Aaron Meyers, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
750 W. Center St., Floor 3
West Bridgewater, MA 02379
Mobile: (774) 420-4202
ameyers@clinellc.com

DATE April 8, 2019

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

RE: Notice of Exempt Modification // Site Number: CT5279
74 Birdsey Avenue, Meriden, CT 06450 (Site Name: Meriden)
N 41.52291667 // W -72.7494444

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains six (6) antennas at the 173-foot level of the existing 175-foot Monopole tower at 74 Birdsey Ave, Meriden, CT 06450. The tower is owned by Eversource. The property is owned by Meriden Police Benevolent Fraternal Association, Inc. AT&T now intends to replace six (6) Antennas, nine (9) TMAs, and adding three (3) TMAs for its LTE upgrade. This equipment would be installed at the 173-foot level of the tower.

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 Kevin Scarpati, Mayor, as well as the tower owner, Eversource, and the ground owner, Meriden Police Benevolent Fraternal Association, Inc.

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

Attached to accommodate this filing are construction drawings dated February 11, 2019 by Dewberry Engineers, Inc, a structural analysis dated January 29, 2019 by Centek Engineering, Inc, a mount analysis dated August 23, 2018 by Dewberry Engineers, Inc, and an Emissions Analysis Report dated April 5, 2019 by Centerline Communications, LLC.

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 as shown in the attached structural analysis by Centek Engineering, Inc, dated January 29, 2019.

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

Sincerely,

Aaron Meyers, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
750 W. Center St., Floor 3
West Bridgewater, MA 02379
Mobile: (774) 420-4202
ameyers@centerlincommunications.com

Attachments

cc: Kevin Scarpati, Mayor - as elected official
Eversource – as tower owner
Meriden Police Benevolent Fraternal Association, Inc. – as property owner
Renata Bertotti – as Planning, Development & Zoning Official

CENTEK engineering

Centered on Solutions℠

Structural Analysis of Pole

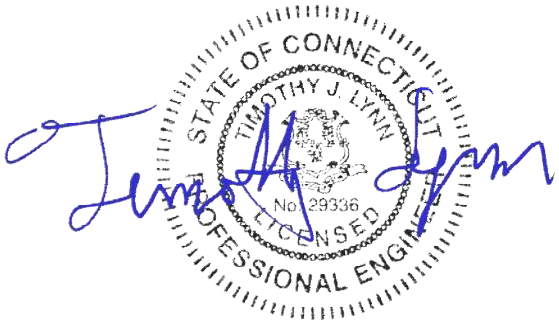
AT&T Site Ref: CT5279

Eversource Structure No. 9403
175.5' Electric Transmission Pole

74 Birdsey Ave.
Meriden, CT

CENTEK Project No. 18015.00

~~Date: February 13, 2018~~
Rev 4: January 29, 2019



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

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

Table of Contents

Introduction

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

The pole was analyzed for the following antenna configuration:

- AT&T (Existing to Remain):
  Coax Cables: Twelve (12) 1-5/8" ∅ coax cables running on the exterior of the pole.
- **AT&T (Existing to Remove):**
  Antennas: Three (3) KMW AM-X-CD-16-65-00T-RET panel antennas, three (3) Powerwave 7770 panel antennas, six (6) Powerwave LGP-21401 and three (3) CCI DTMABP7819VG12A TMAs mounted on T-Arms with a RAD center elevation of 173-ft above grade.
- **AT&T (Proposed):**
  Antennas: Three (3) Quintel QS66512-2 panel antennas, three (3) Andrew SBNHH-1D85B panel antennas, six (6) CCI DTMABPD7823VG12A TMAs and six (6) Kaelus TMA2117F00V1-1 TMAs mounted on T-Arms with a RAD center elevation of 173-ft above grade. (Handrail to be installed on existing T-Arms. Refer to section 4 for details)
  Coax Cables: Twelve (12) 1-5/8" ∅ coax cables running on the exterior of the pole as indicated in section 4 of this report.

Primary assumptions used in the analysis

- ASCE Manual No. 48-11, "Design of Steel Transmission Pole Structures", defines allowable steel stresses for evaluation of the utility pole.
- All utility pole members are adequately protected to prevent corrosion of steel members.
- All proposed antenna mounts are modeled as listed above.
- 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.
- All utility pole 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 utility pole was completed using the current version of PLS-Pole computer program licensed to CENTEK Engineering. Loading was developed per the requirements of the NESC standard and Northeast Utilities Design Criteria. These loads are developed in Section 5 of this report.

Design Basis

Our analysis was performed in accordance with ASCE Manual No. 48-11 – "Design of Steel Transmission Pole Structures", NESC C2-2012 and Northeast Utilities Design Criteria.

The utility pole structure, considering existing and future conductor and shield wire loading, with the proposed Sprint equipment was analyzed as follows:

- UTILITY POLE ANALYSIS

  The purpose of this analysis is to determine the adequacy of the existing utility pole to support the proposed antenna loads. The loading and design requirements were analyzed in accordance with the NU Design Criteria Table, NESC C2-2012 ~ Construction Grade B, and ASCE Manual No. 48-11.

  Load cases considered:

  Load Case 1: NESC Heavy Wind

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

Wind Speed……	110 mph (1)
Radial Ice Thickness……	0"

  Load Case 3: NESC Extreme Ice w/ Wind

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

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

R e s u l t s

- ANTENNA MOUNT

  The antenna mount was found to be within allowable limits.

Antenna Mount Component	Stress Ratio (% of capacity)	Result
Antenna Pipe	60.3%	**PASS**
Horz. Pipe	56.4%	**PASS**
Handrail	20.5%	**PASS**

- UTILITY POLE

  This analysis finds that the subject utility pole is adequate to support the proposed antennas and related appurtenances. The pole 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 Hi-Wind load cases. The detailed analysis results are provided in Section 6 of this report. The analysis results are summarized as follows:

  A maximum usage of **50.95%** occurs in the utility pole under the **NESC Extreme** loading condition.

  POLE SECTION:

  The utility pole was found to be within allowable limits.

Tower Section	Elevation	Stress Ratio (% of capacity)	Result
Tube Number 5	53.92' -77.42' (AGL)	50.95%	**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	44.27%	**PASS**

- FOUNDATION AND ANCHORS

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

BASE REACTIONS:

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

Load Case	Shear	Axial	Moment
NESC Heavy Wind	40.07 kips	124.23 kips	4625.18 ft-kips
NESC Extreme Wind	66.29 kips	71.20 kips	6851.60 ft-kips
NESC Extreme Ice w/ Wind	30.56 kips	95.58 kips	3656.58 ft-kips

Note 1 – 10% increase will be applied to above tower base reactions per OTRM 051 for foundation analysis.

ANCHOR BOLTS:

The anchor bolts were found to be within allowable limits.

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

FOUNDATION:

- The foundation was found to be within allowable limits.

Foundation	Design Limit	Proposed Loading	Result
Reinforced Concrete Caisson	Moment Capacity	47.6%	**PASS**
	Shear Capacity	52.9%	**PASS**
	Axial Capacity	2.6%	**PASS**

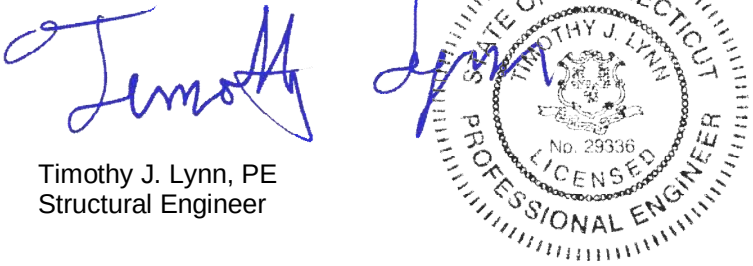
C o n c l u s i o n

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

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

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer

STANDARD CONDITIONS FOR FURNISHING OF PROFESSIONAL ENGINEERING SERVICES ON EXISTING STRUCTURES

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

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.

- Information from the field and/or drawings in the possession of CENTEK engineering, Inc. or generated by field inspections or measurements of the structure.

- It is the responsibility of the client to ensure that the information provided to CENTEK engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the “as new” condition.

- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222.

- All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. CENTEK engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM ~ PLS-POLE

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

Modeling Features:

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

Analysis Features:

- Automatic distribution of loads in 2-part suspension insulators (v-strings, horizontal vees, etc.)
- Design checks for ASCE, ANSI/TIA/EIA 222 (Revisions F and G) or other requirements
- Automatic calculation of dead and wind loads
- Automated loading on structure (wind, ice and drag coefficients) according to:
    - ASCE 74-1991
    - NESC 2002
    - NESC 2007
    - IEC 60826:2003
    - EN50341-1:2001 (CENELEC)
    - EN50341-3-9:2001 (UK NNA)
    - EN50341-3-17:2001 (Portugal NNA)
    - ESAA C(b)1-2003 (Australia)
    - TPNZ (New Zealand)
    - REE (Spain)
    - EIA/TIA 222-F
    - ANSI/TIA 222-G
    - CSA S37-01
- Automated microwave antenna loading as per EIA/TIA 222-F and ANSI/TIA 222-G
- Detects buckling by nonlinear analysis

Results Features:

- Detects buckling by nonlinear analysis
- Easy to interpret text, spreadsheet and graphics design summaries
- Automatic determination of allowable wind and weight spans
- Automatic determination of interaction diagrams between allowable wind and weight spans
- Automatic tracking of part numbers and costs

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 covering the design of telecommunications structures specifies a working strength/allowable stress design approach. This approach applies the loads from extreme weather loading conditions, and designs the structure so that it does not exceed some defined percentage of failure strength (allowable stress).

ANSI Standard C2-2012 (National Electrical Safety Code) covering the design of electric transmission metal structures is based upon an ultimate strength/yield stress design approach. This approach applies a multiplier (overload capacity factor) to the loads possible from extreme weather loading conditions, and designs the structure so that it does not exceed its ultimate strength (yield stress).

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

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

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

Note 1: Prepared from documentation provide from Northeast Utilities.

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

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

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

The uniform loadings and factors specified for the above components in the table are based upon the National Electrical Safety Code 2007 Edition Extreme Wind (Rule 250C) and Combined Ice and Wind (Rule 250B-Heavy) Loadings. These provide equivalent loadings compared to TIA and its loads and factors with the exceptions noted above. (Note that the NESC does not require the projected wind surfaces of structures and equipment to be increased by the ice covering.)

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

Attachment A
Eversource Design Criteria

		Attachment A NU Design Criteria	Basic Wind Speed	Pressure	Height factor	Gust Factor	Load or Stress Factor	Force Coef. - Shape Factor
			V (MPH)	Q (PSF)	Kz	Gh		
Ice Condition	TIA/EIA	Antenna Mount	TIA	TIA (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	2.50	1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with antennas below top of Tower/Pole (on two faces)	____	4	1	1	2.50	1.6 Flat Surfaces 1.3 Round Surfaces
		Conductors:	Conductor Loads Provided by NU					
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 NU					
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 NU					
		* Only for structures installed after 2007						

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) 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	1.6

   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.

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

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

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

\b ----------\b0\par

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

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\b Cable Load Adjustments for each Load Case\b0\par
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\b LC WC Load Case Struct | Command 1 Command 1 Command 1 |\b0\par
\b #   # Description Groups | Wire(s) Value |\b0\par
\b On Which | Set: (lbs) |\b0\par
\b To Apply | Phase: (deg) |\b0\par
\b | Side: (%) |\b0\par
\b ----------\b0\par

1	1	NESC Heavy NA+	'All'				\par
2	1	NESC Heavy NA-	'All'				\par
3	1	NESC Uplift NA+	'All'				\par
4	1	NESC Uplift NA-	'All'				\par
5	4	NESC Ext Wind NA	'All'				\par
6	4	NESC Ext Wind NA	'All'				\par
7	1	NESC Ins NA+	'All'				\par
8	1	NESC Ins NA-	'All'				\par
9	5	ASCE Ice/Wind NA	'All'				\par
10	5	ASCE Ice/Wind NA	'All'				\par
11	17	NU Ice	'All'				\par
12	14	Deflection NA+	'All'				\par
13	19	Construction NA+	'All'				\par
14	19	Construction NA-	'All'				\par
15	1	NESC Heavy AH NA	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors		2.0	\par
16	1	NESC Heavy AH NA	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors		2.0	\par
17	4	NESC Ext Wind AH	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors		2.0	\par
18	4	NESC Ext Wind AH	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors		2.0	\par
19	1	NESC Ins AH NA+	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors		2.0	\par
20	1	NESC Ins AH NA-	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors		2.0	\par
21	5	ASCE Ice/Wind AH	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors		2.0	\par
22	5	ASCE Ice/Wind AH	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors		2.0	\par
23	17	NU AH Ice	'PLS-POLE has DE'	Ahead Spans # Broken Subconductors		2.0	\par
24	1	NESC Heavy BK NA	'PLS-POLE has DE'	Back Spans # Broken Subconductors		2.0	\par
25	1	NESC Heavy BK NA	'PLS-POLE has DE'	Back Spans # Broken Subconductors		2.0	\par
26	4	NESC Ext Wind BK	'PLS-POLE has DE'	Back Spans # Broken Subconductors		2.0	\par
27	4	NESC Ext Wind BK	'PLS-POLE has DE'	Back Spans # Broken Subconductors		2.0	\par
28	1	NESC Ins BK NA+	'PLS-POLE has DE'	Back Spans # Broken Subconductors		2.0	\par
29	1	NESC Ins BK NA-	'PLS-POLE has DE'	Back Spans # Broken Subconductors		2.0	\par
30	5	ASCE Ice/Wind BK	'PLS-POLE has DE'	Back Spans # Broken Subconductors		2.0	\par
31	5	ASCE Ice/Wind BK	'PLS-POLE has DE'	Back Spans # Broken Subconductors		2.0	\par
32	17	NU BK Ice	'PLS-POLE has DE'	Back Spans # Broken Subconductors		2.0	\par
33	1	Broken SW NA+	'PLS-POLE no DE'	1:1:Back # Broken Subconductors		1.0	\par
34	1	Broken SW NA-	'PLS-POLE no DE'	1:1:Back # Broken Subconductors		1.0	\par
35	1	Broken Cond NA+	'PLS-POLE no DE'	2:1:Back # Broken Subconductors		1.0	\par
36	1	Broken Cond NA-	'PLS-POLE no DE'	2:1:Back # Broken Subconductors		1.0	\par
37	1	Unbalanced Ice N	'PLS-POLE'	Back Spans % Wire Ice			\par
38	1	Unbalanced Ice N	'PLS-POLE'	Back Spans % Wire Ice			\par

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

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

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

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

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 9403 30-scsp-20-sgc.175  9   5 ASCE Ice/Wind NA    1     1     SL:E      1411     187       2       760     163    5443       651      24   -5441           \par
 9403 30-scsp-20-sgc.175  9   5                     2     1  TLA,TLB      7254     -29      11      3846     334   19939      3408    -363  -19928           \par
 9403 30-scsp-20-sgc.175  9   5                     3     1  MLA,MLB      7254     -22      11      3846     341   19945      3408    -364  -19934           \par
 9403 30-scsp-20-sgc.175  9   5                     4     1  BLA,BLB      7254     -14      11      3846     349   19945      3408    -364  -19934           \par
 9403 30-scsp-20-sgc.175 10   5 ASCE Ice/Wind NA    1     1     SL:E      1411   -2049      14       760   -1000    5353       651   -1048   -5339           \par
 9403 30-scsp-20-sgc.175 10   5                     2     1  TLA,TLB      7254   -6351      81      3846   -2957   19721      3408   -3394  -19640           \par
 9403 30-scsp-20-sgc.175 10   5                     3     1  MLA,MLB      7254   -6345      82      3846   -2950   19729      3408   -3395  -19647           \par
 9403 30-scsp-20-sgc.175 10   5                     4     1  BLA,BLB      7254   -6337      83      3846   -2942   19730      3408   -3395  -19647           \par
 9403 30-scsp-20-sgc.175 11  17 NU Ice              1     1     SL:E      2142   -1083       9      1144    -487    6279       997    -596   -6270           \par
 9403 30-scsp-20-sgc.175 11  17                     2     1  TLA,TLB      9227   -3840      55      4892   -1579   23873      4335   -2261  -23818           \par
 9403 30-scsp-20-sgc.175 11  17                     3     1  MLA,MLB      9227   -3833      56      4892   -1570   23880      4335   -2262  -23825           \par
 9403 30-scsp-20-sgc.175 11  17                     4     1  BLA,BLB      9227   -3823      56      4892   -1561   23881      4335   -2262  -23824           \par
 9403 30-scsp-20-sgc.175 12  14 Deflection NA+      1     1     SL:E       251    -205       2       136     -92    1190       115    -113   -1188           \par
 9403 30-scsp-20-sgc.175 12  14                     2     1  TLA,TLB      3103   -1058      15      1625    -435    6578      1477    -623   -6563           \par
 9403 30-scsp-20-sgc.175 12  14                     3     1  MLA,MLB      3103   -1056      15      1625    -433    6579      1477    -623   -6564           \par
 9403 30-scsp-20-sgc.175 12  14                     4     1  BLA,BLB      3102   -1053      15      1625    -430    6580      1477    -623   -6564           \par
 9403 30-scsp-20-sgc.175 13  19 Construction NA+    1     1     SL:E       374    -231       2       204     -96    1993       170    -135   -1990           \par
 9403 30-scsp-20-sgc.175 13  19                     2     1  TLA,TLB      4642   -1051      17      2436    -358   10766      2206    -693  -10749           \par
 9403 30-scsp-20-sgc.175 13  19                     3     1  MLA,MLB      4642   -1047      17      2436    -354   10770      2206    -693  -10753           \par
 9403 30-scsp-20-sgc.175 13  19                     4     1  BLA,BLB      4642   -1043      18      2436    -350   10771      2206    -693  -10753           \par
 9403 30-scsp-20-sgc.175 14  19 Construction NA-    1     1     SL:E       374    -455       4       204    -212    1984       170    -242   -1980           \par
 9403 30-scsp-20-sgc.175 14  19                     2     1  TLA,TLB      4642   -2406      32      2436   -1063   10719      2206   -1342  -10687           \par
 9403 30-scsp-20-sgc.175 14  19                     3     1  MLA,MLB      4642   -2402      33      2436   -1059   10724      2206   -1343  -10691           \par
 9403 30-scsp-20-sgc.175 14  19                     4     1  BLA,BLB      4642   -2398      33      2436   -1055   10724      2206   -1343  -10691           \par
\par
\par
\b Wire Load Induced Ground Line Moments For Single Pole Centered At Structure Origin For Structure Range\b0\par
\par
\cf2\b   Note: not applicable to guyed structures or frames.  These approximate values do not include nonlinear (P-delta) effects or wind on pole.  ?? \cf1\b0  \par
\par
\b  Str.               Str. LC  WC Load Case          Vert.  Trans.   Long. Resultant    Trans.     Long. Resultant\b0\par
\b   No.               Name  #   # Description         Load   Shear   Shear     Shear    Moment    Moment    Moment\b0\par
\b                                                   (kips)  (kips)  (kips)    (kips)    (ft-k)    (ft-k)    (ft-k)\b0\par
\b ----------------------------------------------------------------------------------------------------------------\b0\par
 9403 30-scsp-20-sgc.175  1   1 NESC Heavy NA+    24.201  -1.565   0.062     1.566  -533.798     6.974   533.844\par
 9403 30-scsp-20-sgc.175  2   1 NESC Heavy NA-    24.201 -25.764   0.321    25.766 -3274.086    35.695  3274.280\par
 9403 30-scsp-20-sgc.175  3   1 NESC Uplift NA+   16.134  -1.565   0.062     1.566  -413.019     6.974   413.078\par
 9403 30-scsp-20-sgc.175  4   1 NESC Uplift NA-   16.134 -25.764   0.321    25.766 -3153.307    35.695  3153.509\par
 9403 30-scsp-20-sgc.175  5   4 NESC Ext Wind NA  10.068  11.912  -0.096    11.912  1167.266   -10.456  1167.313\par
 9403 30-scsp-20-sgc.175  6   4 NESC Ext Wind NA  10.068 -32.014   0.386    32.016 -3721.351    42.523  3721.594\par
 9403 30-scsp-20-sgc.175  7   1 NESC Ins NA+      16.134  -3.442   0.064     3.442  -627.806     7.186   627.848\par
 9403 30-scsp-20-sgc.175  8   1 NESC Ins NA-      16.134 -13.122   0.168    13.123 -1723.921    18.674  1724.023\par
 9403 30-scsp-20-sgc.175  9   5 ASCE Ice/Wind NA  23.172   0.122   0.034     0.126  -324.029     3.860   324.052\par
 9403 30-scsp-20-sgc.175 10   5 ASCE Ice/Wind NA  23.172 -21.082   0.260    21.084 -2733.637    28.927  2733.790\par
 9403 30-scsp-20-sgc.175 11  17 NU Ice           29.822 -12.579   0.176    12.580 -1861.404    19.584  1861.507\par
 9403 30-scsp-20-sgc.175 12  14 Deflection NA+     9.559  -3.373   0.048     3.373  -521.203     5.272   521.230\par
 9403 30-scsp-20-sgc.175 13  19 Construction NA+  14.300  -3.372   0.055     3.373  -593.991     6.044   594.022\par
 9403 30-scsp-20-sgc.175 14  19 Construction NA-  14.300  -7.661   0.102     7.662 -1071.297    11.218  1071.356\par
\par
\par
\b Basic factored design wind pressure on structure For Structure Range\b0\par
\par
\b  Str.               Str. LC  WC Load Case          Trans.    Long. Notes          \b0  \par
\b   No.               Name  #   # Description          Wind     Wind               \b0  \par
\b                                                    Press.   Press.               \b0  \par
\b                                                     (psf)    (psf)               \b0  \par
\b ------------------------------------------------------------------------------\b0\par
 9403 30-scsp-20-sgc.175  1   1 NESC Heavy NA+       10.0      0.0                \par
 9403 30-scsp-20-sgc.175  2   1 NESC Heavy NA-      -10.0     -0.0                \par
 9403 30-scsp-20-sgc.175  3   1 NESC Uplift NA+      10.0      0.0                \par
 9403 30-scsp-20-sgc.175  4   1 NESC Uplift NA-     -10.0     -0.0                \par
 9403 30-scsp-20-sgc.175  5   4 NESC Ext Wind NA     35.3      0.0                \par
 9403 30-scsp-20-sgc.175  6   4 NESC Ext Wind NA    -35.3     -0.0                \par
 9403 30-scsp-20-sgc.175  7   1 NESC Ins NA+          4.0      0.0                \par
 9403 30-scsp-20-sgc.175  8   1 NESC Ins NA-         -4.0     -0.0                \par
 9403 30-scsp-20-sgc.175  9   5 ASCE Ice/Wind NA      7.0      0.0                \par
 9403 30-scsp-20-sgc.175 10   5 ASCE Ice/Wind NA     -7.0     -0.0                \par
 9403 30-scsp-20-sgc.175 11  17 NU Ice               0.0      0.0                \par
 9403 30-scsp-20-sgc.175 12  14 Deflection NA+        0.0      0.0                \par
 9403 30-scsp-20-sgc.175 13  19 Construction NA+      3.5      0.0                \par
 9403 30-scsp-20-sgc.175 14  19 Construction NA-     -3.5     -0.0                \par
\par
\par
\b Detailed Manufacturer Loading For Structure Range\b0\par
\par
\b Note: Loads in this report include load from counter weights, insulator weight and insulator wind area.\b0\par
\par
\b  Str.               Str.   Line LC  WC Load Case         Set Phase  Attach. | --------------Structure Attach-------------- | ----Structure Loads---- | --Loads from back span- | -Loads from ahead span- | Warnings
-------------------------Back span------------------------ | ------------------------Ahead span------------------------ |\b0\par
\b   No.               Name  Angle  #   # Description       No.   No.    Joint |      X      Y      Z Height Dead ---Wires--- |   Vert.  Trans.   Long. |   Vert.  Trans.   Long. |   Vert.  Trans.   Long. |          Cable
          Len. Azi.  Horiz.   Vert.  Horiz. | Cable                  Len. Azi.  Horiz.   Vert.  Horiz. |\b0\par
\b                     (deg)                                      Labels | -----------(ft)------------  End ----Per---- | ---------(lbs)--------- | ---------(lbs)--------- | ---------(lbs)--------- |          Name
                    -----Load------ Tension | Name                        -----Load------ Tension |\b0\par
\b                                                                    |                        ---Phase--- |                         |                         |                         |
          (ft)(deg) ---(lbs/ft)----   (lbs) |                       (ft)(deg) ---(lbs/ft)----   (lbs) |\b0\par
\b                                          |                             |                      Back Ahead |                         |                         |
                                            |                                                      |\b0\par
\b
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---------------------------------------------------------------------------------------------------------------------\b0\par
 9403 30-scsp-20-sgc.175 -10.85  1   1 NESC Heavy NA+      1     1     SL:E      0.0   -9.1  153.0  153.0     N      1      1      1180     -11       4       636      77    6865       544     -88   -6861
7#8_alumoweld_4200#.wir  1050   94    1.15    1.22    6839   7#8_alumoweld_4200#.wir  970  265    1.15    1.22    6839  \par
 9403 30-scsp-20-sgc.175 -10.85  1   1                     2     1  TLA,TLB      0.0  -15.1  131.0  131.0     N      2      2      7674    -527      19      4061     182   26060      3613    -709  -26041
rail_acsr_8000.wir       1049   94    1.80    3.17   25991   rail_acsr_8000.wir       969  265    1.80    3.17   25991  \par
 9403 30-scsp-20-sgc.175 -10.85  1   1                     3     1  MLA,MLB      0.0  -15.3  109.0  109.0     N      2      2      7674    -518      19      4061     192   26065      3613    -710  -26045
rail_acsr_8000.wir       1049   94    1.80    3.17   25996   rail_acsr_8000.wir       969  265    1.80    3.17   25996  \par
 9403 30-scsp-20-sgc.175 -10.85  1   1                     4     1  BLA,BLB      0.0  -15.5   87.0   87.0     N      2      2      7674    -509      19      4061     202   26069      3613    -710  -26050
rail_acsr_8000.wir       1049   94    1.80    3.17   26001   rail_acsr_8000.wir       969  265    1.80    3.17   26001  \par
 9403 30-scsp-20-sgc.175 -10.85  2   1 NESC Heavy NA-      1     1     SL:E      0.0   -9.1  153.0  153.0     N      1      1      1180   -2341      16       636   -1135    6771       544   -1206   -6755
7#8_alumoweld_4200#.wir  1050   94    1.15    1.22    6839   7#8_alumoweld_4200#.wir  970  265    1.15    1.22    6839  \par
 9403 30-scsp-20-sgc.175 -10.85  2   1                     2     1  TLA,TLB      0.0  -15.1  131.0  131.0     N      2      2      7674   -7817     100      4061   -3613   25809      3613   -4204  -25709
rail_acsr_8000.wir       1049   94    1.80    3.17   25991   rail_acsr_8000.wir       969  265    1.80    3.17   25991  \par
 9403 30-scsp-20-sgc.175 -10.85  2   1                     3     1  MLA,MLB      0.0  -15.3  109.0  109.0     N      2      2      7674   -7808     102      4061   -3603   25815      3613   -4205  -25713
rail_acsr_8000.wir       1049   94    1.80    3.17   25996   rail_acsr_8000.wir       969  265    1.80    3.17   25996  \par
 9403 30-scsp-20-sgc.175 -10.85  2   1                     4     1  BLA,BLB      0.0  -15.5   87.0   87.0     N      2      2      7674   -7798     103      4061   -3593   25821      3613   -4205  -25718
rail_acsr_8000.wir       1049   94    1.80    3.17   26001   rail_acsr_8000.wir       969  265    1.80    3.17   26001  \par
 9403 30-scsp-20-sgc.175 -10.85  3   1 NESC Uplift NA+     1     1     SL:E      0.0   -9.1  153.0  153.0     N      1      1       787     -11       4       424      77    6865       362     -88   -6861
7#8_alumoweld_4200#.wir  1050   94    1.15    0.81    6839   7#8_alumoweld_4200#.wir  970  265    1.15    0.81    6839  \par
 9403 30-scsp-20-sgc.175 -10.85  3   1                     2     1  TLA,TLB      0.0  -15.1  131.0  131.0     N      2      2      5116    -527      19      2707     182   26060      2409    -709  -26041
rail_acsr_8000.wir       1049   94    1.80    2.11   25991   rail_acsr_8000.wir       969  265    1.80    2.11   25991  \par
 9403 30-scsp-20-sgc.175 -10.85  3   1                     3     1  MLA,MLB      0.0  -15.3  109.0  109.0     N      2      2      5116    -518      19      2707     192   26065      2409    -710  -26045
rail_acsr_8000.wir       1049   94    1.80    2.11   25996   rail_acsr_8000.wir       969  265    1.80    2.11   25996  \par
 9403 30-scsp-20-sgc.175 -10.85  3   1                     4     1  BLA,BLB      0.0  -15.5   87.0   87.0     N      2      2      5116    -509      19      2707     202   26069      2409    -710  -26050
rail_acsr_8000.wir       1049   94    1.80    2.11   26001   rail_acsr_8000.wir       969  265    1.80    2.11   26001  \par
 9403 30-scsp-20-sgc.175 -10.85  4   1 NESC Uplift NA-     1     1     SL:E      0.0   -9.1  153.0  153.0     N      1      1       787   -2341      16       424   -1135    6771       362   -1206   -6755
7#8_alumoweld_4200#.wir  1050   94    1.15    0.81    6839   7#8_alumoweld_4200#.wir  970  265    1.15    0.81    6839  \par
 9403 30-scsp-20-sgc.175 -10.85  4   1                     2     1  TLA,TLB      0.0  -15.1  131.0  131.0     N      2      2      5116   -7817     100      2707   -3613   25809      2409   -4204  -25709
rail_acsr_8000.wir       1049   94    1.80    2.11   25991   rail_acsr_8000.wir       969  265    1.80    2.11   25991  \par
 9403 30-scsp-20-sgc.175 -10.85  4   1                     3     1  MLA,MLB      0.0  -15.3  109.0  109.0     N      2      2      5116   -7808     102      2707   -3603   25815      2409   -4205  -25713
rail_acsr_8000.wir       1049   94    1.80    2.11   25996   rail_acsr_8000.wir       969  265    1.80    2.11   25996  \par
 9403 30-scsp-20-sgc.175 -10.85  4   1                     4     1  BLA,BLB      0.0  -15.5   87.0   87.0     N      2      2      5116   -7798     103      2707   -3593   25821      2409   -4205  -25718
rail_acsr_8000.wir       1049   94    1.80    2.11   26001   rail_acsr_8000.wir       969  265    1.80    2.11   26001  \par
 9403 30-scsp-20-sgc.175 -10.85  5   4 NESC Ext Wind NA    1     1     SL:E      0.0   -9.1  153.0  153.0     N      1      1       248     487      -0       147     300    3861       100     187   -3861
7#8_alumoweld_4200#.wir  1050   94    1.13    0.29    3826   7#8_alumoweld_4200#.wir  970  265    1.13    0.29    3826  \par
 9403 30-scsp-20-sgc.175 -10.85  5   4                     2     1  TLA,TLB      0.0  -15.1  131.0  131.0     N      2      2      3274    3802     -31      1775    2322   19744      1499    1480  -19776
rail_acsr_8000.wir       1049   94    3.43    1.18   19548   rail_acsr_8000.wir       969  265    3.43    1.18   19547  \par
 9403 30-scsp-20-sgc.175 -10.85  5   4                     3     1  MLA,MLB      0.0  -15.3  109.0  109.0     N      2      2      3274    3808     -32      1775    2329   19750      1499    1479  -19782
rail_acsr_8000.wir       1049   94    3.43    1.18   19555   rail_acsr_8000.wir       969  265    3.43    1.18   19554  \par
 9403 30-scsp-20-sgc.175 -10.85  5   4                     4     1  BLA,BLB      0.0  -15.5   87.0   87.0     N      2      2      3273    3816     -33      1775    2337   19749      1499    1479  -19782
rail_acsr_8000.wir       1049   94    3.43    1.18   19555   rail_acsr_8000.wir       969  265    3.43    1.18   19554  \par
 9403 30-scsp-20-sgc.175 -10.85  6   4 NESC Ext Wind NA    1     1     SL:E      0.0   -9.1  153.0  153.0     N      1      1       248   -1803      12       147    -891    3768       100    -911   -3756
7#8_alumoweld_4200#.wir  1050   94    1.13    0.29    3826   7#8_alumoweld_4200#.wir  970  265    1.13    0.29    3826  \par
 9403 30-scsp-20-sgc.175 -10.85  6   4                     2     1  TLA,TLB      0.0  -15.1  131.0  131.0     N      2      2      3274  -10077     123      1775   -4902   19267      1499   -5175  -19144
rail_acsr_8000.wir       1049   94    3.43    1.18   19548   rail_acsr_8000.wir       969  265    3.43    1.18   19547  \par
 9403 30-scsp-20-sgc.175 -10.85  6   4                     3     1  MLA,MLB      0.0  -15.3  109.0  109.0     N      2      2      3274  -10071     125      1775   -4895   19275      1499   -5176  -19150
rail_acsr_8000.wir       1049   94    3.43    1.18   19555   rail_acsr_8000.wir       969  265    3.43    1.18   19554  \par
 9403 30-scsp-20-sgc.175 -10.85  6   4                     4     1  BLA,BLB      0.0  -15.5   87.0   87.0     N      2      2      3273  -10063     127      1775   -4888   19277      1499   -5175  -19150
rail_acsr_8000.wir       1049   94    3.43    1.18   19555   rail_acsr_8000.wir       969  265    3.43    1.18   19554  \par
 9403 30-scsp-20-sgc.175 -10.85  7   1 NESC Ins NA+        1     1     SL:E      0.0   -9.1  153.0  153.0     N      1      1       787    -247       4       424     -78    4151       362    -168   -4147
7#8_alumoweld_4200#.wir  1050   94    0.46    0.81    4145   7#8_alumoweld_4200#.wir  970  265    0.46    0.81    4145  \par
 9403 30-scsp-20-sgc.175 -10.85  7   1                     2     1  TLA,TLB      0.0  -15.1  131.0  131.0     N      2      2      5116   -1071      20      2707    -281   15768      2409    -790  -15748
rail_acsr_8000.wir       1049   94    0.72    2.11   15752   rail_acsr_8000.wir       969  265    0.72    2.11   15752  \par
 9403 30-scsp-20-sgc.175 -10.85  7   1                     3     1  MLA,MLB      0.0  -15.3  109.0  109.0     N      2      2      5116   -1065      20      2707    -275   15771      2409    -790  -15751
rail_acsr_8000.wir       1049   94    0.72    2.11   15755   rail_acsr_8000.wir       969  265    0.72    2.11   15755  \par
 9403 30-scsp-20-sgc.175 -10.85  7   1                     4     1  BLA,BLB      0.0  -15.5   87.0   87.0     N      2      2      5116   -1059      20      2707    -269   15774      2409    -791  -15754
rail_acsr_8000.wir       1049   94    0.72    2.11   15758   rail_acsr_8000.wir       969  265    0.72    2.11   15758  \par
 9403 30-scsp-20-sgc.175 -10.85  8   1 NESC Ins NA-        1     1     SL:E      0.0   -9.1  153.0  153.0     N      1      1       787   -1179       9       424    -563    4113       362    -616   -4105
7#8_alumoweld_4200#.wir  1050   94    0.46    0.81    4145   7#8_alumoweld_4200#.wir  970  265    0.46    0.81    4145  \par
 9403 30-scsp-20-sgc.175 -10.85  8   1                     2     1  TLA,TLB      0.0  -15.1  131.0  131.0     N      2      2      5116   -3986      52      2707   -1799   15668      2409   -2188  -15615
rail_acsr_8000.wir       1049   94    0.72    2.11   15752   rail_acsr_8000.wir       969  265    0.72    2.11   15752  \par
 9403 30-scsp-20-sgc.175 -10.85  8   1                     3     1  MLA,MLB      0.0  -15.3  109.0  109.0     N      2      2      5116   -3981      53      2707   -1793   15671      2409   -2188  -15618
rail_acsr_8000.wir       1049   94    0.72    2.11   15755   rail_acsr_8000.wir       969  265    0.72    2.11   15755  \par
 9403 30-scsp-20-sgc.175 -10.85  8   1                     4     1  BLA,BLB      0.0  -15.5   87.0   87.0     N      2      2      5116   -3975      54      2707   -1787   15675      2409   -2189  -15621
rail_acsr_8000.wir       1049   94    0.72    2.11   15758   rail_acsr_8000.wir       969  265    0.72    2.11   15758  \par
 9403 30-scsp-20-sgc.175 -10.85  9   5 ASCE Ice/Wind NA    1     1     SL:E      0.0   -9.1  153.0  153.0     N      1      1      1411     187       2       760     163    5443       651      24   -5441
7#8_alumoweld_4200#.wir  1050   94    1.11    1.45    5414   7#8_alumoweld_4200#.wir  970  265    1.11    1.45    5414  \par
 9403 30-scsp-20-sgc.175 -10.85  9   5                     2     1  TLA,TLB      0.0  -15.1  131.0  131.0     N      2      2      7254     -29      11      3846     334   19939      3408    -363  -19928
rail_acsr_8000.wir       1049   94    1.56    3.15   19873   rail_acsr_8000.wir       969  265    1.56    3.15   19873  \par
 9403 30-scsp-20-sgc.175 -10.85  9   5                     3     1  MLA,MLB      0.0  -15.3  109.0  109.0     N      2      2      7254     -22      11      3846     341   19945      3408    -364  -19934
rail_acsr_8000.wir       1049   94    1.56    3.15   19880   rail_acsr_8000.wir       969  265    1.56    3.15   19880  \par
 9403 30-scsp-20-sgc.175 -10.85  9   5                     4     1  BLA,BLB      0.0  -15.5   87.0   87.0     N      2      2      7254     -14      11      3846     349   19945      3408    -364  -19934
rail_acsr_8000.wir       1049   94    1.56    3.15   19880   rail_acsr_8000.wir       969  265    1.56    3.15   19880  \par
 9403 30-scsp-20-sgc.175 -10.85 10   5 ASCE Ice/Wind NA    1     1     SL:E      0.0   -9.1  153.0  153.0     N      1      1      1411   -2049      14       760   -1000    5353       651   -1048   -5339
7#8_alumoweld_4200#.wir  1050   94    1.11    1.45    5414   7#8_alumoweld_4200#.wir  970  265    1.11    1.45    5414  \par
 9403 30-scsp-20-sgc.175 -10.85 10   5                     2     1  TLA,TLB      0.0  -15.1  131.0  131.0     N      2      2      7254   -6351      81      3846   -2957   19721      3408   -3394  -19640
rail_acsr_8000.wir       1049   94    1.56    3.15   19873   rail_acsr_8000.wir       969  265    1.56    3.15   19873  \par
 9403 30-scsp-20-sgc.175 -10.85 10   5                     3     1  MLA,MLB      0.0  -15.3  109.0  109.0     N      2      2      7254   -6345      82      3846   -2950   19729      3408   -3395  -19647
rail_acsr_8000.wir       1049   94    1.56    3.15   19880   rail_acsr_8000.wir       969  265    1.56    3.15   19880  \par
 9403 30-scsp-20-sgc.175 -10.85 10   5                     4     1  BLA,BLB      0.0  -15.5   87.0   87.0     N      2      2      7254   -6337      83      3846   -2942   19730      3408   -3395  -19647
rail_acsr_8000.wir       1049   94    1.56    3.15   19880   rail_acsr_8000.wir       969  265    1.56    3.15   19880  \par
 9403 30-scsp-20-sgc.175 -10.85 11  17 NU Ice              1     1     SL:E      0.0   -9.1  153.0  153.0     N      1      1      2142   -1083       9      1144    -487    6279       997    -596   -6270
7#8_alumoweld_4200#.wir  1050   94    0.00    2.18    6298   7#8_alumoweld_4200#.wir  970  265    0.00    2.18    6298  \par
 9403 30-scsp-20-sgc.175 -10.85 11  17                     2     1  TLA,TLB      0.0  -15.1  131.0  131.0     N      2      2      9227   -3840      55      4892   -1579   23873      4335   -2261  -23818
rail_acsr_8000.wir       1049   94    0.00    4.14   23925   rail_acsr_8000.wir       969  265    0.00    4.14   23925  \par
 9403 30-scsp-20-sgc.175 -10.85 11  17                     3     1  MLA,MLB      0.0  -15.3  109.0  109.0     N      2      2      9227   -3833      56      4892   -1570   23880      4335   -2262  -23825
rail_acsr_8000.wir       1049   94    0.00    4.14   23932   rail_acsr_8000.wir       969  265    0.00    4.14   23932  \par
```

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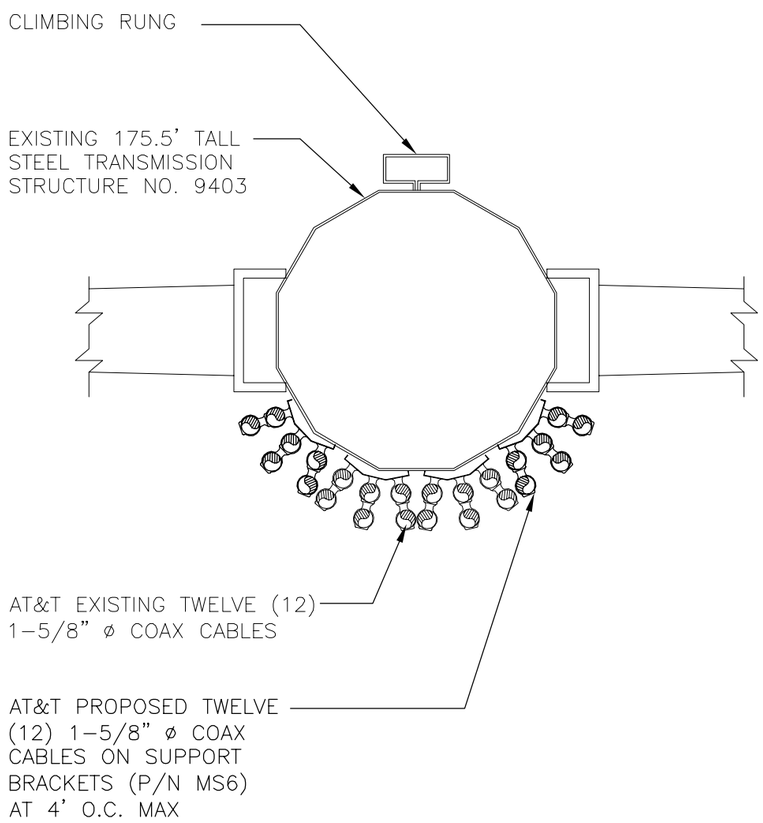
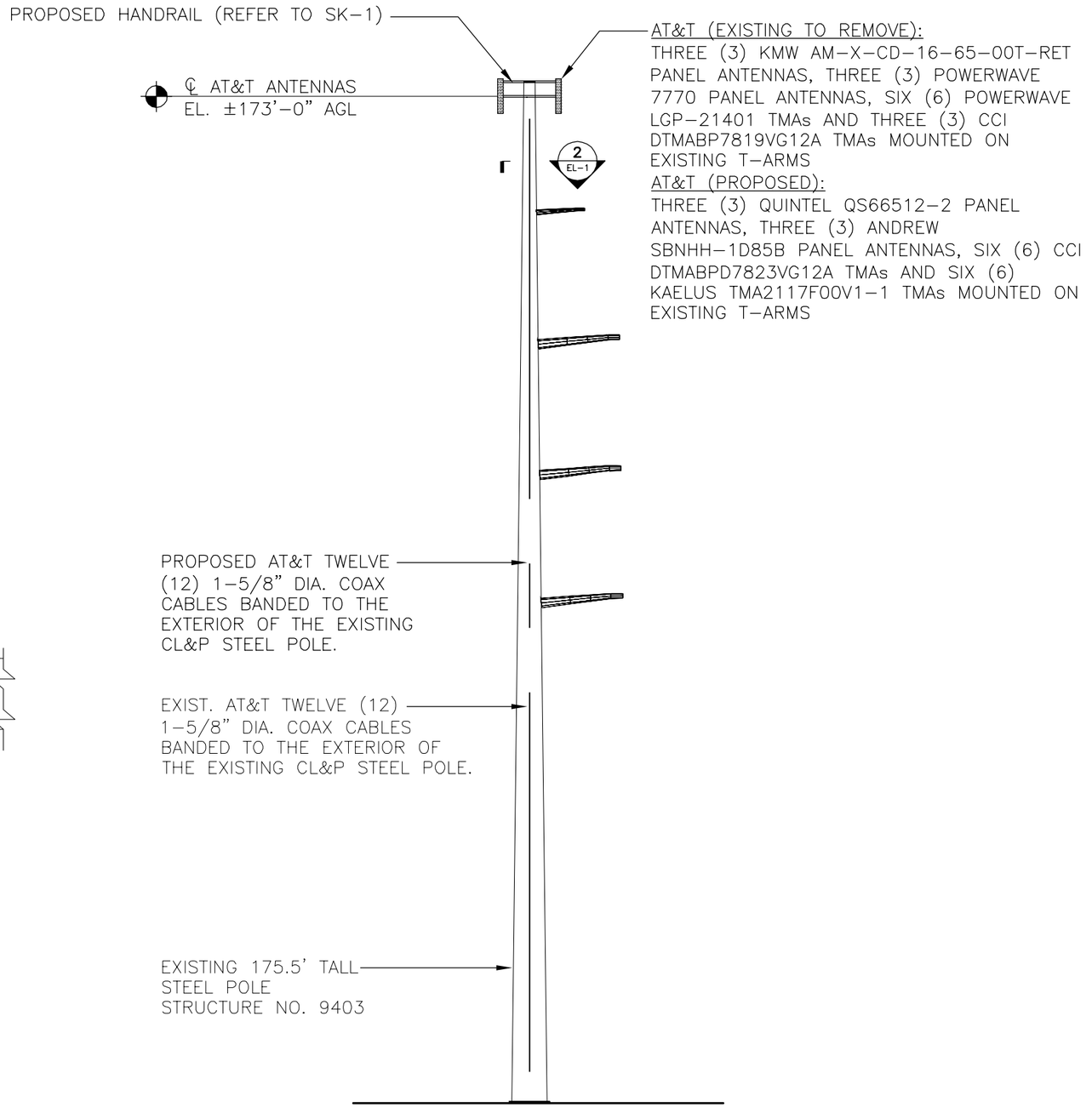


2 / EL-1 **COAX CABLE PLAN**

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



1 / EL-1 **TOWER ELEVATION**

SCALE: NOT TO SCALE

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	1/29/19	TJL	CAG	ISSUED FOR CONSTRUCTION
0	10/30/18	TJL	CAG	ISSUED FOR REVIEW

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STRUCTURE 9403

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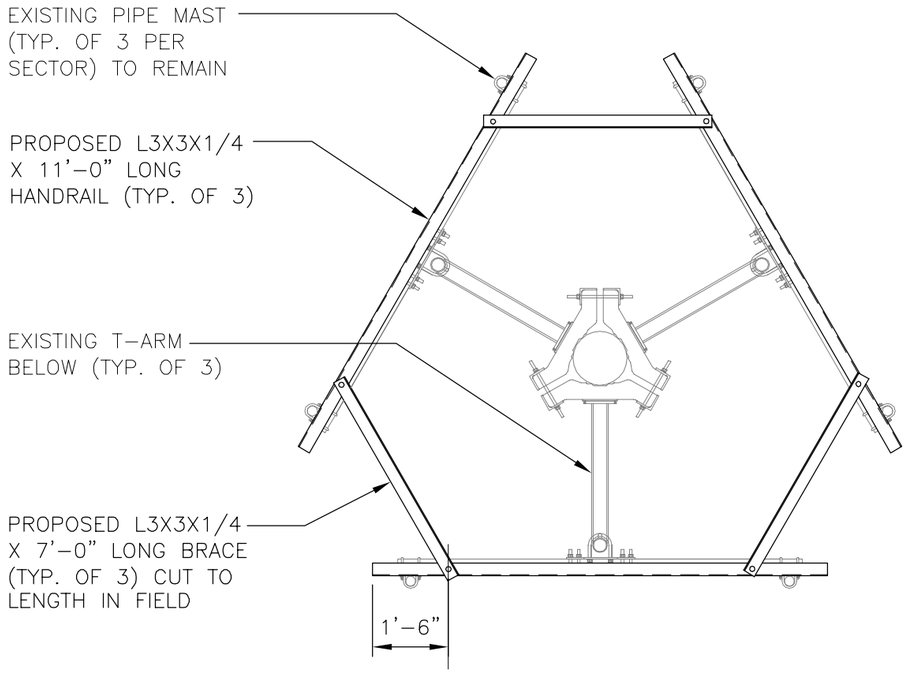
SCALE:	AS SHOWN
JOB NO.	18015.00

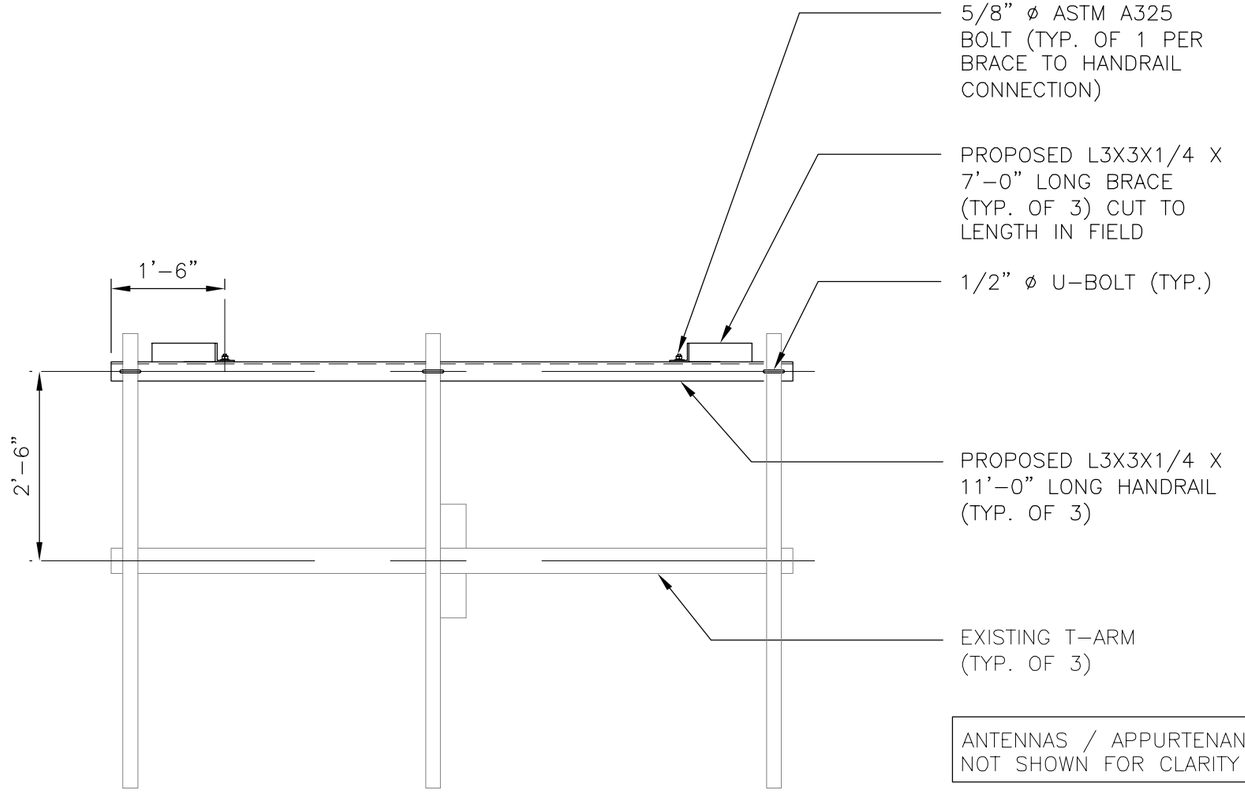
TOWER / MAST ELEVATION AND FEEDLINE PLANS

SHEET NO.
EL-1
Sheet No. 1 of 2



1 SK-1 **MOUNT MOD PLAN**

SCALE: NOT TO SCALE



ANTENNAS / APPURTENANCES NOT SHOWN FOR CLARITY

2 SK-1 **MOUNT MOD ELEVATION**

SCALE: NOT TO SCALE

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	1/29/19	TJL	CAG	ISSUED FOR CONSTRUCTION
0	10/30/18	TJL	CAG	ISSUED FOR REVIEW

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DATE:	10/30/18
SCALE:	AS SHOWN
JOB NO.	18015.00

MOUNT MODIFICATION

SHEET NO.
SK-1
Sheet No. 2 of 2

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

Location: Meriden, CT

Rev. 3: 12/11/18

Prepared by: T.J.L Checked by: C.F.C.
Job No. 18015.00

Basic Components

Heavy Wind Pressure =	p := 4.00	psf	(User Input NESC 2012 Figure 250-1 & Table 250-1)
Basic Windspeed =	V := 110	mph	(User Input NESC 2012 Figure 250-2(e))
Radial Ice Thickness =	Ir := 0.50	in	(User Input)
Radial Ice Density =	Id := 57	pcf	(User Input)

Factors for Extreme Wind Calculation

Elevation of Top of Tower Above Grade =	TME := 175.5	ft	(User Input)
Multiplier Gust Response Factor =	m := 1.25		(User Input - Only for NESC Extreme wind case)
NESC Factor =	kv := 1.43		(User Input from NESC 2012 Table 250-3 equation)
Importance Factor =	I := 1.0		(User Input from NESC 2012 Section 250.C.2)
Velocity Pressure Coefficient =	$Kz := 2.01 \cdot \left(\frac{TME}{900}\right)^{\frac{2}{9.5}} = 1.425$		(NESC 2012 Table 250-2)
Exposure Factor =	$Es := 0.346 \left[\frac{33}{(0.67 \cdot TME)}\right]^{\frac{1}{7}} = 0.289$		(NESC 2012 Table 250-3)
Response Term =	$Bs := \frac{1}{\left(1 + 0.375 \cdot \frac{TME}{220}\right)} = 0.77$		(NESC 2012 Table 250-3)
Gust Response Factor =	$Grf := \frac{\left[1 + \left(2.7 \cdot Es \cdot Bs^{\frac{1}{2}}\right)\right]}{kv^2} = 0.823$		(NESC 2012 Table 250-3)
Wind Pressure =	$qz := 0.00256 \cdot Kz \cdot V^2 \cdot Grf \cdot I = 36.3$	psf	(NESC 2012 Section 250.C.2)

NESC Extreme Ice w/ Wind Components

Heavy Wind Pressure =	$p_{ex} := 6.4$	psf	(User Input NESC 2012 Figure 250-3 & Table 250-4)
Radial Ice Thickness =	$Ir_{ex} := 0.75$	in	(User Input NESC 2012 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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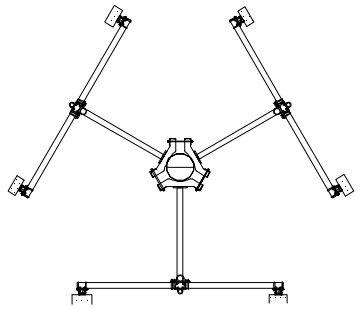
Subject:	Load Analysis of AT&T Equipment on Structure #9403
Location:	Meriden, CT
Rev. 3: 12/11/18	Prepared by: T.J.L Checked by: C.F.C. Job No. 18015.00

Development of Wind & Ice Load on Antennas

Proposed Antenna Data: (AT&T)

Antenna Model =	Quintel QS66512-2		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 72$	in	(User Input)
Antenna Width =	$W_{ant} := 12$	in	(User Input)
Antenna Thickness =	$T_{ant} := 9.6$	in	(User Input)
Antenna Weight =	$WT_{ant} := 111$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 3$		(User Input)



Gravity Load (without ice)

Weight of All Antennas = $Wt_{ant1} := WT_{ant} \cdot N_{ant} = 333$ lbs

Gravity Load (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 8294$ cu in

Volume of Ice on Each Antenna = $V_{ice} := \left(L_{ant} + 2 \cdot Ir\right)\left(W_{ant} + 2 \cdot Ir\right)\left(T_{ant} + 2 \cdot Ir\right) - V_{ant} = 1765$ cu in

Weight of Ice on Each Antenna = $W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 58$ lbs

Weight of Ice on All Antennas = $Wt_{ice.ant1} := W_{ICEant} \cdot N_{ant} = 175$ lbs

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each Antenna = $V_{ice.ex} := \left(L_{ant} + 2 \cdot Ir_{ex}\right)\left(W_{ant} + 2 \cdot Ir_{ex}\right)\left(T_{ant} + 2 \cdot Ir_{ex}\right) - V_{ant} = 2720$ cu in

Weight of Extreme Ice on Each Antenna = $W_{ICE.exant} := \frac{V_{ice.ex}}{1728} \cdot Id = 90$ lbs

Weight of Extreme Ice on All Antennas = $Wt_{ice.ex.ant1} := W_{ICE.exant} \cdot N_{ant} = 269$ lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice = $SA_{ICEant} := \frac{\left(L_{ant} + 2 \cdot Ir\right) \cdot \left(W_{ant} + 2 \cdot Ir\right)}{144} = 6.6$ sf

Antenna Projected Surface Area w/ Ice = $A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 19.8$ sf

Total Antenna Wind Force w/ Ice = $Fi_{ant1} := p \cdot Cd_F \cdot A_{ICEant} = 127$ lbs

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna = $SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 6$ sf

Antenna Projected Surface Area = $A_{ant} := SA_{ant} \cdot N_{ant} = 18$ sf

Total Antenna Wind Force = $F_{ant1} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 1308$ 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 = $SA_{ICE.exant} := \frac{\left(L_{ant} + 2 \cdot Ir_{ex}\right) \cdot \left(W_{ant} + 2 \cdot Ir_{ex}\right)}{144} = 6.9$ sf

Antenna Projected Surface Area w/ Extreme Ice = $A_{ICE.exant} := SA_{ICE.exant} \cdot N_{ant} = 20.7$ sf

Total Antenna Wind Force w/ Extreme Ice = $Fi_{ex.ant1} := p_{ex} \cdot Cd_F \cdot A_{ICE.exant} \cdot m = 265$ lbs

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

Location: Meriden, CT

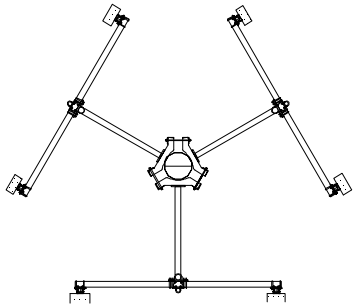
Rev. 3: 12/11/18

Prepared by: T.J.L Checked by: C.F.C.
Job No. 18015.00

Development of Wind & Ice Load on Antennas

Existing Antenna Data: (AT&T)

Antenna Model =	Andrew SBNHH-1D85B		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 72.9$	in	(User Input)
Antenna Width =	$W_{ant} := 11.9$	in	(User Input)
Antenna Thickness =	$T_{ant} := 7.1$	in	(User Input)
Antenna Weight =	$WT_{ant} := 45$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 3$		(User Input)



Gravity Load (without ice)

Weight of All Antennas = $Wt_{ant2} := WT_{ant} \cdot N_{ant} = 135$ lbs

Gravity Load (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 6159$ cu in

Volume of Ice on Each Antenna = $V_{ice} := \left(L_{ant} + 2 \cdot Ir\right)\left(W_{ant} + 2 \cdot Ir\right)\left(T_{ant} + 2 \cdot Ir\right) - V_{ant} = 1562$ cu in

Weight of Ice on Each Antenna = $W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 52$ lbs

Weight of Ice on All Antennas = $Wt_{ice.ant2} := W_{ICEant} \cdot N_{ant} = 155$ lbs

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each Antenna = $V_{ice.ex} := \left(L_{ant} + 2 \cdot Ir_{ex}\right)\left(W_{ant} + 2 \cdot Ir_{ex}\right)\left(T_{ant} + 2 \cdot Ir_{ex}\right) - V_{ant} = 2415$ cu in

Weight of Extreme Ice on Each Antenna = $W_{ICE.exant} := \frac{V_{ice.ex}}{1728} \cdot Id = 80$ lbs

Weight of Extreme Ice on All Antennas = $Wt_{ice.ex.ant2} := W_{ICE.exant} \cdot N_{ant} = 239$ lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice = $SA_{ICEant} := \frac{\left(L_{ant} + 2 \cdot Ir\right) \cdot \left(W_{ant} + 2 \cdot Ir\right)}{144} = 6.6$ sf

Antenna Projected Surface Area w/ Ice = $A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 19.9$ sf

Total Antenna Wind Force w/ Ice = $Fi_{ant2} := p \cdot Cd_F \cdot A_{ICEant} = 127$ lbs

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 6$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 18.1$	sf
Total Antenna Wind Force =	$F_{ant2} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 1313$	lbs

Wind Load (NESC Extreme Ice w/ Wind)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Extreme Ice =	$SA_{ICE.exant} := \frac{(L_{ant} + 2 \cdot Ir_{ex}) \cdot (W_{ant} + 2 \cdot Ir_{ex})}{144} = 6.9$	sf
Antenna Projected Surface Area w/ Extreme Ice =	$A_{ICE.exant} := SA_{ICE.exant} \cdot N_{ant} = 20.8$	sf
Total Antenna Wind Force w/ Extreme Ice =	$Fi_{ex.ant2} := p_{ex} \cdot Cd_F \cdot A_{ICE.exant} \cdot m = 266$	lbs

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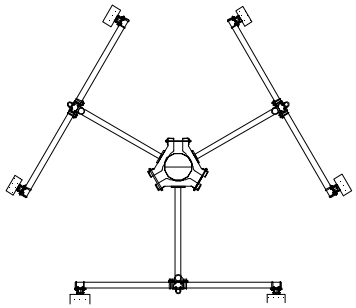
Subject:	Load Analysis of AT&T Equipment on Structure #9403
Location:	Meriden, CT
Rev. 3: 12/11/18	Prepared by: T.J.L Checked by: C.F.C. Job No. 18015.00

Development of Wind & Ice Load on TMA's

Proposed TMA Data: (AT&T)

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



Gravity Load (without ice)

Weight of All TMA's = $Wt_{TMA1} := WT_{TMA} \cdot N_{TMA} = 108$ lbs

Gravity Load (ice only)

Volume of Each TMA = $V_{TMA} := L_{TMA} \cdot W_{TMA} \cdot T_{TMA} = 421$ cu in

Volume of Ice on Each TMA = $V_{ice} := \left(L_{TMA} + 2 \cdot Ir\right)\left(W_{TMA} + 2 \cdot Ir\right)\left(T_{TMA} + 2 \cdot Ir\right) - V_{TMA} = 211$ cu in

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

Weight of Ice on All TMA's = $Wt_{ice.TMA1} := W_{ICETMA} \cdot N_{TMA} = 42$ lbs

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each TMA = $V_{ice.ex} := \left(L_{TMA} + 2 \cdot Ir_{ex}\right)\left(W_{TMA} + 2 \cdot Ir_{ex}\right)\left(T_{TMA} + 2 \cdot Ir_{ex}\right) - V_{TMA} = 336$ cu in

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

Weight of Extreme Ice on All TMA's = $Wt_{ice.ex.TMA1} := W_{ICE.exTMA} \cdot N_{TMA} = 67$ lbs

Wind Load (NESC Heavy)

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

Surface Area for One TMA w/ Ice = $SA_{ICETMA} := \frac{\left(L_{TMA} + 2 \cdot Ir\right) \cdot \left(W_{TMA} + 2 \cdot Ir\right)}{144} = 0.8$ sf

TMA Projected Surface Area w/ Ice = $A_{ICETMA} := SA_{ICETMA} \cdot N_{TMA} = 5$ sf

Total TMA Wind Force w/ Ice = $Fi_{TMA1} := p \cdot Cd_F \cdot A_{ICETMA} = 32$ lbs

Wind Load (NESC Extreme)

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

Surface Area for One TMA = $SA_{TMA} := \frac{L_{TMA} \cdot W_{TMA}}{144} = 0.7$ sf

TMA Projected Surface Area = $A_{TMA} := SA_{TMA} \cdot N_{TMA} = 4.2$ sf

Total TMA Wind Force = $F_{TMA1} := qz \cdot Cd_F \cdot A_{TMA} \cdot m = 303$ lbs

Wind Load (NESC Extreme Ice w/ Wind)

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

Surface Area for One TMA w/ Extreme Ice = $SA_{ICE.exTMA} := \frac{(L_{TMA} + 2 \cdot Ir_{ex}) \cdot (W_{TMA} + 2 \cdot Ir_{ex})}{144} = 0.9$ sf

TMA Projected Surface Area w/ Extreme Ice = $A_{ICE.exTMA} := SA_{ICE.exTMA} \cdot N_{TMA} = 5.5$ sf

Total TMA Wind Force w/ Extreme Ice = $Fi_{ex.TMA1} := p_{ex} \cdot Cd_F \cdot A_{ICE.exTMA} \cdot m = 71$ lbs

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

Location: Meriden, CT

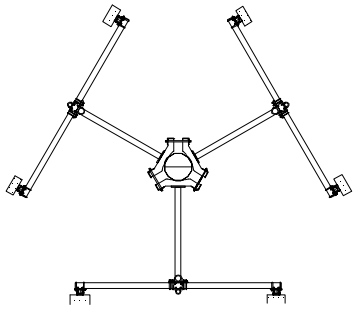
Rev. 3: 12/11/18

Prepared by: T.J.L Checked by: C.F.C.
Job No. 18015.00

Development of Wind & Ice Load on TMA's

Existing TMA Data: (AT&T)

TMA Model =	CCI DTMABPD7823VG12A		
TMA Shape =	Flat		(User Input)
TMA Height =	$L_{TMA} := 14.25$	in	(User Input)
TMA Width =	$W_{TMA} := 11.1$	in	(User Input)
TMA Thickness =	$T_{TMA} := 4.11$	in	(User Input)
TMA Weight =	$WT_{TMA} := 23$	lbs	(User Input)
Number of TMA's =	$N_{TMA} := 6$		(User Input)



Gravity Load (without ice)

Weight of All TMA's = $Wt_{TMA2} := WT_{TMA} \cdot N_{TMA} = 138$ lbs

Gravity Load (ice only)

Volume of Each TMA = $V_{TMA} := L_{TMA} \cdot W_{TMA} \cdot T_{TMA} = 650$ cu in

Volume of Ice on Each TMA = $V_{ice} := \left(L_{TMA} + 2 \cdot Ir\right)\left(W_{TMA} + 2 \cdot Ir\right)\left(T_{TMA} + 2 \cdot Ir\right) - V_{TMA} = 293$ cu in

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

Weight of Ice on All TMA's = $Wt_{ice.TMA2} := W_{ICETMA} \cdot N_{TMA} = 58$ lbs

Gravity Load (Extreme ice only)

Volume of Extreme Ice on Each TMA = $V_{ice.ex} := \left(L_{TMA} + 2 \cdot Ir_{ex}\right)\left(W_{TMA} + 2 \cdot Ir_{ex}\right)\left(T_{TMA} + 2 \cdot Ir_{ex}\right) - V_{TMA} = 463$ cu in

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

Weight of Extreme Ice on All TMA's = $Wt_{ice.ex.TMA2} := W_{ICE.exTMA} \cdot N_{TMA} = 92$ lbs

Wind Load (NESC Heavy)

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

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

TMA Projected Surface Area w/ Ice = $A_{ICETMA} := SA_{ICETMA} \cdot N_{TMA} = 7.7$ sf

Total TMA Wind Force w/ Ice = $Fi_{TMA2} := p \cdot Cd_F \cdot A_{ICETMA} = 49$ lbs

Wind Load (NESC Extreme)

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

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

TMA Projected Surface Area = $A_{TMA} := SA_{TMA} \cdot N_{TMA} = 6.6$ sf

Total TMA Wind Force = $F_{TMA2} := qz \cdot Cd_F \cdot A_{TMA} \cdot m = 479$ lbs

Wind Load (NESC Extreme Ice w/ Wind)

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

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

TMA Projected Surface Area w/ Extreme Ice = $A_{ICE.exTMA} := SA_{ICE.exTMA} \cdot N_{TMA} = 8.3$ sf

Total TMA Wind Force w/ Extreme Ice = $Fi_{ex.TMA2} := p_{ex} \cdot Cd_F \cdot A_{ICE.exTMA} \cdot m = 106$ lbs

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

Location: Meriden, CT

Rev. 3: 12/11/18

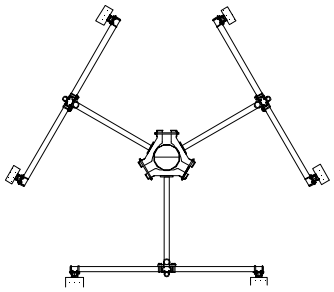
Prepared by: T.J.L Checked by: C.F.C.
Job No. 18015.00

Development of Wind & Ice Load on Antenna Mounts

Mount Data: (AT&T)

Mount Type: Valmont 10'-6" T-Arm Co-Location Kit w/Handrail

Mount Shape = Flat



Mount Projected Surface Area =	$CdAa := 23$	sf	(User Input)
Mount Projected Surface Area w/ Ice =	$CdAa_{ice} := 26$	sf	(User Input)
Mount Projected Surface Area w/ Extreme Ice =	$CdAa_{ice.ex} := 32$	sf	(User Input)
Mount Weight =	$WT_{mnt} := 1500$	lbs	(User Input)
Mount Weight w/ Ice =	$WT_{mnt.ice} := 1850$	lbs	(User Input)
Mount Weight w/ Extreme Ice =	$WT_{mnt.ice.ex} := 2300$	lbs	(User Input)

Gravity Loads (without ice)

Weight of All Mounts = $Wt_{mnt1} := WT_{mnt} = 1500$ lbs

Gravity Load (ice only)

Weight of Ice on All Mounts = $Wt_{ice.mnt1} := WT_{mnt.ice} - WT_{mnt} = 350$ lbs

Gravity Load (Extreme ice only)

Weight of Extreme Ice on All Mounts = $Wt_{ice.ex.mnt1} := WT_{mnt.ice.ex} - WT_{mnt} = 800$ lbs

Wind Load (NESC Heavy)

Total Mount Wind Force w/ Ice = $Fi_{mnt1} := p \cdot CdAa_{ice} = 104$ lbs

Wind Load (NESC Extreme)

Total Mount Wind Force = $F_{mnt1} := qz \cdot CdAa \cdot m = 1045$ lbs

Wind Load (NESC Extreme Ice w/ Wind)

Total Mount Wind Force w/ Extreme Ice = $Fi_{ex.mnt1} := p_{ex} \cdot CdAa_{ice.ex} \cdot m = 256$ lbs

Total Equipment Loads:

AT&T @ 173-ft AGL

NESC Heavy Wind Vertical =

$$\left(Wt_{ant1} + Wt_{ice.ant1} + Wt_{ant2} + Wt_{ice.ant2} + Wt_{TMA1} + Wt_{ice.TMA1} + Wt_{TMA2} + Wt_{ice.TMA2} + Wt_{mnt1} + Wt_{ice.mnt1}\right)\cdot 1.5 = 4489 \text{ lbs}$$

NESC Heavy Wind Trasnsverse =

$$\left(Fi_{ant1} + Fi_{ant2} + Fi_{TMA1} + Fi_{TMA2} + Fi_{mnt1}\right)\cdot 2.5 = 1098 \text{ lbs}$$

NESC Extreme Wind Vertical =

$$\left(Wt_{ant1} + Wt_{ant2} + Wt_{TMA1} + Wt_{TMA2} + Wt_{mnt1}\right) = 2214 \text{ lbs}$$

NESC Extreme Wind Trasnsverse =

$$\left(F_{ant1} + F_{ant2} + F_{TMA1} + F_{TMA2} + F_{mnt1}\right) = 4447 \text{ lbs}$$

NESC Extreme Ice w/ Wind Vertical =

$$\left(Wt_{ant1} + Wt_{ice.ex.ant1} + Wt_{ant2} + Wt_{ice.ex.ant2} + Wt_{TMA1} + Wt_{ice.ex.TMA1} + Wt_{TMA2} + Wt_{ice.ex.TMA2} + Wt_{mnt1} + Wt_{ice.ex.mnt1}\right) = 3680 \text{ lbs}$$

NESC Extreme Ice w/ Wind Trasnsverse =

$$\left(Fi_{ex.ant1} + Fi_{ex.ant2} + Fi_{ex.TMA1} + Fi_{ex.TMA2} + Fi_{ex.mnt1}\right) = 963 \text{ lbs}$$

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Subject:	Coax Cable on Pole #9403
Location:	Meriden, CT
Rev. 3: 12/11/18	Prepared by: T.J.L Checked by: C.F.C. Job No. 18015.00

Coax Cable on Pole

Heavy Wind Pressure =	$p := 4.00 \cdot psf$		(User Input NESC 2012 Figure 250-1 & Table 250-1)
Basic Windspeed =	$V := 110$	mph	(User Input NESC 2012 Figure 250-2(e))
Radial Ice Thickness =	$Ir := 0.50 \cdot in$		(User Input)
Radial Ice Density =	$Id := 57 \cdot pcf$		(User Input)

Factors for Extreme Wind Calculation

Elevation of Top of Tower Above Grade =	$TME := 175.5$	ft	(User Input)
Multiplier Gust Response Factor =	$m := 1.25$		(User Input - Only for NESC Extreme wind case)
NESC Factor =	$kv := 1.43$		(User Input from NESC 2012 Table 250-3 equation)
Importance Factor =	$I := 1.0$		(User Input from NESC 2012 Section 250.C.2)
Velocity Pressure Coefficient =	$Kz := 2.01 \cdot \left(\frac{TME}{900}\right)^{\frac{2}{9.5}} = 1.425$		(NESC 2012 Table 250-2)
Exposure Factor =	$Es := 0.346 \left[\frac{33}{(0.67 \cdot TME)}\right]^{\frac{1}{7}} = 0.289$		(NESC 2012 Table 250-3)
Response Term =	$Bs := \frac{1}{\left(1 + 0.375 \cdot \frac{TME}{220}\right)} = 0.77$		(NESC 2012 Table 250-3)
Gust Response Factor =	$Grf := \frac{\left[1 + \left(2.7 \cdot Es \cdot Bs^{\frac{1}{2}}\right)\right]}{kv^2} = 0.823$		(NESC 2012 Table 250-3)
Wind Pressure =	$qz := 0.00256 \cdot Kz \cdot V^2 \cdot Grf \cdot I = 36.3$	psf	(NESC 2012 Section 250.C.1

NESC Extreme Ice w/ Wind Components

Heavy Wind Pressure =	$p_{ex} := 6.4psf$	(User Input NESC 2012 Figure 250-3 & Table 250-4)
Radial Ice Thickness =	$Ir_{ex} := 0.75 \cdot in$	(User Input NESC 2012 Figure 250-3)
Coaxial Cable Span =	$Coax_{Span} := 10 \cdot ft$	*(User Input - Typ)*
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 =	$NP_{coax} := 4$	*(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)*

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Subject:	Coax Cable on Pole #9403
Location:	Meriden, CT
Rev. 3: 12/11/18	Prepared by: T.J.L Checked by: C.F.C. Job No. 18015.00

Wind Area without Ice = $A := \left(NP_{coax} \cdot D_{coax}\right) = 7.92 \cdot in$

Wind Area with Ice = $A_{ice} := \left(NP_{coax} \cdot D_{coax} + 2 \cdot Ir\right) = 8.92 \cdot in$

Wind Area with Extreme Ice = $A_{ice.ex} := \left(NP_{coax} \cdot D_{coax} + 2 \cdot Ir_{ex}\right) = 9.42 \cdot in$

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

Weight of Ice on All Coax Cables = $W_{ice} := Ai_{coax} \cdot Id \cdot N_{coax} = 37.008 \cdot plf$

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 = $W_{ice.ex} := Ai_{coax.ex} \cdot Id \cdot N_{coax} = 61.108 \cdot plf$

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 =

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

$Heavy_{Vert} = 930\,lb$ $Heavy_{Trans} = 119\,lb$

Extreme Wind Vertical Load =

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

Extreme Wind Transverse Load =

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

$Extreme\_Wind_{Vert} = 250\,lb$ $Extreme\_Wind_{Trans} = 384\,lb$

Extreme Ice w/ Wind Vertical Load =

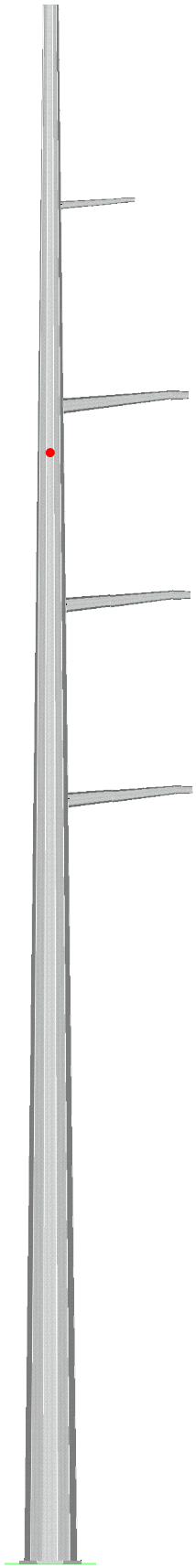
$$Extreme\_Ice_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax} + W_{ice.ex}\right) \cdot Coax_{Span} \cdot OF_{EIV}\right]}$$

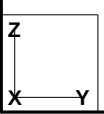
Extreme Ice w/ Wind Transverse Load =

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

$Extreme\_Ice_{Vert} = 861\,lb$ $Extreme\_Ice_{Trans} = 80\,lb$

Centek Engineering Inc, Project: "cl&p structure #9403"
PLS-POLE Version 12.50, 2:02:55 PM Tuesday, October 30, 2018
Undeformed geometry displayed





Project Name : 18015.00 - Meriden, CT
Project Notes: Structure # 9403 / AT&T CT5279
Project File : J:\Jobs\1801500.WI\04_Structural\Backup Documentation\Rev (3)\Calcs\PLS-Pole\cl&p structure #9403.pol
Date run : 2:26:22 PM Tuesday, December 11, 2018
by : PLS-POLE Version 12.50
Licensed to : Centek Engineering Inc

Successfully performed nonlinear analysis

The model has 0 warnings.

Loads from file: j:\jobs\1801500.wi\04_structural\backup documentation\rev (3)\calcs\pls-pole\cl&p #9403.lca

*** Analysis Results:

Maximum element usage is 50.95% for Steel Pole "9403" in load case "NESC Extreme"
Maximum insulator usage is 13.69% for Clamp "Clamp2" in load case "NESC Heavy"

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Bending Moment (ft-k)	Vert. Moment (ft-k)	Found. Usage %
NESC Heavy	9403:g	-0.61	-40.06	-124.23	40.07	4624.80	-58.63	4625.18	5.04	0.00
NESC Extreme	9403:g	-0.39	-66.29	-71.20	66.29	6851.46	-43.05	6851.60	5.96	0.00
NESC Extreme Ice w/ Wind	9403:g	-0.38	-30.56	-95.58	30.56	3656.38	-38.35	3656.58	4.06	0.00

Summary of Tip Deflections For All Load Cases:

Note: postive 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	9403:t	0.57	52.86	-0.93	52.87	0.02	-2.48	-0.01
NESC Extreme	9403:t	0.42	75.00	-1.80	75.02	0.02	-3.65	-0.01
NESC Extreme Ice w/ Wind	9403:t	0.38	42.86	-0.62	42.87	0.02	-2.03	-0.01

Tubes Summary:

Pole Label	Tube Num.	Weight (lbs)	Load Case	Maximum Usage %	Resultant Moment (ft-k)
9403	1	2227	NESC Extreme	17.86	188.39
9403	2	3689	NESC Extreme	31.38	632.83
9403	3	4663	NESC Extreme	44.73	1533.16
9403	4	5445	NESC Extreme	47.23	2324.78
9403	5	6858	NESC Extreme	50.95	3576.01
9403	6	8717	NESC Extreme	48.36	4453.15
9403	7	10219	NESC Extreme	48.17	5880.45
9403	8	7100	NESC Extreme	49.45	6851.60

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

Summary of Steel Pole Usages:

Steel Pole Label	Maximum Usage %	Load Case	Segment Number	Weight (lbs)
9403	50.95	NESC Extreme	36	51849.3

Summary of Tubular Davit Usages:

Tubular Davit Label	Maximum Usage %	Load Case	Segment Number	Weight (lbs)
Davit1	14.25	NESC Extreme Ice w/ Wind	1	163.2
Davit2	28.64	NESC Heavy	1	653.2
Davit3	28.79	NESC Heavy	1	653.2
Davit4	28.97	NESC Heavy	1	653.2

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
NESC Heavy	37.58	9403	Steel Pole
NESC Extreme	50.95	9403	Steel Pole
NESC Extreme Ice w/ Wind	30.34	9403	Steel Pole

Summary of Steel Pole Usages by Load Case:

Load Case	Maximum Usage %	Steel Pole Label	Segment Number
NESC Heavy	37.58	9403	36
NESC Extreme	50.95	9403	36
NESC Extreme Ice w/ Wind	30.34	9403	36

Summary of Base Plate Usages by Load Case:

Load Case	Pole Label	Bend Line #	Length (in)	Vertical Load (kips)	X Moment (ft-k)	Y Moment (ft-k)	Bending Stress (ksi)	Bolt Moment Sum (ft-k)	# Bolts Acting On Bend Line	Max Bolt Load For Bend Line (kips)	Minimum Plate Thickness (in)	Usage %
NESC Heavy	9403	11	30.657	121.297	4624.804	-58.631	15.452	74.943	6	80.423	1.876	30.90
NESC Extreme	9403	11	30.657	68.269	6851.460	-43.056	22.135	107.356	6	115.919	2.246	44.27
NESC Extreme Ice w/ Wind	9403	11	30.657	92.653	3656.382	-38.348	12.182	59.085	6	63.469	1.666	24.36

Summary of Tubular Davit Usages by Load Case:

Load Case	Maximum Usage %	Tubular Davit Label	Segment Number
NESC Heavy	28.97	Davit4	1
NESC Extreme	14.21	Davit4	1
NESC Extreme Ice w/ Wind	26.82	Davit4	1

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load Case	Weight (lbs)
Clamp1	Clamp	3.28	NESC Heavy	0.0
Clamp2	Clamp	13.69	NESC Heavy	0.0
Clamp3	Clamp	13.69	NESC Heavy	0.0
Clamp4	Clamp	13.68	NESC Heavy	0.0
Clamp5	Clamp	1.17	NESC Heavy	0.0
Clamp6	Clamp	1.17	NESC Heavy	0.0
Clamp7	Clamp	1.17	NESC Heavy	0.0
Clamp8	Clamp	1.17	NESC Heavy	0.0
Clamp9	Clamp	1.17	NESC Heavy	0.0
Clamp10	Clamp	1.17	NESC Heavy	0.0
Clamp11	Clamp	1.17	NESC Heavy	0.0
Clamp12	Clamp	1.17	NESC Heavy	0.0
Clamp13	Clamp	1.17	NESC Heavy	0.0
Clamp14	Clamp	1.17	NESC Heavy	0.0
Clamp15	Clamp	1.17	NESC Heavy	0.0
Clamp16	Clamp	1.17	NESC Heavy	0.0
Clamp17	Clamp	1.17	NESC Heavy	0.0
Clamp18	Clamp	1.17	NESC Heavy	0.0
Clamp19	Clamp	1.17	NESC Heavy	0.0
Clamp20	Clamp	1.17	NESC Heavy	0.0
Clamp21	Clamp	1.17	NESC Heavy	0.0
Clamp22	Clamp	6.21	NESC Extreme	0.0

*** Weight of structure (lbs):
Weight of Tubular Davit Arms: 2122.8
Weight of Steel Poles: 51849.3
Total: 53972.1

*** End of Report

```
************************************************************************
*                                                                      *
*                              PLS-POLE                                *
*                   POLE AND FRAME ANALYSIS AND DESIGN                 *
*               Copyright Power Line Systems, Inc. 1999-2011           *
*                                                                      *
************************************************************************

Project Name : 18015.00 - Meriden, CT
Project Notes: Structure # 9403 / AT&T CT5279
Project File : J:\Jobs\1801500.WI\04_Structural\Backup Documentation\Rev (3)\Calcs\PLS-Pole\cl&p structure #9403.pol
Date run     : 2:26:21 PM Tuesday, December 11, 2018
by           : PLS-POLE Version 12.50
Licensed to  : Centek Engineering Inc

