

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Daniel T. Drew
Mayor, City of Middletown
245 deKoven Drive
Middletown, CT 06457



9590 9402 1864 6104 9427 46

2. Article Number (Transfer from service label)
7016 1370 0000 4740 9746

PS Form 3811, July 2015 PSN 7530-02-000-9053

Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent Addressed
X *Kelly* Addressee

B. Received by (Printed Name) C. Date of Delivery
1/9

D. Is delivery address different from item 1? Yes No
If YES, enter delivery address below:

3. Service Type
- Priority Mail Express®
 - Adult Signature
 - Adult Signature Restricted Delivery
 - Certified Mail®
 - Certified Mail Restricted Delivery
 - Collect on Delivery
 - Collect on Delivery Restricted Delivery
 - Insured Mail
 - Registered Mail
 - Registered Mail Restricted Delivery
 - Return Receipt for Merchandise
 - Signature Confirmation™
 - Signature Confirmation Restricted Delivery

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Joseph Samolis
Director of Planning and Zoning
City of Middletown
245 deKoven Drive
Middletown, CT 06457



9590 9402 1864 6104 9427 39

2. Article Number (Transfer from service label)
7016 1370 0000 4740 9746

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent Addressed
X *Kelly* Addressee

B. Received by (Printed Name) C. Date of Delivery
1/9

D. Is delivery address different from item 1? Yes No
If YES, enter delivery address below:

3. Service Type
- Priority Mail Express®
 - Adult Signature
 - Adult Signature Restricted Delivery
 - Certified Mail®
 - Certified Mail Restricted Delivery
 - Collect on Delivery
 - Collect on Delivery Restricted Delivery
 - Insured Mail
 - Registered Mail
 - Registered Mail Restricted Delivery
 - Return Receipt for Merchandise
 - Signature Confirmation™
 - Signature Confirmation Restricted Delivery

Domestic Return Receipt

Track Another Package +

Tracking Number: 70161370000047409760

Remove X

Your item was delivered at 5:04 pm on January 18, 2018 in MIDDLETOWN, CT 06457.

Delivered

January 18, 2018 at 5:04 pm
DELIVERED
MIDDLETOWN, CT 06457

Get Updates 

Text & Email Updates



Tracking History



January 18, 2018, 5:04 pm

Delivered
MIDDLETOWN, CT 06457

Your item was delivered at 5:04 pm on January 18, 2018 in MIDDLETOWN, CT 06457.

Reminder to Schedule Redelivery of your item

January 9, 2018, 9:59 am

Notice Left (No Authorized Recipient Available)
MIDDLETOWN, CT 06457

January 9, 2018, 3:49 am

Departed USPS Regional Facility
SPRINGFIELD MA NETWORK DISTRIBUTION CENTER

January 8, 2018, 12:54 pm

Arrived at USPS Regional Facility
SPRINGFIELD MA NETWORK DISTRIBUTION CENTER

January 6, 2018, 12:11 pm

In Transit to Destination
On its way to MIDDLETOWN, CT 06457

January 5, 2018, 12:11 pm

In Transit to Destination
On its way to MIDDLETOWN, CT 06457

January 4, 2018, 12:11 pm

In Transit to Destination
On its way to MIDDLETOWN, CT 06457

January 3, 2018, 8:11 pm

Arrived at USPS Regional Origin Facility
BOSTON MA DISTRIBUTION CENTER

December 24, 2017, 12:22 pm

In Transit to Destination
On its way to MIDDLETOWN, CT 06457

December 23, 2017, 12:22 pm

In Transit to Destination
On its way to MIDDLETOWN, CT 06457

December 22, 2017, 12:22 pm

In Transit to Destination
On its way to MIDDLETOWN, CT 06457

December 21, 2017, 7:22 pm

Departed Post Office
NORTH BILLERICA, MA 01862

December 21, 2017, 3:28 pm
USPS in possession of item
NORTH BILLERICA, MA 01862

Product Information



See Less ^

Can't find what you're looking for?

Go to our **FAQs** (<http://faq.usps.com/?articleId=220900>) section to find answers to your tracking questions.

The easiest tracking number is the one you don't have to know.

With Informed Delivery[®], you never have to type in another tracking number. Sign up to:

- See images* of incoming mail.
- Automatically track the packages you're expecting.

- Set up email and text alerts so you don't need to enter tracking numbers.
- Enter USPS Delivery Instructions™ for your mail carrier.

Sign Up

([https://reg.usps.com/entreg/RegistrationAction_input?](https://reg.usps.com/entreg/RegistrationAction_input?app=UspsTools&appURL=https%3A%2F%2Ftools.usps.com%2Fgc)

*NOTE: Black and white (grayscale) images show the outside, front of letter-sized envelopes and mailpieces that are processed through USPS automated equipment.

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(<http://www.uspsoig.gov/>)

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National Postal Museum

(<http://www.postalmuseum.si.edu/>)

Resources for Developers

(<https://www.usps.com/webtools/webconf/contract/welcome.htm>)

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FOIA

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No FEAR Act EEO Data

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SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

CCTMO, LLC
c/o Paul Pedicone
Crown Castle
3 Corporate Park Drive, Ste 101
Clifton Park, NY 12065



9590 9402 1864 6104 9427 22

2. Article Number (Transfer from service label)

7016 1370 0000 4740 9739

COMPLETE THIS SECTION ON DELIVERY

A. Signature

[Handwritten Signature]

- Agent
- Addressee

B. Received by (Printed Name)

Brian Crow-miday

C. Date of Delivery

1-8

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Restricted Delivery



December 19, 2017

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

Regarding: Notice of Exempt Modification – Antenna and RRH Swap
and Ancillary Equipment Addition
Property Address: 90 Industrial Park Road, Middletown, CT 06457
AT&T Site: CT1044/FA 10035130

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing monopole at the above-referenced address, latitude 41.5856311, longitude -72.7139711. Said monopole is owned by CCTMO, LLC (Crown Castle).

AT&T desires to modify its existing telecommunications facility by swapping three (3) antennas and three (3) remote radio heads (“RRHs”) and adding (1) surge arrestor and accompanying feedlines, (6) RRHs and (6) combiners. The centerline height of the existing antennas will remain the same.

Please accept this application as notification pursuant to R.C.S.A. §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16-50j-72 (b)(2). In accordance with R.C.S.A. §16-50j-73, a copy of this letter is being sent to a copy of this letter is being sent to Daniel Drew, Mayor of the City of Middletown, as the chief elected official of the municipality in which the facility is located. A copy of this letter is also being sent to 90 Industrial Park Road, LLC as land owner, Joseph Samolis, Director of Planning and Zoning for the City of Middletown and the tower company, CCTMO, LLC (Crown Castle).

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

1. The planned modification will not result in an increase in the height of the existing structure. The equipment to be swapped and added will be installed at the existing height of approximately 175-feet on the 185-foot monopole.
2. The proposed modifications will not involve any changes to ground-mounted equipment, and therefore will not require an extension of the site boundary.
3. The proposed modification will not increase the noise level at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above Federal Communications Commission (FCC) safety standard. An RF emissions calculation (enclosed) for AT&T's modified facility is herein provided.
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 AT&T's proposed modifications (please see enclosed structural analysis completed by Paul J. Ford & Company dated November 2, 2017.).

For the foregoing reasons, AT&T respectfully requests that the proposed upgrades be allowed within the exempt modifications under R.C.S.A. §16-50j-72 (b)(2).

Sincerely,

Jennifer Iliades

Jennifer Iliades
Site Acquisition Specialist

Enclosures: Exhibit 1 – Property Card and GIS Map
Exhibit 2 – Construction Drawings
Exhibit 3 – Structural Evaluation and Analysis
Exhibit 4 – RF Emissions Analysis Report Evaluation

cc: Daniel Drew, Mayor of the City of Middletown
Joseph Samolis, Director of Planning and Zoning, City of Middletown
90 Industrial Park Road, LLC
CCTMO, LLC (Crown Castle)

Exhibit 1

90 INDUSTRIAL PARK RD

Location 90 INDUSTRIAL PARK RD

Mblu 06 / / 0018 / /

Acct# R00347

Owner 90 INDUSTRIAL PARK ROAD
LLC

Assessment \$1,324,110

Appraisal \$1,891,590

PID 396

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$1,255,960	\$635,630	\$1,891,590

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$879,170	\$444,940	\$1,324,110

Owner of Record

Owner 90 INDUSTRIAL PARK ROAD LLC
Co-Owner
Address 90 INDUSTRIAL PARK RD
MIDDLETOWN, CT 06457

Sale Price \$0
Certificate
Book & Page 1843/ 205
Sale Date 06/11/2015
Instrument 29

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
90 INDUSTRIAL PARK ROAD LLC	\$0		1843/ 205	29	06/11/2015
ARMETTA PHILIP C	\$0		505/ 134	29	02/22/1978

Building Information

Building 1 : Section 1

Year Built: 1986
Living Area: 28,684
Replacement Cost: \$1,523,694
Building Percent 77
Good:
Replacement Cost
Less Depreciation: \$1,173,240

Building Attributes

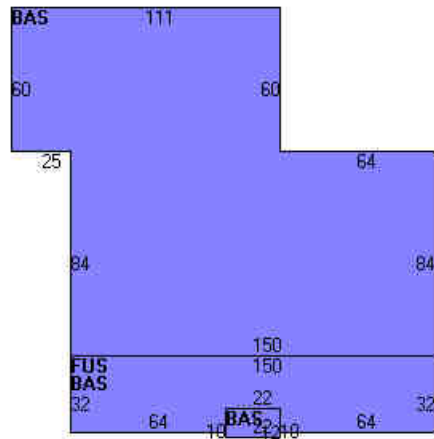
Field	Description
STYLE	Office/Warehs
MODEL	Industrial
Grade	C
Stories	1
Occupancy	2
Exterior Wall 1	Pre-finish Metl
Exterior Wall 2	Concrete
Roof Structure	Flat
Roof Cover	Tar and Gravel
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Concrete
Interior Floor 2	Carpet
Heating Fuel	Gas
Heating Type	Forced Air
AC Type	Partial
Bldg Use	Industrial
Cov Parking	0
Uncov Parking	0
Percent Fin	100
1st Floor Use	
Heat/AC	Heat/AC Pkg
Frame Type	Steel
Baths/Plumbing	Average
Ceiling/Walls	Typical
Rooms/Prtns	Average
Wall Height	25

Building Photo



(http://images.vgsi.com/photos/MiddletownCTPhotos//\00\02\11

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	24,104	24,104
FUS	Finished Upper Story	4,580	4,580
		28,684	28,684

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
A/C	Air Condition	8896 UNITS	\$23,290	1

Land

Land Use

Use Code	301
Description	Industrial
Zone	IT

Land Line Valuation

Size (Acres)	2.61
Frontage	0
Depth	0

Neighborhood 3100
Alt Land Appr No
Category

Assessed Value \$444,940
Appraised Value \$635,630

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
LT1	Lights-In W/Pl			4 UNITS	\$210	1
PAV1	Paving	AS	Asphalt	51134 UNITS	\$57,530	1
PAV2	Paving	CN	Concrete LD	2100 UNITS	\$3,830	1
CSHD	Cell Shed			288 UNITS	\$34,200	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2016	\$1,223,350	\$575,630	\$1,798,980
2015	\$1,223,350	\$575,630	\$1,798,980
2014	\$1,223,350	\$575,630	\$1,798,980

Assessment			
Valuation Year	Improvements	Land	Total
2016	\$856,350	\$402,940	\$1,259,290
2015	\$856,350	\$402,940	\$1,259,290
2014	\$856,350	\$402,940	\$1,259,290

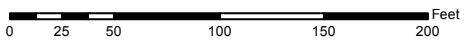
(c) 2016 Vision Government Solutions, Inc. All rights reserved.



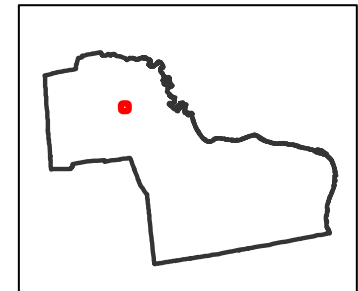
City of Middletown, Connecticut

Map Legend: <http://gis.cityofmiddletown.com/middletownct/legend.pdf>
 Property Card: <http://gis.vgsi.com/MiddletownCT/Parcel.aspx?pid=396>

Map generated 12/19/2017



1 in = 92 ft



MAP FOR REFERENCE ONLY - NOT A LEGAL DOCUMENT

Because of different update schedules, current property assessments may not reflect recent changes to property boundaries. Check with the Board of Assessors to confirm boundaries uses at the time of assessment.

Exhibit 2



WIRELESS COMMUNICATIONS FACILITY

CT1044 - LTE 3C/4C/5C & BWE

CROMWELL EAST

CROWN CASTLE SITE NO.: 825983

90 INDUSTRIAL PARK ROAD

MIDDLETOWN, CT 06457

GENERAL NOTES

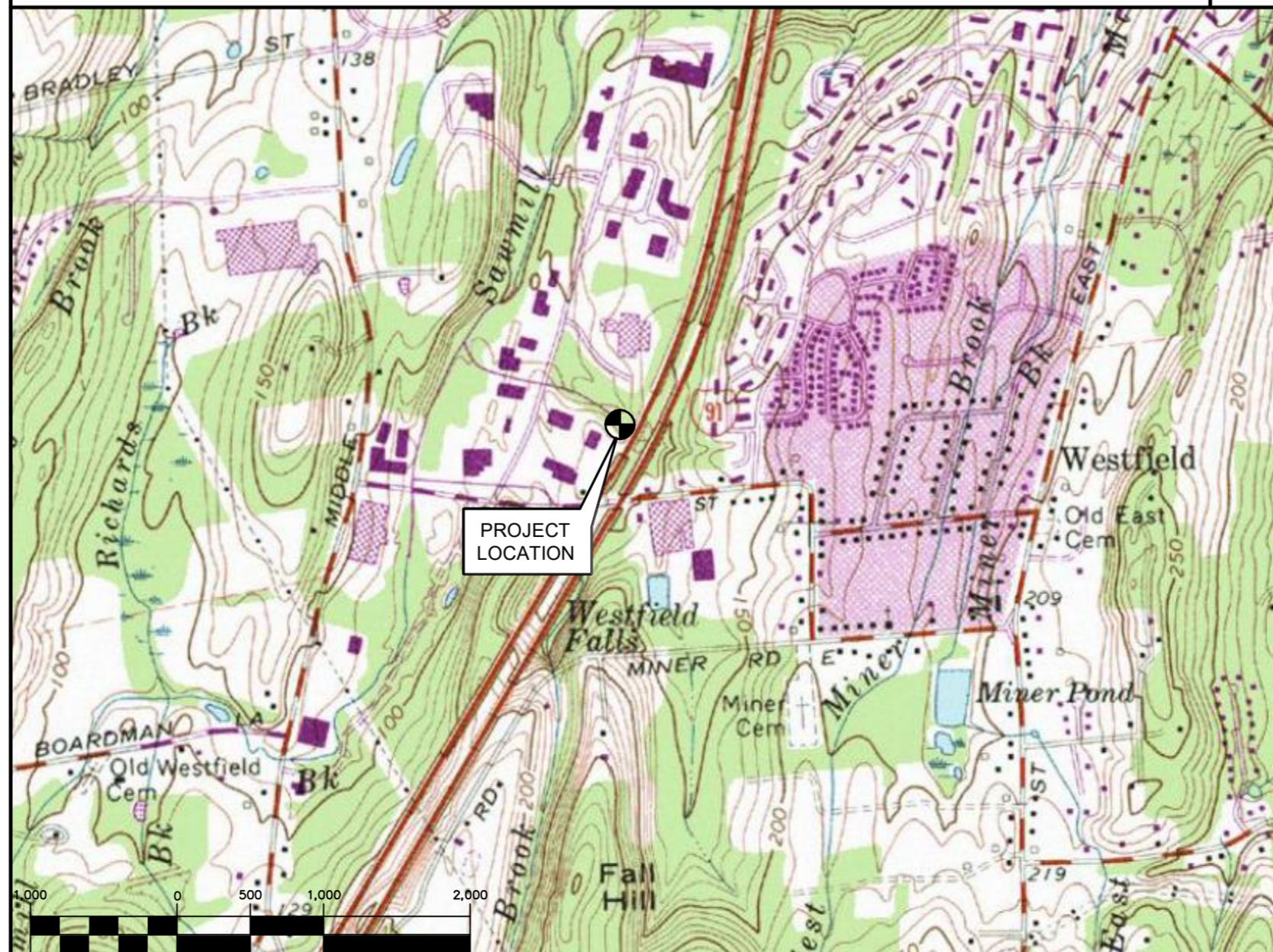
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE, INCLUDING THE TIA-222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2016 CONNECTICUT FIRE SAFETY CODE AND, NATIONAL ELECTRICAL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

SITE DIRECTIONS

FROM: 500 ENTERPRISE DRIVE ROCKY HILL, CONNECTICUT	TO: 90 INDUSTRIAL PARK ROAD MIDDLETOWN, CONNECTICUT
1. HEAD NORTHEAST ON ENTERPRISE DR TOWARD CAPITAL BLVD	0.37 MI
2. TURN LEFT ONTO CAPITAL BLVD	0.27 MI
3. TURN LEFT ONTO WEST ST	0.30 MI
4. TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN	3.25 MI
5. TAKE EXIT 21 FOR CT-372 TOWARD CROMWELL/BERLIN	0.41 MI
6. STAY STRAIGHT TO GO ONTO INDUSTRIAL PARK RD	1.45 MI
7. 90 INDUSTRIAL PARK RD WILL BE ON THE RIGHT	

VICINITY MAP

SCALE: 1" = 1000'



PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:
 - A. REMOVE AND REPLACE EXISTING POS.3 ANTENNA FOR PROPOSED LTE 12 PORT ANTENNA AND MOVE TO POS. 2, (1) PER SECTOR.
 - B. INSTALL (3) NEW RRUS-32 B2 AT TOWER LEVEL.
 - C. REMOVE AND REPLACE (6) EXISTING DIPLEXERS WITHIN EXISTING EQUIPMENT SHELTER FOR (6) NEW LOW-BAND COMBINERS.
 - D. INSTALL (3) NEW RRUS-32 AT TOWER LEVEL.
 - E. INSTALL (3) NEW RRUS-32 B66 AT TOWER LEVEL.
 - F. DECOMMISSION AND REMOVE (3) EXISTING RRW'S WITHIN EXISTING EQUIPMENT SHELTER.
 - G. INSTALL (3) NEW RRUS-12, WITHIN EXISTING EQUIPMENT SHELTER.
 - H. INSTALL (6) NEW SURGE ARRESTORS, (2) PER SECTOR, CONNECTED TO (P) RRUS-12.
 - I. REMOVE AND REPLACE EXISTING DUL UNIT FOR (1) 5216 UNIT AND (2) XMU UNITS.
 - J. INSTALL (1) SURGE ARRESTOR AT TOWER LEVEL.
 - K. INSTALL (6) NEW LOW-BAND COMBINERS AT TOWER LEVEL.
 - L. DECOMMISSION AND REMOVE (2) EXISTING NOKIA GSM CABINETS, WITHIN EXISTING EQUIPMENT SHELTER

PROJECT INFORMATION

AT&T SITE NUMBER:	CT1044
AT&T SITE NAME:	CROMWELL EAST
SITE ADDRESS:	CROWN CASTLE SITE NO.: 825983 90 INDUSTRIAL PARK ROAD MIDDLETOWN, CT 06457
LESSEE/APPLICANT:	AT&T MOBILITY 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067
ENGINEER:	CENITEK ENGINEERING, INC. 63-2 NORTH BRANFORD RD. BRANFORD, CT 06405
PROJECT COORDINATES:	LATITUDE: 41°-35'-8.16" N LONGITUDE: 72°-42'-50.40" W GROUND ELEVATION: ±90' AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
N-1	NOTES, SPECIFICATIONS AND DETAILS	0
C-1	PLANS AND ELEVATION	0
C-2	ANTENNA CONFIGURATION & ELEVATIONS	0
C-3	LTE 3C/4C/5C & BWE EQUIPMENT DETAILS	0
E-1	LTE SCHEMATIC DIAGRAM AND NOTES	0
E-2	LTE WIRING DIAGRAM	0
E-3	TYPICAL ELECTRICAL DETAILS AND NOTES	0



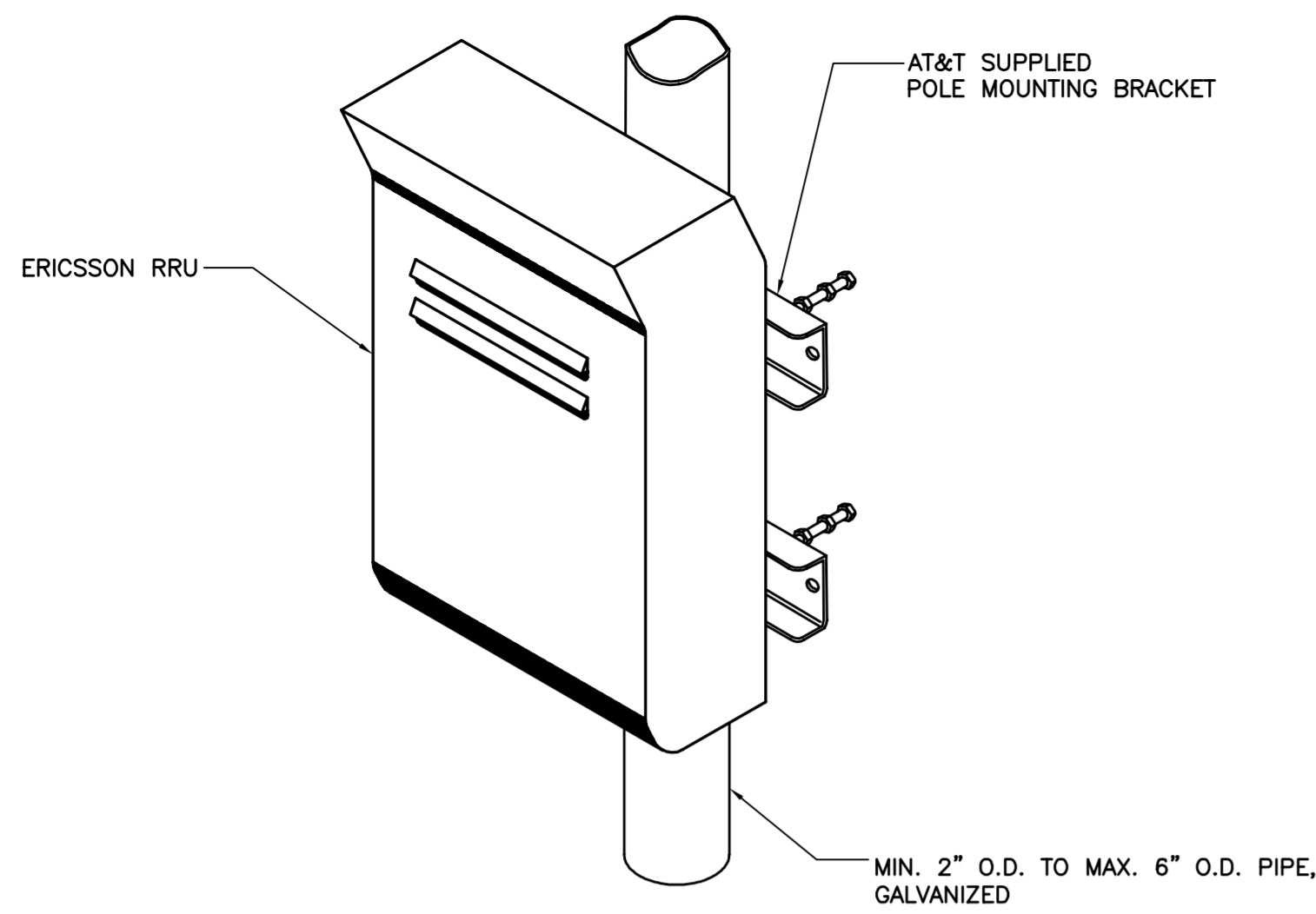
CENITEK engineering
Centered on Solutions
203-488-0980
203-488-8887 Fax
63-2 North Branford Road
Branford, CT 06405
www.CenitekEng.com

AT&T MOBILITY
 WIRELESS COMMUNICATIONS FACILITY
CROMWELL EAST
 CT1044-LTE 3C/4C/5C & BWE
 90 INDUSTRIAL PARK ROAD
 MIDDLETOWN, CT 06457

DATE: 10/12/17
SCALE: AS NOTED
JOB NO. 17004.50

TITLE SHEET

T-1

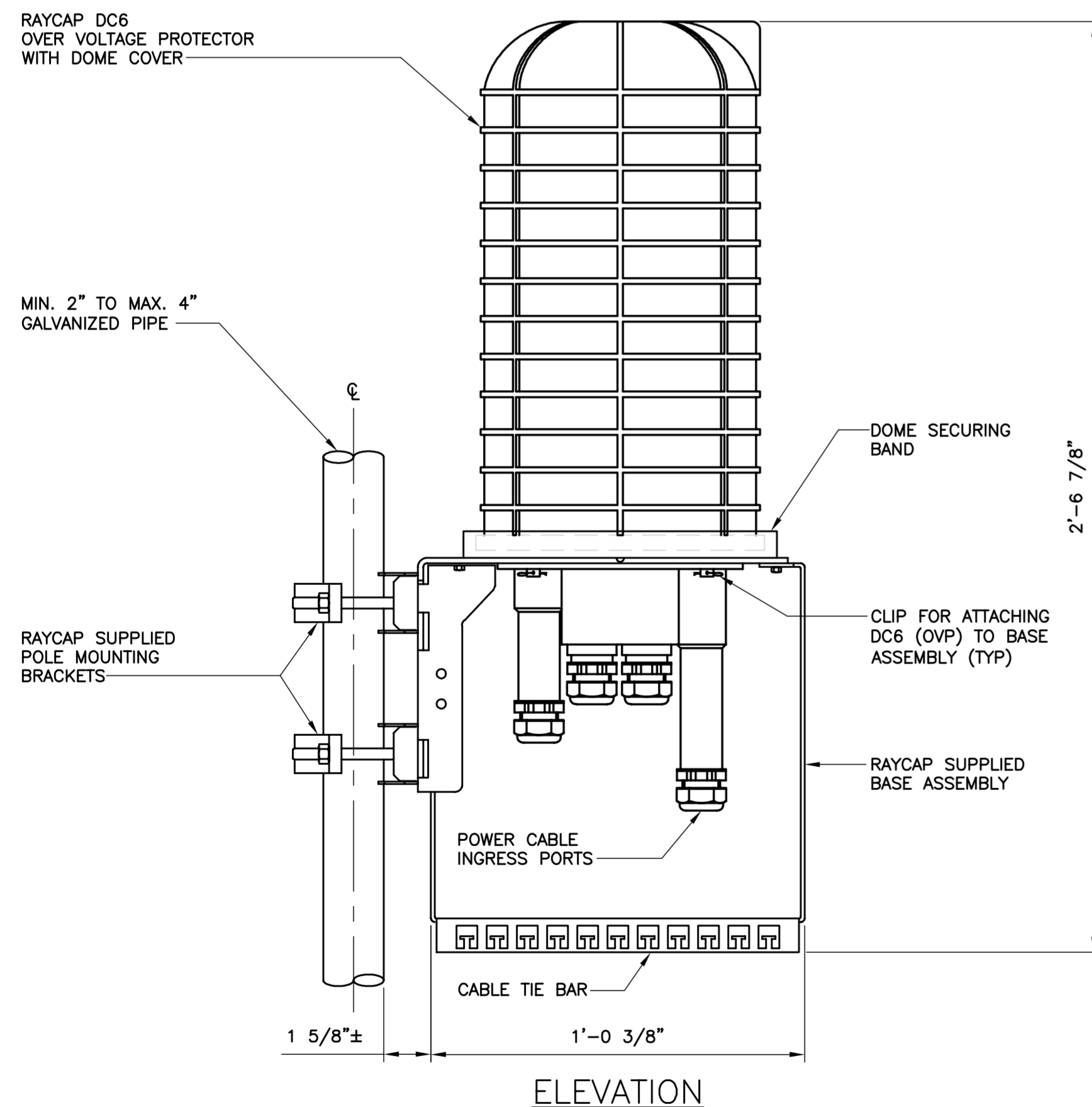


ISOMETRIC VIEW

NOTES:

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

1 TYPICAL RRUS MOUNTING DETAILS
SCALE: NTS



ELEVATION

NOTES:

1. RAYCAP VIA AT&T SUPPLIES THE DC6 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE.

2 RAYCAP DC6 MOUNTING DETAIL
SCALE: 3" = 1'-0"

NOTES AND SPECIFICATIONS

DESIGN BASIS:

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

1. DESIGN CRITERIA:
 - WIND LOAD: PER TIA 222 G (ANTENNA MOUNTS): 100-120 MPH (3 SECOND GUST)
 - RISK CATEGORY: II (BASED ON IBC TABLE 1604.5)
 - NOMINAL DESIGN SPEED (OTHER STRUCTURE): 101 MPH (Vasd) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-10) PER 2012 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE.
 - SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

GENERAL NOTES:

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

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)
 - A. STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)
 - B. STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI)
 - C. STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)
 - D. STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)
 - E. PIPE---ASTM A53 (FY = 35 KSI)
 - F. CONNECTION BOLTS---ASTM A325-N
 - G. U-BOLTS---ASTM A36
 - H. ANCHOR RODS---ASTM F 1554
 - I. WELDING ELECTRODE---ASTM E 70XX
2. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.
3. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
4. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
5. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
6. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
7. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON-GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
8. ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.
9. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE".
10. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
11. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
12. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.
13. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
14. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
15. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
16. FABRICATE BEAMS WITH MILL CAMBER UP.
17. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.
18. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
19. INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
20. FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

PAINT NOTES

PAINTING SCHEDULE:

1. ANTENNA PANELS:
 - A. SHERWIN WILLIAMS POLANE-B
 - B. COLOR TO BE MATCHED WITH EXISTING TOWER STRUCTURE.
2. COAXIAL CABLES:
 - A. ONE COAT OF DTM BONDING PRIMER (2-5 MILS. DRY FINISH)
 - B. TWO COATS OF DTM ACRYLIC PRIMER/FINISH (2.5-5 MILS. DRY FINISH)
 - C. COLOR TO BE FIELD MATCHED WITH EXISTING STRUCTURE.

EXAMINATION AND PREPARATION:

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

CLEANING:

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

APPLICATION:

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

COMPLETED WORK:

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

PROFESSIONAL ENGINEER SEAL

DATE: 12/04/17
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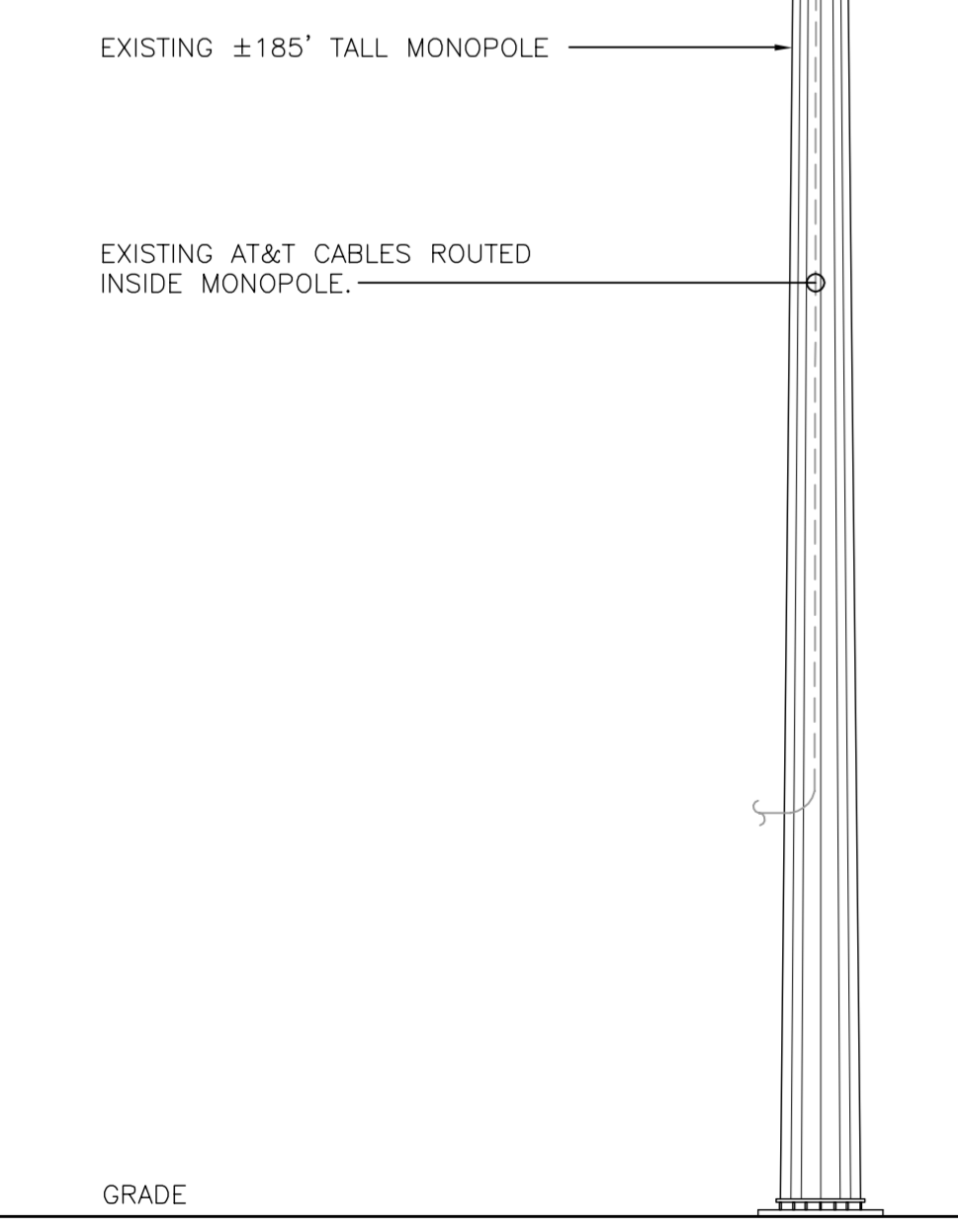
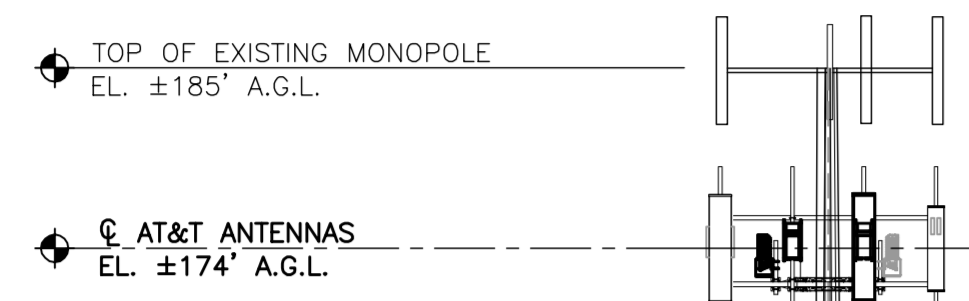
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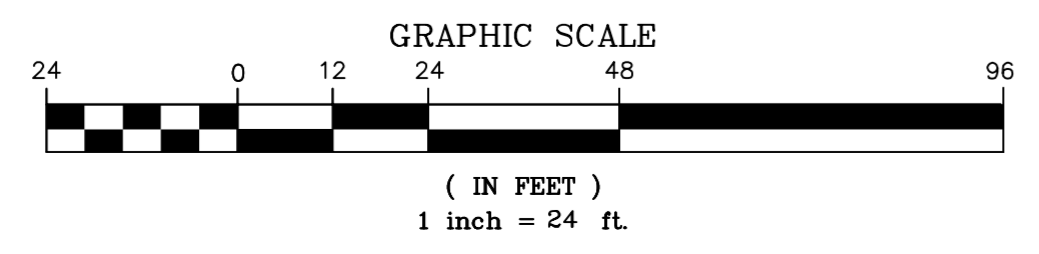
NOTES, SPECIFICATIONS AND DETAILS

N-1

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4 TOWER ELEVATION
C-1 SCALE: 3/32" = 1'-0"



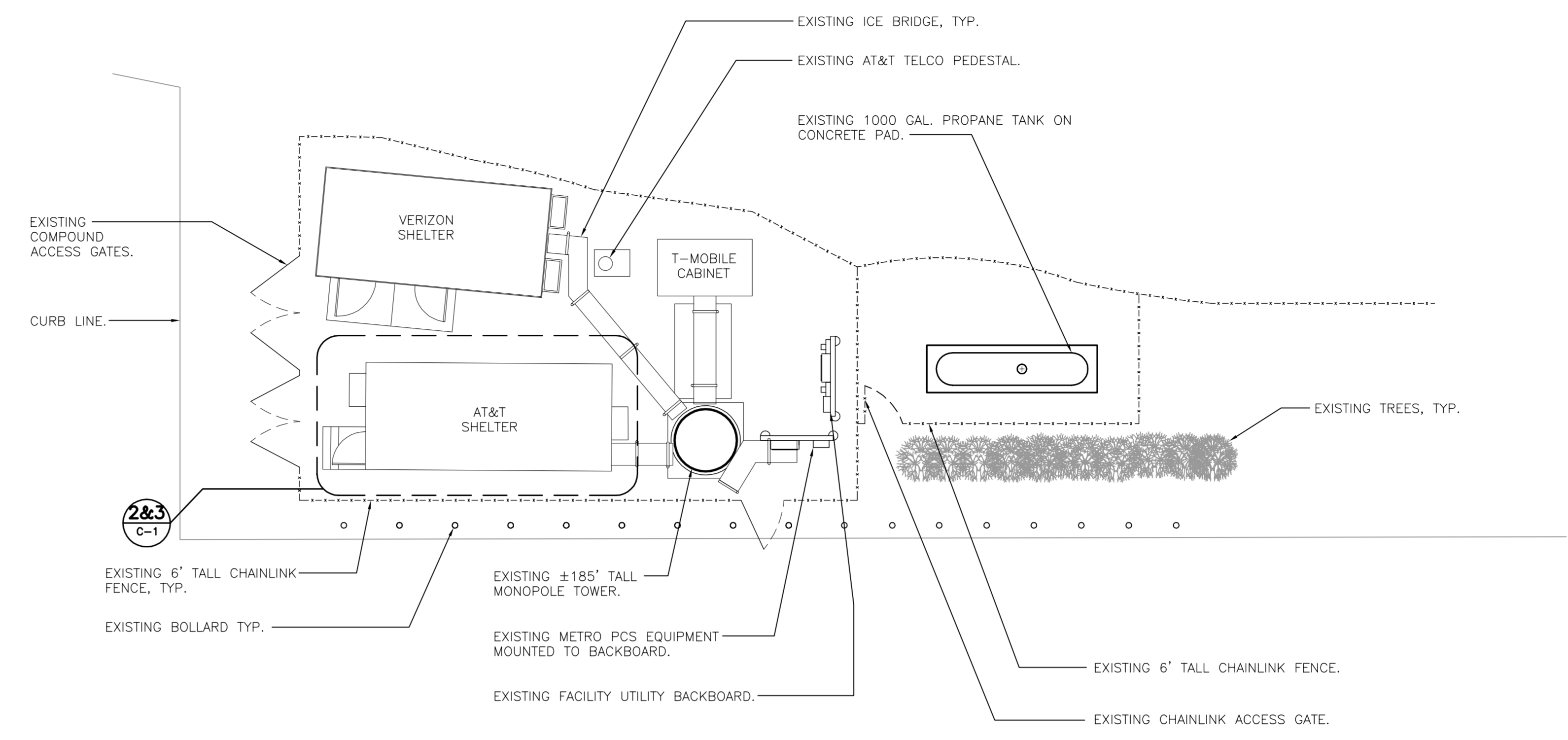
TOWER STRUCTURAL NOTES:

- TOWER STRUCTURAL ANALYSIS SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT TO BE PROVIDED PRIOR TO INSTALLATION OF THE ADDITIONAL TOWER LOADING DEPICTED HEREIN.
- ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE, INC. AND FINAL AT&T RF DATA SHEET.

