October 15th 2012

EM-AT&T-080-121015

VIA Hand Delivery

Ms. Linda Roberts, Executive Directo
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: AT&T Mobility - Notice of Exempt Modification
74 Birdsey Ave, Meriden CT06450

Dear Ms. Roberts:

This letter and attachments are submitted on behalf of AT&T Mobility ("AT&T"). AT&T is enhancing the capabilities of its wireless system in Connecticut by implementing LTE technology. In order to do so, AT&T will modify antenna and equipment configurations at a number of existing sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section I6-50j-73, a copy of this letter and attachments is being sent to Michael Rohde the Mayor of Meriden .

AT&T plans to modify the existing facility at 74 Birdsey Ave, Meriden CT 06450, owned by Connecticut Light and Power(coordinates 41-31-22.50 N, 72-44-57.65). Attached are drawings depicting the planned changes, and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration. Also included is a power density calculation reflecting the modification to AT&T's operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C. S.A. Section | 6-50j-l 2(b)(2).

1. The height of the overall structure will be unaffected. The existing antennas will remain and AT&T will add three (3) new antennas, six (6) RRU's and one (1) surge arrestor. There will also be an addition of three T-Arms. Additionally, AT&T will install one (1) fiber cable and two (2) DC control cables within the existing coax.

2. The proposed changes will not extend the site boundaries. AT&T will install additional equipment on a new concrete pad that falls within existing compound boundaries. Thus, there willno effect on the site compound.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed change will be negligible.

4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environment as calculated for a mixed frequency site. As indicated in the attached

power density calculations, AT&T's operations at the site will result in a power density of 1.07%; the combined site operations will result in a total power density of 1.07%.

Please feel free to call me with any questions or concerns regarding this matter.
Thank you for your consideration.

Respectfully submitted,

AT&T Mobility
Matthew Bandle, Consultant
mbandle@nexlinkgs.com
508-642-8801

Cc: Michael Rohde, Mayor of the City of Meriden. Town Building Official, 142 East Main Street Meriden, CT 06450

CONNECTICUT SITING COUNCIL
NOTICE OF INTENT TO MODIFY AN EXISTING TOWER FACILITY
EXEMPT MODIFICATION FILING FORM

Public Utility Environmental Standards Act, Connecticut General Statutes §§ 16-50g - 16-50aa
Regulations of Connecticut State Agencies §§ 16-50j-72(b)(2) and 16-50j-73

TO BE COMPLETED BY FILER

Date: 10/15/12

Filer Name and Contact Information
Name: Matthew Bandle
Address: Nexlink Global Services; Suite A Building 2
800 Marshall Phelps Road, Windsor, CT 06095
Phone Number: 508-642-8801

Wireless Carrier: AT&T

Tower Owner: CL&P

Tower Site Address: 74 Birdsey Ave., Meriden CT 06450

Municipality and Name of Chief Elected Official Provided A Copy Of This Notice:
Michael Rohde, Meriden Mayor

Description of Exempt Modification (including antenna and equipment changes):
Add 3 LTE Antennas, new conduit, RRUs and surge arrestor.

Attachments
____Plans
____Power density calculations if applicable
____Tower structural report if applicable
____$625.00 Filing Fee

If required:
Municipality w/i 2,500' & Name of Chief Elected Official Provided A Copy Of This Notice:

Underlying Property Owner Provided A Copy Of This Notice:

FOR STAFF USE ONLY

____ Modification will not result in an increase in tower height
____ Modification is within existing site boundaries
____ Modification will not increase noise levels at the site boundary by 6 dbA or more, or to levels that exceed State & local criteria
____ Modification will meet FCC and DEEP MPE limits
____ Modification will not result in significant adverse change in physical or environmental characteristics of the site
____ Modification will not impair the structural integrity of the facility as determined by PE
____ If yes to all of the above, approval of acknowledgement letter

CENTEK engineering

Centered on Solutions℠

Structural Analysis Of CL&P Pole

AT&T Site Ref: CT5279 - Meriden East

CL&P Structure No. 9403
175.5' Electric Transmission Pole

74 Birdsey Ave.
Meriden, CT

CENTEK Project No. 12014.CO7

Date: May 8, 2012

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

63-2 North Branford Road, Branford, CT 06405 203.488.0580 Fax 203.488.8587 www.CentekEng.com

WIRELESS COMMUNICATIONS FACILITY

CT5279

MERIDEN BIRDSEY AVENUE

CL&P STRUCT. NO. 9403

74 BIRDSEY AVENUE

MERIDEN, CT 06450

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2005 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2009 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA-222 REVISION "F" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2005 CONNECTICUT FIRE SAFETY CODE AND 2009 AMENDMENTS, 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

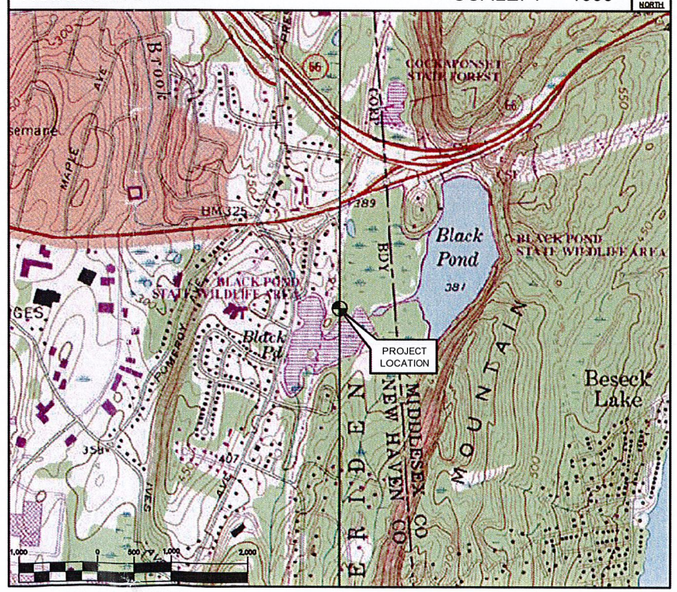
TO: 74 BIRDSEY AVENUE, MERIDEN, CT 06450

1.	Take ramp left for I-91 South	9.7 mi
2.	At exit 67, take ramp right for East Main Street toward W. Cross Pkwy / E. Main St	0.5 mi
3.	Turn left onto E Main St	1.0 mi
4.	Bear right onto Cone Ave, and then keep right to stay on Cone Ave	0.2 mi
5.	Turn left onto Birdsey Ave	269 ft

Arrive at 74 Birdsey Ave, Meriden, CT 06450

VICINITY MAP

SCALE: 1" = 1000'



PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK GENERALLY CONSISTS OF THE INSTALLATION OF ONE (1) LTE ANTENNA PER SECTOR FOR A TOTAL OF (3) LTE ANTENNAS TO THE EXISTING AT&T ANTENNA ARRAY. AN LTE BASEBAND EQUIPMENT UNIT (RBS) WILL BE INSTALLED ON A CONC. PAD ADJACENT TO THE EXISTING AT&T EQUIPMENT.
2. ADDITIONALLY, (2) REMOTE RADIO UNITS (RRUs) PER SECTOR WILL BE INSTALLED. SURGE ARRESTORS WILL BE INSTALLED AT BOTH AT&T RRU AND EQUIPMENT LOCATIONS. REFER TO THESE ACCOMPANYING DRAWINGS FOR FURTHER INFORMATION.

PROJECT INFORMATION

AT&T SITE NUMBER:	CT5279
AT&T SITE NAME:	MERIDEN BIRDSEY AVENUE CL&P STRUCT. NO. 9403
SITE ADDRESS:	74 BIRDSEY AVENUE MERIDEN, CT 06450
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°-31'-22.50"N LONGITUDE: 72°-44'-57.65"W GROUND ELEVATION: ±400'AMSL

SHEET INDEX

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DESIGNED BY:				TJL
DRAWN BY:				TJL
CHK'D BY:				CFC
1	8/18/12	DEB	CFC	CONSTRUCTION
0	5/29/12	TJL	DEB	CONSTRUCTION - CLIENT REVIEW
REV.	DATE	DRAWN BY	CHK'D BY	

PROFESSIONAL ENGINEER SEAL

CARLOS F. CENTEK — No. 17694 — LICENSED PROFESSIONAL ENGINEER — STATE OF CONNECTICUT

at&t

NEXLINK

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AT&T MOBILITY

WIRELESS COMMUNICATIONS FACILITY / LTE UPGRADE

CT5279

MERIDEN BIRDSEY AVENUE

CL&P STRUCT. NO. 9403

74 BIRDSEY AVENUE
MERIDEN, CT 06450

DATE:	5/7/12
SCALE:	AS NOTED
JOB NO.	11118.C072

TITLE SHEET

T-1

STRUCTURAL SPECIFICATIONS

DESIGN BASIS

GOVERNING CODE: 2003 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2005 CONNECTICUT STATE BUILDING CODE AND 2009 AMENDMENTS.

1. DESIGN CRITERIA:
   - WIND LOAD (PCS MAST): BASIC WIND SPEED (V) = 85 MPH (BASED ON EIA/TIA-222-F-96 AND NU MAST DESIGN CRITERIA EXCEPTION 1.
   - WIND LOAD (UTILITY POLE & FOUNDATION): BASIC WIND SPEED (V) = 110 MPH (3 SECOND GUST) BASED ON NESC C2-2007, SECTION 25 RULE 250C.
   - BASIC WIND SPEED (OTHER STRUCTURE): 110 MPH (3 SECOND GUST) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-02) PER 2003 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2005 CONNECTICUT SUPPLEMENT AND 2009 AMMENDMENT.
   - SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7-95 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.

GENERAL NOTES

1. IF ANY FIELD CONDITIONS EXIST WHICH PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL PROCEED WITH AFFECTED WORK AFTER CONFLICT IS SATISFACTORILY RESOLVED.
2. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST THE PRE MANUFACTURED EQUIPMENT BUILDING SHOP DRAWINGS.
3. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.
4. REFER TO DRAWING T1 FOR ADDITIONAL NOTES AND REQUIREMENTS.

SITE NOTES

1. THE CONTRACTOR SHALL CALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.
2. ACTIVE EXISTING UTILITIES, WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY, PRIOR TO PROCEEDING, SHOULD ANY UNCOVERED EXISTING UTILITY PRECLUDE COMPLETION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. ALL RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED OFF SITE AND BE LEGALLY DISPOSED, AT NO ADDITIONAL COST.
4. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE EQUIPMENT AND TOWER AREAS.
5. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
6. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
7. THE AREAS OF THE COMPOUND DISTURBED BY THE WORK SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
8. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

EARTHWORK NOTES

1. COMPACTED GRAVEL FILL SHALL BE FURNISHED AND PLACED AS A FOUNDATION FOR STRUCTURES, WHERE SHOWN ON THE CONTRACT DRAWINGS OR DIRECTED BY THE ENGINEER.
2. CRUSHED STONE FILL SHALL BE PLACED IN 12" MAX. LIFTS AND CONSOLIDATED USING A HAND OPERATED VIBRATORY PLATE COMPACTOR WITH A MINIMUM OF 2 PAQSSES OF COMPACTOR PER LIFT.
3. COMPACTED GRAVEL FILL TO BE WELL GRADED BANK RUN GRAVEL MEETING THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE DESIGNATION	% PASSING
1 ½"	100
No. 4	40-70
No. 100	5-20
No. 200	4-8

4. CRUSHED STONE TO BE UNIFORMLY GRADED, CLEAN, HARD PROCESS AGGREGATE MEETING THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE DESIGNATION	% PASSING
1"	100
¾"	90-100
½"	0-15
⅜"	0-5

5. SELECT BACKFILL FOR FOUNDATION WALLS SHALL BE FREE OF ORGANIC MATERIAL, TOPSOIL, DEBRIS AND BOULDERS LARGER THAN 6".
6. GRAVEL AND GRANULAR FILL SHALL BE INSTALLED IN 8" MAX. LIFTS. COMPACTED TO 95% MIN. AT MAX. DRY DENSITY.
7. NON WOVEN GEOTEXTILE FOR SEPARATION PURPOSES SHALL BE MIRAFI 140N, OR ENGINEER APPROVED EQUAL.

CONCRETE CONSTRUCTION NOTES

1. CONCRETE CONSTRUCTION SHALL CONFORM TO THE FOLLOWING STANDARDS:

   ACI 211 – STANDARD PRACTICE FOR SELECTING PROPORTIONS FOR NORMAL AND HEAVYWEIGHT CONCRETE.

   ACI 301 – SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.

   ACI 302 – GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION

   ACI 304 – RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE.

   ACI 306.1 STANDARD SPECIFICATION FOR COLD WEATHER CONCRETING

   ACI 318 – BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.

2. CONCRETE SHALL DEVELOP COMPRESSIVE STRENGTH IN 28 DAYS AS FOLLOWS:

   SLABS ON GRADE 4,000 PSI
   ALL OTHER CONCRETE 3,000 PSI

   - PORTLAND CEMENT: ASTM C150, TYPE II, (540 LBS/CUBIC YARD)
   - AGGREGATE: ASTM C33, No. 67, TYPICAL
   - WATER: POTABLE WITH MAXIMUM WATER CEMENT RATIO OF .55
   - SLUMP: 3" TO 4"
   - ADMIXTURES: USE AIR ENTRAINING ADGENT CONFORMING TO ASTM C260 WITH 4 TO 6% TOTAL AIR. USE WATER REDUCING AGENT CONFORMING TO ASTM C494, TYPE A, IN ALL CONCRETE. CALCIUM CHLORIDE MAY NOT BE USED TO ACCELERATE THE CONCRETE SETTING TIME.

3. REINFORCING STEEL SHALL BE 60,000 PSI YIELD STRENGTH.
4. WELDED WIRE FABRIC SHALL CONFORM TO ASTM- A-185.
5. ALL DETAILING, FABRICATION, AND ERECTION OF REINFORCING BARS, UNLESS OTHERWISE NOTED, MUST FOLLOW THE LATEST ACI CODE AND LATEST ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".
6. CONCRETE COVER OVER REINFORCING SHALL CONFORM TO THE FOLLOWING, UNLESS OTHERWISE SHOWN:

   BOTTOM OF FOOTINGS 3 INCHES

   SURFACES NOT EXPOSED TO EARTH OR WEATHER 1-1/2 INCHES

7. NO STEEL WIRE, METAL FORM TIES, OR ANY OTHER METAL SHALL REMAIN WITHIN THE REQUIRED COVER OF ANY CONCRETE SURFACE.
8. ALL REINFORCEMENT SHALL BE CONTINUOUS UNLESS OTHERWISE NOTED. SPLICES SHALL BE WELL STAGGERED. ADDITIONAL BARS AND SPECIAL BENDING DETAILS ARE REQUIRED AT INTERSECTING WALLS AND AT JOINTS. SUCH DETAILS SHALL COMPLY WITH ACI 315 RECOMMENDATIONS UNLESS OTHERWISE SHOWN.
9. NO TACK WELDING OF REINFORCING WILL BE PERMITTED.
10. NO CALCIUM CHLORIDE OR ADMIXTURES CONTAINING MORE THAN 1% CHLORIDE BY WEIGHT OF ADMIXTURE SHALL BE USED IN THE CONCRETE.
11. UNLESS OTHERWISE NOTED, ALL LAP SPLICES SHALL BE 48 BAR DIAMETERS.
12. SLAB ON GRADE FINISHES:

    EXTERIOR SLAB: NON-SLIP BROOM FINISH
    INTERIOR SLAB: STEEL TROWEL FINISH

FOUNDATION CONSTRUCTION NOTES

1. ALL FOOTINGS SHALL BE PLACED ON SUITABLE, COMPACTED SOIL HAVING ADEQUATE BEARING CAPACITY AND FREE OF ORGANIC CONTENT, CLAY, OR OTHER UNSUITABLE MATERIAL. ADDITIONAL EXCAVATION MAY BE REQUIRED BELOW FOOTING ELEVATIONS INDICATED IF UNSUITABLE MATERIAL IS ENCOUNTERED.
2. SUBGRADE PREPARATION: IF UNSUITABLE SOIL IS ENCOUNTERED, REMOVE ALL UNSUITABLE MATERIALS FROM BELOW PROPOSED STRUCTURE FOUNDATIONS AND COMPACT EXPOSED SOIL SURFACES. PLACE AND COMPACT APPROVED GRAVEL FILL. PLACEMENT OF ALL COMPACTED FILL MUST BE UNDER SUPERVISION OF AN APPROVED TESTING LABORATORY. FILL SHALL BE COMPACTED IN LAYERS NOT TO EXCEED 10" BEFORE COMPACTION. DETERMINE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D1557-70 AND MAKE ONE (1) FIELD DENSITY TEST IN ACCORDANCE WITH ASTM D2167-66 FOR EACH 50 CUBIC YARDS OF COMPACTED FILL. BUT NOT LESS THAN ONE (1) PER LAYER, TO INSURE COMPACTION TO 95% OF MAX. DRY DENSITY.
3. ALL SOIL SURROUNDING AND UNDER ALL FOOTINGS SHALL BE KEPT REASONABLY DRY AND PROTECTED FROM FREEZING AND FROST ACTION DURING THE COURSE OF CONSTRUCTION.
4. WHERE GROUNDWATER IS ENCOUNTERED, DEWATERING SHALL BE ACCOMPLISHED CONTINUOUSLY AND COMPLETELY DURING FOUNDATION CONSTRUCTION. PROVIDE CRUSHED STONE AS REQUIRED TO STABILIZE FOOTING SUBGRADE.
5. ALL FOOTINGS ARE TO REST ON FIRM SOIL, REGARDLESS OF ELEVATIONS SHOWN ON THE DRAWINGS, BUT IN NO CASE MAY FOOTING ELEVATIONS BE HIGHER THAN INDICATED ON THE FOUNDATION PLAN, UNLESS SPECIFICALLY DIRECTED BY THE ENGINEER.

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. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES APPEARANCE AND QUALITY OF WELDS, AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D1.1 WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLET J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION" 9TH EDITION. AT THE COMPLETION OF WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED.
11. 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.
12. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
13. 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.
14. CONNECTIONS SHALL CONFORM TO ALL REQUIREMENTS OF THE "AISC SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR SHELTERS", LATEST EDITION, AND THE "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", LATEST EDITION.
15. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
16. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
17. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
18. FABRICATE BEAMS WITH MILL CAMBER UP.
19. 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.
20. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
21. INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
22. FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

DESIGNED BY:	DEB
DRAWN BY:	FLO
CHK'D BY:	CFC

REV.	DATE	DRAWN BY	CHK'D BY
0	5/29/12	TJL	DEB
1	8/16/12	DEB	CFC

1 CONSTRUCTION – CLIENT REVIEW

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STATE OF CONNECTICUT
CARL F. PESCE
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LICENSED
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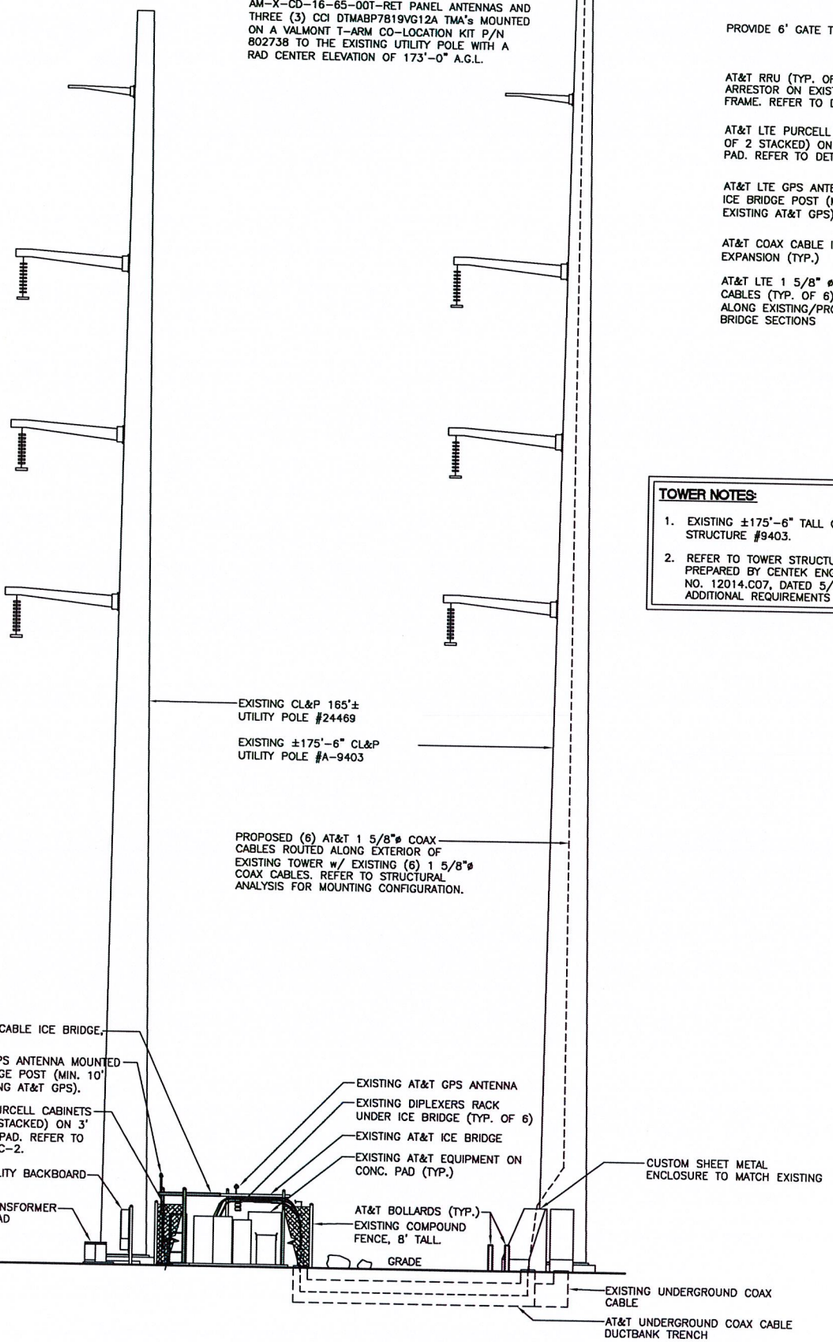
DATE:	5/7/12
SCALE:	AS NOTED
JOB NO.	11118.C072

NOTES AND SPECIFICATIONS

N-1

Sheet No. 2 of 7

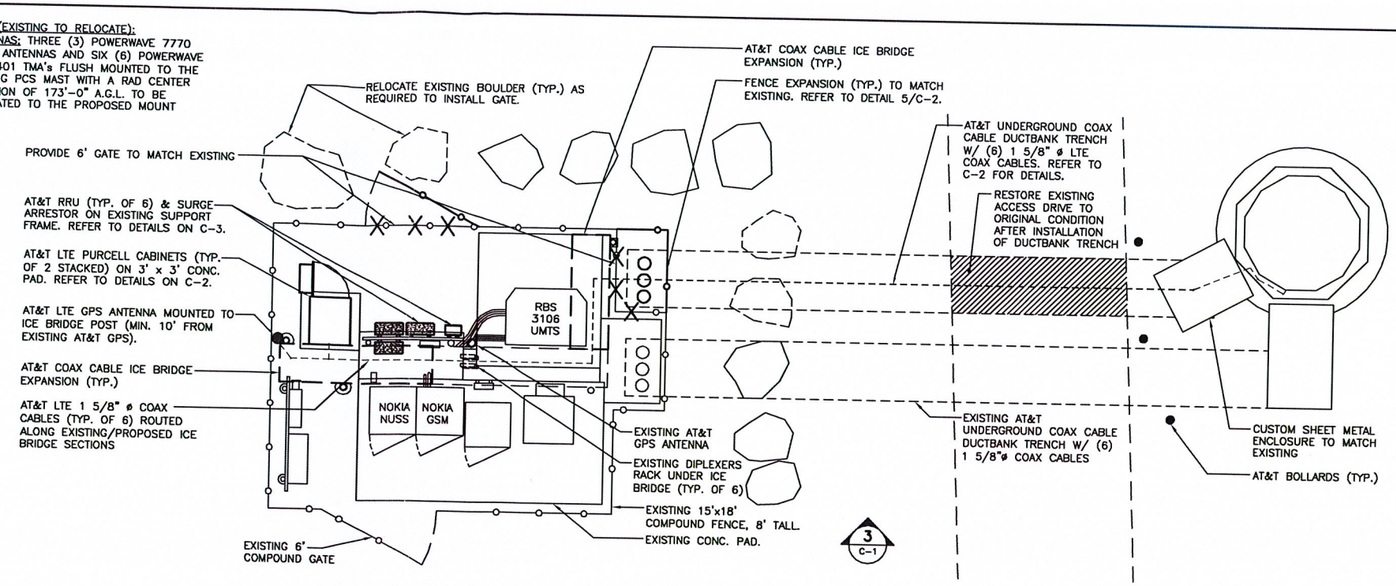


3 C-1 **SOUTH ELEVATION**
SCALE: 1" = 10'

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

TOWER NOTES:

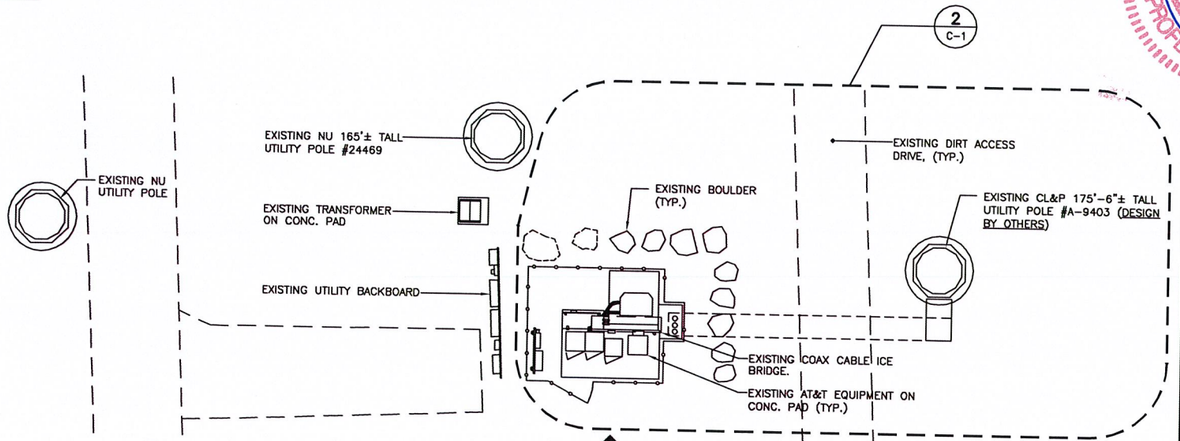
1. EXISTING ±175'-6" TALL CL&P TRANSMISSION STRUCTURE #9403.
2. REFER TO TOWER STRUCTURAL ANALYSIS REPORT PREPARED BY CENTEK ENGINEERING, INC., PROJECT NO. 12014.C07, DATED 5/08/12 (REV-0) FOR ADDITIONAL REQUIREMENTS AND INFORMATION.



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

APPROX. NORTH

GRAPHIC SCALE
4 0 2 4 8 16
(IN FEET)
1 inch = 4 ft.



1 C-1 **EXISTING COMPOUND PLAN**
SCALE: 1" = 10'

APPROX. NORTH

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

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1	8/18/12	DEB	CFC	CONSTRUCTION
0	5/29/12	TJL	DEB	CONSTRUCTION - CLIENT REVIEW

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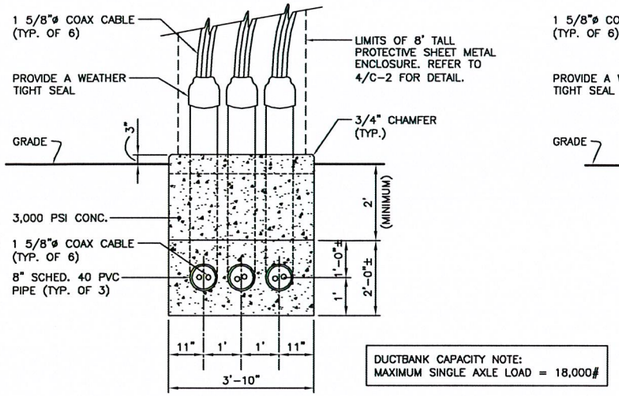
PLANS AND ELEVATION

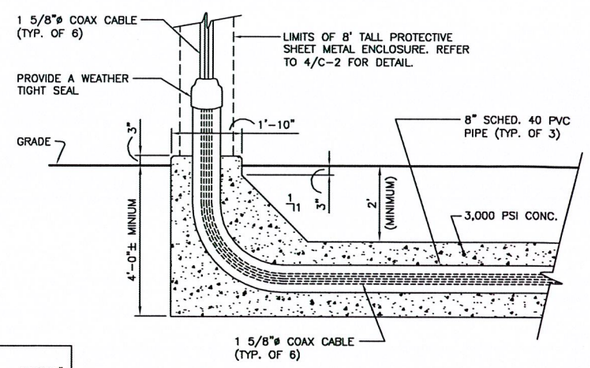
C-1

Sheet No. 3 of 7

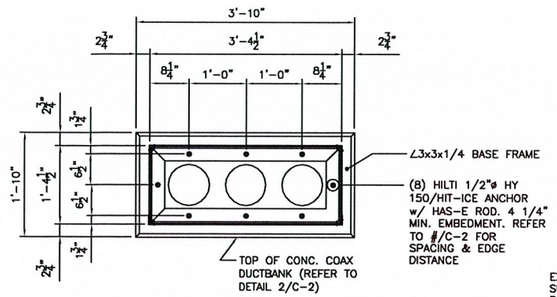


DUCTBANK CAPACITY NOTE:
MAXIMUM SINGLE AXLE LOAD = 18,000#

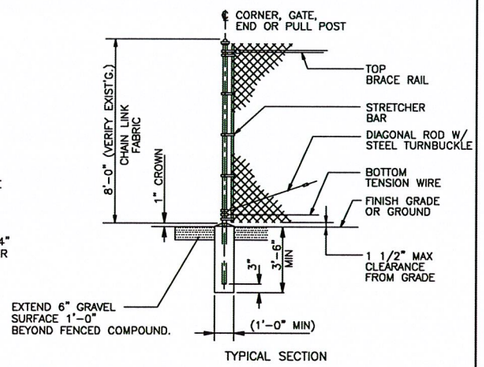
1 C-2 DUCTBANK SECTION
SCALE: 1/2" = 1'-0"



2 C-2 DUCTBANK DETAIL
SCALE: 1/2" = 1'-0"

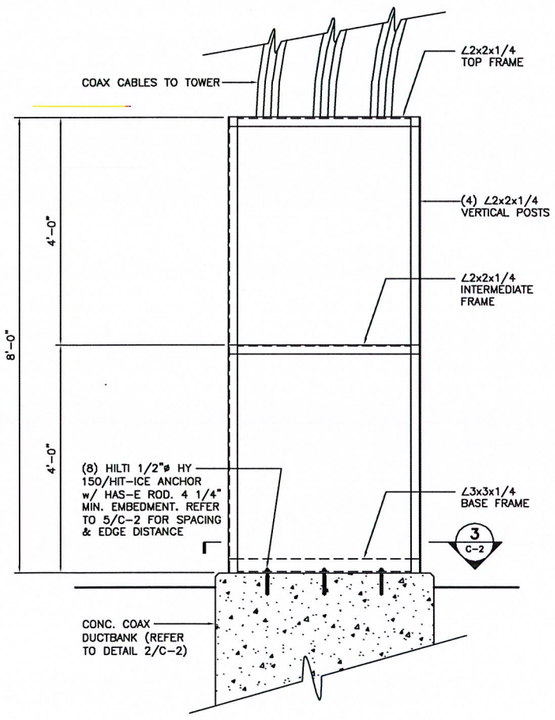


3 C-2 CUSTOM SHEET METAL ENCLOSURE BASE DETAIL
SCALE: NOT TO SCALE



TYPICAL SECTION

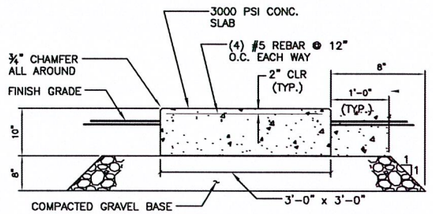
5 C-2 WOVEN WIRE FENCE DETAIL
NOT TO SCALE



NOTES:

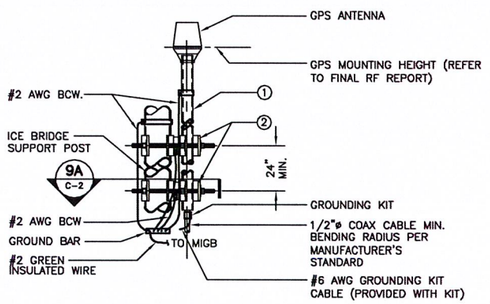
1. MAIN ANGLE FRAME TO BE SHOP WELDED.
2. PROVIDE 18 GA. SHEET METAL PANELS ON (4) SIDES. FASTEN WITH TAMPER-PROOF SELF TAPPING SCREWS.
3. ALL ENCLOSURE COMPONENTS TO BE HOT DIP GALVANIZED.
4. SHIM 1/2" MINIMUM AS REQUIRED BENEATH BASE OF FRAME FOR PRECIPITATION EGRESS.
5. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR REVIEW.

4 C-2 CUSTOM SHEET METAL ENCLOSURE DETAIL
SCALE: NOT TO SCALE



NOTE:
REFER TO EQUIPMENT MANUFACTURER FOR RECOMMENDED HOLD-DOWN HARDWARE.

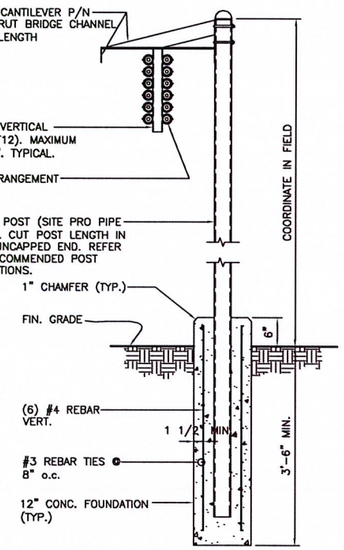
6 C-2 EQUIPMENT CABINET PAD DETAIL
NOT TO SCALE



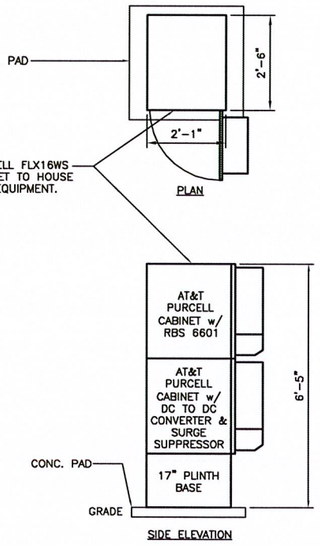
GPS ANTENNA MOUNTING BRACKET

BILL OF MATERIALS		
ITEM	DESCRIPTION	QUANTITY
1	2-1/2"ø SCH. 40 x 8'-0" LG. MAX SS OR GALV. PIPE	1
2	UNIVERSAL CLAMP SET.	2

9 C-2 GPS GROUNDING/MOUNTING BRACKET DETAILS
NOT TO SCALE

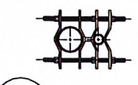


7 C-2 ICE BRIDGE DETAIL
NOT TO SCALE



SIDE ELEVATION

8 C-2 PURCELL CABINET MOUNTING DETAIL
NOT TO SCALE



9A C-2 SECTION
NOT TO SCALE

NOTES:

1. THE ELEVATION AND LOCATION OF THE GPS ANTENNA SHALL BE IN ACCORDANCE WITH THE FINAL RF REPORT AND COORDINATED WITH AT&T CONSTRUCTION MANAGER.
2. THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 2-1/2" DIAMETER, SCHEDULE 40, GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE MUST NOT BE THREADED AT THE ANTENNA MOUNT END. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH (MINIMUM OF 24 INCHES) USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. A HACK SAW SHALL NOT BE USED. THE CUT PIPE END SHALL BE DEBURRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.
3. PRIOR TO INSTALLATION CONTRACTOR SHALL TEST GPS LOCATION WITH HAND HELD AND MOVE GPS ANTENNA TO OTHER ICE BRIDGE POSTS AS REQUIRED TO ACHIEVE ADEQUATE SIGNAL. FAILURE TO ACHIEVE ADEQUATE SIGNAL WITH A HAND HELD GPS SHALL BE REPORTED TO CONSTRUCTION MANAGER AND ENGINEER TO DETERMINE ALTERNATE INSTALLATION LOCATION FOR GPS ANTENNA.

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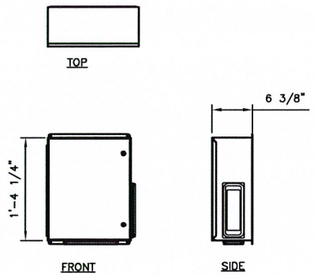
EQUIPMENT DETAILS

C-2

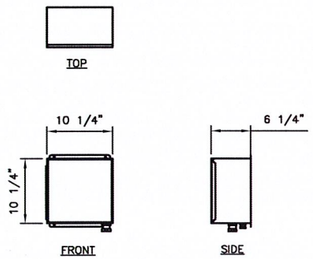
Sheet No. 4 of 7



SURGE ARRESTOR			
SITE TYPE	ARRESTOR MAKE/MODEL	QTY REQUIRED	ARRESTOR LOCATION
TOWER	MAKE: RAYCAP MODEL: DC6-48-60-0-1B	(1) PER SITE	PURCELL CABINET

NOTES:
1. CONTRACTOR TO COORDINATE FINAL SURGE ARRESTOR MODEL SELECTION(S) WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.
2. CONTRACTOR TO INSTALL ARRESTOR IN CONFORMANCE WITH MANUFACTURERS RECOMMENDATIONS.

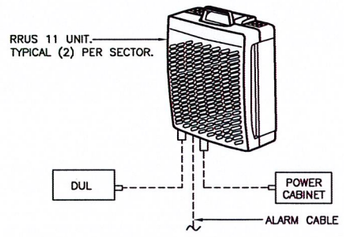
5 C-3 SURGE ARRESTOR DETAIL
NOT TO SCALE



SURGE ARRESTOR				
SITE TYPE	ARRESTOR MAKE/MODEL	QTY REQUIRED	ARRESTOR LOCATION	WEIGHT
TOWER	MAKE: RAYCAP MODEL: DC2-48-60-0-9E	(1) PER SITE	**SUPPORT FRAME AT GRADE, ADJACENT TO AT&T RRU'S.**	16 LBS.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL SURGE ARRESTOR MODEL SELECTION(S) WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.
2. CONTRACTOR TO INSTALL ARRESTOR IN CONFORMANCE WITH MANUFACTURERS RECOMMENDATIONS.

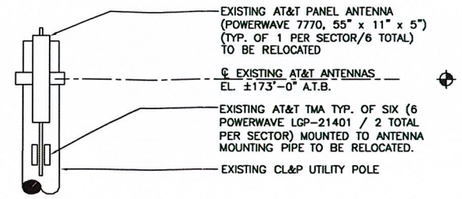
6 C-3 SURGE ARRESTOR DETAIL
NOT TO SCALE



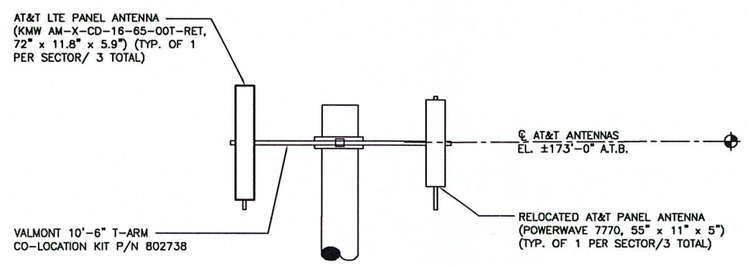
RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS 11	17.8"L x 17.3"W x 7.2"D	BAND 4: 44 LBS. BAND 12: 50 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. SIDE: 0" MIN.

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

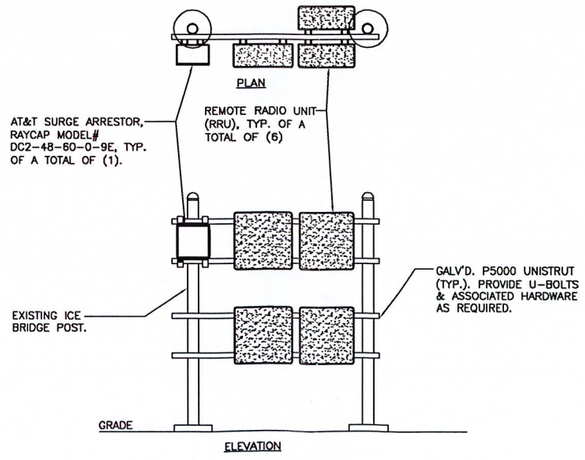
7 C-3 RRU DETAIL
NOT TO SCALE



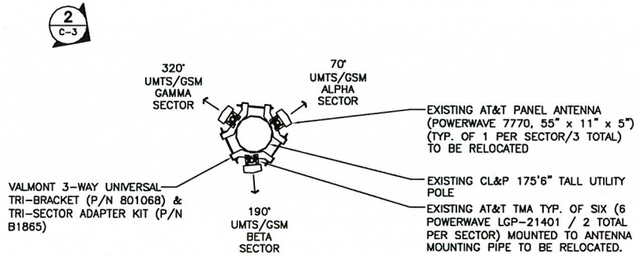
2 C-3 EXISTING ANTENNA SECTOR ELEVATION
SCALE: 1/4" = 1'-0"



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

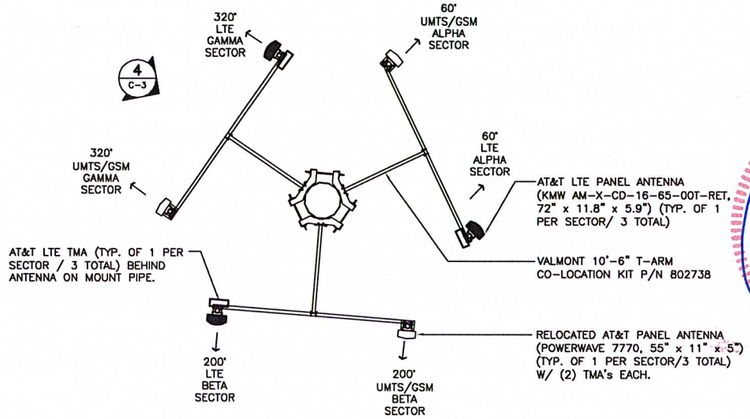


8 C-3 RRU AND SURGE ARRESTOR MOUNTING CONFIG.
SCALE: 1/2" = 1'- 0"



1 C-3 EXISTING ANTENNA PLAN
SCALE: 1/4" = 1'-0"

APPROX. NORTH



3 C-3 PROPOSED ANTENNA PLAN
SCALE: 1/4" = 1'-0"

APPROX. NORTH

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CHK'D BY:	CFC

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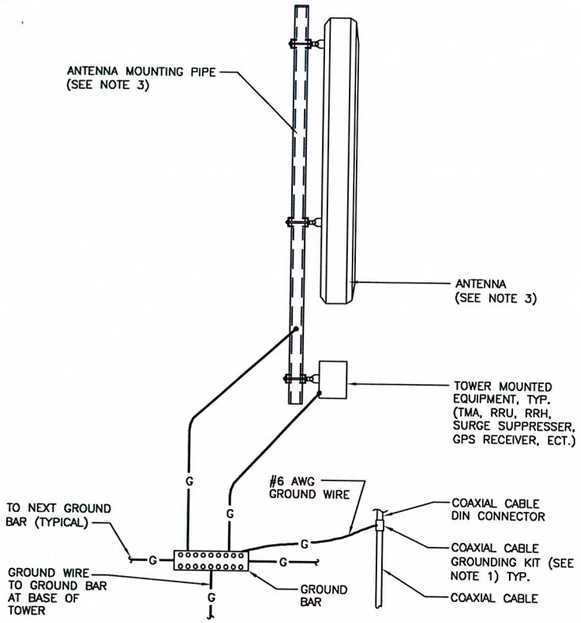
LTE EQUIPMENT DETAILS

C-3

Sheet No. 5 of 7



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-1 TYPICAL ANTENNA GROUNDING DETAIL

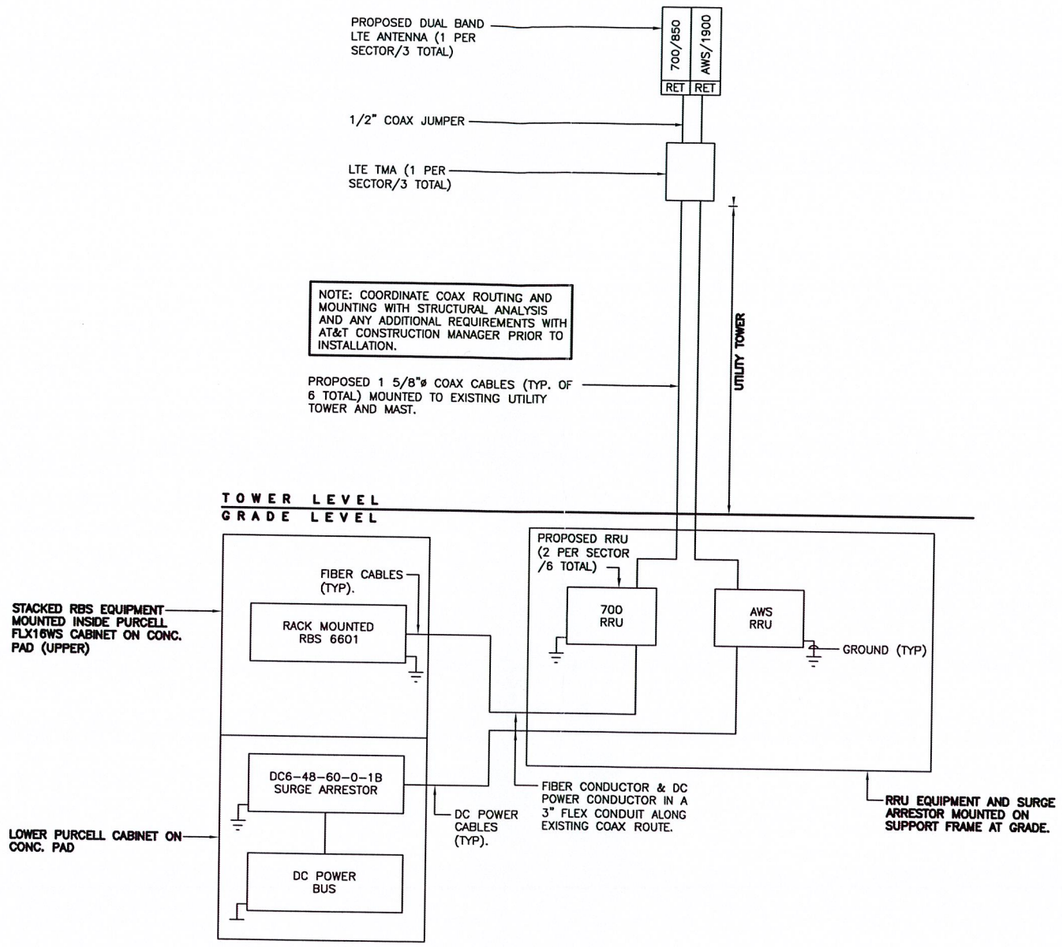
NOT TO SCALE

NOTE:

1. THE ELEVATION AND LOCATION OF THE GPS ANTENNA SHALL BE IN ACCORDANCE WITH THE FINAL RF REPORT.
2. ANTENNA MUST BE INSTALLED WITH UNOBSTRUCTED EXPOSURE TO SOUTHWESTERN SKY. VERIFY SATELLITE VISIBILITY WITH HANDHELD GPS AND RF ENGINEER PRIOR TO INSTALLATION.

3 E-1 GPS MOUNTED TO CABLE TRAY / ICE BRIDGE

NOT TO SCALE



NOTES:

1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURERS RECOMMENDATIONS.

2 E-1 LTE SCHEMATIC DIAGRAM

NOT TO SCALE

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.

DESIGNED BY:	CKD
DRAWN BY:	TJB
CHK'D BY:	CKD

REV.	DATE	DRAWN BY	CHK'D BY	
0	5/25/12	DEB	CFC	CONSTRUCTION
1	8/16/12	TJL	DEB	CONSTRUCTION - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

STATE OF CONNECTICUT
CARL F. CIOCHON
No. 16694
LICENSED PROFESSIONAL ENGINEER

at&t

NEXLINK

CENTEK engineering
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AT&T MOBILITY

WIRELESS COMMUNICATIONS FACILITY / LTE UPGRADE

CT5279

MERIDEN BIRDSEY AVENUE

CL&P STRUCT. NO. 9403

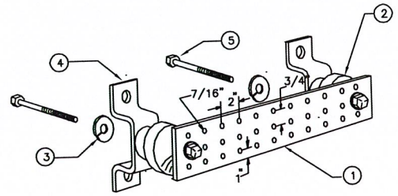
74 BIRDSEY AVENUE
MERIDEN, CT 06450

DATE:	5/7/12
SCALE:	AS NOTED
JOB NO.	11118.C072

ELECTRICAL DETAILS AND NOTES

E-1

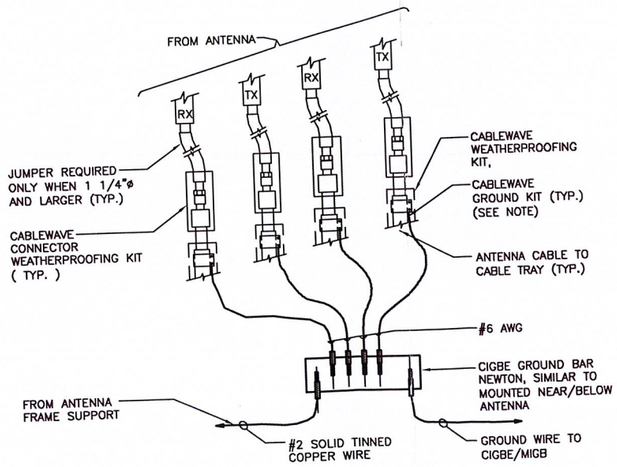
Sheet No. 6 of 7



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.

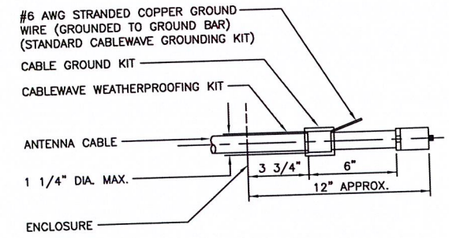
1 / E-2 **GROUND BAR DETAIL**
NOT TO SCALE



NOTE:

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

2 / E-2 **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.

3 / E-2 **ANTENNA CABLE GROUNDING DETAIL**
NOT TO SCALE

DESIGNED BY:	CKD
DRAWN BY:	TJB
CHK'D BY:	CKD

REV.	DATE	DRAWN BY	CHK'D BY
1	8/18/12	DEB	CFC
0	5/29/12	TJL	DEB

CONSTRUCTION
CONSTRUCTION - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

STATE OF CONNECTICUT
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74 BIRDSEY AVENUE
MERIDEN, CT 06450

DATE:	5/7/12
SCALE:	AS NOTED
JOB NO.	11118.C072

ELECTRICAL DETAILS

E-2

Sheet No. 7 of 7

Table of Contents

SECTION 6 - PLS POLE ANALYSIS

- COAX CABLE LOAD ON CL&P POLE CALCULATION
- PLS REPORT
- ANCHOR BOLT ANALYSIS.
- MATHCAD CAISSON FOUNDATION ANALYSIS.
- L-PILE CAISSON ANALYSIS.
- L-PILE LATERAL DEFLECTION VS. DEPTH.
- L-PILE BENDING MOMENT VS. DEPTH.
- L-PILE SHEAR FORCE VS. DEPTH.

SECTION 7 - REFERENCE MATERIAL

- RF DATA SHEET
- EQUIPMENT CUT SHEETS

Introduction

The purpose of this report is to analyze the existing 175.5' CL&P pole located at 74 Birdsey Ave., in Meriden, CT for the proposed antenna and equipment upgrade by AT&T.

The existing/proposed loads consist of the following:

- AT&T (Existing to Relocate):

  Antennas: Three (3) Powerwave 7770 panel antennas and six (6) Powerwave LGP-21401 TMAs flush mounted with a RAD center elevation of 173-ft above grade level to be relocated to the proposed T-Arms.
  Coax Cables: Six (6) 1-5/8" ∅ coax cables running on the exterior of the CL&P pole.

- **AT&T (Proposed):**

  Antennas: Three (3) KMW AM-X-CD-16-65-00T-RET panel antennas and three (3) CCI DTMABP7819VG12A TMAs mounted on a Valmont 10'-6" T-Arm Co-Location Kit p/n 802738 with a RAD center elevation of 173-ft above grade.
  Coax Cables: Six (6) 1-5/8" ∅ coax cables running on the exterior of the CL&P pole as indicated in section 4 of this report.

Primary assumptions used in the analysis

- Allowable steel stresses are defined by AISC-ASD 9th edition for design of the PCS Mast and antenna supporting elements.
- ASCE Manual No. 72, "Design of Steel Transmission Pole Structures Second Edition", defines allowable steel stresses for evaluation of the CL&P utility pole.
- All utility pole members are adequately protected to prevent corrosion of steel members.
- All proposed antenna mounts are modeled as listed above.
- Pipe mast will be properly installed and maintained.
- No residual stresses exist due to incorrect pole erection.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds conform to the requirements of AWS D1.1.
- Pipe mast and utility pole will be in plumb condition.
- Utility pole 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 CL&P pole structure was independently completed using the current version of PLS-Pole computer program licensed to CENTEK Engineering, Inc.

The CL&P pole consisting of a 175.5-ft long 12-sided tapered shaft conforming to ASTM A572 Grade 65 specifications was analyzed for its ability to resist loads prescribed by the NESC standard. Section 6 of this report details this analysis.

Design Basis

Our analysis was performed in accordance with TIA/EIA-222-F-1996, ASCE Manual No. 72 – "Design of Steel Transmission Pole Structures Second Edition", NESC C2-2007 and Northeast Utilities Design Criteria.

The CL&P pole structure, considering existing and future conductor and shield wire loading, with the pcs antenna mast was analyzed under three conditions:

- UTILITY POLE ANALYSIS

  The purpose of this analysis is to determine the adequacy of the existing utility pole 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. 72.

  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"

  Load Case 3: NESC Extreme Ice w/ Wind

Wind Pressure.....	6.4 psf
Radial Ice Thickness.....	0.75"
Vertical Overload Capacity Factor.....	1.0
Wind Overload Capacity Factor.....	1.0

  Note 1: 1.25 x Gust Response Factor (wind speed: 3-second gust)

Results

- UTILITY POLE

This analysis finds that the subject utility pole is adequate to support the existing and proposed appurtenances. The pole stresses meet the requirements set forth by the ASCE Manual No. 72, "Design of Steel Transmission Pole Structures Second Edition", for the applied NESC Heavy and NESC Extreme. The detailed analysis results are provided in Section 6 of this report. The analysis results are summarized as follows:

A maximum usage of **48.68%** occurs in the utility pole under the **NESC Extreme Wind** loading condition.

POLE SECTION:

The utility pole was found to be within allowable limits.

Tower Section	Elevation	Stress Ratio (% of capacity)	Result
Tube Number 5	53.92' - 77.42' (AGL)	48.68%	**PASS**

BASE PLATE:

The base plate was found to be within allowable limits from the PLS output based on 24 bend lines.

Tower Component	Design Limit	Stress Ratio (percentage of capacity)	Result
Base Plate	Bending	42.16%	**PASS**

- FOUNDATION AND ANCHORS

The existing foundation consists of a 8.5-ft ∅ x 22-ft long reinforced concrete caisson. The base of the tower is connected to the foundation by means of (36) 2.25"∅, ASTM A615-75 anchor bolts embedded approximately 9-ft into the concrete foundation structure. Foundation information was obtained from the NUSCO drawing no. 01227-60001.

Review of the foundation and anchor design consisted of verification of applied loads obtained from the tower design calculations and code checks of allowable stresses:

BASE REACTIONS:

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

Load Case	Shear	Axial	Moment
NESC Heavy Wind	37.21 kips	117.13 kips	4395.98 ft-kips
NESC Extreme Wind	62.64 kips	65.48 kips	6522.81 ft-kips
NESC Extreme Ice w/ Wind	28.83 kips	92.14 kips	3525.97 ft-kips

Note 1 – 10% increase applied to tower base reactions per OTRM 051

ANCHOR BOLTS:

The anchor bolts were found to be within allowable limits.

Tower Component	Design Limit	Stress Ratio (% of capacity)	Result
Anchor Bolts	Tension	45.57%	**PASS**

FOUNDATION:

The foundation was found to be within allowable limits.

Foundation	Design Limit	Proposed Loading	Result
Reinforced Concrete Caisson	Moment Capacity	52.0%	**PASS**
	Lateral Deflection	0.36 in.(1)	**PASS**

Note 1: *Lateral* deflection limited to L/100 per OTRM 051 Rev 5 dated 7/19/10. (L/100 = 22*12/100=2.64-in)
Note 2: *10% increase to PLS base reactions used in foundation analysis per OTRM 051.*

Conclusion

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

The analysis is based, in part on the information provided to this office by Northeast Utilities and AT&T Mobility. 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:

Carlo F. Centore, PE
Principal ~ Structural Engineer

STATE OF CONNECTICUT
CARLO F. CENTORE
No.16694
LICENSED
PROFESSIONAL ENGINEER

Prepared by:

Timothy J. Lynn, EIT
Structural Engineer

STANDARD CONDITIONS FOR FURNISHING OF PROFESSIONAL ENGINEERING SERVICES ON EXISTING STRUCTURES

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

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

GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM ~ PLS-POLE

PLS-POLE provides all of the capabilities a structural engineer requires to design transmission, substation or communications structures. It does so using a simple easy to use graphical interface that rests upon our time tested finite element engine. Regardless of whether you want to model a simple wood pole or a guyed steel X-Frame; PLS-POLE can handle the job simply, reliably and efficiently.

