Transcend Wireless

10 Industrial Avenue,
Suite 3
Mahwah, NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

July 31, 2020

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

Notice of Exempt Modification
100 Old Redding Road Redding CT
Latitude: 41.28705556
Longitude: -73.43819444
T-Mobile site: CTFF749A /L600

Dear Ms. Bachman:

T-Mobile currently maintains (9) antennas at the 147-foot level of the existing 180-foot self-support lattice located at 100 Old Redding Road in Redding CT. The self-support lattice is owned by American Tower and the property is owned by Robert Kaufman. T-Mobile now intends to replace (3) of its existing antennas with (3) 600/700 MHz antennas. The new antennas would be installed at the 147-foot level of the tower along with proposed mount modification as per the attached mount analysis.

Planned Modifications:

Remove:
(3) Smart Bias T's
(3) Sector Frames

Remove and Replace:
(3) Andrew LNX-6515DS-VTM (REMOVE) – Add (3) RFS APXVAARR24_43-UNA20 (REPLACE) 600/700 MHz antennas

Existing to Remain:
(6) Ericsson AIR 21, 1.3M B2P B4A
(12) 1-5/8" coax
(1) 1-5/8" Hybrid

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

This facility was approved by Docket No.167 by the Siting Council August 9, 1995, with no record of conditions that would restrict exempt modifications. Therefore, this modification complies with the aforementioned approval. A copy of the approval 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 The Honorable Julia Pemberton, First Selectwoman, and Aimee Pardee, Land Use Director

.

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

cc:
The Honorable Julia Pemberton, First Selectwoman
Aimee Pardee, Land Use Director
American Tower, Tower Owner
Robert Kaufman, Property Owner

Exhibit A

Original Facility Approval

FILE COPY

DOCKET NO. 167 - An application of Springwich Cellular Limited Partnership for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications facility located approximately 2,000 feet east southeast of the intersection of Old Redding Road and Mountain Road with an alternate site located approximately 2,400 feet east of the intersection of Old Redding Road and Mountain Road, in the Town of Redding, Connecticut.	}	Connecticut Siting Council August 9, 1995

DECISION AND ORDER

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a cellular telecommunications tower and equipment building at the proposed prime site and the alternate access road in Redding, Connecticut, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need (Certificate) as provided by General Statutes § 16-50k be issued to Springwich Cellular Limited Partnership (Springwich) for the construction, operation, and maintenance of a cellular telecommunications tower, associated equipment, and building at the proposed prime site located approximately 2,000 feet east southeast of the intersection of Old Redding Road and Mountain Road in the Town of Redding, Connecticut.

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

1. The self-supporting lattice tower shall be no taller than necessary to provide the proposed communication service and the tower shall not exceed a height of 180 feet above ground level (AGL).

2. The Certificate holder shall prepare a Development and Management (D&M) Plan for this site and access road in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include detailed plans for the tower location and tower foundation, the placement of all antennas to be attached to the tower, equipment building, access road, utility line, and security fence; site clearing and tree trimming; and water drainage and erosion and sediment controls consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. Springwich shall provide the Council with a statement of intent and schedule to remove the existing Department of Motor Vehicle (DMV) tower on Fire Tower Road in Redding prior to submission of the D&M Plan to the Council. Springwich must arrange to have the DMV tower removed within one year of the completion of construction of Springwich's tower.

4. No salt or chemicals may be used during access road maintenance to clear snow and ice.

5. Upon the establishment of any new State or federal radio frequency power density standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards as soon as possible.

6. The Certificate holder shall provide the Council a measurement of electromagnetic radio frequency power density at such time when Springwich, the Connecticut State Police, the DMV, and the Northwest Connecticut Public Safety Communications Center broadcast equipment is fully operational. The Certificate holder shall provide the Council a remeasured report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels originally measured.

7. The Certificate holder shall permit public or private entities to share space on the tower for fair consideration or shall provide any requesting entity with specific legal, technical, environmental, economical, or public safety reasons precluding such tower sharing.

8. If the facility does not initially provide cellular or public safety services following completion of construction or if the facility permanently ceases to provide both cellular and public safety services, this Decision and Order shall be void and the Certificate holder shall dismantle the tower, remove all associated equipment, and restore the site. Reapplication for any continued or new use shall be made to the Council before any such use is made.

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

10. The Certificate holder shall notify the Council upon completion of construction and provide the final cost to construct the facility.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below and Notice of Issuance shall be published in the Danbury News Times and the Redding Pilot.

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

APPLICANT	**ITS REPRESENTATIVE**
Springwich Cellular Ltd. Partnership	Peter J. Tyrrell, Sr. Attorney Springwich Cellular Ltd. Partnership 227 Church St., Rm. 1021 New Haven, CT 06510

PARTIES	ITS REPRESENTATIVE
George Vermilyea and the Neighbors Opposed to the Tower ("NOT")	c/o Marie Burroughs 11 Mine Hill Rd. West Redding, CT 06893 and David Silverstone, Esq. Silverstone & Koontz, P.C. 227 Lawrence St. Hartford, CT 06106
Town of Redding	Michael N. LaVelle, Esq. Pullman & Comley, LLC 850 Main St., P.O. Box 7006 Bridgeport, CT 06601-7006
State of Connecticut, Department of Public Safety, Division of State Police	Stephen R. Sarnoski Assistant Attorney General MacKenzie Hall 110 Sherman St. Hartford, CT 06105

The Hon. John E. Stripp
State Representative
Legislative Office Building
Room 4200
Hartford, CT 06106-1591

The Hon. Judith G. Freedman
State Senator
Legislative office Building
Room 3100
Hartford, CT 06106-1591

INTERVENOR

Robert J. Kaufman
100 Old Redding Rd.
West Redding, CT 06896

CERTIFICATION

The Undersigned members of the Connecticut Siting Council (Council) hereby certify that they have heard this case, or read the record thereof, in Docket No. 167, an application of Springwich Cellular Limited Partnership for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications facility located approximately 2,000 feet east southeast of the intersection of Old Redding Road and Mountain Road with an alternate site located approximately 2,400 feet east of the intersection of Old Redding Road and Mountain Road, in the Town of Redding, Connecticut, and voted as follows to approve the prime site:

Council Members	Vote Cast
Mortimer A. Gelston Chairman	YES
Commissioner Reginald J. Smith Designee: Gerald J. Heffernan	YES
Commissioner Sidney J. Holbrook Designee: Brian Emerick	YES
William J. Huber	ABSTAIN
Gloria Dibble Pond	NO
William H. Smith	YES
Colin C. Tait	NO
Edward S. Wilensky	ABSTAIN
Dana J. Wright	ABSENT

Dated at New Britain, Connecticut, August 9, 1995.

Exhibit B

Property card

100 OLD REDDING RD

Location	100 OLD REDDING RD	**Mblu**	35/ / 46/ C/
Acct#	3546C	**Owner**	KAUFMAN ROBERT J
Assessment	$268,400	**Appraisal**	$383,500
PID	100605	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$23,500	$360,000	$383,500
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$16,400	$252,000	$268,400

Owner of Record

Owner	KAUFMAN ROBERT J	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	100 OLD REDDING RD REDDING, CT 06896	**Book & Page**	0117/0510
		Sale Date	06/15/1983
		Instrument	XX

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
KAUFMAN ROBERT J	$0		0117/0510	XX	06/15/1983

Building Information

Building 1 : Section 1

Year Built:	
Living Area:	0
Replacement Cost:	$0
Building Percent Good:	
Replacement Cost Less Depreciation:	$0

Building Attributes

Field	Description
Style	Colonial
Model	
Grade:	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms	
Full Bathrooms	
Half Bathrooms	
Total Xtra Fixtrs	
Total Rooms	
Bath Style:	
Kitchen Style:	
Fireplaces	
Cndtn	
Whirlpool Tubs	
Usrfld 104	
Fin Bsmt Area	
Fin Bsmt Qual	
Bsmt Garages	
Num Park	
Fireplaces	
Usrfld 108	
Usrfld 102	
Usrfld 100	

Building Photo

(http://images.vgsi.com/photos/ReddingCTPhotos//default.jpg)

Building Layout

Building Layout

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend

No Data for Extra Features

Land

Land Use

Use Code	435
Description	Cell Site Vac Lnd
Zone	R-2
Neighborhood	
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0.00
Frontage	
Depth	
Assessed Value	$252,000
Appraised Value	$360,000

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
SHD1	Shed	BR	Brick/Frame	1080.00 S.F.	$15,700	1
SHD1	Shed	FR	Frame	600.00 S.F.	$4,900	1
SHD1	Shed	BR	Brick/Frame	200.00 S.F.	$2,900	1

Valuation History

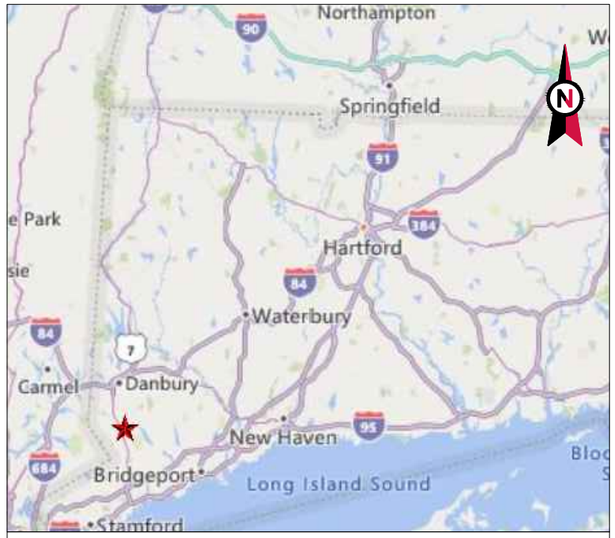
Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$23,500	$360,000	$383,500
2017	$23,500	$360,000	$383,500
2016	$23,500	$360,000	$383,500

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$16,400	$252,000	$268,400
2017	$16,400	$252,000	$268,400
2016	$16,400	$252,000	$268,400

100 OLD REDDING ROAD, REDDING, CT

Exhibit C

Construction Drawings



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: REDDING
ATC SITE NUMBER: 302522
T-MOBILE SITE ID: CTFF749A
SITE ADDRESS: OLD REDDING ROAD REDDING, CT 06896

T-MOBILE L600 ANTENNA AMENDMENT
67D05A_V2 CONFIGURATION

LOCATION MAP

COMPLIANCE CODE

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

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

UTILITY COMPANIES

POWER COMPANY: UNITED ILLUMINATING
PHONE: (800) 722-5584

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

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

PROJECT SUMMARY

SITE ADDRESS:

OLD REDDING ROAD
REDDING, CT 06896
COUNTY: FAIRFIELD

1A CERTIFICATE SUMMARY:

LATITUDE: 41° 17' 13.54" N

LONGITUDE: 73° 26' 17.38" W

GROUND ELEVATION: 686' AMSL

TOWER HEIGHT: 182.4' AGL

HIGHEST APPURTENANCE: 186.8' 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:

ROBERT J KAUFMAN
100 OLD REDDING RD
REDDING, CT, 06875

PROJECT DESCRIPTION

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

REMOVE (3) PANELS, (3) SMART BIAS Ts, AND (3) SECTOR FRAMES

INSTALL (3) NEW PANELS, (3) RRUs, (3) 1-5/8" HYBRID CABLES, AND (3) SECTOR FRAMES

EXISTING (6) PANELS, (1) 1-5/8" HYBRID CABLE, AND (12) 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 HARTFORD TAKE I-84 WEST TO EXIT 3 TO RT 7 SOUTH. FOLLOW TO REDDING AND TURN LEFT ON OLD REDDING RD. AFTER STOP SIGN STAY TO THE RIGHT ON MOUNTAIN RD. ACCESS ROAD IS AHEAD ACROSS FROM # 139.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	1	07/22/19	TC
G-002	GENERAL NOTES	0	05/30/19	EF
C-101	DETAILED SITE PLAN & TOWER ELEVATION	1	07/22/19	TC
C-501	ANTENNA INFORMATION & SCHEDULE	1	07/22/19	TC
C-502	ANTENNA INFORMATION & SCHEDULE	1	07/22/19	TC
E-501	GROUNDING DETAILS	0	05/30/19	EF
R-601	SUPPLEMENTAL	0	05/30/19	EF
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	EF	05/30/19
1	MOUNT ANALYSIS	TC	07/22/19

ATC SITE NUMBER:
302522

ATC SITE NAME:
REDDING

SITE ADDRESS:
OLD REDDING ROAD
REDDING, CT 06896

SEAL:

Authorized by "EOR"
Jul 24 2019 11:16 AM

T-Mobile design

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	05/30/19
ATC JOB NO:	12951820

TITLE SHEET

SHEET NUMBER: G-001

REVISION: 1

GENERAL CONSTRUCTION NOTES:

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

STRUCTURAL STEEL NOTES:

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

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EF	05/30/19

ATC SITE NUMBER:
302522

ATC SITE NAME:
REDDING

SITE ADDRESS:
OLD REDDING ROAD
REDDING, CT 06896

SEAL:

Authorized by "EOR"
Jul 24 2019 11:16 AM

T-Mobile design

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	05/30/19
ATC JOB NO:	12951820

GENERAL NOTES

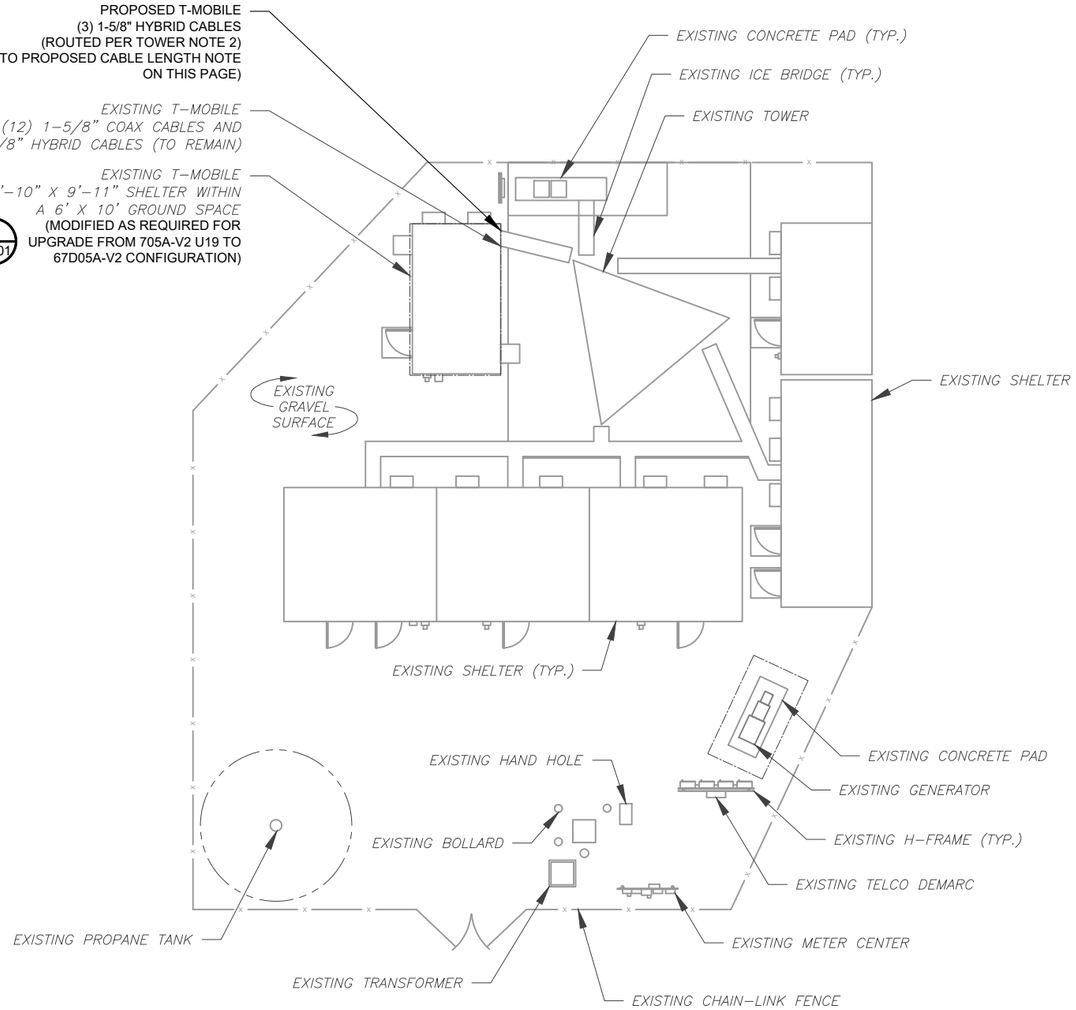
SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

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

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

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

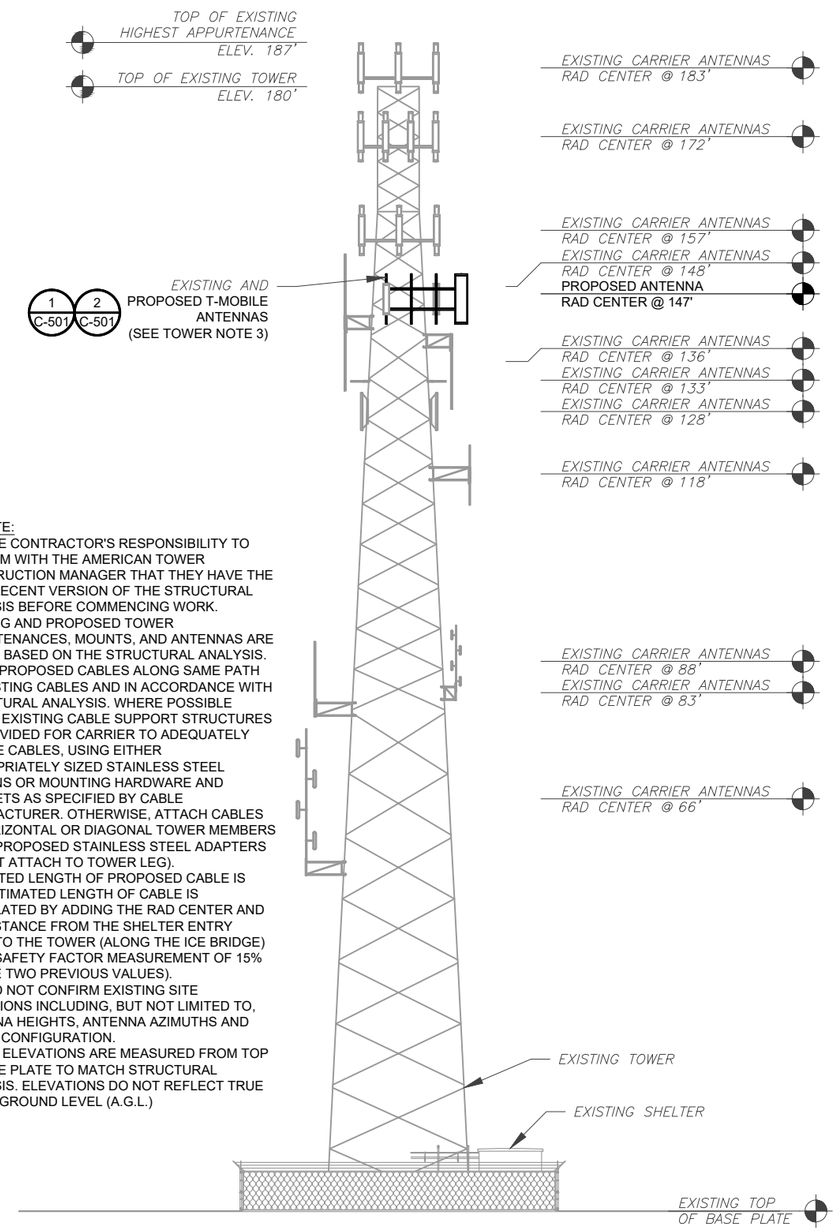


1 DETAILED SITE PLAN

0 20' 40'

SCALE: 1"=20' (11X17)
1"=10' (22X34)

PER MOUNT ANALYSIS COMPLETED BY CLS ENGINEERING, DATED 07-09-19, THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT REPLACEMENT PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT



TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).
3. ESTIMATED LENGTH OF PROPOSED CABLE IS 175'. ESTIMATED LENGTH OF CABLE IS CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES).
4. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA HEIGHTS, ANTENNA AZIMUTHS AND MOUNT CONFIGURATION.
5. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

2 TOWER ELEVATION

SCALE: NOT TO SCALE

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

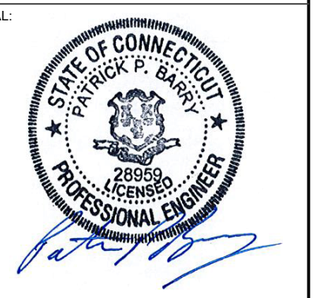
REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EF	05/30/19
1	MOUNT ANALYSIS	TC	07/22/19

ATC SITE NUMBER:
302522

ATC SITE NAME:
REDDING

SITE ADDRESS:
OLD REDDING ROAD
REDDING, CT 06896

SEAL:



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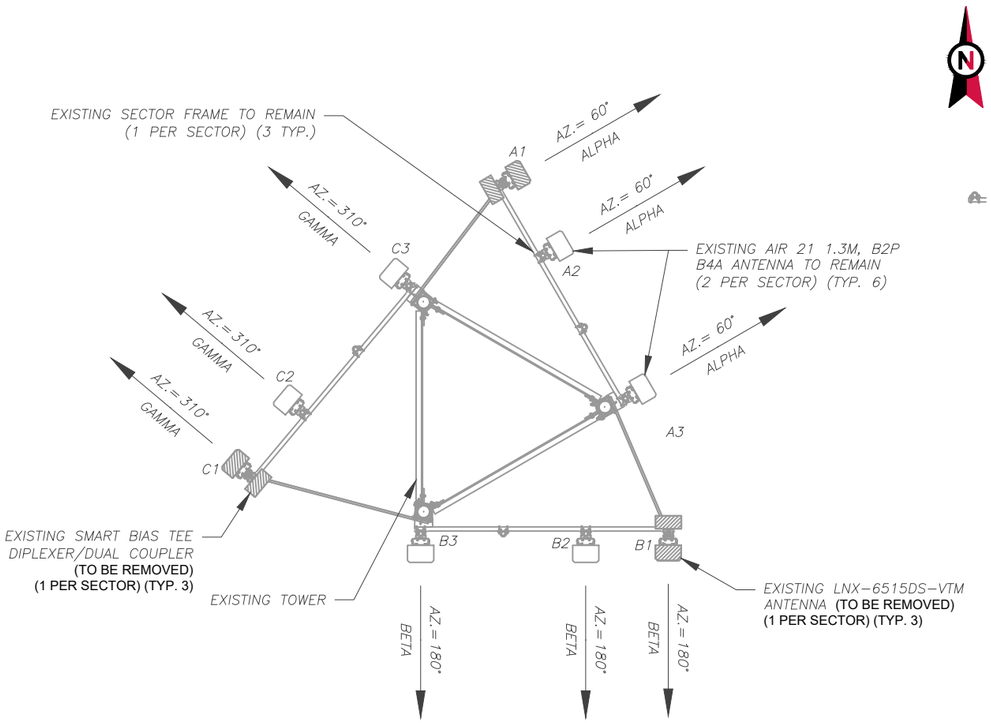
T-Mobile cosign

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	05/30/19
ATC JOB NO:	12951820

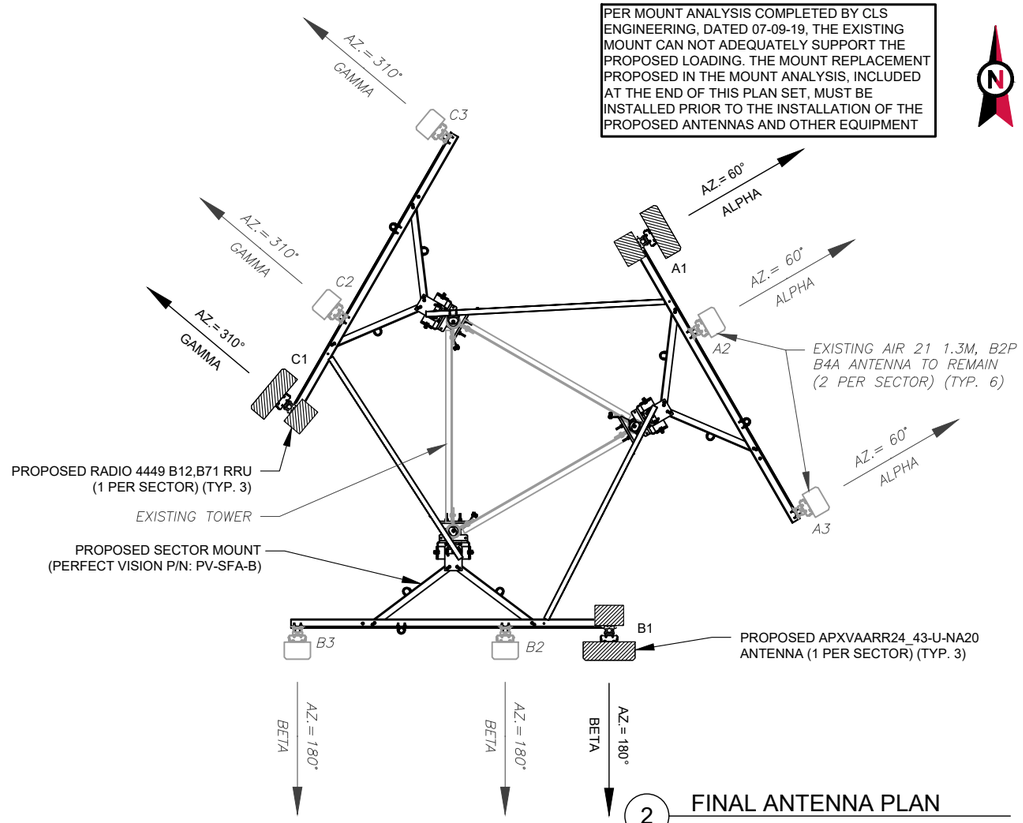
DETAILED SITE PLAN & TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-101	1



1 EXISTING ANTENNA PLAN

PER MOUNT ANALYSIS COMPLETED BY CLS ENGINEERING, DATED 07-09-19, THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT REPLACEMENT 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	LNX-6515DS-VTM	147'-0"	60°	0°	2°	SMART BIAS TEE
ALPHA	A2	AIR 21, 1.3M, B2P B4A	147'-0"	60°	0°	2°	-
ALPHA	A3	AIR 21, 1.3M, B2P B4A	147'-0"	60°	0°	2°	
BETA	B1	LNX-6515DS-VTM	147'-0"	180°	0°	2°	SMART BIAS TEE
BETA	B2	AIR 21, 1.3M, B2P B4A	147'-0"	180°	0°	2°	-
BETA	B3	AIR 21, 1.3M, B2P B4A	147'-0"	180°	0°	2°	
GAMMA	C1	LNX-6515DS-VTM	147'-0"	310°	0°	2°	SMART BIAS TEE
GAMMA	C2	AIR 21, 1.3M, B2P B4A	147'-0"	310°	0°	2°	-
GAMMA	C3	AIR 21, 1.3M, B2P B4A	147'-0"	310°	0°	2°	

NOTES

1. BASED ON APPROVED ATC APPLICATION 12928768, DATED 03/13/2019. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. ATC HAS NOT YET VERIFIED ANY EXISTING ANTENNA CONFIG OR MOUNT CONFIG. CONTRACTOR TO VERIFY MOUNT CONFIG HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (EQUIP) (I.E. CLEARANCES, MOUNT PIPE, SUFFICIENT LENGTH, ETC.) ATC DID NOT ANALYZE ANTENNA MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY LESSEE LOADING.
3. ALL PROPOSED EQUIP INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH ATC'S CM.
4. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
5. POSITIONS START WITH FIRST PIPE ON THE LEFT SIDE (AS VIEWED FROM BEHIND THE MOUNT).