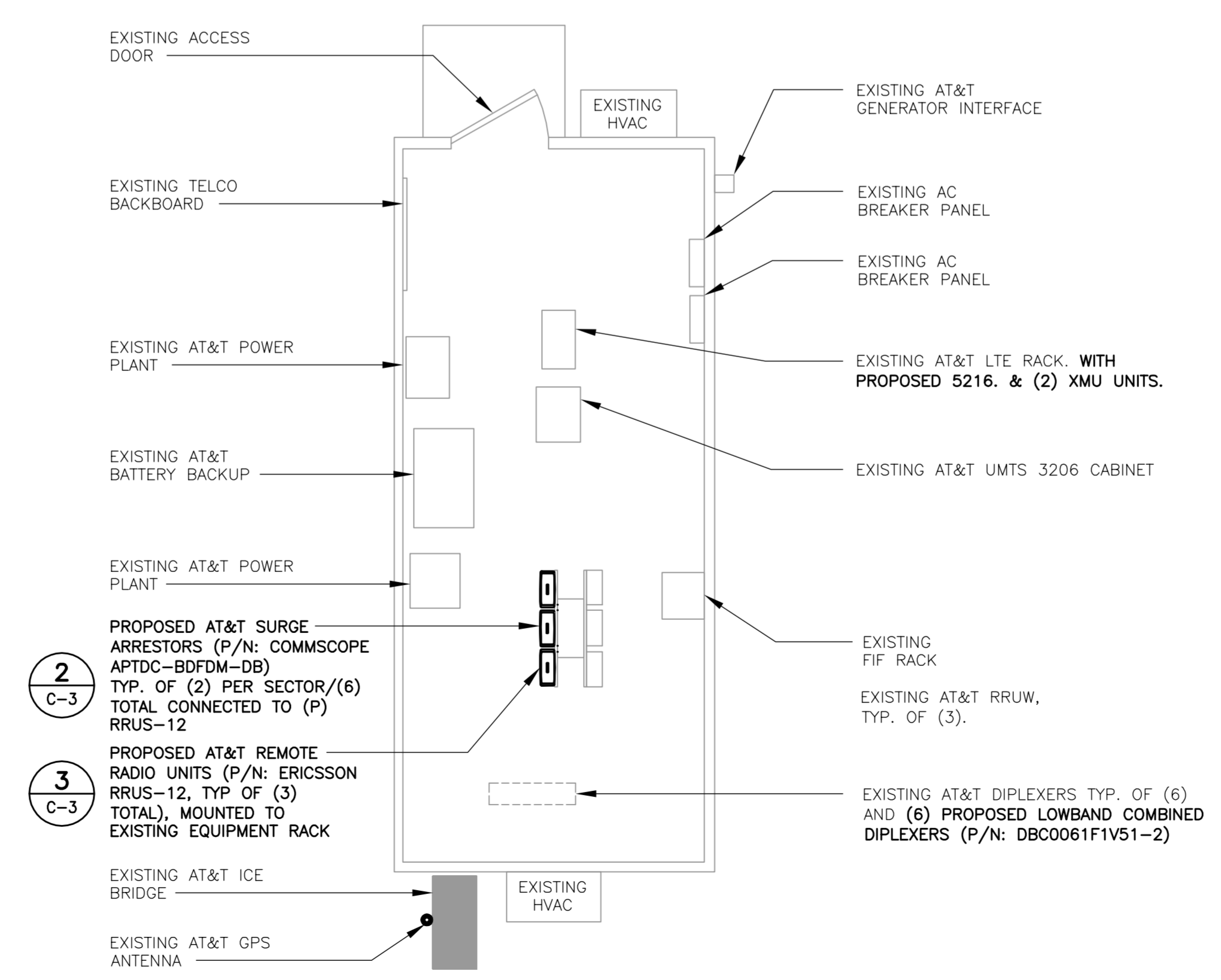
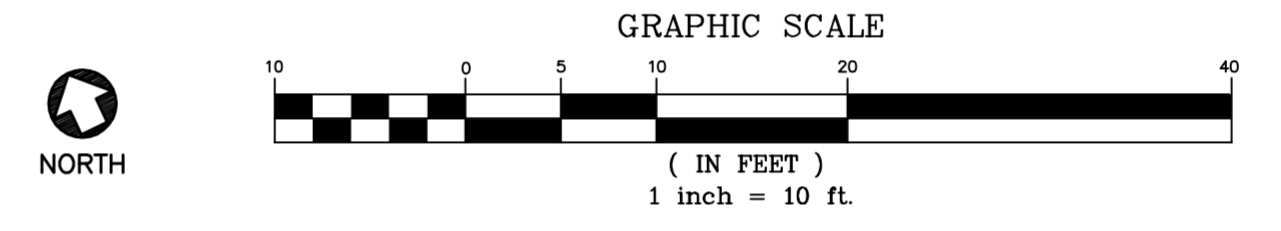
NOTES:

- OTHER CARRIER EQUIPMENT NOT SHOWN FOR CLARITY
- A.G.L. = ABOVE GRADE LEVEL

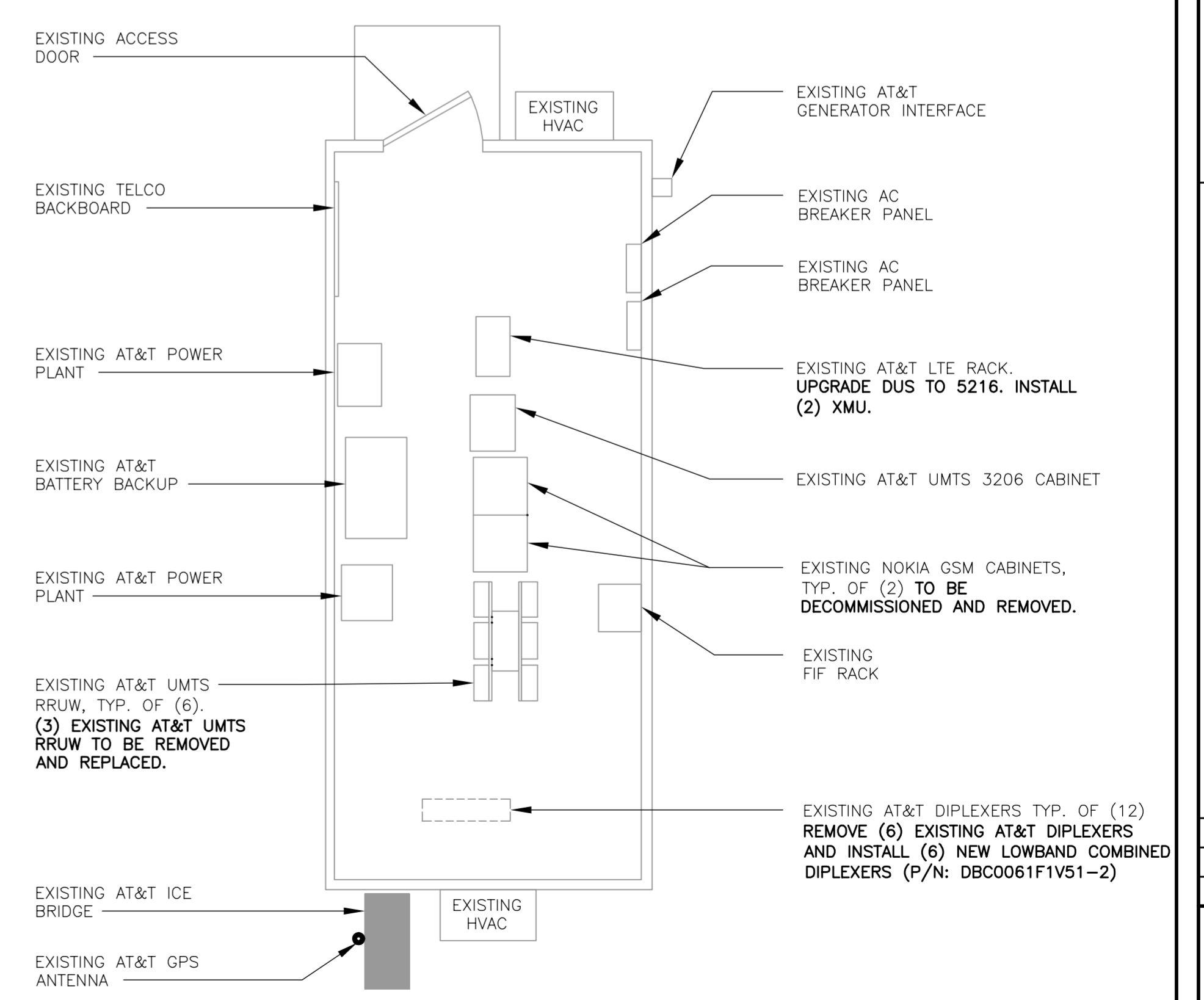
NOTE:
GROUND EQUIPMENT NOT SHOWN FOR CLARITY.



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



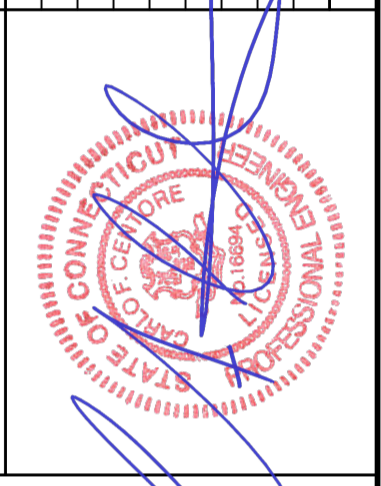
3 PROPOSED EQUIPMENT LAYOUT PLAN
C-1 SCALE: 1/4" = 1'-0"



2 EXISTING EQUIPMENT LAYOUT PLAN
C-1 SCALE: 1/4" = 1'-0"



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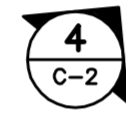
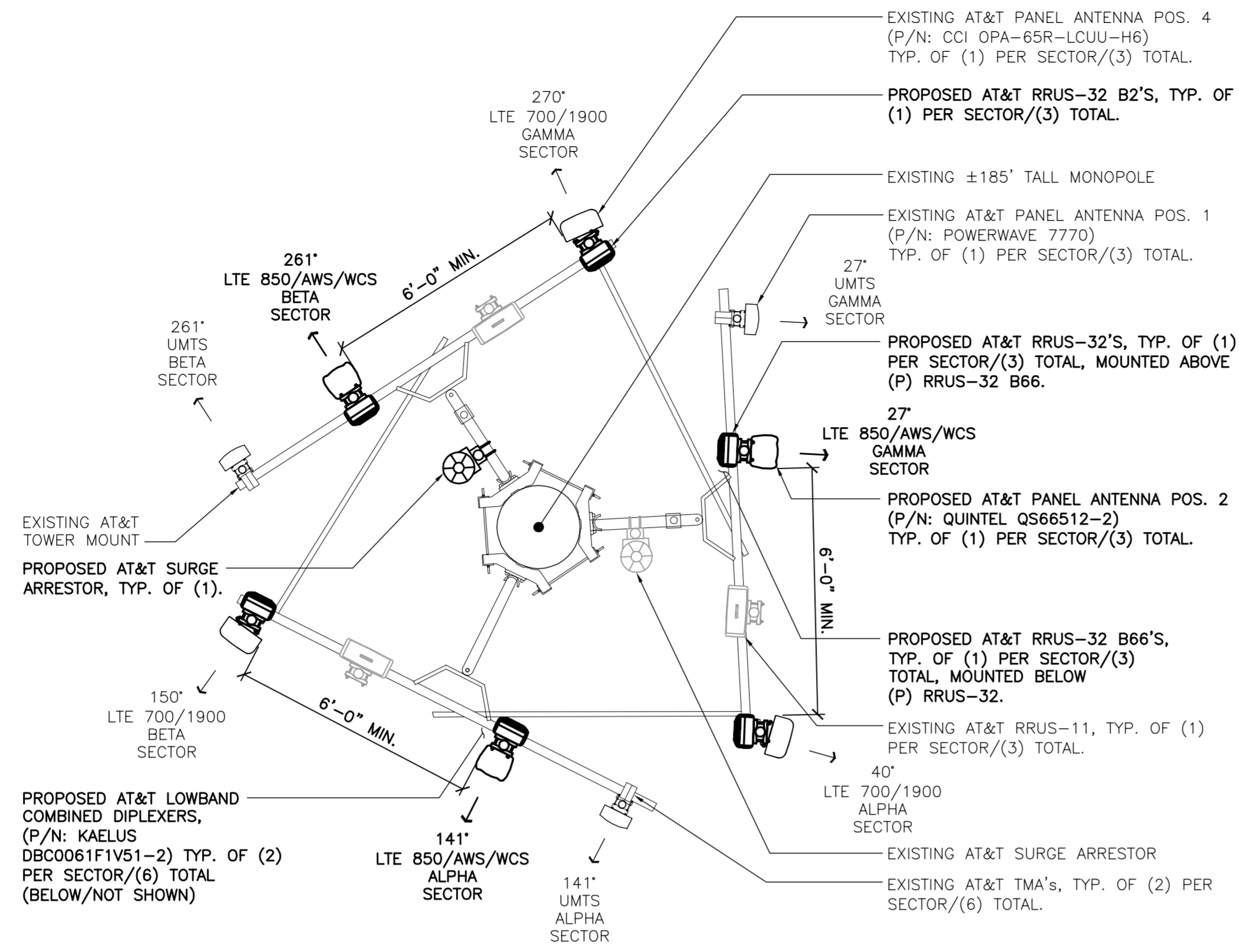
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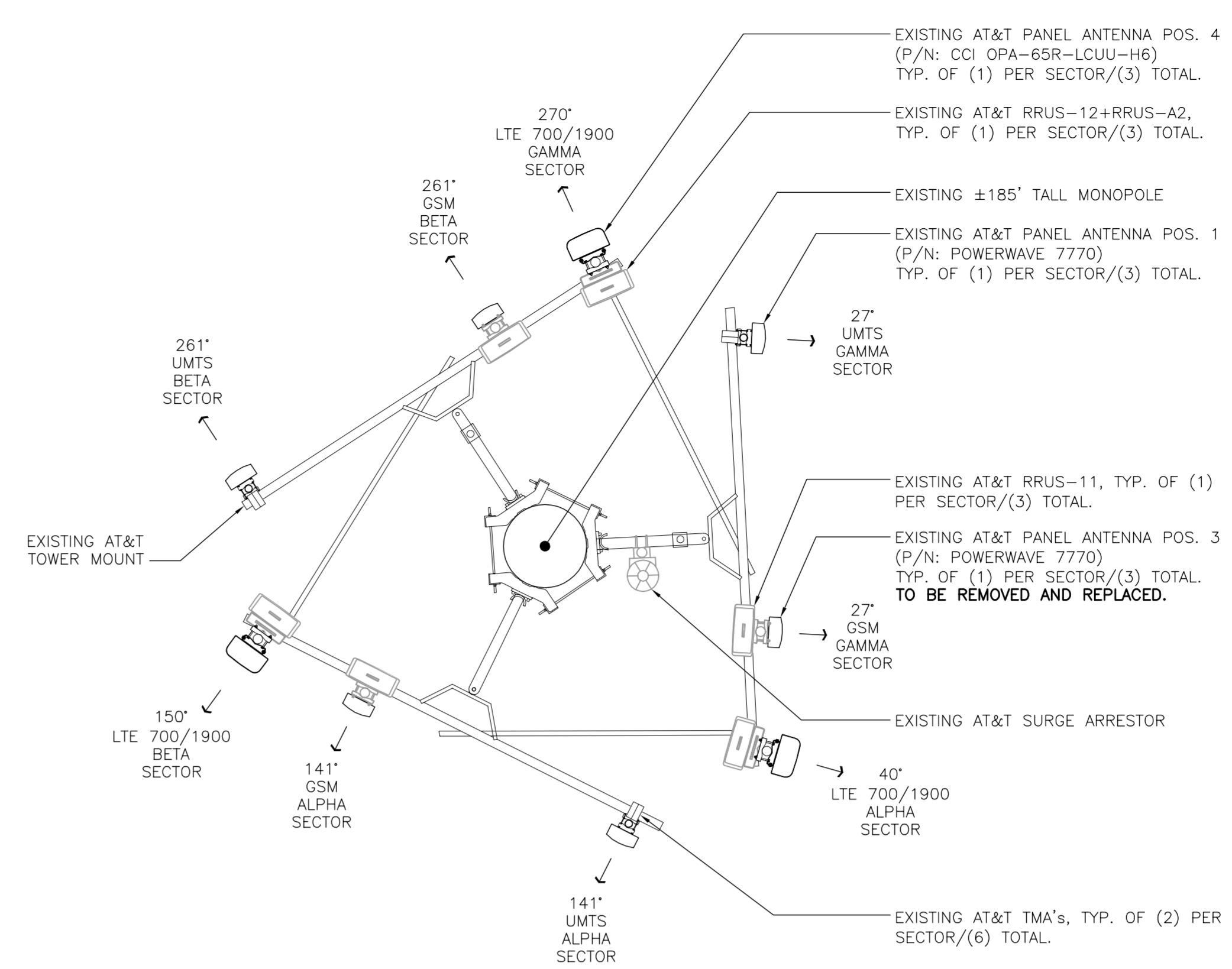
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PLANS AND ELEVATION

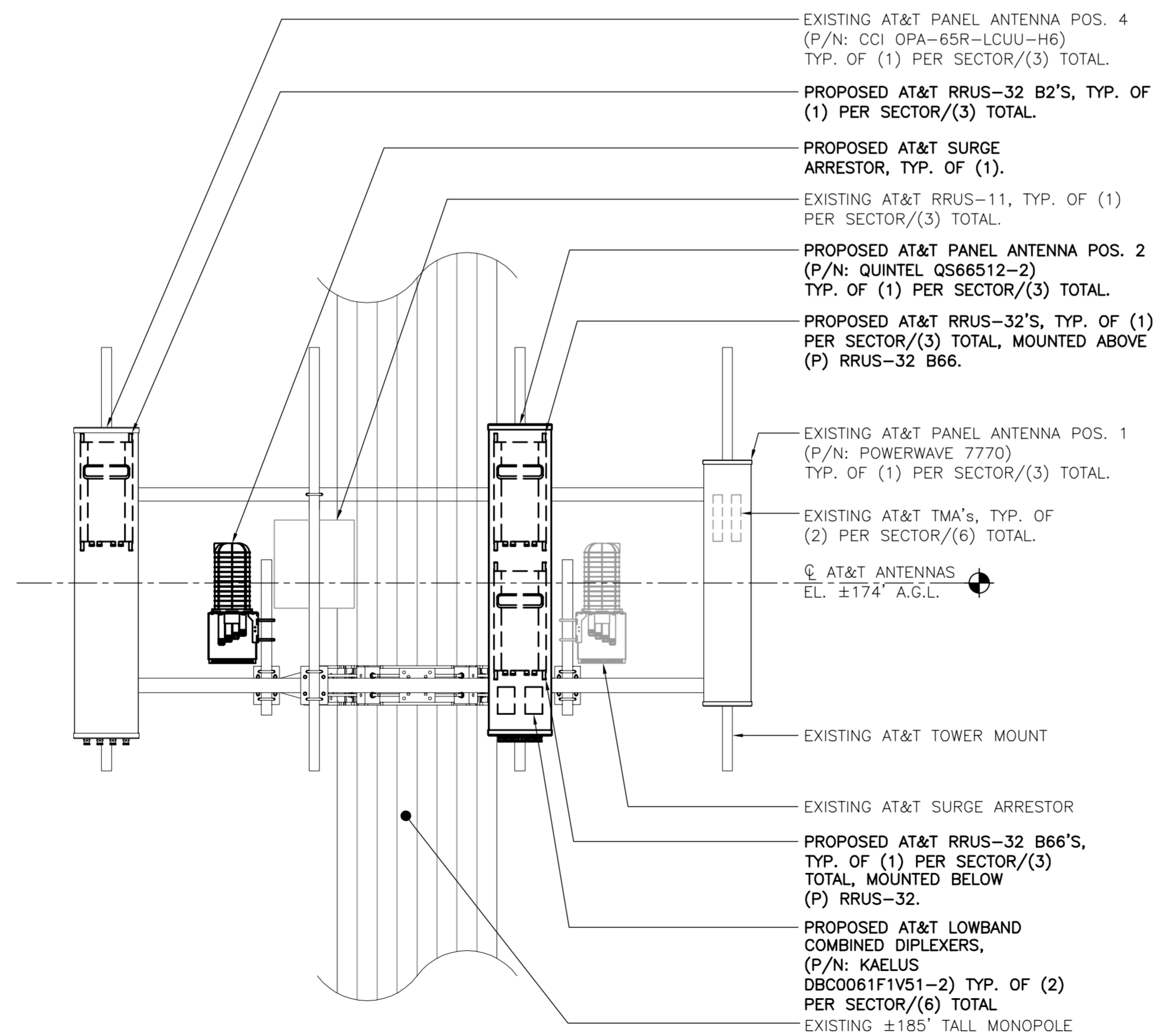
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Sheet No. 3 of 8



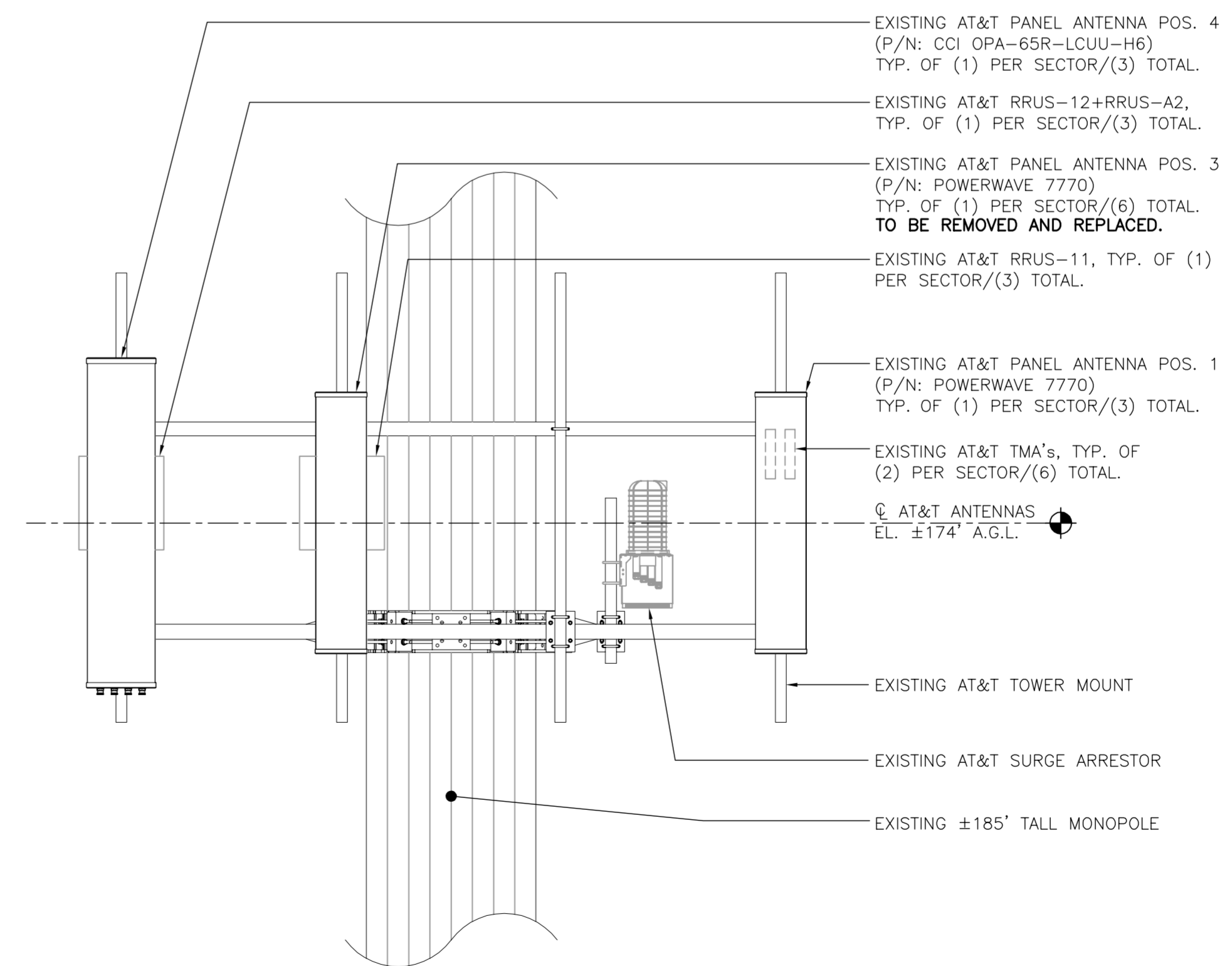
2 PROPOSED ANTENNA PLAN
SCALE: N.T.S. NORTH



1 EXISTING ANTENNA PLAN
SCALE: N.T.S. NORTH

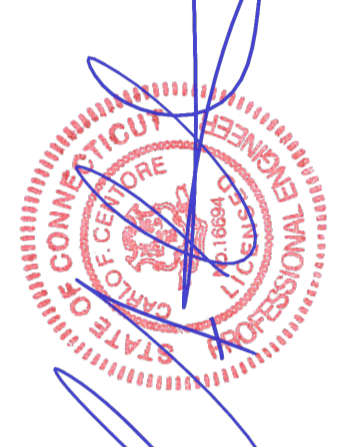


4 PROPOSED ANTENNA ELEVATION
SCALE: N.T.S.



3 EXISTING ANTENNA ELEVATION
SCALE: N.T.S.

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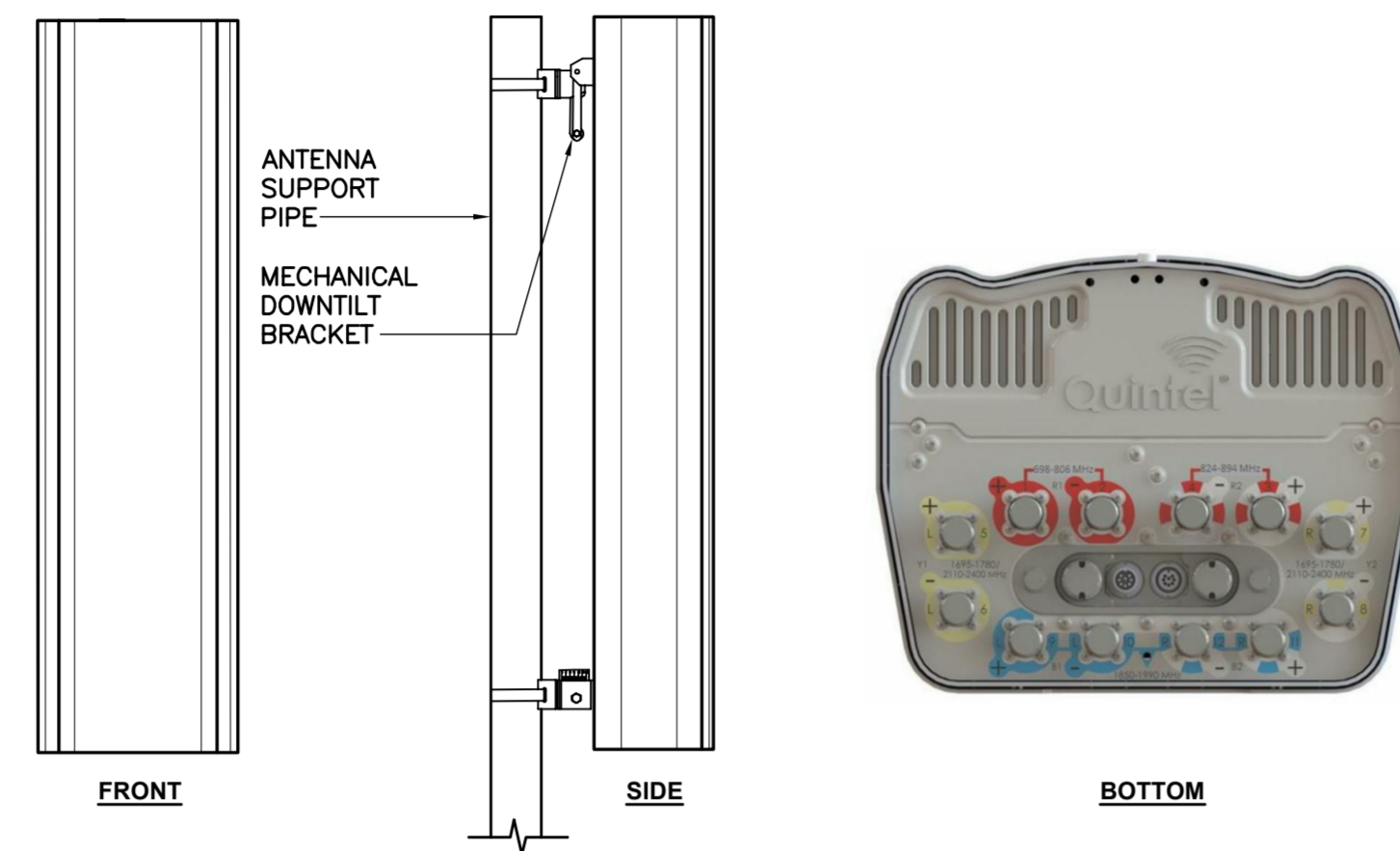
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ANTENNA
 CONFIGURATION &
 ELEVATIONS

C-2



ALPHA/BETA/GAMMA ANTENNA			
EQUIPMENT	DIMENSIONS	WEIGHT	
MAKE: QUINTEL MODEL: QS66512-2	72.0"L x 12.0"W x 9.6"D	111 LBS.	

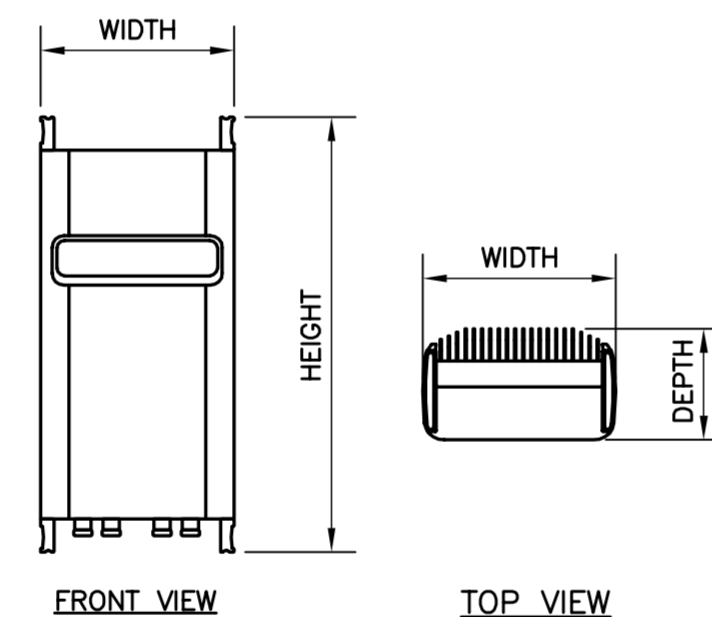
1 PROPOSED ANTENNA DETAIL
C-3 SCALE: 1/2" = 1'-0"



SURGE ARRESTOR		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: COMMSCOPE MODEL: APTDC-BDFDM-DB	3.46"H x 3.46"W x 1.65"D	1.32 LBS.

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

2 COMMSCOPE APTDC-BDFDM-DB DETAIL
C-3 SCALE: NOT TO SCALE



RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS-32	27.17"H x 12.05"W x 7.01"D	52.91 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.
MAKE: ERICSSON MODEL: RRUS-32 B2	27.17"H x 12.05"W x 7.01"D	52.91 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.
MAKE: ERICSSON MODEL: RRUS-32 B66	27.17"H x 12.05"W x 7.01"D	52.91 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

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

3 ERICSSON RRUS 32 B2 DETAIL
C-3 SCALE: 1" = 1'-0"



DIPLEXER 700/850		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: KAEIUS MODEL: DBC0061F1V51-2	8"H x 6.45"W x 6.2"D	18.3 LBS.

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

4 KAEIUS DBC0061F1V51-2 DETAIL
C-3 SCALE: NOT TO SCALE

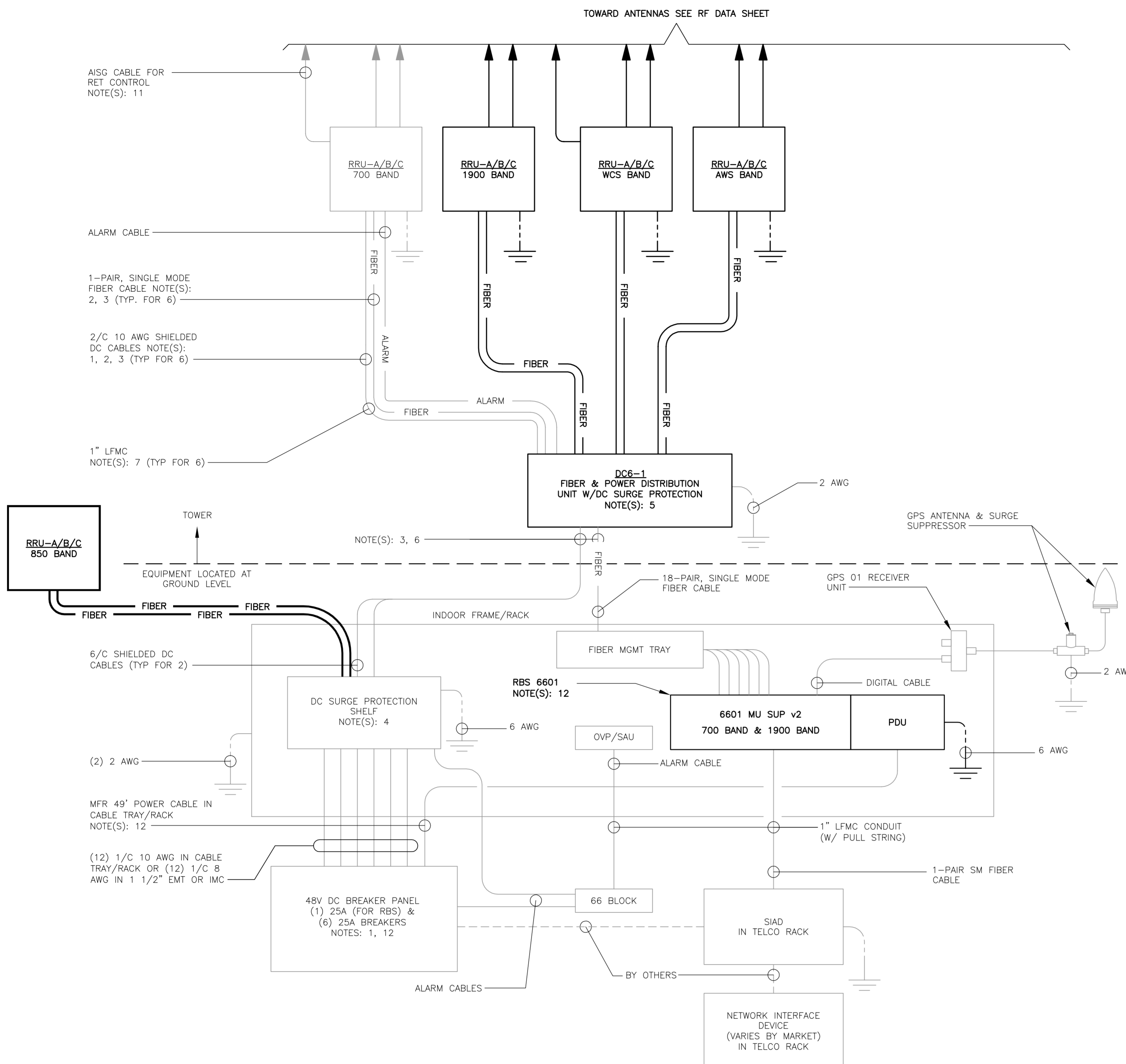


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LTE 3C/4C/5C & BWE
EQUIPMENT
DETAILS



1 LTE SCHEMATIC DIAGRAM
E-1 NOT TO SCALE

LTE SCHEMATIC DIAGRAM NOTES:

