Transcend Wireless

10 Industrial Ave,
Suite 3
Mahwah NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

July 31, 2019

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

RE: Notice of Exempt Modification
15 Oakdale Avenue, Winsted, CT 06098 (AKA 108 Oakdale Ave)
Latitude: 41.92169000000
Longitude: -73.04950000
T-Mobile Site#: CTNH403A – L600

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 166-foot level of the existing 180-foot monopole at 15 Oakdale Avenue, Winsted, CT. The 180-foot monopole is owned and operated by American Tower Corporation. The property is owned by William P. Stow Revocable Trust c/o American Tower. T-Mobile now intends to add three (3) new 600/700 MHz antennas. The new antennas will be installed at the same 166-foot level of the tower. Mount modifications are also required as detailed in the enclosed mount analysis.

Planned Modifications:
Tower:

Remove
(3) TMA
(6) 1-5/8" coax

Remove and Replace:
N/A

Install New:
(3) APXVAARR24_43-U-NA20 600/700 MHz
(3) Ericsson Radio 4449 B12, B71
(3) 1-5/8" hybrid

Existing to Remain:
(6) AIR 21 1900/2100 MHZ
(6) 1-5/8" coax
(1) 1-1/4" Hybrid

Ground:
Install New: Equipment inside existing 6131 cabinet

This facility was originally approved by the Siting Council in Docket No. 138 dated November 26, 1990. The proposed modification complies with the original approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Mayor -Althea Candy Perez, Elected Official, and Craig Sanden, Planning and Zoning Chairman for the Town of Winchester, as well as the owner.

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

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

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

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

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

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

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

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

Sincerely,

Kyle Richers
Transcend Wireless
Cell: 908-447-4716
Email: krichers@transcendwireless.com

Attachments
cc: Althea Candy Perez – Town of Winchester Mayor
Craig Sanden– Town of Winchester Planning and Zoning Chairman
American Tower – Tower Owner
William P. Stow Revocable Trust c/o American Tower – Property Owner

UPS Internet Shipping: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the 'Find Locations' Quick link at ups.com.
   Schedule a same day or future day Pickup to have a UPS driver pickup all of your Internet Shipping packages.
   Hand the package to any UPS driver in your area.

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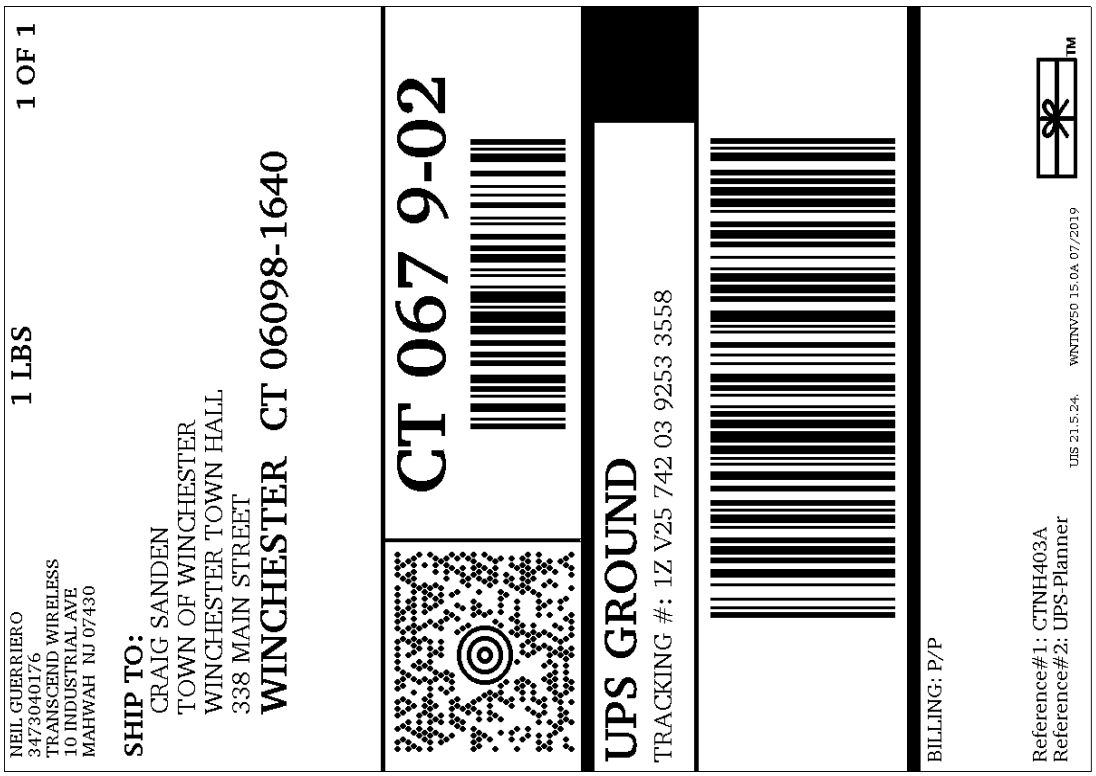
115 FRANKLIN TPKE
MAHWAH ,NJ 07430

UPS Access Point™
THE UPS STORE
120 E MAIN ST
RAMSEY ,NJ 07446

UPS Access Point™
POSTNET NY137
74 LAFAYETTE AVE
SUFFERN ,NY 10901

FOLD HERE



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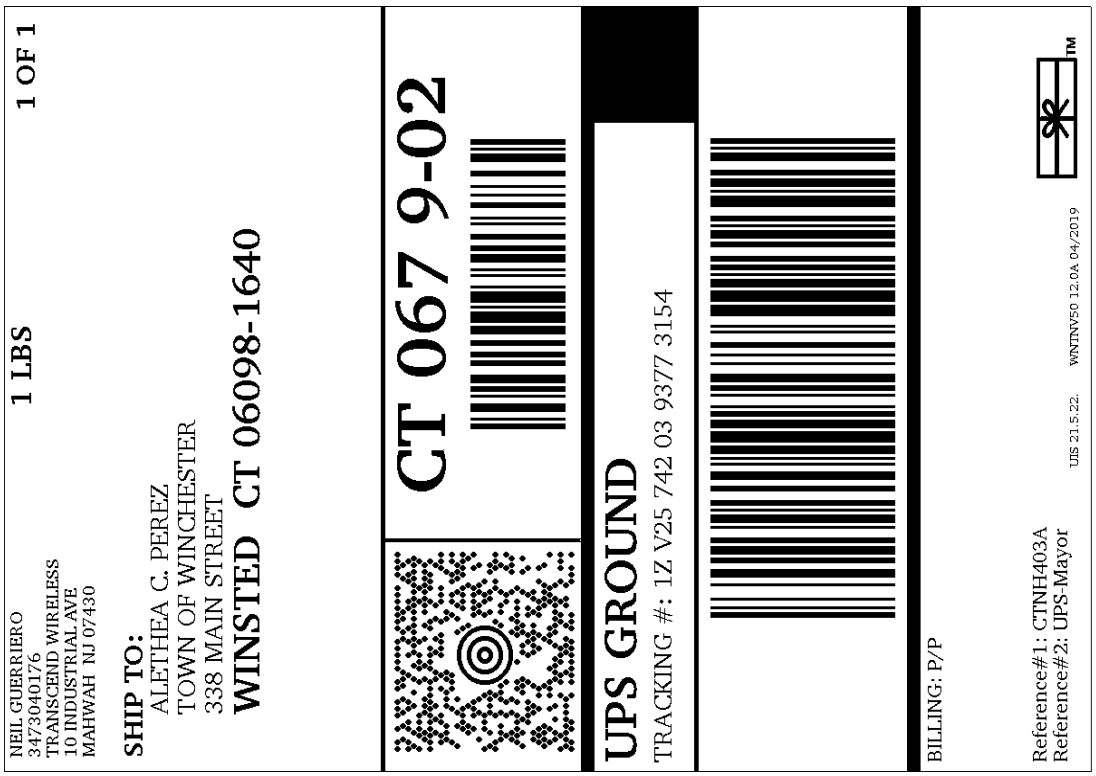

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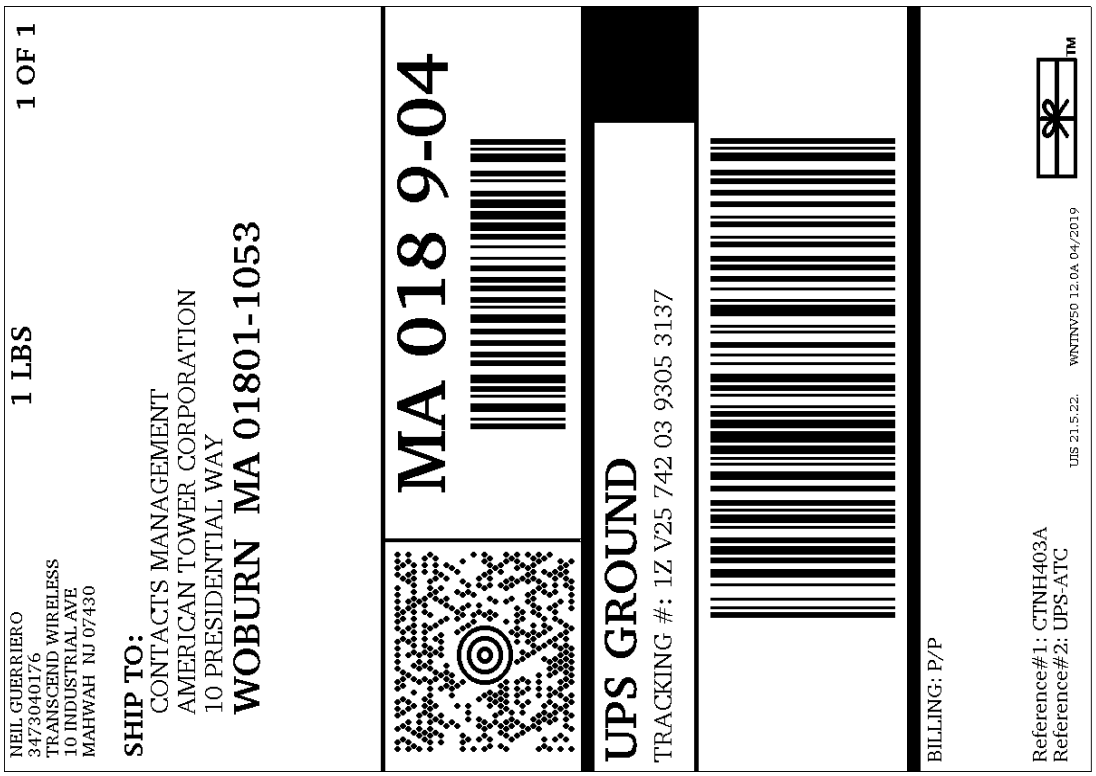


108 OAKDALE AVE

Location	108 OAKDALE AVE	**Mblu**	028/ 151/ 002-1/ /
Acct#	103466	**Owner**	STOW WILLIAM P REVOCABLE TRUST
Assessment	$94,850	**Appraisal**	$135,500
PID	4991	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$25,900	$109,600	$135,500

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$18,130	$76,720	$94,850

Owner of Record

Owner	STOW WILLIAM P REVOCABLE TRUST	**Sale Price**	$0
Co-Owner	C/O AMERICAN TOWER #302506	**Certificate**	
		Book & Page	0411/0779
		Sale Date	03/12/2013
		Instrument	29

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
STOW WILLIAM P REVOCABLE TRUST	$0		0411/0779	29	03/12/2013
STOW WILLIAM P & RICHARD D	$0		00260/0171		11/16/1995

Building Information

Building 1 : Section 1

Year Built: 2004
Living Area: 360
Replacement Cost
Less Depreciation: $13,500

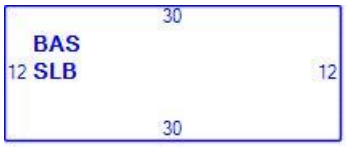
Building Attributes	
Field	**Description**

STYLE	Warehse Prefab
MODEL	Ind/Comm
Stories:	1
Occupancy	1.00
Exterior Wall 1	Pre-cast Concr
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Metal/Tin
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete Slab
Interior Floor 2	
Heating Fuel	Gas/Oil
Heating Type	Hot Air-no Duc
AC Type	None
Struct Class	
Bldg Use	Tele Tower
Usrfld 218	
Usrfld 219	
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	LIGHT
Wall Height	12.00

Building Photo

(http://images.vgsi.com/photos/WinchesterCTPhotos//\01\00\49

Building Layout



(ParcelSketch.ashx?

pid=4991&bid=5553)

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	360	360
SLB	Slab	360	0
		720	360

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	4310
Description	Tele Tower
Zone	RR
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	3.39
Depth	
Assessed Value	$76,720
Appraised Value	$109,600

Outbuildings

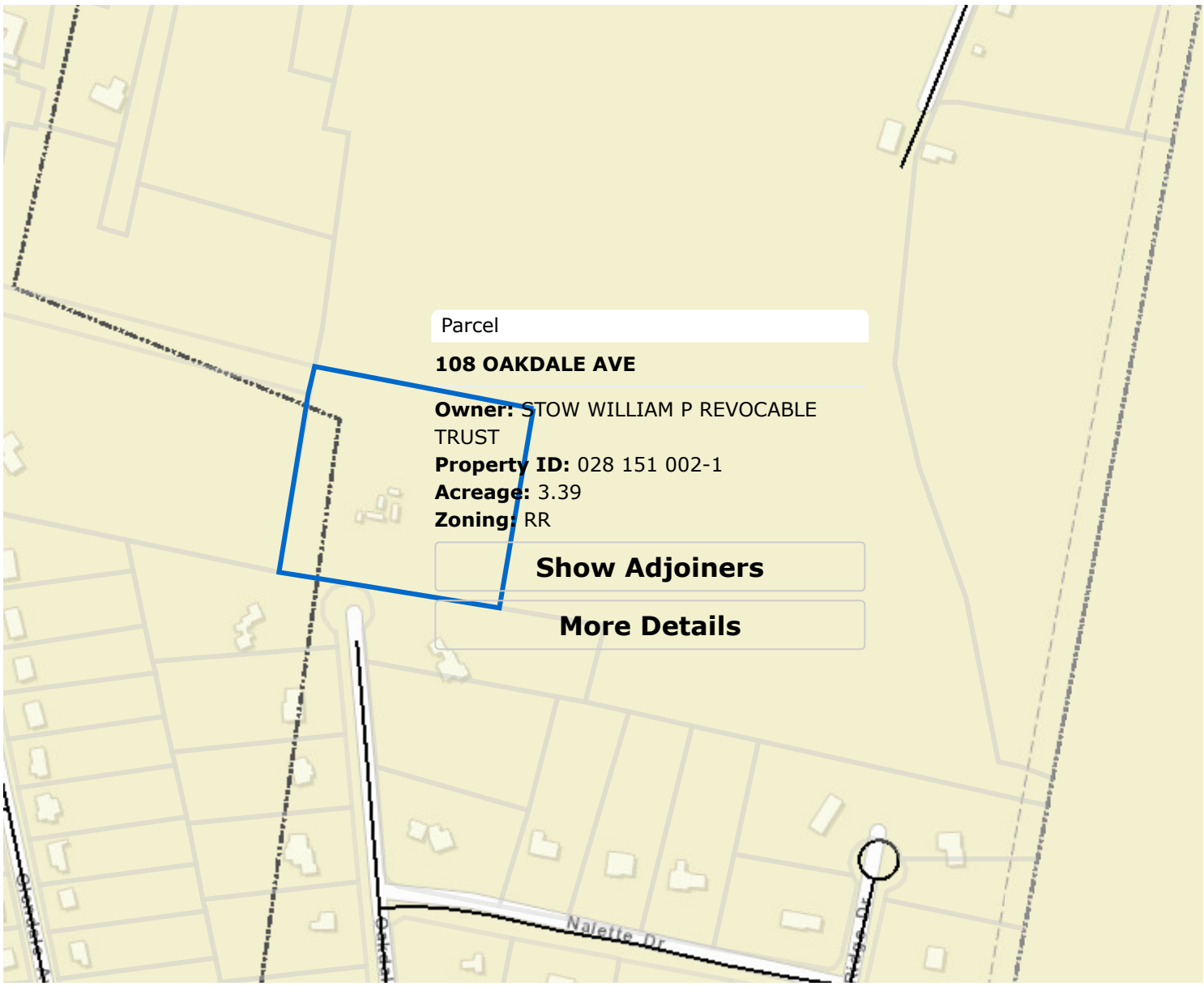
Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
SHD8	Shd Com Mas			252.00 S.F.	$6,200	1
SHD8	Shd Com Mas			252.00 S.F.	$6,200	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$25,900	$109,600	$135,500
2016	$19,900	$109,600	$129,500
2012	$13,700	$109,600	$123,300

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$18,130	$76,720	$94,850
2016	$13,930	$76,720	$90,650
2012	$9,590	$76,720	$86,310

(http[illegible]w.townofwinchester.org/)



Town of Winchester

X,Y -73.042873, 41.922538

DOCKET NO. 138 - An application of SNET Cellular, Inc., for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of cellular facilities in the Towns of Plymouth, Harwinton, Winchester, and New Milford, Connecticut.

Connecticut

Siting

Council

November 26, 1990

DECISION AND ORDER

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council finds that the effects associated with the construction, operation, and maintenance of four cellular telecommunications towers and associated equipment at the proposed Plymouth, Harwinton, New Milford, and alternate Winchester sites including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife need not be in conflict either alone or cumulatively with other effects, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need (Certificate), as provided by section 16-50k of the Connecticut General Statutes (CGS), be issued to SNET Cellular Inc., for the construction, operation, and maintenance of a cellular telecommunications tower, associated equipment, and building at the proposed Plymouth, Harwinton, New Milford, and alternate Winchester sites.

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

1. The facilities shall be constructed in accordance with the State of Connecticut Basic Building Code.

2. The self-supporting monopole towers shall be no taller than necessary to provide the proposed communication service and in no event shall the Plymouth, Harwinton, and Winchester tower structures exceed 192-feet or the New Milford tower structure exceed 162 feet above ground level (AGL), including antennas and appurtenances.

3. The Certificate Holder shall prepare a Development and Management (D&M) Plan, for approval by the Council, for these sites in compliance with sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies (RSA). The D&M Plan shall include detailed plans for the towers, tower pedestals, tower foundations, soil boring reports, antenna structures, equipment buildings, access roads, security fences, erosion and sedimentation control plans

consistent with the Connecticut Guidelines of Soil Erosion and Sedimentation Control, and landscaping plans where necessary to screen the equipment building from adjacent land uses.

At the proposed Harwinton site, the accessway shall be designed to avoid a direct sight-line of the entire tower structure from the adjacent Fowler residence. To further mitigate the visibility of the facility, the tower's site shall be moved as close to the electric transmission line right-of-way as safety clearances allow.

At the alternate Winchester site, the Certificate Holder shall design the accessway to avoid a direct sight-line from the northern end of Oakdale Avenue. Prior to construction, the Certificate Holder shall secure all necessary permits and approvals to construct a crossing of the Tennessee Gas Company's underground gas transmission line. Prior to any necessary blasting activities, the Certificate Holder shall secure all necessary permits and shall conduct such blasting in accordance with State regulations. Copies of all permits and approvals shall be forwarded to the Council immediately upon receipt.

4. The Certificate Holder shall comply with any existing and future radio frequency (RF) standard promulgated by State or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facilities granted in this Decision and Order shall be brought into compliance with such standards.

5. The Certificate Holder shall provide the Council a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power densities above the levels originally calculated and provided in the application.

6. The Certificate Holder shall permit public or private entities to share space on the proposed towers for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

7. If the facilities do not initially provide, or permanently cease to provide cellular service following completion of construction, this Decision and Order shall be void, and the tower(s) and all associated equipment shall be dismantled and removed or reapplication for any new use shall be made to the Council before any such new use is made.

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

Pursuant to Section 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The New Milford Times, The Bristol Press, The Registar-Citizen, and The Danbury News-Times.

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

The parties to this proceeding are:

(PARTIES)	(ITS REPRESENTATIVES)
SNET Cellular, Inc.	Peter J. Tyrrell Senior Attorney SNET Cellular, Inc. 227 Church Street Room 1021 New Haven, CT 06506
(INTERVENORS)	
Pikeville Cellular Partnership	Charles Wolf, Esq. Robinson & Cole One Commercial Plaza Hartford, CT 06103-3597

TEF:bw

4886E-1-3

CERTIFICATION

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case in Docket No. 138 or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut the 26 day of November, 1990.

Council Members	Vote Cast
Gloria Dibble Pond Chairperson	YES
Commissioner Peter Boucher Designee: Mark Marcus	YES
Commissioner Leslie Carothers Designee: Brian Emerick	YES
Harry E. Covey	YES
Mortimer A. Gelston	YES
Daniel P. Lynch, Jr.	YES
Paulann H. Sheets	YES
William H. Smith	ABSENT
Colin C. Tait	YES

4879E-2

STATE OF CONNECTICUT)
:
ss. New Britain, Connecticut
COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the Decision and Order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

Joel M. Rinebold
Executive Director
Connecticut Siting Council

I certify that a copy of the Findings of Fact, Opinion, and Decision and Order in Docket No. 138 have been forwarded by Certified First Class Return Receipt Requested mail on December 3, 1990, to all parties of record as listed on the attached service list, dated August 22, 1990.

ATTEST:

Stanley J. Modzelesky
Executive Assistant
Connecticut Siting Council

4879E-1

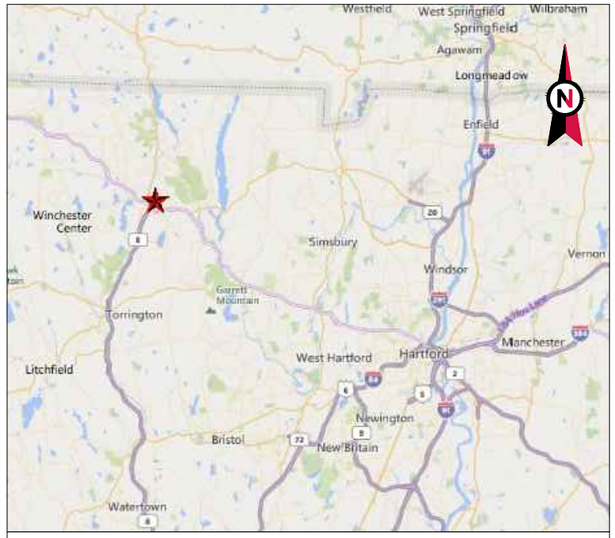
Date: August 22, 1990

Docket No. 138

LIST OF PARTIES AND INTERVENORS - SERVICE LIST

Status Granted	Status Holder (name, address & phone number)	Representative (name, address & phone number)
Party [X] Intervenor [ ]	SNET Cellular, Inc.	Peter J. Tyrrell Senior Attorney SNET Cellular, Inc. 227 Church Street Room 1021 New Haven, CT 06506
Party [ ] Intervenor [X]	Pikeville Cellular Partnership	Charles Wolf, Esq. Robinson & Cole One Commercial Plaza Hartford, CT 06103-3597
Party [ ] Intervenor [ ]		

4467E



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: WINCHESTER CT 3
ATC SITE NUMBER: 302506
T-MOBILE SITE ID: CTNH403A
SITE ADDRESS: 15 OAKDALE AVENUE
WINSTED, CT 06098

T-MOBILE L600 ANTENNA AMENDMENT
67D02C CONFIGURATION

LOCATION MAP

COMPLIANCE CODE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. INTERNATIONAL BUILDING CODE (IBC)
2. NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

UTILITY COMPANIES

POWER COMPANY: EVER SOURCE
PHONE: (877) 659-6326

TELEPHONE COMPANY: FRONTIER COMMUNICATIONS
PHONE: (800) 376-6843

811 Know what's below. Call before you dig.

PROJECT SUMMARY

SITE ADDRESS:

15 OAKDALE AVENUE
WINSTED, CT 06098
COUNTY: LITCHFIELD

1A CERTIFICATE SUMMARY:

LATITUDE: 41° 55' 17.72" N

LONGITUDE: 73° 02' 59.76" W

GROUND ELEVATION: 1073' AMSL

TOWER HEIGHT: 186.0' AGL

HIGHEST APPURTENANCE: 195.5' AGL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

ENGINEER:

ATC TOWER SERVICES, LLC
3500 REGENCY PKWY STE 100
CARY, NC 27518

PROPERTY OWNER:

WILLIAM P STOW
6674 HIBISCUS ST
BUNNELL, FL, 32110

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:

REMOVE (3) TTAs, AND (6) 1-5/8" COAX CABLES

INSTALL (3) NEW PANELS, (3) RRUs, (3) MOUNT PIPES, (3) 1-5/8" HYBRID CABLES, AND MOUNT MODIFICATIONS

EXISTING (6) PANELS, (6) COAX CABLES, AND (1) 1-1/4" HYBRID CABLE TO REMAIN

PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.

PROJECT LOCATION DIRECTIONS

FROM HARTFORD TAKE RT 44 TO WINCHESTER. JUST BEFORE JUNCTION FOR RT 8 TURN RIGHT AT LIGHT. TAKE SECOND LEFT ONTO OAKDALE AVENUE. GO TO END OF STREET AND THROUGH ACCESS ROAD GATE TO SITE.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	1	07/30/19	TC
G-002	GENERAL NOTES	0	07/23/19	EF
C-101	DETAILED SITE PLAN & TOWER ELEVATION	1	07/30/19	TC
C-501	ANTENNA INFORMATION & SCHEDULE	1	07/30/19	TC
E-501	GROUNDING DETAILS	0	07/23/19	EF
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			
R-604	SUPPLEMENTAL			
R-605	SUPPLEMENTAL			
R-606	SUPPLEMENTAL			

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EF	07/23/19
1	MOUNT ANALYSIS	TC	07/30/19

ATC SITE NUMBER:
302506

ATC SITE NAME:
WINCHESTER CT 3

SITE ADDRESS:
15 OAKDALE AVENUE
WINSTED, CT 06098

SEAL:

Authorized by "EOR"
Jul 31 2019 7:55 AM

T-Mobile design

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	07/23/19
ATC JOB NO:	12951832

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	1

GENERAL CONSTRUCTION NOTES:

1. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC MASTER SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
4. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
5. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
6. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
7. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
9. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
10. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE WIRELESS REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE WIRELESS REP PRIOR TO PROCEEDING.
11. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE WIRELESS REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
12. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE WIRELESS CONSTRUCTION MANAGER.
13. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
14. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE WIRELESS REP IMMEDIATELY.
15. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
16. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
17. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
18. CONTRACTOR SHALL FURNISH T-MOBILE WIRELESS WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
19. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE WIRELESS REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
20. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE WIRELESS REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE WIRELESS MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
21. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE WIRELESS SPECIFICATIONS AND REQUIREMENTS.
22. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE WIRELESS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
23. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
24. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
25. CONTRACTOR SHALL NOTIFY T-MOBILE WIRELESS REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
26. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
27. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
28. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE WIRELESS REP. ANY WORK FOUND BY THE T-MOBILE WIRELESS REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
29. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
   A. ASTM A-572, GRADE 50 - ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE
   B. ASTM A-36 - ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
   C. ASTM A-500, GRADE B - HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)
   D. ASTM A-325, TYPE SC OR N - ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS
   E. ASTM F-1554 07 - ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE
3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. CONNECTIONS:
   A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
   B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
   C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
   D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.
   E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
   F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
   G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING ½" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EF	07/23/19

ATC SITE NUMBER:
302506

ATC SITE NAME:
WINCHESTER CT 3

SITE ADDRESS:
15 OAKDALE AVENUE
WINSTED, CT 06098

SEAL:

Authorized by "EOR"
Jul 31 2019 7:55 AM

T-Mobile design

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	07/23/19
ATC JOB NO:	12951832

GENERAL NOTES

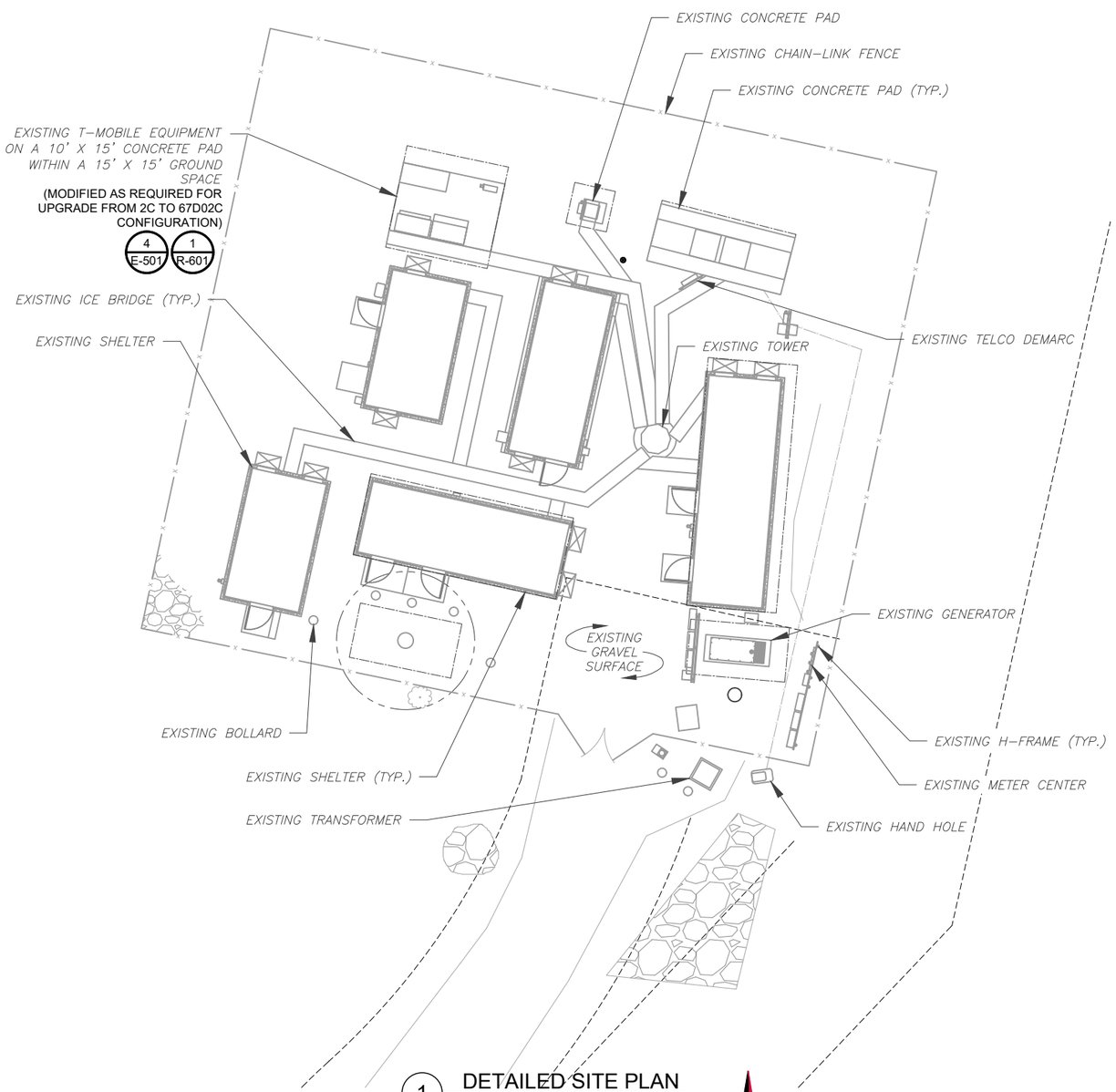
SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.

3. THIS PROJECT INCLUDES NO INSTALL OR MODIFICATION AT GRADE.

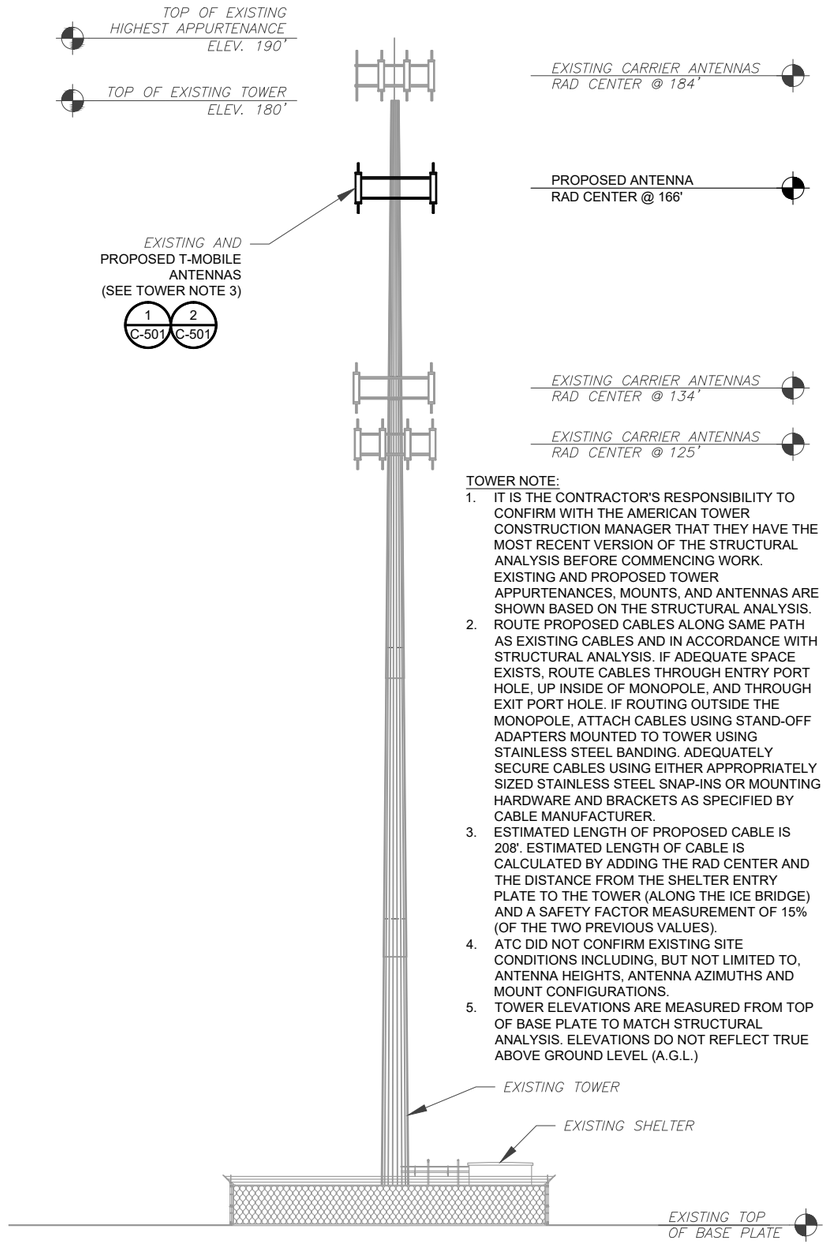


1 DETAILED SITE PLAN

0 10' 20'

SCALE: 1"=10' (11X17)
1"=5' (22X34)

PER MOUNT ANALYSIS COMPLETED BY CLS ENGINEERING, DATED 07-03-19, THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT



TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
3. ESTIMATED LENGTH OF PROPOSED CABLE IS 208'. ESTIMATED LENGTH OF CABLE IS CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES).
4. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA HEIGHTS, ANTENNA AZIMUTHS AND MOUNT CONFIGURATIONS.
5. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

2 TOWER ELEVATION

SCALE: NOT TO SCALE

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A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EF	07/23/19
1	MOUNT ANALYSIS	TC	07/30/19

ATC SITE NUMBER:
302506

ATC SITE NAME:
WINCHESTER CT 3

SITE ADDRESS:
15 OAKDALE AVENUE
WINSTED, CT 06098

SEAL:

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Jul 31 2019 7:55 AM

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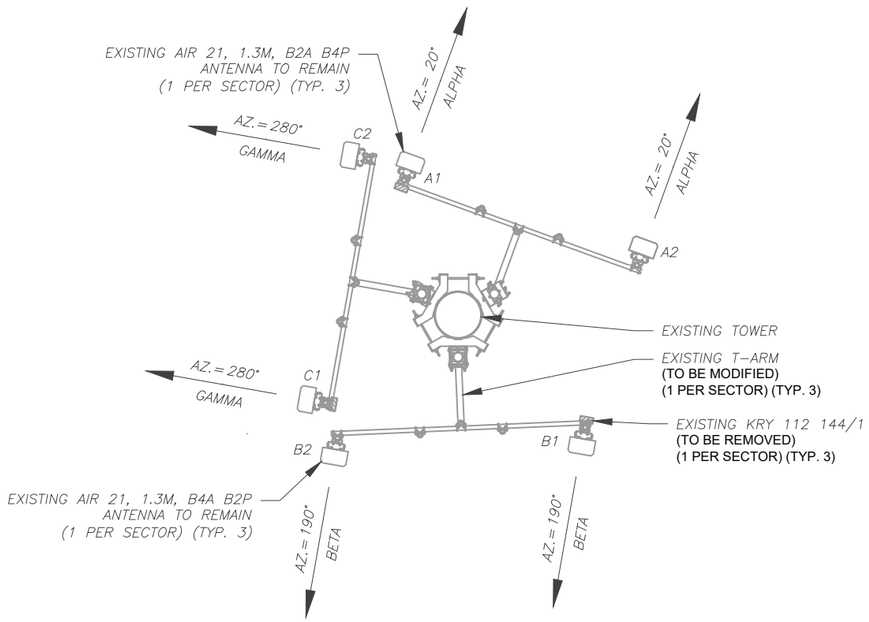
DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	07/23/19
ATC JOB NO:	12951832

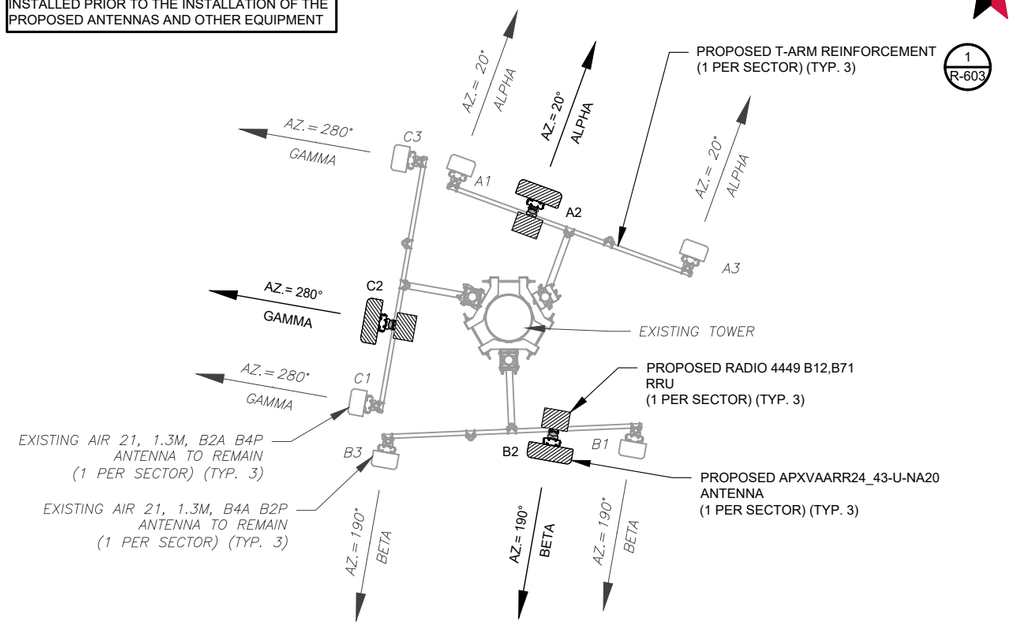
DETAILED SITE PLAN & TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-101	1



1 EXISTING ANTENNA PLAN

PER MOUNT ANALYSIS COMPLETED BY CLS ENGINEERING, DATED 07-03-19, THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT



2 FINAL ANTENNA PLAN

EXISTING ANTENNA / EQUIPMENT SCHEDULE

SECTOR	ANT.	MANUFACTURER (MODEL #)	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	A1	AIR 21, 1.3M, B2A B4P	166'-0"	20°	0°	2°	KRY 112 144/1
ALPHA	A2	AIR 21, 1.3M, B4A B2P	166'-0"	20°	0°	2°	–
BETA	B1	AIR 21, 1.3M, B2A B4P	166'-0"	190°	0°	2°	KRY 112 144/1
BETA	B2	AIR 21, 1.3M, B4A B2P	166'-0"	190°	0°	2°	–
GAMMA	C1	AIR 21, 1.3M, B2A B4P	166'-0"	280°	0°	2°	KRY 112 144/1
GAMMA	C2	AIR 21, 1.3M, B4A B2P	166'-0"	280°	0°	2°	–

NOTES

1. BASED ON APPROVED ATC APPLICATION 12927190, DATED 04/02/2019. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. ATC HAS NOT YET VERIFIED ANY EXISTING ANTENNA CONFIG OR MOUNT CONFIG. CONTRACTOR TO VERIFY MOUNT CONFIG HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (EQUIP) (I.E. CLEARANCES, MOUNT PIPE, SUFFICIENT LENGTH, ETC.) ATC DID NOT ANALYZE ANTENNA MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY LESSEE LOADING.
3. ALL PROPOSED EQUIP INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH ATC'S CM.
4. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
5. POSITIONS START WITH FIRST PIPE ON THE LEFT SIDE (AS VIEWED FROM BEHIND THE MOUNT).

FINAL ANTENNA / EQUIPMENT SCHEDULE

SECTOR	ANT.	MANUFACTURER (MODEL #)	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	A1	AIR 21, 1.3M, B2A B4P	166'-0"	20°	0°	2°	–
ALPHA	A2	APXVAARR24_43-U-NA20	166'-0"	20°	-	-	RADIO 4449 B12,B71
ALPHA	A3	AIR 21, 1.3M, B4A B2P	166'-0"	20°	0°	2°	–
BETA	B1	AIR 21, 1.3M, B2A B4P	166'-0"	190°	0°	2°	
BETA	B2	APXVAARR24_43-U-NA20	166'-0"	190°	-	-	RADIO 4449 B12,B71
BETA	B2	AIR 21, 1.3M, B4A B2P	166'-0"	190°	0°	2°	–
GAMMA	C1	AIR 21, 1.3M, B2A B4P	166'-0"	280°	0°	2°	–
GAMMA	C2	APXVAARR24_43-U-NA20	166'-0"	280°	-	-	RADIO 4449 B12,B71
GAMMA	C3	AIR 21, 1.3M, B4A B2P	166'-0"	280°	0°	2°	–

CURRENT FIBER DISTRIBUTION/OVP BOX		CURRENT CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
–	–	(6) 1-5/8"	(1) 1-1/4"	RMN
–	–	**(6) 1-5/8"**	–	RMV

STATUS ABBREVIATIONS
RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
DSC: TO BE DISCONNECTED & REMAIN
ADD: TO BE ADDED

3 ANTENNA SCHEDULE

CABLE LENGTHS FOR JUMPERS
FIBER DISTRIBUTION/OVP TO RRU: 15'
RRU TO COMBINER: 10'
COMBINER TO ANTENNA: 10'

PROPOSED FIBER DISTRIBUTION/OVP BOX		PROPOSED CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	(6) 1-5/8"	(1) 1-1/4"	RMN
-	-	-	(3) 1-5/8"	ADD

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COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EF	07/23/19
1	MOUNT ANALYSIS	TC	07/30/19

ATC SITE NUMBER:
302506

ATC SITE NAME:
WINCHESTER CT 3

SITE ADDRESS:
15 OAKDALE AVENUE
WINSTED, CT 06098

SEAL:

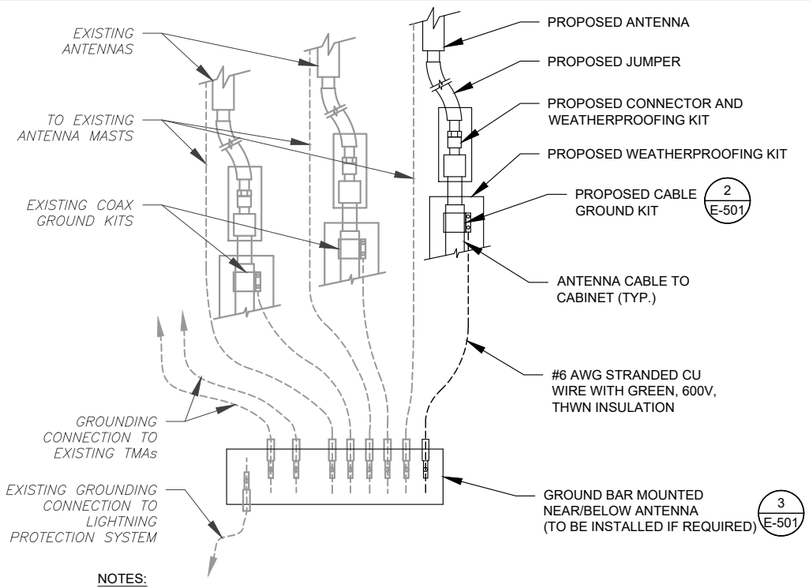
Authorized by "EOR"
Jul 31 2019 7:55 AM

T-Mobile design

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	07/23/19
ATC JOB NO:	12951832

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-501	1

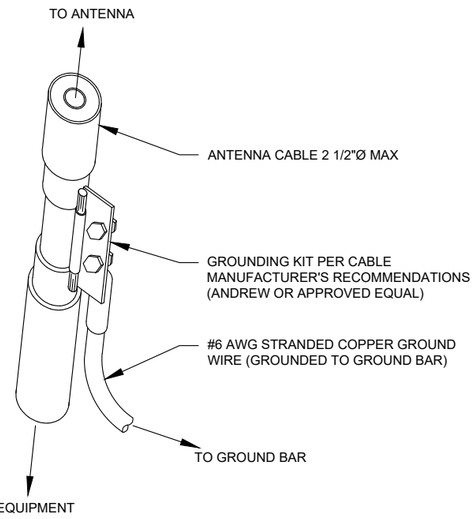


NOTES:

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH T-MOBILE GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: NOT TO SCALE

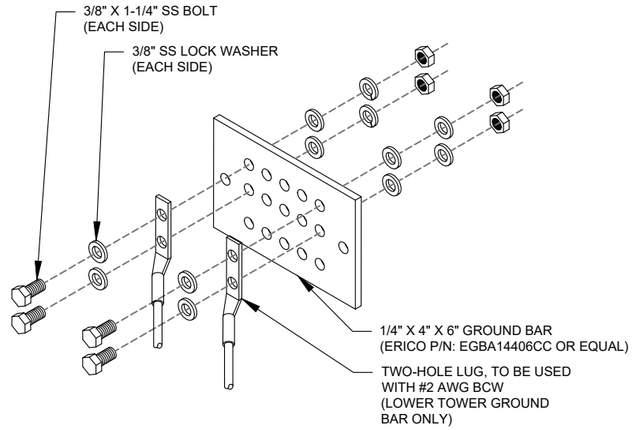


GROUND KIT NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: NOT TO SCALE



GROUND BAR NOTES:

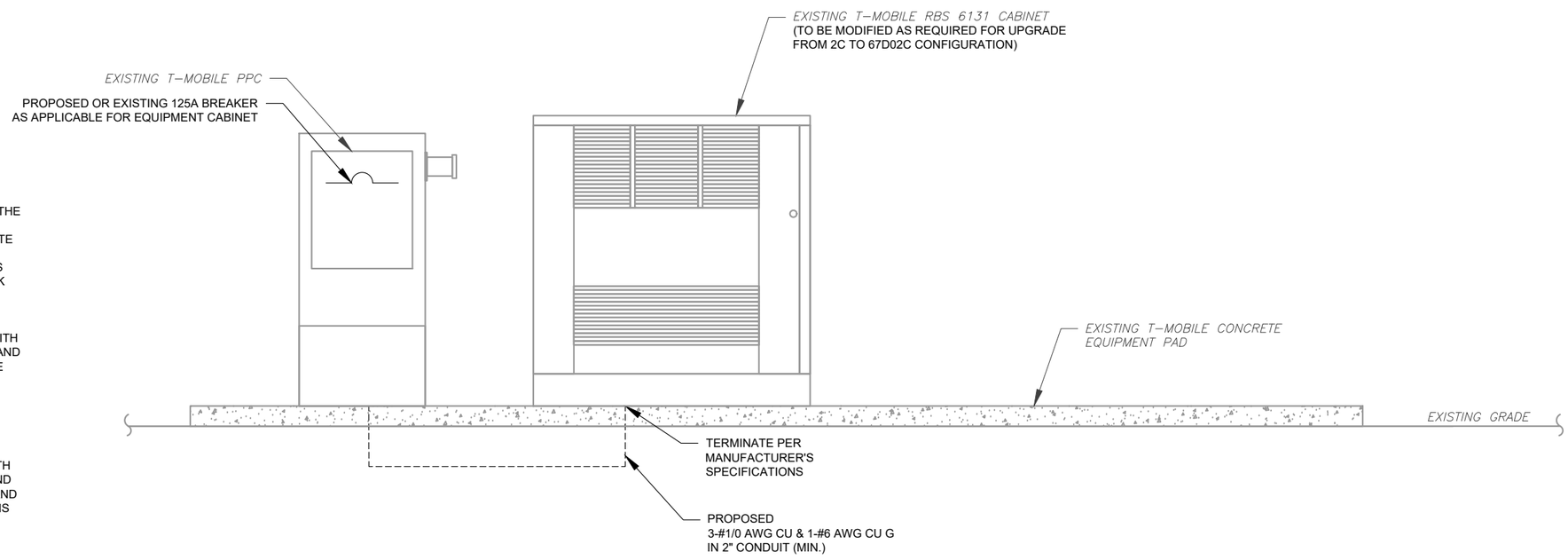
1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL

SCALE: NOT TO SCALE

ELECTRICAL NOTES:

1. THIS DIAGRAM REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.
3. ATC HAS NOT YET VERIFIED ANY EXISTING T-MOBILE GROUND EQUIPMENT OR ELECTRICAL LOADING. PROPOSED WORK BASED ON INSTALLATION CONFIGURATION PROVIDED BY T-MOBILE. CONTRACTOR TO VERIFY EXISTING T-MOBILE PANEL HAS SUFFICIENT SPACE FOR PROPOSED BREAKER.