Successfully performed nonlinear analysis

The model has 0 warnings.
```

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


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

Steel Pole Properties:

Steel Pole Property	Stock Length Number	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 Ultimate

Label	Length (ft)	Length (ft)		(in)	(in)	Coef. (in/ft)		Override (ksi)	Override (lbs/ft^3)	Base	Type	Tip (ft)	Trans. Load (kips)	Long. Load (kips)
CL&P9403	9403	175.50	0	Yes	12F	23	72.03	0	1.6	8 tubes	0	0	Calculated	0.000	0.0000	0.0000

Steel Tubes Properties:

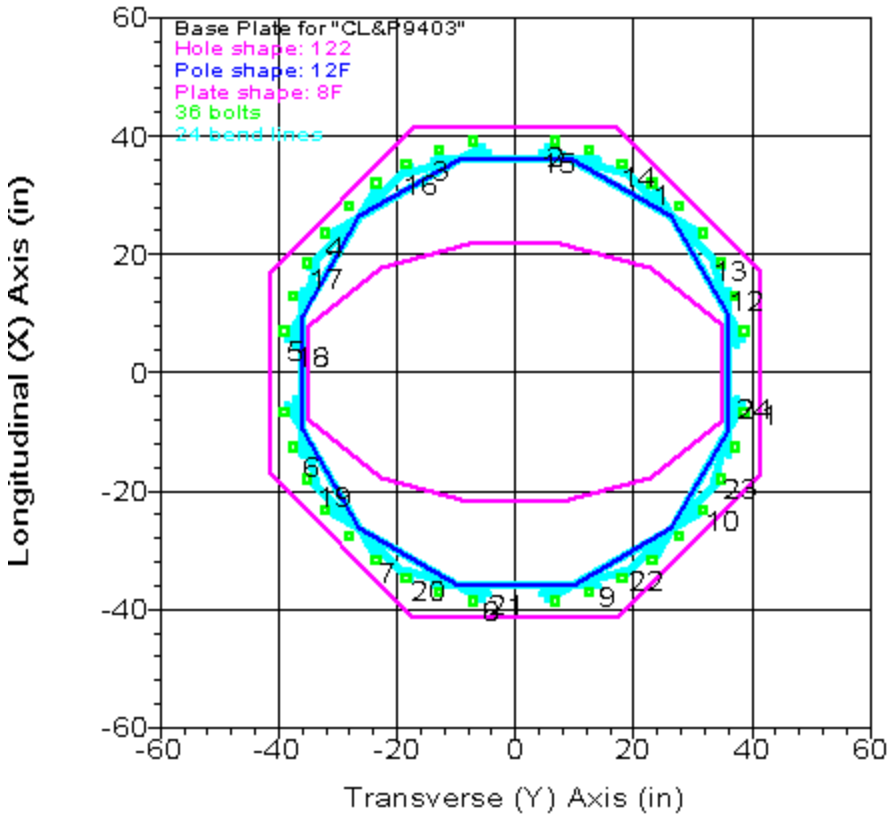
Pole Property	Tube No.	Length (ft)	Thickness (in)	Lap Length (ft)	Lap Factor	Lap Gap (in)	Yield Stress (ksi)	Moment Cap. Override (ft-k)	Tube Weight (lbs)	Center of Gravity (ft)	Calculated Taper (in/ft)	Tube Top Diameter (in)	Tube Bot. Diameter (in)	1.5x Lap Length (ft)	Actual Overlap (ft)
CL&P9403	1	30	0.25	0.000	0.000	0.000	65.000	0.000	2227	15.81	0.29220	23.00	31.77	3.908	0.000
CL&P9403	2	30	0.3125	5.167	0.000	0.000	65.000	0.000	3689	15.61	0.29220	31.89	40.66	5.004	5.167
CL&P9403	3	27	0.375	0.000	0.000	0.000	65.000	0.000	4663	13.92	0.29220	38.52	46.41	5.708	0.000
CL&P9403	4	23	0.4375	6.750	0.000	0.000	65.000	0.000	5445	11.76	0.29220	46.54	53.26	6.548	6.750
CL&P9403	5	23.5	0.5	0.000	0.000	0.000	65.000	0.000	6858	12.00	0.29220	50.41	57.28	7.035	0.000
CL&P9403	6	23.5	0.5625	8.083	0.000	0.000	65.000	0.000	8717	11.97	0.29220	57.40	64.27	7.893	8.083
CL&P9403	7	23.5	0.625	0.000	0.000	0.000	65.000	0.000	10219	11.96	0.29220	60.78	67.65	8.300	0.000
CL&P9403	8	15	0.625	0.000	0.000	0.000	65.000	0.000	7100	7.58	0.29220	67.65	72.03	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&P9403	83.000	8F	3.375	2932	0.000	70.000	122	490.00	50.000	2.250	79.000	36	111580.82	111580.82

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

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



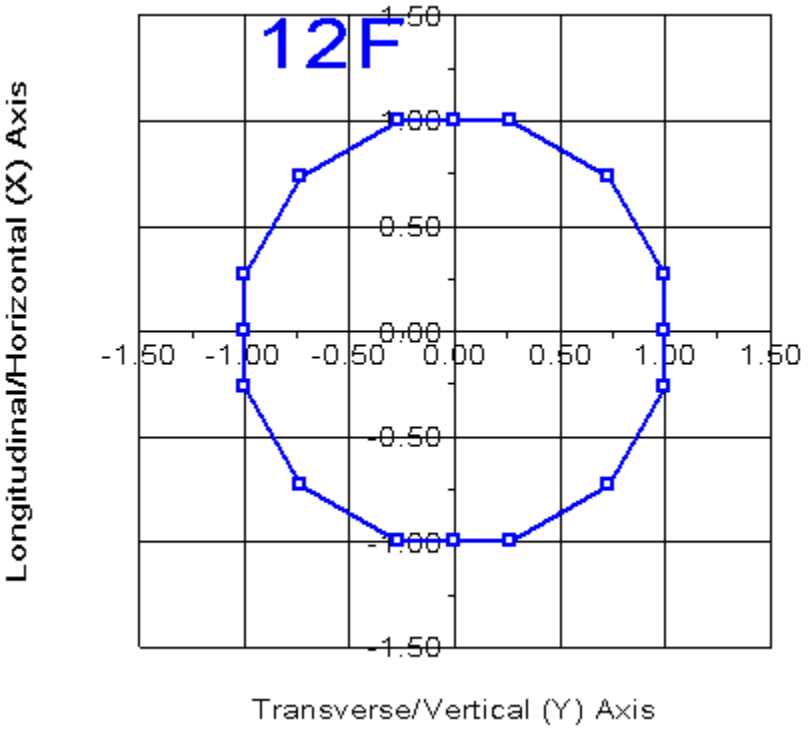
Steel Pole Connectivity:

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

Relative Attachment Labels for Steel Pole "9403":

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

9403:WVGD2	0.00	15.00
9403:WVGD3	0.00	25.00
9403:WVGD4	0.00	35.00
9403:WVGD5	0.00	45.00
9403:WVGD6	0.00	55.00
9403:WVGD7	0.00	65.00
9403:WVGD8	0.00	75.00
9403:WVGD9	0.00	85.00
9403:WVGD10	0.00	95.00
9403:WVGD11	0.00	105.00
9403:WVGD12	0.00	115.00
9403:WVGD13	0.00	125.00
9403:WVGD14	0.00	135.00
9403:WVGD15	0.00	145.00
9403:WVGD16	0.00	155.00
9403:WVGD17	0.00	165.00
9403:AT&T	0.00	173.00



Pole Steel Properties:

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

Element Label	Joint Label	Joint Position	Rel. Dist.	Outer Diam.	Area	T-Moment Inertia	L-Moment Inertia	D/t	W/t Max.	Fy	Fa Min.	T-Moment Capacity	L-Moment Capacity

				(ft)	(in)	(in^2)	(in^4)	(in^4)			(ksi)	(ksi)	(ft-k)	(ft-k)
9403	9403:t	9403:t	Ori	0.00	23.00	18.29	1211.58	1211.58	0.00	22.0	65.00	65.00	570.67	570.67
9403	9403:AT&T	9403:AT&T	End	2.50	23.73	18.87	1332.06	1332.06	0.00	22.8	65.00	65.00	608.11	608.11
9403	9403:AT&T	9403:AT&T	Ori	2.50	23.73	18.87	1332.06	1332.06	0.00	22.8	65.00	65.00	608.11	608.11
9403	#9403:0	Tube 1	End	6.50	24.90	19.81	1541.04	1541.04	0.00	24.0	65.00	65.00	670.48	670.48
9403	#9403:0	Tube 1	Ori	6.50	24.90	19.81	1541.04	1541.04	0.00	24.0	65.00	65.00	670.48	670.48
9403	9403:WVGD17	9403:WVGD17	End	10.50	26.07	20.75	1770.79	1770.79	0.00	25.3	65.00	65.00	735.90	735.90
9403	9403:WVGD17	9403:WVGD17	Ori	10.50	26.07	20.75	1770.79	1770.79	0.00	25.3	65.00	65.00	735.90	735.90
9403	#9403:1	Tube 1	End	15.50	27.53	21.93	2088.73	2088.73	0.00	26.8	65.00	65.00	821.96	821.96
9403	#9403:1	Tube 1	Ori	15.50	27.53	21.93	2088.73	2088.73	0.00	26.8	65.00	65.00	821.96	821.96
9403	9403:WVGD16	9403:WVGD16	End	20.50	28.99	23.10	2442.60	2442.60	0.00	28.4	65.00	65.00	912.78	912.78
9403	9403:WVGD16	9403:WVGD16	Ori	20.50	28.99	23.10	2442.60	2442.60	0.00	28.4	65.00	65.00	912.78	912.78
9403	9403:Arm1	9403:Arm1	End	22.50	29.57	23.57	2594.65	2594.65	0.00	29.0	65.00	65.00	950.43	950.43
9403	9403:Arm1	9403:Arm1	Ori	22.50	29.57	23.57	2594.65	2594.65	0.00	29.0	65.00	65.00	950.44	950.44
9403	#9403:2	Tube 1	End	26.25	30.67	24.45	2896.50	2896.50	0.00	30.2	65.00	64.65	1017.65	1017.65
9403	#9403:2	Tube 1	Ori	26.25	30.67	24.45	2896.50	2896.50	0.00	30.2	65.00	64.65	1017.65	1017.65
9403	#9403:3	SpliceT	End	30.00	31.77	25.33	3220.89	3220.89	0.00	31.4	65.00	63.50	1073.14	1073.14
9403	#9403:3	SpliceT	Ori	30.00	31.89	31.73	4050.26	4050.26	0.00	24.7	65.00	65.00	1375.86	1375.86
9403	9403:WVGD15	9403:WVGD15	End	30.50	32.04	31.88	4106.73	4106.73	0.00	24.8	65.00	65.00	1388.69	1388.69
9403	9403:WVGD15	9403:WVGD15	Ori	30.50	32.04	31.88	4106.73	4106.73	0.00	24.8	65.00	65.00	1388.69	1388.69
9403	#9403:4	Tube 2	End	35.50	33.50	33.35	4700.60	4700.60	0.00	26.0	65.00	65.00	1520.18	1520.18
9403	#9403:4	Tube 2	Ori	35.50	33.50	33.35	4700.60	4700.60	0.00	26.0	65.00	65.00	1520.18	1520.18
9403	9403:WVGD14	9403:WVGD14	End	40.50	34.96	34.81	5349.13	5349.13	0.00	27.3	65.00	65.00	1657.61	1657.61
9403	9403:WVGD14	9403:WVGD14	Ori	40.50	34.96	34.81	5349.13	5349.13	0.00	27.3	65.00	65.00	1657.62	1657.62
9403	9403:Arm2	9403:Arm2	End	45.17	36.32	36.18	6006.35	6006.35	0.00	28.5	65.00	65.00	1791.35	1791.35
9403	9403:Arm2	9403:Arm2	Ori	45.17	36.32	36.18	6006.35	6006.35	0.00	28.5	65.00	65.00	1791.36	1791.36
9403	#9403:5	Tube 2	End	47.83	37.10	36.97	6404.46	6404.46	0.00	29.1	65.00	65.00	1870.00	1870.00
9403	#9403:5	Tube 2	Ori	47.83	37.10	36.97	6404.47	6404.47	0.00	29.1	65.00	65.00	1870.00	1870.00
9403	9403:WVGD13	9403:WVGD13	End	50.50	37.88	37.75	6819.79	6819.79	0.00	29.8	65.00	65.04	1951.47	1951.47
9403	9403:WVGD13	9403:WVGD13	Ori	50.50	37.88	37.75	6819.80	6819.80	0.00	29.8	65.00	65.04	1951.47	1951.47
9403	#9403:6	SpliceT	End	54.83	39.15	39.02	7532.77	7532.77	0.00	30.9	65.00	63.97	2051.65	2051.65
9403	#9403:6	SpliceT	Ori	54.83	39.15	39.02	7532.77	7532.77	0.00	30.9	65.00	63.97	2051.65	2051.65
9403	#9403:7	Tube 2	End	57.42	39.28	46.91	9086.72	9086.72	0.00	25.4	65.00	65.00	2506.27	2506.27
9403	#9403:7	Tube 2	Ori	57.42	39.28	46.91	9086.72	9086.72	0.00	25.4	65.00	65.00	2506.27	2506.27
9403	#9403:8	SpliceB	End	60.00	40.03	47.82	9626.00	9626.00	0.00	25.9	65.00	65.00	2604.95	2604.95
9403	#9403:8	SpliceB	Ori	60.00	40.03	47.82	9626.00	9626.00	0.00	25.9	65.00	65.00	2604.95	2604.95
9403	9403:WVGD12	9403:WVGD12	End	60.50	40.18	47.99	9732.78	9732.78	0.00	26.0	65.00	65.00	2624.27	2624.27
9403	9403:WVGD12	9403:WVGD12	Ori	60.50	40.18	47.99	9732.78	9732.78	0.00	26.0	65.00	65.00	2624.27	2624.27
9403	#9403:9	Tube 3	End	64.08	41.23	49.26	10521.57	10521.57	0.00	26.8	65.00	65.00	2764.87	2764.87
9403	#9403:9	Tube 3	Ori	64.08	41.23	49.26	10521.58	10521.58	0.00	26.8	65.00	65.00	2764.87	2764.87
9403	9403:Arm3	9403:Arm3	End	67.67	42.27	50.52	11351.88	11351.88	0.00	27.5	65.00	65.00	2909.13	2909.13
9403	9403:Arm3	9403:Arm3	Ori	67.67	42.27	50.52	11351.88	11351.88	0.00	27.5	65.00	65.00	2909.13	2909.13
9403	9403:WVGD11	9403:WVGD11	End	70.50	43.10	51.52	12037.34	12037.34	0.00	28.1	65.00	65.00	3025.61	3025.61
9403	9403:WVGD11	9403:WVGD11	Ori	70.50	43.10	51.52	12037.34	12037.34	0.00	28.1	65.00	65.00	3025.61	3025.61
9403	#9403:10	Tube 3	End	75.50	44.56	53.28	13314.85	13314.85	0.00	29.2	65.00	65.00	3236.99	3236.99
9403	#9403:10	Tube 3	Ori	75.50	44.56	53.28	13314.85	13314.85	0.00	29.2	65.00	65.00	3236.99	3236.99
9403	9403:WVGD10	9403:WVGD10	End	80.50	46.02	55.04	14679.69	14679.69	0.00	30.2	65.00	64.64	3436.49	3436.49
9403	9403:WVGD10	9403:WVGD10	Ori	80.50	46.02	55.04	14679.70	14679.70	0.00	30.2	65.00	64.64	3436.49	3436.49
9403	#9403:11	SpliceT	End	81.83	46.41	55.51	15058.67	15058.67	0.00	30.5	65.00	64.37	3480.87	3480.87
9403	#9403:11	SpliceT	Ori	81.83	46.54	64.85	17640.52	17640.52	0.00	25.8	65.00	65.00	4106.55	4106.55
9403	#9403:12	Tube 4	End	85.75	47.68	66.46	18987.79	18987.79	0.00	26.5	65.00	65.00	4314.04	4314.04
9403	#9403:12	Tube 4	Ori	85.75	47.68	66.46	18987.79	18987.79	0.00	26.5	65.00	65.00	4314.04	4314.04
9403	9403:Arm4	9403:Arm4	End	89.67	48.83	68.07	20401.98	20401.98	0.00	27.2	65.00	65.00	4526.65	4526.65
9403	9403:Arm4	9403:Arm4	Ori	89.67	48.83	68.07	20401.98	20401.98	0.00	27.2	65.00	65.00	4526.65	4526.65
9403	9403:WVGD9	9403:WVGD9	End	90.50	49.07	68.41	20710.27	20710.27	0.00	27.4	65.00	65.00	4572.34	4572.34
9403	9403:WVGD9	9403:WVGD9	Ori	90.50	49.07	68.41	20710.27	20710.27	0.00	27.4	65.00	65.00	4572.34	4572.34
9403	#9403:13	Tube 4	End	94.29	50.18	69.97	22158.08	22158.08	0.00	28.1	65.00	65.00	4783.97	4783.97
9403	#9403:13	Tube 4	Ori	94.29	50.18	69.97	22158.09	22158.09	0.00	28.1	65.00	65.00	4783.97	4783.97

9403	#9403:14	SpliceT End	98.08	51.28	71.53	23671.85	23671.85	0.00	28.7	65.00	65.00	5000.39	5000.39
9403	#9403:14	SpliceT Ori	98.08	51.28	71.53	23671.86	23671.86	0.00	28.7	65.00	65.00	5000.39	5000.39
9403	9403:WVGD8	9403:WVGD8 End	100.50	51.12	81.38	26686.73	26686.73	0.00	24.7	65.00	65.00	5655.85	5655.85
9403	9403:WVGD8	9403:WVGD8 Ori	100.50	51.12	81.38	26686.73	26686.73	0.00	24.7	65.00	65.00	5655.85	5655.85
9403	#9403:15	SpliceB End	104.83	52.38	83.41	28739.72	28739.72	0.00	25.4	65.00	65.00	5943.73	5943.73
9403	#9403:15	SpliceB Ori	104.83	52.38	83.41	28739.72	28739.72	0.00	25.4	65.00	65.00	5943.73	5943.73
9403	#9403:16	Tube 5 End	107.67	53.21	84.74	30137.62	30137.62	0.00	25.8	65.00	65.00	6135.85	6135.85
9403	#9403:16	Tube 5 Ori	107.67	53.21	84.74	30137.62	30137.62	0.00	25.8	65.00	65.00	6135.85	6135.85
9403	9403:WVGD7	9403:WVGD7 End	110.50	54.04	86.07	31580.13	31580.13	0.00	26.3	65.00	65.00	6331.03	6331.03
9403	9403:WVGD7	9403:WVGD7 Ori	110.50	54.04	86.07	31580.13	31580.13	0.00	26.3	65.00	65.00	6331.03	6331.03
9403	#9403:17	Tube 5 End	115.50	55.50	88.42	34236.54	34236.54	0.00	27.1	65.00	65.00	6682.89	6682.89
9403	#9403:17	Tube 5 Ori	115.50	55.50	88.42	34236.54	34236.54	0.00	27.1	65.00	65.00	6682.89	6682.89
9403	9403:WVGD6	9403:WVGD6 End	120.50	56.96	90.77	37037.89	37037.89	0.00	27.8	65.00	65.00	7044.27	7044.27
9403	9403:WVGD6	9403:WVGD6 Ori	120.50	56.96	90.77	37037.90	37037.90	0.00	27.8	65.00	65.00	7044.27	7044.27
9403	#9403:18	SpliceT End	121.58	57.28	91.28	37664.14	37664.14	0.00	28.0	65.00	65.00	7123.80	7123.80
9403	#9403:18	SpliceT Ori	121.58	57.40	102.80	42513.09	42513.09	0.00	24.7	65.00	65.00	8023.42	8023.42
9403	#9403:19	Tube 6 End	126.04	58.70	105.16	45503.66	45503.66	0.00	25.3	65.00	65.00	8397.24	8397.24
9403	#9403:19	Tube 6 Ori	126.04	58.70	105.16	45503.67	45503.67	0.00	25.3	65.00	65.00	8397.24	8397.24
9403	9403:WVGD5	9403:WVGD5 End	130.50	60.01	107.52	48631.30	48631.30	0.00	25.9	65.00	65.00	8779.58	8779.58
9403	9403:WVGD5	9403:WVGD5 Ori	130.50	60.01	107.52	48631.31	48631.31	0.00	25.9	65.00	65.00	8779.58	8779.58
9403	#9403:20	Tube 6 End	133.75	60.96	109.23	50999.31	50999.31	0.00	26.4	65.00	65.00	9063.64	9063.64
9403	#9403:20	Tube 6 Ori	133.75	60.96	109.23	50999.32	50999.32	0.00	26.4	65.00	65.00	9063.64	9063.64
9403	#9403:21	SpliceT End	137.00	61.91	110.95	53442.97	53442.97	0.00	26.8	65.00	65.00	9352.23	9352.23
9403	#9403:21	SpliceT Ori	137.00	61.91	110.95	53442.97	53442.97	0.00	26.8	65.00	65.00	9352.23	9352.23
9403	9403:WVGD4	9403:WVGD4 End	140.50	61.80	122.95	58904.96	58904.96	0.00	23.8	65.00	65.00	10325.11	10325.11
9403	9403:WVGD4	9403:WVGD4 Ori	140.50	61.80	122.95	58904.97	58904.97	0.00	23.8	65.00	65.00	10325.12	10325.12
9403	#9403:22	SpliceB End	145.08	63.14	125.64	62858.10	62858.10	0.00	24.4	65.00	65.00	10784.37	10784.37
9403	#9403:22	SpliceB Ori	145.08	63.14	125.64	62858.11	62858.11	0.00	24.4	65.00	65.00	10784.37	10784.37
9403	#9403:23	Tube 7 End	147.79	63.93	127.23	65275.47	65275.47	0.00	24.7	65.00	65.00	11060.48	11060.48
9403	#9403:23	Tube 7 Ori	147.79	63.93	127.23	65275.48	65275.48	0.00	24.7	65.00	65.00	11060.48	11060.48
9403	9403:WVGD3	9403:WVGD3 End	150.50	64.73	128.82	67754.04	67754.04	0.00	25.1	65.00	65.00	11340.08	11340.08
9403	9403:WVGD3	9403:WVGD3 Ori	150.50	64.73	128.82	67754.05	67754.05	0.00	25.1	65.00	65.00	11340.08	11340.08
9403	#9403:24	Tube 7 End	155.50	66.19	131.76	72492.92	72492.92	0.00	25.7	65.00	65.00	11865.40	11865.40
9403	#9403:24	Tube 7 Ori	155.50	66.19	131.76	72492.92	72492.92	0.00	25.7	65.00	65.00	11865.40	11865.40
9403	9403:WVGD2	9403:WVGD2 End	160.50	67.65	134.69	77447.77	77447.77	0.00	26.3	65.00	65.00	12402.62	12402.62
9403	9403:WVGD2	9403:WVGD2 Ori	160.50	67.65	134.69	77447.78	77447.78	0.00	26.3	65.00	65.00	12402.62	12402.62
9403	#9403:25	Tube 8 End	165.50	69.11	137.63	82623.41	82623.41	0.00	26.9	65.00	65.00	12951.74	12951.74
9403	#9403:25	Tube 8 Ori	165.50	69.11	137.63	82623.42	82623.42	0.00	26.9	65.00	65.00	12951.74	12951.74
9403	9403:WVGD1	9403:WVGD1 End	170.50	70.57	140.56	88024.65	88024.65	0.00	27.6	65.00	65.00	13512.75	13512.75
9403	9403:WVGD1	9403:WVGD1 Ori	170.50	70.57	140.56	88024.66	88024.66	0.00	27.6	65.00	65.00	13512.75	13512.75
9403	9403:g	9403:g End	175.50	72.03	143.50	93656.31	93656.31	0.00	28.2	65.00	65.00	14085.66	14085.66

Tubular Davit Properties:

Davit Steel 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 Type	Strength Vertical Capacity (lbs)	Tension Capacity (lbs)	Compres. Capacity (lbs)	Long. Capacity (lbs)	Yield Stress (ksi)	Weight Density Override (lbs/ft^3)
20700-B	20700-B	8T	0.25	9.5	5	0	1.3	29000	2 points Calculated	0	0	0	0	65	0
20700-C	20700-C	8T	0.3125	18	9	0	1.3	29000	2 points Calculated	0	0	0	0	65	0

Intermediate Joints for Davit Property "20700-B":

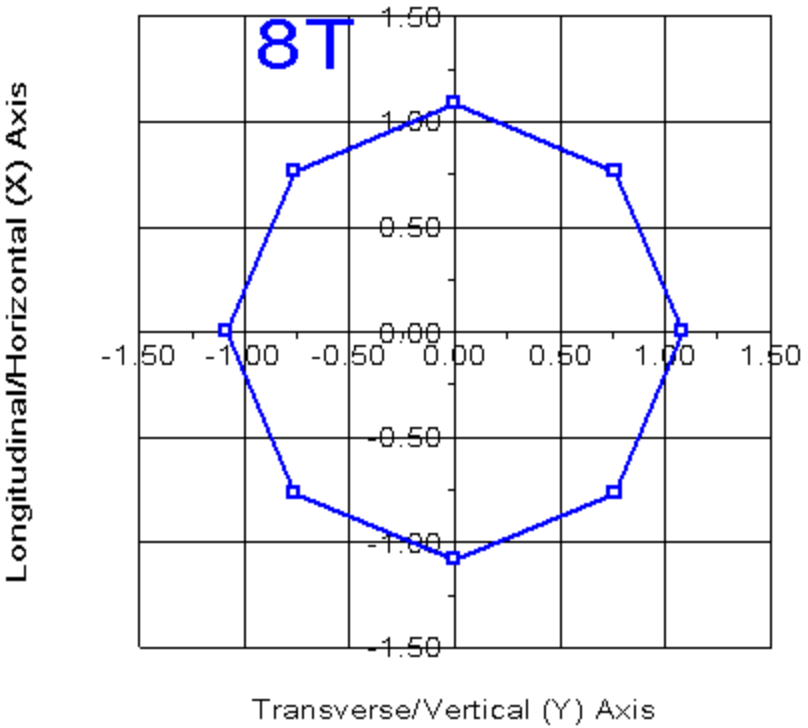
Joint Label	Horz. Offset (ft)	Vert. Offset (ft)
V	6.75	-0.5
End	8.25	-0.5

Intermediate Joints for Davit Property "20700-C":

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

Tubular Davit Arm Connectivity:

Davit Label	Attach Label	Davit Property Set	Azimuth (deg)
Davit1	9403:Arm1	20700-B	0
Davit2	9403:Arm2	20700-C	0
Davit3	9403:Arm3	20700-C	0
Davit4	9403:Arm4	20700-C	0



Tubular Davit Arm Steel Properties:

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

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

*** Insulator Data

Clamp Properties:

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

Clamp Insulator Connectivity:

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

*** Loads Data

Loads from file: j:\jobs\1801500.wi\04_structural\backup documentation\rev (3)\calcs\pls-pole\cl&p #9403.lca

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

Loading Method Parameters:

Structure Height Summary (used for calculating wind/ice adjust with height):
  Z of ground for wind height adjust   0.00 (ft) and structure Z coordinate that will be put on the centerline ground profile in PLS-CADD.
  Ground elevation shift   0.00 (ft)
  Z of ground with shift   0.00 (ft)
  Z of structure top (highest joint)   175.50 (ft)
  Structure height   175.50 (ft)
  Structure height above ground   175.50 (ft)

Vector Load Cases:

Load Case Description	Dead Load Factor	Wind Area Factor	SF for Steel Poles Tubular Arms and Towers	SF for Wood Poles	SF for Conc. Ult.	SF for Conc. First Crack	SF for Conc. Zero Tens.	SF for Guys and Cables	SF for Non Tubular Arms	SF for Braces	SF for Insuls.	SF For Found.	Point Loads	Wind/Ice Model	Trans. Wind Pressure (psf)	Longit. Wind Pressure (psf)	Ice Thick. (in)	Ice Density (lbs/ft^3)	Temperature (deg F)	Pole Deflection Check	Pole Deflection Limit % or (ft)
NESC Heavy	1.5000	2.5000	1.00000	0.6500	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	22 loads	Wind on All	4	0	0.000	0.000	0.0	No Limit	0
NESC Extreme	1.0000	1.0000	1.00000	0.6500	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	22 loads	NESC 2012	31	0	0.000	0.000	0.0	No Limit	0
NESC Extreme Ice w/ Wind	1.0000	1.0000	1.00000	0.6500	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	22 loads	Wind on All	6.4	0	0.000	0.000	0.0	No Limit	0

Point Loads for Load Case "NESC Heavy":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
Davit1:End	1180	2341	16	Shield Wire
Davit2:End	7674	7817	100	Conductor
Davit3:End	7674	7808	102	Conductor
Davit4:End	7674	7798	103	Conductor
9403:AT&T	4489	1098	0	Antennas
9403:WVGD1	930	119	0	Coax Cables
9403:WVGD2	930	119	0	Coax Cables
9403:WVGD3	930	119	0	Coax Cables
9403:WVGD4	930	119	0	Coax Cables
9403:WVGD5	930	119	0	Coax Cables
9403:WVGD6	930	119	0	Coax Cables
9403:WVGD7	930	119	0	Coax Cables
9403:WVGD8	930	119	0	Coax Cables
9403:WVGD9	930	119	0	Coax Cables

9403:WVGD10	930	119	0	Coax Cables
9403:WVGD11	930	119	0	Coax Cables
9403:WVGD12	930	119	0	Coax Cables
9403:WVGD13	930	119	0	Coax Cables
9403:WVGD14	930	119	0	Coax Cables
9403:WVGD15	930	119	0	Coax Cables
9403:WVGD16	930	119	0	Coax Cables
9403:WVGD17	930	119	0	Coax Cables

Point Loads for Load Case "NESC Extreme":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
Davit1:End	248	1803	12	Shield Wire
Davit2:End	3274	10077	123	Conductor
Davit3:End	3274	10071	125	Conductor
Davit4:End	3274	10063	127	Conductor
9403:AT&T	2214	4447	0	Antennas
9403:WVGD1	250	384	0	Coax Cables
9403:WVGD2	250	384	0	Coax Cables
9403:WVGD3	250	384	0	Coax Cables
9403:WVGD4	250	384	0	Coax Cables
9403:WVGD5	250	384	0	Coax Cables
9403:WVGD6	250	384	0	Coax Cables
9403:WVGD7	250	384	0	Coax Cables
9403:WVGD8	250	384	0	Coax Cables
9403:WVGD9	250	384	0	Coax Cables
9403:WVGD10	250	384	0	Coax Cables
9403:WVGD11	250	384	0	Coax Cables
9403:WVGD12	250	384	0	Coax Cables
9403:WVGD13	250	384	0	Coax Cables
9403:WVGD14	250	384	0	Coax Cables
9403:WVGD15	250	384	0	Coax Cables
9403:WVGD16	250	384	0	Coax Cables
9403:WVGD17	250	384	0	Coax Cables

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

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

Pole Label	Top Joint	Bottom Joint	Section Top Z (ft)	Section Bottom Z (ft)	Section Average Elevation (ft)	Outer Diameter (in)	Reynolds Number	Drag Coef.	Adjusted Wind Pressure (psf)	Adjusted Ice Thickness (in)	Pole Vert. Load (lbs)	Pole Wind Load (lbs)	Pole Ice Vertical Load (lbs)	Pole Ice Wind Load (lbs)	Tran. Wind Load (lbs)	Long. Wind Load (lbs)
9403	9403:t	9403:AT&T	175.50	173.00	174.25	23.365	2.02e+006	1.000	33.39	0.00	158.07	162.54	0.00	0.00	162.54	0.00
9403	9403:AT&T		173.00	169.00	171.00	24.315	2.1e+006	1.000	33.39	0.00	263.30	270.64	0.00	0.00	270.64	0.00
9403		9403:WVGD17	169.00	165.00	167.00	25.484	2.2e+006	1.000	33.39	0.00	276.09	283.65	0.00	0.00	283.65	0.00
9403	9403:WVGD17		165.00	160.00	162.50	26.799	2.32e+006	1.000	33.39	0.00	363.09	372.86	0.00	0.00	372.86	0.00
9403		9403:WVGD16	160.00	155.00	157.50	28.260	2.44e+006	1.000	33.39	0.00	383.08	393.18	0.00	0.00	393.18	0.00
9403	9403:WVGD16	9403:Arm1	155.00	153.00	154.00	29.282	2.53e+006	1.000	33.39	0.00	158.83	162.97	0.00	0.00	162.97	0.00
9403	9403:Arm1		153.00	149.25	151.13	30.122	2.61e+006	1.000	33.39	0.00	306.41	314.33	0.00	0.00	314.33	0.00
9403			149.25	145.50	147.38	31.218	2.7e+006	1.000	33.39	0.00	317.66	325.76	0.00	0.00	325.76	0.00
9403		9403:WVGD15	145.50	145.00	145.25	31.964	2.77e+006	1.000	33.39	0.00	54.10	44.47	0.00	0.00	44.47	0.00
9403	9403:WVGD15		145.00	140.00	142.50	32.768	2.83e+006	1.000	33.39	0.00	554.84	455.91	0.00	0.00	455.91	0.00
9403		9403:WVGD14	140.00	135.00	137.50	34.229	2.96e+006	1.000	33.39	0.00	579.82	476.23	0.00	0.00	476.23	0.00

9403	9403:WVGD14	9403:Arm2	135.00	130.33	132.67	35.641	3.08e+006	1.000	33.39	0.00	564.11	463.16	0.00	0.00	463.16	0.00
9403	9403:Arm2		130.33	127.67	129.00	36.713	3.18e+006	1.000	33.39	0.00	331.68	272.26	0.00	0.00	272.26	0.00
9403		9403:WVGD13	127.67	125.00	126.33	37.492	3.24e+006	1.000	33.39	0.00	338.78	278.03	0.00	0.00	278.03	0.00
9403	9403:WVGD13		125.00	120.67	122.83	38.514	3.33e+006	1.000	33.39	0.00	565.96	464.38	0.00	0.00	464.38	0.00
9403			120.67	118.08	119.38	39.212	3.39e+006	1.000	33.39	0.00	754.74	281.90	0.00	0.00	281.90	0.00
9403			118.08	115.50	116.79	39.655	3.43e+006	1.000	33.39	0.00	769.26	285.08	0.00	0.00	285.08	0.00
9403		9403:WVGD12	115.50	115.00	115.25	40.105	3.47e+006	1.000	33.39	0.00	81.51	55.80	0.00	0.00	55.80	0.00
9403	9403:WVGD12		115.00	111.42	113.21	40.702	3.52e+006	1.000	33.39	0.00	593.18	406.04	0.00	0.00	406.04	0.00
9403		9403:Arm3	111.42	107.83	109.62	41.749	3.61e+006	1.000	33.39	0.00	608.58	416.49	0.00	0.00	416.49	0.00
9403	9403:Arm3	9403:WVGD11	107.83	105.00	106.42	42.687	3.69e+006	1.000	33.39	0.00	491.30	336.15	0.00	0.00	336.15	0.00
9403	9403:WVGD11		105.00	100.00	102.50	43.831	3.79e+006	1.000	33.39	0.00	891.49	609.83	0.00	0.00	609.83	0.00
9403		9403:WVGD10	100.00	95.00	97.50	45.292	3.92e+006	1.000	33.39	0.00	921.46	630.16	0.00	0.00	630.16	0.00
9403	9403:WVGD10		95.00	93.67	94.33	46.217	4e+006	1.000	33.39	0.00	250.74	171.43	0.00	0.00	171.43	0.00
9403			93.67	89.75	91.71	47.109	4.08e+006	1.000	33.39	0.00	875.40	513.67	0.00	0.00	513.67	0.00
9403		9403:Arm4	89.75	85.83	87.79	48.254	4.17e+006	1.000	33.39	0.00	896.90	526.16	0.00	0.00	526.16	0.00
9403	9403:Arm4	9403:WVGD9	85.83	85.00	85.42	48.948	4.23e+006	1.000	33.39	0.00	192.73	113.05	0.00	0.00	113.05	0.00
9403	9403:WVGD9		85.00	81.21	83.10	49.623	4.29e+006	1.000	33.39	0.00	892.68	523.55	0.00	0.00	523.55	0.00
9403			81.21	77.42	79.31	50.731	4.39e+006	1.000	33.39	0.00	912.78	535.24	0.00	0.00	535.24	0.00
9403		9403:WVGD8	77.42	75.00	76.21	51.201	4.43e+006	1.000	33.39	0.00	1256.98	344.36	0.00	0.00	344.36	0.00
9403	9403:WVGD8		75.00	70.67	72.83	51.749	4.48e+006	1.000	33.39	0.00	2296.95	623.95	0.00	0.00	623.95	0.00
9403			70.67	67.83	69.25	52.796	4.57e+006	1.000	33.39	0.00	810.80	416.28	0.00	0.00	416.28	0.00
9403		9403:WVGD7	67.83	65.00	66.42	53.624	4.64e+006	1.000	33.39	0.00	823.48	422.81	0.00	0.00	422.81	0.00
9403	9403:WVGD7		65.00	60.00	62.50	54.769	4.74e+006	1.000	33.39	0.00	1484.42	762.01	0.00	0.00	762.01	0.00
9403		9403:WVGD6	60.00	55.00	57.50	56.230	4.86e+006	1.000	33.39	0.00	1524.38	782.34	0.00	0.00	782.34	0.00
9403	9403:WVGD6		55.00	53.92	54.46	57.118	4.94e+006	1.000	33.39	0.00	335.47	172.13	0.00	0.00	172.13	0.00
9403			53.92	49.46	51.69	58.053	5.02e+006	1.000	33.39	0.00	1577.52	720.23	0.00	0.00	720.23	0.00
9403		9403:WVGD5	49.46	45.00	47.23	59.356	5.14e+006	1.000	33.39	0.00	1613.27	736.40	0.00	0.00	736.40	0.00
9403	9403:WVGD5		45.00	41.75	43.38	60.482	5.23e+006	1.000	33.39	0.00	1198.51	546.98	0.00	0.00	546.98	0.00
9403			41.75	38.50	40.13	61.432	5.31e+006	1.000	33.39	0.00	1217.51	555.57	0.00	0.00	555.57	0.00
9403		9403:WVGD4	38.50	35.00	36.75	61.855	5.35e+006	1.000	33.39	0.00	2784.43	602.43	0.00	0.00	602.43	0.00
9403	9403:WVGD4		35.00	30.42	32.71	62.474	5.4e+006	1.000	33.39	0.00	3716.33	796.72	0.00	0.00	796.72	0.00
9403			30.42	27.71	29.06	63.539	5.5e+006	1.000	33.39	0.00	1165.51	478.88	0.00	0.00	478.88	0.00
9403		9403:WVGD3	27.71	25.00	26.35	64.331	5.57e+006	1.000	33.39	0.00	1179.92	484.85	0.00	0.00	484.85	0.00
9403	9403:WVGD3		25.00	20.00	22.50	65.457	5.66e+006	1.000	33.39	0.00	2216.69	910.72	0.00	0.00	910.72	0.00
9403		9403:WVGD2	20.00	15.00	17.50	66.918	5.79e+006	1.000	33.39	0.00	2266.64	931.05	0.00	0.00	931.05	0.00
9403	9403:WVGD2		15.00	10.00	12.50	68.379	5.92e+006	1.000	33.39	0.00	2316.60	951.37	0.00	0.00	951.37	0.00
9403		9403:WVGD1	10.00	5.00	7.50	69.840	6.04e+006	1.000	33.39	0.00	2366.55	971.70	0.00	0.00	971.70	0.00
9403	9403:WVGD1	9403:g	5.00	0.00	2.50	71.301	6.17e+006	1.000	33.39	0.00	2416.51	992.03	0.00	0.00	992.03	0.00

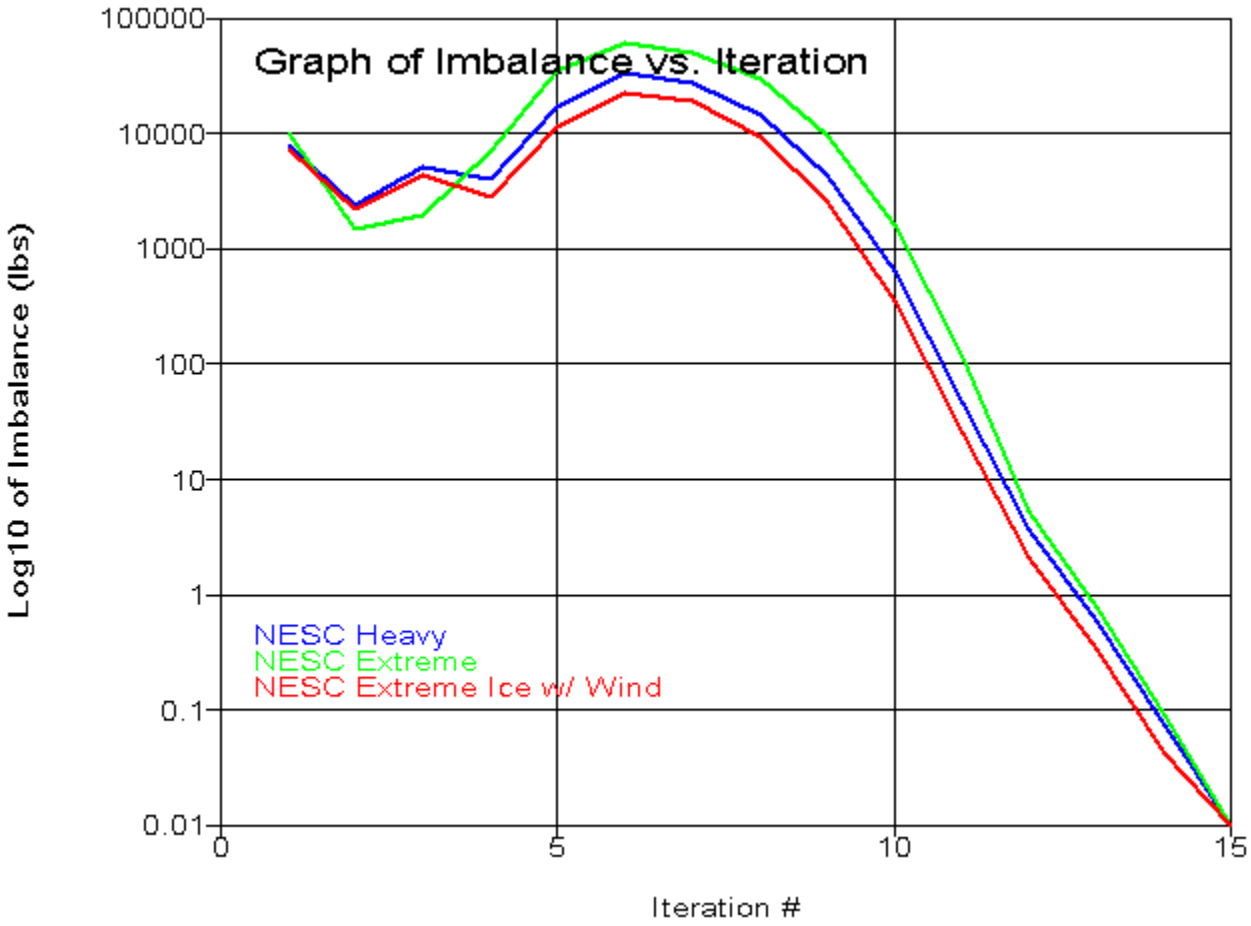
Point Loads for Load Case "NESC Extreme Ice w/ Wind":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
Davit1:End	1411	2049	14	Shield Wire
Davit2:End	7254	6351	81	Conductor
Davit3:End	7254	6345	82	Conductor
Davit4:End	7254	6337	83	Conductor
9403:AT&T	3680	963	0	Antennas
9403:WVGD1	861	80	0	Coax Cables
9403:WVGD2	861	80	0	Coax Cables
9403:WVGD3	861	80	0	Coax Cables
9403:WVGD4	861	80	0	Coax Cables
9403:WVGD5	861	80	0	Coax Cables
9403:WVGD6	861	80	0	Coax Cables
9403:WVGD7	861	80	0	Coax Cables
9403:WVGD8	861	80	0	Coax Cables
9403:WVGD9	861	80	0	Coax Cables

9403:WVGD10	861	80	0	Coax Cables
9403:WVGD11	861	80	0	Coax Cables
9403:WVGD12	861	80	0	Coax Cables
9403:WVGD13	861	80	0	Coax Cables
9403:WVGD14	861	80	0	Coax Cables
9403:WVGD15	861	80	0	Coax Cables
9403:WVGD16	861	80	0	Coax Cables
9403:WVGD17	861	80	0	Coax Cables

*** Analysis Results:

Maximum element usage is 50.95% for Steel Pole "9403" in load case "NESC Extreme"
Maximum insulator usage is 13.69% for Clamp "Clamp2" in load case "NESC Heavy"



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

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

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
9403:g	0	0	0	0.0000	0.0000	0.0000	0	0	0
9403:t	0.0476	4.405	-0.07743	-2.4826	0.0247	-0.0076	0.0476	4.405	175.4
9403:AT&T	0.04651	4.297	-0.07508	-2.4825	0.0247	-0.0076	0.04651	4.297	172.9

9403:WVGD17	0.04302	3.951	-0.06752	-2.4739	0.0247	-0.0076	0.04302	3.951	164.9
9403:WVGD16	0.03867	3.521	-0.05818	-2.4440	0.0245	-0.0076	0.03867	3.521	154.9
9403:Arm1	0.0378	3.436	-0.05634	-2.4361	0.0244	-0.0076	0.0378	3.436	152.9
9403:WVGD15	0.03436	3.1	-0.04914	-2.3824	0.0241	-0.0074	0.03436	3.1	145
9403:WVGD14	0.03015	2.69	-0.0406	-2.3110	0.0235	-0.0073	0.03015	2.69	135
9403:Arm2	0.02822	2.503	-0.03679	-2.2731	0.0232	-0.0073	0.02822	2.503	130.3
9403:WVGD13	0.02603	2.295	-0.03262	-2.1913	0.0227	-0.0068	0.02603	2.295	125
9403:WVGD12	0.0221	1.926	-0.0256	-2.0303	0.0215	-0.0060	0.0221	1.926	115
9403:Arm3	0.01943	1.679	-0.02118	-1.9155	0.0205	-0.0056	0.01943	1.679	107.8
9403:WVGD11	0.01842	1.586	-0.01956	-1.8593	0.0200	-0.0053	0.01842	1.586	105
9403:WVGD10	0.01502	1.279	-0.01456	-1.6515	0.0182	-0.0043	0.01502	1.279	94.99
9403:Arm4	0.0122	1.028	-0.0109	-1.4787	0.0166	-0.0037	0.0122	1.028	85.82
9403:WVGD9	0.01196	1.007	-0.01061	-1.4617	0.0164	-0.0036	0.01196	1.007	84.99
9403:WVGD8	0.009238	0.7694	-0.007489	-1.2548	0.0144	-0.0028	0.009238	0.7694	74.99
9403:WVGD7	0.006876	0.5671	-0.00516	-1.0584	0.0124	-0.0022	0.006876	0.5671	64.99
9403:WVGD6	0.00488	0.399	-0.003458	-0.8625	0.0103	-0.0017	0.00488	0.399	55
9403:WVGD5	0.003248	0.2635	-0.002273	-0.6888	0.0083	-0.0012	0.003248	0.2635	45
9403:WVGD4	0.001957	0.1576	-0.001444	-0.5226	0.0064	-0.0009	0.001957	0.1576	35
9403:WVGD3	0.0009973	0.07973	-0.000872	-0.3670	0.0045	-0.0006	0.0009973	0.07973	25
9403:WVGD2	0.0003599	0.02856	-0.0004635	-0.2164	0.0027	-0.0003	0.0003599	0.02856	15
9403:WVGD1	4.13e-005	0.00324	-0.0001461	-0.0709	0.0009	-0.0001	4.13e-005	0.00324	5
Davit1:O	0.03795	3.435	-0.1087	-2.4361	0.0244	-0.0076	0.03795	4.667	152.9
Davit1:V	0.03912	3.451	-0.4118	-2.6786	0.0244	-0.0106	0.03912	11.43	153.1
Davit1:End	0.03937	3.449	-0.4823	-2.7013	0.0244	-0.0109	0.03937	12.93	153
Davit2:O	0.02838	2.502	-0.09682	-2.2731	0.0232	-0.0073	0.02838	4.015	130.2
Davit2:V	0.03093	2.542	-0.6361	-2.8343	0.0234	-0.0141	0.03093	16.06	130.9
Davit2:End	0.03139	2.54	-0.736	-2.8713	0.0234	-0.0146	0.03139	18.05	130.8
Davit3:O	0.01958	1.678	-0.08006	-1.9155	0.0205	-0.0056	0.01958	3.44	107.7
Davit3:V	0.02177	1.715	-0.5445	-2.4801	0.0207	-0.0125	0.02177	15.48	108.5
Davit3:End	0.02219	1.713	-0.6321	-2.5173	0.0207	-0.0131	0.02219	17.47	108.4
Davit4:O	0.01232	1.028	-0.06341	-1.4787	0.0166	-0.0037	0.01232	3.062	85.77
Davit4:V	0.01411	1.058	-0.4366	-2.0472	0.0168	-0.0108	0.01411	15.09	86.56
Davit4:End	0.01448	1.057	-0.509	-2.0847	0.0168	-0.0113	0.01448	17.09	86.49

Joint Support Reactions for Load Case "NESC Heavy":

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	H-Shear Usage %	Z Force (kips)	Comp. Usage %	Uplift Usage %	Result. Force (kips)	Result. Usage %	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	H-Bend-M Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
9403:g	-0.61	0.0	-40.06	0.0	0.0	-124.23	0.0	0.0	130.53	0.0	4624.80	0.0	-58.6	0.0	0.0	5.04	0.0	0.0

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

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Trans. Mom. (Local Mx) (ft-k)	Long. Mom. (Local My) (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Tran. Shear (kips)	Long. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
9403	9403:t	Origin	0.00	52.86	0.57	-0.93	-0.00	-0.00	0.0	-0.12	0.04	-0.00	-0.01	0.00	0.00	0.00	0.01	0.0	5
9403	9403:AT&T	End	2.50	51.56	0.56	-0.90	0.11	-0.00	0.0	-0.12	0.04	-0.00	-0.01	0.01	0.00	0.00	0.02	0.0	2
9403	9403:AT&T	Origin	2.50	51.56	0.56	-0.90	0.11	-0.00	-0.0	-4.87	1.45	-0.01	-0.26	0.00	0.16	0.00	0.37	0.6	5
9403	Tube 1	End	6.50	49.48	0.54	-0.86	5.92	-0.03	-0.0	-4.87	1.45	-0.01	-0.25	0.57	0.04	0.00	0.82	1.3	2
9403	Tube 1	Origin	6.50	49.48	0.54	-0.86	5.92	-0.03	0.0	-5.28	1.60	-0.01	-0.27	0.57	0.04	0.00	0.84	1.3	2
9403	9403:WVGD17	End	10.50	47.41	0.52	-0.81	12.33	-0.06	0.0	-5.28	1.60	-0.01	-0.25	1.09	0.04	0.00	1.35	2.1	2
9403	9403:WVGD17	Origin	10.50	47.41	0.52	-0.81	12.33	-0.06	0.0	-6.68	1.94	-0.01	-0.32	1.09	0.05	0.00	1.41	2.2	2
9403	Tube 1	End	15.50	44.82	0.49	-0.75	22.02	-0.13	0.0	-6.68	1.94	-0.01	-0.30	1.74	0.05	0.00	2.05	3.2	2
9403	Tube 1	Origin	15.50	44.82	0.49	-0.75	22.02	-0.13	0.0	-7.24	2.14	-0.02	-0.33	1.74	0.05	0.00	2.08	3.2	2
9403	9403:WVGD16	End	20.50	42.26	0.46	-0.70	32.74	-0.23	0.0	-7.24	2.14	-0.02	-0.31	2.34	0.05	0.00	2.65	4.1	2

9403	9403:WVGD16	Origin	20.50	42.26	0.46	-0.70	32.74	-0.23	0.0	-8.57	2.45	-0.02	-0.37	2.34	0.06	0.00	2.71	4.2	2
9403	9403:Arm1	End	22.50	41.23	0.45	-0.68	37.64	-0.27	0.0	-8.57	2.45	-0.02	-0.36	2.58	0.05	0.00	2.94	4.5	2
9403	9403:Arm1	Origin	22.50	41.23	0.45	-0.68	50.24	-0.28	-0.2	-10.24	4.98	-0.04	-0.43	3.44	0.11	0.01	3.88	6.0	2
9403	Tube 1	End	26.25	39.33	0.43	-0.64	68.90	-0.44	-0.2	-10.24	4.98	-0.04	-0.42	4.38	0.11	0.01	4.81	7.4	2
9403	Tube 1	Origin	26.25	39.33	0.43	-0.64	68.90	-0.44	-0.2	-10.71	5.14	-0.05	-0.44	4.38	0.11	0.01	4.83	7.5	2
9403	SpliceT	End	30.00	37.44	0.41	-0.59	88.19	-0.62	-0.2	-10.71	5.14	-0.05	-0.42	5.23	0.11	0.00	5.65	8.9	2
9403	SpliceT	Origin	30.00	37.44	0.41	-0.59	88.19	-0.62	-0.2	-10.99	5.24	-0.05	-0.35	4.17	0.09	0.00	4.52	7.0	2
9403	9403:WVGD15	End	30.50	37.19	0.41	-0.59	90.81	-0.64	-0.2	-10.99	5.24	-0.05	-0.34	4.26	0.09	0.00	4.61	7.1	2
9403	9403:WVGD15	Origin	30.50	37.19	0.41	-0.59	90.81	-0.64	-0.2	-12.37	5.53	-0.05	-0.39	4.26	0.09	0.00	4.65	7.2	2
9403	Tube 2	End	35.50	34.72	0.39	-0.54	118.48	-0.90	-0.2	-12.37	5.53	-0.05	-0.37	5.08	0.09	0.00	5.45	8.4	2
9403	Tube 2	Origin	35.50	34.72	0.39	-0.54	118.48	-0.90	-0.2	-13.23	5.78	-0.06	-0.40	5.08	0.09	0.00	5.48	8.4	2
9403	9403:WVGD14	End	40.50	32.28	0.36	-0.49	147.40	-1.20	-0.2	-13.23	5.78	-0.06	-0.38	5.79	0.09	0.00	6.17	9.5	2
9403	9403:WVGD14	Origin	40.50	32.28	0.36	-0.49	147.40	-1.20	-0.2	-15.01	6.19	-0.07	-0.43	5.79	0.09	0.00	6.23	9.6	2
9403	9403:Arm2	End	45.17	30.03	0.34	-0.44	176.31	-1.50	-0.2	-15.01	6.19	-0.07	-0.41	6.41	0.09	0.00	6.83	10.5	2
9403	9403:Arm2	Origin	45.17	30.03	0.34	-0.44	306.97	-1.62	-1.7	-24.03	14.53	-0.17	-0.66	11.15	0.21	0.03	11.83	18.2	2
9403	Tube 2	End	47.83	28.77	0.33	-0.42	345.70	-2.08	-1.7	-24.03	14.53	-0.17	-0.65	12.04	0.21	0.03	12.69	19.5	2
9403	Tube 2	Origin	47.83	28.77	0.33	-0.42	345.70	-2.08	-1.7	-24.54	14.67	-0.18	-0.66	12.04	0.21	0.03	12.71	19.5	2
9403	9403:WVGD13	End	50.50	27.54	0.31	-0.39	384.79	-2.55	-1.7	-24.54	14.67	-0.18	-0.65	12.85	0.21	0.03	13.50	20.8	2
9403	9403:WVGD13	Origin	50.50	27.54	0.31	-0.39	384.79	-2.55	-1.7	-26.16	15.00	-0.18	-0.69	12.85	0.21	0.03	13.55	20.8	2
9403	SpliceT	End	54.83	25.58	0.29	-0.35	449.79	-3.34	-1.7	-26.16	15.00	-0.18	-0.67	14.05	0.20	0.03	14.73	23.0	2
9403	SpliceT	Origin	54.83	25.58	0.29	-0.35	449.79	-3.34	-1.7	-27.17	15.19	-0.19	-0.70	14.05	0.21	0.03	14.75	23.1	2
9403	Tube 2	End	57.42	24.44	0.28	-0.33	489.04	-3.82	-1.7	-27.17	15.19	-0.19	-0.58	12.71	0.17	0.02	13.29	20.5	2
9403	Tube 2	Origin	57.42	24.44	0.28	-0.33	489.04	-3.82	-1.7	-28.32	15.35	-0.19	-0.60	12.71	0.17	0.02	13.32	20.5	2
9403	SpliceB	End	60.00	23.33	0.27	-0.31	528.69	-4.31	-1.7	-28.32	15.35	-0.19	-0.59	13.22	0.17	0.02	13.82	21.3	2
9403	SpliceB	Origin	60.00	23.33	0.27	-0.31	528.69	-4.31	-1.7	-28.96	15.44	-0.19	-0.61	13.22	0.17	0.02	13.83	21.3	2
9403	9403:WVGD12	End	60.50	23.12	0.27	-0.31	536.40	-4.41	-1.7	-28.96	15.44	-0.19	-0.60	13.32	0.17	0.02	13.92	21.4	2
9403	9403:WVGD12	Origin	60.50	23.12	0.27	-0.31	536.40	-4.41	-1.7	-30.40	15.70	-0.20	-0.63	13.32	0.17	0.02	13.95	21.5	2
9403	Tube 3	End	64.08	21.61	0.25	-0.28	592.70	-5.11	-1.7	-30.40	15.70	-0.20	-0.62	13.97	0.17	0.02	14.59	22.4	2
9403	Tube 3	Origin	64.08	21.61	0.25	-0.28	592.70	-5.11	-1.7	-31.32	15.90	-0.20	-0.64	13.97	0.17	0.02	14.61	22.5	2
9403	9403:Arm3	End	67.67	20.15	0.23	-0.25	649.70	-5.84	-1.7	-31.32	15.90	-0.20	-0.62	14.55	0.17	0.02	15.17	23.3	2
9403	9403:Arm3	Origin	67.67	20.15	0.23	-0.25	783.16	-5.95	-3.4	-40.55	24.17	-0.31	-0.80	17.53	0.25	0.04	18.34	28.2	2
9403	9403:WVGD11	End	70.50	19.03	0.22	-0.23	851.55	-6.84	-3.4	-40.55	24.17	-0.31	-0.79	18.33	0.25	0.04	19.13	29.4	2
9403	9403:WVGD11	Origin	70.50	19.03	0.22	-0.23	851.55	-6.83	-3.4	-42.55	24.52	-0.32	-0.83	18.33	0.25	0.04	19.17	29.5	2
9403	Tube 3	End	75.50	17.13	0.20	-0.20	974.13	-8.43	-3.4	-42.55	24.52	-0.32	-0.80	19.61	0.24	0.04	20.41	31.4	2
9403	Tube 3	Origin	75.50	17.13	0.20	-0.20	974.13	-8.42	-3.4	-43.95	24.78	-0.32	-0.82	19.61	0.25	0.04	20.44	31.4	2
9403	9403:WVGD10	End	80.50	15.35	0.18	-0.17	1098.02	-10.05	-3.4	-43.95	24.78	-0.32	-0.80	20.71	0.24	0.03	21.51	33.3	2
9403	9403:WVGD10	Origin	80.50	15.35	0.18	-0.17	1098.02	-10.04	-3.4	-45.78	25.09	-0.33	-0.83	20.71	0.24	0.03	21.54	33.3	2
9403	SpliceT	End	81.83	14.89	0.18	-0.17	1131.46	-10.49	-3.4	-45.78	25.09	-0.33	-0.82	20.98	0.24	0.03	21.81	33.9	2
9403	SpliceT	Origin	81.83	14.89	0.18	-0.17	1131.46	-10.48	-3.4	-46.65	25.24	-0.33	-0.72	17.95	0.21	0.03	18.68	28.7	2
9403	Tube 4	End	85.75	13.58	0.16	-0.15	1230.35	-11.80	-3.4	-46.65	25.24	-0.33	-0.70	18.59	0.20	0.03	19.29	29.7	2
9403	Tube 4	Origin	85.75	13.58	0.16	-0.15	1230.35	-11.79	-3.4	-48.01	25.46	-0.34	-0.72	18.59	0.20	0.03	19.31	29.7	2
9403	9403:Arm4	End	89.67	12.34	0.15	-0.13	1330.11	-13.13	-3.4	-48.01	25.46	-0.34	-0.71	19.15	0.20	0.03	19.86	30.6	2
9403	9403:Arm4	Origin	89.67	12.34	0.15	-0.13	1466.77	-13.25	-5.0	-57.30	33.62	-0.45	-0.84	21.11	0.26	0.04	21.96	33.8	2
9403	9403:WVGD9	End	90.50	12.08	0.14	-0.13	1494.67	-13.63	-5.0	-57.30	33.62	-0.45	-0.84	21.30	0.26	0.04	22.14	34.1	2
9403	9403:WVGD9	Origin	90.50	12.08	0.14	-0.13	1494.67	-13.62	-5.0	-59.07	33.88	-0.45	-0.86	21.30	0.26	0.04	22.17	34.1	2
9403	Tube 4	End	94.29	10.95	0.13	-0.11	1623.14	-15.35	-5.0	-59.07	33.88	-0.45	-0.84	22.11	0.26	0.04	22.96	35.3	2
9403	Tube 4	Origin	94.29	10.95	0.13	-0.11	1623.14	-15.34	-5.0	-60.47	34.09	-0.46	-0.86	22.11	0.26	0.04	22.98	35.4	2
9403	SpliceT	End	98.08	9.88	0.12	-0.10	1752.37	-17.10	-5.0	-60.47	34.09	-0.46	-0.85	22.84	0.25	0.03	23.69	36.4	2
9403	SpliceT	Origin	98.08	9.88	0.12	-0.10	1752.37	-17.09	-5.0	-62.13	34.27	-0.47	-0.87	22.84	0.25	0.03	23.71	36.5	2
9403	9403:WVGD8	End	100.50	9.23	0.11	-0.09	1835.19	-18.22	-5.0	-62.13	34.27	-0.47	-0.76	21.15	0.22	0.03	21.92	33.7	2
9403	9403:WVGD8	Origin	100.50	9.23	0.11	-0.09	1835.19	-18.22	-5.0	-65.77	34.62	-0.47	-0.81	21.15	0.23	0.03	21.96	33.8	2
9403	SpliceB	End	104.83	8.13	0.10	-0.08	1985.20	-20.27	-5.0	-65.77	34.62	-0.47	-0.79	21.77	0.22	0.03	22.56	34.7	2
9403	SpliceB	Origin	104.83	8.13	0.10	-0.08	1985.20	-20.26	-5.0	-68.14	34.83	-0.48	-0.82	21.77	0.22	0.03	22.59	34.8	2
9403	Tube 5	End	107.67	7.45	0.09	-0.07	2083.90	-21.62	-5.0	-68.14	34.83	-0.48	-0.80	22.14	0.22	0.03	22.95	35.3	2
9403	Tube 5	Origin	107.67	7.45	0.09	-0.07	2083.90	-21.62	-5.0	-69.40	34.99	-0.48	-0.82	22.14	0.22	0.03	22.96	35.3	2
9403	9403:WVGD7	End	110.50	6.81	0.08	-0.06	2183.05	-22.99	-5.0	-69.40	34.99	-0.48	-0.81	22.48	0.22	0.03	23.29	35.8	2
9403	9403:WVGD7	Origin	110.50	6.81	0.08	-0.06	2183.05	-22.99	-5.0	-72.10	35.35	-0.49	-0.84	22.48	0.22	0.03	23.32	35.9	2
9403	Tube 5	End	115.50	5.75	0.07	-0.05	2359.79	-25.45	-5.0	-72.10	35.35	-0.49	-0.82	23.02	0.21	0.03	23.84	36.7	2
9403	Tube 5	Origin	115.50	5.75	0.07	-0.05	2359.79	-25.44	-5.0	-74.42	35.63	-0.50	-0.84	23.02	0.21	0.03	23.86	36.7	2

9403	9403:WVGD6	End	120.50	4.79	0.06	-0.04	2537.95	-27.94	-5.0	-74.42	35.63	-0.50	-0.82	23.49	0.21	0.02	24.31	37.4	2
9403	9403:WVGD6	Origin	120.50	4.79	0.06	-0.04	2537.95	-27.94	-5.0	-76.78	35.94	-0.50	-0.85	23.49	0.21	0.02	24.34	37.4	2
9403	SpliceT	End	121.58	4.59	0.06	-0.04	2576.87	-28.49	-5.0	-76.78	35.94	-0.50	-0.84	23.58	0.21	0.02	24.43	37.6	2
9403	SpliceT	Origin	121.58	4.59	0.06	-0.04	2576.87	-28.48	-5.0	-78.25	36.11	-0.51	-0.76	20.94	0.19	0.02	21.70	33.4	2
9403	Tube 6	End	126.04	3.84	0.05	-0.03	2737.84	-30.76	-5.0	-78.25	36.11	-0.51	-0.74	21.26	0.18	0.02	22.00	33.9	2
9403	Tube 6	Origin	126.04	3.84	0.05	-0.03	2737.84	-30.76	-5.0	-80.69	36.38	-0.52	-0.77	21.26	0.18	0.02	22.03	33.9	2
9403	9403:WVGD5	End	130.50	3.16	0.04	-0.03	2900.04	-33.08	-5.0	-80.69	36.38	-0.52	-0.75	21.54	0.18	0.02	22.29	34.3	2
9403	9403:WVGD5	Origin	130.50	3.16	0.04	-0.03	2900.04	-33.07	-5.0	-83.77	36.75	-0.53	-0.78	21.54	0.18	0.02	22.32	34.3	2
9403	Tube 6	End	133.75	2.71	0.03	-0.02	3019.47	-34.78	-5.0	-83.77	36.75	-0.53	-0.77	21.72	0.18	0.02	22.49	34.6	2
9403	Tube 6	Origin	133.75	2.71	0.03	-0.02	3019.47	-34.78	-5.0	-85.61	36.95	-0.53	-0.78	21.72	0.18	0.02	22.51	34.6	2
9403	SpliceT	End	137.00	2.30	0.03	-0.02	3139.56	-36.51	-5.0	-85.61	36.95	-0.53	-0.77	21.89	0.18	0.02	22.66	34.9	2
9403	SpliceT	Origin	137.00	2.30	0.03	-0.02	3139.56	-36.51	-5.0	-88.65	37.18	-0.54	-0.80	21.89	0.18	0.02	22.69	34.9	2
9403	9403:WVGD4	End	140.50	1.89	0.02	-0.02	3269.67	-38.40	-5.0	-88.65	37.18	-0.54	-0.72	20.65	0.16	0.02	21.37	32.9	2
9403	9403:WVGD4	Origin	140.50	1.89	0.02	-0.02	3269.67	-38.39	-5.0	-94.50	37.58	-0.55	-0.77	20.65	0.16	0.02	21.42	33.0	2
9403	SpliceB	End	145.08	1.42	0.02	-0.01	3441.90	-40.91	-5.0	-94.50	37.58	-0.55	-0.75	20.81	0.16	0.02	21.57	33.2	2
9403	SpliceB	Origin	145.08	1.42	0.02	-0.01	3441.90	-40.90	-5.0	-98.20	37.82	-0.55	-0.78	20.81	0.16	0.02	21.59	33.2	2
9403	Tube 7	End	147.79	1.18	0.01	-0.01	3544.33	-42.41	-5.0	-98.20	37.82	-0.55	-0.77	20.90	0.16	0.02	21.67	33.3	2
9403	Tube 7	Origin	147.79	1.18	0.01	-0.01	3544.33	-42.41	-5.0	-99.98	37.99	-0.56	-0.79	20.90	0.16	0.02	21.68	33.4	2
9403	9403:WVGD3	End	150.50	0.96	0.01	-0.01	3647.22	-43.93	-5.0	-99.98	37.99	-0.56	-0.78	20.97	0.16	0.01	21.75	33.5	2
9403	9403:WVGD3	Origin	150.50	0.96	0.01	-0.01	3647.22	-43.92	-5.0	-103.50	38.36	-0.57	-0.80	20.97	0.16	0.01	21.78	33.5	2
9403	Tube 7	End	155.50	0.61	0.01	-0.01	3839.02	-46.76	-5.0	-103.50	38.36	-0.57	-0.79	21.10	0.15	0.01	21.89	33.7	2
9403	Tube 7	Origin	155.50	0.61	0.01	-0.01	3839.02	-46.76	-5.0	-106.91	38.68	-0.58	-0.81	21.10	0.16	0.01	21.91	33.7	2
9403	9403:WVGD2	End	160.50	0.34	0.00	-0.01	4032.42	-49.65	-5.0	-106.91	38.68	-0.58	-0.79	21.20	0.15	0.01	22.00	33.8	2
9403	9403:WVGD2	Origin	160.50	0.34	0.00	-0.01	4032.42	-49.65	-5.0	-111.33	39.13	-0.59	-0.83	21.20	0.15	0.01	22.03	33.9	2
9403	Tube 8	End	165.50	0.15	0.00	-0.00	4228.05	-52.59	-5.0	-111.33	39.13	-0.59	-0.81	21.29	0.15	0.01	22.10	34.0	2
9403	Tube 8	Origin	165.50	0.15	0.00	-0.00	4228.05	-52.59	-5.0	-114.89	39.45	-0.60	-0.83	21.29	0.15	0.01	22.13	34.0	2
9403	9403:WVGD1	End	170.50	0.04	0.00	-0.00	4425.30	-55.59	-5.0	-114.89	39.45	-0.60	-0.82	21.36	0.15	0.01	22.18	34.1	2
9403	9403:WVGD1	Origin	170.50	0.04	0.00	-0.00	4425.30	-55.58	-5.0	-119.46	39.90	-0.61	-0.85	21.36	0.15	0.01	22.21	34.2	2
9403	9403:g	End	175.50	0.00	0.00	0.00	4624.80	-58.63	-5.0	-119.46	39.90	-0.61	-0.83	21.41	0.15	0.01	22.25	34.2	2

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

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Vert. Mom. (ft-k)	Horz. Mom. (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Vert. Shear (kips)	Horz. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
Davit1	Davit1:O	Origin	0.00	41.22	0.46	-1.30	-10.97	-0.13	-0.0	2.30	1.44	0.02	0.30	7.80	0.00	0.00	8.10	12.5	1
Davit1	#Davit1:0	End	3.38	41.31	0.46	-3.08	-6.11	-0.08	-0.0	2.30	1.44	0.02	0.37	6.82	0.01	0.00	7.19	11.1	1
Davit1	#Davit1:0	Origin	3.38	41.31	0.46	-3.08	-6.11	-0.08	-0.0	2.30	1.32	0.02	0.38	6.82	0.01	0.00	7.19	11.1	1
Davit1	Davit1:V	End	6.77	41.41	0.47	-4.94	-1.63	-0.02	-0.0	2.30	1.32	0.02	0.50	3.25	0.01	0.00	3.75	5.8	1
Davit1	Davit1:V	Origin	6.77	41.41	0.47	-4.94	-1.63	-0.02	0.0	2.39	1.08	0.02	0.52	3.25	0.01	0.00	3.77	5.8	1
Davit1	Davit1:End	End	8.27	41.39	0.47	-5.79	0.00	0.00	0.0	2.39	1.08	0.02	0.61	0.00	0.58	0.00	1.17	1.8	3
Davit2	Davit2:O	Origin	0.00	30.02	0.34	-1.16	-118.04	-1.43	-0.0	7.34	8.86	0.10	0.40	18.22	0.01	0.00	18.62	28.6	1
Davit2	#Davit2:0	End	5.00	30.21	0.35	-3.67	-73.73	-0.92	-0.0	7.34	8.86	0.10	0.49	17.03	0.01	0.00	17.52	26.9	1
Davit2	#Davit2:0	Origin	5.00	30.21	0.35	-3.67	-73.73	-0.92	-0.0	7.39	8.50	0.10	0.49	17.03	0.01	0.00	17.52	27.0	1
Davit2	#Davit2:1	End	8.53	30.35	0.36	-5.59	-43.75	-0.56	-0.0	7.39	8.50	0.10	0.58	14.23	0.02	0.00	14.82	22.8	1
Davit2	#Davit2:1	Origin	8.53	30.35	0.36	-5.59	-43.75	-0.56	-0.0	7.42	8.25	0.10	0.59	14.23	0.02	0.00	14.82	22.8	1
Davit2	Davit2:V	End	12.06	30.51	0.37	-7.63	-14.65	-0.20	-0.0	7.42	8.25	0.10	0.72	7.21	0.02	0.00	7.93	12.2	1
Davit2	Davit2:V	Origin	12.06	30.51	0.37	-7.63	-14.65	-0.20	0.0	8.19	7.32	0.10	0.79	7.21	0.02	0.00	8.00	12.3	1
Davit2	Davit2:End	End	14.06	30.48	0.38	-8.83	-0.00	0.00	0.0	8.19	7.32	0.10	0.91	0.00	1.69	0.00	3.07	4.7	3
Davit3	Davit3:O	Origin	0.00	20.14	0.24	-0.96	-118.68	-1.45	-0.0	7.27	8.91	0.10	0.40	18.32	0.01	0.00	18.71	28.8	1
Davit3	#Davit3:0	End	5.00	20.31	0.24	-3.09	-74.15	-0.93	-0.0	7.27	8.91	0.10	0.48	17.12	0.01	0.00	17.61	27.1	1
Davit3	#Davit3:0	Origin	5.00	20.31	0.24	-3.09	-74.15	-0.93	-0.0	7.33	8.54	0.10	0.49	17.12	0.01	0.00	17.61	27.1	1
Davit3	#Davit3:1	End	8.53	20.44	0.25	-4.75	-44.01	-0.57	-0.0	7.33	8.54	0.10	0.58	14.32	0.02	0.00	14.90	22.9	1
Davit3	#Davit3:1	Origin	8.53	20.44	0.25	-4.75	-44.01	-0.57	-0.0	7.36	8.29	0.10	0.58	14.32	0.02	0.00	14.90	22.9	1
Davit3	Davit3:V	End	12.06	20.58	0.26	-6.53	-14.75	-0.20	-0.0	7.36	8.29	0.10	0.71	7.26	0.02	0.00	7.97	12.3	1

Davit3	Davit3:V	Origin	12.06	20.58	0.26	-6.53	-14.75	-0.21	0.0	8.14	7.37	0.10	0.79	7.26	0.02	0.00	8.05	12.4	1
Davit3	Davit3:End	End	14.06	20.55	0.27	-7.58	-0.00	0.00	0.0	8.14	7.37	0.10	0.90	0.00	1.70	0.00	3.09	4.7	3
Davit4	Davit4:O	Origin	0.00	12.33	0.15	-0.76	-119.47	-1.46	-0.0	7.20	8.96	0.10	0.39	18.44	0.01	0.00	18.83	29.0	1
Davit4	#Davit4:0	End	5.00	12.47	0.15	-2.44	-74.66	-0.94	-0.0	7.20	8.96	0.10	0.48	17.24	0.01	0.00	17.72	27.3	1
Davit4	#Davit4:0	Origin	5.00	12.47	0.15	-2.44	-74.66	-0.94	-0.0	7.25	8.60	0.10	0.48	17.24	0.01	0.00	17.73	27.3	1
Davit4	#Davit4:1	End	8.53	12.58	0.16	-3.78	-44.33	-0.57	-0.0	7.25	8.60	0.10	0.57	14.42	0.02	0.00	14.99	23.1	1
Davit4	#Davit4:1	Origin	8.53	12.58	0.16	-3.78	-44.33	-0.57	-0.0	7.29	8.35	0.10	0.58	14.42	0.02	0.00	15.00	23.1	1
Davit4	Davit4:V	End	12.06	12.70	0.17	-5.24	-14.87	-0.21	-0.0	7.29	8.35	0.10	0.71	7.32	0.02	0.00	8.03	12.3	1
Davit4	Davit4:V	Origin	12.06	12.70	0.17	-5.24	-14.87	-0.21	0.0	8.07	7.44	0.10	0.78	7.32	0.02	0.00	8.10	12.5	1
Davit4	Davit4:End	End	14.06	12.68	0.17	-6.11	-0.00	0.00	0.0	8.07	7.44	0.10	0.90	0.00	1.72	0.00	3.11	4.8	3

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

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Usage %
Clamp1	2.622	80.00	80.00	3.28
Clamp2	10.955	80.00	80.00	13.69
Clamp3	10.948	80.00	80.00	13.69
Clamp4	10.941	80.00	80.00	13.68
Clamp5	0.938	80.00	80.00	1.17
Clamp6	0.938	80.00	80.00	1.17
Clamp7	0.938	80.00	80.00	1.17
Clamp8	0.938	80.00	80.00	1.17
Clamp9	0.938	80.00	80.00	1.17
Clamp10	0.938	80.00	80.00	1.17
Clamp11	0.938	80.00	80.00	1.17
Clamp12	0.938	80.00	80.00	1.17
Clamp13	0.938	80.00	80.00	1.17
Clamp14	0.938	80.00	80.00	1.17
Clamp15	0.938	80.00	80.00	1.17
Clamp16	0.938	80.00	80.00	1.17
Clamp17	0.938	80.00	80.00	1.17
Clamp18	0.938	80.00	80.00	1.17
Clamp19	0.938	80.00	80.00	1.17
Clamp20	0.938	80.00	80.00	1.17
Clamp21	0.938	80.00	80.00	1.17
Clamp22	4.621	80.00	80.00	5.78

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

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

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
9403:g	0	0	0	0.0000	0.0000	0.0000	0	0	0
9403:t	0.03528	6.25	-0.1499	-3.6467	0.0170	-0.0086	0.03528	6.25	175.4
9403:AT&T	0.03451	6.091	-0.1449	-3.6466	0.0170	-0.0086	0.03451	6.091	172.9
9403:WVGD17	0.03205	5.583	-0.1287	-3.6180	0.0170	-0.0086	0.03205	5.583	164.9
9403:WVGD16	0.02899	4.959	-0.1092	-3.5231	0.0170	-0.0087	0.02899	4.959	154.9
9403:Arm1	0.02837	4.837	-0.1054	-3.4986	0.0170	-0.0087	0.02837	4.837	152.9
9403:WVGD15	0.02592	4.356	-0.09092	-3.3795	0.0170	-0.0086	0.02592	4.356	144.9
9403:WVGD14	0.02288	3.779	-0.07417	-3.2319	0.0168	-0.0085	0.02288	3.779	134.9
9403:Arm2	0.02147	3.519	-0.06687	-3.1557	0.0168	-0.0085	0.02147	3.519	130.3
9403:WVGD13	0.01984	3.23	-0.05899	-3.0443	0.0166	-0.0079	0.01984	3.23	124.9
9403:WVGD12	0.01688	2.718	-0.04578	-2.8174	0.0159	-0.0070	0.01688	2.718	115
9403:Arm3	0.01486	2.376	-0.03752	-2.6512	0.0153	-0.0066	0.01486	2.376	107.8
9403:WVGD11	0.01409	2.246	-0.03453	-2.5782	0.0150	-0.0062	0.01409	2.246	105
9403:WVGD10	0.01148	1.819	-0.02527	-2.3021	0.0138	-0.0051	0.01148	1.819	94.97
9403:Arm4	0.009317	1.47	-0.01848	-2.0660	0.0126	-0.0044	0.009317	1.47	85.81
9403:WVGD9	0.00913	1.44	-0.01793	-2.0440	0.0125	-0.0043	0.00913	1.44	84.98
9403:WVGD8	0.00703	1.106	-0.01221	-1.7714	0.0110	-0.0034	0.00703	1.106	74.99
9403:WVGD7	0.005212	0.8194	-0.007955	-1.5065	0.0094	-0.0026	0.005212	0.8194	64.99
9403:WVGD6	0.003683	0.5792	-0.004918	-1.2372	0.0078	-0.0020	0.003683	0.5792	55
9403:WVGD5	0.00244	0.3842	-0.002872	-0.9948	0.0063	-0.0015	0.00244	0.3842	45
9403:WVGD4	0.001463	0.2307	-0.001547	-0.7595	0.0048	-0.0010	0.001463	0.2307	35
9403:WVGD3	0.0007412	0.1172	-0.0007533	-0.5365	0.0034	-0.0007	0.0007412	0.1172	25
9403:WVGD2	0.0002658	0.04215	-0.0003155	-0.3181	0.0020	-0.0004	0.0002658	0.04215	15
9403:WVGD1	3.022e-005	0.004814	-8.365e-005	-0.1047	0.0007	-0.0001	3.022e-005	0.004814	5
Davit1:O	0.02854	4.835	-0.1806	-3.4986	0.0170	-0.0087	0.02854	6.067	152.8
Davit1:V	0.02973	4.853	-0.597	-3.5508	0.0170	-0.0109	0.02973	12.83	152.9
Davit1:End	0.03	4.85	-0.69	-3.5539	0.0170	-0.0112	0.03	14.33	152.8
Davit2:O	0.02167	3.516	-0.1502	-3.1557	0.0168	-0.0085	0.02167	5.03	130.2
Davit2:V	0.02453	3.564	-0.8404	-3.4010	0.0168	-0.0169	0.02453	17.08	130.7
Davit2:End	0.0251	3.56	-0.9594	-3.4146	0.0168	-0.0175	0.0251	19.07	130.5
Davit3:O	0.01504	2.374	-0.119	-2.6512	0.0153	-0.0066	0.01504	4.135	107.7
Davit3:V	0.01752	2.417	-0.7038	-2.9026	0.0154	-0.0151	0.01752	16.18	108.3
Davit3:End	0.01804	2.414	-0.8054	-2.9167	0.0154	-0.0157	0.01804	18.18	108.2
Davit4:O	0.009457	1.468	-0.09182	-2.0660	0.0126	-0.0044	0.009457	3.503	85.74
Davit4:V	0.01149	1.505	-0.5544	-2.3244	0.0128	-0.0131	0.01149	15.54	86.45
Davit4:End	0.01195	1.503	-0.6359	-2.3390	0.0128	-0.0137	0.01195	17.54	86.36

Joint Support Reactions for Load Case "NESC Extreme":

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 %
9403:g	-0.39	0.0	-66.29	0.0	0.0	-71.20	0.0	0.0	97.29	0.0	6851.46	0.0	-43.1	0.0	0.0	5.96	0.0	0.0

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

Element Label	Joint Label	Joint Position	Rel. Dist.	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)	%	
9403	9403:t	Origin	0.00	75.00	0.42	-1.80	-0.00	-0.00	-0.0	-0.08	0.09	-0.00	-0.00	0.00	0.01	0.00	0.02	0.0	5
9403	9403:AT&T	End	2.50	73.09	0.41	-1.74	0.21	-0.00	-0.0	-0.08	0.09	-0.00	-0.00	0.02	0.00	0.00	0.03	0.0	2
9403	9403:AT&T	Origin	2.50	73.09	0.41	-1.74	0.21	-0.00	-0.0	-2.22	4.89	-0.00	-0.12	0.00	0.53	0.00	0.92	1.4	5
9403	Tube 1	End	6.50	70.04	0.40	-1.64	19.79	-0.00	-0.0	-2.22	4.89	-0.00	-0.11	1.92	0.13	0.00	2.04	3.1	2
9403	Tube 1	Origin	6.50	70.04	0.40	-1.64	19.79	-0.00	0.0	-2.49	5.19	-0.00	-0.13	1.92	0.14	0.00	2.06	3.2	2
9403	9403:WVGD17	End	10.50	67.00	0.38	-1.54	40.54	-0.00	0.0	-2.49	5.19	-0.00	-0.12	3.58	0.13	0.00	3.71	5.7	2
9403	9403:WVGD17	Origin	10.50	67.00	0.38	-1.54	40.54	-0.00	0.0	-3.03	5.93	-0.00	-0.15	3.58	0.15	0.00	3.74	5.7	2
9403	Tube 1	End	15.50	63.23	0.37	-1.43	70.19	-0.00	0.0	-3.03	5.93	-0.00	-0.14	5.55	0.14	0.00	5.69	8.8	2
9403	Tube 1	Origin	15.50	63.23	0.37	-1.43	70.19	-0.00	0.0	-3.41	6.33	-0.00	-0.16	5.55	0.15	0.00	5.71	8.8	2
9403	9403:WVGD16	End	20.50	59.51	0.35	-1.31	101.86	-0.00	0.0	-3.41	6.33	-0.00	-0.15	7.25	0.14	0.00	7.41	11.4	2
9403	9403:WVGD16	Origin	20.50	59.51	0.35	-1.31	101.86	-0.00	0.0	-3.91	7.02	-0.00	-0.17	7.25	0.16	0.00	7.43	11.4	2
9403	9403:Arm1	End	22.50	58.04	0.34	-1.26	115.90	-0.00	0.0	-3.91	7.02	-0.00	-0.17	7.93	0.16	0.00	8.10	12.5	2
9403	9403:Arm1	Origin	22.50	58.04	0.34	-1.26	118.92	-0.01	-0.1	-4.45	9.10	-0.01	-0.19	8.13	0.20	0.00	8.33	12.8	2
9403	Tube 1	End	26.25	55.31	0.33	-1.18	153.03	-0.05	-0.1	-4.45	9.10	-0.01	-0.18	9.72	0.20	0.00	9.91	15.3	2
9403	Tube 1	Origin	26.25	55.31	0.33	-1.18	153.03	-0.05	-0.1	-4.77	9.43	-0.01	-0.20	9.72	0.20	0.00	9.92	15.4	2
9403	SpliceT	End	30.00	52.63	0.31	-1.10	188.39	-0.10	-0.1	-4.77	9.43	-0.01	-0.19	11.15	0.20	0.00	11.34	17.9	2
9403	SpliceT	Origin	30.00	52.63	0.31	-1.10	188.39	-0.10	-0.1	-4.96	9.62	-0.01	-0.16	8.90	0.16	0.00	9.06	13.9	2
9403	9403:WVGD15	End	30.50	52.28	0.31	-1.09	193.20	-0.11	-0.1	-4.96	9.62	-0.01	-0.16	9.04	0.16	0.00	9.20	14.2	2
9403	9403:WVGD15	Origin	30.50	52.28	0.31	-1.09	193.20	-0.11	-0.1	-5.50	10.28	-0.01	-0.17	9.04	0.17	0.00	9.22	14.2	2
9403	Tube 2	End	35.50	48.77	0.29	-0.99	244.63	-0.17	-0.1	-5.50	10.28	-0.01	-0.16	10.46	0.16	0.00	10.63	16.4	2
9403	Tube 2	Origin	35.50	48.77	0.29	-0.99	244.63	-0.17	-0.1	-6.08	10.77	-0.01	-0.18	10.46	0.17	0.00	10.65	16.4	2
9403	9403:WVGD14	End	40.50	45.35	0.27	-0.89	298.50	-0.23	-0.1	-6.08	10.77	-0.01	-0.17	11.71	0.16	0.00	11.89	18.3	2
9403	9403:WVGD14	Origin	40.50	45.35	0.27	-0.89	298.50	-0.23	-0.1	-6.89	11.66	-0.01	-0.20	11.71	0.18	0.00	11.91	18.3	2
9403	9403:Arm2	End	45.17	42.22	0.26	-0.80	352.96	-0.29	-0.1	-6.89	11.66	-0.01	-0.19	12.81	0.17	0.00	13.00	20.0	2
9403	9403:Arm2	Origin	45.17	42.22	0.26	-0.80	411.79	-0.43	-2.0	-10.73	22.32	-0.14	-0.30	14.95	0.33	0.04	15.26	23.5	2
9403	Tube 2	End	47.83	40.48	0.25	-0.75	471.28	-0.79	-2.0	-10.73	22.32	-0.14	-0.29	16.39	0.32	0.04	16.69	25.7	2
9403	Tube 2	Origin	47.83	40.48	0.25	-0.75	471.28	-0.79	-2.0	-11.08	22.61	-0.14	-0.30	16.39	0.32	0.04	16.70	25.7	2
9403	9403:WVGD13	End	50.50	38.76	0.24	-0.71	531.52	-1.15	-2.0	-11.08	22.61	-0.14	-0.29	17.72	0.32	0.03	18.03	27.7	2
9403	9403:WVGD13	Origin	50.50	38.76	0.24	-0.71	531.52	-1.15	-2.0	-11.79	23.38	-0.14	-0.31	17.72	0.33	0.03	18.05	27.7	2
9403	SpliceT	End	54.83	36.04	0.22	-0.64	632.83	-1.74	-2.0	-11.79	23.38	-0.14	-0.30	19.75	0.32	0.03	20.06	31.4	2
9403	SpliceT	Origin	54.83	36.04	0.22	-0.64	632.83	-1.74	-2.0	-12.49	23.77	-0.14	-0.32	19.75	0.32	0.03	20.08	31.4	2
9403	Tube 2	End	57.42	34.46	0.21	-0.60	694.24	-2.09	-2.0	-12.49	23.77	-0.14	-0.27	18.02	0.27	0.03	18.29	28.1	2
9403	Tube 2	Origin	57.42	34.46	0.21	-0.60	694.24	-2.09	-2.0	-13.27	24.08	-0.14	-0.28	18.02	0.27	0.03	18.31	28.2	2
9403	SpliceB	End	60.00	32.91	0.20	-0.56	756.44	-2.44	-2.0	-13.27	24.08	-0.14	-0.28	18.89	0.27	0.03	19.18	29.5	2
9403	SpliceB	Origin	60.00	32.91	0.20	-0.56	756.44	-2.44	-2.0	-13.71	24.26	-0.14	-0.29	18.89	0.27	0.03	19.18	29.5	2
9403	9403:WVGD12	End	60.50	32.62	0.20	-0.55	768.57	-2.51	-2.0	-13.71	24.26	-0.14	-0.29	19.05	0.27	0.03	19.35	29.8	2
9403	9403:WVGD12	Origin	60.50	32.62	0.20	-0.55	768.57	-2.51	-2.0	-14.30	24.89	-0.14	-0.30	19.05	0.27	0.03	19.36	29.8	2
9403	Tube 3	End	64.08	30.53	0.19	-0.50	857.81	-3.00	-2.0	-14.30	24.89	-0.14	-0.29	20.19	0.27	0.02	20.48	31.5	2
9403	Tube 3	Origin	64.08	30.53	0.19	-0.50	857.81	-3.00	-2.0	-14.94	25.31	-0.14	-0.30	20.19	0.27	0.02	20.49	31.5	2
9403	9403:Arm3	End	67.67	28.51	0.18	-0.45	948.55	-3.49	-2.0	-14.94	25.31	-0.14	-0.30	21.21	0.26	0.02	21.52	33.1	2
9403	9403:Arm3	Origin	67.67	28.51	0.18	-0.45	1009.59	-3.63	-4.0	-18.98	35.93	-0.26	-0.38	22.58	0.38	0.05	22.97	35.3	2
9403	9403:WVGD11	End	70.50	26.96	0.17	-0.41	1111.27	-4.38	-4.0	-18.98	35.93	-0.26	-0.37	23.90	0.37	0.04	24.28	37.4	2
9403	9403:WVGD11	Origin	70.50	26.96	0.17	-0.41	1111.27	-4.37	-4.0	-19.97	36.79	-0.26	-0.39	23.90	0.38	0.04	24.30	37.4	2
9403	Tube 3	End	75.50	24.32	0.15	-0.36	1295.23	-5.69	-4.0	-19.97	36.79	-0.26	-0.37	26.04	0.36	0.04	26.42	40.7	2
9403	Tube 3	Origin	75.50	24.32	0.15	-0.36	1295.23	-5.68	-4.0	-20.97	37.40	-0.26	-0.39	26.04	0.37	0.04	26.44	40.7	2
9403	9403:WVGD10	End	80.50	21.83	0.14	-0.30	1482.24	-7.01	-4.0	-20.97	37.40	-0.26	-0.38	27.92	0.36	0.04	28.31	43.8	2
9403	9403:WVGD10	Origin	80.50	21.83	0.14	-0.30	1482.24	-7.00	-4.0	-21.85	38.19	-0.26	-0.40	27.92	0.37	0.04	28.32	43.8	2
9403	SpliceT	End	81.83	21.19	0.13	-0.29	1533.14	-7.35	-4.0	-21.85	38.19	-0.26	-0.39	28.39	0.36	0.04	28.79	44.7	2
9403	SpliceT	Origin	81.83	21.19	0.13	-0.29	1533.14	-7.35	-3.9	-22.46	38.52	-0.26	-0.35	24.30	0.31	0.03	24.65	37.9	2
9403	Tube 4	End	85.75	19.37	0.12	-0.25	1684.09	-8.38	-3.9	-22.46	38.52	-0.26	-0.34	25.41	0.31	0.03	25.75	39.6	2
9403	Tube 4	Origin	85.75	19.37	0.12	-0.25	1684.09	-8.38	-3.9	-23.41	39.04	-0.26	-0.35	25.41	0.31	0.03	25.77	39.6	2
9403	9403:Arm4	End	89.67	17.64	0.11	-0.22	1837.05	-9.41	-3.9	-23.41	39.04	-0.26	-0.34	26.42	0.30	0.03	26.77	41.2	2
9403	9403:Arm4	Origin	89.67	17.64	0.11	-0.22	1900.66	-9.56	-6.0	-27.56	49.55	-0.39	-0.40	27.33	0.38	0.04	27.74	42.7	2
9403	9403:WVGD9	End	90.50	17.28	0.11	-0.22	1941.79	-9.88	-6.0	-27.56	49.55	-0.39	-0.40	27.64	0.38	0.04	28.05	43.2	2
9403	9403:WVGD9	Origin	90.50	17.28	0.11	-0.22	1941.79	-9.88	-6.0	-28.39	50.25	-0.39	-0.42	27.64	0.39	0.04	28.07	43.2	2
9403	Tube 4	End	94.29	15.69	0.10	-0.19	2132.30	-11.37	-6.0	-28.39	50.25	-0.39	-0.41	29.01	0.38	0.04	29.43	45.3	2
9403	Tube 4	Origin	94.29	15.69	0.10	-0.19	2132.30	-11.36	-6.0	-29.38	50.75	-0.39	-0.42	29.01	0.38	0.04	29.44	45.3	2

9403	SpliceT	End	98.08	14.19	0.09	-0.16	2324.73	-12.85	-6.0	-29.38	50.75	-0.39	-0.41	30.26	0.37	0.04	30.68	47.2	2
9403	SpliceT	Origin	98.08	14.19	0.09	-0.16	2324.73	-12.84	-6.0	-30.55	51.18	-0.39	-0.43	30.26	0.38	0.04	30.70	47.2	2
9403	9403:WVGD8	End	100.50	13.27	0.08	-0.15	2448.44	-13.79	-6.0	-30.55	51.18	-0.39	-0.38	28.18	0.33	0.04	28.56	43.9	2
9403	9403:WVGD8	Origin	100.50	13.27	0.08	-0.15	2448.44	-13.78	-6.0	-32.64	52.06	-0.39	-0.40	28.18	0.34	0.04	28.59	44.0	2
9403	SpliceB	End	104.83	11.71	0.07	-0.12	2674.04	-15.49	-6.0	-32.64	52.06	-0.39	-0.39	29.29	0.33	0.03	29.69	45.7	2
9403	SpliceB	Origin	104.83	11.71	0.07	-0.12	2674.04	-15.48	-6.0	-34.28	52.57	-0.39	-0.41	29.29	0.33	0.03	29.71	45.7	2