Modeling Features:

- Structures are made of standard reusable components that are available in libraries. You can easily create your own libraries or get them from a manufacturer
- Structure models are built interactively using interactive menus and graphical commands
- Automatic generation of underlying finite element model of structure
- Steel poles can have circular, 4, 6, 8, 12, 16, or 18-sided, regular, elliptical or user input cross sections (flat-to-flat or tip-to-tip orientations)
- Steel and concrete poles can be selected from standard sizes available from manufacturers
- Automatic pole class selection
- Cross brace position optimizer
- Capability to specify pole ground line rotations
- Capability to model foundation displacements
- Can optionally model foundation stiffness
- Guys are easily handled (modeled as exact cable elements in nonlinear analysis)
- Powerful graphics module (members color-coded by stress usage)
- Graphical selection of joints and components allows graphical editing and checking
- Poles can be shown as lines, wire frames or can be rendered as 3-d polygon surfaces

Analysis Features:

- Automatic distribution of loads in 2-part suspension insulators (v-strings, horizontal vees, etc.)
- Design checks for ASCE, ANSI/TIA/EIA 222 (Revisions F and G) or other requirements
- Automatic calculation of dead and wind loads
- Automated loading on structure (wind, ice and 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
- Detects buckling by nonlinear analysis

Results Features:

- Detects buckling by nonlinear analysis
- 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
- Automatic tracking of part numbers and costs

GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM~LPILE Plus

LPILE Plus is a special purpose program based on rational procedures for analyzing a pile under lateral loading. The program computes deflection, shear, bending moment, and soil response with respect to depth in nonlinear soils. Components of the stiffness matrix at the pile head may be computed internally by the program to help the users in their super-structure analysis. Several pile lengths may be automatically checked by the program in order to help the user produce a design with an optimum pile penetration.

Soil behavior is modeled with p-y curves internally generated by the computer program following published recommendations for various types of soils; alternatively, the user can manually introduce other p-y curves. Special procedures are programmed for developing p-y curves for layered soils and for rocks.

Several types of pile-head boundary conditions may be selected, and the properties of the pile can also vary as a function of depth. LPILE Plus has capabilities to compute the ultimate-moment capacity of a pile's section and can provide design information for rebar arrangement. The user may optionally ask the program to generate and take into account nonlinear values of flexural stiffness (EI) which are generated internally based on specified pile dimensions, material properties, and cracked/uncracked concrete behavior.

A single, user-friendly interface written for the Microsoft Windows© environment is provided for the preparation of input, analytical run, and for the graphical observation of data contained in the output file. The program has been written in 32-bit programming codes for compatibility with the latest versions of the Microsoft Windows operating system. The program produces plain-text input and output files that may be observed and/or edited for their inclusion in project reports.

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 (Rev. F) 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.

PCS Mast

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-222 (Rev. F) with two exceptions:

1. An 85 mph extreme wind speed shall be used for locations in all counties throughout the NU system.
2. The allowable stress increase of TIA Section 3.1.1.1 is allowed for the mast section, but is disallowed for the mast to structure connection design.

   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.

ELECTRIC TRANSMISSION TOWER

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.

Attachment A

NU Design Criteria

			Basic Wind Speed	Pressure	Height Factor	Gust Factor	Load or Stress Factor	Force Coef - Shape Factor
			V (MPH)	Q (PSF)	Kz	Gh		
Ice Condition	TIA/EIA	Antenna Mount	TIA	TIA (.75Wi)	TIA	TIA	TIA, Section 3.1.1.1 disallowed for connection design	TIA
	NESC Heavy	Tower/Pole Analysis with antennas extending above top of Tower/Pole (Yield Stress)	----	4	1.00	1.00	2.50	1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with Antennas below top of Tower/Pole (on two faces)	----	4	1.00	1.00	2.50	1.6 Flat Surfaces 1.3 Round Surfaces
		Conductors:	Conductor loads provided by NU					
High Wind Condtion	TIA/EIA	Antenna Mount	85	TIA	TIA	TIA	TIA, Section 3.1.1.1 disallowed for connection design	TIA
	NESC Extreme Wind	Tower/Pole Analysis with antennas extending above top of Tower/Pole	Use NESC C2-2007, Section 25, Rule 250C: Extreme Wind Loading 1.25 x Gust Response Factor Height above ground level based on top of Mast/Antenna					1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with Antennas below top of Tower/Pole	Use NESC C2-2007, Section 25, Rule 250C: Extreme Wind Loading Height above ground level based on top of Tower/Pole					1.6 Flat Surfaces 1.3 Round Surfaces
		Conductors:	Conductor loads provided by NU					
NESC Extreme Ice with Wind Conditon*		Tower/Pole Analysis with antennas extending above top of Tower/Pole	Use NESC C2-2007, Section 25, Rule 250D: Extreme Ice with Wind Loading 4PSF Wind Load 1.25 x Gust Response Factor Height above ground level based on top of Mast/Antenna					1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with Antennas below top of Tower/Pole	Use NESC C2-2007, Section 25, Rule 250D: Extreme Ice with Wind Loading 4PSF Wind Load Height above ground level based on top of Tower/Pole					1.6 Flat Surfaces 1.3 Round Surfaces
		Conductors:	Conductor loads provided by NU					
		* Only for Structures Installed after 2007						

Shape Factor Criteria shall be per TIA Shape Factors.

2) STEP 2 - The electric transmission structure analysis and evaluation shall be performed in accordance with NESC requirements and shall include the mast and antenna loads determined from NESC applied loading conditions (not TIA/EIA Loads) on the structure and mount as specified below, and shall include the wireless communication mast and antenna loads per NESC criteria)

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

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

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

c) Electric Transmission Structure

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

ii) Shape Factor Multiplier:

NESC Structure Shape	Cd
Polyround (for polygonal steel poles)	1.3
Flat	1.6
Open Lattice	3.2

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

Mount Type	Cable Cd	Pole Cd
Coaxial Cables on outside periphery (One layer)	1.45	1.45
Coaxial Cables mounted on stand offs	1.6	1.3

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

Note: The NESC does not require ice load be included in the supporting structure. (Ice on conductors and shield wire only, and NU will provide these loads).

e) Mast reaction loads shall be evaluated for local effects on the transmission structure members at the attachment points.

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{\colortbl ;\red0\green0\blue0;\red0\green0\blue255;}
\viewkind4\uc1\pard\cf1\f0\fs20 PLS-CADD Version 12.00x64 10:09:50 AM Tuesday, April 10, 2012\par
Northeast Utilities System\par
Project Name: 'c:\\cps\\pls-cadd\\bp-bes\\xyz files\\blackpndjct_beseck_final_pls.DON'\par
Line Title: 'Blackpond Jct - Beseck S/S'\par
\par
\b Criteria Notes:\b0\par
NESC Heavy per Rule 250B, Page 161\par
Extreme Wind Loading per Rule 250C, Page 161, Coefficients and Gust Response Factors per Equations in Tables 250-2, 250-3\par
90 MPH Basic Wind Speed, 3 second Gust Wind Speed, Figure 250-2 Beginning on Page 166\par
Grade B Construction "Method A" per Table 253-1, Page 173 and Table 261-1A, Page 182\par
Tension Limits per Rule 261H1, Page 179\par
Insulator Strength Reduction per Rule 277, Page 188 Should be applied to Insulator Strengths when Modeling Insulators\par
2002 NESC C2-2002 Criteria File for PLS-CADD Created December 21, 2001\par
\par
10-20-05 Str. 9409 raised 10 ft to meet minimum weight span\par
10-20-05 Str. 24464 raised 5 ft to meet minimum weight span\par
10-20-05 Made Str. 24423 a special str. to meet weight span\par
40' Wood Pole clearance removed near Knollfield Rd. and High Hill Rd for West circuit due to reuse of exist. structure\par
40' Wood Pole clearance removed near Fleming Rd. for Middle circuit due to reuse of exist. structure\par
11-23-05 Str. 24469 moved 15 ft. North to avoid pcs equipment.\par
11-23-05 Str. 24471 moved 10 ft. South to avoid existing foundation.\par
11-27-05 Str. 24407 moved 40 ft. North to avoid property owners yard/garden.\par
11-27-05 Str. 8749 moved 10 ft. North Along CL to avoid existing foundation.\par
11-27-05 Str. 24457 moved 10 ft. South along CL to avoid fence and road.\par
11-27-05 Str. 8746 moved 10 ft. South along CL to avoid existing foundation.\par
11-29-05 Str. 24421 raised 5 ft. to meet clearance requirements over existing road.\par
11-29-05 Str. 24422 raised 10 ft. to meet clearance requirements over existing road.\par
11-29-05 Str. 24470 raised 5 ft. to meet clearance requirements over existing road.\par
11-29-05 Str. 24471 raised 10 ft. to meet clearance requirements over existing road.\par
11-29-05 Str. 9402 raised 5 ft. to meet clearance requirements over existing road.\par
11-29-05 Str. 9401 raised 15 ft. to meet clearance requirements over existing road.\par
11-29-05 Str. 24459 moved 20 ft. South in line with CL to avoid existing guy wires and anchor.\par
11-29-05 Str. 24466 moved 20 ft. South in line with CL to avoid creek.\par
11-29-05 Str. 24457 moved another 10 ft. South to avoid fence.\par
11-30-05 Str. 8756 raised 30 ft. due to raising of S/S elevation and extended grading moving 8757.\par
11-30-05 Str. 8757 raised 10 ft. due to regrading of Beseck S/S.\par
11-30-05 Str. 4535 raised 15 ft. due to change in structure phasing distance.\par
12-12-05 Str. 24422 changed to strain structure and lowered 5' due to revised layout at Blackpond Jct.\par
12-12-05 Str. 24471 changed to strain structure due to revised layout at Blackpond Jct.\par
12-12-05 Str. 9401 changed to strain structure due to revised layout at Blackpond Jct.\par
12-20-05 Str. 9403 agreed to change structure height to 165' to accomodate PCS equipment.\par
3-9-06 Str. 24412 raised 5 ft. in height to maintain clearances over 115-kV crossing.\par
3-9-06 Str. 24462 raised 5 ft. in height to maintain clearances over 115-kV crossing.\par
4-2-07 Str. 24413 moved 2 ft. to the west after field request due to large stump that was interfering with drilling operations.\par
4-2-07 Str. 24114 moved 15 ft. to the north after field request to move structure off of middle of dam.\par
10-2-07 Str. 8746 moved 4 ft. inline to south to avoid existing foundation.\par
10-17-07 Str. 9400A moved 5 ft. west to avoid wetland 46 per field review.\par
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\b Weather Cases\b0\par
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\b WC #	Description	Air Density Factor (psf/mph^2)	Wind Vel. (mph)	Wind Pres. (psf)	Wire Ice Thick (in)	Wire Ice Density (lbs/ft^3)	Wire Ice Load (lbs/ft)	Wire Temp (deg F)	Ambient Temp (deg F)	Weather Load Factor	NESC Constant (lbs/ft)	Wire Wind Height Adjust Model	Wire Gust Response Factor\b0
1	NESC Heavy	0.00256	40	4.0	0.50	57.000	0.00	0	0	1.00	0.30	None	1
2	OF 4psf w/ ice	0.00256	40	4.0	0.50	57.000	0.00	0	0	1.00	0.00	None	1
3	OF 4psf w/o ice	0.00256	40	4.0	0.00	0.000	0.00	0	0	1.00	0.00	None	1
4	NESC Ext Wind	0.00256	112	32.1	0.00	0.000	0.00	60	60	1.00	0.00	None	1
5	ASCE Ice/Wind	0.00256	50	6.4	0.75	57.000	0.00	32	32	1.00	0.00	None	1
6	Maximum Operating	0.00256	0	0.0	0.00	0.000	0.00	285	285	1.00	0.00	None	1
7	NESC Blowout 6PSF	0.00256	48	6.0	0.00	0.000	0.00	60	60	1.00	0.00	None	1
8	3# Wind (SWING 1)	0.00256	34	3.0	0.00	0.000	0.00	60	60	1.00	0.00	None	1
9	6# Wind (SWING 2)	0.00256	48	6.0	0.00	0.000	0.00	60	60	1.00	0.00	None	1
10	60 mph Wind (SWING 3)	0.00256	60	9.2	0.00	0.000	0.00	60	60	1.00	0.00	None	1
11	GALLOPING (SWING)	0.00256	28	2.0	0.50	57.000	0.00	32	32	1.00	0.00	None	1
12	GALLOPING (SAG)	0.00256	0	0.0	0.50	57.000	0.00	32	32	1.00	0.00	None	1
13	-20 Deg F	0.00256	0	0.0	0.00	0.000	0.00	-20	-20	1.00	0.00	None	1
14	60 Deg F	0.00256	0	0.0	0.00	0.000	0.00	60	60	1.00	0.00	None	1
15	75 Deg F	0.00256	0	0.0	0.00	0.000	0.00	75	75	1.00	0.00	None	1
16	120 Deg F	0.00256	0	0.0	0.00	0.000	0.00	120	120	1.00	0.00	None	1
17	NU Ice	0.00256	0	0.0	1.00	57.000	0.00	0	0	1.00	0.00	None	1
18	NU Blowout	0.00256	60	9.2	0.00	0.000	0.00	60	60	1.00	0.00	None	1
19	Construction	0.00256	30	2.3	0.00	0.000	0.00	30	30	1.00	0.00	None	1
20	NU Extreme Wind 90 mph	0.00256	90	20.7	0.00	0.000	0.00	60	60	1.00	0.00	None	1
21	9 psf Wind 60 deg F	0.00256	59	9.0	0.00	0.000	0.00	60	60	1.00	0.00	None	1

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\b Structure Loads Criteria\b0\par
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\b LC #	WC Load Case # Description	Cable Condition	Wind Dir.	Bisect Wind Angle	Wire Vert. Load Factor	Wire + Struct. Wind Load Factor	Wire Tension Load Factor	Struct Weight Load Factor	Struct Wind Area Factor	Struct. Wind Model	Struct. Ice Thick (in)	Struct. Ice Density (lbs/ft^3)	Pole Tip Deflection Check	Pole Tip\b0 Deflect\b0 Limit\b0 % or (ft)\b0

1	1	NESC Heavy NA+	Load RS	NA+	1.50	2.50	1.65	1.50	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
2	1	NESC Heavy NA-	Load RS	NA-	1.50	2.50	1.65	1.50	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
3	1	NESC Uplift NA+	Load RS	NA+	1.00	2.50	1.65	1.00	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
4	1	NESC Uplift NA-	Load RS	NA-	1.00	2.50	1.65	1.00	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
5	4	NESC Ext Wind NA	Load RS	NA+	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
6	4	NESC Ext Wind NA	Load RS	NA-	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
7	1	NESC Ins NA+	Load RS	NA+	1.00	1.00	1.00	1.00	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
8	1	NESC Ins NA-	Load RS	NA-	1.00	1.00	1.00	1.00	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
9	5	ASCE Ice/Wind NA	Load RS	NA+	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
10	5	ASCE Ice/Wind NA	Load RS	NA-	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
11	17	NU Ice	Load RS	NA+	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
12	14	Deflection NA+	Load RS	NA+	1.00	1.00	1.00	1.00	1.00	Pre V7 Standard	0.00	0.000	No Limit	2.00
13	19	Construction NA+	Initial RS	NA+	1.50	1.50	1.50	1.50	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
14	19	Construction NA-	Initial RS	NA-	1.50	1.50	1.50	1.50	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
15	1	NESC Heavy AH NA	Load RS	NA+	1.50	2.50	1.65	1.50	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
16	1	NESC Heavy AH NA	Load RS	NA-	1.50	2.50	1.65	1.50	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
17	4	NESC Ext Wind AH	Load RS	NA+	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
18	4	NESC Ext Wind AH	Load RS	NA-	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
19	1	NESC Ins AH NA+	Load RS	NA+	1.00	1.00	1.00	1.00	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
20	1	NESC Ins AH NA-	Load RS	NA-	1.00	1.00	1.00	1.00	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
21	5	ASCE Ice/Wind AH	Load RS	NA+	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
22	5	ASCE Ice/Wind AH	Load RS	NA-	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
23	17	NU AH Ice	Load RS	NA+	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
24	1	NESC Heavy BK NA	Load RS	NA+	1.50	2.50	1.65	1.50	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
25	1	NESC Heavy BK NA	Load RS	NA-	1.50	2.50	1.65	1.50	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
26	4	NESC Ext Wind BK	Load RS	NA+	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
27	4	NESC Ext Wind BK	Load RS	NA-	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
28	1	NESC Ins BK NA+	Load RS	NA+	1.00	1.00	1.00	1.00	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
29	1	NESC Ins BK NA-	Load RS	NA-	1.00	1.00	1.00	1.00	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
30	5	ASCE Ice/Wind BK	Load RS	NA+	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
31	5	ASCE Ice/Wind BK	Load RS	NA-	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
32	17	NU BK Ice	Load RS	NA+	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
33	1	Broken SW NA+	Load RS	NA+	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
34	1	Broken SW NA-	Load RS	NA-	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
35	1	Broken Cond NA+	Load RS	NA+	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
36	1	Broken Cond NA-	Load RS	NA-	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
37	1	Unbalanced Ice N	Load FE	NA+	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
38	1	Unbalanced Ice N	Load FE	NA-	1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00

Cable Load Adjustments for each Load Case

LC #	WC Load Case # Description	Struct Groups On Which To Apply	Command 1 Wire(s) Set: Phase: Side:	Command 1 Value (lbs) (deg) (%)	Command 1
1	1 NESC Heavy NA+	'All'			
2	1 NESC Heavy NA-	'All'			
3	1 NESC Uplift NA+	'All'			
4	1 NESC Uplift NA-	'All'			
5	4 NESC Ext Wind NA	'All'			
6	4 NESC Ext Wind NA	'All'			
7	1 NESC Ins NA+	'All'			
8	1 NESC Ins NA-	'All'			
9	5 ASCE Ice/Wind NA	'All'			
10	5 ASCE Ice/Wind NA	'All'			
11	17 NU Ice	'All'			
12	14 Deflection NA+	'All'			
13	19 Construction NA+	'All'			
14	19 Construction NA-	'All'			
15	1 NESC Heavy AH NA	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors	2.0	
16	1 NESC Heavy AH NA	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors	2.0	
17	4 NESC Ext Wind AH	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors	2.0	
18	4 NESC Ext Wind AH	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors	2.0	
19	1 NESC Ins AH NA+	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors	2.0	
20	1 NESC Ins AH NA-	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors	2.0	
21	5 ASCE Ice/Wind AH	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors	2.0	
22	5 ASCE Ice/Wind AH	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors	2.0	
23	17 NU AH Ice	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors	2.0	
24	1 NESC Heavy BK NA	'PLS-POLE has DE'	Back Spans # Broken Subconductors	2.0	
25	1 NESC Heavy BK NA	'PLS-POLE has DE'	Back Spans # Broken Subconductors	2.0	
26	4 NESC Ext Wind BK	'PLS-POLE has DE'	Back Spans # Broken Subconductors	2.0	
27	4 NESC Ext Wind BK	'PLS-POLE has DE'	Back Spans # Broken Subconductors	2.0	
28	1 NESC Ins BK NA+	'PLS-POLE has DE'	Back Spans # Broken Subconductors	2.0	
29	1 NESC Ins BK NA-	'PLS-POLE has DE'	Back Spans # Broken Subconductors	2.0	
30	5 ASCE Ice/Wind BK	'PLS-POLE has DE'	Back Spans # Broken Subconductors	2.0	
31	5 ASCE Ice/Wind BK	'PLS-POLE has DE'	Back Spans # Broken Subconductors	2.0	
32	17 NU BK Ice	'PLS-POLE has DE'	Back Spans # Broken Subconductors	2.0	
33	1 Broken SW NA+	'PLS-POLE no DE'	1:1:Back # Broken Subconductors	1.0	
34	1 Broken SW NA-	'PLS-POLE no DE'	1:1:Back # Broken Subconductors	1.0	
35	1 Broken Cond NA+	'PLS-POLE no DE'	2:1:Back # Broken Subconductors	1.0	
36	1 Broken Cond NA-	'PLS-POLE no DE'	2:1:Back # Broken Subconductors	1.0	
37	1 Unbalanced Ice N	'PLS-POLE'	Back Spans % Wire Ice		
38	1 Unbalanced Ice N	'PLS-POLE'	Back Spans % Wire Ice		

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\b Span and Wire Summary For Structure Range\b0\par
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\b Span azimuth is measured clockwise from structure transverse axis (0=transverse, 90=back, 270=ahead)\b0\par
\b Azimuth of structure transverse axis is 105.5968 (deg) measured clockwise from North.\b0\par
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Str. No.	Str. Name	LC #	WC Load Case # Description	Set No.	Phase No.	Attach. Joint Labels	Back span Cable Name	Back span Len. (ft)	Back span Azi. (deg)	Back span Horiz. -Load- (lbs/ft)	Back span Vert. -Load- (lbs/ft)	Back span Horiz. Tension (lbs)	Ahead span Cable Name	Ahead span Len. (ft)	Ahead span Azi. (deg)	Ahead span Horiz. -Load- (lbs/ft)	Ahead span Vert. -Load- (lbs/ft)	Ahead span Horiz. Tension (lbs)
9403	30-scsp-20-sgc.175	1	1 NESC Heavy NA+	1	1 SL:E	7#8_alumoweld_4200#.wir	1050	94	1.15	1.22	6839	7#8_alumoweld_4200#.wir	970	265	1.15	1.22	6839
9403	30-scsp-20-sgc.175	1	1	2	1 TLA,TLB	rail_acsr_8000.wir	1049	94	1.80	3.17	25991	rail_acsr_8000.wir	969	265	1.80	3.17	25991
9403	30-scsp-20-sgc.175	1	1	3	1 MLA,MLB	rail_acsr_8000.wir	1049	94	1.80	3.17	25996	rail_acsr_8000.wir	969	265	1.80	3.17	25996
9403	30-scsp-20-sgc.175	1	1	4	1 BLA,BLB	rail_acsr_8000.wir	1049	94	1.80	3.17	26001	rail_acsr_8000.wir	969	265	1.80	3.17	26001
9403	30-scsp-20-sgc.175	2	1 NESC Heavy NA-	1	1 SL:E	7#8_alumoweld_4200#.wir	1050	94	1.15	1.22	6839	7#8_alumoweld_4200#.wir	970	265	1.15	1.22	6839
9403	30-scsp-20-sgc.175	2	1	2	1 TLA,TLB	rail_acsr_8000.wir	1049	94	1.80	3.17	25991	rail_acsr_8000.wir	969	265	1.80	3.17	25991
9403	30-scsp-20-sgc.175	2	1	3	1 MLA,MLB	rail_acsr_8000.wir	1049	94	1.80	3.17	25996	rail_acsr_8000.wir	969	265	1.80	3.17	25996
9403	30-scsp-20-sgc.175	2	1	4	1 BLA,BLB	rail_acsr_8000.wir	1049	94	1.80	3.17	26001	rail_acsr_8000.wir	969	265	1.80	3.17	26001
9403	30-scsp-20-sgc.175	3	1 NESC Uplift NA+	1	1 SL:E	7#8_alumoweld_4200#.wir	1050	94	1.15	0.81	6839	7#8_alumoweld_4200#.wir	970	265	1.15	0.81	6839
9403	30-scsp-20-sgc.175	3	1	2	1 TLA,TLB	rail_acsr_8000.wir	1049	94	1.80	2.11	25991	rail_acsr_8000.wir	969	265	1.80	2.11	25991
9403	30-scsp-20-sgc.175	3	1	3	1 MLA,MLB	rail_acsr_8000.wir	1049	94	1.80	2.11	25996	rail_acsr_8000.wir	969	265	1.80	2.11	25996
9403	30-scsp-20-sgc.175	3	1	4	1 BLA,BLB	rail_acsr_8000.wir	1049	94	1.80	2.11	26001	rail_acsr_8000.wir	969	265	1.80	2.11	26001
9403	30-scsp-20-sgc.175	4	1 NESC Uplift NA-	1	1 SL:E	7#8_alumoweld_4200#.wir	1050	94	1.15	0.81	6839	7#8_alumoweld_4200#.wir	970	265	1.15	0.81	6839
9403	30-scsp-20-sgc.175	4	1	2	1 TLA,TLB	rail_acsr_8000.wir	1049	94	1.80	2.11	25991	rail_acsr_8000.wir	969	265	1.80	2.11	25991
9403	30-scsp-20-sgc.175	4	1	3	1 MLA,MLB	rail_acsr_8000.wir	1049	94	1.80	2.11	25996	rail_acsr_8000.wir	969	265	1.80	2.11	25996
9403	30-scsp-20-sgc.175	4	1	4	1 BLA,BLB	rail_acsr_8000.wir	1049	94	1.80	2.11	26001	rail_acsr_8000.wir	969	265	1.80	2.11	26001
9403	30-scsp-20-sgc.175	5	4 NESC Ext Wind NA	1	1 SL:E	7#8_alumoweld_4200#.wir	1050	94	1.13	0.29	3826	7#8_alumoweld_4200#.wir	970	265	1.13	0.29	3826
9403	30-scsp-20-sgc.175	5	4	2	1 TLA,TLB	rail_acsr_8000.wir	1049	94	3.43	1.18	19548	rail_acsr_8000.wir	969	265	3.43	1.18	19547
9403	30-scsp-20-sgc.175	5	4	3	1 MLA,MLB	rail_acsr_8000.wir	1049	94	3.43	1.18	19555	rail_acsr_8000.wir	969	265	3.43	1.18	19554
9403	30-scsp-20-sgc.175	5	4	4	1 BLA,BLB	rail_acsr_8000.wir	1049	94	3.43	1.18	19555	rail_acsr_8000.wir	969	265	3.43	1.18	19554
9403	30-scsp-20-sgc.175	6	4 NESC Ext Wind NA	1	1 SL:E	7#8_alumoweld_4200#.wir	1050	94	1.13	0.29	3826	7#8_alumoweld_4200#.wir	970	265	1.13	0.29	3826
9403	30-scsp-20-sgc.175	6	4	2	1 TLA,TLB	rail_acsr_8000.wir	1049	94	3.43	1.18	19548	rail_acsr_8000.wir	969	265	3.43	1.18	19547
9403	30-scsp-20-sgc.175	6	4	3	1 MLA,MLB	rail_acsr_8000.wir	1049	94	3.43	1.18	19555	rail_acsr_8000.wir	969	265	3.43	1.18	19554
9403	30-scsp-20-sgc.175	6	4	4	1 BLA,BLB	rail_acsr_8000.wir	1049	94	3.43	1.18	19555	rail_acsr_8000.wir	969	265	3.43	1.18	19554
9403	30-scsp-20-sgc.175	7	1 NESC Ins NA+	1	1 SL:E	7#8_alumoweld_4200#.wir	1050	94	0.46	0.81	4145	7#8_alumoweld_4200#.wir	970	265	0.46	0.81	4145
9403	30-scsp-20-sgc.175	7	1	2	1 TLA,TLB	rail_acsr_8000.wir	1049	94	0.72	2.11	15752	rail_acsr_8000.wir	969	265	0.72	2.11	15752
9403	30-scsp-20-sgc.175	7	1	3	1 MLA,MLB	rail_acsr_8000.wir	1049	94	0.72	2.11	15755	rail_acsr_8000.wir	969	265	0.72	2.11	15755
9403	30-scsp-20-sgc.175	7	1	4	1 BLA,BLB	rail_acsr_8000.wir	1049	94	0.72	2.11	15758	rail_acsr_8000.wir	969	265	0.72	2.11	15758
9403	30-scsp-20-sgc.175	8	1 NESC Ins NA-	1	1 SL:E	7#8_alumoweld_4200#.wir	1050	94	0.46	0.81	4145	7#8_alumoweld_4200#.wir	970	265	0.46	0.81	4145
9403	30-scsp-20-sgc.175	8	1	2	1 TLA,TLB	rail_acsr_8000.wir	1049	94	0.72	2.11	15752	rail_acsr_8000.wir	969	265	0.72	2.11	15752
9403	30-scsp-20-sgc.175	8	1	3	1 MLA,MLB	rail_acsr_8000.wir	1049	94	0.72	2.11	15755	rail_acsr_8000.wir	969	265	0.72	2.11	15755
9403	30-scsp-20-sgc.175	8	1	4	1 BLA,BLB	rail_acsr_8000.wir	1049	94	0.72	2.11	15758	rail_acsr_8000.wir	969	265	0.72	2.11	15758
9403	30-scsp-20-sgc.175	9	5 ASCE Ice/Wind NA	1	1 SL:E	7#8_alumoweld_4200#.wir	1050	94	1.11	1.45	5414	7#8_alumoweld_4200#.wir	970	265	1.11	1.45	5414
9403	30-scsp-20-sgc.175	9	5	2	1 TLA,TLB	rail_acsr_8000.wir	1049	94	1.56	3.15	19873	rail_acsr_8000.wir	969	265	1.56	3.15	19873
9403	30-scsp-20-sgc.175	9	5	3	1 MLA,MLB	rail_acsr_8000.wir	1049	94	1.56	3.15	19880	rail_acsr_8000.wir	969	265	1.56	3.15	19880
9403	30-scsp-20-sgc.175	9	5	4	1 BLA,BLB	rail_acsr_8000.wir	1049	94	1.56	3.15	19880	rail_acsr_8000.wir	969	265	1.56	3.15	19880
9403	30-scsp-20-sgc.175	10	5 ASCE Ice/Wind NA	1	1 SL:E	7#8_alumoweld_4200#.wir	1050	94	1.11	1.45	5414	7#8_alumoweld_4200#.wir	970	265	1.11	1.45	5414
9403	30-scsp-20-sgc.175	10	5	2	1 TLA,TLB	rail_acsr_8000.wir	1049	94	1.56	3.15	19873	rail_acsr_8000.wir	969	265	1.56	3.15	19873
9403	30-scsp-20-sgc.175	10	5	3	1 MLA,MLB	rail_acsr_8000.wir	1049	94	1.56	3.15	19880	rail_acsr_8000.wir	969	265	1.56	3.15	19880
9403	30-scsp-20-sgc.175	10	5	4	1 BLA,BLB	rail_acsr_8000.wir	1049	94	1.56	3.15	19880	rail_acsr_8000.wir	969	265	1.56	3.15	19880
9403	30-scsp-20-sgc.175	11	17 NU Ice	1	1 SL:E	7#8_alumoweld_4200#.wir	1050	94	0.00	2.18	6298	7#8_alumoweld_4200#.wir	970	265	0.00	2.18	6298
9403	30-scsp-20-sgc.175	11	17	2	1 TLA,TLB	rail_acsr_8000.wir	1049	94	0.00	4.14	23925	rail_acsr_8000.wir	969	265	0.00	4.14	23925
9403	30-scsp-20-sgc.175	11	17	3	1 MLA,MLB	rail_acsr_8000.wir	1049	94	0.00	4.14	23932	rail_acsr_8000.wir	969	265	0.00	4.14	23932
9403	30-scsp-20-sgc.175	11	17	4	1 BLA,BLB	rail_acsr_8000.wir	1049	94	0.00	4.14	23932	rail_acsr_8000.wir	969	265	0.00	4.14	23932
9403	30-scsp-20-sgc.175	12	14 Deflection NA+	1	1 SL:E	7#8_alumoweld_4200#.wir	1050	94	0.00	0.26	1194	7#8_alumoweld_4200#.wir	970	265	0.00	0.26	1194
9403	30-scsp-20-sgc.175	12	14	2	1 TLA,TLB	rail_acsr_8000.wir	1049	94	0.00	1.08	6592	rail_acsr_8000.wir	969	265	0.00	1.08	6592
9403	30-scsp-20-sgc.175	12	14	3	1 MLA,MLB	rail_acsr_8000.wir	1049	94	0.00	1.08	6594	rail_acsr_8000.wir	969	265	0.00	1.08	6594
9403	30-scsp-20-sgc.175	12	14	4	1 BLA,BLB	rail_acsr_8000.wir	1049	94	0.00	1.08	6594	rail_acsr_8000.wir	969	265	0.00	1.08	6594
9403	30-scsp-20-sgc.175	13	19 Construction NA+	1	1 SL:E	7#8_alumoweld_4200#.wir	1050	94	0.11	0.39	1994	7#8_alumoweld_4200#.wir	970	265	0.11	0.39	1994
9403	30-scsp-20-sgc.175	13	19	2	1 TLA,TLB	rail_acsr_8000.wir	1049	94	0.34	1.61	10766	rail_acsr_8000.wir	969	265	0.34	1.61	10766
9403	30-scsp-20-sgc.175	13	19	3	1 MLA,MLB	rail_acsr_8000.wir	1049	94	0.34	1.61	10770	rail_acsr_8000.wir	969	265	0.34	1.61	10770
9403	30-scsp-20-sgc.175	13	19	4	1 BLA,BLB	rail_acsr_8000.wir	1049	94	0.34	1.61	10770	rail_acsr_8000.wir	969	265	0.34	1.61	10770
9403	30-scsp-20-sgc.175	14	19 Construction NA-	1	1 SL:E	7#8_alumoweld_4200#.wir	1050	94	0.11	0.39	1994	7#8_alumoweld_4200#.wir	970	265	0.11	0.39	1994
9403	30-scsp-20-sgc.175	14	19	2	1 TLA,TLB	rail_acsr_8000.wir	1049	94	0.34	1.61	10766	rail_acsr_8000.wir	969	265	0.34	1.61	10766
9403	30-scsp-20-sgc.175	14	19	3	1 MLA,MLB	rail_acsr_8000.wir	1049	94	0.34	1.61	10770	rail_acsr_8000.wir	969	265	0.34	1.61	10770
9403	30-scsp-20-sgc.175	14	19	4	1 BLA,BLB	rail_acsr_8000.wir	1049	94	0.34	1.61	10770	rail_acsr_8000.wir	969	265	0.34	1.61	10770

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\b Wire Loads In Span Coordinate System For Structure Range\b0\par
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\b Wire loads expressed in span coordinate system (Longitudinal axis is line connecting attach. points)\b0\par
\b Note: Loads in this report do not include load from counter weights, insulator weight or insulator wind area.\b0\par
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Str. No.	Str. Name	LC #	WC Load Case # Description	Set No.	Phase No.	Attach. Joint Labels	Loads from back span- Vert. (lbs)	Loads from back span- Trans. (lbs)	Loads from back span- Long. (lbs)	Loads from ahead span- Vert. (lbs)	Loads from ahead span- Trans. (lbs)	Loads from ahead span- Long. (lbs)	Warnings\b0\par
9403	30-scsp-20-sgc.175	1	1 NESC Heavy NA+	1	1 SL:E		636	608	6839	544	562	6839	\par
9403	30-scsp-20-sgc.175	1	1	2	1 TLA,TLB		3311	1901	25991	2863	1755	25991	\par
9403	30-scsp-20-sgc.175	1	1	3	1 MLA,MLB		3311	1901	25996	2863	1755	25996	\par
9403	30-scsp-20-sgc.175	1	1	4	1 BLA,BLB		3311	1901	26001	2863	1755	26001	\par
9403	30-scsp-20-sgc.175	2	1 NESC Heavy NA-	1	1 SL:E		636	-608	6839	544	-562	6839	\par
9403	30-scsp-20-sgc.175	2	1	2	1 TLA,TLB		3311	-1901	25991	2863	-1755	25991	\par
9403	30-scsp-20-sgc.175	2	1	3	1 MLA,MLB		3311	-1901	25996	2863	-1755	25996	\par
9403	30-scsp-20-sgc.175	2	1	4	1 BLA,BLB		3311	-1901	26001	2863	-1755	26001	\par
9403	30-scsp-20-sgc.175	3	1 NESC Uplift NA+	1	1 SL:E		424	608	6839	362	562	6839	\par
9403	30-scsp-20-sgc.175	3	1	2	1 TLA,TLB		2207	1901	25991	1909	1755	25991	\par

9403	30-scsp-20-sgc.175	3	1		3	1	MLA,MLB	2207	1901	25996	1909	1755	25996	\par
9403	30-scsp-20-sgc.175	3	1		4	1	BLA,BLB	2207	1901	26001	1909	1755	26001	\par
9403	30-scsp-20-sgc.175	4	1	NESC Uplift NA-	1	1	SL:E	424	-608	6839	362	-562	6839	\par
9403	30-scsp-20-sgc.175	4	1		2	1	TLA,TLB	2207	-1901	25991	1909	-1755	25991	\par
9403	30-scsp-20-sgc.175	4	1		3	1	MLA,MLB	2207	-1901	25996	1909	-1755	25996	\par
9403	30-scsp-20-sgc.175	4	1		4	1	BLA,BLB	2207	-1901	26001	1909	-1755	26001	\par
9403	30-scsp-20-sgc.175	5	4	NESC Ext Wind NA	1	1	SL:E	147	597	3826	100	552	3826	\par
9403	30-scsp-20-sgc.175	5	4		2	1	TLA,TLB	1225	3620	19548	949	3342	19547	\par
9403	30-scsp-20-sgc.175	5	4		3	1	MLA,MLB	1225	3620	19555	949	3342	19554	\par
9403	30-scsp-20-sgc.175	5	4		4	1	BLA,BLB	1225	3620	19555	949	3342	19554	\par
9403	30-scsp-20-sgc.175	6	4	NESC Ext Wind NA	1	1	SL:E	147	-597	3826	100	-552	3826	\par
9403	30-scsp-20-sgc.175	6	4		2	1	TLA,TLB	1225	-3620	19548	949	-3342	19547	\par
9403	30-scsp-20-sgc.175	6	4		3	1	MLA,MLB	1225	-3620	19555	949	-3342	19554	\par
9403	30-scsp-20-sgc.175	6	4		4	1	BLA,BLB	1225	-3620	19555	949	-3342	19554	\par
9403	30-scsp-20-sgc.175	7	1	NESC Ins NA+	1	1	SL:E	424	243	4145	362	225	4145	\par
9403	30-scsp-20-sgc.175	7	1		2	1	TLA,TLB	2207	761	15752	1909	702	15752	\par
9403	30-scsp-20-sgc.175	7	1		3	1	MLA,MLB	2207	761	15755	1909	702	15755	\par
9403	30-scsp-20-sgc.175	7	1		4	1	BLA,BLB	2207	761	15758	1909	702	15758	\par
9403	30-scsp-20-sgc.175	8	1	NESC Ins NA-	1	1	SL:E	424	-243	4145	362	-225	4145	\par
9403	30-scsp-20-sgc.175	8	1		2	1	TLA,TLB	2207	-761	15752	1909	-702	15752	\par
9403	30-scsp-20-sgc.175	8	1		3	1	MLA,MLB	2207	-761	15755	1909	-702	15755	\par
9403	30-scsp-20-sgc.175	8	1		4	1	BLA,BLB	2207	-761	15758	1909	-702	15758	\par
9403	30-scsp-20-sgc.175	9	5	ASCE Ice/Wind NA	1	1	SL:E	760	583	5414	651	539	5414	\par
9403	30-scsp-20-sgc.175	9	5		2	1	TLA,TLB	3296	1649	19873	2858	1522	19873	\par
9403	30-scsp-20-sgc.175	9	5		3	1	MLA,MLB	3296	1649	19880	2858	1522	19880	\par
9403	30-scsp-20-sgc.175	9	5		4	1	BLA,BLB	3296	1649	19880	2858	1522	19880	\par
9403	30-scsp-20-sgc.175	10	5	ASCE Ice/Wind NA	1	1	SL:E	760	-583	5414	651	-539	5414	\par
9403	30-scsp-20-sgc.175	10	5		2	1	TLA,TLB	3296	-1649	19873	2858	-1522	19873	\par
9403	30-scsp-20-sgc.175	10	5		3	1	MLA,MLB	3296	-1649	19880	2858	-1522	19880	\par
9403	30-scsp-20-sgc.175	10	5		4	1	BLA,BLB	3296	-1649	19880	2858	-1522	19880	\par
9403	30-scsp-20-sgc.175	11	17	NU Ice	1	1	SL:E	1144	0	6298	997	0	6298	\par
9403	30-scsp-20-sgc.175	11	17		2	1	TLA,TLB	4342	0	23925	3785	0	23925	\par
9403	30-scsp-20-sgc.175	11	17		3	1	MLA,MLB	4342	0	23932	3785	0	23932	\par
9403	30-scsp-20-sgc.175	11	17		4	1	BLA,BLB	4342	0	23932	3785	0	23932	\par
9403	30-scsp-20-sgc.175	12	14	Deflection NA+	1	1	SL:E	136	0	1194	115	0	1194	\par
9403	30-scsp-20-sgc.175	12	14		2	1	TLA,TLB	1125	0	6592	977	0	6592	\par
9403	30-scsp-20-sgc.175	12	14		3	1	MLA,MLB	1125	0	6594	977	0	6594	\par
9403	30-scsp-20-sgc.175	12	14		4	1	BLA,BLB	1125	0	6594	977	0	6594	\par
9403	30-scsp-20-sgc.175	13	19	Construction NA+	1	1	SL:E	204	58	1994	170	54	1994	\par
9403	30-scsp-20-sgc.175	13	19		2	1	TLA,TLB	1686	353	10766	1456	326	10766	\par
9403	30-scsp-20-sgc.175	13	19		3	1	MLA,MLB	1686	353	10770	1456	326	10770	\par
9403	30-scsp-20-sgc.175	13	19		4	1	BLA,BLB	1686	353	10770	1456	326	10770	\par
9403	30-scsp-20-sgc.175	14	19	Construction NA-	1	1	SL:E	204	-58	1994	170	-54	1994	\par
9403	30-scsp-20-sgc.175	14	19		2	1	TLA,TLB	1686	-353	10766	1456	-326	10766	\par
9403	30-scsp-20-sgc.175	14	19		3	1	MLA,MLB	1686	-353	10770	1456	-326	10770	\par
9403	30-scsp-20-sgc.175	14	19		4	1	BLA,BLB	1686	-353	10770	1456	-326	10770	\par

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\b Wire Loads In Structure Coordinate System For Structure Range\b0\par
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\b Note: Loads in this report include load from counter weights, insulator weight and insulator wind area.\b0\par
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\b Str. No.	Str. Name	LC #	WC Load Case # Description	Set No.	Phase No.	Attach. Joint Labels	----Structure Loads---- Vert. (lbs)	Trans.	Long.	--Loads from back span- Vert. (lbs)	Trans.	Long.	-Loads from ahead span- Vert. (lbs)	Trans.	Long.	Warnings\b0\par \b0 \par \b0 \par
9403	30-scsp-20-sgc.175	1	1 NESC Heavy NA+	1	1	SL:E	1180	-11	4	636	77	6865	544	-88	-6861	\par
9403	30-scsp-20-sgc.175	1	1	2	1	TLA,TLB	7674	-527	19	4061	182	26060	3613	-709	-26041	\par
9403	30-scsp-20-sgc.175	1	1	3	1	MLA,MLB	7674	-518	19	4061	192	26065	3613	-710	-26045	\par
9403	30-scsp-20-sgc.175	1	1	4	1	BLA,BLB	7674	-509	19	4061	202	26069	3613	-710	-26050	\par
9403	30-scsp-20-sgc.175	2	1 NESC Heavy NA-	1	1	SL:E	11180	-2341	16	636	-1135	6771	544	-1206	-6755	\par
9403	30-scsp-20-sgc.175	2	1	2	1	TLA,TLB	7674	-7817	100	4061	-3613	25809	3613	-4204	-25709	\par
9403	30-scsp-20-sgc.175	2	1	3	1	MLA,MLB	7674	-7808	102	4061	-3603	25815	3613	-4205	-25713	\par
9403	30-scsp-20-sgc.175	2	1	4	1	BLA,BLB	7674	-7798	103	4061	-3593	25821	3613	-4205	-25718	\par
9403	30-scsp-20-sgc.175	3	1 NESC Uplift NA+	1	1	SL:E	787	-11	4	424	77	6865	362	-88	-6861	\par
9403	30-scsp-20-sgc.175	3	1	2	1	TLA,TLB	5116	-527	19	2707	182	26060	2409	-709	-26041	\par
9403	30-scsp-20-sgc.175	3	1	3	1	MLA,MLB	5116	-518	19	2707	192	26065	2409	-710	-26045	\par
9403	30-scsp-20-sgc.175	3	1	4	1	BLA,BLB	5116	-509	19	2707	202	26069	2409	-710	-26050	\par
9403	30-scsp-20-sgc.175	4	1 NESC Uplift NA-	1	1	SL:E	787	-2341	16	424	-1135	6771	362	-1206	-6755	\par
9403	30-scsp-20-sgc.175	4	1	2	1	TLA,TLB	5116	-7817	100	2707	-3613	25809	2409	-4204	-25709	\par
9403	30-scsp-20-sgc.175	4	1	3	1	MLA,MLB	5116	-7808	102	2707	-3603	25815	2409	-4205	-25713	\par
9403	30-scsp-20-sgc.175	4	1	4	1	BLA,BLB	5116	-7798	103	2707	-3593	25821	2409	-4205	-25718	\par
9403	30-scsp-20-sgc.175	5	4 NESC Ext Wind NA	1	1	SL:E	248	487	-0	147	300	3861	100	187	-3861	\par
9403	30-scsp-20-sgc.175	5	4	2	1	TLA,TLB	3274	3802	-31	1775	2322	19744	1499	1480	-19776	\par
9403	30-scsp-20-sgc.175	5	4	3	1	MLA,MLB	3274	3808	-32	1775	2329	19750	1499	1479	-19782	\par
9403	30-scsp-20-sgc.175	5	4	4	1	BLA,BLB	3273	3816	-33	1775	2337	19749	1499	1479	-19782	\par
9403	30-scsp-20-sgc.175	6	4 NESC Ext Wind NA	1	1	SL:E	248	-1803	12	147	-891	3768	100	-911	-3756	\par
9403	30-scsp-20-sgc.175	6	4	2	1	TLA,TLB	3274	-10077	123	1775	-4902	19267	1499	-5175	-19144	\par
9403	30-scsp-20-sgc.175	6	4	3	1	MLA,MLB	3274	-10071	125	1775	-4895	19275	1499	-5176	-19150	\par
9403	30-scsp-20-sgc.175	6	4	4	1	BLA,BLB	3273	-10063	127	1775	-4888	19277	1499	-5175	-19150	\par
9403	30-scsp-20-sgc.175	7	1 NESC Ins NA+	1	1	SL:E	787	-247	4	424	-78	4151	362	-168	-4147	\par
9403	30-scsp-20-sgc.175	7	1	2	1	TLA,TLB	5116	-1071	20	2707	-281	15768	2409	-790	-15748	\par
9403	30-scsp-20-sgc.175	7	1	3	1	MLA,MLB	5116	-1065	20	2707	-275	15771	2409	-790	-15751	\par
9403	30-scsp-20-sgc.175	7	1	4	1	BLA,BLB	5116	-1059	20	2707	-269	15774	2409	-791	-15754	\par
9403	30-scsp-20-sgc.175	8	1 NESC Ins NA-	1	1	SL:E	787	-1179	9	424	-563	4113	362	-616	-4105	\par
9403	30-scsp-20-sgc.175	8	1	2	1	TLA,TLB	5116	-3986	52	2707	-1799	15668	2409	-2188	-15615	\par
9403	30-scsp-20-sgc.175	8	1	3	1	MLA,MLB	5116	-3981	53	2707	-1793	15671	2409	-2188	-15618	\par
9403	30-scsp-20-sgc.175	8	1	4	1	BLA,BLB	5116	-3975	54	2707	-1787	15675	2409	-2189	-15621	\par

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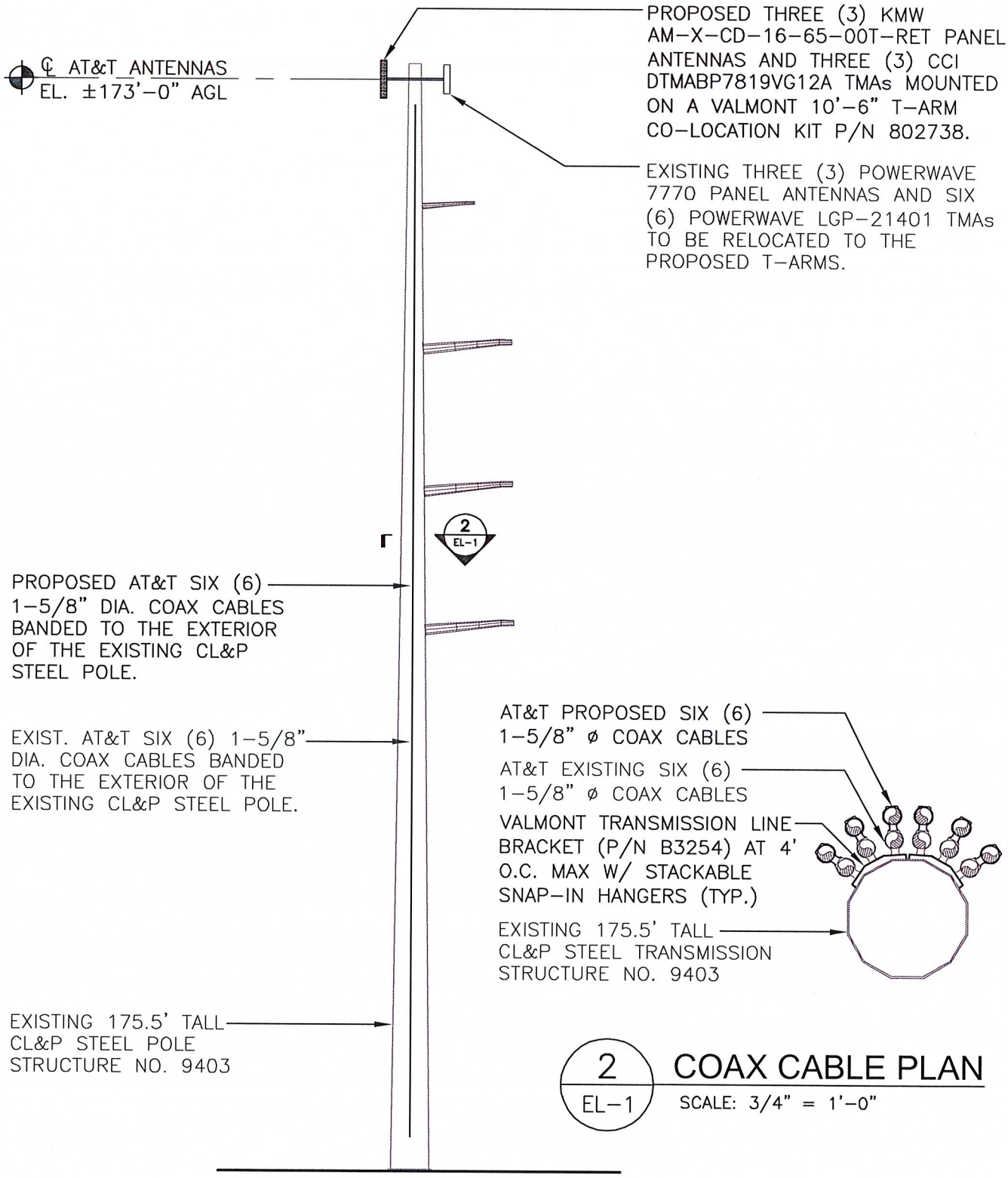
 9403 30-scsp-20-sgc.175  9   5 ASCE Ice/Wind NA    1     1     SL:E      1411     187       2       760     163    5443       651      24   -5441          \par
 9403 30-scsp-20-sgc.175  9   5                     2     1  TLA,TLB      7254     -29      11      3846     334   19939      3408    -363  -19928          \par
 9403 30-scsp-20-sgc.175  9   5                     3     1  MLA,MLB      7254     -22      11      3846     341   19945      3408    -364  -19934          \par
 9403 30-scsp-20-sgc.175  9   5                     4     1  BLA,BLB      7254     -14      11      3846     349   19945      3408    -364  -19934          \par
 9403 30-scsp-20-sgc.175 10   5 ASCE Ice/Wind NA    1     1     SL:E      1411   -2049      14       760   -1000    5353       651   -1048   -5339          \par
 9403 30-scsp-20-sgc.175 10   5                     2     1  TLA,TLB      7254   -6351      81      3846   -2957   19721      3408   -3394  -19640          \par
 9403 30-scsp-20-sgc.175 10   5                     3     1  MLA,MLB      7254   -6345      82      3846   -2950   19729      3408   -3395  -19647          \par
 9403 30-scsp-20-sgc.175 10   5                     4     1  BLA,BLB      7254   -6337      83      3846   -2942   19730      3408   -3395  -19647          \par
 9403 30-scsp-20-sgc.175 11  17 NU Ice              1     1     SL:E      2142   -1083       9      1144    -487    6279       997    -596   -6270          \par
 9403 30-scsp-20-sgc.175 11  17                     2     1  TLA,TLB      9227   -3840      55      4892   -1579   23873      4335   -2261  -23818          \par
 9403 30-scsp-20-sgc.175 11  17                     3     1  MLA,MLB      9227   -3833      56      4892   -1570   23880      4335   -2262  -23825          \par
 9403 30-scsp-20-sgc.175 11  17                     4     1  BLA,BLB      9227   -3823      56      4892   -1561   23881      4335   -2262  -23824          \par
 9403 30-scsp-20-sgc.175 12  14 Deflection NA+      1     1     SL:E       251    -205       2       136     -92    1190       115    -113   -1188          \par
 9403 30-scsp-20-sgc.175 12  14                     2     1  TLA,TLB      3103   -1058      15      1625    -435    6578      1477    -623   -6563          \par
 9403 30-scsp-20-sgc.175 12  14                     3     1  MLA,MLB      3103   -1056      15      1625    -433    6579      1477    -623   -6564          \par
 9403 30-scsp-20-sgc.175 12  14                     4     1  BLA,BLB      3102   -1053      15      1625    -430    6580      1477    -623   -6564          \par
 9403 30-scsp-20-sgc.175 13  19 Construction NA+    1     1     SL:E       374    -231       2       204     -96    1993       170    -135   -1990          \par
 9403 30-scsp-20-sgc.175 13  19                     2     1  TLA,TLB      4642   -1051      17      2436    -358   10766      2206    -693  -10749          \par
 9403 30-scsp-20-sgc.175 13  19                     3     1  MLA,MLB      4642   -1047      17      2436    -354   10770      2206    -693  -10753          \par
 9403 30-scsp-20-sgc.175 13  19                     4     1  BLA,BLB      4642   -1043      18      2436    -350   10771      2206    -693  -10753          \par
 9403 30-scsp-20-sgc.175 14  19 Construction NA-    1     1     SL:E       374    -455       4       204    -212    1984       170    -242   -1980          \par
 9403 30-scsp-20-sgc.175 14  19                     2     1  TLA,TLB      4642   -2406      32      2436   -1063   10719      2206   -1342  -10687          \par
 9403 30-scsp-20-sgc.175 14  19                     3     1  MLA,MLB      4642   -2402      33      2436   -1059   10724      2206   -1343  -10691          \par
 9403 30-scsp-20-sgc.175 14  19                     4     1  BLA,BLB      4642   -2398      33      2436   -1055   10724      2206   -1343  -10691          \par
\par
\par
\b Wire Load Induced Ground Line Moments For Single Pole Centered At Structure Origin For Structure Range\b0\par
\par
\cf2\b   Note: not applicable to guyed structures or frames.  These approximate values do not include nonlinear (P-delta) effects or wind on pole.  ?? \cf1\b0  \par
\par
\b  Str.               Str. LC  WC Load Case          Vert.  Trans.   Long. Resultant    Trans.     Long. Resultant\b0\par
\b   No.               Name  #   # Description         Load   Shear   Shear     Shear    Moment    Moment    Moment\b0\par
\b                                                    (kips)  (kips)  (kips)    (kips)    (ft-k)    (ft-k)    (ft-k)\b0\par
\b ------------------------------------------------------------------------------------------------------------------\b0\par
 9403 30-scsp-20-sgc.175  1   1 NESC Heavy NA+    24.201  -1.565   0.062     1.566  -533.798     6.974   533.844\par
 9403 30-scsp-20-sgc.175  2   1 NESC Heavy NA-    24.201 -25.764   0.321    25.766 -3274.086    35.695  3274.280\par
 9403 30-scsp-20-sgc.175  3   1 NESC Uplift NA+   16.134  -1.565   0.062     1.566  -413.019     6.974   413.078\par
 9403 30-scsp-20-sgc.175  4   1 NESC Uplift NA-   16.134 -25.764   0.321    25.766 -3153.307    35.695  3153.509\par
 9403 30-scsp-20-sgc.175  5   4 NESC Ext Wind NA  10.068  11.912  -0.096    11.912  1167.266   -10.456  1167.313\par
 9403 30-scsp-20-sgc.175  6   4 NESC Ext Wind NA  10.068 -32.014   0.386    32.016 -3721.351    42.523  3721.594\par
 9403 30-scsp-20-sgc.175  7   1 NESC Ins NA+      16.134  -3.442   0.064     3.442  -627.806     7.186   627.848\par
 9403 30-scsp-20-sgc.175  8   1 NESC Ins NA-      16.134 -13.122   0.168    13.123 -1723.921    18.674  1724.023\par
 9403 30-scsp-20-sgc.175  9   5 ASCE Ice/Wind NA  23.172   0.122   0.034     0.126  -324.029     3.860   324.052\par
 9403 30-scsp-20-sgc.175 10   5 ASCE Ice/Wind NA  23.172 -21.082   0.260    21.084 -2733.637    28.927  2733.790\par
 9403 30-scsp-20-sgc.175 11  17 NU Ice            29.822 -12.579   0.176    12.580 -1861.404    19.584  1861.507\par
 9403 30-scsp-20-sgc.175 12  14 Deflection NA+     9.559  -3.373   0.048     3.373  -521.203     5.272   521.230\par
 9403 30-scsp-20-sgc.175 13  19 Construction NA+  14.300  -3.372   0.055     3.373  -593.991     6.044   594.022\par
 9403 30-scsp-20-sgc.175 14  19 Construction NA-  14.300  -7.661   0.102     7.662 -1071.297    11.218  1071.356\par
\par
\par
\b Basic factored design wind pressure on structure For Structure Range\b0\par
\par
\b  Str.               Str. LC  WC Load Case          Trans.    Long. Notes          \b0  \par
\b   No.               Name  #   # Description          Wind     Wind               \b0  \par
\b                                                    Press.   Press.              \b0  \par
\b                                                     (psf)    (psf)              \b0  \par
\b ------------------------------------------------------------------------------------\b0\par
 9403 30-scsp-20-sgc.175  1   1 NESC Heavy NA+       10.0      0.0                 \par
 9403 30-scsp-20-sgc.175  2   1 NESC Heavy NA-      -10.0     -0.0                 \par
 9403 30-scsp-20-sgc.175  3   1 NESC Uplift NA+     10.0      0.0                 \par
 9403 30-scsp-20-sgc.175  4   1 NESC Uplift NA-    -10.0     -0.0                 \par
 9403 30-scsp-20-sgc.175  5   4 NESC Ext Wind NA    35.3      0.0                 \par
 9403 30-scsp-20-sgc.175  6   4 NESC Ext Wind NA   -35.3     -0.0                 \par
 9403 30-scsp-20-sgc.175  7   1 NESC Ins NA+        4.0      0.0                 \par
 9403 30-scsp-20-sgc.175  8   1 NESC Ins NA-       -4.0     -0.0                 \par
 9403 30-scsp-20-sgc.175  9   5 ASCE Ice/Wind NA    7.0      0.0                 \par
 9403 30-scsp-20-sgc.175 10   5 ASCE Ice/Wind NA   -7.0     -0.0                 \par
 9403 30-scsp-20-sgc.175 11  17 NU Ice              0.0      0.0                 \par
 9403 30-scsp-20-sgc.175 12  14 Deflection NA+      0.0      0.0                 \par
 9403 30-scsp-20-sgc.175 13  19 Construction NA+    3.5      0.0                 \par
 9403 30-scsp-20-sgc.175 14  19 Construction NA-   -3.5     -0.0                 \par
\par
\par
\b Detailed Manufacturer Loading For Structure Range\b0\par
\par
\b Note: Loads in this report include load from counter weights, insulator weight and insulator wind area.\b0\par
\par
\b  Str.               Str.   Line LC  WC Load Case         Set Phase  Attach. | --------------Structure Attach-------------- | ----Structure Loads---- | --Loads from back span- | -Loads from ahead span- | Warnings
-----------------------Back span------------------------- | -----------------------Ahead span----------------------- |\b0\par
\b   No.               Name  Angle  #   # Description      No.    No.    Joint |     X       Y       Z Height Dead ---Wires--- |   Vert.  Trans.   Long. |   Vert.  Trans.   Long. |   Vert.  Trans.   Long. |          Cable
\b             Len. Azi.  Horiz.    Vert.  Horiz. | Cable                      Len. Azi.  Horiz.    Vert.  Horiz. |\b0\par
\b                        (deg)                    Labels | ----------(ft)---------- End ----Per---- | ---------(lbs)--------- | ---------(lbs)--------- | ---------(lbs)--------- |          Name
\b                      -----Load------ Tension | Name                       -----Load------ Tension |\b0\par
\b                                                    |                                    ---Phase--- |                         |                         |
\b             (ft)(deg) ---(lbs/ft)----   (lbs) |                      (ft)(deg) ---(lbs/ft)----   (lbs) |\b0\par
\b                                                    |                                    Back Ahead |                         |                         |
\b                                                                                                      |\b0\par
\b
```

