Transcend Wireless

10 Industrial Avenue,
Suite 3
Mahwah, NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

August 2, 2019

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

Notice of Exempt Modification
230 Clover Mill Road, Mansfield, CT
Latitude: 41.77580556
Longitude: -72.2225
T-Mobile site: CT11534A /L600

Dear Ms. Bachman:

T-Mobile currently maintains (6) antennas at the148foot level of the existing 180 -foot monopole located at 230 Clover Mill Road in Mansfield CT. The monopole and underlying property is owned by the Town of Mansfield. T-Mobile now intends to replace (3) of its existing antennas with (3) 600/700 MHz antennas. The new antennas would be installed at the148foot level of the tower, with new mounts to be installed per the attached mount analysis.

Planned Modifications:

Remove
(6) 1-5/8" Coax

Remove and Replace:
Antennas:
(3) LNX-6515DS-A1M (REMOVE) – Add (3) APXVAARR24_43-U-NA20 (REPLACE) - 600 MHz / 700 MHz

Existing to Remain:
Antennas/TMAs/RRUs/coax:
(3) APXV18-209014-C-A20
(3) KRY 112 489/2
(6) 1-5/8" coax

Install New:
Antennas/TMAs/RRUs/coax:
(3) Ericsson Radio 4449 B12 B71
(1) 1-5/8" hybrid

This facility was approved by the Town of Mansfield Planning and Zoning Commission on September 15, 2003. There are no known conditions that would restrict exempt modifications. A copy of the original decision of the facility is attached.

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 The Honorable Paul Shapiro, Mayor and land owner, and Linda Painter, Director of Planning & Development.

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,

Elizabeth Jamieson

Elizabeth Jamieson
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, New Jersey 07430
860-605-7808
EJamieson@TranscendWireless.com

cc:

The Honorable Paul Shapiro, Mayor and land owner
Linda Painter, Director of Planning & Development
American Tower Corporation, Tower Owner

Exhibit A

Original Facility Approval

Exhibit A

Wendell Davis

TOWN OF MA

Planning and Zonin

Audrey P. Beck
Four South Eagle
Storrs, Connecticut 06268
Telephone (203) 429-3330

Memo to: Town Council
From: Planning and Zoning Commission
A. H. Barberet, Chairman

Date: 9/17/03

Re: PZC approval of proposed telecommunication tower and related facilities adjacent to Town Garage, PZC file 1209

At a meeting held on September 15, 2003, the Mansfield Planning and Zoning Commission unanimously adopted the following motion:

"to approve with conditions the special permit application (file 1209) of the Town of Mansfield and TCP Communications, Inc. for a 180-foot telecommunication tower and related facilities and site work to be located at 230 Clover Mill Road, in an RAR-90 zone, as submitted to the Commission and shown on plans revised through 6/5/03 and as presented at a Public Hearing on 8/4/03. This approval is granted because the application as hereby approved is considered to be in compliance with Article V, Section B, Article X, Section R, and other provisions of the Mansfield Zoning Regulations, and is granted with the following conditions:

1. This approval is based on submitted plans and project descriptions. Any change in plans or the proposed use of the site shall require further review and approval as per Mansfield's Zoning Regulations. The applicant shall be responsible for meeting Building Permit requirements and complying with all applicable State and Federal regulations pertaining to the subject telecommunication use.
2. Prior to any use of the telecommunication facilities and the issuance of a Certificate of Compliance, all site work shall be satisfactorily completed. Based on the provisions of Article V, Section B.7.c, a variation of this condition may be authorized by the Commission, provided that public health and safety components of the project have been satisfactorily completed.
3. To help ensure effective long-term screening of the equipment compound area and compliance with regulatory provisions, the plans shall be revised to incorporate a staggered row of evergreen trees of mixed species between the Town Garage/Bicentennial Pond access road and the compound area. The size, type and location of this required evergreen screen shall be approved by the PZC officers, with staff assistance. With this revision, the proposed eight (8) foot high wooden fence around the compound, and the retention of existing wooded areas around the compound, the proposal will be acceptably screened. The compound and tower are not expected to be readily visible from Clover Mill Road or nearby residences along Clover Mill Road.
4. Whereas abandonment/tower removal issues are addressed by Town ownership and the Town's contract with TCP Communications, Inc., a separate bond pursuant to Article X, Section R.6 of the Zoning Regulations shall not be required.
5. This permit shall not become valid until the applicant obtains the permit form from the Planning Office and files it on the Land Records."

If there are any questions regarding this action, the Planning Office may be contacted.

Exhibit B

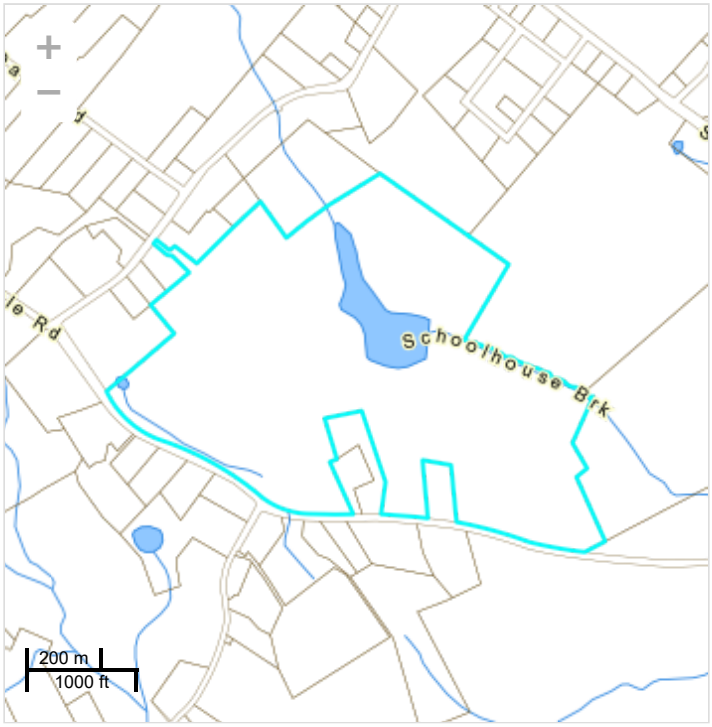
Property card

ID: 2799

Town of Mansfield, Connecticut
Property Record Card

205 SPRING HILL RD

ID: **23.60.7** Account #: **23 60 7**



Owner: MANSFIELD TOWN OF & BOARD OF EDUCATION &
Co-Owner: MANSFIELD MIDDLE SCHOOL
Address: 4 SOUTH EAGLEVILLE RD
STORRS CT 06268

Assessment: Total: $7,720,700
Improvements: $6,423,000 Land: $1,297,700

Sales History

Grantee	Book / Page	Sale Date	Sale Price
MANSFIELD TOWN OF & BOARD OF EDUCATION &	663 / 347	2009-01-20	$0
REFERENCE	113 / 428	1971-04-16	$0
	106 / 136	1967-12-13	$0
MANSFIELD TOWN OF	83 / 413	1957-05-10	$0

MainStreetGIS, LLC
www.mainstreetgis.com

Land Information
Land Area: 93.53 AC
Zoning: RAR90 (See Map)
Land Use: 901 - Town MDL-Com

Building Information

Style:	Heat Type:
Year Built:	Heat Fuel:
Stories:	AC Type:
Rooms: Bedrooms:	Fireplaces:
Baths: Half Baths:	Roof Structure:
Living Area:	Roof Covering:
Grade:	Exterior Wall:
Condition:	Interior Floor:
	Basement:

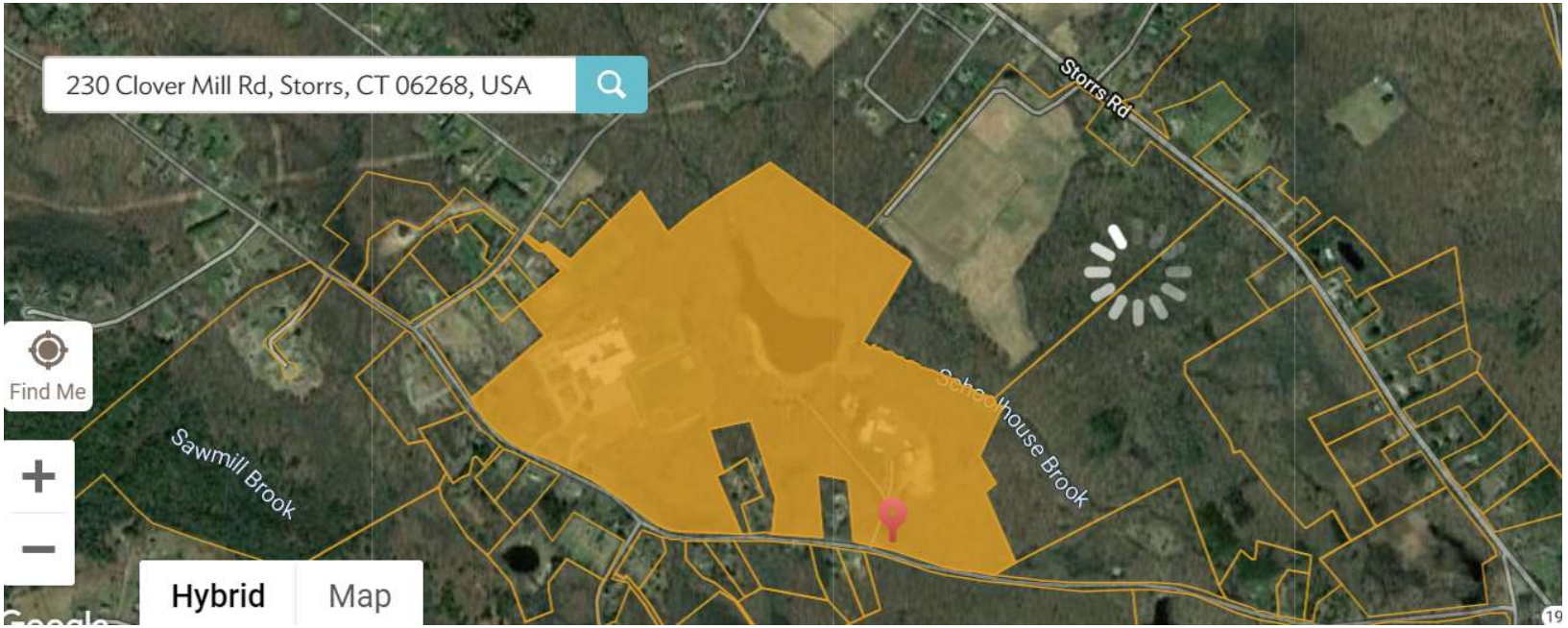
Extra Features

Description	Area / Units	Assessment
FNC Fence	200.00 L.F.	$800
KEN2 Kennel-Good	150.00 S.F.	$900
SHD1 Shed	3600.00 S.F.	$21,100
PAV1 Paving	112400.00 S.F.	$99,100
FGR4 Gar w/Loft	6333.00 S.F	$77,600
FGR1 Garage	6435.00 S.F.	$75,700
WDK Wood Deck	416.00 S.F.	$1,600
SHD1 Shed	120.00 S.F.	$1,200
BTH1 Cabana	462.00 S.F.	$4,600
TEN Tennis Court	1.00 UNIT	$3,500
SHD1 Shed	800.00 S.F.	$4,700
FNC Fence	280.00 L.F.	$1,100
SHD1 Shed	100.00 S.F.	$600
LT5 Light 5	15.00 UNIT	$19,900

Sub Areas

Description	Living Area	Gross Area
BAS First Floor	66700	66700
GRN Greenhouse	0	360
UBM Basement	0	66700
BAS First Floor	1536	1536
BAS First Floor	6000	6000
BAS First Floor	9600	9600
BAS First Floor	512	512

BAS First Floor	3600	3600
FOP Framed Open Porch	0	320



230 CLOVER MILL ROAD STORRS CT

(205 Spring Hill Road)

Exhibit C

Construction Drawings

VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: MANSFIELD CENTER 1 CT
ATC SITE NUMBER: 376046
T-MOBILE SITE ID: CTHA211A
SITE ADDRESS: 230 CLOVER MILL RD
STORRS MANSFIELD, CT 06268

LOCATION MAP

T-MOBILE L600 ANTENNA AMENDMENT
67D04G CONFIGURATION

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: EVERSOURCE
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:

230 CLOVER MILL RD
STORRS MANSFIELD, CT 06268
COUNTY: TOLLAND

1A CERTIFICATE SUMMARY:

LATITUDE: 41° 46' 32" N
LONGITUDE: 72° 13' 18" W
GROUND ELEVATION: 500' AMSL
TOWER HEIGHT: 178' AGL
HIGHEST APPURTENANCE: 198' 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:

TOWN OF MANSFIELD CT
4 SOUTH EAGLEVILLE RD
STORRS, CT 06268

APPLICANT:

T-MOBILE

PROJECT DESCRIPTION

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

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

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

EXISTING (3) PANELS AND (6) 1-5/8" COAX CABLES 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 DOWNTOWN HARTFORD CT START OUT GOING NORTH ON MAIN ST TOWARD ARCH ST. TURN RIGHT ONTO CENTRAL ROW. CENTRAL ROW BECOMES AMERICAN ROW. AMERICAN ROW BECOMES STATE ST STAY STRAIGHT TO GO ONTO RAMP. MERGE ONTO CT-2 E. MERGE ONTO I-84 E/US-6 E VIA EXIT 2 TOWARD E HARTFORD/BOSTON. KEEP RIGHT TO TAKE I-384 E VIA EXIT 59 TOWARD PROVIDENCE. I-384 E BECOMES US-44 E. TURN RIGHT ONTO DEPOT RD. TURN RIGHT ONTO STAFFORD RD/CT-32. TURN LEFT ONTO S EAGLEVILLE RD/CT-275. TURN RIGHT ONTO MAPLE RD. MAPLE RD BECOMES SPRING HILL RD. STAY STRAIGHT TO GO ONTO CLOVER MILL RD. 230 CLOVER MILL RD, STORRS MANSFIELD, CT 06268-2826, 230 CLOVER MILL RD IS ON THE LEFT.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	1	07/29/19	CA
G-002	GENERAL NOTES	0	05/29/19	CA
C-101	DETAILED SITE PLAN & TOWER ELEVATION	0	05/29/19	CA
C-501	ANTENNA INFORMATION & SCHEDULE	0	05/29/19	CA
E-501	GROUNDING DETAILS	0	05/29/19	CA
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			
R-604	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	CA	05/29/19
1	UPDATE MOUNT ANALYSIS	CA	07/29/19

ATC SITE NUMBER:
376046

ATC SITE NAME:
MANSFIELD CENTER 1 CT

SITE ADDRESS:
230 CLOVER MILL RD
STORRS MANSFIELD, CT 06268

SEAL:

Authorized by "EOR"
Jul 29 2019 6:18 PM

T-Mobile design

DRAWN BY:	CA
APPROVED BY:	PPB
DATE DRAWN:	05/29/19
ATC JOB NO:	12951821

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	CA	05/29/19

ATC SITE NUMBER:
376046

ATC SITE NAME:
MANSFIELD CENTER 1 CT

SITE ADDRESS:
230 CLOVER MILL RD
STORRS MANSFIELD, CT 06268

SEAL:

Authorized by "EOR"
Jul 29 2019 6:18 PM

T-Mobile design

DRAWN BY:	CA
APPROVED BY:	PPB
DATE DRAWN:	05/29/19
ATC JOB NO:	12951821

GENERAL NOTES

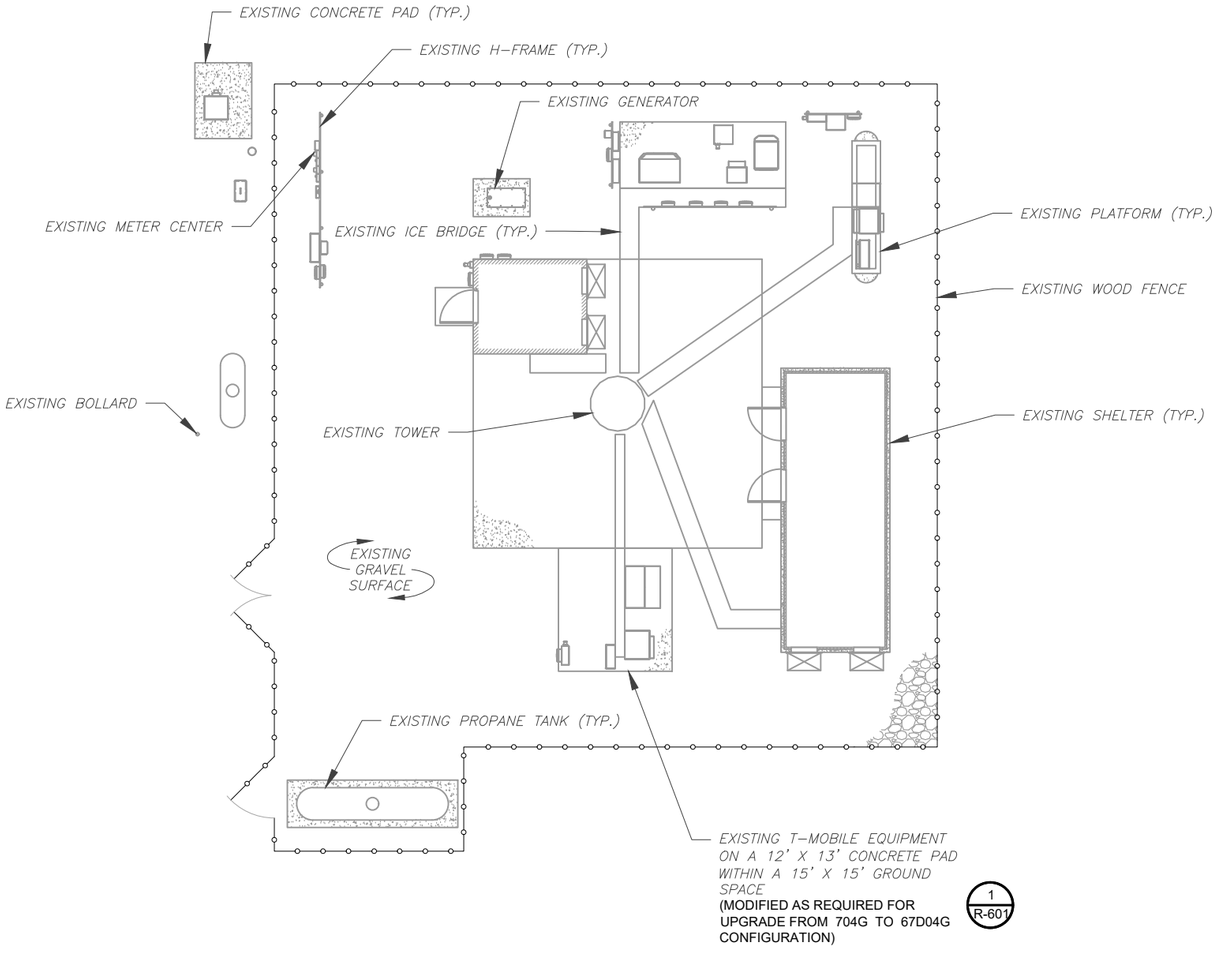
SHEET NUMBER:	REVISION:
G-002	0

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.

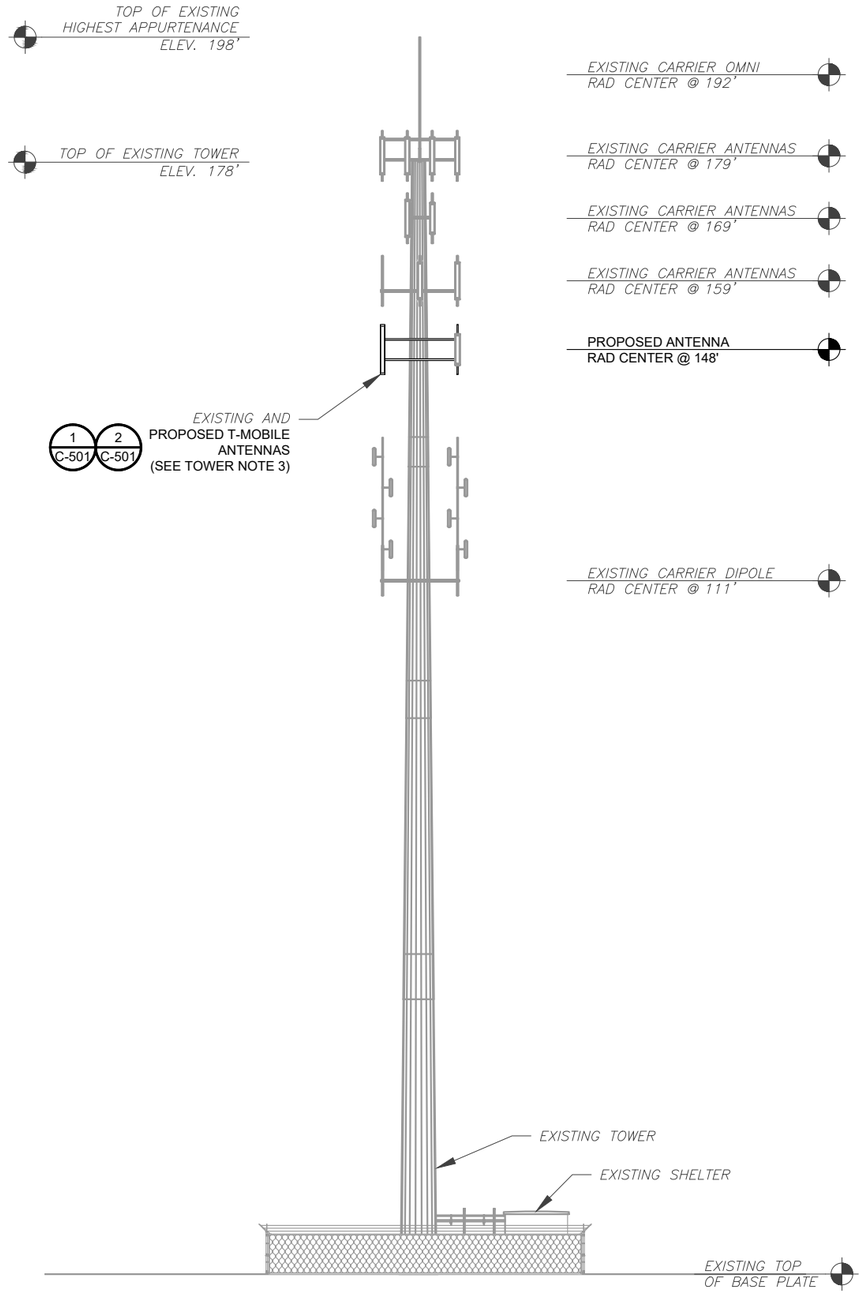
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.



1 DETAILED SITE PLAN

0 10' 20'

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



2 TOWER ELEVATION

SCALE: NOT TO SCALE

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

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SEAL:

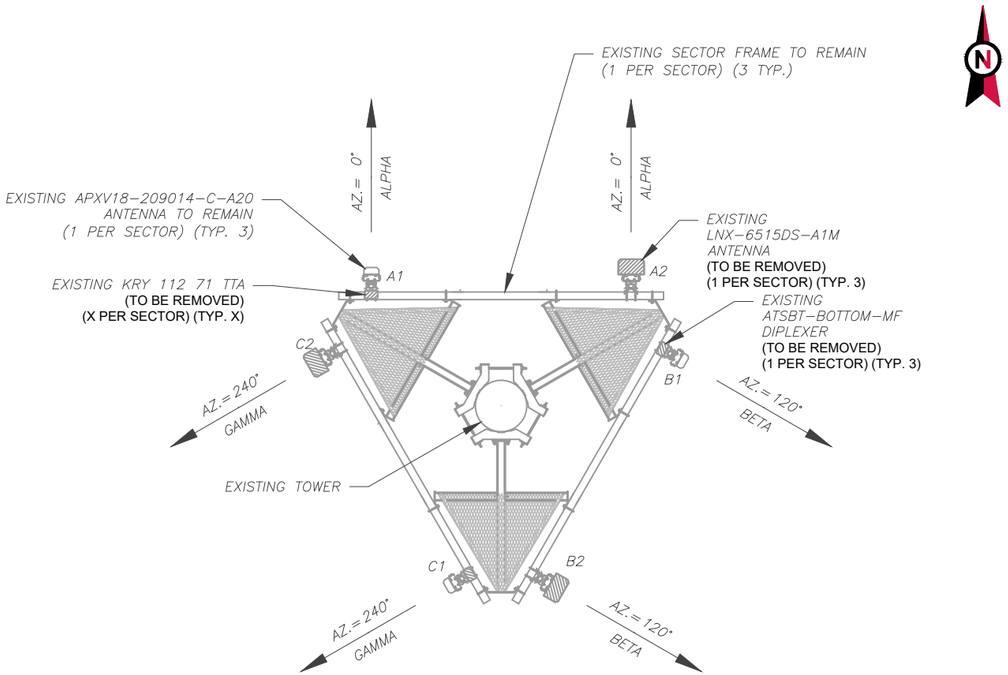
Authorized by "EOR"
Jul 29 2019 6:18 PM

T-Mobile design

DRAWN BY:	CA
APPROVED BY:	PPB
DATE DRAWN:	05/29/19
ATC JOB NO:	12951821

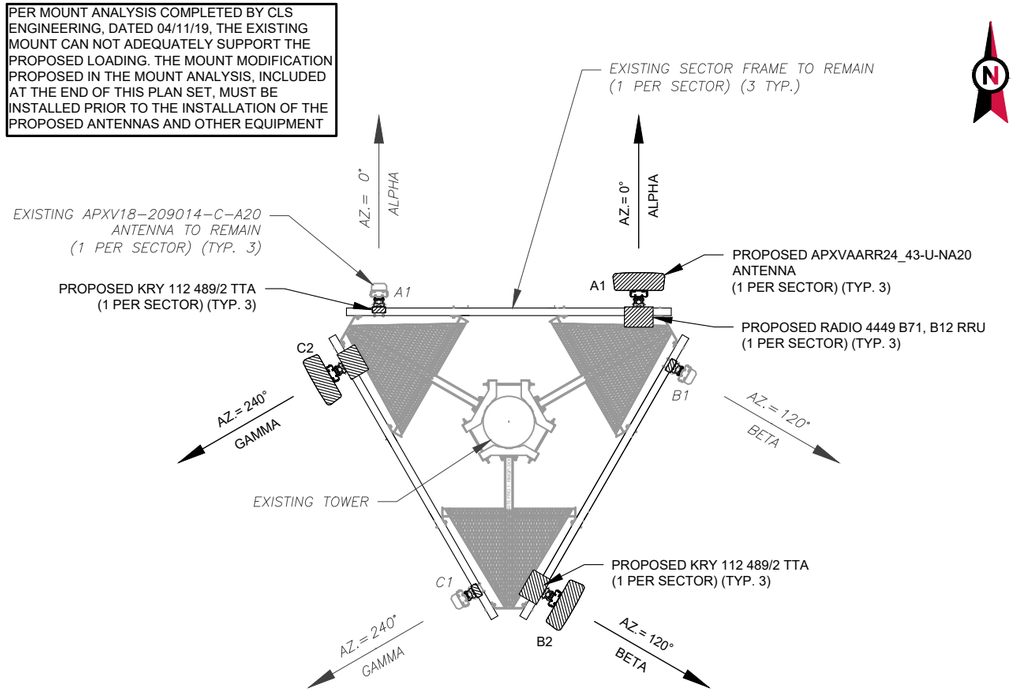
DETAILED SITE PLAN & TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-101	0



1 EXISTING ANTENNA PLAN

PER MOUNT ANALYSIS COMPLETED BY CLS ENGINEERING, DATED 04/11/19, 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	APXV18-209014-C	148'-0"	0°	0°	2°	KRY 112 71 ATSBT-BOTTOM-MF
ALPHA	A2	LNX-6515DS-A1M	148'-0"	0°	0°	2°	–
BETA	B1	APXV18-209014-C	148'-0"	120°	0°	2°	KRY 112 71 ATSBT-BOTTOM-MF
BETA	B2	LNX-6515DS-A1M	148'-0"	120°	0°	2°	–
GAMMA	C1	APXV18-209014-C	148'-0"	240°	0°	2°	KRY 112 71 ATSBT-BOTTOM-MF
GAMMA	C2	LNX-6515DS-A1M	148'-0"	240°	0°	2°	–

NOTES

1. BASED ON APPROVED ATC APPLICATION 12927176, DATED 04/02/19. 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	APXV18-209014-C	148'-0"	0°	0°	2°	KRY 112 489/2
ALPHA	A2	APXVAARR24_43-U-NA20	148'-0"	0°	0°	2°	RADIO 4449 B12-B71
BETA	B1	APXV18-209014-C	148'-0"	120°	0°	2°	KRY 112 489/2
BETA	B2	APXVAARR24_43-U-NA20	148'-0"	120°	0°	2°	RADIO 4449 B12-B71
GAMMA	C1	APXV18-209014-C	148'-0"	240°	0°	2°	KRY 112 489/2
GAMMA	C2	APXVAARR24_43-U-NA20	148'-0"	240°	0°	2°	RADIO 4449 B12-B71

CURRENT FIBER DISTRIBUTION/OVP BOX		CURRENT CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
–	–	(6) 1-5/8"	–	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 ANTENNA: 10'

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

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	CA	05/29/19

ATC SITE NUMBER:
376046

ATC SITE NAME:
MANSFIELD CENTER 1 CT

SITE ADDRESS:
230 CLOVER MILL RD
STORRS MANSFIELD, CT 06268

SEAL:

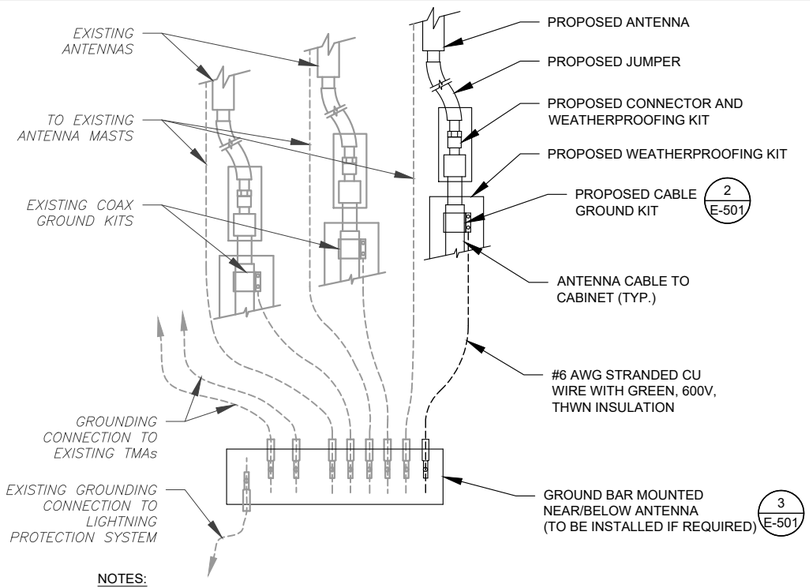
Authorized by "EOR"
Jul 29 2019 6:18 PM

T-Mobile design

DRAWN BY:	CA
APPROVED BY:	PPB
DATE DRAWN:	05/29/19
ATC JOB NO:	12951821

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-501	0

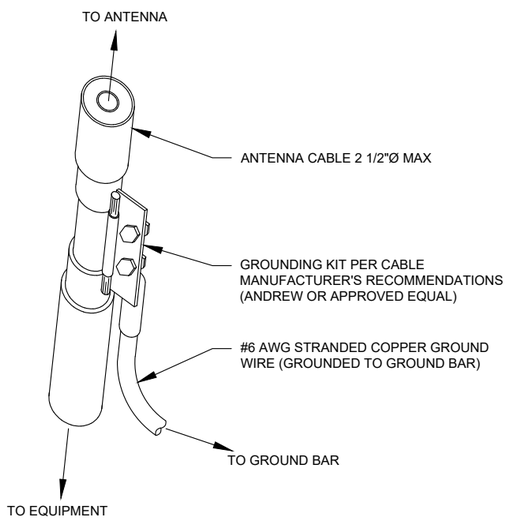


NOTES:

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

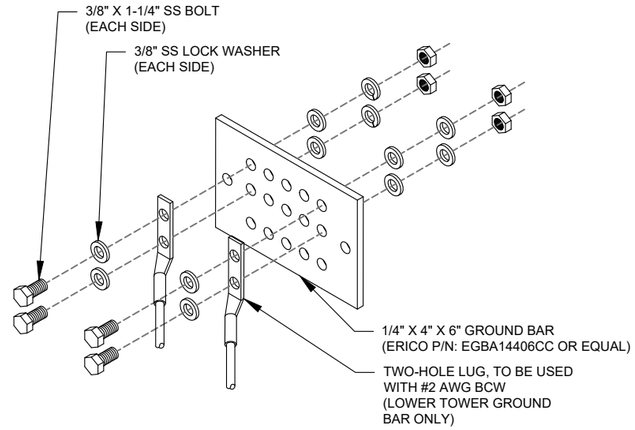


GROUND KIT NOTES:

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

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	CA	05/29/19

ATC SITE NUMBER:
376046

ATC SITE NAME:
MANSFIELD CENTER 1 CT

SITE ADDRESS:
230 CLOVER MILL RD
STORRS MANSFIELD, CT 06268

SEAL:

Authorized by "EOR"
Jul 29 2019 6:18 PM

T-Mobile design

DRAWN BY:	CA
APPROVED BY:	PPB
DATE DRAWN:	05/29/19
ATC JOB NO:	12951821

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

Existing RAN Equipment	
Template:	704G
Enclosure	1
Enclosure Type	RBS 6201 ODE
Baseband	DUG20 (G1900); DUS41 (L1900, L700)
Radio	RUS01 B2 (x 6) (L1900, G1900); RUS01 B12 (x 6) (L700)

Proposed RAN Equipment	
Template:	67D04G
Enclosure	1
Enclosure Type	RBS 6201 ODE
Baseband	DUG20 (G1900); BB 6630 (L1900, L700, L600); BB 6630 (N600 (DARK))
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG*
Radio	RUS01 B2 (x 6) (L1900, G1900); RUS01 B12 (x 6) (L700 (DARK))

RAN Scope of Work:

Replace DUS41 with (1) BB6630 for L1900, L700, and L600.
Add (1) BB6630 for future 5G N600.

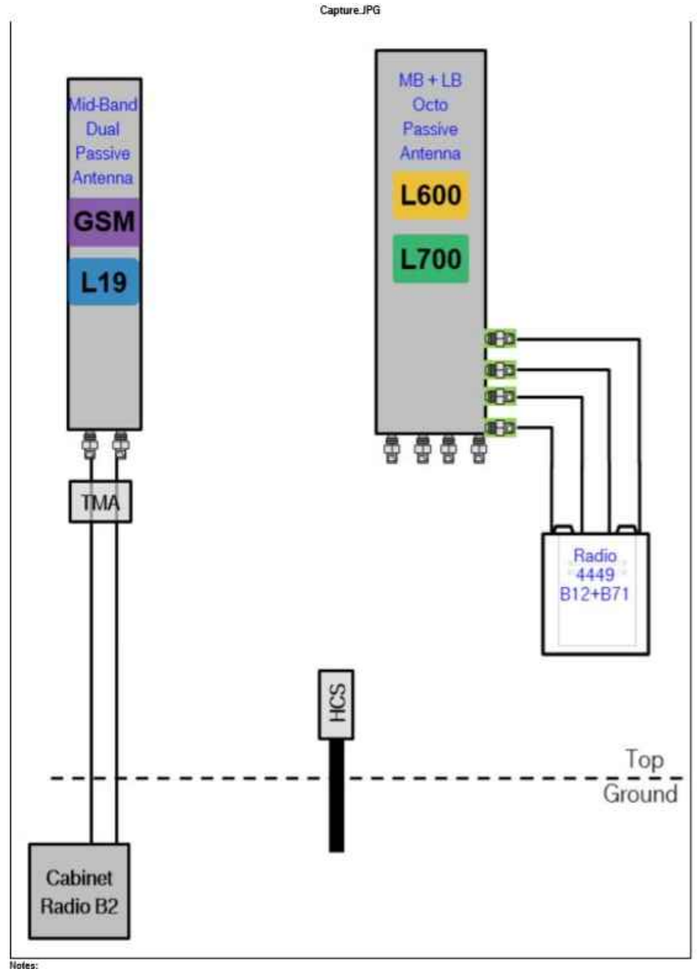
Add (1) 6X12 HCS.

Existing: (12) Coaxial Lines. Remove (6) Lines.

Keep Battery Cabinet.

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE

Capture.JPG



Notes:

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 Low Profile Platform for American Tower on behalf of T-Mobile
376046 - Mansfield Center 1 CT
Project #: 12927176

T-Mobile Site ID: CTHA211A
Program: L600

CLS Engineering PLLC Project #41124-12927176-01-MA-R2
July 8, 2019

MOUNT DESCRIPTION	Existing Low Profile Platform at 145 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 148 ft AGL (Eccentricity of ~3 ft)
SITE DESCRIPTION	178 ft Monopole
SITE ADDRESS	230 Clover Mill Road, Storrs Mansfield, CT 06268-2826, Tolland County
GPS COORDINATES	41.77577777, -72.2225
ANALYSIS STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	130 mph, V_{ult} / 100.7 mph, V_{asd} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 1" Ice

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

MEMBER USAGE	59%	Pass
COLLAR USAGE	28%	Pass

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

Prepared by:
Sean Rock, E.I.