FINAL ANTENNA / EQUIPMENT SCHEDULE

SECTOR	ANT.	MANUFACTURER (MODEL #)	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	A1	APXVAARR24_43-U-NA20	147'-0"	60°	0°	2°	RADIO 4449 B12,B71
ALPHA	A2	AIR 21, 1.3M, B2P B4A	147'-0"	60°	0°	2°	-
ALPHA	A3	AIR 21, 1.3M, B2P B4A	147'-0"	60°	0°	2°	-
BETA	B1	APXVAARR24_43-U-NA20	147'-0"	180°	0°	2°	RADIO 4449 B12,B71
BETA	B2	AIR 21, 1.3M, B2P B4A	147'-0"	180°	0°	2°	-
BETA	B3	AIR 21, 1.3M, B2P B4A	147'-0"	180°	0°	2°	-
GAMMA	C1	APXVAARR24_43-U-NA20	147'-0"	310°	0°	2°	RADIO 4449 B12,B71
GAMMA	C2	AIR 21, 1.3M, B2P B4A	147'-0"	310°	0°	2°	-
GAMMA	C3	AIR 21, 1.3M, B2P B4A	147'-0"	310°	0°	2°	-

CURRENT FIBER DISTRIBUTION/OVP BOX		CURRENT CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	(12) 1-5/8"	(1) 1-5/8"	RMN
-	-	-	-	-

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

3 ANTENNA SCHEDULE

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

PROPOSED FIBER DISTRIBUTION/OVP BOX		PROPOSED CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	(12) 1-5/8"	(1) 1-5/8"	RMN
-	-	-	(3) 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

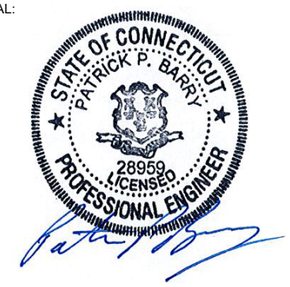
REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EF	05/30/19
1	MOUNT ANALYSIS	TC	07/22/19

ATC SITE NUMBER:
302522

ATC SITE NAME:
REDDING

SITE ADDRESS:
OLD REDDING ROAD
REDDING, CT 06896

SEAL:



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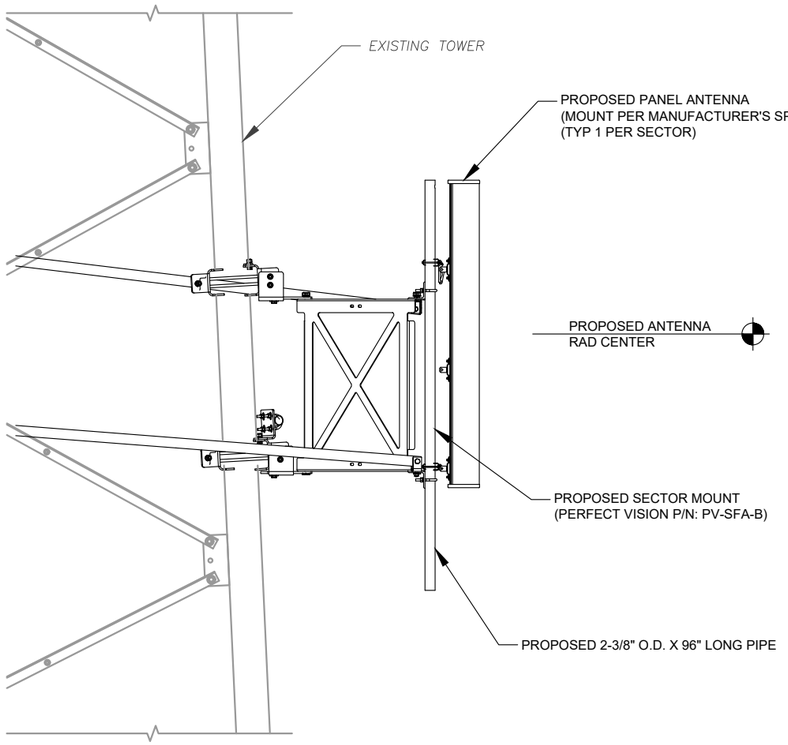
Jul 24 2019 11:16 AM

T-Mobile design

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	05/30/19
ATC JOB NO:	12951820

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-501	1



1 PROPOSED ANTENNA MOUNTING DETAIL (ELEVATION)
SCALE: NOT TO SCALE

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EF	05/30/19
1	MOUNT ANALYSIS	TC	07/22/19

ATC SITE NUMBER:
302522

ATC SITE NAME:
REDDING

SITE ADDRESS:
OLD REDDING ROAD
REDDING, CT 06896

SEAL:

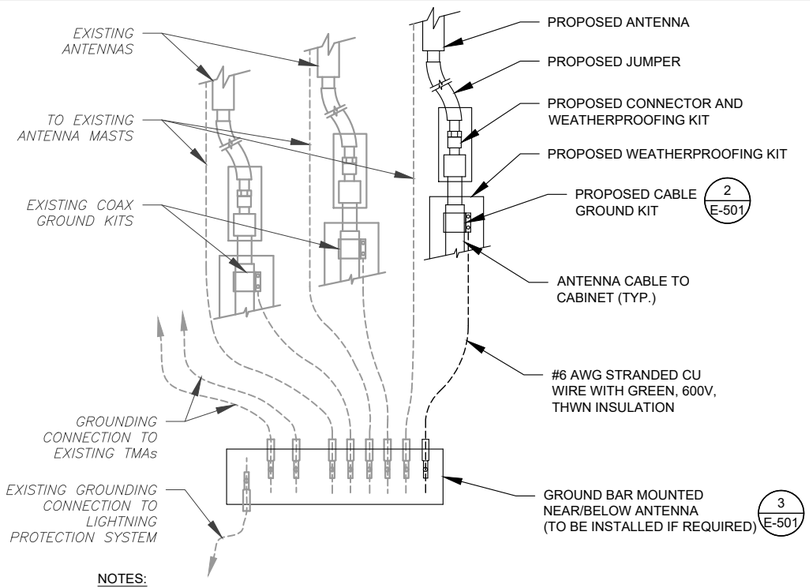
Authorized by "EOR"
Jul 24 2019 11:16 AM

T-Mobile

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	05/30/19
ATC JOB NO:	12951820

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-502	1

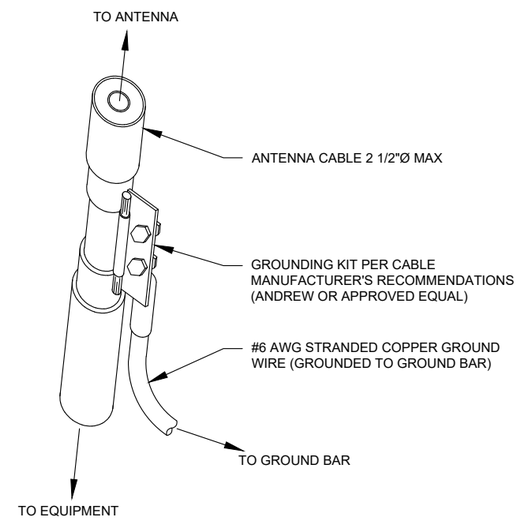


NOTES:

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

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: NOT TO SCALE

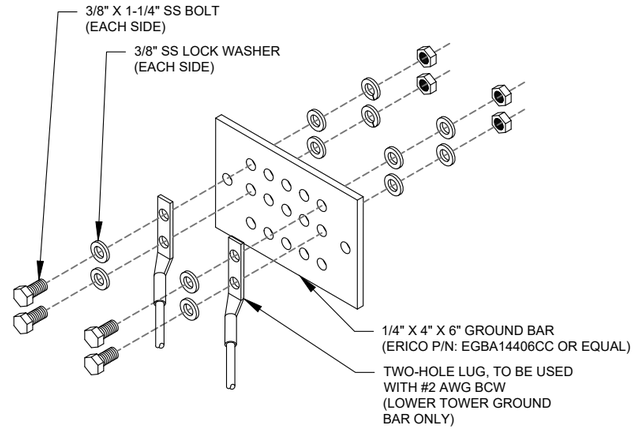


GROUND KIT NOTES:

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

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: NOT TO SCALE



GROUND BAR NOTES:

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

3 TOWER GROUND BAR DETAIL

SCALE: NOT TO SCALE

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EF	05/30/19

ATC SITE NUMBER:
302522

ATC SITE NAME:
REDDING

SITE ADDRESS:
OLD REDDING ROAD
REDDING, CT 06896

SEAL:

Authorized by "EOR"
Jul 24 2019 11:16 AM

T-Mobile design

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	05/30/19
ATC JOB NO:	12951820

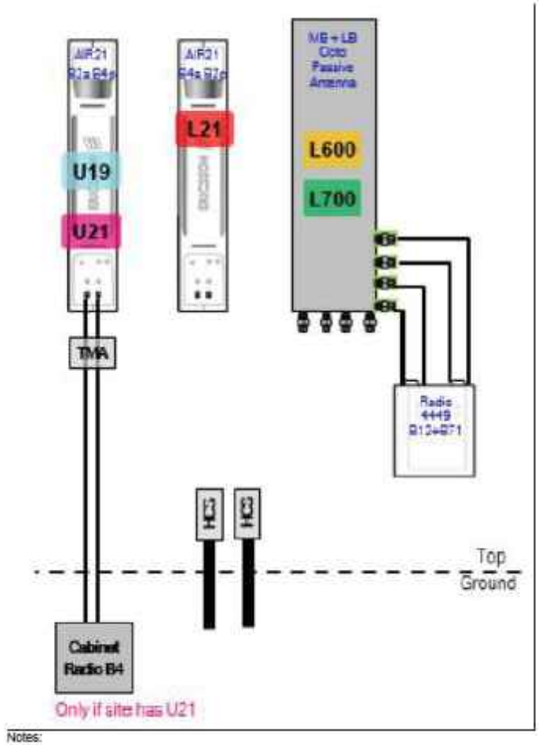
GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

Existing RAN Equipment	
Template:	705A-V2 U19 Shutdown
Enclosure	1
Enclosure Type	RBS 6201 ODE
Baseband	DUW30 (U2100) · DUL20 · DUS41
Radio	RUS01 B12 (x6) L700

Proposed RAN Equipment				
Template:	67D05A-V2			
Enclosure	1	2	3	4
Enclosure Type	RBS 6201 ODE	Ancillary Equipment	Battery Cabinet	PBC 6200
Baseband	DUW30 (U2100) · BB 6630 (N600 (DARK)) · BB 6630 (L2100, L700, L600)			
Hybrid Cable System		Ericsson 9x18 HCS *Select Length*; Ericsson 6x12 HCS *Select AWG & Length* (x3)		
RAN Scope of Work:				

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE



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 Proposed Perfect Vision PV-SFA12-B Sector Frames for American Tower on behalf of T-Mobile
302522 - Redding
Project #: 12928768

T-Mobile Site ID: CTFF749A
Program: L600

CLS Engineering PLLC Project #41124-12928768-01-MA-R1
July 9, 2019

MOUNT DESCRIPTION	Proposed Perfect Vision PV-SFA12-B Sector Frames at 147 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 147 ft AGL
SITE DESCRIPTION	180 ft Self-Supporting Tower
SITE ADDRESS	100 Old Redding Road, Redding, CT 06896-2721, Fairfield County
GPS COORDINATES	41.28708333, -73.4382
ANALYSIS STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	120 mph, V_{ult} / 93 mph, V_{asd} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 0.75" Ice

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

MEMBER USAGE	50%	Pass

Existing mounts to be replaced; 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

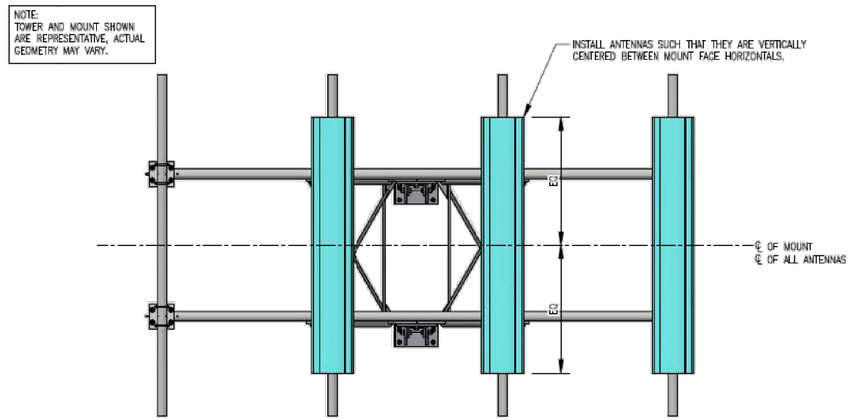
Tyler M. Barker
CLS Engineering, PLLC
Director of Engineering
PE # 32402 Exp. 1/31/2020
COA # PEC.0001833 Exp. 8/14/2019

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 13:45:47 -04'00'

■ CONCLUSION AND RECOMMENDATIONS

According to our structural analysis, the mounts have been found to **PASS PENDING REPLACEMENT**. 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 Sector Frame mounts with (3) proposed Perfect Vision PV-SFA-B Sector Frame Kit.**
- **Install (4) 10'-6" long Pipe 2½ STD, A53 Gr. B, mount pipes at each sector frame mount (12 total). Connect mount pipes to upper and lower face horizontal members with 1/2"Ø U-bolts such that the mount pipes are vertically centered on the mount.**
- **Install (2) stiff arms included in the sector frame kit at each sector frame mount (6 total). Connect to nearest adjacent tower leg with Perfect Vision PV-SAM-U or equal (6 total). Connect to upper face horizontal members as shown in the following sketch.**
- **Install existing and proposed antennas such that they are vertically centered on the mounts. Install existing and proposed RRUS and TMAs behind the antennas.**



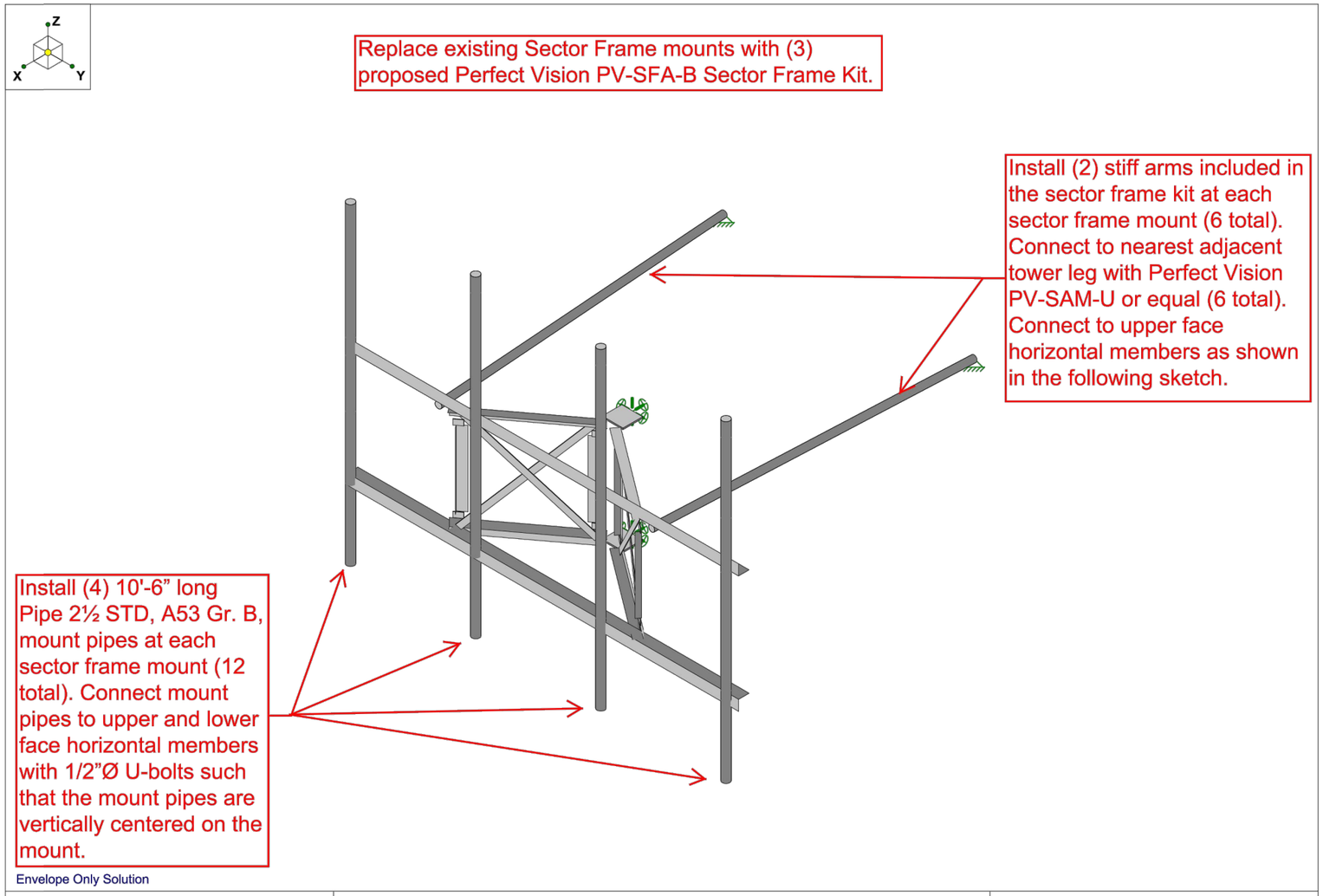
See following sketch and Perfect Vision assembly drawings for additional details.

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

SUPPLEMENTAL

SHEET NUMBER: R-602

REVISION: 1

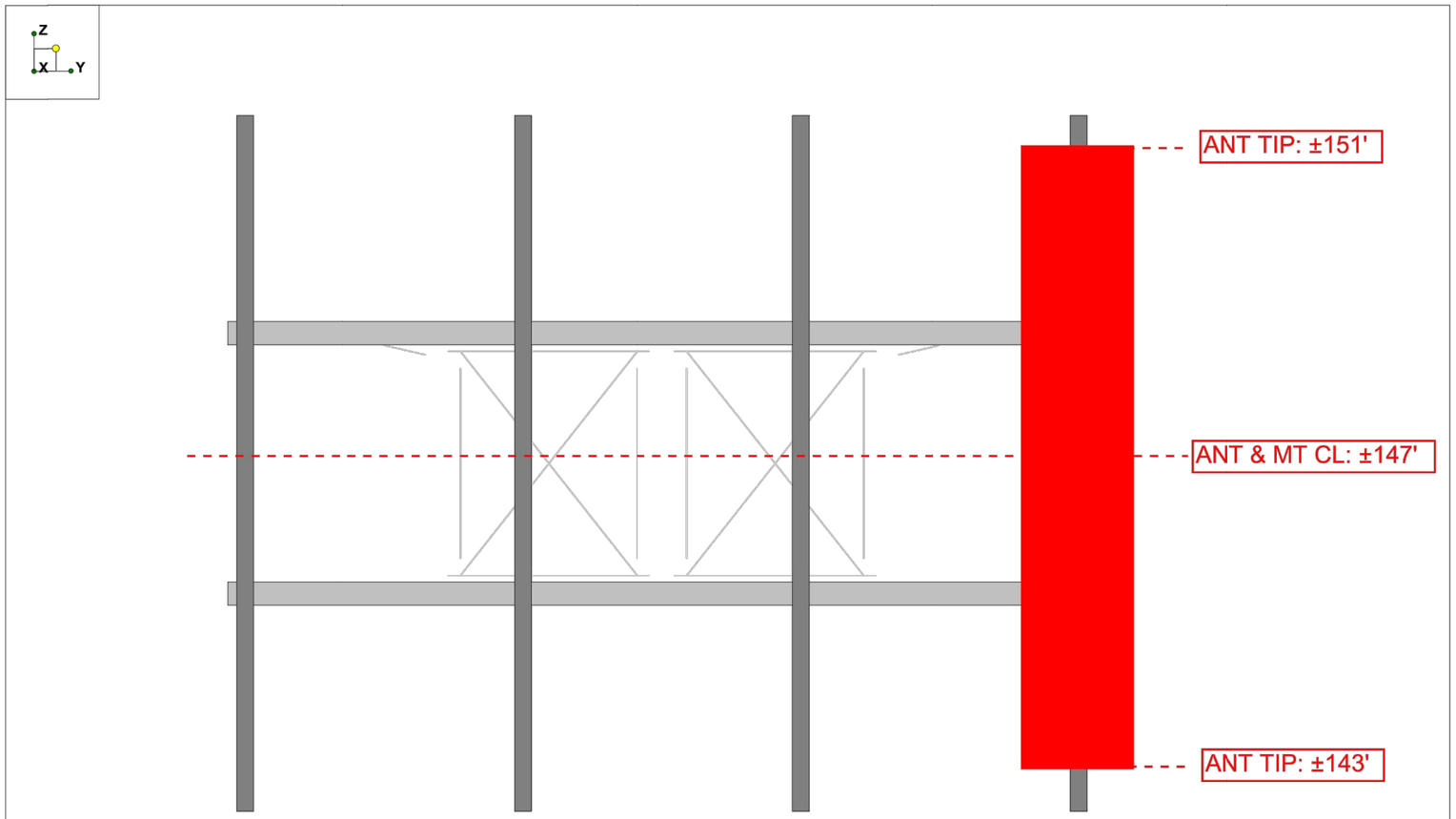


CLS		SK - 0
SMR	41124-12928768-Redding	July 9, 2019 at 10:53 AM
41124-12928768-01-MA-R1	Installation Sketch - Isometric View	41124-12928768-01-MA-R1.r3d

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-603	1



CLS	41124-12928768-Redding	SK - 0
SMR		July 9, 2019 at 11:09 AM
41124-12928768-01-MA-R1	Installation Sketch - Elevation Sketch	41124-12928768-01-MA-R1.r3d

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-604	1

Exhibit D

Structural Analysis Report

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**180 ft Self Supported Tower**
ATC Site Name	:	**Redding, CT**
ATC Site Number	:	**302522**
Engineering Number	:	**12928768_C3_03**
Proposed Carrier	:	**Metro PCS Inc**
Carrier Site Name	:	**ATC Redding Lattice Tower**
Carrier Site Number	:	**CTFF749A**
Site Location	:	**100 Old Redding Road** **Redding, CT 06896-2721** **41.287100,-73.438200**
County	:	**Fairfield**
Date	:	**July 17, 2019**
Max Usage	:	**84%**
Result	:	**Pass**

Prepared By:
Peter Giordano
Structural Engineer II

Peter J. Giordano

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32598
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
Jul 17 2019 4:23 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 180 ft self supported tower to reflect the change in loading by Metro PCS Inc.

Supporting Documents

Tower Drawings	Rohn Drawing #C951762, dated December 26, 1995
Foundation Drawing	Rohn Drawing #A953313-1, dated January 12, 1996
Geotechnical Report	SoilTesting Job #591, dated December 26, 1995
Mount Analysis	CLS Engineering PLLC Project #41124-12928768-01-MA-R1, dated July 9, 2019

Analysis

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

Basic Wind Speed:	93 mph (3-Second Gust, Vasd) / 120 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.22, S_1 = 0.07
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
183.0	3	Kaelus DBC0061F1V51-2	Sector Frames	(1) 0.29" (7.5mm) Fiber (1) 0.39" (10mm) Fiber Trunk (2) 0.74" (18.7mm) 8 AWG 7 (2) 0.78" (19.7mm) 8 AWG 6 (12) 1 1/4" Coax	AT&T MOBILITY
	1	Raycap DC6-48-60-18-8F.			
	6	Powerwave Allgon LGP21401			
	1	Raycap DC6-48-60-18-8C			
	3	Ericsson RRUS 11 (Band 12) (55 lb)			
	3	Ericsson RRUS 32 B30 (53 lbs)			
	3	Ericsson RRUS 32 B2			
	3	Powerwave Allgon 7770.00			
	2	Quintel QS66512-2			
	2	CCI HPA-65R-BUU-H6			
	1	CCI HPA-65R-BUU-H8			
	1	CCI TPA-65R-LCUUUU-H8			
172.0	6	RFS FD9R6004/1C-3L	Sector Frames	(12) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Alcatel-Lucent RRH2X60-1900			
	3	Alcatel-Lucent B25 RRH4x30			
	3	Alcatel-Lucent RRH2x60 700			
	2	RFS APL868013-42T0			
	4	Andrew DB844G65ZAXY			
	2	RFS DB-T1-6Z-8AB-0Z			
	6	Commscope SBNHH-1D65B			
164.0	12	Decibel DB844H90E-XY	Sector Frames	(12) 1 5/8" Coax	SPRINT NEXTEL
157.0	3	Commscope DT465B-2XR	Sector Frames	(4) 1 1/4" Hybriflex Cable	
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	3	RFS APXVSPP18-C-A20			
	3	Alcatel-Lucent 1900 MHz 4X45 RRH			
	3	Alcatel-Lucent 800 MHz RRH			
	3	Alcatel-Lucent RRH2x50-08			
	9	RFS ACU-A20-N			
147.0	3	Ericsson AIR 21, 1.3M, B4A B2P (90.4 lbs)	-	(1) 1 5/8" Hybriflex (12) 1 5/8" Coax	METRO PCS INC
143.0	1	Sinclair SC479-HF1LDF	Side Arms	(3) 1 5/8" Coax (1) 1/2" Coax	CONNECTICUT STATE POLICE DEPT
	1	Andrew Microwaves DB810K-XT			
142.0	1	Bird 432E-83I-01-T			
135.0	1	Generic 24" x 24" Ice Shield	Side Arms	(8) 1 5/8" Coax (1) 3/8" Coax (1) 1/2" Coax (2) EW63	
134.0	2	Sinclair SE419-SF3P4LDF			
	1	Generic 24" x 24" Ice Shield			
132.0	1	Bird 432-83H-01-T			
	2	Generic 96" x 12" Panel			
131.0	1	Morad VHF 156-DELUXE			
130.0	1	Amphenol Antel WPA-700120-4CF-EDIN-X			
129.0	1	RFS PA6-65AC			
128.0	1	RFS PA6-65AC			
125.0	1	Sinclair SE419-SF3P4LDF			
122.0	3	Sinclair SC479-HF1LDF			

Existing and Reserved Equipment Continued

120.5	1	Decibel DB586	Stand-Off	(2) 7/8" Coax	EVERSOURCE ENERGY
	1	Decibel DB586			
115.5	1	Decibel DB586	Stand-Off	(3) 7/8" Coax (1) 1 5/8" Coax	
	1	Decibel DB586			
115.0	1	Telewave ANT450F6			
	1	Sinclair SD210D			
100.0	1	Telewave ANT450F6	Stand-Off	(1) 1 5/8" Coax	
90.0	1	PCTEL GPS-TMG-HR-26N	Stand-Off	(1) 1/2" Coax	SPRINT NEXTEL
88.0	1	Sinclair SD210D	Stand-Off	(2) 7/8" Coax	EVERSOURCE ENERGY
86.0	1	Generic 12' Omni	Side Arm	(1) 7/8" Coax	OTHER
66.0	1	Andrew DB264-A	Leg	(1) 7/8" Coax	CONNECTICUT STATE POLICE DEPT
30.0	1	Generic 2" x 4" GPS	Leg	(1) 1/2" Coax	VERIZON WIRELESS
18.0	1	Generic GPS	Leg	(1) 1/2" Coax	AT&T MOBILITY

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
146.0	3	Kathrein Scala Smart Bias Tee	Existing Sector Frames		METRO PCS INC
	3	Andrew LNX-6515DS-VTM			
	3	Ericsson AIR 21, 1.3M, B2A B4P (91.5 lbs)			

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
147.0	3	Ericsson Radio 4449 B12,B71	PerfectVision PV-SFA12-B Sector Frames	(3) 1 1/4" Hybriflex	METRO PCS INC
	3	Ericsson AIR 21, 1.3M, B4A B2P (90.4 lbs)			
	3	RFS APXVAARR24_43-U-NA20			

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

Install proposed lines alongside of the existing Metro Pcs Inc lines.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	84%	Pass
Diagonals	79%	Pass
Horizontals	23%	Pass
Anchor Bolts	58%	Pass
Leg Bolts	61%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Uplift (Kips)	287.6	388.3	290.6	75%
Axial (Kips)	321.3	433.8	335.7	77%
Total Shear (Kips)	56.4	76.1	59.8	79%

*** 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, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
147.0	Ericsson Radio 4449 B12,B71	METRO PCS INC	0.257	0.015	0.198
	Ericsson AIR 21, 1.3M, B4A B2P (90.4 lbs)				
	RFS APXVAARR24_43-U-NA20				
129.0	RFS PA6-65AC	CONNECTICUT STATE POLICE DEPT	0.197	0.016	0.173
128.0	RFS PA6-65AC				

***Deflection, Twist 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:

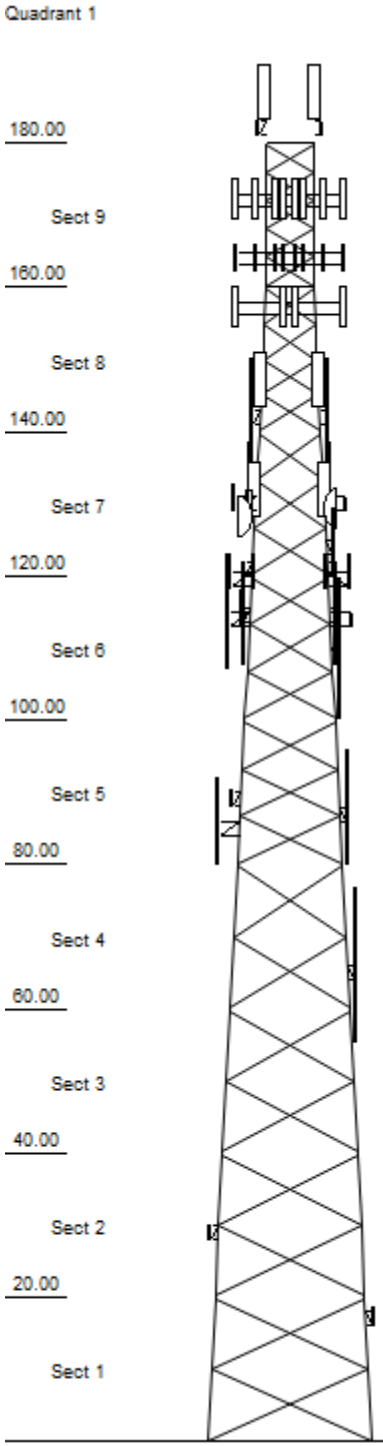
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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.



Loads: 93 mph no ice
50 mph w/ 3/4" radial ice
Site Class: D Ss: 0.22 S1: 0.07
60 mph Serviceability

Job Information

Client : METRO PCS INC			
Tower : 302522	Location : Redding, CT	Base Width :	23.00 ft
Code : ANSI/TIA-222-G		Top Width :	6.65 ft
		Tower Ht :	180.00 ft
		Shape :	Triangle

Sections Properties

Section	Leg Members	Diagonal Members	Horizontal Members
1	PSP 50 ksi ROHN 8 EHS	SAE 50 ksi 4X4X0.3125	
2	PSP 50 ksi ROHN 8 EHS	SAE 50 ksi 4X4X0.25	
3	PX 50 ksi 6" DIA PIPE	SAE 50 ksi 4X4X0.25	
4	PX 50 ksi 6" DIA PIPE	SAE 50 ksi 3.5X3.5X0.25	
5 - 6	PSP 50 ksi ROHN 5 EH	SAE 50 ksi 3X3X0.25	
7	PX 50 ksi 4" DIA PIPE	SAE 36 ksi 2.5X2.5X0.25	
8	PST 50 ksi 3" DIA PIPE	SAE 36 ksi 2X2X0.25	SAE 36 ksi 1.75X1.75X0.1875
9	PST 50 ksi 2-1/2" DIA PIPE	SAE 36 ksi 1.75X1.75X0.1875	SAE 36 ksi 1.75X1.75X0.1875

Discrete Appurtenance

Elev (ft)	Type	Qty	Description
183.00	Panel	1	CCI TPA-65R-LCUUUU-H8
183.00	Panel	1	CCI HPA-65R-BUU-H8
183.00	Panel	2	CCI HPA-65R-BUU-H6
183.00	Panel	2	Quintel QS66512-2
183.00	Panel	3	Powerwave Allgon 7770.00
183.00		3	Ericsson RRUS 32 B2
183.00		3	Ericsson RRUS 32 B30 (53 lbs)
183.00		3	Ericsson RRUS 11 (Band 12) (55
183.00		1	Raycap DC6-48-60-18-8C
183.00		1	Raycap DC6-48-60-18-8F.
183.00		6	Powerwave Allgon LGP21401
183.00		3	Kaelus DBC0061F1V51-2
180.00	Mounting Frame	3	Round Sector Frames
172.00	Mounting Frame	3	Round Sector Frame
172.00	Panel	6	Commscope SBNHH-1D65B
172.00		2	RFS DB-T1-6Z-8AB-0Z
172.00	Panel	4	Andrew DB844G65ZAXY
172.00	Panel	2	RFS APL868013-42T0
172.00		3	Alcatel-Lucent RRH2x60 700
172.00		3	Alcatel-Lucent B25 RRH4x30
172.00		3	Alcatel-Lucent RRH2X60-1900
172.00		6	RFS FD9R6004/1C-3L
164.00	Mounting Frame	3	Round Sector Frame
164.00	Panel	12	Decibel DB844H90E-XY
157.00	Mounting Frame	3	Round Sector Frames
157.00	Panel	3	Commscope DT465B-2XR
157.00	Panel	3	RFS APXVSPP18-C-A20
157.00		3	Alcatel-Lucent TD-RRH8x20-25 w
157.00		3	Alcatel-Lucent 1900 MHz 4X45 R
157.00		3	Alcatel-Lucent 800 MHz RRH
157.00		3	Alcatel-Lucent RRH2x50-08
157.00		9	RFS ACU-A20-N
147.00	Other	3	Perfect Vision PV-SFA12-B Sect
147.00	Panel	3	RFS APXVAARR24_43-U-NA20
147.00	Panel	6	Ericsson AIR 21, 1.3M, B4A B2P
147.00		3	Ericsson Radio 4449 B12,B71
143.00	Whip	1	Sinclair SC479-HF1LDF
143.00	Whip	1	Andrew Microwaves DB810K-XT
142.50	Straight Arm	2	Round Side Arm
142.00		1	Bird 432E-83I-01-T
136.00	Straight Arm	2	Round Side Arm
135.00	Other	1	Generic 24" x 24" Ice Shield
134.00	Whip	2	Sinclair SE419-SF3P4LDF
134.00	Other	1	Generic 24" x 24" Ice Shield
132.00	Panel	2	Generic 96" x 12" Panel

Job Information

Client : METRO PCS INC

Tower : 302522 **Location : Redding, CT** **Base Width : 23.00 ft**

Code : ANSI/TIA-222-G **Top Width : 6.65 ft**

Tower Ht : 180.00 ft

Shape : Triangle

132.00		1	Bird 432-83H-01-T
131.00	Straight Arm	2	Round Side Arm
131.00	Whip	1	Morad VHF 156-DELUXE
130.00	Panel	1	Amphenol Antel WPA-700120-4CF-
129.00	Dish	1	RFS PA6-65AC
128.00	Dish	1	RFS PA6-65AC
127.00	Straight Arm	1	Round Side Arms
125.00	Whip	1	Sinclair SE419-SF3P4LDF
122.00	Whip	3	Sinclair SC479-HF1LDF
121.00	Straight Arm	1	Round Side Arm
120.50	Straight Arm	1	Stand-Off
120.50	Whip	1	Decibel DB586
120.50	Whip	1	Decibel DB586
115.50	Whip	1	Decibel DB586
115.50	Whip	1	Decibel DB586
115.00	Straight Arm	2	Stand-Off
115.00	Whip	1	Sinclair SD210D
110.00	Whip	1	dbSpectra DS4C06F36D-D
100.00	Straight Arm	1	Stand-Off
91.00	Straight Arm	1	Stand-Off
90.00	Whip	1	PCTEL GPS-TMG-HR-26N
88.00	Whip	1	Sinclair SD210D
86.00	Straight Arm	1	Side Arms
86.00	Whip	1	Generic 12' Omni
66.00	Whip	1	Andrew DB264-A
30.00	Whip	1	Generic 2" x 4" GPS
18.00	Whip	1	Generic GPS