```
-----------------------------------------------------------------------------------------------------------\b0\par
 9403 30-scsp-20-sgc.175 -10.85  1   1 NESC Heavy NA+      1    1    SL:E        0.0   -9.1  153.0  153.0   N     1     1    1180    -11     4    636     77   6865    544    -88   -6861
7#8_alumoweld_4200#.wir  1050   94   1.15    1.22    6839  7#8_alumoweld_4200#.wir  970  265    1.15    1.22   6839  \par
 9403 30-scsp-20-sgc.175 -10.85  1   1                     2    1  TLA,TLB       0.0  -15.1  131.0  131.0   N     2     2    7674   -527    19   4061    182  26060   3613   -709  -26041
rail_acsr_8000.wir       1049   94   1.80    3.17   25991  rail_acsr_8000.wir       969  265    1.80    3.17  25991  \par
 9403 30-scsp-20-sgc.175 -10.85  1   1                     3    1  MLA,MLB       0.0  -15.3  109.0  109.0   N     2     2    7674   -518    19   4061    192  26065   3613   -710  -26045
rail_acsr_8000.wir       1049   94   1.80    3.17   25996  rail_acsr_8000.wir       969  265    1.80    3.17  25996  \par
 9403 30-scsp-20-sgc.175 -10.85  1   1                     4    1  BLA,BLB       0.0  -15.5   87.0   87.0   N     2     2    7674   -509    19   4061    202  26069   3613   -710  -26050
rail_acsr_8000.wir       1049   94   1.80    3.17   26001  rail_acsr_8000.wir       969  265    1.80    3.17  26001  \par
 9403 30-scsp-20-sgc.175 -10.85  2   1 NESC Heavy NA-      1    1    SL:E        0.0   -9.1  153.0  153.0   N     1     1    1180  -2341    16    636  -1135   6771    544  -1206   -6755
7#8_alumoweld_4200#.wir  1050   94   1.15    1.22    6839  7#8_alumoweld_4200#.wir  970  265    1.15    1.22   6839  \par
 9403 30-scsp-20-sgc.175 -10.85  2   1                     2    1  TLA,TLB       0.0  -15.1  131.0  131.0   N     2     2    7674  -7817   100   4061  -3613  25809   3613  -4204  -25709
rail_acsr_8000.wir       1049   94   1.80    3.17   25991  rail_acsr_8000.wir       969  265    1.80    3.17  25991  \par
 9403 30-scsp-20-sgc.175 -10.85  2   1                     3    1  MLA,MLB       0.0  -15.3  109.0  109.0   N     2     2    7674  -7808   102   4061  -3603  25815   3613  -4205  -25713
rail_acsr_8000.wir       1049   94   1.80    3.17   25996  rail_acsr_8000.wir       969  265    1.80    3.17  25996  \par
 9403 30-scsp-20-sgc.175 -10.85  2   1                     4    1  BLA,BLB       0.0  -15.5   87.0   87.0   N     2     2    7674  -7798   103   4061  -3593  25821   3613  -4205  -25718
rail_acsr_8000.wir       1049   94   1.80    3.17   26001  rail_acsr_8000.wir       969  265    1.80    3.17  26001  \par
 9403 30-scsp-20-sgc.175 -10.85  3   1 NESC Uplift NA+     1    1    SL:E        0.0   -9.1  153.0  153.0   N     1     1     787    -11     4    424     77   6865    362    -88   -6861
7#8_alumoweld_4200#.wir  1050   94   1.15    0.81    6839  7#8_alumoweld_4200#.wir  970  265    1.15    0.81   6839  \par
 9403 30-scsp-20-sgc.175 -10.85  3   1                     2    1  TLA,TLB       0.0  -15.1  131.0  131.0   N     2     2    5116   -527    19   2707    182  26060   2409   -709  -26041
rail_acsr_8000.wir       1049   94   1.80    2.11   25991  rail_acsr_8000.wir       969  265    1.80    2.11  25991  \par
 9403 30-scsp-20-sgc.175 -10.85  3   1                     3    1  MLA,MLB       0.0  -15.3  109.0  109.0   N     2     2    5116   -518    19   2707    192  26065   2409   -710  -26045
rail_acsr_8000.wir       1049   94   1.80    2.11   25996  rail_acsr_8000.wir       969  265    1.80    2.11  25996  \par
 9403 30-scsp-20-sgc.175 -10.85  3   1                     4    1  BLA,BLB       0.0  -15.5   87.0   87.0   N     2     2    5116   -509    19   2707    202  26069   2409   -710  -26050
rail_acsr_8000.wir       1049   94   1.80    2.11   26001  rail_acsr_8000.wir       969  265    1.80    2.11  26001  \par
 9403 30-scsp-20-sgc.175 -10.85  4   1 NESC Uplift NA-     1    1    SL:E        0.0   -9.1  153.0  153.0   N     1     1     787  -2341    16    424  -1135   6771    362  -1206   -6755
7#8_alumoweld_4200#.wir  1050   94   1.15    0.81    6839  7#8_alumoweld_4200#.wir  970  265    1.15    0.81   6839  \par
 9403 30-scsp-20-sgc.175 -10.85  4   1                     2    1  TLA,TLB       0.0  -15.1  131.0  131.0   N     2     2    5116  -7817   100   2707  -3613  25809   2409  -4204  -25709
rail_acsr_8000.wir       1049   94   1.80    2.11   25991  rail_acsr_8000.wir       969  265    1.80    2.11  25991  \par
 9403 30-scsp-20-sgc.175 -10.85  4   1                     3    1  MLA,MLB       0.0  -15.3  109.0  109.0   N     2     2    5116  -7808   102   2707  -3603  25815   2409  -4205  -25713
rail_acsr_8000.wir       1049   94   1.80    2.11   25996  rail_acsr_8000.wir       969  265    1.80    2.11  25996  \par
 9403 30-scsp-20-sgc.175 -10.85  4   1                     4    1  BLA,BLB       0.0  -15.5   87.0   87.0   N     2     2    5116  -7798   103   2707  -3593  25821   2409  -4205  -25718
rail_acsr_8000.wir       1049   94   1.80    2.11   26001  rail_acsr_8000.wir       969  265    1.80    2.11  26001  \par
 9403 30-scsp-20-sgc.175 -10.85  5   4 NESC Ext Wind NA    1    1    SL:E        0.0   -9.1  153.0  153.0   N     1     1     248    487    -0    147    300   3861    100    187   -3861
7#8_alumoweld_4200#.wir  1050   94   1.13    0.29    3826  7#8_alumoweld_4200#.wir  970  265    1.13    0.29   3826  \par
 9403 30-scsp-20-sgc.175 -10.85  5   4                     2    1  TLA,TLB       0.0  -15.1  131.0  131.0   N     2     2    3274   3802   -31   1775   2322  19744   1499   1480  -19776
rail_acsr_8000.wir       1049   94   3.43    1.18   19548  rail_acsr_8000.wir       969  265    3.43    1.18  19547  \par
 9403 30-scsp-20-sgc.175 -10.85  5   4                     3    1  MLA,MLB       0.0  -15.3  109.0  109.0   N     2     2    3274   3808   -32   1775   2329  19750   1499   1479  -19782
rail_acsr_8000.wir       1049   94   3.43    1.18   19555  rail_acsr_8000.wir       969  265    3.43    1.18  19554  \par
 9403 30-scsp-20-sgc.175 -10.85  5   4                     4    1  BLA,BLB       0.0  -15.5   87.0   87.0   N     2     2    3273   3816   -33   1775   2337  19749   1499   1479  -19782
rail_acsr_8000.wir       1049   94   3.43    1.18   19555  rail_acsr_8000.wir       969  265    3.43    1.18  19554  \par
 9403 30-scsp-20-sgc.175 -10.85  6   4 NESC Ext Wind NA    1    1    SL:E        0.0   -9.1  153.0  153.0   N     1     1     248  -1803    12    147   -891   3768    100   -911   -3756
7#8_alumoweld_4200#.wir  1050   94   1.13    0.29    3826  7#8_alumoweld_4200#.wir  970  265    1.13    0.29   3826  \par
 9403 30-scsp-20-sgc.175 -10.85  6   4                     2    1  TLA,TLB       0.0  -15.1  131.0  131.0   N     2     2    3274 -10077   123   1775  -4902  19267   1499  -5175  -19144
rail_acsr_8000.wir       1049   94   3.43    1.18   19548  rail_acsr_8000.wir       969  265    3.43    1.18  19547  \par
 9403 30-scsp-20-sgc.175 -10.85  6   4                     3    1  MLA,MLB       0.0  -15.3  109.0  109.0   N     2     2    3274 -10071   125   1775  -4895  19275   1499  -5176  -19150
rail_acsr_8000.wir       1049   94   3.43    1.18   19555  rail_acsr_8000.wir       969  265    3.43    1.18  19554  \par
 9403 30-scsp-20-sgc.175 -10.85  6   4                     4    1  BLA,BLB       0.0  -15.5   87.0   87.0   N     2     2    3273 -10063   127   1775  -4888  19277   1499  -5175  -19150
rail_acsr_8000.wir       1049   94   3.43    1.18   19555  rail_acsr_8000.wir       969  265    3.43    1.18  19554  \par
 9403 30-scsp-20-sgc.175 -10.85  7   1 NESC Ins NA+        1    1    SL:E        0.0   -9.1  153.0  153.0   N     1     1     787   -247     4    424    -78   4151    362   -168   -4147
7#8_alumoweld_4200#.wir  1050   94   0.46    0.81    4145  7#8_alumoweld_4200#.wir  970  265    0.46    0.81   4145  \par
 9403 30-scsp-20-sgc.175 -10.85  7   1                     2    1  TLA,TLB       0.0  -15.1  131.0  131.0   N     2     2    5116  -1071    20   2707   -281  15768   2409   -790  -15748
rail_acsr_8000.wir       1049   94   0.72    2.11   15752  rail_acsr_8000.wir       969  265    0.72    2.11  15752  \par
 9403 30-scsp-20-sgc.175 -10.85  7   1                     3    1  MLA,MLB       0.0  -15.3  109.0  109.0   N     2     2    5116  -1065    20   2707   -275  15771   2409   -790  -15751
rail_acsr_8000.wir       1049   94   0.72    2.11   15755  rail_acsr_8000.wir       969  265    0.72    2.11  15755  \par
 9403 30-scsp-20-sgc.175 -10.85  7   1                     4    1  BLA,BLB       0.0  -15.5   87.0   87.0   N     2     2    5116  -1059    20   2707   -269  15774   2409   -791  -15754
rail_acsr_8000.wir       1049   94   0.72    2.11   15758  rail_acsr_8000.wir       969  265    0.72    2.11  15758  \par
 9403 30-scsp-20-sgc.175 -10.85  8   1 NESC Ins NA-        1    1    SL:E        0.0   -9.1  153.0  153.0   N     1     1     787  -1179     9    424   -563   4113    362   -616   -4105
7#8_alumoweld_4200#.wir  1050   94   0.46    0.81    4145  7#8_alumoweld_4200#.wir  970  265    0.46    0.81   4145  \par
 9403 30-scsp-20-sgc.175 -10.85  8   1                     2    1  TLA,TLB       0.0  -15.1  131.0  131.0   N     2     2    5116  -3986    52   2707  -1799  15668   2409  -2188  -15615
rail_acsr_8000.wir       1049   94   0.72    2.11   15752  rail_acsr_8000.wir       969  265    0.72    2.11  15752  \par
 9403 30-scsp-20-sgc.175 -10.85  8   1                     3    1  MLA,MLB       0.0  -15.3  109.0  109.0   N     2     2    5116  -3981    53   2707  -1793  15671   2409  -2188  -15618
rail_acsr_8000.wir       1049   94   0.72    2.11   15755  rail_acsr_8000.wir       969  265    0.72    2.11  15755  \par
 9403 30-scsp-20-sgc.175 -10.85  8   1                     4    1  BLA,BLB       0.0  -15.5   87.0   87.0   N     2     2    5116  -3975    54   2707  -1787  15675   2409  -2189  -15621
rail_acsr_8000.wir       1049   94   0.72    2.11   15758  rail_acsr_8000.wir       969  265    0.72    2.11  15758  \par
 9403 30-scsp-20-sgc.175 -10.85  9   5 ASCE Ice/Wind NA    1    1    SL:E        0.0   -9.1  153.0  153.0   N     1     1    1411    187     2    760    163   5443    651     24   -5441
7#8_alumoweld_4200#.wir  1050   94   1.11    1.45    5414  7#8_alumoweld_4200#.wir  970  265    1.11    1.45   5414  \par
 9403 30-scsp-20-sgc.175 -10.85  9   5                     2    1  TLA,TLB       0.0  -15.1  131.0  131.0   N     2     2    7254    -29    11   3846    334  19939   3408   -363  -19928
rail_acsr_8000.wir       1049   94   1.56    3.15   19873  rail_acsr_8000.wir       969  265    1.56    3.15  19873  \par
 9403 30-scsp-20-sgc.175 -10.85  9   5                     3    1  MLA,MLB       0.0  -15.3  109.0  109.0   N     2     2    7254    -22    11   3846    341  19945   3408   -364  -19934
rail_acsr_8000.wir       1049   94   1.56    3.15   19880  rail_acsr_8000.wir       969  265    1.56    3.15  19880  \par
 9403 30-scsp-20-sgc.175 -10.85  9   5                     4    1  BLA,BLB       0.0  -15.5   87.0   87.0   N     2     2    7254    -14    11   3846    349  19945   3408   -364  -19934
rail_acsr_8000.wir       1049   94   1.56    3.15   19880  rail_acsr_8000.wir       969  265    1.56    3.15  19880  \par
 9403 30-scsp-20-sgc.175 -10.85 10   5 ASCE Ice/Wind NA    1    1    SL:E        0.0   -9.1  153.0  153.0   N     1     1    1411  -2049    14    760  -1000   5353    651  -1048   -5339
7#8_alumoweld_4200#.wir  1050   94   1.11    1.45    5414  7#8_alumoweld_4200#.wir  970  265    1.11    1.45   5414  \par
 9403 30-scsp-20-sgc.175 -10.85 10   5                     2    1  TLA,TLB       0.0  -15.1  131.0  131.0   N     2     2    7254  -6351    81   3846  -2957  19721   3408  -3394  -19640
rail_acsr_8000.wir       1049   94   1.56    3.15   19873  rail_acsr_8000.wir       969  265    1.56    3.15  19873  \par
 9403 30-scsp-20-sgc.175 -10.85 10   5                     3    1  MLA,MLB       0.0  -15.3  109.0  109.0   N     2     2    7254  -6345    82   3846  -2950  19729   3408  -3395  -19647
rail_acsr_8000.wir       1049   94   1.56    3.15   19880  rail_acsr_8000.wir       969  265    1.56    3.15  19880  \par
 9403 30-scsp-20-sgc.175 -10.85 10   5                     4    1  BLA,BLB       0.0  -15.5   87.0   87.0   N     2     2    7254  -6337    83   3846  -2942  19730   3408  -3395  -19647
rail_acsr_8000.wir       1049   94   1.56    3.15   19880  rail_acsr_8000.wir       969  265    1.56    3.15  19880  \par
 9403 30-scsp-20-sgc.175 -10.85 11  17 NU Ice              1    1    SL:E        0.0   -9.1  153.0  153.0   N     1     1    2142  -1083     9   1144   -487   6279    997   -596   -6270
7#8_alumoweld_4200#.wir  1050   94   0.00    2.18    6298  7#8_alumoweld_4200#.wir  970  265    0.00    2.18   6298  \par
 9403 30-scsp-20-sgc.175 -10.85 11  17                     2    1  TLA,TLB       0.0  -15.1  131.0  131.0   N     2     2    9227  -3840    55   4892  -1579  23873   4335  -2261  -23818
rail_acsr_8000.wir       1049   94   0.00    4.14   23925  rail_acsr_8000.wir       969  265    0.00    4.14  23925  \par
 9403 30-scsp-20-sgc.175 -10.85 11  17                     3    1  MLA,MLB       0.0  -15.3  109.0  109.0   N     2     2    9227  -3833    56   4892  -1570  23880   4335  -2262  -23825
rail_acsr_8000.wir       1049   94   0.00    4.14   23932  rail_acsr_8000.wir       969  265    0.00    4.14  23932  \par
```