9403	Tube 5	End	107.67	10.75	0.07	-0.11	2823.01	-16.59	-6.0	-34.28	52.57	-0.39	-0.40	29.95	0.33	0.03	30.36	46.7	2
9403	Tube 5	Origin	107.67	10.75	0.07	-0.11	2823.01	-16.59	-6.0	-35.17	52.97	-0.39	-0.41	29.95	0.33	0.03	30.37	46.7	2
9403	9403:WVGD7	End	110.50	9.83	0.06	-0.10	2973.10	-17.70	-6.0	-35.17	52.97	-0.39	-0.41	30.57	0.33	0.03	30.99	47.7	2
9403	9403:WVGD7	Origin	110.50	9.83	0.06	-0.10	2973.10	-17.69	-6.0	-36.66	53.92	-0.39	-0.43	30.57	0.33	0.03	31.01	47.7	2
9403	Tube 5	End	115.50	8.32	0.05	-0.08	3242.68	-19.66	-6.0	-36.66	53.92	-0.39	-0.41	31.59	0.32	0.03	32.01	49.2	2
9403	Tube 5	Origin	115.50	8.32	0.05	-0.08	3242.68	-19.65	-6.0	-38.29	54.64	-0.39	-0.43	31.59	0.33	0.03	32.03	49.3	2
9403	9403:WVGD6	End	120.50	6.95	0.04	-0.06	3515.86	-21.62	-6.0	-38.29	54.64	-0.39	-0.42	32.50	0.32	0.03	32.92	50.7	2
9403	9403:WVGD6	Origin	120.50	6.95	0.04	-0.06	3515.86	-21.61	-6.0	-39.54	55.47	-0.39	-0.44	32.50	0.32	0.03	32.94	50.7	2
9403	SpliceT	End	121.58	6.67	0.04	-0.06	3575.93	-22.04	-6.0	-39.54	55.47	-0.39	-0.43	32.68	0.32	0.03	33.12	51.0	2
9403	SpliceT	Origin	121.58	6.67	0.04	-0.06	3575.93	-22.03	-6.0	-40.56	55.89	-0.39	-0.39	29.02	0.29	0.03	29.42	45.3	2
9403	Tube 6	End	126.04	5.59	0.04	-0.04	3825.10	-23.78	-6.0	-40.56	55.89	-0.39	-0.39	29.66	0.28	0.02	30.05	46.2	2
9403	Tube 6	Origin	126.04	5.59	0.04	-0.04	3825.10	-23.77	-6.0	-42.26	56.57	-0.39	-0.40	29.66	0.28	0.02	30.06	46.3	2
9403	9403:WVGD5	End	130.50	4.61	0.03	-0.03	4077.30	-25.53	-6.0	-42.26	56.57	-0.39	-0.39	30.24	0.28	0.02	30.63	47.1	2
9403	9403:WVGD5	Origin	130.50	4.61	0.03	-0.03	4077.31	-25.52	-6.0	-44.00	57.55	-0.39	-0.41	30.24	0.28	0.02	30.65	47.2	2
9403	Tube 6	End	133.75	3.96	0.03	-0.03	4264.35	-26.79	-6.0	-44.00	57.55	-0.39	-0.40	30.63	0.28	0.02	31.04	47.8	2
9403	Tube 6	Origin	133.75	3.96	0.03	-0.03	4264.35	-26.79	-6.0	-45.29	58.06	-0.39	-0.41	30.63	0.28	0.02	31.05	47.8	2
9403	SpliceT	End	137.00	3.36	0.02	-0.02	4453.05	-28.06	-6.0	-45.29	58.06	-0.39	-0.41	31.00	0.28	0.02	31.41	48.3	2
9403	SpliceT	Origin	137.00	3.36	0.02	-0.02	4453.05	-28.06	-6.0	-47.37	58.61	-0.39	-0.43	31.00	0.28	0.02	31.43	48.4	2
9403	9403:WVGD4	End	140.50	2.77	0.02	-0.02	4658.18	-29.43	-6.0	-47.37	58.61	-0.39	-0.39	29.37	0.25	0.02	29.76	45.8	2
9403	9403:WVGD4	Origin	140.50	2.77	0.02	-0.02	4658.18	-29.42	-6.0	-50.96	59.66	-0.39	-0.41	29.37	0.26	0.02	29.79	45.8	2
9403	SpliceB	End	145.08	2.09	0.01	-0.01	4931.59	-31.22	-6.0	-50.96	59.66	-0.39	-0.41	29.77	0.25	0.02	30.18	46.4	2
9403	SpliceB	Origin	145.08	2.09	0.01	-0.01	4931.59	-31.21	-6.0	-53.49	60.25	-0.39	-0.43	29.77	0.25	0.02	30.20	46.5	2
9403	Tube 7	End	147.79	1.73	0.01	-0.01	5094.78	-32.28	-6.0	-53.49	60.25	-0.39	-0.42	29.99	0.25	0.02	30.42	46.8	2
9403	Tube 7	Origin	147.79	1.73	0.01	-0.01	5094.78	-32.27	-6.0	-54.72	60.69	-0.39	-0.43	29.99	0.25	0.02	30.43	46.8	2
9403	9403:WVGD3	End	150.50	1.41	0.01	-0.01	5259.15	-33.33	-6.0	-54.72	60.69	-0.39	-0.42	30.20	0.25	0.02	30.62	47.1	2
9403	9403:WVGD3	Origin	150.50	1.41	0.01	-0.01	5259.15	-33.32	-6.0	-56.76	61.71	-0.39	-0.44	30.20	0.25	0.02	30.64	47.1	2
9403	Tube 7	End	155.50	0.90	0.01	-0.01	5567.67	-35.28	-6.0	-56.76	61.71	-0.39	-0.43	30.55	0.25	0.02	30.99	47.7	2
9403	Tube 7	Origin	155.50	0.90	0.01	-0.01	5567.67	-35.27	-6.0	-59.12	62.53	-0.39	-0.45	30.55	0.25	0.02	31.00	47.7	2
9403	9403:WVGD2	End	160.50	0.51	0.00	-0.00	5880.33	-37.23	-6.0	-59.12	62.53	-0.39	-0.44	30.87	0.25	0.02	31.31	48.2	2
9403	9403:WVGD2	Origin	160.50	0.51	0.00	-0.00	5880.33	-37.22	-6.0	-61.78	63.76	-0.39	-0.46	30.87	0.25	0.02	31.33	48.2	2
9403	Tube 8	End	165.50	0.23	0.00	-0.00	6199.11	-39.18	-6.0	-61.78	63.76	-0.39	-0.45	31.16	0.24	0.02	31.62	48.6	2
9403	Tube 8	Origin	165.50	0.23	0.00	-0.00	6199.11	-39.16	-6.0	-64.24	64.61	-0.39	-0.47	31.16	0.25	0.02	31.63	48.7	2
9403	9403:WVGD1	End	170.50	0.06	0.00	-0.00	6522.16	-41.12	-6.0	-64.24	64.61	-0.39	-0.46	31.43	0.24	0.01	31.89	49.1	2
9403	9403:WVGD1	Origin	170.50	0.06	0.00	-0.00	6522.16	-41.11	-6.0	-67.00	65.86	-0.39	-0.48	31.43	0.25	0.01	31.91	49.1	2
9403	9403:g	End	175.50	0.00	0.00	0.00	6851.46	-43.06	-6.0	-67.00	65.86	-0.39	-0.47	31.67	0.24	0.01	32.14	49.4	2

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

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Vert. Mom. (ft-k)	Horz. Mom. (ft-k)	Tors. Mom. (ft-k)	Axial Force (kips)	Vert. Shear (kips)	Horz. Shear (kips)	P/A (ksi)	M/S. (ksi)	V/Q. (ksi)	T/R. (ksi)	Res. (ksi)	Max. Usage %	At Pt.
Davit1	Davit1:O	Origin	0.00	58.01	0.34	-2.17	-2.64	-0.10	-0.0	1.80	0.39	0.01	0.23	1.88	0.00	0.00	2.12	3.3	1
Davit1	#Davit1:0	End	3.38	58.12	0.35	-4.66	-1.31	-0.06	-0.0	1.80	0.39	0.01	0.29	1.46	0.00	0.00	1.76	2.7	1
Davit1	#Davit1:0	Origin	3.38	58.12	0.35	-4.66	-1.31	-0.06	-0.0	1.80	0.32	0.01	0.29	1.46	0.00	0.00	1.76	2.7	1
Davit1	Davit1:V	End	6.77	58.23	0.36	-7.16	-0.22	-0.02	-0.0	1.80	0.32	0.01	0.39	0.44	0.01	0.00	0.83	1.3	1
Davit1	Davit1:V	Origin	6.77	58.23	0.36	-7.16	-0.22	-0.02	0.0	1.82	0.15	0.01	0.39	0.44	0.01	0.00	0.83	1.3	1
Davit1	Davit1:End	End	8.27	58.20	0.36	-8.28	0.00	0.00	0.0	1.82	0.15	0.01	0.46	0.00	0.08	0.00	0.48	0.7	3
Davit2	Davit2:O	Origin	0.00	42.20	0.26	-1.80	-53.73	-1.71	-0.0	9.91	4.20	0.12	0.54	8.29	0.01	0.00	8.83	13.6	1
Davit2	#Davit2:0	End	5.00	42.43	0.27	-5.16	-32.74	-1.10	-0.0	9.91	4.20	0.12	0.66	7.56	0.02	0.00	8.22	12.6	1
Davit2	#Davit2:0	Origin	5.00	42.43	0.27	-5.16	-32.74	-1.10	-0.0	9.93	3.96	0.12	0.66	7.56	0.02	0.00	8.22	12.6	1

Davit2	#Davit2:1	End	8.53	42.60	0.28	-7.59	-18.78	-0.67	-0.0	9.93	3.96	0.12	0.78	6.11	0.02	0.00	6.89	10.6	1
Davit2	#Davit2:1	Origin	8.53	42.60	0.28	-7.59	-18.78	-0.67	-0.0	9.94	3.79	0.12	0.78	6.11	0.02	0.00	6.90	10.6	1
Davit2	Davit2:V	End	12.06	42.77	0.29	-10.08	-5.40	-0.24	-0.0	9.94	3.79	0.12	0.96	2.66	0.02	0.01	3.62	5.6	1
Davit2	Davit2:V	Origin	12.06	42.77	0.29	-10.08	-5.40	-0.24	0.0	10.26	2.70	0.12	0.99	2.66	0.02	0.00	3.65	5.6	1
Davit2	Davit2:End	End	14.06	42.73	0.30	-11.51	-0.00	0.00	0.0	10.26	2.70	0.12	1.14	0.00	0.62	0.00	1.57	2.4	3
Davit3	Davit3:O	Origin	0.00	28.48	0.18	-1.43	-54.95	-1.74	-0.0	9.87	4.28	0.12	0.54	8.48	0.01	0.00	9.02	13.9	1
Davit3	#Davit3:0	End	5.00	28.69	0.19	-4.26	-33.53	-1.12	-0.0	9.87	4.28	0.12	0.66	7.74	0.02	0.00	8.40	12.9	1
Davit3	#Davit3:0	Origin	5.00	28.69	0.19	-4.26	-33.53	-1.12	-0.0	9.89	4.04	0.12	0.66	7.74	0.02	0.00	8.40	12.9	1
Davit3	#Davit3:1	End	8.53	28.85	0.20	-6.32	-19.26	-0.68	-0.0	9.89	4.04	0.12	0.78	6.27	0.02	0.00	7.05	10.8	1
Davit3	#Davit3:1	Origin	8.53	28.85	0.20	-6.32	-19.26	-0.68	-0.0	9.90	3.88	0.12	0.78	6.27	0.02	0.00	7.05	10.8	1
Davit3	Davit3:V	End	12.06	29.00	0.21	-8.45	-5.58	-0.24	-0.0	9.90	3.88	0.12	0.96	2.75	0.02	0.01	3.71	5.7	1
Davit3	Davit3:V	Origin	12.06	29.00	0.21	-8.45	-5.58	-0.25	0.0	10.23	2.79	0.12	0.99	2.75	0.02	0.00	3.74	5.8	1
Davit3	Davit3:End	End	14.06	28.97	0.22	-9.67	-0.00	0.00	0.0	10.23	2.79	0.12	1.14	0.00	0.64	0.00	1.59	2.5	3
Davit4	Davit4:O	Origin	0.00	17.62	0.11	-1.10	-56.36	-1.77	-0.0	9.82	4.38	0.13	0.54	8.70	0.01	0.00	9.23	14.2	1
Davit4	#Davit4:0	End	5.00	17.80	0.12	-3.32	-34.44	-1.14	-0.0	9.82	4.38	0.13	0.65	7.95	0.02	0.00	8.61	13.2	1
Davit4	#Davit4:0	Origin	5.00	17.80	0.12	-3.32	-34.44	-1.14	-0.0	9.84	4.14	0.13	0.66	7.95	0.02	0.00	8.61	13.2	1
Davit4	#Davit4:1	End	8.53	17.92	0.13	-4.96	-19.82	-0.69	-0.0	9.84	4.14	0.13	0.78	6.45	0.02	0.00	7.23	11.1	1
Davit4	#Davit4:1	Origin	8.53	17.92	0.13	-4.96	-19.82	-0.69	-0.0	9.85	3.98	0.13	0.78	6.45	0.02	0.00	7.23	11.1	1
Davit4	Davit4:V	End	12.06	18.06	0.14	-6.65	-5.79	-0.25	-0.0	9.85	3.98	0.13	0.95	2.85	0.03	0.01	3.80	5.9	1
Davit4	Davit4:V	Origin	12.06	18.06	0.14	-6.65	-5.79	-0.25	0.0	10.19	2.89	0.13	0.99	2.85	0.03	0.00	3.84	5.9	1
Davit4	Davit4:End	End	14.06	18.04	0.14	-7.63	-0.00	0.00	0.0	10.19	2.89	0.13	1.13	0.00	0.67	0.00	1.62	2.5	3

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

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Usage %
Clamp1	1.820	80.00	80.00	2.28
Clamp2	10.596	80.00	80.00	13.25
Clamp3	10.591	80.00	80.00	13.24
Clamp4	10.583	80.00	80.00	13.23
Clamp5	0.458	80.00	80.00	0.57
Clamp6	0.458	80.00	80.00	0.57
Clamp7	0.458	80.00	80.00	0.57
Clamp8	0.458	80.00	80.00	0.57
Clamp9	0.458	80.00	80.00	0.57
Clamp10	0.458	80.00	80.00	0.57
Clamp11	0.458	80.00	80.00	0.57
Clamp12	0.458	80.00	80.00	0.57
Clamp13	0.458	80.00	80.00	0.57
Clamp14	0.458	80.00	80.00	0.57
Clamp15	0.458	80.00	80.00	0.57
Clamp16	0.458	80.00	80.00	0.57
Clamp17	0.458	80.00	80.00	0.57
Clamp18	0.458	80.00	80.00	0.57
Clamp19	0.458	80.00	80.00	0.57
Clamp20	0.458	80.00	80.00	0.57
Clamp21	0.458	80.00	80.00	0.57
Clamp22	4.968	80.00	80.00	6.21

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

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

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
9403:g	0	0	0	0.0000	0.0000	0.0000	0	0	0
9403:t	0.03138	3.572	-0.05177	-2.0275	0.0160	-0.0061	0.03138	3.572	175.4
9403:AT&T	0.03067	3.484	-0.05021	-2.0275	0.0160	-0.0061	0.03067	3.484	172.9
9403:WVGD17	0.0284	3.201	-0.04515	-2.0205	0.0160	-0.0061	0.0284	3.201	165
9403:WVGD16	0.02557	2.85	-0.03891	-1.9967	0.0159	-0.0062	0.02557	2.85	155
9403:Arm1	0.02501	2.781	-0.03768	-1.9905	0.0159	-0.0062	0.02501	2.781	153
9403:WVGD15	0.02276	2.506	-0.03285	-1.9446	0.0157	-0.0060	0.02276	2.506	145
9403:WVGD14	0.02	2.171	-0.02715	-1.8852	0.0155	-0.0059	0.02	2.171	135
9403:Arm2	0.01873	2.019	-0.0246	-1.8542	0.0153	-0.0059	0.01873	2.019	130.3
9403:WVGD13	0.01729	1.849	-0.02181	-1.7842	0.0150	-0.0055	0.01729	1.849	125
9403:WVGD12	0.01469	1.55	-0.01713	-1.6489	0.0142	-0.0048	0.01469	1.55	115
9403:Arm3	0.01292	1.349	-0.01419	-1.5540	0.0136	-0.0045	0.01292	1.349	107.8
9403:WVGD11	0.01224	1.273	-0.01312	-1.5068	0.0133	-0.0042	0.01224	1.273	105
9403:WVGD10	0.00998	1.025	-0.009792	-1.3343	0.0121	-0.0035	0.00998	1.025	94.99
9403:Arm4	0.008103	0.8226	-0.007368	-1.1924	0.0110	-0.0030	0.008103	0.8226	85.82
9403:WVGD9	0.007942	0.8054	-0.00717	-1.1783	0.0109	-0.0029	0.007942	0.8054	84.99
9403:WVGD8	0.006127	0.6142	-0.005098	-1.0081	0.0096	-0.0023	0.006127	0.6142	74.99
9403:WVGD7	0.004553	0.452	-0.003552	-0.8478	0.0082	-0.0018	0.004553	0.452	65
9403:WVGD6	0.003226	0.3175	-0.002414	-0.6890	0.0068	-0.0013	0.003226	0.3175	55
9403:WVGD5	0.002143	0.2094	-0.001616	-0.5490	0.0055	-0.0010	0.002143	0.2094	45
9403:WVGD4	0.001289	0.1251	-0.001048	-0.4156	0.0042	-0.0007	0.001289	0.1251	35
9403:WVGD3	0.0006553	0.06319	-0.0006478	-0.2914	0.0030	-0.0005	0.0006553	0.06319	25
9403:WVGD2	0.0002359	0.0226	-0.0003509	-0.1715	0.0018	-0.0003	0.0002359	0.0226	15
9403:WVGD1	2.696e-005	0.00256	-0.0001116	-0.0561	0.0006	-0.0001	2.696e-005	0.00256	5
Davit1:O	0.02513	2.78	-0.08048	-1.9905	0.0159	-0.0062	0.02513	4.012	152.9
Davit1:V	0.0261	2.794	-0.3336	-2.2758	0.0160	-0.0088	0.0261	10.78	153.2
Davit1:End	0.02631	2.793	-0.3937	-2.3038	0.0160	-0.0091	0.02631	12.27	153.1
Davit2:O	0.01887	2.018	-0.07357	-1.8542	0.0153	-0.0059	0.01887	3.531	130.3
Davit2:V	0.02091	2.053	-0.5209	-2.3818	0.0155	-0.0114	0.02091	15.57	131
Davit2:End	0.0213	2.051	-0.6049	-2.4172	0.0155	-0.0118	0.0213	17.56	130.9
Davit3:O	0.01304	1.348	-0.06196	-1.5540	0.0136	-0.0045	0.01304	3.11	107.8
Davit3:V	0.01479	1.38	-0.4464	-2.0838	0.0138	-0.0101	0.01479	15.14	108.6
Davit3:End	0.01514	1.378	-0.5201	-2.1194	0.0138	-0.0105	0.01514	17.14	108.5
Davit4:O	0.008201	0.8221	-0.0497	-1.1924	0.0110	-0.0030	0.008201	2.857	85.78
Davit4:V	0.009624	0.8484	-0.3586	-1.7249	0.0113	-0.0087	0.009624	14.88	86.64
Davit4:End	0.009927	0.8475	-0.4197	-1.7606	0.0113	-0.0091	0.009927	16.88	86.58

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 %	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 %
9403:g	-0.38	0.0	-30.56	0.0	0.0	-95.58	0.0	0.0	100.35	0.0	3656.38	0.0	-38.3	0.0	0.0	4.06	0.0	0.0

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

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)	%	
9403	9403:t	Origin	0.00	42.86	0.38	-0.62	-0.00	-0.00	0.0	-0.08	0.03	-0.00	-0.00	0.00	0.00	0.00	0.01	0.0	5
9403	9403:AT&T	End	2.50	41.80	0.37	-0.60	0.07	-0.00	0.0	-0.08	0.03	-0.00	-0.00	0.01	0.00	0.00	0.01	0.0	2
9403	9403:AT&T	Origin	2.50	41.80	0.37	-0.60	0.07	-0.00	-0.0	-3.93	1.19	-0.00	-0.21	0.00	0.13	0.00	0.31	0.5	5
9403	Tube 1	End	6.50	40.11	0.35	-0.57	4.85	-0.01	-0.0	-3.93	1.19	-0.00	-0.20	0.47	0.03	0.00	0.67	1.0	2
9403	Tube 1	Origin	6.50	40.11	0.35	-0.57	4.85	-0.01	0.0	-4.20	1.29	-0.00	-0.21	0.47	0.03	0.00	0.68	1.1	2
9403	9403:WVGD17	End	10.50	38.41	0.34	-0.54	10.00	-0.03	0.0	-4.20	1.29	-0.00	-0.20	0.88	0.03	0.00	1.09	1.7	2
9403	9403:WVGD17	Origin	10.50	38.41	0.34	-0.54	10.00	-0.03	0.0	-5.38	1.51	-0.01	-0.26	0.88	0.04	0.00	1.14	1.8	2
9403	Tube 1	End	15.50	36.30	0.32	-0.50	17.55	-0.06	0.0	-5.38	1.51	-0.01	-0.25	1.39	0.04	0.00	1.64	2.5	2
9403	Tube 1	Origin	15.50	36.30	0.32	-0.50	17.55	-0.06	0.0	-5.75	1.64	-0.01	-0.26	1.39	0.04	0.00	1.65	2.5	2
9403	9403:WVGD16	End	20.50	34.20	0.31	-0.47	25.74	-0.10	0.0	-5.75	1.64	-0.01	-0.25	1.83	0.04	0.00	2.08	3.2	2
9403	9403:WVGD16	Origin	20.50	34.20	0.31	-0.47	25.74	-0.10	0.0	-6.88	1.84	-0.01	-0.30	1.83	0.04	0.00	2.13	3.3	2
9403	9403:Arm1	End	22.50	33.37	0.30	-0.45	29.43	-0.11	0.0	-6.88	1.84	-0.01	-0.29	2.01	0.04	0.00	2.31	3.6	2
9403	9403:Arm1	Origin	22.50	33.37	0.30	-0.45	43.93	-0.12	-0.1	-8.62	4.02	-0.03	-0.37	3.01	0.09	0.00	3.38	5.2	2
9403	Tube 1	End	26.25	31.81	0.29	-0.42	59.02	-0.22	-0.1	-8.62	4.02	-0.03	-0.35	3.75	0.09	0.00	4.11	6.4	2
9403	Tube 1	Origin	26.25	31.81	0.29	-0.42	59.02	-0.22	-0.1	-8.93	4.13	-0.03	-0.37	3.75	0.09	0.00	4.12	6.4	2
9403	SpliceT	End	30.00	30.27	0.27	-0.40	74.51	-0.32	-0.1	-8.93	4.13	-0.03	-0.35	4.41	0.09	0.00	4.77	7.5	2
9403	SpliceT	Origin	30.00	30.27	0.27	-0.40	74.51	-0.32	-0.1	-9.12	4.19	-0.03	-0.29	3.52	0.07	0.00	3.81	5.9	2
9403	9403:WVGD15	End	30.50	30.07	0.27	-0.39	76.60	-0.33	-0.1	-9.12	4.19	-0.03	-0.29	3.59	0.07	0.00	3.88	6.0	2
9403	9403:WVGD15	Origin	30.50	30.07	0.27	-0.39	76.60	-0.33	-0.1	-10.28	4.38	-0.03	-0.32	3.59	0.07	0.00	3.91	6.0	2
9403	Tube 2	End	35.50	28.04	0.26	-0.36	98.52	-0.48	-0.1	-10.28	4.38	-0.03	-0.31	4.22	0.07	0.00	4.53	7.0	2
9403	Tube 2	Origin	35.50	28.04	0.26	-0.36	98.52	-0.48	-0.1	-10.85	4.54	-0.03	-0.33	4.22	0.07	0.00	4.55	7.0	2
9403	9403:WVGD14	End	40.50	26.05	0.24	-0.33	121.23	-0.63	-0.1	-10.85	4.54	-0.03	-0.31	4.76	0.07	0.00	5.07	7.8	2
9403	9403:WVGD14	Origin	40.50	26.05	0.24	-0.33	121.23	-0.63	-0.1	-12.28	4.81	-0.03	-0.35	4.76	0.07	0.00	5.11	7.9	2
9403	9403:Arm2	End	45.17	24.22	0.22	-0.30	143.67	-0.80	-0.1	-12.28	4.81	-0.03	-0.34	5.22	0.07	0.00	5.56	8.6	2
9403	9403:Arm2	Origin	45.17	24.22	0.22	-0.30	265.28	-0.89	-1.4	-20.43	11.53	-0.12	-0.56	9.63	0.17	0.03	10.20	15.7	2
9403	Tube 2	End	47.83	23.20	0.22	-0.28	296.00	-1.21	-1.4	-20.43	11.53	-0.12	-0.55	10.30	0.16	0.03	10.86	16.7	2
9403	Tube 2	Origin	47.83	23.20	0.22	-0.28	296.00	-1.21	-1.4	-20.77	11.61	-0.12	-0.56	10.30	0.17	0.03	10.87	16.7	2
9403	9403:WVGD13	End	50.50	22.19	0.21	-0.26	326.93	-1.53	-1.4	-20.77	11.61	-0.12	-0.55	10.91	0.16	0.02	11.46	17.6	2
9403	9403:WVGD13	Origin	50.50	22.19	0.21	-0.26	326.93	-1.53	-1.4	-22.09	11.83	-0.12	-0.59	10.91	0.17	0.02	11.50	17.7	2
9403	SpliceT	End	54.83	20.60	0.19	-0.24	378.17	-2.06	-1.4	-22.09	11.83	-0.12	-0.57	11.81	0.16	0.02	12.38	19.4	2
9403	SpliceT	Origin	54.83	20.60	0.19	-0.24	378.17	-2.06	-1.4	-22.76	11.94	-0.12	-0.58	11.81	0.16	0.02	12.40	19.4	2
9403	Tube 2	End	57.42	19.67	0.19	-0.22	409.02	-2.38	-1.4	-22.76	11.94	-0.12	-0.49	10.62	0.13	0.02	11.11	17.1	2
9403	Tube 2	Origin	57.42	19.67	0.19	-0.22	409.02	-2.38	-1.4	-23.53	12.04	-0.13	-0.50	10.62	0.14	0.02	11.13	17.1	2
9403	SpliceB	End	60.00	18.77	0.18	-0.21	440.12	-2.71	-1.4	-23.53	12.04	-0.13	-0.49	11.00	0.13	0.02	11.50	17.7	2
9403	SpliceB	Origin	60.00	18.77	0.18	-0.21	440.12	-2.71	-1.4	-23.96	12.09	-0.13	-0.50	11.00	0.13	0.02	11.50	17.7	2
9403	9403:WVGD12	End	60.50	18.59	0.18	-0.21	446.17	-2.77	-1.4	-23.96	12.09	-0.13	-0.50	11.07	0.13	0.02	11.57	17.8	2
9403	9403:WVGD12	Origin	60.50	18.59	0.18	-0.21	446.17	-2.77	-1.4	-25.16	12.27	-0.13	-0.52	11.07	0.14	0.02	11.60	17.8	2
9403	Tube 3	End	64.08	17.37	0.17	-0.19	490.14	-3.23	-1.4	-25.16	12.27	-0.13	-0.51	11.54	0.13	0.02	12.06	18.5	2
9403	Tube 3	Origin	64.08	17.37	0.17	-0.19	490.14	-3.23	-1.4	-25.77	12.39	-0.13	-0.52	11.54	0.13	0.02	12.07	18.6	2
9403	9403:Arm3	End	67.67	16.19	0.16	-0.17	534.55	-3.70	-1.4	-25.77	12.39	-0.13	-0.51	11.97	0.13	0.02	12.48	19.2	2
9403	9403:Arm3	Origin	67.67	16.19	0.16	-0.17	658.57	-3.80	-2.7	-34.07	19.05	-0.22	-0.67	14.74	0.20	0.03	15.42	23.7	2
9403	9403:WVGD11	End	70.50	15.28	0.15	-0.16	712.48	-4.41	-2.7	-34.07	19.05	-0.22	-0.66	15.33	0.20	0.03	16.00	24.6	2
9403	9403:WVGD11	Origin	70.50	15.28	0.15	-0.16	712.48	-4.41	-2.7	-35.64	19.28	-0.22	-0.69	15.33	0.20	0.03	16.03	24.7	2
9403	Tube 3	End	75.50	13.74	0.13	-0.14	808.86	-5.50	-2.7	-35.64	19.28	-0.22	-0.67	16.27	0.19	0.03	16.95	26.1	2
9403	Tube 3	Origin	75.50	13.74	0.13	-0.14	808.86	-5.50	-2.7	-36.58	19.44	-0.22	-0.69	16.27	0.19	0.03	16.96	26.1	2
9403	9403:WVGD10	End	80.50	12.30	0.12	-0.12	906.04	-6.61	-2.7	-36.58	19.44	-0.22	-0.66	17.08	0.19	0.03	17.74	27.5	2
9403	9403:WVGD10	Origin	80.50	12.30	0.12	-0.12	906.04	-6.61	-2.7	-38.04	19.64	-0.22	-0.69	17.08	0.19	0.03	17.77	27.5	2
9403	SpliceT	End	81.83	11.93	0.12	-0.11	932.21	-6.91	-2.7	-38.04	19.64	-0.22	-0.69	17.27	0.19	0.03	17.96	27.9	2
9403	SpliceT	Origin	81.83	11.93	0.12	-0.11	932.21	-6.91	-2.7	-38.62	19.73	-0.23	-0.60	14.78	0.16	0.02	15.38	23.7	2
9403	Tube 4	End	85.75	10.88	0.11	-0.10	1009.51	-7.79	-2.7	-38.62	19.73	-0.23	-0.58	15.24	0.16	0.02	15.83	24.3	2
9403	Tube 4	Origin	85.75	10.88	0.11	-0.10	1009.51	-7.79	-2.7	-39.52	19.86	-0.23	-0.59	15.24	0.16	0.02	15.84	24.4	2
9403	9403:Arm4	End	89.67	9.87	0.10	-0.09	1087.34	-8.69	-2.7	-39.52	19.86	-0.23	-0.58	15.65	0.15	0.02	16.23	25.0	2
9403	9403:Arm4	Origin	89.67	9.87	0.10	-0.09	1214.07	-8.78	-4.1	-47.86	26.45	-0.31	-0.70	17.47	0.21	0.03	18.17	28.0	2
9403	9403:WVGD9	End	90.50	9.66	0.10	-0.09	1236.02	-9.04	-4.1	-47.86	26.45	-0.31	-0.70	17.61	0.20	0.03	18.31	28.2	2
9403	9403:WVGD9	Origin	90.50	9.66	0.10	-0.09	1236.02	-9.04	-4.1	-49.28	26.62	-0.32	-0.72	17.61	0.21	0.03	18.33	28.2	2
9403	Tube 4	End	94.29	8.75	0.09	-0.08	1336.95	-10.24	-4.1	-49.28	26.62	-0.32	-0.70	18.20	0.20	0.03	18.91	29.1	2
9403	Tube 4	Origin	94.29	8.75	0.09	-0.08	1336.95	-10.24	-4.1	-50.21	26.74	-0.32	-0.72	18.20	0.20	0.03	18.92	29.1	2

9403	SpliceT	End	98.08	7.89	0.08	-0.07	1438.35	-11.45	-4.1	-50.21	26.74	-0.32	-0.70	18.74	0.20	0.03	19.44	29.9	2
9403	SpliceT	Origin	98.08	7.89	0.08	-0.07	1438.35	-11.44	-4.1	-51.32	26.85	-0.32	-0.72	18.74	0.20	0.03	19.46	29.9	2
9403	9403:WVGD8	End	100.50	7.37	0.07	-0.06	1503.25	-12.22	-4.1	-51.32	26.85	-0.32	-0.63	17.31	0.17	0.02	17.95	27.6	2
9403	9403:WVGD8	Origin	100.50	7.37	0.07	-0.06	1503.25	-12.22	-4.1	-53.98	27.08	-0.32	-0.66	17.31	0.18	0.02	17.98	27.7	2
9403	SpliceB	End	104.83	6.49	0.06	-0.05	1620.57	-13.62	-4.1	-53.98	27.08	-0.32	-0.65	17.76	0.17	0.02	18.41	28.3	2
9403	SpliceB	Origin	104.83	6.49	0.06	-0.05	1620.57	-13.61	-4.1	-55.56	27.21	-0.32	-0.67	17.76	0.17	0.02	18.43	28.4	2
9403	Tube 5	End	107.67	5.94	0.06	-0.05	1697.66	-14.54	-4.1	-55.56	27.21	-0.32	-0.66	18.03	0.17	0.02	18.68	28.7	2
9403	Tube 5	Origin	107.67	5.94	0.06	-0.05	1697.66	-14.54	-4.1	-56.40	27.30	-0.33	-0.67	18.03	0.17	0.02	18.69	28.8	2
9403	9403:WVGD7	End	110.50	5.42	0.05	-0.04	1775.02	-15.47	-4.1	-56.40	27.30	-0.33	-0.66	18.27	0.17	0.02	18.92	29.1	2
9403	9403:WVGD7	Origin	110.50	5.42	0.05	-0.04	1775.02	-15.46	-4.1	-58.44	27.53	-0.33	-0.68	18.27	0.17	0.02	18.95	29.2	2
9403	Tube 5	End	115.50	4.58	0.05	-0.04	1912.67	-17.12	-4.1	-58.44	27.53	-0.33	-0.66	18.65	0.16	0.02	19.31	29.7	2
9403	Tube 5	Origin	115.50	4.58	0.05	-0.04	1912.67	-17.11	-4.1	-59.99	27.71	-0.33	-0.68	18.65	0.17	0.02	19.33	29.7	2
9403	9403:WVGD6	End	120.50	3.81	0.04	-0.03	2051.21	-18.78	-4.1	-59.99	27.71	-0.33	-0.66	18.97	0.16	0.02	19.64	30.2	2
9403	9403:WVGD6	Origin	120.50	3.81	0.04	-0.03	2051.21	-18.78	-4.1	-61.80	27.90	-0.34	-0.68	18.97	0.16	0.02	19.66	30.2	2
9403	SpliceT	End	121.58	3.66	0.04	-0.03	2081.42	-19.14	-4.1	-61.80	27.90	-0.34	-0.68	19.04	0.16	0.02	19.72	30.3	2
9403	SpliceT	Origin	121.58	3.66	0.04	-0.03	2081.42	-19.14	-4.1	-62.78	28.01	-0.34	-0.61	16.90	0.14	0.02	17.52	26.9	2
9403	Tube 6	End	126.04	3.06	0.03	-0.02	2206.30	-20.65	-4.1	-62.78	28.01	-0.34	-0.60	17.12	0.14	0.02	17.72	27.3	2
9403	Tube 6	Origin	126.04	3.06	0.03	-0.02	2206.30	-20.64	-4.1	-64.40	28.18	-0.34	-0.61	17.12	0.14	0.02	17.74	27.3	2
9403	9403:WVGD5	End	130.50	2.51	0.03	-0.02	2331.94	-22.17	-4.1	-64.40	28.18	-0.34	-0.60	17.31	0.14	0.02	17.91	27.6	2
9403	9403:WVGD5	Origin	130.50	2.51	0.03	-0.02	2331.94	-22.16	-4.1	-66.69	28.42	-0.34	-0.62	17.31	0.14	0.02	17.93	27.6	2
9403	Tube 6	End	133.75	2.15	0.02	-0.02	2424.30	-23.28	-4.1	-66.69	28.42	-0.34	-0.61	17.43	0.14	0.02	18.04	27.8	2
9403	Tube 6	Origin	133.75	2.15	0.02	-0.02	2424.30	-23.28	-4.1	-67.92	28.55	-0.35	-0.62	17.43	0.14	0.02	18.05	27.8	2
9403	SpliceT	End	137.00	1.82	0.02	-0.01	2517.08	-24.41	-4.1	-67.92	28.55	-0.35	-0.61	17.54	0.14	0.01	18.15	27.9	2
9403	SpliceT	Origin	137.00	1.82	0.02	-0.01	2517.08	-24.40	-4.1	-69.95	28.69	-0.35	-0.63	17.54	0.14	0.01	18.17	28.0	2
9403	9403:WVGD4	End	140.50	1.50	0.02	-0.01	2617.48	-25.63	-4.1	-69.95	28.69	-0.35	-0.57	16.52	0.12	0.01	17.09	26.3	2
9403	9403:WVGD4	Origin	140.50	1.50	0.02	-0.01	2617.48	-25.62	-4.1	-74.08	28.95	-0.35	-0.60	16.52	0.12	0.01	17.13	26.3	2
9403	SpliceB	End	145.08	1.13	0.01	-0.01	2750.14	-27.24	-4.1	-74.08	28.95	-0.35	-0.59	16.62	0.12	0.01	17.21	26.5	2
9403	SpliceB	Origin	145.08	1.13	0.01	-0.01	2750.14	-27.23	-4.1	-76.55	29.10	-0.35	-0.61	16.62	0.12	0.01	17.23	26.5	2
9403	Tube 7	End	147.79	0.93	0.01	-0.01	2828.95	-28.20	-4.1	-76.55	29.10	-0.35	-0.60	16.67	0.12	0.01	17.27	26.6	2
9403	Tube 7	Origin	147.79	0.93	0.01	-0.01	2828.95	-28.19	-4.1	-77.74	29.21	-0.36	-0.61	16.67	0.12	0.01	17.28	26.6	2
9403	9403:WVGD3	End	150.50	0.76	0.01	-0.01	2908.06	-29.16	-4.1	-77.74	29.21	-0.36	-0.60	16.71	0.12	0.01	17.32	26.6	2
9403	9403:WVGD3	Origin	150.50	0.76	0.01	-0.01	2908.06	-29.16	-4.1	-80.32	29.45	-0.36	-0.62	16.71	0.12	0.01	17.34	26.7	2
9403	Tube 7	End	155.50	0.48	0.01	-0.01	3055.30	-30.96	-4.1	-80.32	29.45	-0.36	-0.61	16.78	0.12	0.01	17.39	26.8	2
9403	Tube 7	Origin	155.50	0.48	0.01	-0.01	3055.30	-30.96	-4.1	-82.59	29.66	-0.36	-0.63	16.78	0.12	0.01	17.41	26.8	2
9403	9403:WVGD2	End	160.50	0.27	0.00	-0.00	3203.58	-32.78	-4.1	-82.59	29.66	-0.36	-0.61	16.84	0.12	0.01	17.45	26.8	2
9403	9403:WVGD2	Origin	160.50	0.27	0.00	-0.00	3203.58	-32.77	-4.1	-85.77	29.95	-0.37	-0.64	16.84	0.12	0.01	17.47	26.9	2
9403	Tube 8	End	165.50	0.12	0.00	-0.00	3353.32	-34.61	-4.1	-85.77	29.95	-0.37	-0.62	16.88	0.12	0.01	17.50	26.9	2
9403	Tube 8	Origin	165.50	0.12	0.00	-0.00	3353.32	-34.61	-4.1	-88.15	30.16	-0.37	-0.64	16.88	0.12	0.01	17.52	26.9	2
9403	9403:WVGD1	End	170.50	0.03	0.00	-0.00	3504.11	-36.47	-4.1	-88.15	30.16	-0.37	-0.63	16.90	0.11	0.01	17.53	27.0	2
9403	9403:WVGD1	Origin	170.50	0.03	0.00	-0.00	3504.11	-36.47	-4.1	-91.43	30.46	-0.38	-0.65	16.90	0.11	0.01	17.55	27.0	2
9403	9403:g	End	175.50	0.00	0.00	0.00	3656.38	-38.35	-4.1	-91.43	30.46	-0.38	-0.64	16.92	0.11	0.01	17.56	27.0	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	33.36	0.30	-0.97	-12.65	-0.12	-0.0	1.99	1.61	0.01	0.26	9.00	0.00	0.00	9.26	14.3	1
Davit1	#Davit1:0	End	3.38	33.44	0.31	-2.43	-7.20	-0.07	-0.0	1.99	1.61	0.01	0.32	8.04	0.00	0.00	8.36	12.9	1
Davit1	#Davit1:0	Origin	3.38	33.44	0.31	-2.43	-7.20	-0.07	-0.0	2.00	1.53	0.01	0.33	8.04	0.00	0.00	8.36	12.9	1
Davit1	Davit1:V	End	6.77	33.53	0.31	-4.00	-2.01	-0.02	-0.0	2.00	1.53	0.01	0.43	4.01	0.01	0.00	4.44	6.8	1
Davit1	Davit1:V	Origin	6.77	33.53	0.31	-4.00	-2.01	-0.02	0.0	2.10	1.34	0.01	0.46	4.01	0.01	0.00	4.47	6.9	1
Davit1	Davit1:End	End	8.27	33.51	0.32	-4.72	0.00	0.00	0.0	2.10	1.34	0.01	0.53	0.00	0.71	0.00	1.34	2.1	3
Davit2	Davit2:O	Origin	0.00	24.21	0.23	-0.88	-109.96	-1.15	-0.0	5.85	8.15	0.08	0.32	16.97	0.01	0.00	17.29	26.6	1
Davit2	#Davit2:0	End	5.00	24.38	0.23	-2.94	-69.22	-0.74	-0.0	5.85	8.15	0.08	0.39	15.98	0.01	0.00	16.37	25.2	1
Davit2	#Davit2:0	Origin	5.00	24.38	0.23	-2.94	-69.22	-0.74	-0.0	5.89	7.90	0.08	0.39	15.98	0.01	0.00	16.38	25.2	1

Davit2	#Davit2:1	End	8.53	24.51	0.24	-4.54	-41.32	-0.45	-0.0	5.89	7.90	0.08	0.47	13.44	0.01	0.00	13.91	21.4	1
Davit2	#Davit2:1	Origin	8.53	24.51	0.24	-4.54	-41.32	-0.45	-0.0	5.92	7.74	0.08	0.47	13.44	0.01	0.00	13.91	21.4	1
Davit2	Davit2:V	End	12.06	24.64	0.25	-6.25	-14.03	-0.16	-0.0	5.92	7.74	0.08	0.57	6.90	0.02	0.00	7.48	11.5	1
Davit2	Davit2:V	Origin	12.06	24.64	0.25	-6.25	-14.03	-0.16	0.0	6.65	7.01	0.08	0.64	6.90	0.02	0.00	7.55	11.6	1
Davit2	Davit2:End	End	14.06	24.62	0.26	-7.26	-0.00	0.00	0.0	6.65	7.01	0.08	0.74	0.00	1.62	0.00	2.90	4.5	3
Davit3	Davit3:O	Origin	0.00	16.18	0.16	-0.74	-110.39	-1.16	-0.0	5.80	8.18	0.08	0.32	17.04	0.01	0.00	17.35	26.7	1
Davit3	#Davit3:0	End	5.00	16.33	0.16	-2.49	-69.50	-0.75	-0.0	5.80	8.18	0.08	0.39	16.05	0.01	0.00	16.44	25.3	1
Davit3	#Davit3:0	Origin	5.00	16.33	0.16	-2.49	-69.50	-0.75	-0.0	5.84	7.93	0.08	0.39	16.05	0.01	0.00	16.44	25.3	1
Davit3	#Davit3:1	End	8.53	16.44	0.17	-3.86	-41.50	-0.46	-0.0	5.84	7.93	0.08	0.46	13.50	0.01	0.00	13.96	21.5	1
Davit3	#Davit3:1	Origin	8.53	16.44	0.17	-3.86	-41.50	-0.46	-0.0	5.88	7.77	0.08	0.46	13.50	0.01	0.00	13.97	21.5	1
Davit3	Davit3:V	End	12.06	16.56	0.18	-5.36	-14.10	-0.16	-0.0	5.88	7.77	0.08	0.57	6.94	0.02	0.00	7.51	11.5	1
Davit3	Davit3:V	Origin	12.06	16.56	0.18	-5.36	-14.10	-0.17	0.0	6.61	7.05	0.08	0.64	6.94	0.02	0.00	7.58	11.7	1
Davit3	Davit3:End	End	14.06	16.54	0.18	-6.24	-0.00	0.00	0.0	6.61	7.05	0.08	0.73	0.00	1.63	0.00	2.91	4.5	3
Davit4	Davit4:O	Origin	0.00	9.87	0.10	-0.60	-110.91	-1.18	-0.0	5.74	8.21	0.08	0.31	17.12	0.01	0.00	17.43	26.8	1
Davit4	#Davit4:0	End	5.00	9.98	0.10	-1.97	-69.84	-0.76	-0.0	5.74	8.21	0.08	0.38	16.13	0.01	0.00	16.51	25.4	1
Davit4	#Davit4:0	Origin	5.00	9.98	0.10	-1.97	-69.84	-0.76	-0.0	5.79	7.97	0.08	0.39	16.13	0.01	0.00	16.51	25.4	1
Davit4	#Davit4:1	End	8.53	10.08	0.11	-3.07	-41.71	-0.46	-0.0	5.79	7.97	0.08	0.46	13.57	0.01	0.00	14.03	21.6	1
Davit4	#Davit4:1	Origin	8.53	10.08	0.11	-3.07	-41.71	-0.46	-0.0	5.82	7.80	0.08	0.46	13.57	0.01	0.00	14.03	21.6	1
Davit4	Davit4:V	End	12.06	10.18	0.12	-4.30	-14.18	-0.17	-0.0	5.82	7.80	0.08	0.56	6.98	0.02	0.00	7.54	11.6	1
Davit4	Davit4:V	Origin	12.06	10.18	0.12	-4.30	-14.18	-0.17	0.0	6.56	7.09	0.08	0.64	6.98	0.02	0.00	7.61	11.7	1
Davit4	Davit4:End	End	14.06	10.17	0.12	-5.04	-0.00	0.00	0.0	6.56	7.09	0.08	0.73	0.00	1.64	0.00	2.93	4.5	3

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

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Usage %
Clamp1	2.488	80.00	80.00	3.11
Clamp2	9.642	80.00	80.00	12.05
Clamp3	9.638	80.00	80.00	12.05
Clamp4	9.632	80.00	80.00	12.04
Clamp5	0.865	80.00	80.00	1.08
Clamp6	0.865	80.00	80.00	1.08
Clamp7	0.865	80.00	80.00	1.08
Clamp8	0.865	80.00	80.00	1.08
Clamp9	0.865	80.00	80.00	1.08
Clamp10	0.865	80.00	80.00	1.08
Clamp11	0.865	80.00	80.00	1.08
Clamp12	0.865	80.00	80.00	1.08
Clamp13	0.865	80.00	80.00	1.08
Clamp14	0.865	80.00	80.00	1.08
Clamp15	0.865	80.00	80.00	1.08
Clamp16	0.865	80.00	80.00	1.08
Clamp17	0.865	80.00	80.00	1.08
Clamp18	0.865	80.00	80.00	1.08
Clamp19	0.865	80.00	80.00	1.08
Clamp20	0.865	80.00	80.00	1.08
Clamp21	0.865	80.00	80.00	1.08
Clamp22	3.804	80.00	80.00	4.75

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

Summary of Steel Pole Usages:

Steel Pole Label	Maximum Usage %	Load Case	Segment Number	Weight (lbs)
9403	50.95	NESC Extreme	36	51849.3

Base Plate Results by Bend Line:

Pole Label	Load Case	Bend Line #	Start X (ft)	Start Y (ft)	End X (ft)	End Y (ft)	Length (in)	Bending Stress (ksi)	Bolt Mom. Sum (ft-k)	# Bolts Acting	Bolt Max Load (kips)	Min Plate Thickness (in)	Actual Thickness (in)	Usage %
9403	NESC Heavy	1	2.661	1.929	0.449	3.206	30.657	15.242	73.923	6	80.078	1.863	3.375	30.48
9403	NESC Heavy	2	3.206	0.449	1.929	2.661	30.657	8.848	42.916	6	65.822	1.420	3.375	17.70
9403	NESC Heavy	3	3.001	-1.176	3.001	1.176	28.220	2.732	12.196	4	27.648	0.789	3.375	5.46
9403	NESC Heavy	4	1.929	-2.661	3.206	-0.449	30.657	7.743	37.554	6	-60.256	1.328	3.375	15.49
9403	NESC Heavy	5	0.449	-3.206	2.661	-1.929	30.657	13.976	67.785	6	-73.684	1.784	3.375	27.95
9403	NESC Heavy	6	-1.176	-3.001	1.176	-3.001	28.220	11.429	51.025	4	-73.684	1.614	3.375	22.86
9403	NESC Heavy	7	-2.661	-1.929	-0.449	-3.206	30.657	13.766	66.765	6	-73.339	1.771	3.375	27.53
9403	NESC Heavy	8	-3.206	-0.449	-1.929	-2.661	30.657	7.373	35.758	6	-59.084	1.296	3.375	14.75
9403	NESC Heavy	9	-3.001	1.176	-3.001	-1.176	28.220	2.732	12.196	4	29.522	0.789	3.375	5.46
9403	NESC Heavy	10	-1.929	2.661	-3.206	0.449	30.657	9.219	44.712	6	66.995	1.449	3.375	18.44
9403	NESC Heavy	11	-0.449	3.206	-2.661	1.929	30.657	15.452	74.943	6	80.423	1.876	3.375	30.90
9403	NESC Heavy	12	1.176	3.001	-1.176	3.001	28.220	12.491	55.764	4	80.423	1.687	3.375	24.98
9403	NESC Heavy	13	1.594	2.790	0.364	3.119	15.278	14.356	34.699	3	80.078	1.808	3.375	28.71
9403	NESC Heavy	14	2.917	1.477	1.477	2.917	24.425	7.947	30.708	5	72.130	1.345	3.375	15.89
9403	NESC Heavy	15	3.119	0.364	2.790	1.594	15.278	4.801	11.603	3	38.581	1.046	3.375	9.60
9403	NESC Heavy	16	2.790	-1.594	3.119	-0.364	15.278	3.894	9.412	3	-33.597	0.942	3.375	7.79
9403	NESC Heavy	17	1.477	-2.917	2.917	-1.477	24.425	7.203	27.835	5	-66.306	1.281	3.375	14.41
9403	NESC Heavy	18	0.364	-3.119	1.594	-2.790	15.278	13.211	31.930	3	-73.684	1.735	3.375	26.42
9403	NESC Heavy	19	-1.594	-2.790	-0.364	-3.119	15.278	13.100	31.663	3	-73.339	1.728	3.375	26.20
9403	NESC Heavy	20	-2.917	-1.477	-1.477	-2.917	24.425	7.011	27.093	5	-65.391	1.264	3.375	14.02
9403	NESC Heavy	21	-3.119	-0.364	-2.790	-1.594	15.278	3.545	8.568	3	-31.842	0.899	3.375	7.09
9403	NESC Heavy	22	-2.790	1.594	-3.119	0.364	15.278	5.150	12.448	3	40.336	1.083	3.375	10.30
9403	NESC Heavy	23	-1.477	2.917	-2.917	1.477	24.425	8.139	31.450	5	73.045	1.362	3.375	16.28
9403	NESC Heavy	24	-0.364	3.119	-1.594	2.790	15.278	14.466	34.965	3	80.423	1.815	3.375	28.93
9403	NESC Extreme	1	2.661	1.929	0.449	3.206	30.657	21.980	106.607	6	115.666	2.238	3.375	43.96
9403	NESC Extreme	2	3.206	0.449	1.929	2.661	30.657	12.569	60.961	6	94.856	1.692	3.375	25.14
9403	NESC Extreme	3	3.001	-1.176	3.001	1.176	28.220	4.047	18.067	4	38.564	0.960	3.375	8.09
9403	NESC Extreme	4	1.929	-2.661	3.206	-0.449	30.657	12.010	58.252	6	-91.924	1.654	3.375	24.02
9403	NESC Extreme	5	0.449	-3.206	2.661	-1.929	30.657	21.304	103.328	6	-112.127	2.203	3.375	42.61
9403	NESC Extreme	6	-1.176	-3.001	1.176	-3.001	28.220	17.419	77.768	4	-112.127	1.992	3.375	34.84
9403	NESC Extreme	7	-2.661	-1.929	-0.449	-3.206	30.657	21.150	102.579	6	-111.873	2.195	3.375	42.30
9403	NESC Extreme	8	-3.206	-0.449	-1.929	-2.661	30.657	11.738	56.933	6	-91.063	1.635	3.375	23.48
9403	NESC Extreme	9	-3.001	1.176	-3.001	-1.176	28.220	4.047	18.067	4	39.940	0.960	3.375	8.09
9403	NESC Extreme	10	-1.929	2.661	-3.206	0.449	30.657	12.841	62.280	6	95.717	1.710	3.375	25.68
9403	NESC Extreme	11	-0.449	3.206	-2.661	1.929	30.657	22.135	107.356	6	115.919	2.246	3.375	44.27
9403	NESC Extreme	12	1.176	3.001	-1.176	3.001	28.220	18.017	80.435	4	115.919	2.026	3.375	36.03
9403	NESC Extreme	13	1.594	2.790	0.364	3.119	15.278	20.732	50.110	3	115.666	2.173	3.375	41.46
9403	NESC Extreme	14	2.917	1.477	1.477	2.917	24.425	11.415	44.109	5	104.104	1.613	3.375	22.83
9403	NESC Extreme	15	3.119	0.364	2.790	1.594	15.278	6.666	16.111	3	54.717	1.232	3.375	13.33
9403	NESC Extreme	16	2.790	-1.594	3.119	-0.364	15.278	6.216	15.023	3	-52.213	1.190	3.375	12.43
9403	NESC Extreme	17	1.477	-2.917	2.917	-1.477	24.425	11.029	42.620	5	-100.983	1.585	3.375	22.06

9403		NESC Extreme	18	0.364	-3.119	1.594	-2.790	15.278	20.107	48.597	3	-112.127	2.140	3.375	40.21
9403		NESC Extreme	19	-1.594	-2.790	-0.364	-3.119	15.278	20.026	48.402	3	-111.873	2.136	3.375	40.05
9403		NESC Extreme	20	-2.917	-1.477	-1.477	-2.917	24.425	10.888	42.075	5	-100.311	1.575	3.375	21.78
9403		NESC Extreme	21	-3.119	-0.364	-2.790	-1.594	15.278	5.959	14.403	3	-50.924	1.165	3.375	11.92
9403		NESC Extreme	22	-2.790	1.594	-3.119	0.364	15.278	6.922	16.732	3	56.006	1.256	3.375	13.84
9403		NESC Extreme	23	-1.477	2.917	-2.917	1.477	24.425	11.556	44.654	5	104.776	1.623	3.375	23.11
9403		NESC Extreme	24	-0.364	3.119	-1.594	2.790	15.278	20.813	50.306	3	115.919	2.178	3.375	41.63
9403	NESC Extreme Ice w/ Wind		1	2.661	1.929	0.449	3.206	30.657	12.045	58.417	6	63.243	1.656	3.375	24.09
9403	NESC Extreme Ice w/ Wind		2	3.206	0.449	1.929	2.661	30.657	7.001	33.956	6	52.029	1.263	3.375	14.00
9403	NESC Extreme Ice w/ Wind		3	3.001	-1.176	3.001	1.176	28.220	2.160	9.642	4	21.896	0.701	3.375	4.32
9403	NESC Extreme Ice w/ Wind		4	1.929	-2.661	3.206	-0.449	30.657	6.116	29.664	6	-47.649	1.180	3.375	12.23
9403	NESC Extreme Ice w/ Wind		5	0.449	-3.206	2.661	-1.929	30.657	11.055	53.617	6	-58.322	1.587	3.375	22.11
9403	NESC Extreme Ice w/ Wind		6	-1.176	-3.001	1.176	-3.001	28.220	9.050	40.404	4	-58.322	1.436	3.375	18.10
9403	NESC Extreme Ice w/ Wind		7	-2.661	-1.929	-0.449	-3.206	30.657	10.917	52.950	6	-58.096	1.577	3.375	21.83
9403	NESC Extreme Ice w/ Wind		8	-3.206	-0.449	-1.929	-2.661	30.657	5.874	28.489	6	-46.882	1.157	3.375	11.75
9403	NESC Extreme Ice w/ Wind		9	-3.001	1.176	-3.001	-1.176	28.220	2.160	9.642	4	23.122	0.701	3.375	4.32
9403	NESC Extreme Ice w/ Wind		10	-1.929	2.661	-3.206	0.449	30.657	7.243	35.131	6	52.796	1.285	3.375	14.49
9403	NESC Extreme Ice w/ Wind		11	-0.449	3.206	-2.661	1.929	30.657	12.182	59.085	6	63.469	1.666	3.375	24.36
9403	NESC Extreme Ice w/ Wind		12	1.176	3.001	-1.176	3.001	28.220	9.861	44.024	4	63.469	1.499	3.375	19.72
9403	NESC Extreme Ice w/ Wind		13	1.594	2.790	0.364	3.119	15.278	11.341	27.411	3	63.243	1.607	3.375	22.68
9403	NESC Extreme Ice w/ Wind		14	2.917	1.477	1.477	2.917	24.425	6.283	24.280	5	56.998	1.196	3.375	12.57
9403	NESC Extreme Ice w/ Wind		15	3.119	0.364	2.790	1.594	15.278	3.803	9.191	3	30.532	0.931	3.375	7.61
9403	NESC Extreme Ice w/ Wind		16	2.790	-1.594	3.119	-0.364	15.278	3.072	7.424	3	-26.533	0.837	3.375	6.14
9403	NESC Extreme Ice w/ Wind		17	1.477	-2.917	2.917	-1.477	24.425	5.694	22.004	5	-52.450	1.139	3.375	11.39
9403	NESC Extreme Ice w/ Wind		18	0.364	-3.119	1.594	-2.790	15.278	10.454	25.266	3	-58.322	1.543	3.375	20.91
9403	NESC Extreme Ice w/ Wind		19	-1.594	-2.790	-0.364	-3.119	15.278	10.381	25.092	3	-58.096	1.538	3.375	20.76
9403	NESC Extreme Ice w/ Wind		20	-2.917	-1.477	-1.477	-2.917	24.425	5.569	21.519	5	-51.851	1.126	3.375	11.14
9403	NESC Extreme Ice w/ Wind		21	-3.119	-0.364	-2.790	-1.594	15.278	2.843	6.872	3	-25.385	0.805	3.375	5.69
9403	NESC Extreme Ice w/ Wind		22	-2.790	1.594	-3.119	0.364	15.278	4.031	9.743	3	31.680	0.958	3.375	8.06
9403	NESC Extreme Ice w/ Wind		23	-1.477	2.917	-2.917	1.477	24.425	6.409	24.765	5	57.597	1.208	3.375	12.82
9403	NESC Extreme Ice w/ Wind		24	-0.364	3.119	-1.594	2.790	15.278	11.413	27.585	3	63.469	1.612	3.375	22.83

Summary of Tubular Davit Usages:

Tubular Davit Label	Maximum Usage %	Load Case	Segment Number	Weight (lbs)
Davit1	14.25	NESC Extreme Ice w/ Wind	1	163.2
Davit2	28.64	NESC Heavy	1	653.2
Davit3	28.79	NESC Heavy	1	653.2
Davit4	28.97	NESC Heavy	1	653.2

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
NESC Heavy	37.58	9403	Steel Pole
NESC Extreme	50.95	9403	Steel Pole
NESC Extreme Ice w/ Wind	30.34	9403	Steel Pole

Summary of Steel Pole Usages by Load Case:

Load Case	Maximum Steel Pole Segment

	Usage %	Label	Number
NESC Heavy	37.58	9403	36
NESC Extreme	50.95	9403	36
NESC Extreme Ice w/ Wind	30.34	9403	36

Summary of Base Plate Usages by Load Case:

Load Case	Pole Label	Bend Line #	Length (in)	Vertical Load (kips)	X Moment (ft-k)	Y Moment (ft-k)	Bending Stress (ksi)	Bolt Moment Sum (ft-k)	# Bolts Acting On Bend Line	Max Bolt Load For Bend Line (kips)	Minimum Plate Thickness (in)	Usage %
NESC Heavy	9403	11	30.657	121.297	4624.804	-58.631	15.452	74.943	6	80.423	1.876	30.90
NESC Extreme	9403	11	30.657	68.269	6851.460	-43.056	22.135	107.356	6	115.919	2.246	44.27
NESC Extreme Ice w/ Wind	9403	11	30.657	92.653	3656.382	-38.348	12.182	59.085	6	63.469	1.666	24.36

Summary of Tubular Davit Usages by Load Case:

Load Case	Maximum Tubular Davit Segment Usage %	Label	Number
NESC Heavy	28.97	Davit4	1
NESC Extreme	14.21	Davit4	1
NESC Extreme Ice w/ Wind	26.82	Davit4	1

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load Case	Weight (lbs)
Clamp1	Clamp	3.28	NESC Heavy	0.0
Clamp2	Clamp	13.69	NESC Heavy	0.0
Clamp3	Clamp	13.69	NESC Heavy	0.0
Clamp4	Clamp	13.68	NESC Heavy	0.0
Clamp5	Clamp	1.17	NESC Heavy	0.0
Clamp6	Clamp	1.17	NESC Heavy	0.0
Clamp7	Clamp	1.17	NESC Heavy	0.0
Clamp8	Clamp	1.17	NESC Heavy	0.0
Clamp9	Clamp	1.17	NESC Heavy	0.0
Clamp10	Clamp	1.17	NESC Heavy	0.0
Clamp11	Clamp	1.17	NESC Heavy	0.0
Clamp12	Clamp	1.17	NESC Heavy	0.0
Clamp13	Clamp	1.17	NESC Heavy	0.0
Clamp14	Clamp	1.17	NESC Heavy	0.0
Clamp15	Clamp	1.17	NESC Heavy	0.0
Clamp16	Clamp	1.17	NESC Heavy	0.0
Clamp17	Clamp	1.17	NESC Heavy	0.0
Clamp18	Clamp	1.17	NESC Heavy	0.0
Clamp19	Clamp	1.17	NESC Heavy	0.0
Clamp20	Clamp	1.17	NESC Heavy	0.0
Clamp21	Clamp	1.17	NESC Heavy	0.0
Clamp22	Clamp	6.21	NESC Extreme	0.0

Loads At Insulator Attachments For All Load Cases:

Load Case	Insulator Label	Insulator Type	Structure Attach	Structure Attach	Structure Attach	Structure Attach	Structure Attach

		Label	Load X (kips)	Load Y (kips)	Load Z (kips)	Load Res. (kips)
NESC Heavy	Clamp1	Clamp Davit1:End	0.016	2.341	1.180	2.622
NESC Heavy	Clamp2	Clamp Davit2:End	0.100	7.817	7.674	10.955
NESC Heavy	Clamp3	Clamp Davit3:End	0.102	7.808	7.674	10.948
NESC Heavy	Clamp4	Clamp Davit4:End	0.103	7.798	7.674	10.941
NESC Heavy	Clamp5	Clamp 9403:WVGD1	0.000	0.119	0.930	0.938
NESC Heavy	Clamp6	Clamp 9403:WVGD2	0.000	0.119	0.930	0.938
NESC Heavy	Clamp7	Clamp 9403:WVGD3	0.000	0.119	0.930	0.938
NESC Heavy	Clamp8	Clamp 9403:WVGD4	0.000	0.119	0.930	0.938
NESC Heavy	Clamp9	Clamp 9403:WVGD5	0.000	0.119	0.930	0.938
NESC Heavy	Clamp10	Clamp 9403:WVGD6	0.000	0.119	0.930	0.938
NESC Heavy	Clamp11	Clamp 9403:WVGD7	0.000	0.119	0.930	0.938
NESC Heavy	Clamp12	Clamp 9403:WVGD8	0.000	0.119	0.930	0.938
NESC Heavy	Clamp13	Clamp 9403:WVGD9	0.000	0.119	0.930	0.938
NESC Heavy	Clamp14	Clamp 9403:WVGD10	0.000	0.119	0.930	0.938
NESC Heavy	Clamp15	Clamp 9403:WVGD11	0.000	0.119	0.930	0.938
NESC Heavy	Clamp16	Clamp 9403:WVGD12	0.000	0.119	0.930	0.938
NESC Heavy	Clamp17	Clamp 9403:WVGD13	0.000	0.119	0.930	0.938
NESC Heavy	Clamp18	Clamp 9403:WVGD14	0.000	0.119	0.930	0.938
NESC Heavy	Clamp19	Clamp 9403:WVGD15	0.000	0.119	0.930	0.938
NESC Heavy	Clamp20	Clamp 9403:WVGD16	0.000	0.119	0.930	0.938
NESC Heavy	Clamp21	Clamp 9403:WVGD17	0.000	0.119	0.930	0.938
NESC Heavy	Clamp22	Clamp 9403:AT&T	0.000	1.098	4.489	4.621
NESC Extreme	Clamp1	Clamp Davit1:End	0.012	1.803	0.248	1.820
NESC Extreme	Clamp2	Clamp Davit2:End	0.123	10.077	3.274	10.596
NESC Extreme	Clamp3	Clamp Davit3:End	0.125	10.071	3.274	10.591
NESC Extreme	Clamp4	Clamp Davit4:End	0.127	10.063	3.274	10.583
NESC Extreme	Clamp5	Clamp 9403:WVGD1	0.000	0.384	0.250	0.458
NESC Extreme	Clamp6	Clamp 9403:WVGD2	0.000	0.384	0.250	0.458
NESC Extreme	Clamp7	Clamp 9403:WVGD3	0.000	0.384	0.250	0.458
NESC Extreme	Clamp8	Clamp 9403:WVGD4	0.000	0.384	0.250	0.458
NESC Extreme	Clamp9	Clamp 9403:WVGD5	0.000	0.384	0.250	0.458
NESC Extreme	Clamp10	Clamp 9403:WVGD6	0.000	0.384	0.250	0.458
NESC Extreme	Clamp11	Clamp 9403:WVGD7	0.000	0.384	0.250	0.458
NESC Extreme	Clamp12	Clamp 9403:WVGD8	0.000	0.384	0.250	0.458
NESC Extreme	Clamp13	Clamp 9403:WVGD9	0.000	0.384	0.250	0.458
NESC Extreme	Clamp14	Clamp 9403:WVGD10	0.000	0.384	0.250	0.458
NESC Extreme	Clamp15	Clamp 9403:WVGD11	0.000	0.384	0.250	0.458
NESC Extreme	Clamp16	Clamp 9403:WVGD12	0.000	0.384	0.250	0.458
NESC Extreme	Clamp17	Clamp 9403:WVGD13	0.000	0.384	0.250	0.458
NESC Extreme	Clamp18	Clamp 9403:WVGD14	0.000	0.384	0.250	0.458
NESC Extreme	Clamp19	Clamp 9403:WVGD15	0.000	0.384	0.250	0.458
NESC Extreme	Clamp20	Clamp 9403:WVGD16	0.000	0.384	0.250	0.458
NESC Extreme	Clamp21	Clamp 9403:WVGD17	0.000	0.384	0.250	0.458
NESC Extreme	Clamp22	Clamp 9403:AT&T	0.000	4.447	2.214	4.968
NESC Extreme Ice w/ Wind	Clamp1	Clamp Davit1:End	0.014	2.049	1.411	2.488
NESC Extreme Ice w/ Wind	Clamp2	Clamp Davit2:End	0.081	6.351	7.254	9.642
NESC Extreme Ice w/ Wind	Clamp3	Clamp Davit3:End	0.082	6.345	7.254	9.638
NESC Extreme Ice w/ Wind	Clamp4	Clamp Davit4:End	0.083	6.337	7.254	9.632
NESC Extreme Ice w/ Wind	Clamp5	Clamp 9403:WVGD1	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp6	Clamp 9403:WVGD2	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp7	Clamp 9403:WVGD3	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp8	Clamp 9403:WVGD4	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp9	Clamp 9403:WVGD5	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp10	Clamp 9403:WVGD6	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp11	Clamp 9403:WVGD7	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp12	Clamp 9403:WVGD8	0.000	0.080	0.861	0.865

NESC Extreme Ice w/ Wind	Clamp13	Clamp	9403:WVGD9	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp14	Clamp	9403:WVGD10	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp15	Clamp	9403:WVGD11	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp16	Clamp	9403:WVGD12	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp17	Clamp	9403:WVGD13	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp18	Clamp	9403:WVGD14	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp19	Clamp	9403:WVGD15	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp20	Clamp	9403:WVGD16	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp21	Clamp	9403:WVGD17	0.000	0.080	0.861	0.865
NESC Extreme Ice w/ Wind	Clamp22	Clamp	9403:AT&T	0.000	0.963	3.680	3.804

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	28.885	0.321	44.501	3652.927	35.685	-4.962
NESC Extreme	42.989	0.387	16.534	5056.559	42.691	-6.028
NESC Extreme Ice w/ Wind	23.405	0.260	41.490	3031.362	28.959	-4.013

*** Weight of structure (lbs):
    Weight of Tubular Davit Arms: 2122.8
    Weight of Steel Poles: 51849.3
    Total: 53972.1

*** End of Report

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

Subject:	Anchor Bolt Analysis Pole #9403
Location:	Meriden, CT
Rev. 3: 12/11/18	Prepared by: T.J.L. Checked by: C.F.C. Job No. 18015.00

Anchor Bolt Analysis:

Input Data:

Bolt Force:

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

Maximum Shear Force at Base = $V_{base} := 66.3 \cdot kips$ (User Input from PLS-Pole)

Anchor Bolt Data:

Use AST MA615 Grade 75

Number of Anchor Bolts = $N := 36$ (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 = $V_{Max} := \frac{V_{base}}{N} = 1.8 \times 10^3 \, lbf$

Shear Stress per Bolt = $f_v := \frac{V_{Max}}{A_s} = 567.1 \, psi$

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 = $F_{tv} := F_t \cdot \sqrt{1 - \left(\frac{f_v}{F_v} \right)^2} = 74.98 \cdot ksi$

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"

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

Subject: CAISSON FOUNDATION ANALYSIS

Location: Meriden, CT

Rev. 3: 12/11/18

Prepared by: TJL Checked by: C.F.C.
Job No. 18015.00

Caisson Foundation:

Input Data:

Shear Force = $S := 66.3k \cdot 1.1 = 72.9 \cdot k$ *USER INPUT-FROM PLS-Pole*

Overturning Moment = $M := 6851.6ft \cdot k \cdot 1.1 = 7537 \cdot ft \cdot k$ *USER INPUT-FROM PLS-Pole*

Applied Axial Load = $A1 := 71.2k \cdot 1.1 = 78.3 \cdot k$ *USER INPUT-FROM PLS-Pole*

Bending Moment = $Mu := 8112ft \cdot k$ *USER INPUT--FROM LPILE*

Moment Capacity = $Mn := 19045ft \cdot k$ *USER INPUT--FROM LPILE*

Max Shear = $V_u := 1145602 \cdot lb$ *USER INPUT--FROM LPILE*

Foundation Diameter = $D := 8.5ft$ *USER INPUT*

Overall Length of Caisson = $L_c := 22.0ft$ *USER INPUT*

Depth From Top of Caisson to Grade = $L_{pag} := 0.5ft$ *USER INPUT*

Number of Rebar = $n := 58$ *USER INPUT*

Area of Rebar = $Ar := 1.56in^2$ *USER INPUT*

Area of Ties = $A_{tie} := 1.00in^2$ *USER INPUT*

Spacing of Ties = $S_{tie} := 6in$ *USER INPUT*

Rebar Yield Strength = $fy := 60ksi$ *USER INPUT*

Concrete Comp Strength = $f'c := 3500 \quad psi$ *USER INPUT*

Clear Cover = $CV := 3 \cdot in$ *USER INPUT*

Check Moment Capacity:

Factor of Safety = $FS := \frac{0.9Mn}{Mu} = 2.1$

Factor of Safety Required = $FS_{reqd} := 1.0$

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

FOSCheck = "OK"

Check Axial Capacity:

Concrete Weight = $A2 := .150\frac{k}{ft^3} \cdot L_c \cdot \pi \frac{D^2}{4} = 187.3 \cdot kips$

Total Axial Load = $AT := A1 + A2 = 265.6 \cdot kips$

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

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

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

AxialCheck = "OK"

Check Shear Capacity:

Shear Strength Reduction Factor = $\phi := 0.75$

Area of Concrete Pier = $A_c := \frac{1}{4}\cdot\pi\cdot D^2 = 8171\cdot in^2$

Nominal Shear Strength by Concrete = $V_c := 2\cdot\sqrt{f'c}\cdot psi\cdot A_c = 967\cdot kips$

Area of Shear Reinforcement = $A_v := 2\cdot A_{tie} = 2.00\,in^2$

$d := D - 2\cdot CV = 96\,in$

Nominal Shear Strength by Steel = $V_s := \frac{A_v\cdot fy\cdot d}{S_{tie}} = 1920\,kips$

Nominal Shear Strength = $\phi V_n := \phi\cdot\left(V_c + V_s\right) = 2165\cdot kips$

$\frac{V_u}{\phi V_n} = 52.9\cdot\%$

$ShearCheck := if\left(\phi V_n \geq V_u, "OK", "NO\ GOOD"\right)$

ShearCheck = "OK"

LPILE Plus for Windows, Version 5.0 (5.0.47)

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

This program is licensed to:

TJL
Centek Engineering

Files Used for Analysis

Path to file locations: J:\Jobs\1801500.WI\04_Structural\Backup Documentation\Rev (3)\Calcs\L-Pile\
Name of input data file: Caisson Analysis.lpd
Name of output file: Caisson Analysis.lpo
Name of plot output file: Caisson Analysis.lpp
Name of runtime file: Caisson Analysis.lpr

Time and Date of Analysis

Date: December 11, 2018 Time: 14:49:35

Problem Title

18015.00 / CT5279 / Structure # 9403

Program Options

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

Basic Program Options:

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

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

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

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

Pile Structural Properties and Geometry

Pile Length = 264.00 in

Depth of ground surface below top of pile = 12.00 in

Slope angle of ground surface = 0.00 deg.

Structural properties of pile defined using 2 points

Point No.	Point Depth in	Pile Diameter in	Moment of Inertia in**4	Pile Area Sq.in	Modulus of Elasticity lbs/Sq.in
1	0.0000	102.00000	5313376.	8171.3000	3300000.
2	264.0000	102.00000	5313376.	8171.3000	3300000.

Please note that because this analysis makes computations of ultimate moment capacity and pile response using nonlinear bending stiffness

that the above values of moment of inertia and modulus of are not used
for any computations other than total stress due to combined axial
loading and bending.

Soil and Rock Layering Information

The soil profile is modelled using 2 layers

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

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

(Depth of lowest layer extends   0.00 in below pile tip)

Effective Unit Weight of Soil vs. Depth

Effective unit weight of soil with depth defined using 4 points

Point No.	Depth X in	Eff. Unit Weight lbs/in**3
1	12.00	0.05800
2	102.00	0.05800
3	102.00	0.07800
4	264.00	0.07800

Shear Strength of Soils

Shear strength parameters with depth defined using 4 points

Point No.	Depth X in	Cohesion c lbs/in**2	Angle of Friction Deg.	E50 or k_rm	RQD %
1	12.000	0.00000	30.00	------	------
2	102.000	0.00000	30.00	------	------
3	102.000	250.00000	0.00	0.00050	50.0
4	264.000	250.00000	0.00	0.00050	50.0

Notes:

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

Loading Type

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

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load Case Number 1

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head = 72900.000 lbs
Bending moment at pile head = 90444000.000 in-lbs
Axial load at pile head = 78300.000 lbs

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

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

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Number of sections = 1

Pile Section No. 1

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

Outside Diameter = 102.0000 in

Material Properties:

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

Unfactored Axial Squash Load Capacity = 29469.19 kip

Distribution and Area of Steel Reinforcement

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

19	3.120	-20.155
20	3.120	-24.747
21	3.120	-29.048
22	3.120	-33.010
23	3.120	-36.584
24	3.120	-39.729
25	3.120	-42.409
26	3.120	-44.591
27	3.120	-46.250
28	3.120	-47.368
29	3.120	-47.930

Axial Thrust Force = 78300.00 lbs

Bending Moment in-lbs	Bending Stiffness lb-in2	Bending Curvature rad/in	Maximum Strain in/in	Neutral Axis Position inches	Max. Concrete Stress psi	Max. Steel Stress psi
13144187.	2.103070E+13	6.250000E-07	0.00003459	55.33837768	114.71948	947.35717
26148382.	2.091871E+13	0.00000125	0.00006658	53.26568010	218.70658	1819.57904
39014108.	2.080752E+13	0.00000188	0.00009862	52.59758171	320.90563	2693.04072
51738099.	2.069524E+13	0.00000250	0.00013062	52.24632248	421.03842	3565.25466
51738099.	1.655619E+13	0.00000313	0.00009376	30.00324020	301.84118	6246.45171
51738099.	1.379683E+13	0.00000375	0.00011084	29.55844519	354.95025	7544.11351
51738099.	1.182585E+13	0.00000438	0.00012795	29.24651840	407.60641	8841.04147
51738099.	1.034762E+13	0.00000500	0.00014509	29.01767340	459.80782	10137.22992
51738099.	9.197884E+12	0.00000563	0.00016253	28.89496735	512.43562	11424.40008
51738099.	8.278096E+12	0.00000625	0.00017970	28.75190350	563.64765	12719.70819
51738099.	7.525542E+12	0.00000688	0.00019689	28.63887629	614.40541	14014.21381
51738099.	6.898413E+12	0.00000750	0.00021411	28.54840770	664.70692	15307.91017
51738099.	6.367766E+12	0.00000813	0.00023136	28.47532395	714.55023	16600.78971

51738099.	5.912926E+12	0.00000875	0.00024864	28.41592249	763.93317
17892.84665					
54133825.	5.774275E+12	0.00000938	0.00026595	28.36749789	812.85382
19184.07256					
57575903.	5.757590E+12	0.00001000	0.00028328	28.32801649	861.31007
20474.46034					
61012978.	5.742398E+12	0.00001063	0.00030064	28.29592493	909.29985
21764.00232					
64445011.	5.728445E+12	0.00001125	0.00031804	28.27001336	956.82097
23052.69140					
67871970.	5.715534E+12	0.00001188	0.00033546	28.24933031	1003.87134
24340.51920					
71293808.	5.703505E+12	0.00001250	0.00035291	28.23310974	1050.44865
25627.47912					
74710501.	5.692229E+12	0.00001313	0.00037040	28.22074065	1096.55090
26913.56106					
78121994.	5.681600E+12	0.00001375	0.00038791	28.21171233	1142.17561
28198.75925					
81528256.	5.671531E+12	0.00001438	0.00040546	28.20561138	1187.32062
29483.06437					
84929255.	5.661950E+12	0.00001500	0.00042303	28.20209429	1231.98375
30766.46667					
88324931.	5.652796E+12	0.00001563	0.00044064	28.20086315	1276.16238
32048.96064					
91715258.	5.644016E+12	0.00001625	0.00045828	28.20167783	1319.85438
33330.53514					
95100194.	5.635567E+12	0.00001688	0.00047595	28.20432857	1363.05731
34611.18160					
98479684.	5.627411E+12	0.00001750	0.00049365	28.20863298	1405.76860
35890.89273					
1.018537E+08	5.619515E+12	0.00001813	0.00051139	28.21444210	1447.98600
37169.65690					
1.052222E+08	5.611850E+12	0.00001875	0.00052916	28.22161916	1489.70683
38447.46668					
1.085851E+08	5.604393E+12	0.00001938	0.00054696	28.23005167	1530.92872
39724.31089					
1.119424E+08	5.597121E+12	0.00002000	0.00056479	28.23963323	1571.64882
41000.18297					
1.152941E+08	5.590015E+12	0.00002063	0.00058266	28.25028178	1611.86482
42275.06952					
1.186400E+08	5.583059E+12	0.00002125	0.00060057	28.26191524	1651.57386
43548.96312					
1.219802E+08	5.576236E+12	0.00002188	0.00061850	28.27446672	1690.77333
44821.85262					
1.253145E+08	5.569535E+12	0.00002250	0.00063648	28.28787240	1729.46034
46093.72978					
1.286431E+08	5.562943E+12	0.00002313	0.00065449	28.30208668	1767.63253
47364.57871					
1.319657E+08	5.556450E+12	0.00002375	0.00067253	28.31705484	1805.28673

48634.39314
1.352823E+08 5.550045E+12 0.00002438 0.00069061 28.33273432 1842.42010
49903.16216
1.418976E+08 5.537466E+12 0.00002563 0.00072688 28.36608437 1915.11296
52437.51543
1.484884E+08 5.525148E+12 0.00002688 0.00076330 28.40187845 1985.68739
54967.54600
1.550542E+08 5.513040E+12 0.00002813 0.00079987 28.43990681 2054.11883
57493.15916
1.615916E+08 5.500992E+12 0.00002938 0.00083659 28.47978947 2120.37065
60000.00000
1.668524E+08 5.448241E+12 0.00003063 0.00087097 28.43995240 2180.03700
60000.00000
1.711844E+08 5.370490E+12 0.00003188 0.00090360 28.34822229 2234.57136
60000.00000
1.749217E+08 5.280654E+12 0.00003313 0.00093508 28.22884485 2285.29378
60000.00000
1.781597E+08 5.182829E+12 0.00003438 0.00096555 28.08882996 2332.62452
60000.00000
1.810652E+08 5.082531E+12 0.00003563 0.00099534 27.93950710 2377.23408
60000.00000
1.837990E+08 4.984380E+12 0.00003688 0.00102483 27.79197469 2419.78696
60000.00000
1.861253E+08 4.881974E+12 0.00003813 0.00105337 27.62941638 2459.43613
60000.00000
1.884374E+08 4.785711E+12 0.00003938 0.00108198 27.47875294 2497.70109
60000.00000
1.903693E+08 4.686013E+12 0.00004063 0.00110962 27.31379315 2533.23659
60000.00000
1.921412E+08 4.588447E+12 0.00004188 0.00113900 27.19999990 2569.57325
60000.00000
1.941309E+08 4.501587E+12 0.00004313 0.00116727 27.06713167 2603.02020
60000.00000
1.956906E+08 4.409930E+12 0.00004438 0.00119357 26.89726862 2632.75389
60000.00000
1.972437E+08 4.323150E+12 0.00004563 0.00121993 26.73814532 2661.32139
60000.00000
1.986974E+08 4.238878E+12 0.00004688 0.00124602 26.58168796 2688.35607
60000.00000
1.999486E+08 4.154776E+12 0.00004813 0.00127145 26.41973761 2713.51200
60000.00000