4 ELECTRICAL UPGRADE DIAGRAM

SCALE: NOT TO SCALE

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CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EF	07/23/19

ATC SITE NUMBER:
302506

ATC SITE NAME:
WINCHESTER CT 3

SITE ADDRESS:
15 OAKDALE AVENUE
WINSTED, CT 06098

SEAL:

Authorized by "EOR"
Jul 31 2019 7:55 AM

T-Mobile design

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	07/23/19
ATC JOB NO:	12951832

GROUNDING DETAILS

SHEET NUMBER: E-501

REVISION: 0

Existing RAN Equipment		
Template: 2C		
Enclosure	1	2
Enclosure Type	RBS 6131	S12000 Outdoor
Baseband	DUW30 U2100 (DECOMMISSIONED) · DUW30 U1900 · DUG20 G1900 · DUS31 L2100	
Hybrid Cable System	Ericsson 9x16 HCS *Select Length*	
Radio	RU22 (x6)	

Proposed RAN Equipment		
Template: 67D02C Outdoor		
Enclosure	1	2
Enclosure Type	RBS 6131	S12000 Outdoor
Baseband	DUW30 U2100 (DECOMMISSIONED) · DUW30 U1900 · DUG20 G1900 · BB 6630 L2100 L700 L600 · BB 6630 N600 (DARK)	
Hybrid Cable System	Ericsson 9x16 HCS *Select Length* Ericsson 6x12 HCS *Select Length & AWG* (x3)	
Radio	RUS2 (x6) U2100 (DECOMMISSIONED)	

RAN Scope of Work:

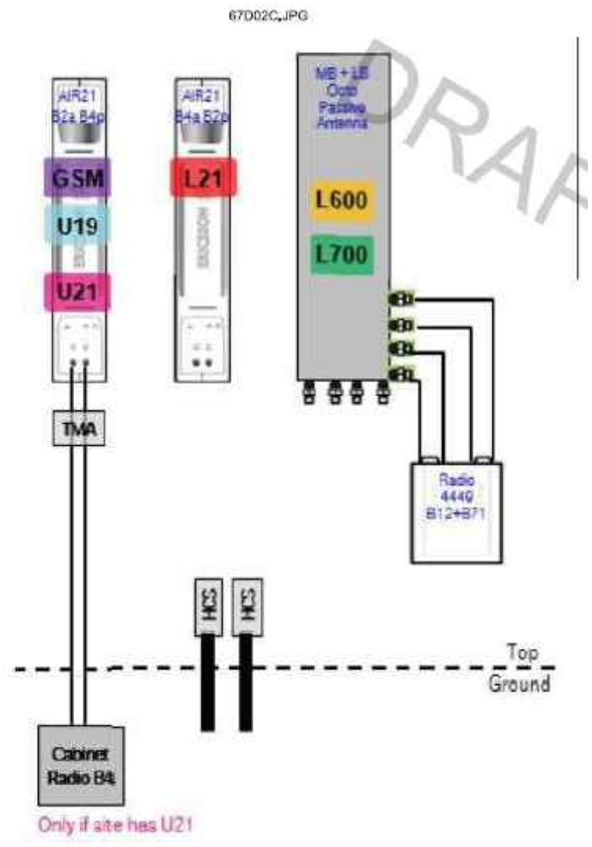
Replace (1) DUS31 with (1) BB6630 for L2100, L700, and L600.
Install (1) BB6630 for future 5G N600.

Add (3) 6X12 HCS.
Existing: (12) 1-5/8"; (1) 9X16, Remove (6) Coaxial Lines.

Rad Center: 166 Feet.

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE

67D02C.JPG



Only if site has U21

2 ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	0

Mount Analysis of Existing T-Arms for American Tower on behalf of T-Mobile
302506 - Winchester CT 3
Project #: 12927190
T-Mobile Site ID: CTNH403A
Program: L600

CLS Engineering PLLC Project #41124-12927190-01-MA-R2
July 3, 2019

MOUNT DESCRIPTION	Existing T-Arms at 164 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 166 ft AGL (Eccentricity of ~2 ft)
SITE DESCRIPTION	180 ft Monopole
SITE ADDRESS	15 Oakdale Avenue, Winsted, CT 06098, Litchfield County
GPS COORDINATES	41.921700, -73.049500
ANALYSIS STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	120 mph, V_{ult} / 93 mph, V_{asd} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 0.75" Ice

■ ANALYSIS RESULT: **Pass (Conditional)**

MEMBER USAGE	58%	Pass
CONNECTION USAGE	92%	Pass

A maintenance live load of 250 lb has been applied at each mounting pipe location.

Modifications are proposed to bring mounts into compliance; see conclusion for details.

Prepared by:
Jennifer Soza

Reviewed and Approved by:
Tyler M. Barker, P.E.

STATE OF CONNECTICUT
TYLER M BARKER
No. 32402
LICENSED
PROFESSIONAL ENGINEER

Tyler M. Barker
CLS Engineering, PLLC
Director of Engineering
PE # 32402 Exp. 1/31/2020
COA # PEC.001833 Exp. 8/14/2019

IdenTrust part of HID Global
Digitally signed by Tyler Barker
DN: c=US, o=Telamon Corporation, ou=A01427E0000016A4525ADF800001D17, cn=Tyler Barker
Date: 2019.07.03 22:01:49 -04'00'

■ CONCLUSION AND RECOMMENDATIONS

According to our structural analysis, the mounts have been found to **CONDITIONALLY PASS.** The mounting configuration considered in this analysis will be capable of supporting the referenced loading pursuant to referenced standards once the following scope is executed:

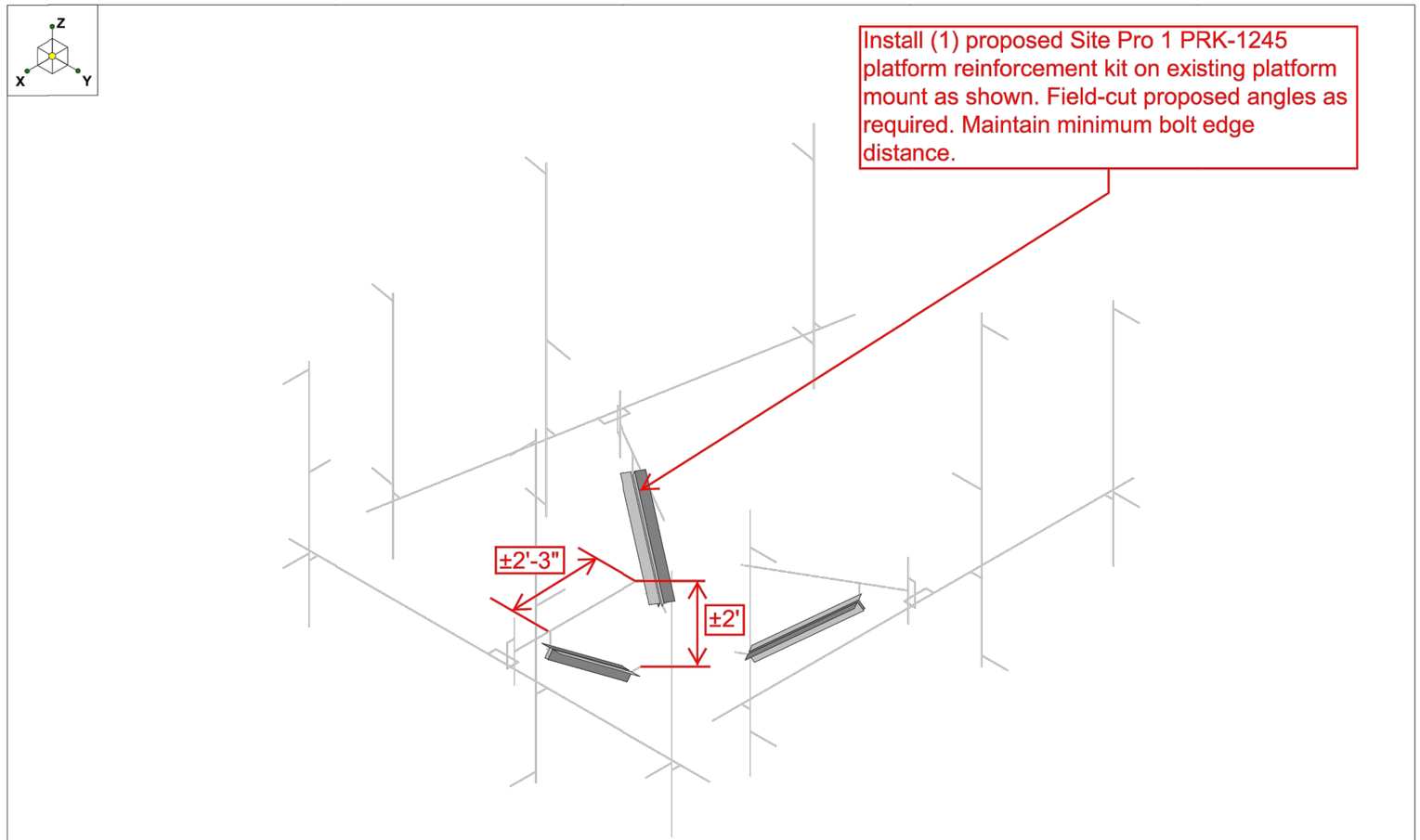
- **Install (1) proposed Site Pro 1 PRK-1245 platform reinforcement kit on existing platform mount as shown in the following sketches. Field-cut proposed angles as required. Maintain minimum bolt edge distance. Re-secure coax after installation of proposed kit. DO NOT PINCH SAFETY CLIMB.**
- **Install (1) 8 ft. long, Pipe 2.5 STD, A53 Gr. B mount pipe at Position 2 for proposed panel at each sector (3 total). Connect to existing face horizontal member with Site Pro 1 SCX45-K crossover plat kit or equal (3 total).**

See following sketches and Site Pro 1 assembly drawings for additional details.

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERYIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONTRUCTION.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-602	1



NOTE:
* Re-secure Coax after installation of kicker kit.
* Do not pinch safety climb.

CLS		SK - 1
ST	41124-12927190-Winchester CT 3	Apr 30, 2019 at 1:21 PM
41124-12927190-01-MA-R1	Proposed Modifications - PRK-1245 - Rendered	41124-12927190-01-MA-R1.r3d

1 T-ARM REINFORCEMENT

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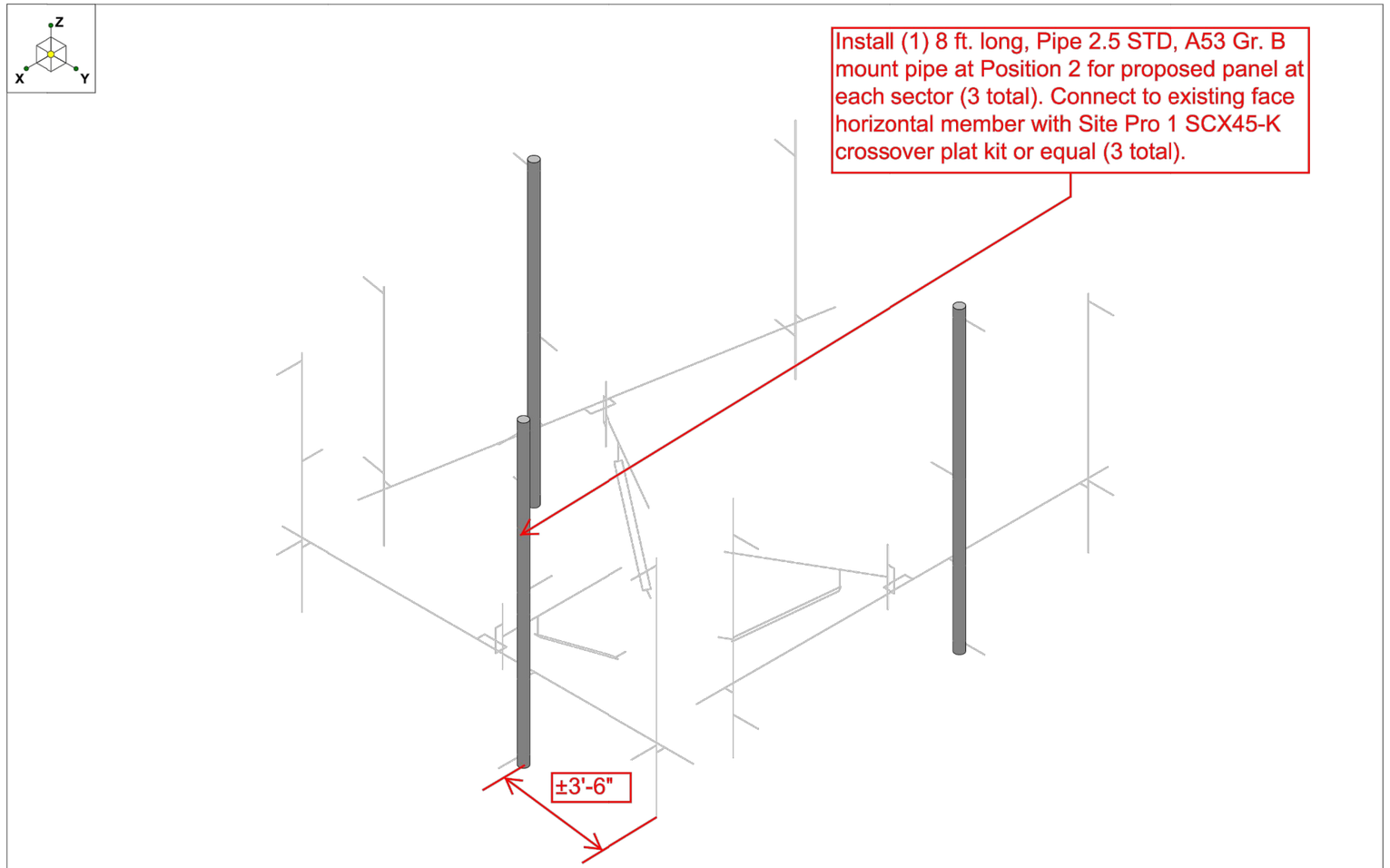
SUPPLEMENTAL

SHEET NUMBER: R-603

REVISION: 1



Envelope Only Solution

CLS	41124-12927190-Winchester CT 3	SK - 2
ST		Apr 30, 2019 at 1:19 PM
41124-12927190-01-MA-R1	Proposed Mount Pipes - Rendered	41124-12927190-01-MA-R1.r3d

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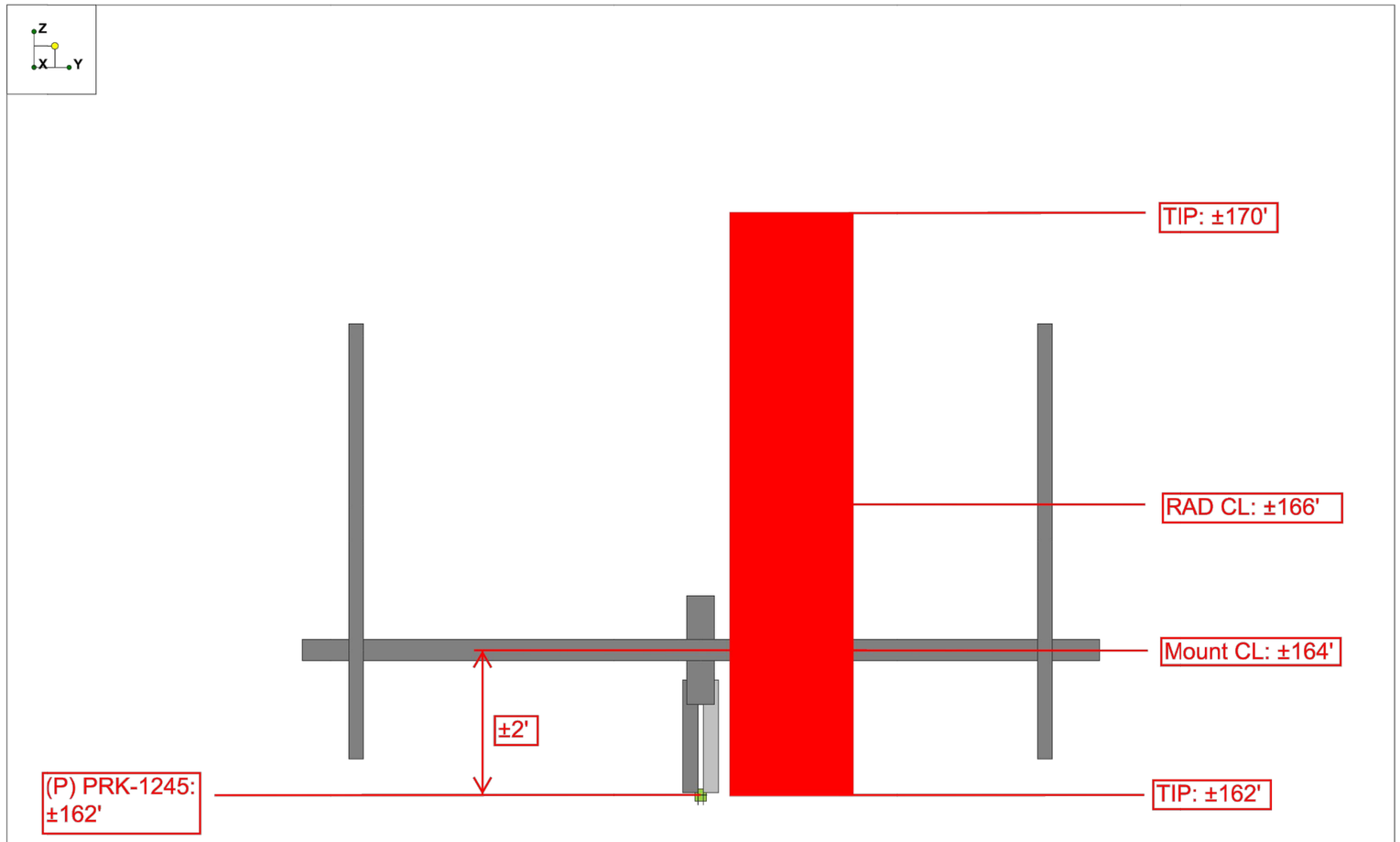
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-604	1



CLS		SK - 3
ST	41124-12927190-Winchester CT 3	Apr 30, 2019 at 1:23 PM
41124-12927190-01-MA-R1	Mount/RAD CL - Front Elevation View	41124-12927190-01-MA-R1.r3d

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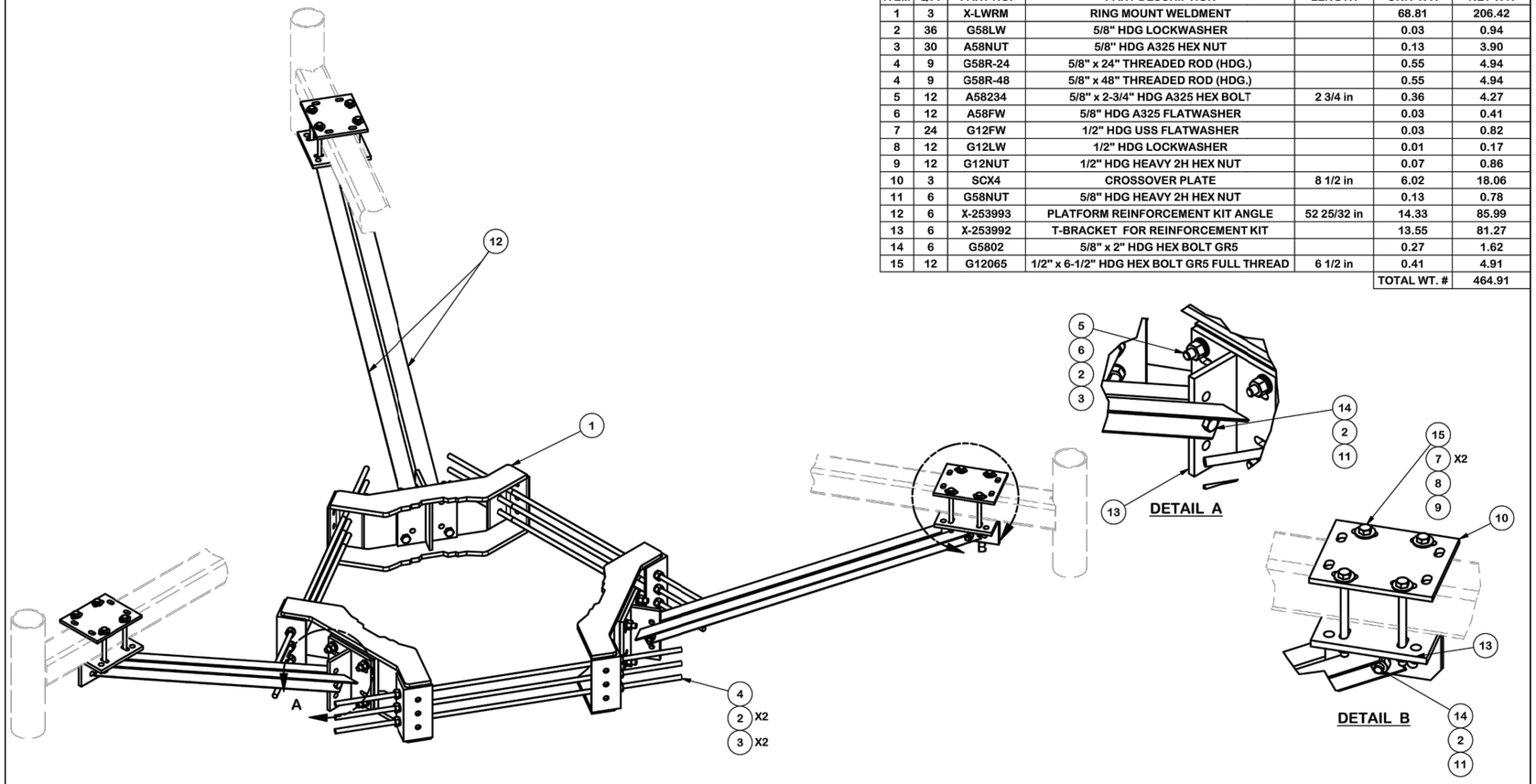
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-605	1



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	36	G58LW	5/8" HDG LOCKWASHER		0.03	0.94
3	30	A58NUT	5/8" HDG A325 HEX NUT		0.13	3.90
4	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)		0.55	4.94
4	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)		0.55	4.94
5	12	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	4.27
6	12	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.41
7	24	G12FW	1/2" HDG USS FLATWASHER		0.03	0.82
8	12	G12LW	1/2" HDG LOCKWASHER		0.01	0.17
9	12	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.86
10	3	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	18.06
11	6	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	0.78
12	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
13	6	X-253992	T-BRACKET FOR REINFORCEMENT KIT		13.55	81.27
14	6	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.62
15	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	4.91
					TOTAL WT. #	464.91

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION: PLATFORM RENIFORCEMENT ON A 12" TO 45" POLE 4' 6" ANGLE

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
4488	CEK 4/10/2014		PRK-1245	1 OF 2
CLASS / SUB: 81 / 01	DRAWING USAGE: CUSTOMER	CHECKED BY: BMC 4/10/2014	DWG. NO.: PRK-1245	

SITE PRO 1 — A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

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SUPPLEMENTAL

SHEET NUMBER: R-606

REVISION: 1

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Structural Analysis Report

Structure	:	**180 ft Monopole**
ATC Site Name	:	**Winchester CT 3, CT**
ATC Site Number	:	**302506**
Engineering Number	:	**12927190_C3_02**
Proposed Carrier	:	**T-MOBILE**
Carrier Site Name	:	**Litchfield ATC**
Carrier Site Number	:	**CTNH403A**
Site Location	:	**15 Oakdale Avenue** **Winsted, CT 06098-1862** **41.921700,-73.049500**
County	:	**Litchfield**
Date	:	**July 18, 2019**
Max Usage	:	**84%**
Result	:	**Pass**

Prepared By:
Hussam Al Tahan, E.I.
Structural Engineer I

Hussam Al Tahan

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
Jul 19 2019 2:50 PM cosign

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 180 ft monopole to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	EEI Job #7676, dated August 21, 2000
Foundation Drawing	SNET Project #F301804.10/F04, dated August 23, 2000
Geotechnical Report	Welti Project: Whalen's Hill, dated February 8, 2000
Modifications	ATC Job #42523432, dated October 24, 2008 ATC Job #50492933, dated October 15, 2012
Mount Analysis	CLS Engineering PLLC Project #41124-12927190-01-MA-R2, dated July 3, 2019

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	93 mph (3-Second Gust, V_{asd}) / 120 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	III
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.18, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
185.0	1	Generic 4' Omni	Flush	-	OTHER
184.0	3	CCI HPA-65R-BUU-H6	Low Profile Platform	(1) 0.39" (10mm) Fiber Trunk (1) 0.40" (10.3mm) Fiber (4) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Coax (1) 3" conduit	AT&T MOBILITY
	1	Andrew ABT-DMDF-ADBH			
	3	Powerwave Allgon TT19-08BP111-001			
	3	Powerwave Allgon LGP21401			
	2	Raycap DC6-48-60-18-8F (23.5" Height)			
	3	Ericsson RRUS 11 (Band 12)			
	3	Ericsson RRUS 32 (50.8 lbs)			
	3	Ericsson RRUS-12 B2			
	3	Powerwave Allgon 7770.00			
	3	KMW AM-X-CD-16-65-00T-RET			
179.0	1	Kathrein Scala MF-900B	Flush	-	OTHER
173.0	1	Telewave ANT450F6	Side Arm	(1) 7/8" Coax	EVERSOURCE ENERGY
166.0	1	Fastback Networks Intelligent Backhaul Radio 1300 Series	T-Arm	(2) 0.25" (6.4mm) Cat 6 UTP (6) 1 5/8" Coax (1) 1.4" (35.6mm) Hybrid	T-MOBILE
	3	Ericsson AIR 21, 1.3M, B4A B2P			
	3	Ericsson AIR 21, 1.3 M, B2A B4P			
158.0	1	Telewave ANT450F6	Side Arm	(1) 7/8" Coax	EVERSOURCE ENERGY
150.0	1	Sinclair SD210-SF2P4SNM	Side Arm	(1) 1 5/8" Coax	LITCHFIELD COUNTY DISPATCH INC
147.0	1	Sinclair SC442D-HF1LDF(DXX-I30-G9-NUFP)	Flush	(8) 1 5/8" Coax (1) 7/8" Coax (2) 1/2" Coax	CONNECTICUT STATE POLICE DEPT OF PUBLIC
146.0	2	Decibel DB809DK-XT	Side Arm		
	1	Sinclair SC479-HF1LDF(E5765)			
142.0	1	Telewave ANT150D (5 lbs)			
141.0	1	Bird 432-83H-01-T			
134.0	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	Platfrom w/ Handrails	(3) 1 1/4" Hybriflex Cable (1) 7/8" (0.88"-22.2mm) Fiber	SPRINT NEXTEL
	3	RFS APXVTM14-C-I20			
	3	RFS APXVSPP18-C-A20			
132.0	3	Alcatel-Lucent 1900MHz RRH			
	3	Alcatel-Lucent 800 MHz RRH w/ Notch Filter			
125.0	1	Raycap RCMDC-6627-PF-48	Low Profile Platform	(6) 1 5/8" Coax (1) 1 5/8" Hybriflex	VERIZON WIRELESS
	4	Antel LPA-80080/6CF ___			
	6	Commscope JAHH-65B-R3B			
	2	Antel LPA-80063/6CF			
	3	Nokia B66a RRH4x45 (UHIE)			
	3	Nokia AHCA AirScale RRH 4T4R B5 160W			
	3	Alcatel-Lucent B25 RRH4x30			
	3	Alcatel-Lucent B13 RRH4x30-4R			
115.0	12	Decibel DB844H90E-XY	Low Profile Platform	(12) 1 1/4" Coax	SPRINT NEXTEL
105.0	3	RFS APXV18-206517S-C	Flush	(6) 1 5/8" Coax	METRO PCS INC
97.0	1	Andrew DB586	Side Arm	(2) 7/8" Coax (1) 1/2" Coax	EVERSOURCE ENERGY
95.0	1	Bird 429-83H-01-T			
93.0	1	Andrew DB586			
80.0	1	RFS PA6-65AC	Flush	(1) EW63	CONNECTICUT STATE POLICE DEPT OF PUBLIC

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
78.0	1	PCTEL GPS-TMG-HR-26N		(1) 1/2" Coax	SPRINT NEXTEL
30.0	1	Generic GPS	Stand-Off	(1) 7/8" Coax	VERIZON WIRELESS

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
166.0	3	Ericsson KRY 112 144/1	-	(1) 1 1/4" Hybriflex Cable (6) 1 5/8" Coax	T-MOBILE

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
166.0	3	Ericsson Radio 4449 B12,B71	T-Arm w/ Reinforcement	(1) 1 1/4" (1.25"-31.8mm) Fiber (3) 1 5/8" (1.63"-41.3mm) Fiber	T-MOBILE
	3	RFS APXVAARR24_43-U-NA20			

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	74%	Pass
Shaft	84%	Pass
Base Plate	79%	Pass
Reinforcement	84%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	5,287.9	49%
Axial (Kips)	67.1	3%
Shear (Kips)	46.7	79%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
179.0	Kathrein Scala MF-900B	OTHER	3.258	2.256
166.0	Ericsson Radio 4449 B12,B71	T-MOBILE	2.755	2.163
	RFS APXVAARR24_43-U-NA20			
80.0	RFS PA6-65AC	CONNECTICUT STATE POLICE DEPT OF PUBLIC	0.582	0.846

***Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G**

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Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

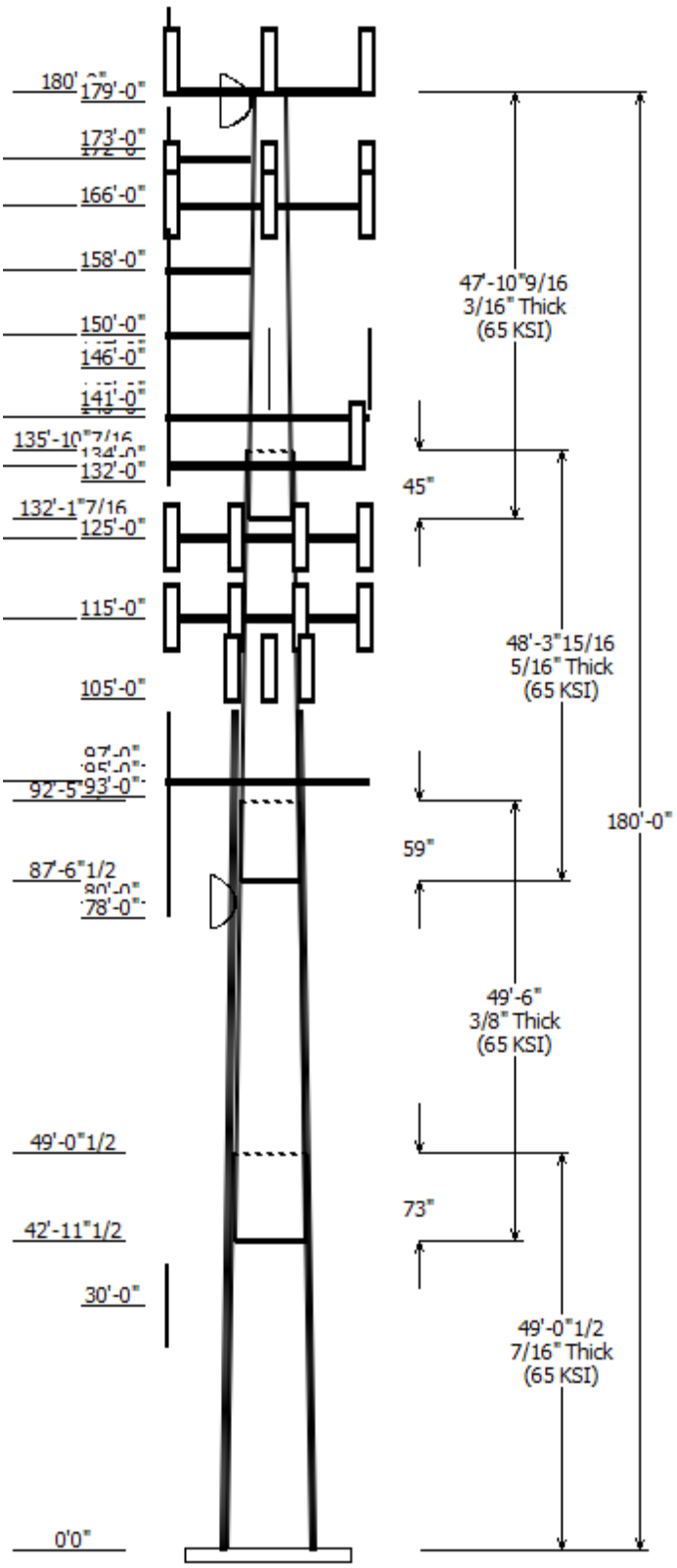
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Job Information

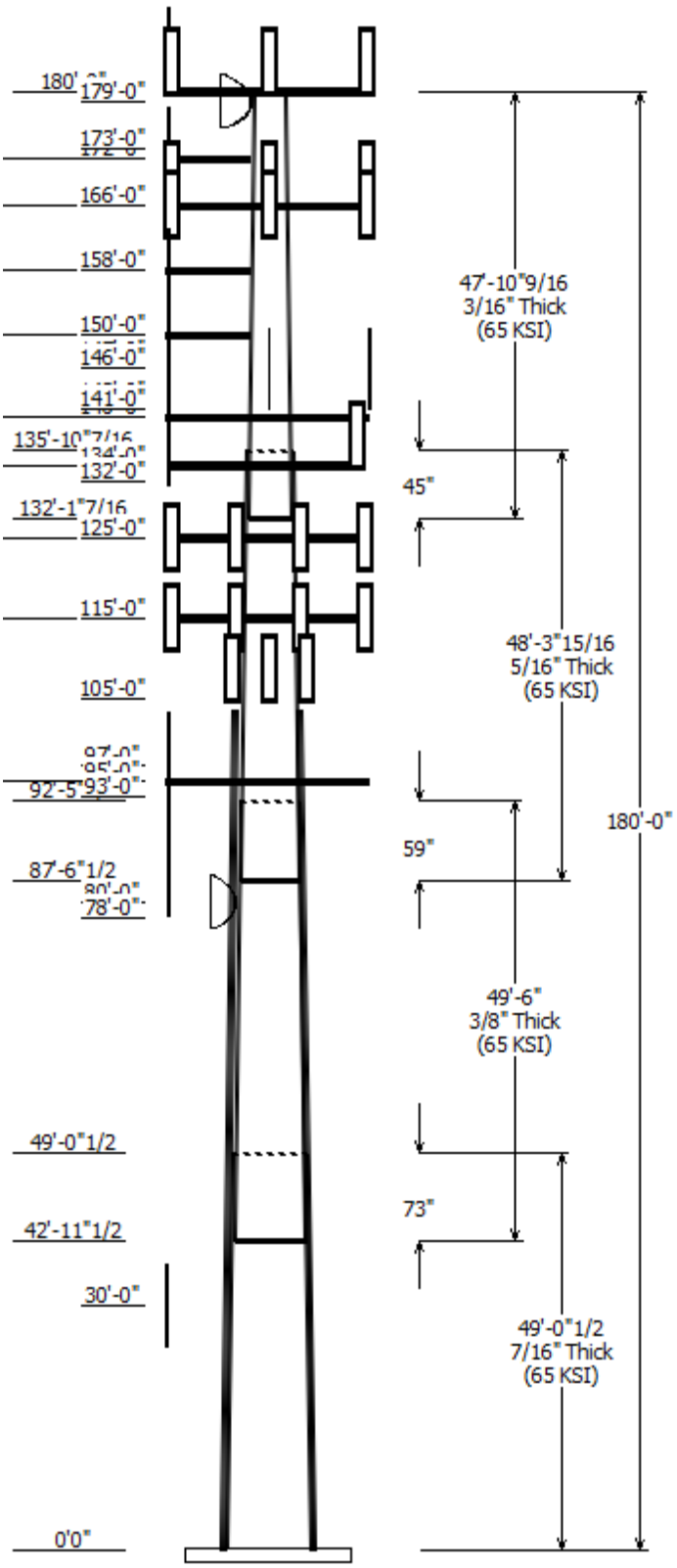
Client :	T-MOBILE		
Pole :	302506	Code:	ANSI/TIA-222-G
Location :	Winchester CT 3, CT		
Description :	180 ft EEI Monopole	Struct Class :	III
Shape :	18 Sides	Exposure :	B
Height :	180.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.219444 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	49.040	41.98	52.75	0.438		0.000	18 Sides	65
2	49.500	33.21	44.07	0.375	Slip Joint	73.000	18 Sides	65
3	48.330	24.30	34.91	0.313	Slip Joint	59.000	18 Sides	65
4	47.880	15.00	25.50	0.188	Slip Joint	45.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
180.000	182.000	3	CCI HPA-65R-BUU-H6
180.000	182.000	3	KMW AM-X-CD-16-65-00T-RET
180.000	182.000	3	Powerwave Allgon 7770.00
180.000	182.000	3	Ericsson RRUS-12 B2
180.000	182.000	3	Ericsson RRUS 32 (50.8 lbs)
180.000	182.000	3	Ericsson RRUS 11 (Band 12)
180.000	182.000	2	Raycap DC6-48-60-18-8F (23.5"
180.000	182.000	3	Powerwave Allgon LGP21401
180.000	182.000	3	Powerwave Allgon TT19-
180.000	182.000	1	Andrew ABT-DMDF-ADBH
180.000	185.000	1	Generic 4' Omni
180.000	180.000	1	Flat Low Profile Platform
179.000	179.000	1	Kathrein Scala MF-900B
173.000	173.000	1	Telewave ANT450F6
172.000	172.000	1	Flat Side Arm
166.000	166.000	3	Round T-Arm w/
166.000	166.000	3	RFS APXVAARR24_43-U-NA20
166.000	167.000	3	Ericsson AIR 21, 1.3M, B4A B2P
166.000	167.000	3	Ericsson AIR 21, 1.3 M, B2A B4
166.000	166.000	3	Ericsson Radio 4449 B12,B71
166.000	166.000	1	Fastback Networks Intelligent
158.000	158.000	1	Flat Side Arm
158.000	158.000	1	Telewave ANT450F6
150.000	150.000	1	Round Side Arm
150.000	150.000	1	Sinclair SD210-SF2P4SNM
147.000	146.000	1	Sinclair SC442D-HF1LDF(DXX-
146.000	146.000	2	Decibel DB809DK-XT
146.000	146.000	1	Sinclair SC479-HF1LDF(E5765)
142.000	141.000	1	Telewave ANT150D (5 lbs)
141.000	141.000	1	Bird 432-83H-01-T
140.000	140.000	3	Round Side Arm
134.000	134.000	1	Flat Platform w/ Handrails
134.000	135.000	3	RFS APXVSPP18-C-A20
134.000	135.000	3	RFS APXVTM14-C-I20
134.000	135.000	3	Alcatel-Lucent TD-RRH8x20-25
132.000	135.000	3	Alcatel-Lucent 1900MHz RRH
132.000	135.000	3	Alcatel-Lucent 800 MHz RRH
125.000	125.000	1	Round Low Profile Platform
125.000	125.000	2	Antel LPA-80063/6CF
125.000	125.000	6	Commscope JAHH-65B-R3B
125.000	125.000	4	Antel LPA-80080/6CF ___
125.000	125.000	1	Raycap RCMDC-6627-PF-48
125.000	125.000	3	Nokia B66a RRH4x45 (UHIE)
125.000	125.000	3	Alcatel-Lucent B13 RRH4x30-4R



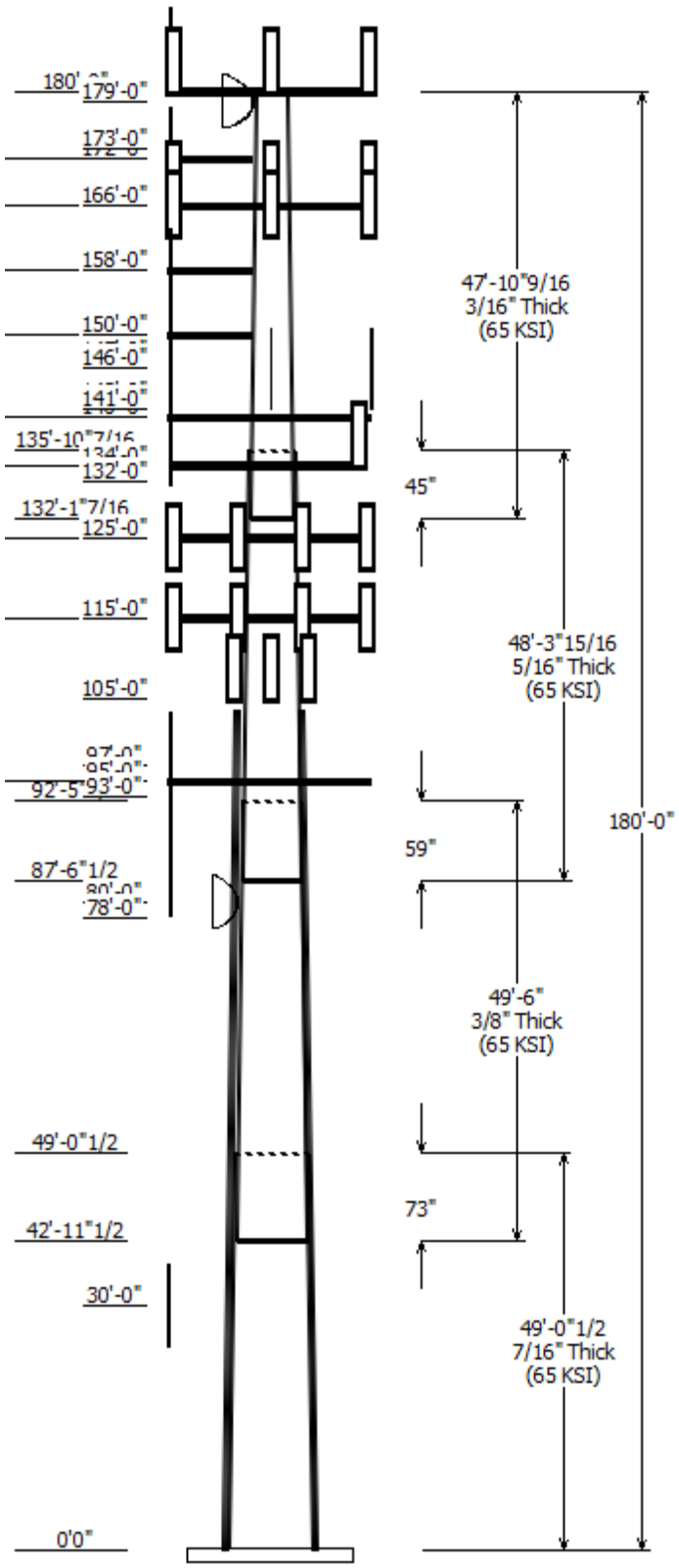
125.000	125.000	3	Alcatel-Lucent B25 RRH4x30
125.000	125.000	3	Nokia AHCA AirScale RRH 4T4R
115.000	115.000	1	Round Low Profile Platform
115.000	115.000	12	Decibel DB844H90E-XY
105.000	106.000	3	RFS APXV18-206517S-C
97.000	96.000	1	Andrew DB586
95.000	95.000	3	Flat Side Arm
95.000	96.000	1	Bird 429-83H-01-T
93.000	96.000	1	Andrew DB586
80.000	80.000	1	RFS PA6-65AC
78.000	79.000	1	PCTEL GPS-TMG-HR-26N
30.000	30.000	1	Generic GPS