```
 9403 30-scsp-20-sgc.175 -10.85 11  17                   4     1  BLA,BLB      0.0  -15.5   87.0   87.0    N     2     2     9227   -3823      56      4892   -1561   23881      4335   -2262   -23824
rail_acsr_8000.wir       1049   94    0.00    4.14   23932  rail_acsr_8000.wir       969  265    0.00    4.14   23932  \par
 9403 30-scsp-20-sgc.175 -10.85 12  14 Deflection NA+     1     1     SL:E      0.0   -9.1  153.0  153.0    N     1     1      251    -205       2       136     -92    1190       115    -113    -1188
7#8_alumoweld_4200#.wir  1050   94    0.00    0.26    1194  7#8_alumoweld_4200#.wir  970  265    0.00    0.26    1194  \par
 9403 30-scsp-20-sgc.175 -10.85 12  14                   2     1  TLA,TLB      0.0  -15.1  131.0  131.0    N     2     2     3103   -1058      15      1625    -435    6578      1477    -623    -6563
rail_acsr_8000.wir       1049   94    0.00    1.08    6592  rail_acsr_8000.wir       969  265    0.00    1.08    6592  \par
 9403 30-scsp-20-sgc.175 -10.85 12  14                   3     1  MLA,MLB      0.0  -15.3  109.0  109.0    N     2     2     3103   -1056      15      1625    -433    6579      1477    -623    -6564
rail_acsr_8000.wir       1049   94    0.00    1.08    6594  rail_acsr_8000.wir       969  265    0.00    1.08    6594  \par
 9403 30-scsp-20-sgc.175 -10.85 12  14                   4     1  BLA,BLB      0.0  -15.5   87.0   87.0    N     2     2     3102   -1053      15      1625    -430    6580      1477    -623    -6564
rail_acsr_8000.wir       1049   94    0.00    1.08    6594  rail_acsr_8000.wir       969  265    0.00    1.08    6594  \par
 9403 30-scsp-20-sgc.175 -10.85 13  19 Construction NA+   1     1     SL:E      0.0   -9.1  153.0  153.0    N     1     1      374    -231       2       204     -96    1993       170    -135    -1990
7#8_alumoweld_4200#.wir  1050   94    0.11    0.39    1994  7#8_alumoweld_4200#.wir  970  265    0.11    0.39    1994  \par
 9403 30-scsp-20-sgc.175 -10.85 13  19                   2     1  TLA,TLB      0.0  -15.1  131.0  131.0    N     2     2     4642   -1051      17      2436    -358   10766      2206    -693   -10749
rail_acsr_8000.wir       1049   94    0.34    1.61   10766  rail_acsr_8000.wir       969  265    0.34    1.61   10766  \par
 9403 30-scsp-20-sgc.175 -10.85 13  19                   3     1  MLA,MLB      0.0  -15.3  109.0  109.0    N     2     2     4642   -1047      17      2436    -354   10770      2206    -693   -10753
rail_acsr_8000.wir       1049   94    0.34    1.61   10770  rail_acsr_8000.wir       969  265    0.34    1.61   10770  \par
 9403 30-scsp-20-sgc.175 -10.85 13  19                   4     1  BLA,BLB      0.0  -15.5   87.0   87.0    N     2     2     4642   -1043      18      2436    -350   10771      2206    -693   -10753
rail_acsr_8000.wir       1049   94    0.34    1.61   10770  rail_acsr_8000.wir       969  265    0.34    1.61   10770  \par
 9403 30-scsp-20-sgc.175 -10.85 14  19 Construction NA-   1     1     SL:E      0.0   -9.1  153.0  153.0    N     1     1      374    -455       4       204     -212   1984       170    -242    -1980
7#8_alumoweld_4200#.wir  1050   94    0.11    0.39    1994  7#8_alumoweld_4200#.wir  970  265    0.11    0.39    1994  \par
 9403 30-scsp-20-sgc.175 -10.85 14  19                   2     1  TLA,TLB      0.0  -15.1  131.0  131.0    N     2     2     4642   -2406      32      2436   -1063   10719      2206   -1342   -10687
rail_acsr_8000.wir       1049   94    0.34    1.61   10766  rail_acsr_8000.wir       969  265    0.34    1.61   10766  \par
 9403 30-scsp-20-sgc.175 -10.85 14  19                   3     1  MLA,MLB      0.0  -15.3  109.0  109.0    N     2     2     4642   -2402      33      2436   -1059   10724      2206   -1343   -10691
rail_acsr_8000.wir       1049   94    0.34    1.61   10770  rail_acsr_8000.wir       969  265    0.34    1.61   10770  \par
 9403 30-scsp-20-sgc.175 -10.85 14  19                   4     1  BLA,BLB      0.0  -15.5   87.0   87.0    N     2     2     4642   -2398      33      2436   -1055   10724      2206   -1343   -10691
rail_acsr_8000.wir       1049   94    0.34    1.61   10770  rail_acsr_8000.wir       969  265    0.34    1.61   10770  \par
\par
\par
Structure loads written to the following LCA files:\par
  c:\\pls\\temp\\9403.lca\par
\par
}
```



2 / EL-1 COAX CABLE PLAN

SCALE: 3/4" = 1'-0"

1 / EL-1 TOWER ELEVATION

SCALE: NOT TO SCALE

REVISIONS		
00	5/7/12	ISSUED FOR NU REVIEW

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CT5279
MERIDEN EAST
CL&P 9403

74 BIRDSEY AVE
MERIDEN, CT 06450

PROJECT NO:	12014.C07
DRAWN BY:	TJL
CHECKED BY:	CFC
SCALE:	AS NOTED
DATE:	4/26/12

TOWER AND MAST ELEVATION

EL-1

DWG. 1 OF 1

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Subject: Load Analysis of AT&T Equipment on CL&P Structure #9403

Location: Meriden, CT

Rev. 0: 4/26/12 Prepared by: T.J.L Checked by: C.F.C.
Job No. 12014.CO7

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 PCS Mast Above Grade =	TME := 175.5	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 = $Kz := 2.01 \cdot \left(\frac{TME}{900}\right)^{\frac{2}{9.5}} = 1.425$ (NESC 2007 Table 250-2)

Exposure Factor = $Es := 0.346 \left[\frac{33}{(0.67 \cdot TME)}\right]^{\frac{1}{7}} = 0.289$ (NESC 2007 Table 250-3)

Response Term = $Bs := \frac{1}{\left(1 + 0.375 \cdot \frac{TME}{220}\right)} = 0.77$ (NESC 2007 Table 250-3)

Gust Response Factor = $Grf := \frac{\left[1 + \left(2.7 \cdot Es \cdot Bs^{\frac{1}{2}}\right)\right]}{kv^2} = 0.823$ (NESC 2007 Table 250-3)

Wind Pressure = $qz := 0.00256 \cdot Kz \cdot V^2 \cdot Grf \cdot I = 36.3$ psf (NESC 2007 Section 250.C.2)

NESC Extreme Ice w/ Wind Components

Heavy Wind Pressure =	$p_{ex} := 6.4$	psf	(User Input NESC 2007 Figure 250-3 & Table 250-4)
Radial Ice Thickness =	$Ir_{ex} := 0.75$	in	(User Input NESC 2007 Figure 250-3)

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 Wind Loading =	**2.5**	(User Input)
NESC Extreme Wind Loading =	**1.0**	(User Input)
NESC Extreme Ice w/ Wind Loading =	**1.0**	(User Input)

Overload Factors for Vertical Loads:

NESC Heavy Wind Loading =	**1.5**	(User Input)
NESC Extreme Wind Loading =	**1.0**	(User Input)
NESC Extreme Ice w/ Wind Loading =	**1.0**	(User Input)

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Subject: Load Analysis of AT&T Equipment on CL&P Structure #9403

Location: Meriden, CT

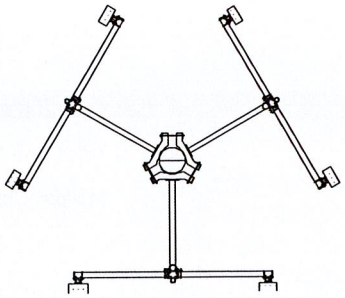
Rev. 0: 4/26/12

Prepared by: T.J.L Checked by: C.F.C.
Job No. 12014.CO7

Development of Wind & Ice Load on Antennas

Proposed Antenna Data: (AT&T)

Antenna Model =	KMW AM-X-CD-16-65-00T-RET		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 72$	in	(User Input)
Antenna Width =	$W_{ant} := 11.8$	in	(User Input)
Antenna Thickness =	$T_{ant} := 5.9$	in	(User Input)
Antenna Weight =	$WT_{ant} := 49$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 3$		(User Input)



Gravity Load (without ice)

Weight of All Antennas = $Wt_{ant1} := WT_{ant} \cdot N_{ant} = 147$ lbs

Gravity Load (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 5013$ cu in

Volume of Ice on Each Antenna = $V_{ice} := \left(L_{ant} + 2 \cdot Ir\right)\left(W_{ant} + 2 \cdot Ir\right)\left(T_{ant} + 2 \cdot Ir\right) - V_{ant} = 1435$ cu in

Weight of Ice on Each Antenna = $W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 46$ lbs

Weight of Ice on All Antennas = $Wt_{ice.ant1} := W_{ICEant} \cdot N_{ant} = 139$ lbs

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each Antenna = $V_{ice.ex} := \left(L_{ant} + 2 \cdot Ir_{ex}\right)\left(W_{ant} + 2 \cdot Ir_{ex}\right)\left(T_{ant} + 2 \cdot Ir_{ex}\right) - V_{ant} = 2221$ cu in

Weight of Extreme Ice on Each Antenna = $W_{ICE.exant} := \frac{V_{ice.ex}}{1728} \cdot Id = 72$ lbs

Weight of Extreme Ice on All Antennas = $Wt_{ice.ex.ant1} := W_{ICE.exant} \cdot N_{ant} = 216$ lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice = $SA_{ICEant} := \frac{\left(L_{ant} + 2 \cdot Ir\right) \cdot \left(W_{ant} + 2 \cdot Ir\right)}{144} = 6.5$ 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

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 = $F_{ant1} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 1286$ lbs

Wind Load (NESC Extreme Ice w/ Wind)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Extreme Ice = $SA_{ICE.exant} := \frac{(L_{ant} + 2 \cdot Ir_{ex}) \cdot (W_{ant} + 2 \cdot Ir_{ex})}{144} = 6.8$ sf

Antenna Projected Surface Area w/ Extreme Ice = $A_{ICE.exant} := SA_{ICE.exant} \cdot N_{ant} = 20.4$ sf

Total Antenna Wind Force w/ Extreme Ice = $Fi_{ex.ant1} := p_{ex} \cdot Cd_F \cdot A_{ICE.exant} \cdot m = 261$ lbs

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Subject: Load Analysis of AT&T Equipment on CL&P Structure #9403

Location: Meriden, CT

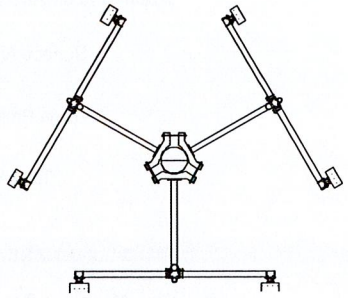
Rev. 0: 4/26/12

Prepared by: T.J.L Checked by: C.F.C.
Job No. 12014.CO7

Development of Wind & Ice Load on Antennas

Existing Antenna Data: (AT&T)

Antenna Model =	Powerwave 7770		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 55$	in	(User Input)
Antenna Width =	$W_{ant} := 11.0$	in	(User Input)
Antenna Thickness =	$T_{ant} := 5$	in	(User Input)
Antenna Weight =	$WT_{ant} := 39$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 3$		(User Input)



Gravity Load (without ice)

Weight of All Antennas = $Wt_{ant2} := WT_{ant} \cdot N_{ant} = 117$ lbs

Gravity Load (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 3025$ cu in

Volume of Ice on Each Antenna = $V_{ice} := (L_{ant} + 2 \cdot Ir)(W_{ant} + 2 \cdot Ir)(T_{ant} + 2 \cdot Ir) - V_{ant} = 1007$ cu in

Weight of Ice on Each Antenna = $W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 33$ lbs

Weight of Ice on All Antennas = $Wt_{ice.ant2} := W_{ICEant} \cdot N_{ant} = 98$ lbs

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each Antenna = $V_{ice.ex} := (L_{ant} + 2 \cdot Ir_{ex})(W_{ant} + 2 \cdot Ir_{ex})(T_{ant} + 2 \cdot Ir_{ex}) - V_{ant} = 1566$ cu in

Weight of Extreme Ice on Each Antenna = $W_{ICE.exant} := \frac{V_{ice.ex}}{1728} \cdot Id = 51$ lbs

Weight of Extreme Ice on All Antennas = $Wt_{ice.ex.ant2} := W_{ICE.exant} \cdot N_{ant} = 152$ lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice = $SA_{ICEant} := \frac{(L_{ant} + 2 \cdot Ir) \cdot (W_{ant} + 2 \cdot Ir)}{144} = 4.7$ sf

Antenna Projected Surface Area w/ Ice = $A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 14$ sf

Total Antenna Wind Force w/ Ice = $Fi_{ant2} := p \cdot Cd_F \cdot A_{ICEant} = 90$ lbs

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna = $SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 4.2$ sf

Antenna Projected Surface Area = $A_{ant} := SA_{ant} \cdot N_{ant} = 12.6$ sf

Total Antenna Wind Force = $F_{ant2} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 916$ lbs

Wind Load (NESC Extreme Ice w/ Wind)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Extreme Ice = $SA_{ICE.exant} := \frac{(L_{ant} + 2 \cdot Ir_{ex}) \cdot (W_{ant} + 2 \cdot Ir_{ex})}{144} = 4.9$ sf

Antenna Projected Surface Area w/ Extreme Ice = $A_{ICE.exant} := SA_{ICE.exant} \cdot N_{ant} = 14.7$ sf

Total Antenna Wind Force w/ Extreme Ice = $Fi_{ex.ant2} := p_{ex} \cdot Cd_F \cdot A_{ICE.exant} \cdot m = 188$ lbs

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Subject: Load Analysis of AT&T Equipment on CL&P Structure #9403

Location: Meriden, CT

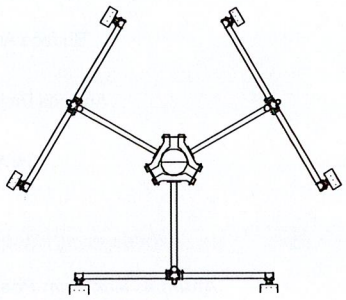
Rev. 0: 4/26/12

Prepared by: T.J.L Checked by: C.F.C.
Job No. 12014.CO7

Development of Wind & Ice Load on TMA's

Proposed TMA Data: (AT&T)

TMA Model =	CCI DTMABP7819VG12A		
TMA Shape =	Flat		(User Input)
TMA Height =	$L_{TMA} := 14.25$	in	(User Input)
TMA Width =	$W_{TMA} := 11.46$	in	(User Input)
TMA Thickness =	$T_{TMA} := 4.17$	in	(User Input)
TMA Weight =	$WT_{TMA} := 20$	lbs	(User Input)
Number of TMA's =	$N_{TMA} := 3$		(User Input)



Gravity Load (without ice)

Weight of All TMA's = $Wt_{TMA1} := WT_{TMA} \cdot N_{TMA} = 60$ lbs

Gravity Load (ice only)

Volume of Each TMA = $V_{TMA} := L_{TMA} \cdot W_{TMA} \cdot T_{TMA} = 681$ cu in

Volume of Ice on Each TMA = $V_{ice} := (L_{TMA} + 2 \cdot Ir)(W_{TMA} + 2 \cdot Ir)(T_{TMA} + 2 \cdot Ir) - V_{TMA} = 301$ cu in

Weight of Ice on Each TMA = $W_{ICETMA} := \frac{V_{ice}}{1728} \cdot Id = 10$ lbs

Weight of Ice on All TMA's = $Wt_{ice.TMA1} := W_{ICETMA} \cdot N_{TMA} = 29$ lbs

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each TMA = $V_{ice.ex} := (L_{TMA} + 2 \cdot Ir_{ex})(W_{TMA} + 2 \cdot Ir_{ex})(T_{TMA} + 2 \cdot Ir_{ex}) - V_{TMA} = 476$ cu in

Weight of Extreme Ice on Each TMA = $W_{ICE.exTMA} := \frac{V_{ice.ex}}{1728} \cdot Id = 15$ lbs

Weight of Extreme Ice on All TMA's = $Wt_{ice.ex.TMA1} := W_{ICE.exTMA} \cdot N_{TMA} = 46$ lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all TMA's Simultaneously

Surface Area for One TMA w/ Ice = $SA_{ICETMA} := \frac{(L_{TMA} + 2 \cdot Ir) \cdot (W_{TMA} + 2 \cdot Ir)}{144} = 1.3$ sf

TMA Projected Surface Area w/ Ice = $A_{ICETMA} := SA_{ICETMA} \cdot N_{TMA} = 4$ sf

Total TMA Wind Force w/ Ice = $Fi_{TMA1} := p \cdot Cd_F \cdot A_{ICETMA} = 25$ lbs

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all TMA's Simultaneously

Surface Area for One TMA = $SA_{TMA} := \frac{L_{TMA} \cdot W_{TMA}}{144} = 1.1$ sf

TMA Projected Surface Area = $A_{TMA} := SA_{TMA} \cdot N_{TMA} = 3.4$ sf

Total TMA Wind Force = $F_{TMA1} := qz \cdot Cd_F \cdot A_{TMA} \cdot m = 247$ lbs

Wind Load (NESC Extreme Ice w/ Wind)

Assumes Maximum Possible Wind Pressure Applied to all TMA's Simultaneously

Surface Area for One TMA w/ Extreme Ice = $SA_{ICE.exTMA} := \frac{(L_{TMA} + 2 \cdot Ir_{ex}) \cdot (W_{TMA} + 2 \cdot Ir_{ex})}{144} = 1.4$ sf

TMA Projected Surface Area w/ Extreme Ice = $A_{ICE.exTMA} := SA_{ICE.exTMA} \cdot N_{TMA} = 4.3$ sf

Total TMA Wind Force w/ Extreme Ice = $Fi_{ex.TMA1} := p_{ex} \cdot Cd_F \cdot A_{ICE.exTMA} \cdot m = 54$ lbs

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Subject: Load Analysis of AT&T Equipment on CL&P Structure #9403

Location: Meriden, CT

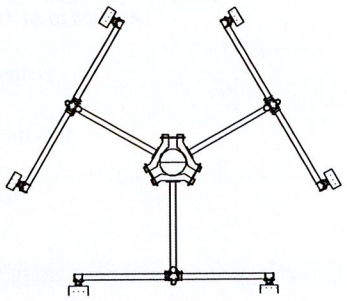
Rev. 0: 4/26/12

Prepared by: T.J.L Checked by: C.F.C.
Job No. 12014.CO7

Development of Wind & Ice Load on TMA's

Existing TMA Data: (AT&T)

TMA Model =	Powerwave LGP 21401		
TMA Shape =	Flat		(User Input)
TMA Height =	$L_{TMA} := 14.4$	in	(User Input)
TMA Width =	$W_{TMA} := 9.2$	in	(User Input)
TMA Thickness =	$T_{TMA} := 2.6$	in	(User Input)
TMA Weight =	$WT_{TMA} := 14$	lbs	(User Input)
Number of TMA's =	$N_{TMA} := 6$		(User Input)



Gravity Load (without ice)

Weight of All TMA's = $Wt_{TMA2} := WT_{TMA} \cdot N_{TMA} = 84$ lbs

Gravity Load (ice only)

Volume of Each TMA = $V_{TMA} := L_{TMA} \cdot W_{TMA} \cdot T_{TMA} = 344$ cu in

Volume of Ice on Each TMA = $V_{ice} := (L_{TMA} + 2 \cdot Ir)(W_{TMA} + 2 \cdot Ir)(T_{TMA} + 2 \cdot Ir) - V_{TMA} = 221$ cu in

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

Weight of Ice on All TMA's = $Wt_{ice.TMA2} := W_{ICETMA} \cdot N_{TMA} = 43$ lbs

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each TMA = $V_{ice.ex} := (L_{TMA} + 2 \cdot Ir_{ex})(W_{TMA} + 2 \cdot Ir_{ex})(T_{TMA} + 2 \cdot Ir_{ex}) - V_{TMA} = 353$ cu in

Weight of Extreme Ice on Each TMA = $W_{ICE.exTMA} := \frac{V_{ice.ex}}{1728} \cdot Id = 11$ lbs

Weight of Extreme Ice on All TMA's = $Wt_{ice.ex.TMA2} := W_{ICE.exTMA} \cdot N_{TMA} = 69$ lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all TMA's Simultaneously

Surface Area for One TMA w/ Ice = $SA_{ICETMA} := \frac{(L_{TMA} + 2 \cdot Ir) \cdot (W_{TMA} + 2 \cdot Ir)}{144} = 1.1$ sf

TMA Projected Surface Area w/ Ice = $A_{ICETMA} := SA_{ICETMA} \cdot N_{TMA} = 6.5$ sf

Total TMA Wind Force w/ Ice = $Fi_{TMA2} := p \cdot Cd_F \cdot A_{ICETMA} = 42$ lbs

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all TMA's Simultaneously

Surface Area for One TMA = $SA_{TMA} := \frac{L_{TMA} \cdot W_{TMA}}{144} = 0.9$ sf

TMA Projected Surface Area = $A_{TMA} := SA_{TMA} \cdot N_{TMA} = 5.5$ sf

Total TMA Wind Force = $F_{TMA2} := qz \cdot Cd_F \cdot A_{TMA} \cdot m = 401$ lbs

Wind Load (NESC Extreme Ice w/ Wind)

Assumes Maximum Possible Wind Pressure Applied to all TMA's Simultaneously

Surface Area for One TMA w/ Extreme Ice = $SA_{ICE.exTMA} := \frac{(L_{TMA} + 2 \cdot Ir_{ex}) \cdot (W_{TMA} + 2 \cdot Ir_{ex})}{144} = 1.2$ sf

TMA Projected Surface Area w/ Extreme Ice = $A_{ICE.exTMA} := SA_{ICE.exTMA} \cdot N_{TMA} = 7.1$ sf

Total TMA Wind Force w/ Extreme Ice = $Fi_{ex.TMA2} := p_{ex} \cdot Cd_F \cdot A_{ICE.exTMA} \cdot m = 91$ lbs

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Subject: Load Analysis of AT&T Equipment on CL&P Structure #9403

Location: Meriden, CT

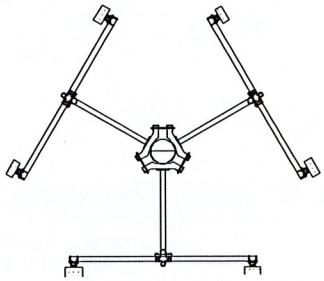
Rev. 0: 4/26/12

Prepared by: T.J.L Checked by: C.F.C.
Job No. 12014.CO7

Development of Wind & Ice Load on Antenna Mounts

Mount Data: (AT&T)

Mount Type:	Valmont 10-6" T-Arm Co-Location Kit		
Mount Shape =	Flat		
Mount Projected Surface Area =	$CdAa := 33.3$	sf	(User Input)
Mount Projected Surface Area w/ Ice =	$CdAa_{ice} := 44.4$	sf	(User Input)
Mount Projected Surface Area w/ Extreme Ice =	$CdAa_{ice.ex} := 55.6$	sf	(User Input)
Mount Weight =	$WT_{mnt} := 1170$	lbs	(User Input)
Mount Weight w/ Ice =	$WT_{mnt.ice} := 1356$	lbs	(User Input)
Mount Weight w/ Extreme Ice =	$WT_{mnt.ice.ex} := 1845$	lbs	(User Input)



Gravity Loads (without ice)

Weight of All Mounts = $Wt_{mnt1} := WT_{mnt} = 1170$ lbs

Gravity Load (ice only)

Weight of Ice on All Mounts = $Wt_{ice.mnt1} := WT_{mnt.ice} - WT_{mnt} = 186$ lbs

Gravity Load (Extreme ice only)

Weight of Extreme Ice on All Mounts = $Wt_{ice.ex.mnt1} := WT_{mnt.ice.ex} - WT_{mnt} = 675$ lbs

Wind Load (NESC Heavy)

Total Mount Wind Force w/ Ice = $Fi_{mnt1} := p \cdot CdAa_{ice} = 178$ lbs

Wind Load (NESC Extreme)

Total Mount Wind Force = $F_{mnt1} := qz \cdot CdAa \cdot m = 1512$ lbs

Wind Load (NESC Extreme Ice w/ Wind)

Total Mount Wind Force w/ Extreme Ice = $Fi_{ex.mnt1} := p_{ex} \cdot CdAa_{ice.ex} \cdot m = 445$ lbs

Total Equipment Loads:

AT&T @ 173-ft AGL

NESC Heavy Wind Vertical =

$$\left(Wt_{ant1} + Wt_{ice.ant1} + Wt_{ant2} + Wt_{ice.ant2} + Wt_{TMA1} + Wt_{ice.TMA1} + Wt_{TMA2} + Wt_{ice.TMA2} + Wt_{mnt1} + Wt_{ice.mnt1}\right) \cdot 1.5 = 3111 \text{ lbs}$$

NESC Heavy Wind Trasnsverse = $\left(Fi_{ant1} + Fi_{ant2} + Fi_{TMA1} + Fi_{TMA2} + Fi_{mnt1}\right) \cdot 2.5 = 1148$ lbs

NESC Extreme Wind Vertical = $\left(Wt_{ant1} + Wt_{ant2} + Wt_{TMA1} + Wt_{TMA2} + Wt_{mnt1}\right) = 1578$ lbs

NESC Extreme Wind Trasnsverse = $\left(F_{ant1} + F_{ant2} + F_{TMA1} + F_{TMA2} + F_{mnt1}\right) = 4363$ lbs

NESC Extreme Ice w/ Wind Vertical =

$$\left(Wt_{ant1} + Wt_{ice.ex.ant1} + Wt_{ant2} + Wt_{ice.ex.ant2} + Wt_{TMA1} + Wt_{ice.ex.TMA1} + Wt_{TMA2} + Wt_{ice.ex.TMA2} + Wt_{mnt1} + Wt_{ice.ex.mnt1}\right) = 2736 \text{ lbs}$$

NESC Extreme Ice w/ Wind Trasnsverse = $\left(Fi_{ex.ant1} + Fi_{ex.ant2} + Fi_{ex.TMA1} + Fi_{ex.TMA2} + Fi_{ex.mnt1}\right) = 1039$ lbs

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Subject:	Coax Cable on CL&P Pole # 9403
Location:	Meriden, CT
Rev. 0: 4/26/12	Prepared by: T.J.L Checked by: C.F.C. Job No. 12014.CO7

Coax Cable on CL&P Pole

Distance Between Coax Cable Attach Points =

Coaxial Cable Span = $Coax_{Span} := \begin{pmatrix} 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \end{pmatrix} \cdot ft$ *(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 = $NP_{coax} := 2$ *(User Input)*

Extreme Wind Pressure = $qz := 36.3 \cdot psf$ *(User Input)*

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)*

Extreme Ice w/ Wind Pressure = $p_{ex} := 6.4 \cdot psf$ *(User Input)*

Extreme Radial Ice Thickness = $Ir_{ex} := 0.75 \cdot in$ *(User Input)*

Shape Factor = $Cd_{coax} := 1.45$ *(User Input)*

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

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

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

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

Overload Factor for NESC Extreme Ice w/ Wind Transverse Load = $OF_{EIT} := 1.0$ *(User Input)*

Overload Factor for NESC Extreme Ice w/ Wind Vertical Load = $OF_{EIV} := 1.0$ *(User Input)*

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Subject: Coax Cable on CL&P Pole # 9403

Location: Meriden, CT

Rev. 0: 4/26/12

Prepared by: T.J.L Checked by: C.F.C.
Job No. 12014.CO7

Wind Area without Ice = $A := \left(NP_{coax} \cdot D_{coax}\right) = 3.96 \cdot in$

Wind Area with Ice = $A_{ice} := \left(NP_{coax} \cdot D_{coax} + 2 \cdot Ir\right) = 4.96 \cdot in$

Wind Area with Extreme Ice = $A_{ice.ex} := \left(NP_{coax} \cdot D_{coax} + 2 \cdot Ir_{ex}\right) = 5.46 \cdot in$

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 = $W_{ice} := Ai_{coax} \cdot Id \cdot N_{coax} = 18.179 \cdot plf$

Extreme Ice Area per Liner Ft = $Ai_{coax.ex} := \frac{\pi}{4} \cdot \left[\left(D_{coax} + 2 \cdot Ir_{ex}\right)^2 - D_{coax}^2\right] = 0.045\,ft^2$

Weight of Extreme Ice on All Coax Cables = $W_{ice.ex} := Ai_{coax.ex} \cdot Id \cdot N_{coax} = 30.018 \cdot plf$

Heavy Vertical Load =

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

Heavy Transverse Load =

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

$$Heavy_{Vert} = \begin{pmatrix} 460 \\ 460 \\ 460 \\ 460 \\ 460 \\ 460 \\ 460 \\ 460 \\ 460 \\ 460 \\ 460 \\ 460 \\ 460 \\ 460 \\ 460 \\ 460 \end{pmatrix} lb \qquad Heavy_{Trans} = \begin{pmatrix} 60 \\ 60 \\ 60 \\ 60 \\ 60 \\ 60 \\ 60 \\ 60 \\ 60 \\ 60 \\ 60 \\ 60 \\ 60 \\ 60 \\ 60 \\ 60 \end{pmatrix} lb$$

Extreme Wind Vertical Load =

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

Extreme Wind Transverse Load =

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

$$Extreme\_Wind_{Vert} = \begin{pmatrix} 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \end{pmatrix} lb \qquad Extreme\_Wind_{Trans} = \begin{pmatrix} 174 \\ 174 \\ 174 \\ 174 \\ 174 \\ 174 \\ 174 \\ 174 \\ 174 \\ 174 \\ 174 \\ 174 \\ 174 \\ 174 \\ 174 \\ 174 \end{pmatrix} lb$$

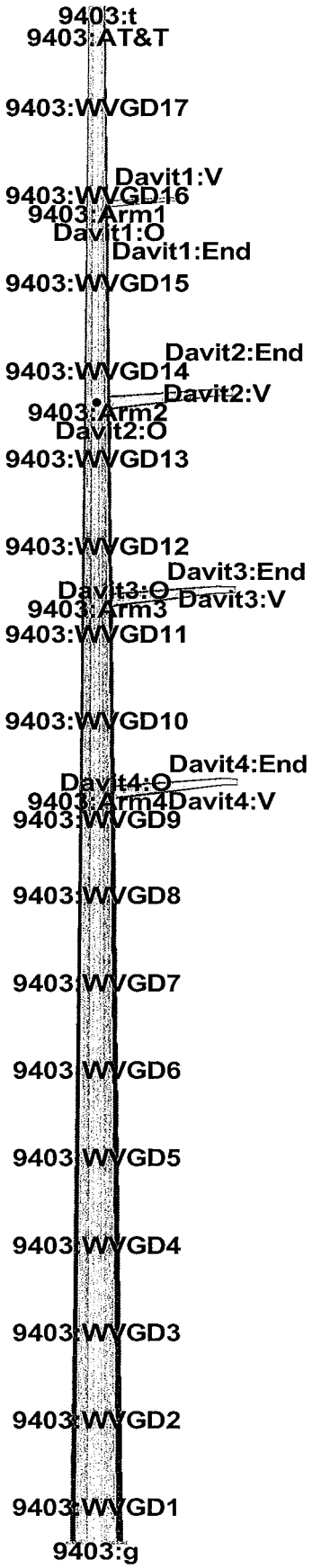
Extreme Ice w/ Wind Vertical Load =

$$Extreme\_Ice_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax} + W_{ice.ex}\right) \cdot Coax_{Span} \cdot OF_{EIV}\right]}$$

Extreme Ice w/ Wind Transverse Load =

$$Extreme\_Ice_{Trans} := \overrightarrow{\left(p_{ex} \cdot A_{ice.ex} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{EIT}\right)}$$

$$Extreme\_Ice_{Vert} = \begin{pmatrix} 425 \\ 425 \\ 425 \\ 425 \\ 425 \\ 425 \\ 425 \\ 425 \\ 425 \\ 425 \\ 425 \\ 425 \\ 425 \\ 425 \\ 425 \\ 425 \end{pmatrix} lb \qquad Extreme\_Ice_{Trans} = \begin{pmatrix} 42 \\ 42 \\ 42 \\ 42 \\ 42 \\ 42 \\ 42 \\ 42 \\ 42 \\ 42 \\ 42 \\ 42 \\ 42 \\ 42 \\ 42 \\ 42 \end{pmatrix} lb$$


9403:t
9403:AT&T
9403:WVGD17
Davit1:V
9403:WVGD16
9403:Arm1
Davit1:O
Davit1:End
9403:WVGD15
Davit2:End
9403:WVGD14
Davit2:V
9403:Arm2
Davit2:O
9403:WVGD13
9403:WVGD12
Davit3:End
Davit3:O
Davit3:V
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Davit4:End
Davit4:O
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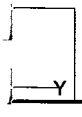
Y

Project Name : 12014.CO7 - Meriden, CT
Project Notes: CL&P Structure # 9403 / AT&T CT5279
Project File : J:\Jobs\1201400.WI\CO.07 - CT5279 - 74 Birdsey Ave., Meriden, CT\Rev (0)\Calcs\PLS-Pole\cl&p structure #9403.pol
Date run   : 1:22:33 PM Thursday, April 26, 2012
by   : PLS-POLE Version 11.11
Licensed to : Centek Engineering Inc

Successfully performed nonlinear analysis

The model has 0 warnings.

Loads from file: j:\jobs\1201400.wi\co.07 - ct5279 - 74 birdsey ave., meriden, ct\rev (0)\calcs\pls-pole\cl&p #9403.lca

*** Analysis Results:

Maximum element usage is 48.68% for Steel Pole "9403" in load case "NESC Extreme"
Maximum insulator usage is 13.69% for Clamp "Clamp2" in load case "NESC Heavy"

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Vert. Moment (ft-k)	Bending Moment (ft-k)	Found. Usage %
NESC Heavy	9403:g	-0.56	-37.20	117.13	37.21	4395.64	-54.86	5.03	4395.98	0.00
NESC Extreme	9403:g	-0.39	-62.64	65.48	62.64	6522.67	-43.02	5.96	6522.81	0.00
NESC Extreme Ice w/ Wind	9403:g	-0.36	-28.83	92.14	28.83	3525.77	-36.94	4.05	3525.97	0.00

Summary of Tip Deflections For All Load Cases:

Note: postive tip load results in positive rotation

Load Case	Joint Label	Long. Defl. (in)	Tran. Defl. (in)	Vert. Defl. (in)	Resultant Defl. (in)	Long. Rot. (deg)	Tran. Rot. (deg)	Twist (deg)
NESC Heavy	9403:t	0.54	50.63	-0.85	50.64	0.02	-2.38	-0.01
NESC Extreme	9403:t	0.42	71.49	-1.63	71.51	0.02	-3.47	-0.01
NESC Extreme Ice w/ Wind	9403:t	0.36	41.69	-0.59	41.69	0.02	-1.98	-0.01

Tubes Summary:

Pole Label	Tube Num.	Weight (lbs)	Load Case	Maximum Usage %	Resultant Moment (ft-k)
9403	1	2227	NESC Extreme	16.89	178.55
9403	2	3689	NESC Extreme	29.73	599.93
9403	3	4663	NESC Extreme	42.59	1460.29
9403	4	5445	NESC Extreme	45.11	2220.35
9403	5	6858	NESC Extreme	48.68	3416.14
9403	6	8717	NESC Extreme	46.16	4250.71
9403	7	10219	NESC Extreme	45.92	5604.54
9403	8	7100	NESC Extreme	47.08	6522.81

*** Overall summary for all load cases - Usage = Maximum Stress / Allowable Stress

Summary of Steel Pole Usages:

Steel Pole Label	Maximum Usage %	Load Case	Segment Number	Weight (lbs)
9403	48.68	NESC Extreme	36	51849.3

Summary of Tubular Davit Usages:

Tubular Davit Label	Maximum Usage %	Load Case	Segment Number	Weight (lbs)
Davit1	14.27	NESC Extreme Ice w/ Wind	1	163.2
Davit2	28.68	NESC Heavy	1	653.2
Davit3	28.82	NESC Heavy	1	653.2
Davit4	28.99	NESC Heavy	1	653.2

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
NESC Heavy	36.06	9403	Steel Pole
NESC Extreme	48.68	9403	Steel Pole
NESC Extreme Ice w/ Wind	29.52	9403	Steel Pole

Summary of Steel Pole Usages by Load Case:

Load Case	Maximum Usage %	Steel Pole Label	Segment Number
NESC Heavy	36.06	9403	36
NESC Extreme	48.68	9403	36
NESC Extreme Ice w/ Wind	29.52	9403	36

Summary of Base Plate Usages by Load Case:

Load Case	Pole Label	Bend Line #	Length (in)	Vertical Load (kips)	X Moment (ft-k)	Y Moment (ft-k)	Bending Stress (ksi)	Bolt Moment Sum (ft-k)	# Bolts Acting On Bend Line	Max Bolt Load For Bend Line (kips)	Minimum Plate Thickness (in)	Usage %
NESC Heavy	9403	11	30.657	117.127	4395.641	-54.868	14.696	71.276	6	76.487	1.830	29.39
NESC Extreme	9403	11	30.657	65.476	6522.668	-43.022	21.079	102.236	6	110.376	2.191	42.16
NESC Extreme Ice w/ Wind	9403	11	30.657	92.144	3525.772	-36.946	11.764	57.056	6	61.279	1.637	23.53

Summary of Tubular Davit Usages by Load Case:

Load Case	Maximum Usage %	Tubular Davit Label	Segment Number
NESC Heavy	28.99	Davit4	1
NESC Extreme	14.26	Davit4	1
NESC Extreme Ice w/ Wind	26.83	Davit4	1

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load Case	Weight (lbs)
Clamp1	Clamp	3.28	NESC Heavy	0.0
Clamp2	Clamp	13.69	NESC Heavy	0.0
Clamp3	Clamp	13.69	NESC Heavy	0.0
Clamp4	Clamp	13.68	NESC Heavy	0.0
Clamp5	Clamp	0.58	NESC Heavy	0.0
Clamp6	Clamp	0.58	NESC Heavy	0.0
Clamp7	Clamp	0.58	NESC Heavy	0.0
Clamp8	Clamp	0.58	NESC Heavy	0.0
Clamp9	Clamp	0.58	NESC Heavy	0.0
Clamp10	Clamp	0.58	NESC Heavy	0.0

Clamp11	Clamp	0.58	NESC Heavy	0.0
Clamp12	Clamp	0.58	NESC Heavy	0.0
Clamp13	Clamp	0.58	NESC Heavy	0.0
Clamp14	Clamp	0.58	NESC Heavy	0.0
Clamp15	Clamp	0.58	NESC Heavy	0.0
Clamp16	Clamp	0.58	NESC Heavy	0.0
Clamp17	Clamp	0.58	NESC Heavy	0.0
Clamp18	Clamp	0.58	NESC Heavy	0.0
Clamp19	Clamp	0.58	NESC Heavy	0.0
Clamp20	Clamp	0.58	NESC Heavy	0.0
Clamp21	Clamp	0.58	NESC Heavy	0.0
Clamp22	Clamp	5.80	NESC Extreme	0.0

*** Weight of structure (lbs):

Weight of Tubular Davit Arms:	2122.8
Weight of Steel Poles:	51849.3
Total:	53972.1

*** End of Report

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*****************************************************************************
*                                                                           *
*                                 PLS-POLE                                  *
*                    POLE AND FRAME ANALYSIS AND DESIGN                     *
*                Copyright Power Line Systems, Inc. 1999-2011               *
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Project Name : 12014.CO7 - Meriden, CT
Project Notes: CL&P Structure # 9403 / AT&T CT5279
Project File : J:\Jobs\1201400.WI\CO.07 - CT5279 - 74 Birdsey Ave., Meriden, CT\Rev (0)\Calcs\PLS-Pole\cl&p structure #9403.pol
Date run   : 1:22:32 PM Thursday, April 26, 2012
by   : PLS-POLE Version 11.11
Licensed to : Centek Engineering Inc

Successfully performed nonlinear analysis

The model has 0 warnings.

Modeling options:
  Offset Arms from Pole/Mast: Yes
  Offset Braces from Pole/Mast: Yes
  Offset Guys from Pole/Mast: Yes
  Offset Posts from Pole/Mast: Yes
  Offset Strains from Pole/Mast: Yes
  Use Alternate Convergence Process: No
  Steel poles checked with ASCE/SEI 48-05

Default Modulus of Elasticity for Steel = 29000.00 (ksi)
Default Weight Density for Steel = 490.00 (lbs/ft^3)

Steel Pole Properties:

Steel Pole Property Label	Stock Number	Length (ft)	Default Embedded Length (ft)	Base Plate	Shape	Tip Diameter (in)	Base Diameter (in)	Taper (in/ft)	Default Drag Coef.	Tubes	Modulus of Elasticity Override (ksi)	Weight Density Override (lbs/ft^3)	Shape At Base	Strength Check Type	Distance From Tip (ft)	Ultimate Trans. Load (kips)	Ultimate Long. Load (kips)
CL&P9403	9403	175.50	0	Yes	12F	23	72.03	0	1.3	8 tubes	0	0		Calculated	0.000	0.0000	0.0000

Steel Tubes Properties:

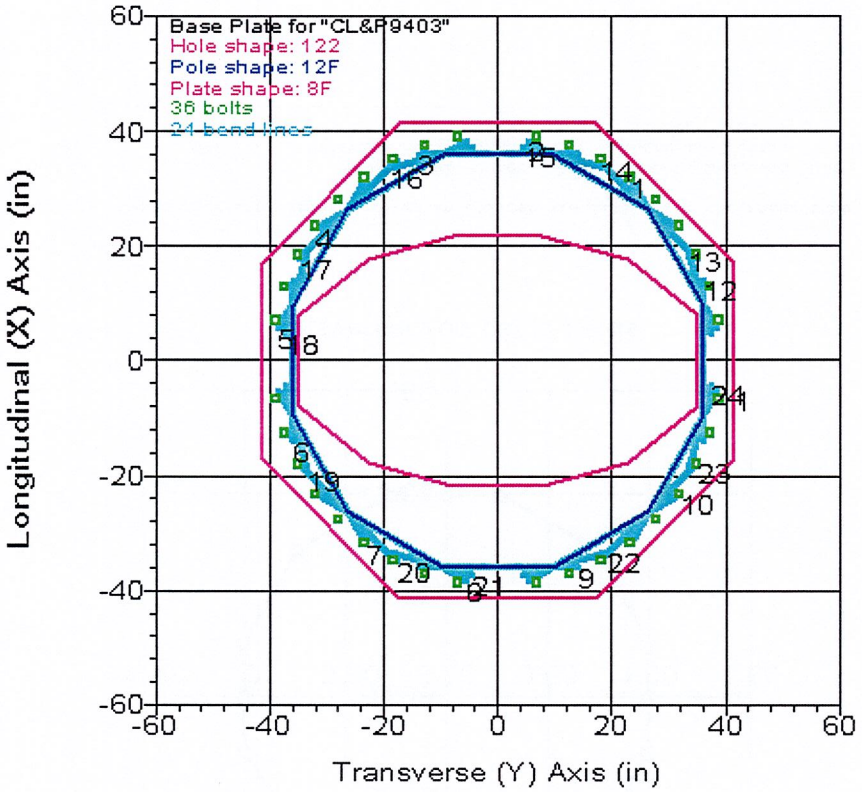
Pole Property	Tube No.	Length (ft)	Thickness (in)	Lap Length (ft)	Lap Gap (in)	Yield Stress (ksi)	Moment Cap. Override (ft-k)	Tube Weight (lbs)	Center of Gravity (ft)	Calculated Taper (in/ft)	Tube Top Diameter (in)	Tube Bot. Diameter (in)	1.5x Diam. Lap Length (ft)
CL&P9403	1	30	0.25	0.000	0.000	65.000	0.000	2227	15.81	0.29220	23.00	31.77	3.91
CL&P9403	2	30	0.3125	5.167	0.000	65.000	0.000	3689	15.61	0.29220	31.89	40.66	5.00
CL&P9403	3	27	0.375	0.000	0.000	65.000	0.000	4663	13.92	0.29220	38.52	46.41	5.71
CL&P9403	4	23	0.4375	6.750	0.000	65.000	0.000	5445	11.76	0.29220	46.54	53.26	6.55
CL&P9403	5	23.5	0.5	0.000	0.000	65.000	0.000	6858	12.00	0.29220	50.41	57.28	7.03
CL&P9403	6	23.5	0.5625	8.083	0.000	65.000	0.000	8717	11.97	0.29220	57.40	64.27	7.89
CL&P9403	7	23.5	0.625	0.000	0.000	65.000	0.000	10219	11.96	0.29220	60.78	67.65	8.30
CL&P9403	8	15	0.625	0.000	0.000	65.000	0.000	7100	7.58	0.29220	67.65	72.03	0.00

Base Plate Properties:

Pole Property	Plate Diam. (in)	Plate Shape	Plate Thick. (in)	Plate Weight (lbs)	Bend Line Length Override (in)	Hole Diam. (in)	Hole Shape	Steel Density (lbs/ft^3)	Steel Yield Stress (ksi)	Bolt Diam. (in)	Bolt Pattern Diam. (in)	Num. Of Bolts	Bolt Cage X Inertia (in^4)	Bolt Cage Y Inertia (in^4)
CL&P9403	83.000	8F	3.375	2932	0.000	70.000	122	490.00	50.000	2.250	79.000	36	111580.82	111580.82

Base Plate Bolt Coordinates for Property "CL&P9403":

Bolt X Coord.	Bolt Y Coord.	Bolt Angle (deg)
0.1741	0.9842	0
0.3228	0.9462	0
0.462	0.8861	0
0.5918	0.807	0
0.7057	0.7057	0
0.807	0.5918	0
0.8861	0.462	0
0.9462	0.3228	0
0.9842	0.1741	0



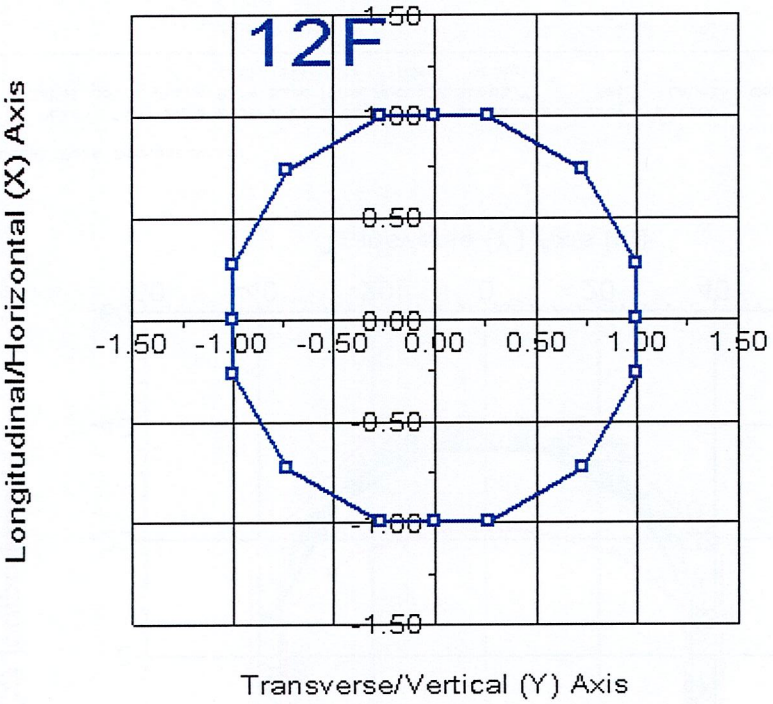
Steel Pole Connectivity:

Pole Label	Tip Joint	Base Joint	X of Base (ft)	Y of Base (ft)	Z of Base (ft)	Inclin. About X (deg)	Inclin. About Y (deg)	Property Set	Attach. Labels	Base Connect	Embed % Override	Embed C. Override (ft)
9403			0	0	0	0	0	CL&P9403	22 labels		0.00	0

Relative Attachment Labels for Steel Pole "9403":

Joint Label	Distance From Origin/Top Joint (ft)	Global Z of Attach (ft)
9403:Arm1	0.00	153.00
9403:Arm2	0.00	130.33
9403:Arm3	0.00	107.83
9403:Arm4	0.00	85.83
9403:WVGD1	0.00	5.00
9403:WVGD2	0.00	15.00
9403:WVGD3	0.00	25.00

9403:WVGD4	0.00	35.00
9403:WVGD5	0.00	45.00
9403:WVGD6	0.00	55.00
9403:WVGD7	0.00	65.00
9403:WVGD8	0.00	75.00
9403:WVGD9	0.00	85.00
9403:WVGD10	0.00	95.00
9403:WVGD11	0.00	105.00
9403:WVGD12	0.00	115.00
9403:WVGD13	0.00	125.00
9403:WVGD14	0.00	135.00
9403:WVGD15	0.00	145.00
9403:WVGD16	0.00	155.00
9403:WVGD17	0.00	165.00
9403:AT&T	0.00	173.00



Pole Steel Properties:

Warning: Capacities and usages printed in splices are listed for the inner tube except at the splice top which uses the outer tube. ??

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Outer Diam. (in)	Area (in^2)	T-Moment Inertia (in^4)	L-Moment Inertia (in^4)	D/t	W/t Max.	Fy (ksi)	Fa Min. (ksi)	ASCE Cap Trans. (ft-k)	ASCE Cap Long. (ft-k)
9403	9403:t	9403:t Ori	0.00	23.00	18.29	1211.58	1211.58	0.00	22.0	65.00	65.00	570.67	570.67
9403	9403:AT&T	9403:AT&T End	2.50	23.73	18.87	1332.06	1332.06	0.00	22.8	65.00	65.00	608.11	608.11
9403	9403:AT&T	9403:AT&T Ori	2.50	23.73	18.87	1332.06	1332.06	0.00	22.8	65.00	65.00	608.11	608.11

9403	#9403:0	Tube 1	End	6.50	24.90	19.81	1541.04	1541.04	0.00	24.0	65.00	65.00	670.48	670.48
9403	#9403:0	Tube 1	Ori	6.50	24.90	19.81	1541.04	1541.04	0.00	24.0	65.00	65.00	670.48	670.48
9403	9403:WVGD17	9403:WVGD17	End	10.50	26.07	20.75	1770.79	1770.79	0.00	25.3	65.00	65.00	735.90	735.90
9403	9403:WVGD17	9403:WVGD17	Ori	10.50	26.07	20.75	1770.79	1770.79	0.00	25.3	65.00	65.00	735.90	735.90
9403	#9403:1	Tube 1	End	15.50	27.53	21.93	2088.73	2088.73	0.00	26.8	65.00	65.00	821.96	821.96
9403	#9403:1	Tube 1	Ori	15.50	27.53	21.93	2088.73	2088.73	0.00	26.8	65.00	65.00	821.96	821.96
9403	9403:WVGD16	9403:WVGD16	End	20.50	28.99	23.10	2442.60	2442.60	0.00	28.4	65.00	65.00	912.78	912.78
9403	9403:WVGD16	9403:WVGD16	Ori	20.50	28.99	23.10	2442.60	2442.60	0.00	28.4	65.00	65.00	912.78	912.78
9403	9403:Arm1	9403:Arm1	End	22.50	29.57	23.57	2594.65	2594.65	0.00	29.0	65.00	65.00	950.43	950.43
9403	9403:Arm1	9403:Arm1	Ori	22.50	29.57	23.57	2594.65	2594.65	0.00	29.0	65.00	65.00	950.44	950.44
9403	#9403:2	Tube 1	End	26.25	30.67	24.45	2896.50	2896.50	0.00	30.2	65.00	64.65	1017.65	1017.65
9403	#9403:2	Tube 1	Ori	26.25	30.67	24.45	2896.50	2896.50	0.00	30.2	65.00	64.65	1017.65	1017.65
9403	#9403:3	SpliceT	End	30.00	31.77	25.33	3220.89	3220.89	0.00	31.4	65.00	63.50	1073.14	1073.14
9403	#9403:3	SpliceT	Ori	30.00	31.89	31.73	4050.26	4050.26	0.00	24.7	65.00	65.00	1375.86	1375.86
9403	9403:WVGD15	9403:WVGD15	End	30.50	32.04	31.88	4106.73	4106.73	0.00	24.8	65.00	65.00	1388.69	1388.69
9403	9403:WVGD15	9403:WVGD15	Ori	30.50	32.04	31.88	4106.73	4106.73	0.00	24.8	65.00	65.00	1388.69	1388.69
9403	#9403:4	Tube 2	End	35.50	33.50	33.35	4700.60	4700.60	0.00	26.0	65.00	65.00	1520.18	1520.18
9403	#9403:4	Tube 2	Ori	35.50	33.50	33.35	4700.60	4700.60	0.00	26.0	65.00	65.00	1520.18	1520.18
9403	9403:WVGD14	9403:WVGD14	End	40.50	34.96	34.81	5349.13	5349.13	0.00	27.3	65.00	65.00	1657.61	1657.61
9403	9403:WVGD14	9403:WVGD14	Ori	40.50	34.96	34.81	5349.13	5349.13	0.00	27.3	65.00	65.00	1657.62	1657.62
9403	9403:Arm2	9403:Arm2	End	45.17	36.32	36.18	6006.35	6006.35	0.00	28.5	65.00	65.00	1791.35	1791.35
9403	9403:Arm2	9403:Arm2	Ori	45.17	36.32	36.18	6006.35	6006.35	0.00	28.5	65.00	65.00	1791.36	1791.36
9403	#9403:5	Tube 2	End	47.83	37.10	36.97	6404.46	6404.46	0.00	29.1	65.00	65.00	1870.00	1870.00
9403	#9403:5	Tube 2	Ori	47.83	37.10	36.97	6404.47	6404.47	0.00	29.1	65.00	65.00	1870.00	1870.00
9403	9403:WVGD13	9403:WVGD13	End	50.50	37.88	37.75	6819.79	6819.79	0.00	29.8	65.00	65.04	1951.47	1951.47
9403	9403:WVGD13	9403:WVGD13	Ori	50.50	37.88	37.75	6819.80	6819.80	0.00	29.8	65.00	65.04	1951.47	1951.47
9403	#9403:6	SpliceT	End	54.83	39.15	39.02	7532.77	7532.77	0.00	30.9	65.00	63.97	2051.65	2051.65
9403	#9403:6	SpliceT	Ori	54.83	39.15	39.02	7532.77	7532.77	0.00	30.9	65.00	63.97	2051.65	2051.65
9403	#9403:7	Tube 2	End	57.42	39.28	46.91	9086.72	9086.72	0.00	25.4	65.00	65.00	2506.27	2506.27
9403	#9403:7	Tube 2	Ori	57.42	39.28	46.91	9086.72	9086.72	0.00	25.4	65.00	65.00	2506.27	2506.27
9403	#9403:8	SpliceB	End	60.00	40.03	47.82	9626.00	9626.00	0.00	25.9	65.00	65.00	2604.95	2604.95
9403	#9403:8	SpliceB	Ori	60.00	40.03	47.82	9626.00	9626.00	0.00	25.9	65.00	65.00	2604.95	2604.95
9403	9403:WVGD12	9403:WVGD12	End	60.50	40.18	47.99	9732.78	9732.78	0.00	26.0	65.00	65.00	2624.27	2624.27
9403	9403:WVGD12	9403:WVGD12	Ori	60.50	40.18	47.99	9732.78	9732.78	0.00	26.0	65.00	65.00	2624.27	2624.27
9403	#9403:9	Tube 3	End	64.08	41.23	49.26	10521.57	10521.57	0.00	26.8	65.00	65.00	2764.87	2764.87
9403	#9403:9	Tube 3	Ori	64.08	41.23	49.26	10521.58	10521.58	0.00	26.8	65.00	65.00	2764.87	2764.87
9403	9403:Arm3	9403:Arm3	End	67.67	42.27	50.52	11351.88	11351.88	0.00	27.5	65.00	65.00	2909.13	2909.13
9403	9403:Arm3	9403:Arm3	Ori	67.67	42.27	50.52	11351.88	11351.88	0.00	27.5	65.00	65.00	2909.13	2909.13
9403	9403:WVGD11	9403:WVGD11	End	70.50	43.10	51.52	12037.34	12037.34	0.00	28.1	65.00	65.00	3025.61	3025.61
9403	9403:WVGD11	9403:WVGD11	Ori	70.50	43.10	51.52	12037.34	12037.34	0.00	28.1	65.00	65.00	3025.61	3025.61
9403	#9403:10	Tube 3	End	75.50	44.56	53.28	13314.85	13314.85	0.00	29.2	65.00	65.00	3236.99	3236.99
9403	#9403:10	Tube 3	Ori	75.50	44.56	53.28	13314.85	13314.85	0.00	29.2	65.00	65.00	3236.99	3236.99
9403	9403:WVGD10	9403:WVGD10	End	80.50	46.02	55.04	14679.69	14679.69	0.00	30.2	65.00	64.64	3436.49	3436.49
9403	9403:WVGD10	9403:WVGD10	Ori	80.50	46.02	55.04	14679.70	14679.70	0.00	30.2	65.00	64.64	3436.49	3436.49
9403	#9403:11	SpliceT	End	81.83	46.41	55.51	15058.67	15058.67	0.00	30.5	65.00	64.37	3480.87	3480.87
9403	#9403:11	SpliceT	Ori	81.83	46.54	64.85	17640.52	17640.52	0.00	25.8	65.00	65.00	4106.55	4106.55
9403	#9403:12	Tube 4	End	85.75	47.68	66.46	18987.79	18987.79	0.00	26.5	65.00	65.00	4314.04	4314.04
9403	#9403:12	Tube 4	Ori	85.75	47.68	66.46	18987.79	18987.79	0.00	26.5	65.00	65.00	4314.04	4314.04
9403	9403:Arm4	9403:Arm4	End	89.67	48.83	68.07	20401.98	20401.98	0.00	27.2	65.00	65.00	4526.65	4526.65
9403	9403:Arm4	9403:Arm4	Ori	89.67	48.83	68.07	20401.98	20401.98	0.00	27.2	65.00	65.00	4526.65	4526.65
9403	9403:WVGD9	9403:WVGD9	End	90.50	49.07	68.41	20710.27	20710.27	0.00	27.4	65.00	65.00	4572.34	4572.34
9403	9403:WVGD9	9403:WVGD9	Ori	90.50	49.07	68.41	20710.27	20710.27	0.00	27.4	65.00	65.00	4572.34	4572.34
9403	#9403:13	Tube 4	End	94.29	50.18	69.97	22158.08	22158.08	0.00	28.1	65.00	65.00	4783.97	4783.97
9403	#9403:13	Tube 4	Ori	94.29	50.18	69.97	22158.09	22158.09	0.00	28.1	65.00	65.00	4783.97	4783.97
9403	#9403:14	SpliceT	End	98.08	51.28	71.53	23671.85	23671.85	0.00	28.7	65.00	65.00	5000.39	5000.39
9403	#9403:14	SpliceT	Ori	98.08	51.28	71.53	23671.86	23671.86	0.00	28.7	65.00	65.00	5000.39	5000.39
9403	9403:WVGD8	9403:WVGD8	End	100.50	51.12	81.38	26686.73	26686.73	0.00	24.7	65.00	65.00	5655.85	5655.85
9403	9403:WVGD8	9403:WVGD8	Ori	100.50	51.12	81.38	26686.73	26686.73	0.00	24.7	65.00	65.00	5655.85	5655.85
9403	#9403:15	SpliceB	End	104.83	52.38	83.41	28739.72	28739.72	0.00	25.4	65.00	65.00	5943.73	5943.73
9403	#9403:15	SpliceB	Ori	104.83	52.38	83.41	28739.72	28739.72	0.00	25.4	65.00	65.00	5943.73	5943.73
9403	#9403:16	Tube 5	End	107.67	53.21	84.74	30137.62	30137.62	0.00	25.8	65.00	65.00	6135.85	6135.85
9403	#9403:16	Tube 5	Ori	107.67	53.21	84.74	30137.62	30137.62	0.00	25.8	65.00	65.00	6135.85	6135.85
9403	9403:WVGD7	9403:WVGD7	End	110.50	54.04	86.07	31580.13	31580.13	0.00	26.3	65.00	65.00	6331.03	6331.03
9403	9403:WVGD7	9403:WVGD7	Ori	110.50	54.04	86.07	31580.13	31580.13	0.00	26.3	65.00	65.00	6331.03	6331.03
9403	#9403:17	Tube 5	End	115.50	55.50	88.42	34236.54	34236.54	0.00	27.1	65.00	65.00	6682.89	6682.89
9403	#9403:17	Tube 5	Ori	115.50	55.50	88.42	34236.54	34236.54	0.00	27.1	65.00	65.00	6682.89	6682.89
9403	9403:WVGD6	9403:WVGD6	End	120.50	56.96	90.77	37037.89	37037.89	0.00	27.8	65.00	65.00	7044.27	7044.27

9403	9403:WVGD6	9403:WVGD6	Ori	120.50	56.96	90.77	37037.90	37037.90	0.00	27.8	65.00	65.00	7044.27	7044.27
9403	#9403:18	SpliceT	End	121.58	57.28	91.28	37664.14	37664.14	0.00	28.0	65.00	65.00	7123.80	7123.80
9403	#9403:18	SpliceT	Ori	121.58	57.40	102.80	42513.09	42513.09	0.00	24.7	65.00	65.00	8023.42	8023.42
9403	#9403:19	Tube 6	End	126.04	58.70	105.16	45503.66	45503.66	0.00	25.3	65.00	65.00	8397.24	8397.24
9403	#9403:19	Tube 6	Ori	126.04	58.70	105.16	45503.67	45503.67	0.00	25.3	65.00	65.00	8397.24	8397.24
9403	9403:WVGD5	9403:WVGD5	End	130.50	60.01	107.52	48631.30	48631.30	0.00	25.9	65.00	65.00	8779.58	8779.58
9403	9403:WVGD5	9403:WVGD5	Ori	130.50	60.01	107.52	48631.31	48631.31	0.00	25.9	65.00	65.00	8779.58	8779.58
9403	#9403:20	Tube 6	End	133.75	60.96	109.23	50999.31	50999.31	0.00	26.4	65.00	65.00	9063.64	9063.64
9403	#9403:20	Tube 6	Ori	133.75	60.96	109.23	50999.32	50999.32	0.00	26.4	65.00	65.00	9063.64	9063.64
9403	#9403:21	SpliceT	End	137.00	61.91	110.95	53442.97	53442.97	0.00	26.8	65.00	65.00	9352.23	9352.23
9403	#9403:21	SpliceT	Ori	137.00	61.91	110.95	53442.97	53442.97	0.00	26.8	65.00	65.00	9352.23	9352.23
9403	9403:WVGD4	9403:WVGD4	End	140.50	61.80	122.95	58904.96	58904.96	0.00	23.8	65.00	65.00	10325.11	10325.11
9403	9403:WVGD4	9403:WVGD4	Ori	140.50	61.80	122.95	58904.97	58904.97	0.00	23.8	65.00	65.00	10325.12	10325.12
9403	#9403:22	SpliceB	End	145.08	63.14	125.64	62858.10	62858.10	0.00	24.4	65.00	65.00	10784.37	10784.37
9403	#9403:22	SpliceB	Ori	145.08	63.14	125.64	62858.11	62858.11	0.00	24.4	65.00	65.00	10784.37	10784.37
9403	#9403:23	Tube 7	End	147.79	63.93	127.23	65275.47	65275.47	0.00	24.7	65.00	65.00	11060.48	11060.48
9403	#9403:23	Tube 7	Ori	147.79	63.93	127.23	65275.48	65275.48	0.00	24.7	65.00	65.00	11060.48	11060.48
9403	9403:WVGD3	9403:WVGD3	End	150.50	64.73	128.82	67754.04	67754.04	0.00	25.1	65.00	65.00	11340.08	11340.08
9403	9403:WVGD3	9403:WVGD3	Ori	150.50	64.73	128.82	67754.05	67754.05	0.00	25.1	65.00	65.00	11340.08	11340.08
9403	#9403:24	Tube 7	End	155.50	66.19	131.76	72492.92	72492.92	0.00	25.7	65.00	65.00	11865.40	11865.40
9403	#9403:24	Tube 7	Ori	155.50	66.19	131.76	72492.92	72492.92	0.00	25.7	65.00	65.00	11865.40	11865.40
9403	9403:WVGD2	9403:WVGD2	End	160.50	67.65	134.69	77447.77	77447.77	0.00	26.3	65.00	65.00	12402.62	12402.62
9403	9403:WVGD2	9403:WVGD2	Ori	160.50	67.65	134.69	77447.78	77447.78	0.00	26.3	65.00	65.00	12402.62	12402.62
9403	#9403:25	Tube 8	End	165.50	69.11	137.63	82623.41	82623.41	0.00	26.9	65.00	65.00	12951.74	12951.74
