NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Victoria Masse
420 Main Street #2, Sturbridge, MA 01566
860-306-2326
victoria@northeastsitesolutions.com

August 5, 2021

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification
945 North Street, Pole 24032, Milford CT 06460
Latitude: 41.25605638
Longitude: -73.04994560
T-Mobile Site#: CT11602C_L600

Dear Ms. Bachman:
T-Mobile currently maintains three (3) antennas at the 137-foot level of the existing 140-foot transmission pole located at 945 North Street, Pole 24032, Milford CT 06460. The electric transmission pole is owned by CL&P d/b/a Eversource. The property is owned by Barretta Realty Associates. T-Mobile now intends to replace all three (3) existing antennas with three (3) new 600/7001900/2100MHz antenna. The new antennas would be installed at the 137-foot level of the tower. This modification includes B2, B5 hardware that is both 4G (LTE), and 5G capable.
T-Mobile Planned Modifications:
Remove:
(6) TMA

Remove and Replace:
(3) RFS APX16DWV Antenna (Remove) - (3) RFS APXVAARR24 600/700/1900/2100MHz 5G Antenna (Replace)

Install New:
(3) Smart Bias-T
(12) Coax

Existing to Remain:
(12) Coax

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This facility was approved by the CT Siting Council. Docket 272 – Dated April 7, 2005. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2).
In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Benjamin G. Blake, Mayor, David B. Sulkis, City Planner, Executive Secretary of the P&Z board, Stephen H. Harris-Zoning Enforcement Officer; Executive Secretary of the Zoning Board of Appeals, as well as the property owner Barretta Realty Associates and the tower owner Eversource (CL&P).

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

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

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

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

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

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

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

Sincerely,

Victoria Masse
Mobile: 860-306-2326
Fax: 413-521-0558
Office: 420 Main Street, Unit 2, Sturbridge MA 01566
Email: victoria@northeastsitesolutions.com

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments:

cc: Benjamin G. Blake, Mayor
70 West River Street
Milford, CT 06460

David B. Sulkis- City Planner; Executive Secretary of the P&Z Board-
70 West River St
Milford, CT 06460

Stephen H. Harris-Zoning Enforcement Officer; Executive Secretary of the Zoning Board of Appeals
shharris@ci.milford.ct.us
70 West River St
Milford, CT 06460

Barretta Realty Associates LLC-property owner
510 Howellton Road
Orange, CT 06477

Eversource (CL&P)- tower owner
107 Selden Street
Berlin, CT 06037

Exhibit A

DOCKET NO. 272 - The Connecticut Light and Power Company and The United Illuminating Company application for a Certificate of Environmental Compatibility and Public Need for the Construction of a New 345-kV Electric Transmission Line and Associated Facilities Between Scovill Rock Switching Station in Middletown and Norwalk Substation in Norwalk, Connecticut Including the Reconstruction of Portions of Existing 115-kV and 345-kV Electric Transmission Lines, the Construction of the Beseck Switching Station in Wallingford, East Devon Substation in Milford, and Singer Substation in Bridgeport, Modifications at Scovill Rock Switching Station and Norwalk Substation and the Reconfiguration of Certain Interconnections.	}	Connecticut Siting Council April 7, 2005

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction of a new 345-kV electric transmission line and associated facilities between Scovill Rock Switching Station in Middletown and Norwalk Substation in Norwalk, Connecticut including the reconstruction of portions of existing 115-kV and 345-kV electric transmission lines, the construction of the Beseck Switching Station in Wallingford, East Devon Substation in Milford, and Singer Substation in Bridgeport, modifications at Scovill Rock Switching Station and Norwalk Substation and the reconfiguration of certain interconnections, including effects on the natural environment; ecological integrity and balance; forests and parks; scenic, historic, and recreational values; air and water purity; fish and wildlife; and public health and safety are not disproportionate either alone or cumulatively with other effects compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application. Therefore, the Council directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to the Connecticut Light and Power Company (CL&P), and the United Illuminating Company (UI), (collectively referred to as the "Applicants") for the construction, operation and maintenance of such facilities.

The facilities shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and is subject to the following conditions:

1. The Certificate Holders shall construct new substations or switching stations at Beseck, East Devon and Singer, and the modification of the existing facilities at Scovill Rock and Norwalk all as proposed in the application except that the Singer Substation is to be located on a parcel of property in Bridgeport bounded by Main Street, Russell Street, Atlantic Street, and Henry Street, and owned by PSEG Power of Connecticut.

2. The Certificate Holders shall install 500-kV rated equipment in the new 345-kV substations and replace approximately 1,200 lightning arresters in various existing substations with similar units having a higher rating.

3. The Certificate Holders shall construct and reconstruct facilities from Scovill Rock to Chestnut Junction; Oxbow Junction to the proposed Beseck Switching Station and Black Pond Junction to Beseck Switching Station as proposed in the application.

4. The Certificate Holders shall utilize the Royal Oak Bypass which shall include a rights-of-way not to exceed 165 feet in width, and cleared rights-of-way of 125 feet, for the proposed 345-kV transmission line and leave the existing 115-kV ROW in place.

5. The Certificate Holders shall construct and reconstruct facilities from Beseck Switching Station to Cook Hill Junction as proposed in the application and the supported route change as follows:

    a. Cheshire supported change. Removing one of the existing 115-kV overhead circuits (Circuit 1640) from the ROW and placing it underground (using 115-kV XLPE cable) along Old Farms Road and Old Lane Road for approximately 5,000 feet. The proposed 345-kV transmission line and the remaining 115-kV line (Circuit 1208) would be installed on a single double-circuit monopole structure.

6. The Certificate Holders shall construct and reconstruct facilities from Cook Hill Junction to East Devon Substation as proposed in the application except that:

    a. In the vicinity of the Jewish Community Center the Certificate Holders shall use of the center of the ROW.
    b. In the vicinity of Congregation B'Nai Jacob/Ezra Academy the right-of-way shall be shifted farther away from buildings on property owned by Congregation B'Nai Jacob/Ezra Academy.

7. The Certificate Holders shall construct and reconstruct 115-kV circuits between the existing Devon Generating Station and the proposed East Devon Substation as proposed in the application.

8. The Certificate Holders shall construct an underground 345-kV circuit from the proposed East Devon Substation to the proposed Singer Substation substantially as proposed in the application except that the cable to be utilized shall be 3,000 kcmil XLPE and as follows:

    a. Bridgeport supported change as follows: proceeding along Noble Street under the Metro North Railroad and then cross the Pequonnock River onto waterfront property owned by the city. The variation would then cross back under the railroad and turn south on Housatonic Avenue/Water Street.

9. The Certificate Holders shall construction an underground 345-kV circuit from the proposed Singer Substation to the existing Norwalk Substation substantially as proposed in the application except that the cable shall be 3,000 kcmil XLPE and the supported route change as follows:

    a. Westport supported change as follows: proceeding south from the proposed route on the Post Road and follow Imperial Avenue for approximately a quarter of a mile, and turn west into Westport Commuter Metro North parking lot before crossing the Saugatuck River. On the west side of the river, the route would cross over Riverside Avenue and continue west along Lincoln Street before merging with Post Road.
    b. Norwalk supported change as follows: construction of an alternate Norwalk River crossing that would begin approximately 1,000 feet south of the original location to mitigate impacts to the Riverside Cemetery Association.

10. The Certificate Holders shall conform to the Council's Best Management Practices for Electric and Magnetic Fields, in accordance with the Opinion.

11. The Certificate Holders shall develop low magnetic field designs as outlined in the Council's Findings of Fact Appendix B (Cross Sections 1-8) as part of the Development and Management (D&M) Plan and file the D&M Plan with each municipality regarding facilities in said municipality for comment. The Council will allow the municipality to file comments for a period of not more than 30 days after the filing a D&M Plan section. The Certificate Holders are encouraged to consult with the municipality prior to such filing.

12. The record indicates that EMF levels may be greater in the immediate vicinity of underground transmission lines than in the immediate vicinity of overhead lines. Where the underground portions of the line are in the vicinity of facilities listed in Conn. Gen. Stat. § 16-50p(i), the Certificate Holders are directed to utilize measures necessary to ensure that public health and safety is protected no less than in the vicinity of statutory facilities adjacent to the approved overhead portions of the line.

13. The Certificate Holders shall comply with all future electric and magnetic field standards promulgated by State or federal regulatory agencies. Upon the establishment of any new standards, the facilities granted in this Decision and Order shall be brought into compliance with such standards.

14. The Certificate Holders shall not commence construction of the overhead and underground electric transmission system until securing Council approval of a D&M Plan, consistent with the Regulations of Connecticut State Agencies Section 16-50j-60 through Section 16-50j-62 and which includes the following elements:

    a. A detailed site plan showing the placement of the access roads, structure foundations, equipment and material staging area for the overhead route;
    b. A detailed site plan showing the underground route, splice boxes, provisions for underground cable protection, and equipment and material staging area;
    c. Identification of horizontal directional drill and jack and boring sites;
    d. An erosion and sediment control plan, consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control as amended for both overhead and underground routes;
    e. Provisions for crossing inland wetland and watercourses for both overhead and underground routes;
    f. Vegetative clearing plan;
    g. A wetland restoration plan;
    h. Invasive species management plan;
    i. A Plan for a pre-construction survey for all other endangered, threatened and species of special concern, flag areas of mudwort and bayonet grass, sweep areas for eastern box turtle and wood turtle prior to construction and abide to construction periods as outlined by the DEP Wildlife Division;
    j. A post-construction electric and magnetic field monitoring plan;
    k. A plan for installing construction fencing at vernal pools near construction activities and a buffer area be established around inland wetlands;
    l. An inland wetlands restoration plan;
    m. Monitoring and Operations Plan for each water body crossing;
    n. A traffic control plan to include scheduling of construction hours during nights and/or weekends and mitigation of lighting and noise;
    o. A blasting plan;
    p. Groundwater best management practices plan;
    q. Identification of developed areas for staging and equipment lay down, field office trailers, sanitary facilities and parking before establishing a new area;
    r. Excavated material in upland construction may be allowed to be graded in proximity to the structure and excavated soil in wetland construction shall be stockpiled in an upland area for use in wetland restoration;
    s. Conductor installation sites shall be within the existing ROW, use of existing cleared area, to the extent possible, and pulling sites will not be allowed in wetlands;

t. A plan for the following: structure #4010 may be eliminated; in Woodbridge, details on removal of structure #3920 and new poles may be eliminated in the area of wetland #133; a number of structures within wetland #70 adjacent to Tamarac Swamp in Wallingford may be reduced, especially structures #8769 and 8800; and a set of existing pole structures immediately adjacent to the Farmington Canal Recreational Trail in Hamden could be removed.

15. The Certificate Holders are directed to consult with DEP on the following matters:

a. Concerning horizontal directional drill and the jack and bore crossing techniques;
b. Fording streams; and
c. Construction scheduling at the Milford boat launch and the line should be sited so as to not interfere unreasonably with any future maintenance needs.

16. The Certificate Holders shall abide to the following Regional Water Authority (RWA) conditions:

a. Shall provide all information necessary for the RWA to prepare a DPH Change in Use Application and Revocable License Agreement for the construction activities on RWA owned watershed land.
b. Shall prepare a Stormwater Pollution Prevention Plan (SWPPP) during the development of the Development and Management Plan (D&M Plan). The D&M Plan shall be prepared in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control.
c. Refueling of construction equipment on public water supply watershed and aquifer areas shall only be conducted over portable spill containment areas. Absorbent spill response materials shall be readily available on-site. The RWA shall be immediately notified of any hazardous material spills or other water quality incidents on its public water supply watershed or aquifers.
d. Any fuel, oils, paints, solvents, or other hazardous materials stored on-site during the construction process shall be in a secure area with at least 100 percent secondary containment.
e. Submittal of an Integrated Pest Management Pan for long-term maintenance of right-of-ways and submittal of an annual summary of pesticide use and other maintenance activities on RWA property.
f. If blasting is required, pre-blast surveys of RWA facilities shall be done, recording seismographs shall be in place during blasting, and copies of the survey sand seismograph results shall be provided to the RWA.
g. Provision of reimbursement for reasonable costs incurred by the RWA regarding review and inspection of the Project, including costs for review by its special consultants, and costs associated with designing and relocating the RWA's facilities, if required.
h. Preliminary and final D&M Plans shall be provided to the RWA for its review comments. The RWA shall be allowed at least 30 days to review and comment.
i. The RWA shall receive between three and five days notice prior to commencement of construction activity on public water supply watershed or aquifers, or in the vicinity of RWA facilities.

17. The Certificate Holders shall use the DOT encroachment permit process developed for the Docket No. 217 project as a template.

18. The Certificate Holders shall provide the following permits prior to the commencement of construction:

a. Department of Public Health change-in-use permit;
b. Office of Long Island Sound Programs (OLISP) coastal permits for the Singer and East Devon Substations; and
c. DEP water body crossing permits.

19. The Certificate Holders shall obtain necessary waste management permits for activity in any solid waste disposal area and remove and dispose of contaminated soil per municipal, state, and federal regulations

20. The Certificate Holders shall hire an independent environmental consultant, subject to Council approval, to monitor and report on the installation of the overhead and underground transmission system.

21. The Certificate Holders shall conduct a Phase II Archeological Reconnaissance Survey in consultation with the Connecticut Historical Commission prior to construction.

22. The Certificate Holders shall provide to the Council an operating report within three months after the conclusion of the first year of operation of all facilities herein, and annually thereafter, with information relevant to the overall condition, safety, reliability, and operation of the cable systems, for three years.

23. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within six years of the effective date of the Decision and Order, or within six years after all appeals to this Decision and Order have been resolved.

We hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of the Decision published in the Hartford Courant, The Connecticut Post, Norwalk Hour, Minuteman Press, The Middletown Press, The New Haven Register, The Record-Journal, The Advisor, The Amity Observer, The Bridgeport News, The Cheshire Herald, The Courier(Monroe/Easton), The Fairfield Citizen News, The Hamden Journal, The Milford Mirror, The Milford Weekly, The Norwalk Hour, The Norwalk Citizens News, The North Haven Post, The Stratford Bard, The Stratford Star, The Trumbull Times, The Wallingford Voices, The Waterbury Republican, The West Haven News, The Weston Forum, The Westport News, The Wilton Bulletin, and The Wilton Villager.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The Parties and Intervenors in this proceeding are:

Applicant	The Connecticut Light and Power Company	Anthony M. Fitzgerald, Esq. Brian T. Henebry, Esq. Carmody & Torrance LLP 50 Leavenworth St., P.O. Box 1110 Waterbury, CT 06721-1110 (203) 573-1200 (203) 575-2600 - fax afitzgerald@carmodylaw.com bhenebry@carmodylaw.com tranmn345docket272@nu.com

Exhibit B

City of Milford, CT

Property Listing Report

Map Block Lot	115 801 24	Bldg #	1	Sec #	1	PID	21733	Account	006778

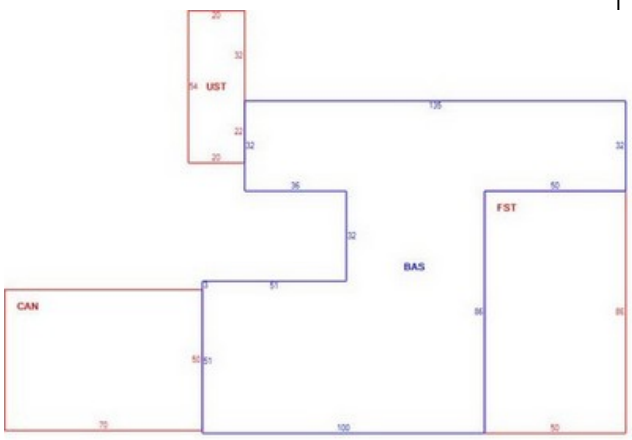
Property Information

Property Location	945 NORTH ST
Owner	BARRETTA REALTY ASSOCIATES LLC
Co-Owner	na
Mailing Address	613 HARVORVIEW RD ORANGE CT 06477
Land Use	322I STORE/SHOP MDL-96
Land Class	C
Zoning Code	RA
Census Tract	

Neighborhood	L
Acreage	5.49
Utilities	UNKNOWN
Lot Setting/Desc	UNKNOWN UNKNOWN
Book / Page	03337/0490
Fire District	2

Photo

Sketch



Primary Construction Details

Year Built	1967
Building Desc.	STORE/SHOP
Building Style	Store
Building Grade	AVERAGE
Stories	1
Occupancy	1.00
Exterior Walls	Concr/Cinder
Exterior Walls 2	Pre-Fab Wood
Roof Style	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Walls	Drywall/Sheet
Interior Walls 2	Wall Brd/Wood
Interior Floors 1	Concr-Finished
Interior Floors 2	Vinyl/Asphalt

Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Gar	
Fireplaces	

(*Industrial / Commercial Details)

Building Use	Commercial
Building Condition	5
Sprinkler %	NA
Heat / AC	HEAT/AC PKGS
Frame Type	WOOD FRAME
Baths / Plumbing	AVERAGE
Ceiling / Wall	SUS-CEIL & WL
Rooms / Prtns	AVERAGE
Wall Height	10.00
First Floor Use	NA
Foundation	NA

Report Created On 7/29/2021

City of Milford, CT

Property Listing Report

Map Block Lot	115 801 24	Bldg #	1	Sec #	1	PID	21733	Account	006778

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	189940	132960
Extras	6100	4270
Improvements		
Outbuildings	11450	8020
Land	538630	377040
Total	746120	522290

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	11288	11288
Canopy	3500	0
Utility, Finished	4300	0
Utility, Storage, Unfinished	1080	0
Total Area	20168	11288

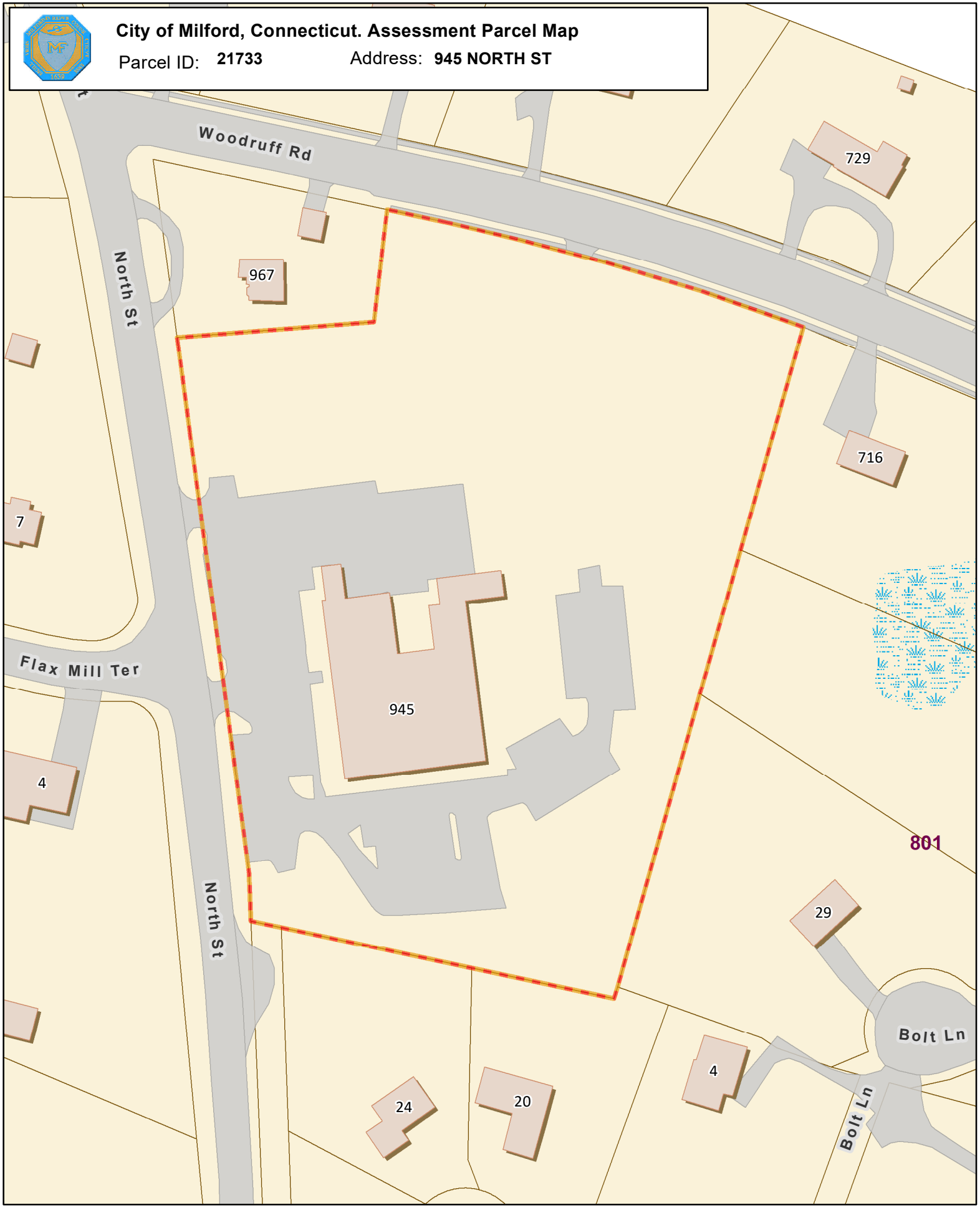
Outbuilding and Extra Features

Type	Description
PAVING-ASPHALT	20000 S.F.
SPRINKLERS-WET	11288 S.F.
COMM PLASTIC	966 S.F.

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
BARRETTA REALTY ASSOCIATES LLC	03337/0490	2010-01-22	0
BARRETTA CHRISTOPHER M	03294/0651	2009-05-11	0
BARRETTA REALTY ASSOCIATES LLC	02517/0134	2001-10-19	500000
FRANKS NURSERY & CRAFTS INC	02105/0299	1995-02-22	0
FLOWER TIME INC	01656/0284	1988-06-17	0

Report Created On 7/29/2021



Disclaimer: This map is for informational purposes only All information is subject to verification by any user. The City of Milford and its mapping contractors assume no legal responsibility for the information contained herein.

Map Produced: April 2021

Exhibit C

T-Mobile

CL&P STANCHION
SITE ID: CT11602C
945 NORTH STREET,
(POLE #24032)
MILFORD, CT 06461

T-MOBILE A+L TEMPLATE (PROVIDED BY RFDS)

67D94B_1DP+1OP

T-MOBILE RAN TEMPLATE (PROVIDED BY RFDS)

67D94B_FLAGPOLE OUTDOOR

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2018 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA-222 REVISION "G" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2017 CONNECTICUT FIRE SAFETY CODE, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
11. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
12. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED' ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE T-MOBILE 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.
13. 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.
14. 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.
15. 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.
16. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUITS AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
17. 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.
18. 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. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
19. CONTRACTOR SHALL COMPLY WITH THE OWNER'S 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

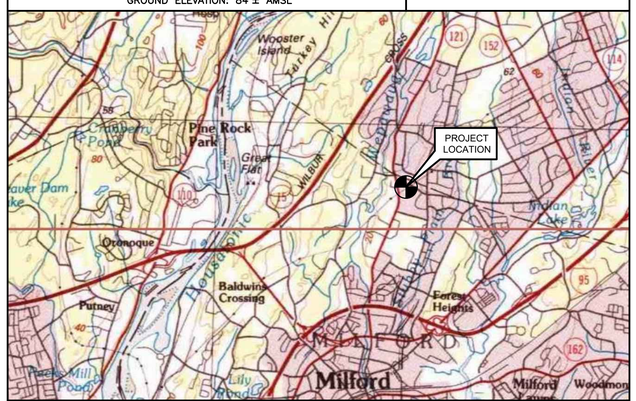
FROM: 35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

TO: 945 NORTH ST.
MILFORD, CT 06461

1.	START OUT GOING NORTH ON GRIFFIN RD TOWARD HARTMAN RD.	0.30 MI.
2.	TURN RIGHT ONTO DAY HILL RD.	0.14 MI.
3.	TAKE THE FIRST RIGHT ONTO BLUE HILLS AVENUE EXT/CT-187. CONTINUE TO FOLLOW CT-187	0.64 MI.
4.	STAY STRAIGHT TO GO ONTO BLUE ILLS AVE/CT-187.	2.72 MI.
5.	TURN LEFT ONTO E WINTONBURY AVE/CT-178. CONTINUE TO FOLLOW CT-178.	1.77 MI.
6.	MERGE ONTO I-91 S TOWARD HARTFORD.	23.74 MI.
7.	MERGE ONTO CT-15 S VIA EXIT 17 TOWARD E MAIN ST.	23.45 MI.
8.	TAKE THE CT-121 EXIT, EXIT 56 TOWARD ORANGE.	0.16 MI.
9.	STAY STRAIGHT TO GO ONTO TURKEY HILL RD.	0.06 MI.
10.	TURN RIGHT ONTO GRASSY HILL RD/CT-121, CONTINUE TO FOLLOW CT-121	2.37 MI.
11.	945 NORTH ST, MILFORD, CT 06461-2018 IS ON THE LEFT.	

SITE COORDINATES: LATITUDE: 41°-15'-22.15" N
LONGITUDE: 73°-2'-57.63" W
GROUND ELEVATION: 84'± AMSL

COORDINATES AND GROUND ELEVATION ARE REFERENCED FROM GOOGLE EARTH



VICINITY MAP

NORTH

PROJECT SUMMARY

THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:

1. REPLACE (1) DUS41 WITH (1) BB6630 FOR LTE.
2. REMOVE (6) EXISTING TMAs LOCATED AT ANTENNA.
3. REMOVE (1) EXISTING APX16DWV-16DWV-S-E-A20 ANTENNAS PER SECTOR, TOTAL OF (3).
4. INSTALL (12) NEW COAXIAL LINES FOR NEW TOTAL OF (24).
5. INSTALL (1) NEW BB6648 FOR FUTURE 5G 2600.
6. INSTALL (3) NEW 4449 B71+B85 RADIOS, MOUNTED TO (1) NEWLY INSTALLED UTILITY FRAME LOCATED ON EQUIPMENT PAD.
7. INSTALL (1) NEW SMART BIAS-T PER SECTOR, TOTAL OF (3).
8. INSTALL (1) NEW APXVAALL24_43-U-NA20 ANTENNA PER SECTOR, TOTAL OF (3).

PROJECT INFORMATION

SITE NAME:	CL&P STANCHION
SITE ID:	CT11602C
SITE ADDRESS:	945 NORTH STREET, MILFORD, CT 06461
APPLICANT:	T-MOBILE NORTHEAST, LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002
CONTACT PERSON:	SHELDON FREINCLE (PROJECT MANAGER) NORTHEAST SITE SOLUTIONS (203) 776-8521
ENGINEER OF RECORD:	CENTEK ENGINEERING, INC. 63-2 NORTH BRANFORD RD. BRANFORD, CT 06405 CARLO F. CENTORE, PE (203) 488-0580 EXT. 122
PROJECT COORDINATES:	LATITUDE: 41°-15'-22.15" N LONGITUDE: 73°-2'-57.63" W GROUND ELEVATION: 84'± AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

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REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
2	08/05/21	BSP	TJR	CONSTRUCTION DRAWINGS - REVISED POLE NUMBER
1	08/05/21	BSP	TJR	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION
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MILFORD, CT 06461

DATE: 06/18/21
SCALE: AS NOTED
JOB NO. 21051.09

TITLE SHEET

T-1

Sheet No. 1 of 9

NOTES AND SPECIFICATIONS

DESIGN BASIS:

GOVERNING CODE: 2015 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2018 CONNECTICUT STATE BUILDING CODE.

1. DESIGN CRITERIA:

- RISK CATEGORY II (BASED ON IBC TABLE 1604.5)
- NOMINAL DESIGN SPEED (OTHER STRUCTURE): 124 MPH (Vasd) (EXPOSURE B/ IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-10).

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. THE AREAS OF THE COMPOUND DISTURBED BY THE WORK SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
4. 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.
5. 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.

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2018 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA-222 REVISION "G" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2017 CONNECTICUT FIRE SAFETY CODE, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND IT'S COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY.
9. 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.
10. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
11. 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.
12. ANY AND ALL ERRORS, DISCREPANCIES, AND "MISSED" ITEMS, ARE TO BE BROUGHT TO THE ATTENTION OF THE SITE OWNER'S 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.
13. 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.
14. 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.
15. 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.
16. 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.
17. 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.
18. 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. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
18. CONTRACTOR SHALL COMPLY WITH OWNER'S ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.
19. THE COUNTY/CITY/TOWN WILL MAKE PERIODIC FIELD OBSERVATION AND INSPECTIONS TO MONITOR THE INSTALLATION, MATERIALS, WORKMANSHIP AND EQUIPMENT INCORPORATED INTO THE PROJECT TO ENSURE COMPLIANCE WITH THE DESIGN PLANS, SPECIFICATIONS, CONTRACT DOCUMENTS AND APPROVED SHOP DRAWINGS.
20. THE COUNTY/CITY/TOWN MUST BE NOTIFIED (2) WORKING DAYS PRIOR TO CONCEALMENT/BURIAL OF ANY SYSTEM OR MATERIAL THAT WILL PREVENT THE DIRECT INSPECTION OF MATERIALS, METHODS OR WORKMANSHIP. EXAMPLES OF THESE PROCESSES ARE BACKFILLING A GROUND RING OR TOWER FOUNDATION, POURING TOWER FOUNDATIONS, BURYING GROUND RODS, PLATES OR GRIDS, ETC. THE CONTRACTOR MAY PROCEED WITH THE SCHEDULED PROCESS (2) WORKING DAYS AFTER PROVIDING NOTICE UNLESS NOTIFIED OTHERWISE BY THE COUNTY/CITY/TOWN.

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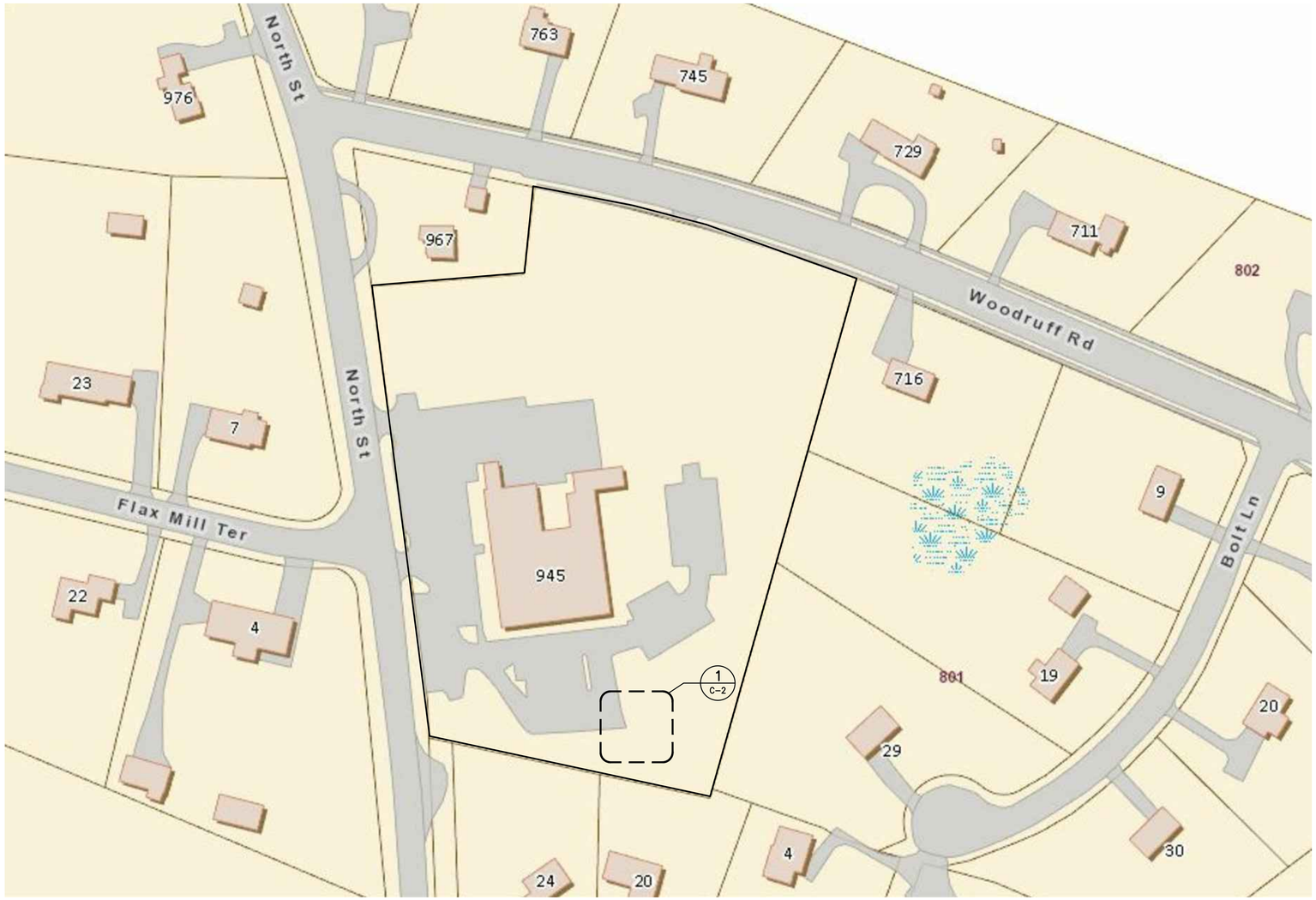
GENERAL NOTES AND SPECIFICATIONS

N-1

NOTE:
ALL COAX LENGTHS TO BE MEASURED
AND VERIFIED IN FIELD BEFORE ORDERING

ANTENNA SCHEDULE

SECTOR	EXISTING/PROPOSED	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	(E/P) RRU (QTY)	(E/P) EQUIPMENT (QTY)	(QTY) PROPOSED COAX (LENGTH)
A1	PROPOSED	RFS (APXVAALL24_43-U-NA20)	95.9 x 24.0 x 8.5	137'	0°	(P) RADIO 4449 B71+B85 (1)	(P) ANDREW SMART BIAS T (1)	(4) 1-5/8" COAX CABLE (±175')
B1	PROPOSED	RFS (APXVAALL24_43-U-NA20)	95.9 x 24.0 x 8.5	137'	120°	(P) RADIO 4449 B71+B85 (1)	(P) ANDREW SMART BIAS T (1)	(4) 1-5/8" COAX CABLE (±175')
C1	PROPOSED	RFS (APXVAALL24_43-U-NA20)	95.9 x 24.0 x 8.5	137'	240°	(P) RADIO 4449 B71+B85 (1)	(P) ANDREW SMART BIAS T (1)	(4) 1-5/8" COAX CABLE (±175')



1 C-1 SITE LOCATION PLAN
SCALE: NOT TO SCALE
TRUE NORTH

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SITE LOCATION PLAN

C-1

Sheet No. 3 of 9

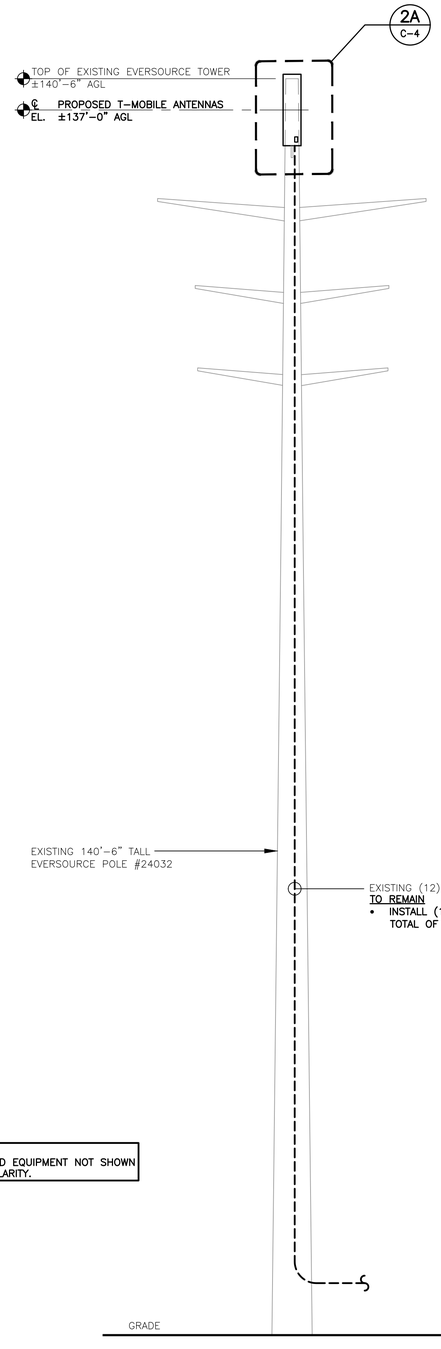
STRUCTURAL COMPLIANCE

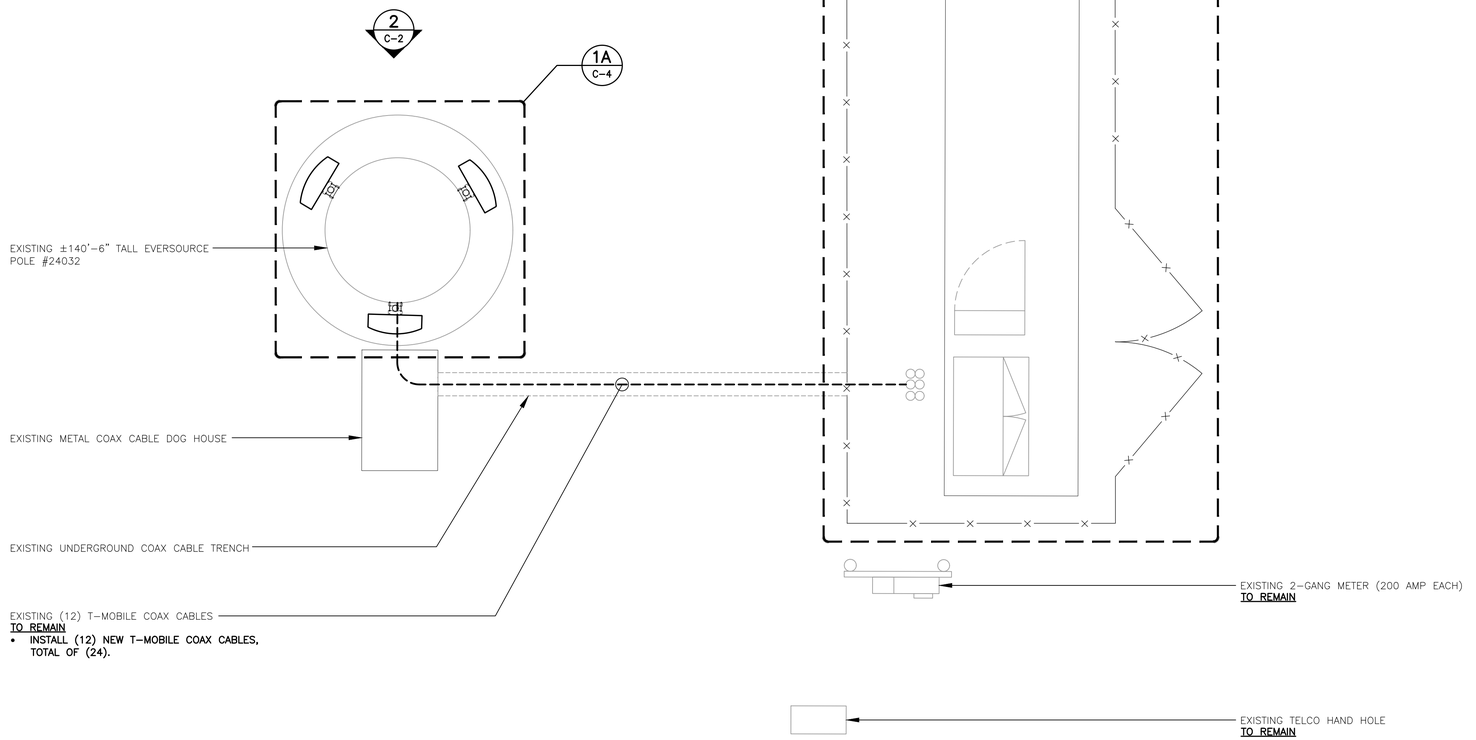
UTILITY STRUCTURE (EVERSOURCE STRUCTURE NO. 24032)

A STRUCTURAL ANALYSIS OF THE UTILITY STRUCTURE WAS PERFORMED FOR THE PROPOSED EQUIPMENT INSTALLATION AND THEY WERE FOUND TO BE STRUCTURALLY SUFFICIENT TO ACCOMMODATE THE PROPOSED LOADING.

REFER TO THE STRUCTURAL ANALYSIS REPORT PREPARED BY CENTEK ENGINEERING (PROJECT # 19066.05) DATED 11/06/19 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

NOTE: NO EQUIPMENT SHALL BE INSTALLED ON THE HOSTING STRUCTURE WITHOUT A PASSING STRUCTURAL ANALYSIS REPORT AND CONTRACTOR PRIOR CONFIRMATION THAT ANY AND ALL REQUISITE MODIFICATIONS HAVE BEEN COMPLETED.





2 C-2 **SOUTH ELEVATION - PROPOSED**
SCALE: 1" = 10'-0"

GRAPHIC SCALE
10 0 5 10 20 40
1 inch = 10 ft.

1 C-2 **COMPOUND PLAN - PROPOSED**
SCALE: 3/8" = 1'-0"

TRUE NORTH

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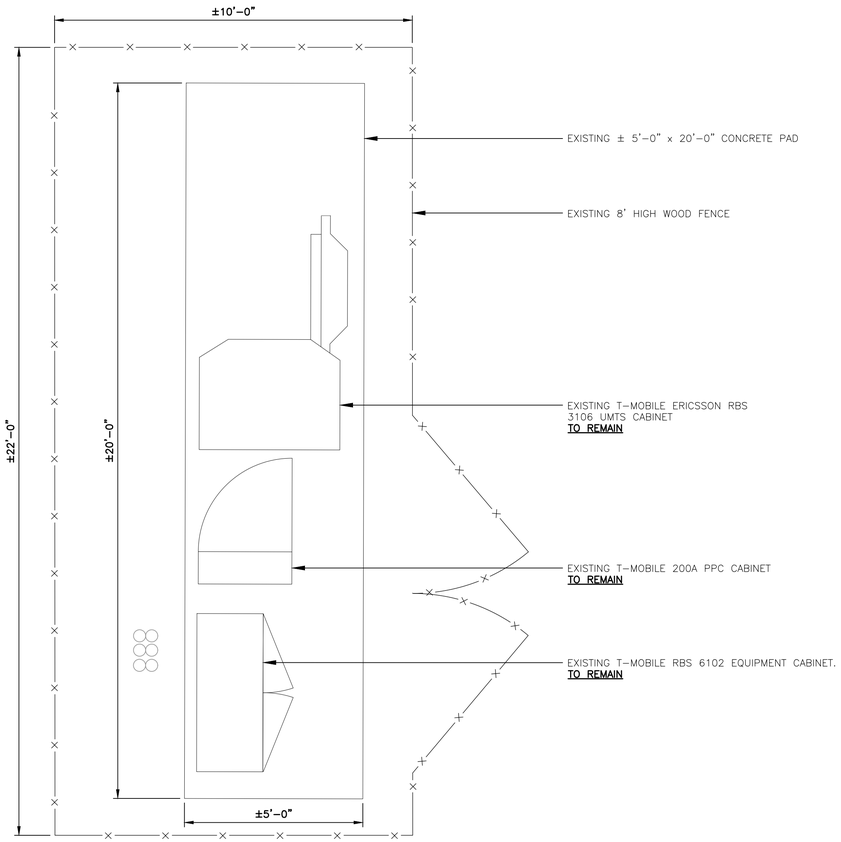
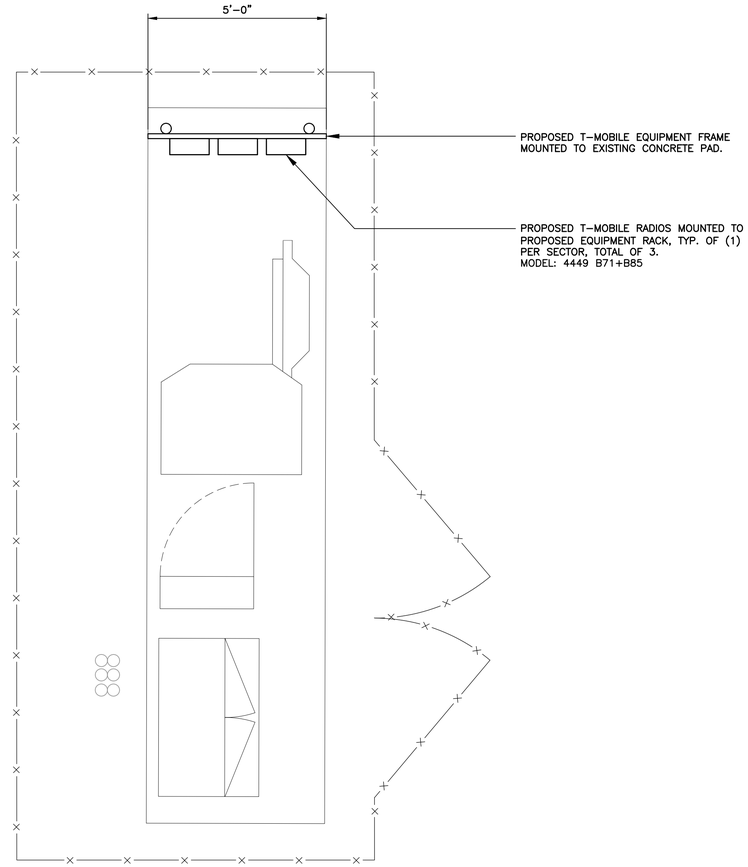
COMPOUND PLAN AND ELEVATION

C-2

Sheet No. 4 of 9



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



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

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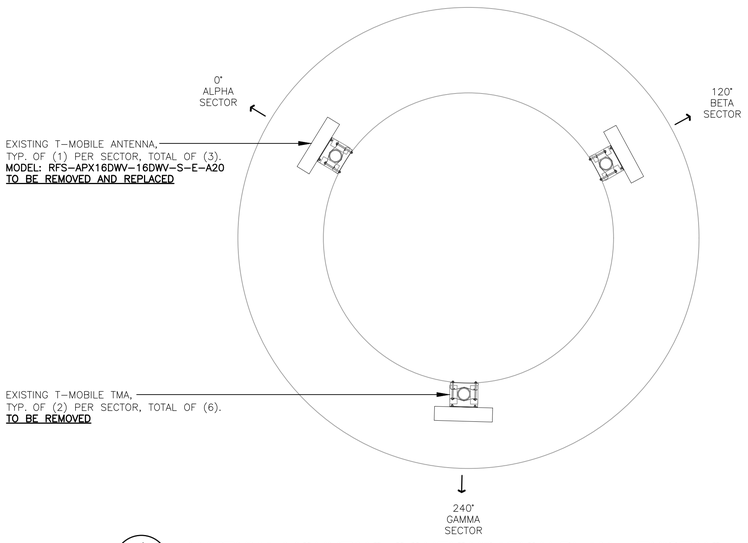
EQUIPMENT PLANS

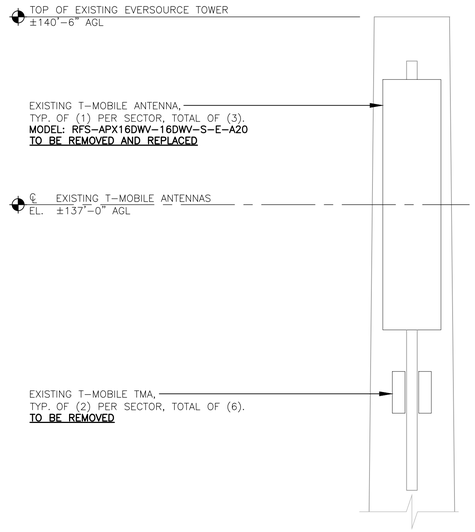
C-3

Sheet No. 5 of 9

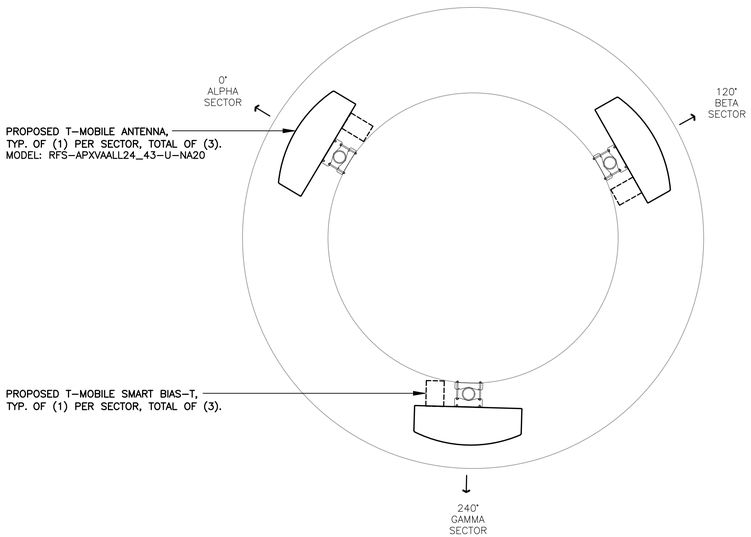


1 / C-4 **ANTENNA MOUNTING CONFIGURATION PLAN - EXISTING**
SCALE: 3/4" = 1'-0"

TRUE NORTH

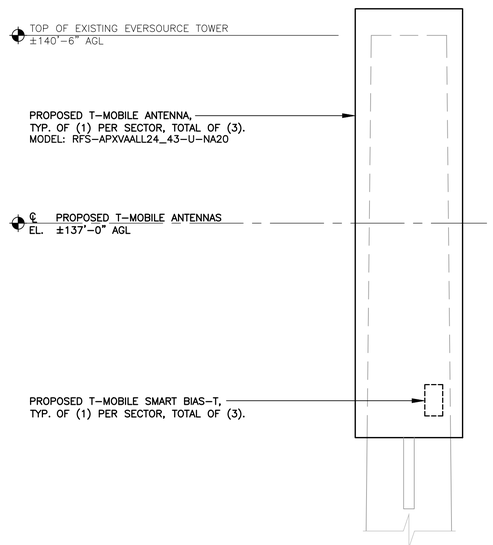


2 / C-4 **ANTENNA ELEVATION - EXISTING**
SCALE: 3/4" = 1'-0"



1A / C-4 **ANTENNA MOUNTING CONFIGURATION PLAN - PROPOSED**
SCALE: 3/4" = 1'-0"

TRUE NORTH



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

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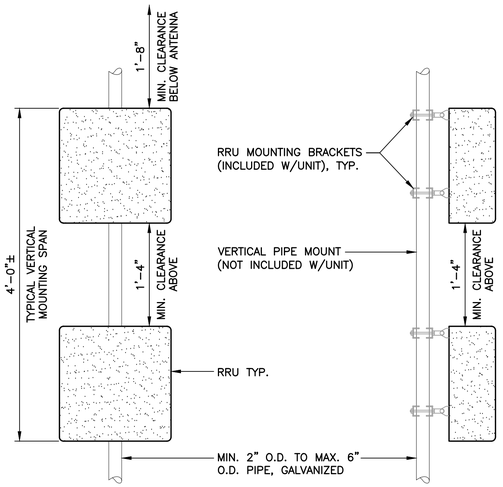
ANTENNA PLANS AND ELEVATIONS

C-4

Sheet No. 6 of 9



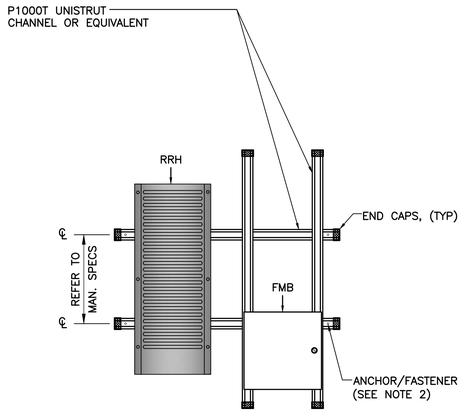
FRONT ELEVATION SIDE ELEVATION

NOTES: (POLE MOUNTING)

1. T–MOBILE SHALL SUPPLY RRU, AND RRU POLE–MOUNTING BRACKET. CONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRU POLE–MOUNTING BRACKET.
2. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

1 C–5 TYPICAL RRU MOUNTING DETAIL

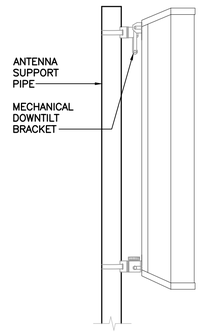
SCALE: NOT TO SCALE



FRONT ELEVATION

NOTES: (UNISTRUT MOUNTING)

1. INSTALL A MINIMUM OF (2) ANCHORS PER UNISTRUT (± 16"o/c MIN).
2. MOUNT RRU TO UNISTRUT WITH 3/8"ø UNISTRUT BOLTING HARDWARE AND SPRING NUTS. TYPICAL FOUR PER BRACKET.
3. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.



SIDE

APXVAALL24_43-U-NA20

ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: RFS MODEL: APXVAALL24_43–U–NA20	95.9"L x 24"W x 8.5"D	±122.8 LBS.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH T–MOBILE CONSTRUCTION MANAGER PRIOR TO ORDERING.		

2 C–5 PROPOSED ANTENNA DETAIL

SCALE: NOT TO SCALE

RADIO 4449 B71+B85

RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RADIO 4449 B71+B85	14.9"L x 13.2"W x 5.4"D	±74 LBS.	BEHIND ANT.: 8" MIN. BELOW ANT.: 20" MIN. BELOW RRU: 16" MIN.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH T–MOBILE CONSTRUCTION MANAGER PRIOR TO ORDERING.			

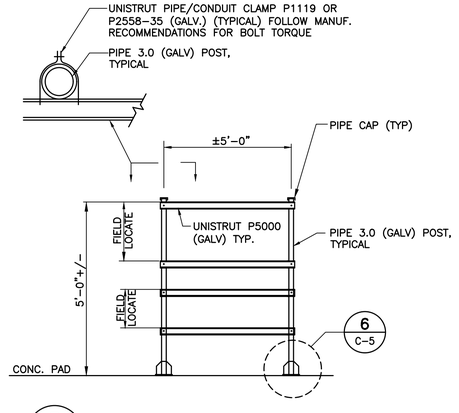
3 C–5 PROPOSED RRU DETAIL

SCALE: NOT TO SCALE

ANDREW SMART BIAS-T		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: COMMSCOPE MODEL: ATSBT–TOP–FF–4G	5.63"L x 3.7"W x 2"D	±1.7 LBS.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH T–MOBILE CONSTRUCTION MANAGER PRIOR TO ORDERING.		