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

ELECTRICAL NOTES

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

TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

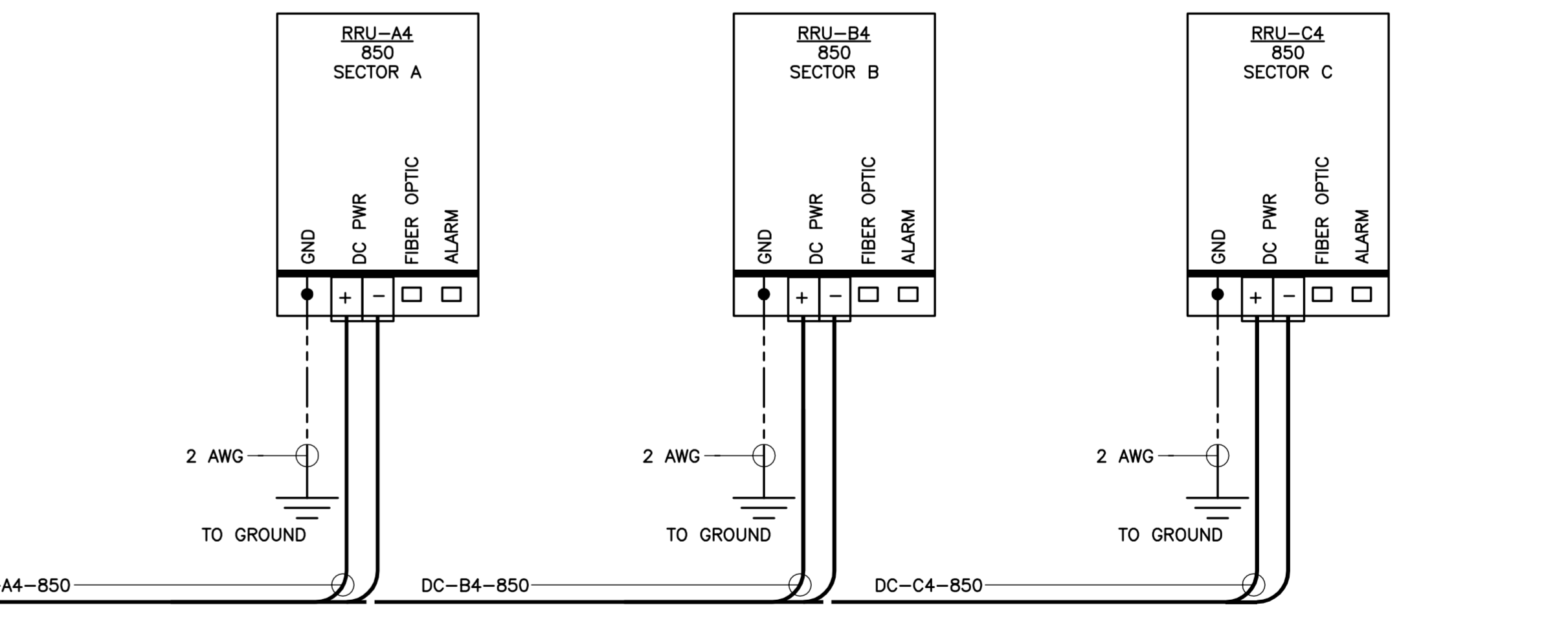
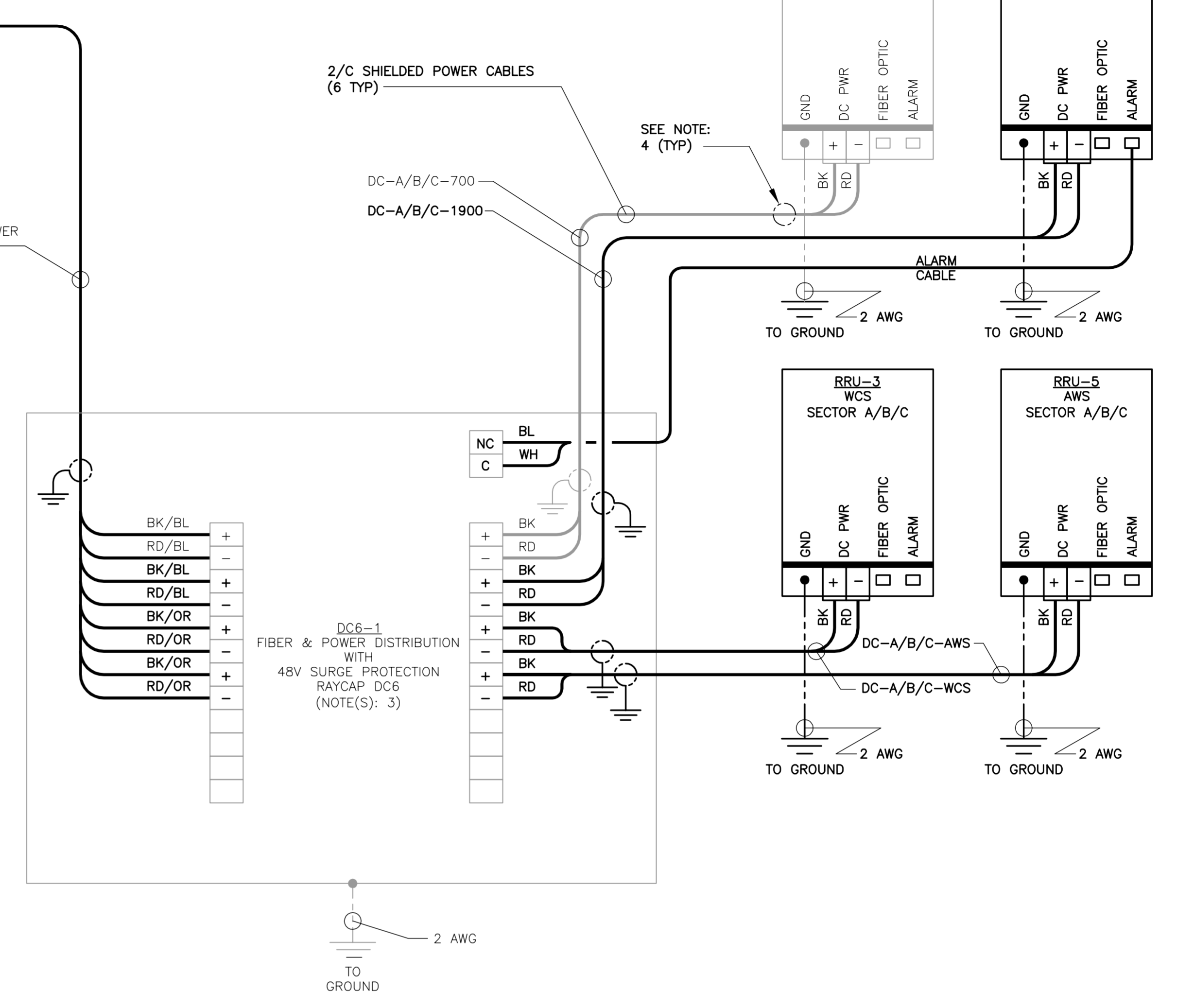
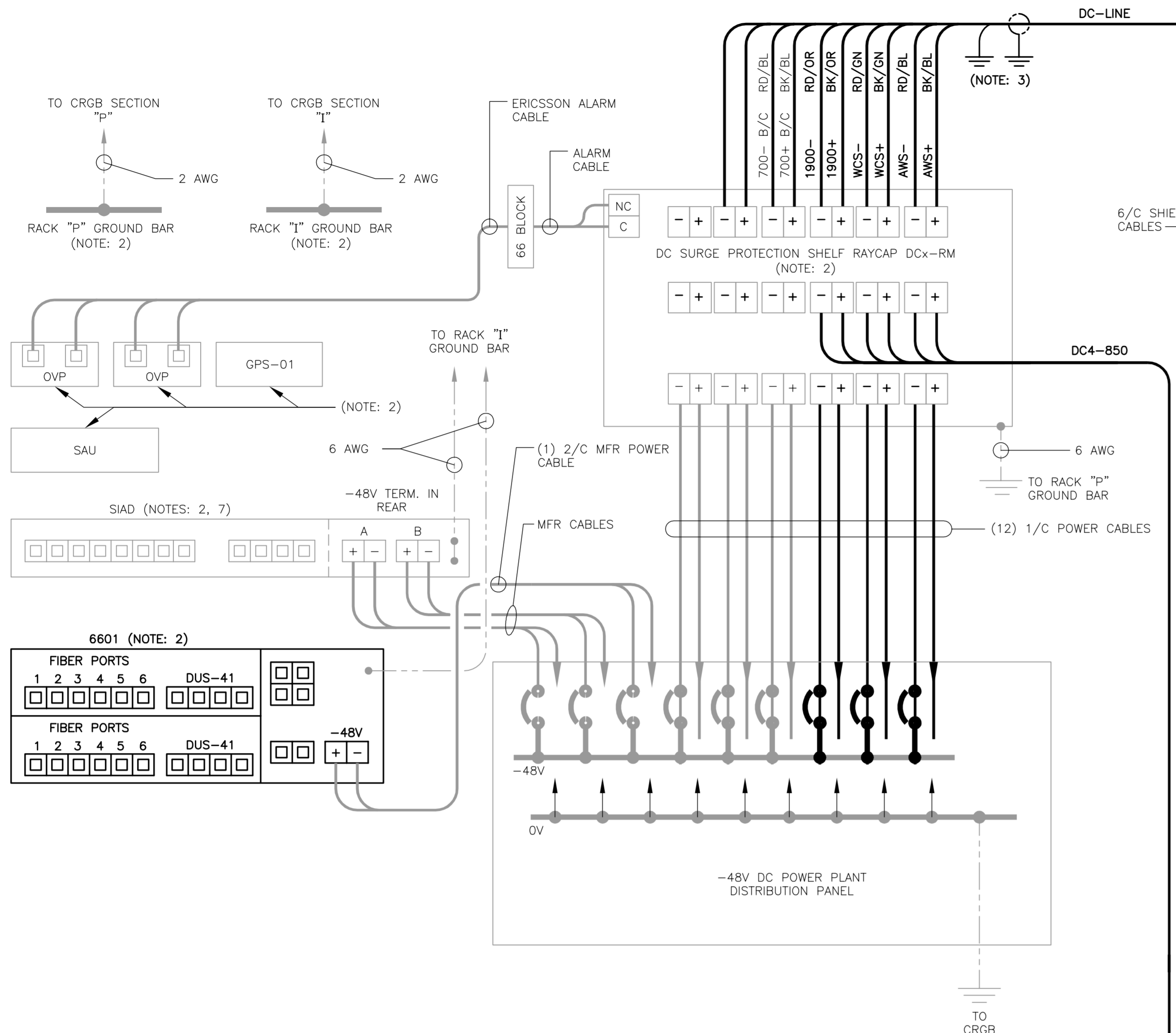
- CONTRACTOR SHALL RETAIN THE SERVICES OF A LOCAL INDEPENDENT ELECTRICAL TESTING FIRM (WITH MINIMUM 5 YEARS COMMERCIAL EXPERIENCE IN THE ELECTRICAL TESTING INDUSTRY) AS SPECIFIED BY OWNER TO PERFORM:
 - TEST 1: RESISTANCE TO GROUND TEST ON THE CELLULAR GROUNDING SYSTEM. THE TESTING FIRM SHALL INCLUDE THE FOLLOWING INFORMATION WITH THE REPORT:
 - TESTING PROCEDURE INCLUDING THE MAKE AND MODEL OF TEST EQUIPMENT.
 - CERTIFICATION OF TESTING EQUIPMENT CALIBRATION WITHIN SIX (6) MONTHS OF DATE OF TESTING. INCLUDE CERTIFICATION LAB ADDRESS AND TELEPHONE NUMBER.
 - GRAPHICAL DESCRIPTION OF TESTING METHOD ACTUALLY IMPLEMENTED.
- TESTING SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF OWNERS CONSTRUCTION REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE CONSTRUCTION AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.
- THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT ELECTRICAL TESTING FIRM REPORT/ANALYSIS TO ENGINEER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO THE JOB TURNOVER.
- CONTRACTOR TO PROVIDE A MINIMUM OF ONE (1) WEEK NOTICE TO OWNER AND ENGINEER FOR ALL TESTS REQUIRING WITNESSING.

PROFESSIONAL ENGINEER SEAL	CONSTRUCTION DOCUMENTS - ISSUED FOR CONSTRUCTION
DATE: 10/12/17	CAG
SCALE: AS NOTED	LG
JOB NO. 17004.50	DATE
TYPICAL ELECTRICAL DETAILS & NOTES	REV.
E-1	0 12/04/17
Sheet No. 6 of 8	DATE

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1 LTE WIRING DIAGRAM
E-2 NOT TO SCALE

LTE WIRING DIAGRAM NOTES:

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

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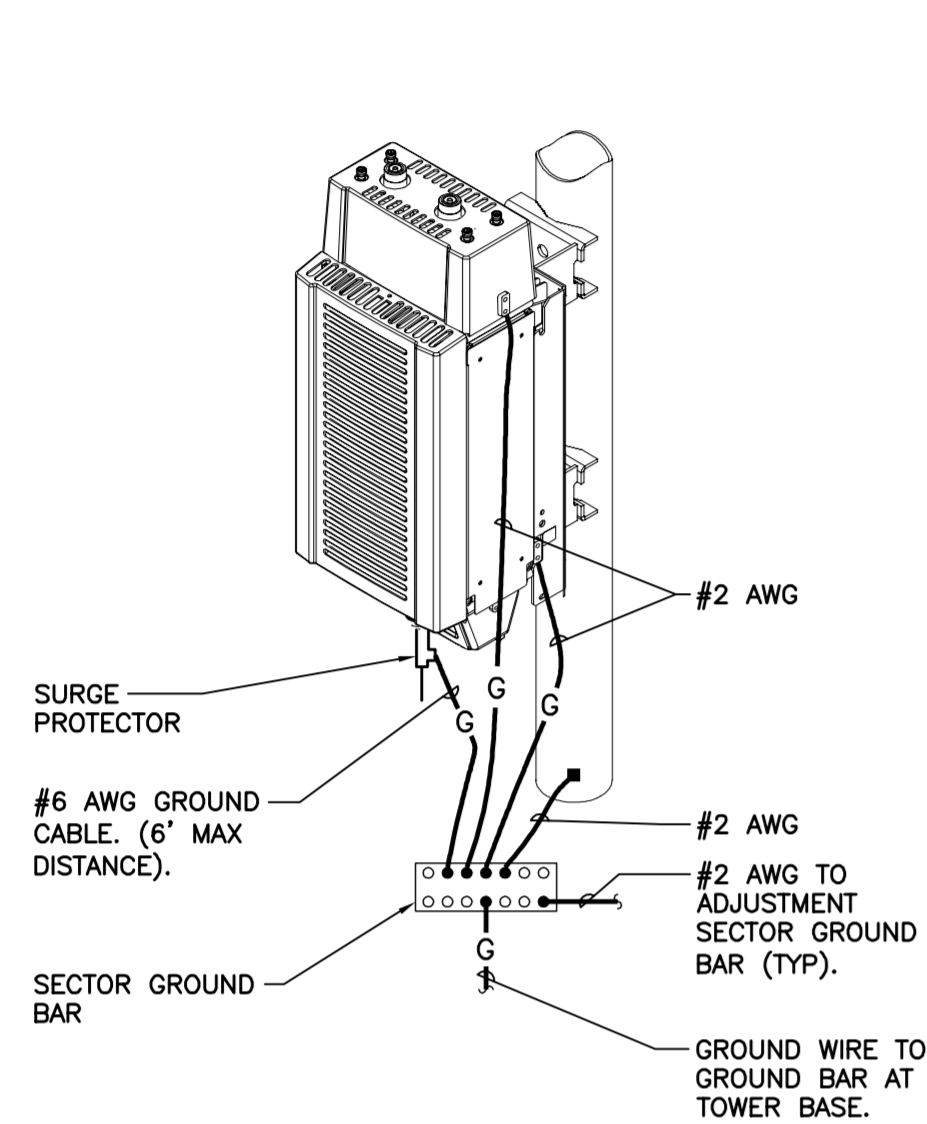
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SCALE: AS NOTED
JOB NO. 17004.50

TYPICAL ELECTRICAL DETAILS & NOTES

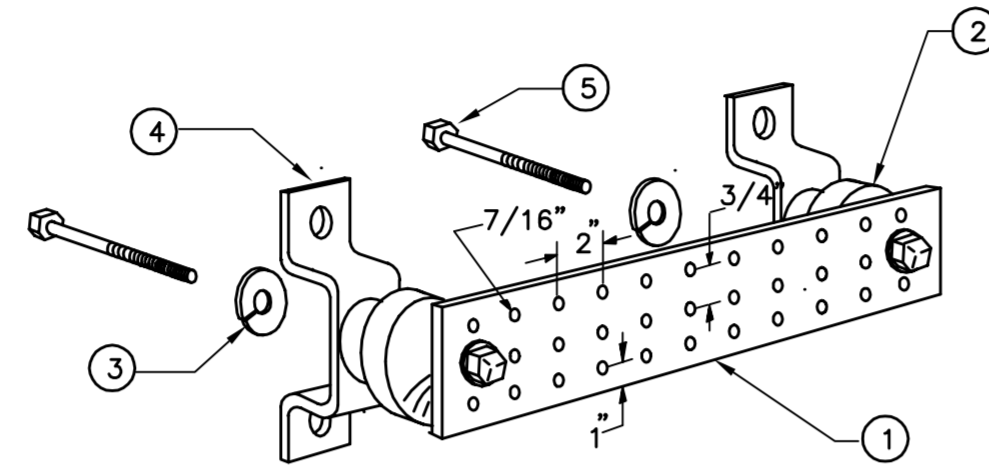
E-2
Sheet No. 7 of 8

CONSTRUCTION DOCUMENTS - ISSUED FOR CONSTRUCTION
CAG
DATE 12/04/17
LGL
DRAWN BY CHK'D BY DESCRIPTION
REV.

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



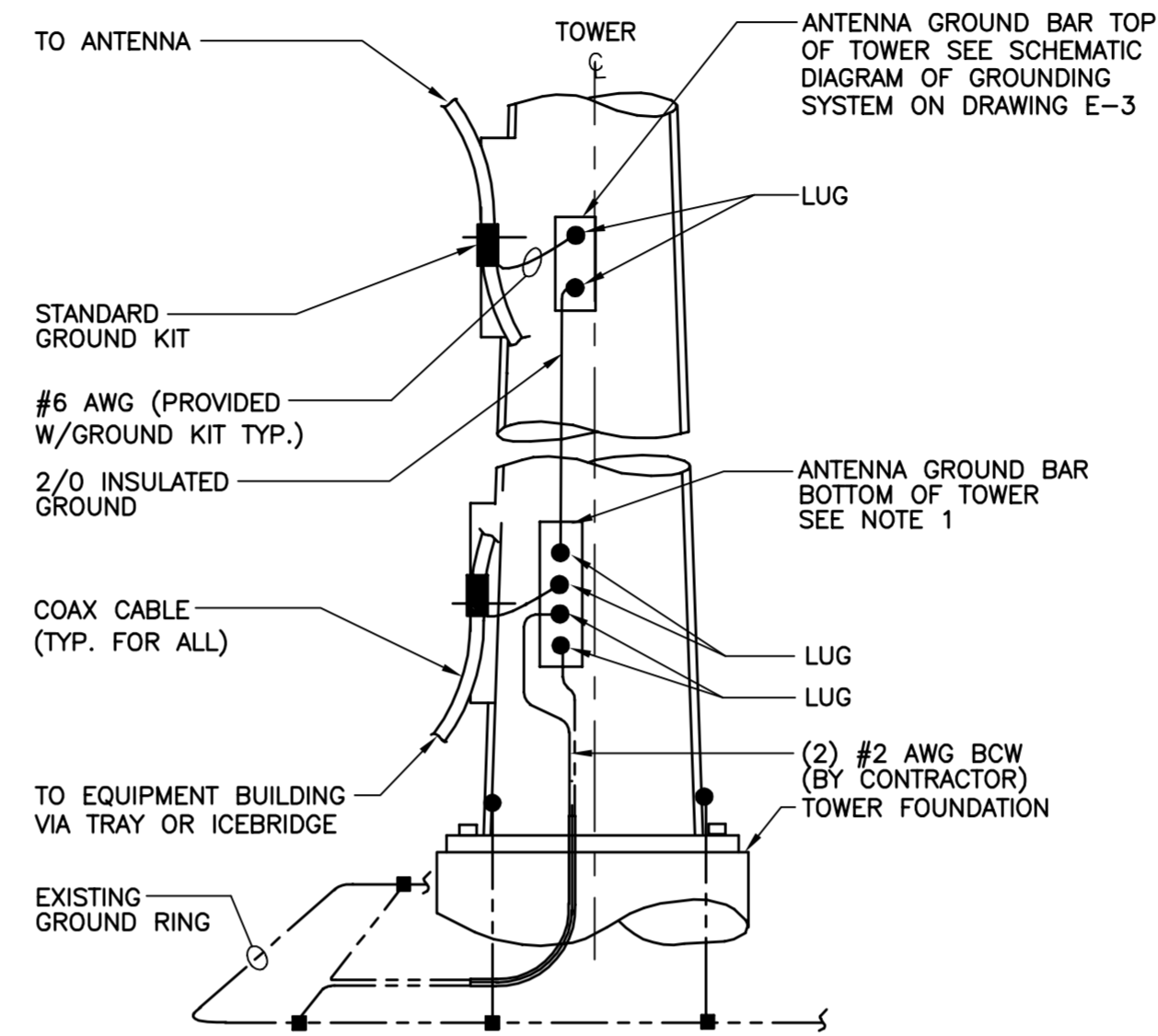
4 RRU POLE MOUNT GROUNING
 E-3 NOT TO SCALE



LEGEND

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

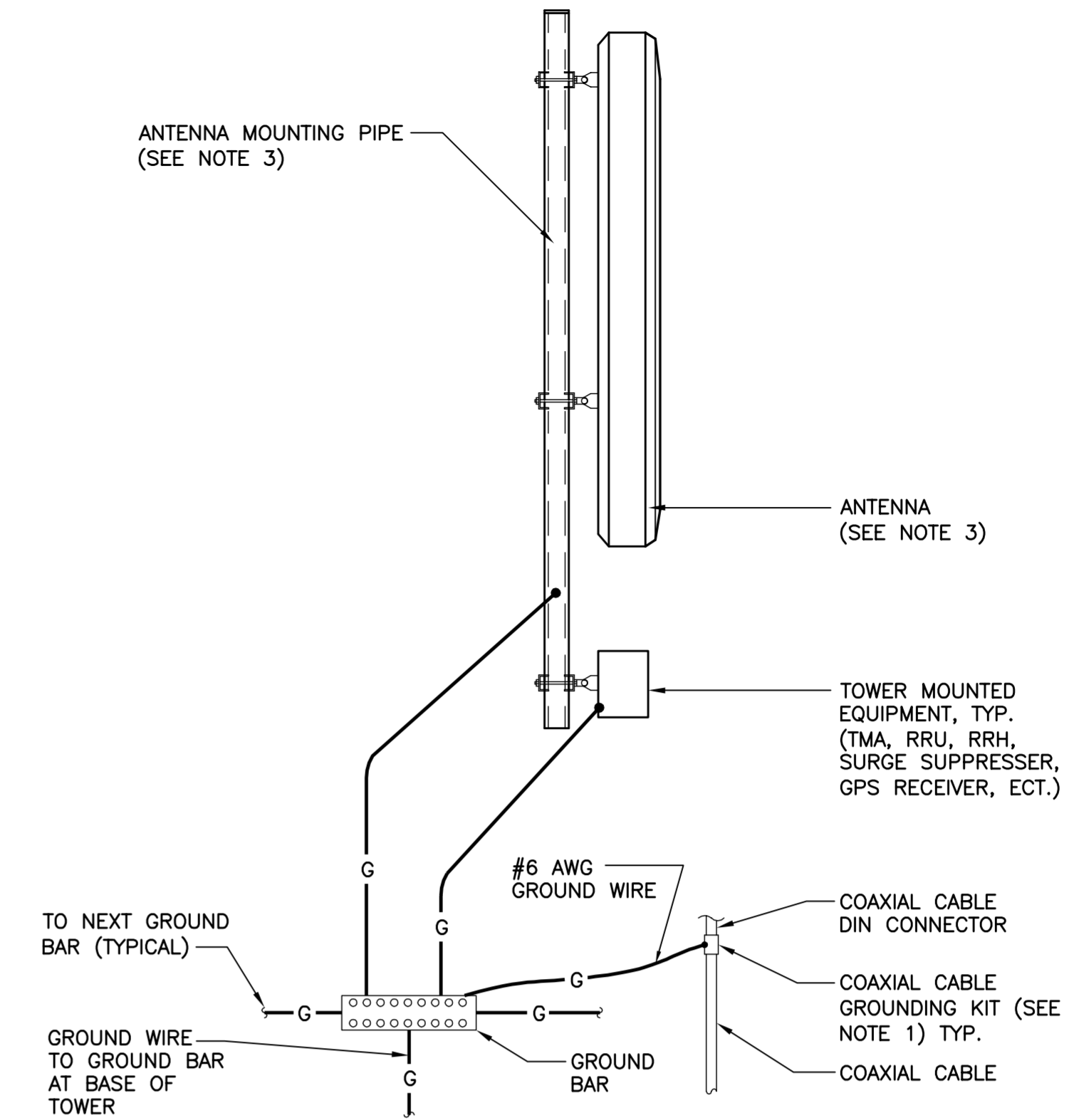
3 GROUND BAR DETAIL
 E-3 NOT TO SCALE



NOTES:

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

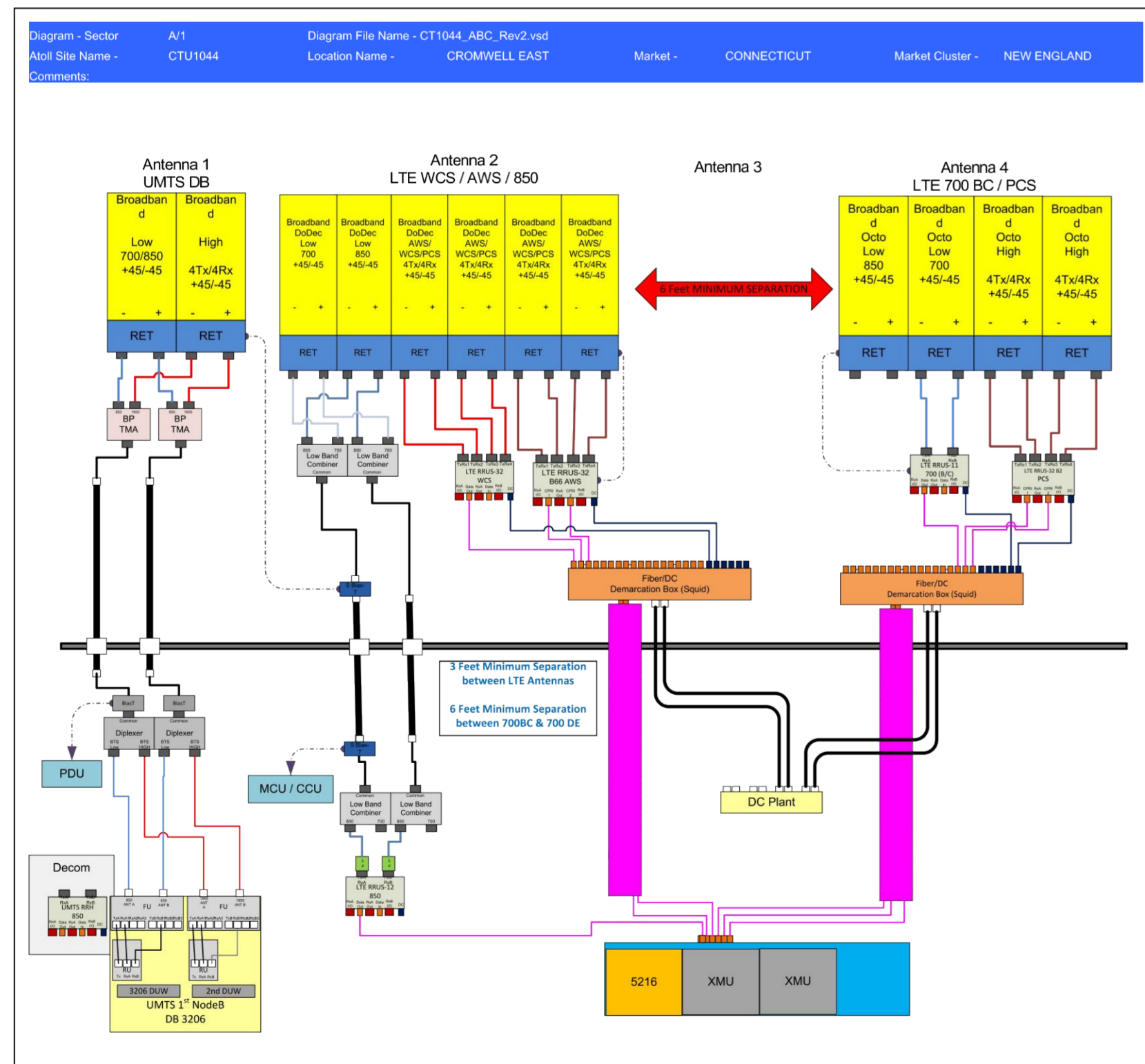
2 ANTENNA CABLE GROUNING - TOWER
 E-3 NOT TO SCALE



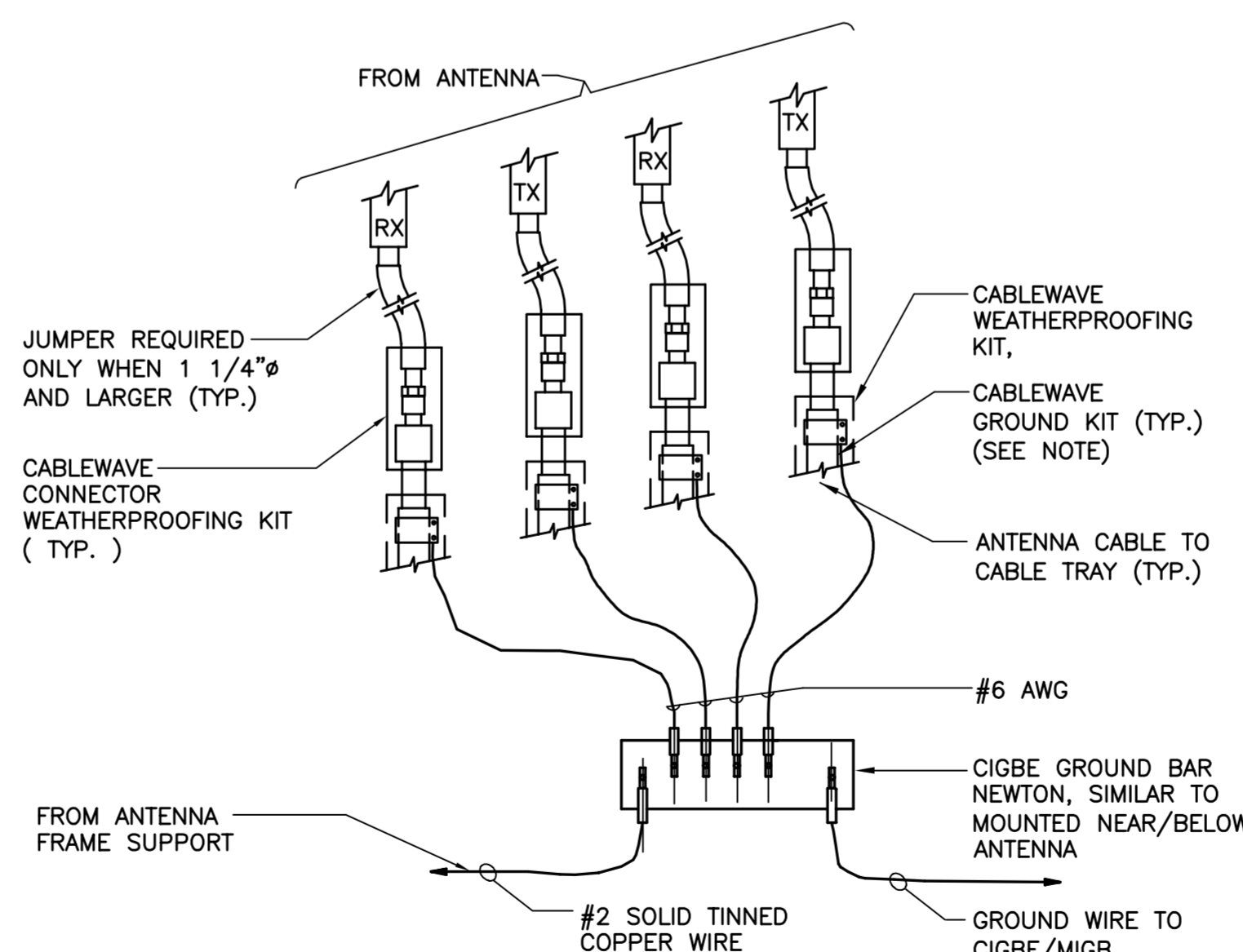
NOTES:

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

1 TYPICAL ANTENNA GROUNING DETAIL
 E-3 NOT TO SCALE



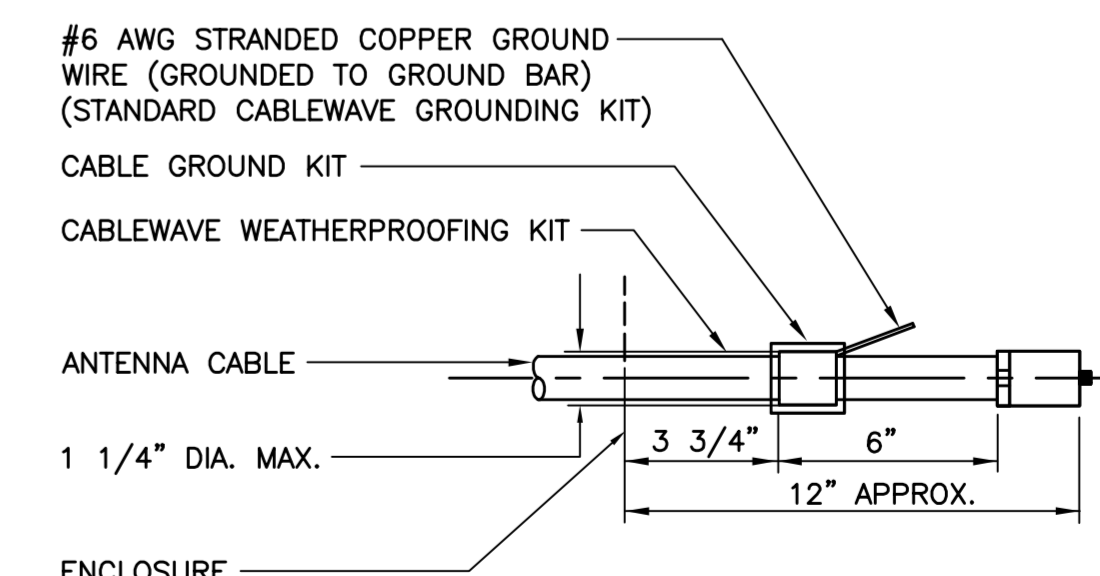
7 RF PLUMBING DIAGRAM
 E-3 NOT TO SCALE



NOTE:

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

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



NOTE:

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

5 ANTENNA CABLE GROUNING DETAIL
 E-3 NOT TO SCALE

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TYPICAL ELECTRICAL DETAILS & NOTES

E-3
 Sheet No. 8 of 8

CONSTRUCTION DOCUMENTS - ISSUED FOR CONSTRUCTION
 DATE: 12/04/17
 LG: DRAWN BY:CHK'D BY:DESCRIPTION

Exhibit 3



Date: **November 2, 2017**

Marianne Dunst
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277
(704) 405-6580

Paul J. Ford and Company
250 East Broad St., Suite 600
Columbus, OH 43215
jacuna@pjfweb.com
(614) 221-6679

Subject: Structural Analysis Report

Carrier Designation:	AT&T Mobility Co-Locate	
	Carrier Site Number:	CT1044
	Carrier Site Name:	10035130
Crown Castle Designation:	Crown Castle BU Number:	825983
	Crown Castle Site Name:	MIDDLETOWN_1
	Crown Castle JDE Job Number:	470116
	Crown Castle Work Order Number:	1482396
	Crown Castle Application Number:	414662 Rev. 0

Engineering Firm Designation: Paul J. Ford and Company Project Number: 37517-1854.002.7805

Site Data: 90 Industrial Park Road, Middletown, Middlesex County, CT
Latitude 41° 35' 8.3", Longitude -72° 42' 50.49"
185 Foot - Monopole Tower

Dear Marianne Dunst,

Paul J. Ford and Company is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 1100996, in accordance with application 414662, revision 0.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

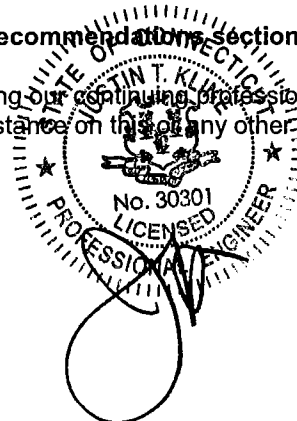
This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 130 mph converted to a nominal 3-second gust wind speed of 101 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G-2005 Standard, "Structural Standard for Antenna Supporting Structures and Antennas", with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category C and Topographic Category 1 with a maximum Topographic Factor, Kzt, of 1.0 were used in this analysis.

This report is only valid if the loading changes described in the Recommendations section are met.

We at Paul J. Ford and Company appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Jaime Acuna
Structural Designer



11-2-17

Date: **November 2, 2017**

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Charlotte, NC 28277
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Subject: Structural Analysis Report

Carrier Designation: **AT&T Mobility Co-Locate**
Carrier Site Number: CT1044
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Crown Castle Site Name: MIDDLETOWN_1
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1) INTRODUCTION

This tower is a 185 ft Monopole tower designed by FRED A. NUDD CORPORATION in May of 1998. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-E.

2) ANALYSIS CRITERIA

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 130 mph converted to a nominal 3-second gust wind speed of 101 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G-2005 Standard, "Structural Standard for Antenna Supporting Structures and Antennas", with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category C and Topographic Category 1 with a maximum Topographic Factor, Kzt, of 1.0 were used in this analysis.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
175.0	175.0	3	ericsson	RRUS 32**	4 2	3/4 3/8	-
		3	ericsson	RRUS 32 B2**			
		3	ericsson	RRUS 32 B66			
		6	kaelus	DBC0061F1V51-2			
		3	kathrein	782 10254			
		3	quintel technology	QS66512-2 w/ Mount Pipe			

** Shielded Equipment

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
185.0	185.0	6	andrew	ETW190VS12UB	16	1-5/8	1
		3	commscope	ATBT-BOTTOM-24V			
		3	commscope	LNx-6515DS-VTM w/ Mount Pipe			
		3	ems wireless	RR90-17-02DP w/ Mount Pipe			
		3	rfs celwave	APX16DWV-16DWVS-C w/ Mount Pipe			
		1	tower mounts	Sector Mount [SM 802-3]			
175.0	175.0	6	ericsson	RRUS 11-700	12	1-1/4	1
		3	ericsson	RRUS A2 MODULE			
		3	powerwave technologies	7770.00 w/ Mount Pipe			
		6	powerwave technologies	LGP21401			
		3	cci antennas	OPA-65R-LCUU-H6 w/ Mount Pipe			
		3	ericsson	RRUS-11			
		6	powerwave technologies	7020.00			
		3	powerwave technologies	7770.00 w/ Mount Pipe			
		6	powerwave technologies	LGP21401			
		2	raycap	DC6-48-60-18-8F			
		1	tower mounts	Sector Mount [SM 802-3]			
165.0	165.0	3	rfs celwave	APXV18-206517S	6	1-5/8	1
		1	tower mounts	Pipe Mount [PM 601-3]			
155.0	155.0	3	alcatel lucent	AWS4 (B66) 4x45 RRH	-	-	2
		3	alcatel lucent	RRH2X60-PCS			
		3	alcatel lucent	RRH2x60-700			
		12	andrew	SBNHH-1D65B w/ Mount Pipe			
		2	rfs celwave	DB-T1-6Z-8AB-0Z			
		1	tower mounts	Platform Mount [LP 403-1]			

Notes:

- 1) Existing Equipment
- 2) Reserved Equipment
- 3) Equipment To Be Removed

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
-	-	-	-	-	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Clarence Welti, 3/27/1998	3473514	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Nudd, 98-5980, 5/1/1998	3880469	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Nudd, 98-5980, 5/1/1998	3473517	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	All-Points Tech, CT107572, 4/26/2005	3879955	CCISITES
4-POST-MODIFICATION INSPECTION	SGS, 146075, 12/30/2014	5512978	CCISITES
4-POST-MODIFICATION INSPECTION	SGS, 13068, 1/13/2015	5650784	CCISITES

3.1) Analysis Method

tnxTower (version 7.0.5.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

- 1) Tower and structures were built in accordance with the manufacturer's specifications.
- 2) The tower and structures have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
- 4) The Nudd manufacturer's drawings specify an anchor rod that does not exist. From experience with Nudd monopoles, the anchors are likely A36 standard anchors and have been assumed as such.
- 5) Monopole was reinforced in conformance with the referenced modification drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Paul J. Ford and Company should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L1	185 - 180	Pole	TP18x18x0.1875	Pole	15.3%	Pass
L2	180 - 175	Pole	TP19.631x18x0.25	Pole	20.2%	Pass
L3	175 - 170	Pole	TP21.263x19.631x0.25	Pole	36.8%	Pass
L4	170 - 165	Pole	TP22.894x21.263x0.25	Pole	49.0%	Pass
L5	165 - 160	Pole	TP24.525x22.894x0.25	Pole	59.5%	Pass
L6	160 - 155	Pole	TP26.156x24.525x0.25	Pole	68.1%	Pass
L7	155 - 154	Pole	TP26.564x26.156x0.25	Pole	71.6%	Pass
L8	154 - 153.75	Pole + Reinf.	TP26.646x26.564x0.3688	Reinf. 8 Tension Rupture	57.0%	Pass
L9	153.75 - 152	Pole + Reinf.	TP27.135x26.646x0.3625	Reinf. 8 Tension Rupture	60.5%	Pass
L10	152 - 151.75	Pole + Reinf.	TP27.217x27.135x0.55	Reinf. 8 Tension Rupture	41.6%	Pass
L11	151.75 - 151.5	Pole + Reinf.	TP27.38x27.217x0.5438	Reinf. 8 Tension Rupture	42.4%	Pass
L12	151.5 - 151.25	Pole + Reinf.	TP27.461x27.38x0.425	Reinf. 3 Tension Rupture	51.9%	Pass
L13	151.25 - 146.25	Pole + Reinf.	TP29.093x27.461x0.4125	Reinf. 3 Tension Rupture	60.4%	Pass
L14	146.25 - 141.25	Pole + Reinf.	TP30.724x29.093x0.4	Reinf. 3 Tension Rupture	67.7%	Pass
L15	141.25 - 136.25	Pole + Reinf.	TP32.355x30.724x0.3938	Reinf. 3 Tension Rupture	74.0%	Pass
L16	136.25 - 130	Pole + Reinf.	TP34.313x32.355x0.3938	Reinf. 3 Tension Rupture	75.2%	Pass
L17	130 - 129	Pole + Reinf.	TP34.133x32.181x0.475	Reinf. 7 Tension Rupture	71.1%	Pass
L18	129 - 124	Pole + Reinf.	TP35.76x34.133x0.4625	Reinf. 7 Tension Rupture	75.6%	Pass
L19	124 - 121.42	Pole + Reinf.	TP36.599x35.76x0.4625	Reinf. 7 Tension Rupture	77.7%	Pass
L20	121.42 - 121.17	Pole + Reinf.	TP36.68x36.599x0.6375	Reinf. 7 Tension Rupture	57.3%	Pass
L21	121.17 - 121	Pole + Reinf.	TP36.736x36.68x0.625	Reinf. 7 Tension Rupture	57.4%	Pass
L22	121 - 120.75	Pole + Reinf.	TP36.817x36.736x0.5	Reinf. 7 Tension Rupture	71.7%	Pass
L23	120.75 - 115.75	Pole + Reinf.	TP38.444x36.817x0.4875	Pole	76.5%	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L24	115.75 - 115	Pole + Reinf.	TP38.688x38.444x0.4875	Pole	77.3%	Pass
L25	115 - 113.75	Pole + Reinf.	TP39.013x38.688x0.55	Reinf. 7 Tension Rupture	67.8%	Pass
L26	113.75 - 113.5	Pole + Reinf.	TP39.094x39.013x0.4688	Pole	73.2%	Pass
L27	113.5 - 108.5	Pole + Reinf.	TP40.719x39.094x0.4625	Pole	77.1%	Pass
L28	108.5 - 103.5	Pole + Reinf.	TP42.344x40.719x0.4563	Pole	80.8%	Pass
L29	103.5 - 95	Pole + Reinf.	TP45.188x42.344x0.45	Pole	82.8%	Pass
L30	95 - 94	Pole + Reinf.	TP44.853x42.613x0.5875	Pole	69.0%	Pass
L31	94 - 91.4	Pole + Reinf.	TP45.685x44.853x0.575	Pole	70.7%	Pass
L32	91.4 - 91.15	Pole + Reinf.	TP45.765x45.685x0.4438	Pole	91.5%	Pass
L33	91.15 - 91	Pole + Reinf.	TP45.813x45.765x0.4438	Pole	91.6%	Pass
L34	91 - 86	Pole + Reinf.	TP47.445x45.813x0.5	Pole	77.0%	Pass
L35	86 - 81	Pole + Reinf.	TP49.078x47.445x0.5	Pole	79.4%	Pass
L36	81 - 76	Pole + Reinf.	TP50.711x49.078x0.4938	Pole	81.7%	Pass
L37	76 - 71	Pole + Reinf.	TP52.344x50.711x0.4875	Pole	83.9%	Pass
L38	71 - 66	Pole + Reinf.	TP53.977x52.344x0.4875	Pole	86.2%	Pass
L39	66 - 63.91	Pole + Reinf.	TP54.711x53.977x0.4875	Pole	87.2%	Pass
L40	63.91 - 63.66	Pole + Reinf.	TP54.793x54.711x0.4875	Pole	87.3%	Pass
L41	63.66 - 63.25	Pole + Reinf.	TP56.426x54.793x0.4813	Pole	89.6%	Pass
L42	63.25 - 63	Pole + Reinf.	TP58.875x56.426x0.4813	Pole	89.8%	Pass
L43	63 - 51	Pole + Reinf.	TP58.438x55.839x0.55	Pole	82.1%	Pass
L44	51 - 50	Pole + Reinf.	TP60.063x58.438x0.55	Pole	84.3%	Pass
L45	50 - 45	Pole + Reinf.	TP61.551x60.063x0.5438	Pole	86.4%	Pass
L46	45 - 40.42	Pole + Reinf.	TP61.632x61.551x0.475	Pole	99.4%	Pass
L47	40.42 - 40.17	Pole + Reinf.	TP61.688x61.632x0.475	Pole	99.5%	Pass
L48	40.17 - 40	Pole + Reinf.	TP63.31x61.688x0.5313	Pole	83.0%	Pass
L49	40 - 35	Pole + Reinf.	TP63.958x63.31x0.525	Pole	83.6%	Pass
L50	35 - 33.55	Pole + Reinf.	TP64.039x63.958x0.6	Pole	75.5%	Pass
L51	33.55 - 33.3	Pole + Reinf.	TP68.5x64.039x0.6	Pole	77.0%	Pass
L52	33.3 - 32.75	Pole + Reinf.	TP67.958x64.705x0.6	Pole	81.5%	Pass
L53	32.75 - 32.5	Pole + Reinf.	TP69.584x67.958x0.5875	Pole	83.1%	Pass
L54	32.5 - 19	Pole + Reinf.	TP71.21x69.584x0.5875	Pole	84.7%	Pass
L55	19 - 18	Pole + Reinf.	TP72.837x71.21x0.5875	Pole	86.3%	Pass
L56	18 - 13	Pole + Reinf.	TP73.813x72.837x0.575	Pole	87.2%	Pass
L57	13 - 8				Summary	
L58	8 - 6.5			Pole	99.5%	Pass
L59	6.5 - 6.25			Reinforcement	82.1%	Pass
L60	6.25 - 1.25			Overall	99.5%	Pass

Table 6 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	62.3	Pass
1	Base Plate	0	45.5	Pass
1	Base Foundation Structural Steel	0	79.1	Pass
1	Base Foundation Soil Interaction	0	31.3	Pass

Structure Rating (max from all components) =	99.5%
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Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The monopole and its foundation will have sufficient capacity to carry the proposed loading configuration once the following load changes are met.