9403	#9403:25	Tube 8	Ori	165.50	69.11	137.63	82623.42	82623.42	0.00	26.9	65.00	65.00	12951.74	12951.74
9403	9403:WVGD1	9403:WVGD1	End	170.50	70.57	140.56	88024.65	88024.65	0.00	27.6	65.00	65.00	13512.75	13512.75
9403	9403:WVGD1	9403:WVGD1	Ori	170.50	70.57	140.56	88024.66	88024.66	0.00	27.6	65.00	65.00	13512.75	13512.75
9403	9403:g	9403:g	End	175.50	72.03	143.50	93656.31	93656.31	0.00	28.2	65.00	65.00	14085.66	14085.66

Tubular Davit Properties:

Davit Property Label	Stock Number	Steel Shape	Thickness (in)	Base Diameter or Depth (in)	Tip Diameter or Depth (in)	Taper (in/ft)	Drag Coef.	Modulus of Elasticity (ksi)	Geometry	Strength Check Type	Vertical Capacity (lbs)	Tension Capacity (lbs)	Compres. Capacity (lbs)	Long. Capacity (lbs)	Yield Stress (ksi)	Weight Density Override (lbs/ft^3)	Steel Shape At End
20700-B	20700-B	8T	0.25	9.5	5	0	1.3	29000	2 points	Calculated	0	0	0	0	65	0	
20700-C	20700-C	8T	0.3125	18	9	0	1.3	29000	2 points	Calculated	0	0	0	0	65	0	

Intermediate Joints for Davit Property "20700-B":

Joint Label	Horz. Offset (ft)	Vert. Offset (ft)
V	6.75	-0.5
End	8.25	-0.5

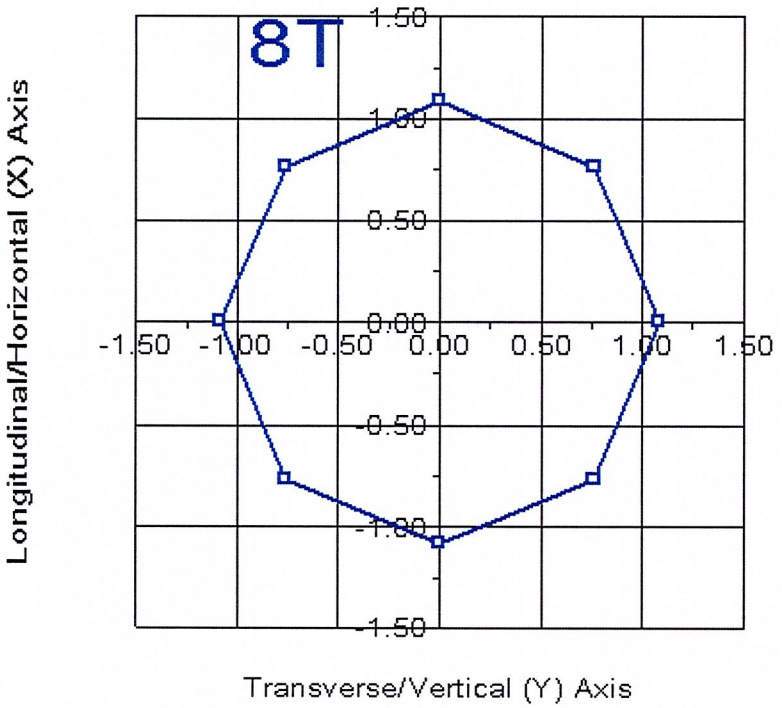
Intermediate Joints for Davit Property "20700-C":

Joint Label	Horz. Offset (ft)	Vert. Offset (ft)
V	12	-1.17
End	14	-1.17

Tubular Davit Arm Connectivity:

Davit Label	Attach Label	Davit Property Set	Azimuth (deg)
Davit1	9403:Arm1	20700-B	0
Davit2	9403:Arm2	20700-C	0

Davit3 9403:Arm3 20700-C 0
Davit4 9403:Arm4 20700-C 0



Tubular Davit Arm Steel Properties:

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Outer Diam. (in)	Area (in^2)	V-Moment Inertia (in^4)	H-Moment Inertia (in^4)	D/t	W/t Max.	Fy (ksi)	Fa Min. (ksi)	ASCE Cap V-Mom. (ft-k)	ASCE Cap H-Mom. (ft-k)
Davit1	Davit1:O	Origin	0.00	9.50	7.66	86.71	86.71	0.00	11.6	65.00	65.00	91.35	91.35
Davit1	#Davit1:0	End	3.38	7.66	6.14	44.56	44.56	0.00	8.5	65.00	65.00	58.24	58.24
Davit1	#Davit1:0	Origin	3.38	7.66	6.14	44.56	44.56	0.00	8.5	65.00	65.00	58.24	58.24
Davit1	Davit1:V	End	6.77	5.82	4.61	18.92	18.92	0.00	5.5	65.00	65.00	32.55	32.55
Davit1	Davit1:V	Origin	6.77	5.82	4.61	18.92	18.92	0.00	5.5	65.00	65.00	32.55	32.55
Davit1	Davit1:End	End	8.27	5.00	3.94	11.76	11.76	0.00	4.1	65.00	65.00	23.55	23.55
Davit2	Davit2:O	Origin	0.00	18.00	18.32	757.46	757.46	0.00	19.7	65.00	65.00	421.18	421.18
Davit2	#Davit2:0	End	5.00	14.80	15.00	416.19	416.19	0.00	15.5	65.00	65.00	281.48	281.48
Davit2	#Davit2:0	Origin	5.00	14.80	15.00	416.19	416.19	0.00	15.5	65.00	65.00	281.48	281.48
Davit2	#Davit2:1	End	8.53	12.54	12.66	250.31	250.31	0.00	12.5	65.00	65.00	199.79	199.79
Davit2	#Davit2:1	Origin	8.53	12.54	12.66	250.31	250.31	0.00	12.5	65.00	65.00	199.79	199.79
Davit2	Davit2:V	End	12.06	10.28	10.32	135.67	135.67	0.00	9.5	65.00	65.00	132.08	132.08
Davit2	Davit2:V	Origin	12.06	10.28	10.32	135.67	135.67	0.00	9.5	65.00	65.00	132.08	132.08
Davit2	Davit2:End	End	14.06	9.00	9.00	89.84	89.84	0.00	7.8	65.00	65.00	99.91	99.91
Davit3	Davit3:O	Origin	0.00	18.00	18.32	757.46	757.46	0.00	19.7	65.00	65.00	421.18	421.18
Davit3	#Davit3:0	End	5.00	14.80	15.00	416.19	416.19	0.00	15.5	65.00	65.00	281.48	281.48

Davit3	#Davit3:0	Origin	5.00	14.80	15.00	416.19	416.19	0.00	15.5	65.00	65.00	281.48	281.48
Davit3	#Davit3:1	End	8.53	12.54	12.66	250.31	250.31	0.00	12.5	65.00	65.00	199.79	199.79
Davit3	#Davit3:1	Origin	8.53	12.54	12.66	250.31	250.31	0.00	12.5	65.00	65.00	199.79	199.79
Davit3	Davit3:V	End	12.06	10.28	10.32	135.67	135.67	0.00	9.5	65.00	65.00	132.08	132.08
Davit3	Davit3:V	Origin	12.06	10.28	10.32	135.67	135.67	0.00	9.5	65.00	65.00	132.08	132.08
Davit3	Davit3:End	End	14.06	9.00	9.00	89.84	89.84	0.00	7.8	65.00	65.00	99.91	99.91
Davit4	Davit4:O	Origin	0.00	18.00	18.32	757.46	757.46	0.00	19.7	65.00	65.00	421.18	421.18
Davit4	#Davit4:0	End	5.00	14.80	15.00	416.19	416.19	0.00	15.5	65.00	65.00	281.48	281.48
Davit4	#Davit4:0	Origin	5.00	14.80	15.00	416.19	416.19	0.00	15.5	65.00	65.00	281.48	281.48
Davit4	#Davit4:1	End	8.53	12.54	12.66	250.31	250.31	0.00	12.5	65.00	65.00	199.79	199.79
Davit4	#Davit4:1	Origin	8.53	12.54	12.66	250.31	250.31	0.00	12.5	65.00	65.00	199.79	199.79
Davit4	Davit4:V	End	12.06	10.28	10.32	135.67	135.67	0.00	9.5	65.00	65.00	132.08	132.08
Davit4	Davit4:V	Origin	12.06	10.28	10.32	135.67	135.67	0.00	9.5	65.00	65.00	132.08	132.08
Davit4	Davit4:End	End	14.06	9.00	9.00	89.84	89.84	0.00	7.8	65.00	65.00	99.91	99.91

*** Insulator Data

Clamp Properties:

Label	Stock Number	Holding Capacity (lbs)
clamp	clamp1	8e+004

Clamp Insulator Connectivity:

Clamp Label	Structure And Tip Attach	Property Set	Min. Required Vertical Load (uplift) (lbs)
Clamp1	Davit1:End	clamp	No Limit
Clamp2	Davit2:End	clamp	No Limit
Clamp3	Davit3:End	clamp	No Limit
Clamp4	Davit4:End	clamp	No Limit
Clamp5	9403:WVGD1	clamp	No Limit
Clamp6	9403:WVGD2	clamp	No Limit
Clamp7	9403:WVGD3	clamp	No Limit
Clamp8	9403:WVGD4	clamp	No Limit
Clamp9	9403:WVGD5	clamp	No Limit
Clamp10	9403:WVGD6	clamp	No Limit
Clamp11	9403:WVGD7	clamp	No Limit
Clamp12	9403:WVGD8	clamp	No Limit
Clamp13	9403:WVGD9	clamp	No Limit
Clamp14	9403:WVGD10	clamp	No Limit
Clamp15	9403:WVGD11	clamp	No Limit
Clamp16	9403:WVGD12	clamp	No Limit
Clamp17	9403:WVGD13	clamp	No Limit
Clamp18	9403:WVGD14	clamp	No Limit
Clamp19	9403:WVGD15	clamp	No Limit
Clamp20	9403:WVGD16	clamp	No Limit
Clamp21	9403:WVGD17	clamp	No Limit
Clamp22	9403:AT&T	clamp	No Limit

*** Loads Data

Loads from file: j:\jobs\1201400.wi\co.07 - ct5279 - 74 birdsey ave., meriden, ct\rev (0)\calcs\pls-pole\cl&p #9403.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) 175.50 (ft)
  Structure height 175.50 (ft)
  Structure height above ground 175.50 (ft)

Vector Load Cases:

Load Case Description	Dead Pole Load Factor	Wind Pole Area Factor	SF for Steel Tubular Arms and Towers	SF for Poles	SF for Wood Poles	SF for Conc. Ult.	SF for Conc. First Crack	SF for Conc. Zero Tens.	SF for Guys and Cables	SF for Non Tubular Arms	SF for Braces	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 Deflection Check	Limit (deg F)	Limit % or (ft)
NESC Heavy	1.5000	2.5000	1.00000	0.6500	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	22 loads	Wind on All	4	0	0.500	56.000	0.0	No Limit	0
NESC Extreme	1.0000	1.0000	1.00000	0.6500	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	22 loads	NESC 2007	31	0	0.000	0.000	0.0	No Limit	0
NESC Extreme Ice w/ Wind	1.0000	1.0000	1.00000	0.6500	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	22 loads	Wind on All	6.4	0	0.750	56.000	0.0	No Limit	0

Point Loads for Load Case "NESC Heavy":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
Davit1:End	1180	2341	16	Shield Wire
Davit2:End	7674	7817	100	Conductor
Davit3:End	7674	7808	102	Conductor
Davit4:End	7674	7798	103	Conductor
9403:AT&T	3111	1148	0	Antennas
9403:WVGD1	460	60	0	Coax Cables
9403:WVGD2	460	60	0	Coax Cables
9403:WVGD3	460	60	0	Coax Cables
9403:WVGD4	460	60	0	Coax Cables
9403:WVGD5	460	60	0	Coax Cables
9403:WVGD6	460	60	0	Coax Cables
9403:WVGD7	460	60	0	Coax Cables
9403:WVGD8	460	60	0	Coax Cables
9403:WVGD9	460	60	0	Coax Cables
9403:WVGD10	460	60	0	Coax Cables
9403:WVGD11	460	60	0	Coax Cables
9403:WVGD12	460	60	0	Coax Cables
9403:WVGD13	460	60	0	Coax Cables
9403:WVGD14	460	60	0	Coax Cables
9403:WVGD15	460	60	0	Coax Cables
9403:WVGD16	460	60	0	Coax Cables

9403:WVGD17 460 60 0 Coax Cables

Detailed Pole Loading Data for Load Case "NESC Heavy":

Notes: Does not include loads from equipment, arms, guys, braces, etc. or user input loads.
Wind load is calculated for the undeformed shape of a pole.

Pole Label	Top Joint	Bottom Joint	Section Top Z (ft)	Section Bottom Z (ft)	Section Average Elevation (ft)	Outer Diameter (in)	Reynolds Number	Drag Coef.	Adjusted Wind Pressure (psf)	Adjusted Ice Thickness (in)	Pole Vert. Load (lbs)	Pole Wind Load (lbs)	Pole Ice Vertical Load (lbs)	Pole Ice Wind Load (lbs)	Tran. Wind Load (lbs)	Long. Wind Load (lbs)
9403	9403:t	9403:AT&T	175.50	173.00	174.25	23.365	1.11e+006	1.300	10.00	0.50	237.10	63.28	36.52	2.71	65.99	0.00
9403	9403:AT&T		173.00	169.00	171.00	24.315	1.15e+006	1.300	10.00	0.50	394.95	105.37	60.81	4.33	109.70	0.00
9403		9403:WVGD17	169.00	165.00	167.00	25.484	1.21e+006	1.300	10.00	0.50	414.13	110.44	63.73	4.33	114.77	0.00
9403	9403:WVGD17		165.00	160.00	162.50	26.799	1.27e+006	1.300	10.00	0.50	544.64	145.17	83.77	5.42	150.58	0.00
9403		9403:WVGD16	160.00	155.00	157.50	28.260	1.34e+006	1.300	10.00	0.50	574.61	153.08	88.34	5.42	158.50	0.00
9403	9403:WVGD16	9403:Arm1	155.00	153.00	154.00	29.282	1.39e+006	1.300	10.00	0.50	238.24	63.45	36.62	2.17	65.62	0.00
9403	9403:Arm1		153.00	149.25	151.13	30.122	1.43e+006	1.300	10.00	0.50	459.62	122.38	70.62	4.06	126.44	0.00
9403			149.25	145.50	147.38	31.218	1.48e+006	1.300	10.00	0.50	476.50	126.83	73.19	4.06	130.89	0.00
9403		9403:WVGD15	145.50	145.00	145.25	31.964	1.51e+006	1.300	10.00	0.50	81.15	17.31	9.99	0.54	17.86	0.00
9403	9403:WVGD15		145.00	140.00	142.50	32.768	1.55e+006	1.300	10.00	0.50	832.27	177.50	102.43	5.42	182.92	0.00
9403		9403:WVGD14	140.00	135.00	137.50	34.229	1.62e+006	1.300	10.00	0.50	869.73	185.41	107.00	5.42	190.83	0.00
9403	9403:WVGD14	9403:Arm2	135.00	130.33	132.67	35.641	1.69e+006	1.300	10.00	0.50	846.17	180.33	104.06	5.06	185.38	0.00
9403	9403:Arm2		130.33	127.67	129.00	36.713	1.74e+006	1.300	10.00	0.50	497.52	106.00	61.17	2.89	108.89	0.00
9403		9403:WVGD13	127.67	125.00	126.33	37.492	1.78e+006	1.300	10.00	0.50	508.17	108.25	62.47	2.89	111.13	0.00
9403	9403:WVGD13		125.00	120.67	122.83	38.514	1.82e+006	1.300	10.00	0.50	848.95	180.80	104.34	4.69	185.49	0.00
9403			120.67	118.08	119.38	39.212	1.86e+006	1.300	10.00	0.50	1132.11	109.75	63.34	2.80	112.55	0.00
9403			118.08	115.50	116.79	39.655	1.88e+006	1.300	10.00	0.50	1153.89	110.99	64.05	2.80	113.79	0.00
9403		9403:WVGD12	115.50	115.00	115.25	40.105	1.9e+006	1.300	10.00	0.50	122.26	21.72	12.54	0.54	22.27	0.00
9403	9403:WVGD12		115.00	111.42	113.21	40.702	1.93e+006	1.300	10.00	0.50	889.76	158.08	91.23	3.88	161.97	0.00
9403		9403:Arm3	111.42	107.83	109.62	41.749	1.98e+006	1.300	10.00	0.50	912.88	162.15	93.58	3.88	166.04	0.00
9403	9403:Arm3	9403:WVGD11	107.83	105.00	106.42	42.687	2.02e+006	1.300	10.00	0.50	736.95	130.88	75.53	3.07	133.94	0.00
9403	9403:WVGD11		105.00	100.00	102.50	43.831	2.08e+006	1.300	10.00	0.50	1337.23	237.43	137.02	5.42	242.85	0.00
9403		9403:WVGD10	100.00	95.00	97.50	45.292	2.14e+006	1.300	10.00	0.50	1382.19	245.34	141.59	5.42	250.76	0.00
9403	9403:WVGD10		95.00	93.67	94.33	46.217	2.19e+006	1.300	10.00	0.50	376.11	66.74	38.52	1.44	68.19	0.00
9403			93.67	89.75	91.71	47.109	2.23e+006	1.300	10.00	0.50	1313.11	199.99	115.41	4.25	204.24	0.00
9403		9403:Arm4	89.75	85.83	87.79	48.254	2.28e+006	1.300	10.00	0.50	1345.35	204.85	118.22	4.25	209.10	0.00
9403	9403:Arm4	9403:WVGD9	85.83	85.00	85.42	48.948	2.32e+006	1.300	10.00	0.50	289.10	44.01	25.40	0.90	44.91	0.00
9403	9403:WVGD9		85.00	81.21	83.10	49.623	2.35e+006	1.300	10.00	0.50	1339.02	203.84	117.63	4.11	207.94	0.00
9403			81.21	77.42	79.31	50.731	2.4e+006	1.300	10.00	0.50	1369.18	208.39	120.26	4.11	212.49	0.00
9403		9403:WVGD8	77.42	75.00	76.21	51.201	2.42e+006	1.300	10.00	0.50	1885.47	134.07	77.37	2.62	136.69	0.00
9403	9403:WVGD8		75.00	70.67	72.83	51.749	2.45e+006	1.300	10.00	0.50	3445.43	242.93	140.19	4.69	247.62	0.00
9403			70.67	67.83	69.25	52.796	2.5e+006	1.300	10.00	0.50	1216.20	162.07	93.53	3.07	165.14	0.00
9403		9403:WVGD7	67.83	65.00	66.42	53.624	2.54e+006	1.300	10.00	0.50	1235.22	164.62	95.00	3.07	167.68	0.00
9403	9403:WVGD7		65.00	60.00	62.50	54.769	2.59e+006	1.300	10.00	0.50	2226.63	296.68	171.21	5.42	302.10	0.00
9403		9403:WVGD6	60.00	55.00	57.50	56.230	2.66e+006	1.300	10.00	0.50	2286.57	304.59	175.78	5.42	310.01	0.00
9403	9403:WVGD6		55.00	53.92	54.46	57.118	2.7e+006	1.300	10.00	0.50	503.20	67.02	38.68	1.17	68.19	0.00
9403			53.92	49.46	51.69	58.053	2.75e+006	1.300	10.00	0.50	2366.28	280.41	161.82	4.83	285.24	0.00
9403		9403:WVGD5	49.46	45.00	47.23	59.356	2.81e+006	1.300	10.00	0.50	2419.90	286.71	165.46	4.83	291.54	0.00
9403	9403:WVGD5		45.00	41.75	43.38	60.482	2.86e+006	1.300	10.00	0.50	1797.77	212.96	122.90	3.52	216.48	0.00
9403			41.75	38.50	40.13	61.432	2.91e+006	1.300	10.00	0.50	1826.26	216.30	124.83	3.52	219.82	0.00
9403		9403:WVGD4	38.50	35.00	36.75	61.855	2.93e+006	1.300	10.00	0.50	4176.64	234.55	135.36	3.79	238.34	0.00
9403	9403:WVGD4		35.00	30.42	32.71	62.474	2.96e+006	1.300	10.00	0.50	5574.49	310.19	179.01	4.97	315.16	0.00
9403			30.42	27.71	29.06	63.539	3.01e+006	1.300	10.00	0.50	1748.27	186.45	107.60	2.93	189.38	0.00
9403		9403:WVGD3	27.71	25.00	26.35	64.331	3.05e+006	1.300	10.00	0.50	1769.88	188.77	108.94	2.93	191.70	0.00
9403	9403:WVGD3		25.00	20.00	22.50	65.457	3.1e+006	1.300	10.00	0.50	3325.04	354.58	204.62	5.42	359.99	0.00
9403		9403:WVGD2	20.00	15.00	17.50	66.918	3.17e+006	1.300	10.00	0.50	3399.97	362.49	209.19	5.42	367.91	0.00
9403	9403:WVGD2		15.00	10.00	12.50	68.379	3.24e+006	1.300	10.00	0.50	3474.90	370.40	213.76	5.42	375.82	0.00
9403		9403:WVGD1	10.00	5.00	7.50	69.840	3.31e+006	1.300	10.00	0.50	3549.83	378.32	218.32	5.42	383.74	0.00
9403	9403:WVGD1	9403:g	5.00	0.00	2.50	71.301	3.38e+006	1.300	10.00	0.50	3624.76	386.23	222.89	5.42	391.65	0.00

Point Loads for Load Case "NESC Extreme":

Joint Label	Vertical Load	Transverse Load	Longitudinal Load	Load Comment

	(lbs)	(lbs)	(lbs)	
Davit1:End	248	1803	12	Shield Wire
Davit2:End	3274	10077	123	Conductor
Davit3:End	3274	10071	125	Conductor
Davit4:End	3274	10063	127	Conductor
9403:AT&T	1578	4363	0	Antennas
9403:WVGD1	125	174	0	Coax Cables
9403:WVGD2	125	174	0	Coax Cables
9403:WVGD3	125	174	0	Coax Cables
9403:WVGD4	125	174	0	Coax Cables
9403:WVGD5	125	174	0	Coax Cables
9403:WVGD6	125	174	0	Coax Cables
9403:WVGD7	125	174	0	Coax Cables
9403:WVGD8	125	174	0	Coax Cables
9403:WVGD9	125	174	0	Coax Cables
9403:WVGD10	125	174	0	Coax Cables
9403:WVGD11	125	174	0	Coax Cables
9403:WVGD12	125	174	0	Coax Cables
9403:WVGD13	125	174	0	Coax Cables
9403:WVGD14	125	174	0	Coax Cables
9403:WVGD15	125	174	0	Coax Cables
9403:WVGD16	125	174	0	Coax Cables
9403:WVGD17	125	174	0	Coax Cables

Detailed Pole Loading Data for Load Case "NESC Extreme":

Notes: Does not include loads from equipment, arms, guys, braces, etc. or user input loads.
Wind load is calculated for the undeformed shape of a pole.

Pole Label	Top Joint	Bottom Joint	Section Top Z (ft)	Section Bottom Z (ft)	Section Average Elevation (ft)	Outer Diameter (in)	Reynolds Number	Drag Coef.	Adjusted Wind Pressure (psf)	Adjusted Ice Thickness (in)	Pole Vert. Load (lbs)	Pole Wind Load (lbs)	Pole Ice Vertical Load (lbs)	Pole Ice Wind Load (lbs)	Tran. Wind Load (lbs)	Long. Wind Load (lbs)
9403	9403:t	9403:AT&T	175.50	173.00	174.25	23.365	2.02e+006	1.000	33.39	0.00	158.07	162.54	0.00	0.00	162.54	0.00
9403	9403:AT&T		173.00	169.00	171.00	24.315	2.1e+006	1.000	33.39	0.00	263.30	270.64	0.00	0.00	270.64	0.00
9403		9403:WVGD17	169.00	165.00	167.00	25.484	2.2e+006	1.000	33.39	0.00	276.09	283.65	0.00	0.00	283.65	0.00
9403	9403:WVGD17		165.00	160.00	162.50	26.799	2.32e+006	1.000	33.39	0.00	363.09	372.86	0.00	0.00	372.86	0.00
9403		9403:WVGD16	160.00	155.00	157.50	28.260	2.44e+006	1.000	33.39	0.00	383.08	393.18	0.00	0.00	393.18	0.00
9403	9403:WVGD16	9403:Arm1	155.00	153.00	154.00	29.282	2.53e+006	1.000	33.39	0.00	158.83	162.97	0.00	0.00	162.97	0.00
9403	9403:Arm1		153.00	149.25	151.13	30.122	2.61e+006	1.000	33.39	0.00	306.41	314.33	0.00	0.00	314.33	0.00
9403			149.25	145.50	147.38	31.218	2.7e+006	1.000	33.39	0.00	317.66	325.76	0.00	0.00	325.76	0.00
9403		9403:WVGD15	145.50	145.00	145.25	31.964	2.77e+006	1.000	33.39	0.00	54.10	44.47	0.00	0.00	44.47	0.00
9403	9403:WVGD15		145.00	140.00	142.50	32.768	2.83e+006	1.000	33.39	0.00	554.84	455.91	0.00	0.00	455.91	0.00
9403		9403:WVGD14	140.00	135.00	137.50	34.229	2.96e+006	1.000	33.39	0.00	579.82	476.23	0.00	0.00	476.23	0.00
9403	9403:WVGD14	9403:Arm2	135.00	130.33	132.67	35.641	3.08e+006	1.000	33.39	0.00	564.11	463.16	0.00	0.00	463.16	0.00
9403	9403:Arm2		130.33	127.67	129.00	36.713	3.18e+006	1.000	33.39	0.00	331.68	272.26	0.00	0.00	272.26	0.00
9403		9403:WVGD13	127.67	125.00	126.33	37.492	3.24e+006	1.000	33.39	0.00	338.78	278.03	0.00	0.00	278.03	0.00
9403	9403:WVGD13		125.00	120.67	122.83	38.514	3.33e+006	1.000	33.39	0.00	565.96	464.38	0.00	0.00	464.38	0.00
9403			120.67	118.08	119.38	39.212	3.39e+006	1.000	33.39	0.00	754.74	281.90	0.00	0.00	281.90	0.00
9403			118.08	115.50	116.79	39.655	3.43e+006	1.000	33.39	0.00	769.26	285.08	0.00	0.00	285.08	0.00
9403		9403:WVGD12	115.50	115.00	115.25	40.105	3.47e+006	1.000	33.39	0.00	81.51	55.80	0.00	0.00	55.80	0.00
9403	9403:WVGD12		115.00	111.42	113.21	40.702	3.52e+006	1.000	33.39	0.00	593.18	406.04	0.00	0.00	406.04	0.00
9403		9403:Arm3	111.42	107.83	109.62	41.749	3.61e+006	1.000	33.39	0.00	608.58	416.49	0.00	0.00	416.49	0.00
9403	9403:Arm3	9403:WVGD11	107.83	105.00	106.42	42.687	3.69e+006	1.000	33.39	0.00	491.30	336.15	0.00	0.00	336.15	0.00
9403	9403:WVGD11		105.00	100.00	102.50	43.831	3.79e+006	1.000	33.39	0.00	891.49	609.83	0.00	0.00	609.83	0.00
9403		9403:WVGD10	100.00	95.00	97.50	45.292	3.92e+006	1.000	33.39	0.00	921.46	630.16	0.00	0.00	630.16	0.00
9403	9403:WVGD10		95.00	93.67	94.33	46.217	4e+006	1.000	33.39	0.00	250.74	171.43	0.00	0.00	171.43	0.00
9403			93.67	89.75	91.71	47.109	4.08e+006	1.000	33.39	0.00	875.40	513.67	0.00	0.00	513.67	0.00
9403		9403:Arm4	89.75	85.83	87.79	48.254	4.17e+006	1.000	33.39	0.00	896.90	526.16	0.00	0.00	526.16	0.00
9403	9403:Arm4	9403:WVGD9	85.83	85.00	85.42	48.948	4.23e+006	1.000	33.39	0.00	192.73	113.05	0.00	0.00	113.05	0.00
9403	9403:WVGD9		85.00	81.21	83.10	49.623	4.29e+006	1.000	33.39	0.00	892.68	523.55	0.00	0.00	523.55	0.00
9403			81.21	77.42	79.31	50.731	4.39e+006	1.000	33.39	0.00	912.78	535.24	0.00	0.00	535.24	0.00
9403		9403:WVGD8	77.42	75.00	76.21	51.201	4.43e+006	1.000	33.39	0.00	1256.98	344.36	0.00	0.00	344.36	0.00
9403	9403:WVGD8		75.00	70.67	72.83	51.749	4.48e+006	1.000	33.39	0.00	2296.95	623.95	0.00	0.00	623.95	0.00

9403			70.67	67.83	69.25	52.796	4.57e+006	1.000	33.39	0.00	810.80	416.28	0.00	0.00	416.28	0.00
9403		9403:WVGD7	67.83	65.00	66.42	53.624	4.64e+006	1.000	33.39	0.00	823.48	422.81	0.00	0.00	422.81	0.00
9403	9403:WVGD7		65.00	60.00	62.50	54.769	4.74e+006	1.000	33.39	0.00	1484.42	762.01	0.00	0.00	762.01	0.00
9403		9403:WVGD6	60.00	55.00	57.50	56.230	4.86e+006	1.000	33.39	0.00	1524.38	782.34	0.00	0.00	782.34	0.00
9403	9403:WVGD6		55.00	53.92	54.46	57.118	4.94e+006	1.000	33.39	0.00	335.47	172.13	0.00	0.00	172.13	0.00
9403			53.92	49.46	51.69	58.053	5.02e+006	1.000	33.39	0.00	1577.52	720.23	0.00	0.00	720.23	0.00
9403		9403:WVGD5	49.46	45.00	47.23	59.356	5.14e+006	1.000	33.39	0.00	1613.27	736.40	0.00	0.00	736.40	0.00
9403	9403:WVGD5		45.00	41.75	43.38	60.482	5.23e+006	1.000	33.39	0.00	1198.51	546.98	0.00	0.00	546.98	0.00
9403			41.75	38.50	40.13	61.432	5.31e+006	1.000	33.39	0.00	1217.51	555.57	0.00	0.00	555.57	0.00
9403		9403:WVGD4	38.50	35.00	36.75	61.855	5.35e+006	1.000	33.39	0.00	2784.43	602.43	0.00	0.00	602.43	0.00
9403	9403:WVGD4		35.00	30.42	32.71	62.474	5.4e+006	1.000	33.39	0.00	3716.33	796.72	0.00	0.00	796.72	0.00
9403			30.42	27.71	29.06	63.539	5.5e+006	1.000	33.39	0.00	1165.51	478.88	0.00	0.00	478.88	0.00
9403		9403:WVGD3	27.71	25.00	26.35	64.331	5.57e+006	1.000	33.39	0.00	1179.92	484.85	0.00	0.00	484.85	0.00
9403	9403:WVGD3		25.00	20.00	22.50	65.457	5.66e+006	1.000	33.39	0.00	2216.69	910.72	0.00	0.00	910.72	0.00
9403		9403:WVGD2	20.00	15.00	17.50	66.918	5.79e+006	1.000	33.39	0.00	2266.64	931.05	0.00	0.00	931.05	0.00
9403	9403:WVGD2		15.00	10.00	12.50	68.379	5.92e+006	1.000	33.39	0.00	2316.60	951.37	0.00	0.00	951.37	0.00
9403		9403:WVGD1	10.00	5.00	7.50	69.840	6.04e+006	1.000	33.39	0.00	2366.55	971.70	0.00	0.00	971.70	0.00
9403	9403:WVGD1	9403:g	5.00	0.00	2.50	71.301	6.17e+006	1.000	33.39	0.00	2416.51	992.03	0.00	0.00	992.03	0.00

Point Loads for Load Case "NESC Extreme Ice w/ Wind":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
Davit1:End	1411	2049	14	Shield Wire
Davit2:End	7254	6351	81	Conductor
Davit3:End	7254	6345	82	Conductor
Davit4:End	7254	6337	83	Conductor
9403:AT&T	2736	1039	0	Antennas
9403:WVGD1	425	42	0	Coax Cables
9403:WVGD2	425	42	0	Coax Cables
9403:WVGD3	425	42	0	Coax Cables
9403:WVGD4	425	42	0	Coax Cables
9403:WVGD5	425	42	0	Coax Cables
9403:WVGD6	425	42	0	Coax Cables
9403:WVGD7	425	42	0	Coax Cables
9403:WVGD8	425	42	0	Coax Cables
9403:WVGD9	425	42	0	Coax Cables
9403:WVGD10	425	42	0	Coax Cables
9403:WVGD11	425	42	0	Coax Cables
9403:WVGD12	425	42	0	Coax Cables
9403:WVGD13	425	42	0	Coax Cables
9403:WVGD14	425	42	0	Coax Cables
9403:WVGD15	425	42	0	Coax Cables
9403:WVGD16	425	42	0	Coax Cables
9403:WVGD17	425	42	0	Coax Cables

Detailed Pole Loading Data for Load Case "NESC Extreme Ice w/ Wind":

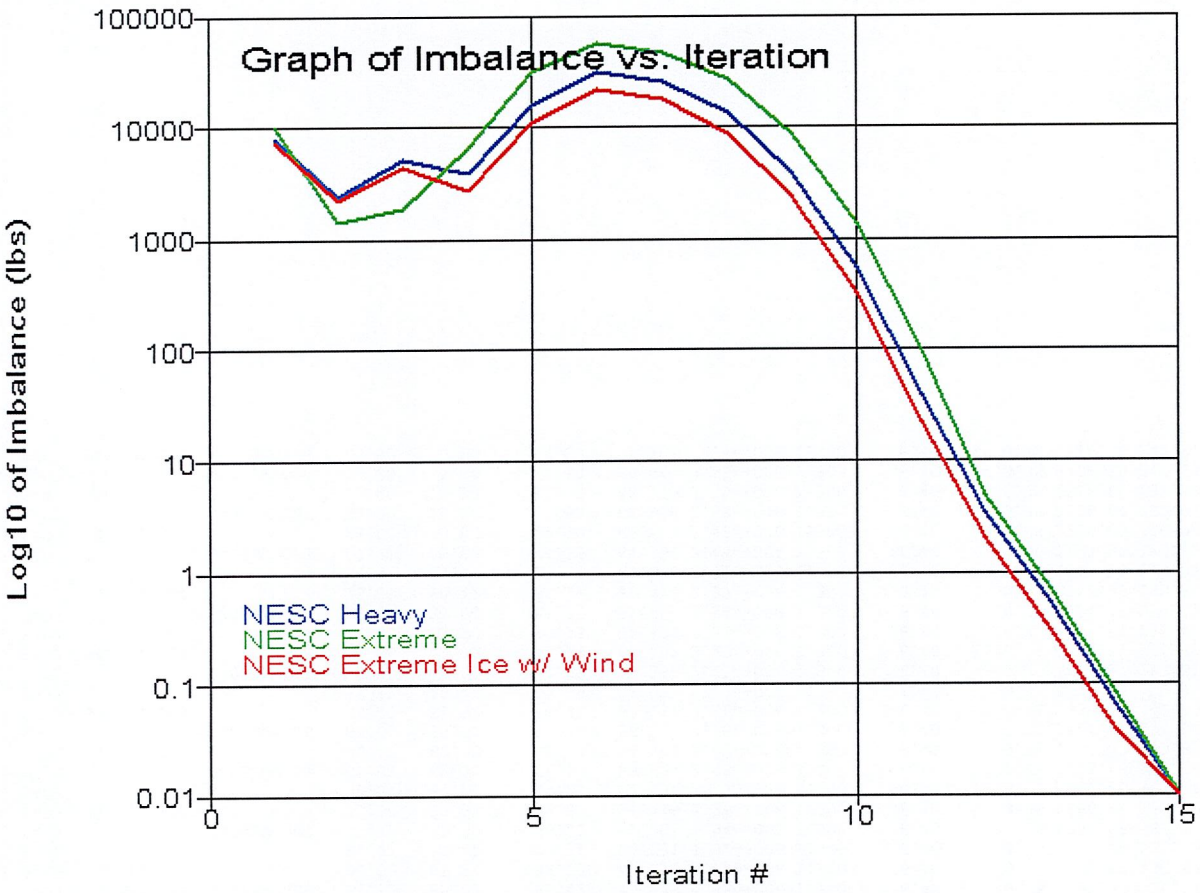
Notes: Does not include loads from equipment, arms, guys, braces, etc. or user input loads.
Wind load is calculated for the undeformed shape of a pole.

Pole Label	Top Joint	Bottom Joint	Section Top Z (ft)	Section Bottom Z (ft)	Section Average Elevation (ft)	Outer Diameter (in)	Reynolds Number	Drag Coef.	Adjusted Wind Pressure (psf)	Adjusted Ice Thickness (in)	Pole Vert. Load (lbs)	Pole Wind Load (lbs)	Pole Ice Vertical Load (lbs)	Pole Ice Wind Load (lbs)	Tran. Wind Load (lbs)	Long. Wind Load (lbs)
9403	9403:t	9403:AT&T	175.50	173.00	174.25	23.365	8.85e+005	1.300	6.40	0.75	158.07	40.51	54.78	2.60	43.11	0.00
9403	9403:AT&T		173.00	169.00	171.00	24.315	9.21e+005	1.300	6.40	0.75	263.30	67.44	91.21	4.16	71.60	0.00
9403		9403:WVGD17	169.00	165.00	167.00	25.484	9.65e+005	1.300	6.40	0.75	276.09	70.68	95.60	4.16	74.84	0.00
9403	9403:WVGD17		165.00	160.00	162.50	26.799	1.02e+006	1.300	6.40	0.75	363.09	92.91	125.66	5.20	98.11	0.00
9403		9403:WVGD16	160.00	155.00	157.50	28.260	1.07e+006	1.300	6.40	0.75	383.08	97.98	132.51	5.20	103.18	0.00
9403	9403:WVGD16	9403:Arm1	155.00	153.00	154.00	29.282	1.11e+006	1.300	6.40	0.75	158.83	40.61	54.92	2.08	42.69	0.00
9403	9403:Arm1		153.00	149.25	151.13	30.122	1.14e+006	1.300	6.40	0.75	306.41	78.33	105.94	3.90	82.23	0.00
9403			149.25	145.50	147.38	31.218	1.18e+006	1.300	6.40	0.75	317.66	81.18	109.79	3.90	85.08	0.00

9403		9403:WVGD15	145.50	145.00	145.25	31.964	1.21e+006	1.300	6.40	0.75	54.10	11.08	14.99	0.52	11.60	0.00
9403	9403:WVGD15		145.00	140.00	142.50	32.768	1.24e+006	1.300	6.40	0.75	554.84	113.61	153.65	5.20	118.81	0.00
9403		9403:WVGD14	140.00	135.00	137.50	34.229	1.3e+006	1.300	6.40	0.75	579.82	118.67	160.50	5.20	123.88	0.00
9403	9403:WVGD14	9403:Arm2	135.00	130.33	132.67	35.641	1.35e+006	1.300	6.40	0.75	564.11	115.42	156.10	4.86	120.27	0.00
9403	9403:Arm2		130.33	127.67	129.00	36.713	1.39e+006	1.300	6.40	0.75	331.68	67.84	91.76	2.77	70.62	0.00
9403		9403:WVGD13	127.67	125.00	126.33	37.492	1.42e+006	1.300	6.40	0.75	338.78	69.28	93.70	2.77	72.06	0.00
9403	9403:WVGD13		125.00	120.67	122.83	38.514	1.46e+006	1.300	6.40	0.75	565.96	115.72	156.51	4.51	120.23	0.00
9403			120.67	118.08	119.38	39.212	1.49e+006	1.300	6.40	0.75	754.74	70.25	95.01	2.69	72.93	0.00
9403			118.08	115.50	116.79	39.655	1.5e+006	1.300	6.40	0.75	769.26	71.04	96.08	2.69	73.73	0.00
9403		9403:WVGD12	115.50	115.00	115.25	40.105	1.52e+006	1.300	6.40	0.75	81.51	13.90	18.81	0.52	14.43	0.00
9403	9403:WVGD12		115.00	111.42	113.21	40.702	1.54e+006	1.300	6.40	0.75	593.18	101.18	136.84	3.73	104.91	0.00
9403		9403:Arm3	111.42	107.83	109.62	41.749	1.58e+006	1.300	6.40	0.75	608.58	103.79	140.37	3.73	107.52	0.00
9403	9403:Arm3	9403:WVGD11	107.83	105.00	106.42	42.687	1.62e+006	1.300	6.40	0.75	491.30	83.77	113.29	2.94	86.71	0.00
9403	9403:WVGD11		105.00	100.00	102.50	43.831	1.66e+006	1.300	6.40	0.75	891.49	151.97	205.53	5.20	157.17	0.00
9403		9403:WVGD10	100.00	95.00	97.50	45.292	1.72e+006	1.300	6.40	0.75	921.46	157.03	212.38	5.20	162.23	0.00
9403	9403:WVGD10		95.00	93.67	94.33	46.217	1.75e+006	1.300	6.40	0.75	250.74	42.72	57.78	1.39	44.11	0.00
9403			93.67	89.75	91.71	47.109	1.78e+006	1.300	6.40	0.75	875.40	128.00	173.12	4.08	132.08	0.00
9403		9403:Arm4	89.75	85.83	87.79	48.254	1.83e+006	1.300	6.40	0.75	896.90	131.12	177.33	4.08	135.19	0.00
9403	9403:Arm4	9403:WVGD9	85.83	85.00	85.42	48.948	1.85e+006	1.300	6.40	0.75	192.73	28.17	38.10	0.86	29.03	0.00
9403	9403:WVGD9		85.00	81.21	83.10	49.623	1.88e+006	1.300	6.40	0.75	892.68	130.47	176.45	3.94	134.41	0.00
9403			81.21	77.42	79.31	50.731	1.92e+006	1.300	6.40	0.75	912.78	133.38	180.39	3.94	137.32	0.00
9403		9403:WVGD8	77.42	75.00	76.21	51.201	1.94e+006	1.300	6.40	0.75	1256.98	85.81	116.06	2.51	88.33	0.00
9403	9403:WVGD8		75.00	70.67	72.83	51.749	1.96e+006	1.300	6.40	0.75	2296.95	155.49	210.29	4.51	159.99	0.00
9403			70.67	67.83	69.25	52.796	2e+006	1.300	6.40	0.75	810.80	103.74	140.30	2.95	106.68	0.00
9403		9403:WVGD7	67.83	65.00	66.42	53.624	2.03e+006	1.300	6.40	0.75	823.48	105.36	142.50	2.95	108.31	0.00
9403	9403:WVGD7		65.00	60.00	62.50	54.769	2.07e+006	1.300	6.40	0.75	1484.42	189.89	256.82	5.20	195.09	0.00
9403		9403:WVGD6	60.00	55.00	57.50	56.230	2.13e+006	1.300	6.40	0.75	1524.38	194.96	263.67	5.20	200.16	0.00
9403	9403:WVGD6		55.00	53.92	54.46	57.118	2.16e+006	1.300	6.40	0.75	335.47	42.89	58.01	1.13	44.02	0.00
9403			53.92	49.46	51.69	58.053	2.2e+006	1.300	6.40	0.75	1577.52	179.48	242.74	4.64	184.12	0.00
9403		9403:WVGD5	49.46	45.00	47.23	59.356	2.25e+006	1.300	6.40	0.75	1613.27	183.51	248.18	4.64	188.14	0.00
9403	9403:WVGD5		45.00	41.75	43.38	60.482	2.29e+006	1.300	6.40	0.75	1198.51	136.30	184.34	3.38	139.68	0.00
9403			41.75	38.50	40.13	61.432	2.33e+006	1.300	6.40	0.75	1217.51	138.44	187.24	3.38	141.82	0.00
9403		9403:WVGD4	38.50	35.00	36.75	61.855	2.34e+006	1.300	6.40	0.75	2784.43	150.12	203.03	3.64	153.76	0.00
9403	9403:WVGD4		35.00	30.42	32.71	62.474	2.37e+006	1.300	6.40	0.75	3716.33	198.54	268.51	4.77	203.31	0.00
9403			30.42	27.71	29.06	63.539	2.41e+006	1.300	6.40	0.75	1165.51	119.34	161.40	2.82	122.15	0.00
9403		9403:WVGD3	27.71	25.00	26.35	64.331	2.44e+006	1.300	6.40	0.75	1179.92	120.82	163.41	2.82	123.64	0.00
9403	9403:WVGD3		25.00	20.00	22.50	65.457	2.48e+006	1.300	6.40	0.75	2216.69	226.95	306.93	5.20	232.15	0.00
9403		9403:WVGD2	20.00	15.00	17.50	66.918	2.53e+006	1.300	6.40	0.75	2266.64	232.01	313.78	5.20	237.21	0.00
9403	9403:WVGD2		15.00	10.00	12.50	68.379	2.59e+006	1.300	6.40	0.75	2316.60	237.08	320.64	5.20	242.28	0.00
9403		9403:WVGD1	10.00	5.00	7.50	69.840	2.65e+006	1.300	6.40	0.75	2366.55	242.14	327.49	5.20	247.34	0.00
9403	9403:WVGD1	9403:g	5.00	0.00	2.50	71.301	2.7e+006	1.300	6.40	0.75	2416.51	247.21	334.34	5.20	252.41	0.00

*** Analysis Results:

Maximum element usage is 48.68% for Steel Pole "9403" in load case "NESC Extreme"
Maximum insulator usage is 13.69% for Clamp "Clamp2" in load case "NESC Heavy"



*** Analysis Results for Load Case No. 1 "NESC Heavy" - Number of iterations in SAPS 15

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

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
9403:g	0	0	0	0.0000	0.0000	0.0000	0	0	0
9403:t	0.0446	4.219	-0.07109	-2.3771	0.0230	-0.0076	0.0446	4.219	175.4
9403:AT&T	0.04358	4.115	-0.06894	-2.3771	0.0230	-0.0076	0.04358	4.115	172.9
9403:WVGD17	0.04032	3.784	-0.06202	-2.3686	0.0230	-0.0076	0.04032	3.784	164.9
9403:WVGD16	0.03627	3.373	-0.05347	-2.3404	0.0228	-0.0076	0.03627	3.373	154.9

9403:Arm1	0.03547	3.291	-0.05179	-2.3329	0.0228	-0.0076	0.03547	3.291	152.9
9403:WVGD15	0.03225	2.969	-0.04519	-2.2822	0.0225	-0.0074	0.03225	2.969	145
9403:WVGD14	0.02831	2.576	-0.03737	-2.2151	0.0220	-0.0073	0.02831	2.576	135
9403:Arm2	0.02651	2.397	-0.03387	-2.1798	0.0217	-0.0073	0.02651	2.397	130.3
9403:WVGD13	0.02446	2.197	-0.03003	-2.1012	0.0213	-0.0068	0.02446	2.197	125
9403:WVGD12	0.02077	1.844	-0.02358	-1.9469	0.0201	-0.0060	0.02077	1.844	115
9403:Arm3	0.01827	1.607	-0.01952	-1.8371	0.0192	-0.0055	0.01827	1.607	107.8
9403:WVGD11	0.01731	1.517	-0.01803	-1.7829	0.0188	-0.0052	0.01731	1.517	105
9403:WVGD10	0.01412	1.223	-0.01344	-1.5831	0.0171	-0.0043	0.01412	1.223	94.99
9403:Arm4	0.01147	0.9828	-0.01007	-1.4171	0.0156	-0.0037	0.01147	0.9828	85.82
9403:WVGD9	0.01124	0.9624	-0.009797	-1.4007	0.0154	-0.0036	0.01124	0.9624	84.99
9403:WVGD8	0.00868	0.7349	-0.006929	-1.2014	0.0136	-0.0028	0.00868	0.7349	74.99
9403:WVGD7	0.006458	0.5413	-0.004788	-1.0125	0.0117	-0.0022	0.006458	0.5413	65
9403:WVGD6	0.004581	0.3806	-0.003221	-0.8242	0.0097	-0.0016	0.004581	0.3806	55
9403:WVGD5	0.003048	0.2512	-0.00213	-0.6576	0.0078	-0.0012	0.003048	0.2512	45
9403:WVGD4	0.001835	0.1501	-0.001363	-0.4984	0.0060	-0.0009	0.001835	0.1501	35
9403:WVGD3	0.0009346	0.07589	-0.00083	-0.3497	0.0043	-0.0006	0.0009346	0.07589	25
9403:WVGD2	0.000337	0.02716	-0.0004446	-0.2060	0.0025	-0.0003	0.000337	0.02716	15
9403:WVGD1	3.863e-005	0.003078	-0.0001408	-0.0674	0.0008	-0.0001	3.863e-005	0.003078	5
Davit1:O	0.03561	3.29	-0.102	-2.3329	0.0228	-0.0076	0.03561	4.522	152.9
Davit1:V	0.03678	3.305	-0.3929	-2.5763	0.0228	-0.0106	0.03678	11.29	153.1
Davit1:End	0.03704	3.304	-0.4608	-2.5991	0.0228	-0.0109	0.03704	12.79	153
Davit2:O	0.02668	2.396	-0.09144	-2.1798	0.0217	-0.0073	0.02668	3.909	130.2
Davit2:V	0.02921	2.435	-0.6112	-2.7419	0.0219	-0.0141	0.02921	15.95	130.9
Davit2:End	0.02968	2.433	-0.7078	-2.7789	0.0219	-0.0146	0.02968	17.95	130.8
Davit3:O	0.01842	1.606	-0.07599	-1.8371	0.0192	-0.0055	0.01842	3.367	107.8
Davit3:V	0.0206	1.641	-0.5241	-2.4023	0.0195	-0.0125	0.0206	15.4	108.5
Davit3:End	0.02102	1.64	-0.6089	-2.4396	0.0194	-0.0130	0.02102	17.4	108.4
Davit4:O	0.01159	0.9822	-0.06038	-1.4171	0.0156	-0.0037	0.01159	3.017	85.77
Davit4:V	0.01336	1.012	-0.4207	-1.9861	0.0158	-0.0108	0.01336	15.05	86.58
Davit4:End	0.01374	1.011	-0.491	-2.0237	0.0158	-0.0113	0.01374	17.05	86.51

Joint Support Reactions for Load Case "NESC Heavy":

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	Z Force (kips)	Comp. Uplift Usage %	Result. Usage %	Result. Force (kips)	Result. Usage %	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
9403:g	-0.56	0.0	-37.20	0.0	117.13	0.0	0.0	122.90	0.0	4395.64	0.0	-54.9	0.0	5.03	0.0	0.0

Detailed Steel Pole Usages for Load Case "NESC Heavy":

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Trans. Mom. (Local Mx) (ft-k)	Long. Mom. (Local My) (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Tran. Shear (kips)	Long. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
9403	9403:t	Origin	0.00	50.63	0.54	-0.85	-0.00	-0.00	0.0	-0.14	0.04	-0.00	-0.01	0.00	0.00	0.00	0.01	0.0	5
9403	9403:AT&T	End	2.50	49.38	0.52	-0.83	0.10	-0.00	0.0	-0.14	0.04	-0.00	-0.01	0.01	0.00	0.00	0.02	0.0	2
9403	9403:AT&T	Origin	2.50	49.38	0.52	-0.83	0.10	-0.00	-0.0	-3.56	1.42	-0.00	-0.19	0.00	0.15	0.00	0.32	0.5	5
9403	Tube 1	End	6.50	47.39	0.50	-0.79	5.77	-0.02	-0.0	-3.56	1.42	-0.00	-0.18	0.56	0.04	0.00	0.74	1.1	2
9403	Tube 1	Origin	6.50	47.39	0.50	-0.79	5.77	-0.02	0.0	-4.03	1.55	-0.01	-0.20	0.56	0.04	0.00	0.77	1.2	2
9403	9403:WVGD17	End	10.50	45.40	0.48	-0.74	11.96	-0.05	0.0	-4.03	1.55	-0.01	-0.19	1.06	0.04	0.00	1.25	1.9	2
9403	9403:WVGD17	Origin	10.50	45.40	0.48	-0.74	11.96	-0.05	0.0	-5.04	1.78	-0.01	-0.24	1.06	0.05	0.00	1.30	2.0	2
9403	Tube 1	End	15.50	42.93	0.46	-0.69	20.87	-0.11	0.0	-5.04	1.78	-0.01	-0.23	1.65	0.04	0.00	1.88	2.9	2
9403	Tube 1	Origin	15.50	42.93	0.46	-0.69	20.87	-0.11	0.0	-5.68	1.96	-0.02	-0.26	1.65	0.05	0.00	1.91	2.9	2
9403	9403:WVGD16	End	20.50	40.47	0.44	-0.64	30.68	-0.19	0.0	-5.68	1.96	-0.02	-0.25	2.19	0.04	0.00	2.44	3.7	2
9403	9403:WVGD16	Origin	20.50	40.47	0.44	-0.64	30.68	-0.19	0.0	-6.61	2.17	-0.02	-0.29	2.19	0.05	0.00	2.48	3.8	2
9403	9403:Arm1	End	22.50	39.49	0.43	-0.62	35.02	-0.22	0.0	-6.61	2.17	-0.02	-0.28	2.40	0.05	0.00	2.68	4.1	2
9403	9403:Arm1	Origin	22.50	39.49	0.43	-0.62	47.66	-0.23	-0.2	-8.34	4.68	-0.04	-0.35	3.26	0.10	0.01	3.62	5.6	2
9403	Tube 1	End	26.25	37.67	0.41	-0.58	65.20	-0.37	-0.2	-8.34	4.68	-0.04	-0.34	4.15	0.10	0.01	4.49	6.9	2
9403	Tube 1	Origin	26.25	37.67	0.41	-0.58	65.20	-0.37	-0.2	-8.88	4.82	-0.04	-0.36	4.15	0.10	0.01	4.52	7.0	2
9403	SpliceT	End	30.00	35.86	0.39	-0.55	83.29	-0.53	-0.2	-8.88	4.82	-0.04	-0.35	4.94	0.10	0.00	5.29	8.3	2
9403	SpliceT	Origin	30.00	35.86	0.39	-0.55	83.29	-0.53	-0.2	-9.20	4.91	-0.04	-0.29	3.94	0.08	0.00	4.23	6.5	2
9403	9403:WVGD15	End	30.50	35.62	0.39	-0.54	85.74	-0.55	-0.2	-9.20	4.91	-0.04	-0.29	4.02	0.08	0.00	4.31	6.6	2
9403	9403:WVGD15	Origin	30.50	35.62	0.39	-0.54	85.74	-0.55	-0.2	-10.18	5.10	-0.05	-0.32	4.02	0.08	0.00	4.34	6.7	2

9403	Tube 2	End	35.50	33.25	0.36	-0.49	111.27	-0.78	-0.2	-10.18	5.10	-0.05	-0.31	4.77	0.08	0.00	5.07	7.8	2
9403	Tube 2	Origin	35.50	33.25	0.36	-0.49	111.27	-0.78	-0.2	-11.13	5.32	-0.05	-0.33	4.77	0.08	0.00	5.10	7.9	2
9403	9403:WVGD14	End	40.50	30.91	0.34	-0.45	137.88	-1.04	-0.2	-11.13	5.32	-0.05	-0.32	5.42	0.08	0.00	5.74	8.8	2
9403	9403:WVGD14	Origin	40.50	30.91	0.34	-0.45	137.88	-1.04	-0.2	-12.56	5.62	-0.06	-0.36	5.42	0.09	0.00	5.78	8.9	2
9403	9403:Arm2	End	45.17	28.76	0.32	-0.41	164.11	-1.31	-0.2	-12.56	5.62	-0.06	-0.35	5.97	0.08	0.00	6.32	9.7	2
9403	9403:Arm2	Origin	45.17	28.76	0.32	-0.41	294.96	-1.42	-1.7	-21.67	13.92	-0.16	-0.60	10.72	0.20	0.03	11.32	17.4	2
9403	Tube 2	End	47.83	27.55	0.31	-0.38	332.07	-1.86	-1.7	-21.67	13.92	-0.16	-0.59	11.56	0.20	0.03	12.15	18.7	2
9403	Tube 2	Origin	47.83	27.55	0.31	-0.38	332.07	-1.86	-1.7	-22.24	14.04	-0.17	-0.60	11.56	0.20	0.03	12.17	18.7	2
9403	9403:WVGD13	End	50.50	26.37	0.29	-0.36	369.48	-2.31	-1.7	-22.24	14.04	-0.17	-0.59	12.33	0.20	0.03	12.93	19.9	2
9403	9403:WVGD13	Origin	50.50	26.37	0.29	-0.36	369.48	-2.31	-1.7	-23.47	14.27	-0.17	-0.62	12.33	0.20	0.03	12.96	19.9	2
9403	SpliceT	End	54.83	24.49	0.27	-0.33	431.32	-3.05	-1.7	-23.47	14.27	-0.17	-0.60	13.47	0.19	0.03	14.08	22.0	2
9403	SpliceT	Origin	54.83	24.49	0.27	-0.33	431.32	-3.05	-1.7	-24.56	14.43	-0.18	-0.63	13.47	0.20	0.03	14.11	22.1	2
9403	Tube 2	End	57.42	23.40	0.26	-0.31	468.61	-3.50	-1.7	-24.56	14.43	-0.18	-0.52	12.18	0.16	0.02	12.71	19.5	2
9403	Tube 2	Origin	57.42	23.40	0.26	-0.31	468.61	-3.50	-1.7	-25.78	14.57	-0.18	-0.55	12.18	0.16	0.02	12.73	19.6	2
9403	SpliceB	End	60.00	22.33	0.25	-0.29	506.26	-3.96	-1.7	-25.78	14.57	-0.18	-0.54	12.66	0.16	0.02	13.20	20.3	2
9403	SpliceB	Origin	60.00	22.33	0.25	-0.29	506.26	-3.96	-1.7	-26.46	14.65	-0.18	-0.55	12.66	0.16	0.02	13.22	20.3	2
9403	9403:WVGD12	End	60.50	22.13	0.25	-0.28	513.58	-4.05	-1.7	-26.46	14.65	-0.18	-0.55	12.75	0.16	0.02	13.30	20.5	2
9403	9403:WVGD12	Origin	60.50	22.13	0.25	-0.28	513.58	-4.05	-1.7	-27.48	14.83	-0.18	-0.57	12.75	0.16	0.02	13.32	20.5	2
9403	Tube 3	End	64.08	20.68	0.23	-0.26	566.73	-4.71	-1.7	-27.48	14.83	-0.18	-0.56	13.35	0.16	0.02	13.91	21.4	2
9403	Tube 3	Origin	64.08	20.68	0.23	-0.26	566.73	-4.71	-1.7	-28.49	15.00	-0.19	-0.58	13.35	0.16	0.02	13.94	21.4	2
9403	9403:Arm3	End	67.67	19.28	0.22	-0.23	620.49	-5.38	-1.7	-28.49	15.00	-0.19	-0.56	13.90	0.16	0.02	14.46	22.3	2
9403	9403:Arm3	Origin	67.67	19.28	0.22	-0.23	754.11	-5.50	-3.4	-37.82	23.22	-0.30	-0.75	16.88	0.24	0.04	17.64	27.1	2
9403	9403:WVGD11	End	70.50	18.21	0.21	-0.22	819.83	-6.34	-3.4	-37.82	23.22	-0.30	-0.73	17.65	0.24	0.04	18.39	28.3	2
9403	9403:WVGD11	Origin	70.50	18.21	0.21	-0.22	819.83	-6.34	-3.4	-39.45	23.47	-0.30	-0.77	17.65	0.24	0.04	18.42	28.3	2
9403	Tube 3	End	75.50	16.39	0.19	-0.19	937.19	-7.85	-3.4	-39.45	23.47	-0.30	-0.74	18.86	0.23	0.03	19.61	30.2	2
9403	Tube 3	Origin	75.50	16.39	0.19	-0.19	937.19	-7.84	-3.4	-40.99	23.69	-0.31	-0.77	18.86	0.23	0.03	19.64	30.2	2
9403	9403:WVGD10	End	80.50	14.68	0.17	-0.16	1055.65	-9.39	-3.4	-40.99	23.69	-0.31	-0.74	19.90	0.23	0.03	20.65	32.0	2
9403	9403:WVGD10	Origin	80.50	14.68	0.17	-0.16	1055.65	-9.39	-3.4	-42.44	23.90	-0.31	-0.77	19.90	0.23	0.03	20.68	32.0	2
9403	SpliceT	End	81.83	14.24	0.16	-0.15	1087.51	-9.80	-3.4	-42.44	23.90	-0.31	-0.76	20.16	0.23	0.03	20.93	32.5	2
9403	SpliceT	Origin	81.83	14.24	0.16	-0.15	1087.51	-9.80	-3.4	-43.38	24.03	-0.32	-0.67	17.26	0.20	0.03	17.93	27.6	2
9403	Tube 4	End	85.75	12.99	0.15	-0.14	1181.67	-11.04	-3.4	-43.38	24.03	-0.32	-0.65	17.85	0.19	0.03	18.51	28.5	2
9403	Tube 4	Origin	85.75	12.99	0.15	-0.14	1181.67	-11.04	-3.4	-44.86	24.22	-0.32	-0.67	17.85	0.19	0.03	18.53	28.5	2
9403	9403:Arm4	End	89.67	11.79	0.14	-0.12	1276.57	-12.30	-3.4	-44.86	24.22	-0.32	-0.66	18.38	0.19	0.03	19.04	29.3	2
9403	9403:Arm4	Origin	89.67	11.79	0.14	-0.12	1413.35	-12.42	-5.0	-54.22	32.34	-0.43	-0.80	20.34	0.25	0.04	21.15	32.5	2
9403	9403:WVGD9	End	90.50	11.55	0.13	-0.12	1440.20	-12.78	-5.0	-54.22	32.34	-0.43	-0.79	20.52	0.25	0.04	21.32	32.8	2
9403	9403:WVGD9	Origin	90.50	11.55	0.13	-0.12	1440.20	-12.77	-5.0	-55.59	32.52	-0.43	-0.81	20.52	0.25	0.04	21.34	32.8	2
9403	Tube 4	End	94.29	10.46	0.12	-0.10	1563.49	-14.42	-5.0	-55.59	32.52	-0.43	-0.79	21.30	0.25	0.04	22.10	34.0	2
9403	Tube 4	Origin	94.29	10.46	0.12	-0.10	1563.49	-14.41	-5.0	-57.11	32.69	-0.44	-0.82	21.30	0.25	0.04	22.12	34.0	2
9403	SpliceT	End	98.08	9.44	0.11	-0.09	1687.43	-16.08	-5.0	-57.11	32.69	-0.44	-0.80	21.99	0.24	0.03	22.79	35.1	2
9403	SpliceT	Origin	98.08	9.44	0.11	-0.09	1687.43	-16.08	-5.0	-58.87	32.84	-0.44	-0.82	21.99	0.24	0.03	22.82	35.1	2
9403	9403:WVGD8	End	100.50	8.82	0.10	-0.08	1766.79	-17.15	-5.0	-58.87	32.84	-0.44	-0.72	20.36	0.21	0.03	21.09	32.4	2
9403	9403:WVGD8	Origin	100.50	8.82	0.10	-0.08	1766.79	-17.15	-5.0	-62.14	33.09	-0.45	-0.76	20.36	0.22	0.03	21.13	32.5	2
9403	SpliceB	End	104.83	7.76	0.09	-0.07	1910.16	-19.10	-5.0	-62.14	33.09	-0.45	-0.74	20.95	0.21	0.03	21.69	33.4	2
9403	SpliceB	Origin	104.83	7.76	0.09	-0.07	1910.16	-19.09	-5.0	-64.63	33.27	-0.45	-0.77	20.95	0.21	0.03	21.72	33.4	2
9403	Tube 5	End	107.67	7.11	0.08	-0.06	2004.43	-20.38	-5.0	-64.63	33.27	-0.45	-0.76	21.29	0.21	0.03	22.06	33.9	2
9403	Tube 5	Origin	107.67	7.11	0.08	-0.06	2004.43	-20.37	-5.0	-65.98	33.40	-0.46	-0.78	21.29	0.21	0.03	22.07	34.0	2
9403	9403:WVGD7	End	110.50	6.50	0.08	-0.06	2099.06	-21.67	-5.0	-65.98	33.40	-0.46	-0.77	21.61	0.21	0.03	22.38	34.4	2
9403	9403:WVGD7	Origin	110.50	6.50	0.08	-0.06	2099.06	-21.67	-5.0	-68.34	33.65	-0.46	-0.79	21.61	0.21	0.03	22.41	34.5	2
9403	Tube 5	End	115.50	5.48	0.07	-0.05	2267.29	-23.99	-5.0	-68.34	33.65	-0.46	-0.77	22.11	0.20	0.03	22.89	35.2	2
9403	Tube 5	Origin	115.50	5.48	0.07	-0.05	2267.29	-23.98	-5.0	-70.83	33.88	-0.47	-0.80	22.11	0.20	0.03	22.92	35.3	2
9403	9403:WVGD6	End	120.50	4.57	0.05	-0.04	2436.68	-26.35	-5.0	-70.83	33.88	-0.47	-0.78	22.55	0.20	0.02	23.33	35.9	2
9403	9403:WVGD6	Origin	120.50	4.57	0.05	-0.04	2436.68	-26.34	-5.0	-72.82	34.08	-0.47	-0.80	22.55	0.20	0.02	23.35	35.9	2
9403	SpliceT	End	121.58	4.38	0.05	-0.04	2473.59	-26.86	-5.0	-72.82	34.08	-0.47	-0.80	22.64	0.20	0.02	23.44	36.1	2
9403	SpliceT	Origin	121.58	4.38	0.05	-0.04	2473.59	-26.85	-5.0	-74.39	34.22	-0.48	-0.72	20.10	0.18	0.02	20.82	32.0	2
9403	Tube 6	End	126.04	3.66	0.04	-0.03	2626.17	-29.00	-5.0	-74.39	34.22	-0.48	-0.71	20.39	0.17	0.02	21.10	32.5	2
9403	Tube 6	Origin	126.04	3.66	0.04	-0.03	2626.17	-28.99	-5.0	-76.99	34.45	-0.49	-0.73	20.39	0.17	0.02	21.12	32.5	2
9403	9403:WVGD5	End	130.50	3.01	0.04	-0.03	2779.74	-31.16	-5.0	-76.99	34.45	-0.49	-0.72	20.64	0.17	0.02	21.36	32.9	2
9403	9403:WVGD5	Origin	130.50	3.01	0.04	-0.03	2779.74	-31.16	-5.0	-79.74	34.71	-0.49	-0.74	20.64	0.17	0.02	21.39	32.9	2
9403	Tube 6	End	133.75	2.58	0.03	-0.02	2892.53	-32.76	-5.0	-79.74	34.71	-0.49	-0.73	20.81	0.17	0.02	21.54	33.1	2
9403	Tube 6	Origin	133.75	2.58	0.03	-0.02	2892.53	-32.76	-5.0	-81.71	34.87	-0.50	-0.75	20.81	0.17	0.02	21.56	33.2	2
9403	SpliceT	End	137.00	2.19	0.03	-0.02	3005.86	-34.38	-5.0	-81.71	34.87	-0.50	-0.74	20.96	0.17	0.02	21.69	33.4	2
9403	SpliceT	Origin	137.00	2.19	0.03	-0.02	3005.86	-34.38	-5.0	-84.87	35.05	-0.50	-0.76	20.96	0.17	0.02	21.72	33.4	2
9403	9403:WVGD4	End	140.50	1.80	0.02	-0.02	3128.54	-36.14	-5.0	-84.87	35.05	-0.50	-0.69	19.76	0.15	0.02	20.45	31.5	2
9403	9403:WVGD4	Origin	140.50	1.80	0.02	-0.02	3128.54	-36.14	-5.0	-90.40	35.34	-0.51	-0.74	19.76	0.15	0.02	20.49	31.5	2
9403	SpliceB	End	145.08	1.35	0.02	-0.01	3290.50	-38.48	-5.0	-90.40	35.34	-0.51	-0.72	19.89	0.15	0.02	20.62	31.7	2
9403	SpliceB	Origin	145.08	1.35	0.02	-0.01	3290.50	-38.47	-5.0	-94.24	35.54	-0.52	-0.75	19.89	0.15	0.02	20.65	31.8	2
9403	Tube 7	End	147.79	1.12	0.01	-0.01	3386.75	-39.87	-5.0	-94.24	35.54	-0.52	-0.74	19.97	0.15	0.02	20.71	31.9	2

9403	Tube 7	Origin	147.79	1.12	0.01	-0.01	3386.75	-39.87	-5.0	-96.13	35.67	-0.52	-0.76	19.97	0.15	0.02	20.72	31.9	2
9403	9403:WVGD3	End	150.50	0.91	0.01	-0.01	3483.37	-41.28	-5.0	-96.13	35.67	-0.52	-0.75	20.03	0.15	0.01	20.78	32.0	2
9403	9403:WVGD3	Origin	150.50	0.91	0.01	-0.01	3483.37	-41.28	-5.0	-99.33	35.93	-0.53	-0.77	20.03	0.15	0.01	20.80	32.0	2
9403	Tube 7	End	155.50	0.58	0.01	-0.01	3663.02	-43.92	-5.0	-99.33	35.93	-0.53	-0.75	20.13	0.14	0.01	20.89	32.1	2
9403	Tube 7	Origin	155.50	0.58	0.01	-0.01	3663.02	-43.91	-5.0	-102.94	36.19	-0.53	-0.78	20.13	0.15	0.01	20.91	32.2	2
9403	9403:WVGD2	End	160.50	0.33	0.00	-0.01	3843.94	-46.59	-5.0	-102.94	36.19	-0.53	-0.76	20.21	0.14	0.01	20.98	32.3	2
9403	9403:WVGD2	Origin	160.50	0.33	0.00	-0.01	3843.94	-46.59	-5.0	-107.10	36.50	-0.54	-0.80	20.21	0.14	0.01	21.01	32.3	2
9403	Tube 8	End	165.50	0.15	0.00	-0.00	4026.46	-49.31	-5.0	-107.10	36.50	-0.54	-0.78	20.27	0.14	0.01	21.05	32.4	2
9403	Tube 8	Origin	165.50	0.15	0.00	-0.00	4026.46	-49.30	-5.0	-110.87	36.76	-0.55	-0.81	20.27	0.14	0.01	21.08	32.4	2
9403	9403:WVGD1	End	170.50	0.04	0.00	-0.00	4210.25	-52.07	-5.0	-110.87	36.76	-0.55	-0.79	20.32	0.14	0.01	21.11	32.5	2
9403	9403:WVGD1	Origin	170.50	0.04	0.00	-0.00	4210.25	-52.06	-5.0	-115.18	37.08	-0.56	-0.82	20.32	0.14	0.01	21.14	32.5	2
9403	9403:g	End	175.50	0.00	0.00	0.00	4395.64	-54.87	-5.0	-115.18	37.08	-0.56	-0.80	20.35	0.14	0.01	21.16	32.5	2

Detailed Tubular Davit Arm Usages for Load Case "NESC Heavy":

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Vert. Mom. (ft-k)	Horz. Mom. (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Vert. Shear (kips)	Horz. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
Davit1	Davit1:O	Origin	0.00	39.48	0.43	-1.22	-11.00	-0.13	-0.0	2.30	1.44	0.02	0.30	7.83	0.00	0.00	8.13	12.5	1
Davit1	#Davit1:O	End	3.38	39.57	0.43	-2.92	-6.13	-0.08	-0.0	2.30	1.44	0.02	0.37	6.84	0.01	0.00	7.22	11.1	1
Davit1	#Davit1:O	Origin	3.38	39.57	0.43	-2.92	-6.13	-0.08	-0.0	2.30	1.33	0.02	0.38	6.84	0.01	0.00	7.22	11.1	1
Davit1	Davit1:V	End	6.77	39.66	0.44	-4.71	-1.63	-0.02	-0.0	2.30	1.33	0.02	0.50	3.26	0.01	0.00	3.76	5.8	1
