EMPIRE telecom

May 5, 2017

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

Regarding:	Notice of Exempt Modification – Swap of 3 Antennas, Addition of (6) TMAs and addition of associated lines
Property Address:	280 Morehouse Drive, Fairfield, CT (the "Property")
Applicant:	AT&T Mobility ("AT&T" Site: CT5145)

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 86 foot utility tower ("tower") at the above-referenced address, latitude 41.21, longitude -73.2616667. AT&T's facility consists of three (3) wireless telecommunications antennas at 84 feet. The tower is controlled and owned by Eversource Energy. Assessor's information is attached hereto.

AT&T desires to modify its existing telecommunications facility by swapping three (3) antennas, adding (6) TMAs, and adding associated lines. The centerline height of said antennas is and will remain at 84 feet.

Please accept this application as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72 (b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the First Selectman of the Town of Fairfield, the Chief Building Official of the Town of Fairfield, and the Planning Director of the Town of Fairfield. A copy of this letter is also being sent to Eversource Energy, the owner of the structure that AT&T is located and Chijian Zhang and Yuzhi Hu, the owners of the land where the tower is located.

The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The planned modifications will not result in an increase in the height of the existing structure. AT&T's antennas and associated lines will be installed at 84 foot level of the 86 foot utility tower.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore will not require an extension of the site boundary.
3. The proposed modification will not increase the noise level at the facility by six decibel or more, or to levels that exceed state and local criteria.

16 Esquire Road, Billerica, MA 01862 Phone 978-284-3906 Email: ncaplan@empiretelecomm.com

4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. An RF emissions calculation is attached.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (Please see attached Structural analysis completed by Centek Engineering Dated March 21, 2017).

For the foregoing reasons AT&T respectfully requests that the proposed swap of 3 antennas, the addition of (6) TMAs, and addition of associated lines be allowed within the exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

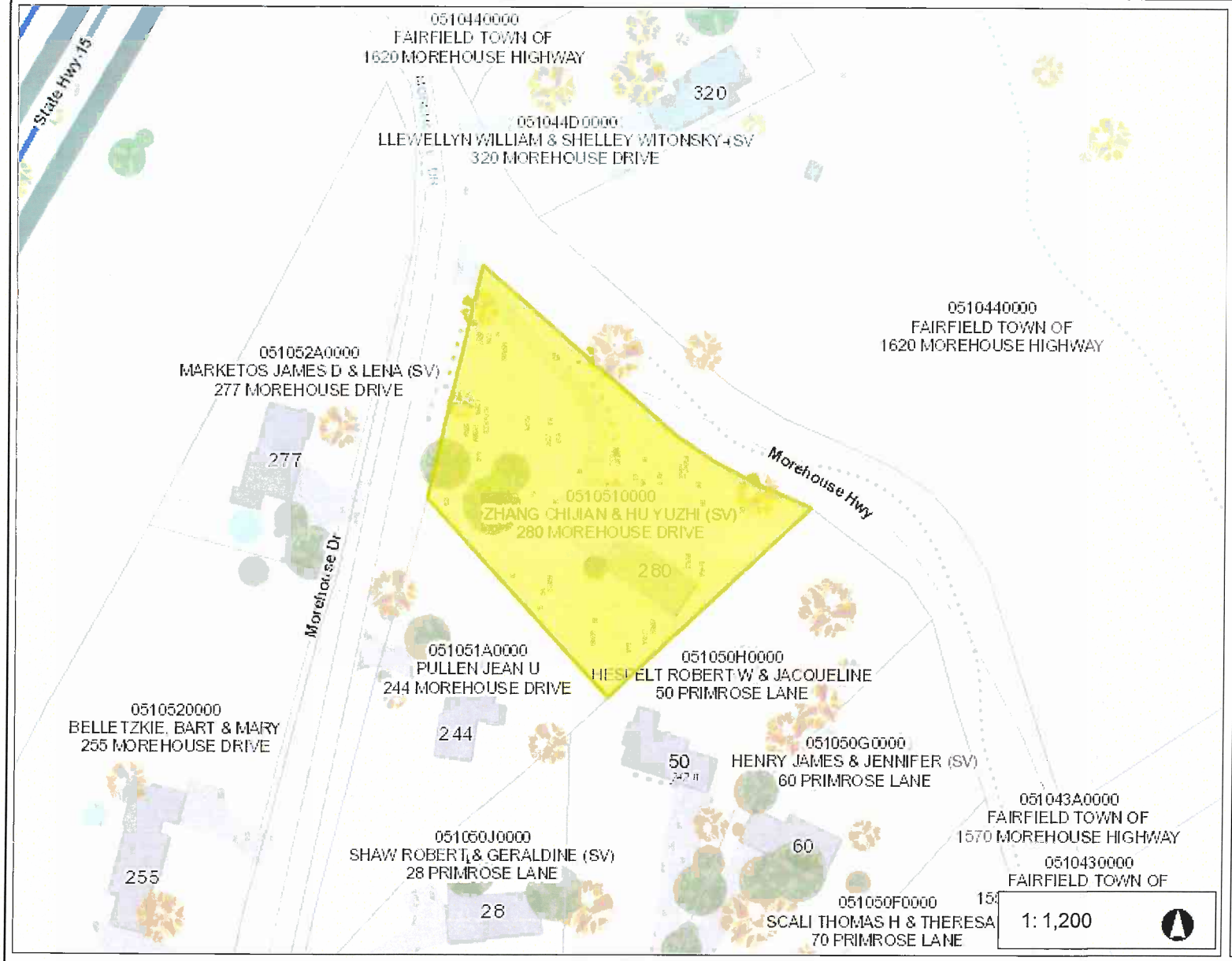
Nicole Caplan
Site Acquisition Specialist
Empire Telecom

CC: The Honorable Michael C. Tetreau, First Selectman, Town of Fairfield
Tom Conley, Chief Building Official, Town of Fairfield
Jim Wendt, Planning Director, Town of Fairfield
Eversource Energy, c/o Joel Szarkowicz
Chijian Zhang and Yuzhi Hu, Land Owners

16 Esquire Road, Billerica, MA 01862 Phone 978-284-3906 Email: ncaplan@empiretelecomm.com

Town of Fairfield

Title



Legend

- Parcels
- Streetname
- Roadways
  - Local
  - Collector
  - Minor Collector
  - Minor Arterial
  - Major Collector
  - PA Other
  - PA Other Expwy
  - PA Interstate

200.0 0 100.00 200.0 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Created by Greater Bridgeport Regional Council

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

METROCOG
Connecticut Metropolitan Council of Governments

280 MOREHOUSE DRIVE

Location	280 MOREHOUSE DRIVE	**Mblu**	51/ 51/ / /
Acct#	17416	**Owner**	ZHANG CHIJIAN & HU YUZHI (SV)
Assessment	$362,950	**Appraisal**	$518,500
PID	5101	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$232,900	$285,600	$518,500
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$163,030	$199,920	$362,950

Owner of Record

Owner ZHANG CHIJIAN & HU YUZHI (SV)
Co-Owner
Address 280 MOREHOUSE DRIVE
FAIRFIELD, CT 06824-2374

Sale Price $300,000
Certificate
Book & Page 2095/ 192
Sale Date 03/06/2000
Instrument 07

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
ZHANG CHIJIAN & HU YUZHI (SV)	$300,000		2095/ 192	07	03/06/2000
FLEET BANK,N.A.	$0		2060/ 112		11/10/1999
STONE WILLIAM & SANDRA	$0		620/ 360		08/06/1976

Building Information

Building 1 : Section 1

Year Built: 1976
Living Area: 2,172
Replacement Cost: $362,258
Building Percent Good: 63
Replacement Cost Less Depreciation: $228,200

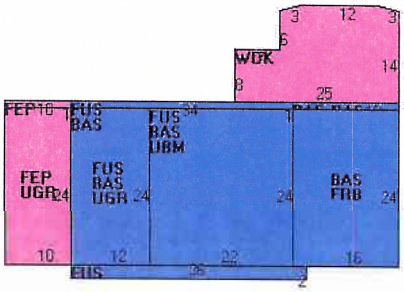
Building Photo

Building Attributes

Field	Description
Style	Colonial
Stories:	2 Stories
Occupancy	1
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure:	Gable/Hip
Roof Cover	Asphalt
Interior Wall 1	Drywall
Interior Wall 2	
Interior Flr 1	Linoleum
Interior Flr 2	Hardwood
Heat Fuel	Gas
Heat Type:	Hot Water
AC Type:	Central
Total Bedrooms:	4 Bedrooms
Total Bthrms:	2
Total Half Baths:	1
Total Xtra Fixtrs:	
Total Rooms:	9 Rooms
Bath Style:	Average
Kitchen Style:	Average
FCPZ	

(http://images.vgsi.com/photos/FairfieldCTPhotos//\02\03\80/67.jpg)

Building Layout



Building Sub-Areas (sq ft)			
Code	Description	Gross Area	Living Area
BAS	First Floor	1,250	1,250
FUS	Upper Story, Finished	922	922
FEP	Porch, Enclosed, Finished	250	0
FRB	Finished Raised Bsmt	384	0
UBM	Basement, Unfinished	534	0
UGR	Garage, Under	528	0
WDK	Deck, Wood	323	0
		4,191	2,172

Extra Features

Extra Features				
Code	Description	Size	Value	Bldg #
FPL3	2.0 STORY FIREPLACE	1 UNITS	$4,700	1

Land

Land Use

Use Code 1010

Land Line Valuation

Size (Acres) 0.79

Description	Single Fam MDL-01	**Depth**	0
Zone	R3	**Assessed Value**	$199,920
Neighborhood	0085	**Appraised Value**	$285,600
Alt Land Appr	No		
Category			

Outbuildings

Outbuildings	Legend
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$232,900	$285,600	$518,500
2014	$154,100	$304,300	$458,400
2013	$154,100	$304,300	$458,400

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$163,030	$199,920	$362,950
2014	$107,870	$213,010	$320,880
2013	$107,870	$213,010	$320,880

WIRELESS COMMUNICATIONS FACILITY
CT5145 - LTE 2C (PCS)
LOWER SCORT HILL
EVERSOURCE UTILITY STRUCT. NO.: 876
280 MOREHOUSE DRIVE
FAIRFIELD, CT 06825

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE, INCLUDING THE TIA-222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2016 CONNECTICUT FIRE SAFETY CODE AND, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. THE COMPOUND, TOWER, PRIMARY GROUND RING, ELECTRICAL SERVICE TO THE METER BANK AND TELEPHONE SERVICE TO THE DEMARCATION POINT ARE PROVIDED BY SITE OWNER. AS BUILT FIELD CONDITIONS REGARDING THESE ITEMS SHALL BE CONFIRMED BY THE CONTRACTOR. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
5. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
6. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
7. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN "AS-BUILT" SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
8. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING BUILDING'S/PROPERTY'S OPERATIONS, COORDINATE WORK WITH BUILDING/PROPERTY OWNER.
10. 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 WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
12. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
13. ANY AND ALL ERRORS, DISCREPANCIES, AND "MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE AT&T CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
15. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
16. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
17. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
19. 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.
20. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
21. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.

SITE DIRECTIONS

FROM: 500 ENTERPRISE DRIVE
ROCKY HILL, CONNECTICUT

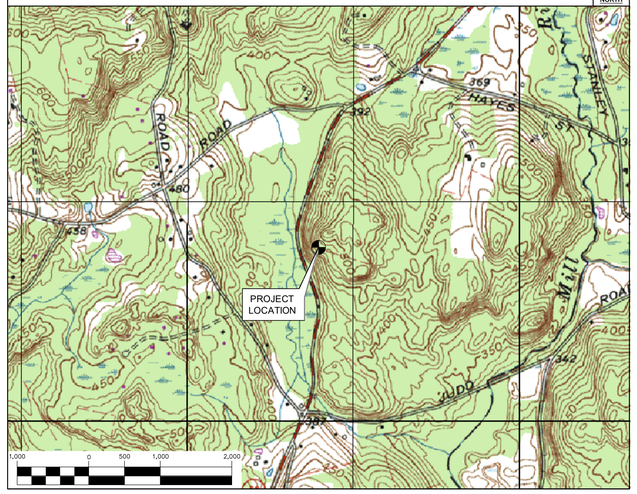
TO: 280 MOREHOUSE DRIVE
FAIRFIELD, CONNECTICUT

1.	HEAD NORTHEAST ON ENTERPRISE DR TOWARD CAPITAL BLVD	0.3 MI
2.	TURN LEFT ONTO CAPITAL BLVD	0.3 MI
3.	TURN LEFT ONTO WEST ST	0.3 MI
4.	TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN	9.6 MI
5.	TAKE EXIT 17 FOR CT-15 S/W CROSS PKWY	0.4 MI
6.	MERGE ONTO CT-15 S	35.9 MI
7.	TAKE EXIT 46 TOWARD CONGRESS ST	
8.	TURN LEFT ONTO CONGRESS ST	0.7 MI
9.	TAKE THE 2ND LEFT ONTO MOREHOUSE DR	0.2 MI
10.	ARRIVE AT 280 MOREHOUSE DRIVE, FAIRFIELD, CT 06825	

VICINITY MAP

SCALE: 1" = 1000'

NORTH



PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:
   - A. REMOVE AND REPLACE EXISTING LTE ANTENNA FOR PROPOSED LTE TWELVE-PORT ANTENNA, (1) PER SECTOR.
   - B. INSTALL (6) NEW TMA'S (2) PER SECTOR
   - C. INSTALL (3) NEW RRUS-12 WITHIN EXISTING COMPOUND
   - D. REMOVE EXISTING DIPLEXERS WITHIN EXISTING COMPOUND
   - E. INSTALL (12) NEW PENTAPLEXERS WITHIN EXISTING COMPOUND
   - F. REMOVE EXISTING RXAIT CABINET WITHIN EXISTINIG COMPOUND
   - G. REMOVE AND REPLACE EXISTING DUL FOR NEW DUS41 AND INSTALL NEW XMU UNIT.
   - H. INSTALL (6) NEW 1-5/8" COAX CABLES ALONG EXISTING STRUCTURE LEG.

PROJECT INFORMATION

AT&T SITE NUMBER:	CT5145
AT&T SITE NAME:	LOWER SCORT HILL
SITE ADDRESS:	EVERSOURCE UTILITY STRUCT. NO.: 876 280 MOREHOUSE DRIVE FAIRFIELD, CT 06825
LESSEE/APPLICANT:	AT&T MOBILITY 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067
ENGINEER:	CENTEK ENGINEERING, INC. 63-2 NORTH BRANFORD RD. BRANFORD, CT 06405
PROJECT COORDINATES:	LATITUDE: 41°-12'-35.92"N LONGITUDE: 73°-15'-41.64"W GROUND ELEVATION: ±225' AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
N-1	NOTES, SPECIFICATIONS AND DETAILS	0
C-1	PLANS AND ELEVATION	0
C-2	EQUIPMENT LAYOUT PLANS	0
C-3	LTE 2C (PCS) EQUIPMENT DETAILS	0
E-1	LTE SCHEMATIC DIAGRAM AND NOTES	0
E-2	LTE WIRING DIAGRAM	0
E-3	TYPICAL ELECTRICAL DETAILS	0

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	05/03/17	KAW/JR	CAG	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

at&t

EMPIRE telecom

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

AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY
LOWER SCORT HILL
CT5145 - LTE 2C (PCS)
280 MOREHOUSE DRIVE
FAIRFIELD, CT 06825

DATE:	02/22/17
SCALE:	AS NOTED
JOB NO.	17004.14

TITLE SHEET

T-1

NOTES AND SPECIFICATIONS

DESIGN BASIS:

GOVERNING CODE: 2012 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2016 CT STATE BUILDING CODE AND AMENDMENTS.

1. DESIGN CRITERIA:

- WIND LOAD: PER TIA 222 G (ANTENNA MOUNTS): 90–110 MPH (3 SECOND GUST)
- RISK CATEGORY: II (BASED ON IBC TABLE 1604.5)
- NOMINAL DESIGN SPEED (OTHER STRUCTURE): 97 MPH (Vasd) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7–10) PER 2012 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE.
- SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7–10 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE GOVERNING BUILDING CODE.
2. 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 WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
3. 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.
4. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST EXISTING FIELD CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.
6. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS, ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
7. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
8. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE SHORING, BRACING, AND BARRICADES AS MAY BE REQUIRED FOR THE PROTECTION OF EXISTING PROPERTY, CONSTRUCTION WORKERS, AND FOR PUBLIC SAFETY.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING SITE OPERATIONS, COORDINATE WORK WITH NORTHEAST UTILITIES
10. THE STRUCTURE IS DESIGNED TO BE SELF–SUPPORTING AND STABLE AFTER FOUNDATION REMEDIATION WORK IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, TEMPORARY BRACING, GUYS OR TIEDOWNS, WHICH MIGHT BE NECESSARY.
11. 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.
12. SHOP DRAWINGS, CONCRETE MIX DESIGNS, TEST REPORTS, AND OTHER SUBMITTALS PERTAINING TO STRUCTURAL WORK SHALL BE FORWARDED TO THE OWNER FOR REVIEW BEFORE FABRICATION AND/OR INSTALLATION IS MADE. SHOP DRAWINGS SHALL INCLUDE ERECTION DRAWINGS AND COMPLETE DETAILS OF CONNECTIONS AS WELL AS MANUFACTURER'S SPECIFICATION DATA WHERE APPROPRIATE. SHOP DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR AND BEAR THE CHECKER'S INITIALS BEFORE BEING SUBMITTED FOR REVIEW.
13. NO DRILLING WELDING OR TAPING ON EVERSOURCE OWNED EQUIPMENT.
14. REFER TO DRAWING T1 FOR ADDITIONAL NOTES AND REQUIREMENTS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)

   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 (FY = 35 KSI)
   F. CONNECTION BOLTS–––ASTM A325–N
   G. U–BOLTS–––ASTM A36
   H. ANCHOR RODS–––ASTM F 1554
   I. WELDING ELECTRODE–––ASTM E 70XX

2. 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.
3. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
4. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
5. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
6. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
7. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON–GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
8. 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.
9. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT–DIP) ON IRON AND STEEL HARDWARE".
10. 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.
11. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
12. 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.
13. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
14. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
15. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
16. FABRICATE BEAMS WITH MILL CAMBER UP.
17. 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.
18. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
19. INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
20. FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

PAINT NOTES

PAINTING SCHEDULE:

1. ANTENNA PANELS:

   A. SHERWIN WILLIAMS POLANE–B
   B. COLOR TO BE MATCHED WITH EXISTING TOWER STRUCTURE.

2. COAXIAL CABLES:

   A. ONE COAT OF DTM BONDING PRIMER (2–5 MILS. DRY FINISH)
   B. TWO COATS OF DTM ACRYLIC PRIMER/FINISH (2.5–5 MILS. DRY FINISH)
   C. COLOR TO BE FIELD MATCHED WITH EXISTING STRUCTURE.

EXAMINATION AND PREPARATION:

1. DO NOT APPLY PAINT IN SNOW, RAIN, FOG OR MIST OR WHEN RELATIVE HUMIDITY EXCEEDS 85%. DO NOT APPLY PAINT TO DAMP OR WET SURFACES.
2. VERIFY THAT SUBSTRATE CONDITIONS ARE READY TO RECEIVE WORK. EXAMINE SURFACE SCHEDULED TO BE FINISHED PRIOR TO COMMENCEMENT OF WORK. REPORT ANY CONDITION THAT MAY POTENTIALLY AFFECT PROPER APPLICATION.
3. TEST SHOP APPLIED PRIMER FOR COMPATIBILITY WITH SUBSEQUENT COVER MATERIALS.
4. PERFORM PREPARATION AND CLEANING PROCEDURE IN STRICT ACCORDANCE WITH COATING MANUFACTURER'S INSTRUCTIONS FOR EACH SUBSTRATE CONDITION.
5. CORRECT DEFECTS AND CLEAN SURFACES WHICH AFFECT WORK OF THIS SECTION. REMOVE EXISTING COATINGS THAT EXHIBIT LOOSE SURFACE DEFECTS.
6. IMPERVIOUS SURFACE: REMOVE MILDEW BY SCRUBBING WITH SOLUTION OF TRI–SODIUM PHOSPHATE AND BLEACH. RINSE WITH CLEAN WATER AND ALLOW SURFACE TO DRY.
7. ALUMINUM SURFACE SCHEDULED FOR PAINT FINISH: REMOVE SURFACE CONTAMINATION BY STEAM OR HIGH–PRESSURE WATER. REMOVE OXIDATION WITH ACID ETCH AND SOLVENT WASHING. APPLY ETCHING PRIMER IMMEDIATELY FOLLOWING CLEANING.
8. FERROUS METALS: CLEAN UNGALVANIZED FERROUS METAL SURFACES THAT HAVE NOT BEEN SHOP COATED; REMOVE OIL, GREASE, DIRT, LOOSE MILL SCALE, AND OTHER FOREIGN SUBSTANCES. USE SOLVENT OR MECHANICAL CLEANING METHODS THAT COMPLY WITH THE STEEL STRUCTURES PAINTING COUNCIL'S (SSPC) RECOMMENDATIONS. TOUCH UP BARE AREAS AND SHOP APPLIED PRIME COATS THAT HAVE BEEN DAMAGED. WIRE BRUSH, CLEAN WITH SOLVENTS RECOMMENDED BY PAINT MANUFACTURER, AND TOUCH UP WITH THE SAME PRIMER AS THE SHOP COAT.
9. GALVANIZED SURFACES: CLEAN GALVANIZED SURFACES WITH NON–PETROLEUM–BASED SOLVENTS SO SURFACE IS FREE OF OIL AND SURFACE CONTAMINANTS. REMOVE PRETREATMENT FROM GALVANIZED SHEET METAL FABRICATED FROM COIL STOCK BY MECHANICAL METHODS.
10. ANTENNA PANELS: REMOVE ALL OIL, DUST, GREASE, DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION. PANELS MUST BE WIPED WITH METHYL ETHYL KETONE (MEK).
11. COAXIAL CABLES: REMOVE ALL OIL, DUST, GREASE. DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION.

CLEANING:

1. COLLECT WASTE MATERIAL, WHICH MAY CONSTITUTE A FIRE HAZARD, PLACE IN CLOSED METAL CONTAINERS AND REMOVE DAILY FROM SITE.

APPLICATION:

1. APPLY PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. DO NOT APPLY FINISHES TO SURFACES THAT ARE NOT DRY.
3. APPLY EACH COAT TO UNIFORM FINISH.
4. APPLY EACH COAT OF PAINT SLIGHTLY DARKER THAN PRECEDING COAT UNLESS OTHERWISE APPROVED.
5. SAND METAL LIGHTLY BETWEEN COATS TO ACHIEVE REQUIRED FINISH.
6. VACUUM CLEAN SURFACES FREE OF LOOSE PARTICLES. USE TACK CLOTH JUST PRIOR TO APPLYING NEXT COAT.
7. ALLOW APPLIED COAT TO DRY BEFORE NEXT COAT IS APPLIED.

COMPLETED WORK:

1. SAMPLES: PREPARE 24" X 24" SAMPLE AREA FOR REVIEW.
2. MATCH APPROVED SAMPLES FOR COLOR, TEXTURE AND COVERAGE. REMOVE REFINISH OR REPAINT WORK NOT IN COMPLIANCE WITH SPECIFIED REQUIREMENTS.

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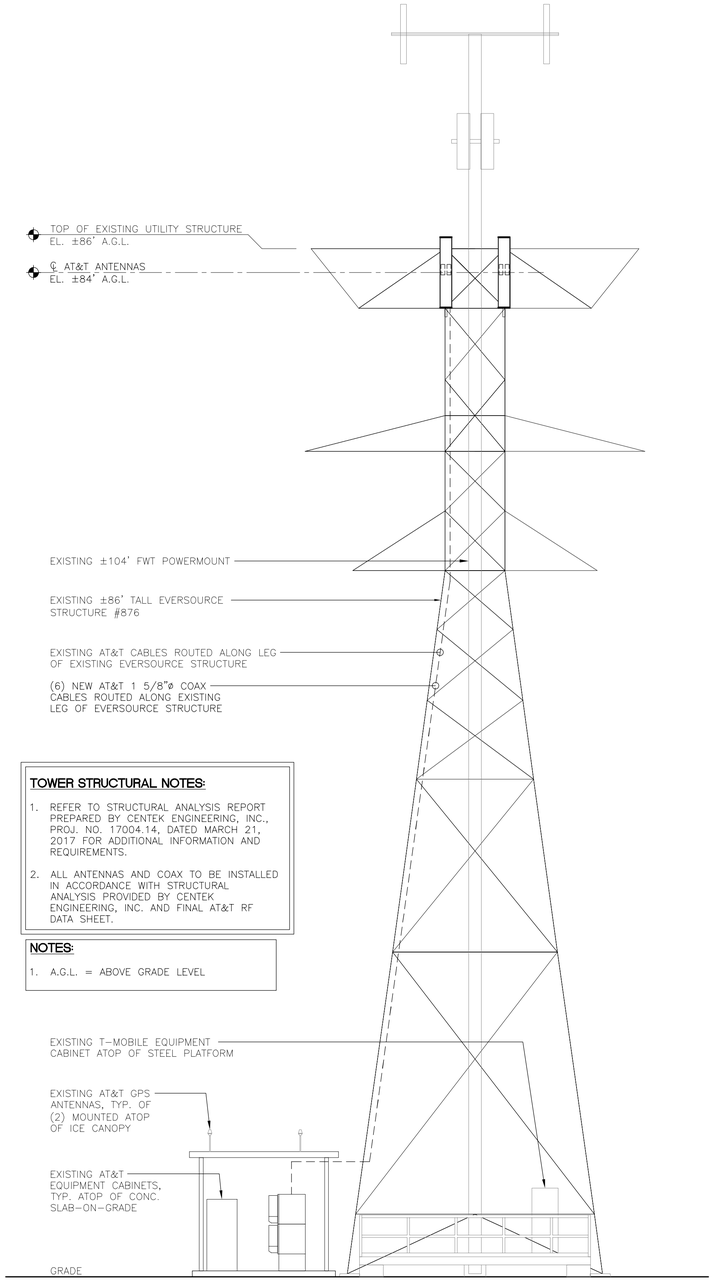
NOTES, SPECIFICATIONS AND DETAILS

N-1



TOWER STRUCTURAL NOTES:

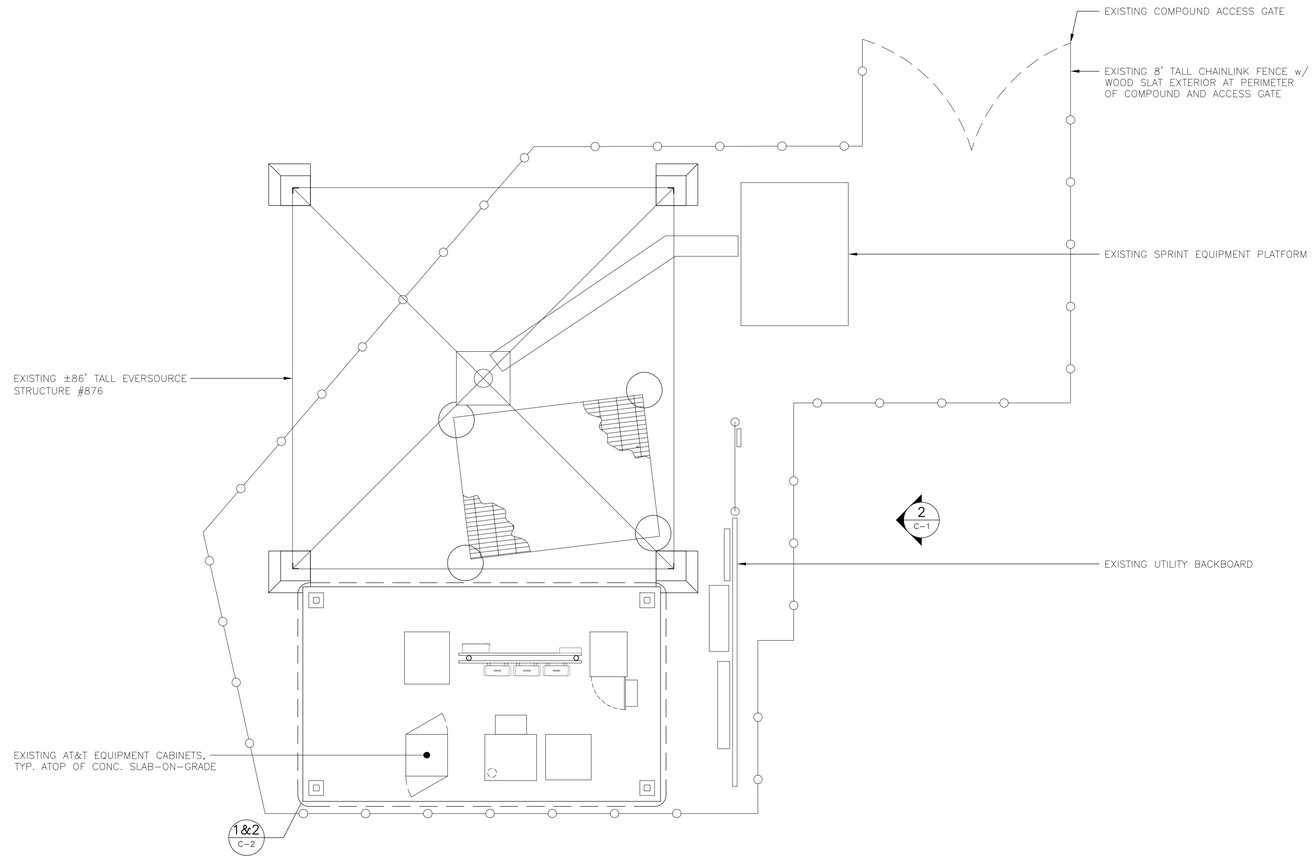
1. REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY CENTEK ENGINEERING, INC., PROJ. NO. 17004.14, DATED MARCH 21, 2017 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
2. ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CENTEK ENGINEERING, INC. AND FINAL AT&T RF DATA SHEET.

NOTES:

1. A.G.L. = ABOVE GRADE LEVEL

2 / C-1 **PARTIAL EAST ELEVATION**
SCALE: 1" = 6'

GRAPHIC SCALE
6 0 3 6 12 24
(IN FEET)
1 inch = 6 ft.



1 / C-1 **COMPOUND PLAN**
SCALE: 1/4" = 1'-0"

APPROX. NORTH

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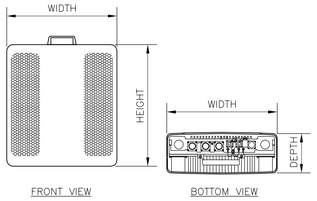
PLANS AND ELEVATION

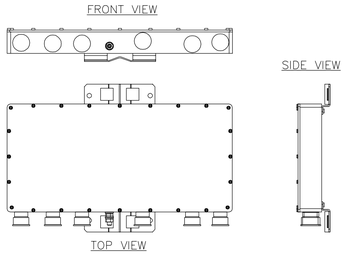
C-1
Sheet No. 3 of 8



RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS 12	20.4"L x 18.5"W x 7.5"D	50 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

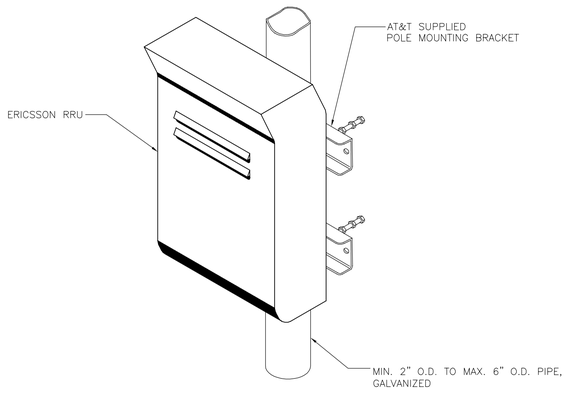
3 / C-2 ERICSSON RRUS 12 DETAIL
SCALE: 1" = 1'-0"



PENTAPLEXER		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: CCI MODEL: 5PX-0726-0	11.44"H x 17.44"W x 1.95"D	15.6 LBS.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

4 / C-2 PENTAPLEXER DETAIL
SCALE: NONE

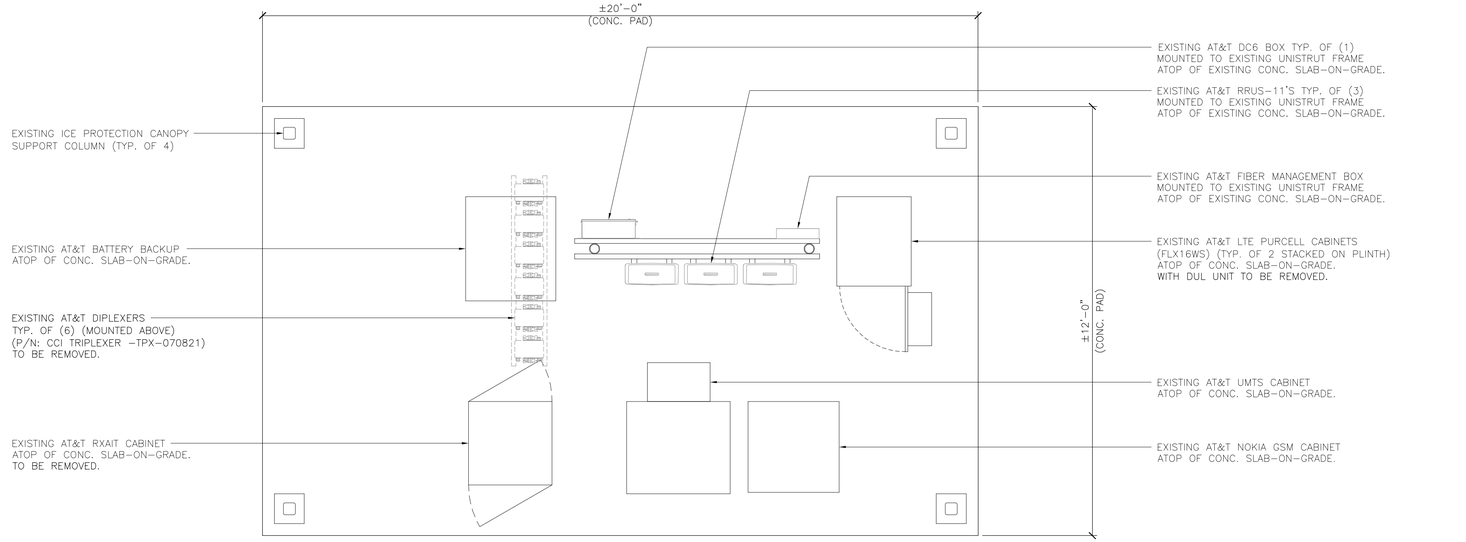


ISOMETRIC VIEW

NOTES:

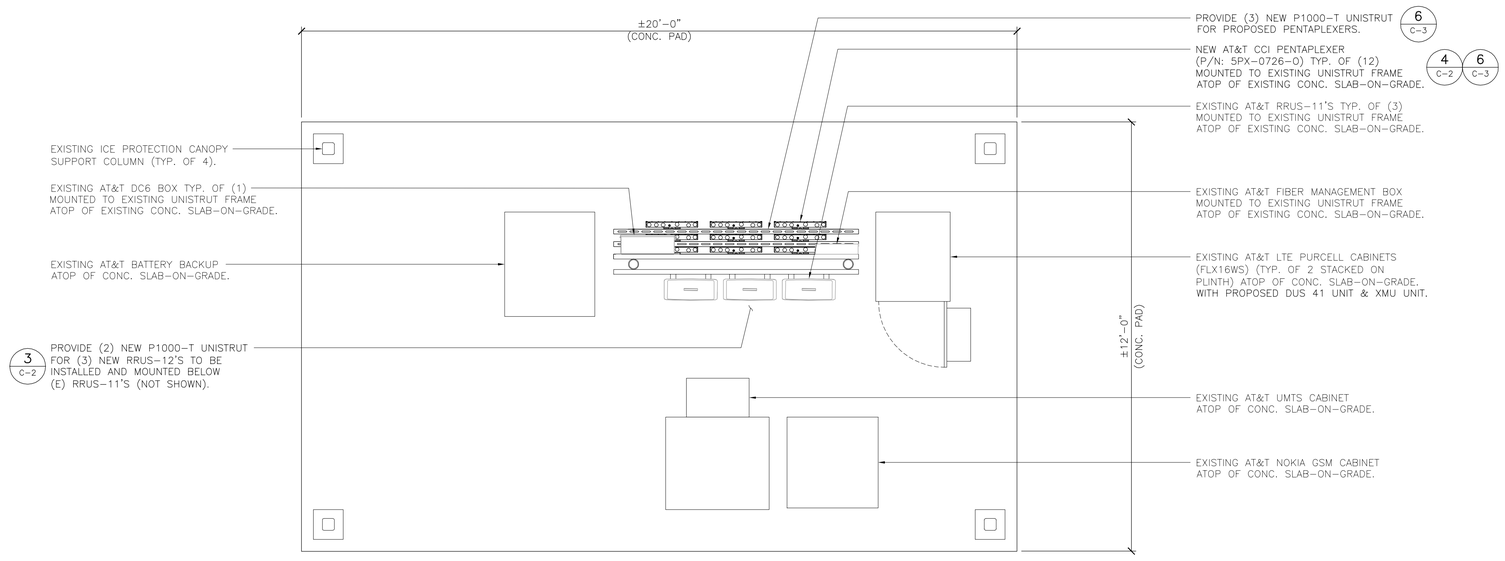
1. AT&T SHALL SUPPLY RRU, AND RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL INSTALLS RRU AND MAKES CABLE TERMINATIONS.
2. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

5 / C-2 TYPICAL RRUS MOUNTING DETAILS
SCALE: NTS



1 / C-2 EXISTING EQUIPMENT LAYOUT PLAN
SCALE: 1/2" = 1'-0"

APPROX. NORTH



2 / C-2 PROPOSED EQUIPMENT LAYOUT PLAN
SCALE: 1/2" = 1'-0"

APPROX. NORTH

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EQUIPMENT LAYOUT PLANS

C-2

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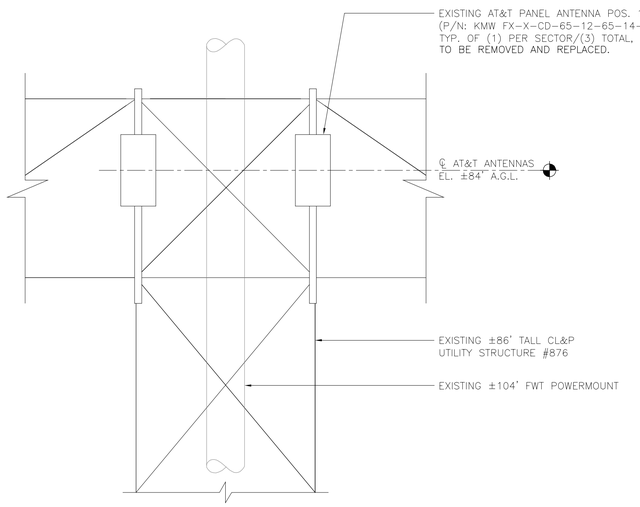
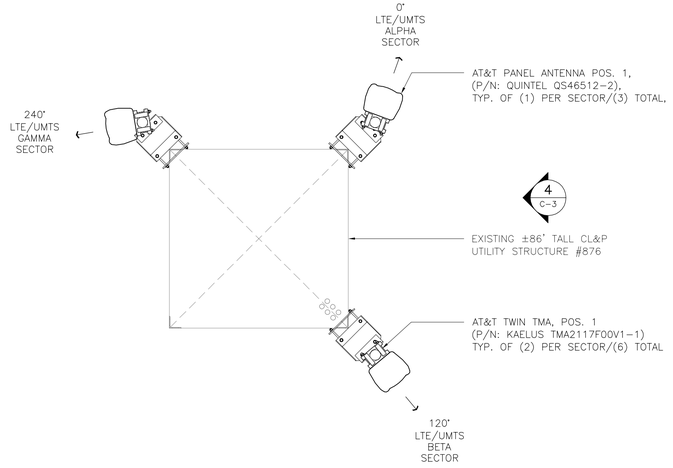
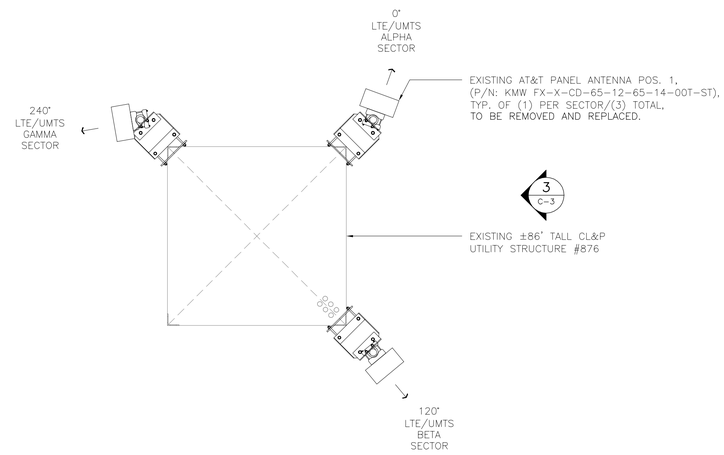


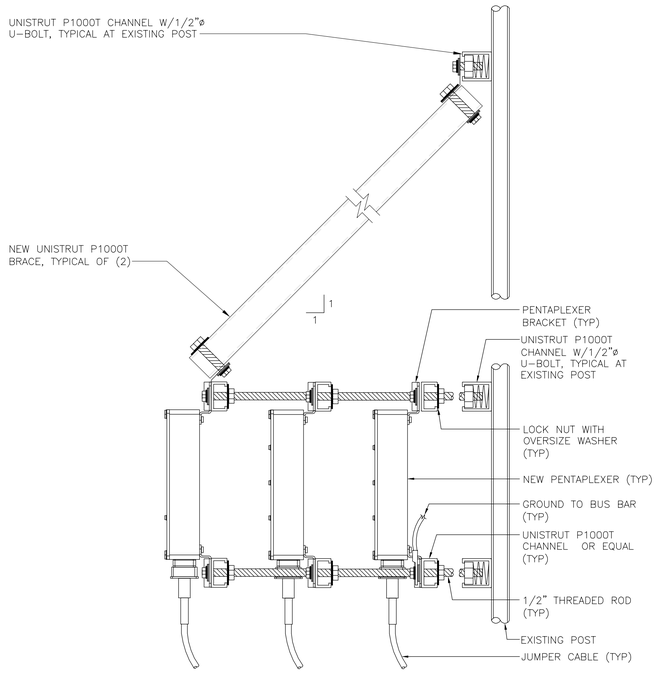
3 C-3 **EXISTING ANTENNA ELEVATION**
SCALE: 1/2" = 1'-0"



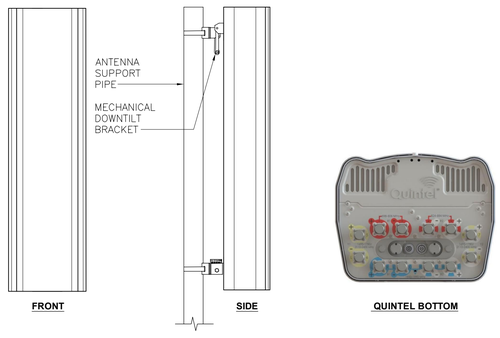
2 C-3 **PROPOSED ANTENNA PLAN** NORTH
SCALE: 1/2" = 1'-0"



1 C-3 **EXISTING ANTENNA PLAN** NORTH
SCALE: 1/2" = 1'-0"

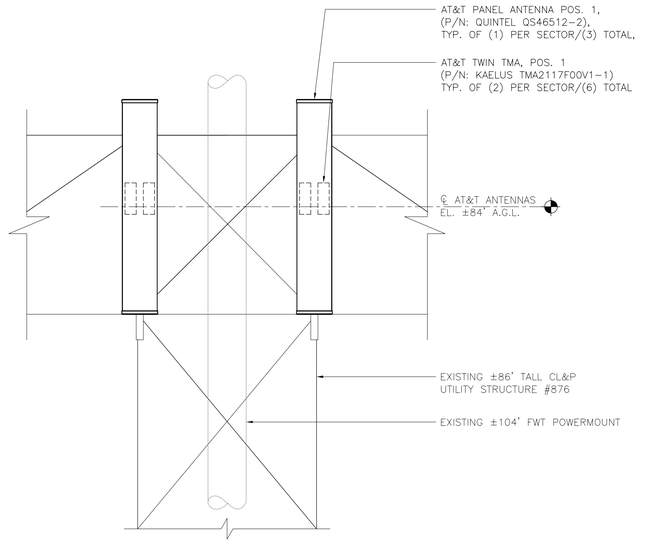


6 C-3 **TYPICAL PENTAPLEXER MOUNTING DETAILS**
SCALE: 3" = 1'-0"



ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: QUINTEL MODEL: QS46512-2	52"H x 12"W x 10.8"D	75 LBS.

5 C-3 **PROPOSED ANTENNA DETAIL**
SCALE: 1/2" = 1'-0"



4 C-3 **PROPOSED ANTENNA ELEVATION**
SCALE: 1/2" = 1'-0"

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LTE 2C EQUIPMENT DETAILS

C-3

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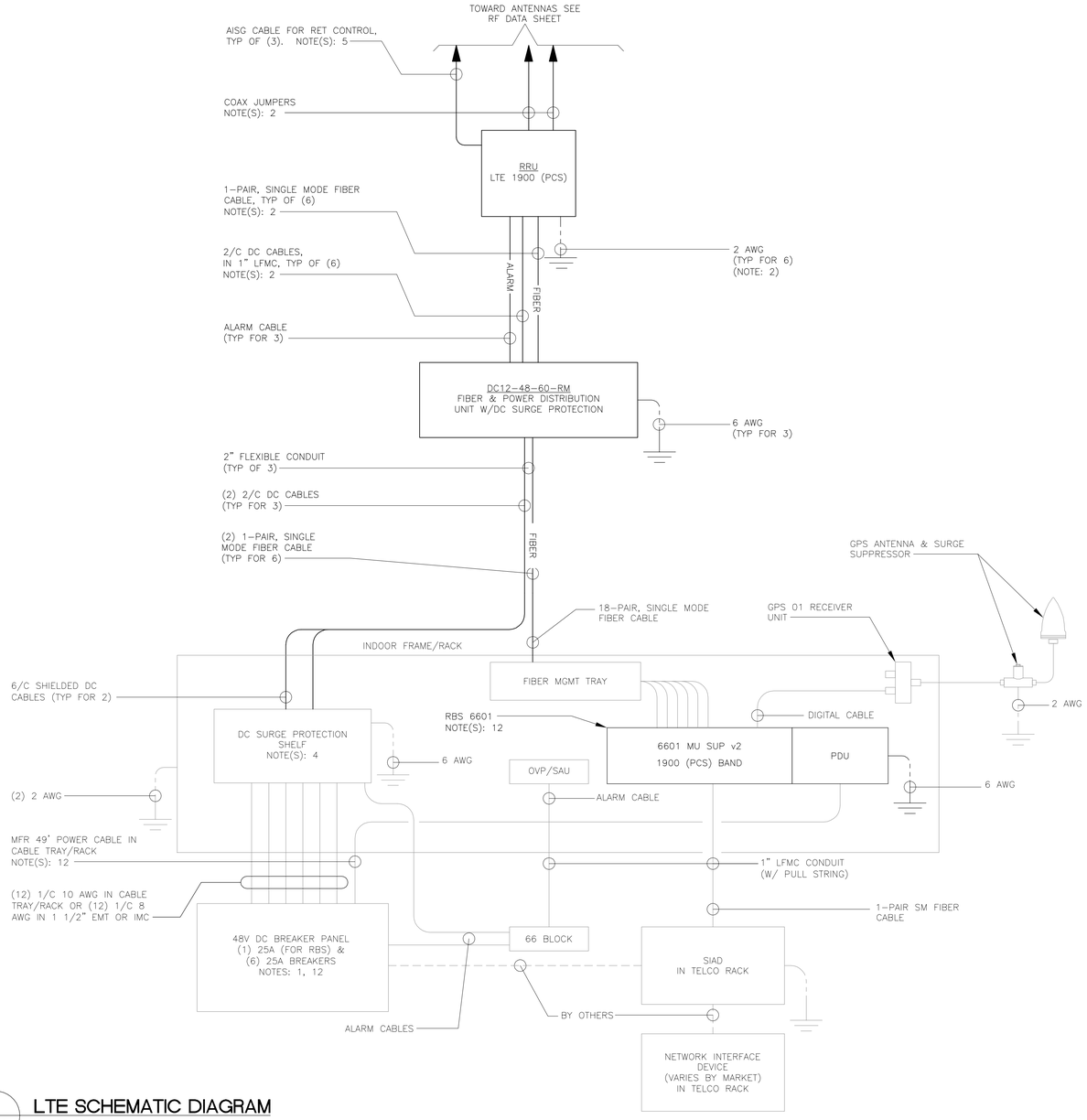

1 / E-1 LTE SCHEMATIC DIAGRAM

NOT TO SCALE

LTE SCHEMATIC DIAGRAM NOTES:

1. BREAKERS TO BE TAGGED AND LOCKED OUT. A 20A (MIN.) OR 30A (MAX.) BREAKER FOR RRUs MAY BE SUBSTITUTED FOR THE RECOMMENDED 25A BREAKER. SIZE 12 CONDUCTORS MAY BE USED ONLY WITH 20A BREAKERS.
2. LEAVE COILED AND PROTECTED UNTIL TERMINATED.
3. DC AND FIBER CABLE SHALL BE ROUTED WITH THE EXISTING COAX CABLE.
4. DC SURGE PROTECTION SHELF SHALL BE RAYCAP DCx-48-60-RM.
5. FIBER & DC DISTRIBUTION BOX W/DC SURGE PROTECTION SHALL BE RAYCAP DC6-48-60-18-8F.
6. SUPPORT FIBER & DC POWER CABLES WITH SNAP-IN HANGERS SPACED NO GREATER THAN 3 FEET APART ON TOWER. SUPPORT FIBER AND DC POWER CABLES INSIDE MONOPOLE WITH CABLE HOISTING GRIPS AT 250 FT MAXIMUM INTERVALS. DRESS CABLES TO PREVENT CONTACT WITH ENTRANCE AND EXIT OPENINGS.
7. CONDUIT TO BE USED ON A TOWER IF THE RRU IS MORE THAN 10' FROM THE DISTRIBUTION UNITS. MAX CABLE LENGTH IS 16 FEET.
8. SINGLE-CONDUCTOR DC POWER CABLES SHALL BE TELCOFLEX® OR KS24194™, COPPER, UL LISTED RHH NON-HALOGEN, LOW SMOKE WITH BRAIDED COVER, TYPE TC (1/0 AND LARGER). UNLESS OTHERWISE NOTED, STRANDING SHALL BE CLASS B (TYPE III) FOR CABLES SIZES 14, 12 & 10 AWG AND CLASS I (TYPE IV) FOR SIZES 8 AWG AND LARGER. CABLES SHALL BE COLOR CODED RED FOR +24V, BLUE FOR -48V AND GRAY FOR 24V AND 48V RETURN CONDUCTORS. MULTI-CONDUCTOR DC POWER CABLES SHALL BE COPPER, CLASS B STRANDING WITH FLAME RETARDANT PVC JACKET, TYPE TC, UL LISTED FOR 90°C DRY/ 75°C WET INSTALLATION.
9. GROUNDING WIRES SHALL BE COPPER, GREEN THHN/THWN UL LISTED FOR 90°C DRY/75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
10. FIBER OPTIC CABLES SHALL BE INSTALLED IN FLEXIBLE CONDUIT AS SCOPED BY MARKET.
11. RET CONTROL FROM THE RRU IS AN OPTIONAL METHOD OF CONNECTION. REFER TO RF DATA SHEET FOR APPLICABILITY.
12. RBS 6601 VARIANT 2 REQUIRES A 25A BREAKER AND 10 AWG (MIN.) CONDUCTORS. REPLACE EXISTING 15A OR 20A BREAKERS AND 12 AWG CONDUCTORS WHEN UPGRADING AN EXISTING RBS 6601 VARIANT 1.

ELECTRICAL NOTES

1. PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL COORDINATE WITH OWNER FOR ALL CONSTRUCTION STANDARDS AND SPECIFICATIONS, AND ALL MANUFACTURER DOCUMENTATION FOR ALL EQUIPMENT TO BE INSTALLED.
2. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH LOCAL BUILDING CODE, NATIONAL ELECTRIC CODE, OWNER AND MANUFACTURER'S SPECIFICATIONS.
3. CONNECT ALL NEW EQUIPMENT TO EXISTING TELCO AS REQUIRED BY MANUFACTURER.
4. MAINTAIN ALL CLEARANCES REQUIRED BY NEC AND EQUIPMENT MANUFACTURER.
5. PRIOR TO INSTALLATION CONTRACTOR SHALL MEASURE EXISTING ELECTRICAL LOAD AND VERIFY EXISTING AVAILABLE CAPACITY FOR PROPOSED INSTALLATION. IF INADEQUATE CAPACITY IS AVAILABLE, CONTRACTOR SHALL COORDINATE WITH LOCAL ELECTRIC UTILITY COMPANY TO UPGRADE EXISTING ELECTRIC SERVICE.
6. CONTRACTOR SHALL INSPECT EXISTING GROUNDING AND LIGHTNING PROTECTION SYSTEM AND ENSURE THAT IT IS IN COMPLIANCE WITH NEC, AND SITE OWNER'S SPECIFICATIONS. THE RESULTS OF THIS INSPECTION SHALL BE PRESENTED TO OWNERS REPRESENTATIVE, AND ANY DEFICIENCIES SHALL BE CORRECTED.
7. ALL TRANSMISSION TOWER SITES CONTAIN AN EXTENSIVE BURIED GROUNDING SYSTEM. ALL GROUNDING WORK MUST BE COORDINATED WITH, AND APPROVED BY, THE TOWER OWNER'S SITE REPRESENTATIVE. ALL OF THE TOWER OWNER'S SPECIFICATIONS MUST BE STRICTLY FOLLOWED.
8. PROVIDE AND INSTALL GROUND KITS FOR ALL NEW COAXIAL CABLES AND BOND TO EXISTING OWNERS GROUNDING SYSTEM PER OWNERS SPECIFICATIONS AND NEC.
9. ALL CONDUCTORS SHALL BE TYPE THWN (INT. APPLICATION) AND XHHW (EXT. APPLICATION), 75 DEGREE C, 600 VOLT INSULATION, SOFT ANNEALED STRANDED COPPER. #10 AWG AND SMALLER SHALL BE SPLICED USING ACCEPTABLE SOLDERLESS PRESSURE CONNECTORS. #8 AWG AND LARGER SHALL BE SPLICED USING COMPRESSION SPLIT-BOLT TYPE CONNECTORS, #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR FOR LINE VOLTAGE BRANCH CIRCUITS. REFER TO PANEL SCHEDULE FOR BRANCH CIRCUIT CONDUCTOR SIZE(S). CONDUCTORS SHALL BE COLOR CODED FOR CONSISTENT PHASE IDENTIFICATION:
10. MINIMUM BENDING RADIUS FOR CONDUCTORS SHALL BE 12 TIMES THE LARGEST DIAMETER OF BRANCH CIRCUIT CONDUCTOR.
11. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH MAY APPLY AND NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE INTERPRETED AS AN INFRINGEMENT OF SUCH CODES OR REGULATIONS.
12. THE ELECTRICAL CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH OWNER'S REPRESENTATIVE, DESIGN ENGINEER AND OTHER AUTHORITIES HAVING JURISDICTION OF TRADES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES AS MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR SCHEDULING OF ALL INSPECTIONS AS MAY BE REQUIRED BY THE LOCAL AUTHORITY.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE SITE AND/OR BUILDING OWNER FOR NEW AND/OR DEMOLITION WORK INVOLVED.
15. THE CONTRACTOR SHALL GUARANTEE ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM THE ACCEPTANCE DATE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WARRANTIES FROM ALL EQUIPMENT MANUFACTURERS FOR SUBMISSION TO THE OWNER.
16. DRAWINGS INDICATE GENERAL ARRANGEMENT OF WORK INCLUDED IN CONTRACT. CONTRACTOR SHALL WITHOUT EXTRA CHARGE, MAKE MODIFICATIONS TO THE LAYOUT OF THE WORK TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND FOR THE PROPER INSTALLATION OF WORK. CHECK ALL DRAWINGS AND VISIT JOB SITE TO VERIFY SPACE AND TYPE OF EXISTING CONDITIONS IN WHICH WORK WILL BE DONE, PRIOR TO SUBMITTAL OF BID.
17. ALL NON-CURRENT CARRYING PARTS OF THE ELECTRICAL AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO THE EQUIPMENT GROUNDING SOURCES.
18. GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS PER LOCAL INSPECTOR HAVING JURISDICTION.
19. EACH EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. ARTICLE 250-122. (MIN. #12 AWG).
20. CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE MAXIMUM AC RESISTANCE TO GROUND OF 5 OHM BETWEEN ANY POINT ON THE GROUNDING SYSTEM AS MEASURED BY 3-POINT GROUNDING TEST. (REFER TO SECTION 16960).

TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

A. CONTRACTOR SHALL RETAIN THE SERVICES OF A LOCAL INDEPENDENT ELECTRICAL TESTING FIRM (WITH MINIMUM 5 YEARS COMMERCIAL EXPERIENCE IN THE ELECTRICAL TESTING INDUSTRY) AS SPECIFIED BY OWNER TO PERFORM:

   TEST 1: RESISTANCE TO GROUND TEST ON THE CELLULAR GROUNDING SYSTEM.

   THE TESTING FIRM SHALL INCLUDE THE FOLLOWING INFORMATION WITH THE REPORT:

   1. TESTING PROCEDURE INCLUDING THE MAKE AND MODEL OF TEST EQUIPMENT.
   2. CERTIFICATION OF TESTING EQUIPMENT CALIBRATION WITHIN SIX (6) MONTHS OF DATE OF TESTING. INCLUDE CERTIFICATION LAB ADDRESS AND TELEPHONE NUMBER.
   3. GRAPHICAL DESCRIPTION OF TESTING METHOD ACTUALLY IMPLEMENTED.

B. TESTING SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF OWNERS CONSTRUCTION REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE CONSTRUCTION AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.

C. THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT ELECTRICAL TESTING FIRM REPORT/ANALYSIS TO ENGINEER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO THE JOB TURNOVER.