Linear Appurtenance

Elev (ft) From	To	Qty	Description
0.00	183.00	12	1 1/4" Coax
0.00	183.00	2	0.78" (19.7mm) 8 AWG
0.00	183.00	2	0.74" (18.7mm) 8 AWG
0.00	183.00	1	0.39" (10mm) Fiber T
0.00	183.00	1	0.29" (7.5mm) Fiber
0.00	180.00	1	Wave Guide
0.00	172.00	1	Wave Guide
0.00	172.00	2	1 5/8" Hybriflex
0.00	172.00	12	1 5/8" Coax
0.00	164.00	1	Wave Guide
0.00	157.00	4	1 1/4" Hybriflex Cab
0.00	147.00	1	Wave Guide
0.00	147.00	1	1 5/8" Hybriflex
0.00	147.00	12	1 5/8" Coax
0.00	147.00	3	1 1/4" Hybriflex Cab
0.00	143.00	2	1 5/8" Coax
0.00	142.50	1	Wave Guide
0.00	142.00	1	1/2" Coax
0.00	142.00	1	1 5/8" Coax
0.00	134.00	2	1 5/8" Coax
0.00	132.00	1	3/8" Coax
0.00	132.00	2	1 5/8" Coax
0.00	131.00	1	1/2" Coax
0.00	129.00	1	EW63
0.00	128.00	1	EW63
0.00	125.00	1	1 5/8" Coax
0.00	122.00	3	1 5/8" Coax
0.00	120.50	1	7/8" Coax
0.00	120.50	1	7/8" Coax
0.00	115.50	1	7/8" Coax

Job Information

Client : METRO PCS INC
Tower : 302522 **Location :** Redding, CT **Base Width :** 23.00 ft
Code : ANSI/TIA-222-G **Top Width :** 6.65 ft
Tower Ht : 180.00 ft
Shape : Triangle

0.00	115.50	1	7/8" Coax
0.00	115.00	1	7/8" Coax
0.00	110.00	2	7/8" Coax
0.00	90.00	1	1/2" Coax
0.00	88.00	2	7/8" Coax
0.00	86.00	1	7/8" Coax
0.00	66.00	1	7/8" Coax
0.00	30.00	1	1/2" Coax
0.00	18.00	1	1/2" Coax

Global Base Foundation Design Loads

Load Case	Moment (k-ft)	Vertical (kip)	Horizontal (kip)
DL + WL	6,293.00	59.41	59.79
DL + WL + IL	2,242.58	176.42	22.04

Individual Base Foundation Design Loads

Vertical (kip)	Uplift (kip)	Horizontal (kip)
335.74	290.57	36.45

Site Number:	302522	Code:	ANSI/TIA-222-G	
Site Name:	Redding, CT	Engineering Number:	12928768_C3_03	7/17/2019 12:29:13 PM
Customer:	METRO PCS INC			

Analysis Parameters

Location:	Fairfield County, CT	Height (ft):	180
Code:	ANSI/TIA-222-G	Base Elevation (ft):	0.00
Shape:	Triangle	Bottom Face Width (ft):	23.00
Tower Manufacturer:	Rohn	Top Face Width (ft):	6.65
Tower Type:	Self Support	Anchor Bolt Detail Type	c
Kd:			
Ke:			

Ice & Wind Parameters

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

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	0.93				
T_L (sec):	6	p:	1.3	C_S:	0.040
S_S:	0.220	S_1:	0.070	C_S, Max:	0.040
F_a:	1.600	F_V:	2.400	C_S, Min:	0.030
S_{ds}:	0.235	S_{d1}:	0.112		

Load Cases

1.2D + 1.6W Normal	93 mph Normal with No Ice
1.2D + 1.6W 60 deg	93 mph 60 degree with No Ice
1.2D + 1.6W 90 deg	93 mph 90 degree with No Ice
0.9D + 1.6W Normal	93 mph Normal with No Ice (Reduced DL)
0.9D + 1.6W 60 deg	93 mph 60 deg with No Ice (Reduced DL)
0.9D + 1.6W 90 deg	93 mph 90 deg with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi Normal	50 mph Normal with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 60 deg	50 mph 60 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 90 deg	50 mph 90 deg with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E Normal	Seismic Normal
(1.2 + 0.2Sds) * DL + E 60 deg	Seismic 60 deg
(1.2 + 0.2Sds) * DL + E 90 deg	Seismic 90 deg
(0.9 - 0.2Sds) * DL + E Normal	Seismic (Reduced DL) Normal
(0.9 - 0.2Sds) * DL + E 60 deg	Seismic (Reduced DL) 60 deg
(0.9 - 0.2Sds) * DL + E 90 deg	Seismic (Reduced DL) 90 deg
1.0D + 1.0W Service Normal	Serviceability - 60 mph Wind Normal
1.0D + 1.0W Service 60 deg	Serviceability - 60 mph Wind 60 deg
1.0D + 1.0W Service 90 deg	Serviceability - 60 mph Wind 90 deg

Tower Loading

Discrete Appurtenance Properties 1.2D + 1.6W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
183.0	Kaelus	3	26	0.4	0.7	6.5	6.2	0.80	0.50	1.0	15.5	22.14	16	92
183.0	Powerwave Allgon	6	14	1.1	1.2	9.2	2.6	0.80	0.50	1.0	79.5	22.14	79	102
183.0	Raycap DC6-48-60-	1	32	1.5	2.0	11.0	0.0	0.80	1.00	1.0	35.4	22.14	35	38
183.0	Raycap DC6-48-60-	1	16	2.0	1.7	18.2	6.4	0.80	1.00	1.0	48.9	22.14	49	19
183.0	Ericsson RRUS 11	3	55	2.5	1.5	17.0	7.2	0.80	0.67	1.0	122.0	22.14	122	198
183.0	Ericsson RRUS 32	3	53	2.7	2.3	12.1	7.0	0.80	0.67	1.0	132.7	22.14	133	191
183.0	Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.67	1.0	132.7	22.14	133	191
183.0	Powerwave Allgon	3	35	5.5	4.6	11.0	5.0	0.80	0.65	2.0	518.4	22.17	259	126
183.0	Quintel QS66512-2	2	111	8.1	6.0	12.0	9.6	0.80	0.80	1.0	313.3	22.14	313	266
183.0	CCI HPA-65R-BUU-H6	2	51	9.7	6.0	14.8	9.0	0.80	0.77	1.0	358.3	22.14	358	122
183.0	CCI HPA-65R-BUU-H8	1	68	13.0	7.7	14.8	7.4	0.80	1.00	1.0	312.6	22.14	313	82
183.0	CCI TPA-65R-	1	82	13.3	8.0	14.4	8.6	0.80	1.00	1.0	320.4	22.14	320	98
180.0	Round Sector	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	22.00	727	1080
172.0	RFS FD9R6004/1C-3L	6	3	0.3	0.5	6.5	1.5	0.80	0.50	0.0	0.0	21.72	22	22
172.0	Alcatel-Lucent	3	43	1.9	1.7	11.2	7.2	0.80	0.50	0.0	0.0	21.72	67	155
172.0	Alcatel-Lucent B25	3	53	2.1	1.8	12.0	7.2	0.80	0.67	0.0	0.0	21.72	101	191
172.0	Alcatel-Lucent	3	57	2.2	1.8	12.0	9.0	0.80	0.67	0.0	0.0	21.72	102	204
172.0	RFS APL868013-	2	6	3.6	4.0	6.0	8.0	0.80	0.79	0.0	0.0	21.72	135	15
172.0	Andrew	4	12	4.3	4.0	10.0	8.5	0.80	0.75	0.0	0.0	21.72	308	58
172.0	RFS DB-T1-6Z-8AB-	2	44	4.8	2.0	24.0	10.0	0.80	0.72	0.0	0.0	21.72	163	106
172.0	Commscope SBNHH-	6	51	8.2	6.1	11.9	7.1	0.80	0.69	0.0	0.0	21.72	799	365
172.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	21.72	718	1080
164.0	Decibel DB844H90E-	12	14	3.6	4.0	6.5	8.0	0.80	0.73	0.0	0.0	21.42	737	202
164.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	21.42	708	1080
157.0	RFS ACU-A20-N	9	1	0.1	0.3	2.0	3.5	0.80	0.50	0.0	0.0	21.16	12	11
157.0	Alcatel-Lucent	3	53	1.7	1.3	13.0	9.8	0.80	0.50	0.0	0.0	21.16	59	190
157.0	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.67	0.0	0.0	21.16	99	191
157.0	Alcatel-Lucent 1900	3	60	2.3	2.1	11.1	10.7	0.80	0.67	0.0	0.0	21.16	107	216
157.0	Alcatel-Lucent TD-	3	70	4.1	2.2	18.6	6.7	0.80	0.61	0.0	0.0	21.16	171	252
157.0	RFS APXVSPP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	0.0	0.0	21.16	382	205
157.0	Commscope	3	58	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.0	21.16	434	209
157.0	Round Sector	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	21.16	699	1080
147.0	Ericsson Radio 4449	3	74	1.6	1.2	13.2	9.3	0.80	0.50	0.0	0.0	20.76	56	266
147.0	Ericsson AIR 21,	6	90	6.1	4.7	12.1	7.9	0.80	0.70	0.0	0.0	20.76	578	651
147.0	Perfect Vision PV-	3	592	18.2	0.0	0.0	0.0	0.75	0.75	0.0	0.0	20.76	867	2131
147.0	RFS	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.0	20.76	864	460
143.0	Andrew Microwaves	1	35	4.3	14.5	3.0	3.0	1.00	1.00	0.0	0.0	20.60	122	42
143.0	Sinclair SC479-	1	34	5.0	14.4	3.5	3.5	1.00	1.00	0.0	0.0	20.60	141	41
142.5	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	20.58	236	360
142.0	Bird 432E-83I-01-T	1	25	1.2	1.0	12.0	7.5	0.90	1.00	0.0	0.0	20.56	30	30
136.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	20.31	233	360
135.0	Generic 24" x 24"	1	50	0.8	0.3	24.0	24.0	1.00	1.00	-2.0	43.9	20.18	22	60
134.0	Generic 24" x 24"	1	50	0.8	0.3	24.0	24.0	1.00	1.00	-1.0	22.0	20.18	22	60
134.0	Sinclair SE419-	2	24	9.6	8.6	2.9	8.5	1.00	1.00	0.0	0.0	20.22	525	58
132.0	Bird 432-83H-01-T	1	25	1.4	1.2	12.0	7.0	1.00	1.00	0.0	0.0	20.13	38	30
132.0	Generic 96" x 12"	2	45	11.5	8.0	12.0	6.0	1.00	0.76	0.0	0.0	20.13	477	108
131.0	Morad VHF 156-	1	1	0.3	3.3	0.8	0.8	1.00	1.00	0.0	0.0	20.09	7	1
131.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	20.09	230	360
130.0	Amphenol Antel	1	7	2.7	4.0	5.6	5.6	0.90	1.00	0.0	0.0	20.05	66	8
129.0	RFS PA6-65AC	1	278	47.0	6.0	72.0	0.0	1.00	1.00	0.0	0.0	20.00	1280	334
128.0	RFS PA6-65AC	1	278	47.0	6.0	72.0	0.0	1.00	1.00	0.0	0.0	19.96	1277	334
127.0	Round Side Arms	1	100	5.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	19.91	110	120
125.0	Sinclair SE419-	1	24	9.6	8.6	2.9	8.5	1.00	1.00	0.0	0.0	19.82	257	29
122.0	Sinclair SC479-	3	34	5.0	14.4	3.5	3.5	1.00	1.00	-4.0	1600.7	19.50	400	122

Site Number: 302522 Code: ANSI/TIA-222-G

Site Name: Redding, CT Engineering Number: 12928768_C3_03 7/17/2019 12:29:13 PM

Customer: METRO PCS INC

Tower Loading

121.0	Round Side Arm	1	100	5.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	19.64	108	120
120.5	Decibel DB586	1	8	0.7	4.9	1.5	1.5	1.00	1.00	0.0	0.0	19.62	20	10
120.5	Decibel DB586	1	8	0.7	4.9	1.5	1.5	1.00	1.00	0.0	0.0	19.62	20	10
120.5	Stand-Off	1	100	3.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	19.62	65	120
115.5	Decibel DB586	1	8	0.7	4.9	1.5	1.5	1.00	1.00	0.0	0.0	19.38	20	10
115.5	Decibel DB586	1	8	0.7	4.9	1.5	1.5	1.00	1.00	0.0	0.0	19.38	20	10
115.0	Stand-Off	2	100	3.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	19.36	128	240
115.0	Sinclair SD210D	1	40	4.4	16.0	41.0	4.0	1.00	1.00	0.0	0.0	19.36	117	48
110.0	dbSpectra	1	50	6.2	19.4	3.2	3.2	1.00	1.00	0.0	0.0	19.11	161	60
100.0	Stand-Off	1	100	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	18.60	76	120
91.00	Stand-Off	1	50	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	18.10	74	60
90.00	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	1.00	1.00	1.0	2.2	18.10	2	1
88.00	Sinclair SD210D	1	40	4.4	16.0	41.0	4.0	1.00	1.00	0.0	0.0	17.93	109	48
86.00	Generic 12' Omni	1	40	3.6	12.0	3.0	3.0	1.00	1.00	0.0	0.0	17.81	87	48
86.00	Side Arms	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	17.81	153	180
66.00	Andrew DB264-A	1	36	5.9	21.5	0.0	0.0	1.00	1.00	0.0	0.0	16.52	133	43
30.00	Generic 2" x 4" GPS	1	5	0.0	0.2	4.0	2.0	1.00	1.00	0.0	0.0	13.19	1	6
18.00	Generic GPS	1	10	0.9	1.0	9.0	6.0	1.00	1.00	0.0	0.0	13.17	16	12
	Totals	168	12955	941.6									17825	15546

Discrete Appurtenance Properties 0.9D + 1.6W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
183.0	Kaelus	3	26	0.4	0.7	6.5	6.2	0.80	0.50	1.0	15.5	22.14	16	69
183.0	Powerwave Allgon	6	14	1.1	1.2	9.2	2.6	0.80	0.50	1.0	79.5	22.14	79	76
183.0	Raycap DC6-48-60-	1	32	1.5	2.0	11.0	0.0	0.80	1.00	1.0	35.4	22.14	35	29
183.0	Raycap DC6-48-60-	1	16	2.0	1.7	18.2	6.4	0.80	1.00	1.0	48.9	22.14	49	14
183.0	Ericsson RRUS 11	3	55	2.5	1.5	17.0	7.2	0.80	0.67	1.0	122.0	22.14	122	149
183.0	Ericsson RRUS 32	3	53	2.7	2.3	12.1	7.0	0.80	0.67	1.0	132.7	22.14	133	143
183.0	Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.67	1.0	132.7	22.14	133	143
183.0	Powerwave Allgon	3	35	5.5	4.6	11.0	5.0	0.80	0.65	2.0	518.4	22.17	259	95
183.0	Quintel QS66512-2	2	111	8.1	6.0	12.0	9.6	0.80	0.80	1.0	313.3	22.14	313	200
183.0	CCI HPA-65R-BUU-H6	2	51	9.7	6.0	14.8	9.0	0.80	0.77	1.0	358.3	22.14	358	92
183.0	CCI HPA-65R-BUU-H8	1	68	13.0	7.7	14.8	7.4	0.80	1.00	1.0	312.6	22.14	313	61
183.0	CCI TPA-65R-	1	82	13.3	8.0	14.4	8.6	0.80	1.00	1.0	320.4	22.14	320	73
180.0	Round Sector	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	22.00	727	810
172.0	RFS FD9R6004/1C-3L	6	3	0.3	0.5	6.5	1.5	0.80	0.50	0.0	0.0	21.72	22	17
172.0	Alcatel-Lucent	3	43	1.9	1.7	11.2	7.2	0.80	0.50	0.0	0.0	21.72	67	116
172.0	Alcatel-Lucent B25	3	53	2.1	1.8	12.0	7.2	0.80	0.67	0.0	0.0	21.72	101	143
172.0	Alcatel-Lucent	3	57	2.2	1.8	12.0	9.0	0.80	0.67	0.0	0.0	21.72	102	153
172.0	RFS APL868013-	2	6	3.6	4.0	6.0	8.0	0.80	0.79	0.0	0.0	21.72	135	11
172.0	Andrew	4	12	4.3	4.0	10.0	8.5	0.80	0.75	0.0	0.0	21.72	308	43
172.0	RFS DB-T1-6Z-8AB-	2	44	4.8	2.0	24.0	10.0	0.80	0.72	0.0	0.0	21.72	163	79
172.0	Commscope SBNHH-	6	51	8.2	6.1	11.9	7.1	0.80	0.69	0.0	0.0	21.72	799	274
172.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	21.72	718	810
164.0	Decibel DB844H90E-	12	14	3.6	4.0	6.5	8.0	0.80	0.73	0.0	0.0	21.42	737	151
164.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	21.42	708	810
157.0	RFS ACU-A20-N	9	1	0.1	0.3	2.0	3.5	0.80	0.50	0.0	0.0	21.16	12	8
157.0	Alcatel-Lucent	3	53	1.7	1.3	13.0	9.8	0.80	0.50	0.0	0.0	21.16	59	143
157.0	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.67	0.0	0.0	21.16	99	143
157.0	Alcatel-Lucent 1900	3	60	2.3	2.1	11.1	10.7	0.80	0.67	0.0	0.0	21.16	107	162
157.0	Alcatel-Lucent TD-	3	70	4.1	2.2	18.6	6.7	0.80	0.61	0.0	0.0	21.16	171	189
157.0	RFS APXVSPP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	0.0	0.0	21.16	382	154
157.0	Commscope	3	58	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.0	21.16	434	157
157.0	Round Sector	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	21.16	699	810

Tower Loading

147.0	Ericsson Radio 4449	3	74	1.6	1.2	13.2	9.3	0.80	0.50	0.0	0.0	20.76	56	200
147.0	Ericsson AIR 21,	6	90	6.1	4.7	12.1	7.9	0.80	0.70	0.0	0.0	20.76	578	488
147.0	Perfect Vision PV-	3	592	18.2	0.0	0.0	0.0	0.75	0.75	0.0	0.0	20.76	867	1598
147.0	RFS	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.0	20.76	864	345
143.0	Andrew Microwaves	1	35	4.3	14.5	3.0	3.0	1.00	1.00	0.0	0.0	20.60	122	32
143.0	Sinclair SC479-	1	34	5.0	14.4	3.5	3.5	1.00	1.00	0.0	0.0	20.60	141	31
142.5	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	20.58	236	270
142.0	Bird 432E-83I-01-T	1	25	1.2	1.0	12.0	7.5	0.90	1.00	0.0	0.0	20.56	30	23
136.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	20.31	233	270
135.0	Generic 24" x 24"	1	50	0.8	0.3	24.0	24.0	1.00	1.00	-2.0	43.9	20.18	22	45
134.0	Generic 24" x 24"	1	50	0.8	0.3	24.0	24.0	1.00	1.00	-1.0	22.0	20.18	22	45
134.0	Sinclair SE419-	2	24	9.6	8.6	2.9	8.5	1.00	1.00	0.0	0.0	20.22	525	43
132.0	Bird 432-83H-01-T	1	25	1.4	1.2	12.0	7.0	1.00	1.00	0.0	0.0	20.13	38	23
132.0	Generic 96" x 12"	2	45	11.5	8.0	12.0	6.0	1.00	0.76	0.0	0.0	20.13	477	81
131.0	Morad VHF 156-	1	1	0.3	3.3	0.8	0.8	1.00	1.00	0.0	0.0	20.09	7	1
131.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	20.09	230	270
130.0	Amphenol Antel	1	7	2.7	4.0	5.6	5.6	0.90	1.00	0.0	0.0	20.05	66	6
129.0	RFS PA6-65AC	1	278	47.0	6.0	72.0	0.0	1.00	1.00	0.0	0.0	20.00	1280	250
128.0	RFS PA6-65AC	1	278	47.0	6.0	72.0	0.0	1.00	1.00	0.0	0.0	19.96	1277	250
127.0	Round Side Arms	1	100	5.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	19.91	110	90
125.0	Sinclair SE419-	1	24	9.6	8.6	2.9	8.5	1.00	1.00	0.0	0.0	19.82	257	22
122.0	Sinclair SC479-	3	34	5.0	14.4	3.5	3.5	1.00	1.00	-4.0	1600.7	19.50	400	92
121.0	Round Side Arm	1	100	5.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	19.64	108	90
120.5	Decibel DB586	1	8	0.7	4.9	1.5	1.5	1.00	1.00	0.0	0.0	19.62	20	7
120.5	Decibel DB586	1	8	0.7	4.9	1.5	1.5	1.00	1.00	0.0	0.0	19.62	20	7
120.5	Stand-Off	1	100	3.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	19.62	65	90
115.5	Decibel DB586	1	8	0.7	4.9	1.5	1.5	1.00	1.00	0.0	0.0	19.38	20	7
115.5	Decibel DB586	1	8	0.7	4.9	1.5	1.5	1.00	1.00	0.0	0.0	19.38	20	7
115.0	Stand-Off	2	100	3.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	19.36	128	180
115.0	Sinclair SD210D	1	40	4.4	16.0	41.0	4.0	1.00	1.00	0.0	0.0	19.36	117	36
110.0	dbSpectra	1	50	6.2	19.4	3.2	3.2	1.00	1.00	0.0	0.0	19.11	161	45
100.0	Stand-Off	1	100	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	18.60	76	90
91.00	Stand-Off	1	50	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	18.10	74	45
90.00	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	1.00	1.00	1.0	2.2	18.10	2	1
88.00	Sinclair SD210D	1	40	4.4	16.0	41.0	4.0	1.00	1.00	0.0	0.0	17.93	109	36
86.00	Generic 12' Omni	1	40	3.6	12.0	3.0	3.0	1.00	1.00	0.0	0.0	17.81	87	36
86.00	Side Arms	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	17.81	153	135
66.00	Andrew DB264-A	1	36	5.9	21.5	0.0	0.0	1.00	1.00	0.0	0.0	16.52	133	32
30.00	Generic 2" x 4" GPS	1	5	0.0	0.2	4.0	2.0	1.00	1.00	0.0	0.0	13.19	1	5
18.00	Generic GPS	1	10	0.9	1.0	9.0	6.0	1.00	1.00	0.0	0.0	13.17	16	9
	Totals	168	12955	941.6									17825	11660

Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elevation (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
183.0	Kaelus	3	44	0.9	0.7	6.5	6.2	0.80	0.50	1.0	5.8	6.40	6	148
183.0	Powerwave Allgon	6	39	1.8	1.2	9.2	2.6	0.80	0.50	1.0	23.8	6.40	24	253
183.0	Raycap DC6-48-60-	1	94	2.2	2.0	11.0	0.0	0.80	1.00	1.0	9.5	6.40	9	101
183.0	Raycap DC6-48-60-	1	75	2.8	1.7	18.2	6.4	0.80	1.00	1.0	12.2	6.40	12	78
183.0	Ericsson RRUS 11	3	123	3.6	1.5	17.0	7.2	0.80	0.67	1.0	31.3	6.40	31	403
183.0	Ericsson RRUS 32	3	128	3.9	2.3	12.1	7.0	0.80	0.67	1.0	34.3	6.40	34	415
183.0	Ericsson RRUS 32 B2	3	128	3.9	2.3	12.1	7.0	0.80	0.67	1.0	34.3	6.40	34	415
183.0	Powerwave Allgon	3	172	6.6	4.6	11.0	5.0	0.80	0.65	2.0	111.8	6.41	56	538
183.0	Quintel QS66512-2	2	313	11.0	6.0	12.0	9.6	0.80	0.80	1.0	76.3	6.40	76	671
183.0	CCI HPA-65R-BUU-H6	2	274	12.5	6.0	14.8	9.0	0.80	0.77	1.0	83.6	6.40	84	568

Tower Loading

183.0	CCI HPA-65R-BUU-H8	1	329	16.6	7.7	14.8	7.4	0.80	1.00	1.0	72.3	6.40	72	342
183.0	CCI TPA-65R-	1	362	17.1	8.0	14.4	8.6	0.80	1.00	1.0	74.4	6.40	74	379
180.0	Round Sector	3	673	31.2	0.0	0.0	0.0	0.75	0.75	0.0	0.0	6.36	285	2200
172.0	RFS FD9R6004/1C-3L	6	11	0.7	0.5	6.5	1.5	0.80	0.50	0.0	0.0	6.28	9	71
172.0	Alcatel-Lucent	3	99	2.8	1.7	11.2	7.2	0.80	0.50	0.0	0.0	6.28	18	323
172.0	Alcatel-Lucent B25	3	114	3.1	1.8	12.0	7.2	0.80	0.67	0.0	0.0	6.28	27	375
172.0	Alcatel-Lucent	3	126	3.2	1.8	12.0	9.0	0.80	0.67	0.0	0.0	6.28	27	411
172.0	RFS APL868013-	2	96	5.5	4.0	6.0	8.0	0.80	0.79	0.0	0.0	6.28	37	194
172.0	Andrew	4	152	5.3	4.0	10.0	8.5	0.80	0.75	0.0	0.0	6.28	68	617
172.0	RFS DB-T1-6Z-8AB-	2	172	6.2	2.0	24.0	10.0	0.80	0.72	0.0	0.0	6.28	38	361
172.0	Commscope SBNHH-	6	229	11.0	6.1	11.9	7.1	0.80	0.69	0.0	0.0	6.28	195	1434
172.0	Round Sector Frame	3	673	31.2	0.0	0.0	0.0	0.75	0.75	0.0	0.0	6.28	281	2200
164.0	Decibel DB844H90E-	12	126	3.9	4.0	6.5	8.0	0.80	0.73	0.0	0.0	6.19	145	1551
164.0	Round Sector Frame	3	673	31.2	0.0	0.0	0.0	0.75	0.75	0.0	0.0	6.19	277	2200
157.0	RFS ACU-A20-N	9	5	0.4	0.3	2.0	3.5	0.80	0.50	0.0	0.0	6.12	7	49
157.0	Alcatel-Lucent	3	112	2.6	1.3	13.0	9.8	0.80	0.50	0.0	0.0	6.12	16	369
157.0	Alcatel-Lucent 800	3	127	3.1	1.6	13.0	10.8	0.80	0.67	0.0	0.0	6.12	26	413
157.0	Alcatel-Lucent 1900	3	141	3.4	2.1	11.1	10.7	0.80	0.67	0.0	0.0	6.12	28	458
157.0	Alcatel-Lucent TD-	3	165	5.4	2.2	18.6	6.7	0.80	0.61	0.0	0.0	6.12	41	536
157.0	RFS APXVSPP18-C-	3	230	10.8	6.0	11.8	7.0	0.80	0.69	0.0	0.0	6.12	93	724
157.0	Commscope	3	260	11.9	6.0	13.8	8.2	0.80	0.69	0.0	0.0	6.12	102	816
157.0	Round Sector	3	669	31.0	0.0	0.0	0.0	0.75	0.75	0.0	0.0	6.12	272	2186
147.0	Ericsson Radio 4449	3	130	2.5	1.2	13.2	9.3	0.80	0.50	0.0	0.0	6.00	15	435
147.0	Ericsson AIR 21,	6	236	8.3	4.7	12.1	7.9	0.80	0.70	0.0	0.0	6.00	142	1526
147.0	Perfect Vision PV-	3	1005	30.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	6.00	266	3371
147.0	RFS	3	521	24.0	8.0	24.0	8.7	0.80	0.63	0.0	0.0	6.00	185	1641
143.0	Andrew Microwaves	1	145	9.5	14.5	3.0	3.0	1.00	1.00	0.0	0.0	5.95	48	152
143.0	Sinclair SC479-	1	158	10.2	14.4	3.5	3.5	1.00	1.00	0.0	0.0	5.95	52	165
142.5	Round Side Arm	2	223	7.9	0.0	0.0	0.0	0.90	0.90	0.0	0.0	5.95	65	507
142.0	Bird 432E-83I-01-T	1	65	1.9	1.0	12.0	7.5	0.90	1.00	0.0	0.0	5.94	9	70
136.0	Round Side Arm	2	222	7.9	0.0	0.0	0.0	0.90	0.90	0.0	0.0	5.87	64	505
135.0	Generic 24" x 24"	1	142	1.6	0.3	24.0	24.0	1.00	1.00	-2.0	16.2	5.83	8	152
134.0	Generic 24" x 24"	1	142	1.6	0.3	24.0	24.0	1.00	1.00	-1.0	8.1	5.83	8	152
134.0	Sinclair SE419-	2	170	12.8	8.6	2.9	8.5	1.00	1.00	0.0	0.0	5.84	128	350
132.0	Bird 432-83H-01-T	1	68	2.2	1.2	12.0	7.0	1.00	1.00	0.0	0.0	5.82	11	73
132.0	Generic 96" x 12"	2	259	14.7	8.0	12.0	6.0	1.00	0.76	0.0	0.0	5.82	110	535
131.0	Morad VHF 156-	1	25	1.1	3.3	0.8	0.8	1.00	1.00	0.0	0.0	5.81	5	25
131.0	Round Side Arm	2	222	7.9	0.0	0.0	0.0	0.90	0.90	0.0	0.0	5.81	63	505
130.0	Amphenol Antel	1	76	4.3	4.0	5.6	5.6	0.90	1.00	0.0	0.0	5.79	19	78
129.0	RFS PA6-65AC	1	745	51.6	6.0	72.0	0.0	1.00	1.00	0.0	0.0	5.78	254	800
128.0	RFS PA6-65AC	1	745	51.6	6.0	72.0	0.0	1.00	1.00	0.0	0.0	5.77	253	800
127.0	Round Side Arms	1	148	7.6	0.0	0.0	0.0	0.90	0.90	0.0	0.0	5.76	30	168
125.0	Sinclair SE419-	1	170	12.8	8.6	2.9	8.5	1.00	1.00	0.0	0.0	5.73	63	175
122.0	Sinclair SC479-	3	157	10.1	14.4	3.5	3.5	1.00	1.00	-4.0	580.9	5.64	145	490
121.0	Round Side Arm	1	148	6.9	0.0	0.0	0.0	0.90	0.90	0.0	0.0	5.68	27	168
120.5	Decibel DB586	1	53	2.0	4.9	1.5	1.5	1.00	1.00	0.0	0.0	5.67	10	55
120.5	Decibel DB586	1	53	2.0	4.9	1.5	1.5	1.00	1.00	0.0	0.0	5.67	10	55
120.5	Stand-Off	1	148	4.5	0.0	0.0	0.0	0.90	0.90	0.0	0.0	5.67	18	168
115.5	Decibel DB586	1	52	2.0	4.9	1.5	1.5	1.00	1.00	0.0	0.0	5.60	9	54
115.5	Decibel DB586	1	52	2.0	4.9	1.5	1.5	1.00	1.00	0.0	0.0	5.60	9	54
115.0	Stand-Off	2	147	4.5	0.0	0.0	0.0	0.90	0.90	0.0	0.0	5.59	35	335
115.0	Sinclair SD210D	1	165	15.1	16.0	41.0	4.0	1.00	1.00	0.0	0.0	5.59	72	173
110.0	dbSpectra	1	200	12.9	19.4	3.2	3.2	1.00	1.00	0.0	0.0	5.52	61	210
100.0	Stand-Off	1	146	4.5	0.0	0.0	0.0	1.00	1.00	0.0	0.0	5.38	21	166
91.00	Stand-Off	1	106	5.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	5.23	22	116
90.00	PCTEL GPS-TMG-HR-	1	5	0.3	0.4	3.2	3.2	1.00	1.00	1.0	1.2	5.23	1	5
88.00	Sinclair SD210D	1	163	14.9	16.0	41.0	4.0	1.00	1.00	0.0	0.0	5.18	66	171
86.00	Generic 12' Omni	1	126	7.7	12.0	3.0	3.0	1.00	1.00	0.0	0.0	5.15	34	134
86.00	Side Arms	1	220	8.6	0.0	0.0	0.0	1.00	1.00	0.0	0.0	5.15	38	250

Tower Loading

66.00	Andrew DB264-A	1	208	23.6	21.5	0.0	0.0	1.00	1.00	0.0	0.0	4.77	96	215
30.00	Generic 2" x 4" GPS	1	7	0.1	0.2	4.0	2.0	1.00	1.00	0.0	0.0	3.81	0	8
18.00	Generic GPS	1	32	1.4	1.0	9.0	6.0	1.00	1.00	0.0	0.0	3.81	4	34
	Totals	168	34251	1464.3									4979	36842