Davit1	Davit1:V	Origin	6.77	39.66	0.44	-4.71	-1.63	-0.02	0.0	2.39	1.09	0.02	0.52	3.26	0.01	0.00	3.78	5.8	1
Davit1	Davit1:End	End	8.27	39.65	0.44	-5.53	0.00	0.00	0.0	2.39	1.09	0.02	0.61	0.00	0.58	0.00	1.17	1.8	3
Davit2	Davit2:O	Origin	0.00	28.75	0.32	-1.10	-118.21	-1.42	-0.0	7.32	8.87	0.10	0.40	18.24	0.01	0.00	18.64	28.7	1
Davit2	#Davit2:O	End	5.00	28.93	0.33	-3.51	-73.84	-0.91	-0.0	7.32	8.87	0.10	0.49	17.05	0.01	0.00	17.54	27.0	1
Davit2	#Davit2:O	Origin	5.00	28.93	0.33	-3.51	-73.84	-0.91	-0.0	7.37	8.51	0.10	0.49	17.05	0.01	0.00	17.54	27.0	1
Davit2	#Davit2:1	End	8.53	29.07	0.34	-5.36	-43.82	-0.56	-0.0	7.37	8.51	0.10	0.58	14.26	0.02	0.00	14.84	22.8	1
Davit2	#Davit2:1	Origin	8.53	29.07	0.34	-5.36	-43.82	-0.56	-0.0	7.41	8.26	0.10	0.59	14.26	0.02	0.00	14.84	22.8	1
Davit2	Davit2:V	End	12.06	29.22	0.35	-7.33	-14.67	-0.20	-0.0	7.41	8.26	0.10	0.72	7.22	0.02	0.00	7.94	12.2	1
Davit2	Davit2:V	Origin	12.06	29.22	0.35	-7.33	-14.67	-0.20	0.0	8.18	7.34	0.10	0.79	7.22	0.02	0.00	8.01	12.3	1
Davit2	Davit2:End	End	14.06	29.19	0.36	-8.49	-0.00	0.00	0.0	8.18	7.34	0.10	0.91	0.00	1.69	0.00	3.07	4.7	3
Davit3	Davit3:O	Origin	0.00	19.27	0.22	-0.91	-118.83	-1.45	-0.0	7.26	8.92	0.10	0.40	18.34	0.01	0.00	18.73	28.8	1
Davit3	#Davit3:O	End	5.00	19.44	0.23	-2.96	-74.25	-0.93	-0.0	7.26	8.92	0.10	0.48	17.15	0.01	0.00	17.63	27.1	1
Davit3	#Davit3:O	Origin	5.00	19.44	0.23	-2.96	-74.25	-0.93	-0.0	7.31	8.55	0.10	0.49	17.15	0.01	0.00	17.63	27.1	1
Davit3	#Davit3:1	End	8.53	19.56	0.24	-4.56	-44.07	-0.57	-0.0	7.31	8.55	0.10	0.58	14.34	0.02	0.00	14.91	22.9	1
Davit3	#Davit3:1	Origin	8.53	19.56	0.24	-4.56	-44.07	-0.57	-0.0	7.35	8.30	0.10	0.58	14.34	0.02	0.00	14.92	23.0	1
Davit3	Davit3:V	End	12.06	19.70	0.25	-6.29	-14.77	-0.20	-0.0	7.35	8.30	0.10	0.71	7.27	0.02	0.00	7.98	12.3	1
Davit3	Davit3:V	Origin	12.06	19.70	0.25	-6.29	-14.77	-0.21	0.0	8.13	7.39	0.10	0.79	7.27	0.02	0.00	8.06	12.4	1
Davit3	Davit3:End	End	14.06	19.68	0.25	-7.31	-0.00	0.00	0.0	8.13	7.39	0.10	0.90	0.00	1.71	0.00	3.09	4.8	3
Davit4	Davit4:O	Origin	0.00	11.79	0.14	-0.72	-119.58	-1.46	-0.0	7.19	8.97	0.10	0.39	18.45	0.01	0.00	18.85	29.0	1
Davit4	#Davit4:O	End	5.00	11.92	0.15	-2.34	-74.74	-0.94	-0.0	7.19	8.97	0.10	0.48	17.26	0.01	0.00	17.74	27.3	1
Davit4	#Davit4:O	Origin	5.00	11.92	0.15	-2.34	-74.74	-0.94	-0.0	7.24	8.61	0.10	0.48	17.26	0.01	0.00	17.74	27.3	1
Davit4	#Davit4:1	End	8.53	12.03	0.15	-3.63	-44.37	-0.57	-0.0	7.24	8.61	0.10	0.57	14.44	0.02	0.00	15.01	23.1	1
Davit4	#Davit4:1	Origin	8.53	12.03	0.15	-3.63	-44.37	-0.57	-0.0	7.28	8.36	0.10	0.58	14.44	0.02	0.00	15.01	23.1	1
Davit4	Davit4:V	End	12.06	12.14	0.16	-5.05	-14.89	-0.21	-0.0	7.28	8.36	0.10	0.71	7.33	0.02	0.00	8.03	12.4	1
Davit4	Davit4:V	Origin	12.06	12.14	0.16	-5.05	-14.89	-0.21	0.0	8.06	7.44	0.10	0.78	7.33	0.02	0.00	8.11	12.5	1
Davit4	Davit4:End	End	14.06	12.13	0.16	-5.89	-0.00	0.00	0.0	8.06	7.44	0.10	0.90	0.00	1.72	0.00	3.11	4.8	3

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

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Usage %
Clamp1	2.622	80.00	80.00	3.28
Clamp2	10.955	80.00	80.00	13.69
Clamp3	10.948	80.00	80.00	13.69
Clamp4	10.941	80.00	80.00	13.68

Clamp5	0.464	80.00	80.00	0.58
Clamp6	0.464	80.00	80.00	0.58
Clamp7	0.464	80.00	80.00	0.58
Clamp8	0.464	80.00	80.00	0.58
Clamp9	0.464	80.00	80.00	0.58
Clamp10	0.464	80.00	80.00	0.58
Clamp11	0.464	80.00	80.00	0.58
Clamp12	0.464	80.00	80.00	0.58
Clamp13	0.464	80.00	80.00	0.58
Clamp14	0.464	80.00	80.00	0.58
Clamp15	0.464	80.00	80.00	0.58
Clamp16	0.464	80.00	80.00	0.58
Clamp17	0.464	80.00	80.00	0.58
Clamp18	0.464	80.00	80.00	0.58
Clamp19	0.464	80.00	80.00	0.58
Clamp20	0.464	80.00	80.00	0.58
Clamp21	0.464	80.00	80.00	0.58
Clamp22	3.316	80.00	80.00	4.15

*** Analysis Results for Load Case No. 2 "NESC Extreme" - Number of iterations in SAPS 15

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

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
9403:g	0	0	0	0.0000	0.0000	0.0000	0	0	0
9403:t	0.03516	5.957	-0.1362	-3.4733	0.0170	-0.0086	0.03516	5.957	175.4
9403:AT&T	0.0344	5.806	-0.1316	-3.4732	0.0170	-0.0086	0.0344	5.806	172.9
9403:WVGD17	0.03195	5.322	-0.1169	-3.4453	0.0170	-0.0086	0.03195	5.322	164.9
9403:WVGD16	0.0289	4.728	-0.09924	-3.3542	0.0170	-0.0087	0.0289	4.728	154.9
9403:Arm1	0.02829	4.611	-0.09583	-3.3307	0.0170	-0.0087	0.02829	4.611	152.9
9403:WVGD15	0.02585	4.154	-0.08269	-3.2177	0.0169	-0.0086	0.02585	4.154	144.9
9403:WVGD14	0.02282	3.604	-0.06751	-3.0785	0.0168	-0.0085	0.02282	3.604	134.9
9403:Arm2	0.02141	3.356	-0.06089	-3.0071	0.0167	-0.0085	0.02141	3.356	130.3
9403:WVGD13	0.01979	3.081	-0.05374	-2.9015	0.0165	-0.0079	0.01979	3.081	124.9
9403:WVGD12	0.01684	2.593	-0.04173	-2.6864	0.0159	-0.0070	0.01684	2.593	115
9403:Arm3	0.01483	2.266	-0.03421	-2.5290	0.0153	-0.0066	0.01483	2.266	107.8
9403:WVGD11	0.01406	2.143	-0.03149	-2.4595	0.0150	-0.0062	0.01406	2.143	105
9403:WVGD10	0.01146	1.736	-0.02306	-2.1966	0.0138	-0.0051	0.01146	1.736	94.98
9403:Arm4	0.009301	1.402	-0.01687	-1.9718	0.0126	-0.0044	0.009301	1.402	85.81
9403:WVGD9	0.009115	1.373	-0.01637	-1.9508	0.0125	-0.0043	0.009115	1.373	84.98
9403:WVGD8	0.007019	1.055	-0.01116	-1.6905	0.0110	-0.0034	0.007019	1.055	74.99
9403:WVGD7	0.005205	0.7813	-0.007278	-1.4374	0.0094	-0.0026	0.005205	0.7813	64.99
9403:WVGD6	0.003678	0.5522	-0.004508	-1.1802	0.0078	-0.0020	0.003678	0.5522	55
9403:WVGD5	0.002437	0.3661	-0.002641	-0.9486	0.0063	-0.0015	0.002437	0.3661	45
9403:WVGD4	0.001461	0.2198	-0.001431	-0.7240	0.0048	-0.0010	0.001461	0.2198	35
9403:WVGD3	0.0007405	0.1116	-0.0007032	-0.5113	0.0034	-0.0007	0.0007405	0.1116	25
9403:WVGD2	0.0002656	0.04014	-0.0002984	-0.3030	0.0020	-0.0004	0.0002656	0.04014	15
9403:WVGD1	3.019e-005	0.004582	-8.005e-005	-0.0997	0.0007	-0.0001	3.019e-005	0.004582	5
Davit1:O	0.02846	4.609	-0.1674	-3.3307	0.0170	-0.0087	0.02846	5.842	152.8
Davit1:V	0.02966	4.627	-0.5641	-3.3840	0.0169	-0.0109	0.02966	12.61	152.9
Davit1:End	0.02992	4.625	-0.6527	-3.3872	0.0169	-0.0112	0.02992	14.11	152.8
Davit2:O	0.02161	3.354	-0.1403	-3.0071	0.0167	-0.0085	0.02161	4.867	130.2
Davit2:V	0.02448	3.4	-0.7994	-3.2542	0.0168	-0.0169	0.02448	16.91	130.7
Davit2:End	0.02505	3.397	-0.9133	-3.2679	0.0168	-0.0175	0.02505	18.91	130.6
Davit3:O	0.01501	2.265	-0.1119	-2.5290	0.0153	-0.0066	0.01501	4.026	107.7
Davit3:V	0.0175	2.306	-0.6712	-2.7818	0.0154	-0.0151	0.0175	16.07	108.3
Davit3:End	0.01801	2.304	-0.7686	-2.7960	0.0154	-0.0157	0.01801	18.07	108.2
Davit4:O	0.009442	1.401	-0.08687	-1.9718	0.0126	-0.0044	0.009442	3.435	85.74
Davit4:V	0.01148	1.436	-0.5298	-2.2313	0.0128	-0.0131	0.01148	15.47	86.47
Davit4:End	0.01194	1.434	-0.608	-2.2460	0.0128	-0.0137	0.01194	17.47	86.39

Joint Support Reactions for Load Case "NESC Extreme":

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	Z Force (kips)	Comp. Uplift Usage %	Result. Force (kips)	Result. Usage %	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
9403:g	-0.39	0.0	-62.64	0.0	65.48	0.0	90.62	0.0	6522.67	0.0	-43.0	0.0	5.96	0.0	0.0

Detailed Steel Pole Usages for Load Case "NESC Extreme":

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Trans. Mom. (Local Mx) (ft-k)	Long. Mom. (Local My) (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Tran. Shear (kips)	Long. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
9403	9403:t	Origin	0.00	71.49	0.42	-1.63	-0.00	-0.00	-0.0	-0.08	0.09	-0.00	-0.00	0.00	0.01	0.00	0.02	0.0	5
9403	9403:AT&T	End	2.50	69.67	0.41	-1.58	0.21	-0.00	-0.0	-0.08	0.09	-0.00	-0.00	0.02	0.00	0.00	0.03	0.0	2
9403	9403:AT&T	Origin	2.50	69.67	0.41	-1.58	0.21	-0.00	-0.0	-1.60	4.76	0.00	-0.08	0.00	0.51	0.00	0.89	1.4	5
9403	Tube 1	End	6.50	66.76	0.40	-1.49	19.27	0.00	-0.0	-1.60	4.76	0.00	-0.08	1.87	0.13	0.00	1.96	3.0	2
9403	Tube 1	Origin	6.50	66.76	0.40	-1.49	19.27	0.00	0.0	-1.87	5.06	0.00	-0.09	1.87	0.13	0.00	1.98	3.0	2

9403	9403:WVGD17	End	10.50	63.87	0.38	-1.40	39.50	0.00	0.0	-1.87	5.06	0.00	-0.09	3.49	0.13	0.00	3.59	5.5	2
9403	9403:WVGD17	Origin	10.50	63.87	0.38	-1.40	39.50	0.00	0.0	-2.31	5.58	0.00	-0.11	3.49	0.14	0.00	3.61	5.6	2
9403	Tube 1	End	15.50	60.28	0.37	-1.30	67.42	0.00	0.0	-2.31	5.58	0.00	-0.11	5.33	0.13	0.00	5.44	8.4	2
9403	Tube 1	Origin	15.50	60.28	0.37	-1.30	67.42	0.00	0.0	-2.68	5.99	0.00	-0.12	5.33	0.14	0.00	5.46	8.4	2
9403	9403:WVGD16	End	20.50	56.74	0.35	-1.19	97.34	0.00	0.0	-2.68	5.99	0.00	-0.12	6.93	0.14	0.00	7.05	10.8	2
9403	9403:WVGD16	Origin	20.50	56.74	0.35	-1.19	97.34	0.00	0.0	-3.07	6.46	-0.00	-0.13	6.93	0.15	0.00	7.07	10.9	2
9403	9403:Arm1	End	22.50	55.34	0.34	-1.15	110.26	0.00	0.0	-3.07	6.46	-0.00	-0.13	7.54	0.14	0.00	7.67	11.8	2
9403	9403:Arm1	Origin	22.50	55.34	0.34	-1.15	113.32	-0.00	-0.1	-3.62	8.53	-0.01	-0.15	7.75	0.19	0.00	7.91	12.2	2
9403	Tube 1	End	26.25	52.74	0.33	-1.07	145.31	-0.05	-0.1	-3.62	8.53	-0.01	-0.15	9.23	0.18	0.00	9.39	14.5	2
9403	Tube 1	Origin	26.25	52.74	0.33	-1.07	145.31	-0.05	-0.1	-3.94	8.86	-0.01	-0.16	9.23	0.19	0.00	9.40	14.5	2
9403	SpliceT	End	30.00	50.18	0.31	-1.00	178.55	-0.09	-0.1	-3.94	8.86	-0.01	-0.16	10.57	0.18	0.00	10.73	16.9	2
9403	SpliceT	Origin	30.00	50.18	0.31	-1.00	178.55	-0.09	-0.1	-4.13	9.06	-0.01	-0.13	8.44	0.15	0.00	8.57	13.2	2
9403	9403:WVGD15	End	30.50	49.85	0.31	-0.99	183.08	-0.10	-0.1	-4.13	9.06	-0.01	-0.13	8.57	0.15	0.00	8.70	13.4	2
9403	9403:WVGD15	Origin	30.50	49.85	0.31	-0.99	183.08	-0.10	-0.1	-4.55	9.50	-0.01	-0.14	8.57	0.16	0.00	8.72	13.4	2
9403	Tube 2	End	35.50	46.51	0.29	-0.90	230.58	-0.16	-0.1	-4.55	9.50	-0.01	-0.14	9.86	0.15	0.00	10.00	15.4	2
9403	Tube 2	Origin	35.50	46.51	0.29	-0.90	230.58	-0.16	-0.1	-5.13	9.99	-0.01	-0.15	9.86	0.16	0.00	10.02	15.4	2
9403	9403:WVGD14	End	40.50	43.25	0.27	-0.81	280.53	-0.22	-0.1	-5.13	9.99	-0.01	-0.15	11.00	0.15	0.00	11.15	17.2	2
9403	9403:WVGD14	Origin	40.50	43.25	0.27	-0.81	280.53	-0.22	-0.1	-5.83	10.66	-0.01	-0.17	11.00	0.16	0.00	11.17	17.2	2
9403	9403:Arm2	End	45.17	40.27	0.26	-0.73	330.33	-0.28	-0.1	-5.83	10.66	-0.01	-0.16	11.99	0.16	0.00	12.15	18.7	2
9403	9403:Arm2	Origin	45.17	40.27	0.26	-0.73	389.56	-0.42	-2.0	-9.69	21.32	-0.14	-0.27	14.14	0.31	0.04	14.42	22.2	2
9403	Tube 2	End	47.83	38.61	0.25	-0.69	446.36	-0.78	-2.0	-9.69	21.32	-0.14	-0.26	15.52	0.30	0.04	15.80	24.3	2
9403	Tube 2	Origin	47.83	38.61	0.25	-0.69	446.36	-0.78	-2.0	-10.04	21.60	-0.14	-0.27	15.52	0.31	0.04	15.81	24.3	2
9403	9403:WVGD13	End	50.50	36.97	0.24	-0.64	503.92	-1.14	-2.0	-10.04	21.60	-0.14	-0.27	16.80	0.30	0.03	17.08	26.3	2
9403	9403:WVGD13	Origin	50.50	36.97	0.24	-0.64	503.92	-1.14	-2.0	-10.64	22.16	-0.14	-0.28	16.80	0.31	0.03	17.10	26.3	2
9403	SpliceT	End	54.83	34.38	0.22	-0.58	599.93	-1.73	-2.0	-10.64	22.16	-0.14	-0.27	18.72	0.30	0.03	19.00	29.7	2
9403	SpliceT	Origin	54.83	34.38	0.22	-0.58	599.93	-1.73	-2.0	-11.33	22.55	-0.14	-0.29	18.72	0.30	0.03	19.02	29.7	2
9403	Tube 2	End	57.42	32.87	0.21	-0.54	658.18	-2.08	-2.0	-11.33	22.55	-0.14	-0.24	17.08	0.25	0.03	17.33	26.7	2
9403	Tube 2	Origin	57.42	32.87	0.21	-0.54	658.18	-2.08	-2.0	-12.11	22.86	-0.14	-0.26	17.08	0.26	0.03	17.35	26.7	2
9403	SpliceB	End	60.00	31.40	0.20	-0.51	717.23	-2.43	-2.0	-12.11	22.86	-0.14	-0.25	17.91	0.25	0.03	18.17	28.0	2
9403	SpliceB	Origin	60.00	31.40	0.20	-0.51	717.23	-2.43	-2.0	-12.55	23.04	-0.14	-0.26	17.91	0.25	0.03	18.18	28.0	2
9403	9403:WVGD12	End	60.50	31.12	0.20	-0.50	728.75	-2.50	-2.0	-12.55	23.04	-0.14	-0.26	18.07	0.25	0.03	18.33	28.2	2
9403	9403:WVGD12	Origin	60.50	31.12	0.20	-0.50	728.75	-2.50	-2.0	-13.02	23.46	-0.14	-0.27	18.07	0.26	0.03	18.34	28.2	2
9403	Tube 3	End	64.08	29.13	0.19	-0.45	812.83	-2.99	-2.0	-13.02	23.46	-0.14	-0.26	19.13	0.25	0.02	19.40	29.8	2
9403	Tube 3	Origin	64.08	29.13	0.19	-0.45	812.83	-2.99	-2.0	-13.65	23.87	-0.14	-0.28	19.13	0.26	0.02	19.41	29.9	2
9403	9403:Arm3	End	67.67	27.20	0.18	-0.41	898.42	-3.48	-2.0	-13.65	23.87	-0.14	-0.27	20.09	0.25	0.02	20.37	31.3	2
9403	9403:Arm3	Origin	67.67	27.20	0.18	-0.41	959.80	-3.62	-4.0	-17.72	34.49	-0.26	-0.35	21.47	0.36	0.05	21.83	33.6	2
9403	9403:WVGD11	End	70.50	25.72	0.17	-0.38	1057.40	-4.37	-4.0	-17.72	34.49	-0.26	-0.34	22.74	0.35	0.04	23.10	35.5	2
9403	9403:WVGD11	Origin	70.50	25.72	0.17	-0.38	1057.40	-4.36	-4.0	-18.58	35.14	-0.26	-0.36	22.74	0.36	0.04	23.11	35.6	2
9403	Tube 3	End	75.50	23.20	0.15	-0.32	1233.10	-5.68	-4.0	-18.58	35.14	-0.26	-0.35	24.79	0.35	0.04	25.15	38.7	2
9403	Tube 3	Origin	75.50	23.20	0.15	-0.32	1233.10	-5.67	-4.0	-19.57	35.75	-0.26	-0.37	24.79	0.35	0.04	25.17	38.7	2
9403	9403:WVGD10	End	80.50	20.83	0.14	-0.28	1411.85	-6.99	-4.0	-19.57	35.75	-0.26	-0.36	26.59	0.34	0.04	26.96	41.7	2
9403	9403:WVGD10	Origin	80.50	20.83	0.14	-0.28	1411.85	-6.98	-4.0	-20.33	36.32	-0.26	-0.37	26.59	0.35	0.04	26.97	41.7	2
9403	SpliceT	End	81.83	20.22	0.13	-0.26	1460.27	-7.34	-4.0	-20.33	36.32	-0.26	-0.37	27.04	0.35	0.04	27.41	42.6	2
9403	SpliceT	Origin	81.83	20.22	0.13	-0.26	1460.27	-7.33	-3.9	-20.93	36.66	-0.26	-0.32	23.14	0.30	0.03	23.47	36.1	2
9403	Tube 4	End	85.75	18.48	0.12	-0.23	1603.93	-8.37	-3.9	-20.93	36.66	-0.26	-0.31	24.20	0.29	0.03	24.52	37.7	2
9403	Tube 4	Origin	85.75	18.48	0.12	-0.23	1603.93	-8.36	-3.9	-21.88	37.18	-0.26	-0.33	24.20	0.30	0.03	24.54	37.7	2
9403	9403:Arm4	End	89.67	16.82	0.11	-0.20	1749.62	-9.39	-3.9	-21.88	37.18	-0.26	-0.32	25.16	0.29	0.03	25.49	39.2	2
9403	9403:Arm4	Origin	89.67	16.82	0.11	-0.20	1813.49	-9.54	-6.0	-26.04	47.69	-0.39	-0.38	26.08	0.37	0.04	26.47	40.7	2
9403	9403:WVGD9	End	90.50	16.48	0.11	-0.20	1853.07	-9.86	-6.0	-26.04	47.69	-0.39	-0.38	26.38	0.37	0.04	26.77	41.2	2
9403	9403:WVGD9	Origin	90.50	16.48	0.11	-0.20	1853.07	-9.86	-6.0	-26.75	48.17	-0.39	-0.39	26.38	0.37	0.04	26.78	41.2	2
9403	Tube 4	End	94.29	14.97	0.10	-0.17	2035.72	-11.35	-6.0	-26.75	48.17	-0.39	-0.38	27.70	0.36	0.04	28.09	43.2	2
9403	Tube 4	Origin	94.29	14.97	0.10	-0.17	2035.72	-11.34	-6.0	-27.74	48.68	-0.39	-0.40	27.70	0.37	0.04	28.11	43.2	2
9403	SpliceT	End	98.08	13.53	0.09	-0.15	2220.30	-12.83	-6.0	-27.74	48.68	-0.39	-0.39	28.91	0.36	0.04	29.30	45.1	2
9403	SpliceT	Origin	98.08	13.53	0.09	-0.15	2220.30	-12.82	-6.0	-28.90	49.12	-0.39	-0.40	28.91	0.36	0.04	29.32	45.1	2
9403	9403:WVGD8	End	100.50	12.66	0.08	-0.13	2339.02	-13.77	-6.0	-28.90	49.12	-0.39	-0.36	26.92	0.32	0.04	27.29	42.0	2
9403	9403:WVGD8	Origin	100.50	12.66	0.08	-0.13	2339.02	-13.76	-6.0	-30.86	49.79	-0.39	-0.38	26.92	0.32	0.04	27.31	42.0	2
9403	SpliceB	End	104.83	11.17	0.07	-0.11	2554.74	-15.47	-6.0	-30.86	49.79	-0.39	-0.37	27.98	0.32	0.03	28.36	43.6	2
9403	SpliceB	Origin	104.83	11.17	0.07	-0.11	2554.74	-15.45	-6.0	-32.50	50.30	-0.39	-0.39	27.98	0.32	0.03	28.38	43.7	2
9403	Tube 5	End	107.67	10.25	0.07	-0.10	2697.26	-16.57	-6.0	-32.50	50.30	-0.39	-0.38	28.62	0.31	0.03	29.01	44.6	2
9403	Tube 5	Origin	107.67	10.25	0.07	-0.10	2697.26	-16.56	-6.0	-33.38	50.70	-0.39	-0.39	28.62	0.32	0.03	29.02	44.6	2
9403	9403:WVGD7	End	110.50	9.38	0.06	-0.09	2840.91	-17.68	-6.0	-33.38	50.70	-0.39	-0.39	29.22	0.31	0.03	29.61	45.6	2
9403	9403:WVGD7	Origin	110.50	9.38	0.06	-0.09	2840.91	-17.67	-6.0	-34.74	51.44	-0.39	-0.40	29.22	0.32	0.03	29.63	45.6	2
9403	Tube 5	End	115.50	7.93	0.05	-0.07	3098.09	-19.64	-6.0	-34.74	51.44	-0.39	-0.39	30.18	0.31	0.03	30.58	47.1	2
9403	Tube 5	Origin	115.50	7.93	0.05	-0.07	3098.09	-19.62	-6.0	-36.36	52.16	-0.39	-0.41	30.18	0.31	0.03	30.60	47.1	2
9403	9403:WVGD6	End	120.50	6.63	0.04	-0.05	3358.90	-21.59	-6.0	-36.36	52.16	-0.39	-0.40	31.05	0.30	0.03	31.45	48.4	2
9403	9403:WVGD6	Origin	120.50	6.63	0.04	-0.05	3358.90	-21.58	-6.0	-37.49	52.79	-0.39	-0.41	31.05	0.31	0.03	31.47	48.4	2
9403	SpliceT	End	121.58	6.36	0.04	-0.05	3416.06	-22.01	-6.0	-37.49	52.79	-0.39	-0.41	31.22	0.31	0.03	31.64	48.7	2

9403	SpliceT	Origin	121.58	6.36	0.04	-0.05	3416.06	-22.00	-6.0	-38.50	53.21	-0.39	-0.37	27.72	0.27	0.03	28.10	43.2	2
9403	Tube 6	End	126.04	5.33	0.04	-0.04	3653.29	-23.76	-6.0	-38.50	53.21	-0.39	-0.37	28.33	0.27	0.02	28.70	44.2	2
9403	Tube 6	Origin	126.04	5.33	0.04	-0.04	3653.29	-23.74	-6.0	-40.19	53.89	-0.39	-0.38	28.33	0.27	0.02	28.71	44.2	2
9403	9403:WVGD5	End	130.50	4.39	0.03	-0.03	3893.57	-25.50	-6.0	-40.19	53.89	-0.39	-0.37	28.88	0.26	0.02	29.25	45.0	2
9403	9403:WVGD5	Origin	130.50	4.39	0.03	-0.03	3893.57	-25.49	-6.0	-41.80	54.67	-0.39	-0.39	28.88	0.27	0.02	29.27	45.0	2
9403	Tube 6	End	133.75	3.77	0.03	-0.03	4071.26	-26.77	-6.0	-41.80	54.67	-0.39	-0.38	29.25	0.26	0.02	29.64	45.6	2
9403	Tube 6	Origin	133.75	3.77	0.03	-0.03	4071.26	-26.76	-6.0	-43.08	55.19	-0.39	-0.39	29.25	0.27	0.02	29.65	45.6	2
9403	SpliceT	End	137.00	3.20	0.02	-0.02	4250.61	-28.03	-6.0	-43.08	55.19	-0.39	-0.39	29.59	0.26	0.02	29.99	46.1	2
9403	SpliceT	Origin	137.00	3.20	0.02	-0.02	4250.61	-28.03	-6.0	-45.16	55.74	-0.39	-0.41	29.59	0.27	0.02	30.01	46.2	2
9403	9403:WVGD4	End	140.50	2.64	0.02	-0.02	4445.69	-29.40	-6.0	-45.16	55.74	-0.39	-0.37	28.04	0.24	0.02	28.41	43.7	2
9403	9403:WVGD4	Origin	140.50	2.64	0.02	-0.02	4445.69	-29.39	-6.0	-48.61	56.58	-0.39	-0.40	28.04	0.24	0.02	28.44	43.7	2
9403	SpliceB	End	145.08	1.99	0.01	-0.01	4705.00	-31.19	-6.0	-48.61	56.58	-0.39	-0.39	28.41	0.24	0.02	28.80	44.3	2
9403	SpliceB	Origin	145.08	1.99	0.01	-0.01	4705.00	-31.18	-6.0	-51.13	57.18	-0.39	-0.41	28.41	0.24	0.02	28.82	44.3	2
9403	Tube 7	End	147.79	1.65	0.01	-0.01	4859.86	-32.24	-6.0	-51.13	57.18	-0.39	-0.40	28.61	0.24	0.02	29.02	44.6	2
9403	Tube 7	Origin	147.79	1.65	0.01	-0.01	4859.86	-32.24	-6.0	-52.36	57.62	-0.39	-0.41	28.61	0.24	0.02	29.03	44.7	2
9403	9403:WVGD3	End	150.50	1.34	0.01	-0.01	5015.92	-33.30	-6.0	-52.36	57.62	-0.39	-0.41	28.80	0.24	0.02	29.21	44.9	2
9403	9403:WVGD3	Origin	150.50	1.34	0.01	-0.01	5015.92	-33.29	-6.0	-54.27	58.43	-0.39	-0.42	28.80	0.24	0.02	29.23	45.0	2
9403	Tube 7	End	155.50	0.86	0.01	-0.01	5308.08	-35.25	-6.0	-54.27	58.43	-0.39	-0.41	29.13	0.23	0.02	29.55	45.5	2
9403	Tube 7	Origin	155.50	0.86	0.01	-0.01	5308.08	-35.24	-6.0	-56.61	59.27	-0.39	-0.43	29.13	0.24	0.02	29.56	45.5	2
9403	9403:WVGD2	End	160.50	0.48	0.00	-0.00	5604.42	-37.20	-6.0	-56.61	59.27	-0.39	-0.42	29.42	0.23	0.02	29.85	45.9	2
9403	9403:WVGD2	Origin	160.50	0.48	0.00	-0.00	5604.42	-37.19	-6.0	-59.14	60.29	-0.39	-0.44	29.42	0.24	0.02	29.87	45.9	2
9403	Tube 8	End	165.50	0.22	0.00	-0.00	5905.87	-39.14	-6.0	-59.14	60.29	-0.39	-0.43	29.69	0.23	0.02	30.12	46.3	2
9403	Tube 8	Origin	165.50	0.22	0.00	-0.00	5905.87	-39.13	-6.0	-61.59	61.16	-0.39	-0.45	29.69	0.23	0.02	30.14	46.4	2
9403	9403:WVGD1	End	170.50	0.05	0.00	-0.00	6211.65	-41.08	-6.0	-61.59	61.16	-0.39	-0.44	29.93	0.23	0.01	30.37	46.7	2
9403	9403:WVGD1	Origin	170.50	0.05	0.00	-0.00	6211.65	-41.07	-6.0	-64.21	62.21	-0.39	-0.46	29.93	0.23	0.01	30.39	46.8	2
9403	9403:g	End	175.50	0.00	0.00	0.00	6522.67	-43.02	-6.0	-64.21	62.21	-0.39	-0.45	30.15	0.23	0.01	30.60	47.1	2

Detailed Tubular Davit Arm Usages for Load Case "NESC Extreme":

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Vert. Mom. (ft-k)	Horz. Mom. (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Vert. Shear (kips)	Horz. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
Davit1	Davit1:O	Origin	0.00	55.31	0.34	-2.01	-2.69	-0.10	-0.0	1.80	0.40	0.01	0.23	1.91	0.00	0.00	2.15	3.3	1
Davit1	#Davit1:O	End	3.38	55.42	0.35	-4.38	-1.34	-0.06	-0.0	1.80	0.40	0.01	0.29	1.49	0.00	0.00	1.79	2.7	1
Davit1	#Davit1:O	Origin	3.38	55.42	0.35	-4.38	-1.34	-0.06	-0.0	1.80	0.33	0.01	0.29	1.49	0.00	0.00	1.79	2.7	1
Davit1	Davit1:V	End	6.77	55.53	0.36	-6.77	-0.23	-0.02	-0.0	1.80	0.33	0.01	0.39	0.45	0.01	0.00	0.85	1.3	1
Davit1	Davit1:V	Origin	6.77	55.53	0.36	-6.77	-0.23	-0.02	0.0	1.82	0.15	0.01	0.39	0.45	0.01	0.00	0.85	1.3	1
Davit1	Davit1:End	End	8.27	55.49	0.36	-7.83	0.00	0.00	0.0	1.82	0.15	0.01	0.46	0.00	0.08	0.00	0.48	0.7	3
Davit2	Davit2:O	Origin	0.00	40.25	0.26	-1.68	-54.09	-1.71	-0.0	9.90	4.22	0.12	0.54	8.35	0.01	0.00	8.89	13.7	1
Davit2	#Davit2:O	End	5.00	40.47	0.27	-4.89	-32.97	-1.10	-0.0	9.90	4.22	0.12	0.66	7.61	0.02	0.00	8.27	12.7	1
Davit2	#Davit2:O	Origin	5.00	40.47	0.27	-4.89	-32.97	-1.10	-0.0	9.92	3.98	0.12	0.66	7.61	0.02	0.00	8.28	12.7	1
Davit2	#Davit2:1	End	8.53	40.64	0.28	-7.21	-18.92	-0.67	-0.0	9.92	3.98	0.12	0.78	6.16	0.02	0.00	6.94	10.7	1
Davit2	#Davit2:1	Origin	8.53	40.64	0.28	-7.21	-18.92	-0.67	-0.0	9.93	3.82	0.12	0.78	6.16	0.02	0.00	6.94	10.7	1
Davit2	Davit2:V	End	12.06	40.80	0.29	-9.59	-5.46	-0.24	-0.0	9.93	3.82	0.12	0.96	2.68	0.02	0.01	3.65	5.6	1
Davit2	Davit2:V	Origin	12.06	40.80	0.29	-9.59	-5.46	-0.24	0.0	10.25	2.73	0.12	0.99	2.68	0.02	0.00	3.68	5.7	1
Davit2	Davit2:End	End	14.06	40.76	0.30	-10.96	-0.00	0.00	0.0	10.25	2.73	0.12	1.14	0.00	0.63	0.00	1.58	2.4	3
Davit3	Davit3:O	Origin	0.00	27.18	0.18	-1.34	-55.25	-1.74	-0.0	9.86	4.30	0.12	0.54	8.53	0.01	0.00	9.06	13.9	1
Davit3	#Davit3:O	End	5.00	27.38	0.19	-4.05	-33.72	-1.12	-0.0	9.86	4.30	0.12	0.66	7.79	0.02	0.00	8.44	13.0	1
Davit3	#Davit3:O	Origin	5.00	27.38	0.19	-4.05	-33.72	-1.12	-0.0	9.88	4.06	0.12	0.66	7.79	0.02	0.00	8.45	13.0	1
Davit3	#Davit3:1	End	8.53	27.53	0.20	-6.02	-19.38	-0.68	-0.0	9.88	4.06	0.12	0.78	6.31	0.02	0.00	7.09	10.9	1
Davit3	#Davit3:1	Origin	8.53	27.53	0.20	-6.02	-19.38	-0.68	-0.0	9.89	3.90	0.12	0.78	6.31	0.02	0.00	7.09	10.9	1
Davit3	Davit3:V	End	12.06	27.68	0.21	-8.05	-5.62	-0.24	-0.0	9.89	3.90	0.12	0.96	2.77	0.02	0.01	3.73	5.7	1
Davit3	Davit3:V	Origin	12.06	27.68	0.21	-8.05	-5.62	-0.25	0.0	10.22	2.81	0.12	0.99	2.77	0.02	0.00	3.76	5.8	1
Davit3	Davit3:End	End	14.06	27.65	0.22	-9.22	-0.00	0.00	0.0	10.22	2.81	0.12	1.14	0.00	0.65	0.00	1.60	2.5	3
Davit4	Davit4:O	Origin	0.00	16.81	0.11	-1.04	-56.59	-1.77	-0.0	9.81	4.40	0.13	0.54	8.73	0.01	0.00	9.27	14.3	1
Davit4	#Davit4:O	End	5.00	16.98	0.12	-3.16	-34.59	-1.14	-0.0	9.81	4.40	0.13	0.65	7.99	0.02	0.00	8.64	13.3	1
Davit4	#Davit4:O	Origin	5.00	16.98	0.12	-3.16	-34.59	-1.14	-0.0	9.83	4.16	0.13	0.66	7.99	0.02	0.00	8.64	13.3	1
Davit4	#Davit4:1	End	8.53	17.10	0.13	-4.73	-19.91	-0.69	-0.0	9.83	4.16	0.13	0.78	6.48	0.02	0.00	7.25	11.2	1
Davit4	#Davit4:1	Origin	8.53	17.10	0.13	-4.73	-19.91	-0.69	-0.0	9.85	3.99	0.13	0.78	6.48	0.02	0.00	7.26	11.2	1
Davit4	Davit4:V	End	12.06	17.23	0.14	-6.36	-5.82	-0.25	-0.0	9.85	3.99	0.13	0.95	2.86	0.03	0.01	3.82	5.9	1
Davit4	Davit4:V	Origin	12.06	17.23	0.14	-6.36	-5.82	-0.25	0.0	10.18	2.91	0.13	0.99	2.86	0.03	0.00	3.85	5.9	1
Davit4	Davit4:End	End	14.06	17.21	0.14	-7.30	-0.00	0.00	0.0	10.18	2.91	0.13	1.13	0.00	0.67	0.00	1.62	2.5	3

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

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Usage %
Clamp1	1.820	80.00	80.00	2.28
Clamp2	10.596	80.00	80.00	13.25
Clamp3	10.591	80.00	80.00	13.24
Clamp4	10.583	80.00	80.00	13.23
Clamp5	0.214	80.00	80.00	0.27
Clamp6	0.214	80.00	80.00	0.27
Clamp7	0.214	80.00	80.00	0.27
Clamp8	0.214	80.00	80.00	0.27
Clamp9	0.214	80.00	80.00	0.27
Clamp10	0.214	80.00	80.00	0.27
Clamp11	0.214	80.00	80.00	0.27
Clamp12	0.214	80.00	80.00	0.27
Clamp13	0.214	80.00	80.00	0.27
Clamp14	0.214	80.00	80.00	0.27
Clamp15	0.214	80.00	80.00	0.27
Clamp16	0.214	80.00	80.00	0.27
Clamp17	0.214	80.00	80.00	0.27
Clamp18	0.214	80.00	80.00	0.27
Clamp19	0.214	80.00	80.00	0.27
Clamp20	0.214	80.00	80.00	0.27
Clamp21	0.214	80.00	80.00	0.27
Clamp22	4.640	80.00	80.00	5.80

*** Analysis Results for Load Case No. 3 "NESC Extreme Ice w/ Wind" - Number of iterations in SAPS 15

Equilibrium Joint Positions and Rotations for Load Case "NESC Extreme Ice w/ Wind":

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)
9403:g	0	0	0	0.0000	0.0000	0.0000	0	0	0
9403:t	0.03027	3.474	-0.04905	-1.9755	0.0154	-0.0061	0.03027	3.474	175.5
9403:AT&T	0.02959	3.388	-0.04757	-1.9755	0.0154	-0.0061	0.02959	3.388	173
9403:WVGD17	0.02741	3.112	-0.04278	-1.9683	0.0154	-0.0061	0.02741	3.112	165
9403:WVGD16	0.02469	2.771	-0.03687	-1.9445	0.0153	-0.0061	0.02469	2.771	155
9403:Arm1	0.02415	2.703	-0.0357	-1.9384	0.0153	-0.0061	0.02415	2.703	153
9403:WVGD15	0.02198	2.435	-0.03113	-1.8932	0.0152	-0.0060	0.02198	2.435	145
9403:WVGD14	0.01932	2.109	-0.02573	-1.8354	0.0149	-0.0059	0.01932	2.109	135
9403:Arm2	0.0181	1.961	-0.02333	-1.8054	0.0147	-0.0059	0.0181	1.961	130.3
9403:WVGD13	0.01671	1.796	-0.02068	-1.7368	0.0145	-0.0055	0.01671	1.796	125
9403:WVGD12	0.01419	1.504	-0.01625	-1.6046	0.0137	-0.0048	0.01419	1.504	115
9403:Arm3	0.01249	1.309	-0.01347	-1.5120	0.0131	-0.0045	0.01249	1.309	107.8
9403:WVGD11	0.01183	1.236	-0.01245	-1.4658	0.0129	-0.0042	0.01183	1.236	105
9403:WVGD10	0.009646	0.994	-0.009302	-1.2972	0.0117	-0.0035	0.009646	0.994	94.99
9403:Arm4	0.007832	0.7974	-0.007009	-1.1588	0.0107	-0.0030	0.007832	0.7974	85.82
9403:WVGD9	0.007676	0.7807	-0.006821	-1.1450	0.0106	-0.0029	0.007676	0.7807	84.99
9403:WVGD8	0.00592	0.595	-0.004861	-0.9788	0.0093	-0.0023	0.00592	0.595	75
9403:WVGD7	0.004398	0.4375	-0.003397	-0.8224	0.0080	-0.0018	0.004398	0.4375	65
9403:WVGD6	0.003115	0.3072	-0.002319	-0.6677	0.0066	-0.0013	0.003115	0.3072	55
9403:WVGD5	0.002069	0.2024	-0.001562	-0.5316	0.0053	-0.0010	0.002069	0.2024	45
9403:WVGD4	0.001244	0.1208	-0.001021	-0.4020	0.0041	-0.0007	0.001244	0.1208	35
9403:WVGD3	0.000632	0.06102	-0.0006356	-0.2816	0.0029	-0.0005	0.000632	0.06102	25
9403:WVGD2	0.0002274	0.02181	-0.0003467	-0.1656	0.0017	-0.0003	0.0002274	0.02181	15
9403:WVGD1	2.597e-005	0.002467	-0.0001108	-0.0541	0.0006	-0.0001	2.597e-005	0.002467	5
Davit1:O	0.02427	2.702	-0.07738	-1.9384	0.0153	-0.0061	0.02427	3.934	152.9
Davit1:V	0.02523	2.716	-0.3243	-2.2241	0.0154	-0.0088	0.02523	10.7	153.2
Davit1:End	0.02545	2.715	-0.3831	-2.2521	0.0154	-0.0091	0.02545	12.2	153.1
Davit2:O	0.01824	1.96	-0.07101	-1.8054	0.0147	-0.0059	0.01824	3.474	130.3
Davit2:V	0.02028	1.995	-0.5081	-2.3334	0.0149	-0.0114	0.02028	15.51	131
Davit2:End	0.02066	1.993	-0.5905	-2.3688	0.0149	-0.0118	0.02066	17.51	130.9
Davit3:O	0.01261	1.309	-0.05994	-1.5120	0.0131	-0.0045	0.01261	3.07	107.8
Davit3:V	0.01435	1.339	-0.4356	-2.0421	0.0134	-0.0101	0.01435	15.1	108.6
Davit3:End	0.0147	1.338	-0.5079	-2.0777	0.0134	-0.0105	0.0147	17.1	108.5
Davit4:O	0.00793	0.797	-0.04815	-1.1588	0.0107	-0.0030	0.00793	2.831	85.78
Davit4:V	0.009348	0.8227	-0.35	-1.6915	0.0109	-0.0087	0.009348	14.86	86.65
Davit4:End	0.009652	0.8219	-0.41	-1.7273	0.0109	-0.0091	0.009652	16.86	86.59

Joint Support Reactions for Load Case "NESC Extreme Ice w/ Wind":

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	Z Force (kips)	Comp. Uplift Usage %	Result. Force (kips)	Result. Usage %	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
9403:g	-0.36	0.0	-28.83	0.0	92.14	0.0	96.55	0.0	3525.77	0.0	-36.9	0.0	4.05	0.0	0.0

Detailed Steel Pole Usages for Load Case "NESC Extreme Ice w/ Wind":

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Trans. Mom. (Local Mx) (ft-k)	Long. Mom. (Local My) (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Tran. Shear (kips)	Long. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
9403	9403:t	Origin	0.00	41.69	0.36	-0.59	-0.00	-0.00	0.0	-0.11	0.03	-0.00	-0.01	0.00	0.00	0.00	0.01	0.0	5
9403	9403:AT&T	End	2.50	40.65	0.36	-0.57	0.06	-0.00	0.0	-0.11	0.03	-0.00	-0.01	0.01	0.00	0.00	0.01	0.0	2
9403	9403:AT&T	Origin	2.50	40.65	0.36	-0.57	0.06	-0.00	-0.0	-3.09	1.22	-0.00	-0.16	0.00	0.13	0.00	0.28	0.4	5
9403	Tube 1	End	6.50	39.00	0.34	-0.54	4.96	-0.01	-0.0	-3.09	1.22	-0.00	-0.16	0.48	0.03	0.00	0.64	1.0	2
9403	Tube 1	Origin	6.50	39.00	0.34	-0.54	4.96	-0.01	0.0	-3.45	1.31	-0.00	-0.17	0.48	0.03	0.00	0.66	1.0	2

9403	9403:WVGD17	End	10.50	37.35	0.33	-0.51	10.20	-0.02	0.0	-3.45	1.31	-0.00	-0.17	0.90	0.03	0.00	1.07	1.6	2
9403	9403:WVGD17	Origin	10.50	37.35	0.33	-0.51	10.20	-0.02	0.0	-4.30	1.47	-0.00	-0.21	0.90	0.04	0.00	1.11	1.7	2
9403	Tube 1	End	15.50	35.29	0.31	-0.48	17.54	-0.05	0.0	-4.30	1.47	-0.00	-0.20	1.39	0.04	0.00	1.59	2.4	2
9403	Tube 1	Origin	15.50	35.29	0.31	-0.48	17.54	-0.05	0.0	-4.81	1.58	-0.01	-0.22	1.39	0.04	0.00	1.61	2.5	2
9403	9403:WVGD16	End	20.50	33.25	0.30	-0.44	25.46	-0.08	0.0	-4.81	1.58	-0.01	-0.21	1.81	0.04	0.00	2.02	3.1	2
9403	9403:WVGD16	Origin	20.50	33.25	0.30	-0.44	25.46	-0.08	0.0	-5.60	1.73	-0.01	-0.24	1.81	0.04	0.00	2.06	3.2	2
9403	9403:Arm1	End	22.50	32.43	0.29	-0.43	28.91	-0.10	0.0	-5.60	1.73	-0.01	-0.24	1.98	0.04	0.00	2.22	3.4	2
9403	9403:Arm1	Origin	22.50	32.43	0.29	-0.43	43.44	-0.10	-0.1	-7.41	3.90	-0.02	-0.31	2.97	0.09	0.00	3.29	5.1	2
9403	Tube 1	End	26.25	30.92	0.28	-0.40	58.05	-0.19	-0.1	-7.41	3.90	-0.02	-0.30	3.69	0.08	0.00	4.00	6.2	2
9403	Tube 1	Origin	26.25	30.92	0.28	-0.40	58.05	-0.19	-0.1	-7.83	3.99	-0.02	-0.32	3.69	0.09	0.00	4.01	6.2	2
9403	SpliceT	End	30.00	29.42	0.27	-0.38	73.02	-0.28	-0.1	-7.83	3.99	-0.02	-0.31	4.33	0.08	0.00	4.64	7.3	2
9403	SpliceT	Origin	30.00	29.42	0.27	-0.38	73.02	-0.28	-0.1	-8.08	4.05	-0.03	-0.25	3.45	0.07	0.00	3.71	5.7	2
9403	9403:WVGD15	End	30.50	29.22	0.26	-0.37	75.05	-0.30	-0.1	-8.08	4.05	-0.03	-0.25	3.52	0.07	0.00	3.77	5.8	2
9403	9403:WVGD15	Origin	30.50	29.22	0.26	-0.37	75.05	-0.30	-0.1	-8.90	4.18	-0.03	-0.28	3.52	0.07	0.00	3.80	5.8	2
9403	Tube 2	End	35.50	27.25	0.25	-0.34	95.94	-0.43	-0.1	-8.90	4.18	-0.03	-0.27	4.11	0.07	0.00	4.38	6.7	2
9403	Tube 2	Origin	35.50	27.25	0.25	-0.34	95.94	-0.43	-0.1	-9.62	4.32	-0.03	-0.29	4.11	0.07	0.00	4.40	6.8	2
9403	9403:WVGD14	End	40.50	25.31	0.23	-0.31	117.53	-0.58	-0.1	-9.62	4.32	-0.03	-0.28	4.61	0.07	0.00	4.89	7.5	2
9403	9403:WVGD14	Origin	40.50	25.31	0.23	-0.31	117.53	-0.58	-0.1	-10.78	4.51	-0.03	-0.31	4.61	0.07	0.00	4.93	7.6	2
9403	9403:Arm2	End	45.17	23.53	0.22	-0.28	138.62	-0.72	-0.1	-10.78	4.51	-0.03	-0.30	5.04	0.07	0.00	5.34	8.2	2
9403	9403:Arm2	Origin	45.17	23.53	0.22	-0.28	260.31	-0.82	-1.4	-19.06	11.22	-0.12	-0.53	9.45	0.16	0.03	9.99	15.4	2
9403	Tube 2	End	47.83	22.53	0.21	-0.26	290.20	-1.13	-1.4	-19.06	11.22	-0.12	-0.52	10.10	0.16	0.03	10.62	16.3	2
9403	Tube 2	Origin	47.83	22.53	0.21	-0.26	290.20	-1.13	-1.4	-19.49	11.29	-0.12	-0.53	10.10	0.16	0.03	10.63	16.4	2
9403	9403:WVGD13	End	50.50	21.55	0.20	-0.25	320.29	-1.44	-1.4	-19.49	11.29	-0.12	-0.52	10.69	0.16	0.02	11.21	17.2	2
9403	9403:WVGD13	Origin	50.50	21.55	0.20	-0.25	320.29	-1.44	-1.4	-20.50	11.44	-0.12	-0.54	10.69	0.16	0.02	11.23	17.3	2
9403	SpliceT	End	54.83	20.00	0.19	-0.22	369.86	-1.95	-1.4	-20.50	11.44	-0.12	-0.53	11.55	0.15	0.02	12.08	18.9	2
9403	SpliceT	Origin	54.83	20.00	0.19	-0.22	369.86	-1.95	-1.4	-21.30	11.54	-0.12	-0.55	11.55	0.16	0.02	12.10	18.9	2
9403	Tube 2	End	57.42	19.10	0.18	-0.21	399.69	-2.27	-1.4	-21.30	11.54	-0.12	-0.45	10.38	0.13	0.02	10.84	16.7	2
9403	Tube 2	Origin	57.42	19.10	0.18	-0.21	399.69	-2.26	-1.4	-22.16	11.63	-0.12	-0.47	10.38	0.13	0.02	10.86	16.7	2
9403	SpliceB	End	60.00	18.22	0.17	-0.20	429.73	-2.58	-1.4	-22.16	11.63	-0.12	-0.46	10.74	0.13	0.02	11.21	17.2	2
9403	SpliceB	Origin	60.00	18.22	0.17	-0.20	429.73	-2.58	-1.4	-22.65	11.68	-0.12	-0.47	10.74	0.13	0.02	11.22	17.3	2
9403	9403:WVGD12	End	60.50	18.05	0.17	-0.19	435.57	-2.64	-1.4	-22.65	11.68	-0.12	-0.47	10.81	0.13	0.02	11.28	17.4	2
9403	9403:WVGD12	Origin	60.50	18.05	0.17	-0.19	435.57	-2.64	-1.4	-23.49	11.79	-0.12	-0.49	10.81	0.13	0.02	11.30	17.4	2
9403	Tube 3	End	64.08	16.86	0.16	-0.18	477.85	-3.08	-1.4	-23.49	11.79	-0.12	-0.48	11.25	0.13	0.02	11.73	18.1	2
9403	Tube 3	Origin	64.08	16.86	0.16	-0.18	477.85	-3.08	-1.4	-24.24	11.90	-0.13	-0.49	11.25	0.13	0.02	11.75	18.1	2
9403	9403:Arm3	End	67.67	15.71	0.15	-0.16	520.52	-3.53	-1.4	-24.24	11.90	-0.13	-0.48	11.65	0.12	0.02	12.13	18.7	2
9403	9403:Arm3	Origin	67.67	15.71	0.15	-0.16	644.60	-3.63	-2.7	-32.67	18.54	-0.21	-0.65	14.42	0.19	0.03	15.08	23.2	2
9403	9403:WVGD11	End	70.50	14.83	0.14	-0.15	697.08	-4.23	-2.7	-32.67	18.54	-0.21	-0.63	15.00	0.19	0.03	15.64	24.1	2
9403	9403:WVGD11	Origin	70.50	14.83	0.14	-0.15	697.08	-4.23	-2.7	-33.96	18.70	-0.21	-0.66	15.00	0.19	0.03	15.66	24.1	2
9403	Tube 3	End	75.50	13.33	0.13	-0.13	790.60	-5.29	-2.7	-33.96	18.70	-0.21	-0.64	15.90	0.19	0.03	16.55	25.5	2
9403	Tube 3	Origin	75.50	13.33	0.13	-0.13	790.60	-5.29	-2.7	-35.10	18.84	-0.22	-0.66	15.90	0.19	0.03	16.57	25.5	2
9403	9403:WVGD10	End	80.50	11.93	0.12	-0.11	884.79	-6.37	-2.7	-35.10	18.84	-0.22	-0.64	16.68	0.18	0.03	17.32	26.8	2
9403	9403:WVGD10	Origin	80.50	11.93	0.12	-0.11	884.79	-6.37	-2.7	-36.27	18.98	-0.22	-0.66	16.68	0.18	0.03	17.34	26.8	2
9403	SpliceT	End	81.83	11.57	0.11	-0.11	910.09	-6.66	-2.7	-36.27	18.98	-0.22	-0.65	16.86	0.18	0.03	17.52	27.2	2
9403	SpliceT	Origin	81.83	11.57	0.11	-0.11	910.09	-6.66	-2.7	-36.96	19.05	-0.22	-0.57	14.43	0.16	0.02	15.01	23.1	2
9403	Tube 4	End	85.75	10.54	0.10	-0.10	984.75	-7.52	-2.7	-36.96	19.05	-0.22	-0.56	14.87	0.15	0.02	15.43	23.7	2
9403	Tube 4	Origin	85.75	10.54	0.10	-0.10	984.75	-7.51	-2.7	-38.04	19.17	-0.22	-0.57	14.87	0.15	0.02	15.44	23.8	2
9403	9403:Arm4	End	89.67	9.57	0.09	-0.08	1059.88	-8.38	-2.7	-38.04	19.17	-0.22	-0.56	15.25	0.15	0.02	15.81	24.3	2
9403	9403:Arm4	Origin	89.67	9.57	0.09	-0.08	1186.66	-8.48	-4.1	-46.48	25.74	-0.31	-0.68	17.07	0.20	0.03	17.76	27.3	2
9403	9403:WVGD9	End	90.50	9.37	0.09	-0.08	1208.02	-8.73	-4.1	-46.48	25.74	-0.31	-0.68	17.21	0.20	0.03	17.89	27.5	2
9403	9403:WVGD9	Origin	90.50	9.37	0.09	-0.08	1208.02	-8.73	-4.1	-47.57	25.85	-0.31	-0.70	17.21	0.20	0.03	17.91	27.5	2
9403	Tube 4	End	94.29	8.48	0.08	-0.07	1306.04	-9.90	-4.1	-47.57	25.85	-0.31	-0.68	17.78	0.20	0.03	18.47	28.4	2
9403	Tube 4	Origin	94.29	8.48	0.08	-0.07	1306.04	-9.90	-4.1	-48.68	25.96	-0.31	-0.70	17.78	0.20	0.03	18.48	28.4	2
9403	SpliceT	End	98.08	7.65	0.08	-0.06	1404.45	-11.08	-4.1	-48.68	25.96	-0.31	-0.68	18.29	0.19	0.03	18.98	29.2	2
9403	SpliceT	Origin	98.08	7.65	0.08	-0.06	1404.45	-11.07	-4.1	-49.94	26.05	-0.31	-0.70	18.29	0.19	0.03	19.00	29.2	2
9403	9403:WVGD8	End	100.50	7.14	0.07	-0.06	1467.40	-11.83	-4.1	-49.94	26.05	-0.31	-0.61	16.90	0.17	0.02	17.52	26.9	2
9403	9403:WVGD8	Origin	100.50	7.14	0.07	-0.06	1467.40	-11.82	-4.1	-52.33	26.20	-0.31	-0.64	16.90	0.17	0.02	17.55	27.0	2
9403	SpliceB	End	104.83	6.28	0.06	-0.05	1580.94	-13.19	-4.1	-52.33	26.20	-0.31	-0.63	17.33	0.17	0.02	17.96	27.6	2
9403	SpliceB	Origin	104.83	6.28	0.06	-0.05	1580.94	-13.18	-4.1	-54.08	26.31	-0.32	-0.65	17.33	0.17	0.02	17.98	27.7	2
9403	Tube 5	End	107.67	5.75	0.06	-0.05	1655.49	-14.08	-4.1	-54.08	26.31	-0.32	-0.64	17.58	0.16	0.02	18.22	28.0	2
9403	Tube 5	Origin	107.67	5.75	0.06	-0.05	1655.49	-14.08	-4.1	-55.06	26.39	-0.32	-0.65	17.58	0.16	0.02	18.23	28.0	2
9403	9403:WVGD7	End	110.50	5.25	0.05	-0.04	1730.28	-14.98	-4.1	-55.06	26.39	-0.32	-0.64	17.81	0.16	0.02	18.45	28.4	2
9403	9403:WVGD7	Origin	110.50	5.25	0.05	-0.04	1730.28	-14.98	-4.1	-56.87	26.55	-0.32	-0.66	17.81	0.16	0.02	18.47	28.4	2
9403	Tube 5	End	115.50	4.43	0.04	-0.03	1863.04	-16.58	-4.1	-56.87	26.55	-0.32	-0.64	18.16	0.16	0.02	18.81	28.9	2
9403	Tube 5	Origin	115.50	4.43	0.04	-0.03	1863.04	-16.58	-4.1	-58.67	26.69	-0.32	-0.66	18.16	0.16	0.02	18.83	29.0	2
9403	9403:WVGD6	End	120.50	3.69	0.04	-0.03	1996.51	-18.19	-4.1	-58.67	26.69	-0.32	-0.65	18.47	0.16	0.02	19.12	29.4	2
9403	9403:WVGD6	Origin	120.50	3.69	0.04	-0.03	1996.51	-18.19	-4.1	-60.21	26.83	-0.32	-0.66	18.47	0.16	0.02	19.13	29.4	2
9403	SpliceT	End	121.58	3.54	0.04	-0.03	2025.56	-18.54	-4.1	-60.21	26.83	-0.32	-0.66	18.53	0.16	0.02	19.19	29.5	2

9403	SpliceT	Origin	121.58	3.54	0.04	-0.03	2025.56	-18.54	-4.1	-61.33	26.91	-0.33	-0.60	16.45	0.14	0.02	17.05	26.2	2
9403	Tube 6	End	126.04	2.95	0.03	-0.02	2145.56	-20.00	-4.1	-61.33	26.91	-0.33	-0.58	16.65	0.14	0.02	17.23	26.5	2
9403	Tube 6	Origin	126.04	2.95	0.03	-0.02	2145.56	-19.99	-4.1	-63.20	27.05	-0.33	-0.60	16.65	0.14	0.02	17.25	26.5	2
9403	9403:WVGD5	End	130.50	2.43	0.02	-0.02	2266.17	-21.46	-4.1	-63.20	27.05	-0.33	-0.59	16.82	0.13	0.02	17.41	26.8	2
9403	9403:WVGD5	Origin	130.50	2.43	0.02	-0.02	2266.17	-21.46	-4.1	-65.27	27.22	-0.33	-0.61	16.82	0.13	0.02	17.43	26.8	2
9403	Tube 6	End	133.75	2.08	0.02	-0.02	2354.64	-22.54	-4.1	-65.27	27.22	-0.33	-0.60	16.93	0.13	0.02	17.53	27.0	2
9403	Tube 6	Origin	133.75	2.08	0.02	-0.02	2354.64	-22.53	-4.1	-66.68	27.33	-0.33	-0.61	16.93	0.13	0.02	17.54	27.0	2
9403	SpliceT	End	137.00	1.76	0.02	-0.01	2443.45	-23.62	-4.1	-66.68	27.33	-0.33	-0.60	17.03	0.13	0.01	17.63	27.1	2
9403	SpliceT	Origin	137.00	1.76	0.02	-0.01	2443.45	-23.62	-4.1	-68.90	27.44	-0.33	-0.62	17.03	0.13	0.01	17.65	27.2	2
9403	9403:WVGD4	End	140.50	1.45	0.01	-0.01	2539.48	-24.79	-4.1	-68.90	27.44	-0.33	-0.56	16.03	0.12	0.01	16.59	25.5	2
9403	9403:WVGD4	Origin	140.50	1.45	0.01	-0.01	2539.48	-24.79	-4.1	-72.84	27.62	-0.34	-0.59	16.03	0.12	0.01	16.62	25.6	2
9403	SpliceB	End	145.08	1.09	0.01	-0.01	2666.08	-26.34	-4.1	-72.84	27.62	-0.34	-0.58	16.11	0.12	0.01	16.69	25.7	2
9403	SpliceB	Origin	145.08	1.09	0.01	-0.01	2666.08	-26.34	-4.1	-75.51	27.75	-0.34	-0.60	16.11	0.12	0.01	16.71	25.7	2
9403	Tube 7	End	147.79	0.90	0.01	-0.01	2741.23	-27.26	-4.1	-75.51	27.75	-0.34	-0.59	16.15	0.12	0.01	16.75	25.8	2
9403	Tube 7	Origin	147.79	0.90	0.01	-0.01	2741.23	-27.26	-4.1	-76.86	27.83	-0.34	-0.60	16.15	0.12	0.01	16.76	25.8	2
9403	9403:WVGD3	End	150.50	0.73	0.01	-0.01	2816.62	-28.18	-4.1	-76.86	27.83	-0.34	-0.60	16.19	0.11	0.01	16.79	25.8	2
9403	9403:WVGD3	Origin	150.50	0.73	0.01	-0.01	2816.62	-28.18	-4.1	-79.24	28.00	-0.34	-0.62	16.19	0.11	0.01	16.80	25.9	2
9403	Tube 7	End	155.50	0.47	0.00	-0.01	2956.63	-29.91	-4.1	-79.24	28.00	-0.34	-0.60	16.24	0.11	0.01	16.84	25.9	2
9403	Tube 7	Origin	155.50	0.47	0.00	-0.01	2956.63	-29.90	-4.1	-81.82	28.17	-0.35	-0.62	16.24	0.11	0.01	16.86	25.9	2
9403	9403:WVGD2	End	160.50	0.26	0.00	-0.00	3097.46	-31.64	-4.1	-81.82	28.17	-0.35	-0.61	16.28	0.11	0.01	16.89	26.0	2
9403	9403:WVGD2	Origin	160.50	0.26	0.00	-0.00	3097.46	-31.64	-4.1	-84.89	28.37	-0.35	-0.63	16.28	0.11	0.01	16.91	26.0	2
9403	Tube 8	End	165.50	0.12	0.00	-0.00	3239.33	-33.39	-4.1	-84.89	28.37	-0.35	-0.62	16.30	0.11	0.01	16.92	26.0	2
9403	Tube 8	Origin	165.50	0.12	0.00	-0.00	3239.33	-33.39	-4.1	-87.58	28.54	-0.35	-0.64	16.30	0.11	0.01	16.94	26.1	2
9403	9403:WVGD1	End	170.50	0.03	0.00	-0.00	3382.03	-35.16	-4.1	-87.58	28.54	-0.35	-0.62	16.31	0.11	0.01	16.94	26.1	2
9403	9403:WVGD1	Origin	170.50	0.03	0.00	-0.00	3382.03	-35.16	-4.1	-90.75	28.75	-0.36	-0.65	16.31	0.11	0.01	16.96	26.1	2
9403	9403:g	End	175.50	0.00	0.00	0.00	3525.77	-36.95	-4.1	-90.75	28.75	-0.36	-0.63	16.32	0.11	0.01	16.95	26.1	2

Detailed Tubular Davit Arm Usages for Load Case "NESC Extreme Ice w/ Wind":

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Vert. Mom. (ft-k)	Horz. Mom. (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Vert. Shear (kips)	Horz. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
Davit1	Davit1:O	Origin	0.00	32.43	0.29	-0.93	-12.67	-0.12	-0.0	1.99	1.61	0.01	0.26	9.01	0.00	0.00	9.27	14.3	1
Davit1	#Davit1:O	End	3.38	32.51	0.30	-2.36	-7.21	-0.07	-0.0	1.99	1.61	0.01	0.32	8.05	0.00	0.00	8.37	12.9	1
Davit1	#Davit1:O	Origin	3.38	32.51	0.30	-2.36	-7.21	-0.07	-0.0	1.99	1.54	0.01	0.33	8.05	0.00	0.00	8.37	12.9	1
Davit1	Davit1:V	End	6.77	32.59	0.30	-3.89	-2.01	-0.02	-0.0	1.99	1.54	0.01	0.43	4.02	0.01	0.00	4.45	6.8	1
Davit1	Davit1:V	Origin	6.77	32.59	0.30	-3.89	-2.01	-0.02	0.0	2.10	1.34	0.01	0.46	4.02	0.01	0.00	4.47	6.9	1
Davit1	Davit1:End	End	8.27	32.58	0.31	-4.60	0.00	0.00	0.0	2.10	1.34	0.01	0.53	0.00	0.71	0.00	1.34	2.1	3
Davit2	Davit2:O	Origin	0.00	23.52	0.22	-0.85	-110.03	-1.15	-0.0	5.84	8.15	0.08	0.32	16.98	0.01	0.00	17.30	26.6	1
Davit2	#Davit2:O	End	5.00	23.69	0.23	-2.86	-69.26	-0.74	-0.0	5.84	8.15	0.08	0.39	15.99	0.01	0.00	16.38	25.2	1
Davit2	#Davit2:O	Origin	5.00	23.69	0.23	-2.86	-69.26	-0.74	-0.0	5.89	7.91	0.08	0.39	15.99	0.01	0.00	16.39	25.2	1
Davit2	#Davit2:1	End	8.53	23.81	0.23	-4.42	-41.35	-0.45	-0.0	5.89	7.91	0.08	0.46	13.45	0.01	0.00	13.92	21.4	1
Davit2	#Davit2:1	Origin	8.53	23.81	0.23	-4.42	-41.35	-0.45	-0.0	5.92	7.74	0.08	0.47	13.45	0.01	0.00	13.92	21.4	1
Davit2	Davit2:V	End	12.06	23.94	0.24	-6.10	-14.04	-0.16	-0.0	5.92	7.74	0.08	0.57	6.91	0.02	0.00	7.48	11.5	1
Davit2	Davit2:V	Origin	12.06	23.94	0.24	-6.10	-14.04	-0.16	0.0	6.65	7.02	0.08	0.64	6.91	0.02	0.00	7.55	11.6	1
Davit2	Davit2:End	End	14.06	23.92	0.25	-7.09	-0.00	0.00	0.0	6.65	7.02	0.08	0.74	0.00	1.62	0.00	2.90	4.5	3
Davit3	Davit3:O	Origin	0.00	15.70	0.15	-0.72	-110.46	-1.16	-0.0	5.80	8.18	0.08	0.32	17.05	0.01	0.00	17.36	26.7	1
Davit3	#Davit3:O	End	5.00	15.85	0.16	-2.42	-69.54	-0.75	-0.0	5.80	8.18	0.08	0.39	16.06	0.01	0.00	16.44	25.3	1
Davit3	#Davit3:O	Origin	5.00	15.85	0.16	-2.42	-69.54	-0.75	-0.0	5.84	7.94	0.08	0.39	16.06	0.01	0.00	16.45	25.3	1
Davit3	#Davit3:1	End	8.53	15.96	0.16	-3.77	-41.53	-0.45	-0.0	5.84	7.94	0.08	0.46	13.51	0.01	0.00	13.97	21.5	1
Davit3	#Davit3:1	Origin	8.53	15.96	0.16	-3.77	-41.53	-0.45	-0.0	5.87	7.77	0.08	0.46	13.51	0.01	0.00	13.97	21.5	1
Davit3	Davit3:V	End	12.06	16.07	0.17	-5.23	-14.11	-0.16	-0.0	5.87	7.77	0.08	0.57	6.94	0.02	0.00	7.51	11.6	1
Davit3	Davit3:V	Origin	12.06	16.07	0.17	-5.23	-14.11	-0.17	0.0	6.60	7.05	0.08	0.64	6.94	0.02	0.00	7.58	11.7	1
Davit3	Davit3:End	End	14.06	16.06	0.18	-6.09	-0.00	0.00	0.0	6.60	7.05	0.08	0.73	0.00	1.63	0.00	2.92	4.5	3
Davit4	Davit4:O	Origin	0.00	9.56	0.10	-0.58	-110.96	-1.18	-0.0	5.74	8.22	0.08	0.31	17.12	0.01	0.00	17.44	26.8	1
Davit4	#Davit4:O	End	5.00	9.68	0.10	-1.91	-69.87	-0.76	-0.0	5.74	8.22	0.08	0.38	16.13	0.01	0.00	16.52	25.4	1
Davit4	#Davit4:O	Origin	5.00	9.68	0.10	-1.91	-69.87	-0.75	-0.0	5.78	7.97	0.08	0.39	16.13	0.01	0.00	16.52	25.4	1
Davit4	#Davit4:1	End	8.53	9.77	0.11	-3.00	-41.73	-0.46	-0.0	5.78	7.97	0.08	0.46	13.58	0.01	0.00	14.03	21.6	1
Davit4	#Davit4:1	Origin	8.53	9.77	0.11	-3.00	-41.73	-0.46	-0.0	5.82	7.81	0.08	0.46	13.58	0.01	0.00	14.04	21.6	1
Davit4	Davit4:V	End	12.06	9.87	0.11	-4.20	-14.19	-0.17	-0.0	5.82	7.81	0.08	0.56	6.98	0.02	0.00	7.55	11.6	1
Davit4	Davit4:V	Origin	12.06	9.87	0.11	-4.20	-14.19	-0.17	0.0	6.55	7.09	0.08	0.63	6.98	0.02	0.00	7.62	11.7	1
Davit4	Davit4:End	End	14.06	9.86	0.12	-4.92	-0.00	0.00	0.0	6.55	7.09	0.08	0.73	0.00	1.64	0.00	2.93	4.5	3

Summary of Clamp Capacities and Usages for Load Case "NESC Extreme Ice w/ Wind":

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Usage %
Clamp1	2.488	80.00	80.00	3.11
Clamp2	9.642	80.00	80.00	12.05
Clamp3	9.638	80.00	80.00	12.05
Clamp4	9.632	80.00	80.00	12.04
Clamp5	0.427	80.00	80.00	0.53
Clamp6	0.427	80.00	80.00	0.53
Clamp7	0.427	80.00	80.00	0.53
Clamp8	0.427	80.00	80.00	0.53
Clamp9	0.427	80.00	80.00	0.53
Clamp10	0.427	80.00	80.00	0.53
Clamp11	0.427	80.00	80.00	0.53
Clamp12	0.427	80.00	80.00	0.53
Clamp13	0.427	80.00	80.00	0.53
Clamp14	0.427	80.00	80.00	0.53
Clamp15	0.427	80.00	80.00	0.53
Clamp16	0.427	80.00	80.00	0.53
Clamp17	0.427	80.00	80.00	0.53
Clamp18	0.427	80.00	80.00	0.53
Clamp19	0.427	80.00	80.00	0.53
Clamp20	0.427	80.00	80.00	0.53
Clamp21	0.427	80.00	80.00	0.53
Clamp22	2.927	80.00	80.00	3.66