D. CONTRACTOR TO PROVIDE A MINIMUM OF ONE (1) WEEK NOTICE TO OWNER AND ENGINEER FOR ALL TESTS REQUIRING WITNESSING.

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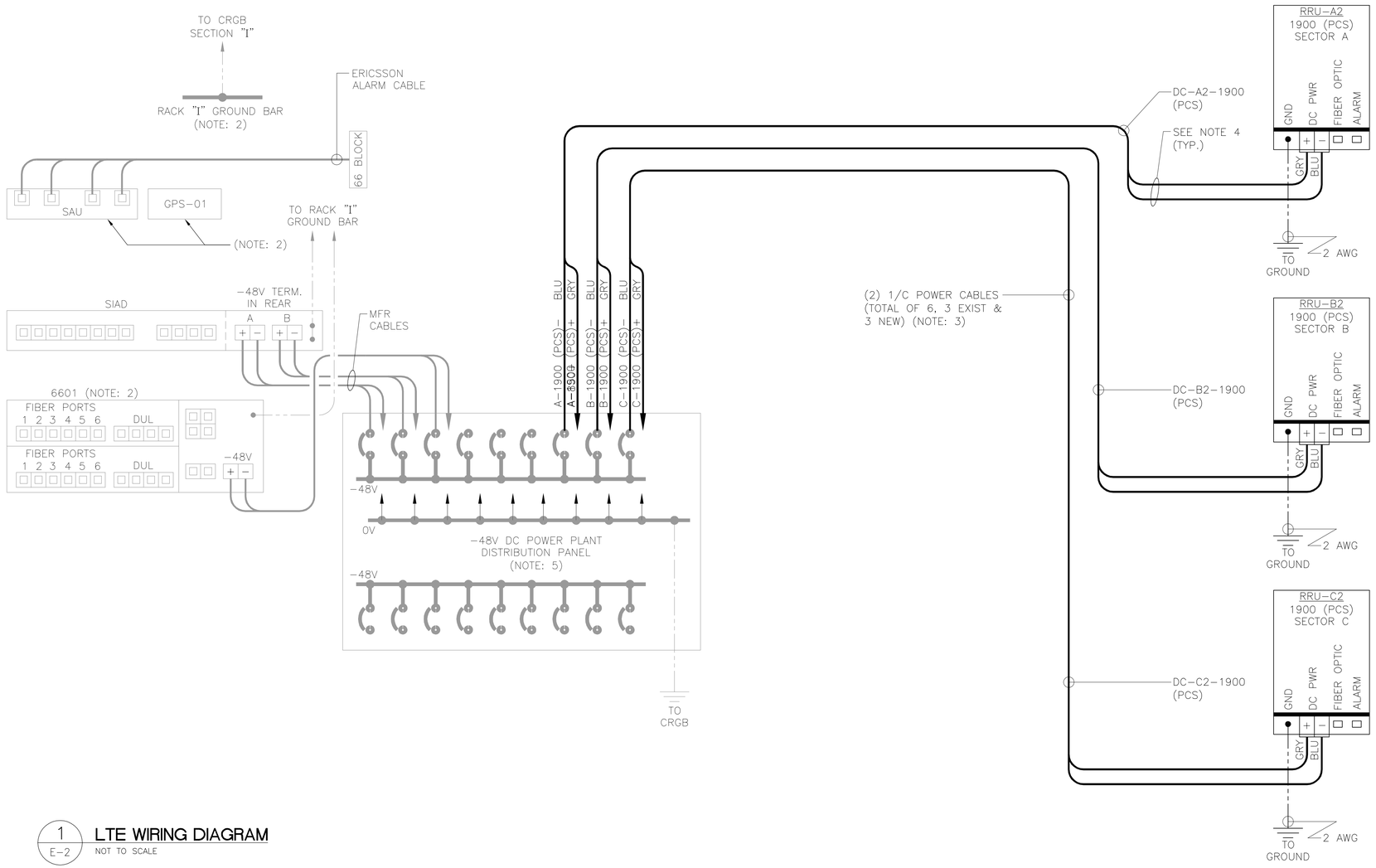
LTE SCHEMATIC DIAGRAM AND NOTES

E-1

Sheet No. 6 of 8



1
E-2

LTE WIRING DIAGRAM

NOT TO SCALE

LTE WIRING DIAGRAM NOTES:

1. LABEL THE DC POWER CABLES AT BOTH ENDS OF EVERY WIRE AND IN ANY PULL BOX IF USED. LABEL SHALL BE DURABLE, SELF ADHESIVE, WRAPPED LONGITUDINALLY ALONG THE CABLE AND STATE THE SECTOR, FREQUENCY BAND AND POLARITY; I.E. "A-1900+". CABLE AND WIRE LABELS SHOWN ARE REPRESENTATIVE AND MAY BE MODIFIED AS DIRECTED BY AT&T.
2. INSTALL ON BASEBAND EQUIPMENT RACK.
3. THE BARE GROUND WIRE OF EACH MULTI-CONDUCTOR CABLE SHALL BE CONNECTED TO THE "P" GROUND BAR ON THE RACK. WHEN A SHIELDED CABLE IS USED, THE DRAIN WIRE ALSO SHALL BE CONNECTED TO THE "P" GROUND BAR.
4. CABLE GROUND WIRE AND SHIELD DRAIN WIRE TO BE LEFT UN-TERMINATED AT RRU AND DC POWER PLANT.
5. SEE LTE SCHEMATIC DIAGRAM DETAIL 1/E-1 FOR BREAKER RATING.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	05/03/17	KAW,JR	CAG	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION

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AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY

LOWER SCORT HILL
CT5145 - LTE 2C (PCS)
280 MOREHOUSE DRIVE
FAIRFIELD, CT 06825

DATE: 02/22/17
SCALE: AS NOTED
JOB NO. 17004.14

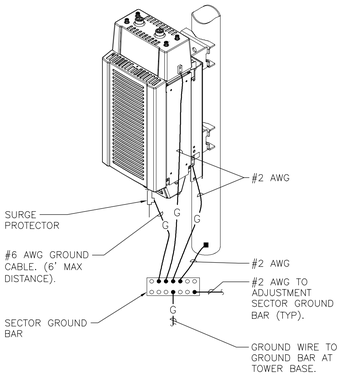
LTE WIRING DIAGRAM

E-2

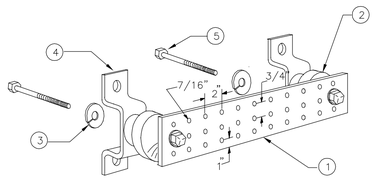
Sheet No. 7 of 8

EACH RRH CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:

1. AT TOP OF THE CABINET
2. AT RIGHT SIDE OF THE CABINET.



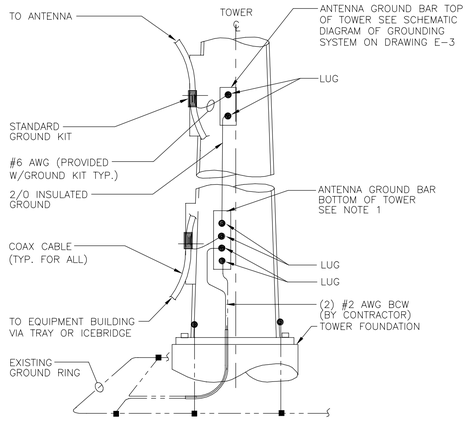
4 E-3 **RRU POLE MOUNT GROUNDING**
NOT TO SCALE



LEGEND

1. TINNED COPPER GROUND BAR, 1/4"x 4"x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG .
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 2. 3061-4.
3. 3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. 4. CAT NO. A-6056.
5. STAINLESS STEEL SECURITY SCREWS.

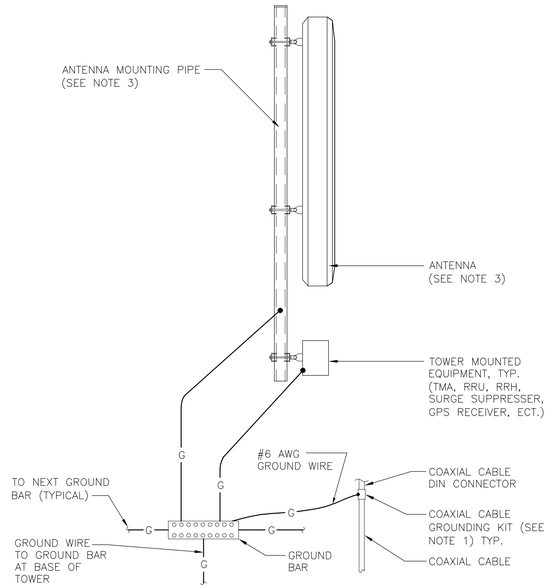
3 E-3 **GROUND BAR DETAIL**
NOT TO SCALE



NOTES:

1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

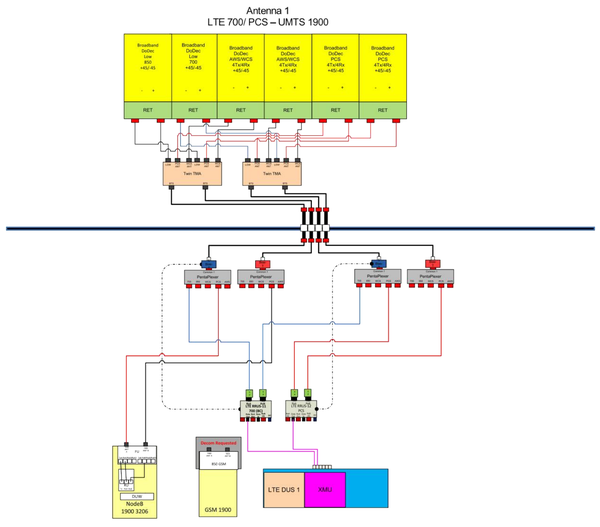
2 E-3 **ANTENNA CABLE GROUNDING - TOWER**
NOT TO SCALE



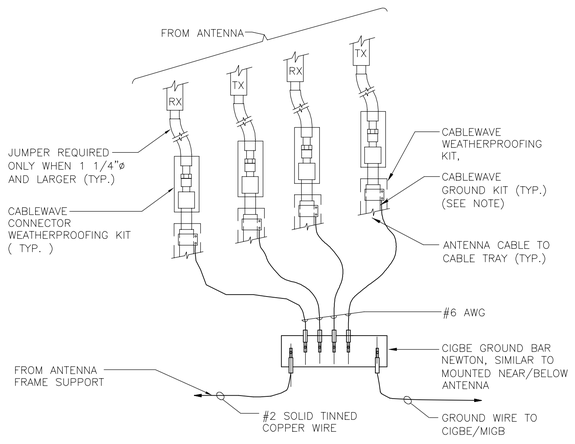
NOTES:

1. BOND COAXIAL CABLE GROUND KITS TO EACH OWNER'S GROUND BAR ALONG ENTIRE COAX RUN FROM ANTENNA TO SHELTER.
2. BOND ALL EQUIPMENT TO GROUND PER NEC AND MANUFACTURERS SPECIFICATIONS.
3. DETAIL IS TYPICAL FOR ALL ANTENNA SECTORS, INCLUDING GPS ANTENNA.

1 E-3 **TYPICAL ANTENNA GROUNDING DETAIL**
NOT TO SCALE



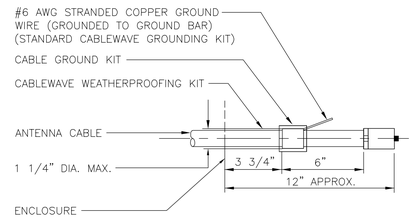
7 E-3 **RF PLUMBING DIAGRAM**
NOT TO SCALE



NOTE:

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

6 E-3 **CONNECTION OF GROUND WIRES TO GROUND BAR**
NOT TO SCALE



NOTE:

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

5 E-3 **ANTENNA CABLE GROUNDING DETAIL**
NOT TO SCALE

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JOB NO. 17004.14

TYPICAL ELECTRICAL DETAILS

E-3
Sheet No. 8 of 8

CENTEK engineering

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Structural Analysis of Tower

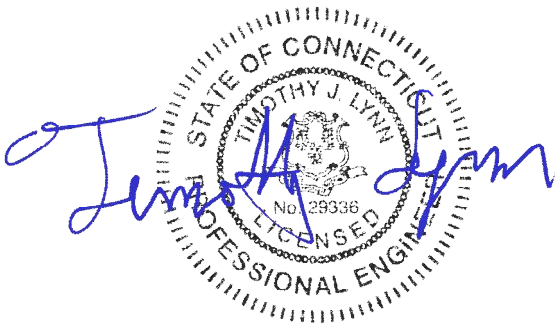
AT&T Site Ref: CT5145

Eversource Structure No. 876
86' Electric Transmission Lattice Tower

280 Morehouse Drive
Fairfield, CT

CENTEK Project No. 17004.14

~~Date: February 20, 2017~~
Rev 1: March 21, 2017



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

Table of Contents

Introduction

The purpose of this report is to analyze the 86' utility tower located at 280 Morehouse Dr., in Fairfield, CT for the proposed antenna and equipment upgrade by AT&T.

The existing and proposed loads consist of the following:

- SPRINT (Existing):
  Antennas: Three (3) RFS APXVSPP18-C panel antennas mounted on a Site Pro WiMAX Monopole T-Arm p/n UDS-NP to the existing mast with a RAD center elevation of 104-ft above grade.
  Coax Cables: Six (6) 1-5/8" ∅ coax cables running on the inside of the existing mast and twelve (12) 1-5/8" ∅ coax cables mounted on a cable ladder running on a face of the existing tower as indicated in section 4 of this report.
- T-MOBILE (Existing):
  Antennas: Three (3) RFS APX16DWV-16DWVS panel antennas, three (3) Andrew LNX-6515DS panel antennas and three (3) Andrew ATSBT-TOP-FM-4G Smart Bias Tees mounted on a Site Pro WiMAX Monopole T-Arm p/n UDS-NP to the existing mast with a RAD center elevation of 95-ft above grade.
  Coax Cables: Twelve (12) 1-1/4" ∅ coax cables running on the exterior of the existing mast and six (6) 1-1/4" ∅ coax cables mounted on a cable ladder running on a face of the existing tower as indicated in section 4 of this report.
- AT&T (Existing to Remain):
  Coax Cables: Six (6) 1-5/8" ∅ coax cables running on a leg of the existing utility tower.
- AT&T (Existing to Remove):
  Antennas: Three (3) KMW FX-X-CD-65-12-65-14-00T panel antennas leg mounted to the existing utility tower with a RAD center elevation of 84-ft above grade.
- **AT&T (Proposed):**
  Antennas: Three (3) Quintel QS46512-2 panel antennas and six (6) Kaelus TMA2117F00V1-1 TMAs leg mounted to the existing utility tower with a RAD center elevation of 84-ft above grade.
  Coax Cables: Six (6) 1-5/8" ∅ coax cables running on a leg of the existing utility tower.

Primary assumptions used in the analysis

- 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 within the antenna mast unless specified otherwise.
- 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 NESC 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 86-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 C2-2007 and Northeast Utilities 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 NU Design Criteria Table, NESC C2-2007 ~ 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..... 110 mph (1)
  Radial Ice Thickness..... 0"

  Note 1: NESC C2-2007, Section25, Rule 250C: Extreme Wind Loading, 1.25 x Gust Response Factor (wind speed: 3-second gust)

Results

- 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 8 of this report. The analysis results are summarized as follows:

  A maximum usage of **98.43%** occurs in the utility tower under the **NESC Extreme Wind** loading.

  TOWER SECTION:

  The utility structure was found to be within allowable limits.

Tower Member	Stress Ratio (% of capacity)	Result
Angle g11x	98.43%	**PASS**

- FOUNDATION AND ANCHORS

The existing foundation consists of four (4) 1-ft 8-in square tapering to 2-ft 4-in square x 5.25-ft long reinforced concrete piers and four (4) 5-ft square x 2-ft thick reinforced concrete pads. The base of the tower is connected to the foundation by one (1) anchor stub angle per leg. Foundation information was obtained from Northeast Utilities drawing 01064-60003.

BASE REACTIONS:

From PLS-Tower analysis of CL&P tower based on NESC/NU prescribed loads.

Foundation	Load Case	Shear	Uplift	Compression
Single Conc. Pad & Pier	NESC Heavy Wind	8.63 kips	17.07 kips	38.87 kips
	NESC Extreme Wind	14.97 kips	51.87 kips	60.33 kips
Conc. Pad & Pier (2) w/ Mat	NESC Heavy Wind	16.26 kips	33.92 kips	74.19 kips
	NESC Extreme Wind	28.29 kips	97.38 kips	116.84 kips

Note 1 – 10% increase to be applied to the above tower base reactions for foundation verification per OTRM 051
Note 2 – Reactions used to analysis the reinforced foundation are the combination of the two adjacent tower legs.

FOUNDATION:

The foundation was found to be within allowable limits.

Foundation	Design Limit	Allowable Limit	Proposed Loading (2)	Result
Single Conc. Pad & Pier	Uplift	1.0 FS (1)	1.13 FS (1)	**PASS**
Conc. Pad & Pier (2) w/ Mat	Uplift	1.0 FS (1)	1.33 FS (1)	**PASS**

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

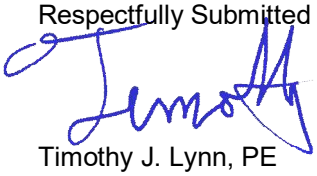
C o n c l u s i o n

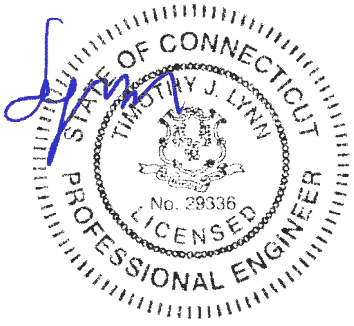
This analysis shows that the subject utility tower **is adequate** to support the proposed AT&T equipment upgrade.

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 ~ RISA-3D

RISA-3D Structural Analysis Program is an integrated structural analysis and design software package for buildings, bridges, tower structures, etc.

Modeling Features:

- Comprehensive CAD-like graphic drawing/editing capabilities that let you draw, modify and load elements as well as snap, move, rotate, copy, mirror, scale, split, merge, mesh, delete, apply, etc.
- Versatile drawing grids (orthogonal, radial, skewed)
- Universal snaps and object snaps allow drawing without grids
- Versatile general truss generator
- Powerful graphic select/unselect tools including box, line, polygon, invert, criteria, spreadsheet selection, with locking
- Saved selections to quickly recall desired selections
- Modification tools that modify single items or entire selections
- Real spreadsheets with cut, paste, fill, math, sort, find, etc.
- Dynamic synchronization between spreadsheets and views so you can edit or view any data in the plotted views or in the spreadsheets
- Simultaneous view of multiple spreadsheets
- Constant in-stream error checking and data validation
- Unlimited undo/redo capability
- Generation templates for grids, disks, cylinders, cones, arcs, trusses, tanks, hydrostatic loads, etc.
- Support for all units systems & conversions at any time
- Automatic interaction with RISASection libraries
- Import DXF, RISA-2D, STAAD and ProSteel 3D files
- Export DXF, SDNF and ProSteel 3D files

Analysis Features:

- Static analysis and P-Delta effects
- Multiple simultaneous dynamic and response spectra analysis using Gupta, CQC or SRSS mode combinations
- Automatic inclusion of mass offset (5% or user defined) for dynamic analysis
- Physical member modeling that does not require members to be broken up at intermediate joints
- State of the art 3 or 4 node plate/shell elements
- High-end automatic mesh generation — draw a polygon with any number of sides to create a mesh of well-formed quadrilateral (NOT triangular) elements.
- Accurate analysis of tapered wide flanges - web, top and bottom flanges may all taper independently
- Automatic rigid diaphragm modeling
- Area loads with one-way or two-way distributions
- Multiple simultaneous moving loads with standard AASHTO loads and custom moving loads for bridges, cranes, etc.
- Torsional warping calculations for stiffness, stress and design
- Automatic Top of Member offset modeling
- Member end releases & rigid end offsets
- Joint master-slave assignments
- Joints detachable from diaphragms
- Enforced joint displacements
- 1-Way members, for tension only bracing, slipping, etc.

- 1-Way springs, for modeling soils and other effects
- Euler members that take compression up to their buckling load, then turn off.
- Stress calculations on any arbitrary shape
- Inactive members, plates, and diaphragms allows you to quickly remove parts of structures from consideration
- Story drift calculations provide relative drift and ratio to height
- Automatic self-weight calculations for members and plates
- Automatic subgrade soil spring generator

Graphics Features:

- Unlimited simultaneous model view windows
- Extraordinary “true to scale” rendering, even when drawing
- High-speed redraw algorithm for instant refreshing
- Dynamic scrolling stops right where you want
- Plot & print virtually everything with color coding & labeling
- Rotate, zoom, pan, scroll and snap views
- Saved views to quickly restore frequent or desired views
- Full render or wire-frame animations of deflected model and dynamic mode shapes with frame and speed control
- Animation of moving loads with speed control
- High quality customizable graphics printing

Design Features:

- Designs concrete, hot rolled steel, cold formed steel and wood
- ACI 1999/2002, BS 8110-97, CSA A23.3-94, IS456:2000,EC 2-1992 with consistent bar sizes through adjacent spans
- Exact integration of concrete stress distributions using parabolic or rectangular stress blocks
- Concrete beam detailing (Rectangular, T and L)
- Concrete column interaction diagrams
- Steel Design Codes: AISC ASD 9th, LRFD 2nd & 3rd, HSS Specification, CAN/CSA-S16.1-1994 & 2004, BS 5950-1-2000, IS 800-1984, Euro 3-1993 including local shape databases
- AISI 1999 cold formed steel design
- NDS 1991/1997/2001 wood design, including Structural Composite Lumber, multi-ply, full sawn
- Automatic spectra generation for UBC 1997, IBC 2000/2003
- Generation of load combinations: ASCE, UBC, IBC, BOCA, SBC, ACI
- Unbraced lengths for physical members that recognize connecting elements and full lengths of members
- Automatic approximation of K factors
- Tapered wide flange design with either ASD or LRFD codes
- Optimization of member sizes for all materials and all design codes, controlled by standard or user-defined lists of available sizes and criteria such as maximum depths
- Automatic calculation of custom shape properties
- Steel Shapes: AISC, HSS, CAN, ARBED, British, Euro, Indian, Chilean
- Light Gage Shapes: AISI, SSMA, Dale / Incor, Dietrich, Marino\WARE
- Wood Shapes: Complete NDS species/grade database
- Full seamless integration with RISAFoot (Ver 2 or better) for advanced footing design and detailing
- Plate force summation tool

Results Features:

- Graphic presentation of color-coded results and plotted designs
- Color contours of plate stresses and forces with quadratic smoothing, the contours may also be animated
- Spreadsheet results with sorting and filtering of: reactions, member & joint deflections, beam & plate forces/stresses, optimized sizes, code designs, concrete reinforcing, material takeoffs, frequencies and mode shapes
- Standard and user-defined reports
- Graphic member detail reports with force/stress/deflection diagrams and detailed design calculations and expanded diagrams that display magnitudes at any dialed location
- Saved solutions quickly restore analysis and design results.

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
  - NESC 2002
  - NESC 2007
  - IEC 60826:2003
  - EN50341-1:2001 (CENELEC)
  - EN50341-3-9:2001 (UK NNA)
  - EN50341-3-17:2001 (Portugal NNA)
  - ESAA C(b)1-2003 (Australia)
  - TPNZ (New Zealand)
  - REE (Spain)
  - EIA/TIA 222-F
  - ANSI/TIA 222-G
  - CSA S37-01
- Automated microwave antenna loading as per EIA/TIA 222-F and ANSI/TIA 222-G
- Minimization of problems caused by unstable joints and mechanisms
- Automatic bandwidth minimization and ability to solve large problems
- Design checks according to (other standards can be added easily):
  - ASCE Standard 10-90

- AS 3995 (Australian Standard 3995)
- BS 8100 (British Standard 8100)
- EN50341-1 (CENELEC, both empirical and analytical methods are available)
- ECCS 1985
- NGT-ECCS
- PN-90/B-03200
- EIA/TIA 222-F
- ANSI/TIA 222-G
- CSA S37-01
- 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/EIA-222 covering the design of telecommunications structures specifies a working strength/allowable stress design approach. This approach applies the loads from extreme weather loading conditions, and designs the structure so that it does not exceed some defined percentage of failure strength (allowable stress).

ANSI Standard C2-2007 (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/EIA Standard 222 with two exceptions:

1. An 85 mph extreme wind speed shall be used for locations in all counties throughout the NU system.
2. The stress increase of TIA Section 3.1.1.1 is disallowed. The combined wind and ice condition shall consider ½" radial ice in combination with the wind load (0.75 Wi) as specified in TIA section 2.3.16.

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 "NU 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 2007 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.

℄ SPRINT ANTENNAS
EL. ±104'-0" AGL

℄ T-MOBILE ANTENNAS
EL. ±95'-0" AGL

℄ AT&T MOBILITY ANTENNAS
EL. ±85'-0" AGL

AT&T (EXISTING TO REMOVE): THREE (3) KMW FX-X-CD-65-12-65-14 PANEL ANTENNAS LEG MOUNTED.
AT&T (PROPOSED): THREE (3) QUINTEL QS46512-2 PANEL ANTENNAS AND SIX (6) KAELUS TMA2117F00V1-1 TMAs LEG MOUNTED.

EXISTING 86' TALL CL&P STEEL TRANSMISSION STRUCTURE NO. 876

AT&T MOBILITY PROPOSED SIX (6) & EXISTING SIX (6) 1-5/8" DIA. COAX CABLES MOUNTED ON SITEPRO SUPER UNIVERSAL T-BRACKET (P/N/ T1200) @ 4'-0" O.C. TO TOWER LEG

EXISTING 12" SCH. 40 X 104'-0" TALL MAST

1
FP-1

SPRINT EXISTING SIX (6) 1-5/8" DIA. COAX CABLES MOUNTED WITHIN MAST

T-MOBILE EXISTING SIX (6) 1-1/4" DIA. COAX CABLES MOUNTED ON A ANDREW UNIVERSAL CABLE LADDER (FRONT FACE)

SPRINT EXISTING TWELVE (12) 1-5/8" DIA. COAX CABLES MOUNTED ON A ANDREW UNIVERSAL CABLE LADDER (BACK FACE)

T-MOBILE EXISTING TWELVE (12) 1-1/4" DIA. COAX CABLES MOUNTED TO EXTERIOR OF MAST

1
EL-1

TOWER & MAST ELEVATION

SCALE: NOT TO SCALE

REVISIONS		
0	2/20/17	ISSUED FOR REVIEW
1	3/21/17	CONSTRUCTION

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CT5145
EVERSOURCE 876

280 MOREHOUSE DRIVE
FAIRFIELD, CT 06825

PROJECT NO:	17004.14
DRAWN BY:	TJL
CHECKED BY:	CFC
SCALE:	AS NOTED
DATE:	2/20/17

TOWER AND MAST ELEVATION

EL-1

DWG. 1 OF 2

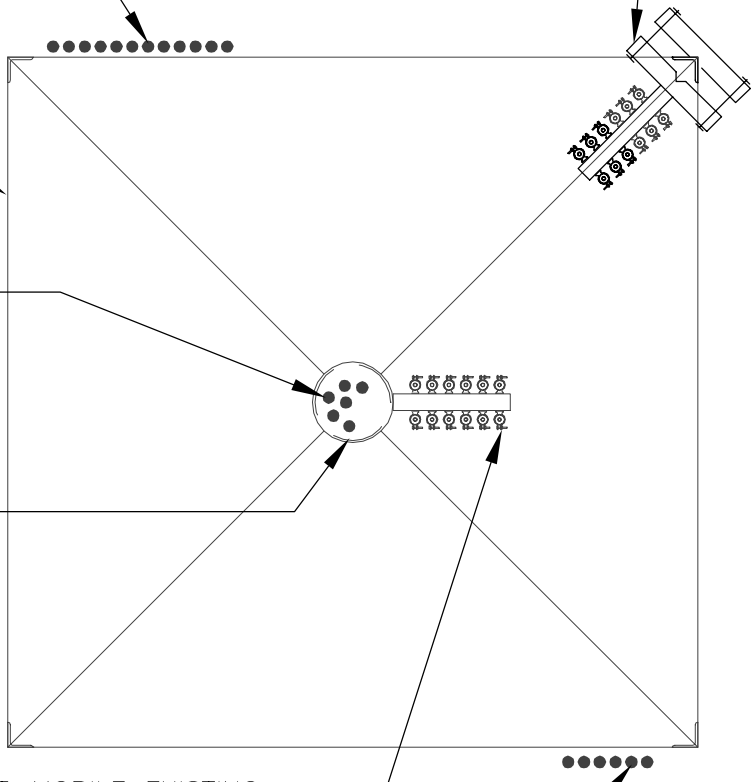
AT&T MOBILITY PROPOSED SIX (6) & EXISTING SIX (6) 1–5/8" DIA. COAX CABLES MOUNTED ON SITEPRO SUPER UNIVERSAL T–BRACKET (P/N/ T1200) @ 4'–0" O.C. TO TOWER LEG

SPRINT EXISTING TWELVE (12) 1–5/8" DIA. COAX CABLES MOUNTED ON A ANDREW UNIVERSAL CABLE LADDER

EXISTING 86' TALL CL&P STEEL TRANSMISSION STRUCTURE NO. 876

SPRINT EXISTING SIX (6) 1–5/8" DIA. COAX CABLES MOUNTED WITHIN MAST

EXISTING 12" SCH. 40 X 104'–0" TALL MAST



T–MOBILE EXISTING TWELVE (12) 1–1/4" DIA. COAX CABLES MOUNTED TO EXTERIOR OF MAST

T–MOBILE EXISTING SIX (6) 1–1/4" DIA. COAX CABLES MOUNTED ON A ANDREW UNIVERSAL CABLE LADDER

1 / FP–1 FEEDLINE PLAN

SCALE: NOT TO SCALE

REVISIONS		
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FEEDLINE PLAN

FP-1

DWG. 2 OF 2

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Subject:	Load Analysis of Equipment on Tower # 876
Location:	Fairfield, CT
Rev. 1: 3/21/17	Prepared by: T.J.L Checked by: C.F.C. Job No. 17004.14

Basic Components

Heavy Wind Pressure =	p := 4.00	psf	(User Input NESC 2007 Figure 250-1 & Table 250-1)
Basic Windspeed =	V := 110	mph	(User Input NESC 2007 Figure 250-2(e))
Radial Ice Thickness =	Ir := 0.50	in	(User Input)
Radial Ice Density =	Id := 56.0	pcf	(User Input)

Factors for Extreme Wind Calculation

Elevation of Top of Mast Above Grade =	TME := 104	ft	(User Input)
Multiplier Gust Response Factor =	m := 1.25		(User Input - Only for NESC Extreme wind case)
NESC Factor =	kv := 1.43		(User Input from NESC 2007 Table 250-3 equation)
Importance Factor =	I := 1.0		(User Input from NESC 2007 Section 250.C.2)

Velocity Pressure Coefficient = $Kz := 2.01 \cdot \left(\frac{TME}{900}\right)^{\frac{2}{9.5}} = 1.276$ (NESC 2007 Table 250-2)

Exposure Factor = $Es := 0.346 \left[\frac{33}{(0.67 \cdot TME)}\right]^{\frac{1}{7}} = 0.311$ (NESC 2007 Table 250-3)

Response Term = $Bs := \frac{1}{\left(1 + 0.375 \cdot \frac{TME}{220}\right)} = 0.849$ (NESC 2007 Table 250-3)

Gust Response Factor = $Grf := \frac{\left[1 + \left(2.7 \cdot Es \cdot Bs^{\frac{1}{2}}\right)\right]}{kv^2} = 0.867$ (NESC 2007 Table 250-3)

Wind Pressure = $qz := 0.00256 \cdot Kz \cdot V^2 \cdot Grf \cdot I = 34.3$ psf (NESC 2007 Section 250.C.2)

Shape Factors

NUS Design Criteria Issued April 12, 2007

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

NU Design Criteria Table

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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Development of Wind & Ice Load on Antennas

Antenna Data: (Sprint)

Antenna Model =	RFS APXVSPP18-C		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 72$	in	(User Input)
Antenna Width =	$W_{ant} := 11.8$	in	(User Input)
Antenna Thickness =	$T_{ant} := 7$	in	(User Input)
Antenna Weight =	$WT_{ant} := 57$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 3$		(User Input)

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 5.9$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 17.7$	sf
Total Antenna Wind Force =	$F_{ant1} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 1214$	lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice =	$SA_{ICEant} := \frac{(L_{ant} + 1) \cdot (W_{ant} + 1)}{144} = 6.5$	sf
Antenna Projected Surface Area w/ Ice =	$A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 19.5$	sf
Total Antenna Wind Force w/ Ice =	$Fi_{ant1} := p \cdot Cd_F \cdot A_{ICEant} = 125$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$Wt_{ant1} := (WT_{ant} \cdot N_{ant}) = 171$	lbs

Gravity Load (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 5947$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 1)(W_{ant} + 1) \cdot (T_{ant} + 1) - V_{ant} = 1528$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 50$	lbs
Weight of Ice on All Antennas =	$Wt_{ice.ant1} := W_{ICEant} \cdot N_{ant} = 149$	lbs

Development of Wind & Ice Load on Antenna Mounts

Mount Data: (Sprint)

Mount Type: Site Pro WiMAX Monopole T-Arm p/n UDS-NP

Mount Shape = Flat

Mount Projected Surface Area = $CdAa := 6.3$ sf (User Input)

Mount Projected Surface Area w/ Ice = $CdAa_{ice} := 7.88$ sf (User Input)

Mount Weight = $WT_{mnt} := 550$ lbs (User Input)

Mount Weight w/ Ice = $WT_{mnt.ice} := 700$ lbs (User Input)

Gravity Loads (without ice)

Weight of All Mounts = $Wt_{mnt1} := WT_{mnt} = 550$ lbs **BLC 2**

Gravity Load (ice only)

Weight of Ice on All Mounts = $Wt_{ice.mnt1} := WT_{mnt.ice} - WT_{mnt} = 150$ lbs **BLC 3**

Wind Load (NESC Heavy)

Total Mount Wind Force w/ Ice = $Fi_{mnt1} := p \cdot CdAa_{ice} = 32$ lbs **BLC 4**

Wind Load (NESC Extreme)

Total Mount Wind Force = $F_{mnt1} := qz \cdot CdAa \cdot m = 270$ lbs **BLC 5**

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Development of Wind & Ice Load on Antennas

Antenna Data: (T-Mobile)

Antenna Model =	RFS APX 16DWV-16DWVS		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 55.9$	in	(User Input)
Antenna Width =	$W_{ant} := 13$	in	(User Input)
Antenna Thickness =	$T_{ant} := 3.15$	in	(User Input)
Antenna Weight =	$WT_{ant} := 40.7$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 3$		(User Input)

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 5$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 15.1$	sf
Total Antenna Wind Force =	$F_{ant2} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 1038$	lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice =	$SA_{ICEant} := \frac{(L_{ant} + 1) \cdot (W_{ant} + 1)}{144} = 5.5$	sf
Antenna Projected Surface Area w/ Ice =	$A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 16.6$	sf
Total Antenna Wind Force w/ Ice =	$Fi_{ant2} := p \cdot Cd_F \cdot A_{ICEant} = 106$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$Wt_{ant2} := (WT_{ant} \cdot N_{ant}) = 122.1$	lbs

Gravity Load (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 2289$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 1)(W_{ant} + 1) \cdot (T_{ant} + 1) - V_{ant} = 1017$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 33$	lbs
Weight of Ice on All Antennas =	$Wt_{ice.ant2} := W_{ICEant} \cdot N_{ant} = 99$	lbs

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Development of Wind & Ice Load on Antennas

Antenna Data: (T-Mobile)

Antenna Model =	Andrew LNX-6515DS		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 96.6$	in	(User Input)
Antenna Width =	$W_{ant} := 11.9$	in	(User Input)
Antenna Thickness =	$T_{ant} := 7.1$	in	(User Input)
Antenna Weight =	$WT_{ant} := 44$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 3$		(User Input)

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 8$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 23.9$	sf
Total Antenna Wind Force =	$F_{ant3} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 1642$	lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice =	$SA_{ICEant} := \frac{(L_{ant} + 1) \cdot (W_{ant} + 1)}{144} = 8.7$	sf
Antenna Projected Surface Area w/ Ice =	$A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 26.2$	sf
Total Antenna Wind Force w/ Ice =	$Fi_{ant3} := p \cdot Cd_F \cdot A_{ICEant} = 168$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$Wt_{ant3} := (WT_{ant} \cdot N_{ant}) = 132$	lbs

Gravity Load (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 8162$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 1)(W_{ant} + 1) \cdot (T_{ant} + 1) - V_{ant} = 2036$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 66$	lbs
Weight of Ice on All Antennas =	$Wt_{ice.ant3} := W_{ICEant} \cdot N_{ant} = 198$	lbs

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Development of Wind & Ice Load on Antennas

Antenna Data: (T-Mobile)

Antenna Model =	Andrew ATSBT-TOP-FM-4G		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 5.63$	in	(User Input)
Antenna Width =	$W_{ant} := 3.7$	in	(User Input)
Antenna Thickness =	$T_{ant} := 2.0$	in	(User Input)
Antenna Weight =	$WT_{ant} := 2$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 3$		(User Input)

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 0.1$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 0.4$	sf
Total Antenna Wind Force =	$F_{ant4} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 30$	lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice =	$SA_{ICEant} := \frac{(L_{ant} + 1) \cdot (W_{ant} + 1)}{144} = 0.2$	sf
Antenna Projected Surface Area w/ Ice =	$A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 0.6$	sf
Total Antenna Wind Force w/ Ice =	$Fi_{ant4} := p \cdot Cd_F \cdot A_{ICEant} = 4$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$Wt_{ant4} := (WT_{ant} \cdot N_{ant}) = 6$	lbs

Gravity Load (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 42$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 1)(W_{ant} + 1) \cdot (T_{ant} + 1) - V_{ant} = 52$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 2$	lbs
Weight of Ice on All Antennas =	$Wt_{ice.ant4} := W_{ICEant} \cdot N_{ant} = 5$	lbs

Development of Wind & Ice Load on Antenna Mounts

Mount Data: (Sprint)

Mount Type: Site Pro WiMAX Monopole T-Arm p/n UDS-NP

Mount Shape = Flat

Mount Projected Surface Area = $CdAa := 6.3$ sf (User Input)

Mount Projected Surface Area w/ Ice = $CdAa_{ice} := 7.88$ sf (User Input)

Mount Weight = $WT_{mnt} := 550$ lbs (User Input)

Mount Weight w/ Ice = $WT_{mnt.ice} := 700$ lbs (User Input)

Gravity Loads (without ice)

Weight of All Mounts = $Wt_{mnt2} := WT_{mnt} = 550$ lbs **BLC 2**

Gravity Load (ice only)

Weight of Ice on All Mounts = $Wt_{ice.mnt2} := WT_{mnt.ice} - WT_{mnt} = 150$ lbs **BLC 3**

Wind Load (NESC Heavy)

Total Mount Wind Force w/ Ice = $Fi_{mnt2} := p \cdot CdAa_{ice} = 32$ lbs **BLC 4**

Wind Load (NESC Extreme)

Total Mount Wind Force = $F_{mnt2} := qz \cdot CdAa \cdot m = 270$ lbs **BLC 5**

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Qunitel QS46512-2		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 52$	in	(User Input)
Antenna Width =	$W_{ant} := 12$	in	(User Input)
Antenna Thickness =	$T_{ant} := 10.8$	in	(User Input)
Antenna Weight =	$WT_{ant} := 75$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 3$		(User Input)

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 4.3$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 13$	sf
Total Antenna Wind Force =	$F_{ant5} := qz \cdot Cd_F \cdot A_{ant} = 713$	lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice =	$SA_{ICEant} := \frac{(L_{ant} + 1) \cdot (W_{ant} + 1)}{144} = 4.8$	sf
Antenna Projected Surface Area w/ Ice =	$A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 14.4$	sf
Total Antenna Wind Force w/ Ice =	$Fi_{ant5} := p \cdot Cd_F \cdot A_{ICEant} = 92$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$Wt_{ant5} := WT_{ant} \cdot N_{ant} = 225$	lbs

Gravity Load (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 6739$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 1)(W_{ant} + 1) \cdot (T_{ant} + 1) - V_{ant} = 1391$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 45$	lbs
Weight of Ice on All Antennas =	$Wt_{ice.ant5} := W_{ICEant} \cdot N_{ant} = 135$	lbs

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Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Kaelus TMA2117F00V1-1		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 8.46$	in	(User Input)
Antenna Width =	$W_{ant} := 11.81$	in	(User Input)
Antenna Thickness =	$T_{ant} := 4.21$	in	(User Input)
Antenna Weight =	$WT_{ant} := 18$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 6$		(User Input)

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 0.7$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 4.2$	sf
Total Antenna Wind Force =	$F_{ant6} := qz \cdot Cd_F \cdot A_{ant} = 228$	lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice =	$SA_{ICEant} := \frac{(L_{ant} + 1) \cdot (W_{ant} + 1)}{144} = 0.8$	sf
Antenna Projected Surface Area w/ Ice =	$A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 5$	sf
Total Antenna Wind Force w/ Ice =	$Fi_{ant6} := p \cdot Cd_F \cdot A_{ICEant} = 32$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$Wt_{ant6} := WT_{ant} \cdot N_{ant} = 108$	lbs

Gravity Load (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 421$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 1)(W_{ant} + 1) \cdot (T_{ant} + 1) - V_{ant} = 211$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot ld = 7$	lbs
Weight of Ice on All Antennas =	$Wt_{ice.ant6} := W_{ICEant} \cdot N_{ant} = 41$	lbs

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Subject:	Load Analysis of Equipment on Tower # 876
Location:	Fairfield, CT
Rev. 1: 3/21/17	Prepared by: T.J.L Checked by: C.F.C. Job No. 17004.14

Development of Wind & Ice Load on Antenna Mounts

Mount Data:

Mount Type:	Pipe Mount		
Mount Shape =	Round		(User Input)
Pipe Mount Length =	$L_{mnt} := 72$	in	(User Input)
Pipe Mount Linear Weight =	$W_{mnt} := 7.58$	plf	(User Input)
Pipe Mount Outside Diameter =	$D_{mnt} := 3.5$	in	(User Input)
Number of Mounting Pipes =	$N_{mnt} := 3$		(User Input)

Wind Load (NESC Extreme)

Mount Projected Surface Area = $A_{mnt} := \frac{D_{mnt} \cdot L_{mnt}}{144} \cdot N_{mnt} = 5.25$ sf

Total Mount Wind Force = $F_{mnt3} := qz \cdot Cd_R \cdot A_{mnt} = 234$ lbs

Wind Load (NESC Heavy)

Mount Projected Surface Area w/ Ice = $A_{ICEmnt} := \frac{(L_{ant} + 1) \cdot (W_{ant} + 1)}{144} \cdot N_{mnt} = 2.525$ sf

Total Mount Wind Force = $Fi_{mnt3} := p \cdot Cd_R \cdot A_{ICEmnt} = 13$ lbs

Gravity Loads (without ice)

(per TIA/EIA-222-F-1996)

Weight Each Pipe Mount = $WT_{mnt} := W_{mnt} \cdot \frac{L_{mnt}}{12} = 45$ lbs

Weight of All Mounts = $Wt_{mnt3} := WT_{mnt} \cdot N_{mnt} = 136$ lbs

Gravity Load (ice only)

(per TIA/EIA-222-F-1996)

Volume of Each Pipe = $V_{mnt} := \frac{\pi}{4} \cdot D_{mnt}^{2} \cdot L_{mnt} = 693$ cu in

Volume of Ice on Each Pipe = $V_{ice} := \left[\frac{\pi}{4} \cdot \left[(D_{mnt} + 1)^2\right] \cdot (L_{mnt} + 1)\right] - V_{mnt} = 468$ cu in

Weight of Ice each mount (incl, hardware) = $W_{ICEmnt} := \frac{V_{ice}}{1728} \cdot Id = 15$ lbs

Weight of Ice on All Mounts = $Wt_{ice.mnt3} := (W_{ICEmnt} \cdot N_{mnt} + 5) = 51$ lbs

Total Equipment Loads:

Sprint @ 104-ft AGL

NESC Heavy Wind Vertical = $\left(Wt_{ant1} + Wt_{ice.ant1} + Wt_{mnt1} + Wt_{ice.mnt1}\right)\cdot 1.5 = 1529$

NESC Heavy Wind Trasnsverse = $\left(Fi_{ant1} + Fi_{mnt1}\right)\cdot 2.5 = 390$

NESC Extreme Wind Vertical = $\left(Wt_{ant1} + Wt_{mnt1}\right) = 721$

NESC Extreme Wind Trasnsverse = $\left(F_{ant1} + F_{mnt1}\right) = 1484$

T-Mobile @ 95-ft AGL

NESC Heavy Wind Vertical = $\left(Wt_{ant2} + Wt_{ice.ant2} + Wt_{ant3} + Wt_{ice.ant3} + Wt_{ant4} + Wt_{ice.ant4} + Wt_{mnt2} + Wt_{ice.mnt2}\right)\cdot 1.5 = 1893$

NESC Heavy Wind Trasnsverse = $\left(Fi_{ant2} + Fi_{ant3} + Fi_{ant4} + Fi_{mnt2}\right)\cdot 2.5 = 774$

NESC Extreme Wind Vertical = $\left(Wt_{ant2} + Wt_{ant3} + Wt_{ant4} + Wt_{mnt2}\right) = 810$

NESC Extreme Wind Trasnsverse = $\left(F_{ant2} + F_{ant3} + F_{ant4} + F_{mnt2}\right) = 2980$

AT&T @ 84-ft AGL / Per Leg

NESC Heavy Wind Vertical = $\frac{\left[\left(Wt_{ant5} + Wt_{ice.ant5} + Wt_{ant6} + Wt_{ice.ant6} + Wt_{mnt3} + Wt_{ice.mnt3}\right)\cdot 1.5\right]}{3} = 348$

NESC Heavy Wind Trasnsverse = $\frac{\left[\left(Fi_{ant5} + Fi_{ant6} + Fi_{mnt3}\right)\cdot 2.5\right]}{3} = 114$

NESC Extreme Wind Vertical = $\frac{\left(Wt_{ant5} + Wt_{ant6} + Wt_{mnt3}\right)}{3} = 156$

NESC Extreme Wind Trasnsverse = $\frac{\left(F_{ant5} + F_{ant6} + F_{mnt3}\right)}{3} = 392$

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Subject:	Coax Cable Loads Tower # 876
Location:	Fairfield, CT
Rev. 1: 3/21/17	Prepared by: T.J.L Checked by: C.F.C. Job No. 17004.14

Coax Cable on Tower

Heavy Wind Pressure = $p := 4 \cdot psf$ *(User Input)*

Radial Ice Thickness = $Ir := 0.5 \cdot in$ *(User Input)*

Radial Ice Density = $Id := 56 \cdot pcf$ *(User Input)*

Basic Windspeed = $V := 110$ mph (User Input NESC 2007 Figure 250-2(e))

Height to Top of Coax Above Grade = $TC := 104$ ft (User Input)

NESC Factor = $kv := 1.43$ (User Input from NESC 2007 Table 250-3 equation)

Importance Factor = $I := 1.0$ (User Input from NESC 2007 Section 250.C.2)

Velocity Pressure Coefficient = $Kz := 2.01 \cdot \left(\frac{0.67TC}{900}\right)^{\frac{2}{9.5}} = 1.173$ (NESC 2007 Table 250-2)

Exposure Factor = $Es := 0.346\left[\frac{33}{(0.67 \cdot TC)}\right]^{\frac{1}{7}} = 0.311$ (NESC 2007 Table 250-3)

Response Term = $Bs := \frac{1}{\left(1 + 0.375 \cdot \frac{TC}{220}\right)} = 0.849$ (NESC 2007 Table 250-3)

Gust Response Factor = $Grf := \frac{\left[1 + \left(2.7 \cdot Es \cdot Bs^{\frac{1}{2}}\right)\right]}{kv^2} = 0.867$ (NESC 2007 Table 250-3)

Wind Pressure = $qz := 0.00256 \cdot Kz \cdot V^2 \cdot Grf \cdot I = 31.5$ psf (NESC 2007 Section 250.C.2)

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Coax Cable within Powermount

(Sprint)

Distance Between Coax Cable Attach Points =

Coax Cable Span = $Coax_{Span} := \begin{pmatrix} 5 \\ 7 \\ 8.5 \\ 11 \\ 21 \\ 43 \end{pmatrix} \cdot ft$ *(User Input)*

Diameter of Coax Cable = $D_{coax} := 1.98 \cdot in$ *(User Input)*

Weight of Coax Cable = $W_{coax} := 1.04 \cdot plf$ *(User Input)*

Number of Coax Cables = $N_{coax} := 6$ *(User Input)*

Number of Projected Coax Cables = $NP_{coax} := 0$ *(User Input)*

Shape Factor = $Cd_{coax} := 1.6$ *(User Input)*

Overload Factor for NESC Heavy Wind Load = $OF_{HW} := 2.5$ *(User Input)*

Overload Factor for NESC Extreme Wind Load = $OF_{EW} := 1.0$ *(User Input)*

Overload Factor for NESC Heavy Vertical Load = $OF_{HV} := 1.5$ *(User Input)*

Overload Factor for NESC Extreme Vertical Load = $OF_{EV} := 1.0$ *(User Input)*

Wind Area with Ice = $A_{ice} := 0$

Wind Area without Ice = $A := \left(NP_{coax} \cdot D_{coax}\right) = 0 \cdot in$

Ice Area per Liner Ft = $Ai_{coax} := \frac{\pi}{4} \cdot \left[\left(D_{coax} + 2 \cdot Ir\right)^2 - D_{coax}^2\right] = 0.027\,ft^2$

Weight of Ice on All Coax Cables = $W_{ice} := 0$

Heavy Vertical Load =

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

Heavy Transverse Load =

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

$$Heavy_{Vert} = \begin{pmatrix} 47 \\ 66 \\ 80 \\ 103 \\ 197 \\ 402 \end{pmatrix} lb \qquad Heavy_{Trans} = \begin{pmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \end{pmatrix}$$

Extreme Vertical Load =

$$Extreme_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax}\right) \cdot Coax_{Span} \cdot OF_{EV}\right]}$$

Extreme Transverse Load =

$$Extreme_{Trans} := \overrightarrow{\left[\left(qz \cdot A \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EW}\right]}$$

$$Extreme_{Vert} = \begin{pmatrix} 31 \\ 44 \\ 53 \\ 69 \\ 131 \\ 268 \end{pmatrix} lb \qquad Extreme_{Trans} = \begin{pmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \end{pmatrix}$$

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Coax Cable on CL&P Tower

(Sprint - NE Leg)

Distance Between Coax Cable Attach Points =

Coax Cable Span = $Coax_{Span} := \begin{pmatrix} 11 \\ 11 \\ 13.5 \\ 16 \\ 18.5 \\ 16 \end{pmatrix} \cdot ft$ *(User Input)*

Diameter of Coax Cable = $D_{coax} := 1.98 \cdot in$ *(User Input)*

Weight of Coax Cable = $W_{coax} := 1.04 \cdot plf$ *(User Input)*

Number of Coax Cables = $N_{coax} := 12$ *(User Input)*

Number of Projected Coax Cables Transverse = $NP_{Tcoax} := 1$ *(User Input)*

Number of Projected Coax Cables Longitudinal = $NP_{Lcoax} := 12$ *(User Input)*

Shape Factor = $Cd_{coax} := 1.6$ *(User Input)*

Overload Factor for NESC Heavy Wind Load = $OF_{HW} := 2.5$ *(User Input)*

Overload Factor for NESC Extreme Wind Load = $OF_{EW} := 1.0$ *(User Input)*

Overload Factor for NESC Heavy Vertical Load = $OF_{HV} := 1.5$ *(User Input)*

Overload Factor for NESC Extreme Vertical Load = $OF_{EV} := 1.0$ *(User Input)*

Wind Area with Ice Transverse = $A_{Tice} := \left(NP_{Tcoax} \cdot D_{coax} + 2 \cdot Ir\right) = 2.98 \cdot in$

Wind Area without Ice Transverse = $A_T := \left(NP_{Tcoax} \cdot D_{coax}\right) = 1.98 \cdot in$

Wind Area with Ice Longitudinal = $A_{Lice} := \left(NP_{Lcoax} \cdot D_{coax} + 2 \cdot Ir\right) = 24.76 \cdot in$

Wind Area without Ice Longitudinal = $A_L := \left(NP_{Lcoax} \cdot D_{coax}\right) = 23.76 \cdot in$

Ice Area per Liner Ft = $Ai_{coax} := \frac{\pi}{4} \cdot \left[\left(D_{coax} + 2 \cdot Ir\right)^2 - D_{coax}^2\right] = 0.027\,ft^2$

Weight of Ice on All Coax Cables = $W_{ice} := Ai_{coax} \cdot Id \cdot N_{coax} = 18.179 \cdot plf$

Heavy Vertical Load =

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

Heavy Transverse Load =

$$Heavy_{Trans} := \overrightarrow{\left(p \cdot A_{Tice} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{HW}\right)}$$

Heavy Longitudinal Load =

$$Heavy_{Long} := \overrightarrow{\left(p \cdot A_{Lice} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{HW}\right)}$$

$$Heavy_{Vert} = \begin{pmatrix} 506 \\ 506 \\ 621 \\ 736 \\ 851 \\ 736 \end{pmatrix} lb \qquad Heavy_{Trans} = \begin{pmatrix} 44 \\ 44 \\ 54 \\ 64 \\ 74 \\ 64 \end{pmatrix} lb$$

$$Heavy_{Long} = \begin{pmatrix} 363 \\ 363 \\ 446 \\ 528 \\ 611 \\ 528 \end{pmatrix} lb$$

Extreme Vertical Load =

$$Extreme_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax}\right) \cdot Coax_{Span} \cdot OF_{EV}\right]}$$

Extreme Transverse Load =

$$Extreme_{Trans} := \overrightarrow{\left[\left(qz \cdot psf \cdot A_T \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EW}\right]}$$

Extreme Longitudinal Load =

$$Extreme_{Long} := \overrightarrow{\left[\left(qz \cdot psf \cdot A_L \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EW}\right]}$$

$$Extreme_{Vert} = \begin{pmatrix} 137 \\ 137 \\ 168 \\ 200 \\ 231 \\ 200 \end{pmatrix} lb \qquad Extreme_{Trans} = \begin{pmatrix} 92 \\ 92 \\ 112 \\ 133 \\ 154 \\ 133 \end{pmatrix} lb$$

$$Extreme_{Long} = \begin{pmatrix} 1098 \\ 1098 \\ 1348 \\ 1597 \\ 1847 \\ 1597 \end{pmatrix} lb$$

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Location:	Fairfield, CT
Rev. 1: 3/21/17	Prepared by: T.J.L Checked by: C.F.C. Job No. 17004.14

Coax Cable on Powermount

(T-Mobile)

Distance Between Coax Cable Attach Points =

Coax Cable Span = $Coax_{Span} := \begin{pmatrix} 5 \\ 7 \\ 8.5 \\ 11 \\ 21 \\ 43 \end{pmatrix} \cdot ft$ *(User Input)*

Diameter of Coax Cable = $D_{coax} := 1.55 \cdot in$ *(User Input)*

Weight of Coax Cable = $W_{coax} := 0.66 \cdot plf$ *(User Input)*

Number of Coax Cables = $N_{coax} := 12$ *(User Input)*

Number of Projected Coax Cables Transverse = $NP_{Tcoax} := 0$ *(User Input)*

Number of Projected Coax Cables Longitudinal = $NP_{Lcoax} := 6$ *(User Input)*

Shape Factor = $Cd_{coax} := 1.6$ *(User Input)*

Overload Factor for NESC Heavy Wind Load = $OF_{HW} := 2.5$ *(User Input)*

Overload Factor for NESC Extreme Wind Load = $OF_{EW} := 1.0$ *(User Input)*

Overload Factor for NESC Heavy Vertical Load = $OF_{HV} := 1.5$ *(User Input)*

Overload Factor for NESC Extreme Vertical Load = $OF_{EV} := 1.0$ *(User Input)*

Wind Area with Ice Transverse = $A_{Tice} := (0) = 0 \cdot in$

Wind Area without Ice Transverse = $A_T := \left(NP_{Tcoax} \cdot D_{coax}\right) = 0 \cdot in$

Wind Area with Ice Longitudinal = $A_{Lice} := \left(NP_{Lcoax} \cdot D_{coax} + 2 \cdot Ir\right) = 10.3 \cdot in$

Wind Area without Ice Longitudinal = $A_L := \left(NP_{Lcoax} \cdot D_{coax}\right) = 9.3 \cdot in$

Ice Area per Liner Ft = $Ai_{coax} := \frac{\pi}{4} \cdot \left[\left(D_{coax} + 2 \cdot Ir\right)^2 - D_{coax}^2\right] = 0.022\,ft^2$

Weight of Ice on All Coax Cables = $W_{ice} := Ai_{coax} \cdot Id \cdot N_{coax} = 15.027 \cdot plf$

Heavy Vertical Load =

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

Heavy Transverse Load =

$$Heavy_{Trans} := \overrightarrow{\left(p \cdot A_{Tice} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{HW}\right)}$$

Heavy Longitudinal Load =

$$Heavy_{Long} := \overrightarrow{\left(p \cdot A_{Lice} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{HW}\right)}$$

$$Heavy_{Vert} = \begin{pmatrix} 172 \\ 241 \\ 293 \\ 379 \\ 723 \\ 1480 \end{pmatrix} lb \qquad Heavy_{Trans} = \begin{pmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \end{pmatrix}$$

$$Heavy_{Long} = \begin{pmatrix} 69 \\ 96 \\ 117 \\ 151 \\ 288 \\ 591 \end{pmatrix} lb$$

Extreme Vertical Load =

$$Extreme_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax}\right) \cdot Coax_{Span} \cdot OF_{EV}\right]}$$

Extreme Transverse Load =

$$Extreme_{Trans} := \overrightarrow{\left[\left(qz \cdot psf \cdot A_T \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EW}\right]}$$

Extreme Longitudinal Load =

$$Extreme_{Long} := \overrightarrow{\left[\left(qz \cdot psf \cdot A_L \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EW}\right]}$$

$$Extreme_{Vert} = \begin{pmatrix} 40 \\ 55 \\ 67 \\ 87 \\ 166 \\ 341 \end{pmatrix} lb \qquad Extreme_{Trans} = \begin{pmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \end{pmatrix}$$

$$Extreme_{Long} = \begin{pmatrix} 195 \\ 274 \\ 332 \\ 430 \\ 821 \\ 1680 \end{pmatrix} lb$$

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Location:	Fairfield, CT
Rev. 1: 3/21/17	Prepared by: T.J.L Checked by: C.F.C. Job No. 17004.14

Coax Cable on CL&P Tower

(T-Mobile - SW Leg)

Distance Between Coax Cable Attach Points =

Coax Cable Span = $Coax_{Span} := \begin{pmatrix} 11 \\ 11 \\ 13.5 \\ 16 \\ 18.5 \\ 16 \end{pmatrix} \cdot ft$ *(User Input)*

Diameter of Coax Cable = $D_{coax} := 1.55 \cdot in$ *(User Input)*

Weight of Coax Cable = $W_{coax} := 0.66 \cdot plf$ *(User Input)*

Number of Coax Cables = $N_{coax} := 6$ *(User Input)*

Number of Projected Coax Cables Transverse = $NP_{Tcoax} := 1$ *(User Input)*

Number of Projected Coax Cables Longitudinal = $NP_{Lcoax} := 6$ *(User Input)*

Shape Factor = $Cd_{coax} := 1.6$ *(User Input)*

Overload Factor for NESC Heavy Wind Load = $OF_{HW} := 2.5$ *(User Input)*

Overload Factor for NESC Extreme Wind Load = $OF_{EW} := 1.0$ *(User Input)*

Overload Factor for NESC Heavy Vertical Load = $OF_{HV} := 1.5$ *(User Input)*

Overload Factor for NESC Extreme Vertical Load = $OF_{EV} := 1.0$ *(User Input)*

Wind Area with Ice Transverse = $A_{Tice} := \left(NP_{Tcoax} \cdot D_{coax} + 2 \cdot Ir\right) = 2.55 \cdot in$

Wind Area without Ice Transverse = $A_T := \left(NP_{Tcoax} \cdot D_{coax}\right) = 1.55 \cdot in$

Wind Area with Ice Longitudinal = $A_{Lice} := \left(NP_{Lcoax} \cdot D_{coax} + 2 \cdot Ir\right) = 10.3 \cdot in$