2.011941E+08 4.074817E+12 0.00004938 0.00129694 26.26721379 2737.57102
60000.00000
2.024338E+08 3.998692E+12 0.00005063 0.00132250 26.12343559 2760.52530
60000.00000
2.035675E+08 3.924192E+12 0.00005188 0.00134770 25.97983369 2782.00949
60000.00000
2.045530E+08 3.850410E+12 0.00005313 0.00137238 25.83302477 2801.92603
60000.00000

2.055335E+08	3.779927E+12	0.00005438	0.00139711	25.69401607	2820.80239
60000.00000					
2.065089E+08	3.712519E+12	0.00005563	0.00142190	25.56229386	2838.63120
60000.00000					
2.074140E+08	3.646840E+12	0.00005688	0.00145031	25.49999848	2857.82126
60000.00000					
2.084740E+08	3.586650E+12	0.00005813	0.00147549	25.38485554	2873.53937
60000.00000					
2.092142E+08	3.523607E+12	0.00005938	0.00149879	25.24280092	2887.02640
60000.00000					
2.099502E+08	3.463096E+12	0.00006063	0.00152214	25.10747954	2899.58072
60000.00000					
2.106820E+08	3.404962E+12	0.00006188	0.00154554	24.97849014	2911.19566
60000.00000					
2.114096E+08	3.349063E+12	0.00006313	0.00156900	24.85546491	2921.86447
60000.00000					
2.121330E+08	3.295270E+12	0.00006438	0.00159251	24.73806944	2931.58044
60000.00000					
2.128438E+08	3.243334E+12	0.00006563	0.00161603	24.62521854	2940.31798
60000.00000					
2.133976E+08	3.190991E+12	0.00006688	0.00163867	24.50352475	2947.79153
60000.00000					
2.139476E+08	3.140516E+12	0.00006813	0.00166137	24.38704428	2954.37372
60000.00000					
2.144940E+08	3.091805E+12	0.00006938	0.00168411	24.27550355	2960.05828
60000.00000					
2.150365E+08	3.044765E+12	0.00007063	0.00170691	24.16864416	2964.83874
60000.00000					
2.155753E+08	2.999309E+12	0.00007188	0.00172976	24.06623510	2968.70869
60000.00000					
2.161102E+08	2.955353E+12	0.00007313	0.00175266	23.96804836	2971.66142
60000.00000					
2.166412E+08	2.912823E+12	0.00007438	0.00177562	23.87388030	2973.69027
60000.00000					
2.177578E+08	2.832622E+12	0.00007688	0.00182863	23.78703824	2971.91415
60000.00000					
2.185007E+08	2.752765E+12	0.00007938	0.00187146	23.57743844	2968.76893
60000.00000					
2.192364E+08	2.677696E+12	0.00008188	0.00191449	23.38304999	2973.16880
60000.00000					
2.199647E+08	2.606989E+12	0.00008438	0.00195772	23.20256576	2974.95847
60000.00000					
2.206808E+08	2.540210E+12	0.00008688	0.00200124	23.03585503	2968.34052
60000.00000					
2.213901E+08	2.477092E+12	0.00008938	0.00204496	22.88062575	2968.14032
60000.00000					
2.219603E+08	2.415895E+12	0.00009188	0.00208748	22.72084281	2972.36121
60000.00000					
2.224747E+08	2.357348E+12	0.00009438	0.00212963	22.56566218	2974.58897

60000.00000					
2.229823E+08	2.301753E+12	0.00009688	0.00217200	22.42064980	2972.56759
60000.00000					
2.234825E+08	2.248881E+12	0.00009938	0.00221459	22.28520986	2965.61190
60000.00000					
2.239795E+08	2.198572E+12	0.00010188	0.00225731	22.15765831	2965.67105
60000.00000					
2.239795E+08	2.145912E+12	0.00010438	0.00230669	22.09999868	2971.08571
60000.00000					
2.251179E+08	2.106366E+12	0.00010688	0.00235524	22.03731421	2974.13826
60000.00000					
2.255825E+08	2.062469E+12	0.00010938	0.00239676	21.91322502	2974.99059
60000.00000					
2.259129E+08	2.019333E+12	0.00011188	0.00243792	21.79145828	2969.96057
60000.00000					
2.261961E+08	1.977671E+12	0.00011438	0.00247890	21.67346093	2964.27986
60000.00000					
2.264456E+08	1.937503E+12	0.00011688	0.00252095	21.56966570	2960.46926
60000.00000					
2.266867E+08	1.898946E+12	0.00011938	0.00256332	21.47280434	2965.46844
60000.00000					
2.269259E+08	1.861956E+12	0.00012188	0.00260578	21.38079455	2969.43330
60000.00000					
2.271633E+08	1.826438E+12	0.00012438	0.00264836	21.29335973	2972.34946
60000.00000					
2.273759E+08	1.792125E+12	0.00012688	0.00269182	21.21628770	2974.24427
60000.00000					
2.275728E+08	1.759017E+12	0.00012938	0.00273585	21.14664504	2974.99149
60000.00000					
2.277632E+08	1.727114E+12	0.00013188	0.00278019	21.08200291	2970.16027
60000.00000					
2.279516E+08	1.696384E+12	0.00013438	0.00282465	21.02064076	2964.64780
60000.00000					
2.281387E+08	1.666767E+12	0.00013688	0.00286920	20.96220294	2959.11500
60000.00000					
2.283243E+08	1.638201E+12	0.00013938	0.00291385	20.90654048	2956.37124
60000.00000					
2.284526E+08	1.610239E+12	0.00014188	0.00295715	20.84335443	2961.34912
60000.00000					
2.285559E+08	1.583071E+12	0.00014438	0.00300033	20.78153327	2965.53194
60000.00000					
2.286361E+08	1.556671E+12	0.00014688	0.00304456	20.72892585	2969.11079
60000.00000					
2.287150E+08	1.531146E+12	0.00014938	0.00308889	20.67875639	2971.85519
60000.00000					
2.287925E+08	1.506452E+12	0.00015188	0.00313332	20.63091847	2973.75292
60000.00000					
2.288686E+08	1.482549E+12	0.00015438	0.00317786	20.58531180	2974.79136
60000.00000					

2.289420E+08	1.459391E+12	0.00015688	0.00322257	20.54230115	2973.54444
60000.00000					
2.290117E+08	1.436936E+12	0.00015938	0.00326753	20.50215706	2968.84829
60000.00000					
2.290807E+08	1.415170E+12	0.00016188	0.00331256	20.46366665	2964.13757
60000.00000					
2.291489E+08	1.394062E+12	0.00016438	0.00335765	20.42676607	2959.41186
60000.00000					
2.293055E+08	1.374115E+12	0.00016688	0.00340425	20.40000030	2954.35831
60000.00000					
2.297260E+08	1.356316E+12	0.00016938	0.00345525	20.40000030	2948.38259
60000.00000					
2.301356E+08	1.338971E+12	0.00017188	0.00350625	20.40000030	2955.37258
60000.00000					
2.305341E+08	1.322060E+12	0.00017438	0.00355725	20.40000030	2961.29991
60000.00000					
2.311097E+08	1.288416E+12	0.00017938	0.00365925	20.40000030	2969.96664
60000.00000					
2.316037E+08	1.256156E+12	0.00018438	0.00376125	20.40000030	2974.38277
60000.00000					
2.316037E+08	1.222990E+12	0.00018938	0.00386088	20.38748226	2970.82601
60000.00000					

Unfactored (Nominal) Moment Capacity at Concrete Strain of 0.003 = 228555.10341 in-kip

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

Pile-head boundary conditions are Shear and Moment (Pile-head Condition Type 1)
Specified shear force at pile head = 72900.000 lbs
Specified moment at pile head = 90444000.000 in-lbs
Specified axial load at pile head = 78300.000 lbs

Output Verification:

Computed forces and moments are within specified convergence limits.

Summary of Pile Response(s)

Definition of Symbols for Pile-Head Loading Conditions:

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

Load Type	Pile-Head Condition 1	Pile-Head Condition 2	Axial Load lbs	Pile-Head Deflection in	Maximum Moment in-lbs	Maximum Shear lbs
1	V= 72900.	M= 9.04E+07	78300.0000	0.4052736	9.7336E+07	-1145602.

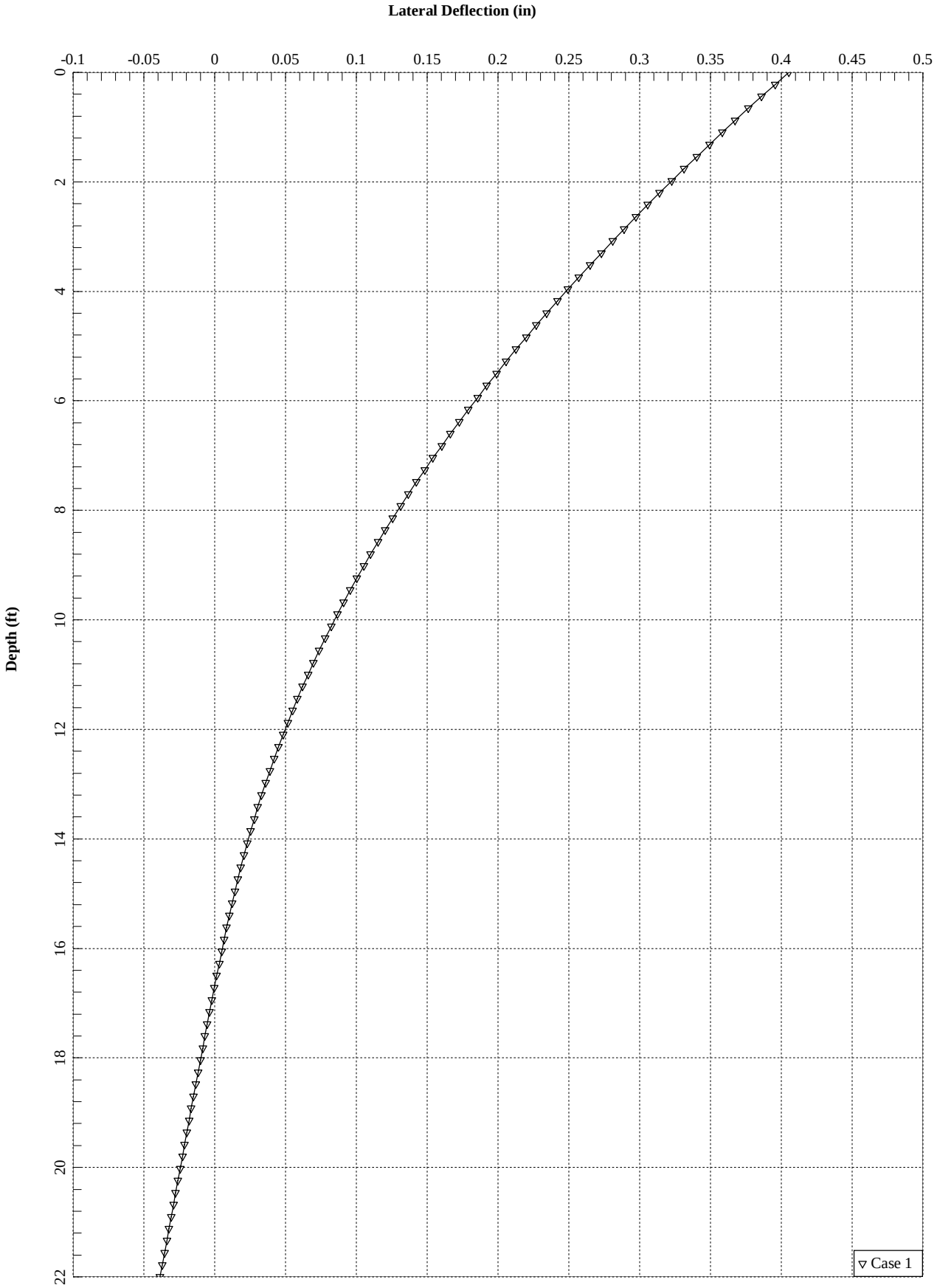
Computed Pile-head Stiffness Matrix Members
K22, K23, K32, K33 for Superstructure

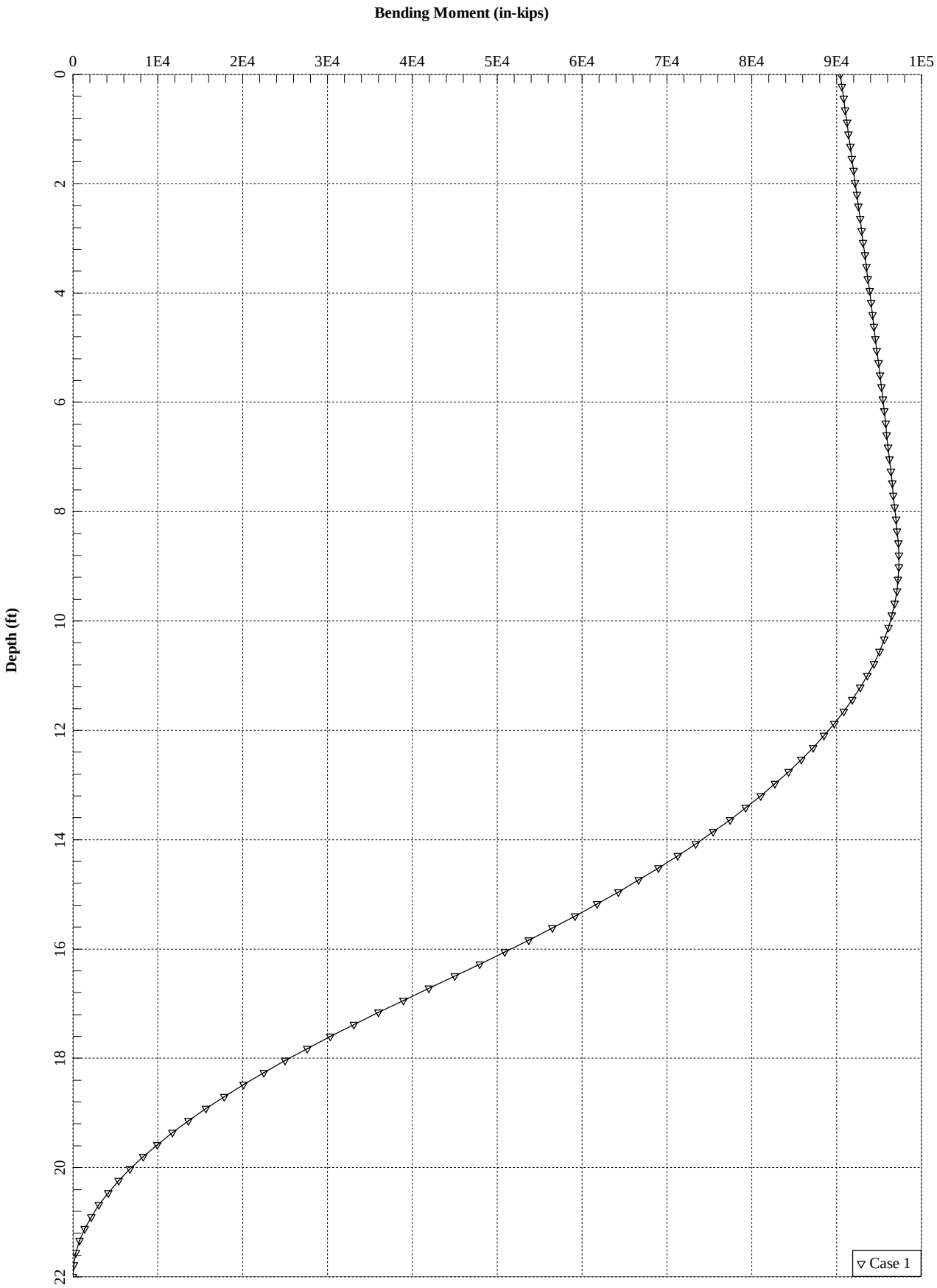
Top y in	Shear React. lbs	Mom. React. in-lbs	K22 lbs/in	K32 in-lbs/in
0.00007611	7290.00011	497643.28175	95784949.	6.538647E+09
0.00024856	21945.08668	1538483.	88287767.	6.189506E+09
0.00044346	34782.13947	2530119.	78433911.	5.705431E+09
0.00059936	43890.17337	3260547.	73227945.	5.440014E+09
0.00072908	50954.91332	3839580.	69889424.	5.266343E+09
0.00084036	56727.22615	4319944.	67503402.	5.140581E+09
0.00093801	61607.64712	4730798.	65678763.	5.043416E+09
0.00097602	65835.26005	5017674.	67453020.	5.140973E+09
0.00105047	69564.27894	5331779.	66221862.	5.075598E+09
0.00111846	72900.00000	5614586.	65179010.	5.019933E+09

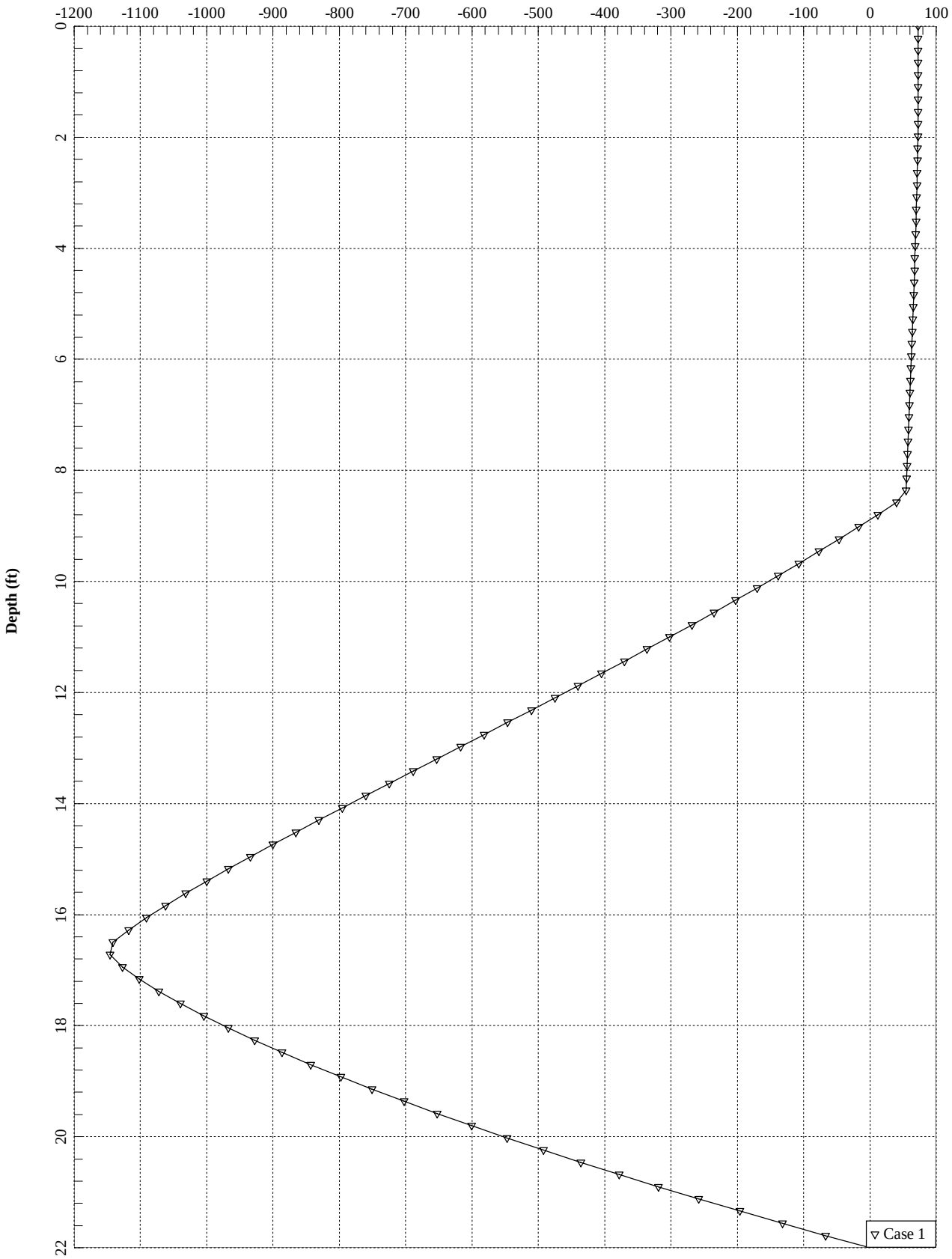
Top Rota. rad	Shear React. lbs	Mom. React. in-lbs	K23 lbs/rad	K33 in-lbs/rad
0.00001702	87716.03394	9044400.	5.153459E+09	5.313731E+11
0.00005788	236953.06775	27226357.	4.093761E+09	4.703809E+11
0.00009765	356411.47319	43152755.	3.649810E+09	4.419032E+11
0.00013187	436089.79251	54452714.	3.306933E+09	4.129229E+11
0.00023883	498490.12286	63217643.	2.087216E+09	2.646970E+11
0.00037428	557815.05894	70379112.	1.490356E+09	1.880371E+11
0.00046437	604201.18094	76434047.	1.301122E+09	1.645976E+11
0.00053356	642534.66002	81679071.	1.204233E+09	1.530822E+11
0.00059520	675731.29169	86305510.	1.135296E+09	1.450019E+11
0.00064943	704729.85332	90444000.	1.085154E+09	1.392671E+11

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

The analysis ended normally.


Lateral Deflection (in)
-0.1
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
Depth (ft)
0
2
4
6
8
10
12
14
16
18
20
22
Case 1


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


Shear Force (kips)
-1200
-1100
-1000
-900
-800
-700
-600
-500
-400
-300
-200
-100
0
100
Depth (ft)
0
2
4
6
8
10
12
14
16
18
20
22
Case 1

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CTU5279	DATE:	08/28/2017	RF DESIGN ENG:	Fatah Fatah
ISSUE:	Bronze Standard	Approved? (Y/N):	Yes	RF DESIGN PHONE:	510-679-8502
REVISION:	Preliminary	RF MANAGER:	John Benedetto	RF DESIGN EMAIL:	ff5901@att.com
INITIATIVE /PROJECT:	LTE 3C WCS,LTE 4C 850				

RF PERF ENG:		RFDS PROGRAM TYPE:	2018 LTE Next Carrier		
RF PERF PHONE:		RFDS TECHNOLOGY:	LTE		
RF PERF EMAIL:		STATE/STATUS:	Preliminary/Approved		
RFDS VERSION:	1.00	RFDS ID:	1783046		
GSM FREQUENCY:		Created By:	ff5901	Updated By:	rx855w
UMTS FREQUENCY:	850	Date Created:	5/24/2017 4:04:12 PM	Date Updated:	8/28/2017 7:51:30 PM
LTE FREQUENCY:	700, 850, 1900, WCS				
I-PLAN JOB # 1:	NER-RCTB-16-02483	IPLAN PRD GRP || SUB GRP #1:	LTE Next Carrier || LTE 3C		
I-PLAN JOB # 2:	NER-RCTB-17-03414	IPLAN PRD GRP || SUB GRP #2:	LTE Next Carrier || LTE 4C		
I-PLAN JOB # 3:		IPLAN PRD GRP || SUB GRP #3:			
I-PLAN JOB # 4:		IPLAN PRD GRP || SUB GRP #4:			
I-PLAN JOB # 5:		IPLAN PRD GRP || SUB GRP #5:			
I-PLAN JOB # 6:		IPLAN PRD GRP || SUB GRP #6:			
I-PLAN JOB # 7:		IPLAN PRD GRP || SUB GRP #7:			
I-PLAN JOB # 8:		IPLAN PRD GRP || SUB GRP #8:			

Section 2 - LOCATION INFORMATION

USID:	25924	FA LOCATION CODE:	10105380	LOCATION NAME:	MERIDEN BIRDSEY AVENUE
REGION:	NORTHEAST	MARKET CLUSTER:	NEW ENGLAND	MARKET:	CONNECTICUT
ADDRESS:	74 BIRDSEY AVENUE	CITY:	MERIDEN	STATE:	CT
ZIP CODE:	06450	COUNTY:	NEW HAVEN	LONG (DEC. DEG.):	-72.7503989
LATITUDE (D-M-S):	41d 31m 26.01084s	LONGITUDE (D-M-S):	-72d -45m -1.43604s	LAT (DEC. DEG.):	41.5238919
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:	CT-279 (UPDATED 5/7/2004)MIDDLEFIELD WEST BLACKTAKE I-91 NORTH TO EXIT 16 AND TAKE A RIGHT ON EAST MAIN STREET GO ABOUT 1 MILE AND TURN RIGHT ON CONE AVE TAKE YOUR FIRST LEFT ON BIRDSEYE AVE .THEN TAKE YOUR FIRST RIGHT INTO PBA CLUB TOWER IS IN BACK ON POWER LINE.DEMARC IS LOCATED IN HOFFMAN BOX NEXT TO THE SITE. T-1 IS NOT LINE POWERED IF WE LOOSE COMMERCIAL POWER THE T-1 GOES DOWN.ADDRESS: 74 BIRDSEYE AVE., MERIDEN, CT 06450ACCESS: 24/7 , GATE COMBO 8899CONTACT: 203-630-6201SECURITY: NO ISSUESPOWER COMPANY: NORTHEAST UTILITIES (800) 286-2000 METER:# 88 685 584FIRE: (203) 235-2537 POLICE: (203) 630-6201 T-1 CIRCUIT NUMBERS HCGS 707645SNET: (800) 448-1008 AND (203) 420-3131 (24-HR REPAIR)				

ORACLE PTN # 1:	2051A0ACTX	PACE JOB # 1:	MRCTB022440		
ORACLE PTN # 2:	2051A0C6AR	PACE JOB # 2:	MRCTB025041		
ORACLE PTN # 3:		PACE JOB # 3:			
ORACLE PTN # 4:		PACE JOB # 4:			
ORACLE PTN # 5:		PACE JOB # 5:			
ORACLE PTN # 6:		PACE JOB # 6:			
ORACLE PTN # 7:		PACE JOB # 7:			
ORACLE PTN # 8:		PACE JOB # 8:			
BORDER CELL WITH CONTOUR COORD:		SEARCH RING NAME:			
AM STUDY REQ'D (Y/N):	No	SEARCH_RING_ID:			
FREQ COORD:		BTA:		MSA / RSA:	
OPS DISTRICT:	CT-North	LAC(GSM):	05008		
OPS ZONE:	NE_CT_S_MDSX_N_CS	LAC(UMTS):	05988		
RF DISTRICT:	NPO Triage	BSC(GSM):	BCT08		
RF ZONE:	Hotseat	RNC(UMTS):	BRPTCT04CRBR07		
PARENT NAME(GSM):	MIDDLETOWN-GSM MTSO-BSC-8	MME POOL ID(LTE):	FF01		
PARENT NAME(UMTS):	BRIDGEPORT RNC07 ERICSSON 3820				

Section 3 - LICENSE COVERAGE/FILING INFORMATION

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

CGSA CALL SIGNS:	

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	Yes	GROUND ELEVATION (ft):	0	STRUCTURE TYPE:	UTILITY
ADDITIONAL REGULATORY?:	Yes	HEIGHT OVERALL (ft):	160.00	FCC ASR NUMBER:	NR
SUB-LEASE RIGHTS?:	Yes	STRUCTURE HEIGHT (ft):	160.00		
LIGHTING TYPE:	NOT REQUIRED				

MARKET LOCATION 700 MHz Band:			
MARKET LOCATION 850 MHz Band:			
MARKET LOCATION 1900 MHz Band:			
MARKET LOCATION AWS Band:			
MARKET LOCATION WCS Band:			
MARKET LOCATION Future Band:			

Section 5 - E-911 INFORMATION - existing

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

Section 5 - E-911 INFORMATION - final

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

Section 6 - RBS GENERAL INFORMATION - existing

	GSM 1ST RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS								
RBS ID:	26172	172488	229744	367110								
CTS COMMON ID:	318P5279	CTU5279	CTV5279	CTL05279								
CELL ID / BCF:	318P5279	CTU5279	CTU5279	CTL05279								
BTA/TID:	318P	318V	318U	318L								
4-9 DIGIT SITE ID:	5279	5279	5279	5279								
COW OR TOY?:	No	No	No	No								
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED	SECTORIZED								
SITE TYPE:	BTS-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL								
BTS LOCATION ID:	GROUND	INTERNAL	INTERNAL	INTERNAL								
BASE STATION TYPE:	BASE	BASE	OVERLAY	BASE								
EQUIPMENT NAME:	MERIDEN EAST	MERIDEN EAST	MERIDEN EAST	MERIDEN BIRDSEY AVENUE								
DISASTER PRIORITY:	3	1	1	3								

Section 6 - RBS GENERAL INFORMATION - final

	GSM 1ST RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS								
RBS ID:		172488	229744	367110								
CTS COMMON ID:		CTU5279	CTV5279	CTL05279								
CELL ID / BCF:		CTU5279	CTU5279	CTL05279								
BTA/TID:		318V	318U	318L								
4-9 DIGIT SITE ID:		5279	5279	5279								
COW OR TOY?:		No	No	No								
CELL SITE TYPE:		SECTORIZED	SECTORIZED	SECTORIZED								
SITE TYPE:		MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL								
BTS LOCATION ID:		INTERNAL	INTERNAL	INTERNAL								
BASE STATION TYPE:		BASE	OVERLAY	BASE								
EQUIPMENT NAME:		MERIDEN EAST	MERIDEN EAST	MERIDEN BIRDSEY AVENUE								
DISASTER PRIORITY:		1	1	3								

Section 7 - RBS SPECIFIC INFORMATION - existing

	GSM 1ST RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS								
RAC:												
EQUIPMENT VENDOR:	NOKIA	ERICSSON	ERICSSON	ERICSSON								
EQUIPMENT TYPE:	ULTRASITE	3206 INDOOR	3206 INDOOR	6601 INDOOR MU								
BASEBAND CONFIGURATION:												
LOCATION:												
CABINET LOCATION:												
MARKET STATE CODE:				CT								
AGPS:	Yes	Yes	Yes	Yes								
NODE B NUMBER:	0	0	0	5279								

Section 7 - RBS SPECIFIC INFORMATION - final

	GSM 1ST RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS								
RAC:												
EQUIPMENT VENDOR:		ERICSSON	ERICSSON	ERICSSON								
EQUIPMENT TYPE:		3206 INDOOR	3206 INDOOR	6601 INDOOR MU								
BASEBAND CONFIGURATION:				1x6601 / 1x5216 / 1xXMU03								
LOCATION:												
CABINET LOCATION:												
MARKET STATE CODE:				CT								
AGPS:		Yes	Yes	Yes								
NODE B NUMBER:		0	0	5279								

Section 8 - RBS/SECTOR ASSOCIATION - existing

	GSM 1ST RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS																
CTS Common ID	318P5279	CTU5279	CTV5279	CTL05279																
Soft Sector IDs	318P52791	CTU52797	CTV52791	CTL05279_7A_1																
	318P52792	CTU52798	CTV52792	CTL05279_7B_1																
	318P52793	CTU52799	CTV52793	CTL05279_7C_1																
			CTV5279A	CTL05279_9A_1																
			CTV5279B	CTL05279_9B_1																
			CTV5279C	CTL05279_9C_1																

Section 8 - RBS/SECTOR ASSOCIATION - final

	GSM 1ST RBS	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS																
CTS Common ID		CTU5279	CTV5279	CTL05279																
Soft Sector IDs			CTV52791	CTL05279_3A_1																
			CTV52792	CTL05279_3B_1																
			CTV52793	CTL05279_3C_1																
			CTV5279A	CTL05279_7A_1																
			CTV5279B	CTL05279_7B_1																
			CTV5279C	CTL05279_7C_1																
				CTL05279_8A_1																
				CTL05279_8B_1																
				CTL05279_8C_1																
				CTL05279_9A_1																
				CTL05279_9A_2																
				CTL05279_9B_1																
				CTL05279_9B_2																
				CTL05279_9C_1																
				CTL05279_9C_2																

Section 9 - SOFT SECTOR ID - existing

	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900																
USEID (excluding Hard Sector)	25924.1900.25G.1	25924.850.3G.1	25924.1900.3G.1	25924.850.3G.2																					
SECTOR A **SOFT SECTOR ID**	318P52791	CTV52791	CTU52797	CTV5279A	CTL05279_7A_1		CTL05279_9A_1																		
SECTOR B	318P52792	CTV52792	CTU52798	CTV5279B	CTL05279_7B_1		CTL05279_9B_1																		
SECTOR C	318P52793	CTV52793	CTU52799	CTV5279C	CTL05279_7C_1		CTL05279_9C_1																		
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - SOFT SECTOR ID - final

	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900																
USEID (excluding Hard Sector)		25924.850.3G.1		25924.850.3G.2																					
SECTOR A **SOFT SECTOR ID**		CTV52791		CTV5279A	CTL05279_7A_1	CTL05279_8A_1	CTL05279_9A_1	CTL05279_3A_1	CTL05279_9A_2																
SECTOR B		CTV52792		CTV5279B	CTL05279_7B_1	CTL05279_8B_1	CTL05279_9B_1	CTL05279_3B_1	CTL05279_9B_2																
SECTOR C		CTV52793		CTV5279C	CTL05279_7C_1	CTL05279_8C_1	CTL05279_9C_1	CTL05279_3C_1	CTL05279_9C_2																
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - Cell Number - existing

	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900																
USEID (excluding Hard Sector)	25924.1900.25G.1	25924.850.3G.1	25924.1900.3G.1	25924.850.3G.2																					
SECTOR A CELL NUMBER					15		8																		
SECTOR B					16		9																		
SECTOR C					17		10																		
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - Cell Number - final

	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900																
USEID (excluding Hard Sector)		25924.850.3G.1		25924.850.3G.2																					
SECTOR A CELL NUMBER					15	1	8	149	178																
SECTOR B					16	2	9	150	179																
SECTOR C					17	3	10	151	180																
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 10 - CID/SAC - existing

		GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900																	
SECTOR A	CID/SAC	52791	52791	52797	42791																						
SECTOR B		52792	52792	52798	42792																						
SECTOR C		52793	52793	52799	42793																						
SECTOR D																											
SECTOR E																											
SECTOR F																											
OMNI																											

Section 10 - CID/SAC - final

		GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900																	
SECTOR A	CID/SAC		52791		42791																						
SECTOR B			52792		42792																						
SECTOR C			52793		42793																						
SECTOR D																											
SECTOR E																											
SECTOR F																											
OMNI																											

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	7770				AM-X-CD-16-65-00T-RET									
ANTENNA VENDOR	Powerwave				KMW									
ANTENNA SIZE (H x W x D)	55X11X5				72X11.8X5.9									
ANTENNA WEIGHT	35				48.5									
AZIMUTH	60				60									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173				173									
ANTENNA TIP HEIGHT	175				176									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	2				2									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)	2	Powerwave 7020				Built-in								
SURGE ARRESTOR (QTY/MODEL)					4	APTDC-BDFDM-DBW								
DIPLEXER (QTY/MODEL)	2	Powerwave LGP 21901			2	Powerwave / CM1007-DBPXBC-003								
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)	1	Kathrein / 860-10006				LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	Powerwave LGP 21401 (DB - 850 Bypass)			1	CCI DTMABP7819VG12A Twin PCS w/ 700-850BP (700)								
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860												
PDU FOR TMAS (QTY/MODEL)	1	LGP 12104 (1900 AND 850 Bypass TMA)												
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)					1	RRUS-11								
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)					1	RRUS-12								
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1		25924.A.850.3G.1	CTV52791	CTV52791		UMTS 850	7770.00.850.06	13.5	60	6	None	Andrew 1-5/8 (850)	200.05									
	PORT 2		25924.A.850.3G.2	CTV52791	CTV5279A		UMTS 850	7770.00.850.06	13.5	60	6	Bottom	Andrew 1-5/8 (850)	200.05									
ANTENNA POSITION 3	PORT 1		25924.A.700.4G.1	CTL05279_7A_1	CTL05279_7A_1		LTE 700	AM-X-CD-16-65-00T-RET_725MHz_04DT	15.6	60	4	Bottom	Andrew 1-5/8 (700)	220.06									
	PORT 3		25924.A.1900.4G.111	CTL05279_9A_1	CTL05279_9A_1		LTE 1900	AM-X-CD-16-65-00T-RET_1930MHz_03DT	17.3	60	3	Bottom	Andrew 1-5/8 (700)	220.06									

Section 15B - CURRENT TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	7770				AM-X-CD-16-65-00T-RET									
ANTENNA VENDOR	Powerwave				KMW									
ANTENNA SIZE (H x W x D)	55X11X5				72X11.8X5.9									
ANTENNA WEIGHT	35				48.5									
AZIMUTH	200				200									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173				173									
ANTENNA TIP HEIGHT	175				176									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	2				2									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)	2	Powerwave 7020				Built-in								
SURGE ARRESTOR (QTY/MODEL)					4	APTDC-BDFDM-DBW								
DIPLEXER (QTY/MODEL)	2	Powerwave LGP 21901			2	Powerwave / CM1007-DBPXBC-003								
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)						LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	Powerwave LGP 21401 (DB - 850 Bypass)			1	CCI DTMABP7819VG12A Twin PCS w/ 700-850BP (700)								
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)					1	RRUS-11								
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)					1	RRUS-12								
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1		25924.B.850.3G.1	CTV52792	CTV52792		UMTS 850	7770.00.850.10	13.5	200	10	None	Andrew 1-5/8 (850)	200.05									
	PORT 2		25924.B.850.3G.2	CTV52792	CTV5279B		UMTS 850	7770.00.850.10	13.5	200	10	Bottom	Andrew 1-5/8 (850)	200.05									
ANTENNA POSITION 3	PORT 1		25924.B.700.4G.1	CTL05279_7B_1	CTL05279_7B_1		LTE 700	AM-X-CD-16-65-00T-RET_725MHz_10DT	15.6	200	10	Bottom	Andrew 1-5/8 (700)	220.06									
	PORT 3		25924.B.1900.4G.111	CTL05279_9B_1	CTL05279_9B_1		LTE 1900	AM-X-CD-16-65-00T-RET_1930MHz_06DT	17.3	200	6	Bottom	Andrew 1-5/8 (700)	220.06									

Section 15C - CURRENT TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	7770				AM-X-CD-16-65-00T-RET									
ANTENNA VENDOR	Powerwave				KMW									
ANTENNA SIZE (H x W x D)	55X11X5				72X11.8X5.9									
ANTENNA WEIGHT	35				48.5									
AZIMUTH	320				320									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173				173									
ANTENNA TIP HEIGHT	175				176									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	2				2									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)	2	Powerwave 7020				Built-in								
SURGE ARRESTOR (QTY/MODEL)					4	APTDC-BDFDM-DBW								
DIPLEXER (QTY/MODEL)	2	Powerwave LGP 21901			2	Powerwave / CM1007-DBPXBC-003								
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)						LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	Powerwave LGP 21401 (DB - 850 Bypass)			1	CCI DTMABP7819VG12A Twin PCS w/ 700-850BP (700)								
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)					1	RRUS-11								
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)					1	RRUS-12								
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1		25924.C.850.3G.1	CTV52793	CTV52793		UMTS 850	7770.00.850.10	13.5	320	10	None	Andrew 1-5/8 (850)	200.05									
	PORT 2		25924.C.850.3G.2	CTV52793	CTV5279C		UMTS 850	7770.00.850.10	13.5	320	10	Bottom	Andrew 1-5/8 (850)	200.05									
ANTENNA POSITION 3	PORT 1		25924.C.700.4G.1	CTL05279_7C_1	CTL05279_7C_1		LTE 700	AM-X-CD-16-65-00T-RET_725MHz_10DT	15.6	320	10	Bottom	Andrew 1-5/8 (700)	220.06									
	PORT 3		25924.C.1900.4G.111	CTL05279_9C_1	CTL05279_9C_1		LTE 1900	AM-X-CD-16-65-00T-RET_1930MHz_02DT	17.3	320	2	Bottom	Andrew 1-5/8 (700)	220.06									

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?							
ANTENNA MAKE - MODEL			QS66512-2				
ANTENNA VENDOR			Quintel				
ANTENNA SIZE (H x W x D)			72X12X9.6				
ANTENNA WEIGHT			111				
AZIMUTH			60				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)			173				
ANTENNA TIP HEIGHT			176				
MECHANICAL DOWNTILT			0				
FEEDER AMOUNT			2				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)			Built-in				
SURGE ARRESTOR (QTY/MODEL)			6 APTDC-BDFDM-DB				
DIPLEXER (QTY/MODEL)			2 QBC0007F1V51-1				
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)			LTE RRH				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2 Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)							
RRH - 850 band (QTY/MODEL)			1 RRUS-12				
RRH - 1900 band (QTY/MODEL)							
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)			1 RRUS-32				
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Std:// Replace TMA with 2x Kaelus Twin PCS-WCS TMA // Add 2 Coax.// Add 2x Quadplexers// Add LTE 850 RRUS-12 at Bottom along with Surge Arrestors.// Add LTE WCS RRUS-32 with SA.// Swap DUS to 5216.// Add XMU ///						
Local Market Note 2							
Local Market Note 3	5216+XMU						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 3	PORT 2		25924.A.850.4G.1	CTL05279_8A_1	CTL05279_8A_1		LTE 850	QS66512-2_850MHz_04DT	13.6	60	4	Bottom	Andrew 1-5/8	200.05						1000		5	
	PORT 4		25924.A.WCS.4G.1	CTL05279_3A_1	CTL05279_3A_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	60	3	Bottom	Andrew 1-5/8	200.05						1285.2866		6	

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?							
ANTENNA MAKE - MODEL			QS66512-2				
ANTENNA VENDOR			Quintel				
ANTENNA SIZE (H x W x D)			72X12X9.6				
ANTENNA WEIGHT			111				
AZIMUTH			200				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)			173				
ANTENNA TIP HEIGHT			176				
MECHANICAL DOWNTILT			0				
FEEDER AMOUNT			2				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)			Built-in				
SURGE ARRESTOR (QTY/MODEL)			6 APTDC-BDFDM-DB				
DIPLEXER (QTY/MODEL)			2 QBC0007F1V51-1				
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)			LTE RRH				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2 Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)							
RRH - 850 band (QTY/MODEL)			1 RRUS-12				
RRH - 1900 band (QTY/MODEL)							
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)			1 RRUS-32				
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Std:// Replace TMA with 2x Kaelus Twin PCS-WCS TMA // Add 2 Coax.// Add 2x Quadplexers// Add LTE 850 RRUS-12 at Bottom along with Surge Arrestors.// Add LTE WCS RRUS-32 with SA.// Swap DUS to 5216.// Add XMU ///						
Local Market Note 2							
Local Market Note 3	5216+XMU						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 3	PORT 2		25924.B.850.4G.1	CTL05279_8B_1	CTL05279_8B_1		LTE 850	QS66512-2_850MHz_10DT	13.5	200	10	Bottom	Andrew 1-5/8	200.05						1000		13	
	PORT 4		25924.B.WCS.4G.1	CTL05279_3B_1	CTL05279_3B_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	200	3	Bottom	Andrew 1-5/8	200.05						1285.2866		14	

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?							
ANTENNA MAKE - MODEL			QS66512-2				
ANTENNA VENDOR			Quintel				
ANTENNA SIZE (H x W x D)			72X12X9.6				
ANTENNA WEIGHT			111				
AZIMUTH			320				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)			173				
ANTENNA TIP HEIGHT			176				
MECHANICAL DOWNTILT			0				
FEEDER AMOUNT			2				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)			Built-in				
SURGE ARRESTOR (QTY/MODEL)			6 APTDC-BDFDM-DB				
DIPLEXER (QTY/MODEL)			2 QBC0007F1V51-1				
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)			LTE RRH				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2 Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)							
RRH - 850 band (QTY/MODEL)			1 RRUS-12				
RRH - 1900 band (QTY/MODEL)							
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)			1 RRUS-32				
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Std:// Replace TMA with 2x Kaelus Twin PCS-WCS TMA // Add 2 Coax.// Add 2x Quadplexers// Add LTE 850 RRUS-12 at Bottom along with Surge Arrestors.// Add LTE WCS RRUS-32 with SA.// Swap DUS to 5216.// Add XMU ///						
Local Market Note 2							
Local Market Note 3	5216+XMU						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 3	PORT 2		25924.C.850.4G.1	CTL05279_8C_1	CTL05279_8C_1		LTE 850	QS66512-2_850MHz_10DT	13.5	320	10	Bottom	Andrew 1-5/8	200.05						1000		21	
	PORT 4		25924.C.WCS.4G.1	CTL05279_3C_1	CTL05279_3C_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	320	3	Bottom	Andrew 1-5/8	200.05						1285.2866		22	

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	7770		QS66512-2				
ANTENNA VENDOR	Powerwave		Quintel				
ANTENNA SIZE (H x W x D)	55X11X5		72X12X9.6				
ANTENNA WEIGHT	35		111				
AZIMUTH	60		60				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	173		173				
ANTENNA TIP HEIGHT	175		176				
MECHANICAL DOWNTILT	0		0				
FEEDER AMOUNT	2		4				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	2 Powerwave 7020		Built-in				
SURGE ARRESTOR (QTY/MODEL)			12 APTDC-BDFDM-DB				
DIPLEXER (QTY/MODEL)	2 Powerwave / LGP 21901		4 QBC0007F1V51-1				
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	1 Kathrein / 860-10006		LTE RRH				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 Powerwave LGP 21401 (DB - 850 Bypass)		2 Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 Polyphaser 1000860						
PDU FOR TMAS (QTY/MODEL)	1 LGP 12104 (1900 AND 850 Bypass TMA)						
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1 RRUS-11				
RRH - 850 band (QTY/MODEL)			1 RRUS-12				
RRH - 1900 band (QTY/MODEL)			2 RRUS-12				
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)			1 RRUS-32				
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Std:// Replace TMA with 2x Kaelus Twin PCS-WCS TMA // Add 2 Coax.// Add 2x Quadplexers// Add LTE 850 RRUS-12 at Bottom along with Surge Arrestors.// Add LTE WCS RRUS-32 with SA.// Swap DUS to 5216.// Add XMU ///						
Local Market Note 2							
Local Market Note 3	5216+XMU						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	25924.A.850.3G.1		CTV52791	CTV52791		UMTS 850	7770.00.850.06	13.5	60	6	None	Andrew 1-5/8	200.05		0				289.07		1	
	PORT 2	25924.A.850.3G.2		CTV52791	CTV5279A		UMTS 850	7770.00.850.06	13.5	60	6	Bottom	Andrew 1-5/8	200.05		0				289.07		1	
ANTENNA POSITION 3	PORT 1	25924.A.700.4G.1	25924.A.700.4G.1	CTL05279_7A_1	CTL05279_7A_1		LTE 700	QS66512-2_722MHz_04DT	13.3	60	4	Bottom	Andrew 1-5/8	200.05						1475.7065		5	
	PORT 2	25924.A.850.4G.tmp1	25924.A.850.4G.1	CTL05279_8A_1	CTL05279_8A_1		LTE 850	QS66512-2_850MHz_04DT	13.6	60	4	Bottom	Andrew 1-5/8	200.05						1000		5	
	PORT 3	25924.A.1900.4G.1	25924.A.1900.4G.1	CTL05279_9A_1	CTL05279_9A_1		LTE 1900	QS66512-2_1930MHz_03DT	15.9	60	3	Bottom	Andrew 1-5/8	200.05						7328.7514		6	

	PORT 4	25924.A.WCS.4G.tmp1	25924.A.WCS.4G.1	CTL05279_3A_1	CTL05279_3A_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	60	3	Bottom	Andrew 1-5/8	200.05						1285.2866		6	
	PORT 7	25924.A.1900.4G.tmp2	25924.A.1900.4G.2	CTL05279_9A_2	CTL05279_9A_2		LTE 1900	QS66512-2_1930MHz_03DT	15.9	60	3	Bottom	Andrew 1-5/8	200.05						7328.7514		6	

Section 17B - FINAL TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	7770		QS66512-2				
ANTENNA VENDOR	Powerwave		Quintel				
ANTENNA SIZE (H x W x D)	55X11X5		72X12X9.6				
ANTENNA WEIGHT	35		111				
AZIMUTH	200		200				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	173		173				
ANTENNA TIP HEIGHT	175		176				
MECHANICAL DOWNTILT	0		0				
FEEDER AMOUNT	2		4				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	2 Powerwave 7020		Built-in				
SURGE ARRESTOR (QTY/MODEL)			12 APTDC-BDFDM-DB				
DIPLEXER (QTY/MODEL)	2 Powerwave / LGP 21901		4 QBC0007F1V51-1				
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)			LTE RRH				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 Powerwave LGP 21401 (DB - 850 Bypass)		2 Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 Polyphaser 1000860						
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1 RRUS-11				
RRH - 850 band (QTY/MODEL)			1 RRUS-12				
RRH - 1900 band (QTY/MODEL)			2 RRUS-12				
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)			1 RRUS-32				
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Std:// Replace TMA with 2x Kaelus Twin PCS-WCS TMA // Add 2 Coax.// Add 2x Quadplexers// Add LTE 850 RRUS-12 at Bottom along with Surge Arrestors.// Add LTE WCS RRUS-32 with SA.// Swap DUS to 5216.// Add XMU ///						
Local Market Note 2							
Local Market Note 3	5216+XMU						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	25924.B.850.3G.1		CTV52792	CTV52792		UMTS 850	7770.00.850.10	13.5	200	10	None	Andrew 1-5/8	200.05		0				289.07		9	
	PORT 2	25924.B.850.3G.2		CTV52792	CTV5279B		UMTS 850	7770.00.850.10	13.5	200	10	Bottom	Andrew 1-5/8	200.05		0				289.07		9	
ANTENNA POSITION 3	PORT 1	25924.B.700.4G.1	25924.B.700.4G.1	CTL05279_7B_1	CTL05279_7B_1		LTE 700	QS66512-2_722MHz_10DT	13.1	200	10	Bottom	Andrew 1-5/8	200.05						1475.7065		13	
	PORT 2	25924.B.850.4G.tmp1	25924.B.850.4G.1	CTL05279_8B_1	CTL05279_8B_1		LTE 850	QS66512-2_850MHz_10DT	13.5	200	10	Bottom	Andrew 1-5/8	200.05						1000		13	
	PORT 3	25924.B.1900.4G.1	25924.B.1900.4G.1	CTL05279_9B_1	CTL05279_9B_1		LTE 1900	QS66512-2_1930MHz_06DT	15.9	200	6	Bottom	Andrew 1-5/8	200.05						7328.7514		14	

	PORT 4	25924.B.WCS.4G.tmp1	25924.B.WCS.4G.1	CTL05279_3B_1	CTL05279_3B_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	200	3	Bottom	Andrew 1-5/8	200.05						1285.2866		14	
	PORT 7	25924.B.1900.4G.tmp2	25924.B.1900.4G.2	CTL05279_9B_2	CTL05279_9B_2		LTE 1900	QS66512-2_1930MHz_06DT	15.9	200	6	Bottom	Andrew 1-5/8	200.05						7328.7514		14	

Section 17C - FINAL TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	7770		QS66512-2				
ANTENNA VENDOR	Powerwave		Quintel				
ANTENNA SIZE (H x W x D)	55X11X5		72X12X9.6				
ANTENNA WEIGHT	35		111				
AZIMUTH	320		320				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	173		173				
ANTENNA TIP HEIGHT	175		176				
MECHANICAL DOWNTILT	0		0				
FEEDER AMOUNT	2		4				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	2 Powerwave 7020		Built-in				
SURGE ARRESTOR (QTY/MODEL)			12 APTDC-BDFDM-DB				
DIPLEXER (QTY/MODEL)	2 Powerwave / LGP 21901		4 QBC0007F1V51-1				
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)			LTE RRH				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 Powerwave LGP 21401 (DB - 850 Bypass)		2 Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 Polyphaser 1000860						
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1 RRUS-11				
RRH - 850 band (QTY/MODEL)			1 RRUS-12				
RRH - 1900 band (QTY/MODEL)			2 RRUS-12				
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)			1 RRUS-32				
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Std:// Replace TMA with 2x Kaelus Twin PCS-WCS TMA // Add 2 Coax.// Add 2x Quadplexers// Add LTE 850 RRUS-12 at Bottom along with Surge Arrestors.// Add LTE WCS RRUS-32 with SA.// Swap DUS to 5216.// Add XMU ///						
Local Market Note 2							
Local Market Note 3	5216+XMU						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	25924.C.850.3G.1		CTV52793	CTV52793		UMTS 850	7770.00.850.10	13.5	320	10	None	Andrew 1-5/8	200.05		0				289.07		17	
	PORT 2	25924.C.850.3G.2		CTV52793	CTV5279C		UMTS 850	7770.00.850.10	13.5	320	10	Bottom	Andrew 1-5/8	200.05		0				289.07		17	
ANTENNA POSITION 3	PORT 1	25924.C.700.4G.1	25924.C.700.4G.1	CTL05279_7C_1	CTL05279_7C_1		LTE 700	QS66512-2_722MHz_10DT	13.1	320	10	Bottom	Andrew 1-5/8	200.05						1475.7065		21	
	PORT 2	25924.C.850.4G.tmp1	25924.C.850.4G.1	CTL05279_8C_1	CTL05279_8C_1		LTE 850	QS66512-2_850MHz_10DT	13.5	320	10	Bottom	Andrew 1-5/8	200.05						1000		21	
	PORT 3	25924.C.1900.4G.1	25924.C.1900.4G.1	CTL05279_9C_1	CTL05279_9C_1		LTE 1900	QS66512-2_1930MHz_02DT	16	320	2	Bottom	Andrew 1-5/8	200.05						7328.7514		22	

	PORT 4	25924.C.WCS.4G.tmp1	25924.C.WCS.4G.1	CTL05279_3C_1	CTL05279_3C_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	320	3	Bottom	Andrew 1-5/8	200.05						1285.2866		22	
	PORT 7	25924.C.1900.4G.tmp2	25924.C.1900.4G.2	CTL05279_9C_2	CTL05279_9C_2		LTE 1900	QS66512-2_1930MHz_02DT	16	320	2	Bottom	Andrew 1-5/8	200.05						7328.7514		22	

Diagram - Sector	A/1	Diagram File Name -	CT5279_A_B_C_LTE4C_REV1.0.vsd				
Atoll Site Name -	CTU5279	Location Name -	MERIDEN BIRDSEY AVENUE	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments:							

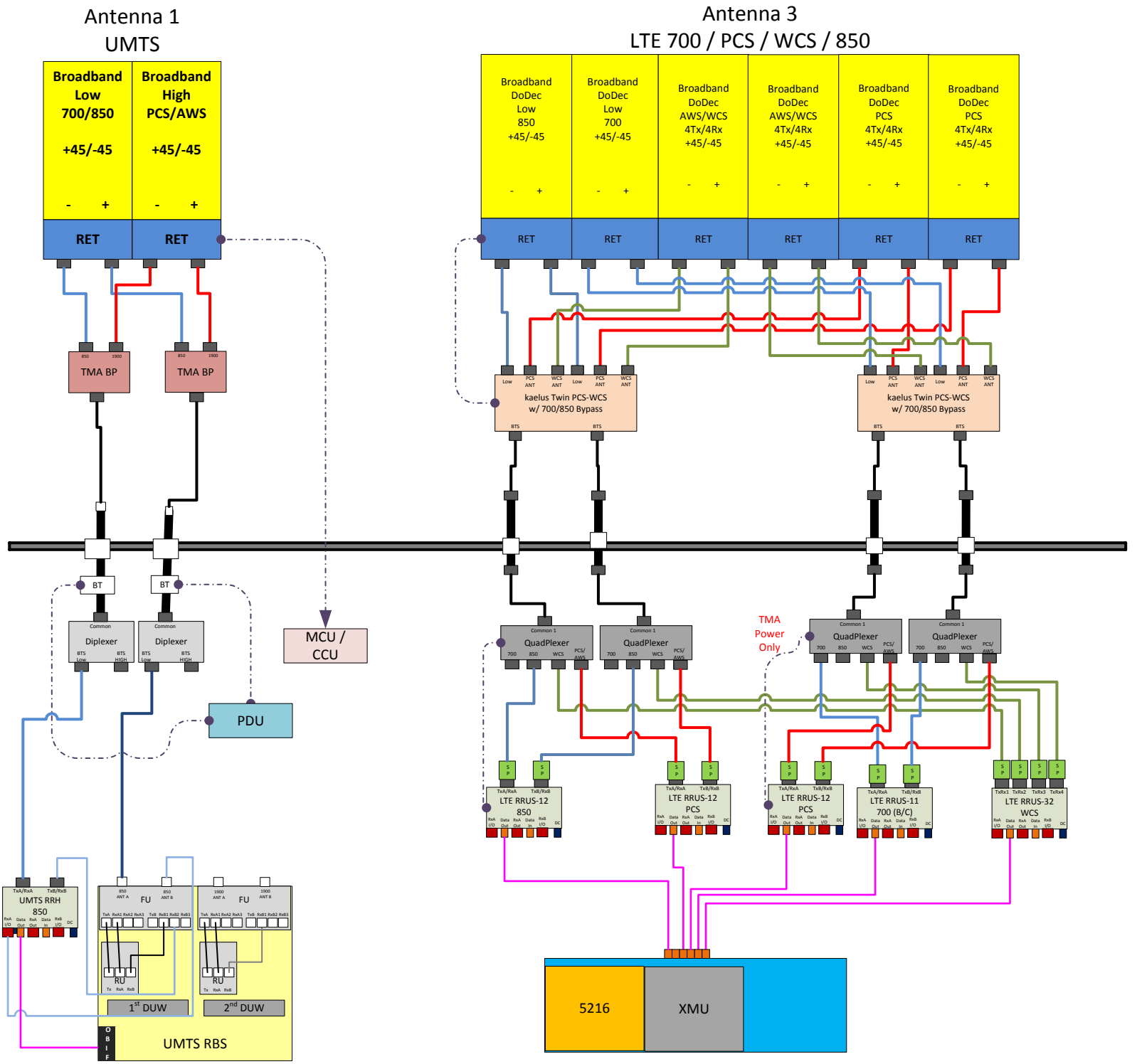


Diagram - Sector	B/2	Diagram File Name -	CT5279_A_B_C_LTE4C_REV1.0.vsd				
Atoll Site Name -	CTU5279	Location Name -	MERIDEN BIRDSEY AVENUE	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments:							

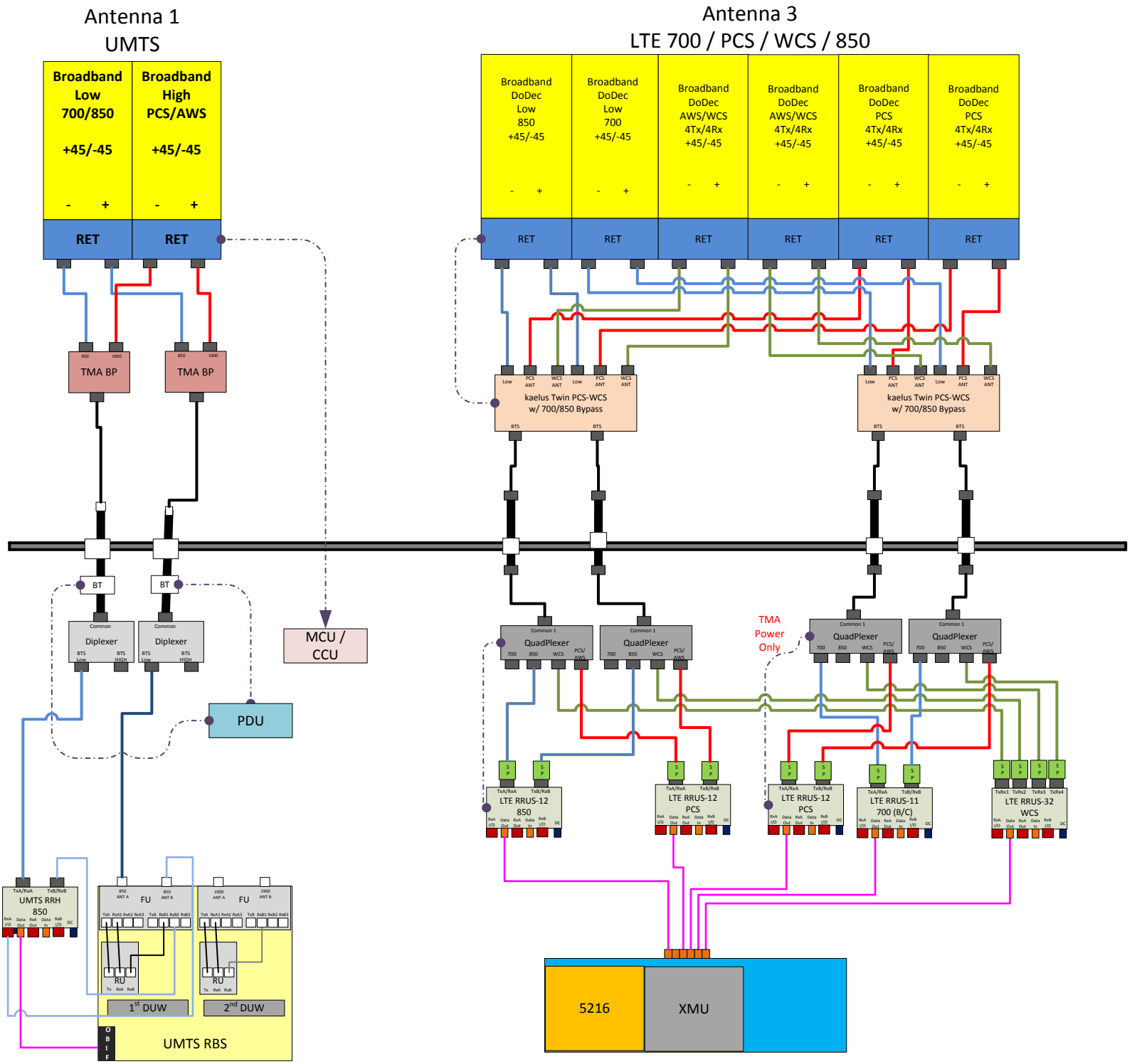
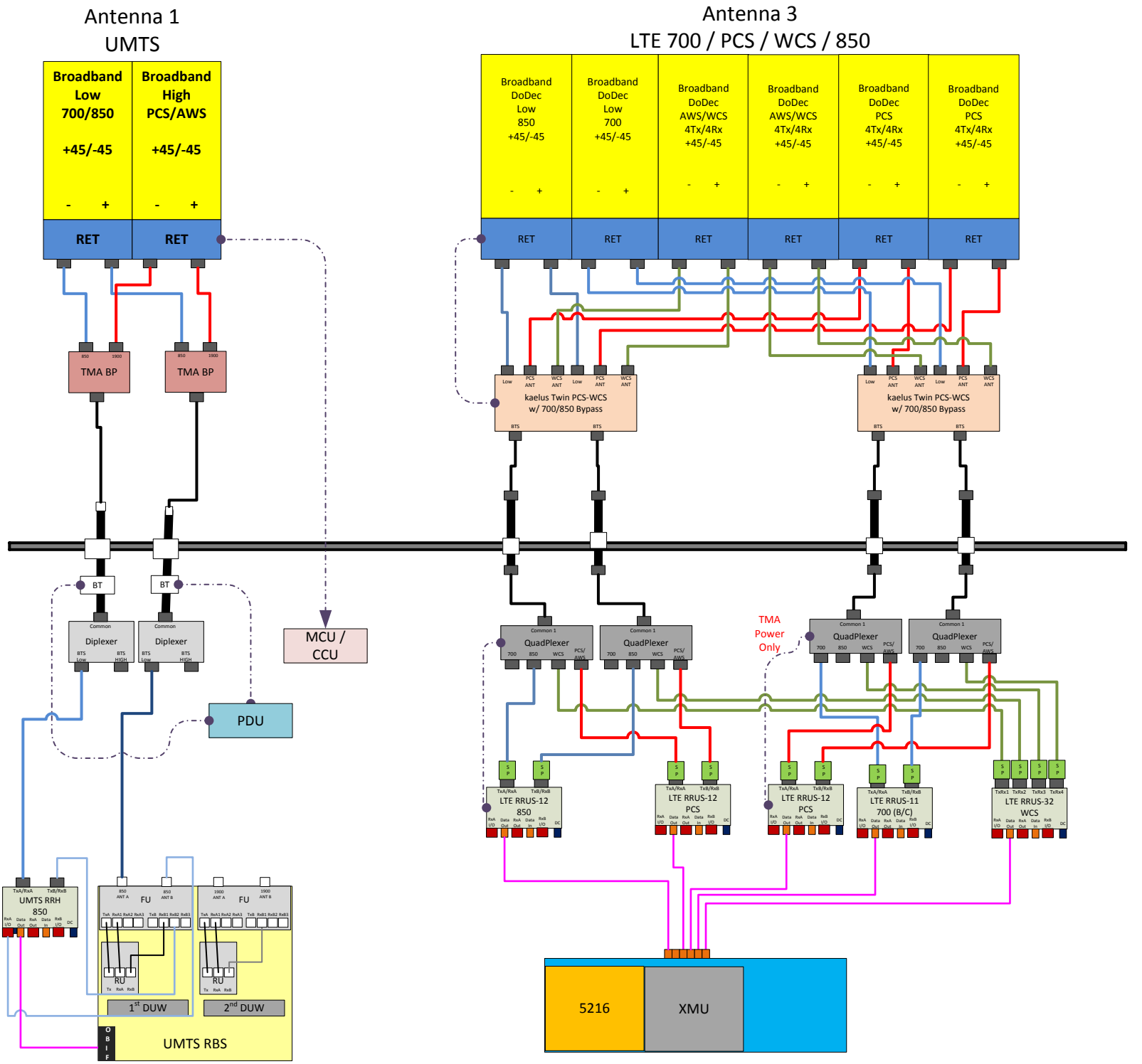


Diagram - Sector	C/3	Diagram File Name -	CT5279_A_B_C_LTE4C_REV1.0.vsd				
Atoll Site Name -	CTU5279	Location Name -	MERIDEN BIRDSEY AVENUE	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments:							



WORKFLOW SUMMARY							
Date	FROM State / Status	FROM ATTUID	TO State / Status	TO ATTUID	Operation	Comments	PACE Status
06/30/2017	Preliminary In Progress	ff5901	Preliminary Submitted for Approval	RC475S	Promote	RFDS Preliminary Promoted	NER-RCTB-16-02483 FAILURE 06/30/2017 10:55:01 AM NER-RCTB-17-03414 FAILURE 06/30/2017 10:55:01 AM
07/26/2017	Preliminary Submitted for Approval	RC475S	Preliminary Approved	LW826K	Promote		
08/28/2017	Preliminary Approved	LW826K	Preliminary In Progress	rx855w	Pull Back	RFDS pre-scope verification.	
08/30/2017	Preliminary In Progress	rx855w	Preliminary Submitted for Approval	RC475S	Promote	Prelim RFDS.	NER-RCTB-16-02483 FAILURE 08/30/2017 4:07:52 PM NER-RCTB-17-03414 FAILURE 08/30/2017 4:07:52 PM
08/31/2017	Preliminary Submitted for Approval	RC475S	Preliminary Approved	LW826K	Promote		

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CTL05279	**DATE:**	03/19/2018	**RF DESIGN ENG:**	Mohammad Minhaj Hussain
ISSUE:	Bronze Standard	**Approved? (Y/N):**	Yes	**RF DESIGN PHONE:**	510-493-3024
REVISION:	Preliminary	**RF MANAGER:**	John Benedetto	**RF DESIGN EMAIL:**	mh705r@att.com
INITIATIVE /PROJECT:	5G NR Upgrade[850], LTE 5C[AWS J].Note: PDs will be updated with 5G 6630 info during final RFDS.				

RF PERF ENG:		**RFDS PROGRAM TYPE:**	2018 LTE Multi Carrier		
RF PERF PHONE:		**RFDS TECHNOLOGY:**	LTE		
RF PERF EMAIL:		**STATE/STATUS:**	Preliminary/Approved		
RFDS VERSION:	1.00	**RFDS ID:**	2310503		
GSM FREQUENCY:		**Created By:**	mh705r	**Updated By:**	mh705r
UMTS FREQUENCY:	850	**Date Created:**	4/1/2018 9:40:26 PM	**Date Updated:**	5/5/2018 12:08:10 AM
LTE FREQUENCY:	700, 850, 1900, AWS, WCS				
5G FREQUENCY:	850				
I-PLAN JOB # 1:	NER-RCTB-18-02310	**IPLAN PRD GRP || SUB GRP #1:**	Cell Site RF Modifications || 5G NR Upgrade		
I-PLAN JOB # 2:	NER-RCTB-18-02386	**IPLAN PRD GRP || SUB GRP #2:**	LTE Next Carrier || LTE 5C		
I-PLAN JOB # 3:		**IPLAN PRD GRP || SUB GRP #3:**			
I-PLAN JOB # 4:		**IPLAN PRD GRP || SUB GRP #4:**			
I-PLAN JOB # 5:		**IPLAN PRD GRP || SUB GRP #5:**			
I-PLAN JOB # 6:		**IPLAN PRD GRP || SUB GRP #6:**			
I-PLAN JOB # 7:		**IPLAN PRD GRP || SUB GRP #7:**			
I-PLAN JOB # 8:		**IPLAN PRD GRP || SUB GRP #8:**			

Section 2 - LOCATION INFORMATION

USID:	25924	**FA LOCATION CODE:**	10105380	**LOCATION NAME:**	MERIDEN BIRDSEY AVENUE
REGION:	NORTHEAST	**MARKET CLUSTER:**	NEW ENGLAND	**MARKET:**	CONNECTICUT
ADDRESS:	74 BIRDSEY AVENUE	**CITY:**	MERIDEN	**STATE:**	CT
ZIP CODE:	06450	**COUNTY:**	NEW HAVEN	**LONG (DEC. DEG.):**	-72.7503989
LATITUDE (D-M-S):	41d 31m 26.01084s	**LONGITUDE (D-M-S):**	-72d -45m -1.43604s	**LAT (DEC. DEG.):**	41.5238919
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:	CT-279 (UPDATED 5/7/2004)MIDDLEFIELD WEST BLACKTAKE I-91 NORTH TO EXIT 16 AND TAKE A RIGHT ON EAST MAIN STREET GO ABOUT 1 MILE AND TURN RIGHT ON CONE AVE TAKE YOUR FIRST LEFT ON BIRDSEYE AVE .THEN TAKE YOUR FIRST RIGHT INTO PBA CLUB TOWER IS IN BACK ON POWER LINE.DEMARC IS LOCATED IN HOFFMAN BOX NEXT TO THE SITE. T-1 IS NOT LINE POWERED IF WE LOOSE COMMERCIAL POWER THE T-1 GOES DOWN.ADDRESS: 74 BIRDSEYE AVE., MERIDEN, CT 06450ACCESS: 24/7 , GATE COMBO 8899CONTACT: 203-630-6201SECURITY: NO ISSUESPOWER COMPANY: NORTHEAST UTILITIES (800) 286-2000 METER:# 88 685 584FIRE: (203) 235-2537 POLICE: (203) 630-6201 T-1 CIRCUIT NUMBERS HCGS 707645SNET: (800) 448-1008 AND (203) 420-3131 (24-HR REPAIR)				

ORACLE PTN # 1:	2051A0GKKD	**PACE JOB # 1:**	MRCTB032126		
ORACLE PTN # 2:	2051A0GGZ8	**PACE JOB # 2:**	MRCTB031617		
ORACLE PTN # 3:		**PACE JOB # 3:**			
ORACLE PTN # 4:		**PACE JOB # 4:**			
ORACLE PTN # 5:		**PACE JOB # 5:**			
ORACLE PTN # 6:		**PACE JOB # 6:**			
ORACLE PTN # 7:		**PACE JOB # 7:**			
ORACLE PTN # 8:		**PACE JOB # 8:**			
BORDER CELL WITH CONTOUR COORD:		**SEARCH RING NAME:**			
AM STUDY REQ'D (Y/N):	No	**SEARCH_RING_ID:**			
FREQ COORD:		**BTA:**		**MSA / RSA:**	
OPS DISTRICT:	CT-North	**LAC(GSM):**			
OPS ZONE:	NE_CT_S_MDSX_N_CS	**LAC(UMTS):**	05988		
RF DISTRICT:	NPO Triage	**BSC(GSM):**			
RF ZONE:	Hotseat	**RNC(UMTS):**	BRPTCT04CRBR07		
PARENT NAME(GSM):		**MME POOL ID(LTE):**	FF01		
PARENT NAME(UMTS):	BRIDGEPORT RNC07 ERICSSON 3820				

Section 3 - LICENSE COVERAGE/FILING INFORMATION

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

CGSA CALL SIGNS:	

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	Yes	**GROUND ELEVATION (ft):**	0	**STRUCTURE TYPE:**	UTILITY
ADDITIONAL REGULATORY?:	Yes	**HEIGHT OVERALL (ft):**	160.00	**FCC ASR NUMBER:**	NR
SUB-LEASE RIGHTS?:	Yes	**STRUCTURE HEIGHT (ft):**	160.00		
LIGHTING TYPE:	NOT REQUIRED				

MARKET LOCATION 700 MHz Band:			
MARKET LOCATION 850 MHz Band:			
MARKET LOCATION 1900 MHz Band:			
MARKET LOCATION AWS Band:			
MARKET LOCATION WCS Band:			
MARKET LOCATION Future Band:			

Section 5 - E-911 INFORMATION - existing

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

Section 5 - E-911 INFORMATION - final

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

Section 6 - RBS GENERAL INFORMATION - existing

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS								
RBS ID:	172488	229744	367110									
CTS COMMON ID:	CTU5279	CTV5279	CTL05279									
CELL ID / BCF:	CTU5279	CTU5279	CTL05279									
BTA/TID:	318V	318U	318L									
4-9 DIGIT SITE ID:	5279	5279	5279									
COW OR TOY?:	No	No	No									
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED									
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL									
BTS LOCATION ID:	INTERNAL	INTERNAL	INTERNAL									
BASE STATION TYPE:	BASE	OVERLAY	BASE									
EQUIPMENT NAME:	MERIDEN EAST	MERIDEN EAST	MERIDEN BIRDSEY AVENUE									
DISASTER PRIORITY:	1	1	3									

Section 6 - RBS GENERAL INFORMATION - final

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS								
RBS ID:	229744		367110	RFDS_36158188								
CTS COMMON ID:	CTV5279		CTL05279	CTN0005279								
CELL ID / BCF:	CTU5279		CTL05279	CTN0005279								
BTA/TID:	318U		318L	318L								
4-9 DIGIT SITE ID:	5279		5279	5279								
COW OR TOY?:	No		No	No								
CELL SITE TYPE:	SECTORIZED		SECTORIZED	SECTORIZED								
SITE TYPE:	MACRO-CONVENTIONAL		MACRO-CONVENTIONAL	MACRO-CONVENTIONAL								
BTS LOCATION ID:	INTERNAL		INTERNAL	INTERNAL								
BASE STATION TYPE:	OVERLAY		BASE	BASE								
EQUIPMENT NAME:	MERIDEN EAST		MERIDEN BIRDSEY AVENUE	MERIDEN BIRDSEY AVENUE								
DISASTER PRIORITY:	1		3	3								

Section 7 - RBS SPECIFIC INFORMATION - existing

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS								
RAC:												
EQUIPMENT VENDOR:	ERICSSON	ERICSSON	ERICSSON									
EQUIPMENT TYPE:	3206 INDOOR	3206 INDOOR	6601 INDOOR MU									
BASEBAND CONFIGURATION:												
LOCATION:												
CABINET LOCATION:												
MARKET STATE CODE:			CT									
AGPS:	Yes	Yes	Yes									
NODE B NUMBER:	0	0	5279									

Section 7 - RBS SPECIFIC INFORMATION - final

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS								
RAC:												
EQUIPMENT VENDOR:	ERICSSON		ERICSSON	ERICSSON								
EQUIPMENT TYPE:	3206 INDOOR		6601 INDOOR MU	6630								
BASEBAND CONFIGURATION:			1x6601 / 1x5216 / 2xXMU03	xxxxx / 1x6630 / xxxxx								
LOCATION:												
CABINET LOCATION:												
MARKET STATE CODE:			CT	CT								
AGPS:	Yes		Yes	Yes								
NODE B NUMBER:	0		5279	5279								

Section 8 - RBS/SECTOR ASSOCIATION - existing

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS																
CTS Common ID	CTU5279	CTV5279	CTL05279																	
Soft Sector IDs	CTU52797	CTV52791	CTL05279_7A_1																	
	CTU52798	CTV52792	CTL05279_7B_1																	
	CTU52799	CTV52793	CTL05279_7C_1																	
		CTV5279A	CTL05279_9A_1																	
		CTV5279B	CTL05279_9A_2																	
		CTV5279C	CTL05279_9B_1																	
			CTL05279_9B_2																	
			CTL05279_9C_1																	
			CTL05279_9C_2																	

Section 8 - RBS/SECTOR ASSOCIATION - final

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS																
CTS Common ID	CTV5279		CTL05279	CTN0005279																
Soft Sector IDs	CTV52791		CTL05279_2A_2	CTN0005279_8A_1																
	CTV52792		CTL05279_2B_2	CTN0005279_8B_1																
	CTV52793		CTL05279_2C_2	CTN0005279_8C_1																
	CTV5279A		CTL05279_3A_1																	
	CTV5279B		CTL05279_3B_1																	
	CTV5279C		CTL05279_3C_1																	
			CTL05279_7A_1																	
			CTL05279_7B_1																	
			CTL05279_7C_1																	
			CTL05279_8A_1																	
			CTL05279_8B_1																	
			CTL05279_8C_1																	
			CTL05279_9A_1																	
			CTL05279_9A_2																	
			CTL05279_9B_1																	
			CTL05279_9B_2																	
			CTL05279_9C_1																	
			CTL05279_9C_2																	

Section 9 - SOFT SECTOR ID - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	5G 1ST 850														
USEID (excluding Hard Sector)	25924.850.3G.1	25924.1900.3G.1	25924.850.3G.2																						
SECTOR A **SOFT SECTOR ID**	CTV52791	CTU52797	CTV5279A	CTL05279_7A_1		CTL05279_9A_1		CTL05279_9A_2																	
SECTOR B	CTV52792	CTU52798	CTV5279B	CTL05279_7B_1		CTL05279_9B_1		CTL05279_9B_2																	
SECTOR C	CTV52793	CTU52799	CTV5279C	CTL05279_7C_1		CTL05279_9C_1		CTL05279_9C_2																	
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - SOFT SECTOR ID - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	5G 1ST 850														
USEID (excluding Hard Sector)	25924.850.3G.1		25924.850.3G.2																						
SECTOR A **SOFT SECTOR ID**	CTV52791		CTV5279A	CTL05279_7A_1	CTL05279_8A_1	CTL05279_9A_1	CTL05279_3A_1		CTL05279_9A_2	CTL05279_2A_2	CTN0005279_8A_1														
SECTOR B	CTV52792		CTV5279B	CTL05279_7B_1	CTL05279_8B_1	CTL05279_9B_1	CTL05279_3B_1		CTL05279_9B_2	CTL05279_2B_2	CTN0005279_8B_1														
SECTOR C	CTV52793		CTV5279C	CTL05279_7C_1	CTL05279_8C_1	CTL05279_9C_1	CTL05279_3C_1		CTL05279_9C_2	CTL05279_2C_2	CTN0005279_8C_1														
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - Cell Number - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	5G 1ST 850														
USEID (excluding Hard Sector)	25924.850.3G.1	25924.1900.3G.1	25924.850.3G.2																						
SECTOR A CELL NUMBER				15		8		178																	
SECTOR B				16		9		179																	
SECTOR C				17		10		180																	
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - Cell Number - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	5G 1ST 850														
USEID (excluding Hard Sector)	25924.850.3G.1		25924.850.3G.2																						
SECTOR A CELL NUMBER				15	1	8	149		178	192	1														
SECTOR B				16	2	9	150		179	193	2														
SECTOR C				17	3	10	151		180	194	3														
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 10 - CID/SAC - existing

		UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	5G 1ST 850																
SECTOR A	CID/SAC	52791	52797	42791																								
SECTOR B		52792	52798	42792																								
SECTOR C		52793	52799	42793																								
SECTOR D																												
SECTOR E																												
SECTOR F																												
OMNI																												

Section 10 - CID/SAC - final

		UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	5G 1ST 850																
SECTOR A	CID/SAC	52791		42791																								
SECTOR B		52792		42792																								
SECTOR C		52793		42793																								
SECTOR D																												
SECTOR E																												
SECTOR F																												
OMNI																												

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	7770				QS66512-2									
ANTENNA VENDOR	Powerwave				Quintel									
ANTENNA SIZE (H x W x D)	55X11X5				72X12X9.6									
ANTENNA WEIGHT	35				111									
AZIMUTH	60				60									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173				173									
ANTENNA TIP HEIGHT	175				176									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	2				4									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)	2	Powerwave 7020				Built-in								
SURGE ARRESTOR (QTY/MODEL)					12	APTDC-BDFDM-DB								
DIPLEXER (QTY/MODEL)	2	Powerwave / LGP 21901			4	QBC0007F1V51-1								
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)	1	Kathrein / 860-10006				LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	Powerwave LGP 21401 (DB - 850 Bypass)			2	Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)								
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860												
PDU FOR TMAS (QTY/MODEL)	1	LGP 12104 (1900 AND 850 Bypass TMA)												
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)					1	RRUS-11 (REUSE ONLY)								
RRH - 850 band (QTY/MODEL)					1	RRUS-12								
RRH - 1900 band (QTY/MODEL)					2	RRUS-12								
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)					1	RRUS-32								
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1			CTV52791	CTV52791		UMTS 850	7770.00.850.06	13.5	60	6	None	Andrew 1-5/8	200.05						289.07		1	
	PORT 2			CTV52791	CTV5279A		UMTS 850	7770.00.850.06	13.5	60	6	Bottom	Andrew 1-5/8	200.05						289.07		1	
ANTENNA POSITION 3	PORT 1			CTL05279_7A_1	CTL05279_7A_1		LTE 700	QS66512-2_722MHz_04DT	13.3	60	4	Bottom	Andrew 1-5/8	200.05						1475.7065		5	
	PORT 2			CTL05279_8A_1	CTL05279_8A_1		LTE 850	QS66512-2_850MHz_04DT	13.6	60	4	Bottom	Andrew 1-5/8	200.05						1000		5	

	PORT 3			CTL05279_9A_1	CTL05279_9A_1		LTE 1900	QS66512-2_1930MHz_03DT	15.9	60	3	Bottom	Andrew 1-5/8	200.05						7328.7514		6	
	PORT 4			CTL05279_3A_1	CTL05279_3A_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	60	3	Bottom	Andrew 1-5/8	200.05						1285.2866		6	
	PORT 7			CTL05279_9A_2	CTL05279_9A_2		LTE 1900	QS66512-2_1930MHz_03DT	15.9	60	3	Bottom	Andrew 1-5/8	200.05						7328.7514		6	

Section 15B - CURRENT TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	7770		QS66512-2				
ANTENNA VENDOR	Powerwave		Quintel				
ANTENNA SIZE (H x W x D)	55X11X5		72X12X9.6				
ANTENNA WEIGHT	35		111				
AZIMUTH	200		200				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	173		173				
ANTENNA TIP HEIGHT	175		176				
MECHANICAL DOWNTILT	0		0				
FEEDER AMOUNT	2		4				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	2 Powerwave 7020		Built-in				
SURGE ARRESTOR (QTY/MODEL)			12 APTDC-BDFDM-DB				
DIPLEXER (QTY/MODEL)	2 Powerwave / LGP 21901		4 QBC0007F1V51-1				
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)			LTE RRH				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 Powerwave LGP 21401 (DB - 850 Bypass)		2 Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 Polyphaser 1000860						
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1 RRUS-11 (REUSE ONLY)				
RRH - 850 band (QTY/MODEL)			1 RRUS-12				
RRH - 1900 band (QTY/MODEL)			2 RRUS-12				
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)			1 RRUS-32				
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1			CTV52792	CTV52792		UMTS 850	7770.00.850.10	13.5	200	10	None	Andrew 1-5/8	200.05						289.07		9	
	PORT 2			CTV52792	CTV5279B		UMTS 850	7770.00.850.10	13.5	200	10	Bottom	Andrew 1-5/8	200.05						289.07		9	
ANTENNA POSITION 3	PORT 1			CTL05279_7B_1	CTL05279_7B_1		LTE 700	QS66512-2_722MHz_10DT	13.1	200	10	Bottom	Andrew 1-5/8	200.05						1475.7065		13	
	PORT 2			CTL05279_8B_1	CTL05279_8B_1		LTE 850	QS66512-2_850MHz_10DT	13.5	200	10	Bottom	Andrew 1-5/8	200.05						1000		13	
	PORT 3			CTL05279_9B_1	CTL05279_9B_1		LTE 1900	QS66512-	15.9	200	6	Bottom	Andrew 1-5/8	200.05						7328.7514		14	

								2_1930MHz_06DT															
	PORT 4			CTL05279_3B_1	CTL05279_3B_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	200	3	Bottom	Andrew 1-5/8	200.05						1285.2866		14	
	PORT 7			CTL05279_9B_2	CTL05279_9B_2		LTE 1900	QS66512-2_1930MHz_06DT	15.9	200	6	Bottom	Andrew 1-5/8	200.05						7328.7514		14	

Section 15C - CURRENT TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	7770		QS66512-2				
ANTENNA VENDOR	Powerwave		Quintel				
ANTENNA SIZE (H x W x D)	55X11X5		72X12X9.6				
ANTENNA WEIGHT	35		111				
AZIMUTH	320		320				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	173		173				
ANTENNA TIP HEIGHT	175		176				
MECHANICAL DOWNTILT	0		0				
FEEDER AMOUNT	2		4				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	2 Powerwave 7020		Built-in				
SURGE ARRESTOR (QTY/MODEL)			12 APTDC-BDFDM-DB				
DIPLEXER (QTY/MODEL)	2 Powerwave / LGP 21901		4 QBC0007F1V51-1				
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)			LTE RRH				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 Powerwave LGP 21401 (DB - 850 Bypass)		2 Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 Polyphaser 1000860						
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1 RRUS-11 (REUSE ONLY)				
RRH - 850 band (QTY/MODEL)			1 RRUS-12				