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
183.0	Kaelus	3	26	0.4	0.7	6.5	6.2	0.80	0.50	1.0	4.0	9.21	4	77
183.0	Powerwave Allgon	6	14	1.1	1.2	9.2	2.6	0.80	0.50	1.0	20.7	9.21	21	85
183.0	Raycap DC6-48-60-	1	32	1.5	2.0	11.0	0.0	0.80	1.00	1.0	9.2	9.21	9	32
183.0	Raycap DC6-48-60-	1	16	2.0	1.7	18.2	6.4	0.80	1.00	1.0	12.7	9.21	13	16
183.0	Ericsson RRUS 11	3	55	2.5	1.5	17.0	7.2	0.80	0.67	1.0	31.7	9.21	32	165
183.0	Ericsson RRUS 32	3	53	2.7	2.3	12.1	7.0	0.80	0.67	1.0	34.5	9.21	35	159
183.0	Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.67	1.0	34.5	9.21	35	159
183.0	Powerwave Allgon	3	35	5.5	4.6	11.0	5.0	0.80	0.65	2.0	134.9	9.23	67	105
183.0	Quintel QS66512-2	2	111	8.1	6.0	12.0	9.6	0.80	0.80	1.0	81.5	9.21	82	222
183.0	CCI HPA-65R-BUU-H6	2	51	9.7	6.0	14.8	9.0	0.80	0.77	1.0	93.2	9.21	93	102
183.0	CCI HPA-65R-BUU-H8	1	68	13.0	7.7	14.8	7.4	0.80	1.00	1.0	81.3	9.21	81	68
183.0	CCI TPA-65R-	1	82	13.3	8.0	14.4	8.6	0.80	1.00	1.0	83.3	9.21	83	82
180.0	Round Sector	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	9.16	189	900
172.0	RFS FD9R6004/1C-3L	6	3	0.3	0.5	6.5	1.5	0.80	0.50	0.0	0.0	9.04	6	19
172.0	Alcatel-Lucent	3	43	1.9	1.7	11.2	7.2	0.80	0.50	0.0	0.0	9.04	17	129
172.0	Alcatel-Lucent B25	3	53	2.1	1.8	12.0	7.2	0.80	0.67	0.0	0.0	9.04	26	159
172.0	Alcatel-Lucent	3	57	2.2	1.8	12.0	9.0	0.80	0.67	0.0	0.0	9.04	27	170
172.0	RFS APL868013-	2	6	3.6	4.0	6.0	8.0	0.80	0.79	0.0	0.0	9.04	35	13
172.0	Andrew	4	12	4.3	4.0	10.0	8.5	0.80	0.75	0.0	0.0	9.04	80	48
172.0	RFS DB-T1-6Z-8AB-	2	44	4.8	2.0	24.0	10.0	0.80	0.72	0.0	0.0	9.04	42	88
172.0	Commscope SBNHH-	6	51	8.2	6.1	11.9	7.1	0.80	0.69	0.0	0.0	9.04	208	304
172.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	9.04	187	900
164.0	Decibel DB844H90E-	12	14	3.6	4.0	6.5	8.0	0.80	0.73	0.0	0.0	8.92	192	168
164.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	8.92	184	900
157.0	RFS ACU-A20-N	9	1	0.1	0.3	2.0	3.5	0.80	0.50	0.0	0.0	8.81	3	9
157.0	Alcatel-Lucent	3	53	1.7	1.3	13.0	9.8	0.80	0.50	0.0	0.0	8.81	15	159
157.0	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.67	0.0	0.0	8.81	26	159
157.0	Alcatel-Lucent 1900	3	60	2.3	2.1	11.1	10.7	0.80	0.67	0.0	0.0	8.81	28	180
157.0	Alcatel-Lucent TD-	3	70	4.1	2.2	18.6	6.7	0.80	0.61	0.0	0.0	8.81	44	210
157.0	RFS APXVSPP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	0.0	0.0	8.81	99	171
157.0	Commscope	3	58	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.0	8.81	113	174
157.0	Round Sector	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	8.81	182	900
147.0	Ericsson Radio 4449	3	74	1.6	1.2	13.2	9.3	0.80	0.50	0.0	0.0	8.64	14	222
147.0	Ericsson AIR 21,	6	90	6.1	4.7	12.1	7.9	0.80	0.70	0.0	0.0	8.64	150	542
147.0	Perfect Vision PV-	3	592	18.2	0.0	0.0	0.0	0.75	0.75	0.0	0.0	8.64	226	1776
147.0	RFS	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.0	8.64	225	384
143.0	Andrew Microwaves	1	35	4.3	14.5	3.0	3.0	1.00	1.00	0.0	0.0	8.57	32	35
143.0	Sinclair SC479-	1	34	5.0	14.4	3.5	3.5	1.00	1.00	0.0	0.0	8.57	37	34
142.5	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	8.57	61	300
142.0	Bird 432E-83I-01-T	1	25	1.2	1.0	12.0	7.5	0.90	1.00	0.0	0.0	8.56	8	25
136.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	8.45	61	300
135.0	Generic 24" x 24"	1	50	0.8	0.3	24.0	24.0	1.00	1.00	-2.0	11.4	8.40	6	50
134.0	Generic 24" x 24"	1	50	0.8	0.3	24.0	24.0	1.00	1.00	-1.0	5.7	8.40	6	50
134.0	Sinclair SE419-	2	24	9.6	8.6	2.9	8.5	1.00	1.00	0.0	0.0	8.42	137	48
132.0	Bird 432-83H-01-T	1	25	1.4	1.2	12.0	7.0	1.00	1.00	0.0	0.0	8.38	10	25
132.0	Generic 96" x 12"	2	45	11.5	8.0	12.0	6.0	1.00	0.76	0.0	0.0	8.38	124	90
131.0	Morad VHF 156-	1	1	0.3	3.3	0.8	0.8	1.00	1.00	0.0	0.0	8.36	2	1

Site Number: 302522
Site Name: Redding, CT
Customer: METRO PCS INC

Code: ANSI/TIA-222-G
Engineering Number: 12928768_C3_03

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Tower Loading

131.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	8.36	60	300
130.0	Amphenol Antel	1	7	2.7	4.0	5.6	5.6	0.90	1.00	0.0	0.0	8.34	17	7
129.0	RFS PA6-65AC	1	278	47.0	6.0	72.0	0.0	1.00	1.00	0.0	0.0	8.33	333	278
128.0	RFS PA6-65AC	1	278	47.0	6.0	72.0	0.0	1.00	1.00	0.0	0.0	8.31	332	278
127.0	Round Side Arms	1	100	5.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	8.29	29	100
125.0	Sinclair SE419-	1	24	9.6	8.6	2.9	8.5	1.00	1.00	0.0	0.0	8.25	67	24
122.0	Sinclair SC479-	3	34	5.0	14.4	3.5	3.5	1.00	1.00	-4.0	416.4	8.12	104	102
121.0	Round Side Arm	1	100	5.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	8.17	28	100
120.5	Decibel DB586	1	8	0.7	4.9	1.5	1.5	1.00	1.00	0.0	0.0	8.17	5	8
120.5	Decibel DB586	1	8	0.7	4.9	1.5	1.5	1.00	1.00	0.0	0.0	8.17	5	8
120.5	Stand-Off	1	100	3.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	8.17	17	100
115.5	Decibel DB586	1	8	0.7	4.9	1.5	1.5	1.00	1.00	0.0	0.0	8.07	5	8
115.5	Decibel DB586	1	8	0.7	4.9	1.5	1.5	1.00	1.00	0.0	0.0	8.07	5	8
115.0	Stand-Off	2	100	3.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	8.06	33	200
115.0	Sinclair SD210D	1	40	4.4	16.0	41.0	4.0	1.00	1.00	0.0	0.0	8.06	30	40
110.0	dbSpectra	1	50	6.2	19.4	3.2	3.2	1.00	1.00	0.0	0.0	7.96	42	50
100.0	Stand-Off	1	100	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.74	20	100
91.00	Stand-Off	1	50	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.54	19	50
90.00	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	1.00	1.00	1.0	0.6	7.54	1	1
88.00	Sinclair SD210D	1	40	4.4	16.0	41.0	4.0	1.00	1.00	0.0	0.0	7.46	28	40
86.00	Generic 12' Omni	1	40	3.6	12.0	3.0	3.0	1.00	1.00	0.0	0.0	7.41	23	40
86.00	Side Arms	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.41	40	150
66.00	Andrew DB264-A	1	36	5.9	21.5	0.0	0.0	1.00	1.00	0.0	0.0	6.87	34	36
30.00	Generic 2" x 4" GPS	1	5	0.0	0.2	4.0	2.0	1.00	1.00	0.0	0.0	5.49	0	5
18.00	Generic GPS	1	10	0.9	1.0	9.0	6.0	1.00	1.00	0.0	0.0	5.48	4	10
	Totals	168	12955	941.6									4637	12955

Site Number: 302522 Code: ANSI/TIA-222-G

Site Name: Redding, CT Engineering Number: 12928768_C3_03 7/17/2019 12:29:14 PM

Customer: METRO PCS INC

Tower Loading

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out Of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	183.0	0.29" (7.5mm) Fiber	1	0.29	0.03	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	183.0	0.39" (10mm) Fiber	1	0.39	0.06	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	183.0	0.74" (18.7mm) 8	2	0.74	0.49	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	183.0	0.78" (19.7mm) 8	2	0.78	0.59	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	183.0	1 1/4" Coax	12	1.55	0.63	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	180.0	Wave Guide	1	1.50	6.00	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	172.0	1 5/8" Coax	12	1.98	0.82	50	Lin App	Block	0.00	N	1.00	1.00	0.00
0.00	172.0	1 5/8" Hybriflex	2	1.98	1.30	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	172.0	Wave Guide	1	1.50	6.00	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	164.0	Wave Guide	1	1.50	6.00	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	157.0	1 1/4" Hybriflex	4	1.54	1.00	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	147.0	1 1/4" Hybriflex	3	1.54	1.00	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	147.0	1 5/8" Coax	12	1.98	0.82	50	Lin App	Block	0.00	N	1.00	1.00	0.00
0.00	147.0	1 5/8" Hybriflex	1	1.98	1.30	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	147.0	Wave Guide	1	1.50	6.00	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	143.0	1 5/8" Coax	2	1.98	0.82	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	142.5	Wave Guide	1	1.50	6.00	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	142.0	1 5/8" Coax	1	1.98	0.82	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	142.0	1/2" Coax	1	0.63	0.15	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	134.0	1 5/8" Coax	2	1.98	0.82	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	132.0	1 5/8" Coax	2	1.98	0.82	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	132.0	3/8" Coax	1	0.44	0.08	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	131.0	1/2" Coax	1	0.63	0.15	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	129.0	EW63	1	2.01	0.51	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	128.0	EW63	1	2.01	0.51	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	125.0	1 5/8" Coax	1	1.98	0.82	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	122.0	1 5/8" Coax	3	1.98	0.82	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	120.5	7/8" Coax	1	1.09	0.33	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	120.5	7/8" Coax	1	1.09	0.33	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	115.5	7/8" Coax	1	1.09	0.33	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	115.5	7/8" Coax	1	1.09	0.33	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	115.0	7/8" Coax	1	1.09	0.33	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	110.0	7/8" Coax	2	1.09	0.33	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	90.00	1/2" Coax	1	0.63	0.15	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	88.00	7/8" Coax	2	1.09	0.33	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	86.00	7/8" Coax	1	1.09	0.33	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	66.00	7/8" Coax	1	1.09	0.33	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	30.00	1/2" Coax	1	0.63	0.15	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	18.00	1/2" Coax	1	0.63	0.15	100	Lin App	Individual	0.00	N	1.00	1.00	0.00

Site Number: 302522 Code: ANSI/TIA-222-G

Site Name: Redding, CT Engineering Number: 12928768_C3_03 7/17/2019 12:29:14 PM

Customer: METRO PCS INC

Section Forces

LoadCase 1.2D + 1.6W Normal — 93 mph Normal with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
9	170.00	21.64	11.849	9.583	0.000	0.155	2.75	1.00	1.00	0.0	17.29	47.60	0.00	1731	0	1401	1328	2729
8	150.00	20.88	12.731	11.688	0.000	0.152	2.76	1.00	1.00	0.0	19.37	53.51	0.00	2680	0	1520	2075	3595
7	130.00	20.05	14.234	15.027	0.000	0.144	2.79	1.00	1.00	0.0	22.47	62.79	0.00	3950	0	1712	3101	4812
6	110.00	19.11	19.569	18.364	0.000	0.154	2.76	1.00	1.00	0.0	29.08	80.12	0.00	4909	0	2083	3435	5518
5	90.00	18.05	22.257	18.364	0.000	0.142	2.80	1.00	1.00	0.0	31.82	89.12	0.00	5123	0	2187	3343	5531
4	70.00	16.80	21.074	22.120	0.000	0.132	2.84	1.00	1.00	0.0	31.81	90.34	0.00	5640	0	2064	3186	5250
3	50.00	15.26	26.478	22.126	0.000	0.132	2.84	1.00	1.00	0.0	37.46	106.41	0.00	6031	0	2208	2913	5121
2	30.00	13.19	28.712	28.798	0.000	0.139	2.81	1.00	1.00	0.0	41.72	117.36	0.00	6532	0	2105	2524	4629
1	10.00	13.17	31.130	28.798	0.000	0.132	2.84	1.00	1.00	0.0	44.06	125.11	0.00	7264	0	2242	2541	4783
														43860	0			41967

LoadCase 1.2D + 1.6W 60 deg — 93 mph 60 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
9	170.00	21.64	11.849	9.583	0.000	0.155	2.75	0.80	1.00	0.0	14.92	41.08	0.00	1731	0	1209	1328	2537
8	150.00	20.88	12.731	11.688	0.000	0.152	2.76	0.80	1.00	0.0	16.82	46.47	0.00	2680	0	1320	2075	3395
7	130.00	20.05	14.234	15.027	0.000	0.144	2.79	0.80	1.00	0.0	19.62	54.83	0.00	3950	0	1495	3101	4595
6	110.00	19.11	19.569	18.364	0.000	0.154	2.76	0.80	1.00	0.0	25.16	69.34	0.00	4909	0	1802	3435	5238
5	90.00	18.05	22.257	18.364	0.000	0.142	2.80	0.80	1.00	0.0	27.36	76.65	0.00	5123	0	1881	3343	5225
4	70.00	16.80	21.074	22.120	0.000	0.132	2.84	0.80	1.00	0.0	27.59	78.37	0.00	5640	0	1790	3186	4976
3	50.00	15.26	26.478	22.126	0.000	0.132	2.84	0.80	1.00	0.0	32.17	91.37	0.00	6031	0	1896	2913	4809
2	30.00	13.19	28.712	28.798	0.000	0.139	2.81	0.80	1.00	0.0	35.98	101.21	0.00	6532	0	1815	2524	4339
1	10.00	13.17	31.130	28.798	0.000	0.132	2.84	0.80	1.00	0.0	37.84	107.43	0.00	7264	0	1925	2541	4466
														43860	0			39580

LoadCase 1.2D + 1.6W 90 deg — 93 mph 90 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
9	170.00	21.64	11.849	9.583	0.000	0.155	2.75	0.85	1.00	0.0	15.52	42.71	0.00	1731	0	1257	1328	2585
8	150.00	20.88	12.731	11.688	0.000	0.152	2.76	0.85	1.00	0.0	17.46	48.23	0.00	2680	0	1370	2075	3445
7	130.00	20.05	14.234	15.027	0.000	0.144	2.79	0.85	1.00	0.0	20.33	56.82	0.00	3950	0	1549	3101	4650
6	110.00	19.11	19.569	18.364	0.000	0.154	2.76	0.85	1.00	0.0	26.14	72.03	0.00	4909	0	1872	3435	5308
5	90.00	18.05	22.257	18.364	0.000	0.142	2.80	0.85	1.00	0.0	28.48	79.77	0.00	5123	0	1958	3343	5301
4	70.00	16.80	21.074	22.120	0.000	0.132	2.84	0.85	1.00	0.0	28.65	81.37	0.00	5640	0	1859	3186	5045
3	50.00	15.26	26.478	22.126	0.000	0.132	2.84	0.85	1.00	0.0	33.49	95.13	0.00	6031	0	1974	2913	4887
2	30.00	13.19	28.712	28.798	0.000	0.139	2.81	0.85	1.00	0.0	37.41	105.25	0.00	6532	0	1887	2524	4411
1	10.00	13.17	31.130	28.798	0.000	0.132	2.84	0.85	1.00	0.0	39.39	111.85	0.00	7264	0	2004	2541	4545
														43860	0			40177

Section Forces

LoadCase 0.9D + 1.6W Normal

93 mph Normal with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
9	170.00	21.64	11.849	9.583	0.000	0.155	2.75	1.00	1.00	0.0	17.29	47.60	0.00	1298	0	1401	1328	2729
8	150.00	20.88	12.731	11.688	0.000	0.152	2.76	1.00	1.00	0.0	19.37	53.51	0.00	2010	0	1520	2075	3595
7	130.00	20.05	14.234	15.027	0.000	0.144	2.79	1.00	1.00	0.0	22.47	62.79	0.00	2963	0	1712	3101	4812
6	110.00	19.11	19.569	18.364	0.000	0.154	2.76	1.00	1.00	0.0	29.08	80.12	0.00	3682	0	2083	3435	5518
5	90.00	18.05	22.257	18.364	0.000	0.142	2.80	1.00	1.00	0.0	31.82	89.12	0.00	3842	0	2187	3343	5531
4	70.00	16.80	21.074	22.120	0.000	0.132	2.84	1.00	1.00	0.0	31.81	90.34	0.00	4230	0	2064	3186	5250
3	50.00	15.26	26.478	22.126	0.000	0.132	2.84	1.00	1.00	0.0	37.46	106.41	0.00	4523	0	2208	2913	5121
2	30.00	13.19	28.712	28.798	0.000	0.139	2.81	1.00	1.00	0.0	41.72	117.36	0.00	4899	0	2105	2524	4629
1	10.00	13.17	31.130	28.798	0.000	0.132	2.84	1.00	1.00	0.0	44.06	125.11	0.00	5448	0	2242	2541	4783
														32895	0			41967

LoadCase 0.9D + 1.6W 60 deg

93 mph 60 deg with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
9	170.00	21.64	11.849	9.583	0.000	0.155	2.75	0.80	1.00	0.0	14.92	41.08	0.00	1298	0	1209	1328	2537
8	150.00	20.88	12.731	11.688	0.000	0.152	2.76	0.80	1.00	0.0	16.82	46.47	0.00	2010	0	1320	2075	3395
7	130.00	20.05	14.234	15.027	0.000	0.144	2.79	0.80	1.00	0.0	19.62	54.83	0.00	2963	0	1495	3101	4595
6	110.00	19.11	19.569	18.364	0.000	0.154	2.76	0.80	1.00	0.0	25.16	69.34	0.00	3682	0	1802	3435	5238
5	90.00	18.05	22.257	18.364	0.000	0.142	2.80	0.80	1.00	0.0	27.36	76.65	0.00	3842	0	1881	3343	5225
4	70.00	16.80	21.074	22.120	0.000	0.132	2.84	0.80	1.00	0.0	27.59	78.37	0.00	4230	0	1790	3186	4976
3	50.00	15.26	26.478	22.126	0.000	0.132	2.84	0.80	1.00	0.0	32.17	91.37	0.00	4523	0	1896	2913	4809
2	30.00	13.19	28.712	28.798	0.000	0.139	2.81	0.80	1.00	0.0	35.98	101.21	0.00	4899	0	1815	2524	4339
1	10.00	13.17	31.130	28.798	0.000	0.132	2.84	0.80	1.00	0.0	37.84	107.43	0.00	5448	0	1925	2541	4466
														32895	0			39580

LoadCase 0.9D + 1.6W 90 deg

93 mph 90 deg with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
9	170.00	21.64	11.849	9.583	0.000	0.155	2.75	0.85	1.00	0.0	15.52	42.71	0.00	1298	0	1257	1328	2585
8	150.00	20.88	12.731	11.688	0.000	0.152	2.76	0.85	1.00	0.0	17.46	48.23	0.00	2010	0	1370	2075	3445
7	130.00	20.05	14.234	15.027	0.000	0.144	2.79	0.85	1.00	0.0	20.33	56.82	0.00	2963	0	1549	3101	4650
6	110.00	19.11	19.569	18.364	0.000	0.154	2.76	0.85	1.00	0.0	26.14	72.03	0.00	3682	0	1872	3435	5308
5	90.00	18.05	22.257	18.364	0.000	0.142	2.80	0.85	1.00	0.0	28.48	79.77	0.00	3842	0	1958	3343	5301
4	70.00	16.80	21.074	22.120	0.000	0.132	2.84	0.85	1.00	0.0	28.65	81.37	0.00	4230	0	1859	3186	5045
3	50.00	15.26	26.478	22.126	0.000	0.132	2.84	0.85	1.00	0.0	33.49	95.13	0.00	4523	0	1974	2913	4887
2	30.00	13.19	28.712	28.798	0.000	0.139	2.81	0.85	1.00	0.0	37.41	105.25	0.00	4899	0	1887	2524	4411
1	10.00	13.17	31.130	28.798	0.000	0.132	2.84	0.85	1.00	0.0	39.39	111.85	0.00	5448	0	2004	2541	4545
														32895	0			40177

Site Number: 302522 Code: ANSI/TIA-222-G

Site Name: Redding, CT Engineering Number: 12928768_C3_03 7/17/2019 12:29:14 PM

Customer: METRO PCS INC

Section Forces

LoadCase 1.2D + 1.0Di + 1.0Wi Normal — 50 mph Normal with 0.75 in Radial Ice

Gust Response Factor (Gh): 0.85 Ice Dead Load Factor 1.00 Ice Importance Factor : 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
9	170.00	6.26	11.849	46.072	36.48	0.402	2.06	1.00	1.00	1.8	41.21	84.87	36.49	7481	5750	451	662	1113
8	150.00	6.04	12.731	46.557	34.86	0.357	2.16	1.00	1.00	1.7	41.53	89.53	34.87	10255	7574	459	938	1398
7	130.00	5.79	14.234	46.753	31.72	0.292	2.32	1.00	1.00	1.7	42.12	97.65	31.73	14051	10101	481	1456	1937
6	110.00	5.52	19.569	52.511	34.14	0.287	2.33	1.00	1.00	1.7	50.81	118.49	34.15	17101	12192	556	1713	2269
5	90.00	5.22	22.257	54.805	36.44	0.264	2.40	1.00	1.00	1.7	54.52	130.58	36.44	17667	12544	579	1726	2305
4	70.00	4.86	21.074	52.989	30.86	0.222	2.52	1.00	1.00	1.6	51.74	130.58	30.87	17963	12324	539	1721	2260
3	50.00	4.41	26.478	53.846	31.72	0.214	2.55	1.00	1.00	1.6	57.55	146.70	31.72	18406	12375	550	1560	2110
2	30.00	3.81	28.712	60.761	31.96	0.213	2.55	1.00	1.00	1.5	63.77	162.73	31.96	18603	12071	527	1318	1845
1	10.00	3.81	31.130	59.045	30.24	0.197	2.61	1.00	1.00	1.3	65.01	169.53	30.25	18047	10783	549	1278	1827
														139574	95714			17064

LoadCase 1.2D + 1.0Di + 1.0Wi 60 deg — 50 mph 60 deg with 0.75 in Radial Ice

Gust Response Factor (Gh): 0.85 Ice Dead Load Factor 1.00 Ice Importance Factor : 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
9	170.00	6.26	11.849	46.072	36.48	0.402	2.06	0.80	1.00	1.8	38.84	79.99	36.49	7481	5750	425	662	1087
8	150.00	6.04	12.731	46.557	34.86	0.357	2.16	0.80	1.00	1.7	38.99	84.05	34.87	10255	7574	431	938	1370
7	130.00	5.79	14.234	46.753	31.72	0.292	2.32	0.80	1.00	1.7	39.27	91.05	31.73	14051	10101	448	1456	1904
6	110.00	5.52	19.569	52.511	34.14	0.287	2.33	0.80	1.00	1.7	46.89	109.36	34.15	17101	12192	514	1713	2227
5	90.00	5.22	22.257	54.805	36.44	0.264	2.40	0.80	1.00	1.7	50.07	119.92	36.44	17667	12544	532	1726	2258
4	70.00	4.86	21.074	52.989	30.86	0.222	2.52	0.80	1.00	1.6	47.52	119.95	30.87	17963	12324	495	1721	2216
3	50.00	4.41	26.478	53.846	31.72	0.214	2.55	0.80	1.00	1.6	52.26	133.20	31.72	18406	12375	499	1560	2059
2	30.00	3.81	28.712	60.761	31.96	0.213	2.55	0.80	1.00	1.5	58.03	148.08	31.96	18603	12071	480	1318	1798
1	10.00	3.81	31.130	59.045	30.24	0.197	2.61	0.80	1.00	1.3	58.79	153.30	30.25	18047	10783	496	1278	1775
														139574	95714			16693

LoadCase 1.2D + 1.0Di + 1.0Wi 90 deg — 50 mph 90 deg with 0.75 in Radial Ice

Gust Response Factor (Gh): 0.85 Ice Dead Load Factor 1.00 Ice Importance Factor : 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
9	170.00	6.26	11.849	46.072	36.48	0.402	2.06	0.85	1.00	1.8	39.43	81.21	36.49	7481	5750	432	662	1094
8	150.00	6.04	12.731	46.557	34.86	0.357	2.16	0.85	1.00	1.7	39.62	85.42	34.87	10255	7574	438	938	1377
7	130.00	5.79	14.234	46.753	31.72	0.292	2.32	0.85	1.00	1.7	39.98	92.70	31.73	14051	10101	457	1456	1912
6	110.00	5.52	19.569	52.511	34.14	0.287	2.33	0.85	1.00	1.7	47.87	111.64	34.15	17101	12192	524	1713	2237
5	90.00	5.22	22.257	54.805	36.44	0.264	2.40	0.85	1.00	1.7	51.18	122.59	36.44	17667	12544	544	1726	2270
4	70.00	4.86	21.074	52.989	30.86	0.222	2.52	0.85	1.00	1.6	48.58	122.61	30.87	17963	12324	506	1721	2227
3	50.00	4.41	26.478	53.846	31.72	0.214	2.55	0.85	1.00	1.6	53.58	136.58	31.72	18406	12375	512	1560	2072
2	30.00	3.81	28.712	60.761	31.96	0.213	2.55	0.85	1.00	1.5	59.46	151.74	31.96	18603	12071	492	1318	1809
1	10.00	3.81	31.130	59.045	30.24	0.197	2.61	0.85	1.00	1.3	60.35	157.36	30.25	18047	10783	509	1278	1788
														139574	95714			16786

Site Number: 302522 Code: ANSI/TIA-222-G

Site Name: Redding, CT Engineering Number: 12928768_C3_03 7/17/2019 12:29:14 PM

Customer: METRO PCS INC

Section Forces

LoadCase 1.0D + 1.0W Service Normal — Serviceability - 60 mph Wind Normal

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
9	170.00	9.01	11.849	9.583	0.000	0.155	2.75	1.00	1.00	0.0	17.29	47.60	0.00	1442	0	365	346	710
8	150.00	8.69	12.731	11.688	0.000	0.152	2.76	1.00	1.00	0.0	19.37	53.51	0.00	2234	0	395	540	935
7	130.00	8.34	14.234	15.027	0.000	0.144	2.79	1.00	1.00	0.0	22.75	63.58	0.00	3292	0	451	807	1258
6	110.00	7.96	19.569	18.364	0.000	0.154	2.76	1.00	1.00	0.0	30.00	82.67	0.00	4091	0	559	894	1453
5	90.00	7.51	22.257	18.364	0.000	0.142	2.80	1.00	1.00	0.0	32.67	91.50	0.00	4269	0	584	870	1454
4	70.00	6.99	21.074	22.120	0.000	0.132	2.84	1.00	1.00	0.0	33.59	95.41	0.00	4700	0	567	829	1396
3	50.00	6.35	26.478	22.126	0.000	0.132	2.84	1.00	1.00	0.0	39.00	110.79	0.00	5026	0	598	758	1356
2	30.00	5.49	28.712	28.798	0.000	0.139	2.81	1.00	1.00	0.0	44.46	125.08	0.00	5443	0	583	657	1240
1	10.00	5.48	31.130	28.798	0.000	0.132	2.84	1.00	1.00	0.0	46.85	133.03	0.00	6053	0	620	661	1281
														36550	0			11082

LoadCase 1.0D + 1.0W Service 60 deg — Serviceability - 60 mph Wind 60 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
9	170.00	9.01	11.849	9.583	0.000	0.155	2.75	0.80	1.00	0.0	14.92	41.08	0.00	1442	0	315	346	660
8	150.00	8.69	12.731	11.688	0.000	0.152	2.76	0.80	1.00	0.0	16.82	46.47	0.00	2234	0	343	540	883
7	130.00	8.34	14.234	15.027	0.000	0.144	2.79	0.80	1.00	0.0	19.91	55.63	0.00	3292	0	395	807	1201
6	110.00	7.96	19.569	18.364	0.000	0.154	2.76	0.80	1.00	0.0	26.09	71.89	0.00	4091	0	486	894	1380
5	90.00	7.51	22.257	18.364	0.000	0.142	2.80	0.80	1.00	0.0	28.21	79.03	0.00	4269	0	505	870	1374
4	70.00	6.99	21.074	22.120	0.000	0.132	2.84	0.80	1.00	0.0	29.38	83.44	0.00	4700	0	496	829	1325
3	50.00	6.35	26.478	22.126	0.000	0.132	2.84	0.80	1.00	0.0	33.70	95.74	0.00	5026	0	517	758	1275
2	30.00	5.49	28.712	28.798	0.000	0.139	2.81	0.80	1.00	0.0	38.72	108.92	0.00	5443	0	508	657	1165
1	10.00	5.48	31.130	28.798	0.000	0.132	2.84	0.80	1.00	0.0	40.63	115.35	0.00	6053	0	538	661	1199
														36550	0			10461

LoadCase 1.0D + 1.0W Service 90 deg — Serviceability - 60 mph Wind 90 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
9	170.00	9.01	11.849	9.583	0.000	0.155	2.75	0.85	1.00	0.0	15.52	42.71	0.00	1442	0	327	346	673
8	150.00	8.69	12.731	11.688	0.000	0.152	2.76	0.85	1.00	0.0	17.46	48.23	0.00	2234	0	356	540	896
7	130.00	8.34	14.234	15.027	0.000	0.144	2.79	0.85	1.00	0.0	20.62	57.61	0.00	3292	0	409	807	1215
6	110.00	7.96	19.569	18.364	0.000	0.154	2.76	0.85	1.00	0.0	27.06	74.58	0.00	4091	0	504	894	1398
5	90.00	7.51	22.257	18.364	0.000	0.142	2.80	0.85	1.00	0.0	29.33	82.15	0.00	4269	0	525	870	1394
4	70.00	6.99	21.074	22.120	0.000	0.132	2.84	0.85	1.00	0.0	30.43	86.43	0.00	4700	0	514	829	1342
3	50.00	6.35	26.478	22.126	0.000	0.132	2.84	0.85	1.00	0.0	35.03	99.50	0.00	5026	0	537	758	1295
2	30.00	5.49	28.712	28.798	0.000	0.139	2.81	0.85	1.00	0.0	40.15	112.96	0.00	5443	0	527	657	1184
1	10.00	5.48	31.130	28.798	0.000	0.132	2.84	0.85	1.00	0.0	42.18	119.77	0.00	6053	0	558	661	1219
														36550	0			10617

Equivalent Lateral Force Method

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

Spectral Response Acceleration for Short Period (S_s):	0.22
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.07
Long-Period Transition Period (T_L - Seconds):	6
Importance Factor (I_e):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v:	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.23
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11
Seismic Response Coefficient (C_s):	0.04
Upper Limit C_s:	0.04
Lower Limit C_s:	0.03
Period based on Rayleigh Method (sec):	0.93
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.22
Total Unfactored Dead Load:	49.51 k
Seismic Base Shear (E):	2.58 k

LoadCase (1.2 + 0.2Sds) * DL + E Seismic

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
9	170.00	1,442	740,052	0.057	148	1,799
8	150.00	2,234	984,376	0.076	197	2,785
7	130.00	3,292	1,219,09	0.094	244	4,105
6	110.00	4,091	1,236,81	0.096	247	5,101
5	90.00	4,269	1,011,37	0.078	202	5,323
4	70.00	4,700	820,411	0.063	164	5,860
3	50.00	5,026	582,897	0.045	117	6,267
2	30.00	5,443	339,374	0.026	68	6,787
1	10.00	6,053	99,325	0.008	20	7,548
Kaelus DBC0061F1V51-2	180.00	76	42,073	0.003	8	95
Powerwave Allgon LGP21401	180.00	85	46,527	0.004	9	105
Raycap DC6-48-60-18-8F.	180.00	32	17,489	0.001	3	40
Raycap DC6-48-60-18-8C	180.00	16	8,800	0.001	2	20
Ericsson RRUS 11 (Band 12) (55 lb)	180.00	165	90,745	0.007	18	206
Ericsson RRUS 32 B30 (53 lbs)	180.00	159	87,445	0.007	17	198
Ericsson RRUS 32 B2	180.00	159	87,445	0.007	17	198
Powerwave Allgon 7770.00	180.00	105	57,747	0.004	12	131
Quintel QS66512-2	180.00	222	122,093	0.009	24	277
CCI HPA-65R-BUU-H6	180.00	102	56,097	0.004	11	127
CCI HPA-65R-BUU-H8	180.00	68	37,398	0.003	7	85
CCI TPA-65R-LCUUUU-H8	180.00	82	44,877	0.003	9	102
Round Sector Frames	180.00	900	494,972	0.038	99	1,122
RFS FD9R6004/1C-3L	172.00	19	9,680	0.001	2	23
Alcatel-Lucent RRH2X60-1900	172.00	129	67,133	0.005	13	161
Alcatel-Lucent B25 RRH4x30	172.00	159	82,746	0.006	17	198