Wind Area without Ice Longitudinal = $A_L := \left(NP_{Lcoax} \cdot D_{coax}\right) = 9.3 \cdot in$

Ice Area per Liner Ft = $Ai_{coax} := \frac{\pi}{4} \cdot \left[\left(D_{coax} + 2 \cdot Ir\right)^2 - D_{coax}^2\right] = 0.022\,ft^2$

Weight of Ice on All Coax Cables = $W_{ice} := Ai_{coax} \cdot Id \cdot N_{coax} = 7.514 \cdot plf$

Heavy Vertical Load =

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

Heavy Transverse Load =

$$Heavy_{Trans} := \overrightarrow{\left(p \cdot A_{Tice} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{HW}\right)}$$

Heavy Longitudinal Load =

$$Heavy_{Long} := \overrightarrow{\left(p \cdot A_{Lice} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{HW}\right)}$$

$$Heavy_{Vert} = \begin{pmatrix} 189 \\ 189 \\ 232 \\ 275 \\ 318 \\ 275 \end{pmatrix} lb \qquad Heavy_{Trans} = \begin{pmatrix} 37 \\ 37 \\ 46 \\ 54 \\ 63 \\ 54 \end{pmatrix} lb$$

$$Heavy_{Long} = \begin{pmatrix} 151 \\ 151 \\ 185 \\ 220 \\ 254 \\ 220 \end{pmatrix} lb$$

Extreme Vertical Load =

$$Extreme_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax}\right) \cdot Coax_{Span} \cdot OF_{EV}\right]}$$

Extreme Transverse Load =

$$Extreme_{Trans} := \overrightarrow{\left[\left(qz \cdot psf \cdot A_T \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EW}\right]}$$

Extreme Longitudinal Load =

$$Extreme_{Long} := \overrightarrow{\left[\left(qz \cdot psf \cdot A_L \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EW}\right]}$$

$$Extreme_{Vert} = \begin{pmatrix} 44 \\ 44 \\ 53 \\ 63 \\ 73 \\ 63 \end{pmatrix} lb \qquad Extreme_{Trans} = \begin{pmatrix} 72 \\ 72 \\ 88 \\ 104 \\ 120 \\ 104 \end{pmatrix} lb$$

$$Extreme_{Long} = \begin{pmatrix} 430 \\ 430 \\ 528 \\ 625 \\ 723 \\ 625 \end{pmatrix} lb$$

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Location:	Fairfield, CT
Rev. 1: 3/21/17	Prepared by: T.J.L Checked by: C.F.C. Job No. 17004.14

Coax Cable on CL&P Tower

(AT&T - SE Leg)

Distance Between Coax Cable Attach Points =

Coax Cable Span = $Coax_{Span} := \begin{pmatrix} 6 \\ 11 \\ 13.5 \\ 16 \\ 18.5 \\ 16 \end{pmatrix} \cdot ft$ *(User Input)*

Diameter of Coax Cable = $D_{coax} := 1.98 \cdot in$ *(User Input)*

Weight of Coax Cable = $W_{coax} := 1.04 \cdot plf$ *(User Input)*

Number of Coax Cables = $N_{coax} := 12$ *(User Input)*

Number of Projected Coax Cables Transverse = $NP_{Tcoax} := 6$ *(User Input)*

Number of Projected Coax Cables Longitudinal = $NP_{Lcoax} := 6$ *(User Input)*

Shape Factor = $Cd_{coax} := 1.6$ *(User Input)*

Overload Factor for NESC Heavy Wind Load = $OF_{HW} := 2.5$ *(User Input)*

Overload Factor for NESC Extreme Wind Load = $OF_{EW} := 1.0$ *(User Input)*

Overload Factor for NESC Heavy Vertical Load = $OF_{HV} := 1.5$ *(User Input)*

Overload Factor for NESC Extreme Vertical Load = $OF_{EV} := 1.0$ *(User Input)*

Wind Area with Ice Transverse = $A_{Tice} := \left(NP_{Tcoax} \cdot D_{coax} + 2 \cdot Ir\right) = 12.88 \cdot in$

Wind Area without Ice Transverse = $A_T := \left(NP_{Tcoax} \cdot D_{coax}\right) = 11.88 \cdot in$

Wind Area with Ice Longitudinal = $A_{Lice} := \left(NP_{Lcoax} \cdot D_{coax} + 2 \cdot Ir\right) = 12.88 \cdot in$

Wind Area without Ice Longitudinal = $A_L := \left(NP_{Lcoax} \cdot D_{coax}\right) = 11.88 \cdot in$

Ice Area per Liner Ft = $Ai_{coax} := \frac{\pi}{4} \cdot \left[\left(D_{coax} + 2 \cdot Ir\right)^2 - D_{coax}^2\right] = 0.027\,ft^2$

Weight of Ice on All Coax Cables = $W_{ice} := Ai_{coax} \cdot Id \cdot N_{coax} = 18.179 \cdot plf$

Heavy Vertical Load =

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

Heavy Transverse Load =

$$Heavy_{Trans} := \overrightarrow{\left(p \cdot A_{Tice} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{HW}\right)}$$

Heavy Longitudinal Load =

$$Heavy_{Long} := \overrightarrow{\left(p \cdot A_{Lice} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{HW}\right)}$$

$$Heavy_{Vert} = \begin{pmatrix} 276 \\ 506 \\ 621 \\ 736 \\ 851 \\ 736 \end{pmatrix} lb \qquad Heavy_{Trans} = \begin{pmatrix} 103 \\ 189 \\ 232 \\ 275 \\ 318 \\ 275 \end{pmatrix} lb$$

$$Heavy_{Long} = \begin{pmatrix} 103 \\ 189 \\ 232 \\ 275 \\ 318 \\ 275 \end{pmatrix} lb$$

Extreme Vertical Load =

$$Extreme_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax}\right) \cdot Coax_{Span} \cdot OF_{EV}\right]}$$

Extreme Transverse Load =

$$Extreme_{Trans} := \overrightarrow{\left[\left(qz \cdot psf \cdot A_T \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EW}\right]}$$

Extreme Longitudinal Load =

$$Extreme_{Long} := \overrightarrow{\left[\left(qz \cdot psf \cdot A_L \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EW}\right]}$$

$$Extreme_{Vert} = \begin{pmatrix} 75 \\ 137 \\ 168 \\ 200 \\ 231 \\ 200 \end{pmatrix} lb \qquad Extreme_{Trans} = \begin{pmatrix} 300 \\ 549 \\ 674 \\ 799 \\ 924 \\ 799 \end{pmatrix} lb$$

$$Extreme_{Long} = \begin{pmatrix} 300 \\ 549 \\ 674 \\ 799 \\ 924 \\ 799 \end{pmatrix} lb$$

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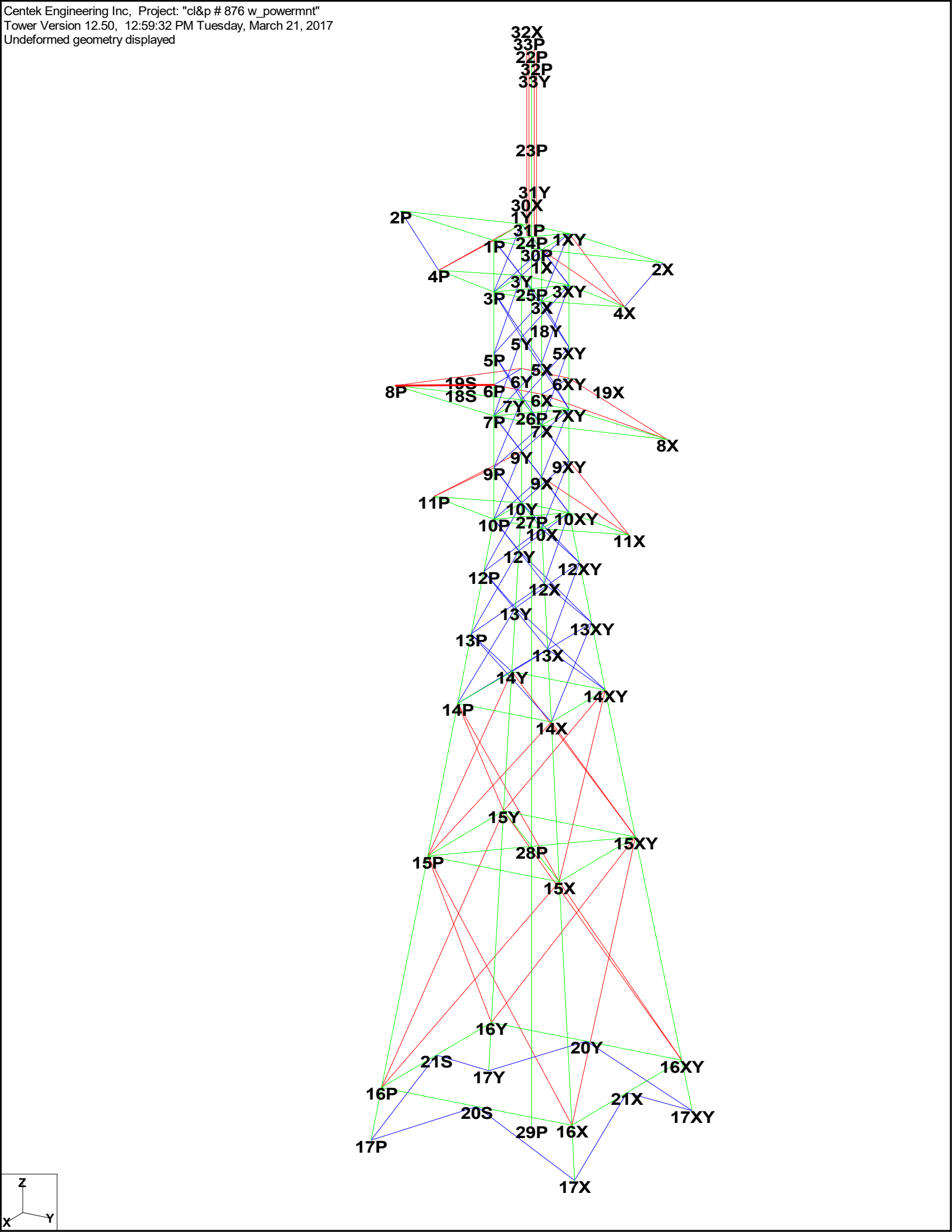
Tower Version 12.50, 12:59:32 PM Tuesday, March 21, 2017
Undeformed geometry displayed



Project Name : 16162.09 - Fairfield, CT
Project Notes: Structure # 876 / T-Mobile CT11317B
Project File : J:\Jobs\1700400.WI\14_Lower Scort Hill CT5145\04_Structural\Backup Documentation\Calcs\PLS Tower\cl&p # 876 w_powermnt.tow
Date run : 12:58:28 PM Tuesday, March 21, 2017
by : Tower Version 12.50
Licensed to : Centek Engineering Inc

Successfully performed nonlinear analysis

Member "g6P" 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 "g6X" 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 "g9P" 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 "g9X" 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 "g10P" 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 "g11P" 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 "g12P" 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 "g15P" 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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Unable to calculate rupture capacity for member "g47P" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g47X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g47XY" because it has a long and short edge distance of 0. ??
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Unable to calculate rupture capacity for member "g61P" because it has a long and short edge distance of 0. ??
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Unable to calculate rupture capacity for member "g61XY" because it has a long and short edge distance of 0. ??
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Unable to calculate rupture capacity for member "g64XY" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g64Y" because it has a long and short edge distance of 0. ??
w/t equals 34.00 for member "g65P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??
w/t equals 34.00 for member "g66P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??
w/t equals 34.00 for member "g67P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??
w/t equals 34.00 for member "g68P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??
w/t equals 34.00 for member "g69P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??
w/t equals 34.00 for member "g70P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??
w/t equals 34.00 for member "g71P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??
Unusual number of fixed joints found: 5. Towers normally have from between 1 and 4 fixed joints. ??
The model has 122 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\1700400.wi\14_lower scort hill ct5145\04_structural\backup documentation\calcs\pls tower\876 w_ powermnt.lca

*** Analysis Results:

Maximum element usage is 98.43% for Angle "g11X" in load case "Extreme Wind - Transverse"
Maximum insulator usage is 14.67% for Clamp "30" in load case "NESC Heavy - Longitudinal"

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 - Transverse	17P	2.45	-3.45	17.07	4.23	0.00	0.02	0.02	0.26	0.00
NESC Heavy - Transverse	29P	0.07	-0.65	-18.27	0.66	5.25	1.16	5.38	-0.49	0.00
NESC Heavy - Transverse	17X	-5.49	-6.66	-38.87	8.63	-0.02	0.06	0.06	-0.04	0.00
NESC Heavy - Transverse	17XY	5.08	-5.69	-35.32	7.63	-0.04	-0.07	0.08	0.03	0.00
NESC Heavy - Transverse	17Y	-2.10	-2.93	16.85	3.61	-0.05	-0.00	0.05	-0.27	0.00
Extreme Wind - Transverse	17P	6.90	-10.29	50.07	12.39	-0.01	0.08	0.08	0.69	0.00
Extreme Wind - Transverse	29P	0.10	-0.87	-6.72	0.88	8.91	1.73	9.08	-0.80	0.00
Extreme Wind - Transverse	17X	-8.74	-12.16	-60.33	14.97	-0.08	0.10	0.13	0.62	0.00
Extreme Wind - Transverse	17XY	8.18	-10.51	-56.49	13.32	-0.14	-0.14	0.20	-0.63	0.00
Extreme Wind - Transverse	17Y	-6.45	-8.77	47.31	10.89	-0.12	-0.08	0.14	-0.70	0.00
NESC Heavy - Longitudinal	17P	-2.96	1.84	-15.93	3.49	-0.01	0.02	0.02	0.26	0.00
NESC Heavy - Longitudinal	29P	-0.14	-0.63	-18.13	0.64	3.27	-3.00	4.44	-0.13	0.00
NESC Heavy - Longitudinal	17X	-4.11	-4.24	-26.40	5.90	-0.04	0.04	0.05	-0.03	0.00
NESC Heavy - Longitudinal	17XY	0.72	-1.89	-6.49	2.02	0.03	-0.02	0.04	0.03	0.00
NESC Heavy - Longitudinal	17Y	-1.74	-1.97	8.41	2.63	-0.00	-0.06	0.06	-0.26	0.00
Extreme Wind - Longitudinal	17P	-5.26	1.31	-21.49	5.42	-0.05	0.01	0.05	0.67	0.00
Extreme Wind - Longitudinal	29P	-0.30	-0.81	-6.58	0.86	5.66	-7.00	9.00	-0.18	0.00
Extreme Wind - Longitudinal	17X	-9.05	-9.72	-54.26	13.28	-0.17	0.03	0.17	0.60	0.00
Extreme Wind - Longitudinal	17XY	-1.45	-2.86	4.30	3.20	0.04	-0.07	0.08	-0.64	0.00
Extreme Wind - Longitudinal	17Y	-9.29	-10.22	51.87	13.81	-0.02	-0.20	0.21	-0.65	0.00

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

Load Case	Support Joint	Origin Joint	Leg Member	Force In Leg Dir. (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 - Transverse	17P	16P	g12P	-17.552	1.066	1.077	-0.077	1.075	2.45	-3.45	17.07
NESC Heavy - Transverse	17X	16X	g12X	39.799	1.253	1.266	0.095	1.263	-5.49	-6.66	-38.87
NESC Heavy - Transverse	17XY	16XY	g12XY	36.123	0.794	0.804	-0.173	0.785	5.08	-5.69	-35.32
NESC Heavy - Transverse	17Y	16Y	g12Y	-17.222	0.635	0.637	-0.238	0.591	-2.10	-2.93	16.85
Extreme Wind - Transverse	17P	16P	g12P	-51.479	3.306	3.336	0.051	3.335	6.90	-10.29	50.07
Extreme Wind - Transverse	17X	16X	g12X	62.047	3.751	3.793	0.357	3.776	-8.74	-12.16	-60.33
Extreme Wind - Transverse	17XY	16XY	g12XY	57.974	2.655	2.686	-0.338	2.665	8.18	-10.51	-56.49
Extreme Wind - Transverse	17Y	16Y	g12Y	-48.493	2.184	2.203	-0.117	2.200	-6.45	-8.77	47.31
NESC Heavy - Longitudinal	17P	16P	g12P	16.287	0.832	0.833	0.746	0.370	-2.96	1.84	-15.93
NESC Heavy - Longitudinal	17X	16X	g12X	27.042	0.712	0.725	0.441	0.576	-4.11	-4.24	-26.40
NESC Heavy - Longitudinal	17XY	16XY	g12XY	6.720	0.999	1.005	0.182	0.988	0.72	-1.89	-6.49
NESC Heavy - Longitudinal	17Y	16Y	g12Y	-8.755	0.967	0.985	0.574	0.800	-1.74	-1.97	8.41
Extreme Wind - Longitudinal	17P	16P	g12P	21.984	2.822	2.824	2.277	1.670	-5.26	1.31	-21.49
Extreme Wind - Longitudinal	17X	16X	g12X	55.801	2.609	2.658	1.517	2.182	-9.05	-9.72	-54.26
Extreme Wind - Longitudinal	17XY	16XY	g12XY	-4.032	3.540	3.558	0.856	3.453	-1.45	-2.86	4.30
Extreme Wind - Longitudinal	17Y	16Y	g12Y	-53.552	3.602	3.668	2.089	3.015	-9.29	-10.22	51.87

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	104.000	86.000	17	26	1.00	5.00	36.000	1.00	27.50	137.250
2	86.000	41.500	56	173	5.00	9.81	264.882	27.50	9.81	431.382
3	41.500	0.000	23	54	9.81	21.39	646.560	9.81	21.39	646.560

*** 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 Angle Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Max Usage Cont-rol	Comp. 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 KL/R	Length (ft)	Curve No.	Comp. No.	Of Member Bolts
LEG1	L4x4x1/4	SAE	4X4X0.25	33.0	76.26	Comp	76.26	g6XY	-40.805	Extreme	53.509	125.640	168.750	1.000	1.000	1.000	75.47	75.47	5.000	1	12
LEG2	L4x4x5/16	SAE	4X4X0.3125	33.0	90.37	Comp	90.37	g12X	-59.243	Extreme	65.558	104.700	175.781	1.000	1.000	1.000	77.30	77.30	5.096	1	10

LEG3	L4x4x3/8	SAE	4X4X0.375	33.0	98.43	Comp	98.43	g11X	-58.872	Extreme	59.809	104.700	210.937	0.330	0.330	0.330	112.73	112.73	22.432	1	10
XBR1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	53.05	Comp	53.05	g13P	-6.132	Extreme	11.559	20.940	21.094	0.750	0.500	0.500	123.69	122.85	7.071	5	2
XBR2	L3x2x3/16	SAU	3X2X0.1875	33.0	46.20	Cross	46.20	g16Y	-5.655	Extreme	12.241	31.410	31.641	0.500	1.000	0.500	160.76	145.07	7.810	6	3
XBR3	L3x2x3/16	SAU	3X2X0.1875	33.0	42.12	Tens	39.92	g35X	-3.937	Extreme	9.860	10.470	10.547	1.000	0.500	0.500	161.63	161.63	11.826	4	1
XBR4	L2x2x3/16	SAE	2X2X0.1875	33.0	26.22	Cross	26.22	g26P	-2.848	Extreme	10.862	20.940	21.094	1.000	0.560	0.560	147.29	136.78	7.573	6	2
XBR5	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	23.11	Cross	23.11	g29P	-1.597	Extreme	6.910	20.940	21.094	0.560	1.000	0.560	222.71	183.17	11.135	6	2
XBR6	L1.75x1.75x1/4	SAE	1.75X1.75X0.25	33.0	91.56	Comp	91.56	g31Y	-2.066	NESC Hea	2.257	20.940	28.125	0.790	0.580	0.580	383.86	321.10	18.807	5	2
XBR7	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	46.91	Tens	0.00	g34XY	0.000		1.061	20.940	21.094	0.800	0.410	0.410	499.05	408.88	27.916	5	2
PMBR1	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	36.0	55.64	Tens	51.84	g60X	-5.286	Extreme	21.670	10.470	10.195	1.000	1.000	1.000	85.71	102.85	3.536	3	1
PMBR2	L3.5x3.5x1/4	SAE	3.5X3.5X0.25	36.0	28.12	Comp	28.12	g64P	-2.944	Extreme	16.980	10.470	13.594	1.000	1.000	1.000	168.78	168.78	9.761	4	1
HBR1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	73.82	Comp	73.82	g37P	-4.281	Extreme	5.799	10.470	10.547	1.000	1.000	1.000	174.93	174.93	5.000	4	1
HBR2	2.5x2x3/16	SAU	2.5X2X0.1875	33.0	43.20	Comp	43.20	g41P	-4.523	Extreme	10.510	10.470	10.547	1.000	0.500	0.500	148.52	148.52	9.815	4	1
HBR3	L3x2.5x1/4	SAU	3X2.5X0.25	33.0	45.17	Comp	45.17	g43P	-4.729	Extreme	12.202	10.470	14.062	1.000	0.500	0.500	175.29	175.29	13.804	4	1
HBR4	**L4x3x1/4**	**SAU**	**4X3X0.25**	**33.0**	**47.68**	**Comp**	**47.68**	**g45P**	**-4.992**	**Extreme**	**13.759**	**10.470**	**14.062**	**2.000**	**1.000**	**1.000**	**187.50**	**187.50**	**10.000**	**4**	**1**

A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g46P g46X g46XY g46Y ??

Arm1	L3x2.5x1/4	SAU	3X2.5X0.25	33.0	20.18	Comp	20.18	g49P	-5.752	NESC Hea	28.509	31.410	42.187	1.000	0.500	0.500	97.38	108.69	7.669	3	3
Arm2	L3.5x2.5x1/4	SAU	3.5X2.5X0.25	33.0	26.72	Comp	26.72	g53P	-6.554	NESC Hea	24.527	31.410	42.187	1.000	0.500	0.500	132.50	129.56	12.013	5	3
ArmBR1	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	33.0	29.16	Comp	29.16	g55P	-3.053	NESC Hea	10.714	10.470	10.547	1.000	1.000	1.000	155.23	155.23	6.403	4	1
ArmBR2	L1.75x1/4x1/4	BAR	1.75X0.25X0.25	33.0	77.58	Tens	0.00	g59Y	0.000		0.050	10.470	14.062	1.000	1.000	1.000	1588.21	1588.21	9.556	4	1
Powermnt	12" Std. Pipe	PIP	12.75X0.375	50.0	14.98	Comp	14.98	g65P	-17.268	NESC Hea	115.298	0.000	0.000	1.000	1.000	1.000	73.97	73.97	27.000	1	0
fic1	Fictitious1	Bar	fic	36.0	0.00		0.00	g72P	0.000		0.000	0.000	0.000	1.000	1.000	1.000	2160000.00	2160000.00	18.000	4	0
fic	Fictitious2	Bar	fic	36.0	0.00		0.00	g74P	0.000		0.000	0.000	0.000	1.000	1.000	1.000	60000.00	60000.00	0.500	4	0
HBR5	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	10.25	Comp	10.25	g78Y	-1.073	NESC Hea	14.114	10.470	10.547	1.000	1.000	1.000	87.46	103.73	2.500	3	1

Group Summary (Tension Portion):

Group Label	**Group Desc.**	**Angle Type**	**Angle Size**	**Steel Strength (ksi)**	**Max Usage %**	**Usage Cont-rol**	**Max Tens. Use In %**	**Tension Control 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 Of Tens. Member (ft)**	**No. Of Tens. Bolts**	**No. Of Holes**	**Hole Diameter (in)**

LEG1	L4x4x1/4	SAE	4X4X0.25	33.0	76.26	Comp	66.99	g6Y	35.288Extreme	52.676	125.640	168.750	220.588	5.000	12	2.000	0.6875
LEG2	L4x4x5/16	SAE	4X4X0.3125	33.0	90.37	Comp	78.28	g12Y	50.897Extreme	65.020	104.700	175.781	103.401	5.096	10	2.000	0.6875
LEG3	L4x4x3/8	SAE	4X4X0.375	33.0	98.43	Comp	54.03	g11Y	41.801Extreme	77.364	104.700	210.937	193.014	22.432	10	2.000	0.6875
XBR1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	53.05	Comp	39.05	g13X	5.696Extreme	14.585	20.940	21.094	16.189	7.071	2	1.000	0.6875
XBR2	L3x2x3/16	SAU	3X2X0.1875	33.0	46.20	Cross	31.63	g23XY	7.243Extreme	22.901	31.410	31.641	28.125	7.071	3	1.000	0.6875
XBR3	L3x2x3/16	SAU	3X2X0.1875	33.0	42.12	Tens	42.12	g35P	3.250Extreme	17.333	10.470	10.547	7.717	11.826	1	1.000	0.6875
XBR4	L2x2x3/16	SAE	2X2X0.1875	33.0	26.22	Cross	14.94	g26X	2.278Extreme	17.258	20.940	21.094	15.240	7.573	2	1.000	0.6875
XBR5	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	23.11	Cross	10.77	g28Y	2.019Extreme	20.228	20.940	21.094	18.750	9.373	2	1.000	0.6875
XBR6	L1.75x1.75x1/4	SAE	1.75X1.75X0.25	33.0	91.56	Comp	28.57	g32X	5.440Extreme	19.041	20.940	28.125	24.820	18.807	2	1.000	0.6875
XBR7	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	46.91	Tens	46.91	g33XY	6.842Extreme	14.585	20.940	21.094	17.420	27.916	2	1.000	0.6875
PMBR1	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	36.0	55.64	Tens	55.64	g60Y	5.673Extreme	25.048	10.470	10.195	0.000	3.536	1	1.000	0.6875
PMBR2	L3.5x3.5x1/4	SAE	3.5X3.5X0.25	36.0	28.12	Comp	3.51	g64Y	0.367NESC Hea	49.187	10.470	13.594	0.000	9.761	1	1.000	0.6875
HBR1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	73.82	Comp	50.48	g38P	3.895Extreme	14.585	10.470	10.547	7.717	5.000	1	1.000	0.6875
HBR2	2.5x2x3/16	SAU	2.5X2X0.1875	33.0	43.20	Comp	17.28	g41X	1.334NESC Hea	17.444	10.470	10.547	7.717	9.815	1	1.000	0.6875
HBR3	L3x2.5x1/4	SAU	3X2.5X0.25	33.0	45.17	Comp	11.95	g43X	1.251NESC Hea	30.090	10.470	14.062	12.500	13.804	1	1.000	0.6875
HBR4	**L4x3x1/4**	**SAU**	**4X3X0.25**	**33.0**	**47.68**	**Comp**	**16.09**	**g46X**	**1.685Extreme**	**37.663**	**10.470**	**14.062**	**12.500**	**10.000**	**1**	**1.000**	**0.6875**
Arm1	L3x2.5x1/4	SAU	3X2.5X0.25	33.0	20.18	Comp	13.72	g48P	5.933Extreme	43.230	0.000	0.000	0.000	5.000	0	0.000	0.6875
Arm2	L3.5x2.5x1/4	SAU	3.5X2.5X0.25	33.0	26.72	Comp	0.00	g54Y	0.000	47.520	0.000	0.000	0.000	5.000	0	0.000	0.6875
ArmBR1	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	33.0	29.16	Comp	0.00	g55X	0.000	22.961	10.470	10.547	0.000	6.403	1	1.000	0.6875
ArmBR2	L1.75x1/4x1/4	BAR	1.75X0.25X0.25	33.0	77.58	Tens	77.58	g57Y	6.120NESC Hea	7.889	10.470	14.062	0.000	12.382	1	1.000	0.6875
Powermnt	12" Std. Pipe	PIP	12.75X0.375	50.0	14.98	Comp	0.00	g71P	0.000	729.999	0.000	0.000	0.000	9.000	0	0.000	0
fic1	Fictitious1	Bar	fic	36.0	0.00		0.00	g72P	0.000NESC Hea	3.600	0.000	0.000	0.000	18.000	0	0.000	0
fic	Fictitious2	Bar	fic	36.0	0.00		0.00	g76P	0.072Extreme	3.600	0.000	0.000	0.000	0.500	0	0.000	0
HBR5	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	10.25	Comp	0.00	g78Y	0.000	14.585	10.470	10.547	7.717	2.500	1	1.000	0.6875

1.000 0.6875 A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g46P g46X g46XY g46Y ??

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case Maximum Element Element

	Usage %	Label	Type
NESC Heavy - Transverse	91.56	g31Y	Angle
Extreme Wind - Transverse	98.43	g11X	Angle
NESC Heavy - Longitudinal	80.89	g32Y	Angle
Extreme Wind - Longitudinal	88.41	g11X	Angle

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load Case	Weight (lbs)
1	Clamp	8.78	NESC Heavy - Transverse	0.0
2	Clamp	5.57	NESC Heavy - Transverse	0.0
3	Clamp	10.73	NESC Heavy - Transverse	0.0
4	Clamp	10.65	NESC Heavy - Transverse	0.0
5	Clamp	10.79	NESC Heavy - Transverse	0.0
6	Clamp	10.74	NESC Heavy - Transverse	0.0
7	Clamp	10.67	NESC Heavy - Transverse	0.0
8	Clamp	10.62	NESC Heavy - Transverse	0.0
14	Clamp	4.79	Extreme Wind - Transverse	0.0
15	Clamp	5.27	NESC Heavy - Transverse	0.0
16	Clamp	5.43	Extreme Wind - Transverse	0.0
17	Clamp	2.94	Extreme Wind - Transverse	0.0
18	Clamp	2.51	Extreme Wind - Transverse	0.0
19	Clamp	4.47	Extreme Wind - Longitudinal	0.0
20	Clamp	1.49	Extreme Wind - Transverse	0.0
21	Clamp	2.36	Extreme Wind - Transverse	0.0
22	Clamp	1.49	Extreme Wind - Transverse	0.0
23	Clamp	1.49	Extreme Wind - Transverse	0.0
24	Clamp	1.34	Extreme Wind - Transverse	0.0
25	Clamp	11.05	Extreme Wind - Longitudinal	0.0
26	Clamp	2.88	NESC Heavy - Longitudinal	0.0
27	Clamp	3.55	NESC Heavy - Longitudinal	0.0
28	Clamp	4.64	NESC Heavy - Longitudinal	0.0
29	Clamp	8.76	NESC Heavy - Longitudinal	0.0
30	Clamp	14.67	NESC Heavy - Longitudinal	0.0
31	Clamp	6.35	NESC Heavy - Transverse	0.0
32	Clamp	3.78	Extreme Wind - Longitudinal	0.0
33	Clamp	4.61	Extreme Wind - Longitudinal	0.0
34	Clamp	6.16	Extreme Wind - Longitudinal	0.0
35	Clamp	6.66	Extreme Wind - Longitudinal	0.0
36	Clamp	5.87	Extreme Wind - Longitudinal	0.0
37	Clamp	1.61	Extreme Wind - Longitudinal	0.0
38	Clamp	1.91	Extreme Wind - Longitudinal	0.0
39	Clamp	3.51	Extreme Wind - Longitudinal	0.0
40	Clamp	3.32	NESC Heavy - Longitudinal	0.0
41	Clamp	3.02	Extreme Wind - Longitudinal	0.0
42	Clamp	1.61	Extreme Wind - Longitudinal	0.0

*** Weight of structure (lbs):
    Weight of Angles*Section DLF: 13185.9
    Total: 13185.9

*** End of Report

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*                                                                           *
* TOWER - Analysis and Design -  Copyright Power Line Systems, Inc. 1986-2011 *
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Project Name : 16162.09 - Fairfield, CT
Project Notes: Structure # 876 / T-Mobile CT11317B
Project File : J:\Jobs\1700400.WI\14_Lower Scort Hill CT5145\04_Structural\Backup Documentation\Calcs\PLS Tower\cl&p # 876 w_powermnt.tow
Date run     : 12:58:28 PM Tuesday, March 21, 2017
by           : Tower Version 12.50
Licensed to  : Centek Engineering Inc

Successfully performed nonlinear analysis

Member "g6P" 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 "g6X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
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Member "g24P" 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 "g24X" 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 "g24XY" 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 "g24Y" 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. ??
Unable to calculate rupture capacity for member "g47P" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g47X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g47XY" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g47Y" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g49P" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g49X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g49XY" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g49Y" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g51P" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g51X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g51XY" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g51Y" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g53P" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g53X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g53XY" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g53Y" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g55P" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g55X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g56P" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g56X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g56XY" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g56Y" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g57P" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g57X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g57XY" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g57Y" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g58P" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g58X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g58XY" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g58Y" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g59P" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g59X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g59XY" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g59Y" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g60P" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g60X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g60XY" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g60Y" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g61P" because it has a long and short edge distance of 0. ??

Unable to calculate rupture capacity for member "g61X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g61XY" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g61Y" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g62P" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g62X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g62XY" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g62Y" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g63P" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g63X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g63XY" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g63Y" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g64P" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g64X" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g64XY" because it has a long and short edge distance of 0. ??
Unable to calculate rupture capacity for member "g64Y" because it has a long and short edge distance of 0. ??
w/t equals 34.00 for member "g65P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??
w/t equals 34.00 for member "g66P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??
w/t equals 34.00 for member "g67P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??
w/t equals 34.00 for member "g68P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??
w/t equals 34.00 for member "g69P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??
w/t equals 34.00 for member "g70P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??
w/t equals 34.00 for member "g71P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??
Unusual number of fixed joints found: 5. Towers normally have from between 1 and 4 fixed joints. ??
The model has 122 warnings. ??

Nonlinear convergence parameters: Use Standard Parameters
Tension only member maximum compression load as a percent of compression capacity: 100%
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	XY-Symmetry	2.5	-2.5	86	Free	Free	Free	Free	Free	Free
2P	X-Symmetry	0	-13.75	86	Free	Free	Free	Free	Free	Free
3P	XY-Symmetry	2.5	-2.5	81	Free	Free	Free	Free	Free	Free
4P	X-Symmetry	0	-9.75	81	Free	Free	Free	Free	Free	Free
5P	XY-Symmetry	2.5	-2.5	75	Free	Free	Free	Free	Free	Free
6P	XY-Symmetry	2.5	-2.5	72	Free	Free	Free	Free	Free	Free
7P	XY-Symmetry	2.5	-2.5	69	Free	Free	Free	Free	Free	Free
8P	X-Symmetry	0	-14.25	69	Free	Free	Free	Free	Free	Free
9P	XY-Symmetry	2.5	-2.5	64	Free	Free	Free	Free	Free	Free
10P	XY-Symmetry	2.5	-2.5	59	Free	Free	Free	Free	Free	Free
11P	X-Symmetry	0	-10.25	59	Free	Free	Free	Free	Free	Free
12P	XY-Symmetry	3.188	-3.188	54.05	Free	Free	Free	Free	Free	Free
13P	XY-Symmetry	4.013	-4.013	48.1	Free	Free	Free	Free	Free	Free
14P	XY-Symmetry	4.907	-4.907	41.5	Free	Free	Free	Free	Free	Free
15P	XY-Symmetry	6.902	-6.902	27	Free	Free	Free	Free	Free	Free
16P	XY-Symmetry	10	-10	5	Free	Free	Free	Free	Free	Free
17P	XY-Symmetry	10.69	-10.69	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
22P	None	0	0	104	Free	Free	Free	Free	Free	Free
23P	None	0	0	95	Free	Free	Free	Free	Free	Free
24P	None	0	0	86	Free	Free	Free	Free	Free	Free
25P	None	0	0	81	Free	Free	Free	Free	Free	Free
26P	None	0	0	69	Free	Free	Free	Free	Free	Free
27P	None	0	0	59	Free	Free	Free	Free	Free	Free
28P	None	0	0	27	Free	Free	Free	Free	Free	Free
29P	None	0	0	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
30P	X-Symmetry	0	0.5	86	Free	Free	Free	Free	Free	Free
31P	Y-Symmetry	0.5	0	86	Free	Free	Free	Free	Free	Free
32P	X-Symmetry	0	0.5	104	Free	Free	Free	Free	Free	Free
33P	Y-Symmetry	0.5	0	104	Free	Free	Free	Free	Free	Free
1X	X-GenXY	2.5	2.5	86	Free	Free	Free	Free	Free	Free
1XY	XY-GenXY	-2.5	2.5	86	Free	Free	Free	Free	Free	Free
1Y	Y-GenXY	-2.5	-2.5	86	Free	Free	Free	Free	Free	Free
2X	X-Gen	0	13.75	86	Free	Free	Free	Free	Free	Free
3X	X-GenXY	2.5	2.5	81	Free	Free	Free	Free	Free	Free
3XY	XY-GenXY	-2.5	2.5	81	Free	Free	Free	Free	Free	Free
3Y	Y-GenXY	-2.5	-2.5	81	Free	Free	Free	Free	Free	Free
4X	X-Gen	0	9.75	81	Free	Free	Free	Free	Free	Free
5X	X-GenXY	2.5	2.5	75	Free	Free	Free	Free	Free	Free
5XY	XY-GenXY	-2.5	2.5	75	Free	Free	Free	Free	Free	Free
5Y	Y-GenXY	-2.5	-2.5	75	Free	Free	Free	Free	Free	Free
6X	X-GenXY	2.5	2.5	72	Free	Free	Free	Free	Free	Free
6XY	XY-GenXY	-2.5	2.5	72	Free	Free	Free	Free	Free	Free
6Y	Y-GenXY	-2.5	-2.5	72	Free	Free	Free	Free	Free	Free
7X	X-GenXY	2.5	2.5	69	Free	Free	Free	Free	Free	Free
7XY	XY-GenXY	-2.5	2.5	69	Free	Free	Free	Free	Free	Free
7Y	Y-GenXY	-2.5	-2.5	69	Free	Free	Free	Free	Free	Free
8X	X-Gen	0	14.25	69	Free	Free	Free	Free	Free	Free
9X	X-GenXY	2.5	2.5	64	Free	Free	Free	Free	Free	Free
9XY	XY-GenXY	-2.5	2.5	64	Free	Free	Free	Free	Free	Free
9Y	Y-GenXY	-2.5	-2.5	64	Free	Free	Free	Free	Free	Free
10X	X-GenXY	2.5	2.5	59	Free	Free	Free	Free	Free	Free
10XY	XY-GenXY	-2.5	2.5	59	Free	Free	Free	Free	Free	Free
10Y	Y-GenXY	-2.5	-2.5	59	Free	Free	Free	Free	Free	Free
11X	X-Gen	0	10.25	59	Free	Free	Free	Free	Free	Free
12X	X-GenXY	3.188	3.188	54.05	Free	Free	Free	Free	Free	Free

12XY	XY-GenXY	-3.188	3.188	54.05	Free	Free	Free	Free	Free	Free
12Y	Y-GenXY	-3.188	-3.188	54.05	Free	Free	Free	Free	Free	Free
13X	X-GenXY	4.013	4.013	48.1	Free	Free	Free	Free	Free	Free
13XY	XY-GenXY	-4.013	4.013	48.1	Free	Free	Free	Free	Free	Free
13Y	Y-GenXY	-4.013	-4.013	48.1	Free	Free	Free	Free	Free	Free
14X	X-GenXY	4.907	4.907	41.5	Free	Free	Free	Free	Free	Free
14XY	XY-GenXY	-4.907	4.907	41.5	Free	Free	Free	Free	Free	Free
14Y	Y-GenXY	-4.907	-4.907	41.5	Free	Free	Free	Free	Free	Free
15X	X-GenXY	6.902	6.902	27	Free	Free	Free	Free	Free	Free
15XY	XY-GenXY	-6.902	6.902	27	Free	Free	Free	Free	Free	Free
15Y	Y-GenXY	-6.902	-6.902	27	Free	Free	Free	Free	Free	Free
16X	X-GenXY	10	10	5	Free	Free	Free	Free	Free	Free
16XY	XY-GenXY	-10	10	5	Free	Free	Free	Free	Free	Free
16Y	Y-GenXY	-10	-10	5	Free	Free	Free	Free	Free	Free
17X	X-GenXY	10.69	10.69	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
17XY	XY-GenXY	-10.69	10.69	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
17Y	Y-GenXY	-10.69	-10.69	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
30X	X-Gen	0	-0.5	86	Free	Free	Free	Free	Free	Free
31Y	Y-Gen	-0.5	0	86	Free	Free	Free	Free	Free	Free
32X	X-Gen	0	-0.5	104	Free	Free	Free	Free	Free	Free
33Y	Y-Gen	-0.5	0	104	Free	Free	Free	Free	Free	Free

Secondary Joints:

Joint Label	Symmetry Code	Origin Joint	End Joint	Fraction	Elevation (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.
18S	Y-Symmetry	6P	6X	0.5	0	Free	Free	Free	Free	Free	Free
19S	X-Symmetry	6P	6Y	0.5	0	Free	Free	Free	Free	Free	Free
20S	Y-Symmetry	16P	16X	0.5	0	Free	Free	Free	Free	Free	Free
21S	X-Symmetry	16P	16Y	0.5	0	Free	Free	Free	Free	Free	Free
18Y	Y-Gen	6P	6X	0.5	0	Free	Free	Free	Free	Free	Free
19X	X-Gen	6P	6Y	0.5	0	Free	Free	Free	Free	Free	Free
20Y	Y-Gen	16P	16X	0.5	0	Free	Free	Free	Free	Free	Free
21X	X-Gen	16P	16Y	0.5	0	Free	Free	Free	Free	Free	Free

The model contains 76 primary and 8 secondary joints for a total of 84 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)
A7	2.9e+004	33	60	0	0	0	0	0	0
A36	2.9e+004	36	58	0	0	0	0	0	0
A 36	2.9e+004	36	58	0	0	0	0	0	0
A572-50	2.9e+004	50	65	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 A7	0.625	0.6875	10.47	0	0	0	0

Number Bolts Used By Type:

Bolt Type	Number Bolts
5/8 A7	546

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	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	0	1.0000	0
SAE	1.75X1.75X0.25	1.75	1.75	0.25	2.77	0.813	4.25	0.529	0.529	0.341	1	1.75	0	0	1.0000	0
SAE	2.5X2.5X0.1875	2.5	2.5	0.1875	3.07	0.902	10.67	0.778	0.778	0.495	1	2.5	0	0	1.0000	0
SAE	2X2X0.1875	2	2	0.1875	2.44	0.71	8	0.617	0.617	0.394	1	2	0	0	1.0000	0
SAE	3.5X3.5X0.25	3.5	3.5	0.25	5.8	1.69	11.5	1.09	1.09	0.694	1	3.5	0	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	0	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	0	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	0	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	0	0	1.0000	0
SAU	3.5X2.5X0.25	3.5	2.5	0.25	4.9	1.44	11.25	1.12	0.735	0.544	1	3.5	0	0	1.0000	0
SAU	3X2.5X0.25	3	2.5	0.25	4.5	1.31	9.5	0.945	0.753	0.528	1	3	0	0	1.0000	0
SAU	3X2X0.1875	3	2	0.1875	3.07	0.9	13.33	0.966	0.583	0.439	1	3	0	0	1.0000	0
SAU	4X3X0.25	4	3	0.25	5.8	1.69	13.25	1.28	0.896	0.651	1	4	0	0	1.0000	0
BAR	1.75X0.25X0.25	1.75	0.25	0.25	1.49	0.4375	7	0.5052	0.0722	0.101	1	1.75	0	0	1.0000	0
PIP	12.75X0.375	12.75	12.75	0.375	49.56	14.6	34	4.38	4.38	4.38	1	12.75	0	0	1.0000	0
Bar	fic	1	0	0.1	0.005	0.1	1	0.0001	0.0001	0.0001	1	0.1	0	0	0.0000	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	L4x4x1/4	SAE	4X4X0.25	A7	Beam	Leg	None	12.000
LEG2	L4x4x5/16	SAE	4X4X0.3125	A7	Beam	Leg	None	12.000
LEG3	L4x4x3/8	SAE	4X4X0.375	A7	Beam	Leg	None	12.000
XBR1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	A7	Truss	Crossing Diagonal	None	12.000
XBR2	L3x2x3/16	SAU	3X2X0.1875	A7	Truss	Crossing Diagonal	None	12.000
XBR3	L3x2x3/16	SAU	3X2X0.1875	A7	Truss	Other	None	12.000
XBR4	L2x2x3/16	SAE	2X2X0.1875	A7	Truss	Crossing Diagonal	None	12.000
XBR5	L2.5x2x3/16	SAU	2.5X2X0.1875	A7	Truss	Crossing Diagonal	None	12.000
XBR6	L1.75x1.75x1/4	SAE	1.75X1.75X0.25	A7	T-Only	Other	None	12.000
XBR7	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	A7	T-Only	Other	None	12.000
PMBR1	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	A36	Beam	Other	None	12.000
PMBR2	L3.5x3.5x1/4	SAE	3.5X3.5X0.25	A36	Beam	Other	None	12.000
HBR1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	A7	Beam	Other	None	12.000
HBR2	2.5x2x3/16	SAU	2.5X2X0.1875	A7	Beam	Other	None	12.000
HBR3	L3x2.5x1/4	SAU	3X2.5X0.25	A7	Beam	Other	None	12.000
HBR4	L4x3x1/4	SAU	4X3X0.25	A7	Beam	Other	None	12.000
Arm1	L3x2.5x1/4	SAU	3X2.5X0.25	A7	Beam	Other	None	12.000
Arm2	L3.5x2.5x1/4	SAU	3.5X2.5X0.25	A7	Beam	Other	None	12.000
ArmBR1	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	A7	Truss	Other	None	0.000
ArmBR2	L1.75x1/4x1/4	BAR	1.75X0.25X0.25	A7	T-Only	Other	None	0.000

Powermnt	12" Std. Pipe	PIP	12.75X0.375	A572-50	Beam	Other	None	0.000
fic1	Fictitious1	Bar	fic	A 36	T-Only	Other	None	0.000
fic	Fictitious2	Bar	fic	A 36	T-Only	Fictitious	None	0.000
HBR5	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	A7	Truss	Other	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	4X4X0.25	A7	108.00	144.00	712.80
SAE	4X4X0.3125	A7	91.69	122.26	751.90
SAE	4X4X0.375	A7	148.82	198.42	1458.39
SAE	1.75X1.75X0.1875	A7	329.89	192.44	699.37
SAU	3X2X0.1875	A7	332.71	277.26	1021.42
SAE	2X2X0.1875	A7	60.58	40.39	147.83
SAU	2.5X2X0.1875	A7	203.33	152.50	559.15
SAE	1.75X1.75X0.25	A7	150.45	87.77	416.76
SAU	3X2.5X0.25	A7	194.56	178.35	875.54
SAU	4X3X0.25	A7	80.00	93.33	464.00
SAU	3.5X2.5X0.25	A7	58.05	58.05	284.46
SAE	2.5X2.5X0.1875	A7	12.81	10.67	39.32
BAR	1.75X0.25X0.25	A7	134.37	44.79	200.21
SAE	2.5X2.5X0.1875	A36	56.57	47.14	173.67
SAE	3.5X3.5X0.25	A36	39.04	45.55	226.46
PIP	12.75X0.375	A572-50	104.00	442.00	5154.24
Bar	fic	A 36	76.00	12.67	0.38

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 Label	Joint Defining Section Bottom	Dead Load Adjust. Factor	Transverse Drag x Area Factor For Face	Longitudinal Drag x Area Factor For Face	Transverse Area Factor (CD From Code)	Longitudinal Area Factor (CD From Code)	Af Flat Factor For Face EIA Only	Ar Round Factor For Face EIA Only	Transverse Drag x Area Factor For All	Longitudinal Drag x Area Factor For All	SAPS Angle Drag x Area Factor	SAPS Round Drag x Area Factor	Force Solid Face
1	24P	1.000	3.200	3.200	1.000	1.000	0.000	0.000	1.000	1.000	0.000	0.000	None
2	14P	1.000	3.200	3.200	1.000	1.000	0.000	0.000	1.000	1.000	0.000	0.000	None
3	17P	1.000	3.200	3.200	1.050	1.050	0.000	0.000	1.000	1.000	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	3P	1	4	1	1	1	5/8 A7	0	4	0		0	0	0	0	0	0	0

g1X	LEG1	X-GenXY	1X	3X	1	4	1	1	1 5/8 A7	0	4	0		0	0	0	0	0	0
g1XY	LEG1	XY-GenXY	1XY	3XY	1	4	1	1	1 5/8 A7	0	4	0		0	0	0	0	0	0
g1Y	LEG1	Y-GenXY	1Y	3Y	1	4	1	1	1 5/8 A7	0	4	0		0	0	0	0	0	0
g2P	LEG1	XY-Symmetry	3P	5P	1	4	1	1	1 5/8 A7	0	4	0		0	0	0	0	0	0
g2X	LEG1	X-GenXY	3X	5X	1	4	1	1	1 5/8 A7	0	4	0		0	0	0	0	0	0
g2XY	LEG1	XY-GenXY	3XY	5XY	1	4	1	1	1 5/8 A7	0	4	0		0	0	0	0	0	0
g2Y	LEG1	Y-GenXY	3Y	5Y	1	4	1	1	1 5/8 A7	0	4	0		0	0	0	0	0	0
g3P	LEG1	XY-Symmetry	5P	6P	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0
g3X	LEG1	X-GenXY	5X	6X	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0
g3XY	LEG1	XY-GenXY	5XY	6XY	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0
g3Y	LEG1	Y-GenXY	5Y	6Y	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0
g4P	LEG1	XY-Symmetry	6P	7P	1	4	1	1	1 5/8 A7	0	4	0		0	0	0	0	0	0
g4X	LEG1	X-GenXY	6X	7X	1	4	1	1	1 5/8 A7	0	4	0		0	0	0	0	0	0
g4XY	LEG1	XY-GenXY	6XY	7XY	1	4	1	1	1 5/8 A7	0	4	0		0	0	0	0	0	0
g4Y	LEG1	Y-GenXY	6Y	7Y	1	4	1	1	1 5/8 A7	0	4	0		0	0	0	0	0	0
g5P	LEG1	XY-Symmetry	7P	9P	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0
g5X	LEG1	X-GenXY	7X	9X	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0
g5XY	LEG1	XY-GenXY	7XY	9XY	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0
g5Y	LEG1	Y-GenXY	7Y	9Y	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0
g6P	LEG1	XY-Symmetry	9P	10P	1	4	1	1	1 5/8 A7	12	2	1	Both	1.25	2.375	1.5	4	0	0
g6X	LEG1	X-GenXY	9X	10X	1	4	1	1	1 5/8 A7	12	2	1	Both	1.25	2.375	1.5	4	0	0
g6XY	LEG1	XY-GenXY	9XY	10XY	1	4	1	1	1 5/8 A7	12	2	1	Both	1.25	2.375	1.5	4	0	0
g6Y	LEG1	Y-GenXY	9Y	10Y	1	4	1	1	1 5/8 A7	12	2	1	Both	1.25	2.375	1.5	4	0	0
g7P	LEG2	XY-Symmetry	10P	12P	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0
g7X	LEG2	X-GenXY	10X	12X	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0
g7XY	LEG2	XY-GenXY	10XY	12XY	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0
g7Y	LEG2	Y-GenXY	10Y	12Y	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0
g8P	LEG2	XY-Symmetry	12P	13P	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0
g8X	LEG2	X-GenXY	12X	13X	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0
g8XY	LEG2	XY-GenXY	12XY	13XY	1	4	1	1	1 5/8 A7	0	2	0		0	0	0	0	0	0

0	0	0																					
	g8Y	LEG2	Y-GenXY	12Y	13Y	1	4	1	1	1	5/8	A7	0	2	0			0	0	0	0		
0	0	0																					
	g9P	LEG2	XY-Symmetry	13P	14P	1	4	1	1	1	5/8	A7	10	2.02	1	Both	0.875	2	1.5	3.5			
0	0	0																					
	g9X	LEG2	X-GenXY	13X	14X	1	4	1	1	1	5/8	A7	10	2.02	1	Both	0.875	2	1.5	3.5			
0	0	0																					
	g9XY	LEG2	XY-GenXY	13XY	14XY	1	4	1	1	1	5/8	A7	10	2.02	1	Both	0.875	2	1.5	3.5			
0	0	0																					
	g9Y	LEG2	Y-GenXY	13Y	14Y	1	4	1	1	1	5/8	A7	10	2.02	1	Both	0.875	2	1.5	3.5			
0	0	0																					
	g10P	LEG3	XY-Symmetry	14P	15P	1	4	0.5	0.5	0.5	5/8	A7	10	2	1	Both	1.3125	2.375	1.5	3.5			
0	0	0																					
	g10X	LEG3	X-GenXY	14X	15X	1	4	0.5	0.5	0.5	5/8	A7	10	2	1	Both	1.3125	2.375	1.5	3.5			
0	0	0																					
	g10XY	LEG3	XY-GenXY	14XY	15XY	1	4	0.5	0.5	0.5	5/8	A7	10	2	1	Both	1.3125	2.375	1.5	3.5			
0	0	0																					
	g10Y	LEG3	Y-GenXY	14Y	15Y	1	4	0.5	0.5	0.5	5/8	A7	10	2	1	Both	1.3125	2.375	1.5	3.5			
0	0	0																					
	g11P	LEG3	XY-Symmetry	15P	16P	1	4	0.33	0.33	0.33	5/8	A7	10	2	1	Both	0.875	1.9375	1.5	3.75			
0	0	0																					
	g11X	LEG3	X-GenXY	15X	16X	1	4	0.33	0.33	0.33	5/8	A7	10	2	1	Both	0.875	1.9375	1.5	3.75			
0	0	0																					
	g11XY	LEG3	XY-GenXY	15XY	16XY	1	4	0.33	0.33	0.33	5/8	A7	10	2	1	Both	0.875	1.9375	1.5	3.75			
0	0	0																					
	g11Y	LEG3	Y-GenXY	15Y	16Y	1	4	0.33	0.33	0.33	5/8	A7	10	2	1	Both	0.875	1.9375	1.5	3.75			
0	0	0																					
	g12P	LEG2	XY-Symmetry	16P	17P	1	4	1	1	1	5/8	A7	10	2	1	Both	0.5625	1.625	1.5625	3.75			
0	0	0																					
	g12X	LEG2	X-GenXY	16X	17X	1	4	1	1	1	5/8	A7	10	2	1	Both	0.5625	1.625	1.5625	3.75			
0	0	0																					
	g12XY	LEG2	XY-GenXY	16XY	17XY	1	4	1	1	1	5/8	A7	10	2	1	Both	0.5625	1.625	1.5625	3.75			
0	0	0																					
	g12Y	LEG2	Y-GenXY	16Y	17Y	1	4	1	1	1	5/8	A7	10	2	1	Both	0.5625	1.625	1.5625	3.75			
0	0	0																					
	g13P	XBR1	XY-Symmetry	1P	3X	2	5	0.75	0.5	0.5	5/8	A7	2	1	1	Short only	0.8125	0	1	2			
0	0	0																					
	g13X	XBR1	X-GenXY	1X	3P	2	5	0.75	0.5	0.5	5/8	A7	2	1	1	Short only	0.8125	0	1	2			
0	0	0																					
	g13XY	XBR1	XY-GenXY	1XY	3Y	2	5	0.75	0.5	0.5	5/8	A7	2	1	1	Short only	0.8125	0	1	2			
0	0	0																					
	g13Y	XBR1	Y-GenXY	1Y	3XY	2	5	0.75	0.5	0.5	5/8	A7	2	1	1	Short only	0.8125	0	1	2			
0	0	0																					
	g14P	XBR1	XY-Symmetry	1X	3XY	2	5	0.75	0.5	0.5	5/8	A7	2	1	1	Short only	0.8125	0	1	2			
0	0	0																					
	g14X	XBR1	X-GenXY	1P	3Y	2	5	0.75	0.5	0.5	5/8	A7	2	1	1	Short only	0.8125	0	1	2			
0	0	0																					
	g14XY	XBR1	XY-GenXY	1Y	3P	2	5	0.75	0.5	0.5	5/8	A7	2	1	1	Short only	0.8125	0	1	2			
0	0	0																					
	g14Y	XBR1	Y-GenXY	1XY	3X	2	5	0.75	0.5	0.5	5/8	A7	2	1	1	Short only	0.8125	0	1	2			
0	0	0																					
	g15P	XBR2	XY-Symmetry	3P	5X	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	3.125			
0	0	0																					
	g15X	XBR2	X-GenXY	3X	5P	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	3.125			
0	0	0																					
	g15XY	XBR2	XY-GenXY	3XY	5Y	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	3.125			
0	0	0																					
	g15Y	XBR2	Y-GenXY	3Y	5XY	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	3.125			
0	0	0																					

g16P	XBR2	XY-Symmetry	3X	5XY	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g16X	XBR2	X-GenXY	3P	5Y	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g16XY	XBR2	XY-GenXY	3Y	5P	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g16Y	XBR2	Y-GenXY	3XY	5X	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g17P	XBR3	XY-Symmetry	5P	18S	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g17X	XBR3	X-GenXY	5X	18S	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g17XY	XBR3	XY-GenXY	5XY	18Y	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g17Y	XBR3	Y-GenXY	5Y	18Y	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g18P	XBR3	XY-Symmetry	5X	19X	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g18X	XBR3	X-GenXY	5P	19S	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g18XY	XBR3	XY-GenXY	5Y	19S	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g18Y	XBR3	Y-GenXY	5XY	19X	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g19P	XBR3	XY-Symmetry	18S	7P	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g19X	XBR3	X-GenXY	18S	7X	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g19XY	XBR3	XY-GenXY	18Y	7XY	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g19Y	XBR3	Y-GenXY	18Y	7Y	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g20P	XBR3	XY-Symmetry	19X	7X	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g20X	XBR3	X-GenXY	19S	7P	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g20XY	XBR3	XY-GenXY	19S	7Y	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g20Y	XBR3	Y-GenXY	19X	7XY	2	4	1	1.5	1	5/8	A7	3	1	1	Long only	0.875	2	1	3.125	0
0	0																			
g21P	XBR2	XY-Symmetry	7P	9X	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	0
0	0																			
g21X	XBR2	X-GenXY	7X	9P	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	0
0	0																			
g21XY	XBR2	XY-GenXY	7XY	9Y	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	0
0	0																			
g21Y	XBR2	Y-GenXY	7Y	9XY	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	0
0	0																			
g22P	XBR2	XY-Symmetry	7X	9XY	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	0
0	0																			
g22X	XBR2	X-GenXY	7P	9Y	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	0
0	0																			
g22XY	XBR2	XY-GenXY	7Y	9P	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	0
0	0																			
g22Y	XBR2	Y-GenXY	7XY	9X	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	0
0	0																			
g23P	XBR2	XY-Symmetry	9P	10X	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	0
0	0																			
g23X	XBR2	X-GenXY	9X	10P	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	