RRH - 1900 band (QTY/MODEL)			2 RRUS-12				
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)			1 RRUS-32				
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1			CTV52793	CTV52793		UMTS 850	7770.00.850.10	13.5	320	10	None	Andrew 1-5/8	200.05						289.07		17	
	PORT 2			CTV52793	CTV5279C		UMTS 850	7770.00.850.10	13.5	320	10	Bottom	Andrew 1-5/8	200.05						289.07		17	
ANTENNA POSITION 3	PORT 1			CTL05279_7C_1	CTL05279_7C_1		LTE 700	QS66512-2_722MHz_10DT	13.1	320	10	Bottom	Andrew 1-5/8	200.05						1475.7065		21	
	PORT 2			CTL05279_8C_1	CTL05279_8C_1		LTE 850	QS66512-2_850MHz_10DT	13.5	320	10	Bottom	Andrew 1-5/8	200.05						1000		21	
	PORT 3			CTL05279_9C_1	CTL05279_9C_1		LTE 1900	QS66512-	16	320	2	Bottom	Andrew 1-5/8	200.05						7328.7514		22	

								2_1930MHz_02DT															
	PORT 4			CTL05279_3C_1	CTL05279_3C_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	320	3	Bottom	Andrew 1-5/8	200.05						1285.2866		22	
	PORT 7			CTL05279_9C_2	CTL05279_9C_2		LTE 1900	QS66512-2_1930MHz_02DT	16	320	2	Bottom	Andrew 1-5/8	200.05						7328.7514		22	

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?					Yes									
ANTENNA MAKE - MODEL	SBNHH-1D85B													
ANTENNA VENDOR	Andrew													
ANTENNA SIZE (H x W x D)	72.9X11.9X7.1													
ANTENNA WEIGHT	42.1													
AZIMUTH	60													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173													
ANTENNA TIP HEIGHT	175													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT	2													
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-in												
SURGE ARRESTOR (QTY/MODEL)	4	TSXDC-4310FM			4	TSXDC-4310FM								
DIPLEXER (QTY/MODEL)	2	TPX-070821												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	TMABPD7823VG12A												
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)					1	4478 B5								
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)	1	4426 B66												
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	K SBT 782-11055												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	SOW:- Replace UMTS Antenna to 85° BW Hex Model.- Replace Diplexers to Triplexers.- Replace TMA's with new AWS Compatible TMA's- Add new 2 Coax per sector.- Add LTE RRH @ Bottom along with SA.- Upgrade LTE 850 RRH- Add 2nd XMU.- Add SBTs.- Add 1x6630.													
Local Market Note 2														
Local Market Note 3	1x5216+2xXMU+1x6630.													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1			CTV52791	CTV52791		UMTS 850	SBNHH-1D85B_847MHz_06DT	14.39	60	6	None	Andrew 1-5/8	200.05						289.07		1	
	PORT 2			CTV52791	CTV5279A		UMTS 850	SBNHH-1D85B_847MHz_06DT	14.39	60	6	Bottom	Andrew 1-5/8	200.05						289.07		1	
	PORT 3			CTL05279_2A_2	CTL05279_2A_2		LTE AWS	SBNHH-1D85B_2170MHz_03DT	18.05	60	3	Bottom	Andrew 1-5/8	200.05						3837.0724		2	

ANTENNA POSITION 3	**PORT 2**			CTL05279_8A_1	CTL05279_8A_1		LTE 850	QS66512-2_850MHz_04DT	13.6	60	4	Bottom	Andrew 1-5/8	200.05						1000		5	
	PORT 5			CTN0005279_8A_1	CTN0005279_8A_1		LTE 850	QS66512-2_850MHz_04DT	13.6	60	4	Bottom	Andrew 1-5/8	200.05						1000		5	

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?					Yes									
ANTENNA MAKE - MODEL	SBNHH-1D85B													
ANTENNA VENDOR	Andrew													
ANTENNA SIZE (H x W x D)	72.9X11.9X7.1													
ANTENNA WEIGHT	42.1													
AZIMUTH	200													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173													
ANTENNA TIP HEIGHT	175													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT	2													
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-in												
SURGE ARRESTOR (QTY/MODEL)	4	TSXDC-4310FM			4	TSXDC-4310FM								
DIPLEXER (QTY/MODEL)	2	TPX-070821												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	TMABPD7823VG12A												
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)					1	4478 B5								
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)	1	4426 B66												
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	K SBT 782-11055												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	SOW:- Replace UMTS Antenna to 85° BW Hex Model.- Replace Diplexers to Triplexers.- Replace TMA's with new AWS Compatible TMA's- Add new 2 Coax per sector.- Add LTE RRH @ Bottom along with SA.- Upgrade LTE 850 RRH- Add 2nd XMU.- Add SBTs.- Add 1x6630.													
Local Market Note 2														
Local Market Note 3	1x5216+2xXMU+1x6630.													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1			CTV52792	CTV52792		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	200	10	None	Andrew 1-5/8	200.05						289.07		9	
	PORT 2			CTV52792	CTV5279B		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	200	10	Bottom	Andrew 1-5/8	200.05						289.07		9	
	PORT 3			CTL05279_2B_2	CTL05279_2B_2		LTE AWS	SBNHH-1D85B_2170MHz_06DT	17.97	200	6	Bottom	Andrew 1-5/8	200.05						3837.0724		10	

ANTENNA POSITION 3	**PORT 2**			CTL05279_8B_1	CTL05279_8B_1		LTE 850	QS66512-2_850MHz_10DT	13.5	200	10	Bottom	Andrew 1-5/8	200.05						1000		13	
	PORT 5			CTN0005279_8B_1	CTN0005279_8B_1		LTE 850	QS66512-2_850MHz_10DT	13.5	200	10	Bottom	Andrew 1-5/8	200.05						1000		13	

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?					Yes									
ANTENNA MAKE - MODEL	SBNHH-1D85B													
ANTENNA VENDOR	Andrew													
ANTENNA SIZE (H x W x D)	72.9X11.9X7.1													
ANTENNA WEIGHT	42.1													
AZIMUTH	320													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173													
ANTENNA TIP HEIGHT	175													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT	2													
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-in												
SURGE ARRESTOR (QTY/MODEL)	4	TSXDC-4310FM			4	TSXDC-4310FM								
DIPLEXER (QTY/MODEL)	2	TPX-070821												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	TMABPD7823VG12A												
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)					1	4478 B5								
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)	1	4426 B66												
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	K SBT 782-11055												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	SOW:- Replace UMTS Antenna to 85° BW Hex Model.- Replace Diplexers to Triplexers.- Replace TMA's with new AWS Compatible TMA's- Add new 2 Coax per sector.- Add LTE RRH @ Bottom along with SA.- Upgrade LTE 850 RRH- Add 2nd XMU.- Add SBTs.- Add 1x6630.													
Local Market Note 2														
Local Market Note 3	1x5216+2xXMU+1x6630.													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1			CTV52793	CTV52793		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	320	10	None	Andrew 1-5/8	200.05						289.07		17	
	PORT 2			CTV52793	CTV5279C		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	320	10	Bottom	Andrew 1-5/8	200.05						289.07		17	
	PORT 3			CTL05279_2C_2	CTL05279_2C_2		LTE AWS	SBNHH-1D85B_2170MHz_02DT	18.05	320	2	Bottom	Andrew 1-5/8	200.05						3837.0724		18	

ANTENNA POSITION 3	**PORT 2**			CTL05279_8C_1	CTL05279_8C_1		LTE 850	QS66512-2_850MHz_10DT	13.5	320	10	Bottom	Andrew 1-5/8	200.05						1000		21	
	PORT 5			CTN0005279_8C_1	CTN0005279_8C_1		LTE 850	QS66512-2_850MHz_10DT	13.5	320	10	Bottom	Andrew 1-5/8	200.05						1000		21	

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	SBNHH-1D85B				QS66512-2									
ANTENNA VENDOR	Andrew				Quintel									
ANTENNA SIZE (H x W x D)	72.9X11.9X7.1				72X12X9.6									
ANTENNA WEIGHT	42.1				111									
AZIMUTH	60				60									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173				173									
ANTENNA TIP HEIGHT	176				176									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	4				4									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-in				Built-in								
SURGE ARRESTOR (QTY/MODEL)	4	TSXDC-4310FM			16	APTDC-BDFDM-DB(12)+TSXDC-4310FM(4)								
DIPLEXER (QTY/MODEL)	2	TPX-070821			4	QBC0007F1V51-1								
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)	1	Kathrein / 860-10006				LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	TMABPD7823VG12A			2	Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)								
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)					1	RRUS-11 (REUSE ONLY)								
RRH - 850 band (QTY/MODEL)					1	4478 B5								
RRH - 1900 band (QTY/MODEL)					2	RRUS-12								
RRH - AWS band (QTY/MODEL)	1	4426 B66												
RRH - WCS band (QTY/MODEL)					1	RRUS-32								
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	K SBT 782-11055												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	SOW:- Replace UMTS Antenna to 85° BW Hex Model.- Replace Diplexers to Triplexers.- Replace TMA's with new AWS Compatible TMA's- Add new 2 Coax per sector.- Add LTE RRH @ Bottom along with SA.- Upgrade LTE 850 RRH- Add 2nd XMU.- Add SBTs.- Add 1x6630.													
Local Market Note 2														
Local Market Note 3	1x5216+2xXMU+1x6630.													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	25924.A.850.3G.1		CTV52791	CTV52791		UMTS 850	SBNHH-1D85B_847MHz_06DT	14.39	60	6	None	Andrew 1-5/8	200.05						289.07		1	
	PORT 2	25924.A.850.3G.2		CTV52791	CTV5279A		UMTS 850	SBNHH-1D85B_847MHz_06DT	14.39	60	6	Bottom	Andrew 1-5/8	200.05						289.07		1	
	PORT 3	25924.A.AWS.4G.tmp4		CTL05279_2A_2	CTL05279_2A_2		LTE AWS	SBNHH-	18.05	60	3	Bottom	Andrew 1-5/8	200.05						3837.0724		2	

								1D85B_2170MHz_03DT															
ANTENNA POSITION 3	**PORT 1**	25924.A.700.4G.1		CTL05279_7A_1	CTL05279_7A_1		LTE 700	QS66512-2_722MHz_04DT	13.3	60	4	Bottom	Andrew 1-5/8	200.05						1475.7065		5	
	PORT 2	25924.A.850.4G.tmp1		CTL05279_8A_1	CTL05279_8A_1		LTE 850	QS66512-2_850MHz_04DT	13.6	60	4	Bottom	Andrew 1-5/8	200.05						1000		5	
	PORT 3	25924.A.1900.4G.1		CTL05279_9A_1	CTL05279_9A_1		LTE 1900	QS66512-2_1930MHz_03DT	15.9	60	3	Bottom	Andrew 1-5/8	200.05						7328.7514		6	
	PORT 4	25924.A.WCS.4G.tmp1		CTL05279_3A_1	CTL05279_3A_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	60	3	Bottom	Andrew 1-5/8	200.05						1285.2866		6	
	PORT 5	25924.A.850.5G.tmp1		CTN0005279_8A_1	CTN0005279_8A_1		LTE 850	QS66512-2_850MHz_04DT	13.6	60	4	Bottom	Andrew 1-5/8	200.05						1000		5	
	PORT 7	25924.A.1900.4G.tmp4		CTL05279_9A_2	CTL05279_9A_2		LTE 1900	QS66512-2_1930MHz_03DT	15.9	60	3	Bottom	Andrew 1-5/8	200.05						7328.7514		6	

Section 17B - FINAL TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	SBNHH-1D85B				QS66512-2									
ANTENNA VENDOR	Andrew				Quintel									
ANTENNA SIZE (H x W x D)	72.9X11.9X7.1				72X12X9.6									
ANTENNA WEIGHT	42.1				111									
AZIMUTH	200				200									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173				173									
ANTENNA TIP HEIGHT	176				176									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	4				4									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-in				Built-in								
SURGE ARRESTOR (QTY/MODEL)	4	TSXDC-4310FM			16	APTDC-BDFDM-DB(12)+TSXDC-4310FM(4)								
DIPLEXER (QTY/MODEL)	2	TPX-070821			4	QBC0007F1V51-1								
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)						LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	TMABPD7823VG12A			2	Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)								
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)					1	RRUS-11 (REUSE ONLY)								
RRH - 850 band (QTY/MODEL)					1	4478 B5								
RRH - 1900 band (QTY/MODEL)					2	RRUS-12								
RRH - AWS band (QTY/MODEL)	1	4426 B66												
RRH - WCS band (QTY/MODEL)					1	RRUS-32								
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	K SBT 782-11055												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	SOW:- Replace UMTS Antenna to 85° BW Hex Model.- Replace Diplexers to Triplexers.- Replace TMA's with new AWS Compatible TMA's- Add new 2 Coax per sector.- Add LTE RRH @ Bottom along with SA.- Upgrade LTE 850 RRH- Add 2nd XMU.- Add SBTs.- Add 1x6630.													
Local Market Note 2														
Local Market Note 3	1x5216+2xXMU+1x6630.													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	25924.B.850.3G.1		CTV52792	CTV52792		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	200	10	None	Andrew 1-5/8	200.05						289.07		9	
	PORT 2	25924.B.850.3G.2		CTV52792	CTV5279B		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	200	10	Bottom	Andrew 1-5/8	200.05						289.07		9	
	PORT 3	25924.B.AWS.4G.tmp4		CTL05279_2B_2	CTL05279_2B_2		LTE AWS	SBNHH-	17.97	200	6	Bottom	Andrew 1-5/8	200.05						3837.0724		10	

								1D85B_2170MHz_06DT															
ANTENNA POSITION 3	**PORT 1**	25924.B.700.4G.1		CTL05279_7B_1	CTL05279_7B_1		LTE 700	QS66512-2_722MHz_10DT	13.1	200	10	Bottom	Andrew 1-5/8	200.05						1475.7065		13	
	PORT 2	25924.B.850.4G.tmp1		CTL05279_8B_1	CTL05279_8B_1		LTE 850	QS66512-2_850MHz_10DT	13.5	200	10	Bottom	Andrew 1-5/8	200.05						1000		13	
	PORT 3	25924.B.1900.4G.1		CTL05279_9B_1	CTL05279_9B_1		LTE 1900	QS66512-2_1930MHz_06DT	15.9	200	6	Bottom	Andrew 1-5/8	200.05						7328.7514		14	
	PORT 4	25924.B.WCS.4G.tmp1		CTL05279_3B_1	CTL05279_3B_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	200	3	Bottom	Andrew 1-5/8	200.05						1285.2866		14	
	PORT 5	25924.B.850.5G.tmp1		CTN0005279_8B_1	CTN0005279_8B_1		LTE 850	QS66512-2_850MHz_10DT	13.5	200	10	Bottom	Andrew 1-5/8	200.05						1000		13	
	PORT 7	25924.B.1900.4G.tmp4		CTL05279_9B_2	CTL05279_9B_2		LTE 1900	QS66512-2_1930MHz_06DT	15.9	200	6	Bottom	Andrew 1-5/8	200.05						7328.7514		14	

Section 17C - FINAL TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	SBNHH-1D85B				QS66512-2									
ANTENNA VENDOR	Andrew				Quintel									
ANTENNA SIZE (H x W x D)	72.9X11.9X7.1				72X12X9.6									
ANTENNA WEIGHT	42.1				111									
AZIMUTH	320				320									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173				173									
ANTENNA TIP HEIGHT	176				176									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	4				4									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-in				Built-in								
SURGE ARRESTOR (QTY/MODEL)	4	TSXDC-4310FM			16	APTDC-BDFDM-DB(12)+TSXDC-4310FM(4)								
DIPLEXER (QTY/MODEL)	2	TPX-070821			4	QBC0007F1V51-1								
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)						LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	TMABPD7823VG12A			2	Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)								
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)					1	RRUS-11 (REUSE ONLY)								
RRH - 850 band (QTY/MODEL)					1	4478 B5								
RRH - 1900 band (QTY/MODEL)					2	RRUS-12								
RRH - AWS band (QTY/MODEL)	1	4426 B66												
RRH - WCS band (QTY/MODEL)					1	RRUS-32								
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	K SBT 782-11055												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	SOW:- Replace UMTS Antenna to 85° BW Hex Model.- Replace Diplexers to Triplexers.- Replace TMA's with new AWS Compatible TMA's- Add new 2 Coax per sector.- Add LTE RRH @ Bottom along with SA.- Upgrade LTE 850 RRH- Add 2nd XMU.- Add SBTs.- Add 1x6630.													
Local Market Note 2														
Local Market Note 3	1x5216+2xXMU+1x6630.													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	25924.C.850.3G.1		CTV52793	CTV52793		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	320	10	None	Andrew 1-5/8	200.05						289.07		17	
	PORT 2	25924.C.850.3G.2		CTV52793	CTV5279C		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	320	10	Bottom	Andrew 1-5/8	200.05						289.07		17	
	PORT 3	25924.C.AWS.4G.tmp4		CTL05279_2C_2	CTL05279_2C_2		LTE AWS	SBNHH-	18.05	320	2	Bottom	Andrew 1-5/8	200.05						3837.0724		18	

								1D85B_2170MHz_02DT															
ANTENNA POSITION 3	**PORT 1**	25924.C.700.4G.1		CTL05279_7C_1	CTL05279_7C_1		LTE 700	QS66512-2_722MHz_10DT	13.1	320	10	Bottom	Andrew 1-5/8	200.05						1475.7065		21	
	PORT 2	25924.C.850.4G.tmp1		CTL05279_8C_1	CTL05279_8C_1		LTE 850	QS66512-2_850MHz_10DT	13.5	320	10	Bottom	Andrew 1-5/8	200.05						1000		21	
	PORT 3	25924.C.1900.4G.1		CTL05279_9C_1	CTL05279_9C_1		LTE 1900	QS66512-2_1930MHz_02DT	16	320	2	Bottom	Andrew 1-5/8	200.05						7328.7514		22	
	PORT 4	25924.C.WCS.4G.tmp1		CTL05279_3C_1	CTL05279_3C_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	320	3	Bottom	Andrew 1-5/8	200.05						1285.2866		22	
	PORT 5	25924.C.850.5G.tmp1		CTN0005279_8C_1	CTN0005279_8C_1		LTE 850	QS66512-2_850MHz_10DT	13.5	320	10	Bottom	Andrew 1-5/8	200.05						1000		21	
	PORT 7	25924.C.1900.4G.tmp4		CTL05279_9C_2	CTL05279_9C_2		LTE 1900	QS66512-2_1930MHz_02DT	16	320	2	Bottom	Andrew 1-5/8	200.05						7328.7514		22	

Diagram - Sector	A	Diagram File Name - CT5279_A_B_C_LTE_REV.1.vsd					
Atoll Site Name -	CTL05279	Location Name -	MERIDEN BIRDSEY AVENUE	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)"

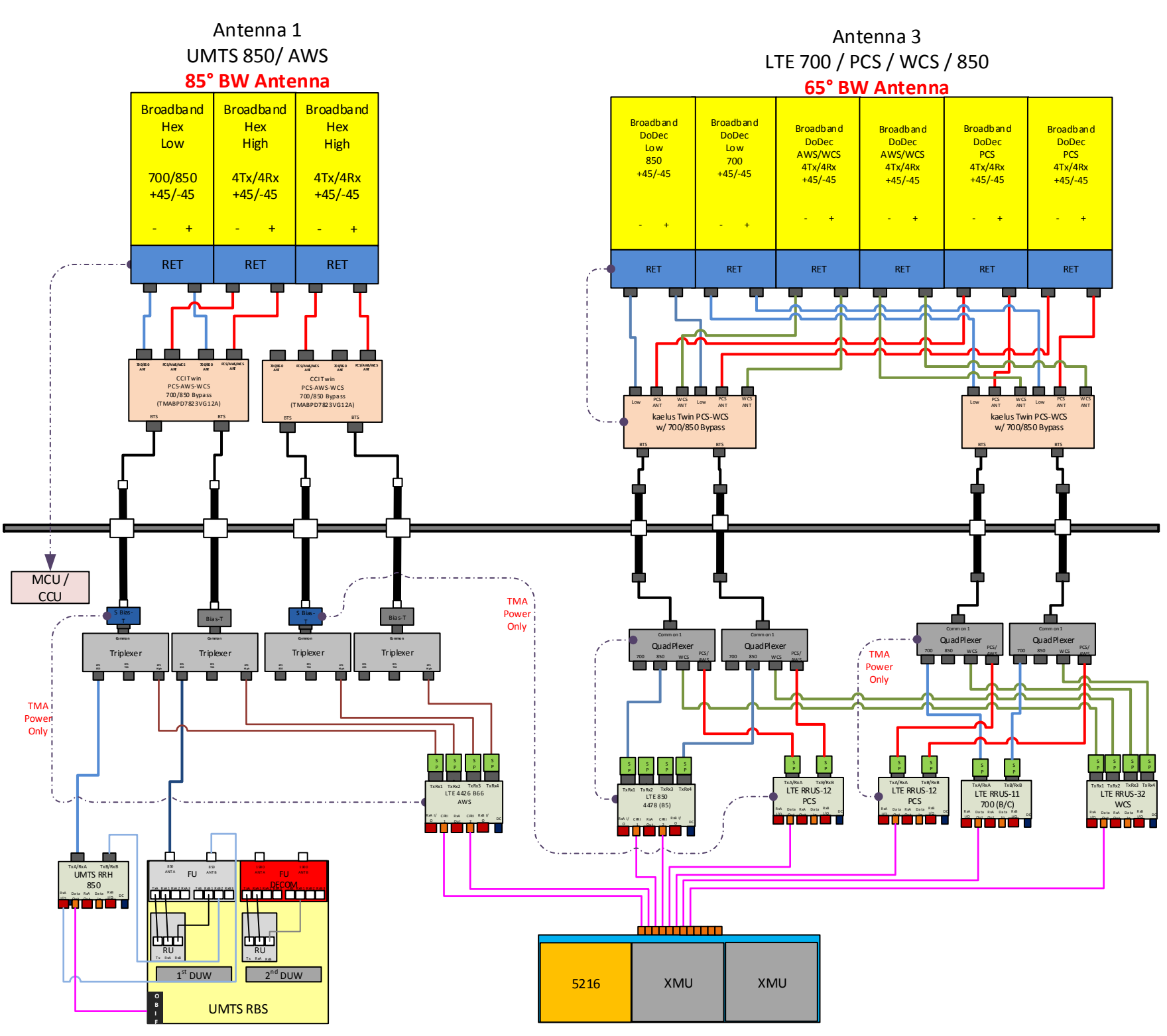


Diagram - Sector	B	Diagram File Name -	CT5279_A_B_C_LTE_REV.1.vsd				
Atoll Site Name -	CTL05279	Location Name -	MERIDEN BIRDSEY AVENUE	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)"

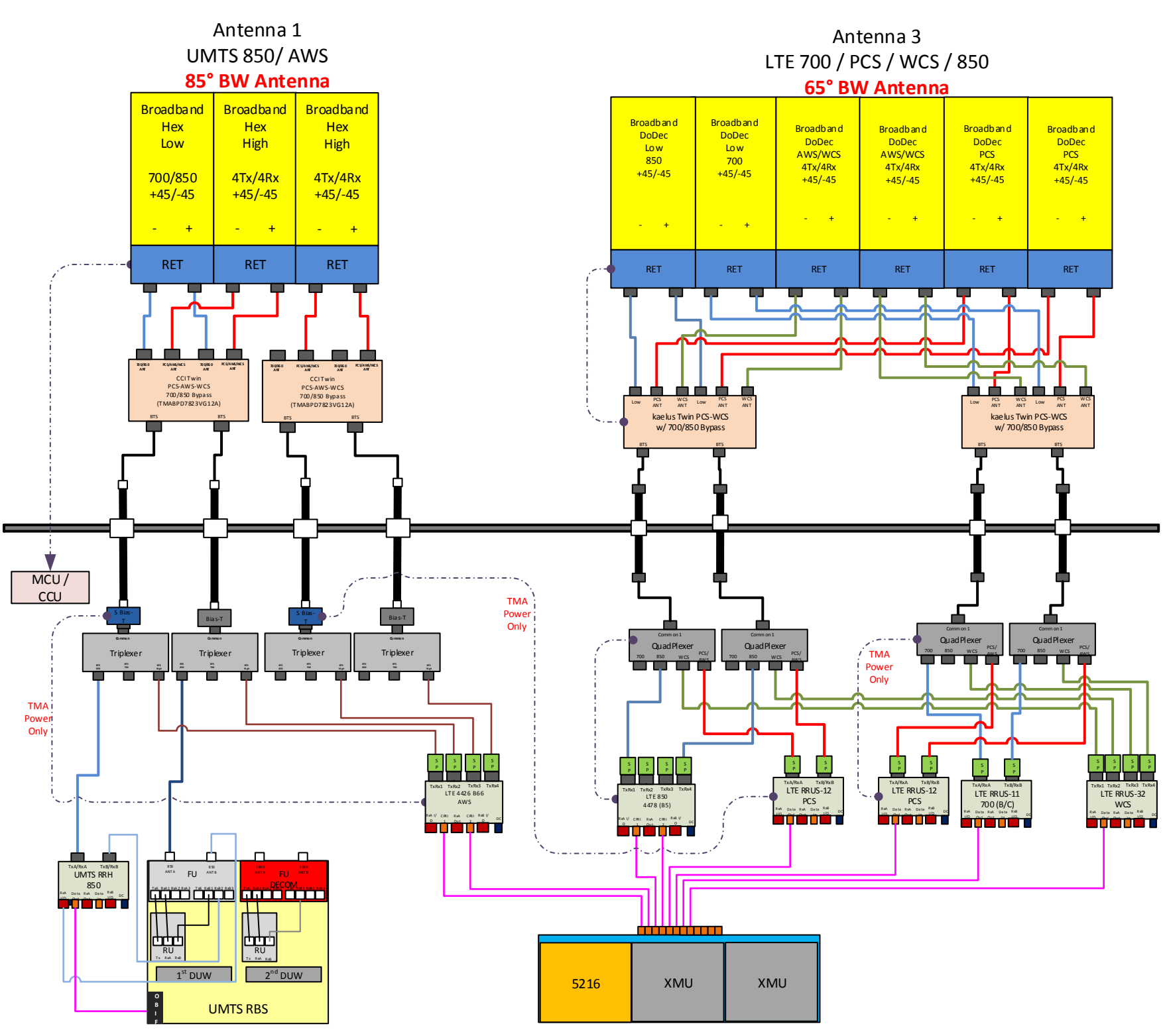
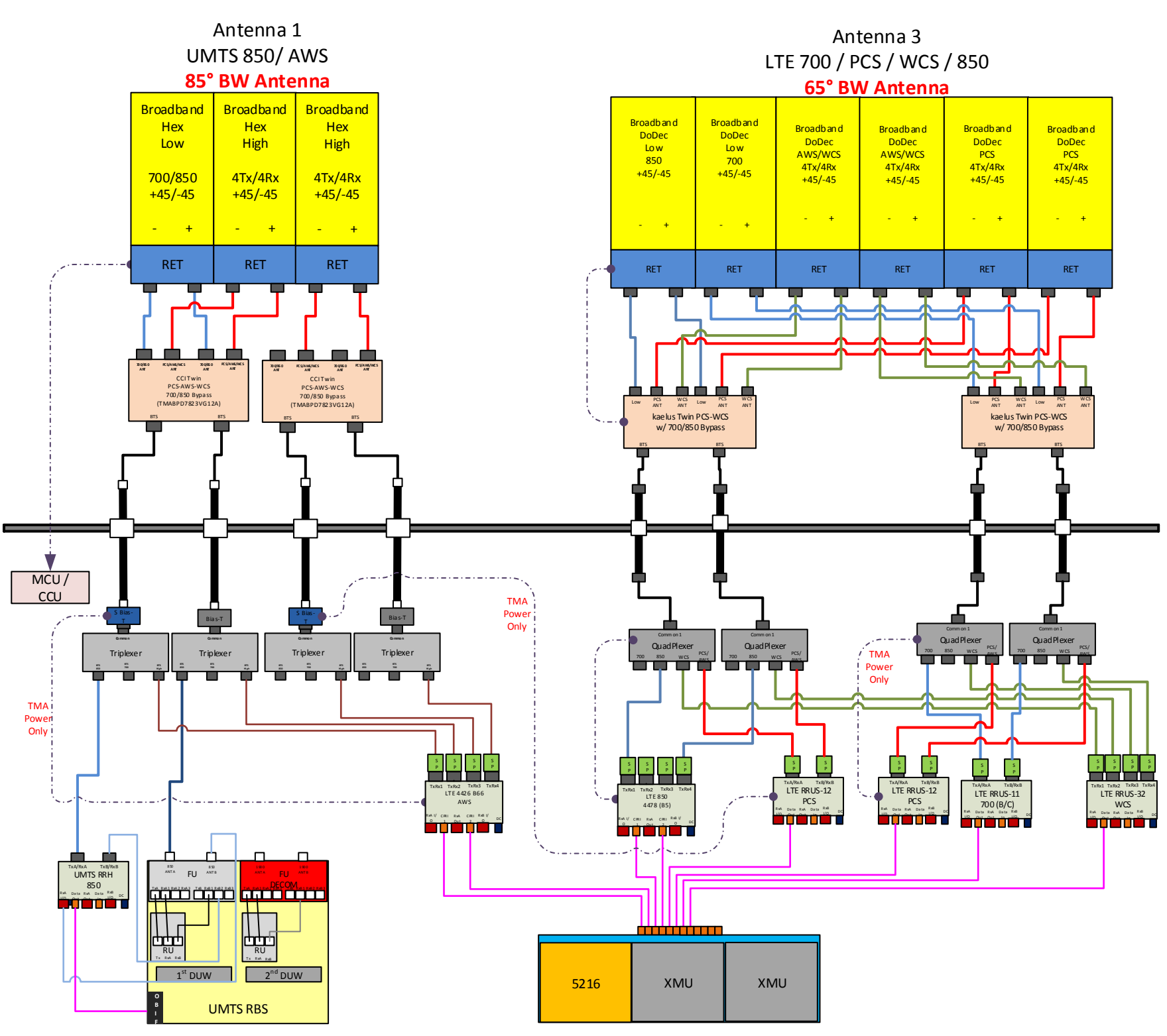


Diagram - Sector	C	Diagram File Name - CT5279_A_B_C_LTE_REV.1.vsd					
Atoll Site Name -	CTL05279	Location Name -	MERIDEN BIRDSEY AVENUE	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)"



NOTES			
Date Time (Eastern)	Version	ATTUID	Note
4/1/2018 9:55:48 PM	1.00	mh705r	LTE Preliminary RFDS Created

WORKFLOW SUMMARY							
Date	FROM State / Status	FROM ATTUID	TO State / Status	TO ATTUID	Operation	Comments	PACE Status
05/05/2018	Preliminary In Progress	mh705r	Preliminary Submitted for Approval	RC475S	Promote	LTE Preliminary RFDS	NER-RCTB-18-02310 MRCTB032126 SUCCESS 05/05/2018 12:10:16 AM NER-RCTB-18-02386 MRCTB031617 SUCCESS 05/05/2018 12:10:16 AM
05/09/2018	Preliminary Submitted for Approval	RC475S	Preliminary Approved	LW826K	Promote		

Quintel®
New Dimensions in Wireless™

QS66512-2

6ft 65° XXX MultiServ™ 12-Port Antenna

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

MultiServ

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

The Quintel MultiServ™ Multiband 12 Port Antenna with patented QTilt™ technology uniquely delivers four independent services in a single slim-line antenna. This enables existing antenna network sites to be upgraded constraint free to add new services such as LTE for 700, 850, PCS, AWS and WCS bands with the replacement of one antenna. The QS66512-2 also provides 4x1695-1780+2110-2400MHz & 4x1850-1990MHz ports as two side-by-side (CLA-2X) arrays, each set of 4 ports having independent tilt for connection to 2T4R/4T4R services.

Electrical Characteristics	2x Ports 1&2	2x Ports 3&4	4x Ports 5-8			4 Ports 9-12
Operating Frequency (MHz	698-806*	824-894	1695-1780 and 2110-2400			1850-1990
	698-806	824-894	1695-1780	2110-2180	2300-2400	1850-1990
Azimuth beamwidth[1]	67°	64°	68°	63°	58°	69°
Elevation beamwidth[1]	12°	10°	6.5°	5.5°	4.5°	5.5°
Gain[1] (dBi)	13.2	13.5	16.2	16.5	17.0	16.0
Polarization	±45°	±45°		±45° ±45°		±45° ±45°
Electrical down-tilt range	2°-10°	2°-10°		2° – 7°		2° – 7°
Upper SLL (20° > mainbeam)[1]	-17dB	-19dB	-18dB	-18B	-18dB	-16dB
Front to Back Ratio(180°±10°)[1]	≥27dB	≥29dB	≥28dB	≥28dB	≥28dB	≥27dB
Port to Port isolation[1]	≥28dB	≥30dB	≥30dB	≥30dB	≥30dB	≥30dB
Return loss (VSWR)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB (1.5)	14dB(1.5)
X Polar Discrimination (at 0°)	>18dB	>16dB	>20dB	>20dB	>18dB	>20dB
Max Power handling (per any port)	500 watts	500 watts		250 watts		250 watts
Total Composite Power (all ports)				1750 watts		
PIM (3rd Order) (2x43dBm)	>153dBc	>153dBc		>153dBc		>153dBc
XBand PIM (3rd Order) (2x43dBm)				>159dBc		

[1] *Typical Performance across frequency and Downtilt. *Products Ordered after Jan 2016 will be 698-806MHz*

Mechanical Characteristics	
Dimensions	L 72"(1828mm) x W 12"(304mm) x D 9.6"(245mm)
Weight (excl mounting brackets)	111lbs (50.3kg)
No. of Connectors	12x 4.3-10.0 DIN Female Long Neck
Max Wind Speed	150mph (67m/s)
Equivalent Flat Plate Area	2.96ft² (0.275m²)
Wind Load @160km/h (45m/s)	Front: 587N (132 lbs), Side: 382N (86 lbs)
Operating Temperature	-40°C to +65°C

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

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

Product Specifications

SBNHH-1D85B

Multiband Antenna, 698–896 and 2x 1695–2360 MHz, 85° horizontal beamwidth, internal RETs.

- Interleaved dipole technology providing for attractive, low wind load mechanical package
- Three internal RETs for independent tilt on all three bands

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.5	14.4	17.0	17.6	17.9	17.9
Beamwidth, Horizontal, degrees	83	86	81	79	79	79
Beamwidth, Vertical, degrees	12.3	11.1	5.7	5.3	5.0	4.6
Beam Tilt, degrees	0–12	0–12	0–8	0–8	0–8	0–8
USLS (First Lobe), dB	19	18	15	16	17	18
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	25	25	25	25
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.3	14.2	16.8	17.4	17.7	17.8
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.5	±0.5	±0.3	±0.4	±0.3
Gain by Beam Tilt, average, dBi	0 ° | 14.2	0 ° | 14.1	0 ° | 16.8	0 ° | 17.5	0 ° | 17.7	0 ° | 17.6
	6 ° | 14.3	6 ° | 14.3	4 ° | 16.8	4 ° | 17.5	4 ° | 17.8	4 ° | 18.0
	12 ° | 14.1	12 ° | 13.9	8 ° | 16.7	8 ° | 17.2	8 ° | 17.5	8 ° | 17.6
Beamwidth, Horizontal Tolerance, degrees	±2.4	±1.7	±4.8	±3.2	±3.8	±1.9
Beamwidth, Vertical Tolerance, degrees	±0.6	±0.9	±0.2	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	16	14	15	16	17	18
Front-to-Back Total Power at 180° ± 30°, dB	23	23	27	26	25	27
CPR at Boresight, dB	20	20	23	22	18	22
CPR at Sector, dB	15	16	12	13	10	6

* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

General Specifications

Antenna Type	Sector with internal RET
Band	Multiband
Brand	DualPol®
Operating Frequency Band	1695 – 2360 MHz | 698 – 896 MHz
Performance Note	Outdoor usage

Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground

Product Specifications

SBNHH-1D85B

Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	6
Wind Loading, frontal	618.0 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Loading, lateral	197.0 N @ 150 km/h 44.3 lbf @ 150 km/h
Wind Loading, rear	728.0 N @ 150 km/h 163.7 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Depth	180.0 mm | 7.1 in
Length	1851.0 mm | 72.9 in
Width	301.0 mm | 11.9 in
Net Weight, without mounting kit	19.1 kg | 42.1 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal RET	High band (2) | Low band (1)
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal conditions, maximum	13.0 W
Protocol	3GPP/AISG 2.0 (Multi-RET)
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	1 female | 1 male

Packed Dimensions

Depth	299.0 mm | 11.8 in
Length	1970.0 mm | 77.6 in
Width	409.0 mm | 16.1 in
Shipping Weight	31.2 kg | 68.8 lb

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

TMA2117F00V1-1

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

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

PRODUCT FEATURES

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

TECHNICAL SPECIFICATIONS

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

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

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

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

ENVIRONMENTAL

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

MECHANICAL

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

ELECTRICAL BLOCK DIAGRAM

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

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

General Information

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

Model TMABPDB7823VG12A

Contents:

Features:

- Small lightweight unit
- Triple Band (AWS/PCS/WCS) Twin TMA with 700/850 Bypass
- Independent Gain Control
- High linearity
- Lightning protected
- Fail-safe bypass mode
- High reliability

Technical Description

The TMA system is an outdoor quad band tower mount unit which provides low noise amplification of PCS, AWS, and WCS uplink signals combined with 700/850 bypassed signals from separate antenna ports to a common BTS port. The tower mount unit consists of 14 band-pass filters, two redundant low noise amplifiers (LNA) with bypass failure circuitry, two bias tees, AISG control circuitry, and lightning protection circuitry all housed in an IP68 enclosure suited to long life masthead mounting. The AWS, PCS and WCS paths are dual duplexed to separate the low power uplink signals from the high power down link signals at the BTS and antenna ports. The AWS, PCS, and WCS uplink signals are amplified with a dedicated ultra-low noise PHEMT LNA with adjustable gain control. The unit provides protection against lightning strikes via a multistage surge protection circuit. DC power and AISG 2.0 control is provided via the BTS feeder cable. The unit operates in current window alarm (CWA) mode until a valid AISG message is detected, at which point it automatically switches to AISG mode. Once in AISG mode, the unit can only switch back to CWA mode with the receipt of an AISG CCI vendor defined command. In CWA mode, the unit requires 12VDC at each BTS port and follows typical current window convention. In AISG mode, the unit will accept 10-30 VDC from either BTS port. In AISG mode, the unit does not require an AISG 2.0 compatible site control unit (SCU) and may also be powered by a standard power distribution unit (PDU).

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

CCI Triple Band (AWS/PCS/WCS) Twin TMA with 700/850 Bypass Typical Specifications

Description	Typical Specifications			
Electrical Specifications	**700/850**	**PCS**	**AWS**	**WCS**
Receive Frequency Range	-	1850 – 1910 MHz	1710 – 1755 MHz	2305 – 2320 MHz
Transmit Frequency Range	-	1930 – 1990 MHz	2110 – 2155 MHz	2345 – 2360 MHz
Bypass Frequency Range	698 - 894 MHz	-	-	-
Amplifier Gain	-	6 to 12 dB Adjustable in 0.25 dB steps via AISG	6 to 12 dB Adjustable in 0.25 dB steps via AISG	6 to 12 dB Adjustable in 0.25 dB steps via AISG
Gain Variation	-	±1.0 dB	±1.0 dB	±1.0 dB
System Noise Figure	-	1.4 dB Typ.	1.3 dB Typ.	1.3 dB Typ.
Input Third Order Intercept Point	-	+12 dBm Min at Max. Gain		
Input / Output Return Loss	18 dB Min all ports, 12 dB Min. Bypass Mode			
Insertion Loss	0.25 dB Typ.			
Transmit Passband	-	0.5 dB Typical	0.4 dB Typical	0.4 dB Typical
Bypass Mode, (PCS/AWS/WCS) Rx Passband	-	2.5 dB Typ.	2.5 dB Typ.	2.5 dB Typ.
Filter Characteristics				
Continuous Average Power	200 Watts max			
Peak Envelope Power	2 KW max			
Intermodulation Performance				
IMD at ANT port in Rx Band	< -112 dBm (-155 dBc) [2 tones at +43 dBm]			
Operating Voltage	+10V to +30V DC provided via coax or AISG			
Power Consumption	<2.0 Watts			
Mechanical Specifications				
Connectors	DIN 7-16 female x 2; AISG x 1			
Dimensions (Body Only)	10.63” (H) x 11.024” (W) x 3.72” (D); (290.60 (H) x 280.00 (W) x 95.0 (D) mm)			
Dimensions (with Conn. & Bracket)	14.25” (H) x 11.024” (W) x 4.11” (D); (362.00 (H) x 280.00 (W) x 104.40 (D) mm)			
Weight	23.1 Lbs. (10.5 Kg) - with Brackets; 22 Lbs. (10 Kg) - without brackets			
Mounting	Pole/Wall Mounting Bracket			
Environmental Specifications				
Operating Temperature	-40˚ C to +65˚C			
Lightning Protection	8/20us, ±2KA max, 10 strikes each, IEC61000-4-5			
Enclosure	IP68			
MTBF	>500,000 hours			

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

Str. No.	Bid Item No.	Current type	T&B Job#	T&B Release #	T&B Base Job#	T&B Anchor Bolt Billable	T&B Pole Billable	T&B Pole #
24450	A.1.66	30--scsp-011-dgx.115	20701	J,K	20701	N1066GAA	N1066GAT	A-166A
24451	A.1.26	30--scsp-010-sgx.115	20701	J,K	20701	K127GXBA	K127GXBT	A-126A
24452	A.1.52	31--dcsp-020-sgx.125	20703	E,F	20703	K152GXAA	K152GXAT	A-152A
24453	A.1.45	31--dcsp-002-ugx.130	20701	J,K	20701	K145GXAA	K145GXAT	A-145A
24454	A.1.49	31--dcsp-005-ugx.135	20701	J,K	20701	K149GXAA	K149GXAT	A-149A
24455	A.1.48	31--dcsp-003-ugx.195	20703	E,F	20703	K148GXAA	K148GXAT	A-148A
24456	A.1.51	31--dcsp-019-sgx.195	20703	E,F	20703	K151GXAA	K151GXAT	A-151A
24457	A.1.50	31--dcsp-010-sgx.140	20703	E,F	20703	K150GXAA	K150GXAT	A-150A
24458	A.1.43	31--dcsp-002-ugx.120	20701	J,K	20701	K145GXCA	K145GXCT	A-143A
24459	A.1.53	31--dcsp-020-sgx.140	20703	E,F	20703	K153GXAA	K153GXAT	A-153A
9411A	A.1.24	30--scsp-010-dgx.135	20703	E,F	20703	K125GXBA	K125GXBT	A-124A
9411B	A.1.63	10--scsp-028-dgx.130	20701	J,K	20701	N1063GAA	N1063GAT	A-163A
9407	A.1.32	30--scsp-020-sgx.130	21873	C,F	20699	RA132GAA	RA132GAT	A-9407
9403	A.1.68	30--scsp-020-sgc.175	21875	R,S	20700	NA1068AA	NA1068AT	A-9403
9402	A.1.14	30--scsp-001-sgx.160	21873	C,E	20699	K114GXAA	K114GXAT	A-9402
9401	A.1.21	30--scsp-008-sgx.160	21873	C,E	20699	K121GXAA	K121GXAT	A-9401
9400A	A.1.64	30--scsf-009-dgx.spc125-R,115-L	21873	C,E	20699	NA164LAA	NA164LAT	A-9400A-L,A-9400A-M,A-9400A-R
24600	A.3.20	30-cscsd-030-dwx.130	20705	G,H	20705	NA320LAA	NA320LAT	A-24600L,A-24600R
24601	A.3.9	30-cscsp-002-uwx.095	20705	G,H	20705	K309WXAA	K309WXAT	A-24601
24602	A.3.6	30-cscsp-002-uwx.080	20705	G,H	20705	K308WXCA	K308WXCT	A-24602
24603	A.3.3	30-cscsp-001-uwx.090	20705	G,H	20705	K303WXAA	K303WXAT	A-24603
24604	A.3.8	30-cscsp-002-uwx.090	20705	G,H	20705	K308WXAA	K308WXAT	A-24604
24605	A.3.14	30-cscsp-020-swx.075	20705	G,H	20705	K314WXAA	K314WXAT	A-24605
24606	A.3.9	30-cscsp-002-uwx.095	21638	A,G	20698	RA309WAA	RA309WAT	A-24606
24607	A.3.8	30-cscsp-002-uwx.090	21728	A,F	20705	K308WXAA	K308WXAT	A-24607
24608	A.3.11	30-cscsp-002-uwx.110	21638	A,H	20698	K311WXAA	K311WXAT	A-24608
24609	A.3.1	31-cscsd-001-uwx.075	21638	B,H	20698	K301WXAA	K301WXAT	A-24609
24610	A.3.19	31-cscsd-010-uwx.spc105-1P,90-2P	21638	B,H	20698	NA319LAA	NA319LAT	A-24610L,A-24610R
24611	A.3.7	30-cscsd-002-uwx.085	21638	B,J	20698	K307WXAA	K307WXAT	A-24611
24612	A.3.10	30-cscsd-002-uwx.100	21638	B,K	20698	K310WXAA	K310WXAT	A-24612
24613	A.3.5	30-cscsd-002-uwx.070	21638	B,K	20698	K305WXAA	K305WXAT	A-24613
24614	A.3.4	30-cscsd-001-uwx.095	21638	C,L	20698	K304WXAA	K304WXAT	A-24614
24615	A.3.13	30-cscsd-010-swx.100	21638	C,L	20698	K313WXAA	K313WXAT	A-24615
24616	A.3.16	30-cscsd-020-swx.100	21638	C,M	20698	K316WXAA	K316WXAT	A-24616
24617	A.3.2	30-cscsd-001-uwx.085	21638	C,M	20698	K302WXAA	K302WXAT	A-24617
24618	A.3.15	30-cscsd-020-swx.080	21638	D,N	20698	K315WXAA	K315WXAT	A-24618
24619	A.3.17	30-cscsd-030-dwx.105	21638	D,N	20698	K317WLAA	K317WLAT	A-24619L,A-24619R

NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP

Northeast Utilities Service Co.

FOR CONNECTICUT LIGHT & POWER COMPANY

TITLE DEVON GENERATING STATION - PEASE ROAD JCT.
STEEL STRUCTURE LEGEND

CT

BY CSM-BMcD	CHKD -	APP -	APP -	
DATE 6/13/08	DATE -	DATE -	DATE -	
H-SCALE N.T.S.	SIZE D	FIELD BOOK & PAGES		
V-SCALE N.T.S.	V.S.	R.E.DWG.		
R.E. PROJ. NUMBER		NUSCO	01227-40001	

FORM 12/07

NORTHEAST UTILITIES SERVICE CO.

MIDDLETOWN-NORWALK

Job No. 21875

Thomas&Betts

8155 T&B Boulevard
Memphis, TN 38125

PHONE: (901) 252-5000
ENGR. FAX: (901) 252-1304

Steel Structures Division

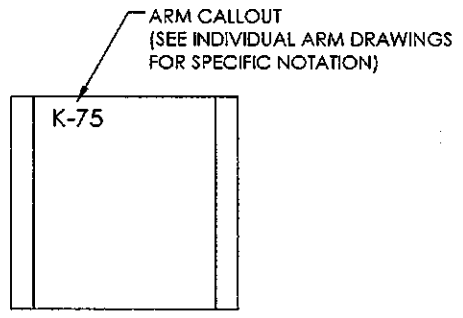
SPECIAL NOTES

1. MATERIAL SPECIFICATION:
   SEE STANDARD DRAWING SSG001, GENERAL INFORMATION NOTE 1A FOR STEEL SPECIFICATIONS FOR GALVANIZED AND WEATHERING POLES, UNLESS NOTED BELOW.
   EXCEPTION: NONE.

2. PLATE TESTING:
   HEAT LOT:
   SEE SHEET SSG001, GENERAL INFORMATION, NOTE 2.
   EXCEPTION: NONE.

3. FINISH:
   A. GALVANIZED:
   POLE AND ARMS – HOT DIP GALVANIZED PER ASTM A-123.
   CABLE COVERS AND CABLE SUPPORT ASSEMBLIES - HOT DIP GALVANIZED PER ASTM A-123.
   BOLTS - HOT DIP GALVANIZED PER ASTM A-153.
   NUTS - HOT DIP GALVANIZED PER ASTM A-153.
   LOCKWASHERS - HOT DIP GALVANIZED PER ASTM A-153.
   M.F. LOCKNUTS – HOT DIP GALVANIZED PER ASTM A-153.
   BASE PLATE – TO BE METALLIZED WHERE NOTED ON THE DRAWINGS..

4. MARKING:
   SEE SHEET SSG001, GENERAL MANUFACTURING INFORMATION, NOTE 10.
   EXCEPTIONS:
   A. PROVIDE NAME PLATE APPROXIMATELY 6'-0" ABOVE BASE PLATE WITH THE FOLLOWING INFORMATION: MANUFACTURER'S NAME, STRUCTURE. HEIGHT, STR. TYPE, STR. NUMBER, SEE INDIVIDUAL ERECTION DRAWINGS FOR NAMEPLATE DETAIL.
   B. MARK 0 DEG. REF. POINT ON TOP OF BASE PLATE WITH WELD BEAD. SEE BASE PLATE ORIENTATION ON INDIVIDUAL SHAFT ASSEMBLY DRAWINGS.
   C. ARMS – MARK ARM LETTER FOLLOWED BY THE LAST TWO DIGITS OF THE BASE JOB NUMBER IN UPPER LEFT HAND CORNER OF ARM BRACKET. (FOR AN EXAMPLE, SEE ARM MARKING DETAIL ON RIGHT) IF ANY INTERNAL MARKING IS REQUIRED, IT IS TO BE PLACED IN THE LOWER RIGHT HAND CORNER.



ARM MARKING DETAIL

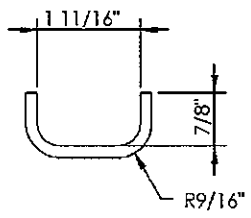
5. CLIMBING/WORKING:
   BAIL STEP CLIPS:
   FOR CLIMBING ORIENTATION AND INFORMATION SEE INDIVIDUAL ERECTION DRAWINGS.
   SEE BAIL STEP CLIP DETAIL ON THIS SHEET

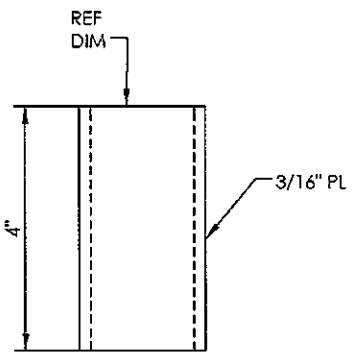
6. CLIMBING/WORKING DEVICES:
   BAIL STEPS TO BE PROVIDED BY CUSTOMER

7. VENT HOLES:
   GALVANIZER TO FILL VENT HOLES WITH SILICONE SEALANT AFTER GALVANIZING.

8. SPECIAL FABRICATION INSTRUCTIONS
   A. TRIAL FIT GO-GAGE AND NO-GO-GAGE INTO EVERY BAIL STEP CLIP TO ENSURE PROPER FIT
   B. PROVIDE 3/4" DIA. X 6" LONG. STAINLESS STEEL BOLT (76971) WITH 2" OF THREADS.
   C. PROVIDE 5% EXCESS FASTENERS WITH MINIMUN OF 1 PER TYPE PER RELEASE.
   D. TOP OF RADIUS ARMS TO BE PARALLEL TO GROUND ON SMALL END.
   E. DO NOT PUNCH HOLES IN PLATE > 1 ¼" THK.
   F. DISREGARD CAMBER IF LESS THAN OR EQUAL TO 6".
   G. SHOP TO PREFIT CABLE COVER AND CABLE SUPPORT ASSEMBLY.

9. CUSTOMER NOTES:
   ALL FINAL WEIGHTS ARE BLACK WEIGHTS (DOES NOT INCLUDE GALVANIZING).





76315
BAIL STEP CLIP DETAIL

REV.	DESCRIPTION	DRFT/DATE
H	REMOVED CAMBER FROM POLE ON REL H	ST/9-28-07
G	REV. STR. TYPE	TJS/9-13-07
F	REV CAMBER & SHAFT DWGS ON REL C, ADDED REL R & S	ST/8-20-07
E	ADDED RELEASE H, N, & P	ST/8-14-07
D	ADDED RELEASE D & G, REV. EXCESS FAST. DECRIPTION	ST/8-8-07
C	ADDED RELEASE B	ST/7-30-07
B	ADDED RELEASE F & C	ST/6-29-07
A	ADDED RELEASES E & A	ST/6-20-07

CUSTOMER: NORTHEAST UTILITIES SERVICE CO.
CUSTOMER P.O. NO: 2231316
JOB NO: 20700
DRAWN/DATE TJS 5/31/2007
CHECKED/DATE: RG 6/13/2007
ENGINEER: KALPESH PATEL

Thomas&Betts
STEEL STRUCTURES DIVISION

SPECIAL NOTES &
DRAWING INDEX

SHEET 2 OF 4 | 21875-SPECNOTE

ANCHOR BOLT DRAWING INDEX

REL	QTY	DESCRIPTION	T&B POLE NO.	ANCHOR BOLT DRAWING
J	1	0-9 DEG. DEADEND UG RISER	B-4663A	20700-NB2047AA
	1	0-9 DEG. DEADEND UG RISER	D-4015A	20700-ND1158AA
L	1	0-10 DEGREE DEADEND SWITCH	C-3951B	20700-NC1109AA
A (A)	1	107-117 DEGREE DEADEND	D-24498	20700-ND1139AA
	2	60-70 DEGREE DEADEND	D-24000L, D-24000R	20700-P168GLAA
	1	20-30 DEGREE SMALL ANGLE	D-24014	20700-ND1153AA
	1	10-20 DEGREE SMALL ANGLE	D-24018	20700-ND1152AA
	3	0-2 DEGREE TANGENT	D-24027, D-24028, D-24100	20700-P154GXAA
	2	10-20 DEGREE SMALL ANGLE	D-24030, D-24121	20700-P165GXAA
	1	0-10 DEGREE DEADEND	A-24461	20700-K125GXAA
	1	0-9 DEGREE DEADEND	B-24209	20700-NB2051AA
	2	0-2 DEGREE TANGENT	D-24095, D-24096	20700-P155GXAA
	1	0-10 DEGREE SMALL ANGLE	D-24099	20700-P161GXAA
	1	20-30 DEGREE SMALL ANGLE	D-24116	20700-ND1103AA
	1	0-10 DEGREE SMALL ANGLE	B-24208	20700-NB2052AA
	2	10-20 DEGREE SMALL ANGLE	D-24117, D-24123	20700-P166GXAA
	1	10-20 DEGREE SMALL ANGLE	A-24469	20700-K136GXAA
	1	0-10 DEGREE SMALL ANGLE	A-24471	20700-RA129GAA
	1	0-8 DEGREE DEADEND	D-24202	20700-ND1107AA
	2	30-40 DEGREE DEADEND	D-24023L, D-24023R	20700-ND1080AA
	1	67-77 DEGREE DEADEND	D-24491	20700-RD1157AA

POLE DRAWING INDEX

REL	QTY	STRUCTURE TYPE	STRUCTURE LENGTH	STRUCTURE DESCRIPTION	T&B STRUCTURE NO.	ERECTION DRAWING	POLE LAYOUT DRAWING	ARM LAYOUT DRAWING	CAMBER AMOUNT
K	1	10-SCSP-009-DGR.145	146'-7"	0-9 DEG. DEADEND UG RISER	B-4663A	20700-NB2047AT	20700-3761, 20700-3762, 20700-3763	20700-AF, 20700-AG, 20700-AH	7"
	1	10-CSCSP-009-DGR.115	116'-7"	0-9 DEG. DEADEND UG RISER	D-4015A	20700-ND1158AT	20700-3764, 20700-3765	20700-AJ, 20700-AK, 20700-AL	15"
	1	(G) -	-	EXCESS FASTENERS	-	21875-EXCESSKT	-	-	-
M	1	10-CSCSP-010-DGG.090	91'-7"	0-10 DEGREE DEADEND SWITCH	C-3951B	20700-NC1109AT	20700-3766, 20700-3767	-	-
	1	-	-	EXCESS FASTENERS	-	21875-EXCESSMT	-	-	-
E (A)	1	33-CDCSP-020-SGX.105	105'-6"	10-20 DEG. SMALL ANGLE	D-24018	20700-ND1152AT	20700-3708, 20700-3709	20700-RB, 20700-RC, 20700-T, 20700-TA	10"
	1	33-CDCSP-020-SGX.115	115'-6"	10-20 DEG. SMALL ANGLE	D-24030	20700-P165GXAT	20700-3056, 20700-3057, 20700-3058	20700-RB, 20700-RC, 20700-T, 20700-TA	12"
	1	30-SCSP-010-DGX.140	142'-1"	0-10 DEGREE DEADEND	A-24461	20700-K125GXAT	20700-3001, 20700-3002, 20700-3003	20700-A	7"
	1	30-SCSP-009-DGX.165	167'-1"	0-9 DEGREE DEADEND	B-24209	20700-NB2051AT	20700-3074, 20700-3075, 20700-3076	20700-A	9"
	1	-	-	EXCESS FASTENERS	-	21875-EXCESSET	-	-	-
F (B)	2	33-CDCSP-002-UGX.145	145'-0"	0-2 DEGREE TANGENT	D-24095, D-24096	20700-P155GXAT	20700-3050, 20700-3051, 20700-3052	20700-N, 20700-P	-
	1	33-CDCSP-010-SGX.145	145'-6"	0-10 DEG. SMALL ANGLE	D-24099	20700-P161GXAT	20700-3053, 20700-3054, 20700-3055	20700-RD, 20700-RE, 20700-SB, 20700-SC	12"
	1	-	-	EXCESS FASTENERS	-	21875-EXCESSFT	-	-	-
C (B)	1	33-CDCSP-070-DGX.110	112'-1"	60-70 DEG. TRANSITION DEADEND	D-24000L, D-24000R	20700-P168GLAT	20700-3062, 20700-3063, 20700-3064, 20700-3962, (F) 20700-3963, 20700-3964	20700-A (E)	18"(L), 14"(R)
	1	33-CDCSP-030-SGX.110	110'-6"	20-30 DEG. SMALL ANGLE	D-24014	20700-ND1153AT	20700-3710, 20700-3711, 20700-3712	20700-R, 20700-RA, 20700-S, 20700-SA	14"
	3	33-CDCSP-002-UGX.140	140'-0"	0-2 DEGREE TANGENT	D-24027, D-24028, D-24100	20700-P154GXAT	20700-3047, 20700-3048, 20700-3049	20700-N, 20700-P	-
	1	-	-	EXCESS FASTENERS (D)	-	21875-EXCESSCT	-	-	-
B (C)	1	10-SCSP-117-DGX.085	-	107-117 DEGREE DEADEND	D-24498	20700-ND1139AT	20700-3704, 20700-3705	20700-J	4"
	1	-	-	EXCESS FASTENERS (D)	-	21875-EXCESSBT	-	-	-
D (D)	1	33-CDCSP-030-SGX.115	115'-6"	20-30 DEG. SMALL ANGLE	D-24116	20700-ND1103AT	20700-3095, 20700-3096, 20700-3097	20700-R, 20700-RA, 20700-S, 20700-SA	14"
	1	31-DCSP-010-SGX.165	165'-9"	0-10 DEG. SMALL ANGLE	B-24208	20700-NB2052AT	20700-3077, 20700-3078, 20700-3079	20700-ED, 20700-FD, 20700-GD, 20700-HG	20"
	2	33-CDCSP-020-SGX.120	120'-6"	10-20 DEG. SMALL ANGLE	D-24123, D-24117	20700-P166GXAT	20700-3059, 20700-3060, 20700-3061	20700-RB, 20700-RC, 20700-T, 20700-TA	13"
	1	-	-	EXCESS FASTENERS	-	21875-EXCESSDT	-	-	-
G (D)	1	33-CDCSP-020-SGX.115	115'-6"	10-20 DEG. SMALL ANGLE	D-24121	20700-P165GXAT	20700-3056, 20700-3057, 20700-3058	20700-RB, 20700-RC, 20700-T, 20700-TA	12"
	1	30-SCSP-020-SGX.165	166'-0"	10-20 DEG. SMALL ANGLE	A-24469	20700-K136GXAT	20700-3004, 20700-3005, 20700-3006	20700-B, 20700-C	32"
	1	30-SCSP-010-SGX.160	161'-0"	0-10 DEG. SMALL ANGLE	A-24471	20700-RA129GAT	20700-3718, 20700-3719, 20700-3720	20700-BA, 20700-CA	37"
	1	-	-	EXCESS FASTENERS	-	21875-EXCESSGT	-	-	-

SSG DRAWING INDEX

STANDARD DRAWINGS	DRAWING NO	REVISION
GENERAL NOTES, ASSEMBLY AND ERECTION INFORMATION	SSG001	B
GALVANIZED POLE LIFTING REQUIREMENTS	SSG002	A
JACKING NUT LOCATIONS	SSG004	A
JACKING INSTRUCTIONS	SSG005	A
WELDING DETAILS	SSG006	A
WELDING DETAILS (CONT.)	SSG007	A

Thomas&Betts

STEEL STRUCTURES DIVISION

SPECIAL NOTES & DRAWING INDEX

CUSTOMER: NORTHEAST UTILITIES SERVICE CO.	
CUSTOMER P.O. NO: 2231316	
JOB NO: 20700	
DRAWN/DATE TJS 5/31/2007	
CHECKED/DATE: RG 6/13/2007	
ENGINEER: KALPESH PATEL	
SHEET 3 OF 4	21875-SPECNOTE

ANCHOR BOLT DRAWING INDEX

REL	QTY	DESCRIPTION	T & B POLE NO.	ANCHOR BOLT DRAWING
N △F	1	80-90 DEGREE DEADEND	B-24206	20700-L214GXAA
R △F	1	10-20 DEGREE SMALL ANGLE W/PCS	A-9403	20700-NA1068AA
	1	10-20 DEGREE DEADEND W/PCS	D-24092L	20700-ND154LAA
	1	10-20 DEGREE DEADEND W/PCS	D-24092R	20700-ND154RAA

POLE DRAWING INDEX

REL	QTY	STRUCTURE TYPE	STRUCTURE LENGTH	STRUCTURE DESCRIPTION	EMBEDMENT LENGTH	T&B POLE NO	ERECTION DRAWING	POLE LAYOUT DRAWING	ARM LAYOUT DRAWING	CAMBER AMOUNT
H △E	1	30-CSCSP-008-DGX.145	147'-1"	0-8 DEGREE DEADEND	-	D-24202	20700-ND1107AT	20700-3098, 20700-3099, 20700-3700	20700-A	7"
	1	10-SCSP-077.DGX.085	86'-7"	67-77 DEGREE DEADEND	-	D-24491	20700-RD1157AT	20700-3759, 20700-3760	20700-J	-△H
	2	30-CSCSP-040.DGX.130	132'-1"	30-40 DEGREE DEADEND	-	D-24023L, D-24023R	20700-ND1080AT	20700-3086, 20700-3087, 20700-3088	20700-A	19"
	1	-	-	EXCESS FASTENERS	-	-	21875-EXCESSHT	-	-	-
P △E	1	30-CSCSP-090-DGX.150	152'-1"	80-90 DEGREE DEADEND	-	B-24206	20700-L214GXAT	20700-3029, 20700-3030, 20700-3031	20700-A	23"
	1	-	-	EXCESS FASTENERS	-	-	21875-EXCESSPT	-	-	-
S △F	1	30-SCSP-020-SGC.175	175'-6"	10-20 DEGREE SMALL ANGLE W/PCS	-	A-9403	20700-NA1068AT	20700-376B, 20700-3769, 20700-3770, 20700-3771	20700-B, 20700-C	25"
	1	33-CDCSP-020-DGC.160	140'-1", 160'-6"	10-20 DEGREE DEADEND W/PCS	-	D-24092L, D-24092R	20700-ND154LAT	20700-3772, 20700-3773, 20700-3774, 20700-3775, 20700-3776, 20700-3777	20700-A	11" (L&R)
	1	-	-	EXCESS FASTENERS	-	-	21875-EXCESSST	-	-	-

CUSTOMER:	NORTHEAST UTILITIES SERVICE CO.
CUSTOMER P.O. NO:	2231316
JOB NO:	20700
DRAWN/DATE	TJS 5/31/2007
CHECKED/DATE:	RG 6/13/2007
ENGINEER:	KALPESH PATEL

Thomas&Betts

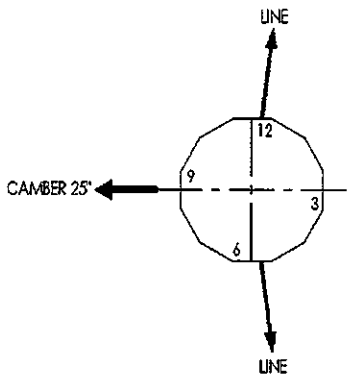
STEEL STRUCTURES DIVISION

SPECIAL NOTES & DRAWING INDEX

SHEET 4 OF 4 | 21875-SPECNOTE

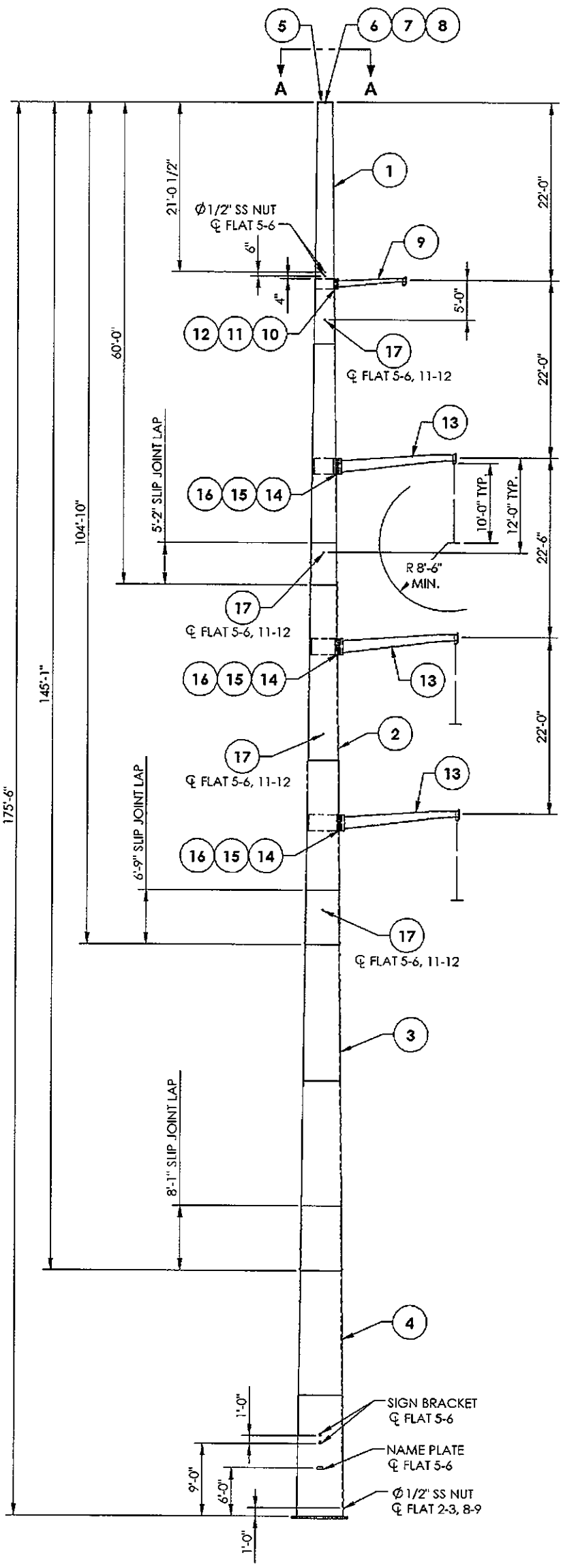
"TOLLES—9/28/2007—4:55:26 PM"

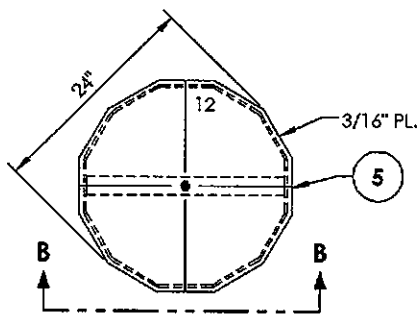
STRUCTURE INFORMATION					
BILLABLE	POLE NO	HGT. ABOVE GRND. LINE	TOP DIA.	GRND. LINE DIA.	TAPER IN./FT.
20700-NA1068AT	A-9403	175'-6"	23"	72 1/32"	0.29482



POLE ORIENTATION

PARTS AND ASSEMBLIES LIST				
ITEM NO.	PART NUMBER	QTY.	DESCRIPTION	WT. EACH
1	20700-3768	1	SHAFT ASSEMBLY, 60'-0" LONG	6900
2	20700-3769	1	SHAFT ASSEMBLY, 50'-0" LONG	11600
3	20700-3770	1	SHAFT ASSEMBLY, 47'-0" LONG	15100
4	20700-3771	1	SHAFT ASSEMBLY, 38'-6" LONG	21000
5	R3PR0240	1	POLE CAP	
6	78696	1	BOLT, 1/2" DIA. x 2"	
7	78697	2	NUT, 1/2" DIA.	
8	74123	1	LOCKWASHER, 1/2" DIA.	
9	20700-B	1	ARM ASSEMBLY, 8'-3" LONG	300
10	80172	8	BOLT, 1" DIA. x 3 3/4"	
11	73442	8	NUT, 1" DIA.	
12	78371	8	MF LOCKNUT, 1" DIA.	
13	20700-C	3	ARM ASSEMBLY, 14'-0" LONG	1200
14	84041	36	BOLT, 1 1/2" DIA. x 5 1/2"	
15	74122	36	LOCKWASHER, 1 1/2" DIA.	
16	76556	36	NUT, 1 1/2" DIA.	
17	76971	8	SS BOLT, 3/4" DIA. x 6"	
**TOTAL STRUCTURE WEIGHT				58500





VIEW A-A
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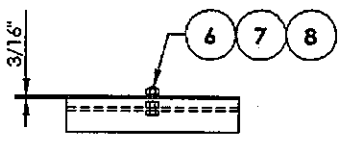
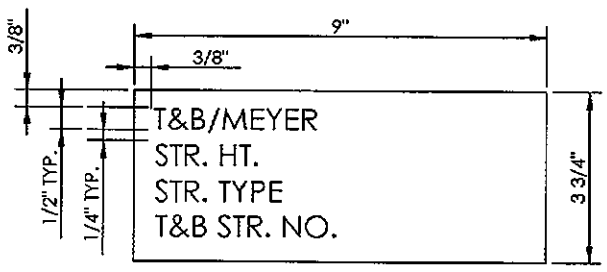


VIEW B-B
SCALE 1 : 15



NAME PLATE DETAIL
INFORMATION NEEDED ON PLATE
STR. HT: 175'-6"
STR. TYPE: 30-SCSP-020-SGC.175
T&B STR. NO: A-9403

Project Name Middletown - Norwalk 345-kV Transmission Line Project
Project No. 38565
P.O. No. 02231316
Contract Name Tubular Steel Poles
Contract No. MN-PM-PRO-0005

Burns & McDonnell Project No. 38565

B&McD Record Stamp

Contractor's Approval
(See Contract Documents)
Contractor _____
Approved By _____
Date _____
(Do not send drawing to Engineer without Contractor's prior Approval)

B&McD Action (See Contract Documents)
Date Received _____
Initials & Date _____
A _____ E _____
B _____ F _____
C _____ G _____
D _____ H _____

REV.	DESCRIPTION	DRFT/DATE

CUSTOMER: NORTHEAST UTILITIES SERVICE CO.
CUSTOMER P.O. NO: 02231316
JOB NO: 20700
DRAWN/DATE ST 8/15/2007
CHECKED/DATE: TW 8/23/2007
ENGINEER: KALPESH PATEL

Thomas&Betts

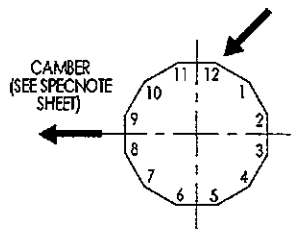
STEEL STRUCTURES DIVISION

MIDDLETOWN-NORWALK
POLE TYPE 30-SCSP-020-SGC.175
T&B POLE NO. A-9403

SHEET 1 OF 1 | 20700-NA1068AT

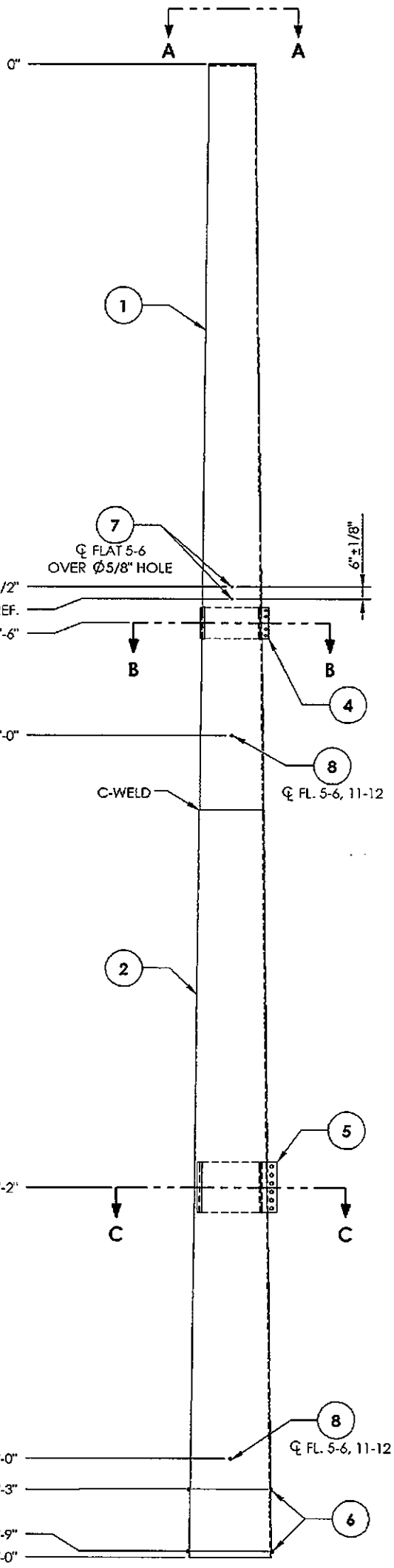
"TOLLES-9/28/2007-4:55:42 PM"

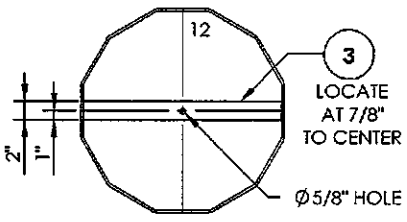
SHAFT INFORMATION					
TUBE NO.	LENGTH	THICKNESS	TOP DIA	BOTTOM DIA	TAPER IN./FT.
20700-4417	30'-0"	1/4"	23"	31 27/32"	0.29482
20700-4418	30'-0"	5/16"	31 31/32"	40 13/16"	0.29482



POLE ORIENTATION

PARTS AND ASSEMBLIES LIST			
ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	20700-4417	1	TOWER PLATE TUBES
2	20700-4418	1	TOWER PLATE TUBES
3	PCA215	1	ANCHOR PLATE
4	20700-1215	2	THROUGH PLATE
5	20700-1216	2	THROUGH PLATE
6	74547	4	JACKING NUT, 1" DIA.
7	73515	2	SS NUT, 1/2" DIA.
8	76472	4	SS NUT, 3/4" DIA.
9	76315	114	BAIL STEP CLIP





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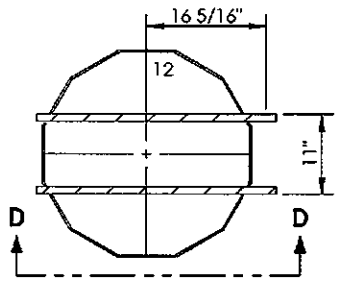
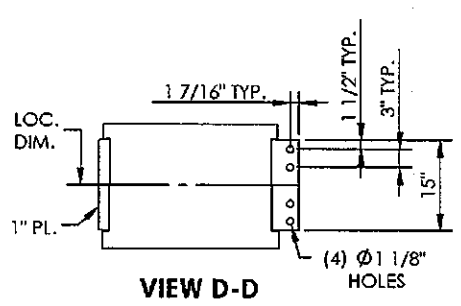
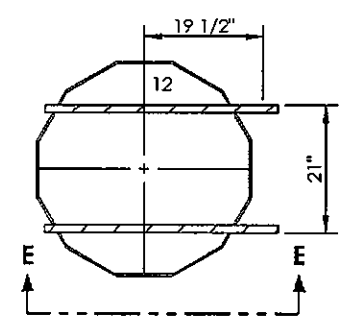


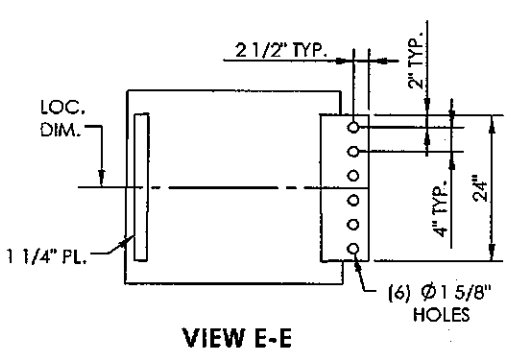
SECTION B-B
SCALE 1 : 25



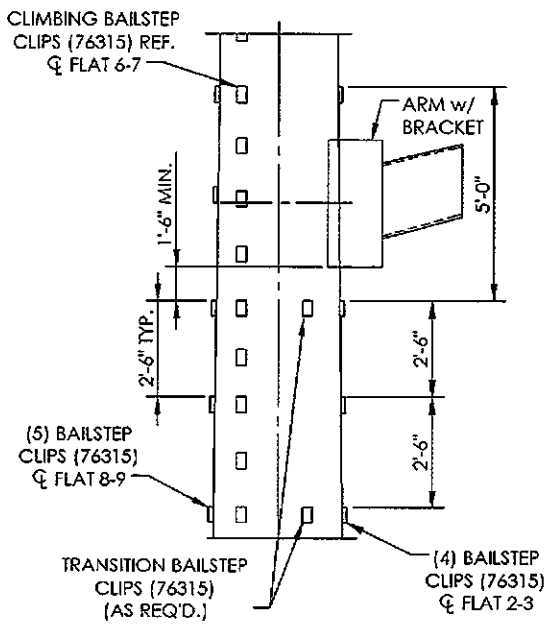
VIEW D-D
SCALE 1 : 30



SECTION C-C
SCALE 1 : 30

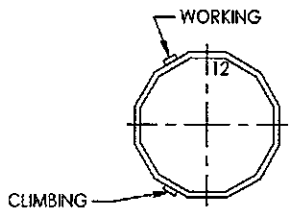


VIEW E-E
SCALE 1 : 30



PROVIDE TRANSITION CLIPS FROM CLIMBING VERITICALLY SPACED AT 5'-0" APART MEASURED ALONG THE POLE FACE AT 15" MIN. - 34" MAX. ALIGN ALL CLIPS WITH CLIMBING.

ADDITIONAL BAILSTEP CLIPS
REQUIRED AT ARM CONNECTION
DETAIL



BAIL STEP CLIP ORIENTATION

CLIMBING:
PROVIDE (76315) BAIL STEP CLIPS FROM POLE TOP TO A MIN. OF 12'-0" ABOVE BASE PLATE SPACED AT 1'-3" APART MAX.

WORKING:
PROVIDE (76315) BAIL STEP CLIPS FROM POLE TOP TO APPROX. 20'-0" BELOW BOTTOM ARM LOCATION. ALSO PROVIDE BAIL STEP CLIPS TO TRANSITION FROM CLIMBING CLIPS TO WORKING CLIPS AT APPROX. 15'-0" & 20'-0" BELOW BOTTOM ARM LOCATION. MEASURED ALONG POLE FACE AT 15" MIN., 34" MAX. PROVIDE ADDITIONAL CLIPS SO THAT ALL PARTS OF THE STRUCTURE ARE ACCESSIBLE FOR MAINTENANCE.

FEMALE SLIPJOINT DATA			
SLIPJOINT LAP	12 SIDED	FEMALE END DIA.	
		O.D.	CIRCUMFERENCE
5'-2"	TOP	39.30	10'-2 1/32"
	BOTTOM	40.82	10'-6 3/4"

REV.	DESCRIPTION	DRFT/DATE

CUSTOMER: NORTHEAST UTILITIES SERVICE CO.	
CUSTOMER P.O. NO: 02231316	
JOB NO: 20700	
DRAWN/DATE	ST 8/15/2007
CHECKED/DATE:	TW 8/23/2007
ENGINEER: KALPESH PATEL	

Thomas&Betts

STEEL STRUCTURES DIVISION

SHAFT ASSEMBLY, 60'-0" LONG

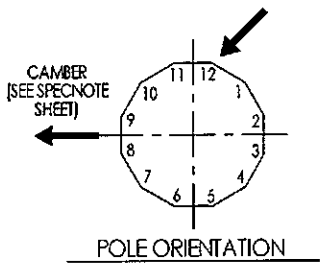
SHEET 1 OF 1 | 20700-3768

"TOLLES--9/28/2007--4:15:15 PM"

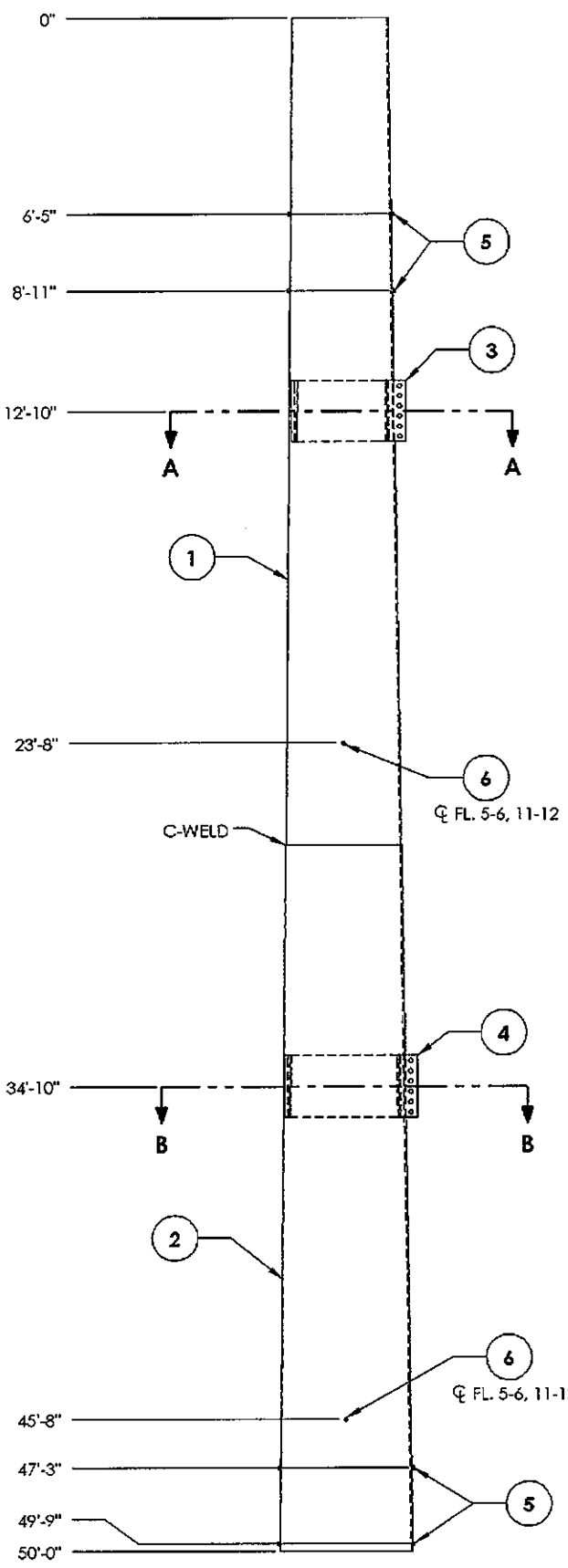
MALE SLIPJOINT DATA			
SLIPJOINT LAP	12 SIDED	MALE END DIA.	
		O.D.	CIRCUMFERENCE
5'-2"	TOP	38.52	9'-11 5/8"
	BOTTOM	40.05	10'-4 3/8"

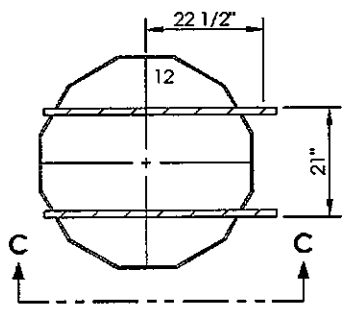
SHAFT INFORMATION					
TUBE NO.	LENGTH	THICKNESS	TOP DIA	BOTTOM DIA	TAPER IN./FT.
20700-4419	27'-0"	3/8"	38 17/32"	46 15/32"	0.29482
20700-4420	23'-0"	7/16"	46 5/8"	53 13/32"	0.29482

PARTS AND ASSEMBLIES LIST			
ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	20700-4419	1	TOWER PLATE TUBES
2	20700-4420	1	TOWER PLATE TUBES
3	20700-1197	2	THROUGH PLATE
4	20700-1217	2	THROUGH PLATE
5	74547	8	JACKING NUT, 1" DIA.
6	76472	4	SS NUT, 3/4" DIA.
7	76315	90	BAIL STEP CLIP

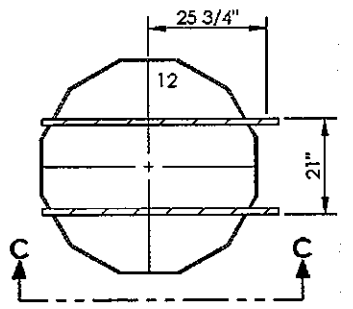


POLE ORIENTATION

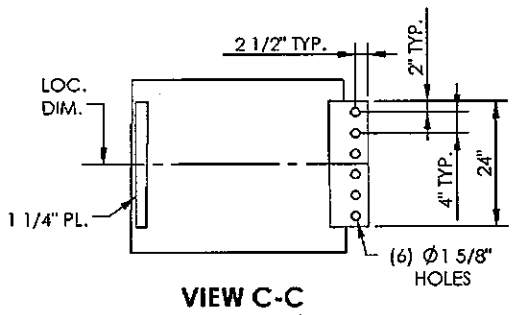




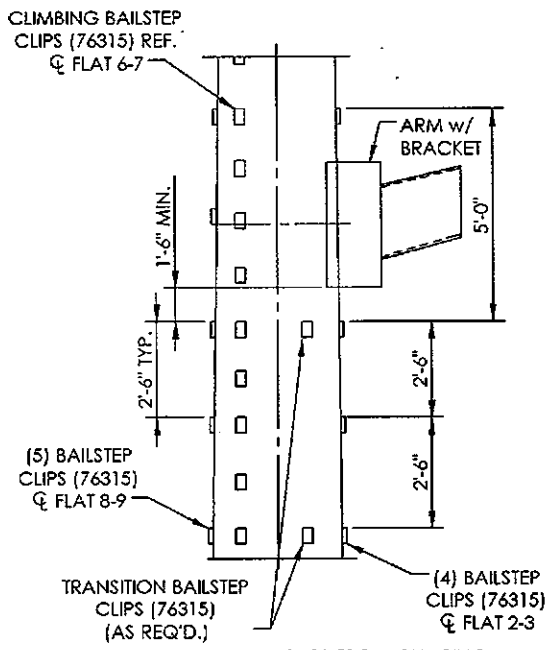
SECTION A-A
SCALE 1 : 35



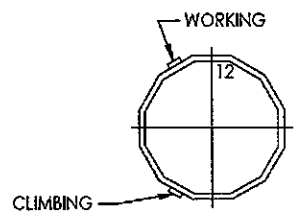
SECTION B-B
SCALE 1 : 40



VIEW C-C
SCALE 1 : 35



PROVIDE TRANSITION CLIPS FROM CLIMBING VERITICALLY SPACED AT 5'-0" APART MEASURED ALONG THE POLE FACE AT 15" MIN. - 34" MAX. ALIGN ALL CLIPS WITH CLIMBING.



BAIL STEP CLIP ORIENTATION

CLIMBING:
PROVIDE (76315) BAIL STEP CLIPS FROM POLE TOP TO A MIN. OF 12'-0" ABOVE BASE PLATE SPACED AT 1'-3" APART MAX.

WORKING:
PROVIDE (76315) BAIL STEP CLIPS FROM POLE TOP TO APPROX. 20'-0" BELOW ELEV. 34'-10". ALSO PROVIDE BAIL STEP CLIPS TO TRANSITION FROM CLIMBING CLIPS TO WORKING CLIPS APPROX. 15'-0" & 20'-0" BELOW ELEV. 34'-10". MEASURED ALONG POLE FACE AT 15" MIN., 34" MAX. PROVIDE ADDITIONAL CLIPS SO THAT ALL PARTS OF THE STRUCTURE ARE ACCESSIBLE FOR MAINTENANCE.

FEMALE SLIPJOINT DATA			
SLIPJOINT LAP	12 SIDED	FEMALE END DIA.	
		O.D.	CIRCUMFERENCE
6'-9"	TOP	51.40	13'-3 5/8"
	BOTTOM	53.39	13'-9 13/16"

ADDITIONAL BAILSTEP CLIPS
REQUIRED AT ARM CONNECTION
DETAIL

REV.	DESCRIPTION	DRFT/DATE

CUSTOMER: NORTHEAST UTILITIES SERVICE CO.	
CUSTOMER P.O. NO: 02231316	
JOB NO: 20700	
DRAWN/DATE ST	8/15/2007
CHECKED/DATE: TW	8/23/2007
ENGINEER: KALPESH PATEL	

Thomas&Betts

STEEL STRUCTURES DIVISION

SHAFT ASSEMBLY, 50'-0" LONG

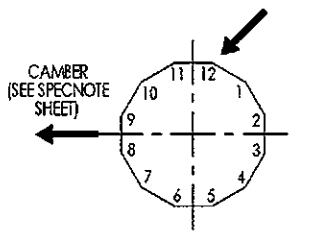
SHEET 1 OF 1 | 20700-3769

"TOLES=9/28/2007--4:56:29 PM"

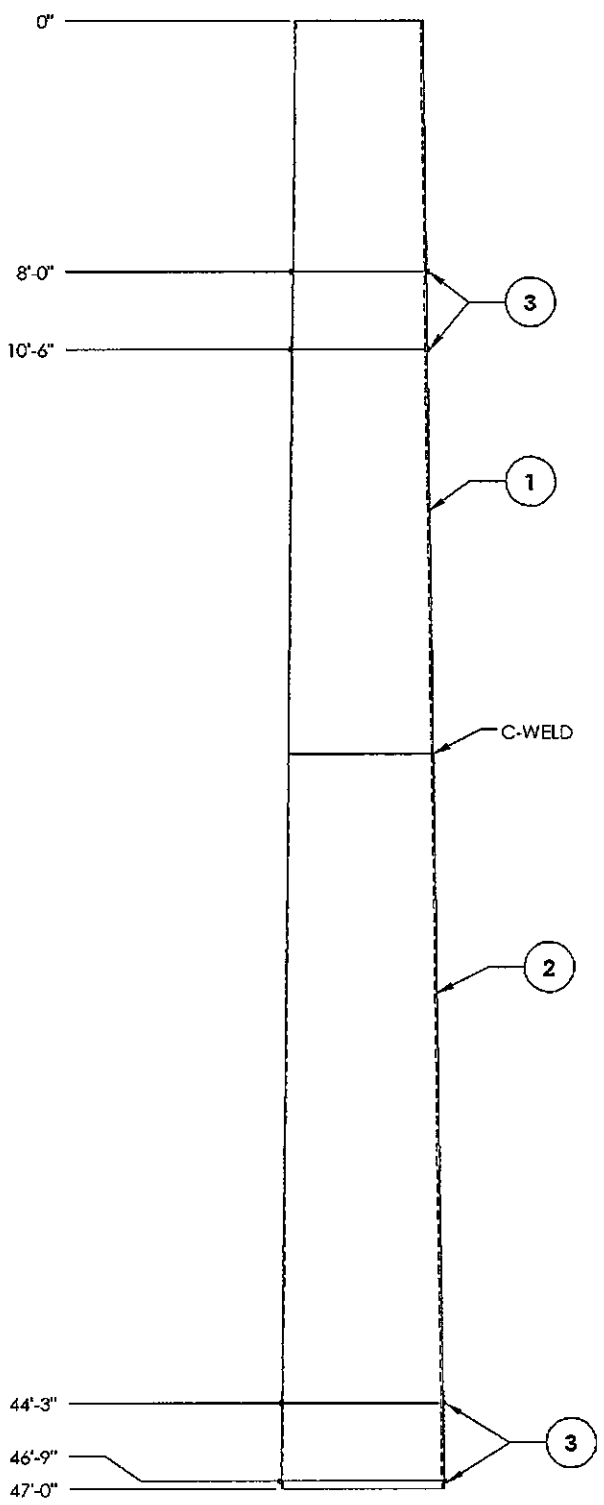
MALE SLIPJOINT DATA			
SLIPJOINT LAP	12 SIDED	MALE END DIA.	
		O.D.	CIRCUMFERENCE
6'-9"	TOP	50.37	13'-7/16"
	BOTTOM	52.36	13'-6 5/8"

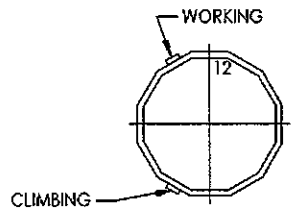
SHAFT INFORMATION					
TUBE NO.	LENGTH	THICKNESS	TOP DIA	BOTTOM DIA	TAPER IN./FT.
20700-4421	23'-6"	1/2"	50 3/8"	57 5/16"	0.29482
20700-4422	23'-6"	9/16"	57 7/16"	64 11/32"	0.29482

PARTS AND ASSEMBLIES LIST			
ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	20700-4421	1	TOWER PLATE TUBES
2	20700-4422	1	TOWER PLATE TUBES
3	74547	8	JACKING NUT, 1" DIA.
4	76315	36	BAIL STEP CLIP



POLE ORIENTATION





BAIL STEP CLIP ORIENTATION

CLIMBING:
PROVIDE (76315) BAIL STEP CLIPS FROM POLE TOP TO A MIN. OF 12'-0" ABOVE BASE PLATE SPACED AT 1'-3" APART MAX.

WORKING:
PROVIDE (76315) BAIL STEP CLIPS FROM POLE TOP TO APPROX. 20'-0" BELOW BOTTOM ARM LOCATION. ALSO PROVIDE BAIL STEP CLIPS TO TRANSITION FROM CLIMBING CLIPS TO WORKING CLIPS APPROX. 15'-0" & 20'-0" BELOW BOTTOM ARM LOCATION. MEASURED ALONG POLE FACE AT 15" MIN., 34" MAX. PROVIDE ADDITIONAL CLIPS SO THAT ALL PARTS OF THE STRUCTURE ARE ACCESSIBLE FOR MAINTENANCE.

FEMALE SLIPJOINT DATA			
SLIPJOINT LAP	12 SIDED	FEMALE END DIA.	
		O.D.	CIRCUMFERENCE
8'-1"	TOP	61.97	16'-15/32"
	BOTTOM	64.36	16'-7 7/8"

REV.	DESCRIPTION	DRFT/DATE

CUSTOMER: NORTHEAST UTILITIES SERVICE CO.
CUSTOMER P.O. NO: 02231316
JOB NO: 20700
DRAWN/DATE ST 8/15/2007
CHECKED/DATE: TW 8/23/2007
ENGINEER: KALPESH PATEL

Thomas&Betts

STEEL STRUCTURES DIVISION

SHAFT ASSEMBLY, 47'-0" LONG

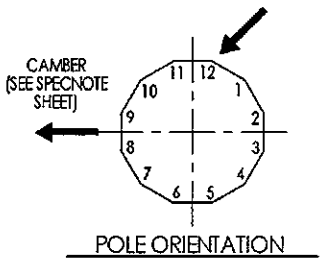
SHEET 1 OF 1 | 20700-3770

"TOLLES-6/28/2007-4:56:10 PM"

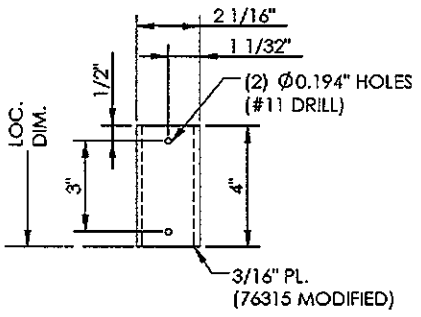
MALE SLIPJOINT DATA			
SLIPJOINT LAP	12 SIDED	MALE END DIA.	
		O.D.	CIRCUMFERENCE
8'-1"	TOP	60.69	15'-8 15/32"
	BOTTOM	63.07	16'-3 7/8"

SHAFT INFORMATION					
TUBE NO.	LENGTH	THICKNESS	TOP DIA	BOTTOM DIA	TAPER IN./FT.
20700-4423	23'-6"	5/8"	60 11/16"	67 5/8"	0.29482
20700-4424	15'-0"	5/8"	67 5/8"	72 1/32"	0.29482

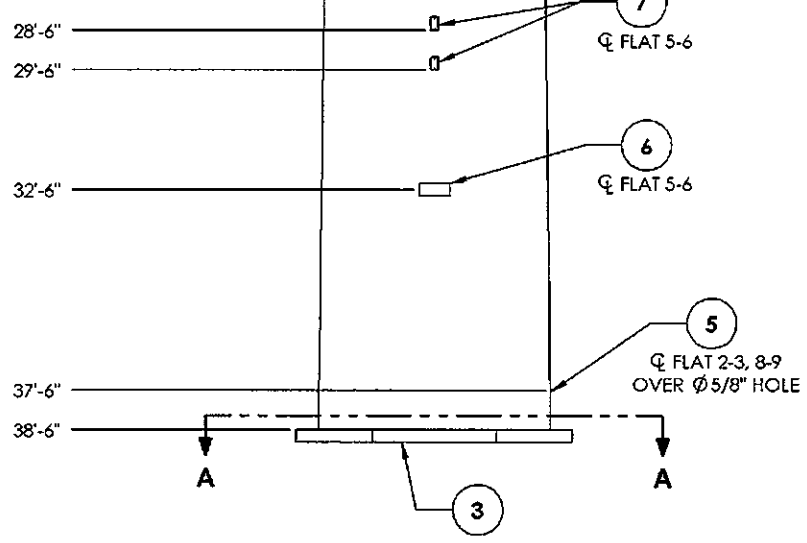
PARTS AND ASSEMBLIES LIST			
ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	20700-4423	1	TOWER PLATE TUBES
2	20700-4424	1	TOWER PLATE TUBES
3	20700-4439	1	BASE PLATE
4	74547	4	JACKING NUT, 1" DIA.
5	73515	2	SS NUT, 1/2" DIA.
6	20700-1401	1	NAME PLATE
7	20700-1501	2	SIGN BRACKET
8	76315	15	BAIL STEP CLIP

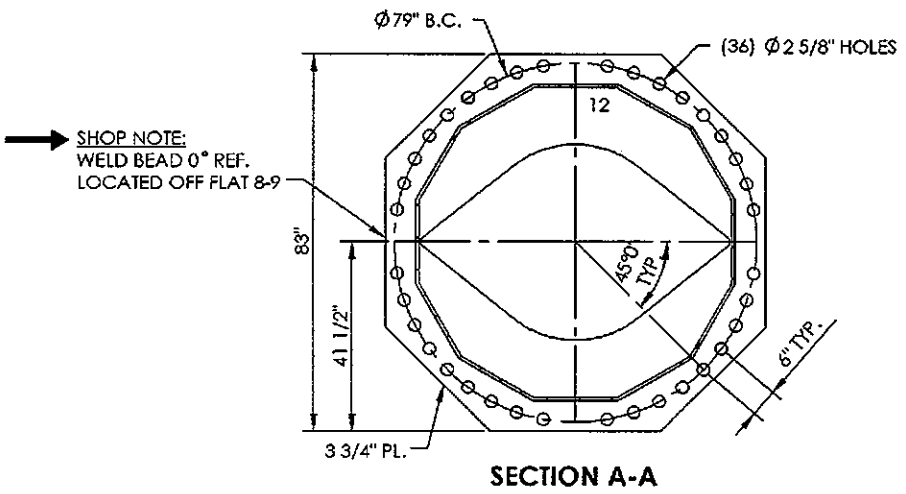


POLE ORIENTATION

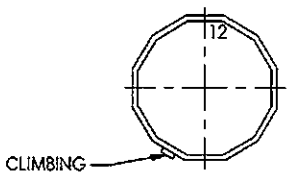


SIGN BRACKET DETAIL
20700-1501





SECTION A-A
SCALE 1 : 40



BAIL STEP CLIP ORIENTATION

CLIMBING:
PROVIDE (76315) BAIL STEP CLIPS FROM POLE TOP TO A MIN. OF 12'-0" ABOVE BASE PLATE SPACED AT 1'-3" APART MAX.

REV.	DESCRIPTION	DRFT/DATE

CUSTOMER: NORTHEAST UTILITIES SERVICE CO.	
CUSTOMER P.O. NO: 02231316	
JOB NO: 20700	
DRAWN/DATE ST 8/15/2007	
CHECKED/DATE: TW 8/23/2007	
ENGINEER: KALPESH PATEL	

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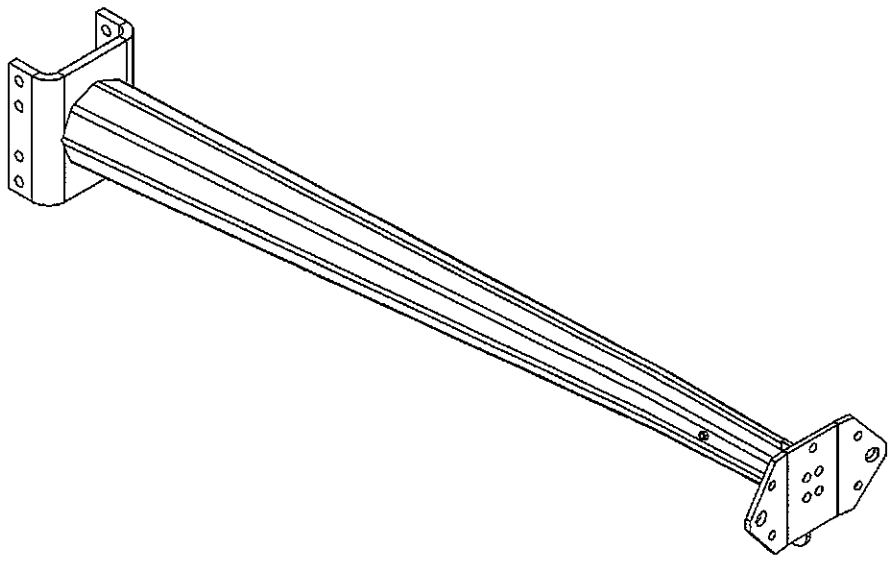
STEEL STRUCTURES DIVISION

SHAFT ASSEMBLY, 38'-6" LONG

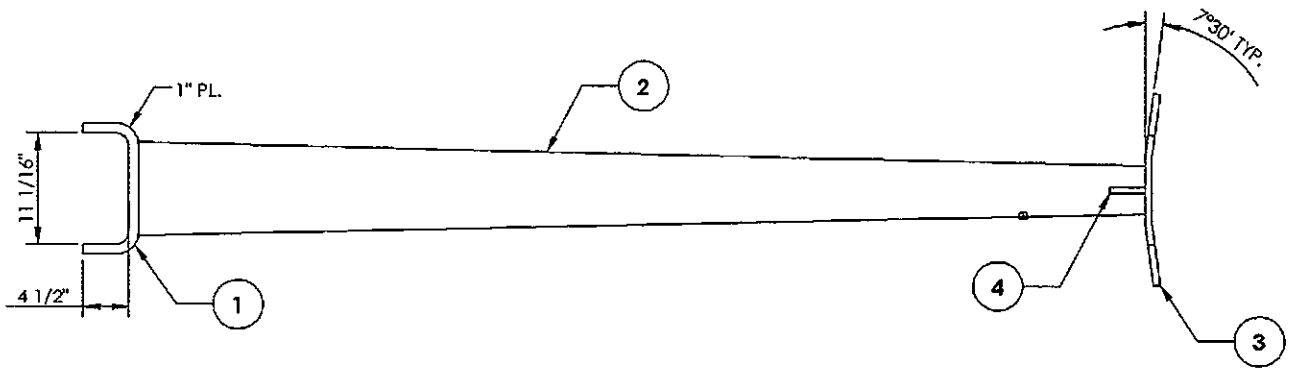
SHEET 1 OF 1 | **20700-3771**

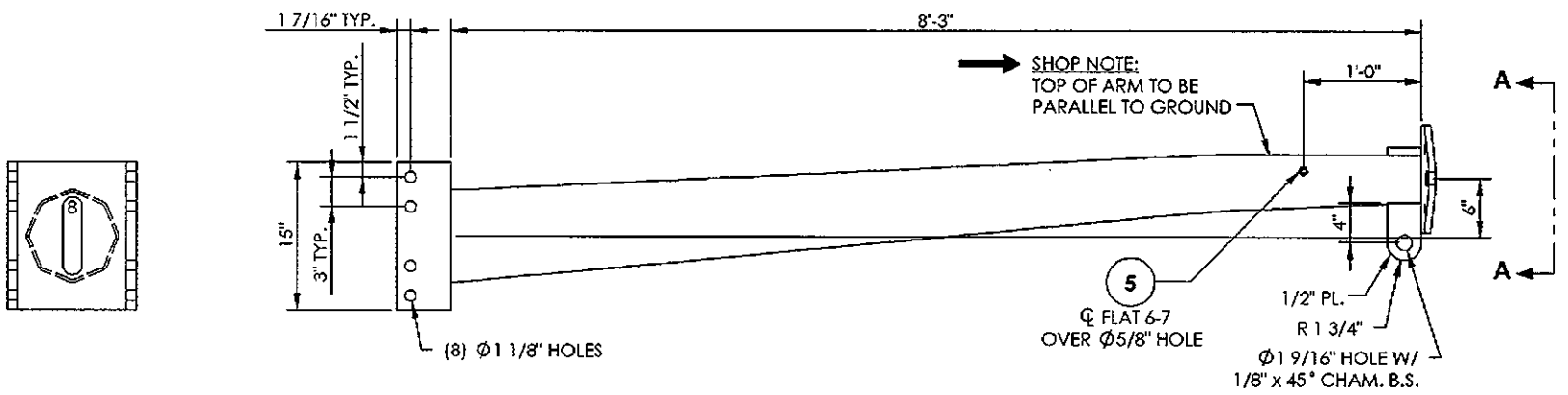
"TOLLES-9/28/2007-4:56:18 PM"

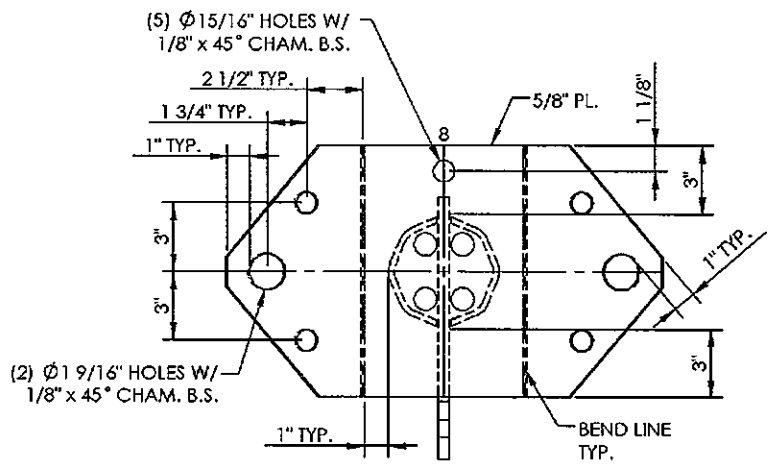
ARM INFORMATION								
ARM NO.	HOR. LENGTH	THICKNESS	LARGE DIA	SMALL DIA	RADIUS	ARC LENGTH	SMALL END STRAIGHT	SMALL END MITERED
20700-B	8'-3"	1/4"	9 1/2"	5"	10'-0"	13"	18"	N



PARTS AND ASSEMBLIES LIST			
ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	20700-7152	1	ARM BRACKET
2	20700-7002	1	ARM SHANK
3	20700-7202	1	ARM END PLATE
4	20700-7301	1	THRU VANG
5	73515	1	SS NUT, 1/2" DIA.







MARK ARM WITH "B-00" ON INSIDE OF ARM BRACKET

VIEW A-A
SCALE 1 : 8

Thomas&Betts

STEEL STRUCTURES DIVISION

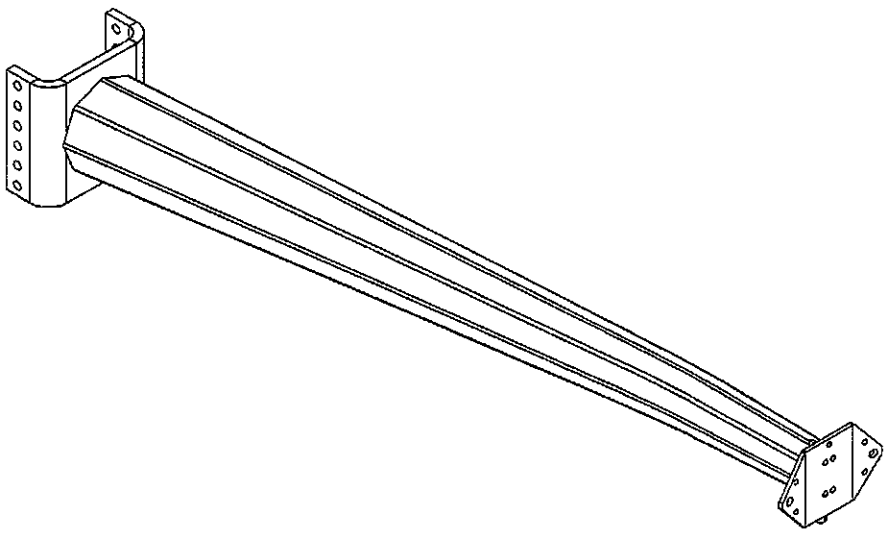
ARM ASSEMBLY, 8'-3" LONG

CUSTOMER: NORTHEAST UTILITIES SERVICE CO.	
CUSTOMER P.O. NO: 02231316	
JOB NO: 20700	
DRAWN/DATE ST 8/8/2007	
CHECKED/DATE: TW 8/17/2007	
ENGINEER: KALPESH PATEL	SHEET 1 OF 1

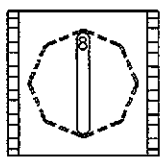
20700-B

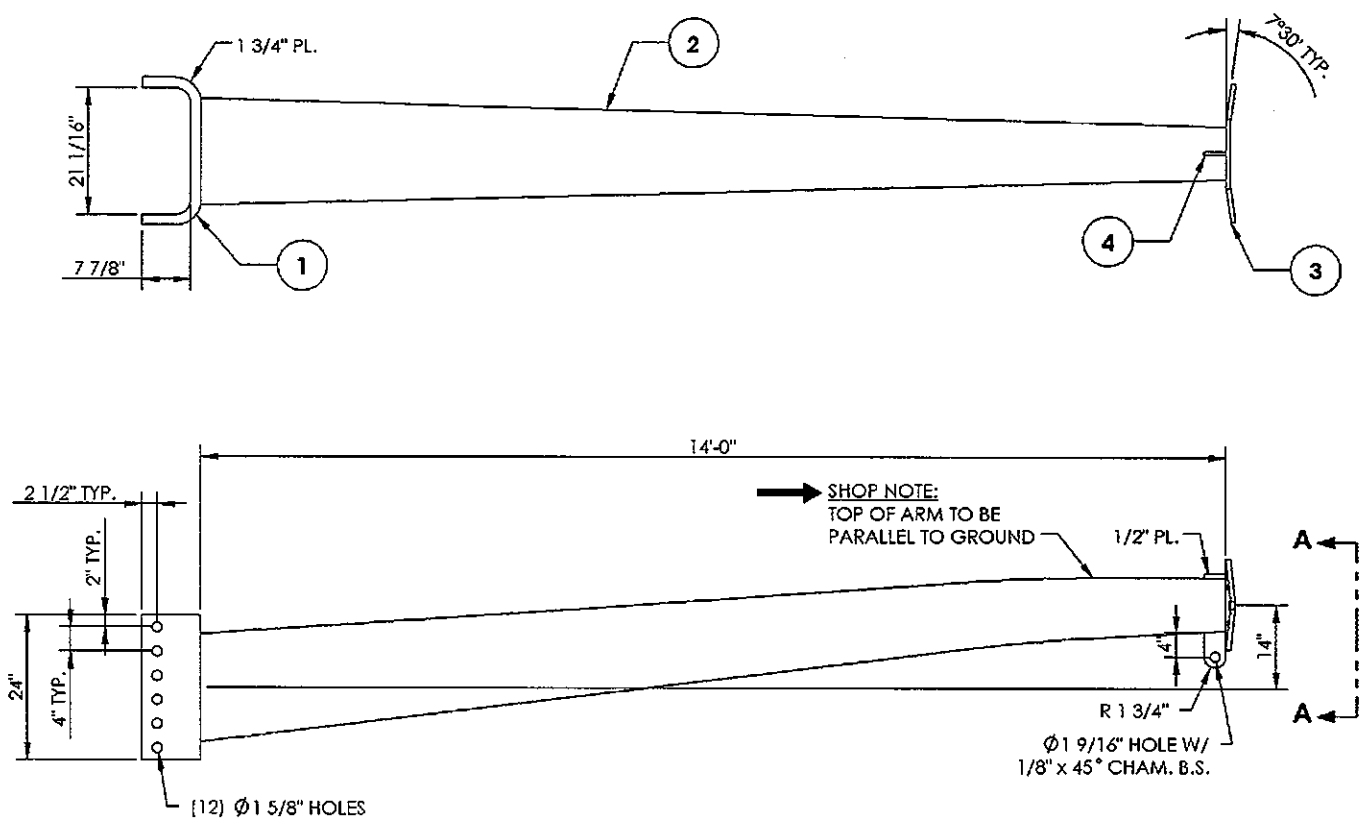
REV	DESCRIPTION	DRFT/DATE

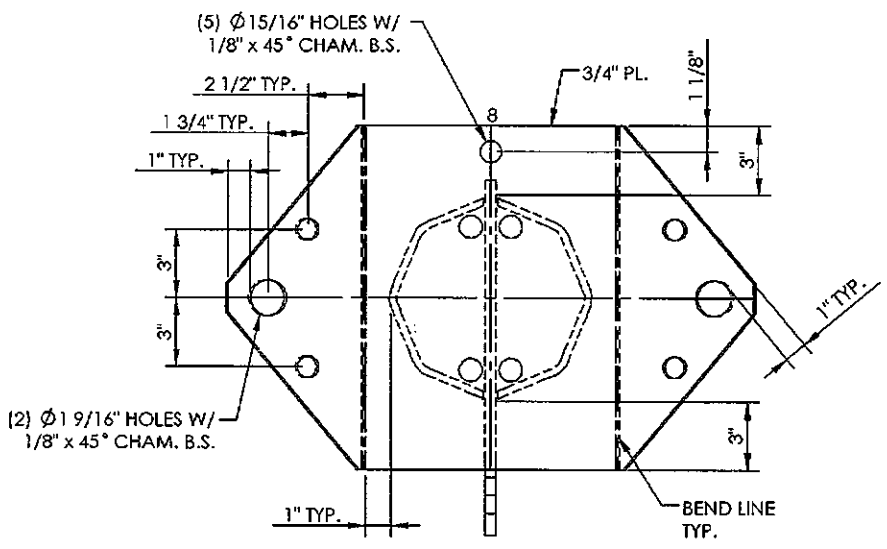
ARM INFORMATION								
ARM NO.	HOR. LENGTH	THICKNESS	LARGE DIA	SMALL DIA	RADIUS	ARC LENGTH	SMALL END STRAIGHT	SMALL END MITERED
20700-C	14'-0"	5/16"	18"	9"	20'-0"	35"	24"	N



PARTS AND ASSEMBLIES LIST			
ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	20700-7153	1	ARM BRACKET
2	20700-7003	1	ARM SHANK
3	20700-7203	1	ARM END PLATE
4	20700-7302	1	THRU VANG







VIEW A-A
SCALE 1 : 8

MARK ARM WITH "C-00" ON INSIDE OF ARM BRACKET

REV	DESCRIPTION	DRFT/DATE

CUSTOMER: NORTHEAST UTILITIES SERVICE CO.
CUSTOMER P.O. NO: 02231316
JOB NO: 20700
DRAWN/DATE ST 8/8/2007
CHECKED/DATE: TW 8/17/2007
ENGINEER: KALPESH PATEL

Thomas&Betts

STEEL STRUCTURES DIVISION

ARM ASSEMBLY, 14'-0" LONG

SHEET 1 OF 1 | 20700-C

Designation				Foundation Type I						Foundation Type II											Foundation Type III											Anchor Bolt Cage				
				Foundation Dimensions			Foundation Reinforcement			Foundation Dimensions		Foundation Reinforcement		Rock Anchors							Foundation Dimensions			Rock Anchors						Connection Plate					
Foundation	Structure	Foundation Type	Reveal (in.)	DIA (ft.)	Total Length (ft.)	Rock Socket Length (ft.)	"W"	"X"	"Y"	DIA (ft.)	Total Length (ft.)	"W"	"X"	Rock Anchor Circle DIA	Total Anchors "Z"	DIA (in.)	FREE LENGTH (ft.)	BONDED LENGTH (ft.)	TOTAL Length (ft.)	Anchor Plate Size (in.)	L (ft.)	T (ft.)	"B"	Total Anchors	DIA (in.)	FREE LENGTH (ft.)	BONDED LENGTH (ft.)	TOTAL Length (ft.)	Anchor Plate Size (in.)	Width (ft.)	Thickness (in.)	Cage Designation	Number of Bolts	Anchor Bolt DIA (in.)	Anchor Bolt Length	Bolt Circle (in.)	Comments
24450	30-scsp-11-dgx.115	I	12	6.5	23	9	36-#11	42-#936"	21-#936"																							A168	32	2.25	9'-6"	77	DOUBLE BUNDLED "X" TIES
24451	30-scsp-10-sgx.115	I	12	6	20	8	35-#11	21-#936"	8-#9610"																							A126	24	2.25	7'-9"	69	--
24452	31-dcsp-20-sgx.125	I	12	8.5	22	11	44-#11	36-#936"	25-#936"																							A152	32	2.25	8'-3"	77	DOUBLE BUNDLED "X" TIES