Equivalent Lateral Force Method

Alcatel-Lucent RRH2x60 700	172.00	170	88,522	0.007	18	212
RFS APL868013-42T0	172.00	13	6,557	0.001	1	16
Andrew DB844G65ZAXY	172.00	48	24,980	0.002	5	60
RFS DB-T1-6Z-8AB-0Z	172.00	88	45,796	0.004	9	110
Commscope SBNHH-1D65B	172.00	304	158,310	0.012	32	379
Round Sector Frame	172.00	900	468,371	0.036	94	1,122
Decibel DB844H90E-XY	164.00	168	82,513	0.006	16	209
Round Sector Frame	164.00	900	442,035	0.034	88	1,122
RFS ACU-A20-N	157.00	9	4,192	0.000	1	11
Alcatel-Lucent RRH2x50-08	157.00	159	73,922	0.006	15	198
Alcatel-Lucent 800 MHz RRH	157.00	159	74,062	0.006	15	198
Alcatel-Lucent 1900 MHz 4X45 RRH	157.00	180	83,843	0.006	17	224
Alcatel-Lucent TD-RRH8x20-25 w/ Solar	157.00	210	97,817	0.008	20	262
RFS APXVSPP18-C-A20	157.00	171	79,651	0.006	16	213
Commscope DT465B-2XR	157.00	174	81,048	0.006	16	217
Round Sector Frames	157.00	900	419,216	0.032	84	1,122
Ericsson Radio 4449 B12,B71	147.00	222	95,459	0.007	19	277
Ericsson AIR 21, 1.3M, B4A B2P (90.4 lbs	147.00	542	233,231	0.018	47	676
Perfect Vision PV-SFA12-B Sector	147.00	1,776	763,675	0.059	153	2,215
RFS APXVAARR24_43-U-NA20	147.00	384	164,990	0.013	33	478
Andrew Microwaves DB810K-XT	143.00	35	14,554	0.001	3	44
Sinclair SC479-HF1LDF	143.00	34	14,138	0.001	3	42
Round Side Arm	142.50	300	124,217	0.010	25	374
Bird 432E-83I-01-T	142.00	25	10,307	0.001	2	31
Round Side Arm	136.00	300	117,366	0.009	23	374
Generic 24" x 24" Ice Shield	135.00	50	19,386	0.002	4	62
Generic 24" x 24" Ice Shield	134.00	50	19,212	0.001	4	62
Sinclair SE419-SF3P4LDF	134.00	48	18,444	0.001	4	60
Bird 432-83H-01-T	132.00	25	9,432	0.001	2	31
Generic 96" x 12" Panel	132.00	90	33,956	0.003	7	112
Morad VHF 156-DELUXE	131.00	1	336	0.000	0	1
Round Side Arm	131.00	300	112,144	0.009	22	374
Amphenol Antel WPA-700120-4CF-EDIN-	130.00	7	2,518	0.000	1	8
RFS PA6-65AC	129.00	278	101,996	0.008	20	347
RFS PA6-65AC	128.00	278	101,036	0.008	20	347
Round Side Arms	127.00	100	35,999	0.003	7	125
Sinclair SE419-SF3P4LDF	125.00	24	8,475	0.001	2	30
Sinclair SC479-HF1LDF	122.00	102	34,970	0.003	7	127
Round Side Arm	121.00	100	33,943	0.003	7	125
Decibel DB586	120.50	8	2,803	0.000	1	10
Decibel DB586	120.50	8	2,803	0.000	1	10
Stand-Off	120.50	100	33,773	0.003	7	125
Decibel DB586	115.50	8	2,662	0.000	1	10
Decibel DB586	115.50	8	2,662	0.000	1	10
Stand-Off	115.00	200	63,818	0.005	13	249
Sinclair SD210D	115.00	40	12,764	0.001	3	50
dbSpectra DS4C06F36D-D	110.00	50	15,116	0.001	3	62
Stand-Off	100.00	100	26,925	0.002	5	125
Stand-Off	91.00	50	12,005	0.001	2	62
PCTEL GPS-TMG-HR-26N	90.00	1	142	0.000	0	1
Sinclair SD210D	88.00	40	9,221	0.001	2	50
Generic 12' Omni	86.00	40	8,967	0.001	2	50
Side Arms	86.00	150	33,625	0.003	7	187
Andrew DB264-A	66.00	36	5,851	0.000	1	45
Generic 2" x 4" GPS	30.00	5	312	0.000	0	6

Equivalent Lateral Force Method

Generic GPS	18.00	10	335	0.000	0	12
		49,506	12,921,391	1.000	2,583	61,730

LoadCase (0.9 - 0.2Sds) * DL + E — Seismic (Reduced DL)

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
9	170.00	1,442	740,052	0.057	148	1,230
8	150.00	2,234	984,376	0.076	197	1,906
7	130.00	3,292	1,219,09	0.094	244	2,808
6	110.00	4,091	1,236,81	0.096	247	3,490
5	90.00	4,269	1,011,37	0.078	202	3,642
4	70.00	4,700	820,411	0.063	164	4,009
3	50.00	5,026	582,897	0.045	117	4,287
2	30.00	5,443	339,374	0.026	68	4,643
1	10.00	6,053	99,325	0.008	20	5,164
Kaelus DBC0061F1V51-2	180.00	76	42,073	0.003	8	65
Powerwave Allgon LGP21401	180.00	85	46,527	0.004	9	72
Raycap DC6-48-60-18-8F.	180.00	32	17,489	0.001	3	27
Raycap DC6-48-60-18-8C	180.00	16	8,800	0.001	2	14
Ericsson RRUS 11 (Band 12) (55 lb)	180.00	165	90,745	0.007	18	141
Ericsson RRUS 32 B30 (53 lbs)	180.00	159	87,445	0.007	17	136
Ericsson RRUS 32 B2	180.00	159	87,445	0.007	17	136
Powerwave Allgon 7770.00	180.00	105	57,747	0.004	12	90
Quintel QS66512-2	180.00	222	122,093	0.009	24	189
CCI HPA-65R-BUU-H6	180.00	102	56,097	0.004	11	87
CCI HPA-65R-BUU-H8	180.00	68	37,398	0.003	7	58
CCI TPA-65R-LCUUUU-H8	180.00	82	44,877	0.003	9	70
Round Sector Frames	180.00	900	494,972	0.038	99	768
RFS FD9R6004/1C-3L	172.00	19	9,680	0.001	2	16
Alcatel-Lucent RRH2X60-1900	172.00	129	67,133	0.005	13	110
Alcatel-Lucent B25 RRH4x30	172.00	159	82,746	0.006	17	136
Alcatel-Lucent RRH2x60 700	172.00	170	88,522	0.007	18	145
RFS APL868013-42T0	172.00	13	6,557	0.001	1	11
Andrew DB844G65ZAXY	172.00	48	24,980	0.002	5	41
RFS DB-T1-6Z-8AB-0Z	172.00	88	45,796	0.004	9	75
Commscope SBNHH-1D65B	172.00	304	158,310	0.012	32	260
Round Sector Frame	172.00	900	468,371	0.036	94	768
Decibel DB844H90E-XY	164.00	168	82,513	0.006	16	143
Round Sector Frame	164.00	900	442,035	0.034	88	768
RFS ACU-A20-N	157.00	9	4,192	0.000	1	8
Alcatel-Lucent RRH2x50-08	157.00	159	73,922	0.006	15	135
Alcatel-Lucent 800 MHz RRH	157.00	159	74,062	0.006	15	136
Alcatel-Lucent 1900 MHz 4X45 RRH	157.00	180	83,843	0.006	17	154
Alcatel-Lucent TD-RRH8x20-25 w/ Solar	157.00	210	97,817	0.008	20	179
RFS APXVSPP18-C-A20	157.00	171	79,651	0.006	16	146
Commscope DT465B-2XR	157.00	174	81,048	0.006	16	148
Round Sector Frames	157.00	900	419,216	0.032	84	768
Ericsson Radio 4449 B12,B71	147.00	222	95,459	0.007	19	189
Ericsson AIR 21, 1.3M, B4A B2P (90.4 lbs	147.00	542	233,231	0.018	47	463
Perfect Vision PV-SFA12-B Sector	147.00	1,776	763,675	0.059	153	1,515
RFS APXVAARR24_43-U-NA20	147.00	384	164,990	0.013	33	327
Andrew Microwaves DB810K-XT	143.00	35	14,554	0.001	3	30
Sinclair SC479-HF1LDF	143.00	34	14,138	0.001	3	29

Equivalent Lateral Force Method

Round Side Arm	142.50	300	124,217	0.010	25	256
Bird 432E-83I-01-T	142.00	25	10,307	0.001	2	21
Round Side Arm	136.00	300	117,366	0.009	23	256
Generic 24" x 24" Ice Shield	135.00	50	19,386	0.002	4	43
Generic 24" x 24" Ice Shield	134.00	50	19,212	0.001	4	43
Sinclair SE419-SF3P4LDF	134.00	48	18,444	0.001	4	41
Bird 432-83H-01-T	132.00	25	9,432	0.001	2	21
Generic 96" x 12" Panel	132.00	90	33,956	0.003	7	77
Morad VHF 156-DELUXE	131.00	1	336	0.000	0	1
Round Side Arm	131.00	300	112,144	0.009	22	256
Amphenol Antel WPA-700120-4CF-EDIN-	130.00	7	2,518	0.000	1	6
RFS PA6-65AC	129.00	278	101,996	0.008	20	237
RFS PA6-65AC	128.00	278	101,036	0.008	20	237
Round Side Arms	127.00	100	35,999	0.003	7	85
Sinclair SE419-SF3P4LDF	125.00	24	8,475	0.001	2	20
Sinclair SC479-HF1LDF	122.00	102	34,970	0.003	7	87
Round Side Arm	121.00	100	33,943	0.003	7	85
Decibel DB586	120.50	8	2,803	0.000	1	7
Decibel DB586	120.50	8	2,803	0.000	1	7
Stand-Off	120.50	100	33,773	0.003	7	85
Decibel DB586	115.50	8	2,662	0.000	1	7
Decibel DB586	115.50	8	2,662	0.000	1	7
Stand-Off	115.00	200	63,818	0.005	13	171
Sinclair SD210D	115.00	40	12,764	0.001	3	34
dbSpectra DS4C06F36D-D	110.00	50	15,116	0.001	3	43
Stand-Off	100.00	100	26,925	0.002	5	85
Stand-Off	91.00	50	12,005	0.001	2	43
PCTEL GPS-TMG-HR-26N	90.00	1	142	0.000	0	1
Sinclair SD210D	88.00	40	9,221	0.001	2	34
Generic 12' Omni	86.00	40	8,967	0.001	2	34
Side Arms	86.00	150	33,625	0.003	7	128
Andrew DB264-A	66.00	36	5,851	0.000	1	31
Generic 2" x 4" GPS	30.00	5	312	0.000	0	4
Generic GPS	18.00	10	335	0.000	0	9
		49,506	12,921,391	1.000	2,583	42,232

Site Number: 302522 Code: ANSI/TIA-222-G

Site Name: Redding, CT Engineering Number: 12928768_C3_03 7/17/2019 12:29:14 PM

Customer: METRO PCS INC

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):	0.22
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.07
Importance Factor (I_e):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v:	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.23
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11
Period Based on Rayleigh Method (sec):	0.93
Redundancy Factor (p):	1.30

LoadCase (1.2 + 0.2Sds) * DL + E Seismic

Section	Height Above Base (ft)	Weight (lb)	a	b	c	S_{az}	Horizontal Force (lb)	Vertical Force (lb)
9	170.00	1,442	1.686	1.069	0.793	0.345	216	1,799
8	150.00	2,234	1.312	0.138	0.347	0.145	141	2,785
7	130.00	3,292	0.986	-0.113	0.124	0.055	79	4,105
6	110.00	4,091	0.706	-0.089	0.031	0.042	75	5,101
5	90.00	4,269	0.472	-0.006	0.006	0.053	99	5,323
4	70.00	4,700	0.286	0.048	0.013	0.055	112	5,860
3	50.00	5,026	0.146	0.068	0.031	0.046	100	6,267
2	30.00	5,443	0.053	0.071	0.042	0.036	85	6,787
1	10.00	6,053	0.006	0.047	0.027	0.021	55	7,548
Kaelus DBC0061F1V51-2	180.00	76	1.890	1.980	1.140	0.491	16	95
Powerwave Allgon LGP21401	180.00	85	1.890	1.980	1.140	0.491	18	105
Raycap DC6-48-60-18-8F.	180.00	32	1.890	1.980	1.140	0.491	7	40
Raycap DC6-48-60-18-8C	180.00	16	1.890	1.980	1.140	0.491	3	20
Ericsson RRUS 11 (Band 12) (55	180.00	165	1.890	1.980	1.140	0.491	35	206
Ericsson RRUS 32 B30 (53 lbs)	180.00	159	1.890	1.980	1.140	0.491	34	198
Ericsson RRUS 32 B2	180.00	159	1.890	1.980	1.140	0.491	34	198
Powerwave Allgon 7770.00	180.00	105	1.890	1.980	1.140	0.491	22	131
Quintel QS66512-2	180.00	222	1.890	1.980	1.140	0.491	47	277
CCI HPA-65R-BUU-H6	180.00	102	1.890	1.980	1.140	0.491	22	127
CCI HPA-65R-BUU-H8	180.00	68	1.890	1.980	1.140	0.491	14	85
CCI TPA-65R-LCUUUU-H8	180.00	82	1.890	1.980	1.140	0.491	17	102
Round Sector Frames	180.00	900	1.890	1.980	1.140	0.491	191	1,122
RFS FD9R6004/1C-3L	172.00	19	1.726	1.222	0.855	0.372	3	23
Alcatel-Lucent RRH2X60-1900	172.00	129	1.726	1.222	0.855	0.372	21	161
Alcatel-Lucent B25 RRH4x30	172.00	159	1.726	1.222	0.855	0.372	26	198
Alcatel-Lucent RRH2x60 700	172.00	170	1.726	1.222	0.855	0.372	27	212
RFS APL868013-42T0	172.00	13	1.726	1.222	0.855	0.372	2	16
Andrew DB844G65ZAXY	172.00	48	1.726	1.222	0.855	0.372	8	60
RFS DB-T1-6Z-8AB-0Z	172.00	88	1.726	1.222	0.855	0.372	14	110
Commscope SBNHH-1D65B	172.00	304	1.726	1.222	0.855	0.372	49	379
Round Sector Frame	172.00	900	1.726	1.222	0.855	0.372	145	1,122
Decibel DB844H90E-XY	164.00	168	1.569	0.685	0.629	0.273	20	209
Round Sector Frame	164.00	900	1.569	0.685	0.629	0.273	106	1,122
RFS ACU-A20-N	157.00	9	1.438	0.359	0.472	0.202	1	11
Alcatel-Lucent RRH2x50-08	157.00	159	1.438	0.359	0.472	0.202	14	198
Alcatel-Lucent 800 MHz RRH	157.00	159	1.438	0.359	0.472	0.202	14	198
Alcatel-Lucent 1900 MHz 4X45	157.00	180	1.438	0.359	0.472	0.202	16	224
Alcatel-Lucent TD-RRH8x20-25	157.00	210	1.438	0.359	0.472	0.202	18	262
RFS APXVSPP18-C-A20	157.00	171	1.438	0.359	0.472	0.202	15	213
Commscope DT465B-2XR	157.00	174	1.438	0.359	0.472	0.202	15	217

Equivalent Modal Analysis Method

Round Sector Frames	157.00	900	1.438	0.359	0.472	0.202	79	1,122
Ericsson Radio 4449 B12,B71	147.00	222	1.261	0.069	0.302	0.125	12	277
Ericsson AIR 21, 1.3M, B4A B2P	147.00	542	1.261	0.069	0.302	0.125	29	676
Perfect Vision PV-SFA12-B	147.00	1,776	1.261	0.069	0.302	0.125	96	2,215
RFS APXVAARR24_43-U-NA20	147.00	384	1.261	0.069	0.302	0.125	21	478
Andrew Microwaves DB810K-XT	143.00	35	1.193	-0.002	0.249	0.102	2	44
Sinclair SC479-HF1LDF	143.00	34	1.193	-0.002	0.249	0.102	2	42
Round Side Arm	142.50	300	1.185	-0.009	0.243	0.100	13	374
Bird 432E-83I-01-T	142.00	25	1.176	-0.017	0.237	0.097	1	31
Round Side Arm	136.00	300	1.079	-0.081	0.174	0.072	9	374
Generic 24" x 24" Ice Shield	135.00	50	1.063	-0.088	0.165	0.069	1	62
Generic 24" x 24" Ice Shield	134.00	50	1.047	-0.095	0.156	0.066	1	62
Sinclair SE419-SF3P4LDF	134.00	48	1.047	-0.095	0.156	0.066	1	60
Bird 432-83H-01-T	132.00	25	1.016	-0.105	0.140	0.060	1	31
Generic 96" x 12" Panel	132.00	90	1.016	-0.105	0.140	0.060	2	112
Morad VHF 156-DELUXE	131.00	1	1.001	-0.110	0.132	0.057	0	1
Round Side Arm	131.00	300	1.001	-0.110	0.132	0.057	7	374
Amphenol Antel WPA-700120-	130.00	7	0.986	-0.113	0.124	0.055	0	8
RFS PA6-65AC	129.00	278	0.971	-0.116	0.117	0.053	6	347
RFS PA6-65AC	128.00	278	0.956	-0.118	0.111	0.051	6	347
Round Side Arms	127.00	100	0.941	-0.120	0.104	0.049	2	125
Sinclair SE419-SF3P4LDF	125.00	24	0.911	-0.122	0.092	0.047	0	30
Sinclair SC479-HF1LDF	122.00	102	0.868	-0.121	0.076	0.044	2	127
Round Side Arm	121.00	100	0.854	-0.120	0.071	0.043	2	125
Decibel DB586	120.50	8	0.847	-0.119	0.068	0.042	0	10
Decibel DB586	120.50	8	0.847	-0.119	0.068	0.042	0	10
Stand-Off	120.50	100	0.847	-0.119	0.068	0.042	2	125
Decibel DB586	115.50	8	0.778	-0.108	0.048	0.041	0	10
Decibel DB586	115.50	8	0.778	-0.108	0.048	0.041	0	10
Stand-Off	115.00	200	0.771	-0.106	0.046	0.041	4	249
Sinclair SD210D	115.00	40	0.771	-0.106	0.046	0.041	1	50
dbSpectra DS4C06F36D-D	110.00	50	0.706	-0.089	0.031	0.042	1	62
Stand-Off	100.00	100	0.583	-0.047	0.013	0.048	2	125
Stand-Off	91.00	50	0.483	-0.010	0.006	0.053	1	62
PCTEL GPS-TMG-HR-26N	90.00	1	0.472	-0.006	0.006	0.053	0	1
Sinclair SD210D	88.00	40	0.452	0.001	0.006	0.054	1	50
Generic 12' Omni	86.00	40	0.431	0.008	0.006	0.055	1	50
Side Arms	86.00	150	0.431	0.008	0.006	0.055	4	187
Andrew DB264-A	66.00	36	0.254	0.055	0.017	0.054	1	45
Generic 2" x 4" GPS	30.00	5	0.053	0.071	0.042	0.036	0	6
Generic GPS	18.00	10	0.019	0.063	0.037	0.029	0	12
		49,506	94.467	40.121	33.600	15.213	2,253	61,730

LoadCase (0.9 - 0.2Sds) * DL + E Seismic (Reduced DL)

Section	Height Above Base (ft)	Weight (lb)	a	b	c	S_{az}	Horizontal Force (lb)	Vertical Force (lb)
9	170.00	1,442	1.686	1.069	0.793	0.345	216	1,230
8	150.00	2,234	1.312	0.138	0.347	0.145	141	1,906
7	130.00	3,292	0.986	-0.113	0.124	0.055	79	2,808
6	110.00	4,091	0.706	-0.089	0.031	0.042	75	3,490
5	90.00	4,269	0.472	-0.006	0.006	0.053	99	3,642
4	70.00	4,700	0.286	0.048	0.013	0.055	112	4,009
3	50.00	5,026	0.146	0.068	0.031	0.046	100	4,287
2	30.00	5,443	0.053	0.071	0.042	0.036	85	4,643
1	10.00	6,053	0.006	0.047	0.027	0.021	55	5,164
Kaelus DBC0061F1V51-2	180.00	76	1.890	1.980	1.140	0.491	16	65
Powerwave Allgon LGP21401	180.00	85	1.890	1.980	1.140	0.491	18	72
Raycap DC6-48-60-18-8F.	180.00	32	1.890	1.980	1.140	0.491	7	27
Raycap DC6-48-60-18-8C	180.00	16	1.890	1.980	1.140	0.491	3	14
Ericsson RRUS 11 (Band 12) (55	180.00	165	1.890	1.980	1.140	0.491	35	141
Ericsson RRUS 32 B30 (53 lbs)	180.00	159	1.890	1.980	1.140	0.491	34	136
Ericsson RRUS 32 B2	180.00	159	1.890	1.980	1.140	0.491	34	136

Equivalent Modal Analysis Method

Powerwave Allgon 7770.00	180.00	105	1.890	1.980	1.140	0.491	22	90
Quintel QS66512-2	180.00	222	1.890	1.980	1.140	0.491	47	189
CCI HPA-65R-BUU-H6	180.00	102	1.890	1.980	1.140	0.491	22	87
CCI HPA-65R-BUU-H8	180.00	68	1.890	1.980	1.140	0.491	14	58
CCI TPA-65R-LCUUUU-H8	180.00	82	1.890	1.980	1.140	0.491	17	70
Round Sector Frames	180.00	900	1.890	1.980	1.140	0.491	191	768
RFS FD9R6004/1C-3L	172.00	19	1.726	1.222	0.855	0.372	3	16
Alcatel-Lucent RRH2X60-1900	172.00	129	1.726	1.222	0.855	0.372	21	110
Alcatel-Lucent B25 RRH4x30	172.00	159	1.726	1.222	0.855	0.372	26	136
Alcatel-Lucent RRH2x60 700	172.00	170	1.726	1.222	0.855	0.372	27	145
RFS APL868013-42T0	172.00	13	1.726	1.222	0.855	0.372	2	11
Andrew DB844G65ZAXY	172.00	48	1.726	1.222	0.855	0.372	8	41
RFS DB-T1-6Z-8AB-0Z	172.00	88	1.726	1.222	0.855	0.372	14	75
Commscope SBNHH-1D65B	172.00	304	1.726	1.222	0.855	0.372	49	260
Round Sector Frame	172.00	900	1.726	1.222	0.855	0.372	145	768
Decibel DB844H90E-XY	164.00	168	1.569	0.685	0.629	0.273	20	143
Round Sector Frame	164.00	900	1.569	0.685	0.629	0.273	106	768
RFS ACU-A20-N	157.00	9	1.438	0.359	0.472	0.202	1	8
Alcatel-Lucent RRH2x50-08	157.00	159	1.438	0.359	0.472	0.202	14	135
Alcatel-Lucent 800 MHz RRH	157.00	159	1.438	0.359	0.472	0.202	14	136
Alcatel-Lucent 1900 MHz 4X45	157.00	180	1.438	0.359	0.472	0.202	16	154
Alcatel-Lucent TD-RRH8x20-25	157.00	210	1.438	0.359	0.472	0.202	18	179
RFS APXVSPP18-C-A20	157.00	171	1.438	0.359	0.472	0.202	15	146
Commscope DT465B-2XR	157.00	174	1.438	0.359	0.472	0.202	15	148
Round Sector Frames	157.00	900	1.438	0.359	0.472	0.202	79	768
Ericsson Radio 4449 B12,B71	147.00	222	1.261	0.069	0.302	0.125	12	189
Ericsson AIR 21, 1.3M, B4A B2P	147.00	542	1.261	0.069	0.302	0.125	29	463
Perfect Vision PV-SFA12-B	147.00	1,776	1.261	0.069	0.302	0.125	96	1,515
RFS APXVAARR24_43-U-NA20	147.00	384	1.261	0.069	0.302	0.125	21	327
Andrew Microwaves DB810K-XT	143.00	35	1.193	-0.002	0.249	0.102	2	30
Sinclair SC479-HF1LDF	143.00	34	1.193	-0.002	0.249	0.102	2	29
Round Side Arm	142.50	300	1.185	-0.009	0.243	0.100	13	256
Bird 432E-83I-01-T	142.00	25	1.176	-0.017	0.237	0.097	1	21
Round Side Arm	136.00	300	1.079	-0.081	0.174	0.072	9	256
Generic 24" x 24" Ice Shield	135.00	50	1.063	-0.088	0.165	0.069	1	43
Generic 24" x 24" Ice Shield	134.00	50	1.047	-0.095	0.156	0.066	1	43
Sinclair SE419-SF3P4LDF	134.00	48	1.047	-0.095	0.156	0.066	1	41
Bird 432-83H-01-T	132.00	25	1.016	-0.105	0.140	0.060	1	21
Generic 96" x 12" Panel	132.00	90	1.016	-0.105	0.140	0.060	2	77
Morad VHF 156-DELUXE	131.00	1	1.001	-0.110	0.132	0.057	0	1
Round Side Arm	131.00	300	1.001	-0.110	0.132	0.057	7	256
Amphenol Antel WPA-700120-	130.00	7	0.986	-0.113	0.124	0.055	0	6
RFS PA6-65AC	129.00	278	0.971	-0.116	0.117	0.053	6	237
RFS PA6-65AC	128.00	278	0.956	-0.118	0.111	0.051	6	237
Round Side Arms	127.00	100	0.941	-0.120	0.104	0.049	2	85
Sinclair SE419-SF3P4LDF	125.00	24	0.911	-0.122	0.092	0.047	0	20
Sinclair SC479-HF1LDF	122.00	102	0.868	-0.121	0.076	0.044	2	87
Round Side Arm	121.00	100	0.854	-0.120	0.071	0.043	2	85
Decibel DB586	120.50	8	0.847	-0.119	0.068	0.042	0	7
Decibel DB586	120.50	8	0.847	-0.119	0.068	0.042	0	7
Stand-Off	120.50	100	0.847	-0.119	0.068	0.042	2	85
Decibel DB586	115.50	8	0.778	-0.108	0.048	0.041	0	7
Decibel DB586	115.50	8	0.778	-0.108	0.048	0.041	0	7
Stand-Off	115.00	200	0.771	-0.106	0.046	0.041	4	171
Sinclair SD210D	115.00	40	0.771	-0.106	0.046	0.041	1	34
dbSpectra DS4C06F36D-D	110.00	50	0.706	-0.089	0.031	0.042	1	43
Stand-Off	100.00	100	0.583	-0.047	0.013	0.048	2	85
Stand-Off	91.00	50	0.483	-0.010	0.006	0.053	1	43
PCTEL GPS-TMG-HR-26N	90.00	1	0.472	-0.006	0.006	0.053	0	1
Sinclair SD210D	88.00	40	0.452	0.001	0.006	0.054	1	34
Generic 12' Omni	86.00	40	0.431	0.008	0.006	0.055	1	34
Side Arms	86.00	150	0.431	0.008	0.006	0.055	4	128
Andrew DB264-A	66.00	36	0.254	0.055	0.017	0.054	1	31
Generic 2" x 4" GPS	30.00	5	0.053	0.071	0.042	0.036	0	4
Generic GPS	18.00	10	0.019	0.063	0.037	0.029	0	9

Equivalent Modal Analysis Method

49,506	94.467	40.121	33.600	15.213	2,253	42,232

Force/Stress Summary

Section: 1 SSV Bot Elev (ft): 0.00 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PSP - ROHN 8 EHS	-327.05	1.2D + 1.6W Normal	9.77	100	100	100	40.1	50.0	388.80	0	0	0.00	0.00	84	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 4X4X0.3125	-10.95	1.2D + 1.6W 90 deg	24.51	50	50	50	188.3	50.0	15.29	1	1	17.89	29.25	71	Member Z

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG PSP - ROHN 8 EHS	292.34	0.9D + 1.6W 60 deg	50	65	437.40	0	0	0.00	0.00		66	Member
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE - 4X4X0.3125	11.45	1.2D + 1.6W 90 deg	50	65	77.75	1	1	17.89	17.67	22.47	64	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	262.43	0.9D + 1.6W 60 deg	0.00	0	0	
Top Compression	302.72	1.2D + 1.6W Normal	0.00	0		
Bot Tension	292.34	0.9D + 1.6W 60 deg	605.74	58	10	1" A354-BC
Bot Compression	336.78	1.2D + 1.6W Normal	0.00	0		

Section: 2 SSV Bot Elev (ft): 20.00 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PSP - ROHN 8 EHS	-291.97	1.2D + 1.6W Normal	9.77	100	100	100	40.1	50.0	388.80	0	0	0.00	0.00	75	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 4X4X0.25	-11.21	1.2D + 1.6W 90 deg	22.69	50	50	50	171.3	43.5	14.94	1	1	17.89	23.40	74	Member Z

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG PSP - ROHN 8 EHS	262.78	0.9D + 1.6W 60 deg	50	65	437.40	0	0	0.00	0.00		60	Member
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE - 4X4X0.25	11.19	1.2D + 1.6W 90 deg	50	65	62.93	1	1	17.89	14.14	17.98	79	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	230.35	0.9D + 1.6W 60 deg	0.00	0	0	
Top Compression	265.38	1.2D + 1.6W Normal	0.00	0		
Bot Tension	262.43	0.9D + 1.6W 60 deg	436.14	60	8	1 A325
Bot Compression	0.00		0.00	0		

Force/Stress Summary

Section: 3 SSV Bot Elev (ft): 40.00 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 6" DIA PIPE	-255.19	1.2D + 1.6W Normal	9.77	100	100	100	53.4	50.0	306.85	0	0	0.00	0.00	83	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 4X4X0.25	-10.55	1.2D + 1.6W 90 deg	19.95	50	50	50	150.6	43.5	19.33	1	1	17.89	23.40	58	Bolt Shear

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG PX - 6" DIA PIPE	230.79	0.9D + 1.6W 60 deg	50	65	378.00	0	0	0.00	0.00		61	Member
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE - 4X4X0.25	10.21	1.2D + 1.6W 90 deg	50	65	62.93	1	1	17.89	14.14	17.98	72	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	198.37	0.9D + 1.6W 60 deg	0.00	0	0	
Top Compression	228.40	1.2D + 1.6W Normal	0.00	0		
Bot Tension	230.35	0.9D + 1.6W 60 deg	436.14	53	8	1 A325
Bot Compression	0.00		0.00	0		

Section: 4 SSV Bot Elev (ft): 60.00 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 6" DIA PIPE	-217.05	1.2D + 1.6W Normal	9.77	100	100	100	53.4	50.0	306.88	0	0	0.00	0.00	70	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 3.5X3.5X0.25	-10.38	1.2D + 1.6W 90 deg	19.03	50	50	50	166.0	50.0	13.86	1	1	17.89	23.40	74	Member Z

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG PX - 6" DIA PIPE	198.67	0.9D + 1.6W 60 deg	50	65	378.00	0	0	0.00	0.00		52	Member
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE - 3.5X3.5X0.25	10.40	1.2D + 1.6W 90 deg	50	65	53.79	1	1	17.89	14.14	17.98	73	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	162.25	0.9D + 1.6W 60 deg	0.00	0	0	
Top Compression	187.48	1.2D + 1.6W Normal	0.00	0		
Bot Tension	198.37	0.9D + 1.6W 60 deg	327.10	61	6	1 A325
Bot Compression	0.00		0.00	0		