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: 2019.07.09 13:46:11 -04'00'

Modified Mount Usages:

COMPONENT	PEAK USAGE	RESULT
Corner Plates	59%	Pass
Mount Pipes	52%	Pass
Support Rail	39%	Pass
Collar Reactions	28%	Pass
Stand-Off Horizontals	25%	Pass
Platform Base	20%	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:

- **Replace existing mount pipe at Position 2 with (1) 8ft. long proposed Pipe 2½ STD, A53 Gr. B, at each sector for proposed configuration (3 total) as shown. Connect to platform base horizontal member using Site Pro 1 SCX45-K crossover plate or equal.**
- **Install Site Pro 1 HRK12-U Support Rail kit at 3'-0" above the existing platform horizontal HSS tube. Connect to (2) existing and proposed mount pipes per sector of the mount (12 total) using Site Pro 1 SCX2 crossover plate kits included in the Support Rail kit.**
- **Install (1) proposed Site Pro 1 PRK-1245 platform reinforcement kit on existing platform mount as shown in the following sketches. Field-cut proposed members as required. Maintain minimum bolt edge distance.**

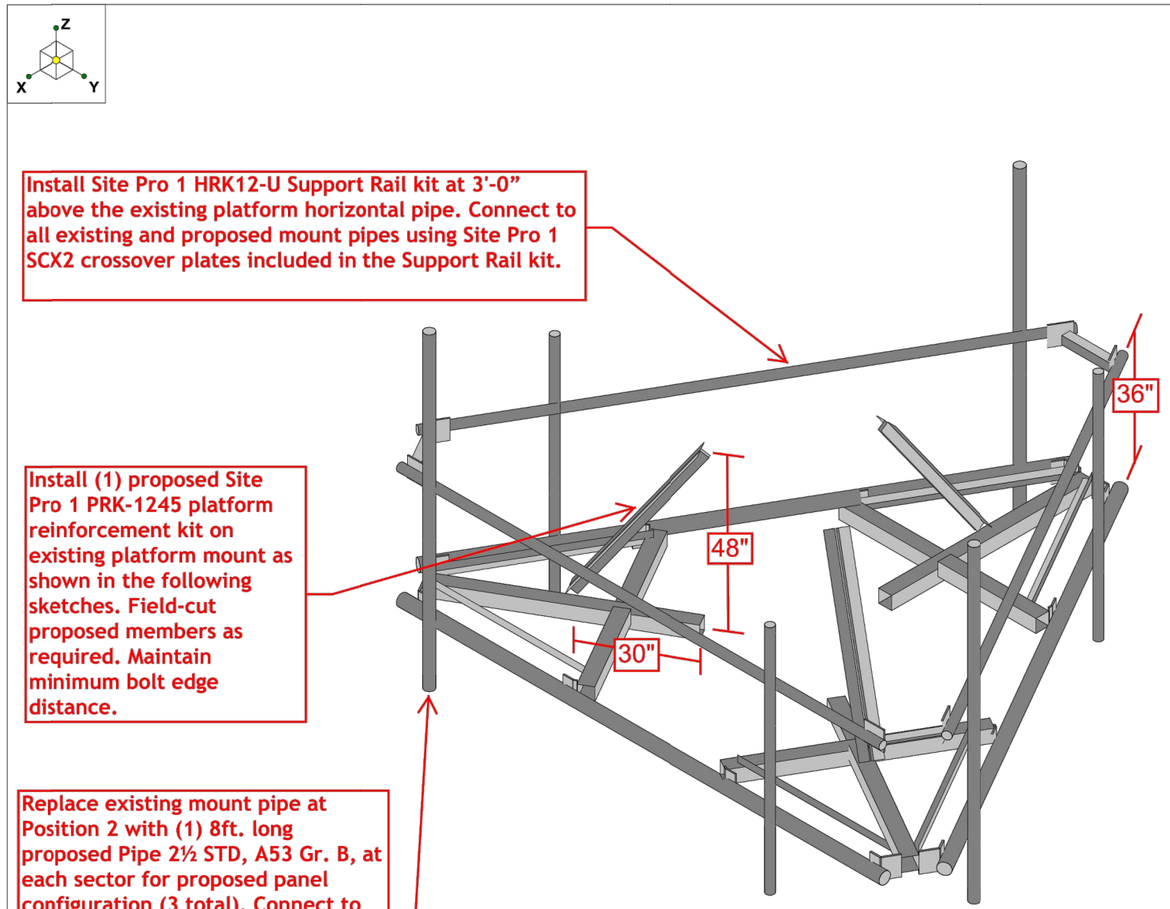
See following sketches and Site Pro 1 assembly drawings for additional details.

1 MOUNT ANALYSIS
SCALE: NOT TO SCALE

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-602	0



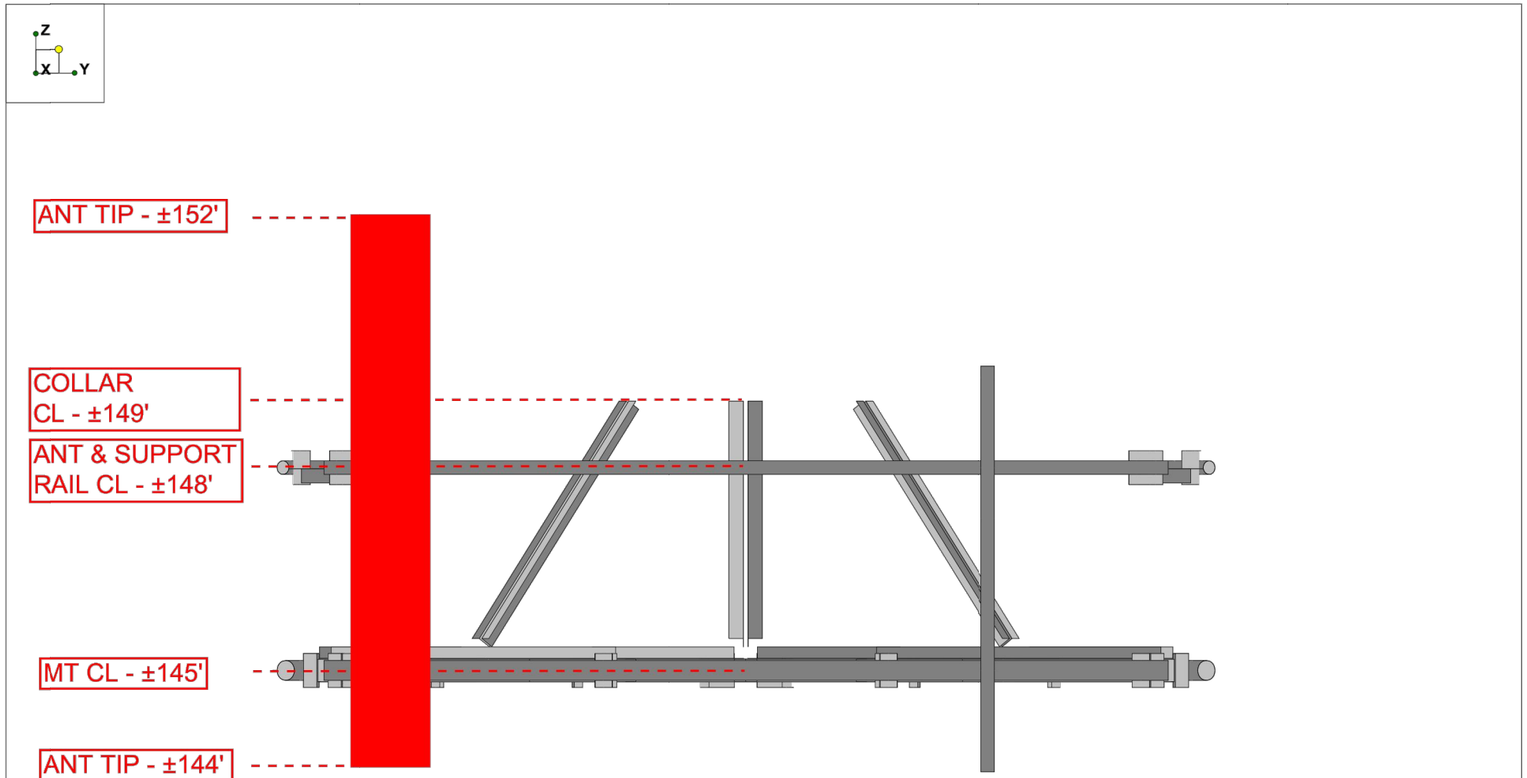
Envelope Only Solution

CLS		SK - 0
SMR	41124-12927176-Mansfield Center 1 CT, CT	July 8, 2019 at 2:56 PM
41124-12927176-01-MA-R2	Installation Sketch - Isometric View	41124-12927176-01-MA-R2.r3d

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-603	0



Envelope Only Solution

CLS	41124-12927176-Mansfield Center 1 CT, CT	SK - 0
SMR		July 8, 2019 at 2:57 PM
41124-12927176-01-MA-R2	Installation Sketch - Elevation Sketch	41124-12927176-01-MA-R2.r3d

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-604	0

Exhibit D

Structural Analysis Report

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**178 ft Monopole**
ATC Site Name	:	**Mansfield Center 1 CT, CT**
ATC Site Number	:	**376046**
Engineering Number	:	**12927176_C3_03**
Proposed Carrier	:	**T-MOBILE**
Carrier Site Name	:	**CTHA211/TCP Communication**
Carrier Site Number	:	**CTHA211A**
Site Location	:	**230 Clover Mill Road** **Storrs Mansfield, CT 06268-2826** **41.775800,-72.222500**
County	:	**Tolland**
Date	:	**July 12, 2019**
Max Usage	:	**62%**
Result	:	**Pass**

Prepared By:
Jennifer Yu
Structural Engineer I

Jennifer Yu

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32598
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
Jul 12 2019 1:04 PM cosign

COA: PEC.0001553

AMERICAN TOWER®
CORPORATION

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 178 ft monopole to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	PJF Job #29203-0151, Revision 1, dated December 23, 2003
Foundation Drawing	PJF Job #29203-0151, Revision 1, dated December 23, 2003
Geotechnical Report	JGI Project #01133G, dated May 14, 2001
Mount Analysis	CLS Engineering PLLC Project #41124-12927176-01-MA-R2, dated July 8, 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:	101 mph (3-Second Gust, Vasd) / 130 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.17, 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
192.0	1	Generic 20' Omni	Platform with Handrails	(5) 7/8" Coax	OTHER
191.0	2	Generic 18' Dipole			
186.0	1	Generic 8' Yagi			
180.0	1	Generic 2' x 4' Rectangular Grid Dish			
178.0	3	Commscope LNX-8513DS-VTM (39.2 lb)		(12) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Commscope LNX-6514DS-A1M			
	2	RFS DB-T1-6Z-8AB-0Z			
	3	Alcatel-Lucent RRH2X60-AWS			
	6	Commscope HBXX-6517DS-A2M			
	6	RFS FD9R6004/2C-3L			
	3	Alcatel-Lucent RRH2X60-1900			
168.0	6	Ericsson RRU11	T-Arms	(1) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax	AT&T MOBILITY
	1	Raycap DC6-48-60-18-8F			
	6	Powerwave Allgon LGP21401			
	3	Powerwave Allgon 7770.00			
	3	KMW AM-X-CD-16-65-00T-RET			
158.0	3	Alcatel-Lucent 2X50W RRH w/o Filter	Low Profile Platform	(4) 1 1/4" Hybriflex Cable	SPRINT NEXTEL
	3	Alcatel-Lucent 1900MHz RRH (65MHz)			
	3	Alcatel-Lucent 800 MHz RRH w/ Notch Filter			
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	3	RFS APXVSPP18-C-A20			
	3	Commscope DT465B-2XR			
148.0	-	-	-	(6) 1 5/8" Coax	T-MOBILE
120.0	2	Generic 18' Dipole	T-Arm	(7) 7/8" Coax	OTHER
116.0	1	Generic 8' Yagi			
113.0	1	Generic 9' Omni			
	1	Generic 8' Yagi			
111.0	1	Generic 2' x 4' Rectangular Grid Dish			
	1	Generic 22' Dipole			
76.0	1	Generic GPS	Stand-Off	(1) 1/2" Coax	SPRINT NEXTEL

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
148.0	3	Andrew ATSBT-BOTTOM-MF	Low Profile Platform	(6) 1 5/8" Coax	T-MOBILE
	3	Commscope LNX-6515DS-A1M (50.3 lb)			
	3	RFS APX18-209014-CT5			
	3	Ericsson KRY 112 71			

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
148.0	3	Ericsson KRY 112 489/2	Platform with Handrails	(1) 1 5/8" (1.63"-41.3mm) Fiber	T-MOBILE
	3	Ericsson Radio 4449 B12,B71			
	3	RFS APXV18-209014-C-A20			
	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.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	50%	Pass
Shaft	62%	Pass
Base Plate	40%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	6,250.0	8,437.5	4,839.5	57%
Shear (Kips)	48.0	64.8	37.7	58%

*** The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1**

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
178.0	Generic 2' x 4' Rectangular Grid Dish	Other	1.561	0.965
148.0	Ericsson KRY 112 489/2	T-MOBILE	1.075	0.863
	Ericsson Radio 4449 B12,B71			
	RFS APXV18-209014-C-A20			
	RFS APXVAARR24_43-U-NA20			
111.0	Generic 2' x 4' Rectangular Grid Dish	Other	0.590	0.643

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

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:

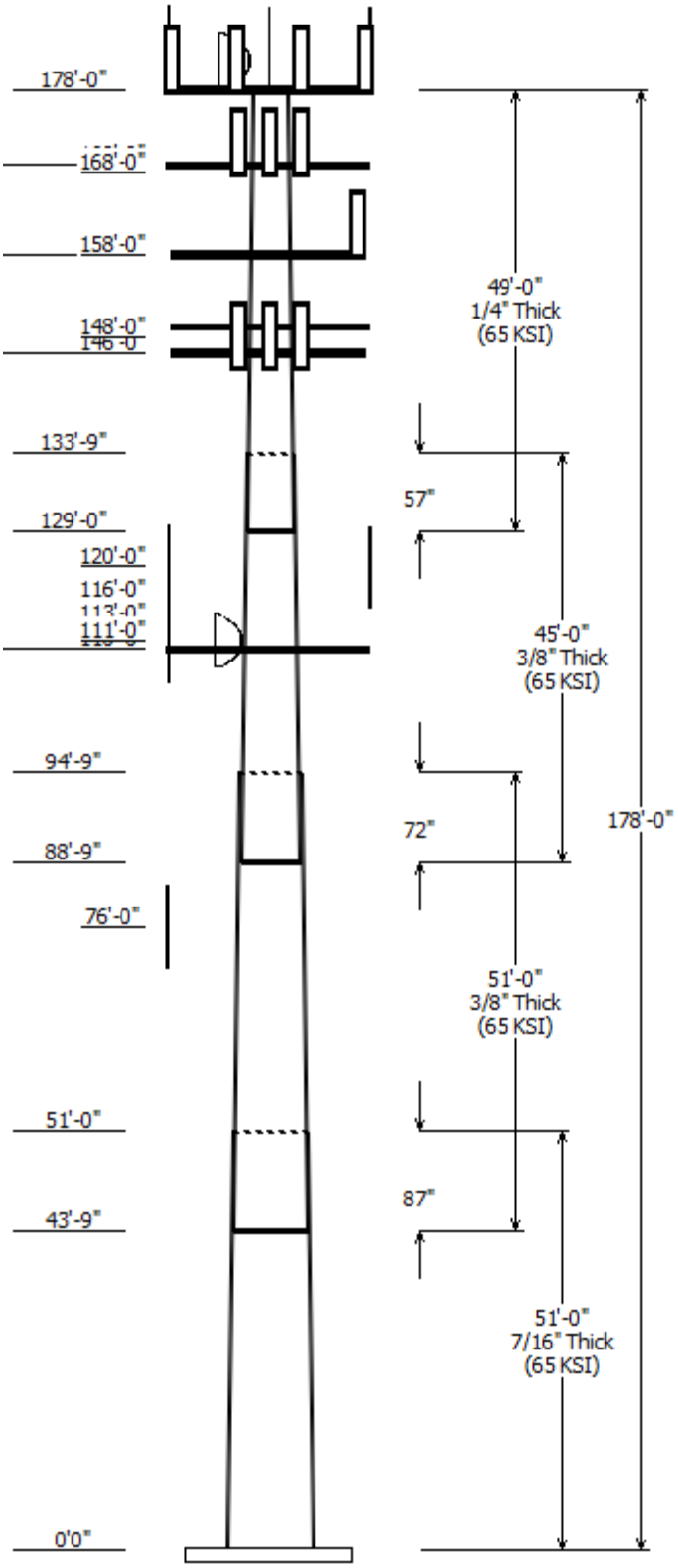
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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 :	376046	Code:	ANSI/TIA-222-G
Location :	MANSFIELD CENTER 1 CT, CT		
Description :	178 ft PennSummit Monopole	Struct Class :	II
Shape :	18 Sides	Exposure :	B
Height :	178.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.252023 (in/ft)		

Sections Properties

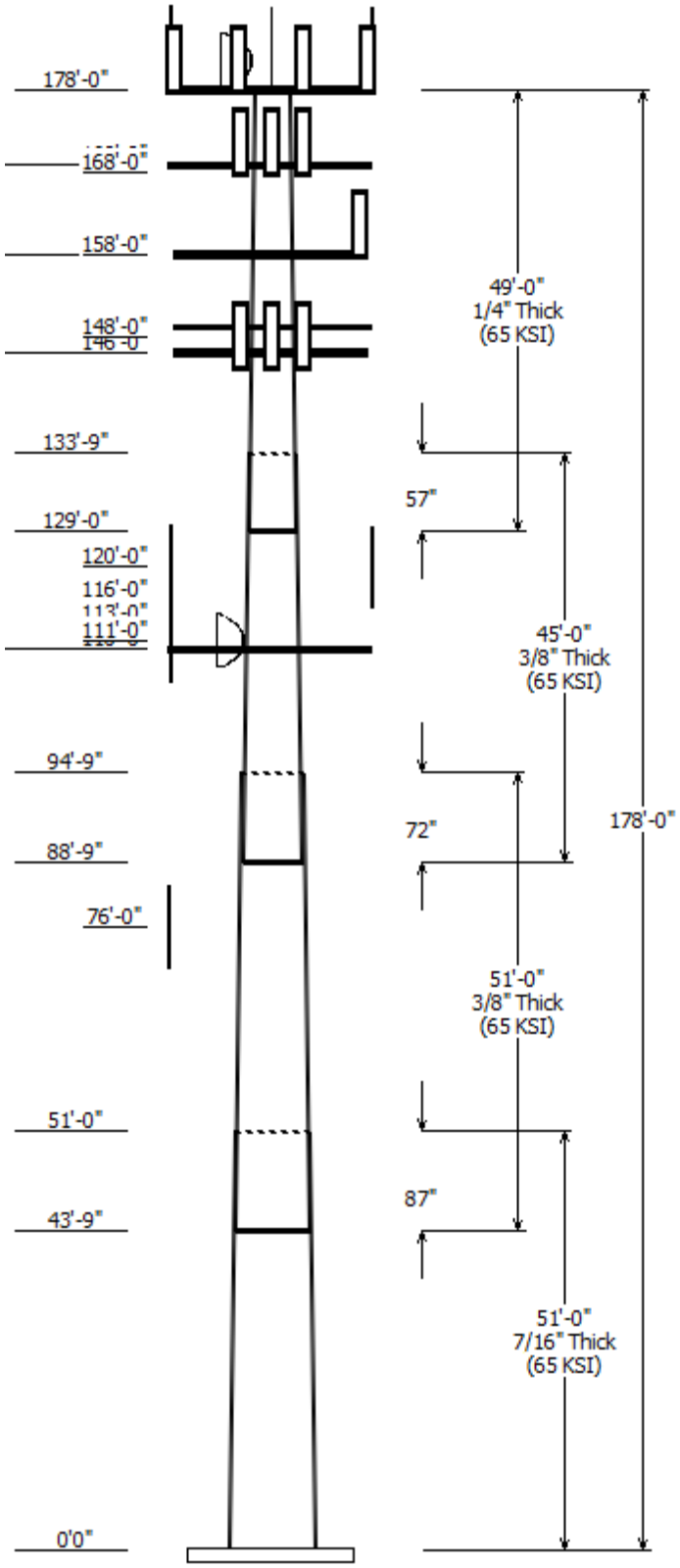
Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	51.000	55.50	68.36	0.438		0.000	18 Sides	65
2	51.000	45.23	58.08	0.375	Slip Joint	87.000	18 Sides	65
3	45.000	36.15	47.49	0.375	Slip Joint	72.000	18 Sides	65
4	49.000	25.50	37.84	0.250	Slip Joint	57.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
178.000	180.000	1	Generic 2' x 4' Rectangular Gr
178.000	186.000	1	Generic 8' Yagi
178.000	191.000	2	Generic 18' Dipole
178.000	192.000	1	Generic 20' Omni
178.000	178.000	1	Flat Platform w/ Handrails
178.000	179.000	6	Commscope HBXX-6517DS-
178.000	179.000	3	Commscope LNX-6514DS-A1M
178.000	179.000	3	Commscope LNX-8513DS-
178.000	179.000	2	RFS DB-T1-6Z-8AB-0Z
178.000	178.000	3	Alcatel-Lucent RRH2X60-AWS
178.000	178.000	3	Alcatel-Lucent RRH2X60-1900
178.000	179.000	6	RFS FD9R6004/2C-3L
169.000	169.000	3	Round T-Arm
168.000	169.000	3	KMW AM-X-CD-16-65-00T-RET
168.000	169.000	3	Powerwave Allgon 7770.00
168.000	169.000	6	Ericsson RRU11
168.000	169.000	1	Raycap DC6-48-60-18-8F
168.000	169.000	6	Powerwave Allgon LGP21401
158.000	158.000	1	Round Low Profile Platform
158.000	159.000	3	Commscope DT465B-2XR
158.000	159.000	3	RFS APXVSPP18-C-A20
158.000	158.000	3	Alcatel-Lucent TD-RRH8x20-25
158.000	158.000	3	Alcatel-Lucent 800 MHz RRH
158.000	158.000	3	Alcatel-Lucent 1900MHz RRH
158.000	158.000	3	Alcatel-Lucent 2X50W RRH w/o
148.000	148.000	3	RFS APXVAARR24_43-U-NA20
148.000	148.000	3	RFS APXV18-209014-C-A20
148.000	148.000	3	Ericsson Radio 4449 B12,B71
148.000	148.000	3	Ericsson KRY 112 489/2
146.000	146.000	1	Generic Flat Platform with Han
120.000	120.000	2	Generic 18' Dipole
116.000	116.000	1	Generic 8' Yagi
113.000	113.000	1	Generic 8' Yagi
113.000	113.000	1	Generic 9' Omni
111.000	111.000	1	Generic 22' Dipole
111.000	111.000	1	Generic 2' x 4' Rectangular Gr
110.000	110.000	3	Flat T-Arm
76.000	76.000	1	Generic GPS

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind



0.000	76.000	1/2" Coax	No
0.000	111.0	7/8" Coax	No
0.000	113.0	7/8" Coax	No
0.000	116.0	7/8" Coax	No
0.000	120.0	7/8" Coax	No
0.000	148.0	1 5/8" (1.63"-	No
0.000	148.0	1 5/8" Coax	No
0.000	158.0	1 1/4" Hybriflex	No
0.000	168.0	0.39" (10mm)	No
0.000	168.0	0.78" (19.7mm) 8	No
0.000	168.0	1 5/8" Coax	No
0.000	178.0	1 5/8" Coax	No
0.000	178.0	1 5/8" Hybriflex	No
0.000	178.0	7/8" Coax	No
0.000	178.0	7/8" Coax	No
0.000	178.0	7/8" Coax	No
0.000	178.0	7/8" Coax	No

Load Cases

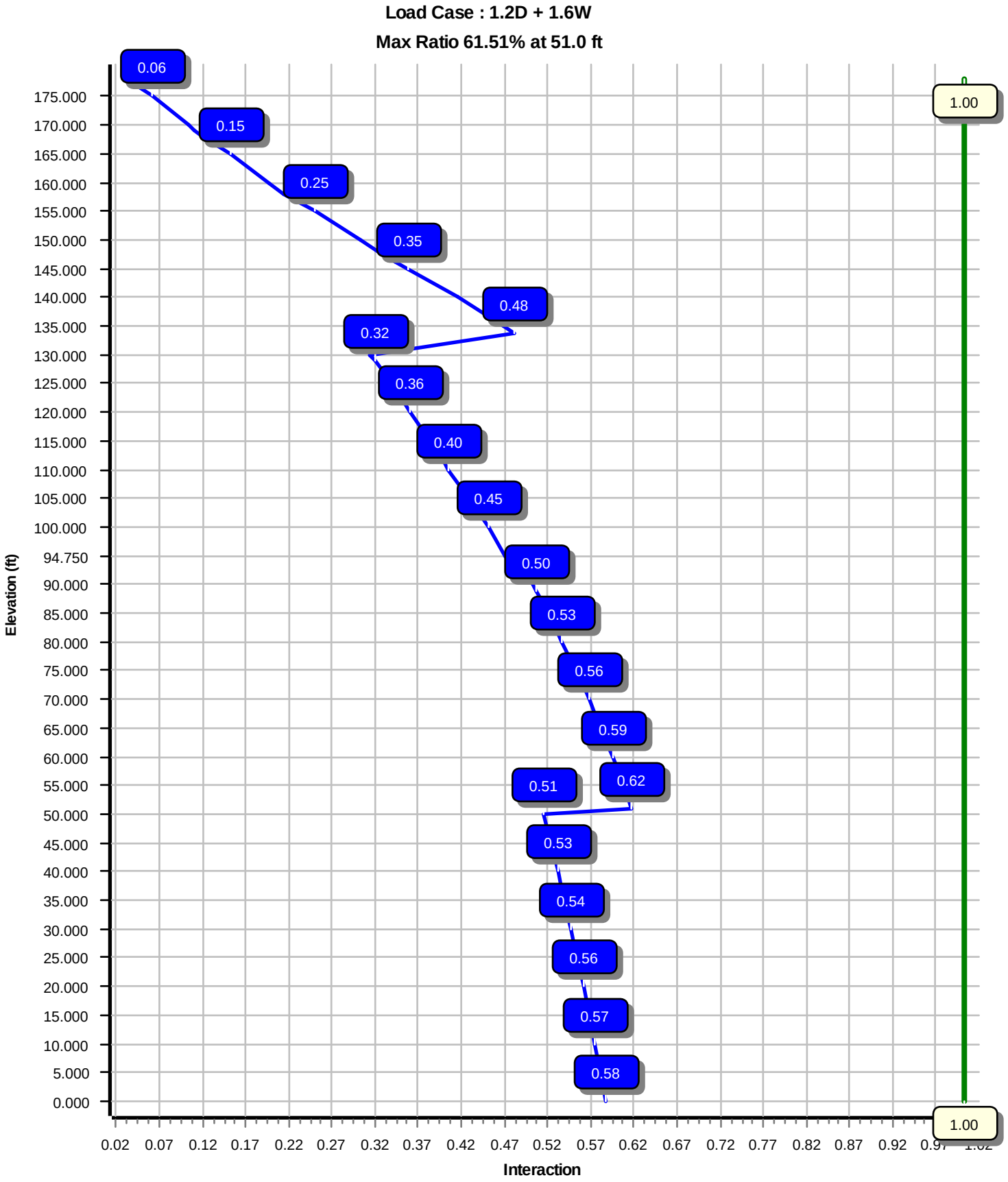
1.2D + 1.6W	101 mph with No Ice
0.9D + 1.6W	101 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) 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	4839.55	37.69	64.71
0.9D + 1.6W	4793.44	37.67	48.52
1.2D + 1.0Di + 1.0Wi	1688.34	12.59	104.34
(1.2 + 0.2Sds) * DL + E ELFM	299.73	2.11	64.57
(1.2 + 0.2Sds) * DL + E EMAM	396.39	2.89	64.57
(0.9 - 0.2Sds) * DL + E ELFM	296.29	2.11	45.05
(0.9 - 0.2Sds) * DL + E EMAM	391.50	2.89	45.05
1.0D + 1.0W	949.79	7.44	53.95

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	111.00	7.083	0.643
1.0D + 1.0W	178.00	18.729	0.965


Load Case : 1.2D + 1.6W
Max Ratio 61.51% at 51.0 ft
0.06
0.15
0.25
0.35
0.48
0.32
0.36
0.40
0.45
0.50
0.53
0.56
0.59
0.62
0.51
0.53
0.54
0.56
0.57
0.58
1.00
1.00
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
94.750
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
0.07
0.12
0.17
0.22
0.27
0.32
0.37
0.42
0.47
0.52
0.57
0.62
0.67
0.72
0.77
0.82
0.87
0.92
Interaction

Site Number: 376046 Code: ANSI/TIA-222-G

Site Name: MANSFIELD CENTER 1 CT, CT Engineering Number:12927176_C3_03 7/12/2019 11:07:55 AM

Customer: T-MOBILE

Analysis Parameters

Location :	Tolland County, CT	Height (ft) :	178
Code :	ANSI/TIA-222-G	Base Diameter (in) :	68.36
Shape :	18 Sides	Top Diameter (in) :	25.50
Pole Type :	Taper	Taper (in/ft) :	0.252
Pole Manfacturer :	PennSummit Tub	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	101 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:	1.00 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	2.30				
T_L (sec):	6	p:	1.3	C_s:	0.030
S_s:	0.173	S_1:	0.062	C_s Max:	0.030
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.185	S_{d1}:	0.099		

Load Cases

1.2D + 1.6W	101 mph with No Ice
0.9D + 1.6W	101 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 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	51.000	0.4375	65		0.00	14,819	68.36	0.00	94.32	54974.8	25.79	156.25	55.50	51.00	76.47	29298.9	20.61	126.87	0.252023
2-18	51.000	0.3750	65	Slip	87.00	10,592	58.08	43.75	68.69	28900.5	25.55	154.89	45.23	94.75	53.39	13571.6	19.50	120.62	0.252023
3-18	45.000	0.3750	65	Slip	72.00	7,554	47.49	88.75	56.08	15730.2	20.57	126.65	36.15	133.75	42.58	6886.3	15.24	96.41	0.252023
4-18	49.000	0.2500	65	Slip	57.00	4,157	37.84	129.00	29.83	5328.6	24.93	151.40	25.50	178.00	20.04	1613.8	16.22	102.00	0.252023
				Shaft Weight		37,123													

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
178.00	RFS FD9R6004/2C-3L	6	0.75	1.000	2.60	0.310	0.50	13.48	0.827	0.50
178.00	Alcatel-Lucent RRH2X60-1900	3	0.75	0.000	43.00	1.880	0.50	118.14	3.155	0.50
178.00	Alcatel-Lucent RRH2X60-AWS	3	0.75	0.000	44.00	1.880	0.50	121.09	3.155	0.50
178.00	RFS DB-T1-6Z-8AB-0Z	2	0.75	1.000	44.00	4.800	0.72	214.92	6.730	0.72
178.00	Generic 20' Omni	1	1.00	14.000	55.00	6.000	1.00	259.18	15.616	1.00
178.00	Generic 18' Dipole	2	1.00	13.000	55.00	6.770	1.00	325.67	21.283	1.00
178.00	Generic 2' x 4' Rectangular Grid	1	1.00	2.000	40.00	7.460	1.00	345.12	75.233	1.00
178.00	Commscope LNX-8513DS-VTM	3	0.75	1.000	39.20	8.170	0.69	277.32	12.011	0.69
178.00	Commscope LNX-6514DS-A1M	3	0.75	1.000	38.80	8.170	0.69	277.72	11.996	0.69
178.00	Commscope HBXX-6517DS-A2M	6	0.75	1.000	40.80	8.530	0.68	279.65	12.476	0.68
178.00	Generic 8' Yagi	1	1.00	8.000	30.00	12.000	1.00	489.92	57.354	1.00
178.00	Flat Platform w/ Handrails	1	1.00	0.000	2,000.00	42.400	1.00	3,929.94	70.880	1.00
169.00	Round T-Arm	3	0.75	0.000	250.00	9.700	0.67	532.50	20.844	0.67
168.00	Powerwave Allgon LGP21401	6	0.80	1.000	14.10	1.100	0.50	47.78	2.060	0.50
168.00	Raycap DC6-48-60-18-8F	1	0.80	1.000	20.00	1.260	1.00	91.09	2.149	1.00
168.00	Ericsson RRU11	6	0.80	1.000	63.90	2.950	0.50	193.54	4.498	0.50
168.00	Powerwave Allgon 7770.00	3	0.80	1.000	35.00	5.510	0.65	231.75	6.968	0.65
168.00	KMW AM-X-CD-16-65-00T-RET	3	0.80	1.000	48.50	8.020	0.67	267.14	11.784	0.67
158.00	Alcatel-Lucent 2X50W RRH w/o	3	0.80	0.000	53.00	2.060	0.50	138.41	3.346	0.50
158.00	Alcatel-Lucent 1900MHz RRH	3	0.80	0.000	60.00	2.370	0.50	171.72	3.823	0.50
158.00	Alcatel-Lucent 800 MHz RRH w/	3	0.80	0.000	61.80	2.500	0.50	183.11	3.900	0.50
158.00	Alcatel-Lucent TD-RRH8x20-25	3	0.80	0.000	70.00	4.050	0.50	196.81	5.833	0.50
158.00	RFS APXVSPP18-C-A20	3	0.80	1.000	57.00	8.020	0.69	288.45	11.761	0.69
158.00	Commscope DT465B-2XR	3	0.80	1.000	58.00	9.100	0.69	329.07	12.817	0.69
158.00	Round Low Profile Platform	1	1.00	0.000	1,500.00	21.700	1.00	2,369.31	47.460	1.00
148.00	Ericsson KRY 112 489/2	3	0.75	0.000	15.40	0.560	0.50	38.95	1.261	0.50
148.00	Ericsson Radio 4449 B12,B71	3	0.75	0.000	74.00	1.640	0.50	148.65	2.766	0.50
148.00	RFS APXV18-209014-C-A20	3	0.75	0.000	18.70	3.530	0.67	110.23	5.930	0.67
148.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.000	127.90	20.240	0.63	651.36	25.185	0.63
146.00	Generic Flat Platform with	1	1.00	0.000	2,500.00	42.400	1.00	4,866.27	70.335	1.00
120.00	Generic 18' Dipole	2	1.00	0.000	55.00	6.770	1.00	314.99	20.710	1.00
116.00	Generic 8' Yagi	1	1.00	0.000	30.00	12.000	1.00	470.83	55.471	1.00
113.00	Generic 9' Omni	1	1.00	0.000	25.00	2.700	1.00	113.82	6.918	1.00
113.00	Generic 8' Yagi	1	1.00	0.000	30.00	12.000	1.00	469.47	55.337	1.00
111.00	Generic 2' x 4' Rectangular Grid	1	1.00	0.000	40.00	7.460	1.00	331.16	72.133	1.00
111.00	Generic 22' Dipole	1	1.00	0.000	66.00	8.270	1.00	381.25	25.158	1.00
110.00	Flat T-Arm	3	0.75	0.000	250.00	12.900	0.67	520.09	23.468	0.67
76.00	Generic GPS	1	1.00	0.000	10.00	0.900	1.00	46.50	1.698	1.00
Totals	Num Loadings:38	97			11,415.30			32,889.22		

Linear Appurtenance Properties

Load Case Azimuth (deg) :

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	178.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	178.00	2	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	178.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	Other
0.00	178.00	2	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	Other
0.00	178.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	Other
0.00	178.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	Other
0.00	168.00	1	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	168.00	2	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	168.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	158.00	4	1 1/4" Hybriflex Cable	1.54	1.00	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	148.00	1	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	148.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	120.00	2	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	Other
0.00	116.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	Other
0.00	113.00	2	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	Other
0.00	111.00	2	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	Other
0.00	76.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL