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	30.000	7/8" Coax	No
0.000	78.000	1/2" Coax	No
0.000	80.000	EW63	No
0.000	93.000	7/8" Coax	No
0.000	95.000	1/2" Coax	No
0.000	97.000	7/8" Coax	No
0.000	105.0	1 5/8" Coax	Yes
0.000	112.0	#20 Dywidag Bar	Yes
0.000	112.0	#20 Dywidag Bar	Yes
0.000	112.0	#20 Dywidag Bar	Yes
0.000	112.0	#20 Dywidag Bar	Yes
0.000	115.0	1 1/4" Coax	Yes
0.000	125.0	1 5/8" Coax	Yes
0.000	125.0	1 5/8" Hybriflex	No
0.000	134.0	1 1/4" Hybriflex	No
0.000	134.0	7/8" (0.88"-	No
0.000	141.0	1 5/8" Coax	No
0.000	141.0	1/2" Coax	No
0.000	141.0	1/2" Coax	No
0.000	142.0	7/8" Coax	No
0.000	146.0	1 5/8" Coax	No
0.000	147.0	1 5/8" Coax	No
0.000	150.0	1 5/8" Coax	No
0.000	158.0	7/8" Coax	No
0.000	166.0	0.25" (6.4mm) Cat	No
0.000	166.0	1 1/4" (1.25"-	No
0.000	166.0	1 5/8" (1.63"-	No
0.000	166.0	1 5/8" Coax	Yes
0.000	166.0	1.4" (35.6mm)	Yes
0.000	173.0	7/8" Coax	No
0.000	184.0	0.39" (10mm)	No
0.000	184.0	0.40" (10.3mm)	No
0.000	184.0	0.78" (19.7mm) 8	No
0.000	184.0	1 5/8" Coax	No
0.000	184.0	3" conduit	No

Load Cases

1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

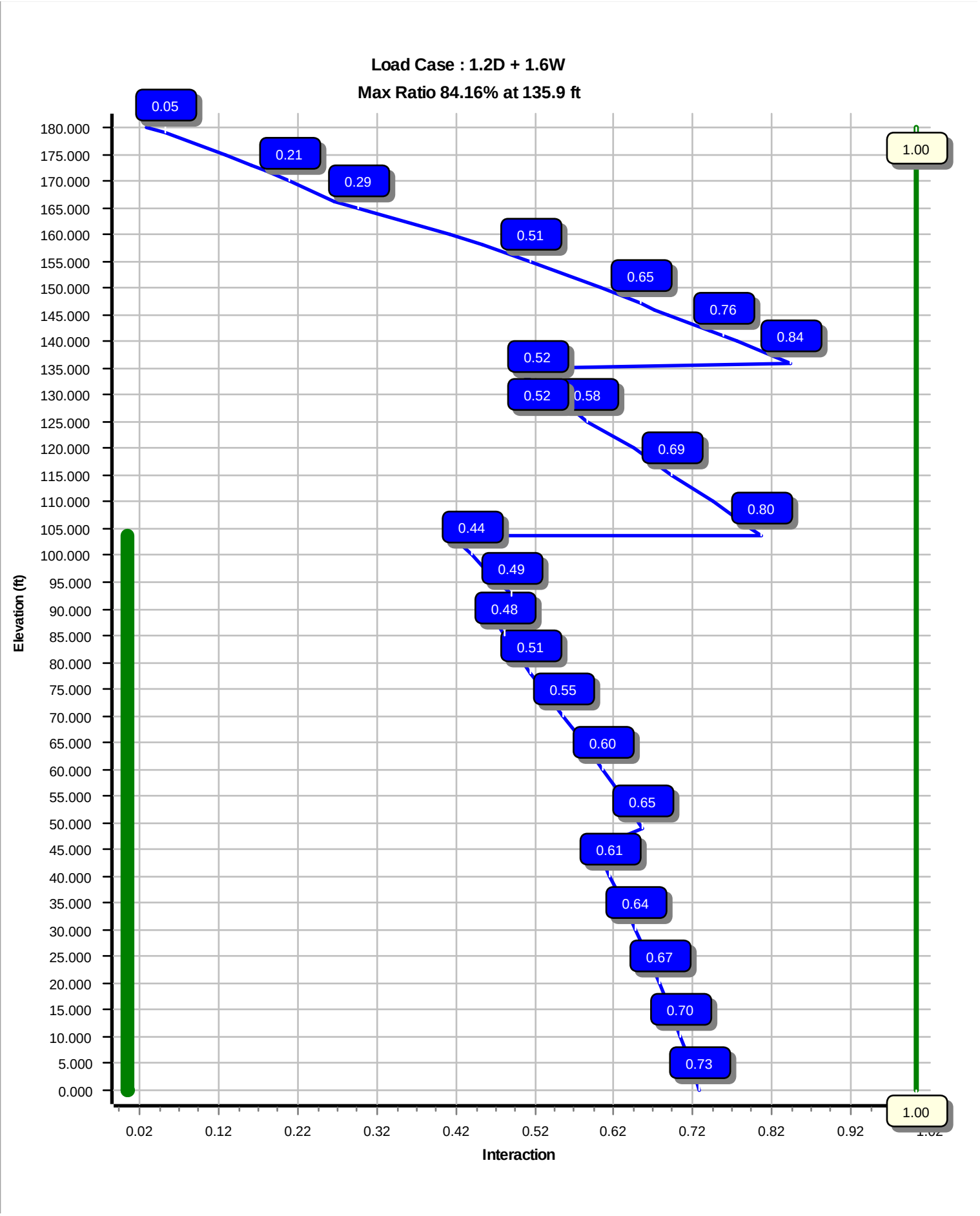


Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	5287.87	46.73	67.09
0.9D + 1.6W	5175.70	46.08	50.30
1.2D + 1.0Di + 1.0Wi	2019.63	19.92	118.38
(1.2 + 0.2Sds) * DL + E ELFM	291.37	2.07	66.97
(1.2 + 0.2Sds) * DL + E EMAM	324.99	2.57	66.97
(0.9 - 0.2Sds) * DL + E ELFM	285.94	2.07	46.65
(0.9 - 0.2Sds) * DL + E EMAM	317.85	2.57	46.65
1.0D + 1.0W	1213.08	10.73	55.98

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	80.00	6.980	0.846
1.0D + 1.0W	179.00	39.102	2.256


Load Case : 1.2D + 1.6W
Max Ratio 84.16% at 135.9 ft
0.05
0.21
0.29
0.51
0.65
0.76
0.84
0.52
0.52
0.58
0.69
0.80
0.44
0.49
0.48
0.51
0.55
0.60
0.65
0.61
0.64
0.67
0.70
0.73
1.00
1.00
180.000
175.000
170.000
165.000
160.000
155.000
150.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number: 302506 Code: ANSI/TIA-222-G

Site Name: Winchester CT 3, CT Engineering Number:12927190_C3_02 7/18/2019 7:30:10 PM

Customer: T-MOBILE

Analysis Parameters

Location :	Litchfield County, CT	Height (ft) :	180
Code :	ANSI/TIA-222-G	Base Diameter (in) :	52.75
Shape :	18 Sides	Top Diameter (in) :	15.00
Pole Type :	Taper	Taper (in/ft) :	0.219
Pole Manfacturer :	EEI	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	III	Design Wind Speed Without Ice:	93 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	2.81				
T_L (sec):	6	p:	1	C_s:	0.037
S_s:	0.177	S_1:	0.065	C_s Max:	0.037
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.189	S_{d1}:	0.104		

Load Cases

1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	49.040	0.4375	65		0.00	10,875	52.75	0.00	72.64	25115.3	19.85	120.57	41.98	49.04	57.70	12585.4	15.51	95.97	0.219444
2-18	49.500	0.3750	65	Slip	73.00	7,672	44.07	42.96	52.01	12548.0	19.31	117.53	33.21	92.46	39.08	5323.8	14.21	88.56	0.219444
3-18	48.330	0.3125	65	Slip	59.00	4,779	34.91	87.54	34.32	5191.7	18.29	111.73	24.30	135.87	23.80	1731.6	12.31	77.79	0.219444
4-18	47.880	0.1875	65	Slip	45.00	1,946	25.50	132.12	15.07	1220.4	22.58	136.04	15.00	180.00	8.81	244.4	12.70	80.00	0.219444
				Shaft Weight		25,271													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
180.00	Andrew ABT-DMDF-ADBH	1	0.80	2.000	1.10	0.050	0.50	3.94	0.295	0.50
180.00	Powerwave Allgon TT19-	3	0.80	2.000	16.00	0.550	0.50	41.76	1.198	0.50
180.00	Generic 4' Omni	1	1.00	5.000	10.00	1.000	1.00	49.80	2.100	1.00
180.00	Powerwave Allgon LGP21401	3	0.80	2.000	14.10	1.100	0.50	45.92	2.007	0.50
180.00	Raycap DC6-48-60-18-8F (23.5"	2	0.80	2.000	20.00	1.260	0.50	87.15	2.100	0.50
180.00	Ericsson RRUS 11 (Band 12)	3	0.80	2.000	50.00	2.570	0.50	136.93	3.908	0.50
180.00	Ericsson RRUS 32 (50.8 lbs)	3	0.80	2.000	50.80	2.690	0.50	142.01	4.162	0.50
180.00	Ericsson RRUS-12 B2	3	0.80	2.000	58.00	3.150	0.50	161.16	4.630	0.50
180.00	Powerwave Allgon 7770.00	3	0.80	2.000	35.00	5.510	0.65	217.84	6.880	0.65
180.00	KMW AM-X-CD-16-65-00T-RET	3	0.80	2.000	48.50	8.020	0.67	255.02	11.575	0.67
180.00	CCI HPA-65R-BUU-H6	3	0.80	2.000	51.00	9.660	0.69	330.78	13.196	0.69
180.00	Flat Low Profile Platform	1	1.00	0.000	1,500.00	26.100	1.00	2,326.23	50.447	1.00
179.00	Kathrein Scala MF-900B	1	1.00	0.000	13.00	2.610	1.00	150.46	17.057	1.00
173.00	Telewave ANT450F6	1	1.00	0.000	21.00	1.800	1.00	83.16	5.274	1.00
172.00	Flat Side Arm	1	1.00	0.000	150.00	6.300	0.67	242.83	9.419	0.67
166.00	Fastback Networks Intelligent	1	0.80	0.000	8.80	0.670	1.00	32.65	1.370	1.00
166.00	Ericsson Radio 4449 B12,B71	3	0.80	0.000	74.00	1.640	0.50	144.82	2.708	0.50
166.00	Ericsson AIR 21, 1.3 M, B2A B4P	3	0.80	1.000	83.00	6.050	0.71	267.61	8.785	0.71
166.00	Ericsson AIR 21, 1.3M, B4A B2P	3	0.80	1.000	81.50	6.090	0.70	265.43	8.827	0.70
166.00	Round T-Arm w/ Reinforcement	3	0.75	0.000	404.97	9.700	0.67	833.22	20.128	0.67
166.00	RFS APXVAARR24_43-U-NA20	3	0.80	0.000	127.90	20.240	0.63	624.50	24.931	0.63
158.00	Telewave ANT450F6	1	1.00	0.000	21.00	1.800	1.00	82.56	5.240	1.00
158.00	Flat Side Arm	1	1.00	0.000	150.00	6.300	1.00	242.01	9.392	1.00
150.00	Sinclair SD210-SF2P4SNM	1	1.00	0.000	8.30	1.370	1.00	66.30	7.051	1.00
150.00	Round Side Arm	1	1.00	0.000	150.00	5.200	1.00	241.53	8.600	1.00
147.00	Sinclair SC442D-HF1LDF(DXX-	1	1.00	-1.000	79.00	10.480	1.00	389.51	19.822	1.00
146.00	Sinclair SC479-HF1LDF(E5765)	1	1.00	0.000	34.00	5.030	1.00	189.02	11.445	1.00
146.00	Decibel DB809DK-XT	2	1.00	0.000	64.00	6.350	1.00	262.60	15.702	1.00
142.00	Telewave ANT150D (5 lbs)	1	1.00	-1.000	5.00	1.090	1.00	12.38	3.798	1.00
141.00	Bird 432-83H-01-T	1	0.80	0.000	25.00	1.400	1.00	78.94	2.376	1.00
140.00	Round Side Arm	3	1.00	0.000	150.00	5.200	0.67	240.86	8.575	0.67
134.00	Alcatel-Lucent TD-RRH8x20-25	3	0.75	1.000	70.00	4.050	0.61	186.97	5.695	0.61
134.00	RFS APXVTM14-C-I20	3	0.75	1.000	52.90	6.340	0.66	223.30	9.035	0.66
134.00	RFS APXVSPP18-C-A20	3	0.75	1.000	57.00	8.020	0.69	270.49	11.471	0.69
134.00	Flat Platform w/ Handrails	1	1.00	0.000	2,000.00	31.600	1.00	3,758.91	50.945	1.00
132.00	Alcatel-Lucent 800 MHz RRH w/	3	0.75	3.000	61.80	2.500	0.50	173.52	3.789	0.50
132.00	Alcatel-Lucent 1900MHz RRH	3	0.75	3.000	44.00	3.260	0.72	178.62	4.731	0.72
125.00	Nokia AHCA AirScale RRH 4T4R	3	0.80	0.000	35.30	1.290	0.50	83.57	2.217	0.50
125.00	Alcatel-Lucent B25 RRH4x30	3	0.80	0.000	53.00	2.120	0.50	127.10	3.338	0.50
125.00	Alcatel-Lucent B13 RRH4x30-4R	3	0.80	0.000	57.80	2.140	0.50	142.47	3.366	0.50
125.00	Nokia B66a RRH4x45 (UHIE)	3	0.80	0.000	56.80	2.540	0.50	142.82	3.917	0.50
125.00	Raycap RCMDC-6627-PF-48	1	0.80	0.000	32.00	4.060	0.50	188.00	5.737	0.50
125.00	Antel LPA-80080/6CF ___	4	0.80	0.000	21.00	8.630	0.62	270.38	5.806	0.62
125.00	Commscope JAHH-65B-R3B	6	0.80	0.000	60.60	9.110	0.69	308.92	12.514	0.69
125.00	Antel LPA-80063/6CF	2	0.80	0.000	27.00	9.590	0.82	391.46	11.279	0.82
125.00	Round Low Profile Platform	1	1.00	0.000	1,500.00	21.700	1.00	2,295.25	45.266	1.00
115.00	Decibel DB844H90E-XY	12	0.80	0.000	14.00	3.610	0.73	155.63	4.129	0.73

115.00	Round Low Profile Platform	1	1.00	0.000	1,500.00	21.700	1.00	2,288.51	45.066	1.00
105.00	RFS APXV18-206517S-C	3	1.00	1.000	26.40	5.160	0.68	138.33	8.017	0.68
97.00	Andrew DB586	1	1.00	-1.000	8.30	0.740	1.00	69.87	2.220	1.00
95.00	Bird 429-83H-01-T	1	0.80	1.000	20.00	0.920	0.50	58.19	1.806	0.50
95.00	Flat Side Arm	3	1.00	0.000	150.00	6.300	0.67	237.44	9.238	0.67
93.00	Andrew DB586	1	1.00	3.000	8.30	0.740	1.00	69.52	2.215	1.00
80.00	RFS PA6-65AC	1	1.00	0.000	278.00	47.050	1.00	833.15	52.441	1.00
78.00	PCTEL GPS-TMG-HR-26N	1	1.00	1.000	0.60	0.090	1.00	6.27	0.301	1.00
30.00	Generic GPS	1	1.00	0.000	10.00	0.900	1.00	40.93	1.576	1.00
Totals	Num Loadings:56	128			14,100.31			36,922.45		

Linear Appurtenance Properties

Load Case Azimuth (deg) : 50

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	184.00	1	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	184.00	1	0.40" (10.3mm) Fiber	0.40	0.09	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	184.00	4	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	184.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	184.00	1	3" conduit	3.50	7.58	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	173.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	EVERSOURCE
0.00	166.00	2	0.25" (6.4mm) Cat 6	0.25	0.04	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	166.00	1	1 1/4" (1.25"- 31.8mm)	1.25	1.05	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	166.00	3	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	166.00	6	1 5/8" Coax	1.98	0.82	N	6	1.00	1.00	60	1.00	Y	T-MOBILE
0.00	166.00	1	1.4" (35.6mm) Hybrid	1.40	1.30	N	1	1.00	1.00	55	1.00	Y	T-MOBILE
0.00	158.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	EVERSOURCE
0.00	150.00	1	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	LITCHFIELD COUNTY
0.00	147.00	2	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	CONNECTICUT
0.00	146.00	5	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	CONNECTICUT
0.00	142.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	CONNECTICUT
0.00	141.00	1	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	CONNECTICUT
0.00	141.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	CONNECTICUT
0.00	141.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	CONNECTICUT
0.00	134.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	3	0.00	0.00	25	3.10	N	SPRINT NEXTEL
0.00	134.00	1	7/8" (0.88"- 22.2mm)	0.88	0.70	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	125.00	6	1 5/8" Coax	1.98	0.82	N	6	1.00	1.00	220	1.00	Y	VERIZON WIRELESS
0.00	125.00	1	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	115.00	12	1 1/4" Coax	1.55	0.63	N	6	1.00	1.00	240	1.00	Y	SPRINT NEXTEL
0.00	112.00	1	#20 Dywidag Bar	4.00	0.00	N	1	0.00	0.00	280	0.00	Y	
0.00	112.00	1	#20 Dywidag Bar	4.00	0.00	N	1	0.00	0.00	190	0.00	Y	
0.00	112.00	1	#20 Dywidag Bar	4.00	0.00	N	1	0.00	0.00	10	0.00	Y	
0.00	112.00	1	#20 Dywidag Bar	4.00	0.00	N	1	0.00	0.00	100	0.00	Y	
0.00	105.00	6	1 5/8" Coax	1.98	0.82	N	3	1.00	1.00	20	1.00	Y	METRO PCS INC
0.00	97.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	EVERSOURCE
0.00	95.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	EVERSOURCE
0.00	93.00	1	7/8" Coax	1.09	0.33	N	1	0.00	0.00	90	0.00	N	EVERSOURCE
0.00	80.00	1	EW63	2.01	0.51	N	0	0.00	0.00	0	0.00	N	CONNECTICUT
0.00	78.00	1	1/2" Coax	0.63	0.15	N	1	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	30.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connections				Continuation?
						Description	Spacing (in)	Len (in)	Connectors	
0.00	103.7	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.13	5/8" A36 U-Bolt	No

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.4375	52.750	72.640	25,115.3	19.85	120.57	78.1	937.8	0.0	0.0	19.64	8,737	0.0
5.00		0.4375	51.653	71.116	23,567.9	19.41	118.06	78.6	898.7	0.0	1,222.9	19.64	8,418	334.0
10.00		0.4375	50.556	69.593	22,085.4	18.96	115.56	79.1	860.4	0.0	1,197.0	19.64	8,106	334.0
15.00		0.4375	49.458	68.069	20,666.4	18.52	113.05	79.6	823.0	0.0	1,171.1	19.64	7,799	334.0
20.00		0.4375	48.361	66.546	19,309.5	18.08	110.54	80.1	786.4	0.0	1,145.2	19.64	7,499	334.0
25.00		0.4375	47.264	65.022	18,013.3	17.64	108.03	80.7	750.7	0.0	1,119.2	19.64	7,204	334.0
30.00		0.4375	46.167	63.498	16,776.5	17.20	105.52	81.2	715.7	0.0	1,093.3	19.64	6,915	334.0
35.00		0.4375	45.069	61.975	15,597.7	16.75	103.02	81.7	681.6	0.0	1,067.4	19.64	6,633	334.0
40.00		0.4375	43.972	60.451	14,475.4	16.31	100.51	82.2	648.4	0.0	1,041.5	19.64	6,356	334.0
42.96	Bot - Section 2	0.4375	43.323	59.550	13,837.8	16.05	99.02	82.5	629.1	0.0	603.6	19.64	6,195	197.5
45.00		0.4375	42.875	58.928	13,408.2	15.87	98.00	82.6	616.0	0.0	771.7	19.64	6,269	136.5
49.04	Top - Section 1	0.3750	42.738	50.421	11,432.7	18.69	113.97	79.4	526.9	0.0	1,502.0	19.64	6,051	269.9
50.00		0.3750	42.528	50.171	11,263.0	18.59	113.41	79.5	521.6	0.0	164.3	19.64	6,000	64.1
55.00		0.3750	41.431	48.865	10,406.2	18.07	110.48	80.1	494.7	0.0	842.5	19.64	5,737	334.0
60.00		0.3750	40.333	47.559	9,594.0	17.55	107.56	80.8	468.5	0.0	820.3	19.64	5,480	334.0
65.00		0.3750	39.236	46.253	8,825.1	17.04	104.63	81.4	443.0	0.0	798.0	19.64	5,228	334.0
70.00		0.3750	38.139	44.947	8,098.5	16.52	101.70	82.0	418.2	0.0	775.8	19.64	4,983	334.0
75.00		0.3750	37.042	43.641	7,412.9	16.01	98.78	82.6	394.2	0.0	753.6	19.64	4,743	334.0
78.00		0.3750	36.383	42.857	7,020.8	15.70	97.02	82.6	380.1	0.0	441.5	19.64	4,602	200.4
80.00		0.3750	35.944	42.335	6,767.2	15.49	95.85	82.6	370.8	0.0	289.9	19.64	4,510	133.6
85.00		0.3750	34.847	41.029	6,160.0	14.97	92.93	82.6	348.2	0.0	709.2	19.64	4,282	334.0
87.54	Bot - Section 3	0.3750	34.290	40.366	5,866.0	14.71	91.44	82.6	336.9	0.0	351.7	19.64	4,168	169.7
90.00		0.3750	33.750	39.723	5,590.4	14.46	90.00	82.6	326.2	0.0	620.3	19.64	4,186	164.3
92.46	Top - Section 2	0.3125	33.836	33.250	4,721.1	17.68	108.27	80.6	274.8	0.0	609.5	19.64	4,077	164.1
93.00		0.3125	33.717	33.132	4,670.9	17.61	107.89	80.7	272.9	0.0	61.4	19.64	4,053	36.3
95.00		0.3125	33.278	32.696	4,489.2	17.37	106.49	81.0	265.7	0.0	224.0	19.64	3,966	133.6
97.00		0.3125	32.839	32.261	4,312.2	17.12	105.08	81.3	258.6	0.0	221.0	19.64	3,880	133.6
100.0		0.3125	32.181	31.608	4,055.7	16.75	102.98	81.7	248.2	0.0	326.0	19.64	3,753	200.4
103.7	Reinf. Top	0.3125	31.358	30.792	3,749.5	16.28	100.34	82.2	235.5	0.0	398.1	19.64	3,597	250.5
105.0		0.3125	31.083	30.520	3,651.0	16.13	99.47	82.4	231.3	0.0	130.4			
110.0		0.3125	29.986	29.431	3,274.2	15.51	95.96	82.6	215.1	0.0	510.0			
115.0		0.3125	28.889	28.343	2,924.3	14.89	92.44	82.6	199.4	0.0	491.5			
120.0		0.3125	27.792	27.255	2,600.2	14.27	88.93	82.6	184.3	0.0	473.0			
125.0		0.3125	26.694	26.167	2,301.0	13.65	85.42	82.6	169.8	0.0	454.5			
130.0		0.3125	25.597	25.078	2,025.7	13.03	81.91	82.6	155.9	0.0	435.9			
132.0		0.3125	25.158	24.643	1,922.0	12.78	80.51	82.6	150.5	0.0	169.2			
132.1	Bot - Section 4	0.3125	25.132	24.617	1,915.9	12.77	80.42	82.6	150.2	0.0	10.0			
134.0		0.3125	24.719	24.208	1,821.9	12.54	79.10	82.6	145.2	0.0	251.8			
135.0		0.3125	24.500	23.990	1,773.2	12.41	78.40	82.6	142.6	0.0	132.2			
135.8	Top - Section 3	0.1875	24.684	14.578	1,105.3	21.80	131.65	75.8	88.2	0.0	114.0			
140.0		0.1875	23.778	14.039	987.1	20.95	126.81	76.8	81.8	0.0	201.1			
141.0		0.1875	23.558	13.908	959.8	20.74	125.64	77.0	80.2	0.0	47.5			
142.0		0.1875	23.339	13.777	933.0	20.54	124.47	77.2	78.7	0.0	47.1			
145.0		0.1875	22.681	13.386	855.6	19.92	120.96	78.0	74.3	0.0	138.6			
146.0		0.1875	22.461	13.255	830.8	19.71	119.79	78.2	72.9	0.0	45.3			
147.0		0.1875	22.242	13.125	806.5	19.51	118.62	78.5	71.4	0.0	44.9			
150.0		0.1875	21.583	12.733	736.4	18.89	115.11	79.2	67.2	0.0	132.0			
155.0		0.1875	20.486	12.080	628.8	17.85	109.26	80.4	60.5	0.0	211.1			
158.0		0.1875	19.828	11.688	569.6	17.24	105.75	81.1	56.6	0.0	121.3			
160.0		0.1875	19.389	11.427	532.3	16.82	103.41	81.6	54.1	0.0	78.7			
165.0		0.1875	18.292	10.774	446.2	15.79	97.56	82.6	48.0	0.0	188.9			
166.0		0.1875	18.072	10.643	430.1	15.58	96.39	82.6	46.9	0.0	36.4			
170.0		0.1875	17.194	10.121	369.8	14.76	91.70	82.6	42.4	0.0	141.3			
172.0		0.1875	16.756	9.860	341.9	14.35	89.36	82.6	40.2	0.0	68.0			
173.0		0.1875	16.536	9.729	328.5	14.14	88.19	82.6	39.1	0.0	33.3			
175.0		0.1875	16.097	9.468	302.8	13.73	85.85	82.6	37.0	0.0	65.3			
179.0		0.1875	15.219	8.946	255.4	12.90	81.17	82.6	33.1	0.0	125.3			
180.0		0.1875	15.000	8.815	244.4	12.70	80.00	82.6	32.1	0.0	30.2			

	25,271.1	6,930.5

Load Case: 1.2D + 1.6W 93 mph with No Ice 29 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.15
Dead Load Factor :1.20
Wind Load Factor :1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		267.6	0.0					0.0	0.0	267.6	0.0	0.0	0.0
5.00		532.7	1,467.5					0.0	790.7	532.7	2,258.2	0.0	0.0
10.00		527.7	1,436.4					0.0	790.7	527.7	2,227.1	0.0	0.0
15.00		522.7	1,405.3					0.0	790.7	522.7	2,196.0	0.0	0.0
20.00		621.8	1,374.2					0.0	790.7	621.8	2,164.9	0.0	0.0
25.00		715.1	1,343.1					148.2	790.7	863.3	2,133.8	0.0	0.0
30.00	Appurtenance(s)	706.8	1,312.0	26.8	0.0	0.0	12.0	148.9	790.7	882.6	2,114.7	0.0	0.0
35.00		712.7	1,280.9					153.3	788.7	865.9	2,069.6	0.0	0.0
40.00		573.7	1,249.8					160.4	788.7	734.1	2,038.5	0.0	0.0
42.96	Bot - Section 2	365.7	724.4					98.0	466.4	463.7	1,190.7	0.0	0.0
45.00		451.7	926.0					69.0	322.3	520.8	1,248.4	0.0	0.0
49.04	Top - Section 1	371.9	1,802.4					174.5	637.3	546.4	2,439.7	0.0	0.0
50.00		444.5	197.2					42.0	151.4	486.5	348.6	0.0	0.0
55.00		745.7	1,011.0					223.4	788.7	969.2	1,799.7	0.0	0.0
60.00		744.3	984.3					230.7	788.7	975.0	1,773.0	0.0	0.0
65.00		740.8	957.7					237.6	788.7	978.5	1,746.4	0.0	0.0
70.00		735.5	931.0					244.3	788.7	979.9	1,719.7	0.0	0.0
75.00		584.2	904.3					250.9	788.7	835.0	1,693.0	0.0	0.0
78.00	Appurtenance(s)	362.4	529.8	3.5	0.0	3.5	0.7	153.6	473.2	519.5	1,003.7	0.0	0.0
80.00	Appurtenance(s)	502.3	347.9	1,857.2	0.0	0.0	333.6	103.6	315.1	2,463.1	996.6	0.0	0.0
85.00		537.6	851.0					263.3	784.7	800.9	1,635.7	0.0	0.0
87.54	Bot - Section 3	355.8	422.1					136.0	398.6	491.7	820.7	0.0	0.0
90.00		350.3	744.3					133.1	386.1	483.4	1,130.4	0.0	0.0
92.46	Top - Section 2	212.7	731.5					105.8	385.6	318.5	1,117.0	0.0	0.0
93.00	Appurtenance(s)	179.0	73.7	30.8	0.0	92.3	10.0	29.8	85.3	239.5	168.9	0.0	0.0
95.00	Appurtenance(s)	280.2	268.8	540.3	0.0	15.3	564.0	86.8	313.1	907.3	1,145.9	0.0	0.0
97.00	Appurtenance(s)	347.0	265.2	30.8	0.0	-30.8	10.0	87.4	312.7	465.2	587.9	0.0	0.0
100.00		463.3	391.2					132.3	467.9	595.5	859.1	0.0	0.0
103.75	Reinf. Top	340.2	477.7					167.2	584.9	507.4	1,062.7	0.0	0.0
105.00	Appurtenance(s)	417.3	156.5	450.3	0.0	450.3	95.0	56.2	94.8	923.8	346.3	0.0	0.0
110.00		658.1	612.0					170.8	349.6	828.9	961.6	0.0	0.0
115.00	Appurtenance(s)	642.1	589.8	2,057.9	0.0	0.0	2,001.6	172.6	349.6	2,872.6	2,940.9	0.0	0.0
120.00		625.3	567.6					128.8	304.2	754.0	871.8	0.0	0.0
125.00	Appurtenance(s)	476.0	545.3	4,166.2	0.0	0.0	3,170.8	130.5	304.2	4,772.7	4,020.3	0.0	0.0
130.00		233.9	523.1					0.0	266.9	233.9	790.0	0.0	0.0
132.00	Appurtenance(s)	70.2	203.0	371.0	0.0	1,113.0	380.9	0.0	106.8	441.2	690.7	0.0	0.0
132.12	Bot - Section 4	66.8	12.0					0.0	6.4	66.8	18.4	0.0	0.0
134.00	Appurtenance(s)	96.0	302.2	2,702.6	0.0	1,257.1	3,047.6	0.0	100.4	2,798.6	3,450.2	0.0	0.0
135.00		62.0	158.7					0.0	48.9	62.0	207.6	0.0	0.0
135.87	Top - Section 3	163.6	136.8					0.0	42.6	163.6	179.4	0.0	0.0
140.00	Appurtenance(s)	167.2	241.3	484.1	0.0	0.0	540.0	0.0	202.1	651.3	983.4	0.0	0.0
141.00	Appurtenance(s)	64.5	57.1	52.0	0.0	0.0	30.0	0.0	48.9	116.5	136.0	0.0	0.0
142.00	Appurtenance(s)	128.0	56.5	50.6	0.0	-50.6	6.0	0.0	47.6	178.6	110.1	0.0	0.0
145.00		127.5	166.4					0.0	141.6	127.5	308.0	0.0	0.0
146.00	Appurtenance(s)	63.2	54.4	831.1	0.0	0.0	194.4	0.0	47.2	894.3	296.0	0.0	0.0
147.00	Appurtenance(s)	125.4	53.9	491.3	0.0	-491.3	94.8	0.0	42.3	616.6	190.9	0.0	0.0
150.00	Appurtenance(s)	247.4	158.4	310.4	0.0	0.0	190.0	0.0	120.9	557.7	469.3	0.0	0.0
155.00		243.9	253.3					0.0	196.6	243.9	449.9	0.0	0.0

Load Case: 1.2D + 1.6W 93 mph with No Ice 29 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.15
Dead Load Factor :1.20
Wind Load Factor :1.60

158.00	Appurtenance(s)	149.9	145.6	388.4	0.0	0.0	205.2	0.0	118.0	538.2	468.7	0.0	0.0
160.00		205.5	94.4					0.0	77.9	205.5	172.2	0.0	0.0
165.00		174.7	226.6					0.0	194.6	174.7	421.3	0.0	0.0
166.00	Appurtenance(s)	123.4	43.7	3,321.6	0.0	1,000.6	2,787.5	0.0	38.9	3,444.9	2,870.1	0.0	0.0
170.00		140.4	169.6					0.0	97.2	140.4	266.8	0.0	0.0
172.00	Appurtenance(s)	68.3	81.6	207.4	0.0	0.0	180.0	0.0	48.6	275.6	310.2	0.0	0.0
173.00	Appurtenance(s)	66.7	40.0	88.6	0.0	0.0	25.2	0.0	24.3	155.3	89.5	0.0	0.0
175.00		129.5	78.4					0.0	47.8	129.5	126.2	0.0	0.0
179.00	Appurtenance(s)	106.0	150.4	129.7	0.0	0.0	15.6	0.0	95.7	235.7	261.6	0.0	0.0
180.00	Appurtenance(s)	20.7	36.3	3,874.6	0.0	5,301.9	3,025.6	0.0	23.9	3,895.3	3,085.7	0.0	0.0
								Totals:		46,865.6	67,183.7	0.00	0.00

Load Case: 1.2D + 1.6W 93 mph with No Ice 29 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.15
Dead Load Factor :1.20
Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-67.09	-46.73	0.00	-5,287.87	0.00	5,287.87	5,102.86	2,551.43	10,963.2	5,489.79	0.00	0.00	0.725
5.00	-64.66	-46.44	0.00	-5,054.24	0.00	5,054.24	5,029.12	2,514.56	10,576.3	5,296.03	0.12	-0.22	0.714
10.00	-62.26	-46.14	0.00	-4,822.05	0.00	4,822.05	4,953.95	2,476.98	10,193.1	5,104.17	0.46	-0.44	0.701
15.00	-59.89	-45.83	0.00	-4,591.37	0.00	4,591.37	4,877.36	2,438.68	9,813.98	4,914.28	1.04	-0.66	0.688
20.00	-57.55	-45.40	0.00	-4,362.24	0.00	4,362.24	4,799.34	2,399.67	9,438.93	4,726.48	1.85	-0.88	0.674
25.00	-55.26	-44.72	0.00	-4,135.23	0.00	4,135.23	4,719.90	2,359.95	9,068.23	4,540.86	2.90	-1.11	0.660
30.00	-52.99	-44.00	0.00	-3,911.64	0.00	3,911.64	4,639.03	2,319.51	8,702.08	4,357.51	4.18	-1.33	0.645
35.00	-50.77	-43.29	0.00	-3,691.62	0.00	3,691.62	4,556.73	2,278.36	8,340.67	4,176.53	5.70	-1.56	0.629
40.00	-48.62	-42.65	0.00	-3,475.18	0.00	3,475.18	4,473.00	2,236.50	7,984.18	3,998.03	7.46	-1.79	0.613
42.96	-47.36	-42.24	0.00	-3,349.09	0.00	3,349.09	4,422.82	2,211.41	7,775.79	3,893.68	8.62	-1.93	0.603
45.00	-46.03	-41.79	0.00	-3,262.76	0.00	3,262.76	4,378.03	2,189.01	7,615.75	3,813.53	9.46	-2.03	0.591
49.04	-43.53	-41.25	0.00	-3,093.92	0.00	3,093.92	3,604.17	1,802.08	6,267.69	3,138.50	11.26	-2.21	0.654
50.00	-43.09	-40.86	0.00	-3,054.32	0.00	3,054.32	3,591.50	1,795.75	6,214.33	3,111.78	11.71	-2.26	0.650
55.00	-41.17	-39.99	0.00	-2,850.05	0.00	2,850.05	3,524.70	1,762.35	5,938.60	2,973.71	14.20	-2.50	0.627
60.00	-39.27	-39.10	0.00	-2,650.12	0.00	2,650.12	3,456.48	1,728.24	5,666.60	2,837.51	16.95	-2.74	0.603
65.00	-37.42	-38.19	0.00	-2,454.63	0.00	2,454.63	3,386.83	1,693.41	5,398.53	2,703.28	19.95	-2.98	0.578
70.00	-35.60	-37.27	0.00	-2,263.68	0.00	2,263.68	3,315.75	1,657.87	5,134.58	2,571.11	23.21	-3.22	0.553
75.00	-33.84	-36.45	0.00	-2,077.35	0.00	2,077.35	3,242.30	1,621.15	4,873.54	2,440.39	26.71	-3.46	0.527
78.00	-32.80	-35.93	0.00	-1,968.01	0.00	1,968.01	3,184.09	1,592.04	4,699.23	2,353.11	28.93	-3.60	0.513
80.00	-31.86	-33.50	0.00	-1,896.14	0.00	1,896.14	3,145.28	1,572.64	4,584.79	2,295.80	30.45	-3.69	0.503
85.00	-30.19	-32.68	0.00	-1,728.64	0.00	1,728.64	3,048.26	1,524.13	4,304.87	2,155.63	34.44	-3.92	0.480
87.54	-29.34	-32.20	0.00	-1,645.62	0.00	1,645.62	2,998.97	1,499.48	4,166.05	2,086.12	36.56	-4.04	0.468
90.00	-28.18	-31.69	0.00	-1,566.42	0.00	1,566.42	2,951.23	1,475.62	4,033.76	2,019.88	38.67	-4.15	0.450
92.46	-27.06	-31.32	0.00	-1,488.58	0.00	1,488.58	2,412.07	1,206.04	3,317.78	1,661.36	40.84	-4.26	0.488
93.00	-26.87	-31.10	0.00	-1,471.47	0.00	1,471.47	2,405.85	1,202.93	3,297.34	1,651.12	41.32	-4.29	0.485
95.00	-25.75	-30.15	0.00	-1,409.26	0.00	1,409.26	2,382.81	1,191.41	3,222.46	1,613.62	43.14	-4.38	0.471
97.00	-25.14	-29.69	0.00	-1,348.97	0.00	1,348.97	2,359.55	1,179.77	3,148.11	1,576.40	44.99	-4.47	0.458
100.00	-24.26	-29.09	0.00	-1,259.91	0.00	1,259.91	2,324.22	1,162.11	3,037.61	1,521.06	47.84	-4.61	0.437
103.75	-23.18	-28.54	0.00	-1,150.82	0.00	1,150.82	2,279.33	1,139.67	2,901.28	1,452.80	51.53	-4.77	0.411
103.75	-23.18	-28.54	0.00	-1,150.82	0.00	1,150.82	2,279.33	1,139.67	2,901.28	1,452.80	51.53	-4.77	0.803
105.00	-22.80	-27.69	0.00	-1,114.70	0.00	1,114.70	2,264.20	1,132.10	2,856.29	1,430.27	52.78	-4.83	0.790
110.00	-21.73	-26.93	0.00	-976.28	0.00	976.28	2,186.61	1,093.30	2,659.07	1,331.51	58.05	-5.24	0.744
115.00	-18.91	-23.92	0.00	-841.64	0.00	841.64	2,105.76	1,052.88	2,465.08	1,234.37	63.74	-5.63	0.691
120.00	-17.97	-23.20	0.00	-722.05	0.00	722.05	2,024.90	1,012.45	2,278.43	1,140.91	69.84	-6.01	0.642
125.00	-14.38	-18.11	0.00	-606.07	0.00	606.07	1,944.05	972.03	2,099.13	1,051.12	76.32	-6.37	0.584
130.00	-13.55	-17.84	0.00	-515.54	0.00	515.54	1,863.20	931.60	1,927.17	965.02	83.17	-6.72	0.542
132.00	-12.89	-17.34	0.00	-478.74	0.00	478.74	1,830.86	915.43	1,860.45	931.61	86.00	-6.86	0.521
132.12	-12.86	-17.28	0.00	-476.67	0.00	476.67	1,828.92	914.46	1,856.49	929.62	86.18	-6.87	0.520
134.00	-9.75	-14.11	0.00	-442.91	0.00	442.91	1,798.52	899.26	1,794.90	898.78	88.90	-7.00	0.498
135.00	-9.54	-14.03	0.00	-428.80	0.00	428.80	1,782.35	891.17	1,762.57	882.59	90.37	-7.07	0.491
135.87	-9.34	-13.87	0.00	-416.60	0.00	416.60	993.95	496.97	1,000.68	501.09	91.66	-7.12	0.842
140.00	-8.40	-13.13	0.00	-359.30	0.00	359.30	969.84	484.92	940.01	470.70	97.92	-7.39	0.773
141.00	-8.26	-13.01	0.00	-346.18	0.00	346.18	963.86	481.93	925.45	463.41	99.48	-7.49	0.756

Load Case: 1.2D + 1.6W 93 mph with No Ice 29 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.15
Dead Load Factor :1.20
Wind Load Factor :1.60

142.00	-8.13	-12.85	0.00	-333.17	0.00	333.17	957.82	478.91	910.95	456.15	101.05	-7.59	0.740
145.00	-7.80	-12.70	0.00	-294.63	0.00	294.63	939.35	469.68	867.78	434.53	105.90	-7.88	0.687
146.00	-7.61	-11.79	0.00	-281.92	0.00	281.92	933.08	466.54	853.51	427.39	107.56	-7.97	0.668
147.00	-7.47	-11.18	0.00	-270.13	0.00	270.13	926.76	463.38	839.30	420.27	109.23	-8.07	0.651
150.00	-7.02	-10.60	0.00	-236.60	0.00	236.60	907.44	453.72	797.07	399.13	114.37	-8.34	0.601
155.00	-6.56	-10.33	0.00	-183.60	0.00	183.60	874.09	437.05	728.06	364.57	123.29	-8.74	0.512
158.00	-6.15	-9.74	0.00	-152.61	0.00	152.61	853.41	426.70	687.57	344.29	128.84	-8.97	0.451
160.00	-5.97	-9.54	0.00	-133.12	0.00	133.12	839.33	419.66	660.97	330.98	132.61	-9.11	0.410
165.00	-5.56	-9.31	0.00	-85.43	0.00	85.43	800.44	400.22	593.98	297.43	142.28	-9.40	0.295
166.00	-3.28	-5.45	0.00	-75.12	0.00	75.12	790.74	395.37	579.60	290.23	144.25	-9.46	0.263
170.00	-3.03	-5.27	0.00	-53.31	0.00	53.31	751.93	375.97	523.82	262.30	152.21	-9.63	0.207
172.00	-2.77	-4.95	0.00	-42.76	0.00	42.76	732.53	366.26	496.99	248.86	156.24	-9.70	0.176
173.00	-2.70	-4.79	0.00	-37.81	0.00	37.81	722.82	361.41	483.84	242.28	158.26	-9.73	0.160
175.00	-2.59	-4.64	0.00	-28.24	0.00	28.24	703.42	351.71	458.07	229.37	162.33	-9.79	0.127
179.00	-2.37	-4.37	0.00	-9.67	0.00	9.67	664.61	332.31	408.64	204.62	170.53	-9.86	0.051
180.00	0.00	-3.90	0.00	-5.30	0.00	5.30	654.91	327.45	396.72	198.65	172.59	-9.87	0.027