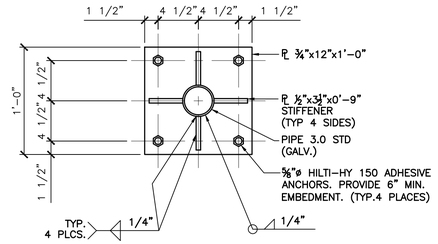
4 C–5 PROPOSED BIAS-T DETAIL

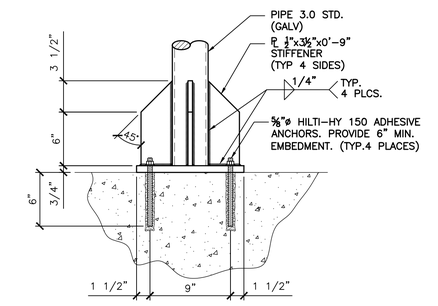
SCALE: NOT TO SCALE



5 C–5 EQUIPMENT MOUNTING FRAME DETAIL

NOT TO SCALE





6 C–5 FRAME TO CONCRETE CONNECTION DETAIL

NOT TO SCALE

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TYPICAL EQUIPMENT DETAILS

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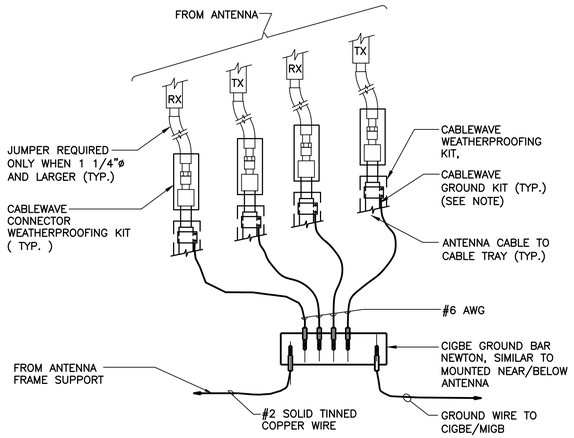
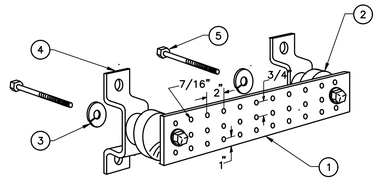


NOTES:

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

1 E-1 CONNECTION OF GROUND WIRES TO GROUND BAR

SCALE: NOT TO SCALE

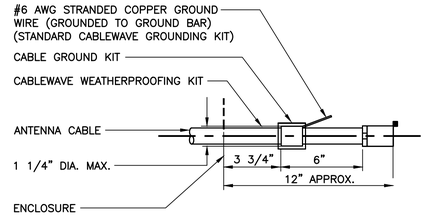


NOTES

1. TINNED COPPER GROUND BAR, 1/4" x 4" x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061–4.
3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015–8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A–6056.
5. 5/8–11 x 1" STAINLESS STEEL TRUSS SPANNER MACHINE SCREWS.

2 E-1 GROUND BAR DETAIL

SCALE: NOT TO SCALE

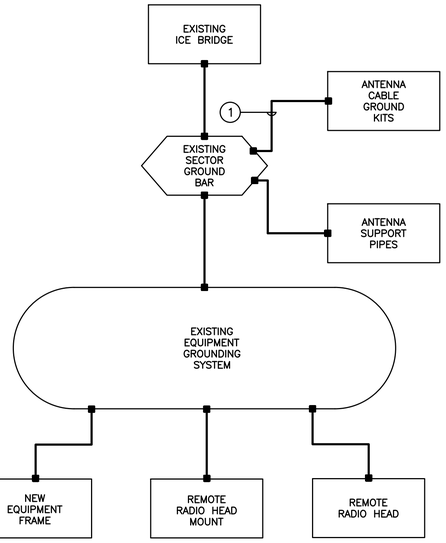


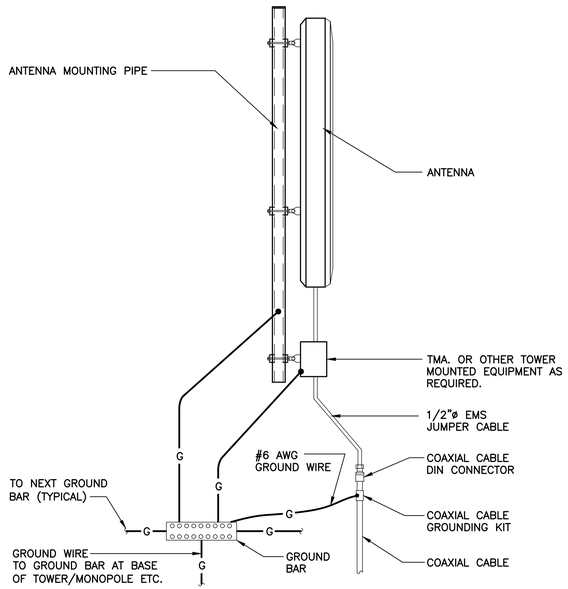
NOTES:

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

3 E-1 ANTENNA CABLE GROUNDING DETAIL

SCALE: NOT TO SCALE

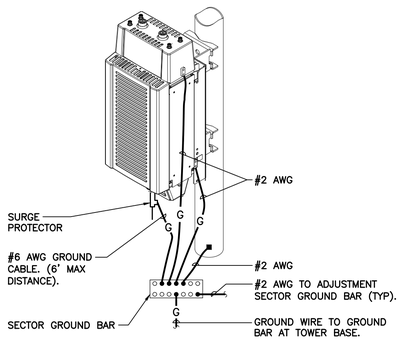




4 E-1 TYPICAL ANTENNA GROUNDING DETAIL

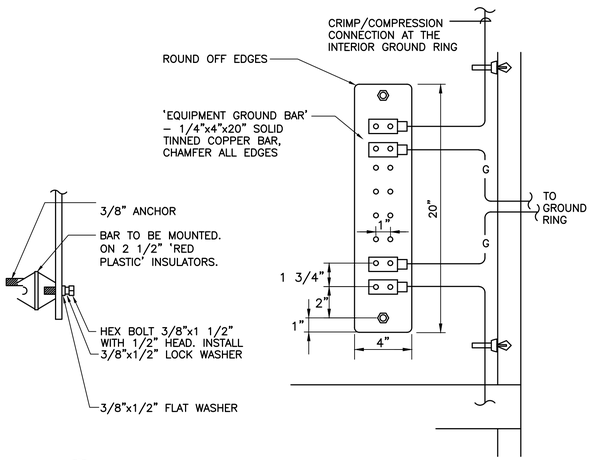
SCALE: NOT TO SCALE

EACH RRH CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:
1. AT TOP OF THE CABINET
2. AT RIGHT SIDE OF THE CABINET.



5 E-1 RRH POLE MOUNT GROUNDING

SCALE: NOT TO SCALE



6 E-1 EQUIPMENT GROUND BAR DETAIL

SCALE: NOT TO SCALE

GROUNDING SCHEMATIC NOTES

1. #6 AWG

GENERAL NOTES:

1. ALL SURGE SUPPRESSION EQUIPMENT SHALL BE BONDED TO GROUND PER MANUFACTURER'S SPECIFICATIONS
2. UNLESS OTHERWISE NOTED OR REQUIRED BY CODE, GROUND CONDUCTORS SHOWN SHALL BE #2 AWG (SOLID TINNED BCW – EXTERIOR; STRANDED GREEN INSULATED – INTERIOR).
3. BOND CABLE TRAY SECTIONS TOGETHER WITH #6 AWG STRANDED GREEN INSULATED JUMPERS.
4. ALL SECTOR GROUND BARS SHALL BE BONDED TOGETHER WITH #2 AWG SOLID TINNED BCW.
5. BOND ALL EQUIPMENT CABINETS AND BATTERY CABINETS TO GROUND PER MANUFACTURER'S SPECIFICATIONS.
6. REFER TO ALL ELECTRICAL AND GROUNDING DETAILS.
7. COORDINATE ALL TOWER MOUNTED EQUIPMENT WITH OWNER.
8. ALL TOWER MOUNTED AMPLIFIERS AND ASSOCIATED EQUIPMENT SHALL BE BONDED TO THE SECTOR GROUND BAR PER MANUFACTURER'S SPECIFICATIONS.
9. ALL GROUNDING SHALL BE IN ACCORDANCE WITH NEC AND OWNER'S REQUIREMENTS.

7 E-1 ELECTRICAL SCHEMATIC DIAGRAM

SCALE: NOT TO SCALE

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TYPICAL ELECTRICAL DETAILS

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ELECTRICAL SPECIFICATIONS

SECTION 16010

1.01. GENERAL REQUIREMENTS

A. 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.

B. THE ELECTRICAL CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH OWNERS REPRESENTATIVE, DESIGN ENGINEER AND OTHER AUTHORITIES HAVING JURISDICTION OF TRADES.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES THAT MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR THE SCHEDULING OF ALL INSPECTIONS THAT MAY BE REQUIRED BY THE LOCAL AUTHORITY.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE BUILDING OWNER FOR NEW AND/OR DEMOLITION WORK INVOLVED.

E. NO MATERIAL OTHER THAN THAT CONTAINED IN THE "LATEST LIST OF ELECTRICAL FITTINGS" APPROVED BY THE UNDERWRITERS' LABORATORIES, SHALL BE USED IN ANY PART OF THE WORK. ALL MATERIAL FOR WHICH LABEL SERVICE HAS BEEN ESTABLISHED SHALL BEAR THE U.L. LABEL.

F. 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.

G. 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.

H. THE ELECTRICAL CONTRACTOR SHALL SUPPLY THREE (3) COMPLETE SETS OF APPROVED DRAWINGS, ENGINEERING DATA SHEETS, MAINTENANCE AND OPERATING INSTRUCTION MANUALS FOR ALL SYSTEMS AND THEIR RESPECTIVE EQUIPMENT. THESE MANUALS SHALL BE INSERTED IN VINYL COVERED 3-RING BINDERS AND TURNED OVER TO OWNER'S REPRESENTATIVE ONE (1) WEEK PRIOR TO FINAL PUNCH LIST.

I. ALL WORK SHALL BE INSTALLED IN A NEAT AND WORKMAN LIKE MANNER AND WILL BE SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE.

J. ALL EQUIPMENT AND MATERIALS TO BE INSTALLED SHALL BE NEW, UNLESS OTHERWISE NOTED.

K. BEFORE FINAL PAYMENT, THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF PRINTS (AS-BUILTS), LEGIBLY MARKED IN RED PENCIL TO SHOW ALL CHANGES FROM THE ORIGINAL PLANS.

L. PROVIDE TEMPORARY POWER AND LIGHTING IN WORK AREAS AS REQUIRED.

M. SHOP DRAWINGS:

1. CONTRACTOR SHALL SUBMIT SIX (6) COPIES OF SHOP DRAWINGS ON ALL EQUIPMENT AND MATERIALS PROPOSED FOR USE ON THIS PROJECT, GIVING ALL DETAILS, WHICH INCLUDE DIMENSIONS, CAPACITIES, ETC.

2. CONTRACTOR SHALL SUBMIT SIX (6) COPIES OF ALL TEST REPORTS CALLED FOR IN THE SPECIFICATIONS AND DRAWINGS.

N. ENTIRE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH OWNER'S SPECIFICATIONS, AND REQUIREMENTS OF ALL LOCAL AUTHORITIES HAVING JURISDICTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH APPROPRIATE INDIVIDUALS TO OBTAIN ALL SUCH SPECIFICATIONS AND REQUIREMENTS. NOTHING CONTAINED IN, OR OMITTED FROM, THESE DOCUMENTS SHALL RELIEVE CONTRACTOR FROM THIS OBLIGATION.

SECTION 16111

1.01. CONDUIT

A. MINIMUM CONDUIT SIZE FOR BRANCH CIRCUITS, LOW VOLTAGE CONTROL AND ALARM CIRCUITS SHALL BE 3/4". CONDUITS SHALL BE PROPERLY FASTENED AS REQUIRED BY THE N.E.C.

B. THE INTERIOR OF RACEWAYS/ENCLOSURES INSTALLED UNDERGROUND SHALL BE CONSIDERED TO BE WET LOCATION, INSULATED CONDUCTORS SHALL BE LISTED FOR USE IN WET LOCATIONS. PROVIDE WEATHERPROOF CONSTRUCTION IN WET LOCATIONS.

C. CONDUIT INSTALLED UNDERGROUND SHALL BE INSTALLED TO MEET MINIMUM COVER REQUIREMENTS OF TABLE 300.5.

D. PROVIDE RIGID GALVANIZED STEEL CONDUIT (RMC) FOR THE FIRST 10 FOOT SECTION WHEN LEAVING A BUILDING OR SECTIONS PASSING THROUGH FLOOR SLABS

E. ONLY LISTED PVC CONDUIT AND FITTINGS ARE PERMITTED FOR THE INSTALLATION OF ELECTRICAL CONDUCTORS, SUITABLE FOR UNDERGROUND APPLICATIONS.

CONDUIT SCHEDULE SECTION 16111

CONDUIT TYPE	NEC REFERENCE	APPLICATION	MIN. BURIAL DEPTH (PER NEC TABLE 300.5) [2,3]
EMT	ARTICLE 358	INTERIOR CIRCUITING, EQUIPMENT ROOMS, SHELTERS	N/A
RMC, RIGID GALV. STEEL	ARTICLE 344, 300.5, 300.50	ALL INTERIOR/ EXTERIOR CIRCUITING, ALL UNDERGROUND INSTALLATIONS.	6 INCHES
PVC, SCHEDULE 40	ARTICLE 352, 300.5, 300.50	INTERIOR/ EXTERIOR CIRCUITING AND GROUNDING SYSTEMS, UNDERGROUND INSTALLATIONS, WHERE NOT SUBJECT TO PHYSICAL DAMAGE. [1]	18 INCHES
PVC, SCHEDULE 80	ARTICLE 352, 300.5, 300.50	INTERIOR/ EXTERIOR CIRCUITING AND GROUNDING SYSTEMS, UNDERGROUND INSTALLATIONS, WHERE SUBJECT TO PHYSICAL DAMAGE. [1]	18 INCHES
LIQUID TIGHT FLEX. METAL	ARTICLE 350	SHORT LENGTHS (MAX. 3FT.) WIRING TO VIBRATING EQUIPMENT IN WET LOCATIONS.	SEE SECTION 16450
FLEX. METAL	ARTICLE 348	SHORT LENGTHS (MAX. 3FT.) WIRING TO VIBRATING EQUIPMENT IN WET LOCATIONS.	N/A

[1] PHYSICAL DAMAGE IS SUBJECT TO THE AUTHORITY HAVING JURISDICTION.

[2] UNDERGROUND CONDUIT INSTALLED UNDER ROADS, HIGHWAYS, DRIVEWAYS, PARKING LOTS SHALL HAVE MINIMUM DEPTH OF 24".

[3] WHERE SOLID ROCK PREVENTS COMPLIANCE WITH MINIMUM COVER DEPTHS, WIRING SHALL BE INSTALLED IN PERMITTED RACEWAY FOR DIRECT BURIAL. THE RACEWAY SHALL BE COVERED BY A MINIMUM OF 2" OF CONCRETE EXTENDING DOWN TO ROCK.

SECTION 16123

1.01. CONDUCTORS

A. 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:

	120/208/240V	277/480V
LINE	COLOR	COLOR
A	BLACK	BROWN
B	RED	ORANGE
C	BLUE	YELLOW
N	CONTINUOUS WHITE	GREY
G	CONTINUOUS GREEN	GREEN WITH YELLOW STRIPE

B. MINIMUM BENDING RADIUS FOR CONDUCTORS SHALL BE 12 TIMES THE LARGEST DIAMETER OF BRANCH CIRCUIT CONDUCTOR.

SECTION 16130

1.01. BOXES

A. FURNISH AND INSTALL OUTLET BOXES FOR ALL DEVICES, SWITCHES, RECEPTACLES, ETC.. BOXES TO BE ZINC COATED STEEL.

B. FURNISH AND INSTALL PULL BOXES IN MAIN FEEDERS RUNS WHERE REQUIRED. PULL BOXES SHALL BE GALVANIZED STEEL WITH SCREW REMOVABLE COVERS, SIZE AND QUANTITY AS REQUIRED. PROVIDE WEATHERPROOF CONSTRUCTION IN WET LOCATIONS.

SECTION 16140

1.01. WIRING DEVICES

A. THE FOLLOWING LIST IS PROVIDED TO CONVEY THE QUALITY AND RATING OF WIRING DEVICES WHICH ARE TO BE INSTALLED. A COMPLETE LIST OF ALL DEVICES MUST BE SUBMITTED BEFORE INSTALLATION FOR APPROVAL.

1. 15 MINUTE TIMER SWITCH - INTERMATIC #FF15M (INTERIOR LIGHTS)

2. DUPLEX RECEPTACLE - P&S #2095 (GFCI) SPECIFICATION GRADE

3. SINGLE POLE SWITCH - P&S #CSB20AC2 (20A-120V HARD USE) SPECIFICATION GRADE

4. DUPLEX RECEPTACLE - P&S #5362 (20A-120V HARD USE) SPECIFICATION GRADE

B. PLATES - ALL PLATES USED SHALL BE CORROSION RESISTANT TYPE 304 STAINLESS STEEL. PLATES SHALL BE FROM SAME MANUFACTURER AS SWITCHES AND RECEPTACLES. PROVIDE WEATHERPROOF HOUSING FOR DEVICES LOCATED IN WET LOCATIONS.

C. OTHER MANUFACTURERS OF THE SWITCHES, RECEPTACLES AND PLATES MAY BE SUBMITTED FOR APPROVAL BY THE ENGINEER.

SECTION 16170

1.01. DISCONNECT SWITCHES

A. FUSIBLE AND NON-FUSIBLE, 600V, HEAVY DUTY DISCONNECT SWITCHES SHALL BE AS MANUFACTURED BY SQUARE "D". PROVIDE FUSES AS CALLED FOR ON THE CONTRACT DRAWINGS. AMPERE RATING SHALL BE CONSISTENT WITH LOAD BEING SERVED. DISCONNECT SWITCH COVER SHALL BE MECHANICALLY INTERLOCKED TO PREVENT COVER FROM OPENING WHEN THE SWITCH IS IN THE "ON" POSITION. EXTERIOR APPLICATIONS SHALL BE NEMA 3R CONSTRUCTION WITH PADLOCK FEATURE.

SECTION 16190

1.01. SEISMIC RESTRAINT

A. ALL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH ZONE 2 SEISMIC REQUIREMENTS.

SECTION 16195

1.01. LABELING AND IDENTIFICATION NOMENCLATURE FOR ELECTRICAL EQUIPMENT

A. CONTRACTOR SHALL FURNISH AND INSTALL NON-METALLIC ENGRAVED BACK-LIT NAMEPLATES ON ALL PANELS AND MAJOR ITEMS OF ELECTRICAL EQUIPMENT.

B. LETTERS TO BE WHITE ON BLACK BACKGROUND WITH LETTERS 1-1/2 INCH HIGH WITH 1/4 INCH MARGIN.

C. IDENTIFICATION NOMENCLATURE SHALL BE IN ACCORDANCE WITH OWNER'S STANDARDS.

SECTION 16450

1.01. GROUNDING

A. 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.

B. GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS PER LOCAL INSPECTOR HAVING JURISDICTION.

C. GROUNDING OF PANELBOARDS:

1. PANELBOARD SHALL BE GROUNDED BY TERMINATING THE PANELBOARD FEEDER'S EQUIPMENT GROUND CONDUCTOR TO THE EQUIPMENT GROUND BAR KIT(S) LUGGED TO THE CABINET. ENSURE THAT THE SURFACE BETWEEN THE KIT AND CABINET ARE BARE METAL TO BARE METAL. PRIME AND PAINT OVER TO PREVENT CORROSION.

2. CONDUIT(S) TERMINATING INTO THE PANELBOARD SHALL HAVE GROUNDING TYPE BUSHINGS. THE BUSHINGS SHALL BE BONDED TOGETHER WITH BARE #10 AWG COPPER CONDUCTOR WHICH IN TURN IS TERMINATED INTO THE PANELBOARD'S EQUIPMENT GROUND BAR KIT(S).

D. EQUIPMENT GROUNDING CONDUCTOR:

1. EACH EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. ARTICLE 250-122.

2. THE MINIMUM SIZE OF EQUIPMENT GROUND CONDUCTOR SHALL BE #12 AWG COPPER.

3. EACH FEEDER OR BRANCH CIRCUIT SHALL HAVE EQUIPMENT GROUND CONDUCTOR(S) INSTALLED IN THE SAME RACEWAY(S).

E. CELLULAR GROUNDING SYSTEM:

CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE MAXIMUM AC RESISTANCE TO GROUND OF 10 OHM BETWEEN ANY POINT ON THE GROUNDING SYSTEM AS MEASURED BY 3-POINT GROUNDING TEST. (REFER TO SECTION 16960).

PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUND BARS

2. EXTERIOR GROUNDING (WHERE REQUIRED DUE TO MEASURED AC RESISTANCE GREATER THAN SPECIFIED).

3. ANTENNA GROUND CONNECTIONS AND PLATES.

F. CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM BUT PRIOR TO CONCEALMENT/BURIAL OF SAME, SHALL NOTIFY OWNER'S PROJECT ENGINEER WHO WILL HAVE A DESIGN ENGINEER VISIT SITE AND MAKE A VISUAL INSPECTION OF THE GROUNDING GRID AND CONNECTIONS OF THE SYSTEM.

G. ALL EQUIPMENT SHALL BE BONDED TO GROUND AS REQUIRED BY N.E.C., MFG. SPECIFICATIONS, AND OWNER'S SPECIFICATIONS.

SECTION 16470

1.01. DISTRIBUTION EQUIPMENT

A. REFER TO CONTRACT DRAWINGS FOR DETAILS AND SCHEDULES.

SECTION 16477

1.01. FUSES

A. FUSES SHALL BE NONRENEWABLE TYPE AS MANUFACTURED BY "BUSSMAN" OR APPROVED EQUAL. FUSES RATED TO 1/10 AMPERE UP TO 600 AMPERES SHALL BE EQUIVALENT TO BUSSMAN TYPE LPN-RK (250V) UL CLASS RK1, LOW PEAK, DUAL ELEMENT, TIME-DELAY FUSES. FUSES SHALL HAVE SEPARATE SHORT CIRCUIT AND OVERLOAD ELEMENTS AND HAVE AN INTERRUPTING RATING OF 200 KAIC. UPON COMPLETION OF WORK, PROVIDE ONE SPARE SET OF FUSES FOR EACH TYPE INSTALLED.

SECTION 16960

1.01. 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: THERMAL OVERLOAD AND MAGNETIC TRIP TEST, AND CABLE INSULATION TEST FOR ALL CIRCUIT BREAKERS RATED 100 AMPS OR GREATER.

TEST 2: 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. THESE TESTS SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF OWNER'S CONSTRUCTION REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE CONSTRUCTION REPRESENTATIVE AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.

C. THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT ELECTRICAL TESTING FIRM'S 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.

SECTION 16961

1.01. TESTS BY CONTRACTOR

A. ALL TESTS AS REQUIRED UPON COMPLETION OF WORK, SHALL BE MADE BY THIS CONTRACTOR. THESE SHALL BE CONTINUITY AND INSULATION TESTS; TEST TO DETERMINE THE QUALITY OF MATERIALS, ETC. AND SHALL BE MADE IN ACCORDANCE WITH N.E.C. RECOMMENDATIONS. ALL FEEDERS AND BRANCH CIRCUIT WIRING (EXCEPT CLASS 2 SIGNAL CIRCUITS) MUST BE TESTED FREE FROM SHORT CIRCUIT AND GROUND FAULT CONDITIONS AT 500V IN A REASONABLY DRY AMBIENT OF APPROXIMATELY 70 DEGREES F.

B. CONTRACTOR SHALL PERFORM LOAD PHASE BALANCING TESTS. CIRCUITS SHALL BE SO CONNECTED TO THE PANELBOARDS SUCH THAT THE NEW LOAD IS DISTRIBUTED AS EQUALLY AS POSSIBLE BETWEEN EACH LOAD AND NEUTRAL. 10% SHALL BE CONSIDERED AS A REASONABLE AND ACCEPTABLE ALLOWANCE. BRANCH CIRCUITS SHALL BE BALANCED ON THEIR OWN PANELBOARDS; FEEDER LOADS SHALL, IN TURN, BE BALANCED ON THE SERVICE EQUIPMENT. REASONABLE LOAD TEST SHALL BE ARRANGED TO VERIFY LOAD BALANCE IF REQUESTED BY THE ENGINEER.

C. ALL TESTS, UPON REQUEST, SHALL BE REPEATED IN THE PRESENCE OF OWNER'S REPRESENTATIVE. ALL TESTS SHALL BE DOCUMENTED AND TURNED OVER TO OWNER. OWNER SHALL HAVE THE AUTHORITY TO STOP ANY OF THE WORK NOT BEING PROPERLY INSTALLED. ALL SUCH DETECTED WORK SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL EXPENSE TO THE OWNER AND THE TESTS SHALL BE REPEATED.

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ELECTRICAL SPECIFICATIONS

E-2

Sheet No. 9 of 9

Exhibit D

CENTEK engineering

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Structural Analysis of PCS Structure and Utility Pole

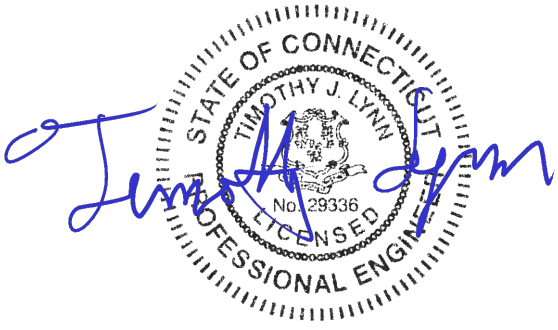
T-Mobile Site Ref: CT11602C

Eversource Structure No. 24032
140.5' Electric Transmission Pole

945 North Street
Milford, CT

CENTEK Project No. 19066.05

Date: November 6, 2019



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Introduction

The purpose of this report is to analyze the existing antenna mast and 140.5' Eversource pole located at 945 North St., Milford, CT for the proposed antenna and equipment upgrade by T-Mobile.

The existing and proposed loads consist of the following:

- T-MOBILE (Existing to Remain):
  Coax Cables: Twelve (12) 1-5/8" ∅ coax cables mounted to the outside of the existing pole.
- T-MOBILE (Existing to Remove):
  Antennas: Three (3) RFS APX16DWV-16DWVS-E-A20 panel antennas and six (6) TMA's flush mounted with a RAD center elevation of 137-ft above tower base.
- **T-MOBILE (Proposed):**
  Antennas: Three (3) RFS APXVAARR24_43-U-NA20 panel antennas and three (3) Bias Tees flush mounted with a RAD center elevation of 137-ft above tower base.
  Coax Cables: Twelve (12) 1-5/8" ∅ coax cables mounted to the outside of the existing pole.

Primary assumptions used in the analysis

- ASCE Manual No. 48-11, "Design of Steel Transmission Pole Structures", defines steel stresses for evaluation of the utility pole.
- All utility tower members are adequately protected to prevent corrosion of steel members.
- All proposed antenna mounts are modeled as listed above.
- All coaxial cable will be installed within the antenna mast unless specified otherwise.
- Antenna mast will be properly installed and maintained.
- No residual stresses exist due to incorrect pole erection.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds conform to the requirements of AWS D1.1.
- Antenna mast and utility 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 existing utility tower structure was completed using the current version of PLS-Tower computer program licensed to CENTEK Engineering, Inc. The NESC program contains a library of all AISC angle shapes and corresponding section properties are computed and applied directly within the program. The program's Steel Code Check option was also utilized.

The existing 140.5-ft tall transmission pole was analyzed for its ability to resist loads prescribed by the NESC standard. Maximum usage for the tower was calculated considering the additional forces from the antenna mast and associated appurtenances. Section 5 of this report details these gravity and lateral wind loads.

Design Basis

Our analysis was performed in accordance with ASCE 48-11, "Design of Steel Transmission Pole Structures", NESC C2-2017 and Eversource Design Criteria.

- UTILITY POLE ANALYSIS

  The purpose of this analysis is to determine the adequacy of the existing utility structure to support the proposed antenna loads. The loading and design requirements were analyzed in accordance with the EVERSOURCE Design Criteria Table, NESC C2-2017 ~ Construction Grade B, and ASCE Manual No. 48-11, "Design of Steel Transmission Pole Structures".

  Load cases considered:

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

  Load Case 2: NESC Extreme
  Wind Speed..... 110 mph (1)
  Radial Ice Thickness..... 0.0"

  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: NESC C2-2017, Section25, Rule 250C: Extreme Wind Loading, 1.25 x Gust Response Factor (wind speed: 3-second gust)

R e s u l t s

- UTILITY STRUCTURE

  This analysis finds that the subject utility structure is adequate to support the proposed T-Mobile equipment. The structure stresses meet the requirements set forth by the ASCE Manual No. 48-11, "Design of Steel Transmission Pole Structures", for the applied NESC Heavy and NESC Extreme load cases. The detailed analysis results are provided in Section 6 of this report. The analysis results are summarized as follows:

  A maximum usage of **48.44%** 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	Component	Stress Ratio (percentage of capacity)	Result
Tube Number 6	0' -16.5'	48.44%	**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	41.97%	**PASS**

- FOUNDATION AND ANCHORS

  The existing foundation consists of an 8-ft ∅ x 32-ft long reinforced concrete cassion. The base of the tower is connected to the foundation by means of (32) 2.25"∅, ASTM A615 Gr. 75 anchor bolts embedded approximately 8-ft into the concrete foundation structure.

  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 transmission pole based on NESC/Eversource prescribed loads.

Load Case	Transverse	Axial	Overturning Moment
NESC Heavy Wind	27.63 kips	111.66 kips	2370.58 ft-kips
NESC Extreme Wind	61.93 kips	63.48 kips	5243.78 ft-kips
NESC Extreme Ice w/ Wind	21.05 kips	87.84 kips	1846.70 ft-kips
NESC Heavy Wind w/ Broken Wire	28.79 kips	102.15 kips	3027.61 ft-kips

ANCHOR BOLTS:

The anchor bolts were found to be within allowable limits.

Tower Component	Design Limit	Stress Ratio (percentage of capacity)	Result
Anchor Bolts	Tension	47.63%	**PASS**

FOUNDATION:

The foundation was found to be within allowable limits.

Reaction Type	Maximum Allowable Base Reactions (2)	Proposed Base Reactions (1)	Result
Transverse	107.7 kips	68.1 kips	**PASS**
Axial	200.0 kips	122.8 kips	**PASS**
Overturning Moment	10,334.0 ft-kips	5768.2 ft-kips	**PASS**

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

(2) Maximum allowable base reactions provided by Eversource dated 4/12/10 included in Section 7 of this report.

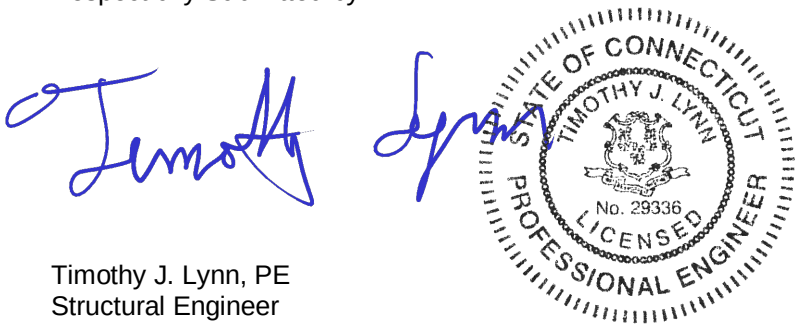
C o n c l u s i o n

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

The analysis is based, in part on the information provided to this office by Eversource and T-Mobile. If the existing conditions are different than the information in this report, CENTEK engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer

Prepared by:

Fernando J. Palacios
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 48-11
    - NESC 2017
    - 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

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

Introduction

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

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

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

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

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

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

Note 1: Prepared from documentation provide from Northeast Utilities.

P C S M a s t

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

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

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

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

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

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

Attachment A
Eversource Design Criteria

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

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

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

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

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

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

c) Electric Transmission Structure

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

ii) Shape Factor Multiplier:

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

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

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

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

PLS-CADD Version 10.40x64 10:53:39 AM Tuesday, April 06, 2010
Northeast Utilities System
Project Name: 'c:\cps\pls-cadd\prj-dev\xyz files\peaserd_eastdevon_final_pls.DON'
Line Title: '345-kV/115-kV 3827, 1640, 1685, 1776, 1497, & 1350'

Criteria notes:
  NESC Heavy per Rule 250B, Page 161
  Extreme Wind Loading per Rule 250C, Page 161, Coefficients and Gust Response Factors per Equations in Tables 250-2, 250-3
  90 MPH Basic Wind Speed, 3 second Gust Wind Speed, Figure 250-2 Beginning on Page 166
  Grade B Construction "Method A" per Table 253-1, Page 173 and Table 261-1A, Page 182
  Tension Limits per Rule 261H1, Page 179
  Insulator Strength Reduction per Rule 277, Page 188 Should be applied to Insulator Strengths when Modeling Insulators
  2002 NESC C2-2002 Criteria File for PLS-CADD Created December 21, 2001
  Structure 24277 (just North of Durham Rd) moved 50` south per homeowner request. Structure height increased 5 ft. to maintain ground clearance.
  1-27-06 Moved structure 24257 100` NE to accomodate homeowner request.
  Homeowner request - Structures 24102 & 3915 were moved 100 ft. North for aesthetic purposes.
  Homeowner request - Structure 3910 moved 90 ft. South out of line of sight.
  Homeowner requests - Neighborhoods of Salem Rd, Country Ct., & Brookwood Ct. requested 135` typ. split phase.
  do not change these areas structure heights.
  Homeowner request - Structures 24098 & 3911 moved South to property line.
  Structure 3808 raised 10 ft. to meet road clearance requirements
  12-5-06: Structure 3807 moved 15 ft. South to avoid existing 3808 guy wires.
  3848: Moved 5 ft. South towards 3847 per field request, too close to rock wall and distribution lines.
  3848: Moved 5 ft. North back to original spot per email from Jason Cabral. Rock wall will be moved, PAR said there should be no
  impact to adjacent distribution lines.
  3807: (1-24-07) Moved approx. 20 ft. southwest to get structure away from existing 1640 guy locations to accomodate construction.
  3849: (1-24-07) Moved approx. 14 ft. southwest to get structure away from existing 1640 guy locations to accomodate construction.
  3888: (1-24-07) Moved approx. 20 ft. north to get structure away from existing 1640 guy locations to accomodate construction.
  5-22-07 : Moved structure 24043 20 ft. northeast per homeowner request. This was a field call from Tim Arvin.
  6-11-07: Moved structure 3911 5 ft. South to avoid underground utilities to two residences.
  10-17-07: Moved structure 24002 46.5 ft. north per field request.
  10-24-07: Moved structure 24045 11.75 ft. east per field request.
  1-4-08: Moved structure 24091 17 ft. south to avoid underground storm water drainage pipe.

Weather Cases

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
1	NESC Heavy	0.00256	40	4.0	0.50	57.000	0.00	0	0	1.00	0.30	None	1
2	0F 4psf w/ ice	0.00256	40	4.0	0.50	57.000	0.00	0	0	1.00	0.00	None	1
3	0F 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	0 Deg F	0.00256	0	0.0	0.00	0.000	0.00	0	0	1.00	0.00	None	1
15	50 Deg F	0.00256	0	0.0	0.00	0.000	0.00	50	50	1.00	0.00	None	1
16	60 Deg F	0.00256	0	0.0	0.00	0.000	0.00	60	60	1.00	0.00	None	1
17	120 Deg F	0.00256	0	0.0	0.00	0.000	0.00	120	120	1.00	0.00	None	1
18	NU Ice	0.00256	0	0.0	1.00	57.000	0.00	0	0	1.00	0.00	None	1
19	NU Blowout	0.00256	60	9.2	0.00	0.000	0.00	60	60	1.00	0.00	None	1
20	Construction	0.00256	30	2.3	0.00	0.000	0.00	30	30	1.00	0.00	None	1
21	UI Ice	0.00256	56	8.0	0.50	57.000	0.00	0	0	1.00	0.00	None	1
22	NU Extreme Wind 90mph	0.00256	90	20.7	0.00	0.000	0.00	60	60	1.00	0.00	None	1
23	9psf Wind 60 deg F	0.00256	59	9.0	0.00	0.000	0.00	60	60	1.00	0.00	None	1
24	Tower High Wind	0.00256	80	16.4	0.00	0.000	0.00	60	60	1.00	0.00	None	1
25	UI Heavy Ice (Tower)	0.00256	0	0.0	1.50	57.000	0.00	32	32	1.00	0.00	None	1
26	ADSS Survey Temp	0.00256	0	0.0	0.00	0.000	0.00	85	85	1.00	0.00	None	1
27	ADSS 90 Deg Case	0.00256	0	0.0	0.00	0.000	0.00	90	90	1.00	0.00	None	1

Structure Loads Criteria

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 Load Model	Struct. Ice Thick (in)	Struct. Ice Density (lbs/ft^3)	Pole Tip Deflection Check	Pole Tip Deflect Limit % or (ft)
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	18	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	24	Tower High Wind	Load RS	NA+		1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
13	24	Tower High Wind	Load RS	NA-		1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
14	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
15	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
16	1	Cond 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
17	1	Cond 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
18	1	Deadend Tower 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
19	1	Deadend Tower 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	25	UI Havey Ice Tow	Load RS	NA+		1.10	1.10	1.10	1.10	1.00	Pre V7 Standard	0.00	0.000	No Limit	0.00
21	25	UI Havey Ice Tow	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	1	Broken SW & Cond	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	1	Broken SW & Cond	Load RS	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 Types On Which To Apply	Command 1 Wire(s) Set: Phase: Side:	Command 1 Value (lbs) or %	Command 2 Wire(s) Set: Phase: Side:	Command 2 Value (lbs) or %
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	18	NU Ice	All				
12	24	Tower High Wind	All				
13	24	Tower High Wind	All				
14	1	Broken SW NA+	No DeadEnd Sets	1:1:Ahead # Broken Subconductors	1		
15	1	Broken SW NA-	No DeadEnd Sets	1:1:Ahead # Broken Subconductors	1		
16	1	Cond SW NA+	No DeadEnd Sets	2:1:Ahead # Broken Subconductors	1		
17	1	Cond SW NA-	No DeadEnd Sets	2:1:Ahead # Broken Subconductors	1		
18	1	Deadend Tower NA	All Sets DeadEnd	Ahead Spans # Broken Subconductors	1		
19	1	Deadend Tower NA	All Sets DeadEnd	Ahead Spans # Broken Subconductors	1		
20	25	UI Havey Ice Tow	All				
21	25	UI Havey Ice Tow	All				
22	1	Broken SW & Cond	No DeadEnd Sets	1:1:Ahead # Broken Subconductors	1	2:1:Ahead # Broken Subconductors	1
23	1	Broken SW & Cond	No DeadEnd Sets	1:1:Ahead # Broken Subconductors	1	2:1:Ahead # Broken Subconductors	1

Span and Wire Summary For Structure Range

Span azimuth is measured clockwise from structure transverse axis (0=transverse, 90=back, 270=ahead)
Azimuth of structure transverse axis is 147.1646 (deg) measured clockwise from North.

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)
24032	33-cdcsp-02-ugc.140	1	1	NESC Heavy NA+	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	1.35	1.70	10142	brugg_86ay62acs-2c_345_tight.wir	735	270	1.35	1.70	10142
24032	33-cdcsp-02-ugc.140	1	1		2	1	X1	lapwing_tight.wir	342	90	2.09	4.56	45326	lapwing_tight.wir	735	270	2.09	4.56	45325
24032	33-cdcsp-02-ugc.140	1	1		3	1	Y1	lapwing_tight.wir	342	90	2.09	4.56	45326	lapwing_tight.wir	735	270	2.09	4.56	45325
24032	33-cdcsp-02-ugc.140	1	1		4	1	Z1	lapwing_tight.wir	342	90	2.09	4.56	45326	lapwing_tight.wir	735	270	2.09	4.56	45325
24032	33-cdcsp-02-ugc.140	1	1		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	1.26	1.61	9787	19#10_alumoweld_tight.wir	735	270	1.26	1.61	9787
24032	33-cdcsp-02-ugc.140	1	1		6	1	X2	lapwing_tight.wir	342	90	2.09	4.56	45326	lapwing_tight.wir	735	270	2.09	4.56	45325
24032	33-cdcsp-02-ugc.140	1	1		7	1	Y2	lapwing_tight.wir	342	90	2.09	4.56	45326	lapwing_tight.wir	735	270	2.09	4.56	45325
24032	33-cdcsp-02-ugc.140	1	1		8	1	Z2	lapwing_tight.wir	342	90	2.09	4.56	45326	lapwing_tight.wir	735	270	2.09	4.56	45325
24032	33-cdcsp-02-ugc.140	2	1	NESC Heavy NA-	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	1.35	1.70	10142	brugg_86ay62acs-2c_345_tight.wir	735	270	1.35	1.70	10142
24032	33-cdcsp-02-ugc.140	2	1		2	1	X1	lapwing_tight.wir	342	90	2.09	4.56	45326	lapwing_tight.wir	735	270	2.09	4.56	45325
24032	33-cdcsp-02-ugc.140	2	1		3	1	Y1	lapwing_tight.wir	342	90	2.09	4.56	45326	lapwing_tight.wir	735	270	2.09	4.56	45325
24032	33-cdcsp-02-ugc.140	2	1		4	1	Z1	lapwing_tight.wir	342	90	2.09	4.56	45326	lapwing_tight.wir	735	270	2.09	4.56	45325
24032	33-cdcsp-02-ugc.140	2	1		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	1.26	1.61	9787	19#10_alumoweld_tight.wir	735	270	1.26	1.61	9787
24032	33-cdcsp-02-ugc.140	2	1		6	1	X2	lapwing_tight.wir	342	90	2.09	4.56	45326	lapwing_tight.wir	735	270	2.09	4.56	45325
24032	33-cdcsp-02-ugc.140	2	1		7	1	Y2	lapwing_tight.wir	342	90	2.09	4.56	45326	lapwing_tight.wir	735	270	2.09	4.56	45325
24032	33-cdcsp-02-ugc.140	2	1		8	1	Z2	lapwing_tight.wir	342	90	2.09	4.56	45326	lapwing_tight.wir	735	270	2.09	4.56	45325
24032	33-cdcsp-02-ugc.140	3	1	NESC Uplift NA+	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	1.35	1.13	10142	brugg_86ay62acs-2c_345_tight.wir	735	270	1.35	1.13	10142
24032	33-cdcsp-02-ugc.140	3	1		2	1	X1	lapwing_tight.wir	342	90	2.09	3.04	45326	lapwing_tight.wir	735	270	2.09	3.04	45325
24032	33-cdcsp-02-ugc.140	3	1		3	1	Y1	lapwing_tight.wir	342	90	2.09	3.04	45326	lapwing_tight.wir	735	270	2.09	3.04	45325
24032	33-cdcsp-02-ugc.140	3	1		4	1	Z1	lapwing_tight.wir	342	90	2.09	3.04	45326	lapwing_tight.wir	735	270	2.09	3.04	45325
24032	33-cdcsp-02-ugc.140	3	1		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	1.26	1.08	9787	19#10_alumoweld_tight.wir	735	270	1.26	1.08	9787
24032	33-cdcsp-02-ugc.140	3	1		6	1	X2	lapwing_tight.wir	342	90	2.09	3.04	45326	lapwing_tight.wir	735	270	2.09	3.04	45325
24032	33-cdcsp-02-ugc.140	3	1		7	1	Y2	lapwing_tight.wir	342	90	2.09	3.04	45326	lapwing_tight.wir	735	270	2.09	3.04	45325
24032	33-cdcsp-02-ugc.140	3	1		8	1	Z2	lapwing_tight.wir	342	90	2.09	3.04	45326	lapwing_tight.wir	735	270	2.09	3.04	45325
24032	33-cdcsp-02-ugc.140	4	1	NESC Uplift NA-	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	1.35	1.13	10142	brugg_86ay62acs-2c_345_tight.wir	735	270	1.35	1.13	10142
24032	33-cdcsp-02-ugc.140	4	1		2	1	X1	lapwing_tight.wir	342	90	2.09	3.04	45326	lapwing_tight.wir	735	270	2.09	3.04	45325
24032	33-cdcsp-02-ugc.140	4	1		3	1	Y1	lapwing_tight.wir	342	90	2.09	3.04	45326	lapwing_tight.wir	735	270	2.09	3.04	45325
24032	33-cdcsp-02-ugc.140	4	1		4	1	Z1	lapwing_tight.wir	342	90	2.09	3.04	45326	lapwing_tight.wir	735	270	2.09	3.04	45325
24032	33-cdcsp-02-ugc.140	4	1		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	1.26	1.08	9787	19#10_alumoweld_tight.wir	735	270	1.26	1.08	9787
24032	33-cdcsp-02-ugc.140	4	1		6	1	X2	lapwing_tight.wir	342	90	2.09	3.04	45326	lapwing_tight.wir	735	270	2.09	3.04	45325
24032	33-cdcsp-02-ugc.140	4	1		7	1	Y2	lapwing_tight.wir	342	90	2.09	3.04	45326	lapwing_tight.wir	735	270	2.09	3.04	45325
24032	33-cdcsp-02-ugc.140	4	1		8	1	Z2	lapwing_tight.wir	342	90	2.09	3.04	45326	lapwing_tight.wir	735	270	2.09	3.04	45325
24032	33-cdcsp-02-ugc.140	5	4	NESC Ext Wind NA	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	1.83	0.48	6373	brugg_86ay62acs-2c_345_tight.wir	735	270	1.83	0.48	6372
24032	33-cdcsp-02-ugc.140	5	4		2	1	X1	lapwing_tight.wir	342	90	4.43	1.97	30368	lapwing_tight.wir	735	270	4.43	1.97	30363
24032	33-cdcsp-02-ugc.140	5	4		3	1	Y1	lapwing_tight.wir	342	90	4.43	1.97	30368	lapwing_tight.wir	735	270	4.43	1.97	30363
24032	33-cdcsp-02-ugc.140	5	4		4	1	Z1	lapwing_tight.wir	342	90	4.43	1.97	30368	lapwing_tight.wir	735	270	4.43	1.97	30363
24032	33-cdcsp-02-ugc.140	5	4		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	1.50	0.49	5738	19#10_alumoweld_tight.wir	735	270	1.50	0.49	5737
24032	33-cdcsp-02-ugc.140	5	4		6	1	X2	lapwing_tight.wir	342	90	4.43	1.97	30368	lapwing_tight.wir	735	270	4.43	1.97	30363
24032	33-cdcsp-02-ugc.140	5	4		7	1	Y2	lapwing_tight.wir	342	90	4.43	1.97	30368	lapwing_tight.wir	735	270	4.43	1.97	30363
24032	33-cdcsp-02-ugc.140	5	4		8	1	Z2	lapwing_tight.wir	342	90	4.43	1.97	30368	lapwing_tight.wir	735	270	4.43	1.97	30363
24032	33-cdcsp-02-ugc.140	6	4		1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	1.83	0.48	6373	brugg_86ay62acs-2c_345_tight.wir	735	270	1.83	0.48	6372
24032	33-cdcsp-02-ugc.140	6	4		2	1	X1	lapwing_tight.wir	342	90	4.43	1.97	30368	lapwing_tight.wir	735	270	4.43	1.97	30363
24032	33-cdcsp-02-ugc.140	6	4		3	1	Y1	lapwing_tight.wir	342	90	4.43	1.97	30368	lapwing_tight.wir	735	270	4.43	1.97	30363
24032	33-cdcsp-02-ugc.140	6	4		4	1	Z1	lapwing_tight.wir	342	90	4.43	1.97	30368	lapwing_tight.wir	735	270	4.43	1.97	30363
24032	33-cdcsp-02-ugc.140	6	4		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	1.50	0.49	5738	19#10_alumoweld_tight.wir	735	270	1.50	0.49	5737
24032	33-cdcsp-02-ugc.140	6	4		6	1	X2	lapwing_tight.wir	342	90	4.43	1.97	30368	lapwing_tight.wir	735	270	4.43	1.97	30363
24032	33-cdcsp-02-ugc.140	6	4		7	1	Y2	lapwing_tight.wir	342	90	4.43	1.97	30368	lapwing_tight.wir	735	270	4.43	1.97	30363
24032	33-cdcsp-02-ugc.140	6	4		8	1	Z2	lapwing_tight.wir	342	90	4.43	1.97	30368	lapwing_tight.wir	735	270	4.43	1.97	30363
24032	33-cdcsp-02-ugc.140	7	1	NESC Ins NA+	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	0.54	1.13	6147	brugg_86ay62acs-2c_345_tight.wir	735	270	0.54	1.13	6147
24032	33-cdcsp-02-ugc.140	7	1		2	1	X1	lapwing_tight.wir	342	90	0.83	3.04	27470	lapwing_tight.wir	735	270	0.83	3.04	27470
24032	33-cdcsp-02-ugc.140	7	1		3	1	Y1	lapwing_tight.wir	342	90	0.83	3.04	27470	lapwing_tight.wir	735	270	0.83	3.04	27470
24032	33-cdcsp-02-ugc.140	7	1		4	1	Z1	lapwing_tight.wir	342	90	0.83	3.04	27470	lapwing_tight.wir	735	270	0.83	3.04	27470
24032	33-cdcsp-02-ugc.140	7	1		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	0.50	1.08	5932	19#10_alumoweld_tight.wir	735	270	0.50	1.08	5931
24032	33-cdcsp-02-ugc.140	7	1		6	1	X2	lapwing_tight.wir	342	90	0.83	3.04	27470	lapwing_tight.wir	735	270	0.83	3.04	27470
24032	33-cdcsp-02-ugc.140	7	1		7	1	Y2	lapwing_tight.wir	342	90	0.83	3.04	27470	lapwing_tight.wir	735	270	0.83	3.04	27470
24032	33-cdcsp-02-ugc.140	7	1		8	1	Z2	lapwing_tight.wir	342	90	0.83	3.04	27470	lapwing_tight.wir	735	270	0.83	3.04	27470
24032	33-cdcsp-02-ugc.140	8	1	NESC Ins NA-	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	0.54	1.13	6147	brugg_86ay62acs-2c_345_tight.wir	735	270	0.54	1.13	6147
24032	33-cdcsp-02-ugc.140	8	1		2	1	X1	lapwing_tight.wir	342	90	0.83	3.04	27470	lapwing_tight.wir	735	270	0.83	3.04	27470
24032	33-cdcsp-02-ugc.140	8	1		3	1	Y1	lapwing_tight.wir	342	90	0.83	3.04	27470	lapwing_tight.wir	735	270	0.83	3.04	27470
24032	33-cdcsp-02-ugc.140	8	1		4	1	Z1	lapwing_tight.wir	342	90	0.83	3.04	27470	lapwing_tight.wir	735	270	0.83	3.04	27470
24032	33-cdcsp-02-ugc.140	8	1		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	0.50	1.08	5932	19#10_alumoweld_tight.wir	735	270	0.50	1.08	5931
24032	33-cdcsp-02-ugc.140	8	1		6	1	X2	lapwing_tight.wir	342	90	0.83	3.04	27470	lapwing_tight.wir	735	270	0.83	3.04	27470
24032	33-cdcsp-02-ugc.140	8	1		7	1	Y2	lapwing_tight.wir	342	90	0.83	3.04	27470	lapwing_tight.wir	735	270	0.83	3.04	27470
24032	33-cdcsp-02-ugc.140	8	1		8	1	Z2	lapwing_tight.wir	342	90	0.83	3.04	27470	lapwing_tight.wir	735	270	0.83	3.04	27470
24032	33-cdcsp-02-ugc.140	9	5	ASCE Ice/Wind NA	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	1.24	1.89	7499	brugg_86ay62acs-2c_345_tight.wir	735	270	1.24	1.89	7499
24032	33-cdcsp-02-ugc.140	9	5		2	1	X1	lapwing_tight.wir	342	90	1.76	4.28	31539	lapwing_tight.wir	735	270	1.76	4.28	31538
24032	33-cdcsp-02-ugc.140	9	5		3	1	Y1	lapwing_tight.wir	342	90	1.76	4.28	31539	lapwing_tight.wir	735	270	1.76	4.28	31538