*** Overall summary for all load cases - Usage = Maximum Stress / Allowable Stress

Summary of Steel Pole Usages:

Steel Pole Label	Maximum Usage %	Load Case	Segment Number	Weight (lbs)
9403	48.68	NESC Extreme	36	51849.3

Base Plate Results by Bend Line:

Pole Label	Load Case	Bend Line #	Start X (ft)	Start Y (ft)	End X (ft)	End Y (ft)	Length (in)	Bending Stress (ksi)	Bolt Mom. Sum (ft-k)	# Bolts Acting	Bolt Max Load (kips)	Min Plate Thickness (in)	Actual Thickness (in)	Usage %
9403	NESC Heavy	1	2.661	1.929	0.449	3.206	30.657	14.499	70.322	6	76.164	1.817	3.375	29.00
9403	NESC Heavy	2	3.206	0.449	1.929	2.661	30.657	8.424	40.857	6	62.621	1.385	3.375	16.85
9403	NESC Heavy	3	3.001	-1.176	3.001	1.176	28.220	2.596	11.591	4	26.343	0.769	3.375	5.19
9403	NESC Heavy	4	1.929	-2.661	3.206	-0.449	30.657	7.345	35.626	6	-57.210	1.294	3.375	14.69
9403	NESC Heavy	5	0.449	-3.206	2.661	-1.929	30.657	13.271	64.365	6	-69.980	1.739	3.375	26.54
9403	NESC Heavy	6	-1.176	-3.001	1.176	-3.001	28.220	10.855	48.460	4	-69.980	1.573	3.375	21.71
9403	NESC Heavy	7	-2.661	-1.929	-0.449	-3.206	30.657	13.074	63.410	6	-69.657	1.726	3.375	26.15
9403	NESC Heavy	8	-3.206	-0.449	-1.929	-2.661	30.657	6.999	33.945	6	-56.114	1.263	3.375	14.00
9403	NESC Heavy	9	-3.001	1.176	-3.001	-1.176	28.220	2.596	11.591	4	28.097	0.769	3.375	5.19
9403	NESC Heavy	10	-1.929	2.661	-3.206	0.449	30.657	8.770	42.538	6	63.718	1.414	3.375	17.54
9403	NESC Heavy	11	-0.449	3.206	-2.661	1.929	30.657	14.696	71.276	6	76.487	1.830	3.375	29.39
9403	NESC Heavy	12	1.176	3.001	-1.176	3.001	28.220	11.880	53.037	4	76.487	1.645	3.375	23.76
9403	NESC Heavy	13	1.594	2.790	0.364	3.119	15.278	13.655	33.005	3	76.164	1.764	3.375	27.31
9403	NESC Heavy	14	2.917	1.477	1.477	2.917	24.425	7.561	29.219	5	68.614	1.312	3.375	15.12
9403	NESC Heavy	15	3.119	0.364	2.790	1.594	15.278	4.575	11.058	3	36.733	1.021	3.375	9.15
9403	NESC Heavy	16	2.790	-1.594	3.119	-0.364	15.278	3.689	8.917	3	-31.869	0.917	3.375	7.38
9403	NESC Heavy	17	1.477	-2.917	2.917	-1.477	24.425	6.838	26.423	5	-62.963	1.248	3.375	13.68
9403	NESC Heavy	18	0.364	-3.119	1.594	-2.790	15.278	12.546	30.323	3	-69.980	1.691	3.375	25.09
9403	NESC Heavy	19	-1.594	-2.790	-0.364	-3.119	15.278	12.442	30.073	3	-69.657	1.684	3.375	24.88
9403	NESC Heavy	20	-2.917	-1.477	-1.477	-2.917	24.425	6.658	25.729	5	-62.107	1.232	3.375	13.32
9403	NESC Heavy	21	-3.119	-0.364	-2.790	-1.594	15.278	3.362	8.126	3	-30.226	0.875	3.375	6.72
9403	NESC Heavy	22	-2.790	1.594	-3.119	0.364	15.278	4.902	11.848	3	38.376	1.057	3.375	9.80
9403	NESC Heavy	23	-1.477	2.917	-2.917	1.477	24.425	7.741	29.913	5	69.470	1.328	3.375	15.48
9403	NESC Heavy	24	-0.364	3.119	-1.594	2.790	15.278	13.758	33.254	3	76.487	1.770	3.375	27.52
9403	NESC Extreme	1	2.661	1.929	0.449	3.206	30.657	20.925	101.488	6	110.123	2.183	3.375	41.85
9403	NESC Extreme	2	3.206	0.449	1.929	2.661	30.657	11.962	58.019	6	90.297	1.651	3.375	23.92
9403	NESC Extreme	3	3.001	-1.176	3.001	1.176	28.220	3.853	17.200	4	36.695	0.937	3.375	7.71
9403	NESC Extreme	4	1.929	-2.661	3.206	-0.449	30.657	11.438	55.473	6	-87.520	1.614	3.375	22.88
9403	NESC Extreme	5	0.449	-3.206	2.661	-1.929	30.657	20.283	98.373	6	-106.738	2.150	3.375	40.57
9403	NESC Extreme	6	-1.176	-3.001	1.176	-3.001	28.220	16.581	74.026	4	-106.738	1.944	3.375	33.16
9403	NESC Extreme	7	-2.661	-1.929	-0.449	-3.206	30.657	20.128	97.624	6	-106.485	2.141	3.375	40.26
9403	NESC Extreme	8	-3.206	-0.449	-1.929	-2.661	30.657	11.166	54.155	6	-86.660	1.595	3.375	22.33
9403	NESC Extreme	9	-3.001	1.176	-3.001	-1.176	28.220	3.853	17.200	4	38.070	0.937	3.375	7.71
9403	NESC Extreme	10	-1.929	2.661	-3.206	0.449	30.657	12.234	59.337	6	91.157	1.669	3.375	24.47
9403	NESC Extreme	11	-0.449	3.206	-2.661	1.929	30.657	21.079	102.236	6	110.376	2.191	3.375	42.16
9403	NESC Extreme	12	1.176	3.001	-1.176	3.001	28.220	17.154	76.585	4	110.376	1.977	3.375	34.31
9403	NESC Extreme	13	1.594	2.790	0.364	3.119	15.278	19.738	47.707	3	110.123	2.121	3.375	39.48
9403	NESC Extreme	14	2.917	1.477	1.477	2.917	24.425	10.866	41.987	5	99.106	1.573	3.375	21.73
9403	NESC Extreme	15	3.119	0.364	2.790	1.594	15.278	6.342	15.329	3	52.074	1.202	3.375	12.68
9403	NESC Extreme	16	2.790	-1.594	3.119	-0.364	15.278	5.921	14.311	3	-49.724	1.161	3.375	11.84
9403	NESC Extreme	17	1.477	-2.917	2.917	-1.477	24.425	10.502	40.580	5	-96.140	1.547	3.375	21.00
9403	NESC Extreme	18	0.364	-3.119	1.594	-2.790	15.278	19.141	46.264	3	-106.738	2.088	3.375	38.28
9403	NESC Extreme	19	-1.594	-2.790	-0.364	-3.119	15.278	19.060	46.068	3	-106.485	2.084	3.375	38.12
9403	NESC Extreme	20	-2.917	-1.477	-1.477	-2.917	24.425	10.361	40.036	5	-95.468	1.536	3.375	20.72
9403	NESC Extreme	21	-3.119	-0.364	-2.790	-1.594	15.278	5.664	13.691	3	-48.437	1.136	3.375	11.33
9403	NESC Extreme	22	-2.790	1.594	-3.119	0.364	15.278	6.599	15.949	3	53.362	1.226	3.375	13.20
9403	NESC Extreme	23	-1.477	2.917	-2.917	1.477	24.425	11.007	42.531	5	99.777	1.583	3.375	22.01
9403	NESC Extreme	24	-0.364	3.119	-1.594	2.790	15.278	19.819	47.902	3	110.376	2.125	3.375	39.64

9403 NESC Extreme Ice w/ Wind	1	2.661	1.929	0.449	3.206	30.657	11.631	56.414	6	61.062	1.628	3.375	23.26
9403 NESC Extreme Ice w/ Wind	2	3.206	0.449	1.929	2.661	30.657	6.768	32.826	6	50.249	1.242	3.375	13.54
9403 NESC Extreme Ice w/ Wind	3	3.001	-1.176	3.001	1.176	28.220	2.083	9.297	4	21.193	0.689	3.375	4.17
9403 NESC Extreme Ice w/ Wind	4	1.929	-2.661	3.206	-0.449	30.657	5.881	28.521	6	-45.868	1.157	3.375	11.76
9403 NESC Extreme Ice w/ Wind	5	0.449	-3.206	2.661	-1.929	30.657	10.643	51.619	6	-56.160	1.557	3.375	21.29
9403 NESC Extreme Ice w/ Wind	6	-1.176	-3.001	1.176	-3.001	28.220	8.715	38.906	4	-56.160	1.409	3.375	17.43
9403 NESC Extreme Ice w/ Wind	7	-2.661	-1.929	-0.449	-3.206	30.657	10.510	50.976	6	-55.943	1.547	3.375	21.02
9403 NESC Extreme Ice w/ Wind	8	-3.206	-0.449	-1.929	-2.661	30.657	5.647	27.389	6	-45.130	1.134	3.375	11.29
9403 NESC Extreme Ice w/ Wind	9	-3.001	1.176	-3.001	-1.176	28.220	2.083	9.297	4	22.373	0.689	3.375	4.17
9403 NESC Extreme Ice w/ Wind	10	-1.929	2.661	-3.206	0.449	30.657	7.002	33.958	6	50.987	1.263	3.375	14.00
9403 NESC Extreme Ice w/ Wind	11	-0.449	3.206	-2.661	1.929	30.657	11.764	57.056	6	61.279	1.637	3.375	23.53
9403 NESC Extreme Ice w/ Wind	12	1.176	3.001	-1.176	3.001	28.220	9.521	42.506	4	61.279	1.473	3.375	19.04
9403 NESC Extreme Ice w/ Wind	13	1.594	2.790	0.364	3.119	15.278	10.950	26.467	3	61.062	1.579	3.375	21.90
9403 NESC Extreme Ice w/ Wind	14	2.917	1.477	1.477	2.917	24.425	6.070	23.454	5	55.040	1.176	3.375	12.14
9403 NESC Extreme Ice w/ Wind	15	3.119	0.364	2.790	1.594	15.278	3.681	8.898	3	29.520	0.916	3.375	7.36
9403 NESC Extreme Ice w/ Wind	16	2.790	-1.594	3.119	-0.364	15.278	2.947	7.124	3	-25.507	0.819	3.375	5.89
9403 NESC Extreme Ice w/ Wind	17	1.477	-2.917	2.917	-1.477	24.425	5.480	21.176	5	-50.498	1.117	3.375	10.96
9403 NESC Extreme Ice w/ Wind	18	0.364	-3.119	1.594	-2.790	15.278	10.066	24.328	3	-56.160	1.514	3.375	20.13
9403 NESC Extreme Ice w/ Wind	19	-1.594	-2.790	-0.364	-3.119	15.278	9.996	24.161	3	-55.943	1.509	3.375	19.99
9403 NESC Extreme Ice w/ Wind	20	-2.917	-1.477	-1.477	-2.917	24.425	5.359	20.709	5	-49.921	1.105	3.375	10.72
9403 NESC Extreme Ice w/ Wind	21	-3.119	-0.364	-2.790	-1.594	15.278	2.727	6.592	3	-24.401	0.788	3.375	5.45
9403 NESC Extreme Ice w/ Wind	22	-2.790	1.594	-3.119	0.364	15.278	3.902	9.430	3	30.626	0.943	3.375	7.80
9403 NESC Extreme Ice w/ Wind	23	-1.477	2.917	-2.917	1.477	24.425	6.191	23.922	5	55.617	1.188	3.375	12.38
9403 NESC Extreme Ice w/ Wind	24	-0.364	3.119	-1.594	2.790	15.278	11.020	26.634	3	61.279	1.584	3.375	22.04

Summary of Tubular Davit Usages:

Tubular Davit Label	Maximum Usage %	Load Case	Segment Number	Weight (lbs)
Davit1	14.27	NESC Extreme Ice w/ Wind	1	163.2
Davit2	28.68	NESC Heavy	1	653.2
Davit3	28.82	NESC Heavy	1	653.2
Davit4	28.99	NESC Heavy	1	653.2

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
NESC Heavy	36.06	9403	Steel Pole
NESC Extreme	48.68	9403	Steel Pole
NESC Extreme Ice w/ Wind	29.52	9403	Steel Pole

Summary of Steel Pole Usages by Load Case:

Load Case	Maximum Usage %	Steel Pole Label	Segment Number
NESC Heavy	36.06	9403	36
NESC Extreme	48.68	9403	36
NESC Extreme Ice w/ Wind	29.52	9403	36

Summary of Base Plate Usages by Load Case:

Load Case	Pole Label	Bend Line #	Length (in)	Vertical Load (kips)	X Moment (ft-k)	Y Moment (ft-k)	Bending Stress (ksi)	Bolt Moment Sum (ft-k)	# Bolts Acting On Bend Line	Max Bolt Load For Bend Line (kips)	Minimum Plate Thickness (in)	Usage %
NESC Heavy	9403	11	30.657	117.127	4395.641	-54.868	14.696	71.276	6	76.487	1.830	29.39

NESC Extreme	9403	11	30.657	65.476	6522.668	-43.022	21.079	102.236	6	110.376	2.191	42.16
NESC Extreme Ice w/ Wind	9403	11	30.657	92.144	3525.772	-36.946	11.764	57.056	6	61.279	1.637	23.53

Summary of Tubular Davit Usages by Load Case:

Load Case	Maximum Tubular Davit Usage %	Davit Segment Label	Segment Number
NESC Heavy	28.99	Davit4	1
NESC Extreme	14.26	Davit4	1
NESC Extreme Ice w/ Wind	26.83	Davit4	1

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load Case	Weight (lbs)
Clamp1	Clamp	3.28	NESC Heavy	0.0
Clamp2	Clamp	13.69	NESC Heavy	0.0
Clamp3	Clamp	13.69	NESC Heavy	0.0
Clamp4	Clamp	13.68	NESC Heavy	0.0
Clamp5	Clamp	0.58	NESC Heavy	0.0
Clamp6	Clamp	0.58	NESC Heavy	0.0
Clamp7	Clamp	0.58	NESC Heavy	0.0
Clamp8	Clamp	0.58	NESC Heavy	0.0
Clamp9	Clamp	0.58	NESC Heavy	0.0
Clamp10	Clamp	0.58	NESC Heavy	0.0
Clamp11	Clamp	0.58	NESC Heavy	0.0
Clamp12	Clamp	0.58	NESC Heavy	0.0
Clamp13	Clamp	0.58	NESC Heavy	0.0
Clamp14	Clamp	0.58	NESC Heavy	0.0
Clamp15	Clamp	0.58	NESC Heavy	0.0
Clamp16	Clamp	0.58	NESC Heavy	0.0
Clamp17	Clamp	0.58	NESC Heavy	0.0
Clamp18	Clamp	0.58	NESC Heavy	0.0
Clamp19	Clamp	0.58	NESC Heavy	0.0
Clamp20	Clamp	0.58	NESC Heavy	0.0
Clamp21	Clamp	0.58	NESC Heavy	0.0
Clamp22	Clamp	5.80	NESC Extreme	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	Clamp1	Clamp	Davit1:End	0.016	2.341	1.180	2.622
NESC Heavy	Clamp2	Clamp	Davit2:End	0.100	7.817	7.674	10.955
NESC Heavy	Clamp3	Clamp	Davit3:End	0.102	7.808	7.674	10.948
NESC Heavy	Clamp4	Clamp	Davit4:End	0.103	7.798	7.674	10.941
NESC Heavy	Clamp5	Clamp	9403:WVGD1	0.000	0.060	0.460	0.464
NESC Heavy	Clamp6	Clamp	9403:WVGD2	0.000	0.060	0.460	0.464
NESC Heavy	Clamp7	Clamp	9403:WVGD3	0.000	0.060	0.460	0.464
NESC Heavy	Clamp8	Clamp	9403:WVGD4	0.000	0.060	0.460	0.464
NESC Heavy	Clamp9	Clamp	9403:WVGD5	0.000	0.060	0.460	0.464
NESC Heavy	Clamp10	Clamp	9403:WVGD6	0.000	0.060	0.460	0.464
NESC Heavy	Clamp11	Clamp	9403:WVGD7	0.000	0.060	0.460	0.464
NESC Heavy	Clamp12	Clamp	9403:WVGD8	0.000	0.060	0.460	0.464
NESC Heavy	Clamp13	Clamp	9403:WVGD9	0.000	0.060	0.460	0.464
NESC Heavy	Clamp14	Clamp	9403:WVGD10	0.000	0.060	0.460	0.464
NESC Heavy	Clamp15	Clamp	9403:WVGD11	0.000	0.060	0.460	0.464
NESC Heavy	Clamp16	Clamp	9403:WVGD12	0.000	0.060	0.460	0.464
NESC Heavy	Clamp17	Clamp	9403:WVGD13	0.000	0.060	0.460	0.464
NESC Heavy	Clamp18	Clamp	9403:WVGD14	0.000	0.060	0.460	0.464

NESC Heavy	Clamp19	Clamp	9403:WVGD15	0.000	0.060	0.460	0.464
NESC Heavy	Clamp20	Clamp	9403:WVGD16	0.000	0.060	0.460	0.464
NESC Heavy	Clamp21	Clamp	9403:WVGD17	0.000	0.060	0.460	0.464
NESC Heavy	Clamp22	Clamp	9403:AT&T	0.000	1.148	3.111	3.316
NESC Extreme	Clamp1	Clamp	Davit1:End	0.012	1.803	0.248	1.820
NESC Extreme	Clamp2	Clamp	Davit2:End	0.123	10.077	3.274	10.596
NESC Extreme	Clamp3	Clamp	Davit3:End	0.125	10.071	3.274	10.591
NESC Extreme	Clamp4	Clamp	Davit4:End	0.127	10.063	3.274	10.583
NESC Extreme	Clamp5	Clamp	9403:WVGD1	0.000	0.174	0.125	0.214
NESC Extreme	Clamp6	Clamp	9403:WVGD2	0.000	0.174	0.125	0.214
NESC Extreme	Clamp7	Clamp	9403:WVGD3	0.000	0.174	0.125	0.214
NESC Extreme	Clamp8	Clamp	9403:WVGD4	0.000	0.174	0.125	0.214
NESC Extreme	Clamp9	Clamp	9403:WVGD5	0.000	0.174	0.125	0.214
NESC Extreme	Clamp10	Clamp	9403:WVGD6	0.000	0.174	0.125	0.214
NESC Extreme	Clamp11	Clamp	9403:WVGD7	0.000	0.174	0.125	0.214
NESC Extreme	Clamp12	Clamp	9403:WVGD8	0.000	0.174	0.125	0.214
NESC Extreme	Clamp13	Clamp	9403:WVGD9	0.000	0.174	0.125	0.214
NESC Extreme	Clamp14	Clamp	9403:WVGD10	0.000	0.174	0.125	0.214
NESC Extreme	Clamp15	Clamp	9403:WVGD11	0.000	0.174	0.125	0.214
NESC Extreme	Clamp16	Clamp	9403:WVGD12	0.000	0.174	0.125	0.214
NESC Extreme	Clamp17	Clamp	9403:WVGD13	0.000	0.174	0.125	0.214
NESC Extreme	Clamp18	Clamp	9403:WVGD14	0.000	0.174	0.125	0.214
NESC Extreme	Clamp19	Clamp	9403:WVGD15	0.000	0.174	0.125	0.214
NESC Extreme	Clamp20	Clamp	9403:WVGD16	0.000	0.174	0.125	0.214
NESC Extreme	Clamp21	Clamp	9403:WVGD17	0.000	0.174	0.125	0.214
NESC Extreme	Clamp22	Clamp	9403:AT&T	0.000	4.363	1.578	4.640
NESC Extreme Ice w/ Wind	Clamp1	Clamp	Davit1:End	0.014	2.049	1.411	2.488
NESC Extreme Ice w/ Wind	Clamp2	Clamp	Davit2:End	0.081	6.351	7.254	9.642
NESC Extreme Ice w/ Wind	Clamp3	Clamp	Davit3:End	0.082	6.345	7.254	9.638
NESC Extreme Ice w/ Wind	Clamp4	Clamp	Davit4:End	0.083	6.337	7.254	9.632
NESC Extreme Ice w/ Wind	Clamp5	Clamp	9403:WVGD1	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp6	Clamp	9403:WVGD2	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp7	Clamp	9403:WVGD3	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp8	Clamp	9403:WVGD4	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp9	Clamp	9403:WVGD5	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp10	Clamp	9403:WVGD6	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp11	Clamp	9403:WVGD7	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp12	Clamp	9403:WVGD8	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp13	Clamp	9403:WVGD9	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp14	Clamp	9403:WVGD10	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp15	Clamp	9403:WVGD11	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp16	Clamp	9403:WVGD12	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp17	Clamp	9403:WVGD13	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp18	Clamp	9403:WVGD14	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp19	Clamp	9403:WVGD15	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp20	Clamp	9403:WVGD16	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp21	Clamp	9403:WVGD17	0.000	0.042	0.425	0.427
NESC Extreme Ice w/ Wind	Clamp22	Clamp	9403:AT&T	0.000	1.039	2.736	2.927

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)
NESC Heavy	27.932	0.321	35.133	3576.322	35.685
NESC Extreme	39.335	0.387	13.773	4738.577	42.691
NESC Extreme Ice w/ Wind	22.835	0.260	33.134	2989.600	28.959

*** Weight of structure (lbs):

Weight of Tubular Davit Arms:	2122.8
Weight of Steel Poles:	51849.3
Total:	53972.1

*** End of Report

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63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Subject: Anchor Bolt Analysis CL&P Pole #9403

Location: Meriden, CT

Rev. 0: 4/26/12 Prepared by: T.J.L. Checked by: C.F.C.
Job No. 12014.CO7

Anchor Bolt Analysis:

Input Data:

Bolt Force:

Maximum Tensile Force = $T_{Max} := 111 \cdot kips$ (User Input from PLS-Pole)

Anchor Bolt Data:

Use ASTM A615 Grade 75

Number of Anchor Bolts = $N := 36$ (User Input)

Bolt "Column" Distance = $l := 3.0 \cdot in$ (User Input)

Bolt Ultimate Strength = $F_u := 100 \cdot ksi$ (User Input)

Bolt Yeild Strength= $F_y := 75 \cdot ksi$ (User Input)

Bolt Modulus = $E := 29000 \cdot ksi$ (User Input)

Diameter of Anchor Bolts = $D := 2.25 \cdot in$ (User Input)

Threads per Inch = $n := 4.5$ (User Input)

Anchor Bolt Analysis:

Calculated Anchor Bolt Properties:

Net Area of Bolt = $A_n := \frac{\pi}{4} \cdot \left(D - \frac{0.9743 \cdot in}{n} \right)^2 = 3.248 \cdot in^2$

Bolt Tension Check:

Allowable Tensile Force (Net Area) = $T_{ALL.Net} := 1.0 \cdot \left(A_n \cdot F_y \right) = 243.576 \cdot kips$

Bolt Tension % of Capacity = $\frac{T_{Max}}{T_{ALL.Net}} = 45.57 \cdot \%$

Condition1 = $Condition1 := if\left(\frac{T_{Max}}{T_{ALL.Net}} \le 1.00, "OK", "Overstressed" \right)$

Condition1 = "OK"

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63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Subject: CAISSON FOUNDATION ANALYSIS

Location: Meriden, CT

Rev. 0: 5/8/12 Prepared by: TJL Checked by: C.F.C.
Job No. 12014.CO7

Caisson Foundation:

Input Data:

Shear Force =	$S := 62.6k \cdot 1.1 = 68.9 \cdot k$	*USER INPUT-FROM PLS-Pole*
Overturning Moment =	$M := 6522.8ft \cdot k \cdot 1.1 = 7175 \cdot ft \cdot k$	*USER INPUT-FROM PLS-Pole*
Applied Axial Load =	$A1 := 65.5k \cdot 1.1 = 72.1 \cdot k$	*USER INPUT-FROM PLS-Pole*
Bending Moment =	$Mu := 7721.6ft \cdot k$	*USER INPUT–FROM LPILE*
Moment Capacity =	$Mn := 19029ft \cdot k$	*USER INPUT–FROM LPILE*
Foundation Diameter =	$d := 8.5ft$	*USER INPUT*
Overall Length of Caisson =	$L_c := 22.0ft$	*USER INPUT*
Depth From Top of Caisson to Grade =	$L_{pag} := 0.5ft$	*USER INPUT*
Number of Rebar =	$n := 58$	*USER INPUT*
Area of Rebar =	$Ar := 1.56in^2$	*USER INPUT*
Rebar Yield Strength =	$fy := 60ksi$	*USER INPUT*
Concrete Comp Strength =	$f'c := 3.5ksi$	*USER INPUT*

Check Moment Capacity:

Factor of Safety = $FS := \frac{Mn}{Mu} = 2.5$

Factor of Safety Required = $FS_{reqd} := 1.3$

$FOSCheck := if(FS \geq FS_{reqd}, "OK", "NO GOOD")$

FOSCheck = "OK"

Check Axial Capacity:

Concrete Weight = $A2 := .150\frac{k}{ft^3} \cdot LD \cdot \pi \frac{d^2}{4} = 183 \cdot kips$

Total Axial Load = $AT := A1 + A2 = 255.1 \cdot kips$

Area of Concrete = $Ag := \pi \cdot \frac{d^2}{4} = 56.75ft^2$

Axial Capacity = $Po := n \cdot Ar \cdot fy + (Ag - n \cdot Ar) \cdot 0.85 \cdot f'c = 29469.2 \cdot kips$

$AxialCheck := if(AT \leq Po, "OK", "NO GOOD")$

AxialCheck = "OK"

LPILE Plus for Windows, Version 5.0 (5.0.39)

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

This program is licensed to:

TJL
Centek Engineering Inc

Path to file locations: J:\Jobs\1201400.WI\CO.07 - CT5279 - 74 Birdsey Ave., Meriden, CT\Rev (0)\Calcs\L-Pile\
Name of input data file: Caisson Analysis.lpd
Name of output file: Caisson Analysis.lpo
Name of plot output file: Caisson Analysis.lpp
Name of runtime file: Caisson Analysis.lpr

Time and Date of Analysis

Date: May 8, 2012 Time: 10:22:45

Problem Title

12014.CO7 / CT5279 / CL&P # 9403

Program Options

Units Used in Computations - US Customary Units: Inches, Pounds

Basic Program Options:

Analysis Type 3:
- Computation of Nonlinear Bending Stiffness and Ultimate Bending Moment Capacity with Pile Response Computed Using Nonlinear EI

Computation Options:
- Only internally-generated p-y curves used in analysis
- Analysis does not use p-y multipliers (individual pile or shaft action only)
- Analysis assumes no shear resistance at pile tip
- Analysis for fixed-length pile or shaft only
- Analysis includes computation of foundation stiffness matrix elements
- Output summary table of values for pile-head deflection, maximum bending moment, and shear force only
- Analysis assumes no soil movements acting on pile
- No additional p-y curves to be computed at user-specified depths

Solution Control Parameters:
- Number of pile increments = 100
- Maximum number of iterations allowed = 100
- Deflection tolerance for convergence = 1.0000E-04 in
- Maximum allowable deflection = 1.0000E+02 in

Printing Options:
- Only summary tables of pile-head deflection, maximum bending moment, and maximum shear force are to be printed in output file.

Pile Structural Properties and Geometry

Pile Length = 264.00 in

Depth of ground surface below top of pile = 12.00 in

Slope angle of ground surface = .00 deg.

Structural properties of pile defined using 2 points

Point	Depth X	Pile Diameter	Moment of Inertia	Pile Area	Modulus of Elasticity

	in	in	in**4	Sq.in	lbs/Sq.in
1	0.0000	102.00000	5313376.	8171.3000	3300000.
2	264.0000	102.00000	5313376.	8171.3000	3300000.

Please note that because this analysis makes computations of ultimate moment capacity and pile response using nonlinear bending stiffness that the above values of moment of inertia and modulus of are not used for any computations other than total stress due to combined axial loading and bending.

Soil and Rock Layering Information

The soil profile is modelled using 2 layers

Layer 1 is sand, p-y criteria by Reese et al., 1974
Distance from top of pile to top of layer = 12.000 in
Distance from top of pile to bottom of layer = 102.000 in
p-y subgrade modulus k for top of soil layer = 25.000 lbs/in**3
p-y subgrade modulus k for bottom of layer = 25.000 lbs/in**3

Layer 2 is weak rock, p-y criteria by Reese, 1997
Distance from top of pile to top of layer = 102.000 in
Distance from top of pile to bottom of layer = 264.000 in
Initial modulus of rock at top of layer = 5.0000E+05 lbs/in**2
Initial modulus of rock at bottom of layer = 5.0000E+05 lbs/in**2

(Depth of lowest layer extends .00 in below pile tip)

Effective Unit Weight of Soil vs. Depth

Effective unit weight of soil with depth defined using 4 points

Point No.	Depth X in	Eff. Unit Weight lbs/in**3
1	12.00	.05800
2	102.00	.05800
3	102.00	.07800
4	264.00	.07800

Shear Strength of Soils

Shear strength parameters with depth defined using 4 points

Point No.	Depth X in	Cohesion c lbs/in**2	Angle of Friction Deg.	E50 or k_rm	RQD %
1	12.000	.00000	30.00	------	------
2	102.000	.00000	30.00	------	------
3	102.000	250.00000	.00	.00050	50.0
4	264.000	250.00000	.00	.00050	50.0

Notes:

(1) Cohesion = uniaxial compressive strength for rock materials.
(2) Values of E50 are reported for clay strata.
(3) Default values will be generated for E50 when input values are 0.
(4) RQD and k_rm are reported only for weak rock strata.

Loading Type

Static loading criteria was used for computation of p-y curves.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load Case Number 1

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head = 68904.000 lbs
Bending moment at pile head = 86101092.000 in-lbs
Axial load at pile head = 72028.000 lbs

Non-zero moment at pile head for this load case indicates the pile-head may rotate under the applied pile-head loading, but is not a free-head (zero moment) condition.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

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Number of sections = 1

Pile Section No. 1

The sectional shape is a circular drilled shaft (bored pile).

Outside Diameter = 102.0000 in

Material Properties:

Compressive Strength of Concrete	=	3.500 kip/in**2
Yield Stress of Reinforcement	=	60. kip/in**2
Modulus of Elasticity of Reinforcement	=	29000. kip/in**2
Number of Reinforcing Bars	=	58
Area of Single Bar	=	1.56000 in**2
Number of Rows of Reinforcing Bars	=	29
Area of Steel	=	90.480 in**2
Area of Shaft	=	8171.282 in**2
Percentage of Steel Reinforcement	=	1.107 percent
Cover Thickness (edge to bar center)	=	3.000 in

Unfactored Axial Squash Load Capacity = 29469.19 kip

Distribution and Area of Steel Reinforcement

Row Number	Area of Reinforcement in**2	Distance to Centroidal Axis in
1	3.120	47.930
2	3.120	47.368
3	3.120	46.250
4	3.120	44.591
5	3.120	42.409
6	3.120	39.729
7	3.120	36.584
8	3.120	33.010
9	3.120	29.048
10	3.120	24.747
11	3.120	20.155
12	3.120	15.326
13	3.120	10.319
14	3.120	5.190
15	3.120	0.000
16	3.120	-5.190
17	3.120	-10.319
18	3.120	-15.326
19	3.120	-20.155
20	3.120	-24.747
21	3.120	-29.048
22	3.120	-33.010
23	3.120	-36.584
24	3.120	-39.729
25	3.120	-42.409
26	3.120	-44.591
27	3.120	-46.250
28	3.120	-47.368
29	3.120	-47.930

Axial Thrust Force = 72028.00 lbs

Bending Moment in-lbs	Bending Stiffness lb-in2	Bending Curvature rad/in	Maximum Strain in/in	Neutral Axis Position inches	Max. Concrete Stress psi	Max. Steel Stress psi
13143846.	2.103015E+13	6.250000E-07	.00003437	54.99853304	114.01096	941.19748
26148261.	2.091861E+13	.00000125	.00006637	53.09451905	218.00599	1813.37446
39014214.	2.080758E+13	.00000188	.00009840	52.48263940	320.21312	2686.79073

51738215.	2.069529E+13	.00000250	.00013040	52.15947738	420.35407	3558.95839
51738215.	1.655623E+13	.00000313	.00009305	29.77668115	299.55771	6266.98362
51738215.	1.379686E+13	.00000375	.00011013	29.36915454	352.68369	7564.69886
51738215.	1.182588E+13	.00000438	.00012724	29.08384457	405.35686	8861.68071
51738215.	1.034764E+13	.00000500	.00014450	28.90000132	457.96719	10154.29237
51738215.	9.197905E+12	.00000563	.00016177	28.75964597	510.07924	11446.47438
51738215.	8.278114E+12	.00000625	.00017894	28.62976894	561.30928	12741.84508
51738215.	7.525559E+12	.00000688	.00019613	28.52752706	612.08516	14036.41406
51738215.	6.898429E+12	.00000750	.00021335	28.44604120	662.40485	15330.17488
51738215.	6.367780E+12	.00000813	.00023059	28.38055703	712.26649	16623.11916
51738215.	5.912939E+12	.00000875	.00024787	28.32766691	761.66789	17915.24150
53984205.	5.758315E+12	.00000938	.00026517	28.28488424	810.60716	19206.53315
57426604.	5.742660E+12	.00001000	.00028250	28.25033650	859.08214	20496.98754
60864001.	5.728377E+12	.00001063	.00029987	28.22259495	907.09073	21786.59712
64296363.	5.715232E+12	.00001125	.00031726	28.20055005	954.63087	23075.35381
67723644.	5.703044E+12	.00001188	.00033468	28.18332025	1001.70024	24363.25142
71145816.	5.691665E+12	.00001250	.00035213	28.17020944	1048.29682	25650.28048
74562847.	5.680979E+12	.00001313	.00036961	28.16065219	1094.41848	26936.43223
77974678.	5.670886E+12	.00001375	.00038712	28.15417734	1140.06271	28221.70133
81381287.	5.661307E+12	.00001438	.00040466	28.15040794	1185.22745	29506.07730
84782622.	5.652175E+12	.00001500	.00042224	28.14902177	1229.91027	30789.55321
88178652.	5.643434E+12	.00001563	.00043984	28.14975438	1274.10895	32072.11930
91569330.	5.635036E+12	.00001625	.00045748	28.15237775	1317.82104	33353.76780
94954616.	5.626940E+12	.00001688	.00047514	28.15670040	1361.04416	34634.48963
98334467.	5.619112E+12	.00001750	.00049284	28.16255817	1403.77591	35914.27569
1.017088E+08	5.611523E+12	.00001813	.00051058	28.16981122	1446.01388	37193.11601
1.050777E+08	5.604144E+12	.00001875	.00052834	28.17833492	1487.75547	38471.00249
1.084410E+08	5.596954E+12	.00001938	.00054614	28.18802288	1528.99814	39747.92581
1.117987E+08	5.589933E+12	.00002000	.00056398	28.19878086	1569.73924	41023.87734
1.151507E+08	5.583063E+12	.00002063	.00058184	28.21053287	1609.97640	42298.84434
1.184970E+08	5.576329E+12	.00002125	.00059974	28.22320595	1649.70690	43572.81771
1.218375E+08	5.569717E+12	.00002188	.00061768	28.23673323	1688.92785	44845.78981
1.251723E+08	5.563214E+12	.00002250	.00063565	28.25106302	1727.63671	46117.74790
1.285012E+08	5.556810E+12	.00002313	.00065365	28.26614669	1765.83075	47388.68097
1.318242E+08	5.550494E+12	.00002375	.00067170	28.28193864	1803.50708	48658.57942
1.351413E+08	5.544258E+12	.00002438	.00068977	28.29839632	1840.66266	49927.43483
1.417574E+08	5.531994E+12	.00002563	.00072604	28.33319029	1913.40079	52461.95984
1.483490E+08	5.519961E+12	.00002688	.00076245	28.37028542	1984.02111	54992.16881
1.549157E+08	5.508113E+12	.00002813	.00079902	28.40949324	2052.49922	57517.96523
1.614484E+08	5.496117E+12	.00002938	.00083572	28.45008418	2118.77895	60000.00000
1.666986E+08	5.443220E+12	.00003063	.00087007	28.41052374	2178.45140	60000.00000
1.710198E+08	5.365327E+12	.00003188	.00090267	28.31901857	2232.99077	60000.00000
1.747520E+08	5.275532E+12	.00003313	.00093413	28.20019743	2283.73861	60000.00000
1.779906E+08	5.177908E+12	.00003438	.00096460	28.06108233	2331.11591	60000.00000
1.808909E+08	5.077641E+12	.00003563	.00099437	27.91222760	2375.75127	60000.00000
1.836199E+08	4.979522E+12	.00003688	.00102384	27.76511773	2418.33063	60000.00000
1.859465E+08	4.877287E+12	.00003813	.00105238	27.60332546	2458.02654	60000.00000
1.882539E+08	4.781050E+12	.00003938	.00108096	27.45300856	2496.31889	60000.00000
1.901862E+08	4.681506E+12	.00004063	.00110861	27.28874186	2531.90151	60000.00000
1.921412E+08	4.588447E+12	.00004188	.00113900	27.19999990	2569.57325	60000.00000
1.939407E+08	4.497175E+12	.00004313	.00116613	27.04072765	2601.64927	60000.00000
1.955007E+08	4.405650E+12	.00004438	.00119242	26.87150297	2631.43343	60000.00000
1.970543E+08	4.318998E+12	.00004563	.00121878	26.71298763	2660.05224	60000.00000
1.985030E+08	4.234731E+12	.00004688	.00124484	26.55668834	2687.11735	60000.00000
1.997546E+08	4.150745E+12	.00004813	.00127027	26.39530036	2712.32459	60000.00000
2.010005E+08	4.070896E+12	.00004938	.00129576	26.24330851	2736.43537	60000.00000
2.022405E+08	3.994875E+12	.00005063	.00132131	26.10003188	2759.44177	60000.00000
2.033696E+08	3.920377E+12	.00005188	.00134649	25.95651510	2780.96001	60000.00000
2.043555E+08	3.846692E+12	.00005313	.00137117	25.81018040	2800.92884	60000.00000
2.053364E+08	3.776301E+12	.00005438	.00139589	25.67162159	2819.85790	60000.00000
2.063121E+08	3.708982E+12	.00005563	.00142068	25.54033104	2837.73998	60000.00000
2.074017E+08	3.646623E+12	.00005688	.00145023	25.49851808	2857.76440	60000.00000
2.082695E+08	3.583132E+12	.00005813	.00147410	25.36089858	2872.66270	60000.00000
2.090100E+08	3.520169E+12	.00005938	.00149739	25.21926954	2886.20719	60000.00000
2.097464E+08	3.459734E+12	.00006063	.00152074	25.08435246	2898.81941	60000.00000
2.104786E+08	3.401674E+12	.00006188	.00154414	24.95575520	2910.49294	60000.00000
2.112066E+08	3.345846E+12	.00006313	.00156759	24.83310387	2921.22081	60000.00000
2.119303E+08	3.292121E+12	.00006438	.00159110	24.71606407	2930.99632	60000.00000
2.126365E+08	3.240176E+12	.00006563	.00161458	24.60310373	2939.78289	60000.00000
2.131907E+08	3.187898E+12	.00006688	.00163722	24.48175952	2947.31595	60000.00000
2.137411E+08	3.137484E+12	.00006813	.00165991	24.36561039	2953.95805	60000.00000
2.142878E+08	3.088833E+12	.00006938	.00168265	24.25439188	2959.70310	60000.00000
2.148307E+08	3.041851E+12	.00007063	.00170544	24.14783952	2964.54453	60000.00000
2.153698E+08	2.996450E+12	.00007188	.00172829	24.04572532	2968.47597	60000.00000
2.159051E+08	2.952548E+12	.00007313	.00175118	23.94782433	2971.49077	60000.00000
2.164365E+08	2.910070E+12	.00007438	.00177414	23.85392985	2973.58222	60000.00000
2.175458E+08	2.829864E+12	.00007688	.00182689	23.76446745	2972.29169	60000.00000
2.182891E+08	2.750099E+12	.00007938	.00186971	23.55543610	2968.49408	60000.00000
2.190253E+08	2.675118E+12	.00008188	.00191273	23.36157659	2973.01741	60000.00000
2.197541E+08	2.604493E+12	.00008438	.00195595	23.18158481	2974.93290	60000.00000
2.204710E+08	2.537795E+12	.00008688	.00199945	23.01528141	2968.72942	60000.00000
2.211807E+08	2.474749E+12	.00008938	.00204316	22.86050203	2967.84339	60000.00000
2.217467E+08	2.413569E+12	.00009188	.00208562	22.70063397	2972.16975	60000.00000
2.222614E+08	2.355088E+12	.00009438	.00212777	22.54588196	2974.51094	60000.00000
2.227698E+08	2.299559E+12	.00009688	.00217012	22.40119180	2972.97774	60000.00000
2.232703E+08	2.246745E+12	.00009938	.00221270	22.26615617	2966.02390	60000.00000
2.237676E+08	2.196492E+12	.00010188	.00225541	22.13898763	2965.30521	60000.00000
2.239615E+08	2.145739E+12	.00010438	.00230669	22.09999868	2971.08571	60000.00000

2.249028E+08	2.104354E+12	.00010688	.00235298	22.01622990	2974.00285	60000.00000
2.253677E+08	2.060505E+12	.00010938	.00239449	21.89250550	2974.97183	60000.00000
2.256966E+08	2.017399E+12	.00011188	.00243547	21.76954105	2970.49409	60000.00000
2.259800E+08	1.975781E+12	.00011438	.00247644	21.65193585	2964.81555	60000.00000
2.262328E+08	1.935682E+12	.00011688	.00251839	21.54771808	2959.85302	60000.00000
2.264741E+08	1.897165E+12	.00011938	.00256074	21.45120022	2964.96539	60000.00000
2.267136E+08	1.860214E+12	.00012188	.00260319	21.35951874	2969.04520	60000.00000
2.269512E+08	1.824734E+12	.00012438	.00264575	21.27239701	2972.07811	60000.00000
2.271672E+08	1.790480E+12	.00012688	.00268909	21.19479606	2974.08919	60000.00000
2.273644E+08	1.757406E+12	.00012938	.00273310	21.12542090	2974.96827	60000.00000
2.275557E+08	1.725541E+12	.00013188	.00277740	21.06087908	2970.76640	60000.00000
2.277444E+08	1.694842E+12	.00013438	.00282185	20.99980268	2965.25707	60000.00000
2.279316E+08	1.665254E+12	.00013688	.00286639	20.94162932	2959.72773	60000.00000
2.281175E+08	1.636718E+12	.00013938	.00291102	20.88622221	2955.60115	60000.00000
2.282413E+08	1.608749E+12	.00014188	.00295418	20.82244340	2960.65693	60000.00000
2.283479E+08	1.581631E+12	.00014438	.00299722	20.75995955	2964.92477	60000.00000
2.284284E+08	1.555257E+12	.00014688	.00304143	20.70759532	2968.62707	60000.00000
2.285075E+08	1.529757E+12	.00014938	.00308574	20.65765688	2971.49694	60000.00000
2.285853E+08	1.505088E+12	.00015188	.00313015	20.61003783	2973.52226	60000.00000
2.286616E+08	1.481209E+12	.00015438	.00317467	20.56464091	2974.69053	60000.00000
2.287359E+08	1.458077E+12	.00015688	.00321933	20.52160594	2974.25085	60000.00000
2.288058E+08	1.435644E+12	.00015938	.00326427	20.48169592	2969.55784	60000.00000
2.288749E+08	1.413899E+12	.00016188	.00330928	20.44342741	2964.85044	60000.00000
2.289434E+08	1.392811E+12	.00016438	.00335436	20.40673962	2960.12813	60000.00000
2.293055E+08	1.374115E+12	.00016688	.00340425	20.40000030	2954.35831	60000.00000
2.297260E+08	1.356316E+12	.00016938	.00345525	20.40000030	2948.38259	60000.00000
2.301356E+08	1.338971E+12	.00017188	.00350625	20.40000030	2955.37258	60000.00000
2.305341E+08	1.322060E+12	.00017438	.00355725	20.40000030	2961.29991	60000.00000
2.311097E+08	1.288416E+12	.00017938	.00365925	20.40000030	2969.96664	60000.00000
2.316037E+08	1.256156E+12	.00018438	.00376125	20.40000030	2974.38277	60000.00000
2.316037E+08	1.222990E+12	.00018938	.00385569	20.36007205	2971.95547	60000.00000

Unfactored (Nominal) Moment Capacity at Concrete Strain of 0.003 = 228352.97280 in-kip

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Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 1

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 68904.000 lbs
Specified moment at pile head = 86101092.000 in-lbs
Specified axial load at pile head = 72028.000 lbs

Non-zero moment for this load case indicates the pile-head may rotate under
the applied pile-head loading, but is not a free-head (zero moment)condition.

Output Verification:

Computed forces and moments are within specified convergence limits.

Summary of Pile Response(s)

Definition of Symbols for Pile-Head Loading Conditions:

Type 1 = Shear and Moment, y = pile-head displacment in
Type 2 = Shear and Slope, M = Pile-head Moment lbs-in
Type 3 = Shear and Rot. Stiffness, V = Pile-head Shear Force lbs
Type 4 = Deflection and Moment, S = Pile-head Slope, radians
Type 5 = Deflection and Slope, R = Rot. Stiffness of Pile-head in-lbs/rad

Load Type	Pile-Head Condition 1	Pile-Head Condition 2	Axial Load lbs	Pile-Head Deflection in	Maximum Moment in-lbs	Maximum Shear lbs
1	V= 68904.	M= 8.61E+07	72028.0000	.3638016	9.2659E+07	-1088754.

Computed Pile-head Stiffness Matrix Members
K22, K23, K32, K33 for Superstructure

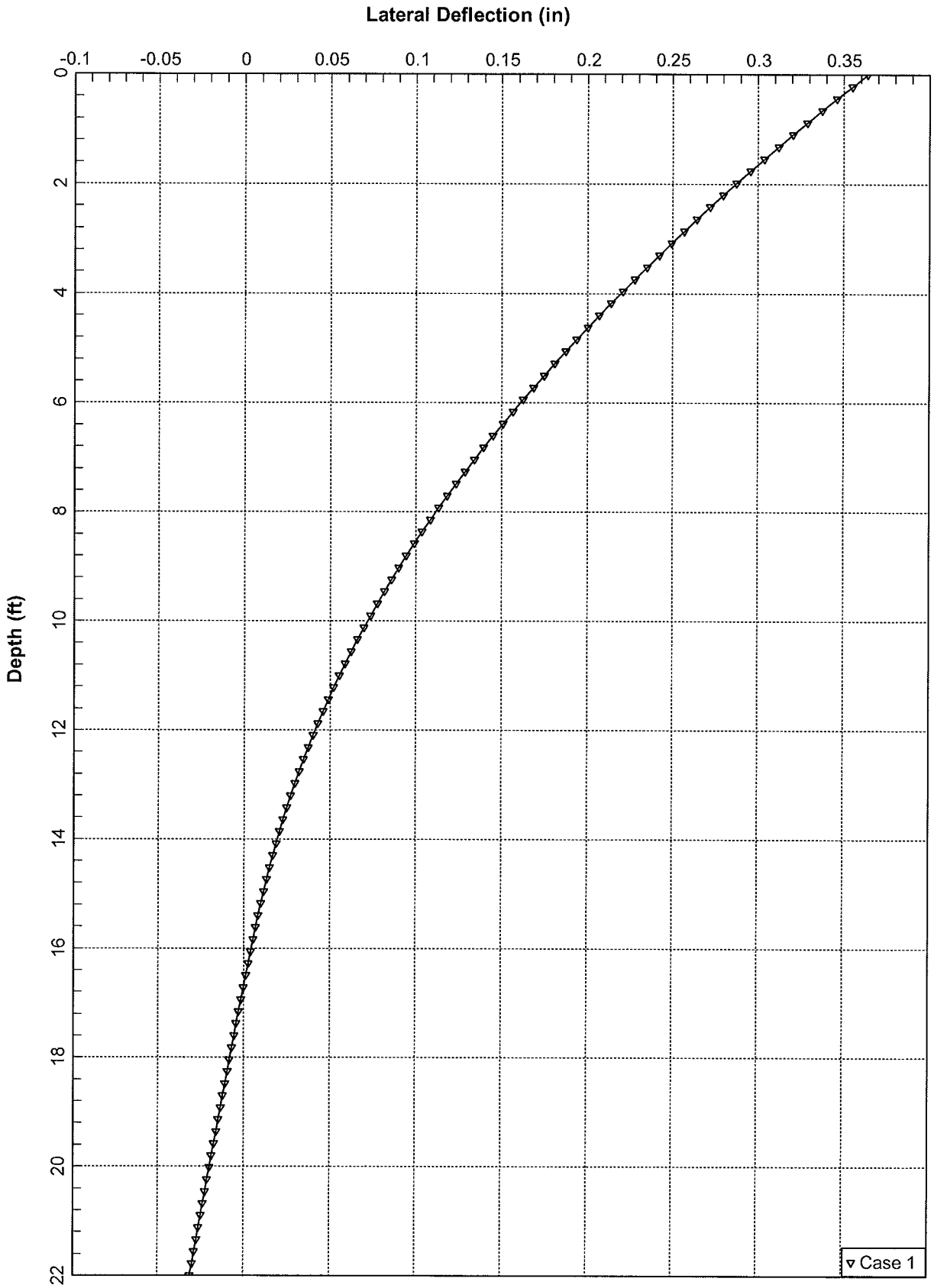
Top y in	Shear React. lbs	Mom. React. in-lbs	K22 lbs/in	K32 in-lbs/in
.00007194	6890.40010	470364.07505	95783028.	6.538502E+09
.00023207	20742.17082	1448461.	89378477.	6.241452E+09
.00041255	32875.56294	2379758.	79689010.	5.768436E+09

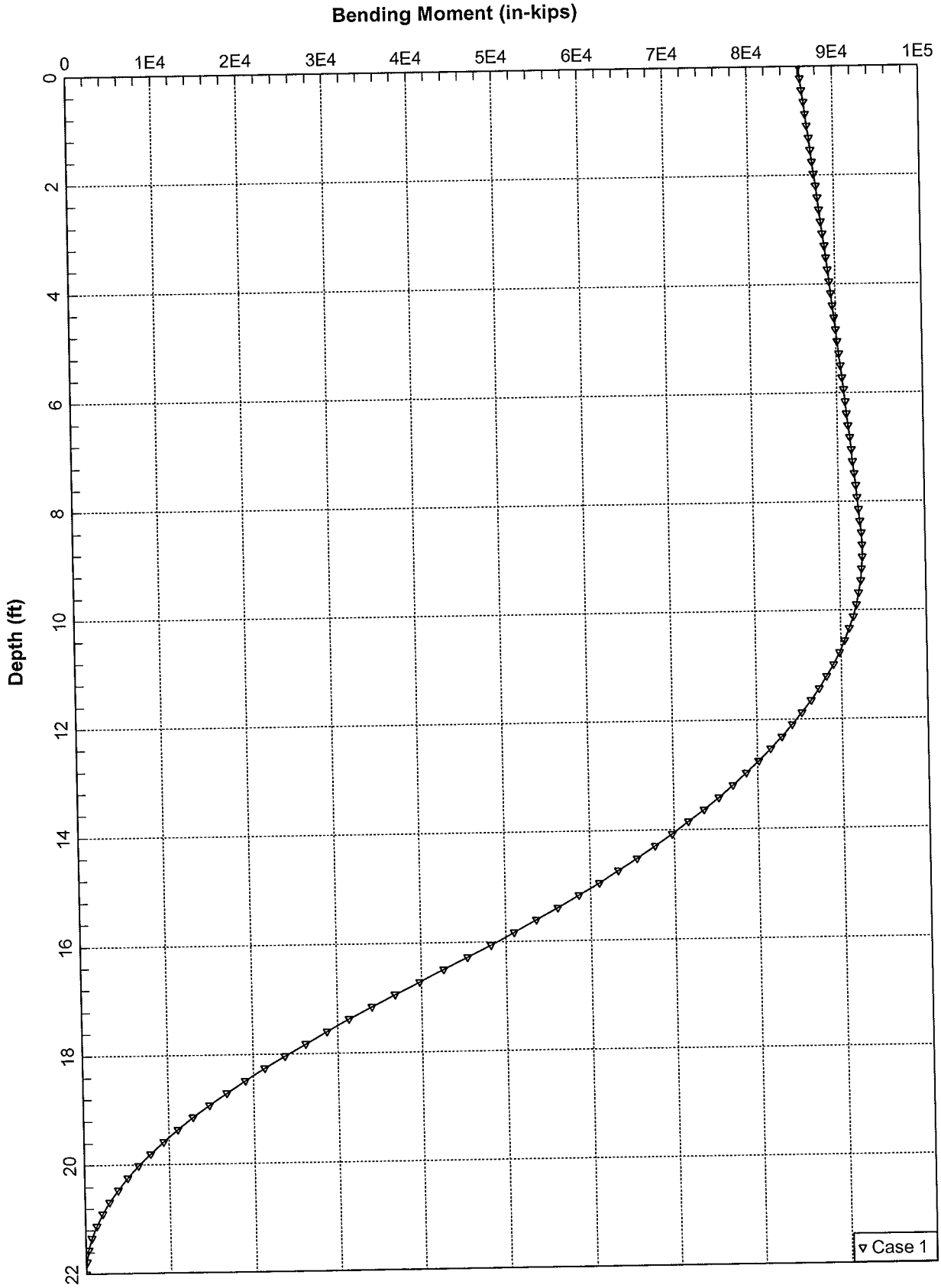
.00055692	41484.34164	3065750.	74489190.	5.504854E+09
.00067694	48161.82918	3609438.	71146453.	5.331996E+09
.00077985	53617.73376	4060395.	68753735.	5.206623E+09
.00087012	58230.63535	4446043.	66922257.	5.109668E+09
.00090556	62226.51246	4715804.	68715988.	5.207606E+09
.00097438	65751.12587	5010603.	67480163.	5.142365E+09
.00103719	68904.00000	5275990.	66433478.	5.086821E+09

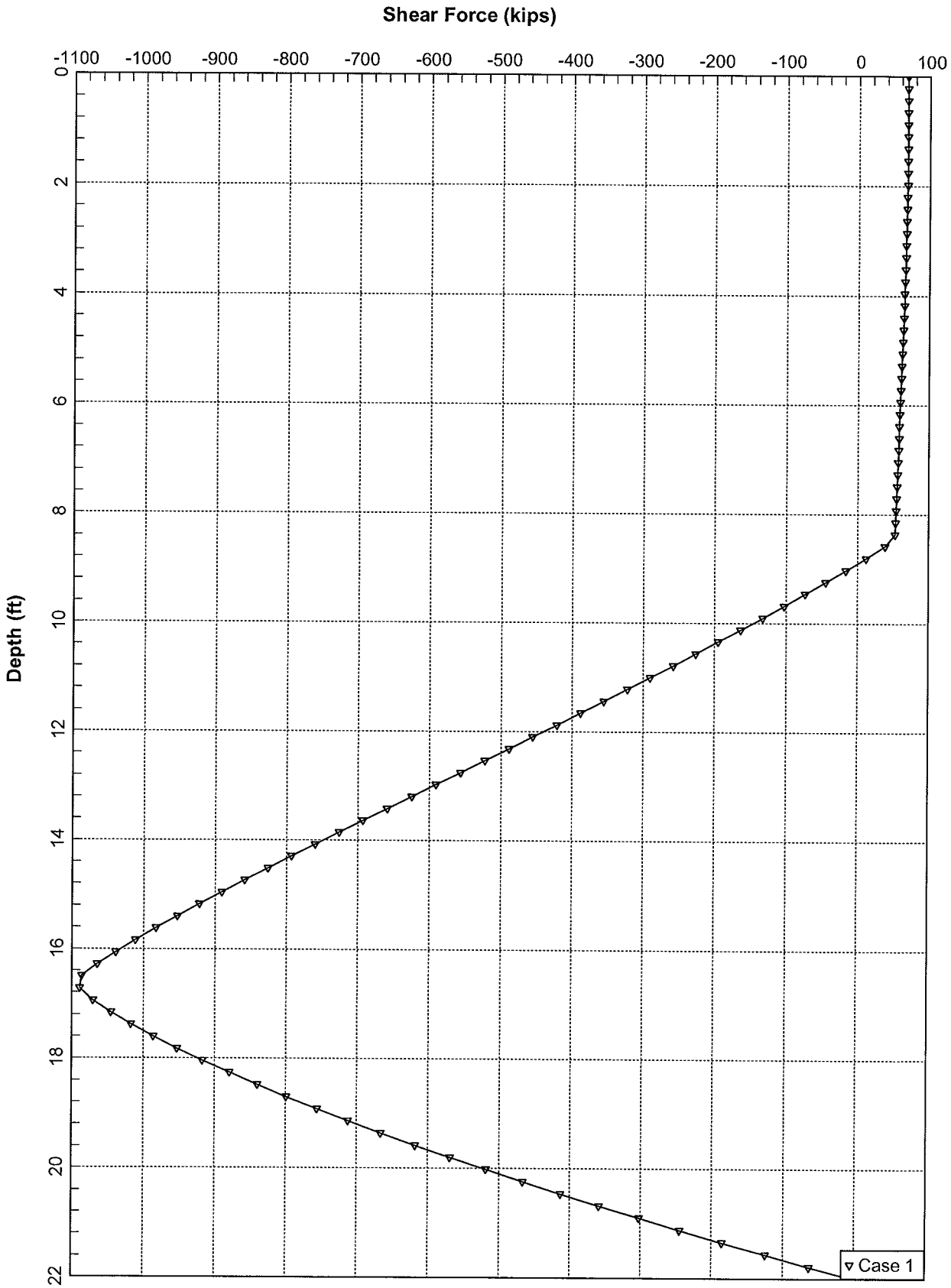
Top Rota. rad	Shear React. lbs	Mom. React. in-lbs	K23 lbs/rad	K33 in-lbs/rad
.00001612	83907.56013	8610109.	5.205747E+09	5.341837E+11
.00005473	226910.37333	25919011.	4.146306E+09	4.736150E+11
.00009219	341614.82438	41080661.	3.705740E+09	4.456312E+11
.00012139	416588.24000	51838023.	3.431871E+09	4.270438E+11
.00018744	476018.02404	60182081.	2.539524E+09	3.210673E+11
.00030854	525742.31627	66999672.	1.703979E+09	2.171520E+11
.00040625	571523.79324	72763864.	1.406828E+09	1.791111E+11
.00048453	612298.79965	77757034.	1.263691E+09	1.604787E+11
.00054640	644885.28753	82161322.	1.180248E+09	1.503690E+11
.00060033	673566.12785	86101092.	1.122002E+09	1.434241E+11

K22 = abs(Shear Reaction/Top y)
K23 = abs(Shear Reaction/Top Rotation)
K32 = abs(Moment Reaction/Top y)
K33 = abs(Moment Reaction/Top Rotation)

The analysis ended normally.


Lateral Deflection (in)
-0.1
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
Depth (ft)
0
2
4
6
8
10
12
14
16
18
20
22
Case 1


Bending Moment (in-kips)
0
1E4
2E4
3E4
4E4
5E4
6E4
7E4
8E4
9E4
1E5
Depth (ft)
0
2
4
6
8
10
12
14
16
18
20
22
Case 1


Shear Force (kips)
-1100
-1000
-900
-800
-700
-600
-500
-400
-300
-200
-100
0
100
Depth (ft)
0
2
4
6
8
10
12
14
16
18
20
22
Case 1

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CT5279	DATE:	3/13/2012 10:21	RF DESIGN ENG:	Evan Thibodeau	RF PERF ENG:	TB
ISSUE:	Preliminary	Approved? (Y/N)	Y	RF DESIGN PHONE:	(603) 320-8556	RF PERF PHONE:	TB
REVISION:	V01	RF MANAGER:	Walter C. Saddig Jr.	RF DESIGN EMAIL:	et2267@att.com	RF PERF EMAIL:	TB
INITIATIVE / PROJECT:	LTE Wave 3 Prelim					TRIDENT:	
						GSM FREQUENCY:	850/1
						UMTS FREQUENCY:	850/1
						LTE FREQUENCY:	70
						I-PLAN JOB # 1:	NER-RCTE
						I-PLAN JOB # 2:	
						I-PLAN JOB # 3:	
						I-PLAN JOB # 4:	

Section 2 - LOCATION INFORMATION

USID:	25924	FA LOCATION CODE:	10105380	LOCATION NAME:	Meridain East	ORACLE PRJT # 1:	20513
REGION:	North East	MARKET CLUSTER:	New England	MARKET:	CT	ORACLE PRJT # 2:	
ADDRESS:	74 Birdseye Ave	CITY:	Meriden	STATE:	CT	ORACLE PRJT # 3:	
ZIP CODE:	06450	COUNTY:	New Haven	MSA/RSA:	TBD	ORACLE PRJT # 4:	
LATITUDE (D-M-S):	41° 31' 22.51"	LONGITUDE (D-M-S):	72° 44' 57.65"	LAT (DEC. DEG.):	41.522919	SEARCH RING NAME:	N/
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:						SEARCH RING ID:	N/
						BTA:	TB
						LONG (DEC. DEG.):	-72.74
						BORDER CELL WITH CONTOUR COORD:	TB
						AM STUDY REQ'D (Y/N):	TB
						FREQ COORD:	TB

Section 3 - LICENSE COVERAGE/FILING INFORMATION

CGSA - NO FILING TRIGGERED:	TBD	CGSA LOSS:	TBD	PCS REDUCED - UPS ZIP:	TBD
CGSA - MINOR FILING NEEDED:	TBD	CGSA EXT AGMT NEEDED:	TBD	PCS POPS REDUCED:	TBD
CGSA - MAJOR FILING NEEDED:	TBD	CGSA SCORECARD UPDATED:	TBD		

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	TBD	GROUND ELEVATION (ft):		STRUCTURE TYPE:	Utility Tower	MKT LOCATION 850 MHZ CALL SIGN(S):	TE
ADDTIONAL REGULATORY?:	TBD	HEIGHT OVERALL (ft):		FCC ASR NUMBER:	TBD	MKT LOCATION 1900 MHZ CALL SIGN(S):	TE
SUB-LEASE RIGHTS?:	TBD	STRUCTURE HEIGHT (ft):				MKT LOCATION 700 MHZ CALL SIGN(S):	
LIGHTING TYPE:	TBD					MKT LOCATION AWS MHZ CALL SIGN(S):	

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
ALPHA	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
BETA	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GAMMA	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
DELTA								
EPSILON								
PSI								

Section 6 - RBS GENERAL INFORMATION

4-DIGIT SITE ID:	5279	COW OR TOY?:	NO	CELLULAR NETWORK:	GOLD	DISASTER PRIORITY:
CELL SITE TYPE:	SECTORIZED	SITE TYPE:	MACRO	OPS DISTRICT:	CT-South	OPS ZONE:
BTS LOCATION ID:	TBD	ORIGINATING CO:	ATT	RF DISTRICT:	Middletown	RF ZONE:

Section 7 - RBS SPECIFIC INFORMATION

	GSM RBSs	UMTS 1ST CARRIER RBSs	UMTS 2ND CARRIER RBSs	UMTS 3RD CARRIER RBSs	UMTS 4TH CARRIER RBSs	UMTS 5TH CARRIER RBSs
MSC	MCT01	TBD	TBD	TBD	TBD	
BSC/RNC	BCT08	BRPTCT04RNC002	BRPTCT04RNC002	BRPTCT04RNC002	N/A	
LAC	05008	5098	5098	5098	N/A	
RAC	TBD	255	255	255	N/A	
EQUIPMENT VENDOR	NOKIA	ERICSSON	ERICSSON	ERICSSON	N/A	
EQUIPMENT TYPE	TBD	RBS3106	1900 Radio Kit	850 RRUW OBIF	N/A	
LOCATION	TBD	TBD	TBD	N/A	N/A	
CABINET LOCATION	TBD	TBD	TBD	N/A	N/A	

Section 8 - RBS INDIVIDUAL INFORMATION

	GSM 850 RBS	GSM 1900 RBS	UMTS 850 RBS	UMTS 1900 RBS	UMTS 2ND 850 RBS	UMTS 2ND 1900 RBS	UMTS 3RD 850 RBS	UMTS 3RD 1900 RBS	UMTS 4TH 850 RBS	UMTS 4TH 1900 RBS	UMTS 5TH 850 RBS	UMTS 5TH 1900 RBS
CELL ID/BCF	N/A	318P5279	CTU5279	N/A	N/A	CTU5279	CTV4279	N/A	N/A	N/A		
CTS COMMON ID	N/A	318P5279	CTV5279	N/A	N/A	CTU5279	CTV4279	N/A	N/A	N/A		

Section 9 - SOFT SECTOR ID

	GSM 850 RBS	GSM 1900 RBS	UMTS 850 RBS	UMTS 1900 RBS	UMTS 2ND 850 RBS	UMTS 2ND 1900 RBS	UMTS 3RD 850 RBS	UMTS 3RD 1900 RBS	UMTS 4TH 850 RBS	UMTS 4TH 1900 RBS	UMTS 5TH 850 RBS	UMTS 5TH 1900 RBS
ALPHA (OR OMNI)	N/A	318P52791	CTV52791	N/A	N/A	CTU52797	CTV42791	N/A	N/A	N/A		
BETA	N/A	318P52792	CTV52792	N/A	N/A	CTU52798	CTV42792	N/A	N/A	N/A		
GAMMA	N/A	318P52793	CTV52793	N/A	N/A	CTU52799	CTV42793	N/A	N/A	N/A		
DELTA												
EPSILON												
PSI												

Section 10 - CID/SAC

	GSM 850 RBS	GSM 1900 RBS	UMTS 850 RBS	UMTS 1900 RBS	UMTS 2ND 850 RBS	UMTS 2ND 1900 RBS	UMTS 3RD 850 RBS	UMTS 3RD 1900 RBS	UMTS 4TH 850 RBS	UMTS 4TH 1900 RBS	UMTS 5TH 850 RBS	UMTS 5TH 1900 RBS
ALPHA (OR OMNI)	N/A	52791	52791	N/A	N/A	52797	42791	N/A	N/A	N/A		
BETA	N/A	52792	52792	N/A	N/A	52798	42792	N/A	N/A	N/A		
GAMMA	N/A	52793	52793	N/A	N/A	52799	42793	N/A	N/A	N/A		
DELTA												
EPSILON												
PSI												

Section 11 - CURRENT RADIO COUNTS (Existing)

	GSM 850 RBS	GSM 1900 RBS	UMTS 850 RBS	UMTS 1900 RBS	UMTS 2ND 850 RBS	UMTS 2ND 1900 RBS	UMTS 3RD 850 RBS	UMTS 3RD 1900 RBS	UMTS 4TH 850 RBS	UMTS 4TH 1900 RBS	UMTS 5TH 850 RBS	UMTS 5TH 1900 RBS
ALPHA (OR OMNI)	N/A	2	1	N/A	N/A	1	N/A	N/A	N/A	N/A		
BETA	N/A	2	1	N/A	N/A	1	N/A	N/A	N/A	N/A		
GAMMA	N/A	2	1	N/A	N/A	1	N/A	N/A	N/A	N/A		
DELTA												
EPSILON												
PSI												

Section 12 - CURRENT BASE BAND CONFIGURATION (Existing)

	GSM 1st Cabinet	GSM 2nd Cabinet	UMTS 1st Cabinet	UMTS 2nd Cabinet	UMTS 3rd Cabinet	UMTS 4th Cabinet
# T1s	TBD	TBD	TBD	TBD		
LINK PROFILE	TBD	TBD	TBD	TBD		
RF Combining						
Fiber or Ethernet?	TBD	TBD	TBD	TBD		
Tx Board Model	TBD	TBD	TBD	TBD		
Tx Board QTY	TBD	TBD	TBD	TBD		
RAX/ECU Board Model	TBD	TBD	TBD	TBD		
RAX/ECU Board QTY	TBD	TBD	TBD	TBD		
BBU Board Model						
BBU Board QTY						
RRU - Type(Qty-Model)						
Fiber Jumper						
DC Cable						
DC/Fiber Dem. Box						
Bundled Fiber Cable						
Bundled DC Cable						

Section 13 - NEW/PROPOSED RADIO COUNTS

	GSM 850 RBS	GSM 1900 RBS	UMTS 850 RBS	UMTS 1900 RBS	UMTS 2ND 850 RBS	UMTS 2ND 1900 RBS	UMTS 3RD 850 RBS	UMTS 3RD 1900 RBS	UMTS 4TH 850 RBS	UMTS 4TH 1900 RBS	UMTS 5TH 850 RBS	UMTS 5TH 1900 RBS