Load Case: 0.9D + 1.6W — 93 mph with No Ice (Reduced DL) — 29 Iterations

Gust Response Factor :1.10 — Wind Importance Factor 1.15
Dead Load Factor :0.90
Wind Load Factor :1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		213.9	0.0					0.0	0.0	213.9	0.0	0.0	0.0
5.00		423.3	1,100.6					0.0	593.0	423.3	1,693.6	0.0	0.0
10.00		414.3	1,077.3					0.0	593.0	414.3	1,670.3	0.0	0.0
15.00		405.3	1,054.0					0.0	593.0	405.3	1,647.0	0.0	0.0
20.00		562.1	1,030.6					0.0	593.0	562.1	1,623.7	0.0	0.0
25.00		715.1	1,007.3					148.2	593.0	863.3	1,600.3	0.0	0.0
30.00	Appurtenance(s)	706.8	984.0	26.8	0.0	0.0	9.0	148.9	593.0	882.6	1,586.0	0.0	0.0
35.00		712.7	960.7					153.3	591.5	865.9	1,552.2	0.0	0.0
40.00		573.7	937.3					160.4	591.5	734.1	1,528.8	0.0	0.0
42.96	Bot - Section 2	365.7	543.3					98.0	349.8	463.7	893.1	0.0	0.0
45.00		451.7	694.5					69.0	241.7	520.8	936.3	0.0	0.0
49.04	Top - Section 1	371.9	1,351.8					174.5	477.9	546.4	1,829.7	0.0	0.0
50.00		444.5	147.9					42.0	113.6	486.5	261.5	0.0	0.0
55.00		745.7	758.2					223.4	591.5	969.2	1,349.8	0.0	0.0
60.00		744.3	738.2					230.7	591.5	975.0	1,329.8	0.0	0.0
65.00		740.8	718.2					237.6	591.5	978.5	1,309.8	0.0	0.0
70.00		735.5	698.2					244.3	591.5	979.9	1,289.8	0.0	0.0
75.00		584.2	678.3					250.9	591.5	835.0	1,269.8	0.0	0.0
78.00	Appurtenance(s)	362.4	397.4	3.5	0.0	3.5	0.5	153.6	354.9	519.5	752.8	0.0	0.0
80.00	Appurtenance(s)	502.3	260.9	1,857.2	0.0	0.0	250.2	103.6	236.3	2,463.1	747.4	0.0	0.0
85.00		537.6	638.3					263.3	588.6	800.9	1,226.8	0.0	0.0
87.54	Bot - Section 3	355.8	316.6					136.0	299.0	491.7	615.5	0.0	0.0
90.00		350.3	558.2					133.1	289.6	483.4	847.8	0.0	0.0
92.46	Top - Section 2	212.7	548.6					105.8	289.2	318.5	837.8	0.0	0.0
93.00	Appurtenance(s)	179.0	55.2	30.8	0.0	92.3	7.5	29.8	64.0	239.5	126.7	0.0	0.0
95.00	Appurtenance(s)	280.2	201.6	540.3	0.0	15.3	423.0	86.8	234.8	907.3	859.4	0.0	0.0
97.00	Appurtenance(s)	347.0	198.9	30.8	0.0	-30.8	7.5	87.4	234.6	465.2	441.0	0.0	0.0
100.00		463.3	293.4					132.3	350.9	595.5	644.3	0.0	0.0
103.75	Reinf. Top	340.2	358.3					167.2	438.7	507.4	797.0	0.0	0.0
105.00	Appurtenance(s)	417.3	117.4	450.3	0.0	450.3	71.3	56.2	71.1	923.8	259.7	0.0	0.0
110.00		658.1	459.0					170.8	262.2	828.9	721.2	0.0	0.0
115.00	Appurtenance(s)	642.1	442.3	2,057.9	0.0	0.0	1,501.2	172.6	262.2	2,872.6	2,205.7	0.0	0.0
120.00		625.3	425.7					128.8	228.1	754.0	653.8	0.0	0.0
125.00	Appurtenance(s)	470.5	409.0	4,166.2	0.0	0.0	2,378.1	130.5	228.1	4,767.2	3,015.2	0.0	0.0
130.00		225.6	392.3					0.0	200.2	225.6	592.5	0.0	0.0
132.00	Appurtenance(s)	67.2	152.3	371.0	0.0	1,113.0	285.7	0.0	80.1	438.2	518.0	0.0	0.0
132.12	Bot - Section 4	63.5	9.0					0.0	4.8	63.5	13.8	0.0	0.0
134.00	Appurtenance(s)	91.2	226.6	2,702.6	0.0	1,257.1	2,285.7	0.0	75.3	2,793.7	2,587.6	0.0	0.0
135.00		58.7	119.0					0.0	36.7	58.7	155.7	0.0	0.0
135.87	Top - Section 3	154.1	102.6					0.0	31.9	154.1	134.6	0.0	0.0
140.00	Appurtenance(s)	157.1	181.0	484.1	0.0	0.0	405.0	0.0	151.6	641.2	737.6	0.0	0.0
141.00	Appurtenance(s)	60.1	42.8	52.0	0.0	0.0	22.5	0.0	36.7	112.1	102.0	0.0	0.0
142.00	Appurtenance(s)	118.5	42.4	50.6	0.0	-50.6	4.5	0.0	35.7	169.1	82.6	0.0	0.0
145.00		117.6	124.8					0.0	106.2	117.6	231.0	0.0	0.0
146.00	Appurtenance(s)	57.9	40.8	831.1	0.0	0.0	145.8	0.0	35.4	889.0	222.0	0.0	0.0
147.00	Appurtenance(s)	114.0	40.4	491.3	0.0	-491.3	71.1	0.0	31.7	605.3	143.2	0.0	0.0
150.00	Appurtenance(s)	222.4	118.8	310.4	0.0	0.0	142.5	0.0	90.7	532.8	351.9	0.0	0.0
155.00		216.8	190.0					0.0	147.5	216.8	337.4	0.0	0.0

Load Case: 0.9D + 1.6W 93 mph with No Ice (Reduced DL) 29 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.15
Dead Load Factor :0.90
Wind Load Factor :1.60

158.00	Appurtenance(s)	131.3	109.2	388.4	0.0	0.0	153.9	0.0	88.5	519.7	351.6	0.0	0.0
160.00		177.0	70.8					0.0	58.4	177.0	129.2	0.0	0.0
165.00		149.5	170.0					0.0	146.0	149.5	316.0	0.0	0.0
166.00	Appurtenance(s)	118.9	32.8	3,321.6	0.0	1,000.6	2,090.6	0.0	29.2	3,440.5	2,152.6	0.0	0.0
170.00		140.4	127.2					0.0	72.9	140.4	200.1	0.0	0.0
172.00	Appurtenance(s)	68.3	61.2	207.4	0.0	0.0	135.0	0.0	36.5	275.6	232.7	0.0	0.0
173.00	Appurtenance(s)	66.7	30.0	88.6	0.0	0.0	18.9	0.0	18.2	155.3	67.1	0.0	0.0
175.00		129.5	58.8					0.0	35.9	129.5	94.7	0.0	0.0
179.00	Appurtenance(s)	106.0	112.8	129.7	0.0	0.0	11.7	0.0	71.7	235.7	196.2	0.0	0.0
180.00	Appurtenance(s)	20.7	27.2	3,874.6	0.0	5,301.9	2,269.2	0.0	17.9	3,895.3	2,314.3	0.0	0.0
								Totals:		46,195.1	50,387.8	0.00	0.00

Load Case: 0.9D + 1.6W 93 mph with No Ice (Reduced DL) 29 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.15
Dead Load Factor :0.90
Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-50.30	-46.08	0.00	-5,175.70	0.00	5,175.70	5,102.86	2,551.43	10,963.2	5,489.79	0.00	0.00	0.708
5.00	-48.44	-45.83	0.00	-4,945.32	0.00	4,945.32	5,029.12	2,514.56	10,576.3	5,296.03	0.11	-0.21	0.696
10.00	-46.60	-45.58	0.00	-4,716.17	0.00	4,716.17	4,953.95	2,476.98	10,193.1	5,104.17	0.45	-0.43	0.684
15.00	-44.78	-45.33	0.00	-4,488.26	0.00	4,488.26	4,877.36	2,438.68	9,813.98	4,914.28	1.02	-0.64	0.671
20.00	-42.99	-44.91	0.00	-4,261.60	0.00	4,261.60	4,799.34	2,399.67	9,438.93	4,726.48	1.81	-0.86	0.657
25.00	-41.24	-44.18	0.00	-4,037.03	0.00	4,037.03	4,719.90	2,359.95	9,068.23	4,540.86	2.83	-1.08	0.642
30.00	-39.50	-43.42	0.00	-3,816.12	0.00	3,816.12	4,639.03	2,319.51	8,702.08	4,357.51	4.09	-1.30	0.627
35.00	-37.81	-42.66	0.00	-3,599.02	0.00	3,599.02	4,556.73	2,278.36	8,340.67	4,176.53	5.57	-1.53	0.611
40.00	-36.17	-42.00	0.00	-3,385.70	0.00	3,385.70	4,473.00	2,236.50	7,984.18	3,998.03	7.29	-1.75	0.595
42.96	-35.21	-41.58	0.00	-3,261.52	0.00	3,261.52	4,422.82	2,211.41	7,775.79	3,893.68	8.42	-1.88	0.585
45.00	-34.19	-41.11	0.00	-3,176.56	0.00	3,176.56	4,378.03	2,189.01	7,615.75	3,813.53	9.25	-1.98	0.574
49.04	-32.30	-40.56	0.00	-3,010.50	0.00	3,010.50	3,604.17	1,802.08	6,267.69	3,138.50	11.00	-2.16	0.634
50.00	-31.96	-40.14	0.00	-2,971.56	0.00	2,971.56	3,591.50	1,795.75	6,214.33	3,111.78	11.44	-2.20	0.630
55.00	-30.49	-39.24	0.00	-2,770.85	0.00	2,770.85	3,524.70	1,762.35	5,938.60	2,973.71	13.88	-2.44	0.607
60.00	-29.05	-38.33	0.00	-2,574.63	0.00	2,574.63	3,456.48	1,728.24	5,666.60	2,837.51	16.56	-2.67	0.584
65.00	-27.64	-37.40	0.00	-2,382.98	0.00	2,382.98	3,386.83	1,693.41	5,398.53	2,703.28	19.49	-2.91	0.560
70.00	-26.26	-36.46	0.00	-2,195.97	0.00	2,195.97	3,315.75	1,657.87	5,134.58	2,571.11	22.66	-3.14	0.535
75.00	-24.92	-35.63	0.00	-2,013.67	0.00	2,013.67	3,242.30	1,621.15	4,873.54	2,440.39	26.07	-3.37	0.509
78.00	-24.13	-35.12	0.00	-1,906.76	0.00	1,906.76	3,184.09	1,592.04	4,699.23	2,353.11	28.23	-3.51	0.495
80.00	-23.45	-32.68	0.00	-1,836.53	0.00	1,836.53	3,145.28	1,572.64	4,584.79	2,295.80	29.72	-3.60	0.486
85.00	-22.18	-31.86	0.00	-1,673.13	0.00	1,673.13	3,048.26	1,524.13	4,304.87	2,155.63	33.61	-3.82	0.463
87.54	-21.54	-31.37	0.00	-1,592.20	0.00	1,592.20	2,998.97	1,499.48	4,166.05	2,086.12	35.67	-3.93	0.451
90.00	-20.67	-30.87	0.00	-1,515.02	0.00	1,515.02	2,951.23	1,475.62	4,033.76	2,019.88	37.72	-4.04	0.434
92.46	-19.83	-30.52	0.00	-1,439.18	0.00	1,439.18	2,412.07	1,206.04	3,317.78	1,661.36	39.83	-4.15	0.471
93.00	-19.69	-30.29	0.00	-1,422.50	0.00	1,422.50	2,405.85	1,202.93	3,297.34	1,651.12	40.30	-4.17	0.467
95.00	-18.85	-29.35	0.00	-1,361.91	0.00	1,361.91	2,382.81	1,191.41	3,222.46	1,613.62	42.07	-4.26	0.454
97.00	-18.39	-28.89	0.00	-1,303.21	0.00	1,303.21	2,359.55	1,179.77	3,148.11	1,576.40	43.87	-4.35	0.441
100.00	-17.72	-28.29	0.00	-1,216.55	0.00	1,216.55	2,324.22	1,162.11	3,037.61	1,521.06	46.65	-4.48	0.421
103.75	-16.92	-27.75	0.00	-1,110.46	0.00	1,110.46	2,279.33	1,139.67	2,901.28	1,452.80	50.23	-4.64	0.395
103.75	-16.92	-27.75	0.00	-1,110.46	0.00	1,110.46	2,279.33	1,139.67	2,901.28	1,452.80	50.23	-4.64	0.772
105.00	-16.63	-26.88	0.00	-1,075.32	0.00	1,075.32	2,264.20	1,132.10	2,856.29	1,430.27	51.45	-4.69	0.760
110.00	-15.80	-26.10	0.00	-940.95	0.00	940.95	2,186.61	1,093.30	2,659.07	1,331.51	56.57	-5.09	0.714
115.00	-13.72	-23.12	0.00	-810.47	0.00	810.47	2,105.76	1,052.88	2,465.08	1,234.37	62.10	-5.47	0.664
120.00	-13.00	-22.39	0.00	-694.86	0.00	694.86	2,024.90	1,012.45	2,278.43	1,140.91	68.02	-5.83	0.616
125.00	-10.40	-17.39	0.00	-582.91	0.00	582.91	1,944.05	972.03	2,099.13	1,051.12	74.31	-6.18	0.560
130.00	-9.77	-17.14	0.00	-495.94	0.00	495.94	1,863.20	931.60	1,927.17	965.02	80.95	-6.52	0.520
132.00	-9.28	-16.66	0.00	-460.54	0.00	460.54	1,830.86	915.43	1,860.45	931.61	83.70	-6.65	0.500
132.12	-9.26	-16.61	0.00	-458.55	0.00	458.55	1,828.92	914.46	1,856.49	929.62	83.87	-6.66	0.499
134.00	-6.99	-13.54	0.00	-426.07	0.00	426.07	1,798.52	899.26	1,794.90	898.78	86.51	-6.78	0.478
135.00	-6.83	-13.47	0.00	-412.53	0.00	412.53	1,782.35	891.17	1,762.57	882.59	87.94	-6.85	0.471
135.87	-6.68	-13.32	0.00	-400.81	0.00	400.81	993.95	496.97	1,000.68	501.09	89.19	-6.91	0.807
140.00	-5.99	-12.61	0.00	-345.79	0.00	345.79	969.84	484.92	940.01	470.70	95.26	-7.16	0.741
141.00	-5.88	-12.50	0.00	-333.18	0.00	333.18	963.86	481.93	925.45	463.41	96.76	-7.26	0.726

Load Case: 0.9D + 1.6W 93 mph with No Ice (Reduced DL) 29 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.15
Dead Load Factor :0.90
Wind Load Factor :1.60

142.00	-5.78	-12.34	0.00	-320.68	0.00	320.68	957.82	478.91	910.95	456.15	98.29	-7.35	0.710
145.00	-5.53	-12.21	0.00	-283.66	0.00	283.66	939.35	469.68	867.78	434.53	102.99	-7.63	0.659
146.00	-5.41	-11.31	0.00	-271.45	0.00	271.45	933.08	466.54	853.51	427.39	104.59	-7.72	0.642
147.00	-5.31	-10.71	0.00	-260.15	0.00	260.15	926.76	463.38	839.30	420.27	106.21	-7.81	0.625
150.00	-4.98	-10.16	0.00	-228.03	0.00	228.03	907.44	453.72	797.07	399.13	111.19	-8.07	0.577
155.00	-4.63	-9.92	0.00	-177.24	0.00	177.24	874.09	437.05	728.06	364.57	119.83	-8.46	0.492
158.00	-4.33	-9.37	0.00	-147.48	0.00	147.48	853.41	426.70	687.57	344.29	125.20	-8.68	0.434
160.00	-4.19	-9.19	0.00	-128.75	0.00	128.75	839.33	419.66	660.97	330.98	128.85	-8.82	0.394
165.00	-3.88	-9.00	0.00	-82.81	0.00	82.81	800.44	400.22	593.98	297.43	138.21	-9.10	0.284
166.00	-2.29	-5.27	0.00	-72.81	0.00	72.81	790.74	395.37	579.60	290.23	140.12	-9.15	0.254
170.00	-2.10	-5.10	0.00	-51.74	0.00	51.74	751.93	375.97	523.82	262.30	147.83	-9.32	0.200
172.00	-1.91	-4.79	0.00	-41.54	0.00	41.54	732.53	366.26	496.99	248.86	151.73	-9.39	0.170
173.00	-1.87	-4.63	0.00	-36.74	0.00	36.74	722.82	361.41	483.84	242.28	153.69	-9.42	0.154
175.00	-1.79	-4.49	0.00	-27.48	0.00	27.48	703.42	351.71	458.07	229.37	157.63	-9.48	0.123
179.00	-1.64	-4.23	0.00	-9.53	0.00	9.53	664.61	332.31	408.64	204.62	165.57	-9.55	0.049
180.00	0.00	-3.90	0.00	-5.30	0.00	5.30	654.91	327.45	396.72	198.65	167.57	-9.56	0.027

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 29 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00 Wind Importance Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.25
Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		65.4	0.0					0.0	0.0	65.4	0.0	0.0	0.0
5.00		129.9	1,949.4					393.6	1,316.2	523.5	3,265.5	0.0	0.0
10.00		127.9	1,964.8					392.8	1,363.9	520.8	3,328.7	0.0	0.0
15.00		125.7	1,950.5					389.5	1,388.4	515.2	3,339.0	0.0	0.0
20.00		123.3	1,926.6					385.4	1,405.5	508.7	3,332.1	0.0	0.0
25.00		120.9	1,897.7					380.9	1,418.7	501.8	3,316.4	0.0	0.0
30.00	Appurtenance(s)	119.8	1,865.6	7.4	0.0	0.0	34.4	376.2	1,429.6	503.4	3,329.6	0.0	0.0
35.00		121.2	1,831.3					380.1	1,436.9	501.3	3,268.1	0.0	0.0
40.00		97.8	1,795.3					390.6	1,445.0	488.4	3,240.3	0.0	0.0
42.96	Bot - Section 2	62.4	1,045.8					235.1	857.9	297.5	1,903.6	0.0	0.0
45.00		77.2	1,151.0					164.0	594.3	241.2	1,745.3	0.0	0.0
49.04	Top - Section 1	63.6	2,241.6					327.6	1,178.1	391.3	3,419.7	0.0	0.0
50.00		76.2	301.6					79.3	280.6	155.6	582.2	0.0	0.0
55.00		128.1	1,544.7					416.4	1,464.6	544.5	3,009.4	0.0	0.0
60.00		128.3	1,509.5					421.0	1,470.1	549.3	2,979.6	0.0	0.0
65.00		128.1	1,473.7					424.5	1,475.1	552.6	2,948.9	0.0	0.0
70.00		127.6	1,437.4					427.1	1,479.9	554.7	2,917.3	0.0	0.0
75.00		101.6	1,400.6					428.9	1,484.3	530.6	2,884.9	0.0	0.0
78.00	Appurtenance(s)	63.2	824.2	1.9	0.0	1.9	4.6	257.9	892.6	323.0	1,721.4	0.0	0.0
80.00	Appurtenance(s)	87.9	542.6	325.2	0.0	0.0	739.5	172.1	595.5	585.1	1,877.6	0.0	0.0
85.00		94.2	1,325.8					430.5	1,488.4	524.7	2,814.3	0.0	0.0
87.54	Bot - Section 3	62.5	660.8					218.6	757.5	281.1	1,418.3	0.0	0.0
90.00		61.6	976.7					211.6	734.6	273.2	1,711.4	0.0	0.0
92.46	Top - Section 2	37.4	960.8					211.2	734.4	248.6	1,695.2	0.0	0.0
93.00	Appurtenance(s)	31.5	124.3	14.5	0.0	43.4	71.2	47.2	162.6	93.2	358.1	0.0	0.0
95.00	Appurtenance(s)	49.4	453.2	125.7	0.0	4.7	765.3	173.6	597.9	348.7	1,816.4	0.0	0.0
97.00	Appurtenance(s)	61.4	447.7	14.5	0.0	-14.5	71.5	173.4	598.1	249.2	1,117.4	0.0	0.0
100.00		82.1	660.5					259.6	897.0	341.8	1,557.4	0.0	0.0
103.75	Reinf. Top	60.4	807.4					323.7	1,122.8	384.1	1,930.3	0.0	0.0
105.00	Appurtenance(s)	74.4	265.8	109.9	0.0	109.9	350.6	107.7	274.5	292.0	890.9	0.0	0.0
110.00		117.7	1,036.0					393.3	939.1	511.0	1,975.0	0.0	0.0
115.00	Appurtenance(s)	115.5	1,001.2	509.0	0.0	0.0	4,189.7	374.2	862.9	998.8	6,053.9	0.0	0.0
120.00		113.1	966.3					195.8	586.1	308.8	1,552.4	0.0	0.0
125.00	Appurtenance(s)	110.5	931.2	920.9	0.0	0.0	7,328.2	193.6	587.3	1,225.1	8,846.7	0.0	0.0
130.00		76.1	895.9					46.0	417.0	122.1	1,312.9	0.0	0.0
132.00	Appurtenance(s)	22.7	350.2	85.9	0.0	257.6	948.1	18.6	167.0	127.3	1,465.3	0.0	0.0
132.12	Bot - Section 4	21.5	20.9					1.1	10.0	22.6	30.9	0.0	0.0
134.00	Appurtenance(s)	30.9	440.4	647.2	0.0	281.1	5,560.6	17.7	157.1	695.8	6,158.1	0.0	0.0
135.00		19.9	231.7					9.4	79.1	29.4	310.8	0.0	0.0
135.87	Top - Section 3	52.5	200.0					8.2	68.8	60.8	268.8	0.0	0.0
140.00	Appurtenance(s)	53.6	531.4	125.4	0.0	0.0	722.6	39.4	327.1	218.4	1,581.1	0.0	0.0
141.00	Appurtenance(s)	20.6	126.8	13.9	0.0	0.0	71.5	9.6	79.3	44.1	277.6	0.0	0.0
142.00	Appurtenance(s)	40.7	125.8	27.7	0.0	-27.7	-51.7	9.7	77.9	78.1	152.1	0.0	0.0
145.00		40.5	369.1					29.2	232.7	69.6	601.8	0.0	0.0
146.00	Appurtenance(s)	20.0	121.5	315.5	0.0	0.0	620.4	9.8	77.6	345.3	819.5	0.0	0.0
147.00	Appurtenance(s)	39.5	120.4	146.0	0.0	-146.0	334.6	9.8	72.7	195.3	527.7	0.0	0.0
150.00	Appurtenance(s)	77.5	352.8	116.1	0.0	0.0	242.7	29.6	212.4	223.3	807.9	0.0	0.0
155.00		76.0	563.3					50.0	349.4	126.0	912.7	0.0	0.0

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 29 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00 Wind Importance Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.25
Wind Load Factor :1.00

158.00	Appurtenance(s)	46.3	326.7	110.2	0.0	0.0	315.2	30.4	209.9	187.0	851.8	0.0	0.0
160.00		63.0	212.9					20.4	139.2	83.4	352.1	0.0	0.0
165.00		53.4	508.5					51.6	348.4	105.0	857.0	0.0	0.0
166.00	Appurtenance(s)	42.9	99.6	781.0	0.0	228.0	6,576.1	10.4	69.7	834.3	6,745.4	0.0	0.0
170.00		50.9	383.8					0.0	97.2	50.9	481.0	0.0	0.0
172.00	Appurtenance(s)	24.9	186.5	48.7	0.0	0.0	242.8	0.0	48.6	73.6	477.9	0.0	0.0
173.00	Appurtenance(s)	24.5	91.9	40.8	0.0	0.0	73.8	0.0	24.3	65.3	190.0	0.0	0.0
175.00		47.9	179.8					0.0	47.8	47.9	227.7	0.0	0.0
179.00	Appurtenance(s)	39.4	343.9	133.1	0.0	0.0	143.0	0.0	95.7	172.5	582.5	0.0	0.0
180.00	Appurtenance(s)	7.7	84.1	976.3	0.0	1,213.4	6,148.0	0.0	23.9	984.0	6,256.0	0.0	0.0
								Totals:		19,896.1	118,395.	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 29 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor 1.00 Wind Importance Factor 1.00
Dead Load Factor :1.20 Ice Importance Factor :1.25
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-118.38	-19.92	0.00	-2,019.63	0.00	2,019.63	5,102.86	2,551.43	10,963.2	5,489.79	0.00	0.00	0.291
5.00	-115.09	-19.56	0.00	-1,920.04	0.00	1,920.04	5,029.12	2,514.56	10,576.3	5,296.03	0.04	-0.08	0.285
10.00	-111.73	-19.19	0.00	-1,822.25	0.00	1,822.25	4,953.95	2,476.98	10,193.1	5,104.17	0.18	-0.17	0.279
15.00	-108.37	-18.83	0.00	-1,726.28	0.00	1,726.28	4,877.36	2,438.68	9,813.98	4,914.28	0.40	-0.25	0.272
20.00	-105.01	-18.45	0.00	-1,632.16	0.00	1,632.16	4,799.34	2,399.67	9,438.93	4,726.48	0.70	-0.33	0.266
25.00	-101.67	-18.08	0.00	-1,539.90	0.00	1,539.90	4,719.90	2,359.95	9,068.23	4,540.86	1.10	-0.42	0.259
30.00	-98.32	-17.69	0.00	-1,449.50	0.00	1,449.50	4,639.03	2,319.51	8,702.08	4,357.51	1.58	-0.50	0.252
35.00	-95.03	-17.30	0.00	-1,361.04	0.00	1,361.04	4,556.73	2,278.36	8,340.67	4,176.53	2.15	-0.59	0.245
40.00	-91.78	-16.88	0.00	-1,274.54	0.00	1,274.54	4,473.00	2,236.50	7,984.18	3,998.03	2.81	-0.67	0.237
42.96	-89.87	-16.63	0.00	-1,224.62	0.00	1,224.62	4,422.82	2,211.41	7,775.79	3,893.68	3.24	-0.72	0.233
45.00	-88.11	-16.45	0.00	-1,190.63	0.00	1,190.63	4,378.03	2,189.01	7,615.75	3,813.53	3.56	-0.76	0.228
49.04	-84.68	-16.07	0.00	-1,124.19	0.00	1,124.19	3,604.17	1,802.08	6,267.69	3,138.50	4.23	-0.82	0.251
50.00	-84.09	-15.98	0.00	-1,108.76	0.00	1,108.76	3,591.50	1,795.75	6,214.33	3,111.78	4.40	-0.84	0.249
55.00	-81.06	-15.52	0.00	-1,028.85	0.00	1,028.85	3,524.70	1,762.35	5,938.60	2,973.71	5.32	-0.93	0.240
60.00	-78.07	-15.03	0.00	-951.27	0.00	951.27	3,456.48	1,728.24	5,666.60	2,837.51	6.34	-1.02	0.229
65.00	-75.11	-14.54	0.00	-876.10	0.00	876.10	3,386.83	1,693.41	5,398.53	2,703.28	7.45	-1.10	0.219
70.00	-72.19	-14.03	0.00	-803.40	0.00	803.40	3,315.75	1,657.87	5,134.58	2,571.11	8.65	-1.19	0.209
75.00	-69.30	-13.52	0.00	-733.24	0.00	733.24	3,242.30	1,621.15	4,873.54	2,440.39	9.94	-1.27	0.198
78.00	-67.57	-13.21	0.00	-692.67	0.00	692.67	3,184.09	1,592.04	4,699.23	2,353.11	10.76	-1.32	0.192
80.00	-65.70	-12.65	0.00	-666.26	0.00	666.26	3,145.28	1,572.64	4,584.79	2,295.80	11.32	-1.35	0.188
85.00	-62.88	-12.12	0.00	-603.03	0.00	603.03	3,048.26	1,524.13	4,304.87	2,155.63	12.78	-1.43	0.179
87.54	-61.47	-11.84	0.00	-572.26	0.00	572.26	2,998.97	1,499.48	4,166.05	2,086.12	13.55	-1.47	0.174
90.00	-59.75	-11.57	0.00	-543.12	0.00	543.12	2,951.23	1,475.62	4,033.76	2,019.88	14.32	-1.51	0.167
92.46	-58.06	-11.30	0.00	-514.71	0.00	514.71	2,412.07	1,206.04	3,317.78	1,661.36	15.11	-1.55	0.181
93.00	-57.70	-11.21	0.00	-508.53	0.00	508.53	2,405.85	1,202.93	3,297.34	1,651.12	15.29	-1.56	0.180
95.00	-55.89	-10.85	0.00	-486.10	0.00	486.10	2,382.81	1,191.41	3,222.46	1,613.62	15.95	-1.59	0.175
97.00	-54.77	-10.60	0.00	-464.41	0.00	464.41	2,359.55	1,179.77	3,148.11	1,576.40	16.62	-1.62	0.170
100.00	-53.22	-10.26	0.00	-432.60	0.00	432.60	2,324.22	1,162.11	3,037.61	1,521.06	17.66	-1.67	0.162
103.75	-51.29	-9.86	0.00	-394.11	0.00	394.11	2,279.33	1,139.67	2,901.28	1,452.80	18.99	-1.73	0.152
103.75	-51.29	-9.86	0.00	-394.11	0.00	394.11	2,279.33	1,139.67	2,901.28	1,452.80	18.99	-1.73	0.294
105.00	-50.40	-9.61	0.00	-381.68	0.00	381.68	2,264.20	1,132.10	2,856.29	1,430.27	19.45	-1.75	0.289
110.00	-48.42	-9.15	0.00	-333.64	0.00	333.64	2,186.61	1,093.30	2,659.07	1,331.51	21.35	-1.89	0.273
115.00	-42.38	-8.04	0.00	-287.88	0.00	287.88	2,105.76	1,052.88	2,465.08	1,234.37	23.40	-2.02	0.253
120.00	-40.83	-7.77	0.00	-247.66	0.00	247.66	2,024.90	1,012.45	2,278.43	1,140.91	25.59	-2.15	0.237
125.00	-32.02	-6.27	0.00	-208.81	0.00	208.81	1,944.05	972.03	2,099.13	1,051.12	27.91	-2.28	0.215
130.00	-30.70	-6.14	0.00	-177.45	0.00	177.45	1,863.20	931.60	1,927.17	965.02	30.35	-2.39	0.200
132.00	-29.24	-5.97	0.00	-164.91	0.00	164.91	1,830.86	915.43	1,860.45	931.61	31.37	-2.44	0.193
132.12	-29.21	-5.95	0.00	-164.19	0.00	164.19	1,828.92	914.46	1,856.49	929.62	31.43	-2.45	0.193
134.00	-23.08	-5.01	0.00	-152.72	0.00	152.72	1,798.52	899.26	1,794.90	898.78	32.40	-2.49	0.183
135.00	-22.77	-4.97	0.00	-147.71	0.00	147.71	1,782.35	891.17	1,762.57	882.59	32.92	-2.51	0.180
135.87	-22.50	-4.92	0.00	-143.39	0.00	143.39	993.95	496.97	1,000.68	501.09	33.38	-2.53	0.309
140.00	-20.93	-4.66	0.00	-123.06	0.00	123.06	969.84	484.92	940.01	470.70	35.62	-2.62	0.283
141.00	-20.65	-4.61	0.00	-118.40	0.00	118.40	963.86	481.93	925.45	463.41	36.17	-2.66	0.277

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 29 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00 Wind Importance Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.25
Wind Load Factor :1.00

142.00	-20.50	-4.55	0.00	-113.79	0.00	113.79	957.82	478.91	910.95	456.15	36.73	-2.69	0.271
145.00	-19.89	-4.47	0.00	-100.14	0.00	100.14	939.35	469.68	867.78	434.53	38.45	-2.79	0.252
146.00	-19.09	-4.10	0.00	-95.67	0.00	95.67	933.08	466.54	853.51	427.39	39.04	-2.82	0.244
147.00	-18.57	-3.90	0.00	-91.57	0.00	91.57	926.76	463.38	839.30	420.27	39.64	-2.86	0.238
150.00	-17.77	-3.67	0.00	-79.88	0.00	79.88	907.44	453.72	797.07	399.13	41.46	-2.95	0.220
155.00	-16.85	-3.53	0.00	-61.53	0.00	61.53	874.09	437.05	728.06	364.57	44.62	-3.08	0.188
158.00	-16.01	-3.31	0.00	-50.95	0.00	50.95	853.41	426.70	687.57	344.29	46.58	-3.16	0.167
160.00	-15.66	-3.23	0.00	-44.32	0.00	44.32	839.33	419.66	660.97	330.98	47.91	-3.21	0.153
165.00	-14.81	-3.09	0.00	-28.18	0.00	28.18	800.44	400.22	593.98	297.43	51.33	-3.30	0.113
166.00	-8.12	-1.87	0.00	-24.86	0.00	24.86	790.74	395.37	579.60	290.23	52.02	-3.32	0.096
170.00	-7.64	-1.80	0.00	-17.37	0.00	17.37	751.93	375.97	523.82	262.30	54.82	-3.38	0.076
172.00	-7.17	-1.70	0.00	-13.78	0.00	13.78	732.53	366.26	496.99	248.86	56.24	-3.40	0.065
173.00	-6.98	-1.62	0.00	-12.08	0.00	12.08	722.82	361.41	483.84	242.28	56.96	-3.41	0.060
175.00	-6.76	-1.57	0.00	-8.83	0.00	8.83	703.42	351.71	458.07	229.37	58.39	-3.43	0.048
179.00	-6.19	-1.36	0.00	-2.57	0.00	2.57	664.61	332.31	408.64	204.62	61.27	-3.45	0.022
180.00	0.00	-0.98	0.00	-1.21	0.00	1.21	654.91	327.45	396.72	198.65	61.99	-3.45	0.006

Load Case: 1.0D + 1.0W Serviceability 60 mph 28 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.15
Dead Load Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		49.8	0.0					0.0	0.0	49.8	0.0	0.0	0.0
5.00		98.5	1,222.9					0.0	658.9	98.5	1,881.8	0.0	0.0
10.00		96.4	1,197.0					0.0	658.9	96.4	1,855.9	0.0	0.0
15.00		94.3	1,171.1					0.0	658.9	94.3	1,830.0	0.0	0.0
20.00		130.8	1,145.2					0.0	658.9	130.8	1,804.1	0.0	0.0
25.00		166.5	1,119.2					34.5	658.9	200.9	1,778.1	0.0	0.0
30.00	Appurtenance(s)	164.5	1,093.3	6.2	0.0	0.0	10.0	34.7	658.9	205.4	1,762.2	0.0	0.0
35.00		165.9	1,067.4					35.7	657.2	201.6	1,724.6	0.0	0.0
40.00		133.5	1,041.5					37.3	657.2	170.9	1,698.7	0.0	0.0
42.96	Bot - Section 2	85.1	603.6					22.8	388.6	107.9	992.3	0.0	0.0
45.00		105.1	771.7					16.1	268.6	121.2	1,040.3	0.0	0.0
49.04	Top - Section 1	86.6	1,502.0					40.6	531.0	127.2	2,033.0	0.0	0.0
50.00		103.5	164.3					9.8	126.2	113.2	290.5	0.0	0.0
55.00		173.6	842.5					52.0	657.2	225.6	1,499.7	0.0	0.0
60.00		173.2	820.3					53.7	657.2	226.9	1,477.5	0.0	0.0
65.00		172.4	798.0					55.3	657.2	227.7	1,455.3	0.0	0.0
70.00		171.2	775.8					56.9	657.2	228.1	1,433.1	0.0	0.0
75.00		136.0	753.6					58.4	657.2	194.4	1,410.9	0.0	0.0
78.00	Appurtenance(s)	84.3	441.5	0.8	0.0	0.8	0.6	35.7	394.3	120.9	836.5	0.0	0.0
80.00	Appurtenance(s)	116.9	289.9	432.3	0.0	0.0	278.0	24.1	262.6	573.3	830.5	0.0	0.0
85.00		125.1	709.2					61.3	653.9	186.4	1,363.1	0.0	0.0
87.54	Bot - Section 3	82.8	351.7					31.7	332.2	114.5	683.9	0.0	0.0
90.00		81.5	620.3					31.0	321.8	112.6	942.0	0.0	0.0
92.46	Top - Section 2	49.5	609.5					24.7	321.3	74.2	930.8	0.0	0.0
93.00	Appurtenance(s)	41.7	61.4	7.2	0.0	21.5	8.3	7.0	71.1	55.8	140.8	0.0	0.0
95.00	Appurtenance(s)	65.2	224.0	125.8	0.0	3.6	470.0	20.3	260.9	211.3	954.9	0.0	0.0
97.00	Appurtenance(s)	80.8	221.0	7.2	0.0	-7.2	8.3	20.4	260.6	108.4	490.0	0.0	0.0
100.00		107.8	326.0					30.9	389.9	138.7	715.9	0.0	0.0
103.75	Reinf. Top	79.2	398.1					39.1	487.4	118.3	885.5	0.0	0.0
105.00	Appurtenance(s)	97.1	130.4	104.8	0.0	104.8	79.2	13.1	79.0	215.1	288.6	0.0	0.0
110.00		153.2	510.0					40.1	291.3	193.3	801.3	0.0	0.0
115.00	Appurtenance(s)	149.5	491.5	479.0	0.0	0.0	1,668.0	40.6	291.3	669.1	2,450.8	0.0	0.0
120.00		145.5	473.0					30.0	253.5	175.5	726.5	0.0	0.0
125.00	Appurtenance(s)	109.5	454.5	969.7	0.0	0.0	2,642.3	30.4	253.5	1,109.6	3,350.3	0.0	0.0
130.00		52.5	435.9					0.0	222.4	52.5	658.3	0.0	0.0
132.00	Appurtenance(s)	15.6	169.2	86.4	0.0	259.1	317.4	0.0	89.0	102.0	575.6	0.0	0.0
132.12	Bot - Section 4	14.8	10.0					0.0	5.3	14.8	15.4	0.0	0.0
134.00	Appurtenance(s)	21.2	251.8	629.1	0.0	292.6	2,539.7	0.0	83.6	650.3	2,875.1	0.0	0.0
135.00		13.7	132.2					0.0	40.8	13.7	173.0	0.0	0.0
135.87	Top - Section 3	35.9	114.0					0.0	35.5	35.9	149.5	0.0	0.0
140.00	Appurtenance(s)	36.6	201.1	112.7	0.0	0.0	450.0	0.0	168.4	149.3	819.5	0.0	0.0
141.00	Appurtenance(s)	14.0	47.5	12.1	0.0	0.0	25.0	0.0	40.8	26.1	113.3	0.0	0.0
142.00	Appurtenance(s)	27.6	47.1	11.8	0.0	-11.8	5.0	0.0	39.7	39.4	91.8	0.0	0.0
145.00		27.4	138.6					0.0	118.0	27.4	256.6	0.0	0.0
146.00	Appurtenance(s)	13.5	45.3	193.5	0.0	0.0	162.0	0.0	39.3	206.9	246.7	0.0	0.0
147.00	Appurtenance(s)	26.5	44.9	114.3	0.0	-114.3	79.0	0.0	35.2	140.9	159.1	0.0	0.0
150.00	Appurtenance(s)	51.8	132.0	72.2	0.0	0.0	158.3	0.0	100.8	124.0	391.0	0.0	0.0
155.00		50.5	211.1					0.0	163.9	50.5	374.9	0.0	0.0

Load Case: 1.0D + 1.0W Serviceability 60 mph 28 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.15
Dead Load Factor :1.00
Wind Load Factor :1.00

158.00	Appurtenance(s)	30.6	121.3	90.4	0.0	0.0	171.0	0.0	98.3	121.0	390.6	0.0	0.0
160.00		41.2	78.7					0.0	64.9	41.2	143.5	0.0	0.0
165.00		34.8	188.9					0.0	162.2	34.8	351.1	0.0	0.0
166.00	Appurtenance(s)	27.7	36.4	773.1	0.0	232.9	2,322.9	0.0	32.4	800.8	2,391.8	0.0	0.0
170.00		32.7	141.3					0.0	81.0	32.7	222.4	0.0	0.0
172.00	Appurtenance(s)	15.9	68.0	48.3	0.0	0.0	150.0	0.0	40.5	64.2	258.5	0.0	0.0
173.00	Appurtenance(s)	15.5	33.3	20.6	0.0	0.0	21.0	0.0	20.3	36.1	74.6	0.0	0.0
175.00		30.2	65.3					0.0	39.9	30.2	105.2	0.0	0.0
179.00	Appurtenance(s)	24.7	125.3	30.2	0.0	0.0	13.0	0.0	79.7	54.9	218.0	0.0	0.0
180.00	Appurtenance(s)	4.8	30.2	901.9	0.0	1,234.1	2,521.3	0.0	19.9	906.7	2,571.4	0.0	0.0
								Totals:		10,753.9	55,986.4	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 28 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.15
Dead Load Factor :1.00
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-55.98	-10.73	0.00	-1,213.08	0.00	1,213.08	5,102.86	2,551.43	10,963.2	5,489.79	0.00	0.00	0.173
5.00	-54.09	-10.68	0.00	-1,159.44	0.00	1,159.44	5,029.12	2,514.56	10,576.3	5,296.03	0.03	-0.05	0.170
10.00	-52.23	-10.62	0.00	-1,106.06	0.00	1,106.06	4,953.95	2,476.98	10,193.1	5,104.17	0.11	-0.10	0.167
15.00	-50.39	-10.57	0.00	-1,052.94	0.00	1,052.94	4,877.36	2,438.68	9,813.98	4,914.28	0.24	-0.15	0.164
20.00	-48.57	-10.48	0.00	-1,000.09	0.00	1,000.09	4,799.34	2,399.67	9,438.93	4,726.48	0.42	-0.20	0.160
25.00	-46.79	-10.31	0.00	-947.70	0.00	947.70	4,719.90	2,359.95	9,068.23	4,540.86	0.66	-0.25	0.157
30.00	-45.02	-10.14	0.00	-896.14	0.00	896.14	4,639.03	2,319.51	8,702.08	4,357.51	0.96	-0.31	0.153
35.00	-43.28	-9.97	0.00	-845.45	0.00	845.45	4,556.73	2,278.36	8,340.67	4,176.53	1.31	-0.36	0.149
40.00	-41.58	-9.81	0.00	-795.62	0.00	795.62	4,473.00	2,236.50	7,984.18	3,998.03	1.71	-0.41	0.145
42.96	-40.58	-9.72	0.00	-766.60	0.00	766.60	4,422.82	2,211.41	7,775.79	3,893.68	1.98	-0.44	0.143
45.00	-39.54	-9.61	0.00	-746.74	0.00	746.74	4,378.03	2,189.01	7,615.75	3,813.53	2.17	-0.46	0.140
49.04	-37.50	-9.48	0.00	-707.91	0.00	707.91	3,604.17	1,802.08	6,267.69	3,138.50	2.58	-0.51	0.155
50.00	-37.21	-9.39	0.00	-698.81	0.00	698.81	3,591.50	1,795.75	6,214.33	3,111.78	2.68	-0.52	0.154
55.00	-35.70	-9.18	0.00	-651.86	0.00	651.86	3,524.70	1,762.35	5,938.60	2,973.71	3.26	-0.57	0.149
60.00	-34.22	-8.98	0.00	-605.94	0.00	605.94	3,456.48	1,728.24	5,666.60	2,837.51	3.89	-0.63	0.143
65.00	-32.76	-8.76	0.00	-561.06	0.00	561.06	3,386.83	1,693.41	5,398.53	2,703.28	4.57	-0.68	0.137
70.00	-31.32	-8.55	0.00	-517.25	0.00	517.25	3,315.75	1,657.87	5,134.58	2,571.11	5.32	-0.74	0.131
75.00	-29.90	-8.36	0.00	-474.52	0.00	474.52	3,242.30	1,621.15	4,873.54	2,440.39	6.12	-0.79	0.125
78.00	-29.06	-8.24	0.00	-449.46	0.00	449.46	3,184.09	1,592.04	4,699.23	2,353.11	6.63	-0.82	0.122
80.00	-28.24	-7.67	0.00	-432.98	0.00	432.98	3,145.28	1,572.64	4,584.79	2,295.80	6.98	-0.85	0.119
85.00	-26.87	-7.48	0.00	-394.64	0.00	394.64	3,048.26	1,524.13	4,304.87	2,155.63	7.89	-0.90	0.114
87.54	-26.19	-7.37	0.00	-375.64	0.00	375.64	2,998.97	1,499.48	4,166.05	2,086.12	8.38	-0.92	0.111
90.00	-25.24	-7.25	0.00	-357.52	0.00	357.52	2,951.23	1,475.62	4,033.76	2,019.88	8.86	-0.95	0.107
92.46	-24.31	-7.17	0.00	-339.71	0.00	339.71	2,412.07	1,206.04	3,317.78	1,661.36	9.36	-0.98	0.116
93.00	-24.17	-7.11	0.00	-335.79	0.00	335.79	2,405.85	1,202.93	3,297.34	1,651.12	9.47	-0.98	0.115
95.00	-23.22	-6.90	0.00	-321.56	0.00	321.56	2,382.81	1,191.41	3,222.46	1,613.62	9.89	-1.00	0.112
97.00	-22.73	-6.79	0.00	-307.77	0.00	307.77	2,359.55	1,179.77	3,148.11	1,576.40	10.31	-1.02	0.109
100.00	-22.01	-6.65	0.00	-287.40	0.00	287.40	2,324.22	1,162.11	3,037.61	1,521.06	10.96	-1.05	0.104
103.75	-21.12	-6.52	0.00	-262.47	0.00	262.47	2,279.33	1,139.67	2,901.28	1,452.80	11.81	-1.09	0.098
103.75	-21.12	-6.52	0.00	-262.47	0.00	262.47	2,279.33	1,139.67	2,901.28	1,452.80	11.81	-1.09	0.190
105.00	-20.83	-6.32	0.00	-254.21	0.00	254.21	2,264.20	1,132.10	2,856.29	1,430.27	12.09	-1.10	0.187
110.00	-20.03	-6.15	0.00	-222.59	0.00	222.59	2,186.61	1,093.30	2,659.07	1,331.51	13.30	-1.20	0.176
115.00	-17.58	-5.45	0.00	-191.86	0.00	191.86	2,105.76	1,052.88	2,465.08	1,234.37	14.60	-1.29	0.164
120.00	-16.85	-5.28	0.00	-164.61	0.00	164.61	2,024.90	1,012.45	2,278.43	1,140.91	16.00	-1.37	0.153
125.00	-13.52	-4.11	0.00	-138.19	0.00	138.19	1,944.05	972.03	2,099.13	1,051.12	17.48	-1.46	0.138
130.00	-12.86	-4.05	0.00	-117.64	0.00	117.64	1,863.20	931.60	1,927.17	965.02	19.05	-1.54	0.129
132.00	-12.29	-3.94	0.00	-109.28	0.00	109.28	1,830.86	915.43	1,860.45	931.61	19.70	-1.57	0.124
132.12	-12.27	-3.93	0.00	-108.81	0.00	108.81	1,828.92	914.46	1,856.49	929.62	19.74	-1.57	0.124
134.00	-9.42	-3.20	0.00	-101.13	0.00	101.13	1,798.52	899.26	1,794.90	898.78	20.37	-1.60	0.118
135.00	-9.24	-3.19	0.00	-97.93	0.00	97.93	1,782.35	891.17	1,762.57	882.59	20.70	-1.61	0.116
135.87	-9.09	-3.15	0.00	-95.16	0.00	95.16	993.95	496.97	1,000.68	501.09	21.00	-1.63	0.199
140.00	-8.28	-2.98	0.00	-82.14	0.00	82.14	969.84	484.92	940.01	470.70	22.43	-1.69	0.183
141.00	-8.16	-2.96	0.00	-79.16	0.00	79.16	963.86	481.93	925.45	463.41	22.79	-1.71	0.179