24032	33-cdcsp-02-ugc.140	9	5		4	1	Z1	lapwing_tight.wir	342	90	1.76	4.28	31539	lapwing_tight.wir	735	270	1.76	4.28	31538
24032	33-cdcsp-02-ugc.140	9	5		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	1.18	1.79	7275	19#10_alumoweld_tight.wir	735	270	1.18	1.79	7274
24032	33-cdcsp-02-ugc.140	9	5		6	1	X2	lapwing_tight.wir	342	90	1.76	4.28	31539	lapwing_tight.wir	735	270	1.76	4.28	31538
24032	33-cdcsp-02-ugc.140	9	5		7	1	Y2	lapwing_tight.wir	342	90	1.76	4.28	31539	lapwing_tight.wir	735	270	1.76	4.28	31538
24032	33-cdcsp-02-ugc.140	9	5		8	1	Z2	lapwing_tight.wir	342	90	1.76	4.28	31539	lapwing_tight.wir	735	270	1.76	4.28	31538
24032	33-cdcsp-02-ugc.140	10	5	ASCE Ice/Wind NA	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	1.24	1.89	7499	brugg_86ay62acs-2c_345_tight.wir	735	270	1.24	1.89	7499
24032	33-cdcsp-02-ugc.140	10	5		2	1	X1	lapwing_tight.wir	342	90	1.76	4.28	31539	lapwing_tight.wir	735	270	1.76	4.28	31538
24032	33-cdcsp-02-ugc.140	10	5		3	1	Y1	lapwing_tight.wir	342	90	1.76	4.28	31539	lapwing_tight.wir	735	270	1.76	4.28	31538
24032	33-cdcsp-02-ugc.140	10	5		4	1	Z1	lapwing_tight.wir	342	90	1.76	4.28	31539	lapwing_tight.wir	735	270	1.76	4.28	31538
24032	33-cdcsp-02-ugc.140	10	5		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	1.18	1.79	7275	19#10_alumoweld_tight.wir	735	270	1.18	1.79	7274
24032	33-cdcsp-02-ugc.140	10	5		6	1	X2	lapwing_tight.wir	342	90	1.76	4.28	31539	lapwing_tight.wir	735	270	1.76	4.28	31538
24032	33-cdcsp-02-ugc.140	10	5		7	1	Y2	lapwing_tight.wir	342	90	1.76	4.28	31539	lapwing_tight.wir	735	270	1.76	4.28	31538
24032	33-cdcsp-02-ugc.140	10	5		8	1	Z2	lapwing_tight.wir	342	90	1.76	4.28	31539	lapwing_tight.wir	735	270	1.76	4.28	31538
24032	33-cdcsp-02-ugc.140	11	18	NU Ice	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	0.00	2.70	8782	brugg_86ay62acs-2c_345_tight.wir	735	270	0.00	2.70	8782
24032	33-cdcsp-02-ugc.140	11	18		2	1	X1	lapwing_tight.wir	342	90	0.00	5.40	38304	lapwing_tight.wir	735	270	0.00	5.40	38304
24032	33-cdcsp-02-ugc.140	11	18		3	1	Y1	lapwing_tight.wir	342	90	0.00	5.40	38304	lapwing_tight.wir	735	270	0.00	5.40	38304
24032	33-cdcsp-02-ugc.140	11	18		4	1	Z1	lapwing_tight.wir	342	90	0.00	5.40	38304	lapwing_tight.wir	735	270	0.00	5.40	38304
24032	33-cdcsp-02-ugc.140	11	18		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	0.00	2.56	8477	19#10_alumoweld_tight.wir	735	270	0.00	2.56	8477
24032	33-cdcsp-02-ugc.140	11	18		6	1	X2	lapwing_tight.wir	342	90	0.00	5.40	38304	lapwing_tight.wir	735	270	0.00	5.40	38304
24032	33-cdcsp-02-ugc.140	11	18		7	1	Y2	lapwing_tight.wir	342	90	0.00	5.40	38304	lapwing_tight.wir	735	270	0.00	5.40	38304
24032	33-cdcsp-02-ugc.140	11	18		8	1	Z2	lapwing_tight.wir	342	90	0.00	5.40	38304	lapwing_tight.wir	735	270	0.00	5.40	38304
24032	33-cdcsp-02-ugc.140	12	24	Tower High Wind	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	0.93	0.48	4365	brugg_86ay62acs-2c_345_tight.wir	735	270	0.93	0.48	4364
24032	33-cdcsp-02-ugc.140	12	24		2	1	X1	lapwing_tight.wir	342	90	2.26	1.97	20843	lapwing_tight.wir	735	270	2.26	1.97	20841
24032	33-cdcsp-02-ugc.140	12	24		3	1	Y1	lapwing_tight.wir	342	90	2.26	1.97	20843	lapwing_tight.wir	735	270	2.26	1.97	20841
24032	33-cdcsp-02-ugc.140	12	24		4	1	Z1	lapwing_tight.wir	342	90	2.26	1.97	20843	lapwing_tight.wir	735	270	2.26	1.97	20841
24032	33-cdcsp-02-ugc.140	12	24		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	0.76	0.49	4030	19#10_alumoweld_tight.wir	735	270	0.76	0.49	4030
24032	33-cdcsp-02-ugc.140	12	24		6	1	X2	lapwing_tight.wir	342	90	2.26	1.97	20843	lapwing_tight.wir	735	270	2.26	1.97	20841
24032	33-cdcsp-02-ugc.140	12	24		7	1	Y2	lapwing_tight.wir	342	90	2.26	1.97	20843	lapwing_tight.wir	735	270	2.26	1.97	20841
24032	33-cdcsp-02-ugc.140	12	24		8	1	Z2	lapwing_tight.wir	342	90	2.26	1.97	20843	lapwing_tight.wir	735	270	2.26	1.97	20841
24032	33-cdcsp-02-ugc.140	13	24		1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	0.93	0.48	4365	brugg_86ay62acs-2c_345_tight.wir	735	270	0.93	0.48	4364
24032	33-cdcsp-02-ugc.140	13	24		2	1	X1	lapwing_tight.wir	342	90	2.26	1.97	20843	lapwing_tight.wir	735	270	2.26	1.97	20841
24032	33-cdcsp-02-ugc.140	13	24		3	1	Y1	lapwing_tight.wir	342	90	2.26	1.97	20843	lapwing_tight.wir	735	270	2.26	1.97	20841
24032	33-cdcsp-02-ugc.140	13	24		4	1	Z1	lapwing_tight.wir	342	90	2.26	1.97	20843	lapwing_tight.wir	735	270	2.26	1.97	20841
24032	33-cdcsp-02-ugc.140	13	24		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	0.76	0.49	4030	19#10_alumoweld_tight.wir	735	270	0.76	0.49	4030
24032	33-cdcsp-02-ugc.140	13	24		6	1	X2	lapwing_tight.wir	342	90	2.26	1.97	20843	lapwing_tight.wir	735	270	2.26	1.97	20841
24032	33-cdcsp-02-ugc.140	13	24		7	1	Y2	lapwing_tight.wir	342	90	2.26	1.97	20843	lapwing_tight.wir	735	270	2.26	1.97	20841
24032	33-cdcsp-02-ugc.140	13	24		8	1	Z2	lapwing_tight.wir	342	90	2.26	1.97	20843	lapwing_tight.wir	735	270	2.26	1.97	20841
24032	33-cdcsp-02-ugc.140	14	1	Broken SW NA+	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	0.59	1.25	6762	brugg_86ay62acs-2c_345_tight.wir	735	270	0.59	1.25	0
24032	33-cdcsp-02-ugc.140	14	1		2	1	X1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	14	1		3	1	Y1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	14	1		4	1	Z1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	14	1		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	0.55	1.18	6525	19#10_alumoweld_tight.wir	735	270	0.55	1.18	6525
24032	33-cdcsp-02-ugc.140	14	1		6	1	X2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	14	1		7	1	Y2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	14	1		8	1	Z2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	15	1	Broken SW NA-	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	0.59	1.25	6762	brugg_86ay62acs-2c_345_tight.wir	735	270	0.59	1.25	0
24032	33-cdcsp-02-ugc.140	15	1		2	1	X1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	15	1		3	1	Y1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	15	1		4	1	Z1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	15	1		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	0.55	1.18	6525	19#10_alumoweld_tight.wir	735	270	0.55	1.18	6525
24032	33-cdcsp-02-ugc.140	15	1		6	1	X2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	15	1		7	1	Y2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	15	1		8	1	Z2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	16	1	Cond SW NA+	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	0.59	1.25	6762	brugg_86ay62acs-2c_345_tight.wir	735	270	0.59	1.25	6761
24032	33-cdcsp-02-ugc.140	16	1		2	1	X1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	15108
24032	33-cdcsp-02-ugc.140	16	1		3	1	Y1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	16	1		4	1	Z1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	16	1		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	0.55	1.18	6525	19#10_alumoweld_tight.wir	735	270	0.55	1.18	6525
24032	33-cdcsp-02-ugc.140	16	1		6	1	X2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	16	1		7	1	Y2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	16	1		8	1	Z2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	17	1	Cond SW NA-	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	0.59	1.25	6762	brugg_86ay62acs-2c_345_tight.wir	735	270	0.59	1.25	6761
24032	33-cdcsp-02-ugc.140	17	1		2	1	X1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	15108
24032	33-cdcsp-02-ugc.140	17	1		3	1	Y1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	17	1		4	1	Z1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	17	1		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	0.55	1.18	6525	19#10_alumoweld_tight.wir	735	270	0.55	1.18	6525
24032	33-cdcsp-02-ugc.140	17	1		6	1	X2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	17	1		7	1	Y2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	17	1		8	1	Z2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	20	25	UI Havey Ice Tow	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	0.00	4.83	11469	brugg_86ay62acs-2c_345_tight.wir	735	270	0.00	4.83	11469
24032	33-cdcsp-02-ugc.140	20	25		2	1	X1	lapwing_tight.wir	342	90	0.00	8.13	45868	lapwing_tight.wir	735	270	0.00	8.13	45868
24032	33-cdcsp-02-ugc.140	20	25		3	1	Y1	lapwing_tight.wir	342	90	0.00	8.13	45868	lapwing_tight.wir	735	270	0.00	8.13	45868

24032	33-cdcsp-02-ugc.140	20	25		4	1	Z1	lapwing_tight.wir	342	90	0.00	8.13	45868	lapwing_tight.wir	735	270	0.00	8.13	45868
24032	33-cdcsp-02-ugc.140	20	25		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	0.00	4.62	11677	19#10_alumoweld_tight.wir	735	270	0.00	4.62	11677
24032	33-cdcsp-02-ugc.140	20	25		6	1	X2	lapwing_tight.wir	342	90	0.00	8.13	45868	lapwing_tight.wir	735	270	0.00	8.13	45868
24032	33-cdcsp-02-ugc.140	20	25		7	1	Y2	lapwing_tight.wir	342	90	0.00	8.13	45868	lapwing_tight.wir	735	270	0.00	8.13	45868
24032	33-cdcsp-02-ugc.140	20	25		8	1	Z2	lapwing_tight.wir	342	90	0.00	8.13	45868	lapwing_tight.wir	735	270	0.00	8.13	45868
24032	33-cdcsp-02-ugc.140	21	25		1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	0.00	4.83	11469	brugg_86ay62acs-2c_345_tight.wir	735	270	0.00	4.83	11469
24032	33-cdcsp-02-ugc.140	21	25		2	1	X1	lapwing_tight.wir	342	90	0.00	8.13	45868	lapwing_tight.wir	735	270	0.00	8.13	45868
24032	33-cdcsp-02-ugc.140	21	25		3	1	Y1	lapwing_tight.wir	342	90	0.00	8.13	45868	lapwing_tight.wir	735	270	0.00	8.13	45868
24032	33-cdcsp-02-ugc.140	21	25		4	1	Z1	lapwing_tight.wir	342	90	0.00	8.13	45868	lapwing_tight.wir	735	270	0.00	8.13	45868
24032	33-cdcsp-02-ugc.140	21	25		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	0.00	4.62	11677	19#10_alumoweld_tight.wir	735	270	0.00	4.62	11677
24032	33-cdcsp-02-ugc.140	21	25		6	1	X2	lapwing_tight.wir	342	90	0.00	8.13	45868	lapwing_tight.wir	735	270	0.00	8.13	45868
24032	33-cdcsp-02-ugc.140	21	25		7	1	Y2	lapwing_tight.wir	342	90	0.00	8.13	45868	lapwing_tight.wir	735	270	0.00	8.13	45868
24032	33-cdcsp-02-ugc.140	21	25		8	1	Z2	lapwing_tight.wir	342	90	0.00	8.13	45868	lapwing_tight.wir	735	270	0.00	8.13	45868
24032	33-cdcsp-02-ugc.140	22	1	Broken SW & Cond	1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	0.59	1.25	6762	brugg_86ay62acs-2c_345_tight.wir	735	270	0.59	1.25	0
24032	33-cdcsp-02-ugc.140	22	1		2	1	X1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	15108
24032	33-cdcsp-02-ugc.140	22	1		3	1	Y1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	22	1		4	1	Z1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	22	1		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	0.55	1.18	6525	19#10_alumoweld_tight.wir	735	270	0.55	1.18	6525
24032	33-cdcsp-02-ugc.140	22	1		6	1	X2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	22	1		7	1	Y2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	22	1		8	1	Z2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	23	1		1	1	TL:SW	brugg_86ay62acs-2c_345_tight.wir	342	90	0.59	1.25	6762	brugg_86ay62acs-2c_345_tight.wir	735	270	0.59	1.25	0
24032	33-cdcsp-02-ugc.140	23	1		2	1	X1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	15108
24032	33-cdcsp-02-ugc.140	23	1		3	1	Y1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	23	1		4	1	Z1	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	23	1		5	1	TR:SW	19#10_alumoweld_tight.wir	342	90	0.55	1.18	6525	19#10_alumoweld_tight.wir	735	270	0.55	1.18	6525
24032	33-cdcsp-02-ugc.140	23	1		6	1	X2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	23	1		7	1	Y2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217
24032	33-cdcsp-02-ugc.140	23	1		8	1	Z2	lapwing_tight.wir	342	90	0.92	3.34	30217	lapwing_tight.wir	735	270	0.92	3.34	30217

Wire Loads In Span Coordinate System For Structure Range

Wire loads expressed in span coordinate system (Longitudinal axis is line connecting attach. points)
Note: Loads in this report do not include load from counter weights, insulator weight or insulator wind area.

Str. No.	Str. Name	LC #	WC #	Load Case Description	Set No.	Phase No.	Attach. Labels	--Loads from back span- Vert. (lbs)	Trans. (lbs)	Long.	-Loads from ahead span- Vert. (lbs)	Trans. (lbs)	Long.	Warnings
24032	33-cdcsp-02-ugc.140	1	1	NESC Heavy NA+	1	1	TL:SW	402	231	10142	436	497	10142	
24032	33-cdcsp-02-ugc.140	1	1		2	1	X1	2121	713	45326	2398	1536	45325	
24032	33-cdcsp-02-ugc.140	1	1		3	1	Y1	2121	713	45326	2398	1536	45325	
24032	33-cdcsp-02-ugc.140	1	1		4	1	Z1	2121	713	45326	2398	1536	45325	
24032	33-cdcsp-02-ugc.140	1	1		5	1	TR:SW	382	215	9787	414	463	9787	
24032	33-cdcsp-02-ugc.140	1	1		6	1	X2	2121	713	45326	2398	1536	45325	
24032	33-cdcsp-02-ugc.140	1	1		7	1	Y2	2121	713	45326	2398	1536	45325	
24032	33-cdcsp-02-ugc.140	1	1		8	1	Z2	2121	713	45326	2398	1536	45325	
24032	33-cdcsp-02-ugc.140	2	1	NESC Heavy NA-	1	1	TL:SW	402	-231	10142	436	-497	10142	
24032	33-cdcsp-02-ugc.140	2	1		2	1	X1	2121	-713	45326	2398	-1536	45325	
24032	33-cdcsp-02-ugc.140	2	1		3	1	Y1	2121	-713	45326	2398	-1536	45325	
24032	33-cdcsp-02-ugc.140	2	1		4	1	Z1	2121	-713	45326	2398	-1536	45325	
24032	33-cdcsp-02-ugc.140	2	1		5	1	TR:SW	382	-215	9787	414	-463	9787	
24032	33-cdcsp-02-ugc.140	2	1		6	1	X2	2121	-713	45326	2398	-1536	45325	
24032	33-cdcsp-02-ugc.140	2	1		7	1	Y2	2121	-713	45326	2398	-1536	45325	
24032	33-cdcsp-02-ugc.140	2	1		8	1	Z2	2121	-713	45326	2398	-1536	45325	
24032	33-cdcsp-02-ugc.140	3	1	NESC Uplift NA+	1	1	TL:SW	268	231	10142	291	497	10142	
24032	33-cdcsp-02-ugc.140	3	1		2	1	X1	1414	713	45326	1599	1536	45325	
24032	33-cdcsp-02-ugc.140	3	1		3	1	Y1	1414	713	45326	1599	1536	45325	
24032	33-cdcsp-02-ugc.140	3	1		4	1	Z1	1414	713	45326	1599	1536	45325	
24032	33-cdcsp-02-ugc.140	3	1		5	1	TR:SW	255	215	9787	276	463	9787	
24032	33-cdcsp-02-ugc.140	3	1		6	1	X2	1414	713	45326	1599	1536	45325	
24032	33-cdcsp-02-ugc.140	3	1		7	1	Y2	1414	713	45326	1599	1536	45325	
24032	33-cdcsp-02-ugc.140	3	1		8	1	Z2	1414	713	45326	1599	1536	45325	
24032	33-cdcsp-02-ugc.140	4	1	NESC Uplift NA-	1	1	TL:SW	268	-231	10142	291	-497	10142	
24032	33-cdcsp-02-ugc.140	4	1		2	1	X1	1414	-713	45326	1599	-1536	45325	
24032	33-cdcsp-02-ugc.140	4	1		3	1	Y1	1414	-713	45326	1599	-1536	45325	
24032	33-cdcsp-02-ugc.140	4	1		4	1	Z1	1414	-713	45326	1599	-1536	45325	
24032	33-cdcsp-02-ugc.140	4	1		5	1	TR:SW	255	-215	9787	276	-463	9787	
24032	33-cdcsp-02-ugc.140	4	1		6	1	X2	1414	-713	45326	1599	-1536	45325	
24032	33-cdcsp-02-ugc.140	4	1		7	1	Y2	1414	-713	45326	1599	-1536	45325	
24032	33-cdcsp-02-ugc.140	4	1		8	1	Z2	1414	-713	45326	1599	-1536	45325	

24032	33-cdcsp-02-ugc.140	5	4	NESC Ext Wind NA	1	1	TL:SW	177	312	6373	15	672	6372
24032	33-cdcsp-02-ugc.140	5	4		2	1	X1	1129	1514	30368	681	3262	30363
24032	33-cdcsp-02-ugc.140	5	4		3	1	Y1	1129	1514	30368	681	3262	30363
24032	33-cdcsp-02-ugc.140	5	4		4	1	Z1	1129	1514	30368	681	3262	30363
24032	33-cdcsp-02-ugc.140	5	4		5	1	TR:SW	170	256	5738	36	552	5737
24032	33-cdcsp-02-ugc.140	5	4		6	1	X2	1129	1514	30368	681	3262	30363
24032	33-cdcsp-02-ugc.140	5	4		7	1	Y2	1129	1514	30368	681	3262	30363
24032	33-cdcsp-02-ugc.140	5	4		8	1	Z2	1129	1514	30368	681	3262	30363
24032	33-cdcsp-02-ugc.140	6	4		1	1	TL:SW	177	-312	6373	15	-672	6372
24032	33-cdcsp-02-ugc.140	6	4		2	1	X1	1129	-1514	30368	681	-3262	30363
24032	33-cdcsp-02-ugc.140	6	4		3	1	Y1	1129	-1514	30368	681	-3262	30363
24032	33-cdcsp-02-ugc.140	6	4		4	1	Z1	1129	-1514	30368	681	-3262	30363
24032	33-cdcsp-02-ugc.140	6	4		5	1	TR:SW	170	-256	5738	36	-552	5737
24032	33-cdcsp-02-ugc.140	6	4		6	1	X2	1129	-1514	30368	681	-3262	30363
24032	33-cdcsp-02-ugc.140	6	4		7	1	Y2	1129	-1514	30368	681	-3262	30363
24032	33-cdcsp-02-ugc.140	6	4		8	1	Z2	1129	-1514	30368	681	-3262	30363
24032	33-cdcsp-02-ugc.140	7	1	NESC Ins NA+	1	1	TL:SW	268	92	6147	291	199	6147
24032	33-cdcsp-02-ugc.140	7	1		2	1	X1	1414	285	27470	1599	614	27470
24032	33-cdcsp-02-ugc.140	7	1		3	1	Y1	1414	285	27470	1599	614	27470
24032	33-cdcsp-02-ugc.140	7	1		4	1	Z1	1414	285	27470	1599	614	27470
24032	33-cdcsp-02-ugc.140	7	1		5	1	TR:SW	255	86	5932	276	185	5931
24032	33-cdcsp-02-ugc.140	7	1		6	1	X2	1414	285	27470	1599	614	27470
24032	33-cdcsp-02-ugc.140	7	1		7	1	Y2	1414	285	27470	1599	614	27470
24032	33-cdcsp-02-ugc.140	7	1		8	1	Z2	1414	285	27470	1599	614	27470
24032	33-cdcsp-02-ugc.140	8	1	NESC Ins NA-	1	1	TL:SW	268	-92	6147	291	-199	6147
24032	33-cdcsp-02-ugc.140	8	1		2	1	X1	1414	-285	27470	1599	-614	27470
24032	33-cdcsp-02-ugc.140	8	1		3	1	Y1	1414	-285	27470	1599	-614	27470
24032	33-cdcsp-02-ugc.140	8	1		4	1	Z1	1414	-285	27470	1599	-614	27470
24032	33-cdcsp-02-ugc.140	8	1		5	1	TR:SW	255	-86	5932	276	-185	5931
24032	33-cdcsp-02-ugc.140	8	1		6	1	X2	1414	-285	27470	1599	-614	27470
24032	33-cdcsp-02-ugc.140	8	1		7	1	Y2	1414	-285	27470	1599	-614	27470
24032	33-cdcsp-02-ugc.140	8	1		8	1	Z2	1414	-285	27470	1599	-614	27470
24032	33-cdcsp-02-ugc.140	9	5	ASCE Ice/Wind NA	1	1	TL:SW	435	213	7499	504	458	7499
24032	33-cdcsp-02-ugc.140	9	5		2	1	X1	1937	603	31539	2353	1298	31538
24032	33-cdcsp-02-ugc.140	9	5		3	1	Y1	1937	603	31539	2353	1298	31538
24032	33-cdcsp-02-ugc.140	9	5		4	1	Z1	1937	603	31539	2353	1298	31538
24032	33-cdcsp-02-ugc.140	9	5		5	1	TR:SW	414	201	7275	472	434	7274
24032	33-cdcsp-02-ugc.140	9	5		6	1	X2	1937	603	31539	2353	1298	31538
24032	33-cdcsp-02-ugc.140	9	5		7	1	Y2	1937	603	31539	2353	1298	31538
24032	33-cdcsp-02-ugc.140	9	5		8	1	Z2	1937	603	31539	2353	1298	31538
24032	33-cdcsp-02-ugc.140	10	5	ASCE Ice/Wind NA	1	1	TL:SW	435	-213	7499	504	-458	7499
24032	33-cdcsp-02-ugc.140	10	5		2	1	X1	1937	-603	31539	2353	-1298	31538
24032	33-cdcsp-02-ugc.140	10	5		3	1	Y1	1937	-603	31539	2353	-1298	31538
24032	33-cdcsp-02-ugc.140	10	5		4	1	Z1	1937	-603	31539	2353	-1298	31538
24032	33-cdcsp-02-ugc.140	10	5		5	1	TR:SW	414	-201	7275	472	-434	7274
24032	33-cdcsp-02-ugc.140	10	5		6	1	X2	1937	-603	31539	2353	-1298	31538
24032	33-cdcsp-02-ugc.140	10	5		7	1	Y2	1937	-603	31539	2353	-1298	31538
24032	33-cdcsp-02-ugc.140	10	5		8	1	Z2	1937	-603	31539	2353	-1298	31538
24032	33-cdcsp-02-ugc.140	11	18	NU Ice	1	1	TL:SW	592	0	8782	769	0	8782
24032	33-cdcsp-02-ugc.140	11	18		2	1	X1	2419	0	38304	2999	0	38304
24032	33-cdcsp-02-ugc.140	11	18		3	1	Y1	2419	0	38304	2999	0	38304
24032	33-cdcsp-02-ugc.140	11	18		4	1	Z1	2419	0	38304	2999	0	38304
24032	33-cdcsp-02-ugc.140	11	18		5	1	TR:SW	564	0	8477	726	0	8477
24032	33-cdcsp-02-ugc.140	11	18		6	1	X2	2419	0	38304	2999	0	38304
24032	33-cdcsp-02-ugc.140	11	18		7	1	Y2	2419	0	38304	2999	0	38304
24032	33-cdcsp-02-ugc.140	11	18		8	1	Z2	2419	0	38304	2999	0	38304
24032	33-cdcsp-02-ugc.140	12	24	Tower High Wind	1	1	TL:SW	147	159	4365	66	343	4364
24032	33-cdcsp-02-ugc.140	12	24		2	1	X1	986	772	20843	922	1663	20841
24032	33-cdcsp-02-ugc.140	12	24		3	1	Y1	986	772	20843	922	1663	20841
24032	33-cdcsp-02-ugc.140	12	24		4	1	Z1	986	772	20843	922	1663	20841
24032	33-cdcsp-02-ugc.140	12	24		5	1	TR:SW	145	131	4030	79	281	4030
24032	33-cdcsp-02-ugc.140	12	24		6	1	X2	986	772	20843	922	1663	20841
24032	33-cdcsp-02-ugc.140	12	24		7	1	Y2	986	772	20843	922	1663	20841
24032	33-cdcsp-02-ugc.140	12	24		8	1	Z2	986	772	20843	922	1663	20841
24032	33-cdcsp-02-ugc.140	13	24		1	1	TL:SW	147	-159	4365	66	-343	4364
24032	33-cdcsp-02-ugc.140	13	24		2	1	X1	986	-772	20843	922	-1663	20841
24032	33-cdcsp-02-ugc.140	13	24		3	1	Y1	986	-772	20843	922	-1663	20841
24032	33-cdcsp-02-ugc.140	13	24		4	1	Z1	986	-772	20843	922	-1663	20841
24032	33-cdcsp-02-ugc.140	13	24		5	1	TR:SW	145	-131	4030	79	-281	4030
24032	33-cdcsp-02-ugc.140	13	24		6	1	X2	986	-772	20843	922	-1663	20841
24032	33-cdcsp-02-ugc.140	13	24		7	1	Y2	986	-772	20843	922	-1663	20841
24032	33-cdcsp-02-ugc.140	13	24		8	1	Z2	986	-772	20843	922	-1663	20841

24032	33-cdcsp-02-ugc.140	14	1	Broken SW NA+	1	1	TL:SW	295	102	6762	0	0	0
24032	33-cdcsp-02-ugc.140	14	1		2	1	X1	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	14	1		3	1	Y1	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	14	1		4	1	Z1	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	14	1		5	1	TR:SW	280	95	6525	303	204	6525
24032	33-cdcsp-02-ugc.140	14	1		6	1	X2	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	14	1		7	1	Y2	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	14	1		8	1	Z2	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	15	1	Broken SW NA-	1	1	TL:SW	295	-102	6762	0	-0	0
24032	33-cdcsp-02-ugc.140	15	1		2	1	X1	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	15	1		3	1	Y1	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	15	1		4	1	Z1	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	15	1		5	1	TR:SW	280	-95	6525	303	-204	6525
24032	33-cdcsp-02-ugc.140	15	1		6	1	X2	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	15	1		7	1	Y2	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	15	1		8	1	Z2	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	16	1	Cond SW NA+	1	1	TL:SW	295	102	6762	320	219	6761
24032	33-cdcsp-02-ugc.140	16	1		2	1	X1	1556	314	30217	879	338	15108
24032	33-cdcsp-02-ugc.140	16	1		3	1	Y1	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	16	1		4	1	Z1	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	16	1		5	1	TR:SW	280	95	6525	303	204	6525
24032	33-cdcsp-02-ugc.140	16	1		6	1	X2	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	16	1		7	1	Y2	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	16	1		8	1	Z2	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	17	1	Cond SW NA-	1	1	TL:SW	295	-102	6762	320	-219	6761
24032	33-cdcsp-02-ugc.140	17	1		2	1	X1	1556	-314	30217	879	-338	15108
24032	33-cdcsp-02-ugc.140	17	1		3	1	Y1	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	17	1		4	1	Z1	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	17	1		5	1	TR:SW	280	-95	6525	303	-204	6525
24032	33-cdcsp-02-ugc.140	17	1		6	1	X2	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	17	1		7	1	Y2	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	17	1		8	1	Z2	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	20	25	UI Havey Ice Tow	1	1	TL:SW	998	0	11469	1489	0	11469
24032	33-cdcsp-02-ugc.140	20	25		2	1	X1	3469	0	45868	4828	0	45868
24032	33-cdcsp-02-ugc.140	20	25		3	1	Y1	3469	0	45868	4828	0	45868
24032	33-cdcsp-02-ugc.140	20	25		4	1	Z1	3469	0	45868	4828	0	45868
24032	33-cdcsp-02-ugc.140	20	25		5	1	TR:SW	964	0	11677	1405	0	11677
24032	33-cdcsp-02-ugc.140	20	25		6	1	X2	3469	0	45868	4828	0	45868
24032	33-cdcsp-02-ugc.140	20	25		7	1	Y2	3469	0	45868	4828	0	45868
24032	33-cdcsp-02-ugc.140	20	25		8	1	Z2	3469	0	45868	4828	0	45868
24032	33-cdcsp-02-ugc.140	21	25		1	1	TL:SW	998	0	11469	1489	0	11469
24032	33-cdcsp-02-ugc.140	21	25		2	1	X1	3469	0	45868	4828	0	45868
24032	33-cdcsp-02-ugc.140	21	25		3	1	Y1	3469	0	45868	4828	0	45868
24032	33-cdcsp-02-ugc.140	21	25		4	1	Z1	3469	0	45868	4828	0	45868
24032	33-cdcsp-02-ugc.140	21	25		5	1	TR:SW	964	0	11677	1405	0	11677
24032	33-cdcsp-02-ugc.140	21	25		6	1	X2	3469	0	45868	4828	0	45868
24032	33-cdcsp-02-ugc.140	21	25		7	1	Y2	3469	0	45868	4828	0	45868
24032	33-cdcsp-02-ugc.140	21	25		8	1	Z2	3469	0	45868	4828	0	45868
24032	33-cdcsp-02-ugc.140	22	1	Broken SW & Cond	1	1	TL:SW	295	-102	6762	0	-0	0
24032	33-cdcsp-02-ugc.140	22	1		2	1	X1	1556	-314	30217	879	-338	15108
24032	33-cdcsp-02-ugc.140	22	1		3	1	Y1	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	22	1		4	1	Z1	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	22	1		5	1	TR:SW	280	-95	6525	303	-204	6525
24032	33-cdcsp-02-ugc.140	22	1		6	1	X2	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	22	1		7	1	Y2	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	22	1		8	1	Z2	1556	-314	30217	1758	-676	30217
24032	33-cdcsp-02-ugc.140	23	1		1	1	TL:SW	295	102	6762	0	0	0
24032	33-cdcsp-02-ugc.140	23	1		2	1	X1	1556	314	30217	879	338	15108
24032	33-cdcsp-02-ugc.140	23	1		3	1	Y1	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	23	1		4	1	Z1	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	23	1		5	1	TR:SW	280	95	6525	303	204	6525
24032	33-cdcsp-02-ugc.140	23	1		6	1	X2	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	23	1		7	1	Y2	1556	314	30217	1758	676	30217
24032	33-cdcsp-02-ugc.140	23	1		8	1	Z2	1556	314	30217	1758	676	30217

Wire Loads In Structure Coordinate System For Structure Range

Note: Loads in this report include load from counter weights, insulator weight and insulator wind area.

Str. No.	Str. Name	LC #	WC #	Load Case Description	Set No.	Phase No.	Attach. Joint	----Structure Loads---- Vert.	Trans.	Long.	--Loads from back span- Vert.	Trans.	Long.	-Loads from ahead span- Vert.	Trans.	Long.	Warnings

				Labels		--------(lbs)--------			--------(lbs)--------			--------(lbs)--------	
24032	33-cdcsp-02-ugc.140	1	1	NESC Heavy NA+	1	1	TL:SW	838	728	0	402	231	10142	436	497	-10142
24032	33-cdcsp-02-ugc.140	1	1		2	1	X1	4894	2249	1	2309	713	45326	2585	1536	-45325
24032	33-cdcsp-02-ugc.140	1	1		3	1	Y1	4894	2249	1	2309	713	45326	2585	1536	-45325
24032	33-cdcsp-02-ugc.140	1	1		4	1	Z1	4894	2249	1	2309	713	45326	2585	1536	-45325
24032	33-cdcsp-02-ugc.140	1	1		5	1	TR:SW	796	678	0	382	215	9787	414	463	-9787
24032	33-cdcsp-02-ugc.140	1	1		6	1	X2	4894	2249	1	2309	713	45326	2585	1536	-45325
24032	33-cdcsp-02-ugc.140	1	1		7	1	Y2	4894	2249	1	2309	713	45326	2585	1536	-45325
24032	33-cdcsp-02-ugc.140	1	1		8	1	Z2	4894	2249	1	2309	713	45326	2585	1536	-45325
24032	33-cdcsp-02-ugc.140	2	1	NESC Heavy NA-	1	1	TL:SW	838	-728	0	402	-231	10142	436	-497	-10142
24032	33-cdcsp-02-ugc.140	2	1		2	1	X1	4894	-2249	1	2309	-713	45326	2585	-1536	-45325
24032	33-cdcsp-02-ugc.140	2	1		3	1	Y1	4894	-2249	1	2309	-713	45326	2585	-1536	-45325
24032	33-cdcsp-02-ugc.140	2	1		4	1	Z1	4894	-2249	1	2309	-713	45326	2585	-1536	-45325
24032	33-cdcsp-02-ugc.140	2	1		5	1	TR:SW	796	-678	0	382	-215	9787	414	-463	-9787
24032	33-cdcsp-02-ugc.140	2	1		6	1	X2	4894	-2249	1	2309	-713	45326	2585	-1536	-45325
24032	33-cdcsp-02-ugc.140	2	1		7	1	Y2	4894	-2249	1	2309	-713	45326	2585	-1536	-45325
24032	33-cdcsp-02-ugc.140	2	1		8	1	Z2	4894	-2249	1	2309	-713	45326	2585	-1536	-45325
24032	33-cdcsp-02-ugc.140	3	1	NESC Uplift NA+	1	1	TL:SW	559	728	0	268	231	10142	291	497	-10142
24032	33-cdcsp-02-ugc.140	3	1		2	1	X1	3263	2249	1	1539	713	45326	1724	1536	-45325
24032	33-cdcsp-02-ugc.140	3	1		3	1	Y1	3263	2249	1	1539	713	45326	1724	1536	-45325
24032	33-cdcsp-02-ugc.140	3	1		4	1	Z1	3263	2249	1	1539	713	45326	1724	1536	-45325
24032	33-cdcsp-02-ugc.140	3	1		5	1	TR:SW	531	678	0	255	215	9787	276	463	-9787
24032	33-cdcsp-02-ugc.140	3	1		6	1	X2	3263	2249	1	1539	713	45326	1724	1536	-45325
24032	33-cdcsp-02-ugc.140	3	1		7	1	Y2	3263	2249	1	1539	713	45326	1724	1536	-45325
24032	33-cdcsp-02-ugc.140	3	1		8	1	Z2	3263	2249	1	1539	713	45326	1724	1536	-45325
24032	33-cdcsp-02-ugc.140	4	1	NESC Uplift NA-	1	1	TL:SW	559	-728	0	268	-231	10142	291	-497	-10142
24032	33-cdcsp-02-ugc.140	4	1		2	1	X1	3263	-2249	1	1539	-713	45326	1724	-1536	-45325
24032	33-cdcsp-02-ugc.140	4	1		3	1	Y1	3263	-2249	1	1539	-713	45326	1724	-1536	-45325
24032	33-cdcsp-02-ugc.140	4	1		4	1	Z1	3263	-2249	1	1539	-713	45326	1724	-1536	-45325
24032	33-cdcsp-02-ugc.140	4	1		5	1	TR:SW	531	-678	0	255	-215	9787	276	-463	-9787
24032	33-cdcsp-02-ugc.140	4	1		6	1	X2	3263	-2249	1	1539	-713	45326	1724	-1536	-45325
24032	33-cdcsp-02-ugc.140	4	1		7	1	Y2	3263	-2249	1	1539	-713	45326	1724	-1536	-45325
24032	33-cdcsp-02-ugc.140	4	1		8	1	Z2	3263	-2249	1	1539	-713	45326	1724	-1536	-45325
24032	33-cdcsp-02-ugc.140	5	4	NESC Ext Wind NA	1	1	TL:SW	192	984	1	177	312	6373	15	672	-6372
24032	33-cdcsp-02-ugc.140	5	4		2	1	X1	2085	4776	5	1266	1514	30368	819	3262	-30363
24032	33-cdcsp-02-ugc.140	5	4		3	1	Y1	2085	4776	5	1266	1514	30368	819	3262	-30363
24032	33-cdcsp-02-ugc.140	5	4		4	1	Z1	2085	4776	5	1266	1514	30368	819	3262	-30363
24032	33-cdcsp-02-ugc.140	5	4		5	1	TR:SW	206	808	1	170	256	5738	36	552	-5737
24032	33-cdcsp-02-ugc.140	5	4		6	1	X2	2085	4776	5	1266	1514	30368	819	3262	-30363
24032	33-cdcsp-02-ugc.140	5	4		7	1	Y2	2085	4776	5	1266	1514	30368	819	3262	-30363
24032	33-cdcsp-02-ugc.140	5	4		8	1	Z2	2085	4776	5	1266	1514	30368	819	3262	-30363
24032	33-cdcsp-02-ugc.140	6	4		1	1	TL:SW	192	-984	1	177	-312	6373	15	-672	-6372
24032	33-cdcsp-02-ugc.140	6	4		2	1	X1	2085	-4776	5	1266	-1514	30368	819	-3262	-30363
24032	33-cdcsp-02-ugc.140	6	4		3	1	Y1	2085	-4776	5	1266	-1514	30368	819	-3262	-30363
24032	33-cdcsp-02-ugc.140	6	4		4	1	Z1	2085	-4776	5	1266	-1514	30368	819	-3262	-30363
24032	33-cdcsp-02-ugc.140	6	4		5	1	TR:SW	206	-808	1	170	-256	5738	36	-552	-5737
24032	33-cdcsp-02-ugc.140	6	4		6	1	X2	2085	-4776	5	1266	-1514	30368	819	-3262	-30363
24032	33-cdcsp-02-ugc.140	6	4		7	1	Y2	2085	-4776	5	1266	-1514	30368	819	-3262	-30363
24032	33-cdcsp-02-ugc.140	6	4		8	1	Z2	2085	-4776	5	1266	-1514	30368	819	-3262	-30363
24032	33-cdcsp-02-ugc.140	7	1	NESC Ins NA+	1	1	TL:SW	559	291	0	268	92	6147	291	199	-6147
24032	33-cdcsp-02-ugc.140	7	1		2	1	X1	3263	900	0	1539	285	27470	1724	614	-27470
24032	33-cdcsp-02-ugc.140	7	1		3	1	Y1	3263	900	0	1539	285	27470	1724	614	-27470
24032	33-cdcsp-02-ugc.140	7	1		4	1	Z1	3263	900	0	1539	285	27470	1724	614	-27470
24032	33-cdcsp-02-ugc.140	7	1		5	1	TR:SW	531	271	0	255	86	5932	276	185	-5931
24032	33-cdcsp-02-ugc.140	7	1		6	1	X2	3263	900	0	1539	285	27470	1724	614	-27470
24032	33-cdcsp-02-ugc.140	7	1		7	1	Y2	3263	900	0	1539	285	27470	1724	614	-27470
24032	33-cdcsp-02-ugc.140	7	1		8	1	Z2	3263	900	0	1539	285	27470	1724	614	-27470
24032	33-cdcsp-02-ugc.140	8	1	NESC Ins NA-	1	1	TL:SW	559	-291	0	268	-92	6147	291	-199	-6147
24032	33-cdcsp-02-ugc.140	8	1		2	1	X1	3263	-900	0	1539	-285	27470	1724	-614	-27470
24032	33-cdcsp-02-ugc.140	8	1		3	1	Y1	3263	-900	0	1539	-285	27470	1724	-614	-27470
24032	33-cdcsp-02-ugc.140	8	1		4	1	Z1	3263	-900	0	1539	-285	27470	1724	-614	-27470
24032	33-cdcsp-02-ugc.140	8	1		5	1	TR:SW	531	-271	0	255	-86	5932	276	-185	-5931
24032	33-cdcsp-02-ugc.140	8	1		6	1	X2	3263	-900	0	1539	-285	27470	1724	-614	-27470
24032	33-cdcsp-02-ugc.140	8	1		7	1	Y2	3263	-900	0	1539	-285	27470	1724	-614	-27470
24032	33-cdcsp-02-ugc.140	8	1		8	1	Z2	3263	-900	0	1539	-285	27470	1724	-614	-27470
24032	33-cdcsp-02-ugc.140	9	5	ASCE Ice/Wind NA	1	1	TL:SW	938	671	0	435	213	7499	504	458	-7499
24032	33-cdcsp-02-ugc.140	9	5		2	1	X1	4565	1900	1	2074	603	31539	2490	1298	-31538
24032	33-cdcsp-02-ugc.140	9	5		3	1	Y1	4565	1900	1	2074	603	31539	2490	1298	-31538
24032	33-cdcsp-02-ugc.140	9	5		4	1	Z1	4565	1900	1	2074	603	31539	2490	1298	-31538
24032	33-cdcsp-02-ugc.140	9	5		5	1	TR:SW	887	635	0	414	201	7275	472	434	-7274
24032	33-cdcsp-02-ugc.140	9	5		6	1	X2	4565	1900	1	2074	603	31539	2490	1298	-31538

24032	33-cdcsp-02-ugc.140	9	5		7	1	Y2	4565	1900	1	2074	603	31539	2490	1298	-31538
24032	33-cdcsp-02-ugc.140	9	5		8	1	Z2	4565	1900	1	2074	603	31539	2490	1298	-31538
24032	33-cdcsp-02-ugc.140	10	5	ASCE Ice/Wind NA	1	1	TL:SW	938	-671	0	435	-213	7499	504	-458	-7499
24032	33-cdcsp-02-ugc.140	10	5		2	1	X1	4565	-1900	1	2074	-603	31539	2490	-1298	-31538
24032	33-cdcsp-02-ugc.140	10	5		3	1	Y1	4565	-1900	1	2074	-603	31539	2490	-1298	-31538
24032	33-cdcsp-02-ugc.140	10	5		4	1	Z1	4565	-1900	1	2074	-603	31539	2490	-1298	-31538
24032	33-cdcsp-02-ugc.140	10	5		5	1	TR:SW	887	-635	0	414	-201	7275	472	-434	-7274
24032	33-cdcsp-02-ugc.140	10	5		6	1	X2	4565	-1900	1	2074	-603	31539	2490	-1298	-31538
24032	33-cdcsp-02-ugc.140	10	5		7	1	Y2	4565	-1900	1	2074	-603	31539	2490	-1298	-31538
24032	33-cdcsp-02-ugc.140	10	5		8	1	Z2	4565	-1900	1	2074	-603	31539	2490	-1298	-31538
24032	33-cdcsp-02-ugc.140	11	18	NU Ice	1	1	TL:SW	1362	0	-0	592	0	8782	769	0	-8782
24032	33-cdcsp-02-ugc.140	11	18		2	1	X1	5693	0	-0	2556	0	38304	3137	0	-38304
24032	33-cdcsp-02-ugc.140	11	18		3	1	Y1	5693	0	0	2556	0	38304	3137	0	-38304
24032	33-cdcsp-02-ugc.140	11	18		4	1	Z1	5693	0	0	2556	0	38304	3137	0	-38304
24032	33-cdcsp-02-ugc.140	11	18		5	1	TR:SW	1290	0	0	564	0	8477	726	0	-8477
24032	33-cdcsp-02-ugc.140	11	18		6	1	X2	5693	0	0	2556	0	38304	3137	0	-38304
24032	33-cdcsp-02-ugc.140	11	18		7	1	Y2	5693	0	0	2556	0	38304	3137	0	-38304
24032	33-cdcsp-02-ugc.140	11	18		8	1	Z2	5693	0	-0	2556	0	38304	3137	0	-38304
24032	33-cdcsp-02-ugc.140	12	24	Tower High Wind	1	1	TL:SW	213	502	1	147	159	4365	66	343	-4364
24032	33-cdcsp-02-ugc.140	12	24		2	1	X1	2183	2436	2	1124	772	20843	1060	1663	-20841
24032	33-cdcsp-02-ugc.140	12	24		3	1	Y1	2183	2436	2	1124	772	20843	1060	1663	-20841
24032	33-cdcsp-02-ugc.140	12	24		4	1	Z1	2183	2436	2	1124	772	20843	1060	1663	-20841
24032	33-cdcsp-02-ugc.140	12	24		5	1	TR:SW	224	412	1	145	131	4030	79	281	-4030
24032	33-cdcsp-02-ugc.140	12	24		6	1	X2	2183	2436	2	1124	772	20843	1060	1663	-20841
24032	33-cdcsp-02-ugc.140	12	24		7	1	Y2	2183	2436	2	1124	772	20843	1060	1663	-20841
24032	33-cdcsp-02-ugc.140	12	24		8	1	Z2	2183	2436	2	1124	772	20843	1060	1663	-20841
24032	33-cdcsp-02-ugc.140	13	24		1	1	TL:SW	213	-502	1	147	-159	4365	66	-343	-4364
24032	33-cdcsp-02-ugc.140	13	24		2	1	X1	2183	-2436	2	1124	-772	20843	1060	-1663	-20841
24032	33-cdcsp-02-ugc.140	13	24		3	1	Y1	2183	-2436	2	1124	-772	20843	1060	-1663	-20841
24032	33-cdcsp-02-ugc.140	13	24		4	1	Z1	2183	-2436	2	1124	-772	20843	1060	-1663	-20841
24032	33-cdcsp-02-ugc.140	13	24		5	1	TR:SW	224	-412	1	145	-131	4030	79	-281	-4030
24032	33-cdcsp-02-ugc.140	13	24		6	1	X2	2183	-2436	2	1124	-772	20843	1060	-1663	-20841
24032	33-cdcsp-02-ugc.140	13	24		7	1	Y2	2183	-2436	2	1124	-772	20843	1060	-1663	-20841
24032	33-cdcsp-02-ugc.140	13	24		8	1	Z2	2183	-2436	2	1124	-772	20843	1060	-1663	-20841
24032	33-cdcsp-02-ugc.140	14	1	Broken SW NA+	1	1	TL:SW	295	102	6762	295	102	6762	0	0	0
24032	33-cdcsp-02-ugc.140	14	1		2	1	X1	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	14	1		3	1	Y1	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	14	1		4	1	Z1	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	14	1		5	1	TR:SW	295	298	0	280	95	6525	303	204	-6525
24032	33-cdcsp-02-ugc.140	14	1		6	1	X2	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	14	1		7	1	Y2	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	14	1		8	1	Z2	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	15	1	Broken SW NA-	1	1	TL:SW	295	-102	6762	295	-102	6762	0	0	0
24032	33-cdcsp-02-ugc.140	15	1		2	1	X1	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	15	1		3	1	Y1	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	15	1		4	1	Z1	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	15	1		5	1	TR:SW	584	-298	0	280	-95	6525	303	-204	-6525
24032	33-cdcsp-02-ugc.140	15	1		6	1	X2	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	15	1		7	1	Y2	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	15	1		8	1	Z2	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	16	1	Cond SW NA+	1	1	TL:SW	614	320	0	295	102	6762	320	219	-6761
24032	33-cdcsp-02-ugc.140	16	1		2	1	X1	2710	652	15109	1693	314	30217	1017	338	-15108
24032	33-cdcsp-02-ugc.140	16	1		3	1	Y1	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	16	1		4	1	Z1	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	16	1		5	1	TR:SW	584	298	0	280	95	6525	303	204	-6525
24032	33-cdcsp-02-ugc.140	16	1		6	1	X2	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	16	1		7	1	Y2	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	16	1		8	1	Z2	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	17	1	Cond SW NA-	1	1	TL:SW	614	-320	0	295	-102	6762	320	-219	-6761
24032	33-cdcsp-02-ugc.140	17	1		2	1	X1	2710	-652	15109	1693	-314	30217	1017	-338	-15108
24032	33-cdcsp-02-ugc.140	17	1		3	1	Y1	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	17	1		4	1	Z1	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	17	1		5	1	TR:SW	584	-298	0	280	-95	6525	303	-204	-6525
24032	33-cdcsp-02-ugc.140	17	1		6	1	X2	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	17	1		7	1	Y2	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	17	1		8	1	Z2	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	20	25	UI Havey Ice Tow	1	1	TL:SW	2487	0	0	998	0	11469	1489	0	-11469
24032	33-cdcsp-02-ugc.140	20	25		2	1	X1	8572	0	-0	3607	0	45868	4965	0	-45868
24032	33-cdcsp-02-ugc.140	20	25		3	1	Y1	8572	0	0	3607	0	45868	4965	0	-45868
24032	33-cdcsp-02-ugc.140	20	25		4	1	Z1	8572	0	0	3607	0	45868	4965	0	-45868
24032	33-cdcsp-02-ugc.140	20	25		5	1	TR:SW	2369	0	0	964	0	11677	1405	0	-11677
24032	33-cdcsp-02-ugc.140	20	25		6	1	X2	8572	0	0	3607	0	45868	4965	0	-45868

24032	33-cdcsp-02-ugc.140	20	25		7	1	Y2	8572	0	0	3607	0	45868	4965	0	-45868
24032	33-cdcsp-02-ugc.140	20	25		8	1	Z2	8572	0	-0	3607	0	45868	4965	0	-45868
24032	33-cdcsp-02-ugc.140	21	25		1	1	TL:SW	2487	0	0	998	0	11469	1489	0	-11469
24032	33-cdcsp-02-ugc.140	21	25		2	1	X1	8572	0	-0	3607	0	45868	4965	0	-45868
24032	33-cdcsp-02-ugc.140	21	25		3	1	Y1	8572	0	0	3607	0	45868	4965	0	-45868
24032	33-cdcsp-02-ugc.140	21	25		4	1	Z1	8572	0	0	3607	0	45868	4965	0	-45868
24032	33-cdcsp-02-ugc.140	21	25		5	1	TR:SW	2369	0	0	964	0	11677	1405	0	-11677
24032	33-cdcsp-02-ugc.140	21	25		6	1	X2	8572	0	0	3607	0	45868	4965	0	-45868
24032	33-cdcsp-02-ugc.140	21	25		7	1	Y2	8572	0	0	3607	0	45868	4965	0	-45868
24032	33-cdcsp-02-ugc.140	21	25		8	1	Z2	8572	0	-0	3607	0	45868	4965	0	-45868
24032	33-cdcsp-02-ugc.140	22	1	Broken SW & Cond	1	1	TL:SW	295	-102	6762	295	-102	6762	0	0	0
24032	33-cdcsp-02-ugc.140	22	1		2	1	X1	2710	-652	15109	1693	-314	30217	1017	-338	-15108
24032	33-cdcsp-02-ugc.140	22	1		3	1	Y1	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	22	1		4	1	Z1	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	22	1		5	1	TR:SW	584	-298	0	280	-95	6525	303	-204	-6525
24032	33-cdcsp-02-ugc.140	22	1		6	1	X2	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	22	1		7	1	Y2	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	22	1		8	1	Z2	3589	-990	0	1693	-314	30217	1896	-676	-30217
24032	33-cdcsp-02-ugc.140	23	1		1	1	TL:SW	295	102	6762	295	102	6762	0	0	0
24032	33-cdcsp-02-ugc.140	23	1		2	1	X1	2710	652	15109	1693	314	30217	1017	338	-15108
24032	33-cdcsp-02-ugc.140	23	1		3	1	Y1	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	23	1		4	1	Z1	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	23	1		5	1	TR:SW	584	298	0	280	95	6525	303	204	-6525
24032	33-cdcsp-02-ugc.140	23	1		6	1	X2	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	23	1		7	1	Y2	3589	990	0	1693	314	30217	1896	676	-30217
24032	33-cdcsp-02-ugc.140	23	1		8	1	Z2	3589	990	0	1693	314	30217	1896	676	-30217

Wire Load Induced Ground Line Moments For Single Pole Centered At Structure Origin For Structure Range

Note: not applicable to guyed structures or frames. These approximate values do not include nonlinear (P-delta) effects or wind on pole. ??

Str. No.	Str. Name	LC #	WC #	Load Case Description	Vert. Load (kips)	Trans. Shear (kips)	Long. Shear (kips)	Resultant Shear (kips)	Trans. Moment (ft-k)	Long. Moment (ft-k)	Resultant Moment (ft-k)
24032	33-cdcsp-02-ugc.140	1	1	NESC Heavy NA+	30.998	14.900	0.005	14.900	1446.857	0.472	1446.857
24032	33-cdcsp-02-ugc.140	2	1	NESC Heavy NA-	30.998	-14.900	0.005	14.900	-1448.757	0.472	1448.757
24032	33-cdcsp-02-ugc.140	3	1	NESC Uplift NA+	20.666	14.900	0.005	14.900	1447.173	0.472	1447.173
24032	33-cdcsp-02-ugc.140	4	1	NESC Uplift NA-	20.666	-14.900	0.005	14.900	-1448.440	0.472	1448.440
24032	33-cdcsp-02-ugc.140	5	4	NESC Ext Wind NA	12.907	30.448	0.034	30.448	2934.117	3.320	2934.119
24032	33-cdcsp-02-ugc.140	6	4	NESC Ext Wind NA	12.907	-30.448	0.034	30.448	-2933.480	3.320	2933.482
24032	33-cdcsp-02-ugc.140	7	1	NESC Ins NA+	20.666	5.960	0.003	5.960	578.489	0.286	578.489
24032	33-cdcsp-02-ugc.140	8	1	NESC Ins NA-	20.666	-5.960	0.003	5.960	-579.756	0.286	579.756
24032	33-cdcsp-02-ugc.140	9	5	ASCE Ice/Wind NA	29.212	12.707	0.007	12.707	1236.039	0.660	1236.039
24032	33-cdcsp-02-ugc.140	10	5	ASCE Ice/Wind NA	29.212	-12.707	0.007	12.707	-1238.371	0.660	1238.372
24032	33-cdcsp-02-ugc.140	11	18	NU Ice	36.810	0.000	-0.000	0.000	-1.610	-0.000	1.610
24032	33-cdcsp-02-ugc.140	12	24	Tower High Wind	13.536	15.528	0.016	15.528	1496.426	1.577	1496.427
24032	33-cdcsp-02-ugc.140	13	24	Tower High Wind	13.536	-15.528	0.016	15.528	-1495.930	1.577	1495.931
24032	33-cdcsp-02-ugc.140	14	1	Broken SW NA+	22.412	6.337	6.764	9.269	617.773	798.149	1009.299
24032	33-cdcsp-02-ugc.140	15	1	Broken SW NA-	22.412	-6.337	6.764	9.269	-604.707	798.149	1001.355
24032	33-cdcsp-02-ugc.140	16	1	Cond SW NA+	21.853	6.218	15.112	16.341	609.874	1767.999	1870.231
24032	33-cdcsp-02-ugc.140	17	1	Cond SW NA-	21.853	-6.218	15.112	16.341	-585.136	1767.999	1862.312
24032	33-cdcsp-02-ugc.140	20	25	UI Havey Ice Tow	56.288	0.000	0.000	0.000	-2.675	0.000	2.675
24032	33-cdcsp-02-ugc.140	21	25	UI Havey Ice Tow	56.288	0.000	0.000	0.000	-2.675	0.000	2.675
24032	33-cdcsp-02-ugc.140	22	1	Broken SW & Cond	21.533	-5.999	21.873	22.681	-552.112	2565.833	2624.562
24032	33-cdcsp-02-ugc.140	23	1	Broken SW & Cond	21.533	5.999	21.873	22.681	591.308	2565.833	2633.086

Basic factored design wind pressure on structure For Structure Range

Str. No.	Str. Name	LC #	WC #	Load Case Description	Trans. Wind Press. (psf)	Long. Wind Press. (psf)	Notes
24032	33-cdcsp-02-ugc.140	1	1	NESC Heavy NA+	10.0	0.0	
24032	33-cdcsp-02-ugc.140	2	1	NESC Heavy NA-	-10.0	-0.0	
24032	33-cdcsp-02-ugc.140	3	1	NESC Uplift NA+	10.0	0.0	
24032	33-cdcsp-02-ugc.140	4	1	NESC Uplift NA-	-10.0	-0.0	
24032	33-cdcsp-02-ugc.140	5	4	NESC Ext Wind NA	35.3	0.0	
24032	33-cdcsp-02-ugc.140	6	4	NESC Ext Wind NA	-35.3	-0.0	

24032	33-cdcsp-02-ugc.140	7	1	NESC Ins NA+	4.0	0.0
24032	33-cdcsp-02-ugc.140	8	1	NESC Ins NA-	-4.0	-0.0
24032	33-cdcsp-02-ugc.140	9	5	ASCE Ice/Wind NA	7.0	0.0
24032	33-cdcsp-02-ugc.140	10	5	ASCE Ice/Wind NA	-7.0	-0.0
24032	33-cdcsp-02-ugc.140	11	18	NU Ice	0.0	0.0
24032	33-cdcsp-02-ugc.140	12	24	Tower High Wind	18.0	0.0
24032	33-cdcsp-02-ugc.140	13	24	Tower High Wind	-18.0	-0.0
24032	33-cdcsp-02-ugc.140	14	1	Broken SW NA+	4.4	0.0
24032	33-cdcsp-02-ugc.140	15	1	Broken SW NA-	-4.4	-0.0
24032	33-cdcsp-02-ugc.140	16	1	Cond SW NA+	4.4	0.0
24032	33-cdcsp-02-ugc.140	17	1	Cond SW NA-	-4.4	-0.0
24032	33-cdcsp-02-ugc.140	20	25	UI Havey Ice Tow	0.0	0.0
24032	33-cdcsp-02-ugc.140	21	25	UI Havey Ice Tow	-0.0	-0.0
24032	33-cdcsp-02-ugc.140	22	1	Broken SW & Cond	-4.4	-0.0
24032	33-cdcsp-02-ugc.140	23	1	Broken SW & Cond	4.4	0.0

℄ T-MOBILE ANTENNAS
EL. ±137'-0" ABP

NOTE: ABP DENOTES ABOVE OF BASE PLATE

T-MOBILE (EXISTING TO REMAIN):
THREE (3) BIAS TEEs.
T-MOBILE (EXISTING TO REMOVE):
THREE (3) RFS APX16DWV-16DWVS-E-A20 PANEL ANTENNAS AND SIX (6) TMAs.
T-MOBILE (PROPOSED):
THREE (3) RFS APXVAARR24_43-U-NA20 PANEL ANTENNAS.