0	0	0																		
g23XY	XBR2	XY-GenXY	9XY	10Y	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	
0	0	0																		
g23Y	XBR2	Y-GenXY	9Y	10XY	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	
0	0	0																		
g24P	XBR2	XY-Symmetry	9X	10XY	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	
0	0	0																		
g24X	XBR2	X-GenXY	9P	10Y	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	
0	0	0																		
g24XY	XBR2	XY-GenXY	9Y	10P	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	
0	0	0																		
g24Y	XBR2	Y-GenXY	9XY	10X	2	5	0.5	0.75	0.5	5/8	A7	3	1	1	Long only	0.875	2	1	2.75	
0	0	0																		
g25P	XBR4	XY-Symmetry	10P	12X	2	5	0.78	0.56	0.56	5/8	A7	2	1	1	Short only	1	0	1	1.6875	
0	0	0																		
g25X	XBR4	X-GenXY	10X	12P	2	5	0.78	0.56	0.56	5/8	A7	2	1	1	Short only	1	0	1	1.6875	
0	0	0																		
g25XY	XBR4	XY-GenXY	10XY	12Y	2	5	0.78	0.56	0.56	5/8	A7	2	1	1	Short only	1	0	1	1.6875	
0	0	0																		
g25Y	XBR4	Y-GenXY	10Y	12XY	2	5	0.78	0.56	0.56	5/8	A7	2	1	1	Short only	1	0	1	1.6875	
0	0	0																		
g26P	XBR4	XY-Symmetry	10X	12XY	2	5	0.78	0.56	0.56	5/8	A7	2	1	1	Short only	1	0	1	1.6875	
0	0	0																		
g26X	XBR4	X-GenXY	10P	12Y	2	5	0.78	0.56	0.56	5/8	A7	2	1	1	Short only	1	0	1	1.6875	
0	0	0																		
g26XY	XBR4	XY-GenXY	10Y	12P	2	5	0.78	0.56	0.56	5/8	A7	2	1	1	Short only	1	0	1	1.6875	
0	0	0																		
g26Y	XBR4	Y-GenXY	10XY	12X	2	5	0.78	0.56	0.56	5/8	A7	2	1	1	Short only	1	0	1	1.6875	
0	0	0																		
g27P	XBR5	XY-Symmetry	12P	13X	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.375	
0	0	0																		
g27X	XBR5	X-GenXY	12X	13P	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.375	
0	0	0																		
g27XY	XBR5	XY-GenXY	12XY	13Y	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.375	
0	0	0																		
g27Y	XBR5	Y-GenXY	12Y	13XY	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.375	
0	0	0																		
g28P	XBR5	XY-Symmetry	12X	13XY	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.375	
0	0	0																		
g28X	XBR5	X-GenXY	12P	13Y	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.375	
0	0	0																		
g28XY	XBR5	XY-GenXY	12Y	13P	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.375	
0	0	0																		
g28Y	XBR5	Y-GenXY	12XY	13X	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.375	
0	0	0																		
g29P	XBR5	XY-Symmetry	13P	14X	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.25	
0	0	0																		
g29X	XBR5	X-GenXY	13X	14P	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.25	
0	0	0																		
g29XY	XBR5	XY-GenXY	13XY	14Y	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.25	
0	0	0																		
g29Y	XBR5	Y-GenXY	13Y	14XY	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.25	
0	0	0																		
g30P	XBR5	XY-Symmetry	13X	14XY	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.25	
0	0	0																		
g30X	XBR5	X-GenXY	13P	14Y	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.25	
0	0	0																		
g30XY	XBR5	XY-GenXY	13Y	14P	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.25	
0	0	0																		

g30Y	XBR5	Y-GenXY	13XY	14X	2	5	0.56	0.78	0.56	5/8	A7	2	1	1	Long only	1	0	1	2.25	0	0	0
g31P	XBR6	XY-Symmetry	14P	15X	2	5	0.79	0.58	0.58	5/8	A7	2	1	1	Short only	1	0	1	2.1875	0	0	0
g31X	XBR6	X-GenXY	14X	15P	2	5	0.79	0.58	0.58	5/8	A7	2	1	1	Short only	1	0	1	2.1875	0	0	0
g31XY	XBR6	XY-GenXY	14XY	15Y	2	5	0.79	0.58	0.58	5/8	A7	2	1	1	Short only	1	0	1	2.1875	0	0	0
g31Y	XBR6	Y-GenXY	14Y	15XY	2	5	0.79	0.58	0.58	5/8	A7	2	1	1	Short only	1	0	1	2.1875	0	0	0
g32P	XBR6	XY-Symmetry	14X	15XY	2	5	0.79	0.58	0.58	5/8	A7	2	1	1	Short only	1	0	1	2.1875	0	0	0
g32X	XBR6	X-GenXY	14P	15Y	2	5	0.79	0.58	0.58	5/8	A7	2	1	1	Short only	1	0	1	2.1875	0	0	0
g32XY	XBR6	XY-GenXY	14Y	15P	2	5	0.79	0.58	0.58	5/8	A7	2	1	1	Short only	1	0	1	2.1875	0	0	0
g32Y	XBR6	Y-GenXY	14XY	15X	2	5	0.79	0.58	0.58	5/8	A7	2	1	1	Short only	1	0	1	2.1875	0	0	0
g33P	XBR7	XY-Symmetry	15P	16X	2	5	0.8	0.41	0.41	5/8	A7	2	1	1	Short only	0.875	0	1	2.125	0	0	0
g33X	XBR7	X-GenXY	15X	16P	2	5	0.8	0.41	0.41	5/8	A7	2	1	1	Short only	0.875	0	1	2.125	0	0	0
g33XY	XBR7	XY-GenXY	15XY	16Y	2	5	0.8	0.41	0.41	5/8	A7	2	1	1	Short only	0.875	0	1	2.125	0	0	0
g33Y	XBR7	Y-GenXY	15Y	16XY	2	5	0.8	0.41	0.41	5/8	A7	2	1	1	Short only	0.875	0	1	2.125	0	0	0
g34P	XBR7	XY-Symmetry	15X	16XY	2	5	0.8	0.41	0.41	5/8	A7	2	1	1	Short only	0.875	0	1	2.125	0	0	0
g34X	XBR7	X-GenXY	15P	16Y	2	5	0.8	0.41	0.41	5/8	A7	2	1	1	Short only	0.875	0	1	2.125	0	0	0
g34XY	XBR7	XY-GenXY	15Y	16P	2	5	0.8	0.41	0.41	5/8	A7	2	1	1	Short only	0.875	0	1	2.125	0	0	0
g34Y	XBR7	Y-GenXY	15XY	16X	2	5	0.8	0.41	0.41	5/8	A7	2	1	1	Short only	0.875	0	1	2.125	0	0	0
g35P	XBR3	XY-Symmetry	17P	20S	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	0.875	0	1	0	0	0	0
g35X	XBR3	X-GenXY	17X	20S	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	0.875	0	1	0	0	0	0
g35XY	XBR3	XY-GenXY	17XY	20Y	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	0.875	0	1	0	0	0	0
g35Y	XBR3	Y-GenXY	17Y	20Y	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	0.875	0	1	0	0	0	0
g36P	XBR3	XY-Symmetry	17X	21X	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	0.875	0	1	0	0	0	0
g36X	XBR3	X-GenXY	17P	21S	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	0.875	0	1	0	0	0	0
g36XY	XBR3	XY-GenXY	17Y	21S	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	0.875	0	1	0	0	0	0
g36Y	XBR3	Y-GenXY	17XY	21X	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	0.875	0	1	0	0	0	0
g37P	HBR1	X-Symmetry	1P	1Y	3	4	1	1	1	5/8	A7	1	1	1	Short only	0.875	0	1	0	0	0	0
g37X	HBR1	X-Gen	1X	1XY	3	4	1	1	1	5/8	A7	1	1	1	Short only	0.875	0	1	0	0	0	0
g38P	HBR1	X-Symmetry	3P	3Y	3	4	1	1	1	5/8	A7	1	1	1	Short only	0.875	0	1	0	0	0	0
g38X	HBR1	X-Gen	3X	3XY	3	4	1	1	1	5/8	A7	1	1	1	Short only	0.875	0	1	0	0	0	0
g39P	HBR1	X-Symmetry	7P	7Y	3	4	1	1	1	5/8	A7	1	1	1	Short only	0.875	0	1	0			

0	0	0																			
	g39X	HBR1	X-Gen	7X	7XY	3	4	1	1	1	5/8	A7	1	1	1	Short only	0.875	0	1	0	
0	0	0																			
	g40P	HBR1	X-Symmetry	10P	10Y	3	4	1	1	1	5/8	A7	1	1	1	Short only	0.875	0	1	0	
0	0	0																			
	g40X	HBR1	X-Gen	10X	10XY	3	4	1	1	1	5/8	A7	1	1	1	Short only	0.875	0	1	0	
0	0	0																			
	g41P	HBR2	X-Symmetry	14P	14Y	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	0.875	0	1	0	
0	0	0																			
	g41X	HBR2	X-Gen	14X	14XY	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	0.875	0	1	0	
0	0	0																			
	g42P	HBR2	Y-Symmetry	14P	14X	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	0.875	0	1	0	
0	0	0																			
	g42Y	HBR2	Y-Gen	14Y	14XY	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	0.875	0	1	0	
0	0	0																			
	g43P	HBR3	X-Symmetry	15P	15Y	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	1.25	0	1	0	
0	0	0																			
	g43X	HBR3	X-Gen	15X	15XY	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	1.25	0	1	0	
0	0	0																			
	g44P	HBR3	Y-Symmetry	15P	15X	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	1.25	0	1	0	
0	0	0																			
	g44Y	HBR3	Y-Gen	15Y	15XY	3	4	1	0.5	0.5	5/8	A7	1	1	1	Short only	1.25	0	1	0	
0	0	0																			
	g45P	HBR4	XY-Symmetry	16P	20S	3	4	2	1	1	5/8	A7	1	1	1	Short only	1.25	0	1	0	
0	0	0																			
	g45X	HBR4	X-GenXY	16X	20S	3	4	2	1	1	5/8	A7	1	1	1	Short only	1.25	0	1	0	
0	0	0																			
	g45XY	HBR4	XY-GenXY	16XY	20Y	3	4	2	1	1	5/8	A7	1	1	1	Short only	1.25	0	1	0	
0	0	0																			
	g45Y	HBR4	Y-GenXY	16Y	20Y	3	4	2	1	1	5/8	A7	1	1	1	Short only	1.25	0	1	0	
0	0	0																			
	g46P	HBR4	XY-Symmetry	16P	21S	3	4	2	1	1	5/8	A7	1	1	1	Short only	1.25	0	1	0	
0	0	0																			
	g46X	HBR4	X-GenXY	16X	21X	3	4	2	1	1	5/8	A7	1	1	1	Short only	1.25	0	1	0	
0	0	0																			
	g46XY	HBR4	XY-GenXY	16XY	21X	3	4	2	1	1	5/8	A7	1	1	1	Short only	1.25	0	1	0	
0	0	0																			
	g46Y	HBR4	Y-GenXY	16Y	21S	3	4	2	1	1	5/8	A7	1	1	1	Short only	1.25	0	1	0	
0	0	0																			
	g47P	Arm1	XY-Symmetry	2P	1P	3	5	1	0.5	0.5	5/8	A7	3	1	1	Long only	0	0	0	0	
0	0	0																			
	g47X	Arm1	X-GenXY	2X	1X	3	5	1	0.5	0.5	5/8	A7	3	1	1	Long only	0	0	0	0	
0	0	0																			
	g47XY	Arm1	XY-GenXY	2X	1XY	3	5	1	0.5	0.5	5/8	A7	3	1	1	Long only	0	0	0	0	
0	0	0																			
	g47Y	Arm1	Y-GenXY	2P	1Y	3	5	1	0.5	0.5	5/8	A7	3	1	1	Long only	0	0	0	0	
0	0	0																			
	g48P	Arm1	Y-Symmetry	1P	1X	3	6	1	1	1	5/8	A7	0	0	0		0	0	0	0	
0	0	0																			
	g48Y	Arm1	Y-Gen	1Y	1XY	3	6	1	1	1	5/8	A7	0	0	0		0	0	0	0	
0	0	0																			
	g49P	Arm1	XY-Symmetry	4P	3P	3	5	1	0.5	0.5	5/8	A7	3	1	1	Long only	0	0	0	0	
0	0	0																			
	g49X	Arm1	X-GenXY	4X	3X	3	5	1	0.5	0.5	5/8	A7	3	1	1	Long only	0	0	0	0	
0	0	0																			
	g49XY	Arm1	XY-GenXY	4X	3XY	3	5	1	0.5	0.5	5/8	A7	3	1	1	Long only	0	0	0	0	
0	0	0																			
	g49Y	Arm1	Y-GenXY	4P	3Y	3	5	1	0.5	0.5	5/8	A7	3	1	1	Long only	0	0	0	0	
0	0	0																			

g50P	Arm1	Y-Symmetry	3P	3X	3	6	1	1	1	5/8 A7	0	0	0		0	0	0	0	0
g50Y	Arm1	Y-Gen	3Y	3XY	3	6	1	1	1	5/8 A7	0	0	0		0	0	0	0	0
g51P	Arm1	XY-Symmetry	11P	10P	3	5	1	0.5	0.5	5/8 A7	3	1	1	Long only	0	0	0	0	0
g51X	Arm1	X-GenXY	11X	10X	3	5	1	0.5	0.5	5/8 A7	3	1	1	Long only	0	0	0	0	0
g51XY	Arm1	XY-GenXY	11X	10XY	3	5	1	0.5	0.5	5/8 A7	3	1	1	Long only	0	0	0	0	0
g51Y	Arm1	Y-GenXY	11P	10Y	3	5	1	0.5	0.5	5/8 A7	3	1	1	Long only	0	0	0	0	0
g52P	Arm1	Y-Symmetry	10P	10X	3	6	1	1	1	5/8 A7	0	0	0		0	0	0	0	0
g52Y	Arm1	Y-Gen	10Y	10XY	3	6	1	1	1	5/8 A7	0	0	0		0	0	0	0	0
g53P	Arm2	XY-Symmetry	8P	7P	3	5	1	0.5	0.5	5/8 A7	3	1	1	Long only	0	0	0	0	0
g53X	Arm2	X-GenXY	8X	7X	3	5	1	0.5	0.5	5/8 A7	3	1	1	Long only	0	0	0	0	0
g53XY	Arm2	XY-GenXY	8X	7XY	3	5	1	0.5	0.5	5/8 A7	3	1	1	Long only	0	0	0	0	0
g53Y	Arm2	Y-GenXY	8P	7Y	3	5	1	0.5	0.5	5/8 A7	3	1	1	Long only	0	0	0	0	0
g54P	Arm2	Y-Symmetry	7P	7X	3	6	1	1	1	5/8 A7	0	0	0		0	0	0	0	0
g54Y	Arm2	Y-Gen	7Y	7XY	3	6	1	1	1	5/8 A7	0	0	0		0	0	0	0	0
g55P	ArmBR1	X-Symmetry	2P	4P	3	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g55X	ArmBR1	X-Gen	2X	4X	3	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g56P	ArmBR2	XY-Symmetry	4P	1P	3	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g56X	ArmBR2	X-GenXY	4X	1X	3	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g56XY	ArmBR2	XY-GenXY	4X	1XY	3	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g56Y	ArmBR2	Y-GenXY	4P	1Y	3	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g57P	ArmBR2	XY-Symmetry	8P	6P	3	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g57X	ArmBR2	X-GenXY	8X	6X	3	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g57XY	ArmBR2	XY-GenXY	8X	6XY	3	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g57Y	ArmBR2	Y-GenXY	8P	6Y	3	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g58P	ArmBR2	XY-Symmetry	6P	18S	2	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g58X	ArmBR2	X-GenXY	6X	18S	2	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g58XY	ArmBR2	XY-GenXY	6XY	18Y	2	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g58Y	ArmBR2	Y-GenXY	6Y	18Y	2	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g59P	ArmBR2	XY-Symmetry	11P	9P	3	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0
g59X	ArmBR2	X-GenXY	11X	9X	3	4	1	1	1	5/8 A7	1	1	1	Long only	0	0	0	0	0

0	0	0																		
g59XY	ArmBR2	XY-GenXY	11X	9XY	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g59Y	ArmBR2	Y-GenXY	11P	9Y	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g60P	PMBR1	XY-Symmetry	1P	24P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g60X	PMBR1	X-GenXY	1X	24P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g60XY	PMBR1	XY-GenXY	1XY	24P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g60Y	PMBR1	Y-GenXY	1Y	24P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g61P	PMBR1	XY-Symmetry	3P	25P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g61X	PMBR1	X-GenXY	3X	25P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g61XY	PMBR1	XY-GenXY	3XY	25P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g61Y	PMBR1	Y-GenXY	3Y	25P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g62P	PMBR1	XY-Symmetry	7P	26P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g62X	PMBR1	X-GenXY	7X	26P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g62XY	PMBR1	XY-GenXY	7XY	26P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g62Y	PMBR1	Y-GenXY	7Y	26P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g63P	PMBR1	XY-Symmetry	10P	27P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g63X	PMBR1	X-GenXY	10X	27P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g63XY	PMBR1	XY-GenXY	10XY	27P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g63Y	PMBR1	Y-GenXY	10Y	27P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g64P	PMBR2	XY-Symmetry	15P	28P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g64X	PMBR2	X-GenXY	15X	28P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g64XY	PMBR2	XY-GenXY	15XY	28P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g64Y	PMBR2	Y-GenXY	15Y	28P	3	4	1	1	1 5/8 A7	1	1	1	Long only	0	0	0	0			
0	0	0																		
g65P	Powermnt	None	29P	28P	1	4	1	1	1	0	0	0		0	0	0	0			
0	0	0																		
g66P	Powermnt	None	28P	27P	1	4	1	1	1	0	0	0		0	0	0	0			
0	0	0																		
g67P	Powermnt	None	27P	26P	1	4	1	1	1	0	0	0		0	0	0	0			
0	0	0																		
g68P	Powermnt	None	26P	25P	1	4	1	1	1	0	0	0		0	0	0	0			
0	0	0																		
g69P	Powermnt	None	25P	24P	1	4	1	1	1	0	0	0		0	0	0	0			
0	0	0																		
g70P	Powermnt	None	24P	23P	1	4	1	1	1	0	0	0		0	0	0	0			
0	0	0																		
g71P	Powermnt	None	23P	22P	1	4	1	1	1	0	0	0		0	0	0	0			
0	0	0																		

g72P	fic1	X-Symmetry	30X	32X	1	4	1	1	1		0	0	0		0	0	0	0	0
g72X	fic1	X-Gen	30P	32P	1	4	1	1	1		0	0	0		0	0	0	0	0
g73P	fic1	Y-Symmetry	33P	31P	1	4	1	1	1		0	0	0		0	0	0	0	0
g73Y	fic1	Y-Gen	33Y	31Y	1	4	1	1	1		0	0	0		0	0	0	0	0
g74P	fic	X-Symmetry	32X	22P	1	4	1	1	1		0	0	0		0	0	0	0	0
g74X	fic	X-Gen	32P	22P	1	4	1	1	1		0	0	0		0	0	0	0	0
g75P	fic	X-Symmetry	30X	24P	1	4	1	1	1		0	0	0		0	0	0	0	0
g75X	fic	X-Gen	30P	24P	1	4	1	1	1		0	0	0		0	0	0	0	0
g76P	fic	Y-Symmetry	31P	24P	1	4	1	1	1		0	0	0		0	0	0	0	0
g76Y	fic	Y-Gen	31Y	24P	1	4	1	1	1		0	0	0		0	0	0	0	0
g77P	fic	Y-Symmetry	33P	22P	1	4	1	1	1		0	0	0		0	0	0	0	0
g77Y	fic	Y-Gen	33Y	22P	1	4	1	1	1		0	0	0		0	0	0	0	0
g78P	HBR5	XY-Symmetry	6X	19X	3	4	1	1	1	5/8 A7	1	1	1	Short only	0.875	0	1	0	0
g78X	HBR5	X-GenXY	6P	19S	3	4	1	1	1	5/8 A7	1	1	1	Short only	0.875	0	1	0	0
g78XY	HBR5	XY-GenXY	6Y	19S	3	4	1	1	1	5/8 A7	1	1	1	Short only	0.875	0	1	0	0
g78Y	HBR5	Y-GenXY	6XY	19X	3	4	1	1	1	5/8 A7	1	1	1	Short only	0.875	0	1	0	0

Member Capacities and Overrides:

Member	Group	Design	Comp.	Design	Tension	L/r	Length		L/r	Connection	Connection		Net	Rupture	RTE End	RTE Edge	Override	Override
Label	Label	Comp.	Control	Tension	Face					Comp.	Shear	Bearing	Section	Tension	Dist.	Dist.	Comp.	Warnings
		Capacity	Criterion	Capacity	Criterion					Capacity	Capacity	Capacity	Tension Capacity		Tension Capacity	Tension Capacity	Capacity	
Unsup.	Criterion	(kips)	Criterion	(kips)		(ft)				(kips)	(kips)	(kips)		(kips)			(kips)	
g1P	LEG1	53.509	L/r	41.332	Net Sect	75	5.00	53.509	0.000	0.000	41.332	0.000	0.000	0.000	0.000	0.000		
0.000		0.000	Automatic															
g1X	LEG1	53.509	L/r	41.332	Net Sect	75	5.00	53.509	0.000	0.000	41.332	0.000	0.000	0.000	0.000	0.000		
0.000		0.000	Automatic															
g1XY	LEG1	53.509	L/r	41.332	Net Sect	75	5.00	53.509	0.000	0.000	41.332	0.000	0.000	0.000	0.000	0.000		
0.000		0.000	Automatic															
g1Y	LEG1	53.509	L/r	41.332	Net Sect	75	5.00	53.509	0.000	0.000	41.332	0.000	0.000	0.000	0.000	0.000		
0.000		0.000	Automatic															
g2P	LEG1	48.884	L/r	41.332	Net Sect	91	6.00	48.884	0.000	0.000	41.332	0.000	0.000	0.000	0.000	0.000		

0.000		0.000		Automatic											
g2X	LEG1	48.884	L/r	41.332	Net Sect	91	6.00	48.884	0.000	0.000	41.332	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g2XY	LEG1	48.884	L/r	41.332	Net Sect	91	6.00	48.884	0.000	0.000	41.332	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g2Y	LEG1	48.884	L/r	41.332	Net Sect	91	6.00	48.884	0.000	0.000	41.332	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g3P	LEG1	60.236	L/r	52.676	Net Sect	45	3.00	60.236	0.000	0.000	52.676	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g3X	LEG1	60.236	L/r	52.676	Net Sect	45	3.00	60.236	0.000	0.000	52.676	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g3XY	LEG1	60.236	L/r	52.676	Net Sect	45	3.00	60.236	0.000	0.000	52.676	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g3Y	LEG1	60.236	L/r	52.676	Net Sect	45	3.00	60.236	0.000	0.000	52.676	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g4P	LEG1	60.236	L/r	41.332	Net Sect	45	3.00	60.236	0.000	0.000	41.332	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g4X	LEG1	60.236	L/r	41.332	Net Sect	45	3.00	60.236	0.000	0.000	41.332	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g4XY	LEG1	60.236	L/r	41.332	Net Sect	45	3.00	60.236	0.000	0.000	41.332	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g4Y	LEG1	60.236	L/r	41.332	Net Sect	45	3.00	60.236	0.000	0.000	41.332	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g5P	LEG1	53.509	L/r	52.676	Net Sect	75	5.00	53.509	0.000	0.000	52.676	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g5X	LEG1	53.509	L/r	52.676	Net Sect	75	5.00	53.509	0.000	0.000	52.676	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g5XY	LEG1	53.509	L/r	52.676	Net Sect	75	5.00	53.509	0.000	0.000	52.676	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g5Y	LEG1	53.509	L/r	52.676	Net Sect	75	5.00	53.509	0.000	0.000	52.676	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g6P	**LEG1**	**53.509**	**L/r**	**52.676**	**Net Sect**	**75**	**5.00**	**53.509**	**125.640**	**168.750**	**52.676**	**220.588**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g6P" 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. ??**										
g6X	**LEG1**	**53.509**	**L/r**	**52.676**	**Net Sect**	**75**	**5.00**	**53.509**	**125.640**	**168.750**	**52.676**	**220.588**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g6X" 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. ??**										
g6XY	**LEG1**	**53.509**	**L/r**	**52.676**	**Net Sect**	**75**	**5.00**	**53.509**	**125.640**	**168.750**	**52.676**	**220.588**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g6XY" 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. ??**										
g6Y	**LEG1**	**53.509**	**L/r**	**52.676**	**Net Sect**	**75**	**5.00**	**53.509**	**125.640**	**168.750**	**52.676**	**220.588**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g6Y" 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. ??**										
g7P	LEG2	65.816	L/r	65.020	Net Sect	77	5.05	65.816	0.000	0.000	65.020	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g7X	LEG2	65.816	L/r	65.020	Net Sect	77	5.05	65.816	0.000	0.000	65.020	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g7XY	LEG2	65.816	L/r	65.020	Net Sect	77	5.05	65.816	0.000	0.000	65.020	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g7Y	LEG2	65.816	L/r	65.020	Net Sect	77	5.05	65.816	0.000	0.000	65.020	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g8P	LEG2	59.927	L/r	65.020	Net Sect	92	6.06	59.927	0.000	0.000	65.020	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g8X	LEG2	59.927	L/r	65.020	Net Sect	92	6.06	59.927	0.000	0.000	65.020	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g8XY	LEG2	59.927	L/r	65.020	Net Sect	92	6.06	59.927	0.000	0.000	65.020	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g8Y	LEG2	59.927	L/r	65.020	Net Sect	92	6.06	59.927	0.000	0.000	65.020	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											

g9P	LEG2	55.441	L/r	64.878	Net Sect	102	6.72	55.441	104.700	175.781	64.878	160.845	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g9P" 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. ??												
g9X	LEG2	55.441	L/r	64.878	Net Sect	102	6.72	55.441	104.700	175.781	64.878	160.845	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g9X" 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. ??												
g9XY	LEG2	55.441	L/r	64.878	Net Sect	102	6.72	55.441	104.700	175.781	64.878	160.845	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g9XY" 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. ??												
g9Y	LEG2	55.441	L/r	64.878	Net Sect	102	6.72	55.441	104.700	175.781	64.878	160.845	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g9Y" 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. ??												
g10P	LEG3	59.964	L/r	77.364	Net Sect	112	14.77	59.964	104.700	210.937	77.364	281.250	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g10P" 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. ??												
g10X	LEG3	59.964	L/r	77.364	Net Sect	112	14.77	59.964	104.700	210.937	77.364	281.250	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g10X" 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. ??												
g10XY	LEG3	59.964	L/r	77.364	Net Sect	112	14.77	59.964	104.700	210.937	77.364	281.250	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g10XY" 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. ??												
g10Y	LEG3	59.964	L/r	77.364	Net Sect	112	14.77	59.964	104.700	210.937	77.364	281.250	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g10Y" 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. ??												
g11P	LEG3	59.809	L/r	77.364	Net Sect	113	22.43	59.809	104.700	210.937	77.364	193.014	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g11P" 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. ??												
g11X	LEG3	59.809	L/r	77.364	Net Sect	113	22.43	59.809	104.700	210.937	77.364	193.014	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g11X" 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. ??												
g11XY	LEG3	59.809	L/r	77.364	Net Sect	113	22.43	59.809	104.700	210.937	77.364	193.014	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g11XY" 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. ??												
g11Y	LEG3	59.809	L/r	77.364	Net Sect	113	22.43	59.809	104.700	210.937	77.364	193.014	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g11Y" 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. ??												
g12P	LEG2	65.558	L/r	65.020	Net Sect	77	5.10	65.558	104.700	175.781	65.020	103.401	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g12P" 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. ??												
g12X	LEG2	65.558	L/r	65.020	Net Sect	77	5.10	65.558	104.700	175.781	65.020	103.401	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g12X" 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. ??												
g12XY	LEG2	65.558	L/r	65.020	Net Sect	77	5.10	65.558	104.700	175.781	65.020	103.401	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g12XY" 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. ??												
g12Y	LEG2	65.558	L/r	65.020	Net Sect	77	5.10	65.558	104.700	175.781	65.020	103.401	0.000	0.000	0.000
0.000	0.000	Automatic	Member "g12Y" 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. ??												
g13P	XBR1	11.559	L/r	14.585	Net Sect	124	7.07	11.559	20.940	21.094	14.585	16.189	0.000	0.000	0.000
0.000	0.000	Automatic													
g13X	XBR1	11.559	L/r	14.585	Net Sect	124	7.07	11.559	20.940	21.094	14.585	16.189	0.000	0.000	0.000
0.000	0.000	Automatic													
g13XY	XBR1	11.559	L/r	14.585	Net Sect	124	7.07	11.559	20.940	21.094	14.585	16.189	0.000	0.000	0.000
0.000	0.000	Automatic													
g13Y	XBR1	11.559	L/r	14.585	Net Sect	124	7.07	11.559	20.940	21.094	14.585	16.189	0.000	0.000	0.000
0.000	0.000	Automatic													
g14P	XBR1	11.559	L/r	14.585	Net Sect	124	7.07	11.559	20.940	21.094	14.585	16.189	0.000	0.000	0.000
0.000	0.000	Automatic													

g14X	XBR1	11.559	L/r	14.585	Net Sect	124	7.07	11.559	20.940	21.094	14.585	16.189	0.000	0.000	0.000
0.000		0.000		Automatic											
g14XY	XBR1	11.559	L/r	14.585	Net Sect	124	7.07	11.559	20.940	21.094	14.585	16.189	0.000	0.000	0.000
0.000		0.000		Automatic											
g14Y	XBR1	11.559	L/r	14.585	Net Sect	124	7.07	11.559	20.940	21.094	14.585	16.189	0.000	0.000	0.000
0.000		0.000		Automatic											
g15P	**XBR2**	**17.275**	**L/r**	**22.901**	**Net Sect**	**121**	**7.81**	**17.275**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g15P" 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. ??**										
g15X	**XBR2**	**17.275**	**L/r**	**22.901**	**Net Sect**	**121**	**7.81**	**17.275**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g15X" 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. ??**										
g15XY	**XBR2**	**17.275**	**L/r**	**22.901**	**Net Sect**	**121**	**7.81**	**17.275**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g15XY" 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. ??**										
g15Y	**XBR2**	**17.275**	**L/r**	**22.901**	**Net Sect**	**121**	**7.81**	**17.275**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g15Y" 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. ??**										
g16P	**XBR2**	**17.275**	**L/r**	**22.901**	**Net Sect**	**121**	**7.81**	**17.275**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g16P" 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. ??**										
g16X	**XBR2**	**17.275**	**L/r**	**22.901**	**Net Sect**	**121**	**7.81**	**17.275**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g16X" 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. ??**										
g16XY	**XBR2**	**17.275**	**L/r**	**22.901**	**Net Sect**	**121**	**7.81**	**17.275**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g16XY" 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. ??**										
g16Y	**XBR2**	**17.275**	**L/r**	**22.901**	**Net Sect**	**121**	**7.81**	**17.275**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g16Y" 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. ??**										
g17P	**XBR3**	**17.255**	**L/r**	**22.901**	**Net Sect**	**121**	**3.91**	**17.255**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g17P" 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. ??**										
g17X	**XBR3**	**17.255**	**L/r**	**22.901**	**Net Sect**	**121**	**3.91**	**17.255**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g17X" 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. ??**										
g17XY	**XBR3**	**17.255**	**L/r**	**22.901**	**Net Sect**	**121**	**3.91**	**17.255**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g17XY" 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. ??**										
g17Y	**XBR3**	**17.255**	**L/r**	**22.901**	**Net Sect**	**121**	**3.91**	**17.255**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g17Y" 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. ??**										
g18P	**XBR3**	**17.255**	**L/r**	**22.901**	**Net Sect**	**121**	**3.91**	**17.255**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g18P" 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. ??**										
g18X	**XBR3**	**17.255**	**L/r**	**22.901**	**Net Sect**	**121**	**3.91**	**17.255**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g18X" 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. ??**										
g18XY	**XBR3**	**17.255**	**L/r**	**22.901**	**Net Sect**	**121**	**3.91**	**17.255**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g18XY" 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. ??**										
g18Y	**XBR3**	**17.255**	**L/r**	**22.901**	**Net Sect**	**121**	**3.91**	**17.255**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g18Y" 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. ??**										
g19P	**XBR3**	**17.255**	**L/r**	**22.901**	**Net Sect**	**121**	**3.91**	**17.255**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**	**Member "g19P" 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. ??**										
g19X	**XBR3**	**17.255**	**L/r**	**22.901**	**Net Sect**	**121**	**3.91**	**17.255**	**31.410**	**31.641**	**22.901**	**28.125**	**0.000**	**0.000**	**0.000**

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0.000             0.000          Automatic  Member "g19X" 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.  ??
  g19XY     XBR3   17.255       L/r   22.901  Net Sect     121   3.91   17.255     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic Member "g19XY" 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.  ??
   g19Y     XBR3   17.255       L/r   22.901  Net Sect     121   3.91   17.255     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g19Y" 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.  ??
   g20P     XBR3   17.255       L/r   22.901  Net Sect     121   3.91   17.255     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g20P" 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.  ??
   g20X     XBR3   17.255       L/r   22.901  Net Sect     121   3.91   17.255     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g20X" 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.  ??
  g20XY     XBR3   17.255       L/r   22.901  Net Sect     121   3.91   17.255     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic Member "g20XY" 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.  ??
   g20Y     XBR3   17.255       L/r   22.901  Net Sect     121   3.91   17.255     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g20Y" 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.  ??
   g21P     XBR2   18.986       L/r   22.901  Net Sect     109   7.07   18.986     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g21P" 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.  ??
   g21X     XBR2   18.986       L/r   22.901  Net Sect     109   7.07   18.986     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g21X" 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.  ??
  g21XY     XBR2   18.986       L/r   22.901  Net Sect     109   7.07   18.986     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic Member "g21XY" 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.  ??
   g21Y     XBR2   18.986       L/r   22.901  Net Sect     109   7.07   18.986     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g21Y" 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.  ??
   g22P     XBR2   18.986       L/r   22.901  Net Sect     109   7.07   18.986     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g22P" 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.  ??
   g22X     XBR2   18.986       L/r   22.901  Net Sect     109   7.07   18.986     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g22X" 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.  ??
  g22XY     XBR2   18.986       L/r   22.901  Net Sect     109   7.07   18.986     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic Member "g22XY" 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.  ??
   g22Y     XBR2   18.986       L/r   22.901  Net Sect     109   7.07   18.986     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g22Y" 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.  ??
   g23P     XBR2   18.986       L/r   22.901  Net Sect     109   7.07   18.986     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g23P" 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.  ??
   g23X     XBR2   18.986       L/r   22.901  Net Sect     109   7.07   18.986     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g23X" 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.  ??
  g23XY     XBR2   18.986       L/r   22.901  Net Sect     109   7.07   18.986     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic Member "g23XY" 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.  ??
   g23Y     XBR2   18.986       L/r   22.901  Net Sect     109   7.07   18.986     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g23Y" 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.  ??
   g24P     XBR2   18.986       L/r   22.901  Net Sect     109   7.07   18.986     31.410     31.641   22.901   28.125    0.000    0.000    0.000
0.000             0.000          Automatic  Member "g24P" will not be checked for block shear since more than one gage line exists (long edge
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distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
g24X XBR2 18.986 L/r 22.901 Net Sect 109 7.07 18.986 31.410 31.641 22.901 28.125 0.000 0.000 0.000
0.000 0.000 Automatic Member "g24X" 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. ??
g24XY XBR2 18.986 L/r 22.901 Net Sect 109 7.07 18.986 31.410 31.641 22.901 28.125 0.000 0.000 0.000
0.000 0.000 Automatic Member "g24XY" 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. ??
g24Y XBR2 18.986 L/r 22.901 Net Sect 109 7.07 18.986 31.410 31.641 22.901 28.125 0.000 0.000 0.000
0.000 0.000 Automatic Member "g24Y" 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. ??
g25P XBR4 12.533 L/r 15.240 Rupture 129 7.57 12.533 20.940 21.094 17.258 15.240 0.000 0.000 0.000
0.000 0.000 Automatic
g25X XBR4 12.533 L/r 15.240 Rupture 129 7.57 12.533 20.940 21.094 17.258 15.240 0.000 0.000 0.000
0.000 0.000 Automatic
g25XY XBR4 12.533 L/r 15.240 Rupture 129 7.57 12.533 20.940 21.094 17.258 15.240 0.000 0.000 0.000
0.000 0.000 Automatic
g25Y XBR4 12.533 L/r 15.240 Rupture 129 7.57 12.533 20.940 21.094 17.258 15.240 0.000 0.000 0.000
0.000 0.000 Automatic
g26P XBR4 12.533 L/r 15.240 Rupture 129 7.57 12.533 20.940 21.094 17.258 15.240 0.000 0.000 0.000
0.000 0.000 Automatic
g26X XBR4 12.533 L/r 15.240 Rupture 129 7.57 12.533 20.940 21.094 17.258 15.240 0.000 0.000 0.000
0.000 0.000 Automatic
g26XY XBR4 12.533 L/r 15.240 Rupture 129 7.57 12.533 20.940 21.094 17.258 15.240 0.000 0.000 0.000
0.000 0.000 Automatic
g26Y XBR4 12.533 L/r 15.240 Rupture 129 7.57 12.533 20.940 21.094 17.258 15.240 0.000 0.000 0.000
0.000 0.000 Automatic
g27P XBR5 11.661 L/r 18.750 Rupture 148 9.37 11.661 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g27X XBR5 11.661 L/r 18.750 Rupture 148 9.37 11.661 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g27XY XBR5 11.661 L/r 18.750 Rupture 148 9.37 11.661 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g27Y XBR5 11.661 L/r 18.750 Rupture 148 9.37 11.661 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g28P XBR5 11.661 L/r 18.750 Rupture 148 9.37 11.661 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g28X XBR5 11.661 L/r 18.750 Rupture 148 9.37 11.661 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g28XY XBR5 11.661 L/r 18.750 Rupture 148 9.37 11.661 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g28Y XBR5 11.661 L/r 18.750 Rupture 148 9.37 11.661 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g29P XBR5 8.819 L/r 18.750 Rupture 175 11.14 8.819 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g29X XBR5 8.819 L/r 18.750 Rupture 175 11.14 8.819 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g29XY XBR5 8.819 L/r 18.750 Rupture 175 11.14 8.819 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g29Y XBR5 8.819 L/r 18.750 Rupture 175 11.14 8.819 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g30P XBR5 8.819 L/r 18.750 Rupture 175 11.14 8.819 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g30X XBR5 8.819 L/r 18.750 Rupture 175 11.14 8.819 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g30XY XBR5 8.819 L/r 18.750 Rupture 175 11.14 8.819 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g30Y XBR5 8.819 L/r 18.750 Rupture 175 11.14 8.819 20.940 21.094 20.228 18.750 0.000 0.000 0.000
0.000 0.000 Automatic
g31P XBR6 2.257 L/r 19.041 Net Sect 384 18.81 2.257 20.940 28.125 19.041 24.820 0.000 0.000 0.000

0.000		0.000	Automatic											
g31X	XBR6	2.257	L/r 19.041	Net Sect	384	18.81	2.257	20.940	28.125	19.041	24.820	0.000	0.000	0.000
0.000		0.000	Automatic											
g31XY	XBR6	2.257	L/r 19.041	Net Sect	384	18.81	2.257	20.940	28.125	19.041	24.820	0.000	0.000	0.000
0.000		0.000	Automatic											
g31Y	XBR6	2.257	L/r 19.041	Net Sect	384	18.81	2.257	20.940	28.125	19.041	24.820	0.000	0.000	0.000
0.000		0.000	Automatic											
g32P	XBR6	2.257	L/r 19.041	Net Sect	384	18.81	2.257	20.940	28.125	19.041	24.820	0.000	0.000	0.000
0.000		0.000	Automatic											
g32X	XBR6	2.257	L/r 19.041	Net Sect	384	18.81	2.257	20.940	28.125	19.041	24.820	0.000	0.000	0.000
0.000		0.000	Automatic											
g32XY	XBR6	2.257	L/r 19.041	Net Sect	384	18.81	2.257	20.940	28.125	19.041	24.820	0.000	0.000	0.000
0.000		0.000	Automatic											
g32Y	XBR6	2.257	L/r 19.041	Net Sect	384	18.81	2.257	20.940	28.125	19.041	24.820	0.000	0.000	0.000
0.000		0.000	Automatic											
g33P	XBR7	1.061	L/r 14.585	Net Sect	499	27.92	1.061	20.940	21.094	14.585	17.420	0.000	0.000	0.000
0.000		0.000	Automatic											
g33X	XBR7	1.061	L/r 14.585	Net Sect	499	27.92	1.061	20.940	21.094	14.585	17.420	0.000	0.000	0.000
0.000		0.000	Automatic											
g33XY	XBR7	1.061	L/r 14.585	Net Sect	499	27.92	1.061	20.940	21.094	14.585	17.420	0.000	0.000	0.000
0.000		0.000	Automatic											
g33Y	XBR7	1.061	L/r 14.585	Net Sect	499	27.92	1.061	20.940	21.094	14.585	17.420	0.000	0.000	0.000
0.000		0.000	Automatic											
g34P	XBR7	1.061	L/r 14.585	Net Sect	499	27.92	1.061	20.940	21.094	14.585	17.420	0.000	0.000	0.000
0.000		0.000	Automatic											
g34X	XBR7	1.061	L/r 14.585	Net Sect	499	27.92	1.061	20.940	21.094	14.585	17.420	0.000	0.000	0.000
0.000		0.000	Automatic											
g34XY	XBR7	1.061	L/r 14.585	Net Sect	499	27.92	1.061	20.940	21.094	14.585	17.420	0.000	0.000	0.000
0.000		0.000	Automatic											
g34Y	XBR7	1.061	L/r 14.585	Net Sect	499	27.92	1.061	20.940	21.094	14.585	17.420	0.000	0.000	0.000
0.000		0.000	Automatic											
g35P	XBR3	9.860	L/r 7.717	Rupture	162	11.83	9.860	10.470	10.547	17.333	7.717	0.000	0.000	0.000
0.000		0.000	Automatic											
g35X	XBR3	9.860	L/r 7.717	Rupture	162	11.83	9.860	10.470	10.547	17.333	7.717	0.000	0.000	0.000
0.000		0.000	Automatic											
g35XY	XBR3	9.860	L/r 7.717	Rupture	162	11.83	9.860	10.470	10.547	17.333	7.717	0.000	0.000	0.000
0.000		0.000	Automatic											
g35Y	XBR3	9.860	L/r 7.717	Rupture	162	11.83	9.860	10.470	10.547	17.333	7.717	0.000	0.000	0.000
0.000		0.000	Automatic											
g36P	XBR3	9.860	L/r 7.717	Rupture	162	11.83	9.860	10.470	10.547	17.333	7.717	0.000	0.000	0.000
0.000		0.000	Automatic											
g36X	XBR3	9.860	L/r 7.717	Rupture	162	11.83	9.860	10.470	10.547	17.333	7.717	0.000	0.000	0.000
0.000		0.000	Automatic											
g36XY	XBR3	9.860	L/r 7.717	Rupture	162	11.83	9.860	10.470	10.547	17.333	7.717	0.000	0.000	0.000
0.000		0.000	Automatic											
g36Y	XBR3	9.860	L/r 7.717	Rupture	162	11.83	9.860	10.470	10.547	17.333	7.717	0.000	0.000	0.000
0.000		0.000	Automatic											
g37P	HBR1	5.799	L/r 7.717	Rupture	175	5.00	5.799	10.470	10.547	14.585	7.717	0.000	0.000	0.000
0.000		0.000	Automatic											
g37X	HBR1	5.799	L/r 7.717	Rupture	175	5.00	5.799	10.470	10.547	14.585	7.717	0.000	0.000	0.000
0.000		0.000	Automatic											
g38P	HBR1	5.799	L/r 7.717	Rupture	175	5.00	5.799	10.470	10.547	14.585	7.717	0.000	0.000	0.000
0.000		0.000	Automatic											
g38X	HBR1	5.799	L/r 7.717	Rupture	175	5.00	5.799	10.470	10.547	14.585	7.717	0.000	0.000	0.000
0.000		0.000	Automatic											
g39P	HBR1	5.799	L/r 7.717	Rupture	175	5.00	5.799	10.470	10.547	14.585	7.717	0.000	0.000	0.000
0.000		0.000	Automatic											
g39X	HBR1	5.799	L/r 7.717	Rupture	175	5.00	5.799	10.470	10.547	14.585	7.717	0.000	0.000	0.000
0.000		0.000	Automatic											

g40P	HBR1	5.799	L/r	7.717	Rupture	175	5.00	5.799	10.470	10.547	14.585	7.717	0.000	0.000	0.000
0.000		0.000		Automatic											
g40X	HBR1	5.799	L/r	7.717	Rupture	175	5.00	5.799	10.470	10.547	14.585	7.717	0.000	0.000	0.000
0.000		0.000		Automatic											
g41P	HBR2	10.470	Shear	7.717	Rupture	149	9.81	10.510	10.470	10.547	17.444	7.717	0.000	0.000	0.000
0.000		0.000		Automatic											
g41X	HBR2	10.470	Shear	7.717	Rupture	149	9.81	10.510	10.470	10.547	17.444	7.717	0.000	0.000	0.000
0.000		0.000		Automatic											
g42P	HBR2	10.470	Shear	7.717	Rupture	149	9.81	10.510	10.470	10.547	17.444	7.717	0.000	0.000	0.000
0.000		0.000		Automatic											
g42Y	HBR2	10.470	Shear	7.717	Rupture	149	9.81	10.510	10.470	10.547	17.444	7.717	0.000	0.000	0.000
0.000		0.000		Automatic											
g43P	HBR3	10.470	Shear	10.470	Shear	175	13.80	12.202	10.470	14.062	30.090	12.500	0.000	0.000	0.000
0.000		0.000		Automatic											
g43X	HBR3	10.470	Shear	10.470	Shear	175	13.80	12.202	10.470	14.062	30.090	12.500	0.000	0.000	0.000
0.000		0.000		Automatic											
g44P	HBR3	10.470	Shear	10.470	Shear	175	13.80	12.202	10.470	14.062	30.090	12.500	0.000	0.000	0.000
0.000		0.000		Automatic											
g44Y	HBR3	10.470	Shear	10.470	Shear	175	13.80	12.202	10.470	14.062	30.090	12.500	0.000	0.000	0.000
0.000		0.000		Automatic											
g45P	HBR4	10.470	Shear	10.470	Shear	188	10.00	13.759	10.470	14.062	37.663	12.500	0.000	0.000	0.000
0.000		0.000		Automatic											
g45X	HBR4	10.470	Shear	10.470	Shear	188	10.00	13.759	10.470	14.062	37.663	12.500	0.000	0.000	0.000
0.000		0.000		Automatic											
g45XY	HBR4	10.470	Shear	10.470	Shear	188	10.00	13.759	10.470	14.062	37.663	12.500	0.000	0.000	0.000
0.000		0.000		Automatic											
g45Y	HBR4	10.470	Shear	10.470	Shear	188	10.00	13.759	10.470	14.062	37.663	12.500	0.000	0.000	0.000
0.000		0.000		Automatic											
g46P	HBR4	10.470	Shear	10.470	Shear	188	10.00	13.759	10.470	14.062	37.663	12.500	0.000	0.000	0.000
0.000		0.000		Automatic											
g46X	HBR4	10.470	Shear	10.470	Shear	188	10.00	13.759	10.470	14.062	37.663	12.500	0.000	0.000	0.000
0.000		0.000		Automatic											
g46XY	HBR4	10.470	Shear	10.470	Shear	188	10.00	13.759	10.470	14.062	37.663	12.500	0.000	0.000	0.000
0.000		0.000		Automatic											
g46Y	HBR4	10.470	Shear	10.470	Shear	188	10.00	13.759	10.470	14.062	37.663	12.500	0.000	0.000	0.000
0.000		0.000		Automatic											
g47P	**Arm1**	**19.099**	**L/r**	**31.410**	**Shear**	**146**	**11.52**	**19.099**	**31.410**	**42.187**	**33.802**	**0.000**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**										**Unable to calculate**	
rupture capacity for member "g47P" because it has a long and short edge distance of 0. ??															
g47X	**Arm1**	**19.099**	**L/r**	**31.410**	**Shear**	**146**	**11.52**	**19.099**	**31.410**	**42.187**	**33.802**	**0.000**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**										**Unable to calculate**	
rupture capacity for member "g47X" because it has a long and short edge distance of 0. ??															
g47XY	**Arm1**	**19.099**	**L/r**	**31.410**	**Shear**	**146**	**11.52**	**19.099**	**31.410**	**42.187**	**33.802**	**0.000**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**										**Unable to calculate**	
rupture capacity for member "g47XY" because it has a long and short edge distance of 0. ??															
g47Y	**Arm1**	**19.099**	**L/r**	**31.410**	**Shear**	**146**	**11.52**	**19.099**	**31.410**	**42.187**	**33.802**	**0.000**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**										**Unable to calculate**	
rupture capacity for member "g47Y" because it has a long and short edge distance of 0. ??															
g48P	Arm1	26.226	L/r	43.230	Net Sect	114	5.00	26.226	0.000	0.000	43.230	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g48Y	Arm1	26.226	L/r	43.230	Net Sect	114	5.00	26.226	0.000	0.000	43.230	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g49P	**Arm1**	**28.509**	**L/r**	**31.410**	**Shear**	**97**	**7.67**	**28.509**	**31.410**	**42.187**	**33.802**	**0.000**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**										**Unable to calculate**	
rupture capacity for member "g49P" because it has a long and short edge distance of 0. ??															
g49X	**Arm1**	**28.509**	**L/r**	**31.410**	**Shear**	**97**	**7.67**	**28.509**	**31.410**	**42.187**	**33.802**	**0.000**	**0.000**	**0.000**	**0.000**
0.000		**0.000**		**Automatic**										**Unable to calculate**	
rupture capacity for member "g49X" because it has a long and short edge distance of 0. ??															
g49XY	**Arm1**	**28.509**	**L/r**	**31.410**	**Shear**	**97**	**7.67**	**28.509**	**31.410**	**42.187**	**33.802**	**0.000**	**0.000**	**0.000**	**0.000**

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0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g49XY" because it has a long and short edge distance of 0.  ??
   g49Y     Arm1   28.509       L/r   31.410     Shear      97   7.67   28.509     31.410     42.187   33.802    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g49Y" because it has a long and short edge distance of 0.  ??
   g50P     Arm1   26.226       L/r   43.230  Net Sect     114   5.00   26.226      0.000      0.000   43.230    0.000    0.000    0.000    0.000
0.000             0.000          Automatic
   g50Y     Arm1   26.226       L/r   43.230  Net Sect     114   5.00   26.226      0.000      0.000   43.230    0.000    0.000    0.000    0.000
0.000             0.000          Automatic
   g51P     Arm1   27.682       L/r   31.410     Shear     103   8.14   27.682     31.410     42.187   33.802    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g51P" because it has a long and short edge distance of 0.  ??
   g51X     Arm1   27.682       L/r   31.410     Shear     103   8.14   27.682     31.410     42.187   33.802    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g51X" because it has a long and short edge distance of 0.  ??
  g51XY     Arm1   27.682       L/r   31.410     Shear     103   8.14   27.682     31.410     42.187   33.802    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g51XY" because it has a long and short edge distance of 0.  ??
   g51Y     Arm1   27.682       L/r   31.410     Shear     103   8.14   27.682     31.410     42.187   33.802    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g51Y" because it has a long and short edge distance of 0.  ??
   g52P     Arm1   26.226       L/r   43.230  Net Sect     114   5.00   26.226      0.000      0.000   43.230    0.000    0.000    0.000    0.000
0.000             0.000          Automatic
   g52Y     Arm1   26.226       L/r   43.230  Net Sect     114   5.00   26.226      0.000      0.000   43.230    0.000    0.000    0.000    0.000
0.000             0.000          Automatic
   g53P     Arm2   24.527       L/r   31.410     Shear     132  12.01   24.527     31.410     42.187   37.663    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g53P" because it has a long and short edge distance of 0.  ??
   g53X     Arm2   24.527       L/r   31.410     Shear     132  12.01   24.527     31.410     42.187   37.663    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g53X" because it has a long and short edge distance of 0.  ??
  g53XY     Arm2   24.527       L/r   31.410     Shear     132  12.01   24.527     31.410     42.187   37.663    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g53XY" because it has a long and short edge distance of 0.  ??
   g53Y     Arm2   24.527       L/r   31.410     Shear     132  12.01   24.527     31.410     42.187   37.663    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g53Y" because it has a long and short edge distance of 0.  ??
   g54P     Arm2   29.359       L/r   47.520  Net Sect     110   5.00   29.359      0.000      0.000   47.520    0.000    0.000    0.000    0.000
0.000             0.000          Automatic
   g54Y     Arm2   29.359       L/r   47.520  Net Sect     110   5.00   29.359      0.000      0.000   47.520    0.000    0.000    0.000    0.000
0.000             0.000          Automatic
   g55P   ArmBR1   10.470     Shear   10.470     Shear     155   6.40   10.714     10.470     10.547   22.961    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g55P" because it has a long and short edge distance of 0.  ??
   g55X   ArmBR1   10.470     Shear   10.470     Shear     155   6.40   10.714     10.470     10.547   22.961    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g55X" because it has a long and short edge distance of 0.  ??
   g56P   ArmBR2    0.054       L/r    7.889  Net Sect    1522   9.15    0.054     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g56P" because it has a long and short edge distance of 0.  ??
   g56X   ArmBR2    0.054       L/r    7.889  Net Sect    1522   9.15    0.054     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g56X" because it has a long and short edge distance of 0.  ??
  g56XY   ArmBR2    0.054       L/r    7.889  Net Sect    1522   9.15    0.054     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
rupture capacity for member "g56XY" because it has a long and short edge distance of 0.  ??
   g56Y   ArmBR2    0.054       L/r    7.889  Net Sect    1522   9.15    0.054     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000             0.000          Automatic                                                                                  Unable to calculate
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rupture capacity for member "g56Y" because it has a long and short edge distance of 0.  ??
   g57P   ArmBR2    0.030       L/r    7.889  Net Sect    2058  12.38    0.030     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g57P" because it has a long and short edge distance of 0.  ??
   g57X   ArmBR2    0.030       L/r    7.889  Net Sect    2058  12.38    0.030     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g57X" because it has a long and short edge distance of 0.  ??
  g57XY   ArmBR2    0.030       L/r    7.889  Net Sect    2058  12.38    0.030     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                Unable to calculate
rupture capacity for member "g57XY" because it has a long and short edge distance of 0.  ??
   g57Y   ArmBR2    0.030       L/r    7.889  Net Sect    2058  12.38    0.030     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g57Y" because it has a long and short edge distance of 0.  ??
   g58P   ArmBR2    0.725       L/r    7.889  Net Sect     416   2.50    0.725     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g58P" because it has a long and short edge distance of 0.  ??
   g58X   ArmBR2    0.725       L/r    7.889  Net Sect     416   2.50    0.725     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g58X" because it has a long and short edge distance of 0.  ??
  g58XY   ArmBR2    0.725       L/r    7.889  Net Sect     416   2.50    0.725     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                Unable to calculate
rupture capacity for member "g58XY" because it has a long and short edge distance of 0.  ??
   g58Y   ArmBR2    0.725       L/r    7.889  Net Sect     416   2.50    0.725     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g58Y" because it has a long and short edge distance of 0.  ??
   g59P   ArmBR2    0.050       L/r    7.889  Net Sect    1588   9.56    0.050     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g59P" because it has a long and short edge distance of 0.  ??
   g59X   ArmBR2    0.050       L/r    7.889  Net Sect    1588   9.56    0.050     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g59X" because it has a long and short edge distance of 0.  ??
  g59XY   ArmBR2    0.050       L/r    7.889  Net Sect    1588   9.56    0.050     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                Unable to calculate
rupture capacity for member "g59XY" because it has a long and short edge distance of 0.  ??
   g59Y   ArmBR2    0.050       L/r    7.889  Net Sect    1588   9.56    0.050     10.470     14.062    7.889    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g59Y" because it has a long and short edge distance of 0.  ??
   g60P    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g60P" because it has a long and short edge distance of 0.  ??
   g60X    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g60X" because it has a long and short edge distance of 0.  ??
  g60XY    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                Unable to calculate
rupture capacity for member "g60XY" because it has a long and short edge distance of 0.  ??
   g60Y    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g60Y" because it has a long and short edge distance of 0.  ??
   g61P    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g61P" because it has a long and short edge distance of 0.  ??
   g61X    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g61X" because it has a long and short edge distance of 0.  ??
  g61XY    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                Unable to calculate
rupture capacity for member "g61XY" because it has a long and short edge distance of 0.  ??
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   g61Y    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g61Y" because it has a long and short edge distance of 0.  ??
   g62P    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g62P" because it has a long and short edge distance of 0.  ??
   g62X    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g62X" because it has a long and short edge distance of 0.  ??
  g62XY    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g62XY" because it has a long and short edge distance of 0.  ??
   g62Y    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g62Y" because it has a long and short edge distance of 0.  ??
   g63P    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g63P" because it has a long and short edge distance of 0.  ??
   g63X    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g63X" because it has a long and short edge distance of 0.  ??
  g63XY    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g63XY" because it has a long and short edge distance of 0.  ??
   g63Y    PMBR1   10.195   Bearing   10.195   Bearing      86   3.54   21.670     10.470     10.195   25.048    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g63Y" because it has a long and short edge distance of 0.  ??
   g64P    PMBR2   10.470    Shear   10.470    Shear     169   9.76   16.980     10.470     13.594   49.187    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g64P" because it has a long and short edge distance of 0.  ??
   g64X    PMBR2   10.470    Shear   10.470    Shear     169   9.76   16.980     10.470     13.594   49.187    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g64X" because it has a long and short edge distance of 0.  ??
  g64XY    PMBR2   10.470    Shear   10.470    Shear     169   9.76   16.980     10.470     13.594   49.187    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g64XY" because it has a long and short edge distance of 0.  ??
   g64Y    PMBR2   10.470    Shear   10.470    Shear     169   9.76   16.980     10.470     13.594   49.187    0.000    0.000    0.000    0.000
0.000              0.000           Automatic                                                                                  Unable to calculate
rupture capacity for member "g64Y" because it has a long and short edge distance of 0.  ??
   g65P Powermnt  115.298      L/r  729.999  Net Sect      74  27.00  115.298      0.000      0.000  729.999    0.000    0.000    0.000    0.000
0.000              0.000           Automatic
w/t equals 34.00 for member "g65P" which exceeds ASCE 10 section 3.7.1 limit of 25.  ??
   g66P Powermnt  113.390      L/r  729.999  Net Sect      88  32.00  113.390      0.000      0.000  729.999    0.000    0.000    0.000    0.000
0.000              0.000           Automatic
w/t equals 34.00 for member "g66P" which exceeds ASCE 10 section 3.7.1 limit of 25.  ??
   g67P Powermnt  119.367      L/r  729.999  Net Sect      27  10.00  119.367      0.000      0.000  729.999    0.000    0.000    0.000    0.000
0.000              0.000           Automatic
w/t equals 34.00 for member "g67P" which exceeds ASCE 10 section 3.7.1 limit of 25.  ??
   g68P Powermnt  119.082      L/r  729.999  Net Sect      33  12.00  119.082      0.000      0.000  729.999    0.000    0.000    0.000    0.000
0.000              0.000           Automatic
w/t equals 34.00 for member "g68P" which exceeds ASCE 10 section 3.7.1 limit of 25.  ??
   g69P Powermnt  119.852      L/r  729.999  Net Sect      14   5.00  119.852      0.000      0.000  729.999    0.000    0.000    0.000    0.000
0.000              0.000           Automatic
w/t equals 34.00 for member "g69P" which exceeds ASCE 10 section 3.7.1 limit of 25.  ??
   g70P Powermnt  119.490      L/r  729.999  Net Sect      25   9.00  119.490      0.000      0.000  729.999    0.000    0.000    0.000    0.000
0.000              0.000           Automatic
w/t equals 34.00 for member "g70P" which exceeds ASCE 10 section 3.7.1 limit of 25.  ??
   g71P Powermnt  119.490      L/r  729.999  Net Sect      25   9.00  119.490      0.000      0.000  729.999    0.000    0.000    0.000    0.000
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0.000 0.000 Automatic
w/t equals 34.00 for member "g71P" which exceeds ASCE 10 section 3.7.1 limit of 25. ??