- This report is only valid if all the proposed RRUS 32 and RRUS 32 B66 are installed in such a manner that the largest portion is parallel to the width of the proposed antennas (QS66512-2) they are mounted behind. Thereby, shielding the proposed TMA's from the wind.

APPENDIX A
TNXTOWER OUTPUT

Tower Input Data

There is a pole section.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

- 1) Tower is located in Middlesex County, Connecticut.
- 2) ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
- 3) Basic wind speed of 101 mph.
- 4) Structure Class II.
- 5) Exposure Category C.
- 6) Topographic Category 1.
- 7) Crest Height 0.000 ft.
- 8) Nominal ice thickness of 1.0000 in.
- 9) Ice thickness is considered to increase with height.
- 10) Ice density of 56.000 pcf.
- 11) A wind speed of 50 mph is used in combination with ice.
- 12) Temperature drop of 50.000 °F.
- 13) Deflections calculated using a wind speed of 60 mph.
- 14) A non-linear (P-delta) analysis was used.
- 15) Pressures are calculated at each section.
- 16) Stress ratio used in pole design is 1.
- 17) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder	Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-G Bracing Resist. Exemption Use TIA-222-G Tension Splice Exemption <div style="text-align: center; background-color: #e0e0e0; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets
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Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	185.000- 180.000	5.000	0.000	12	18.0000	18.0000	0.1875	0.7500	A36M-42 (42 ksi)
L2	180.000- 175.000	5.000	0.000	12	18.0000	19.6313	0.2500	1.0000	A36M-42 (42 ksi)
L3	175.000- 170.000	5.000	0.000	12	19.6313	21.2625	0.2500	1.0000	A36M-42 (42 ksi)
L4	170.000- 165.000	5.000	0.000	12	21.2625	22.8938	0.2500	1.0000	A36M-42 (42 ksi)
L5	165.000- 160.000	5.000	0.000	12	22.8938	24.5250	0.2500	1.0000	A36M-42 (42 ksi)
L6	160.000- 155.000	5.000	0.000	12	24.5250	26.1563	0.2500	1.0000	A36M-42 (42 ksi)
L7	155.000- 153.750	1.250	0.000	12	26.1563	26.5641	0.2500	1.0000	A36M-42 (42 ksi)
L8	153.750-	0.250	0.000	12	26.5641	26.6456	0.3688	1.4750	A36M-42

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
	153.500								(42 ksi)
L9	153.500-152.000	1.500	0.000	12	26.6456	27.1350	0.3625	1.4500	A36M-42 (42 ksi)
L10	152.000-151.750	0.250	0.000	12	27.1350	27.2166	0.5500	2.2000	A36M-42 (42 ksi)
L11	151.750-151.250	0.500	0.000	12	27.2166	27.3797	0.5437	2.1750	A36M-42 (42 ksi)
L12	151.250-151.000	0.250	0.000	12	27.3797	27.4613	0.4250	1.7000	A36M-42 (42 ksi)
L13	151.000-146.000	5.000	0.000	12	27.4613	29.0925	0.4125	1.6500	A36M-42 (42 ksi)
L14	146.000-141.000	5.000	0.000	12	29.0925	30.7237	0.4000	1.6000	A36M-42 (42 ksi)
L15	141.000-136.000	5.000	0.000	12	30.7237	32.3550	0.3937	1.5750	A36M-42 (42 ksi)
L16	136.000-130.000	6.000	5.000	12	32.3550	34.3125	0.3937	1.5750	A36M-42 (42 ksi)
L17	130.000-129.000	6.000	0.000	12	32.1812	34.1331	0.4750	1.9000	A36M-42 (42 ksi)
L18	129.000-124.000	5.000	0.000	12	34.1331	35.7597	0.4625	1.8500	A36M-42 (42 ksi)
L19	124.000-121.420	2.580	0.000	12	35.7597	36.5990	0.4625	1.8500	A36M-42 (42 ksi)
L20	121.420-121.170	0.250	0.000	12	36.5990	36.6803	0.6375	2.5500	A36M-42 (42 ksi)
L21	121.170-121.000	0.170	0.000	12	36.6803	36.7356	0.6250	2.5000	A36M-42 (42 ksi)
L22	121.000-120.750	0.250	0.000	12	36.7356	36.8170	0.5000	2.0000	A36M-42 (42 ksi)
L23	120.750-115.750	5.000	0.000	12	36.8170	38.4435	0.4875	1.9500	A36M-42 (42 ksi)
L24	115.750-115.000	0.750	0.000	12	38.4435	38.6875	0.4875	1.9500	A36M-42 (42 ksi)
L25	115.000-114.000	1.000	0.000	12	38.6875	39.0125	0.5500	2.2000	A36M-42 (42 ksi)
L26	114.000-113.750	0.250	0.000	12	39.0125	39.0938	0.4688	1.8750	A36M-42 (42 ksi)
L27	113.750-108.750	5.000	0.000	12	39.0938	40.7188	0.4625	1.8500	A36M-42 (42 ksi)
L28	108.750-103.750	5.000	0.000	12	40.7188	42.3438	0.4562	1.8250	A36M-42 (42 ksi)
L29	103.750-95.000	8.750	6.000	12	42.3438	45.1875	0.4500	1.8000	A36M-42 (42 ksi)
L30	95.000-94.000	7.000	0.000	12	42.6125	44.8525	0.5875	2.3500	A36M-42 (42 ksi)
L31	94.000-91.400	2.600	0.000	12	44.8525	45.6845	0.5750	2.3000	A36M-42 (42 ksi)
L32	91.400-91.150	0.250	0.000	12	45.6845	45.7645	0.4437	1.7750	A36M-42 (42 ksi)
L33	91.150-91.000	0.150	0.000	12	45.7645	45.8125	0.4437	1.7750	A36M-42 (42 ksi)
L34	91.000-86.000	5.000	0.000	12	45.8125	47.4453	0.5000	2.0000	A36M-42 (42 ksi)
L35	86.000-81.000	5.000	0.000	12	47.4453	49.0781	0.5000	2.0000	A36M-42 (42 ksi)
L36	81.000-76.000	5.000	0.000	12	49.0781	50.7109	0.4938	1.9750	A36M-42 (42 ksi)
L37	76.000-71.000	5.000	0.000	12	50.7109	52.3438	0.4875	1.9500	A36M-42 (42 ksi)
L38	71.000-66.000	5.000	0.000	12	52.3438	53.9766	0.4875	1.9500	A36M-42 (42 ksi)
L39	66.000-63.750	2.250	0.000	12	53.9766	54.7113	0.4875	1.9500	A36M-42 (42 ksi)
L40	63.750-63.500	0.250	0.000	12	54.7113	54.7930	0.4875	1.9500	A36M-42 (42 ksi)
L41	63.500-58.500	5.000	0.000	12	54.7930	56.4258	0.4813	1.9250	A36M-42 (42 ksi)
L42	58.500-51.000	7.500	7.000	12	56.4258	58.8750	0.4813	1.9250	A36M-42 (42 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L43	51.000-50.000	8.000	0.000	12	55.8391	58.4384	0.5500	2.2000	A36M-42 (42 ksi)
L44	50.000-45.000	5.000	0.000	12	58.4384	60.0629	0.5500	2.2000	A36M-42 (42 ksi)
L45	45.000-40.420	4.580	0.000	12	60.0629	61.5510	0.5437	2.1750	A36M-42 (42 ksi)
L46	40.420-40.170	0.250	0.000	12	61.5510	61.6323	0.4750	1.9000	A36M-42 (42 ksi)
L47	40.170-40.000	0.170	0.000	12	61.6323	61.6875	0.4750	1.9000	A36M-42 (42 ksi)
L48	40.000-35.000	5.000	0.000	12	61.6875	63.3095	0.5313	2.1250	A36M-42 (42 ksi)
L49	35.000-33.000	2.000	0.000	12	63.3095	63.9583	0.5250	2.1000	A36M-42 (42 ksi)
L50	33.000-32.750	0.250	0.000	12	63.9583	64.0394	0.6000	2.4000	A36M-42 (42 ksi)
L51	32.750-19.000	13.750	9.000	12	64.0394	68.5000	0.6000	2.4000	A36M-42 (42 ksi)
L52	19.000-18.000	10.000	0.000	12	64.7054	67.9579	0.6000	2.4000	A36M-42 (42 ksi)
L53	18.000-13.000	5.000	0.000	12	67.9579	69.5842	0.5875	2.3500	A36M-42 (42 ksi)
L54	13.000-8.000	5.000	0.000	12	69.5842	71.2105	0.5875	2.3500	A36M-42 (42 ksi)
L55	8.000-3.000	5.000	0.000	12	71.2105	72.8367	0.5875	2.3500	A36M-42 (42 ksi)
L56	3.000-0.000	3.000		12	72.8367	73.8125	0.5750	2.3000	A36M-42 (42 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	18.6350	10.7543	435.5296	6.3769	9.3240	46.7106	882.5011	5.2929	4.3215	23.048
L2	18.6350	10.7543	435.5296	6.3769	9.3240	46.7106	882.5011	5.2929	4.3215	23.048
L2	20.3238	14.2888	574.6149	6.3545	9.3240	61.6275	1164.3256	7.0325	4.1540	16.616
L3	20.3238	15.6019	748.0441	6.9385	10.1690	73.5613	1515.7401	7.6788	4.5912	18.365
L3	22.0126	16.9151	953.2680	7.5225	11.0140	86.5508	1931.5794	8.3251	5.0283	20.113
L4	22.0126	16.9151	953.2680	7.5225	11.0140	86.5508	1931.5794	8.3251	5.0283	20.113
L4	23.7014	18.2282	1192.9628	8.1065	11.8590	100.5959	2417.2660	8.9714	5.4655	21.862
L5	23.7014	18.2282	1192.9628	8.1065	11.8590	100.5959	2417.2660	8.9714	5.4655	21.862
L5	25.3901	19.5414	1469.8044	8.6905	12.7039	115.6966	2978.2222	9.6177	5.9027	23.611
L6	25.3901	19.5414	1469.8044	8.6905	12.7039	115.6966	2978.2222	9.6177	5.9027	23.611
L6	27.0789	20.8545	1786.4690	9.2744	13.5489	131.8531	3619.8706	10.2640	6.3399	25.36
L7	27.0789	20.8545	1786.4690	9.2744	13.5489	131.8531	3619.8706	10.2640	6.3399	25.36
L7	27.5011	21.1828	1872.1710	9.4204	13.7602	136.0571	3793.5260	10.4255	6.4492	25.797
L8	27.5011	31.1037	2724.2351	9.3779	13.7602	197.9795	5520.0388	15.3083	6.1309	16.626
L8	27.5856	31.2005	2749.7613	9.4071	13.8024	199.2229	5571.7619	15.3559	6.1528	16.685
L9	27.5856	30.6790	2705.0845	9.4094	13.8024	195.9861	5481.2346	15.0993	6.1695	17.019
L9	28.0922	31.2502	2859.0162	9.5846	14.0559	203.4028	5793.1419	15.3804	6.3007	17.381
L10	28.0922	47.0820	4247.3153	9.5174	14.0559	302.1725	8606.2124	23.1723	5.7982	10.542
L10	28.1767	47.2265	4286.5273	9.5466	14.0982	304.0483	8685.6665	23.2434	5.8200	10.582
L11	28.1767	46.7008	4240.7972	9.5489	14.0982	300.8046	8593.0048	22.9847	5.8368	10.734
L11	28.3455	46.9864	4319.0813	9.6073	14.1827	304.5321	8751.6298	23.1253	5.8805	10.815
L12	28.3455	36.8875	3420.8468	9.6498	14.1827	241.1989	6931.5632	18.1549	6.1988	14.585
L12	28.4300	36.9991	3451.9946	9.6790	14.2249	242.6722	6994.6770	18.2098	6.2206	14.637
L13	28.4300	35.9275	3355.1147	9.6835	14.2249	235.8616	6798.3720	17.6824	6.2541	15.161
L13	30.1188	38.0942	3999.4771	10.2674	15.0699	265.3948	8104.0249	18.7488	6.6913	16.221
L14	30.1188	36.9559	3883.3540	10.2719	15.0699	257.6892	7868.7281	18.1886	6.7248	16.812
L14	31.8076	39.0570	4584.0626	10.8559	15.9149	283.7106	9288.5535	19.2227	7.1620	17.905
L15	31.8076	38.4546	4515.2273	10.8581	15.9149	283.7106	9149.0747	18.9262	7.1787	18.232
L15	33.4964	40.5229	5283.6453	11.4421	16.7599	315.2554	10706.097	19.9441	7.6159	19.342
L16	33.4964	40.5229	5283.6453	11.4421	16.7599	315.2554	10706.097	19.9441	7.6159	19.342
L16	35.5229	43.0047	6315.1243	12.1429	17.7739	355.3037	12796.154	21.1656	8.1405	20.674

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L17	35.0004	48.4947	6222.5740	11.3508	16.6699	373.2823	12608.622	23.8676	7.3516	15.477
	35.3372	51.4801	7443.9798	12.0496	17.6810	421.0168	15083.521	25.3369	7.8747	16.578
L18	35.3372	50.1440	7256.1640	12.0541	17.6810	410.3943	14702.955	24.6793	7.9082	17.099
	37.0212	52.5663	8359.3757	12.6364	18.5235	451.2845	16938.361	25.8716	8.3441	18.041
L19	37.0212	52.5663	8359.3757	12.6364	18.5235	451.2845	16938.361	25.8716	8.3441	18.041
	37.8901	53.8163	8969.9826	12.9369	18.9583	473.1433	18175.616	26.4867	8.5690	18.528
L20	37.8901	73.8200	12185.270	12.8742	18.9583	642.7414	24690.662	36.3319	8.1000	12.706
	37.9743	73.9869	12268.130	12.9033	19.0004	645.6772	24858.557	36.4141	8.1218	12.74
L21	37.9743	72.5613	12040.096	12.9078	19.0004	633.6757	24396.500	35.7125	8.1553	13.049
	38.0315	72.6726	12095.584	12.9276	19.0291	635.6377	24508.933	35.7673	8.1701	13.072
L22	38.0315	58.3394	9777.3035	12.9724	19.0291	513.8092	19811.467	28.7129	8.5051	17.01
	38.1157	58.4703	9843.2845	13.0015	19.0712	516.1340	19945.163	28.7773	8.5269	17.054
L23	38.1157	57.0282	9607.1156	13.0059	19.0712	503.7504	19466.620	28.0675	8.5604	17.56
	39.7997	59.5815	10956.158	13.5883	19.9137	550.1808	22200.147	29.3242	8.9964	18.454
L24	39.7997	59.5815	10956.158	13.5883	19.9137	550.1808	22200.147	29.3242	8.9964	18.454
	40.0522	59.9644	11168.800	13.6756	20.0401	557.3219	22631.017	29.5127	9.0618	18.588
L25	40.0522	67.5415	12538.950	13.6532	20.0401	625.6922	25407.312	33.2419	8.8942	16.171
	40.3887	68.1171	12862.252	13.7696	20.2085	636.4781	26062.411	33.5252	8.9814	16.33
L26	40.3887	58.1770	11031.765	13.7987	20.2085	545.8979	22353.346	28.6329	9.1991	19.625
	40.4728	58.2996	11101.676	13.8278	20.2506	548.2157	22495.007	28.6933	9.2209	19.671
L27	40.4728	57.5316	10958.972	13.8300	20.2506	541.1688	22205.849	28.3153	9.2376	19.973
	42.1552	59.9516	12400.908	14.4117	21.0923	587.9350	25127.603	29.5064	9.6731	20.915
L28	42.1552	59.1506	12239.027	14.4140	21.0923	580.2601	24799.588	29.1121	9.6899	21.238
	43.8375	61.5380	13781.548	14.9957	21.9341	628.3172	27925.153	30.2871	10.1254	22.193
L29	43.8375	60.7040	13598.845	14.9980	21.9341	619.9876	27554.948	29.8767	10.1421	22.538
	46.7815	64.8246	16560.348	16.0160	23.4071	707.4918	33555.755	31.9047	10.9042	24.232
L30	46.1034	79.5008	17921.438	15.0450	22.0733	811.9066	36313.692	39.1279	9.8456	16.759
	46.4347	83.7383	20942.624	15.8469	23.2336	901.3940	42435.434	41.2135	10.4460	17.78
L31	46.4347	81.9798	20514.405	15.8513	23.2336	882.9630	41567.747	40.3480	10.4795	18.225
	47.2961	83.5202	21692.704	16.1492	23.6646	916.6743	43955.301	41.1061	10.7024	18.613
L32	47.2961	64.6434	16887.663	16.1962	23.6646	713.6265	34218.985	31.8155	11.0542	24.911
	47.3789	64.7577	16977.410	16.2248	23.7060	716.1648	34400.836	31.8718	11.0756	24.959
L33	47.3789	64.7577	16977.410	16.2248	23.7060	716.1648	34400.836	31.8718	11.0756	24.959
	47.4286	64.8263	17031.411	16.2420	23.7309	717.6900	34510.256	31.9055	11.0885	24.988
L34	47.4286	72.9531	19119.031	16.2219	23.7309	805.6606	38740.342	35.9053	10.9377	21.876

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
			9				1			
	49.1190	75.5820	21261.237	16.8064	24.5767	865.0983	43081.031	37.1991	11.3753	22.751
L35	49.1190	75.5820	21261.237	16.8064	24.5767	865.0983	43081.031	37.1991	11.3753	22.751
			7				8			
	50.8094	78.2108	23557.764	17.3910	25.4225	926.6513	47734.417	38.4930	11.8129	23.626
L36	50.8094	77.2431	23272.272	17.3932	25.4225	915.4214	47155.933	38.0167	11.8297	23.959
			2				1			
	52.4998	79.8391	25698.400	17.9778	26.2683	978.3060	52071.927	39.2944	12.2673	24.845
L37	52.4998	78.8382	25382.579	17.9800	26.2683	966.2830	51431.987	38.8018	12.2840	25.198
			9				5			
	54.1902	81.4013	27939.573	18.5645	27.1141	1030.4458	56613.149	40.0633	12.7216	26.096
L38	54.1902	81.4013	27939.573	18.5645	27.1141	1030.4458	56613.149	40.0633	12.7216	26.096
			0				7			
	55.8806	83.9645	30662.771	19.1491	27.9599	1096.6712	62131.089	41.3248	13.1592	26.993
L39	55.8806	83.9645	30662.771	19.1491	27.9599	1096.6712	62131.089	41.3248	13.1592	26.993
			9				0			
	56.6413	85.1179	31943.828	19.4121	28.3405	1127.1454	64726.856	41.8924	13.3561	27.397
L40	56.6413	85.1179	31943.828	19.4121	28.3405	1127.1454	64726.856	41.8924	13.3561	27.397
			4				7			
	56.7259	85.2460	32088.332	19.4414	28.3828	1130.5572	65019.661	41.9555	13.3780	27.442
L41	56.7259	84.1628	31687.881	19.4436	28.3828	1116.4483	64208.239	41.4224	13.3948	27.833
			4				7			
	58.4163	86.6930	34632.630	20.0281	29.2286	1184.8903	70175.098	42.6677	13.8324	28.743
L42	58.4163	86.6930	34632.630	20.0281	29.2286	1184.8903	70175.098	42.6677	13.8324	28.743
			3				3			
	60.9519	90.4884	39383.260	20.9050	30.4973	1291.3709	79801.162	44.5356	14.4888	30.106
L43	60.1635	97.9169	38205.173	19.7935	28.9246	1320.8524	77414.039	48.1917	13.4909	24.529
			0				2			
	60.4999	102.5203	43850.891	20.7240	30.2711	1448.6070	88853.795	50.4574	14.1875	25.795
L44	60.4999	102.5203	43850.891	20.7240	30.2711	1448.6070	88853.795	50.4574	14.1875	25.795
			7				2			
	62.1817	105.3974	47647.333	21.3056	31.1126	1531.4481	96546.414	51.8734	14.6229	26.587
L45	62.1817	104.2107	47120.728	21.3079	31.1126	1514.5224	95479.371	51.2893	14.6396	26.923
			6				2			
	63.7223	106.8161	50744.176	21.8406	31.8834	1591.5529	102821.45	52.5717	15.0384	27.657
L46	63.7223	93.4158	44478.277	21.8652	31.8834	1395.0277	90125.048	45.9764	15.2227	32.048
			3				86			
	63.8064	93.5400	44655.977	21.8943	31.9255	1398.7552	90485.116	46.0376	15.2444	32.094
L47	63.8064	93.5400	44655.977	21.8943	31.9255	1398.7552	90485.116	46.0376	15.2444	32.094
			2				6			
	63.8636	93.6245	44777.081	21.9141	31.9541	1401.2927	90730.506	46.0791	15.2593	32.125
L48	63.8636	104.6154	49941.698	21.8939	31.9541	1562.9187	101195.42	51.4885	15.1085	28.44
			4				6			
	65.5428	107.3901	54021.778	22.4746	32.7943	1647.2900	109462.76	52.8541	15.5432	29.258
L49	65.5428	106.1372	53402.174	22.4769	32.7943	1628.3964	108207.28	52.2375	15.5600	29.638
			6				94			
	66.2145	107.2340	55074.900	22.7091	33.1304	1662.3667	111596.67	52.7773	15.7338	29.969
L50	66.2145	122.4083	62719.747	22.6823	33.1304	1893.1168	127087.21	60.2456	15.5328	25.888
			7				40			
	66.2985	122.5650	62960.909	22.7113	33.1724	1897.9892	127575.87	60.3228	15.5546	25.924
L51	66.2985	122.5650	62960.909	22.7113	33.1724	1897.9892	127575.87	60.3228	15.5546	25.924
			3				18			
	70.9164	131.1828	77197.350	24.3082	35.4830	2175.6151	156422.76	64.5642	16.7500	27.917

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L52	70.0185	123.8515	64964.491	22.9497	33.5174	1938.2333	131635.67	60.9560	15.7330	26.222
	70.3552	130.1355	75363.115	24.1141	35.2022	2140.8640	152706.10	64.0487	16.6047	27.675
L53	70.3552	127.4480	73834.140	24.1186	35.2022	2097.4299	149607.98	62.7260	16.6382	28.32
	72.0388	130.5245	79311.168	24.7008	36.0446	2200.3616	160705.93	64.2402	17.0741	29.062
L54	72.0388	130.5245	79311.168	24.7008	36.0446	2200.3616	160705.93	64.2402	17.0741	29.062
	73.7225	133.6010	85052.566	25.2830	36.8870	2305.7588	172339.55	65.7543	17.5099	29.804
L55	73.7225	133.6010	85052.566	25.2830	36.8870	2305.7588	172339.55	65.7543	17.5099	29.804
	75.4061	136.6775	91064.572	25.8652	37.7294	2413.6218	184521.51	67.2685	17.9457	30.546
L56	75.4061	133.7926	89173.296	25.8697	37.7294	2363.4945	180689.27	65.8486	17.9792	31.268
	76.4163	135.5992	92834.670	26.2190	38.2349	2428.0103	188108.21	66.7378	18.2407	31.723

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontal in	Double Angle Stitch Bolt Spacing Redundants in
L1 185.000-180.000				1	1	1			
L2 180.000-175.000				1	1	1			
L3 175.000-170.000				1	1	1			
L4 170.000-165.000				1	1	1			
L5 165.000-160.000				1	1	1			
L6 160.000-155.000				1	1	1			
L7 155.000-153.750				1	1	1			
L8 153.750-153.500				1	1	0.9699			
L9 153.500-152.000				1	1	0.980964			
L10 152.000-151.750				1	1	0.93677			
L11 151.750-151.250				1	1	0.944352			
L12 151.250-151.000				1	1	0.95744			
L13 151.000-146.000				1	1	0.964387			
L14 146.000-141.000				1	1	0.974236			
L15 141.000-136.000				1	1	0.971399			
L16 136.000-130.000				1	1	0.967999			
L17 130.000-129.000				1	1	0.967523			
L18 129.000-124.000				1	1	0.972439			
L19 124.000-121.420				1	1	0.962408			
L20 121.420-121.170				1	1	0.944552			
L21 121.170-121.000				1	1	0.962247			

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontal in	Double Angle Stitch Bolt Spacing Redundants in
L22 121.000-120.750				1	1	0.965877			
L23 120.750-115.750				1	1	0.96984			
L24 115.750-115.000				1	1	0.966921			
L25 115.000-114.000				1	1	0.968635			
L26 114.000-113.750				1	1	0.978556			
L27 113.750-108.750				1	1	0.978866			
L28 108.750-103.750				1	1	0.980204			
L29 103.750-95.000				1	1	0.987419			
L30 95.000-94.000				1	1	0.965747			
L31 94.000-91.400				1	1	0.978292			
L32 91.400-91.150				1	1	0.984623			
L33 91.150-91.000				1	1	0.984326			
L34 91.000-86.000				1	1	0.990491			
L35 86.000-81.000				1	1	0.982407			
L36 81.000-76.000				1	1	0.987066			
L37 76.000-71.000				1	1	0.992343			
L38 71.000-66.000				1	1	0.985532			
L39 66.000-63.750				1	1	0.982601			
L40 63.750-63.500				1	1	0.982281			
L41 63.500-58.500				1	1	0.988627			
L42 58.500-51.000				1	1	0.988018			
L43 51.000-50.000				1	1	0.991576			
L44 50.000-45.000				1	1	0.98312			
L45 45.000-40.420				1	1	0.986885			
L46 40.420-40.170				1	1	0.983471			
L47 40.170-40.000				1	1	0.983296			
L48 40.000-35.000				1	1	0.992613			
L49 35.000-33.000				1	1	1.00258			
L50 33.000-32.750				1	1	1.07829			
L51 32.750-19.000				1	1	1.07001			
L52 19.000-18.000				1	1	1.05798			
L53 18.000-13.000				1	1	1.07238			
L54 13.000-8.000				1	1	1.06483			
L55 8.000-				1	1	1.05762			

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
3.000									
L56 3.000- 0.000				1	1	1.07617			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diamete r in	Perimete r in	Weight klf

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight klf		
LDF7-50A(1-5/8")	C	No	CaAa (Out Of Face)	185.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.198 0.298 0.398	0.001 0.002 0.004		
LDF7-50A(1-5/8")	C	No	CaAa (Out Of Face)	185.000 - 0.000	5	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.002 0.004		
LDF7-50A(1-5/8")	C	No	Inside Pole	185.000 - 0.000	10	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001		

LDF6-50A(1-1/4")	C	No	Inside Pole	175.000 - 0.000	12	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001		
WR-VG86ST-BRD(3/4)	C	No	Inside Pole	175.000 - 0.000	4	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001		
FB-L98B-034-XXXXXX(3/8)	C	No	Inside Pole	175.000 - 0.000	2	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000		

LDF7-50A(1-5/8")	C	No	Inside Pole	165.000 - 0.000	6	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001		

HB158-1-08U8-S8J18(1-5/8)	C	No	Inside Pole	155.000 - 0.000	2	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001		

1 1/4" Flat Reinforcement	C	No	CaAa (Out Of Face)	37.500 - 0.000	2	No Ice 1/2" Ice 1" Ice	0.208 0.319 0.431	0.000 0.000 0.000		

1" Flat Reinforcement	C	No	CaAa (Out Of Face)	88.830 - 37.500	1	No Ice 1/2" Ice 1" Ice	0.167 0.278 0.389	0.000 0.000 0.000		

1" Flat Reinforcement	C	No	CaAa (Out Of Face)	101.670 - 88.830	2	No Ice 1/2" Ice 1" Ice	0.167 0.278 0.389	0.000 0.000 0.000		

1" Flat Reinforcement	C	No	CaAa (Out Of Face)	112.500 - 101.670	1	No Ice 1/2" Ice 1" Ice	0.167 0.278 0.389	0.000 0.000 0.000		

1" Flat Reinforcement	C	No	CaAa (Out Of Face)	123.917 - 112.500	1	No Ice 1/2" Ice 1" Ice	0.167 0.278 0.389	0.000 0.000 0.000		

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight kif
3/4" Flat Reinforcement	C	No	CaAa (Out Of Face)	123.917 - 112.500	1	No Ice	0.125	0.000
						1/2" Ice	0.236	0.000
						1" Ice	0.347	0.000

1" Flat Reinforcement	C	No	CaAa (Out Of Face)	154.500 - 123.917	1	No Ice	0.167	0.000
						1/2" Ice	0.278	0.000
						1" Ice	0.389	0.000

3/4" Flat Reinforcement	C	No	CaAa (Out Of Face)	155.000 - 154.500	1	No Ice	0.125	0.000
						1/2" Ice	0.236	0.000
						1" Ice	0.347	0.000

Feed Line/Linear Appurtenances Section Areas

Tower Section n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	185.000-180.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.990	0.066
L2	180.000-175.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.990	0.066
L3	175.000-170.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.990	0.117
L4	170.000-165.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.990	0.117
L5	165.000-160.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.990	0.142
L6	160.000-155.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.990	0.142
L7	155.000-153.750	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.435	0.039
L8	153.750-153.500	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.091	0.008
L9	153.500-152.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.547	0.046
L10	152.000-151.750	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.091	0.008
L11	151.750-151.250	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.182	0.015
L12	151.250-151.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.091	0.008
L13	151.000-146.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.823	0.155
L14	146.000-141.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.823	0.155
L15	141.000-136.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.823	0.155
L16	136.000-130.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	2.188	0.186
L17	130.000-129.000	A	0.000	0.000	0.000	0.000	0.000

Tower Section n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.365	0.031
L18	129.000-124.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.823	0.155
L19	124.000-121.420	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.253	0.080
L20	121.420-121.170	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.122	0.008
L21	121.170-121.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.083	0.005
L22	121.000-120.750	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.122	0.008
L23	120.750-115.750	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	2.448	0.155
L24	115.750-115.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.367	0.023
L25	115.000-114.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.490	0.031
L26	114.000-113.750	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.122	0.008
L27	113.750-108.750	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.980	0.155
L28	108.750-103.750	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.823	0.155
L29	103.750-95.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	4.303	0.271
L30	95.000-94.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.531	0.031
L31	94.000-91.400	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.381	0.081
L32	91.400-91.150	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.133	0.008
L33	91.150-91.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.080	0.005
L34	91.000-86.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	2.185	0.155
L35	86.000-81.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.823	0.155
L36	81.000-76.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.823	0.155
L37	76.000-71.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.823	0.155
L38	71.000-66.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.823	0.155
L39	66.000-63.750	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.821	0.070
L40	63.750-63.500	A	0.000	0.000	0.000	0.000	0.000

Tower Sectio n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.091	0.008
L41	63.500-58.500	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.823	0.155
L42	58.500-51.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	2.735	0.232
L43	51.000-50.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.365	0.031
L44	50.000-45.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.823	0.155
L45	45.000-40.420	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.670	0.142
L46	40.420-40.170	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.091	0.008
L47	40.170-40.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.062	0.005
L48	40.000-35.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	2.448	0.155
L49	35.000-33.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.229	0.062
L50	33.000-32.750	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.154	0.008
L51	32.750-19.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	8.452	0.426
L52	19.000-18.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.615	0.031
L53	18.000-13.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	3.073	0.155
L54	13.000-8.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	3.073	0.155
L55	8.000-3.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	3.073	0.155
L56	3.000-0.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	1.844	0.093

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Sectio n	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	185.000-180.000	A	2.373	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	3.363	0.466
L2	180.000-175.000	A	2.366	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	3.356	0.465
L3	175.000-170.000	A	2.360	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	3.350	0.514
L4	170.000-165.000	A	2.353	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L5	165.000-160.000	C		0.000	0.000	0.000	3.343	0.512
		A	2.346	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L6	160.000-155.000	C		0.000	0.000	0.000	3.336	0.535
		A	2.338	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L7	155.000-153.750	C		0.000	0.000	0.000	3.328	0.533
		A	2.334	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L8	153.750-153.500	C		0.000	0.000	0.000	1.667	0.136
		A	2.333	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L9	153.500-152.000	C		0.000	0.000	0.000	0.337	0.027
		A	2.331	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L10	152.000-151.750	C		0.000	0.000	0.000	2.023	0.163
		A	2.330	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L11	151.750-151.250	C		0.000	0.000	0.000	0.337	0.027
		A	2.329	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L12	151.250-151.000	C		0.000	0.000	0.000	0.674	0.054
		A	2.329	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L13	151.000-146.000	C		0.000	0.000	0.000	0.337	0.027
		A	2.325	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L14	146.000-141.000	C		0.000	0.000	0.000	6.731	0.542
		A	2.317	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L15	141.000-136.000	C		0.000	0.000	0.000	6.714	0.539
		A	2.308	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L16	136.000-130.000	C		0.000	0.000	0.000	6.697	0.537
		A	2.299	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L17	130.000-129.000	C		0.000	0.000	0.000	8.012	0.641
		A	2.293	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L18	129.000-124.000	C		0.000	0.000	0.000	1.335	0.107
		A	2.288	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L19	124.000-121.420	C		0.000	0.000	0.000	6.653	0.531
		A	2.281	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L20	121.420-121.170	C		0.000	0.000	0.000	5.003	0.273
		A	2.278	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L21	121.170-121.000	C		0.000	0.000	0.000	0.489	0.026
		A	2.278	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L22	121.000-120.750	C		0.000	0.000	0.000	0.333	0.018
		A	2.277	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L23	120.750-115.750	C		0.000	0.000	0.000	0.489	0.026
		A	2.272	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L24	115.750-115.000	C		0.000	0.000	0.000	9.770	0.526
		A	2.267	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L25	115.000-114.000	C		0.000	0.000	0.000	1.463	0.079
		A	2.265	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L26	114.000-113.750	C		0.000	0.000	0.000	1.949	0.105
		A	2.264	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L27	113.750-108.750	C		0.000	0.000	0.000	0.487	0.026
		A	2.258	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L28	108.750-103.750	C		0.000	0.000	0.000	7.375	0.522
		A	2.248	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L29	103.750-95.000	C		0.000	0.000	0.000	6.569	0.519
		A	2.233	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L30	95.000-94.000	C		0.000	0.000	0.000	15.862	0.901
		A	2.222	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L31	94.000-91.400	C		0.000	0.000	0.000	1.970	0.103
		A	2.218	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L32	91.400-91.150	C		0.000	0.000	0.000	5.097	0.265
		A	2.214	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L33	91.150-91.000	C		0.000	0.000	0.000	0.490	0.025
		A	2.214	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L34	91.000-86.000	C		0.000	0.000	0.000	0.294	0.015
		A	2.207	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L35	86.000-81.000	C		0.000	0.000	0.000	7.909	0.507
		A	2.195	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L36	81.000-76.000	C		0.000	0.000	0.000	6.456	0.504
		A	2.181	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L37	76.000-71.000	C		0.000	0.000	0.000	6.428	0.500
		A	2.167	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L38	71.000-66.000	C		0.000	0.000	0.000	6.397	0.495
		A	2.151	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L39	66.000-63.750	C		0.000	0.000	0.000	6.365	0.491
		A	2.140	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L40	63.750-63.500	C		0.000	0.000	0.000	2.853	0.219
		A	2.136	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L41	63.500-58.500	C		0.000	0.000	0.000	0.317	0.024
		A	2.127	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L42	58.500-51.000	C		0.000	0.000	0.000	6.313	0.484
		A	2.104	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L43	51.000-50.000	C		0.000	0.000	0.000	9.397	0.716
		A	2.087	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L44	50.000-45.000	C		0.000	0.000	0.000	1.253	0.095
		A	2.074	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L45	45.000-40.420	C		0.000	0.000	0.000	6.202	0.468
		A	2.052	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L46	40.420-40.170	C		0.000	0.000	0.000	5.639	0.423
		A	2.040	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L47	40.170-40.000	C		0.000	0.000	0.000	0.307	0.023
		A	2.039	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L48	40.000-35.000	C		0.000	0.000	0.000	0.208	0.016
		A	2.026	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L49	35.000-33.000	C		0.000	0.000	0.000	7.850	0.454
		A	2.006	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L50	33.000-32.750	C		0.000	0.000	0.000	3.815	0.179
		A	1.999	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L51	32.750-19.000	C	1.951	0.000	0.000	0.000	0.476	0.022
		A		0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L52	19.000-18.000	C	1.888	0.000	0.000	0.000	25.743	1.204
		A		0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L53	18.000-13.000	C	1.854	0.000	0.000	0.000	1.872	0.088
		A		0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L54	13.000-8.000	C	1.783	0.000	0.000	0.000	9.048	0.420
		A		0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L55	8.000-3.000	C	1.672	0.000	0.000	0.000	8.820	0.407
		A		0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
L56	3.000-0.000	C	1.468	0.000	0.000	0.000	8.460	0.387
		A		0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	4.682	0.210