ALPHA (OR OMNI)	N/A	2	1	N/A	N/A	1	1	N/A	N/A	N/A		
BETA	N/A	2	1	N/A	N/A	1	1	N/A	N/A	N/A		
GAMMA	N/A	2	1	N/A	N/A	1	1	N/A	N/A	N/A		
DELTA												
EPSILON												
PSI												

Section 14 - NEW/PROPOSED BASE BAND CONFIGURATION

	GSM 1st Cabinet	GSM 2nd Cabinet	UMTS 1st Cabinet	UMTS 2nd Cabinet	UMTS 3rd Cabinet	UMTS 4th Cabinet
# T1s						
LINK PROFILE						
RF Combining						
Fiber or Ethernet?						
Tx Board Model						
Tx Board QTY						
RAX/ECU Board Model						
RAX/ECU Board QTY						
BBU Board Model						
BBU Board QTY						
RRU - Type(Qty-Model)						
Fiber Jumper						
DC Cable						
DC/Fiber Dem. Box						
Bundled Fiber Cable						
Bundled DC Cable						

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

ANTENNA CONFIG (FROM BACK):	ANTENNA 1 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	ANTENNA 2 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	ANTENNA 3 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	ANTENNA 4 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	ANTENNA 5 GSM, UMTS (850 / 1900) or LTE (700 / AWS)
TX/RX?	TxRx-TxRx | TxRx-TxRx				
TECHNOLOGY	UMTS / DB | GSM / DB				
RRH LOCATION (Top/Bottom/None)	N/A | N/A				
FEEDERS TYPE	1 5/8" - Andrew | 1 5/8" - Andrew				
Feeder Length (feet)	220 ' | 220 '				
ANTENNA ATOLL					
ANTENNA MAKE - MODEL	7770				
ANTENNA VENDOR	Powerwave				
ANTENNA SIZE (H x W x D)	55.0 x 11.0 x 5.0				
ANTENNA WEIGHT	35				
ANTENNA GAIN	13.5 dBi | 16.5 dBi				
AZIMUTH	70 °				
RADIATION CENTER (feet)	173 '				
ANTENNA TIP HEIGHT	175 '				
ELECTRICAL TILT (700/850/1900/AWS)	2 ° | 2 °				
MECHANICAL DOWNTILT	0 °				
FEEDER AMOUNT	2				
Antenna RET Motor (QTY/MODEL)	1 / Powerwave / 7020 (DB)				
Antenna RET Splitter (QTY/MODEL)	N/A				
Antenna RET Earth (Grounding) Clamp (QTY/MODEL)	N/A				
Antenna RET Surge Arrestor (QTY/MODEL)	N/A				
Antenna RET CONTROL UNIT (QTY/MODEL) usually per site	1 / Powerwave / 7070				
DC BLOCK (QTY/MODEL)	N/A				
TMA/LNA (TYPE/MODEL)	2 / Powerwave / LGP 21401 (Dual Band + 850 Bypass)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)	Polyphaser / 1000860				
PDU FOR TMAS (QTY/MODEL) usually per site	LGP 12104 (1900 AND 850 Bypass TMA)				
SURGE ARRESTOR (QTY/MODEL)	N/A				
DIPLEXER (QTY/MODEL)	0 + 2 / Powerwave / LGP 21901				
HYBRID COMBINER (QTY/MODEL)	N/A				
DUPLEXER (QTY/MODEL)	N/A				
FILTER (QTY/MODEL)	N/A				
RXAIT KIT MODULE?	RxAIT - DualBand | RxAIT - DualBand				
TRIPLEXER or NARROW BAND LLC (QTY/MODEL)	N/A / No LLC | N/A / No LLC				
SCPA/MCPA MODULE?	N/A | N/A				
Additional Component1					
Additional Component2					
Additional Component3					
MAGNETIC DECLINATION	Home run				
HATCHPLATE POWER (Watts)	-14 °				
ERP (Watts)	TBD | TBD				
Local Market Note1	TBD | TBD				
Local Market Note2					
Local Market Note3					

Section 15B - CURRENT SECTOR/CELL INFORMATION - BETA

ANTENNA CONFIG (FROM BACK):	ANTENNA 1 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	ANTENNA 2 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	ANTENNA 3 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	ANTENNA 4 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	ANTENNA 5 GSM, UMTS (850 / 1900) or LTE (700 / AWS)
TX/RX?	TxRx-TxRx | TxRx-TxRx				
TECHNOLOGY	UMTS / DB | GSM / DB				
RRH LOCATION (Top/Bottom/None)	N/A | N/A				
FEEDERS TYPE	1 5/8" - Andrew | 1 5/8" - Andrew				
Feeder Length (feet)	220 ' | 220 '				
ANTENNA ATOLL					
ANTENNA MAKE - MODEL	7770				
ANTENNA VENDOR	Powerwave				
ANTENNA SIZE (H x W x D)	55.0 x 11.0 x 5.0				
ANTENNA WEIGHT	35				
ANTENNA GAIN	13.5 dBi | 16.5 dBi				
AZIMUTH	190 °				
RADIATION CENTER (feet)	173 '				
ANTENNA TIP HEIGHT	175 '				
ELECTRICAL TILT (700/850/1900/AWS)	4 ° | 2 °				
MECHANICAL DOWNTILT	0 °				
FEEDER AMOUNT	2				
Antenna RET Motor (QTY/MODEL)	1 / Powerwave / 7020 (DB)				
Antenna RET Splitter (QTY/MODEL)	N/A				
Antenna RET Earth (Grounding) Clamp (QTY/MODEL)	N/A				
Antenna RET Surge Arrestor (QTY/MODEL)	N/A				
Antenna RET CONTROL UNIT (QTY/MODEL) usually per site	1 / Powerwave / 7070				
DC BLOCK (QTY/MODEL)	N/A				
TMA/LNA (TYPE/MODEL)	2 / Powerwave / LGP 21401 (Dual Band + 850 Bypass)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)	Polyphaser / 1000860				
PDU FOR TMAS (QTY/MODEL) usually per site	LGP 12104 (1900 AND 850 Bypass TMA)				
SURGE ARRESTOR (QTY/MODEL)	N/A				
DIPLEXER (QTY/MODEL)	0 + 2 / Powerwave / LGP 21901				
HYBRID COMBINER (QTY/MODEL)	N/A				
DUPLEXER (QTY/MODEL)	N/A				
FILTER (QTY/MODEL)	N/A				
RXAIT KIT MODULE?	RxAIT - DualBand | RxAIT - DualBand				
TRIPLEXER or NARROW BAND LLC (QTY/MODEL)	N/A / No LLC | N/A / No LLC				
SCPA/MCPA MODULE?	N/A | N/A				
Additional Component1					
Additional Component2					
Additional Component3	Home run				
MAGNETIC DECLINATION	-14 °				
HATCHPLATE POWER (Watts)	TBD | TBD				
ERP (Watts)	TBD | TBD				
Local Market Note1					
Local Market Note2					
Local Market Note3					

Section 15C - CURRENT SECTOR/CELL INFORMATION - GAMMA

ANTENNA CONFIG (FROM BACK):	ANTENNA 1 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	ANTENNA 2 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	ANTENNA 3 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	ANTENNA 4 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	ANTENNA 5 GSM, UMTS (850 / 1900) or LTE (700 / AWS)
TX/RX?	TxRx-TxRx | TxRx-TxRx				
TECHNOLOGY	UMTS / DB | GSM / DB				
RRH LOCATION (Top/Bottom/None)	N/A | N/A				
FEEDERS TYPE	1 5/8" - Andrew | 1 5/8" - Andrew				
Feeder Length (feet)	220 ' | 220 '				
ANTENNA ATOLL					
ANTENNA MAKE - MODEL	7770				
ANTENNA VENDOR	Powerwave				
ANTENNA SIZE (H x W x D)	55.0 x 11.0 x 5.0				
ANTENNA WEIGHT	35				
ANTENNA GAIN	13.5 dBi | 16.5 dBi				
AZIMUTH	320 °				
RADIATION CENTER (feet)	173 '				
ANTENNA TIP HEIGHT	175 '				
ELECTRICAL TILT (700/850/1900/AWS)	4 ° | 2 °				
MECHANICAL DOWNTILT	0 °				
FEEDER AMOUNT	2				
Antenna RET Motor (QTY/MODEL)	1 / Powerwave / 7020 (DB)				
Antenna RET Splitter (QTY/MODEL)	N/A				
Antenna RET Earth (Grounding) Clamp (QTY/MODEL)	N/A				
Antenna RET Surge Arrestor (QTY/MODEL)	N/A				
Antenna RET CONTROL UNIT (QTY/MODEL) usually per site	1 / Powerwave / 7070				
DC BLOCK (QTY/MODEL)	N/A				
TMA/LNA (TYPE/MODEL)	2 / Powerwave / LGP 21401 (Dual Band + 850 Bypass)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)	Polyphaser / 1000860				
PDU FOR TMAS (QTY/MODEL) usually per site	LGP 12104 (1900 AND 850 Bypass TMA)				
SURGE ARRESTOR (QTY/MODEL)	N/A				
DIPLEXER (QTY/MODEL)	0 + 2 / Powerwave / LGP 21901				
HYBRID COMBINER (QTY/MODEL)	N/A				
DUPLEXER (QTY/MODEL)	N/A				
FILTER (QTY/MODEL)	N/A				
RXAIT KIT MODULE?	RxAIT - DualBand | RxAIT - DualBand				
TRIPLEXER or NARROW BAND LLC (QTY/MODEL)	N/A / No LLC | N/A / No LLC				
SCPA/MCPA MODULE?	N/A | N/A				
Additional Component1					
Additional Component2					
Additional Component3	Home run				
MAGNETIC DECLINATION	-14 °				
HATCHPLATE POWER (Watts)	TBD | TBD				
ERP (Watts)	TBD | TBD				
Local Market Note1					
Local Market Note2					
Local Market Note3					

Section 15D - CURRENT SECTOR/CELL INFORMATION - DELTA

ANTENNA CONFIG (FROM BACK):	ANTENNA 1 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 2 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 3 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 4 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 5 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	
TX/RX?										
TECHNOLOGY										
RRH LOCATION (Top/Bottom/None)										
FEEDERS TYPE										
Feeder Length (feet)										
ANTENNA ATOLL										
ANTENNA MAKE - MODEL										
ANTENNA VENDOR										
ANTENNA SIZE (H x W x D)										
ANTENNA WEIGHT										
ANTENNA GAIN										
AZIMUTH										
RADIATION CENTER (feet)										
ANTENNA TIP HEIGHT										
ELECTRICAL TILT (700/850/1900/AWS)										
MECHANICAL DOWNTILT										
FEEDER AMOUNT										
Antenna RET Motor (QTY/MODEL)										
Antenna RET Splitter (QTY/MODEL)										
Antenna RET Earth (Grounding) Clamp (QTY/MODEL)										
Antenna RET Surge Arrestor (QTY/MODEL)										
Antenna RET CONTROL UNIT (QTY/MODEL) usually per site										
DC BLOCK (QTY/MODEL)										
TMA/LNA (TYPE/MODEL)										
CURRENT INJECTORS FOR TMA (QTY/MODEL)										
PDU FOR TMAS (QTY/MODEL) usually per site										
SURGE ARRESTOR (QTY/MODEL)										
DIPLEXER (QTY/MODEL)										
HYBRID COMBINER (QTY/MODEL)										
DUPLEXER (QTY/MODEL)										
FILTER (QTY/MODEL)										
RXAIT KIT MODULE?										
TRIPLEXER or NARROW BAND LLC (QTY/MODEL)										
SCPA/MCPA MODULE?										
Additional Component1										
Additional Component2										
Additional Component3										
MAGNETIC DECLINATION										
HATCHPLATE POWER (Watts)										
ERP (Watts)										
Local Market Note1										
Local Market Note2										
Local Market Note3										

Section 15E - CURRENT SECTOR/CELL INFORMATION - EPSILON

ANTENNA CONFIG (FROM BACK):	ANTENNA 1 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 2 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 3 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 4 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 5 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	
TX/RX?										
TECHNOLOGY										
RRH LOCATION (Top/Bottom/None)										
FEEDERS TYPE										
Feeder Length (feet)										
ANTENNA ATOLL										
ANTENNA MAKE - MODEL										
ANTENNA VENDOR										
ANTENNA SIZE (H x W x D)										
ANTENNA WEIGHT										
ANTENNA GAIN										
AZIMUTH										
RADIATION CENTER (feet)										
ANTENNA TIP HEIGHT										
ELECTRICAL TILT (700/850/1900/AWS)										
MECHANICAL DOWNTILT										
FEEDER AMOUNT										
Antenna RET Motor (QTY/MODEL)										
Antenna RET Splitter (QTY/MODEL)										
Antenna RET Earth (Grounding) Clamp (QTY/MODEL)										
Antenna RET Surge Arrestor (QTY/MODEL)										
Antenna RET CONTROL UNIT (QTY/MODEL) usually per site										
DC BLOCK (QTY/MODEL)										
TMA/LNA (TYPE/MODEL)										
CURRENT INJECTORS FOR TMA (QTY/MODEL)										
PDU FOR TMAS (QTY/MODEL) usually per site										
SURGE ARRESTOR (QTY/MODEL)										
DIPLEXER (QTY/MODEL)										
HYBRID COMBINER (QTY/MODEL)										
DUPLEXER (QTY/MODEL)										
FILTER (QTY/MODEL)										
RXAIT KIT MODULE?										
TRIPLEXER or NARROW BAND LLC (QTY/MODEL)										
SCPA/MCPA MODULE?										
Additional Component1										
Additional Component2										
Additional Component3										
MAGNETIC DECLINATION										
HATCHPLATE POWER (Watts)										
ERP (Watts)										
Local Market Note1										
Local Market Note2										
Local Market Note3										

Section 15F - CURRENT SECTOR/CELL INFORMATION - ZETA

ANTENNA CONFIG (FROM BACK):	ANTENNA 1 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 2 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 3 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 4 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 5 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	
TX/RX?										
TECHNOLOGY										
RRH LOCATION (Top/Bottom/None)										
FEEDERS TYPE										
Feeder Length (feet)										
ANTENNA ATOLL										
ANTENNA MAKE - MODEL										
ANTENNA VENDOR										
ANTENNA SIZE (H x W x D)										
ANTENNA WEIGHT										
ANTENNA GAIN										
AZIMUTH										
RADIATION CENTER (feet)										
ANTENNA TIP HEIGHT										
ELECTRICAL TILT (700/850/1900/AWS)										
MECHANICAL DOWNTILT										
FEEDER AMOUNT										
Antenna RET Motor (QTY/MODEL)										
Antenna RET Splitter (QTY/MODEL)										
Antenna RET Earth (Grounding) Clamp (QTY/MODEL)										
Antenna RET Surge Arrestor (QTY/MODEL)										
Antenna RET CONTROL UNIT (QTY/MODEL) usually per site										
DC BLOCK (QTY/MODEL)										
TMA/LNA (TYPE/MODEL)										
CURRENT INJECTORS FOR TMA (QTY/MODEL)										
PDU FOR TMAS (QTY/MODEL) usually per site										
SURGE ARRESTOR (QTY/MODEL)										
DIPLEXER (QTY/MODEL)										
HYBRID COMBINER (QTY/MODEL)										
DUPLEXER (QTY/MODEL)										
FILTER (QTY/MODEL)										
RXAIT KIT MODULE?										
TRIPLEXER or NARROW BAND LLC (QTY/MODEL)										
SCPA/MCPA MODULE?										
Additional Component1										
Additional Component2										
Additional Component3										
MAGNETIC DECLINATION										
HATCHPLATE POWER (Watts)										
ERP (Watts)										
local Market Note1										
local Market Note2										
local Market Note3										

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

ANTENNA CONFIG (FROM BACK):	ANTENNA 1 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 2 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 3 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 4 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 5 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	
TX/RX?	TxRx-TxRx	TxRx-TxRx	TxRx-Rx	N/A						
TECHNOLOGY	UMTS / DB	GSM / DB	LTE / 700	N/A						
RRH LOCATION (Top/Bottom/None)	N/A	N/A	BOTTOM	BOTTOM						
FEEDERS TYPE	1 5/8" - Andrew	1 5/8" - Andrew								
Feeder Length (feet)	220 '	220 '								
ANTENNA ATOLL										
ANTENNA MAKE - MODEL	7770		AM-X-CD-16-65-00T-RET							
ANTENNA VENDOR	Powerwave		KMW							
ANTENNA SIZE (H x W x D)	55.0 x 11.0 x 5.0		72.0 x 11.8 x 5.9							
ANTENNA WEIGHT	35		48.5							
ANTENNA GAIN	13.5 dBi	16.5 dBi								
AZIMUTH	60 °		60 °							
RADIATION CENTER (feet)	173 '		173 '							
ANTENNA TIP HEIGHT	175 '		176 '							
ELECTRICAL TILT (700/850/1900/AWS)	2 °	2 °	TBD	TBD						
MECHANICAL DOWNTILT	0 °		0 °							
FEEDER AMOUNT	2		1 Optic Fiber & 2 DC cables							
Antenna RET Motor (QTY/MODEL)	1 / Powerwave / 7020 (DB)		N/A / KMW / Built-in RET Equipment							
Antenna RET Splitter (QTY/MODEL)	N/A									
Antenna RET Earth (Grounding) Clamp (QTY/MODEL)	N/A									
Antenna RET Surge Arrestor (QTY/MODEL)	N/A									
Antenna RET CONTROL UNIT (QTY/MODEL) usually per site	1 / Powerwave / 7070									
DC BLOCK (QTY/MODEL)	N/A									
TMA/LNA (TYPE/MODEL)	2 / Powerwave / LGP 21401 (Dual Band + 850 Bypass)		1 / CCI / DTMABP7819VG12A							
CURRENT INJECTORS FOR TMA (QTY/MODEL)	Polyphaser / 1000860									
PDU FOR TMAS (QTY/MODEL) usually per site	LGP 12104 (1900 AND 850 Bypass TMA)									
SURGE ARRESTOR (QTY/MODEL)	N/A									
DIPLEXER (QTY/MODEL)	0 + 2 / Powerwave / LGP 21901									
HYBRID COMBINER (QTY/MODEL)	N/A									
DUPLEXER (QTY/MODEL)	N/A									
FILTER (QTY/MODEL)	N/A									
RXAIT KIT MODULE?	RxAIT - DualBand	RxAIT - DualBand								
TRIPLEXER or NARROW BAND LLC (QTY/MODEL)	N/A / No LLC	N/A / No LLC								
SCPA/MCPA MODULE?	N/A	N/A								
Additional Component1										
Additional Component2										
Additional Component3	Home run		RET connected to RRU for control							
MAGNETIC DECLINATION	-14 °		-14 °							
HATCHPLATE POWER (Watts)	TBD	TBD								
ERP (Watts)	TBD	TBD								
Local Market Note1	1 850 RRUW OBIF with sharing kit and jump									
Local Market Note2										
Local Market Note3										

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

ANTENNA CONFIG (FROM BACK):	ANTENNA 1 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 2 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 3 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 4 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 5 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	
TX/RX?	TxRx-TxRx	TxRx-TxRx	TxRx-Rx	N/A						
TECHNOLOGY	UMTS / DB	GSM / DB	LTE / 700	N/A						
RRH LOCATION (Top/Bottom/None)	N/A	N/A	BOTTOM	BOTTOM						
FEEDERS TYPE	1 5/8" - Andrew	1 5/8" - Andrew								
Feeder Length (feet)	220 '	220 '								
ANTENNA ATOLL										
ANTENNA MAKE - MODEL	7770		AM-X-CD-16-65-00T-RET							
ANTENNA VENDOR	Powerwave		KMW							
ANTENNA SIZE (H x W x D)	55.0 x 11.0 x 5.0		72.0 x 11.8 x 5.9							
ANTENNA WEIGHT	35		48.5							
ANTENNA GAIN	13.5 dBi	16.5 dBi								
AZIMUTH	200 °		200 °							
RADIATION CENTER (feet)	173 '		173 '							
ANTENNA TIP HEIGHT	175 '		176 '							
ELECTRICAL TILT (700/850/1900/AWS)	4 °	2 °	TBD	TBD						
MECHANICAL DOWNTILT	0 °		0 °							
FEEDER AMOUNT	2		1 Optic Fiber & 2 DC cables							
Antenna RET Motor (QTY/MODEL)	1 / Powerwave / 7020 (DB)		N/A / KMW / Built-in RET Equipment							
Antenna RET Splitter (QTY/MODEL)	N/A									
Antenna RET Earth (Grounding) Clamp (QTY/MODEL)	N/A									
Antenna RET Surge Arrestor (QTY/MODEL)	N/A									
Antenna RET CONTROL UNIT (QTY/MODEL) usually per site	1 / Powerwave / 7070									
DC BLOCK (QTY/MODEL)	N/A									
TMA/LNA (TYPE/MODEL)	2 / Powerwave / LGP 21401 (Dual Band + 850 Bypass)		1 / CCI / DTMABP7819VG12A							
CURRENT INJECTORS FOR TMA (QTY/MODEL)	Polyphaser / 1000860									
PDU FOR TMAS (QTY/MODEL) usually per site	LGP 12104 (1900 AND 850 Bypass TMA)									
SURGE ARRESTOR (QTY/MODEL)	N/A									
DIPLEXER (QTY/MODEL)	0 + 2 / Powerwave / LGP 21901									
HYBRID COMBINER (QTY/MODEL)	N/A									
DUPLEXER (QTY/MODEL)	N/A									
FILTER (QTY/MODEL)	N/A									
RXAIT KIT MODULE?	RxAIT - DualBand	RxAIT - DualBand								
TRIPLEXER or NARROW BAND LLC (QTY/MODEL)	N/A / No LLC	N/A / No LLC								
SCPA/MCPA MODULE?	N/A	N/A								
Additional Component1										
Additional Component2										
Additional Component3	Home run		RET connected to RRU for control							
MAGNETIC DECLINATION	-14 °		-14 °							
HATCHPLATE POWER (Watts)	TBD	TBD								
ERP (Watts)	TBD	TBD								
Local Market Note1	1 850 RRUW OBIF with sharing kit and jump									
Local Market Note2										
Local Market Note3										

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

ANTENNA CONFIG (FROM BACK):	ANTENNA 1 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 2 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 3 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 4 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 5 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	
TX/RX?	TxRx-TxRx	TxRx-TxRx	TxRx-Rx	N/A						
TECHNOLOGY	UMTS / DB	GSM / DB	LTE / 700	N/A						
RRH LOCATION (Top/Bottom/None)	N/A	N/A	BOTTOM	BOTTOM						
FEEDERS TYPE	1 5/8" - Andrew	1 5/8" - Andrew								
Feeder Length (feet)	220 '	220 '								
ANTENNA ATOLL										
ANTENNA MAKE - MODEL	7770		AM-X-CD-16-65-00T-RET							
ANTENNA VENDOR	Powerwave		KMW							
ANTENNA SIZE (H x W x D)	55.0 x 11.0 x 5.0		72.0 x 11.8 x 5.9							
ANTENNA WEIGHT	35		48.5							
ANTENNA GAIN	13.5 dBi	16.5 dBi								
AZIMUTH	320 °		320 °							
RADIATION CENTER (feet)	173 '		173 '							
ANTENNA TIP HEIGHT	175 '		176 '							
ELECTRICAL TILT (700/850/1900/AWS)	4 °	2 °	TBD	TBD						
MECHANICAL DOWNTILT	0 °		0 °							
FEEDER AMOUNT	2		1 Optic Fiber & 2 DC cables							
Antenna RET Motor (QTY/MODEL)	1 / Powerwave / 7020 (DB)		N/A / KMW / Built-in RET Equipment							
Antenna RET Splitter (QTY/MODEL)	N/A									
Antenna RET Earth (Grounding) Clamp (QTY/MODEL)	N/A									
Antenna RET Surge Arrestor (QTY/MODEL)	N/A									
Antenna RET CONTROL UNIT (QTY/MODEL) usually per site	1 / Powerwave / 7070									
DC BLOCK (QTY/MODEL)	N/A									
TMA/LNA (TYPE/MODEL)	2 / Powerwave / LGP 21401 (Dual Band + 850 Bypass)		1 / CCI / DTMABP7819VG12A							
CURRENT INJECTORS FOR TMA (QTY/MODEL)	Polyphaser / 1000860									
PDU FOR TMAS (QTY/MODEL) usually per site	LGP 12104 (1900 AND 850 Bypass TMA)									
SURGE ARRESTOR (QTY/MODEL)	N/A									
DIPLEXER (QTY/MODEL)	0 + 2 / Powerwave / LGP 21901									
HYBRID COMBINER (QTY/MODEL)	N/A									
DUPLEXER (QTY/MODEL)	N/A									
FILTER (QTY/MODEL)	N/A									
RXAIT KIT MODULE?	RxAIT - DualBand	RxAIT - DualBand								
TRIPLEXER or NARROW BAND LLC (QTY/MODEL)	N/A / No LLC	N/A / No LLC								
SCPA/MCPA MODULE?	N/A	N/A								
Additional Component1										
Additional Component2										
Additional Component3	Home run		RET connected to RRU for control							
MAGNETIC DECLINATION	-14 °		-14 °							
HATCHPLATE POWER (Watts)	TBD	TBD								
ERP (Watts)	TBD	TBD								
Local Market Note1	1 850 RRUW OBIF with sharing kit and jump									
Local Market Note2										
Local Market Note3										

Section 16D - NEW/PROPOSED SECTOR/CELL INFORMATION - DELTA

ANTENNA CONFIG (FROM BACK):	ANTENNA 1 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 2 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 3 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 4 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 5 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	
TX/RX?										
TECHNOLOGY										
RRH LOCATION (Top/Bottom/None)										
FEEDERS TYPE										
Feeder Length (feet)										
ANTENNA ATOLL										
ANTENNA MAKE - MODEL										
ANTENNA VENDOR										
ANTENNA SIZE (H x W x D)										
ANTENNA WEIGHT										
ANTENNA GAIN										
AZIMUTH										
RADIATION CENTER (feet)										
ANTENNA TIP HEIGHT										
ELECTRICAL TILT (700/850/1900/AWS)										
MECHANICAL DOWNTILT										
FEEDER AMOUNT										
Antenna RET Motor (QTY/MODEL)										
Antenna RET Splitter (QTY/MODEL)										
Antenna RET Earth (Grounding) Clamp (QTY/MODEL)										
Antenna RET Surge Arrestor (QTY/MODEL)										
Antenna RET CONTROL UNIT (QTY/MODEL) usually per site										
DC BLOCK (QTY/MODEL)										
TMA/LNA (TYPE/MODEL)										
CURRENT INJECTORS FOR TMA (QTY/MODEL)										
PDU FOR TMAS (QTY/MODEL) usually per site										
SURGE ARRESTOR (QTY/MODEL)										
DIPLEXER (QTY/MODEL)										
HYBRID COMBINER (QTY/MODEL)										
DUPLEXER (QTY/MODEL)										
FILTER (QTY/MODEL)										
RXAIT KIT MODULE?										
TRIPLEXER or NARROW BAND LLC (QTY/MODEL)										
SCPA/MCPA MODULE?										
Additional Component1										
Additional Component2										
Additional Component3										
MAGNETIC DECLINATION										
HATCHPLATE POWER (Watts)										
ERP (Watts)										
Local Market Note1										
Local Market Note2										
Local Market Note3										

Section 16E - NEW/PROPOSED SECTOR/CELL INFORMATION - EPSILON

ANTENNA CONFIG (FROM BACK):	ANTENNA 1 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 2 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 3 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 4 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 5 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	
TX/RX?										
TECHNOLOGY										
RRH LOCATION (Top/Bottom/None)										
FEEDERS TYPE										
Feeder Length (feet)										
ANTENNA ATOLL										
ANTENNA MAKE - MODEL										
ANTENNA VENDOR										
ANTENNA SIZE (H x W x D)										
ANTENNA WEIGHT										
ANTENNA GAIN										
AZIMUTH										
RADIATION CENTER (feet)										
ANTENNA TIP HEIGHT										
ELECTRICAL TILT (700/850/1900/AWS)										
MECHANICAL DOWNTILT										
FEEDER AMOUNT										
Antenna RET Motor (QTY/MODEL)										
Antenna RET Splitter (QTY/MODEL)										
Antenna RET Earth (Grounding) Clamp (QTY/MODEL)										
Antenna RET Surge Arrestor (QTY/MODEL)										
Antenna RET CONTROL UNIT (QTY/MODEL) usually per site										
DC BLOCK (QTY/MODEL)										
TMA/LNA (TYPE/MODEL)										
CURRENT INJECTORS FOR TMA (QTY/MODEL)										
PDU FOR TMAS (QTY/MODEL) usually per site										
SURGE ARRESTOR (QTY/MODEL)										
DIPLEXER (QTY/MODEL)										
HYBRID COMBINER (QTY/MODEL)										
DUPLEXER (QTY/MODEL)										
FILTER (QTY/MODEL)										
RXAIT KIT MODULE?										
TRIPLEXER or NARROW BAND LLC (QTY/MODEL)										
SCPA/MCPA MODULE?										
Additional Component1										
Additional Component2										
Additional Component3										
MAGNETIC DECLINATION										
HATCHPLATE POWER (Watts)										
ERP (Watts)										
Local Market Note1										
Local Market Note2										
Local Market Note3										

Section 16F - NEW/PROPOSED SECTOR/CELL INFORMATION - ZETA

ANTENNA CONFIG (FROM BACK):	ANTENNA 1 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 2 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 3 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 4 GSM, UMTS (850 / 1900) or LTE (700 / AWS)		ANTENNA 5 GSM, UMTS (850 / 1900) or LTE (700 / AWS)	
TX/RX?										
TECHNOLOGY										
RRH LOCATION (Top/Bottom/None)										
FEEDERS TYPE										
Feeder Length (feet)										
ANTENNA ATOLL										
ANTENNA MAKE - MODEL										
ANTENNA VENDOR										
ANTENNA SIZE (H x W x D)										
ANTENNA WEIGHT										
ANTENNA GAIN										
AZIMUTH										
RADIATION CENTER (feet)										
ANTENNA TIP HEIGHT										
ELECTRICAL TILT (700/850/1900/AWS)										
MECHANICAL DOWNTILT										
FEEDER AMOUNT										
Antenna RET Motor (QTY/MODEL)										
Antenna RET Splitter (QTY/MODEL)										
Antenna RET Earth (Grounding) Clamp (QTY/MODEL)										
Antenna RET Surge Arrestor (QTY/MODEL)										
Antenna RET CONTROL UNIT (QTY/MODEL) usually per site										
DC BLOCK (QTY/MODEL)										
TMA/LNA (TYPE/MODEL)										
CURRENT INJECTORS FOR TMA (QTY/MODEL)										
PDU FOR TMAS (QTY/MODEL) usually per site										
SURGE ARRESTOR (QTY/MODEL)										
DIPLEXER (QTY/MODEL)										
HYBRID COMBINER (QTY/MODEL)										
DUPLEXER (QTY/MODEL)										
FILTER (QTY/MODEL)										
RXAIT KIT MODULE?										
TRIPLEXER or NARROW BAND LLC (QTY/MODEL)										
SCPA/MCPA MODULE?										
Additional Component1										
Additional Component2										
Additional Component3										
MAGNETIC DECLINATION										
HATCHPLATE POWER (Watts)										
ERP (Watts)										
Local Market Note1										
Local Market Note2										
Local Market Note3										

AM-X-CD-16-65-00T-RET(6' 65° Dual Broadband Antenna)

Dual Band Electrical DownTilt Antenna

698 ~ 894MHz, X-pol., H65° / V12°

1710 ~ 2170MHz, X-pol., H65° / V6.0°

Electrical Specification

Frequency Range		698~894MHz	1710~2170MHz
Impedance		50Ω	
Polarization		Dual, Slant ±45°	
Gain		15.5dBi / 13.35dBd @ 698-806MHz 16.0dBi / 13.85dBd @ 824-894MHz	17.3dBi / 15.15dBd @ 1710-1755MHz 17.4dBi / 15.25dBd @ 1850-1900MHz 17.1dBi / 14.95dBd @ 2110-2155MHz
Beamwidth	Horizontal	65° @ 698-806MHz 63° @ 824-894MHz	65° @ 1710-1755MHz 67° @ 1850-1900MHz 69° @ 2110-2155MHz
	Vertical	12.3° @ 698-806MHz 11.5° @ 824-894MHz	6.5° @ 1710-1755MHz 6.0° @ 1850-1900MHz 5.7° @ 2110-2155MHz
VSWR		≤1.5:1	
Front-to-Back Ratio		≥27 dB	
Electrical Downtilt Range		2° ~ 16°	0° ~ 10°
Isolation Between Ports		≥30 dB	
Isolation Between Ports of Different Frequency Elements		≥35 dB	
Cross Pole Discrimination		10.0 dB @ ±60° 15.0 dBi @ 0°	
First Upper Side Lobe Suppression		16dB	
Side Lobe Suppression		> 16 dB @ 0-6° Tilt > 18 dB @ 7-12° Tilt (Up to 10° from Boresight)	> 16 dB @ 0-6° Tilt > 18 dB @ 7-10° Tilt (Up to 10° from Boresight)
Passive Intermodulation		≤ -150 dBc @ 2x20w	
Input Maximum CW Power		500 W	300 W
Environmental Compliance		IP65 for Radome IP67 for Connectors	
RET Motor Configuration		Field Replaceable RET Electronic Control Module / RET Motor is internal to antenna & not field replaceable	
Compliant with AISG 1.1 and 2.0		AISG 1.1 and 2.0	

Mechanical Specification

Dimension (W×D×H)	11.8×5.9×72 inches (300×150×1829mm)
Weight (Without clamp)	48.5 lbs (22.0 kg)
Connector	4 x 7/16 DIN(F), Long Neck
Max Wind Speed	150 mph
Wind Load (@150 mph)	1891 N

300

7770.00A DBB90 Broadband Cross Polarized

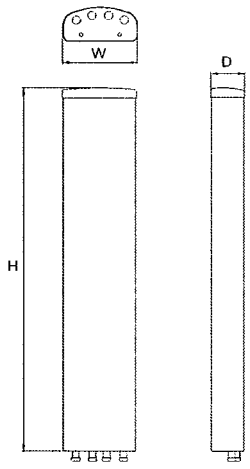
POLARIZATION: XX-Pol
FREQUENCY (MHz): 824-896, 1710-2170
HORIZONTAL BEAM WIDTH (°): 90
GAIN (dBi/dBd): 13.5/11.4, 15.5/13.4
TILT: MET
LENGTH: 1.4m (4'7")

ELECTRICAL SPECIFICATIONS*

Frequency range (MHz)	824-896		1710-2170	
Frequency band (MHz)	824-896	1710-1880	1850-1990	1900-2170
Gain (dBi/dBd)	13.5/11.4	15.5/13.4	15.5/13.4	15.5/13.4
Polarization	Dual linear ±45°		Dual linear ±45°	
Nominal Impedance (Ω)	50		50	
VSWR	<1.5:1		<1.5:1	
Horizontal beam width, -3 dB (°)	85	90	90	90
Vertical beam width, -3 dB (°)	15	7	7	7
Electrical down tilt (°)	0 to 10		0 to 8	
Side lobe suppression, vertical 1st upper (dB)	>18	>18	>18	>18
Isolation between inputs (dB)	>30	>30	>30	>25
Inter band Isolation (dB)	>36		>36	
Tracking, horizontal plane ±60° (dB)	<2	<2	<2	<2
First null fill (dB)	-	-	-	-
Vertical beam squint (°)	<1.0	<0.5	<0.5	<0.5
Front to back ratio (dB) 180°±30° copolar	>25	>25	>25	>25
Front to back ratio (dB) 180°±30° total power	>22	>21	>21	>21
Cross polar discrimination (XPD) 0° (dB)	-	-	-	-
Cross polar discrimination (XPD) ±60° (dB)	>10	>10	>10	>10
Far field coupling	-	-	-	-
IM3, 2xTx@43dBm (dBc)	<-153		<-153	
IM7, 2xTx@43dBm (dBc)	-		<-160	
Power handling, average per input (W)	500		250	
Power handling, average total (W)	800		500	

MECHANICAL SPECIFICATIONS*

Connector	4 x 7/16 DIN Female
Connector position	Bottom
Dimensions, HxWxD, mm (ft)	1408x280x125mm
Mounting	Pre-mounted heavy duty brackets
Weight, with brackets, kg (lbs)	17.6 (39)
Weight, without brackets, kg (lbs)	12.1 (27)
Wind load, frontal/lateral/rear side 42 m/s Cd=1.6 (N)	415
Maximum operational wind speed, m/s (mph)	42 (93)
Survival wind speed, m/s (mph)	55 (123)
Lightning protection	DC grounded
Operating Temperature	-40°C to +60°C
Radome material	GRP
Package size, HxWxD, mm (ft)	1550x355x255 (61"x1'2"x10")
Radome colour	Light Grey
Shipping weight, kg (lbs)	21.5 (47.4)
RET	8220.10, 8220.40, 8210.10, 8210.40
Brackets	7256.00, 7454.00



*All specifications subject to change without notice. Please contact your Powerwave representative for complete performance data.

ANTENNA PATTERNS*

For detailed patterns visithttp://www.powerwave.com/rpa/.

Tower Mounted Amplifier

Dual Band 1900 MHz with 850 MHz Bypass

1900/850 MHz

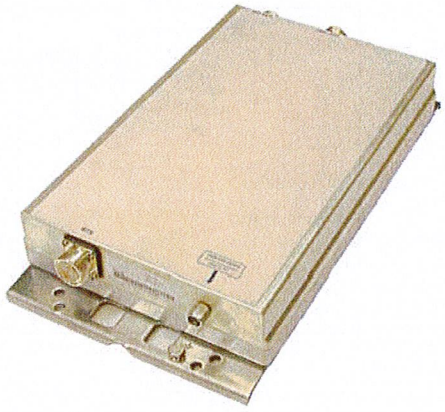
Part Number:
LGP 214nn

Up-link: 1850-1910 MHz
Down-link: 1930-1990 MHz
Bypass: 824-894 MHz

Gain: 12 dB
Noise Figure: < 1.7 dB

The Powerwave® TMA-DD 1900/850 is a dual band Tower Mounted Amplifier (TMA) to be installed near the antenna. Deployed in an AMPS, GSM, GPRS, EDGE and CDMA network it will increase capacity and coverage as well as extend the battery life time for the handsets. The TMA System will provide enhanced coverage and improved up-link signal quality. Appropriate for new rollouts by optimizing coverage with a reduced number of BTSs or as an upgrade to existing BTSs for enhancing the existing coverage.

Extended band TMA facilitates simplified logistics, especially when the frequency bands are scattered. The unit comprises of high Q band-pass filters, dual balanced low noise amplifiers with circuits for active bias, supervision, alarms and lightning protection circuit. The Powerwave patented design with all active components integrated within the filter body provides an extremely reliable, compact and lightweight TMA solution. The vented enclosure design is employed to prevent the effect of condensation, thereby guaranteeing long, reliable, maintenance-free service in all environmental conditions. These TMAs offer an easy to install, maintenance free, cost effective solution for coverage enhancement and increased quality in mobile communication networks.



Key Benefits:

- 850 MHz Bypass
- Improved Network Quality
- Increased Coverage
- State of the Art Performance
- Excellent Power Handling
- Low Tx Loss
- Exceptional Reliability

ANTENNA SYSTEMS

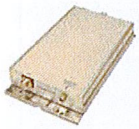
BASE STATION SYSTEMS

COVERAGE SYSTEMS

THE POWER IN WIRELESS®

Powerwave technologies

Tower Mounted Amplifier



1900/850 MHz

Technical Specifications

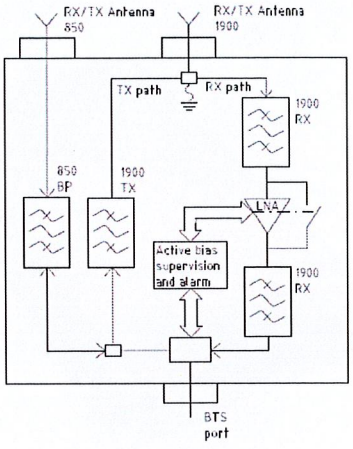
Product Number	LGP214nn	
850 MHz	Bypass (MHz)	824-894
	Return loss* (dB)	> 20
	Insertion loss* (dB)	< 0.3
1900 MHz		
Up-link	Frequency range, full band (60 MHz)	1850-1910
	Nominal gain (dB)	12
	Return loss* (dB)	> 20
	Noise figure* (dB)	< 1.7
	Output 3rd order Intercept Point* (dBm)	> +23
Down-link	Frequency range, full band (60 MHz)	1930-1990
	Insertion loss* (dB)	< 0.6
	Return loss* (dB)	> 20
Intermodulation	2 Tx@x43 dBm (dBc)	<-158
Alarm Functionality	Two levels,individually supervised LNAs	
Power Consumption	@12 VDC	1.2 W

* Typical

All specifications subject to change without notice. Please contact your Powerwave representative for complete performance data.

Mechanical Specifications

Size,W x H x D (without mounting plate)	235 x 366 x 66 mm (9.2 x 14.4 x 2.6 in)
Weight	6.4 kg (14.1 lbs)
Color	Off white (NCS 1502-R)
Housing	Aluminum
RF-connectors	DIN 7/16 female.
Mounting kit	Mounting kit for pole and wall is included
Temperature range	-40 °C to +65 °C (-40 °F to +149 °F)
MTBF	>1 million hours
Safety	UL 60 950
Ingress protection, IP 65	EN 60 529
Environmental	ETS 300 019
EMC	FCC Part 15



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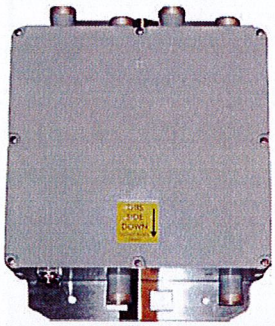
Powerwave technologies

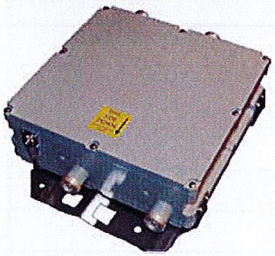
COVERAGE AND CAPACITY | TECHNOLOGY LEADERSHIP | GLOBAL PARTNER | INTEGRATED SOLUTIONS | QUALITY AND RELIABILITY

Twin Triple Band "Active PCS with 700 and 850 Band Pass-thru" Dual Duplexed TMA

Tel: 201-342-3338 Fax: 201-342-3339 www.cciproducts.com

General Information





CCI's Twin Triple Band (700 Band, Cellular and PCS) TMA contains two triple band TMA's in a single housing. The PCS TMA is full band and fully duplexed, while the 700 Band and Cellular RF is bypassed and combined (Diplexed) with the PCS RF signal. High linearity improves the uplink sensitivity and the receive performance of base stations. The TMA is fully compliant with the latest AISG 2.0 specification. The TMA supports EDGE/GSM, UMTS and LTE BTS equipment. It provides a convenient package for sites upgraded to triple or quad antenna configurations. The twin TMA package reduces tower loading, leasing, and installation costs. Unit count on the tower is cut in half. An excellent match for two branch receive diversity applications using triple polarization antennas. The input and output connectors are located inline for ease of installation in space constrained areas such as uni-pole structures and stealth antennas.

Model
DTMABP7819VG12A

Contents:

Features:

- Small, lightweight, twin unit
- Triple Band Dual Duplexed (PCS with 700 Band & Cellular Bypass)
- Optional AISG 2.0 compatible unit
- AISG TMA detects BTS port that DC voltage and AISG sampling is applied to, and automatically switches to utilize that port
- AISG TMA operates at constant power
- AISG TMA may be powered by a standard PDU
- High linearity
- Lightning protected
- Fail-safe bypass mode
- High reliability

Technical Description

The TMA system consists of a twin outdoor triple band tower mount unit which combine separate PCS, 700 Band & Cellular antennas onto a single BTS port. The PCS path of the tower mount unit is dual duplexed to separate the low-power uplink signals from the high-power downlink signals at the antenna port, amplifies the low-level uplink signals using an ultra-low noise amplifier (LNA), and recombines the two paths at the BTS port. The 700 Band & Cellular path is ultra low loss and passive. Both paths are diplexed at the BTS port. The tower mount units consist of eight band-pass filters, two redundant low-noise amplifiers, bypass failure circuitry, and bias tee's which are all housed in an IP65 moisture proof enclosure, with IP68 Immersion proof connectors suited to long-life masthead mounting. The unit provides protection against lightning strikes via a multi-stage surge protection circuit. DC power and control is provided via the feeder cable from the BTS or a Power Distribution Unit (PDU). Optional AISG 2.0 DC power and control is provided via the feeder cable from the BTS using the AISG 2.0 and 3GPP standard. The optional AISG TMA detects which BTS port has DC Voltage/AISG Sampling applied and automatically switches to utilize that port. Additionally the AISG TMA operates at constant power when powered by an AISG 2.0 Compatible Site Control Unit, but may be powered by a "Standard Power distribution Unit. A separate AISG connector is also provided to allow direct AISG connection or "Daisy Chaining" to multiple AISG products at the top of the tower.

An optional indoor site control unit (SCU) is available to power up to up to 32 AISG modules per sector and to provide the all the monitoring and alarm functions for the system. The SCU is housed in a single (1U) 1.75" x 19" rack and contains triple redundant power supplies capable of being "hot swapped" that provide a regulated DC supply voltage on the RF coax for the tower mount amplifiers.

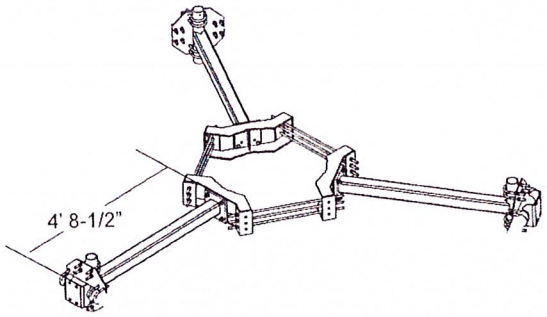
Twin Triple Band "Active AWS with 700 and 850 Band Pass-thru" TMA Typical Specifications

Description	Typical Specifications
Electrical Specifications	
700 Band & Cellular Frequency Range	698 to 894 MHz
PCS Receive Frequency Range	1850 – 1910 MHz
PCS Transmit Frequency Range	1930 - 1990 MHz
PCS Amplifier Gain	6 to 12 dB Adjustable in 0.25 dB steps via AISG
PCS Gain Variation	±1.0 dB
PCS System Noise Figure	1.4 dB (@ +25°C),1.6 dB (@ +65°C), At 1910 MHz: 1.7 dB (@ +25°C), 1.9 dB (@ +65°C)
PCS Input Third Order Intercept Point	+12 dBm Min @ Max. Gain
Input/Output Return Loss	18 dB Min. all ports, 15 dB Min. Bypass Mode
Insertion Loss	
700 Band & Cellular Passband	< 0.2 dB, 0.1 dB typical
PCS Transmit Passband	0.4 dB Typical
PCS Transmit Passband Ripple	±0.2 dB
PCS Bypass Mode, Rx Passband	1.6 dB (@ +25°C),1.8 dB (@ +65°C), At 1910 MHz: 2.3 dB (@ +25°C), 2.5 dB (@ +65°C)
PCS Bypass Mode, Rx Passband Ripple	±1 dB
Filter Characteristics	
700 Band & Cellular Path Rejection	70 dB @ 1850 - 1990 MHz
PCS Path Rejection	80 dB @ 698 - 894 MHz
Continuous Average Power	200 Watts max
Peak Envelope Power	2 kW max
Intermodulation Performance	
IMD at ANT port in Rx Band	-112 dBm Min. (2 x +43 dBm tones)
Operating Voltage	+10V to +30V DC provided via coax or AISG
Power Consumption	≤ 2.1 Watts
Mechanical Specifications	
Connectors	DIN 7-16 Female (Long Neck) x 6, AISG x 1
Dimensions (Body Only)	10.63" (H) x 11.02" (W) x 3.78" (D); (270 (H) x 280 (W) x 96 (D) mm)
Dimensions (with Bracket)	14.25" (H) x 11.46" (W) x 4.17" (D); (362 (H) x 291 (W) x 106 (D) mm)
Weight (w/o Bracket)	19.18 Lbs. (8.7 Kg)
Mounting	Pole/Wall Mounting Bracket
Environmental Specifications	
Operating Temperature	-40° C to +65°C
Lightning Protection	8/20us, ±2KA max, 10 strikes each, IEC61000-4-5
Enclosure	IP65 (Unit Body), IP68 (Connector)
MTBF	>500,000 hours

All specifications are subject to change. The latest specifications are available at www.cciproducts.com

T-Arm Co-Location Kit

Designed to fit a wide variety of round or multi-sided monopoles. All necessary hardware is included. **Antenna Pipes ordered separately.**



10' 6" Kit (for 12"-36" poles) Includes:
1 - Tri-Bracket Assembly (P/N 801068)
3 - Standoff Arms (P/N B1820)
3 - Cross Arms (B1821)

13' 6" Kit (for 12"-36" poles) Includes:
1 - Tri-Bracket Assembly (P/N 801068)
3 - Standoff Arms (P/N B1820)
3 - Cross Arms (B1822)

10' T-Arm Co-Location Kit

Description	P/N
10-6" cross-arm w/ standoff and Tri-Bracket Arm, includes attaching hardware for nine pipes.	802738*

*For 37" to 60" dia. poles add P/N 157286

13' T-Arm Co-Location Kit

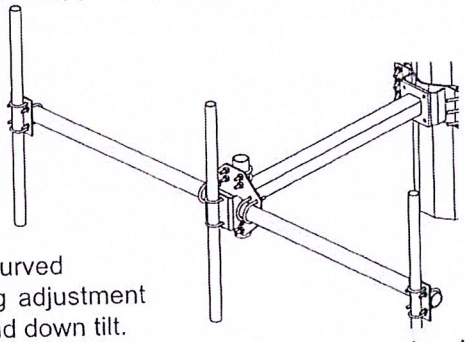
Description	P/N
13-6" cross-arm w/ standoff and Tri-Bracket Arm, includes attaching hardware for twelve pipes.	802740*

Antenna Pipes - Other lengths available upon request.

Description	Length	P/N
2-3/8" O. D. Pipe	84"	111436
2-3/8" O. D. Pipe	96"	124960
2-3/8" O. D. Pipe	108"	140499

Sector Cross-Arms

Sector Cross-Arms support up to four antennas with a maximum center to center antenna spacing of 10', 13' or 15'. Included U-bolts enable the Sector Cross-Arm to mount on the end of a straight or curved standoff, allowing adjustment of the azimuth and down tilt.

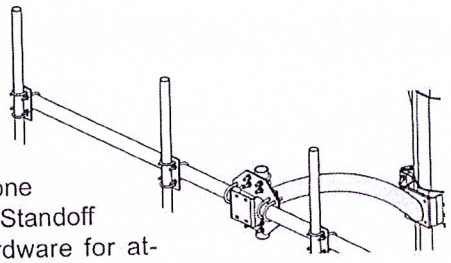


Antenna mounting pipes, standoff and tri-bracket ordered separately.

Description	P/N
10' face Sector Cross-Arm	B1821
13' face Sector Cross-Arm	B1822
15' face Sector Cross-Arm	B2764

Curved Standoff Arm

The Curved Standoff extends 4' 11-1/4" from the tri-bracket, has a vertical rise of 2' 2-5/8" and provides support for one sector cross-arm. Standoff includes 5/8" hardware for attaching to the tri-bracket and sector cross-arm.

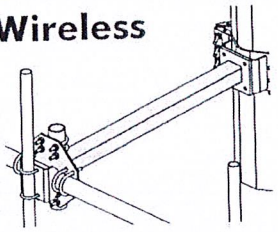


Sector cross-arm and tri-bracket ordered separately.

Description	P/N
Curved Standoff Arm	B1823

Straight Standoff for Wireless Cross-Arm

The Straight Standoff provides support for a separately ordered sector cross-arm. The Straight Standoffs are available in three lengths from 3' to 6' 6". The Straight Standoff bolts to the separately ordered tri-bracket with included 5/8" diameter hardware.

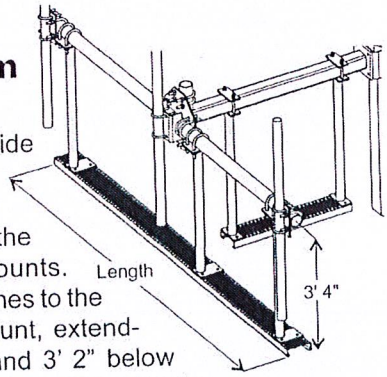


Sector cross-arm and tri-bracket ordered separately.

Description	P/N
3' long	B3045
4' 8-1/2" long	B1820
6' 6" long	B2854

Work Support for Straight Arm Sector Mounts

The Work Supports provide a 7" wide grating section to support a person while working on one of the straight arm sector mounts. The Work Support attaches to the standoff arm of the Mount, extending for the full length and 3' 2" below the arm. For safety, the worker must be correctly tied-off to the monopole while using the Work Support.



For use with	Length	P/N
B1868 & B1820	3'	B1867
B1821 or B1822	10'	B2032

Northeast
Utilities System

107 Selden Street, Berlin, CT 06037

Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270
(203) 665-5000

July 18, 2012

Mr. Mark Roberts
AT&T Wireless.
500 Enterprise Drive
Rocky Hill, CT 06067

RE: AT&T Antenna Site, CT-5279, 74 Birdsey Ave., Meriden CT, structure 9403.

Dear Mr. Roberts:

Based on our reviews of the site drawings, the structural analysis provided by Centek Engineering and, and the foundation analyses performed by Centek Engineering, we have reviewed for acceptance this modification

Since there are no outstanding structural issues to resolve at this time please contact Mr. Green (860-665-6926) to resolve any lease issues; once the lease amendment is secured you may contact Mr. John Landry directly (860-665-5425) to begin these arrangements.

Sincerely,

Robert Gray
Transmission Line Engineering

ref: CT5279 ATT LTE CD Rev0 053012.pdf
CT5279 LTE Structural 5-08-12.pdf