Load Case: 1.0D + 1.0W Serviceability 60 mph 28 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.15
Dead Load Factor :1.00
Wind Load Factor :1.00

142.00	-8.07	-2.92	0.00	-76.20	0.00	76.20	957.82	478.91	910.95	456.15	23.15	-1.73	0.176
145.00	-7.81	-2.89	0.00	-67.44	0.00	67.44	939.35	469.68	867.78	434.53	24.26	-1.80	0.164
146.00	-7.57	-2.68	0.00	-64.54	0.00	64.54	933.08	466.54	853.51	427.39	24.64	-1.82	0.159
147.00	-7.41	-2.54	0.00	-61.86	0.00	61.86	926.76	463.38	839.30	420.27	25.03	-1.84	0.155
150.00	-7.02	-2.41	0.00	-54.24	0.00	54.24	907.44	453.72	797.07	399.13	26.20	-1.91	0.144
155.00	-6.65	-2.36	0.00	-42.17	0.00	42.17	874.09	437.05	728.06	364.57	28.25	-2.00	0.123
158.00	-6.26	-2.23	0.00	-35.10	0.00	35.10	853.41	426.70	687.57	344.29	29.52	-2.05	0.109
160.00	-6.12	-2.19	0.00	-30.64	0.00	30.64	839.33	419.66	660.97	330.98	30.39	-2.08	0.100
165.00	-5.77	-2.14	0.00	-19.70	0.00	19.70	800.44	400.22	593.98	297.43	32.61	-2.15	0.073
166.00	-3.40	-1.26	0.00	-17.32	0.00	17.32	790.74	395.37	579.60	290.23	33.06	-2.16	0.064
170.00	-3.18	-1.22	0.00	-12.30	0.00	12.30	751.93	375.97	523.82	262.30	34.89	-2.20	0.051
172.00	-2.93	-1.14	0.00	-9.87	0.00	9.87	732.53	366.26	496.99	248.86	35.82	-2.22	0.044
173.00	-2.85	-1.10	0.00	-8.73	0.00	8.73	722.82	361.41	483.84	242.28	36.28	-2.23	0.040
175.00	-2.75	-1.07	0.00	-6.52	0.00	6.52	703.42	351.71	458.07	229.37	37.22	-2.24	0.032
179.00	-2.53	-1.01	0.00	-2.24	0.00	2.24	664.61	332.31	408.64	204.62	39.10	-2.26	0.015
180.00	0.00	-0.91	0.00	-1.23	0.00	1.23	654.91	327.45	396.72	198.65	39.57	-2.26	0.006

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.18	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.50	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.04	
Upper Limit C_s	0.04	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	2.81	
Redundancy Factor (p):	1.00	
Seismic Force Distribution Exponent (k):	2.00	
Total Unfactored Dead Load:	55.99	k
Seismic Base Shear (E):	2.07	k

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
57	179.50	50	1,616	0.003	6	62
56	177.00	205	6,424	0.012	24	254
55	174.00	105	3,185	0.006	12	130
54	172.50	54	1,595	0.003	6	66
53	171.00	109	3,173	0.006	12	134
52	168.00	222	6,276	0.011	24	275
51	165.50	69	1,887	0.003	7	85
50	162.50	351	9,270	0.017	35	435
49	159.00	144	3,629	0.007	14	178
48	156.50	220	5,379	0.010	20	272
47	152.50	375	8,719	0.016	33	464
46	148.50	233	5,133	0.009	19	288
45	146.50	80	1,719	0.003	6	99
44	145.50	85	1,792	0.003	7	105
43	143.50	257	5,285	0.010	20	318
42	141.50	87	1,737	0.003	7	107
41	140.50	88	1,744	0.003	7	109
40	137.93	370	7,031	0.013	27	457
39	135.43	150	2,742	0.005	10	185
38	134.50	173	3,130	0.006	12	214
37	133.06	335	5,939	0.011	22	415
36	132.06	15	268	0.000	1	19
35	131.00	258	4,430	0.008	17	320

34	127.50	658	10,702	0.019	40	815
33	122.50	708	10,624	0.019	40	876
32	117.50	726	10,030	0.018	38	899
31	112.50	783	9,907	0.018	37	969
30	107.50	801	9,260	0.017	35	992
29	104.38	209	2,281	0.004	9	259
28	101.88	886	9,191	0.017	35	1,096
27	98.50	716	6,946	0.013	26	886
26	96.00	482	4,439	0.008	17	596
25	94.00	485	4,285	0.008	16	600
24	92.73	132	1,139	0.002	4	164
23	91.23	931	7,747	0.014	29	1,152
22	88.77	942	7,423	0.014	28	1,166
21	86.27	684	5,090	0.009	19	847
20	82.50	1,363	9,278	0.017	35	1,687
19	79.00	552	3,448	0.006	13	684
18	76.50	836	4,892	0.009	18	1,035
17	72.50	1,411	7,416	0.014	28	1,746
16	67.50	1,433	6,529	0.012	25	1,774
15	62.50	1,455	5,685	0.010	21	1,801
14	57.50	1,478	4,885	0.009	18	1,829
13	52.50	1,500	4,134	0.008	16	1,856
12	49.52	291	712	0.001	3	360
11	47.02	2,033	4,495	0.008	17	2,516
10	43.98	1,040	2,012	0.004	8	1,288
9	41.48	992	1,707	0.003	6	1,228
8	37.50	1,699	2,389	0.004	9	2,103
7	32.50	1,725	1,822	0.003	7	2,135
6	27.50	1,752	1,325	0.002	5	2,169
5	22.50	1,778	900	0.002	3	2,201
4	17.50	1,804	552	0.001	2	2,233
3	12.50	1,830	286	0.001	1	2,265
2	7.50	1,856	104	0.000	0	2,297
1	2.50	1,882	12	0.000	0	2,329
Andrew ABT-DMDF-ADBH	180.00	1	36	0.000	0	1
Powerwave Allgon TT1	180.00	48	1,555	0.003	6	59
Generic 4' Omni	180.00	10	324	0.001	1	12
Powerwave Allgon LGP	180.00	42	1,371	0.002	5	52
Raycap DC6-48-60-18-	180.00	40	1,296	0.002	5	50
Ericsson RRUS 11 (Ba	180.00	150	4,860	0.009	18	186
Ericsson RRUS 32 (50	180.00	152	4,938	0.009	19	189
Ericsson RRUS-12 B2	180.00	174	5,638	0.010	21	215
Powerwave Allgon 777	180.00	105	3,402	0.006	13	130
KMW AM-X-CD-16-65-00	180.00	146	4,714	0.009	18	180
CCI HPA-65R-BUU-H6	180.00	153	4,957	0.009	19	189
Flat Low Profile Pla	180.00	1,500	48,600	0.089	183	1,857
Kathrein Scala MF-90	179.00	13	417	0.001	2	16
Telewave ANT450F6	173.00	21	629	0.001	2	26
Flat Side Arm	172.00	150	4,438	0.008	17	186
Fastback Networks In	166.00	9	242	0.000	1	11
Ericsson Radio 4449	166.00	222	6,117	0.011	23	275
Ericsson AIR 21, 1.3	166.00	249	6,861	0.013	26	308
Ericsson AIR 21, 1.3	166.00	244	6,737	0.012	25	303
Round T-Arm w/ Reinf	166.00	1,215	33,478	0.061	126	1,504
RFS APXVAARR24_43-U-	166.00	384	10,573	0.019	40	475
Telewave ANT450F6	158.00	21	524	0.001	2	26
Flat Side Arm	158.00	150	3,745	0.007	14	186
Sinclair SD210-SF2P4	150.00	8	187	0.000	1	10
Round Side Arm	150.00	150	3,375	0.006	13	186
Sinclair SC442D-HF1L	147.00	79	1,707	0.003	6	98
Sinclair SC479-HF1LD	146.00	34	725	0.001	3	42
Decibel DB809DK-XT	146.00	128	2,728	0.005	10	158
Telewave ANT150D (5	142.00	5	101	0.000	0	6
Bird 432-83H-01-T	141.00	25	497	0.001	2	31

Round Side Arm	140.00	450	8,820	0.016	33	557
Alcatel-Lucent TD-RR	134.00	210	3,771	0.007	14	260
RFS APXVTM14-C-I20	134.00	159	2,850	0.005	11	196
RFS APXVSPP18-C-A20	134.00	171	3,070	0.006	12	212
Flat Platform w/ Han	134.00	2,000	35,912	0.065	135	2,476
Alcatel-Lucent 800 M	132.00	185	3,230	0.006	12	229
Alcatel-Lucent 1900M	132.00	132	2,300	0.004	9	163
Nokia AHCA AirScale	125.00	106	1,655	0.003	6	131
Alcatel-Lucent B25 R	125.00	159	2,484	0.005	9	197
Alcatel-Lucent B13 R	125.00	173	2,709	0.005	10	215
Nokia B66a RRH4x45 (	125.00	170	2,663	0.005	10	211
Raycap RCMDC-6627-PF	125.00	32	500	0.001	2	40
Antel LPA-80080/6CF	125.00	84	1,313	0.002	5	104
Commscope JAHH-65B-R	125.00	364	5,681	0.010	21	450
Antel LPA-80063/6CF	125.00	54	844	0.002	3	67
Round Low Profile Pl	125.00	1,500	23,438	0.043	88	1,857
Decibel DB844H90E-XY	115.00	168	2,222	0.004	8	208
Round Low Profile Pl	115.00	1,500	19,838	0.036	75	1,857
RFS APXV18-206517S-C	105.00	79	873	0.002	3	98
Andrew DB586	97.00	8	78	0.000	0	10
Bird 429-83H-01-T	95.00	20	181	0.000	1	25
Flat Side Arm	95.00	450	4,061	0.007	15	557
Andrew DB586	93.00	8	72	0.000	0	10
RFS PA6-65AC	80.00	278	1,779	0.003	7	344
PCTEL GPS-TMG-HR-26N	78.00	1	4	0.000	0	1
Generic GPS	30.00	10	9	0.000	0	12
		55,986	548,874	1.000	2,069	69,298

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
57	179.50	50	1,616	0.003	6	43
56	177.00	205	6,424	0.012	24	177
55	174.00	105	3,185	0.006	12	91
54	172.50	54	1,595	0.003	6	46
53	171.00	109	3,173	0.006	12	94
52	168.00	222	6,276	0.011	24	192
51	165.50	69	1,887	0.003	7	59
50	162.50	351	9,270	0.017	35	303
49	159.00	144	3,629	0.007	14	124
48	156.50	220	5,379	0.010	20	189
47	152.50	375	8,719	0.016	33	323
46	148.50	233	5,133	0.009	19	201
45	146.50	80	1,719	0.003	6	69
44	145.50	85	1,792	0.003	7	73
43	143.50	257	5,285	0.010	20	221
42	141.50	87	1,737	0.003	7	75
41	140.50	88	1,744	0.003	7	76
40	137.93	370	7,031	0.013	27	319
39	135.43	150	2,742	0.005	10	129
38	134.50	173	3,130	0.006	12	149
37	133.06	335	5,939	0.011	22	289
36	132.06	15	268	0.000	1	13
35	131.00	258	4,430	0.008	17	223
34	127.50	658	10,702	0.019	40	568
33	122.50	708	10,624	0.019	40	610
32	117.50	726	10,030	0.018	38	626
31	112.50	783	9,907	0.018	37	675
30	107.50	801	9,260	0.017	35	691

29	104.38	209	2,281	0.004	9	181
28	101.88	886	9,191	0.017	35	764
27	98.50	716	6,946	0.013	26	617
26	96.00	482	4,439	0.008	17	415
25	94.00	485	4,285	0.008	16	418
24	92.73	132	1,139	0.002	4	114
23	91.23	931	7,747	0.014	29	803
22	88.77	942	7,423	0.014	28	812
21	86.27	684	5,090	0.009	19	590
20	82.50	1,363	9,278	0.017	35	1,175
19	79.00	552	3,448	0.006	13	476
18	76.50	836	4,892	0.009	18	721
17	72.50	1,411	7,416	0.014	28	1,216
16	67.50	1,433	6,529	0.012	25	1,236
15	62.50	1,455	5,685	0.010	21	1,255
14	57.50	1,478	4,885	0.009	18	1,274
13	52.50	1,500	4,134	0.008	16	1,293
12	49.52	291	712	0.001	3	250
11	47.02	2,033	4,495	0.008	17	1,753
10	43.98	1,040	2,012	0.004	8	897
9	41.48	992	1,707	0.003	6	856
8	37.50	1,699	2,389	0.004	9	1,465
7	32.50	1,725	1,822	0.003	7	1,487
6	27.50	1,752	1,325	0.002	5	1,511
5	22.50	1,778	900	0.002	3	1,533
4	17.50	1,804	552	0.001	2	1,556
3	12.50	1,830	286	0.001	1	1,578
2	7.50	1,856	104	0.000	0	1,600
1	2.50	1,882	12	0.000	0	1,623
Andrew ABT-DMDF-ADBH	180.00	1	36	0.000	0	1
Powerwave Allgon TT1	180.00	48	1,555	0.003	6	41
Generic 4' Omni	180.00	10	324	0.001	1	9
Powerwave Allgon LGP	180.00	42	1,371	0.002	5	36
Raycap DC6-48-60-18-	180.00	40	1,296	0.002	5	34
Ericsson RRUS 11 (Ba	180.00	150	4,860	0.009	18	129
Ericsson RRUS 32 (50	180.00	152	4,938	0.009	19	131
Ericsson RRUS-12 B2	180.00	174	5,638	0.010	21	150
Powerwave Allgon 777	180.00	105	3,402	0.006	13	91
KMW AM-X-CD-16-65-00	180.00	146	4,714	0.009	18	125
CCI HPA-65R-BUU-H6	180.00	153	4,957	0.009	19	132
Flat Low Profile Pla	180.00	1,500	48,600	0.089	183	1,293
Kathrein Scala MF-90	179.00	13	417	0.001	2	11
Telewave ANT450F6	173.00	21	629	0.001	2	18
Flat Side Arm	172.00	150	4,438	0.008	17	129
Fastback Networks In	166.00	9	242	0.000	1	8
Ericsson Radio 4449	166.00	222	6,117	0.011	23	191
Ericsson AIR 21, 1.3	166.00	249	6,861	0.013	26	215
Ericsson AIR 21, 1.3	166.00	244	6,737	0.012	25	211
Round T-Arm w/ Reinf	166.00	1,215	33,478	0.061	126	1,048
RFS APXVAARR24_43-U-	166.00	384	10,573	0.019	40	331
Telewave ANT450F6	158.00	21	524	0.001	2	18
Flat Side Arm	158.00	150	3,745	0.007	14	129
Sinclair SD210-SF2P4	150.00	8	187	0.000	1	7
Round Side Arm	150.00	150	3,375	0.006	13	129
Sinclair SC442D-HF1L	147.00	79	1,707	0.003	6	68
Sinclair SC479-HF1LD	146.00	34	725	0.001	3	29
Decibel DB809DK-XT	146.00	128	2,728	0.005	10	110
Telewave ANT150D (5	142.00	5	101	0.000	0	4
Bird 432-83H-01-T	141.00	25	497	0.001	2	22
Round Side Arm	140.00	450	8,820	0.016	33	388
Alcatel-Lucent TD-RR	134.00	210	3,771	0.007	14	181
RFS APXVTM14-C-I20	134.00	159	2,850	0.005	11	137
RFS APXVSPP18-C-A20	134.00	171	3,070	0.006	12	147
Flat Platform w/ Han	134.00	2,000	35,912	0.065	135	1,724

Alcatel-Lucent 800 M	132.00	185	3,230	0.006	12	160
Alcatel-Lucent 1900M	132.00	132	2,300	0.004	9	114
Nokia AHCA AirScale	125.00	106	1,655	0.003	6	91
Alcatel-Lucent B25 R	125.00	159	2,484	0.005	9	137
Alcatel-Lucent B13 R	125.00	173	2,709	0.005	10	150
Nokia B66a RRH4x45 (	125.00	170	2,663	0.005	10	147
Raycap RCMDC-6627-PF	125.00	32	500	0.001	2	28
Antel LPA-80080/6CF	125.00	84	1,313	0.002	5	72
Commscope JAHH-65B-R	125.00	364	5,681	0.010	21	314
Antel LPA-80063/6CF	125.00	54	844	0.002	3	47
Round Low Profile Pl	125.00	1,500	23,438	0.043	88	1,293
Decibel DB844H90E-XY	115.00	168	2,222	0.004	8	145
Round Low Profile Pl	115.00	1,500	19,838	0.036	75	1,293
RFS APXV18-206517S-C	105.00	79	873	0.002	3	68
Andrew DB586	97.00	8	78	0.000	0	7
Bird 429-83H-01-T	95.00	20	181	0.000	1	17
Flat Side Arm	95.00	450	4,061	0.007	15	388
Andrew DB586	93.00	8	72	0.000	0	7
RFS PA6-65AC	80.00	278	1,779	0.003	7	240
PCTEL GPS-TMG-HR-26N	78.00	1	4	0.000	0	1
Generic GPS	30.00	10	9	0.000	0	9
		55,986	548,874	1.000	2,069	48,274

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-66.97	-2.07	0.00	-291.37	0.00	291.37	5,102.86	2,551.43	10,963.2	5,489.79	0.00	0.00	0.050
5.00	-64.67	-2.09	0.00	-281.00	0.00	281.00	5,029.12	2,514.56	10,576.3	5,296.03	0.01	-0.01	0.049
10.00	-62.41	-2.10	0.00	-270.56	0.00	270.56	4,953.95	2,476.98	10,193.1	5,104.17	0.03	-0.02	0.049
15.00	-60.17	-2.11	0.00	-260.06	0.00	260.06	4,877.36	2,438.68	9,813.98	4,914.28	0.06	-0.04	0.048
20.00	-57.97	-2.12	0.00	-249.51	0.00	249.51	4,799.34	2,399.67	9,438.93	4,726.48	0.10	-0.05	0.047
25.00	-55.80	-2.12	0.00	-238.92	0.00	238.92	4,719.90	2,359.95	9,068.23	4,540.86	0.16	-0.06	0.047
30.00	-53.65	-2.13	0.00	-228.31	0.00	228.31	4,639.03	2,319.51	8,702.08	4,357.51	0.23	-0.08	0.046
35.00	-51.55	-2.13	0.00	-217.68	0.00	217.68	4,556.73	2,278.36	8,340.67	4,176.53	0.32	-0.09	0.045
40.00	-50.32	-2.13	0.00	-207.05	0.00	207.05	4,473.00	2,236.50	7,984.18	3,998.03	0.42	-0.10	0.044
42.96	-49.03	-2.12	0.00	-200.76	0.00	200.76	4,422.82	2,211.41	7,775.79	3,893.68	0.49	-0.11	0.044
45.00	-46.52	-2.11	0.00	-196.42	0.00	196.42	4,378.03	2,189.01	7,615.75	3,813.53	0.54	-0.12	0.043
49.04	-46.16	-2.11	0.00	-187.90	0.00	187.90	3,604.17	1,802.08	6,267.69	3,138.50	0.64	-0.13	0.048
50.00	-44.30	-2.10	0.00	-185.87	0.00	185.87	3,591.50	1,795.75	6,214.33	3,111.78	0.67	-0.13	0.048
55.00	-42.47	-2.09	0.00	-175.39	0.00	175.39	3,524.70	1,762.35	5,938.60	2,973.71	0.81	-0.15	0.047
60.00	-40.67	-2.07	0.00	-164.96	0.00	164.96	3,456.48	1,728.24	5,666.60	2,837.51	0.97	-0.16	0.045
65.00	-38.90	-2.05	0.00	-154.61	0.00	154.61	3,386.83	1,693.41	5,398.53	2,703.28	1.15	-0.18	0.044
70.00	-37.15	-2.03	0.00	-144.35	0.00	144.35	3,315.75	1,657.87	5,134.58	2,571.11	1.34	-0.19	0.043
75.00	-36.11	-2.01	0.00	-134.22	0.00	134.22	3,242.30	1,621.15	4,873.54	2,440.39	1.55	-0.21	0.041
78.00	-35.43	-2.00	0.00	-128.18	0.00	128.18	3,184.09	1,592.04	4,699.23	2,353.11	1.68	-0.22	0.041
80.00	-33.40	-1.96	0.00	-124.18	0.00	124.18	3,145.28	1,572.64	4,584.79	2,295.80	1.77	-0.22	0.040
85.00	-32.55	-1.94	0.00	-114.38	0.00	114.38	3,048.26	1,524.13	4,304.87	2,155.63	2.01	-0.24	0.039
87.54	-31.38	-1.91	0.00	-109.45	0.00	109.45	2,998.97	1,499.48	4,166.05	2,086.12	2.14	-0.24	0.038
90.00	-30.23	-1.88	0.00	-104.74	0.00	104.74	2,951.23	1,475.62	4,033.76	2,019.88	2.27	-0.25	0.037
92.46	-30.07	-1.88	0.00	-100.11	0.00	100.11	2,412.07	1,206.04	3,317.78	1,661.36	2.40	-0.26	0.040
93.00	-29.46	-1.86	0.00	-99.09	0.00	99.09	2,405.85	1,202.93	3,297.34	1,651.12	2.43	-0.26	0.040
95.00	-28.28	-1.83	0.00	-95.36	0.00	95.36	2,382.81	1,191.41	3,222.46	1,613.62	2.54	-0.27	0.039
97.00	-27.38	-1.80	0.00	-91.71	0.00	91.71	2,359.55	1,179.77	3,148.11	1,576.40	2.65	-0.27	0.038
100.00	-26.29	-1.77	0.00	-86.30	0.00	86.30	2,324.22	1,162.11	3,037.61	1,521.06	2.83	-0.28	0.036
103.75	-26.03	-1.76	0.00	-79.68	0.00	79.68	2,279.33	1,139.67	2,901.28	1,452.80	3.05	-0.29	0.035
103.75	-26.03	-1.76	0.00	-79.68	0.00	79.68	2,279.33	1,139.67	2,901.28	1,452.80	3.05	-0.29	0.066
105.00	-24.94	-1.72	0.00	-77.48	0.00	77.48	2,264.20	1,132.10	2,856.29	1,430.27	3.13	-0.30	0.065
110.00	-23.97	-1.69	0.00	-68.86	0.00	68.86	2,186.61	1,093.30	2,659.07	1,331.51	3.46	-0.33	0.063
115.00	-21.00	-1.56	0.00	-60.40	0.00	60.40	2,105.76	1,052.88	2,465.08	1,234.37	3.81	-0.35	0.059
120.00	-20.13	-1.53	0.00	-52.57	0.00	52.57	2,024.90	1,012.45	2,278.43	1,140.91	4.20	-0.38	0.056
125.00	-16.04	-1.31	0.00	-44.93	0.00	44.93	1,944.05	972.03	2,099.13	1,051.12	4.61	-0.41	0.051
130.00	-15.72	-1.30	0.00	-38.38	0.00	38.38	1,863.20	931.60	1,927.17	965.02	5.05	-0.43	0.048
132.00	-15.31	-1.27	0.00	-35.78	0.00	35.78	1,830.86	915.43	1,860.45	931.61	5.24	-0.44	0.047
132.12	-14.90	-1.25	0.00	-35.63	0.00	35.63	1,828.92	914.46	1,856.49	929.62	5.25	-0.45	0.046
134.00	-11.54	-1.04	0.00	-33.28	0.00	33.28	1,798.52	899.26	1,794.90	898.78	5.43	-0.45	0.043
135.00	-11.35	-1.03	0.00	-32.24	0.00	32.24	1,782.35	891.17	1,762.57	882.59	5.52	-0.46	0.043
135.87	-10.90	-1.00	0.00	-31.34	0.00	31.34	993.95	496.97	1,000.68	501.09	5.61	-0.46	0.074
140.00	-10.23	-0.96	0.00	-27.20	0.00	27.20	969.84	484.92	940.01	470.70	6.02	-0.48	0.068
141.00	-10.09	-0.95	0.00	-26.24	0.00	26.24	963.86	481.93	925.45	463.41	6.12	-0.49	0.067
142.00	-9.77	-0.93	0.00	-25.29	0.00	25.29	957.82	478.91	910.95	456.15	6.22	-0.50	0.066
145.00	-9.66	-0.93	0.00	-22.50	0.00	22.50	939.35	469.68	867.78	434.53	6.54	-0.52	0.062
146.00	-9.36	-0.90	0.00	-21.58	0.00	21.58	933.08	466.54	853.51	427.39	6.65	-0.53	0.061
147.00	-8.98	-0.88	0.00	-20.67	0.00	20.67	926.76	463.38	839.30	420.27	6.77	-0.54	0.059

150.00	-8.32	-0.83	0.00	-18.04	0.00	18.04	907.44	453.72	797.07	399.13	7.11	-0.56	0.054
155.00	-8.05	-0.81	0.00	-13.90	0.00	13.90	874.09	437.05	728.06	364.57	7.71	-0.59	0.047
158.00	-7.66	-0.78	0.00	-11.47	0.00	11.47	853.41	426.70	687.57	344.29	8.08	-0.60	0.042
160.00	-7.22	-0.74	0.00	-9.92	0.00	9.92	839.33	419.66	660.97	330.98	8.34	-0.62	0.039
165.00	-7.14	-0.73	0.00	-6.22	0.00	6.22	800.44	400.22	593.98	297.43	9.00	-0.64	0.030
166.00	-3.99	-0.43	0.00	-5.49	0.00	5.49	790.74	395.37	579.60	290.23	9.13	-0.64	0.024
170.00	-3.86	-0.42	0.00	-3.75	0.00	3.75	751.93	375.97	523.82	262.30	9.67	-0.65	0.019
172.00	-3.60	-0.40	0.00	-2.91	0.00	2.91	732.53	366.26	496.99	248.86	9.95	-0.66	0.017
173.00	-3.45	-0.38	0.00	-2.51	0.00	2.51	722.82	361.41	483.84	242.28	10.08	-0.66	0.015
175.00	-3.20	-0.35	0.00	-1.75	0.00	1.75	703.42	351.71	458.07	229.37	10.36	-0.66	0.012
179.00	-3.12	-0.34	0.00	-0.34	0.00	0.34	664.61	332.31	408.64	204.62	10.92	-0.67	0.006
180.00	0.00	-0.31	0.00	0.00	0.00	0.00	654.91	327.45	396.72	198.65	11.06	-0.67	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.65	-2.07	0.00	-285.94	0.00	285.94	5,102.86	2,551.43	10,963.2	5,489.79	0.00	0.00	0.046
5.00	-45.05	-2.08	0.00	-275.57	0.00	275.57	5,029.12	2,514.56	10,576.3	5,296.03	0.01	-0.01	0.045
10.00	-43.47	-2.09	0.00	-265.16	0.00	265.16	4,953.95	2,476.98	10,193.1	5,104.17	0.03	-0.02	0.045
15.00	-41.92	-2.10	0.00	-254.72	0.00	254.72	4,877.36	2,438.68	9,813.98	4,914.28	0.06	-0.04	0.044
20.00	-40.38	-2.10	0.00	-244.24	0.00	244.24	4,799.34	2,399.67	9,438.93	4,726.48	0.10	-0.05	0.044
25.00	-38.87	-2.10	0.00	-233.74	0.00	233.74	4,719.90	2,359.95	9,068.23	4,540.86	0.16	-0.06	0.043
30.00	-37.37	-2.10	0.00	-223.23	0.00	223.23	4,639.03	2,319.51	8,702.08	4,357.51	0.23	-0.07	0.042
35.00	-35.91	-2.10	0.00	-212.72	0.00	212.72	4,556.73	2,278.36	8,340.67	4,176.53	0.31	-0.09	0.042
40.00	-35.05	-2.10	0.00	-202.23	0.00	202.23	4,473.00	2,236.50	7,984.18	3,998.03	0.41	-0.10	0.041
42.96	-34.16	-2.09	0.00	-196.03	0.00	196.03	4,422.82	2,211.41	7,775.79	3,893.68	0.48	-0.11	0.041
45.00	-32.40	-2.08	0.00	-191.75	0.00	191.75	4,378.03	2,189.01	7,615.75	3,813.53	0.53	-0.11	0.040
49.04	-32.15	-2.08	0.00	-183.36	0.00	183.36	3,604.17	1,802.08	6,267.69	3,138.50	0.63	-0.13	0.045
50.00	-30.86	-2.06	0.00	-181.36	0.00	181.36	3,591.50	1,795.75	6,214.33	3,111.78	0.65	-0.13	0.044
55.00	-29.58	-2.05	0.00	-171.05	0.00	171.05	3,524.70	1,762.35	5,938.60	2,973.71	0.79	-0.14	0.043
60.00	-28.33	-2.03	0.00	-160.80	0.00	160.80	3,456.48	1,728.24	5,666.60	2,837.51	0.95	-0.16	0.042
65.00	-27.09	-2.01	0.00	-150.64	0.00	150.64	3,386.83	1,693.41	5,398.53	2,703.28	1.12	-0.17	0.041
70.00	-25.88	-1.99	0.00	-140.58	0.00	140.58	3,315.75	1,657.87	5,134.58	2,571.11	1.31	-0.19	0.039
75.00	-25.16	-1.97	0.00	-130.65	0.00	130.65	3,242.30	1,621.15	4,873.54	2,440.39	1.51	-0.20	0.038
78.00	-24.68	-1.96	0.00	-124.74	0.00	124.74	3,184.09	1,592.04	4,699.23	2,353.11	1.64	-0.21	0.037
80.00	-23.26	-1.92	0.00	-120.82	0.00	120.82	3,145.28	1,572.64	4,584.79	2,295.80	1.73	-0.22	0.037
85.00	-22.67	-1.90	0.00	-111.24	0.00	111.24	3,048.26	1,524.13	4,304.87	2,155.63	1.97	-0.23	0.035
87.54	-21.86	-1.87	0.00	-106.42	0.00	106.42	2,998.97	1,499.48	4,166.05	2,086.12	2.09	-0.24	0.035
90.00	-21.06	-1.84	0.00	-101.82	0.00	101.82	2,951.23	1,475.62	4,033.76	2,019.88	2.22	-0.25	0.034
92.46	-20.94	-1.84	0.00	-97.29	0.00	97.29	2,412.07	1,206.04	3,317.78	1,661.36	2.34	-0.25	0.037
93.00	-20.52	-1.82	0.00	-96.30	0.00	96.30	2,405.85	1,202.93	3,297.34	1,651.12	2.37	-0.25	0.037
95.00	-19.70	-1.79	0.00	-92.65	0.00	92.65	2,382.81	1,191.41	3,222.46	1,613.62	2.48	-0.26	0.036
97.00	-19.07	-1.76	0.00	-89.08	0.00	89.08	2,359.55	1,179.77	3,148.11	1,576.40	2.59	-0.27	0.035
100.00	-18.31	-1.72	0.00	-83.80	0.00	83.80	2,324.22	1,162.11	3,037.61	1,521.06	2.76	-0.28	0.033
103.75	-18.13	-1.72	0.00	-77.34	0.00	77.34	2,279.33	1,139.67	2,901.28	1,452.80	2.98	-0.29	0.032
103.75	-18.13	-1.72	0.00	-77.34	0.00	77.34	2,279.33	1,139.67	2,901.28	1,452.80	2.98	-0.29	0.061
105.00	-17.37	-1.68	0.00	-75.19	0.00	75.19	2,264.20	1,132.10	2,856.29	1,430.27	3.06	-0.29	0.060
110.00	-16.69	-1.65	0.00	-66.79	0.00	66.79	2,186.61	1,093.30	2,659.07	1,331.51	3.38	-0.32	0.058
115.00	-14.63	-1.52	0.00	-58.56	0.00	58.56	2,105.76	1,052.88	2,465.08	1,234.37	3.73	-0.35	0.054
120.00	-14.02	-1.48	0.00	-50.95	0.00	50.95	2,024.90	1,012.45	2,278.43	1,140.91	4.10	-0.37	0.052
125.00	-11.17	-1.27	0.00	-43.53	0.00	43.53	1,944.05	972.03	2,099.13	1,051.12	4.50	-0.40	0.047
130.00	-10.95	-1.26	0.00	-37.16	0.00	37.16	1,863.20	931.60	1,927.17	965.02	4.93	-0.42	0.044
132.00	-10.66	-1.24	0.00	-34.65	0.00	34.65	1,830.86	915.43	1,860.45	931.61	5.11	-0.43	0.043
132.12	-10.37	-1.21	0.00	-34.50	0.00	34.50	1,828.92	914.46	1,856.49	929.62	5.12	-0.43	0.043
134.00	-8.04	-1.01	0.00	-32.22	0.00	32.22	1,798.52	899.26	1,794.90	898.78	5.30	-0.44	0.040
135.00	-7.91	-1.00	0.00	-31.21	0.00	31.21	1,782.35	891.17	1,762.57	882.59	5.39	-0.45	0.040
135.87	-7.59	-0.97	0.00	-30.34	0.00	30.34	993.95	496.97	1,000.68	501.09	5.47	-0.45	0.068
140.00	-7.13	-0.93	0.00	-26.32	0.00	26.32	969.84	484.92	940.01	470.70	5.87	-0.47	0.063
141.00	-7.03	-0.92	0.00	-25.39	0.00	25.39	963.86	481.93	925.45	463.41	5.97	-0.48	0.062
142.00	-6.80	-0.90	0.00	-24.46	0.00	24.46	957.82	478.91	910.95	456.15	6.07	-0.49	0.061
145.00	-6.73	-0.90	0.00	-21.76	0.00	21.76	939.35	469.68	867.78	434.53	6.38	-0.51	0.057
146.00	-6.52	-0.88	0.00	-20.86	0.00	20.86	933.08	466.54	853.51	427.39	6.49	-0.51	0.056
147.00	-6.25	-0.85	0.00	-19.98	0.00	19.98	926.76	463.38	839.30	420.27	6.60	-0.52	0.054

150.00	-5.79	-0.80	0.00	-17.43	0.00	17.43	907.44	453.72	797.07	399.13	6.93	-0.54	0.050
155.00	-5.60	-0.78	0.00	-13.42	0.00	13.42	874.09	437.05	728.06	364.57	7.52	-0.57	0.043
158.00	-5.33	-0.75	0.00	-11.08	0.00	11.08	853.41	426.70	687.57	344.29	7.88	-0.59	0.038
160.00	-5.03	-0.71	0.00	-9.58	0.00	9.58	839.33	419.66	660.97	330.98	8.13	-0.60	0.035
165.00	-4.97	-0.71	0.00	-6.01	0.00	6.01	800.44	400.22	593.98	297.43	8.77	-0.62	0.026
166.00	-2.78	-0.42	0.00	-5.30	0.00	5.30	790.74	395.37	579.60	290.23	8.90	-0.62	0.022
170.00	-2.69	-0.41	0.00	-3.62	0.00	3.62	751.93	375.97	523.82	262.30	9.42	-0.63	0.017
172.00	-2.51	-0.38	0.00	-2.81	0.00	2.81	732.53	366.26	496.99	248.86	9.69	-0.64	0.015
173.00	-2.40	-0.37	0.00	-2.43	0.00	2.43	722.82	361.41	483.84	242.28	9.82	-0.64	0.013
175.00	-2.22	-0.34	0.00	-1.70	0.00	1.70	703.42	351.71	458.07	229.37	10.09	-0.64	0.011
179.00	-2.17	-0.33	0.00	-0.33	0.00	0.33	664.61	332.31	408.64	204.62	10.63	-0.65	0.005
180.00	0.00	-0.31	0.00	0.00	0.00	0.00	654.91	327.45	396.72	198.65	10.77	-0.65	0.000

Equivalent Modal Analysis Method

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.50
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.81
Redundancy Factor (p):	1.00

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
57	179.50	50	1.880	1.925	1.120	0.350	18	62
56	177.00	205	1.828	1.667	1.025	0.318	65	254
55	174.00	105	1.766	1.389	0.920	0.281	30	130
54	172.50	54	1.736	1.263	0.871	0.263	14	66
53	171.00	109	1.706	1.144	0.823	0.246	27	134
52	168.00	222	1.646	0.929	0.735	0.213	47	275
51	165.50	69	1.598	0.772	0.667	0.187	13	85
50	162.50	351	1.540	0.605	0.592	0.158	55	435
49	159.00	144	1.475	0.441	0.513	0.126	18	178
48	156.50	220	1.429	0.340	0.462	0.105	23	272
47	152.50	375	1.357	0.207	0.388	0.075	28	464
46	148.50	233	1.286	0.102	0.324	0.047	11	288
45	146.50	80	1.252	0.059	0.295	0.035	3	99
44	145.50	85	1.235	0.040	0.282	0.029	2	105
43	143.50	257	1.201	0.006	0.256	0.018	5	318
42	141.50	87	1.168	-0.023	0.232	0.008	1	107
41	140.50	88	1.152	-0.036	0.220	0.003	0	109
40	137.93	370	1.110	-0.064	0.193	-0.009	-3	457
39	135.43	150	1.070	-0.085	0.169	-0.018	-3	185
38	134.50	173	1.055	-0.092	0.161	-0.022	-4	214
37	133.06	335	1.033	-0.100	0.148	-0.027	-9	415
36	132.06	15	1.017	-0.105	0.140	-0.030	0	19
35	131.00	258	1.001	-0.110	0.132	-0.033	-8	320
34	127.50	658	0.948	-0.119	0.107	-0.041	-27	815
33	122.50	708	0.875	-0.121	0.078	-0.048	-34	876
32	117.50	726	0.805	-0.113	0.055	-0.051	-37	899
31	112.50	783	0.738	-0.098	0.038	-0.048	-37	969
30	107.50	801	0.674	-0.079	0.025	-0.040	-32	992
29	104.38	209	0.635	-0.066	0.019	-0.033	-7	259
28	101.88	886	0.605	-0.055	0.015	-0.026	-23	1,096
27	98.50	716	0.566	-0.040	0.011	-0.016	-11	886
26	96.00	482	0.538	-0.030	0.009	-0.008	-4	596
25	94.00	485	0.515	-0.022	0.008	-0.002	-1	600
24	92.73	132	0.502	-0.017	0.007	0.002	0	164

23	91.23	931	0.485	-0.011	0.007	0.007	6	1,152
22	88.77	942	0.460	-0.002	0.006	0.014	13	1,166
21	86.27	684	0.434	0.007	0.006	0.021	15	847
20	82.50	1,363	0.397	0.019	0.007	0.030	42	1,687
19	79.00	552	0.364	0.029	0.008	0.038	21	684
18	76.50	836	0.341	0.035	0.009	0.042	35	1,035
17	72.50	1,411	0.307	0.044	0.012	0.047	66	1,746
16	67.50	1,433	0.266	0.052	0.015	0.051	73	1,774
15	62.50	1,455	0.228	0.059	0.020	0.053	77	1,801
14	57.50	1,478	0.193	0.064	0.024	0.054	79	1,829
13	52.50	1,500	0.161	0.067	0.029	0.053	80	1,856
12	49.52	291	0.143	0.068	0.031	0.053	15	360
11	47.02	2,033	0.129	0.069	0.033	0.053	107	2,516
10	43.98	1,040	0.113	0.070	0.035	0.052	54	1,288
9	41.48	992	0.100	0.071	0.037	0.051	51	1,228
8	37.50	1,699	0.082	0.072	0.039	0.051	86	2,103
7	32.50	1,725	0.062	0.072	0.041	0.050	85	2,135
6	27.50	1,752	0.044	0.071	0.042	0.048	85	2,169
5	22.50	1,778	0.030	0.068	0.040	0.046	83	2,201
4	17.50	1,804	0.018	0.063	0.037	0.044	79	2,233
3	12.50	1,830	0.009	0.054	0.031	0.039	71	2,265
2	7.50	1,856	0.003	0.039	0.022	0.030	55	2,297
1	2.50	1,882	0.000	0.015	0.008	0.014	25	2,329
Andrew ABT-DMDF-	180.00	1	1.890	1.980	1.140	0.357	0	1
Powerwave Allgon TT1	180.00	48	1.890	1.980	1.140	0.357	17	59
Generic 4' Omni	180.00	10	1.890	1.980	1.140	0.357	4	12
Powerwave Allgon LGP	180.00	42	1.890	1.980	1.140	0.357	15	52
Raycap DC6-48-60-18-	180.00	40	1.890	1.980	1.140	0.357	14	50
Ericsson RRUS 11 (Ba	180.00	150	1.890	1.980	1.140	0.357	54	186
Ericsson RRUS 32 (50	180.00	152	1.890	1.980	1.140	0.357	54	189
Ericsson RRUS-12 B2	180.00	174	1.890	1.980	1.140	0.357	62	215
Powerwave Allgon 777	180.00	105	1.890	1.980	1.140	0.357	37	130
KMW AM-X-CD-16-65-00	180.00	146	1.890	1.980	1.140	0.357	52	180
CCI HPA-65R-BUU-H6	180.00	153	1.890	1.980	1.140	0.357	55	189
Flat Low Profile Pla	180.00	1,500	1.890	1.980	1.140	0.357	535	1,857
Kathrein Scala MF-90	179.00	13	1.869	1.871	1.101	0.344	4	16
Telewave ANT450F6	173.00	21	1.746	1.304	0.887	0.269	6	26
Flat Side Arm	172.00	150	1.726	1.222	0.855	0.257	39	186
Fastback Networks In	166.00	9	1.607	0.802	0.680	0.192	2	11
Ericsson Radio 4449	166.00	222	1.607	0.802	0.680	0.192	43	275
Ericsson AIR 21, 1.3	166.00	249	1.607	0.802	0.680	0.192	48	308
Ericsson AIR 21, 1.3	166.00	244	1.607	0.802	0.680	0.192	47	303
Round T-Arm w/ Reinf	166.00	1,215	1.607	0.802	0.680	0.192	234	1,504
RFS APXVAARR24_43-U-	166.00	384	1.607	0.802	0.680	0.192	74	475
Telewave ANT450F6	158.00	21	1.456	0.399	0.492	0.118	2	26
Flat Side Arm	158.00	150	1.456	0.399	0.492	0.118	18	186
Sinclair SD210-SF2P4	150.00	8	1.312	0.138	0.347	0.057	0	10
Round Side Arm	150.00	150	1.312	0.138	0.347	0.057	9	186
Sinclair SC442D-HF1L	147.00	79	1.261	0.069	0.302	0.038	3	98
Sinclair SC479-HF1LD	146.00	34	1.243	0.050	0.288	0.032	1	42
Decibel DB809DK-XT	146.00	128	1.243	0.050	0.288	0.032	4	158
Telewave ANT150D (5	142.00	5	1.176	-0.017	0.237	0.010	0	6
Bird 432-83H-01-T	141.00	25	1.160	-0.030	0.226	0.005	0	31
Round Side Arm	140.00	450	1.143	-0.042	0.215	0.001	0	557
Alcatel-Lucent TD-RR	134.00	210	1.047	-0.095	0.156	-0.023	-5	260
RFS APXVTM14-C-I20	134.00	159	1.047	-0.095	0.156	-0.023	-4	196
RFS APXVSPP18-C-A20	134.00	171	1.047	-0.095	0.156	-0.023	-4	212
Flat Platform w/ Han	134.00	2,000	1.047	-0.095	0.156	-0.023	-47	2,476
Alcatel-Lucent 800 M	132.00	185	1.016	-0.105	0.140	-0.030	-6	229
Alcatel-Lucent 1900M	132.00	132	1.016	-0.105	0.140	-0.030	-4	163
Nokia AHCA AirScale	125.00	106	0.911	-0.122	0.092	-0.045	-5	131
Alcatel-Lucent B25 R	125.00	159	0.911	-0.122	0.092	-0.045	-7	197
Alcatel-Lucent B13 R	125.00	173	0.911	-0.122	0.092	-0.045	-8	215
Nokia B66a RRH4x45 (	125.00	170	0.911	-0.122	0.092	-0.045	-8	211

Raycap RCMDC-6627-PF	125.00	32	0.911	-0.122	0.092	-0.045	-1	40
Antel LPA-80080/6CF	125.00	84	0.911	-0.122	0.092	-0.045	-4	104
Commscope JAHH-65B-	125.00	364	0.911	-0.122	0.092	-0.045	-16	450
Antel LPA-80063/6CF	125.00	54	0.911	-0.122	0.092	-0.045	-2	67
Round Low Profile Pl	125.00	1,500	0.911	-0.122	0.092	-0.045	-68	1,857
Decibel DB844H90E-XY	115.00	168	0.771	-0.106	0.046	-0.050	-8	208
Round Low Profile Pl	115.00	1,500	0.771	-0.106	0.046	-0.050	-75	1,857
RFS APXV18-206517S-C	105.00	79	0.643	-0.068	0.020	-0.034	-3	98
Andrew DB586	97.00	8	0.549	-0.034	0.010	-0.011	0	10
Bird 429-83H-01-T	95.00	20	0.526	-0.026	0.008	-0.005	0	25
Flat Side Arm	95.00	450	0.526	-0.026	0.008	-0.005	-2	557
Andrew DB586	93.00	8	0.505	-0.018	0.007	0.001	0	10
RFS PA6-65AC	80.00	278	0.373	0.026	0.007	0.036	10	344
PCTEL GPS-TMG-HR-	78.00	1	0.355	0.031	0.008	0.039	0	1
Generic GPS	30.00	10	0.053	0.071	0.042	0.049	0	12
		55,986	113.239	42.790	37.354	9.142	2,590	69,298