Feed Line Center of Pressure

Section	Elevation ft	CP_x in	CP_z in	CP_x Ice in	CP_z Ice in
L1	185.000-180.000	-0.2204	0.1272	-0.5000	0.2887
L2	180.000-175.000	-0.2214	0.1278	-0.5085	0.2936
L3	175.000-170.000	-0.2234	0.1290	-0.5245	0.3028
L4	170.000-165.000	-0.2251	0.1299	-0.5388	0.3111
L5	165.000-160.000	-0.2265	0.1308	-0.5517	0.3185
L6	160.000-155.000	-0.2278	0.1315	-0.5633	0.3252
L7	155.000-153.750	-0.3788	0.2187	-0.9521	0.5497
L8	153.750-153.500	-0.3948	0.2280	-0.9636	0.5563
L9	153.500-152.000	-0.3954	0.2283	-0.9678	0.5588
L10	152.000-151.750	-0.3960	0.2286	-0.9719	0.5612
L11	151.750-151.250	-0.3962	0.2288	-0.9737	0.5622
L12	151.250-151.000	-0.3965	0.2289	-0.9755	0.5632
L13	151.000-146.000	-0.3981	0.2298	-0.9874	0.5701
L14	146.000-141.000	-0.4009	0.2315	-1.0089	0.5825
L15	141.000-136.000	-0.4035	0.2330	-1.0287	0.5939
L16	136.000-130.000	-0.4061	0.2345	-1.0488	0.6055
L17	130.000-129.000	-0.4069	0.2349	-1.0562	0.6098
L18	129.000-124.000	-0.4082	0.2357	-1.0649	0.6148
L19	124.000-121.420	-0.5274	0.3045	-1.3960	0.8060
L20	121.420-121.170	-0.5320	0.3072	-1.4122	0.8154
L21	121.170-121.000	-0.5321	0.3072	-1.4133	0.8159
L22	121.000-120.750	-0.5323	0.3073	-1.4143	0.8165
L23	120.750-115.750	-0.5339	0.3082	-1.4267	0.8237
L24	115.750-115.000	-0.5356	0.3092	-1.4398	0.8313
L25	115.000-114.000	-0.5361	0.3095	-1.4437	0.8335
L26	114.000-113.750	-0.5365	0.3097	-1.4464	0.8351
L27	113.750-108.750	-0.4450	0.2569	-1.2016	0.6937
L28	108.750-103.750	-0.4153	0.2398	-1.1205	0.6469
L29	103.750-95.000	-0.5470	0.3158	-1.4440	0.8337
L30	95.000-94.000	-0.5860	0.3383	-1.5380	0.8880
L31	94.000-91.400	-0.5869	0.3388	-1.5407	0.8895
L32	91.400-91.150	-0.5876	0.3392	-1.5454	0.8922
L33	91.150-91.000	-0.5877	0.3393	-1.5461	0.8926
L34	91.000-86.000	-0.4938	0.2851	-1.3345	0.7705
L35	86.000-81.000	-0.4207	0.2429	-1.1590	0.6691
L36	81.000-76.000	-0.4218	0.2435	-1.1663	0.6733
L37	76.000-71.000	-0.4229	0.2442	-1.1727	0.6771
L38	71.000-66.000	-0.4239	0.2447	-1.1782	0.6803
L39	66.000-63.750	-0.4246	0.2451	-1.1817	0.6823
L40	63.750-63.500	-0.4248	0.2452	-1.1828	0.6829
L41	63.500-58.500	-0.4253	0.2455	-1.1849	0.6841
L42	58.500-51.000	-0.4263	0.2461	-1.1888	0.6864

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
L43	51.000-50.000	-0.4266	0.2463	-1.1920	0.6882
L44	50.000-45.000	-0.4271	0.2466	-1.1879	0.6858
L45	45.000-40.420	-0.4278	0.2470	-1.1884	0.6861
L46	40.420-40.170	-0.4282	0.2472	-1.1883	0.6861
L47	40.170-40.000	-0.4282	0.2472	-1.1883	0.6860
L48	40.000-35.000	-0.5642	0.3257	-1.4573	0.8414
L49	35.000-33.000	-0.6936	0.4005	-1.6994	0.9812
L50	33.000-32.750	-0.6940	0.4007	-1.6996	0.9812
L51	32.750-19.000	-0.6964	0.4021	-1.6970	0.9797
L52	19.000-18.000	-0.6979	0.4029	-1.7076	0.9859
L53	18.000-13.000	-0.6989	0.4035	-1.6732	0.9660
L54	13.000-8.000	-0.7004	0.4044	-1.6526	0.9541
L55	8.000-3.000	-0.7018	0.4052	-1.6118	0.9306
L56	3.000-0.000	-0.7030	0.4059	-1.5235	0.8796

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
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Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K	
185									
LNx-6515DS-VTM w/ Mount Pipe	A	From Leg	4.000	0.000	185.000	No Ice	11.683	9.842	0.083
			0.000			1/2"	12.404	11.366	0.173
			0.000			Ice	13.135	12.914	0.273
LNx-6515DS-VTM w/ Mount Pipe	B	From Leg	4.000	0.000	185.000	No Ice	11.683	9.842	0.083
			0.000			1/2"	12.404	11.366	0.173
			0.000			Ice	13.135	12.914	0.273
LNx-6515DS-VTM w/ Mount Pipe	C	From Leg	4.000	0.000	185.000	No Ice	11.683	9.842	0.083
			0.000			1/2"	12.404	11.366	0.173
			0.000			Ice	13.135	12.914	0.273
APX16DWV-16DWVS-C w/ Mount Pipe	A	From Leg	4.000	0.000	185.000	No Ice	6.824	3.494	0.061
			0.000			1/2"	7.275	4.263	0.110
			0.000			Ice	7.719	4.960	0.165
APX16DWV-16DWVS-C w/ Mount Pipe	B	From Leg	4.000	0.000	185.000	No Ice	6.824	3.494	0.061
			0.000			1/2"	7.275	4.263	0.110
			0.000			Ice	7.719	4.960	0.165
APX16DWV-16DWVS-C w/ Mount Pipe	C	From Leg	4.000	0.000	185.000	No Ice	6.824	3.494	0.061
			0.000			1/2"	7.275	4.263	0.110
			0.000			Ice	7.719	4.960	0.165
RR90-17-02DP w/ Mount Pipe	A	From Leg	4.000	0.000	185.000	No Ice	4.593	3.319	0.034
			0.000			1/2"	5.018	4.089	0.072
			0.000			Ice	5.436	4.784	0.115
RR90-17-02DP w/ Mount Pipe	B	From Leg	4.000	0.000	185.000	No Ice	4.593	3.319	0.034
			0.000			1/2"	5.018	4.089	0.072
			0.000			Ice	5.436	4.784	0.115
RR90-17-02DP w/ Mount Pipe	C	From Leg	4.000	0.000	185.000	No Ice	4.593	3.319	0.034
			0.000			1/2"	5.018	4.089	0.072
			0.000			Ice	5.436	4.784	0.115

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
ATBT-BOTTOM-24V	A	From Leg	4.000 0.000 0.000	0.000	185.000	1" Ice			
						No Ice	0.104	0.065	0.003
						1/2" Ice	0.148	0.102	0.004
ATBT-BOTTOM-24V	B	From Leg	4.000 0.000 0.000	0.000	185.000	1" Ice			
						No Ice	0.104	0.065	0.003
						1/2" Ice	0.148	0.102	0.004
ATBT-BOTTOM-24V	C	From Leg	4.000 0.000 0.000	0.000	185.000	1" Ice			
						No Ice	0.104	0.065	0.003
						1/2" Ice	0.148	0.102	0.004
(3) ETW190VS12UB	A	From Leg	4.000 0.000 0.000	0.000	185.000	1" Ice			
						No Ice	0.570	0.317	0.015
						1/2" Ice	0.667	0.395	0.020
ETW190VS12UB	B	From Leg	4.000 0.000 0.000	0.000	185.000	1" Ice			
						No Ice	0.570	0.317	0.015
						1/2" Ice	0.667	0.395	0.020
(2) ETW190VS12UB	C	From Leg	4.000 0.000 0.000	0.000	185.000	1" Ice			
						No Ice	0.570	0.317	0.015
						1/2" Ice	0.667	0.395	0.020
Sector Mount [SM 802-3]	C	None		0.000	185.000	1" Ice			
						No Ice	24.410	24.410	0.930
						1/2" Ice	31.390	31.390	1.362
						Ice	38.370	38.370	1.794
175 7770.00 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	5.746	4.254	0.055
						1/2" Ice	6.179	5.014	0.103
7770.00 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	5.746	4.254	0.055
						1/2" Ice	6.179	5.014	0.103
7770.00 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	5.746	4.254	0.055
						1/2" Ice	6.179	5.014	0.103
OPA-65R-LCUU-H6 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	9.895	7.179	0.099
						1/2" Ice	10.470	8.362	0.175
OPA-65R-LCUU-H6 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	9.895	7.179	0.099
						1/2" Ice	10.470	8.362	0.175
OPA-65R-LCUU-H6 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	9.895	7.179	0.099
						1/2" Ice	10.470	8.362	0.175
QS66512-2 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	8.371	8.463	0.137
						1/2" Ice	8.931	9.657	0.212
QS66512-2 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	8.371	8.463	0.137
						1/2" Ice	8.931	9.657	0.212
QS66512-2 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	8.371	8.463	0.137
						1/2" Ice	8.931	9.657	0.212
						Ice	9.457	10.548	0.296

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
(2) LGP21401	A	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	1.104	0.347	0.014
						1/2"	1.239	0.442	0.021
(2) LGP21401	B	From Leg	4.000 0.000 0.000	0.000	175.000	Ice	1.381	0.544	0.030
						1" Ice			
						No Ice	1.104	0.347	0.014
(2) LGP21401	C	From Leg	4.000 0.000 0.000	0.000	175.000	1/2"	1.239	0.442	0.021
						Ice	1.381	0.544	0.030
						No Ice	1.104	0.347	0.014
(2) 7020.00	A	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	0.102	0.175	0.002
						1/2"	0.147	0.239	0.005
(2) 7020.00	B	From Leg	4.000 0.000 0.000	0.000	175.000	Ice	0.199	0.311	0.009
						1" Ice			
						No Ice	0.102	0.175	0.002
(2) 7020.00	C	From Leg	4.000 0.000 0.000	0.000	175.000	1/2"	0.147	0.239	0.005
						Ice	0.199	0.311	0.009
						No Ice	0.102	0.175	0.002
(2) DC6-48-60-18-8F	A	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	0.917	0.917	0.019
						1/2"	1.458	1.458	0.037
RRUS-11	A	From Leg	4.000 0.000 0.000	0.000	175.000	Ice	1.643	1.643	0.057
						1" Ice			
						No Ice	2.791	1.192	0.050
RRUS-11	B	From Leg	4.000 0.000 0.000	0.000	175.000	1/2"	2.998	1.340	0.071
						Ice	3.213	1.496	0.095
						No Ice	2.791	1.192	0.050
RRUS-11	C	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	2.791	1.192	0.050
						1/2"	2.998	1.340	0.071
782 10254	A	From Leg	4.000 0.000 0.000	0.000	175.000	Ice	3.213	1.496	0.095
						1" Ice			
						No Ice	0.044	0.078	0.003
782 10254	B	From Leg	4.000 0.000 0.000	0.000	175.000	1/2"	0.074	0.122	0.004
						Ice	0.112	0.173	0.007
						No Ice	0.044	0.078	0.003
782 10254	C	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	0.044	0.078	0.003
						1/2"	0.074	0.122	0.004
RRUS 32 B66	A	From Leg	4.000 0.000 0.000	0.000	175.000	Ice	0.000	2.049	0.098
						1" Ice			
						No Ice	0.000	1.668	0.053
RRUS 32 B66	B	From Leg	4.000 0.000 0.000	0.000	175.000	1/2"	0.000	1.855	0.074
						Ice	0.000	2.049	0.098
						No Ice	0.000	1.668	0.053
RRUS 32 B66	C	From Leg	4.000 0.000 0.000	0.000	175.000	1" Ice			
						No Ice	0.000	1.668	0.053
						1/2"	0.000	1.855	0.074
						Ice	0.000	2.049	0.098
						1" Ice			
						No Ice	0.000	1.668	0.053

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
RRUS 32	A	From Leg	4.000	0.000	175.000	No Ice	0.000	1.777	0.055
			0.000			1/2"	0.000	1.968	0.077
			0.000			Ice	0.000	2.166	0.103
RRUS 32	B	From Leg	4.000	0.000	175.000	No Ice	0.000	1.777	0.055
			0.000			1/2"	0.000	1.968	0.077
			0.000			Ice	0.000	2.166	0.103
RRUS 32	C	From Leg	4.000	0.000	175.000	No Ice	0.000	1.777	0.055
			0.000			1/2"	0.000	1.968	0.077
			0.000			Ice	0.000	2.166	0.103
(2) DBC0061F1V51-2	A	From Leg	4.000	0.000	175.000	No Ice	0.213	0.413	0.013
			0.000			1/2"	0.279	0.496	0.016
			0.000			Ice	0.353	0.586	0.021
(2) DBC0061F1V51-2	B	From Leg	4.000	0.000	175.000	No Ice	0.213	0.413	0.013
			0.000			1/2"	0.279	0.496	0.016
			0.000			Ice	0.353	0.586	0.021
(2) DBC0061F1V51-2	C	From Leg	4.000	0.000	175.000	No Ice	0.213	0.413	0.013
			0.000			1/2"	0.279	0.496	0.016
			0.000			Ice	0.353	0.586	0.021
RRUS 32 B2	A	From Leg	4.000	0.000	175.000	No Ice	2.731	1.668	0.053
			0.000			1/2"	2.953	1.855	0.074
			0.000			Ice	3.182	2.049	0.098
RRUS 32 B2	B	From Leg	4.000	0.000	175.000	No Ice	2.731	1.668	0.053
			0.000			1/2"	2.953	1.855	0.074
			0.000			Ice	3.182	2.049	0.098
RRUS 32 B2	C	From Leg	4.000	0.000	175.000	No Ice	2.731	1.668	0.053
			0.000			1/2"	2.953	1.855	0.074
			0.000			Ice	3.182	2.049	0.098
Sector Mount [SM 802-3]	C	None		0.000	175.000	No Ice	24.410	24.410	0.930
						1/2"	31.390	31.390	1.362
						Ice	38.370	38.370	1.794
165 APXV18-206517S-C	A	From Leg	1.000	0.000	165.000	No Ice	5.167	3.038	0.026
			0.000			1/2"	5.618	3.469	0.053
			0.000			Ice	6.077	3.909	0.085
APXV18-206517S-C	B	From Leg	1.000	0.000	165.000	No Ice	5.167	3.038	0.026
			0.000			1/2"	5.618	3.469	0.053
			0.000			Ice	6.077	3.909	0.085
APXV18-206517S-C	C	From Leg	1.000	0.000	165.000	No Ice	5.167	3.038	0.026
			0.000			1/2"	5.618	3.469	0.053
			0.000			Ice	6.077	3.909	0.085
Pipe Mount [PM 601-3]	C	None		0.000	165.000	No Ice	4.390	4.390	0.195
						1/2"	5.480	5.480	0.237
						Ice	6.570	6.570	0.280
155 (4) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.000	0.000	155.000	No Ice	8.419	7.420	0.081
			0.000			1/2"	8.956	8.454	0.153
			0.000			Ice	9.480	9.347	0.234
(4) SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.000	0.000	155.000	No Ice	8.419	7.420	0.081
			0.000			1/2"	8.956	8.454	0.153
			0.000			Ice	9.480	9.347	0.234

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
(4) SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	155.000	1" Ice			
						No Ice	8.419	7.420	0.081
						1/2"	8.956	8.454	0.153
RRH2x60-700	A	From Leg	4.000 0.000 0.000	0.000	155.000	Ice	9.480	9.347	0.234
						1" Ice			
						No Ice	3.500	1.816	0.060
RRH2x60-700	A	From Leg	4.000 0.000 0.000	0.000	155.000	1/2"	3.761	2.052	0.083
						Ice	4.029	2.289	0.109
						1" Ice			
RRH2x60-700	B	From Leg	4.000 0.000 0.000	0.000	155.000	No Ice	3.500	1.816	0.060
						1/2"	3.761	2.052	0.083
						Ice	4.029	2.289	0.109
RRH2x60-700	B	From Leg	4.000 0.000 0.000	0.000	155.000	1" Ice			
						No Ice	3.500	1.816	0.060
						1/2"	3.761	2.052	0.083
RRH2x60-700	C	From Leg	4.000 0.000 0.000	0.000	155.000	Ice	4.029	2.289	0.109
						1" Ice			
						No Ice	3.500	1.816	0.060
RRH2X60-PCS	A	From Leg	4.000 0.000 0.000	0.000	155.000	1/2"	2.393	1.901	0.075
						Ice	2.593	2.087	0.099
						1" Ice			
RRH2X60-PCS	B	From Leg	4.000 0.000 0.000	0.000	155.000	No Ice	2.200	1.723	0.055
						1/2"	2.393	1.901	0.075
						Ice	2.593	2.087	0.099
RRH2X60-PCS	B	From Leg	4.000 0.000 0.000	0.000	155.000	1" Ice			
						No Ice	2.200	1.723	0.055
						1/2"	2.393	1.901	0.075
RRH2X60-PCS	C	From Leg	4.000 0.000 0.000	0.000	155.000	Ice	2.593	2.087	0.099
						1" Ice			
						No Ice	2.200	1.723	0.055
AWS4 (B66) 4x45 RRH	C	From Leg	4.000 0.000 0.000	0.000	155.000	1/2"	2.878	1.769	0.084
						Ice	3.104	1.959	0.108
						1" Ice			
AWS4 (B66) 4x45 RRH	A	From Leg	4.000 0.000 0.000	0.000	155.000	No Ice	2.660	1.586	0.064
						1/2"	2.878	1.769	0.084
						Ice	3.104	1.959	0.108
AWS4 (B66) 4x45 RRH	A	From Leg	4.000 0.000 0.000	0.000	155.000	1" Ice			
						No Ice	2.660	1.586	0.064
						1/2"	2.878	1.769	0.084
AWS4 (B66) 4x45 RRH	B	From Leg	4.000 0.000 0.000	0.000	155.000	Ice	3.104	1.959	0.108
						1" Ice			
						No Ice	2.660	1.586	0.064
(2) DB-T1-6Z-8AB-0Z	C	From Leg	4.000 0.000 0.000	0.000	155.000	1/2"	5.070	2.193	0.080
						Ice	5.348	2.393	0.120
						1" Ice			
Platform Mount [LP 403-1]	C	None		0.000	155.000	No Ice	18.850	18.850	1.500
						1/2"	24.300	24.300	1.797
						Ice	29.750	29.750	2.093
						1" Ice			

Tower Pressures - No Ice

$G_H = 1.100$

Section Elevation ft	z ft	K _Z	q _z ksf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
L1 185.000- 180.000	182.500	1.436	0.036	7.765	A	0.000	7.765	7.765	100.00	0.000	0.000
					B	0.000	7.765	7.765	100.00	0.000	0.000
					C	0.000	7.765	7.765	100.00	0.000	0.990
L2 180.000- 175.000	177.464	1.428	0.035	8.116	A	0.000	8.116	8.116	100.00	0.000	0.000
					B	0.000	8.116	8.116	100.00	0.000	0.000

Section Elevation ft	z ft	K _Z	q _z ksf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L3 175.000- 170.000	172.467	1.42	0.035	8.820	C	0.000	8.116	8.820	100.00	0.000	0.990
					A	0.000	8.820		100.00	0.000	0.000
					B	0.000	8.820		100.00	0.000	0.000
L4 170.000- 165.000	167.469	1.411	0.035	9.524	C	0.000	8.820	9.524	100.00	0.000	0.990
					A	0.000	9.524		100.00	0.000	0.000
					B	0.000	9.524		100.00	0.000	0.000
L5 165.000- 160.000	162.471	1.402	0.035	10.227	C	0.000	9.524	10.227	100.00	0.000	0.990
					A	0.000	10.227		100.00	0.000	0.000
					B	0.000	10.227		100.00	0.000	0.000
L6 160.000- 155.000	157.473	1.393	0.035	10.931	C	0.000	10.227	10.931	100.00	0.000	0.990
					A	0.000	10.931		100.00	0.000	0.000
					B	0.000	10.931		100.00	0.000	0.000
L7 155.000- 153.750	154.373	1.387	0.034	2.843	C	0.000	10.931	2.843	100.00	0.000	0.990
					A	0.000	2.843		100.00	0.000	0.000
					B	0.000	2.843		100.00	0.000	0.000
L8 153.750- 153.500	153.625	1.385	0.034	0.574	C	0.000	2.843	0.574	100.00	0.000	0.435
					A	0.000	0.574		100.00	0.000	0.000
					B	0.000	0.574		100.00	0.000	0.000
L9 153.500- 152.000	152.748	1.384	0.034	3.480	C	0.000	0.574	3.480	100.00	0.000	0.091
					A	0.000	3.480		100.00	0.000	0.000
					B	0.000	3.480		100.00	0.000	0.000
L10 152.000- 151.750	151.875	1.382	0.034	0.586	C	0.000	3.480	0.586	100.00	0.000	0.547
					A	0.000	0.586		100.00	0.000	0.000
					B	0.000	0.586		100.00	0.000	0.000
L11 151.750- 151.250	151.500	1.381	0.034	1.178	C	0.000	0.586	1.178	100.00	0.000	0.091
					A	0.000	1.178		100.00	0.000	0.000
					B	0.000	1.178		100.00	0.000	0.000
L12 151.250- 151.000	151.125	1.381	0.034	0.591	C	0.000	1.178	0.591	100.00	0.000	0.182
					A	0.000	0.591		100.00	0.000	0.000
					B	0.000	0.591		100.00	0.000	0.000
L13 151.000- 146.000	148.476	1.375	0.034	12.198	C	0.000	0.591	12.198	100.00	0.000	0.091
					A	0.000	12.198		100.00	0.000	0.000
					B	0.000	12.198		100.00	0.000	0.000
L14 146.000- 141.000	143.477	1.366	0.034	12.901	C	0.000	12.198	12.901	100.00	0.000	1.823
					A	0.000	12.901		100.00	0.000	0.000
					B	0.000	12.901		100.00	0.000	0.000
L15 141.000- 136.000	138.478	1.355	0.034	13.605	C	0.000	12.901	13.605	100.00	0.000	1.823
					A	0.000	13.605		100.00	0.000	0.000
					B	0.000	13.605		100.00	0.000	0.000
L16 136.000- 130.000	132.971	1.344	0.033	17.255	C	0.000	13.605	17.255	100.00	0.000	1.823
					A	0.000	17.255		100.00	0.000	0.000
					B	0.000	17.255		100.00	0.000	0.000
L17 130.000- 129.000	129.499	1.336	0.033	2.931	C	0.000	17.255	2.931	100.00	0.000	2.188
					A	0.000	2.931		100.00	0.000	0.000
					B	0.000	2.931		100.00	0.000	0.000
L18 129.000- 124.000	126.481	1.33	0.033	15.075	C	0.000	2.931	15.075	100.00	0.000	0.365
					A	0.000	15.075		100.00	0.000	0.000
					B	0.000	15.075		100.00	0.000	0.000
L19 124.000- 121.420	122.705	1.321	0.033	8.053	C	0.000	15.075	8.053	100.00	0.000	1.823
					A	0.000	8.053		100.00	0.000	0.000
					B	0.000	8.053		100.00	0.000	0.000
L20 121.420- 121.170	121.295	1.318	0.033	0.790	C	0.000	8.053	0.790	100.00	0.000	1.253
					A	0.000	0.790		100.00	0.000	0.000
					B	0.000	0.790		100.00	0.000	0.000
L21 121.170- 121.000	121.085	1.318	0.033	0.538	C	0.000	0.790	0.538	100.00	0.000	0.122
					A	0.000	0.538		100.00	0.000	0.000
					B	0.000	0.538		100.00	0.000	0.000
L22 121.000- 120.750	120.875	1.317	0.033	0.793	C	0.000	0.538	0.793	100.00	0.000	0.083
					A	0.000	0.793		100.00	0.000	0.000
					B	0.000	0.793		100.00	0.000	0.000
L23 120.750- 115.750	118.232	1.311	0.033	16.232	C	0.000	0.793	16.232	100.00	0.000	0.122
					A	0.000	16.232		100.00	0.000	0.000
					B	0.000	16.232		100.00	0.000	0.000
L24 115.750- 115.000	115.375	1.304	0.032	2.495	C	0.000	16.232	2.495	100.00	0.000	2.448
					A	0.000	2.495		100.00	0.000	0.000
					B	0.000	2.495		100.00	0.000	0.000
L25 115.000-	114.499	1.302	0.032	3.352	A	0.000	2.495	3.352	100.00	0.000	0.367

Section Elevation ft	z ft	K _Z	q _z ksf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
114.000					B	0.000	3.352		100.00	0.000	0.000
L26 114.000- 113.750	113.875	1.301	0.032	0.842	C	0.000	3.352		100.00	0.000	0.490
					A	0.000	0.842	0.842	100.00	0.000	0.000
					B	0.000	0.842		100.00	0.000	0.000
					C	0.000	0.842		100.00	0.000	0.122
L27 113.750- 108.750	111.233	1.294	0.032	17.214	A	0.000	17.214	17.214	100.00	0.000	0.000
					B	0.000	17.214		100.00	0.000	0.000
					C	0.000	17.214		100.00	0.000	1.980
L28 108.750- 103.750	106.234	1.282	0.032	17.915	A	0.000	17.915	17.915	100.00	0.000	0.000
					B	0.000	17.915		100.00	0.000	0.000
					C	0.000	17.915		100.00	0.000	1.823
L29 103.750- 95.000	99.328	1.264	0.031	33.038	A	0.000	33.038	33.038	100.00	0.000	0.000
					B	0.000	33.038		100.00	0.000	0.000
					C	0.000	33.038		100.00	0.000	4.303
L30 95.000- 94.000	94.499	1.251	0.031	3.856	A	0.000	3.856	3.856	100.00	0.000	0.000
					B	0.000	3.856		100.00	0.000	0.000
					C	0.000	3.856		100.00	0.000	0.531
L31 94.000- 91.400	92.696	1.246	0.031	10.154	A	0.000	10.154	10.154	100.00	0.000	0.000
					B	0.000	10.154		100.00	0.000	0.000
					C	0.000	10.154		100.00	0.000	1.381
L32 91.400- 91.150	91.275	1.242	0.031	0.986	A	0.000	0.986	0.986	100.00	0.000	0.000
					B	0.000	0.986		100.00	0.000	0.000
					C	0.000	0.986		100.00	0.000	0.133
L33 91.150- 91.000	91.075	1.241	0.031	0.593	A	0.000	0.593	0.593	100.00	0.000	0.000
					B	0.000	0.593		100.00	0.000	0.000
					C	0.000	0.593		100.00	0.000	0.080
L34 91.000- 86.000	88.485	1.233	0.031	20.114	A	0.000	20.114	20.114	100.00	0.000	0.000
					B	0.000	20.114		100.00	0.000	0.000
					C	0.000	20.114		100.00	0.000	2.185
L35 86.000- 81.000	83.486	1.218	0.030	20.818	A	0.000	20.818	20.818	100.00	0.000	0.000
					B	0.000	20.818		100.00	0.000	0.000
					C	0.000	20.818		100.00	0.000	1.823
L36 81.000- 76.000	78.486	1.203	0.030	21.523	A	0.000	21.523	21.523	100.00	0.000	0.000
					B	0.000	21.523		100.00	0.000	0.000
					C	0.000	21.523		100.00	0.000	1.823
L37 76.000- 71.000	73.487	1.186	0.029	22.227	A	0.000	22.227	22.227	100.00	0.000	0.000
					B	0.000	22.227		100.00	0.000	0.000
					C	0.000	22.227		100.00	0.000	1.823
L38 71.000- 66.000	68.487	1.169	0.029	22.931	A	0.000	22.931	22.931	100.00	0.000	0.000
					B	0.000	22.931		100.00	0.000	0.000
					C	0.000	22.931		100.00	0.000	1.823
L39 66.000- 63.750	64.872	1.155	0.029	10.549	A	0.000	10.549	10.549	100.00	0.000	0.000
					B	0.000	10.549		100.00	0.000	0.000
					C	0.000	10.549		100.00	0.000	0.821
L40 63.750- 63.500	63.625	1.151	0.029	1.181	A	0.000	1.181	1.181	100.00	0.000	0.000
					B	0.000	1.181		100.00	0.000	0.000
					C	0.000	1.181		100.00	0.000	0.091
L41 63.500- 58.500	60.988	1.14	0.028	23.988	A	0.000	23.988	23.988	100.00	0.000	0.000
					B	0.000	23.988		100.00	0.000	0.000
					C	0.000	23.988		100.00	0.000	1.823
L42 58.500- 51.000	54.723	1.115	0.028	37.303	A	0.000	37.303	37.303	100.00	0.000	0.000
					B	0.000	37.303		100.00	0.000	0.000
					C	0.000	37.303		100.00	0.000	2.735
L43 51.000- 50.000	50.500	1.096	0.027	5.028	A	0.000	5.028	5.028	100.00	0.000	0.000
					B	0.000	5.028		100.00	0.000	0.000
					C	0.000	5.028		100.00	0.000	0.365
L44 50.000- 45.000	47.489	1.082	0.027	25.559	A	0.000	25.559	25.559	100.00	0.000	0.000
					B	0.000	25.559		100.00	0.000	0.000
					C	0.000	25.559		100.00	0.000	1.823
L45 45.000- 40.420	42.701	1.058	0.026	24.027	A	0.000	24.027	24.027	100.00	0.000	0.000
					B	0.000	24.027		100.00	0.000	0.000
					C	0.000	24.027		100.00	0.000	1.670
L46 40.420- 40.170	40.295	1.045	0.026	1.328	A	0.000	1.328	1.328	100.00	0.000	0.000
					B	0.000	1.328		100.00	0.000	0.000
					C	0.000	1.328		100.00	0.000	0.091
L47 40.170- 40.000	40.085	1.044	0.026	0.904	A	0.000	0.904	0.904	100.00	0.000	0.000
					B	0.000	0.904		100.00	0.000	0.000
					C	0.000	0.904		100.00	0.000	0.062

Section Elevation ft	z ft	K _z	q _z ksf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L48 40.000-35.000	37.489	1.029	0.026	26.960	A	0.000	26.960	26.960	100.00	0.000	0.000
					B	0.000	26.960	100.00	0.000	0.000	
					C	0.000	26.960	100.00	0.000	2.448	
L49 35.000-33.000	33.998	1.008	0.025	10.980	A	0.000	10.980	10.980	100.00	0.000	0.000
					B	0.000	10.980	100.00	0.000	0.000	
					C	0.000	10.980	100.00	0.000	1.229	
L50 33.000-32.750	32.875	1.001	0.025	1.380	A	0.000	1.380	1.380	100.00	0.000	0.000
					B	0.000	1.380	100.00	0.000	0.000	
					C	0.000	1.380	100.00	0.000	0.154	
L51 32.750-19.000	25.798	0.952	0.024	78.613	A	0.000	78.613	78.613	100.00	0.000	0.000
					B	0.000	78.613	100.00	0.000	0.000	
					C	0.000	78.613	100.00	0.000	8.452	
L52 19.000-18.000	18.500	0.887	0.022	5.849	A	0.000	5.849	5.849	100.00	0.000	0.000
					B	0.000	5.849	100.00	0.000	0.000	
					C	0.000	5.849	100.00	0.000	0.615	
L53 18.000-13.000	15.490	0.855	0.021	29.665	A	0.000	29.665	29.665	100.00	0.000	0.000
					B	0.000	29.665	100.00	0.000	0.000	
					C	0.000	29.665	100.00	0.000	3.073	
L54 13.000-8.000	10.490	0.85	0.021	30.367	A	0.000	30.367	30.367	100.00	0.000	0.000
					B	0.000	30.367	100.00	0.000	0.000	
					C	0.000	30.367	100.00	0.000	3.073	
L55 8.000-3.000	5.491	0.85	0.021	31.068	A	0.000	31.068	31.068	100.00	0.000	0.000
					B	0.000	31.068	100.00	0.000	0.000	
					C	0.000	31.068	100.00	0.000	3.073	
L56 3.000-0.000	1.497	0.85	0.021	18.978	A	0.000	18.978	18.978	100.00	0.000	0.000
					B	0.000	18.978	100.00	0.000	0.000	
					C	0.000	18.978	100.00	0.000	1.844	

Tower Pressure - With Ice

G_H = 1.100

Section Elevation ft	z ft	K _z	q _z ksf	t _z in	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L1 185.000-180.000	182.500	1.436	0.009	2.3730	9.742	A	0.000	9.742	9.742	100.00	0.000	0.000
						B	0.000	9.742	100.00	0.000	0.000	
						C	0.000	9.742	100.00	0.000	3.363	
L2 180.000-175.000	177.464	1.428	0.009	2.3664	10.088	A	0.000	10.088	10.088	100.00	0.000	0.000
						B	0.000	10.088	100.00	0.000	0.000	
						C	0.000	10.088	100.00	0.000	3.356	
L3 175.000-170.000	172.467	1.42	0.009	2.3597	10.786	A	0.000	10.786	10.786	100.00	0.000	0.000
						B	0.000	10.786	100.00	0.000	0.000	
						C	0.000	10.786	100.00	0.000	3.350	
L4 170.000-165.000	167.469	1.411	0.009	2.3527	11.484	A	0.000	11.484	11.484	100.00	0.000	0.000
						B	0.000	11.484	100.00	0.000	0.000	
						C	0.000	11.484	100.00	0.000	3.343	
L5 165.000-160.000	162.471	1.402	0.009	2.3456	12.182	A	0.000	12.182	12.182	100.00	0.000	0.000
						B	0.000	12.182	100.00	0.000	0.000	
						C	0.000	12.182	100.00	0.000	3.336	
L6 160.000-155.000	157.473	1.393	0.008	2.3383	12.880	A	0.000	12.880	12.880	100.00	0.000	0.000
						B	0.000	12.880	100.00	0.000	0.000	
						C	0.000	12.880	100.00	0.000	3.328	
L7 155.000-153.750	154.373	1.387	0.008	2.3337	3.329	A	0.000	3.329	3.329	100.00	0.000	0.000
						B	0.000	3.329	100.00	0.000	0.000	
						C	0.000	3.329	100.00	0.000	1.667	
L8 153.750-153.500	153.625	1.385	0.008	2.3325	0.671	A	0.000	0.671	0.671	100.00	0.000	0.000
						B	0.000	0.671	100.00	0.000	0.000	
						C	0.000	0.671	100.00	0.000	0.337	
L9 153.500-152.000	152.748	1.384	0.008	2.3312	4.063	A	0.000	4.063	4.063	100.00	0.000	0.000
						B	0.000	4.063	100.00	0.000	0.000	
						C	0.000	4.063	100.00	0.000	2.023	
L10 152.000-151.750	151.875	1.382	0.008	2.3298	0.683	A	0.000	0.683	0.683	100.00	0.000	0.000
						B	0.000	0.683	100.00	0.000	0.000	
						C	0.000	0.683	100.00	0.000	0.337	
L11 151.750-	151.500	1.381	0.008	2.3293	1.372	A	0.000	1.372	100.00	0.000	0.000	

Section Elevation ft	z ft	K _z	q _z ksf	t _z in	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
151.250						B	0.000	1.372		100.00	0.000	0.000
L12 151.250-151.000	151.125	1.381	0.008	2.3287	0.688	C	0.000	1.372		100.00	0.000	0.674
						A	0.000	0.688	0.688	100.00	0.000	0.000
						B	0.000	0.688		100.00	0.000	0.000
						C	0.000	0.688		100.00	0.000	0.337
L13 151.000-146.000	148.476	1.375	0.008	2.3246	14.135	A	0.000	14.135	14.135	100.00	0.000	0.000
						B	0.000	14.135		100.00	0.000	0.000
						C	0.000	14.135		100.00	0.000	6.731
L14 146.000-141.000	143.477	1.366	0.008	2.3166	14.832	A	0.000	14.832	14.832	100.00	0.000	0.000
						B	0.000	14.832		100.00	0.000	0.000
						C	0.000	14.832		100.00	0.000	6.714
L15 141.000-136.000	138.478	1.355	0.008	2.3084	15.529	A	0.000	15.529	15.529	100.00	0.000	0.000
						B	0.000	15.529		100.00	0.000	0.000
						C	0.000	15.529		100.00	0.000	6.697
L16 136.000-130.000	132.971	1.344	0.008	2.2991	19.554	A	0.000	19.554	19.554	100.00	0.000	0.000
						B	0.000	19.554		100.00	0.000	0.000
						C	0.000	19.554		100.00	0.000	8.012
L17 130.000-129.000	129.499	1.336	0.008	2.2930	3.314	A	0.000	3.314	3.314	100.00	0.000	0.000
						B	0.000	3.314		100.00	0.000	0.000
						C	0.000	3.314		100.00	0.000	1.335
L18 129.000-124.000	126.481	1.33	0.008	2.2876	16.981	A	0.000	16.981	16.981	100.00	0.000	0.000
						B	0.000	16.981		100.00	0.000	0.000
						C	0.000	16.981		100.00	0.000	6.653
L19 124.000-121.420	122.705	1.321	0.008	2.2807	9.034	A	0.000	9.034	9.034	100.00	0.000	0.000
						B	0.000	9.034		100.00	0.000	0.000
						C	0.000	9.034		100.00	0.000	5.003
L20 121.420-121.170	121.295	1.318	0.008	2.2780	0.885	A	0.000	0.885	0.885	100.00	0.000	0.000
						B	0.000	0.885		100.00	0.000	0.000
						C	0.000	0.885		100.00	0.000	0.489
L21 121.170-121.000	121.085	1.318	0.008	2.2777	0.603	A	0.000	0.603	0.603	100.00	0.000	0.000
						B	0.000	0.603		100.00	0.000	0.000
						C	0.000	0.603		100.00	0.000	0.333
L22 121.000-120.750	120.875	1.317	0.008	2.2773	0.888	A	0.000	0.888	0.888	100.00	0.000	0.000
						B	0.000	0.888		100.00	0.000	0.000
						C	0.000	0.888		100.00	0.000	0.489
L23 120.750-115.750	118.232	1.311	0.008	2.2722	18.126	A	0.000	18.126	18.126	100.00	0.000	0.000
						B	0.000	18.126		100.00	0.000	0.000
						C	0.000	18.126		100.00	0.000	9.770
L24 115.750-115.000	115.375	1.304	0.008	2.2667	2.779	A	0.000	2.779	2.779	100.00	0.000	0.000
						B	0.000	2.779		100.00	0.000	0.000
						C	0.000	2.779		100.00	0.000	1.463
L25 115.000-114.000	114.499	1.302	0.008	2.2650	3.729	A	0.000	3.729	3.729	100.00	0.000	0.000
						B	0.000	3.729		100.00	0.000	0.000
						C	0.000	3.729		100.00	0.000	1.949
L26 114.000-113.750	113.875	1.301	0.008	2.2637	0.937	A	0.000	0.937	0.937	100.00	0.000	0.000
						B	0.000	0.937		100.00	0.000	0.000
						C	0.000	0.937		100.00	0.000	0.487
L27 113.750-108.750	111.233	1.294	0.008	2.2584	19.096	A	0.000	19.096	19.096	100.00	0.000	0.000
						B	0.000	19.096		100.00	0.000	0.000
						C	0.000	19.096		100.00	0.000	7.375
L28 108.750-103.750	106.234	1.282	0.008	2.2480	19.789	A	0.000	19.789	19.789	100.00	0.000	0.000
						B	0.000	19.789		100.00	0.000	0.000
						C	0.000	19.789		100.00	0.000	6.569
L29 103.750-95.000	99.328	1.264	0.008	2.2330	36.295	A	0.000	36.295	36.295	100.00	0.000	0.000
						B	0.000	36.295		100.00	0.000	0.000
						C	0.000	36.295		100.00	0.000	15.862
L30 95.000-94.000	94.499	1.251	0.008	2.2219	4.228	A	0.000	4.228	4.228	100.00	0.000	0.000
						B	0.000	4.228		100.00	0.000	0.000
						C	0.000	4.228		100.00	0.000	1.970
L31 94.000-91.400	92.696	1.246	0.008	2.2176	11.115	A	0.000	11.115	11.115	100.00	0.000	0.000
						B	0.000	11.115		100.00	0.000	0.000
						C	0.000	11.115		100.00	0.000	5.097
L32 91.400-91.150	91.275	1.242	0.008	2.2142	1.078	A	0.000	1.078	1.078	100.00	0.000	0.000
						B	0.000	1.078		100.00	0.000	0.000
						C	0.000	1.078		100.00	0.000	0.490
L33 91.150-91.000	91.075	1.241	0.008	2.2137	0.648	A	0.000	0.648	0.648	100.00	0.000	0.000
						B	0.000	0.648		100.00	0.000	0.000
						C	0.000	0.648		100.00	0.000	0.294