g72P	fic1	0.000	L/r	3.600	Net Sect	2160000	18.00	0.000	0.000	0.000	3.600	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g72X	fic1	0.000	L/r	3.600	Net Sect	2160000	18.00	0.000	0.000	0.000	3.600	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g73P	fic1	0.000	L/r	3.600	Net Sect	2160000	18.00	0.000	0.000	0.000	3.600	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g73Y	fic1	0.000	L/r	3.600	Net Sect	2160000	18.00	0.000	0.000	0.000	3.600	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g74P	fic	0.000	L/r	3.600	Net Sect	60000	0.50	0.000	0.000	0.000	3.600	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g74X	fic	0.000	L/r	3.600	Net Sect	60000	0.50	0.000	0.000	0.000	3.600	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g75P	fic	0.000	L/r	3.600	Net Sect	60000	0.50	0.000	0.000	0.000	3.600	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g75X	fic	0.000	L/r	3.600	Net Sect	60000	0.50	0.000	0.000	0.000	3.600	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g76P	fic	0.000	L/r	3.600	Net Sect	60000	0.50	0.000	0.000	0.000	3.600	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g76Y	fic	0.000	L/r	3.600	Net Sect	60000	0.50	0.000	0.000	0.000	3.600	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g77P	fic	0.000	L/r	3.600	Net Sect	60000	0.50	0.000	0.000	0.000	3.600	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g77Y	fic	0.000	L/r	3.600	Net Sect	60000	0.50	0.000	0.000	0.000	3.600	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g78P	HBR5	10.470	Shear	7.717	Rupture	87	2.50	14.114	10.470	10.547	14.585	7.717	0.000	0.000	0.000
0.000		0.000		Automatic											
g78X	HBR5	10.470	Shear	7.717	Rupture	87	2.50	14.114	10.470	10.547	14.585	7.717	0.000	0.000	0.000
0.000		0.000		Automatic											
g78XY	HBR5	10.470	Shear	7.717	Rupture	87	2.50	14.114	10.470	10.547	14.585	7.717	0.000	0.000	0.000
0.000		0.000		Automatic											
g78Y	HBR5	10.470	Shear	7.717	Rupture	87	2.50	14.114	10.470	10.547	14.585	7.717	0.000	0.000	0.000
0.000		0.000		Automatic											

The model contains 253 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	0.0862	4.647	3.059
2P	0.0617	3.479	1.146
3P	0.115	6.231	5.377
4P	0.058	3.764	1.961
5P	0.0657	4.089	4.089
6P	0.0335	2.067	1.467
7P	0.113	6.408	4.695
8P	0.0773	5.196	1.299
9P	0.0835	5.357	5.092
10P	0.118	6.075	5.158
11P	0.0509	3.283	1.440
12P	0.0898	4.476	4.476
13P	0.109	5.559	5.559
14P	0.21	8.854	8.854
15P	0.384	14.948	14.948
16P	0.248	9.854	9.854

17P	0.0572	2.948	2.948
22P	0.223	4.785	4.785
23P	0.446	9.563	9.563
24P	0.369	8.483	8.483
25P	0.443	10.073	10.073
26P	0.567	12.729	12.729
27P	1.06	23.354	23.354
28P	1.58	35.370	35.370
29P	0.669	14.344	14.344
30P	4.62e-005	0.077	0.075
31P	4.62e-005	0.075	0.077
32P	4.62e-005	0.077	0.075
33P	4.62e-005	0.075	0.077
1X	0.0862	4.647	3.059
1XY	0.0862	4.647	3.059
1Y	0.0862	4.647	3.059
2X	0.0617	3.479	1.146
3X	0.115	6.231	5.377
3XY	0.115	6.231	5.377
3Y	0.115	6.231	5.377
4X	0.058	3.764	1.961
5X	0.0657	4.089	4.089
5XY	0.0657	4.089	4.089
5Y	0.0657	4.089	4.089
6X	0.0335	2.067	1.467
6XY	0.0335	2.067	1.467
6Y	0.0335	2.067	1.467
7X	0.113	6.408	4.695
7XY	0.113	6.408	4.695
7Y	0.113	6.408	4.695
8X	0.0773	5.196	1.299
9X	0.0835	5.357	5.092
9XY	0.0835	5.357	5.092
9Y	0.0835	5.357	5.092
10X	0.118	6.075	5.158
10XY	0.118	6.075	5.158
10Y	0.118	6.075	5.158
11X	0.0509	3.283	1.440
12X	0.0898	4.476	4.476
12XY	0.0898	4.476	4.476
12Y	0.0898	4.476	4.476
13X	0.109	5.559	5.559
13XY	0.109	5.559	5.559
13Y	0.109	5.559	5.559
14X	0.21	8.854	8.854
14XY	0.21	8.854	8.854
14Y	0.21	8.854	8.854
15X	0.384	14.948	14.948
15XY	0.384	14.948	14.948
15Y	0.384	14.948	14.948
16X	0.248	9.854	9.854
16XY	0.248	9.854	9.854
16Y	0.248	9.854	9.854
17X	0.0572	2.948	2.948
17XY	0.0572	2.948	2.948
17Y	0.0572	2.948	2.948
30X	4.62e-005	0.077	0.075
31Y	4.62e-005	0.075	0.077
32X	4.62e-005	0.077	0.075

33Y	4.62e-005	0.075	0.077
18S	0.0277	2.317	1.500
19S	0.0293	1.500	2.317
20S	0.0943	6.285	1.262
21S	0.0943	1.262	6.285
18Y	0.0277	2.317	1.500
19X	0.0293	1.500	2.317
20Y	0.0943	6.285	1.262
21X	0.0943	1.262	6.285
Total	13.2	499.536	456.034

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	1.210	35.575	25.783	7.325	1.700
2	5.307	251.672	217.963	118.987	93.298
3	6.669	212.288	212.288	120.189	120.189
Total	13.186	499.536	456.034	246.500	215.187

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	1.210	1.210	165.438	165.438
2	5.307	5.307	1026.649	1026.649
3	6.669	6.669	962.726	962.726
Total	13.186	13.186	2154.813	2154.813

Section Joint Information:

Section Label	Joint Label	Joint Elevation (ft)
1	1P	86.000
1	1Y	86.000
1	1X	86.000
1	1XY	86.000
1	2P	86.000
1	2X	86.000
1	24P	86.000
1	23P	95.000
1	22P	104.000
1	30X	86.000
1	32X	104.000
1	30P	86.000
1	32P	104.000
1	33P	104.000
1	31P	86.000
1	33Y	104.000
1	31Y	86.000
2	1P	86.000
2	3P	81.000
2	1X	86.000

2	3X	81.000
2	1XY	86.000
2	3XY	81.000
2	1Y	86.000
2	3Y	81.000
2	5P	75.000
2	5X	75.000
2	5XY	75.000
2	5Y	75.000
2	6P	72.000
2	6X	72.000
2	6XY	72.000
2	6Y	72.000
2	7P	69.000
2	7X	69.000
2	7XY	69.000
2	7Y	69.000
2	9P	64.000
2	9X	64.000
2	9XY	64.000
2	9Y	64.000
2	10P	59.000
2	10X	59.000
2	10XY	59.000
2	10Y	59.000
2	12P	54.047
2	12X	54.047
2	12XY	54.047
2	12Y	54.047
2	13P	48.105
2	13X	48.105
2	13XY	48.105
2	13Y	48.105
2	14P	41.500
2	14X	41.500
2	14XY	41.500
2	14Y	41.500
2	18S	72.000
2	18Y	72.000
2	19X	72.000
2	19S	72.000
2	4P	81.000
2	4X	81.000
2	11P	59.000
2	11X	59.000
2	8P	69.000
2	8X	69.000
2	2P	86.000
2	2X	86.000
2	25P	81.000
2	26P	69.000
2	27P	59.000
2	24P	86.000
3	14P	41.500
3	15P	27.000
3	14X	41.500
3	15X	27.000
3	14XY	41.500
3	15XY	27.000

3	14Y	41.500
3	15Y	27.000
3	16P	5.000
3	16X	5.000
3	16XY	5.000
3	16Y	5.000
3	17P	0.000
3	17X	0.000
3	17XY	0.000
3	17Y	0.000
3	20S	5.000
3	20Y	5.000
3	21X	5.000
3	21S	5.000
3	28P	27.000
3	29P	0.000
3	27P	59.000

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	104.000	86.000	17	26	1.00	5.00	36.000	1.00	27.50	137.250
2	86.000	41.500	56	173	5.00	9.81	264.882	27.50	9.81	431.382
3	41.500	0.000	23	54	9.81	21.39	646.560	9.81	21.39	646.560

*** Insulator Data

Clamp Properties:

Label	Stock Number	Holding Capacity (lbs)
clamp-prop#1		3e+004

Clamp Insulator Connectivity:

Clamp Label	Structure And Tip Attach	Property Set	Min. Required Vertical Load (uplift) (lbs)
1	2P	clamp-prop#1	No Limit
2	2X	clamp-prop#1	No Limit
3	4P	clamp-prop#1	No Limit
4	4X	clamp-prop#1	No Limit
5	8P	clamp-prop#1	No Limit
6	8X	clamp-prop#1	No Limit
7	11P	clamp-prop#1	No Limit
8	11X	clamp-prop#1	No Limit
14	16P	clamp-prop#1	No Limit
15	15P	clamp-prop#1	No Limit
16	14P	clamp-prop#1	No Limit
17	10P	clamp-prop#1	No Limit
18	7P	clamp-prop#1	No Limit
19	3X	clamp-prop#1	No Limit

20	1P	clamp-prop#1	No Limit
21	3P	clamp-prop#1	No Limit
22	1X	clamp-prop#1	No Limit
23	1XY	clamp-prop#1	No Limit
24	3XY	clamp-prop#1	No Limit
25	23P	clamp-prop#1	No Limit
26	24P	clamp-prop#1	No Limit
27	25P	clamp-prop#1	No Limit
28	26P	clamp-prop#1	No Limit
29	27P	clamp-prop#1	No Limit
30	28P	clamp-prop#1	No Limit
31	22P	clamp-prop#1	No Limit
32	7X	clamp-prop#1	No Limit
33	10X	clamp-prop#1	No Limit
34	14X	clamp-prop#1	No Limit
35	15X	clamp-prop#1	No Limit
36	16X	clamp-prop#1	No Limit
37	7Y	clamp-prop#1	No Limit
38	10Y	clamp-prop#1	No Limit
39	14Y	clamp-prop#1	No Limit
40	15Y	clamp-prop#1	No Limit
41	16Y	clamp-prop#1	No Limit
42	3Y	clamp-prop#1	No Limit

*** Loads Data

Loads from file: j:\jobs\1700400.wi\14_lower scort hill ct5145\04_structural\backup documentation\calcs\pls tower\876 w_ powermnt.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)	104.00	(ft)	
Structure height	104.00	(ft)	
Structure height above ground	104.00	(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 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 Joint Displ. (deg F)
NESC Heavy - Transverse	1.5000	2.5000	1.00000	1.0000	1.0000	1.0000	46 loads	Wind on Face	4	0	0.000	56.000	0.0
Extreme Wind - Transverse	1.0000	1.0000	1.00000	1.0000	1.0000	1.0000	46 loads	NESC 2012	31	0	0.000	56.000	0.0
NESC Heavy - Longitudinal	1.5000	2.5000	1.00000	1.0000	1.0000	1.0000	46 loads	Wind on Face	4	0	0.000	56.000	0.0
Extreme Wind - Longitudinal	1.0000	1.0000	1.00000	1.0000	1.0000	1.0000	46 loads	NESC 2012	31	0	0.000	56.000	0.0

Point Loads for Load Case "NESC Heavy - Transverse":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
2X	1362	821	0	Shield Wire
2P	2299	1067	0	Shield Wire
4P	2882	1179	0	Conductor
4X	2882	1179	0	Conductor
8P	2882	1179	0	Conductor
8X	2882	1179	0	Conductor
11P	2882	1179	0	Conductor
11X	2882	1179	0	Conductor
1P	174	57	0	AT&T Antennas
3P	174	57	0	AT&T Antennas
1X	174	57	0	AT&T Antennas
3X	174	57	0	AT&T Antennas
1XY	174	57	0	AT&T Antennas
3XY	174	57	0	AT&T Antennas
3P	276	103	0	AT&T Coax (on tower leg)

7P	506	189	0	AT&T Coax (on tower leg)
10P	621	232	0	AT&T Coax (on tower leg)
14P	736	275	0	AT&T Coax (on tower leg)
15P	851	318	0	AT&T Coax (on tower leg)
16P	736	275	0	AT&T Coax (on tower leg)
23P	47	0	0	Sprint Coax (within powermount)
24P	66	0	0	Sprint Coax (within powermount)
25P	80	0	0	Sprint Coax (within powermount)
26P	103	0	0	Sprint Coax (within powermount)
27P	197	0	0	Sprint Coax (within powermount)
28P	402	0	0	Sprint Coax (within powermount)
23P	172	0	0	T-Mobile Coax (on powermount exterior)
24P	241	0	0	T-Mobile Coax (on powermount exterior)
25P	293	0	0	T-Mobile Coax (on powermount exterior)
26P	379	0	0	T-Mobile Coax (on powermount exterior)
27P	723	0	0	T-Mobile Coax (on powermount exterior)
28P	1480	0	0	T-Mobile Coax (on powermount exterior)
22P	1529	390	0	Sprint Antennas
23P	1893	774	0	T-Mobile Antennas
3X	506	44	0	Sprint Coax (on tower leg)
7X	506	44	0	Sprint Coax (on tower leg)
10X	621	54	0	Sprint Coax (on tower leg)
14X	736	64	0	Sprint Coax (on tower leg)
15X	851	74	0	Sprint Coax (on tower leg)
16X	736	64	0	Sprint Coax (on tower leg)
3Y	189	37	0	T-Mobile Coax (on tower leg)
7Y	189	37	0	T-Mobile Coax (on tower leg)
10Y	232	46	0	T-Mobile Coax (on tower leg)
14Y	275	54	0	T-Mobile Coax (on tower leg)
15Y	318	63	0	T-Mobile Coax (on tower leg)
16Y	275	54	0	T-Mobile Coax (on tower leg)

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

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	104.00	86.00	95.00	10.00	10.00	3.200	54.4	0.00	3.200	0.0	0	1814
2	86.00	41.50	63.75	10.00	10.00	3.200	2985.5	0.00	3.200	0.0	0	7961
3	41.50	0.00	20.75	10.00	10.00	3.200	3846.0	0.00	3.200	0.0	0	10004

Point Loads for Load Case "Extreme Wind - Transverse":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
2X	343	483	0	Shield Wire
2P	709	1042	0	Shield Wire
4P	1024	1304	0	Conductor
4X	1024	1304	0	Conductor
8P	1024	1304	0	Conductor
8X	1024	1304	0	Conductor
11P	1024	1304	0	Conductor
11X	1024	1304	0	Conductor
1P	78	196	0	AT&T Antennas

3P	78	196	0	AT&T Antennas
1X	78	196	0	AT&T Antennas
3X	78	196	0	AT&T Antennas
1XY	78	196	0	AT&T Antennas
3XY	78	196	0	AT&T Antennas
3P	75	300	0	AT&T Coax (on tower leg)
7P	137	549	0	AT&T Coax (on tower leg)
10P	168	674	0	AT&T Coax (on tower leg)
14P	200	799	0	AT&T Coax (on tower leg)
15P	231	924	0	AT&T Coax (on tower leg)
16P	200	799	0	AT&T Coax (on tower leg)
23P	31	0	0	Sprint Coax (within powermount)
24P	44	0	0	Sprint Coax (within powermount)
25P	53	0	0	Sprint Coax (within powermount)
26P	69	0	0	Sprint Coax (within powermount)
27P	131	0	0	Sprint Coax (within powermount)
28P	268	0	0	Sprint Coax (within powermount)
23P	40	0	0	T-Mobile Coax (on powermount exterior)
24P	55	0	0	T-Mobile Coax (on powermount exterior)
25P	67	0	0	T-Mobile Coax (on powermount exterior)
26P	87	0	0	T-Mobile Coax (on powermount exterior)
27P	166	0	0	T-Mobile Coax (on powermount exterior)
28P	341	0	0	T-Mobile Coax (on powermount exterior)
22P	721	1484	0	Sprint Antennas
23P	810	2980	0	T-Mobile Antennas
3X	137	92	0	Sprint Coax (on tower leg)
7X	137	92	0	Sprint Coax (on tower leg)
10X	168	112	0	Sprint Coax (on tower leg)
14X	200	133	0	Sprint Coax (on tower leg)
15X	231	154	0	Sprint Coax (on tower leg)
16X	200	133	0	Sprint Coax (on tower leg)
3Y	44	72	0	T-Mobile Coax (on tower leg)
7Y	44	72	0	T-Mobile Coax (on tower leg)
10Y	53	88	0	T-Mobile Coax (on tower leg)
14Y	63	104	0	T-Mobile Coax (on tower leg)
15Y	73	120	0	T-Mobile Coax (on tower leg)
16Y	63	104	0	T-Mobile Coax (on tower leg)

Section Load Case Information (Code) for "Extreme Wind - Transverse":

Section Label	Z of Top (ft)	Z of Bottom (ft)	Ave. Elev. Above Ground (ft)	Res. Wind Pres. (psf)	Tran Wind Pres. (psf)	Tran Angle Face Area (ft^2)	Tran Round Face Area (ft^2)	Tran Gross Area (ft^2)	Tran Soli- dity Ratio	Tran Drag Coef	Tran Round Drag Coef	Tran Wind Load (lbs)	Long Adj. Wind Pres. (psf)	Long Angle Face Area (ft^2)	Long Round Face Area (ft^2)	Long Gross Area (ft^2)	Long Soli- dity Ratio	Long Angle Drag Coef	Long Round Drag Coef	Long Wind Load (lbs)	Ice Weight (lbs)	Total Weight (lbs)
1	104.00	86.00	95.00	31.51	31.51	1.25	0.45	36.00	0.047	3.200	2.000	154.4	0.00	6.88	0.45	137.25	0.053	3.200	2.000	0.0	0	1210
2	86.00	41.50	63.75	31.51	31.51	93.30	0.00	264.88	0.352	3.200	2.000	9407.9	0.00	118.99	0.00	431.38	0.276	3.200	2.000	0.0	0	5307
3	41.50	0.00	20.75	31.51	31.51	126.20	0.00	646.56	0.195	3.200	2.000	12725.5	0.00	126.20	0.00	646.56	0.195	3.200	2.000	0.0	0	6669

Point Loads for Load Case "NESC Heavy - Longitudinal":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
2X	1362	0	0	Shield Wire
2P	2299	0	0	Shield Wire
4P	2882	0	0	Conductor
4X	2882	0	0	Conductor
8P	2882	0	0	Conductor
8X	2882	0	0	Conductor
11P	2882	0	0	Conductor
11X	2882	0	0	Conductor
1P	174	0	57	AT&T Antennas
3P	174	0	57	AT&T Antennas
1X	174	0	57	AT&T Antennas
3X	174	0	57	AT&T Antennas
1XY	174	0	57	AT&T Antennas
3XY	174	0	57	AT&T Antennas
3P	276	0	103	AT&T Coax (on tower leg)
7P	506	0	189	AT&T Coax (on tower leg)
10P	621	0	232	AT&T Coax (on tower leg)
14P	736	0	275	AT&T Coax (on tower leg)
15P	851	0	318	AT&T Coax (on tower leg)
16P	736	0	275	AT&T Coax (on tower leg)
23P	47	0	0	Sprint Coax (within powermount)
24P	66	0	0	Sprint Coax (within powermount)
25P	80	0	0	Sprint Coax (within powermount)
26P	103	0	0	Sprint Coax (within powermount)
27P	197	0	0	Sprint Coax (within powermount)
28P	402	0	0	Sprint Coax (within powermount)
23P	172	0	69	T-Mobile Coax (on powermount exterior)
24P	241	0	96	T-Mobile Coax (on powermount exterior)
25P	293	0	117	T-Mobile Coax (on powermount exterior)
26P	379	0	151	T-Mobile Coax (on powermount exterior)
27P	723	0	288	T-Mobile Coax (on powermount exterior)
28P	1480	0	591	T-Mobile Coax (on powermount exterior)
22P	1529	0	390	Sprint Antennas
23P	1893	0	774	T-Mobile Antennas
3X	506	0	363	Sprint Coax (on tower leg)
7X	506	0	363	Sprint Coax (on tower leg)
10X	621	0	446	Sprint Coax (on tower leg)
14X	736	0	528	Sprint Coax (on tower leg)
15X	851	0	611	Sprint Coax (on tower leg)
16X	736	0	528	Sprint Coax (on tower leg)
3Y	189	0	151	T-Mobile Coax (on tower leg)
7Y	189	0	151	T-Mobile Coax (on tower leg)
10Y	232	0	185	T-Mobile Coax (on tower leg)
14Y	275	0	220	T-Mobile Coax (on tower leg)
15Y	318	0	254	T-Mobile Coax (on tower leg)
16Y	275	0	220	T-Mobile Coax (on tower leg)

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

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	104.00	86.00	95.00	10.00	10.00	3.200	54.4	0.00	3.200	0.0	0	1814
2	86.00	41.50	63.75	10.00	10.00	3.200	2985.5	0.00	3.200	0.0	0	7961
3	41.50	0.00	20.75	10.00	10.00	3.200	3846.0	0.00	3.200	0.0	0	10004

Point Loads for Load Case "Extreme Wind - Longitudinal":

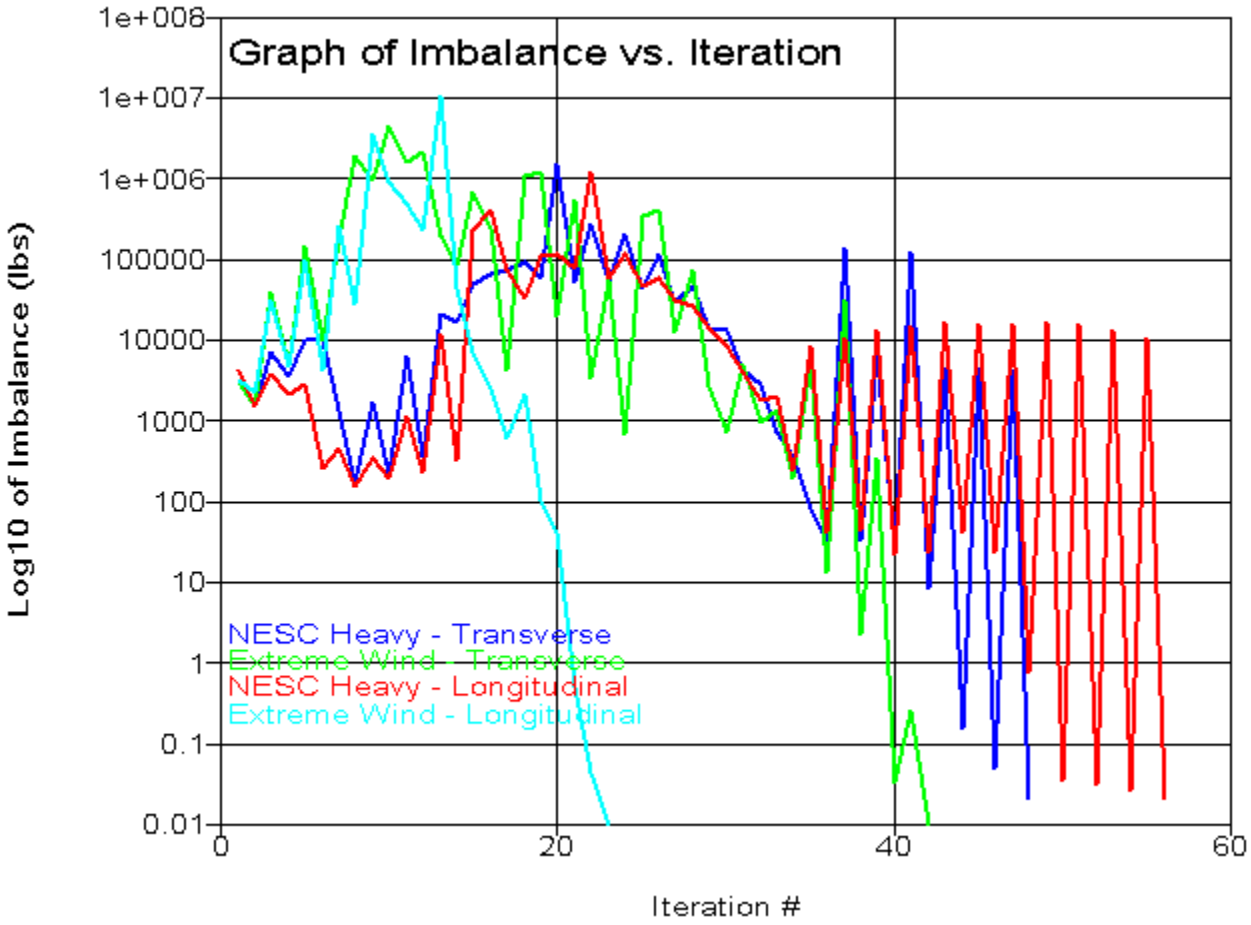
Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
2X	343	0	0	Shield Wire
2P	709	0	0	Shield Wire
4P	1024	0	0	Conductor
4X	1024	0	0	Conductor
8P	1024	0	0	Conductor
8X	1024	0	0	Conductor
11P	1024	0	0	Conductor
11X	1024	0	0	Conductor
1P	78	0	196	AT&T Antennas
3P	78	0	196	AT&T Antennas
1X	78	0	196	AT&T Antennas
3X	78	0	196	AT&T Antennas
1XY	78	0	196	AT&T Antennas
3XY	78	0	196	AT&T Antennas
3P	75	0	300	AT&T Coax (on tower leg)
7P	137	0	549	AT&T Coax (on tower leg)
10P	168	0	674	AT&T Coax (on tower leg)
14P	200	0	799	AT&T Coax (on tower leg)
15P	231	0	924	AT&T Coax (on tower leg)
16P	200	0	799	AT&T Coax (on tower leg)
23P	31	0	0	Sprint Coax (within powermount)
24P	44	0	0	Sprint Coax (within powermount)
25P	53	0	0	Sprint Coax (within powermount)
26P	69	0	0	Sprint Coax (within powermount)
27P	131	0	0	Sprint Coax (within powermount)
28P	268	0	0	Sprint Coax (within powermount)
23P	40	0	195	T-Mobile Coax (on powermount exterior)
24P	55	0	274	T-Mobile Coax (on powermount exterior)
25P	67	0	332	T-Mobile Coax (on powermount exterior)
26P	87	0	430	T-Mobile Coax (on powermount exterior)
27P	166	0	821	T-Mobile Coax (on powermount exterior)
28P	341	0	1680	T-Mobile Coax (on powermount exterior)
22P	721	0	1484	Sprint Antennas
23P	810	0	2980	T-Mobile Antennas
3X	137	0	1098	Sprint Coax (on tower leg)
7X	137	0	1098	Sprint Coax (on tower leg)
10X	168	0	1348	Sprint Coax (on tower leg)
14X	200	0	1597	Sprint Coax (on tower leg)
15X	231	0	1847	Sprint Coax (on tower leg)
16X	200	0	1597	Sprint Coax (on tower leg)
3Y	44	0	430	T-Mobile Coax (on tower leg)
7Y	44	0	430	T-Mobile Coax (on tower leg)
10Y	53	0	528	T-Mobile Coax (on tower leg)
14Y	63	0	625	T-Mobile Coax (on tower leg)
15Y	73	0	723	T-Mobile Coax (on tower leg)
16Y	63	0	625	T-Mobile Coax (on tower leg)

Section Load Case Information (Code) for "Extreme Wind - Longitudinal":

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 Round Face Area (ft^2)	Tran Gross Area (ft^2)	Tran Soli- dity Ratio	Tran Angle Drag Coef	Tran Round Drag Coef	Tran Wind Load (lbs)	Long Adj. Wind Pres. (psf)	Long Angle Face Area (ft^2)	Long Round Face Area (ft^2)	Long Gross Area (ft^2)	Long Soli- dity Ratio	Long Angle Drag Coef	Long Round Drag Coef	Long Wind Load (lbs)	Ice Weight (lbs)	Total Weight
1	104.00	86.00	95.00	31.51	31.51	1.25	0.45	36.00	0.047	3.200	2.000	154.4	0.00	6.88	0.45	137.25	0.053	3.200	2.000	0.0	0	1210
2	86.00	41.50	63.75	31.51	31.51	93.30	0.00	264.88	0.352	3.200	2.000	9407.9	0.00	118.99	0.00	431.38	0.276	3.200	2.000	0.0	0	5307
3	41.50	0.00	20.75	31.51	31.51	126.20	0.00	646.56	0.195	3.200	2.000	12725.5	0.00	126.20	0.00	646.56	0.195	3.200	2.000	0.0	0	6669

*** Analysis Results:

Maximum element usage is 98.43% for Angle "g11X" in load case "Extreme Wind - Transverse"
Maximum insulator usage is 14.67% for Clamp "30" in load case "NESC Heavy - Longitudinal"



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)	LC 3 (kips)	LC 4 (kips)
LEG1	g1P	8.69	3.105	-4.650	-1.475	3.105	-3.880	-4.650
LEG1	g1X	9.24	0.000	-4.944	-2.906	-4.944	-2.597	-4.923
LEG1	g1XY	9.26	2.725	-4.956	-2.920	-4.956	-0.558	2.725
LEG1	g1Y	7.67	3.169	-1.662	-1.315	3.169	-1.662	3.027

LEG1	g2P	30.26	12.508	-9.218	1.912	12.508	-5.652	-9.218
LEG1	g2X	24.46	0.000	-11.957	-6.475	-11.957	-4.760	-11.306
LEG1	g2XY	24.12	9.824	-11.790	-5.990	-11.790	1.481	9.824
LEG1	g2Y	30.80	12.732	0.000	2.375	12.732	0.563	12.004
LEG1	g3P	32.24	16.985	-14.791	3.418	16.985	-8.769	-14.791
LEG1	g3X	37.17	0.000	-22.389	-11.291	-22.389	-7.376	-20.223
LEG1	g3XY	36.89	9.564	-22.221	-10.841	-22.221	1.369	9.564
LEG1	g3Y	32.77	17.261	-0.018	3.936	17.261	-0.018	14.952
LEG1	g4P	39.53	16.338	-15.429	1.872	16.338	-10.311	-15.429
LEG1	g4X	38.22	0.000	-23.022	-12.830	-23.022	-8.921	-20.865
LEG1	g4XY	37.96	8.909	-22.865	-12.385	-22.865	-0.179	8.909
LEG1	g4Y	40.21	16.621	-1.569	2.391	16.621	-1.569	14.291
LEG1	g5P	51.36	27.056	-16.593	6.504	27.056	-11.344	-16.593
LEG1	g5X	59.58	0.000	-31.881	-18.715	-31.881	-12.324	-28.662
LEG1	g5XY	59.86	12.924	-32.030	-17.973	-32.030	0.196	12.924
LEG1	g5Y	52.87	27.852	0.000	7.482	27.852	0.612	23.118
LEG1	g6P	63.70	33.556	-18.118	9.068	33.556	-12.966	-18.118
LEG1	g6X	74.10	0.000	-39.651	-23.895	-39.651	-15.726	-36.560
LEG1	g6XY	76.26	14.643	-40.805	-23.531	-40.805	-0.388	14.643
LEG1	g6Y	66.99	35.288	0.000	10.353	35.288	0.955	28.218
LEG2	g7P	60.50	39.339	-18.446	12.811	39.339	-12.733	-18.446
LEG2	g7X	67.38	0.000	-44.345	-26.702	-44.345	-17.513	-41.777
LEG2	g7XY	69.50	16.392	-45.745	-26.160	-45.745	0.602	16.392
LEG2	g7Y	63.68	41.407	0.000	14.465	41.407	3.528	33.816
LEG2	g8P	64.75	42.102	-18.882	14.231	42.102	-13.387	-18.882
LEG2	g8X	81.51	0.000	-48.848	-30.328	-48.848	-19.564	-45.007
LEG2	g8XY	83.10	14.982	-49.801	-29.822	-49.801	-0.845	14.982
LEG2	g8Y	67.50	43.891	0.000	15.952	43.891	3.941	36.365
LEG2	g9P	64.53	41.867	-16.899	15.059	41.867	-12.127	-16.899
LEG2	g9X	85.84	0.000	-47.593	-29.890	-47.593	-19.417	-43.942
LEG2	g9XY	87.38	13.076	-48.446	-29.827	-48.446	-1.683	13.076
LEG2	g9Y	66.64	43.234	0.000	16.421	43.234	4.559	36.281
LEG3	g10P	49.07	37.962	-18.878	12.998	37.962	-12.941	-18.878
LEG3	g10X	89.32	0.000	-53.559	-33.888	-53.559	-20.981	-49.618
LEG3	g10XY	88.19	8.164	-52.881	-31.399	-52.881	-1.700	8.164
LEG3	g10Y	51.07	39.511	0.000	16.393	39.511	5.389	35.775
LEG3	g11P	53.70	41.548	-21.631	13.825	41.548	-15.688	-21.631
LEG3	g11X	98.43	0.000	-58.872	-37.708	-58.872	-25.157	-52.876
LEG3	g11XY	93.15	4.555	-55.712	-35.028	-55.712	-6.072	4.555
LEG3	g11Y	54.03	41.801	0.000	15.233	41.801	4.901	40.883
LEG2	g12P	76.83	49.952	-21.032	16.929	49.952	-15.917	-21.032
LEG2	g12X	90.37	0.000	-59.243	-38.795	-59.243	-26.257	-53.255
LEG2	g12XY	85.24	5.779	-55.880	-35.368	-55.880	-6.103	5.779
LEG2	g12Y	78.28	50.897	0.000	17.101	47.718	7.996	50.897
XBR1	g13P	53.05	0.118	-6.132	-1.807	-6.132	0.118	-0.863
XBR1	g13X	39.05	5.696	-1.091	1.039	5.696	-1.091	-0.354
XBR1	g13XY	38.95	5.681	-0.848	1.048	5.681	-0.848	0.489
XBR1	g13Y	52.39	0.326	-6.056	-1.781	-6.056	0.326	-0.096
XBR1	g14P	37.47	5.465	-0.283	-0.283	-0.221	1.323	5.465
XBR1	g14X	36.89	5.380	0.000	0.004	0.429	1.253	5.380
XBR1	g14XY	44.72	0.381	-5.169	-0.006	0.381	-1.585	-5.169
XBR1	g14Y	44.59	0.000	-5.155	-0.273	-0.199	-1.524	-5.155
XBR2	g15P	26.89	0.196	-4.645	-2.210	-4.645	0.196	-0.160
XBR2	g15X	23.70	5.429	0.000	2.900	5.429	0.588	1.380
XBR2	g15XY	22.74	5.207	0.000	2.858	5.207	0.584	1.287
XBR2	g15Y	25.58	0.002	-4.419	-2.160	-4.419	0.002	-0.886
XBR2	g16P	20.15	1.094	-2.466	-1.074	-2.466	0.039	1.094
XBR2	g16X	17.12	0.808	-2.096	-1.811	-2.096	-0.966	0.808
XBR2	g16XY	44.16	0.000	-5.405	-1.898	-2.359	-2.785	-5.405

XBR2 g16Y	46.20	0.000	-5.655	-1.007	-2.247	-1.942	-5.655
XBR3 g17P	32.66	0.000	-5.636	-3.016	-5.636	-0.877	-2.142
XBR3 g17X	21.05	4.820	-0.262	2.201	4.820	-0.262	0.268
XBR3 g17XY	20.12	4.607	0.000	2.161	4.607	0.175	1.481
XBR3 g17Y	31.30	0.000	-5.401	-2.960	-5.401	-0.619	-1.155
XBR3 g18P	23.58	5.400	0.000	0.723	1.747	1.792	5.400
XBR3 g18X	22.90	5.245	0.000	1.929	2.754	2.610	5.245
XBR3 g18XY	10.88	2.492	-0.709	1.845	2.492	0.865	-0.709
XBR3 g18Y	8.58	1.965	-1.059	0.791	1.965	-0.116	-1.059
XBR3 g19P	23.15	5.301	-0.273	2.257	5.301	-0.273	0.601
XBR3 g19X	36.20	0.000	-6.247	-3.130	-6.247	-0.923	-2.599
XBR3 g19XY	35.14	0.000	-6.064	-3.090	-6.064	-0.647	-1.568
XBR3 g19Y	22.45	5.141	0.000	2.233	5.141	0.148	1.772
XBR3 g20P	8.29	1.899	-1.311	0.760	1.899	-0.195	-1.311
XBR3 g20X	10.63	2.434	-0.951	1.814	2.434	0.786	-0.951
XBR3 g20XY	23.41	5.362	0.000	1.904	2.694	2.632	5.362
XBR3 g20Y	24.13	5.527	0.000	0.697	1.691	1.813	5.527
XBR2 g21P	31.57	0.703	-5.995	-2.078	-5.995	0.703	-1.600
XBR2 g21X	31.06	7.113	0.000	4.845	7.113	1.828	2.477
XBR2 g21XY	30.71	7.034	0.000	4.888	7.034	2.083	2.597
XBR2 g21Y	30.81	1.028	-5.850	-2.018	-5.850	1.028	-1.041
XBR2 g22P	17.92	4.104	0.000	0.144	0.474	1.020	4.104
XBR2 g22X	11.83	2.710	-0.874	-0.740	-0.874	0.588	2.710
XBR2 g22XY	19.52	0.000	-3.706	-0.930	-1.505	-1.368	-3.706
XBR2 g22Y	20.97	1.156	-3.982	0.373	1.156	-1.377	-3.982
XBR2 g23P	32.62	0.306	-6.193	-2.112	-6.193	0.306	-3.007
XBR2 g23X	31.14	7.131	0.000	4.927	7.131	1.675	1.532
XBR2 g23XY	31.63	7.243	0.000	5.013	7.243	2.468	3.833
XBR2 g23Y	33.04	1.307	-6.273	-2.130	-6.273	1.307	-0.251
XBR2 g24P	17.12	3.921	-1.798	-1.511	-1.798	0.526	3.921
XBR2 g24X	16.57	3.795	0.000	0.138	1.612	0.558	3.795
XBR2 g24XY	17.79	1.030	-3.378	-0.060	1.030	-1.757	-3.378
XBR2 g24Y	25.87	0.000	-4.912	-1.326	-1.199	-2.181	-4.912
XBR4 g25P	21.65	0.000	-2.351	-1.892	-1.370	-1.662	-2.351
XBR4 g25X	11.13	0.433	-1.208	0.355	0.433	-0.596	-1.208
XBR4 g25XY	13.72	2.091	-0.108	0.449	-0.108	0.485	2.091
XBR4 g25Y	12.39	0.000	-1.553	-1.553	-0.606	-0.958	-0.138
XBR4 g26P	26.22	0.000	-2.848	-1.599	-2.848	-0.234	-0.871
XBR4 g26X	14.94	2.278	-0.159	0.827	2.278	-0.159	0.088
XBR4 g26XY	12.99	1.980	-0.015	0.873	1.980	-0.015	0.743
XBR4 g26Y	22.52	0.000	-2.446	-1.218	-2.446	-0.080	-0.361
XBR5 g27P	4.90	0.645	-0.572	-0.515	-0.572	0.195	0.645
XBR5 g27X	9.91	1.857	0.000	1.312	1.104	1.140	1.857
XBR5 g27XY	5.52	1.035	0.000	1.035	0.491	0.642	0.356
XBR5 g27Y	15.13	0.000	-1.765	-0.610	-0.159	-0.613	-1.765
XBR5 g28P	9.24	1.733	-0.005	0.845	1.733	-0.005	0.152
XBR5 g28X	14.95	0.000	-1.329	-0.632	-1.329	-0.052	-0.617
XBR5 g28XY	17.58	0.077	-1.563	-0.598	-1.563	0.077	-0.066
XBR5 g28Y	10.77	2.019	0.000	1.127	2.019	0.138	0.648
XBR5 g29P	23.11	0.000	-1.597	-1.264	-1.322	-1.005	-1.597
XBR5 g29X	4.08	0.766	-0.116	0.496	0.766	-0.070	-0.116
XBR5 g29XY	7.83	1.467	0.000	0.573	0.456	0.470	1.467
XBR5 g29Y	11.57	0.000	-1.020	-1.020	-0.838	-0.670	-0.653
XBR5 g30P	20.13	0.000	-1.391	-0.800	-1.391	-0.057	-0.352
XBR5 g30X	5.12	0.960	-0.036	0.350	0.960	-0.036	0.086
XBR5 g30XY	4.13	0.774	0.000	0.373	0.774	0.000	0.284
XBR5 g30Y	15.84	0.000	-1.094	-0.536	-1.094	-0.013	-0.231
XBR6 g31P	0.00	0.000	0.000	0.000	0.000	0.000	0.000
XBR6 g31X	25.94	4.940	0.000	2.323	4.940	1.171	3.253

XBR6 g31XY	26.25	4.999	-0.212	-0.212	3.043	0.879	4.999
XBR6 g31Y	91.56	0.988	-2.066	-2.066	0.000	-0.591	0.988
XBR6 g32P	59.47	1.766	-1.342	0.000	0.000	-1.342	1.766
XBR6 g32X	28.57	5.440	-0.381	1.948	5.440	-0.381	1.895
XBR6 g32XY	39.60	5.285	-0.894	2.059	5.285	-0.894	0.293
XBR6 g32Y	80.89	0.376	-1.826	0.376	0.339	-1.826	0.000
XBR7 g33P	0.00	0.000	0.000	0.000	0.000	0.000	0.000
XBR7 g33X	42.73	6.233	0.000	3.284	6.233	1.136	1.473
XBR7 g33XY	46.91	6.842	0.000	1.712	3.057	2.825	6.842
XBR7 g33Y	0.00	0.000	0.000	0.000	0.000	0.000	0.000
XBR7 g34P	12.49	1.821	0.000	0.000	0.000	0.427	1.821
XBR7 g34X	42.76	6.236	0.000	1.497	4.946	1.888	6.236
XBR7 g34XY	34.51	5.033	0.000	2.042	5.033	0.000	0.000
XBR7 g34Y	0.00	0.000	0.000	0.000	0.000	0.000	0.000
XBR3 g35P	42.12	3.250	0.000	1.179	3.250	0.349	1.340
XBR3 g35X	39.92	0.000	-3.937	-1.538	-3.937	-0.724	-2.080
XBR3 g35XY	34.99	0.000	-3.450	-0.975	-2.627	-1.180	-3.450
XBR3 g35Y	36.77	2.838	0.000	0.624	1.951	0.848	2.838
XBR3 g36P	19.51	0.000	-1.924	-0.146	-0.539	-0.558	-1.924
XBR3 g36X	27.39	0.096	-2.701	0.096	-0.071	-0.890	-2.701
XBR3 g36XY	31.21	2.408	-0.267	-0.267	-0.148	0.676	2.408
XBR3 g36Y	11.80	0.911	-0.549	-0.253	-0.549	0.204	0.911
HBR1 g37P	73.82	0.000	-4.281	-2.576	-4.281	-1.663	-0.707
HBR1 g37X	40.66	3.137	-1.327	-0.387	3.137	-1.327	-0.496
HBR1 g38P	50.48	3.895	0.000	3.463	3.895	2.769	1.651
HBR1 g38X	25.06	1.934	-0.813	1.135	-0.813	1.934	1.822
HBR1 g39P	14.97	1.155	-0.268	1.155	0.214	0.796	-0.268
HBR1 g39X	20.51	1.582	-1.037	1.047	-1.037	1.582	-0.065
HBR1 g40P	34.70	2.678	0.000	1.826	2.678	0.627	0.539
HBR1 g40X	36.65	1.068	-2.126	-0.141	-2.126	1.068	0.376
HBR2 g41P	43.20	0.391	-4.523	-1.799	-4.523	0.391	-0.910
HBR2 g41X	17.28	1.334	0.000	0.192	0.600	1.334	0.260
HBR2 g42P	19.54	0.000	-2.045	-0.953	-2.045	-0.329	-0.708
HBR2 g42Y	23.81	0.760	-2.493	0.760	-1.128	-0.207	-2.493
HBR3 g43P	45.17	0.000	-4.729	-1.912	-4.729	-0.421	-1.774
HBR3 g43X	11.95	1.251	0.000	0.437	1.148	1.251	0.757
HBR3 g44P	23.86	0.000	-2.498	-1.651	-2.498	-0.812	-0.292
HBR3 g44Y	30.52	0.265	-3.196	0.265	-0.583	-1.174	-3.196
HBR4 g45P	47.68	0.000	-4.992	-2.492	-4.992	-1.068	-1.649
HBR4 g45X	9.11	0.954	-0.098	-0.035	0.954	-0.098	0.890
HBR4 g45XY	8.30	0.869	-0.053	0.008	0.869	-0.053	0.737
HBR4 g45Y	41.98	0.000	-4.396	-1.439	-2.717	-1.887	-4.396
HBR4 g46P	26.31	0.646	-2.755	-1.237	-2.755	0.118	0.646
HBR4 g46X	16.09	1.685	-0.058	-0.058	0.166	0.433	1.685
HBR4 g46XY	8.40	0.176	-0.879	0.039	0.176	-0.256	-0.879
HBR4 g46Y	37.96	0.000	-3.975	-0.909	-2.685	-1.298	-3.975
Arm1 g47P	3.01	0.947	-0.282	0.400	-0.282	0.947	0.253
Arm1 g47X	3.23	1.014	0.000	1.014	0.544	0.587	0.292
Arm1 g47XY	3.24	1.019	0.000	1.019	0.548	0.601	0.306
Arm1 g47Y	3.09	0.970	-0.271	0.409	-0.271	0.970	0.279
Arm1 g48P	13.72	5.933	0.000	4.207	1.513	5.411	5.933
Arm1 g48Y	9.97	4.236	-2.614	4.236	1.594	3.133	-2.614
Arm1 g49P	20.18	0.000	-5.752	-5.752	-2.662	-5.224	-2.320
Arm1 g49X	14.35	0.000	-4.092	-3.345	-0.642	-4.092	-1.736
Arm1 g49XY	13.61	0.000	-3.879	-3.342	-0.650	-3.879	-0.992
Arm1 g49Y	20.16	0.000	-5.747	-5.747	-2.644	-5.028	-1.636
Arm1 g50P	19.64	0.000	-5.152	-4.492	-2.104	-5.152	-4.613
Arm1 g50Y	17.05	0.391	-4.471	-4.471	-1.960	-3.840	0.391
Arm1 g51P	11.01	0.000	-3.048	-3.048	-1.763	-2.001	-0.099

Arm1	g51X	7.32	0.081	-2.027	-1.708	-0.006	-2.027	0.081
Arm1	g51XY	9.99	0.000	-2.764	-1.811	-0.197	-2.764	-1.710
Arm1	g51Y	11.04	0.000	-3.056	-3.056	-1.629	-2.844	-1.909
Arm1	g52P	12.64	0.000	-3.314	-3.314	-1.329	-3.225	-1.641
Arm1	g52Y	12.71	0.000	-3.334	-3.334	-1.197	-3.313	-0.773
Arm2	g53P	26.72	0.000	-6.554	-6.554	-2.969	-5.939	-2.270
Arm2	g53X	24.16	0.000	-5.927	-5.287	-1.399	-5.927	-2.111
Arm2	g53XY	24.09	0.000	-5.909	-5.296	-1.433	-5.909	-2.128
Arm2	g53Y	26.67	0.000	-6.541	-6.541	-2.931	-5.942	-2.325
Arm2	g54P	19.55	0.000	-5.739	-5.739	-1.834	-5.512	-1.270
Arm2	g54Y	20.25	0.000	-5.946	-5.703	-1.641	-5.946	-2.270
ArmBR1	g55P	29.16	0.000	-3.053	-3.048	-1.104	-3.053	-1.118
ArmBR1	g55X	17.73	0.000	-1.856	-1.850	-0.640	-1.856	-0.650
ArmBR2	g56P	63.16	4.983	0.000	4.871	1.801	4.983	2.207
ArmBR2	g56X	52.53	4.144	0.000	4.016	1.446	4.144	1.911
ArmBR2	g56XY	50.94	4.018	0.000	4.018	1.463	3.914	1.051
ArmBR2	g56Y	61.79	4.875	0.000	4.875	1.792	4.775	1.420
ArmBR2	g57P	77.38	6.105	0.000	6.105	2.273	6.090	2.234
ArmBR2	g57X	77.34	6.101	0.000	6.077	2.217	6.101	2.251
ArmBR2	g57XY	77.44	6.109	0.000	6.096	2.264	6.109	2.299
ArmBR2	g57Y	77.58	6.120	0.000	6.103	2.248	6.120	2.324
ArmBR2	g58P	71.99	5.679	0.000	5.577	1.830	5.679	2.128
ArmBR2	g58X	72.27	5.702	0.000	5.684	2.360	5.702	2.465
ArmBR2	g58XY	72.18	5.695	0.000	5.695	2.402	5.585	2.088
ArmBR2	g58Y	70.80	5.585	0.000	5.567	1.805	5.585	1.805
ArmBR2	g59P	35.64	2.811	0.000	2.811	1.152	2.312	0.000
ArmBR2	g59X	34.68	2.736	0.000	2.736	0.915	2.372	0.000
ArmBR2	g59XY	41.26	3.255	0.000	2.863	1.147	3.255	2.122
ArmBR2	g59Y	42.06	3.318	0.000	2.830	1.005	3.318	2.147
PMBR1	g60P	51.40	5.240	-4.991	1.798	5.240	-0.931	-4.991
PMBR1	g60X	51.84	0.000	-5.286	-0.950	-4.970	-1.046	-5.286
PMBR1	g60XY	51.11	5.211	-5.018	-0.973	-5.018	1.749	5.211
PMBR1	g60Y	55.64	5.673	0.000	1.815	5.308	1.929	5.673
PMBR1	g61P	37.62	3.835	-3.155	-0.825	-3.155	1.076	3.835
PMBR1	g61X	41.31	4.212	0.000	1.169	4.037	1.154	4.212
PMBR1	g61XY	37.66	3.839	-2.940	1.102	3.839	-0.724	-2.940
PMBR1	g61Y	28.99	0.000	-2.956	-0.748	-2.956	-0.692	-2.895
PMBR1	g62P	11.55	0.000	-1.178	-0.974	-1.178	-0.714	-0.377
PMBR1	g62X	10.35	0.000	-1.055	-0.900	-0.423	-1.055	-0.952
PMBR1	g62XY	10.65	0.000	-1.085	-1.085	-0.936	-0.950	-0.416
PMBR1	g62Y	8.81	0.000	-0.898	-0.851	-0.767	-0.861	-0.898
PMBR1	g63P	4.19	0.427	-0.421	-0.062	0.427	-0.421	-0.386
PMBR1	g63X	9.82	0.000	-1.001	-0.973	-0.906	-1.001	-0.977
PMBR1	g63XY	10.34	0.051	-1.054	-1.054	-1.021	-0.599	0.051
PMBR1	g63Y	10.10	1.030	0.000	0.074	0.622	0.082	1.030
PMBR2	g64P	28.12	0.000	-2.944	-0.550	-2.155	-0.565	-2.944
PMBR2	g64X	21.19	0.000	-2.219	-1.347	-2.219	-0.386	-0.654
PMBR2	g64XY	22.69	0.000	-2.376	-0.877	-1.894	-0.899	-2.376
PMBR2	g64Y	22.17	0.367	-2.322	-0.911	-2.322	0.367	0.168
Powermnt	g65P	14.98	0.000	-17.268	-17.268	-6.429	-17.128	-6.285
Powermnt	g66P	11.45	0.000	-12.980	-12.980	-5.499	-12.842	-5.359
Powermnt	g67P	8.33	0.000	-9.942	-9.942	-4.434	-9.836	-4.325
Powermnt	g68P	6.68	0.000	-7.953	-7.953	-3.710	-7.882	-3.634
Powermnt	g69P	5.18	0.000	-6.203	-6.203	-3.053	-6.167	-3.011
Powermnt	g70P	3.88	0.000	-4.640	-4.637	-1.955	-4.640	-1.969
Powermnt	g71P	1.56	0.000	-1.862	-1.861	-1.047	-1.862	-1.053
fic1	g72P	0.00	0.000	0.000	0.000	0.000	0.000	0.000
fic1	g72X	0.00	0.000	0.000	0.000	0.000	0.000	0.000
fic1	g73P	0.00	0.000	0.000	0.000	0.000	0.000	0.000

fic1	g73Y	0.00	0.000	0.000	0.000	0.000	0.000	0.000
fic	g74P	0.00	0.072	0.000	0.002	0.072	0.002	0.072
fic	g74X	0.00	0.072	0.000	0.000	0.072	0.000	0.072
fic	g75P	0.00	0.072	0.000	0.002	0.072	0.002	0.072
fic	g75X	0.00	0.072	0.000	0.000	0.072	0.000	0.072
fic	g76P	0.00	0.072	0.000	0.002	0.072	0.002	0.072
fic	g76Y	0.00	0.072	0.000	0.002	0.072	0.002	0.072
fic	g77P	0.00	0.072	0.000	0.002	0.072	0.002	0.072
fic	g77Y	0.00	0.072	0.000	0.002	0.072	0.002	0.072
HBR5	g78P	9.64	0.000	-1.009	-0.946	-0.031	-1.009	-0.135
HBR5	g78X	10.03	0.000	-1.050	-1.050	-0.483	-0.942	-0.175
HBR5	g78XY	10.06	0.000	-1.054	-1.054	-0.482	-1.006	-0.404
HBR5	g78Y	10.25	0.000	-1.073	-0.950	-0.038	-1.073	-0.377

*** Analysis Results for Load Case No. 1 "NESC Heavy - Transverse" - Number of iterations in SAPS 48

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

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	0.0109	0.2026	0.001157	-0.2445	0.0275	0.0513	2.511	-2.297	86
2P	0.02211	0.2001	0.04376	-0.1958	0.0200	0.0543	0.02211	-13.55	86.04
3P	0.01002	0.1792	0.001343	-0.2575	0.0336	0.0606	2.51	-2.321	81
4P	0.01653	0.1782	0.02734	-0.1679	0.0196	0.0543	0.01653	-9.572	81.03
5P	0.005882	0.1498	0.001212	-0.2884	0.0278	0.0598	2.506	-2.35	75
6P	0.005332	0.1355	0.001064	-0.2450	-0.0083	0.0596	2.505	-2.365	72
7P	0.005686	0.1239	0.0009867	-0.2129	0.0196	0.0591	2.506	-2.376	69
8P	0.01673	0.1235	0.01397	0.0160	0.0186	0.0537	0.01673	-14.13	69.01
9P	0.002826	0.1013	0.0004606	-0.2436	0.0153	0.0559	2.503	-2.399	64
10P	0.002678	0.08466	-0.0003176	-0.1613	0.0246	0.0527	2.503	-2.415	59
11P	0.009696	0.08312	0.02126	-0.1494	0.0162	0.0528	0.009696	-10.17	59.02
12P	0.0008975	0.07026	0.0005094	-0.1627	0.0229	0.0452	3.189	-3.118	54.05
13P	0.0005143	0.05684	0.001073	-0.1106	0.0095	0.0453	4.014	-3.956	48.11
14P	4.194e-006	0.046	0.0009999	-0.0937	0.0103	0.0375	4.907	-4.861	41.5
15P	-0.0007986	0.02456	0.001496	-0.0621	0.0137	0.0071	6.901	-6.878	27
16P	-0.0004499	0.00119	0.001035	-0.0089	-0.0307	-0.1333	10	-9.999	5.001
17P	0	0	0	0.0000	0.0000	0.0000	10.69	-10.69	0
22P	0.01506	0.3206	-0.003485	-0.4089	0.0201	0.0438	0.01506	0.3206	104
23P	0.01195	0.2573	-0.003222	-0.3920	0.0200	0.0438	0.01195	0.2573	95
24P	0.008856	0.2009	-0.002946	-0.3088	0.0199	0.0437	0.008856	0.2009	86
25P	0.007145	0.1762	-0.002812	-0.2711	0.0197	0.0431	0.007145	0.1762	81
26P	0.003155	0.1212	-0.00246	-0.2482	0.0188	0.0402	0.003155	0.1212	69
27P	9.334e-005	0.08206	-0.002148	-0.1918	0.0158	0.0362	9.334e-005	0.08206	59
28P	-0.003265	0.02193	-0.00111	-0.0674	-0.0047	0.0175	-0.003265	0.02193	27
29P	0	0	0	0.0000	0.0000	0.0000	0	0	0
30P	0.00434	-0.1446	-0.4784	0.0000	0.0000	0.0000	0.00434	0.3554	85.52
31P	-0.4911	0.7007	-0.01739	0.0000	0.0000	0.0000	0.008856	0.7007	85.98
32P	0.005624	-0.06576	-0.4903	0.0000	0.0000	0.0000	0.005624	0.4342	103.5
33P	-0.4849	0.8204	-0.01793	0.0000	0.0000	0.0000	0.01506	0.8204	104
1X	0.006392	0.2031	-0.02207	-0.2965	0.0334	0.0561	2.506	2.703	85.98
1XY	0.006502	0.1983	-0.02034	-0.2965	0.0063	0.0577	-2.493	2.698	85.98
1Y	0.01162	0.1978	0.002901	-0.2447	0.0125	0.0627	-2.488	-2.302	86
2X	-0.00439	0.2008	-0.0843	-0.3355	0.0197	0.0542	-0.00439	13.95	85.92
3X	0.004897	0.1786	-0.02175	-0.2848	0.0225	0.0579	2.505	2.679	80.98
3XY	0.004584	0.1737	-0.02002	-0.2851	0.0168	0.0558	-2.495	2.674	80.98
3Y	0.009064	0.1744	0.003074	-0.2570	0.0061	0.0532	-2.491	-2.326	81
4X	-0.002245	0.1753	-0.06316	-0.3577	0.0194	0.0543	-0.002245	9.925	80.94
5X	0.002885	0.1512	-0.021	-0.2519	0.0390	0.0562	2.503	2.651	74.98
5XY	0.002581	0.1464	-0.01932	-0.2510	-0.0005	0.0571	-2.497	2.646	74.98
5Y	0.009129	0.1451	0.002892	-0.2888	0.0114	0.0537	-2.491	-2.355	75
6X	0.0008198	0.1377	-0.02037	-0.2707	0.0191	0.0554	2.501	2.638	71.98
6XY	0.002673	0.1329	-0.01871	-0.2697	0.0187	0.0576	-2.497	2.633	71.98
6Y	0.007671	0.1307	0.002717	-0.2457	0.0466	0.0537	-2.492	-2.369	72
7X	0.0009316	0.1232	-0.01965	-0.2713	-0.0019	0.0547	2.501	2.623	68.98
7XY	0.000643	0.1184	-0.01801	-0.2716	0.0385	0.0582	-2.499	2.618	68.98
7Y	0.005367	0.1192	0.002612	-0.2123	0.0178	0.0541	-2.495	-2.381	69
8X	-0.01043	0.1189	-0.1077	-0.5098	0.0180	0.0536	-0.01043	14.37	68.89
9X	0.0008307	0.1041	-0.01795	-0.2155	0.0216	0.0565	2.501	2.604	63.98
9XY	-0.002333	0.09931	-0.01638	-0.2155	0.0137	0.0552	-2.502	2.599	63.98
9Y	0.005032	0.09663	0.001998	-0.2432	0.0212	0.0563	-2.495	-2.403	64