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
57	179.50	50	1.880	1.925	1.120	0.350	18	43
56	177.00	205	1.828	1.667	1.025	0.318	65	177
55	174.00	105	1.766	1.389	0.920	0.281	30	91
54	172.50	54	1.736	1.263	0.871	0.263	14	46
53	171.00	109	1.706	1.144	0.823	0.246	27	94
52	168.00	222	1.646	0.929	0.735	0.213	47	192
51	165.50	69	1.598	0.772	0.667	0.187	13	59
50	162.50	351	1.540	0.605	0.592	0.158	55	303
49	159.00	144	1.475	0.441	0.513	0.126	18	124
48	156.50	220	1.429	0.340	0.462	0.105	23	189
47	152.50	375	1.357	0.207	0.388	0.075	28	323
46	148.50	233	1.286	0.102	0.324	0.047	11	201
45	146.50	80	1.252	0.059	0.295	0.035	3	69
44	145.50	85	1.235	0.040	0.282	0.029	2	73
43	143.50	257	1.201	0.006	0.256	0.018	5	221
42	141.50	87	1.168	-0.023	0.232	0.008	1	75
41	140.50	88	1.152	-0.036	0.220	0.003	0	76
40	137.93	370	1.110	-0.064	0.193	-0.009	-3	319
39	135.43	150	1.070	-0.085	0.169	-0.018	-3	129
38	134.50	173	1.055	-0.092	0.161	-0.022	-4	149
37	133.06	335	1.033	-0.100	0.148	-0.027	-9	289
36	132.06	15	1.017	-0.105	0.140	-0.030	0	13
35	131.00	258	1.001	-0.110	0.132	-0.033	-8	223
34	127.50	658	0.948	-0.119	0.107	-0.041	-27	568
33	122.50	708	0.875	-0.121	0.078	-0.048	-34	610
32	117.50	726	0.805	-0.113	0.055	-0.051	-37	626
31	112.50	783	0.738	-0.098	0.038	-0.048	-37	675
30	107.50	801	0.674	-0.079	0.025	-0.040	-32	691
29	104.38	209	0.635	-0.066	0.019	-0.033	-7	181
28	101.88	886	0.605	-0.055	0.015	-0.026	-23	764
27	98.50	716	0.566	-0.040	0.011	-0.016	-11	617
26	96.00	482	0.538	-0.030	0.009	-0.008	-4	415
25	94.00	485	0.515	-0.022	0.008	-0.002	-1	418
24	92.73	132	0.502	-0.017	0.007	0.002	0	114
23	91.23	931	0.485	-0.011	0.007	0.007	6	803
22	88.77	942	0.460	-0.002	0.006	0.014	13	812
21	86.27	684	0.434	0.007	0.006	0.021	15	590
20	82.50	1,363	0.397	0.019	0.007	0.030	42	1,175

19	79.00	552	0.364	0.029	0.008	0.038	21	476
18	76.50	836	0.341	0.035	0.009	0.042	35	721
17	72.50	1,411	0.307	0.044	0.012	0.047	66	1,216
16	67.50	1,433	0.266	0.052	0.015	0.051	73	1,236
15	62.50	1,455	0.228	0.059	0.020	0.053	77	1,255
14	57.50	1,478	0.193	0.064	0.024	0.054	79	1,274
13	52.50	1,500	0.161	0.067	0.029	0.053	80	1,293
12	49.52	291	0.143	0.068	0.031	0.053	15	250
11	47.02	2,033	0.129	0.069	0.033	0.053	107	1,753
10	43.98	1,040	0.113	0.070	0.035	0.052	54	897
9	41.48	992	0.100	0.071	0.037	0.051	51	856
8	37.50	1,699	0.082	0.072	0.039	0.051	86	1,465
7	32.50	1,725	0.062	0.072	0.041	0.050	85	1,487
6	27.50	1,752	0.044	0.071	0.042	0.048	85	1,511
5	22.50	1,778	0.030	0.068	0.040	0.046	83	1,533
4	17.50	1,804	0.018	0.063	0.037	0.044	79	1,556
3	12.50	1,830	0.009	0.054	0.031	0.039	71	1,578
2	7.50	1,856	0.003	0.039	0.022	0.030	55	1,600
1	2.50	1,882	0.000	0.015	0.008	0.014	25	1,623
Andrew ABT-DMDF-	180.00	1	1.890	1.980	1.140	0.357	0	1
Powerwave Allgon TT1	180.00	48	1.890	1.980	1.140	0.357	17	41
Generic 4' Omni	180.00	10	1.890	1.980	1.140	0.357	4	9
Powerwave Allgon LGP	180.00	42	1.890	1.980	1.140	0.357	15	36
Raycap DC6-48-60-18-	180.00	40	1.890	1.980	1.140	0.357	14	34
Ericsson RRUS 11 (Ba	180.00	150	1.890	1.980	1.140	0.357	54	129
Ericsson RRUS 32 (50	180.00	152	1.890	1.980	1.140	0.357	54	131
Ericsson RRUS-12 B2	180.00	174	1.890	1.980	1.140	0.357	62	150
Powerwave Allgon 777	180.00	105	1.890	1.980	1.140	0.357	37	91
KMW AM-X-CD-16-65-00	180.00	146	1.890	1.980	1.140	0.357	52	125
CCI HPA-65R-BUU-H6	180.00	153	1.890	1.980	1.140	0.357	55	132
Flat Low Profile Pla	180.00	1,500	1.890	1.980	1.140	0.357	535	1,293
Kathrein Scala MF-90	179.00	13	1.869	1.871	1.101	0.344	4	11
Telewave ANT450F6	173.00	21	1.746	1.304	0.887	0.269	6	18
Flat Side Arm	172.00	150	1.726	1.222	0.855	0.257	39	129
Fastback Networks In	166.00	9	1.607	0.802	0.680	0.192	2	8
Ericsson Radio 4449	166.00	222	1.607	0.802	0.680	0.192	43	191
Ericsson AIR 21, 1.3	166.00	249	1.607	0.802	0.680	0.192	48	215
Ericsson AIR 21, 1.3	166.00	244	1.607	0.802	0.680	0.192	47	211
Round T-Arm w/ Reinf	166.00	1,215	1.607	0.802	0.680	0.192	234	1,048
RFS APXVAARR24_43-U-	166.00	384	1.607	0.802	0.680	0.192	74	331
Telewave ANT450F6	158.00	21	1.456	0.399	0.492	0.118	2	18
Flat Side Arm	158.00	150	1.456	0.399	0.492	0.118	18	129
Sinclair SD210-SF2P4	150.00	8	1.312	0.138	0.347	0.057	0	7
Round Side Arm	150.00	150	1.312	0.138	0.347	0.057	9	129
Sinclair SC442D-HF1L	147.00	79	1.261	0.069	0.302	0.038	3	68
Sinclair SC479-HF1LD	146.00	34	1.243	0.050	0.288	0.032	1	29
Decibel DB809DK-XT	146.00	128	1.243	0.050	0.288	0.032	4	110
Telewave ANT150D (5	142.00	5	1.176	-0.017	0.237	0.010	0	4
Bird 432-83H-01-T	141.00	25	1.160	-0.030	0.226	0.005	0	22
Round Side Arm	140.00	450	1.143	-0.042	0.215	0.001	0	388
Alcatel-Lucent TD-RR	134.00	210	1.047	-0.095	0.156	-0.023	-5	181
RFS APXVTM14-C-I20	134.00	159	1.047	-0.095	0.156	-0.023	-4	137
RFS APXVSPP18-C-A20	134.00	171	1.047	-0.095	0.156	-0.023	-4	147
Flat Platform w/ Han	134.00	2,000	1.047	-0.095	0.156	-0.023	-47	1,724
Alcatel-Lucent 800 M	132.00	185	1.016	-0.105	0.140	-0.030	-6	160
Alcatel-Lucent 1900M	132.00	132	1.016	-0.105	0.140	-0.030	-4	114
Nokia AHCA AirScale	125.00	106	0.911	-0.122	0.092	-0.045	-5	91
Alcatel-Lucent B25 R	125.00	159	0.911	-0.122	0.092	-0.045	-7	137
Alcatel-Lucent B13 R	125.00	173	0.911	-0.122	0.092	-0.045	-8	150
Nokia B66a RRH4x45 (	125.00	170	0.911	-0.122	0.092	-0.045	-8	147
Raycap RCMDC-6627-PF	125.00	32	0.911	-0.122	0.092	-0.045	-1	28
Antel LPA-80080/6CF	125.00	84	0.911	-0.122	0.092	-0.045	-4	72
Commscope JAHH-65B-	125.00	364	0.911	-0.122	0.092	-0.045	-16	314
Antel LPA-80063/6CF	125.00	54	0.911	-0.122	0.092	-0.045	-2	47

Round Low Profile Pl	125.00	1,500	0.911	-0.122	0.092	-0.045	-68	1,293
Decibel DB844H90E-XY	115.00	168	0.771	-0.106	0.046	-0.050	-8	145
Round Low Profile Pl	115.00	1,500	0.771	-0.106	0.046	-0.050	-75	1,293
RFS APXV18-206517S-C	105.00	79	0.643	-0.068	0.020	-0.034	-3	68
Andrew DB586	97.00	8	0.549	-0.034	0.010	-0.011	0	7
Bird 429-83H-01-T	95.00	20	0.526	-0.026	0.008	-0.005	0	17
Flat Side Arm	95.00	450	0.526	-0.026	0.008	-0.005	-2	388
Andrew DB586	93.00	8	0.505	-0.018	0.007	0.001	0	7
RFS PA6-65AC	80.00	278	0.373	0.026	0.007	0.036	10	240
PCTEL GPS-TMG-HR-	78.00	1	0.355	0.031	0.008	0.039	0	1
Generic GPS	30.00	10	0.053	0.071	0.042	0.049	0	9
		55,986	113.239	42.790	37.354	9.142	2,590	48,274

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-66.97	-2.57	0.00	-324.99	0.00	324.99	5,102.86	2,551.43	10,963.28	5,489.79	0.00	0.00	0.054
5.00	-64.67	-2.53	0.00	-312.13	0.00	312.13	5,029.12	2,514.56	10,576.35	5,296.03	0.01	-0.01	0.054
10.00	-62.40	-2.48	0.00	-299.47	0.00	299.47	4,953.95	2,476.98	10,193.18	5,104.17	0.03	-0.03	0.053
15.00	-60.17	-2.41	0.00	-287.09	0.00	287.09	4,877.36	2,438.68	9,813.98	4,914.28	0.06	-0.04	0.052
20.00	-57.97	-2.34	0.00	-275.05	0.00	275.05	4,799.34	2,399.67	9,438.93	4,726.48	0.11	-0.05	0.051
25.00	-55.80	-2.27	0.00	-263.35	0.00	263.35	4,719.90	2,359.95	9,068.23	4,540.86	0.18	-0.07	0.051
30.00	-53.65	-2.19	0.00	-252.02	0.00	252.02	4,639.03	2,319.51	8,702.08	4,357.51	0.26	-0.08	0.050
35.00	-51.55	-2.12	0.00	-241.06	0.00	241.06	4,556.73	2,278.36	8,340.67	4,176.53	0.36	-0.10	0.049
40.00	-50.32	-2.07	0.00	-230.48	0.00	230.48	4,473.00	2,236.50	7,984.18	3,998.03	0.47	-0.11	0.049
42.96	-49.03	-2.02	0.00	-224.35	0.00	224.35	4,422.82	2,211.41	7,775.79	3,893.68	0.54	-0.12	0.048
45.00	-46.52	-1.92	0.00	-220.21	0.00	220.21	4,378.03	2,189.01	7,615.75	3,813.53	0.59	-0.13	0.047
49.04	-46.16	-1.91	0.00	-212.46	0.00	212.46	3,604.17	1,802.08	6,267.69	3,138.50	0.71	-0.14	0.053
50.00	-44.30	-1.83	0.00	-210.63	0.00	210.63	3,591.50	1,795.75	6,214.33	3,111.78	0.74	-0.14	0.053
55.00	-42.47	-1.76	0.00	-201.47	0.00	201.47	3,524.70	1,762.35	5,938.60	2,973.71	0.90	-0.16	0.052
60.00	-40.67	-1.69	0.00	-192.67	0.00	192.67	3,456.48	1,728.24	5,666.60	2,837.51	1.08	-0.18	0.052
65.00	-38.90	-1.62	0.00	-184.22	0.00	184.22	3,386.83	1,693.41	5,398.53	2,703.28	1.27	-0.20	0.051
70.00	-37.15	-1.56	0.00	-176.10	0.00	176.10	3,315.75	1,657.87	5,134.58	2,571.11	1.49	-0.22	0.050
75.00	-36.11	-1.53	0.00	-168.29	0.00	168.29	3,242.30	1,621.15	4,873.54	2,440.39	1.73	-0.23	0.050
78.00	-35.43	-1.52	0.00	-163.69	0.00	163.69	3,184.09	1,592.04	4,699.23	2,353.11	1.88	-0.25	0.050
80.00	-33.40	-1.46	0.00	-160.65	0.00	160.65	3,145.28	1,572.64	4,584.79	2,295.80	1.98	-0.25	0.049
85.00	-32.55	-1.45	0.00	-153.33	0.00	153.33	3,048.26	1,524.13	4,304.87	2,155.63	2.26	-0.27	0.049
87.54	-31.39	-1.44	0.00	-149.64	0.00	149.64	2,998.97	1,499.48	4,166.05	2,086.12	2.41	-0.28	0.049
90.00	-30.23	-1.43	0.00	-146.10	0.00	146.10	2,951.23	1,475.62	4,033.76	2,019.88	2.55	-0.29	0.048
92.46	-30.07	-1.44	0.00	-142.57	0.00	142.57	2,412.07	1,206.04	3,317.78	1,661.36	2.71	-0.30	0.054
93.00	-29.46	-1.44	0.00	-141.79	0.00	141.79	2,405.85	1,202.93	3,297.34	1,651.12	2.74	-0.31	0.054
95.00	-28.28	-1.44	0.00	-138.92	0.00	138.92	2,382.81	1,191.41	3,222.46	1,613.62	2.87	-0.32	0.053
97.00	-27.38	-1.45	0.00	-136.04	0.00	136.04	2,359.55	1,179.77	3,148.11	1,576.40	3.01	-0.33	0.053
100.00	-26.29	-1.48	0.00	-131.68	0.00	131.68	2,324.22	1,162.11	3,037.61	1,521.06	3.22	-0.34	0.052
103.75	-26.03	-1.49	0.00	-126.14	0.00	126.14	2,279.33	1,139.67	2,901.28	1,452.80	3.49	-0.36	0.051
103.75	-26.03	-1.49	0.00	-126.14	0.00	126.14	2,279.33	1,139.67	2,901.28	1,452.80	3.49	-0.36	0.098
105.00	-24.94	-1.53	0.00	-124.28	0.00	124.28	2,264.20	1,132.10	2,856.29	1,430.27	3.59	-0.36	0.098
110.00	-23.97	-1.58	0.00	-116.65	0.00	116.65	2,186.61	1,093.30	2,659.07	1,331.51	3.99	-0.41	0.099
115.00	-21.00	-1.69	0.00	-108.76	0.00	108.76	2,105.76	1,052.88	2,465.08	1,234.37	4.45	-0.46	0.098
120.00	-20.12	-1.74	0.00	-100.29	0.00	100.29	2,024.90	1,012.45	2,278.43	1,140.91	4.95	-0.51	0.098
125.00	-16.03	-1.86	0.00	-91.60	0.00	91.60	1,944.05	972.03	2,099.13	1,051.12	5.52	-0.56	0.095
130.00	-15.71	-1.88	0.00	-82.30	0.00	82.30	1,863.20	931.60	1,927.17	965.02	6.13	-0.62	0.094
132.00	-15.30	-1.89	0.00	-78.54	0.00	78.54	1,830.86	915.43	1,860.45	931.61	6.40	-0.64	0.093
132.12	-14.88	-1.89	0.00	-78.31	0.00	78.31	1,828.92	914.46	1,856.49	929.62	6.41	-0.64	0.092
134.00	-11.53	-1.92	0.00	-74.76	0.00	74.76	1,798.52	899.26	1,794.90	898.78	6.67	-0.66	0.090
135.00	-11.34	-1.92	0.00	-72.83	0.00	72.83	1,782.35	891.17	1,762.57	882.59	6.81	-0.67	0.089
135.87	-10.88	-1.93	0.00	-71.16	0.00	71.16	993.95	496.97	1,000.68	501.09	6.93	-0.68	0.153
140.00	-10.22	-1.92	0.00	-63.20	0.00	63.20	969.84	484.92	940.01	470.70	7.54	-0.73	0.145
141.00	-10.08	-1.92	0.00	-61.28	0.00	61.28	963.86	481.93	925.45	463.41	7.70	-0.75	0.143
142.00	-9.75	-1.92	0.00	-59.35	0.00	59.35	957.82	478.91	910.95	456.15	7.86	-0.76	0.140
145.00	-9.65	-1.92	0.00	-53.59	0.00	53.59	939.35	469.68	867.78	434.53	8.35	-0.82	0.134
146.00	-9.35	-1.91	0.00	-51.66	0.00	51.66	933.08	466.54	853.51	427.39	8.53	-0.83	0.131
147.00	-8.96	-1.90	0.00	-49.75	0.00	49.75	926.76	463.38	839.30	420.27	8.70	-0.85	0.128

150.00	-8.30	-1.86	0.00	-44.05	0.00	44.05	907.44	453.72	797.07	399.13	9.25	-0.90	0.120
155.00	-8.02	-1.84	0.00	-34.74	0.00	34.74	874.09	437.05	728.06	364.57	10.24	-0.98	0.104
158.00	-7.63	-1.80	0.00	-29.21	0.00	29.21	853.41	426.70	687.57	344.29	10.86	-1.02	0.094
160.00	-7.20	-1.74	0.00	-25.61	0.00	25.61	839.33	419.66	660.97	330.98	11.30	-1.05	0.086
165.00	-7.11	-1.73	0.00	-16.89	0.00	16.89	800.44	400.22	593.98	297.43	12.43	-1.10	0.066
166.00	-3.97	-1.18	0.00	-15.15	0.00	15.15	790.74	395.37	579.60	290.23	12.66	-1.11	0.057
170.00	-3.84	-1.15	0.00	-10.43	0.00	10.43	751.93	375.97	523.82	262.30	13.61	-1.15	0.045
172.00	-3.59	-1.10	0.00	-8.13	0.00	8.13	732.53	366.26	496.99	248.86	14.09	-1.16	0.038
173.00	-3.43	-1.06	0.00	-7.03	0.00	7.03	722.82	361.41	483.84	242.28	14.34	-1.17	0.034
175.00	-3.18	-0.99	0.00	-4.92	0.00	4.92	703.42	351.71	458.07	229.37	14.83	-1.18	0.026
179.00	-3.10	-0.96	0.00	-0.96	0.00	0.96	664.61	332.31	408.64	204.62	15.82	-1.19	0.009
180.00	0.00	-0.90	0.00	0.00	0.00	0.00	654.91	327.45	396.72	198.65	16.07	-1.19	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.65	-2.57	0.00	-317.85	0.00	317.85	5,102.86	2,551.43	10,963.28	5,489.79	0.00	0.00	0.050
5.00	-45.05	-2.52	0.00	-305.00	0.00	305.00	5,029.12	2,514.56	10,576.35	5,296.03	0.01	-0.01	0.049
10.00	-43.47	-2.46	0.00	-292.39	0.00	292.39	4,953.95	2,476.98	10,193.18	5,104.17	0.03	-0.03	0.049
15.00	-41.92	-2.39	0.00	-280.07	0.00	280.07	4,877.36	2,438.68	9,813.98	4,914.28	0.06	-0.04	0.048
20.00	-40.38	-2.32	0.00	-268.11	0.00	268.11	4,799.34	2,399.67	9,438.93	4,726.48	0.11	-0.05	0.047
25.00	-38.87	-2.24	0.00	-256.52	0.00	256.52	4,719.90	2,359.95	9,068.23	4,540.86	0.18	-0.07	0.047
30.00	-37.37	-2.16	0.00	-245.31	0.00	245.31	4,639.03	2,319.51	8,702.08	4,357.51	0.25	-0.08	0.046
35.00	-35.91	-2.08	0.00	-234.49	0.00	234.49	4,556.73	2,278.36	8,340.67	4,176.53	0.35	-0.10	0.045
40.00	-35.05	-2.04	0.00	-224.07	0.00	224.07	4,473.00	2,236.50	7,984.18	3,998.03	0.46	-0.11	0.045
42.96	-34.16	-1.99	0.00	-218.04	0.00	218.04	4,422.82	2,211.41	7,775.79	3,893.68	0.53	-0.12	0.044
45.00	-32.40	-1.88	0.00	-213.98	0.00	213.98	4,378.03	2,189.01	7,615.75	3,813.53	0.58	-0.13	0.044
49.04	-32.15	-1.87	0.00	-206.38	0.00	206.38	3,604.17	1,802.08	6,267.69	3,138.50	0.69	-0.14	0.049
50.00	-30.86	-1.79	0.00	-204.58	0.00	204.58	3,591.50	1,795.75	6,214.33	3,111.78	0.72	-0.14	0.049
55.00	-29.59	-1.72	0.00	-195.62	0.00	195.62	3,524.70	1,762.35	5,938.60	2,973.71	0.88	-0.16	0.048
60.00	-28.33	-1.65	0.00	-187.03	0.00	187.03	3,456.48	1,728.24	5,666.60	2,837.51	1.05	-0.17	0.048
65.00	-27.09	-1.58	0.00	-178.79	0.00	178.79	3,386.83	1,693.41	5,398.53	2,703.28	1.24	-0.19	0.047
70.00	-25.88	-1.52	0.00	-170.91	0.00	170.91	3,315.75	1,657.87	5,134.58	2,571.11	1.45	-0.21	0.047
75.00	-25.16	-1.48	0.00	-163.33	0.00	163.33	3,242.30	1,621.15	4,873.54	2,440.39	1.68	-0.23	0.046
78.00	-24.68	-1.47	0.00	-158.88	0.00	158.88	3,184.09	1,592.04	4,699.23	2,353.11	1.83	-0.24	0.046
80.00	-23.26	-1.41	0.00	-155.95	0.00	155.95	3,145.28	1,572.64	4,584.79	2,295.80	1.93	-0.25	0.046
85.00	-22.67	-1.40	0.00	-148.88	0.00	148.88	3,048.26	1,524.13	4,304.87	2,155.63	2.20	-0.27	0.046
87.54	-21.86	-1.39	0.00	-145.32	0.00	145.32	2,998.97	1,499.48	4,166.05	2,086.12	2.34	-0.28	0.046
90.00	-21.06	-1.38	0.00	-141.90	0.00	141.90	2,951.23	1,475.62	4,033.76	2,019.88	2.49	-0.29	0.045
92.46	-20.94	-1.38	0.00	-138.51	0.00	138.51	2,412.07	1,206.04	3,317.78	1,661.36	2.64	-0.30	0.050
93.00	-20.52	-1.38	0.00	-137.76	0.00	137.76	2,405.85	1,202.93	3,297.34	1,651.12	2.67	-0.30	0.050
95.00	-19.70	-1.39	0.00	-134.99	0.00	134.99	2,382.81	1,191.41	3,222.46	1,613.62	2.80	-0.31	0.050
97.00	-19.07	-1.40	0.00	-132.21	0.00	132.21	2,359.55	1,179.77	3,148.11	1,576.40	2.93	-0.32	0.049
100.00	-18.31	-1.42	0.00	-128.01	0.00	128.01	2,324.22	1,162.11	3,037.61	1,521.06	3.13	-0.33	0.049
103.75	-18.13	-1.43	0.00	-122.66	0.00	122.66	2,279.33	1,139.67	2,901.28	1,452.80	3.40	-0.35	0.048
103.75	-18.13	-1.43	0.00	-122.66	0.00	122.66	2,279.33	1,139.67	2,901.28	1,452.80	3.40	-0.35	0.092
105.00	-17.37	-1.47	0.00	-120.87	0.00	120.87	2,264.20	1,132.10	2,856.29	1,430.27	3.49	-0.35	0.092
110.00	-16.69	-1.52	0.00	-113.51	0.00	113.51	2,186.61	1,093.30	2,659.07	1,331.51	3.88	-0.40	0.093
115.00	-14.63	-1.64	0.00	-105.92	0.00	105.92	2,105.76	1,052.88	2,465.08	1,234.37	4.33	-0.45	0.093
120.00	-14.01	-1.68	0.00	-97.75	0.00	97.75	2,024.90	1,012.45	2,278.43	1,140.91	4.82	-0.50	0.093
125.00	-11.16	-1.81	0.00	-89.37	0.00	89.37	1,944.05	972.03	2,099.13	1,051.12	5.37	-0.55	0.091
130.00	-10.94	-1.82	0.00	-80.33	0.00	80.33	1,863.20	931.60	1,927.17	965.02	5.97	-0.60	0.089
132.00	-10.65	-1.83	0.00	-76.68	0.00	76.68	1,830.86	915.43	1,860.45	931.61	6.22	-0.62	0.088
132.12	-10.36	-1.84	0.00	-76.47	0.00	76.47	1,828.92	914.46	1,856.49	929.62	6.24	-0.62	0.088
134.00	-8.02	-1.88	0.00	-73.01	0.00	73.01	1,798.52	899.26	1,794.90	898.78	6.49	-0.64	0.086
135.00	-7.89	-1.88	0.00	-71.13	0.00	71.13	1,782.35	891.17	1,762.57	882.59	6.62	-0.65	0.085
135.87	-7.57	-1.88	0.00	-69.50	0.00	69.50	993.95	496.97	1,000.68	501.09	6.74	-0.66	0.146
140.00	-7.11	-1.88	0.00	-61.72	0.00	61.72	969.84	484.92	940.01	470.70	7.34	-0.71	0.138
141.00	-7.01	-1.88	0.00	-59.84	0.00	59.84	963.86	481.93	925.45	463.41	7.49	-0.73	0.136
142.00	-6.79	-1.88	0.00	-57.96	0.00	57.96	957.82	478.91	910.95	456.15	7.64	-0.74	0.134
145.00	-6.71	-1.88	0.00	-52.32	0.00	52.32	939.35	469.68	867.78	434.53	8.13	-0.79	0.128
146.00	-6.50	-1.87	0.00	-50.44	0.00	50.44	933.08	466.54	853.51	427.39	8.30	-0.81	0.125
147.00	-6.23	-1.86	0.00	-48.58	0.00	48.58	926.76	463.38	839.30	420.27	8.47	-0.83	0.122

150.00	-5.77	-1.82	0.00	-43.01	0.00	43.01	907.44	453.72	797.07	399.13	9.01	-0.88	0.114
155.00	-5.58	-1.80	0.00	-33.92	0.00	33.92	874.09	437.05	728.06	364.57	9.96	-0.95	0.099
158.00	-5.31	-1.76	0.00	-28.53	0.00	28.53	853.41	426.70	687.57	344.29	10.58	-0.99	0.089
160.00	-5.01	-1.70	0.00	-25.02	0.00	25.02	839.33	419.66	660.97	330.98	11.00	-1.02	0.082
165.00	-4.95	-1.69	0.00	-16.52	0.00	16.52	800.44	400.22	593.98	297.43	12.10	-1.08	0.062
166.00	-2.76	-1.15	0.00	-14.83	0.00	14.83	790.74	395.37	579.60	290.23	12.33	-1.09	0.055
170.00	-2.67	-1.13	0.00	-10.21	0.00	10.21	751.93	375.97	523.82	262.30	13.25	-1.12	0.042
172.00	-2.49	-1.07	0.00	-7.95	0.00	7.95	732.53	366.26	496.99	248.86	13.72	-1.13	0.035
173.00	-2.38	-1.03	0.00	-6.88	0.00	6.88	722.82	361.41	483.84	242.28	13.96	-1.14	0.032
175.00	-2.21	-0.97	0.00	-4.81	0.00	4.81	703.42	351.71	458.07	229.37	14.44	-1.15	0.024
179.00	-2.16	-0.94	0.00	-0.94	0.00	0.94	664.61	332.31	408.64	204.62	15.41	-1.16	0.008
180.00	0.00	-0.90	0.00	0.00	0.00	0.00	654.91	327.45	396.72	198.65	15.65	-1.16	0.000

Analysis Summary

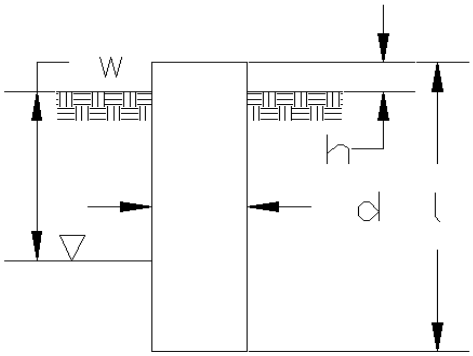
Load Case	Reactions Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage Elev (ft)	Interaction Ratio
1.2D + 1.6W	46.73	0.00	67.09	0.00	0.00	5287.87	135.87	0.84
0.9D + 1.6W	46.08	0.00	50.30	0.00	0.00	5175.70	135.87	0.81
1.2D + 1.0Di + 1.0Wi	19.92	0.00	118.38	0.00	0.00	2019.63	135.87	0.31
(1.2 + 0.2Sds) * DL + E ELFM	2.07	0.00	66.97	0.00	0.00	291.37	135.87	0.07
(1.2 + 0.2Sds) * DL + E EMAM	2.57	0.00	66.97	0.00	0.00	324.99	135.87	0.15
(0.9 - 0.2Sds) * DL + E ELFM	2.07	0.00	46.65	0.00	0.00	285.94	135.87	0.07
(0.9 - 0.2Sds) * DL + E EMAM	2.57	0.00	46.65	0.00	0.00	317.85	135.87	0.15
1.0D + 1.0W	10.73	0.00	55.98	0.00	0.00	1213.08	135.87	0.20

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Ratio	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	103.75	(4) SOL-#20 All Thread Bar	364.7	10.9	16.8	0.651	278.0	330.5	0.841

Elev From (ft)	Elev To (ft)	Member	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio	Lower Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio
0.00	103.75	(4) SOL-#20 All Thread Bar	176.5	12.0	15	24	0.613	0.0	12.0	0	0	0.000

Site Name:	Winchester CT 3, CT	*Program Last Updated:*	*5/13/2014*
Site Number:	302506	*American Tower Corporation*	
Engineer:	Hussam.Altahan		
Engineering Number:	12927190		
Date:	07/18/19		



Design Base Loads (Factored) - Analysis per TIA-222-G Standards

Analyze or Design a Foundation?	Analyze	
Foundation Mapped:	N	
Moment (M):	5288	k-ft
Shear/Leg (V):	46.7	k
Axial Load (P):	67.1	k
Uplift/Leg (U):	0.0	k
Tower Type (GT / SST / MP):	MP	
Diameter of Caisson (d):	7.0	ft
Caisson Embedment (L-h):	22.5	ft
Caisson Height Above Ground (h):	1.0	ft
Depth Below Ground Surface to Water Table (w):	99.0	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Water:	62.4	pcf
Tension Skin Friction/Compression Skin Friction:	1.00	
Pullout Angle:	30.0	degrees

Engineer Notes

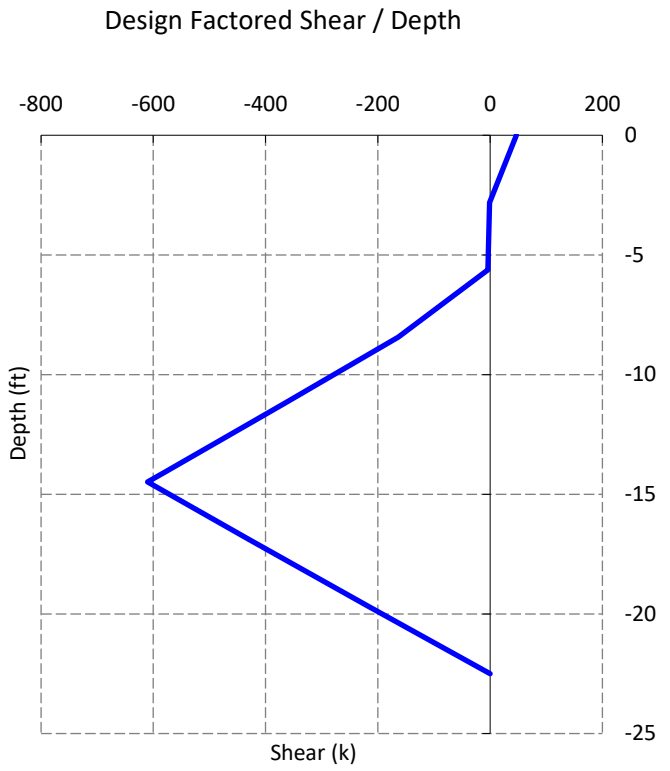
Soil Mechanical Properties

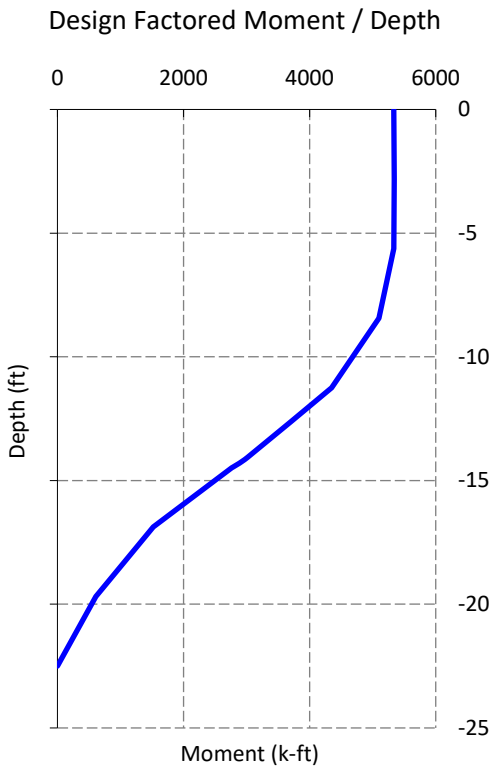
Depth (ft) Top	Depth (ft) Bottom	γ_{Soil} (pcf)	Cohesion (psf)	ϕ (degree)	Ultimate Skin Friction (psf)	Ultimate Bearing Pressure (psf)
0.0	3.5	105	0	0	0	0
3.5	7.0	138	8474	0	0	0
7.0	23.5	140	10865	0	4889	43383

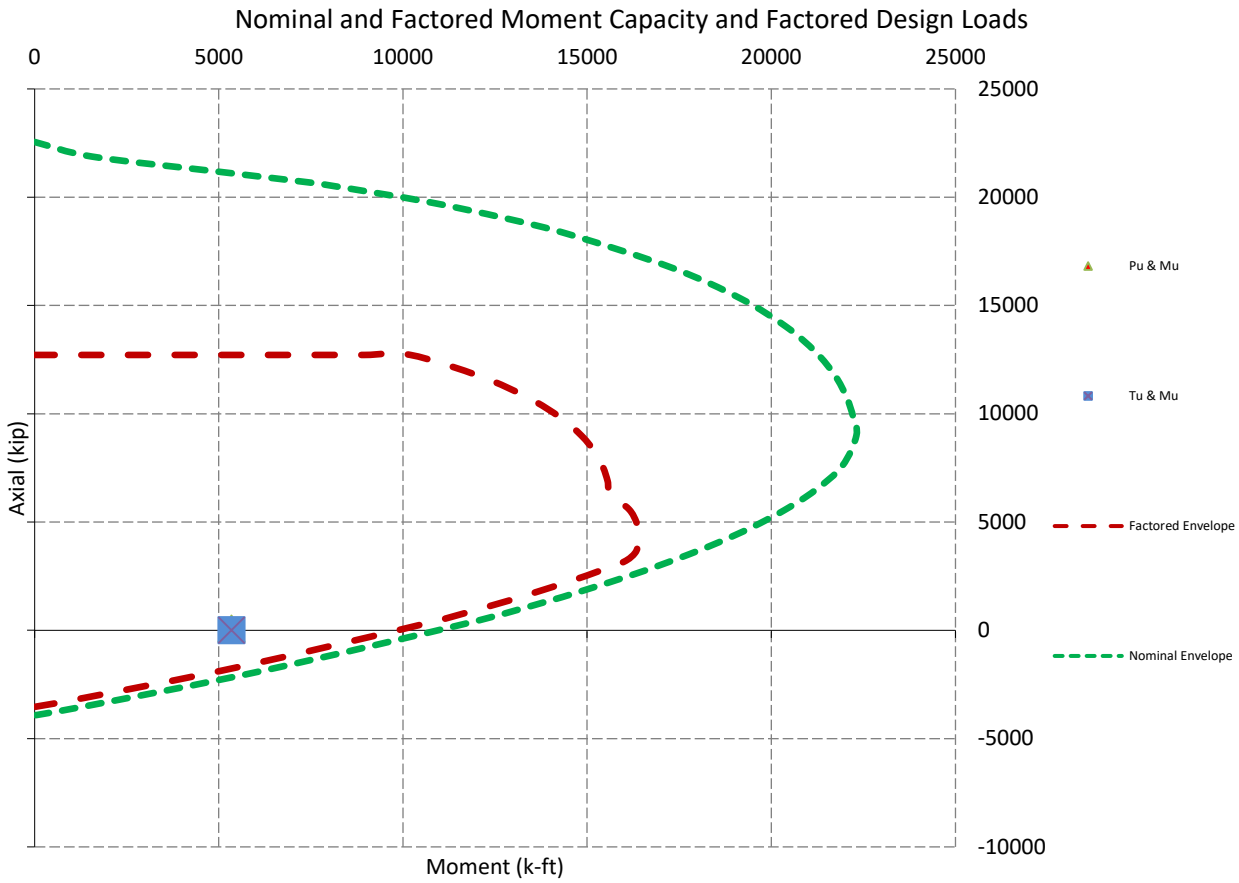
Required Embedment:	13.0	ft - OK, Caisson Embedment Satisfactory
Volume of Concrete:	904.4	ft^3 = 33.5 yd^3
Weight of Concrete (Buoyancy Effect Considered):	135.7	k
Average Soil Unit Weight:	134.2	pcf
Skin Friction Resistance:	1666.5	k
Compressive Bearing Resistance:	1669.6	k
Pullout Weight (Minus Concrete Weight):	965.2	k
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	723.9	k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	2502.0	k
T_u:	0.0	k
$T_u/\phi_s T_n$:	0.00	Result: OK
P_u:	83.5	k
$P_u/\phi_s P_n$:	0.03	Result: OK
Total Lateral Resistance:	9003.9	k
Inflection Point (Below Ground Surface):	14.5	ft
Design Overturning Moment At Inflection Point (M_D):	6011.6	k-ft
Nominal Moment Capacity ($\phi_s M_n$):	27878.9	k-ft
$M_D/\phi_s M_n$:	0.22	Result: OK
ϕ_s:	0.75	

Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	4000	psi
Vertical Steel Rebar Size #:	11	
Vertical Steel Rebar Area:	1.56	in^2
# of Vertical Steel Rebars:	42	
Vertical Steel Rebar Yield Strength (F_y):	60	ksi
Horizontal Tie / Stirrup Size #:	5	
Horizontal Tie / Stirrup Area:	0.31	in^2
Design Horizontal Tie / Stirrup Spacing:	12.0	in
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	60	ksi
Rebar Cage Diameter:	76.0	in
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90	ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor (ϕ_V):	0.85	ACI318-05 - 9.3.2.3
Strength Compression Reduction Factor (ϕ_V):	0.65	ACI318-05 - 9.3.2.2
Steel Elastic Modulus:	29000	ksi
Design Moment (M_u):	5342.1	k-ft
Nominal Moment Capacity ($\phi_B M_n$):	10956.3	k-ft - ACI318-005 - 10.2
$M_u/\phi_B M_n$:	0.49	Result: OK
Design Shear (V_u):	610.3	k
Nominal Shear Capacity ($\phi_V V_n$):	776.5	k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u/\phi_V V_n$:	0.79	Result: OK
Design Tension (T_u):	0.0	k
Nominal Tension Capacity ($\phi_T T_n$):	3538.1	k - ACI318-05 - 10.2
$T_u/\phi_T T_n$:	0.00	Result: OK
Design Compression (P_u):	83.5	k
Nominal Compression Capacity ($\phi_P P_n$):	11726.2	k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$:	0.01	Result: OK
Bending Reinforcement Ratio:	0.012	ACI318-05 - 10.8.4 & 10.9.1
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.49	Result: OK


Design Factored Shear / Depth
-800
-600
-400
-200
0
200
0
-5
-10
-15
-20
-25
Depth (ft)
Shear (k)


Design Factored Moment / Depth
0
2000
4000
6000
0
-5
-10
-15
-20
-25
Depth (ft)
Moment (k-ft)


Nominal and Factored Moment Capacity and Factored Design Loads
0
5000
10000
15000
20000
25000
25000
20000
15000
10000
5000
0
-5000
-10000
Axial (kip)
Moment (k-ft)
Pu & Mu
Tu & Mu
Factored Envelope
Nominal Envelope

Base Plate & Anchor Rod Analysis

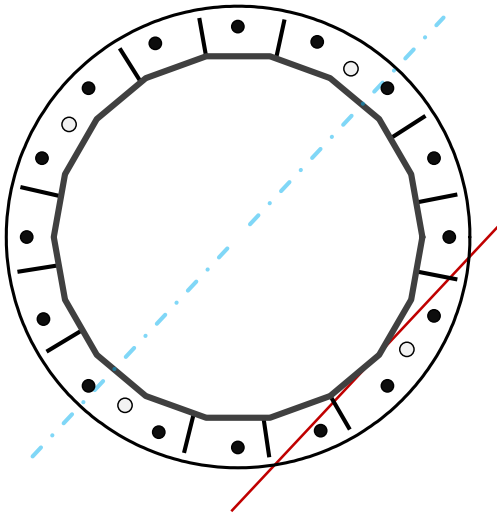
Pole Dimensions		
Number of Sides	18	-
Diameter	52.75	in
Thickness	0.4375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	5287.9	k-ft
Axial, Pu	67.1	k
Shear, Vu	46.7	k
Neutral Axis	227	°

Report Capacities		
Component	Capacity	Result
Base Plate	79%	Pass
Anchor Rods	74%	Pass
Dwyidag	71%	Pass

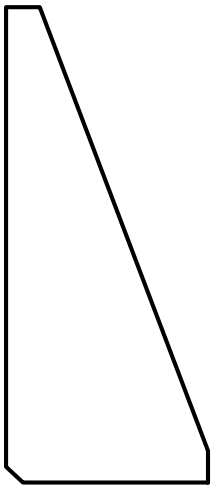
Base Plate		
Shape	Round	-
Diameter, ø	68	in
Thickness	2	in
Grade	A572-50	-
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	1543.2	k
Bending Stress, ϕMn	1958.8	k

Dywidag Reinforcement		
Quantity	4	-
Bar Size	#20	in
Diameter, ø	2.5	in
Bracket Type	Angle	-
Circle	59.63	in
Orientation Offset		°
Applied Force, Pu	280.4	k
Dywidag Bar, ϕPn	392.7	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	16	-
Diameter, ø	2 1/4	in
Bolt Circle	62	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	12.2	in
Orientation Offset	0	°
Applied Force, Pu	191.1	k
Anchor Rods, ϕPn	259.8	k

Stiffeners		
Arrangement	Radial	-
Quantity	12	-
Height	15	in
Width	6	in
Effective Width	6.000	in
Thickness	3/4	in
Effective Thickness	0.520	in
Notch	0.5	in
Flat Edge	1	in
Grade	A36	-
Yield Strength, Fy	36	ksi
Tensile Strength, Fu	58	ksi
Horizontal Weld	Fillet	
Horizontal Fillet Size	5/16	in
Bevel Depth		in
Vertical Weld	Fillet	
Vertical Fillet Size	5/16	in
Weld Strength	70	ksi
Electrode Coefficient	1	-
Orientation Offset	0	°
Vertical Weld, ϕRn	209.3	k
Horz. Weld, ϕRn	88.7	k
Ten. Capacity, ϕTn	133.7	k
Comp. Capacity, ϕPn	259.2	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	46.7	3897.1	0.74
Anchor Rod Forces	46.7	3897.1	0.74
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	1390.8	0.26
Stiffener Forces	16.4	1365.5	0.26

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	71.5363	3.9742	0.2546		24475.33
Bolt	3.9761	3.2477	0.8393	4.5	25022.78
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	4.9087	4.9087	1.9175		8734.76
Stiffener	2.8600	2.5740	37.4400		13201.32

Base Plate		
Shape	Round	-
Diameter, D	68	in
Thickness, t	2	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	42.912	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

External Base Plate		
Chord Length AA	36.396	in
Additional AA	7.133	in
Section Modulus, Z	43.529	in^3
Applied Moment, Mu	1543.2	k-ft
Bending Capacity, ϕMn	1958.8	k-ft
Capacity, Mu/ϕMn	0.788	OK
Chord Length AB	35.164	in
Additional AB	6.401	in
Section Modulus, Z	41.565	in^3
Applied Moment, Mu	1319.4	k-ft
Bending Capacity, ϕMn	1870.4	k-ft
Capacity, Mu/ϕMn	0.705	OK
Bend Line Length	39.263	in
Additional Bend Line	70.383	in
Section Modulus, Z	109.645	in^3
Applied Moment, Mu	1543.2	k-ft
Bending Capacity, ϕMn	4934.0	k-ft
Capacity, Mu/ϕMn	0.313	OK

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Anchor Rods		
Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	62	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	191.1	k
Applied Shear, Vu	0.1	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.736	OK
Interaction Capacity	0.737	OK

Dywidag Reinforcement		
Dywidag Quantity, N	4	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	59.63	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	280.4	k
Compressive Capacity, ϕPn	392.7	k
Capacity, Pu/ϕPn	0.714	OK

Base Plate Stiffeners		
Applied Axial Force, Pu	91.2	k
Applied Horizontal Force, Vu	0.68	k

Vertical Weld		
Vert.-to-Stiffener a=e_x/l	0.133	-
Spacing Ratio, k	0.050	-
Weld Coefficient, C	3.720	-
Compressive Capacity, ϕPn	209.3	k
Vert.-to-Plate a=e_x/l	0.333	-
Spacing Ratio, k	0.050	-
Weld Coefficient, C	2.940	-
Shear Capacity, ϕVn	165.4	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	0.440	OK

Horizontal Weld		
Horz.-to-Stiffener a=e_x/l	0.167	-
Spacing Ratio, k	0.125	-
Weld Coefficient, C	3.940	-
Effective Fillet	0.313	in
Compressive Capacity, ϕPn	88.7	k
Horz.-to-Pole a=e_x/l	0.417	-
Spacing Ratio, k	0.125	-
Weld Coefficient, C	2.670	-
Shear Capacity, ϕVn	60.1	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	1.040	OK

Plate Tension		
Gross Cross Section	2.860	in^2
Net Cross Section	2.574	in^2
Tensile Capacity, ϕTn	133.7	k
Capacity, Tu/ϕTn	0.341	OK

Plate Compression		
Radius of Gyration	0.150	in^3
kl/r	59.96	-
4.71 $\sqrt{(E/Fy)}$	133.68	-
Buckling Stress(Fe)	79.6	-
Crit. Buckling Stress(Fcr)	69.8	ksi
Compressive Capacity, ϕPn	259.2	k
Capacity, Pu/ϕPn	0.176	OK

Mount Analysis of Existing T-Arms for American Tower on behalf of T-Mobile
302506 - Winchester CT 3
Project #: 12927190

T-Mobile Site ID: CTNH403A
Program: L600

CLS Engineering PLLC Project #41124-12927190-01-MA-R2
July 3, 2019

MOUNT DESCRIPTION	Existing T-Arms at 164 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 166 ft AGL (Eccentricity of ~2 ft)
SITE DESCRIPTION	180 ft Monopole
SITE ADDRESS	15 Oakdale Avenue, Winsted, CT 06098, Litchfield County
GPS COORDINATES	41.921700, -73.049500
ANALYSIS STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	120 mph, V_{ult} / 93 mph, V_{asd} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 0.75" Ice

■ **ANALYSIS RESULT:** **Pass (Conditional)**

MEMBER USAGE	**58%**	**Pass**
CONNECTION USAGE	**92%**	**Pass**

A maintenance live load of 250 lb has been applied at each mounting pipe location.