Section Elevation ft	z ft	K _z	q _z ksf	t _z in	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L34 91.000- 86.000	88.485	1.233	0.007	2.2073	21.954	A	0.000	21.954	21.954	100.00	0.000	0.000
						B	0.000	21.954	21.954	100.00	0.000	0.000
						C	0.000	21.954	21.954	100.00	0.000	7.909
L35 86.000- 81.000	83.486	1.218	0.007	2.1945	22.647	A	0.000	22.647	22.647	100.00	0.000	0.000
						B	0.000	22.647	22.647	100.00	0.000	0.000
						C	0.000	22.647	22.647	100.00	0.000	6.456
L36 81.000- 76.000	78.486	1.203	0.007	2.1810	23.340	A	0.000	23.340	23.340	100.00	0.000	0.000
						B	0.000	23.340	23.340	100.00	0.000	0.000
						C	0.000	23.340	23.340	100.00	0.000	6.428
L37 76.000- 71.000	73.487	1.186	0.007	2.1667	24.033	A	0.000	24.033	24.033	100.00	0.000	0.000
						B	0.000	24.033	24.033	100.00	0.000	0.000
						C	0.000	24.033	24.033	100.00	0.000	6.397
L38 71.000- 66.000	68.487	1.169	0.007	2.1515	24.724	A	0.000	24.724	24.724	100.00	0.000	0.000
						B	0.000	24.724	24.724	100.00	0.000	0.000
						C	0.000	24.724	24.724	100.00	0.000	6.365
L39 66.000- 63.750	64.872	1.155	0.007	2.1399	11.351	A	0.000	11.351	11.351	100.00	0.000	0.000
						B	0.000	11.351	11.351	100.00	0.000	0.000
						C	0.000	11.351	11.351	100.00	0.000	2.853
L40 63.750- 63.500	63.625	1.151	0.007	2.1357	1.270	A	0.000	1.270	1.270	100.00	0.000	0.000
						B	0.000	1.270	1.270	100.00	0.000	0.000
						C	0.000	1.270	1.270	100.00	0.000	0.317
L41 63.500- 58.500	60.988	1.14	0.007	2.1267	25.760	A	0.000	25.760	25.760	100.00	0.000	0.000
						B	0.000	25.760	25.760	100.00	0.000	0.000
						C	0.000	25.760	25.760	100.00	0.000	6.313
L42 58.500- 51.000	54.723	1.115	0.007	2.1038	39.932	A	0.000	39.932	39.932	100.00	0.000	0.000
						B	0.000	39.932	39.932	100.00	0.000	0.000
						C	0.000	39.932	39.932	100.00	0.000	9.397
L43 51.000- 50.000	50.500	1.096	0.007	2.0869	5.378	A	0.000	5.378	5.378	100.00	0.000	0.000
						B	0.000	5.378	5.378	100.00	0.000	0.000
						C	0.000	5.378	5.378	100.00	0.000	1.253
L44 50.000- 45.000	47.489	1.082	0.007	2.0741	27.287	A	0.000	27.287	27.287	100.00	0.000	0.000
						B	0.000	27.287	27.287	100.00	0.000	0.000
						C	0.000	27.287	27.287	100.00	0.000	6.202
L45 45.000- 40.420	42.701	1.058	0.006	2.0522	25.593	A	0.000	25.593	25.593	100.00	0.000	0.000
						B	0.000	25.593	25.593	100.00	0.000	0.000
						C	0.000	25.593	25.593	100.00	0.000	5.639
L46 40.420- 40.170	40.295	1.045	0.006	2.0403	1.413	A	0.000	1.413	1.413	100.00	0.000	0.000
						B	0.000	1.413	1.413	100.00	0.000	0.000
						C	0.000	1.413	1.413	100.00	0.000	0.307
L47 40.170- 40.000	40.085	1.044	0.006	2.0393	0.962	A	0.000	0.962	0.962	100.00	0.000	0.000
						B	0.000	0.962	0.962	100.00	0.000	0.000
						C	0.000	0.962	0.962	100.00	0.000	0.208
L48 40.000- 35.000	37.489	1.029	0.006	2.0257	28.648	A	0.000	28.648	28.648	100.00	0.000	0.000
						B	0.000	28.648	28.648	100.00	0.000	0.000
						C	0.000	28.648	28.648	100.00	0.000	7.850
L49 35.000- 33.000	33.998	1.008	0.006	2.0060	11.648	A	0.000	11.648	11.648	100.00	0.000	0.000
						B	0.000	11.648	11.648	100.00	0.000	0.000
						C	0.000	11.648	11.648	100.00	0.000	3.815
L50 33.000- 32.750	32.875	1.001	0.006	1.9992	1.464	A	0.000	1.464	1.464	100.00	0.000	0.000
						B	0.000	1.464	1.464	100.00	0.000	0.000
						C	0.000	1.464	1.464	100.00	0.000	0.476
L51 32.750- 19.000	25.798	0.952	0.006	1.9514	83.085	A	0.000	83.085	83.085	100.00	0.000	0.000
						B	0.000	83.085	83.085	100.00	0.000	0.000
						C	0.000	83.085	83.085	100.00	0.000	25.743
L52 19.000- 18.000	18.500	0.887	0.005	1.8875	6.174	A	0.000	6.174	6.174	100.00	0.000	0.000
						B	0.000	6.174	6.174	100.00	0.000	0.000
						C	0.000	6.174	6.174	100.00	0.000	1.872
L53 18.000- 13.000	15.490	0.855	0.005	1.8543	31.211	A	0.000	31.211	31.211	100.00	0.000	0.000
						B	0.000	31.211	31.211	100.00	0.000	0.000
						C	0.000	31.211	31.211	100.00	0.000	9.048
L54 13.000- 8.000	10.490	0.85	0.005	1.7834	31.853	A	0.000	31.853	31.853	100.00	0.000	0.000
						B	0.000	31.853	31.853	100.00	0.000	0.000
						C	0.000	31.853	31.853	100.00	0.000	8.820
L55 8.000- 3.000	5.491	0.85	0.005	1.6716	32.461	A	0.000	32.461	32.461	100.00	0.000	0.000
						B	0.000	32.461	32.461	100.00	0.000	0.000
						C	0.000	32.461	32.461	100.00	0.000	8.460
L56 3.000- 0.000	1.497	0.85	0.005	1.4679	19.712	A	0.000	19.712	19.712	100.00	0.000	0.000
						B	0.000	19.712	19.712	100.00	0.000	0.000
						C	0.000	19.712	19.712	100.00	0.000	0.000

Section Elevation ft	z ft	K _Z	q _z ksf	t _z in	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
						C	0.000	19.712		100.00	0.000	4.682

Tower Pressure - Service

G_H = 1.100

Section Elevation ft	z ft	K _Z	q _z ksf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L1 185.000-180.000	182.500	1.436	0.011	7.765	A	0.000	7.765	7.765	100.00	0.000	0.000
					B	0.000	7.765		100.00	0.000	0.000
					C	0.000	7.765		100.00	0.000	0.990
L2 180.000-175.000	177.464	1.428	0.011	8.116	A	0.000	8.116	8.116	100.00	0.000	0.000
					B	0.000	8.116		100.00	0.000	0.000
					C	0.000	8.116		100.00	0.000	0.990
L3 175.000-170.000	172.467	1.42	0.011	8.820	A	0.000	8.820	8.820	100.00	0.000	0.000
					B	0.000	8.820		100.00	0.000	0.000
					C	0.000	8.820		100.00	0.000	0.990
L4 170.000-165.000	167.469	1.411	0.011	9.524	A	0.000	9.524	9.524	100.00	0.000	0.000
					B	0.000	9.524		100.00	0.000	0.000
					C	0.000	9.524		100.00	0.000	0.990
L5 165.000-160.000	162.471	1.402	0.011	10.227	A	0.000	10.227	10.227	100.00	0.000	0.000
					B	0.000	10.227		100.00	0.000	0.000
					C	0.000	10.227		100.00	0.000	0.990
L6 160.000-155.000	157.473	1.393	0.011	10.931	A	0.000	10.931	10.931	100.00	0.000	0.000
					B	0.000	10.931		100.00	0.000	0.000
					C	0.000	10.931		100.00	0.000	0.990
L7 155.000-153.750	154.373	1.387	0.011	2.843	A	0.000	2.843	2.843	100.00	0.000	0.000
					B	0.000	2.843		100.00	0.000	0.000
					C	0.000	2.843		100.00	0.000	0.435
L8 153.750-153.500	153.625	1.385	0.011	0.574	A	0.000	0.574	0.574	100.00	0.000	0.000
					B	0.000	0.574		100.00	0.000	0.000
					C	0.000	0.574		100.00	0.000	0.091
L9 153.500-152.000	152.748	1.384	0.011	3.480	A	0.000	3.480	3.480	100.00	0.000	0.000
					B	0.000	3.480		100.00	0.000	0.000
					C	0.000	3.480		100.00	0.000	0.547
L10 152.000-151.750	151.875	1.382	0.011	0.586	A	0.000	0.586	0.586	100.00	0.000	0.000
					B	0.000	0.586		100.00	0.000	0.000
					C	0.000	0.586		100.00	0.000	0.091
L11 151.750-151.250	151.500	1.381	0.011	1.178	A	0.000	1.178	1.178	100.00	0.000	0.000
					B	0.000	1.178		100.00	0.000	0.000
					C	0.000	1.178		100.00	0.000	0.182
L12 151.250-151.000	151.125	1.381	0.011	0.591	A	0.000	0.591	0.591	100.00	0.000	0.000
					B	0.000	0.591		100.00	0.000	0.000
					C	0.000	0.591		100.00	0.000	0.091
L13 151.000-146.000	148.476	1.375	0.011	12.198	A	0.000	12.198	12.198	100.00	0.000	0.000
					B	0.000	12.198		100.00	0.000	0.000
					C	0.000	12.198		100.00	0.000	1.823
L14 146.000-141.000	143.477	1.366	0.011	12.901	A	0.000	12.901	12.901	100.00	0.000	0.000
					B	0.000	12.901		100.00	0.000	0.000
					C	0.000	12.901		100.00	0.000	1.823
L15 141.000-136.000	138.478	1.355	0.011	13.605	A	0.000	13.605	13.605	100.00	0.000	0.000
					B	0.000	13.605		100.00	0.000	0.000
					C	0.000	13.605		100.00	0.000	1.823
L16 136.000-130.000	132.971	1.344	0.011	17.255	A	0.000	17.255	17.255	100.00	0.000	0.000
					B	0.000	17.255		100.00	0.000	0.000
					C	0.000	17.255		100.00	0.000	2.188
L17 130.000-129.000	129.499	1.336	0.010	2.931	A	0.000	2.931	2.931	100.00	0.000	0.000
					B	0.000	2.931		100.00	0.000	0.000
					C	0.000	2.931		100.00	0.000	0.365
L18 129.000-124.000	126.481	1.33	0.010	15.075	A	0.000	15.075	15.075	100.00	0.000	0.000
					B	0.000	15.075		100.00	0.000	0.000
					C	0.000	15.075		100.00	0.000	1.823
L19 124.000-121.420	122.705	1.321	0.010	8.053	A	0.000	8.053	8.053	100.00	0.000	0.000
					B	0.000	8.053		100.00	0.000	0.000
					C	0.000	8.053		100.00	0.000	1.253

Section Elevation ft	z ft	K _Z	q _z ksf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
L20 121.420- 121.170	121.295	1.318	0.010	0.790	A	0.000	0.790	0.790	100.00	0.000	0.000
					B	0.000	0.790	100.00	0.000	0.000	
					C	0.000	0.790	100.00	0.000	0.122	
L21 121.170- 121.000	121.085	1.318	0.010	0.538	A	0.000	0.538	0.538	100.00	0.000	0.000
					B	0.000	0.538	100.00	0.000	0.000	
					C	0.000	0.538	100.00	0.000	0.083	
L22 121.000- 120.750	120.875	1.317	0.010	0.793	A	0.000	0.793	0.793	100.00	0.000	0.000
					B	0.000	0.793	100.00	0.000	0.000	
					C	0.000	0.793	100.00	0.000	0.122	
L23 120.750- 115.750	118.232	1.311	0.010	16.232	A	0.000	16.232	16.232	100.00	0.000	0.000
					B	0.000	16.232	100.00	0.000	0.000	
					C	0.000	16.232	100.00	0.000	2.448	
L24 115.750- 115.000	115.375	1.304	0.010	2.495	A	0.000	2.495	2.495	100.00	0.000	0.000
					B	0.000	2.495	100.00	0.000	0.000	
					C	0.000	2.495	100.00	0.000	0.367	
L25 115.000- 114.000	114.499	1.302	0.010	3.352	A	0.000	3.352	3.352	100.00	0.000	0.000
					B	0.000	3.352	100.00	0.000	0.000	
					C	0.000	3.352	100.00	0.000	0.490	
L26 114.000- 113.750	113.875	1.301	0.010	0.842	A	0.000	0.842	0.842	100.00	0.000	0.000
					B	0.000	0.842	100.00	0.000	0.000	
					C	0.000	0.842	100.00	0.000	0.122	
L27 113.750- 108.750	111.233	1.294	0.010	17.214	A	0.000	17.214	17.214	100.00	0.000	0.000
					B	0.000	17.214	100.00	0.000	0.000	
					C	0.000	17.214	100.00	0.000	1.980	
L28 108.750- 103.750	106.234	1.282	0.010	17.915	A	0.000	17.915	17.915	100.00	0.000	0.000
					B	0.000	17.915	100.00	0.000	0.000	
					C	0.000	17.915	100.00	0.000	1.823	
L29 103.750- 95.000	99.328	1.264	0.010	33.038	A	0.000	33.038	33.038	100.00	0.000	0.000
					B	0.000	33.038	100.00	0.000	0.000	
					C	0.000	33.038	100.00	0.000	4.303	
L30 95.000- 94.000	94.499	1.251	0.010	3.856	A	0.000	3.856	3.856	100.00	0.000	0.000
					B	0.000	3.856	100.00	0.000	0.000	
					C	0.000	3.856	100.00	0.000	0.531	
L31 94.000- 91.400	92.696	1.246	0.010	10.154	A	0.000	10.154	10.154	100.00	0.000	0.000
					B	0.000	10.154	100.00	0.000	0.000	
					C	0.000	10.154	100.00	0.000	1.381	
L32 91.400- 91.150	91.275	1.242	0.010	0.986	A	0.000	0.986	0.986	100.00	0.000	0.000
					B	0.000	0.986	100.00	0.000	0.000	
					C	0.000	0.986	100.00	0.000	0.133	
L33 91.150- 91.000	91.075	1.241	0.010	0.593	A	0.000	0.593	0.593	100.00	0.000	0.000
					B	0.000	0.593	100.00	0.000	0.000	
					C	0.000	0.593	100.00	0.000	0.080	
L34 91.000- 86.000	88.485	1.233	0.010	20.114	A	0.000	20.114	20.114	100.00	0.000	0.000
					B	0.000	20.114	100.00	0.000	0.000	
					C	0.000	20.114	100.00	0.000	2.185	
L35 86.000- 81.000	83.486	1.218	0.010	20.818	A	0.000	20.818	20.818	100.00	0.000	0.000
					B	0.000	20.818	100.00	0.000	0.000	
					C	0.000	20.818	100.00	0.000	1.823	
L36 81.000- 76.000	78.486	1.203	0.009	21.523	A	0.000	21.523	21.523	100.00	0.000	0.000
					B	0.000	21.523	100.00	0.000	0.000	
					C	0.000	21.523	100.00	0.000	1.823	
L37 76.000- 71.000	73.487	1.186	0.009	22.227	A	0.000	22.227	22.227	100.00	0.000	0.000
					B	0.000	22.227	100.00	0.000	0.000	
					C	0.000	22.227	100.00	0.000	1.823	
L38 71.000- 66.000	68.487	1.169	0.009	22.931	A	0.000	22.931	22.931	100.00	0.000	0.000
					B	0.000	22.931	100.00	0.000	0.000	
					C	0.000	22.931	100.00	0.000	1.823	
L39 66.000- 63.750	64.872	1.155	0.009	10.549	A	0.000	10.549	10.549	100.00	0.000	0.000
					B	0.000	10.549	100.00	0.000	0.000	
					C	0.000	10.549	100.00	0.000	0.821	
L40 63.750- 63.500	63.625	1.151	0.009	1.181	A	0.000	1.181	1.181	100.00	0.000	0.000
					B	0.000	1.181	100.00	0.000	0.000	
					C	0.000	1.181	100.00	0.000	0.091	
L41 63.500- 58.500	60.988	1.14	0.009	23.988	A	0.000	23.988	23.988	100.00	0.000	0.000
					B	0.000	23.988	100.00	0.000	0.000	
					C	0.000	23.988	100.00	0.000	1.823	
L42 58.500- 51.000	54.723	1.115	0.009	37.303	A	0.000	37.303	37.303	100.00	0.000	0.000
					B	0.000	37.303	100.00	0.000	0.000	
					C	0.000	37.303	100.00	0.000	0.000	

Section Elevation ft	z ft	K _Z	q _z ksf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L43 51.000- 50.000	50.500	1.096	0.009	5.028	C	0.000	37.303	5.028	100.00	0.000	2.735
					A	0.000	5.028		100.00	0.000	0.000
					B	0.000	5.028		100.00	0.000	0.000
L44 50.000- 45.000	47.489	1.082	0.008	25.559	C	0.000	5.028	25.559	100.00	0.000	0.365
					A	0.000	25.559		100.00	0.000	0.000
					B	0.000	25.559		100.00	0.000	1.823
L45 45.000- 40.420	42.701	1.058	0.008	24.027	C	0.000	24.027	24.027	100.00	0.000	0.000
					A	0.000	24.027		100.00	0.000	0.000
					B	0.000	24.027		100.00	0.000	1.670
L46 40.420- 40.170	40.295	1.045	0.008	1.328	C	0.000	24.027	1.328	100.00	0.000	0.000
					A	0.000	1.328		100.00	0.000	0.000
					B	0.000	1.328		100.00	0.000	0.000
L47 40.170- 40.000	40.085	1.044	0.008	0.904	C	0.000	1.328	0.904	100.00	0.000	0.091
					A	0.000	0.904		100.00	0.000	0.000
					B	0.000	0.904		100.00	0.000	0.000
L48 40.000- 35.000	37.489	1.029	0.008	26.960	C	0.000	0.904	26.960	100.00	0.000	0.062
					A	0.000	26.960		100.00	0.000	0.000
					B	0.000	26.960		100.00	0.000	0.000
L49 35.000- 33.000	33.998	1.008	0.008	10.980	C	0.000	26.960	10.980	100.00	0.000	2.448
					A	0.000	10.980		100.00	0.000	0.000
					B	0.000	10.980		100.00	0.000	0.000
L50 33.000- 32.750	32.875	1.001	0.008	1.380	C	0.000	10.980	1.380	100.00	0.000	1.229
					A	0.000	1.380		100.00	0.000	0.000
					B	0.000	1.380		100.00	0.000	0.000
L51 32.750- 19.000	25.798	0.952	0.007	78.613	C	0.000	1.380	78.613	100.00	0.000	0.154
					A	0.000	78.613		100.00	0.000	0.000
					B	0.000	78.613		100.00	0.000	0.000
L52 19.000- 18.000	18.500	0.887	0.007	5.849	C	0.000	78.613	5.849	100.00	0.000	8.452
					A	0.000	5.849		100.00	0.000	0.000
					B	0.000	5.849		100.00	0.000	0.000
L53 18.000- 13.000	15.490	0.855	0.007	29.665	C	0.000	5.849	29.665	100.00	0.000	0.615
					A	0.000	29.665		100.00	0.000	0.000
					B	0.000	29.665		100.00	0.000	0.000
L54 13.000- 8.000	10.490	0.85	0.007	30.367	C	0.000	29.665	30.367	100.00	0.000	3.073
					A	0.000	30.367		100.00	0.000	0.000
					B	0.000	30.367		100.00	0.000	0.000
L55 8.000- 3.000	5.491	0.85	0.007	31.068	C	0.000	30.367	31.068	100.00	0.000	3.073
					A	0.000	31.068		100.00	0.000	0.000
					B	0.000	31.068		100.00	0.000	0.000
L56 3.000- 0.000	1.497	0.85	0.007	18.978	C	0.000	31.068	18.978	100.00	0.000	3.073
					A	0.000	18.978		100.00	0.000	0.000
					B	0.000	18.978		100.00	0.000	0.000
					C	0.000	18.978		100.00	0.000	1.844

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice

Comb. No.	Description
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	185 - 180	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-8.544	0.550	0.258
			Max. Mx	20	-1.626	27.665	0.074
			Max. My	2	-1.626	0.054	27.794
			Max. Vy	20	-5.806	27.665	0.074
			Max. Vx	2	-5.827	0.054	27.794
			Max. Torque	16			-0.163
L2	180 - 175	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-9.640	0.870	0.086
			Max. Mx	20	-1.964	58.195	0.031
			Max. My	2	-1.963	0.043	58.397
			Max. Vy	20	-6.407	58.195	0.031
			Max. Vx	2	-6.428	0.043	58.397
			Max. Torque	16			-0.187
L3	175 - 170	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-22.311	1.251	1.179
			Max. Mx	20	-5.009	123.822	0.160
			Max. My	2	-5.010	0.035	124.312
			Max. Vy	20	-13.444	123.822	0.160
			Max. Vx	2	-13.465	0.035	124.312
			Max. Torque	18			-0.558
L4	170 - 165	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-23.566	1.656	0.968
			Max. Mx	20	-5.498	192.718	0.108
			Max. My	2	-5.499	0.029	193.272
			Max. Vy	20	-14.116	192.718	0.108
			Max. Vx	2	-14.136	0.029	193.272
			Max. Torque	18			-0.558
L5	165 - 160	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-25.970	2.086	0.740

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L6	160 - 155	Pole	Max. Mx	20	-6.308	269.553	0.054
			Max. My	2	-6.310	0.024	270.168
			Max. Vy	20	-15.721	269.553	0.054
			Max. Vx	14	15.741	0.391	-269.597
			Max. Torque	18			-0.558
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-27.349	2.539	0.495
			Max. Mx	20	-6.905	350.001	-0.004
			Max. My	2	-6.907	0.020	350.672
			Max. Vy	20	-16.460	350.001	-0.004
L7	155 - 153.75	Pole	Max. Vx	14	16.480	0.468	-350.132
			Max. Torque	18			-0.558
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-39.538	4.974	-0.906
			Max. Mx	20	-10.209	380.424	-0.395
			Max. My	14	-10.223	1.033	-380.210
			Max. Vy	20	-24.073	380.424	-0.395
			Max. Vx	14	23.956	1.033	-380.210
			Max. Torque	2			1.275
			Max Tension	1	0.000	0.000	0.000
L8	153.75 - 153.5	Pole	Max. Compression	26	-39.618	5.000	-0.919
			Max. Mx	20	-10.262	386.447	-0.429
			Max. My	14	-10.277	1.068	-386.204
			Max. Vy	20	-24.113	386.447	-0.429
			Max. Vx	14	23.996	1.068	-386.204
			Max. Torque	2			1.280
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.105	5.149	-0.999
			Max. Mx	20	-10.498	422.824	-0.623
			Max. My	14	-10.512	1.269	-422.403
L9	153.5 - 152	Pole	Max. Vy	20	-24.386	422.824	-0.623
			Max. Vx	14	24.270	1.269	-422.403
			Max. Torque	2			1.312
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.200	5.175	-1.013
			Max. Mx	20	-10.563	428.927	-0.657
			Max. My	14	-10.578	1.304	-428.476
			Max. Vy	20	-24.429	428.927	-0.657
			Max. Vx	14	24.312	1.304	-428.476
			Max. Torque	2			1.317
L10	152 - 151.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.391	5.225	-1.040
			Max. Mx	20	-10.670	441.167	-0.721
			Max. My	14	-10.684	1.370	-440.656
			Max. Vy	20	-24.523	441.167	-0.721
			Max. Vx	14	24.406	1.370	-440.656
			Max. Torque	2			1.328
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.477	5.250	-1.054
			Max. Mx	20	-10.717	447.304	-0.754
L11	151.75 - 151.25	Pole	Max. My	14	-10.731	1.404	-446.764
			Max. Vy	20	-24.569	447.304	-0.754
			Max. Vx	14	24.452	1.404	-446.764
			Max. Torque	2			1.334
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.224	5.764	-1.332
			Max. Mx	20	-11.642	572.456	-1.406
			Max. My	14	-11.656	2.077	-571.321
			Max. Vy	20	-25.494	572.456	-1.406
			Max. Vx	14	25.377	2.077	-571.321
L12	151.25 - 151	Pole	Max. Torque	2			1.445
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-44.018	6.297	-1.623
			Max. Mx	20	-12.613	702.260	-2.059
			Max. My	14	-12.626	2.752	-700.529
			Max. Vy	20	-26.432	702.260	-2.059
			Max. Vx	14	26.315	2.752	-700.529
			Max. Torque	2			1.445
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-44.018	6.297	-1.623

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L15	141 - 136	Pole	Max. Torque	2			1.561
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.858	6.847	-1.926
			Max. Mx	20	-13.621	836.792	-2.714
			Max. My	14	-13.635	3.428	-834.463
			Max. Vy	20	-27.385	836.792	-2.714
			Max. Vx	14	27.268	3.428	-834.463
L16	136 - 130	Pole	Max. Torque	2			1.683
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-46.235	6.962	-1.989
			Max. Mx	20	-13.829	864.273	-2.846
			Max. My	14	-13.842	3.564	-861.824
			Max. Vy	20	-27.575	864.273	-2.846
			Max. Vx	14	27.458	3.564	-861.824
L17	130 - 129	Pole	Max. Torque	2			1.708
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.065	7.650	-2.370
			Max. Mx	20	-16.061	1033.546	-3.635
			Max. My	14	-16.074	4.379	-1030.377
			Max. Vy	20	-28.839	1033.546	-3.635
			Max. Vx	14	28.721	4.379	-1030.377
L18	129 - 124	Pole	Max. Torque	2			1.862
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.180	8.241	-2.698
			Max. Mx	20	-17.309	1180.217	-4.294
			Max. My	14	-17.321	5.060	-1176.447
			Max. Vy	20	-29.834	1180.217	-4.294
			Max. Vx	14	29.716	5.060	-1176.447
L19	124 - 121.42	Pole	Max. Torque	2			1.994
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-53.292	8.552	-2.872
			Max. Mx	20	-17.962	1257.939	-4.634
			Max. My	14	-17.973	5.410	-1253.858
			Max. Vy	20	-30.417	1257.939	-4.634
			Max. Vx	14	30.300	5.410	-1253.858
L20	121.42 - 121.17	Pole	Max. Torque	12			-2.090
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-53.419	8.584	-2.890
			Max. Mx	20	-18.055	1265.551	-4.669
			Max. My	14	-18.066	5.446	-1261.440
			Max. Vy	20	-30.472	1265.551	-4.669
			Max. Vx	14	30.353	5.446	-1261.440
L21	121.17 - 121	Pole	Max. Torque	12			-2.101
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-53.505	8.606	-2.901
			Max. Mx	20	-18.110	1270.736	-4.692
			Max. My	14	-18.122	5.470	-1266.604
			Max. Vy	20	-30.515	1270.736	-4.692
			Max. Vx	14	30.394	5.470	-1266.604
L22	121 - 120.75	Pole	Max. Torque	12			-2.108
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-53.618	8.635	-2.918
			Max. Mx	20	-18.178	1278.371	-4.724
			Max. My	14	-18.190	5.503	-1274.209
			Max. Vy	20	-30.569	1278.371	-4.724
			Max. Vx	14	30.450	5.503	-1274.209
L23	120.75 - 115.75	Pole	Max. Torque	12			-2.119
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.898	9.252	-3.264
			Max. Mx	20	-19.549	1434.091	-5.382
			Max. My	14	-19.560	6.182	-1429.326
			Max. Vy	20	-31.721	1434.091	-5.382
			Max. Vx	14	31.604	6.182	-1429.326
L24	115.75 - 115	Pole	Max. Torque	12			-2.337
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-56.245	9.347	-3.316
			Max. Mx	20	-19.763	1457.948	-5.481

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L25	115 - 114	Pole	Max. My	14	-19.774	6.285	-1453.092
			Max. Vy	20	-31.893	1457.948	-5.481
			Max. Vx	14	31.776	6.285	-1453.092
			Max. Torque	12			-2.371
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-56.741	9.473	-3.387
			Max. Mx	20	-20.073	1489.962	-5.613
			Max. My	14	-20.084	6.421	-1484.985
			Max. Vy	20	-32.129	1489.962	-5.613
			Max. Vx	14	32.012	6.421	-1484.985
L26	114 - 113.75	Pole	Max. Torque	12			-2.416
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-56.856	9.506	-3.405
			Max. Mx	20	-20.149	1498.002	-5.647
			Max. My	14	-20.160	6.456	-1492.995
			Max. Vy	20	-32.186	1498.002	-5.647
			Max. Vx	14	32.067	6.456	-1492.995
			Max. Torque	12			-2.427
			Max Tension	1	0.000	0.000	0.000
			L27	113.75 - 108.75	Pole	Max. Compression	26
Max. Mx	20	-21.555				1661.634	-6.308
Max. My	14	-21.566				7.139	-1656.022
Max. Vy	20	-33.269				1661.634	-6.308
Max. Vx	14	33.151				7.139	-1656.022
Max. Torque	12						-2.612
Max Tension	1	0.000				0.000	0.000
Max. Compression	26	-61.554				10.804	-4.136
Max. Mx	20	-23.009				1830.702	-6.972
Max. My	14	-23.019				7.825	-1824.486
L28	108.75 - 103.75	Pole	Max. Vy	20	-34.363	1830.702	-6.972
			Max. Vx	14	34.245	7.825	-1824.486
			Max. Torque	12			-2.787
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-62.888	11.177	-4.347
			Max. Mx	20	-23.821	1926.078	-7.336
			Max. My	14	-23.831	8.202	-1919.529
			Max. Vy	20	-35.004	1926.078	-7.336
			Max. Vx	14	34.886	8.202	-1919.529
			Max. Torque	12			-2.920
L29	103.75 - 95	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-69.125	12.132	-4.886
			Max. Mx	20	-27.882	2177.463	-8.266
			Max. My	14	-27.891	9.165	-2170.064
			Max. Vy	20	-36.817	2177.463	-8.266
			Max. Vx	14	36.699	9.165	-2170.064
			Max. Torque	12			-3.273
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-70.609	12.492	-5.090
			Max. Mx	20	-28.859	2274.033	-8.612
L30	95 - 94	Pole	Max. My	14	-28.868	9.523	-2266.317
			Max. Vy	20	-37.467	2274.033	-8.612
			Max. Vx	14	37.350	9.523	-2266.317
			Max. Torque	12			-3.415
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-70.734	12.528	-5.110
			Max. Mx	20	-28.947	2283.408	-8.646
			Max. My	14	-28.956	9.558	-2275.661
			Max. Vy	20	-37.526	2283.408	-8.646
			Max. Vx	14	37.405	9.558	-2275.661
L31	94 - 91.4	Pole	Max. Torque	12			-3.428
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-70.809	12.551	-5.123
			Max. Mx	20	-28.995	2289.040	-8.667
			Max. My	14	-29.004	9.579	-2281.275
			Max. Vy	20	-37.572	2289.040	-8.667
			Max. Vx	14	37.445	9.579	-2281.275
			Max. Torque	12			-3.436
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-70.809	12.551	-5.123
L32	91.4 - 91.15	Pole	Max. Mx	20	-28.995	2289.040	-8.667
			Max. My	14	-29.004	9.579	-2281.275
			Max. Vy	20	-37.572	2289.040	-8.667
			Max. Vx	14	37.445	9.579	-2281.275
			Max. Torque	12			-3.436
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-70.809	12.551	-5.123
			Max. Mx	20	-28.995	2289.040	-8.667
			Max. My	14	-29.004	9.579	-2281.275
			Max. Vy	20	-37.572	2289.040	-8.667
L33	91.15 - 91	Pole	Max. Vx	14	37.445	9.579	-2281.275
			Max. Torque	12			-3.436
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-70.809	12.551	-5.123
			Max. Mx	20	-28.995	2289.040	-8.667
			Max. My	14	-29.004	9.579	-2281.275
			Max. Vy	20	-37.572	2289.040	-8.667
			Max. Vx	14	37.445	9.579	-2281.275
			Max. Torque	12			-3.436
			Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L34	91 - 86	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-73.524	13.252	-5.521
			Max. Mx	20	-30.739	2479.784	-9.332
			Max. My	14	-30.748	10.268	-2471.411
			Max. Vy	20	-38.739	2479.784	-9.332
			Max. Vx	14	38.621	10.268	-2471.411
			Max. Torque	12			-3.664
L35	86 - 81	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-76.295	13.970	-5.928
			Max. Mx	20	-32.538	2676.402	-10.000
			Max. My	14	-32.546	10.960	-2667.420
			Max. Vy	20	-39.912	2676.402	-10.000
			Max. Vx	14	39.794	10.960	-2667.420
			Max. Torque	12			-3.858
L36	81 - 76	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-79.119	14.698	-6.343
			Max. Mx	20	-34.381	2878.920	-10.667
			Max. My	14	-34.388	11.653	-2869.329
			Max. Vy	20	-41.099	2878.920	-10.667
			Max. Vx	14	40.982	11.653	-2869.329
			Max. Torque	12			-4.056
L37	76 - 71	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.997	15.438	-6.764
			Max. Mx	20	-36.270	3087.404	-11.335
			Max. My	14	-36.276	12.346	-3077.204
			Max. Vy	20	-42.298	3087.404	-11.335
			Max. Vx	14	42.181	12.346	-3077.204
			Max. Torque	12			-4.258
L38	71 - 66	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.928	16.186	-7.191
			Max. Mx	20	-38.202	3301.911	-12.003
			Max. My	14	-38.208	13.040	-3291.102
			Max. Vy	20	-43.508	3301.911	-12.003
			Max. Vx	14	43.391	13.040	-3291.102
			Max. Torque	12			-4.463
L39	66 - 63.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.265	16.526	-7.385
			Max. Mx	20	-39.086	3400.422	-12.303
			Max. My	14	-39.092	13.352	-3389.339
			Max. Vy	20	-44.057	3400.422	-12.303
			Max. Vx	14	43.940	13.352	-3389.339
			Max. Torque	12			-4.556
L40	63.75 - 63.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.415	16.565	-7.407
			Max. Mx	20	-39.195	3411.445	-12.337
			Max. My	14	-39.201	13.387	-3400.331
			Max. Vy	20	-44.115	3411.445	-12.337
			Max. Vx	14	43.995	13.387	-3400.331
			Max. Torque	12			-4.567
L41	63.5 - 58.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-89.422	17.316	-7.837
			Max. Mx	20	-41.186	3635.074	-13.004
			Max. My	14	-41.191	14.080	-3623.351
			Max. Vy	20	-45.338	3635.074	-13.004
			Max. Vx	14	45.221	14.080	-3623.351
			Max. Torque	12			-4.776
L42	58.5 - 51	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-89.727	17.390	-7.880
			Max. Mx	20	-41.395	3657.774	-13.071
			Max. My	14	-41.400	14.150	-3645.990
			Max. Vy	20	-45.455	3657.774	-13.071
			Max. Vx	14	45.337	14.150	-3645.990
			Max. Torque	12			-4.797
L43	51 - 50	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-98.656	18.561	-8.556
			Max. Mx	20	-47.498	4029.898	-14.141
			Max. My	14	-47.503	15.265	-4017.140
			Max. Vy	20	-47.559	4029.898	-14.141
			Max. Vx	14	47.442	15.265	-4017.140

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L44	50 - 45	Pole	Max. Torque	12			-5.138
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-102.038	19.294	-8.979
			Max. Mx	20	-49.857	4270.742	-14.809
			Max. My	14	-49.861	15.961	-4257.374
			Max. Vy	20	-48.781	4270.742	-14.809
L45	45 - 40.42	Pole	Max. Vx	14	48.665	15.961	-4257.374
			Max. Torque	12			-5.350
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-105.177	19.970	-9.370
			Max. Mx	20	-52.056	4496.710	-15.421
			Max. My	14	-52.059	16.599	-4482.785
L46	40.42 - 40.17	Pole	Max. Vy	20	-49.898	4496.710	-15.421
			Max. Vx	14	49.781	16.599	-4482.785
			Max. Torque	12			-5.545
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-105.336	20.008	-9.391
			Max. Mx	20	-52.174	4509.193	-15.455
L47	40.17 - 40	Pole	Max. My	14	-52.177	16.634	-4495.236
			Max. Vy	20	-49.954	4509.193	-15.455
			Max. Vx	14	49.834	16.634	-4495.236
			Max. Torque	12			-5.556
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-105.444	20.034	-9.406
L48	40 - 35	Pole	Max. Mx	20	-52.248	4517.689	-15.478
			Max. My	14	-52.252	16.657	-4503.712
			Max. Vy	20	-50.001	4517.689	-15.478
			Max. Vx	14	49.876	16.657	-4503.712
			Max. Torque	12			-5.563
			Max Tension	1	0.000	0.000	0.000
L49	35 - 33	Pole	Max. Compression	26	-108.896	20.773	-9.833
			Max. Mx	20	-54.669	4770.748	-16.144
			Max. My	14	-54.672	17.352	-4756.163
			Max. Vy	20	-51.230	4770.748	-16.144
			Max. Vx	14	51.113	17.352	-4756.163
			Max. Torque	12			-5.850
L50	33 - 32.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-110.291	21.070	-10.005
			Max. Mx	20	-55.656	4873.708	-16.411
			Max. My	14	-55.659	17.630	-4858.880
			Max. Vy	20	-51.729	4873.708	-16.411
			Max. Vx	14	51.613	17.630	-4858.880
L51	32.75 - 19	Pole	Max. Torque	12			-5.993
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-110.491	21.108	-10.027
			Max. Mx	20	-55.813	4886.649	-16.444
			Max. My	14	-55.816	17.665	-4871.790
			Max. Vy	20	-51.788	4886.649	-16.444
L52	19 - 18	Pole	Max. Vx	14	51.669	17.665	-4871.790
			Max. Torque	12			-6.011
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-114.303	21.816	-10.436
			Max. Mx	20	-58.638	5135.380	-17.078
			Max. My	14	-58.641	18.326	-5119.943
L53	18 - 13	Pole	Max. Vy	20	-52.938	5135.380	-17.078
			Max. Vx	14	52.822	18.326	-5119.943
			Max. Torque	12			-6.338
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-128.922	23.313	-11.300
			Max. Mx	20	-69.637	5677.870	-18.411
L53	18 - 13	Pole	Max. My	14	-69.639	19.720	-5661.218
			Max. Vy	20	-55.534	5677.870	-18.411
			Max. Vx	14	55.419	19.720	-5661.218
			Max. Torque	12			-7.047
L53	18 - 13	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-133.017	24.044	-11.722
			Max. Mx	20	-72.746	5958.300	-19.077
			Max. My	14	-72.747	20.416	-5941.041

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L54	13 - 8	Pole	Max. Vy	20	-56.639	5958.300	-19.077
			Max. Vx	14	56.524	20.416	-5941.041
			Max. Torque	12			-7.376
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-137.132	24.759	-12.135
			Max. Mx	20	-75.903	6244.282	-19.742
			Max. My	14	-75.904	21.111	-6226.417
			Max. Vy	20	-57.755	6244.282	-19.742
L55	8 - 3	Pole	Max. Vx	14	57.640	21.111	-6226.417
			Max. Torque	12			-7.710
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-141.239	25.438	-12.527
			Max. Mx	20	-79.110	6535.889	-20.405
			Max. My	14	-79.111	21.806	-6517.419
			Max. Vy	20	-58.889	6535.889	-20.405
			Max. Vx	14	58.774	21.806	-6517.419
L56	3 - 0	Pole	Max. Torque	12			-8.052
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-143.656	25.794	-12.733
			Max. Mx	20	-81.061	6713.589	-20.803
			Max. My	14	-81.061	22.222	-6694.756
			Max. Vy	20	-59.576	6713.589	-20.803
			Max. Vx	14	59.462	22.222	-6694.756
			Max. Torque	12			-8.261

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	143.656	-0.000	0.000
	Max. H _x	21	60.804	59.562	-0.124
	Max. H _z	3	60.804	-0.124	59.447
	Max. M _x	2	6692.810	-0.124	59.447
	Max. M _z	8	6708.794	-59.562	0.124
	Max. Torsion	24	8.261	29.674	51.421
	Min. Vert	9	60.804	-59.561	0.124
	Min. H _x	8	81.072	-59.562	0.124
	Min. H _z	15	60.804	0.124	-59.447
	Min. M _x	14	-6694.756	0.124	-59.447
	Min. M _z	20	-6713.589	59.562	-0.124
	Min. Torsion	12	-8.261	-29.674	-51.421