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)
0.00		0.4375	68.360	94.315	54,974.8	25.79	156.25	71.1	1584.	0.0	0.0
5.00		0.4375	67.100	92.566	51,971.5	25.28	153.37	71.7	1525.	0.0	1,589.8
10.00		0.4375	65.840	90.816	49,079.6	24.77	150.49	72.3	1468.	0.0	1,560.0
15.00		0.4375	64.580	89.066	46,297.0	24.26	147.61	72.9	1412.	0.0	1,530.2
20.00		0.4375	63.320	87.316	43,621.7	23.76	144.73	73.5	1356.	0.0	1,500.5
25.00		0.4375	62.059	85.567	41,051.4	23.25	141.85	74.1	1302.	0.0	1,470.7
30.00		0.4375	60.799	83.817	38,584.2	22.74	138.97	74.7	1249.	0.0	1,440.9
35.00		0.4375	59.539	82.067	36,217.8	22.23	136.09	75.3	1198.	0.0	1,411.2
40.00		0.4375	58.279	80.317	33,950.2	21.73	133.21	75.8	1147.	0.0	1,381.4
43.75	Bot - Section 2	0.4375	57.334	79.005	32,313.1	21.34	131.05	76.3	1110.	0.0	1,016.5
45.00		0.4375	57.019	78.568	31,779.3	21.22	130.33	76.4	1097.	0.0	626.5
50.00		0.4375	55.759	76.818	29,703.0	20.71	127.45	77.0	1049.	0.0	2,471.3
51.00	Top - Section 1	0.3750	56.257	66.511	26,241.4	24.69	150.02	72.4	918.7	0.0	487.6
55.00		0.3750	55.249	65.311	24,846.7	24.21	147.33	72.9	885.8	0.0	897.1
60.00		0.3750	53.989	63.811	23,174.0	23.62	143.97	73.6	845.4	0.0	1,098.4
65.00		0.3750	52.728	62.312	21,578.1	23.03	140.61	74.3	806.0	0.0	1,072.9
70.00		0.3750	51.468	60.812	20,057.2	22.44	137.25	75.0	767.6	0.0	1,047.4
75.00		0.3750	50.208	59.312	18,609.5	21.84	133.89	75.7	730.0	0.0	1,021.9
76.00		0.3750	49.956	59.012	18,328.5	21.73	133.22	75.8	722.6	0.0	201.3
80.00		0.3750	48.948	57.812	17,233.1	21.25	130.53	76.4	693.4	0.0	795.1
85.00		0.3750	47.688	56.312	15,926.4	20.66	127.17	77.1	657.8	0.0	970.9
88.75	Bot - Section 3	0.3750	46.743	55.187	14,991.0	20.22	124.65	77.6	631.7	0.0	711.4
90.00		0.3750	46.428	54.813	14,687.5	20.07	123.81	77.8	623.1	0.0	471.7
94.75	Top - Section 2	0.3750	45.981	54.280	14,263.8	19.86	122.62	78.0	611.0	0.0	1,763.3
95.00		0.3750	45.918	54.205	14,204.8	19.83	122.45	78.1	609.3	0.0	46.1
100.0		0.3750	44.658	52.706	13,058.0	19.24	119.09	78.8	575.9	0.0	909.5
105.0		0.3750	43.398	51.206	11,974.7	18.64	115.73	79.5	543.5	0.0	884.0
110.0		0.3750	42.137	49.706	10,953.0	18.05	112.37	80.2	512.0	0.0	858.5
111.0		0.3750	41.885	49.406	10,755.9	17.93	111.69	80.3	505.8	0.0	168.6
113.0		0.3750	41.381	48.806	10,368.8	17.69	110.35	80.6	493.5	0.0	334.2
115.0		0.3750	40.877	48.206	9,991.2	17.46	109.01	80.9	481.4	0.0	330.1
116.0		0.3750	40.625	47.906	9,805.8	17.34	108.33	81.0	475.4	0.0	163.5
120.0		0.3750	39.617	46.706	9,087.3	16.86	105.65	81.6	451.8	0.0	643.9
125.0		0.3750	38.357	45.207	8,239.7	16.27	102.29	82.3	423.1	0.0	781.9
129.0	Bot - Section 4	0.3750	37.349	44.007	7,600.9	15.80	99.60	82.6	400.8	0.0	607.1
130.0		0.3750	37.097	43.707	7,446.5	15.68	98.93	82.6	395.4	0.0	250.4
133.7	Top - Section 3	0.2500	36.652	28.884	4,835.7	24.09	146.61	73.1	259.9	0.0	923.9
135.0		0.2500	36.337	28.634	4,711.2	23.87	145.35	73.3	255.4	0.0	122.3
140.0		0.2500	35.077	27.634	4,234.7	22.98	140.31	74.4	237.8	0.0	478.7
145.0		0.2500	33.817	26.634	3,791.5	22.09	135.27	75.4	220.8	0.0	461.7
146.0		0.2500	33.565	26.434	3,706.7	21.91	134.26	75.6	217.5	0.0	90.3
148.0		0.2500	33.061	26.034	3,541.0	21.55	132.24	76.0	211.0	0.0	178.5
150.0		0.2500	32.557	25.634	3,380.3	21.20	130.23	76.5	204.5	0.0	175.8
155.0		0.2500	31.296	24.634	3,000.0	20.31	125.19	77.5	188.8	0.0	427.6
158.0		0.2500	30.540	24.035	2,786.1	19.78	122.16	78.1	179.7	0.0	248.4
160.0		0.2500	30.036	23.635	2,649.3	19.42	120.15	78.6	173.7	0.0	162.2
165.0		0.2500	28.776	22.635	2,327.1	18.53	115.10	79.6	159.3	0.0	393.6
168.0		0.2500	28.020	22.035	2,146.9	18.00	112.08	80.2	150.9	0.0	228.0
169.0		0.2500	27.768	21.835	2,089.0	17.82	111.07	80.4	148.2	0.0	74.6
170.0		0.2500	27.516	21.635	2,032.1	17.64	110.06	80.6	145.5	0.0	74.0
175.0		0.2500	26.256	20.635	1,763.2	16.76	105.02	81.7	132.3	0.0	359.6
178.0		0.2500	25.500	20.035	1,613.8	16.22	102.00	82.3	124.7	0.0	207.6
											37,122.7

Load Case: 1.2D + 1.6W 101 mph with No Ice 24 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
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		284.7	0.0					0.0	0.0	284.7	0.0	0.0	0.0
5.00		564.0	1,907.7					0.0	199.4	564.0	2,107.2	0.0	0.0
10.00		553.4	1,872.0					0.0	199.4	553.4	2,071.5	0.0	0.0
15.00		542.8	1,836.3					0.0	199.4	542.8	2,035.7	0.0	0.0
20.00		532.2	1,800.6					0.0	199.4	532.2	2,000.0	0.0	0.0
25.00		521.6	1,764.8					0.0	199.4	521.6	1,964.3	0.0	0.0
30.00		517.1	1,729.1					0.0	199.4	517.1	1,928.6	0.0	0.0
35.00		523.1	1,693.4					0.0	199.4	523.1	1,892.8	0.0	0.0
40.00		464.7	1,657.7					0.0	199.4	464.7	1,857.1	0.0	0.0
43.75	Bot - Section 2	268.7	1,219.8					0.0	149.6	268.7	1,369.4	0.0	0.0
45.00		342.2	751.8					0.0	49.9	342.2	801.6	0.0	0.0
50.00		329.1	2,965.6					0.0	199.4	329.1	3,165.0	0.0	0.0
51.00	Top - Section 1	275.8	585.2					0.0	39.9	275.8	625.0	0.0	0.0
55.00		497.4	1,076.5					0.0	159.6	497.4	1,236.1	0.0	0.0
60.00		553.5	1,318.1					0.0	199.4	553.5	1,517.6	0.0	0.0
65.00		553.1	1,287.5					0.0	199.4	553.1	1,486.9	0.0	0.0
70.00		551.4	1,256.9					0.0	199.4	551.4	1,456.3	0.0	0.0
75.00		330.0	1,226.3					0.0	199.4	330.0	1,425.7	0.0	0.0
76.00	Appurtenance(s)	273.5	241.6	35.9	0.0	0.0	12.0	0.0	39.9	309.4	293.5	0.0	0.0
80.00		490.0	954.1					0.0	158.8	490.0	1,112.9	0.0	0.0
85.00		473.2	1,165.0					0.0	198.5	473.2	1,363.6	0.0	0.0
88.75	Bot - Section 3	269.8	853.7					0.0	148.9	269.8	1,002.6	0.0	0.0
90.00		324.7	566.0					0.0	49.6	324.7	615.6	0.0	0.0
94.75	Top - Section 2	270.1	2,115.9					0.0	188.6	270.1	2,304.6	0.0	0.0
95.00		280.2	55.4					0.0	9.9	280.2	65.3	0.0	0.0
100.00		529.9	1,091.4					0.0	198.5	529.9	1,289.9	0.0	0.0
105.00		522.1	1,060.8					0.0	198.5	522.1	1,259.3	0.0	0.0
110.00	Appurtenance(s)	310.3	1,030.1	862.3	0.0	0.0	900.0	0.0	198.5	1,172.6	2,128.7	0.0	0.0
111.00	Appurtenance(s)	153.4	202.4	699.3	0.0	0.0	127.2	0.0	39.7	852.6	369.3	0.0	0.0
113.00	Appurtenance(s)	203.4	401.0	656.8	0.0	0.0	66.0	0.0	77.8	860.2	544.9	0.0	0.0
115.00		151.7	396.1					0.0	76.2	151.7	472.4	0.0	0.0
116.00	Appurtenance(s)	250.1	196.2	540.2	0.0	0.0	36.0	0.0	38.1	790.3	270.4	0.0	0.0
120.00	Appurtenance(s)	444.8	772.7	615.5	0.0	0.0	132.0	0.0	150.9	1,060.3	1,055.6	0.0	0.0
125.00		437.5	938.3					0.0	184.7	437.5	1,123.0	0.0	0.0
129.00	Bot - Section 4	240.6	728.6					0.0	147.7	240.6	876.3	0.0	0.0
130.00		227.0	300.5					0.0	36.9	227.0	337.4	0.0	0.0
133.75	Top - Section 3	237.7	1,108.7					0.0	138.5	237.7	1,247.2	0.0	0.0
135.00		290.9	146.8					0.0	46.2	290.9	193.0	0.0	0.0
140.00		458.2	574.4					0.0	184.7	458.2	759.1	0.0	0.0
145.00		270.6	554.0					0.0	184.7	270.6	738.7	0.0	0.0
146.00	Appurtenance(s)	132.8	108.3	2,038.5	0.0	0.0	3,000.0	0.0	36.9	2,171.2	3,145.3	0.0	0.0
148.00	Appurtenance(s)	175.5	214.2	1,761.0	0.0	0.0	849.6	0.0	73.9	1,936.5	1,137.7	0.0	0.0
150.00		301.0	211.0					0.0	58.2	301.0	269.2	0.0	0.0
155.00		338.8	513.2					0.0	145.5	338.8	658.7	0.0	0.0
158.00	Appurtenance(s)	207.2	298.1	3,111.6	0.0	1,396.6	3,095.3	0.0	87.3	3,318.8	3,480.7	0.0	0.0
160.00		282.5	194.6					0.0	48.6	282.5	243.2	0.0	0.0
165.00		317.4	472.3					0.0	121.5	317.4	593.8	0.0	0.0
168.00	Appurtenance(s)	155.4	273.6	1,615.1	0.0	1,615.1	886.2	0.0	72.9	1,770.5	1,232.7	0.0	0.0

Load Case: 1.2D + 1.6W 101 mph with No Ice 24 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.20
Wind Load Factor :1.60

169.00	Appurtenance(s)	76.6	89.6	733.0	0.0	0.0	900.0	0.0	16.9	809.6	1,006.5	0.0	0.0
170.00		224.6	88.8					0.0	16.9	224.6	105.7	0.0	0.0
175.00		294.8	431.5					0.0	84.5	294.8	516.0	0.0	0.0
178.00	Appurtenance(s)	108.4	249.1	7,308.8	0.0	22,134.9	3,694.1	0.0	50.7	7,417.2	3,993.9	0.0	0.0
								Totals:		37,907.4	64,747.2	0.00	0.00

Load Case: 1.2D + 1.6W 101 mph with No Ice 24 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.20
Wind Load Factor :1.60

Calculated Forces1

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	-64.71	-37.69	0.00	-4,839.55	0.00	4,839.55	6,032.65	3,016.33	16,860.5	8,442.81	0.00	0.00	0.584
5.00	-62.52	-37.26	0.00	-4,651.09	0.00	4,651.09	5,970.50	2,985.25	16,375.2	8,199.81	0.07	-0.12	0.578
10.00	-60.37	-36.83	0.00	-4,464.78	0.00	4,464.78	5,906.46	2,953.23	15,891.4	7,957.52	0.26	-0.25	0.571
15.00	-58.25	-36.41	0.00	-4,280.62	0.00	4,280.62	5,840.54	2,920.27	15,409.2	7,716.10	0.59	-0.37	0.565
20.00	-56.18	-35.99	0.00	-4,098.57	0.00	4,098.57	5,772.74	2,886.37	14,929.1	7,475.68	1.05	-0.50	0.558
25.00	-54.14	-35.57	0.00	-3,918.62	0.00	3,918.62	5,703.06	2,851.53	14,451.3	7,236.42	1.65	-0.63	0.551
30.00	-52.13	-35.15	0.00	-3,740.76	0.00	3,740.76	5,631.49	2,815.75	13,976.1	6,998.46	2.38	-0.77	0.544
35.00	-50.17	-34.72	0.00	-3,564.99	0.00	3,564.99	5,558.05	2,779.02	13,503.8	6,761.96	3.26	-0.90	0.536
40.00	-48.24	-34.33	0.00	-3,391.38	0.00	3,391.38	5,482.72	2,741.36	13,034.7	6,527.05	4.28	-1.04	0.529
43.75	-46.84	-34.09	0.00	-3,262.65	0.00	3,262.65	5,424.99	2,712.50	12,685.1	6,352.01	5.13	-1.14	0.522
45.00	-45.99	-33.80	0.00	-3,220.04	0.00	3,220.04	5,405.52	2,702.76	12,569.1	6,293.89	5.44	-1.18	0.520
50.00	-42.79	-33.47	0.00	-3,051.02	0.00	3,051.02	5,326.43	2,663.21	12,107.2	6,062.63	6.75	-1.32	0.511
51.00	-42.13	-33.23	0.00	-3,017.56	0.00	3,017.56	4,331.58	2,165.79	9,957.52	4,986.16	7.03	-1.35	0.615
55.00	-40.82	-32.80	0.00	-2,884.64	0.00	2,884.64	4,286.21	2,143.11	9,674.28	4,844.33	8.21	-1.46	0.605
60.00	-39.23	-32.32	0.00	-2,720.63	0.00	2,720.63	4,227.81	2,113.90	9,321.84	4,667.85	9.82	-1.62	0.592
65.00	-37.67	-31.83	0.00	-2,559.04	0.00	2,559.04	4,167.52	2,083.76	8,971.44	4,492.39	11.61	-1.78	0.579
70.00	-36.14	-31.33	0.00	-2,399.90	0.00	2,399.90	4,105.35	2,052.68	8,623.38	4,318.10	13.57	-1.95	0.565
75.00	-34.68	-31.01	0.00	-2,243.24	0.00	2,243.24	4,041.30	2,020.65	8,277.95	4,145.13	15.70	-2.11	0.550
76.00	-34.35	-30.74	0.00	-2,212.23	0.00	2,212.23	4,028.27	2,014.13	8,209.21	4,110.71	16.14	-2.15	0.547
80.00	-33.18	-30.30	0.00	-2,089.26	0.00	2,089.26	3,975.37	1,987.69	7,935.46	3,973.63	18.00	-2.28	0.534
85.00	-31.76	-29.85	0.00	-1,937.77	0.00	1,937.77	3,907.56	1,953.78	7,596.19	3,803.74	20.48	-2.45	0.518
88.75	-30.73	-29.58	0.00	-1,825.84	0.00	1,825.84	3,855.46	1,927.73	7,344.03	3,677.47	22.45	-2.57	0.505
90.00	-30.07	-29.28	0.00	-1,788.86	0.00	1,788.86	3,837.86	1,918.93	7,260.44	3,635.61	23.13	-2.62	0.500
94.75	-27.74	-28.94	0.00	-1,649.77	0.00	1,649.77	3,812.68	1,906.34	7,142.21	3,576.41	25.81	-2.77	0.469
95.00	-27.65	-28.70	0.00	-1,642.54	0.00	1,642.54	3,809.11	1,904.56	7,125.59	3,568.09	25.96	-2.78	0.468
100.00	-26.31	-28.18	0.00	-1,499.03	0.00	1,499.03	3,736.78	1,868.39	6,795.28	3,402.69	28.95	-2.94	0.448
105.00	-25.01	-27.66	0.00	-1,358.14	0.00	1,358.14	3,662.56	1,831.28	6,469.20	3,239.41	32.12	-3.10	0.426
110.00	-22.90	-26.41	0.00	-1,219.84	0.00	1,219.84	3,586.46	1,793.23	6,147.63	3,078.39	35.44	-3.25	0.403
111.00	-22.56	-25.55	0.00	-1,193.44	0.00	1,193.44	3,571.01	1,785.51	6,083.89	3,046.47	36.12	-3.28	0.398
113.00	-22.04	-24.69	0.00	-1,142.33	0.00	1,142.33	3,539.90	1,769.95	5,956.99	2,982.92	37.51	-3.34	0.389
115.00	-21.56	-24.52	0.00	-1,092.96	0.00	1,092.96	3,508.48	1,754.24	5,830.89	2,919.78	38.92	-3.40	0.381
116.00	-21.31	-23.75	0.00	-1,068.43	0.00	1,068.43	3,492.66	1,746.33	5,768.14	2,888.36	39.64	-3.43	0.376
120.00	-20.26	-22.67	0.00	-973.44	0.00	973.44	3,428.62	1,714.31	5,519.25	2,763.73	42.56	-3.55	0.358
125.00	-19.12	-22.21	0.00	-860.09	0.00	860.09	3,346.87	1,673.44	5,213.02	2,610.39	46.36	-3.70	0.335
129.00	-18.24	-21.93	0.00	-771.26	0.00	771.26	3,269.48	1,634.74	4,956.00	2,481.68	49.50	-3.81	0.317
130.00	-17.89	-21.70	0.00	-749.33	0.00	749.33	3,247.19	1,623.60	4,888.33	2,447.80	50.30	-3.84	0.312
133.75	-16.64	-21.40	0.00	-667.94	0.00	667.94	1,899.47	949.74	2,843.96	1,424.09	53.36	-3.94	0.478
135.00	-16.42	-21.13	0.00	-641.19	0.00	641.19	1,889.77	944.89	2,804.78	1,404.47	54.39	-3.97	0.466
140.00	-15.64	-20.66	0.00	-535.55	0.00	535.55	1,849.78	924.89	2,648.90	1,326.42	58.65	-4.15	0.413
145.00	-14.89	-20.36	0.00	-432.23	0.00	432.23	1,807.91	903.95	2,494.59	1,249.15	63.08	-4.31	0.355
146.00	-11.90	-17.97	0.00	-411.86	0.00	411.86	1,799.31	899.65	2,463.95	1,233.81	63.98	-4.34	0.341
148.00	-10.90	-15.97	0.00	-375.92	0.00	375.92	1,781.88	890.94	2,402.89	1,203.23	65.82	-4.40	0.319
150.00	-10.63	-15.66	0.00	-343.99	0.00	343.99	1,764.15	882.08	2,342.16	1,172.82	67.67	-4.46	0.300

Load Case: 1.2D + 1.6W 101 mph with No Ice 24 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.20
Wind Load Factor :1.60

155.00	-9.97	-15.29	0.00	-265.68	0.00	265.68	1,718.52	859.26	2,191.90	1,097.58	72.41	-4.59	0.248
158.00	-6.76	-11.71	0.00	-218.42	0.00	218.42	1,690.24	845.12	2,102.91	1,053.02	75.32	-4.66	0.212
160.00	-6.53	-11.41	0.00	-195.00	0.00	195.00	1,671.00	835.50	2,044.10	1,023.57	77.28	-4.70	0.195
165.00	-5.95	-11.05	0.00	-137.94	0.00	137.94	1,621.61	810.80	1,899.05	950.94	82.25	-4.79	0.149
168.00	-4.86	-9.19	0.00	-103.16	0.00	103.16	1,591.06	795.53	1,813.47	908.08	85.27	-4.84	0.117
169.00	-3.93	-8.30	0.00	-93.97	0.00	93.97	1,580.73	790.37	1,785.20	893.93	86.28	-4.85	0.108
170.00	-3.84	-8.07	0.00	-85.67	0.00	85.67	1,570.33	785.16	1,757.06	879.84	87.30	-4.86	0.100
175.00	-3.34	-7.73	0.00	-45.33	0.00	45.33	1,517.17	758.58	1,618.41	810.41	92.41	-4.91	0.058
178.00	0.00	-7.42	0.00	-22.13	0.00	22.13	1,484.37	742.18	1,536.95	769.62	95.50	-4.92	0.029

Load Case: 0.9D + 1.6W — 101 mph with No Ice (Reduced DL) — 24 Iterations

Gust Response Factor :1.10 — Wind Importance Factor 1.00
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		284.7	0.0					0.0	0.0	284.7	0.0	0.0	0.0
5.00		564.0	1,430.8					0.0	149.6	564.0	1,580.4	0.0	0.0
10.00		553.4	1,404.0					0.0	149.6	553.4	1,553.6	0.0	0.0
15.00		542.8	1,377.2					0.0	149.6	542.8	1,526.8	0.0	0.0
20.00		532.2	1,350.4					0.0	149.6	532.2	1,500.0	0.0	0.0
25.00		521.6	1,323.6					0.0	149.6	521.6	1,473.2	0.0	0.0
30.00		517.1	1,296.8					0.0	149.6	517.1	1,446.4	0.0	0.0
35.00		523.1	1,270.0					0.0	149.6	523.1	1,419.6	0.0	0.0
40.00		464.7	1,243.3					0.0	149.6	464.7	1,392.8	0.0	0.0
43.75	Bot - Section 2	268.7	914.9					0.0	112.2	268.7	1,027.0	0.0	0.0
45.00		342.2	563.8					0.0	37.4	342.2	601.2	0.0	0.0
50.00		329.1	2,224.2					0.0	149.6	329.1	2,373.8	0.0	0.0
51.00	Top - Section 1	275.8	438.9					0.0	29.9	275.8	468.8	0.0	0.0
55.00		497.4	807.4					0.0	119.7	497.4	927.1	0.0	0.0
60.00		553.5	988.6					0.0	149.6	553.5	1,138.2	0.0	0.0
65.00		553.1	965.6					0.0	149.6	553.1	1,115.2	0.0	0.0
70.00		551.4	942.7					0.0	149.6	551.4	1,092.2	0.0	0.0
75.00		330.0	919.7					0.0	149.6	330.0	1,069.3	0.0	0.0
76.00	Appurtenance(s)	273.5	181.2	35.9	0.0	0.0	9.0	0.0	29.9	309.4	220.1	0.0	0.0
80.00		490.0	715.5					0.0	119.1	490.0	834.7	0.0	0.0
85.00		473.2	873.8					0.0	148.9	473.2	1,022.7	0.0	0.0
88.75	Bot - Section 3	269.8	640.3					0.0	111.7	269.8	751.9	0.0	0.0
90.00		324.7	424.5					0.0	37.2	324.7	461.7	0.0	0.0
94.75	Top - Section 2	270.1	1,587.0					0.0	141.5	270.1	1,728.4	0.0	0.0
95.00		280.2	41.5					0.0	7.4	280.2	49.0	0.0	0.0
100.00		529.9	818.5					0.0	148.9	529.9	967.4	0.0	0.0
105.00		522.1	795.6					0.0	148.9	522.1	944.5	0.0	0.0
110.00	Appurtenance(s)	310.3	772.6	862.3	0.0	0.0	675.0	0.0	148.9	1,172.6	1,596.5	0.0	0.0
111.00	Appurtenance(s)	153.4	151.8	699.3	0.0	0.0	95.4	0.0	29.8	852.6	276.9	0.0	0.0
113.00	Appurtenance(s)	203.4	300.8	656.8	0.0	0.0	49.5	0.0	58.4	860.2	408.6	0.0	0.0
115.00		151.7	297.1					0.0	57.2	151.7	354.3	0.0	0.0
116.00	Appurtenance(s)	250.1	147.2	540.2	0.0	0.0	27.0	0.0	28.6	790.3	202.8	0.0	0.0
120.00	Appurtenance(s)	444.8	579.5	615.5	0.0	0.0	99.0	0.0	113.2	1,060.3	791.7	0.0	0.0
125.00		437.5	703.7					0.0	138.5	437.5	842.2	0.0	0.0
129.00	Bot - Section 4	240.6	546.4					0.0	110.8	240.6	657.2	0.0	0.0
130.00		227.0	225.4					0.0	27.7	227.0	253.1	0.0	0.0
133.75	Top - Section 3	237.7	831.5					0.0	103.9	237.7	935.4	0.0	0.0
135.00		290.9	110.1					0.0	34.6	290.9	144.7	0.0	0.0
140.00		458.2	430.8					0.0	138.5	458.2	569.3	0.0	0.0
145.00		270.6	415.5					0.0	138.5	270.6	554.0	0.0	0.0
146.00	Appurtenance(s)	132.8	81.3	2,038.5	0.0	0.0	2,250.0	0.0	27.7	2,171.2	2,359.0	0.0	0.0
148.00	Appurtenance(s)	175.5	160.7	1,761.0	0.0	0.0	637.2	0.0	55.4	1,936.5	853.3	0.0	0.0
150.00		301.0	158.2					0.0	43.6	301.0	201.9	0.0	0.0
155.00		338.8	384.9					0.0	109.1	338.8	494.0	0.0	0.0
158.00	Appurtenance(s)	207.2	223.6	3,111.6	0.0	1,396.6	2,321.5	0.0	65.5	3,318.8	2,610.5	0.0	0.0
160.00		282.5	146.0					0.0	36.4	282.5	182.4	0.0	0.0
165.00		317.4	354.2					0.0	91.1	317.4	445.4	0.0	0.0
168.00	Appurtenance(s)	155.4	205.2	1,615.1	0.0	1,615.1	664.6	0.0	54.7	1,770.5	924.5	0.0	0.0

Load Case: 0.9D + 1.6W — 101 mph with No Ice (Reduced DL) — 24 Iterations

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

Wind Importance Factor 1.00

169.00	Appurtenance(s)	76.6	67.2	733.0	0.0	0.0	675.0	0.0	12.7	809.6	754.9	0.0	0.0
170.00		224.6	66.6					0.0	12.7	224.6	79.2	0.0	0.0
175.00		294.8	323.6					0.0	63.4	294.8	387.0	0.0	0.0
178.00	Appurtenance(s)	108.4	186.8	7,308.8	0.0	22,134.9	2,770.6	0.0	38.0	7,417.2	2,995.4	0.0	0.0
								Totals:		37,907.4	48,560.4	0.00	0.00

Load Case: 0.9D + 1.6W 101 mph with No Ice (Reduced DL) 24 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :0.90
Wind Load Factor :1.60

Calculated Forces1

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	-48.52	-37.67	0.00	-4,793.44	0.00	4,793.44	6,032.65	3,016.33	16,860.5	8,442.81	0.00	0.00	0.576
5.00	-46.86	-37.21	0.00	-4,605.07	0.00	4,605.07	5,970.50	2,985.25	16,375.2	8,199.81	0.07	-0.12	0.570
10.00	-45.23	-36.75	0.00	-4,419.03	0.00	4,419.03	5,906.46	2,953.23	15,891.4	7,957.52	0.26	-0.25	0.563
15.00	-43.62	-36.29	0.00	-4,235.29	0.00	4,235.29	5,840.54	2,920.27	15,409.2	7,716.10	0.58	-0.37	0.557
20.00	-42.05	-35.85	0.00	-4,053.82	0.00	4,053.82	5,772.74	2,886.37	14,929.1	7,475.68	1.04	-0.50	0.550
25.00	-40.50	-35.40	0.00	-3,874.59	0.00	3,874.59	5,703.06	2,851.53	14,451.3	7,236.42	1.63	-0.63	0.543
30.00	-38.98	-34.96	0.00	-3,697.59	0.00	3,697.59	5,631.49	2,815.75	13,976.1	6,998.46	2.36	-0.76	0.535
35.00	-37.49	-34.50	0.00	-3,522.81	0.00	3,522.81	5,558.05	2,779.02	13,503.8	6,761.96	3.23	-0.89	0.528
40.00	-36.03	-34.09	0.00	-3,350.31	0.00	3,350.31	5,482.72	2,741.36	13,034.7	6,527.05	4.23	-1.03	0.520
43.75	-34.97	-33.84	0.00	-3,222.48	0.00	3,222.48	5,424.99	2,712.50	12,685.1	6,352.01	5.08	-1.13	0.514
45.00	-34.32	-33.54	0.00	-3,180.18	0.00	3,180.18	5,405.52	2,702.76	12,569.1	6,293.89	5.38	-1.16	0.512
50.00	-31.91	-33.21	0.00	-3,012.48	0.00	3,012.48	5,326.43	2,663.21	12,107.2	6,062.63	6.68	-1.30	0.503
51.00	-31.41	-32.96	0.00	-2,979.27	0.00	2,979.27	4,331.58	2,165.79	9,957.52	4,986.16	6.95	-1.33	0.605
55.00	-30.41	-32.51	0.00	-2,847.44	0.00	2,847.44	4,286.21	2,143.11	9,674.28	4,844.33	8.12	-1.45	0.595
60.00	-29.20	-32.01	0.00	-2,684.89	0.00	2,684.89	4,227.81	2,113.90	9,321.84	4,667.85	9.72	-1.60	0.582
65.00	-28.02	-31.50	0.00	-2,524.84	0.00	2,524.84	4,167.52	2,083.76	8,971.44	4,492.39	11.48	-1.76	0.569
70.00	-26.85	-30.99	0.00	-2,367.33	0.00	2,367.33	4,105.35	2,052.68	8,623.38	4,318.10	13.42	-1.92	0.555
75.00	-25.75	-30.67	0.00	-2,212.38	0.00	2,212.38	4,041.30	2,020.65	8,277.95	4,145.13	15.52	-2.09	0.540
76.00	-25.49	-30.39	0.00	-2,181.71	0.00	2,181.71	4,028.27	2,014.13	8,209.21	4,110.71	15.96	-2.12	0.537
80.00	-24.60	-29.93	0.00	-2,060.16	0.00	2,060.16	3,975.37	1,987.69	7,935.46	3,973.63	17.79	-2.25	0.525
85.00	-23.52	-29.47	0.00	-1,910.51	0.00	1,910.51	3,907.56	1,953.78	7,596.19	3,803.74	20.24	-2.42	0.509
88.75	-22.74	-29.21	0.00	-1,799.98	0.00	1,799.98	3,855.46	1,927.73	7,344.03	3,677.47	22.19	-2.54	0.496
90.00	-22.24	-28.90	0.00	-1,763.47	0.00	1,763.47	3,837.86	1,918.93	7,260.44	3,635.61	22.86	-2.58	0.491
94.75	-20.49	-28.58	0.00	-1,626.20	0.00	1,626.20	3,812.68	1,906.34	7,142.21	3,576.41	25.51	-2.74	0.460
95.00	-20.41	-28.33	0.00	-1,619.06	0.00	1,619.06	3,809.11	1,904.56	7,125.59	3,568.09	25.65	-2.75	0.459
100.00	-19.40	-27.80	0.00	-1,477.43	0.00	1,477.43	3,736.78	1,868.39	6,795.28	3,402.69	28.61	-2.90	0.440
105.00	-18.41	-27.28	0.00	-1,338.42	0.00	1,338.42	3,662.56	1,831.28	6,469.20	3,239.41	31.74	-3.06	0.418
110.00	-16.84	-26.05	0.00	-1,202.03	0.00	1,202.03	3,586.46	1,793.23	6,147.63	3,078.39	35.02	-3.21	0.395
111.00	-16.59	-25.19	0.00	-1,175.98	0.00	1,175.98	3,571.01	1,785.51	6,083.89	3,046.47	35.69	-3.24	0.391
113.00	-16.21	-24.33	0.00	-1,125.59	0.00	1,125.59	3,539.90	1,769.95	5,956.99	2,982.92	37.06	-3.30	0.382
115.00	-15.84	-24.17	0.00	-1,076.93	0.00	1,076.93	3,508.48	1,754.24	5,830.89	2,919.78	38.46	-3.36	0.374
116.00	-15.66	-23.39	0.00	-1,052.76	0.00	1,052.76	3,492.66	1,746.33	5,768.14	2,888.36	39.16	-3.39	0.369
120.00	-14.88	-22.32	0.00	-959.21	0.00	959.21	3,428.62	1,714.31	5,519.25	2,763.73	42.05	-3.51	0.352
125.00	-14.02	-21.86	0.00	-847.62	0.00	847.62	3,346.87	1,673.44	5,213.02	2,610.39	45.80	-3.65	0.329
129.00	-13.35	-21.59	0.00	-760.19	0.00	760.19	3,269.48	1,634.74	4,956.00	2,481.68	48.90	-3.76	0.311
130.00	-13.09	-21.36	0.00	-738.60	0.00	738.60	3,247.19	1,623.60	4,888.33	2,447.80	49.69	-3.79	0.306
133.75	-12.15	-21.08	0.00	-658.48	0.00	658.48	1,899.47	949.74	2,843.96	1,424.09	52.70	-3.89	0.469
135.00	-11.98	-20.80	0.00	-632.13	0.00	632.13	1,889.77	944.89	2,804.78	1,404.47	53.73	-3.92	0.457
140.00	-11.39	-20.34	0.00	-528.13	0.00	528.13	1,849.78	924.89	2,648.90	1,326.42	57.92	-4.10	0.405
145.00	-10.82	-20.04	0.00	-426.45	0.00	426.45	1,807.91	903.95	2,494.59	1,249.15	62.30	-4.26	0.348
146.00	-8.62	-17.71	0.00	-406.40	0.00	406.40	1,799.31	899.65	2,463.95	1,233.81	63.19	-4.29	0.335
148.00	-7.90	-15.72	0.00	-370.98	0.00	370.98	1,781.88	890.94	2,402.89	1,203.23	65.00	-4.35	0.313
150.00	-7.69	-15.42	0.00	-339.54	0.00	339.54	1,764.15	882.08	2,342.16	1,172.82	66.83	-4.40	0.294

Load Case: 0.9D + 1.6W — 101 mph with No Ice (Reduced DL) — 24 Iterations

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

Wind Importance Factor 1.00

155.00	-7.20	-15.06	0.00	-262.43	0.00	262.43	1,718.52	859.26	2,191.90	1,097.58	71.51	-4.53	0.244
158.00	-4.85	-11.54	0.00	-215.87	0.00	215.87	1,690.24	845.12	2,102.91	1,053.02	74.38	-4.60	0.208
160.00	-4.68	-11.25	0.00	-192.78	0.00	192.78	1,671.00	835.50	2,044.10	1,023.57	76.31	-4.64	0.191
165.00	-4.25	-10.91	0.00	-136.51	0.00	136.51	1,621.61	810.80	1,899.05	950.94	81.22	-4.73	0.146
168.00	-3.47	-9.07	0.00	-102.18	0.00	102.18	1,591.06	795.53	1,813.47	908.08	84.20	-4.77	0.115
169.00	-2.79	-8.20	0.00	-93.11	0.00	93.11	1,580.73	790.37	1,785.20	893.93	85.20	-4.79	0.106
170.00	-2.72	-7.97	0.00	-84.91	0.00	84.91	1,570.33	785.16	1,757.06	879.84	86.20	-4.80	0.098
175.00	-2.36	-7.64	0.00	-45.07	0.00	45.07	1,517.17	758.58	1,618.41	810.41	91.25	-4.84	0.057
178.00	0.00	-7.42	0.00	-22.13	0.00	22.13	1,484.37	742.18	1,536.95	769.62	94.29	-4.86	0.029

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 24 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 :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		84.1	0.0					0.0	0.0	84.1	0.0	0.0	0.0
5.00		167.1	2,572.2					0.0	199.4	167.1	2,771.6	0.0	0.0
10.00		164.8	2,601.9					0.0	199.4	164.8	2,801.4	0.0	0.0
15.00		162.1	2,591.1					0.0	199.4	162.1	2,790.6	0.0	0.0
20.00		159.4	2,567.1					0.0	199.4	159.4	2,766.6	0.0	0.0
25.00		156.6	2,536.3					0.0	199.4	156.6	2,735.7	0.0	0.0
30.00		155.6	2,501.2					0.0	199.4	155.6	2,700.6	0.0	0.0
35.00		157.8	2,463.1					0.0	199.4	157.8	2,662.5	0.0	0.0
40.00		140.4	2,422.8					0.0	199.4	140.4	2,622.3	0.0	0.0
43.75	Bot - Section 2	81.3	1,791.2					0.0	149.6	81.3	1,940.7	0.0	0.0
45.00		103.7	944.8					0.0	49.9	103.7	994.6	0.0	0.0
50.00		99.7	3,726.7					0.0	199.4	99.7	3,926.1	0.0	0.0
51.00	Top - Section 1	83.7	737.7					0.0	39.9	83.7	777.6	0.0	0.0
55.00		151.2	1,679.1					0.0	159.6	151.2	1,838.6	0.0	0.0
60.00		168.6	2,061.0					0.0	199.4	168.6	2,260.4	0.0	0.0
65.00		168.9	2,020.0					0.0	199.4	168.9	2,219.4	0.0	0.0
70.00		168.8	1,978.3					0.0	199.4	168.8	2,177.7	0.0	0.0
75.00		101.2	1,936.0					0.0	199.4	101.2	2,135.4	0.0	0.0
76.00	Appurtenance(s)	84.0	383.4	10.4	0.0	0.0	40.0	0.0	39.9	94.4	463.3	0.0	0.0
80.00		150.8	1,512.4					0.0	158.8	150.8	1,671.2	0.0	0.0
85.00		145.9	1,849.7					0.0	198.5	145.9	2,048.3	0.0	0.0
88.75	Bot - Section 3	83.3	1,360.2					0.0	148.9	83.3	1,509.1	0.0	0.0
90.00		100.4	736.9					0.0	49.6	100.4	786.5	0.0	0.0
94.75	Top - Section 2	83.5	2,751.6					0.0	188.6	83.5	2,940.2	0.0	0.0
95.00		86.9	88.9					0.0	9.9	86.9	98.8	0.0	0.0
100.00		164.6	1,745.8					0.0	198.5	164.6	1,944.3	0.0	0.0
105.00		162.7	1,700.9					0.0	198.5	162.7	1,899.5	0.0	0.0
110.00	Appurtenance(s)	96.9	1,655.7	240.3	0.0	0.0	1,560.3	0.0	198.5	337.2	3,414.5	0.0	0.0
111.00	Appurtenance(s)	48.0	327.1	662.5	0.0	0.0	619.2	0.0	39.7	710.5	986.0	0.0	0.0
113.00	Appurtenance(s)	63.7	648.1	426.1	0.0	0.0	367.8	0.0	77.8	489.8	1,093.7	0.0	0.0
115.00		47.6	640.8					0.0	76.2	47.6	717.0	0.0	0.0
116.00	Appurtenance(s)	78.6	318.0	382.5	0.0	0.0	269.8	0.0	38.1	461.1	625.9	0.0	0.0
120.00	Appurtenance(s)	140.1	1,249.4	288.4	0.0	0.0	574.7	0.0	150.9	428.5	1,974.9	0.0	0.0
125.00		138.2	1,518.5					0.0	184.7	138.2	1,703.2	0.0	0.0
129.00	Bot - Section 4	76.1	1,182.9					0.0	147.7	76.1	1,330.7	0.0	0.0
130.00		72.0	415.0					0.0	36.9	72.0	452.0	0.0	0.0
133.75	Top - Section 3	75.4	1,528.8					0.0	138.5	75.4	1,667.3	0.0	0.0
135.00		92.7	286.0					0.0	46.2	92.7	332.2	0.0	0.0
140.00		146.4	1,114.3					0.0	184.7	146.4	1,299.0	0.0	0.0
145.00		86.7	1,077.7					0.0	184.7	86.7	1,262.3	0.0	0.0
146.00	Appurtenance(s)	42.7	212.6	517.9	0.0	0.0	4,866.3	0.0	36.9	560.6	5,115.8	0.0	0.0
148.00	Appurtenance(s)	56.5	420.0	363.5	0.0	0.0	2,528.5	0.0	73.9	420.0	3,022.4	0.0	0.0
150.00		97.2	414.1					0.0	58.2	97.2	472.3	0.0	0.0
155.00		109.8	1,003.8					0.0	145.5	109.8	1,149.3	0.0	0.0
158.00	Appurtenance(s)	67.4	586.7	817.4	0.0	307.1	5,899.4	0.0	87.3	884.7	6,573.4	0.0	0.0
160.00		92.3	384.4					0.0	48.6	92.3	433.0	0.0	0.0
165.00		104.0	929.3					0.0	121.5	104.0	1,050.8	0.0	0.0
168.00	Appurtenance(s)	51.1	541.8	363.0	0.0	363.0	2,816.6	0.0	72.9	414.1	3,431.3	0.0	0.0