Modifications are proposed to bring mounts into compliance; see conclusion for details.

Prepared by:
Jennifer Soza

Reviewed and Approved by:
Tyler M. Barker, P.E.

STATE OF CONNECTICUT
TYLER M BARKER
No. 32402
LICENSED
PROFESSIONAL ENGINEER

Tyler M. Barker
CLS Engineering, PLLC
Director of Engineering
PE # 32402 Exp. 1/31/2020
COA # PEC.001833 Exp. 8/14/2019

IdenTrust part of HID Global
Digitally signed by Tyler Barker
DN: c=US, o=Telamon Corporation, ou=A01427E0000016A4525ADF800001D17, cn=Tyler Barker
Date: 2019.07.03 22:01:49 -04'00'

■ INTRODUCTION

The proposed equipment is to be mounted to the existing T-Arms. This proposed mounting configuration was analyzed using RISA-3D, a commercially available finite element analysis software package. A selection of input and output from our analysis is attached to the end of this report.

■ STRUCTURAL DOCUMENTS PROVIDED

STRUCTURAL DATA	Site Photos, dated December 20, 2018 Site Pro 1 Drawing #SCX45-K, dated February 19, 2015 Site Pro 1 Drawing #PRK-1245, dated April 10, 2014
PREVIOUS ANALYSES	Tower SA by ATC, Engineering #12629663_C3_01, dated November 27, 2018
LOADING DATA	ATC Application, Project #12927190, dated April 02, 2019

■ ANALYSIS CRITERIA

STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
BASIC WIND SPEED	120 mph, V_{ult} / 93 mph, V_{asd} (3-Second Gust)
BASIC WIND SPEED W/ ICE	50 mph (3-Second Gust) w/ 0.75" Radial Ice (Escalating)
EXPOSURE CATEGORY	B
MAX. TOPOGRAPHIC FACTOR, K_{zt}	1.00
RISK CATEGORY	II
MAINTENANCE LIVE LOAD	L_M: 250 lb

■ FINAL EQUIPMENT

ELEVATION (ft)		ANTENNAS	
MOUNT	**RAD.**	**#**	**NAME**
164.0	166.0	3	Ericsson AIR 21, 1.3 M, B2A B4P
		3	Ericsson AIR 21, 1.3 M, B4A B2P
		3	Ericsson RADIO 4449 B12/B71
		1	Fastback Networks Intelligent Backhaul Radio 1300 Series
		3	RFS Celwave APXVAARR24_43-U-NA20

■ RESULTS SUMMARY

COMPONENT	PEAK USAGE	RESULT
Connections	92%	Pass
Face Horizontals	58%	Pass
Collar Reactions	53%	Pass
Mount Pipes	50%	Pass
Stand-Off Horizontals	41%	Pass
Reinforcement Members	24%	Pass

■ CONCLUSION AND RECOMMENDATIONS

According to our structural analysis, the mounts have been found to **CONDITIONALLY PASS**. The mounting configuration considered in this analysis will be capable of supporting the referenced loading pursuant to referenced standards once the following scope is executed:

- **Install (1) proposed Site Pro 1 PRK-1245 platform reinforcement kit on existing platform mount as shown in the following sketches. Field-cut proposed angles as required. Maintain minimum bolt edge distance. Re-secure coax after installation of proposed kit. DO NOT PINCH SAFETY CLIMB.**
- **Install (1) 8 ft. long, Pipe 2.5 STD, A53 Gr. B mount pipe at Position 2 for proposed panel at each sector (3 total). Connect to existing face horizontal member with Site Pro 1 SCX45-K crossover plat kit or equal (3 total).**

See following sketches and Site Pro 1 assembly drawings for additional details.

■ ASSUMPTIONS AND CONDITIONS

This analysis is inclusive of the antenna supporting frames/mounts and all recorded connections that will support the equipment listed in this report. It considers only the theoretical capacity of structural components and it is not a condition assessment. The validity of the analysis may be dependent on the accuracy of structural information supplied by others. The client is responsible for verifying this information. If any provided information is revised after completion of this analysis, CLS Engineering PLLC should be notified immediately to revise results.

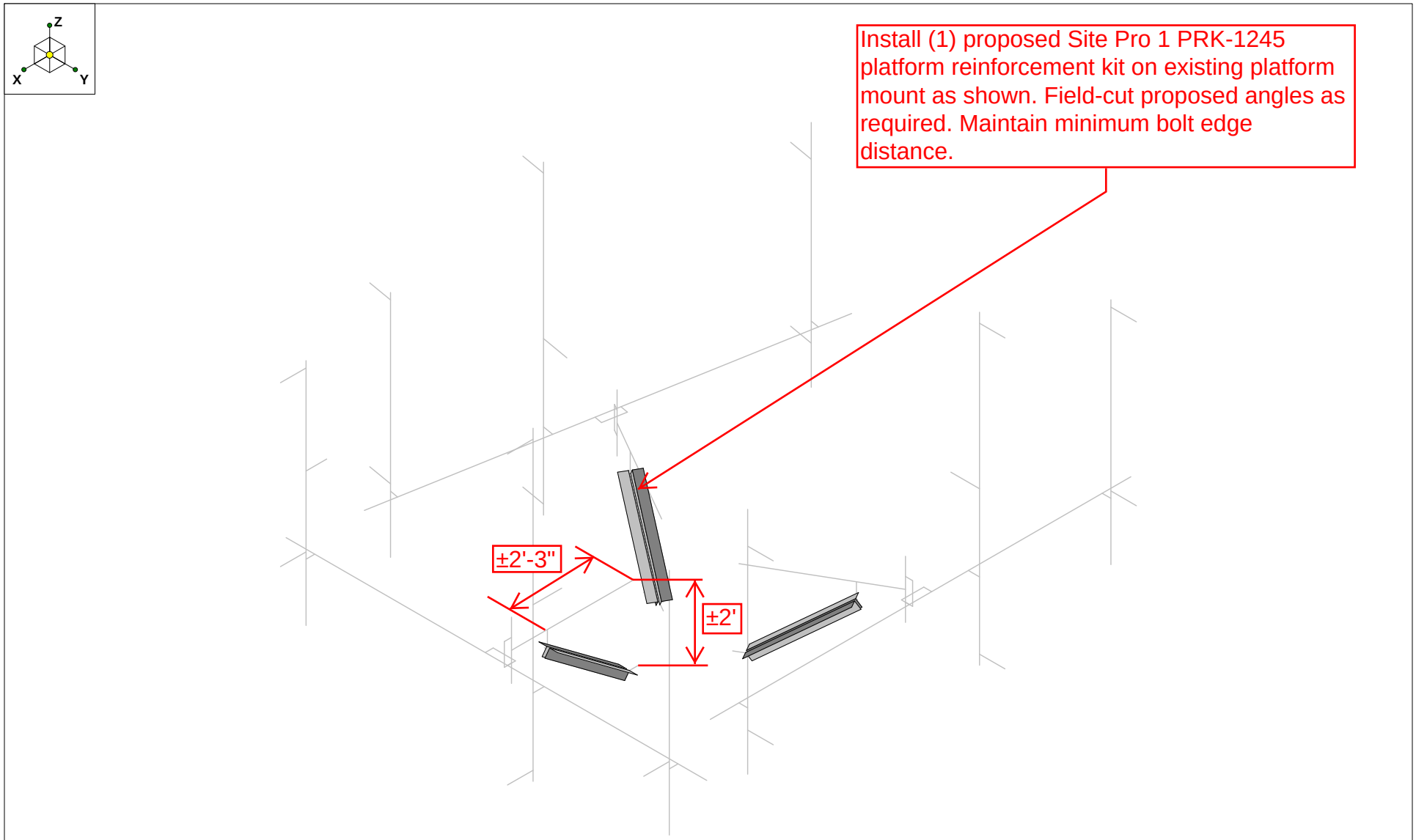
This analysis assumes the following:

1. The tower or other superstructure and mounts (if existing) were properly constructed as per the original design and have been properly maintained in accordance with applicable code standards.
2. Member sizes and strengths are accurate as supplied or are assumed as stated in the calculations.
3. In the absence of sufficient design information, all welds and connections are assumed to develop at least the capacity of the connected member, unless otherwise stated in this analysis.
4. All prior structural modifications, if any, are assumed to be correctly installed and fully effective.
5. The loading configuration is complete and accurate as supplied and/or as modeled in the previous analysis. All appurtenances are assumed to be properly installed and supported as per manufacturer requirements.
6. Some conservative assumptions may be used regarding appurtenances and their projected areas based on careful interpretation of data supplied, previous experience and standard industry practice.

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of the report. All opinions and conclusions contained herein are subject to revision based upon receipt of new or updated information. All services are provided exercising a level of care and diligence equivalent to the standard of our profession. No warranty or guarantee, either expressed or implied, is offered. All services are confidential in nature and this report will not be released to any other party without the client's consent. The use of this analysis is limited to the expressed purpose for which it was commissioned and it may not be reused, copied or disseminated for any other purpose without consent from CLS Engineering PLLC.

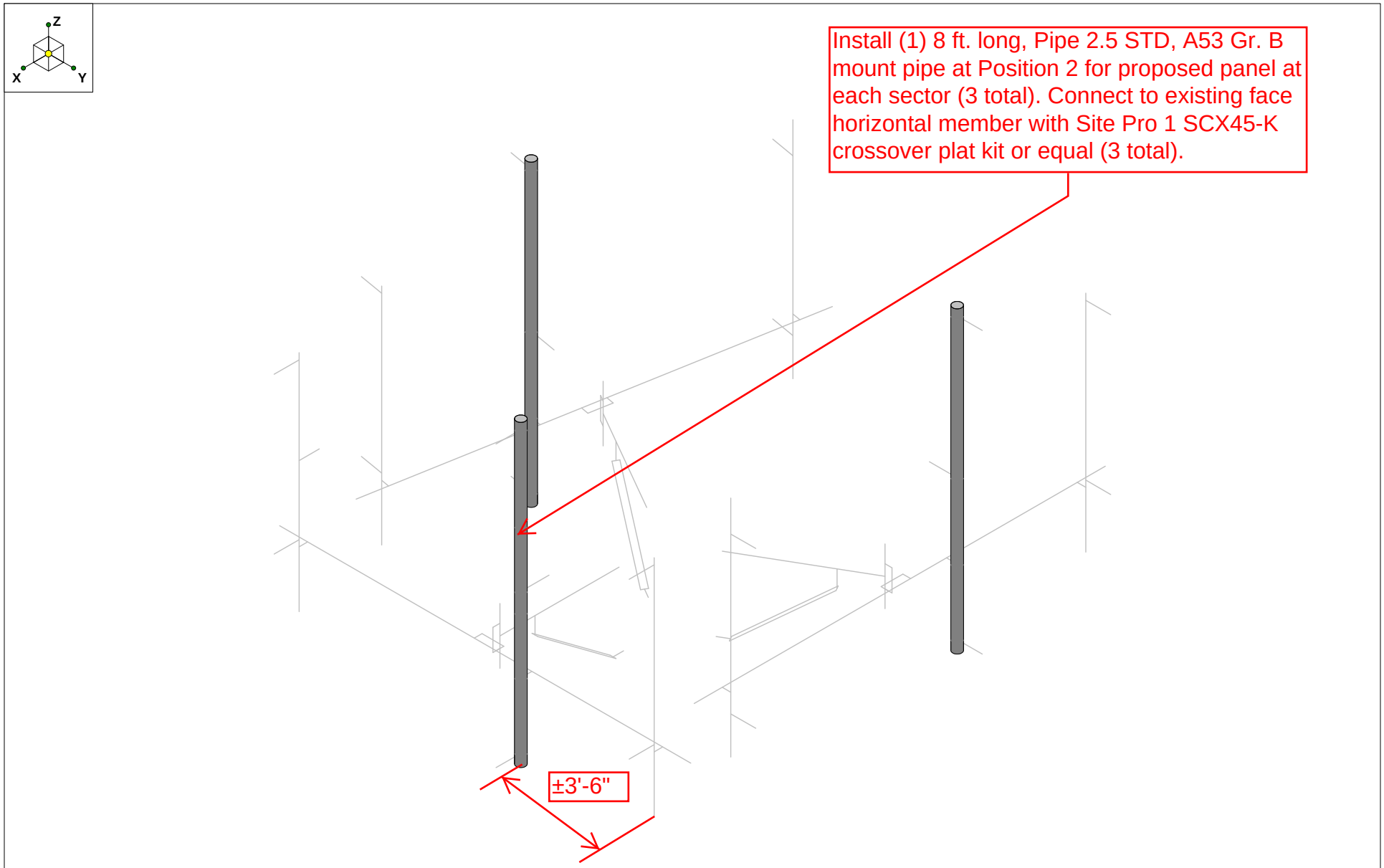
All services were performed, results obtained and recommendations made in accordance with generally accepted engineering principles and practices. CLS Engineering PLLC is not responsible for the conclusions, opinions or recommendations made by others based on the information supplied in this analysis.

It is not possible to have the fully detailed information necessary to perform a complete and thorough analysis of every structural sub-component of an existing structure. The structural analysis by CLS Engineering PLLC verifies the adequacy of the primary members of the structure. CLS Engineering PLLC provides a limited scope of service in that we cannot verify the adequacy of every weld, bolt, gusset, etc.



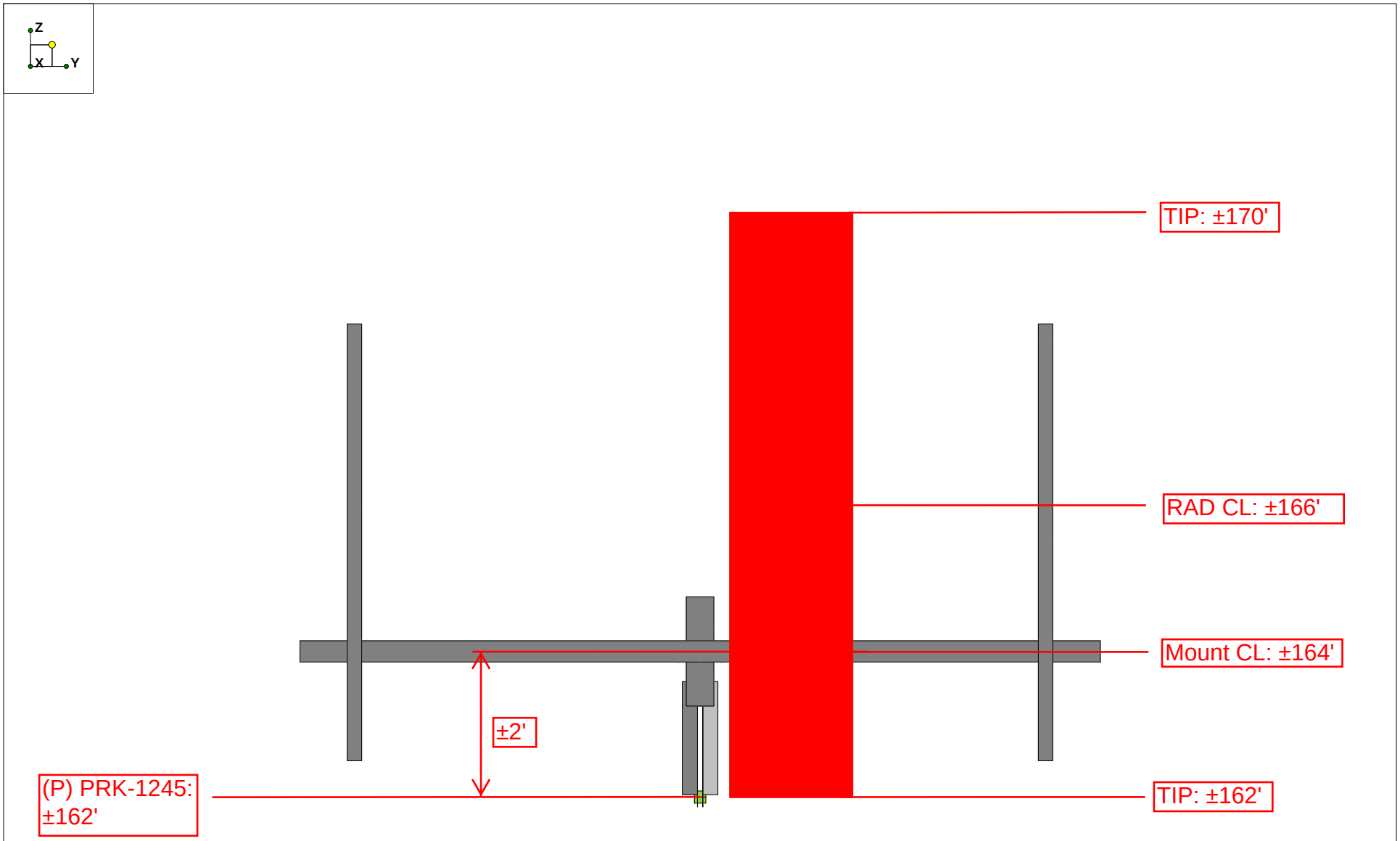
NOTE:
* Re-secure Coax after installation of kicker kit.
* Do not pinch safety climb.

CLS		SK - 1
ST	41124-12927190-Winchester CT 3	Apr 30, 2019 at 1:21 PM
41124-12927190-01-MA-R1	Proposed Modifications - PRK-1245 - Rendered	41124-12927190-01-MA-R1.r3d

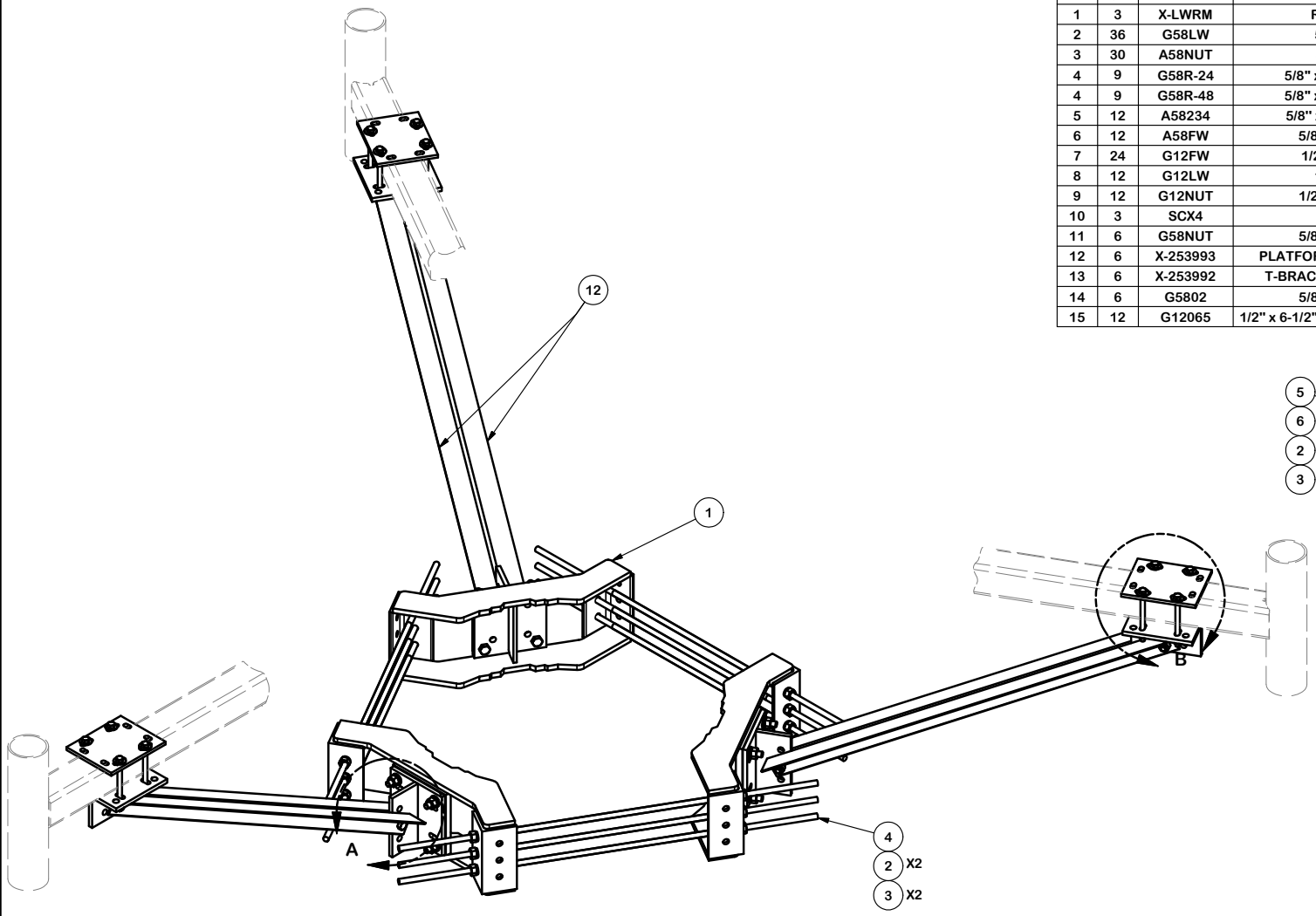


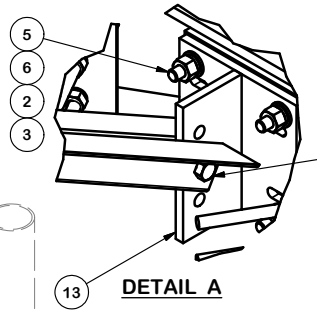
Envelope Only Solution

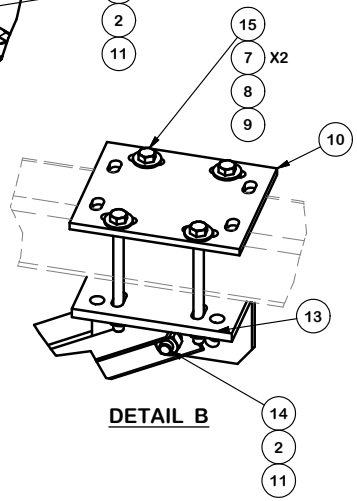
CLS		SK - 2
ST	41124-12927190-Winchester CT 3	Apr 30, 2019 at 1:19 PM
41124-12927190-01-MA-R1	Proposed Mount Pipes - Rendered	41124-12927190-01-MA-R1.r3d



CLS		SK - 3
ST	41124-12927190-Winchester CT 3	Apr 30, 2019 at 1:23 PM
41124-12927190-01-MA-R1	Mount/RAD CL - Front Elevation View	41124-12927190-01-MA-R1.r3d







PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	36	G58LW	5/8" HDG LOCKWASHER		0.03	0.94
3	30	A58NUT	5/8" HDG A325 HEX NUT		0.13	3.90
4	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)		0.55	4.94
4	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)		0.55	4.94
5	12	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	4.27
6	12	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.41
7	24	G12FW	1/2" HDG USS FLATWASHER		0.03	0.82
8	12	G12LW	1/2" HDG LOCKWASHER		0.01	0.17
9	12	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.86
10	3	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	18.06
11	6	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	0.78
12	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
13	6	X-253992	T-BRACKET FOR REINFORCEMENT KIT		13.55	81.27
14	6	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.62
15	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	4.91
					TOTAL WT. #	464.91

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION
PLATFORM RENIFORCEMENT
ON A 12" TO 45" POLE
4' 6" ANGLE

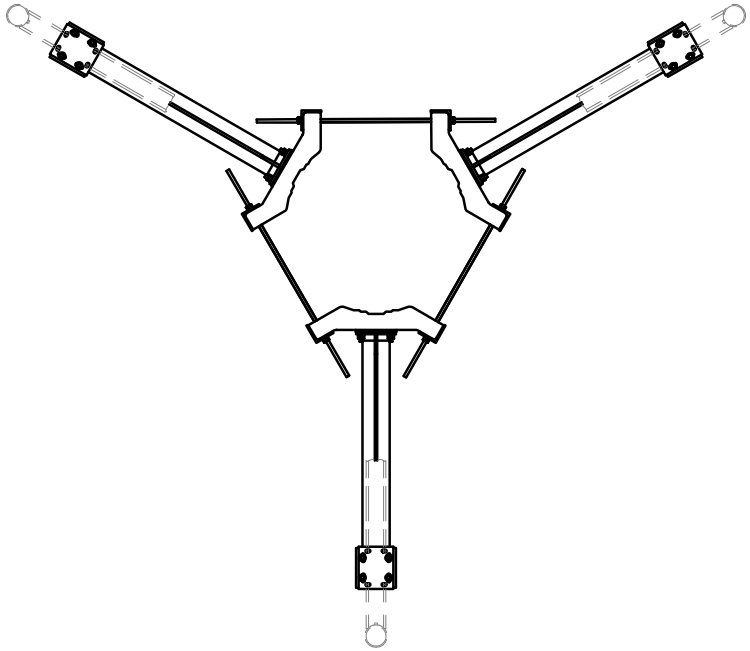
SITE PRO 1 — A valmont COMPANY

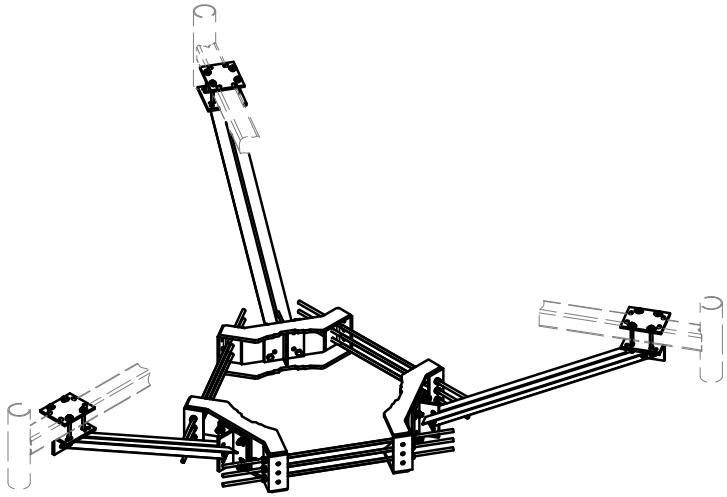
Engineering Support Team: 1-888-753-7446

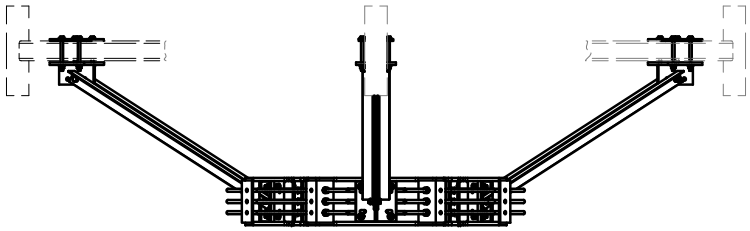
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

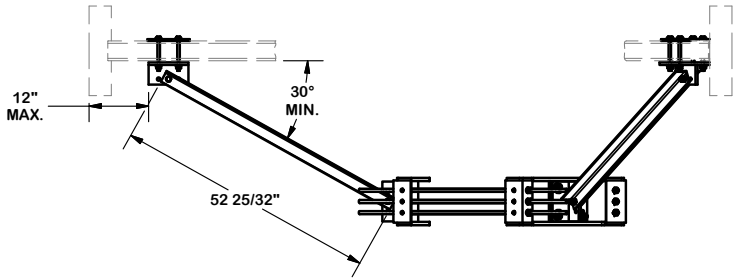
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
4488	CEK 4/10/2014		PRK-1245

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 4/10/2014	PRK-1245









TOLERANCE NOTES

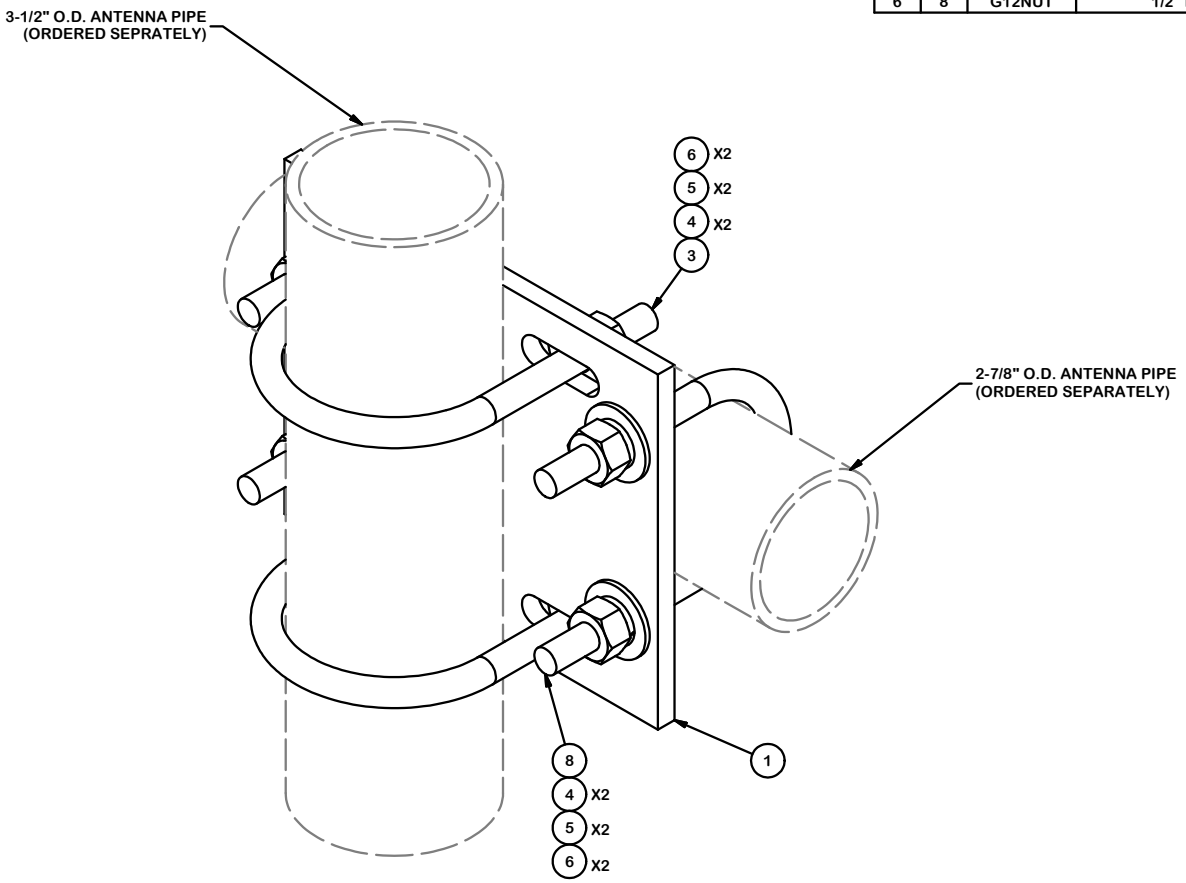
TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION
PLATFORM RENIFORCEMENT
ON A 12" TO 45" POLE
4' 6" ANGLE

SITE PRO 1
A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	
4488	CEK 4/10/2014		PRK-1245	PAGE 2 OF 2
CLASS / SUB	DRAWING USAGE	CHECKED BY	DWG. NO.	
81 / 01	CUSTOMER	BMC 4/10/2014	PRK-1245	

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	6.02
3	2	X-UB1358	1/2" X 3-5/8" X 5-1/2" X 3" U-BOLT (HDG.)		0.73	1.46
8	2	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.73	1.46
4	8	G12FW	1/2" HDG USS FLATWASHER		0.03	0.27
5	8	G12LW	1/2" HDG LOCKWASHER		0.01	0.11
6	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
					TOTAL WT. #	9.92



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BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION: CROSSOVER PLATE KIT

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
	CEK 2/19/2015		SCX45-K	1 OF 1

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 2/19/2015	SCX45-K

Wind & Ice Loading

Nominal Mount Elevation (AGL), z_{mount}	164 ft	K_a	0.90
Nominal Rad Elevation (AGL), z_{rad}	166 ft	K_d	0.95
Elevation AMSL (ft)	-	K_e	-
TIA Standard	G	K_z	1.14
Basic Wind Speed, V_{ult} (bare)	120 mph	K_{zt}	1.00
Basic Wind Speed, V (ice)	50 mph	K_s	-
Design Ice Thickness, t_i	3/4 in	t_{iz}	1.76 in
Exposure Category	B	G_h	1.00
Risk Category	II	q_z (bare)	39.9 psf
Seismic Response Coeff., C_s	-	q_z (ice)	6.9 psf

Live Loading

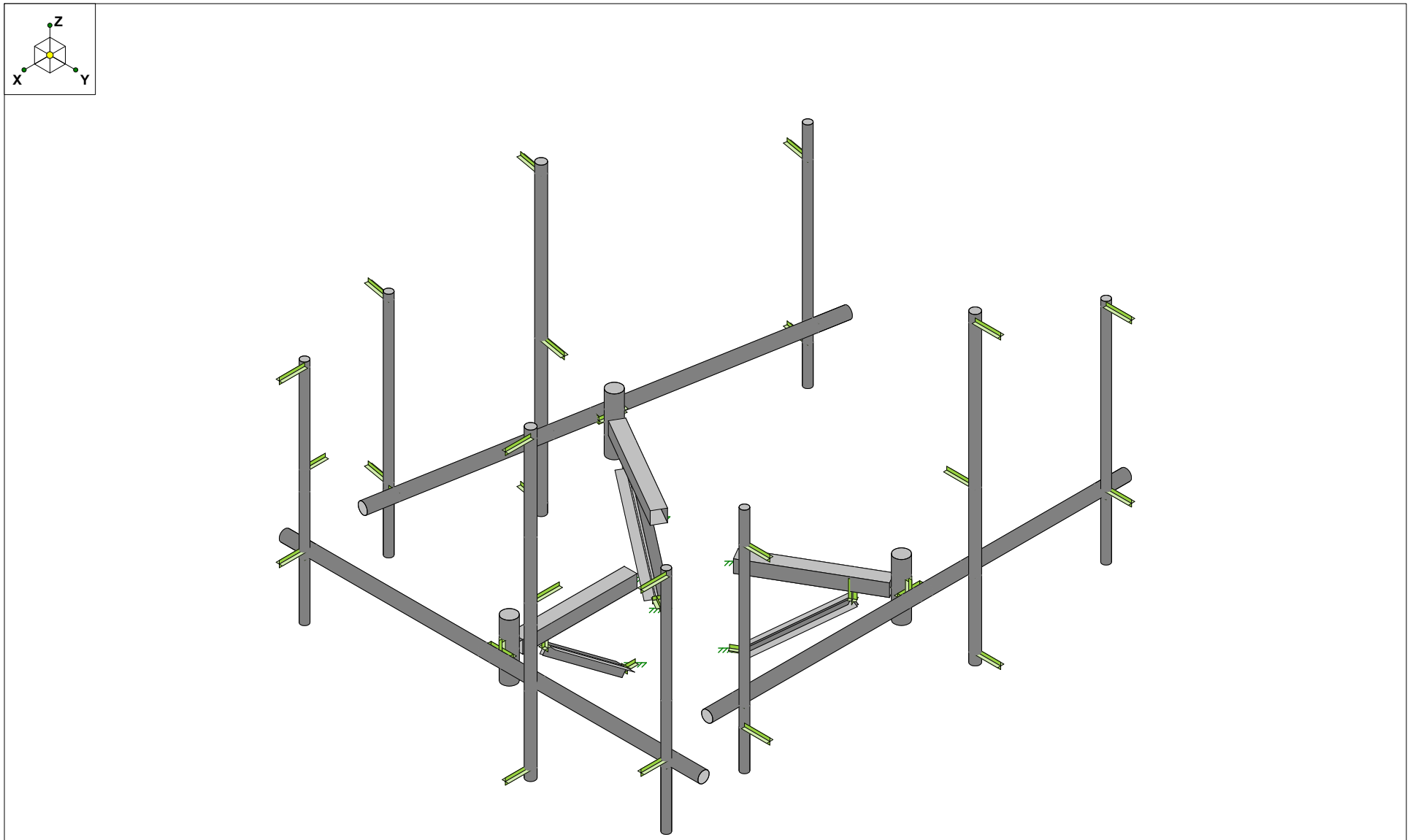
At Mount Pipes, L_M	250 lb
Joint Labels Considered	M1A
	M2A
	M3A

Member Distributed Loading

Section Set Label	Shape Label	F_A (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Standoff Tube	HSS4X4X4	23.92	2.50	14.74
Vertical Pipe	PIPE_4.0	16.14	5.00	13.47
Face Horizontal	PIPE_3.0	12.56	4.37	11.32
Mount Pipe	PIPE_2.0	8.52	3.67	8.90
MOD-Mount Pipe	PIPE_2.5	10.31	3.98	9.97
MOD PRK	L2.5x2.5x3	14.95	2.39	10.38

Appurtenances

Appurtenance Model	Status	Azimuth Offset (°, ↻)	Rad Elev. Override (ft)	Swap Width & Depth	Area Factor		Qty. per Azimuth			Total Qty. Override	0° Joints		120° Joints		240° Joints		Height (in)	Width (in)	Depth (in)	Weight (Bare) (lb)	Shape	Weight of Ice (lb)	EPA_A (Bare) (ft^2)		EPA_A (Ice) (ft^2)		F_A (Bare) (lb)		F_A (Ice) (lb)	
					Front	Side	0°	120°	240°		1	2	1	2	1	2							N	T	N	T	N	T	N	T
AIR 21, 1.3 M, B2A B4P				☐			1				A1	A2					56	12	8	83	Flat	170.99	6.05	4.36	8.08	6.28	217.78	156.80	50.52	39.26
AIR 21, 1.3 M, B4A B2P				☐			1				A5	A6					56	12.1	7.9	81.5	Flat	170.94	6.09	4.31	8.13	6.24	219.31	155.17	50.80	38.98
APXVAARR24_43-U-NA20				☐			1				A3	A4					0	0	0	153.3	Generic	396.99	14.67	5.32	17.35	7.68	528.14	191.53	108.44	48.02
RADIO 4449 B12/B71				☐	0.25		1				R1A						15	13.2	10.4	75	Flat	60.66	0.41	1.30	0.65	2.15	14.85	46.80	4.03	13.44
AIR 21, 1.3 M, B2A B4P		-20		☐				1					B1	B2			56	12	8	83	Flat	170.99	6.05	4.36	8.08	6.28	217.78	156.80	50.52	39.26
AIR 21, 1.3 M, B4A B2P		-20		☐				1					B5	B6			56	12.1	7.9	81.5	Flat	170.94	6.09	4.31	8.13	6.24	219.31	155.17	50.80	38.98
APXVAARR24_43-U-NA20		-20		☐				1					B3	B4			0	0	0	153.3	Generic	396.99	14.67	5.32	17.35	7.68	528.14	191.53	108.44	48.02
RADIO 4449 B12/B71				☐	0.25			1	1				R1B		R1G		15	13.2	10.4	75	Flat	60.66	0.41	1.30	0.65	2.15	14.85	46.80	4.03	13.44
AIR 21, 1.3 M, B2A B4P		30		☐					1						G1	G2	56	12	8	83	Flat	170.99	6.05	4.36	8.08	6.28	217.78	156.80	50.52	39.26
AIR 21, 1.3 M, B4A B2P		30		☐					1						G5	G6	56	12.1	7.9	81.5	Flat	170.94	6.09	4.31	8.13	6.24	219.31	155.17	50.80	38.98
APXVAARR24_43-U-NA20		30		☐					1						G3	G4	0	0	0	153.3	Generic	396.99	14.67	5.32	17.35	7.68	528.14	191.53	108.44	48.02
Intelligent Backhaul Radio 1300 Series				☐	0.25		1			1	O1A						10.2	7.9	3.5	8.8	Flat	26.57	0.17	0.30	0.33	0.80	6.04	10.87	2.04	5.02



Envelope Only Solution

CLS	41124-12927190-Winchester CT 3	SK - 1
ST		July 3, 2019 at 4:43 PM
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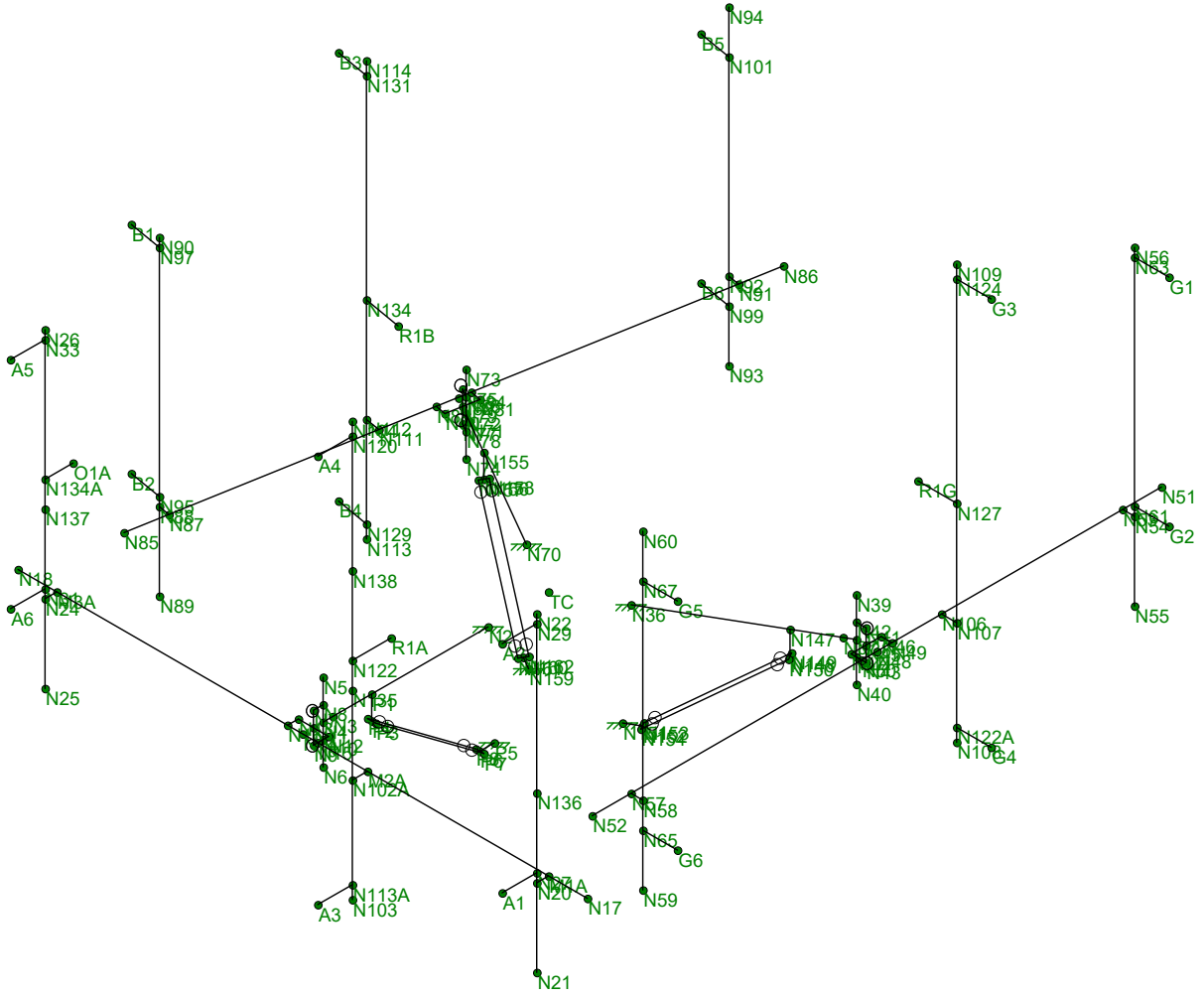
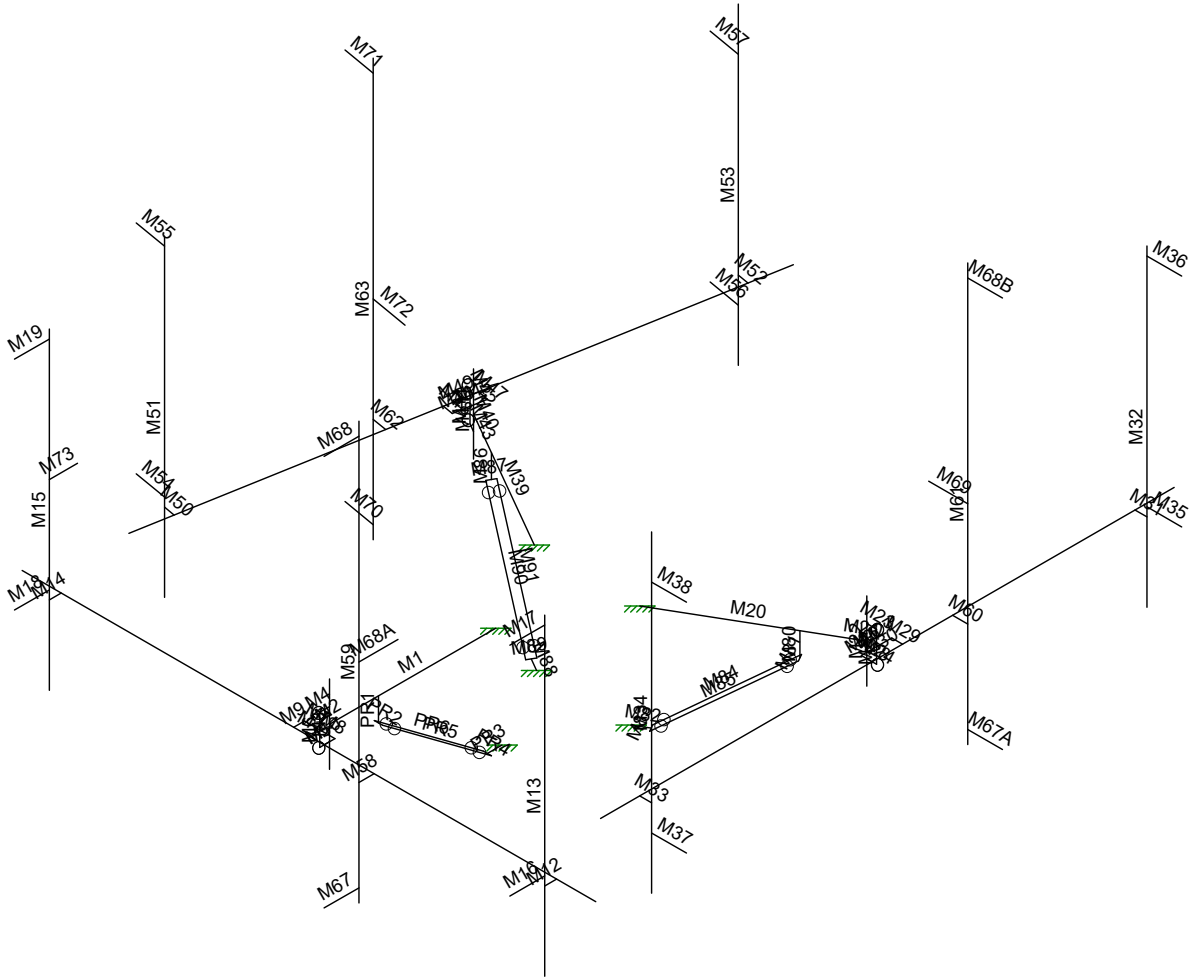