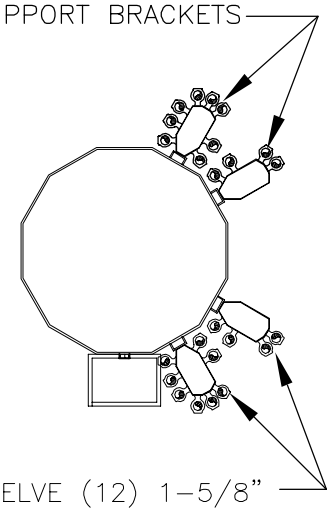
2
EL-1

EXISTING 140.5' TALL CL&P STEEL POLE STRUCTURE NO. 24032

PROPOSED TWELVE (12) 1-5/8" DIA. COAX CABLES BEHIND

EXISTING TWELVE (12) 1-5/8" DIA. COAX CABLES

PROPOSED TWELVE (12) 1-5/8" ø COAX CABLES MOUNTED ON CLUSTER SUPPORT BRACKETS



EXISTING TWELVE (12) 1-5/8" ø COAX CABLES MOUNTED ON EXISTING CLUSTER SUPPORT BRACKETS

2 / EL-1 **COAX CABLE PLAN**
SCALE: NOT TO SCALE

1 / EL-1 **TOWER + MAST ELEVATION**
SCALE: NOT TO SCALE

REVISIONS		
00	10/01/19	ISSUED FOR REVIEW

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CT11602C
EVERSOURCE 24032

945 NORTH STREET
MILFORD, CT, 06461

PROJECT NO:	19066.05
DRAWN BY:	FJP
CHECKED BY:	TJL
SCALE:	AS NOTED
DATE:	10/01/19

TOWER ELEVATION

EL-1

DWG. 1 OF 1

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Subject: Load Analysis of T-Mobile Equipment on Structure #24032

Location: Milford, CT

Rev. 0: 11/6/19

Prepared by: T.J.L Checked by: C.A.G.
Job No. 19066.05

Basic Components

Heavy Wind Pressure =	p := 4.00	psf	(User Input NESC 2017 Figure 250-1 & Table 250-1)
Basic Windspeed =	V := 110	mph	(User Input NESC 2017 Figure 250-2(e))
Radial Ice Thickness =	Ir := 0.50	in	(User Input)
Radial Ice Density =	Id := 56.0	pcf	(User Input)

Factors for Extreme Wind Calculation

Elevation of Top of Tower Above Grade =	TME := 140.5	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 2017 Table 250-3 equation)
Importance Factor =	I := 1.0		(User Input from NESC 2017 Section 250.C.2)
Velocity Pressure Coefficient =	$Kz := 2.01\cdot\left(\frac{TME}{900}\right)^{\frac{2}{9.5}} = 1.36$		(NESC 2017 Table 250-2)
Exposure Factor =	$Es := 0.346\left[\frac{33}{(0.67\cdot TME)}\right]^{\frac{1}{7}} = 0.298$		(NESC 2017 Table 250-3)
Response Term =	$Bs := \frac{1}{\left(1 + 0.375\cdot\frac{TME}{220}\right)} = 0.807$		(NESC 2017 Table 250-3)
Gust Response Factor =	$Grf := \frac{\left[1 + \left(2.7\cdot Es\cdot Bs^{\frac{1}{2}}\right)\right]}{kv^2} = 0.842$		(NESC 2017 Table 250-3)
Wind Pressure =	$qz := 0.00256\cdot Kz\cdot V^2\cdot Grf\cdot I = 35.5$	psf	(NESC 2017 Section 250.C.2)

NESC Extreme Ice w/ Wind Components

Heavy Wind Pressure =	$p_{ex} := 6.4$	psf	(User Input NESC 2017 Figure 250-3 & Table 250-4)
Radial Ice Thickness =	$Ir_{ex} := 0.75$	in	(User Input NESC 2017 Figure 250-3)

Shape Factors

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

Overload Factors

Overload 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 T-Mobile Equipment on Structure #24032
Location:	Milford, CT
Rev. 0: 11/6/19	Prepared by: T.J.L Checked by: C.A.G. Job No. 19066.05

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	RFSAPXVAARR24_43		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 95.9$	in	(User Input)
Antenna Width =	$W_{ant} := 24$	in	(User Input)
Antenna Thickness =	$T_{ant} := 8.7$	in	(User Input)
Antenna Weight =	$WT_{ant} := 153.3$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 3$		(User Input)

Gravity Load (without ice)

Weight of All Antennas = $Wt_{ant1} := WT_{ant} \cdot N_{ant} = 460$ lbs

Gravity Load (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 2 \times 10^{4}$ cu in

Volume of Ice on Each Antenna = $V_{ice} := \left(L_{ant} + 2 \cdot Ir\right)\left(W_{ant} + 2 \cdot Ir\right)\left(T_{ant} + 2 \cdot Ir\right) - V_{ant} = 3474$ cu in

Weight of Ice on Each Antenna = $W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 113$ lbs

Weight of Ice on All Antennas = $Wt_{ice.ant1} := W_{ICEant} \cdot N_{ant} = 338$ lbs

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each Antenna = $V_{ice.ex} := \left(L_{ant} + 2 \cdot Ir_{ex}\right)\left(W_{ant} + 2 \cdot Ir_{ex}\right)\left(T_{ant} + 2 \cdot Ir_{ex}\right) - V_{ant} = 5310$ cu in

Weight of Extreme Ice on Each Antenna = $W_{ICE.exant} := \frac{V_{ice.ex}}{1728} \cdot Id = 172$ lbs

Weight of Extreme Ice on All Antennas = $Wt_{ice.ex.ant1} := W_{ICE.exant} \cdot N_{ant} = 516$ lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice = $SA_{ICEant} := \frac{\left(L_{ant} + 2 \cdot Ir\right) \cdot \left(W_{ant} + 2 \cdot Ir\right)}{144} = 16.8$ sf

Antenna Projected Surface Area w/ Ice = $A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 50.5$ sf

Total Antenna Wind Force w/ Ice = $Fi_{ant1} := p \cdot Cd_F \cdot A_{ICEant} = 323$ lbs

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna = $SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 16$ sf

Antenna Projected Surface Area = $A_{ant} := SA_{ant} \cdot N_{ant} = 48$ sf

Total Antenna Wind Force = $F_{ant1} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 3402$ 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 = $SA_{ICE.exant} := \frac{\left(L_{ant} + 2 \cdot Ir_{ex}\right) \cdot \left(W_{ant} + 2 \cdot Ir_{ex}\right)}{144} = 17.2$ sf

Antenna Projected Surface Area w/ Extreme Ice = $A_{ICE.exant} := SA_{ICE.exant} \cdot N_{ant} = 51.7$ sf

Total Antenna Wind Force w/ Extreme Ice = $Fi_{ex.ant1} := p_{ex} \cdot Cd_F \cdot A_{ICE.exant} \cdot m = 662$ lbs

Development of Wind & Ice Load on Antennas

Antenna Data:

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

Gravity Load (without ice)

Weight of All Antennas = $Wt_{ant2} := WT_{ant} \cdot N_{ant} = 6$ lbs

Gravity Load (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 42$ cu in

Volume of Ice on Each Antenna = $V_{ice} := \left(L_{ant} + 2 \cdot Ir\right)\left(W_{ant} + 2 \cdot Ir\right)\left(T_{ant} + 2 \cdot Ir\right) - V_{ant} = 52$ cu in

Weight of Ice on Each Antenna = $W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 2$ lbs

Weight of Ice on All Antennas = $Wt_{ice.ant2} := W_{ICEant} \cdot N_{ant} = 5$ lbs

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each Antenna = $V_{ice.ex} := \left(L_{ant} + 2 \cdot Ir_{ex}\right)\left(W_{ant} + 2 \cdot Ir_{ex}\right)\left(T_{ant} + 2 \cdot Ir_{ex}\right) - V_{ant} = 88$ cu in

Weight of Extreme Ice on Each Antenna = $W_{ICE.exant} := \frac{V_{ice.ex}}{1728} \cdot Id = 3$ lbs

Weight of Extreme Ice on All Antennas = $Wt_{ice.ex.ant2} := W_{ICE.exant} \cdot N_{ant} = 9$ lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice = $SA_{ICEant} := \frac{\left(L_{ant} + 2 \cdot Ir\right) \cdot \left(W_{ant} + 2 \cdot Ir\right)}{144} = 0.2$ sf

Antenna Projected Surface Area w/ Ice = $A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 0.6$ sf

Total Antenna Wind Force w/ Ice = $Fi_{ant2} := p \cdot Cd_F \cdot A_{ICEant} = 4$ lbs

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna = $SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 0.1$ sf

Antenna Projected Surface Area = $A_{ant} := SA_{ant} \cdot N_{ant} = 0.4$ sf

Total Antenna Wind Force = $F_{ant2} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 31$ 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 = $SA_{ICE.exant} := \frac{\left(L_{ant} + 2 \cdot Ir_{ex}\right) \cdot \left(W_{ant} + 2 \cdot Ir_{ex}\right)}{144} = 0.3$ sf

Antenna Projected Surface Area w/ Extreme Ice = $A_{ICE.exant} := SA_{ICE.exant} \cdot N_{ant} = 0.8$ sf

Total Antenna Wind Force w/ Extreme Ice = $Fi_{ex.ant2} := p_{ex} \cdot Cd_F \cdot A_{ICE.exant} \cdot m = 10$ lbs

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Subject:	Load Analysis of T-Mobile Equipment on Structure #24032
Location:	Milford, CT
Rev. 0: 11/6/19	Prepared by: T.J.L Checked by: C.A.G. Job No. 19066.05

Development of Wind & Ice Load on Platform

Platform Data:

Platform Model =	Microflect Tri Sector Adapter Kit		
Mount Shape =	Flat		
Mount Projected Surface Area =	$CdAa := 0$	sf	(User Input)
Mount Projected Surface Area w/ Ice =	$CdAa_{ice} := 0$	sf	(User Input)
Mount Projected Surface Area w/ Extreme Ice =	$CdAa_{ice.ex} := 0$	sf	(User Input)
Mount Weight =	$WT_{mnt} := 324$	lbs	(User Input)
Mount Weight w/ Ice =	$WT_{mnt.ice} := 377$	lbs	(User Input)
Mount Weight w/ Extreme Ice =	$WT_{mnt.ice.ex} := 408$	lbs	(User Input)

Gravity Loads (without ice)

Weight of All Mounts = $Wt_{mnt1} := WT_{mnt} = 324$ lbs

Gravity Load (ice only)

Weight of Ice on All Mounts = $Wt_{ice.mnt1} := \left(WT_{mnt.ice} - WT_{mnt}\right) = 53$ lbs

Gravity Load (ice only)

Weight of Ice on All Mounts = $Wt_{ice.ex.mnt1} := \left(WT_{mnt.ice.ex} - WT_{mnt}\right) = 84$ lbs

Wind Load (NESC Heavy)

Total Mount Wind Force w/ Ice = $Fi_{mnt1} := p \cdot CdAa_{ice} = 0$ lbs

Wind Load (NESC Extreme)

Total Mount Wind Force = $F_{mnt1} := qz \cdot CdAa \cdot m = 0$ lbs

Wind Load (NESC Extreme Ice w/ Wind)

Total Mount Wind Force = $Fi_{ex.mnt1} := p_{ex} \cdot CdAa_{ice.ex} \cdot m = 0$ lbs

Total Equipment Loads:

NESC Heavy Wind Vertical =	$\left(Wt_{ant1} + Wt_{ice.ant1} + Wt_{ant2} + Wt_{ice.ant2} + Wt_{mnt1} + Wt_{ice.mnt1}\right)\cdot 1.5 = 1779$	lbs
NESC Heavy Wind Trasnsverse =	$\left(Fi_{ant1} + Fi_{ant2} + Fi_{mnt1}\right)\cdot 2.5 = 818$	lbs
NESC Extreme Wind Vertical =	$\left(Wt_{ant1} + Wt_{ant2} + Wt_{mnt1}\right) = 790$	lbs
NESC Extreme Wind Trasnsverse =	$\left(F_{ant1} + F_{ant2} + F_{mnt1}\right) = 3433$	lbs
NESC Extreme Ice w/ Wind Vertical =	$Wt_{ant1} + Wt_{ice.ex.ant1} + Wt_{ant2} + Wt_{ice.ex.ant2} + Wt_{mnt1} + Wt_{ice.ex.mnt1} = 1399$	lbs
NESC Extreme Ice w/ Wind Trasnsverse =	$\left(Fi_{ex.ant1} + Fi_{ex.ant2} + Fi_{ex.mnt1}\right) = 672$	lbs

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Subject:	Coax Cable on Pole #24032
Location:	Milford, CT
Rev. 0: 11/6/19	Prepared by: T.J.L Checked by: C.A.G. Job No. 19066.05

Coax Cable on Pole

Distance Between Coax Cable Attach Points =

Coaxial Cable Span = $Coax_{Span} := \begin{pmatrix} 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \end{pmatrix} ft$ *(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 = $N_{coax} := 24$ *(User Input)*

Number of Projected Coax Cables = $NP_{coax} := 8$ *(User Input)*

Extreme Wind Pressure = $qz := 35.5 \cdot psf$ *(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 = $Cd_{coax} := 1.6$ *(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)*

Wind Area without Ice = $A := \left(NP_{coax} \cdot D_{coax}\right) = 15.84 \cdot in$

Wind Area with Ice = $A_{ice} := \left(NP_{coax} \cdot D_{coax} + 2 \cdot Ir\right) = 16.84 \cdot in$

Wind Area with Extreme Ice = $A_{ice.ex} := \left(NP_{coax} \cdot D_{coax} + 2 \cdot Ir_{ex}\right) = 17.34 \cdot in$

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

Subject:	Coax Cable on Pole #24032
Location:	Milford, CT
Rev. 0: 11/6/19	Prepared by: T.J.L Checked by: C.A.G. Job No. 19066.05

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 = $W_{ice} := Ai_{coax}\cdot Id\cdot N_{coax} = 36.359\cdot plf$

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 = $W_{ice.ex} := Ai_{coax.ex}\cdot Id\cdot N_{coax} = 60.036\cdot plf$

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 =

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

$$Heavy_{Vert} = \begin{pmatrix}920\\920\\920\\920\\920\\920\\920\\920\\920\\920\\920\end{pmatrix} lb \qquad Heavy_{Trans} = \begin{pmatrix}225\\225\\225\\225\\225\\225\\225\\225\\225\\225\\225\end{pmatrix} lb$$

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 =

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

$$Extreme\_Wind_{Vert} = \begin{pmatrix}250\\250\\250\\250\\250\\250\\250\\250\\250\\250\\250\end{pmatrix} lb \qquad Extreme\_Wind_{Trans} = \begin{pmatrix}750\\750\\750\\750\\750\\750\\750\\750\\750\\750\\750\end{pmatrix} lb$$

Extreme Ice w/ Wind Vertical Load =

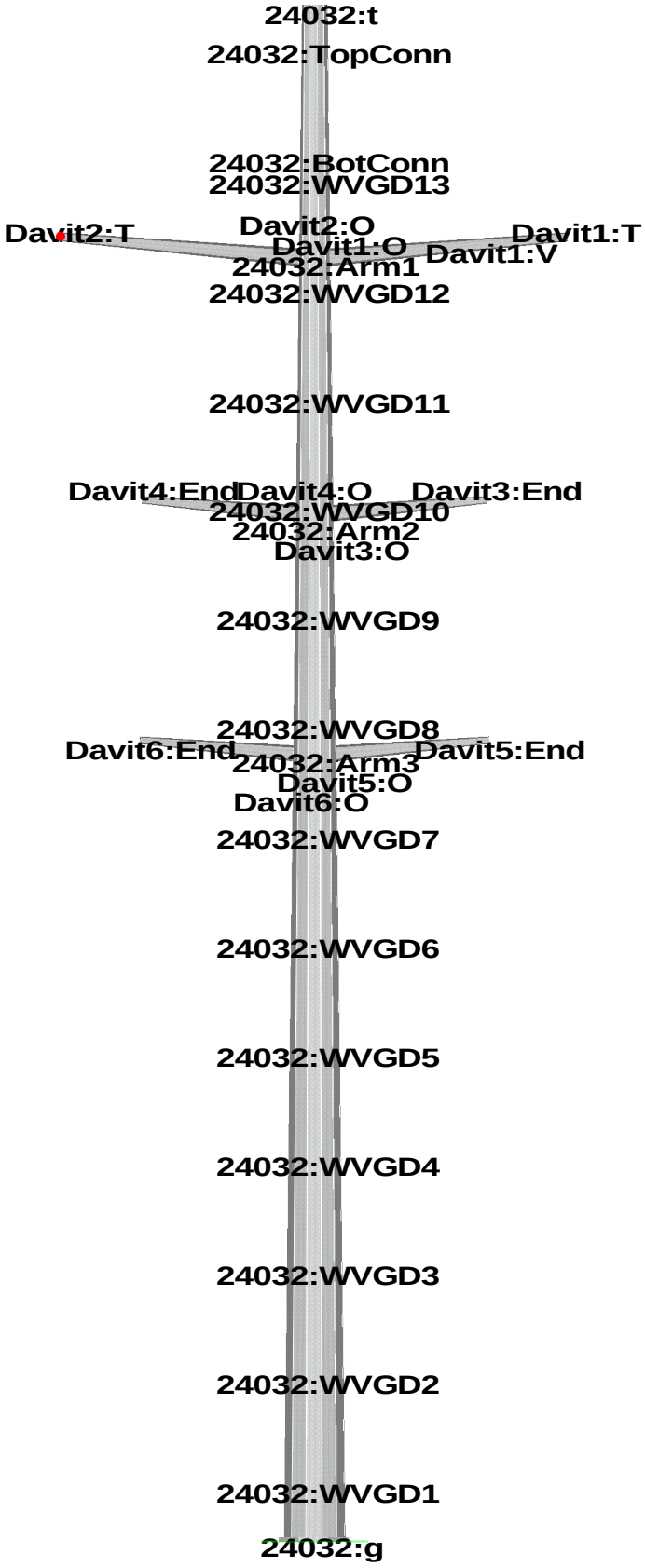
$$Extreme\_Ice_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax} + W_{ice.ex}\right) \cdot Coax_{Span} \cdot OF_{EIV}\right]}$$

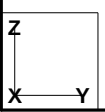
Extreme Ice w/ Wind Transverse Load =

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

$$Extreme\_Ice_{Vert} = \begin{pmatrix} 850 \\ 850 \\ 850 \\ 850 \\ 850 \\ 850 \\ 850 \\ 850 \\ 850 \\ 850 \\ 850 \end{pmatrix} lb \qquad Extreme\_Ice_{Trans} = \begin{pmatrix} 148 \\ 148 \\ 148 \\ 148 \\ 148 \\ 148 \\ 148 \\ 148 \\ 148 \\ 148 \\ 148 \end{pmatrix} lb$$

Centek Engineering Inc, Project: "cl&p structure # 24032"
PLS-POLE Version 12.50, 10:44:01 AM Tuesday, October 01, 2019
Undeformed geometry displayed





Project Name : 19066.05 - Milford, CT
Project Notes: CL&P - Str # 24032/ T-Mobile - 11602C
Project File : J:\Jobs\1906600.WI\05_CT11602C\05_Structural\Backup Documentation\Rev (1)\Calcs\PLS POLE\cl&p structure # 24032.pol
Date run : 11:35:22 AM Wednesday, November 6, 2019
by : PLS-POLE Version 16.01
Licensed to : Centek Engineering Inc

Successfully performed nonlinear analysis

The model has 0 warnings.

Loads from file: J:\Jobs\1906600.WI\05_CT11602C\05_Structural\Backup Documentation\Rev (1)\Calcs\PLS POLE\cl&p #24032.lca

*** Analysis Results:

Maximum element usage is 85.71% for Tubular Davit "Davit1" in load case "NESC Heavy Broken Wire"
Maximum insulator usage is 19.20% for Clamp "Clamp1" in load case "NESC Heavy Broken Wire"

Foundation Design Forces For All Load Cases:

Note: loads are factored.

Load Case	Foundation Description	Axial Force (kips)	Shear Force (kips)	Bending Moment (ft-k)	Foundation Usage %
NESC Heavy Wind	24032:g	111.66	27.63	2370.58	0.00
NESC Extreme Wind	24032:g	63.48	61.93	5243.78	0.00
NESC Extreme Ice w/ Wind	24032:g	87.84	21.05	1846.70	0.00
NESC Heavy Broken Wire	24032:g	102.15	28.79	3027.61	0.00

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. Bending Moment (ft-k)	Vert. Moment (ft-k)	Found. Usage %
NESC Heavy Wind	24032:g	-0.24	-27.62	-111.66	27.63	2370.53	-15.53	2370.58	-0.01	0.00
NESC Extreme Wind	24032:g	-0.09	-61.93	-63.48	61.93	5243.77	-7.08	5243.78	-0.01	0.00
NESC Extreme Ice w/ Wind	24032:g	-0.10	-21.05	-87.84	21.05	1846.69	-6.54	1846.70	-0.00	0.00
NESC Heavy Broken Wire	24032:g	-21.87	-18.73	-102.15	28.79	1435.17	-2665.84	3027.61	389.06	0.00

Summary of Tip Deflections For All Load Cases:

Note: positive tip load results in positive deflection

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 Wind	24032:t	0.11	19.76	-0.19	19.76	0.01	-1.09	0.00
NESC Extreme Wind	24032:t	0.05	43.90	-0.75	43.90	0.00	-2.44	0.00
NESC Extreme Ice w/ Wind	24032:t	0.05	15.44	-0.12	15.44	0.00	-0.84	0.00
NESC Heavy Broken Wire	24032:t	28.06	10.61	-0.39	30.00	1.62	-0.59	-1.00

Tubes Summary:

Pole Label	Tube Num.	Weight	Load Case	Maximum Usage	Resultant Moment

		(lbs)		%	(ft-k)
24032	1	5078	NESC Heavy Broken Wire	26.27	538.28
24032	2	7282	NESC Extreme Wind	41.07	1504.72
24032	3	4826	NESC Extreme Wind	46.19	2482.23
24032	4	6157	NESC Extreme Wind	44.40	3135.45
24032	5	7241	NESC Extreme Wind	45.64	4253.05
24032	6	6510	NESC Extreme Wind	48.44	5243.78

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

Summary of Steel Pole Usages:

Steel Pole Label	Maximum Usage %	Load Case	Height AGL (ft)	Segment Number	Weight (lbs)
24032	48.44	NESC Extreme Wind	2.5	39	41843.0

Summary of Tubular Davit Usages:

Tubular Davit Label	Maximum Usage %	Load Case	Height AGL (ft)	Segment Number	Weight (lbs)
Davit1	85.71	NESC Heavy Broken Wire	117.7	1	1014.2
Davit2	23.05	NESC Heavy Wind	117.7	1	1014.2
Davit3	23.12	NESC Heavy Wind	94.2	1	566.2
Davit4	21.66	NESC Heavy Wind	94.2	1	566.2
Davit5	23.15	NESC Heavy Wind	72.2	1	566.2
Davit6	21.70	NESC Heavy Wind	72.2	1	566.2

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
NESC Heavy Wind	36.24	24032	Base Plate
NESC Extreme Wind	48.44	24032	Steel Pole
NESC Extreme Ice w/ Wind	35.90	24032	Base Plate
NESC Heavy Broken Wire	85.71	Davit1	Tubular Davit

Summary of Steel Pole Usages by Load Case:

Load Case	Maximum Usage %	Steel Pole Label	Height AGL (ft)	Segment Number
NESC Heavy Wind	22.94	24032	2.5	39
NESC Extreme Wind	48.44	24032	2.5	39
NESC Extreme Ice w/ Wind	17.86	24032	2.5	39
NESC Heavy Broken Wire	35.73	24032	67.0	21

Summary of Base Plate Usages by Load Case:

Load Case	Pole Bend Line #	Length	Vertical Load	X Moment	Y Moment	Bending Stress	Bolt Moment	# Bolts Acting On Sum Bend Line	Max Bolt Load For Bend Line	Minimum Plate Thickness	Usage

			(in)	(kips)	(ft-k)	(ft-k)	(ksi)	(ft-k)		(kips)	(in)	%
NESC Heavy Wind	24032	2	17.969	106.908	5498.891	-36.032	21.741	66.469	-3	108.599	2.107	36.24
NESC Extreme Wind	24032	2	17.969	58.729	5499.004	-7.421	21.350	65.273	-3	106.881	2.088	35.58
NESC Extreme Ice w/ Wind	24032	2	17.969	83.096	5498.974	-19.461	21.543	65.862	-3	107.732	2.097	35.90
NESC Heavy Broken Wire	24032	3	17.969	97.403	2606.325	-4842.124	25.184	76.996	-3	115.897	2.268	41.97

Summary of Tubular Davit Usages by Load Case:

Load Case	Maximum Tubular Davit Usage %	Davit Label	Height AGL (ft)	Segment Number
NESC Heavy Wind	25.04	Davit1	117.7	1
NESC Extreme Wind	11.63	Davit1	117.7	1
NESC Extreme Ice w/ Wind	21.41	Davit1	117.7	1
NESC Heavy Broken Wire	85.71	Davit1	117.7	1

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load Case	Weight (lbs)
Clamp1	Clamp	19.20	NESC Heavy Broken Wire	0.0
Clamp2	Clamp	6.73	NESC Heavy Wind	0.0
Clamp3	Clamp	8.46	NESC Heavy Broken Wire	0.0
Clamp4	Clamp	1.36	NESC Extreme Ice w/ Wind	0.0
Clamp5	Clamp	6.73	NESC Heavy Wind	0.0
Clamp6	Clamp	6.73	NESC Heavy Wind	0.0
Clamp7	Clamp	6.73	NESC Heavy Wind	0.0
Clamp8	Clamp	6.73	NESC Heavy Wind	0.0
Clamp9	Clamp	4.42	NESC Extreme Wind	0.0
Clamp10	Clamp	0.00	NESC Heavy Wind	0.0
Clamp11	Clamp	1.18	NESC Heavy Wind	0.0
Clamp12	Clamp	1.18	NESC Heavy Wind	0.0
Clamp13	Clamp	1.18	NESC Heavy Wind	0.0
Clamp14	Clamp	1.18	NESC Heavy Wind	0.0
Clamp15	Clamp	1.18	NESC Heavy Wind	0.0
Clamp16	Clamp	1.18	NESC Heavy Wind	0.0
Clamp17	Clamp	1.18	NESC Heavy Wind	0.0
Clamp18	Clamp	1.18	NESC Heavy Wind	0.0
Clamp19	Clamp	1.18	NESC Heavy Wind	0.0
Clamp20	Clamp	1.18	NESC Heavy Wind	0.0
Clamp21	Clamp	1.18	NESC Heavy Wind	0.0
Clamp22	Clamp	1.18	NESC Heavy Wind	0.0
Clamp23	Clamp	1.18	NESC Heavy Wind	0.0