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturing Moment, M _x kip-ft	Overturing Moment, M _z kip-ft	Torque kip-ft
Dead Only	67.560	-0.000	0.000	0.797	1.945	0.000
1.2 Dead+1.6 Wind 0 deg - No Ice	81.072	0.124	-59.447	-6692.810	-17.448	-7.432
0.9 Dead+1.6 Wind 0 deg - No Ice	60.804	0.124	-59.447	-6655.310	-17.934	-7.421
1.2 Dead+1.6 Wind 30 deg - No Ice	81.072	29.888	-51.545	-5805.918	-3370.408	-4.611
0.9 Dead+1.6 Wind 30 deg - No Ice	60.804	29.888	-51.545	-5773.407	-3351.984	-4.600
1.2 Dead+1.6 Wind 60 deg - No Ice	81.072	51.644	-29.831	-3363.083	-5819.617	-0.555
0.9 Dead+1.6 Wind 60 deg - No Ice	60.804	51.644	-29.831	-3344.345	-5787.383	-0.547
1.2 Dead+1.6 Wind 90 deg - No Ice	81.072	59.562	-0.124	-18.866	-6708.794	3.650
0.9 Dead+1.6 Wind 90 deg - No Ice	60.804	59.561	-0.124	-18.987	-6671.509	3.653

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
No Ice						
1.2 Dead+1.6 Wind 120 deg - No Ice	81.072	51.520	29.617	3330.697	-5799.839	6.877
0.9 Dead+1.6 Wind 120 deg - No Ice	60.804	51.520	29.617	3311.682	-5767.727	6.875
1.2 Dead+1.6 Wind 150 deg - No Ice	81.072	29.674	51.421	5788.079	-3336.088	8.261
0.9 Dead+1.6 Wind 150 deg - No Ice	60.804	29.674	51.421	5755.198	-3317.876	8.254
1.2 Dead+1.6 Wind 180 deg - No Ice	81.072	-0.124	59.447	6694.756	22.222	7.432
0.9 Dead+1.6 Wind 180 deg - No Ice	60.804	-0.124	59.447	6656.763	21.488	7.421
1.2 Dead+1.6 Wind 210 deg - No Ice	81.072	-29.888	51.545	5807.870	3375.192	4.611
0.9 Dead+1.6 Wind 210 deg - No Ice	60.804	-29.888	51.545	5774.864	3355.544	4.600
1.2 Dead+1.6 Wind 240 deg - No Ice	81.072	-51.644	29.831	3365.030	5824.411	0.555
0.9 Dead+1.6 Wind 240 deg - No Ice	60.804	-51.644	29.831	3345.799	5790.951	0.547
1.2 Dead+1.6 Wind 270 deg - No Ice	81.072	-59.562	0.124	20.803	6713.589	-3.650
0.9 Dead+1.6 Wind 270 deg - No Ice	60.804	-59.562	0.124	20.433	6675.139	-3.653
1.2 Dead+1.6 Wind 300 deg - No Ice	81.072	-51.520	-29.617	-3328.767	5804.625	-6.877
0.9 Dead+1.6 Wind 300 deg - No Ice	60.804	-51.520	-29.617	-3310.241	5771.289	-6.874
1.2 Dead+1.6 Wind 330 deg - No Ice	81.072	-29.674	-51.421	-5786.144	3340.863	-8.261
0.9 Dead+1.6 Wind 330 deg - No Ice	60.804	-29.674	-51.421	-5753.754	3321.431	-8.254
1.2 Dead+1.0 Ice+1.0 Temp	143.656	0.000	-0.000	12.733	25.794	0.001
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	143.656	0.022	-14.270	-1723.138	22.457	-3.622
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	143.656	7.163	-12.369	-1492.364	-846.566	-2.228
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	143.656	12.385	-7.153	-858.266	-1481.766	-0.237
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	143.656	14.289	-0.022	9.251	-1712.943	1.818
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	143.656	12.364	7.116	877.738	-1478.152	3.386
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	143.656	7.126	12.347	1514.483	-840.306	4.047
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	143.656	-0.022	14.270	1748.872	29.687	3.624
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	143.656	-7.163	12.369	1518.099	898.711	2.230
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	143.656	-12.385	7.153	884.000	1533.913	0.239
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	143.656	-14.289	0.022	16.482	1765.090	-1.816
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	143.656	-12.364	-7.116	-852.006	1530.298	-3.384
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	143.656	-7.126	-12.347	-1488.751	892.450	-4.045
Dead+Wind 0 deg - Service	67.560	0.024	-11.731	-1316.087	-1.907	-0.190
Dead+Wind 30 deg - Service	67.560	5.898	-10.172	-1141.701	-661.606	-0.173
Dead+Wind 60 deg - Service	67.560	10.192	-5.887	-661.071	-1143.493	-0.109
Dead+Wind 90 deg - Service	67.560	11.754	-0.024	-3.091	-1318.339	-0.017
Dead+Wind 120 deg - Service	67.560	10.167	5.845	655.934	-1139.592	0.081
Dead+Wind 150 deg - Service	67.560	5.856	10.148	1139.419	-654.849	0.157
Dead+Wind 180 deg - Service	67.560	-0.024	11.731	1317.706	5.894	0.190
Dead+Wind 210 deg -	67.560	-5.898	10.172	1143.320	665.593	0.173

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Service						
Dead+Wind 240 deg - Service	67.560	-10.192	5.887	662.691	1147.481	0.110
Dead+Wind 270 deg - Service	67.560	-11.754	0.024	4.710	1322.326	0.017
Dead+Wind 300 deg - Service	67.560	-10.167	-5.845	-654.315	1143.580	-0.081
Dead+Wind 330 deg - Service	67.560	-5.856	-10.148	-1137.800	658.837	-0.157

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-67.560	0.000	0.000	67.560	-0.000	0.000%
2	0.124	-81.072	-59.448	-0.124	81.072	59.447	0.000%
3	0.124	-60.804	-59.448	-0.124	60.804	59.447	0.000%
4	29.888	-81.072	-51.545	-29.888	81.072	51.545	0.000%
5	29.888	-60.804	-51.545	-29.888	60.804	51.545	0.000%
6	51.644	-81.072	-29.831	-51.644	81.072	29.831	0.000%
7	51.644	-60.804	-29.831	-51.644	60.804	29.831	0.000%
8	59.562	-81.072	-0.124	-59.562	81.072	0.124	0.000%
9	59.562	-60.804	-0.124	-59.561	60.804	0.124	0.001%
10	51.520	-81.072	29.617	-51.520	81.072	-29.617	0.000%
11	51.520	-60.804	29.617	-51.520	60.804	-29.617	0.000%
12	29.674	-81.072	51.421	-29.674	81.072	-51.421	0.000%
13	29.674	-60.804	51.421	-29.674	60.804	-51.421	0.000%
14	-0.124	-81.072	59.448	0.124	81.072	-59.447	0.000%
15	-0.124	-60.804	59.448	0.124	60.804	-59.447	0.000%
16	-29.888	-81.072	51.545	29.888	81.072	-51.545	0.000%
17	-29.888	-60.804	51.545	29.888	60.804	-51.545	0.000%
18	-51.644	-81.072	29.831	51.644	81.072	-29.831	0.000%
19	-51.644	-60.804	29.831	51.644	60.804	-29.831	0.000%
20	-59.562	-81.072	0.124	59.562	81.072	-0.124	0.000%
21	-59.562	-60.804	0.124	59.562	60.804	-0.124	0.000%
22	-51.520	-81.072	-29.617	51.520	81.072	29.617	0.000%
23	-51.520	-60.804	-29.617	51.520	60.804	29.617	0.000%
24	-29.674	-81.072	-51.421	29.674	81.072	51.421	0.000%
25	-29.674	-60.804	-51.421	29.674	60.804	51.421	0.000%
26	0.000	-143.656	0.000	-0.000	143.656	0.000	0.000%
27	0.022	-143.656	-14.270	-0.022	143.656	14.270	0.000%
28	7.163	-143.656	-12.369	-7.163	143.656	12.369	0.000%
29	12.385	-143.656	-7.154	-12.385	143.656	7.153	0.000%
30	14.289	-143.656	-0.022	-14.289	143.656	0.022	0.000%
31	12.364	-143.656	7.116	-12.364	143.656	-7.116	0.000%
32	7.126	-143.656	12.347	-7.126	143.656	-12.347	0.000%
33	-0.022	-143.656	14.270	0.022	143.656	-14.270	0.000%
34	-7.163	-143.656	12.369	7.163	143.656	-12.369	0.000%
35	-12.385	-143.656	7.154	12.385	143.656	-7.153	0.000%
36	-14.289	-143.656	0.022	14.289	143.656	-0.022	0.000%
37	-12.364	-143.656	-7.116	12.364	143.656	7.116	0.000%
38	-7.126	-143.656	-12.347	7.126	143.656	12.347	0.000%
39	0.024	-67.560	-11.732	-0.024	67.560	11.731	0.001%
40	5.898	-67.560	-10.172	-5.898	67.560	10.172	0.000%
41	10.192	-67.560	-5.887	-10.192	67.560	5.887	0.000%
42	11.754	-67.560	-0.024	-11.754	67.560	0.024	0.001%
43	10.167	-67.560	5.845	-10.167	67.560	-5.845	0.000%
44	5.856	-67.560	10.148	-5.856	67.560	-10.148	0.000%
45	-0.024	-67.560	11.732	0.024	67.560	-11.731	0.001%
46	-5.898	-67.560	10.172	5.898	67.560	-10.172	0.000%
47	-10.192	-67.560	5.887	10.192	67.560	-5.887	0.000%
48	-11.754	-67.560	0.024	11.754	67.560	-0.024	0.001%
49	-10.167	-67.560	-5.845	10.167	67.560	5.845	0.000%
50	-5.856	-67.560	-10.148	5.856	67.560	10.148	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.0000001	0.0000001
2	Yes	18	0.0000001	0.00009497
3	Yes	18	0.0000001	0.00007340
4	Yes	21	0.0000001	0.00010240
5	Yes	21	0.0000001	0.00007589
6	Yes	21	0.0000001	0.00010560
7	Yes	21	0.0000001	0.00007830
8	Yes	17	0.0000001	0.00008492
9	Yes	16	0.0000001	0.00014015
10	Yes	21	0.0000001	0.00010673
11	Yes	21	0.0000001	0.00007928
12	Yes	21	0.0000001	0.00009921
13	Yes	21	0.0000001	0.00007356
14	Yes	18	0.0000001	0.00011524
15	Yes	18	0.0000001	0.00008918
16	Yes	21	0.0000001	0.00010792
17	Yes	21	0.0000001	0.00008003
18	Yes	21	0.0000001	0.00010463
19	Yes	21	0.0000001	0.00007751
20	Yes	17	0.0000001	0.00012604
21	Yes	17	0.0000001	0.00009648
22	Yes	21	0.0000001	0.00010016
23	Yes	21	0.0000001	0.00007424
24	Yes	21	0.0000001	0.00010779
25	Yes	21	0.0000001	0.00008007
26	Yes	15	0.0000001	0.00007939
27	Yes	20	0.0000001	0.00009831
28	Yes	20	0.0000001	0.00010995
29	Yes	20	0.0000001	0.00011029
30	Yes	20	0.0000001	0.00009678
31	Yes	20	0.0000001	0.00011190
32	Yes	20	0.0000001	0.00011084
33	Yes	20	0.0000001	0.00009979
34	Yes	20	0.0000001	0.00011636
35	Yes	20	0.0000001	0.00011579
36	Yes	20	0.0000001	0.00010072
37	Yes	20	0.0000001	0.00011339
38	Yes	20	0.0000001	0.00011467
39	Yes	14	0.0000001	0.00010816
40	Yes	16	0.0000001	0.00008462
41	Yes	16	0.0000001	0.00008907
42	Yes	14	0.0000001	0.00010378
43	Yes	16	0.0000001	0.00008718
44	Yes	16	0.0000001	0.00008337
45	Yes	14	0.0000001	0.00010975
46	Yes	16	0.0000001	0.00009100
47	Yes	16	0.0000001	0.00008646
48	Yes	14	0.0000001	0.00010413
49	Yes	16	0.0000001	0.00008506
50	Yes	16	0.0000001	0.00008896

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	185 - 180	18.744	47	1.089	0.001
L2	180 - 175	17.606	47	1.080	0.001
L3	175 - 170	16.484	47	1.062	0.001
L4	170 - 165	15.386	47	1.033	0.001
L5	165 - 160	14.325	47	0.992	0.001
L6	160 - 155	13.311	47	0.943	0.001
L7	155 - 153.75	12.351	47	0.890	0.001
L8	153.75 - 153.5	12.120	47	0.876	0.001
L9	153.5 - 152	12.074	47	0.874	0.001

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L10	152 - 151.75	11.802	47	0.862	0.001
L11	151.75 - 151.25	11.757	47	0.861	0.001
L12	151.25 - 151	11.667	47	0.858	0.001
L13	151 - 146	11.622	47	0.856	0.001
L14	146 - 141	10.745	47	0.817	0.001
L15	141 - 136	9.912	47	0.775	0.000
L16	136 - 130	9.124	47	0.731	0.000
L17	135 - 129	8.972	47	0.722	0.000
L18	129 - 124	8.081	47	0.693	0.000
L19	124 - 121.42	7.376	47	0.653	0.000
L20	121.42 - 121.17	7.028	47	0.633	0.000
L21	121.17 - 121	6.995	47	0.631	0.000
L22	121 - 120.75	6.973	47	0.630	0.000
L23	120.75 - 115.75	6.940	47	0.628	0.000
L24	115.75 - 115	6.301	47	0.591	0.000
L25	115 - 114	6.209	47	0.586	0.000
L26	114 - 113.75	6.087	47	0.580	0.000
L27	113.75 - 108.75	6.057	47	0.578	0.000
L28	108.75 - 103.75	5.472	47	0.540	0.000
L29	103.75 - 95	4.926	47	0.502	0.000
L30	101 - 94	4.643	47	0.481	0.000
L31	94 - 91.4	3.955	47	0.456	0.000
L32	91.4 - 91.15	3.711	47	0.440	0.000
L33	91.15 - 91	3.688	47	0.438	0.000
L34	91 - 86	3.674	47	0.437	0.000
L35	86 - 81	3.233	47	0.404	0.000
L36	81 - 76	2.827	47	0.372	0.000
L37	76 - 71	2.455	47	0.340	0.000
L38	71 - 66	2.115	47	0.309	0.000
L39	66 - 63.75	1.808	47	0.278	0.000
L40	63.75 - 63.5	1.680	47	0.264	0.000
L41	63.5 - 58.5	1.667	47	0.263	0.000
L42	58.5 - 51	1.407	47	0.233	0.000
L43	58 - 50	1.383	47	0.230	0.000
L44	50 - 45	1.016	47	0.206	0.000
L45	45 - 40.42	0.814	47	0.180	0.000
L46	40.42 - 40.17	0.652	47	0.157	0.000
L47	40.17 - 40	0.644	47	0.156	0.000
L48	40 - 35	0.638	47	0.155	0.000
L49	35 - 33	0.489	47	0.130	0.000
L50	33 - 32.75	0.437	47	0.120	0.000
L51	32.75 - 19	0.431	47	0.119	0.000
L52	28 - 18	0.323	47	0.098	0.000
L53	18 - 13	0.140	47	0.075	0.000
L54	13 - 8	0.072	47	0.053	0.000
L55	8 - 3	0.027	47	0.033	0.000
L56	3 - 0	0.004	47	0.012	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
185.000	LNx-6515DS-VTM w/ Mount Pipe	47	18.744	1.089	0.001	19821
175.000	7770.00 w/ Mount Pipe	47	16.484	1.062	0.001	12106
165.000	APXV18-206517S-C	47	14.325	0.992	0.001	6308
155.000	(4) SBNHH-1D65B w/ Mount Pipe	47	12.351	0.890	0.001	5791

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	185 - 180	95.062	18	5.530	0.012
L2	180 - 175	89.301	18	5.486	0.011
L3	175 - 170	83.616	18	5.394	0.011
L4	170 - 165	78.053	18	5.244	0.010
L5	165 - 160	72.680	18	5.034	0.010
L6	160 - 155	67.546	18	4.788	0.010
L7	155 - 153.75	62.682	18	4.517	0.009
L8	153.75 - 153.5	61.510	18	4.447	0.009
L9	153.5 - 152	61.278	18	4.437	0.009
L10	152 - 151.75	59.896	18	4.377	0.009
L11	151.75 - 151.25	59.667	18	4.370	0.009
L12	151.25 - 151	59.211	18	4.356	0.009
L13	151 - 146	58.984	18	4.346	0.009
L14	146 - 141	54.542	18	4.149	0.008
L15	141 - 136	50.315	18	3.934	0.007
L16	136 - 130	46.317	18	3.710	0.007
L17	135 - 129	45.545	18	3.665	0.007
L18	129 - 124	41.025	18	3.520	0.006
L19	124 - 121.42	37.449	18	3.317	0.006
L20	121.42 - 121.17	35.686	18	3.214	0.006
L21	121.17 - 121	35.518	18	3.207	0.006
L22	121 - 120.75	35.404	18	3.202	0.006
L23	120.75 - 115.75	35.237	18	3.192	0.006
L24	115.75 - 115	31.995	18	3.004	0.005
L25	115 - 114	31.526	18	2.976	0.005
L26	114 - 113.75	30.907	18	2.944	0.005
L27	113.75 - 108.75	30.753	18	2.934	0.005
L28	108.75 - 103.75	27.784	18	2.741	0.005
L29	103.75 - 95	25.016	18	2.550	0.004
L30	101 - 94	23.578	18	2.445	0.004
L31	94 - 91.4	20.082	18	2.315	0.004
L32	91.4 - 91.15	18.843	18	2.237	0.004
L33	91.15 - 91	18.727	18	2.227	0.004
L34	91 - 86	18.657	18	2.221	0.004
L35	86 - 81	16.420	18	2.053	0.003
L36	81 - 76	14.357	18	1.889	0.003
L37	76 - 71	12.465	18	1.727	0.003
L38	71 - 66	10.741	18	1.567	0.003
L39	66 - 63.75	9.182	18	1.412	0.002
L40	63.75 - 63.5	8.534	18	1.343	0.002
L41	63.5 - 58.5	8.463	18	1.335	0.002
L42	58.5 - 51	7.145	18	1.184	0.002
L43	58 - 50	7.022	18	1.169	0.002
L44	50 - 45	5.158	18	1.045	0.002
L45	45 - 40.42	4.132	18	0.915	0.001
L46	40.42 - 40.17	3.310	18	0.798	0.001
L47	40.17 - 40	3.269	18	0.791	0.001
L48	40 - 35	3.241	18	0.786	0.001
L49	35 - 33	2.484	18	0.659	0.001
L50	33 - 32.75	2.219	18	0.608	0.001
L51	32.75 - 19	2.187	18	0.603	0.001
L52	28 - 18	1.640	18	0.499	0.001
L53	18 - 13	0.708	18	0.380	0.001
L54	13 - 8	0.367	18	0.272	0.000
L55	8 - 3	0.139	18	0.166	0.000
L56	3 - 0	0.020	18	0.062	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
185.000	LNx-6515DS-VTM w/ Mount Pipe	18	95.062	5.530	0.012	4043
175.000	7770.00 w/ Mount Pipe	18	83.616	5.394	0.011	2451
165.000	APXV18-206517S-C	18	72.680	5.034	0.010	1266
155.000	(4) SBNHH-1D65B w/ Mount Pipe	18	62.682	4.517	0.009	1156

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K
L1	185 - 180 (1)	TP18x18x0.1875	5.000	0.000	0.0	10.754	-1.626
L2	180 - 175 (2)	TP19.6313x18x0.25	5.000	0.000	0.0	15.601	-1.963
L3	175 - 170 (3)	TP21.2625x19.6313x0.25	5.000	0.000	0.0	16.915	-5.010
L4	170 - 165 (4)	TP22.8938x21.2625x0.25	5.000	0.000	0.0	18.228	-5.499
L5	165 - 160 (5)	TP24.525x22.8938x0.25	5.000	0.000	0.0	19.541	-6.310
L6	160 - 155 (6)	TP26.1563x24.525x0.25	5.000	0.000	0.0	20.854	-6.907
L7	155 - 153.75 (7)	TP26.5641x26.1563x0.25	1.250	0.000	0.0	21.182	-10.206
L8	153.75 - 153.5 (8)	TP26.6456x26.5641x0.36	0.250	0.000	0.0	31.200	-10.252
L9	153.5 - 152 (9)	TP27.135x26.6456x0.362	1.500	0.000	0.0	31.250	-10.488
L10	152 - 151.75 (10)	TP27.2166x27.135x0.55	0.250	0.000	0.0	47.226	-10.553
L11	151.75 - 151.25 (11)	TP27.3797x27.2166x0.54	0.500	0.000	0.0	46.986	-10.660
L12	151.25 - 151 (12)	TP27.4613x27.3797x0.42	0.250	0.000	0.0	36.999	-10.707
L13	151 - 146 (13)	TP29.0925x27.4613x0.41	5.000	0.000	0.0	38.094	-11.632
L14	146 - 141 (14)	TP30.7238x29.0925x0.4	5.000	0.000	0.0	39.057	-12.603
L15	141 - 136 (15)	TP32.355x30.7238x0.393	5.000	0.000	0.0	40.522	-13.612
L16	136 - 130 (16)	TP34.3125x32.355x0.393	6.000	0.000	0.0	40.936	-13.820
L17	130 - 129 (17)	TP34.1331x32.1813x0.47	6.000	0.000	0.0	51.480	-16.052
L18	129 - 124 (18)	TP35.7597x34.1331x0.46	5.000	0.000	0.0	52.566	-17.301
L19	124 - 121.42 (19)	TP36.599x35.7597x0.462	2.580	0.000	0.0	53.816	-17.953
L20	121.42 - 121.17 (20)	TP36.6803x36.599x0.637	0.250	0.000	0.0	73.986	-18.046
L21	121.17 - 121 (21)	TP36.7356x36.6803x0.62	0.170	0.000	0.0	72.672	-18.102
L22	121 - 120.75 (22)	TP36.817x36.7356x0.5	0.250	0.000	0.0	58.470	-18.170
L23	120.75 - 115.75 (23)	TP38.4435x36.817x0.487	5.000	0.000	0.0	59.581	-19.541
L24	115.75 - 115 (24)	TP38.6875x38.4435x0.48	0.750	0.000	0.0	59.964	-19.755
L25	115 - 114 (25)	TP39.0125x38.6875x0.55	1.000	0.000	0.0	68.117	-20.065

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K
L26	114 - 113.75 (26)	TP39.0938x39.0125x0.46 88	0.250	0.000	0.0	58.299	-20.141
L27	113.75 - 108.75 (27)	TP40.7188x39.0938x0.46 25	5.000	0.000	0.0	59.951	-21.548
L28	108.75 - 103.75 (28)	TP42.3438x40.7188x0.45 63	5.000	0.000	0.0	61.538	-23.002
L29	103.75 - 95 (29)	TP45.1875x42.3438x0.45	8.750	0.000	0.0	61.999	-23.814
L30	95 - 94 (30)	TP44.8525x42.6125x0.58 75	7.000	0.000	0.0	83.738	-27.875
L31	94 - 91.4 (31)	TP45.6845x44.8525x0.57 5	2.600	0.000	0.0	83.520	-28.853
L32	91.4 - 91.15 (32)	TP45.7645x45.6845x0.44 38	0.250	0.000	0.0	64.757	-28.941
L33	91.15 - 91 (33)	TP45.8125x45.7645x0.44 38	0.150	0.000	0.0	64.826	-28.989
L34	91 - 86 (34)	TP47.4453x45.8125x0.5	5.000	0.000	0.0	75.582	-30.734
L35	86 - 81 (35)	TP49.0781x47.4453x0.5	5.000	0.000	0.0	78.210	-32.532
L36	81 - 76 (36)	TP50.7109x49.0781x0.49 38	5.000	0.000	0.0	79.839	-34.376
L37	76 - 71 (37)	TP52.3438x50.7109x0.48 75	5.000	0.000	0.0	81.401	-36.265
L38	71 - 66 (38)	TP53.9766x52.3438x0.48 75	5.000	0.000	0.0	83.964	-38.198
L39	66 - 63.75 (39)	TP54.7113x53.9766x0.48 75	2.250	0.000	0.0	85.117	-39.082
L40	63.75 - 63.5 (40)	TP54.793x54.7113x0.487 5	0.250	0.000	0.0	85.246	-39.191
L41	63.5 - 58.5 (41)	TP56.4258x54.793x0.481 3	5.000	0.000	0.0	86.693	-41.182
L42	58.5 - 51 (42)	TP58.875x56.4258x0.481 3	7.500	0.000	0.0	86.946	-41.391
L43	51 - 50 (43)	TP58.4384x55.8391x0.55	8.000	0.000	0.0	102.52	-47.495
L44	50 - 45 (44)	TP60.0629x58.4384x0.55	5.000	0.000	0.0	105.39	-49.854
L45	45 - 40.42 (45)	TP61.551x60.0629x0.543 8	4.580	0.000	0.0	106.81	-52.053
L46	40.42 - 40.17 (46)	TP61.6323x61.551x0.475	0.250	0.000	0.0	93.540	-52.171
L47	40.17 - 40 (47)	TP61.6875x61.6323x0.47 5	0.170	0.000	0.0	93.624	-52.246
L48	40 - 35 (48)	TP63.3095x61.6875x0.53 13	5.000	0.000	0.0	107.39	-54.667
L49	35 - 33 (49)	TP63.9583x63.3095x0.52 5	2.000	0.000	0.0	107.23	-55.654
L50	33 - 32.75 (50)	TP64.0394x63.9583x0.6	0.250	0.000	0.0	122.56	-55.812
L51	32.75 - 19 (51)	TP68.5x64.0394x0.6	13.750	0.000	0.0	125.54	-58.637
L52	19 - 18 (52)	TP67.9579x64.7054x0.6	10.000	0.000	0.0	130.13	-69.636
L53	18 - 13 (53)	TP69.5842x67.9579x0.58 75	5.000	0.000	0.0	130.52	-72.745
L54	13 - 8 (54)	TP71.2105x69.5842x0.58 75	5.000	0.000	0.0	133.60	-75.903
L55	8 - 3 (55)	TP72.8367x71.2105x0.58 75	5.000	0.000	0.0	136.67	-79.110
L56	3 - 0 (56)	TP73.8125x72.8367x0.57 5	3.000	0.000	0.0	135.59	-81.061

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	M_{uy} kip-ft
L1	185 - 180 (1)	TP18x18x0.1875	27.794	0.000
L2	180 - 175 (2)	TP19.6313x18x0.25	58.397	0.000
L3	175 - 170 (3)	TP21.2625x19.6313x0.25	124.312	0.000
L4	170 - 165 (4)	TP22.8938x21.2625x0.25	193.272	0.000
L5	165 - 160 (5)	TP24.525x22.8938x0.25	270.168	0.000
L6	160 - 155 (6)	TP26.1563x24.525x0.25	350.672	0.000
L7	155 - 153.75 (7)	TP26.5641x26.1563x0.25	380.765	0.000
L8	153.75 - 153.5 (8)	TP26.6456x26.5641x0.3688	386.824	0.000
L9	153.5 - 152 (9)	TP27.135x26.6456x0.3625	423.322	0.000
L10	152 - 151.75 (10)	TP27.2166x27.135x0.55	429.447	0.000
L11	151.75 - 151.25 (11)	TP27.3797x27.2166x0.5438	441.727	0.000
L12	151.25 - 151 (12)	TP27.4613x27.3797x0.425	447.885	0.000
L13	151 - 146 (13)	TP29.0925x27.4613x0.4125	573.443	0.000
L14	146 - 141 (14)	TP30.7238x29.0925x0.4	703.655	0.000
L15	141 - 136 (15)	TP32.355x30.7238x0.3938	838.592	0.000
L16	136 - 130 (16)	TP34.3125x32.355x0.3938	866.158	0.000
L17	130 - 129 (17)	TP34.1331x32.1813x0.475	1035.925	0.000
L18	129 - 124 (18)	TP35.7597x34.1331x0.4625	1183.008	0.000
L19	124 - 121.42 (19)	TP36.599x35.7597x0.4625	1260.942	0.000
L20	121.42 - 121.17 (20)	TP36.6803x36.599x0.6375	1268.575	0.000
L21	121.17 - 121 (21)	TP36.7356x36.6803x0.625	1273.775	0.000
L22	121 - 120.75 (22)	TP36.817x36.7356x0.5	1281.425	0.000
L23	120.75 - 115.75 (23)	TP38.4435x36.817x0.4875	1437.558	0.000
L24	115.75 - 115 (24)	TP38.6875x38.4435x0.4875	1461.475	0.000
L25	115 - 114 (25)	TP39.0125x38.6875x0.55	1493.575	0.000
L26	114 - 113.75 (26)	TP39.0938x39.0125x0.4688	1501.633	0.000
L27	113.75 - 108.75 (27)	TP40.7188x39.0938x0.4625	1665.675	0.000
L28	108.75 - 103.75 (28)	TP42.3438x40.7188x0.4563	1835.158	0.000
L29	103.75 - 95 (29)	TP45.1875x42.3438x0.45	1930.758	0.000
L30	95 - 94 (30)	TP44.8525x42.6125x0.5875	2182.725	0.000
L31	94 - 91.4 (31)	TP45.6845x44.8525x0.575	2279.508	0.000
L32	91.4 - 91.15 (32)	TP45.7645x45.6845x0.4438	2288.908	0.000
L33	91.15 - 91 (33)	TP45.8125x45.7645x0.4438	2294.550	0.000
L34	91 - 86 (34)	TP47.4453x45.8125x0.5	2485.708	0.000
L35	86 - 81 (35)	TP49.0781x47.4453x0.5	2682.742	0.000
L36	81 - 76 (36)	TP50.7109x49.0781x0.4938	2885.675	0.000
L37	76 - 71 (37)	TP52.3438x50.7109x0.4875	3094.575	0.000
L38	71 - 66 (38)	TP53.9766x52.3438x0.4875	3309.492	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	M_{uy} kip-ft
L39	66 - 63.75 (39)	TP54.7113x53.9766x0.4875	3408.192	0.000
L40	63.75 - 63.5 (40)	TP54.793x54.7113x0.4875	3419.233	0.000
L41	63.5 - 58.5 (41)	TP56.4258x54.793x0.4813	3643.275	0.000
L42	58.5 - 51 (42)	TP58.875x56.4258x0.4813	3666.017	0.000
L43	51 - 50 (43)	TP58.4384x55.8391x0.55	4038.800	0.000
L44	50 - 45 (44)	TP60.0629x58.4384x0.55	4280.058	0.000
L45	45 - 40.42 (45)	TP61.551x60.0629x0.5438	4506.408	0.000
L46	40.42 - 40.17 (46)	TP61.6323x61.551x0.475	4518.908	0.000
L47	40.17 - 40 (47)	TP61.6875x61.6323x0.475	4527.417	0.000
L48	40 - 35 (48)	TP63.3095x61.6875x0.5313	4780.892	0.000
L49	35 - 33 (49)	TP63.9583x63.3095x0.525	4884.017	0.000
L50	33 - 32.75 (50)	TP64.0394x63.9583x0.6	4896.975	0.000
L51	32.75 - 19 (51)	TP68.5x64.0394x0.6	5146.100	0.000
L52	19 - 18 (52)	TP67.9579x64.7054x0.6	5689.408	0.000
L53	18 - 13 (53)	TP69.5842x67.9579x0.5875	5970.250	0.000
L54	13 - 8 (54)	TP71.2105x69.5842x0.5875	6256.641	0.000
L55	8 - 3 (55)	TP72.8367x71.2105x0.5875	6548.658	0.000
L56	3 - 0 (56)	TP73.8125x72.8367x0.575	6726.600	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	Actual T_u kip-ft
L1	185 - 180 (1)	TP18x18x0.1875	5.827	0.121
L2	180 - 175 (2)	TP19.6313x18x0.25	6.428	0.163
L3	175 - 170 (3)	TP21.2625x19.6313x0.25	13.465	0.208
L4	170 - 165 (4)	TP22.8938x21.2625x0.25	14.136	0.256
L5	165 - 160 (5)	TP24.525x22.8938x0.25	15.741	0.307
L6	160 - 155 (6)	TP26.1563x24.525x0.25	16.480	0.362
L7	155 - 153.75 (7)	TP26.5641x26.1563x0.25	24.095	1.058
L8	153.75 - 153.5 (8)	TP26.6456x26.5641x0.3688	24.200	0.557
L9	153.5 - 152 (9)	TP27.135x26.6456x0.3625	24.467	0.557
L10	152 - 151.75 (10)	TP27.2166x27.135x0.55	24.520	0.557
L11	151.75 - 151.25 (11)	TP27.3797x27.2166x0.5438	24.606	0.557
L12	151.25 - 151 (12)	TP27.4613x27.3797x0.425	24.657	0.557
L13	151 - 146 (13)	TP29.0925x27.4613x0.4125	25.575	0.557
L14	146 - 141 (14)	TP30.7238x29.0925x0.4	26.513	0.557
L15	141 - 136 (15)	TP32.355x30.7238x0.3938	27.466	0.557
L16	136 - 130 (16)	TP34.3125x32.355x0.3938	27.656	0.557
L17	130 - 129 (17)	TP34.1331x32.1813x0.475	28.920	0.557
L18	129 - 124 (18)	TP35.7597x34.1331x0.46	29.915	0.556

Section No.	Elevation ft	Size	Actual V_u K	Actual T_u kip-ft
		25		
L19	124 - 121.42 (19)	TP36.599x35.7597x0.462 5	30.499	0.556
L20	121.42 - 121.17 (20)	TP36.6803x36.599x0.637 5	30.564	0.556
L21	121.17 - 121 (21)	TP36.7356x36.6803x0.62 5	30.619	0.556
L22	121 - 120.75 (22)	TP36.817x36.7356x0.5	30.658	0.556
L23	120.75 - 115.75 (23)	TP38.4435x36.817x0.487 5	31.803	0.556
L24	115.75 - 115 (24)	TP38.6875x38.4435x0.48 75	31.975	0.556
L25	115 - 114 (25)	TP39.0125x38.6875x0.55	32.211	0.556
L26	114 - 113.75 (26)	TP39.0938x39.0125x0.46 88	32.273	0.556
L27	113.75 - 108.75 (27)	TP40.7188x39.0938x0.46 25	33.350	0.556
L28	108.75 - 103.75 (28)	TP42.3438x40.7188x0.45 63	34.444	0.556
L29	103.75 - 95 (29)	TP45.1875x42.3438x0.45	35.085	0.556
L30	95 - 94 (30)	TP44.8525x42.6125x0.58 75	36.898	0.556
L31	94 - 91.4 (31)	TP45.6845x44.8525x0.57 5	37.549	0.556
L32	91.4 - 91.15 (32)	TP45.7645x45.6845x0.44 38	37.608	0.555
L33	91.15 - 91 (33)	TP45.8125x45.7645x0.44 38	37.655	0.555
L34	91 - 86 (34)	TP47.4453x45.8125x0.5	38.820	0.555
L35	86 - 81 (35)	TP49.0781x47.4453x0.5	39.993	0.555
L36	81 - 76 (36)	TP50.7109x49.0781x0.49 38	41.180	0.555
L37	76 - 71 (37)	TP52.3438x50.7109x0.48 75	42.379	0.555
L38	71 - 66 (38)	TP53.9766x52.3438x0.48 75	43.589	0.555
L39	66 - 63.75 (39)	TP54.7113x53.9766x0.48 75	44.138	0.555
L40	63.75 - 63.5 (40)	TP54.793x54.7113x0.487 5	44.192	0.555
L41	63.5 - 58.5 (41)	TP56.4258x54.793x0.481 3	45.419	0.555
L42	58.5 - 51 (42)	TP58.875x56.4258x0.481 3	45.534	0.555
L43	51 - 50 (43)	TP58.4384x55.8391x0.55	47.639	0.555
L44	50 - 45 (44)	TP60.0629x58.4384x0.55	48.862	0.555
L45	45 - 40.42 (45)	TP61.551x60.0629x0.543 8	49.978	0.555
L46	40.42 - 40.17 (46)	TP61.6323x61.551x0.475	50.029	0.555
L47	40.17 - 40 (47)	TP61.6875x61.6323x0.47 5	50.069	0.555
L48	40 - 35 (48)	TP63.3095x61.6875x0.53 13	51.310	0.555
L49	35 - 33 (49)	TP63.9583x63.3095x0.52 5	51.809	0.555
L50	33 - 32.75 (50)	TP64.0394x63.9583x0.6	51.863	0.555
L51	32.75 - 19 (51)	TP68.5x64.0394x0.6	53.018	0.555
L52	19 - 18 (52)	TP67.9579x64.7054x0.6	55.614	0.555
L53	18 - 13 (53)	TP69.5842x67.9579x0.58 75	56.719	0.555
L54	13 - 8 (54)	TP71.2105x69.5842x0.58 75	57.834	0.555
L55	8 - 3 (55)	TP72.8367x71.2105x0.58 75	58.968	0.555

Section No.	Elevation ft	Size	Actual V_u K	Actual T_u kip-ft
L56	3 - 0 (56)	TP73.8125x72.8367x0.57 5	59.655	0.555

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	185	5	0	12	18	18	0.1875	0.75	A36M-42
2	180	50	5	12	18.00	34.3125	0.25	1	A36M-42
3	135	20	0	12	32.18	38.6875	0.25	1	A36M-42
4	115	20	6	12	38.69	45.1875	0.3125	1.25	A36M-42
5	101	10	0	12	42.61	45.8125	0.3125	1.25	A36M-42
6	91	40	7	12	45.81	58.875	0.375	1.5	A36M-42
7	58	18	0	12	55.84	61.6875	0.375	1.5	A36M-42
8	40	21	9	12	61.69	68.5	0.4375	1.75	A36M-42
9	28	28	0	12	64.71	73.8125	0.4375	1.75	A36M-42

Reinforcement Configuration

Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	40.42	plate	P-045100; (1) (1.1875)	3	o				o							
2	91.4	plate	P-060100; (1) (1.1875)	3	o				o							
3	121	plate	P-045100; (1) (1.1875)	3		o				o						
4	0	plate	P-085125; (1) (1.1875)	4			o									
5	33	plate	P-060100; (1) (1.1875)	3			o									o
6	63.75	plate	P-060100; (1) (1.1875)	3				o								
7	114	plate	P-040075; (1) (1.1875)	3					o							
8	151.25	plate	P-040075; (1) (1.1875)	3						o						
9											o					
10												o				