24453	31-dcsp-02-ugx.130	I	18	8	24.5	7	35-#11	19-#936"	13-#9613"																							A145	28	2.25	8'-6"	69	--
24454	31-dcsp-05-ugx.135	I	12	8	19	8	36-#11	22-#936"	11-#9610"																							A148	36	2.25	9'-9"	92	DOUBLE BUNDLE ALL TIES
24455	31-dcsp-03-ugx.195	I	12	10	25	7	57-#11	42-#936"	56-#936"																							A151	48	2.25	9'-3"	100	DOUBLE BUNDLE ALL TIES
24456	31-dcsp-19-sgx.195	I	12	11	27	11	72-#11	48-#936"	60-#936"																							A150	32	2.25	8'-6"	78	--
24457	31-dcsp-10-sgx.140	I	12	8.5	35	0	44-#11	17-#787"	21-#7614"																							A143	24	2.25	8'-0"	66	--
24458	31-dcsp-02-ugx.120	I	12	7.5	23	6	31-#11	25-#936"	18-#936"																							A153	32	2.25	9'-0"	81	DOUBLE BUNDLED "X" TIES
24459	31-dcsp-20-sgx.140	I	42	9	22	10.5	48-#11	40-#936"	27-#936"																							A124	32	2.25	9'-3"	85	DOUBLE BUNDLE ALL TIES
9411A/L	30-scsp-10-dgx.135	I	18	9	19.5	8	54-#11	47-#936"	34-#936"																							A163	24	2.25	9'-9"	74	DOUBLE BUNDLED "X" TIES
9411B/R	10-scsp-28-dgx.130	I	18	8	18.5	8	40-#11	42-#936"	18-#936"																							A-9407	32	2.25	8'-3"	63	--
9407	30-scsp-20-sgx.130	I	12	7.5	29	6	39-#11	28-#784"	23-#7610"																							A-9403	36	2.25	9'-6"	78	DOUBLE BUNDLE ALL REINFORCEMENT
9403	30-scsp-20-sgc.175	I	12	8.5	22	6	58-#11	40-#936"	46-#936"																							A-9402	24	2.25	9'-6"	69	--
9402	30-scsp-01-ugx.165	I	12	8	26	6	36-#11	28-#936"	22-#936"																							A-9401	36	2.25	7'-9"	69	--
9401	30-scsp-08-sgx.160	I	12	8	32	0	42-#11	16-#787"	18-#7615"																							A-9400A-R	24	2.25	8'-6"	57	--
9400A/R	30-scsf-09-dgx.125	I	6	7	31	0	29-#11	28-#564"	32-#568"																							A-9400A-M	20	2.25	8'-3"	51	--
9400A/M	30-scsf-09-dgx.spc	I	35	6.5	31	0	23-#11	28-#564"	26-#568"																							A-9400A-L	20	2.25	9'-3"	57	DOUBLE BUNDLED "W" BARS
9400A/L	30-scsf-09-dgx.115	I	40	7	33	0	36-#11	31-#564"	33-#568"																												

FORM 12/07

SHEET 2 OF 5

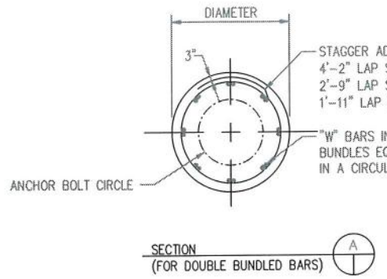
NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP
-	7/16/08	CONFORMED TO CONSTRUCTION RECORDS	JPB	JJW	DAS	-

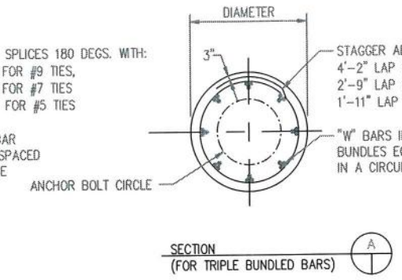
Northeast Utilities Service Co.

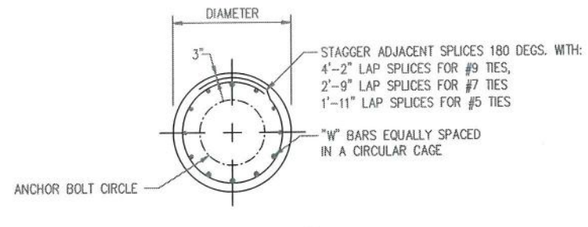
FOR CONNECTICUT LIGHT & POWER COMPANY

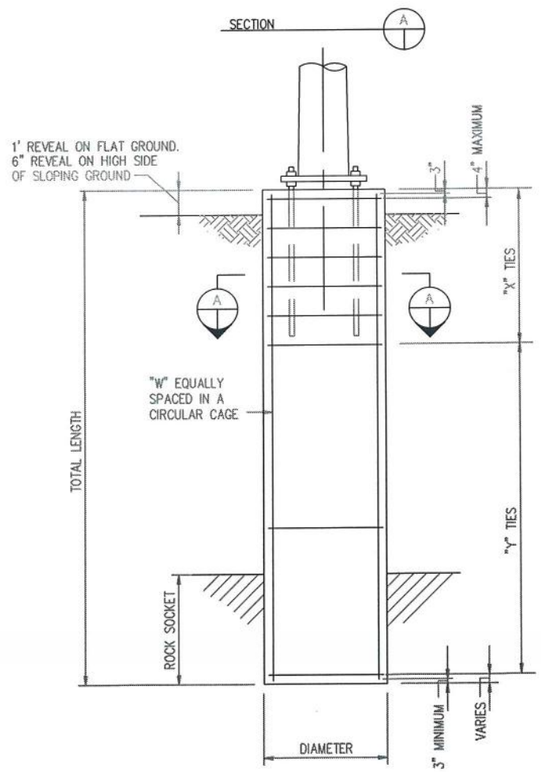
TITLE
BESECK S/S - BLACK POND JCT.
BLACKPOND-BESECK
FOUNDATION DETAILS
MIDDLETOWN, CT

BY	CSM-BMCD	CHKD	-	APP	-
DATE	3/20/06	DATE	-	DATE	-
H-SCALE	N.T.S.	SIZE	D	FIELD BOOK & PAGES	
V-SCALE	N.T.S.	V.S.		R.E.DWG.	
R.E. PROJ. NUMBER				NUSCO	01227-60001p002









FOUNDATION TYPE I
NOT TO SCALE

SHEET 1 OF 5

NO.	DATE	AS BUILT REVISIONS	BY	CHK	APP	APP
-	7/16/08	CONFORMED TO CONSTRUCTION RECORDS	JPB	JJW	DAB	-

Northeast Utilities Service Co.
FOR CONNECTICUT LIGHT & POWER COMPANY

TITLE MIDDLETOWN - NORWALK 345-kV TRANSMISSION LINE PROJECT
FOUNDATION DETAILS
TYPE I
MIDDLETOWN, CT

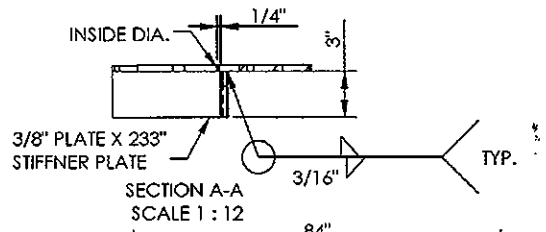
BY CSM-BMCD	CHKD -	APP -	APP -		
DATE 3/20/06	DATE -	DATE -	DATE -		
H-SCALE N.T.S.	SIZE D	FIELD BOOK & PAGES			
V-SCALE N.T.S.	V.S.	R.E.DWG.			
R.E. PROJ. NUMBER		NUSCO	01227-60001p001		

FORM 12/07

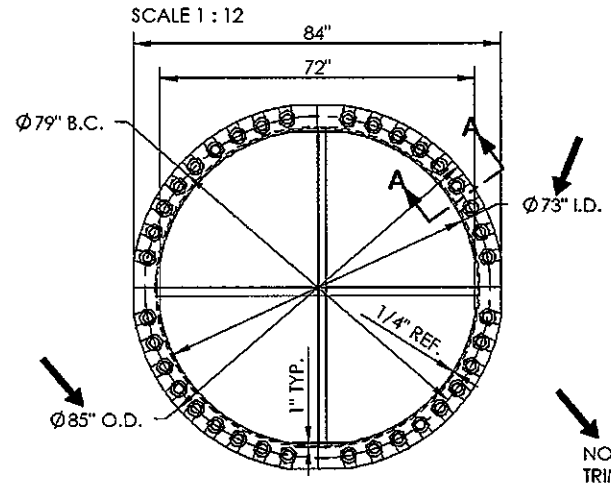
NOTES:

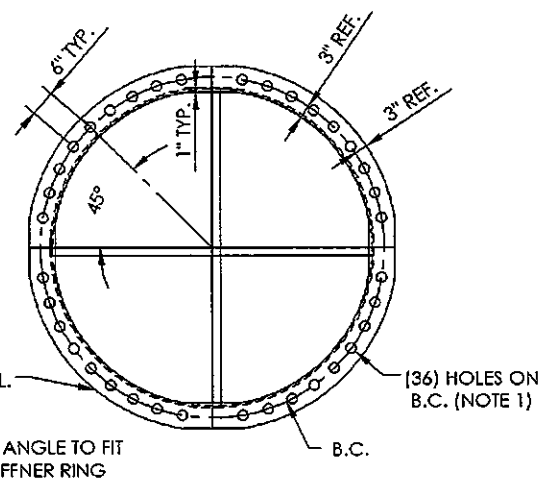
1. TOP RING HOLES: 2 5/16" DIA. ; BOTTOM RING SLOTS: 2 5/8" WIDE
2. ANCHOR BOLT: 2 1/4" DIA REBAR ; NUT: 2 1/4" HEAVY HEX. ;FLATWASHER: 2 1/4" SEE CHART FOR QUANTITY PER ANCHOR BOLT ASSEMBLY.
3. SPACER: L2 x 2 x 3/16, WHEN REQUIRED.
4. ANGLE STIFFENERS, L2 x 2 x 3/16, ON TOP & BOTTOM RINGS WHEN REQUIRED; 90° APART, ALONG X & Y AXIS WITH 1" OVERLAP.
5. HOLE AND BOLT QUANTITIES ON DETAILS ARE TYPICAL FOR DIMENSIONAL PURPOSES. SEE CHART FOR ACTUAL QUANTITIES.
6. ANCHOR BOLT ASSEMBLY IS TO BE MARKED WITH ASSEMBLY NO. AND STRUCTURE NO. ON TOP RING.
7. NO WELDING IS TO BE DONE ON ANCHOR BOLTS EXCEPT FOR BOTTOM 6".
8. CLUSTERS WHICH ARE TO BE SHIPPED BY RAIL REQUIRE ADDITION OF STANDARD LONGITUDINAL X-BRACING.
9. ALL ANCHOR BOLTS TO HAVE A CHARPY V-NOTCH IMPACT VALUE OF 15 FT-LBS. MINIMUM AT -20° F PER HEAT LOT TEST.
10. 1" WIDE x 1/2" DEEP "V" NOTCH, BISECTOR OF LINE ANGLES, 2-PLACES, ON TOP RING (FOR CONSTRUCTION/INSTALLATION PURPOSES).
11. ANCHOR BOLT ASSEMBLY TO BE SECURED AT MIDDLE RINGS BY MECHANICAL MEANS.
12. SPECIFICATIONS:

ITEM	MIN. YIELD	STEEL	FINISH
ANCHOR BOLTS	75 KSI	ASTM A 615 GRADE 75 MOD	HOT DIP GALVANIZED PER ASTM A 153 (TOP 24")
ANCHOR BOLT NUTS	---	ASTM A 563 GRADE DH	HOT DIP GALVANIZED PER ASTM A 153
ANCHOR BOLT RINGS	36 KSI	ASTM A 36	BARE

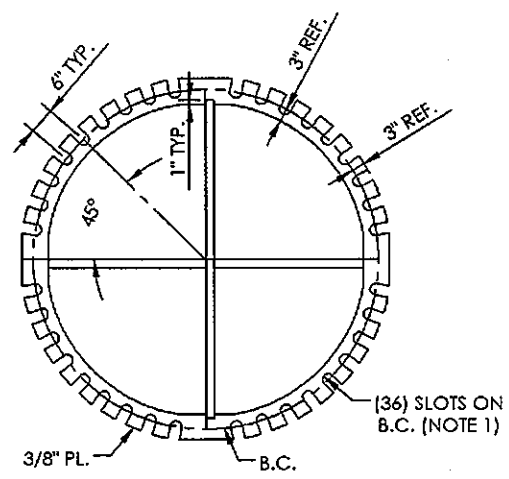


ANCHOR BOLT ASSEMBLY INFORMATION						
REL	BILLABLE	ANCHOR BOLT ASSY PART NO.	QTY	STRUCTURE NUMBER(S)	STRUCTURE DESCRIPTION	STRUCTURE TYPE
21875R	20700-NA1068AA	20700-3148	1	A-9403	10°-20° SMALL ANGLE	30-scsp-020-sgc.175

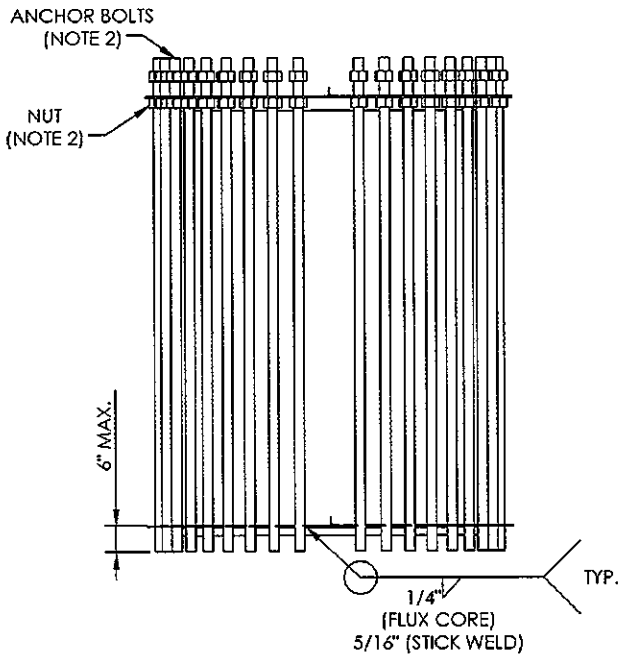


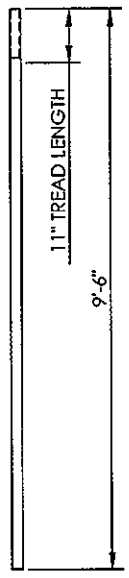


TOP RING ASSEMBLY

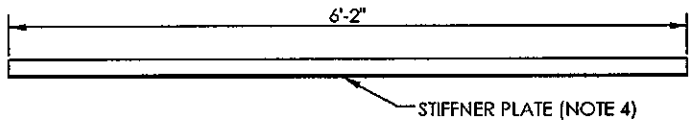


BOTTOM RING ASSEMBLY

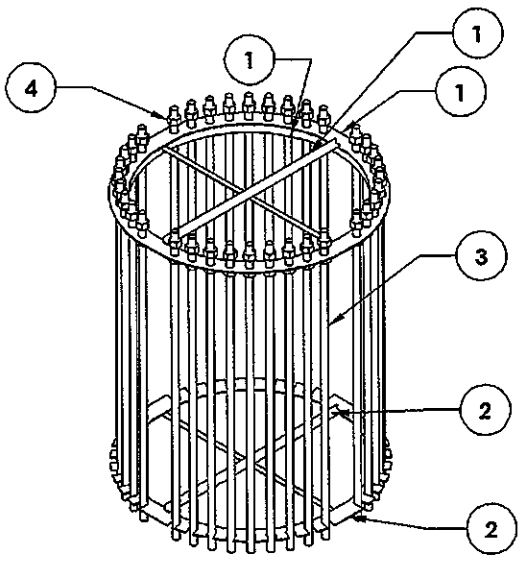


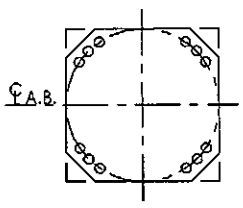


ANCHOR BOLT

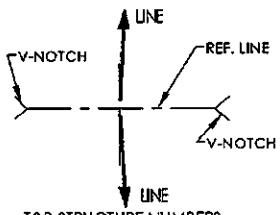


ANGLE STIFFENER





BASE PLATE



T&B STRUCTURE NUMBERS
A-9403

PARTS AND ASSEMBLIES LIST				
ITEM NO.	PART NUMBER	QTY.	DESCRIPTION	WT. EACH
1	20700-6663	1	TOP RING ASSEMBLY	
	20700-6142	1	TOP RING	
	20700-6148	1	STIFFENER RING	
	20700-6146	2	ANGLE STIFFENER	
2	20700-6664	1	BOTTOM RING ASSEMBLY	
	20700-6143	1	BOTTOM RING	
	20700-6146	2	ANGLE STIFFENER	
3	20700-6141	36	ANCHOR BOLT	
4	76144	72	NUT, 2 1/4" DIA.	
**TOTAL STRUCTURE WEIGHT				5900

Project Name Middletown - Norwalk 345-kV Transmission Line Project
Project No. 38565
P.O. No. 02231316
Contract Name Tubular Steel Poles
Contract No. MN-PM-PRO-0005

Contractor's Approval
(See Contract Documents)
Contractor
Approved By
Date
(Do not send drawing to Engineer without Contractor's prior Approval)

Burns & McDonnell Project No. 38565

B&McD Record Stamp

B&McD Action (See Contract Documents)
Date Received
Initials & Date
A E
B F
C G
D H

REV	DESCRIPTION	DRFT/DATE
A	INITIAL RELEASE	JAM/07-09-07

CUSTOMER: NORTHEAST UTILITIES SERVICE CO.
CUSTOMER P.O. NO: 2231316
JOB NO: 20700
DRAWN/DATE JAM 07/09/2007
CHECKED/DATE: TW 8/8/2007
ENGINEER: KALPESH PATEL

Thomas&Betts

STEEL STRUCTURES DIVISION
ANCHOR BOLT ASSEMBLY
SHEET 1 OF 1
20700-NA1068AA

MATJA-8/16/2007-8:29:26 AM

Owner	Northeast Utilities Service Company
Project Name	Middletown - Norwalk
Project No.	37253
Contract No.	Con # 0007, 879

DRILLED SHAFT FOUNDATION REPORT

Shaft Location / Number

Segment 1A / 9403 / Pedestal

Lonefellow Drilling

AS DESIGNED (Per Drawing)

Diameter Of Shaft (ft)	8.5
Length Of Shaft (ft)	22
Embedment Length (ft)	21
Rock Embedment (ft)	6
Length Of Rebar (ft)	21.5

AS BUILT

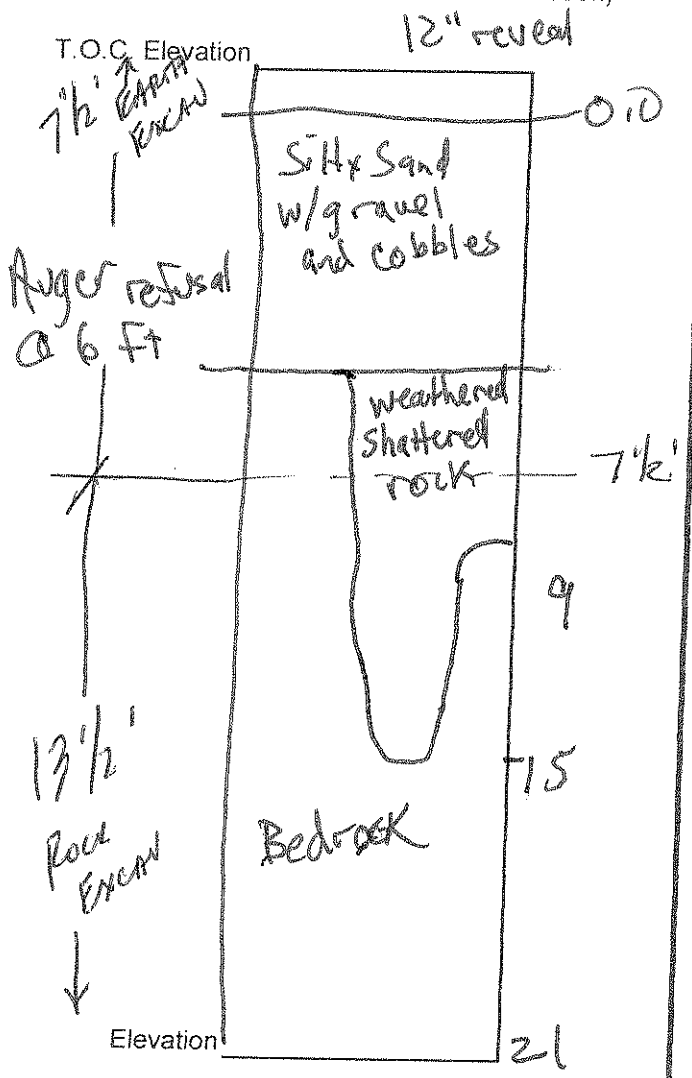
Date Started	10/16/07
Date Completed	10/19/07
Diameter Of Shaft (in)	8.5
Length Of Shaft (ft)	22
Embedment Length (ft)	21
Rock Embedment (ft)	~~6~~ used 13½

Length Of Rebar (ft)	21.5
Rebar Size "W"	58 - #11
Rebar Size "X"	40 - #9 @ 6"
Rebar Size "Y"	46 - #9 @ 6"

Excavated Soil (Cy)	15.76
Excavated Rock (Cy)	28.38

Neat Volume Quantity (Cy)	46.24 (52 q arrow)
Concrete Air Content (%)	
Concrete Slump (in)	
Concrete Temperature	
Cylinder Test (7 Days)	
Cylinder Test (14 Days)	
Cylinder Test (28 Days)	
Cylinder Test (56 Days)	

SHAFT LOG (Unusual Drilling Conditions, Location Of Obstructions And All Other Pertinent Information)



Foundation Contractor

Burns & McDonnell Representative

H+A Roger Lindsey

middletown : norwalk

1.75

WHITE – BMcD-Cost Control YELLOW – Contractor PINK – BMcD Field GOLDENROD – File

Single Shaft Record Report

LONGFELLOW DRILLING
1209 County Hwy J23
Clearfield, Iowa 50840

PROJECT [illegible] DAY Fri

JOB NO. [illegible] DATE 10-19-07

DESIGN

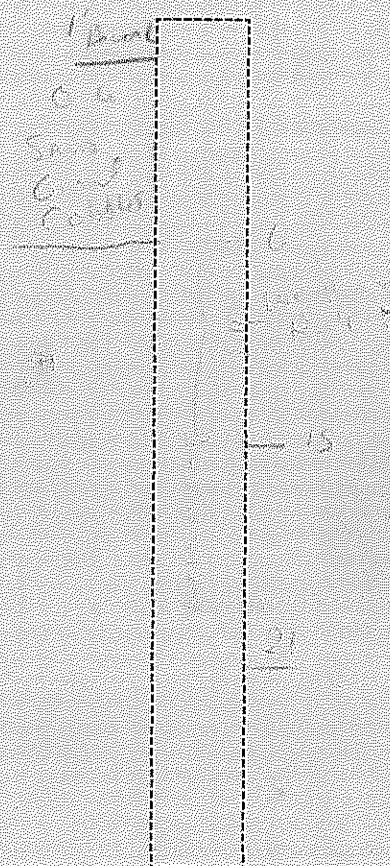
SHAFT LOCATION	# 9403
TYPE/DIAMETER	2½
TOP ELEVATION	-1
BOTTOM ELEVATION	-21
~~BELL DIAMETER~~ Rock Socket	16
LENGTH	22

AZBUILT

DATE STARTED	10-16-07
COMPLETED	10-19-07
DIAMETER	2½
TOP ELEVATION	-1
BOTTOM ELEVATION	-21
BELL DIAMETER	
ADD OR DEDUCT	
TOTAL LENGTH	22
ACTUAL CONCRETE	[illegible]
TOP OF STEEL	21'6

REMARKS

DRAWINGS (INCLUDE ELEVS, SIZE, SHAPE, CASING, AND ALL OTHER PERTINENT INFORMATION)



Total Rock 13½

APPROVED BY –

OWNERS REPRESENTATIVE ______

GENERAL CONTRACTOR ______

LONGFELLOW DRILLING INC. [signature]

OTHER [illegible] [signature]

CUSTOMER'S COPY

THE L. SUZIO CONCRETE COMPANY

WESTFIELD ROAD, MERIDEN, CONNECTICUT 06450-0748

MERIDEN	237-8421
NEW HAVEN	562-3940
WALLINGFORD	269-8265
MIDDLETOWN	346-6669
HARTFORD	246-6177

CONTROL NO. 358639

TO JOB	ON JOB	START POUR	START WASH	TO PLANT	IN YARD
1401	1402				

In consideration of your making delivery off the highway, I agree to assume responsibility for any and all damage resulting therefrom.

RECEIVED BY: _____
NAME IN FULL (NO INITIALS)

Price is based on a reasonable time to unload the truck. A reasonable time is 5 minutes per cubic yard. A charge for truck time will be made if the reasonable time is exceeded. An additional charge for heating will be made for winter concrete. The L. Suzio Concrete Co., Inc. assumes no responsibility for strength or quality when additional water is added to the mix upon request of the customer or his representative.

ADDITIONAL WATER ORDERED By _____ Title _____ Amt. _____

WARNING

CONCRETE AND CEMENT PRODUCTS CAN CAUSE SKIN AND EYE INJURIES. WEAR PROTECTIVE CLOTHING, RUBBER BOOTS, GLOVES AND GOGGLES. IN CASE OF CONTACT FLUSH IMMEDIATELY WITH WATER. IF IRRITATION PERSISTS SEEK MEDICAL ATTENTION PROMPTLY.

(KEEP OUT OF REACH OF CHILDREN.)

SEE REVERSE FOR ADDITIONAL PRODUCT CONDITIONS

INVOICE TO:
10129
LONGFELLOW DRILLING, INC.

DELIVER TO:
N.E. UTIL. TRANSMISSION LINE

DELIVER TO:
EAST MAIN ST MERIDEN

PROJECT INSTRUCTIONS
AND OLD MAIN ST BEHIND CONDOS

ZONE

PROJECT	PURCHASE ORDER	LOT / BLOCK
161254001		

CUSTOMER JOB NO.	USE	SLUMP
	GENERAL	6.00

DATE	ORDER NO.	TICKET NO.	MIX NO.	LOAD QUANTITY	QTY. ORDERED	QTY. DELIVERED	PLANT	TRUCK	DRIVERS NAME
19Oct07	2014	86998	400060	6.00	56.00	56.00	1	141	MORRONE, R

Begin Tare			Zero			Begin Tare			Zero		
SAND	8554	Lb	8540	In Tol	4.63%	Poly-997	360	oz	360	In To	
3/4"TRAP	13934	Lb	14000	In Tol	0.0%	AEA	18	oz	18	In To	
1/2"TRAP	16671	Lb	16620	In Tol	0.0%						
3/8"TRAP	19331	Lb	19200	In Tol	0.0%						
End Tare			Zero			End Tare			Zero		
Begin Tare			Zero			Begin Tare			Zero		
TYPE-II	3666	Lb	3660	In Tol		WATER #4	900	Lb	896	In To	
End Tare			33			End Tare			Zero		

10:31:53

DESCRIPTION
4000 3 STONE MIDRANGE

UNIT PRICE	QTY. EXTENDED	MIN. LOAD CHG.	HEAT CHG.	SUB TOTAL	SALES TAX	TICKET TOTAL	TOTAL ORDER DUE ▶

A FINANCE CHARGE OF 1 ½% PER MONTH, WHICH IS AN ANNUAL PERCENTAGE RATE OF 18%, WILL BE ASSESSED ON ANY BALANCE OUTSTANDING FOR MORE THAN THIRTY (30) DAYS PAST INVOICE DATE. IN NO EVENT WILL THE RATE BE HIGHER THAN THAT PERMITTED BY LAW. ACCOUNTS

FORM NO. 5003

CUSTOMER'S COPY

THE L. SUZIO CONCRETE COMPANY

WESTFIELD ROAD, MERIDEN, CONNECTICUT 06450-0748

MERIDEN	237-8421
NEW HAVEN	562-3940
WALLINGFORD	269-8265
MIDDLETOWN	346-6669
HARTFORD	246-6177

CONTROL NO. 358637

TO JOB	ON JOB	START POUR	START WASH	TO PLANT	IN YARD
1207	1200				

In consideration of your making delivery off the highway, I agree to assume responsibility for any and all damage resulting therefrom.

RECEIVED BY: _____
NAME IN FULL (NO INITIALS)

Price is based on a reasonable time to unload the truck. A reasonable time is 5 minutes per cubic yard. A charge for truck time will be made if the reasonable time is exceeded. An additional charge for heating will be made for winter concrete. The L. Suzio Concrete Co., Inc. assumes no responsibility for strength or quality when additional water is added to the mix upon request of the customer or his representative.

ADDITIONAL WATER
ORDERED By _____ Title _____ Amt. _____

WARNING

CONCRETE AND CEMENT PRODUCTS CAN CAUSE SKIN AND EYE INJURIES. WEAR PROTECTIVE CLOTHING, RUBBER BOOTS, GLOVES AND GOGGLES. IN CASE OF CONTACT FLUSH IMMEDIATELY WITH WATER. IF IRRITATION PERSISTS SEEK MEDICAL ATTENTION PROMPTLY.

(KEEP OUT OF REACH OF CHILDREN.)

SEE REVERSE FOR ADDITIONAL PRODUCT CONDITIONS

DELIVER TO: N.E. UTIL. - TRANSMISSION LINE

DELIVER TO: EAST MAIN ST MERIDEN

INVOICE TO: 16123
LONGFELLOW DRILLING, INC.

PROJECT INSTRUCTIONS: AND OLD MAIN ST BEHIND CONDOS

ZONE

PROJECT: 1212901

PURCHASE ORDER

LOT / BLOCK

CUSTOMER JOB NO.

USE: GENERAL

SLUMP: 6.00

DATE	ORDER NO.	TICKET NO.	MIX NO.	LOAD QUANTITY	QTY. ORDERED	QTY. DELIVERED	PLANT	TRUCK	DRIVERS NAME
19Oct07	2014	86990	400080	10.00	50.00	50.00	1	149	RASMUSSEN, R

Begin Tare		Zero			Begin Tare		Zero		
SAND	14256 Lb	14260	In Tol	4.6%	POLY-997	600 oz	600	In To	
3/4"TRAP	23256 Lb	23280	In Tol	0.0%	AEA	30 oz	30	In To	
1/2"TRAP	27744 Lb	27700	In Tol	0.0%					
3/8"TRAP	32224 Lb	32180	In Tol	0.0%					
End Tare		Zero			End Tare		Zero		
Begin Tare		27			Begin Tare		Zero		
TYPE-II	6110 Lb	6100	In Tol		WATER	2210 Lb	2242	Out To	
End Tare		29			End Tare		Zero		

12:00:18

DESCRIPTION: 4000 # STONE HYDRANGE

UNIT PRICE	QTY. EXTENDED	MIN. LOAD CHG.	HEAT CHG.	SUB TOTAL	SALES TAX	TICKET TOTAL	TOTAL ORDER ▶ DUE

A FINANCE CHARGE OF 1 ½% PER MONTH, WHICH IS AN ANNUAL PERCENTAGE RATE OF 18%, WILL BE ASSESSED ON ANY BALANCE OUTSTANDING FOR MORE THAN THIRTY (30) DAYS PAST INVOICE DATE. IN NO EVENT WILL THE RATE BE HIGHER THAN THAT PERMITTED BY LAW. ACCOUNTS

ALIGN

PRINT LINE FIND

FIRST PRINT LINE FIND

NO. 500

CUSTOMER'S COPY

THE L. SUZIO CONCRETE COMPANY

WESTFIELD ROAD, MERIDEN, CONNECTICUT 06450-0748

MERIDEN 237-8421
NEW HAVEN 562-3940
WALLINGFORD 269-6265
MIDDLETOWN 346-6669
HARTFORD 246-6177

CONTROL NO. 358632

TO JOB	ON JOB	START POUR	START WASH	TO PLANT	IN YARD
11:35	11:50	12:00	12:10	12:20	

In consideration of your making delivery off the highway, I agree to assume responsibility for any and all damage resulting therefrom.

RECEIVED BY: Ralph Bloch
NAME IN FULL (NO INITIALS)

Price is based on a reasonable time to unload the truck. A reasonable time is 5 minutes per cubic yard. A charge for truck time will be made if the reasonable time is exceeded. An additional charge for heating will be made for winter concrete. The L. Suzio Concrete Co., Inc. assumes no responsibility for strength or quality when additional water is added to the mix upon request of the customer or his representative.

ADDITIONAL WATER
ORDERED By _____ Title _____ Amt. 3

WARNING

CONCRETE AND CEMENT PRODUCTS CAN CAUSE SKIN AND EYE INJURIES. WEAR PROTECTIVE CLOTHING, RUBBER BOOTS, GLOVES AND GOGGLES. IN CASE OF CONTACT FLUSH IMMEDIATELY WITH WATER. IF IRRITATION PERSISTS SEEK MEDICAL ATTENTION PROMPTLY.

(KEEP OUT OF REACH OF CHILDREN.)

SEE REVERSE FOR ADDITIONAL PRODUCT CONDITIONS

INVOICE TO:
16129
CONDEMELLON DRILLING, INC.

DELIVER TO:
N. E. UTIL.--TRANSMISSION LINE
DELIVER TO:
EAST MAIN ST MERIDEN
PROJECT INSTRUCTIONS
AND OLD MAIN ST BEHIND CONDOS
ZONE
PROJECT
19129001
PURCHASE ORDER
LOT / BLOCK
CUSTOMER JOB NO.
USE
GENERAL
SLUMP
6.00

DATE	ORDER NO.	TICKET NO.	MIX NO.	LOAD QUANTITY	QTY. ORDERED	QTY. DELIVERED	PLANT	TRUCK	DRIVERS NAME
190ct07	2014866902		400080	10.00	50.00	40.00	1	169	BRODEUR, P

Begin Tare		Zero			Begin Tare		Zero		
SAND	14256 Lb	14260	In Tol	4.6%	POLY-997	800 oz	600	In To	
3/4"TRAP	23256 Lb	23280	In Tol	0.0%	AEA	20 oz	20	In To	
1/2"TRAP	27764 Lb	27720	In Tol	0.0%					
3/8"TRAP	32244 Lb	32280	In Tol	0.0%					
End Tare		Zero			End Tare		Zero		
Begin Tare		31			Begin Tare		Zero		
TYPE-II	6110-Lb	6100	In Tol		WATER	2218 Lb	2222	In To	
End Tare		Zero			End Tare		Zero		

11:25:03

DESCRIPTION
4000 3 STONE MIDRANGE

UNIT PRICE	QTY. EXTENDED	MIN. LOAD CHG.	HEAT CHG.	SUB TOTAL	SALES TAX	TICKET TOTAL	TOTAL ORDER DUE ▶

ALIGN
PRINT LINE FIND
FIRST PRINT LINE FIND

9403

CUSTOMER'S COPY

THE L. SUZIO CONCRETE COMPANY

WESTFIELD ROAD, MERIDEN, CONNECTICUT 06450-0748

MERIDEN	237-8421
NEW HAVEN	562-3940
WALLINGFORD	269-8265
MIDDLETOWN	346-6669
HARTFORD	246-6177

CONTROL NO. 358631

TO JOB	ON JOB	START POUR	START WASH	TO PLANT	IN YARD
1102	1102				

In consideration of your making delivery off the highway, I agree to assume responsibility for any and all damage resulting therefrom.

RECEIVED BY: _____ NAME IN FULL (NO INITIALS)

Price is based on a reasonable time to unload the truck. A reasonable time is 5 minutes per cubic yard. A charge for truck time will be made if the reasonable time is exceeded. An additional charge for heating will be made for winter concrete. The L. Suzio Concrete Co., Inc. assumes no responsibility for strength or quality when additional water is added to the mix upon request of the customer or his representative.

ADDITIONAL WATER ORDERED By _____ Title _____ Amt. _____

WARNING

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(KEEP OUT OF REACH OF CHILDREN)

SEE REVERSE FOR ADDITIONAL PRODUCT CONDITIONS

INVOICE TO:
16129
LONGFELLOW DRILLING, INC.

DELIVER TO:
N.E. UTIL. - TRANSMISSION LINE

DELIVER TO:
EAST MAIN ST MERIDEN

PROJECT INSTRUCTIONS
AND OLD MAIN ST BEHIND CONDOS

ZONE

PROJECT
16129001

PURCHASE ORDER

LOT / BLOCK

CUSTOMER JOB NO.

USE
GENERAL

SLUMP
5.00

DATE	ORDER NO.	TICKET NO.	MIX NO.	LOAD QUANTITY	QTY. ORDERED	QTY. DELIVERED	PLANT	TRUCK	DRIVERS NAME
190ct07	2014B6978		400080	10.00	50.00	30.00	1	41	MORRONE, A

Begin Tare		Zero				Begin Tare		Zero	
SAND	14256 Lb	14250	In Tol	4.6%		POLY-997	600 oz	600	In To
3/4"TRAP	23256 Lb	23280	In Tol	0.0%		AEA	20 oz	20	In To
1/2"TRAP	27744 Lb	27700	In Tol	0.0%				+12 gallons	
3/8"TRAP	32244 Lb	32200	In Tol	0.0%				32 Total	
End Tare		Zero				End Tare		Zero	
Begin Tare		27				Begin Tare		Zero	
TYPE-II	6110 Lb	6100	In Tol	--		WATER	2210 Lb	2240	In To
End Tare		27				End Tare		Zero	

11:09:33

DESCRIPTION
4000 3 STONE MIDRANGE

UNIT PRICE	QTY. EXTENDED	MIN. LOAD CHG.	HEAT CHG.	SUB TOTAL	SALES TAX	TICKET TOTAL	TOTAL ORDER ▶ DUE

A FINANCE CHARGE OF 1 1/2% PER MONTH, WHICH IS AN ANNUAL PERCENTAGE RATE OF 18%, WILL BE ASSESSED ON ANY BALANCE PAST INVOICE DATE. IN NO EVENT WILL THE RATE BE HIGHER THAN THAT PERMITTED BY LAW. ACCOUNTS

FORM NO. 5003

CUSTOMER'S COPY

THE L. SUZIO CONCRETE COMPANY

WESTFIELD ROAD, MERIDEN, CONNECTICUT 06450-0748

MERIDEN	237-8421
NEW HAVEN	562-3940
WALLINGFORD	269-8265
MIDDLETOWN	346-6669
HARTFORD	246-6177

CONTROL NO. 358630

TO JOB	ON JOB	START POUR	START WASH	TO PLANT	IN YARD
1110	1121				

In consideration of your making delivery off the highway, I agree to assume responsibility for any and all damage resulting therefrom.

RECEIVED BY: _____ NAME IN FULL (NO INITIALS)

Price is based on a reasonable time to unload the truck. A reasonable time is 5 minutes per cubic yard. A charge for truck time will be made if the reasonable time is exceeded. An additional charge for heating will be made for winter concrete. The L. Suzio Concrete Co., Inc. assumes no responsibility for strength or quality when additional water is added to the mix upon request of the customer or his representative.

ADDITIONAL WATER ORDERED By _____ Title _____ Amt. _____

WARNING

CONCRETE AND CEMENT PRODUCTS CAN CAUSE SKIN AND EYE INJURIES. WEAR PROTECTIVE CLOTHING, RUBBER BOOTS, GLOVES AND GOGGLES. IN CASE OF CONTACT FLUSH IMMEDIATELY WITH WATER. IF IRRITATION PERSISTS SEEK MEDICAL ATTENTION PROMPTLY.

(KEEP OUT OF REACH OF CHILDREN.)

SEE REVERSE FOR ADDITIONAL PRODUCT CONDITIONS

INVOICE TO: 16129
LONGFELLOW DRILLING, INC.

DELIVER TO: N.E. UTIL.-TRANSMISSION LINE

DELIVER TO: EAST MAIN ST MERIDEN

PROJECT INSTRUCTIONS: AND OLD MAIN ST BEHIND CONDOS

ZONE

PROJECT: 16129001

PURCHASE ORDER

LOT / BLOCK

CUSTOMER JOB NO.

USE: GENERAL

SLUMP: 6.00

DATE	ORDER NO.	TICKET NO.	MIX NO.	LOAD QUANTITY	QTY. ORDERED	QTY. DELIVERED	PLANT	TRUCK	DRIVERS NAME
11-01-07	20144	65975	400080	10.00	50.00	20.00	1	52	Seyward, D.

Begin Tare			Zero			Begin Tare		Zero	
SAND	14256	Lb	14260	In Tol	4.6%	POLY-997	600	oz	600 In To
3/4"TRAP	23255	Lb	23280	In Tol	0.0%	AEA	20	oz	20 In To
1/2"TRAP	27744	Lb	27720	In Tol	0.0%				
3/8"TRAP	32244	Lb	32180	In Tol	0.0%				
End Tare			Zero			End Tare		Zero	
Begin Tare			25			Begin Tare		Zero	
TYPE-II	6110	Lb	6100	In Tol		WATER	2218	Lb	2202 In To
End Tare			25			End Tare		Zero	

11-01-07

DESCRIPTION: 4000 3 STONE MIDRANGE

UNIT PRICE	QTY. EXTENDED	MIN. LOAD CHG.	HEAT CHG.	SUB TOTAL	SALES TAX	TICKET TOTAL	TOTAL ORDER DUE ▶

A FINANCE CHARGE OF 1 1/2% PER MONTH WHICH IS AN ANNUAL PERCENTAGE RATE OF 18%, WILL BE ASSESSED ON ANY BALANCE

CUSTOMER'S COPY

THE L. SUZIO CONCRETE COMPANY

WESTFIELD ROAD, MERIDEN, CONNECTICUT 06450-0748

MERIDEN	237-8421
NEW HAVEN	562-3940
WALLINGFORD	269-8265
MIDDLETOWN	346-6669
HARTFORD	246-6177

CONTROL NO. 358629

TO JOB	ON JOB	START POUR	START WASH	TO PLANT	IN YARD
1104	1177				

In consideration of your making delivery off the highway, I agree to assume responsibility for any and all damage resulting therefrom.

Price is based on a reasonable time to unload the truck. A reasonable time is 5 minutes per cubic yard. A charge for truck time will be made if the reasonable time is exceeded. An additional charge for heating will be made for winter concrete. The L. Suzio Concrete Co., Inc. assumes no responsibility for strength or quality when additional water is added to the mix upon request of the customer or his representative.

RECEIVED BY: _____ NAME IN FULL (NO INITIALS)

ADDITIONAL WATER ORDERED By _____ Title _____ Amt. _____

WARNING

CONCRETE AND CEMENT PRODUCTS CAN CAUSE SKIN AND EYE INJURIES. WEAR PROTECTIVE CLOTHING, RUBBER BOOTS, GLOVES AND GOGGLES. IN CASE OF CONTACT FLUSH IMMEDIATELY WITH WATER. IF IRRITATION PERSISTS SEEK MEDICAL ATTENTION PROMPTLY.

(KEEP OUT OF REACH OF CHILDREN.)

SEE REVERSE FOR ADDITIONAL PRODUCT CONDITIONS

INVOICE TO: 16129
LONGFELLOW DRILLING, INC.

DELIVER TO: N.E. UTIL.-TRANSMISSION LINE

DELIVER TO: EAST MAIN ST MERIDEN

PROJECT INSTRUCTIONS: AND OLD MAIN ST BEHIND CONDOS

ZONE

PROJECT: 161290A1

PURCHASE ORDER

LOT / BLOCK

CUSTOMER JOB NO.

USE: GENERAL

SLUMP: 6.00

DATE	ORDER NO.	TICKET NO.	MIX NO.	LOAD QUANTITY	QTY. ORDERED	QTY. DELIVERED	PLANT	TRUCK	DRIVERS NAME
19Oct07	2014	86973	400000	10.00	50.00	10.00	1	43	RASMUSSEN, R

Begin Tare		Zero			Begin Tare		Zero	
SAND	14250 Lb	14260	In Tol	4.6%	POLY-937	600 oz	600	In To
3/4"TRAP	23256 Lb	23290	In Tol	0.0%	AEA	20 oz	20	In To
1/2"TRAP	27744 Lb	27700	In Tol	0.0%				
3/8"TRAP	32224 Lb	32180	In Tol	0.0%				
End Tare		Zero			End Tare		Zero	
Begin Tare		Zero			Begin Tare		2200	In To
TYPE-II	6110 Lb	6100	In Tol		WATER	2218 Lb		
		20			End Tare		Zero	
End Tare								
19:52:29								

DESCRIPTION: 4000 3 STONE MIDRANGE

UNIT PRICE	QTY. EXTENDED	MIN. LOAD CHG.	HEAT CHG.	SUB TOTAL	SALES TAX	TICKET TOTAL	TOTAL ORDER DUE

ALIGN

ALIGN

PRINT LINE FIND

FIRST PRINT LINE FIND

CENTEK engineering

Centered on Solutions℠

December 12, 2018

Mr. Joel Szarkowicz
Transmission Line Engineering
Eversource
56 Prospect Street
Hartford, CT 06103

Re: Structural Letter ~ Tower Assessment
Eversource Tower #: 9403
AT&T – Site Ref: CT5279
74 Birdsey Avenue
Meriden, CT

Centek Project No. 18015.00

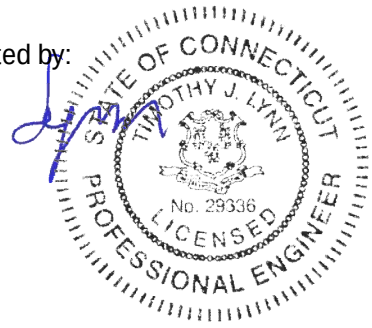
Dear Mr. Szarkowicz,

Centek Engineering, Inc. has conducted a field investigation of at the above referenced site. The purpose of the investigation was to assess the structural condition of the existing transmission tower in order to determine if any reduction should be taken in calculating the strength of the tower components due to existing conditions. The field investigation was conducted by Centek personnel on December 12, 2018 from grade.

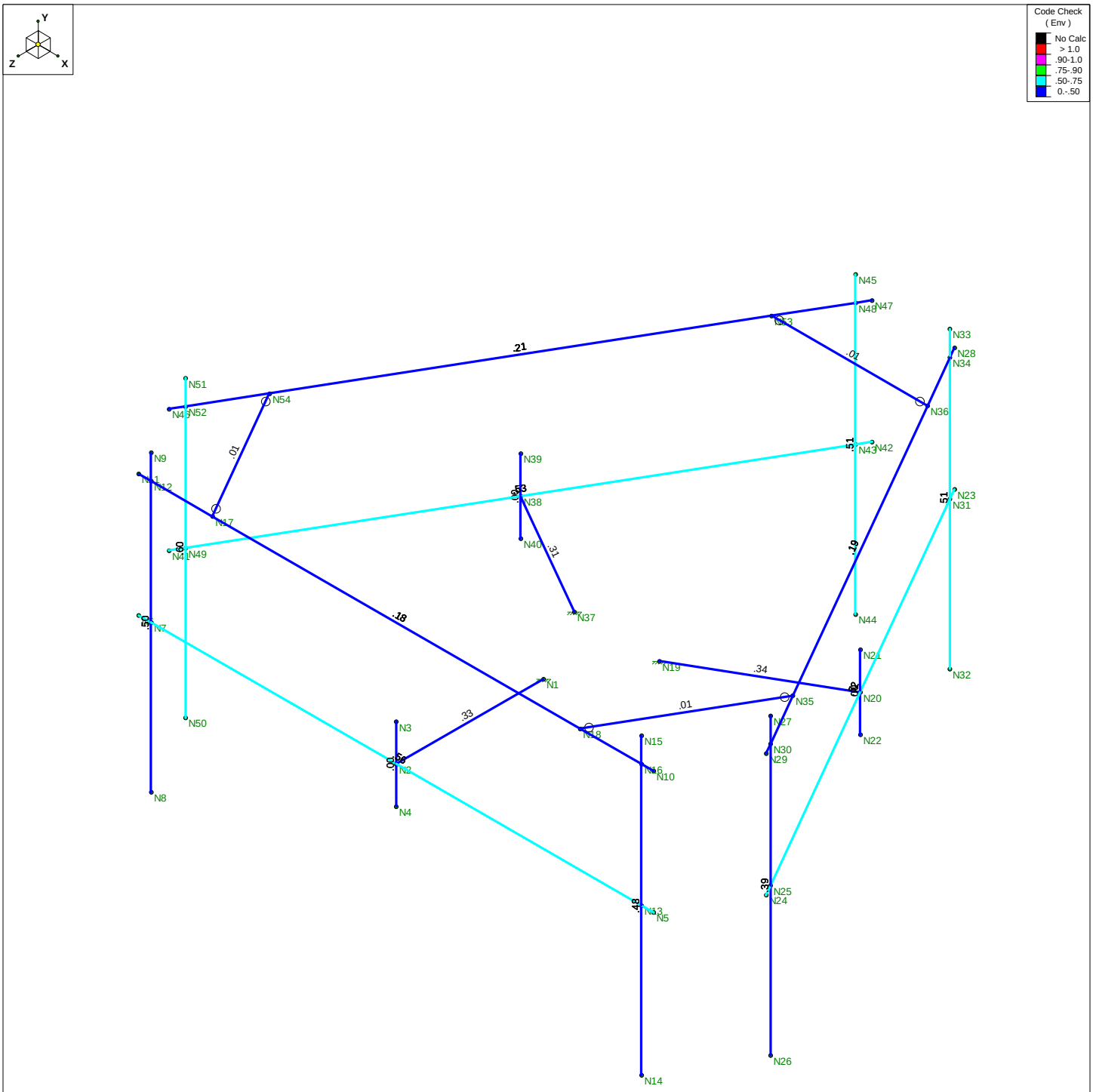
Based on our investigation it is our opinion that the subject tower is in excellent condition and no reductions to the strength of the tower components need to be considered. If there are any questions regarding this matter, please feel free to call.

Respectfully Submitted by:

Timothy J. Lynn, PE
Structural Engineer



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



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Centek		
TJL	CT5279 - Mount	Dec 13, 2018 at 10:07 AM
18015.00	Mount Unity Check	Mount.r3d

Dewberry Engineers Inc.
280 Summer Street, 10th Floor
Boston, MA 02210
617.695.3400
617.695.3310 fax
www.dewberry.com

Mount Analysis Report and Design Calculations For a Wireless Telecommunications Upgrade

Site Name: Meriden Birdsey Ave. (3C/4C/5C/5G NR)
Site No.: CT5279
Site Address: 74 Birdsey Avenue
Meriden, CT 06450

Prepared for:
AT&T
550 Cochituate Road Suites 13 & 14
Framingham, MA 01701

August 23, 2018
(Rev.1)

Prepared by:
Dewberry Engineers Inc.
280 Summer Street, 10th Floor
Boston, MA 02210
Dewberry Project Number: 50096234

Analysis Condition	Utilization	Pass/Fail
Existing Mount	60.4%	*Pass*

Prepared by:

Sahnoune Abed
Structural Project Engineer

Approved by:

Benjamin Revette, P.E.
Connecticut Professional Engineer
License No. # 0028971

Table of Contents

1.0 INTRODUCTION AND PROJECT SUMMARY

The objective of this report is to assess the proposed installation of new antennas and TMA units on existing steel antenna mounts. The RRH units are ground mounted therefore they won't be included in the mount analysis. This report is limited to the analysis of the existing T-Arm only.

The existing structure is a 175-ft tall transmission pole located in Meriden, CT. There are currently existing antennas and support equipment mounted to steel sector frames in sectors Alpha, Beta, & Gamma. The existing sector frames are attached at approximately 171 ft. above grade with an approximate antenna centerline elevation of 173 ft.

2.0 EXISTING & PROPOSED ANTENNAS & EQUIPMENT

Currently, each sector currently has the following equipment:

- Sectors Alpha, Beta, & Gamma
  - One (1) Powerwave 7770 antenna measuring 55"H x 11"W x 5"D 9 (35.0 lb.) ***(*)***
  - One (1) AM-X-CD-16-65-00T-Ret antenna measuring 72"H x 11.8" W x 5.9" D (48.5 lb.) ***(*)***
  - One (1) CCI DTMABP7819VG12A TMA ***(*)***
  - Two (2) Powerwave LGP 21401 TMAs ***(*)***
  - Three (3) RRUS-12 (one to be removed); one (1) RRUS-32 & one (1) RRUS-11 ***(**)***
  - Four (4) Diplexers QBC0007F1V51-1 & two (2) Diplexers Powerwave / LGP 21901(To be removed) ***(**)***
  - One (1) steel antenna mount
  - Miscellaneous equipment and cables negligible in weight and profile

(*) To be removed
(**) Ground mounted

The following antennas and equipment are proposed for each sector:

- Sectors Alpha, Beta, & Gamma
  - One (1) QS66512-2 antenna measuring 72" H x 12" W x 9.6" D (126 lb.)
  - One (1) SBNHH-1D85B antenna measuring 72.9" H x 11.9" W x 7.1" D (57.1 lb.)
  - Two (2) Kaelus 2117F00V1TMAs measuring 9.84" H x 4.65" W x 11.81" D (26 lb.)
  - Two (2) CCI BPD7823VG12A TMAs measuring 10.63" H x 3.75" W x 11.04" D (26 lb.)
  - Two (2) RRUS-12; one (1) RRUS-32, one (1) RRUS-11, one (1) 4478 B5 RRH & one (1) 4426 B66 RRH ***(**)***
  - Four (4) Diplexers QBC0007F1V51-1 & two (2) Diplexers TPX-070821 ***(**)***
  - Miscellaneous equipment and cables negligible in weight and profile

For the final configuration utilized for this analysis, refer to the table below.

Table 1: APPURTENANCE LOADING on TOWER			
Elev.	Status	Appurtenance Description	Mounting Location
173'	**Final**	**(3) – SBNHH-1D85B**	**Position 1**
173'	**Final**	**(3) – QS66512-2**	**Position 3**
173'	**Final**	**(6) – CCI TMA BPD7823VG12A**	**Position 1**
173'	**Final**	**(6) – Kaelus TMA 2117F00V1**	**Position 3**
GL.	**Final**	**Two (2) RRUS-12, one (1) RRUS-32, one (1) RRUS-11, one (1) 4478 B5 RRH & one (1) 4426 B66 RRH**	**Ground Level**

Note: The current tower configuration does not match the latest RFDS. The 3C/4C configuration was not installed.

3.0 CODES, STANDARDS, AND REFERENCES

The structure was analyzed and the proposed installation designed per the provisions of the following codes, standards, and references:

- *International Building Code (IBC) 2012,* International Code Council
- *2016 Connecticut Building Code,* Amendments to IBC 2012
- *TIA-222-G-4, Structural Standard for Antenna Supporting Structures and Antennas*
- *AT&T Mount Technical Directive – R9 (Modified 08/07/18)*
- *Steel Construction Manual 14th Ed,* American Institute of Steel Construction
- Radio Frequency Data Sheet (RFDS) AT&T dated 05/05/18
- Site Pro Email dated 10/26/17

4.0 LOADING AND PERFORMANCE CRITERIA

The following code-specified strength limit state (LRFD) load combinations were considered in the analysis of the antenna mount *(TIA-222-G)*:

1. $1.2D + 1.6W$
2. $1.2D + 1.0D_i + 1.0W_i$
3. $1.4D$
4. $1.2D + 1.5L_m + 1.0W_m$
5. $1.2D + 1.5L_v$

The following Code-specified serviceability load combination was considered in the deflection of the antenna mounts (TIA-222-G):

1. $1.0D + 1.0W_{service}$

Where:

D = dead load of structure, steel, and new equipment.
D_i = dead load of ice
W = design wind load
W_i = design ice wind load
$W_{service}$ = service wind load
W_m = design maintenance wind load
L_m = design maintenance load *(250 lb. per AT&T directive)*
L_v = design maintenance load *(250 lb. per AT&T directive)*

Since by policy AT&T forbids walking on or suspending below T-Arm mounts, no maintenance load allowance is applied to T-Arm mounts.

The following site-specific design parameters were considered in this analysis per the provisions of *TIA-222-G:*

Risk Category:	II	
Exposure Category:	C	
Ultimate Design Wind Speed:	125 mph	*Appendix N CT State Building Code*
Design Ice Wind Speed:	50 mph	*Annex B, TIA*
Design Ice Thickness:	0.75 in.	*Annex B, TIA*
Gust Effect Factor	1.0	*Sect. 2.6.7, TIA*
Wind Direction Probability Factor	0.95	*Table 2-2, TIA*
Serviceability Wind Speed:	60 mph	*Sect. 2.8.3, TIA*
Maintenance Wind Speed	30 mph	*AT&T MTD – Sect. 4.0*

5.0 ANALYSIS ASSUMPTIONS

- This mount analysis is not based on a mount mapping. The mount dimensions and steel members are based on existing plans and visual inspection of photos from grade level during a site visit by Dewberry on 9/11/17, the mount was determined to be the discontinued Valmont P/N 802738 T-Arm monopole mount.
- The mount analysis was completed using member sizes provided by Site Pro via email and scaling photos taken from grade level.

6.0 REQUIRED FIELD VERIFICATIONS

- T-Arm members' sizes and measurements need to be field verified to match with the mount analysis inputs.
- Existing antenna mounting pipes are at least 6'-3". If not, replace existing mounting pipes with new ones measuring 6'-3'

7.0 CALCULATIONS

Calculations for this analysis and the design of the proposed installation are included in the Appendices of this report.

8.0 CONCLUSIONS, COMMENTARY, AND RECOMMENDATIONS

The analysis concludes that the existing T-Arms, **have sufficient structural capacity** to support the proposed installation. Under the proposed conditions, the maximum utilization of a single structural member is 60.4%.

This analysis is limited to the existing T-Arms only. If actual field conditions vary from what was assumed in this analysis, the results and conclusions expressed herein are invalid and further evaluation is recommended for any proposed installation to continue. All proposed equipment shall be installed according to the latest associated construction drawings by Dewberry.

Dewberry Engineers Inc. reserves the right to add to or modify this report if more information becomes available. The conclusions reached by Dewberry Engineers Inc. in this report are only applicable to the previously mentioned existing structural elements supporting the proposed wireless telecommunications installation. The results of this report are based on the assumption that existing structural elements have been installed per the original design documents, have been well maintained, and are uncompromised. This report does not imply that a thorough inspection of the existing structure has been performed. Any deviation of the support condition, loading, location, placement, equipment configuration, etc., will require Dewberry Engineers Inc. to generate an additional structural analysis. Further, no structural qualification is made or implied by this report of any existing structural elements.

APPENDIX A

Dewberry®

Job Number	50096234
Made by:	SA
Date:	08/16/18
Checked by:	SMS
Date:	08/23/18

(CT5279 Meriden Birdsey Ave.) - Design Wind Load

\\Capecod\Projects\50093723\50096234-CT5279 Meriden Birdseye Avenue\Tech\Rev.1\50096234 - Meriden Birdsey Ave (Sector Mount, TIA-222-G).xlsx

Wind Load Design Criteria

Site Name: CT5279 Meriden Birdsey Ave.

General Information & Design Input from TIA-222-G

Item	Value	Description	Reference
V =	125.00	Design Wind Speed (mph)	*Appendix N, CT State Building Code*
V_{max} =	96.82	$(\sqrt{0.6}) * V$	*Except. #5, Sect. 1609.1.1, Eqn. 16-33, IBC 12*
Location =	CT	New Haven County	*Annex B, TIA*
V_i =	50.00	Design Ice Wind Speed (mph)	
K_d =	0.95	Wind Direction Probability Factor	*Table 2-2, TIA*
Class	II	Structure Classification	*Table 2-1, TIA*
I =	1.00	Importance Factor (Without Ice)	*Table 2-3, TIA*
I_{ice} =	1.00	Importance Factor (Ice Thickness)	*Table 2-3, TIA*
$z = h$ =	173.00	ft. (A.G.L.)	*Max. Center of Appurtenance*
Exp. Cat.	C	Exposure Category	*Sect. 2.6.5.1, TIA*
z_g =	900.00	Exposure Category Coeff.	*Table 2-4, TIA*
α' =	9.50	Exposure Category Coeff.	*Table 2-4, TIA*
$K_{z\,(min)}$ =	0.85	Exposure Category Coeff.	*Table 2-4, TIA*
K_e =	1.00	Exposure Category Coeff.	*Table 2-4, TIA*
K_t =	N/A	Topographic Constant	*Table 2-5, TIA ("N/A" if Topo. Cat. = 1)*
K_z =	1.42	$= 2.01(z/z_g)^{(2/\alpha')}$	*Sect. 2.6.5.2, TIA*
Topo. Cat.	1	Topographic Category (1-5)	*Sect. 2.6.6.2, TIA*
e =	2.72	Natural Logarithmic base	
f =	N/A	Height Attenuation Factor	*Table 2-5, TIA ("N/A" if Topo. Cat. = 1)*
H =	N/A	ft. Height of crest above surrounding terrain	
K_h =	N/A	$e^{((f*z)/H)}$	*Sect. 2.6.6.4, TIA*
K_{zt} =	1.00	$= [1+((K_e*K_t)/K_h)]^2$	*Sect. 2.6.6.4, TIA*
K_{iz} =	1.18	$= (z/33)^{0.10} \leq 1.4$ (Height escalation factor)	*Sect. 2.6.8, TIA*
G_h =	1.00	Gust Effect Factor	*Sect. 2.6.7, TIA*
t_i =	0.75	Design Ice Thickness	*Annex B, TIA*
t_{iz} =	1.77	$=2\ t_i(I_{ice})K_{iz}(K_{zt})^{0.35}$	*Sect. 2.6.8, TIA*
$q_{z\,design}$ =	32.4 psf	$= 0.00256(K_z)(K_{zt})(K_d)(V_{max}^2)(I)$	*Sect. 2.6.9.6, TIA*
$q_{z\,ice}$ =	8.7 psf	$= 0.00256(K_z)(K_{zt})(K_d)(V_i^2)$	*Sect. 2.6.9.6, TIA*

Design Wind Forces:

Section 2.6.11.2

$F_A = q_{z\,design}G_h(EPA)_A$ *(where $(EPA)_A$ = effective projected area of the appurtenance = C_aA_a)*

$F_{Ai} = q_{z\,ice}G_h(EPA)_{Ai}$

(see calculation tables on following pages)

Design Ice Weight:

Section 2.6.10

$F_i = [\pi(t_{iz})(D_c + t_{iz})]*56\ lb/ft^3$ *(where D_c = largest out to out dimension of member)*

(see calculation tables on following pages)

Dewberry

Job Number	50096234
Made by:	SA
Date:	08/16/18
Checked by:	SMS
Date:	08/23/18

(CT5279 Meriden Birdsey Ave.) - Design Wind Load

\\Capecod\Projects\50093723\50096234-CT5279 Meriden Birdseye Avenue\Tech\Rev.1\50096234 - Meriden Birdsey Ave (Sector Mount, TIA-222-G).xlsx

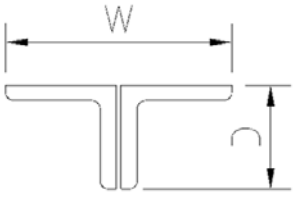
Element Definition

Description	Dimensions (in.)			Weight	Length /	
	W	D	H	(lb)	# Supports	
SBNHH-1D85B	11.90	7.10	72.90	57.10	2.00	
QS66512-2	12.00	9.60	72.00	126.00	2.00	
TMA2117F00V1	11.81	4.65	9.84	26.00	1.00	
TMABPD7823VG12A	11.04	3.75	10.63	26.00	1.00	
STRUCTURAL MEMBERS						
2-3/8" OD Pipe	2.38	2.38	12.00	STAAD	*Pipe*	
3.5" OD Pipe	3.50	3.50	12.00	STAAD	*Pipe*	
4" Square Tube	4.00	4.00	12.00	STAAD	*Tube*	

(Mounting Pipe) *(See Note 2)*

Note:

1) *For Double Angles assume the following:*



2) *For mounting pipes that **do not** support equipment or portions which are not shielded by equipment, create an additional entry below.*

Dewberry

Job Number	50096234
Made by:	SA
Date:	08/16/18
Checked by:	SMS
Date:	08/23/18

(CT5279 Meriden Birdsey Ave.) - Design Wind Load

\\Capecod\Projects\50093723\50096234-CT5279 Meriden Birdseye Avenue\Tech\Rev.1\50096234 - Meriden Birdsey Ave (Sector Mount, TIA-222-G).xlsx

Design Wind Load

Members	Dimensions (ft.)			Area (A_a)$_n$	Area (A_a)$_t$	Aspect Ratio	Aspect Ratio	C_{an}	C_{at}
	Width *(Normal)*	Depth *(Tangent)*	Height *(or span)*	*(normal)* *(sf)*	*(tangent)* *(sf)*	*(normal)*	*(tangent)*	*(normal)* *Table 2-8*	*(tangent)* *Table 2-8*
SBNHH-1D85B	0.99	0.59	6.08	6.02	3.59	6.14	10.31	1.36	1.51
QS66512-2	1.00	0.80	6.00	6.00	4.80	6.00	7.50	1.36	1.42
TMA2117F00V1	0.98	0.39	0.82	0.80	0.32	0.84	2.10	1.20	1.20
TMABPD7823VG12A	0.92	0.31	0.89	0.82	0.28	0.97	2.87	1.20	1.22
STRUCTURAL MEMBERS									
2-3/8" OD Pipe	0.20	0.20	1.00	0.20	0.20	5.00	5.00	0.76	0.76
3.5" OD Pipe	0.29	0.29	1.00	0.29	0.29	3.45	3.45	0.72	0.72
4" Square Tube	0.33	0.33	1.00	0.33	0.33	3.03	3.03	1.22	1.22

Design Effective Projected Area & Wind Loads

Members	EPA_a @ 0.0° *(sf)*	EPA_a @ 30.0° *(sf)*	EPA_a @ 60.0° *(sf)*	EPA_a @ 90.0° *(sf)*	F_a @ 0.0° *(lb)*	F_a @ 30.0° *(lb)*	F_a @ 60.0° *(lb)*	F_a @ 90.0° *(lb)*	Gravity Load @ Support *(lb)*
SBNHH-1D85B	8.19	7.50	6.11	5.42	132.6	121.4	99.0	87.8	28.6
QS66512-2	8.16	7.82	7.15	6.82	132.2	126.7	115.9	110.4	63.0
TMA2117F00V1	0.96	0.82	0.53	0.38	31.1	26.4	17.1	12.4	26.0
TMABPD7823VG12A	0.98	0.82	0.50	0.34	31.9	26.7	16.3	11.1	26.0
STRUCTURAL MEMBERS									
2-3/8" OD Pipe	0.15	-	-	-	4.9	-	-	-	-
3.5" OD Pipe	0.21	-	-	-	6.8	-	-	-	-
4" Square Tube	0.40	-	-	-	13.0	-	-	-	-

Dewberry

Job Number	50096234
Made by:	SA
Date:	08/16/18
Checked by:	SMS
Date:	08/23/18

(CT5279 Meriden Birdsey Ave.) - Design Wind Load

\\Capecod\Projects\50093723\50096234-CT5279 Meriden Birdseye Avenue\Tech\Rev.1\50096234 - Meriden Birdsey Ave (Sector Mount, TIA-222-G).xlsx

Design Ice Wind Load

- Design ice thickness included in tabulated dimensions below.

Members	Dimensions (ft.)			Area $(A_a)_{ni}$	Area $(A_a)_{ti}$	Aspect Ratio	Aspect Ratio	C_{ani}	C_{ati}
	Width *(Normal)*	Depth *(Tangent)*	Height *(or span)*	*(normal)* *(sf)*	*(tangent)* *(sf)*	*(normal)*	*(tangent)*	*(normal)* *Table 2-8*	*(tangent)* *Table 2-8*
SBNHH-1D85B	1.29	0.89	6.37	8.22	5.67	4.94	7.16	1.31	1.41
QS66512-2	1.30	1.10	6.30	8.19	6.93	4.85	5.73	1.30	1.34
TMA2117F00V1	1.28	0.68	1.12	1.43	0.76	0.88	1.65	1.20	1.20
TMABPD7823VG12A	1.22	0.61	1.18	1.44	0.72	0.97	1.93	1.20	1.20
STRUCTURAL MEMBERS									
2-3/8" OD Pipe	0.49	0.49	1.00	0.49	0.49	2.04	2.04	0.70	0.70
3.5" OD Pipe	0.59	0.59	1.00	0.59	0.59	1.69	1.69	0.70	0.70
4" Square Tube	0.63	0.63	1.00	0.63	0.63	1.59	1.59	1.20	1.20

Design Effective Projected Area & Wind Loads with Ice

Members	EPA_{ai} @ 0.0° *(sf)*	EPA_{ai} @ 30.0° *(sf)*	EPA_{ai} @ 60.0° *(sf)*	EPA_{ai} @ 90.0° *(sf)*	F_{ai} @ 0.0° *(lb)*	F_{ai} @ 30.0° *(lb)*	F_{ai} @ 60.0° *(lb)*	F_{ai} @ 90.0° *(lb)*	Ice Load F_i @ Support *(lb)*
SBNHH-1D85B	10.77	10.07	8.69	7.99	46.8	43.8	37.8	34.8	102.6
QS66512-2	10.65	10.31	9.63	9.29	46.3	44.8	41.9	40.4	111.2
TMA2117F00V1	1.72	1.52	1.11	0.91	14.9	13.2	9.7	7.9	25.6
TMABPD7823VG12A	1.73	1.51	1.08	0.86	15.0	13.2	9.4	7.5	25.7
STRUCTURAL MEMBERS									
2-3/8" OD Pipe	0.34	-	-	-	3.0	-	-	-	9.0
3.5" OD Pipe	0.41	-	-	-	3.6	-	-	-	11.4
4" Square Tube	0.76	-	-	-	6.6	-	-	-	16.1

Dewberry®

Job Number	50096234
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(CT5279 Meriden Birdsey Ave.) - Serviceability Wind Load

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Serviceability Wind Load Design Criteria

General Information & Design Input from TIA-222-G

Item	Value	Description	Reference
V_s =	60.00	Service Wind Speed (mph)	*Sect. 2.8.3, TIA*
V_m =	30.00	Maintenance Wind Speed (mph)	
K_d =	0.85	Service Wind Direction Probability Factor	*Sect. 2.8.3, TIA*
Class	II	Structure Classification	*Table 2-1, TIA*
z = h =	173.00	ft. (A.G.L.)	*Max. Center of Appurtenance*
Exp. Cat.	C	Exposure Category	*Sect. 2.6.5.1, TIA*
z_g =	900.00	Exposure Category Coeff.	*Table 2-4, TIA*
α' =	9.50	Exposure Category Coeff.	*Table 2-4, TIA*
$K_{z\,(min)}$ =	0.85	Exposure Category Coeff.	*Table 2-4, TIA*
K_e =	1.00	Terrain Constant	*Table 2-4, TIA*
K_t =	N/A	Topographic Constant	*Table 2-5, TIA ("N/A" if Topo. Cat. = 1)*
K_z =	1.42	$= 2.01(z/z_g)^{(2/\alpha')}$	*Sect. 2.6.6.2, TIA*
Topo. Cat.	1	Topographic Category (1-4)	*Sect. 2.6.5.2, TIA*
e =	2.72	Natural Logarithmic base	
f =	N/A	Height Attenuation Factor	*Table 2-5, TIA ("N/A" if Topo. Cat. = 1)*
H =	N/A	ft. Height of crest above surrounding terrain	
K_h =	N/A	$e^{((f*z)/H)}$	*Sect. 2.6.6.4, TIA*
K_{zt} =	1.00	$= [1+((K_c*K_t)/K_h)]^2$	*Sect. 2.6.6.4, TIA*
G_h =	1.00	Gust Effect Factor	*Sect. 2.6.7, TIA*
$q_{z\,service}$ =	11.2 psf	$= 0.00256(K_z)(K_{zt})(K_d)(V_s^2)$	*Sect. 2.6.9.6, TIA*
$q_{z\,maint}$ =	3.2 psf	$= 0.00256(K_z)(K_{zt})(K_d)(V_m^2)$	

Design Serviceability and Maintenance Wind Forces:

Section 2.6.11.2

$F_{As} = q_{z\,service} G_h (EPA)_A$

$F_{Am} = q_{z\,maint} G_h (EPA)_A$

(where $(EPA)_A$ = effective projected area of the appurtenance = $C_a A_a$)

(see calculation tables on following pages)

Dewberry

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(CT5279 Meriden Birdsey Ave.) - Serviceability Wind Load

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Element Definition:

	Description	Dimensions (in.)			Weight	Length /
		W	D	H	(lb)	# Supports
	SBNHH-1D85B	11.90	7.10	72.90	57.10	2.00
	QS66512-2	12.00	9.60	72.00	126.00	2.00
	TMA2117F00V1	11.81	4.65	9.84	26.00	1.00
	TMABPD7823VG12A	11.04	3.75	10.63	26.00	1.00
	STRUCTURAL MEMBERS					
(Mounting Pipe)	2-3/8" OD Pipe	2.38	2.38	12.00	STAAD	Pipe
	3.5" OD Pipe	3.50	3.50	12.00	STAAD	Pipe
	4" Square Tube	4.00	4.00	12.00	STAAD	Tube

Service & Maintenance Wind Load

Members	Dimensions (ft.)			Area $(A_a)_n$	Area $(A_a)_t$	Aspect	Aspect	C_{an}	C_{at}
	Width	Depth	Height	*(normal)*	*(tangent)*	Ratio	Ratio	*(normal)*	*(tangent)*
	(Normal)	*(Tangent)*	*(or span)*	*(sf)*	*(sf)*	*(normal)*	*(tangent)*	*Table 2-8*	*Table 2-8*
SBNHH-1D85B	0.99	0.59	6.08	6.02	3.59	6.14	10.31	1.36	1.51
QS66512-2	1.00	0.80	6.00	6.00	4.80	6.00	7.50	1.36	1.42
TMA2117F00V1	0.98	0.39	0.82	0.80	0.32	0.84	2.10	1.20	1.20
TMABPD7823VG12A	0.92	0.31	0.89	0.82	0.28	0.97	2.87	1.20	1.22
STRUCTURAL MEMBERS									
2-3/8" OD Pipe	0.20	0.20	1.00	0.20	0.20	5.00	5.00	0.76	0.76
3.5" OD Pipe	0.29	0.29	1.00	0.29	0.29	3.45	3.45	0.72	0.72
4" Square Tube	0.33	0.33	1.00	0.33	0.33	3.03	3.03	1.22	1.22

Dewberry

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(CT5279 Meriden Birdsey Ave.) - Serviceability Wind Load

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Service Effective Projected Area & Wind Loads

Members	EPA_{as} @ 0.0° (sf)	EPA_{as} @ 30.0° (sf)	EPA_{as} @ 60.0° (sf)	EPA_{as} @ 90.0° (sf)	F_{as} @ 0.0° (lb)	F_{as} @ 30.0° (lb)	F_{as} @ 60.0° (lb)	F_{as} @ 90.0° (lb)
SBNHH-1D85B	8.19	7.50	6.11	5.42	45.8	42.0	34.2	30.4
QS66512-2	8.16	7.82	7.15	6.82	45.7	43.8	40.1	38.2
TMA2117F00V1	0.96	0.82	0.53	0.38	10.8	9.1	5.9	4.3
TMABPD7823VG12A	0.98	0.82	0.50	0.34	11.0	9.2	5.6	3.8
STRUCTURAL MEMBERS								
2-3/8" OD Pipe	0.15	-	-	-	1.7	-	-	-
3.5" OD Pipe	0.21	-	-	-	2.3	-	-	-
4" Square Tube	0.40	-	-	-	4.5	-	-	-

Maintenance Effective Projected Area & Wind Loads

Members	EPA_{am} @ 0.0° (sf)	EPA_{am} @ 30.0° (sf)	EPA_{am} @ 60.0° (sf)	EPA_{am} @ 90.0° (sf)	F_{am} @ 0.0° (lb)	F_{am} @ 30.0° (lb)	F_{am} @ 60.0° (lb)	F_{am} @ 90.0° (lb)
SBNHH-1D85B	8.19	7.50	6.11	5.42	13.1	12.0	9.8	8.7
QS66512-2	8.16	7.82	7.15	6.82	13.1	12.5	11.4	10.9
TMA2117F00V1	0.96	0.82	0.53	0.38	3.1	2.6	1.7	1.2
TMABPD7823VG12A	0.98	0.82	0.50	0.34	3.1	2.6	1.6	1.1
STRUCTURAL MEMBERS								
2-3/8" OD Pipe	0.15	-	-	-	0.5	-	-	-
3.5" OD Pipe	0.21	-	-	-	0.7	-	-	-
4" Square Tube	0.40	-	-	-	1.3	-	-	-

Dewberry

Job Number	50096234
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Date:	08/23/18

(CT5279 Meriden Birdsey Ave.) - Load Input for STAAD Model

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STAAD Gravity Load Input

Equipment	Dead Load *(lb per support)*	Ice Load *(lb per support)*
SBNHH-1D85B	28.6	102.6
QS66512-2	63.0	111.2
TMA2117F00V1	26.0	25.6
TMABPD7823VG12A	26.0	25.7

Maintenance Loads

L_M = 0 lbs - vertical concentrated downward force applied in each mounting pipe location independently

L_V = 0 lbs - vertical concentrated downward force applied at the center of each simply supported horizontal member and at the end of each horizontal cantilevered members independently (excluding tie-backs)

STAAD Wind Load Calculation

Equipment	Axis	Case #1 0°	Case #2 30°	Case #3 60°	Case #4 90°	Case #5 120°	Case #6 150°	Case #7 180°	Case #8 210°	Case #9 240°	Case #10 270°	Case #11 300°	Case #12 330°
Not Shielded	z	$-F_0$	$-0.87F_{30}$	$-0.50F_{60}$	-	$0.50F_{60}$	$0.87F_{30}$	Inverse of Case #1	Inverse of Case #2	Inverse of Case #3	Inverse of Case #4	Inverse of Case #5	Inverse of Case #6
	x	-	$0.50F_{30}$	$0.87F_{60}$	F_{90}	$0.87F_{60}$	$0.50F_{30}$						
Shielded	z	N/A	N/A	$-0.50F_{60}$	-	$0.50F_{60}$	N/A						
	x	-	N/A	$0.87F_{60}$	F_{90}	$0.87F_{60}$	N/A						

Dewberry

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(CT5279 Meriden Birdsey Ave.) - Load Input for STAAD Model

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STAAD Load Input (Design Wind Load)

Equipment	Axis	Case #1 0°	Case #2 30°	Case #3 60°	Case #4 90°	Case #5 120°	Case #6 150°	Case #7 180°	Case #8 210°	Case #9 240°	Case #10 270°	Case #11 300°	Case #12 330°
SBNHH-1D85B	z	-132.6	-105.6	-49.5	-	49.5	105.6	Inverse of Case #1	Inverse of Case #2	Inverse of Case #3	Inverse of Case #4	Inverse of Case #5	Inverse of Case #6
(Not Shielded)	x	-	60.7	86.1	87.8	86.1	60.7						
QS66512-2	z	-132.2	-110.2	-58.0	-	58.0	110.2						
(Not Shielded)	x	-	63.4	100.8	110.4	100.8	63.4						
TMA2117F00V1	z	N/A	N/A	-8.6	-	8.6	N/A						
(Shielded)	x	-	N/A	14.9	12.4	14.9	N/A						
TMABPD7823VG12A	z	N/A	N/A	-8.2	-	8.2	N/A						
(Shielded)	x	-	N/A	14.2	11.1	14.2	N/A						

Dewberry

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(CT5279 Meriden Birdsey Ave.) - Load Input for STAAD Model

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STAAD Load Input (Design Wind on Ice Load)

Equipment	Axis	Case #1 0°	Case #2 30°	Case #3 60°	Case #4 90°	Case #5 120°	Case #6 150°	Case #7 180°	Case #8 210°	Case #9 240°	Case #10 270°	Case #11 300°	Case #12 330°
SBNHH-1D85B	z	-46.8	-38.1	-18.9	-	18.9	38.1	Inverse of Case #1	Inverse of Case #2	Inverse of Case #3	Inverse of Case #4	Inverse of Case #5	Inverse of Case #6
(Not Shielded)	x	-	21.9	32.9	34.8	32.9	21.9						
QS66512-2	z	-46.3	-39.0	-21.0	-	21.0	39.0						
(Not Shielded)	x	-	22.4	36.5	40.4	36.5	22.4						
TMA2117F00V1	z	N/A	N/A	-4.9	-	4.9	N/A						
(Shielded)	x	-	N/A	8.4	7.9	8.4	N/A						
TMABPD7823VG12A	z	N/A	N/A	-4.7	-	4.7	N/A						
(Shielded)	x	-	N/A	8.2	7.5	8.2	N/A						

Dewberry

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(CT5279 Meriden Birdsey Ave.) - Load Input for STAAD Model

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STAAD Load Input (Service Wind Load)

Equipment	Axis	Case #1 0°	Case #2 30°	Case #3 60°	Case #4 90°	Case #5 120°	Case #6 150°	Case #7 180°	Case #8 210°	Case #9 240°	Case #10 270°	Case #11 300°	Case #12 330°
SBNHH-1D85B	z	-45.8	-36.5	-17.1	-	17.1	36.5	Inverse of Case #1	Inverse of Case #2	Inverse of Case #3	Inverse of Case #4	Inverse of Case #5	Inverse of Case #6
(Not Shielded)	x	-	21.0	29.8	30.4	29.8	21.0						
QS66512-2	z	-45.7	-38.1	-20.1	-	20.1	38.1						
(Not Shielded)	x	-	21.9	34.9	38.2	34.9	21.9						
TMA2117F00V1	z	N/A	N/A	-3.0	-	3.0	N/A						
(Shielded)	x	-	N/A	5.1	4.3	5.1	N/A						
TMABPD7823VG12A	z	N/A	N/A	-2.8	-	2.8	N/A						
(Shielded)	x	-	N/A	4.9	3.8	4.9	N/A						

Dewberry

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(CT5279 Meriden Birdsey Ave.) - Load Input for STAAD Model

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STAAD Load Input (Maintenance Wind Load)

Equipment	Axis	Case #1 0°	Case #2 30°	Case #3 60°	Case #4 90°	Case #5 120°	Case #6 150°	Case #7 180°	Case #8 210°	Case #9 240°	Case #10 270°	Case #11 300°	Case #12 330°
SBNHH-1D85B	z	-13.1	-10.4	-4.9	-	4.9	10.4						
(Not Shielded)	x	-	6.0	8.5	8.7	8.5	6.0						
QS66512-2	z	-13.1	-10.9	-5.7	-	5.7	10.9						
(Not Shielded)	x	-	6.3	9.9	10.9	9.9	6.3						
TMA2117F00V1	z	N/A	N/A	-0.9	-	0.9	N/A						
(Shielded)	x	-	N/A	1.5	1.2	1.5	N/A						
TMABPD7823VG12A	z	N/A	N/A	-0.8	-	0.8	N/A						
(Shielded)	x	-	N/A	1.4	1.1	1.4	N/A	Inverse of Case #1	Inverse of Case #2	Inverse of Case #3	Inverse of Case #4	Inverse of Case #5	Inverse of Case #6

Job Information

	Engineer	Checked	Approved
Name:	SA	BGK	
Date:	08/20/18	08/21/17	

Project ID	
Project Name	

Structure Type	SPACE FRAME

Number of Nodes	23	Highest Node	23
Number of Elements	19	Highest Beam	19

Number of Basic Load Cases	28
Number of Combination Load Cases	50

Included in this printout are data for:

All	The Whole Structure

Included in this printout are results for load cases:

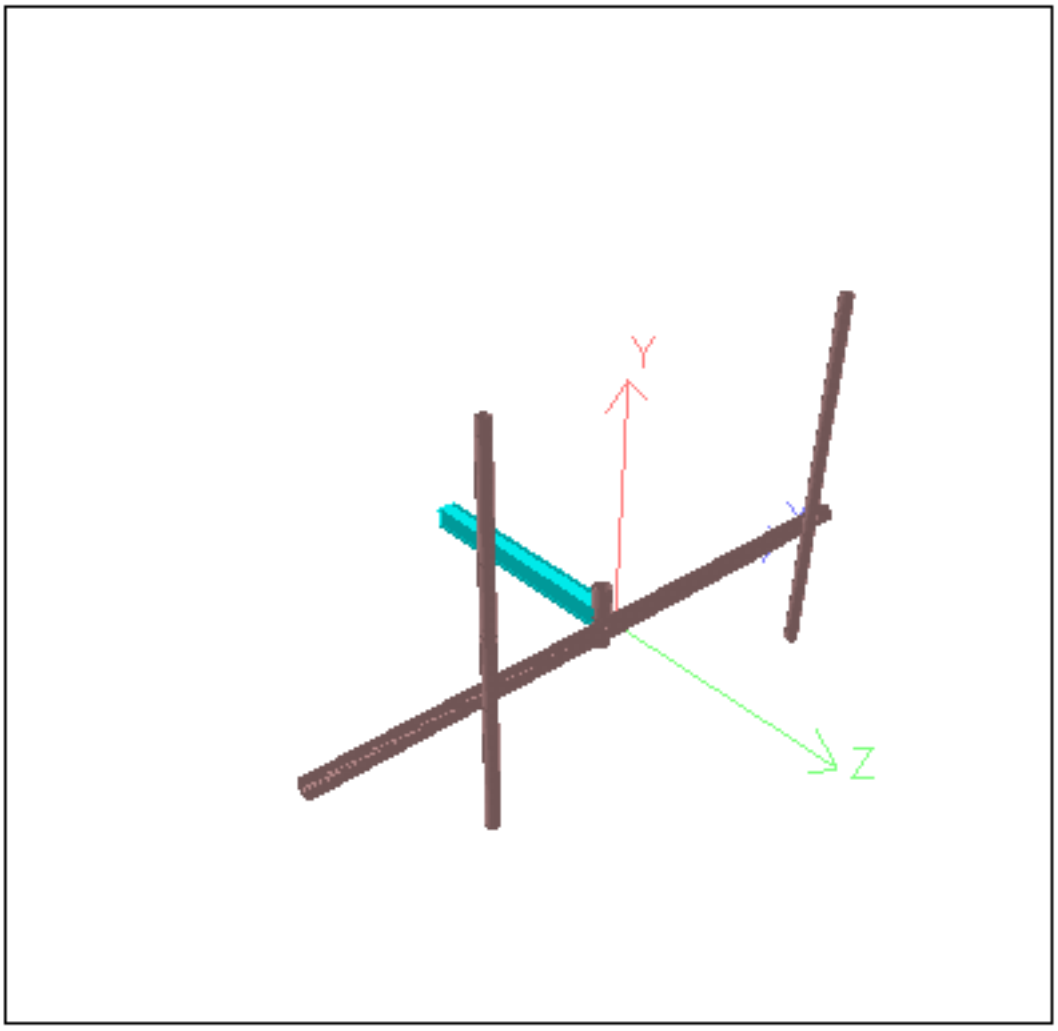
Type	L/C	Name
Primary	1	DEAD
Primary	2	WL#1
Primary	3	WL#2
Primary	4	WL#3
Primary	5	WL#4
Primary	6	WL#5
Primary	7	WL#6
Primary	8	DI
Primary	9	WLI#1
Primary	10	WLI#2
Primary	11	WLI#3
Primary	12	WLI#4
Primary	13	WLI#5
Primary	14	WLI#6
Primary	15	WLS#1
Primary	16	WLS#2
Primary	17	WLS#3
Primary	18	WLS#4
Primary	19	WLS#5
Primary	20	WLS#6
Primary	21	WLM#1
Primary	22	WLM#2
Primary	23	WLM#3
Primary	24	WLM#4
Primary	25	WLM#5

Job Information Cont...

Type	L/C	Name
Combination	29	1.2D+1.6WL#1
Combination	30	1.2D+1.6WL#2
Combination	31	1.2D+1.6WL#3
Combination	32	1.2D+1.6WL#4
Combination	33	1.2D+1.6WL#5
Combination	34	1.2D+1.6WL#6
Combination	35	1.2D+1.6WL#7
Combination	36	1.2D+1.6WL#8
Combination	37	1.2D+1.6WL#9
Combination	38	1.2D+1.6WL#10
Combination	39	1.2D+1.6WL#11
Combination	40	1.2D+1.6WL#12
Combination	41	1.2D+1.0DI+1.0WI#1
Combination	42	1.2D+1.0DI+1.0WI#2
Combination	43	1.2D+1.0DI+1.0WI#3
Combination	44	1.2D+1.0DI+1.0WI#4
Combination	45	1.2D+1.0DI+1.0WI#5
Combination	46	1.2D+1.0DI+1.0WI#6
Combination	47	1.2D+1.0DI+1.0WI#7
Combination	48	1.2D+1.0DI+1.0WI#8
Combination	49	1.2D+1.0DI+1.0WI#9
Combination	50	1.2D+1.0DI+1.0WI#10
Combination	51	1.2D+1.0DI+1.0WI#11
Combination	52	1.2D+1.0DI+1.0WI#12
Combination	53	1.0D+1.0WLS#1
Combination	54	1.0D+1.0WLS#2
Combination	55	1.0D+1.0WLS#3
Combination	56	1.0D+1.0WLS#4
Combination	57	1.0D+1.0WLS#5
Combination	58	1.0D+1.0WLS#6
Combination	59	1.0D+1.0WLS#7
Combination	60	1.0D+1.0WLS#8
Combination	61	1.0D+1.0WLS#9
Combination	62	1.0D+1.0WLS#10
Combination	63	1.0D+1.0WLS#11
Combination	64	1.0D+1.0WLS#12
Combination	65	1.4D
Combination	66	1.2D+1.5LM+1.0WM#1
Combination	67	1.2D+1.5LM+1.0WM#2
Combination	68	1.2D+1.5LM+1.0WM#3
Combination	69	1.2D+1.5LM+1.0WM#4
Combination	70	1.2D+1.5LM+1.0WM#5
Combination	71	1.2D+1.5LM+1.0WM#6
Combination	72	1.2D+1.5LM+1.0WM#7
Combination	73	1.2D+1.5LM+1.0WM#8

Job Information Cont...

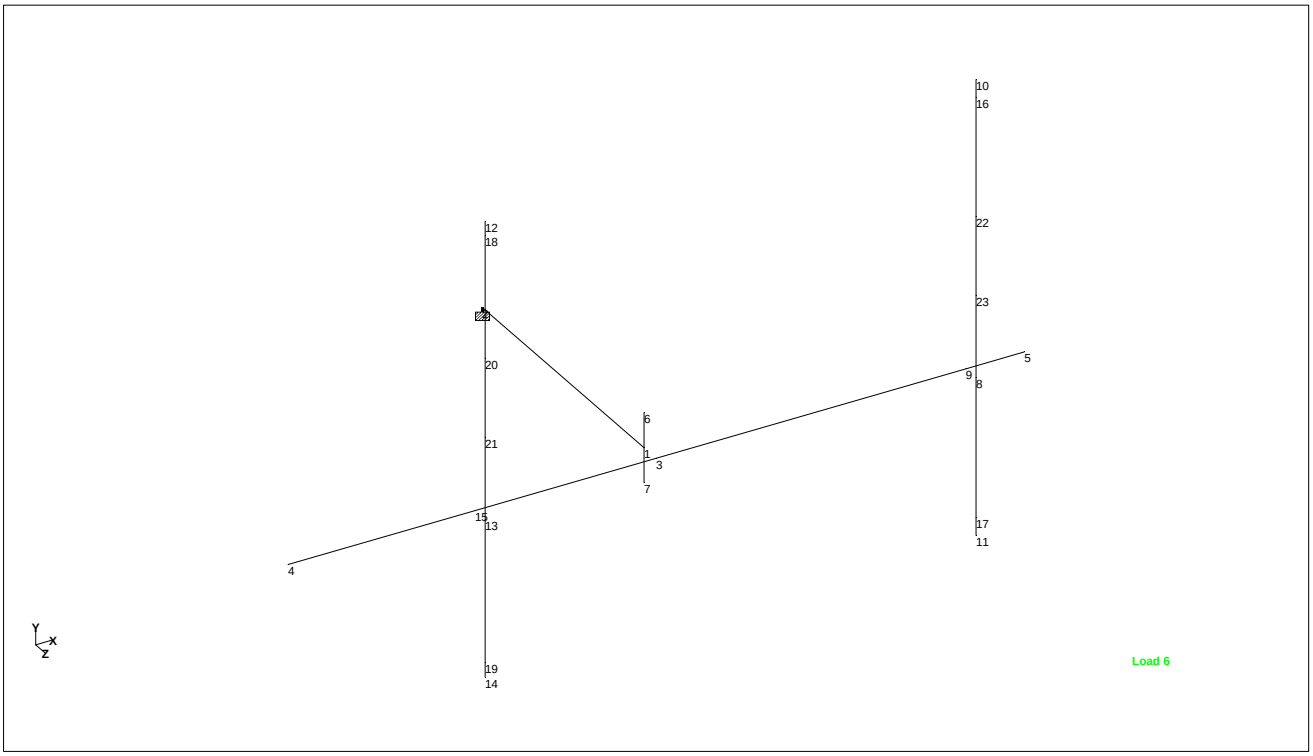
Type	L/C	Name
Combination	74	1.2D+1.5LM+1.0WM#9
Combination	75	1.2D+1.5LM+1.0WM#10
Combination	76	1.2D+1.5LM+1.0WM#11
Combination	77	1.2D+1.5LM+1.0WM#12
Combination	78	1.2D+1.5LV



3D Rendered View

Nodes

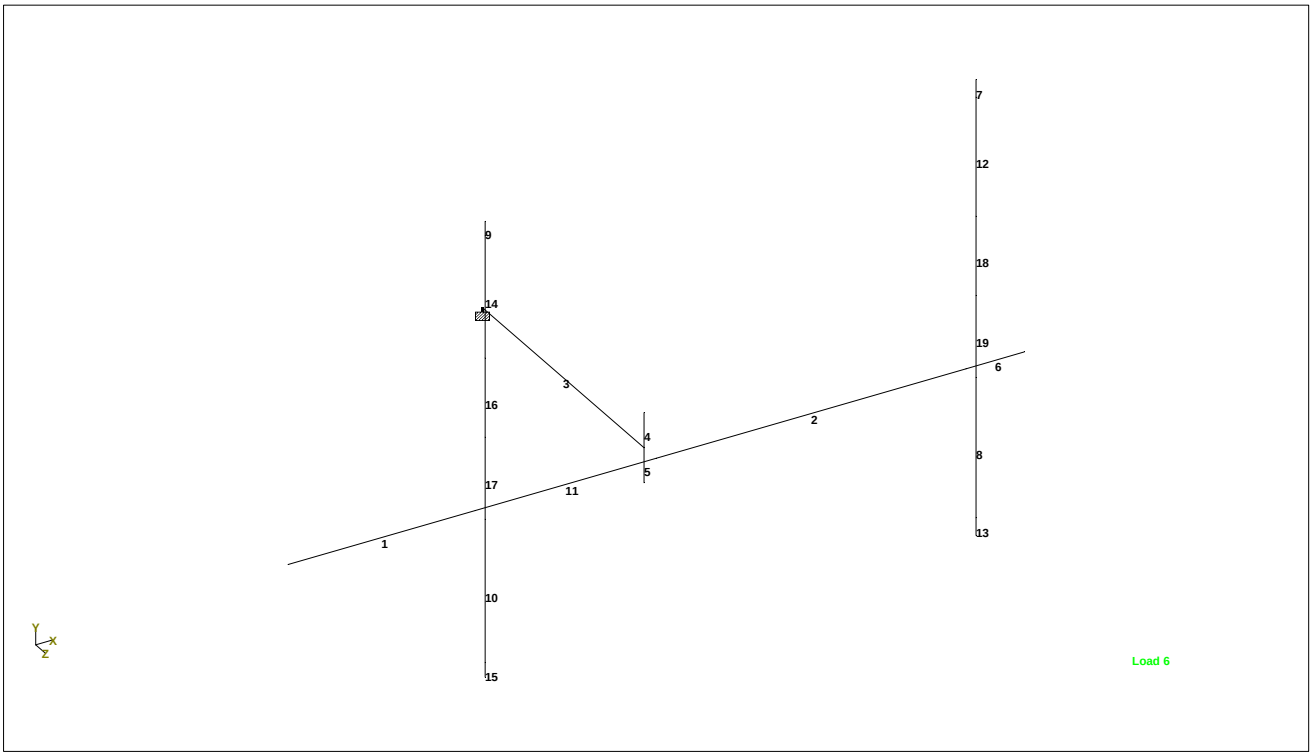
Node	X (ft)	Y (ft)	Z (ft)
1	0.000	0.000	-0.300
2	0.000	0.000	-4.300
3	0.000	0.000	0.000
4	-5.250	0.000	0.000
5	5.250	0.000	0.000
6	0.000	0.500	-0.300
7	0.000	-0.500	-0.300
8	4.417	0.000	0.250
9	4.417	0.000	0.000
10	4.417	4.250	0.250
11	4.417	-2.250	0.250
12	-2.583	4.250	0.250
13	-2.583	0.000	0.250
14	-2.583	-2.250	0.250
15	-2.583	0.000	0.000
16	4.417	4.000	0.250
17	4.417	-2.000	0.250
18	-2.583	4.042	0.250
19	-2.583	-2.042	0.250
20	-2.583	2.300	0.250
21	-2.583	1.170	0.250
22	4.417	2.300	0.250
23	4.417	1.170	0.250



Node Numbers

Beams

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
1	4	15	2.667	2	0
2	3	9	4.417	2	0
3	2	1	4.000	1	0
4	6	1	0.500	2	0
5	1	7	0.500	2	0
6	9	5	0.833	2	0
7	10	16	0.250	3	0
8	8	17	2.000	3	0
9	12	18	0.208	3	0
10	13	19	2.042	3	0
11	15	3	2.583	2	0
12	16	22	1.700	3	0
13	17	11	0.250	3	0
14	18	20	1.742	3	0
15	19	14	0.208	3	0
16	20	21	1.130	3	0
17	21	13	1.170	3	0
18	22	23	1.130	3	0
19	23	8	1.170	3	0



Beam Numbers

Section Properties

Prop	Section	Area (in^2)	I_{yy} (in^4)	I_{zz} (in^4)	J (in^4)	Material
1	HSST4X4X0.25	3.370	7.800	7.800	12.455	STEEL
2	PIPS30	2.070	2.850	2.850	5.689	STEEL
3	PIPS20	1.020	0.627	0.627	1.262	STEEL

Materials

Mat	Name	E (kip/in^2)	ν	Density (kip/in^3)	α (/°F)
1	STEEL	29E+3	0.300	0.000	6E -6
2	STAINLESSSTEEL	28E+3	0.300	0.000	10E -6
3	ALUMINUM	10E+3	0.330	0.000	13E -6
4	CONCRETE	3.15E+3	0.170	0.000	5E -6

Supports

Node	X (kip/in)	Y (kip/in)	Z (kip/in)	rX (kip-ft/deg)	rY (kip-ft/deg)	rZ (kip-ft/deg)
2	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed

Releases

There is no data of this type.

Primary Load Cases

Number	Name	Type
1	DEAD	Dead
2	WL#1	Wind
3	WL#2	Wind
4	WL#3	Wind
5	WL#4	Wind
6	WL#5	Wind
7	WL#6	Wind
8	DI	Ice
9	WLI#1	Wind on Ice
10	WLI#2	Wind on Ice
11	WLI#3	Wind on Ice
12	WLI#4	Wind on Ice
13	WLI#5	Wind on Ice
14	WLI#6	Wind on Ice
15	WLS#1	Wind
16	WLS#2	Wind
17	WLS#3	Wind
18	WLS#4	Wind
19	WLS#5	Wind
20	WLS#6	Wind
21	WLM#1	Wind
22	WLM#2	Wind
23	WLM#3	Wind
24	WLM#4	Wind
25	WLM#5	Wind
26	WLM#6	Wind
27	LM	Live
28	LV	Live

Combination Load Cases

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
29	1.2D+1.6WL#1	1	DEAD	1.20
		2	WL#1	1.60
30	1.2D+1.6WL#2	1	DEAD	1.20
		3	WL#2	1.60
31	1.2D+1.6WL#3	1	DEAD	1.20
		4	WL#3	1.60
32	1.2D+1.6WL#4	1	DEAD	1.20
		5	WL#4	1.60
33	1.2D+1.6WL#5	1	DEAD	1.20
		6	WL#5	1.60
34	1.2D+1.6WL#6	1	DEAD	1.20
		7	WL#6	1.60
35	1.2D+1.6WL#7	1	DEAD	1.20
		2	WL#1	-1.60
36	1.2D+1.6WL#8	1	DEAD	1.20
		3	WL#2	-1.60
37	1.2D+1.6WL#9	1	DEAD	1.20
		4	WL#3	-1.60
38	1.2D+1.6WL#10	1	DEAD	1.20
		5	WL#4	-1.60
39	1.2D+1.6WL#11	1	DEAD	1.20
		6	WL#5	-1.60
40	1.2D+1.6WL#12	1	DEAD	1.20
		7	WL#6	-1.60
41	1.2D+1.0DI+1.0WI#1	1	DEAD	1.20
		9	WLI#1	1.00
		8	DI	1.00
42	1.2D+1.0DI+1.0WI#2	1	DEAD	1.20