*** Weight of structure (lbs):
Weight of Tubular Davit Arms: 4293.2
Weight of Steel Poles: 41843.0
Total: 46136.2

*** End of Report

```
************************************************************************
*                                                                      *
*                              PLS-POLE                                *
*                   POLE AND FRAME ANALYSIS AND DESIGN                 *
*               Copyright Power Line Systems 1999-2019                 *
*                                                                      *
************************************************************************

Project Name : 19066.05 - Milford, CT
Project Notes: CL&P - Str # 24032/ T-Mobile - 11602C
Project File : J:\Jobs\1906600.WI\05_CT11602C\05_Structural\Backup Documentation\Rev (1)\Calcs\PLS POLE\cl&p structure # 24032.pol
Date run     : 11:35:22 AM Wednesday, November 6, 2019
by           : PLS-POLE Version 16.01
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 and tubular arms checked with ASCE/SEI 48-11


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	Stock Number	Length	Default Embedded	Base Plate	Shape	Tip Diameter	Base Diameter	Taper	Default Drag	Tubes	Modulus of Elasticity	Weight Density	Shape At	Strength Check	Distance From	Ultimate Trans.	Ultimate Texture

Label	Length (ft)	Long. Load (ft)				Coef. (in/ft)	Override (ksi)	Override (lbs/ft^3)	Base	Type	Tip (ft)	Load (kips)	Load (kips)
CL&P24032	24032	140.50	0	Yes	12F	28.63	67.06	0	1.6	6 tubes	0	0	Calculated	0.000	0.0000	0.0000	Galvanized Steel

Steel Tubes Properties:

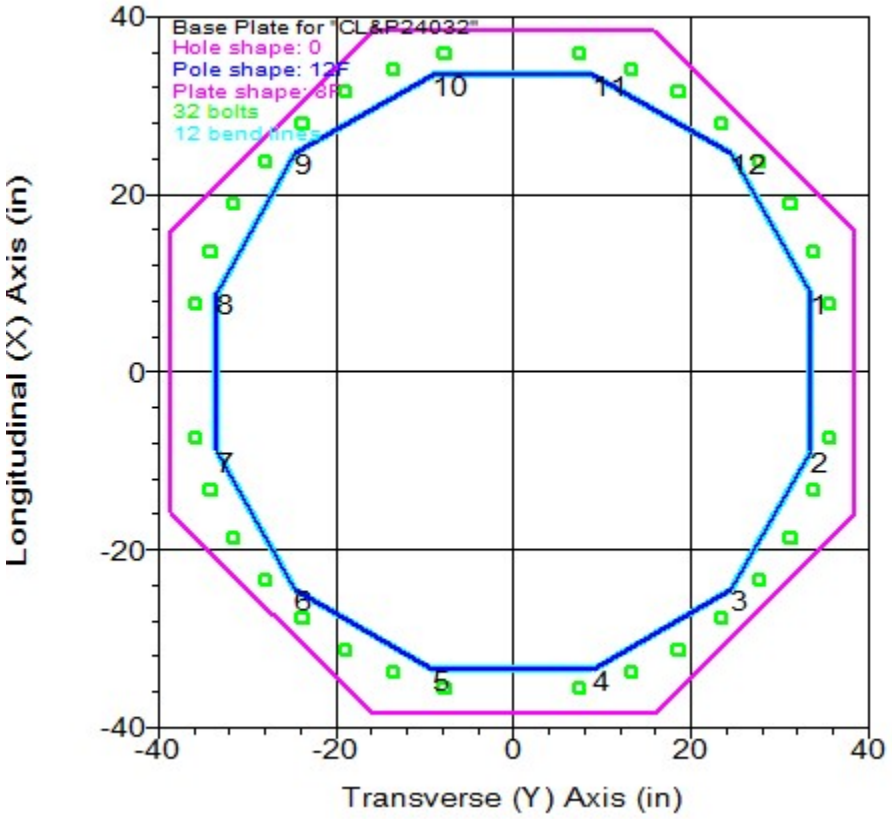
Pole Property	Tube No.	Length (ft)	Thickness (in)	Lap Length (ft)	Lap Factor	Lap Butt (in)	Gap or Offset (in)	Yield Stress (ksi)	Moment Cap. Override (ft-k)	Tube Weight (lbs)	Center of Gravity (ft)	Calculated Taper (in/ft)	Tube Top Diameter (in)	Tube Bot. Diameter (in)	1.5x Lap Length (ft)	Diam. Actual Overlap (ft)
CL&P24032	1	43	0.3125	5.167	0.000		0.000	65.000	0.000	5078	22.79	0.28958	28.63	41.08	5.057	5.167
CL&P24032	2	40	0.375	6.330	0.000		0.000	65.000	0.000	7282	20.87	0.28958	38.96	50.54	6.224	6.330
CL&P24032	3	20	0.4375	0.000	0.000		0.000	65.000	0.000	4826	10.19	0.28958	47.96	53.75	6.609	0.000
CL&P24032	4	20	0.5	7.500	0.000		0.000	65.000	0.000	6157	10.17	0.28958	53.87	59.66	7.333	7.500
CL&P24032	5	20	0.5625	0.000	0.000		0.000	65.000	0.000	7241	10.16	0.28958	56.49	62.28	7.645	0.000
CL&P24032	6	16.5	0.5625	0.000	0.000		0.000	65.000	0.000	6510	8.35	0.28958	62.28	67.06	0.000	0.000

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&P24032	77.000	8F	3.500	4749	0.000	0.000	0	490.00	60.000	2.250	73.000	32	84966.72	84868.24

Base Plate Bolt Coordinates for Property "CL&P24032":

Bolt X Coord.	Bolt Y Coord.	Bolt Angle (deg)
0.2089	0.9795	0
0.3664	0.9315	0
0.5137	0.8596	0
0.6437	0.7637	0
0.7637	0.6473	0
0.8596	0.5137	0
0.9315	0.3664	0
0.9795	0.2089	0



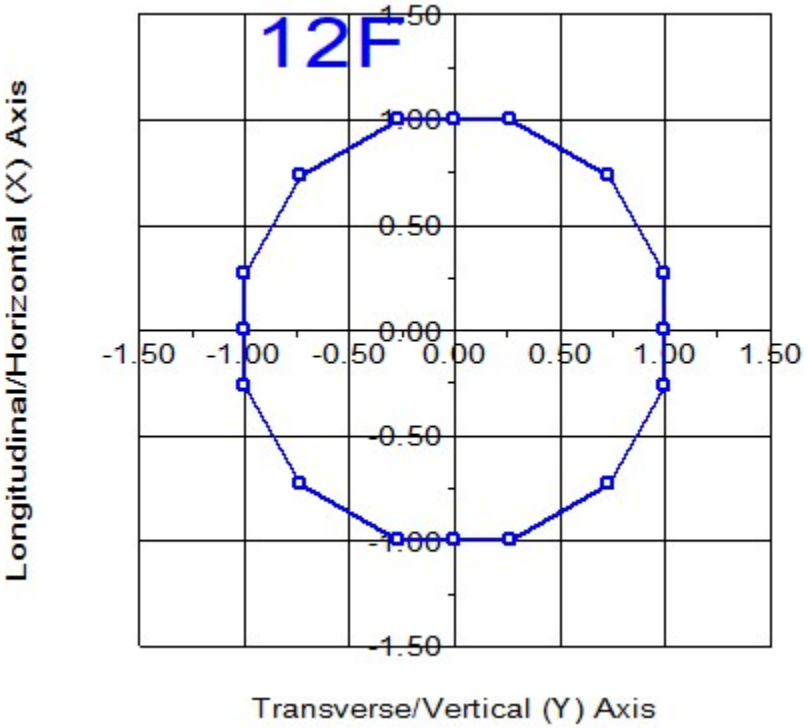
Steel Pole Connectivity:

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)
24032			0	0	0	0	0	CL&P24032	18 labels		0.00	0

Relative Attachment Labels for Steel Pole "24032":

Joint Label	Distance From Origin/Top Joint (ft)	Global Z of Attach (ft)
24032:Arm1	0.00	117.50
24032:Arm2	0.00	94.00
24032:Arm3	0.00	72.00
24032:TopConn	0.00	137.00
24032:BotConn	0.00	127.00

24032:WVGD1	0.00	5.00
24032:WVGD2	0.00	15.00
24032:WVGD3	0.00	25.00
24032:WVGD4	0.00	35.00
24032:WVGD5	0.00	45.00
24032:WVGD6	0.00	55.00
24032:WVGD7	0.00	65.00
24032:WVGD8	0.00	75.00
24032:WVGD9	0.00	85.00
24032:WVGD10	0.00	95.00
24032:WVGD11	0.00	105.00
24032:WVGD12	0.00	115.00
24032:WVGD13	0.00	125.00



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)	T-Moment Capacity (ft-k)	L-Moment Capacity (ft-k)
24032	24032:t	24032:t Ori	0.00	28.63	28.45	2919.12	2919.12	0.00	21.9	65.00	65.00	1104.76	1104.76
24032	24032:TopConn	24032:TopConn End	3.50	29.64	29.47	3244.23	3244.23	0.00	22.7	65.00	65.00	1185.78	1185.78

24032	24032:TopConn	24032:TopConn	Ori	3.50	29.64	29.47	3244.23	3244.23	0.00	22.7	65.00	65.00	1185.78	1185.78
24032	#24032:0	Tube 1	End	8.50	31.09	30.92	3748.83	3748.83	0.00	24.0	65.00	65.00	1306.39	1306.39
24032	#24032:0	Tube 1	Ori	8.50	31.09	30.92	3748.83	3748.83	0.00	24.0	65.00	65.00	1306.39	1306.39
24032	24032:BotConn	24032:BotConn	End	13.50	32.54	32.38	4303.21	4303.21	0.00	25.2	65.00	65.00	1432.85	1432.85
24032	24032:BotConn	24032:BotConn	Ori	13.50	32.54	32.38	4303.22	4303.22	0.00	25.2	65.00	65.00	1432.85	1432.85
24032	24032:WVGD13	24032:WVGD13	End	15.50	33.11	32.96	4539.43	4539.43	0.00	25.7	65.00	65.00	1485.07	1485.07
24032	24032:WVGD13	24032:WVGD13	Ori	15.50	33.11	32.96	4539.43	4539.43	0.00	25.7	65.00	65.00	1485.07	1485.07
24032	#24032:1	Tube 1	End	19.25	34.20	34.05	5005.34	5005.34	0.00	26.6	65.00	65.00	1585.49	1585.49
24032	#24032:1	Tube 1	Ori	19.25	34.20	34.05	5005.34	5005.34	0.00	26.6	65.00	65.00	1585.49	1585.49
24032	24032:Arm1	24032:Arm1	End	23.00	35.29	35.14	5502.09	5502.09	0.00	27.6	65.00	65.00	1689.21	1689.21
24032	24032:Arm1	24032:Arm1	Ori	23.00	35.29	35.14	5502.09	5502.09	0.00	27.6	65.00	65.00	1689.21	1689.21
24032	24032:WVGD12	24032:WVGD12	End	25.50	36.01	35.87	5850.88	5850.88	0.00	28.2	65.00	65.00	1760.18	1760.18
24032	24032:WVGD12	24032:WVGD12	Ori	25.50	36.01	35.87	5850.88	5850.88	0.00	28.2	65.00	65.00	1760.18	1760.18
24032	#24032:2	Tube 1	End	30.50	37.46	37.32	6592.05	6592.05	0.00	29.4	65.00	65.00	1906.49	1906.49
24032	#24032:2	Tube 1	Ori	30.50	37.46	37.32	6592.05	6592.05	0.00	29.4	65.00	65.00	1906.49	1906.49
24032	24032:WVGD11	24032:WVGD11	End	35.50	38.91	38.78	7393.32	7393.32	0.00	30.7	65.00	64.18	2032.57	2032.57
24032	24032:WVGD11	24032:WVGD11	Ori	35.50	38.91	38.78	7393.32	7393.32	0.00	30.7	65.00	64.18	2032.57	2032.57
24032	#24032:3	SpliceT	End	37.83	39.58	39.46	7787.89	7787.89	0.00	31.3	65.00	63.61	2085.95	2085.95
24032	#24032:3	SpliceT	Ori	37.83	39.58	39.46	7787.89	7787.89	0.00	31.3	65.00	63.61	2085.95	2085.95
24032	#24032:4	Splice	End	40.42	39.70	47.42	9389.09	9389.09	0.00	25.7	65.00	65.00	2561.83	2561.83
24032	#24032:4	Splice	Ori	40.42	39.70	47.42	9389.09	9389.09	0.00	25.7	65.00	65.00	2561.83	2561.83
24032	#24032:5	SpliceB	End	43.00	40.45	48.32	9935.13	9935.13	0.00	26.2	65.00	65.00	2660.68	2660.68
24032	#24032:5	SpliceB	Ori	43.00	40.45	48.32	9935.13	9935.13	0.00	26.2	65.00	65.00	2660.68	2660.68
24032	24032:WVGD10	24032:WVGD10	End	45.50	41.18	49.20	10483.96	10483.96	0.00	26.7	65.00	65.00	2758.24	2758.24
24032	24032:WVGD10	24032:WVGD10	Ori	45.50	41.18	49.20	10483.96	10483.96	0.00	26.7	65.00	65.00	2758.24	2758.24
24032	24032:Arm2	24032:Arm2	End	46.50	41.47	49.55	10708.76	10708.76	0.00	26.9	65.00	65.00	2797.71	2797.71
24032	24032:Arm2	24032:Arm2	Ori	46.50	41.47	49.55	10708.76	10708.76	0.00	26.9	65.00	65.00	2797.71	2797.71
24032	#24032:6	Tube 2	End	51.00	42.77	51.12	11760.17	11760.17	0.00	27.9	65.00	65.00	2978.78	2978.78
24032	#24032:6	Tube 2	Ori	51.00	42.77	51.12	11760.17	11760.17	0.00	27.9	65.00	65.00	2978.78	2978.78
24032	24032:WVGD9	24032:WVGD9	End	55.50	44.07	52.69	12878.24	12878.24	0.00	28.8	65.00	65.00	3165.54	3165.54
24032	24032:WVGD9	24032:WVGD9	Ori	55.50	44.07	52.69	12878.24	12878.24	0.00	28.8	65.00	65.00	3165.54	3165.54
24032	#24032:7	Tube 2	End	60.50	45.52	54.44	14201.22	14201.22	0.00	29.8	65.00	64.99	3379.36	3379.36
24032	#24032:7	Tube 2	Ori	60.50	45.52	54.44	14201.22	14201.22	0.00	29.8	65.00	64.99	3379.36	3379.36
24032	24032:WVGD8	24032:WVGD8	End	65.50	46.97	56.18	15611.84	15611.84	0.00	30.9	65.00	63.98	3544.33	3544.33
24032	24032:WVGD8	24032:WVGD8	Ori	65.50	46.97	56.18	15611.84	15611.84	0.00	30.9	65.00	63.98	3544.33	3544.33
24032	24032:Arm3	24032:Arm3	End	68.50	47.84	57.23	16501.45	16501.45	0.00	31.5	65.00	63.37	3643.28	3643.28
24032	24032:Arm3	24032:Arm3	Ori	68.50	47.84	57.23	16501.45	16501.45	0.00	31.5	65.00	63.37	3643.28	3643.28
24032	#24032:8	SpliceT	End	71.50	48.71	58.28	17424.23	17424.23	0.00	32.1	65.00	62.76	3742.12	3742.12
24032	#24032:8	SpliceT	Ori	71.50	48.71	58.28	17424.23	17424.23	0.00	32.1	65.00	62.76	3742.12	3742.12
24032	24032:WVGD7	24032:WVGD7	End	75.50	49.11	68.48	20768.19	20768.19	0.00	27.4	65.00	65.00	4580.90	4580.90
24032	24032:WVGD7	24032:WVGD7	Ori	75.50	49.11	68.48	20768.20	20768.20	0.00	27.4	65.00	65.00	4580.90	4580.90
24032	#24032:9	SpliceB	End	77.83	49.79	69.42	21643.80	21643.80	0.00	27.8	65.00	65.00	4709.33	4709.33
24032	#24032:9	SpliceB	Ori	77.83	49.79	69.42	21643.81	21643.81	0.00	27.8	65.00	65.00	4709.34	4709.34
24032	#24032:10	Tube 3	End	81.67	50.90	70.99	23138.00	23138.00	0.00	28.5	65.00	65.00	4924.60	4924.60
24032	#24032:10	Tube 3	Ori	81.67	50.90	70.99	23138.00	23138.00	0.00	28.5	65.00	65.00	4924.60	4924.60
24032	24032:WVGD6	24032:WVGD6	End	85.50	52.01	72.55	24699.43	24699.43	0.00	29.2	65.00	65.00	5144.68	5144.68
24032	24032:WVGD6	24032:WVGD6	Ori	85.50	52.01	72.55	24699.43	24699.43	0.00	29.2	65.00	65.00	5144.68	5144.68
24032	#24032:11	Tube 3	End	88.50	52.88	73.77	25968.71	25968.71	0.00	29.7	65.00	65.00	5320.20	5320.20
24032	#24032:11	Tube 3	Ori	88.50	52.88	73.77	25968.71	25968.71	0.00	29.7	65.00	65.00	5320.20	5320.20
24032	#24032:12	SpliceT	End	91.50	53.75	74.99	27280.75	27280.75	0.00	30.2	65.00	64.61	5465.59	5465.59
24032	#24032:12	SpliceT	Ori	91.50	53.87	85.81	31288.41	31288.41	0.00	26.2	65.00	65.00	6291.80	6291.80
24032	24032:WVGD5	24032:WVGD5	End	95.50	55.03	87.67	33369.95	33369.95	0.00	26.8	65.00	65.00	6569.13	6569.13
24032	24032:WVGD5	24032:WVGD5	Ori	95.50	55.03	87.67	33369.96	33369.96	0.00	26.8	65.00	65.00	6569.13	6569.13
24032	#24032:13	Tube 4	End	99.75	56.26	89.65	35680.62	35680.62	0.00	27.5	65.00	65.00	6870.36	6870.36
24032	#24032:13	Tube 4	Ori	99.75	56.26	89.65	35680.62	35680.62	0.00	27.5	65.00	65.00	6870.36	6870.36
24032	#24032:14	SpliceT	End	104.00	57.49	91.63	38095.57	38095.57	0.00	28.1	65.00	65.00	7178.33	7178.33
24032	#24032:14	SpliceT	Ori	104.00	57.49	91.63	38095.57	38095.57	0.00	28.1	65.00	65.00	7178.33	7178.33
24032	24032:WVGD4	24032:WVGD4	End	105.50	56.93	101.94	41456.97	41456.97	0.00	24.4	65.00	65.00	7889.34	7889.34
24032	24032:WVGD4	24032:WVGD4	Ori	105.50	56.93	101.94	41456.98	41456.98	0.00	24.4	65.00	65.00	7889.34	7889.34
24032	#24032:15	Splice	End	108.50	57.80	103.52	43403.49	43403.49	0.00	24.9	65.00	65.00	8135.60	8135.60

24032	#24032:15	Splice	Ori	108.50	57.80	103.52	43403.49	43403.49	0.00	24.9	65.00	65.00	8135.61	8135.61
24032	#24032:16	SpliceB	End	111.50	58.66	105.09	45410.00	45410.00	0.00	25.3	65.00	65.00	8385.66	8385.66
24032	#24032:16	SpliceB	Ori	111.50	58.66	105.09	45410.01	45410.01	0.00	25.3	65.00	65.00	8385.66	8385.66
24032	24032:WVGD3	24032:WVGD3	End	115.50	59.82	107.18	48180.25	48180.25	0.00	25.8	65.00	65.00	8724.95	8724.95
24032	24032:WVGD3	24032:WVGD3	Ori	115.50	59.82	107.18	48180.26	48180.26	0.00	25.8	65.00	65.00	8724.96	8724.96
24032	#24032:17	Tube 5	End	119.75	61.05	109.41	51244.71	51244.71	0.00	26.4	65.00	65.00	9092.83	9092.83
24032	#24032:17	Tube 5	Ori	119.75	61.05	109.41	51244.71	51244.71	0.00	26.4	65.00	65.00	9092.83	9092.83
24032	#24032:18	SpliceT	End	124.00	62.28	111.63	54436.42	54436.42	0.00	27.0	65.00	65.00	9468.30	9468.30
24032	#24032:18	SpliceT	Ori	124.00	62.28	111.63	54436.43	54436.43	0.00	27.0	65.00	65.00	9468.30	9468.30
24032	24032:WVGD2	24032:WVGD2	End	125.50	62.72	112.42	55593.78	55593.78	0.00	27.2	65.00	65.00	9602.63	9602.63
24032	24032:WVGD2	24032:WVGD2	Ori	125.50	62.72	112.42	55593.79	55593.79	0.00	27.2	65.00	65.00	9602.63	9602.63
24032	#24032:19	Tube 6	End	130.50	64.17	115.04	59569.93	59569.93	0.00	27.9	65.00	65.00	10057.25	10057.25
24032	#24032:19	Tube 6	Ori	130.50	64.17	115.04	59569.93	59569.93	0.00	27.9	65.00	65.00	10057.25	10057.25
24032	24032:WVGD1	24032:WVGD1	End	135.50	65.61	117.66	63731.28	63731.28	0.00	28.6	65.00	65.00	10522.37	10522.37
24032	24032:WVGD1	24032:WVGD1	Ori	135.50	65.61	117.66	63731.29	63731.29	0.00	28.6	65.00	65.00	10522.38	10522.38
24032	24032:g	24032:g	End	140.50	67.06	120.28	68082.07	68082.07	0.00	29.3	65.00	65.00	10998.02	10998.02

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 Check	Strength Type	Vertical Capacity (lbs)	Tension Capacity (lbs)	Compres. Capacity (lbs)	Long. Capacity (lbs)	Yield Stress (ksi)	Steel Texture Weight Density (lbs/ft^3)	Override Shape At End
ARM1	20708-EB	8T	0.3125	18	9	0	1.3	29000	2 points	Calculated	0	0	0	0	65	0	
ARM2	20708-H	8T	0.3125	16	7.5	0	1.3	29000	1 point	Calculated	0	0	0	0	65	0	

Intermediate Joints for Davit Property "ARM1":

Joint Label	Horz. Offset (ft)	Vert. Offset (ft)
V	14	-1.2083
T	21.75	-1.8125

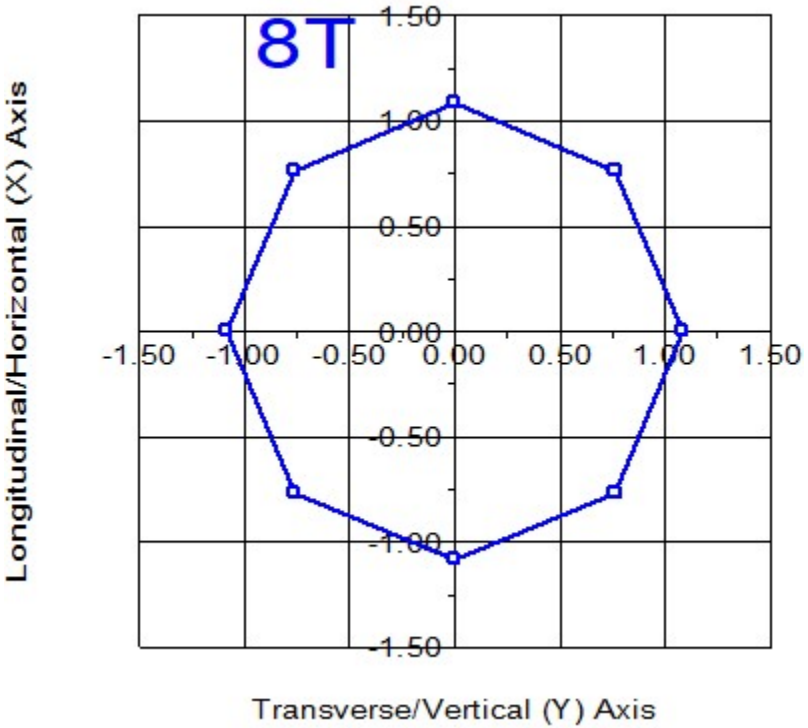
Intermediate Joints for Davit Property "ARM2":

Joint Label	Horz. Offset (ft)	Vert. Offset (ft)
End	14	-1.167

Tubular Davit Arm Connectivity:

Davit Label	Attach Label	Davit Property Set	Azimuth (deg)

Davit1	24032:Arm1	ARM1	0
Davit2	24032:Arm1	ARM1	180
Davit3	24032:Arm2	ARM2	0
Davit4	24032:Arm2	ARM2	180
Davit5	24032:Arm3	ARM2	0
Davit6	24032:Arm3	ARM2	180



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)	V-Moment Capacity (ft-k)	H-Moment Capacity (ft-k)
Davit1	Davit1:O	Origin	0.00	18.00	18.32	757.46	757.46	0.00	19.7	65.00	65.00	421.18	421.18
Davit1	#Davit1:0	End	5.00	15.94	16.18	522.30	522.30	0.00	17.0	65.00	65.00	327.99	327.99
Davit1	#Davit1:0	Origin	5.00	15.94	16.18	522.30	522.30	0.00	17.0	65.00	65.00	327.99	327.99
Davit1	#Davit1:1	End	9.53	14.07	14.25	356.65	356.65	0.00	14.5	65.00	65.00	253.67	253.67
Davit1	#Davit1:1	Origin	9.53	14.07	14.25	356.65	356.65	0.00	14.5	65.00	65.00	253.67	253.67
Davit1	Davit1:V	End	14.05	12.21	12.32	230.35	230.35	0.00	12.0	65.00	65.00	188.89	188.89
Davit1	Davit1:V	Origin	14.05	12.21	12.32	230.35	230.35	0.00	12.0	65.00	65.00	188.89	188.89
Davit1	#Davit1:2	End	17.94	10.60	10.66	149.24	149.24	0.00	9.9	65.00	65.00	140.88	140.88
Davit1	#Davit1:2	Origin	17.94	10.60	10.66	149.24	149.24	0.00	9.9	65.00	65.00	140.88	140.88
Davit1	Davit1:T	End	21.83	9.00	9.00	89.84	89.84	0.00	7.8	65.00	65.00	99.91	99.91

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	15.94	16.18	522.30	522.30	0.00	17.0	65.00	65.00	327.99	327.99
Davit2	#Davit2:0	Origin	5.00	15.94	16.18	522.30	522.30	0.00	17.0	65.00	65.00	327.99	327.99
Davit2	#Davit2:1	End	9.53	14.07	14.25	356.65	356.65	0.00	14.5	65.00	65.00	253.67	253.67
Davit2	#Davit2:1	Origin	9.53	14.07	14.25	356.65	356.65	0.00	14.5	65.00	65.00	253.67	253.67
Davit2	Davit2:V	End	14.05	12.21	12.32	230.35	230.35	0.00	12.0	65.00	65.00	188.89	188.89
Davit2	Davit2:V	Origin	14.05	12.21	12.32	230.35	230.35	0.00	12.0	65.00	65.00	188.89	188.89
Davit2	#Davit2:2	End	17.94	10.60	10.66	149.24	149.24	0.00	9.9	65.00	65.00	140.88	140.88
Davit2	#Davit2:2	Origin	17.94	10.60	10.66	149.24	149.24	0.00	9.9	65.00	65.00	140.88	140.88
Davit2	Davit2:T	End	21.83	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	16.00	16.24	528.52	528.52	0.00	17.1	65.00	65.00	330.61	330.61
Davit3	#Davit3:0	End	5.00	12.97	13.11	277.99	277.99	0.00	13.1	65.00	65.00	214.44	214.44
Davit3	#Davit3:0	Origin	5.00	12.97	13.11	277.99	277.99	0.00	13.1	65.00	65.00	214.44	214.44
Davit3	#Davit3:1	End	9.52	10.24	10.28	133.91	133.91	0.00	9.4	65.00	65.00	130.92	130.92
Davit3	#Davit3:1	Origin	9.52	10.24	10.28	133.91	133.91	0.00	9.4	65.00	65.00	130.92	130.92
Davit3	Davit3:End	End	14.05	7.50	7.44	50.90	50.90	0.00	5.8	65.00	65.00	67.93	67.93
Davit4	Davit4:O	Origin	0.00	16.00	16.24	528.52	528.52	0.00	17.1	65.00	65.00	330.61	330.61
Davit4	#Davit4:0	End	5.00	12.97	13.11	277.99	277.99	0.00	13.1	65.00	65.00	214.44	214.44
Davit4	#Davit4:0	Origin	5.00	12.97	13.11	277.99	277.99	0.00	13.1	65.00	65.00	214.44	214.44
Davit4	#Davit4:1	End	9.52	10.24	10.28	133.91	133.91	0.00	9.4	65.00	65.00	130.92	130.92
Davit4	#Davit4:1	Origin	9.52	10.24	10.28	133.91	133.91	0.00	9.4	65.00	65.00	130.92	130.92
Davit4	Davit4:End	End	14.05	7.50	7.44	50.90	50.90	0.00	5.8	65.00	65.00	67.93	67.93
Davit5	Davit5:O	Origin	0.00	16.00	16.24	528.52	528.52	0.00	17.1	65.00	65.00	330.61	330.61
Davit5	#Davit5:0	End	5.00	12.97	13.11	277.99	277.99	0.00	13.1	65.00	65.00	214.44	214.44
Davit5	#Davit5:0	Origin	5.00	12.97	13.11	277.99	277.99	0.00	13.1	65.00	65.00	214.44	214.44
Davit5	#Davit5:1	End	9.52	10.24	10.28	133.91	133.91	0.00	9.4	65.00	65.00	130.92	130.92
Davit5	#Davit5:1	Origin	9.52	10.24	10.28	133.91	133.91	0.00	9.4	65.00	65.00	130.92	130.92
Davit5	Davit5:End	End	14.05	7.50	7.44	50.90	50.90	0.00	5.8	65.00	65.00	67.93	67.93
Davit6	Davit6:O	Origin	0.00	16.00	16.24	528.52	528.52	0.00	17.1	65.00	65.00	330.61	330.61
Davit6	#Davit6:0	End	5.00	12.97	13.11	277.99	277.99	0.00	13.1	65.00	65.00	214.44	214.44
Davit6	#Davit6:0	Origin	5.00	12.97	13.11	277.99	277.99	0.00	13.1	65.00	65.00	214.44	214.44
Davit6	#Davit6:1	End	9.52	10.24	10.28	133.91	133.91	0.00	9.4	65.00	65.00	130.92	130.92
Davit6	#Davit6:1	Origin	9.52	10.24	10.28	133.91	133.91	0.00	9.4	65.00	65.00	130.92	130.92
Davit6	Davit6:End	End	14.05	7.50	7.44	50.90	50.90	0.00	5.8	65.00	65.00	67.93	67.93

*** Insulator Data

Clamp Properties:

Label	Stock Number	Holding Capacity (lbs)	Hardware Capacity (lbs)	Notes
clamp	clamp1	8e+04	0	

Clamp Insulator Connectivity:

Clamp Label	Structure And Tip Attach	Property Set	Min. Required Vertical Load (uplift) (lbs)
Clamp1	Davit1:V	clamp	No Limit
Clamp2	Davit2:V	clamp	No Limit
Clamp3	Davit1:T	clamp	No Limit

Clamp4	Davit2:T	clamp	No Limit
Clamp5	Davit3:End	clamp	No Limit
Clamp6	Davit4:End	clamp	No Limit
Clamp7	Davit5:End	clamp	No Limit
Clamp8	Davit6:End	clamp	No Limit
Clamp9	24032:TopConn	clamp	No Limit
Clamp10	24032:BotConn	clamp	No Limit
Clamp11	24032:WVGD1	clamp	No Limit
Clamp12	24032:WVGD2	clamp	No Limit
Clamp13	24032:WVGD3	clamp	No Limit
Clamp14	24032:WVGD4	clamp	No Limit
Clamp15	24032:WVGD5	clamp	No Limit
Clamp16	24032:WVGD6	clamp	No Limit
Clamp17	24032:WVGD7	clamp	No Limit
Clamp18	24032:WVGD8	clamp	No Limit
Clamp19	24032:WVGD9	clamp	No Limit
Clamp20	24032:WVGD10	clamp	No Limit
Clamp21	24032:WVGD11	clamp	No Limit
Clamp22	24032:WVGD12	clamp	No Limit
Clamp23	24032:WVGD13	clamp	No Limit

Material List Options:
Show Parts: YES
Decompose Assemblies: NO
Show Assemblies: YES

Material List

Stock Number	Item Description	Quantity	Unit of Measure
20708-EB	Tubular Davit property: ARM1	2.00	Each
20708-H	Tubular Davit property: ARM2	4.00	Each
clamp1	Clamp property: clamp	23.00	Each
24032	Steel Pole property: CL&P24032	1.00	Each

*** Loads Data

Loads from file: J:\Jobs\1906600.WI\05_CT11602C\05_Structural\Backup Documentation\Rev (1)\Calcs\PLS POLE\cl&p #24032.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) 140.50 (ft)
  Structure height 140.50 (ft)
  Structure height above ground 140.50 (ft)

Vector Load Cases:

Load Case Description	Dead Load	Wind Area	SF for Steel Poles Deflection	SF for Wood Poles Deflection	SF for Conc. Poles	SF for Conc. Poles	SF for Guys	SF for Non Tubular Arms	SF for Braces	SF for Insuls.	SF For Hardware	Point Found.	Wind/Ice Loads	Trans. Wind Pressure (psf)	Longit. Wind Pressure (psf)	Ice Thick. (in)	Ice Density (lbs/ft^3)	Temperature Factor (deg F)	Pole Tubular Factor	Pole Arms	Pole Ult. Check and Towers	Pole First Crack % or (ft)	Zero Tens.	Cables and Tubular Arms	Model
NESC Heavy Wind	1.5000	2.5000	1.00000	0.6500	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	22 loads	Wind on All	4	0	0.000	56.000	60.0	No Limit	0														
NESC Extreme Wind	1.0000	1.0000	1.00000	0.6500	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	22 loads	NESC 2017	31	0	0.000	0.000	60.0	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	0.0000	1.0000	22 loads	Wind on All	6.4	0	0.000	56.000	60.0	No Limit	0														
NESC Heavy Broken Wire	1.5000	2.5000	1.00000	0.6500	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	22 loads	Wind on All	4	0	0.000	56.000	60.0	No Limit	0														

Point Loads for Load Case "NESC Heavy Wind":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
Davit1:T	838	728	0	TL:SW
Davit2:T	796	678	0	TR:SW
Davit1:V	4894	2249	1	X1
Davit2:V	4894	2249	1	X2
Davit3:End	4894	2249	1	Y1
Davit4:End	4894	2249	1	Y2
Davit5:End	4894	2249	1	Z1
Davit6:End	4894	2249	1	Z2
24032:TopConn	1779	818	0	
24032:WVGD1	920	225	0	
24032:WVGD2	920	225	0	
24032:WVGD3	920	225	0	

24032:WVGD4	920	225	0
24032:WVGD5	920	225	0
24032:WVGD6	920	225	0
24032:WVGD7	920	225	0
24032:WVGD8	920	225	0
24032:WVGD9	920	225	0
24032:WVGD10	920	225	0
24032:WVGD11	920	225	0
24032:WVGD12	920	225	0
24032:WVGD13	920	225	0

Point Loads for Load Case "NESC Extreme Wind":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
Davit1:T	192	984	1	TL:SW
Davit2:T	206	808	1	TR:SW
Davit1:V	2085	4776	5	X1
Davit2:V	2085	4776	5	X2
Davit3:End	2085	4776	5	Y1
Davit4:End	2085	4776	5	Y2
Davit5:End	2085	4776	5	Z1
Davit6:End	2085	4776	5	Z2
24032:TopConn	790	3443	0	
24032:WVGD1	250	750	0	
24032:WVGD2	250	750	0	
24032:WVGD3	250	750	0	
24032:WVGD4	250	750	0	
24032:WVGD5	250	750	0	
24032:WVGD6	250	750	0	
24032:WVGD7	250	750	0	
24032:WVGD8	250	750	0	
24032:WVGD9	250	750	0	
24032:WVGD10	250	750	0	
24032:WVGD11	250	750	0	
24032:WVGD12	250	750	0	
24032:WVGD13	250	750	0	

Detailed Pole Loading Data for Load Case "NESC Extreme 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)
24032	24032:t	24032:TopConn	140.50	137.00	138.75	29.132	2.49e+06	1.000	32.60	0.00	345.18	277.23	0.00	0.00	277.23	0.00
24032	24032:TopConn		137.00	132.00	134.50	30.363	2.6e+06	1.000	32.60	0.00	513.74	412.43	0.00	0.00	412.43	0.00
24032		24032:BotConn	132.00	127.00	129.50	31.811	2.72e+06	1.000	32.60	0.00	538.49	432.10	0.00	0.00	432.10	0.00
24032	24032:BotConn	24032:WVGD13	127.00	125.00	126.00	32.825	2.81e+06	1.000	32.60	0.00	222.33	178.35	0.00	0.00	178.35	0.00
24032	24032:WVGD13		125.00	121.25	123.13	33.657	2.88e+06	1.000	32.60	0.00	427.54	342.88	0.00	0.00	342.88	0.00
24032		24032:Arm1	121.25	117.50	119.38	34.743	2.97e+06	1.000	32.60	0.00	441.46	353.95	0.00	0.00	353.95	0.00
24032	24032:Arm1	24032:WVGD12	117.50	115.00	116.25	35.648	3.05e+06	1.000	32.60	0.00	302.05	242.11	0.00	0.00	242.11	0.00
24032	24032:WVGD12		115.00	110.00	112.50	36.734	3.14e+06	1.000	32.60	0.00	622.66	498.97	0.00	0.00	498.97	0.00
24032		24032:WVGD11	110.00	105.00	107.50	38.182	3.26e+06	1.000	32.60	0.00	647.41	518.64	0.00	0.00	518.64	0.00

24032	24032:WVGD11		105.00	102.67	103.84	39.243	3.35e+06	1.000	32.60	0.00	310.15	248.40	0.00	0.00	248.40	0.00
24032			102.67	100.09	101.38	39.642	3.39e+06	1.000	32.60	0.00	763.10	278.23	0.00	0.00	278.23	0.00
24032			100.09	97.50	98.79	40.078	3.43e+06	1.000	32.60	0.00	777.64	281.29	0.00	0.00	281.29	0.00
24032		24032:WVGD10	97.50	95.00	96.25	40.815	3.49e+06	1.000	32.60	0.00	415.39	277.53	0.00	0.00	277.53	0.00
24032	24032:WVGD10	24032:Arm2	95.00	94.00	94.50	41.322	3.53e+06	1.000	32.60	0.00	168.00	112.26	0.00	0.00	112.26	0.00
24032	24032:Arm2		94.00	89.50	91.75	42.118	3.6e+06	1.000	32.60	0.00	770.72	514.89	0.00	0.00	514.89	0.00
24032		24032:WVGD9	89.50	85.00	87.25	43.421	3.71e+06	1.000	32.60	0.00	794.78	530.82	0.00	0.00	530.82	0.00
24032	24032:WVGD9		85.00	80.00	82.50	44.797	3.83e+06	1.000	32.60	0.00	911.31	608.49	0.00	0.00	608.49	0.00
24032		24032:WVGD8	80.00	75.00	77.50	46.245	3.95e+06	1.000	32.60	0.00	941.01	628.15	0.00	0.00	628.15	0.00
24032	24032:WVGD8	24032:Arm3	75.00	72.00	73.50	47.403	4.05e+06	1.000	32.60	0.00	578.86	386.33	0.00	0.00	386.33	0.00
24032	24032:Arm3		72.00	69.00	70.50	48.272	4.13e+06	1.000	32.60	0.00	589.56	393.41	0.00	0.00	393.41	0.00
24032		24032:WVGD7	69.00	65.00	67.00	48.910	4.18e+06	1.000	32.60	0.00	1723.65	531.49	0.00	0.00	531.49	0.00
24032	24032:WVGD7		65.00	62.67	63.84	49.452	4.23e+06	1.000	32.60	0.00	1023.01	313.02	0.00	0.00	313.02	0.00
24032			62.67	58.84	60.75	50.345	4.3e+06	1.000	32.60	0.00	916.28	524.51	0.00	0.00	524.51	0.00
24032		24032:WVGD6	58.84	55.00	56.92	51.455	4.4e+06	1.000	32.60	0.00	936.55	536.08	0.00	0.00	536.08	0.00
24032	24032:WVGD6		55.00	52.00	53.50	52.445	4.48e+06	1.000	32.60	0.00	746.84	427.42	0.00	0.00	427.42	0.00
24032			52.00	49.00	50.50	53.313	4.56e+06	1.000	32.60	0.00	759.32	434.50	0.00	0.00	434.50	0.00
24032		24032:WVGD5	49.00	45.00	47.00	54.452	4.65e+06	1.000	32.60	0.00	1180.58	591.71	0.00	0.00	591.71	0.00
24032	24032:WVGD5		45.00	40.75	42.88	55.647	4.76e+06	1.000	32.60	0.00	1282.17	642.48	0.00	0.00	642.48	0.00
24032			40.75	36.50	38.63	56.877	4.86e+06	1.000	32.60	0.00	1310.78	656.69	0.00	0.00	656.69	0.00
24032		24032:WVGD4	36.50	35.00	35.75	57.210	4.89e+06	1.000	32.60	0.00	987.80	233.13	0.00	0.00	233.13	0.00
24032	24032:WVGD4		35.00	32.00	33.50	57.361	4.9e+06	1.000	32.60	0.00	1998.31	467.49	0.00	0.00	467.49	0.00
24032			32.00	29.00	30.50	58.230	4.98e+06	1.000	32.60	0.00	2028.23	474.57	0.00	0.00	474.57	0.00
24032		24032:WVGD3	29.00	25.00	27.00	59.244	5.06e+06	1.000	32.60	0.00	1444.81	643.78	0.00	0.00	643.78	0.00
24032	24032:WVGD3		25.00	20.75	22.88	60.438	5.17e+06	1.000	32.60	0.00	1566.14	697.81	0.00	0.00	697.81	0.00
24032			20.75	16.50	18.63	61.669	5.27e+06	1.000	32.60	0.00	1598.33	712.02	0.00	0.00	712.02	0.00
24032		24032:WVGD2	16.50	15.00	15.75	62.502	5.34e+06	1.000	32.60	0.00	571.80	254.69	0.00	0.00	254.69	0.00
24032	24032:WVGD2		15.00	10.00	12.50	63.443	5.42e+06	1.000	32.60	0.00	1934.97	861.76	0.00	0.00	861.76	0.00
24032		24032:WVGD1	10.00	5.00	7.50	64.891	5.55e+06	1.000	32.60	0.00	1979.52	881.42	0.00	0.00	881.42	0.00
24032	24032:WVGD1	24032:g	5.00	0.00	2.50	66.339	5.67e+06	1.000	32.60	0.00	2024.08	901.09	0.00	0.00	901.09	0.00

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

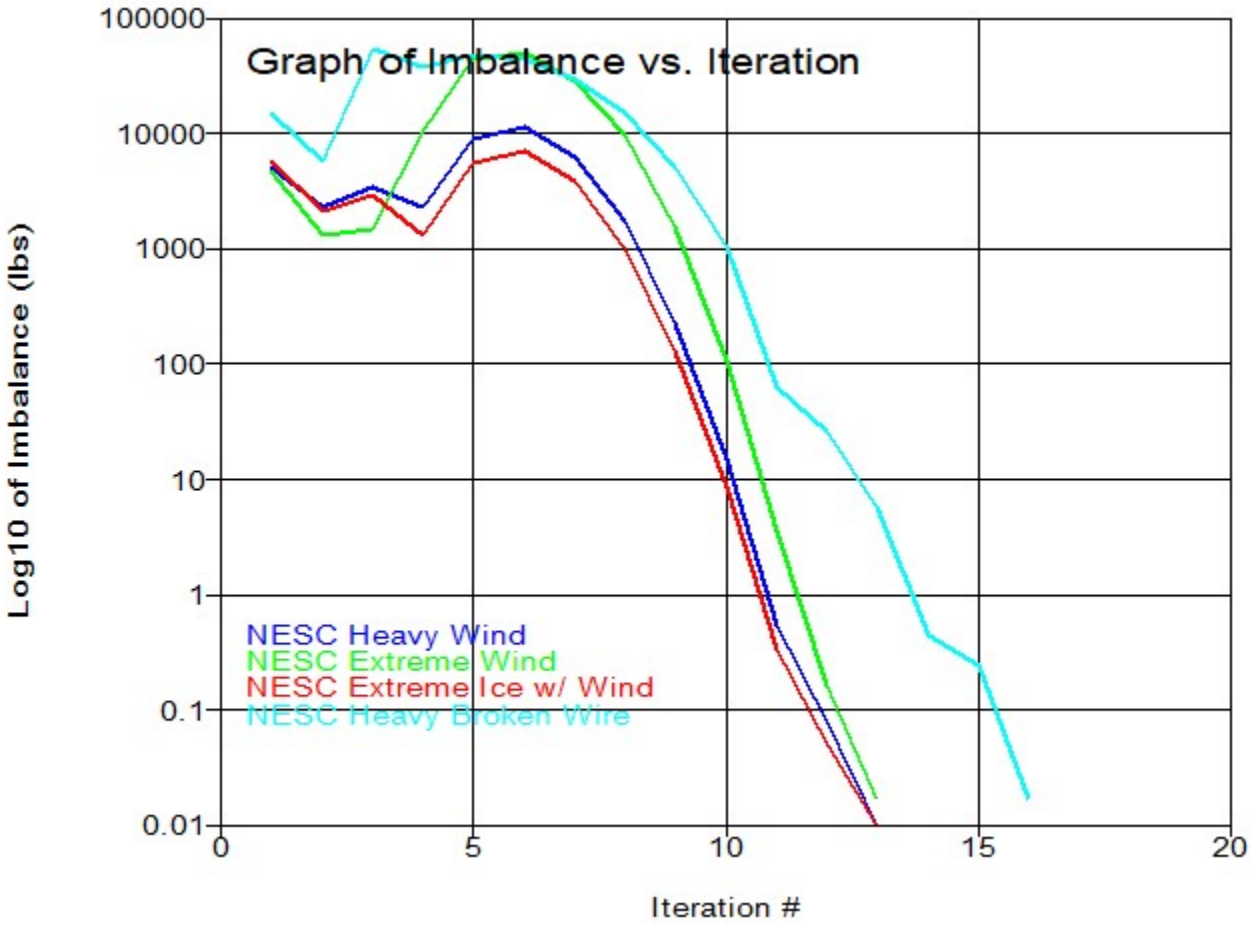
Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
Davit1:V	938	671	0	TL:SW
Davit2:T	887	635	0	TR:SW
Davit1:V	4565	1900	1	X1
Davit2:V	4565	1900	1	X2
Davit3:End	4565	1900	1	Y1
Davit4:End	4565	1900	1	Y2
Davit5:End	4565	1900	1	Z1
Davit6:End	4565	1900	1	Z2
24032:TopConn	1399	672	0	
24032:WVGD1	850	148	0	
24032:WVGD2	850	148	0	
24032:WVGD3	850	148	0	
24032:WVGD4	850	148	0	
24032:WVGD5	850	148	0	
24032:WVGD6	850	148	0	
24032:WVGD7	850	148	0	
24032:WVGD8	850	148	0	
24032:WVGD9	850	148	0	
24032:WVGD10	850	148	0	
24032:WVGD11	850	148	0	
24032:WVGD12	850	148	0	
24032:WVGD13	850	148	0	

Point Loads for Load Case "NESC Heavy Broken Wire":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
Davit1:T	295	102	6762	Broken SW
Davit2:T	584	298	0	TR:SW
Davit1:V	2710	652	15109	Broken Cond
Davit2:V	3589	990	0	X2
Davit3:End	3589	990	0	Y1
Davit4:End	3589	990	0	Y2
Davit5:End	3589	990	0	Z1
Davit6:End	3589	990	0	Z2
24032:TopConn	1779	818	0	
24032:WVGD1	920	225	0	
24032:WVGD2	920	225	0	
24032:WVGD3	920	225	0	
24032:WVGD4	920	225	0	
24032:WVGD5	920	225	0	
24032:WVGD6	920	225	0	
24032:WVGD7	920	225	0	
24032:WVGD8	920	225	0	
24032:WVGD9	920	225	0	
24032:WVGD10	920	225	0	
24032:WVGD11	920	225	0	
24032:WVGD12	920	225	0	
24032:WVGD13	920	225	0	

*** Analysis Results:

Maximum element usage is 85.71% for Tubular Davit "Davit1" in load case "NESC Heavy Broken Wire"
Maximum insulator usage is 19.20% for Clamp "Clamp1" in load case "NESC Heavy Broken Wire"



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

Equilibrium Joint Positions and Rotations for Load Case "NESC Heavy 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)
24032:g	0	0	0	0.0000	0.0000	0.0000	0	0	0
24032:t	0.009439	1.647	-0.01575	-1.0856	0.0061	0.0000	0.009439	1.647	140.5
24032:TopConn	0.009064	1.581	-0.01512	-1.0855	0.0061	0.0000	0.009064	1.581	137

24032:BotConn	0.007994	1.391	-0.01329	-1.0811	0.0061	0.0000	0.007994	1.391	127
24032:WVGD13	0.007782	1.354	-0.01293	-1.0793	0.0061	0.0000	0.007782	1.354	125
24032:Arm1	0.006989	1.213	-0.01156	-1.0697	0.0060	0.0000	0.006989	1.213	117.5
24032:WVGD12	0.006728	1.166	-0.01108	-1.0635	0.0060	0.0000	0.006728	1.166	115
24032:WVGD11	0.005707	0.9839	-0.009202	-1.0191	0.0057	0.0000	0.005707	0.9839	105
24032:WVGD10	0.004737	0.8111	-0.007504	-0.9571	0.0054	0.0000	0.004737	0.8111	94.99
24032:Arm2	0.004643	0.7945	-0.007345	-0.9503	0.0053	0.0000	0.004643	0.7945	93.99
24032:WVGD9	0.00383	0.6503	-0.005934	-0.8788	0.0050	0.0000	0.00383	0.6503	84.99
24032:WVGD8	0.003003	0.5048	-0.004585	-0.7832	0.0045	0.0000	0.003003	0.5048	75
24032:Arm3	0.002773	0.4645	-0.004226	-0.7521	0.0043	0.0000	0.002773	0.4645	72
24032:WVGD7	0.002269	0.377	-0.003434	-0.6766	0.0039	0.0000	0.002269	0.377	65
24032:WVGD6	0.001634	0.268	-0.002511	-0.5669	0.0033	0.0000	0.001634	0.268	55
24032:WVGD5	0.001104	0.1787	-0.001794	-0.4562	0.0027	0.0000	0.001104	0.1787	45
24032:WVGD4	0.0006763	0.1079	-0.001249	-0.3513	0.0021	0.0000	0.0006763	0.1079	35
24032:WVGD3	0.0003505	0.05515	-0.0008252	-0.2507	0.0016	0.0000	0.0003505	0.05515	25
24032:WVGD2	0.0001288	0.01995	-0.0004694	-0.1499	0.0010	0.0000	0.0001288	0.01995	15
24032:WVGD1	1.515e-05	0.002293	-0.0001532	-0.0497	0.0003	0.0000	1.515e-05	0.002293	5
Davit1:O	0.006986	1.213	-0.03901	-1.0697	0.0060	0.0000	0.006986	2.683	117.5
Davit1:V	0.007086	1.237	-0.3643	-1.5187	0.0060	-0.0001	0.007086	16.71	118.3
Davit1:T	0.007135	1.25	-0.5745	-1.5716	0.0060	-0.0001	0.007135	24.47	118.7
Davit2:O	0.006992	1.213	0.01588	-1.0697	0.0060	0.0000	0.006992	-0.2571	117.5
Davit2:V	0.007157	1.232	0.2191	-0.6611	0.0060	0.0001	0.007157	-14.24	118.9
Davit2:T	0.007244	1.239	0.3045	-0.6156	0.0060	0.0001	0.007244	-21.98	119.6
Davit3:O	0.00464	0.7942	-0.036	-0.9503	0.0053	0.0000	0.00464	2.522	93.96
Davit3:End	0.004734	0.8168	-0.3489	-1.5494	0.0054	-0.0001	0.004734	16.54	94.82
Davit4:O	0.004646	0.7947	0.02131	-0.9503	0.0053	0.0000	0.004646	-0.9331	94.02
Davit4:End	0.00479	0.8089	0.1784	-0.3917	0.0054	0.0001	0.00479	-14.92	95.35
Davit5:O	0.00277	0.4643	-0.03039	-0.7521	0.0043	0.0000	0.00277	2.458	71.97
Davit5:End	0.002853	0.4839	-0.2949	-1.3520	0.0043	-0.0001	0.002853	16.48	72.87
Davit6:O	0.002775	0.4647	0.02194	-0.7521	0.0043	0.0000	0.002775	-1.529	72.02
Davit6:End	0.00289	0.4743	0.1305	-0.1924	0.0043	0.0001	0.00289	-15.52	73.3

Joint Support Reactions for Load Case "NESC Heavy Wind":

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	H-Shear Usage %	Z Force (kips)	Comp. Uplift Usage %	Result. Usage %	Result. Force (kips)	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	H-Bend-M Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
24032:g	-0.24	0.0	-27.62	0.0	0.0	-111.66	0.0	0.0	115.02	0.0	2370.53	0.0	-15.5	0.0	0.0	-0.01	0.0	0.0

Detailed Steel Pole Usages for Load Case "NESC Heavy 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. At Usage % Pt.
24032	24032:t	Origin	0.00	19.76	0.11	-0.19	-0.00	-0.00	0.0	-0.26	0.07	-0.00	-0.01	0.00	0.01	0.00	0.01	0.05
24032	24032:TopConn	End	3.50	18.97	0.11	-0.18	0.26	-0.01	0.0	-0.26	0.07	-0.00	-0.01	0.01	0.00	0.00	0.02	0.02
24032	24032:TopConn	Origin	3.50	18.97	0.11	-0.18	0.26	-0.01	-0.0	-2.67	1.11	-0.01	-0.09	0.00	0.08	0.00	0.16	0.25
24032	Tube 1	End	8.50	17.83	0.10	-0.17	5.78	-0.04	-0.0	-2.67	1.11	-0.01	-0.09	0.29	0.02	0.00	0.38	0.62
24032	Tube 1	Origin	8.50	17.83	0.10	-0.17	5.78	-0.04	0.0	-3.46	1.33	-0.01	-0.11	0.29	0.02	0.00	0.40	0.6

24032	24032:BotConn	End	13.50	16.70	0.10	-0.16	12.42	-0.10	0.0	-3.46	1.33	-0.01	-0.11	0.56	0.02	0.00	0.67	1.0
24032	24032:BotConn	Origin	13.50	16.70	0.10	-0.16	12.42	-0.10	-0.0	-4.03	1.49	-0.02	-0.12	0.56	0.02	0.00	0.69	1.1
24032	24032:WVGD13	End	15.50	16.24	0.09	-0.16	15.40	-0.13	-0.0	-4.03	1.49	-0.02	-0.12	0.68	0.02	0.00	0.80	1.2
24032	24032:WVGD13	Origin	15.50	16.24	0.09	-0.16	15.40	-0.13	0.0	-5.43	1.87	-0.02	-0.16	0.68	0.03	0.00	0.84	1.3
24032	Tube 1	End	19.25	15.40	0.09	-0.15	22.40	-0.20	0.0	-5.43	1.87	-0.02	-0.16	0.92	0.03	0.00	1.08	1.7
24032	Tube 1	Origin	19.25	15.40	0.09	-0.15	22.40	-0.20	0.0	-6.08	2.05	-0.02	-0.18	0.92	0.03	0.00	1.10	1.7
24032	24032:Arm1	End	23.00	14.55	0.08	-0.14	30.09	-0.29	0.0	-6.08	2.05	-0.02	-0.17	1.16	0.03	0.00	1.33	2.1
24032	24032:Arm1	Origin	23.00	14.55	0.08	-0.14	38.93	-0.30	0.0	-20.99	8.38	-0.03	-0.60	1.50	0.13	0.00	2.11	3.2
24032	24032:WVGD12	End	25.50	14.00	0.08	-0.13	59.88	-0.38	0.0	-20.99	8.38	-0.03	-0.59	2.22	0.12	0.00	2.81	4.3
24032	24032:WVGD12	Origin	25.50	14.00	0.08	-0.13	59.88	-0.38	0.0	-22.60	8.81	-0.04	-0.63	2.22	0.13	0.00	2.85	4.4
24032	Tube 1	End	30.50	12.89	0.07	-0.12	103.94	-0.57	0.0	-22.60	8.81	-0.04	-0.61	3.55	0.12	0.00	4.16	6.4
24032	Tube 1	Origin	30.50	12.89	0.07	-0.12	103.94	-0.57	0.0	-23.56	9.07	-0.04	-0.63	3.55	0.13	0.00	4.19	6.4
24032	24032:WVGD11	End	35.50	11.81	0.07	-0.11	149.28	-0.79	0.0	-23.56	9.07	-0.04	-0.61	4.72	0.12	0.00	5.33	8.3
24032	24032:WVGD11	Origin	35.50	11.81	0.07	-0.11	149.28	-0.79	0.0	-25.19	9.50	-0.05	-0.65	4.72	0.13	0.00	5.37	8.4
24032	SpliceT	End	37.83	11.31	0.07	-0.11	171.42	-0.90	0.0	-25.19	9.50	-0.05	-0.64	5.23	0.13	0.00	5.88	9.2
24032	SpliceT	Origin	37.83	11.31	0.07	-0.11	171.42	-0.90	0.0	-26.00	9.64	-0.05	-0.66	5.23	0.13	0.00	5.90	9.3
24032	Splice	End	40.42	10.77	0.06	-0.10	196.33	-1.04	0.0	-26.00	9.64	-0.05	-0.55	4.99	0.11	0.00	5.54	8.5
24032	Splice	Origin	40.42	10.77	0.06	-0.10	196.33	-1.04	0.0	-27.16	9.79	-0.06	-0.57	4.99	0.11	0.00	5.56	8.6
24032	SpliceB	End	43.00	10.24	0.06	-0.09	221.62	-1.19	0.0	-27.16	9.79	-0.06	-0.56	5.42	0.11	0.00	5.99	9.2
24032	SpliceB	Origin	43.00	10.24	0.06	-0.09	221.62	-1.19	0.0	-28.06	9.93	-0.06	-0.58	5.42	0.11	0.00	6.01	9.2
24032	24032:WVGD10	End	45.50	9.73	0.06	-0.09	246.48	-1.34	0.0	-28.06	9.93	-0.06	-0.57	5.82	0.11	0.00	6.39	9.8
24032	24032:WVGD10	Origin	45.50	9.73	0.06	-0.09	246.48	-1.34	0.0	-29.41	10.27	-0.06	-0.60	5.82	0.11	0.00	6.42	9.9
24032	24032:Arm2	End	46.50	9.53	0.06	-0.09	256.75	-1.40	0.0	-29.41	10.27	-0.06	-0.59	5.97	0.11	0.00	6.57	10.1
24032	24032:Arm2	Origin	46.50	9.53	0.06	-0.09	261.86	-1.40	0.0	-41.53	15.11	-0.07	-0.84	6.09	0.16	0.00	6.94	10.7
24032	Tube 2	End	51.00	8.65	0.05	-0.08	329.87	-1.72	0.0	-41.53	15.11	-0.07	-0.81	7.21	0.16	0.00	8.03	12.3
24032	Tube 2	Origin	51.00	8.65	0.05	-0.08	329.87	-1.72	0.0	-42.71	15.36	-0.08	-0.84	7.21	0.16	0.00	8.05	12.4
24032	24032:WVGD9	End	55.50	7.80	0.05	-0.07	398.99	-2.06	0.0	-42.71	15.36	-0.08	-0.81	8.20	0.15	0.00	9.02	13.9
24032	24032:WVGD9	Origin	55.50	7.80	0.05	-0.07	398.99	-2.06	0.0	-44.92	15.87	-0.08	-0.85	8.20	0.16	0.00	9.06	13.9
24032	Tube 2	End	60.50	6.91	0.04	-0.06	478.32	-2.49	0.0	-44.92	15.87	-0.08	-0.83	9.21	0.15	0.00	10.04	15.4
24032	Tube 2	Origin	60.50	6.91	0.04	-0.06	478.32	-2.49	0.0	-46.32	16.15	-0.09	-0.85	9.21	0.16	0.00	10.07	15.5

24032	24032:WVGD8	End	65.50	6.06	0.04	-0.06	559.09	-2.95	0.0	-46.32	16.15	-0.09	-0.82	10.11	0.15	0.00	10.93	17.1
24032	24032:WVGD8	Origin	65.50	6.06	0.04	-0.06	559.09	-2.95	0.0	-48.39	16.62	-0.10	-0.86	10.11	0.16	0.00	10.97	17.1
24032	24032:Arm3	End	68.50	5.57	0.03	-0.05	608.95	-3.24	0.0	-48.39	16.62	-0.10	-0.85	10.61	0.15	0.00	11.46	18.1
24032	24032:Arm3	Origin	68.50	5.57	0.03	-0.05	614.02	-3.25	0.0	-60.70	21.44	-0.11	-1.06	10.70	0.20	0.00	11.76	18.6
24032	SpliceT	End	71.50	5.11	0.03	-0.05	678.35	-3.57	0.0	-60.70	21.44	-0.11	-1.04	11.39	0.19	0.00	12.44	19.8
24032	SpliceT	Origin	71.50	5.11	0.03	-0.05	678.35	-3.57	0.0	-62.45	21.65	-0.11	-1.07	11.39	0.20	0.00	12.47	19.9
24032	24032:WVGD7	End	75.50	4.52	0.03	-0.04	764.95	-4.02	0.0	-62.45	21.65	-0.11	-0.91	10.87	0.17	0.00	11.79	18.1
24032	24032:WVGD7	Origin	75.50	4.52	0.03	-0.04	764.95	-4.02	0.0	-65.44	22.08	-0.12	-0.96	10.87	0.17	0.00	11.83	18.2
24032	SpliceB	End	77.83	4.20	0.03	-0.04	816.40	-4.30	0.0	-65.44	22.08	-0.12	-0.94	11.28	0.17	0.00	12.23	18.8
24032	SpliceB	Origin	77.83	4.20	0.03	-0.04	816.40	-4.30	0.0	-66.91	22.26	-0.12	-0.96	11.28	0.17	0.00	12.25	18.8
24032	Tube 3	End	81.67	3.69	0.02	-0.03	901.78	-4.77	0.0	-66.91	22.26	-0.12	-0.94	11.92	0.17	0.00	12.87	19.8
24032	Tube 3	Origin	81.67	3.69	0.02	-0.03	901.78	-4.77	0.0	-68.32	22.49	-0.13	-0.96	11.92	0.17	0.00	12.89	19.8
24032	24032:WVGD6	End	85.50	3.22	0.02	-0.03	988.03	-5.27	0.0	-68.32	22.49	-0.13	-0.94	12.50	0.16	0.00	13.45	20.7
24032	24032:WVGD6	Origin	85.50	3.22	0.02	-0.03	988.03	-5.27	0.0	-70.51	22.93	-0.14	-0.97	12.50	0.17	0.00	13.48	20.7
24032	Tube 3	End	88.50	2.87	0.02	-0.03	1056.80	-5.68	0.0	-70.51	22.93	-0.14	-0.96	12.93	0.16	0.00	13.89	21.4
24032	Tube 3	Origin	88.50	2.87	0.02	-0.03	1056.80	-5.68	0.0	-71.65	23.10	-0.14	-0.97	12.93	0.17	0.00	13.90	21.4
24032	SpliceT	End	91.50	2.54	0.02	-0.02	1126.11	-6.10	0.0	-71.65	23.10	-0.14	-0.96	13.33	0.16	0.00	14.29	22.1
24032	SpliceT	Origin	91.50	2.54	0.02	-0.02	1126.11	-6.10	0.0	-73.12	23.32	-0.15	-0.85	11.65	0.14	0.00	12.51	19.2
24032	24032:WVGD5	End	95.50	2.14	0.01	-0.02	1219.39	-6.70	0.0	-73.12	23.32	-0.15	-0.83	12.08	0.14	0.00	12.92	19.9