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 24 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 :1.00
Wind Load Factor :1.00

169.00	Appurtenance(s)	25.3	178.3	241.3	0.0	0.0	1,597.5	0.0	16.9	266.5	1,792.7	0.0	0.0
170.00		74.4	176.8					0.0	16.9	74.4	193.7	0.0	0.0
175.00		98.0	854.1					0.0	84.5	98.0	938.7	0.0	0.0
178.00	Appurtenance(s)	36.2	496.6	2,771.5	0.0	11,598.4	9,279.5	0.0	50.7	2,807.6	9,826.8	0.0	0.0
								Totals:		12,639.2	104,342.	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 24 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 :1.00
Wind Load Factor :1.00

Calculated Forces1

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	-104.34	-12.59	0.00	-1,688.34	0.00	1,688.34	6,032.65	3,016.33	16,860.5	8,442.81	0.00	0.00	0.217
5.00	-101.56	-12.50	0.00	-1,625.37	0.00	1,625.37	5,970.50	2,985.25	16,375.2	8,199.81	0.02	-0.04	0.215
10.00	-98.75	-12.41	0.00	-1,562.86	0.00	1,562.86	5,906.46	2,953.23	15,891.4	7,957.52	0.09	-0.09	0.213
15.00	-95.95	-12.32	0.00	-1,500.80	0.00	1,500.80	5,840.54	2,920.27	15,409.2	7,716.10	0.21	-0.13	0.211
20.00	-93.17	-12.23	0.00	-1,439.21	0.00	1,439.21	5,772.74	2,886.37	14,929.1	7,475.68	0.37	-0.18	0.209
25.00	-90.42	-12.13	0.00	-1,378.08	0.00	1,378.08	5,703.06	2,851.53	14,451.3	7,236.42	0.58	-0.22	0.206
30.00	-87.72	-12.04	0.00	-1,317.42	0.00	1,317.42	5,631.49	2,815.75	13,976.1	6,998.46	0.83	-0.27	0.204
35.00	-85.04	-11.94	0.00	-1,257.23	0.00	1,257.23	5,558.05	2,779.02	13,503.8	6,761.96	1.14	-0.32	0.201
40.00	-82.41	-11.84	0.00	-1,197.55	0.00	1,197.55	5,482.72	2,741.36	13,034.7	6,527.05	1.50	-0.36	0.199
43.75	-80.47	-11.78	0.00	-1,153.14	0.00	1,153.14	5,424.99	2,712.50	12,685.1	6,352.01	1.80	-0.40	0.196
45.00	-79.47	-11.72	0.00	-1,138.41	0.00	1,138.41	5,405.52	2,702.76	12,569.1	6,293.89	1.91	-0.41	0.196
50.00	-75.54	-11.63	0.00	-1,079.84	0.00	1,079.84	5,326.43	2,663.21	12,107.2	6,062.63	2.37	-0.46	0.192
51.00	-74.75	-11.57	0.00	-1,068.21	0.00	1,068.21	4,331.58	2,165.79	9,957.52	4,986.16	2.47	-0.47	0.232
55.00	-72.91	-11.46	0.00	-1,021.94	0.00	1,021.94	4,286.21	2,143.11	9,674.28	4,844.33	2.88	-0.51	0.228
60.00	-70.64	-11.34	0.00	-964.62	0.00	964.62	4,227.81	2,113.90	9,321.84	4,667.85	3.45	-0.57	0.223
65.00	-68.41	-11.22	0.00	-907.91	0.00	907.91	4,167.52	2,083.76	8,971.44	4,492.39	4.08	-0.63	0.219
70.00	-66.22	-11.09	0.00	-851.81	0.00	851.81	4,105.35	2,052.68	8,623.38	4,318.10	4.77	-0.69	0.213
75.00	-64.08	-11.01	0.00	-796.34	0.00	796.34	4,041.30	2,020.65	8,277.95	4,145.13	5.52	-0.75	0.208
76.00	-63.61	-10.94	0.00	-785.33	0.00	785.33	4,028.27	2,014.13	8,209.21	4,110.71	5.68	-0.76	0.207
80.00	-61.93	-10.82	0.00	-741.58	0.00	741.58	3,975.37	1,987.69	7,935.46	3,973.63	6.33	-0.80	0.202
85.00	-59.88	-10.70	0.00	-687.47	0.00	687.47	3,907.56	1,953.78	7,596.19	3,803.74	7.21	-0.86	0.196
88.75	-58.37	-10.62	0.00	-647.34	0.00	647.34	3,855.46	1,927.73	7,344.03	3,677.47	7.90	-0.91	0.191
90.00	-57.57	-10.55	0.00	-634.06	0.00	634.06	3,837.86	1,918.93	7,260.44	3,635.61	8.14	-0.92	0.189
94.75	-54.63	-10.44	0.00	-583.96	0.00	583.96	3,812.68	1,906.34	7,142.21	3,576.41	9.09	-0.98	0.178
95.00	-54.53	-10.38	0.00	-581.35	0.00	581.35	3,809.11	1,904.56	7,125.59	3,568.09	9.14	-0.98	0.177
100.00	-52.58	-10.23	0.00	-529.44	0.00	529.44	3,736.78	1,868.39	6,795.28	3,402.69	10.20	-1.04	0.170
105.00	-50.67	-10.08	0.00	-478.27	0.00	478.27	3,662.56	1,831.28	6,469.20	3,239.41	11.32	-1.09	0.162
110.00	-47.26	-9.71	0.00	-427.85	0.00	427.85	3,586.46	1,793.23	6,147.63	3,078.39	12.49	-1.15	0.152
111.00	-46.28	-8.99	0.00	-418.14	0.00	418.14	3,571.01	1,785.51	6,083.89	3,046.47	12.73	-1.16	0.150
113.00	-45.20	-8.50	0.00	-400.16	0.00	400.16	3,539.90	1,769.95	5,956.99	2,982.92	13.22	-1.18	0.147
115.00	-44.48	-8.45	0.00	-383.17	0.00	383.17	3,508.48	1,754.24	5,830.89	2,919.78	13.72	-1.20	0.144
116.00	-43.86	-7.99	0.00	-374.73	0.00	374.73	3,492.66	1,746.33	5,768.14	2,888.36	13.98	-1.21	0.142
120.00	-41.89	-7.55	0.00	-342.77	0.00	342.77	3,428.62	1,714.31	5,519.25	2,763.73	15.01	-1.25	0.136
125.00	-40.18	-7.41	0.00	-305.00	0.00	305.00	3,346.87	1,673.44	5,213.02	2,610.39	16.35	-1.30	0.129
129.00	-38.85	-7.32	0.00	-275.36	0.00	275.36	3,269.48	1,634.74	4,956.00	2,481.68	17.46	-1.34	0.123
130.00	-38.40	-7.25	0.00	-268.04	0.00	268.04	3,247.19	1,623.60	4,888.33	2,447.80	17.74	-1.35	0.121
133.75	-36.73	-7.15	0.00	-240.84	0.00	240.84	1,899.47	949.74	2,843.96	1,424.09	18.82	-1.39	0.189
135.00	-36.40	-7.08	0.00	-231.90	0.00	231.90	1,889.77	944.89	2,804.78	1,404.47	19.19	-1.40	0.184
140.00	-35.09	-6.94	0.00	-196.51	0.00	196.51	1,849.78	924.89	2,648.90	1,326.42	20.69	-1.47	0.167
145.00	-33.83	-6.84	0.00	-161.83	0.00	161.83	1,807.91	903.95	2,494.59	1,249.15	22.26	-1.53	0.148
146.00	-28.73	-6.15	0.00	-154.99	0.00	154.99	1,799.31	899.65	2,463.95	1,233.81	22.58	-1.54	0.142
148.00	-25.72	-5.66	0.00	-142.70	0.00	142.70	1,781.88	890.94	2,402.89	1,203.23	23.24	-1.56	0.133
150.00	-25.24	-5.56	0.00	-131.38	0.00	131.38	1,764.15	882.08	2,342.16	1,172.82	23.89	-1.58	0.126

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 24 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 :1.00
Wind Load Factor :1.00

155.00	-24.09	-5.44	0.00	-103.57	0.00	103.57	1,718.52	859.26	2,191.90	1,097.58	25.58	-1.63	0.108
158.00	-17.55	-4.37	0.00	-86.95	0.00	86.95	1,690.24	845.12	2,102.91	1,053.02	26.62	-1.66	0.093
160.00	-17.11	-4.27	0.00	-78.21	0.00	78.21	1,671.00	835.50	2,044.10	1,023.57	27.32	-1.68	0.087
165.00	-16.07	-4.15	0.00	-56.84	0.00	56.84	1,621.61	810.80	1,899.05	950.94	29.10	-1.71	0.070
168.00	-12.65	-3.63	0.00	-44.04	0.00	44.04	1,591.06	795.53	1,813.47	908.08	30.18	-1.73	0.056
169.00	-10.86	-3.31	0.00	-40.41	0.00	40.41	1,580.73	790.37	1,785.20	893.93	30.54	-1.74	0.052
170.00	-10.67	-3.23	0.00	-37.10	0.00	37.10	1,570.33	785.16	1,757.06	879.84	30.91	-1.74	0.049
175.00	-9.74	-3.11	0.00	-20.93	0.00	20.93	1,517.17	758.58	1,618.41	810.41	32.75	-1.76	0.032
178.00	0.00	-2.81	0.00	-11.60	0.00	11.60	1,484.37	742.18	1,536.95	769.62	33.86	-1.77	0.015

Load Case: 1.0D + 1.0W Serviceability 60 mph 23 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
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		56.2	0.0					0.0	0.0	56.2	0.0	0.0	0.0
5.00		111.3	1,589.8					0.0	166.2	111.3	1,756.0	0.0	0.0
10.00		109.2	1,560.0					0.0	166.2	109.2	1,726.2	0.0	0.0
15.00		107.1	1,530.2					0.0	166.2	107.1	1,696.4	0.0	0.0
20.00		105.0	1,500.5					0.0	166.2	105.0	1,666.7	0.0	0.0
25.00		102.9	1,470.7					0.0	166.2	102.9	1,636.9	0.0	0.0
30.00		102.1	1,440.9					0.0	166.2	102.1	1,607.1	0.0	0.0
35.00		103.2	1,411.2					0.0	166.2	103.2	1,577.4	0.0	0.0
40.00		91.7	1,381.4					0.0	166.2	91.7	1,547.6	0.0	0.0
43.75	Bot - Section 2	53.0	1,016.5					0.0	124.7	53.0	1,141.2	0.0	0.0
45.00		67.5	626.5					0.0	41.6	67.5	668.0	0.0	0.0
50.00		64.9	2,471.3					0.0	166.2	64.9	2,637.5	0.0	0.0
51.00	Top - Section 1	54.4	487.6					0.0	33.2	54.4	520.9	0.0	0.0
55.00		98.2	897.1					0.0	133.0	98.2	1,030.1	0.0	0.0
60.00		109.2	1,098.4					0.0	166.2	109.2	1,264.6	0.0	0.0
65.00		109.2	1,072.9					0.0	166.2	109.2	1,239.1	0.0	0.0
70.00		108.8	1,047.4					0.0	166.2	108.8	1,213.6	0.0	0.0
75.00		65.1	1,021.9					0.0	166.2	65.1	1,188.1	0.0	0.0
76.00	Appurtenance(s)	54.0	201.3	7.1	0.0	0.0	10.0	0.0	33.2	61.1	244.6	0.0	0.0
80.00		96.7	795.1					0.0	132.4	96.7	927.4	0.0	0.0
85.00		93.4	970.9					0.0	165.5	93.4	1,136.3	0.0	0.0
88.75	Bot - Section 3	53.2	711.4					0.0	124.1	53.2	835.5	0.0	0.0
90.00		64.1	471.7					0.0	41.4	64.1	513.0	0.0	0.0
94.75	Top - Section 2	53.3	1,763.3					0.0	157.2	53.3	1,920.5	0.0	0.0
95.00		55.3	46.1					0.0	8.3	55.3	54.4	0.0	0.0
100.00		104.6	909.5					0.0	165.5	104.6	1,074.9	0.0	0.0
105.00		103.0	884.0					0.0	165.5	103.0	1,049.4	0.0	0.0
110.00	Appurtenance(s)	61.2	858.5	170.2	0.0	0.0	750.0	0.0	165.5	231.4	1,773.9	0.0	0.0
111.00	Appurtenance(s)	30.3	168.6	138.0	0.0	0.0	106.0	0.0	33.1	168.3	307.7	0.0	0.0
113.00	Appurtenance(s)	40.1	334.2	129.6	0.0	0.0	55.0	0.0	64.9	169.8	454.1	0.0	0.0
115.00		29.9	330.1					0.0	63.5	29.9	393.7	0.0	0.0
116.00	Appurtenance(s)	49.3	163.5	106.6	0.0	0.0	30.0	0.0	31.8	156.0	225.3	0.0	0.0
120.00	Appurtenance(s)	87.8	643.9	121.5	0.0	0.0	110.0	0.0	125.8	209.2	879.7	0.0	0.0
125.00		86.3	781.9					0.0	153.9	86.3	935.8	0.0	0.0
129.00	Bot - Section 4	47.5	607.1					0.0	123.1	47.5	730.3	0.0	0.0
130.00		44.8	250.4					0.0	30.8	44.8	281.2	0.0	0.0
133.75	Top - Section 3	46.9	923.9					0.0	115.4	46.9	1,039.3	0.0	0.0
135.00		57.4	122.3					0.0	38.5	57.4	160.8	0.0	0.0
140.00		90.4	478.7					0.0	153.9	90.4	632.6	0.0	0.0
145.00		53.4	461.7					0.0	153.9	53.4	615.6	0.0	0.0
146.00	Appurtenance(s)	26.2	90.3	402.3	0.0	0.0	2,500.0	0.0	30.8	428.5	2,621.1	0.0	0.0
148.00	Appurtenance(s)	34.6	178.5	347.5	0.0	0.0	708.0	0.0	61.6	382.2	948.1	0.0	0.0
150.00		59.4	175.8					0.0	48.5	59.4	224.3	0.0	0.0
155.00		66.9	427.6					0.0	121.3	66.9	548.9	0.0	0.0
158.00	Appurtenance(s)	40.9	248.4	614.1	0.0	275.6	2,579.4	0.0	72.8	655.0	2,900.6	0.0	0.0
160.00		55.8	162.2					0.0	40.5	55.8	202.7	0.0	0.0
165.00		62.6	393.6					0.0	101.3	62.6	494.9	0.0	0.0
168.00	Appurtenance(s)	30.7	228.0	318.7	0.0	318.7	738.5	0.0	60.8	349.4	1,027.3	0.0	0.0

Load Case: 1.0D + 1.0W Serviceability 60 mph 23 Iterations

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

169.00	Appurtenance(s)	15.1	74.6	144.7	0.0	0.0	750.0	0.0	14.1	159.8	838.7	0.0	0.0
170.00		44.3	74.0					0.0	14.1	44.3	88.0	0.0	0.0
175.00		58.2	359.6					0.0	70.5	58.2	430.0	0.0	0.0
178.00	Appurtenance(s)	21.4	207.6	1,442.4	0.0	4,368.3	3,078.4	0.0	42.3	1,463.8	3,328.3	0.0	0.0
								Totals:		7,481.00	53,956.0	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 23 Iterations

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

Calculated Forces1

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	-53.95	-7.44	0.00	-949.79	0.00	949.79	6,032.65	3,016.33	16,860.5	8,442.81	0.00	0.00	0.121
5.00	-52.20	-7.35	0.00	-912.62	0.00	912.62	5,970.50	2,985.25	16,375.2	8,199.81	0.01	-0.02	0.120
10.00	-50.47	-7.26	0.00	-875.89	0.00	875.89	5,906.46	2,953.23	15,891.4	7,957.52	0.05	-0.05	0.119
15.00	-48.77	-7.17	0.00	-839.60	0.00	839.60	5,840.54	2,920.27	15,409.2	7,716.10	0.12	-0.07	0.117
20.00	-47.10	-7.08	0.00	-803.75	0.00	803.75	5,772.74	2,886.37	14,929.1	7,475.68	0.21	-0.10	0.116
25.00	-45.46	-7.00	0.00	-768.33	0.00	768.33	5,703.06	2,851.53	14,451.3	7,236.42	0.32	-0.12	0.114
30.00	-43.85	-6.91	0.00	-733.35	0.00	733.35	5,631.49	2,815.75	13,976.1	6,998.46	0.47	-0.15	0.113
35.00	-42.27	-6.82	0.00	-698.79	0.00	698.79	5,558.05	2,779.02	13,503.8	6,761.96	0.64	-0.18	0.111
40.00	-40.72	-6.74	0.00	-664.67	0.00	664.67	5,482.72	2,741.36	13,034.7	6,527.05	0.84	-0.20	0.109
43.75	-39.57	-6.70	0.00	-639.38	0.00	639.38	5,424.99	2,712.50	12,685.1	6,352.01	1.01	-0.22	0.108
45.00	-38.90	-6.64	0.00	-631.01	0.00	631.01	5,405.52	2,702.76	12,569.1	6,293.89	1.07	-0.23	0.107
50.00	-36.27	-6.57	0.00	-597.82	0.00	597.82	5,326.43	2,663.21	12,107.2	6,062.63	1.32	-0.26	0.105
51.00	-35.74	-6.52	0.00	-591.25	0.00	591.25	4,331.58	2,165.79	9,957.52	4,986.16	1.38	-0.26	0.127
55.00	-34.71	-6.44	0.00	-565.16	0.00	565.16	4,286.21	2,143.11	9,674.28	4,844.33	1.61	-0.29	0.125
60.00	-33.44	-6.34	0.00	-532.98	0.00	532.98	4,227.81	2,113.90	9,321.84	4,667.85	1.93	-0.32	0.122
65.00	-32.20	-6.24	0.00	-501.28	0.00	501.28	4,167.52	2,083.76	8,971.44	4,492.39	2.28	-0.35	0.119
70.00	-30.98	-6.14	0.00	-470.07	0.00	470.07	4,105.35	2,052.68	8,623.38	4,318.10	2.66	-0.38	0.116
75.00	-29.80	-6.08	0.00	-439.37	0.00	439.37	4,041.30	2,020.65	8,277.95	4,145.13	3.08	-0.41	0.113
76.00	-29.55	-6.02	0.00	-433.29	0.00	433.29	4,028.27	2,014.13	8,209.21	4,110.71	3.17	-0.42	0.113
80.00	-28.62	-5.94	0.00	-409.19	0.00	409.19	3,975.37	1,987.69	7,935.46	3,973.63	3.53	-0.45	0.110
85.00	-27.48	-5.85	0.00	-379.52	0.00	379.52	3,907.56	1,953.78	7,596.19	3,803.74	4.02	-0.48	0.107
88.75	-26.64	-5.79	0.00	-357.59	0.00	357.59	3,855.46	1,927.73	7,344.03	3,677.47	4.40	-0.50	0.104
90.00	-26.13	-5.73	0.00	-350.35	0.00	350.35	3,837.86	1,918.93	7,260.44	3,635.61	4.53	-0.51	0.103
94.75	-24.21	-5.67	0.00	-323.12	0.00	323.12	3,812.68	1,906.34	7,142.21	3,576.41	5.06	-0.54	0.097
95.00	-24.15	-5.62	0.00	-321.70	0.00	321.70	3,809.11	1,904.56	7,125.59	3,568.09	5.09	-0.55	0.097
100.00	-23.08	-5.52	0.00	-293.59	0.00	293.59	3,736.78	1,868.39	6,795.28	3,402.69	5.68	-0.58	0.092
105.00	-22.03	-5.42	0.00	-266.00	0.00	266.00	3,662.56	1,831.28	6,469.20	3,239.41	6.30	-0.61	0.088
110.00	-20.25	-5.17	0.00	-238.93	0.00	238.93	3,586.46	1,793.23	6,147.63	3,078.39	6.95	-0.64	0.083
111.00	-19.95	-5.00	0.00	-233.75	0.00	233.75	3,571.01	1,785.51	6,083.89	3,046.47	7.08	-0.64	0.082
113.00	-19.49	-4.83	0.00	-223.75	0.00	223.75	3,539.90	1,769.95	5,956.99	2,982.92	7.35	-0.65	0.081
115.00	-19.10	-4.80	0.00	-214.08	0.00	214.08	3,508.48	1,754.24	5,830.89	2,919.78	7.63	-0.67	0.079
116.00	-18.87	-4.65	0.00	-209.28	0.00	209.28	3,492.66	1,746.33	5,768.14	2,888.36	7.77	-0.67	0.078
120.00	-17.99	-4.44	0.00	-190.69	0.00	190.69	3,428.62	1,714.31	5,519.25	2,763.73	8.35	-0.70	0.074
125.00	-17.06	-4.35	0.00	-168.52	0.00	168.52	3,346.87	1,673.44	5,213.02	2,610.39	9.09	-0.72	0.070
129.00	-16.33	-4.29	0.00	-151.14	0.00	151.14	3,269.48	1,634.74	4,956.00	2,481.68	9.71	-0.75	0.066
130.00	-16.05	-4.25	0.00	-146.85	0.00	146.85	3,247.19	1,623.60	4,888.33	2,447.80	9.86	-0.75	0.065
133.75	-15.01	-4.19	0.00	-130.92	0.00	130.92	1,899.47	949.74	2,843.96	1,424.09	10.46	-0.77	0.100
135.00	-14.84	-4.14	0.00	-125.68	0.00	125.68	1,889.77	944.89	2,804.78	1,404.47	10.66	-0.78	0.097
140.00	-14.21	-4.05	0.00	-105.00	0.00	105.00	1,849.78	924.89	2,648.90	1,326.42	11.50	-0.81	0.087
145.00	-13.60	-3.99	0.00	-84.78	0.00	84.78	1,807.91	903.95	2,494.59	1,249.15	12.37	-0.84	0.075
146.00	-10.98	-3.52	0.00	-80.79	0.00	80.79	1,799.31	899.65	2,463.95	1,233.81	12.55	-0.85	0.072
148.00	-10.04	-3.13	0.00	-73.75	0.00	73.75	1,781.88	890.94	2,402.89	1,203.23	12.91	-0.86	0.067
150.00	-9.81	-3.07	0.00	-67.49	0.00	67.49	1,764.15	882.08	2,342.16	1,172.82	13.27	-0.87	0.063

Load Case: 1.0D + 1.0W Serviceability 60 mph 23 Iterations

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

155.00	-9.26	-3.00	0.00	-52.15	0.00	52.15	1,718.52	859.26	2,191.90	1,097.58	14.20	-0.90	0.053
158.00	-6.37	-2.30	0.00	-42.89	0.00	42.89	1,690.24	845.12	2,102.91	1,053.02	14.77	-0.91	0.045
160.00	-6.17	-2.24	0.00	-38.30	0.00	38.30	1,671.00	835.50	2,044.10	1,023.57	15.15	-0.92	0.041
165.00	-5.68	-2.17	0.00	-27.11	0.00	27.11	1,621.61	810.80	1,899.05	950.94	16.13	-0.94	0.032
168.00	-4.66	-1.80	0.00	-20.28	0.00	20.28	1,591.06	795.53	1,813.47	908.08	16.72	-0.95	0.025
169.00	-3.82	-1.63	0.00	-18.48	0.00	18.48	1,580.73	790.37	1,785.20	893.93	16.92	-0.95	0.023
170.00	-3.73	-1.58	0.00	-16.85	0.00	16.85	1,570.33	785.16	1,757.06	879.84	17.12	-0.95	0.022
175.00	-3.30	-1.52	0.00	-8.93	0.00	8.93	1,517.17	758.58	1,618.41	810.41	18.12	-0.96	0.013
178.00	0.00	-1.46	0.00	-4.37	0.00	4.37	1,484.37	742.18	1,536.95	769.62	18.73	-0.96	0.006

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.17	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
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}):	0.18	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	2.30	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	1.90	
Total Unfactored Dead Load:	53.96	k
Seismic Base Shear (E):	2.10	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)
51	176.50	250	4,613	0.013	27	309
50	172.50	430	7,601	0.021	44	532
49	169.50	88	1,505	0.004	9	109
48	168.50	89	1,500	0.004	9	110
47	166.50	289	4,772	0.013	28	357
46	162.50	495	7,809	0.022	46	612
45	159.00	203	3,069	0.009	18	251
44	156.50	321	4,719	0.013	28	397
43	152.50	549	7,677	0.021	45	679
42	149.00	224	3,002	0.008	18	277
41	147.00	240	3,132	0.009	18	297
40	145.50	121	1,549	0.004	9	150
39	142.50	616	7,570	0.021	44	761
38	137.50	633	7,269	0.020	43	782
37	134.38	161	1,769	0.005	10	199
36	131.88	1,039	11,032	0.031	65	1,286
35	129.50	281	2,884	0.008	17	348
34	127.00	730	7,216	0.020	42	903
33	122.50	936	8,635	0.024	51	1,157
32	118.00	770	6,615	0.018	39	952
31	115.50	195	1,612	0.004	9	242
30	114.00	394	3,169	0.009	19	487
29	112.00	399	3,106	0.009	18	494

28	110.50	202	1,530	0.004	9	250
27	107.50	1,024	7,373	0.021	43	1,266
26	102.50	1,049	6,903	0.019	40	1,298
25	97.50	1,075	6,430	0.018	38	1,330
24	94.88	54	309	0.001	2	67
23	92.38	1,920	10,369	0.029	61	2,375
22	89.38	513	2,602	0.007	15	635
21	86.88	835	4,015	0.011	23	1,033
20	82.50	1,136	4,950	0.014	29	1,405
19	78.00	927	3,632	0.010	21	1,147
18	75.50	235	863	0.002	5	290
17	72.50	1,188	4,049	0.011	24	1,470
16	67.50	1,214	3,611	0.010	21	1,501
15	62.50	1,239	3,186	0.009	19	1,533
14	57.50	1,265	2,775	0.008	16	1,564
13	53.00	1,030	1,937	0.005	11	1,274
12	50.50	521	893	0.002	5	644
11	47.50	2,638	4,027	0.011	24	3,262
10	44.38	668	896	0.002	5	826
9	41.88	1,141	1,372	0.004	8	1,412
8	37.50	1,548	1,508	0.004	9	1,914
7	32.50	1,577	1,172	0.003	7	1,951
6	27.50	1,607	869	0.002	5	1,988
5	22.50	1,637	605	0.002	4	2,025
4	17.50	1,667	382	0.001	2	2,062
3	12.50	1,696	205	0.001	1	2,098
2	7.50	1,726	79	0.000	0	2,135
1	2.50	1,756	10	0.000	0	2,172
RFS FD9R6004/2C-3L	178.00	16	293	0.001	2	19
Alcatel-Lucent RRH2X	178.00	129	2,420	0.007	14	160
Alcatel-Lucent RRH2X	178.00	132	2,476	0.007	14	163
RFS DB-T1-6Z-8AB-0Z	178.00	88	1,651	0.005	10	109
Generic 20' Omni	178.00	55	1,032	0.003	6	68
Generic 18' Dipole	178.00	110	2,064	0.006	12	136
Generic 2' x 4' Rect	178.00	40	750	0.002	4	49
Commscope LNX-8513DS	178.00	118	2,206	0.006	13	145
Commscope LNX-6514DS	178.00	116	2,184	0.006	13	144
Commscope HBXX-6517D	178.00	245	4,593	0.013	27	303
Generic 8' Yagi	178.00	30	563	0.002	3	37
Flat Platform w/ Han	178.00	2,000	37,521	0.104	220	2,474
Round T-Arm	169.00	750	12,750	0.035	75	928
Powerwave Allgon LGP	168.00	85	1,422	0.004	8	105
Raycap DC6-48-60-18-	168.00	20	336	0.001	2	25
Ericsson RRU11	168.00	383	6,445	0.018	38	474
Powerwave Allgon 777	168.00	105	1,765	0.005	10	130
KMW AM-X-CD-16-65-00	168.00	146	2,446	0.007	14	180
Alcatel-Lucent 2X50W	158.00	159	2,379	0.007	14	197
Alcatel-Lucent 1900M	158.00	180	2,693	0.007	16	223
Alcatel-Lucent 800 M	158.00	185	2,774	0.008	16	229
Alcatel-Lucent TD-RR	158.00	210	3,142	0.009	18	260
RFS APXVSPP18-C-A20	158.00	171	2,558	0.007	15	212
Commscope DT465B-2XR	158.00	174	2,603	0.007	15	215
Round Low Profile Pl	158.00	1,500	22,441	0.062	131	1,855
Ericsson KRY 112 489	148.00	46	610	0.002	4	57
Ericsson Radio 4449	148.00	222	2,934	0.008	17	275
RFS APXV18-209014-C-	148.00	56	741	0.002	4	69
RFS APXVAARR24_43-U-	148.00	384	5,070	0.014	30	475
Generic Flat Platfor	146.00	2,500	32,193	0.090	188	3,092
Generic 18' Dipole	120.00	110	976	0.003	6	136
Generic 8' Yagi	116.00	30	250	0.001	1	37
Generic 9' Omni	113.00	25	198	0.001	1	31
Generic 8' Yagi	113.00	30	237	0.001	1	37
Generic 2' x 4' Rect	111.00	40	306	0.001	2	49
Generic 22' Dipole	111.00	66	505	0.001	3	82

Flat T-Arm	110.00	750	5,641	0.016	33	928
Generic GPS	76.00	10	37	0.000	0	12
		53,956	359,584	1.000	2,104	66,739

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)
51	176.50	250	4,613	0.013	27	216
50	172.50	430	7,601	0.021	44	371
49	169.50	88	1,505	0.004	9	76
48	168.50	89	1,500	0.004	9	77
47	166.50	289	4,772	0.013	28	249
46	162.50	495	7,809	0.022	46	427
45	159.00	203	3,069	0.009	18	175
44	156.50	321	4,719	0.013	28	277
43	152.50	549	7,677	0.021	45	474
42	149.00	224	3,002	0.008	18	194
41	147.00	240	3,132	0.009	18	207
40	145.50	121	1,549	0.004	9	104
39	142.50	616	7,570	0.021	44	531
38	137.50	633	7,269	0.020	43	546
37	134.38	161	1,769	0.005	10	139
36	131.88	1,039	11,032	0.031	65	897
35	129.50	281	2,884	0.008	17	243
34	127.00	730	7,216	0.020	42	630
33	122.50	936	8,635	0.024	51	808
32	118.00	770	6,615	0.018	39	664
31	115.50	195	1,612	0.004	9	169
30	114.00	394	3,169	0.009	19	340
29	112.00	399	3,106	0.009	18	344
28	110.50	202	1,530	0.004	9	174
27	107.50	1,024	7,373	0.021	43	884
26	102.50	1,049	6,903	0.019	40	906
25	97.50	1,075	6,430	0.018	38	928
24	94.88	54	309	0.001	2	47
23	92.38	1,920	10,369	0.029	61	1,658
22	89.38	513	2,602	0.007	15	443
21	86.88	835	4,015	0.011	23	721
20	82.50	1,136	4,950	0.014	29	981
19	78.00	927	3,632	0.010	21	800
18	75.50	235	863	0.002	5	202
17	72.50	1,188	4,049	0.011	24	1,025
16	67.50	1,214	3,611	0.010	21	1,047
15	62.50	1,239	3,186	0.009	19	1,069
14	57.50	1,265	2,775	0.008	16	1,091
13	53.00	1,030	1,937	0.005	11	889
12	50.50	521	893	0.002	5	450
11	47.50	2,638	4,027	0.011	24	2,276
10	44.38	668	896	0.002	5	577
9	41.88	1,141	1,372	0.004	8	985
8	37.50	1,548	1,508	0.004	9	1,336
7	32.50	1,577	1,172	0.003	7	1,361
6	27.50	1,607	869	0.002	5	1,387
5	22.50	1,637	605	0.002	4	1,413
4	17.50	1,667	382	0.001	2	1,438
3	12.50	1,696	205	0.001	1	1,464
2	7.50	1,726	79	0.000	0	1,490
1	2.50	1,756	10	0.000	0	1,516
RFS FD9R6004/2C-3L	178.00	16	293	0.001	2	13

Alcatel-Lucent RRH2X	178.00	129	2,420	0.007	14	111
Alcatel-Lucent RRH2X	178.00	132	2,476	0.007	14	114
RFS DB-T1-6Z-8AB-0Z	178.00	88	1,651	0.005	10	76
Generic 20' Omni	178.00	55	1,032	0.003	6	47
Generic 18' Dipole	178.00	110	2,064	0.006	12	95
Generic 2' x 4' Rect	178.00	40	750	0.002	4	35
Commscope LNX-8513DS	178.00	118	2,206	0.006	13	101
Commscope LNX-6514DS	178.00	116	2,184	0.006	13	100
Commscope HBXX-6517D	178.00	245	4,593	0.013	27	211
Generic 8' Yagi	178.00	30	563	0.002	3	26
Flat Platform w/ Han	178.00	2,000	37,521	0.104	220	1,726
Round T-Arm	169.00	750	12,750	0.035	75	647
Powerwave Allgon LGP	168.00	85	1,422	0.004	8	73
Raycap DC6-48-60-18-	168.00	20	336	0.001	2	17
Ericsson RRU11	168.00	383	6,445	0.018	38	331
Powerwave Allgon 777	168.00	105	1,765	0.005	10	91
KMW AM-X-CD-16-65-00	168.00	146	2,446	0.007	14	126
Alcatel-Lucent 2X50W	158.00	159	2,379	0.007	14	137
Alcatel-Lucent 1900M	158.00	180	2,693	0.007	16	155
Alcatel-Lucent 800 M	158.00	185	2,774	0.008	16	160
Alcatel-Lucent TD-RR	158.00	210	3,142	0.009	18	181
RFS APXVSPP18-C-A20	158.00	171	2,558	0.007	15	148
Commscope DT465B-2XR	158.00	174	2,603	0.007	15	150
Round Low Profile Pl	158.00	1,500	22,441	0.062	131	1,295
Ericsson KRY 112 489	148.00	46	610	0.002	4	40
Ericsson Radio 4449	148.00	222	2,934	0.008	17	192
RFS APXV18-209014-C-	148.00	56	741	0.002	4	48
RFS APXVAARR24_43-U-	148.00	384	5,070	0.014	30	331
Generic Flat Platfor	146.00	2,500	32,193	0.090	188	2,158
Generic 18' Dipole	120.00	110	976	0.003	6	95
Generic 8' Yagi	116.00	30	250	0.001	1	26
Generic 9' Omni	113.00	25	198	0.001	1	22
Generic 8' Yagi	113.00	30	237	0.001	1	26
Generic 2' x 4' Rect	111.00	40	306	0.001	2	35
Generic 22' Dipole	111.00	66	505	0.001	3	57
Flat T-Arm	110.00	750	5,641	0.016	33	647
Generic GPS	76.00	10	37	0.000	0	9
		53,956	359,584	1.000	2,104	46,569