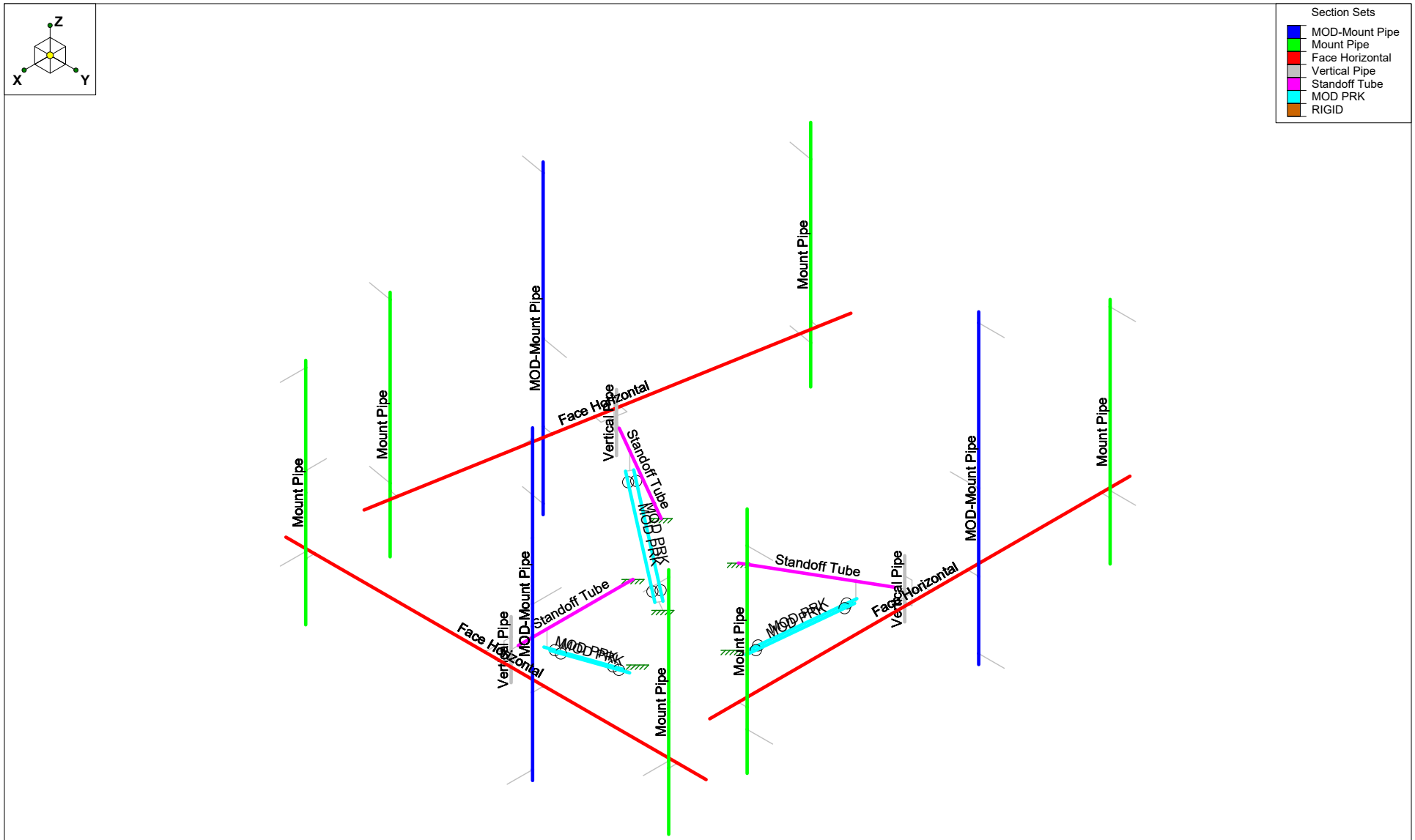
Envelope Only Solution

CLS	41124-12927190-Winchester CT 3	SK - 2
ST		July 3, 2019 at 4:43 PM
41124-12927190-01-MA-R2	Joint Labels	41124-12927190-01-MA-R2.r3d



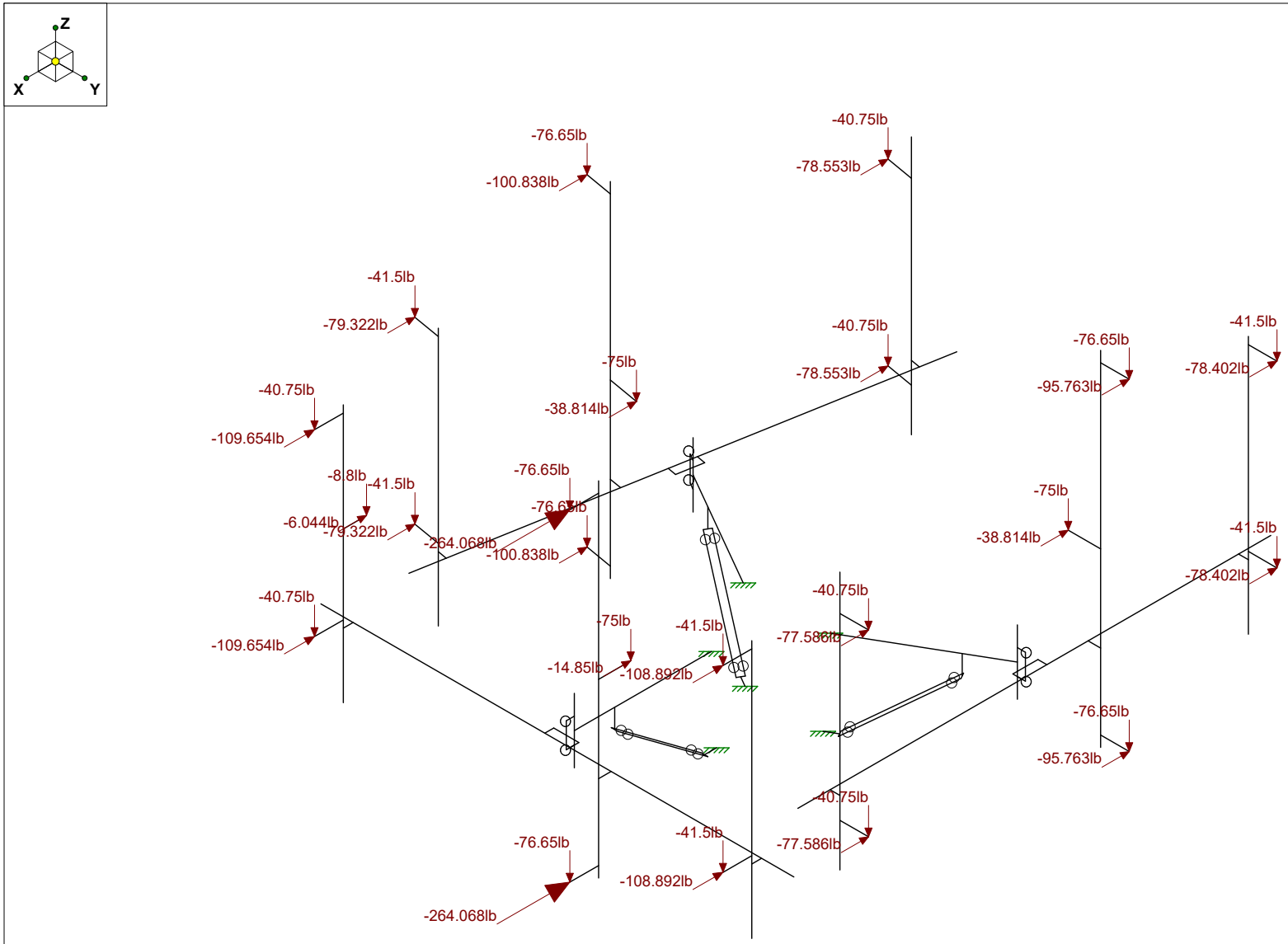
Envelope Only Solution

CLS	41124-12927190-Winchester CT 3	SK - 3
ST		July 3, 2019 at 4:43 PM
41124-12927190-01-MA-R2	Member Labels	41124-12927190-01-MA-R2.r3d



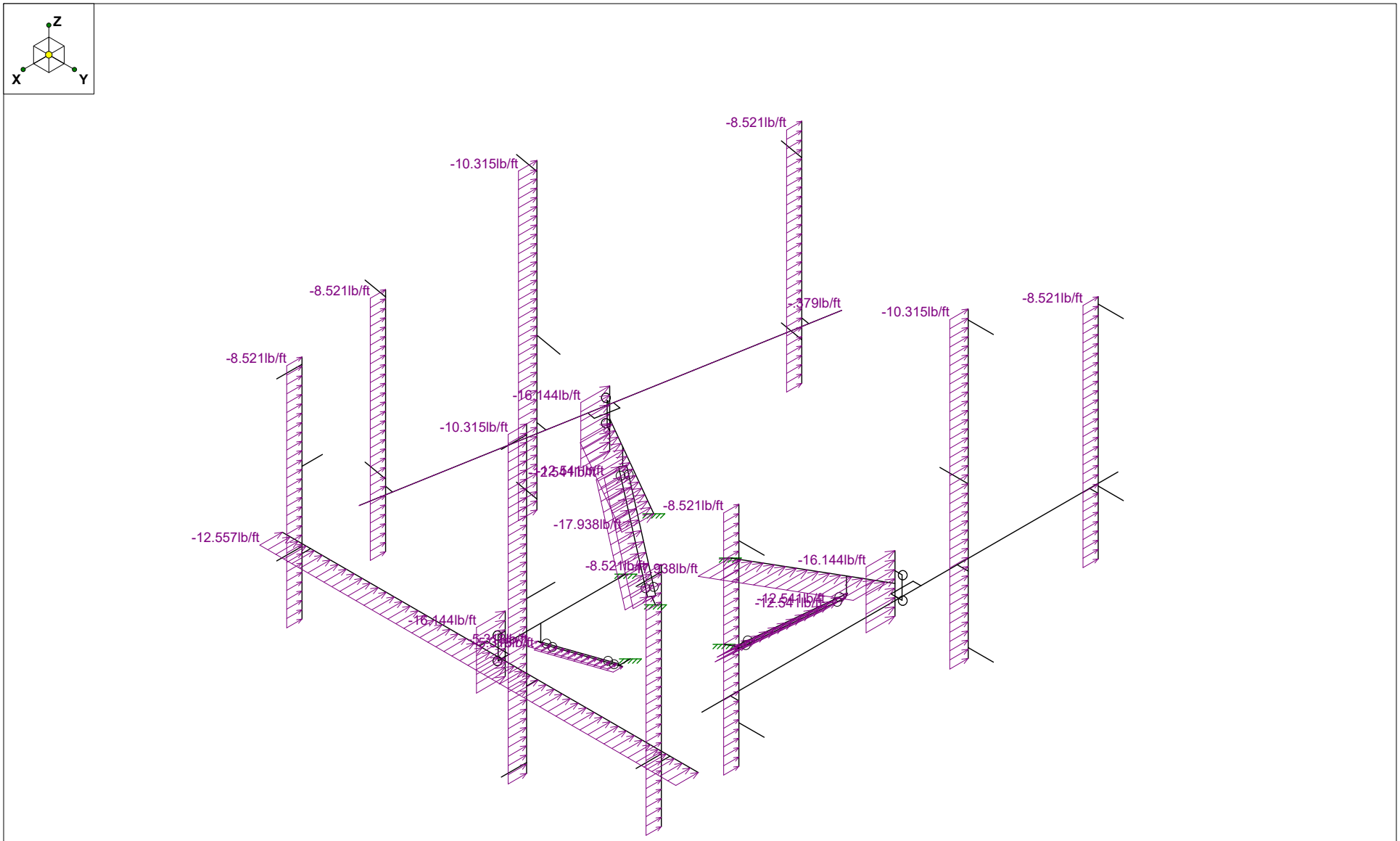
Envelope Only Solution

CLS	41124-12927190-Winchester CT 3	SK - 4
ST		July 3, 2019 at 4:44 PM
41124-12927190-01-MA-R2	Section Sets	41124-12927190-01-MA-R2.r3d



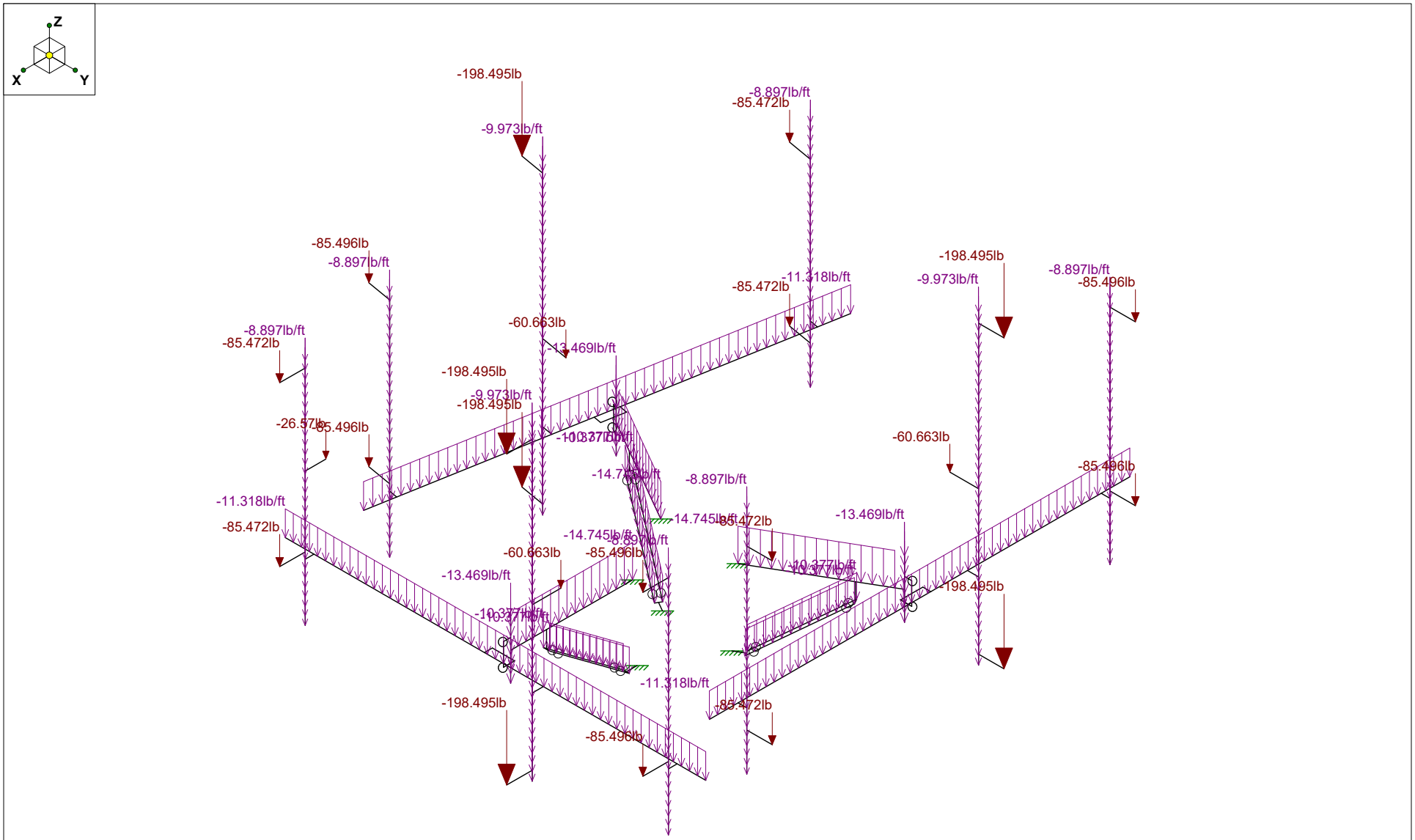
Loads: LC 1, DISPLAY (1.0D + 1.0W_0°)
Envelope Only Solution

CLS		SK - 5
ST	41124-12927190-Winchester CT 3	July 3, 2019 at 4:44 PM
41124-12927190-01-MA-R2	Joint Loads - Dead and Normal Wind	41124-12927190-01-MA-R2.r3d



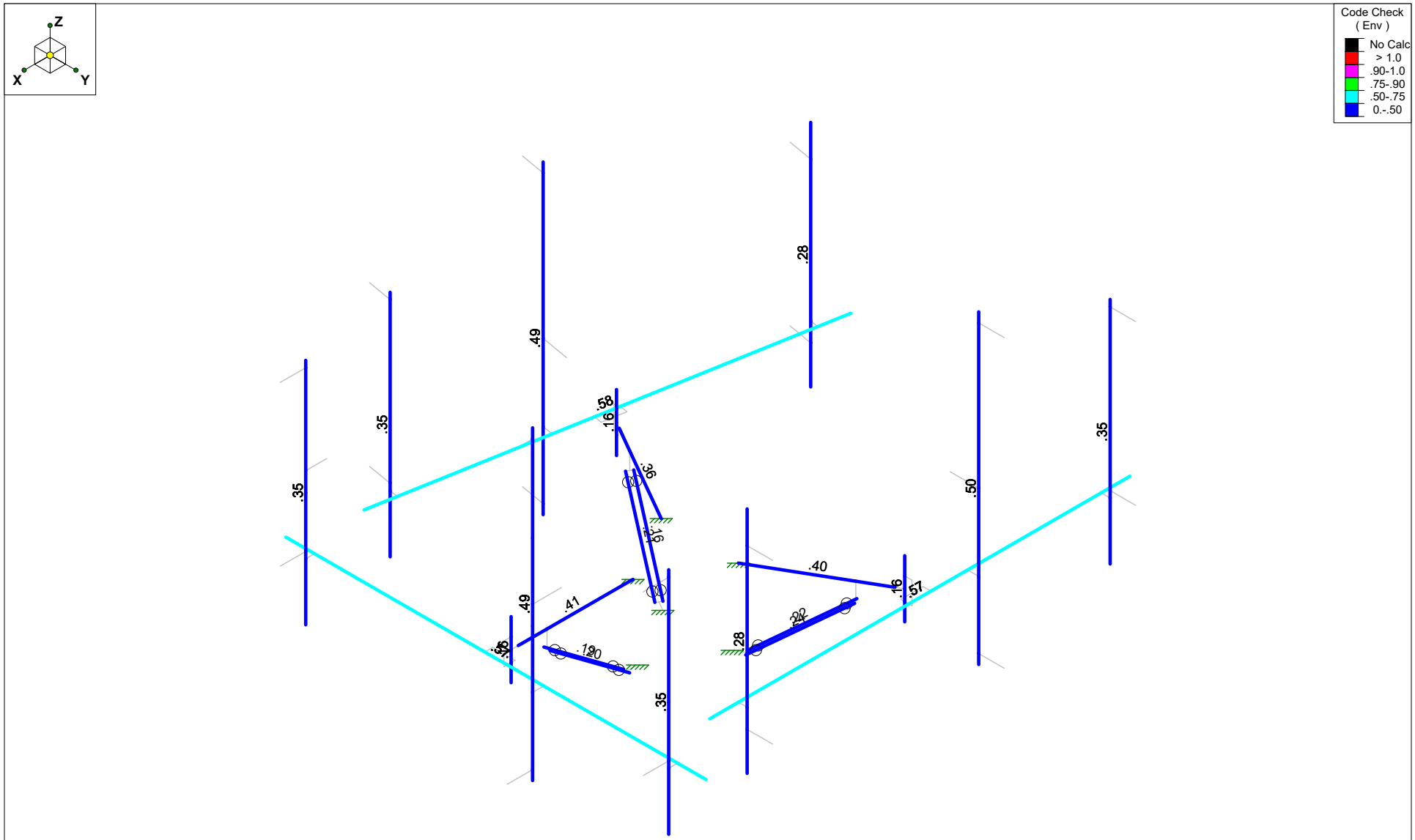
Loads: BLC 4, Structure Wind 0°
Envelope Only Solution

CLS	41124-12927190-Winchester CT 3	SK - 6
ST		July 3, 2019 at 4:44 PM
41124-12927190-01-MA-R2	Distributed Load - Normal Wind	41124-12927190-01-MA-R2.r3d



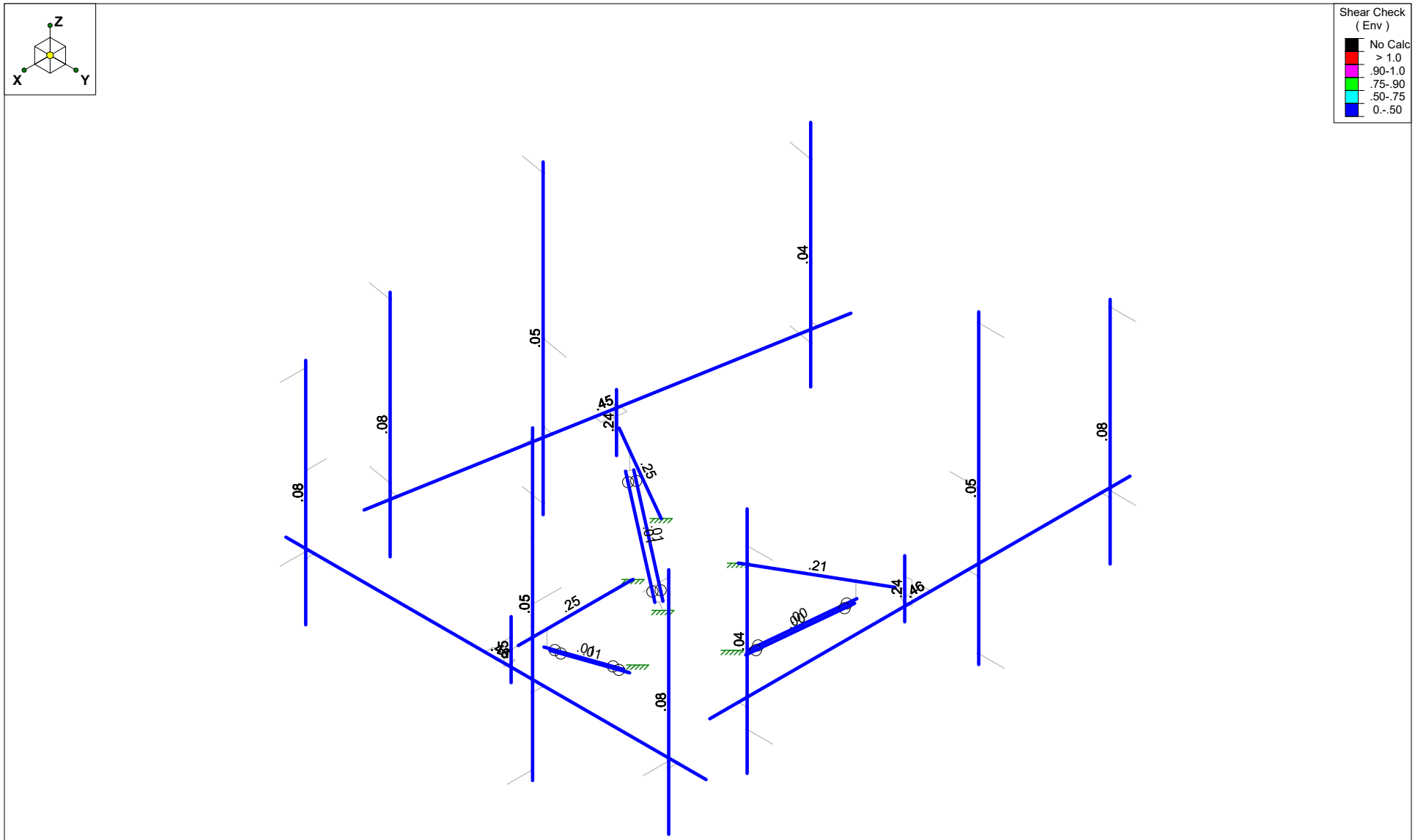
Loads: BLC 2, Ice Dead
Envelope Only Solution

CLS	41124-12927190-Winchester CT 3	SK - 7
ST		July 3, 2019 at 4:44 PM
41124-12927190-01-MA-R2	Ice Dead Loads	41124-12927190-01-MA-R2.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

CLS	41124-12927190-Winchester CT 3	SK - 8
ST		July 3, 2019 at 4:44 PM
41124-12927190-01-MA-R2	Envelope Member Unity Check Results - Bending	41124-12927190-01-MA-R2.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

CLS		SK - 9
ST	41124-12927190-Winchester CT 3	July 3, 2019 at 4:45 PM
41124-12927190-01-MA-R2	Envelope Member Check Results - Shear	41124-12927190-01-MA-R2.r3d

Basic Load Cases

	BLC Description	Category	X Gravi..	Y Gravi..	Z Gravity	Joint	Point	Distributed	Area(Member)	Surfac...
1	Dead	DL			-1	22				
2	Ice Dead	RL				22		24		
4	Structure Wind 0°	None						22		
5	Structure Wind 30°	None						48		
6	Structure Wind 45°	None						48		
7	Structure Wind 60°	None						46		
8	Structure Wind 90°	None						23		
9	Structure Wind 120°	None						46		
10	Structure Wind 135°	None						48		
11	Structure Wind 150°	None						48		
12	Structure Wind w/ Ice 0°	None						22		
13	Structure Wind w/ Ice 30°	None						48		
14	Structure Wind w/ Ice 45°	None						48		
15	Structure Wind w/ Ice 60°	None						46		
16	Structure Wind w/ Ice 90°	None						23		
17	Structure Wind w/ Ice 120°	None						46		
18	Structure Wind w/ Ice 135°	None						48		
19	Structure Wind w/ Ice 150°	None						48		
20	Antenna Wind 0°	None				22				
21	Antenna Wind 30°	None				44				
22	Antenna Wind 45°	None				44				
23	Antenna Wind 60°	None				44				
24	Antenna Wind 90°	None				22				
25	Antenna Wind 120°	None				44				
26	Antenna Wind 135°	None				44				
27	Antenna Wind 150°	None				44				
28	Antenna Wind w/ Ice 0°	None				22				
29	Antenna Wind w/ Ice 30°	None				44				
30	Antenna Wind w/ Ice 45°	None				44				
31	Antenna Wind w/ Ice 60°	None				44				
32	Antenna Wind w/ Ice 90°	None				22				
33	Antenna Wind w/ Ice 120°	None				44				
34	Antenna Wind w/ Ice 135°	None				44				
35	Antenna Wind w/ Ice 150°	None				44				
39	Maintenance Live 500 (1)	OL1				1				
40	Maintenance Live 500 (2)	OL2				1				
41	Maintenance Live 500 (3)	OL3				1				

Load Combinations

	Description	S...	P...	S...	BLC	Factor	BLC	Factor	BLC	Factor	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	DISPLAY (1.0D + ...	Y...	Y		DL	1	20	1																
2	1.4D	Y...	Y		DL	1.4																		
3	1.2D + 1.0W_0°	Y...	Y		DL	1.2	4	1	20	1														
4	1.2D + 1.0W_30°	Y...	Y		DL	1.2	5	1	21	1														
5	1.2D + 1.0W_45°	Y...	Y		DL	1.2	6	1	22	1														
6	1.2D + 1.0W_60°	Y...	Y		DL	1.2	7	1	23	1														
7	1.2D + 1.0W_90°	Y...	Y		DL	1.2	8	1	24	1														
8	1.2D + 1.0W_120°	Y...	Y		DL	1.2	9	1	25	1														
9	1.2D + 1.0W_135°	Y...	Y		DL	1.2	10	1	26	1														
10	1.2D + 1.0W_150°	Y...	Y		DL	1.2	11	1	27	1														
11	1.2D + 1.0W_180°	Y...	Y		DL	1.2	4	-1	20	-1														
12	1.2D + 1.0W_210°	Y...	Y		DL	1.2	5	-1	21	-1														
13	1.2D + 1.0W_225°	Y...	Y		DL	1.2	6	-1	22	-1														
14	1.2D + 1.0W_240°	Y...	Y		DL	1.2	7	-1	23	-1														

Load Combinations (Continued)

	Description	S...	P...	S...	BLC	Factor	BLC	Factor	BLC	Factor	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
15	1.2D + 1.0W_270°	Y...	Y		DL	1.2	8	-1	24	-1														
16	1.2D + 1.0W_300°	Y...	Y		DL	1.2	9	-1	25	-1														
17	1.2D + 1.0W_315°	Y...	Y		DL	1.2	10	-1	26	-1														
18	1.2D + 1.0W_330°	Y...	Y		DL	1.2	11	-1	27	-1														
19	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	12	1	28	1	RL	1												
20	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	13	1	29	1	RL	1												
21	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	14	1	30	1	RL	1												
22	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	15	1	31	1	RL	1												
23	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	16	1	32	1	RL	1												
24	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	17	1	33	1	RL	1												
25	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	18	1	34	1	RL	1												
26	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	19	1	35	1	RL	1												
27	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	12	-1	28	-1	RL	1												
28	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	13	-1	29	-1	RL	1												
29	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	14	-1	30	-1	RL	1												
30	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	15	-1	31	-1	RL	1												
31	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	16	-1	32	-1	RL	1												
32	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	17	-1	33	-1	RL	1												
33	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	18	-1	34	-1	RL	1												
34	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	19	-1	35	-1	RL	1												
35	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	4	.066	20	.066	O...	1.5												
36	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	5	.066	21	.066	O...	1.5												
37	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	6	.066	22	.066	O...	1.5												
38	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	7	.066	23	.066	O...	1.5												
39	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	8	.066	24	.066	O...	1.5												
40	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	9	.066	25	.066	O...	1.5												
41	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	10	.066	26	.066	O...	1.5												
42	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	11	.066	27	.066	O...	1.5												
43	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	4	-.066	20	-.066	O...	1.5												
44	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	5	-.066	21	-.066	O...	1.5												
45	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	6	-.066	22	-.066	O...	1.5												
46	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	7	-.066	23	-.066	O...	1.5												
47	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	8	-.066	24	-.066	O...	1.5												
48	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	9	-.066	25	-.066	O...	1.5												
49	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	10	-.066	26	-.066	O...	1.5												
50	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	11	-.066	27	-.066	O...	1.5												
51	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	4	.066	20	.066	O...	1.5												
52	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	5	.066	21	.066	O...	1.5												
53	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	6	.066	22	.066	O...	1.5												
54	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	7	.066	23	.066	O...	1.5												
55	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	8	.066	24	.066	O...	1.5												
56	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	9	.066	25	.066	O...	1.5												
57	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	10	.066	26	.066	O...	1.5												
58	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	11	.066	27	.066	O...	1.5												
59	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	4	-.066	20	-.066	O...	1.5												
60	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	5	-.066	21	-.066	O...	1.5												
61	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	6	-.066	22	-.066	O...	1.5												
62	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	7	-.066	23	-.066	O...	1.5												
63	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	8	-.066	24	-.066	O...	1.5												
64	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	9	-.066	25	-.066	O...	1.5												
65	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	10	-.066	26	-.066	O...	1.5												
66	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	11	-.066	27	-.066	O...	1.5												
67	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	4	.066	20	.066	O...	1.5												
68	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	5	.066	21	.066	O...	1.5												
69	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	6	.066	22	.066	O...	1.5												
70	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	7	.066	23	.066	O...	1.5												
71	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	8	.066	24	.066	O...	1.5												

Load Combinations (Continued)

	Description	S...	P...	S...	BLC	Factor	BLC	Factor	BLC	Factor	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
72	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	9	.066	25	.066	O...	1.5												
73	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	10	.066	26	.066	O...	1.5												
74	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	11	.066	27	.066	O...	1.5												
75	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	4	-.066	20	-.066	O...	1.5												
76	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	5	-.066	21	-.066	O...	1.5												
77	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	6	-.066	22	-.066	O...	1.5												
78	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	7	-.066	23	-.066	O...	1.5												
79	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	8	-.066	24	-.066	O...	1.5												
80	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	9	-.066	25	-.066	O...	1.5												
81	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	10	-.066	26	-.066	O...	1.5												
82	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	11	-.066	27	-.066	O...	1.5												

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[lb/f...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	490	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	490	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	490	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	490	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	MOD-Mount Pipe	PIPE_2.5	Beam	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
2	Mount Pipe	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	Face Horizontal	PIPE_3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
4	Vertical Pipe	PIPE_4.0	Beam	None	A53 Gr.B	Typical	2.96	6.82	6.82	13.6
5	Standoff Tube	HSS4X4X4	Beam	None	A36 Gr.36	Typical	3.37	7.8	7.8	12.8
6	MOD PRK	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical	.901	.535	.535	.011

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	Standoff Tu...	36			Lbyy			2.1	2.1		Lateral
2	M3	Vertical Pipe	18			Lbyy						Lateral
3	M11	Face Horizo...	132			Lbyy						Lateral
4	M13	Mount Pipe	72			Lbyy						Lateral
5	M15	Mount Pipe	72			Lbyy						Lateral
6	M20	Standoff Tu...	36			Lbyy			2.1	2.1		Lateral
7	M22	Vertical Pipe	18			Lbyy						Lateral
8	M30	Face Horizo...	132			Lbyy						Lateral
9	M32	Mount Pipe	72			Lbyy						Lateral
10	M34	Mount Pipe	72			Lbyy						Lateral
11	M39	Standoff Tu...	36			Lbyy			2.1	2.1		Lateral
12	M41	Vertical Pipe	18			Lbyy						Lateral
13	M49	Face Horizo...	132			Lbyy						Lateral
14	M51	Mount Pipe	72			Lbyy						Lateral
15	M53	Mount Pipe	72			Lbyy						Lateral
16	M59	MOD-Mount...	96			Lbyy						Lateral
17	M61	MOD-Mount...	96			Lbyy						Lateral
18	M63	MOD-Mount...	96			Lbyy						Lateral
19	PR5	MOD PRK	31.225									Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
20	PR6	MOD PRK	31.225									Lateral
21	M84	MOD PRK	31.225									Lateral
22	M85	MOD PRK	31.225									Lateral
23	M90	MOD PRK	31.225									Lateral
24	M91	MOD PRK	31.225									Lateral

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N36	max	2443.564	21	1134.667	15	556.988	14	478.93	12	1338.69	16	4207.441	8
2		min	-528.896	13	-4241.881	23	-1409.669	22	-994.334	4	-1501.367	8	-4215.059	16
3	N2	max	1428.086	3	883.687	15	806.627	3	2101.277	40	1078.927	11	3332.892	14
4		min	-4764.462	27	-883.102	7	-1491.965	11	-1409.936	80	-649.074	3	-3271.615	6
5	N70	max	2219.925	34	3799.801	31	760.489	8	665.136	18	843.113	6	3320.816	5
6		min	-747.234	9	-1270.813	7	-1281.41	16	-913.376	10	-1894.585	14	-3213.506	13
7	N151	max	-127.292	14	3897.457	22	3384.23	22	847.124	23	523.157	34	487.697	8
8		min	-2250.088	22	220.518	14	188.481	14	-64.857	15	-112.758	10	-501.353	16
9	P5	max	4409.664	27	35.986	15	3316.671	27	317.271	6	23.535	1	368.211	14
10		min	-123.373	1	-36.575	7	-83.681	1	-267.9	14	-932.814	27	-434.023	6
11	N159	max	9.623	8	16.713	8	3021.866	32	32.108	7	389.536	18	344.916	5
12		min	-2010.408	32	-3473.571	32	-15.021	8	-799.946	31	-170.517	10	-442.413	13
13	Totals:	max	3119.766	3	3688.234	15	5960.803	21						
14		min	-3119.765	11	-3688.217	7	1872.491	1						

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....		Eqn
1	M49	PIPE_3.0	.577	70.125	30	.452	70.125		15	34117....	65205	5748.75	5748.75	...	H3-6
2	M11	PIPE_3.0	.574	70.125	26	.460	70.125		11	34117....	65205	5748.75	5748.75	...	H3-6
3	M30	PIPE_3.0	.573	70.125	22	.464	70.125		7	34117....	65205	5748.75	5748.75	...	H3-6
4	M61	PIPE_2.5	.497	72	15	.046	72		17	30038....	50715	3596.25	3596.25	...	H1-1b
5	M59	PIPE_2.5	.493	72	3	.045	72		5	30038....	50715	3596.25	3596.25	...	H1-1b
6	M63	PIPE_2.5	.489	72	7	.046	72		6	30038....	50715	3596.25	3596.25	...	H1-1b
7	M1	HSS4X4X4	.405	27	12	.247	27	z	39	95877....	109188	12663	12663	...	H1-1b
8	M20	HSS4X4X4	.395	0	8	.209	27	y	16	95877....	109188	12663	12663	...	H1-1b
9	M39	HSS4X4X4	.365	27	17	.247	27	z	29	95877....	109188	12663	12663	...	H1-1b
10	M15	PIPE_2.0	.352	54	11	.080	54		15	20866....	32130	1871.6...	1871.6.....		H1-1b
11	M32	PIPE_2.0	.348	54	7	.083	54		3	20866....	32130	1871.6...	1871.6.....		H1-1b
12	M13	PIPE_2.0	.348	54	11	.083	54		7	20866....	32130	1871.6...	1871.6.....		H1-1b
13	M51	PIPE_2.0	.345	54	15	.083	54		11	20866....	32130	1871.6...	1871.6.....		H1-1b
14	M34	PIPE_2.0	.281	54	7	.043	54		11	20866....	32130	1871.6...	1871.6.....		H1-1b
15	M53	PIPE_2.0	.279	54	15	.043	54		4	20866....	32130	1871.6...	1871.6.....		H1-1b
16	M85	L2.5x2.5x3	.239	15.613	8	.004	31.225	z	9	23111....	29192.4	872.574	1902.1.....		H2-1
17	M84	L2.5x2.5x3	.216	15.613	17	.004	31.225	y	9	23111....	29192.4	872.574	1902.1.....		H2-1
18	M90	L2.5x2.5x3	.211	15.613	14	.010	0	z	32	23111....	29192.4	872.574	1902.1.....		H2-1
19	PR5	L2.5x2.5x3	.200	15.613	8	.012	31.225	z	43	23111....	29192.4	872.574	1902.1.....		H2-1
20	PR6	L2.5x2.5x3	.195	15.613	13	.012	0	y	43	23111....	29192.4	872.574	1902.1.....		H2-1
21	M3	PIPE_4.0	.163	9	11	.249	9		11	92571....	93240	10631....	10631.....		H1-1b
22	M91	L2.5x2.5x3	.162	15.613	4	.010	31.225	y	32	23111....	29192.4	872.574	1902.1.....		H2-1
23	M41	PIPE_4.0	.157	9	15	.240	9		16	92571....	93240	10631....	10631.....		H1-1b
24	M22	PIPE_4.0	.156	9	7	.242	9		7	92571....	93240	10631....	10631.....		H1-1b

BOLTED CONNECTION ROTATIONAL SLIP RESISTANCE

v. 2017.11.20

DESIGN LOADS	
Factored Moment, M_u (lb-ft)	2192

BOLT PROPERTIES	
Bolt Type	U-Bolt
# of U-Bolts	2
Hole Type	Standard
Bolt Grade	A36
Bolt Diameter, d (in)	0.5
Leg Width, W_{leg} (in)	3.5
Bolt Torque Override, T (lb-ft)	50
Bolt Pretension Stress Override (ksi)	
Bolt Ultimate Strength, F_u (ksi)	58
Specified Torque, T (lb-ft)	50.00
Clamping Force per Bolt, P_u (lb)	6000.00
Bolt Pretension Stress (ksi)	30.56
Tensile Strength per Bolt, ϕP_n (lb)	6405.90
Slip Resistance per Bolt, ϕM_n (lb-ft)	593.25
Total Slip Resistance, ϕM_n (lb-ft)	2373.00
Connection Slip Usage, M_u / ϕM_n	**0.92**

Using Torque Override

FACTORS		
Nut Factor, K	0.20	**Rule-of-thumb estimate**
$\phi_{(BOLT\ TENSION)}$	0.75	**AISC 15th, J3.6**
$\phi_{(SLIP\text{-}CRITICAL)}$	1.00	**AISC 15th, J3.8**
Mean Slip Coefficient, μ	0.30	**AISC 15th, J3.8**
Installed Pretension Ratio, D_u	1.13	**AISC 15th, J3.8**

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTNH403A

Litchfield ATC
15 Oakdale Avenue
Winchester, Connecticut 06098

June 12, 2019

EBI Project Number: 6219002199

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**15.02%**

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

June 12, 2019

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

Emissions Analysis for Site: CTNH403A - Litchfield ATC

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **15 Oakdale Avenue** in **Winchester, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 15 Oakdale Avenue in Winchester, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

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

5) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

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

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

8) The antennas used in this modeling are the Ericsson AIR 21 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 2100 MHz channel(s) in Sector A, the Ericsson AIR 21 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 2100 MHz channel(s) in Sector B, the Ericsson AIR 21 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antenna mounting height centerline of the proposed antennas is 166 feet above ground level (AGL).

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

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	1900 MHz / 1900 MHz	Frequency Bands:	1900 MHz / 1900 MHz	Frequency Bands:	1900 MHz / 1900 MHz
Gain:	15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd
Height (AGL):	166 feet	Height (AGL):	166 feet	Height (AGL):	166 feet
Channel Count:	6	Channel Count:	6	Channel Count:	6
Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts
ERP (W):	6,169.82	ERP (W):	6,169.82	ERP (W):	6,169.82
Antenna A1 MPE %:	**0.80%**	Antenna B1 MPE %:	**0.80%**	Antenna C1 MPE %:	**0.80%**
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 700 MHz	Frequency Bands:	600 MHz / 700 MHz	Frequency Bands:	600 MHz / 700 MHz
Gain:	12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 13.35 dBd
Height (AGL):	166 feet	Height (AGL):	166 feet	Height (AGL):	166 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	2,481.08	ERP (W):	2,481.08	ERP (W):	2,481.08
Antenna A2 MPE %:	**0.75%**	Antenna B2 MPE %:	**0.75%**	Antenna C2 MPE %:	**0.75%**
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.35 dBd	Gain:	15.35 dBd	Gain:	15.35 dBd
Height (AGL):	166 feet	Height (AGL):	166 feet	Height (AGL):	166 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	4,113.21	ERP (W):	4,113.21	ERP (W):	4,113.21
Antenna A3 MPE %:	**0.54%**	Antenna B3 MPE %:	**0.54%**	Antenna C3 MPE %:	**0.54%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	2.09%
AT&T	2.16%
Metro PCS	0.69%
CTPD	0.57%
Sprint	0.96%
Verizon	7.88%
Nextel	0.48%
Northeast Utilities	0.19%
Site Total MPE % :	15.02%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	2.09%
T-Mobile Sector B Total:	2.09%
T-Mobile Sector C Total:	2.09%
Site Total MPE % :	15.02%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz GSM	4	1028.30	166.0	5.37	1900 MHz GSM	1000	0.54%
T-Mobile 1900 MHz UMTS	2	1028.30	166.0	2.68	1900 MHz UMTS	1000	0.27%
T-Mobile 600 MHz LTE	2	591.73	166.0	1.54	600 MHz LTE	400	0.39%
T-Mobile 700 MHz LTE	2	648.82	166.0	1.69	700 MHz LTE	467	0.36%
T-Mobile 2100 MHz LTE	2	2056.61	166.0	5.37	2100 MHz LTE	1000	0.54%
						Total:	**2.09%**

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

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	2.09%
Sector B:	2.09%
Sector C:	2.09%
T-Mobile Maximum MPE % (Sector A):	2.09%
Site Total:	15.02%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **15.02%** 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.