24032	24032:WVGD5	Origin	95.50	2.14	0.01	-0.02	1219.39	-6.70	0.0	-75.91	23.81	-0.16	-0.87	12.08	0.14	0.00	12.95	19.9
24032	Tube 4	End	99.75	1.76	0.01	-0.02	1320.60	-7.36	0.0	-75.91	23.81	-0.16	-0.85	12.51	0.14	0.00	13.36	20.6
24032	Tube 4	Origin	99.75	1.76	0.01	-0.02	1320.60	-7.36	0.0	-77.87	24.09	-0.16	-0.87	12.51	0.14	0.00	13.38	20.6
24032	SpliceT	End	104.00	1.41	0.01	-0.02	1422.97	-8.06	0.0	-77.87	24.09	-0.16	-0.85	12.90	0.14	0.00	13.76	21.2
24032	SpliceT	Origin	104.00	1.41	0.01	-0.02	1422.97	-8.06	0.0	-79.61	24.28	-0.17	-0.87	12.90	0.14	0.00	13.78	21.2
24032	24032:WVGD4	End	105.50	1.30	0.01	-0.01	1459.38	-8.31	0.0	-79.61	24.28	-0.17	-0.78	12.04	0.13	0.00	12.82	19.7
24032	24032:WVGD4	Origin	105.50	1.30	0.01	-0.01	1459.38	-8.31	0.0	-82.78	24.66	-0.17	-0.81	12.04	0.13	0.00	12.86	19.8
24032	Splice	End	108.50	1.08	0.01	-0.01	1533.36	-8.83	0.0	-82.78	24.66	-0.17	-0.80	12.27	0.13	0.00	13.07	20.1
24032	Splice	Origin	108.50	1.08	0.01	-0.01	1533.36	-8.83	0.0	-85.81	24.86	-0.18	-0.83	12.27	0.13	0.00	13.10	20.2
24032	SpliceB	End	111.50	0.89	0.01	-0.01	1607.95	-9.37	0.0	-85.81	24.86	-0.18	-0.82	12.48	0.13	0.00	13.30	20.5
24032	SpliceB	Origin	111.50	0.89	0.01	-0.01	1607.95	-9.37	0.0	-88.43	25.10	-0.19	-0.84	12.48	0.13	0.00	13.33	20.5

2																			
	24032	24032:WVGD3	End	115.50	0.66	0.00	-0.01	1708.33	-10.12	0.0	-88.43	25.10	-0.19	-0.83	12.75	0.12	0.00	13.57	20.9
2																			
	24032	24032:WVGD3	Origin	115.50	0.66	0.00	-0.01	1708.33	-10.12	0.0	-91.62	25.60	-0.19	-0.85	12.75	0.13	0.00	13.60	20.9
2																			
	24032	Tube 5	End	119.75	0.46	0.00	-0.01	1817.13	-10.95	0.0	-91.62	25.60	-0.19	-0.84	13.01	0.12	0.00	13.85	21.3
2																			
	24032	Tube 5	Origin	119.75	0.46	0.00	-0.01	1817.13	-10.95	0.0	-94.02	25.89	-0.20	-0.86	13.01	0.13	0.00	13.87	21.3
2																			
	24032	SpliceT	End	124.00	0.29	0.00	-0.01	1927.14	-11.81	0.0	-94.02	25.89	-0.20	-0.84	13.25	0.12	0.00	14.10	21.7
2																			
	24032	SpliceT	Origin	124.00	0.29	0.00	-0.01	1927.14	-11.81	0.0	-95.66	26.08	-0.21	-0.86	13.25	0.12	0.00	14.11	21.7
2																			
	24032	24032:WVGD2	End	125.50	0.24	0.00	-0.01	1966.26	-12.13	0.0	-95.66	26.08	-0.21	-0.85	13.33	0.12	0.00	14.18	21.8
2																			
	24032	24032:WVGD2	Origin	125.50	0.24	0.00	-0.01	1966.26	-12.13	0.0	-98.47	26.53	-0.22	-0.88	13.33	0.12	0.00	14.21	21.9
2																			
	24032	Tube 6	End	130.50	0.11	0.00	-0.00	2098.90	-13.21	0.0	-98.47	26.53	-0.22	-0.86	13.59	0.12	0.00	14.45	22.2
2																			
	24032	Tube 6	Origin	130.50	0.11	0.00	-0.00	2098.90	-13.21	0.0	-101.43	26.88	-0.23	-0.88	13.59	0.12	0.00	14.47	22.3
2																			
	24032	24032:WVGD1	End	135.50	0.03	0.00	-0.00	2233.28	-14.34	0.0	-101.43	26.88	-0.23	-0.86	13.82	0.12	0.00	14.68	22.6
2																			
	24032	24032:WVGD1	Origin	135.50	0.03	0.00	-0.00	2233.28	-14.34	0.0	-105.38	27.45	-0.24	-0.90	13.82	0.12	0.00	14.72	22.6
2																			
	24032	24032:g	End	140.50	0.00	0.00	0.00	2370.53	-15.53	0.0	-105.38	27.45	-0.24	-0.88	14.03	0.12	0.00	14.91	22.9
2																			

Detailed Tubular Davit Arm Usages for Load Case "NESC Heavy 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	14.55	0.08	-0.47	-104.58	-0.03	-0.0	2.51	7.21	0.00	0.14	16.14	0.00	0.00	16.28	25.0	1
Davit1	#Davit1:0	End	5.00	14.65	0.08	-1.69	-68.51	-0.02	-0.0	2.51	7.21	0.00	0.16	13.58	0.00	0.00	13.73	21.1	1
Davit1	#Davit1:0	Origin	5.00	14.65	0.08	-1.69	-68.51	-0.02	-0.0	2.56	6.81	0.00	0.16	13.58	0.00	0.00	13.74	21.1	1
Davit1	#Davit1:1	End	9.53	14.74	0.08	-2.97	-37.68	-0.01	-0.0	2.56	6.81	0.00	0.18	9.66	0.00	0.00	9.84	15.1	1
Davit1	#Davit1:1	Origin	9.53	14.74	0.08	-2.97	-37.68	-0.01	-0.0	2.59	6.48	0.00	0.18	9.66	0.00	0.00	9.84	15.1	1
Davit1	Davit1:V	End	14.05	14.84	0.09	-4.37	-8.37	-0.00	-0.0	2.59	6.48	0.00	0.21	2.88	0.00	0.00	3.09	4.8	1
Davit1	Davit1:V	Origin	14.05	14.84	0.09	-4.37	-8.37	-0.00	-0.0	0.67	1.18	0.00	0.05	2.88	0.00	0.00	2.93	4.5	1
Davit1	#Davit1:2	End	17.94	14.92	0.09	-5.62	-3.77	-0.00	-0.0	0.67	1.18	0.00	0.06	1.74	0.00	0.00	1.80	2.8	1
Davit1	#Davit1:2	Origin	17.94	14.92	0.09	-5.62	-3.77	-0.00	-0.0	0.68	0.97	0.00	0.06	1.74	0.00	0.00	1.81	2.8	1
Davit1	Davit1:T	End	21.83	15.01	0.09	-6.89	0.00	0.00	-0.0	0.68	0.97	0.00	0.08	0.00	0.22	0.00	0.40	0.6	3
Davit2	Davit2:O	Origin	0.00	14.56	0.08	0.19	-95.80	0.03	0.0	-3.63	6.65	-0.00	-0.20	14.79	0.00	0.00	14.98	23.1	1
Davit2	#Davit2:0	End	5.00	14.65	0.08	1.21	-62.55	0.02	0.0	-3.63	6.65	-0.00	-0.22	12.40	0.00	0.00	12.62	19.4	1
Davit2	#Davit2:0	Origin	5.00	14.65	0.08	1.21	-62.55	0.02	0.0	-3.57	6.27	-0.00	-0.22	12.40	0.00	0.00	12.62	19.4	1
Davit2	#Davit2:1	End	9.53	14.73	0.09	1.97	-34.19	0.01	0.0	-3.57	6.27	-0.00	-0.25	8.76	0.00	0.00	9.01	13.9	1
Davit2	#Davit2:1	Origin	9.53	14.73	0.09	1.97	-34.19	0.01	0.0	-3.53	5.95	-0.00	-0.25	8.76	0.00	0.00	9.01	13.9	1
Davit2	Davit2:V	End	14.05	14.79	0.09	2.63	-7.27	0.00	0.0	-3.53	5.95	-0.00	-0.29	2.50	0.00	0.00	2.79	4.3	1
Davit2	Davit2:V	Origin	14.05	14.79	0.09	2.63	-7.27	0.00	0.0	-0.77	1.04	-0.00	-0.06	2.50	0.00	0.00	2.56	3.9	1
Davit2	#Davit2:2	End	17.94	14.83	0.09	3.15	-3.23	0.00	0.0	-0.77	1.04	-0.00	-0.07	1.49	0.00	0.00	1.56	2.4	1
Davit2	#Davit2:2	Origin	17.94	14.83	0.09	3.15	-3.23	0.00	0.0	-0.75	0.83	-0.00	-0.07	1.49	0.00	0.00	1.56	2.4	1
Davit2	Davit2:T	End	21.83	14.87	0.09	3.65	-0.00	0.00	0.0	-0.75	0.83	-0.00	-0.08	0.00	0.19	0.00	0.34	0.5	3
Davit3	Davit3:O	Origin	0.00	9.53	0.06	-0.43	-75.85	-0.02	-0.0	1.89	5.69	0.00	0.12	14.91	0.00	0.00	15.03	23.1	1
Davit3	#Davit3:0	End	5.00	9.61	0.06	-1.55	-47.40	-0.01	-0.0	1.89	5.69	0.00	0.14	14.37	0.00	0.00	14.51	22.3	1
Davit3	#Davit3:0	Origin	5.00	9.61	0.06	-1.55	-47.40	-0.01	-0.0	1.93	5.36	0.00	0.15	14.37	0.00	0.00	14.52	22.3	1

Davit3	#Davit3:1	End	9.52	9.70	0.06	-2.77	-23.15	-0.01	-0.0	1.93	5.36	0.00	0.19	11.49	0.00	0.00	11.68	18.0	1
Davit3	#Davit3:1	Origin	9.52	9.70	0.06	-2.77	-23.15	-0.01	0.0	1.96	5.12	0.00	0.19	11.49	0.00	0.00	11.68	18.0	1
Davit3	Davit3:End	End	14.05	9.80	0.06	-4.19	0.00	0.00	0.0	1.96	5.12	0.00	0.26	0.00	1.43	0.00	2.49	3.8	3
Davit4	Davit4:O	Origin	0.00	9.54	0.06	0.26	-70.74	0.02	0.0	-2.78	5.31	-0.00	-0.17	13.91	0.00	0.00	14.08	21.7	1
Davit4	#Davit4:0	End	5.00	9.62	0.06	1.13	-44.20	0.01	0.0	-2.78	5.31	-0.00	-0.21	13.40	0.00	0.00	13.61	20.9	1
Davit4	#Davit4:0	Origin	5.00	9.62	0.06	1.13	-44.20	0.01	0.0	-2.73	5.00	-0.00	-0.21	13.40	0.00	0.00	13.61	20.9	1
Davit4	#Davit4:1	End	9.52	9.67	0.06	1.73	-21.59	0.01	0.0	-2.73	5.00	-0.00	-0.27	10.72	0.00	0.00	10.98	16.9	1
Davit4	#Davit4:1	Origin	9.52	9.67	0.06	1.73	-21.59	0.01	0.0	-2.69	4.77	-0.00	-0.26	10.72	0.00	0.00	10.98	16.9	1
Davit4	Davit4:End	End	14.05	9.71	0.06	2.14	-0.00	0.00	0.0	-2.69	4.77	-0.00	-0.36	0.00	1.34	0.00	2.34	3.6	3
Davit5	Davit5:O	Origin	0.00	5.57	0.03	-0.36	-75.94	-0.02	-0.0	1.87	5.70	0.00	0.11	14.93	0.00	0.00	15.05	23.1	1
Davit5	#Davit5:0	End	5.00	5.64	0.03	-1.27	-47.46	-0.01	-0.0	1.87	5.70	0.00	0.14	14.39	0.00	0.00	14.53	22.4	1
Davit5	#Davit5:0	Origin	5.00	5.64	0.03	-1.27	-47.46	-0.01	-0.0	1.91	5.37	0.00	0.15	14.39	0.00	0.00	14.53	22.4	1
Davit5	#Davit5:1	End	9.52	5.72	0.03	-2.31	-23.18	-0.01	-0.0	1.91	5.37	0.00	0.19	11.51	0.00	0.00	11.69	18.0	1
Davit5	#Davit5:1	Origin	9.52	5.72	0.03	-2.31	-23.18	-0.01	0.0	1.94	5.12	0.00	0.19	11.51	0.00	0.00	11.70	18.0	1
Davit5	Davit5:End	End	14.05	5.81	0.03	-3.54	0.00	0.00	0.0	1.94	5.12	0.00	0.26	0.00	1.43	0.00	2.50	3.8	3
Davit6	Davit6:O	Origin	0.00	5.58	0.03	0.26	-70.88	0.02	0.0	-2.76	5.32	-0.00	-0.17	13.93	0.00	0.00	14.10	21.7	1
Davit6	#Davit6:0	End	5.00	5.64	0.03	0.93	-44.29	0.01	0.0	-2.76	5.32	-0.00	-0.21	13.42	0.00	0.00	13.63	21.0	1
Davit6	#Davit6:0	Origin	5.00	5.64	0.03	0.93	-44.29	0.01	0.0	-2.71	5.01	-0.00	-0.21	13.42	0.00	0.00	13.63	21.0	1
Davit6	#Davit6:1	End	9.52	5.67	0.03	1.34	-21.63	0.01	0.0	-2.71	5.01	-0.00	-0.26	10.74	0.00	0.00	11.00	16.9	1
Davit6	#Davit6:1	Origin	9.52	5.67	0.03	1.34	-21.63	0.01	0.0	-2.68	4.78	-0.00	-0.26	10.74	0.00	0.00	11.00	16.9	1
Davit6	Davit6:End	End	14.05	5.69	0.03	1.57	-0.00	0.00	0.0	-2.68	4.78	-0.00	-0.36	0.00	1.34	0.00	2.35	3.6	3

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

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Holding Usage %	Input Hardware Capacity (kips)	Factored Hardware Capacity (kips)	Hardware Usage %	Max. Usage %
Clamp1	5.386	80.00	80.00	6.73	0.00	0.00	0.00	6.73
Clamp2	5.386	80.00	80.00	6.73	0.00	0.00	0.00	6.73
Clamp3	1.110	80.00	80.00	1.39	0.00	0.00	0.00	1.39
Clamp4	1.046	80.00	80.00	1.31	0.00	0.00	0.00	1.31
Clamp5	5.386	80.00	80.00	6.73	0.00	0.00	0.00	6.73
Clamp6	5.386	80.00	80.00	6.73	0.00	0.00	0.00	6.73
Clamp7	5.386	80.00	80.00	6.73	0.00	0.00	0.00	6.73
Clamp8	5.386	80.00	80.00	6.73	0.00	0.00	0.00	6.73
Clamp9	1.958	80.00	80.00	2.45	0.00	0.00	0.00	2.45
Clamp10	0.000	80.00	80.00	0.00	0.00	0.00	0.00	0.00
Clamp11	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp12	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp13	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp14	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp15	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp16	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp17	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp18	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp19	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp20	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp21	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp22	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp23	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18

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

Equilibrium Joint Positions and Rotations for Load Case "NESC Extreme 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)
24032:g	0	0	0	0.0000	0.0000	0.0000	0	0	0
24032:t	0.004578	3.658	-0.06273	-2.4415	0.0030	0.0000	0.004578	3.658	140.4
24032:TopConn	0.004398	3.509	-0.05955	-2.4414	0.0030	0.0000	0.004398	3.509	136.9
24032:BotConn	0.003882	3.084	-0.05049	-2.4261	0.0029	0.0000	0.003882	3.084	126.9
24032:WVGD13	0.003779	2.999	-0.0487	-2.4200	0.0029	0.0000	0.003779	2.999	125
24032:Arm1	0.003395	2.684	-0.04206	-2.3886	0.0029	0.0000	0.003395	2.684	117.5
24032:WVGD12	0.003268	2.58	-0.03988	-2.3718	0.0029	0.0000	0.003268	2.58	115
24032:WVGD11	0.002769	2.174	-0.03154	-2.2637	0.0028	0.0000	0.002769	2.174	105
24032:WVGD10	0.002294	1.791	-0.0241	-2.1202	0.0026	0.0000	0.002294	1.791	94.98
24032:Arm2	0.002248	1.754	-0.02341	-2.1048	0.0026	0.0000	0.002248	1.754	93.98
24032:WVGD9	0.001848	1.436	-0.01763	-1.9429	0.0024	0.0000	0.001848	1.436	84.98
24032:WVGD8	0.001443	1.114	-0.01232	-1.7294	0.0022	0.0000	0.001443	1.114	74.99
24032:Arm3	0.00133	1.025	-0.01095	-1.6603	0.0021	0.0000	0.00133	1.025	71.99
24032:WVGD7	0.001084	0.8319	-0.008169	-1.4929	0.0019	0.0000	0.001084	0.8319	64.99
24032:WVGD6	0.0007752	0.5915	-0.005111	-1.2506	0.0016	0.0000	0.0007752	0.5915	54.99
24032:WVGD5	0.0005199	0.3945	-0.003003	-1.0065	0.0013	0.0000	0.0005199	0.3945	45
24032:WVGD4	0.000316	0.2384	-0.001628	-0.7754	0.0010	0.0000	0.000316	0.2384	35
24032:WVGD3	0.0001625	0.1219	-0.000794	-0.5536	0.0007	0.0000	0.0001625	0.1219	25
24032:WVGD2	5.917e-05	0.04411	-0.0003296	-0.3312	0.0004	0.0000	5.917e-05	0.04411	15
24032:WVGD1	6.869e-06	0.005074	-8.613e-05	-0.1099	0.0001	0.0000	6.869e-06	0.005074	5
Davit1:O	0.003392	2.683	-0.1033	-2.3886	0.0029	0.0000	0.003392	4.153	117.4
Davit1:V	0.003475	2.723	-0.7159	-2.5826	0.0029	-0.0004	0.003475	18.19	118
Davit1:T	0.003546	2.742	-1.067	-2.5992	0.0029	-0.0004	0.003546	25.96	118.2
Davit2:O	0.003399	2.686	0.01921	-2.3886	0.0029	0.0000	0.003399	1.215	117.5
Davit2:V	0.003555	2.746	0.5826	-2.2564	0.0030	0.0004	0.003555	-12.72	119.3
Davit2:T	0.003666	2.775	0.8863	-2.2458	0.0030	0.0005	0.003666	-20.44	120.2
Davit3:O	0.002244	1.753	-0.08686	-2.1048	0.0026	0.0000	0.002244	3.481	93.91
Davit3:End	0.002346	1.789	-0.6394	-2.3829	0.0027	-0.0006	0.002346	17.52	94.53
Davit4:O	0.002251	1.756	0.04005	-2.1048	0.0026	0.0000	0.002251	0.02782	94.04
Davit4:End	0.002408	1.805	0.5279	-1.9159	0.0027	0.0006	0.002408	-13.92	95.69
Davit5:O	0.001327	1.024	-0.06871	-1.6603	0.0021	0.0000	0.001327	3.017	71.93
Davit5:End	0.001429	1.054	-0.513	-1.9426	0.0021	-0.0006	0.001429	17.05	72.65
Davit6:O	0.001332	1.026	0.0468	-1.6603	0.0021	0.0000	0.001332	-0.9674	72.05
Davit6:End	0.001469	1.063	0.4258	-1.4670	0.0022	0.0006	0.001469	-14.93	73.59

Joint Support Reactions for Load Case "NESC Extreme Wind":

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	H-Shear Usage %	Z Force (kips)	Comp. Uplift Usage %	Result. Usage %	Result. Force (kips)	Result. Usage %	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	H-Bend-M Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
24032:g	-0.09	0.0	-61.93	0.0	0.0	-63.48	0.0	0.0	88.68	0.0	5243.77	0.0	-7.1	0.0	0.0	-0.01	0.0	0.0

Detailed Steel Pole Usages for Load Case "NESC Extreme 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.

24032	24032:t	Origin	0.00	43.90	0.05	-0.75	-0.00	-0.00	0.0	-0.17	0.15	-0.00	-0.01	0.00	0.01	0.00	0.02	0.0	5
24032	24032:TopConn	End	3.50	42.11	0.05	-0.71	0.51	-0.00	0.0	-0.17	0.15	-0.00	-0.01	0.03	0.00	0.00	0.03	0.1	2
24032	24032:TopConn	Origin	3.50	42.11	0.05	-0.71	0.51	-0.00	-0.0	-1.24	3.98	-0.00	-0.04	0.00	0.27	0.00	0.48	0.7	5
24032	Tube 1	End	8.50	39.55	0.05	-0.66	20.42	-0.01	-0.0	-1.24	3.98	-0.00	-0.04	1.02	0.07	0.00	1.06	1.6	2
24032	Tube 1	Origin	8.50	39.55	0.05	-0.66	20.42	-0.01	0.0	-1.77	4.43	-0.00	-0.06	1.02	0.08	0.00	1.08	1.7	2
24032	24032:BotConn	End	13.50	37.00	0.05	-0.61	42.55	-0.03	0.0	-1.77	4.43	-0.00	-0.05	1.93	0.07	0.00	1.99	3.1	2
24032	24032:BotConn	Origin	13.50	37.00	0.05	-0.61	42.55	-0.03	-0.0	-2.15	4.75	-0.00	-0.07	1.93	0.08	0.00	2.00	3.1	2
24032	24032:WVGD13	End	15.50	35.99	0.05	-0.58	52.04	-0.03	-0.0	-2.15	4.75	-0.00	-0.07	2.28	0.08	0.00	2.35	3.6	2
24032	24032:WVGD13	Origin	15.50	35.99	0.05	-0.58	52.04	-0.03	-0.0	-2.69	5.78	-0.01	-0.08	2.28	0.09	0.00	2.37	3.6	2
24032	Tube 1	End	19.25	34.09	0.04	-0.54	73.71	-0.05	-0.0	-2.69	5.78	-0.01	-0.08	3.02	0.09	0.00	3.11	4.8	2
24032	Tube 1	Origin	19.25	34.09	0.04	-0.54	73.71	-0.05	-0.0	-3.13	6.14	-0.01	-0.09	3.02	0.10	0.00	3.12	4.8	2
24032	24032:Arm1	End	23.00	32.21	0.04	-0.50	96.75	-0.08	-0.0	-3.13	6.14	-0.01	-0.09	3.72	0.09	0.00	3.82	5.9	2
24032	24032:Arm1	Origin	23.00	32.21	0.04	-0.50	111.22	-0.09	0.0	-9.61	18.07	-0.02	-0.27	4.28	0.27	0.00	4.58	7.0	2
24032	24032:WVGD12	End	25.50	30.96	0.04	-0.48	156.38	-0.14	0.0	-9.61	18.07	-0.02	-0.27	5.78	0.27	0.00	6.06	9.3	2
24032	24032:WVGD12	Origin	25.50	30.96	0.04	-0.48	156.38	-0.14	0.0	-10.30	19.21	-0.02	-0.29	5.78	0.28	0.00	6.08	9.4	2
24032	Tube 1	End	30.50	28.50	0.04	-0.43	252.43	-0.25	0.0	-10.30	19.21	-0.02	-0.28	8.61	0.27	0.00	8.90	13.7	2
24032	Tube 1	Origin	30.50	28.50	0.04	-0.43	252.43	-0.25	0.0	-10.95	19.73	-0.02	-0.29	8.61	0.28	0.00	8.92	13.7	2
24032	24032:WVGD11	End	35.50	26.09	0.03	-0.38	351.10	-0.37	0.0	-10.95	19.73	-0.02	-0.28	11.09	0.27	0.00	11.38	17.7	2
24032	24032:WVGD11	Origin	35.50	26.09	0.03	-0.38	351.10	-0.37	0.0	-11.67	20.89	-0.02	-0.30	11.09	0.28	0.00	11.40	17.8	2
24032	SpliceT	End	37.83	25.00	0.03	-0.36	399.76	-0.43	0.0	-11.67	20.89	-0.02	-0.30	12.19	0.28	0.00	12.50	19.6	2
24032	SpliceT	Origin	37.83	25.00	0.03	-0.36	399.76	-0.43	0.0	-12.22	21.16	-0.03	-0.31	12.19	0.28	0.00	12.51	19.7	2
24032	Splice	End	40.42	23.80	0.03	-0.33	454.43	-0.49	0.0	-12.22	21.16	-0.03	-0.26	11.53	0.24	0.00	11.80	18.2	2
24032	Splice	Origin	40.42	23.80	0.03	-0.33	454.43	-0.49	0.0	-13.00	21.46	-0.03	-0.27	11.53	0.24	0.00	11.81	18.2	2
24032	SpliceB	End	43.00	22.62	0.03	-0.31	509.88	-0.56	0.0	-13.00	21.46	-0.03	-0.27	12.46	0.23	0.00	12.74	19.6	2
24032	SpliceB	Origin	43.00	22.62	0.03	-0.31	509.88	-0.56	0.0	-13.61	21.76	-0.03	-0.28	12.46	0.24	0.00	12.75	19.6	2
24032	24032:WVGD10	End	45.50	21.50	0.03	-0.29	564.33	-0.63	0.0	-13.61	21.76	-0.03	-0.28	13.30	0.23	0.00	13.59	20.9	2
24032	24032:WVGD10	Origin	45.50	21.50	0.03	-0.29	564.33	-0.63	0.0	-14.13	22.71	-0.03	-0.29	13.30	0.24	0.00	13.60	20.9	2
24032	24032:Arm2	End	46.50	21.05	0.03	-0.28	587.05	-0.66	0.0	-14.13	22.71	-0.03	-0.29	13.64	0.24	0.00	13.93	21.4	2
24032	24032:Arm2	Origin	46.50	21.05	0.03	-0.28	598.16	-0.67	0.0	-19.57	32.77	-0.04	-0.39	13.90	0.35	0.00	14.31	22.0	2
24032	Tube 2	End	51.00	19.10	0.02	-0.24	745.62	-0.85	0.0	-19.57	32.77	-0.04	-0.38	16.28	0.34	0.00	16.67	25.6	2
24032	Tube 2	Origin	51.00	19.10	0.02	-0.24	745.62	-0.85	0.0	-20.40	33.29	-0.04	-0.40	16.28	0.34	0.00	16.68	25.7	2
24032	24032:WVGD9	End	55.50	17.23	0.02	-0.21	895.44	-1.03	0.0	-20.40	33.29	-0.04	-0.39	18.39	0.33	0.00	18.79	28.9	2
24032	24032:WVGD9	Origin	55.50	17.23	0.02	-0.21	895.44	-1.03	0.0	-21.53	34.61	-0.04	-0.41	18.39	0.35	0.00	18.81	28.9	2
24032	Tube 2	End	60.50	15.24	0.02	-0.18	1068.50	-1.25	0.0	-21.53	34.61	-0.04	-0.40	20.56	0.34	0.00	20.96	32.2	2
24032	Tube 2	Origin	60.50	15.24	0.02	-0.18	1068.50	-1.25	0.0	-22.52	35.22	-0.05	-0.41	20.56	0.34	0.00	20.98	32.3	2
24032	24032:WVGD8	End	65.50	13.37	0.02	-0.15	1244.60	-1.48	0.0	-22.52	35.22	-0.05	-0.40	22.47	0.33	0.00	22.88	35.8	2
24032	24032:WVGD8	Origin	65.50	13.37	0.02	-0.15	1244.60	-1.48	0.0	-23.56	36.47	-0.05	-0.42	22.47	0.34	0.00	22.90	35.8	2
24032	24032:Arm3	End	68.50	12.30	0.02	-0.13	1354.02	-1.62	0.0	-23.56	36.47	-0.05	-0.41	23.56	0.34	0.00	23.98	37.8	2
24032	24032:Arm3	Origin	68.50	12.30	0.02	-0.13	1365.08	-1.63	0.0	-29.21	46.55	-0.06	-0.51	23.75	0.43	0.00	24.27	38.3	2
24032	SpliceT	End	71.50	11.28	0.01	-0.12	1504.72	-1.81	0.0	-29.21	46.55	-0.06	-0.50	25.25	0.42	0.00	25.76	41.0	2
24032	SpliceT	Origin	71.50	11.28	0.01	-0.12	1504.72	-1.81	0.0	-30.44	47.00	-0.06	-0.52	25.25	0.43	0.00	25.78	41.1	2
24032	24032:WVGD7	End	75.50	9.98	0.01	-0.10	1692.71	-2.05	0.0	-30.44	47.00	-0.06	-0.44	24.03	0.36	0.00	24.48	37.7	2
24032	24032:WVGD7	Origin	75.50	9.98	0.01	-0.10	1692.71	-2.05	0.0	-32.11	48.17	-0.06	-0.47	24.03	0.37	0.00	24.50	37.7	2
24032	SpliceB	End	77.83	9.27	0.01	-0.09	1804.95	-2.19	0.0	-32.11	48.17	-0.06	-0.46	24.92	0.37	0.00	25.39	39.1	2
24032	SpliceB	Origin	77.83	9.27	0.01	-0.09	1804.95	-2.19	0.0	-33.14	48.57	-0.06	-0.48	24.92	0.37	0.00	25.41	39.1	2
24032	Tube 3	End	81.67	8.14	0.01	-0.07	1991.22	-2.44	0.0	-33.14	48.57	-0.06	-0.47	26.29	0.36	0.00	26.76	41.2	2
24032	Tube 3	Origin	81.67	8.14	0.01	-0.07	1991.22	-2.44	0.0	-34.14	49.07	-0.07	-0.48	26.29	0.36	0.00	26.78	41.2	2
24032	24032:WVGD6	End	85.50	7.10	0.01	-0.06	2179.40	-2.68	0.0	-34.14	49.07	-0.07	-0.47	27.54	0.36	0.00	28.02	43.1	2
24032	24032:WVGD6	Origin	85.50	7.10	0.01	-0.06	2179.40	-2.68	0.0	-35.29	50.27	-0.07	-0.49	27.54	0.37	0.00	28.04	43.1	2
24032	Tube 3	End	88.50	6.33	0.01	-0.05	2330.22	-2.88	0.0	-35.29	50.27	-0.07	-0.48	28.48	0.36	0.00	28.96	44.6	2
24032	Tube 3	Origin	88.50	6.33	0.01	-0.05	2330.22	-2.88	0.0	-36.11	50.67	-0.07	-0.49	28.48	0.36	0.00	28.98	44.6	2
24032	SpliceT	End	91.50	5.62	0.01	-0.04	2482.23	-3.09	0.0	-36.11	50.67	-0.07	-0.48	29.35	0.36	0.00	29.84	46.2	2
24032	SpliceT	Origin	91.50	5.62	0.01	-0.04	2482.23	-3.09	0.0	-37.16	51.15	-0.07	-0.43	25.65	0.31	0.00	26.09	40.1	2
24032	24032:WVGD5	End	95.50	4.73	0.01	-0.04	2686.82	-3.37	0.0	-37.16	51.15	-0.07	-0.42	26.59	0.31	0.00	27.02	41.6	2
24032	24032:WVGD5	Origin	95.50	4.73	0.01	-0.04	2686.82	-3.37	0.0	-38.71	52.48	-0.07	-0.44	26.59	0.32	0.00	27.04	41.6	2
24032	Tube 4	End	99.75	3.88	0.01	-0.03	2909.85	-3.67	0.0	-38.71	52.48	-0.07	-0.43	27.54	0.31	0.00	27.98	43.0	2
24032	Tube 4	Origin	99.75	3.88	0.01	-0.03	2909.85	-3.67	0.0	-40.10	53.08	-0.07	-0.45	27.54	0.31	0.00	27.99	43.1	2
24032	SpliceT	End	104.00	3.11	0.00	-0.02	3135.45	-3.99	0.0	-40.10	53.08	-0.07	-0.44	28.40	0.31	0.00	28.84	44.4	2
24032	SpliceT	Origin	104.00	3.11	0.00	-0.02	3135.44	-3.99	0.0	-41.31	53.50	-0.08	-0.45	28.40	0.31	0.00	28.86	44.4	2
24032	24032:WVGD4	End	105.50	2.86	0.00	-0.02	3215.69	-4.10	0.0	-41.31	53.50	-0.08	-0.41	26.50	0.28	0.00	26.91	41.4	2

24032	24032:WVGD4	Origin	105.50	2.86	0.00	-0.02	3215.69	-4.10	0.0	-43.09	54.58	-0.08	-0.42	26.50	0.28	0.00	26.93	41.4	2
24032	Splice	End	108.50	2.39	0.00	-0.02	3379.43	-4.33	0.0	-43.09	54.58	-0.08	-0.42	27.01	0.28	0.00	27.43	42.2	2
24032	Splice	Origin	108.50	2.39	0.00	-0.02	3379.43	-4.33	0.0	-45.17	55.03	-0.08	-0.44	27.01	0.28	0.00	27.45	42.2	2
24032	SpliceB	End	111.50	1.97	0.00	-0.01	3544.51	-4.56	0.0	-45.17	55.03	-0.08	-0.43	27.48	0.28	0.00	27.92	43.0	2
24032	SpliceB	Origin	111.50	1.97	0.00	-0.01	3544.51	-4.56	0.0	-46.98	55.54	-0.08	-0.45	27.48	0.28	0.00	27.94	43.0	2
24032	24032:WVGD3	End	115.50	1.46	0.00	-0.01	3766.67	-4.88	0.0	-46.98	55.54	-0.08	-0.44	28.07	0.27	0.00	28.51	43.9	2
24032	24032:WVGD3	Origin	115.50	1.46	0.00	-0.01	3766.67	-4.88	0.0	-48.82	56.90	-0.08	-0.46	28.07	0.28	0.00	28.53	43.9	2
24032	Tube 5	End	119.75	1.01	0.00	-0.01	4008.51	-5.23	0.0	-48.82	56.90	-0.08	-0.45	28.66	0.27	0.00	29.11	44.8	2
24032	Tube 5	Origin	119.75	1.01	0.00	-0.01	4008.51	-5.23	0.0	-50.49	57.54	-0.08	-0.46	28.66	0.28	0.00	29.13	44.8	2
24032	SpliceT	End	124.00	0.64	0.00	-0.00	4253.05	-5.59	0.0	-50.49	57.54	-0.08	-0.45	29.21	0.27	0.00	29.66	45.6	2
24032	SpliceT	Origin	124.00	0.64	0.00	-0.00	4253.05	-5.59	0.0	-51.64	57.97	-0.09	-0.46	29.21	0.27	0.00	29.67	45.7	2
24032	24032:WVGD2	End	125.50	0.53	0.00	-0.00	4340.01	-5.72	0.0	-51.64	57.97	-0.09	-0.46	29.39	0.27	0.00	29.85	45.9	2
24032	24032:WVGD2	Origin	125.50	0.53	0.00	-0.00	4340.01	-5.72	0.0	-53.21	59.22	-0.09	-0.47	29.39	0.28	0.00	29.87	45.9	2
24032	Tube 6	End	130.50	0.24	0.00	-0.00	4636.12	-6.16	0.0	-53.21	59.22	-0.09	-0.46	29.97	0.27	0.00	30.44	46.8	2
24032	Tube 6	Origin	130.50	0.24	0.00	-0.00	4636.12	-6.16	0.0	-55.29	60.00	-0.09	-0.48	29.97	0.28	0.00	30.46	46.9	2
24032	24032:WVGD1	End	135.50	0.06	0.00	-0.00	4936.10	-6.61	0.0	-55.29	60.00	-0.09	-0.47	30.50	0.27	0.00	30.98	47.7	2
24032	24032:WVGD1	Origin	135.50	0.06	0.00	-0.00	4936.10	-6.61	0.0	-57.65	61.54	-0.09	-0.49	30.50	0.28	0.00	31.00	47.7	2
24032	24032:g	End	140.50	0.00	0.00	0.00	5243.77	-7.08	0.0	-57.65	61.54	-0.09	-0.48	31.00	0.27	0.00	31.49	48.4	2

Detailed Tubular Davit Arm Usages for Load Case "NESC Extreme 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	32.20	0.04	-1.24	-47.01	-0.10	-0.0	5.62	3.39	0.01	0.31	7.25	0.00	0.00	7.56	11.6	1
Davit1	#Davit1:0	End	5.00	32.36	0.04	-3.79	-30.04	-0.06	-0.0	5.62	3.39	0.01	0.35	5.95	0.00	0.00	6.30	9.7	1
Davit1	#Davit1:0	Origin	5.00	32.36	0.04	-3.79	-30.04	-0.06	-0.0	5.63	3.12	0.01	0.35	5.95	0.00	0.00	6.30	9.7	1
Davit1	#Davit1:1	End	9.53	32.51	0.04	-6.16	-15.91	-0.04	-0.0	5.63	3.12	0.01	0.40	4.08	0.00	0.00	4.47	6.9	1
Davit1	#Davit1:1	Origin	9.53	32.51	0.04	-6.16	-15.91	-0.04	-0.0	5.65	2.90	0.01	0.40	4.08	0.00	0.00	4.47	6.9	1
Davit1	Davit1:V	End	14.05	32.67	0.04	-8.59	-2.79	-0.01	-0.0	5.65	2.90	0.01	0.46	0.96	0.00	0.00	1.42	2.2	1
Davit1	Davit1:V	Origin	14.05	32.67	0.04	-8.59	-2.79	-0.01	-0.0	0.97	0.43	0.00	0.08	0.96	0.00	0.00	1.04	1.6	1
Davit1	#Davit1:2	End	17.94	32.79	0.04	-10.69	-1.12	-0.00	-0.0	0.97	0.43	0.00	0.09	0.52	0.00	0.00	0.61	0.9	1
Davit1	#Davit1:2	Origin	17.94	32.79	0.04	-10.69	-1.12	-0.00	0.0	0.98	0.29	0.00	0.09	0.52	0.00	0.00	0.61	0.9	1
Davit1	Davit1:T	End	21.83	32.90	0.04	-12.81	0.00	0.00	0.0	0.98	0.29	0.00	0.11	0.00	0.07	0.00	0.16	0.2	3
Davit2	Davit2:O	Origin	0.00	32.23	0.04	0.23	-32.53	0.10	0.0	-5.94	2.41	-0.01	-0.32	5.02	0.00	0.00	5.35	8.2	1
Davit2	#Davit2:0	End	5.00	32.49	0.04	2.68	-20.48	0.07	0.0	-5.94	2.41	-0.01	-0.37	4.06	0.00	0.00	4.43	6.8	1
Davit2	#Davit2:0	Origin	5.00	32.49	0.04	2.68	-20.48	0.07	0.0	-5.90	2.16	-0.01	-0.36	4.06	0.00	0.00	4.42	6.8	1
Davit2	#Davit2:1	End	9.53	32.72	0.04	4.85	-10.71	0.04	0.0	-5.90	2.16	-0.01	-0.41	2.74	0.00	0.00	3.16	4.9	1
Davit2	#Davit2:1	Origin	9.53	32.72	0.04	4.85	-10.71	0.04	0.0	-5.88	1.95	-0.01	-0.41	2.74	0.00	0.00	3.16	4.9	1
Davit2	Davit2:V	End	14.05	32.95	0.04	6.99	-1.89	0.01	0.0	-5.88	1.95	-0.01	-0.48	0.65	0.00	0.00	1.13	1.7	1
Davit2	Davit2:V	Origin	14.05	32.95	0.04	6.99	-1.89	0.01	0.0	-0.85	0.31	-0.00	-0.07	0.65	0.00	0.00	0.72	1.1	1
Davit2	#Davit2:2	End	17.94	33.13	0.04	8.82	-0.68	0.00	0.0	-0.85	0.31	-0.00	-0.08	0.31	0.00	0.00	0.39	0.6	1
Davit2	#Davit2:2	Origin	17.94	33.13	0.04	8.82	-0.68	0.00	0.0	-0.83	0.17	-0.00	-0.08	0.31	0.00	0.00	0.39	0.6	1
Davit2	Davit2:T	End	21.83	33.31	0.04	10.64	-0.00	0.00	0.0	-0.83	0.17	-0.00	-0.09	0.00	0.04	0.00	0.12	0.2	3
Davit3	Davit3:O	Origin	0.00	21.04	0.03	-1.04	-35.74	-0.07	-0.0	4.66	2.74	0.01	0.29	7.03	0.00	0.00	7.31	11.3	1
Davit3	#Davit3:0	End	5.00	21.19	0.03	-3.30	-22.03	-0.05	-0.0	4.66	2.74	0.01	0.36	6.68	0.00	0.00	7.03	10.8	1
Davit3	#Davit3:0	Origin	5.00	21.19	0.03	-3.30	-22.03	-0.05	-0.0	4.67	2.52	0.01	0.36	6.68	0.00	0.00	7.03	10.8	1
Davit3	#Davit3:1	End	9.52	21.32	0.03	-5.44	-10.64	-0.02	-0.0	4.67	2.52	0.01	0.45	5.28	0.00	0.00	5.74	8.8	1
Davit3	#Davit3:1	Origin	9.52	21.32	0.03	-5.44	-10.64	-0.02	0.0	4.68	2.35	0.01	0.46	5.28	0.00	0.00	5.74	8.8	1
Davit3	Davit3:End	End	14.05	21.46	0.03	-7.67	0.00	0.00	0.0	4.68	2.35	0.01	0.63	0.00	0.66	0.00	1.30	2.0	3
Davit4	Davit4:O	Origin	0.00	21.07	0.03	0.48	-24.65	0.07	0.0	-5.04	1.93	-0.01	-0.31	4.85	0.00	0.00	5.16	7.9	1
Davit4	#Davit4:0	End	5.00	21.29	0.03	2.63	-14.98	0.05	0.0	-5.04	1.93	-0.01	-0.38	4.54	0.00	0.00	4.92	7.6	1
Davit4	#Davit4:0	Origin	5.00	21.29	0.03	2.63	-14.98	0.05	0.0	-5.01	1.73	-0.01	-0.38	4.54	0.00	0.00	4.92	7.6	1
Davit4	#Davit4:1	End	9.52	21.48	0.03	4.51	-7.15	0.02	0.0	-5.01	1.73	-0.01	-0.49	3.55	0.00	0.00	4.04	6.2	1
Davit4	#Davit4:1	Origin	9.52	21.48	0.03	4.51	-7.15	0.02	0.0	-4.99	1.58	-0.01	-0.49	3.55	0.00	0.00	4.04	6.2	1

Davit4	Davit4:End	End	14.05	21.66	0.03	6.34	-0.00	0.00	0.0	-4.99	1.58	-0.01	-0.67	0.00	0.44	0.00	1.02	1.6	3
Davit5	Davit5:O	Origin	0.00	12.29	0.02	-0.82	-36.25	-0.07	-0.0	4.63	2.78	0.01	0.29	7.13	0.00	0.00	7.41	11.4	1
Davit5	#Davit5:0	End	5.00	12.41	0.02	-2.62	-22.36	-0.05	-0.0	4.63	2.78	0.01	0.35	6.78	0.00	0.00	7.13	11.0	1
Davit5	#Davit5:0	Origin	5.00	12.41	0.02	-2.62	-22.36	-0.05	-0.0	4.65	2.55	0.01	0.35	6.78	0.00	0.00	7.13	11.0	1
Davit5	#Davit5:1	End	9.52	12.53	0.02	-4.34	-10.80	-0.02	-0.0	4.65	2.55	0.01	0.45	5.36	0.00	0.00	5.82	8.9	1
Davit5	#Davit5:1	Origin	9.52	12.53	0.02	-4.34	-10.80	-0.02	0.0	4.66	2.39	0.01	0.45	5.36	0.00	0.00	5.82	8.9	1
Davit5	Davit5:End	End	14.05	12.65	0.02	-6.16	0.00	0.00	0.0	4.66	2.39	0.01	0.63	0.00	0.67	0.00	1.32	2.0	3
Davit6	Davit6:O	Origin	0.00	12.31	0.02	0.56	-25.20	0.07	0.0	-5.03	1.97	-0.01	-0.31	4.96	0.00	0.00	5.26	8.1	1
Davit6	#Davit6:0	End	5.00	12.48	0.02	2.25	-15.33	0.05	0.0	-5.03	1.97	-0.01	-0.38	4.65	0.00	0.00	5.03	7.7	1
Davit6	#Davit6:0	Origin	5.00	12.48	0.02	2.25	-15.33	0.05	0.0	-5.00	1.77	-0.01	-0.38	4.65	0.00	0.00	5.03	7.7	1
Davit6	#Davit6:1	End	9.52	12.62	0.02	3.71	-7.33	0.02	0.0	-5.00	1.77	-0.01	-0.49	3.64	0.00	0.00	4.12	6.3	1
Davit6	#Davit6:1	Origin	9.52	12.62	0.02	3.71	-7.33	0.02	0.0	-4.98	1.62	-0.01	-0.48	3.64	0.00	0.00	4.12	6.3	1
Davit6	Davit6:End	End	14.05	12.75	0.02	5.11	-0.00	0.00	0.0	-4.98	1.62	-0.01	-0.67	0.00	0.45	0.00	1.03	1.6	3

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

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Holding Usage %	Input Hardware Capacity (kips)	Factored Hardware Capacity (kips)	Hardware Usage %	Max. Usage %
Clamp1	5.211	80.00	80.00	6.51	0.00	0.00	0.00	6.51
Clamp2	5.211	80.00	80.00	6.51	0.00	0.00	0.00	6.51
Clamp3	1.003	80.00	80.00	1.25	0.00	0.00	0.00	1.25
Clamp4	0.834	80.00	80.00	1.04	0.00	0.00	0.00	1.04
Clamp5	5.211	80.00	80.00	6.51	0.00	0.00	0.00	6.51
Clamp6	5.211	80.00	80.00	6.51	0.00	0.00	0.00	6.51
Clamp7	5.211	80.00	80.00	6.51	0.00	0.00	0.00	6.51
Clamp8	5.211	80.00	80.00	6.51	0.00	0.00	0.00	6.51
Clamp9	3.532	80.00	80.00	4.42	0.00	0.00	0.00	4.42
Clamp10	0.000	80.00	80.00	0.00	0.00	0.00	0.00	0.00
Clamp11	0.791	80.00	80.00	0.99	0.00	0.00	0.00	0.99
Clamp12	0.791	80.00	80.00	0.99	0.00	0.00	0.00	0.99
Clamp13	0.791	80.00	80.00	0.99	0.00	0.00	0.00	0.99
Clamp14	0.791	80.00	80.00	0.99	0.00	0.00	0.00	0.99
Clamp15	0.791	80.00	80.00	0.99	0.00	0.00	0.00	0.99
Clamp16	0.791	80.00	80.00	0.99	0.00	0.00	0.00	0.99
Clamp17	0.791	80.00	80.00	0.99	0.00	0.00	0.00	0.99
Clamp18	0.791	80.00	80.00	0.99	0.00	0.00	0.00	0.99
Clamp19	0.791	80.00	80.00	0.99	0.00	0.00	0.00	0.99
Clamp20	0.791	80.00	80.00	0.99	0.00	0.00	0.00	0.99
Clamp21	0.791	80.00	80.00	0.99	0.00	0.00	0.00	0.99
Clamp22	0.791	80.00	80.00	0.99	0.00	0.00	0.00	0.99
Clamp23	0.791	80.00	80.00	0.99	0.00	0.00	0.00	0.99

*** Analysis Results for Load Case No. 3 "NESC Extreme Ice w/ Wind" - Number of iterations in SAPS 13

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)
24032:g	0	0	0	0.0000	0.0000	0.0000	0	0	0
24032:t	0.003993	1.287	-0.0103	-0.8445	0.0026	0.0000	0.003993	1.287	140.5
24032:TopConn	0.003834	1.235	-0.009916	-0.8445	0.0026	0.0000	0.003834	1.235	137
24032:BotConn	0.003383	1.088	-0.008807	-0.8411	0.0026	0.0000	0.003383	1.088	127
24032:WVGD13	0.003293	1.059	-0.008586	-0.8397	0.0026	0.0000	0.003293	1.059	125
24032:Arm1	0.002958	0.9493	-0.007753	-0.8327	0.0025	0.0000	0.002958	0.9493	117.5
24032:WVGD12	0.002847	0.913	-0.007447	-0.8288	0.0025	0.0000	0.002847	0.913	115
24032:WVGD11	0.002415	0.7707	-0.006254	-0.7966	0.0024	0.0000	0.002415	0.7707	105
24032:WVGD10	0.002005	0.6355	-0.00517	-0.7495	0.0023	0.0000	0.002005	0.6355	94.99
24032:Arm2	0.001965	0.6224	-0.005068	-0.7443	0.0023	0.0000	0.001965	0.6224	93.99
24032:WVGD9	0.001621	0.5095	-0.004145	-0.6889	0.0021	0.0000	0.001621	0.5095	85
24032:WVGD8	0.00127	0.3954	-0.003254	-0.6142	0.0019	0.0000	0.00127	0.3954	75
24032:Arm3	0.001173	0.3638	-0.003015	-0.5899	0.0018	0.0000	0.001173	0.3638	72
24032:WVGD7	0.0009593	0.2951	-0.002475	-0.5306	0.0017	0.0000	0.0009593	0.2951	65
24032:WVGD6	0.0006905	0.2097	-0.001839	-0.4444	0.0014	0.0000	0.0006905	0.2097	55
24032:WVGD5	0.0004662	0.1397	-0.001336	-0.3573	0.0012	0.0000	0.0004662	0.1397	45
24032:WVGD4	0.0002853	0.08431	-0.0009446	-0.2748	0.0009	0.0000	0.0002853	0.08431	35
24032:WVGD3	0.0001477	0.04304	-0.0006332	-0.1959	0.0007	0.0000	0.0001477	0.04304	25
24032:WVGD2	5.424e-05	0.01556	-0.0003638	-0.1170	0.0004	0.0000	5.424e-05	0.01556	15
24032:WVGD1	6.372e-06	0.001785	-0.0001193	-0.0387	0.0001	0.0000	6.372e-06	0.001785	5
Davit1:O	0.002957	0.9492	-0.02912	-0.8327	0.0025	0.0000	0.002957	2.419	117.5
Davit1:V	0.003007	0.969	-0.2851	-1.1846	0.0025	-0.0001	0.003007	16.44	118.4
Davit1:T	0.003034	0.9798	-0.4459	-1.1895	0.0025	-0.0001	0.003034	24.2	118.9
Davit2:O	0.002959	0.9495	0.01361	-0.8327	0.0025	0.0000	0.002959	-0.5208	117.5
Davit2:V	0.00303	0.9633	0.1624	-0.4458	0.0025	0.0001	0.00303	-14.51	118.9
Davit2:T	0.00307	0.9679	0.2186	-0.3978	0.0025	0.0001	0.00307	-22.25	119.5
Davit3:O	0.001964	0.6223	-0.02751	-0.7443	0.0023	0.0000	0.001964	2.35	93.97
Davit3:End	0.002015	0.6413	-0.2835	-1.2963	0.0023	-0.0001	0.002015	16.37	94.88
Davit4:O	0.001966	0.6226	0.01738	-0.7443	0.0023	0.0000	0.001966	-1.105	94.02
Davit4:End	0.002034	0.6326	0.1298	-0.2266	0.0023	0.0001	0.002034	-15.1	95.3
Davit5:O	0.001172	0.3637	-0.02354	-0.5899	0.0018	0.0000	0.001172	2.357	71.98
Davit5:End	0.001217	0.3802	-0.2418	-1.1423	0.0018	-0.0001	0.001217	16.37	72.93
Davit6:O	0.001173	0.3639	0.01751	-0.5899	0.0018	0.0000	0.001173	-1.629	72.02
Davit6:End	0.00123	0.3704	0.09215	-0.0714	0.0018	0.0001	0.00123	-15.62	73.26

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

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	H-Shear Usage %	Z Force (kips)	Comp. Uplift Usage %	Uplift Usage %	Result. Force (kips)	Result. Usage %	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	H-Bend-M Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
24032:g	-0.10	0.0	-21.05	0.0	0.0	-87.84	0.0	0.0	90.33	0.0	1846.69	0.0	-6.5	0.0	0.0	-0.00	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.

24032	24032:t	Origin	0.00	15.44	0.05	-0.12	-0.00	-0.00	0.0	-0.17	0.05	-0.00	-0.01	0.00	0.00	0.00	0.01	0.0	5
24032	24032:TopConn	End	3.50	14.82	0.05	-0.12	0.16	-0.00	0.0	-0.17	0.05	-0.00	-0.01	0.01	0.00	0.00	0.01	0.0	2
24032	24032:TopConn	Origin	3.50	14.82	0.05	-0.12	0.16	-0.00	-0.0	-1.99	0.85	-0.00	-0.07	0.00	0.06	0.00	0.12	0.2	5
24032	Tube 1	End	8.50	13.94	0.04	-0.11	4.43	-0.02	-0.0	-1.99	0.85	-0.00	-0.06	0.22	0.01	0.00	0.29	0.4	2
24032	Tube 1	Origin	8.50	13.94	0.04	-0.11	4.43	-0.02	0.0	-2.52	0.99	-0.00	-0.08	0.22	0.02	0.00	0.30	0.5	2
24032	24032:BotConn	End	13.50	13.06	0.04	-0.11	9.40	-0.04	0.0	-2.52	0.99	-0.00	-0.08	0.43	0.02	0.00	0.51	0.8	2
24032	24032:BotConn	Origin	13.50	13.06	0.04	-0.11	9.40	-0.04	-0.0	-2.90	1.09	-0.01	-0.09	0.43	0.02	0.00	0.52	0.8	2
24032	24032:WVGD13	End	15.50	12.71	0.04	-0.10	11.58	-0.05	-0.0	-2.90	1.09	-0.01	-0.09	0.51	0.02	0.00	0.60	0.9	2
24032	24032:WVGD13	Origin	15.50	12.71	0.04	-0.10	11.58	-0.05	0.0	-4.07	1.34	-0.01	-0.12	0.51	0.02	0.00	0.63	1.0	2
24032	Tube 1	End	19.25	12.05	0.04	-0.10	16.62	-0.08	0.0	-4.07	1.34	-0.01	-0.12	0.68	0.02	0.00	0.80	1.2	2
24032	Tube 1	Origin	19.25	12.05	0.04	-0.10	16.62	-0.08	0.0	-4.50	1.46	-0.01	-0.13	0.68	0.02	0.00	0.82	1.3	2
24032	24032:Arm1	End	23.00	11.39	0.04	-0.09	22.08	-0.12	0.0	-4.50	1.46	-0.01	-0.13	0.85	0.02	0.00	0.98	1.5	2
24032	24032:Arm1	Origin	23.00	11.39	0.04	-0.09	22.54	-0.12	0.0	-17.78	6.85	-0.01	-0.51	0.87	0.10	0.00	1.39	2.1	2
24032	24032:WVGD12	End	25.50	10.96	0.03	-0.09	39.67	-0.16	0.0	-17.78	6.85	-0.01	-0.50	1.47	0.10	0.00	1.97	3.0	2
24032	24032:WVGD12	Origin	25.50	10.96	0.03	-0.09	39.67	-0.16	0.0	-19.09	7.13	-0.02	-0.53	1.47	0.10	0.00	2.01	3.1	2
24032	Tube 1	End	30.50	10.09	0.03	-0.08	75.32	-0.24	0.0	-19.09	7.13	-0.02	-0.51	2.57	0.10	0.00	3.09	4.7	2
24032	Tube 1	Origin	30.50	10.09	0.03	-0.08	75.32	-0.24	0.0	-19.73	7.29	-0.02	-0.53	2.57	0.10	0.00	3.10	4.8	2
24032	24032:WVGD11	End	35.50	9.25	0.03	-0.08	111.79	-0.33	0.0	-19.73	7.29	-0.02	-0.51	3.53	0.10	0.00	4.05	6.3	2
24032	24032:WVGD11	Origin	35.50	9.25	0.03	-0.08	111.79	-0.33	0.0	-21.06	7.58	-0.02	-0.54	3.53	0.10	0.00	4.08	6.4	2
24032	SpliceT	End	37.83	8.86	0.03	-0.07	129.44	-0.38	0.0	-21.06	7.58	-0.02	-0.53	3.95	0.10	0.00	4.49	7.1	2
24032	SpliceT	Origin	37.83	8.86	0.03	-0.07	129.44	-0.38	0.0	-21.60	7.66	-0.02	-0.55	3.95	0.10	0.00	4.50	7.1	2
24032	Splice	End	40.42	8.44	0.03	-0.07	149.24	-0.44	0.0	-21.60	7.66	-0.02	-0.46	3.79	0.09	0.00	4.25	6.5	2
24032	Splice	Origin	40.42	8.44	0.03	-0.07	149.24	-0.44	0.0	-22.37	7.76	-0.02	-0.47	3.79	0.09	0.00	4.26	6.6	2
24032	SpliceB	End	43.00	8.02	0.03	-0.07	169.27	-0.50	0.0	-22.37	7.76	-0.02	-0.46	4.14	0.08	0.00	4.60	7.1	2
24032	SpliceB	Origin	43.00	8.02	0.03	-0.07	169.27	-0.50	0.0	-22.97	7.85	-0.03	-0.48	4.14	0.09	0.00	4.62	7.1	2
24032	24032:WVGD10	End	45.50	7.63	0.02	-0.06	188.91	-0.56	0.0	-22.97	7.85	-0.03	-0.47	4.46	0.08	0.00	4.92	7.6	2
24032	24032:WVGD10	Origin	45.50	7.63	0.02	-0.06	188.91	-0.56	0.0	-24.11	8.07	-0.03	-0.49	4.46	0.09	0.00	4.95	7.6	2
24032	24032:Arm2	End	46.50	7.47	0.02	-0.06	196.98	-0.58	0.0	-24.11	8.07	-0.03	-0.49	4.58	0.09	0.00	5.07	7.8	2
24032	24032:Arm2	Origin	46.50	7.47	0.02	-0.06	201.29	-0.59	0.0	-34.79	12.10	-0.03	-0.70	4.68	0.13	0.00	5.39	8.3	2
24032	Tube 2	End	51.00	6.78	0.02	-0.06	255.72	-0.72	0.0	-34.79	12.10	-0.03	-0.68	5.58	0.12	0.00	6.27	9.6	2
24032	Tube 2	Origin	51.00	6.78	0.02	-0.06	255.72	-0.72	0.0	-35.58	12.25	-0.03	-0.70	5.58	0.13	0.00	6.28	9.7	2
24032	24032:WVGD9	End	55.50	6.11	0.02	-0.05	310.86	-0.87	0.0	-35.58	12.25	-0.03	-0.68	6.39	0.12	0.00	7.07	10.9	2
24032	24032:WVGD9	Origin	55.50	6.11	0.02	-0.05	310.86	-0.87	0.0	-37.29	12.58	-0.04	-0.71	6.39	0.13	0.00	7.10	10.9	2
24032	Tube 2	End	60.50	5.41	0.02	-0.04	373.76	-1.05	0.0	-37.29	12.58	-0.04	-0.69	7.19	0.12	0.00	7.88	12.1	2
24032	Tube 2	Origin	60.50	5.41	0.02	-0.04	373.76	-1.05	0.0	-38.22	12.76	-0.04	-0.70	7.19	0.12	0.00	7.90	12.2	2
24032	24032:WVGD8	End	65.50	4.74	0.02	-0.04	437.55	-1.25	0.0	-38.22	12.76	-0.04	-0.68	7.90	0.12	0.00	8.59	13.4	2
24032	24032:WVGD8	Origin	65.50	4.74	0.02	-0.04	437.55	-1.25	0.0	-39.84	13.06	-0.04	-0.71	7.90	0.12	0.00	8.62	13.5	2
24032	24032:Arm3	End	68.50	4.37	0.01	-0.04	476.74	-1.37	0.0	-39.84	13.06	-0.04	-0.70	8.30	0.12	0.00	9.00	14.2	2
24032	24032:Arm3	Origin	68.50	4.37	0.01	-0.04	481.03	-1.38	0.0	-50.65	17.08	-0.05	-0.89	8.37	0.16	0.00	9.26	14.6	2
24032	SpliceT	End	71.50	4.00	0.01	-0.03	532.26	-1.51	0.0	-50.65	17.08	-0.05	-0.87	8.93	0.15	0.00	9.81	15.6	2
24032	SpliceT	Origin	71.50	4.00	0.01	-0.03	532.26	-1.51	0.0	-51.82	17.21	-0.05	-0.89	8.93	0.16	0.00	9.83	15.7	2
24032	24032:WVGD7	End	75.50	3.54	0.01	-0.03	601.09	-1.71	0.0	-51.82	17.21	-0.05	-0.76	8.54	0.13	0.00	9.30	14.3	2