		10	WLI#2	1.00
		8	DI	1.00
43	1.2D+1.0DI+1.0WI#3	1	DEAD	1.20
		11	WLI#3	1.00
		8	DI	1.00
44	1.2D+1.0DI+1.0WI#4	1	DEAD	1.20
		12	WLI#4	1.00
		8	DI	1.00
45	1.2D+1.0DI+1.0WI#5	1	DEAD	1.20
		13	WLI#5	1.00
		8	DI	1.00
46	1.2D+1.0DI+1.0WI#6	1	DEAD	1.20
		14	WLI#6	1.00
		8	DI	1.00
47	1.2D+1.0DI+1.0WI#7	1	DEAD	1.20
		9	WLI#1	-1.00
		8	DI	1.00

Combination Load Cases Cont...

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
48	1.2D+1.0DI+1.0WI#8	1	DEAD	1.20
		10	WLI#2	-1.00
		8	DI	1.00
49	1.2D+1.0DI+1.0WI#9	1	DEAD	1.20
		11	WLI#3	-1.00
		8	DI	1.00
50	1.2D+1.0DI+1.0WI#10	1	DEAD	1.20
		12	WLI#4	-1.00
		8	DI	1.00
51	1.2D+1.0DI+1.0WI#11	1	DEAD	1.20
		13	WLI#5	-1.00
		8	DI	1.00
52	1.2D+1.0DI+1.0WI#12	1	DEAD	1.20
		14	WLI#6	-1.00
		8	DI	1.00
53	1.0D+1.0WLS#1	1	DEAD	1.00
		15	WLS#1	1.00
54	1.0D+1.0WLS#2	1	DEAD	1.00
		16	WLS#2	1.00
55	1.0D+1.0WLS#3	1	DEAD	1.00
		17	WLS#3	1.00
56	1.0D+1.0WLS#4	1	DEAD	1.00
		18	WLS#4	1.00
57	1.0D+1.0WLS#5	1	DEAD	1.00
		19	WLS#5	1.00
58	1.0D+1.0WLS#6	1	DEAD	1.00
		20	WLS#6	1.00
59	1.0D+1.0WLS#7	1	DEAD	1.00
		15	WLS#1	-1.00
60	1.0D+1.0WLS#8	1	DEAD	1.00
		16	WLS#2	-1.00
61	1.0D+1.0WLS#9	1	DEAD	1.00
		17	WLS#3	-1.00
62	1.0D+1.0WLS#10	1	DEAD	1.00
		18	WLS#4	-1.00
63	1.0D+1.0WLS#11	1	DEAD	1.00
		19	WLS#5	-1.00
64	1.0D+1.0WLS#12	1	DEAD	1.00
		20	WLS#6	-1.00
65	1.4D	1	DEAD	1.40
66	1.2D+1.5LM+1.0WM#1	1	DEAD	1.20
		21	WLM#1	1.00
		27	LM	1.50
67	1.2D+1.5LM+1.0WM#2	1	DEAD	1.20
		22	WLM#2	1.00

Combination Load Cases Cont...

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
		27	LM	1.50
68	1.2D+1.5LM+1.0WM#3	1	DEAD	1.20
		23	WLM#3	1.00
		27	LM	1.50
69	1.2D+1.5LM+1.0WM#4	1	DEAD	1.20
		24	WLM#4	1.00
		27	LM	1.50
70	1.2D+1.5LM+1.0WM#5	1	DEAD	1.20
		25	WLM#5	1.00
		27	LM	1.50
71	1.2D+1.5LM+1.0WM#6	1	DEAD	1.20
		26	WLM#6	1.00
		27	LM	1.50
72	1.2D+1.5LM+1.0WM#7	1	DEAD	1.20
		21	WLM#1	-1.00
		27	LM	1.50
73	1.2D+1.5LM+1.0WM#8	1	DEAD	1.20
		22	WLM#2	-1.00
		27	LM	1.50
74	1.2D+1.5LM+1.0WM#9	1	DEAD	1.20
		23	WLM#3	-1.00
		27	LM	1.50
75	1.2D+1.5LM+1.0WM#10	1	DEAD	1.20
		24	WLM#4	-1.00
		27	LM	1.50
76	1.2D+1.5LM+1.0WM#11	1	DEAD	1.20
		25	WLM#5	-1.00
		27	LM	1.50
77	1.2D+1.5LM+1.0WM#12	1	DEAD	1.20
		26	WLM#6	-1.00
		27	LM	1.50
78	1.2D+1.5LV	1	DEAD	1.20
		28	LV	1.50

1 DEAD : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	-	-0.029	-	-	-	-
17	-	-0.029	-	-	-	-
18	-	-0.063	-	-	-	-
19	-	-0.063	-	-	-	-
20	-	-0.026	-	-	-	-
21	-	-0.026	-	-	-	-
22	-	-0.026	-	-	-	-
23	-	-0.026	-	-	-	-

1 DEAD : Selfweight

Direction	Factor	Assigned Geometry
Y	-1.000	ALL

2 WL#1 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	-	-	-0.133	-	-	-
17	-	-	-0.133	-	-	-
18	-	-	-0.132	-	-	-
19	-	-	-0.132	-	-	-

2 WL#1 : Beam Loads

Beam	Type		Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI	lbf/ft	GZ	-6.800	-	-	-	-
2	UNI	lbf/ft	GZ	-6.800	-	-	-	-
3	UNI	lbf/ft	GZ	-13.000	-	-	-	-
4	UNI	lbf/ft	GZ	-6.800	-	-	-	-
5	UNI	lbf/ft	GZ	-6.800	-	-	-	-
6	UNI	lbf/ft	GZ	-6.800	-	-	-	-
11	UNI	lbf/ft	GZ	-6.800	-	-	-	-

3 WL#2 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.061	-	-0.106	-	-	-
17	0.061	-	-0.106	-	-	-
18	0.063	-	-0.110	-	-	-
19	0.063	-	-0.110	-	-	-

3 WL#2 : Beam Loads

Beam	Type		Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI	lbf/ft	GZ	-6.800	-	-	-	-
2	UNI	lbf/ft	GZ	-6.800	-	-	-	-
3	UNI	lbf/ft	GZ	-13.000	-	-	-	-
4	UNI	lbf/ft	GZ	-6.800	-	-	-	-
5	UNI	lbf/ft	GZ	-6.800	-	-	-	-
6	UNI	lbf/ft	GZ	-6.800	-	-	-	-
11	UNI	lbf/ft	GZ	-6.800	-	-	-	-

4 WL#3 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.086	-	-0.049	-	-	-
17	0.086	-	-0.049	-	-	-
18	0.101	-	-0.058	-	-	-
19	0.101	-	-0.058	-	-	-
20	0.015	-	-0.009	-	-	-
21	0.015	-	-0.009	-	-	-
22	0.014	-	-0.008	-	-	-
23	0.014	-	-0.008	-	-	-

4 WL#3 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	6.800	-	-	-	-
2	UNI lbf/ft	GX	6.800	-	-	-	-
3	UNI lbf/ft	GX	13.000	-	-	-	-
4	UNI lbf/ft	GX	6.800	-	-	-	-
5	UNI lbf/ft	GX	6.800	-	-	-	-
6	UNI lbf/ft	GX	6.800	-	-	-	-
7	UNI lbf/ft	GX	4.900	-	-	-	-
8	UNI lbf/ft	GX	4.900	-	-	-	-
9	UNI lbf/ft	GX	4.900	-	-	-	-
10	UNI lbf/ft	GX	4.900	-	-	-	-
11	UNI lbf/ft	GX	4.900	-	-	-	-
	UNI lbf/ft	GX	6.800	-	-	-	-
12	UNI lbf/ft	GX	4.900	-	-	-	-
13	UNI lbf/ft	GX	4.900	-	-	-	-
14	UNI lbf/ft	GX	4.900	-	-	-	-
15	UNI lbf/ft	GX	4.900	-	-	-	-
16	UNI lbf/ft	GX	4.900	-	-	-	-
17	UNI lbf/ft	GX	4.900	-	-	-	-
18	UNI lbf/ft	GX	4.900	-	-	-	-
19	UNI lbf/ft	GX	4.900	-	-	-	-

5 WL#4 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.088	-	-	-	-	-
17	0.088	-	-	-	-	-
18	0.110	-	-	-	-	-
19	0.110	-	-	-	-	-
20	0.012	-	-	-	-	-
21	0.012	-	-	-	-	-
22	0.011	-	-	-	-	-
23	0.011	-	-	-	-	-

5 WL#4 : Beam Loads

Beam	Type		Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI	lbf/ft	GX	6.800	-	-	-	-
2	UNI	lbf/ft	GX	6.800	-	-	-	-
3	UNI	lbf/ft	GX	13.000	-	-	-	-
4	UNI	lbf/ft	GX	6.800	-	-	-	-
5	UNI	lbf/ft	GX	6.800	-	-	-	-
6	UNI	lbf/ft	GX	6.800	-	-	-	-
7	UNI	lbf/ft	GX	4.900	-	-	-	-
8	UNI	lbf/ft	GX	4.900	-	-	-	-
9	UNI	lbf/ft	GX	4.900	-	-	-	-
10	UNI	lbf/ft	GX	4.900	-	-	-	-
11	UNI	lbf/ft	GX	4.900	-	-	-	-
	UNI	lbf/ft	GX	6.800	-	-	-	-
12	UNI	lbf/ft	GX	4.900	-	-	-	-
13	UNI	lbf/ft	GX	4.900	-	-	-	-
14	UNI	lbf/ft	GX	4.900	-	-	-	-
15	UNI	lbf/ft	GX	4.900	-	-	-	-
16	UNI	lbf/ft	GX	4.900	-	-	-	-
17	UNI	lbf/ft	GX	4.900	-	-	-	-
18	UNI	lbf/ft	GX	4.900	-	-	-	-
19	UNI	lbf/ft	GX	4.900	-	-	-	-

6 WL#5 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.086	-	0.049	-	-	-
17	0.086	-	0.049	-	-	-
18	0.101	-	0.058	-	-	-
19	0.101	-	0.058	-	-	-
20	0.015	-	0.009	-	-	-
21	0.015	-	0.009	-	-	-
22	0.014	-	0.008	-	-	-
23	0.014	-	0.008	-	-	-

6 WL#5 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	6.800	-	-	-	-
2	UNI lbf/ft	GX	6.800	-	-	-	-
3	UNI lbf/ft	GX	13.000	-	-	-	-
4	UNI lbf/ft	GX	6.800	-	-	-	-
5	UNI lbf/ft	GX	6.800	-	-	-	-
6	UNI lbf/ft	GX	6.800	-	-	-	-
7	UNI lbf/ft	GX	4.900	-	-	-	-
8	UNI lbf/ft	GX	4.900	-	-	-	-
9	UNI lbf/ft	GX	4.900	-	-	-	-
10	UNI lbf/ft	GX	4.900	-	-	-	-
11	UNI lbf/ft	GX	4.900	-	-	-	-
	UNI lbf/ft	GX	6.800	-	-	-	-
12	UNI lbf/ft	GX	4.900	-	-	-	-
13	UNI lbf/ft	GX	4.900	-	-	-	-
14	UNI lbf/ft	GX	4.900	-	-	-	-
15	UNI lbf/ft	GX	4.900	-	-	-	-
16	UNI lbf/ft	GX	4.900	-	-	-	-
17	UNI lbf/ft	GX	4.900	-	-	-	-
18	UNI lbf/ft	GX	4.900	-	-	-	-
19	UNI lbf/ft	GX	4.900	-	-	-	-

7 WL#6 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.061	-	0.106	-	-	-
17	0.061	-	0.106	-	-	-
18	0.063	-	0.110	-	-	-
19	0.063	-	0.110	-	-	-

7 WL#6 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	6.800	-	-	-	-
2	UNI lbf/ft	GZ	6.800	-	-	-	-
3	UNI lbf/ft	GZ	13.000	-	-	-	-
4	UNI lbf/ft	GZ	6.800	-	-	-	-
5	UNI lbf/ft	GZ	6.800	-	-	-	-
6	UNI lbf/ft	GZ	6.800	-	-	-	-
11	UNI lbf/ft	GZ	6.800	-	-	-	-

8 DI : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	-	-0.103	-	-	-	-
17	-	-0.103	-	-	-	-
18	-	-0.111	-	-	-	-
19	-	-0.111	-	-	-	-
20	-	-0.026	-	-	-	-
21	-	-0.026	-	-	-	-
22	-	-0.026	-	-	-	-
23	-	-0.026	-	-	-	-

8 DI : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GY	-11.400	-	-	-	-
2	UNI lbf/ft	GY	-11.400	-	-	-	-
3	UNI lbf/ft	GY	-16.100	-	-	-	-
4	UNI lbf/ft	GY	-11.400	-	-	-	-
5	UNI lbf/ft	GY	-11.400	-	-	-	-
6	UNI lbf/ft	GY	-11.400	-	-	-	-
7	UNI lbf/ft	GY	-9.000	-	-	-	-
8	UNI lbf/ft	GY	-9.000	-	-	-	-
9	UNI lbf/ft	GY	-9.000	-	-	-	-
10	UNI lbf/ft	GY	-9.000	-	-	-	-
11	UNI lbf/ft	GY	-9.000	-	-	-	-
	UNI lbf/ft	GY	-11.400	-	-	-	-
12	UNI lbf/ft	GY	-9.000	-	-	-	-
13	UNI lbf/ft	GY	-9.000	-	-	-	-
14	UNI lbf/ft	GY	-9.000	-	-	-	-
15	UNI lbf/ft	GY	-9.000	-	-	-	-
16	UNI lbf/ft	GY	-9.000	-	-	-	-
17	UNI lbf/ft	GY	-9.000	-	-	-	-
18	UNI lbf/ft	GY	-9.000	-	-	-	-
19	UNI lbf/ft	GY	-9.000	-	-	-	-

9 WLI#1 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	-	-	-0.047	-	-	-
17	-	-	-0.047	-	-	-
18	-	-	-0.046	-	-	-
19	-	-	-0.046	-	-	-

9 WLI#1 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	-3.600	-	-	-	-
2	UNI lbf/ft	GZ	-3.600	-	-	-	-
3	UNI lbf/ft	GZ	-6.600	-	-	-	-
4	UNI lbf/ft	GZ	-3.600	-	-	-	-
5	UNI lbf/ft	GZ	-3.600	-	-	-	-
6	UNI lbf/ft	GZ	-3.600	-	-	-	-
11	UNI lbf/ft	GZ	-3.600	-	-	-	-

10 WLI#2 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.022	-	-0.038	-	-	-
17	0.022	-	-0.038	-	-	-
18	0.022	-	-0.039	-	-	-
19	0.022	-	-0.039	-	-	-

10 WLI#2 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	-3.600	-	-	-	-
2	UNI lbf/ft	GZ	-3.600	-	-	-	-
3	UNI lbf/ft	GZ	-6.600	-	-	-	-
4	UNI lbf/ft	GZ	-3.600	-	-	-	-
5	UNI lbf/ft	GZ	-3.600	-	-	-	-
6	UNI lbf/ft	GZ	-3.600	-	-	-	-
11	UNI lbf/ft	GZ	-3.600	-	-	-	-

11 WLI#3 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.033	-	-0.019	-	-	-
17	0.033	-	-0.019	-	-	-
18	0.036	-	-0.021	-	-	-
19	0.036	-	-0.021	-	-	-
20	0.008	-	-0.005	-	-	-
21	0.008	-	-0.005	-	-	-
22	0.008	-	-0.005	-	-	-
23	0.008	-	-0.005	-	-	-

11 WLI#3 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	3.600	-	-	-	-
2	UNI lbf/ft	GX	3.600	-	-	-	-
3	UNI lbf/ft	GX	6.600	-	-	-	-
4	UNI lbf/ft	GX	3.600	-	-	-	-
5	UNI lbf/ft	GX	3.600	-	-	-	-
6	UNI lbf/ft	GX	3.600	-	-	-	-
7	UNI lbf/ft	GX	3.000	-	-	-	-
8	UNI lbf/ft	GX	3.000	-	-	-	-
9	UNI lbf/ft	GX	3.000	-	-	-	-
10	UNI lbf/ft	GX	3.000	-	-	-	-
11	UNI lbf/ft	GX	3.000	-	-	-	-
	UNI lbf/ft	GX	3.600	-	-	-	-
12	UNI lbf/ft	GX	3.000	-	-	-	-
13	UNI lbf/ft	GX	3.000	-	-	-	-
14	UNI lbf/ft	GX	3.000	-	-	-	-
15	UNI lbf/ft	GX	3.000	-	-	-	-
16	UNI lbf/ft	GX	3.000	-	-	-	-
17	UNI lbf/ft	GX	3.000	-	-	-	-
18	UNI lbf/ft	GX	3.000	-	-	-	-
19	UNI lbf/ft	GX	3.000	-	-	-	-

12 WLI#4 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.035	-	-	-	-	-
17	0.035	-	-	-	-	-
18	0.040	-	-	-	-	-
19	0.040	-	-	-	-	-
20	0.008	-	-	-	-	-
21	0.008	-	-	-	-	-
22	0.007	-	-	-	-	-
23	0.007	-	-	-	-	-

12 WLI#4 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	3.600	-	-	-	-
2	UNI lbf/ft	GX	3.600	-	-	-	-
3	UNI lbf/ft	GX	6.600	-	-	-	-
4	UNI lbf/ft	GX	3.600	-	-	-	-
5	UNI lbf/ft	GX	3.600	-	-	-	-
6	UNI lbf/ft	GX	3.600	-	-	-	-
7	UNI lbf/ft	GX	3.000	-	-	-	-
8	UNI lbf/ft	GX	3.000	-	-	-	-
9	UNI lbf/ft	GX	3.000	-	-	-	-
10	UNI lbf/ft	GX	3.000	-	-	-	-
11	UNI lbf/ft	GX	3.000	-	-	-	-
	UNI lbf/ft	GX	3.600	-	-	-	-
12	UNI lbf/ft	GX	3.000	-	-	-	-
13	UNI lbf/ft	GX	3.000	-	-	-	-
14	UNI lbf/ft	GX	3.000	-	-	-	-
15	UNI lbf/ft	GX	3.000	-	-	-	-
16	UNI lbf/ft	GX	3.000	-	-	-	-
17	UNI lbf/ft	GX	3.000	-	-	-	-
18	UNI lbf/ft	GX	3.000	-	-	-	-
19	UNI lbf/ft	GX	3.000	-	-	-	-

13 WLI#5 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.033	-	0.019	-	-	-
17	0.033	-	0.019	-	-	-
18	0.036	-	0.021	-	-	-
19	0.036	-	0.021	-	-	-
20	0.008	-	0.005	-	-	-
21	0.008	-	0.005	-	-	-
22	0.008	-	0.005	-	-	-
23	0.008	-	0.005	-	-	-

13 WLI#5 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	3.600	-	-	-	-
2	UNI lbf/ft	GX	3.600	-	-	-	-
3	UNI lbf/ft	GX	6.600	-	-	-	-
4	UNI lbf/ft	GX	3.600	-	-	-	-
5	UNI lbf/ft	GX	3.600	-	-	-	-
6	UNI lbf/ft	GX	3.600	-	-	-	-
7	UNI lbf/ft	GX	3.000	-	-	-	-
8	UNI lbf/ft	GX	3.000	-	-	-	-
9	UNI lbf/ft	GX	3.000	-	-	-	-
10	UNI lbf/ft	GX	3.000	-	-	-	-
11	UNI lbf/ft	GX	3.000	-	-	-	-
	UNI lbf/ft	GX	3.600	-	-	-	-
12	UNI lbf/ft	GX	3.000	-	-	-	-
13	UNI lbf/ft	GX	3.000	-	-	-	-
14	UNI lbf/ft	GX	3.000	-	-	-	-
15	UNI lbf/ft	GX	3.000	-	-	-	-
16	UNI lbf/ft	GX	3.000	-	-	-	-
17	UNI lbf/ft	GX	3.000	-	-	-	-
18	UNI lbf/ft	GX	3.000	-	-	-	-
19	UNI lbf/ft	GX	3.000	-	-	-	-

14 WLI#6 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.022	-	0.038	-	-	-
17	0.022	-	0.038	-	-	-
18	0.022	-	0.039	-	-	-
19	0.022	-	0.039	-	-	-

14 WLI#6 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	3.600	-	-	-	-
2	UNI lbf/ft	GZ	3.600	-	-	-	-
3	UNI lbf/ft	GZ	6.600	-	-	-	-
4	UNI lbf/ft	GZ	3.600	-	-	-	-
5	UNI lbf/ft	GZ	3.600	-	-	-	-
6	UNI lbf/ft	GZ	3.600	-	-	-	-
11	UNI lbf/ft	GZ	3.600	-	-	-	-

15 WLS#1 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	-	-	-0.046	-	-	-
17	-	-	-0.046	-	-	-
18	-	-	-0.046	-	-	-
19	-	-	-0.046	-	-	-

15 WLS#1 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	-2.300	-	-	-	-
2	UNI lbf/ft	GZ	-2.300	-	-	-	-
3	UNI lbf/ft	GZ	-4.500	-	-	-	-
4	UNI lbf/ft	GZ	-2.300	-	-	-	-
5	UNI lbf/ft	GZ	-2.300	-	-	-	-
6	UNI lbf/ft	GZ	-2.300	-	-	-	-
11	UNI lbf/ft	GZ	-2.300	-	-	-	-

16 WLS#2 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.021	-	-0.036	-	-	-
17	0.021	-	-0.036	-	-	-
18	0.022	-	-0.038	-	-	-
19	0.022	-	-0.038	-	-	-

16 WLS#2 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	-2.300	-	-	-	-
2	UNI lbf/ft	GZ	-2.300	-	-	-	-
3	UNI lbf/ft	GZ	-4.500	-	-	-	-
4	UNI lbf/ft	GZ	-2.300	-	-	-	-
5	UNI lbf/ft	GZ	-2.300	-	-	-	-
6	UNI lbf/ft	GZ	-2.300	-	-	-	-
11	UNI lbf/ft	GZ	-2.300	-	-	-	-

17 WLS#3 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.030	-	-0.017	-	-	-
17	0.030	-	-0.017	-	-	-
18	0.035	-	-0.020	-	-	-
19	0.035	-	-0.020	-	-	-
20	0.005	-	-0.003	-	-	-
21	0.005	-	-0.003	-	-	-
22	0.005	-	-0.003	-	-	-
23	0.005	-	-0.003	-	-	-

17 WLS#3 : Beam Loads

Beam	Type		Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI	lbf/ft	GX	2.300	-	-	-	-
2	UNI	lbf/ft	GX	2.300	-	-	-	-
3	UNI	lbf/ft	GX	4.500	-	-	-	-
4	UNI	lbf/ft	GX	2.300	-	-	-	-
5	UNI	lbf/ft	GX	2.300	-	-	-	-
6	UNI	lbf/ft	GX	2.300	-	-	-	-
7	UNI	lbf/ft	GX	1.700	-	-	-	-
8	UNI	lbf/ft	GX	1.700	-	-	-	-
9	UNI	lbf/ft	GX	1.700	-	-	-	-
10	UNI	lbf/ft	GX	1.700	-	-	-	-
11	UNI	lbf/ft	GX	1.700	-	-	-	-
	UNI	lbf/ft	GX	2.300	-	-	-	-
12	UNI	lbf/ft	GX	1.700	-	-	-	-
13	UNI	lbf/ft	GX	1.700	-	-	-	-
14	UNI	lbf/ft	GX	1.700	-	-	-	-
15	UNI	lbf/ft	GX	1.700	-	-	-	-
16	UNI	lbf/ft	GX	1.700	-	-	-	-
17	UNI	lbf/ft	GX	1.700	-	-	-	-
18	UNI	lbf/ft	GX	1.700	-	-	-	-
19	UNI	lbf/ft	GX	1.700	-	-	-	-

18 WLS#4 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.030	-	-	-	-	-
17	0.030	-	-	-	-	-
18	0.038	-	-	-	-	-
19	0.038	-	-	-	-	-
20	0.004	-	-	-	-	-
21	0.004	-	-	-	-	-
22	0.004	-	-	-	-	-
23	0.004	-	-	-	-	-

18 WLS#4 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	2.300	-	-	-	-
2	UNI lbf/ft	GX	2.300	-	-	-	-
3	UNI lbf/ft	GX	4.500	-	-	-	-
4	UNI lbf/ft	GX	2.300	-	-	-	-
5	UNI lbf/ft	GX	2.300	-	-	-	-
6	UNI lbf/ft	GX	2.300	-	-	-	-
7	UNI lbf/ft	GX	1.700	-	-	-	-
8	UNI lbf/ft	GX	1.700	-	-	-	-
9	UNI lbf/ft	GX	1.700	-	-	-	-
10	UNI lbf/ft	GX	1.700	-	-	-	-
11	UNI lbf/ft	GX	1.700	-	-	-	-
	UNI lbf/ft	GX	2.300	-	-	-	-
12	UNI lbf/ft	GX	1.700	-	-	-	-
13	UNI lbf/ft	GX	1.700	-	-	-	-
14	UNI lbf/ft	GX	1.700	-	-	-	-
15	UNI lbf/ft	GX	1.700	-	-	-	-
16	UNI lbf/ft	GX	1.700	-	-	-	-
17	UNI lbf/ft	GX	1.700	-	-	-	-
18	UNI lbf/ft	GX	1.700	-	-	-	-
19	UNI lbf/ft	GX	1.700	-	-	-	-

19 WLS#5 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.030	-	0.017	-	-	-
17	0.030	-	0.017	-	-	-
18	0.035	-	0.020	-	-	-
19	0.035	-	0.020	-	-	-
20	0.005	-	0.003	-	-	-
21	0.005	-	0.003	-	-	-
22	0.005	-	0.003	-	-	-
23	0.005	-	0.003	-	-	-

19 WLS#5 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	2.300	-	-	-	-
2	UNI lbf/ft	GX	2.300	-	-	-	-
3	UNI lbf/ft	GX	4.500	-	-	-	-
4	UNI lbf/ft	GX	2.300	-	-	-	-
5	UNI lbf/ft	GX	2.300	-	-	-	-
6	UNI lbf/ft	GX	2.300	-	-	-	-
7	UNI lbf/ft	GX	1.700	-	-	-	-
8	UNI lbf/ft	GX	1.700	-	-	-	-
9	UNI lbf/ft	GX	1.700	-	-	-	-
10	UNI lbf/ft	GX	1.700	-	-	-	-
11	UNI lbf/ft	GX	1.700	-	-	-	-
	UNI lbf/ft	GX	2.300	-	-	-	-
12	UNI lbf/ft	GX	1.700	-	-	-	-
13	UNI lbf/ft	GX	1.700	-	-	-	-
14	UNI lbf/ft	GX	1.700	-	-	-	-
15	UNI lbf/ft	GX	1.700	-	-	-	-
16	UNI lbf/ft	GX	1.700	-	-	-	-
17	UNI lbf/ft	GX	1.700	-	-	-	-
18	UNI lbf/ft	GX	1.700	-	-	-	-
19	UNI lbf/ft	GX	1.700	-	-	-	-

20 WLS#6 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.021	-	0.036	-	-	-
17	0.021	-	0.036	-	-	-
18	0.022	-	0.038	-	-	-
19	0.022	-	0.038	-	-	-

20 WLS#6 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	2.300	-	-	-	-
2	UNI lbf/ft	GZ	2.300	-	-	-	-
3	UNI lbf/ft	GZ	4.500	-	-	-	-
4	UNI lbf/ft	GZ	2.300	-	-	-	-
5	UNI lbf/ft	GZ	2.300	-	-	-	-
6	UNI lbf/ft	GZ	2.300	-	-	-	-
11	UNI lbf/ft	GZ	2.300	-	-	-	-

21 WLM#1 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	-	-	-0.013	-	-	-
17	-	-	-0.013	-	-	-
18	-	-	-0.013	-	-	-
19	-	-	-0.013	-	-	-

21 WLM#1 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	-0.700	-	-	-	-
2	UNI lbf/ft	GZ	-0.700	-	-	-	-
3	UNI lbf/ft	GZ	-1.300	-	-	-	-
4	UNI lbf/ft	GZ	-0.700	-	-	-	-
5	UNI lbf/ft	GZ	-0.700	-	-	-	-
6	UNI lbf/ft	GZ	-0.700	-	-	-	-
11	UNI lbf/ft	GZ	-0.700	-	-	-	-

22 WLM#2 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.006	-	-0.010	-	-	-
17	0.006	-	-0.010	-	-	-
18	0.006	-	-0.011	-	-	-
19	0.006	-	-0.011	-	-	-

22 WLM#2 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	-0.700	-	-	-	-
2	UNI lbf/ft	GZ	-0.700	-	-	-	-
3	UNI lbf/ft	GZ	-1.300	-	-	-	-
4	UNI lbf/ft	GZ	-0.700	-	-	-	-
5	UNI lbf/ft	GZ	-0.700	-	-	-	-
6	UNI lbf/ft	GZ	-0.700	-	-	-	-
11	UNI lbf/ft	GZ	-0.700	-	-	-	-

23 WLM#3 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.009	-	-0.005	-	-	-
17	0.009	-	-0.005	-	-	-
18	0.010	-	-0.006	-	-	-
19	0.010	-	-0.006	-	-	-
20	0.002	-	-0.001	-	-	-
21	0.002	-	-0.001	-	-	-
22	0.001	-	-0.001	-	-	-
23	0.001	-	-0.001	-	-	-

23 WLM#3 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	0.700	-	-	-	-
2	UNI lbf/ft	GX	0.700	-	-	-	-
3	UNI lbf/ft	GX	1.300	-	-	-	-
4	UNI lbf/ft	GX	0.700	-	-	-	-
5	UNI lbf/ft	GX	0.700	-	-	-	-
6	UNI lbf/ft	GX	0.700	-	-	-	-
7	UNI lbf/ft	GX	0.500	-	-	-	-
8	UNI lbf/ft	GX	0.500	-	-	-	-
9	UNI lbf/ft	GX	0.500	-	-	-	-
10	UNI lbf/ft	GX	0.500	-	-	-	-
11	UNI lbf/ft	GX	0.500	-	-	-	-
	UNI lbf/ft	GX	0.700	-	-	-	-
12	UNI lbf/ft	GX	0.500	-	-	-	-
13	UNI lbf/ft	GX	0.500	-	-	-	-
14	UNI lbf/ft	GX	0.500	-	-	-	-
15	UNI lbf/ft	GX	0.500	-	-	-	-
16	UNI lbf/ft	GX	0.500	-	-	-	-
17	UNI lbf/ft	GX	0.500	-	-	-	-
18	UNI lbf/ft	GX	0.500	-	-	-	-

23 WLM#3 : Beam Loads Cont...

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
19	UNI lbf/ft	GX	0.500	-	-	-	-

24 WLM#4 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.009	-	-	-	-	-
17	0.009	-	-	-	-	-
18	0.011	-	-	-	-	-
19	0.011	-	-	-	-	-
20	0.001	-	-	-	-	-
21	0.001	-	-	-	-	-
22	0.001	-	-	-	-	-
23	0.001	-	-	-	-	-

24 WLM#4 : Beam Loads

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GX	0.700	-	-	-	-
2	UNI lbf/ft	GX	0.700	-	-	-	-
3	UNI lbf/ft	GX	1.300	-	-	-	-
4	UNI lbf/ft	GX	0.700	-	-	-	-
5	UNI lbf/ft	GX	0.700	-	-	-	-
6	UNI lbf/ft	GX	0.700	-	-	-	-
7	UNI lbf/ft	GX	0.500	-	-	-	-
8	UNI lbf/ft	GX	0.500	-	-	-	-
9	UNI lbf/ft	GX	0.500	-	-	-	-
10	UNI lbf/ft	GX	0.500	-	-	-	-
11	UNI lbf/ft	GX	0.500	-	-	-	-
	UNI lbf/ft	GX	0.700	-	-	-	-
12	UNI lbf/ft	GX	0.500	-	-	-	-
13	UNI lbf/ft	GX	0.500	-	-	-	-
14	UNI lbf/ft	GX	0.500	-	-	-	-
15	UNI lbf/ft	GX	0.500	-	-	-	-
16	UNI lbf/ft	GX	0.500	-	-	-	-
17	UNI lbf/ft	GX	0.500	-	-	-	-
18	UNI lbf/ft	GX	0.500	-	-	-	-
19	UNI lbf/ft	GX	0.500	-	-	-	-

25 WLM#5 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.009	-	0.005	-	-	-
17	0.009	-	0.005	-	-	-
18	0.010	-	0.006	-	-	-
19	0.010	-	0.006	-	-	-
20	0.002	-	0.001	-	-	-
21	0.002	-	0.001	-	-	-
22	0.001	-	0.001	-	-	-
23	0.001	-	0.001	-	-	-

25 WLM#5 : Beam Loads

Beam	Type		Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI	lbf/ft	GX	0.700	-	-	-	-
2	UNI	lbf/ft	GX	0.700	-	-	-	-
3	UNI	lbf/ft	GX	1.300	-	-	-	-
4	UNI	lbf/ft	GX	0.700	-	-	-	-
5	UNI	lbf/ft	GX	0.700	-	-	-	-
6	UNI	lbf/ft	GX	0.700	-	-	-	-
7	UNI	lbf/ft	GX	0.500	-	-	-	-
8	UNI	lbf/ft	GX	0.500	-	-	-	-
9	UNI	lbf/ft	GX	0.500	-	-	-	-
10	UNI	lbf/ft	GX	0.500	-	-	-	-
11	UNI	lbf/ft	GX	0.500	-	-	-	-
	UNI	lbf/ft	GX	0.700	-	-	-	-
12	UNI	lbf/ft	GX	0.500	-	-	-	-
13	UNI	lbf/ft	GX	0.500	-	-	-	-
14	UNI	lbf/ft	GX	0.500	-	-	-	-
15	UNI	lbf/ft	GX	0.500	-	-	-	-
16	UNI	lbf/ft	GX	0.500	-	-	-	-
17	UNI	lbf/ft	GX	0.500	-	-	-	-
18	UNI	lbf/ft	GX	0.500	-	-	-	-
19	UNI	lbf/ft	GX	0.500	-	-	-	-

26 WLM#6 : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
16	0.006	-	0.010	-	-	-
17	0.006	-	0.010	-	-	-
18	0.006	-	0.011	-	-	-
19	0.006	-	0.011	-	-	-

26 WLM#6 : Beam Loads

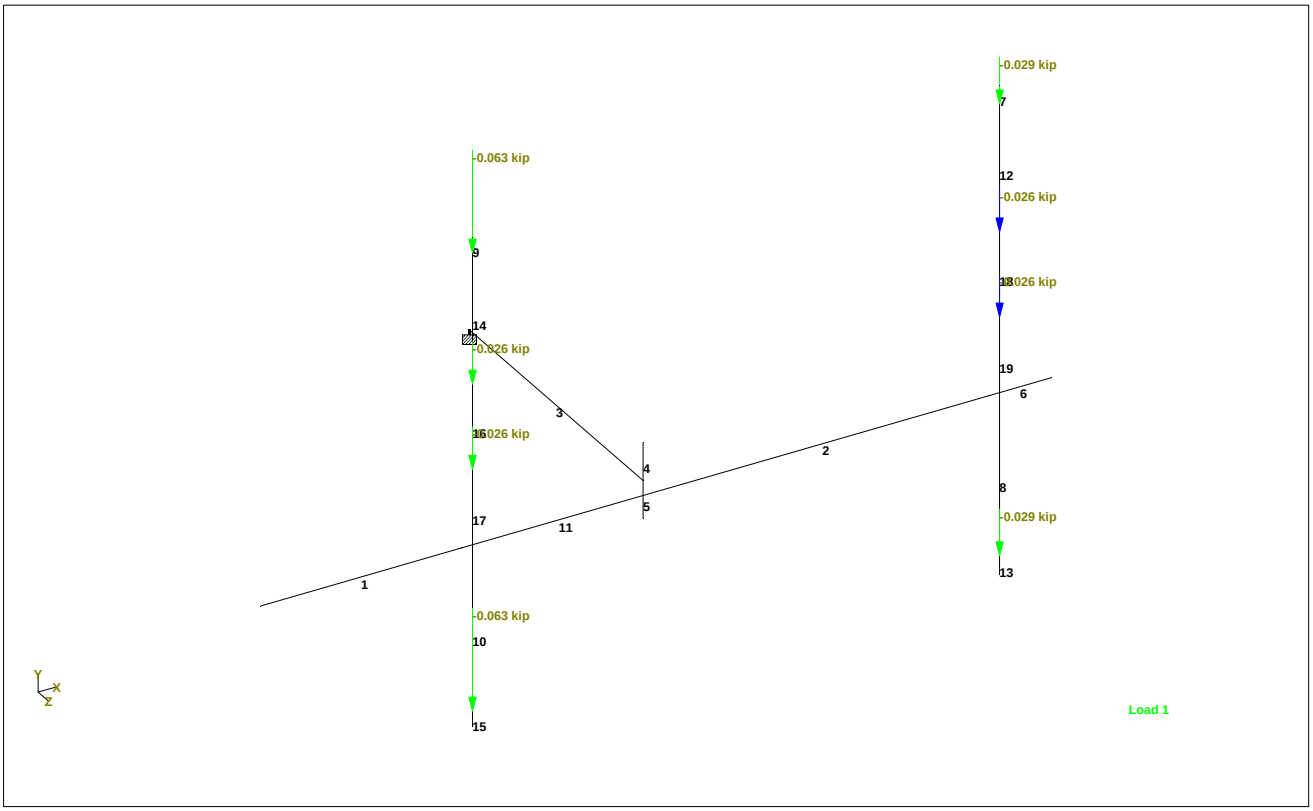
Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
1	UNI lbf/ft	GZ	0.700	-	-	-	-
2	UNI lbf/ft	GZ	0.700	-	-	-	-
3	UNI lbf/ft	GZ	1.300	-	-	-	-
4	UNI lbf/ft	GZ	0.700	-	-	-	-
5	UNI lbf/ft	GZ	0.700	-	-	-	-
6	UNI lbf/ft	GZ	0.700	-	-	-	-
11	UNI lbf/ft	GZ	0.700	-	-	-	-

27 LM : Node Loads

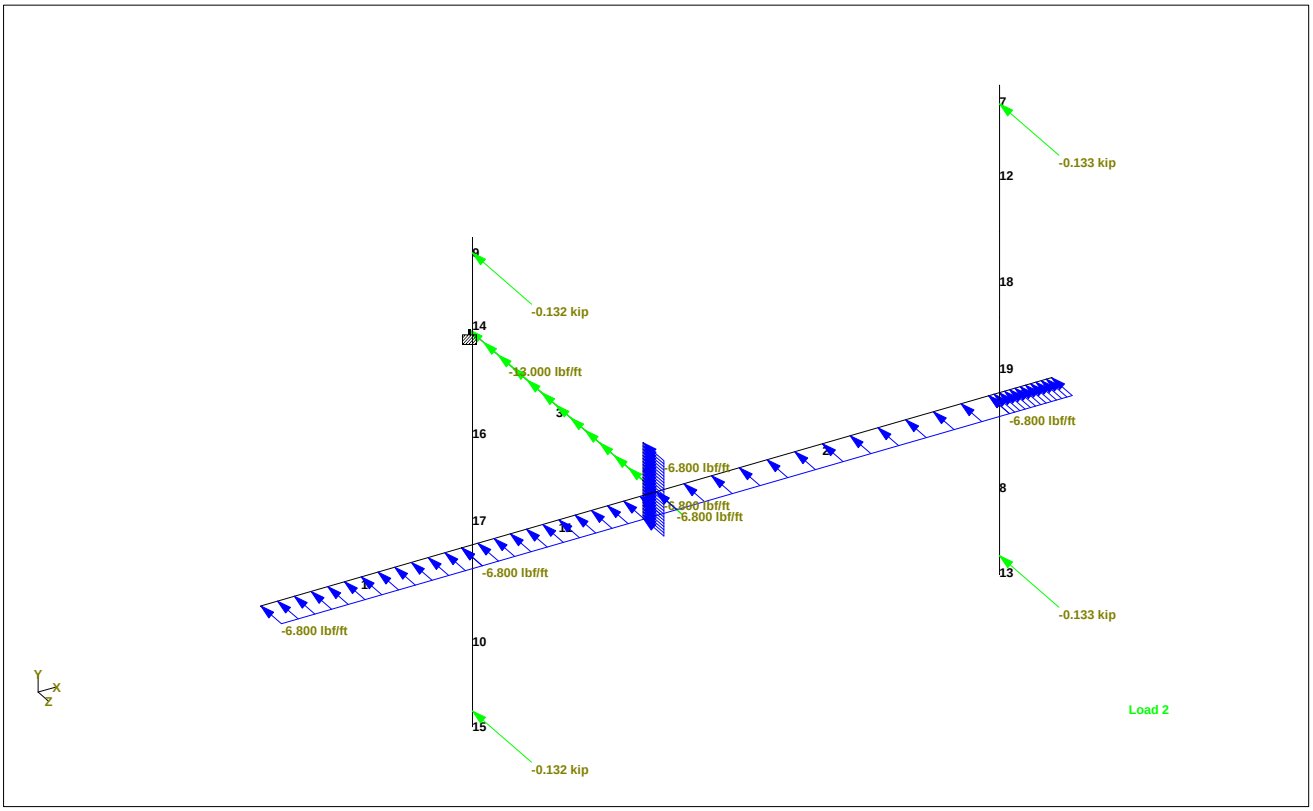
Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
14	-	-	-	-	-	-

28 LV : Node Loads

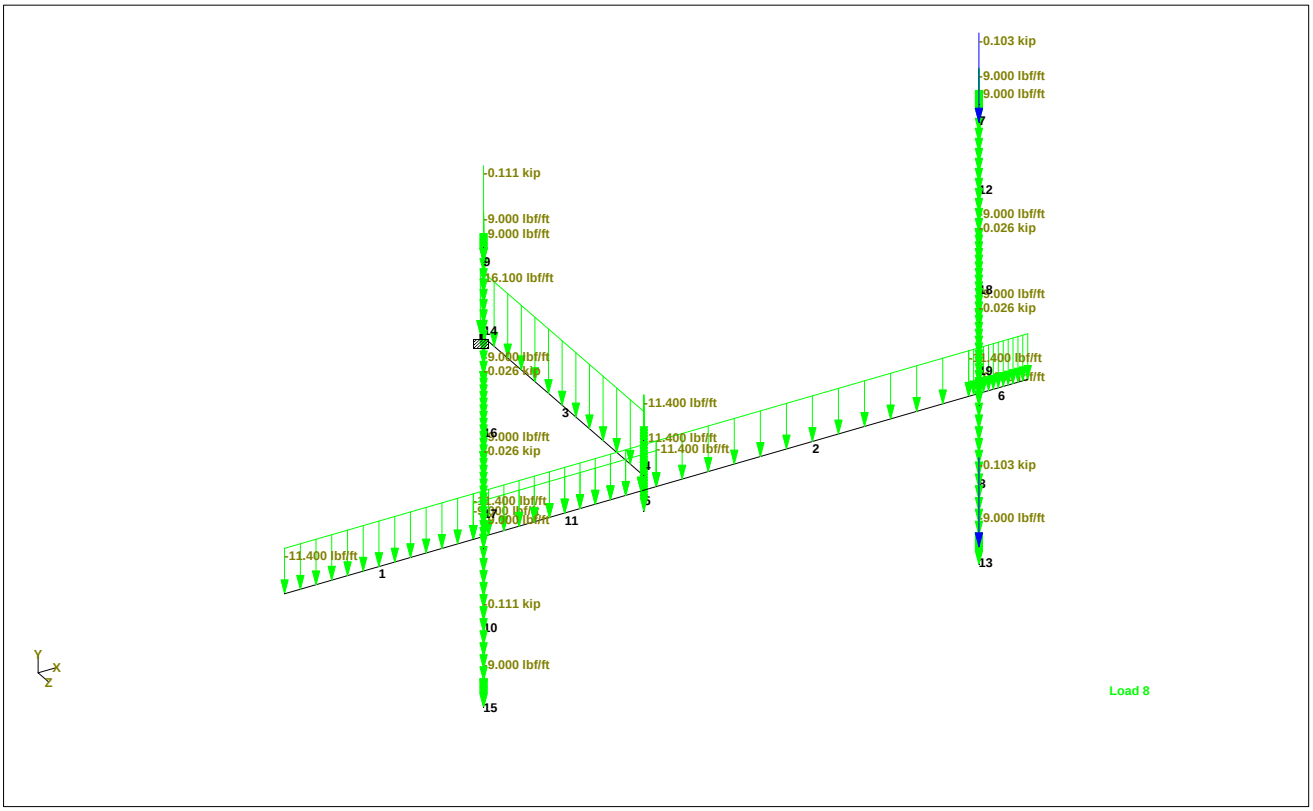
Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
4	-	-	-	-	-	-


-0.029 kip
7
12
-0.026 kip
-0.063 kip
9
-0.026 kip
14
-0.026 kip
19
6
3
2
4
5
8
-0.029 kip
17
11
1
13
-0.063 kip
10
15
Load 1

Dead Load



Typical Wind Load


0.103 kip
9.000 lbf/ft
9.000 lbf/ft
7
12
9.000 lbf/ft
0.026 kip
18
9.000 lbf/ft
0.026 kip
19
6
0.111 kip
9.000 lbf/ft
9.000 lbf/ft
9
16.100 lbf/ft
14
9.000 lbf/ft
0.026 kip
3
11.400 lbf/ft
16
9.000 lbf/ft
0.026 kip
11.400 lbf/ft
11.400 lbf/ft
4
2
5
11.400 lbf/ft
11
11.400 lbf/ft
1
0.103 kip
8
9.000 lbf/ft
13
0.111 kip
10
9.000 lbf/ft
15
Load 8

Ice Load

Node Displacement Summary

	Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (rad)	rY (rad)	rZ (rad)
Max X	10	55:1.0D+1.0Wl	**0.350**	-0.256	-0.027	0.435	0.001	0.002	-0.006
Min X	12	62:1.0D+1.0Wl	**-0.270**	-0.155	0.109	0.330	0.003	-0.001	0.005
Max Y	2	53:1.0D+1.0Wl	0.000	**0.000**	0.000	0.000	0.000	0.000	0.000
Min Y	5	57:1.0D+1.0Wl	0.042	**-0.304**	-0.049	0.311	0.004	0.001	-0.004
Max Z	10	59:1.0D+1.0Wl	0.124	-0.224	**0.409**	0.483	0.007	-0.002	-0.003
Min Z	11	55:1.0D+1.0Wl	-0.048	-0.256	**-0.175**	0.314	0.003	0.002	-0.004
Max rX	10	59:1.0D+1.0Wl	0.124	-0.224	0.409	0.483	**0.007**	-0.002	-0.003
Min rX	10	53:1.0D+1.0Wl	0.160	-0.190	-0.100	0.268	**-0.001**	0.002	-0.003
Max rY	5	55:1.0D+1.0Wl	0.050	-0.291	-0.129	0.322	0.002	**0.002**	-0.004
Min rY	5	61:1.0D+1.0Wl	-0.050	-0.160	0.129	0.212	0.004	**-0.002**	-0.001
Max rZ	12	62:1.0D+1.0Wl	-0.270	-0.155	0.109	0.330	0.003	-0.001	**0.005**
Min rZ	10	55:1.0D+1.0Wl	0.350	-0.256	-0.027	0.435	0.001	0.002	**-0.006**
Max Rst	10	59:1.0D+1.0Wl	0.124	-0.224	0.409	**0.483**	0.007	-0.002	-0.003

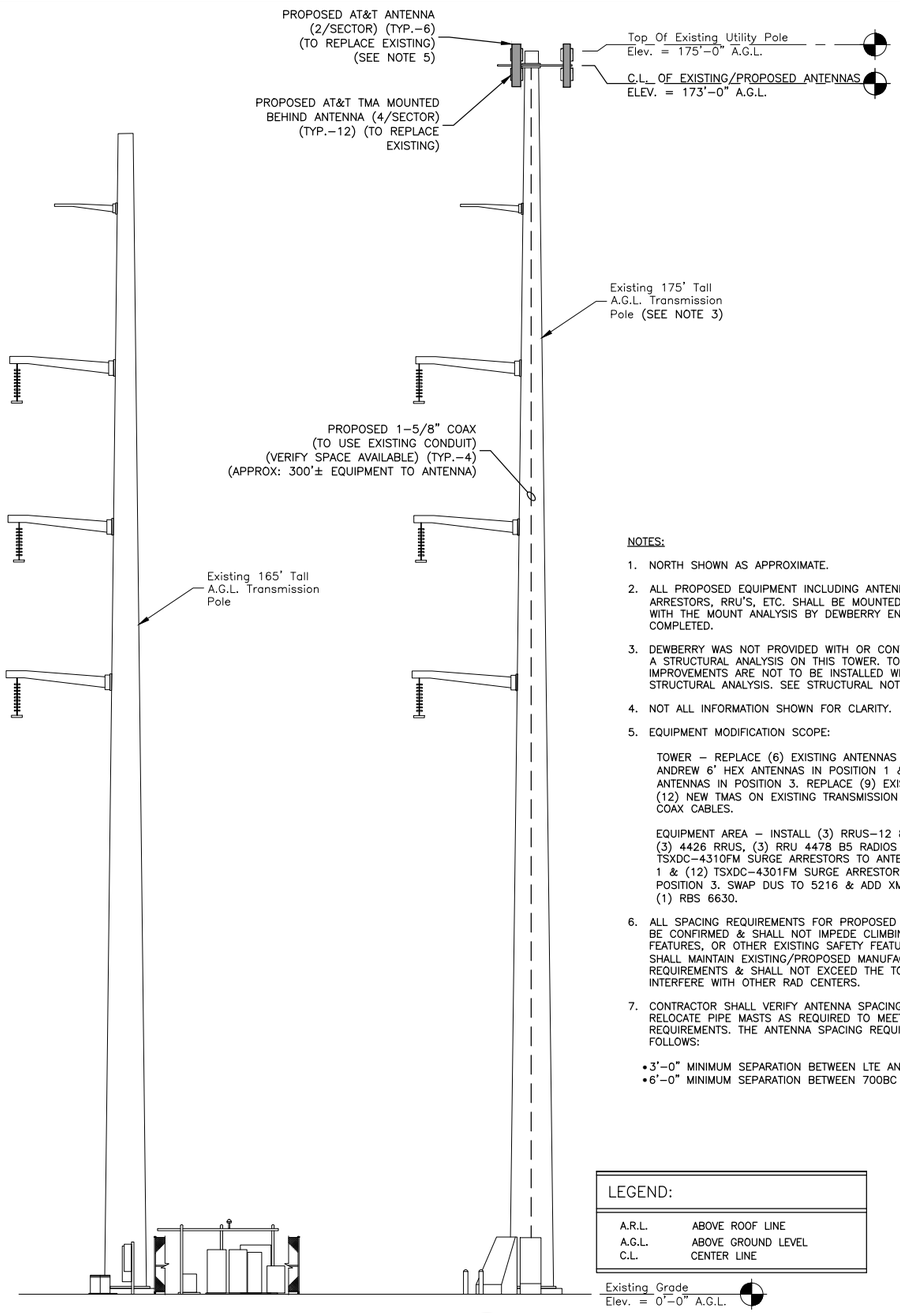
Utilization Ratio

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (in^2)	Iz (in^4)	Iy (in^4)	Ix (in^4)
1	PIPS30	PIPS30	0.012	1.000	0.012	LRFD-H1-1B-	41	2.070	2.850	2.850	5.700
2	PIPS30	PIPS30	0.422	1.000	0.422	LRFD-H1-1B-	43	2.070	2.850	2.850	5.700
3	HSST4X4X0	HSST4X4X0	0.604	1.000	0.604	HSS T+SH+F	47	3.370	7.800	7.800	12.800
4	PIPS30	PIPS30	0.000	1.000	0.000	LRFD-H1-1B-	29	2.070	2.850	2.850	5.700
5	PIPS30	PIPS30	0.000	1.000	0.000	LRFD-H1-1B-	29	2.070	2.850	2.850	5.700
6	PIPS30	PIPS30	0.001	1.000	0.001	LRFD-H1-1B-	41	2.070	2.850	2.850	5.700
7	PIPS20	PIPS20	0.000	1.000	0.000	SHEAR-Y	31	1.020	0.627	0.627	1.254
8	PIPS20	PIPS20	0.221	1.000	0.221	LRFD-H1-1B-	29	1.020	0.627	0.627	1.254
9	PIPS20	PIPS20	0.000	1.000	0.000	SHEAR-Y	31	1.020	0.627	0.627	1.254
10	PIPS20	PIPS20	0.226	1.000	0.226	LRFD-H1-1B-	29	1.020	0.627	0.627	1.254
11	PIPS30	PIPS30	0.324	1.000	0.324	LRFD-H1-1B-	51	2.070	2.850	2.850	5.700
12	PIPS20	PIPS20	0.188	1.000	0.188	LRFD-H1-1B-	29	1.020	0.627	0.627	1.254
13	PIPS20	PIPS20	0.000	1.000	0.000	SHEAR-Y	31	1.020	0.627	0.627	1.254
14	PIPS20	PIPS20	0.193	1.000	0.193	LRFD-H1-1B-	29	1.020	0.627	0.627	1.254
15	PIPS20	PIPS20	0.000	1.000	0.000	SHEAR-Y	31	1.020	0.627	0.627	1.254
16	PIPS20	PIPS20	0.318	1.000	0.318	LRFD-H1-1B-	29	1.020	0.627	0.627	1.254
17	PIPS20	PIPS20	0.475	1.000	0.475	LRFD-H1-1B-	31	1.020	0.627	0.627	1.254
18	PIPS20	PIPS20	0.313	1.000	0.313	LRFD-H1-1B-	29	1.020	0.627	0.627	1.254
19	PIPS20	PIPS20	0.443	1.000	0.443	LRFD-H1-1B-	29	1.020	0.627	0.627	1.254

Failed Members

There is no data of this type.

APPENDIX B



PROPOSED ELEVATION

SCALE: 3/64"=1' FOR 11"x17"
3/32"=1' FOR 22"x34"

1

0' 8' 16' 24'

NOTES:

1. NORTH SHOWN AS APPROXIMATE.
2. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE MOUNT ANALYSIS BY DEWBERRY ENGINEERS INC. TO BE COMPLETED.
3. DEWBERRY WAS NOT PROVIDED WITH OR CONTRACTED TO PERFORM A STRUCTURAL ANALYSIS ON THIS TOWER. TOWER RELATED IMPROVEMENTS ARE NOT TO BE INSTALLED WITHOUT A PASSING STRUCTURAL ANALYSIS. SEE STRUCTURAL NOTE ON SHEET T01.
4. NOT ALL INFORMATION SHOWN FOR CLARITY.
5. EQUIPMENT MODIFICATION SCOPE:

   TOWER – REPLACE (6) EXISTING ANTENNAS WITH (3) NEW ANDREW 6' HEX ANTENNAS IN POSITION 1 & (3) NEW 12–PORT ANTENNAS IN POSITION 3. REPLACE (9) EXISTING TMAS WITH (12) NEW TMAS ON EXISTING TRANSMISSION TOWER. ADD (6) NEW COAX CABLES.

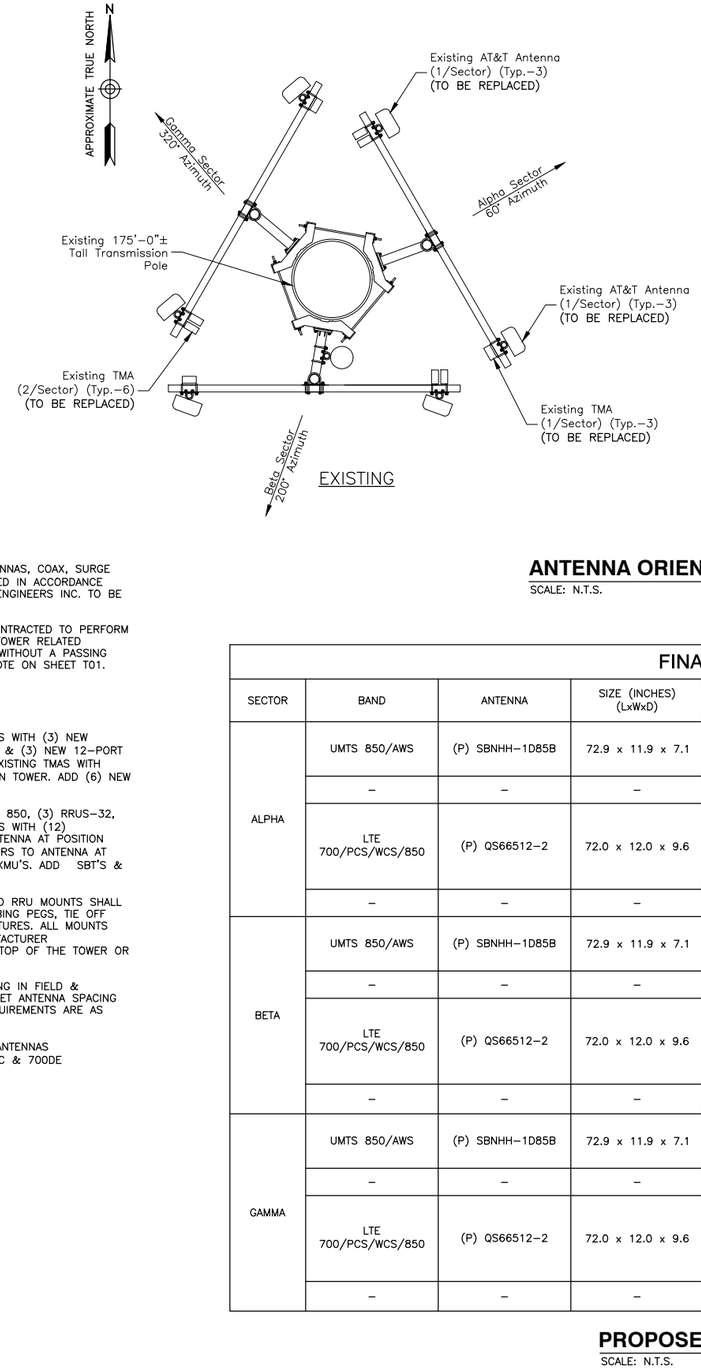
   EQUIPMENT AREA – INSTALL (3) RRUS–12 850, (3) RRUS–32, (3) 4426 RRUS, (3) RRU 4478 B5 RADIOS WITH (12) TSXDC–4310FM SURGE ARRESTORS TO ANTENNA AT POSITION 1 & (12) TSXDC–4301FM SURGE ARRESTORS TO ANTENNA AT POSITION 3. SWAP DUS TO 5216 & ADD XMU'S. ADD SBT'S & (1) RBS 6630.

6. ALL SPACING REQUIREMENTS FOR PROPOSED RRU MOUNTS SHALL BE CONFIRMED & SHALL NOT IMPEDE CLIMBING PEGS, TIE OFF FEATURES, OR OTHER EXISTING SAFETY FEATURES. ALL MOUNTS SHALL MAINTAIN EXISTING/PROPOSED MANUFACTURER REQUIREMENTS & SHALL NOT EXCEED THE TOP OF THE TOWER OR INTERFERE WITH OTHER RAD CENTERS.
7. CONTRACTOR SHALL VERIFY ANTENNA SPACING IN FIELD & RELOCATE PIPE MASTS AS REQUIRED TO MEET ANTENNA SPACING REQUIREMENTS. THE ANTENNA SPACING REQUIREMENTS ARE AS FOLLOWS:

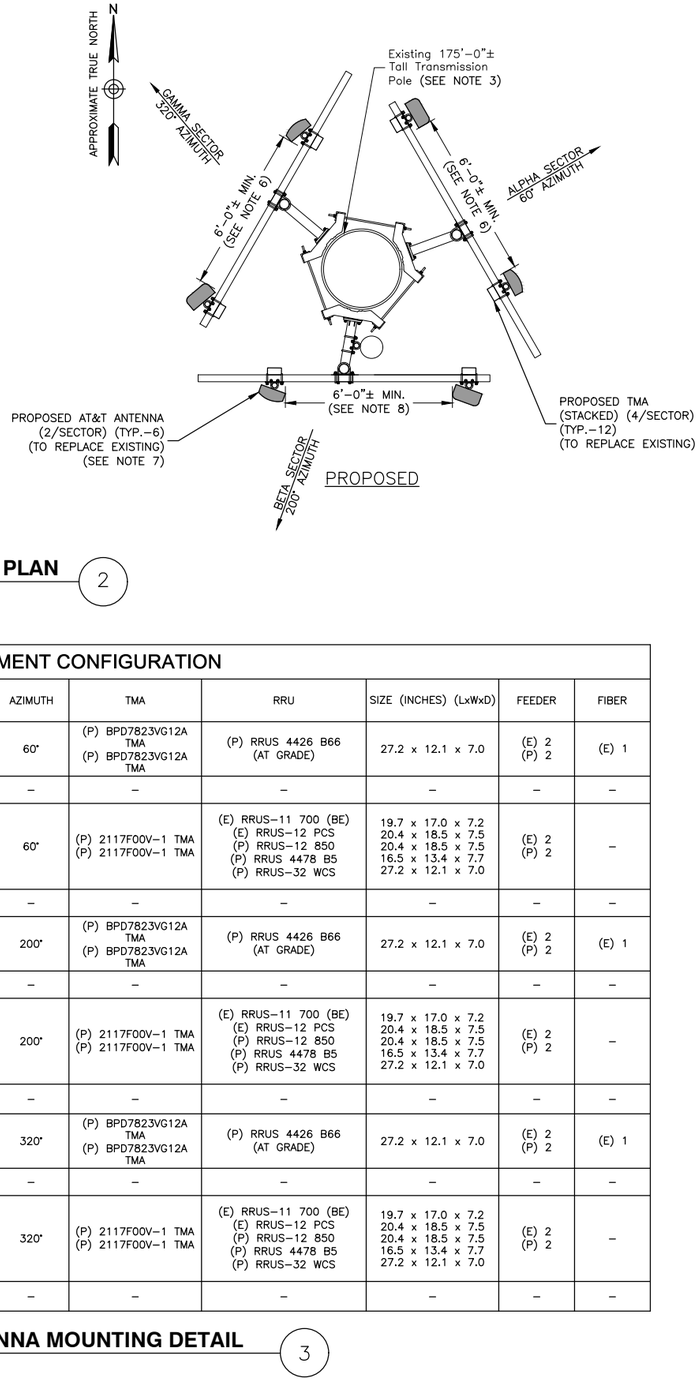
   • 3'–0" MINIMUM SEPARATION BETWEEN LTE ANTENNAS
   • 6'–0" MINIMUM SEPARATION BETWEEN 700BC & 700DE

LEGEND:

A.R.L.	ABOVE ROOF LINE
A.G.L.	ABOVE GROUND LEVEL
C.L.	CENTER LINE



EXISTING



PROPOSED

ANTENNA ORIENTATION PLAN

SCALE: N.T.S.

2

FINAL EQUIPMENT CONFIGURATION

SECTOR	BAND	ANTENNA	SIZE (INCHES) (LxWxD)	RAD. CENTER	AZIMUTH	TMA	RRU	SIZE (INCHES) (LxWxD)	FEEDER	FIBER
ALPHA	UMTS 850/AWS	(P) SBNHH–1D85B	72.9 x 11.9 x 7.1	173'±	60°	(P) BPD7823VG12A TMA (P) BPD7823VG12A TMA	(P) RRUS 4426 B66 (AT GRADE)	27.2 x 12.1 x 7.0	(E) 2 (P) 2	(E) 1
	–	–	–	–	–	–	–	–	–	–
	LTE 700/PCS/WCS/850	(P) QS66512–2	72.0 x 12.0 x 9.6	173'±	60°	(P) 2117F00V–1 TMA (P) 2117F00V–1 TMA	(E) RRUS–11 700 (BE) (E) RRUS–12 PCS (P) RRUS–12 850 (P) RRUS 4478 B5 (P) RRUS–32 WCS	19.7 x 17.0 x 7.2 20.4 x 18.5 x 7.5 20.4 x 18.5 x 7.5 16.5 x 13.4 x 7.7 27.2 x 12.1 x 7.0	(E) 2 (P) 2	–
	–	–	–	–	–	–	–	–	–	–
BETA	UMTS 850/AWS	(P) SBNHH–1D85B	72.9 x 11.9 x 7.1	173'±	200°	(P) BPD7823VG12A TMA (P) BPD7823VG12A TMA	(P) RRUS 4426 B66 (AT GRADE)	27.2 x 12.1 x 7.0	(E) 2 (P) 2	(E) 1
	–	–	–	–	–	–	–	–	–	–
	LTE 700/PCS/WCS/850	(P) QS66512–2	72.0 x 12.0 x 9.6	173'±	200°	(P) 2117F00V–1 TMA (P) 2117F00V–1 TMA	(E) RRUS–11 700 (BE) (E) RRUS–12 PCS (P) RRUS–12 850 (P) RRUS 4478 B5 (P) RRUS–32 WCS	19.7 x 17.0 x 7.2 20.4 x 18.5 x 7.5 20.4 x 18.5 x 7.5 16.5 x 13.4 x 7.7 27.2 x 12.1 x 7.0	(E) 2 (P) 2	–
	–	–	–	–	–	–	–	–	–	–
GAMMA	UMTS 850/AWS	(P) SBNHH–1D85B	72.9 x 11.9 x 7.1	173'±	320°	(P) BPD7823VG12A TMA (P) BPD7823VG12A TMA	(P) RRUS 4426 B66 (AT GRADE)	27.2 x 12.1 x 7.0	(E) 2 (P) 2	(E) 1
	–	–	–	–	–	–	–	–	–	–
	LTE 700/PCS/WCS/850	(P) QS66512–2	72.0 x 12.0 x 9.6	173'±	320°	(P) 2117F00V–1 TMA (P) 2117F00V–1 TMA	(E) RRUS–11 700 (BE) (E) RRUS–12 PCS (P) RRUS–12 850 (P) RRUS 4478 B5 (P) RRUS–32 WCS	19.7 x 17.0 x 7.2 20.4 x 18.5 x 7.5 20.4 x 18.5 x 7.5 16.5 x 13.4 x 7.7 27.2 x 12.1 x 7.0	(E) 2 (P) 2	–
	–	–	–	–	–	–	–	–	–	–

PROPOSED ANTENNA MOUNTING DETAIL

SCALE: N.T.S.

3

Dewberry®
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

CENTERLINE COMMUNICATIONS
95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767

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

MERIDEN BIRDSEY AVENUE
SITE NO. CT5279 3C/4C/5C/5G NR

74 BIRDSEY AVENUE
MERIDEN, CT 06450

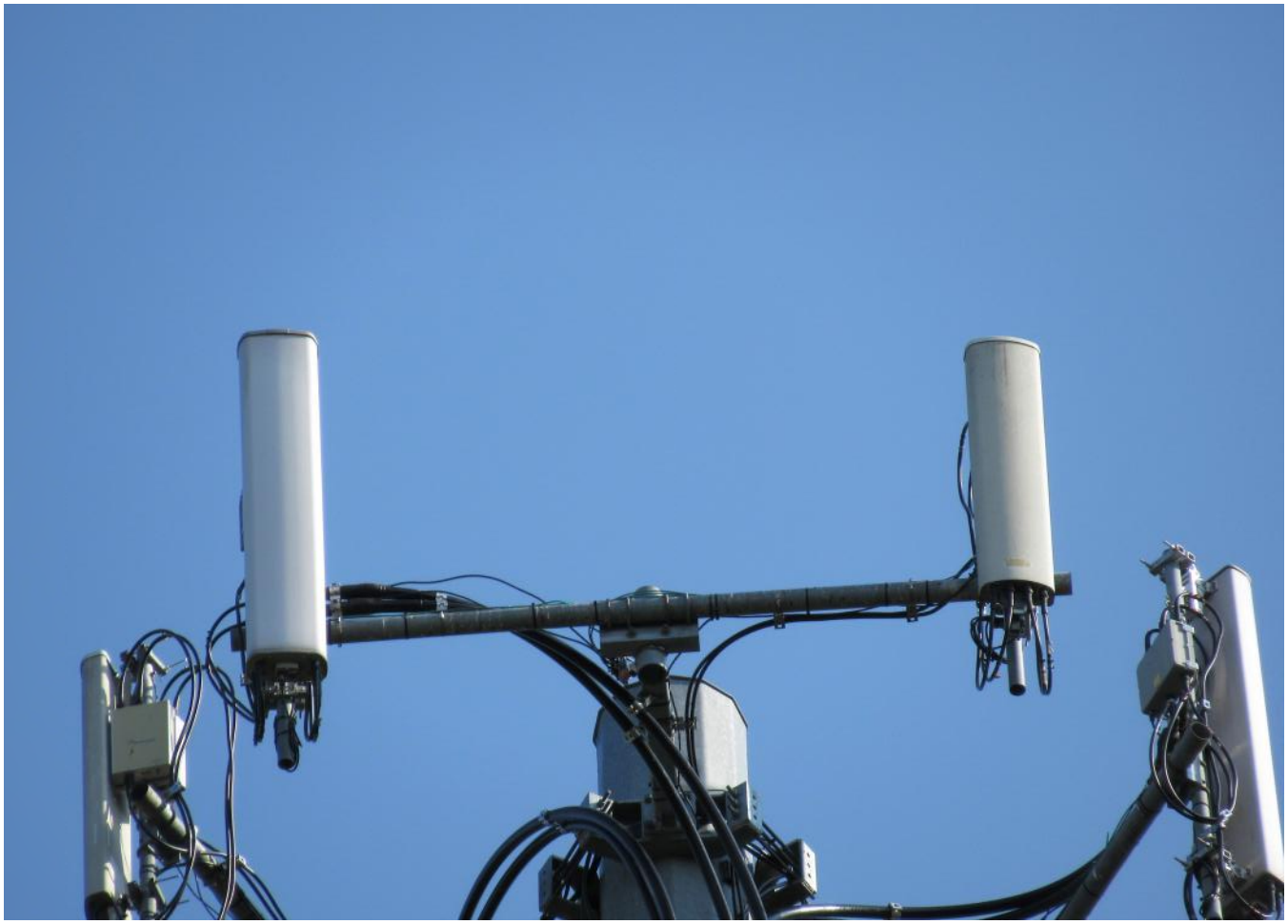
NO.	DATE	REVISIONS	BY	CHK	APP'D
A	08/16/18	ISSUED FOR REVIEW	AJB	DAS	BBR

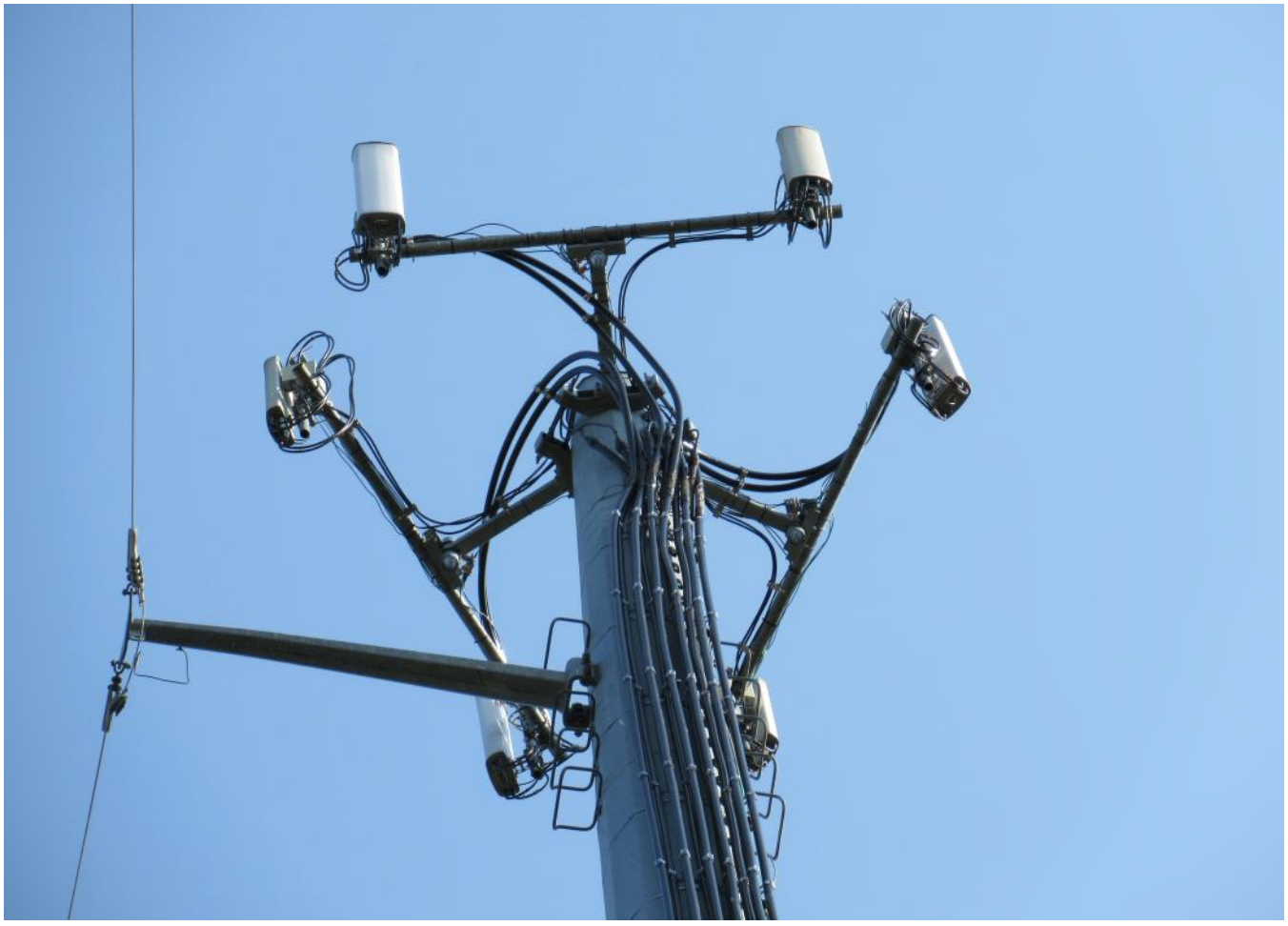
SCALE: AS SHOWN | DESIGNED BY: DAS | DRAWN BY: MR

AT&T MOBILITY
ROCKY HILL, 06067

PROPOSED ELEVATION & CONSTRUCTION DETAILS

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096234	C02	A





From:	Chapman, Brandon M.
To:	Hardie, Christopher; Ng, David; Ferguson, Luke J.; Prosser, Dawn E.
Subject:	RE: Valmont Discontinued Part Specifications (External E-Mail)
Date:	Thursday, October 26, 2017 10:11:43 AM

This message originated from outside your organization

Face pipe is 3" sch 40 (35 min yield) length can be anything from 5' to 14'

Thanks, BC

From: Hardie, Christopher [mailto:chardie@Dewberry.com]
Sent: Thursday, October 26, 2017 10:10 AM
To: Ng, David <dng@Dewberry.com>; Chapman, Brandon M. <brandon.chapman@valmont.com>; Ferguson, Luke J. <luke.ferguson@valmont.com>; Prosser, Dawn E. <Dawn.Prosser@valmont.com>
Subject: RE: Valmont Discontinued Part Specifications (External E-Mail)

Brandon,

What would the horizontal pipe diameter be, or could it vary? We will assume the longer 4' standoff tube.

Thanks,
Chris

Chris Hardie
Engineer
Dewberry
280 Summer St., 10th Floor
Boston MA, 02210
Direct: 617.531.0783
Fax: 617.695.3310
Mobile: 978.844.3515
www.dewberry.com

From: Ng, David
Sent: Thursday, October 26, 2017 9:49 AM
To: Chapman, Brandon M. <brandon.chapman@valmont.com>; Ferguson, Luke J. <luke.ferguson@valmont.com>; Hardie, Christopher <chardie@Dewberry.com>; Prosser, Dawn E. <Dawn.Prosser@valmont.com>
Subject: RE: Valmont Discontinued Part Specifications (External E-Mail)

Chris may know but I don't believe so. The longest possible standoff arm would be sufficient.

David Ng, P.E *
Structural Project Engineer
Dewberry
280 Summer St., 10th Floor
Boston, MA 02210
617.531.0790

617.695.3310 fax
www.dewberry.com
(Licensed in CT, FL, MA, ME, NH, VT, VA)*

From: Chapman, Brandon M. [mailto:brandon.chapman@valmont.com]
Sent: Wednesday, October 25, 2017 6:29 PM
To: Ferguson, Luke J. <luke.ferguson@valmont.com>; Hardie, Christopher <chardie@Dewberry.com>; Prosser, Dawn E. <Dawn.Prosser@valmont.com>
Cc: Ng, David <dng@Dewberry.com>
Subject: RE: Valmont Discontinued Part Specifications (External E-Mail)

This message originated from outside your organization

This looks to be a Site Pro T-arm, do you have a confirmed standoff distance? The standard assemblies are 3' but we do offer 4' as well. The tube is ¼" x 4" x 4" (35 min yield)

Thanks, BC

From: Ferguson, Luke J.
Sent: Wednesday, October 25, 2017 6:25 PM
To: Hardie, Christopher <chardie@Dewberry.com>; Prosser, Dawn E. <Dawn.Prosser@valmont.com>; Chapman, Brandon M. <brandon.chapman@valmont.com>
Cc: Ng, David <dng@Dewberry.com>
Subject: RE: Valmont Discontinued Part Specifications (External E-Mail)

Brandon and Dawn,

Do you guys know the member sizes for the attached. Hopefully we can get around getting the detailed mount drawings from Microflect.

Thanks,

Luke Ferguson, PE | National Sales Engineer
Valmont Site Pro 1 | 12661 Corral Place | Santa Fe Springs, CA 90670
Mobile: +1 (402) 427-4335
Luke.Ferguson@valmont.com | sitepro1.com

From: Hardie, Christopher [mailto:chardie@Dewberry.com]
Sent: Wednesday, October 25, 2017 8:12 AM
To: Ferguson, Luke J. <luke.ferguson@valmont.com>
Cc: Ng, David <dng@Dewberry.com>
Subject: Valmont Discontinued Part Specifications (External E-Mail)

Hi Luke,

We are working on a mount analysis on the discontinued Valmont P/N 802738 T-Arm monopole mount. Could you please send along the drawings/member sizes for this mount?

See attached photo for reference.

Thank you very much for any help you are able to provide, let me know if you have any questions.
Chris

Chris Hardie
Engineer
Dewberry
280 Summer St., 10th Floor
Boston MA, 02210
Direct: 617.531.0783
Fax: 617.695.3310
Mobile: 978.844.3515
www.dewberry.com

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QS66512-2

6ft 65º XXX MultiServ™ 12-Port Antenna

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

- Provides 12 antenna Ports in a slim-line form factor
- Optimized Azimuth patterns for Min Inter-Sector Interference
- Industry leading Minimal Wind-Load design

- 700, 850, PCS, AWS & WCS bands in one antenna
- AISG & 3GPP compliant internal remote electrical tilt (RET)
- AWS & PCS Cross band PIM >159dBc

The Quintel MultiServ™ Multiband 12 echnology uniquely delivers four independent services in a single slim-line antenna. This enables existing antenna network sites to be upgraded constraint free to add new services such as LTE for 700, 850, PCS, AWS and WCS bands with the replacement of one antenna. The QS66512-2 also provides 4x1695-1780+2110-2400MHz & 4x1850-1990MHz ports as two side-by-side (CLA-2X) arrays, each set of 4 ports having independent tilt for connection to 2T4R/4T4R services.

Electrical Characteristics	2x Ports 1&2	2x Ports 3&4	4x Ports 5-8			4 Ports 9-12
Operating Frequency (MHz)	**698-806***	**824-894**	**1695-1780 and 2110-2400**			**1850-1990**
	698-806	824-894	1695-1780	2110-2180	2300-2400	1850-1990
Azimuth beamwidth[1]	67º	64º	68º	63º	58º	69º
Elevation beamwidth[1]	12º	10º	6.5º	5.5º	4.5º	5.5º
Gain[1] (dBi)	13.2	13.5	16.2	16.5	17.0	16.0
Polarization	±45º	±45º		±45º ±45º		±45º ±45º
Electrical down-tilt range	2º-10º	2º-10º		2º 7º		2º 7º
Upper SLL (20º > mainbeam)[1]	-17dB	-19dB	-18dB	-18B	-18dB	-16dB
Front to Back Ratio(180º±10º)[1]	27dB	29dB	dB	dB	dB	dB
Port to Port isolation[1]	dB	dB	dB	dB		
Return loss (VSWR)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB (1.5)	14dB(1.5)
X Polar Discrimination (at 0º)	>18dB	>16dB	>20dB	>20dB	>18dB	>20dB
Max Power handling (per any port)	500 watts	500 watts		250 watts		250 watts
Total Composite Power (all ports)				1750 watts		
PIM (3rd Order) (2x43dBm)	>153dBc	>153dBc		>153dBc		>153dBc
XBand PIM (3rd Order) (2x43dBm)				>159dBc		

[1] *Typical Performance across frequency and Downtilt. *Products Ordered after Jan 2016 will be 698-806MHz*

Mechanical Characteristics	
Dimensions	x)
Weight (excl mounting brackets)	111lbs (50.3kg)
No. of Connectors	12x 4.3-10.0 DIN Female Long Neck
Max Wind Speed	150mph (67m/s)
Effective Projected Area	Front: 2.6ft² (0.24m²) Side: 5.0ft²(0.46m²)
Wind Load @160km/h (45m/s)	Front: 284.7N (64 lbs), Side: 535.5N (120.4 lbs)
Operating Temperature	-40°C to +65°C

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

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

SBNHH-1D85B

Band	Multiband
Performance Note	Outdoor usage

Mechanical Specifications

RF Connector Quantity, total	6
RF Connector Quantity, low band	2
RF Connector Quantity, high band	4
RF Connector Interface	7-16 DIN Female
Color	Light gray
Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Location	Bottom
Wind Loading, frontal	283.0 N @ 150 km/h 63.6 lbf @ 150 km/h
Wind Loading, lateral	234.0 N @ 150 km/h 52.6 lbf @ 150 km/h
Wind Loading, maximum	545.0 N @ 150 km/h 122.5 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Length	1851.0 mm | 72.9 in
Width	301.0 mm | 11.9 in
Depth	180.0 mm | 7.1 in
Net Weight, without mounting kit	19.1 kg | 42.1 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal RET	High band (2) | Low band (1)
Power Consumption, idle state, maximum	2 W
Power Consumption, normal conditions, maximum	13 W
Protocol	3GPP/AISG 2.0 (Multi-RET)
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	1 female | 1 male

Packed Dimensions

Length	1970.0 mm | 77.6 in

TMA2117F00V1-1

TWIN TMA 1900/WCS, LOWPASS

Designed to be deployed in co-located 1900 & WCS systems with wideband antennas, the Kaelus TMA provides internal diplexing and gain in both bands while allowing 700/850 services to pass through to a separate antenna, thereby saving hardware costs.

FEATURES

- Improved base station sensitivity through gain in 1900 and WCS bands
- High Linearity and low noise performance; Bypass provided for 700/850MHz services
- Hardware and software configuration using AISG “Personality” upload
- Fail safe bypass mode with lightning protection

TECHNICAL SPECIFICATIONS

BAND NAME	1900	WCS
DOWNLINK		
Passband	1930 - 1990MHz	2350 - 2360MHz
Insertion loss	0.5dB typical	
Return loss	18dB minimum	
Maximum input power	160W (average) / 2kW (PEP)	120W (average) / 1.2kW (PEP)
UPLINK		
Passband	1850 - 1910MHz	2305 - 2315MHz
Gain	13dB	12dB
Variable gain	3dB to 13dB in 1dB steps (controlled by AISG commands)	2dB to 12dB in 1dB steps (controlled by AISG commands)
Gain variation	±1dB maximum	
Return loss	18dB minimum operating, 12dB in bypass	
Bypass loss	2.5dB typical	3.3dB typical
Noise figure	1.4dB typical	1.7dB typical
Output IP3	+30dBm typical	
Maximum input power with no damage	+12dBm maximum	
Rejection	27.5dB minimum@2324.54 - 2341.285MHz	
LOW BAND PATH		
Passband	698 - 896MHz	
Return loss	18dB minimum	
Insertion loss	0.35dB typical	
Maximum input power with no damage	200W (average) / 2kW (PEP)	
ELECTRICAL		
Impedance	50Ohms	
Intermodulation products	-153dBc maximum in RX band with 2 x 20W carriers	

POWER SUPPLY AND ALARM (CURRENT WINDOW ALARM MODE, DEFAULT)	
Current window alarm mode (CWA) is the default TMA operating mode and can be configured to specific customer requirements. The generic personality (F00V1) is configured so that both channels are independently powered and monitored via the respective BTS port. The BTS port sinks additional current to indicate an alarm state in its uplink path. Normal operating and alarm current values are configured independently via a field-loadable personality file, Please contact Kaelus for more information.	
DC supply voltage	8.5 to 30V DC, case is DC ground
DC supply	Each BTS powered individually (programmable)
DC supply current, normal mode	200 ± 20mA per port (programmable)
DC supply current, alarm mode	300 ± 30mA per port(programmable)

AISG MODE OF OPERATION (AUTO SELECTED ON VALID AISG 2.0 FRAMES)	
AISG signals can be applied to either port 7 or port 8. The TMA2117FxxVx-1 unit switches to AISG mode when valid frames are detected on one of the BTS ports. Both LNAs take DC power from the port with AISG frames or, if DC is present on both ports, both channels supply equal power to the TMA2117FxxVx-1.	
DC supply voltage	+8.5V to +30V DC
AISG version	2.0 (1.1 optional)
Supply current, AISG mode	400mA @ 8.5V, 120mA @ 30V typical
AISG connector, current rating	IEC60130-9, 8-pin female ,< 4A peak, 2A continuous, pin 6
Field firmware upgradable	Yes

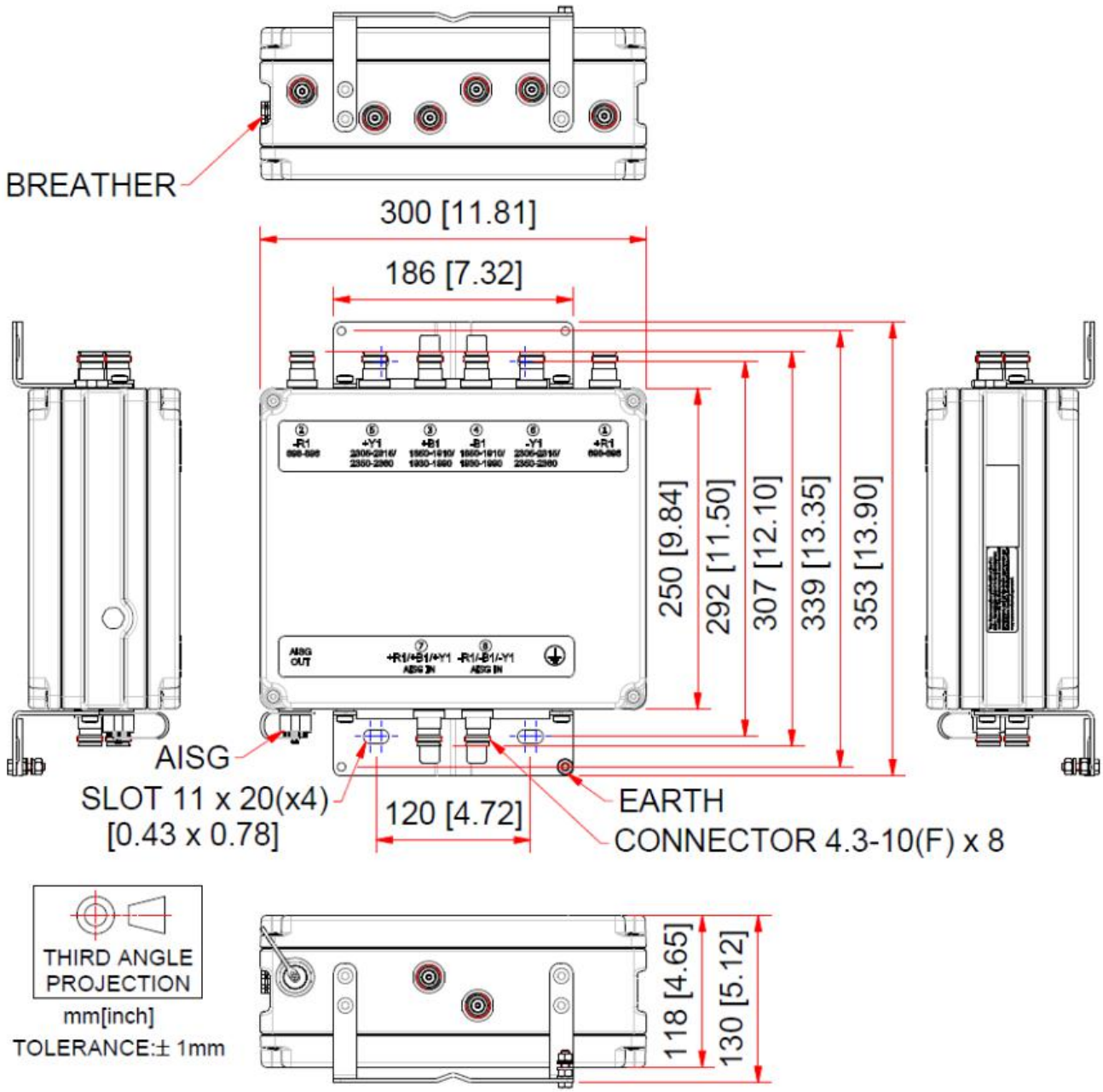
ENVIRONMENTAL	
For further details of environmental compliance, please contact Kaelus.	
Temperature range	-40ºC to +65ºC | -40°F to +149°F
Ingress protection	IP67
Lightning protection	IEC61312-1, RF: ±5kA maximum (8/20us), AISG: ±2kA maximum (8/20us)
MTBF	>1,000,000 hours
Compliance	FCC Part 15 subpart B, ETSI EN 300 019 class 4.1, RoHS

MECHANICAL	
Dimensions H x D x W	300 x 250 x 118mm | 11.81 x 9.84 x 4.65in
Weight	11.8kg | 26lbs
Finish	Painted, light grey (RAL7035)
Connectors	DIN 4.3-10 (F) x 8 long shank, AISG (F) x 1
Mounting	Pole/wall bracket supplied with two metal clamps 45-178mm diameter poles

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
TMA2117F00V1-1	TWIN TMA 1900/WCS, 698-896 LOWPASS, 6 ANT

MECHANICAL BLOCK DIAGRAM



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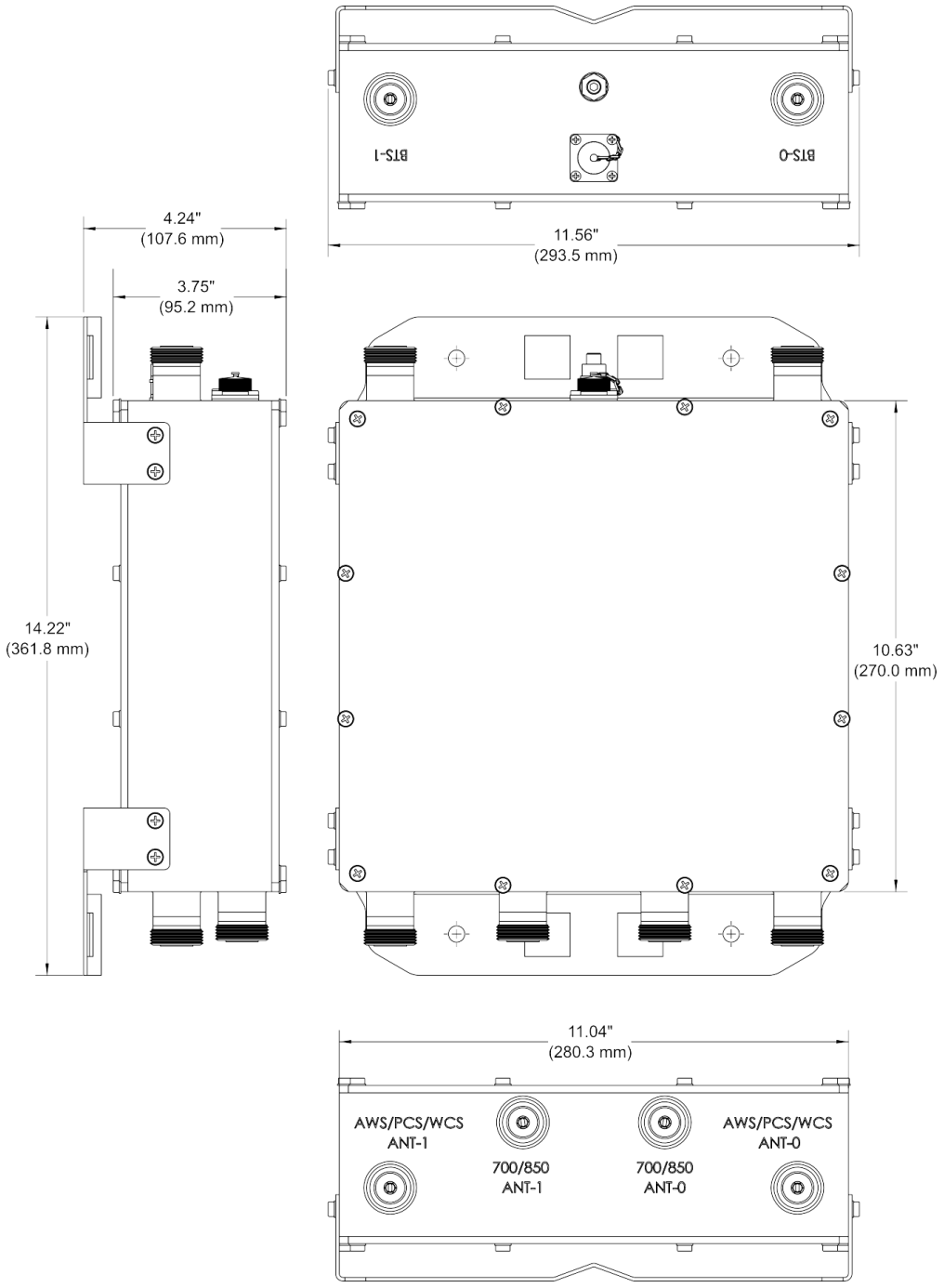

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Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CTL05279	**DATE:**	03/19/2018	**RF DESIGN ENG:**	Mohammad Minhaj Hussain
ISSUE:	Bronze Standard	**Approved? (Y/N):**	Yes	**RF DESIGN PHONE:**	510-493-3024
REVISION:	Preliminary	**RF MANAGER:**	John Benedetto	**RF DESIGN EMAIL:**	mh705r@att.com
INITIATIVE /PROJECT:	5G NR Upgrade[850], LTE 5C[AWS J].Note: PDs will be updated with 5G 6630 info during final RFDS.				

RF PERF ENG:		**RFDS PROGRAM TYPE:**	2018 LTE Multi Carrier		
RF PERF PHONE:		**RFDS TECHNOLOGY:**	LTE		
RF PERF EMAIL:		**STATE/STATUS:**	Preliminary/Approved		
RFDS VERSION:	1.00	**RFDS ID:**	2310503		
GSM FREQUENCY:		**Created By:**	mh705r	**Updated By:**	mh705r
UMTS FREQUENCY:	850	**Date Created:**	4/1/2018 9:40:26 PM	**Date Updated:**	5/5/2018 12:08:10 AM
LTE FREQUENCY:	700, 850, 1900, AWS, WCS				
5G FREQUENCY:	850				
I-PLAN JOB # 1:	NER-RCTB-18-02310	**IPLAN PRD GRP || SUB GRP #1:**	Cell Site RF Modifications || 5G NR Upgrade		
I-PLAN JOB # 2:	NER-RCTB-18-02386	**IPLAN PRD GRP || SUB GRP #2:**	LTE Next Carrier || LTE 5C		
I-PLAN JOB # 3:		**IPLAN PRD GRP || SUB GRP #3:**			
I-PLAN JOB # 4:		**IPLAN PRD GRP || SUB GRP #4:**			
I-PLAN JOB # 5:		**IPLAN PRD GRP || SUB GRP #5:**			
I-PLAN JOB # 6:		**IPLAN PRD GRP || SUB GRP #6:**			
I-PLAN JOB # 7:		**IPLAN PRD GRP || SUB GRP #7:**			
I-PLAN JOB # 8:		**IPLAN PRD GRP || SUB GRP #8:**			

Section 2 - LOCATION INFORMATION

USID:	25924	**FA LOCATION CODE:**	10105380	**LOCATION NAME:**	MERIDEN BIRDSEY AVENUE
REGION:	NORTHEAST	**MARKET CLUSTER:**	NEW ENGLAND	**MARKET:**	CONNECTICUT
ADDRESS:	74 BIRDSEY AVENUE	**CITY:**	MERIDEN	**STATE:**	CT
ZIP CODE:	06450	**COUNTY:**	NEW HAVEN	**LONG (DEC. DEG.):**	-72.7503989
LATITUDE (D-M-S):	41d 31m 26.01084s	**LONGITUDE (D-M-S):**	-72d -45m -1.43604s	**LAT (DEC. DEG.):**	41.5238919
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:	CT-279 (UPDATED 5/7/2004)MIDDLEFIELD WEST BLACKTAKE I-91 NORTH TO EXIT 16 AND TAKE A RIGHT ON EAST MAIN STREET GO ABOUT 1 MILE AND TURN RIGHT ON CONE AVE TAKE YOUR FIRST LEFT ON BIRDSEYE AVE .THEN TAKE YOUR FIRST RIGHT INTO PBA CLUB TOWER IS IN BACK ON POWER LINE.DEMARC IS LOCATED IN HOFFMAN BOX NEXT TO THE SITE. T-1 IS NOT LINE POWERED IF WE LOOSE COMMERCIAL POWER THE T-1 GOES DOWN.ADDRESS: 74 BIRDSEYE AVE., MERIDEN, CT 06450ACCESS: 24/7 , GATE COMBO 8899CONTACT: 203-630-6201SECURITY: NO ISSUESPOWER COMPANY: NORTHEAST UTILITIES (800) 286-2000 METER:# 88 685 584FIRE: (203) 235-2537 POLICE: (203) 630-6201 T-1 CIRCUIT NUMBERS HCGS 707645SNET: (800) 448-1008 AND (203) 420-3131 (24-HR REPAIR)				

ORACLE PTN # 1:	2051A0GKKD	**PACE JOB # 1:**	MRCTB032126		
ORACLE PTN # 2:	2051A0GGZ8	**PACE JOB # 2:**	MRCTB031617		
ORACLE PTN # 3:		**PACE JOB # 3:**			
ORACLE PTN # 4:		**PACE JOB # 4:**			
ORACLE PTN # 5:		**PACE JOB # 5:**			
ORACLE PTN # 6:		**PACE JOB # 6:**			
ORACLE PTN # 7:		**PACE JOB # 7:**			
ORACLE PTN # 8:		**PACE JOB # 8:**			
BORDER CELL WITH CONTOUR COORD:		**SEARCH RING NAME:**			
AM STUDY REQ'D (Y/N):	No	**SEARCH_RING_ID:**			
FREQ COORD:		**BTA:**		**MSA / RSA:**	
OPS DISTRICT:	CT-North	**LAC(GSM):**			
OPS ZONE:	NE_CT_S_MDSX_N_CS	**LAC(UMTS):**	05988		
RF DISTRICT:	NPO Triage	**BSC(GSM):**			
RF ZONE:	Hotseat	**RNC(UMTS):**	BRPTCT04CRBR07		
PARENT NAME(GSM):		**MME POOL ID(LTE):**	FF01		
PARENT NAME(UMTS):	BRIDGEPORT RNC07 ERICSSON 3820				

Section 3 - LICENSE COVERAGE/FILING INFORMATION

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

CGSA CALL SIGNS:	

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	Yes	**GROUND ELEVATION (ft):**	0	**STRUCTURE TYPE:**	UTILITY
ADDITIONAL REGULATORY?:	Yes	**HEIGHT OVERALL (ft):**	160.00	**FCC ASR NUMBER:**	NR
SUB-LEASE RIGHTS?:	Yes	**STRUCTURE HEIGHT (ft):**	160.00		
LIGHTING TYPE:	NOT REQUIRED				

MARKET LOCATION 700 MHz Band:			
MARKET LOCATION 850 MHz Band:			
MARKET LOCATION 1900 MHz Band:			
MARKET LOCATION AWS Band:			
MARKET LOCATION WCS Band:			
MARKET LOCATION Future Band:			

Section 5 - E-911 INFORMATION - existing

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

Section 5 - E-911 INFORMATION - final

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

Section 6 - RBS GENERAL INFORMATION - existing

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS								
RBS ID:	172488	229744	367110									
CTS COMMON ID:	CTU5279	CTV5279	CTL05279									
CELL ID / BCF:	CTU5279	CTU5279	CTL05279									
BTA/TID:	318V	318U	318L									
4-9 DIGIT SITE ID:	5279	5279	5279									
COW OR TOY?:	No	No	No									
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED									
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL									
BTS LOCATION ID:	INTERNAL	INTERNAL	INTERNAL									
BASE STATION TYPE:	BASE	OVERLAY	BASE									
EQUIPMENT NAME:	MERIDEN EAST	MERIDEN EAST	MERIDEN BIRDSEY AVENUE									
DISASTER PRIORITY:	1	1	3									

Section 6 - RBS GENERAL INFORMATION - final

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS								
RBS ID:	229744		367110	RFDS_36158188								
CTS COMMON ID:	CTV5279		CTL05279	CTN0005279								
CELL ID / BCF:	CTU5279		CTL05279	CTN0005279								
BTA/TID:	318U		318L	318L								
4-9 DIGIT SITE ID:	5279		5279	5279								
COW OR TOY?:	No		No	No								
CELL SITE TYPE:	SECTORIZED		SECTORIZED	SECTORIZED								
SITE TYPE:	MACRO-CONVENTIONAL		MACRO-CONVENTIONAL	MACRO-CONVENTIONAL								
BTS LOCATION ID:	INTERNAL		INTERNAL	INTERNAL								
BASE STATION TYPE:	OVERLAY		BASE	BASE								
EQUIPMENT NAME:	MERIDEN EAST		MERIDEN BIRDSEY AVENUE	MERIDEN BIRDSEY AVENUE								
DISASTER PRIORITY:	1		3	3								

Section 7 - RBS SPECIFIC INFORMATION - existing

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS								
RAC:												
EQUIPMENT VENDOR:	ERICSSON	ERICSSON	ERICSSON									
EQUIPMENT TYPE:	3206 INDOOR	3206 INDOOR	6601 INDOOR MU									
BASEBAND CONFIGURATION:												
LOCATION:												
CABINET LOCATION:												
MARKET STATE CODE:			CT									
AGPS:	Yes	Yes	Yes									
NODE B NUMBER:	0	0	5279									

Section 7 - RBS SPECIFIC INFORMATION - final

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS								
RAC:												
EQUIPMENT VENDOR:	ERICSSON		ERICSSON	ERICSSON								
EQUIPMENT TYPE:	3206 INDOOR		6601 INDOOR MU	6630								
BASEBAND CONFIGURATION:			1x6601 / 1x5216 / 2xXMU03	xxxxx / 1x6630 / xxxxx								
LOCATION:												
CABINET LOCATION:												
MARKET STATE CODE:			CT	CT								
AGPS:	Yes		Yes	Yes								
NODE B NUMBER:	0		5279	5279								

Section 8 - RBS/SECTOR ASSOCIATION - existing

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS																
CTS Common ID	CTU5279	CTV5279	CTL05279																	
Soft Sector IDs	CTU52797	CTV52791	CTL05279_7A_1																	
	CTU52798	CTV52792	CTL05279_7B_1																	
	CTU52799	CTV52793	CTL05279_7C_1																	
		CTV5279A	CTL05279_9A_1																	
		CTV5279B	CTL05279_9A_2																	
		CTV5279C	CTL05279_9B_1																	
			CTL05279_9B_2																	
			CTL05279_9C_1																	
			CTL05279_9C_2																	

Section 8 - RBS/SECTOR ASSOCIATION - final

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS	5G 1ST RBS																
CTS Common ID	CTV5279		CTL05279	CTN0005279																
Soft Sector IDs	CTV52791		CTL05279_2A_2	CTN0005279_8A_1																
	CTV52792		CTL05279_2B_2	CTN0005279_8B_1																
	CTV52793		CTL05279_2C_2	CTN0005279_8C_1																
	CTV5279A		CTL05279_3A_1																	
	CTV5279B		CTL05279_3B_1																	
	CTV5279C		CTL05279_3C_1																	
			CTL05279_7A_1																	
			CTL05279_7B_1																	
			CTL05279_7C_1																	
			CTL05279_8A_1																	
			CTL05279_8B_1																	
			CTL05279_8C_1																	
			CTL05279_9A_1																	
			CTL05279_9A_2																	
			CTL05279_9B_1																	
			CTL05279_9B_2																	
			CTL05279_9C_1																	
			CTL05279_9C_2																	

Section 9 - SOFT SECTOR ID - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	5G 1ST 850														
USEID (excluding Hard Sector)	25924.850.3G.1	25924.1900.3G.1	25924.850.3G.2																						
SECTOR A **SOFT SECTOR ID**	CTV52791	CTU52797	CTV5279A	CTL05279_7A_1		CTL05279_9A_1		CTL05279_9A_2																	
SECTOR B	CTV52792	CTU52798	CTV5279B	CTL05279_7B_1		CTL05279_9B_1		CTL05279_9B_2																	
SECTOR C	CTV52793	CTU52799	CTV5279C	CTL05279_7C_1		CTL05279_9C_1		CTL05279_9C_2																	
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - SOFT SECTOR ID - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	5G 1ST 850														
USEID (excluding Hard Sector)	25924.850.3G.1		25924.850.3G.2																						
SECTOR A **SOFT SECTOR ID**	CTV52791		CTV5279A	CTL05279_7A_1	CTL05279_8A_1	CTL05279_9A_1	CTL05279_3A_1		CTL05279_9A_2	CTL05279_2A_2	CTN0005279_8A_1														
SECTOR B	CTV52792		CTV5279B	CTL05279_7B_1	CTL05279_8B_1	CTL05279_9B_1	CTL05279_3B_1		CTL05279_9B_2	CTL05279_2B_2	CTN0005279_8B_1														
SECTOR C	CTV52793		CTV5279C	CTL05279_7C_1	CTL05279_8C_1	CTL05279_9C_1	CTL05279_3C_1		CTL05279_9C_2	CTL05279_2C_2	CTN0005279_8C_1														
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - Cell Number - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	5G 1ST 850														
USEID (excluding Hard Sector)	25924.850.3G.1	25924.1900.3G.1	25924.850.3G.2																						
SECTOR A CELL NUMBER				15		8		178																	
SECTOR B				16		9		179																	
SECTOR C				17		10		180																	
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - Cell Number - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	5G 1ST 850														
USEID (excluding Hard Sector)	25924.850.3G.1		25924.850.3G.2																						
SECTOR A CELL NUMBER				15	1	8	149		178	192	1														
SECTOR B				16	2	9	150		179	193	2														
SECTOR C				17	3	10	151		180	194	3														
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 10 - CID/SAC - existing

		UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	5G 1ST 850																
SECTOR A	CID/SAC	52791	52797	42791																								
SECTOR B		52792	52798	42792																								
SECTOR C		52793	52799	42793																								
SECTOR D																												
SECTOR E																												
SECTOR F																												
OMNI																												

Section 10 - CID/SAC - final

		UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	5G 1ST 850																
SECTOR A	CID/SAC	52791		42791																								
SECTOR B		52792		42792																								
SECTOR C		52793		42793																								
SECTOR D																												
SECTOR E																												
SECTOR F																												
OMNI																												

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	7770				QS66512-2									
ANTENNA VENDOR	Powerwave				Quintel									
ANTENNA SIZE (H x W x D)	55X11X5				72X12X9.6									
ANTENNA WEIGHT	35				111									
AZIMUTH	60				60									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173				173									
ANTENNA TIP HEIGHT	175				176									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	2				4									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)	2	Powerwave 7020				Built-in								
SURGE ARRESTOR (QTY/MODEL)					12	APTDC-BDFDM-DB								
DIPLEXER (QTY/MODEL)	2	Powerwave / LGP 21901			4	QBC0007F1V51-1								
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)	1	Kathrein / 860-10006				LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	Powerwave LGP 21401 (DB - 850 Bypass)			2	Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)								
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860												
PDU FOR TMAS (QTY/MODEL)	1	LGP 12104 (1900 AND 850 Bypass TMA)												
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)					1	RRUS-11 (REUSE ONLY)								
RRH - 850 band (QTY/MODEL)					1	RRUS-12								
RRH - 1900 band (QTY/MODEL)					2	RRUS-12								
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)					1	RRUS-32								
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1			CTV52791	CTV52791		UMTS 850	7770.00.850.06	13.5	60	6	None	Andrew 1-5/8	200.05						289.07		1	
	PORT 2			CTV52791	CTV5279A		UMTS 850	7770.00.850.06	13.5	60	6	Bottom	Andrew 1-5/8	200.05						289.07		1	
ANTENNA POSITION 3	PORT 1			CTL05279_7A_1	CTL05279_7A_1		LTE 700	QS66512-2_722MHz_04DT	13.3	60	4	Bottom	Andrew 1-5/8	200.05						1475.7065		5	
	PORT 2			CTL05279_8A_1	CTL05279_8A_1		LTE 850	QS66512-2_850MHz_04DT	13.6	60	4	Bottom	Andrew 1-5/8	200.05						1000		5	

	PORT 3			CTL05279_9A_1	CTL05279_9A_1		LTE 1900	QS66512-2_1930MHz_03DT	15.9	60	3	Bottom	Andrew 1-5/8	200.05						7328.7514		6	
	PORT 4			CTL05279_3A_1	CTL05279_3A_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	60	3	Bottom	Andrew 1-5/8	200.05						1285.2866		6	
	PORT 7			CTL05279_9A_2	CTL05279_9A_2		LTE 1900	QS66512-2_1930MHz_03DT	15.9	60	3	Bottom	Andrew 1-5/8	200.05						7328.7514		6	

Section 15B - CURRENT TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	7770		QS66512-2				
ANTENNA VENDOR	Powerwave		Quintel				
ANTENNA SIZE (H x W x D)	55X11X5		72X12X9.6				
ANTENNA WEIGHT	35		111				
AZIMUTH	200		200				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	173		173				
ANTENNA TIP HEIGHT	175		176				
MECHANICAL DOWNTILT	0		0				
FEEDER AMOUNT	2		4				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	2 Powerwave 7020		Built-in				
SURGE ARRESTOR (QTY/MODEL)			12 APTDC-BDFDM-DB				
DIPLEXER (QTY/MODEL)	2 Powerwave / LGP 21901		4 QBC0007F1V51-1				
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)			LTE RRH				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 Powerwave LGP 21401 (DB - 850 Bypass)		2 Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 Polyphaser 1000860						
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1 RRUS-11 (REUSE ONLY)				
RRH - 850 band (QTY/MODEL)			1 RRUS-12				
RRH - 1900 band (QTY/MODEL)			2 RRUS-12				
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)			1 RRUS-32				
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1			CTV52792	CTV52792		UMTS 850	7770.00.850.10	13.5	200	10	None	Andrew 1-5/8	200.05						289.07		9	
	PORT 2			CTV52792	CTV5279B		UMTS 850	7770.00.850.10	13.5	200	10	Bottom	Andrew 1-5/8	200.05						289.07		9	
ANTENNA POSITION 3	PORT 1			CTL05279_7B_1	CTL05279_7B_1		LTE 700	QS66512-2_722MHz_10DT	13.1	200	10	Bottom	Andrew 1-5/8	200.05						1475.7065		13	
	PORT 2			CTL05279_8B_1	CTL05279_8B_1		LTE 850	QS66512-2_850MHz_10DT	13.5	200	10	Bottom	Andrew 1-5/8	200.05						1000		13	
	PORT 3			CTL05279_9B_1	CTL05279_9B_1		LTE 1900	QS66512-	15.9	200	6	Bottom	Andrew 1-5/8	200.05						7328.7514		14	

								2_1930MHz_06DT															
	PORT 4			CTL05279_3B_1	CTL05279_3B_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	200	3	Bottom	Andrew 1-5/8	200.05						1285.2866		14	
	PORT 7			CTL05279_9B_2	CTL05279_9B_2		LTE 1900	QS66512-2_1930MHz_06DT	15.9	200	6	Bottom	Andrew 1-5/8	200.05						7328.7514		14	

Section 15C - CURRENT TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	7770		QS66512-2				
ANTENNA VENDOR	Powerwave		Quintel				
ANTENNA SIZE (H x W x D)	55X11X5		72X12X9.6				
ANTENNA WEIGHT	35		111				
AZIMUTH	320		320				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	173		173				
ANTENNA TIP HEIGHT	175		176				
MECHANICAL DOWNTILT	0		0				