10X	-0.002269	0.0842	-0.01578	-0.2077	0.0267	0.0583	2.498	2.584	58.98
10XY	-0.002227	0.07951	-0.01425	-0.2051	0.0072	0.0523	-2.502	2.58	58.99
10Y	0.002173	0.07997	0.001107	-0.1610	0.0083	0.0585	-2.498	-2.42	59
11X	-0.009566	0.08137	-0.05176	-0.3046	0.0182	0.0534	-0.009566	10.33	58.95
12X	-0.003102	0.07096	-0.01575	-0.1348	-0.0080	0.0564	3.185	3.259	54.03
12XY	-0.005449	0.06524	-0.01383	-0.1338	0.0386	0.0474	-3.193	3.253	54.03
12Y	0.002597	0.06447	0.002157	-0.1570	0.0062	0.0597	-3.185	-3.123	54.05
13X	-0.005106	0.05772	-0.01516	-0.1229	0.0248	0.0538	4.008	4.071	48.09
13XY	-0.00827	0.05051	-0.01282	-0.1212	0.0147	0.0434	-4.022	4.064	48.09
13Y	0.001598	0.05014	0.002888	-0.1109	0.0170	0.0535	-4.012	-3.963	48.11
14X	-0.009278	0.04558	-0.01442	-0.0972	0.0104	0.0460	4.898	4.953	41.49
14XY	-0.009354	0.0378	-0.01145	-0.0849	-0.0018	0.0371	-4.917	4.945	41.49
14Y	0.0007596	0.0375	0.00311	-0.0878	0.0117	0.0530	-4.907	-4.87	41.5
15X	-0.005668	0.02395	-0.01073	-0.0792	-0.0193	0.0200	6.897	6.926	26.99
15XY	-0.005826	0.01912	-0.008794	-0.0574	-0.0111	0.0195	-6.908	6.921	26.99
15Y	-0.0001025	0.01903	0.002806	-0.0472	-0.0020	0.0424	-6.902	-6.883	27
16X	-4.009e-005	0.0006726	-0.002807	-0.0171	-0.0059	0.0183	10	10	4.997
16XY	-3.337e-005	0.0004014	-0.002578	-0.0122	-0.0009	-0.0154	-10	10	4.997
16Y	0.0002031	0.0006951	0.001151	-0.0006	0.0279	0.1384	-10	-9.999	5.001
17X	0	0	0	0.0000	0.0000	0.0000	10.69	10.69	0
17XY	0	0	0	0.0000	0.0000	0.0000	-10.69	10.69	0
17Y	0	0	0	0.0000	0.0000	0.0000	-10.69	-10.69	0
30X	0.008856	1.201	-0.01739	0.0000	0.0000	0.0000	0.008856	0.7007	85.98
31Y	0.5089	0.7007	-0.01739	0.0000	0.0000	0.0000	0.008855	0.7007	85.98
32X	0.01506	1.32	-0.01793	0.0000	0.0000	0.0000	0.01506	0.8204	104
33Y	0.5151	0.8204	-0.01793	0.0000	0.0000	0.0000	0.01506	0.8204	104
18S	0.003286	0.1366	-0.009158	0.0000	0.0000	0.0000	2.503	0.1366	71.99
19S	0.006433	0.2046	0.0008783	0.0000	0.0000	0.0000	0.006433	-2.295	72
20S	0.0033	0.0006807	0.0002645	-0.0100	-0.0184	0.0270	10	0.0006807	5
21S	-9.102e-005	0.04665	-0.006793	-0.0055	0.0012	0.0009	-9.102e-005	-9.953	4.993
18Y	0.00496	0.1318	-0.007529	0.0000	0.0000	0.0000	-2.495	0.1318	71.99
19X	0.001806	0.07229	-0.0192	0.0000	0.0000	0.0000	0.001806	2.572	71.98
20Y	-0.003574	0.0004008	0.000307	-0.0128	0.0135	-0.0297	-10	0.0004008	5
21X	-2.678e-005	-0.004541	-0.000847	-0.0147	0.0027	0.0004	-2.678e-005	9.995	4.999

Joint Support Reactions for Load Case "NESC Heavy - Transverse":

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	H-Shear Usage %	Z Force (kips)	Comp. Uplift Usage %	Result. Usage %	Result. Force (kips)	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 %
17P	2.45	0.0	-3.45	0.0	0.0	17.07	0.0	0.0	17.58	0.0	0.00	0.0	0.0	0.0	0.26	0.0	0.0
29P	0.07	0.0	-0.65	0.0	0.0	-18.27	0.0	0.0	18.28	0.0	5.25	0.0	1.2	0.0	-0.49	0.0	0.0
17X	-5.49	0.0	-6.66	0.0	0.0	-38.87	0.0	0.0	39.82	0.0	-0.02	0.0	0.1	0.0	-0.04	0.0	0.0
17XY	5.08	0.0	-5.69	0.0	0.0	-35.32	0.0	0.0	36.13	0.0	-0.04	0.0	-0.1	0.0	0.03	0.0	0.0
17Y	-2.10	0.0	-2.93	0.0	0.0	16.85	0.0	0.0	17.23	0.0	-0.05	0.0	-0.0	0.0	-0.27	0.0	0.0

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

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	0.1232	-0.3033	-0.0000	-0.1232	0.3033	0.0109	0.2026	0.0012
2P	0.0000	1.1037	-2.3915	-0.0000	-1.1037	2.3915	0.0221	0.2001	0.0438
3P	0.0000	0.2764	-0.6218	0.0000	-0.2764	0.6218	0.0100	0.1792	0.0013
4P	0.0000	1.2418	-2.9690	-0.0000	-1.2418	2.9690	0.0165	0.1782	0.0273
5P	0.0000	0.0949	-0.0985	0.0000	-0.0949	0.0985	0.0059	0.1498	0.0012

6P	0.0000	0.0469	-0.0503	-0.0000	-0.0469	0.0503	0.0053	0.1355	0.0011
7P	0.0000	0.2872	-0.6748	-0.0000	-0.2872	0.6748	0.0057	0.1239	0.0010
8P	0.0000	1.2206	-2.9980	-0.0000	-1.2206	2.9980	0.0167	0.1235	0.0140
9P	0.0000	0.1229	-0.1253	-0.0000	-0.1229	0.1253	0.0028	0.1013	0.0005
10P	0.0000	0.3437	-0.7975	0.0000	-0.3437	0.7975	0.0027	0.0847	-0.0003
11P	0.0000	1.2251	-2.9583	-0.0000	-1.2251	2.9583	0.0097	0.0831	0.0213
12P	0.0000	0.1099	-0.1347	-0.0000	-0.1099	0.1347	0.0009	0.0703	0.0005
13P	0.0000	0.1357	-0.1632	-0.0000	-0.1357	0.1632	0.0005	0.0568	0.0011
14P	0.0000	0.5020	-1.0505	-0.0000	-0.5020	1.0505	0.0000	0.0460	0.0010
15P	0.0000	0.6781	-1.4270	-0.0000	-0.6781	1.4270	-0.0008	0.0246	0.0015
16P	0.0000	0.5385	-1.1080	0.0000	-0.5385	1.1080	-0.0004	0.0012	0.0010
17P	0.0000	0.0741	-0.0858	-2.4473	3.3711	17.1543	0.0000	0.0000	0.0000
22P	0.0000	0.3900	-1.8635	-0.0000	-0.3900	1.8635	0.0151	0.3206	-0.0035
23P	0.0000	0.7740	-2.7811	-0.0000	-0.7740	2.7811	0.0120	0.2573	-0.0032
24P	0.0000	0.0000	-0.8599	-0.0000	0.0000	0.8600	0.0089	0.2009	-0.0029
25P	0.0000	0.2040	-1.0375	-0.0000	-0.2040	1.0375	0.0071	0.1762	-0.0028
26P	0.0000	0.3740	-1.3323	-0.0000	-0.3740	1.3323	0.0032	0.1212	-0.0025
27P	0.0000	0.7140	-2.5137	-0.0000	-0.7140	2.5137	0.0001	0.0821	-0.0021
28P	0.0000	1.0030	-4.2449	-0.0000	-1.0030	4.2449	-0.0033	0.0219	-0.0011
29P	0.0000	0.4590	-1.0036	-0.0715	0.1928	-17.2682	0.0000	0.0000	0.0000
30P	0.0000	0.0000	-0.0001	0.0000	-0.0000	0.0001	0.0043	-0.1446	-0.4784
31P	0.0000	0.0024	-0.0001	0.0000	-0.0024	0.0001	-0.4911	0.7007	-0.0174
32P	0.0000	0.0000	-0.0001	0.0000	-0.0000	0.0001	0.0056	-0.0658	-0.4903
33P	0.0000	0.0024	-0.0001	0.0000	-0.0024	0.0001	-0.4849	0.8204	-0.0179
1X	0.0000	0.0570	-0.3033	-0.0000	-0.0570	0.3033	0.0064	0.2031	-0.0221
1XY	0.0000	0.0570	-0.3033	0.0000	-0.0570	0.3033	0.0065	0.1983	-0.0203
1Y	0.0000	0.0662	-0.1293	0.0000	-0.0662	0.1293	0.0116	0.1978	0.0029
2X	0.0000	0.8210	-1.4545	0.0000	-0.8210	1.4545	-0.0044	0.2008	-0.0843
3X	0.0000	0.1010	-0.8518	0.0000	-0.1010	0.8518	0.0049	0.1786	-0.0218
3XY	0.0000	0.0570	-0.3458	-0.0000	-0.0570	0.3458	0.0046	0.1737	-0.0200
3Y	0.0000	0.1534	-0.3608	-0.0000	-0.1534	0.3608	0.0091	0.1744	0.0031
4X	0.0000	1.1790	-2.9690	0.0000	-1.1790	2.9690	-0.0022	0.1753	-0.0632
5X	0.0000	0.0000	-0.0985	0.0000	0.0000	0.0985	0.0029	0.1512	-0.0210
5XY	0.0000	0.0000	-0.0985	0.0000	0.0000	0.0985	0.0026	0.1464	-0.0193
5Y	0.0000	0.0949	-0.0985	0.0000	-0.0949	0.0985	0.0091	0.1451	0.0029
6X	0.0000	0.0000	-0.0503	-0.0000	0.0000	0.0503	0.0008	0.1377	-0.0204
6XY	0.0000	0.0000	-0.0503	-0.0000	-0.0000	0.0503	0.0027	0.1329	-0.0187
6Y	0.0000	0.0469	-0.0503	-0.0000	-0.0469	0.0503	0.0077	0.1307	0.0027
7X	0.0000	0.0440	-0.6748	-0.0000	-0.0440	0.6748	0.0009	0.1232	-0.0196
7XY	0.0000	0.0000	-0.1688	-0.0000	-0.0000	0.1688	0.0006	0.1184	-0.0180
7Y	0.0000	0.1352	-0.3578	-0.0000	-0.1352	0.3578	0.0054	0.1192	0.0026
8X	0.0000	1.1790	-2.9980	0.0000	-1.1790	2.9980	-0.0104	0.1189	-0.1077
9X	0.0000	0.0000	-0.1253	0.0000	-0.0000	0.1253	0.0008	0.1041	-0.0179
9XY	0.0000	0.0000	-0.1253	-0.0000	0.0000	0.1253	-0.0023	0.0993	-0.0164
9Y	0.0000	0.1229	-0.1253	-0.0000	-0.1229	0.1253	0.0050	0.0966	0.0020
10X	0.0000	0.0540	-0.7975	-0.0000	-0.0540	0.7975	-0.0023	0.0842	-0.0158
10XY	0.0000	0.0000	-0.1765	-0.0000	-0.0000	0.1765	-0.0022	0.0795	-0.0142
10Y	0.0000	0.1577	-0.4085	-0.0000	-0.1577	0.4085	0.0022	0.0800	0.0011
11X	0.0000	1.1790	-2.9583	0.0000	-1.1790	2.9583	-0.0096	0.0814	-0.0518
12X	0.0000	0.0000	-0.1347	-0.0000	-0.0000	0.1347	-0.0031	0.0710	-0.0157
12XY	0.0000	0.0000	-0.1347	-0.0000	-0.0000	0.1347	-0.0054	0.0652	-0.0138
12Y	0.0000	0.1099	-0.1347	-0.0000	-0.1099	0.1347	0.0026	0.0645	0.0022
13X	0.0000	0.0000	-0.1632	-0.0000	-0.0000	0.1632	-0.0051	0.0577	-0.0152
13XY	0.0000	0.0000	-0.1632	0.0000	-0.0000	0.1632	-0.0083	0.0505	-0.0128
13Y	0.0000	0.1357	-0.1632	-0.0000	-0.1357	0.1632	0.0016	0.0501	0.0029
14X	0.0000	0.0640	-1.0505	-0.0000	-0.0640	1.0505	-0.0093	0.0456	-0.0144
14XY	0.0000	0.0000	-0.3145	-0.0000	-0.0000	0.3145	-0.0094	0.0378	-0.0114
14Y	0.0000	0.2810	-0.5895	-0.0000	-0.2810	0.5895	0.0008	0.0375	0.0031
15X	0.0000	0.0740	-1.4270	-0.0000	-0.0740	1.4270	-0.0057	0.0240	-0.0107

15XY	0.0000	0.0000	-0.5760	0.0000	-0.0000	0.5760	-0.0058	0.0191	-0.0088
15Y	0.0000	0.4231	-0.8940	-0.0000	-0.4231	0.8940	-0.0001	0.0190	0.0028
16X	0.0000	0.0640	-1.1080	-0.0000	-0.0640	1.1080	-0.0000	0.0007	-0.0028
16XY	0.0000	0.0000	-0.3720	0.0000	-0.0000	0.3720	-0.0000	0.0004	-0.0026
16Y	0.0000	0.3175	-0.6470	-0.0000	-0.3175	0.6470	0.0002	0.0007	0.0012
17X	0.0000	0.0000	-0.0858	5.4942	6.6616	-38.7858	0.0000	0.0000	0.0000
17XY	0.0000	0.0000	-0.0858	-5.0781	5.6907	-35.2316	0.0000	0.0000	0.0000
17Y	0.0000	0.0741	-0.0858	2.1027	2.8576	16.9373	0.0000	0.0000	0.0000
30X	0.0000	0.0024	-0.0001	0.0000	-0.0024	0.0001	0.0089	1.2007	-0.0174
31Y	0.0000	0.0024	-0.0001	0.0000	-0.0024	0.0001	0.5089	0.7007	-0.0174
32X	0.0000	0.0024	-0.0001	0.0000	-0.0024	0.0001	0.0151	1.3204	-0.0179
33Y	0.0000	0.0024	-0.0001	0.0000	-0.0024	0.0001	0.5151	0.8204	-0.0179
18S	0.0000	0.0000	-0.0416	0.0000	-0.0000	0.0416	0.0033	0.1366	-0.0092
19S	0.0000	0.0741	-0.0439	0.0000	-0.0741	0.0439	0.0064	0.2046	0.0009
20S	0.0000	0.0000	-0.1415	0.0000	0.0000	0.1415	0.0033	0.0007	0.0003
21S	0.0000	0.2011	-0.1415	0.0000	-0.2011	0.1415	-0.0001	0.0466	-0.0068
18Y	0.0000	0.0000	-0.0416	0.0000	-0.0000	0.0416	0.0050	0.1318	-0.0075
19X	0.0000	0.0000	-0.0439	0.0000	-0.0000	0.0439	0.0018	0.0723	-0.0192
20Y	0.0000	0.0000	-0.1415	-0.0000	-0.0000	0.1415	-0.0036	0.0004	0.0003
21X	0.0000	0.0000	-0.1415	-0.0000	-0.0000	0.1415	-0.0000	-0.0045	-0.0008

Crossing Diagonal Check for Load Case "NESC Heavy - Transverse" (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.
g14P	g14Y	Short only	-0.28	-0.27	11.56	0.750	0.500	0.500	123.69	122.85	5	8.63	1.000	158.01	143.38	6
g14Y	g14P	Short only	-0.27	-0.28	11.56	0.750	0.500	0.500	123.69	122.85	5	8.63	1.000	158.01	143.38	6
g16P	g16Y	Long only	-1.07	-1.01	17.27	0.500	0.750	0.500	120.57	120.47	5	12.24	1.000	160.76	145.07	6
g16X	g16XY	Long only	-1.81	-1.90	17.27	0.500	0.750	0.500	120.57	120.47	5	12.24	1.000	160.76	145.07	6
g16XY	g16X	Long only	-1.90	-1.81	17.27	0.500	0.750	0.500	120.57	120.47	5	12.24	1.000	160.76	145.07	6
g16Y	g16P	Long only	-1.01	-1.07	17.27	0.500	0.750	0.500	120.57	120.47	5	12.24	1.000	160.76	145.07	6
g22X	g22XY	Long only	-0.74	-0.93	18.99	0.500	0.750	0.500	109.16	111.87	2	13.99	1.000	145.55	135.71	6
g22XY	g22X	Long only	-0.93	-0.74	18.99	0.500	0.750	0.500	109.16	111.87	2	13.99	1.000	145.55	135.71	6
g24P	g24Y	Long only	-1.51	-1.33	18.99	0.500	0.750	0.500	109.16	111.87	2	13.99	1.000	145.55	135.71	6
g24Y	g24P	Long only	-1.33	-1.51	18.99	0.500	0.750	0.500	109.16	111.87	2	13.99	1.000	145.55	135.71	6
g25P	g25X	Short only	-1.89	0.35	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g26P	g26Y	Short only	-1.60	-1.22	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g26Y	g26P	Short only	-1.22	-1.60	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g28X	g28XY	Long only	-0.63	-0.60	11.66	0.560	0.780	0.560	147.51	141.00	5	8.89	1.000	187.46	161.49	6
g28XY	g28X	Long only	-0.60	-0.63	11.66	0.560	0.780	0.560	147.51	141.00	5	8.89	1.000	187.46	161.49	6
g30P	g30Y	Long only	-0.80	-0.54	8.82	0.560	0.780	0.560	175.25	162.14	5	6.91	1.000	222.71	183.17	6
g30Y	g30P	Long only	-0.54	-0.80	8.82	0.560	0.780	0.560	175.25	162.14	5	6.91	1.000	222.71	183.17	6

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

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Usage %
1	2.634	30.00	30.00	8.78
2	1.670	30.00	30.00	5.57
3	3.218	30.00	30.00	10.73

4	3.194	30.00	30.00	10.65
5	3.237	30.00	30.00	10.79
6	3.221	30.00	30.00	10.74
7	3.202	30.00	30.00	10.67
8	3.185	30.00	30.00	10.62
14	1.232	30.00	30.00	4.11
15	1.580	30.00	30.00	5.27
16	1.164	30.00	30.00	3.88
17	0.868	30.00	30.00	2.89
18	0.733	30.00	30.00	2.44
19	0.858	30.00	30.00	2.86
20	0.327	30.00	30.00	1.09
21	0.680	30.00	30.00	2.27
22	0.309	30.00	30.00	1.03
23	0.309	30.00	30.00	1.03
24	0.350	30.00	30.00	1.17
25	2.887	30.00	30.00	9.62
26	0.860	30.00	30.00	2.87
27	1.057	30.00	30.00	3.52
28	1.384	30.00	30.00	4.61
29	2.613	30.00	30.00	8.71
30	4.362	30.00	30.00	14.54
31	1.904	30.00	30.00	6.35
32	0.676	30.00	30.00	2.25
33	0.799	30.00	30.00	2.66
34	1.052	30.00	30.00	3.51
35	1.429	30.00	30.00	4.76
36	1.110	30.00	30.00	3.70
37	0.382	30.00	30.00	1.27
38	0.438	30.00	30.00	1.46
39	0.653	30.00	30.00	2.18
40	0.989	30.00	30.00	3.30
41	0.721	30.00	30.00	2.40
42	0.392	30.00	30.00	1.31

Equilibrium Joint Positions and Rotations for Load Case "Extreme Wind - Transverse":

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	0.009081	0.4154	0.01786	-0.5903	0.0228	0.0776	2.509	-2.085	86.02
2P	0.02704	0.4121	0.1349	-0.5919	0.0191	0.0868	0.02704	-13.34	86.13
3P	0.008588	0.3616	0.01787	-0.5931	0.0411	0.0963	2.509	-2.138	81.02
4P	0.01923	0.3589	0.09315	-0.5819	0.0187	0.0869	0.01923	-9.391	81.09
5P	0.00286	0.3	0.01685	-0.5850	0.0131	0.0936	2.503	-2.2	75.02
6P	0.003842	0.2701	0.0161	-0.5452	-0.0284	0.0926	2.504	-2.23	72.02
7P	0.004123	0.2431	0.01535	-0.4957	0.0363	0.0906	2.504	-2.257	69.02
8P	0.0218	0.2406	0.1092	-0.4310	0.0187	0.0849	0.0218	-14.01	69.11
9P	-0.0004941	0.199	0.01314	-0.4818	0.0110	0.0881	2.5	-2.301	64.01
10P	0.001254	0.162	0.01029	-0.3619	0.0235	0.0855	2.501	-2.338	59.01
11P	0.01216	0.1591	0.06744	-0.4437	0.0143	0.0822	0.01216	-10.09	59.07
12P	-0.001734	0.134	0.01094	-0.3014	0.0428	0.0750	3.186	-3.054	54.06
13P	-0.001367	0.1069	0.01109	-0.2286	0.0036	0.0715	4.012	-3.906	48.12
14P	-0.0009819	0.08457	0.01007	-0.1829	0.0105	0.0557	4.906	-4.823	41.51
15P	-0.001118	0.04321	0.008915	-0.1191	0.0174	0.0021	6.901	-6.859	27.01
16P	-0.001425	0.002821	0.003137	-0.0142	-0.0841	-0.3489	9.999	-9.997	5.003
17P	0	0	0	0.0000	0.0000	0.0000	10.69	-10.69	0
22P	0.01154	0.7335	-0.005484	-1.1246	0.0194	0.0697	0.01154	0.7335	104
23P	0.008695	0.5601	-0.00379	-1.0609	0.0194	0.0697	0.008695	0.5601	95
24P	0.005828	0.4131	-0.002547	-0.7461	0.0194	0.0696	0.005828	0.4131	86
25P	0.004217	0.3566	-0.002191	-0.5967	0.0192	0.0686	0.004217	0.3566	81
26P	0.0003752	0.239	-0.00151	-0.5189	0.0192	0.0638	0.0003752	0.239	69
27P	-0.002718	0.1581	-0.001077	-0.3937	0.0164	0.0574	-0.002718	0.1581	59
28P	-0.00517	0.03854	-0.000438	-0.1229	-0.0090	0.0286	-0.00517	0.03854	27
29P	0	0	0	0.0000	0.0000	0.0000	0	0	0
30P	0.005828	-0.02362	-0.4985	0.0000	0.0000	0.0000	0.005828	0.4764	85.5
31P	-0.4942	0.4764	-0.4985	0.0000	0.0000	0.0000	0.005828	0.4764	85.5
32P	0.01154	0.2968	-0.5015	0.0000	0.0000	0.0000	0.01154	0.7968	103.5
33P	-0.4885	0.7968	-0.5015	0.0000	0.0000	0.0000	0.01154	0.7968	103.5
1X	0.002415	0.4153	-0.0332	-0.6224	0.0284	0.0802	2.502	2.915	85.97
1XY	0.001549	0.4076	-0.03151	-0.6225	0.0098	0.1016	-2.498	2.908	85.97
1Y	0.01028	0.4077	0.01956	-0.5902	0.0162	0.1045	-2.49	-2.092	86.02
2X	-0.01535	0.4109	-0.1565	-0.6387	0.0187	0.0866	-0.01535	14.16	85.84
3X	0.0002729	0.3611	-0.03246	-0.6067	0.0162	0.0955	2.5	2.861	80.97
3XY	0.000505	0.3534	-0.03078	-0.6067	0.0218	0.0856	-2.499	2.853	80.97
3Y	0.007511	0.354	0.01957	-0.5924	-0.0018	0.0852	-2.492	-2.146	81.02
4X	-0.01077	0.3567	-0.1125	-0.6537	0.0185	0.0867	-0.01077	10.11	80.89
5X	-0.0009477	0.3004	-0.03088	-0.5715	0.0545	0.0929	2.499	2.8	74.97
5XY	-0.002003	0.2927	-0.02921	-0.5700	-0.0172	0.0860	-2.502	2.793	74.97
5Y	0.009261	0.2925	0.01852	-0.5842	0.0269	0.0858	-2.491	-2.208	75.02
6X	-0.004125	0.2707	-0.02954	-0.5531	0.0308	0.0920	2.496	2.771	71.97
6XY	-0.0006849	0.2632	-0.02788	-0.5516	0.0066	0.0858	-2.501	2.763	71.97
6Y	0.006301	0.2625	0.01775	-0.5450	0.0676	0.0858	-2.494	-2.237	72.02
7X	-0.003474	0.2427	-0.02818	-0.5233	-0.0274	0.0915	2.497	2.743	68.97
7XY	-0.00318	0.2352	-0.02653	-0.5230	0.0636	0.0853	-2.503	2.735	68.97
7Y	0.004069	0.2356	0.01699	-0.4948	0.0026	0.0868	-2.496	-2.264	69.02
8X	-0.02098	0.2379	-0.1503	-0.6302	0.0180	0.0847	-0.02098	14.49	68.85
9X	-0.001492	0.1999	-0.02516	-0.4681	0.0274	0.0894	2.499	2.7	63.97
9XY	-0.008078	0.1925	-0.0235	-0.4674	0.0077	0.0842	-2.508	2.692	63.98
9Y	0.005364	0.1916	0.01471	-0.4808	0.0282	0.0860	-2.495	-2.308	64.01

10X	-0.006621	0.1617	-0.02149	-0.3883	0.0305	0.0875	2.493	2.662	58.98
10XY	-0.006024	0.1545	-0.01973	-0.3824	0.0082	0.0828	-2.506	2.654	58.98
10Y	0.0005151	0.1548	0.01171	-0.3573	0.0109	0.0853	-2.499	-2.345	59.01
11X	-0.0176	0.1579	-0.08298	-0.4992	0.0217	0.0821	-0.0176	10.41	58.92
12X	-0.006761	0.134	-0.022	-0.2856	-0.0189	0.0793	3.181	3.322	54.03
12XY	-0.01115	0.1257	-0.01956	-0.2754	0.0575	0.0809	-3.199	3.313	54.03
12Y	0.002761	0.1256	0.01247	-0.2886	-0.0123	0.0857	-3.185	-3.062	54.06
13X	-0.009833	0.1076	-0.02171	-0.2351	0.0397	0.0749	4.003	4.121	48.08
13XY	-0.01464	0.09789	-0.01845	-0.2249	0.0141	0.0759	-4.028	4.111	48.09
13Y	0.001797	0.09744	0.01269	-0.2200	0.0227	0.0790	-4.012	-3.916	48.12
14X	-0.01578	0.08366	-0.02103	-0.1908	0.0132	0.0564	4.892	4.991	41.48
14XY	-0.01603	0.07323	-0.01679	-0.1769	-0.0059	0.0752	-4.923	4.981	41.48
14Y	0.0009142	0.07376	0.0118	-0.1705	0.0113	0.0824	-4.906	-4.834	41.51
15X	-0.00955	0.04228	-0.01609	-0.1334	-0.0282	0.0021	6.893	6.944	26.98
15XY	-0.009964	0.0332	-0.01348	-0.1033	-0.0241	0.0720	-6.912	6.935	26.99
15Y	0.0006038	0.03344	0.01028	-0.1037	-0.0037	0.0843	-6.902	-6.869	27.01
16X	-0.0005073	0.001993	-0.004214	-0.0038	0.0419	-0.3075	9.999	10	4.996
16XY	0.000507	0.001323	-0.004056	0.0077	-0.0522	0.3124	-9.999	10	4.996
16Y	0.001386	0.001703	0.003131	0.0037	0.0844	0.3576	-9.999	-9.998	5.003
17X	0	0	0	0.0000	0.0000	0.0000	10.69	10.69	0
17XY	0	0	0	0.0000	0.0000	0.0000	-10.69	10.69	0
17Y	0	0	0	0.0000	0.0000	0.0000	-10.69	-10.69	0
30X	0.005828	0.9764	-0.4985	0.0000	0.0000	0.0000	0.005828	0.4764	85.5
31Y	0.5058	0.4764	-0.4985	0.0000	0.0000	0.0000	0.005828	0.4764	85.5
32X	0.01154	1.297	-0.5015	0.0000	0.0000	0.0000	0.01154	0.7968	103.5
33Y	0.5115	0.7968	-0.5015	0.0000	0.0000	0.0000	0.01154	0.7968	103.5
18S	0.003904	0.2703	-0.006543	0.0000	0.0000	0.0000	2.504	0.2703	71.99
19S	0.004956	0.3424	0.01487	0.0000	0.0000	0.0000	0.004956	-2.158	72.01
20S	-0.005615	0.0018	-0.001151	-0.0270	-0.0209	0.1600	9.994	0.0018	4.999
21S	-1.938e-005	0.1306	-0.02	-0.0117	-0.0000	0.0026	-1.938e-005	-9.869	4.98
18Y	-0.0007962	0.2628	-0.004905	0.0000	0.0000	0.0000	-2.501	0.2628	72
19X	-0.002545	0.3594	-0.02931	0.0000	0.0000	0.0000	-0.002545	2.859	71.97
20Y	0.005174	0.001147	-0.001083	-0.0337	0.0159	-0.1635	-9.995	0.001147	4.999
21X	-2.535e-006	0.1044	0.01281	0.0065	0.0033	0.0017	-2.535e-006	10.1	5.013

Joint Support Reactions for Load Case "Extreme Wind - Transverse":

Joint Label	X Force (kips)	X Usage %	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 %
17P	6.90	0.0	-10.29	0.0	0.0	50.07	0.0	0.0	51.58	0.0	-0.01	0.0	0.1	0.0	0.0	0.69	0.0	0.0
29P	0.10	0.0	-0.87	0.0	0.0	-6.72	0.0	0.0	6.78	0.0	8.91	0.0	1.7	0.0	0.0	-0.80	0.0	0.0
17X	-8.74	0.0	-12.16	0.0	0.0	-60.33	0.0	0.0	62.16	0.0	-0.08	0.0	0.1	0.0	0.0	0.62	0.0	0.0
17XY	8.18	0.0	-10.51	0.0	0.0	-56.49	0.0	0.0	58.03	0.0	-0.14	0.0	-0.1	0.0	0.0	-0.63	0.0	0.0
17Y	-6.45	0.0	-8.77	0.0	0.0	47.31	0.0	0.0	48.54	0.0	-0.12	0.0	-0.1	0.0	0.0	-0.70	0.0	0.0

Joint Displacements, Loads and Member Forces on Joints for Load Case "Extreme Wind - Transverse":

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	0.3731	-0.2439	0.0000	-0.3731	0.2439	0.0091	0.4154	0.0179
2P	0.0000	1.2191	-0.8749	-0.0000	-1.2191	0.8749	0.0270	0.4121	0.1349
3P	0.0000	0.6640	-0.2478	-0.0000	-0.6640	0.2478	0.0086	0.3616	0.0179
4P	0.0000	1.4720	-1.1188	-0.0000	-1.4720	1.1188	0.0192	0.3589	0.0931
5P	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.0029	0.3000	0.0169

6P	0.0000	0.1680	-0.0948	0.0000	-0.1680	0.0948	0.0038	0.2701	0.0161
7P	0.0000	0.7170	-0.2318	0.0000	-0.7170	0.2318	0.0041	0.2431	0.0153
8P	0.0000	1.4720	-1.1188	0.0000	-1.4720	1.1188	0.0218	0.2406	0.1092
9P	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	-0.0005	0.1990	0.0131
10P	0.0000	0.8420	-0.2628	-0.0000	-0.8420	0.2628	0.0013	0.1620	0.0103
11P	0.0000	1.4720	-1.1188	-0.0000	-1.4720	1.1188	0.0122	0.1591	0.0674
12P	0.0000	0.1680	-0.0948	0.0000	-0.1680	0.0948	-0.0017	0.1340	0.0109
13P	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	-0.0014	0.1069	0.0111
14P	0.0000	1.5203	-0.5847	-0.0000	-1.5203	0.5847	-0.0010	0.0846	0.0101
15P	0.0000	1.4773	-0.5210	-0.0000	-1.4773	0.5210	-0.0011	0.0432	0.0089
16P	0.0000	1.3523	-0.4900	0.0000	-1.3523	0.4900	-0.0014	0.0028	0.0031
17P	0.0000	0.5533	-0.2900	-6.9035	9.7369	50.3644	0.0000	0.0000	0.0000
22P	0.0000	1.4931	-0.7921	-0.0000	-1.4931	0.7921	0.0115	0.7335	-0.0055
23P	0.0000	2.9891	-0.9521	0.0000	-2.9891	0.9521	0.0087	0.5601	-0.0038
24P	0.0000	0.1771	-0.2649	0.0000	-0.1771	0.2649	0.0058	0.4131	-0.0025
25P	0.0000	0.1680	-0.2148	0.0000	-0.1680	0.2148	0.0042	0.3566	-0.0022
26P	0.0000	0.1680	-0.2508	0.0000	-0.1680	0.2508	0.0004	0.2390	-0.0015
27P	0.0000	0.7213	-0.6817	-0.0000	-0.7213	0.6817	-0.0027	0.1581	-0.0011
28P	0.0000	0.5533	-0.8990	-0.0000	-0.5533	0.8990	-0.0052	0.0385	-0.0004
29P	0.0000	0.5533	-0.2900	-0.1030	0.3190	-6.4296	0.0000	0.0000	0.0000
30P	0.0000	0.0091	-0.0711	0.0000	-0.0091	0.0711	0.0058	-0.0236	-0.4985
31P	0.0000	0.0091	-0.0711	0.0000	-0.0091	0.0711	-0.4942	0.4764	-0.4985
32P	0.0000	0.0091	-0.0711	0.0000	-0.0091	0.0711	0.0115	0.2968	-0.5015
33P	0.0000	0.0091	-0.0711	0.0000	-0.0091	0.0711	-0.4885	0.7968	-0.5015
1X	0.0000	0.3731	-0.2439	0.0000	-0.3731	0.2439	0.0024	0.4153	-0.0332
1XY	0.0000	0.3731	-0.2439	-0.0000	-0.3731	0.2439	0.0015	0.4076	-0.0315
1Y	0.0000	0.1771	-0.1659	-0.0000	-0.1771	0.1659	0.0103	0.4077	0.0196
2X	0.0000	0.6601	-0.5089	-0.0000	-0.6601	0.5089	-0.0153	0.4109	-0.1565
3X	0.0000	0.4560	-0.3098	-0.0000	-0.4560	0.3098	0.0003	0.3611	-0.0325
3XY	0.0000	0.3640	-0.1728	0.0000	-0.3640	0.1728	0.0005	0.3534	-0.0308
3Y	0.0000	0.2400	-0.1388	0.0000	-0.2400	0.1388	0.0075	0.3540	0.0196
4X	0.0000	1.4720	-1.1188	-0.0000	-1.4720	1.1188	-0.0108	0.3567	-0.1125
5X	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	-0.0009	0.3004	-0.0309
5XY	0.0000	0.1680	-0.0948	0.0000	-0.1680	0.0948	-0.0020	0.2927	-0.0292
5Y	0.0000	0.1680	-0.0948	0.0000	-0.1680	0.0948	0.0093	0.2925	0.0185
6X	0.0000	0.1680	-0.0948	0.0000	-0.1680	0.0948	-0.0041	0.2707	-0.0295
6XY	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	-0.0007	0.2632	-0.0279
6Y	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.0063	0.2625	0.0178
7X	0.0000	0.2600	-0.2318	0.0000	-0.2600	0.2318	-0.0035	0.2427	-0.0282
7XY	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	-0.0032	0.2352	-0.0265
7Y	0.0000	0.2400	-0.1388	-0.0000	-0.2400	0.1388	0.0041	0.2356	0.0170
8X	0.0000	1.4720	-1.1188	0.0000	-1.4720	1.1188	-0.0210	0.2379	-0.1503
9X	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	-0.0015	0.1999	-0.0252
9XY	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	-0.0081	0.1925	-0.0235
9Y	0.0000	0.1680	-0.0948	0.0000	-0.1680	0.0948	0.0054	0.1916	0.0147
10X	0.0000	0.2800	-0.2628	0.0000	-0.2800	0.2628	-0.0066	0.1617	-0.0215
10XY	0.0000	0.1680	-0.0948	0.0000	-0.1680	0.0948	-0.0060	0.1545	-0.0197
10Y	0.0000	0.2560	-0.1478	-0.0000	-0.2560	0.1478	0.0005	0.1548	0.0117
11X	0.0000	1.4720	-1.1188	-0.0000	-1.4720	1.1188	-0.0176	0.1579	-0.0830
12X	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	-0.0068	0.1340	-0.0220
12XY	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	-0.0112	0.1257	-0.0196
12Y	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.0028	0.1256	0.0125
13X	0.0000	0.1680	-0.0948	0.0000	-0.1680	0.0948	-0.0098	0.1076	-0.0217
13XY	0.0000	0.1680	-0.0948	0.0000	-0.1680	0.0948	-0.0146	0.0979	-0.0184
13Y	0.0000	0.1680	-0.0948	0.0000	-0.1680	0.0948	0.0018	0.0974	0.0127
14X	0.0000	0.8543	-0.5847	-0.0000	-0.8543	0.5847	-0.0158	0.0837	-0.0210
14XY	0.0000	0.7213	-0.3847	-0.0000	-0.7213	0.3847	-0.0160	0.0732	-0.0168
14Y	0.0000	0.8253	-0.4477	-0.0000	-0.8253	0.4477	0.0009	0.0738	0.0118
15X	0.0000	0.7073	-0.5210	-0.0000	-0.7073	0.5210	-0.0096	0.0423	-0.0161

15XY	0.0000	0.5533	-0.2900	0.0000	-0.5533	0.2900	-0.0100	0.0332	-0.0135
15Y	0.0000	0.6733	-0.3630	0.0000	-0.6733	0.3630	0.0006	0.0334	0.0103
16X	0.0000	0.6863	-0.4900	-0.0000	-0.6863	0.4900	-0.0005	0.0020	-0.0042
16XY	0.0000	0.5533	-0.2900	-0.0000	-0.5533	0.2900	0.0005	0.0013	-0.0041
16Y	0.0000	0.6573	-0.3530	-0.0000	-0.6573	0.3530	0.0014	0.0017	0.0031
17X	0.0000	0.5533	-0.2900	8.7364	11.6023	-60.0412	0.0000	0.0000	0.0000
17XY	0.0000	0.5533	-0.2900	-8.1828	9.9567	-56.1957	0.0000	0.0000	0.0000
17Y	0.0000	0.5533	-0.2900	6.4529	8.2165	47.5951	0.0000	0.0000	0.0000
30X	0.0000	0.0091	-0.0711	-0.0000	-0.0091	0.0711	0.0058	0.9764	-0.4985
31Y	0.0000	0.0091	-0.0711	0.0000	-0.0091	0.0711	0.5058	0.4764	-0.4985
32X	0.0000	0.0091	-0.0711	0.0000	-0.0091	0.0711	0.0115	1.2968	-0.5015
33Y	0.0000	0.0091	-0.0711	0.0000	-0.0091	0.0711	0.5115	0.7968	-0.5015
18S	0.0000	0.1680	-0.0948	0.0000	-0.1680	0.0948	0.0039	0.2703	-0.0065
19S	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.0050	0.3424	0.0149
20S	0.0000	0.5533	-0.2900	0.0000	-0.5533	0.2900	-0.0056	0.0018	-0.0012
21S	0.0000	0.5533	-0.2900	0.0000	-0.5533	0.2900	-0.0000	0.1306	-0.0200
18Y	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	-0.0008	0.2628	-0.0049
19X	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	-0.0025	0.3594	-0.0293
20Y	0.0000	0.5533	-0.2900	-0.0000	-0.5533	0.2900	0.0052	0.0011	-0.0011
21X	0.0000	0.5533	-0.2900	0.0000	-0.5533	0.2900	-0.0000	0.1044	0.0128

Crossing Diagonal Check for Load Case "Extreme Wind - Transverse" (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.
g14P	g14Y	Short only	-0.22	-0.20	11.56	0.750	0.500	0.500	123.69	122.85	5	8.63	1.000	158.01	143.38	6
g14Y	g14P	Short only	-0.20	-0.22	11.56	0.750	0.500	0.500	123.69	122.85	5	8.63	1.000	158.01	143.38	6
g16P	g16Y	Long only	-2.47	-2.25	17.27	0.500	0.750	0.500	120.57	120.47	5	12.24	1.000	160.76	145.07	6
g16X	g16XY	Long only	-2.10	-2.36	17.27	0.500	0.750	0.500	120.57	120.47	5	12.24	1.000	160.76	145.07	6
g16XY	g16X	Long only	-2.36	-2.10	17.27	0.500	0.750	0.500	120.57	120.47	5	12.24	1.000	160.76	145.07	6
g16Y	g16P	Long only	-2.25	-2.47	17.27	0.500	0.750	0.500	120.57	120.47	5	12.24	1.000	160.76	145.07	6
g22X	g22XY	Long only	-0.87	-1.51	18.99	0.500	0.750	0.500	109.16	111.87	2	13.99	1.000	145.55	135.71	6
g22XY	g22X	Long only	-1.51	-0.87	18.99	0.500	0.750	0.500	109.16	111.87	2	13.99	1.000	145.55	135.71	6
g24P	g24Y	Long only	-1.80	-1.20	18.99	0.500	0.750	0.500	109.16	111.87	2	13.99	1.000	145.55	135.71	6
g24Y	g24P	Long only	-1.20	-1.80	18.99	0.500	0.750	0.500	109.16	111.87	2	13.99	1.000	145.55	135.71	6
g25XY	g25Y	Short only	-0.11	-0.61	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g25Y	g25XY	Short only	-0.61	-0.11	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g26P	g26Y	Short only	-2.85	-2.45	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g26Y	g26P	Short only	-2.45	-2.85	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g28X	g28XY	Long only	-1.33	-1.56	11.66	0.560	0.780	0.560	147.51	141.00	5	8.89	1.000	187.46	161.49	6
g28XY	g28X	Long only	-1.56	-1.33	11.66	0.560	0.780	0.560	147.51	141.00	5	8.89	1.000	187.46	161.49	6
g30P	g30Y	Long only	-1.39	-1.09	8.82	0.560	0.780	0.560	175.25	162.14	5	6.91	1.000	222.71	183.17	6
g30Y	g30P	Long only	-1.09	-1.39	8.82	0.560	0.780	0.560	175.25	162.14	5	6.91	1.000	222.71	183.17	6

Summary of Clamp Capacities and Usages for Load Case "Extreme Wind - Transverse":

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Usage %
1	1.501	30.00	30.00	5.00
2	0.833	30.00	30.00	2.78

3	1.849	30.00	30.00	6.16
4	1.849	30.00	30.00	6.16
5	1.849	30.00	30.00	6.16
6	1.849	30.00	30.00	6.16
7	1.849	30.00	30.00	6.16
8	1.849	30.00	30.00	6.16
14	1.438	30.00	30.00	4.79
15	1.566	30.00	30.00	5.22
16	1.629	30.00	30.00	5.43
17	0.882	30.00	30.00	2.94
18	0.754	30.00	30.00	2.51
19	0.551	30.00	30.00	1.84
20	0.446	30.00	30.00	1.49
21	0.709	30.00	30.00	2.36
22	0.446	30.00	30.00	1.49
23	0.446	30.00	30.00	1.49
24	0.403	30.00	30.00	1.34
25	3.137	30.00	30.00	10.46
26	0.319	30.00	30.00	1.06
27	0.273	30.00	30.00	0.91
28	0.302	30.00	30.00	1.01
29	0.992	30.00	30.00	3.31
30	1.056	30.00	30.00	3.52
31	1.690	30.00	30.00	5.63
32	0.348	30.00	30.00	1.16
33	0.384	30.00	30.00	1.28
34	1.035	30.00	30.00	3.45
35	0.878	30.00	30.00	2.93
36	0.843	30.00	30.00	2.81
37	0.277	30.00	30.00	0.92
38	0.296	30.00	30.00	0.99
39	0.939	30.00	30.00	3.13
40	0.765	30.00	30.00	2.55
41	0.746	30.00	30.00	2.49
42	0.277	30.00	30.00	0.92

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

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	0.08278	0.0269	-0.01357	0.0144	0.1333	0.0097	2.583	-2.473	85.99
2P	0.08552	0.026	-0.01829	0.0688	0.1227	0.0131	0.08552	-13.72	85.98
3P	0.07236	0.02673	-0.01321	-0.0016	0.1299	0.0183	2.572	-2.473	80.99
4P	0.074	0.02728	-0.0163	0.0963	0.1165	0.0159	0.074	-9.723	80.98
5P	0.05885	0.02353	-0.01259	-0.0308	0.1314	0.0179	2.559	-2.476	74.99
6P	0.0526	0.02271	-0.01212	0.0010	0.0916	0.0175	2.553	-2.477	71.99
7P	0.04867	0.02318	-0.01157	0.0062	0.0859	0.0173	2.549	-2.477	68.99
8P	0.05158	0.02434	-0.04206	0.2458	0.0960	0.0145	0.05158	-14.23	68.96
9P	0.04039	0.0193	-0.01055	-0.0320	0.0937	0.0147	2.54	-2.481	63.99
10P	0.03295	0.01981	-0.009392	0.0070	0.0797	0.0121	2.533	-2.48	58.99
11P	0.03474	0.01969	-0.01166	0.0577	0.0733	0.0132	0.03474	-10.23	58.99
12P	0.02769	0.01775	-0.008892	-0.0319	0.0512	0.0077	3.215	-3.17	54.04
13P	0.02253	0.01679	-0.008285	0.0010	0.0460	0.0094	4.036	-3.997	48.1
14P	0.01799	0.01712	-0.00775	-0.0081	0.0310	0.0064	4.925	-4.89	41.49
15P	0.01134	0.01157	-0.005552	-0.0174	0.0322	-0.0111	6.914	-6.891	26.99
16P	0.0003118	0.0004874	-0.001212	0.0021	-0.0170	-0.1336	10	-10	4.999
17P	0	0	0	0.0000	0.0000	0.0000	10.69	-10.69	0
22P	0.1559	0.03034	-0.002942	-0.0120	0.2602	0.0119	0.1559	0.03034	104
23P	0.1158	0.02845	-0.002813	-0.0117	0.2438	0.0119	0.1158	0.02845	95
24P	0.08274	0.02667	-0.002653	-0.0108	0.1596	0.0119	0.08274	0.02667	86
25P	0.07115	0.02569	-0.002567	-0.0125	0.1193	0.0118	0.07115	0.02569	81
26P	0.0479	0.02226	-0.002321	-0.0191	0.1018	0.0111	0.0479	0.02226	69
27P	0.03222	0.01899	-0.002075	-0.0163	0.0742	0.0101	0.03222	0.01899	59
28P	0.01085	0.01092	-0.001097	-0.0244	0.0278	0.0048	0.01085	0.01092	27
29P	0	0	0	0.0000	0.0000	0.0000	0	0	0
30P	0.06812	-0.3129	-0.476	0.0000	0.0000	0.0000	0.06812	0.1871	85.52
31P	-0.4173	0.5265	-0.0171	0.0000	0.0000	0.0000	0.08274	0.5265	85.98
32P	0.1325	-0.3103	-0.4763	0.0000	0.0000	0.0000	0.1325	0.1897	103.5
33P	-0.3441	0.5301	-0.01739	0.0000	0.0000	0.0000	0.1559	0.5301	104
1X	0.08156	0.02762	-0.01472	-0.0347	0.1365	0.0194	2.582	2.528	85.99
1XY	0.08194	0.0262	-0.004385	-0.0359	0.1142	0.0154	-2.418	2.526	86
1Y	0.08325	0.02579	-0.003228	0.0153	0.1175	0.0150	-2.417	-2.474	86
2X	0.07856	0.02713	-0.02112	-0.0721	0.1224	0.0155	0.07856	13.78	85.98
3X	0.07098	0.02605	-0.01448	-0.0233	0.1296	0.0130	2.571	2.526	80.99
3XY	0.07046	0.02486	-0.004322	-0.0285	0.1143	0.0148	-2.43	2.525	81
3Y	0.0716	0.02537	-0.003067	0.0035	0.1136	0.0140	-2.428	-2.475	81
4X	0.06905	0.0245	-0.01843	-0.0946	0.1164	0.0128	0.06905	9.775	80.98
5X	0.05796	0.02591	-0.01395	-0.0028	0.1254	0.0128	2.558	2.526	74.99
5XY	0.05898	0.02367	-0.004469	0.0057	0.1043	0.0172	-2.441	2.524	75
5Y	0.06073	0.02315	-0.003117	-0.0402	0.0972	0.0144	-2.439	-2.477	75
6X	0.05183	0.02495	-0.01355	-0.0369	0.0967	0.0128	2.552	2.525	71.99
6XY	0.05332	0.02361	-0.004537	-0.0245	0.1190	0.0185	-2.447	2.524	72
6Y	0.05523	0.0214	-0.00311	-0.0120	0.1232	0.0146	-2.445	-2.479	72
7X	0.04742	0.02252	-0.01307	-0.0433	0.0925	0.0127	2.547	2.523	68.99
7XY	0.04699	0.02115	-0.004519	-0.0517	0.1065	0.0198	-2.453	2.521	69
7Y	0.04846	0.02187	-0.003019	0.0145	0.1121	0.0147	-2.452	-2.478	69
8X	0.04394	0.01997	-0.05082	-0.2812	0.0961	0.0152	0.04394	14.27	68.95
9X	0.03899	0.02303	-0.01197	-0.0066	0.0934	0.0158	2.539	2.523	63.99
9XY	0.0385	0.02074	-0.00453	-0.0046	0.0919	0.0179	-2.462	2.521	64
9Y	0.03996	0.01891	-0.003065	-0.0341	0.0904	0.0173	-2.46	-2.481	64

10X	0.03162	0.01939	-0.01057	-0.0384	0.0770	0.0189	2.532	2.519	58.99
10XY	0.03132	0.01798	-0.004489	-0.0394	0.0642	0.0162	-2.469	2.518	59
10Y	0.03278	0.01841	-0.003145	0.0038	0.0650	0.0197	-2.467	-2.482	59
11X	0.02901	0.01809	-0.01804	-0.0975	0.0696	0.0181	0.02901	10.27	58.98
12X	0.0263	0.01925	-0.01003	0.0057	0.0463	0.0202	3.214	3.207	54.04
12XY	0.02562	0.01636	-0.003963	-0.0109	0.0592	0.0126	-3.162	3.204	54.04
12Y	0.02734	0.01637	-0.002362	-0.0243	0.0615	0.0233	-3.16	-3.171	54.05
13X	0.0212	0.01841	-0.009117	-0.0134	0.0412	0.0163	4.035	4.032	48.1
13XY	0.0203	0.01437	-0.003423	-0.0177	0.0417	0.0124	-3.993	4.028	48.1
13Y	0.02219	0.01459	-0.001747	-0.0100	0.0453	0.0224	-3.991	-3.999	48.1
14X	0.01663	0.01698	-0.008017	-0.0141	0.0290	0.0140	4.924	4.924	41.49
14XY	0.01607	0.01272	-0.002906	-0.0084	0.0295	0.0107	-4.891	4.92	41.5
14Y	0.01783	0.01281	-0.001363	-0.0116	0.0362	0.0227	-4.89	-4.895	41.5
15X	0.01038	0.01128	-0.005852	-0.0225	0.0203	0.0061	6.913	6.913	26.99
15XY	0.009925	0.009743	-0.00216	-0.0202	0.0212	0.0072	-6.892	6.912	27
15Y	0.01149	0.01017	-0.001104	-0.0009	0.0180	0.0213	-6.891	-6.892	27
16X	0.0002782	0.000248	-0.001886	-0.0102	0.0044	0.0165	10	10	4.998
16XY	0.0002443	0.0004968	-0.0004203	-0.0109	0.0096	-0.0141	-10	10	5
16Y	0.0007611	0.000894	0.0003666	-0.0024	0.0376	0.1336	-9.999	-9.999	5
17X	0	0	0	0.0000	0.0000	0.0000	10.69	10.69	0
17XY	0	0	0	0.0000	0.0000	0.0000	-10.69	10.69	0
17Y	0	0	0	0.0000	0.0000	0.0000	-10.69	-10.69	0
30X	0.08274	1.026	-0.0171	0.0000	0.0000	0.0000	0.08274	0.5265	85.98
31Y	0.5827	0.5265	-0.0171	0.0000	0.0000	0.0000	0.08274	0.5265	85.98
32X	0.1559	1.03	-0.01739	0.0000	0.0000	0.0000	0.1559	0.5301	104
33Y	0.6559	0.5301	-0.01739	0.0000	0.0000	0.0000	0.1559	0.5301	104
18S	0.05209	0.02383	-0.01216	0.0000	0.0000	0.0000	2.552	0.02383	71.99
19S	0.05389	0.09864	-0.008022	0.0000	0.0000	0.0000	0.05389	-2.401	71.99
20S	0.003553	0.0002688	0.0002912	-0.0009	-0.0064	0.0294	10	0.0002688	5
21S	0.0003924	0.04593	-0.006709	-0.0007	0.0016	-0.0017	0.0003924	-9.954	4.993
18Y	0.05431	0.02251	-0.003529	0.0000	0.0000	0.0000	-2.446	0.02251	72
19X	0.05258	-0.03036	-0.009282	0.0000	0.0000	0.0000	0.05258	2.47	71.99
20Y	-0.003092	0.0005082	0.0002508	-0.0000	0.0236	-0.0276	-10	0.0005082	5
21X	0.0001909	-0.004146	-0.0007673	-0.0106	0.0028	-0.0017	0.0001909	9.996	4.999

Joint Support Reactions for Load Case "NESC Heavy - Longitudinal":

Joint Label	X Force (kips)	X Usage %	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 %
17P	-2.96	0.0	1.84	0.0	0.0	-15.93	0.0	0.0	16.31	0.0	-0.01	0.0	0.0	0.0	0.0	0.26	0.0	0.0
29P	-0.14	0.0	-0.63	0.0	0.0	-18.13	0.0	0.0	18.14	0.0	3.27	0.0	-3.0	0.0	0.0	-0.13	0.0	0.0
17X	-4.11	0.0	-4.24	0.0	0.0	-26.40	0.0	0.0	27.05	0.0	-0.04	0.0	0.0	0.0	0.0	-0.03	0.0	0.0
17XY	0.72	0.0	-1.89	0.0	0.0	-6.49	0.0	0.0	6.79	0.0	0.03	0.0	-0.0	0.0	0.0	0.03	0.0	0.0
17Y	-1.74	0.0	-1.97	0.0	0.0	8.41	0.0	0.0	8.81	0.0	-0.00	0.0	-0.1	0.0	0.0	-0.26	0.0	0.0

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

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	0.0570	0.0662	-0.3033	-0.0570	-0.0662	0.3033	0.0828	0.0269	-0.0136
2P	0.0000	0.0367	-2.3915	-0.0000	-0.0367	2.3915	0.0855	0.0260	-0.0183
3P	0.1600	0.1164	-0.6218	-0.1600	-0.1164	0.6218	0.0724	0.0267	-0.0132
4P	0.0000	0.0628	-2.9690	-0.0000	-0.0628	2.9690	0.0740	0.0273	-0.0163
5P	0.0000	0.0949	-0.0985	0.0000	-0.0949	0.0985	0.0588	0.0235	-0.0126

6P	0.0000	0.0469	-0.0503	-0.0000	-0.0469	0.0503	0.0526	0.0227	-0.0121
7P	0.1890	0.0982	-0.6748	-0.1890	-0.0982	0.6748	0.0487	0.0232	-0.0116
8P	0.0000	0.0416	-2.9980	-0.0000	-0.0416	2.9980	0.0516	0.0243	-0.0421
9P	0.0000	0.1229	-0.1253	-0.0000	-0.1229	0.1253	0.0404	0.0193	-0.0105
10P	0.2320	0.1117	-0.7975	-0.2320	-0.1117	0.7975	0.0330	0.0198	-0.0094
11P	0.0000	0.0461	-2.9583	-0.0000	-0.0461	2.9583	0.0347	0.0197	-0.0117
12P	0.0000	0.1099	-0.1347	-0.0000	-0.1099	0.1347	0.0277	0.0178	-0.0089
13P	0.0000	0.1357	-0.1632	-0.0000	-0.1357	0.1632	0.0225	0.0168	-0.0083
14P	0.2750	0.2270	-1.0505	-0.2750	-0.2270	1.0505	0.0180	0.0171	-0.0077
15P	0.3180	0.3601	-1.4270	-0.3180	-0.3601	1.4270	0.0113	0.0116	-0.0056
16P	0.2750	0.2635	-1.1080	-0.2750	-0.2635	1.1080	0.0003	0.0005	-0.0012
17P	0.0000	0.0741	-0.0858	2.9589	-1.9163	-15.8454	0.0000	0.0000	0.0000
22P	0.3900	0.0000	-1.8635	-0.3900	0.0000	1.8635	0.1559	0.0303	-0.0029
23P	0.8430	0.0000	-2.7811	-0.8430	-0.0000	2.7811	0.1158	0.0285	-0.0028
24P	0.0960	0.0000	-0.8599	-0.0960	0.0000	0.8600	0.0827	0.0267	-0.0027
25P	0.1170	0.2040	-1.0375	-0.1170	-0.2040	1.0375	0.0711	0.0257	-0.0026
26P	0.1510	0.3740	-1.3323	-0.1510	-0.3740	1.3323	0.0479	0.0223	-0.0023
27P	0.2880	0.7140	-2.5137	-0.2880	-0.7140	2.5137	0.0322	0.0190	-0.0021
28P	0.5910	1.0030	-4.2449	-0.5910	-1.0030	4.2449	0.0108	0.0109	-0.0011
29P	0.0000	0.4590	-1.0036	0.1405	0.1696	-17.1280	0.0000	0.0000	0.0000
30P	0.0000	0.0000	-0.0001	0.0000	-0.0000	0.0001	0.0681	-0.3129	-0.4760
31P	0.0000	0.0024	-0.0001	0.0000	-0.0024	0.0001	-0.4173	0.5265	-0.0171
32P	0.0000	0.0000	-0.0001	0.0000	-0.0000	0.0001	0.1325	-0.3103	-0.4763
33P	0.0000	0.0024	-0.0001	0.0000	-0.0024	0.0001	-0.3441	0.5301	-0.0174
1X	0.0570	0.0000	-0.3033	-0.0570	0.0000	0.3033	0.0816	0.0276	-0.0147
1XY	0.0570	0.0000	-0.3033	-0.0570	-0.0000	0.3033	0.0819	0.0262	-0.0044
1Y	0.0000	0.0662	-0.1293	-0.0000	-0.0662	0.1293	0.0833	0.0258	-0.0032
2X	0.0000	0.0000	-1.4545	0.0000	-0.0000	1.4545	0.0786	0.0271	-0.0211
3X	0.4200	0.0000	-0.8518	-0.4200	-0.0000	0.8518	0.0710	0.0260	-0.0145
3XY	0.0570	0.0000	-0.3458	-0.0570	0.0000	0.3458	0.0705	0.0249	-0.0043
3Y	0.1510	0.1164	-0.3608	-0.1510	-0.1164	0.3608	0.0716	0.0254	-0.0031
4X	0.0000	0.0000	-2.9690	0.0000	-0.0000	2.9690	0.0690	0.0245	-0.0184
5X	0.0000	0.0000	-0.0985	0.0000	0.0000	0.0985	0.0580	0.0259	-0.0140
5XY	0.0000	0.0000	-0.0985	0.0000	0.0000	0.0985	0.0590	0.0237	-0.0045
5Y	0.0000	0.0949	-0.0985	0.0000	-0.0949	0.0985	0.0607	0.0232	-0.0031
6X	0.0000	0.0000	-0.0503	-0.0000	0.0000	0.0503	0.0518	0.0250	-0.0136
6XY	0.0000	0.0000	-0.0503	-0.0000	-0.0000	0.0503	0.0533	0.0236	-0.0045
6Y	0.0000	0.0469	-0.0503	-0.0000	-0.0469	0.0503	0.0552	0.0214	-0.0031
7X	0.3630	0.0000	-0.6748	-0.3630	-0.0000	0.6748	0.0474	0.0225	-0.0131
7XY	0.0000	0.0000	-0.1688	0.0000	-0.0000	0.1688	0.0470	0.0212	-0.0045
7Y	0.1510	0.0982	-0.3578	-0.1510	-0.0982	0.3578	0.0485	0.0219	-0.0030
8X	0.0000	0.0000	-2.9980	0.0000	-0.0000	2.9980	0.0439	0.0200	-0.0508
9X	0.0000	0.0000	-0.1253	0.0000	-0.0000	0.1253	0.0390	0.0230	-0.0120
9XY	0.0000	0.0000	-0.1253	-0.0000	0.0000	0.1253	0.0385	0.0207	-0.0045
9Y	0.0000	0.1229	-0.1253	-0.0000	-0.1229	0.1253	0.0400	0.0189	-0.0031
10X	0.4460	0.0000	-0.7975	-0.4460	-0.0000	0.7975	0.0316	0.0194	-0.0106
10XY	0.0000	0.0000	-0.1765	0.0000	0.0000	0.1765	0.0313	0.0180	-0.0045
10Y	0.1850	0.1117	-0.4085	-0.1850	-0.1117	0.4085	0.0328	0.0184	-0.0031
11X	0.0000	0.0000	-2.9583	0.0000	-0.0000	2.9583	0.0290	0.0181	-0.0180
12X	0.0000	0.0000	-0.1347	-0.0000	-0.0000	0.1347	0.0263	0.0192	-0.0100
12XY	0.0000	0.0000	-0.1347	0.0000	-0.0000	0.1347	0.0256	0.0164	-0.0040
12Y	0.0000	0.1099	-0.1347	-0.0000	-0.1099	0.1347	0.0273	0.0164	-0.0024
13X	0.0000	0.0000	-0.1632	-0.0000	-0.0000	0.1632	0.0212	0.0184	-0.0091
13XY	0.0000	0.0000	-0.1632	0.0000	-0.0000	0.1632	0.0203	0.0144	-0.0034
13Y	0.0000	0.1357	-0.1632	-0.0000	-0.1357	0.1632	0.0222	0.0146	-0.0017
14X	0.5280	0.0000	-1.0505	-0.5280	-0.0000	1.0505	0.0166	0.0170	-0.0080
14XY	0.0000	0.0000	-0.3145	0.0000	-0.0000	0.3145	0.0161	0.0127	-0.0029
14Y	0.2200	0.2270	-0.5895	-0.2200	-0.2270	0.5895	0.0178	0.0128	-0.0014
15X	0.6110	0.0000	-1.4270	-0.6110	-0.0000	1.4270	0.0104	0.0113	-0.0059