Reinforcement Details

B (in)	H (in)	Gross Area (in ²)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L _y (in)	Net Area (in ²)	Bolt Hole Size (in)	Reinforcement Material
1	4.5	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
2	6	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
3	4.5	4.5	0.5	24.000	24.000	20.000	3.250	1.1875	A572-65
4	8.5	10.625	0.625	48.000	51.000	17.000	9.063	1.1875	A572-65
5	6	6	0.5	27.000	27.000	16.000	4.750	1.1875	A572-65
6	6	6	0.5	27.000	27.000	16.000	4.750	1.1875	A572-65
7	4	3	0.375	15.000	18.000	16.000	2.063	1.1875	A572-65
8	4	3	0.375	15.000	15.000	16.000	2.063	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	185 - 180	5	0	12	18.000	18.000	0.1875	A36M-42	1.000
2	180 - 175	5		12	18.000	19.631	0.25	A36M-42	1.000
3	175 - 170	5		12	19.631	21.263	0.25	A36M-42	1.000
4	170 - 165	5		12	21.263	22.894	0.25	A36M-42	1.000
5	165 - 160	5		12	22.894	24.525	0.25	A36M-42	1.000
6	160 - 155	5		12	24.525	26.156	0.25	A36M-42	1.000
7	155 - 153.75	1.25		12	26.156	26.564	0.25	A36M-42	1.000
8	153.75 - 153.5	0.25		12	26.564	26.646	0.36875	A36M-42	0.970
9	153.5 - 152	1.5		12	26.646	27.135	0.3625	A36M-42	0.981
10	152 - 151.75	0.25		12	27.135	27.217	0.55	A36M-42	0.937
11	151.75 - 151.25	0.5		12	27.217	27.380	0.54375	A36M-42	0.944
12	151.25 - 151	0.25		12	27.380	27.461	0.425	A36M-42	0.957
13	151 - 146	5		12	27.461	29.093	0.4125	A36M-42	0.964
14	146 - 141	5		12	29.093	30.724	0.4	A36M-42	0.974
15	141 - 136	5		12	30.724	32.355	0.39375	A36M-42	0.971
16	136 - 135	6	5	12	32.355	34.313	0.39375	A36M-42	0.968
17	135 - 129	6		12	32.181	34.133	0.475	A36M-42	0.968
18	129 - 124	5		12	34.133	35.760	0.4625	A36M-42	0.972
19	124 - 121.42	2.58		12	35.760	36.599	0.4625	A36M-42	0.962
20	121.42 - 121.17	0.25		12	36.599	36.680	0.6375	A36M-42	0.945
21	121.17 - 121	0.17		12	36.680	36.736	0.625	A36M-42	0.962
22	121 - 120.75	0.25		12	36.736	36.817	0.5	A36M-42	0.966
23	120.75 - 115.75	5		12	36.817	38.444	0.4875	A36M-42	0.970
24	115.75 - 115	0.75	0	12	38.444	38.688	0.4875	A36M-42	0.967
25	115 - 114	1		12	38.688	39.013	0.55	A36M-42	0.969
26	114 - 113.75	0.25		12	39.013	39.094	0.46875	A36M-42	0.979
27	113.75 - 108.75	5		12	39.094	40.719	0.4625	A36M-42	0.979
28	108.75 - 103.75	5		12	40.719	42.344	0.45625	A36M-42	0.980
29	103.75 - 101	8.75	6	12	42.344	45.188	0.45	A36M-42	0.987
30	101 - 94	7		12	42.613	44.853	0.5875	A36M-42	0.966
31	94 - 91.4	2.6		12	44.853	45.685	0.575	A36M-42	0.978
32	91.4 - 91.15	0.25		12	45.685	45.765	0.44375	A36M-42	0.985
33	91.15 - 91	0.15	0	12	45.765	45.813	0.44375	A36M-42	0.984
34	91 - 86	5		12	45.813	47.445	0.5	A36M-42	0.990
35	86 - 81	5		12	47.445	49.078	0.5	A36M-42	0.982
36	81 - 76	5		12	49.078	50.711	0.49375	A36M-42	0.987
37	76 - 71	5		12	50.711	52.344	0.4875	A36M-42	0.992
38	71 - 66	5		12	52.344	53.977	0.4875	A36M-42	0.986
39	66 - 63.75	2.25		12	53.977	54.711	0.4875	A36M-42	0.983
40	63.75 - 63.5	0.25		12	54.711	54.793	0.4875	A36M-42	0.982
41	63.5 - 58.5	5		12	54.793	56.426	0.48125	A36M-42	0.989
42	58.5 - 58	7.5	7	12	56.426	58.875	0.48125	A36M-42	0.988
43	58 - 50	8		12	55.839	58.438	0.55	A36M-42	0.992
44	50 - 45	5		12	58.438	60.063	0.55	A36M-42	0.983
45	45 - 40.42	4.58		12	60.063	61.551	0.54375	A36M-42	0.987
46	40.42 - 40.17	0.25		12	61.551	61.632	0.475	A36M-42	0.983
47	40.17 - 40	0.17	0	12	61.632	61.688	0.475	A36M-42	0.983
48	40 - 35	5		12	61.688	63.310	0.53125	A36M-42	0.993
49	35 - 33	2		12	63.310	63.958	0.525	A36M-42	1.003
50	33 - 32.75	0.25		12	63.958	64.039	0.6	A36M-42	1.078
51	32.75 - 28	13.75	9	12	64.039	68.500	0.6	A36M-42	1.070
52	28 - 18	10		12	64.705	67.958	0.6	A36M-42	1.058
53	18 - 13	5		12	67.958	69.584	0.5875	A36M-42	1.072
54	13 - 8	5		12	69.584	71.210	0.5875	A36M-42	1.065
55	8 - 3	5		12	71.210	72.837	0.5875	A36M-42	1.058
56	3 - 0	3		12	72.837	73.813	0.575	A36M-42	1.076

TNX Section Forces

Increment (ft):		TNX Output		
	5	P _u (K)	M _{ux} (kip-ft)	V _u (K)
	Section Height (ft)			
1	185 - 180	1.63	27.79	5.83
2	180 - 175	1.96	58.40	6.43
3	175 - 170	5.01	124.31	13.46
4	170 - 165	5.50	193.27	14.14
5	165 - 160	6.31	270.17	15.74
6	160 - 155	10.64	350.78	23.60
7	155 - 153.75	10.20	380.78	24.15
8	153.75 - 153.5	10.25	386.82	24.20
9	153.5 - 152	10.49	423.32	24.47
10	152 - 151.75	10.55	429.45	24.52
11	151.75 - 151.25	10.66	441.73	24.61
12	151.25 - 151	10.71	447.88	24.66
13	151 - 146	11.63	573.44	25.57
14	146 - 141	12.60	703.65	26.51
15	141 - 136	13.61	838.60	27.47
16	136 - 135	13.82	866.16	27.66
17	135 - 129	16.05	1035.92	28.92
18	129 - 124	17.30	1183.00	29.92
19	124 - 121.42	17.95	1260.94	30.50
20	121.42 - 121.17	18.05	1268.57	30.56
21	121.17 - 121	18.10	1273.77	30.62
22	121 - 120.75	18.17	1281.43	30.66
23	120.75 - 115.75	19.54	1437.56	31.80
24	115.75 - 115	19.75	1461.48	31.98
25	115 - 114	20.06	1493.57	32.21
26	114 - 113.75	20.14	1501.63	32.27
27	113.75 - 108.75	21.55	1665.68	33.35
28	108.75 - 103.75	23.00	1835.16	34.44
29	103.75 - 101	23.81	1930.76	35.09
30	101 - 94	27.88	2182.73	36.90
31	94 - 91.4	28.85	2279.51	37.55
32	91.4 - 91.15	28.94	2288.91	37.61
33	91.15 - 91	28.99	2294.55	37.66
34	91 - 86	30.73	2485.71	38.82
35	86 - 81	32.53	2682.74	39.99
36	81 - 76	34.38	2885.67	41.18
37	76 - 71	36.26	3094.57	42.38
38	71 - 66	38.20	3309.49	43.59
39	66 - 63.75	39.08	3408.19	44.14
40	63.75 - 63.5	39.19	3419.23	44.19
41	63.5 - 58.5	41.18	3643.28	45.42
42	58.5 - 58	41.39	3666.02	45.53
43	58 - 50	47.49	4038.80	47.64
44	50 - 45	49.85	4280.06	48.86
45	45 - 40.42	52.05	4506.41	49.98
46	40.42 - 40.17	52.17	4518.91	50.03
47	40.17 - 40	52.25	4527.42	50.07
48	40 - 35	54.67	4780.89	51.31
49	35 - 33	55.65	4884.02	51.81
50	33 - 32.75	55.81	4896.98	51.86
51	32.75 - 28	58.64	5146.10	53.02
52	28 - 18	69.64	5689.41	55.61
53	18 - 13	72.74	5970.25	56.72
54	13 - 8	75.90	6256.64	57.83
55	8 - 3	79.11	6548.66	58.97
56	3 - 0	81.06	6726.60	59.66

Analysis Results

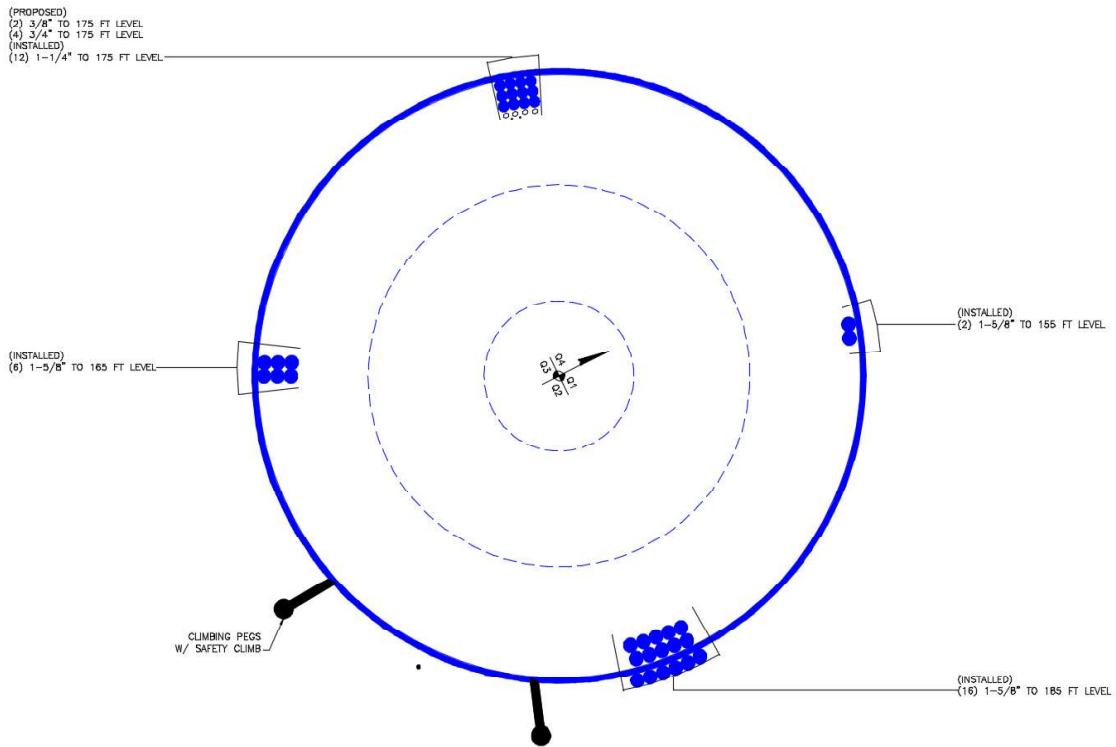
Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
185 - 180	Pole	TP18x18x0.1875	Pole	15.3%	Pass
180 - 175	Pole	TP19.631x18x0.25	Pole	20.2%	Pass
175 - 170	Pole	TP21.263x19.631x0.25	Pole	36.8%	Pass
170 - 165	Pole	TP22.894x21.263x0.25	Pole	49.0%	Pass
165 - 160	Pole	TP24.525x22.894x0.25	Pole	59.5%	Pass
160 - 155	Pole	TP26.156x24.525x0.25	Pole	68.1%	Pass
155 - 153.75	Pole	TP26.564x26.156x0.25	Pole	71.6%	Pass
153.75 - 153.5	Pole + Reinf.	TP26.646x26.564x0.3688	Reinf. 8 Tension Rupture	57.0%	Pass
153.5 - 152	Pole + Reinf.	TP27.135x26.646x0.3625	Reinf. 8 Tension Rupture	60.5%	Pass
152 - 151.75	Pole + Reinf.	TP27.217x27.135x0.55	Reinf. 8 Tension Rupture	41.6%	Pass
151.75 - 151.25	Pole + Reinf.	TP27.38x27.217x0.5438	Reinf. 8 Tension Rupture	42.4%	Pass
151.25 - 151	Pole + Reinf.	TP27.461x27.38x0.425	Reinf. 3 Tension Rupture	51.9%	Pass
151 - 146	Pole + Reinf.	TP29.093x27.461x0.4125	Reinf. 3 Tension Rupture	60.4%	Pass
146 - 141	Pole + Reinf.	TP30.724x29.093x0.4	Reinf. 3 Tension Rupture	67.7%	Pass
141 - 136	Pole + Reinf.	TP32.355x30.724x0.3938	Reinf. 3 Tension Rupture	74.0%	Pass
136 - 135	Pole + Reinf.	TP34.313x32.355x0.3938	Reinf. 3 Tension Rupture	75.2%	Pass
135 - 129	Pole + Reinf.	TP34.133x32.181x0.475	Reinf. 7 Tension Rupture	71.1%	Pass
129 - 124	Pole + Reinf.	TP35.76x34.133x0.4625	Reinf. 7 Tension Rupture	75.6%	Pass
124 - 121.42	Pole + Reinf.	TP36.599x35.76x0.4625	Reinf. 7 Tension Rupture	77.7%	Pass
121.42 - 121.17	Pole + Reinf.	TP36.68x36.599x0.6375	Reinf. 7 Tension Rupture	57.3%	Pass
121.17 - 121	Pole + Reinf.	TP36.736x36.68x0.625	Reinf. 7 Tension Rupture	57.4%	Pass
121 - 120.75	Pole + Reinf.	TP36.817x36.736x0.5	Reinf. 7 Tension Rupture	71.7%	Pass
120.75 - 115.75	Pole + Reinf.	TP38.444x36.817x0.4875	Pole	76.5%	Pass
115.75 - 115	Pole + Reinf.	TP38.688x38.444x0.4875	Pole	77.3%	Pass
115 - 114	Pole + Reinf.	TP39.013x38.688x0.55	Reinf. 7 Tension Rupture	67.8%	Pass
114 - 113.75	Pole + Reinf.	TP39.094x39.013x0.4688	Pole	73.2%	Pass
113.75 - 108.75	Pole + Reinf.	TP40.719x39.094x0.4625	Pole	77.1%	Pass
108.75 - 103.75	Pole + Reinf.	TP42.344x40.719x0.4563	Pole	80.8%	Pass
103.75 - 101	Pole + Reinf.	TP45.188x42.344x0.45	Pole	82.8%	Pass
101 - 94	Pole + Reinf.	TP44.853x42.613x0.5875	Pole	69.0%	Pass
94 - 91.4	Pole + Reinf.	TP45.685x44.853x0.575	Pole	70.7%	Pass
91.4 - 91.15	Pole + Reinf.	TP45.765x45.685x0.4438	Pole	91.5%	Pass
91.15 - 91	Pole + Reinf.	TP45.813x45.765x0.4438	Pole	91.6%	Pass
91 - 86	Pole + Reinf.	TP47.445x45.813x0.5	Pole	77.0%	Pass
86 - 81	Pole + Reinf.	TP49.078x47.445x0.5	Pole	79.4%	Pass
81 - 76	Pole + Reinf.	TP50.711x49.078x0.4938	Pole	81.7%	Pass
76 - 71	Pole + Reinf.	TP52.344x50.711x0.4875	Pole	83.9%	Pass
71 - 66	Pole + Reinf.	TP53.977x52.344x0.4875	Pole	86.2%	Pass
66 - 63.75	Pole + Reinf.	TP54.711x53.977x0.4875	Pole	87.2%	Pass
63.75 - 63.5	Pole + Reinf.	TP54.793x54.711x0.4875	Pole	87.3%	Pass
63.5 - 58.5	Pole + Reinf.	TP56.426x54.793x0.4813	Pole	89.6%	Pass
58.5 - 58	Pole + Reinf.	TP58.875x56.426x0.4813	Pole	89.8%	Pass
58 - 50	Pole + Reinf.	TP58.438x55.839x0.55	Pole	82.1%	Pass
50 - 45	Pole + Reinf.	TP60.063x58.438x0.55	Pole	84.3%	Pass
45 - 40.42	Pole + Reinf.	TP61.551x60.063x0.5438	Pole	86.4%	Pass
40.42 - 40.17	Pole + Reinf.	TP61.632x61.551x0.475	Pole	99.4%	Pass
40.17 - 40	Pole + Reinf.	TP61.688x61.632x0.475	Pole	99.5%	Pass
40 - 35	Pole + Reinf.	TP63.31x61.688x0.5313	Pole	83.0%	Pass
35 - 33	Pole + Reinf.	TP63.958x63.31x0.525	Pole	83.6%	Pass
33 - 32.75	Pole + Reinf.	TP64.039x63.958x0.6	Pole	75.5%	Pass
32.75 - 28	Pole + Reinf.	TP68.5x64.039x0.6	Pole	77.0%	Pass
28 - 18	Pole + Reinf.	TP67.958x64.705x0.6	Pole	81.5%	Pass
18 - 13	Pole + Reinf.	TP69.584x67.958x0.5875	Pole	83.1%	Pass
13 - 8	Pole + Reinf.	TP71.21x69.584x0.5875	Pole	84.7%	Pass
8 - 3	Pole + Reinf.	TP72.837x71.21x0.5875	Pole	86.3%	Pass
3 - 0	Pole + Reinf.	TP73.813x72.837x0.575	Pole	87.2%	Pass
				Summary	
			Pole	99.5%	Pass
			Reinforcement	82.1%	Pass
			Overall	99.5%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity								
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8
185 - 180	436	n/a	436	10.74	n/a	10.74	15.3%								
180 - 175	749	n/a	749	15.58	n/a	15.58	20.2%								
175 - 170	955	n/a	955	16.89	n/a	16.89	36.8%								
170 - 165	1195	n/a	1195	18.20	n/a	18.20	49.0%								
165 - 160	1472	n/a	1472	19.51	n/a	19.51	59.5%								
160 - 155	1789	n/a	1789	20.82	n/a	20.82	68.1%								
155 - 153.75	1875	n/a	1875	21.15	n/a	21.15	71.6%								
153.75 - 153.5	1892	851	2743	21.22	9.00	30.22	48.2%								57.0%
153.5 - 152	1999	881	2880	21.61	9.00	30.61	51.3%								60.5%
152 - 151.75	2018	2242	4259	21.68	22.50	44.18	35.3%			40.0%					41.6%
151.75 - 151.25	2054	2267	4322	21.81	22.50	44.31	36.1%			40.7%					42.4%
151.25 - 151	2073	1379	3452	21.87	13.50	35.37	46.0%			51.9%					
151 - 146	2469	1540	4009	23.18	13.50	36.68	54.6%			60.4%					
146 - 141	2912	1710	4622	24.50	13.50	38.00	62.5%			67.7%					
141 - 136	3405	1889	5294	25.81	13.50	39.31	69.8%			74.0%					
136 - 135	3510	1926	5436	26.07	13.50	39.57	71.2%			75.2%					
135 - 129	4002	3470	7472	27.24	22.50	49.74	65.9%			68.2%				71.1%	
129 - 124	4607	3798	8405	28.54	22.50	51.04	71.5%			72.5%				75.6%	
124 - 121.42	4941	3973	8914	29.22	22.50	51.72	74.4%			74.5%				77.7%	
121.42 - 121.17	4975	7213	12187	29.28	40.50	69.78	54.9%		50.2%	54.9%				57.3%	
121.17 - 121	4997	7234	12231	29.33	40.50	69.83	55.0%		50.3%	55.0%				57.4%	
121 - 120.75	5031	4839	9870	29.39	27.00	56.39	68.8%		62.8%					71.7%	
120.75 - 115.75	5732	5263	10995	30.70	27.00	57.70	76.5%		66.0%					75.4%	
115.75 - 115	5843	5328	11171	30.90	27.00	57.90	77.3%		66.4%					75.9%	
115 - 114	7454	5415	12869	38.89	27.00	65.89	60.8%		59.4%					67.8%	
114 - 113.75	7501	3645	11146	38.97	18.00	56.97	73.2%		69.0%						
113.75 - 108.75	8484	3944	12428	40.60	18.00	58.60	77.1%		71.5%						
108.75 - 103.75	9550	4255	13804	42.23	18.00	60.23	80.8%		73.7%						
103.75 - 101	10172	4431	14603	43.13	18.00	61.13	82.8%		74.8%						
101 - 94	11364	9517	20880	44.75	36.00	80.75	69.0%		61.3%				61.3%		
94 - 91.4	12013	9863	21876	45.59	36.00	81.59	70.7%		62.3%				62.3%		
91.4 - 91.15	12076	4948	17025	45.67	18.00	63.67	91.5%						80.5%		
91.15 - 91	12115	4958	17073	45.72	18.00	63.72	91.6%						80.6%		
91 - 86	16095	5308	21404	56.76	18.00	74.76	77.0%						72.0%		
86 - 81	17829	5670	23499	58.72	18.00	76.72	79.4%						73.2%		
81 - 76	19683	6044	25727	60.69	18.00	78.69	81.7%						74.3%		
76 - 71	21661	6430	28091	62.66	18.00	80.66	83.9%						75.3%		
71 - 66	23768	6828	30596	64.63	18.00	82.63	86.2%						76.2%		
66 - 63.75	24758	7011	31770	65.52	18.00	83.52	87.2%						76.6%		
63.75 - 63.5	24870	7032	31902	65.62	18.00	83.62	87.3%					76.7%			
63.5 - 58.5	27177	7448	34624	67.58	18.00	85.58	89.6%					77.5%			
58.5 - 58	27415	7490	34905	67.78	18.00	85.78	89.8%					77.6%			
58 - 50	30211	13951	44161	70.01	31.50	101.51	82.1%	76.4%				69.8%			
50 - 45	32818	14721	47539	71.97	31.50	103.47	84.3%	77.3%				70.6%			
45 - 40.42	35334	15446	50780	73.76	31.50	105.26	86.4%	78.1%				71.3%			
40.42 - 40.17	35475	8854	44329	73.86	18.00	91.86	99.4%					82.1%			
40.17 - 40	35571	8870	44441	73.93	18.00	91.93	99.5%					82.1%			
40 - 35	44748	9333	54081	88.44	18.00	106.44	83.0%					73.0%			
35 - 33	46148	9522	55669	89.36	18.00	107.36	83.6%					73.2%			
33 - 32.75	46436	17211	63646	89.47	42.50	131.97	75.5%				57.3%				
32.75 - 28	49889	18029	67918	91.64	42.50	134.14	77.0%				57.8%				
28 - 18	55547	19329	74876	94.98	42.50	137.48	81.5%				60.2%				
18 - 13	59654	20245	79898	97.27	42.50	139.77	83.1%				60.7%				
13 - 8	63958	21182	85140	99.56	42.50	142.06	84.7%				61.1%				
8 - 3	68464	22140	90605	101.85	42.50	144.35	86.3%				61.6%				
3 - 0	71267	22726	93993	103.22	42.50	145.72	87.2%				61.8%				

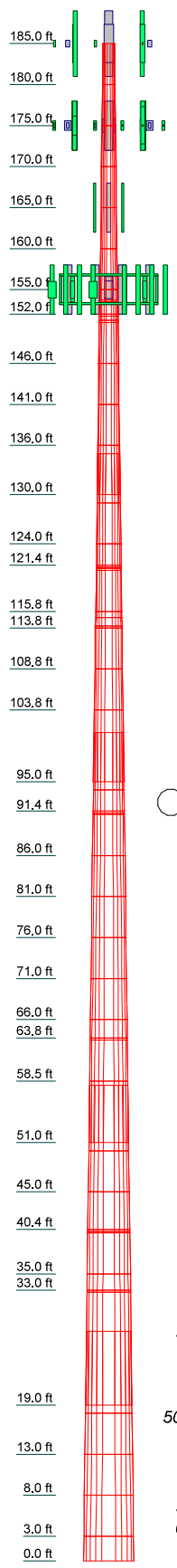
Note: Section capacity checked in 5 degree increments.

APPENDIX B
BASE LEVEL DRAWING



APPENDIX C
ADDITIONAL CALCULATIONS

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1								
2								
3								
4								
5								
6								
13								
14								
15								
16								
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56								



DESIGNED APPURTENANCE LOADING

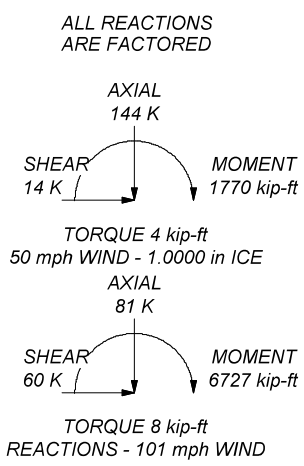
TYPE	ELEVATION	TYPE	ELEVATION
LNX-6515DS-VTM w/ Mount Pipe	185	RRUS-11	175
LNX-6515DS-VTM w/ Mount Pipe	185	RRUS-11	175
LNX-6515DS-VTM w/ Mount Pipe	185	782 10254	175
APX16DWW-16DWVS-C w/ Mount Pipe	185	782 10254	175
APX16DWW-16DWVS-C w/ Mount Pipe	185	RRUS 32 B66	175
APX16DWW-16DWVS-C w/ Mount Pipe	185	RRUS 32 B66	175
APX16DWW-16DWVS-C w/ Mount Pipe	185	RRUS 32 B66	175
RR90-17-02DP w/ Mount Pipe	185	RRUS 32	175
RR90-17-02DP w/ Mount Pipe	185	RRUS 32	175
RR90-17-02DP w/ Mount Pipe	185	RRUS 32	175
ATBT-BOTTOM-24V	185	(2) DBC0061F1V51-2	175
ATBT-BOTTOM-24V	185	(2) DBC0061F1V51-2	175
ATBT-BOTTOM-24V	185	(2) DBC0061F1V51-2	175
(3) ETW190VS12UB	185	RRUS 32 B2	175
ETW190VS12UB	185	RRUS 32 B2	175
(2) ETW190VS12UB	185	RRUS 32 B2	175
Sector Mount [SM 802-3]	185	Sector Mount [SM 802-3]	175
7770.00 w/ Mount Pipe	175	APXV18-206517S-C	165
7770.00 w/ Mount Pipe	175	APXV18-206517S-C	165
7770.00 w/ Mount Pipe	175	APXV18-206517S-C	165
OPA-65R-LCUU-H6 w/ Mount Pipe	175	Pipe Mount [PM 601-3]	165
OPA-65R-LCUU-H6 w/ Mount Pipe	175	(4) SBNHH-1D65B w/ Mount Pipe	155
OPA-65R-LCUU-H6 w/ Mount Pipe	175	(4) SBNHH-1D65B w/ Mount Pipe	155
OPA-65R-LCUU-H6 w/ Mount Pipe	175	(4) SBNHH-1D65B w/ Mount Pipe	155
QS66512-2 w/ Mount Pipe	175	RRH2x60-700	155
QS66512-2 w/ Mount Pipe	175	RRH2x60-700	155
QS66512-2 w/ Mount Pipe	175	RRH2x60-700	155
(2) LGP21401	175	RRH2X60-PCS	155
(2) LGP21401	175	RRH2X60-PCS	155
(2) LGP21401	175	RRH2X60-PCS	155
(2) 7020.00	175	AWS4 (B66) 4x45 RRH	155
(2) 7020.00	175	AWS4 (B66) 4x45 RRH	155
(2) 7020.00	175	AWS4 (B66) 4x45 RRH	155
(2) DCG-48-60-18-8F	175	AWS4 (B66) 4x45 RRH	155
RRUS-11	175	(2) DB-T1-6Z-8AB-0Z	155
		Platform Mount [LP 403-1]	155

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36M-42	42 ksi	60 ksi			

TOWER DESIGN NOTES

1. Tower is located in Middlesex County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 101 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.000 ft



Paul J. Ford and Company 250 East Broad St., Suite 600 Columbus, OH 43215 Phone: (614) 221-6679 FAX:	Job: 185' Monopole / Middletown, CT Project: 37517-1854 / BU 825983		
	Client: CCI Code: TIA-222-G Path:	Drawn by: Jaime Acuna Date: 11/02/17	App'd: Scale: NTS Dwg No. E-1

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: 825983
 Site Name: Middletown_1
 App #:

Manufacturer: Other

Bolt Data

Qty:	24	Bolt Fu:	58
Diam:	2	Bolt Fy:	36
Bolt Material:	Other		
Strength (Fu):	58	ksi	
Yield (Fy):	36	ksi	
Circle:	68	in	

Plate Data

Plate Outer Diam:	72.9375	in
Plate Inner Diam:	62	in (Hole @ Ctr)
Thick:	2	in
Grade:	36	ksi
Effective Width:	9.77	in

Stiffener Data (Welding at Both Sides)

Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.75	in
Fillet V. Weld:	0.375	in
Width:	5	in
Height:	18	in
Thick:	1	in
Notch:	1	in
Grade:	50	ksi
Weld str.:	70	ksi

Pole Data

Pole OuterDiam:	73.8125	in
Thick:	0.4375	in
Pole Inner Diam:	72.9375	in
Grade:	42	ksi
# of Sides:	12	"0" IF Round
Fu	60	ksi

Reactions

Moment:	2391.3	ft-kips
Axial:	61.4	kips
Shear:	45.5	kips
Exterior Flange Run, T+q:	0	kips

Bolt Threads:

X-Excluded
$\phi V_n = \phi(0.55 \cdot A_b \cdot F_u)$
$\phi = 0.75, \phi \cdot V_n$ (kips):
75.16

Elevation: 0 feet

Reactions adjusted to account for micropiles.

Interior Flange Bolt Results

Maximum Bolt Tension, Tu: 67.8 Kips, Ext. Tu=Interior Tu
 Adjusted $\phi \cdot T_n$ (due to $V_u = V_u / Q_t$), I: 108.7 Kips
 Bolt Stress Ratio: 62.3% **Pass**

Interior Flange Plate Results

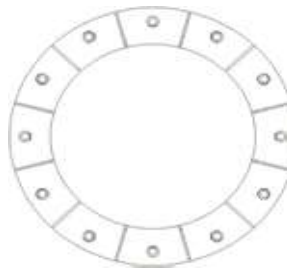
Controlling Bolt Axial Force: 72.9 Kips, Ext. Cu=Interior Cu
 Plate Stress: 14.7 ksi
 Allowable Plate Stress, $\phi \cdot F_y$: 32.4 ksi
 Plate Stress Ratio: 45.5% **Pass**

Stiffener Results

Horizontal Weld : 24.7% **Pass**
 Vertical Weld: 12.5% **Pass**
 Plate Flex+Shear, $f_b / F_b + (f_v / F_v)^2$: 2.5% **Pass**
 Plate Tension+Shear, $f_t / F_t + (f_v / F_v)^2$: 18.3% **Pass**
 Plate Comp. (AISC Bracket): 16.3% **Pass**

Pole Results

Pole Punching Shear Check: 4.5% **Pass**



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

v4.4 - Effective 7-12-13

Asymmetric Anchor Rod Analysis

Moment = 6727 k-ft
 Axial = 81.0 kips
 Shear = 60.0 kips
 Anchor Qty = 30

TIA Ref. = G
 ASIF = N/A
 Max Ratio = 100.0%

Location = Base Plate
 η = 0.55 for BP, Rev. G Sect. 4.9.9
 Threads = N/A for FP, Rev. G

**** For Post Installed Anchors: Check anchors for embedment, epoxy/grout bond, and capacity based on proof load. ****

Item	Nominal Anchor Dia, in	Spec	Fy, ksi	Fu, ksi	Location, degrees	Anchor Circle, in	Area Override, in ²	Area, in ²	Max Net Compression, kips	Max Net Tension, kips	Load for Capacity Calc, kips	Capacity Override, kips	Capacity, kips	Capacity Ratio
1	2.000	A36	36	58	0.0	68.00	0.00	3.14	68.26	63.15	71.71	0.00	116.00	61.8%
2	2.000	A36	36	58	15.0	68.00	0.00	3.14	69.90	64.79	73.35	0.00	116.00	63.2%
3	2.000	A36	36	58	30.0	68.00	0.00	3.14	71.50	66.38	74.94	0.00	116.00	64.6%
4	2.000	A36	36	58	45.0	68.00	0.00	3.14	72.60	67.48	76.04	0.00	116.00	65.6%
5	2.000	A36	36	58	60.0	68.00	0.00	3.14	72.89	67.78	76.33	0.00	116.00	65.8%
6	2.000	A36	36	58	75.0	68.00	0.00	3.14	72.25	67.13	75.69	0.00	116.00	65.3%
7	2.000	A36	36	58	90.0	68.00	0.00	3.14	70.75	65.64	74.20	0.00	116.00	64.0%
8	2.000	A36	36	58	105.0	68.00	0.00	3.14	68.70	63.58	72.14	0.00	116.00	62.2%
9	2.000	A36	36	58	120.0	68.00	0.00	3.14	66.54	61.42	69.98	0.00	116.00	60.3%
10	2.000	A36	36	58	135.0	68.00	0.00	3.14	64.80	59.68	68.24	0.00	116.00	58.8%
11	2.000	A36	36	58	150.0	68.00	0.00	3.14	63.94	58.83	67.39	0.00	116.00	58.1%
12	2.000	A36	36	58	165.0	68.00	0.00	3.14	64.21	59.09	67.65	0.00	116.00	58.3%
13	2.000	A36	36	58	180.0	68.00	0.00	3.14	65.48	60.37	68.92	0.00	116.00	59.4%
14	2.000	A36	36	58	195.0	68.00	0.00	3.14	67.38	62.27	70.82	0.00	116.00	61.1%
15	2.000	A36	36	58	210.0	68.00	0.00	3.14	69.39	64.27	72.83	0.00	116.00	62.8%
16	2.000	A36	36	58	225.0	68.00	0.00	3.14	71.01	65.90	74.46	0.00	116.00	64.2%
17	2.000	A36	36	58	240.0	68.00	0.00	3.14	71.90	66.79	75.35	0.00	116.00	65.0%
18	2.000	A36	36	58	255.0	68.00	0.00	3.14	71.91	66.80	75.35	0.00	116.00	65.0%
19	2.000	A36	36	58	270.0	68.00	0.00	3.14	71.10	65.99	74.54	0.00	116.00	64.3%
20	2.000	A36	36	58	285.0	68.00	0.00	3.14	69.74	64.62	73.18	0.00	116.00	63.1%
21	2.000	A36	36	58	300.0	68.00	0.00	3.14	68.23	63.12	71.68	0.00	116.00	61.8%
22	2.000	A36	36	58	315.0	68.00	0.00	3.14	67.06	61.94	70.50	0.00	116.00	60.8%
23	2.000	A36	36	58	330.0	68.00	0.00	3.14	66.60	61.49	70.05	0.00	116.00	60.4%
24	2.000	A36	36	58	345.0	68.00	0.00	3.14	67.04	61.93	70.49	0.00	116.00	60.8%
25	0.000	Other			45.0	169.81	4.02	4.02	225.54	218.99	225.54	285.10	285.10	79.1%
26	0.000	Other			165.0	169.81	4.02	4.02	202.98	196.44	202.98	285.10	285.10	71.2%
27	0.000	Other			285.0	169.81	4.02	4.02	216.91	210.37	216.91	285.10	285.10	76.1%
28	0.000	Other			105.0	169.81	4.02	4.02	215.58	209.04	215.58	285.10	285.10	75.6%
29	0.000	Other			210.0	169.81	4.02	4.02	218.83	212.29	218.83	285.10	285.10	76.8%
30	0.000	Other			335.0	169.81	4.02	4.02	205.45	198.90	205.45	285.10	285.10	72.1%

Pier and Pad Foundation



BU # : 825983
Site Name: MIDDLETOWN_1
App. Number: 414662 Rev 0

TIA-222 Revision: G
Tower Type: Monopole

Block Foundation?:

Superstructure Analysis Reactions		
Compression, P_{comp} :	61.4	kips
Base Shear, V_{u_comp} :	45.5	kips
Moment, M_u :	2391.3	ft-kips
Tower Height, H :	185	ft
BP Dist. Above Fdn, bp_{dist} :	6	in

Foundation Analysis Checks				
	Capacity	Demand	Rating	Check
<i>Lateral (Sliding) (kips)</i>	398.17	45.50	11.4%	Pass
<i>Bearing Pressure (ksf)</i>	5.82	2.31	39.7%	Pass
<i>Overtuning (kip*ft)</i>	8361.06	2903.18	34.7%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	8770.36	2743.93	31.3%	Pass
<i>Pier Compression (kip)</i>	28118.83	123.03	0.4%	Pass
<i>Pad Flexure (kip*ft)</i>	3818.20	939.39	24.6%	Pass
<i>Pad Shear - 1-way (kips)</i>	896.51	148.31	16.5%	Pass
<i>Pad Shear - 2-way (ksi)</i>	0.19	0.03	16.0%	Pass

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, $dpier$:	7.5	ft
Ext. Above Grade, E :	0.25	ft
Pier Rebar Size, S_c :	8	
Pier Rebar Quantity, mc :	65	
Pier Tie/Spiral Size, S_t :	4	
Pier Tie/Spiral Quantity, mt :	8	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Soil Rating:	39.7%
Structural Rating:	31.3%

Pad Properties		
Depth, D :	10.5	ft
Pad Width, W :	25.0	ft
Pad Thickness, T :	3.0	ft
Pad Rebar Size, S_p :	8	
Pad Rebar Quantity, mp :	35	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60000	psi
Concrete Compressive Strength, F'_c :	4000	psi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	110	pcf
Ultimate Net Bearing, Q_{net} :	6.600	ksf
Cohesion, C_u :	1.000	ksf
Friction Angle, ϕ :	0	degrees
SPT Blow Count, N_{blows} :	13	
Base Friction, μ :	0.3	
Neglected Depth, N :	3.8	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	16	ft

<--Toggle between Gross and Net

Exhibit 4



Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT1044

Cromwell East
90 Industrial Park Road
Middletown, CT 06457

November 27, 2017

Centerline Communications Project Number: 950006-084

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	6.14 %



November 27, 2017

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

Emissions Analysis for Site: **CT1044 – Cromwell East**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility located at **90 Industrial Park Road, Middletown, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is $1000 \mu\text{W}/\text{cm}^2$. 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 **90 Industrial Park Road, Middletown, 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
UMTS	1900 MHz (PCS)	2	30
LTE	850 MHz	2	60
LTE	2100 MHz (AWS)	2	60
LTE	2300 MHz (WCS)	2	60
LTE	700 MHz	2	60
LTE	1900 MHz (PCS)	2	60

Table 1: Channel Data Table



The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 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	Powerwave 7770	175
A	2	Quintel QS66512-2	175
A	3	CCI OPA-65R-LCUU-H6	175
B	1	Powerwave 7770	175
B	2	Quintel QS66512-2	175
B	3	CCI OPA-65R-LCUU-H6	175
C	1	Powerwave 7770	175
C	2	Quintel QS66512-2	175
C	3	CCI OPA-65R-LCUU-H6	175

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	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	0.35
Antenna A2	Quintel QS66512-2	850 MHz / 2100 MHz (AWS) / 2300 MHz (WCS)	11.35 / 14.35 / 14.85	6	360	8,570.65	1.24
Antenna A3	CCI OPA-65R-LCUU-H6	700 MHz / 1900 MHz (PCS)	11.65 / 14.85	4	240	5,420.52	0.93
Sector A Composite MPE%							2.52
Antenna B1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	0.35
Antenna B2	Quintel QS66512-2	850 MHz / 2100 MHz (AWS) / 2300 MHz (WCS)	11.35 / 14.35 / 14.85	6	360	8,570.65	1.24
Antenna B3	CCI OPA-65R-LCUU-H6	700 MHz / 1900 MHz (PCS)	11.65 / 14.85	4	240	5,420.52	0.93
Sector B Composite MPE%							2.52
Antenna C1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	0.35
Antenna C2	Quintel QS66512-2	850 MHz / 2100 MHz (AWS) / 2300 MHz (WCS)	11.35 / 14.35 / 14.85	6	360	8,570.65	1.24
Antenna C3	CCI OPA-65R-LCUU-H6	700 MHz / 1900 MHz (PCS)	11.65 / 14.85	4	240	5,420.52	0.93
Sector C Composite MPE%							2.52

Table 3: AT&T Emissions Levels



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

Site Composite MPE%	
Carrier	MPE%
AT&T – Max Sector Value	2.52 %
T-Mobile	0.54 %
MetroPCS	0.48 %
Verizon Wireless	2.60 %
Site Total MPE %:	6.14 %

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	2.52 %
AT&T Sector B Total:	2.52 %
AT&T Sector C Total:	2.52 %
Site Total:	6.14 %

Table 5: Site MPE Summary



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

AT&T _ Frequency Band / Technology (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	414.12	175	1.04	850 MHz	567	0.18%
AT&T 1900 MHz (PCS) UMTS	2	656.33	175	1.65	1900 MHz (PCS)	1000	0.17%
AT&T 850 MHz LTE	2	818.75	175	2.06	850 MHz	567	0.36%
AT&T 2100 MHz (AWS) LTE	2	1,633.62	175	4.11	2100 MHz (AWS)	1000	0.41%
AT&T 2300 MHz (WCS) LTE	2	1,832.95	175	4.61	2300 MHz (WCS)	1000	0.46%
AT&T 700 MHz LTE	2	877.31	175	2.21	700 MHz	467	0.47%
AT&T 1900 MHz (PCS) LTE	2	1,832.95	175	4.61	1900 MHz (PCS)	1000	0.46%
						Total:	2.52%

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:	2.52 %
Sector B:	2.52 %
Sector C:	2.52 %
AT&T Maximum Total (per sector):	2.52 %
Site Total:	6.14 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **6.14 %** 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.

A handwritten signature in black ink, appearing to read 'Scott Heffernan', is positioned above the printed name.

Scott Heffernan
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