24032	24032:WVGD7	Origin	75.50	3.54	0.01	-0.03	601.09	-1.71	0.0	-54.05	17.48	-0.05	-0.79	8.54	0.13	0.00	9.33	14.4	2
24032	SpliceB	End	77.83	3.29	0.01	-0.03	641.82	-1.83	0.0	-54.05	17.48	-0.05	-0.78	8.87	0.13	0.00	9.65	14.8	2
24032	SpliceB	Origin	77.83	3.29	0.01	-0.03	641.82	-1.83	0.0	-55.03	17.60	-0.05	-0.79	8.87	0.13	0.00	9.66	14.9	2
24032	Tube 3	End	81.67	2.89	0.01	-0.02	709.32	-2.03	0.0	-55.03	17.60	-0.05	-0.78	9.37	0.13	0.00	10.15	15.6	2
24032	Tube 3	Origin	81.67	2.89	0.01	-0.02	709.32	-2.03	0.0	-55.96	17.74	-0.06	-0.79	9.37	0.13	0.00	10.16	15.6	2
24032	24032:WVGD6	End	85.50	2.52	0.01	-0.02	777.35	-2.24	0.0	-55.96	17.74	-0.06	-0.77	9.83	0.13	0.00	10.60	16.3	2
24032	24032:WVGD6	Origin	85.50	2.52	0.01	-0.02	777.35	-2.24	0.0	-57.66	18.02	-0.06	-0.79	9.83	0.13	0.00	10.63	16.3	2
24032	Tube 3	End	88.50	2.24	0.01	-0.02	831.42	-2.42	0.0	-57.66	18.02	-0.06	-0.78	10.17	0.13	0.00	10.95	16.8	2
24032	Tube 3	Origin	88.50	2.24	0.01	-0.02	831.42	-2.42	0.0	-58.42	18.14	-0.06	-0.79	10.17	0.13	0.00	10.96	16.9	2
24032	SpliceT	End	91.50	1.99	0.01	-0.02	885.83	-2.60	0.0	-58.42	18.14	-0.06	-0.78	10.48	0.13	0.00	11.26	17.4	2
24032	SpliceT	Origin	91.50	1.99	0.01	-0.02	885.83	-2.60	0.0	-59.40	18.27	-0.06	-0.69	9.16	0.11	0.00	9.85	15.2	2
24032	24032:WVGD5	End	95.50	1.68	0.01	-0.02	958.93	-2.85	0.0	-59.40	18.27	-0.06	-0.68	9.50	0.11	0.00	10.18	15.7	2
24032	24032:WVGD5	Origin	95.50	1.68	0.01	-0.02	958.93	-2.85	0.0	-61.49	18.59	-0.07	-0.70	9.50	0.11	0.00	10.20	15.7	2
24032	Tube 4	End	99.75	1.37	0.00	-0.01	1037.95	-3.13	0.0	-61.49	18.59	-0.07	-0.69	9.83	0.11	0.00	10.52	16.2	2
24032	Tube 4	Origin	99.75	1.37	0.00	-0.01	1037.95	-3.13	0.0	-62.80	18.77	-0.07	-0.70	9.83	0.11	0.00	10.53	16.2	2
24032	SpliceT	End	104.00	1.10	0.00	-0.01	1117.70	-3.42	0.0	-62.80	18.77	-0.07	-0.69	10.13	0.11	0.00	10.82	16.6	2
24032	SpliceT	Origin	104.00	1.10	0.00	-0.01	1117.70	-3.42	0.0	-63.96	18.89	-0.07	-0.70	10.13	0.11	0.00	10.83	16.7	2
24032	24032:WVGD4	End	105.50	1.01	0.00	-0.01	1146.03	-3.53	0.0	-63.96	18.89	-0.07	-0.63	9.45	0.10	0.00	10.08	15.5	2

24032	24032:WVGD4	Origin	105.50	1.01	0.00	-0.01	1146.03	-3.53	0.0	-66.31	19.13	-0.07	-0.65	9.45	0.10	0.00	10.10	15.5	2
24032	Splice	End	108.50	0.85	0.00	-0.01	1203.43	-3.74	0.0	-66.31	19.13	-0.07	-0.64	9.62	0.10	0.00	10.26	15.8	2
24032	Splice	Origin	108.50	0.85	0.00	-0.01	1203.43	-3.74	0.0	-68.33	19.26	-0.08	-0.66	9.62	0.10	0.00	10.28	15.8	2
24032	SpliceB	End	111.50	0.69	0.00	-0.01	1261.22	-3.97	0.0	-68.33	19.26	-0.08	-0.65	9.78	0.10	0.00	10.44	16.1	2
24032	SpliceB	Origin	111.50	0.69	0.00	-0.01	1261.22	-3.97	0.0	-70.07	19.41	-0.08	-0.67	9.78	0.10	0.00	10.45	16.1	2
24032	24032:WVGD3	End	115.50	0.52	0.00	-0.01	1338.87	-4.28	0.0	-70.07	19.41	-0.08	-0.65	9.98	0.10	0.00	10.64	16.4	2
24032	24032:WVGD3	Origin	115.50	0.52	0.00	-0.01	1338.87	-4.28	0.0	-72.44	19.74	-0.08	-0.68	9.98	0.10	0.00	10.66	16.4	2
24032	Tube 5	End	119.75	0.36	0.00	-0.01	1422.75	-4.63	0.0	-72.44	19.74	-0.08	-0.66	10.18	0.10	0.00	10.84	16.7	2
24032	Tube 5	Origin	119.75	0.36	0.00	-0.01	1422.75	-4.63	0.0	-74.03	19.92	-0.08	-0.68	10.18	0.10	0.00	10.86	16.7	2
24032	SpliceT	End	124.00	0.23	0.00	-0.00	1507.42	-4.99	0.0	-74.03	19.92	-0.08	-0.66	10.36	0.09	0.00	11.02	17.0	2
24032	SpliceT	Origin	124.00	0.23	0.00	-0.00	1507.42	-4.99	0.0	-75.13	20.05	-0.09	-0.67	10.36	0.09	0.00	11.03	17.0	2
24032	24032:WVGD2	End	125.50	0.19	0.00	-0.00	1537.49	-5.12	0.0	-75.13	20.05	-0.09	-0.67	10.42	0.09	0.00	11.09	17.1	2
24032	24032:WVGD2	Origin	125.50	0.19	0.00	-0.00	1537.49	-5.12	0.0	-77.24	20.34	-0.09	-0.69	10.42	0.10	0.00	11.10	17.1	2
24032	Tube 6	End	130.50	0.08	0.00	-0.00	1639.19	-5.57	0.0	-77.24	20.34	-0.09	-0.67	10.60	0.09	0.00	11.28	17.3	2
24032	Tube 6	Origin	130.50	0.08	0.00	-0.00	1639.19	-5.57	0.0	-79.21	20.56	-0.09	-0.69	10.60	0.09	0.00	11.29	17.4	2
24032	24032:WVGD1	End	135.50	0.02	0.00	-0.00	1742.00	-6.04	0.0	-79.21	20.56	-0.09	-0.67	10.77	0.09	0.00	11.45	17.6	2
24032	24032:WVGD1	Origin	135.50	0.02	0.00	-0.00	1742.00	-6.04	0.0	-82.08	20.94	-0.10	-0.70	10.77	0.09	0.00	11.47	17.6	2
24032	24032:g	End	140.50	0.00	0.00	0.00	1846.69	-6.54	0.0	-82.08	20.94	-0.10	-0.68	10.92	0.09	0.00	11.61	17.9	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	11.39	0.04	-0.35	-89.45	-0.02	-0.0	2.12	6.54	0.00	0.12	13.80	0.00	0.00	13.92	21.4	1
Davit1	#Davit1:0	End	5.00	11.47	0.04	-1.31	-56.77	-0.01	-0.0	2.12	6.54	0.00	0.13	11.25	0.00	0.00	11.38	17.5	1
Davit1	#Davit1:0	Origin	5.00	11.47	0.04	-1.31	-56.77	-0.01	-0.0	2.15	6.27	0.00	0.13	11.25	0.00	0.00	11.38	17.5	1
Davit1	#Davit1:1	End	9.53	11.54	0.04	-2.32	-28.41	-0.01	-0.0	2.15	6.27	0.00	0.15	7.28	0.00	0.00	7.43	11.4	1
Davit1	#Davit1:1	Origin	9.53	11.54	0.04	-2.32	-28.41	-0.01	-0.0	2.18	6.04	0.00	0.15	7.28	0.00	0.00	7.43	11.4	1
Davit1	Davit1:V	End	14.05	11.63	0.04	-3.42	-1.05	-0.00	-0.0	2.18	6.04	0.00	0.18	0.00	1.02	0.00	1.77	2.7	3
Davit1	Davit1:V	Origin	14.05	11.63	0.04	-3.42	-1.05	-0.00	-0.0	-0.01	0.21	0.00	-0.00	0.36	0.00	0.00	0.36	0.6	1
Davit1	#Davit1:2	End	17.94	11.69	0.04	-4.38	-0.25	-0.00	-0.0	-0.01	0.21	0.00	-0.00	0.12	0.00	0.00	0.12	0.2	1
Davit1	#Davit1:2	Origin	17.94	11.69	0.04	-4.38	-0.25	-0.00	-0.0	-0.00	0.06	0.00	-0.00	0.12	0.00	0.00	0.12	0.2	1
Davit1	Davit1:T	End	21.83	11.76	0.04	-5.35	0.00	0.00	-0.0	-0.00	0.06	0.00	-0.00	0.00	0.01	0.00	0.03	0.0	3
Davit2	Davit2:O	Origin	0.00	11.39	0.04	0.16	-89.06	0.02	0.0	-3.15	6.04	-0.00	-0.17	13.74	0.00	0.00	13.92	21.4	1
Davit2	#Davit2:0	End	5.00	11.47	0.04	0.94	-58.88	0.01	0.0	-3.15	6.04	-0.00	-0.19	11.67	0.00	0.00	11.86	18.3	1
Davit2	#Davit2:0	Origin	5.00	11.47	0.04	0.94	-58.88	0.01	0.0	-3.11	5.78	-0.00	-0.19	11.67	0.00	0.00	11.86	18.2	1
Davit2	#Davit2:1	End	9.53	11.52	0.04	1.50	-32.71	0.01	0.0	-3.11	5.78	-0.00	-0.22	8.38	0.00	0.00	8.60	13.2	1
Davit2	#Davit2:1	Origin	9.53	11.52	0.04	1.50	-32.71	0.01	0.0	-3.07	5.57	-0.00	-0.22	8.38	0.00	0.00	8.60	13.2	1
Davit2	Davit2:V	End	14.05	11.56	0.04	1.95	-7.50	0.00	0.0	-3.07	5.57	-0.00	-0.25	2.58	0.00	0.00	2.83	4.4	1
Davit2	Davit2:V	Origin	14.05	11.56	0.04	1.95	-7.50	0.00	0.0	-0.73	1.03	-0.00	-0.06	2.58	0.00	0.00	2.64	4.1	1
Davit2	#Davit2:2	End	17.94	11.59	0.04	2.30	-3.48	0.00	0.0	-0.73	1.03	-0.00	-0.07	1.60	0.00	0.00	1.67	2.6	1
Davit2	#Davit2:2	Origin	17.94	11.59	0.04	2.30	-3.48	0.00	0.0	-0.71	0.89	-0.00	-0.07	1.60	0.00	0.00	1.67	2.6	1
Davit2	Davit2:T	End	21.83	11.61	0.04	2.62	-0.00	0.00	0.0	-0.71	0.89	-0.00	-0.08	0.00	0.21	0.00	0.37	0.6	3
Davit3	Davit3:O	Origin	0.00	7.47	0.02	-0.33	-69.26	-0.02	-0.0	1.55	5.12	0.00	0.10	13.62	0.00	0.00	13.71	21.1	1
Davit3	#Davit3:0	End	5.00	7.54	0.02	-1.22	-43.64	-0.01	-0.0	1.55	5.12	0.00	0.12	13.23	0.00	0.00	13.35	20.5	1
Davit3	#Davit3:0	Origin	5.00	7.54	0.02	-1.22	-43.64	-0.01	-0.0	1.59	4.90	0.00	0.12	13.23	0.00	0.00	13.35	20.5	1
Davit3	#Davit3:1	End	9.52	7.61	0.02	-2.22	-21.45	-0.01	-0.0	1.59	4.90	0.00	0.15	10.65	0.00	0.00	10.80	16.6	1
Davit3	#Davit3:1	Origin	9.52	7.61	0.02	-2.22	-21.45	-0.01	0.0	1.61	4.74	0.00	0.16	10.65	0.00	0.00	10.81	16.6	1
Davit3	Davit3:End	End	14.05	7.70	0.02	-3.40	0.00	0.00	0.0	1.61	4.74	0.00	0.22	0.00	1.33	0.00	2.31	3.6	3
Davit4	Davit4:O	Origin	0.00	7.47	0.02	0.21	-64.95	0.02	0.0	-2.36	4.80	-0.00	-0.15	12.77	0.00	0.00	12.92	19.9	1
Davit4	#Davit4:0	End	5.00	7.53	0.02	0.88	-40.93	0.01	0.0	-2.36	4.80	-0.00	-0.18	12.41	0.00	0.00	12.59	19.4	1
Davit4	#Davit4:0	Origin	5.00	7.53	0.02	0.88	-40.93	0.01	0.0	-2.33	4.60	-0.00	-0.18	12.41	0.00	0.00	12.58	19.4	1
Davit4	#Davit4:1	End	9.52	7.57	0.02	1.30	-20.13	0.01	0.0	-2.33	4.60	-0.00	-0.23	9.99	0.00	0.00	10.22	15.7	1
Davit4	#Davit4:1	Origin	9.52	7.57	0.02	1.30	-20.13	0.01	0.0	-2.30	4.45	-0.00	-0.22	9.99	0.00	0.00	10.22	15.7	1

Davit4	Davit4:End	End	14.05	7.59	0.02	1.56	-0.00	0.00	0.0	-2.30	4.45	-0.00	-0.31	0.00	1.25	0.00	2.18	3.4	3
Davit5	Davit5:O	Origin	0.00	4.36	0.01	-0.28	-69.32	-0.02	-0.0	1.54	5.13	0.00	0.09	13.63	0.00	0.00	13.72	21.1	1
Davit5	#Davit5:0	End	5.00	4.42	0.01	-1.01	-43.68	-0.01	-0.0	1.54	5.13	0.00	0.12	13.24	0.00	0.00	13.36	20.5	1
Davit5	#Davit5:0	Origin	5.00	4.42	0.01	-1.01	-43.68	-0.01	-0.0	1.57	4.91	0.00	0.12	13.24	0.00	0.00	13.36	20.6	1
Davit5	#Davit5:1	End	9.52	4.49	0.01	-1.87	-21.47	-0.01	-0.0	1.57	4.91	0.00	0.15	10.66	0.00	0.00	10.81	16.6	1
Davit5	#Davit5:1	Origin	9.52	4.49	0.01	-1.87	-21.47	-0.01	0.0	1.60	4.75	0.00	0.16	10.66	0.00	0.00	10.81	16.6	1
Davit5	Davit5:End	End	14.05	4.56	0.01	-2.90	0.00	0.00	0.0	1.60	4.75	0.00	0.21	0.00	1.33	0.00	2.31	3.6	3
Davit6	Davit6:O	Origin	0.00	4.37	0.01	0.21	-65.04	0.02	0.0	-2.35	4.81	-0.00	-0.14	12.79	0.00	0.00	12.93	19.9	1
Davit6	#Davit6:0	End	5.00	4.41	0.01	0.72	-40.99	0.01	0.0	-2.35	4.81	-0.00	-0.18	12.42	0.00	0.00	12.60	19.4	1
Davit6	#Davit6:0	Origin	5.00	4.41	0.01	0.72	-40.99	0.01	0.0	-2.32	4.60	-0.00	-0.18	12.42	0.00	0.00	12.60	19.4	1
Davit6	#Davit6:1	End	9.52	4.44	0.01	1.00	-20.15	0.01	0.0	-2.32	4.60	-0.00	-0.23	10.01	0.00	0.00	10.23	15.7	1
Davit6	#Davit6:1	Origin	9.52	4.44	0.01	1.00	-20.15	0.01	0.0	-2.29	4.45	-0.00	-0.22	10.01	0.00	0.00	10.23	15.7	1
Davit6	Davit6:End	End	14.05	4.45	0.01	1.11	-0.00	0.00	0.0	-2.29	4.45	-0.00	-0.31	0.00	1.25	0.00	2.18	3.4	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)	Holding Usage %	Input Hardware Capacity (kips)	Factored Hardware Capacity (kips)	Hardware Usage %	Max. Usage %
Clamp1	6.074	80.00	80.00	7.59	0.00	0.00	0.00	7.59
Clamp2	4.945	80.00	80.00	6.18	0.00	0.00	0.00	6.18
Clamp3	0.000	80.00	80.00	0.00	0.00	0.00	0.00	0.00
Clamp4	1.091	80.00	80.00	1.36	0.00	0.00	0.00	1.36
Clamp5	4.945	80.00	80.00	6.18	0.00	0.00	0.00	6.18
Clamp6	4.945	80.00	80.00	6.18	0.00	0.00	0.00	6.18
Clamp7	4.945	80.00	80.00	6.18	0.00	0.00	0.00	6.18
Clamp8	4.945	80.00	80.00	6.18	0.00	0.00	0.00	6.18
Clamp9	1.552	80.00	80.00	1.94	0.00	0.00	0.00	1.94
Clamp10	0.000	80.00	80.00	0.00	0.00	0.00	0.00	0.00
Clamp11	0.863	80.00	80.00	1.08	0.00	0.00	0.00	1.08
Clamp12	0.863	80.00	80.00	1.08	0.00	0.00	0.00	1.08
Clamp13	0.863	80.00	80.00	1.08	0.00	0.00	0.00	1.08
Clamp14	0.863	80.00	80.00	1.08	0.00	0.00	0.00	1.08
Clamp15	0.863	80.00	80.00	1.08	0.00	0.00	0.00	1.08
Clamp16	0.863	80.00	80.00	1.08	0.00	0.00	0.00	1.08
Clamp17	0.863	80.00	80.00	1.08	0.00	0.00	0.00	1.08
Clamp18	0.863	80.00	80.00	1.08	0.00	0.00	0.00	1.08
Clamp19	0.863	80.00	80.00	1.08	0.00	0.00	0.00	1.08
Clamp20	0.863	80.00	80.00	1.08	0.00	0.00	0.00	1.08
Clamp21	0.863	80.00	80.00	1.08	0.00	0.00	0.00	1.08
Clamp22	0.863	80.00	80.00	1.08	0.00	0.00	0.00	1.08
Clamp23	0.863	80.00	80.00	1.08	0.00	0.00	0.00	1.08

*** Analysis Results for Load Case No. 4 "NESC Heavy Broken Wire" - Number of iterations in SAPS 16

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

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)
24032:g	0	0	0	0.0000	0.0000	0.0000	0	0	0
24032:t	2.338	0.8838	-0.03259	-0.5939	1.6242	-1.0036	2.338	0.8838	140.5
24032:TopConn	2.238	0.8492	-0.03099	-0.5939	1.6242	-1.0036	2.238	0.8492	137
24032:BotConn	1.953	0.7508	-0.02641	-0.5895	1.6239	-1.0038	1.953	0.7508	127
24032:WVGD13	1.896	0.7312	-0.02549	-0.5878	1.6237	-1.0038	1.896	0.7312	125
24032:Arm1	1.682	0.6586	-0.02205	-0.5785	1.6230	-1.0041	1.682	0.6586	117.5
24032:WVGD12	1.61	0.6364	-0.02088	-0.5777	1.6155	-0.9405	1.61	0.6364	115
24032:WVGD11	1.331	0.5461	-0.01638	-0.5626	1.5304	-0.7211	1.331	0.5461	105
24032:WVGD10	1.072	0.4564	-0.01246	-0.5351	1.3975	-0.5591	1.072	0.4564	94.99
24032:Arm2	1.047	0.4476	-0.01211	-0.5318	1.3828	-0.5454	1.047	0.4476	93.99
24032:WVGD9	0.8394	0.3701	-0.009155	-0.4963	1.2393	-0.4346	0.8394	0.3701	84.99
24032:WVGD8	0.6366	0.2902	-0.006533	-0.4464	1.0642	-0.3327	0.6366	0.2902	74.99
24032:Arm3	0.5819	0.2678	-0.005876	-0.4298	1.0098	-0.3057	0.5819	0.2678	71.99
24032:WVGD7	0.4655	0.2187	-0.004528	-0.3890	0.8852	-0.2499	0.4655	0.2187	65
24032:WVGD6	0.3248	0.1568	-0.003062	-0.3288	0.7186	-0.1861	0.3248	0.1568	55
24032:WVGD5	0.2129	0.1053	-0.002027	-0.2669	0.5622	-0.1349	0.2129	0.1053	45
24032:WVGD4	0.1267	0.06405	-0.00131	-0.2072	0.4227	-0.0951	0.1267	0.06405	35
24032:WVGD3	0.06381	0.03294	-0.0008096	-0.1490	0.2954	-0.0629	0.06381	0.03294	25
24032:WVGD2	0.02275	0.012	-0.0004385	-0.0897	0.1732	-0.0351	0.02275	0.012	15
24032:WVGD1	0.002559	0.001391	-0.0001398	-0.0300	0.0564	-0.0109	0.002559	0.001391	5
Davit1:O	1.708	0.6583	-0.03689	-0.5785	1.6230	-1.0041	1.708	2.129	117.5
Davit1:V	2.214	0.6638	-0.2279	-0.8262	1.7497	-2.7116	2.214	16.13	118.5
Davit1:T	2.626	0.6617	-0.3537	-0.8492	1.7725	-3.0614	2.626	23.88	119
Davit2:O	1.657	0.6589	-0.00721	-0.5785	1.6230	-1.0041	1.657	-0.8114	117.5
Davit2:V	1.449	0.6696	0.09444	-0.2569	1.6181	-1.0055	1.449	-14.8	118.8
Davit2:T	1.331	0.6733	0.1294	-0.2205	1.6175	-1.0057	1.331	-22.55	119.4
Davit3:O	1.063	0.4474	-0.02814	-0.5318	1.3828	-0.5454	1.063	2.175	93.97
Davit3:End	1.22	0.4613	-0.2214	-0.9738	1.3876	-0.5442	1.22	16.19	94.95
Davit4:O	1.031	0.4477	0.003925	-0.5318	1.3828	-0.5454	1.031	-1.28	94
Davit4:End	0.928	0.4547	0.07928	-0.1080	1.3795	-0.5463	0.928	-15.27	95.25
Davit5:O	0.5923	0.2677	-0.02083	-0.4298	1.0098	-0.3057	0.5923	2.261	71.98
Davit5:End	0.6846	0.2803	-0.1871	-0.8720	1.0127	-0.3049	0.6846	16.27	72.98
Davit6:O	0.5716	0.2679	0.009075	-0.4298	1.0098	-0.3057	0.5716	-1.725	72.01
Davit6:End	0.5182	0.2722	0.0579	-0.0058	1.0081	-0.3061	0.5182	-15.72	73.22

Joint Support Reactions for Load Case "NESC Heavy Broken Wire":

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	H-Shear Usage %	Z Comp. Force (kips)	Z Uplift Usage %	Result. Usage %	Result. Force (kips)	Result. Usage %	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	H-Bend-M Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
24032:g	-21.87	0.0	-18.73	0.0	0.0	-102.15	0.0	0.0	106.13	0.0	1435.17	0.0	-2665.8	0.0	0.0	389.06	0.0	0.0

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

Element Label	Joint Label	Joint Position	Rel. Dist.	Trans. Defl.	Long. Defl.	Vert. Defl.	Trans. Mom. (Local Mx)	Long. Mom. (Local My)	Tors. Mom.	Axial Force	Tran. Shear	Long. Shear	P/A	M/S.	V/Q.	T/R.	Res.	Max. Usage At Pt.

				(ft)	(in)	(in)	(in)	(ft-k)	(ft-k)	(ft-k)	(kips)	(kips)	(kips)	(ksi)	(ksi)	(ksi)	(ksi)	(ksi)	%
-																			
	24032	24032:t	Origin	0.00	10.61	28.06	-0.39	-0.00	0.00	-0.0	-0.26	0.07	-0.01	-0.01	0.00	0.01	0.00	0.01	0.0
5																			
	24032	24032:TopConn	End	3.50	10.19	26.86	-0.37	0.25	-0.02	-0.0	-0.26	0.07	-0.01	-0.01	0.01	0.00	0.00	0.02	0.0
2																			
	24032	24032:TopConn	Origin	3.50	10.19	26.86	-0.37	0.25	-0.02	-0.0	-2.67	1.08	-0.06	-0.09	0.00	0.07	0.00	0.16	0.2
5																			
	24032	Tube 1	End	8.50	9.60	25.15	-0.34	5.66	-0.31	-0.0	-2.67	1.08	-0.06	-0.09	0.29	0.02	0.00	0.37	0.6
2																			
	24032	Tube 1	Origin	8.50	9.60	25.15	-0.34	5.66	-0.31	0.0	-3.46	1.30	-0.08	-0.11	0.29	0.02	0.00	0.40	0.6
2																			
	24032	24032:BotConn	End	13.50	9.01	23.44	-0.32	12.15	-0.69	0.0	-3.46	1.30	-0.08	-0.11	0.56	0.02	0.00	0.67	1.0
2																			
	24032	24032:BotConn	Origin	13.50	9.01	23.44	-0.32	12.15	-0.69	0.0	-4.03	1.45	-0.09	-0.12	0.56	0.02	0.00	0.69	1.1
2																			
	24032	24032:WVGD13	End	15.50	8.77	22.75	-0.31	15.06	-0.87	0.0	-4.03	1.45	-0.09	-0.12	0.67	0.02	0.00	0.79	1.2
2																			
	24032	24032:WVGD13	Origin	15.50	8.77	22.75	-0.31	15.06	-0.87	0.0	-5.44	1.82	-0.12	-0.16	0.67	0.03	0.00	0.84	1.3
2																			
	24032	Tube 1	End	19.25	8.34	21.47	-0.29	21.89	-1.33	0.0	-5.44	1.82	-0.12	-0.16	0.91	0.03	0.00	1.07	1.7
2																			
	24032	Tube 1	Origin	19.25	8.34	21.47	-0.29	21.89	-1.33	0.0	-6.09	2.00	-0.14	-0.18	0.91	0.03	0.00	1.09	1.7
2																			
	24032	24032:Arm1	End	23.00	7.90	20.19	-0.26	29.38	-1.85	0.0	-6.09	2.00	-0.14	-0.17	1.15	0.03	0.00	1.32	2.0
2																			
	24032	24032:Arm1	Origin	23.00	7.90	20.19	-0.26	1.19	-31.96	-389.8	-16.22	4.66	-22.27	-0.46	0.38	1.25	7.76	15.63	24.0
2																			
	24032	24032:WVGD12	End	25.50	7.64	19.32	-0.25	12.74	-87.64	-389.8	-16.22	4.66	-22.27	-0.45	1.34	1.22	7.45	15.13	23.3
2																			
	24032	24032:WVGD12	Origin	25.50	7.64	19.32	-0.25	12.89	-87.68	-389.8	-17.83	5.06	-22.31	-0.50	1.34	1.22	7.45	15.14	23.3
2																			
	24032	Tube 1	End	30.50	7.10	17.62	-0.22	37.79	-199.28	-389.8	-17.83	5.06	-22.31	-0.48	5.92	0.88	6.88	14.89	22.9
3																			
	24032	Tube 1	Origin	30.50	7.10	17.62	-0.22	38.10	-199.30	-389.8	-18.80	5.27	-22.32	-0.50	5.93	0.89	6.88	14.91	22.9
3																			
	24032	24032:WVGD11	End	35.50	6.55	15.97	-0.20	63.91	-311.03	-389.8	-18.80	5.27	-22.32	-0.48	10.36	0.40	6.37	15.98	24.9
4																			
	24032	24032:WVGD11	Origin	35.50	6.55	15.97	-0.20	64.22	-311.02	-389.7	-20.46	5.66	-22.36	-0.53	10.36	0.42	6.37	16.03	25.0
4																			
	24032	SpliceT	End	37.83	6.30	15.22	-0.18	77.13	-363.17	-389.7	-20.46	5.66	-22.36	-0.52	11.70	0.41	6.15	16.69	26.2
4																			
	24032	SpliceT	Origin	37.83	6.30	15.22	-0.18	77.36	-363.16	-389.7	-21.27	5.78	-22.37	-0.54	11.71	0.41	6.15	16.71	26.3
4																			
	24032	Splice	End	40.42	6.02	14.41	-0.17	91.97	-421.02	-389.7	-21.27	5.78	-22.37	-0.45	11.31	0.35	5.12	15.09	23.2
4																			
	24032	Splice	Origin	40.42	6.02	14.41	-0.17	92.22	-421.00	-389.7	-22.44	5.91	-22.39	-0.47	11.31	0.35	5.12	15.12	23.3
4																			
	24032	SpliceB	End	43.00	5.74	13.61	-0.16	107.16	-478.91	-389.7	-22.44	5.91	-22.39	-0.46	12.40	0.34	4.93	15.78	24.3
4																			
	24032	SpliceB	Origin	43.00	5.74	13.61	-0.16	107.41	-478.88	-389.6	-23.35	6.04	-22.40	-0.48	12.40	0.35	4.93	15.79	24.3
4																			
	24032	24032:WVGD10	End	45.50	5.48	12.86	-0.15	122.20	-535.01	-389.6	-23.35	6.04	-22.40	-0.47	13.38	0.34	4.75	16.42	25.3
4																			
	24032	24032:WVGD10	Origin	45.50	5.48	12.86	-0.15	122.37	-534.99	-389.6	-24.72	6.36	-22.42	-0.50	13.38	0.35	4.75	16.46	25.3
4																			
	24032	24032:Arm2	End	46.50	5.37	12.57	-0.15	128.60	-557.44	-389.6	-24.72	6.36	-22.42	-0.50	13.75	0.35	4.69	16.71	25.7
4																			
	24032	24032:Arm2	Origin	46.50	5.37	12.57	-0.15	131.18	-557.58	-389.6	-34.30	8.57	-22.61	-0.69	13.77	0.42	4.69	16.95	26.1

4																		
24032	Tube 2	End	51.00	4.90	11.29	-0.13	169.07	-659.50	-389.6	-34.30	8.57	-22.61	-0.67	15.38	0.40	4.40	18.08	27.8
4																		
24032	Tube 2	Origin	51.00	4.90	11.29	-0.13	169.58	-659.40	-389.5	-35.50	8.80	-22.60	-0.69	15.38	0.41	4.40	18.11	27.9
4																		
24032	24032:WVGD9	End	55.50	4.44	10.07	-0.11	208.49	-761.29	-389.5	-35.50	8.80	-22.60	-0.67	16.78	0.40	4.14	19.14	29.4
4																		
24032	24032:WVGD9	Origin	55.50	4.44	10.07	-0.11	209.05	-761.17	-389.5	-37.73	9.29	-22.60	-0.72	16.78	0.41	4.14	19.19	29.5
4																		
24032	Tube 2	End	60.50	3.95	8.81	-0.09	254.71	-874.40	-389.5	-37.73	9.29	-22.60	-0.69	18.13	0.40	3.88	20.23	31.1
4																		
24032	Tube 2	Origin	60.50	3.95	8.81	-0.09	255.32	-874.25	-389.4	-39.16	9.57	-22.57	-0.72	18.13	0.41	3.88	20.26	31.2
4																		
24032	24032:WVGD8	End	65.50	3.48	7.64	-0.08	302.36	-987.38	-389.4	-39.16	9.57	-22.57	-0.70	19.29	0.40	3.64	21.17	33.1
4																		
24032	24032:WVGD8	Origin	65.50	3.48	7.64	-0.08	302.86	-987.24	-389.4	-41.25	10.03	-22.57	-0.73	19.29	0.41	3.64	21.21	33.2
4																		
24032	24032:Arm3	End	68.50	3.21	6.98	-0.07	332.46	-1055.10	-389.4	-41.25	10.03	-22.57	-0.72	19.90	0.40	3.51	21.70	34.3
4																		
24032	24032:Arm3	Origin	68.50	3.21	6.98	-0.07	335.12	-1055.13	-389.3	-51.01	12.25	-22.69	-0.89	19.91	0.47	3.51	21.92	34.6
4																		
24032	SpliceT	End	71.50	2.95	6.36	-0.06	371.37	-1123.36	-389.3	-51.01	12.25	-22.69	-0.88	20.51	0.46	3.38	22.40	35.7
4																		
24032	SpliceT	Origin	71.50	2.95	6.36	-0.06	371.81	-1123.23	-389.3	-52.78	12.46	-22.66	-0.91	20.51	0.47	3.38	22.43	35.7
4																		
24032	24032:WVGD7	End	75.50	2.62	5.59	-0.05	421.02	-1214.11	-389.3	-52.78	12.46	-22.66	-0.77	18.83	0.40	2.86	20.39	31.4
4																		
24032	24032:WVGD7	Origin	75.50	2.62	5.59	-0.05	421.40	-1213.99	-389.3	-55.78	12.89	-22.66	-0.81	18.83	0.41	2.86	20.44	31.4
4																		
24032	SpliceB	End	77.83	2.44	5.16	-0.05	451.08	-1266.92	-389.3	-55.78	12.89	-22.66	-0.80	19.15	0.40	2.78	20.71	31.9
4																		
24032	SpliceB	Origin	77.83	2.44	5.16	-0.05	451.44	-1266.80	-389.3	-57.26	13.08	-22.64	-0.82	19.15	0.41	2.78	20.73	31.9
4																		
24032	Tube 3	End	81.67	2.15	4.50	-0.04	501.01	-1353.82	-389.3	-57.26	13.08	-22.64	-0.81	19.64	0.40	2.66	21.12	32.5
4																		
24032	Tube 3	Origin	81.67	2.15	4.50	-0.04	501.46	-1353.67	-389.2	-58.68	13.32	-22.60	-0.83	19.64	0.40	2.66	21.14	32.5
4																		
24032	24032:WVGD6	End	85.50	1.88	3.90	-0.04	551.94	-1440.54	-389.2	-58.68	13.32	-22.60	-0.81	20.07	0.40	2.55	21.49	33.1
4																		
24032	24032:WVGD6	Origin	85.50	1.88	3.90	-0.04	552.34	-1440.40	-389.2	-60.89	13.76	-22.57	-0.84	20.07	0.41	2.55	21.52	33.1
4																		
24032	Tube 3	End	88.50	1.68	3.46	-0.03	593.16	-1508.27	-389.2	-60.89	13.76	-22.57	-0.83	20.37	0.40	2.46	21.77	33.5
4																		
24032	Tube 3	Origin	88.50	1.68	3.46	-0.03	593.51	-1508.14	-389.2	-62.04	13.95	-22.53	-0.84	20.37	0.40	2.46	21.78	33.5
4																		
24032	SpliceT	End	91.50	1.50	3.05	-0.03	634.91	-1575.91	-389.2	-62.04	13.95	-22.53	-0.83	20.64	0.40	2.38	22.00	34.1
4																		
24032	SpliceT	Origin	91.50	1.50	3.05	-0.03	635.28	-1575.77	-389.2	-63.52	14.18	-22.49	-0.74	18.04	0.35	2.08	19.25	29.6
4																		
24032	24032:WVGD5	End	95.50	1.26	2.56	-0.02	691.48	-1665.94	-389.2	-63.52	14.18	-22.49	-0.72	18.32	0.35	1.99	19.47	30.0
4																		
24032	24032:WVGD5	Origin	95.50	1.26	2.56	-0.02	691.89	-1665.78	-389.1	-66.32	14.69	-22.45	-0.76	18.32	0.36	1.99	19.50	30.0
4																		
24032	Tube 4	End	99.75	1.04	2.08	-0.02	753.76	-1761.44	-389.1	-66.32	14.69	-22.45	-0.74	18.58	0.35	1.91	19.71	30.3
4																		
24032	Tube 4	Origin	99.75	1.04	2.08	-0.02	754.17	-1761.26	-389.1	-68.29	14.98	-22.40	-0.76	18.58	0.35	1.91	19.73	30.4
4																		
24032	SpliceT	End	104.00	0.83	1.66	-0.02	817.29	-1856.72	-389.1	-68.29	14.98	-22.40	-0.75	18.80	0.35	1.82	19.90	30.6
4																		
24032	SpliceT	Origin	104.00	0.83	1.66	-0.02	817.57	-1856.60	-389.1	-70.03	15.18	-22.37	-0.76	18.80	0.35	1.82	19.92	30.6

4																			
	24032	24032:WVGD4	End	105.50	0.77	1.52	-0.02	840.15	-1890.24	-389.1	-70.03	15.18	-22.37	-0.69	17.43	0.31	1.66	18.44	28.4
4																			
	24032	24032:WVGD4	Origin	105.50	0.77	1.52	-0.02	840.35	-1890.15	-389.1	-73.21	15.57	-22.36	-0.72	17.43	0.32	1.66	18.47	28.4
4																			
	24032	Splice	End	108.50	0.64	1.27	-0.01	886.70	-1957.39	-389.1	-73.21	15.57	-22.36	-0.71	17.54	0.32	1.61	18.55	28.5
4																			
	24032	Splice	Origin	108.50	0.64	1.27	-0.01	886.97	-1957.27	-389.1	-76.25	15.78	-22.33	-0.74	17.54	0.32	1.61	18.58	28.6
4																			
	24032	SpliceB	End	111.50	0.53	1.04	-0.01	933.96	-2024.43	-389.1	-76.25	15.78	-22.33	-0.73	17.63	0.32	1.56	18.64	28.7
4																			
	24032	SpliceB	Origin	111.50	0.53	1.04	-0.01	934.27	-2024.29	-389.1	-78.88	16.03	-22.29	-0.75	17.63	0.32	1.56	18.67	28.7
4																			
	24032	24032:WVGD3	End	115.50	0.40	0.77	-0.01	997.94	-2113.66	-389.1	-78.88	16.03	-22.29	-0.74	17.74	0.31	1.50	18.74	28.8
4																			
	24032	24032:WVGD3	Origin	115.50	0.40	0.77	-0.01	998.29	-2113.50	-389.1	-82.08	16.56	-22.24	-0.77	17.74	0.32	1.50	18.77	28.9
4																			
	24032	Tube 5	End	119.75	0.27	0.52	-0.01	1068.17	-2208.24	-389.1	-82.08	16.56	-22.24	-0.75	17.83	0.32	1.44	18.83	29.0
4																			
	24032	Tube 5	Origin	119.75	0.27	0.52	-0.01	1068.53	-2208.06	-389.1	-84.48	16.87	-22.18	-0.77	17.83	0.32	1.44	18.85	29.0
4																			
	24032	SpliceT	End	124.00	0.17	0.33	-0.01	1139.74	-2302.54	-389.1	-84.48	16.87	-22.18	-0.76	17.90	0.31	1.38	18.89	29.1
4																			
	24032	SpliceT	Origin	124.00	0.17	0.33	-0.01	1139.98	-2302.42	-389.1	-86.13	17.08	-22.13	-0.77	17.90	0.32	1.38	18.91	29.1
4																			
	24032	24032:WVGD2	End	125.50	0.14	0.27	-0.01	1165.43	-2335.70	-389.1	-86.13	17.08	-22.13	-0.77	17.92	0.32	1.36	18.92	29.1
4																			
	24032	24032:WVGD2	Origin	125.50	0.14	0.27	-0.01	1165.70	-2335.57	-389.1	-88.95	17.55	-22.08	-0.79	17.92	0.32	1.36	18.94	29.1
4																			
	24032	Tube 6	End	130.50	0.06	0.12	-0.00	1252.90	-2446.25	-389.1	-88.95	17.55	-22.08	-0.77	17.98	0.32	1.30	18.96	29.2
4																			
	24032	Tube 6	Origin	130.50	0.06	0.12	-0.00	1253.30	-2446.04	-389.1	-91.91	17.93	-22.00	-0.80	17.98	0.32	1.30	18.99	29.2
4																			
	24032	24032:WVGD1	End	135.50	0.02	0.03	-0.00	1342.41	-2556.31	-389.1	-91.91	17.93	-22.00	-0.78	18.01	0.32	1.24	18.99	29.2
4																			
	24032	24032:WVGD1	Origin	135.50	0.02	0.03	-0.00	1342.80	-2556.11	-389.0	-95.87	18.54	-21.91	-0.81	18.01	0.32	1.24	19.02	29.3
4																			
	24032	24032:g	End	140.50	0.00	0.00	0.00	1434.98	-2665.95	-389.0	-95.87	18.54	-21.91	-0.80	18.03	0.32	1.19	19.01	29.2
4																			

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

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	7.90	20.49	-0.44	-51.85	-360.59	-0.6	1.00	3.86	21.94	0.05	55.65	0.43	0.04	55.71	85.7	3
Davit1	#Davit1:0	End	5.00	7.94	22.05	-1.15	-32.56	-250.87	-0.6	1.00	3.86	21.94	0.06	49.72	0.49	0.06	49.79	76.6	3
Davit1	#Davit1:0	Origin	5.00	7.94	22.05	-1.15	-33.02	-250.81	-0.5	1.28	3.50	21.92	0.08	49.71	0.45	0.05	49.79	76.6	3
Davit1	#Davit1:1	End	9.53	7.96	24.06	-1.90	-17.17	-151.62	-0.5	1.28	3.50	21.92	0.09	38.85	0.51	0.06	38.95	59.9	3
Davit1	#Davit1:1	Origin	9.53	7.96	24.06	-1.90	-17.40	-151.60	-0.5	1.51	3.21	21.89	0.11	38.85	0.47	0.06	38.96	59.9	3
Davit1	Davit1:V	End	14.05	7.97	26.57	-2.74	-2.89	-52.52	-0.5	1.51	3.21	21.89	0.12	18.07	0.54	0.08	18.23	28.0	3
Davit1	Davit1:V	Origin	14.05	7.97	26.57	-2.74	-2.89	-52.53	-0.0	0.41	0.48	6.76	0.03	18.07	0.08	0.00	18.11	27.9	3
Davit1	#Davit1:2	End	17.94	7.96	28.97	-3.48	-1.03	-26.25	-0.0	0.41	0.48	6.76	0.04	12.11	0.09	0.00	12.15	18.7	3
Davit1	#Davit1:2	Origin	17.94	7.96	28.97	-3.48	-1.05	-26.25	-0.0	0.45	0.27	6.75	0.04	12.11	0.05	0.00	12.15	18.7	3
Davit1	Davit1:T	End	21.83	7.94	31.51	-4.24	0.00	-0.00	-0.0	0.45	0.27	6.75	0.05	0.00	1.56	0.00	2.70	4.2	1
Davit2	Davit2:O	Origin	0.00	7.91	19.88	-0.09	-75.71	2.04	0.0	-1.80	5.32	-0.15	-0.10	11.68	0.02	0.00	11.78	18.1	1
Davit2	#Davit2:0	End	5.00	7.96	19.00	0.46	-49.09	1.31	0.0	-1.80	5.32	-0.15	-0.11	9.73	0.02	0.00	9.84	15.1	1

Davit2	#Davit2:0	Origin	5.00	7.96	19.00	0.46	-49.09	1.31	0.0	-1.75	4.93	-0.13	-0.11	9.73	0.02	0.00	9.84	15.1	1
Davit2	#Davit2:1	End	9.53	8.00	18.19	0.84	-26.77	0.71	0.0	-1.75	4.93	-0.13	-0.12	6.86	0.02	0.00	6.98	10.7	1
Davit2	#Davit2:1	Origin	9.53	8.00	18.19	0.84	-26.77	0.70	0.0	-1.72	4.61	-0.12	-0.12	6.86	0.02	0.00	6.98	10.7	1
Davit2	Davit2:V	End	14.05	8.04	17.38	1.13	-5.90	0.15	0.0	-1.72	4.61	-0.12	-0.14	2.03	0.02	0.00	2.17	3.3	1
Davit2	Davit2:V	Origin	14.05	8.04	17.38	1.13	-5.90	0.15	0.0	-0.37	0.86	-0.02	-0.03	2.03	0.00	0.00	2.06	3.2	1
Davit2	#Davit2:2	End	17.94	8.06	16.68	1.35	-2.54	0.06	0.0	-0.37	0.86	-0.02	-0.03	1.17	0.00	0.00	1.21	1.9	1
Davit2	#Davit2:2	Origin	17.94	8.06	16.68	1.35	-2.54	0.06	0.0	-0.35	0.65	-0.02	-0.03	1.17	0.00	0.00	1.21	1.9	1
Davit2	Davit2:T	End	21.83	8.08	15.97	1.55	-0.00	-0.00	0.0	-0.35	0.65	-0.02	-0.04	0.00	0.15	0.00	0.26	0.4	3
Davit3	Davit3:O	Origin	0.00	5.37	12.76	-0.34	-56.55	-1.11	-0.0	0.68	4.31	0.09	0.04	11.12	0.01	0.00	11.16	17.2	1
Davit3	#Davit3:0	End	5.00	5.42	13.44	-1.00	-35.00	-0.68	-0.0	0.68	4.31	0.09	0.05	10.61	0.01	0.00	10.66	16.4	1
Davit3	#Davit3:0	Origin	5.00	5.42	13.44	-1.00	-35.00	-0.68	-0.0	0.72	3.99	0.08	0.05	10.61	0.01	0.00	10.66	16.4	1
Davit3	#Davit3:1	End	9.52	5.47	14.04	-1.76	-16.96	-0.33	-0.0	0.72	3.99	0.08	0.07	8.42	0.02	0.00	8.49	13.1	1
Davit3	#Davit3:1	Origin	9.52	5.47	14.04	-1.76	-16.96	-0.33	0.0	0.74	3.75	0.07	0.07	8.42	0.01	0.00	8.49	13.1	1
Davit3	Davit3:End	End	14.05	5.54	14.64	-2.66	0.00	-0.00	0.0	0.74	3.75	0.07	0.10	0.00	1.05	0.00	1.82	2.8	3
Davit4	Davit4:O	Origin	0.00	5.37	12.38	0.05	-54.26	1.28	0.0	-1.37	4.14	-0.10	-0.08	10.67	0.01	0.00	10.75	16.5	1
Davit4	#Davit4:0	End	5.00	5.42	11.94	0.52	-33.55	0.79	0.0	-1.37	4.14	-0.10	-0.10	10.17	0.02	0.00	10.27	15.8	1
Davit4	#Davit4:0	Origin	5.00	5.42	11.94	0.52	-33.55	0.79	0.0	-1.33	3.82	-0.09	-0.10	10.17	0.01	0.00	10.27	15.8	1
Davit4	#Davit4:1	End	9.52	5.44	11.54	0.81	-16.25	0.38	0.0	-1.33	3.82	-0.09	-0.13	8.07	0.02	0.00	8.20	12.6	1
Davit4	#Davit4:1	Origin	9.52	5.44	11.54	0.81	-16.25	0.38	0.0	-1.30	3.59	-0.08	-0.13	8.07	0.02	0.00	8.19	12.6	1
Davit4	Davit4:End	End	14.05	5.46	11.14	0.95	-0.00	-0.00	0.0	-1.30	3.59	-0.08	-0.18	0.00	1.01	0.00	1.75	2.7	3
Davit5	Davit5:O	Origin	0.00	3.21	7.11	-0.25	-56.58	-0.85	-0.0	0.67	4.31	0.06	0.04	11.12	0.01	0.00	11.16	17.2	1
Davit5	#Davit5:0	End	5.00	3.25	7.50	-0.80	-35.01	-0.52	-0.0	0.67	4.31	0.06	0.05	10.61	0.01	0.00	10.66	16.4	1
Davit5	#Davit5:0	Origin	5.00	3.25	7.50	-0.80	-35.01	-0.52	-0.0	0.71	3.99	0.06	0.05	10.61	0.01	0.00	10.67	16.4	1
Davit5	#Davit5:1	End	9.52	3.30	7.86	-1.45	-16.97	-0.25	-0.0	0.71	3.99	0.06	0.07	8.42	0.01	0.00	8.49	13.1	1
Davit5	#Davit5:1	Origin	9.52	3.30	7.86	-1.45	-16.97	-0.25	0.0	0.74	3.75	0.06	0.07	8.42	0.01	0.00	8.50	13.1	1
Davit5	Davit5:End	End	14.05	3.36	8.22	-2.25	0.00	-0.00	0.0	0.74	3.75	0.06	0.10	0.00	1.05	0.00	1.82	2.8	3
Davit6	Davit6:O	Origin	0.00	3.21	6.86	0.11	-54.30	0.94	0.0	-1.36	4.14	-0.07	-0.08	10.68	0.01	0.00	10.76	16.6	1
Davit6	#Davit6:0	End	5.00	3.25	6.63	0.47	-33.58	0.58	0.0	-1.36	4.14	-0.07	-0.10	10.18	0.01	0.00	10.28	15.8	1
Davit6	#Davit6:0	Origin	5.00	3.25	6.63	0.47	-33.58	0.58	0.0	-1.33	3.83	-0.07	-0.10	10.18	0.01	0.00	10.28	15.8	1
Davit6	#Davit6:1	End	9.52	3.26	6.43	0.65	-16.26	0.28	0.0	-1.33	3.83	-0.07	-0.13	8.07	0.01	0.00	8.20	12.6	1
Davit6	#Davit6:1	Origin	9.52	3.26	6.43	0.65	-16.26	0.28	0.0	-1.30	3.59	-0.06	-0.13	8.07	0.01	0.00	8.20	12.6	1
Davit6	Davit6:End	End	14.05	3.27	6.22	0.69	-0.00	-0.00	0.0	-1.30	3.59	-0.06	-0.17	0.00	1.01	0.00	1.75	2.7	3

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

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Holding Usage %	Input Hardware Capacity (kips)	Factored Hardware Capacity (kips)	Hardware Usage %	Max. Usage %
Clamp1	15.364	80.00	80.00	19.20	0.00	0.00	0.00	19.20
Clamp2	3.723	80.00	80.00	4.65	0.00	0.00	0.00	4.65
Clamp3	6.769	80.00	80.00	8.46	0.00	0.00	0.00	8.46
Clamp4	0.656	80.00	80.00	0.82	0.00	0.00	0.00	0.82
Clamp5	3.723	80.00	80.00	4.65	0.00	0.00	0.00	4.65
Clamp6	3.723	80.00	80.00	4.65	0.00	0.00	0.00	4.65
Clamp7	3.723	80.00	80.00	4.65	0.00	0.00	0.00	4.65
Clamp8	3.723	80.00	80.00	4.65	0.00	0.00	0.00	4.65
Clamp9	1.958	80.00	80.00	2.45	0.00	0.00	0.00	2.45
Clamp10	0.000	80.00	80.00	0.00	0.00	0.00	0.00	0.00
Clamp11	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp12	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp13	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp14	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp15	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18

Clamp16	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp17	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp18	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp19	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp20	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp21	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp22	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18
Clamp23	0.947	80.00	80.00	1.18	0.00	0.00	0.00	1.18

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

Summary of Steel Pole Usages:

Steel Pole Label	Maximum Usage %	Load Case	Height AGL (ft)	Segment Number	Weight (lbs)
24032	48.44	NESC Extreme Wind	2.5	39	41843.0

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 %	
24032	NESC Heavy Wind	1	0.749	2.794	-0.749	2.794	17.969	13.768	42.093	-2	113.893	1.677	3.500	22.95	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Heavy Wind	2	-0.749	2.794	-2.046	2.046	17.969	21.741	66.469	-3	108.599	2.107	3.500	36.24	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Heavy Wind	3	-2.046	2.046	-2.794	0.749	17.969	13.374	40.887	-3	76.862	1.652	3.500	22.29	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Heavy Wind	4	-2.794	0.749	-2.794	-0.749	17.969	2.850	8.714	-2	27.610	0.763	3.500	4.75	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Heavy Wind	5	-2.794	-0.749	-2.046	-2.046	17.969	11.633	35.566	-3	-69.050	1.541	3.500	19.39	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Heavy Wind	6	-2.046	-2.046	-0.749	-2.794	17.969	20.127	61.535	-3	-101.376	2.027	3.500	33.55	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Heavy Wind	7	-0.749	-2.794	0.749	-2.794	17.969	12.959	39.620	-2	-107.211	1.627	3.500	21.60	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Heavy Wind	8	0.749	-2.794	2.046	-2.046	17.969	20.289	62.030	-3	-101.918	2.035	3.500	33.82	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Heavy Wind	9	2.046	-2.046	2.794	-0.749	17.969	11.910	36.411	-3	-70.180	1.559	3.500	19.85	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Heavy Wind	10	2.794	-0.749	2.794	0.749	17.969	2.850	8.714	-2	26.161	0.763	3.500	4.75	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Heavy Wind	11	2.794	0.749	2.046	2.046	17.969	13.097	40.041	-3	75.732	1.635	3.500	21.83	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Heavy Wind	12	2.046	2.046	0.749	2.794	17.969	21.579	65.974	-3	108.058	2.099	3.500	35.97	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Extreme Wind	1	0.749	2.794	-0.749	2.794	17.969	13.586	41.536	-2	112.267	1.665	3.500	22.64	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Extreme Wind	2	-0.749	2.794	-2.046	2.046	17.969	21.350	65.273	-3	106.881	2.088	3.500	35.58	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Extreme Wind	3	-2.046	2.046	-2.794	0.749	17.969	12.934	39.544	-3	74.909	1.625	3.500	21.56	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Extreme Wind	4	-2.794	0.749	-2.794	-0.749	17.969	2.850	8.714	-2	25.530	0.763	3.500	4.75	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Extreme Wind	5	-2.794	-0.749	-2.046	-2.046	17.969	12.073	36.911	-3	-71.006	1.570	3.500	20.12	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Extreme Wind	6	-2.046	-2.046	-0.749	-2.794	17.969	20.519	62.733	-3	-103.099	2.047	3.500	34.20	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Extreme Wind	7	-0.749	-2.794	0.749	-2.794	17.969	13.142	40.178	-2	-108.596	1.638	3.500	21.90	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Extreme Wind	8	0.749	-2.794	2.046	-2.046	17.969	20.553	62.835	-3	-103.210	2.048	3.500	34.25	Note: actual load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2
24032	NESC Extreme Wind	9	2.046	-2.046	2.794	-0.749	17.969	12.130	37.085	-3	-71.239	1.574	3.500	20.22	Note: actual