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	-64.57	-2.11	0.00	-299.73	0.00	299.73	6,032.65	3,016.33	16,860.5	8,442.81	0.00	0.00	0.046
5.00	-62.43	-2.12	0.00	-289.20	0.00	289.20	5,970.50	2,985.25	16,375.2	8,199.81	0.00	-0.01	0.046
10.00	-60.33	-2.12	0.00	-278.62	0.00	278.62	5,906.46	2,953.23	15,891.4	7,957.52	0.02	-0.02	0.045
15.00	-58.27	-2.13	0.00	-268.01	0.00	268.01	5,840.54	2,920.27	15,409.2	7,716.10	0.04	-0.02	0.045
20.00	-56.25	-2.13	0.00	-257.37	0.00	257.37	5,772.74	2,886.37	14,929.1	7,475.68	0.07	-0.03	0.044
25.00	-54.26	-2.13	0.00	-246.72	0.00	246.72	5,703.06	2,851.53	14,451.3	7,236.42	0.10	-0.04	0.044
30.00	-52.31	-2.13	0.00	-236.06	0.00	236.06	5,631.49	2,815.75	13,976.1	6,998.46	0.15	-0.05	0.043
35.00	-50.39	-2.13	0.00	-225.40	0.00	225.40	5,558.05	2,779.02	13,503.8	6,761.96	0.20	-0.06	0.042
40.00	-48.98	-2.13	0.00	-214.75	0.00	214.75	5,482.72	2,741.36	13,034.7	6,527.05	0.27	-0.07	0.042
43.75	-48.15	-2.12	0.00	-206.78	0.00	206.78	5,424.99	2,712.50	12,685.1	6,352.01	0.32	-0.07	0.041
45.00	-44.89	-2.10	0.00	-204.13	0.00	204.13	5,405.52	2,702.76	12,569.1	6,293.89	0.34	-0.07	0.041
50.00	-44.25	-2.10	0.00	-193.63	0.00	193.63	5,326.43	2,663.21	12,107.2	6,062.63	0.42	-0.08	0.040
51.00	-42.97	-2.09	0.00	-191.53	0.00	191.53	4,331.58	2,165.79	9,957.52	4,986.16	0.44	-0.08	0.048
55.00	-41.41	-2.08	0.00	-183.18	0.00	183.18	4,286.21	2,143.11	9,674.28	4,844.33	0.51	-0.09	0.047
60.00	-39.87	-2.06	0.00	-172.80	0.00	172.80	4,227.81	2,113.90	9,321.84	4,667.85	0.62	-0.10	0.046
65.00	-38.37	-2.04	0.00	-162.49	0.00	162.49	4,167.52	2,083.76	8,971.44	4,492.39	0.73	-0.11	0.045
70.00	-36.90	-2.02	0.00	-152.27	0.00	152.27	4,105.35	2,052.68	8,623.38	4,318.10	0.85	-0.12	0.044
75.00	-36.61	-2.02	0.00	-142.15	0.00	142.15	4,041.30	2,020.65	8,277.95	4,145.13	0.99	-0.13	0.043
76.00	-35.45	-2.00	0.00	-140.12	0.00	140.12	4,028.27	2,014.13	8,209.21	4,110.71	1.01	-0.14	0.043
80.00	-34.05	-1.98	0.00	-132.11	0.00	132.11	3,975.37	1,987.69	7,935.46	3,973.63	1.13	-0.14	0.042
85.00	-33.01	-1.95	0.00	-122.24	0.00	122.24	3,907.56	1,953.78	7,596.19	3,803.74	1.29	-0.15	0.041
88.75	-32.38	-1.94	0.00	-114.91	0.00	114.91	3,855.46	1,927.73	7,344.03	3,677.47	1.41	-0.16	0.040
90.00	-30.00	-1.88	0.00	-112.48	0.00	112.48	3,837.86	1,918.93	7,260.44	3,635.61	1.46	-0.17	0.039
94.75	-29.94	-1.88	0.00	-103.57	0.00	103.57	3,812.68	1,906.34	7,142.21	3,576.41	1.63	-0.18	0.037
95.00	-28.61	-1.84	0.00	-103.10	0.00	103.10	3,809.11	1,904.56	7,125.59	3,568.09	1.63	-0.18	0.036
100.00	-27.31	-1.80	0.00	-93.91	0.00	93.91	3,736.78	1,868.39	6,795.28	3,402.69	1.82	-0.19	0.035
105.00	-26.04	-1.76	0.00	-84.92	0.00	84.92	3,662.56	1,831.28	6,469.20	3,239.41	2.02	-0.20	0.033
110.00	-24.86	-1.71	0.00	-76.14	0.00	76.14	3,586.46	1,793.23	6,147.63	3,078.39	2.23	-0.20	0.032
111.00	-24.24	-1.69	0.00	-74.43	0.00	74.43	3,571.01	1,785.51	6,083.89	3,046.47	2.28	-0.21	0.031
113.00	-23.68	-1.67	0.00	-71.06	0.00	71.06	3,539.90	1,769.95	5,956.99	2,982.92	2.36	-0.21	0.031
115.00	-23.44	-1.66	0.00	-67.72	0.00	67.72	3,508.48	1,754.24	5,830.89	2,919.78	2.45	-0.21	0.030
116.00	-22.45	-1.62	0.00	-66.07	0.00	66.07	3,492.66	1,746.33	5,768.14	2,888.36	2.50	-0.22	0.029
120.00	-21.16	-1.56	0.00	-59.61	0.00	59.61	3,428.62	1,714.31	5,519.25	2,763.73	2.68	-0.22	0.028
125.00	-20.26	-1.51	0.00	-51.82	0.00	51.82	3,346.87	1,673.44	5,213.02	2,610.39	2.92	-0.23	0.026
129.00	-19.91	-1.50	0.00	-45.77	0.00	45.77	3,269.48	1,634.74	4,956.00	2,481.68	3.12	-0.24	0.025
130.00	-18.62	-1.43	0.00	-44.27	0.00	44.27	3,247.19	1,623.60	4,888.33	2,447.80	3.17	-0.24	0.024
133.75	-18.43	-1.42	0.00	-38.92	0.00	38.92	1,899.47	949.74	2,843.96	1,424.09	3.36	-0.25	0.037
135.00	-17.64	-1.37	0.00	-37.14	0.00	37.14	1,889.77	944.89	2,804.78	1,404.47	3.42	-0.25	0.036
140.00	-16.88	-1.33	0.00	-30.27	0.00	30.27	1,849.78	924.89	2,648.90	1,326.42	3.69	-0.26	0.032
145.00	-16.73	-1.32	0.00	-23.62	0.00	23.62	1,807.91	903.95	2,494.59	1,249.15	3.97	-0.27	0.028
146.00	-13.34	-1.10	0.00	-22.30	0.00	22.30	1,799.31	899.65	2,463.95	1,233.81	4.02	-0.27	0.025
148.00	-12.19	-1.02	0.00	-20.10	0.00	20.10	1,781.88	890.94	2,402.89	1,203.23	4.14	-0.27	0.024
150.00	-11.51	-0.98	0.00	-18.06	0.00	18.06	1,764.15	882.08	2,342.16	1,172.82	4.25	-0.28	0.022
155.00	-11.11	-0.95	0.00	-13.18	0.00	13.18	1,718.52	859.26	2,191.90	1,097.58	4.54	-0.28	0.018
158.00	-7.67	-0.69	0.00	-10.34	0.00	10.34	1,690.24	845.12	2,102.91	1,053.02	4.72	-0.29	0.014
160.00	-7.06	-0.64	0.00	-8.97	0.00	8.97	1,671.00	835.50	2,044.10	1,023.57	4.84	-0.29	0.013
165.00	-6.71	-0.61	0.00	-5.78	0.00	5.78	1,621.61	810.80	1,899.05	950.94	5.15	-0.29	0.010

168.00	-5.68	-0.52	0.00	-3.96	0.00	3.96	1,591.06	795.53	1,813.47	908.08	5.33	-0.29	0.008
169.00	-4.65	-0.43	0.00	-3.44	0.00	3.44	1,580.73	790.37	1,785.20	893.93	5.39	-0.29	0.007
170.00	-4.11	-0.39	0.00	-3.00	0.00	3.00	1,570.33	785.16	1,757.06	879.84	5.45	-0.29	0.006
175.00	-3.81	-0.36	0.00	-1.07	0.00	1.07	1,517.17	758.58	1,618.41	810.41	5.76	-0.30	0.004
178.00	0.00	-0.34	0.00	0.00	0.00	0.00	1,484.37	742.18	1,536.95	769.62	5.95	-0.30	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	-45.05	-2.11	0.00	-296.29	0.00	296.29	6,032.65	3,016.33	16,860.5	8,442.81	0.00	0.00	0.043
5.00	-43.56	-2.11	0.00	-285.76	0.00	285.76	5,970.50	2,985.25	16,375.2	8,199.81	0.00	-0.01	0.042
10.00	-42.10	-2.12	0.00	-275.20	0.00	275.20	5,906.46	2,953.23	15,891.4	7,957.52	0.02	-0.02	0.042
15.00	-40.66	-2.12	0.00	-264.62	0.00	264.62	5,840.54	2,920.27	15,409.2	7,716.10	0.04	-0.02	0.041
20.00	-39.25	-2.12	0.00	-254.03	0.00	254.03	5,772.74	2,886.37	14,929.1	7,475.68	0.06	-0.03	0.041
25.00	-37.86	-2.12	0.00	-243.43	0.00	243.43	5,703.06	2,851.53	14,451.3	7,236.42	0.10	-0.04	0.040
30.00	-36.50	-2.12	0.00	-232.83	0.00	232.83	5,631.49	2,815.75	13,976.1	6,998.46	0.15	-0.05	0.040
35.00	-35.16	-2.11	0.00	-222.24	0.00	222.24	5,558.05	2,779.02	13,503.8	6,761.96	0.20	-0.06	0.039
40.00	-34.18	-2.11	0.00	-211.68	0.00	211.68	5,482.72	2,741.36	13,034.7	6,527.05	0.26	-0.06	0.039
43.75	-33.60	-2.10	0.00	-203.78	0.00	203.78	5,424.99	2,712.50	12,685.1	6,352.01	0.32	-0.07	0.038
45.00	-31.32	-2.08	0.00	-201.15	0.00	201.15	5,405.52	2,702.76	12,569.1	6,293.89	0.34	-0.07	0.038
50.00	-30.87	-2.08	0.00	-190.75	0.00	190.75	5,326.43	2,663.21	12,107.2	6,062.63	0.42	-0.08	0.037
51.00	-29.98	-2.07	0.00	-188.67	0.00	188.67	4,331.58	2,165.79	9,957.52	4,986.16	0.43	-0.08	0.045
55.00	-28.89	-2.05	0.00	-180.40	0.00	180.40	4,286.21	2,143.11	9,674.28	4,844.33	0.51	-0.09	0.044
60.00	-27.82	-2.04	0.00	-170.13	0.00	170.13	4,227.81	2,113.90	9,321.84	4,667.85	0.61	-0.10	0.043
65.00	-26.77	-2.02	0.00	-159.94	0.00	159.94	4,167.52	2,083.76	8,971.44	4,492.39	0.72	-0.11	0.042
70.00	-25.75	-2.00	0.00	-149.84	0.00	149.84	4,105.35	2,052.68	8,623.38	4,318.10	0.84	-0.12	0.041
75.00	-25.55	-2.00	0.00	-139.84	0.00	139.84	4,041.30	2,020.65	8,277.95	4,145.13	0.97	-0.13	0.040
76.00	-24.74	-1.98	0.00	-137.85	0.00	137.85	4,028.27	2,014.13	8,209.21	4,110.71	1.00	-0.13	0.040
80.00	-23.76	-1.95	0.00	-129.95	0.00	129.95	3,975.37	1,987.69	7,935.46	3,973.63	1.12	-0.14	0.039
85.00	-23.04	-1.93	0.00	-120.21	0.00	120.21	3,907.56	1,953.78	7,596.19	3,803.74	1.27	-0.15	0.037
88.75	-22.59	-1.91	0.00	-112.99	0.00	112.99	3,855.46	1,927.73	7,344.03	3,677.47	1.39	-0.16	0.037
90.00	-20.93	-1.85	0.00	-110.60	0.00	110.60	3,837.86	1,918.93	7,260.44	3,635.61	1.44	-0.16	0.036
94.75	-20.89	-1.85	0.00	-101.82	0.00	101.82	3,812.68	1,906.34	7,142.21	3,576.41	1.60	-0.17	0.034
95.00	-19.96	-1.81	0.00	-101.35	0.00	101.35	3,809.11	1,904.56	7,125.59	3,568.09	1.61	-0.17	0.034
100.00	-19.05	-1.77	0.00	-92.30	0.00	92.30	3,736.78	1,868.39	6,795.28	3,402.69	1.80	-0.18	0.032
105.00	-18.17	-1.73	0.00	-83.46	0.00	83.46	3,662.56	1,831.28	6,469.20	3,239.41	1.99	-0.19	0.031
110.00	-17.35	-1.68	0.00	-74.82	0.00	74.82	3,586.46	1,793.23	6,147.63	3,078.39	2.20	-0.20	0.029
111.00	-16.91	-1.66	0.00	-73.14	0.00	73.14	3,571.01	1,785.51	6,083.89	3,046.47	2.24	-0.20	0.029
113.00	-16.53	-1.64	0.00	-69.82	0.00	69.82	3,539.90	1,769.95	5,956.99	2,982.92	2.33	-0.21	0.028
115.00	-16.36	-1.63	0.00	-66.54	0.00	66.54	3,508.48	1,754.24	5,830.89	2,919.78	2.42	-0.21	0.027
116.00	-15.67	-1.59	0.00	-64.91	0.00	64.91	3,492.66	1,746.33	5,768.14	2,888.36	2.46	-0.21	0.027
120.00	-14.76	-1.53	0.00	-58.56	0.00	58.56	3,428.62	1,714.31	5,519.25	2,763.73	2.64	-0.22	0.025
125.00	-14.13	-1.49	0.00	-50.91	0.00	50.91	3,346.87	1,673.44	5,213.02	2,610.39	2.88	-0.23	0.024
129.00	-13.89	-1.47	0.00	-44.95	0.00	44.95	3,269.48	1,634.74	4,956.00	2,481.68	3.07	-0.24	0.022
130.00	-12.99	-1.40	0.00	-43.48	0.00	43.48	3,247.19	1,623.60	4,888.33	2,447.80	3.12	-0.24	0.022
133.75	-12.86	-1.39	0.00	-38.22	0.00	38.22	1,899.47	949.74	2,843.96	1,424.09	3.31	-0.24	0.034
135.00	-12.31	-1.35	0.00	-36.48	0.00	36.48	1,889.77	944.89	2,804.78	1,404.47	3.38	-0.24	0.032
140.00	-11.78	-1.31	0.00	-29.73	0.00	29.73	1,849.78	924.89	2,648.90	1,326.42	3.64	-0.25	0.029
145.00	-11.67	-1.30	0.00	-23.20	0.00	23.20	1,807.91	903.95	2,494.59	1,249.15	3.91	-0.26	0.025
146.00	-9.31	-1.08	0.00	-21.91	0.00	21.91	1,799.31	899.65	2,463.95	1,233.81	3.96	-0.27	0.023
148.00	-8.50	-1.00	0.00	-19.75	0.00	19.75	1,781.88	890.94	2,402.89	1,203.23	4.08	-0.27	0.021
150.00	-8.03	-0.96	0.00	-17.74	0.00	17.74	1,764.15	882.08	2,342.16	1,172.82	4.19	-0.27	0.020
155.00	-7.75	-0.93	0.00	-12.95	0.00	12.95	1,718.52	859.26	2,191.90	1,097.58	4.48	-0.28	0.016
158.00	-5.35	-0.67	0.00	-10.16	0.00	10.16	1,690.24	845.12	2,102.91	1,053.02	4.65	-0.28	0.013
160.00	-4.93	-0.63	0.00	-8.82	0.00	8.82	1,671.00	835.50	2,044.10	1,023.57	4.77	-0.28	0.012
165.00	-4.68	-0.60	0.00	-5.68	0.00	5.68	1,621.61	810.80	1,899.05	950.94	5.07	-0.29	0.009

168.00	-3.96	-0.51	0.00	-3.89	0.00	3.89	1,591.06	795.53	1,813.47	908.08	5.25	-0.29	0.007
169.00	-3.24	-0.43	0.00	-3.38	0.00	3.38	1,580.73	790.37	1,785.20	893.93	5.31	-0.29	0.006
170.00	-2.87	-0.38	0.00	-2.95	0.00	2.95	1,570.33	785.16	1,757.06	879.84	5.37	-0.29	0.005
175.00	-2.66	-0.35	0.00	-1.05	0.00	1.05	1,517.17	758.58	1,618.41	810.41	5.68	-0.29	0.003
178.00	0.00	-0.34	0.00	0.00	0.00	0.00	1,484.37	742.18	1,536.95	769.62	5.86	-0.29	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):	0.17
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
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}):	0.18
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.30
Redundancy Factor (p):	1.30

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)
51	176.50	250	1.858	1.817	1.081	0.332	72	309
50	172.50	430	1.775	1.427	0.935	0.283	105	532
49	169.50	88	1.714	1.175	0.836	0.248	19	109
48	168.50	89	1.694	1.098	0.805	0.237	18	110
47	166.50	289	1.654	0.954	0.745	0.216	54	357
46	162.50	495	1.575	0.704	0.637	0.175	75	612
45	159.00	203	1.508	0.521	0.552	0.143	25	251
44	156.50	321	1.461	0.410	0.498	0.122	34	397
43	152.50	549	1.387	0.260	0.419	0.090	43	679
42	149.00	224	1.324	0.156	0.358	0.066	13	277
41	147.00	240	1.289	0.106	0.326	0.053	11	297
40	145.50	121	1.263	0.072	0.304	0.044	5	150
39	142.50	616	1.211	0.016	0.263	0.027	14	761
38	137.50	633	1.128	-0.053	0.204	0.003	2	782
37	134.38	161	1.077	-0.082	0.173	-0.009	-1	199
36	131.88	1,039	1.037	-0.099	0.151	-0.017	-15	1,286
35	129.50	281	1.000	-0.110	0.132	-0.024	-6	348
34	127.00	730	0.962	-0.117	0.113	-0.029	-18	903
33	122.50	936	0.895	-0.122	0.085	-0.036	-29	1,157
32	118.00	770	0.831	-0.117	0.063	-0.038	-26	952
31	115.50	195	0.796	-0.111	0.053	-0.038	-6	242
30	114.00	394	0.775	-0.107	0.047	-0.037	-13	487
29	112.00	399	0.748	-0.100	0.040	-0.036	-12	494
28	110.50	202	0.728	-0.095	0.036	-0.034	-6	250
27	107.50	1,024	0.689	-0.084	0.028	-0.029	-26	1,266
26	102.50	1,049	0.627	-0.063	0.018	-0.019	-18	1,298
25	97.50	1,075	0.567	-0.041	0.011	-0.007	-7	1,330
24	94.88	54	0.537	-0.030	0.009	0.000	0	67
23	92.38	1,920	0.509	-0.019	0.007	0.006	10	2,375
22	89.38	513	0.476	-0.008	0.006	0.014	6	635
21	86.88	835	0.450	0.002	0.006	0.020	14	1,033
20	82.50	1,136	0.406	0.016	0.006	0.029	28	1,405
19	78.00	927	0.363	0.029	0.008	0.036	29	1,147
18	75.50	235	0.340	0.035	0.009	0.039	8	290

17	72.50	1,188	0.314	0.042	0.011	0.043	44	1,470
16	67.50	1,214	0.272	0.051	0.015	0.046	49	1,501
15	62.50	1,239	0.233	0.058	0.019	0.048	52	1,533
14	57.50	1,265	0.197	0.063	0.024	0.049	53	1,564
13	53.00	1,030	0.168	0.066	0.028	0.049	43	1,274
12	50.50	521	0.152	0.068	0.030	0.048	22	644
11	47.50	2,638	0.135	0.069	0.032	0.048	109	3,262
10	44.38	668	0.117	0.070	0.035	0.047	27	826
9	41.88	1,141	0.105	0.071	0.037	0.047	46	1,412
8	37.50	1,548	0.084	0.071	0.039	0.046	61	1,914
7	32.50	1,577	0.063	0.072	0.041	0.045	61	1,951
6	27.50	1,607	0.045	0.071	0.042	0.043	61	1,988
5	22.50	1,637	0.030	0.068	0.041	0.042	59	2,025
4	17.50	1,667	0.018	0.063	0.037	0.039	56	2,062
3	12.50	1,696	0.009	0.054	0.031	0.034	50	2,098
2	7.50	1,726	0.003	0.039	0.022	0.026	39	2,135
1	2.50	1,756	0.000	0.016	0.008	0.011	17	2,172
RFS FD9R6004/2C-3L	178.00	16	1.890	1.980	1.140	0.352	5	19
Alcatel-Lucent RRH2X	178.00	129	1.890	1.980	1.140	0.352	39	160
Alcatel-Lucent RRH2X	178.00	132	1.890	1.980	1.140	0.352	40	163
RFS DB-T1-6Z-8AB-0Z	178.00	88	1.890	1.980	1.140	0.352	27	109
Generic 20' Omni	178.00	55	1.890	1.980	1.140	0.352	17	68
Generic 18' Dipole	178.00	110	1.890	1.980	1.140	0.352	34	136
Generic 2' x 4' Rect	178.00	40	1.890	1.980	1.140	0.352	12	49
Commscope LNX-	178.00	118	1.890	1.980	1.140	0.352	36	145
Commscope LNX-	178.00	116	1.890	1.980	1.140	0.352	35	144
Commscope HBXX-	178.00	245	1.890	1.980	1.140	0.352	75	303
Generic 8' Yagi	178.00	30	1.890	1.980	1.140	0.352	9	37
Flat Platform w/ Han	178.00	2,000	1.890	1.980	1.140	0.352	610	2,474
Round T-Arm	169.00	750	1.704	1.136	0.820	0.243	158	928
Powerwave Allgon LGP	168.00	85	1.684	1.061	0.790	0.232	17	105
Raycap DC6-48-60-18-	168.00	20	1.684	1.061	0.790	0.232	4	25
Ericsson RRU11	168.00	383	1.684	1.061	0.790	0.232	77	474
Powerwave Allgon 777	168.00	105	1.684	1.061	0.790	0.232	21	130
KMW AM-X-CD-16-65-00	168.00	146	1.684	1.061	0.790	0.232	29	180
Alcatel-Lucent 2X50W	158.00	159	1.489	0.475	0.530	0.134	18	197
Alcatel-Lucent 1900M	158.00	180	1.489	0.475	0.530	0.134	21	223
Alcatel-Lucent 800 M	158.00	185	1.489	0.475	0.530	0.134	22	229
Alcatel-Lucent TD-RR	158.00	210	1.489	0.475	0.530	0.134	24	260
RFS APXVSPP18-C-A20	158.00	171	1.489	0.475	0.530	0.134	20	212
Commscope DT465B-	158.00	174	1.489	0.475	0.530	0.134	20	215
Round Low Profile Pl	158.00	1,500	1.489	0.475	0.530	0.134	174	1,855
Ericsson KRY 112 489	148.00	46	1.307	0.130	0.342	0.059	2	57
Ericsson Radio 4449	148.00	222	1.307	0.130	0.342	0.059	11	275
RFS APXV18-209014-C-	148.00	56	1.307	0.130	0.342	0.059	3	69
RFS APXVAARR24_43-U-	148.00	384	1.307	0.130	0.342	0.059	20	475
Generic Flat Platfor	146.00	2,500	1.272	0.083	0.312	0.047	101	3,092
Generic 18' Dipole	120.00	110	0.859	-0.120	0.072	-0.038	-4	136
Generic 8' Yagi	116.00	30	0.803	-0.112	0.055	-0.038	-1	37
Generic 9' Omni	113.00	25	0.762	-0.104	0.044	-0.037	-1	31
Generic 8' Yagi	113.00	30	0.762	-0.104	0.044	-0.037	-1	37
Generic 2' x 4' Rect	111.00	40	0.735	-0.097	0.037	-0.035	-1	49
Generic 22' Dipole	111.00	66	0.735	-0.097	0.037	-0.035	-2	82
Flat T-Arm	110.00	750	0.722	-0.093	0.034	-0.033	-22	928
Generic GPS	76.00	10	0.345	0.034	0.009	0.039	0	12
		53,956	92.047	41.887	33.626	9.169	2,904	66,739

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)
51	176.50	250	1.858	1.817	1.081	0.332	72	216
50	172.50	430	1.775	1.427	0.935	0.283	105	371
49	169.50	88	1.714	1.175	0.836	0.248	19	76
48	168.50	89	1.694	1.098	0.805	0.237	18	77
47	166.50	289	1.654	0.954	0.745	0.216	54	249
46	162.50	495	1.575	0.704	0.637	0.175	75	427
45	159.00	203	1.508	0.521	0.552	0.143	25	175
44	156.50	321	1.461	0.410	0.498	0.122	34	277
43	152.50	549	1.387	0.260	0.419	0.090	43	474
42	149.00	224	1.324	0.156	0.358	0.066	13	194
41	147.00	240	1.289	0.106	0.326	0.053	11	207
40	145.50	121	1.263	0.072	0.304	0.044	5	104
39	142.50	616	1.211	0.016	0.263	0.027	14	531
38	137.50	633	1.128	-0.053	0.204	0.003	2	546
37	134.38	161	1.077	-0.082	0.173	-0.009	-1	139
36	131.88	1,039	1.037	-0.099	0.151	-0.017	-15	897
35	129.50	281	1.000	-0.110	0.132	-0.024	-6	243
34	127.00	730	0.962	-0.117	0.113	-0.029	-18	630
33	122.50	936	0.895	-0.122	0.085	-0.036	-29	808
32	118.00	770	0.831	-0.117	0.063	-0.038	-26	664
31	115.50	195	0.796	-0.111	0.053	-0.038	-6	169
30	114.00	394	0.775	-0.107	0.047	-0.037	-13	340
29	112.00	399	0.748	-0.100	0.040	-0.036	-12	344
28	110.50	202	0.728	-0.095	0.036	-0.034	-6	174
27	107.50	1,024	0.689	-0.084	0.028	-0.029	-26	884
26	102.50	1,049	0.627	-0.063	0.018	-0.019	-18	906
25	97.50	1,075	0.567	-0.041	0.011	-0.007	-7	928
24	94.88	54	0.537	-0.030	0.009	0.000	0	47
23	92.38	1,920	0.509	-0.019	0.007	0.006	10	1,658
22	89.38	513	0.476	-0.008	0.006	0.014	6	443
21	86.88	835	0.450	0.002	0.006	0.020	14	721
20	82.50	1,136	0.406	0.016	0.006	0.029	28	981
19	78.00	927	0.363	0.029	0.008	0.036	29	800
18	75.50	235	0.340	0.035	0.009	0.039	8	202
17	72.50	1,188	0.314	0.042	0.011	0.043	44	1,025
16	67.50	1,214	0.272	0.051	0.015	0.046	49	1,047
15	62.50	1,239	0.233	0.058	0.019	0.048	52	1,069
14	57.50	1,265	0.197	0.063	0.024	0.049	53	1,091
13	53.00	1,030	0.168	0.066	0.028	0.049	43	889
12	50.50	521	0.152	0.068	0.030	0.048	22	450
11	47.50	2,638	0.135	0.069	0.032	0.048	109	2,276
10	44.38	668	0.117	0.070	0.035	0.047	27	577
9	41.88	1,141	0.105	0.071	0.037	0.047	46	985
8	37.50	1,548	0.084	0.071	0.039	0.046	61	1,336
7	32.50	1,577	0.063	0.072	0.041	0.045	61	1,361
6	27.50	1,607	0.045	0.071	0.042	0.043	61	1,387
5	22.50	1,637	0.030	0.068	0.041	0.042	59	1,413
4	17.50	1,667	0.018	0.063	0.037	0.039	56	1,438
3	12.50	1,696	0.009	0.054	0.031	0.034	50	1,464
2	7.50	1,726	0.003	0.039	0.022	0.026	39	1,490
1	2.50	1,756	0.000	0.016	0.008	0.011	17	1,516
RFS FD9R6004/2C-3L	178.00	16	1.890	1.980	1.140	0.352	5	13
Alcatel-Lucent RRH2X	178.00	129	1.890	1.980	1.140	0.352	39	111
Alcatel-Lucent RRH2X	178.00	132	1.890	1.980	1.140	0.352	40	114
RFS DB-T1-6Z-8AB-0Z	178.00	88	1.890	1.980	1.140	0.352	27	76
Generic 20' Omni	178.00	55	1.890	1.980	1.140	0.352	17	47

Generic 18' Dipole	178.00	110	1.890	1.980	1.140	0.352	34	95
Generic 2' x 4' Rect	178.00	40	1.890	1.980	1.140	0.352	12	35
Commscope LNX-	178.00	118	1.890	1.980	1.140	0.352	36	101
Commscope LNX-	178.00	116	1.890	1.980	1.140	0.352	35	100
Commscope HBXX-	178.00	245	1.890	1.980	1.140	0.352	75	211
Generic 8' Yagi	178.00	30	1.890	1.980	1.140	0.352	9	26
Flat Platform w/ Han	178.00	2,000	1.890	1.980	1.140	0.352	610	1,726
Round T-Arm	169.00	750	1.704	1.136	0.820	0.243	158	647
Powerwave Allgon LGP	168.00	85	1.684	1.061	0.790	0.232	17	73
Raycap DC6-48-60-18-	168.00	20	1.684	1.061	0.790	0.232	4	17
Ericsson RRU11	168.00	383	1.684	1.061	0.790	0.232	77	331
Powerwave Allgon 777	168.00	105	1.684	1.061	0.790	0.232	21	91
KMW AM-X-CD-16-65-00	168.00	146	1.684	1.061	0.790	0.232	29	126
Alcatel-Lucent 2X50W	158.00	159	1.489	0.475	0.530	0.134	18	137
Alcatel-Lucent 1900M	158.00	180	1.489	0.475	0.530	0.134	21	155
Alcatel-Lucent 800 M	158.00	185	1.489	0.475	0.530	0.134	22	160
Alcatel-Lucent TD-RR	158.00	210	1.489	0.475	0.530	0.134	24	181
RFS APXVSPP18-C-A20	158.00	171	1.489	0.475	0.530	0.134	20	148
Commscope DT465B-	158.00	174	1.489	0.475	0.530	0.134	20	150
Round Low Profile Pl	158.00	1,500	1.489	0.475	0.530	0.134	174	1,295
Ericsson KRY 112 489	148.00	46	1.307	0.130	0.342	0.059	2	40
Ericsson Radio 4449	148.00	222	1.307	0.130	0.342	0.059	11	192
RFS APXV18-209014-C-	148.00	56	1.307	0.130	0.342	0.059	3	48
RFS APXVAARR24_43-U-	148.00	384	1.307	0.130	0.342	0.059	20	331
Generic Flat Platfor	146.00	2,500	1.272	0.083	0.312	0.047	101	2,158
Generic 18' Dipole	120.00	110	0.859	-0.120	0.072	-0.038	-4	95
Generic 8' Yagi	116.00	30	0.803	-0.112	0.055	-0.038	-1	26
Generic 9' Omni	113.00	25	0.762	-0.104	0.044	-0.037	-1	22
Generic 8' Yagi	113.00	30	0.762	-0.104	0.044	-0.037	-1	26
Generic 2' x 4' Rect	111.00	40	0.735	-0.097	0.037	-0.035	-1	35
Generic 22' Dipole	111.00	66	0.735	-0.097	0.037	-0.035	-2	57
Flat T-Arm	110.00	750	0.722	-0.093	0.034	-0.033	-22	647
Generic GPS	76.00	10	0.345	0.034	0.009	0.039	0	9
		53,956	92.047	41.887	33.626	9.169	2,904	46,569

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	-64.57	-2.89	0.00	-396.39	0.00	396.39	6,032.65	3,016.33	16,860.55	8,442.81	0.00	0.00	0.058
5.00	-62.43	-2.86	0.00	-381.94	0.00	381.94	5,970.50	2,985.25	16,375.27	8,199.81	0.01	-0.01	0.057
10.00	-60.33	-2.82	0.00	-367.62	0.00	367.62	5,906.46	2,953.23	15,891.42	7,957.52	0.02	-0.02	0.056
15.00	-58.27	-2.78	0.00	-353.50	0.00	353.50	5,840.54	2,920.27	15,409.29	7,716.10	0.05	-0.03	0.056
20.00	-56.24	-2.73	0.00	-339.62	0.00	339.62	5,772.74	2,886.37	14,929.17	7,475.68	0.09	-0.04	0.055
25.00	-54.26	-2.68	0.00	-325.99	0.00	325.99	5,703.06	2,851.53	14,451.36	7,236.42	0.14	-0.05	0.055
30.00	-52.30	-2.62	0.00	-312.61	0.00	312.61	5,631.49	2,815.75	13,976.15	6,998.46	0.20	-0.06	0.054
35.00	-50.39	-2.57	0.00	-299.50	0.00	299.50	5,558.05	2,779.02	13,503.85	6,761.96	0.27	-0.07	0.053
40.00	-48.98	-2.53	0.00	-286.66	0.00	286.66	5,482.72	2,741.36	13,034.73	6,527.05	0.35	-0.09	0.053
43.75	-48.15	-2.51	0.00	-277.18	0.00	277.18	5,424.99	2,712.50	12,685.17	6,352.01	0.42	-0.09	0.053
45.00	-44.89	-2.40	0.00	-274.04	0.00	274.04	5,405.52	2,702.76	12,569.11	6,293.89	0.45	-0.10	0.052
50.00	-44.24	-2.38	0.00	-262.06	0.00	262.06	5,326.43	2,663.21	12,107.26	6,062.63	0.56	-0.11	0.052
51.00	-42.97	-2.34	0.00	-259.68	0.00	259.68	4,331.58	2,165.79	9,957.52	4,986.16	0.58	-0.11	0.062
55.00	-41.41	-2.29	0.00	-250.33	0.00	250.33	4,286.21	2,143.11	9,674.28	4,844.33	0.68	-0.12	0.061
60.00	-39.87	-2.24	0.00	-238.88	0.00	238.88	4,227.81	2,113.90	9,321.84	4,667.85	0.82	-0.14	0.061
65.00	-38.37	-2.20	0.00	-227.66	0.00	227.66	4,167.52	2,083.76	8,971.44	4,492.39	0.97	-0.15	0.060
70.00	-36.90	-2.16	0.00	-216.65	0.00	216.65	4,105.35	2,052.68	8,623.38	4,318.10	1.13	-0.17	0.059
75.00	-36.61	-2.16	0.00	-205.83	0.00	205.83	4,041.30	2,020.65	8,277.95	4,145.13	1.31	-0.18	0.059
76.00	-35.45	-2.13	0.00	-203.67	0.00	203.67	4,028.27	2,014.13	8,209.21	4,110.71	1.35	-0.18	0.058
80.00	-34.05	-2.11	0.00	-195.14	0.00	195.14	3,975.37	1,987.69	7,935.46	3,973.63	1.51	-0.20	0.058
85.00	-33.01	-2.10	0.00	-184.61	0.00	184.61	3,907.56	1,953.78	7,596.19	3,803.74	1.72	-0.21	0.057
88.75	-32.38	-2.09	0.00	-176.74	0.00	176.74	3,855.46	1,927.73	7,344.03	3,677.47	1.90	-0.22	0.056
90.00	-30.00	-2.08	0.00	-174.12	0.00	174.12	3,837.86	1,918.93	7,260.44	3,635.61	1.95	-0.23	0.056
94.75	-29.93	-2.08	0.00	-164.25	0.00	164.25	3,812.68	1,906.34	7,142.21	3,576.41	2.19	-0.24	0.054
95.00	-28.60	-2.09	0.00	-163.73	0.00	163.73	3,809.11	1,904.56	7,125.59	3,568.09	2.20	-0.24	0.053
100.00	-27.30	-2.11	0.00	-153.28	0.00	153.28	3,736.78	1,868.39	6,795.28	3,402.69	2.47	-0.26	0.052
105.00	-26.04	-2.14	0.00	-142.75	0.00	142.75	3,662.56	1,831.28	6,469.20	3,239.41	2.75	-0.28	0.051
110.00	-24.86	-2.16	0.00	-132.07	0.00	132.07	3,586.46	1,793.23	6,147.63	3,078.39	3.05	-0.29	0.050
111.00	-24.23	-2.18	0.00	-129.91	0.00	129.91	3,571.01	1,785.51	6,083.89	3,046.47	3.11	-0.30	0.049
113.00	-23.68	-2.19	0.00	-125.55	0.00	125.55	3,539.90	1,769.95	5,956.99	2,982.92	3.23	-0.30	0.049
115.00	-23.44	-2.20	0.00	-121.17	0.00	121.17	3,508.48	1,754.24	5,830.89	2,919.78	3.36	-0.31	0.048
116.00	-22.45	-2.22	0.00	-118.98	0.00	118.98	3,492.66	1,746.33	5,768.14	2,888.36	3.43	-0.31	0.048
120.00	-21.15	-2.25	0.00	-110.09	0.00	110.09	3,428.62	1,714.31	5,519.25	2,763.73	3.69	-0.33	0.046
125.00	-20.25	-2.27	0.00	-98.82	0.00	98.82	3,346.87	1,673.44	5,213.02	2,610.39	4.05	-0.34	0.044
129.00	-19.90	-2.28	0.00	-89.74	0.00	89.74	3,269.48	1,634.74	4,956.00	2,481.68	4.34	-0.36	0.042
130.00	-18.62	-2.29	0.00	-87.46	0.00	87.46	3,247.19	1,623.60	4,888.33	2,447.80	4.41	-0.36	0.041
133.75	-18.42	-2.29	0.00	-78.88	0.00	78.88	1,899.47	949.74	2,843.96	1,424.09	4.70	-0.37	0.065
135.00	-17.63	-2.29	0.00	-76.02	0.00	76.02	1,889.77	944.89	2,804.78	1,404.47	4.80	-0.37	0.063
140.00	-16.87	-2.27	0.00	-64.58	0.00	64.58	1,849.78	924.89	2,648.90	1,326.42	5.20	-0.40	0.058
145.00	-16.72	-2.27	0.00	-53.21	0.00	53.21	1,807.91	903.95	2,494.59	1,249.15	5.63	-0.42	0.052
146.00	-13.33	-2.14	0.00	-50.94	0.00	50.94	1,799.31	899.65	2,463.95	1,233.81	5.71	-0.42	0.049
148.00	-12.18	-2.08	0.00	-46.66	0.00	46.66	1,781.88	890.94	2,402.89	1,203.23	5.89	-0.43	0.046
150.00	-11.50	-2.04	0.00	-42.50	0.00	42.50	1,764.15	882.08	2,342.16	1,172.82	6.07	-0.43	0.043
155.00	-11.10	-2.00	0.00	-32.33	0.00	32.33	1,718.52	859.26	2,191.90	1,097.58	6.54	-0.45	0.036
158.00	-7.66	-1.65	0.00	-26.32	0.00	26.32	1,690.24	845.12	2,102.91	1,053.02	6.82	-0.46	0.030
160.00	-7.05	-1.57	0.00	-23.02	0.00	23.02	1,671.00	835.50	2,044.10	1,023.57	7.02	-0.46	0.027
165.00	-6.70	-1.51	0.00	-15.17	0.00	15.17	1,621.61	810.80	1,899.05	950.94	7.51	-0.47	0.020