Force/Stress Summary

Section: 5 SSV Bot Elev (ft): 80.00 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PSP - ROHN 5 EH	-179.21	1.2D + 1.6W Normal	6.51	100	100	100	42.5	50.0	240.99	0	0	0.00	0.00	74	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 3X3X0.25	-9.11	1.2D + 1.6W 90 deg	15.89	50	50	50	161.1	50.0	12.54	1	1	17.89	23.40	72	Member Z

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG PSP - ROHN 5 EH	162.58	0.9D + 1.6W 60 deg	50	65	274.95	0	0	0.00	0.00		59	Member
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE - 3X3X0.25	8.98	1.2D + 1.6W 90 deg	50	65	44.65	1	1	17.89	14.14	14.93	63	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	124.76	0.9D + 1.6W 60 deg	0.00	0	0	
Top Compression	145.27	1.2D + 1.6W Normal	0.00	0		
Bot Tension	162.25	0.9D + 1.6W 60 deg	327.10	50	6	1 A325
Bot Compression	0.00		0.00	0		

Section: 6 SSV Bot Elev (ft): 100.0 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PSP - ROHN 5 EH	-136.78	1.2D + 1.6W Normal	6.51	100	100	100	42.5	50.0	240.99	0	0	0.00	0.00	56	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 3X3X0.25	-8.56	1.2D + 1.6W 90 deg	14.07	50	50	50	142.7	50.0	15.99	1	1	17.89	23.40	53	Member Z

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG PSP - ROHN 5 EH	125.01	0.9D + 1.6W 60 deg	50	65	274.95	0	0	0.00	0.00		45	Member
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE - 3X3X0.25	8.74	1.2D + 1.6W 90 deg	50	65	44.65	1	1	17.89	14.14	14.93	61	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	84.25	0.9D + 1.6W 60 deg	0.00	0	0	
Top Compression	100.58	1.2D + 1.6W Normal	0.00	0		
Bot Tension	124.76	0.9D + 1.6W 60 deg	327.10	38	6	1 A325
Bot Compression	0.00		0.00	0		

Force/Stress Summary

Section: 7 SSV Bot Elev (ft): 120.0 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PX - 4" DIA PIPE	-91.99	1.2D + 1.6W Normal	6.51	100	100	100	52.8	50.0	161.86	0	0	0.00	0.00	56	Member X
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 2.5X2.5X0.25	-7.64	1.2D + 1.6W 90 deg	12.32	50	50	50	150.6	36.0	11.85	1	1	17.89	20.88	64	Member Z

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG PX - 4" DIA PIPE	84.49	0.9D + 1.6W 60 deg	50	65	198.45	0	0	0.00	0.00		42	Member
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE - 2.5X2.5X0.25	7.59	1.2D + 1.6W 90 deg	36	58	31.69	1	1	17.89	12.61	11.96	63	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	47.49	0.9D + 1.6W 60 deg	0.00	0	0	
Top Compression	59.34	1.2D + 1.6W Normal	0.00	0		
Bot Tension	84.25	0.9D + 1.6W 60 deg	218.07	39	4	1 A325
Bot Compression	0.00		0.00	0		

Section: 8 SSV Bot Elev (ft): 140.0 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PST - 3" DIA PIPE	-53.78	1.2D + 1.6W Normal	4.88	100	100	100	50.5	50.0	83.27	0	0	0.00	0.00	64	Member X
HORIZ SAE - 1.75X1.75X0.18	-0.40	1.2D + 1.6W Normal	6.688	100	100	100	234.0	36.0	2.56	1	1	12.43	13.05	15	Member Z
DIAG SAE - 2X2X0.25	-5.10	1.2D + 1.6W 90 deg	9.784	50	50	50	150.1	36.0	9.42	1	1	12.43	17.40	54	Member Z

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG PST - 3" DIA PIPE	47.67	0.9D + 1.6W 60 deg	50	65	100.35	0	0	0.00	0.00		47	Member
HORIZ SAE - 1.75X1.75X0.18	0.39	1.2D + 1.6W 60 deg	36	58	15.67	1	1	12.43	7.83	5.81	6	Blk Shear
DIAG SAE - 2X2X0.25	5.05	1.2D + 1.6W 90 deg	36	58	24.55	1	1	12.43	10.44	9.11	55	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	18.97	0.9D + 1.6W 60 deg	0.00	0	0	
Top Compression	24.73	1.2D + 1.6W Normal	0.00	0		
Bot Tension	47.49	0.9D + 1.6W 60 deg	166.22	29	4	0.875" A325
Bot Compression	0.00		0.00	0		

Force/Stress Summary

Section: 9 SSV Bot Elev (ft): 160.0 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG PST - 2-1/2" DIA PIP	-20.79	1.2D + 1.6W Normal	3.90	100	100	100	49.4	50.0	64.14	0	0	0.00	0.00	32	Member X
HORIZ SAE - 1.75X1.75X0.18	-0.60	1.2D + 1.6W 60 deg	6.646	100	100	100	232.5	36.0	2.59	1	1	12.43	13.05	23	Member Z
DIAG SAE - 1.75X1.75X0.18	-3.71	1.2D + 1.6W 90 deg	7.738	50	50	50	135.4	36.0	7.66	1	1	12.43	13.05	48	Member Z

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG PST - 2-1/2" DIA PIP	18.86	0.9D + 1.6W 60 deg	50	65	76.68	0	0	0.00	0.00		24	Member
HORIZ SAE - 1.75X1.75X0.18	0.97	1.2D + 1.6W Normal	36	58	15.67	1	1	12.43	7.83	5.81	16	Blk Shear
DIAG SAE - 1.75X1.75X0.18	3.63	1.2D + 1.6W 90 deg	36	58	15.67	1	1	12.43	7.83	5.81	62	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	0.00		0.00	0	0	
Top Compression	2.52	1.2D + 1.0Di + 1.0Wi	0.00	0		
Bot Tension	18.97	0.9D + 1.6W 60 deg	120.41	16	4	0.75" A325
Bot Compression	0.00		0.00	0		

Detailed Reactions

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
1.2D + 1.6W Normal	**13.28**	**00.00**	**0**	**1**	**0.00**	**335.74**	**-36.45**	
	13.28	**00.00**	**120**	**1a**	**12.29**	**-138.17**	**-11.67**	
	13.28	**00.00**	**240**	**1b**	**-12.29**	**-138.17**	**-11.67**	
1.2D + 1.6W 60 deg	**13.28**	**00.00**	**0**	**1**	**-3.71**	**172.75**	**-18.17**	
	13.28	**00.00**	**120**	**1a**	**-17.58**	**172.69**	**5.87**	
	13.28	**00.00**	**240**	**1b**	**-28.42**	**-286.03**	**-16.41**	
1.2D + 1.6W 90 deg	**13.28**	**00.00**	**0**	**1**	**-4.37**	**19.81**	**-1.20**	
	13.28	**00.00**	**120**	**1a**	**-27.80**	**286.81**	**13.56**	
	13.28	**00.00**	**240**	**1b**	**-25.83**	**-247.21**	**-12.36**	
0.9D + 1.6W Normal	**13.28**	**00.00**	**0**	**1**	**0.00**	**330.37**	**-36.12**	
	13.28	**00.00**	**120**	**1a**	**12.56**	**-142.91**	**-11.84**	
	13.28	**00.00**	**240**	**1b**	**-12.56**	**-142.91**	**-11.84**	
0.9D + 1.6W 60 deg	**13.28**	**00.00**	**0**	**1**	**-3.72**	**167.59**	**-17.84**	
	13.28	**00.00**	**120**	**1a**	**-17.31**	**167.53**	**5.70**	
	13.28	**00.00**	**240**	**1b**	**-28.69**	**-290.57**	**-16.56**	
0.9D + 1.6W 90 deg	**13.28**	**00.00**	**0**	**1**	**-4.38**	**14.86**	**-0.88**	
	13.28	**00.00**	**120**	**1a**	**-27.52**	**281.51**	**13.39**	
	13.28	**00.00**	**240**	**1b**	**-26.10**	**-251.81**	**-12.52**	
1.2D + 1.0Di + 1.0Wi Normal	**13.28**	**00.00**	**0**	**1**	**0.00**	**171.39**	**-13.38**	
	13.28	**00.00**	**120**	**1a**	**4.47**	**2.51**	**-4.33**	
	13.28	**00.00**	**240**	**1b**	**-4.47**	**2.51**	**-4.33**	
1.2D + 1.0Di + 1.0Wi 60 deg	**13.28**	**00.00**	**0**	**1**	**-1.47**	**114.34**	**-6.81**	
	13.28	**00.00**	**120**	**1a**	**-6.63**	**114.34**	**2.13**	
	13.28	**00.00**	**240**	**1b**	**-10.66**	**-52.26**	**-6.16**	
1.2D + 1.0Di + 1.0Wi 90 deg	**13.28**	**00.00**	**0**	**1**	**-1.72**	**58.81**	**-0.44**	
	13.28	**00.00**	**120**	**1a**	**-10.40**	**155.32**	**5.02**	
	13.28	**00.00**	**240**	**1b**	**-9.65**	**-37.71**	**-4.58**	
(1.2 + 0.2Sds) * DL + E Normal M1	**13.28**	**00.00**	**0**	**1**	**0.00**	**36.83**	**-2.91**	
	13.28	**00.00**	**120**	**1a**	**-0.52**	**11.69**	**0.19**	
	13.28	**00.00**	**240**	**1b**	**0.52**	**11.69**	**0.19**	
(1.2 + 0.2Sds) * DL + E Normal M2	**13.28**	**00.00**	**0**	**1**	**0.00**	**35.63**	**-2.72**	
	13.28	**00.00**	**120**	**1a**	**-0.59**	**12.29**	**0.26**	
	13.28	**00.00**	**240**	**1b**	**0.59**	**12.29**	**0.26**	
(1.2 + 0.2Sds) * DL + E 60 deg M1	**13.28**	**00.00**	**0**	**1**	**-0.10**	**28.45**	**-2.12**	
	13.28	**00.00**	**120**	**1a**	**-1.89**	**28.45**	**0.98**	
	13.28	**00.00**	**240**	**1b**	**-0.21**	**3.32**	**-0.12**	
(1.2 + 0.2Sds) * DL + E 60 deg M2	**13.28**	**00.00**	**0**	**1**	**-0.07**	**27.85**	**-2.03**	
	13.28	**00.00**	**120**	**1a**	**-1.79**	**27.85**	**0.95**	
	13.28	**00.00**	**240**	**1b**	**-0.05**	**4.52**	**-0.03**	
(1.2 + 0.2Sds) * DL + E 90 deg M1	**13.28**	**00.00**	**0**	**1**	**-0.11**	**20.07**	**-1.33**	
	13.28	**00.00**	**120**	**1a**	**-2.37**	**34.58**	**1.30**	
	13.28	**00.00**	**240**	**1b**	**-0.06**	**5.56**	**0.03**	
(1.2 + 0.2Sds) * DL + E 90 deg M2	**13.28**	**00.00**	**0**	**1**	**-0.08**	**20.07**	**-1.33**	
	13.28	**00.00**	**120**	**1a**	**-2.22**	**33.54**	**1.23**	

	13.28	00.00	240	1b	0.09	6.60	0.10
(0.9 - 0.2Sds) * DL + E Normal M1	13.28	00.00	0	1	0.00	30.46	-2.49
	13.28	00.00	120	1a	-0.16	5.37	-0.02
	13.28	00.00	240	1b	0.16	5.37	-0.02
(0.9 - 0.2Sds) * DL + E Normal M2	13.28	00.00	0	1	0.00	29.26	-2.30
	13.28	00.00	120	1a	-0.22	5.97	0.05
	13.28	00.00	240	1b	0.22	5.97	0.05
(0.9 - 0.2Sds) * DL + E 60 deg M1	13.28	00.00	0	1	-0.10	22.10	-1.70
	13.28	00.00	120	1a	-1.52	22.10	0.77
	13.28	00.00	240	1b	-0.58	-2.99	-0.33
(0.9 - 0.2Sds) * DL + E 60 deg M2	13.28	00.00	0	1	-0.07	21.50	-1.61
	13.28	00.00	120	1a	-1.43	21.50	0.74
	13.28	00.00	240	1b	-0.41	-1.79	-0.24
(0.9 - 0.2Sds) * DL + E 90 deg M1	13.28	00.00	0	1	-0.11	13.73	-0.91
	13.28	00.00	120	1a	-2.00	28.22	1.09
	13.28	00.00	240	1b	-0.42	-0.75	-0.18
(0.9 - 0.2Sds) * DL + E 90 deg M2	13.28	00.00	0	1	-0.08	13.73	-0.91
	13.28	00.00	120	1a	-1.85	27.18	1.02
	13.28	00.00	240	1b	-0.27	0.29	-0.11
1.0D + 1.0W Service Normal	13.28	00.00	0	1	0.00	99.07	-10.33
	13.28	00.00	120	1a	2.57	-24.78	-2.69
	13.28	00.00	240	1b	-2.57	-24.78	-2.69
1.0D + 1.0W Service 60 deg	13.28	00.00	0	1	-0.99	56.45	-5.52
	13.28	00.00	120	1a	-5.28	56.44	1.90
	13.28	00.00	240	1b	-6.80	-63.38	-3.93
1.0D + 1.0W Service 90 deg	13.28	00.00	0	1	-1.16	16.50	-1.06
	13.28	00.00	120	1a	-7.94	86.03	3.92
	13.28	00.00	240	1b	-6.11	-53.03	-2.86

Max Uplift:	290.57 (kip)	Moment Ice:	2,242.58 (kip-ft)	Moment:	6,293.00 (kip-ft)	1.2D + 1.6W Normal
Max Down:	335.74 (kip)	Total Down Ice:	176.42 (kip)	Total Down:	59.41 (kip)	
Max Shear:	36.45 (kip)	Total Shear Ice:	22.04 (kip)	Total Shear:	59.79 (kip)	

Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
93 mph Normal with No Ice	19.75	0.025	0.0091	0.1543	0.1543
93 mph Normal with No Ice	30.00	0.052	0.0114	0.1568	0.1573
93 mph Normal with No Ice	70.00	0.237	0.0284	0.3423	0.3435
93 mph Normal with No Ice	86.75	0.356	0.0382	0.4471	0.4487
93 mph Normal with No Ice	93.25	0.411	0.0430	0.4882	0.4901
93 mph Normal with No Ice	100.00	0.472	0.0491	0.6096	0.6096
93 mph Normal with No Ice	106.75	0.537	0.0519	0.5577	0.5601
93 mph Normal with No Ice	113.25	0.603	0.0565	0.5938	0.5965
93 mph Normal with No Ice	120.25	0.680	0.0620	0.7127	0.7127
93 mph Normal with No Ice	126.75	0.754	0.0617	0.6657	0.6686
93 mph Normal with No Ice	133.25	0.833	0.0615	0.6861	0.6888
93 mph Normal with No Ice	140.25	0.922	0.0643	0.8772	0.8772
93 mph Normal with No Ice	145.13	0.987	0.0596	0.7595	0.7618
93 mph Normal with No Ice	154.88	1.125	0.0549	0.8204	0.8222
93 mph Normal with No Ice	164.15	1.269	0.0561	0.8735	0.8753
93 mph Normal with No Ice	171.95	1.393	0.0536	0.9332	0.9332
93 mph Normal with No Ice	180.00	1.523	0.0507	1.2290	1.2290
93 mph 60 degree with No Ice	19.75	0.024	0.0069	0.1491	0.1491
93 mph 60 degree with No Ice	30.00	0.050	0.0079	0.1522	0.1523
93 mph 60 degree with No Ice	70.00	0.230	0.0177	0.3336	0.3336
93 mph 60 degree with No Ice	86.75	0.346	0.0229	0.4367	0.4367
93 mph 60 degree with No Ice	93.25	0.399	0.0250	0.4768	0.4768
93 mph 60 degree with No Ice	100.00	0.458	0.0289	0.5913	0.5917
93 mph 60 degree with No Ice	106.75	0.522	0.0286	0.5463	0.5464
93 mph 60 degree with No Ice	113.25	0.587	0.0304	0.5780	0.5781
93 mph 60 degree with No Ice	120.25	0.661	0.0344	0.7104	0.7110
93 mph 60 degree with No Ice	126.75	0.734	0.0351	0.6472	0.6474
93 mph 60 degree with No Ice	133.25	0.810	0.0377	0.6736	0.6739
93 mph 60 degree with No Ice	140.25	0.897	0.0449	0.8499	0.8501
93 mph 60 degree with No Ice	145.13	0.960	0.0462	0.7426	0.7432
93 mph 60 degree with No Ice	154.88	1.095	0.0558	0.8025	0.8038
93 mph 60 degree with No Ice	164.15	1.234	0.0774	0.8492	0.8520
93 mph 60 degree with No Ice	171.95	1.354	0.0988	0.8901	0.8936
93 mph 60 degree with No Ice	180.00	1.479	0.1183	0.8990	0.9018
93 mph 90 degree with No Ice	19.75	0.024	-0.0049	0.1469	0.1470
93 mph 90 degree with No Ice	30.00	0.050	-0.0045	0.1569	0.1570
93 mph 90 degree with No Ice	70.00	0.231	-0.0043	0.3418	0.3418
93 mph 90 degree with No Ice	86.75	0.348	-0.0024	0.4414	0.4414
93 mph 90 degree with No Ice	93.25	0.401	-0.0006	0.4834	0.4834
93 mph 90 degree with No Ice	100.00	0.461	-0.0004	0.5866	0.5866
93 mph 90 degree with No Ice	106.75	0.525	0.0041	0.5521	0.5522
93 mph 90 degree with No Ice	113.25	0.590	0.0065	0.5844	0.5845
93 mph 90 degree with No Ice	120.25	0.666	0.0063	0.7103	0.7103
93 mph 90 degree with No Ice	126.75	0.739	0.0088	0.6521	0.6522
93 mph 90 degree with No Ice	133.25	0.815	0.0085	0.6829	0.6830
93 mph 90 degree with No Ice	140.25	0.903	0.0040	0.8400	0.8400
93 mph 90 degree with No Ice	145.13	0.966	0.0084	0.7539	0.7539
93 mph 90 degree with No Ice	154.88	1.102	0.0103	0.8146	0.8147
93 mph 90 degree with No Ice	164.15	1.242	0.0047	0.8580	0.8580
93 mph 90 degree with No Ice	171.95	1.363	0.0027	0.8878	0.8878
93 mph 90 degree with No Ice	180.00	1.488	0.0010	0.7662	0.7662
93 mph Normal with No Ice (Reduced DL)	19.75	0.025	0.0091	0.1544	0.1544
93 mph Normal with No Ice (Reduced DL)	30.00	0.052	0.0114	0.1566	0.1571
93 mph Normal with No Ice (Reduced DL)	70.00	0.237	0.0284	0.3417	0.3429
93 mph Normal with No Ice (Reduced DL)	86.75	0.356	0.0382	0.4463	0.4479

93 mph Normal with No Ice (Reduced DL)	93.25	0.410	0.0430	0.4873	0.4892
93 mph Normal with No Ice (Reduced DL)	100.00	0.471	0.0491	0.6084	0.6084
93 mph Normal with No Ice (Reduced DL)	106.75	0.536	0.0519	0.5565	0.5589
93 mph Normal with No Ice (Reduced DL)	113.25	0.602	0.0565	0.5926	0.5953
93 mph Normal with No Ice (Reduced DL)	120.25	0.679	0.0619	0.7111	0.7111
93 mph Normal with No Ice (Reduced DL)	126.75	0.753	0.0617	0.6643	0.6671
93 mph Normal with No Ice (Reduced DL)	133.25	0.831	0.0615	0.6845	0.6873
93 mph Normal with No Ice (Reduced DL)	140.25	0.920	0.0643	0.8749	0.8749
93 mph Normal with No Ice (Reduced DL)	145.13	0.985	0.0596	0.7576	0.7600
93 mph Normal with No Ice (Reduced DL)	154.88	1.123	0.0549	0.8184	0.8202
93 mph Normal with No Ice (Reduced DL)	164.15	1.266	0.0561	0.8714	0.8733
93 mph Normal with No Ice (Reduced DL)	171.95	1.390	0.0536	0.9309	0.9309
93 mph Normal with No Ice (Reduced DL)	180.00	1.520	0.0507	1.2269	1.2269
93 mph 60 deg with No Ice (Reduced DL)	19.75	0.024	0.0068	0.1488	0.1488
93 mph 60 deg with No Ice (Reduced DL)	30.00	0.050	0.0079	0.1520	0.1520
93 mph 60 deg with No Ice (Reduced DL)	70.00	0.229	0.0177	0.3330	0.3330
93 mph 60 deg with No Ice (Reduced DL)	86.75	0.346	0.0228	0.4358	0.4359
93 mph 60 deg with No Ice (Reduced DL)	93.25	0.398	0.0250	0.4759	0.4759
93 mph 60 deg with No Ice (Reduced DL)	100.00	0.458	0.0289	0.5901	0.5904
93 mph 60 deg with No Ice (Reduced DL)	106.75	0.521	0.0286	0.5452	0.5453
93 mph 60 deg with No Ice (Reduced DL)	113.25	0.586	0.0303	0.5768	0.5770
93 mph 60 deg with No Ice (Reduced DL)	120.25	0.660	0.0344	0.7090	0.7095
93 mph 60 deg with No Ice (Reduced DL)	126.75	0.732	0.0351	0.6458	0.6461
93 mph 60 deg with No Ice (Reduced DL)	133.25	0.809	0.0376	0.6721	0.6724
93 mph 60 deg with No Ice (Reduced DL)	140.25	0.895	0.0448	0.8479	0.8481
93 mph 60 deg with No Ice (Reduced DL)	145.13	0.958	0.0461	0.7411	0.7417
93 mph 60 deg with No Ice (Reduced DL)	154.88	1.093	0.0557	0.8007	0.8020
93 mph 60 deg with No Ice (Reduced DL)	164.15	1.231	0.0772	0.8471	0.8498
93 mph 60 deg with No Ice (Reduced DL)	171.95	1.352	0.0986	0.8878	0.8914
93 mph 60 deg with No Ice (Reduced DL)	180.00	1.476	0.1181	0.8960	0.8988
93 mph 90 deg with No Ice (Reduced DL)	19.75	0.024	-0.0049	0.1467	0.1467
93 mph 90 deg with No Ice (Reduced DL)	30.00	0.050	-0.0045	0.1567	0.1568
93 mph 90 deg with No Ice (Reduced DL)	70.00	0.230	-0.0043	0.3412	0.3412
93 mph 90 deg with No Ice (Reduced DL)	86.75	0.348	-0.0023	0.4406	0.4406
93 mph 90 deg with No Ice (Reduced DL)	93.25	0.401	-0.0006	0.4825	0.4825
93 mph 90 deg with No Ice (Reduced DL)	100.00	0.461	-0.0003	0.5855	0.5855
93 mph 90 deg with No Ice (Reduced DL)	106.75	0.525	0.0042	0.5510	0.5511
93 mph 90 deg with No Ice (Reduced DL)	113.25	0.589	0.0065	0.5832	0.5833
93 mph 90 deg with No Ice (Reduced DL)	120.25	0.664	0.0064	0.7088	0.7088
93 mph 90 deg with No Ice (Reduced DL)	126.75	0.737	0.0089	0.6507	0.6508
93 mph 90 deg with No Ice (Reduced DL)	133.25	0.814	0.0085	0.6814	0.6815
93 mph 90 deg with No Ice (Reduced DL)	140.25	0.901	0.0041	0.8379	0.8379
93 mph 90 deg with No Ice (Reduced DL)	145.13	0.965	0.0084	0.7521	0.7522
93 mph 90 deg with No Ice (Reduced DL)	154.88	1.100	0.0104	0.8127	0.8128
93 mph 90 deg with No Ice (Reduced DL)	164.15	1.239	0.0048	0.8559	0.8559
93 mph 90 deg with No Ice (Reduced DL)	171.95	1.360	0.0028	0.8856	0.8856
93 mph 90 deg with No Ice (Reduced DL)	180.00	1.485	0.0011	0.7633	0.7633
50 mph Normal with 0.75 in Radial Ice	19.75	0.009	0.0034	0.0605	0.0605
50 mph Normal with 0.75 in Radial Ice	30.00	0.019	0.0041	0.0581	0.0582
50 mph Normal with 0.75 in Radial Ice	70.00	0.084	0.0102	0.1197	0.1202
50 mph Normal with 0.75 in Radial Ice	86.75	0.126	0.0137	0.1552	0.1558
50 mph Normal with 0.75 in Radial Ice	93.25	0.145	0.0154	0.1698	0.1705
50 mph Normal with 0.75 in Radial Ice	100.00	0.166	0.0176	0.2100	0.2100
50 mph Normal with 0.75 in Radial Ice	106.75	0.189	0.0186	0.1918	0.1927
50 mph Normal with 0.75 in Radial Ice	113.25	0.212	0.0202	0.2048	0.2058
50 mph Normal with 0.75 in Radial Ice	120.25	0.238	0.0222	0.2427	0.2427
50 mph Normal with 0.75 in Radial Ice	126.75	0.263	0.0220	0.2278	0.2288
50 mph Normal with 0.75 in Radial Ice	133.25	0.290	0.0221	0.2355	0.2365
50 mph Normal with 0.75 in Radial Ice	140.25	0.320	0.0231	0.2980	0.2980
50 mph Normal with 0.75 in Radial Ice	145.13	0.343	0.0215	0.2598	0.2607
50 mph Normal with 0.75 in Radial Ice	154.88	0.390	0.0201	0.2796	0.2803
50 mph Normal with 0.75 in Radial Ice	164.15	0.438	0.0207	0.2955	0.2962

50 mph Normal with 0.75 in Radial Ice	171.95	0.481	0.0201	0.3147	0.3147
50 mph Normal with 0.75 in Radial Ice	180.00	0.525	0.0195	0.3855	0.3855
50 mph 60 deg with 0.75 in Radial Ice	19.75	0.010	0.0024	0.0536	0.0536
50 mph 60 deg with 0.75 in Radial Ice	30.00	0.021	0.0027	0.0552	0.0553
50 mph 60 deg with 0.75 in Radial Ice	70.00	0.084	0.0056	0.1187	0.1187
50 mph 60 deg with 0.75 in Radial Ice	86.75	0.126	0.0070	0.1540	0.1540
50 mph 60 deg with 0.75 in Radial Ice	93.25	0.144	0.0075	0.1679	0.1679
50 mph 60 deg with 0.75 in Radial Ice	100.00	0.165	0.0086	0.2090	0.2092
50 mph 60 deg with 0.75 in Radial Ice	106.75	0.187	0.0083	0.1907	0.1908
50 mph 60 deg with 0.75 in Radial Ice	113.25	0.210	0.0087	0.2015	0.2015
50 mph 60 deg with 0.75 in Radial Ice	120.25	0.236	0.0097	0.2456	0.2459
50 mph 60 deg with 0.75 in Radial Ice	126.75	0.261	0.0094	0.2241	0.2241
50 mph 60 deg with 0.75 in Radial Ice	133.25	0.287	0.0097	0.2340	0.2340
50 mph 60 deg with 0.75 in Radial Ice	140.25	0.317	0.0111	0.2942	0.2945
50 mph 60 deg with 0.75 in Radial Ice	145.13	0.339	0.0100	0.2558	0.2558
50 mph 60 deg with 0.75 in Radial Ice	154.88	0.386	0.0100	0.2757	0.2758
50 mph 60 deg with 0.75 in Radial Ice	164.15	0.433	0.0126	0.2930	0.2930
50 mph 60 deg with 0.75 in Radial Ice	171.95	0.475	0.0142	0.3063	0.3063
50 mph 60 deg with 0.75 in Radial Ice	180.00	0.518	0.0158	0.3182	0.3182
50 mph 90 deg with 0.75 in Radial Ice	19.75	0.010	-0.0019	0.0580	0.0580
50 mph 90 deg with 0.75 in Radial Ice	30.00	0.020	-0.0017	0.0572	0.0572
50 mph 90 deg with 0.75 in Radial Ice	70.00	0.084	-0.0016	0.1212	0.1212
50 mph 90 deg with 0.75 in Radial Ice	86.75	0.126	-0.0008	0.1551	0.1551
50 mph 90 deg with 0.75 in Radial Ice	93.25	0.144	-0.0002	0.1700	0.1700
50 mph 90 deg with 0.75 in Radial Ice	100.00	0.165	-0.0001	0.2060	0.2060
50 mph 90 deg with 0.75 in Radial Ice	106.75	0.188	0.0016	0.1921	0.1921
50 mph 90 deg with 0.75 in Radial Ice	113.25	0.210	0.0024	0.2036	0.2036
50 mph 90 deg with 0.75 in Radial Ice	120.25	0.236	0.0025	0.2453	0.2453
50 mph 90 deg with 0.75 in Radial Ice	126.75	0.261	0.0033	0.2252	0.2252
50 mph 90 deg with 0.75 in Radial Ice	133.25	0.288	0.0031	0.2372	0.2372
50 mph 90 deg with 0.75 in Radial Ice	140.25	0.318	0.0016	0.2888	0.2888
50 mph 90 deg with 0.75 in Radial Ice	145.13	0.340	0.0029	0.2600	0.2600
50 mph 90 deg with 0.75 in Radial Ice	154.88	0.386	0.0033	0.2802	0.2802
50 mph 90 deg with 0.75 in Radial Ice	164.15	0.435	0.0013	0.2945	0.2945
50 mph 90 deg with 0.75 in Radial Ice	171.95	0.476	0.0006	0.3051	0.3051
50 mph 90 deg with 0.75 in Radial Ice	180.00	0.519	0.0001	0.2862	0.2862
Seismic Normal M1	19.75	0.001	0.0003	0.0074	0.0074
Seismic Normal M1	30.00	0.003	0.0004	0.0083	0.0083
Seismic Normal M1	70.00	0.013	0.0009	0.0194	0.0195
Seismic Normal M1	86.75	0.020	0.0012	0.0259	0.0259
Seismic Normal M1	93.25	0.023	0.0013	0.0287	0.0287
Seismic Normal M1	100.00	0.026	0.0015	0.0351	0.0351
Seismic Normal M1	106.75	0.030	0.0015	0.0333	0.0334
Seismic Normal M1	113.25	0.034	0.0016	0.0357	0.0357
Seismic Normal M1	120.25	0.039	0.0018	0.0436	0.0436
Seismic Normal M1	126.75	0.043	0.0017	0.0407	0.0407
Seismic Normal M1	133.25	0.048	0.0018	0.0428	0.0429
Seismic Normal M1	140.25	0.054	0.0021	0.0553	0.0553
Seismic Normal M1	145.13	0.058	0.0018	0.0480	0.0480
Seismic Normal M1	154.88	0.067	0.0017	0.0520	0.0520
Seismic Normal M1	164.15	0.076	0.0019	0.0548	0.0548
Seismic Normal M1	171.95	0.083	0.0017	0.0582	0.0582
Seismic Normal M1	180.00	0.092	0.0016	0.0600	0.0600
Seismic Normal M2	19.75	0.001	0.0003	0.0066	0.0066
Seismic Normal M2	30.00	0.003	0.0004	0.0076	0.0076
Seismic Normal M2	70.00	0.012	0.0008	0.0187	0.0187
Seismic Normal M2	86.75	0.018	0.0010	0.0252	0.0252
Seismic Normal M2	93.25	0.022	0.0011	0.0281	0.0281
Seismic Normal M2	100.00	0.025	0.0013	0.0338	0.0338
Seismic Normal M2	106.75	0.029	0.0013	0.0336	0.0336
Seismic Normal M2	113.25	0.033	0.0014	0.0362	0.0362
Seismic Normal M2	120.25	0.038	0.0016	0.0440	0.0440