15XY	0.0000	0.0000	-0.5760	0.0000	0.0000	0.5760	0.0099	0.0097	-0.0022
15Y	0.2540	0.3601	-0.8940	-0.2540	-0.3601	0.8940	0.0115	0.0102	-0.0011
16X	0.5280	0.0000	-1.1080	-0.5280	-0.0000	1.1080	0.0003	0.0002	-0.0019
16XY	0.0000	0.0000	-0.3720	0.0000	-0.0000	0.3720	0.0002	0.0005	-0.0004
16Y	0.2200	0.2635	-0.6470	-0.2200	-0.2635	0.6470	0.0008	0.0009	0.0004
17X	0.0000	0.0000	-0.0858	4.1071	4.2423	-26.3129	0.0000	0.0000	0.0000
17XY	0.0000	0.0000	-0.0858	-0.7184	1.8892	-6.4004	0.0000	0.0000	0.0000
17Y	0.0000	0.0741	-0.0858	1.7419	1.8939	8.4927	0.0000	0.0000	0.0000
30X	0.0000	0.0024	-0.0001	0.0000	-0.0024	0.0001	0.0827	1.0265	-0.0171
31Y	0.0000	0.0024	-0.0001	0.0000	-0.0024	0.0001	0.5827	0.5265	-0.0171
32X	0.0000	0.0024	-0.0001	0.0000	-0.0024	0.0001	0.1559	1.0301	-0.0174
33Y	0.0000	0.0024	-0.0001	0.0000	-0.0024	0.0001	0.6559	0.5301	-0.0174
18S	0.0000	0.0000	-0.0416	0.0000	-0.0000	0.0416	0.0521	0.0238	-0.0122
19S	0.0000	0.0741	-0.0439	0.0000	-0.0741	0.0439	0.0539	0.0986	-0.0080
20S	0.0000	0.0000	-0.1415	0.0000	0.0000	0.1415	0.0036	0.0003	0.0003
21S	0.0000	0.2011	-0.1415	0.0000	-0.2011	0.1415	0.0004	0.0459	-0.0067
18Y	0.0000	0.0000	-0.0416	0.0000	-0.0000	0.0416	0.0543	0.0225	-0.0035
19X	0.0000	0.0000	-0.0439	0.0000	-0.0000	0.0439	0.0526	-0.0304	-0.0093
20Y	0.0000	0.0000	-0.1415	-0.0000	0.0000	0.1415	-0.0031	0.0005	0.0003
21X	0.0000	0.0000	-0.1415	-0.0000	-0.0000	0.1415	0.0002	-0.0041	-0.0008

Crossing Diagonal Check for Load Case "NESC Heavy - Longitudinal" (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.
g13X	g13P	Short only	-1.09	0.12	11.56	0.750	0.500	0.500	123.69	122.85	5	8.63	1.000	158.01	143.38	6
g16X	g16XY	Long only	-0.97	-2.78	17.27	0.500	0.750	0.500	120.57	120.47	5	12.24	1.000	160.76	145.07	6
g16XY	g16X	Long only	-2.78	-0.97	17.27	0.500	0.750	0.500	120.57	120.47	5	12.24	1.000	160.76	145.07	6
g16Y	g16P	Long only	-1.94	0.04	17.27	0.500	0.750	0.500	120.57	120.47	5	12.24	1.000	160.76	145.07	6
g25P	g25X	Short only	-1.66	-0.60	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g25X	g25P	Short only	-0.60	-1.66	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g26P	g26Y	Short only	-0.23	-0.08	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g26X	g26XY	Short only	-0.16	-0.01	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g26XY	g26X	Short only	-0.01	-0.16	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g26Y	g26P	Short only	-0.08	-0.23	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g29P	g29X	Long only	-1.01	-0.07	8.82	0.560	0.780	0.560	175.25	162.14	5	6.91	1.000	222.71	183.17	6
g29X	g29P	Long only	-0.07	-1.01	8.82	0.560	0.780	0.560	175.25	162.14	5	6.91	1.000	222.71	183.17	6
g30P	g30Y	Long only	-0.06	-0.01	8.82	0.560	0.780	0.560	175.25	162.14	5	6.91	1.000	222.71	183.17	6
g30X	g30XY	Long only	-0.04	0.00	8.82	0.560	0.780	0.560	175.25	162.14	5	6.91	1.000	222.71	183.17	6
g30Y	g30P	Long only	-0.01	-0.06	8.82	0.560	0.780	0.560	175.25	162.14	5	6.91	1.000	222.71	183.17	6

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

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Usage %
1	2.392	30.00	30.00	7.97
2	1.455	30.00	30.00	4.85
3	2.970	30.00	30.00	9.90
4	2.969	30.00	30.00	9.90
5	2.998	30.00	30.00	9.99

6	2.998	30.00	30.00	9.99
7	2.959	30.00	30.00	9.86
8	2.958	30.00	30.00	9.86
14	1.172	30.00	30.00	3.91
15	1.506	30.00	30.00	5.02
16	1.109	30.00	30.00	3.70
17	0.838	30.00	30.00	2.79
18	0.708	30.00	30.00	2.36
19	0.950	30.00	30.00	3.17
20	0.316	30.00	30.00	1.05
21	0.652	30.00	30.00	2.17
22	0.309	30.00	30.00	1.03
23	0.309	30.00	30.00	1.03
24	0.350	30.00	30.00	1.17
25	2.906	30.00	30.00	9.69
26	0.865	30.00	30.00	2.88
27	1.064	30.00	30.00	3.55
28	1.392	30.00	30.00	4.64
29	2.629	30.00	30.00	8.76
30	4.402	30.00	30.00	14.67
31	1.904	30.00	30.00	6.35
32	0.766	30.00	30.00	2.55
33	0.914	30.00	30.00	3.05
34	1.176	30.00	30.00	3.92
35	1.552	30.00	30.00	5.17
36	1.227	30.00	30.00	4.09
37	0.401	30.00	30.00	1.34
38	0.462	30.00	30.00	1.54
39	0.669	30.00	30.00	2.23
40	0.997	30.00	30.00	3.32
41	0.732	30.00	30.00	2.44
42	0.408	30.00	30.00	1.36

Equilibrium Joint Positions and Rotations for Load Case "Extreme Wind - Longitudinal":

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	0.259	0.1146	-0.01698	-0.1133	0.4144	0.0018	2.759	-2.385	85.98
2P	0.2604	0.1142	0.02004	-0.0984	0.3987	0.0071	0.2604	-13.64	86.02
3P	0.2233	0.1042	-0.01643	-0.1282	0.4068	0.0180	2.723	-2.396	80.98
4P	0.2255	0.104	0.01236	-0.0848	0.3759	0.0182	0.2255	-9.646	81.01
5P	0.1822	0.08873	-0.01529	-0.1188	0.3793	0.0172	2.682	-2.411	74.98
6P	0.1634	0.08354	-0.01444	-0.0993	0.3244	0.0168	2.663	-2.416	71.99
7P	0.1476	0.07761	-0.01357	-0.1213	0.3086	0.0165	2.648	-2.422	68.99
8P	0.1506	0.07766	0.01039	-0.0237	0.3050	0.0130	0.1506	-14.17	69.01
9P	0.1204	0.06496	-0.012	-0.1170	0.2923	0.0159	2.62	-2.435	63.99
10P	0.0978	0.05826	-0.01034	-0.0752	0.2339	0.0150	2.598	-2.442	58.99
11P	0.09975	0.05769	0.01251	-0.1021	0.2306	0.0138	0.09975	-10.19	59.01
12P	0.08014	0.05027	-0.01028	-0.0937	0.1795	0.0112	3.268	-3.138	54.04
13P	0.06366	0.04392	-0.009984	-0.0373	0.1403	0.0137	4.077	-3.969	48.09
14P	0.04957	0.04093	-0.009808	-0.0427	0.1027	0.0065	4.957	-4.866	41.49
15P	0.02797	0.02281	-0.006834	-0.0555	0.0838	-0.0273	6.93	-6.879	26.99
16P	0.0006295	0.001195	-0.001648	0.0076	-0.0491	-0.3378	10	-9.999	4.998
17P	0	0	0	0.0000	0.0000	0.0000	10.69	-10.69	0
22P	0.5151	0.1567	-0.003671	-0.1369	0.9154	0.0106	0.5151	0.1567	104
23P	0.3745	0.1353	-0.002524	-0.1350	0.8537	0.0107	0.3745	0.1353	95
24P	0.2599	0.1145	-0.001729	-0.1286	0.5375	0.0113	0.2599	0.1145	86
25P	0.2218	0.1034	-0.001535	-0.1272	0.3869	0.0116	0.2218	0.1034	81
26P	0.147	0.07691	-0.00117	-0.1219	0.3245	0.0115	0.147	0.07691	69
27P	0.09705	0.05742	-0.0009243	-0.0971	0.2383	0.0109	0.09705	0.05742	59
28P	0.02735	0.02135	-0.0004231	-0.0581	0.0778	0.0063	0.02735	0.02135	27
29P	0	0	0	0.0000	0.0000	0.0000	0	0	0
30P	0.2599	-0.3222	-0.4977	0.0000	0.0000	0.0000	0.2599	0.1778	85.5
31P	-0.2401	0.1778	-0.4977	0.0000	0.0000	0.0000	0.2599	0.1778	85.5
32P	0.5151	-0.28	-0.4997	0.0000	0.0000	0.0000	0.5151	0.22	103.5
33P	0.01514	0.22	-0.4997	0.0000	0.0000	0.0000	0.5151	0.22	103.5
1X	0.2579	0.1153	-0.02789	-0.1375	0.4147	0.0220	2.758	2.615	85.97
1XY	0.2582	0.1137	0.005549	-0.1426	0.4032	0.0217	-2.242	2.614	86.01
1Y	0.2593	0.1141	0.01646	-0.1099	0.4040	0.0038	-2.241	-2.386	86.02
2X	0.2543	0.1146	-0.03971	-0.1493	0.3977	0.0168	0.2543	13.86	85.96
3X	0.2222	0.1036	-0.02731	-0.1240	0.4049	0.0070	2.722	2.604	80.97
3XY	0.2218	0.1028	0.005451	-0.1416	0.3874	0.0101	-2.278	2.603	81.01
3Y	0.223	0.1028	0.01634	-0.1115	0.3841	0.0158	-2.277	-2.397	81.02
4X	0.221	0.1028	-0.02995	-0.1613	0.3754	0.0064	0.221	9.853	80.97
5X	0.1812	0.09252	-0.02595	-0.1359	0.3875	0.0113	2.681	2.593	74.97
5XY	0.1838	0.08805	0.004542	-0.1063	0.3551	0.0137	-2.316	2.588	75
5Y	0.1853	0.09072	0.01519	-0.1506	0.3578	0.0161	-2.315	-2.409	75.02
6X	0.1619	0.08443	-0.0248	-0.1521	0.3313	0.0136	2.662	2.584	71.98
6XY	0.165	0.08308	0.004095	-0.1078	0.3639	0.0156	-2.335	2.583	72
6Y	0.1662	0.08233	0.01446	-0.1445	0.3666	0.0161	-2.334	-2.418	72.01
7X	0.1462	0.07745	-0.02364	-0.1187	0.2979	0.0156	2.646	2.577	68.98
7XY	0.1462	0.07609	0.003687	-0.1482	0.3382	0.0178	-2.354	2.576	69
7Y	0.1477	0.07637	0.01376	-0.0915	0.3250	0.0159	-2.352	-2.424	69.01
8X	0.1428	0.07608	-0.05049	-0.2265	0.3060	0.0151	0.1428	14.33	68.95
9X	0.1199	0.06946	-0.02102	-0.1115	0.2981	0.0179	2.62	2.569	63.98
9XY	0.1185	0.06473	0.002628	-0.1048	0.2925	0.0200	-2.382	2.565	64
9Y	0.1213	0.06707	0.01179	-0.1251	0.2934	0.0176	-2.379	-2.433	64.01

10X	0.09617	0.05804	-0.0177	-0.1026	0.2283	0.0205	2.596	2.558	58.98
10XY	0.09611	0.05649	0.001384	-0.1065	0.2149	0.0224	-2.404	2.556	59
10Y	0.09769	0.05659	0.009347	-0.0868	0.2207	0.0192	-2.402	-2.443	59.01
11X	0.09304	0.05705	-0.02491	-0.1346	0.2183	0.0224	0.09304	10.31	58.98
12X	0.07981	0.05296	-0.01756	-0.0414	0.1543	0.0174	3.268	3.241	54.03
12XY	0.0788	0.04721	0.001328	-0.0946	0.1751	0.0243	-3.109	3.235	54.05
12Y	0.08102	0.04968	0.01016	-0.0705	0.1730	0.0243	-3.107	-3.138	54.06
13X	0.0644	0.04727	-0.01648	-0.0540	0.1272	0.0105	4.078	4.061	48.09
13XY	0.06278	0.03919	0.001136	-0.0647	0.1216	0.0234	-3.951	4.052	48.11
13Y	0.06446	0.04118	0.01044	-0.0705	0.1434	0.0292	-3.949	-3.972	48.12
14X	0.0506	0.04063	-0.01491	-0.0590	0.1051	0.0052	4.958	4.948	41.49
14XY	0.0505	0.03205	0.0005606	-0.0545	0.0945	0.0300	-4.857	4.939	41.5
14Y	0.04998	0.0331	0.009945	-0.0556	0.1108	0.0326	-4.857	-4.874	41.51
15X	0.02581	0.0227	-0.01175	-0.0443	0.0741	-0.0174	6.928	6.925	26.99
15XY	0.02554	0.01887	0.0007278	-0.0442	0.0727	0.0508	-6.877	6.921	27
15Y	0.02862	0.02004	0.008209	-0.0226	0.0638	0.0452	-6.874	-6.882	27.01
16X	0.0005111	0.001036	-0.003758	0.0088	0.0653	-0.3063	10	10	4.996
16XY	0.001419	0.001724	0.000473	0.0072	-0.0279	0.3129	-9.999	10	5
16Y	0.002867	0.002474	0.003055	-0.0063	0.1056	0.3355	-9.997	-9.998	5.003
17X	0	0	0	0.0000	0.0000	0.0000	10.69	10.69	0
17XY	0	0	0	0.0000	0.0000	0.0000	-10.69	10.69	0
17Y	0	0	0	0.0000	0.0000	0.0000	-10.69	-10.69	0
30X	0.2599	0.6778	-0.4977	0.0000	0.0000	0.0000	0.2599	0.1778	85.5
31Y	0.7599	0.1778	-0.4977	0.0000	0.0000	0.0000	0.2599	0.1778	85.5
32X	0.5151	0.72	-0.4997	0.0000	0.0000	0.0000	0.5151	0.22	103.5
33Y	1.015	0.22	-0.4997	0.0000	0.0000	0.0000	0.5151	0.22	103.5
18S	0.1616	0.08395	-0.01878	0.0000	0.0000	0.0000	2.662	0.08395	71.98
19S	0.1648	0.1639	-0.0007481	0.0000	0.0000	0.0000	0.1648	-2.336	72
20S	-0.004805	0.0008566	-0.001066	-0.0131	0.0082	0.1613	9.995	0.0008566	4.999
21S	0.00128	0.125	-0.01912	-0.0043	0.0061	-0.0049	0.00128	-9.875	4.981
18Y	0.166	0.08268	0.008792	0.0000	0.0000	0.0000	-2.334	0.08268	72.01
19X	0.1634	0.1695	-0.01104	0.0000	0.0000	0.0000	0.1634	2.67	71.99
20Y	0.006918	0.001575	-0.001294	-0.0113	0.0388	-0.1557	-9.993	0.001575	4.999
21X	0.0007102	0.1039	0.01279	0.0115	0.0088	-0.0046	0.0007102	10.1	5.013

Joint Support Reactions for Load Case "Extreme Wind - Longitudinal":

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	H-Shear Usage %	Z Force (kips)	Comp. Uplift Usage %	Result. Usage %	Result. Force (kips)	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 %
17P	-5.26	0.0	1.31	0.0	0.0	-21.49	0.0	0.0	22.16	0.0	-0.05	0.0	0.0	0.0	0.0	0.67	0.0	0.0
29P	-0.30	0.0	-0.81	0.0	0.0	-6.58	0.0	0.0	6.63	0.0	5.66	0.0	-7.0	0.0	0.0	-0.18	0.0	0.0
17X	-9.05	0.0	-9.72	0.0	0.0	-54.26	0.0	0.0	55.86	0.0	-0.17	0.0	0.0	0.0	0.0	0.60	0.0	0.0
17XY	-1.45	0.0	-2.86	0.0	0.0	4.30	0.0	0.0	5.37	0.0	0.04	0.0	-0.1	0.0	0.0	-0.64	0.0	0.0
17Y	-9.29	0.0	-10.22	0.0	0.0	51.87	0.0	0.0	53.67	0.0	-0.02	0.0	-0.2	0.0	0.0	-0.65	0.0	0.0

Joint Displacements, Loads and Member Forces on Joints for Load Case "Extreme Wind - Longitudinal":

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	0.1960	0.1771	-0.2439	-0.1960	-0.1771	0.2439	0.2590	0.1146	-0.0170
2P	0.0000	0.1771	-0.8749	-0.0000	-0.1771	0.8749	0.2604	0.1142	0.0200
3P	0.4960	0.1680	-0.2478	-0.4960	-0.1680	0.2478	0.2233	0.1042	-0.0164
4P	0.0000	0.1680	-1.1188	-0.0000	-0.1680	1.1188	0.2255	0.1040	0.0124
5P	0.0000	0.1680	-0.0948	0.0000	-0.1680	0.0948	0.1822	0.0887	-0.0153

6P	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1634	0.0835	-0.0144
7P	0.5490	0.1680	-0.2318	-0.5490	-0.1680	0.2318	0.1476	0.0776	-0.0136
8P	0.0000	0.1680	-1.1188	-0.0000	-0.1680	1.1188	0.1506	0.0777	0.0104
9P	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1204	0.0650	-0.0120
10P	0.6740	0.1680	-0.2628	-0.6740	-0.1680	0.2628	0.0978	0.0583	-0.0103
11P	0.0000	0.1680	-1.1188	-0.0000	-0.1680	1.1188	0.0998	0.0577	0.0125
12P	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.0801	0.0503	-0.0103
13P	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.0637	0.0439	-0.0100
14P	0.7990	0.7213	-0.5847	-0.7990	-0.7213	0.5847	0.0496	0.0409	-0.0098
15P	0.9240	0.5533	-0.5210	-0.9240	-0.5533	0.5210	0.0280	0.0228	-0.0068
16P	0.7990	0.5533	-0.4900	-0.7990	-0.5533	0.4900	0.0006	0.0012	-0.0016
17P	0.0000	0.5533	-0.2900	5.2616	-1.8682	-21.2006	0.0000	0.0000	0.0000
22P	1.4840	0.0091	-0.7921	-1.4840	-0.0091	0.7921	0.5151	0.1567	-0.0037
23P	3.1750	0.0091	-0.9521	-3.1750	-0.0091	0.9521	0.3745	0.1353	-0.0025
24P	0.2740	0.1771	-0.2649	-0.2740	-0.1771	0.2649	0.2599	0.1145	-0.0017
25P	0.3320	0.1680	-0.2148	-0.3320	-0.1680	0.2148	0.2218	0.1034	-0.0015
26P	0.4300	0.1680	-0.2508	-0.4300	-0.1680	0.2508	0.1470	0.0769	-0.0012
27P	0.8210	0.7213	-0.6817	-0.8210	-0.7213	0.6817	0.0970	0.0574	-0.0009
28P	1.6800	0.5533	-0.8990	-1.6800	-0.5533	0.8990	0.0273	0.0214	-0.0004
29P	0.0000	0.5533	-0.2900	0.3017	0.2574	-6.2856	0.0000	0.0000	0.0000
30P	0.0000	0.0091	-0.0711	-0.0000	-0.0091	0.0711	0.2599	-0.3222	-0.4977
31P	0.0000	0.0091	-0.0711	-0.0000	-0.0091	0.0711	-0.2401	0.1778	-0.4977
32P	0.0000	0.0091	-0.0711	-0.0000	-0.0091	0.0711	0.5151	-0.2800	-0.4997
33P	0.0000	0.0091	-0.0711	-0.0000	-0.0091	0.0711	0.0151	0.2200	-0.4997
1X	0.1960	0.1771	-0.2439	-0.1960	-0.1771	0.2439	0.2579	0.1153	-0.0279
1XY	0.1960	0.1771	-0.2439	-0.1960	-0.1771	0.2439	0.2582	0.1137	0.0055
1Y	0.0000	0.1771	-0.1659	-0.0000	-0.1771	0.1659	0.2593	0.1141	0.0165
2X	0.0000	0.1771	-0.5089	-0.0000	-0.1771	0.5089	0.2543	0.1146	-0.0397
3X	1.2940	0.1680	-0.3098	-1.2940	-0.1680	0.3098	0.2222	0.1036	-0.0273
3XY	0.1960	0.1680	-0.1728	-0.1960	-0.1680	0.1728	0.2218	0.1028	0.0055
3Y	0.4300	0.1680	-0.1388	-0.4300	-0.1680	0.1388	0.2230	0.1028	0.0163
4X	0.0000	0.1680	-1.1188	-0.0000	-0.1680	1.1188	0.2210	0.1028	-0.0299
5X	0.0000	0.1680	-0.0948	0.0000	-0.1680	0.0948	0.1812	0.0925	-0.0260
5XY	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1838	0.0880	0.0045
5Y	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1853	0.0907	0.0152
6X	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1619	0.0844	-0.0248
6XY	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1650	0.0831	0.0041
6Y	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1662	0.0823	0.0145
7X	1.0980	0.1680	-0.2318	-1.0980	-0.1680	0.2318	0.1462	0.0774	-0.0236
7XY	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1462	0.0761	0.0037
7Y	0.4300	0.1680	-0.1388	-0.4300	-0.1680	0.1388	0.1477	0.0764	0.0138
8X	0.0000	0.1680	-1.1188	-0.0000	-0.1680	1.1188	0.1428	0.0761	-0.0505
9X	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1199	0.0695	-0.0210
9XY	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1185	0.0647	0.0026
9Y	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1213	0.0671	0.0118
10X	1.3480	0.1680	-0.2628	-1.3480	-0.1680	0.2628	0.0962	0.0580	-0.0177
10XY	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.0961	0.0565	0.0014
10Y	0.5280	0.1680	-0.1478	-0.5280	-0.1680	0.1478	0.0977	0.0566	0.0093
11X	0.0000	0.1680	-1.1188	-0.0000	-0.1680	1.1188	0.0930	0.0570	-0.0249
12X	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.0798	0.0530	-0.0176
12XY	0.0000	0.1680	-0.0948	0.0000	-0.1680	0.0948	0.0788	0.0472	0.0013
12Y	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.0810	0.0497	0.0102
13X	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.0644	0.0473	-0.0165
13XY	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.0628	0.0392	0.0011
13Y	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.0645	0.0412	0.0104
14X	1.5970	0.7213	-0.5847	-1.5970	-0.7213	0.5847	0.0506	0.0406	-0.0149
14XY	0.0000	0.7213	-0.3847	-0.0000	-0.7213	0.3847	0.0505	0.0321	0.0006
14Y	0.6250	0.7213	-0.4477	-0.6250	-0.7213	0.4477	0.0500	0.0331	0.0099
15X	1.8470	0.5533	-0.5210	-1.8470	-0.5533	0.5210	0.0258	0.0227	-0.0117

15XY	0.0000	0.5533	-0.2900	-0.0000	-0.5533	0.2900	0.0255	0.0189	0.0007
15Y	0.7230	0.5533	-0.3630	-0.7230	-0.5533	0.3630	0.0286	0.0200	0.0082
16X	1.5970	0.5533	-0.4900	-1.5970	-0.5533	0.4900	0.0005	0.0010	-0.0038
16XY	0.0000	0.5533	-0.2900	0.0000	-0.5533	0.2900	0.0014	0.0017	0.0005
16Y	0.6250	0.5533	-0.3530	-0.6250	-0.5533	0.3530	0.0029	0.0025	0.0031
17X	0.0000	0.5533	-0.2900	9.0534	9.1646	-53.9701	0.0000	0.0000	0.0000
17XY	0.0000	0.5533	-0.2900	1.4541	2.3020	4.5940	0.0000	0.0000	0.0000
17Y	0.0000	0.5533	-0.2900	9.2922	9.6657	52.1552	0.0000	0.0000	0.0000
30X	0.0000	0.0091	-0.0711	-0.0000	-0.0091	0.0711	0.2599	0.6778	-0.4977
31Y	0.0000	0.0091	-0.0711	0.0000	-0.0091	0.0711	0.7599	0.1778	-0.4977
32X	0.0000	0.0091	-0.0711	-0.0000	-0.0091	0.0711	0.5151	0.7200	-0.4997
33Y	0.0000	0.0091	-0.0711	-0.0000	-0.0091	0.0711	1.0151	0.2200	-0.4997
18S	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1616	0.0840	-0.0188
19S	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1648	0.1639	-0.0007
20S	0.0000	0.5533	-0.2900	0.0000	-0.5533	0.2900	-0.0048	0.0009	-0.0011
21S	0.0000	0.5533	-0.2900	0.0000	-0.5533	0.2900	0.0013	0.1250	-0.0191
18Y	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1660	0.0827	0.0088
19X	0.0000	0.1680	-0.0948	-0.0000	-0.1680	0.0948	0.1634	0.1695	-0.0110
20Y	0.0000	0.5533	-0.2900	0.0000	-0.5533	0.2900	0.0069	0.0016	-0.0013
21X	0.0000	0.5533	-0.2900	-0.0000	-0.5533	0.2900	0.0007	0.1039	0.0128

Crossing Diagonal Check for Load Case "Extreme Wind - Longitudinal" (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.
g13P	g13X	Short only	-0.86	-0.35	11.56	0.750	0.500	0.500	123.69	122.85	5	8.63	1.000	158.01	143.38	6
g13X	g13P	Short only	-0.35	-0.86	11.56	0.750	0.500	0.500	123.69	122.85	5	8.63	1.000	158.01	143.38	6
g16XY	g16X	Long only	-5.41	0.81	17.27	0.500	0.750	0.500	120.57	120.47	5	12.24	1.000	160.76	145.07	6
g16Y	g16P	Long only	-5.65	1.09	17.27	0.500	0.750	0.500	120.57	120.47	5	12.24	1.000	160.76	145.07	6
g25P	g25X	Short only	-2.35	-1.21	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g25X	g25P	Short only	-1.21	-2.35	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g26P	g26Y	Short only	-0.87	-0.36	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g26Y	g26P	Short only	-0.36	-0.87	12.53	0.780	0.560	0.560	129.17	127.02	5	10.86	1.000	147.29	136.78	6
g28X	g28XY	Long only	-0.62	-0.07	11.66	0.560	0.780	0.560	147.51	141.00	5	8.89	1.000	187.46	161.49	6
g28XY	g28X	Long only	-0.07	-0.62	11.66	0.560	0.780	0.560	147.51	141.00	5	8.89	1.000	187.46	161.49	6
g29P	g29X	Long only	-1.60	-0.12	8.82	0.560	0.780	0.560	175.25	162.14	5	6.91	1.000	222.71	183.17	6
g29X	g29P	Long only	-0.12	-1.60	8.82	0.560	0.780	0.560	175.25	162.14	5	6.91	1.000	222.71	183.17	6
g30P	g30Y	Long only	-0.35	-0.23	8.82	0.560	0.780	0.560	175.25	162.14	5	6.91	1.000	222.71	183.17	6
g30Y	g30P	Long only	-0.23	-0.35	8.82	0.560	0.780	0.560	175.25	162.14	5	6.91	1.000	222.71	183.17	6

Summary of Clamp Capacities and Usages for Load Case "Extreme Wind - Longitudinal":

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Usage %
1	0.893	30.00	30.00	2.98
2	0.539	30.00	30.00	1.80
3	1.131	30.00	30.00	3.77
4	1.131	30.00	30.00	3.77
5	1.131	30.00	30.00	3.77
6	1.131	30.00	30.00	3.77

7	1.131	30.00	30.00	3.77
8	1.131	30.00	30.00	3.77
14	1.088	30.00	30.00	3.63
15	1.196	30.00	30.00	3.99
16	1.225	30.00	30.00	4.08
17	0.743	30.00	30.00	2.48
18	0.619	30.00	30.00	2.06
19	1.341	30.00	30.00	4.47
20	0.360	30.00	30.00	1.20
21	0.579	30.00	30.00	1.93
22	0.360	30.00	30.00	1.20
23	0.360	30.00	30.00	1.20
24	0.311	30.00	30.00	1.04
25	3.315	30.00	30.00	11.05
26	0.420	30.00	30.00	1.40
27	0.430	30.00	30.00	1.43
28	0.525	30.00	30.00	1.75
29	1.288	30.00	30.00	4.29
30	1.984	30.00	30.00	6.61
31	1.682	30.00	30.00	5.61
32	1.135	30.00	30.00	3.78
33	1.384	30.00	30.00	4.61
34	1.847	30.00	30.00	6.16
35	1.997	30.00	30.00	6.66
36	1.760	30.00	30.00	5.87
37	0.482	30.00	30.00	1.61
38	0.573	30.00	30.00	1.91
39	1.054	30.00	30.00	3.51
40	0.980	30.00	30.00	3.27
41	0.906	30.00	30.00	3.02
42	0.482	30.00	30.00	1.61

*** 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 Size	Angle Type	Steel Strength (ksi)	Max Usage %	Cont-rol	Max 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	KL/R	Length (ft)	Curve No.	Comp. No. Of Member Bolts
LEG1	L4x4x1/4	4X4X0.25	SAE	33.0	76.26	Comp	76.26	g6XY	-40.805	Extreme	53.509	125.640	168.750	1.000	1.000	1.000	75.47	75.47	5.000	1	12
LEG2	L4x4x5/16	4X4X0.3125	SAE	33.0	90.37	Comp	90.37	g12X	-59.243	Extreme	65.558	104.700	175.781	1.000	1.000	1.000	77.30	77.30	5.096	1	10
LEG3	L4x4x3/8	4X4X0.375	SAE	33.0	98.43	Comp	98.43	g11X	-58.872	Extreme	59.809	104.700	210.937	0.330	0.330	0.330	112.73	112.73	22.432	1	10
XBR1	L1.75x1.75x3/16	1.75X1.75X0.1875	SAE	33.0	53.05	Comp	53.05	g13P	-6.132	Extreme	11.559	20.940	21.094	0.750	0.500	0.500	123.69	122.85	7.071	5	2
XBR2	L3x2x3/16	3X2X0.1875	SAU	33.0	46.20	Cross	46.20	g16Y	-5.655	Extreme	12.241	31.410	31.641	0.500	1.000	0.500	160.76	145.07	7.810	6	3
XBR3	L3x2x3/16	3X2X0.1875	SAU	33.0	42.12	Tens	39.92	g35X	-3.937	Extreme	9.860	10.470	10.547	1.000	0.500	0.500	161.63	161.63	11.826	4	1
XBR4	L2x2x3/16	2X2X0.1875	SAE	33.0	26.22	Cross	26.22	g26P	-2.848	Extreme	10.862	20.940	21.094	1.000	0.560	0.560	147.29	136.78	7.573	6	2
XBR5	L2.5x2x3/16	2.5X2X0.1875	SAU	33.0	23.11	Cross	23.11	g29P	-1.597	Extreme	6.910	20.940	21.094	0.560	1.000	0.560	222.71	183.17	11.135	6	2
XBR6	L1.75x1.75x1/4	1.75X1.75X0.25	SAE	33.0	91.56	Comp	91.56	g31Y	-2.066	NESC Hea	2.257	20.940	28.125	0.790	0.580	0.580	383.86	321.10	18.807	5	2
XBR7	L1.75x1.75x3/16	1.75X1.75X0.1875	SAE	33.0	46.91	Tens	0.00	g34XY	0.000		1.061	20.940	21.094	0.800	0.410	0.410	499.05	408.88	27.916	5	2
PMBR1	L2.5x2.5x3/16	2.5X2.5X0.1875	SAE	36.0	55.64	Tens	51.84	g60X	-5.286	Extreme	21.670	10.470	10.195	1.000	1.000	1.000	85.71	102.85	3.536	3	1
PMBR2	L3.5x3.5x1/4	3.5X3.5X0.25	SAE	36.0	28.12	Comp	28.12	g64P	-2.944	Extreme	16.980	10.470	13.594	1.000	1.000	1.000	168.78	168.78	9.761	4	1
HBR1	L1.75x1.75x3/16	1.75X1.75X0.1875	SAE	33.0	73.82	Comp	73.82	g37P	-4.281	Extreme	5.799	10.470	10.547	1.000	1.000	1.000	174.93	174.93	5.000	4	1
HBR2	2.5x2x3/16	2.5X2X0.1875	SAU	33.0	43.20	Comp	43.20	g41P	-4.523	Extreme	10.510	10.470	10.547	1.000	0.500	0.500	148.52	148.52	9.815	4	1
HBR3	L3x2.5x1/4	3X2.5X0.25	SAU	33.0	45.17	Comp	45.17	g43P	-4.729	Extreme	12.202	10.470	14.062	1.000	0.500	0.500	175.29	175.29	13.804	4	1
HBR4	**L4x3x1/4**	**4X3X0.25**	**SAU**	**33.0**	**47.68**	**Comp**	**47.68**	**g45P**	**-4.992**	**Extreme**	**13.759**	**10.470**	**14.062**	**2.000**	**1.000**	**1.000**	**187.50**	**187.50**	**10.000**	**4**	**1 A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g46P g46X g46XY g46Y ??**
Arm1	L3x2.5x1/4	3X2.5X0.25	SAU	33.0	20.18	Comp	20.18	g49P	-5.752	NESC Hea	28.509	31.410	42.187	1.000	0.500	0.500	97.38	108.69	7.669	3	3
Arm2	L3.5x2.5x1/4	3.5X2.5X0.25	SAU	33.0	26.72	Comp	26.72	g53P	-6.554	NESC Hea	24.527	31.410	42.187	1.000	0.500	0.500	132.50	129.56	12.013	5	3

ArmBR1	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	33.0	29.16	Comp	29.16	g55P	-3.053	NESC Hea	10.714	10.470	10.547	1.000	1.000	1.000	155.23	155.23	6.403	4	1
ArmBR2	L1.75x1/4x1/4	BAR	1.75X0.25X0.25	33.0	77.58	Tens	0.00	g59Y	0.000		0.050	10.470	14.062	1.000	1.000	1.000	1588.21	1588.21	9.556	4	1
Powermnt	12" Std. Pipe	PIP	12.75X0.375	50.0	14.98	Comp	14.98	g65P	-17.268	NESC Hea	115.298	0.000	0.000	1.000	1.000	1.000	73.97	73.97	27.000	1	0
fic1	Fictitious1	Bar	fic	36.0	0.00		0.00	g72P	0.000		0.000	0.000	0.000	1.000	1.000	1.000	2160000.00	2160000.00	18.000	4	0
fic	Fictitious2	Bar	fic	36.0	0.00		0.00	g74P	0.000		0.000	0.000	0.000	1.000	1.000	1.000	60000.00	60000.00	0.500	4	0
HBR5	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	10.25	Comp	10.25	g78Y	-1.073	NESC Hea	14.114	10.470	10.547	1.000	1.000	1.000	87.46	103.73	2.500	3	1

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Usage Control	Max Use In Tens. %	Tension Control 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 Tens. Bolts	No. Of Holes	Hole Diameter (in)
LEG1	L4x4x1/4	SAE	4X4X0.25	33.0	76.26	Comp	66.99	g6Y	35.288	Extreme	52.676	125.640	168.750	220.588	5.000	12	2.000	0.6875
LEG2	L4x4x5/16	SAE	4X4X0.3125	33.0	90.37	Comp	78.28	g12Y	50.897	Extreme	65.020	104.700	175.781	103.401	5.096	10	2.000	0.6875
LEG3	L4x4x3/8	SAE	4X4X0.375	33.0	98.43	Comp	54.03	g11Y	41.801	Extreme	77.364	104.700	210.937	193.014	22.432	10	2.000	0.6875
XBR1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	53.05	Comp	39.05	g13X	5.696	Extreme	14.585	20.940	21.094	16.189	7.071	2	1.000	0.6875
XBR2	L3x2x3/16	SAU	3X2X0.1875	33.0	46.20	Cross	31.63	g23XY	7.243	Extreme	22.901	31.410	31.641	28.125	7.071	3	1.000	0.6875
XBR3	L3x2x3/16	SAU	3X2X0.1875	33.0	42.12	Tens	42.12	g35P	3.250	Extreme	17.333	10.470	10.547	7.717	11.826	1	1.000	0.6875
XBR4	L2x2x3/16	SAE	2X2X0.1875	33.0	26.22	Cross	14.94	g26X	2.278	Extreme	17.258	20.940	21.094	15.240	7.573	2	1.000	0.6875
XBR5	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	23.11	Cross	10.77	g28Y	2.019	Extreme	20.228	20.940	21.094	18.750	9.373	2	1.000	0.6875
XBR6	L1.75x1.75x1/4	SAE	1.75X1.75X0.25	33.0	91.56	Comp	28.57	g32X	5.440	Extreme	19.041	20.940	28.125	24.820	18.807	2	1.000	0.6875
XBR7	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	46.91	Tens	46.91	g33XY	6.842	Extreme	14.585	20.940	21.094	17.420	27.916	2	1.000	0.6875
PMBR1	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	36.0	55.64	Tens	55.64	g60Y	5.673	Extreme	25.048	10.470	10.195	0.000	3.536	1	1.000	0.6875
PMBR2	L3.5x3.5x1/4	SAE	3.5X3.5X0.25	36.0	28.12	Comp	3.51	g64Y	0.367	NESC Hea	49.187	10.470	13.594	0.000	9.761	1	1.000	0.6875
HBR1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	73.82	Comp	50.48	g38P	3.895	Extreme	14.585	10.470	10.547	7.717	5.000	1	1.000	0.6875
HBR2	2.5x2x3/16	SAU	2.5X2X0.1875	33.0	43.20	Comp	17.28	g41X	1.334	NESC Hea	17.444	10.470	10.547	7.717	9.815	1	1.000	0.6875
HBR3	L3x2.5x1/4	SAU	3X2.5X0.25	33.0	45.17	Comp	11.95	g43X	1.251	NESC Hea	30.090	10.470	14.062	12.500	13.804	1	1.000	0.6875
HBR4	**L4x3x1/4**	**SAU**	**4X3X0.25**	**33.0**	**47.68**	**Comp**	**16.09**	**g46X**	**1.685**	**Extreme**	**37.663**	**10.470**	**14.062**	**12.500**	**10.000**	**1**	**1.000**	**0.6875**

A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g46P

g46X g46XY g46Y ??

Arm1	L3x2.5x1/4	SAU	3X2.5X0.25	33.0	20.18	Comp	13.72	g48P	5.933Extreme	43.230	0.000	0.000	0.000	5.000	0	0.000	0.6875
Arm2	L3.5x2.5x1/4	SAU	3.5X2.5X0.25	33.0	26.72	Comp	0.00	g54Y	0.000	47.520	0.000	0.000	0.000	5.000	0	0.000	0.6875
ArmBR1	L2.5x2.5x3/16	SAE	2.5X2.5X0.1875	33.0	29.16	Comp	0.00	g55X	0.000	22.961	10.470	10.547	0.000	6.403	1	1.000	0.6875
ArmBR2	L1.75x1/4x1/4	BAR	1.75X0.25X0.25	33.0	77.58	Tens	77.58	g57Y	6.120NESC Hea	7.889	10.470	14.062	0.000	12.382	1	1.000	0.6875
Powermnt	12" Std. Pipe	PIP	12.75X0.375	50.0	14.98	Comp	0.00	g71P	0.000	729.999	0.000	0.000	0.000	9.000	0	0.000	0
fic1	Fictitious1	Bar	fic	36.0	0.00		0.00	g72P	0.000NESC Hea	3.600	0.000	0.000	0.000	18.000	0	0.000	0
fic	Fictitious2	Bar	fic	36.0	0.00		0.00	g76P	0.072Extreme	3.600	0.000	0.000	0.000	0.500	0	0.000	0
HBR5	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	10.25	Comp	0.00	g78Y	0.000	14.585	10.470	10.547	7.717	2.500	1	1.000	0.6875

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
NESC Heavy - Transverse	91.56	g31Y	Angle
Extreme Wind - Transverse	98.43	g11X	Angle
NESC Heavy - Longitudinal	80.89	g32Y	Angle
Extreme Wind - Longitudinal	88.41	g11X	Angle

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load Case	Weight (lbs)
1	Clamp	8.78	NESC Heavy - Transverse	0.0
2	Clamp	5.57	NESC Heavy - Transverse	0.0
3	Clamp	10.73	NESC Heavy - Transverse	0.0
4	Clamp	10.65	NESC Heavy - Transverse	0.0
5	Clamp	10.79	NESC Heavy - Transverse	0.0
6	Clamp	10.74	NESC Heavy - Transverse	0.0
7	Clamp	10.67	NESC Heavy - Transverse	0.0
8	Clamp	10.62	NESC Heavy - Transverse	0.0
14	Clamp	4.79	Extreme Wind - Transverse	0.0
15	Clamp	5.27	NESC Heavy - Transverse	0.0
16	Clamp	5.43	Extreme Wind - Transverse	0.0
17	Clamp	2.94	Extreme Wind - Transverse	0.0
18	Clamp	2.51	Extreme Wind - Transverse	0.0
19	Clamp	4.47	Extreme Wind - Longitudinal	0.0
20	Clamp	1.49	Extreme Wind - Transverse	0.0
21	Clamp	2.36	Extreme Wind - Transverse	0.0
22	Clamp	1.49	Extreme Wind - Transverse	0.0
23	Clamp	1.49	Extreme Wind - Transverse	0.0
24	Clamp	1.34	Extreme Wind - Transverse	0.0

25	Clamp	11.05	Extreme Wind - Longitudinal	0.0
26	Clamp	2.88	NESC Heavy - Longitudinal	0.0
27	Clamp	3.55	NESC Heavy - Longitudinal	0.0
28	Clamp	4.64	NESC Heavy - Longitudinal	0.0
29	Clamp	8.76	NESC Heavy - Longitudinal	0.0
30	Clamp	14.67	NESC Heavy - Longitudinal	0.0
31	Clamp	6.35	NESC Heavy - Transverse	0.0
32	Clamp	3.78	Extreme Wind - Longitudinal	0.0
33	Clamp	4.61	Extreme Wind - Longitudinal	0.0
34	Clamp	6.16	Extreme Wind - Longitudinal	0.0
35	Clamp	6.66	Extreme Wind - Longitudinal	0.0
36	Clamp	5.87	Extreme Wind - Longitudinal	0.0
37	Clamp	1.61	Extreme Wind - Longitudinal	0.0
38	Clamp	1.91	Extreme Wind - Longitudinal	0.0
39	Clamp	3.51	Extreme Wind - Longitudinal	0.0
40	Clamp	3.32	NESC Heavy - Longitudinal	0.0
41	Clamp	3.02	Extreme Wind - Longitudinal	0.0
42	Clamp	1.61	Extreme Wind - Longitudinal	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 - Transverse	1	Clamp	2P	0.000	1.104	2.392	2.634
NESC Heavy - Transverse	2	Clamp	2X	0.000	0.821	1.455	1.670
NESC Heavy - Transverse	3	Clamp	4P	0.000	1.242	2.969	3.218
NESC Heavy - Transverse	4	Clamp	4X	0.000	1.179	2.969	3.194
NESC Heavy - Transverse	5	Clamp	8P	0.000	1.221	2.998	3.237
NESC Heavy - Transverse	6	Clamp	8X	0.000	1.179	2.998	3.221
NESC Heavy - Transverse	7	Clamp	11P	0.000	1.225	2.958	3.202
NESC Heavy - Transverse	8	Clamp	11X	0.000	1.179	2.958	3.185
NESC Heavy - Transverse	14	Clamp	16P	0.000	0.538	1.108	1.232
NESC Heavy - Transverse	15	Clamp	15P	0.000	0.678	1.427	1.580
NESC Heavy - Transverse	16	Clamp	14P	0.000	0.502	1.050	1.164
NESC Heavy - Transverse	17	Clamp	10P	0.000	0.344	0.798	0.868
NESC Heavy - Transverse	18	Clamp	7P	0.000	0.287	0.675	0.733
NESC Heavy - Transverse	19	Clamp	3X	0.000	0.101	0.852	0.858
NESC Heavy - Transverse	20	Clamp	1P	0.000	0.123	0.303	0.327
NESC Heavy - Transverse	21	Clamp	3P	0.000	0.276	0.622	0.680
NESC Heavy - Transverse	22	Clamp	1X	0.000	0.057	0.303	0.309
NESC Heavy - Transverse	23	Clamp	1XY	0.000	0.057	0.303	0.309
NESC Heavy - Transverse	24	Clamp	3XY	0.000	0.057	0.346	0.350
NESC Heavy - Transverse	25	Clamp	23P	0.000	0.774	2.781	2.887
NESC Heavy - Transverse	26	Clamp	24P	0.000	0.000	0.860	0.860
NESC Heavy - Transverse	27	Clamp	25P	0.000	0.204	1.037	1.057
NESC Heavy - Transverse	28	Clamp	26P	0.000	0.374	1.332	1.384
NESC Heavy - Transverse	29	Clamp	27P	0.000	0.714	2.514	2.613
NESC Heavy - Transverse	30	Clamp	28P	0.000	1.003	4.245	4.362
NESC Heavy - Transverse	31	Clamp	22P	0.000	0.390	1.864	1.904
NESC Heavy - Transverse	32	Clamp	7X	0.000	0.044	0.675	0.676
NESC Heavy - Transverse	33	Clamp	10X	0.000	0.054	0.798	0.799
NESC Heavy - Transverse	34	Clamp	14X	0.000	0.064	1.050	1.052
NESC Heavy - Transverse	35	Clamp	15X	0.000	0.074	1.427	1.429
NESC Heavy - Transverse	36	Clamp	16X	0.000	0.064	1.108	1.110
NESC Heavy - Transverse	37	Clamp	7Y	0.000	0.135	0.358	0.382
NESC Heavy - Transverse	38	Clamp	10Y	0.000	0.158	0.409	0.438

NESC Heavy - Transverse	39	Clamp	14Y	0.000	0.281	0.589	0.653
NESC Heavy - Transverse	40	Clamp	15Y	0.000	0.423	0.894	0.989
NESC Heavy - Transverse	41	Clamp	16Y	0.000	0.317	0.647	0.721
NESC Heavy - Transverse	42	Clamp	3Y	0.000	0.153	0.361	0.392
Extreme Wind - Transverse	1	Clamp	2P	0.000	1.219	0.875	1.501
Extreme Wind - Transverse	2	Clamp	2X	0.000	0.660	0.509	0.833
Extreme Wind - Transverse	3	Clamp	4P	0.000	1.472	1.119	1.849
Extreme Wind - Transverse	4	Clamp	4X	0.000	1.472	1.119	1.849
Extreme Wind - Transverse	5	Clamp	8P	0.000	1.472	1.119	1.849
Extreme Wind - Transverse	6	Clamp	8X	0.000	1.472	1.119	1.849
Extreme Wind - Transverse	7	Clamp	11P	0.000	1.472	1.119	1.849
Extreme Wind - Transverse	8	Clamp	11X	0.000	1.472	1.119	1.849
Extreme Wind - Transverse	14	Clamp	16P	0.000	1.352	0.490	1.438
Extreme Wind - Transverse	15	Clamp	15P	0.000	1.477	0.521	1.566
Extreme Wind - Transverse	16	Clamp	14P	0.000	1.520	0.585	1.629
Extreme Wind - Transverse	17	Clamp	10P	0.000	0.842	0.263	0.882
Extreme Wind - Transverse	18	Clamp	7P	0.000	0.717	0.232	0.754
Extreme Wind - Transverse	19	Clamp	3X	0.000	0.456	0.310	0.551
Extreme Wind - Transverse	20	Clamp	1P	0.000	0.373	0.244	0.446
Extreme Wind - Transverse	21	Clamp	3P	0.000	0.664	0.248	0.709
Extreme Wind - Transverse	22	Clamp	1X	0.000	0.373	0.244	0.446
Extreme Wind - Transverse	23	Clamp	1XY	0.000	0.373	0.244	0.446
Extreme Wind - Transverse	24	Clamp	3XY	0.000	0.364	0.173	0.403
Extreme Wind - Transverse	25	Clamp	23P	0.000	2.989	0.952	3.137
Extreme Wind - Transverse	26	Clamp	24P	0.000	0.177	0.265	0.319
Extreme Wind - Transverse	27	Clamp	25P	0.000	0.168	0.215	0.273
Extreme Wind - Transverse	28	Clamp	26P	0.000	0.168	0.251	0.302
Extreme Wind - Transverse	29	Clamp	27P	0.000	0.721	0.682	0.992
Extreme Wind - Transverse	30	Clamp	28P	0.000	0.553	0.899	1.056
Extreme Wind - Transverse	31	Clamp	22P	0.000	1.493	0.792	1.690
Extreme Wind - Transverse	32	Clamp	7X	0.000	0.260	0.232	0.348
Extreme Wind - Transverse	33	Clamp	10X	0.000	0.280	0.263	0.384
Extreme Wind - Transverse	34	Clamp	14X	0.000	0.854	0.585	1.035
Extreme Wind - Transverse	35	Clamp	15X	0.000	0.707	0.521	0.878
Extreme Wind - Transverse	36	Clamp	16X	0.000	0.686	0.490	0.843
Extreme Wind - Transverse	37	Clamp	7Y	0.000	0.240	0.139	0.277
Extreme Wind - Transverse	38	Clamp	10Y	0.000	0.256	0.148	0.296
Extreme Wind - Transverse	39	Clamp	14Y	0.000	0.825	0.448	0.939
Extreme Wind - Transverse	40	Clamp	15Y	0.000	0.673	0.363	0.765
Extreme Wind - Transverse	41	Clamp	16Y	0.000	0.657	0.353	0.746
Extreme Wind - Transverse	42	Clamp	3Y	0.000	0.240	0.139	0.277
NESC Heavy - Longitudinal	1	Clamp	2P	0.000	0.037	2.392	2.392
NESC Heavy - Longitudinal	2	Clamp	2X	0.000	0.000	1.455	1.455
NESC Heavy - Longitudinal	3	Clamp	4P	0.000	0.063	2.969	2.970
NESC Heavy - Longitudinal	4	Clamp	4X	0.000	0.000	2.969	2.969
NESC Heavy - Longitudinal	5	Clamp	8P	0.000	0.042	2.998	2.998
NESC Heavy - Longitudinal	6	Clamp	8X	0.000	0.000	2.998	2.998
NESC Heavy - Longitudinal	7	Clamp	11P	0.000	0.046	2.958	2.959
NESC Heavy - Longitudinal	8	Clamp	11X	0.000	0.000	2.958	2.958
NESC Heavy - Longitudinal	14	Clamp	16P	0.275	0.263	1.108	1.172
NESC Heavy - Longitudinal	15	Clamp	15P	0.318	0.360	1.427	1.506
NESC Heavy - Longitudinal	16	Clamp	14P	0.275	0.227	1.050	1.109
NESC Heavy - Longitudinal	17	Clamp	10P	0.232	0.112	0.798	0.838
NESC Heavy - Longitudinal	18	Clamp	7P	0.189	0.098	0.675	0.708
NESC Heavy - Longitudinal	19	Clamp	3X	0.420	0.000	0.852	0.950
NESC Heavy - Longitudinal	20	Clamp	1P	0.057	0.066	0.303	0.316
NESC Heavy - Longitudinal	21	Clamp	3P	0.160	0.116	0.622	0.652
NESC Heavy - Longitudinal	22	Clamp	1X	0.057	0.000	0.303	0.309
NESC Heavy - Longitudinal	23	Clamp	1XY	0.057	0.000	0.303	0.309

NESC Heavy - Longitudinal	24	Clamp	3XY	0.057	0.000	0.346	0.350
NESC Heavy - Longitudinal	25	Clamp	23P	0.843	0.000	2.781	2.906
NESC Heavy - Longitudinal	26	Clamp	24P	0.096	0.000	0.860	0.865
NESC Heavy - Longitudinal	27	Clamp	25P	0.117	0.204	1.037	1.064
NESC Heavy - Longitudinal	28	Clamp	26P	0.151	0.374	1.332	1.392
NESC Heavy - Longitudinal	29	Clamp	27P	0.288	0.714	2.514	2.629
NESC Heavy - Longitudinal	30	Clamp	28P	0.591	1.003	4.245	4.402
NESC Heavy - Longitudinal	31	Clamp	22P	0.390	0.000	1.864	1.904
NESC Heavy - Longitudinal	32	Clamp	7X	0.363	0.000	0.675	0.766
NESC Heavy - Longitudinal	33	Clamp	10X	0.446	0.000	0.798	0.914
NESC Heavy - Longitudinal	34	Clamp	14X	0.528	0.000	1.050	1.176
NESC Heavy - Longitudinal	35	Clamp	15X	0.611	0.000	1.427	1.552
NESC Heavy - Longitudinal	36	Clamp	16X	0.528	0.000	1.108	1.227
NESC Heavy - Longitudinal	37	Clamp	7Y	0.151	0.098	0.358	0.401
NESC Heavy - Longitudinal	38	Clamp	10Y	0.185	0.112	0.409	0.462
NESC Heavy - Longitudinal	39	Clamp	14Y	0.220	0.227	0.589	0.669
NESC Heavy - Longitudinal	40	Clamp	15Y	0.254	0.360	0.894	0.997
NESC Heavy - Longitudinal	41	Clamp	16Y	0.220	0.263	0.647	0.732
NESC Heavy - Longitudinal	42	Clamp	3Y	0.151	0.116	0.361	0.408
Extreme Wind - Longitudinal	1	Clamp	2P	0.000	0.177	0.875	0.893
Extreme Wind - Longitudinal	2	Clamp	2X	0.000	0.177	0.509	0.539
Extreme Wind - Longitudinal	3	Clamp	4P	0.000	0.168	1.119	1.131
Extreme Wind - Longitudinal	4	Clamp	4X	0.000	0.168	1.119	1.131
Extreme Wind - Longitudinal	5	Clamp	8P	0.000	0.168	1.119	1.131
Extreme Wind - Longitudinal	6	Clamp	8X	0.000	0.168	1.119	1.131
Extreme Wind - Longitudinal	7	Clamp	11P	0.000	0.168	1.119	1.131
Extreme Wind - Longitudinal	8	Clamp	11X	0.000	0.168	1.119	1.131
Extreme Wind - Longitudinal	14	Clamp	16P	0.799	0.553	0.490	1.088
Extreme Wind - Longitudinal	15	Clamp	15P	0.924	0.553	0.521	1.196
Extreme Wind - Longitudinal	16	Clamp	14P	0.799	0.721	0.585	1.225
Extreme Wind - Longitudinal	17	Clamp	10P	0.674	0.168	0.263	0.743
Extreme Wind - Longitudinal	18	Clamp	7P	0.549	0.168	0.232	0.619
Extreme Wind - Longitudinal	19	Clamp	3X	1.294	0.168	0.310	1.341
Extreme Wind - Longitudinal	20	Clamp	1P	0.196	0.177	0.244	0.360
Extreme Wind - Longitudinal	21	Clamp	3P	0.496	0.168	0.248	0.579
Extreme Wind - Longitudinal	22	Clamp	1X	0.196	0.177	0.244	0.360
Extreme Wind - Longitudinal	23	Clamp	1XY	0.196	0.177	0.244	0.360
Extreme Wind - Longitudinal	24	Clamp	3XY	0.196	0.168	0.173	0.311
Extreme Wind - Longitudinal	25	Clamp	23P	3.175	0.009	0.952	3.315
Extreme Wind - Longitudinal	26	Clamp	24P	0.274	0.177	0.265	0.420
Extreme Wind - Longitudinal	27	Clamp	25P	0.332	0.168	0.215	0.430
Extreme Wind - Longitudinal	28	Clamp	26P	0.430	0.168	0.251	0.525
Extreme Wind - Longitudinal	29	Clamp	27P	0.821	0.721	0.682	1.288
Extreme Wind - Longitudinal	30	Clamp	28P	1.680	0.553	0.899	1.984
Extreme Wind - Longitudinal	31	Clamp	22P	1.484	0.009	0.792	1.682
Extreme Wind - Longitudinal	32	Clamp	7X	1.098	0.168	0.232	1.135
Extreme Wind - Longitudinal	33	Clamp	10X	1.348	0.168	0.263	1.384
Extreme Wind - Longitudinal	34	Clamp	14X	1.597	0.721	0.585	1.847
Extreme Wind - Longitudinal	35	Clamp	15X	1.847	0.553	0.521	1.997
Extreme Wind - Longitudinal	36	Clamp	16X	1.597	0.553	0.490	1.760
Extreme Wind - Longitudinal	37	Clamp	7Y	0.430	0.168	0.139	0.482
Extreme Wind - Longitudinal	38	Clamp	10Y	0.528	0.168	0.148	0.573
Extreme Wind - Longitudinal	39	Clamp	14Y	0.625	0.721	0.448	1.054
Extreme Wind - Longitudinal	40	Clamp	15Y	0.723	0.553	0.363	0.980
Extreme Wind - Longitudinal	41	Clamp	16Y	0.625	0.553	0.353	0.906
Extreme Wind - Longitudinal	42	Clamp	3Y	0.430	0.168	0.139	0.482