168.00	-5.67	-1.34	0.00	-10.63	0.00	10.63	1,591.06	795.53	1,813.47	908.08	7.81	-0.48	0.015
169.00	-4.64	-1.15	0.00	-9.29	0.00	9.29	1,580.73	790.37	1,785.20	893.93	7.91	-0.48	0.013
170.00	-4.11	-1.04	0.00	-8.14	0.00	8.14	1,570.33	785.16	1,757.06	879.84	8.01	-0.48	0.012
175.00	-3.80	-0.97	0.00	-2.91	0.00	2.91	1,517.17	758.58	1,618.41	810.41	8.51	-0.48	0.006
178.00	0.00	-0.94	0.00	0.00	0.00	0.00	1,484.37	742.18	1,536.95	769.62	8.82	-0.49	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	-45.05	-2.89	0.00	-391.50	0.00	391.50	6,032.65	3,016.33	16,860.55	8,442.81	0.00	0.00	0.054
5.00	-43.56	-2.86	0.00	-377.05	0.00	377.05	5,970.50	2,985.25	16,375.27	8,199.81	0.01	-0.01	0.053
10.00	-42.10	-2.82	0.00	-362.76	0.00	362.76	5,906.46	2,953.23	15,891.42	7,957.52	0.02	-0.02	0.053
15.00	-40.66	-2.77	0.00	-348.69	0.00	348.69	5,840.54	2,920.27	15,409.29	7,716.10	0.05	-0.03	0.052
20.00	-39.25	-2.71	0.00	-334.86	0.00	334.86	5,772.74	2,886.37	14,929.17	7,475.68	0.09	-0.04	0.052
25.00	-37.86	-2.66	0.00	-321.30	0.00	321.30	5,703.06	2,851.53	14,451.36	7,236.42	0.13	-0.05	0.051
30.00	-36.50	-2.60	0.00	-308.01	0.00	308.01	5,631.49	2,815.75	13,976.15	6,998.46	0.19	-0.06	0.050
35.00	-35.16	-2.55	0.00	-295.00	0.00	295.00	5,558.05	2,779.02	13,503.85	6,761.96	0.27	-0.07	0.050
40.00	-34.18	-2.50	0.00	-282.26	0.00	282.26	5,482.72	2,741.36	13,034.73	6,527.05	0.35	-0.08	0.049
43.75	-33.60	-2.48	0.00	-272.87	0.00	272.87	5,424.99	2,712.50	12,685.17	6,352.01	0.42	-0.09	0.049
45.00	-31.32	-2.37	0.00	-269.77	0.00	269.77	5,405.52	2,702.76	12,569.11	6,293.89	0.44	-0.10	0.049
50.00	-30.87	-2.35	0.00	-257.92	0.00	257.92	5,326.43	2,663.21	12,107.26	6,062.63	0.55	-0.11	0.048
51.00	-29.98	-2.31	0.00	-255.56	0.00	255.56	4,331.58	2,165.79	9,957.52	4,986.16	0.57	-0.11	0.058
55.00	-28.89	-2.26	0.00	-246.32	0.00	246.32	4,286.21	2,143.11	9,674.28	4,844.33	0.67	-0.12	0.058
60.00	-27.82	-2.21	0.00	-235.02	0.00	235.02	4,227.81	2,113.90	9,321.84	4,667.85	0.80	-0.13	0.057
65.00	-26.77	-2.17	0.00	-223.95	0.00	223.95	4,167.52	2,083.76	8,971.44	4,492.39	0.95	-0.15	0.056
70.00	-25.75	-2.13	0.00	-213.11	0.00	213.11	4,105.35	2,052.68	8,623.38	4,318.10	1.12	-0.16	0.056
75.00	-25.54	-2.12	0.00	-202.46	0.00	202.46	4,041.30	2,020.65	8,277.95	4,145.13	1.30	-0.18	0.055
76.00	-24.74	-2.10	0.00	-200.34	0.00	200.34	4,028.27	2,014.13	8,209.21	4,110.71	1.33	-0.18	0.055
80.00	-23.75	-2.07	0.00	-191.96	0.00	191.96	3,975.37	1,987.69	7,935.46	3,973.63	1.49	-0.19	0.054
85.00	-23.03	-2.06	0.00	-181.61	0.00	181.61	3,907.56	1,953.78	7,596.19	3,803.74	1.70	-0.21	0.054
88.75	-22.59	-2.05	0.00	-173.89	0.00	173.89	3,855.46	1,927.73	7,344.03	3,677.47	1.87	-0.22	0.053
90.00	-20.93	-2.04	0.00	-171.32	0.00	171.32	3,837.86	1,918.93	7,260.44	3,635.61	1.93	-0.22	0.053
94.75	-20.88	-2.04	0.00	-161.63	0.00	161.63	3,812.68	1,906.34	7,142.21	3,576.41	2.16	-0.24	0.051
95.00	-19.96	-2.05	0.00	-161.12	0.00	161.12	3,809.11	1,904.56	7,125.59	3,568.09	2.17	-0.24	0.050
100.00	-19.05	-2.07	0.00	-150.87	0.00	150.87	3,736.78	1,868.39	6,795.28	3,402.69	2.43	-0.26	0.049
105.00	-18.17	-2.10	0.00	-140.53	0.00	140.53	3,662.56	1,831.28	6,469.20	3,239.41	2.71	-0.27	0.048
110.00	-17.34	-2.12	0.00	-130.06	0.00	130.06	3,586.46	1,793.23	6,147.63	3,078.39	3.00	-0.29	0.047
111.00	-16.91	-2.14	0.00	-127.94	0.00	127.94	3,571.01	1,785.51	6,083.89	3,046.47	3.06	-0.29	0.047
113.00	-16.52	-2.15	0.00	-123.66	0.00	123.66	3,539.90	1,769.95	5,956.99	2,982.92	3.18	-0.30	0.046
115.00	-16.35	-2.16	0.00	-119.36	0.00	119.36	3,508.48	1,754.24	5,830.89	2,919.78	3.31	-0.30	0.046
116.00	-15.66	-2.18	0.00	-117.20	0.00	117.20	3,492.66	1,746.33	5,768.14	2,888.36	3.38	-0.31	0.045
120.00	-14.76	-2.21	0.00	-108.47	0.00	108.47	3,428.62	1,714.31	5,519.25	2,763.73	3.64	-0.32	0.044
125.00	-14.13	-2.23	0.00	-97.40	0.00	97.40	3,346.87	1,673.44	5,213.02	2,610.39	3.98	-0.34	0.042
129.00	-13.88	-2.24	0.00	-88.47	0.00	88.47	3,269.48	1,634.74	4,956.00	2,481.68	4.27	-0.35	0.040
130.00	-12.99	-2.25	0.00	-86.23	0.00	86.23	3,247.19	1,623.60	4,888.33	2,447.80	4.35	-0.35	0.039
133.75	-12.85	-2.25	0.00	-77.79	0.00	77.79	1,899.47	949.74	2,843.96	1,424.09	4.63	-0.37	0.061
135.00	-12.30	-2.25	0.00	-74.97	0.00	74.97	1,889.77	944.89	2,804.78	1,404.47	4.72	-0.37	0.060
140.00	-11.77	-2.24	0.00	-63.72	0.00	63.72	1,849.78	924.89	2,648.90	1,326.42	5.12	-0.39	0.054
145.00	-11.66	-2.23	0.00	-52.54	0.00	52.54	1,807.91	903.95	2,494.59	1,249.15	5.54	-0.41	0.049
146.00	-9.30	-2.11	0.00	-50.30	0.00	50.30	1,799.31	899.65	2,463.95	1,233.81	5.63	-0.41	0.046
148.00	-8.49	-2.05	0.00	-46.09	0.00	46.09	1,781.88	890.94	2,402.89	1,203.23	5.80	-0.42	0.043
150.00	-8.02	-2.01	0.00	-41.99	0.00	41.99	1,764.15	882.08	2,342.16	1,172.82	5.98	-0.43	0.040
155.00	-7.74	-1.97	0.00	-31.95	0.00	31.95	1,718.52	859.26	2,191.90	1,097.58	6.44	-0.44	0.034
158.00	-5.34	-1.63	0.00	-26.03	0.00	26.03	1,690.24	845.12	2,102.91	1,053.02	6.72	-0.45	0.028
160.00	-4.92	-1.55	0.00	-22.77	0.00	22.77	1,671.00	835.50	2,044.10	1,023.57	6.91	-0.46	0.025
165.00	-4.67	-1.50	0.00	-15.01	0.00	15.01	1,621.61	810.80	1,899.05	950.94	7.39	-0.47	0.019

168.00	-3.96	-1.32	0.00	-10.52	0.00	10.52	1,591.06	795.53	1,813.47	908.08	7.69	-0.47	0.014
169.00	-3.23	-1.14	0.00	-9.19	0.00	9.19	1,580.73	790.37	1,785.20	893.93	7.79	-0.47	0.012
170.00	-2.86	-1.03	0.00	-8.05	0.00	8.05	1,570.33	785.16	1,757.06	879.84	7.89	-0.47	0.011
175.00	-2.65	-0.96	0.00	-2.88	0.00	2.88	1,517.17	758.58	1,618.41	810.41	8.39	-0.48	0.005
178.00	0.00	-0.94	0.00	0.00	0.00	0.00	1,484.37	742.18	1,536.95	769.62	8.69	-0.48	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	37.69	0.00	64.71	0.00	0.00	4839.55	51.00	0.62
0.9D + 1.6W	37.67	0.00	48.52	0.00	0.00	4793.44	51.00	0.60
1.2D + 1.0Di + 1.0Wi	12.59	0.00	104.34	0.00	0.00	1688.34	51.00	0.23
(1.2 + 0.2Sds) * DL + E ELFM	2.11	0.00	64.57	0.00	0.00	299.73	51.00	0.05
(1.2 + 0.2Sds) * DL + E EMAM	2.89	0.00	64.57	0.00	0.00	396.39	133.75	0.07
(0.9 - 0.2Sds) * DL + E ELFM	2.11	0.00	45.05	0.00	0.00	296.29	51.00	0.04
(0.9 - 0.2Sds) * DL + E EMAM	2.89	0.00	45.05	0.00	0.00	391.50	133.75	0.06
1.0D + 1.0W	7.44	0.00	53.95	0.00	0.00	949.79	51.00	0.13

Base Plate & Anchor Rod Analysis

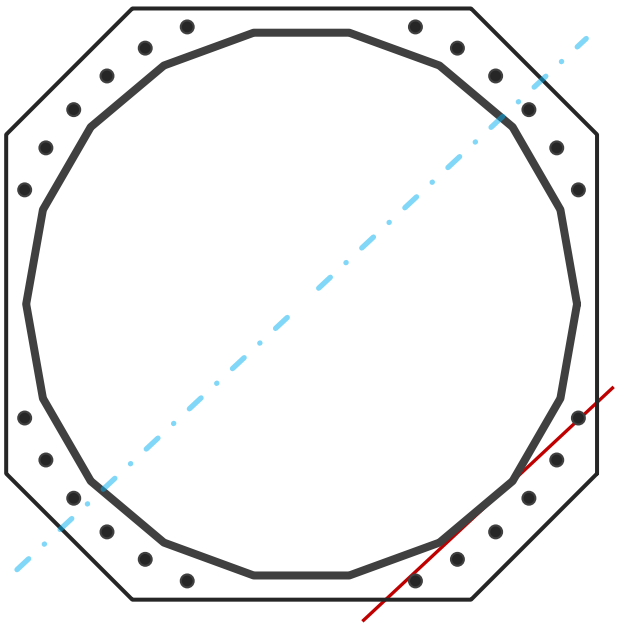
Pole Dimensions		
Number of Sides	18	-
Diameter	68.36	in
Thickness	0.4375	in
Orientation Offset		°

Base Reactions		
Moment, Mu	4839.6	k-ft
Axial, Pu	64.7	k
Shear, Vu	37.7	k
Neutral Axis	223	°

Report Capacities		
Component	Capacity	Result
Base Plate	40%	Pass
Anchor Rods	50%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	75	in
Thickness	3	in
Grade	Other	-
Yield Strength, Fy	55	ksi
Tensile Strength, Fu	70	ksi
Clip	16	in
Orientation Offset		°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	1669.7	k
Bending Stress, ϕMn	4143.8	k

Original Anchor Rods		
Arrangement	Cluster	-
Quantity	24	-
Diameter, ø	2 1/4	in
Bolt Circle	76	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset		°
Applied Force, Pu	129.9	k
Anchor Rods, ϕPn	259.8	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	37.7	4839.6	1.00
Anchor Rod Forces	37.7	4839.6	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	92.8826	5.1601	0.3303		53569.80
Bolt	3.9761	3.2477	0.8393	4.5	56296.11
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	75	in
Thickness, t	3	in
Yield Strength, Fy	55	ksi
Tensile Strength, Fu	70	ksi
Base Plate Chord	30.853	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	24	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	76	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	129.9	k
Applied Shear, Vu	0.1	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.500	OK
Interaction Capacity	0.501	OK

External Base Plate		
Chord Length AA	37.206	in
Additional AA	0.000	in
Section Modulus, Z	83.714	in^3
Applied Moment, Mu	1669.7	k-ft
Bending Capacity, ϕMn	4143.8	k-ft
Capacity, Mu/ϕMn	0.403	OK
Chord Length AB	36.144	in
Additional AB	0.000	in
Section Modulus, Z	81.323	in^3
Applied Moment, Mu	1319.4	k-ft
Bending Capacity, ϕMn	4025.5	k-ft
Capacity, Mu/ϕMn	0.328	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in^3
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

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		

Exhibit E

Mount Analysis

Mount Analysis of Existing Low Profile Platform for American Tower on behalf of T-Mobile
376046 - Mansfield Center 1 CT
Project #: 12927176

T-Mobile Site ID: CTHA211A

Program: L600

CLS Engineering PLLC Project #41124-12927176-01-MA-R2

July 8, 2019

MOUNT DESCRIPTION	Existing Low Profile Platform at 145 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 148 ft AGL (Eccentricity of ~3 ft)
SITE DESCRIPTION	178 ft Monopole
SITE ADDRESS	230 Clover Mill Road, Storrs Mansfield, CT 06268-2826, Tolland County
GPS COORDINATES	41.77577777, -72.2225
ANALYSIS STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	130 mph, V_{ult} / 100.7 mph, V_{asd} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 1" Ice

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

MEMBER USAGE	**59%**	**Pass**
COLLAR USAGE	**28%**	**Pass**

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

Prepared by:
Sean Rock, E.I.

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: 2019.07.09 13:46:11 -04'00'

■ INTRODUCTION

The proposed equipment is to be mounted to the existing Low Profile Platform. 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 November 12, 2018 Assembly Drawings by Site Pro 1, Part No. HRK12-U, dated March 10, 2015 Assembly Drawings by Site Pro 1, Part No. SCX45-K, dated February 19, 2015 Assembly Drawings by Site Pro 1, Part No. PRK-1245, dated April 10, 2014
PREVIOUS ANALYSES	Structrual Analysis by ATC, Engineering #63859921, dated October 15, 2015
LOADING DATA	ATC Application, Project #12927176, dated April 2, 2019

■ ANALYSIS CRITERIA

STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
BASIC WIND SPEED	130 mph, V_{ult} / 100.7 mph, V_{asd} (3-Second Gust)
BASIC WIND SPEED W/ ICE	50 mph (3-Second Gust) w/ 1" Radial Ice (Escalating)
EXPOSURE CATEGORY	B
MAX. TOPOGRAPHIC FACTOR, K_{zt}	1.00
RISK CATEGORY	II
MAINTENANCE LIVE LOAD	L_M: 500 lb

■ FINAL EQUIPMENT

ELEVATION (ft)		ANTENNAS	
MOUNT	**RAD.**	**#**	**NAME**
145.0	148.0	3	RFS Celwave APXV18-209014-C-A20
		3	Ericsson RADIO 4449 B12/B71
		3	Ericsson KRY 112 489/2
		3	RFS Celwave APXVAARR24_43-U-NA20

■ RESULTS SUMMARY

Existing Mount Usages:

COMPONENT	PEAK USAGE	RESULT
Mount Pipes	**140%**	**Fail**
Collar Reactions	87%	Pass
Stand-Off Horizontals	35%	Pass
Platform Base	29%	Pass

Modified Mount Usages:

COMPONENT	PEAK USAGE	RESULT
Corner Plates	59%	Pass
Mount Pipes	52%	Pass
Support Rail	39%	Pass
Collar Reactions	28%	Pass
Stand-Off Horizontals	25%	Pass
Platform Base	20%	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:

- **Replace existing mount pipe at Position 2 with (1) 8ft. long proposed Pipe 2½ STD, A53 Gr. B, at each sector for proposed configuration (3 total) as shown. Connect to platform base horizontal member using Site Pro 1 SCX45-K crossover plate or equal.**
- **Install Site Pro 1 HRK12-U Support Rail kit at 3'-0" above the existing platform horizontal HSS tube. Connect to (2) existing and proposed mount pipes per sector of the mount (12 total) using Site Pro 1 SCX2 crossover plate kits included in the Support Rail kit.**
- **Install (1) proposed Site Pro 1 PRK-1245 platform reinforcement kit on existing platform mount as shown in the following sketches. Field-cut proposed members as required. Maintain minimum bolt edge distance.**

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.

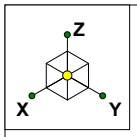
This analysis assumes the following:

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.

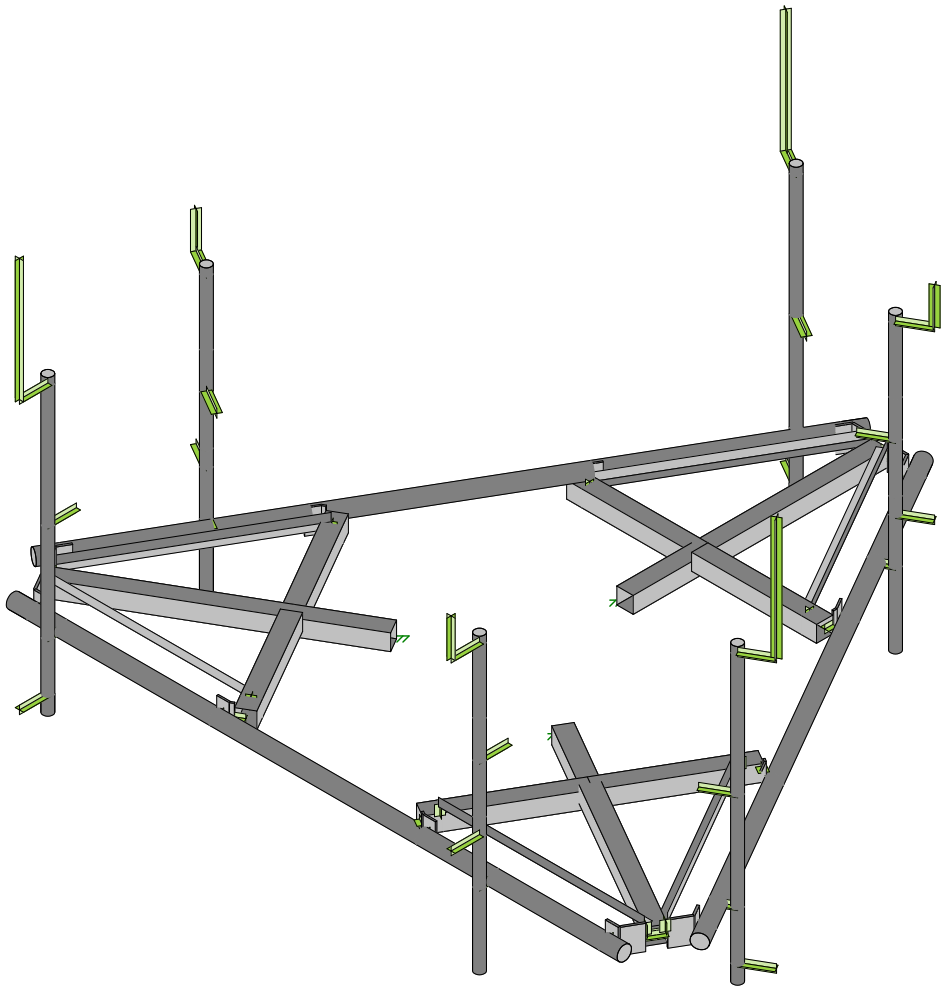
All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of the report. All opinions and conclusions contained herein are subject to revision based upon receipt of new or updated information. All services are provided 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.



Existing Mount to be Modified.



Envelope Only Solution

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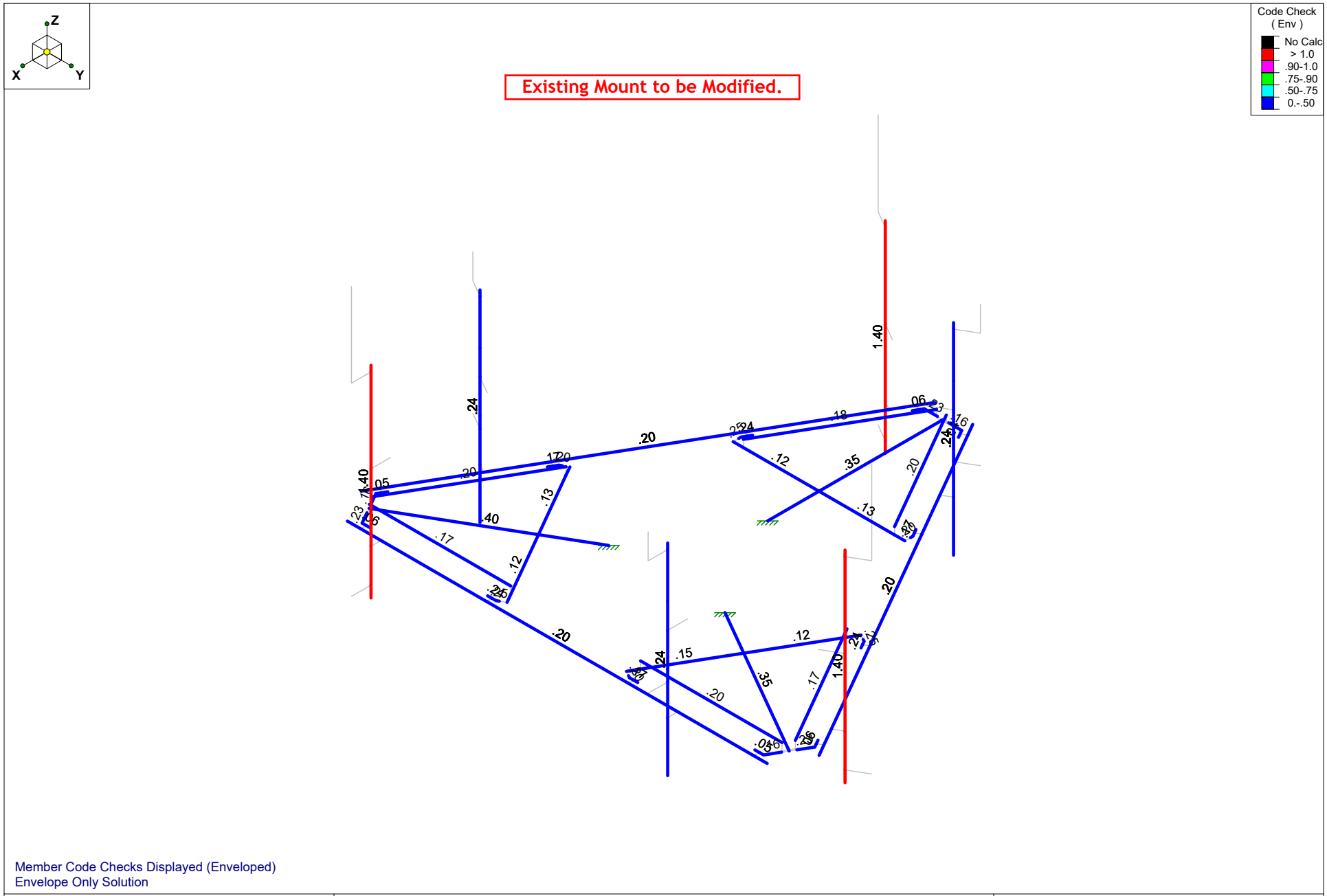

CLS		EX - 2
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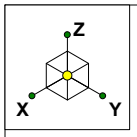
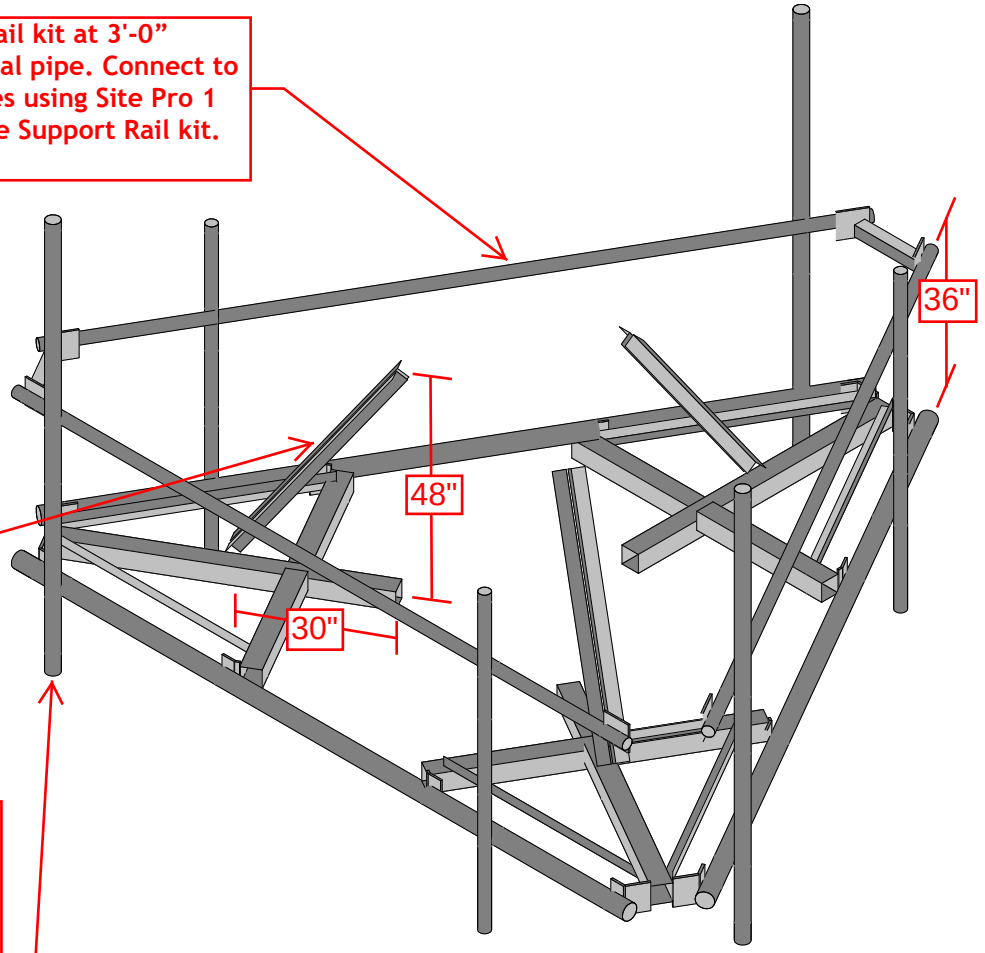


Install Site Pro 1 HRK12-U Support Rail kit at 3'-0" above the existing platform horizontal pipe. Connect to all existing and proposed mount pipes using Site Pro 1 SCX2 crossover plates included in the Support Rail kit.

Install (1) proposed Site Pro 1 PRK-1245 platform reinforcement kit on existing platform mount as shown in the following sketches. Field-cut proposed members as required. Maintain minimum bolt edge distance.

Replace existing mount pipe at Position 2 with (1) 8ft. long proposed Pipe 2½ STD, A53 Gr. B, at each sector for proposed panel configuration (3 total). Connect to platform base horizontal member using Site Pro 1 SCX45-K crossover plate kit or equal.



Envelope Only Solution

CLS		SK - 0
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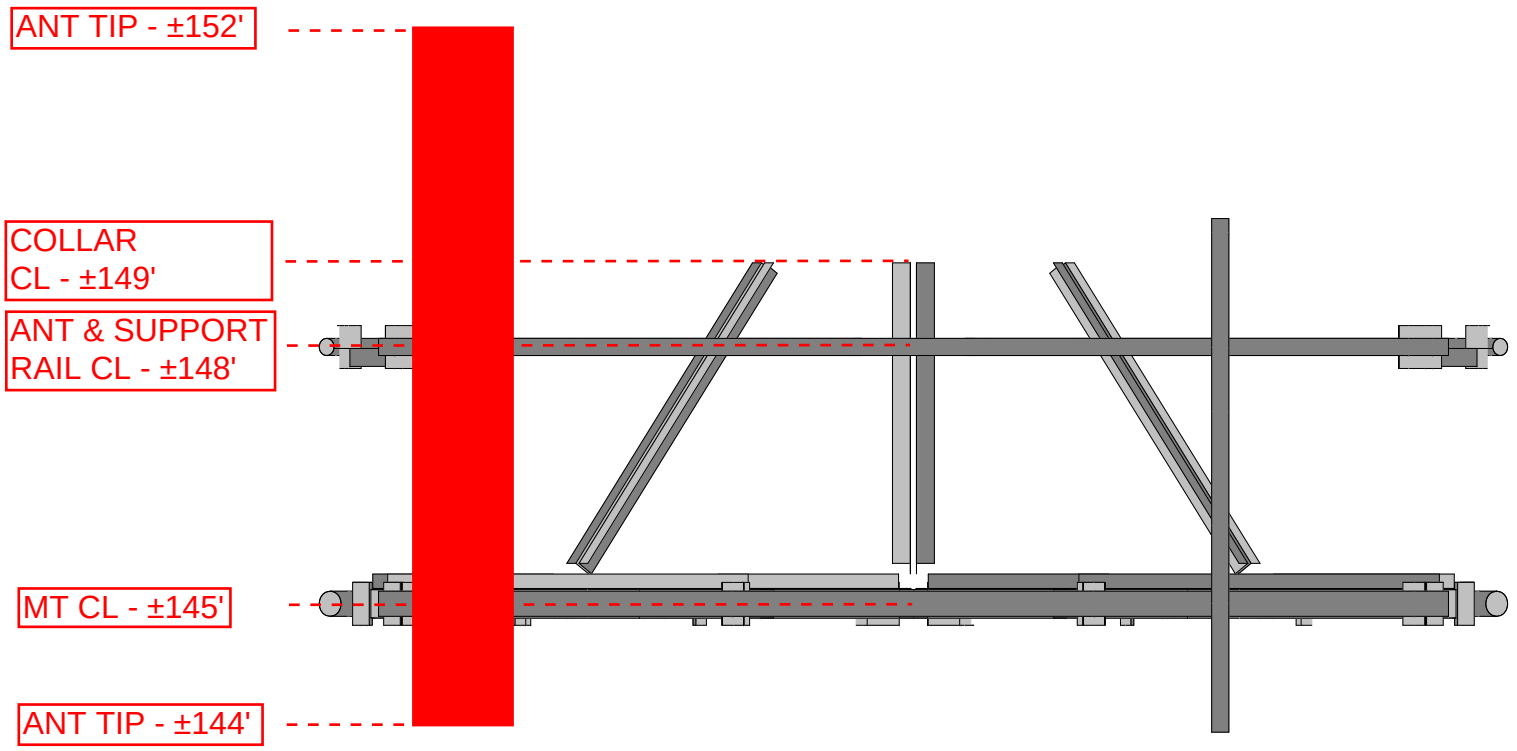
41124-12927176-01-MA-R2	Installation Sketch - Isometric View	41124-12927176-01-MA-R2.r3d



Envelope Only Solution

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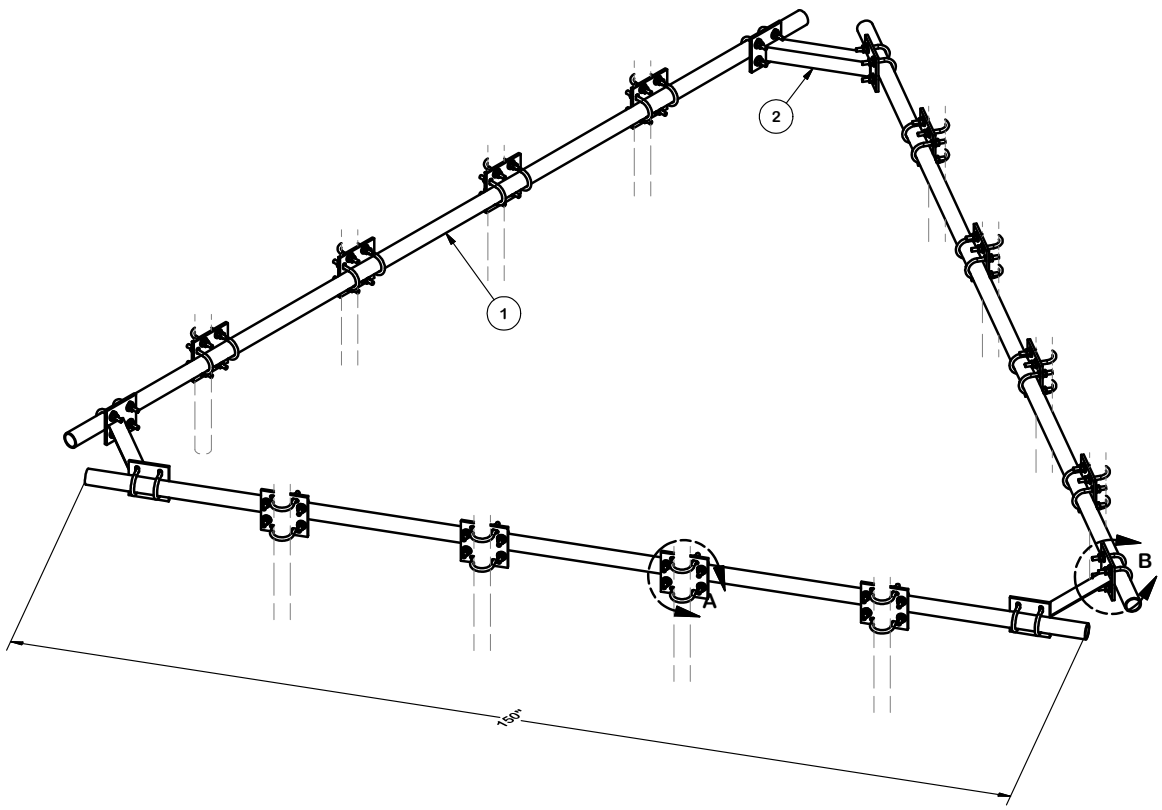
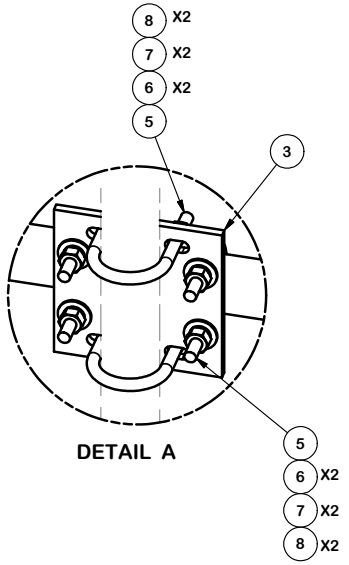
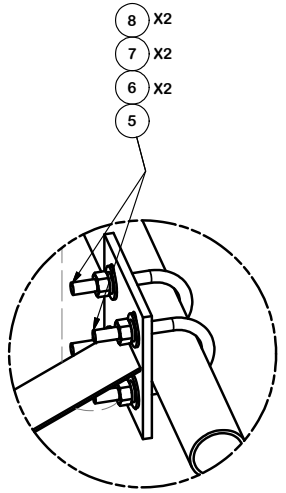
41124-12927176-01-MA-R2	Installation Sketch - Elevation Sketch	41124-12927176-01-MA-R2.r3d

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	P2150	2-3/8" OD X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.31
2	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
3	12	SCX2	CROSSOVER PLATE	7 in	4.80	57.56
4	24	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.73	17.56
5	60	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.73	43.90
6	120	G12FW	1/2" HDG USS FLATWASHER		0.03	4.09
7	120	G12LW	1/2" HDG LOCKWASHER		0.01	1.67
8	120	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	8.60
					TOTAL WT. #	302.21





DETAIL A



DETAIL B

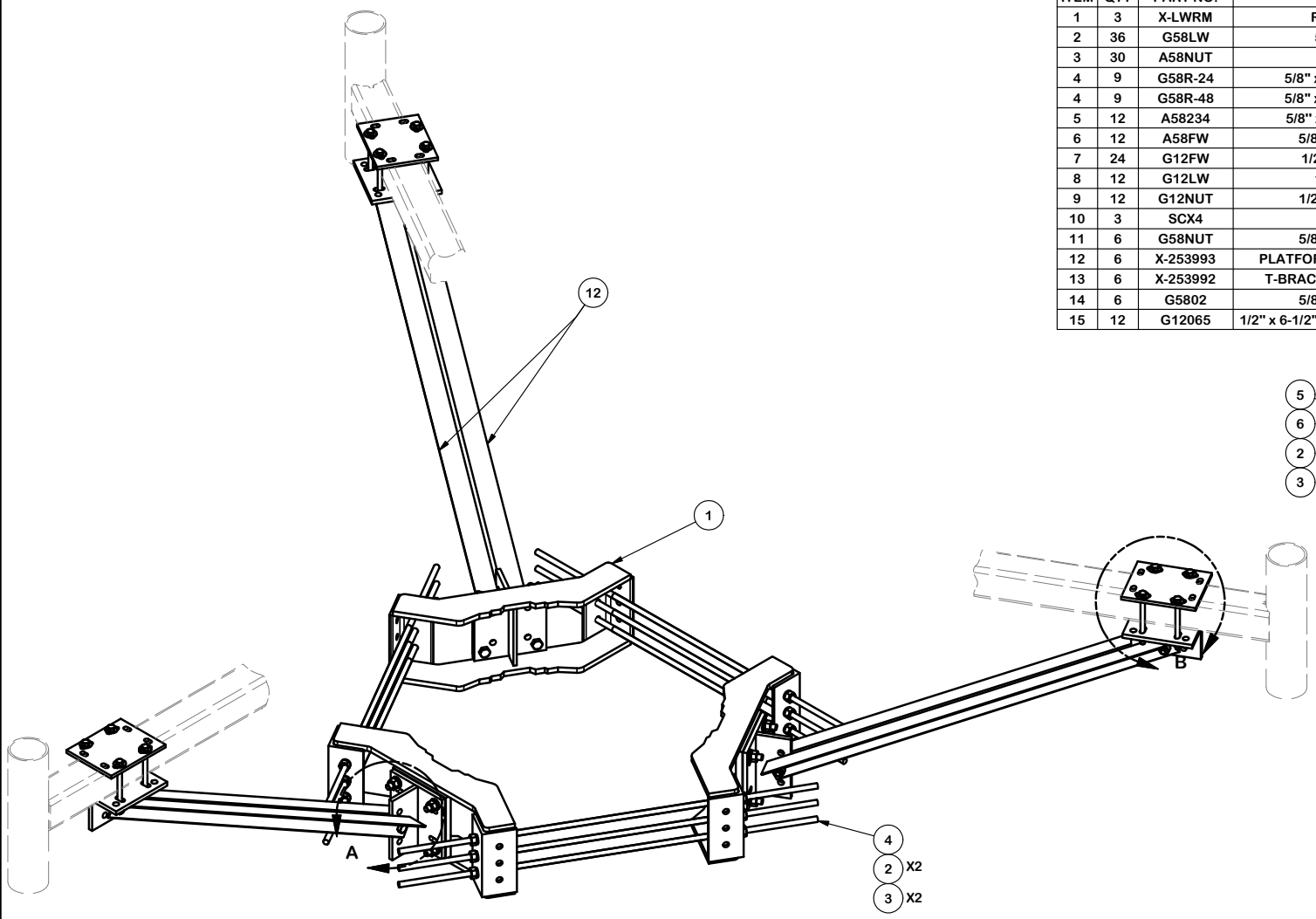
TOLERANCE NOTES

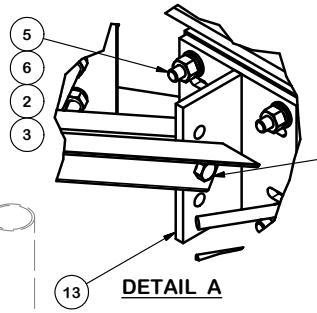
TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