Seismic Normal M2	126.75	0.042	0.0016	0.0427	0.0427
Seismic Normal M2	133.25	0.047	0.0016	0.0453	0.0453
Seismic Normal M2	140.25	0.053	0.0019	0.0599	0.0599
Seismic Normal M2	145.13	0.058	0.0016	0.0531	0.0531
Seismic Normal M2	154.88	0.068	0.0013	0.0586	0.0586
Seismic Normal M2	164.15	0.078	0.0017	0.0637	0.0637
Seismic Normal M2	171.95	0.087	0.0016	0.0686	0.0686
Seismic Normal M2	180.00	0.097	0.0015	0.0715	0.0715
Seismic 60 deg M1	19.75	0.001	-0.0003	0.0080	0.0080
Seismic 60 deg M1	30.00	0.003	-0.0004	0.0084	0.0084
Seismic 60 deg M1	70.00	0.013	-0.0009	0.0196	0.0197
Seismic 60 deg M1	86.75	0.020	-0.0012	0.0261	0.0261
Seismic 60 deg M1	93.25	0.023	-0.0013	0.0283	0.0283
Seismic 60 deg M1	100.00	0.026	-0.0015	0.0357	0.0357
Seismic 60 deg M1	106.75	0.030	-0.0015	0.0332	0.0333
Seismic 60 deg M1	113.25	0.034	-0.0016	0.0354	0.0354
Seismic 60 deg M1	120.25	0.039	-0.0018	0.0431	0.0431
Seismic 60 deg M1	126.75	0.043	-0.0017	0.0406	0.0406
Seismic 60 deg M1	133.25	0.048	-0.0018	0.0426	0.0427
Seismic 60 deg M1	140.25	0.054	-0.0021	0.0569	0.0569
Seismic 60 deg M1	145.13	0.058	-0.0018	0.0476	0.0476
Seismic 60 deg M1	154.88	0.067	-0.0016	0.0518	0.0518
Seismic 60 deg M1	164.15	0.076	-0.0018	0.0554	0.0554
Seismic 60 deg M1	171.95	0.083	-0.0017	0.0580	0.0580
Seismic 60 deg M1	180.00	0.092	-0.0016	0.0620	0.0620
Seismic 60 deg M2	19.75	0.001	-0.0003	0.0071	0.0071
Seismic 60 deg M2	30.00	0.002	-0.0004	0.0077	0.0077
Seismic 60 deg M2	70.00	0.012	-0.0008	0.0189	0.0189
Seismic 60 deg M2	86.75	0.018	-0.0010	0.0253	0.0253
Seismic 60 deg M2	93.25	0.021	-0.0011	0.0279	0.0279
Seismic 60 deg M2	100.00	0.025	-0.0013	0.0344	0.0344
Seismic 60 deg M2	106.75	0.029	-0.0013	0.0335	0.0335
Seismic 60 deg M2	113.25	0.033	-0.0014	0.0359	0.0359
Seismic 60 deg M2	120.25	0.037	-0.0016	0.0434	0.0434
Seismic 60 deg M2	126.75	0.042	-0.0015	0.0426	0.0427
Seismic 60 deg M2	133.25	0.047	-0.0016	0.0451	0.0451
Seismic 60 deg M2	140.25	0.053	-0.0019	0.0614	0.0614
Seismic 60 deg M2	145.13	0.058	-0.0015	0.0527	0.0527
Seismic 60 deg M2	154.88	0.068	-0.0012	0.0584	0.0584
Seismic 60 deg M2	164.15	0.078	-0.0016	0.0643	0.0643
Seismic 60 deg M2	171.95	0.087	-0.0015	0.0685	0.0685
Seismic 60 deg M2	180.00	0.097	-0.0015	0.0743	0.0743
Seismic 90 deg M1	19.75	0.001	-0.0004	0.0078	0.0078
Seismic 90 deg M1	30.00	0.003	-0.0005	0.0085	0.0085
Seismic 90 deg M1	70.00	0.013	-0.0011	0.0198	0.0199
Seismic 90 deg M1	86.75	0.020	-0.0014	0.0261	0.0261
Seismic 90 deg M1	93.25	0.023	-0.0015	0.0287	0.0287
Seismic 90 deg M1	100.00	0.026	-0.0017	0.0351	0.0351
Seismic 90 deg M1	106.75	0.030	-0.0017	0.0334	0.0334
Seismic 90 deg M1	113.25	0.034	-0.0018	0.0357	0.0358
Seismic 90 deg M1	120.25	0.039	-0.0020	0.0428	0.0428
Seismic 90 deg M1	126.75	0.043	-0.0020	0.0407	0.0407
Seismic 90 deg M1	133.25	0.048	-0.0020	0.0432	0.0432
Seismic 90 deg M1	140.25	0.054	-0.0024	0.0554	0.0554
Seismic 90 deg M1	145.13	0.058	-0.0020	0.0483	0.0484
Seismic 90 deg M1	154.88	0.067	-0.0019	0.0525	0.0525
Seismic 90 deg M1	164.15	0.076	-0.0021	0.0556	0.0556
Seismic 90 deg M1	171.95	0.083	-0.0020	0.0581	0.0581
Seismic 90 deg M1	180.00	0.092	-0.0019	0.0614	0.0614
Seismic 90 deg M2	19.75	0.001	-0.0003	0.0069	0.0069
Seismic 90 deg M2	30.00	0.002	-0.0004	0.0078	0.0078
Seismic 90 deg M2	70.00	0.012	-0.0009	0.0190	0.0190

Seismic 90 deg M2	86.75	0.018	-0.0012	0.0253	0.0254
Seismic 90 deg M2	93.25	0.021	-0.0013	0.0280	0.0281
Seismic 90 deg M2	100.00	0.025	-0.0015	0.0339	0.0339
Seismic 90 deg M2	106.75	0.029	-0.0015	0.0336	0.0337
Seismic 90 deg M2	113.25	0.033	-0.0016	0.0362	0.0362
Seismic 90 deg M2	120.25	0.038	-0.0018	0.0432	0.0432
Seismic 90 deg M2	126.75	0.042	-0.0018	0.0427	0.0428
Seismic 90 deg M2	133.25	0.047	-0.0018	0.0456	0.0457
Seismic 90 deg M2	140.25	0.053	-0.0022	0.0598	0.0598
Seismic 90 deg M2	145.13	0.058	-0.0018	0.0536	0.0536
Seismic 90 deg M2	154.88	0.068	-0.0014	0.0594	0.0595
Seismic 90 deg M2	164.15	0.078	-0.0019	0.0647	0.0648
Seismic 90 deg M2	171.95	0.087	-0.0018	0.0686	0.0686
Seismic 90 deg M2	180.00	0.097	-0.0017	0.0733	0.0733
Seismic (Reduced DL) Normal M1	19.75	0.001	0.0003	0.0072	0.0073
Seismic (Reduced DL) Normal M1	30.00	0.003	0.0004	0.0083	0.0083
Seismic (Reduced DL) Normal M1	70.00	0.013	0.0009	0.0194	0.0195
Seismic (Reduced DL) Normal M1	86.75	0.020	0.0012	0.0259	0.0259
Seismic (Reduced DL) Normal M1	93.25	0.023	0.0013	0.0285	0.0286
Seismic (Reduced DL) Normal M1	100.00	0.026	0.0015	0.0351	0.0351
Seismic (Reduced DL) Normal M1	106.75	0.030	0.0015	0.0332	0.0333
Seismic (Reduced DL) Normal M1	113.25	0.034	0.0016	0.0355	0.0356
Seismic (Reduced DL) Normal M1	120.25	0.039	0.0018	0.0434	0.0434
Seismic (Reduced DL) Normal M1	126.75	0.043	0.0017	0.0406	0.0406
Seismic (Reduced DL) Normal M1	133.25	0.048	0.0018	0.0427	0.0427
Seismic (Reduced DL) Normal M1	140.25	0.054	0.0021	0.0554	0.0554
Seismic (Reduced DL) Normal M1	145.13	0.058	0.0018	0.0478	0.0478
Seismic (Reduced DL) Normal M1	154.88	0.067	0.0017	0.0518	0.0518
Seismic (Reduced DL) Normal M1	164.15	0.075	0.0019	0.0547	0.0548
Seismic (Reduced DL) Normal M1	171.95	0.083	0.0017	0.0579	0.0579
Seismic (Reduced DL) Normal M1	180.00	0.091	0.0016	0.0595	0.0596
Seismic (Reduced DL) Normal M2	19.75	0.001	0.0003	0.0065	0.0065
Seismic (Reduced DL) Normal M2	30.00	0.002	0.0004	0.0076	0.0076
Seismic (Reduced DL) Normal M2	70.00	0.012	0.0008	0.0186	0.0187
Seismic (Reduced DL) Normal M2	86.75	0.018	0.0010	0.0251	0.0252
Seismic (Reduced DL) Normal M2	93.25	0.021	0.0011	0.0279	0.0280
Seismic (Reduced DL) Normal M2	100.00	0.025	0.0013	0.0338	0.0338
Seismic (Reduced DL) Normal M2	106.75	0.029	0.0013	0.0335	0.0335
Seismic (Reduced DL) Normal M2	113.25	0.033	0.0014	0.0360	0.0361
Seismic (Reduced DL) Normal M2	120.25	0.037	0.0016	0.0438	0.0438
Seismic (Reduced DL) Normal M2	126.75	0.042	0.0016	0.0426	0.0426
Seismic (Reduced DL) Normal M2	133.25	0.047	0.0016	0.0451	0.0452
Seismic (Reduced DL) Normal M2	140.25	0.053	0.0019	0.0599	0.0599
Seismic (Reduced DL) Normal M2	145.13	0.058	0.0016	0.0529	0.0529
Seismic (Reduced DL) Normal M2	154.88	0.067	0.0013	0.0584	0.0584
Seismic (Reduced DL) Normal M2	164.15	0.078	0.0017	0.0636	0.0637
Seismic (Reduced DL) Normal M2	171.95	0.087	0.0015	0.0683	0.0683
Seismic (Reduced DL) Normal M2	180.00	0.097	0.0015	0.0718	0.0718
Seismic (Reduced DL) 60 deg M1	19.75	0.001	-0.0003	0.0078	0.0078
Seismic (Reduced DL) 60 deg M1	30.00	0.003	-0.0004	0.0083	0.0084
Seismic (Reduced DL) 60 deg M1	70.00	0.013	-0.0009	0.0196	0.0196
Seismic (Reduced DL) 60 deg M1	86.75	0.019	-0.0012	0.0260	0.0260
Seismic (Reduced DL) 60 deg M1	93.25	0.023	-0.0013	0.0283	0.0283
Seismic (Reduced DL) 60 deg M1	100.00	0.026	-0.0015	0.0355	0.0355
Seismic (Reduced DL) 60 deg M1	106.75	0.030	-0.0015	0.0332	0.0332
Seismic (Reduced DL) 60 deg M1	113.25	0.034	-0.0016	0.0354	0.0354
Seismic (Reduced DL) 60 deg M1	120.25	0.039	-0.0018	0.0430	0.0430
Seismic (Reduced DL) 60 deg M1	126.75	0.043	-0.0017	0.0405	0.0405
Seismic (Reduced DL) 60 deg M1	133.25	0.048	-0.0018	0.0426	0.0426
Seismic (Reduced DL) 60 deg M1	140.25	0.054	-0.0020	0.0565	0.0565
Seismic (Reduced DL) 60 deg M1	145.13	0.058	-0.0018	0.0475	0.0476
Seismic (Reduced DL) 60 deg M1	154.88	0.066	-0.0016	0.0516	0.0517

Seismic (Reduced DL) 60 deg M1	164.15	0.075	-0.0018	0.0551	0.0552
Seismic (Reduced DL) 60 deg M1	171.95	0.083	-0.0017	0.0578	0.0578
Seismic (Reduced DL) 60 deg M1	180.00	0.091	-0.0016	0.0614	0.0614
Seismic (Reduced DL) 60 deg M2	19.75	0.001	-0.0003	0.0068	0.0068
Seismic (Reduced DL) 60 deg M2	30.00	0.002	-0.0004	0.0077	0.0077
Seismic (Reduced DL) 60 deg M2	70.00	0.012	-0.0008	0.0188	0.0188
Seismic (Reduced DL) 60 deg M2	86.75	0.018	-0.0010	0.0252	0.0253
Seismic (Reduced DL) 60 deg M2	93.25	0.021	-0.0011	0.0277	0.0277
Seismic (Reduced DL) 60 deg M2	100.00	0.025	-0.0013	0.0342	0.0342
Seismic (Reduced DL) 60 deg M2	106.75	0.029	-0.0013	0.0334	0.0334
Seismic (Reduced DL) 60 deg M2	113.25	0.033	-0.0014	0.0359	0.0359
Seismic (Reduced DL) 60 deg M2	120.25	0.037	-0.0016	0.0434	0.0434
Seismic (Reduced DL) 60 deg M2	126.75	0.042	-0.0015	0.0425	0.0426
Seismic (Reduced DL) 60 deg M2	133.25	0.047	-0.0016	0.0450	0.0450
Seismic (Reduced DL) 60 deg M2	140.25	0.053	-0.0019	0.0610	0.0610
Seismic (Reduced DL) 60 deg M2	145.13	0.057	-0.0015	0.0526	0.0527
Seismic (Reduced DL) 60 deg M2	154.88	0.067	-0.0012	0.0583	0.0583
Seismic (Reduced DL) 60 deg M2	164.15	0.078	-0.0016	0.0640	0.0641
Seismic (Reduced DL) 60 deg M2	171.95	0.087	-0.0015	0.0682	0.0682
Seismic (Reduced DL) 60 deg M2	180.00	0.097	-0.0015	0.0736	0.0736
Seismic (Reduced DL) 90 deg M1	19.75	0.001	-0.0004	0.0076	0.0076
Seismic (Reduced DL) 90 deg M1	30.00	0.003	-0.0005	0.0085	0.0085
Seismic (Reduced DL) 90 deg M1	70.00	0.013	-0.0011	0.0198	0.0198
Seismic (Reduced DL) 90 deg M1	86.75	0.020	-0.0014	0.0260	0.0261
Seismic (Reduced DL) 90 deg M1	93.25	0.023	-0.0015	0.0286	0.0286
Seismic (Reduced DL) 90 deg M1	100.00	0.026	-0.0017	0.0349	0.0349
Seismic (Reduced DL) 90 deg M1	106.75	0.030	-0.0017	0.0333	0.0334
Seismic (Reduced DL) 90 deg M1	113.25	0.034	-0.0018	0.0356	0.0357
Seismic (Reduced DL) 90 deg M1	120.25	0.039	-0.0020	0.0426	0.0426
Seismic (Reduced DL) 90 deg M1	126.75	0.043	-0.0020	0.0406	0.0406
Seismic (Reduced DL) 90 deg M1	133.25	0.048	-0.0020	0.0430	0.0431
Seismic (Reduced DL) 90 deg M1	140.25	0.054	-0.0024	0.0550	0.0551
Seismic (Reduced DL) 90 deg M1	145.13	0.058	-0.0020	0.0482	0.0482
Seismic (Reduced DL) 90 deg M1	154.88	0.066	-0.0019	0.0523	0.0524
Seismic (Reduced DL) 90 deg M1	164.15	0.075	-0.0021	0.0554	0.0554
Seismic (Reduced DL) 90 deg M1	171.95	0.083	-0.0020	0.0579	0.0579
Seismic (Reduced DL) 90 deg M1	180.00	0.091	-0.0019	0.0608	0.0608
Seismic (Reduced DL) 90 deg M2	19.75	0.001	-0.0003	0.0067	0.0067
Seismic (Reduced DL) 90 deg M2	30.00	0.002	-0.0004	0.0078	0.0078
Seismic (Reduced DL) 90 deg M2	70.00	0.012	-0.0009	0.0189	0.0189
Seismic (Reduced DL) 90 deg M2	86.75	0.018	-0.0012	0.0253	0.0253
Seismic (Reduced DL) 90 deg M2	93.25	0.021	-0.0013	0.0280	0.0280
Seismic (Reduced DL) 90 deg M2	100.00	0.025	-0.0015	0.0337	0.0337
Seismic (Reduced DL) 90 deg M2	106.75	0.029	-0.0015	0.0335	0.0336
Seismic (Reduced DL) 90 deg M2	113.25	0.033	-0.0016	0.0361	0.0361
Seismic (Reduced DL) 90 deg M2	120.25	0.037	-0.0018	0.0430	0.0430
Seismic (Reduced DL) 90 deg M2	126.75	0.042	-0.0018	0.0426	0.0427
Seismic (Reduced DL) 90 deg M2	133.25	0.047	-0.0018	0.0455	0.0456
Seismic (Reduced DL) 90 deg M2	140.25	0.053	-0.0022	0.0594	0.0594
Seismic (Reduced DL) 90 deg M2	145.13	0.058	-0.0018	0.0534	0.0535
Seismic (Reduced DL) 90 deg M2	154.88	0.067	-0.0014	0.0593	0.0593
Seismic (Reduced DL) 90 deg M2	164.15	0.078	-0.0019	0.0646	0.0646
Seismic (Reduced DL) 90 deg M2	171.95	0.087	-0.0017	0.0683	0.0683
Seismic (Reduced DL) 90 deg M2	180.00	0.097	-0.0017	0.0728	0.0728
Serviceability - 60 mph Wind Normal	19.75	0.007	0.0024	0.0400	0.0400
Serviceability - 60 mph Wind Normal	30.00	0.014	0.0029	0.0410	0.0411
Serviceability - 60 mph Wind Normal	70.00	0.062	0.0073	0.0892	0.0895
Serviceability - 60 mph Wind Normal	86.75	0.093	0.0098	0.1165	0.1169
Serviceability - 60 mph Wind Normal	93.25	0.107	0.0110	0.1274	0.1279
Serviceability - 60 mph Wind Normal	100.00	0.123	0.0126	0.1585	0.1585
Serviceability - 60 mph Wind Normal	106.75	0.140	0.0133	0.1453	0.1459
Serviceability - 60 mph Wind Normal	113.25	0.158	0.0145	0.1548	0.1555

Serviceability - 60 mph Wind Normal	120.25	0.178	0.0159	0.1855	0.1855
Serviceability - 60 mph Wind Normal	126.75	0.197	0.0157	0.1735	0.1742
Serviceability - 60 mph Wind Normal	133.25	0.217	0.0156	0.1788	0.1794
Serviceability - 60 mph Wind Normal	140.25	0.241	0.0164	0.2280	0.2280
Serviceability - 60 mph Wind Normal	145.13	0.257	0.0150	0.1980	0.1986
Serviceability - 60 mph Wind Normal	154.88	0.294	0.0136	0.2138	0.2142
Serviceability - 60 mph Wind Normal	164.15	0.331	0.0138	0.2272	0.2276
Serviceability - 60 mph Wind Normal	171.95	0.363	0.0131	0.2429	0.2429
Serviceability - 60 mph Wind Normal	180.00	0.397	0.0125	0.3185	0.3185
Serviceability - 60 mph Wind 60 deg	19.75	0.006	0.0017	0.0395	0.0395
Serviceability - 60 mph Wind 60 deg	30.00	0.013	0.0019	0.0398	0.0398
Serviceability - 60 mph Wind 60 deg	70.00	0.060	0.0040	0.0870	0.0870
Serviceability - 60 mph Wind 60 deg	86.75	0.090	0.0050	0.1137	0.1137
Serviceability - 60 mph Wind 60 deg	93.25	0.104	0.0054	0.1240	0.1240
Serviceability - 60 mph Wind 60 deg	100.00	0.119	0.0062	0.1543	0.1544
Serviceability - 60 mph Wind 60 deg	106.75	0.136	0.0060	0.1421	0.1421
Serviceability - 60 mph Wind 60 deg	113.25	0.153	0.0064	0.1502	0.1502
Serviceability - 60 mph Wind 60 deg	120.25	0.172	0.0071	0.1849	0.1851
Serviceability - 60 mph Wind 60 deg	126.75	0.191	0.0068	0.1681	0.1681
Serviceability - 60 mph Wind 60 deg	133.25	0.211	0.0069	0.1749	0.1750
Serviceability - 60 mph Wind 60 deg	140.25	0.233	0.0080	0.2212	0.2213
Serviceability - 60 mph Wind 60 deg	145.13	0.250	0.0071	0.1925	0.1925
Serviceability - 60 mph Wind 60 deg	154.88	0.285	0.0068	0.2079	0.2079
Serviceability - 60 mph Wind 60 deg	164.15	0.321	0.0086	0.2210	0.2210
Serviceability - 60 mph Wind 60 deg	171.95	0.353	0.0098	0.2313	0.2313
Serviceability - 60 mph Wind 60 deg	180.00	0.385	0.0110	0.2345	0.2345
Serviceability - 60 mph Wind 90 deg	19.75	0.006	-0.0013	0.0388	0.0388
Serviceability - 60 mph Wind 90 deg	30.00	0.013	-0.0013	0.0409	0.0409
Serviceability - 60 mph Wind 90 deg	70.00	0.060	-0.0015	0.0888	0.0888
Serviceability - 60 mph Wind 90 deg	86.75	0.091	-0.0011	0.1145	0.1145
Serviceability - 60 mph Wind 90 deg	93.25	0.104	-0.0007	0.1254	0.1254
Serviceability - 60 mph Wind 90 deg	100.00	0.120	-0.0008	0.1522	0.1522
Serviceability - 60 mph Wind 90 deg	106.75	0.137	0.0003	0.1432	0.1432
Serviceability - 60 mph Wind 90 deg	113.25	0.153	0.0009	0.1515	0.1515
Serviceability - 60 mph Wind 90 deg	120.25	0.173	0.0008	0.1840	0.1840
Serviceability - 60 mph Wind 90 deg	126.75	0.192	0.0013	0.1689	0.1689
Serviceability - 60 mph Wind 90 deg	133.25	0.212	0.0011	0.1769	0.1769
Serviceability - 60 mph Wind 90 deg	140.25	0.234	-0.0002	0.2173	0.2173
Serviceability - 60 mph Wind 90 deg	145.13	0.251	0.0007	0.1952	0.1952
Serviceability - 60 mph Wind 90 deg	154.88	0.286	0.0008	0.2108	0.2108
Serviceability - 60 mph Wind 90 deg	164.15	0.322	-0.0010	0.2221	0.2221
Serviceability - 60 mph Wind 90 deg	171.95	0.353	-0.0018	0.2298	0.2298
Serviceability - 60 mph Wind 90 deg	180.00	0.386	-0.0024	0.1991	0.1991

Maximum Reactions Summary

	Vertical (kip)				Horizontal (kip)		Moment (kip-ft)	
Anchor Group	DL+WL	DL+WL+IL	UpLift	Shear	DL+WL	DL+WL+IL	DL+WL	DL+WL+IL
Base	59.41	176.42	335.74	36.45	59.79	22.04	6293.00	2242.58

Exhibit E

Mount Analysis

Mount Analysis of Proposed Perfect Vision PV-SFA12-B Sector Frames for American Tower on behalf of T-Mobile
302522 - Redding
Project #: 12928768

T-Mobile Site ID: CTFF749A

Program: L600

CLS Engineering PLLC Project #41124-12928768-01-MA-R1

July 9, 2019

MOUNT DESCRIPTION	Proposed Perfect Vision PV-SFA12-B Sector Frames at 147 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 147 ft AGL
SITE DESCRIPTION	180 ft Self-Supporting Tower
SITE ADDRESS	100 Old Redding Road, Redding, CT 06896-2721, Fairfield County
GPS COORDINATES	41.28708333, -73.4382
ANALYSIS STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	120 mph, V_{ult} / 93 mph, V_{asd} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 0.75" Ice

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

MEMBER USAGE	**50%**	**Pass**

Existing mounts to be replaced; 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 13:45:47 -04'00'

■ INTRODUCTION

The proposed equipment is to be mounted to the proposed Perfect Vision PV-SFA12-B Sector Frames. 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 Janauary 16, 2019 Perfect Vision Drawing #SFA-ENG-01-R7 Rev. 7, dated March 20, 2018
PREVIOUS ANALYSES	Tower SA by ATC, Engineering #12928768_C3_01, dated March 21, 2019
LOADING DATA	ATC Application, Project #12928768, dated March 13, 2019

■ ANALYSIS CRITERIA

STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
BASIC WIND SPEED	120 mph, V_{ult} / 93 mph, V_{asd} (3-Second Gust)
BASIC WIND SPEED W/ ICE	50 mph (3-Second Gust) w/ 0.75" Radial Ice (Escalating)
EXPOSURE CATEGORY	B
MAX. TOPOGRAPHIC FACTOR, K_{zt}	1.00
RISK CATEGORY	II
MAINTENANCE LIVE LOAD	L_M: 500 lb

■ FINAL EQUIPMENT

ELEVATION (ft)		ANTENNAS		CARRIER
MOUNT	RAD.	#	NAME	
147.0	147.0	6	Ericsson AIR 21	T-Mobile
		3	Ericsson RADIO 4449 B12,B71	
		3	RFS Celwave APXVAARR24_43-U-NA20	
		1	12'x3" Omni	Other
		1	Single Element Dipole	

■ RESULTS SUMMARY

Existing Mount Usages:

COMPONENT	PEAK USAGE	RESULT
Connection Plates	**139%**	**Fail**
Face Horizontals	**110%**	**Fail**
Mount Pipes	46%	Pass
Bracing Members	45%	Pass
Stiff Arms	35%	Pass

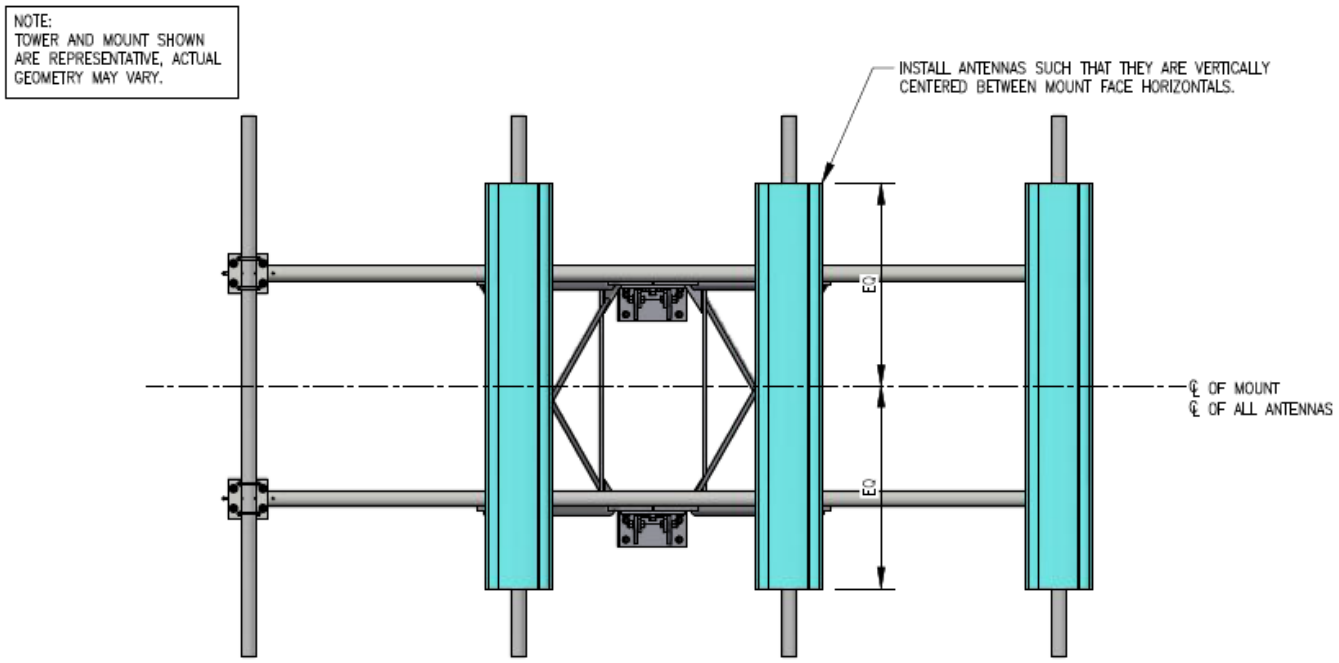
Replacement Mount Usages:

COMPONENT	PEAK USAGE	RESULT
Face Horizontals	50%	Pass
Stand-Off Horizontals	44%	Pass
Bracing Members	32%	Pass
Mount Pipes	31%	Pass
Stiff Arms	10%	Pass

■ CONCLUSION AND RECOMMENDATIONS

According to our structural analysis, the mounts have been found to **PASS PENDING REPLACEMENT**. 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 Sector Frame mounts with (3) proposed Perfect Vision PV-SFA-B Sector Frame Kit.**
- **Install (4) 10'-6" long Pipe 2½ STD, A53 Gr. B, mount pipes at each sector frame mount (12 total). Connect mount pipes to upper and lower face horizontal members with 1/2"Ø U-bolts such that the mount pipes are vertically centered on the mount.**
- **Install (2) stiff arms included in the sector frame kit at each sector frame mount (6 total). Connect to nearest adjacent tower leg with Perfect Vision PV-SAM-U or equal (6 total). Connect to upper face horizontal members as shown in the following sketch.**
- **Install existing and proposed antennas such that they are vertically centered on the mounts. Install existing and proposed RRUS and TMAs behind the antennas.**



See following sketch and Perfect Vision 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.

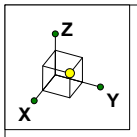
This analysis assumes the following:

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.