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 - Transverse	12.495	0.000	38.762	862.260	34.332	8.169
Extreme Wind - Transverse	20.310	0.000	12.971	1424.438	9.801	23.903
NESC Heavy - Longitudinal	0.000	8.230	38.762	-19.258	473.546	-1.449
Extreme Wind - Longitudinal	0.000	25.363	12.971	-6.283	1414.529	-6.522

*** Weight of structure (lbs):
Weight of Angles*Section DLF: 13185.9
Total: 13185.9

*** End of Report

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Subject:	Foundation Analysis Tower # 876
Location:	Fairfield, CT
Rev. 1: 3/21/17	Prepared by: T.J.L. Checked by: C.F.C. Job No. 17004.14

Foundation Analysis

Input Data:

Max. Reactions at Tower Leg:

Shear =	Shear := 14.97·1.1·kips = 16.5·kips	(User Input)
Compression =	Comp := 60.33·1.1·kips = 66.4·kips	(User Input)
Uplift =	Uplift := 51.87·1.1·kips = 57.1·kips	(User Input)

Tower Properties:

Tower Height =	$H_t := 86 \cdot ft$	(User Input)

Foundation Properties:

Pier Height =	$P_H := 3.75 \cdot ft$	(User Input)
Pier Width Top =	$P_{w1} := 1.67 \cdot ft$	(User Input)
Pier Width Botttom =	$P_{w2} := 2.14 \cdot ft$	(User Input)
Pier Projection Above Grade =	$P_P := 2.75 \cdot ft$	(User Input)
Pad Width =	$Pd_w := 10 \cdot ft$	(User Input)
Pad Thickness =	$Pd_t := 3.5 \cdot ft$	(User Input)
Mat Width =	$Mat_w := 0 \cdot ft$	(User Input)
Mat Thickness =	$Mat_t := 0 \cdot ft$	(User Input)

Subgrade Properties:

Concrete Unit Weight =	$\gamma c := 150 \cdot pcf$	(User Input)
Water Unit Weight =	$\gamma w := 62.4 \cdot pcf$	(User Input)
Soil Unit Weight =	$\gamma s := 100 \cdot pcf$	(User Input)
Uplift Angle =	$\psi := 30.0 \cdot deg$	(User Input)
Soil Bearing Capacity =	$BC_{soil} := 4000 \cdot psf$	(User Input)

Calculated Data:

Volume of the Concrete Pad =

$V_{pad} := Pd_w^{2} \cdot Pd_t = 350 \cdot ft^3$

Volume of the Concrete Pier =

$V_{pier} := \frac{(P_H)}{3} \cdot \left(P_{w1}^{2} + P_{w2}^{2} + \sqrt{P_{w1}^{2} \cdot P_{w2}^{2}} \right) = 13.68 \cdot ft^3$

Resisting Pyramid Base 1 =

$B_1 := Pd_w^{2} = 100 ft^2$

Resisting Pyramid Base 2 =

$B_2 := \left[2 \cdot \tan(\psi) \cdot (P_H - P_P) + Pd_w \right]^2 = 124 ft^2$

Volume of Soil =

$V_{soil} := \left[\frac{(P_H - P_P)}{3} \cdot \left(B_1 + B_2 + \sqrt{B_1 \cdot B_2} \right) \right] - V_{pier} = 98.31 \cdot ft^3$

Total Volume of Concrete =

$V_{Conc} := V_{pad} + V_{pier} = 364 \cdot ft^3$

Mass of Concrete =

$Mass_{Conc} := V_{Conc} \cdot \gamma c = 54.6 \cdot kips$

Mass of Soil =

$Mass_{Soil} := V_{soil} \cdot \gamma s = 10 \cdot kips$

Total Mass =

$Mass_{tot} := Mass_{Conc} + Mass_{Soil} = 64 \cdot kips$

<u>Check Uplift:</u>

Required Factor of Safety =

$F_S := 1.0$

$ActualFS := \frac{Mass_{tot}}{Uplift} = 1.13$

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

Uplift_Check = "OK"

Cross Sectional Area of Pad =

$A_{pad} := Pd_w^{2} = 100 ft^2$

Section Modulus of Pad =

$S_{pad} := \frac{(Pd_w)^3}{6} = 167 \cdot ft^3$

<u>Check Bearing:</u>

$Bearing := \frac{Comp + Mass_{Conc}}{A_{pad}} + \frac{Shear \cdot (P_H + Pd_t)}{S_{pad}} = 1.93 \cdot ksf$

$Bearing\_Check := if\left(Bearing \leq BC_{soil}, "OK", "No Good" \right)$

Bearing_Check = "OK"

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Subject:	Foundation Analysis Tower # 876
Location:	Fairfield, CT
Rev. 0: 2/20/17	Prepared by: T.J.L. Checked by: C.F.C. Job No. 17004.14

Foundation Analysis

Input Data:

Max. Reactions at Tower Leg:

Shear =	Shear := 28.29·1.1·kips = 31.1·kips	(User Input)	Combined Reactions from Two Adjacents Legs
Compression =	Comp := 116.84·1.1·kips = 128.5·kips	(User Input)	
Uplift =	Uplift := 97.38·1.1·kips = 107.1·kips	(User Input)	

Tower Properties:

Tower Height =	$H_t := 86 \cdot ft$	(User Input)

Foundation Properties:

Pier Height =	$P_H := 2.25 \cdot ft$	(User Input)
Pier Width Top =	$P_{w1} := 2.0 \cdot ft$	(User Input)
Pier Width Botttom =	$P_{w2} := 2.33 \cdot ft$	(User Input)
Pier Projection Above Grade =	$P_P := 0 \cdot ft$	(User Input)
Pad Width =	$Pd_w := 5 \cdot ft$	(User Input)
Pad Thickness =	$Pd_t := 2 \cdot ft$	(User Input)
Mat Width =	$Mat_w := 10 \cdot ft$	(User Input)
Mat Width =	$Mat_L := 24 \cdot ft$	(User Input)
Mat Thickness =	$Mat_t := 3 \cdot ft$	(User Input)

Subgrade Properties:

Concrete Unit Weight =	$\gamma c := 150 \cdot pcf$	(User Input)
Water Unit Weight =	$\gamma w := 62.4 \cdot pcf$	(User Input)
Soil Unit Weight =	$\gamma s := 100 \cdot pcf$	(User Input)
Uplift Angle =	$\psi := 30.0 \cdot deg$	(User Input)
Soil Bearing Capacity =	$BC_{soil} := 9000 \cdot psf$	(User Input)
Coefficient of Friction =	$\mu := 0.45$	(User Input)

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Subject:	Foundation Analysis Tower # 876
Location:	Fairfield, CT
Rev. 0: 2/20/17	Prepared by: T.J.L. Checked by: C.F.C. Job No. 17004.14

Calculated Data:

Volume of the Concrete Pad = $V_{pad} := Pd_w^2 \cdot Pd_t = 50 \cdot ft^3$

Volume of the Concrete Mat = $V_{mat} := Mat_W \cdot Mat_L \cdot Mat_t = 720 \cdot ft^3$

Volume of the Concrete Pier = $V_{pier} := \frac{(P_H)}{3} \cdot \left(P_{w1}^2 + P_{w2}^2 + \sqrt{P_{w1}^2 \cdot P_{w2}^2}\right) = 10.57 \cdot ft^3$

Resisting Pyramid Base 1 = $B_1 := Pd_w^2 = 25 ft^2$

Resisting Pyramid Base 2 = $B_2 := \left[2 \cdot \tan(\psi) \cdot (P_H - P_P) + Pd_w\right]^2 = 58 ft^2$

Volume of Soil = $V_{soil} := \left[\left[\frac{(P_H - P_P)}{3} \cdot \left(B_1 + B_2 + \sqrt{B_1 \cdot B_2}\right)\right] - V_{pier}\right] \cdot 2 = 159.95 \cdot ft^3$

Total Volume of Concrete = $V_{Conc} := V_{pad} \cdot 2 + V_{mat} + V_{pier} \cdot 2 = 841 \cdot ft^3$

Mass of Concrete = $Mass_{Conc} := V_{Conc} \cdot \gamma c = 126.2 \cdot kips$

Mass of Soil = $Mass_{Soil} := V_{soil} \cdot \gamma s = 16 \cdot kips$

Total Mass = $Mass_{tot} := Mass_{Conc} + Mass_{Soil} = 142 \cdot kips$

Check Uplift:

Required Factor of Safety = $F_S := 1.0$

$ActualFS := \frac{Mass_{tot}}{Uplift} = 1.33$

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

Uplift_Check = "OK"

Check Sliding:

Sliding Resistance = $S_R := \mu \cdot (Mass_{Conc}) = 56.777 \cdot kips$

$Sliding\_Check := if(Shear \leq S_R, "OK", "No Good")$

Sliding_Check = "OK"

Check Bearing:

Cross Sectional Area of Pad = $A_{pad} := Pd_w^{\,2} = 25\,ft^2$

Section Modulus of Pad = $S_{pad} := \frac{(Pd_w)^3}{6} = 21\cdot ft^3$

Mass of Pad and Pier = $Mass_{pad.pier} := (V_{pad}\cdot 2 + V_{pier}\cdot 2)\cdot \gamma c = 18.2\cdot kips$

$$Bearing := \frac{Comp + Mass_{pad.pier}}{A_{pad}\cdot 2} + \frac{Shear\cdot(P_H + Pd_t)}{S_{pad}\cdot 2} = 6.11\cdot ksf$$

$Bearing\_Check := if(Bearing \le BC_{soil}, "OK", "No Good")$

Bearing_Check = "OK"

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CTU5145	DATE:	10/20/2016	RF DESIGN ENG:	Mohammad Hussain
ISSUE:	Bronze Standard	Approved? (Y/N):	Yes	RF DESIGN PHONE:	510-493-3024
REVISION:	FINAL	RF MANAGER:	John Benedetto	RF DESIGN EMAIL:	MH705R@ATT.COM
INITIATIVE /PROJECT:	LTE 2C PCS, Bronze SOW				

RF PERF ENG:		RFDS PROGRAM TYPE:	2017 LTE Next Carrier		
RF PERF PHONE:		RFDS TECHNOLOGY:	LTE 2C		
RF PERF EMAIL:		STATE/STATUS:	Final/Approved		
RFDS VERSION:	2.00	RFDS ID:	1469474		
GSM FREQUENCY:		Created By:	mh705r	Updated By:	sp656b
UMTS FREQUENCY:	1900	Date Created:	10/20/2016 2:24:10 PM	Date Updated:	1/20/2017 1:42:21 PM
LTE FREQUENCY:	700, 1900				
I-PLAN JOB # 1:	NER-RCTB-12-04554	IPLAN PRD GRP || SUB GRP #1:	LTE Next Carrier || LTE 2C		
I-PLAN JOB # 2:		IPLAN PRD GRP || SUB GRP #2:			
I-PLAN JOB # 3:		IPLAN PRD GRP || SUB GRP #3:			
I-PLAN JOB # 4:		IPLAN PRD GRP || SUB GRP #4:			
I-PLAN JOB # 5:		IPLAN PRD GRP || SUB GRP #5:			
I-PLAN JOB # 6:		IPLAN PRD GRP || SUB GRP #6:			
I-PLAN JOB # 7:		IPLAN PRD GRP || SUB GRP #7:			
I-PLAN JOB # 8:		IPLAN PRD GRP || SUB GRP #8:			

Section 2 - LOCATION INFORMATION

USID:	26706	FA LOCATION CODE:	10071095	LOCATION NAME:	LOWER SCORT HILL
REGION:	NORTHEAST	MARKET CLUSTER:	NEW ENGLAND	MARKET:	CONNECTICUT
ADDRESS:	280 MOREHOUSE DRIVE	CITY:	FAIRFIELD	STATE:	CT
ZIP CODE:	06825	COUNTY:	FAIRFIELD	LONG (DEC. DEG.):	-73.2610989
LATITUDE (D-M-S):	41d 12m38.13084s	LONGITUDE (D-M-S):	-73d -15m-39.95604s	LAT (DEC. DEG.):	41.2105919
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:	UPDATED 4/04 CT-045/145 LOWER SCORT HILL TAKE RT. 17 NORTH TO GARDEN STATE PARKWAY NORTH TO I-87 SOUTH. GO ACROSS TAPPAN ZEE BRIDGE; FOLLOW SIGNS TO I-287 EAST; ONCE ON I-287 YOU WILL GET OFF EXIT 9N FOR THE HUTCHINSON AND MERRITT PARKWAY YOU NEED TO GO N				

ORACLE PTN # 1:	2051A07Y8N	PACE JOB # 1:	MRCTB020582		
ORACLE PTN # 2:		PACE JOB # 2:			
ORACLE PTN # 3:		PACE JOB # 3:			
ORACLE PTN # 4:		PACE JOB # 4:			
ORACLE PTN # 5:		PACE JOB # 5:			
ORACLE PTN # 6:		PACE JOB # 6:			
ORACLE PTN # 7:		PACE JOB # 7:			
ORACLE PTN # 8:		PACE JOB # 8:			
BORDER CELL WITH CONTOUR COORD:		SEARCH RING NAME:			
AM STUDY REQ'D (Y/N):	No	SEARCH_RING_ID:			
FREQ COORD:		BTA:		MSA / RSA:	
OPS DISTRICT:	CT-South	LAC(GSM):	05011		
OPS ZONE:	NE_CT_S_FRFD_CTL_CS	LAC(UMTS):	05989		
RF DISTRICT:	NPO Triage	BSC(GSM):	BRPTCTBSC02		
RF ZONE:	Hotseat	RNC(UMTS):	BRPTCT04CRBR06		
PARENT NAME(GSM):	BRIDGEPORT BSC 02	MME POOL ID(LTE):	FF01		
PARENT NAME(UMTS):	BRIDGEPORT RNC06 ERICSSON 3820				

Section 3 - LICENSE COVERAGE/FILING INFORMATION

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

CGSA CALL SIGNS:	

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	Yes	GROUND ELEVATION (ft):		STRUCTURE TYPE:	UTILITY
ADDITIONAL REGULATORY?:	Yes	HEIGHT OVERALL (ft):	106.00	FCC ASR NUMBER:	NR
SUB-LEASE RIGHTS?:	Yes	STRUCTURE HEIGHT (ft):	106.00		
LIGHTING TYPE:	NOT REQUIRED				

MARKET LOCATION 700 MHz Band:	
MARKET LOCATION 850 MHz Band:	
MARKET LOCATION 1900 MHz Band:	
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	CONNECTICUT STATE POLICE-G TROOP	1319		INTRADO_MIAMI		0				
SECTOR B	FAIRFIELD EMERGENCY COMMUNICATIONS CENTER	1340		INTRADO_MIAMI		0				
SECTOR C	CONNECTICUT STATE POLICE-G TROOP	1319		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	CONNECTICUT STATE POLICE-G TROOP	1319		INTRADO_MIAMI		0				
SECTOR B	FAIRFIELD EMERGENCY COMMUNICATIONS CENTER	1340		INTRADO_MIAMI		0				
SECTOR C	CONNECTICUT STATE POLICE-G TROOP	1319		INTRADO_MIAMI		0				
SECTOR D										
SECTOR E										
SECTOR F										
OMNI										

Section 6 - RBS GENERAL INFORMATION - existing

	GSM 1ST RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS								
RBS ID:	48916	172494	305218	456079								
CTS COMMON ID:	321P5145	CTU5145	CTV5145	CTL05145								
CELL ID / BCF:	NYNYCT0145	CTU5145	CTU5145	CTL05145								
BTA/TID:	321P	321V	321W	321L								
4-9 DIGIT SITE ID:	5145	5145	9145	5145								
COW OR TOY?:	No	No	No	No								
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED	SECTORIZED								
SITE TYPE:	BTS-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL								
BTS LOCATION ID:	GROUND	GROUND	INTERNAL	GROUND								
BASE STATION TYPE:	BASE	BASE	OVERLAY	BASE								
EQUIPMENT NAME:	LOWER SHORT HILL	LOWER SCORT HILL	LOWERSCORT HILL	LOWER SCORT HILL LTE								
DISASTER PRIORITY:	0	2	0	0								

Section 6 - RBS GENERAL INFORMATION - final

	GSM 1ST RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS								
RBS ID:	48916	172494	305218	456079								
CTS COMMON ID:	321P5145	CTU5145	CTV5145	CTL05145								
CELL ID / BCF:	NYNYCT0145	CTU5145	CTU5145	CTL05145								
BTA/TID:	321P	321V	321W	321L								
4-9 DIGIT SITE ID:	5145	5145	9145	5145								
COW OR TOY?:	No	No	No	No								
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED	SECTORIZED								
SITE TYPE:	BTS-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL								
BTS LOCATION ID:	GROUND	GROUND	INTERNAL	GROUND								
BASE STATION TYPE:	BASE	BASE	OVERLAY	BASE								
EQUIPMENT NAME:	LOWER SHORT HILL	LOWER SCORT HILL	LOWERSCORT HILL	LOWER SCORT HILL LTE								
DISASTER PRIORITY:	0	2	0	0								

Section 7 - RBS SPECIFIC INFORMATION - existing

	GSM 1ST RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS								
RAC:												
EQUIPMENT VENDOR:	NOKIA	ERICSSON	ERICSSON	ERICSSON								
EQUIPMENT TYPE:	ULTRASITE	3206 INDOOR	3206 INDOOR	6601 INDOOR MU								
BASEBAND CONFIGURATION:												
LOCATION:												
CABINET LOCATION:												
MARKET STATE CODE:				CT								
AGPS:	Yes	Yes	Yes	Yes								
NODE B NUMBER:	0	0	0	5145								

Section 7 - RBS SPECIFIC INFORMATION - final

	GSM 1ST RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS								
RAC:												
EQUIPMENT VENDOR:	NOKIA	ERICSSON	ERICSSON	ERICSSON								
EQUIPMENT TYPE:	ULTRASITE	3206 INDOOR	3206 INDOOR	6601 INDOOR MU								
BASEBAND CONFIGURATION:				1x6601 / 1xDUS41 / 1xXMU03								
LOCATION:												
CABINET LOCATION:												
MARKET STATE CODE:				CT								
AGPS:	Yes	Yes	Yes	Yes								
NODE B NUMBER:	0	0	0	5145								

Section 8 - RBS/SECTOR ASSOCIATION - existing

	GSM 1ST RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS																
CTS Common ID	321P5145	CTU5145	CTV5145	CTL05145																
Soft Sector IDs	321P51451	CTU51454	CTV51451	CTL05145_7A_1																
	321P51452	CTU51455	CTV51452	CTL05145_7B_1																
	321P51453	CTU51456	CTV51453	CTL05145_7C_1																
		CTU51457																		
		CTU51458																		
		CTU51459																		

Section 8 - RBS/SECTOR ASSOCIATION - final

	GSM 1ST RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS																
CTS Common ID	321P5145	CTU5145	CTV5145	CTL05145																
Soft Sector IDs		CTU51454		CTL05145_7A_1																
		CTU51455		CTL05145_7B_1																
		CTU51456		CTL05145_7C_1																
				CTL05145_9A_1																
				CTL05145_9B_1																
				CTL05145_9C_1																

Section 9 - SOFT SECTOR ID - existing

	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900																			
USEID (excluding Hard Sector)	26706.1900.25G.1	26706.850.3G.2	26706.1900.3G.1	26706.1900.3G.2																					
SECTOR A SOFT SECTOR ID	321P51451	CTV51451	CTU51457	CTU51454	CTL05145_7A_1																				
SECTOR B	321P51452	CTV51452	CTU51458	CTU51455	CTL05145_7B_1																				
SECTOR C	321P51453	CTV51453	CTU51459	CTU51456	CTL05145_7C_1																				
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - SOFT SECTOR ID - final

	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900																			
USEID (excluding Hard Sector)				26706.1900.3G.2																					
SECTOR A SOFT SECTOR ID				CTU51454	CTL05145_7A_1	CTL05145_9A_1																			
SECTOR B				CTU51455	CTL05145_7B_1	CTL05145_9B_1																			
SECTOR C				CTU51456	CTL05145_7C_1	CTL05145_9C_1																			
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - Cell Number - existing

	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900																				
USEID (excluding Hard Sector)	26706.1900.25G.1	26706.850.3G.2	26706.1900.3G.1	26706.1900.3G.2																						
SECTOR A **CELL NUMBER**	0	0	0	0	15																					
SECTOR B	0	0	0	0	16																					
SECTOR C	0	0	0	0	17																					
SECTOR D																										
SECTOR E																										
SECTOR F																										
OMNI																										

Section 9 - Cell Number - final

	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900																				
USEID (excluding Hard Sector)				26706.1900.3G.2																						
SECTOR A **CELL NUMBER**				0	15	8																				
SECTOR B				0	16	9																				
SECTOR C				0	17	10																				
SECTOR D																										
SECTOR E																										
SECTOR F																										
OMNI																										

Section 10 - CID/SAC - existing

		GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900																					
SECTOR A	CID/SAC	51451	51451	51457	51454																							
SECTOR B		51452	51452	51458	51455																							
SECTOR C		51453	51453	51459	51456																							
SECTOR D																												
SECTOR E																												
SECTOR F																												
OMNI																												

Section 10 - CID/SAC - final

		GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900																					
SECTOR A	CID/SAC				51454																							
SECTOR B					51455																							
SECTOR C					51456																							
SECTOR D																												
SECTOR E																												
SECTOR F																												
OMNI																												

Section 15A - CURRENT SECTOR/CELL INFORMATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	FX-X-CD-65-12-65-14-00T-ST													
ANTENNA VENDOR	KMW													
ANTENNA SIZE (H x W x D)	24X11.8X6													
ANTENNA WEIGHT	15.4													
AZIMUTH	0													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	85													
ANTENNA TIP HEIGHT	86													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT	2													
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	2	CCI Triplexer -TPX-070821												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	RRUS-11												
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	26706.A.700.4G.1	26706.A.700.4G.1	CTL05145_7A_1	CTL05145_7A_1		LTE 700	FX-X-CD-65-12-65-14-00T-ST_725MHz_00DT	12.69		0	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675									
	PORT 3	26706.A.1900.3G.2	26706.A.1900.3G.2	CTU51457	CTU51454		UMTS 1900	FX-X-CD-65-12-65-14-00T-ST_1930MHz_00DT	13.5		0	BOTTOM	Andrew 1-5/8 (1900)	112.028685	RXAIT 1900								

Section 15B - CURRENT SECTOR/CELL INFORMATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	FX-X-CD-65-12-65-14-00T-ST													
ANTENNA VENDOR	KMW													
ANTENNA SIZE (H x W x D)	24X11.8X6													
ANTENNA WEIGHT	15.4													
AZIMUTH	120													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	85													
ANTENNA TIP HEIGHT	86													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT	2													
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	2	CCI Triplexer -TPX-070821												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	RRUS-11												
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	26706.B.700.4G.1	26706.B.700.4G.1	CTL05145_7B_1	CTL05145_7B_1		LTE 700	FX-X-CD-65-12-65-14-00T-ST_725MHz_00DT	12.69		0	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675									
	PORT 3	26706.B.1900.3G.2	26706.B.1900.3G.2	CTU51458	CTU51455		UMTS 1900	FX-X-CD-65-12-65-14-00T-ST_1930MHz_00DT	13.5		0	BOTTOM	Andrew 1-5/8 (1900)	112.028685	RXAIT 1900								

Section 15C - CURRENT SECTOR/CELL INFORMATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	FX-X-CD-65-12-65-14-00T-ST													
ANTENNA VENDOR	KMW													
ANTENNA SIZE (H x W x D)	24X11.8X6													
ANTENNA WEIGHT	15.4													
AZIMUTH	240													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	85													
ANTENNA TIP HEIGHT	86													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT	2													
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	2	CCI Triplexer -TPX-070821												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	RRUS-11												
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	26706.C.700.4G.1	26706.C.700.4G.1	CTL05145_7C_1	CTL05145_7C_1		LTE 700	FX-X-CD-65-12-65-14-00T-ST_725MHz_00DT	12.69		0	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675									
	PORT 3	26706.C.1900.3G.2	26706.C.1900.3G.2	CTU51459	CTU51456		UMTS 1900	FX-X-CD-65-12-65-14-00T-ST_1930MHz_00DT	13.5		0	BOTTOM	Andrew 1-5/8 (1900)	112.028685	RXAIT 1900								

Section 16A - NEW/PROPOSED SECTOR/CELL INFORMATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?														
ANTENNA MAKE - MODEL	QS46512-2													
ANTENNA VENDOR	Quintel													
ANTENNA SIZE (H x W x D)	52X12X10.8													
ANTENNA WEIGHT	75													
AZIMUTH	0													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	85													
ANTENNA TIP HEIGHT	87													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT	2													
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)	6	Kathrein / 782 11055 (2) + Andrew APTDC-BDFDM-DB (4)												
DIPLEXER (QTY/MODEL)	4	CCI Pentaplexer 5PX-0726-O												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)												
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Kathrein / 782 11055												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)	1	RRUS-12												
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)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Bronze Standard - Replace existing Antenna with 4' 12 port Antenna - Add 2 Coax per sector - Add 2 Twin TMA per sector - Add Smart Bias T's - Add LTE 1900 RRUS-12 - Replace Triplexers with 4 Pentaplexers - DUL to DUS upgrade - Add XMU - Remove RxAIT along with LLC and Plumb UMTS staright													
Local Market Note 2														
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2:_ XMU-1 -PB:_:PA:_:PC:_:_:_:_:_:_:_:_:_:D1E:D1D													

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 7	26706.A.1900.4G.tmp1	26706.A.1900.4G.1	CTL05145_9A_1	CTL05145_9A_1		LTE 1900	QS46512-2_1930MHz_02DT	15.7		2	BOTTOM	1 5/8" ANDREW	112.028675									

Section 16B - NEW/PROPOSED SECTOR/CELL INFORMATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?														
ANTENNA MAKE - MODEL	QS46512-2													
ANTENNA VENDOR	Quintel													
ANTENNA SIZE (H x W x D)	52X12X10.8													
ANTENNA WEIGHT	75													
AZIMUTH	120													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	85													
ANTENNA TIP HEIGHT	87													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT	2													
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)	6	Kathrein / 782 11055 (2) + Andrew APTDC-BDFDM-DB (4)												
DIPLEXER (QTY/MODEL)	4	CCI Pentaplexer 5PX-0726-O												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)												
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Kathrein / 782 11055												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)	1	RRUS-12												
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)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Bronze Standard - Replace existing Antenna with 4' 12 port Antenna - Add 2 Coax per sector - Add 2 Twin TMA per sector - Add Smart Bias T's - Add LTE 1900 RRUS-12 - Replace Triplexers with 4 Pentaplexers - DUL to DUS upgrade - Add XMU - Remove RxAIT along with LLC and Plumb UMTS staright													
Local Market Note 2														
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2:_ XMU-1 -PB:_:PA:_:PC:_:_:_:_:_:_:_:_:D1E:D1D													

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 7	26706.B.1900.4G.tmp1	26706.B.1900.4G.1	CTL05145_9B_1	CTL05145_9B_1		LTE 1900	QS46512-2_1930MHz_02DT	15.7		2	BOTTOM	1 5/8" ANDREW	112.028675									

Section 16C - NEW/PROPOSED SECTOR/CELL INFORMATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?														
ANTENNA MAKE - MODEL	QS46512-2													
ANTENNA VENDOR	Quintel													
ANTENNA SIZE (H x W x D)	52X12X10.8													
ANTENNA WEIGHT	75													
AZIMUTH	240													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	85													
ANTENNA TIP HEIGHT	87													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT	2													
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)	6	Kathrein / 782 11055 (2) + Andrew APTDC-BDFDM-DB (4)												
DIPLEXER (QTY/MODEL)	4	CCI Pentaplexer 5PX-0726-O												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)												
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Kathrein / 782 11055												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)	1	RRUS-12												
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)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Bronze Standard - Replace existing Antenna with 4' 12 port Antenna - Add 2 Coax per sector - Add 2 Twin TMA per sector - Add Smart Bias T's - Add LTE 1900 RRUS-12 - Replace Triplexers with 4 Pentaplexers - DUL to DUS upgrade - Add XMU - Remove RxAIT along with LLC and Plumb UMTS staright													
Local Market Note 2														
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2:_ XMU-1 -PB:_:PA:_:PC:_:_:_:_:_:_:_:_:D1E:D1D													

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 7	26706.C.1900.4G.tmp1	26706.C.1900.4G.1	CTL05145_9C_1	CTL05145_9C_1		LTE 1900	QS46512-2_1930MHz_02DT	15.7		2	BOTTOM	1 5/8" ANDREW	112.028675									

Section 17A - FINAL SECTOR/CELL INFORMATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	QS46512-2													
ANTENNA VENDOR	Quintel													
ANTENNA SIZE (H x W x D)	52X12X10.8													
ANTENNA WEIGHT	75													
AZIMUTH	0													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	85													
ANTENNA TIP HEIGHT	87													
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)	6	Kathrein / 782 11055 (2) + Andrew APTDC-BDFDM-DB (4)												
DIPLEXER (QTY/MODEL)	4	CCI Pentaplexer 5PX-0726-O												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)												
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Kathrein / 782 11055												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	RRUS-11												
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)	1	RRUS-12												
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)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Bronze Standard - Replace existing Antenna with 4' 12 port Antenna - Add 2 Coax per sector - Add 2 Twin TMA per sector - Add Smart Bias T's - Add LTE 1900 RRUS-12 - Replace Triplexers with 4 Pentaplexers - DUL to DUS upgrade - Add XMU - Remove RxAIT along with LLC and Plumb UMTS staright													
Local Market Note 2														
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2:_ XMU-1 -PB:_:PA:_:PC:_:_:_:_:_:_:_:_:_:_:D1E:D1D													

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**	26706.A.700.4G.1	26706.A.700.4G.1	CTL05145_7A_1	CTL05145_7A_1		LTE 700	QS46512-2_776MHz_02DT	13	0	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		1	
	PORT 3	26706.A.1900.3G.2	26706.A.1900.3G.2	CTU51457	CTU51454		UMTS 1900	QS46512-2_1930MHz_02DT	15.7	0	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						633.86		2	
	PORT 7	26706.A.1900.4G.tmp1	26706.A.1900.4G.1	CTL05145_9A_1	CTL05145_9A_1		LTE 1900	QS46512-2_1930MHz_02DT	15.7	0	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		2	

Section 17B - FINAL SECTOR/CELL INFORMATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	QS46512-2													
ANTENNA VENDOR	Quintel													
ANTENNA SIZE (H x W x D)	52X12X10.8													
ANTENNA WEIGHT	75													
AZIMUTH	120													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	85													
ANTENNA TIP HEIGHT	87													
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)	6	Kathrein / 782 11055 (2) + Andrew APTDC-BDFDM-DB (4)												
DIPLEXER (QTY/MODEL)	4	CCI Pentaplexer 5PX-0726-O												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)												
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Kathrein / 782 11055												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	RRUS-11												
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)	1	RRUS-12												
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)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Bronze Standard - Replace existing Antenna with 4' 12 port Antenna - Add 2 Coax per sector - Add 2 Twin TMA per sector - Add Smart Bias T's - Add LTE 1900 RRUS-12 - Replace Triplexers with 4 Pentaplexers - DUL to DUS upgrade - Add XMU - Remove RxAIT along with LLC and Plumb UMTS staright													
Local Market Note 2														
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2:_ XMU-1 -PB:_:PA:_:PC:_:_:_:_:_:_:_:_:_:_:D1E:D1D													

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**	26706.B.700.4G.1	26706.B.700.4G.1	CTL05145_7B_1	CTL05145_7B_1		LTE 700	QS46512-2_776MHz_02DT	13	120	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		9	
	PORT 3	26706.B.1900.3G.2	26706.B.1900.3G.2	CTU51458	CTU51455		UMTS 1900	QS46512-2_1930MHz_02DT	15.7	120	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						633.86		10	
	PORT 7	26706.B.1900.4G.tmp1	26706.B.1900.4G.1	CTL05145_9B_1	CTL05145_9B_1		LTE 1900	QS46512-2_1930MHz_02DT	15.7	120	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		10	

Section 17C - FINAL SECTOR/CELL INFORMATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	QS46512-2													
ANTENNA VENDOR	Quintel													
ANTENNA SIZE (H x W x D)	52X12X10.8													
ANTENNA WEIGHT	75													
AZIMUTH	240													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	85													
ANTENNA TIP HEIGHT	87													
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)	6	Kathrein / 782 11055 (2) + Andrew APTDC-BDFDM-DB (4)												
DIPLEXER (QTY/MODEL)	4	CCI Pentaplexer 5PX-0726-O												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)												
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Kathrein / 782 11055												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	RRUS-11												
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)	1	RRUS-12												
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)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Bronze Standard - Replace existing Antenna with 4' 12 port Antenna - Add 2 Coax per sector - Add 2 Twin TMA per sector - Add Smart Bias T's - Add LTE 1900 RRUS-12 - Replace Triplexers with 4 Pentaplexers - DUL to DUS upgrade - Add XMU - Remove RxAIT along with LLC and Plumb UMTS staright													
Local Market Note 2														
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2:_ XMU-1 -PB:_:PA:_:PC:_:_:_:_:_:_:_:_:_:_:D1E:D1D													

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**	26706.C.700.4G.1	26706.C.700.4G.1	CTL05145_7C_1	CTL05145_7C_1		LTE 700	QS46512-2_776MHz_02DT	13	240	2	BOTTOM	1 5/8" ANDREW AVA7-50_700 MHz	112.028675						1475.7065		17	
	PORT 3	26706.C.1900.3G.2	26706.C.1900.3G.2	CTU51459	CTU51456		UMTS 1900	QS46512-2_1930MHz_02DT	15.7	240	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						633.86		18	
	PORT 7	26706.C.1900.4G.tmp1	26706.C.1900.4G.1	CTL05145_9C_1	CTL05145_9C_1		LTE 1900	QS46512-2_1930MHz_02DT	15.7	240	2	BOTTOM	Andrew 1-5/8 (1900)	112.028685						3664.3757		18	

Diagram - Sector	A	Diagram File Name - CT5145_A_B_C_LTE 2C Rev-1.vsd					
Atoll Site Name -	CTU5145	Location Name -	LOWER SCORT HILL	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments:							

Antenna 1
LTE 700/ PCS – UMTS 1900

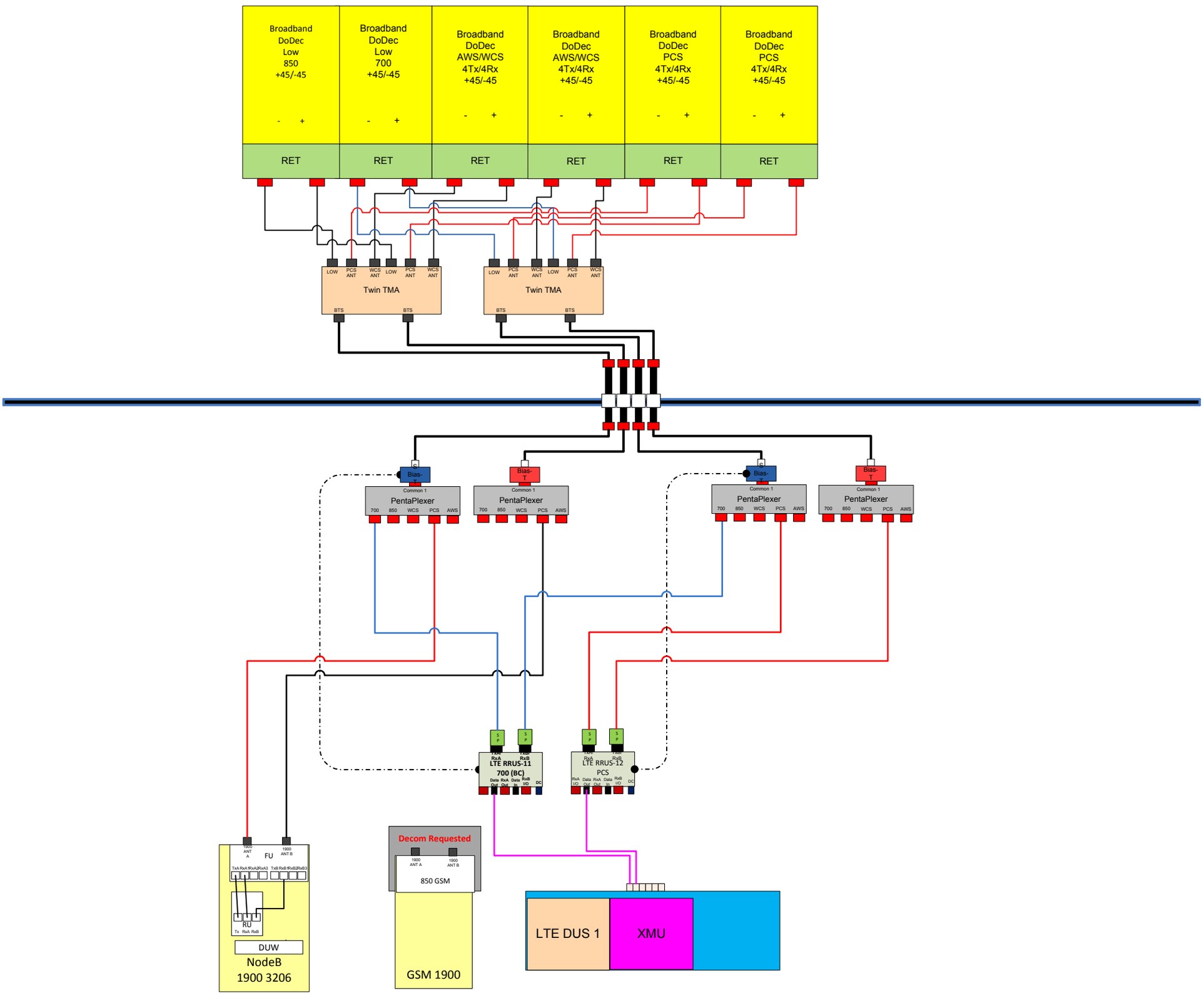


Diagram - Sector	B	Diagram File Name - CT5145_A_B_C_LTE 2C Rev-1.vsd					
Atoll Site Name -	CTU5145	Location Name -	LOWER SCORT HILL	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments:							

Antenna 1
LTE 700/ PCS – UMTS 1900

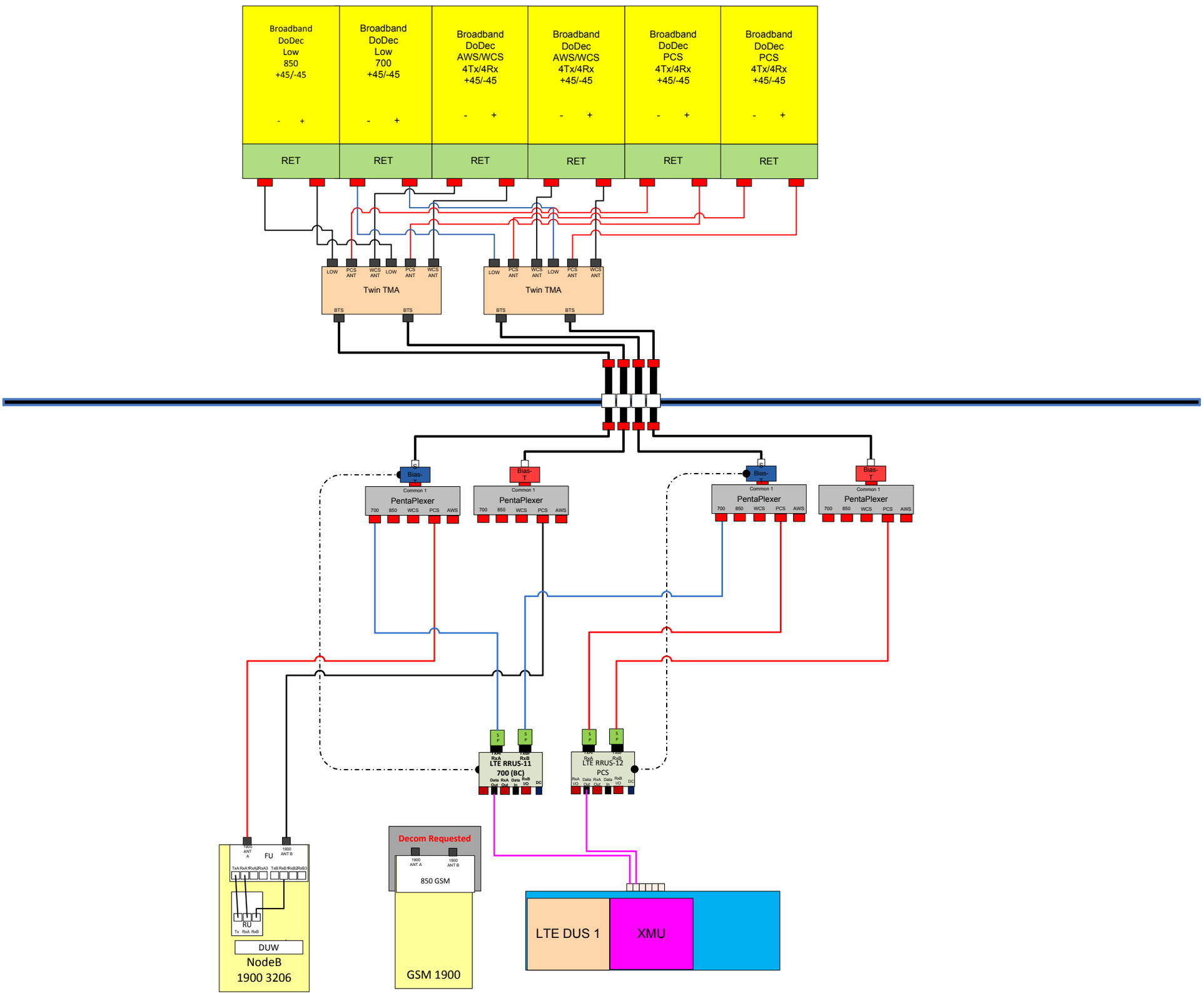
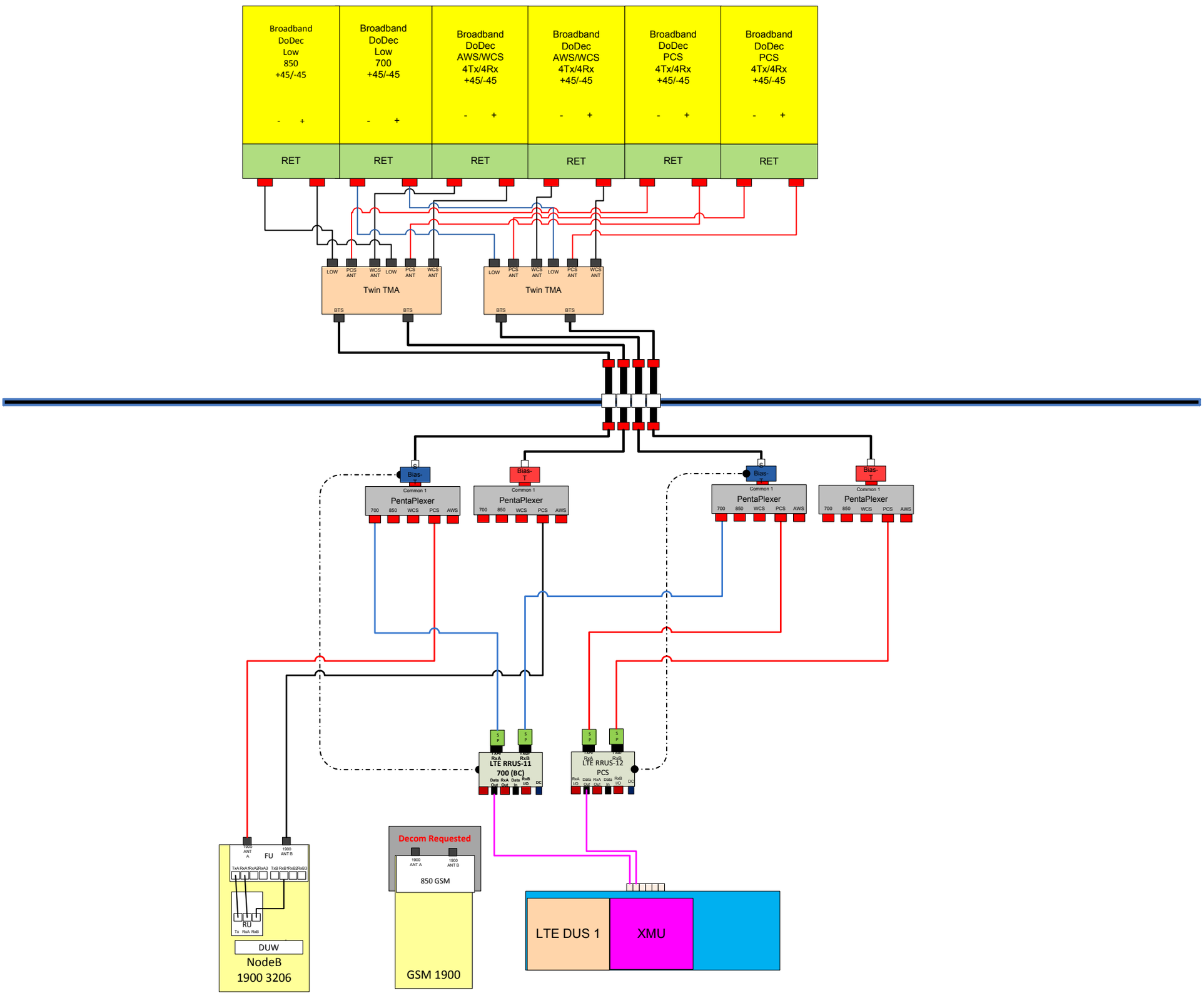


Diagram - Sector	C	Diagram File Name - CT5145_A_B_C_LTE 2C Rev-1.vsd					
Atoll Site Name -	CTU5145	Location Name -	LOWER SCORT HILL	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments:							

Antenna 1
LTE 700/ PCS – UMTS 1900



NOTES			
Date Time (Central)	Version	ATTUID	Note
10/20/2016 3:29:09 PM	1.00	mh705r	LTE 2C Preliminary RFDS
10/24/2016 3:51:56 PM	1.00	mh705r	LTE 2C Preliminary RFDS

WORKFLOW SUMMARY							
Date	FROM State / Status	FROM ATTUID	TO State / Status	TO ATTUID	Operation	Comments	PACE Status
10/25/2016	Preliminary In Progress	mh705r	Preliminary Submitted for Approval	RC475S	Promote	LTE 2C PRELIMINARY RFDS	
10/28/2016	Preliminary Submitted for Approval	RC475S	Preliminary Approved	BG144B	Promote		
01/18/2017	Preliminary Approved	BG144B	Preliminary Approved	DC5778	Reassign	Successfully Reassigned	
01/19/2017	Preliminary Approved	DC5778	Final RF Approval	OM636A	Promote	promote as final	
01/19/2017	Final RF Approval	OM636A	Final RF Approval	SP656B	Reassign	Successfully Reassigned	
01/20/2017	Final RF Approval	SP656B	Final Approved	LG792W	Promote	Final	NER-RCTB-12-04554 PENDING 01/20/2017 1:46:27 PM

Quintel®
New Dimensions in Wireless™

QS46512-2

4ft 65° XXX MultiServ™ 12-Port Antenna

2x698-806MHz / 2x824-894MHz / 4x1850-1990MHz / 4x1695-1780+2110-2400MHz

MultiServ

- Provides 12 antenna Ports in a slim-line form factor
- Optimized Azimuth patterns for Min Inter-Sector Interference
- Industry leading Minimal Wind-Load design
- 700, 850, PCS, AWS & WCS bands in one antenna
- AISG & 3GPP compliant internal remote electrical tilt (RET)
- AWS & PCS Cross band PIM >159dBc

The Quintel MultiServ™ Multiband 12 Port Antenna with patented QTilt™ technology uniquely delivers four independent services in a single slim-line antenna. This enables existing antenna network sites to be upgraded constraint free to add new services such as LTE for 700, 850, PCS, AWS and WCS bands with the replacement of one antenna. The QS46512-2 also provides 4x1695-1780+2110-2400MHz & 4x1850-1990MHz ports as two side-by-side (CLA-2X) arrays, each set of 4x ports having independent tilt, for connection to 2T4R/4T4R services.

Electrical Characteristics	2x Ports 1&2	2x Ports 3&4	4x Ports 5-8			4x Ports 9-12
Operating Frequency (MHz)	**698-806**	**824-894**	**1695-1780 and 2110-2400**			**1850-1990**
	698-806	824-894	1695-1780	2110-2180	2300-2400	1850-1990
Azimuth beamwidth[1]	65°	61°	72°	65°	60°	68°
Elevation beamwidth[1]	15.5°	14°	7.7°	6.2°	5.7°	7.3°
Gain[1] (dBi)	12.7	12.5	15.5	16.0	16.2	15.3
Polarization	±45°	±45°	±45° ±45°			±45° ±45°
Electrical down-tilt range	2°-10°	2°-10°	2° – 10°			2° – 10°
Upper SLL (20° > mainbeam)[1]	-16dB	-19dB	-17.5dB	-16dB	-17dB	-19dB
Front to Back Ratio(180°±10°)[1]	≥25dB	≥24dB	≥34dB	≥28dB	≥30dB	≥28dB
Port to Port isolation[1]	≥26dB	≥29dB	≥30dB	≥30dB	≥30dB	≥30dB
Return loss (VSWR)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB (1.5)	14dB(1.5)
X Polar Discrimination (at 0°)	>16dB	>17.5dB	>21dB	>20dB	>21dB	>18dB
Max Power handling (per any port)	500 watts	500 watts	250 watts			250 watts
Total Composite Power (all ports)	1750 watts					
PIM (3rd Order) (2x43dBm)	>153dBc	>153dBc	>153dBc			>153dBc
XBand PIM (3rd Order) (2x43dBm)			>159dBc			

[1] *Typical Performance across frequency and Downtilt.*

Mechanical Characteristics	
Dimensions	L 52"(1320mm) x W 12"(304mm) x D 10.8"(275mm)
Weight (excl mounting brackets)	75lbs (34kg)
No. of Connectors	12x 4.3-10.0 DIN Female Long Neck
Max Wind Speed	150mph (67m/s)
Equivalent Flat Plate Area	2.02ft² (0.19m²)
Wind Load @160km/h (45m/s)	Front: 445N (100 lbs), Side: 267N (60 lbs)
Operating Temperature	-40°C to +65°C

Fully Integrated RET Characteristics	
AISG Standards	V1.1,V 2.0 and 3GPP
Factory Default	AISG 2.0
Surge immunity	IEC 61000-4-5:2005 4KV(AISG PIN)
Device Type	SRET Type 1
AISG Data rate	9.6 kbps
No of connectors	RET1 1in/1out.
Connector type	IEC 60130-9 (Ed 3.0)
MTBF	36,000 Operational moves

All specifications are subject to change without notice. Please contact your Quintel representative for complete information.

QS46512-2

4ft 65° XXX MultiServ™ 12-Port Antenna

2x698-806MHz / 2x824-894MHz / 4x1850-1990MHz / 4x1695-1780+2110-2400MHz

RET Configuration

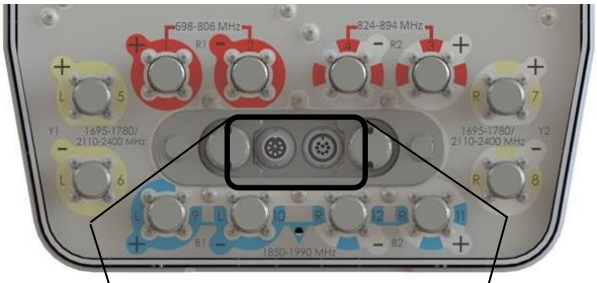
The Quintel MultiServ™ Multiband 12 Port Antenna has the following Array, RF Port and AISG I/O Configurations.

The 12-Port array topology consists of 3 radiating arrays:

R1/R2 – 698-894MHz
Y1/B1 – 1695-2400MHz
Y2/B2 – 1695-2400MHz

RF Connector Port Configuration

	Ports	Freq (MHz)
R1	1-2	698-806
R2	3-4	824-894
Y1	5-6	1695-1780+ 2110-2400
Y2	7-8	1695-1780+ 2110-2400
B1	9-10	1850-1990
B2	11-12	1850-1990



AISG I/O Configuration

RET Device	Band	RF Ports
1	698-806	1-2
2	824-894	3-4
3	AWS/WCS	5-8
4	PCS	9-12

Multiband Optimization

The Quintel MultiServ™ Multiband 12 Port Antenna is an ideal solution for independently optimizing multiple services when rapidly introducing new technologies. Technology agnostic, each pair of ports provides flexibility for existing and future technologies such as CDMA/EVDO, GSM/EDGE, UMTS/HSPA, and LTE and advanced 2T4R and 4T4R MIMO implementations at high-bands.

The tilt of each service is controlled independently via internal RET actuators compliant to AISG1.1, AISG2.0 and 3GPP protocols. The QS46512-2 provides a total of 4 independent tilts:

- 1x(698-806MHz)
- 1x(824-894MHz)
- 1x Left & Right Array (1695-1780 and 2110-2400MHz)
- 1x Left & Right Array (1850-1990MHz)

Design Optimization

All Quintel antennas use the same mechanical mounting brackets thus making maintenance swaps easy and future proof. All Quintel Antennas also have Azimuth patterns optimized with network design and deployment in mind. The 3dB Azimuth beamwidth is ~65° as with most Antennas, but we have optimized how the pattern rolls-off and where the sidelobes emerge such that there is minimal Inter-Sector Interference when 3x sectors are deployed. For interference limited networks, we can deliver 25% more capacity.

The QS46512-2 12-Port antenna has been designed for delivering best in class, maximum PIM performance. This includes using 4.3-10.0 connectors externally and internally for all array diplexing filters used with our QTilt™ technology.

About Quintel

Quintel is a leading innovator in the design, development, and delivery of network-efficient antenna solutions for wireless operators worldwide. The company's products enable global wireless operators to independently deploy and optimize multiple air interfaces or services on a single standard antenna platform. Quintel is the only antenna maker whose products can increase a wireless network's capacity and provide additional services, without increasing the number or size of antennas. Quintel is headquartered in Rochester, New York with additional offices throughout North America and Europe. More information about Quintel is available at www.quintelsolutions.com.

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TMA2117F00V1-1

PCS / WCS Dual Band Twin TMA, with 700/850 bypass, AISG2.0

Designed to be deployed in co-located PCS & WCS systems with wideband antennas, the Kaelus TMA provides internal diplexing and gain in both bands while allowing 700/850 services to pass through to a separate antenna, thereby saving hardware costs.

PRODUCT FEATURES

- Improved base station sensitivity through gain in PCS and WCS bands
- Hardware and software configuration using AISG "Personality" upload
- High Linearity and low noise performance; Bypass provided for 700/850MHz services
- Fail safe bypass mode with lightning protection

TECHNICAL SPECIFICATIONS

Downlink Path, Band 1	PCS
Passband	1930 - 1990
Insertion Loss	0.5dB typ
Return Loss	18dB min
Max Average input power (W)	160
Max PEP Input Power (W)	2000
Intermodulation, 2 x 43dBm TX carriers (dBc)	-153dBc max
Uplink Path, Band 1	
Passband	1850 - 1910
Gain (dB)	3dB to 13dB in 1dB steps
Gain window	+/- 1dB max
Return Loss (Operating)	18dB min
Return Loss (Bypass)	12dB min
Noise Figure	1.4dB typ
Bypass Loss	2.5dB typ

Supply Current, alarm mode	320 +/- 30mA per port (programmable)

AISG MODE OF OPERATION (AUTO SELECTED ON VALID AISG 2.0 FRAMES)

AISG Version	2
AISG Supply Current	400mA @ 8.5V, 120mA @ 30V typical
AISG Connector	IEC60130-9, 8-pin female
AISG Connector Current rating	< 4A peak, 2A continuous, pin 6
Field firmware upgradable	Yes

ENVIRONMENTAL

Temperature range	-40ºC to +65ºC | -40º to +149ºF
Environmental sealing	IP67
Lightning protection	RF port: +/- 5kA max (8/20us), AISG port: +/- 2kA max (8/20us) IEC61312-1
MTBF	>1,000,000 hours
Compliance	EMC:EN301 489, Ingress ETSI EN 300 019 class 4.1, RoHS

MECHANICAL

Connectors	DIN 4.3-10 (F) x 8 long shank, AISG (F) x 1
Dimensions, H x D x W	216 x 300 x 107mm | 8.46 x 11.81 x 4.21in
Finish	Powder coated, light grey (RAL7035)
Weight	8 kg | 17.6lbs est
Mounting	Pole / wall bracket supplied with two metal clamps for 45-178 mm diameter poles

ELECTRICAL BLOCK DIAGRAM

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT5145

Lower Scort Hill
280 Morehouse Drive
Fairfield, CT 6825

April 26, 2017

Centerline Communications Project Number: 950006-051

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**9.80 %**

April 26, 2017

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT5145 – Lower Scort Hill**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **280 Morehouse Drive, Fairfield, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **280 Morehouse Drive, Fairfield, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE	Frequency Band	2	60
UMTS	Frequency Band	2	30
LTE	Frequency Band	2	60

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz and 1900 MHz (PCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Quintel QS46512-2	85
B	1	Quintel QS46512-2	85
C	1	Quintel QS46512-2	85

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Quintel QS46512-2	700 MHz / 1900 MHz (PCS)	10.55 / 13.15	6	300	5,079.70	3.82
						Sector A Composite MPE%	**3.82**
Antenna B1	Quintel QS46512-2	700 MHz / 1900 MHz (PCS)	10.55 / 13.15	6	300	5,079.70	3.82
						Sector B Composite MPE%	**3.82**
Antenna C1	Quintel QS46512-2	700 MHz / 1900 MHz (PCS)	10.55 / 13.15	6	300	5,079.70	3.82
						Sector C Composite MPE%	**3.82**

Table 3: AT&T Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Sector Value	**3.82 %**
Sprint	1.30 %
T-Mobile	4.68 %
Site Total MPE %:	**9.80 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	3.82 %
AT&T Sector B Total:	3.82 %
AT&T Sector C Total:	3.82 %
Site Total:	9.80 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 700 MHz LTE	2	681.01	85	7.85	700 MHz	467	1.68%
AT&T 1900 MHz (PCS) UMTS	2	619.61	85	7.14	1900 MHz (PCS)	1000	0.71%
AT&T 1900 MHz (PCS) LTE	2	1,239.23	85	14.28	1900 MHz (PCS)	1000	1.43%
						Total:	**3.82%**

Table 6: AT&T Maximum Sector MPE Power Values

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	3.82 %
Sector B:	3.82 %
Sector C:	3.82 %
AT&T Maximum Total (per sector):	3.82 %
Site Total:	9.80 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **9.80 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

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