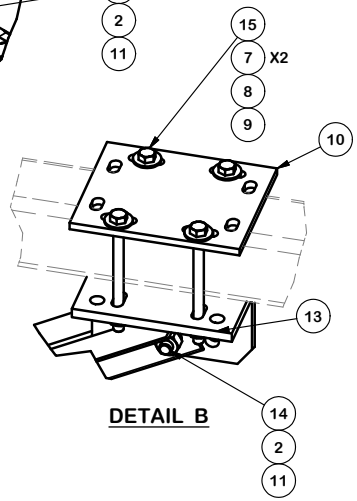
DESCRIPTION
UNIVERSAL HANDRAIL KIT
FOR 12' PLATFORM
2-3/8" & 2-7/8" ANTENNA PIPES

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 3/9/2015		HRK12-U	1 OF 1
CLASS / SUB	DRAWING USAGE	CHECKED BY	DWG. NO.	
81 / 01	CUSTOMER	BMC 3/10/2015	HRK12-U	







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

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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")*

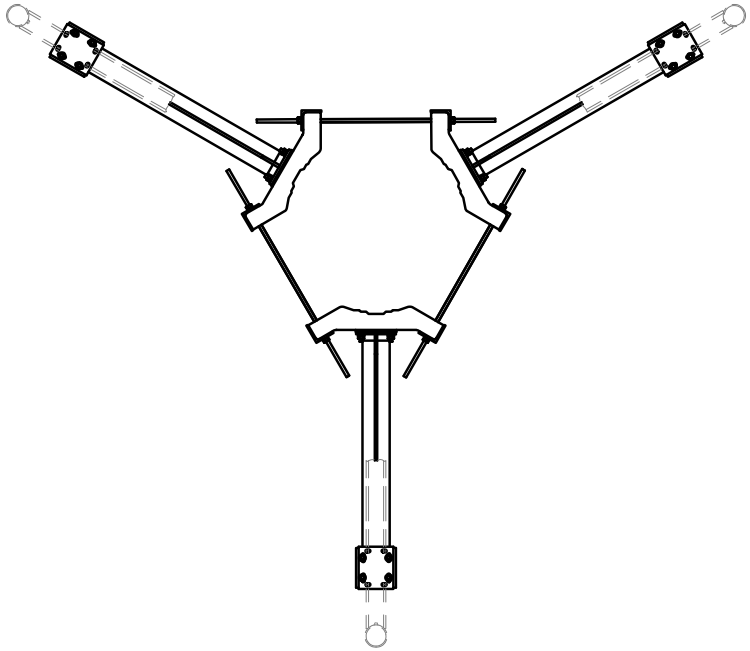
DESCRIPTION
PLATFORM RENIFORCEMENT
ON A 12" TO 45" POLE
4' 6" ANGLE

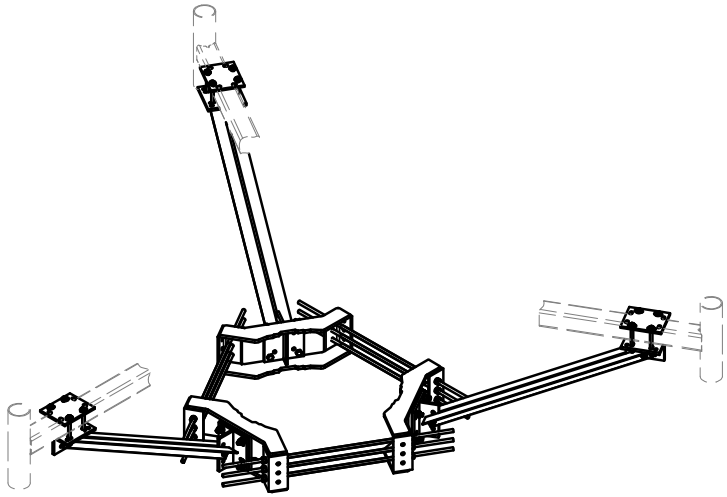
SITE PRO 1 — A valmont COMPANY

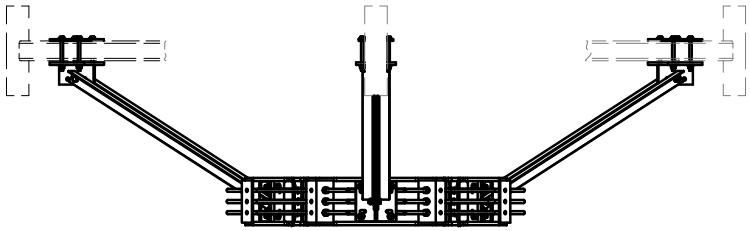
Engineering Support Team: 1-888-753-7446

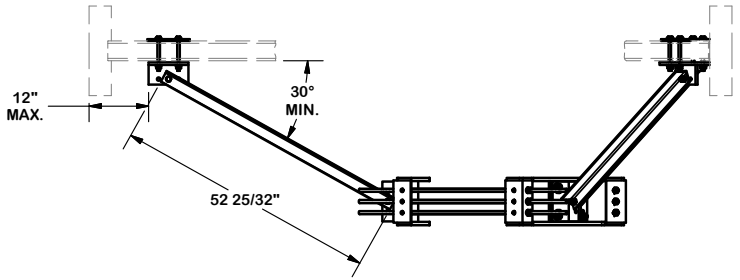
Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

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









TOLERANCE NOTES

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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")*

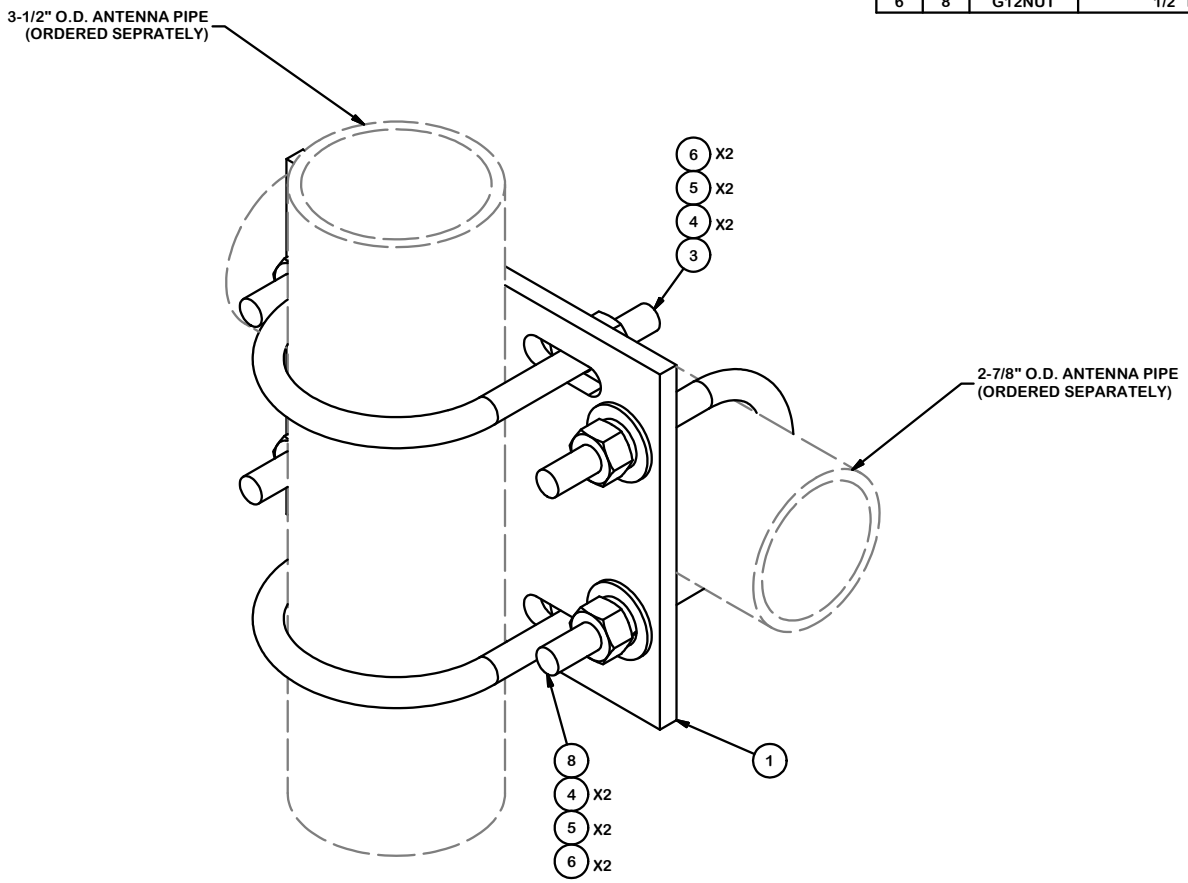
DESCRIPTION
PLATFORM RENIFORCEMENT
ON A 12" TO 45" POLE
4' 6" ANGLE

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

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



TOLERANCE NOTES

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SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
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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: 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}	145 ft	K_a	0.90
Nominal Rad Elevation (AGL), z_{rad}	148 ft	K_d	0.95
Elevation AMSL (ft)	-	K_e	-
TIA Standard	G	K_z	1.10
Basic Wind Speed, V_{ult} (bare)	130 mph	K_{zt}	1.00
Basic Wind Speed, V (ice)	50 mph	K_s	-
Design Ice Thickness, t_i	1 in	t_{iz}	2.32 in
Exposure Category	B	G_h	1.00
Risk Category	II	q_z (bare)	45.2 psf
Seismic Response Coeff., C_s	-	q_z (ice)	6.7 psf

Live Loading

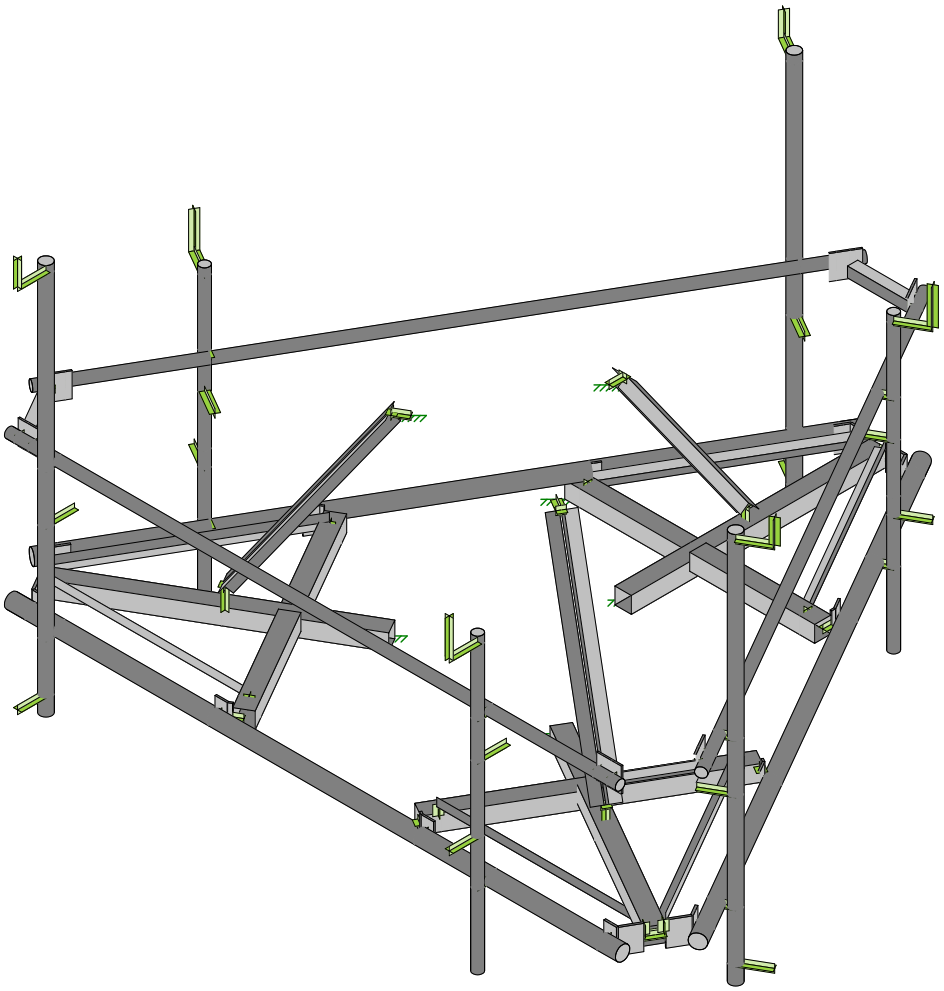
At Mount Pipes, L_M	500 lb
Joint Labels Considered	m1
	m2

Member Distributed Loading

Section Set Label	Shape Label	F_A (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Offsett Tube	HSS4X4X4	27.10	3.09	21.00
Offset End Plate	0.5 x 6 Plate	40.65	6.41	18.29
Offset Side Plate	0.38 X 6 Plate	40.65	6.40	18.08
Platform Horizontal Pipe	PIPE_3.0	14.23	4.89	16.49
Grating Angle	L2x2x3	13.55	4.49	14.58
MOD Mount PIpe	PIPE_2.5	11.69	4.52	14.72
Mount Pipe	PIPE_2.0	9.65	4.22	13.30
MOD Support Rail	PIPE_2.0	9.65	4.22	13.30
MOD SR Conn Plate	PL6x0.375	40.65	6.40	18.07
MOD SR Conn Angle	L2.5x2.5x4	16.94	2.98	15.14
MOD PRK	L2.5x2.5x3	16.94	2.98	15.14

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
APXV18-209014-C-A20				☐			1	1	1		A1	A2	B1	B2	G1	G2	53.1	6.7	3.2	18.7	Flat	129.76	3.54	2.03	5.98	4.44	144.54	82.98	36.20	26.88
KRY 112 489/2				☐	0.2		1	1	1		T2		T4		T6		11	6.1	3.94	15.4	Flat	23.57	0.11	0.37	0.28	1.12	4.57	14.93	1.70	6.77
APXVAARR24_43-U-NA20				☐			1	1	1		A3	A4	B3	B4	G3	G4	0	0	0	153.3	Generic	523.28	14.67	5.32	18.20	8.43	599.83	217.53	110.10	51.01
RADIO 4449 B12/B71				☐	0.5		1	1	1		R1		R2		R3		15	13.2	10.4	75	Flat	79.96	0.83	1.30	1.46	2.46	33.73	53.15	8.84	14.90



Envelope Only Solution

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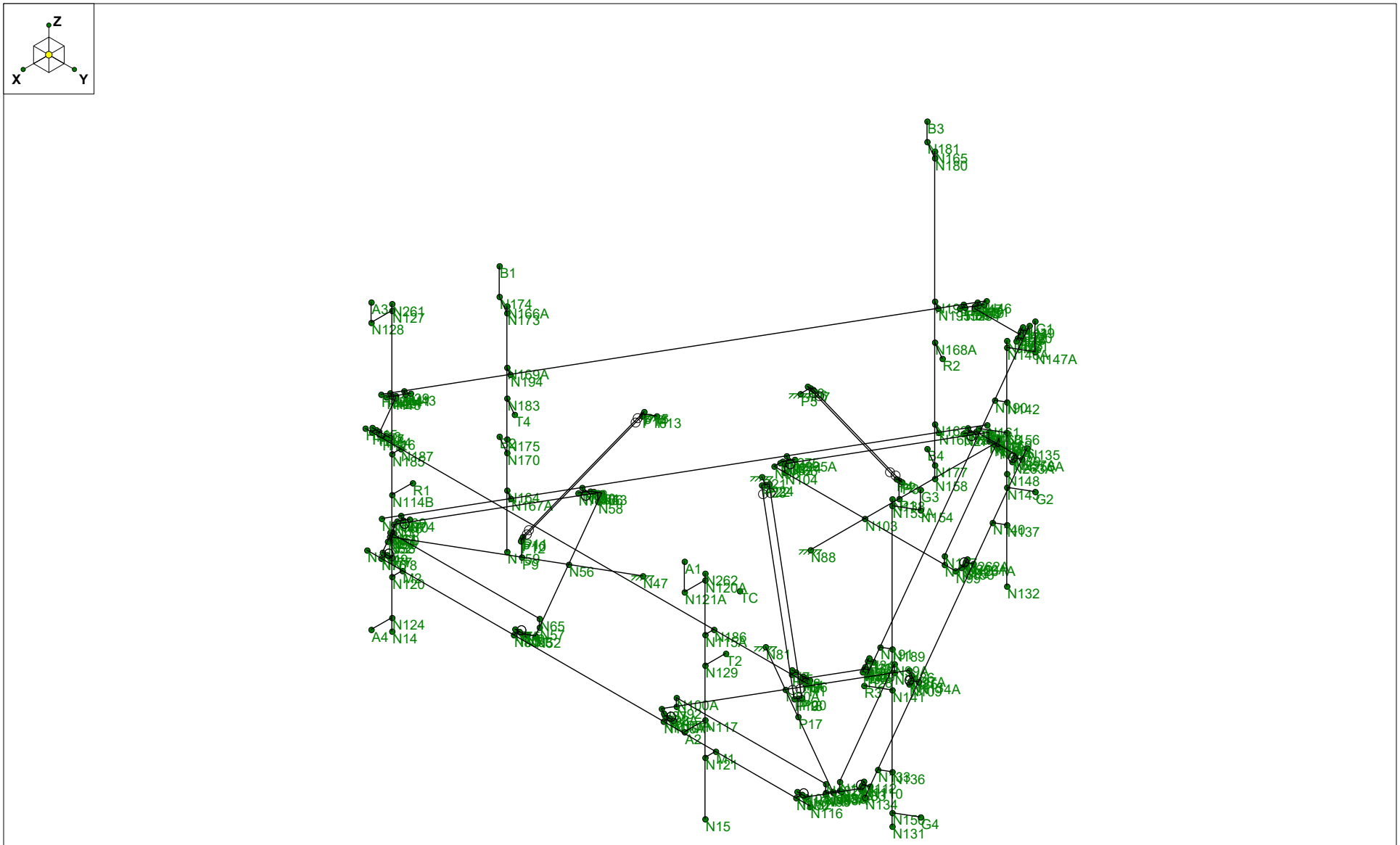

Envelope Only Solution

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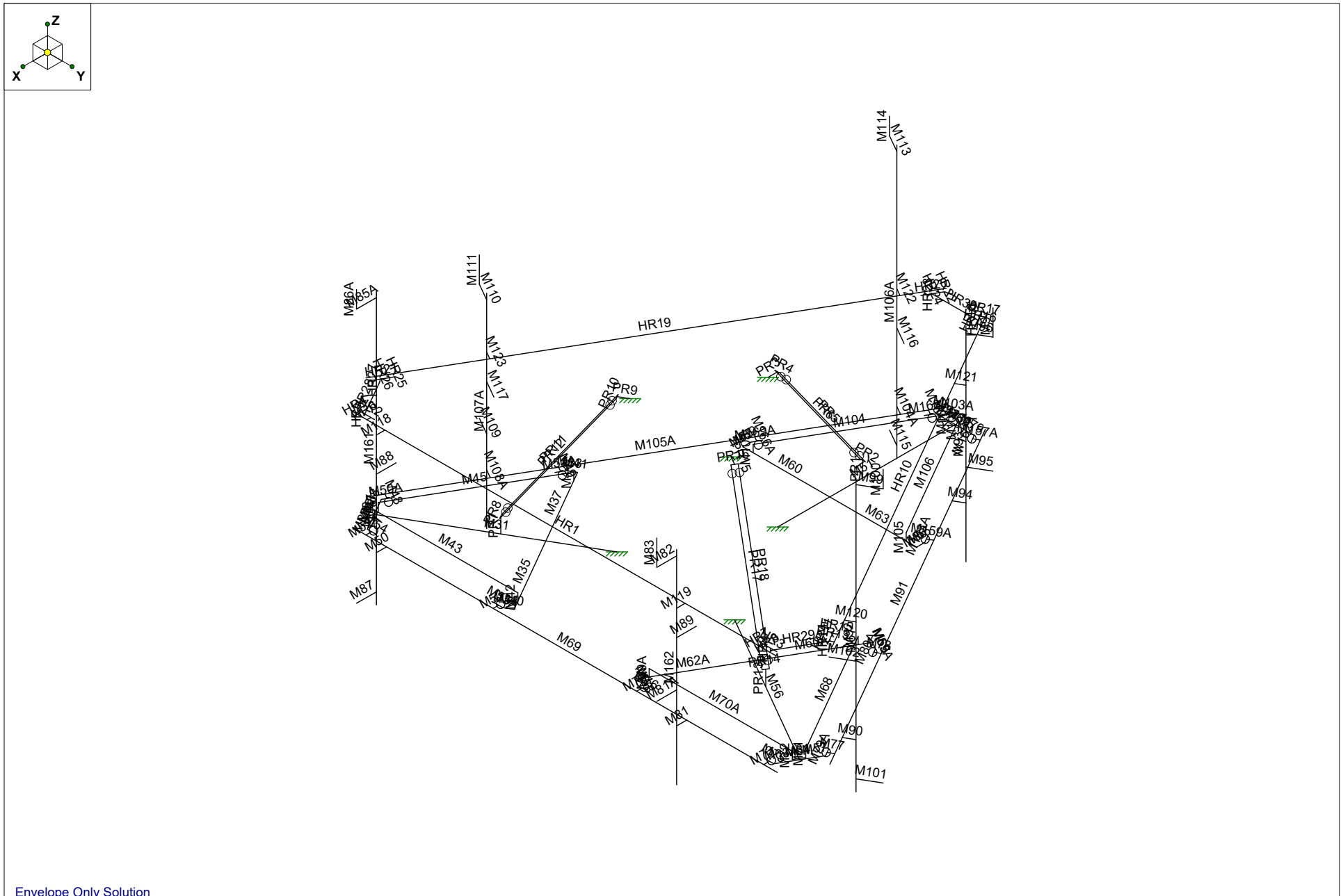
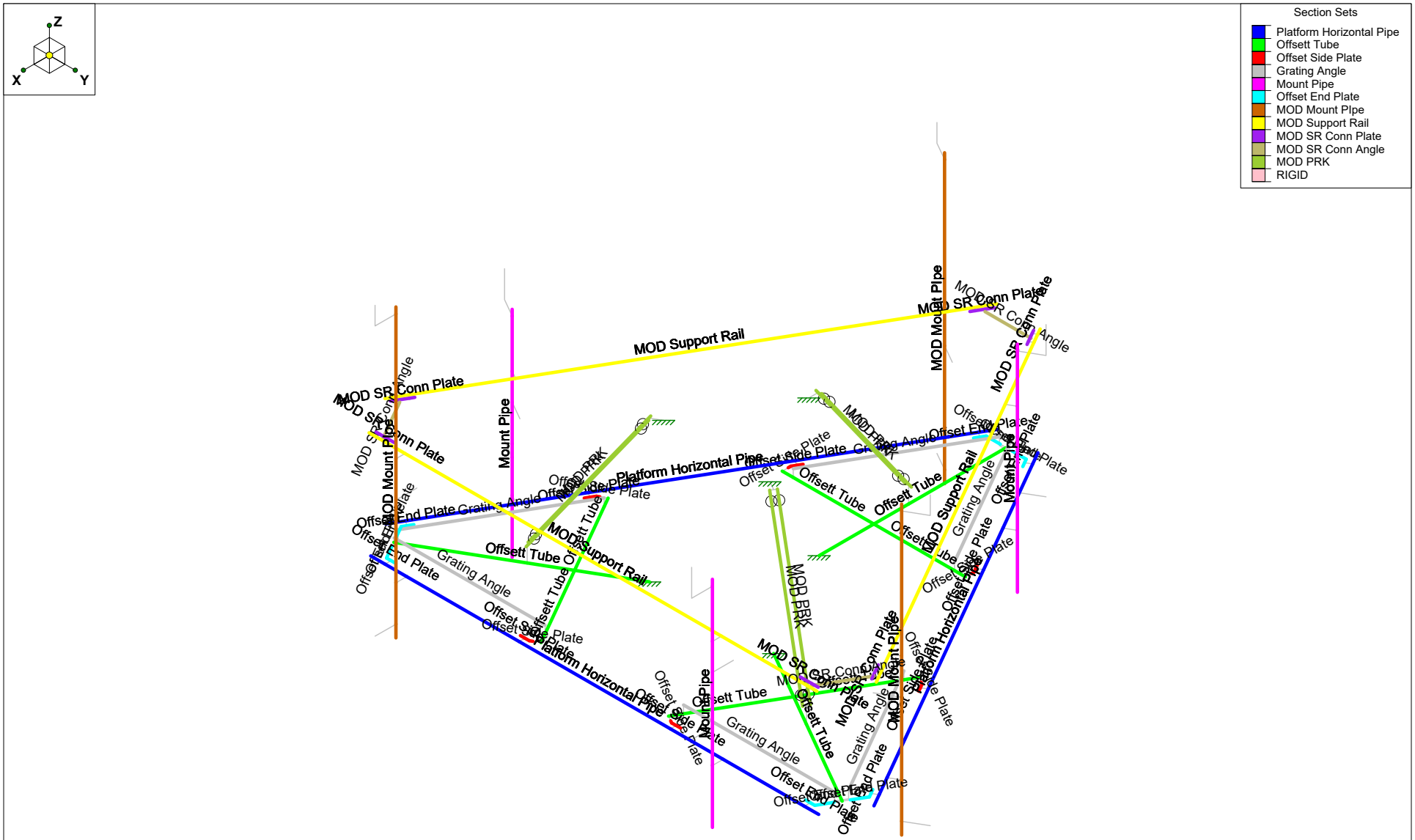


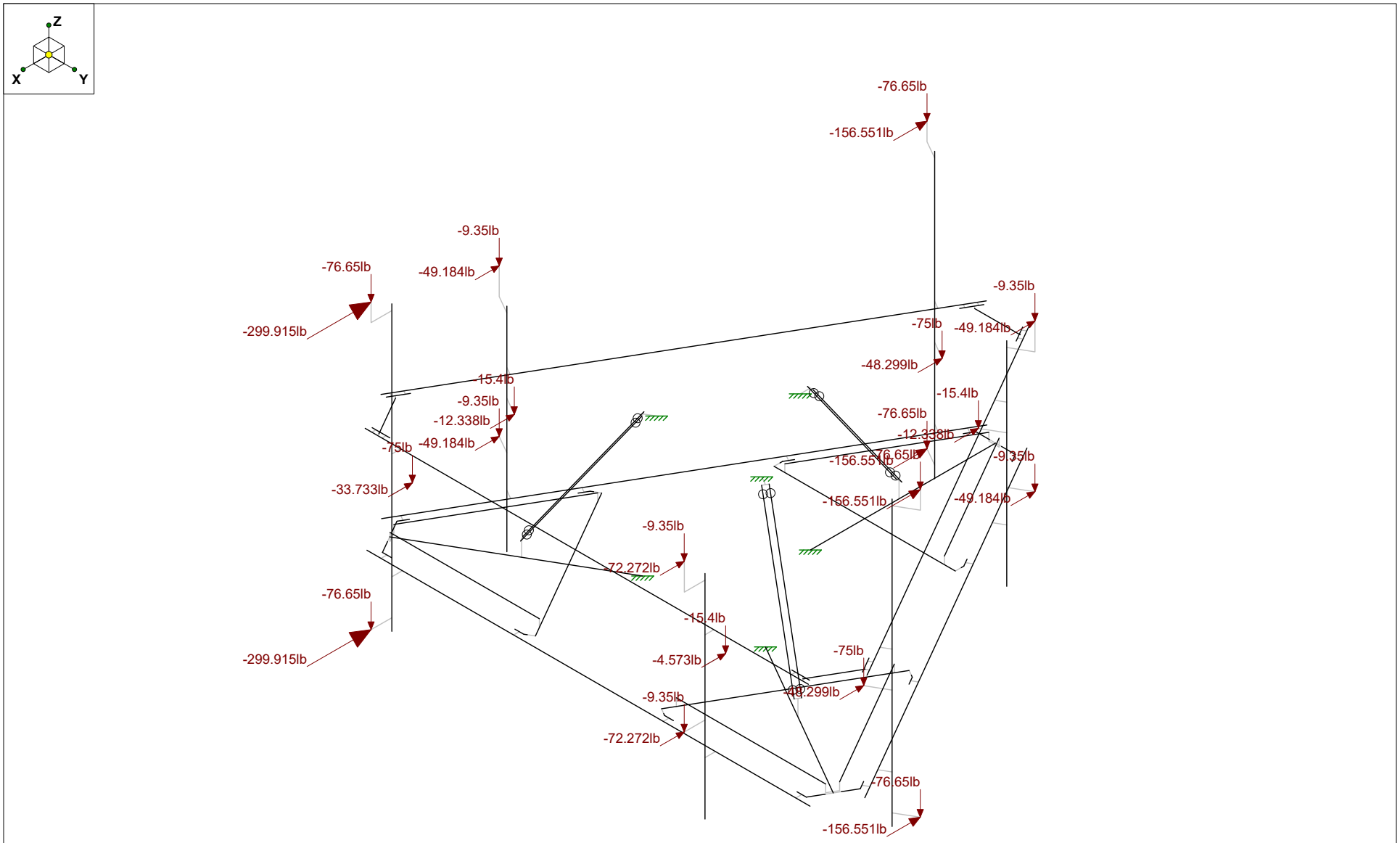
Envelope Only Solution

CLS	41124-12927176-Mansfield Center 1 CT, CT	SK - 3
SMR		July 8, 2019 at 2:53 PM
41124-12927176-01-MA-R2	Member Labels	41124-12927176-01-MA-R2.r3d



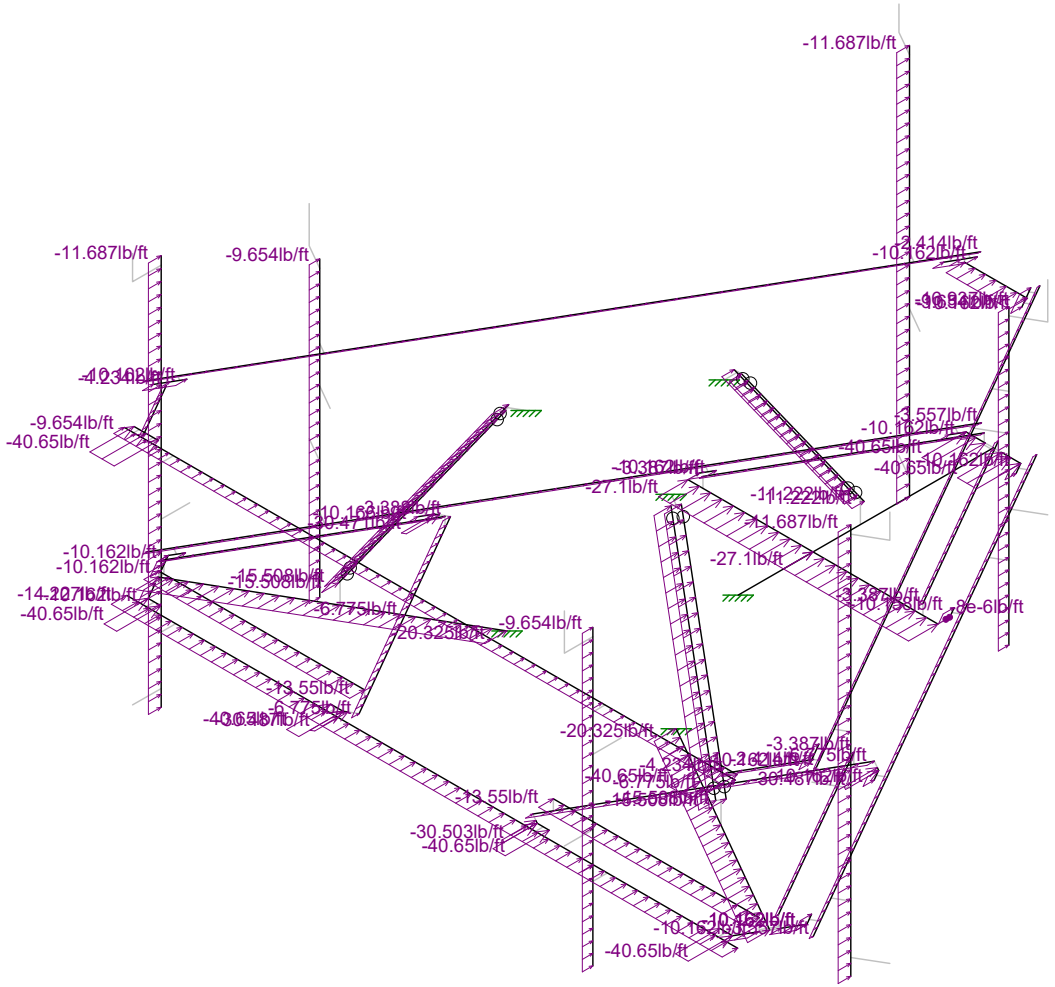
Envelope Only Solution

CLS	41124-12927176-Mansfield Center 1 CT, CT	SK - 4
SMR		July 8, 2019 at 2:53 PM
41124-12927176-01-MA-R2	Section Sets	41124-12927176-01-MA-R2.r3d



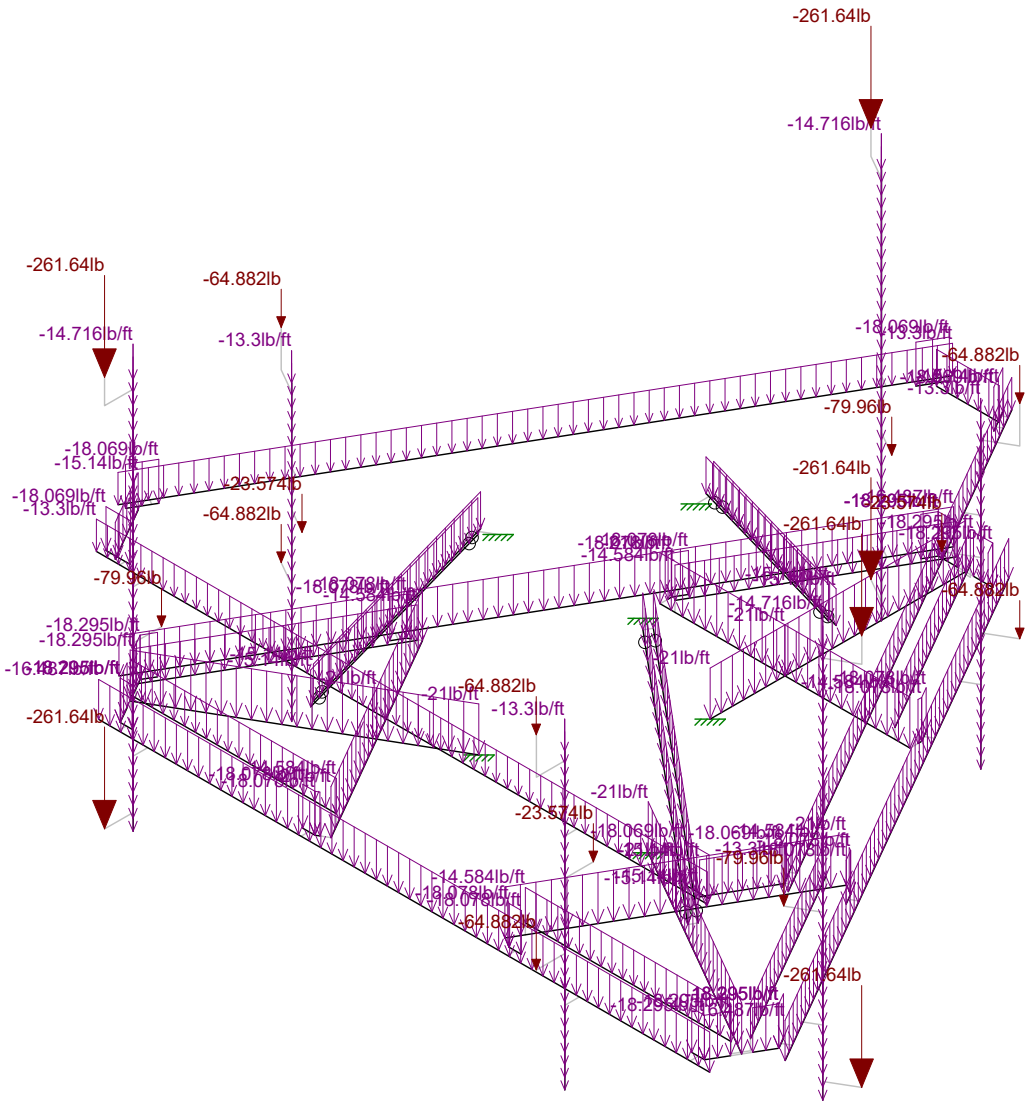
Loads: LC 1, DISPLAY (1.0D + 1.0W_0°)
Envelope Only Solution