FEEDER AMOUNT	2		4				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	2 Powerwave 7020		Built-in				
SURGE ARRESTOR (QTY/MODEL)			12 APTDC-BDFDM-DB				
DIPLEXER (QTY/MODEL)	2 Powerwave / LGP 21901		4 QBC0007F1V51-1				
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)			LTE RRH				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 Powerwave LGP 21401 (DB - 850 Bypass)		2 Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 Polyphaser 1000860						
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1 RRUS-11 (REUSE ONLY)				
RRH - 850 band (QTY/MODEL)			1 RRUS-12				
RRH - 1900 band (QTY/MODEL)			2 RRUS-12				
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)			1 RRUS-32				
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1			CTV52793	CTV52793		UMTS 850	7770.00.850.10	13.5	320	10	None	Andrew 1-5/8	200.05						289.07		17	
	PORT 2			CTV52793	CTV5279C		UMTS 850	7770.00.850.10	13.5	320	10	Bottom	Andrew 1-5/8	200.05						289.07		17	
ANTENNA POSITION 3	PORT 1			CTL05279_7C_1	CTL05279_7C_1		LTE 700	QS66512-2_722MHz_10DT	13.1	320	10	Bottom	Andrew 1-5/8	200.05						1475.7065		21	
	PORT 2			CTL05279_8C_1	CTL05279_8C_1		LTE 850	QS66512-2_850MHz_10DT	13.5	320	10	Bottom	Andrew 1-5/8	200.05						1000		21	
	PORT 3			CTL05279_9C_1	CTL05279_9C_1		LTE 1900	QS66512-	16	320	2	Bottom	Andrew 1-5/8	200.05						7328.7514		22	

								2_1930MHz_02DT															
	PORT 4			CTL05279_3C_1	CTL05279_3C_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	320	3	Bottom	Andrew 1-5/8	200.05						1285.2866		22	
	PORT 7			CTL05279_9C_2	CTL05279_9C_2		LTE 1900	QS66512-2_1930MHz_02DT	16	320	2	Bottom	Andrew 1-5/8	200.05						7328.7514		22	

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?					Yes									
ANTENNA MAKE - MODEL	SBNHH-1D85B													
ANTENNA VENDOR	Andrew													
ANTENNA SIZE (H x W x D)	72.9X11.9X7.1													
ANTENNA WEIGHT	42.1													
AZIMUTH	60													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173													
ANTENNA TIP HEIGHT	175													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT	2													
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-in												
SURGE ARRESTOR (QTY/MODEL)	4	TSXDC-4310FM			4	TSXDC-4310FM								
DIPLEXER (QTY/MODEL)	2	TPX-070821												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	TMABPD7823VG12A												
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)					1	4478 B5								
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)	1	4426 B66												
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	K SBT 782-11055												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	SOW:- Replace UMTS Antenna to 85° BW Hex Model.- Replace Diplexers to Triplexers.- Replace TMA's with new AWS Compatible TMA's- Add new 2 Coax per sector.- Add LTE RRH @ Bottom along with SA.- Upgrade LTE 850 RRH- Add 2nd XMU.- Add SBTs.- Add 1x6630.													
Local Market Note 2														
Local Market Note 3	1x5216+2xXMU+1x6630.													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1			CTV52791	CTV52791		UMTS 850	SBNHH-1D85B_847MHz_06DT	14.39	60	6	None	Andrew 1-5/8	200.05						289.07		1	
	PORT 2			CTV52791	CTV5279A		UMTS 850	SBNHH-1D85B_847MHz_06DT	14.39	60	6	Bottom	Andrew 1-5/8	200.05						289.07		1	
	PORT 3			CTL05279_2A_2	CTL05279_2A_2		LTE AWS	SBNHH-1D85B_2170MHz_03DT	18.05	60	3	Bottom	Andrew 1-5/8	200.05						3837.0724		2	

ANTENNA POSITION 3	**PORT 2**			CTL05279_8A_1	CTL05279_8A_1		LTE 850	QS66512-2_850MHz_04DT	13.6	60	4	Bottom	Andrew 1-5/8	200.05						1000		5	
	PORT 5			CTN0005279_8A_1	CTN0005279_8A_1		LTE 850	QS66512-2_850MHz_04DT	13.6	60	4	Bottom	Andrew 1-5/8	200.05						1000		5	

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?					Yes									
ANTENNA MAKE - MODEL	SBNHH-1D85B													
ANTENNA VENDOR	Andrew													
ANTENNA SIZE (H x W x D)	72.9X11.9X7.1													
ANTENNA WEIGHT	42.1													
AZIMUTH	200													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173													
ANTENNA TIP HEIGHT	175													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT	2													
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-in												
SURGE ARRESTOR (QTY/MODEL)	4	TSXDC-4310FM			4	TSXDC-4310FM								
DIPLEXER (QTY/MODEL)	2	TPX-070821												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	TMABPD7823VG12A												
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)					1	4478 B5								
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)	1	4426 B66												
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	K SBT 782-11055												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	SOW:- Replace UMTS Antenna to 85° BW Hex Model.- Replace Diplexers to Triplexers.- Replace TMA's with new AWS Compatible TMA's- Add new 2 Coax per sector.- Add LTE RRH @ Bottom along with SA.- Upgrade LTE 850 RRH- Add 2nd XMU.- Add SBTs.- Add 1x6630.													
Local Market Note 2														
Local Market Note 3	1x5216+2xXMU+1x6630.													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1			CTV52792	CTV52792		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	200	10	None	Andrew 1-5/8	200.05						289.07		9	
	PORT 2			CTV52792	CTV5279B		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	200	10	Bottom	Andrew 1-5/8	200.05						289.07		9	
	PORT 3			CTL05279_2B_2	CTL05279_2B_2		LTE AWS	SBNHH-1D85B_2170MHz_06DT	17.97	200	6	Bottom	Andrew 1-5/8	200.05						3837.0724		10	

ANTENNA POSITION 3	**PORT 2**			CTL05279_8B_1	CTL05279_8B_1		LTE 850	QS66512-2_850MHz_10DT	13.5	200	10	Bottom	Andrew 1-5/8	200.05						1000		13	
	PORT 5			CTN0005279_8B_1	CTN0005279_8B_1		LTE 850	QS66512-2_850MHz_10DT	13.5	200	10	Bottom	Andrew 1-5/8	200.05						1000		13	

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?					Yes									
ANTENNA MAKE - MODEL	SBNHH-1D85B													
ANTENNA VENDOR	Andrew													
ANTENNA SIZE (H x W x D)	72.9X11.9X7.1													
ANTENNA WEIGHT	42.1													
AZIMUTH	320													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173													
ANTENNA TIP HEIGHT	175													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT	2													
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-in												
SURGE ARRESTOR (QTY/MODEL)	4	TSXDC-4310FM			4	TSXDC-4310FM								
DIPLEXER (QTY/MODEL)	2	TPX-070821												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	TMABPD7823VG12A												
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)					1	4478 B5								
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)	1	4426 B66												
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	K SBT 782-11055												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	SOW:- Replace UMTS Antenna to 85° BW Hex Model.- Replace Diplexers to Triplexers.- Replace TMA's with new AWS Compatible TMA's- Add new 2 Coax per sector.- Add LTE RRH @ Bottom along with SA.- Upgrade LTE 850 RRH- Add 2nd XMU.- Add SBTs.- Add 1x6630.													
Local Market Note 2														
Local Market Note 3	1x5216+2xXMU+1x6630.													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1			CTV52793	CTV52793		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	320	10	None	Andrew 1-5/8	200.05						289.07		17	
	PORT 2			CTV52793	CTV5279C		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	320	10	Bottom	Andrew 1-5/8	200.05						289.07		17	
	PORT 3			CTL05279_2C_2	CTL05279_2C_2		LTE AWS	SBNHH-1D85B_2170MHz_02DT	18.05	320	2	Bottom	Andrew 1-5/8	200.05						3837.0724		18	

ANTENNA POSITION 3	**PORT 2**			CTL05279_8C_1	CTL05279_8C_1		LTE 850	QS66512-2_850MHz_10DT	13.5	320	10	Bottom	Andrew 1-5/8	200.05						1000		21	
	PORT 5			CTN0005279_8C_1	CTN0005279_8C_1		LTE 850	QS66512-2_850MHz_10DT	13.5	320	10	Bottom	Andrew 1-5/8	200.05						1000		21	

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

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	SBNHH-1D85B				QS66512-2									
ANTENNA VENDOR	Andrew				Quintel									
ANTENNA SIZE (H x W x D)	72.9X11.9X7.1				72X12X9.6									
ANTENNA WEIGHT	42.1				111									
AZIMUTH	60				60									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173				173									
ANTENNA TIP HEIGHT	176				176									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	4				4									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-in				Built-in								
SURGE ARRESTOR (QTY/MODEL)	4	TSXDC-4310FM			16	APTDC-BDFDM-DB(12)+TSXDC-4310FM(4)								
DIPLEXER (QTY/MODEL)	2	TPX-070821			4	QBC0007F1V51-1								
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)	1	Kathrein / 860-10006				LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	TMABPD7823VG12A			2	Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)								
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)					1	RRUS-11 (REUSE ONLY)								
RRH - 850 band (QTY/MODEL)					1	4478 B5								
RRH - 1900 band (QTY/MODEL)					2	RRUS-12								
RRH - AWS band (QTY/MODEL)	1	4426 B66												
RRH - WCS band (QTY/MODEL)					1	RRUS-32								
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	K SBT 782-11055												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	SOW:- Replace UMTS Antenna to 85° BW Hex Model.- Replace Diplexers to Triplexers.- Replace TMA's with new AWS Compatible TMA's- Add new 2 Coax per sector.- Add LTE RRH @ Bottom along with SA.- Upgrade LTE 850 RRH- Add 2nd XMU.- Add SBTs.- Add 1x6630.													
Local Market Note 2														
Local Market Note 3	1x5216+2xXMU+1x6630.													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	25924.A.850.3G.1		CTV52791	CTV52791		UMTS 850	SBNHH-1D85B_847MHz_06DT	14.39	60	6	None	Andrew 1-5/8	200.05						289.07		1	
	PORT 2	25924.A.850.3G.2		CTV52791	CTV5279A		UMTS 850	SBNHH-1D85B_847MHz_06DT	14.39	60	6	Bottom	Andrew 1-5/8	200.05						289.07		1	
	PORT 3	25924.A.AWS.4G.tmp4		CTL05279_2A_2	CTL05279_2A_2		LTE AWS	SBNHH-	18.05	60	3	Bottom	Andrew 1-5/8	200.05						3837.0724		2	

								1D85B_2170MHz_03DT															
ANTENNA POSITION 3	**PORT 1**	25924.A.700.4G.1		CTL05279_7A_1	CTL05279_7A_1		LTE 700	QS66512-2_722MHz_04DT	13.3	60	4	Bottom	Andrew 1-5/8	200.05						1475.7065		5	
	PORT 2	25924.A.850.4G.tmp1		CTL05279_8A_1	CTL05279_8A_1		LTE 850	QS66512-2_850MHz_04DT	13.6	60	4	Bottom	Andrew 1-5/8	200.05						1000		5	
	PORT 3	25924.A.1900.4G.1		CTL05279_9A_1	CTL05279_9A_1		LTE 1900	QS66512-2_1930MHz_03DT	15.9	60	3	Bottom	Andrew 1-5/8	200.05						7328.7514		6	
	PORT 4	25924.A.WCS.4G.tmp1		CTL05279_3A_1	CTL05279_3A_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	60	3	Bottom	Andrew 1-5/8	200.05						1285.2866		6	
	PORT 5	25924.A.850.5G.tmp1		CTN0005279_8A_1	CTN0005279_8A_1		LTE 850	QS66512-2_850MHz_04DT	13.6	60	4	Bottom	Andrew 1-5/8	200.05						1000		5	
	PORT 7	25924.A.1900.4G.tmp4		CTL05279_9A_2	CTL05279_9A_2		LTE 1900	QS66512-2_1930MHz_03DT	15.9	60	3	Bottom	Andrew 1-5/8	200.05						7328.7514		6	

Section 17B - FINAL TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	SBNHH-1D85B				QS66512-2									
ANTENNA VENDOR	Andrew				Quintel									
ANTENNA SIZE (H x W x D)	72.9X11.9X7.1				72X12X9.6									
ANTENNA WEIGHT	42.1				111									
AZIMUTH	200				200									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173				173									
ANTENNA TIP HEIGHT	176				176									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	4				4									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-in				Built-in								
SURGE ARRESTOR (QTY/MODEL)	4	TSXDC-4310FM			16	APTDC-BDFDM-DB(12)+TSXDC-4310FM(4)								
DIPLEXER (QTY/MODEL)	2	TPX-070821			4	QBC0007F1V51-1								
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)						LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	TMABPD7823VG12A			2	Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)								
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)					1	RRUS-11 (REUSE ONLY)								
RRH - 850 band (QTY/MODEL)					1	4478 B5								
RRH - 1900 band (QTY/MODEL)					2	RRUS-12								
RRH - AWS band (QTY/MODEL)	1	4426 B66												
RRH - WCS band (QTY/MODEL)					1	RRUS-32								
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	K SBT 782-11055												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	SOW:- Replace UMTS Antenna to 85° BW Hex Model.- Replace Diplexers to Triplexers.- Replace TMA's with new AWS Compatible TMA's- Add new 2 Coax per sector.- Add LTE RRH @ Bottom along with SA.- Upgrade LTE 850 RRH- Add 2nd XMU.- Add SBTs.- Add 1x6630.													
Local Market Note 2														
Local Market Note 3	1x5216+2xXMU+1x6630.													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	25924.B.850.3G.1		CTV52792	CTV52792		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	200	10	None	Andrew 1-5/8	200.05						289.07		9	
	PORT 2	25924.B.850.3G.2		CTV52792	CTV5279B		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	200	10	Bottom	Andrew 1-5/8	200.05						289.07		9	
	PORT 3	25924.B.AWS.4G.tmp4		CTL05279_2B_2	CTL05279_2B_2		LTE AWS	SBNHH-	17.97	200	6	Bottom	Andrew 1-5/8	200.05						3837.0724		10	

								1D85B_2170MHz_06DT															
ANTENNA POSITION 3	**PORT 1**	25924.B.700.4G.1		CTL05279_7B_1	CTL05279_7B_1		LTE 700	QS66512-2_722MHz_10DT	13.1	200	10	Bottom	Andrew 1-5/8	200.05						1475.7065		13	
	PORT 2	25924.B.850.4G.tmp1		CTL05279_8B_1	CTL05279_8B_1		LTE 850	QS66512-2_850MHz_10DT	13.5	200	10	Bottom	Andrew 1-5/8	200.05						1000		13	
	PORT 3	25924.B.1900.4G.1		CTL05279_9B_1	CTL05279_9B_1		LTE 1900	QS66512-2_1930MHz_06DT	15.9	200	6	Bottom	Andrew 1-5/8	200.05						7328.7514		14	
	PORT 4	25924.B.WCS.4G.tmp1		CTL05279_3B_1	CTL05279_3B_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	200	3	Bottom	Andrew 1-5/8	200.05						1285.2866		14	
	PORT 5	25924.B.850.5G.tmp1		CTN0005279_8B_1	CTN0005279_8B_1		LTE 850	QS66512-2_850MHz_10DT	13.5	200	10	Bottom	Andrew 1-5/8	200.05						1000		13	
	PORT 7	25924.B.1900.4G.tmp4		CTL05279_9B_2	CTL05279_9B_2		LTE 1900	QS66512-2_1930MHz_06DT	15.9	200	6	Bottom	Andrew 1-5/8	200.05						7328.7514		14	

Section 17C - FINAL TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	SBNHH-1D85B				QS66512-2									
ANTENNA VENDOR	Andrew				Quintel									
ANTENNA SIZE (H x W x D)	72.9X11.9X7.1				72X12X9.6									
ANTENNA WEIGHT	42.1				111									
AZIMUTH	320				320									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	173				173									
ANTENNA TIP HEIGHT	176				176									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	4				4									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-in				Built-in								
SURGE ARRESTOR (QTY/MODEL)	4	TSXDC-4310FM			16	APTDC-BDFDM-DB(12)+TSXDC-4310FM(4)								
DIPLEXER (QTY/MODEL)	2	TPX-070821			4	QBC0007F1V51-1								
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)						LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	2	TMABPD7823VG12A			2	Kaelus TMA2117F00V1-1 (Twin PCS-WCS w/700/850 BP)								
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)					1	RRUS-11 (REUSE ONLY)								
RRH - 850 band (QTY/MODEL)					1	4478 B5								
RRH - 1900 band (QTY/MODEL)					2	RRUS-12								
RRH - AWS band (QTY/MODEL)	1	4426 B66												
RRH - WCS band (QTY/MODEL)					1	RRUS-32								
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	K SBT 782-11055												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	SOW:- Replace UMTS Antenna to 85° BW Hex Model.- Replace Diplexers to Triplexers.- Replace TMA's with new AWS Compatible TMA's- Add new 2 Coax per sector.- Add LTE RRH @ Bottom along with SA.- Upgrade LTE 850 RRH- Add 2nd XMU.- Add SBTs.- Add 1x6630.													
Local Market Note 2														
Local Market Note 3	1x5216+2xXMU+1x6630.													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	25924.C.850.3G.1		CTV52793	CTV52793		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	320	10	None	Andrew 1-5/8	200.05						289.07		17	
	PORT 2	25924.C.850.3G.2		CTV52793	CTV5279C		UMTS 850	SBNHH-1D85B_847MHz_10DT	14.37	320	10	Bottom	Andrew 1-5/8	200.05						289.07		17	
	PORT 3	25924.C.AWS.4G.tmp4		CTL05279_2C_2	CTL05279_2C_2		LTE AWS	SBNHH-	18.05	320	2	Bottom	Andrew 1-5/8	200.05						3837.0724		18	

								1D85B_2170MHz_02DT															
ANTENNA POSITION 3	**PORT 1**	25924.C.700.4G.1		CTL05279_7C_1	CTL05279_7C_1		LTE 700	QS66512-2_722MHz_10DT	13.1	320	10	Bottom	Andrew 1-5/8	200.05						1475.7065		21	
	PORT 2	25924.C.850.4G.tmp1		CTL05279_8C_1	CTL05279_8C_1		LTE 850	QS66512-2_850MHz_10DT	13.5	320	10	Bottom	Andrew 1-5/8	200.05						1000		21	
	PORT 3	25924.C.1900.4G.1		CTL05279_9C_1	CTL05279_9C_1		LTE 1900	QS66512-2_1930MHz_02DT	16	320	2	Bottom	Andrew 1-5/8	200.05						7328.7514		22	
	PORT 4	25924.C.WCS.4G.tmp1		CTL05279_3C_1	CTL05279_3C_1		LTE WCS	QS66512-2_2355MHz_03DT	16.7	320	3	Bottom	Andrew 1-5/8	200.05						1285.2866		22	
	PORT 5	25924.C.850.5G.tmp1		CTN0005279_8C_1	CTN0005279_8C_1		LTE 850	QS66512-2_850MHz_10DT	13.5	320	10	Bottom	Andrew 1-5/8	200.05						1000		21	
	PORT 7	25924.C.1900.4G.tmp4		CTL05279_9C_2	CTL05279_9C_2		LTE 1900	QS66512-2_1930MHz_02DT	16	320	2	Bottom	Andrew 1-5/8	200.05						7328.7514		22	

Diagram - Sector	A	Diagram File Name - CT5279_A_B_C_LTE_REV.1.vsd					
Atoll Site Name -	CTL05279	Location Name -	MERIDEN BIRDSEY AVENUE	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)"

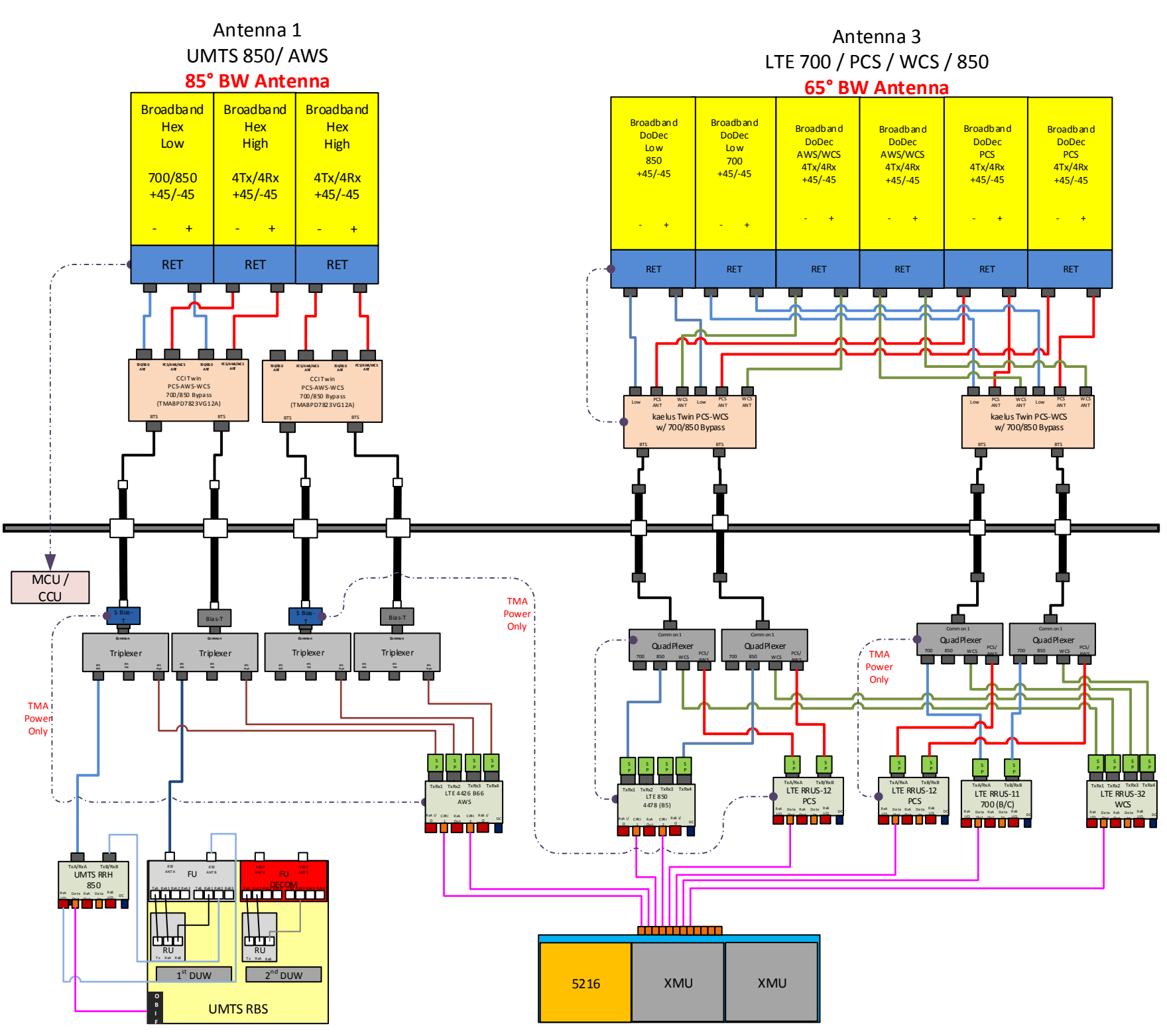


Diagram - Sector	B	Diagram File Name -	CT5279_A_B_C_LTE_REV.1.vsd				
Atoll Site Name -	CTL05279	Location Name -	MERIDEN BIRDSEY AVENUE	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)"

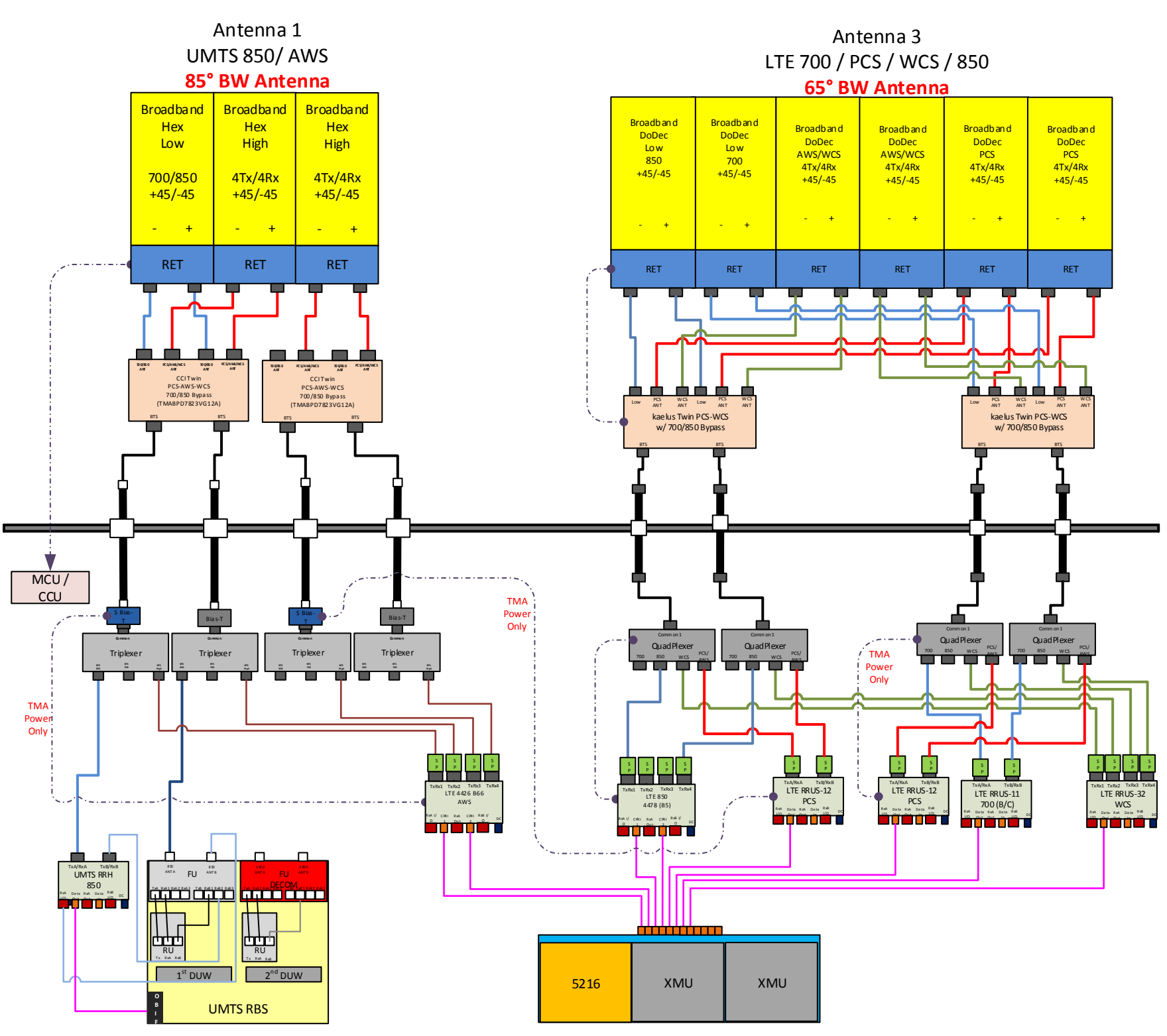
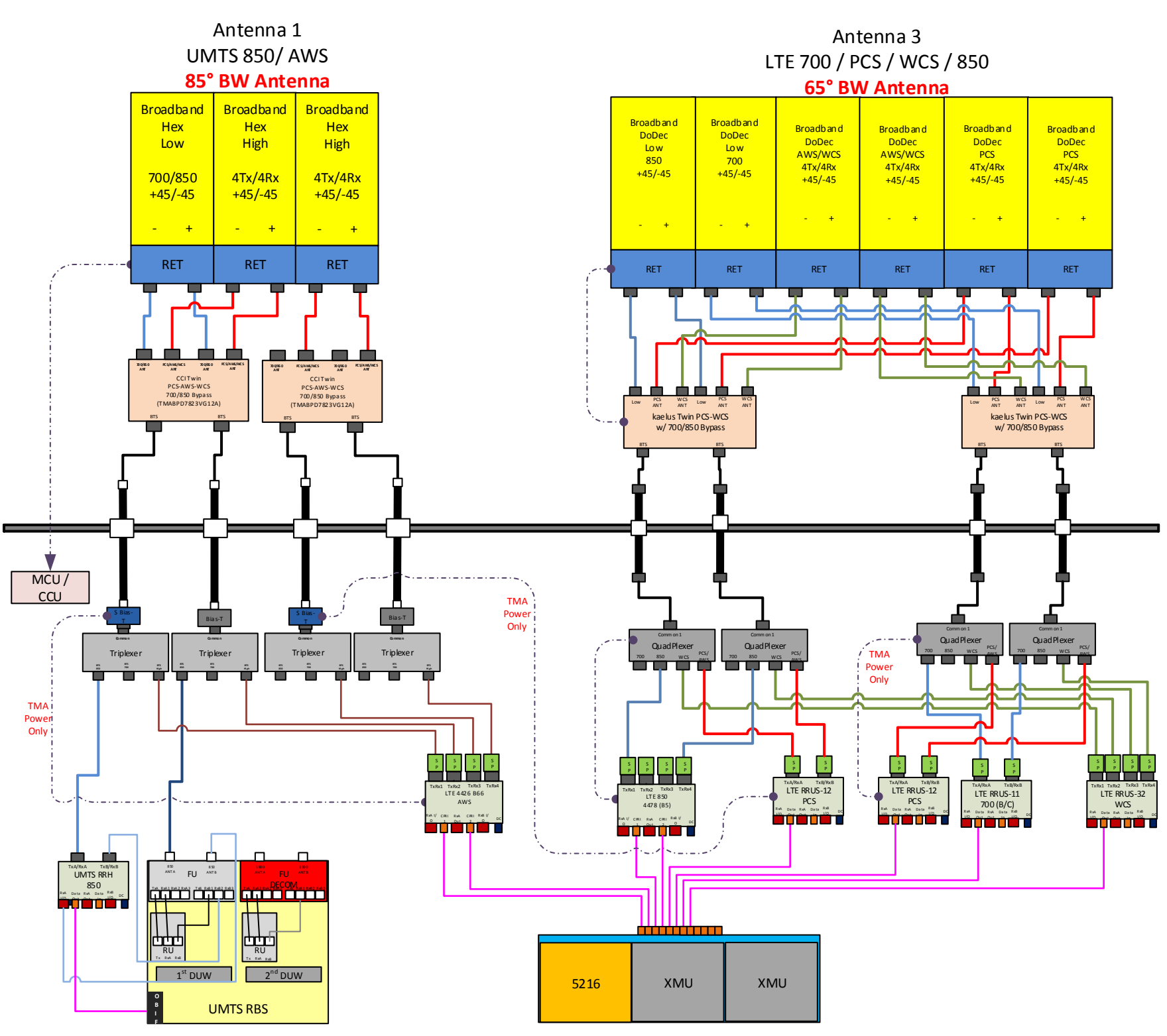


Diagram - Sector	C	Diagram File Name - CT5279_A_B_C_LTE_REV.1.vsd					
Atoll Site Name -	CTL05279	Location Name -	MERIDEN BIRDSEY AVENUE	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)"



NOTES			
Date Time (Eastern)	Version	ATTUID	Note
4/1/2018 9:55:48 PM	1.00	mh705r	LTE Preliminary RFDS Created

WORKFLOW SUMMARY							
Date	FROM State / Status	FROM ATTUID	TO State / Status	TO ATTUID	Operation	Comments	PACE Status
05/05/2018	Preliminary In Progress	mh705r	Preliminary Submitted for Approval	RC475S	Promote	LTE Preliminary RFDS	NER-RCTB-18-02310 MRCTB032126 SUCCESS 05/05/2018 12:10:16 AM NER-RCTB-18-02386 MRCTB031617 SUCCESS 05/05/2018 12:10:16 AM
05/09/2018	Preliminary Submitted for Approval	RC475S	Preliminary Approved	LW826K	Promote		

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT5279

FA#: 10105380

Meriden Birdsey Avenue
74 Birdsey Avenue
Meriden, CT 06450

April 5, 2019

Centerline Communications Project Number: 950012-212

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**2.30 %**

April 5, 2019

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

Emissions Analysis for Site: **CT5279 – Meriden Birdsey Avenue**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **74 Birdsey Avenue, Meriden, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **74 Birdsey Avenue, Meriden, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
LTE	2100 MHz (AWS)	4	30
LTE	700 MHz	2	40
LTE	850 MHz	2	40
LTE	1900 MHz (PCS)	4	40
LTE	2300 MHz (WCS)	4	30

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Commscope SBNHH-1D85B	173
A	2	Quintel QS66512-2	173
B	1	Commscope SBNHH-1D85B	173
B	2	Quintel QS66512-2	173
C	1	Commscope SBNHH-1D85B	173
C	2	Quintel QS66512-2	173

Table 2: Antenna Data

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

RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Commscope SBNHH-1D85B	850 MHz / 2100 MHz (AWS)	12.25 / 15.75	6	180	5,517.33	0.81
Antenna A2	Quintel QS66512-2	700 MHz / 850 MHz / 1900 MHz (PCS) / 2300 MHz (WCS)	10.85 / 11.35 / 13.85 / 14.85	12	440	9,613.10	1.49
						Sector A Composite MPE%	**2.30**
Antenna B1	Commscope SBNHH-1D85B	850 MHz / 2100 MHz (AWS)	12.25 / 15.75	6	180	5,517.33	0.81
Antenna B2	Quintel QS66512-2	700 MHz / 850 MHz / 1900 MHz (PCS) / 2300 MHz (WCS)	10.85 / 11.35 / 13.85 / 14.85	12	440	9,613.10	1.49
						Sector B Composite MPE%	**2.30**
Antenna C1	Commscope SBNHH-1D85B	850 MHz / 2100 MHz (AWS)	12.25 / 15.75	6	180	5,517.33	0.81
Antenna C2	Quintel QS66512-2	700 MHz / 850 MHz / 1900 MHz (PCS) / 2300 MHz (WCS)	10.85 / 11.35 / 13.85 / 14.85	12	440	9,613.10	1.49
						Sector C Composite MPE%	**2.30**

Table 3: AT&T Emissions Levels

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

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Per Sector Value	**2.30 %**
No additional Carriers Per CSC Database	0.00 %
Site Total MPE %:	**2.30 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	2.30 %
AT&T Sector B Total:	2.30 %
AT&T Sector C Total:	2.30 %
Site Total:	2.30 %

Table 5: Site MPE Summary

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

AT&T _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS – Antenna 1	2	503.64	173	1.30	850 MHz	567	0.23%
AT&T 2100 MHz (AWS) LTE – Antenna	4	1,127.51	173	5.81	2100 MHz (AWS)	1000	0.58%
AT&T 700 MHz LTE – Antenna 2	2	486.47	173	1.25	700 MHz	467	0.27%
AT&T 850 MHz LTE – Antenna 2	2	545.83	173	1.41	850 MHz	567	0.25%
AT&T 1900 MHz (PCS) LTE – Antenna 2	4	970.64	173	5.00	1900 MHz (PCS)	1000	0.50%
AT&T 2300 MHz (WCS) LTE – Antenna 2	4	916.48	173	4.73	2300 MHz (WCS)	1000	0.47%
						Total:	**2.30%**

Table 6: AT&T Maximum Sector MPE Power Values

Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A:	2.30 %
Sector B:	2.30 %
Sector C:	2.30 %
AT&T Maximum Total (per sector):	2.30 %
Site Total:	2.30 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **2.30 %** 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.

Scott Heffernan
RF Engineering Director
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

PROJECT INFORMATION

SCOPE OF WORK:	TOWER – REPLACE (6) EXISTING ANTENNAS WITH (3) NEW ANDREW 6' HEX ANTENNAS IN POSITION 1 & (3) NEW 12–PORT ANTENNAS IN POSITION 3. REPLACE (9) EXISTING TMAS WITH (12) NEW TMAS ON EXISTING TRANSMISSION TOWER. ADD (6) NEW COAX CABLES. EQUIPMENT AREA – INSTALL (3) RRUS–12 850, (3) RRUS–32, (3) 4426 RRUS, (3) RRU 4478 B5 RADIOS WITH (12) TSXDC–4310FM SURGE ARRESTORS TO ANTENNA AT POSITION 1 & (12) TSXDC–4301FM SURGE ARRESTORS TO ANTENNA AT POSITION 3. SWAP DUS TO 5216 & ADD XMU'S. ADD SBT'S & (1) RBS 6630.
SITE ADDRESS:	74 BIRDSEY AVENUE MERIDEN, CT 06450
LATITUDE:	41° 31' 22.50" N (NAD 83)*
LONGITUDE:	72° 44' 57.65" W (NAD 83)* *PER EXISTING AT&T PLANS
JURISDICTION:	CITY OF MERIDEN
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
NAME OF APPLICANT:	AT&T MOBILITY 500 ENTERPRISE DRIVE SUITE 3A ROCKY HILL, CT 06067
TOWER OWNER:	CONNECTICUT LIGHT & POWER
STRUCTURE NUMBER:	9403

at&t Mobility

SITE NAME: MERIDEN BIRDSEY AVENUE
SITE NUMBER: CT5279 LTE 3C/4C/5C/5G NR
PACE NO:. MRCTB02240 (3C) / MRCTB025041 (4C) / MRCTB031617 (5C) / MRCTB032126 (5G NR)
FA LOCATION CODE: 10105380

DRAWING INDEX

		REV
T01	TITLE SHEET	1
G01	GENERAL NOTES	1
C01	PROPOSED SITE PLAN	1
C02	PROPOSED ELEVATION & CONSTRUCTION DETAILS	1
C03	EQUIPMENT PLUMBING DIAGRAM	1
C04	PROPOSED EQUIPMENT SPECIFICATIONS – I	1
C05	PROPOSED EQUIPMENT SPECIFICATIONS – II	1
E01	GROUNDING DETAILS	1

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

STRUCTURAL NOTE:

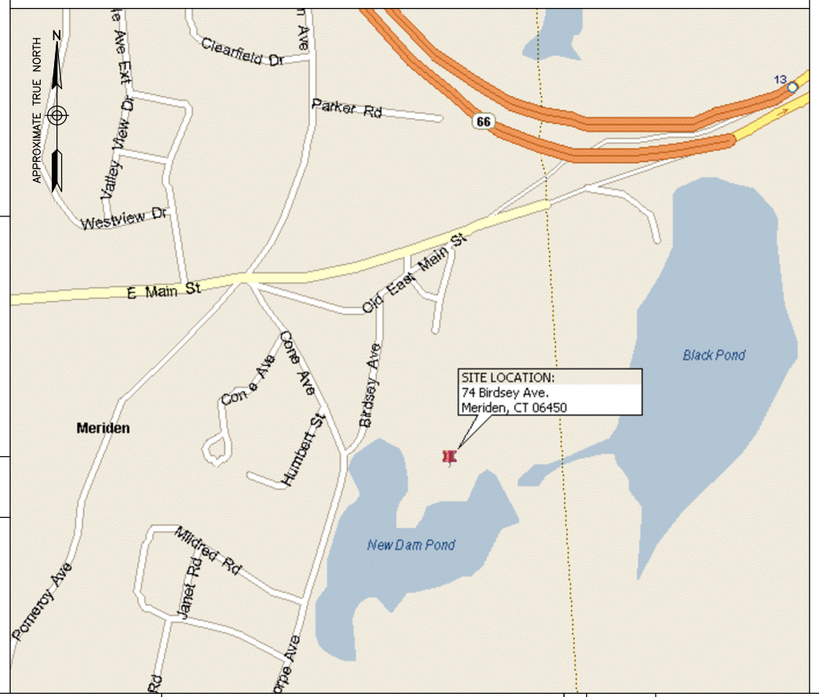
1. AS REQUIRED UNDER TIA/EIA 222H – STANDARD, CENTERLINE COMMUNICATIONS SHALL PROVIDE A STRUCTURAL ANALYSIS OF THE TOWER PREPARED BY A LICENSED CONNECTICUT STRUCTURAL ENGINEER CERTIFYING THAT, THE EXISTING TOWER AND ANY REQUIRED IMPROVEMENTS AND REINFORCEMENTS HAVE SUFFICIENT CAPACITY TO SUPPORT ALL EXISTING AND PROPOSED ANTENNAS, SUPPORTS AND APPURTENANCES AND COMPLIES WITH THE CURRENT CONNECTICUT STATE BUILDING CODE AND EIA/TIA CRITERIA. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY IMPROVEMENTS AND REINFORCEMENTS REQUIRED BY THE STRUCTURAL ANALYSIS CERTIFICATION ARE PROPERLY INSTALLED PRIOR TO THE ADDITION OF ANTENNAS, SUPPORTS AND APPURTENANCES PROPOSED ON THESE DRAWINGS OR OTHERWISE NOTED IN THE STRUCTURAL ANALYSIS.

CONTACT INFORMATION

CONTACT	CONTACT	COMPANY	PHONE NO.
ENGINEERING:	BENJAMIN REVETTE, P.E.	DEWBERRY ENGINEERS INC.	(617) 695–3400
SAC:	DAVID FORD	CENTERLINE COMMUNICATIONS	(508) 821–6509

VICINITY MAP

DIRECTIONS : TAKE I–91 S. TAKE EXIT 19 FOR BALDWIN AVE. TOWARD PRESTON AVE. TURN LEFT ONTO BALDWIN AVE. CONTINUE ONTO PRESTON AVE. TURN LEFT ONTO CONE AVE. TURN LEFT ONTO BIRDSEY AVE. THE SITE WILL BE ON THE RIGHT.



APPLICABLE BUILDING CODES AND STANDARDS

CONTRACTOR'S WORK SHALL COMPLY WITH PROJECT STANDARD NOTES, SYMBOLS AND DETAILS (SEE DRAWING INDEX FOR STANDARD NOTES AND DETAILS INCLUDED WITH TYPICAL DRAWING PACKAGE). CONTRACTOR WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE:
INTERNATIONAL BUILDING CODE (IBC)

ELECTRICAL CODE:
NATIONAL ELECTRICAL CODE (NEC)

CONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS.
AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222–G, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM
IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT

IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")

TELCORDIA GR–1503, COAXIAL CABLE CONNECTIONS

ANSI T1.311, FOR TELECOM – DC POWER SYSTEMS – TELECOM, ENVIRONMENTAL PROTECTION

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

Dewberry®
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET
WEST BRIDGEWATER, MA 02379

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

MERIDEN BIRDSEY AVENUE
SITE NO. CT5279 3C/4C/5C/5G NR

74 BIRDSEY AVENUE
MERIDEN, CT 06450

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/11/19	ISSUED FOR CONSTRUCTION	AJB	DAS	BBR
0	12/14/18	ISSUED FOR CONSTRUCTION	AJB	DAS	BBR
A	08/16/18	ISSUED FOR REVIEW	AJB	DAS	BBR

SCALE: AS SHOWN | DESIGNED BY: DAS | DRAWN BY: MR

STATE OF CONNECTICUT
BENJAMIN B. REVETTE
28971
REGISTERED
PROFESSIONAL ENGINEER

AT&T MOBILITY
ROCKY HILL, 06067

TITLE SHEET

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096234	T01	1

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   PROJECT MANAGEMENT – CENTERLINE COMMUNICATIONS
   CONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY
   OEM – ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF PROJECT MANAGEMENT.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
5. DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED AND ARE INTENDED TO SHOW OUTLINE ONLY.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY PROJECT MANAGEMENT.
9. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH PROJECT MANAGEMENT.
10. THE CONTRACTOR SHALL PROTECT EXISTING & PROPOSED IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
11. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
14. CONTRACTOR SHALL NOTIFY DEWBERRY 48 HOURS IN ADVANCE OF POURING CONCRETE, OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEER REVIEW.
15. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY PROJECT MANAGEMENT OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
16. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
17. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.

SITE WORK GENERAL NOTES:

1. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO:
   A) FALL PROTECTION
   B) CONFINED SPACE
   C) ELECTRICAL SAFETY
   D) TRENCHING & EXCAVATION.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, TOP SOIL AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
6. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE AT&T SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE TRANSMISSION EQUIPMENT AND TOWER AREAS.
9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION, SEE SOIL COMPACTION NOTES.
11. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
12. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL JURISDICTION'S GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000 PSI) MAY BE USED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE (UNO). SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF.....1 1/2 IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL .....3/4 IN.
   BEAMS AND COLUMNS.....1 1/2 IN.
5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
7. CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC 1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
   (A) RESULTS OF CONCRETE CYLINDER TESTS PERFORMED AT THE SUPPLIER'S PLANT,
   (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
   FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
8. AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
3. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE 3/4"Ø CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
7. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION & TOPSOIL EXPOSE UNDISTURBED NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
3. AS AN ALTERNATIVE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
4. COMPACTED SUBBASE SHALL BE UNIFORM & LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING 1" SIEVE.
5. AS AN ALTERNATIVE TO ITEMS 2 AND 3 PROOFROLL THE SUBGRADE SOILS WITH 5 PASSES OF A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). ANY SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL, AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
   CONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, AT&T ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE REPLACED.
2. COORDINATION OF WORK:
   CONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH PROJECT MANAGEMENT.
3. CABLE LADDER RACK:
   CONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO ANY NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
2. CONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO NEW BTS EQUIPMENT. CONTRACTOR SHALL SUBMIT MODIFICATIONS TO PROJECT MANAGEMENT FOR APPROVAL.
3. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
4. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
5. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
6. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
7. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.
8. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
9. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
10. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
11. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
12. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL.) PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS.
13. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (SIZE 6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
14. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
15. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
16. ALL POWER AND POWER GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
17. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
18. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
19. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
20. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
21. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
22. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
23. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
24. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
25. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
26. CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
27. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
28. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
29. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
30. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
31. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM PROJECT MANAGEMENT BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
32. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

Dewberry®
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET
WEST BRIDGEWATER, MA 02379

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

MERIDEN BIRDSEY AVENUE
SITE NO. CT5279 3C/4C/5C/5G NR

74 BIRDSEY AVENUE
MERIDEN, CT 06450

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/11/19	ISSUED FOR CONSTRUCTION	AJB	DAS	BBR
0	12/14/18	ISSUED FOR CONSTRUCTION	AJB	DAS	BBR
A	08/16/18	ISSUED FOR REVIEW	AJB	DAS	BBR

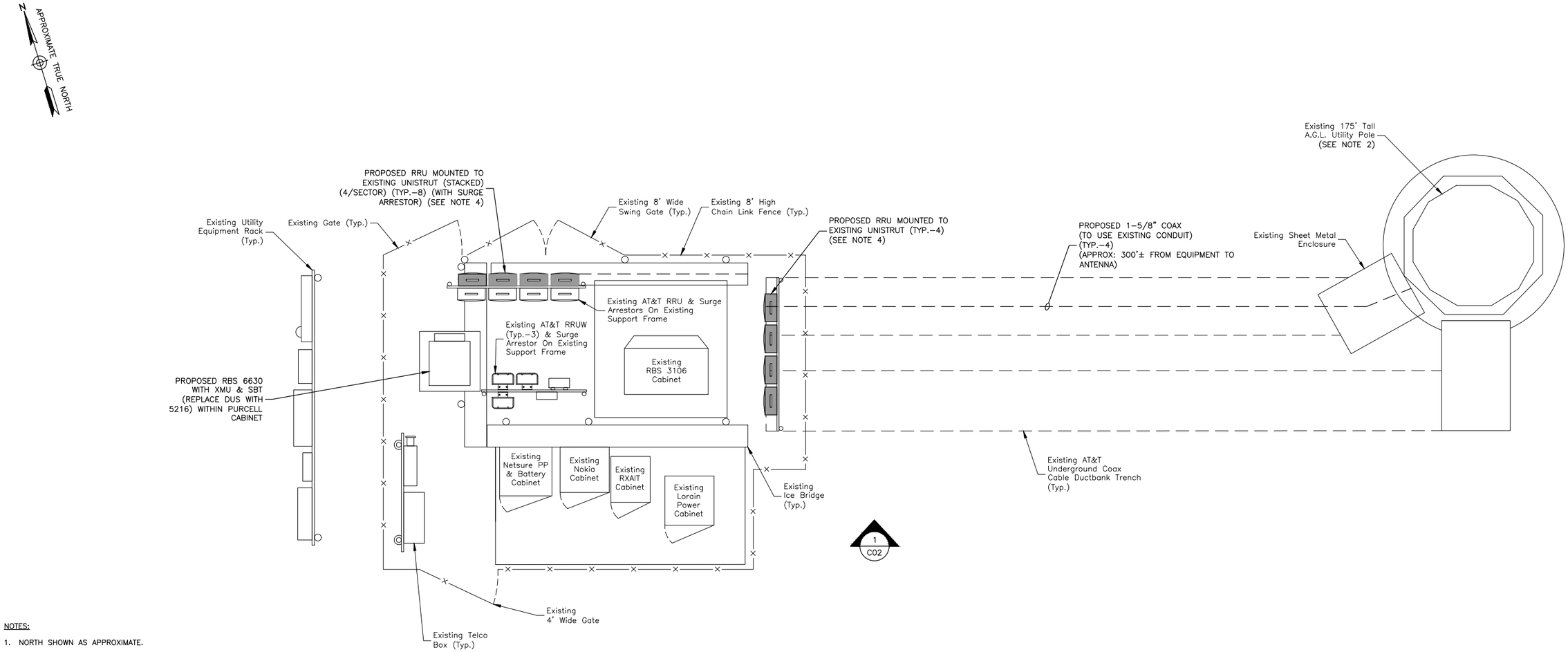
SCALE: AS SHOWN | DESIGNED BY: DAS | DRAWN BY: MR

STATE OF CONNECTICUT
BENJAMIN B. REVETTE
28971
REGISTERED
PROFESSIONAL ENGINEER

AT&T MOBILITY
ROCKY HILL, 06067

GENERAL NOTES

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096234	G01	1



PROPOSED SITE PLAN

1

SCALE: 3/16"=1' FOR 11"x17"
3/8"=1' FOR 22"x34"

0' 2' 4' 6'

NOTES:

1. NORTH SHOWN AS APPROXIMATE.
2. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS BY CENTEK ENGINEERING DATED 01/29/19, MOUNT MODIFICATION DRAWINGS BY CENTEK ENGINEERING DATED 10/30/18, MOUNT ANALYSIS BY DEWBERRY ENGINEERS INC. DATED 08/23/18 & MANUFACTURER RECOMMENDATIONS. SEE STRUCTURAL NOTE ON SHEET T01.
3. NOT ALL INFORMATION SHOWN FOR CLARITY.
4. EQUIPMENT MODIFICATION SCOPE:

   TOWER – REPLACE (6) EXISTING ANTENNAS WITH (3) NEW ANDREW 6' HEX ANTENNAS IN POSITION 1 & (3) NEW 12–PORT ANTENNAS IN POSITION 3. REPLACE (9) EXISTING TMAS WITH (12) NEW TMAS ON EXISTING TRANSMISSION TOWER. ADD (6) NEW COAX CABLES.

   EQUIPMENT AREA – INSTALL (3) RRUS–12 850, (3) RRUS–32, (3) 4426 RRUS, (3) RRU 4478 B5 RADIOS WITH (12) TSXDC–4310FM SURGE ARRESTORS TO ANTENNA AT POSITION 1 & (12) TSXDC–4301FM SURGE ARRESTORS TO ANTENNA AT POSITION 3. SWAP DUS TO 5216 & ADD XMU'S. ADD SBT'S & (1) RBS 6630.
5. ALL SPACING REQUIREMENTS FOR PROPOSED RRU MOUNTS SHALL BE CONFIRMED & SHALL NOT IMPEDE CLIMBING PEGS, TIE OFF FEATURES, OR OTHER EXISTING SAFETY FEATURES. ALL MOUNTS SHALL MAINTAIN EXISTING/PROPOSED MANUFACTURER REQUIREMENTS & SHALL NOT INTERFERE WITH OTHER RAD CENTERS OR EQUIPMENT.
6. CONTRACTOR SHALL VERIFY ANTENNA SPACING IN FIELD & RELOCATE PIPE MASTS AS REQUIRED TO MEET ANTENNA SPACING REQUIREMENTS. THE ANTENNA SPACING REQUIREMENTS ARE AS FOLLOWS:

   • 3'–0" MINIMUM SEPARATION BETWEEN LTE ANTENNAS
   • 6'–0" MINIMUM SEPARATION BETWEEN 700BC & 700DE

Dewberry®
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

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750 WEST CENTER STREET
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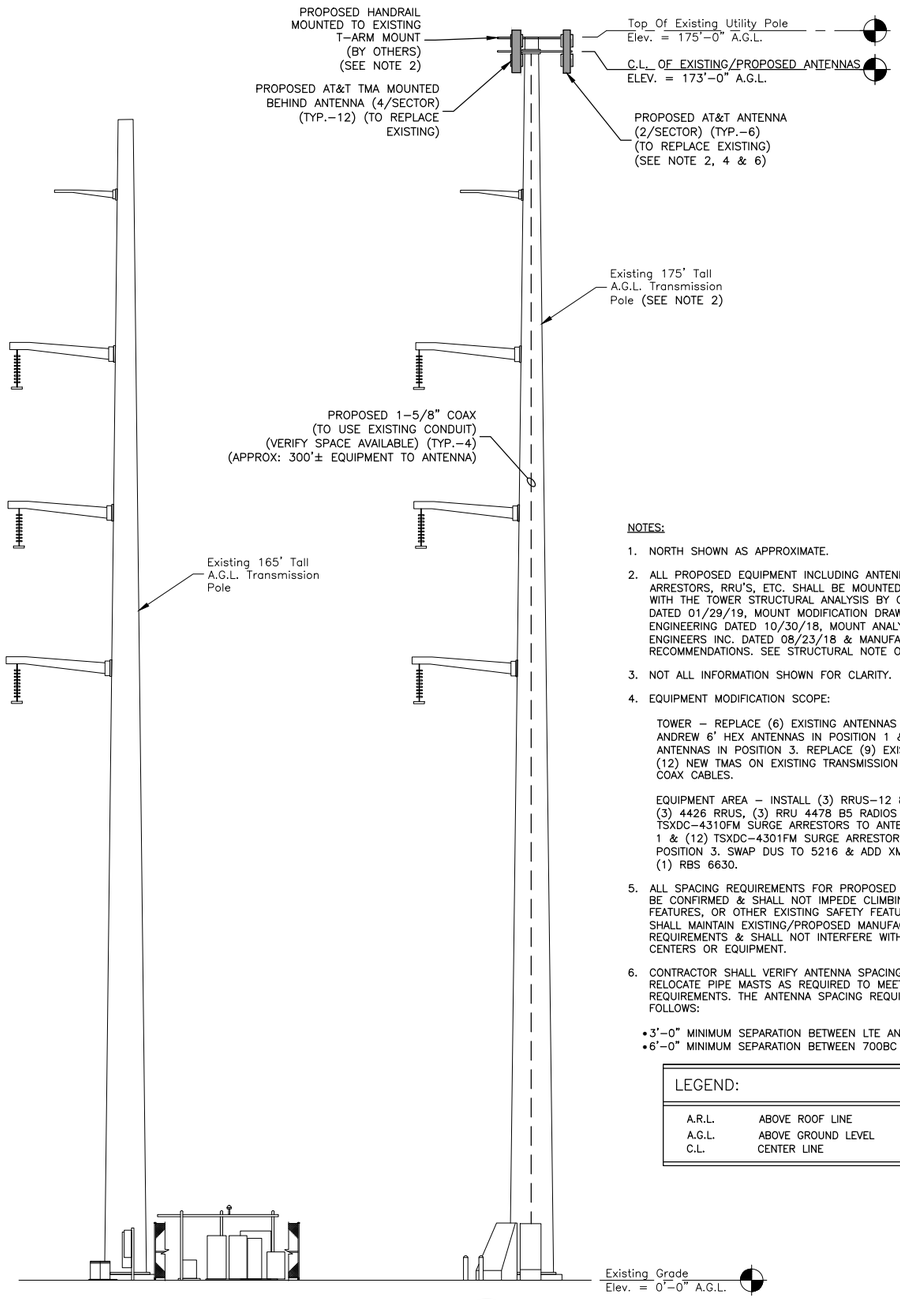
SCALE: AS SHOWN | DESIGNED BY: DAS | DRAWN BY: MR

STATE OF CONNECTICUT
BENJAMIN B. REVETTE
28971
REGISTERED
PROFESSIONAL ENGINEER

AT&T MOBILITY
ROCKY HILL, 06067

PROPOSED SITE PLAN

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096234	C01	1

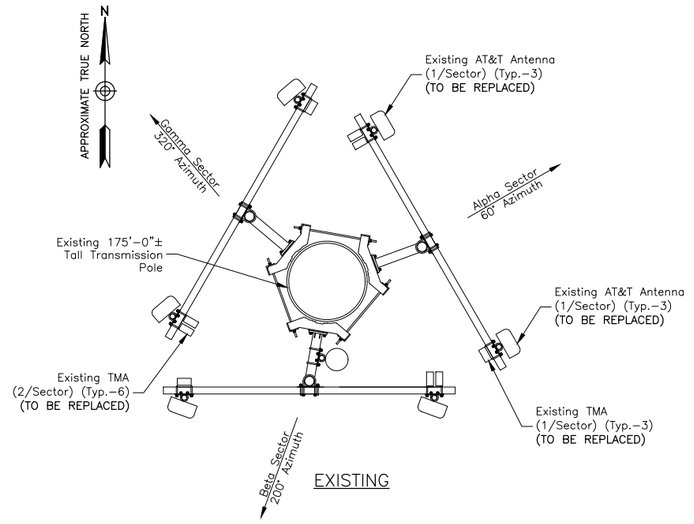


PROPOSED ELEVATION

SCALE: 3/64"=1' FOR 11"x17"
3/32"=1' FOR 22"x34"

1

0' 8' 16' 24'



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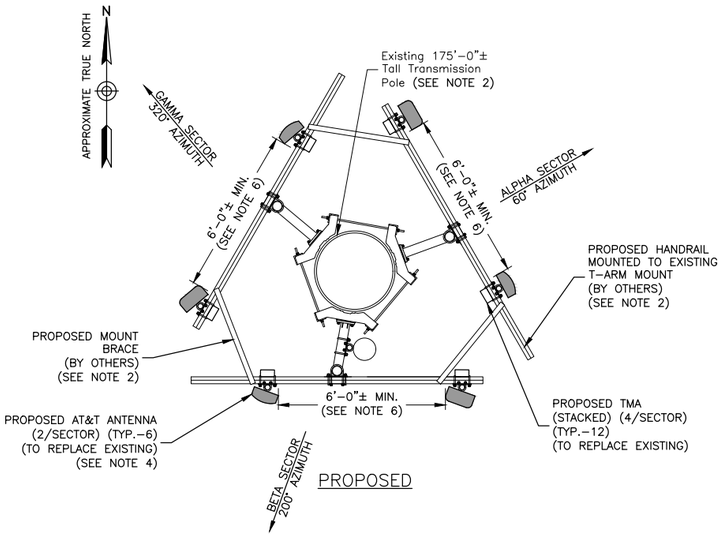


PROPOSED

ANTENNA ORIENTATION PLAN

SCALE: N.T.S.

2

NOTES:

1. NORTH SHOWN AS APPROXIMATE.
2. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS BY CENTEK ENGINEERING DATED 01/29/19, MOUNT MODIFICATION DRAWINGS BY CENTEK ENGINEERING DATED 10/30/18, MOUNT ANALYSIS BY DEWBERRY ENGINEERS INC. DATED 08/23/18 & MANUFACTURER RECOMMENDATIONS. SEE STRUCTURAL NOTE ON SHEET T01.
3. NOT ALL INFORMATION SHOWN FOR CLARITY.
4. EQUIPMENT MODIFICATION SCOPE:

   TOWER – REPLACE (6) EXISTING ANTENNAS WITH (3) NEW ANDREW 6' HEX ANTENNAS IN POSITION 1 & (3) NEW 12-PORT ANTENNAS IN POSITION 3. REPLACE (9) EXISTING TMAS WITH (12) NEW TMAS ON EXISTING TRANSMISSION TOWER. ADD (6) NEW COAX CABLES.

   EQUIPMENT AREA – INSTALL (3) RRUS-12 850, (3) RRUS-32, (3) 4426 RRUS, (3) RRU 4478 B5 RADIOS WITH (12) TSXDC-4310FM SURGE ARRESTORS TO ANTENNA AT POSITION 1 & (12) TSXDC-4301FM SURGE ARRESTORS TO ANTENNA AT POSITION 3. SWAP DUS TO 5216 & ADD XMU'S. ADD SBT'S & (1) RBS 6630.
5. ALL SPACING REQUIREMENTS FOR PROPOSED RRU MOUNTS SHALL BE CONFIRMED & SHALL NOT IMPEDE CLIMBING PEGS, TIE OFF FEATURES, OR OTHER EXISTING SAFETY FEATURES. ALL MOUNTS SHALL MAINTAIN EXISTING/PROPOSED MANUFACTURER REQUIREMENTS & SHALL NOT INTERFERE WITH OTHER RAD CENTERS OR EQUIPMENT.
6. CONTRACTOR SHALL VERIFY ANTENNA SPACING IN FIELD & RELOCATE PIPE MASTS AS REQUIRED TO MEET ANTENNA SPACING REQUIREMENTS. THE ANTENNA SPACING REQUIREMENTS ARE AS FOLLOWS:

- 3'-0" MINIMUM SEPARATION BETWEEN LTE ANTENNAS
- 6'-0" MINIMUM SEPARATION BETWEEN 700BC & 700DE

LEGEND:	
A.R.L.	ABOVE ROOF LINE
A.G.L.	ABOVE GROUND LEVEL
C.L.	CENTER LINE

FINAL EQUIPMENT CONFIGURATION

SECTOR	BAND	ANTENNA	SIZE (INCHES) (LxWxD)	RAD. CENTER	AZIMUTH	TMA	RRU	SIZE (INCHES) (LxWxD)	FEEDER	FIBER
ALPHA	UMTS 850/AWS	(P) SBNHH-1D85B	72.9 x 11.9 x 7.1	173'±	60°	(P) BPD7823VG12A TMA (P) BPD7823VG12A TMA	(P) RRUS 4426 B66 (AT GRADE)	27.2 x 12.1 x 7.0	(E) 2 (P) 2	(E) 1
	–	–	–	–	–	–	–	–	–	–
	LTE 700/PCS/WCS/850	(P) QS66512-2	72.0 x 12.0 x 9.6	173'±	60°	(P) 2117F00V-1 TMA (P) 2117F00V-1 TMA	(E) RRUS-11 700 (BE) (E) RRUS-12 PCS (P) RRUS-12 850 (P) RRUS 4478 B5 (P) RRUS-32 WCS	19.7 x 17.0 x 7.2 20.4 x 18.5 x 7.5 20.4 x 18.5 x 7.5 16.5 x 13.4 x 7.7 27.2 x 12.1 x 7.0	(E) 2 (P) 2	–
	–	–	–	–	–	–	–	–	–	–
BETA	UMTS 850/AWS	(P) SBNHH-1D85B	72.9 x 11.9 x 7.1	173'±	200°	(P) BPD7823VG12A TMA (P) BPD7823VG12A TMA	(P) RRUS 4426 B66 (AT GRADE)	27.2 x 12.1 x 7.0	(E) 2 (P) 2	(E) 1
	–	–	–	–	–	–	–	–	–	–
	LTE 700/PCS/WCS/850	(P) QS66512-2	72.0 x 12.0 x 9.6	173'±	200°	(P) 2117F00V-1 TMA (P) 2117F00V-1 TMA	(E) RRUS-11 700 (BE) (E) RRUS-12 PCS (P) RRUS-12 850 (P) RRUS 4478 B5 (P) RRUS-32 WCS	19.7 x 17.0 x 7.2 20.4 x 18.5 x 7.5 20.4 x 18.5 x 7.5 16.5 x 13.4 x 7.7 27.2 x 12.1 x 7.0	(E) 2 (P) 2	–
	–	–	–	–	–	–	–	–	–	–
GAMMA	UMTS 850/AWS	(P) SBNHH-1D85B	72.9 x 11.9 x 7.1	173'±	320°	(P) BPD7823VG12A TMA (P) BPD7823VG12A TMA	(P) RRUS 4426 B66 (AT GRADE)	27.2 x 12.1 x 7.0	(E) 2 (P) 2	(E) 1
	–	–	–	–	–	–	–	–	–	–
	LTE 700/PCS/WCS/850	(P) QS66512-2	72.0 x 12.0 x 9.6	173'±	320°	(P) 2117F00V-1 TMA (P) 2117F00V-1 TMA	(E) RRUS-11 700 (BE) (E) RRUS-12 PCS (P) RRUS-12 850 (P) RRUS 4478 B5 (P) RRUS-32 WCS	19.7 x 17.0 x 7.2 20.4 x 18.5 x 7.5 20.4 x 18.5 x 7.5 16.5 x 13.4 x 7.7 27.2 x 12.1 x 7.0	(E) 2 (P) 2	–
	–	–	–	–	–	–	–	–	–	–

*RF SCHEDULE BASED ON VERSION 1.00 RFDS FOR CT5279 DATED 05/05/18. CONTRACTOR TO VERIFY FINAL EQUIPMENT CONFIGURATION AND SEPARATIONS WITH AT&T PRIOR TO CONSTRUCTION.

FINAL EQUIPMENT CONFIGURATION

SCALE: N.T.S.

Dewberry®
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET
WEST BRIDGEWATER, MA 02379

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

MERIDEN BIRDSEY AVENUE
SITE NO. CT5279 3C/4C/5C/5G NR

74 BIRDSEY AVENUE
MERIDEN, CT 06450

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/11/19	ISSUED FOR CONSTRUCTION	AJB	DAS	BBR
0	12/14/18	ISSUED FOR CONSTRUCTION	AJB	DAS	BBR
A	08/16/18	ISSUED FOR REVIEW	AJB	DAS	BBR

SCALE: AS SHOWN | DESIGNED BY: DAS | DRAWN BY: MR

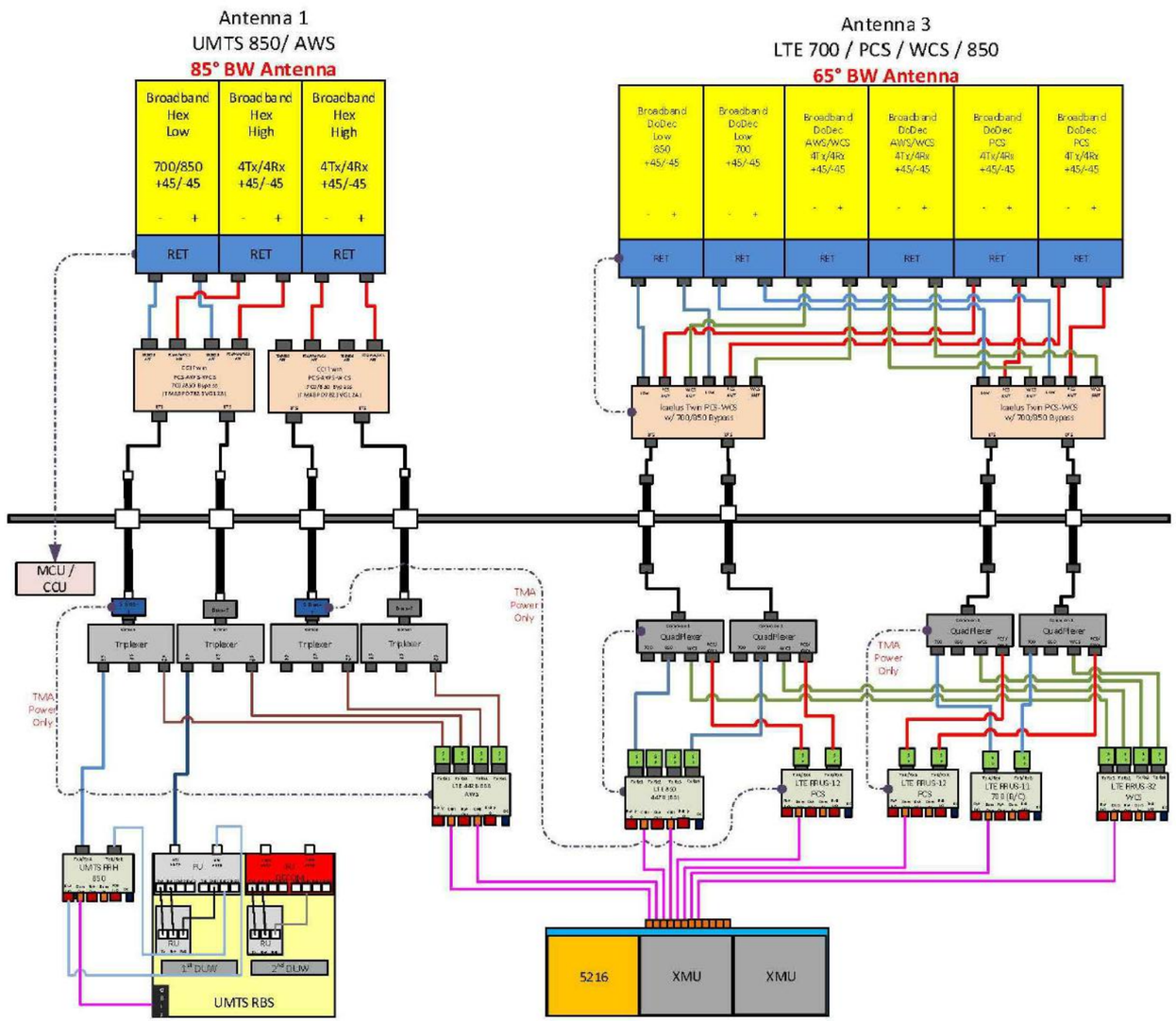
STATE OF CONNECTICUT
BENJAMIN B. REVETTE
28971
REGISTERED
PROFESSIONAL ENGINEER

AT&T MOBILITY
ROCKY HILL, 06067

PROPOSED ELEVATION & CONSTRUCTION DETAILS

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096234	C02	1

Diagram - Sector	A	Diagram File Name - CT5279_A_B_C_LTE_REV.1.vsd					
Atoll Site Name -	CTL05279	Location Name -	MERIDEN BIRDSEY AVENUE	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)"							



EQUIPMENT PLUMBING DIAGRAM

SCALE: N.T.S.

1

NOTES:

1. EQUIPMENT PLUMBING DIAGRAM PER RFDS VERSION 1.00 DATED 05/05/18.
2. CONTRACTOR TO VERIFY FINAL EQUIPMENT CONFIGURATION AND SEPARATIONS WITH AT&T PRIOR TO CONSTRUCTION.

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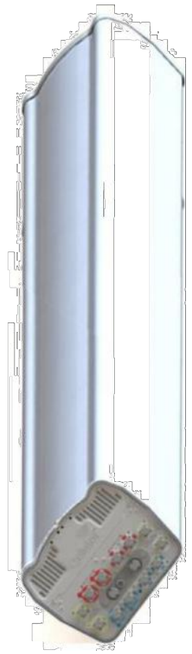
SCALE: AS SHOWN | DESIGNED BY: DAS | DRAWN BY: MR

STATE OF CONNECTICUT BENJAMIN B. REVETTE 28971 REGISTERED PROFESSIONAL ENGINEER

AT&T MOBILITY
ROCKY HILL, 06067

EQUIPMENT PLUMBING DIAGRAM

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096234	C03	1



Electrical Characteristics	2x Ports 1&2	2x Ports 3&4	4x Ports 5-8			4 Ports 9-12
Operating Frequency (MHz)	698-806*	824-894	1695-1780 and 2110-2400			1850-1990
	698-806	824-894	1695-1780	2110-2180	2300-2400	1850-1990
Azimuth beamwidth[1]	67°	64°	68°	63°	58°	69°
Elevation beamwidth[1]	12°	10°	6.5°	5.5°	4.5°	5.5°
Gain[1] (dBi)	13.2	13.5	16.2	16.5	17.0	16.0
Polarization	±45°	±45°		±45° ±45°		±45° ±45°
Electrical down-tilt range	2°-10°	2°-10°		2° – 7°		2° – 7°
Upper SLL (20° > mainbeam)[1]	-17dB	-19dB	-18dB	-18B	-18dB	-16dB
Front to Back Ratio(180°±10°)[1]	≥27dB	≥29dB	≥28dB	≥28dB	≥28dB	≥27dB
Port to Port isolation[1]	≥28dB	≥30dB	≥30dB	≥30dB	≥30dB	≥30dB
Return loss (VSWR)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB (1.5)	14dB(1.5)
X Polar Discrimination (at 0°)	>18dB	>16dB	>20dB	>20dB	>18dB	>20dB
Max Power handling (per any port)	500 watts	500 watts		250 watts		250 watts
Total Composite Power (all ports)				1750 watts		
PIM (3rd Order) (2x43dBm)	>153dBc	>153dBc		>153dBc		>153dBc
XBand PIM (3rd Order) (2x43dBm)				>159dBc		

Mechanical Characteristics	
Dimensions	L 72"(1828mm) x W 12"(304mm) x D 9.6"(245mm)
Weight (excl mounting brackets)	111lbs (50.3kg)
No. of Connectors	12x 4.3-10.0 DIN Female Long Neck
Max Wind Speed	150mph (67m/s)
Effective Projected Area	Front: 2.6ft² (0.24m²) Side: 5.0ft²(0.46m²)
Wind Load @160km/h (45m/s)	Front: 284.7N (64 lbs), Side: 535.5N (120.4 lbs)
Operating Temperature	-40°C to +65°C

QS66512-2 ANTENNA SPECIFICATIONS (1)

SCALE: N.T.S.

TECHNICAL SPECIFICATIONS

BAND NAME	1900	WCS
DOWNLINK		
Passband	1930 - 1990MHz	2350 - 2360MHz
Insertion loss	0.5dB typical	
Return loss	18dB minimum	
Maximum input power	160W (average) / 2kW (PEP)	120W (average) / 1.2kW (PEP)
UPLINK		
Passband	1850 - 1910MHz	2305 - 2315MHz
Gain	13dB	12dB
Variable gain	3dB to 13dB in 1dB steps (controlled by AISG commands)	2dB to 12dB in 1dB steps (controlled by AISG commands)
Gain variation	±1dB maximum	
Return loss	18dB minimum operating, 12dB in bypass	
Bypass loss	2.5dB typical	3.3dB typical
Noise figure	1.4dB typical	1.7dB typical
Output IP3	+30dBm typical	
Maximum input power with no damage	+12dBm maximum	
Rejection	27.5dB minimum@2324.54 - 2341.286MHz	
LOW BAND PATH		
Passband	698 - 806MHz	
Return loss	18dB minimum	
Insertion loss	0.35dB typical	
Maximum input power with no damage	200W (average) / 2kW (PEP)	
ELECTRICAL		
Impedance	50Ohms	
Intermodulation products	-153dBc maximum in RX band with 2 x 20W carriers	

TMA2117F00V1 SPECFICATIONS (3)

SCALE: N.T.S.

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.5	14.4	17.0	17.6	17.9	17.9
Beamwidth, Horizontal, degrees	83	86	81	79	79	79
Beamwidth, Vertical, degrees	12.3	11.1	5.7	5.3	5.0	4.6
Beam Tilt, degrees	0–12	0–12	0–8	0–8	0–8	0–8
USLS (First Lobe), dB	19	18	15	16	17	18
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	25	25	25	25
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port at 50°C, maximum, watts	300	300	300	300	300	250
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Length	1851.0 mm | 72.9 in
Width	301.0 mm | 11.9 in
Depth	180.0 mm | 7.1 in
Net Weight, without mounting kit	19.1 kg | 42.1 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal RET	High band (2) | Low band (1)
Power Consumption, idle state, maximum	2 W
Power Consumption, normal conditions, maximum	13 W
Protocol	3GPP/AISG 2.0 (Multi-RET)
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	1 female | 1 male

Packed Dimensions

Length	1970.0 mm | 77.6 in
Width	409.0 mm | 16.1 in
Depth	299.0 mm | 11.8 in
Shipping Weight	31.2 kg | 68.8 lb

SBNHH-1D85B ANTENNA SPECIFICATIONS (2)

SCALE: N.T.S.

General Specifications

Interface	7-16 DIN Female Bulkhead
Interface 2	7-16 DIN Male
Device Type	dc Pass
Ordering Note	CommScope® standard product in Asia Pacific
Body Style	Bulkhead

Electrical Specifications

Operating Frequency Band	698 – 2700 MHz
3rd Order IMD	-117.0 dBm | -160.0 -dBc
3rd Order IMD Test Method	Two +43 dBm carriers
Average Power	3000 W
Connector Impedance	50 ohm
dc Current, continuous	3 A
Gas Tube Voltage	350 V
Lightning Surge Capability	10 times @ 30 kA
Lightning Surge Capability Test Method	IEEE C62.42-1991
Lightning Surge Capability Waveform	8/20 waveform
Lightning Surge Current	30 kA
Lightning Surge Current Waveform	8/20 waveform
Peak Power, maximum	40.00 kW
Insertion Loss, typical	0.07 dB

SURGE ARRESTOR SPECIFICATIONS (4)

SCALE: N.T.S.

Dewberry®
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
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SCALE: AS SHOWN | DESIGNED BY: DAS | DRAWN BY: MR

STATE OF CONNECTICUT · BENJAMIN B. REVETTE · 28971 · REGISTERED PROFESSIONAL ENGINEER

AT&T MOBILITY
ROCKY HILL, 06067

PROPOSED EQUIPMENT SPECIFICATIONS – I

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096234	C04	1

- AWS
  - TX = 2110 – 2180 MHz
  - RX = 1710 – 1780 MHz
- CPRI 2 ports x 10 Gbps. Install 2 SFPs and connect 2 fiber pairs to the RRUS32 during initial install.
- Only use Ericsson supplied and approved SFPs RDH10247/3
- 6 external alarm inputs
- Max wind load @ 50m/sec = 350N
- Breaker size = 30A, DC Power Consumption = 880W (for dimensioning)
- 200mm horizontal separation required for side by side mounting
- 200mm separation required from antenna backplane to radio
- 600mm/800mm vertical outdoor/indoor separation required
- Min, Max DC cable size from squid to radio = 10,8 AWG
  - Adapter is required for 2-wire connection
  - Shielded DC cable is required
- Ground cable size = 2AWG
- Dimensions (incl. handles, feet and sunshield)
  - Height: 27.2" (690 mm)
  - Width: 12.1" (306 mm)
  - Depth: 7.0" (178 mm)
- Weight, excl. mounting hardware = 53 lbs (24 kg)

- WCS A+B blocks
  - TX = 2350 – 2360 MHz
  - RX = 2305 – 2315 MHz
- CPRI 2 ports x 10 Gbps
- Only use Ericsson supplied and approved SFPs
- 6 external alarm inputs
- Max wind load @ 50m/sec = 350N
- Breaker size = 20A, DC Power Consumption = 800W
- 200mm horizontal separation required for side by side mounting
- 200mm separation required for antenna backplane to radio
- 600mm/800mm vertical outdoor/indoor separation required
- Max DC cable size from squid to radio = 8AWG
  - Adapter is required for 2-wire connection
  - Shielded DC cable is required
- Ground cable size = 2AWG
- Dimensions (incl. handles, feet and sunshield)
  - Height: 27.2" (690 mm)
  - Width: 12.1" (306 mm)
  - Depth: 7.0" (178 mm)
- Weight, excl. mounting hardware = 53 lbs (24 kg)

4426 B66 & RRUS-32 WCS SPECIFICATIONS

SCALE: N.T.S.

1

- B5
  - TX = 869 – 894 MHz
  - RX = 824 – 849 MHz
- CPRI 2 ports x 2.5/4.9/9.8/10.1 Gbps. Install 2 SFPs and connect 2 fiber pairs to the RRUS 4478 during initial install.
- Only use Ericsson supplied and approved SFPs
  - 2x SFP3 RDH 10247/25 for cellular A OR B block
  - 2x SFP7 RDH 10265/25 for cellular A AND B block
    - Exception cases: 2xSFP7 RDH 10265/3 for CPRI Length 1,4 – 10km
    - 2xSFP7 RDH 10270/1 & RDH 10270/2 for CPRI length > 10km
- 2 external alarm inputs
- Max wind load @ 50m/sec = 260N
- Breaker size = 25A, DC Power Consumption = 805W (for dimensioning)
- 200mm horizontal separation required for side by side mounting
- 200mm separation required from antenna backplane to radio
- 400mm vertical outdoor/indoor separation required between 2 radios
- 500mm vertical separation below antenna
- Min, Max DC cable size from squid to radio = 10,8 AWG
  - Adapter is required for 2-wire connection
  - Shielded DC cable is required
- Ground cable size = 2AWG
- Dimensions (incl. handles, feet and sunshield, w/o fan unit)
  - Height: 16.5" (420 mm)
  - Width: 13.4" (340 mm)
  - Depth: 7.7" (196 mm)
- Weight, excl. mounting hardware = 59.9 lbs (27.2 kg)

4478 B5 SPECIFICATIONS

SCALE: N.T.S.

2

NOTES:

1. EQUIPMENT PLUMBING DIAGRAM PER RFDS VERSION 1.00 DATED 05/05/18.
2. CONTRACTOR TO VERIFY FINAL EQUIPMENT CONFIGURATION AND SEPARATIONS WITH AT&T PRIOR TO CONSTRUCTION.

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SCALE: AS SHOWN | DESIGNED BY: DAS | DRAWN BY: MR

STATE OF CONNECTICUT BENJAMIN B. REVETTE 28971 REGISTERED PROFESSIONAL ENGINEER

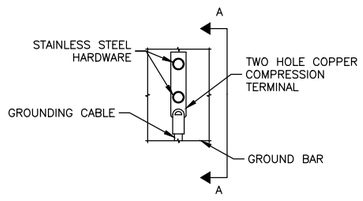
AT&T MOBILITY
ROCKY HILL, 06067

PROPOSED EQUIPMENT SPECIFICATIONS – II

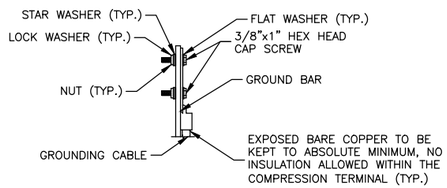
DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096234	C05	1

GROUNDING NOTES:

1. THE CONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ). THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE CONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS. ALL AVAILABLE GROUNDING ELECTRODES SHALL BE CONNECTED TOGETHER IN ACCORDANCE WITH THE NEC.
3. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. USE OF OTHER METHODS MUST BE PRE-APPROVED BY CONTRACTOR IN WRITING.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS ON TOWER SITES AND 10 OHMS OR LESS ON ROOFTOP SITES. WHEN ADDING ELECTRODES, CONTRACTOR SHALL MAINTAIN A MINIMUM DISTANCE BETWEEN THE ADDED ELECTRODE AND ANY OTHER EXISTING ELECTRODE EQUAL TO THE BURIED LENGTH OF THE ROD. IDEALLY, CONTRACTOR SHALL STRIVE TO KEEP THE SEPARATION DISTANCE EQUAL TO TWICE THE BURIED LENGTH OF THE RODS.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
6. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE AND UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
7. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO TRANSMISSION EQUIPMENT.
8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK-TO-BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. IN ALL CASES, BENDS SHALL BE MADE WITH A MINIMUM BEND RADIUS OF 8 INCHES.
11. EACH INTERIOR TRANSMISSION CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH 6 AWG STRANDED, GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRE UNLESS NOTED OTHERWISE IN THE DETAILS. EACH OUTDOOR CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER WIRE UNLESS NOTED OTHERWISE IN THE DETAILS.
12. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE 2 AWG SOLID TIN-PLATED COPPER UNLESS OTHERWISE INDICATED.
13. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE. CONNECTIONS TO ABOVE GRADE UNITS SHALL BE MADE WITH EXOTHERMIC WELDS WHERE PRACTICAL OR WITH 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS. HIGH PRESSURE CRIMP CONNECTORS MAY ONLY BE USED WITH WRITTEN PERMISSION FROM CENTERLINE COMMUNICATIONS COMMUNICATIONS MARKET REPRESENTATIVE.
14. EXOTHERMIC WELDS SHALL BE PERMITTED ON TOWERS ONLY WITH THE EXPRESS APPROVAL OF THE TOWER MANUFACTURER OR THE CONTRACTORS STRUCTURAL ENGINEER.
15. ALL WIRE TO WIRE GROUND CONNECTIONS TO THE INTERIOR GROUND RING SHALL BE FORMED USING HIGH PRESS CRIMPS OR SPLIT BOLT CONNECTORS WHERE INDICATED IN THE DETAILS.
16. ON ROOFTOP SITES WHERE EXOTHERMIC WELDS ARE A FIRE HAZARD COPPER COMPRESSION CAP CONNECTORS MAY BE USED FOR WIRE TO WIRE CONNECTORS. 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS SHALL BE USED FOR CONNECTION TO ALL ROOFTOP TRANSMISSION EQUIPMENT AND STRUCTURAL STEEL.
17. COAX BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR USING TWO-HOLE MECHANICAL TYPE BRASS CONNECTORS AND STAINLESS STEEL HARDWARE.
18. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
19. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
20. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
21. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER GROUND CONDUCTOR. DURING EXCAVATION FOR NEW GROUND CONDUCTORS, IF EXISTING GROUND CONDUCTORS ARE ENCOUNTERED, BOND EXISTING GROUND CONDUCTORS TO NEW CONDUCTORS.
22. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT WITH LISTED BONDING FITTINGS.



ELEVATION

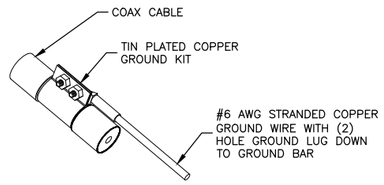


NOTES:

1. DOUBLING UP OR STACKING OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

TYPICAL GROUND BAR MECHANICAL CONNECTION DETAIL 1

SCALE: N.T.S.

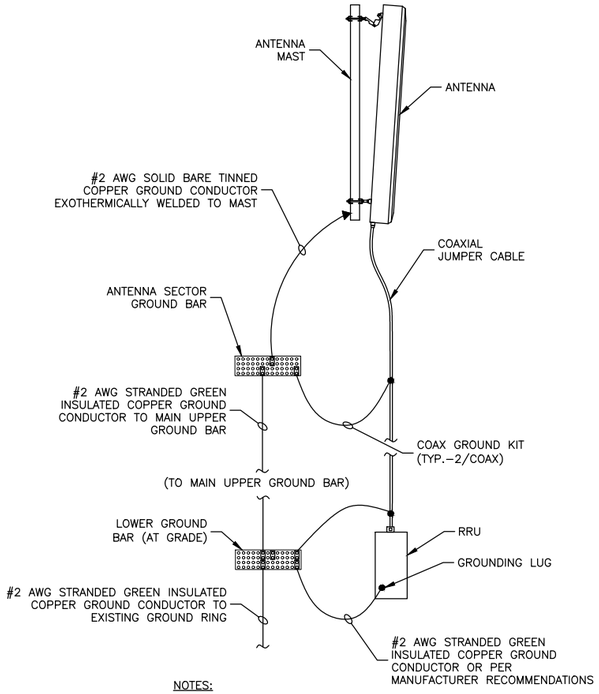


NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND. ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TIN PLATED COPPER WITH TWO-HOLE LUG, SIZE PER COAX DIAMETER.
3. WEATHER SEAL GROUND KIT PER CARRIER REQUIREMENTS.
4. COAX CABLE GROUND KIT LOCATION & QUANTITY SHALL BE PER CARRIER SPECIFICATIONS & STANDARDS.

COAX GROUNDING DETAIL 3

SCALE: N.T.S.



NOTES:

1. VERIFY EXISTING GROUNDING SYSTEM IS INSTALLED PER AT&T STANDARDS.
2. BOND NEW EQUIPMENT INTO EXISTING GROUND SYSTEM IN ACCORDANCE WITH AT&T STANDARDS & MANUFACTURER RECOMMENDATIONS.

TYPICAL ANTENNA GROUNDING DETAIL 2

SCALE: N.T.S

Dewberry®
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET
WEST BRIDGEWATER, MA 02379

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

MERIDEN BIRDSEY AVENUE
SITE NO. CT5279 3C/4C/5C/5G NR

74 BIRDSEY AVENUE
MERIDEN, CT 06450

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/11/19	ISSUED FOR CONSTRUCTION	AJB	DAS	BBR
0	12/14/18	ISSUED FOR CONSTRUCTION	AJB	DAS	BBR
A	08/16/18	ISSUED FOR REVIEW	AJB	DAS	BBR

SCALE: AS SHOWN | DESIGNED BY: DAS | DRAWN BY: MR

STATE OF CONNECTICUT · BENJAMIN B. REVETTE · 28971 · REGISTERED PROFESSIONAL ENGINEER

AT&T MOBILITY
ROCKY HILL, 06067

GROUNDING DETAILS

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096234	E01	1

UPS CampusShip: View/Print Label

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2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
   Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
   Hand the package to any UPS driver in your area.

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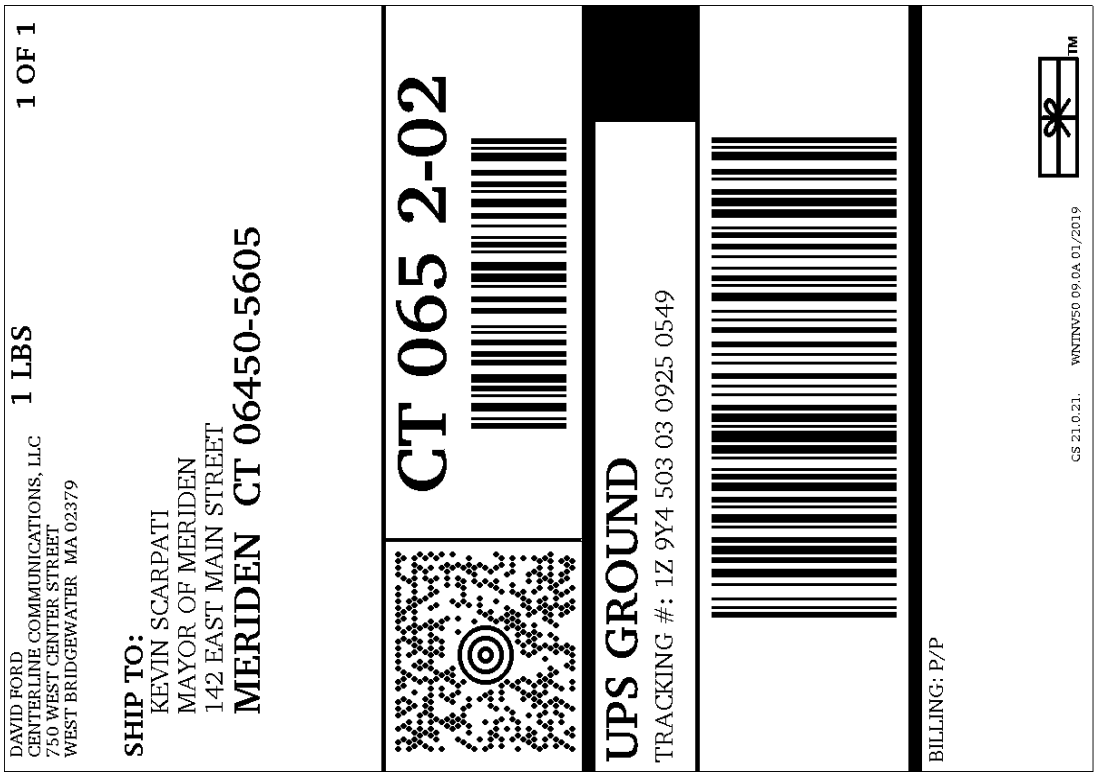
TOWN LINE GENERAL STORE
450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

UPS Access Point™
M&M SEAFOOD
1124 MAIN ST
BROCKTON ,MA 02301

UPS Access Point™
BOOST MOBILE 649
649 WARREN AVE
BROCKTON ,MA 02301

FOLD HERE



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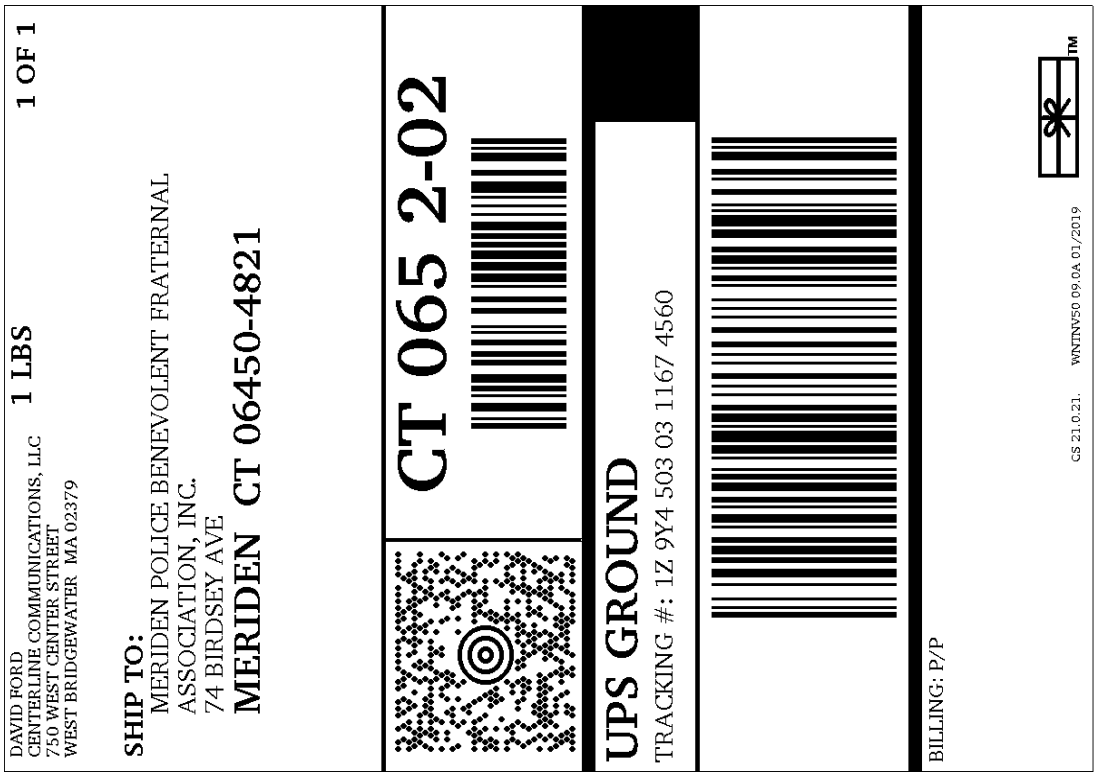

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DAVID FORD
CENTERLINE COMMUNICATIONS, LLC
750 WEST CENTER STREET
WEST BRIDGEWATER MA 02379

1 LBS 1 OF 1

SHIP TO:
JOEL SZARKOWICZ
EVERSOURCE
56 PROSPECT STREET
HARTFORD CT 06103-2818

CT 061 9-03

UPS GROUND
TRACKING #: 1Z 9Y4 503 03 1936 1553

BILLING: P/P

CS 21.0.21. WNTN50 09.0A 01/2019

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