load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Wind	10	2.794	-0.749	2.794	0.749	17.969	2.850	8.714	-2	25.231	0.763	3.500	4.75 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Wind	11	2.794	0.749	2.046	2.046	17.969	12.877	39.369	-3	74.676	1.621	3.500	21.46 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Wind	12	2.046	2.046	0.749	2.794	17.969	21.317	65.171	-3	106.769	2.086	3.500	35.53 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Ice w/ Wind	1	0.749	2.794	-0.749	2.794	17.969	13.678	41.818	-2	113.079	1.671	3.500	22.80 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Ice w/ Wind	2	-0.749	2.794	-2.046	2.046	17.969	21.543	65.862	-3	107.732	2.097	3.500	35.90 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Ice w/ Wind	3	-2.046	2.046	-2.794	0.749	17.969	13.147	40.195	-3	75.859	1.638	3.500	21.91 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Ice w/ Wind	4	-2.794	0.749	-2.794	-0.749	17.969	2.850	8.714	-2	26.533	0.763	3.500	4.75 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Ice w/ Wind	5	-2.794	-0.749	-2.046	-2.046	17.969	11.860	36.259	-3	-70.055	1.556	3.500	19.77 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Ice w/ Wind	6	-2.046	-2.046	-0.749	-2.794	17.969	20.327	62.144	-3	-102.246	2.037	3.500	33.88 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Ice w/ Wind	7	-0.749	-2.794	0.749	-2.794	17.969	13.049	39.896	-2	-107.886	1.632	3.500	21.75 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Ice w/ Wind	8	0.749	-2.794	2.046	-2.046	17.969	20.414	62.411	-3	-102.539	2.042	3.500	34.02 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Ice w/ Wind	9	2.046	-2.046	2.794	-0.749	17.969	12.009	36.716	-3	-70.665	1.566	3.500	20.02 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Ice w/ Wind	10	2.794	-0.749	2.794	0.749	17.969	2.850	8.714	-2	25.751	0.763	3.500	4.75 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Ice w/ Wind	11	2.794	0.749	2.046	2.046	17.969	12.998	39.738	-3	75.249	1.629	3.500	21.66 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Extreme Ice w/ Wind	12	2.046	2.046	0.749	2.794	17.969	21.455	65.594	-3	107.440	2.093	3.500	35.76 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Heavy Broken Wire	1	0.749	2.794	-0.749	2.794	17.969	6.702	20.491	-2	76.126	1.170	3.500	11.17 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Heavy Broken Wire	2	-0.749	2.794	-2.046	2.046	17.969	21.468	65.635	-3	107.800	2.094	3.500	35.78 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Heavy Broken Wire	3	-2.046	2.046	-2.794	0.749	17.969	25.184	76.996	-3	115.897	2.268	3.500	41.97 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Heavy Broken Wire	4	-2.794	0.749	-2.794	-0.749	17.969	12.150	37.145	-2	111.528	1.575	3.500	20.25 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Heavy Broken Wire	5	-2.794	-0.749	-2.046	-2.046	17.969	13.332	40.759	-3	76.026	1.650	3.500	22.22 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Heavy Broken Wire	6	-2.046	-2.046	-0.749	-2.794	17.969	3.085	9.433	-3	26.206	0.794	3.500	5.14 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Heavy Broken Wire	7	-0.749	-2.794	0.749	-2.794	17.969	5.966	18.238	-2	-70.038	1.104	3.500	9.94 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Heavy Broken Wire	8	0.749	-2.794	2.046	-2.046	17.969	20.145	61.590	-3	-101.713	2.028	3.500	33.58 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Heavy Broken Wire	9	2.046	-2.046	2.794	-0.749	17.969	23.851	72.918	-3	-109.810	2.207	3.500	39.75 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Heavy Broken Wire	10	2.794	-0.749	2.794	0.749	17.969	11.413	34.892	-2	-105.441	1.526	3.500	19.02 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Heavy Broken Wire	11	2.794	0.749	2.046	2.046	17.969	11.998	36.681	-3	-69.938	1.565	3.500	20.00 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														
24032	NESC Heavy Broken Wire	12	2.046	2.046	0.749	2.794	17.969	2.625	8.027	-3	-20.118	0.732	3.500	4.38 Note: actual
load overridden by one half of pole moment capacity at the base as per ASCE/SEI 48-11 6.4.2														

Summary of Tubular Davit Usages:

Tubular Davit Label	Maximum Usage %	Load Case	Height AGL (ft)	Segment Number	Weight (lbs)
Davit1	85.71	NESC Heavy Broken Wire	117.7	1	1014.2
Davit2	23.05	NESC Heavy Wind	117.7	1	1014.2
Davit3	23.12	NESC Heavy Wind	94.2	1	566.2
Davit4	21.66	NESC Heavy Wind	94.2	1	566.2
Davit5	23.15	NESC Heavy Wind	72.2	1	566.2
Davit6	21.70	NESC Heavy Wind	72.2	1	566.2

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
NESC Heavy Wind	36.24	24032	Base Plate
NESC Extreme Wind	48.44	24032	Steel Pole
NESC Extreme Ice w/ Wind	35.90	24032	Base Plate
NESC Heavy Broken Wire	85.71	Davit1	Tubular Davit

Summary of Steel Pole Usages by Load Case:

Load Case	Maximum Usage %	Steel Pole Label	Height AGL (ft)	Segment Number
NESC Heavy Wind	22.94	24032	2.5	39
NESC Extreme Wind	48.44	24032	2.5	39
NESC Extreme Ice w/ Wind	17.86	24032	2.5	39
NESC Heavy Broken Wire	35.73	24032	67.0	21

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 Wind	24032	2	17.969	106.908	5498.891	-36.032	21.741	66.469	-3	108.599	2.107	36.24
NESC Extreme Wind	24032	2	17.969	58.729	5499.004	-7.421	21.350	65.273	-3	106.881	2.088	35.58
NESC Extreme Ice w/ Wind	24032	2	17.969	83.096	5498.974	-19.461	21.543	65.862	-3	107.732	2.097	35.90
NESC Heavy Broken Wire	24032	3	17.969	97.403	2606.325	-4842.124	25.184	76.996	-3	115.897	2.268	41.97

Summary of Tubular Davit Usages by Load Case:

Load Case	Maximum Usage %	Tubular Davit Label	Height AGL (ft)	Segment Number
NESC Heavy Wind	25.04	Davit1	117.7	1
NESC Extreme Wind	11.63	Davit1	117.7	1
NESC Extreme Ice w/ Wind	21.41	Davit1	117.7	1
NESC Heavy Broken Wire	85.71	Davit1	117.7	1

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load Case	Weight (lbs)
Clamp1	Clamp	19.20	NESC Heavy Broken Wire	0.0
Clamp2	Clamp	6.73	NESC Heavy Wind	0.0
Clamp3	Clamp	8.46	NESC Heavy Broken Wire	0.0
Clamp4	Clamp	1.36	NESC Extreme Ice w/ Wind	0.0
Clamp5	Clamp	6.73	NESC Heavy Wind	0.0
Clamp6	Clamp	6.73	NESC Heavy Wind	0.0
Clamp7	Clamp	6.73	NESC Heavy Wind	0.0
Clamp8	Clamp	6.73	NESC Heavy Wind	0.0
Clamp9	Clamp	4.42	NESC Extreme Wind	0.0
Clamp10	Clamp	0.00	NESC Heavy Wind	0.0
Clamp11	Clamp	1.18	NESC Heavy Wind	0.0
Clamp12	Clamp	1.18	NESC Heavy Wind	0.0
Clamp13	Clamp	1.18	NESC Heavy Wind	0.0
Clamp14	Clamp	1.18	NESC Heavy Wind	0.0
Clamp15	Clamp	1.18	NESC Heavy Wind	0.0
Clamp16	Clamp	1.18	NESC Heavy Wind	0.0
Clamp17	Clamp	1.18	NESC Heavy Wind	0.0
Clamp18	Clamp	1.18	NESC Heavy Wind	0.0
Clamp19	Clamp	1.18	NESC Heavy Wind	0.0
Clamp20	Clamp	1.18	NESC Heavy Wind	0.0
Clamp21	Clamp	1.18	NESC Heavy Wind	0.0
Clamp22	Clamp	1.18	NESC Heavy Wind	0.0
Clamp23	Clamp	1.18	NESC Heavy Wind	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 Wind	Clamp1	Clamp	Davit1:V	0.001	2.249	4.894	5.386
NESC Heavy Wind	Clamp2	Clamp	Davit2:V	0.001	2.249	4.894	5.386
NESC Heavy Wind	Clamp3	Clamp	Davit1:T	0.000	0.728	0.838	1.110
NESC Heavy Wind	Clamp4	Clamp	Davit2:T	0.000	0.678	0.796	1.046
NESC Heavy Wind	Clamp5	Clamp	Davit3:End	0.001	2.249	4.894	5.386
NESC Heavy Wind	Clamp6	Clamp	Davit4:End	0.001	2.249	4.894	5.386
NESC Heavy Wind	Clamp7	Clamp	Davit5:End	0.001	2.249	4.894	5.386
NESC Heavy Wind	Clamp8	Clamp	Davit6:End	0.001	2.249	4.894	5.386
NESC Heavy Wind	Clamp9	Clamp	24032:TopConn	0.000	0.818	1.779	1.958
NESC Heavy Wind	Clamp10	Clamp	24032:BotConn	0.000	0.000	-0.000	0.000
NESC Heavy Wind	Clamp11	Clamp	24032:WVGD1	0.000	0.225	0.920	0.947
NESC Heavy Wind	Clamp12	Clamp	24032:WVGD2	0.000	0.225	0.920	0.947
NESC Heavy Wind	Clamp13	Clamp	24032:WVGD3	0.000	0.225	0.920	0.947
NESC Heavy Wind	Clamp14	Clamp	24032:WVGD4	0.000	0.225	0.920	0.947
NESC Heavy Wind	Clamp15	Clamp	24032:WVGD5	0.000	0.225	0.920	0.947
NESC Heavy Wind	Clamp16	Clamp	24032:WVGD6	0.000	0.225	0.920	0.947
NESC Heavy Wind	Clamp17	Clamp	24032:WVGD7	0.000	0.225	0.920	0.947
NESC Heavy Wind	Clamp18	Clamp	24032:WVGD8	0.000	0.225	0.920	0.947
NESC Heavy Wind	Clamp19	Clamp	24032:WVGD9	0.000	0.225	0.920	0.947
NESC Heavy Wind	Clamp20	Clamp	24032:WVGD10	0.000	0.225	0.920	0.947
NESC Heavy Wind	Clamp21	Clamp	24032:WVGD11	0.000	0.225	0.920	0.947
NESC Heavy Wind	Clamp22	Clamp	24032:WVGD12	0.000	0.225	0.920	0.947
NESC Heavy Wind	Clamp23	Clamp	24032:WVGD13	0.000	0.225	0.920	0.947
NESC Extreme Wind	Clamp1	Clamp	Davit1:V	0.005	4.776	2.085	5.211
NESC Extreme Wind	Clamp2	Clamp	Davit2:V	0.005	4.776	2.085	5.211

NESC Extreme Wind	Clamp3	Clamp	Davit1:T	0.001	0.984	0.192	1.003
NESC Extreme Wind	Clamp4	Clamp	Davit2:T	0.001	0.808	0.206	0.834
NESC Extreme Wind	Clamp5	Clamp	Davit3:End	0.005	4.776	2.085	5.211
NESC Extreme Wind	Clamp6	Clamp	Davit4:End	0.005	4.776	2.085	5.211
NESC Extreme Wind	Clamp7	Clamp	Davit5:End	0.005	4.776	2.085	5.211
NESC Extreme Wind	Clamp8	Clamp	Davit6:End	0.005	4.776	2.085	5.211
NESC Extreme Wind	Clamp9	Clamp	24032:TopConn	0.000	3.443	0.790	3.532
NESC Extreme Wind	Clamp10	Clamp	24032:BotConn	0.000	0.000	-0.000	0.000
NESC Extreme Wind	Clamp11	Clamp	24032:WVGD1	0.000	0.750	0.250	0.791
NESC Extreme Wind	Clamp12	Clamp	24032:WVGD2	0.000	0.750	0.250	0.791
NESC Extreme Wind	Clamp13	Clamp	24032:WVGD3	0.000	0.750	0.250	0.791
NESC Extreme Wind	Clamp14	Clamp	24032:WVGD4	0.000	0.750	0.250	0.791
NESC Extreme Wind	Clamp15	Clamp	24032:WVGD5	0.000	0.750	0.250	0.791
NESC Extreme Wind	Clamp16	Clamp	24032:WVGD6	0.000	0.750	0.250	0.791
NESC Extreme Wind	Clamp17	Clamp	24032:WVGD7	0.000	0.750	0.250	0.791
NESC Extreme Wind	Clamp18	Clamp	24032:WVGD8	0.000	0.750	0.250	0.791
NESC Extreme Wind	Clamp19	Clamp	24032:WVGD9	0.000	0.750	0.250	0.791
NESC Extreme Wind	Clamp20	Clamp	24032:WVGD10	0.000	0.750	0.250	0.791
NESC Extreme Wind	Clamp21	Clamp	24032:WVGD11	0.000	0.750	0.250	0.791
NESC Extreme Wind	Clamp22	Clamp	24032:WVGD12	0.000	0.750	0.250	0.791
NESC Extreme Wind	Clamp23	Clamp	24032:WVGD13	0.000	0.750	0.250	0.791
NESC Extreme Ice w/ Wind	Clamp1	Clamp	Davit1:V	0.001	2.571	5.503	6.074
NESC Extreme Ice w/ Wind	Clamp2	Clamp	Davit2:V	0.001	1.900	4.565	4.945
NESC Extreme Ice w/ Wind	Clamp3	Clamp	Davit1:T	0.000	0.000	-0.000	0.000
NESC Extreme Ice w/ Wind	Clamp4	Clamp	Davit2:T	0.000	0.635	0.887	1.091
NESC Extreme Ice w/ Wind	Clamp5	Clamp	Davit3:End	0.001	1.900	4.565	4.945
NESC Extreme Ice w/ Wind	Clamp6	Clamp	Davit4:End	0.001	1.900	4.565	4.945
NESC Extreme Ice w/ Wind	Clamp7	Clamp	Davit5:End	0.001	1.900	4.565	4.945
NESC Extreme Ice w/ Wind	Clamp8	Clamp	Davit6:End	0.001	1.900	4.565	4.945
NESC Extreme Ice w/ Wind	Clamp9	Clamp	24032:TopConn	0.000	0.672	1.399	1.552
NESC Extreme Ice w/ Wind	Clamp10	Clamp	24032:BotConn	0.000	0.000	-0.000	0.000
NESC Extreme Ice w/ Wind	Clamp11	Clamp	24032:WVGD1	0.000	0.148	0.850	0.863
NESC Extreme Ice w/ Wind	Clamp12	Clamp	24032:WVGD2	0.000	0.148	0.850	0.863
NESC Extreme Ice w/ Wind	Clamp13	Clamp	24032:WVGD3	0.000	0.148	0.850	0.863
NESC Extreme Ice w/ Wind	Clamp14	Clamp	24032:WVGD4	0.000	0.148	0.850	0.863
NESC Extreme Ice w/ Wind	Clamp15	Clamp	24032:WVGD5	0.000	0.148	0.850	0.863
NESC Extreme Ice w/ Wind	Clamp16	Clamp	24032:WVGD6	0.000	0.148	0.850	0.863
NESC Extreme Ice w/ Wind	Clamp17	Clamp	24032:WVGD7	0.000	0.148	0.850	0.863
NESC Extreme Ice w/ Wind	Clamp18	Clamp	24032:WVGD8	0.000	0.148	0.850	0.863
NESC Extreme Ice w/ Wind	Clamp19	Clamp	24032:WVGD9	0.000	0.148	0.850	0.863
NESC Extreme Ice w/ Wind	Clamp20	Clamp	24032:WVGD10	0.000	0.148	0.850	0.863
NESC Extreme Ice w/ Wind	Clamp21	Clamp	24032:WVGD11	0.000	0.148	0.850	0.863
NESC Extreme Ice w/ Wind	Clamp22	Clamp	24032:WVGD12	0.000	0.148	0.850	0.863
NESC Extreme Ice w/ Wind	Clamp23	Clamp	24032:WVGD13	0.000	0.148	0.850	0.863
NESC Heavy Broken Wire	Clamp1	Clamp	Davit1:V	15.109	0.652	2.710	15.364
NESC Heavy Broken Wire	Clamp2	Clamp	Davit2:V	0.000	0.990	3.589	3.723
NESC Heavy Broken Wire	Clamp3	Clamp	Davit1:T	6.762	0.102	0.295	6.769
NESC Heavy Broken Wire	Clamp4	Clamp	Davit2:T	0.000	0.298	0.584	0.656
NESC Heavy Broken Wire	Clamp5	Clamp	Davit3:End	0.000	0.990	3.589	3.723
NESC Heavy Broken Wire	Clamp6	Clamp	Davit4:End	0.000	0.990	3.589	3.723
NESC Heavy Broken Wire	Clamp7	Clamp	Davit5:End	0.000	0.990	3.589	3.723
NESC Heavy Broken Wire	Clamp8	Clamp	Davit6:End	0.000	0.990	3.589	3.723
NESC Heavy Broken Wire	Clamp9	Clamp	24032:TopConn	0.000	0.818	1.779	1.958
NESC Heavy Broken Wire	Clamp10	Clamp	24032:BotConn	0.000	0.000	-0.000	0.000
NESC Heavy Broken Wire	Clamp11	Clamp	24032:WVGD1	0.000	0.225	0.920	0.947
NESC Heavy Broken Wire	Clamp12	Clamp	24032:WVGD2	0.000	0.225	0.920	0.947
NESC Heavy Broken Wire	Clamp13	Clamp	24032:WVGD3	0.000	0.225	0.920	0.947
NESC Heavy Broken Wire	Clamp14	Clamp	24032:WVGD4	0.000	0.225	0.920	0.947
NESC Heavy Broken Wire	Clamp15	Clamp	24032:WVGD5	0.000	0.225	0.920	0.947
NESC Heavy Broken Wire	Clamp16	Clamp	24032:WVGD6	0.000	0.225	0.920	0.947

NESC Heavy Broken Wire	Clamp17	Clamp	24032:WVGD7	0.000	0.225	0.920	0.947
NESC Heavy Broken Wire	Clamp18	Clamp	24032:WVGD8	0.000	0.225	0.920	0.947
NESC Heavy Broken Wire	Clamp19	Clamp	24032:WVGD9	0.000	0.225	0.920	0.947
NESC Heavy Broken Wire	Clamp20	Clamp	24032:WVGD10	0.000	0.225	0.920	0.947
NESC Heavy Broken Wire	Clamp21	Clamp	24032:WVGD11	0.000	0.225	0.920	0.947
NESC Heavy Broken Wire	Clamp22	Clamp	24032:WVGD12	0.000	0.225	0.920	0.947
NESC Heavy Broken Wire	Clamp23	Clamp	24032:WVGD13	0.000	0.225	0.920	0.947

Overturning Moments For User Input Concentrated Loads:

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

Load Case	Total Tran. Load (kips)	Total Long. Load (kips)	Total Vert. Load (kips)	Transverse Overturning Moment (ft-k)	Longitudinal Overturning Moment (ft-k)	Torsional Moment (ft-k)
NESC Heavy Wind	18.643	0.006	44.737	1762.036	-0.574	0.000
NESC Extreme Wind	43.641	0.032	16.948	4060.752	-3.109	0.000
NESC Extreme Ice w/ Wind	15.302	0.006	41.664	1457.216	-0.574	0.000
NESC Heavy Broken Wire	9.745	21.871	35.273	857.827	-2600.355	390.756

*** Weight of structure (lbs):
Weight of Tubular Davit Arms: 4293.2
Weight of Steel Poles: 41843.0
Total: 46136.2

*** End of Report

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

Subject: Anchor Bolt Analysis Pole #24032

Location: Milford, CT

Rev. 1: 11/6/19

Prepared by: T.J.L. Checked by: C.A.G.
Job No. 19066.05

Anchor Bolt Analysis:

Input Data:

Bolt Force:

Maximum Tensile Force = $T_{Max} := 116 \cdot kips$ (User Input from PLS-Pole)

Maximum Shear Force at Base = $V_{base} := 28.8 \cdot kips$ (User Input from PLS-Pole)

Anchor Bolt Data:

Use AST MA615 Grade 75

Number of Anchor Bolts = $N := 32$ (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:

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

Maximum Shear Force per Bolt = $V_{Max} := \frac{V_{base}}{N} = 0.9 \cdot kips$

Shear Stress per Bolt = $f_v := \frac{V_{Max}}{A_s} = 277.1\,psi$

Tensile Stress Permitted = $F_t := 0.75 \cdot F_u = 75 \cdot ksi$

Shear Stress Permitted = $F_v := 0.35 F_y = 26.25 \cdot ksi$

Permitted Axial Tensile Stress in Conjuction with Shear = $F_{tv} := F_t \cdot \sqrt{1 - \left(\frac{f_v}{F_v}\right)^2} = 75 \cdot ksi$

Bolt Tension % of Capacity = $\frac{T_{Max}}{F_{tv} \cdot A_s} = 47.63 \cdot \%$

Condition1 = $Condition1 := if\left(\frac{T_{Max}}{F_{tv} \cdot A_s} \le 1.00, "OK", "Overstressed"\right)$

Condition1 = "OK"

RAN Template:	A&L Template:	Power System Template:
67D04B Hybrid	67D04B_1QP+1OP	Custom

Section 1 - Site Information

Site ID: CT11602C
Status: Draft
Version: 2.1
Project Type: L600
Approved: Not Approved
Approved By: Not Approved
Last Modified: 5/2/2019 6:4:54 PM
Last Modified By: GSM1900\AMurill9

Site Name: CL&P Stanchion
Site Class: Utility Lattice Tower
Site Type: Structure Non Building
Plan Year: 2019
Market: CONNECTICUT
Vendor: Ericsson
Landlord: CL&P

Latitude: 41.2560563800
Longitude: -73.0499456000
Address: 945 North Street, Pole 2336, Line 1690
City, State: Milford, CT
Region: NORTHEAST

RAN Template: 67D04B Hybrid			AL Template: 67D04B_1QP+1OP	
Sector Count: 3	**Antenna Count:** 3	**Coax Line Count:** 24	**TMA Count:** 0	**RRU Count:** 3

Section 2 - Existing Template Images

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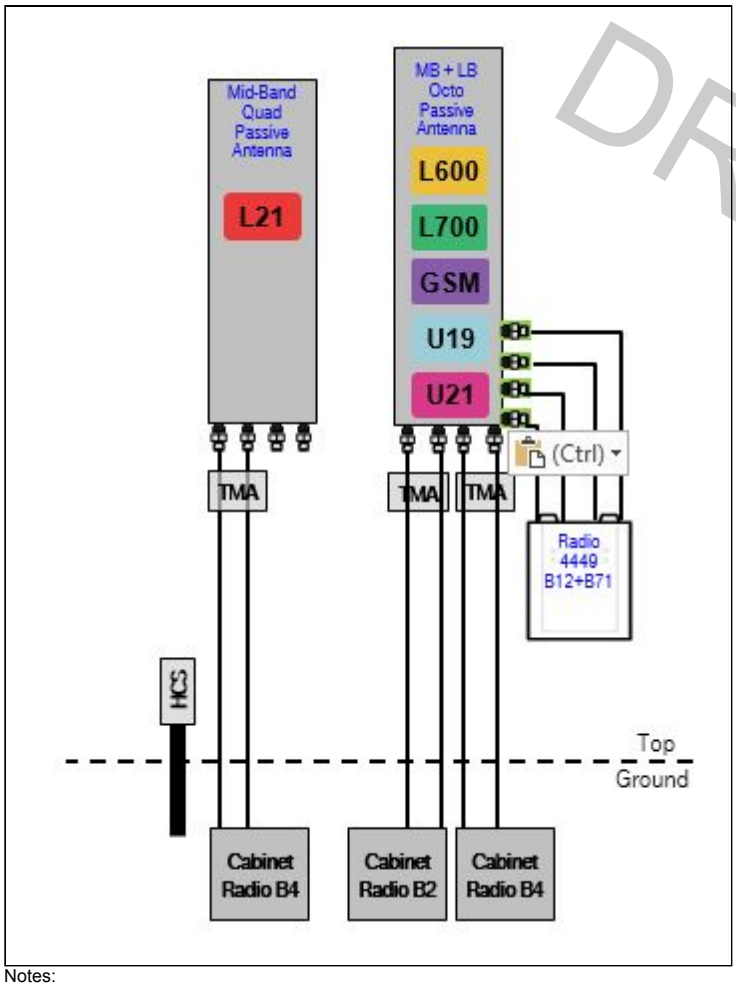
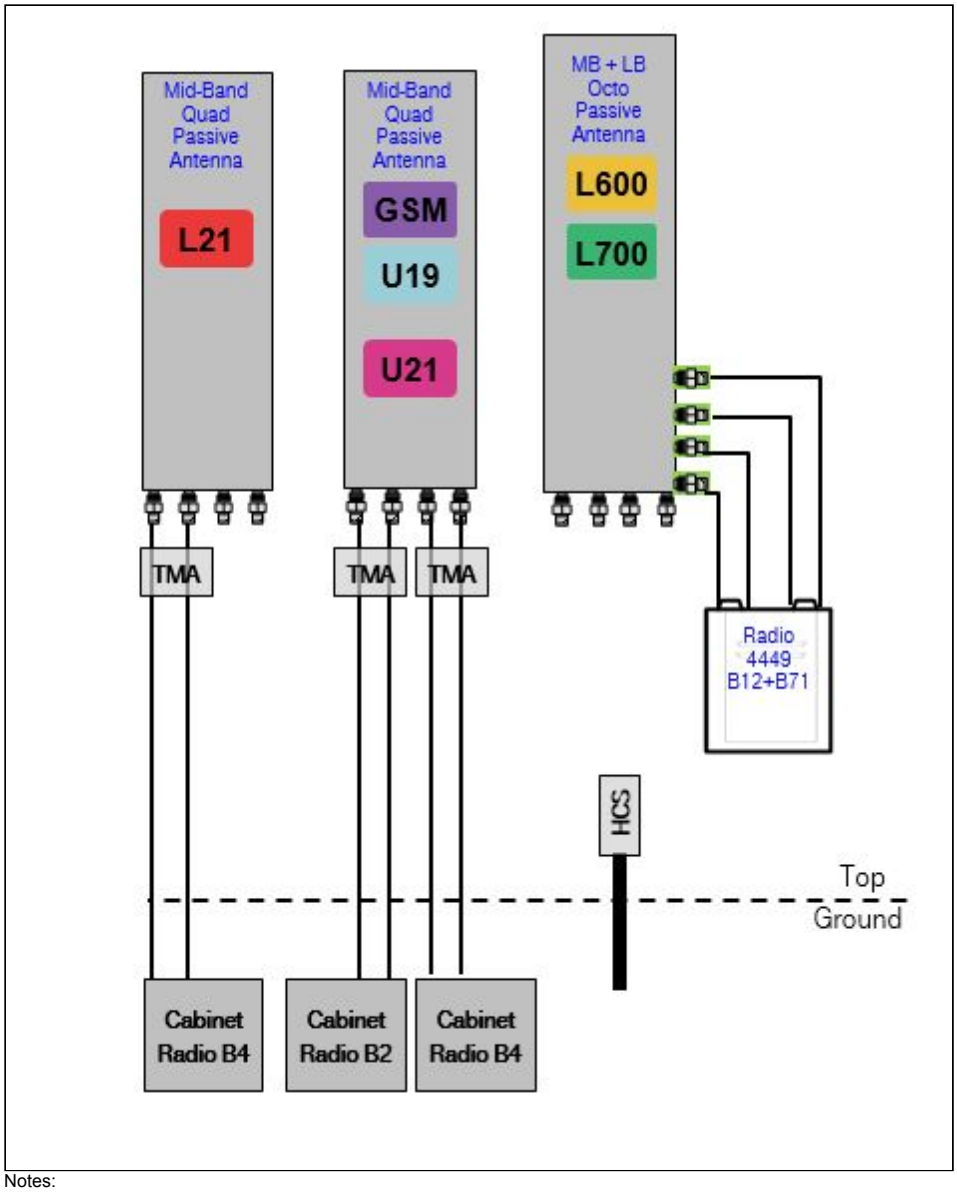
Section 3 - Proposed Template Images

67D04B.JPG



Notes:

67D04B_2QP+1OP.JPG


Mid-Band
Quad
Passive
Antenna
L21
Mid-Band
Quad
Passive
Antenna
GSM
U19
U21
MB + LB
Octo
Passive
Antenna
L600
L700
TMA
TMA
TMA
Radio
4449
B12+B71
HCS
Top
Ground
Cabinet
Radio B4
Cabinet
Radio B2
Cabinet
Radio B4

Notes:

Section 4 - Siteplan Images

----- This section is intentionally blank. -----

RAN Template:	A&L Template:	Power System Template:
67D04B Hybrid	67D04B_1QP+1OP	Custom

Section 5 - RAN Equipment

Existing RAN Equipment

Template: 4B

Enclosure	1	2
Enclosure Type	RBS 6102	RBS 3106
Baseband	DUW30 (U2100); DUW30 (U1900); DUG20 (G1900); DUS41 (L2100)	
Radio	RUS01 B2 (x3) (G1900); RUS01 B2 (x3) (U1900); RUS01 B4 (x3) (U2100); RUS01 B4 (x3) (L2100)	

Proposed RAN Equipment

Template: 67D04B Hybrid

Enclosure	1	2
Enclosure Type	RBS 6102	RBS 3106
Baseband	DUW30 (U2100); DUW30 (U1900); DUG20 (G1900); BB 6630 (L2100, L700, L600); BB 6630 (N600 (DARK))	
Radio	RUS01 B2 (x3) (G1900); RUS01 B2 (x3) (U1900); RUS01 B4 (x3) (U2100); RUS01 B4 (x3) (L2100)	

RAN Scope of Work:

Replace (1) DUS41 with (1) BB6630 for LTE.
Install (1) BB6630 for future 5G N600.

Existing: (12) Coaxial Lines
Add (12) Coaxial Lines for new total of (24).

RAN Template:	A&L Template:	Power System Template:
67D04B Hybrid	67D04B_1QP+1OP	Custom

Section 6 - A&L Equipment

Existing Template: 4B
Proposed Template: 67D04B_1QP+1OP

Sector 1 (Existing) view from behind		
Coverage Type	A - Outdoor Macro	
Antenna	1	
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)	
Azimuth	0	
M. Tilt	0	
Height	137	
Ports	**P1**	**P2**
Active Tech.	U1900, G1900	U2100, L2100
Dark Tech.		
Restricted Tech.		
Decomm. Tech.		
E. Tilt	4	4
Cables	1-5/8" Coax - 175 ft. **(x2)**	1-5/8" Coax - 175 ft. **(x2)**
TMAs	Generic Twin Style 1A - PCS (AtAntenna)	Generic Twin Style 1B - AWS (AtAntenna)
Diplexers / Combiners		
Radio		
Sector Equipment		

Unconnected Equipment:

Scope of Work:

RAN Template:	A&L Template:	Power System Template:
67D04B Hybrid	67D04B_1QP+1OP	Custom

CT11602C_L600_2.1_draft

Sector 1 (Proposed) view from behind				
Coverage Type	A - Outdoor Macro			
Antenna	1			
Antenna Model	RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	0			
M. Tilt	0			
Height	137			
Ports	P1	P2	P3	P4
Active Tech.	L700 L600	L700 L600	U1900 G1900	U2100 L2100
Dark Tech.				
Restricted Tech.				
Decomm. Tech.				
E. Tilt	4	4	4	4
Cables	1-5/8" Coax - 175 ft. **(x2)**	1-5/8" Coax - 175 ft. **(x2)**	1-5/8" Coax - 175 ft. **(x2)**	1-5/8" Coax - 175 ft. **(x2)**
TMAs			Generic Twin Style 1A - PCS (AtCabinet)	Generic Twin Style 1B - AWS (AtCabinet)
Diplexers / Combiners				
Radio	Radio 4449 B71+B12 (At Cabinet)	SHARED Radio 4449 B71+B12 (At Cabinet)		
Sector Equipment				Andrew Smart Bias T (At Antenna)

Unconnected Equipment:

Scope of Work:

*** Existing 6 TMAs at Site ***

Smart Bias-T at site.
Daisy Chain RETs.

Remove existing Quad.
Install (1) LB/MB Octo.
Relocate TMAs to Ground Level.
Add (4) Coaxial Lines.
Add (1) Radio 4449 B71+B12 for L600 and L700 at ground level.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:	Power System Template:
67D04B Hybrid	67D04B_1QP+1OP	Custom

CT11602C_L600_2.1_draft

Sector 2 (Existing) view from behind		
Coverage Type	A - Outdoor Macro	
Antenna	1	
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)	
Azimuth	120	
M. Tilt	0	
Height	137	
Ports	P1	P2
Active Tech.	U1900 G1900	U2100 L2100
Dark Tech.		
Restricted Tech.		
Decomm. Tech.		
E. Tilt	4	4
Cables	1-5/8" Coax - 175 ft. **(x2)**	1-5/8" Coax - 175 ft. **(x2)**
TMAs	Generic Twin Style 1A - PCS (AtAntenna)	Generic Twin Style 1B - AWS (AtAntenna)
Diplexers / Combiners		
Radio		
Sector Equipment		

Unconnected Equipment:

Scope of Work:

RAN Template:	A&L Template:	Power System Template:
67D04B Hybrid	67D04B_1QP+1OP	Custom

CT11602C_L600_2.1_draft

Sector 2 (Proposed) view from behind				
Coverage Type	A - Outdoor Macro			
Antenna	1			
Antenna Model	RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	120			
M. Tilt	0			
Height	137			
Ports	**P1**	**P2**	**P3**	**P4**
Active Tech.	L700 L600	L700 L600	U1900 G1900	U2100 L2100
Dark Tech.				
Restricted Tech.				
Decomm. Tech.				
E. Tilt	4	4	4	4
Cables	1-5/8" Coax - 175 ft. **(x2)**	1-5/8" Coax - 175 ft. **(x2)**	1-5/8" Coax - 175 ft. **(x2)**	1-5/8" Coax - 175 ft. **(x2)**
TMAs			Generic Twin Style 1A - PCS (AtCabinet)	Generic Twin Style 1B - AWS (AtCabinet)
Diplexers / Combiners				
Radio	Radio 4449 B71+B12 (At Cabinet)	SHARED Radio 4449 B71+B12 (At Cabinet)		
Sector Equipment				Andrew Smart Bias T (At Antenna)

Unconnected Equipment:

Scope of Work:

*** Existing 6 TMAs at Site ***

Smart Bias-T at site.
Daisy Chain RETs.

Remove existing Quad.
Install (1) LB/MB Octo.
Relocate TMAs to Ground Level.
Add (4) Coaxial Lines.
Add (1) Radio 4449 B71+B12 for L600 and L700 at ground level.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:	Power System Template:
67D04B Hybrid	67D04B_1QP+1OP	Custom

CT11602C_L600_2.1_draft

Sector 3 (Existing) view from behind		
Coverage Type	A - Outdoor Macro	
Antenna	1	
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)	
Azimuth	240	
M. Tilt	0	
Height	137	
Ports	P1	P2
Active Tech.	U1900 G1900	U2100 L2100
Dark Tech.		
Restricted Tech.		
Decomm. Tech.		
E. Tilt	4	4
Cables	1-5/8" Coax - 175 ft. **(x2)**	1-5/8" Coax - 175 ft. **(x2)**
TMAs	Generic Twin Style 1A - PCS (AtAntenna)	Generic Twin Style 1B - AWS (AtAntenna)
Diplexers / Combiners		
Radio		
Sector Equipment		

Unconnected Equipment:

Scope of Work:

RAN Template:	A&L Template:	Power System Template:
67D04B Hybrid	67D04B_1QP+1OP	Custom

CT11602C_L600_2.1_draft

Sector 3 (Proposed) view from behind				
Coverage Type	A - Outdoor Macro			
Antenna	1			
Antenna Model	RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	240			
M. Tilt	0			
Height	137			
Ports	P1	P2	P3	P4
Active Tech.	L700 L600	L700 L600	U1900 G1900	U2100 L2100
Dark Tech.				
Restricted Tech.				
Decomm. Tech.				
E. Tilt	4	4	4	4
Cables	1-5/8" Coax - 175 ft. **(x2)**	1-5/8" Coax - 175 ft. **(x2)**	1-5/8" Coax - 175 ft. **(x2)**	1-5/8" Coax - 175 ft. **(x2)**
TMAs			Generic Twin Style 1A - PCS (AtCabinet)	Generic Twin Style 1B - AWS (AtCabinet)
Diplexers / Combiners				
Radio	Radio 4449 B71+B12 (At Cabinet)	SHARED Radio 4449 B71+B12 (At Cabinet)		
Sector Equipment				Andrew Smart Bias T (At Antenna)

Unconnected Equipment:

Scope of Work:

*** Existing 6 TMAs at Site ***

Smart Bias-T at site.
Daisy Chain RETs.

Remove existing Quad.
Install (1) LB/MB Octo.
Relocate TMAs to Ground Level.
Add (4) Coaxial Lines.
Add (1) Radio 4449 B71+B12 for L600 and L700 at ground level.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

Section 7 - Power Systems Equipment

Existing Power Systems Equipment

----- This section is intentionally blank. -----

Proposed Power Systems Equipment

RADIO FREQUENCY SYSTEMS
The Clear Choice®

Dual Slant Polarized Quad Band (8 Port) Antenna, 617-746/617-746/1695-2200/1695-2200MHz, 65deg, 15/15/18/18dBi, 2.4m (8ft), VET, RET, 0-12°/0-12°/2-12°/2-12°

FEATURES / BENEFITS

This antenna provides a 8 Port multi-band flexible platform for advanced use for flexible use in deployment scenarios for encompassing 600MHz, 700MHz, AWS & PCS applications.

- 24 Inch Width For Easier Zoning
- Field Replaceable (Integrated) AISG RET platform for reduced environmental exposure and long lasting quality
- Superior elevation pattern performance across the entire electrical down tilt range
- Includes three AISG RET motors - Includes 0.5m AISG jumper for optional daisy chain of two high band RET motors for one single AISG point of high band tilt control.
- Low band arrays driven by a single RET motor

Technical Features

LOW BAND LEFT ARRAY (617-746 MHZ) [R1]

Frequency Band	MHz	617-698	698-746
Gain Over All Tilts	dBi	15.1 +/- .3	15.5 +/- .3
Horizontal Beamwidth @3dB	Deg	65 +/- 4	62 +/- 2
Vertical Beamwidth @3dB	Deg	11.4 +/- .7	10.4 +/- .5
Electrical Downtilt Range	Deg	0-12	0-12
Upper Side Lobe Suppression 0 to +20	dB	19	20
Front-to-Back, at +/-30°, Copolar	dB	25	24
Cross Polar Discrimination (XPD) @ Boresight	dB	19	19
Cross Polar Discrimination (XPD) @ +/-60	dB	5	3
3rd Order PIM 2 x 43dBm	dBc		-153
VSWR	-	1.5:1	1.5:1
Cross Polar Isolation	dB	25	25
Maximum Effective Power per Port	Watt	250	250

LOW BAND RIGHT ARRAY (617-746 MHZ) [R2]

Frequency Band	MHz	617-698	698-746
Gain Over All Tilts	dBi	14.8 +/- .2	15.1 +/- .2
Horizontal Beamwidth @3dB	Deg	65 +/- 4	62 +/- 2
Vertical Beamwidth @3dB	Deg	11.4 +/- .8	10.3 +/- .5
Electrical Downtilt Range	Deg	0-12	0-12
Upper Side Lobe Suppression 0 to +20	dB	19	20
Front-to-Back, at +/-30°, Copolar	dB	25	23
Cross Polar Discrimination (XPD) @ Boresight	dB	19	19
Cross Polar Discrimination (XPD) @ +/-60	dB	5	3
3rd Order PIM 2 x 43dBm	dBc		-153
VSWR	-	1.5:1	1.5:1
Cross Polar Isolation	dB	25	25
Maximum Effective Power per Port	Watt	250	250

Dual Slant Polarized Quad Band (8 Port) Antenna, 617-746/617-746/1695-2200/1695-2200MHz, 65deg, 15/15/18/18dBi, 2.4m (8ft), VET, RET, 0-12°/0-12°/2-12°/2-12°

HIGH BAND LEFT ARRAY (1695-2200 MHZ) [B1]

Frequency Band	MHz	1695-1880	1850-1990	1920-2200
Gain Over All Tilts	dBi	17.3 +/- .7	17.8 +/- .4	18.5 +/- 1
Horizontal Beamwidth @3dB	Deg	66 +/- 7	59 +/- 4	59 +/- 6
Vertical Beamwidth @3dB	Deg	5.3 +/- .4	4.7 +/- .4	4.3 +/- .3
Electrical Downtilt Range	Deg	2-12	2-12	2-12
Upper Side Lobe Suppression 0 to +20	dB	15	15	15
Front-to-Back, at +/-30°, Copolar	dB	25	25	25
Cross Polar Discrimination (XPD) @ Boresight	dB	19	17	16
Cross Polar Discrimination (XPD) @ +/-60	dB	4	6	4
3rd Order PIM 2 x 43dBm	dBc	-153	-153	-153
VSWR	-	1.5:1	1.5:1	1.5:1
Cross Polar Isolation	dB	25	25	25
Maximum Effective Power per Port	Watt	250	250	250

HIGH BAND RIGHT ARRAY (1695-2200 MHZ) [B2]

Frequency Band	MHz	1695-1880	1850-1990	1920-2200
Gain Over All Tilts	dBi	17.1 +/- .7	17.8 +/- .4	18.5 +/- 1
Horizontal Beamwidth @3dB	Deg	66 +/- 7	59 +/- 4	59 +/- 5
Vertical Beamwidth @3dB	Deg	5.2 +/- .4	4.7 +/- .4	4.3 +/- .3
Electrical Downtilt Range	Deg	2-12	2-12	2-12
Upper Side Lobe Suppression 0 to +20	dB	15	15	15
Front-to-Back, at +/-30°, Copolar	dB	25	24	25
Cross Polar Discrimination (XPD) @ Boresight	dB	20	17	16
Cross Polar Discrimination (XPD) @ +/-60	dB	4	6	5
3rd Order PIM 2 x 43dBm	dBc	-153	-153	-153
VSWR	-	1.5:1	1.5:1	1.5:1
Cross Polar Isolation	dB	25	25	25
Maximum Effective Power per Port	Watt	250	250	250

RADIO FREQUENCY SYSTEMS
The Clear Choice®

Dual Slant Polarized Quad Band (8 Port) Antenna, 617-746/617-746/1695-2200/1695-2200MHz, 65deg, 15/15/18/18dBi, 2.4m (8ft), VET, RET, 0-12°/0-12°/2-12°/2-12°

ELECTRICAL SPECIFICATIONS

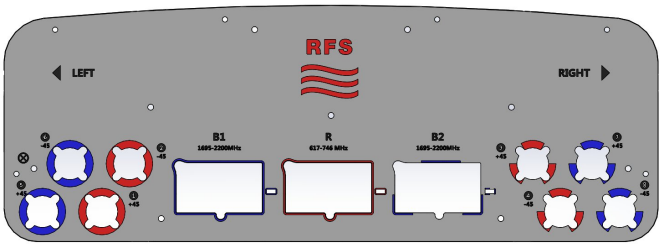
Impedance	Ohm	50.0
Polarization	Deg	±45°

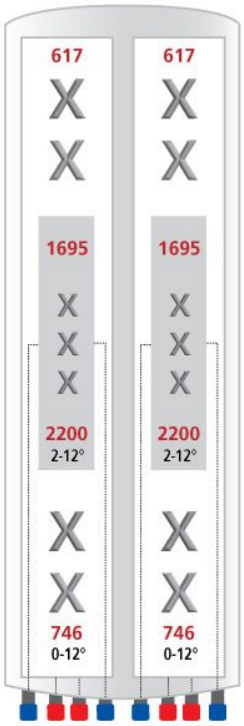
MECHANICAL SPECIFICATIONS

Dimensions - H x W x D	mm (in)	2436 x 609 x 222 (95.9 x 24 x 8.7)
Weight (Antenna Only)	kg (lb)	58 (128)
Weight (Mounting Hardware only)	kg (lb)	11.5 (25.3)
Shipping Weight	kg (lb)	80 (176)
Connector type		8 x 4.3-10 female at bottom + 6 AISG connectors (3 male, 3 female)
Adjustment mechanism		Integrated RET solution AISG compliant (Field Replaceable) + Manual Override + External Tilt Indicator
Mounting Hardware Material		Galvanized steel
Radome Material / Color		Fiber Glass / Light Grey RAL7035

TESTING AND ENVIRONMENTAL

Temperature Range	°C (°F)	-40 to 60 (-40 to 140)
Lightning protection		IEC 61000-4-5
Survival/Rated Wind Velocity	km/h	241 (150)
Environmental		ETSI 300-019-2-4 Class 4.1E





ORDERING INFORMATION

Order No.	Configuration	Mounting Hardware	Mounting pipe Diameter	Shipping Weight
APXVAARR24_43-U-NA20	Field Replace RET included (3)	APM40-5E Beam tilt kit (included)	60-120mm	80 Kg

RADIO FREQUENCY SYSTEMS
The Clear Choice®

Dual Slant Polarized Quad Band (8 Port) Antenna, 617-746/617-746/1695-2200/1695-2200MHz, 65deg, 15/15/18/18dBi, 2.4m (8ft), VET, RET, 0-12°/0-12°/2-12°/2-12°

External Document Links

APM40_Series_Installation_Instructions
Manual_Overdrive_Instructions
Global RFS Website

Notes

All electrical parameters are compliant with BASTA NGMN 9.6 requirements.

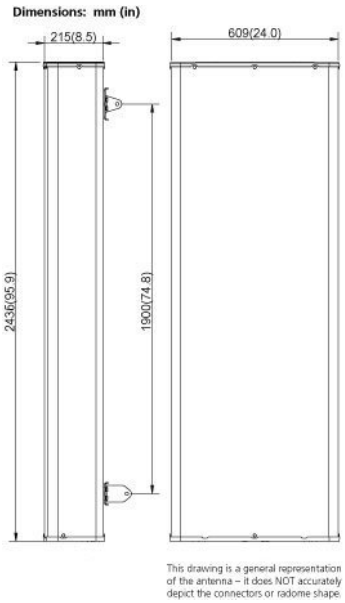
Available Configurations
APXVAARR24_43-U-NA20 -- External ACU is included -- shipping weight 80kg.

For additional mounting information please click "External Document Links".

This data is provisional and subject to changes.

External Link Reference

Global RFS Website	http://www.rfsworld.com



Drilled Shaft
LPILE Data Input Form

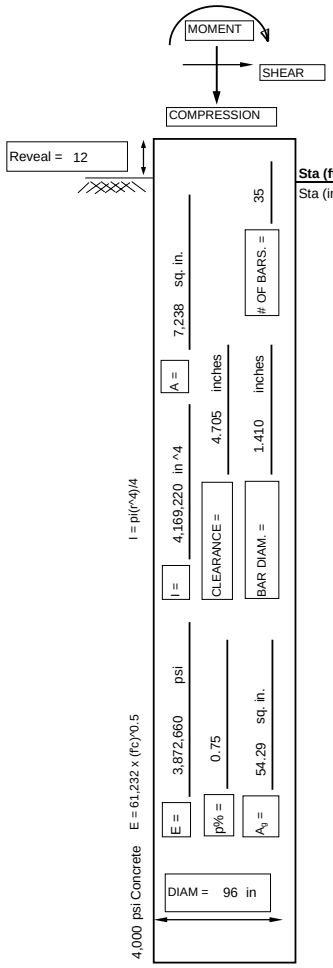
01092003 Form TS-GT-4-1B

Client: NUSCO **Page** _____ **Of** _____

Project No.: 38565 **Date** 07/31/2007 **Made By:** Elisabeth Freeman

Segment 2B (Cook Hill to E. Devon) **Checked By:** _____

Drilled Shaft Foundation Design (24032) **Preliminary** _____ **Final** _____



Max Ground Slope Angle = 5.5 degrees
Max 5ft Offset Ground Slope = 5.5 degrees
Slope Adjusted Reveal = 0.385 feet
(Note: Minimum reveal is 1.0 feet, round adjusted reveal up to nearest 0.5 feet)

Soil / Rock Layer Information

Sta (ft)	**1.0**					**Dpth (ft)**	**0**
Sta (in)	12					Dpth (in)	0
Soil Type =	Sand			Rock Type =			
Eff Unit Wt, geff =	53 pcf	=	0.031 pci		0 pcf	= 0. pci	
Cohesion, C =	0 psf	=	0. psi		0 psf	= 0. psi	
Phi Angle, f =	32 deg				0 psi		
Subgrade Modulus, SK =	60 pci				0 %		
Strain at 50% failure, EC =	0				0		
8.5							**7.5**
102							90
Soil Type =	Sand			Rock Type =			
Eff Unit Wt, geff =	63 pcf	=	0.036 pci		0 pcf	= 0. pci	
Cohesion, C =	0 psf	=	0. psi		0 psf	= 0. psi	
Phi Angle, f =	35 deg				0 psi		
Subgrade Modulus, SK =	125 pci				0 %		
Strain at 50% failure, EC =	0				0		
11.5							**10.5**
138							126
Soil Type =	Sand			Rock Type =			
Eff Unit Wt, geff =	68 pcf	=	0.039 pci		0 pcf	= 0. pci	
Cohesion, C =	0 psf	=	0. psi		0 psf	= 0. psi	
Phi Angle, f =	36 deg				0 psi		
Subgrade Modulus, SK =	125 pci				0 %		
Strain at 50% failure, EC =	0				0		
26.0							**25.0**
312							300
Soil Type =				Rock Type =	Vuggy Limestone (Hard Rock)		
	0 pcf	=	0. pci	Eff Unit Wt, geff =	88 pcf	= 0.051 pci	
	0 psf	=	0. psi	Comp. Strength, qu =	1728000 psf	= 12000. psi	
	0 deg			Young's Mod, Er =	375000 psi		
	0 pci			RQD =	17 %		
	0			k rm* =	0.0005		
36.0							**35.0**
432							420

*NOTES: LPile uses units of "inches" and "pounds" for English calcs.
Depths for pile and soil properties are always relative to the top of the pile.
"k rm" is the strain at 50% of the maximum strength of the rock core sample. LPILE suggests a value between 0.00005 and 0.0005 (w/ 0.0005 as more conservative).

SHEAR (lbs) =	**107,700 lbs.**
MOMENT (ft-kips) =	**10,334 ft-kips**
MOMENT (in-lbs) =	**124,008,000 in-lbs.**
COMPRESSION (lbs) =	**200,000 lbs.**
STRUCTURE:	**24032**
SOIL TYPE:	**B-032**
LOOPING:	**Length**
REVEAL=	**1 ft.**
W.L. @ =	**0.0 ft**

FILE NAME(S):	**24032**
TOTAL LENGTH:	**L (in) = 384**
	L (ft) = 32

DEFLECTION =	**2.92 in**	**@**	**T.O.C.**
ROTATION =	**0.0202 rad = 1.16 deg**	**@**	**T.O.C.**
MOMENT (MAX.) =	**133,396,400 in-lbs = 11,116 ft-k**	**@**	**10.5 ft**
SHEAR (MAX.) =	**1,866 kips**	**@**	**28.0 ft**
STRESS RATIO =	**0.83 per EFFMOD**		

Exhibit E

EBI Consulting

environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CT11602C

CL&P Stanchion
945 North Street, Pole 2336, Line 1690
Milford, Connecticut 06461

May 22, 2019

EBI Project Number: 6219001736

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**4.66%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

May 22, 2019

T-Mobile
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CT11602C - CL&P Stanchion

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **945 North Street, Pole 2336, Line 1690** in **Milford, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because

each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 945 North Street, Pole 2336, Line 1690 in Milford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

8) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antennas used in this modeling are the RFS APXVAARR24_43-U-NA20 for the 1900 MHz / 1900 MHz / 2100 MHz / 600 MHz / 700 MHz / 2100 MHz channel(s) in Sector A, the RFS APXVAARR24_43-U-NA20 for the 1900 MHz / 1900 MHz / 2100 MHz / 600 MHz / 700 MHz / 2100 MHz channel(s) in Sector B, the RFS APXVAARR24_43-U-NA20 for the 1900 MHz / 1900 MHz / 2100 MHz / 600 MHz / 700 MHz / 2100 MHz channel(s) in Sector C. **(**This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

10) The antenna mounting height centerline of the proposed antennas is 137 feet above ground level (AGL).

11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz / 600 MHz / 700 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz / 600 MHz / 700 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz / 600 MHz / 700 MHz / 2100 MHz
Gain:	15.65 dBd / 15.65 dBd / 16.35 dBd / 12.95 dBd / 13.35 dBd / 16.35 dBd	Gain:	15.65 dBd / 15.65 dBd / 16.35 dBd / 12.95 dBd / 13.35 dBd / 16.35 dBd	Gain:	15.65 dBd / 15.65 dBd / 16.35 dBd / 12.95 dBd / 13.35 dBd / 16.35 dBd
Height (AGL):	137 feet	Height (AGL):	137 feet	Height (AGL):	137 feet
Channel Count:	14	Channel Count:	14	Channel Count:	14
Total TX Power (W):	480 Watts	Total TX Power (W):	480 Watts	Total TX Power (W):	480 Watts
ERP (W):	16,859.51	ERP (W):	16,859.51	ERP (W):	16,859.51
Antenna A1 MPE %:	**3.85%**	Antenna B1 MPE %:	**3.85%**	Antenna C1 MPE %:	**3.85%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	3.85%
AT&T	0.81%
Site Total MPE % :	4.66%

T-Mobile Sector A Total:	3.85%
T-Mobile Sector B Total:	3.85%
T-Mobile Sector C Total:	3.85%
Site Total:	4.66%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz GSM	4	1101.85	137.0	8.44	1900 MHz GSM	1000	0.84%
T-Mobile 1900 MHz UMTS	2	1101.85	137.0	4.22	1900 MHz UMTS	1000	0.42%
T-Mobile 2100 MHz UMTS	2	1294.56	137.0	4.96	2100 MHz UMTS	1000	0.50%
T-Mobile 600 MHz LTE	2	591.73	137.0	2.27	600 MHz LTE	400	0.57%
T-Mobile 700 MHz LTE	2	648.82	137.0	2.49	700 MHz LTE	467	0.53%
T-Mobile 2100 MHz LTE	2	2589.11	137.0	9.92	2100 MHz LTE	1000	0.99%
						Total:	**3.85%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

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

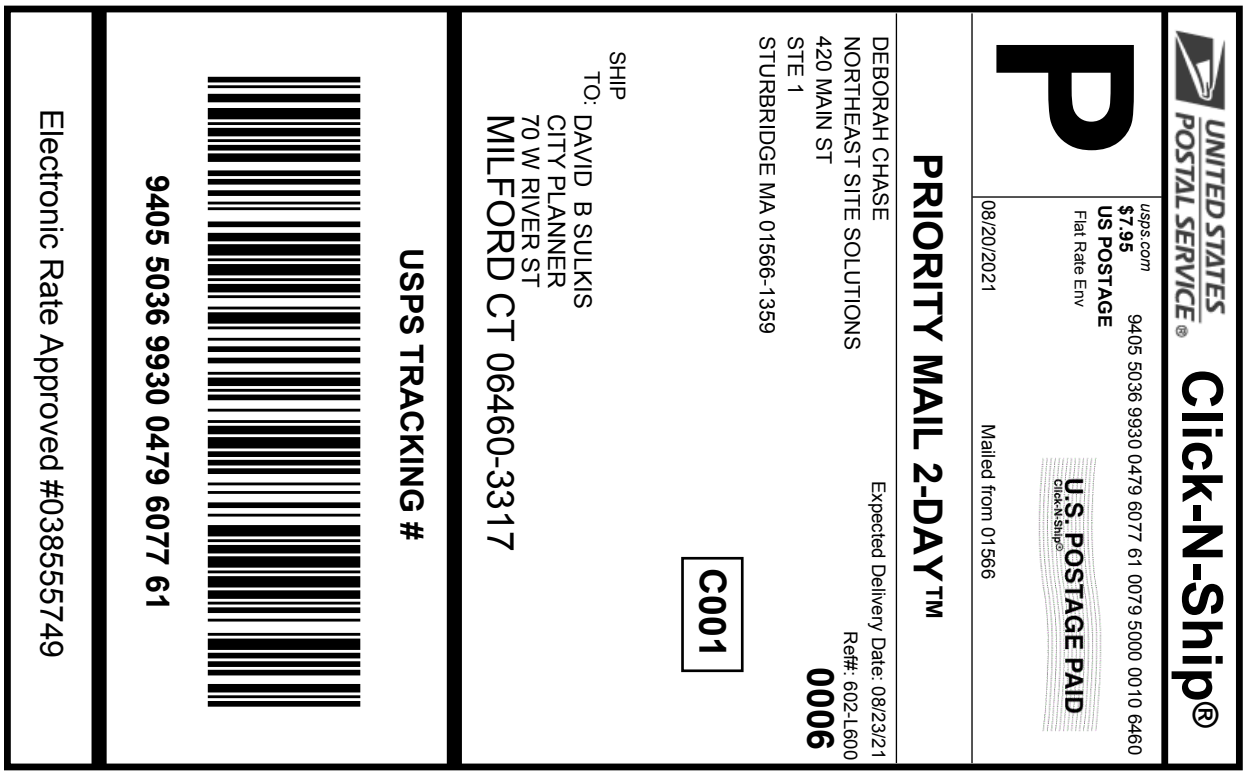
The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	3.85%
Sector B:	3.85%
Sector C:	3.85%
T-Mobile Maximum MPE % (Sector A):	3.85%
Site Total:	4.66%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **4.66%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Exhibit F



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USPS TRACKING # :
9405 5036 9930 0479 6077 61

Trans. #:	541293056
Print Date:	08/19/2021
Ship Date:	08/20/2021
Expected Delivery Date:	08/23/2021

Priority Mail® Postage:	**$7.95**
Total:	**$7.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: 602-L600

To: DAVID B SULKIS
CITY PLANNER
70 W RIVER ST
MILFORD CT 06460-3317

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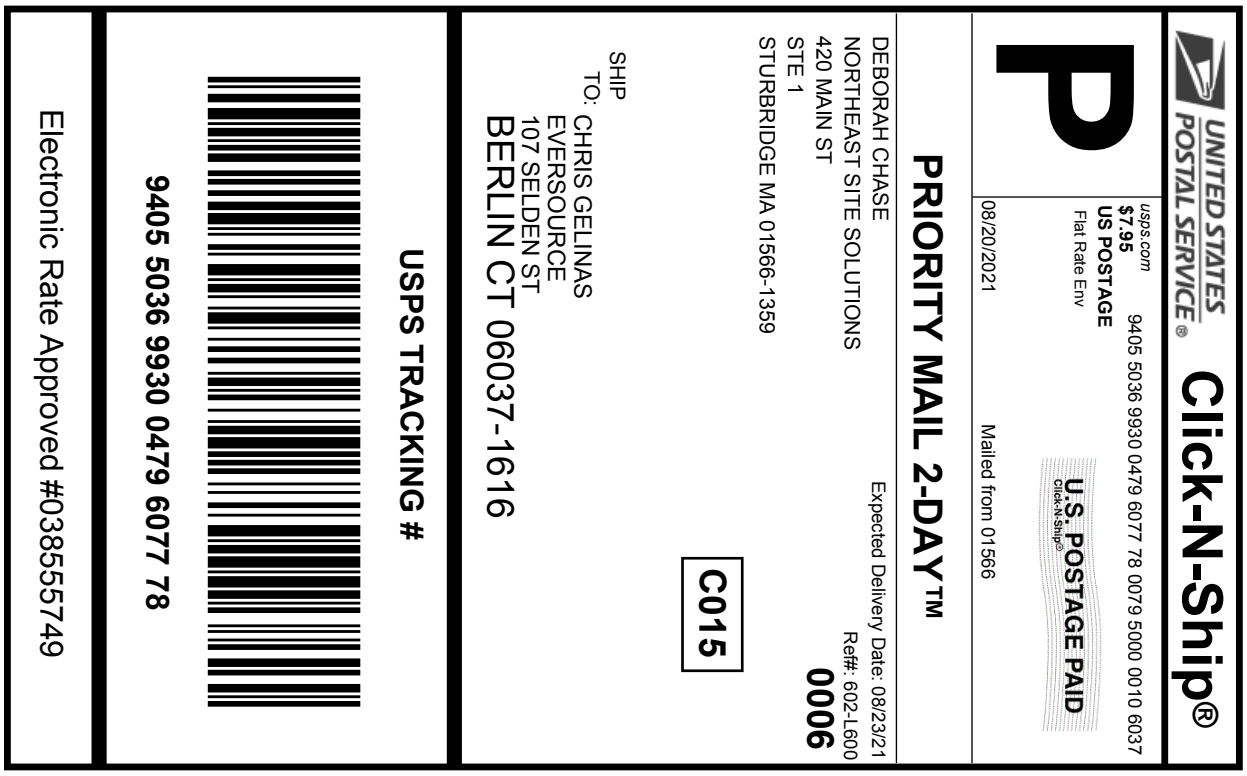

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9405 5036 9930 0479 6077 78

Trans. #:	541293056
Print Date:	08/19/2021
Ship Date:	08/20/2021
Expected Delivery Date:	08/23/2021

Priority Mail® Postage:	**$7.95**
Total:	**$7.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: 602-L600

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

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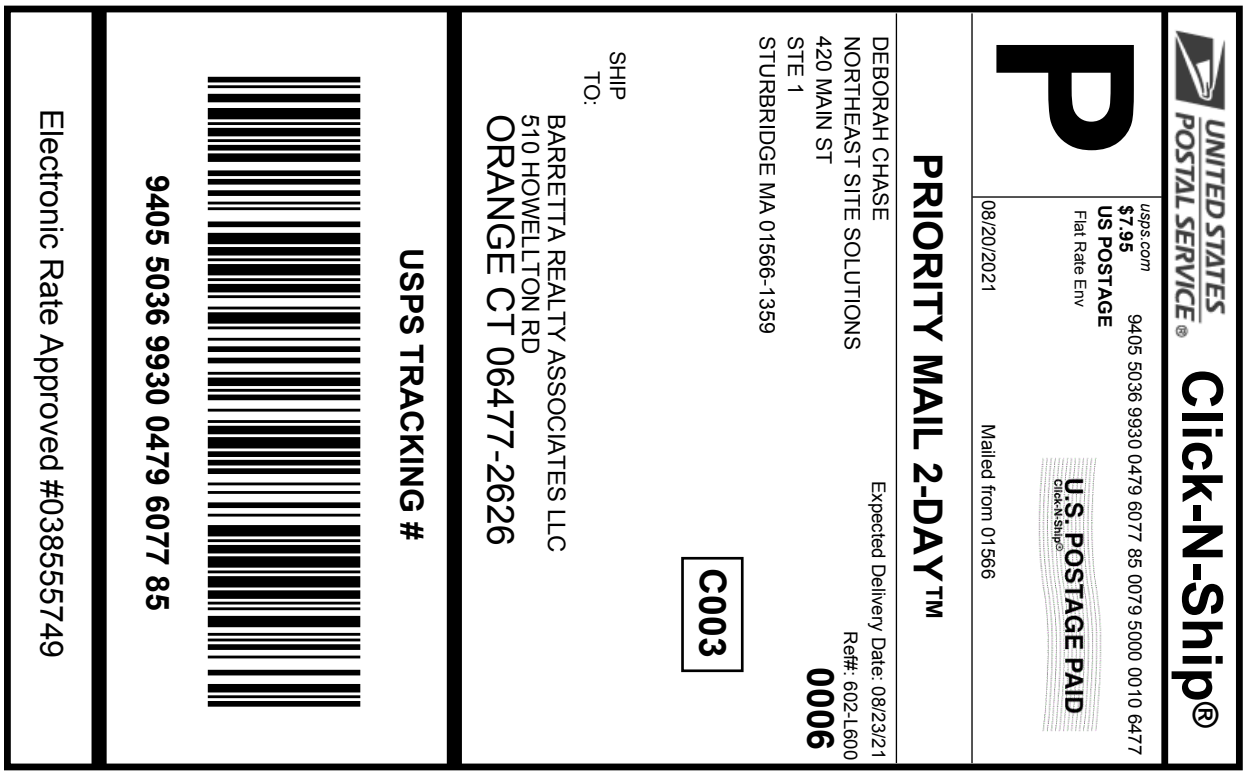

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USPS TRACKING # :
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Trans. #:	541293056
Print Date:	08/19/2021
Ship Date:	08/20/2021
Expected Delivery Date:	08/23/2021

Priority Mail® Postage:	**$7.95**
Total:	**$7.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: 602-L600

To: BARRETTA REALTY ASSOCIATES LLC
510 HOWELLTON RD
ORANGE CT 06477-2626

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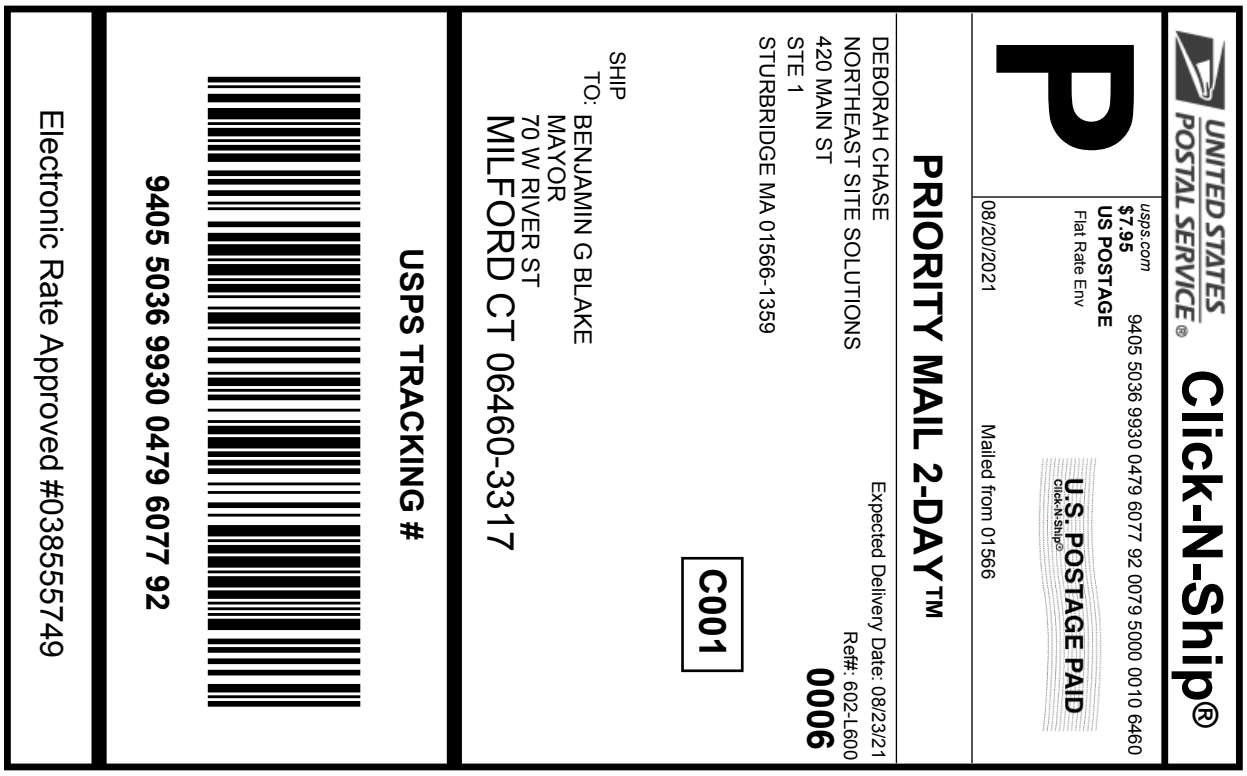

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Print Date:	08/19/2021
Ship Date:	08/20/2021
Expected Delivery Date:	08/23/2021

Priority Mail® Postage:	**$7.95**
Total:	**$7.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: 602-L600

To: BENJAMIN G BLAKE
MAYOR
70 W RIVER ST
MILFORD CT 06460-3317

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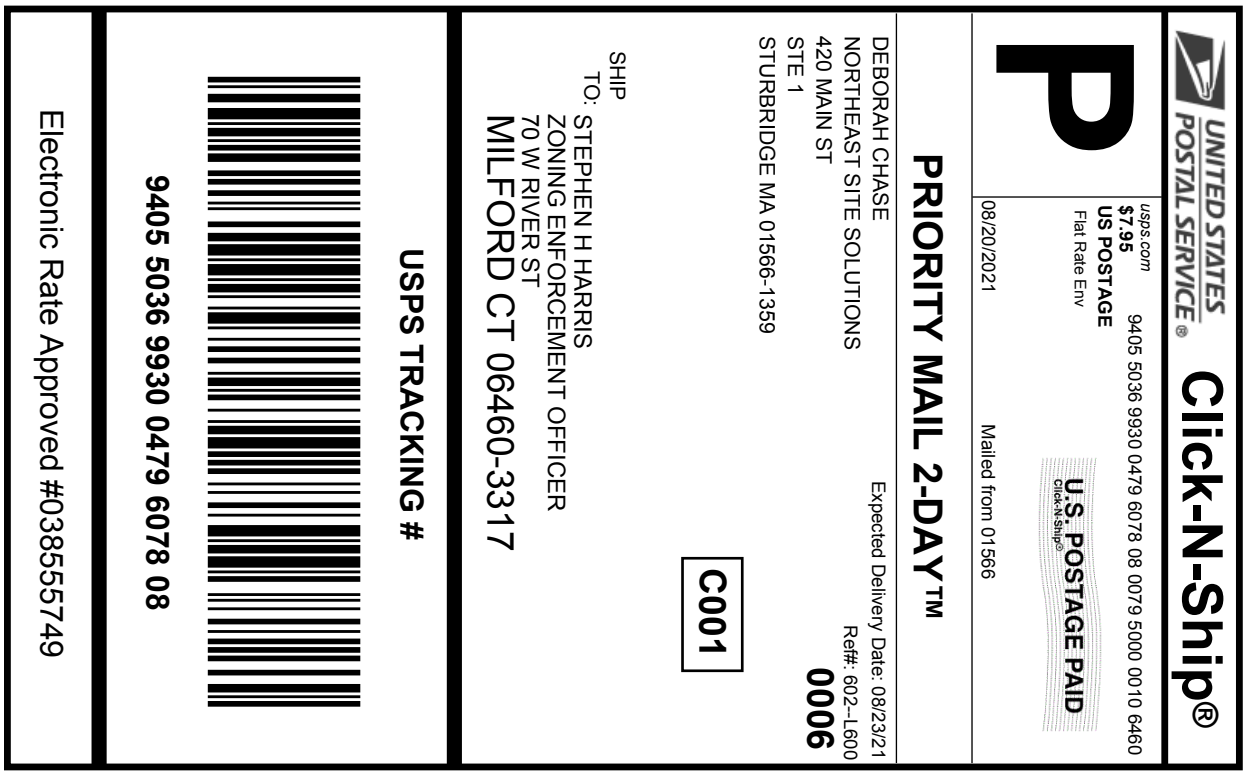

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USPS TRACKING # :
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Print Date:	08/19/2021
Ship Date:	08/20/2021
Expected Delivery Date:	08/23/2021

Priority Mail® Postage:	**$7.95**
Total:	**$7.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: 602--L600

To: STEPHEN H HARRIS
ZONING ENFORCEMENT OFFICER
70 W RIVER ST
MILFORD CT 06460-3317

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Product	Qty	Unit Price	Price
Prepaid Mail Berlin, CT 06037 Weight: 1 lb 7.70 oz Acceptance Date: Tue 08/24/2021 Tracking #: 9405 5036 9930 0479 6077 78	1		$0.00
Prepaid Mail Milford, CT 06460 Weight: 1 lb 7.60 oz Acceptance Date: Tue 08/24/2021 Tracking #: 9405 5036 9930 0479 6078 08	1		$0.00
Prepaid Mail Milford, CT 06460 Weight: 1 lb 7.60 oz Acceptance Date: Tue 08/24/2021 Tracking #: 9405 5036 9930 0479 6077 92	1		$0.00
Prepaid Mail Milford, CT 06460 Weight: 1 lb 7.00 oz Acceptance Date: Tue 08/24/2021 Tracking #: 9405 5036 9930 0479 6077 61	1		$0.00
Prepaid Mail Orange, CT 06477 Weight: 1 lb 7.60 oz Acceptance Date: Tue 08/24/2021 Tracking #: 9405 5036 9930 0479 6077 85	1		$0.00
Grand Total:			$0.00