CLS	41124-12927176-Mansfield Center 1 CT, CT	SK - 5
SMR		July 8, 2019 at 2:53 PM
41124-12927176-01-MA-R2	Joint Loads - Dead and Normal Wind	41124-12927176-01-MA-R2.r3d



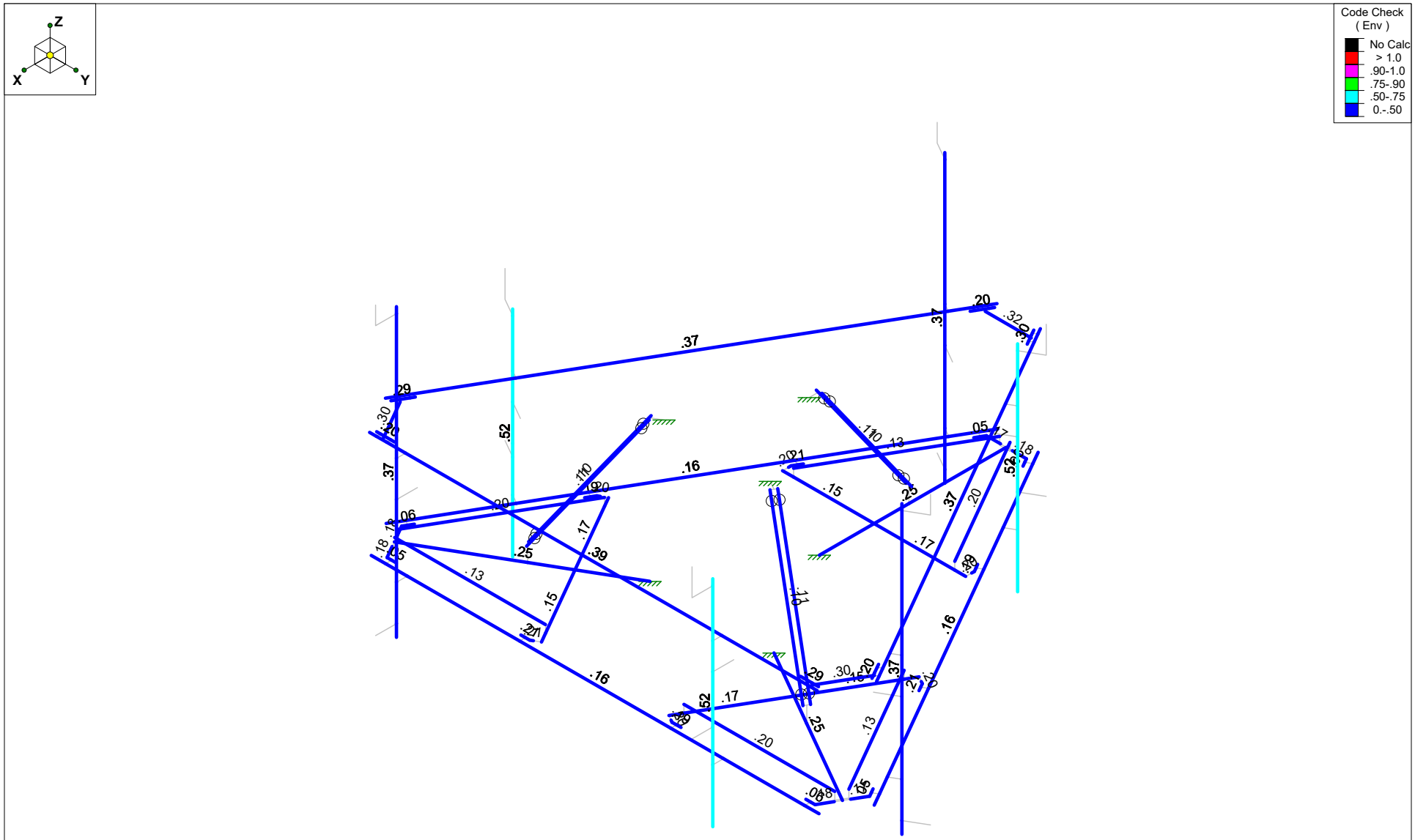
Loads: BLC 4, Structure Wind 0°
Envelope Only Solution

CLS	41124-12927176-Mansfield Center 1 CT, CT	SK - 6
SMR		July 8, 2019 at 2:53 PM
41124-12927176-01-MA-R2	Distributed Load - Normal Wind	41124-12927176-01-MA-R2.r3d



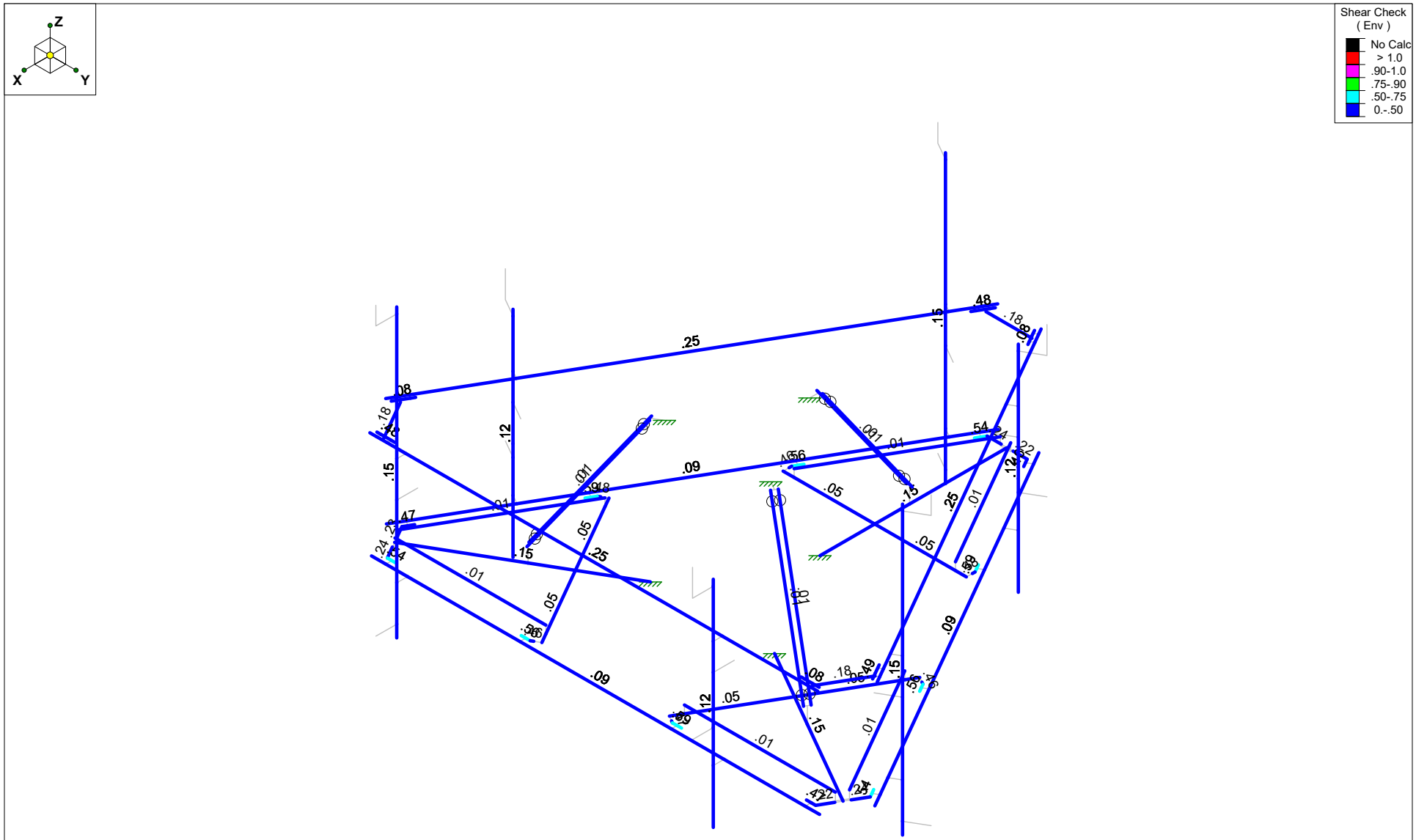
Loads: BLC 2, Ice Dead
Envelope Only Solution

CLS	41124-12927176-Mansfield Center 1 CT, CT	SK - 7
SMR		July 8, 2019 at 2:54 PM
41124-12927176-01-MA-R2	Ice Dead Loads	41124-12927176-01-MA-R2.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

CLS	41124-12927176-Mansfield Center 1 CT, CT	SK - 8
SMR		July 8, 2019 at 2:54 PM
41124-12927176-01-MA-R2	Envelope Member Unity Check Results - Bending	41124-12927176-01-MA-R2.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

CLS	41124-12927176-Mansfield Center 1 CT, CT	SK - 9
SMR		July 8, 2019 at 2:54 PM
41124-12927176-01-MA-R2	Envelope Member Check Results - Shear	41124-12927176-01-MA-R2.r3d

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Dead	DL			-1	18				
2	Ice Dead	RL				18		66		
4	Structure Wind 0Á	None						64		
5	Structure Wind 30Á	None						102		
6	Structure Wind 45Á	None						132		
7	Structure Wind 60Á	None						128		
8	Structure Wind 90Á	None						52		
9	Structure Wind 120Á	None						128		
10	Structure Wind 135Á	None						132		
11	Structure Wind 150Á	None						102		
12	Structure Wind w/ Ice 0Á	None						64		
13	Structure Wind w/ Ice 30Á	None						106		
14	Structure Wind w/ Ice 45Á	None						132		
15	Structure Wind w/ Ice 60Á	None						128		
16	Structure Wind w/ Ice 90Á	None						53		
17	Structure Wind w/ Ice 120Á	None						128		
18	Structure Wind w/ Ice 135Á	None						132		
19	Structure Wind w/ Ice 150Á	None						106		
20	Antenna Wind 0Á	None				18				
21	Antenna Wind 30Á	None				36				
22	Antenna Wind 45Á	None				36				
23	Antenna Wind 60Á	None				36				
24	Antenna Wind 90Á	None				18				
25	Antenna Wind 120Á	None				36				
26	Antenna Wind 135Á	None				36				
27	Antenna Wind 150Á	None				36				
28	Antenna Wind w/ Ice 0Á	None				18				
29	Antenna Wind w/ Ice 30Á	None				36				
30	Antenna Wind w/ Ice 45Á	None				36				
31	Antenna Wind w/ Ice 60Á	None				36				
32	Antenna Wind w/ Ice 90Á	None				18				
33	Antenna Wind w/ Ice 120Á	None				36				
34	Antenna Wind w/ Ice 135Á	None				36				
35	Antenna Wind w/ Ice 150Á	None				36				
39	Maintenance Live 500 (1)	OL1				1				
40	Maintenance Live 500 (2)	OL2				1				

Load Combinations

	Description	Solve	PDe..	SRSS	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
1	DISPLAY (1.0D + ..	Yes	Y		DL	1	20	1																		
2	1.4D	Yes	Y		DL	1.4																				
3	1.2D + 1.0W_0Á	Yes	Y		DL	1.2	4	1	20	1																
4	1.2D + 1.0W_30Á	Yes	Y		DL	1.2	5	1	21	1																
5	1.2D + 1.0W_45Á	Yes	Y		DL	1.2	6	1	22	1																
6	1.2D + 1.0W_60Á	Yes	Y		DL	1.2	7	1	23	1																
7	1.2D + 1.0W_90Á	Yes	Y		DL	1.2	8	1	24	1																
8	1.2D + 1.0W_120Á	Yes	Y		DL	1.2	9	1	25	1																
9	1.2D + 1.0W_135Á	Yes	Y		DL	1.2	10	1	26	1																
10	1.2D + 1.0W_150Á	Yes	Y		DL	1.2	11	1	27	1																

Load Combinations (Continued)

	Description	Solve	PDe..	SRSS	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
11	1.2D + 1.0W_180Á	Yes	Y		DL	1.2	4	-1	20	-1																
12	1.2D + 1.0W_210Á	Yes	Y		DL	1.2	5	-1	21	-1																
13	1.2D + 1.0W_225Á	Yes	Y		DL	1.2	6	-1	22	-1																
14	1.2D + 1.0W_240Á	Yes	Y		DL	1.2	7	-1	23	-1																
15	1.2D + 1.0W_270Á	Yes	Y		DL	1.2	8	-1	24	-1																
16	1.2D + 1.0W_300Á	Yes	Y		DL	1.2	9	-1	25	-1																
17	1.2D + 1.0W_315Á	Yes	Y		DL	1.2	10	-1	26	-1																
18	1.2D + 1.0W_330Á	Yes	Y		DL	1.2	11	-1	27	-1																
19	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	12	1	28	1	RL	1														
20	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	13	1	29	1	RL	1														
21	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	14	1	30	1	RL	1														
22	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	15	1	31	1	RL	1														
23	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	16	1	32	1	RL	1														
24	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	17	1	33	1	RL	1														
25	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	18	1	34	1	RL	1														
26	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	19	1	35	1	RL	1														
27	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	12	-1	28	-1	RL	1														
28	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	13	-1	29	-1	RL	1														
29	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	14	-1	30	-1	RL	1														
30	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	15	-1	31	-1	RL	1														
31	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	16	-1	32	-1	RL	1														
32	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	17	-1	33	-1	RL	1														
33	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	18	-1	34	-1	RL	1														
34	1.2D + 1.0Di + 1.0..	Yes	Y		DL	1.2	19	-1	35	-1	RL	1														
35	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	4	.056	20	.056	OL1	1.5														
36	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	5	.056	21	.056	OL1	1.5														
37	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	6	.056	22	.056	OL1	1.5														
38	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	7	.056	23	.056	OL1	1.5														
39	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	8	.056	24	.056	OL1	1.5														
40	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	9	.056	25	.056	OL1	1.5														
41	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	10	.056	26	.056	OL1	1.5														
42	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	11	.056	27	.056	OL1	1.5														
43	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	4	-.056	20	-.056	OL1	1.5														
44	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	5	-.056	21	-.056	OL1	1.5														
45	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	6	-.056	22	-.056	OL1	1.5														
46	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	7	-.056	23	-.056	OL1	1.5														
47	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	8	-.056	24	-.056	OL1	1.5														
48	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	9	-.056	25	-.056	OL1	1.5														
49	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	10	-.056	26	-.056	OL1	1.5														
50	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	11	-.056	27	-.056	OL1	1.5														
51	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	4	.056	20	.056	OL2	1.5														
52	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	5	.056	21	.056	OL2	1.5														
53	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	6	.056	22	.056	OL2	1.5														
54	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	7	.056	23	.056	OL2	1.5														
55	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	8	.056	24	.056	OL2	1.5														
56	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	9	.056	25	.056	OL2	1.5														
57	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	10	.056	26	.056	OL2	1.5														
58	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	11	.056	27	.056	OL2	1.5														
59	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	4	-.056	20	-.056	OL2	1.5														
60	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	5	-.056	21	-.056	OL2	1.5														
61	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	6	-.056	22	-.056	OL2	1.5														
62	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	7	-.056	23	-.056	OL2	1.5														

Load Combinations (Continued)

	Description	Solve	PDe..	SRSS	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
63	1.2D + 1.5Lm_2 +...	Yes	Y		DL	1.2	8	-.056	24	-.056	OL2	1.5														
64	1.2D + 1.5Lm_2 +...	Yes	Y		DL	1.2	9	-.056	25	-.056	OL2	1.5														
65	1.2D + 1.5Lm_2 +...	Yes	Y		DL	1.2	10	-.056	26	-.056	OL2	1.5														
66	1.2D + 1.5Lm_2 +...	Yes	Y		DL	1.2	11	-.056	27	-.056	OL2	1.5														

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	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	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Platform Horizontal Pipe	PIPE_3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Offsett Tube	HSS4X4X4	Beam	None	A36 Gr.36	Typical	3.37	7.8	7.8	12.8
3	Offset Side Plate	0.38 X 6 Plate	Beam	None	A36 Gr.36	Typical	2.28	.027	6.84	.105
4	Grating Angle	L2x2x3	Beam	None	A36 Gr.36	Typical	.722	.271	.271	.009
5	Mount Pipe	PIPE_2.0	Column	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
6	Offset End Plate	0.5 x 6 Plate	Beam	None	A36 Gr.36	Typical	3	.063	9	.237
7	Support Rail	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	MOD Mount Plpe	PIPE_2.5	Beam	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
9	MOD Support Rail	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
10	MOD SR Conn Plate	PL6x0.375	Beam	None	A36 Gr.36	Typical	2.25	.026	6.75	.101
11	MOD SR Conn Angle	L2.5x2.5x4	Beam	None	A36 Gr.36	Typical	1.19	.692	.692	.026
12	MOD SR Bracing	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
13	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[...	Lcomp...	L-tor...	Kyy	Kzz	Cb	Functi...
1	M51	Offsett Tube	62.679									Lateral
2	M52	Offset End Plate	4.688			Lbyy						Lateral
3	M55	Offset Side Plate	.875			Lbyy						Lateral
4	M59	Offset Side Plate	.875			Lbyy						Lateral
5	M60	Offsett Tube	30.688			Lbyy						Lateral
6	M63	Offsett Tube	30.687			Lbyy						Lateral
7	M69	Platform Horizontal Pipe	150			Lbyy						Lateral
8	M79	Offset End Plate	4.688			Lbyy						Lateral
9	M104	Grating Angle	50.542			Lbyy						Lateral
10	M106	Grating Angle	50.542			Lbyy						Lateral
11	M161	MOD Mount Plpe	96			Lbyy						Lateral
12	M162	Mount Pipe	72			Lbyy						Lateral
13	M162A	Offset End Plate	3.122			Lbyy						Lateral
14	M163A	Offset Side Plate	3			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp...	L-tor...	Kyy	Kzz	Cb	Functi...
15	M168A	Offset End Plate	3.122			Lbyy						Lateral
16	M169A	Offset Side Plate	3			Lbyy						Lateral
17	M31	Offsett Tube	62.679									Lateral
18	M32	Offset End Plate	4.688			Lbyy						Lateral
19	M33	Offset Side Plate	.875			Lbyy						Lateral
20	M34	Offset Side Plate	.875			Lbyy						Lateral
21	M35	Offsett Tube	30.688			Lbyy						Lateral
22	M37	Offsett Tube	30.687			Lbyy						Lateral
23	M38	Offset End Plate	4.688			Lbyy						Lateral
24	M43	Grating Angle	50.542			Lbyy						Lateral
25	M45	Grating Angle	50.542			Lbyy						Lateral
26	M50A	Offset End Plate	3.122			Lbyy						Lateral
27	M51A	Offset Side Plate	3			Lbyy						Lateral
28	M54	Offset End Plate	3.122			Lbyy						Lateral
29	M55A	Offset Side Plate	3			Lbyy						Lateral
30	M56	Offsett Tube	62.679									Lateral
31	M57	Offset End Plate	4.688			Lbyy						Lateral
32	M58	Offset Side Plate	.875			Lbyy						Lateral
33	M59A	Offset Side Plate	.875			Lbyy						Lateral
34	M60A	Offsett Tube	30.688			Lbyy						Lateral
35	M62A	Offsett Tube	30.687			Lbyy						Lateral
36	M63A	Offset End Plate	4.688			Lbyy						Lateral
37	M68	Grating Angle	50.542			Lbyy						Lateral
38	M70A	Grating Angle	50.542			Lbyy						Lateral
39	M75	Offset End Plate	3.122			Lbyy						Lateral
40	M76	Offset Side Plate	3			Lbyy						Lateral
41	M79A	Offset End Plate	3.122			Lbyy						Lateral
42	M80A	Offset Side Plate	3			Lbyy						Lateral
43	M91	Platform Horizontal Pipe	150			Lbyy						Lateral
44	M92	MOD Mount PIpe	96			Lbyy						Lateral
45	M93	Mount Pipe	72			Lbyy						Lateral
46	M105A	Platform Horizontal Pipe	150			Lbyy						Lateral
47	M106A	MOD Mount PIpe	96			Lbyy						Lateral
48	M107A	Mount Pipe	72			Lbyy						Lateral
49	HR1	MOD Support Rail	150									Lateral
50	HR2	MOD SR Conn Plate	6									Lateral
51	HR3	MOD SR Conn Plate	6									Lateral
52	HR10	MOD Support Rail	150									Lateral
53	HR11	MOD SR Conn Plate	6									Lateral
54	HR12	MOD SR Conn Plate	6									Lateral
55	HR19	MOD Support Rail	150									Lateral
56	HR20	MOD SR Conn Plate	6									Lateral
57	HR21	MOD SR Conn Plate	6									Lateral
58	HR28	MOD SR Conn Angle	15.408									Lateral
59	HR29	MOD SR Conn Angle	15.408									Lateral
60	HR30	MOD SR Conn Angle	15.408									Lateral
61	PR5	MOD PRK	51.75									Lateral
62	PR6	MOD PRK	51.75									Lateral
63	PR11	MOD PRK	51.75									Lateral
64	PR12	MOD PRK	51.75									Lateral
65	PR17	MOD PRK	51.75									Lateral
66	PR18	MOD PRK	51.75									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	N47	max	1659.905	19	132.952	14	307.425	6	916.296	11	910.518	18	1435.154	18
2		min	-471.049	11	-2702.424	22	-755.975	30	-671.835	3	-994.027	10	-1465.045	10
3	N88	max	130.448	3	895.231	15	307.287	11	1064.086	7	295.554	11	1434.963	7
4		min	-3120.641	27	-898.487	7	-756.165	19	-1260.566	15	-468.764	3	-1464.878	15
5	N81	max	1628.953	20	2702.507	32	307.597	16	516.544	3	1258.535	5	1434.911	12
6		min	-382.919	12	-151.634	7	-756.544	24	-566.017	11	-1005.664	13	-1464.773	4
7	P5	max	2490.367	19	73.989	15	3555.691	19	59.273	9	1000.038	19	44.345	17
8		min	-85.593	11	-73.696	7	-36.262	11	-80.14	17	-10.199	11	-29.764	9
9	P21	max	42.907	16	74.329	16	3555.99	24	883.546	24	24.609	18	43.83	7
10		min	-1244.956	24	-2157.099	24	-36.587	16	-12.749	16	-474.926	26	-28.965	15
11	P13	max	44.521	5	2156.402	30	3555.487	30	5.009	6	35.403	4	43.824	12
12		min	-1245.446	30	-74.23	6	-36.437	6	-848.536	30	-535.196	28	-30.283	1
13	Totals:	max	3797.214	3	3796.901	15	7969.28	34						
14		min	-3797.229	11	-3796.888	7	1966.063	1						

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

	Member	Shape	Code Ch...	Loc[in]	LC	Shear ...	Loc[in]	...	LC	phi*Pnc ..	phi*Pnt [..	phi*Mn y-y [...	phi*Mn z...	Cb	Eqn
1	M163A	0.38 X 6 ...	.187	1.5	12	.588	3	y	6	71020.2...	73872	584.82	9234	3.137	H1-1b
2	M51A	0.38 X 6 ...	.187	1.5	7	.588	3	y	16	71020.2...	73872	584.82	9234	3.137	H1-1b
3	M76	0.38 X 6 ...	.187	1.5	18	.586	3	y	11	71020.2...	73872	584.82	9234	3.133	H1-1b
4	M80A	0.38 X 6 ...	.208	1.5	15	.561	3	y	6	71019.8...	73872	584.82	9234	3.146	H1-1b
5	M169A	0.38 X 6 ...	.208	1.5	10	.561	3	y	16	71019.8...	73872	584.82	9234	3.146	H1-1b
6	M55A	0.38 X 6 ...	.208	1.5	4	.560	3	y	11	71019.8...	73872	584.82	9234	3.146	H1-1b
7	M168A	0.5 x 6 Pl...	.054	1.479	3	.545	0	y	16	94834.5...	97200	1012.5	12150	3.104	H1-1b
8	M54	0.5 x 6 Pl...	.054	1.479	14	.545	0	y	11	94834.5...	97200	1012.5	12150	3.104	H1-1b
9	M79A	0.5 x 6 Pl...	.054	1.479	8	.544	0	y	6	94834.5...	97200	1012.5	12150	3.104	H1-1b
10	HR11	PL6x0.375	.196	2.368	12	.494	1.421	y	13	61901.8...	72900	569.533	9112.5	1.434	H1-1b
11	HR2	PL6x0.375	.200	2.368	17	.479	1.421	y	3	61901.8...	72900	569.533	9112.5	1.442	H1-1b
12	HR20	PL6x0.375	.196	2.368	7	.479	1.421	y	8	61901.8...	72900	569.533	9112.5	1.434	H1-1b
13	M55	0.38 X 6 ...	.197	.875	12	.476	.875	y	6	73624.9...	73872	584.82	9234	1.015	H1-1b
14	M33	0.38 X 6 ...	.197	.875	7	.476	.875	y	16	73624.9...	73872	584.82	9234	1.015	H1-1b
15	M58	0.38 X 6 ...	.197	.875	18	.475	.875	y	11	73624.9...	73872	584.82	9234	1.016	H1-1b
16	M50A	0.5 x 6 Pl...	.058	1.479	13	.468	0	y	17	94834.5...	97200	1012.5	12150	3.081	H1-1b
17	M75	0.5 x 6 Pl...	.058	1.479	8	.465	0	y	11	94834.5...	97200	1012.5	12150	2.978	H1-1b
18	M59A	0.38 X 6 ...	.203	.875	15	.463	.875	y	6	73624.9...	73872	584.82	9234	1.02	H1-1b
19	M59	0.38 X 6 ...	.203	.875	10	.462	.875	y	16	73624.9...	73872	584.82	9234	1.02	H1-1b
20	M34	0.38 X 6 ...	.208	.875	5	.462	.875	y	11	73624.9...	73872	584.82	9234	1.023	H1-1b
21	M162A	0.5 x 6 Pl...	.058	1.479	3	.461	0	y	6	94834.5...	97200	1012.5	12150	3.083	H1-1b
22	HR10	PIPE 2.0	.371	118.4...	8	.252	7.895		5	6295.422	32130	1871.625	1871.625	2.514	H1-1b
23	HR19	PIPE 2.0	.371	118.4...	3	.250	7.895		16	6295.422	32130	1871.625	1871.625	2.514	H1-1b
24	HR1	PIPE 2.0	.387	118.4...	13	.250	7.895		11	6295.422	32130	1871.625	1871.625	2.738	H1-1b
25	M57	0.5 x 6 Pl...	.174	4.688	7	.242	4.688	y	13	91950.0...	97200	1012.5	12150	1.187	H1-1b
26	M52	0.5 x 6 Pl...	.174	4.688	18	.239	4.688	y	8	91950.0...	97200	1012.5	12150	1.187	H1-1b
27	M32	0.5 x 6 Pl...	.180	4.688	13	.238	4.688	y	3	91950.0...	97200	1012.5	12150	1.213	H1-1b
28	M38	0.5 x 6 Pl...	.176	0	15	.227	0	y	17	91950.0...	97200	1012.5	12150	1.072	H1-1b
29	M79	0.5 x 6 Pl...	.176	0	4	.220	0	y	6	91950.0...	97200	1012.5	12150	1.072	H1-1b
30	M63A	0.5 x 6 Pl...	.180	0	9	.217	0	y	11	91950.0...	97200	1012.5	12150	1.093	H1-1b
31	HR30	L2.5x2.5x4	.315	0	17	.183	0	y	8	36536.53	38556	1113.554	2537.388	2.208	H2-1
32	HR28	L2.5x2.5x4	.296	0	11	.183	0	y	3	36536.53	38556	1113.554	2537.388	2.183	H2-1

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

	Member	Shape	Code Ch...	Loc[in]	LC	Shear ...	Loc[in]	...	LC	phi*Pnc ..	phi*Pnt [..	phi*Mn y-y [...	phi*Mn z...	Cb	Eqn
33	HR29	L2.5x2.5x4	.297	0	6	.183	0	y	14	36536.53	38556	1113.554	2537.388	2.183	H2-1
34	M106A	PIPE_2.5	.365	42.947	16	.152	45.474		17	30038.4...	50715	3596.25	3596.25	1.995	H1-1b
35	M56	HSS4X4X4	.248	31.34	24	.150	0	z	5	99854.3...	109188	12663	12663	1.479	H1-1b
36	M92	PIPE_2.5	.365	42.947	6	.149	45.474		6	30038.4...	50715	3596.25	3596.25	1.995	H1-1b
37	M161	PIPE_2.5	.365	42.947	11	.149	45.474		11	30038.4...	50715	3596.25	3596.25	1.995	H1-1b
38	M51	HSS4X4X4	.248	31.34	19	.148	0	z	15	99854.3...	109188	12663	12663	1.479	H1-1b
39	M31	HSS4X4X4	.248	31.34	29	.148	0	z	10	99854.3...	109188	12663	12663	1.479	H1-1b
40	M107A	PIPE_2.0	.519	53.053	11	.125	41.684		17	20866.7...	32130	1871.625	1871.625	2.119	H1-1b
41	M93	PIPE_2.0	.519	53.053	16	.124	41.684		7	20866.7...	32130	1871.625	1871.625	2.119	H1-1b
42	M162	PIPE_2.0	.519	53.053	6	.124	41.684		12	20866.7...	32130	1871.625	1871.625	2.119	H1-1b
43	M105A	PIPE_3.0	.157	15.789	12	.089	7.895		16	28250.5...	65205	5748.75	5748.75	1.774	H1-1b
44	M69	PIPE_3.0	.157	15.789	7	.089	7.895		11	28250.5...	65205	5748.75	5748.75	1.774	H1-1b
45	M91	PIPE_3.0	.158	15.789	17	.089	7.895		6	28250.5...	65205	5748.75	5748.75	1.715	H1-1b
46	HR12	PL6x0.375	.303	3.632	17	.080	4.579	y	13	61901.8...	72900	569.533	9112.5	2.024	H1-1b
47	HR3	PL6x0.375	.285	3.632	6	.079	4.579	y	3	61901.8...	72900	569.533	9112.5	2.012	H1-1b
48	HR21	PL6x0.375	.285	3.632	11	.079	4.579	y	8	61901.8...	72900	569.533	9112.5	2.013	H1-1b
49	M37	HSS4X4X4	.167	0	31	.055	0	y	33	106874....	109188	12663	12663	1.687	H1-1b
50	M63	HSS4X4X4	.167	0	20	.055	0	y	23	106874....	109188	12663	12663	1.688	H1-1b
51	M62A	HSS4X4X4	.167	0	26	.055	0	y	28	106874....	109188	12663	12663	1.688	H1-1b
52	M60A	HSS4X4X4	.147	30.688	23	.054	30.688	y	22	106874....	109188	12663	12663	1.736	H1-1b
53	M60	HSS4X4X4	.147	30.688	34	.054	30.688	y	32	106874....	109188	12663	12663	1.736	H1-1b
54	M35	HSS4X4X4	.147	30.688	28	.054	30.688	y	27	106874....	109188	12663	12663	1.736	H1-1b
55	M106	L2x2x3	.202	50.542	32	.011	50.542	z	31	9618.956	23392.8	557.717	1229.866	2.171	H2-1
56	M45	L2x2x3	.202	50.542	27	.011	50.542	z	26	9618.956	23392.8	557.717	1229.866	2.171	H2-1
57	M70A	L2x2x3	.202	50.542	22	.011	50.542	z	20	9618.956	23392.8	557.717	1229.806	2.171	H2-1
58	M104	L2x2x3	.132	0	32	.010	0	y	32	9618.888	23392.8	557.717	1209.04	1.938	H2-1
59	M43	L2x2x3	.132	0	27	.010	0	y	27	9618.888	23392.8	557.717	1209.02	1.938	H2-1
60	M68	L2x2x3	.132	0	22	.010	0	y	21	9618.888	23392.8	557.717	1208.687	1.935	H2-1
61	PR17	L2.5x2.5x3	.097	25.875	29	.008	51.75	z	4	15809.4...	29192.4	872.574	1723.627	1.137	H2-1
62	PR18	L2.5x2.5x3	.114	25.875	20	.008	0	y	4	15809.4...	29192.4	872.574	1723.627	1.137	H2-1
63	PR5	L2.5x2.5x3	.097	25.875	24	.008	51.75	z	15	15809.4...	29192.4	872.574	1723.627	1.137	H2-1
64	PR6	L2.5x2.5x3	.114	25.875	31	.008	0	y	15	15809.4...	29192.4	872.574	1723.627	1.137	H2-1
65	PR11	L2.5x2.5x3	.097	25.875	19	.008	0	z	10	15809.4...	29192.4	872.574	1723.627	1.137	H2-1
66	PR12	L2.5x2.5x3	.114	25.875	26	.008	0	y	10	15809.4...	29192.4	872.574	1723.627	1.137	H2-1

Exhibit F

Power Density/RF Emissions Report

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: CTHA211A

CTHA211/TCP Communication
230 Clover Mill Road
Mansfield, Connecticut 06268

June 12, 2019

EBI Project Number: 6219002194

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**8.74%**

EBI Consulting

environmental | engineering | due diligence

June 12, 2019

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

Emissions Analysis for Site: CTHA211A - CTHA211/TCP Communication

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **230 Clover Mill Road** in **Mansfield, 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 230 Clover Mill Road in Mansfield, 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 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

5) 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.

6) 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.

7) The antennas used in this modeling are the RFS APXV18-209014-C-A20 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s) in Sector A, the RFS APXV18-209014-C-A20 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s) in Sector B, the RFS APXV18-209014-C-A20 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 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.

8) The antenna mounting height centerline of the proposed antennas is 148 feet above ground level (AGL).

9) 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.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXV18-209014-C-A20	Make / Model:	RFS APXV18-209014-C-A20	Make / Model:	RFS APXV18-209014-C-A20
Frequency Bands:	1900 MHz / 1900 MHz	Frequency Bands:	1900 MHz / 1900 MHz	Frequency Bands:	1900 MHz / 1900 MHz
Gain:	14.4 dBd / 14.4 dBd	Gain:	14.4 dBd / 14.4 dBd	Gain:	14.4 dBd / 14.4 dBd
Height (AGL):	148 feet	Height (AGL):	148 feet	Height (AGL):	148 feet
Channel Count:	6	Channel Count:	6	Channel Count:	6
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	6,610.15	ERP (W):	6,610.15	ERP (W):	6,610.15
Antenna A1 MPE %:	**1.08%**	Antenna B1 MPE %:	**1.08%**	Antenna C1 MPE %:	**1.08%**
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):	148 feet	Height (AGL):	148 feet	Height (AGL):	148 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 %:	**0.94%**	Antenna B2 MPE %:	**0.94%**	Antenna C2 MPE %:	**0.94%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	2.03%
Fire Svcs & Public	1.75%
AT&T	1.23%
Sprint	2.13%
Verizon	1.6%
Site Total MPE % :	8.74%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	2.03%
T-Mobile Sector B Total:	2.03%
T-Mobile Sector C Total:	2.03%
Site Total MPE % :	8.74%

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	826.27	148.0	5.42	1900 MHz GSM	1000	0.54%
T-Mobile 1900 MHz LTE	2	1652.54	148.0	5.42	1900 MHz LTE	1000	0.54%
T-Mobile 600 MHz LTE	2	591.73	148.0	1.94	600 MHz LTE	400	0.49%
T-Mobile 700 MHz LTE	2	648.82	148.0	2.13	700 MHz LTE	467	0.46%
						Total:	**2.03%**

• 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:	2.03%
Sector B:	2.03%
Sector C:	2.03%
T-Mobile Maximum MPE % (Sector A):	2.03%
Site Total:	8.74%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **8.74%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Exhibit G

Mailing Receipts/Proof of Notice

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MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
Linda Painter, Director of Planning & Development
TOWN OF MANSF
AUDREY P. BECK I
4 SOUTH EAGLEVILLE ROAD
STORRS MANSFIELD CT 06268-2574

CT 063 0-01

UPS GROUND
TRACKING #: 1Z V25 742 03 9230 9676

BILLING: P/P

Reference#1: CT11517B
Reference#2: UPS-Planner

UBS 21.5.24. WNTNV50 15.0A 07/2019

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**
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   Your driver will pickup your shipment(s) as usual.

   Customers without a Daily Pickup
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THE UPS STORE
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

NEIL GUERRIERO
3473040176
TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
CONTACTS MANAGEMENT
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN MA 01801-1053

MA 018 9-04

UPS GROUND

TRACKING #: 1Z V25 742 03 9231 1645

BILLING: P/P

Reference#1: CT11517B
Reference#2: UPS-ATC

UIS 21.5.24. WNTNV50 15.0A 07/2019

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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MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQUARE
NEW BRITAIN CT 06051-2655

CT 067 9-06

UPS GROUND
TRACKING #: 1Z V25 742 03 9197 3656

BILLING: P/P

Reference#1: CT11517B
Reference#2: UPS-CSC

UIS 21.5.24. WNTNV50 15.0A 07/2019

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.

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3473040176
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10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
PAUL SHAPIRO
TOWN OF MANSFIELD
4 SOUTH EAGLEVILLE ROAD
STORRS MANSFIELD CT 06268-2574

CT 063 0-01

UPS GROUND

TRACKING #: 1Z V25 742 03 9143 9662

BILLING: P/P

Reference#1: CT11517B
Reference#2: UPS-Mayor

UIS 21.5.24. WNTINV50 15.0A 07/2019