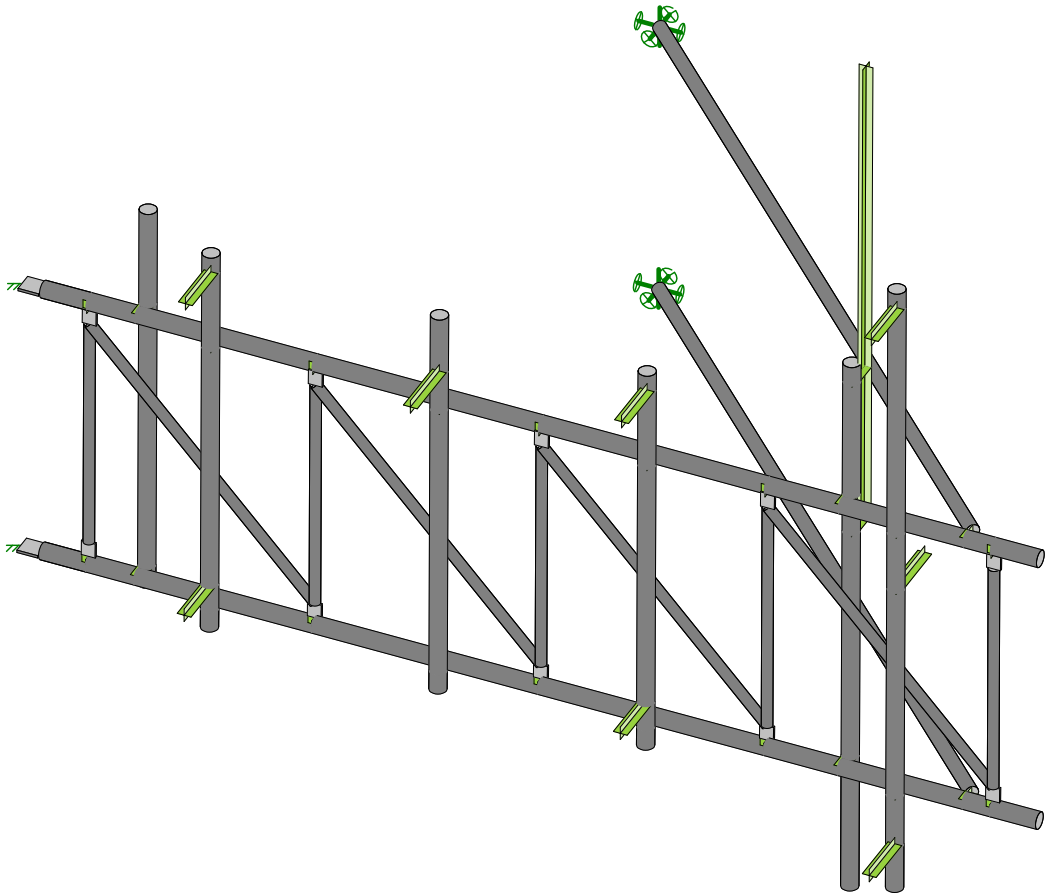
All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of the report. All opinions and conclusions contained herein are subject to revision based upon receipt of new or updated information. All services are provided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

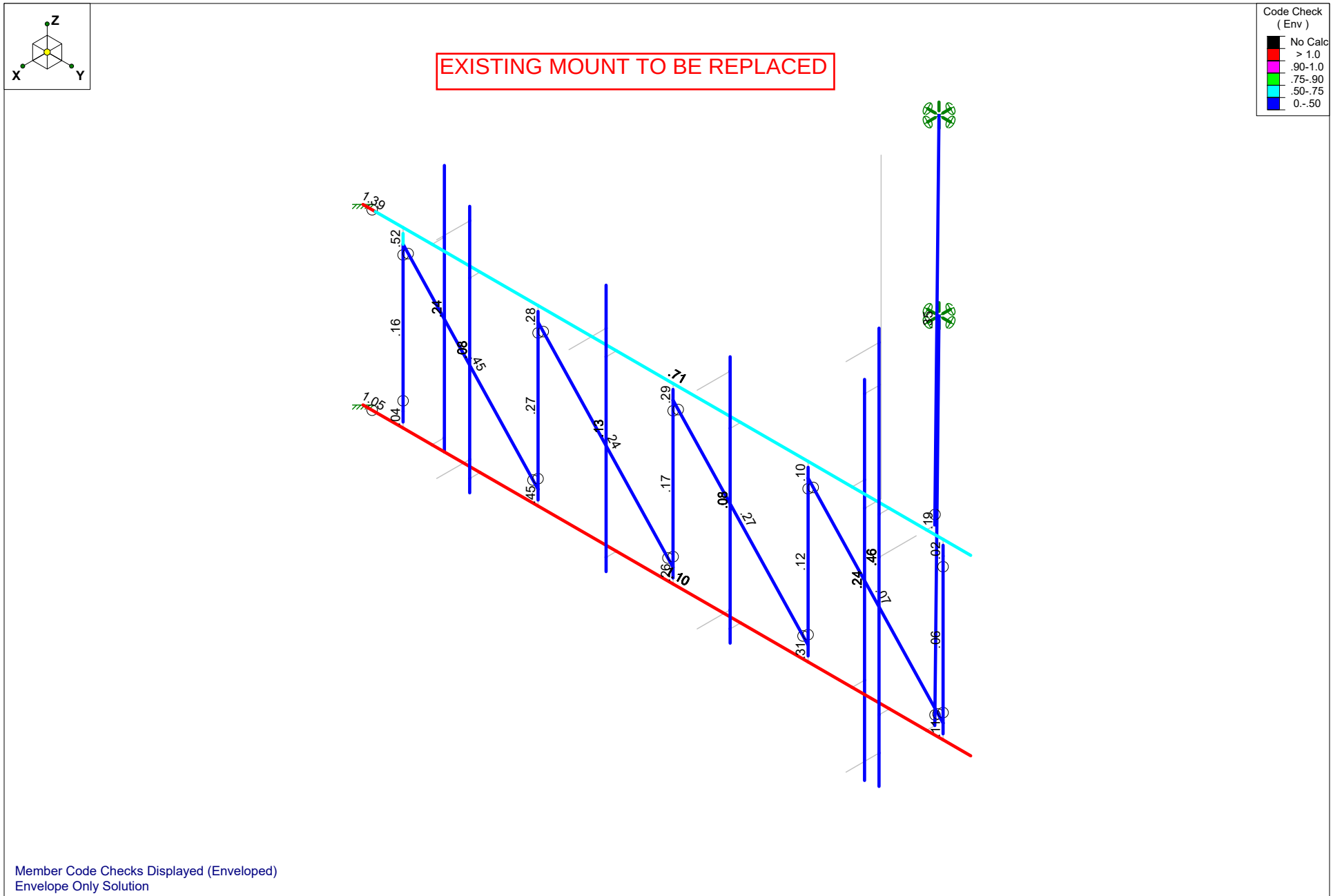


EXISTING MOUNT TO BE REPLACED



Envelope Only Solution

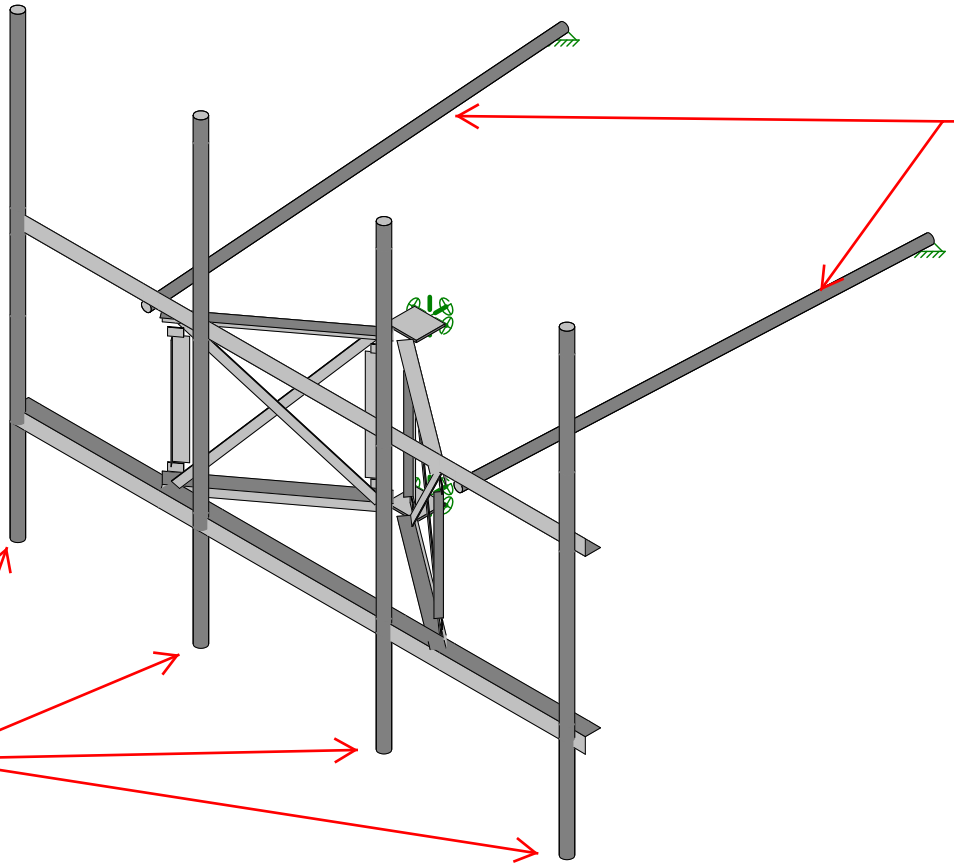
CLS		SK - 1
SMR	41124-12928768-Redding	July 5, 2019 at 2:18 PM
41124-12928768-01-MA-R1	Existing Mount - Rendered	41124-12928768-01-MA-R1.r3d



CLS	41124-12928768-Redding	SK - 0
SMR		July 9, 2019 at 11:21 AM
41124-12928768-01-MA-R1	Existing Mount - Envelope Member Unity Check Results - Bending	41124-12928768-01-MA-R1.r3d

Replace existing Sector Frame mounts with (3) proposed Perfect Vision PV-SFA-B Sector Frame Kit.

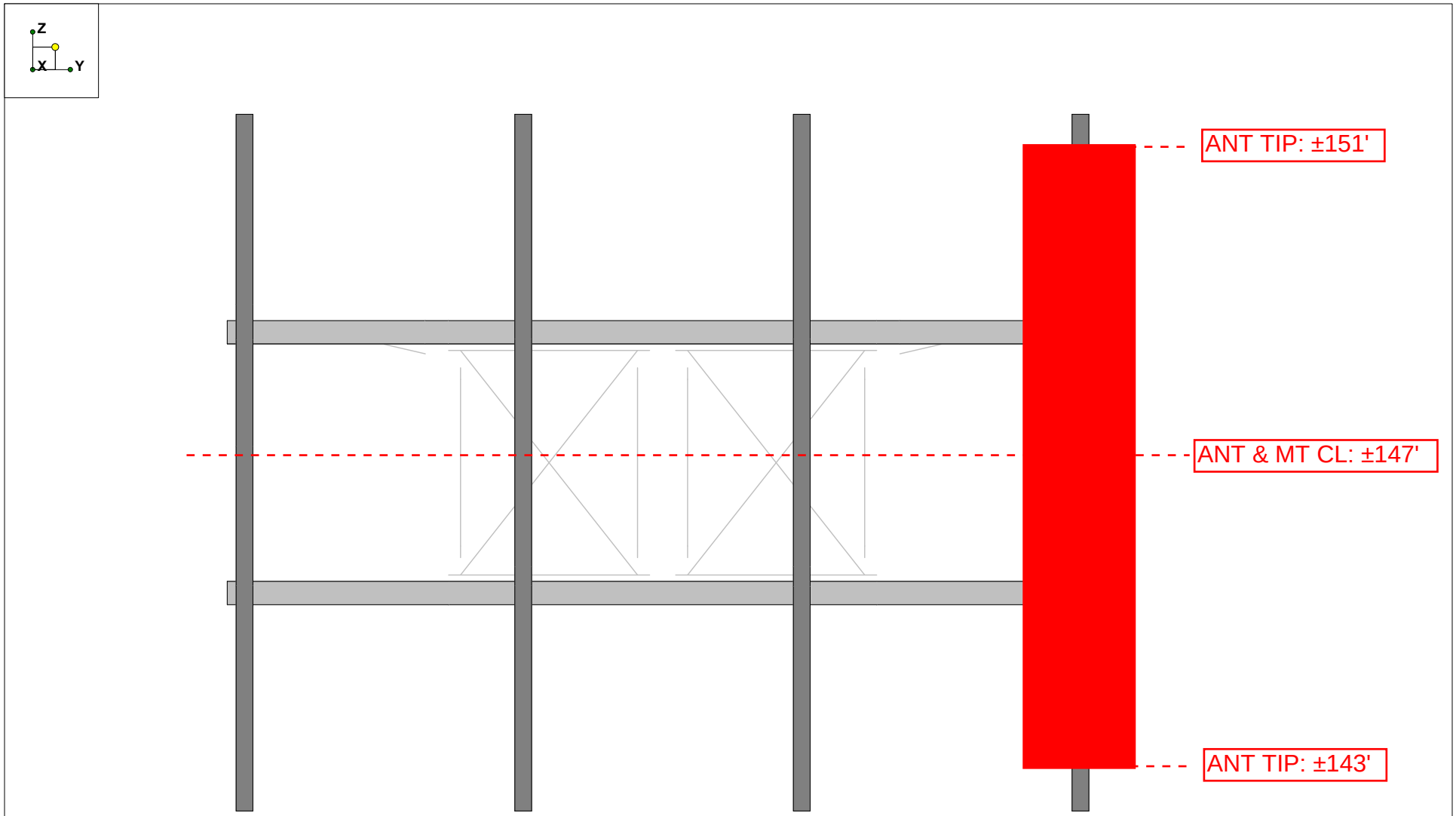
Install (2) stiff arms included in the sector frame kit at each sector frame mount (6 total). Connect to nearest adjacent tower leg with Perfect Vision PV-SAM-U or equal (6 total). Connect to upper face horizontal members as shown in the following sketch.



Install (4) 10'-6" long Pipe 2½ STD, A53 Gr. B, mount pipes at each sector frame mount (12 total). Connect mount pipes to upper and lower face horizontal members with 1/2"Ø U-bolts such that the mount pipes are vertically centered on the mount.

Envelope Only Solution

CLS		SK - 0
SMR	41124-12928768-Redding	July 9, 2019 at 10:53 AM
41124-12928768-01-MA-R1	Installation Sketch - Isometric View	41124-12928768-01-MA-R1.r3d



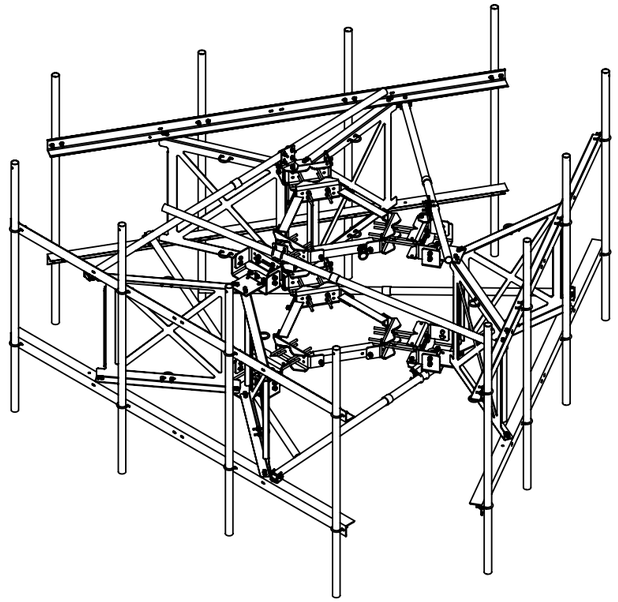
CLS		SK - 0
SMR	41124-12928768-Redding	July 9, 2019 at 11:09 AM
41124-12928768-01-MA-R1	Installation Sketch - Elevation Sketch	41124-12928768-01-MA-R1.r3d

PV-SFA-B
L.I.F.E. MOUNT ASSEMBLED SECTOR FRAME

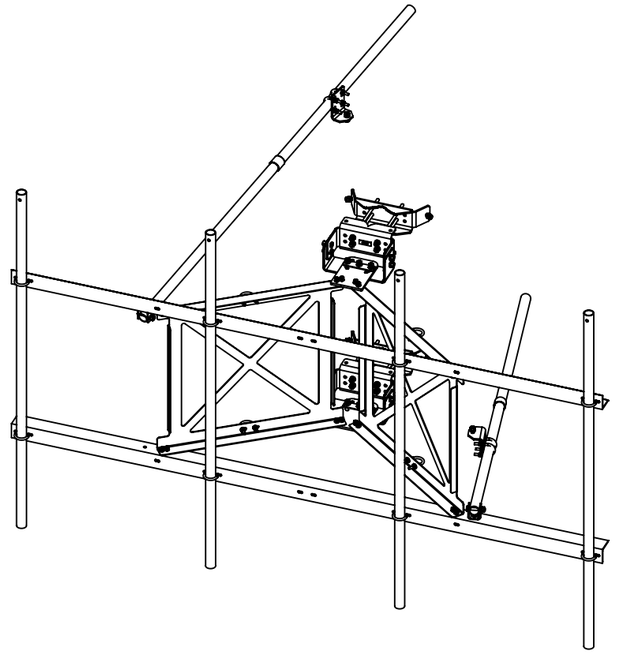
Table 1: PV-SFA Configurations					
Part Number	Included Frame	Frame qty	Total Antenna Pipes	Pipe Length	HSK Included
PV-SFA7-3-96	PV-SFA7-B	1	3	96"	No
PV-SFA7-4-96	PV-SFA7-B	1	4	96"	No
PV-SFA7-3-126	PV-SFA7-B	1	3	126"	No
PV-SFA7-4-126	PV-SFA7-B	1	4	126"	No
PV-SFA10-3-96	PV-SFA10-B	1	3	96"	No
PV-SFA10-4-96	PV-SFA10-B	1	4	96"	No
PV-SFA10-3-126	PV-SFA10-B	1	3	126"	No
PV-SFA10-4-126	PV-SFA10-B	1	4	126"	No
PV-SFA12-3-96	PV-SFA12-B	1	3	96"	No
PV-SFA12-4-96	PV-SFA12-B	1	4	96"	No
PV-SFA12-3-126	PV-SFA12-B	1	3	126"	No
PV-SFA12-4-126	PV-SFA12-B	1	4	126"	No
PV-SFA14-4-96	PV-SFA14-B	1	4	96"	No
PV-SFA14-5-96	PV-SFA14-B	1	5	96"	No
PV-SFA14-4-126	PV-SFA14-B	1	4	126"	No
PV-SFA14-5-126	PV-SFA14-B	1	5	126"	No
PV-SFA7-3-9-96	PV-SFA7-B	3	9	96"	Yes
PV-SFA7-3-12-96	PV-SFA7-B	3	12	96"	Yes
PV-SFA7-3-9-126	PV-SFA7-B	3	9	126"	Yes
PV-SFA7-3-12-126	PV-SFA7-B	3	12	126"	Yes
PV-SFA10-3-9-96	PV-SFA10-B	3	9	96"	Yes
PV-SFA10-3-12-96	PV-SFA10-B	3	12	96"	Yes
PV-SFA10-3-9-126	PV-SFA10-B	3	9	126"	Yes
PV-SFA10-3-12-126	PV-SFA10-B	3	12	126"	Yes
PV-SFA12-3-9-96	PV-SFA12-B	3	9	96"	Yes
PV-SFA12-3-12-96	PV-SFA12-B	3	12	96"	Yes
PV-SFA12-3-9-126	PV-SFA12-B	3	9	126"	Yes
PV-SFA12-3-12-126	PV-SFA12-B	3	12	126"	Yes
PV-SFA14-3-12-96	PV-SFA14-B	3	12	96"	Yes
PV-SFA14-3-15-96	PV-SFA14-B	3	15	96"	Yes
PV-SFA14-3-12-126	PV-SFA14-B	3	12	126"	Yes
PV-SFA14-3-15-126	PV-SFA14-B	3	15	126"	Yes

Table 2: PV-SFA-B Configurations			
Part Number	Mount Width	Face Angle	Total Weight
PV-SFA7-B	7' 6"	PV-SFA-ANGLE7-HD	510 lbs
PV-SFA10-B	10' 6"	PV-SFA-ANGLE10-HD	560 lbs
PV-SFA12-B	12' 6"	PV-SFA-ANGLE12-HD	592 lbs
PV-SFA14-B	14' 6"	PV-SFA-ANGLE14-HD	624 lbs

Table 3: Optional Accessories		
Part Number	Description	Sheet
PV-HSK	Horizontal Support Kit	5
PV-SFA-8016	Large Leg Adapter Kit	6
PV-SAM-U	Stiff Arm Leg Bracket	6
PV-SCRB-SFA	Safety Climb Cable Guide Attachment	4

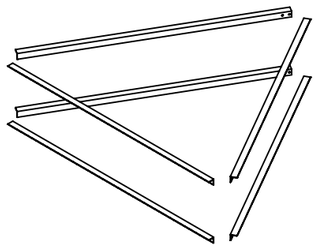


3 SECTOR WITH HSK AND PIPE

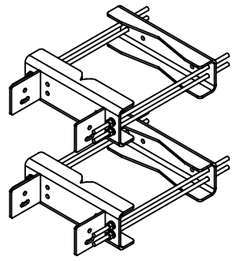


SINGLE SECTOR WITH PIPE

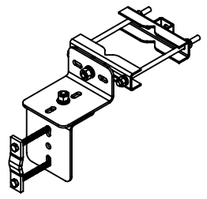
OPTIONAL ACCESSORIES



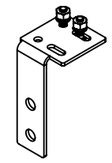
PV-HSK



PV-SFA-8016



PV-SAM-U



PV-SCRB-SFA

FALL-SAFE L.I.F.E. MOUNTS™

SHEET 1 OF 8	THIRD ANGLE PROJECTION	CATEGORY 01_Self Support	7	UPDATED CLASSIFICATIONS. ADDED ADDITIONAL NOTES	3/20/18
		SERIES 02_V-Frames - Assembled	6	UPDATED CLASSIFICATIONS / TEMPLATE	8/30/17
5/1/2018	SCALE NTS	TYPE PV-SFA	5	MOUNT CLASSIFICATIONS	1/19/17
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	4	ADDED TIE BACK PIPE RANGE	6/9/16
		CHECKED SJS	3	L.I.F.E. MOUNT™ UPDATE	2/24/16
		STATUS APPROVED	REV	DESCRIPTION	DATE

PERFECTVISION MANUFACTURING

L.I.F.E. MOUNT™ SECTOR FRAME

DOCUMENT NUMBER SFA-ENG-01-R7 REV 7

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FRAME DETAILS:

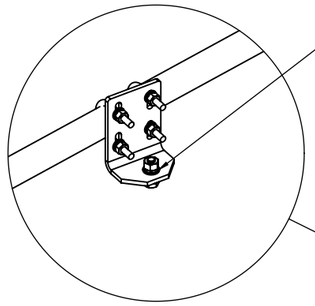
Table 4: Frame (EPA)				
Part Number	Front (ft^2) $(EPA)_{MN}$		Side (ft^2) $(EPA)_{MT}$	
	No Ice	0.5" Radial Ice	No Ice	0.5" Radial Ice
PV-SFA7-B	9.9	11.3	5.2	7.4
PV-SFA10-B	11.7	13.5	5.2	7.4
PV-SFA12-B	13.0	15.1	5.2	7.4
PV-SFA14-B	14.3	16.7	5.2	7.4

NOTE: FRAME EPA DOES NOT INCLUDE ANTENNA PIPES

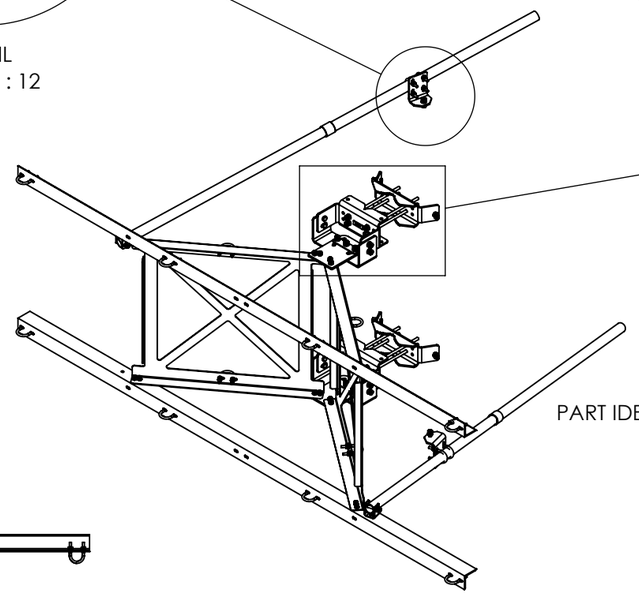
Table 5: Tower Leg Compatibility		
Leg Type	Max Standard Bracket Size	Max Large Leg Bracket Size
Round	Ø8.625	Ø16
Angle 60°	6" x 6"	12" x 12"
Angle 90°	8" x 8"	16" x 16"

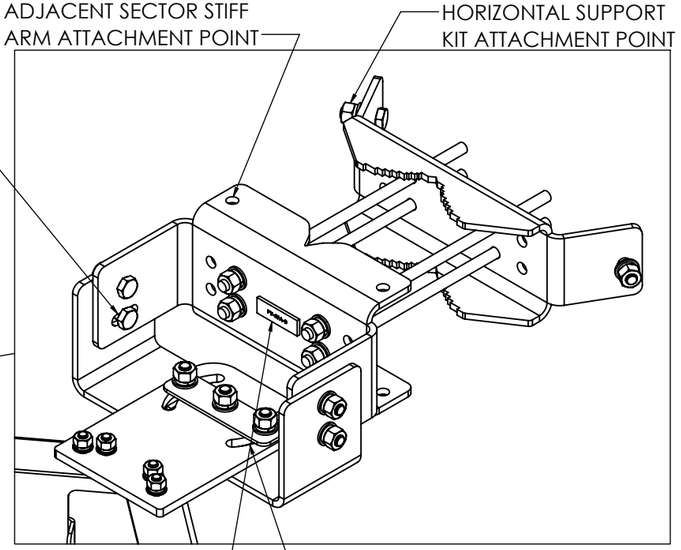
NOTE: SEE SHEET 6 FOR LARGE LEG BRACKET DETAILS

Table 6: Antenna Pipe Spacing			
Part Number	3 Pipe Spacing	4 Pipe Spacing	5 Pipe Spacing
PV-SFA7-B	3'6"	2'4"	N/A
PV-SFA10-B	5'	3'4"	N/A
PV-SFA12-B	6'	4'	N/A
PV-SFA14-B	7'	4'8"	3'6"

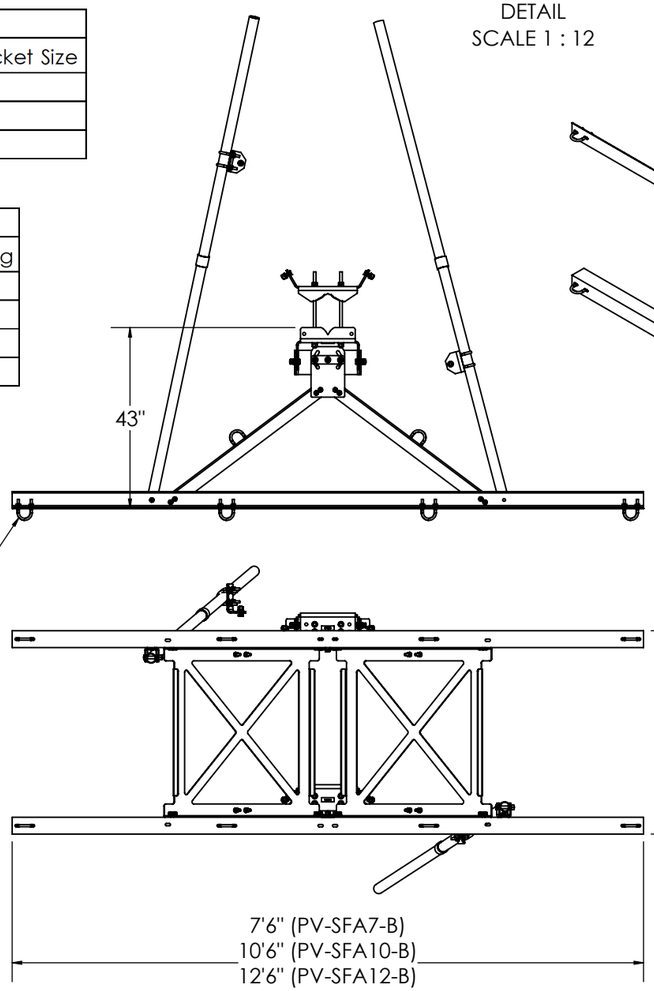


DETAIL
SCALE 1 : 12



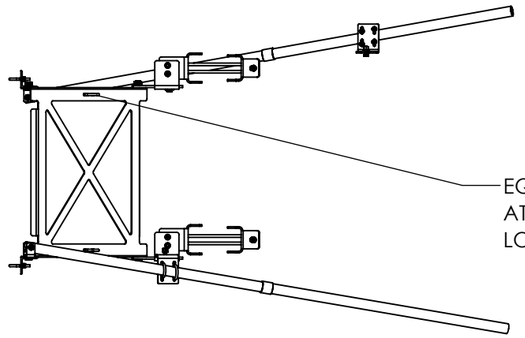


DETAIL
SCALE 1 : 8



COMPATIBLE ANTENNA PIPE:
- ∅2-3/8"
- ∅2-7/8"
- ∅3-1/2"

U-BOLTS SUPPLIED FOR ∅2-3/8"



FALL-SAFE L.I.F.E. MOUNTS™

SHEET: 2 OF 8	THIRD ANGLE PROJECTION	CATEGORY: 01_Self Support	7	UPDATED CLASSIFICATIONS. ADDED ADDITIONAL NOTES	3/20/18
		SERIES: 02_V-Frames - Assembled	6	UPDATED CLASSIFICATIONS / TEMPLATE	8/30/17
5/1/2018	SCALE: 1:36	TYPE: PV-SFA	5	MOUNT CLASSIFICATIONS	1/19/17
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY: DJN	4	ADDED TIE BACK PIPE RANGE	6/9/16
		CHECKED: SJS	3	L.I.F.E. MOUNT™ UPDATE	2/24/16
		STATUS: APPROVED	REV	DESCRIPTION	DATE

PERFECTVISION® MANUFACTURING

L.I.F.E. MOUNT™ SECTOR FRAME

DOCUMENT NUMBER: SFA-ENG-01-R7 | REV: 7

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MOUNT CLASSIFICATIONS:

REFERENCE STRUCTURAL LETTER (SFA-STL-01-R1) FOR ADDITIONAL LOADING REQUIREMENTS

MOUNT CLASSIFICATION INFORMATION
- MAX STRUCTURE HEIGHT: 400ft
- STRUCTURE CLASS: I OR II
- EXPOSURE CATEGORY: B OR C
- TOPOGRAPHIC CATEGORY: 1
- DESIGN WIND PRESSURE (NO ICE): 135psf
- DESIGN WIND PRESSURE (ICED):15psf
- DESIGN ICE THICKNESS: 2.75in Radial

APPROVED MOUNT CLASSIFICATIONS*
- M700R-4[6]
- M800R-4[6]
- M900R-4[6]
- M950R-4[6]
- M1000R-4[6]
- M1400R-4[6]
- M1600R-4[6]
- HEAVY-5
- HEAVY-10
- HEAVY-WLL (PV-SFA14-B ONLY)

APPROVED MOUNT CLASSIFICATIONS (ICED)*
- M1000R(i)-4[6]
- M1150R(i)-4[6]
- HEAVY-5
- HEAVY-10
- HEAVY-WLL (PV-SFA14-B ONLY)

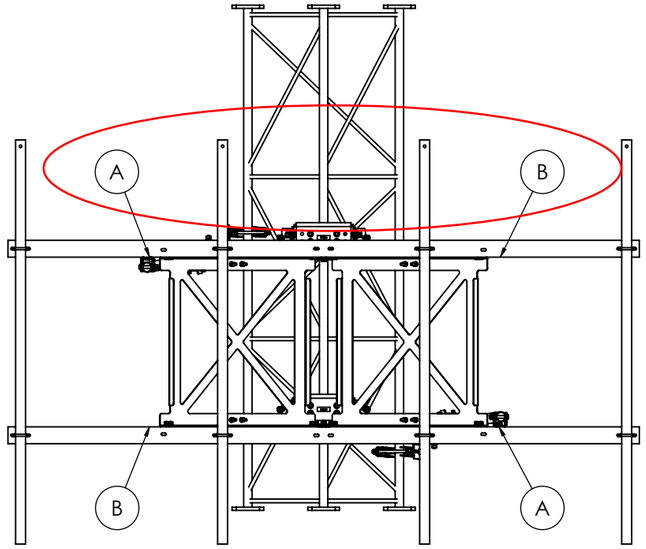
NOTES:
*UNLESS NOTES, APPLIES TO PV-SFA7-B, PV-SFA10-B, PV-SFA12-B, AND PV-SFA14-B MOUNTS

PERFECTVISION MANUFACTURING HIGHLY RECOMMENDS SPECIFYING THE PV-HSK (SEE SHEET 5) HORIZONTAL SUPPORT KIT TO INTERCONNECT SECTORS ON TOWERS WITH FACE WIDTHS LESS THAN 10FT AND LEG DIAMETERS LESS THAN 4IN OD.

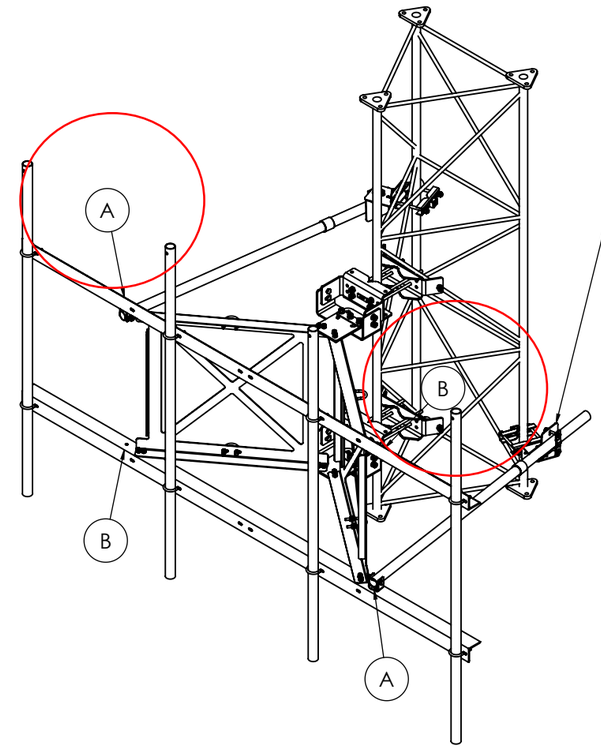
STIFF ARM INSTALLATION:

- (2) STIFF ARMS ARE REQUIRED TO MEET APPROVED MOUNT CLASSIFICATIONS
- ~~STIFF ARMS MUST BE INSTALLED ON OPPOSITE CORNERS OF FRAME (LOCATIONS A-A OR B-B)~~
- ~~DO NOT INSTALL STIFF ARMS IN AN A-B CONFIGURATION~~

Install both stiff arms to upper face horizontal member



NOTE: SHOWN AS SINGLE SETUP WITH PV-SAM-U (SEE SHEET 6 FOR DETAILS)



SHEET 3 OF 8	THIRD ANGLE PROJECTION	CATEGORY 01_Self Support	7	UPDATED CLASSIFICATIONS. ADDED ADDITIONAL NOTES	3/20/18
		SERIES 02_V-Frames - Assembled	6	UPDATED CLASSIFICATIONS / TEMPLATE	8/30/17
5/1/2018	SCALE 1:36	TYPE PV-SFA	5	MOUNT CLASSIFICATIONS	1/19/17
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	4	ADDED TIE BACK PIPE RANGE	6/9/16
		CHECKED SJS	3	L.I.F.E. MOUNT™ UPDATE	2/24/16
		STATUS APPROVED	REV	DESCRIPTION	DATE

PERFECTVISION® MANUFACTURING

L.I.F.E. MOUNT™ SECTOR FRAME

DOCUMENT NUMBER SFA-ENG-01-R7 | REV 7

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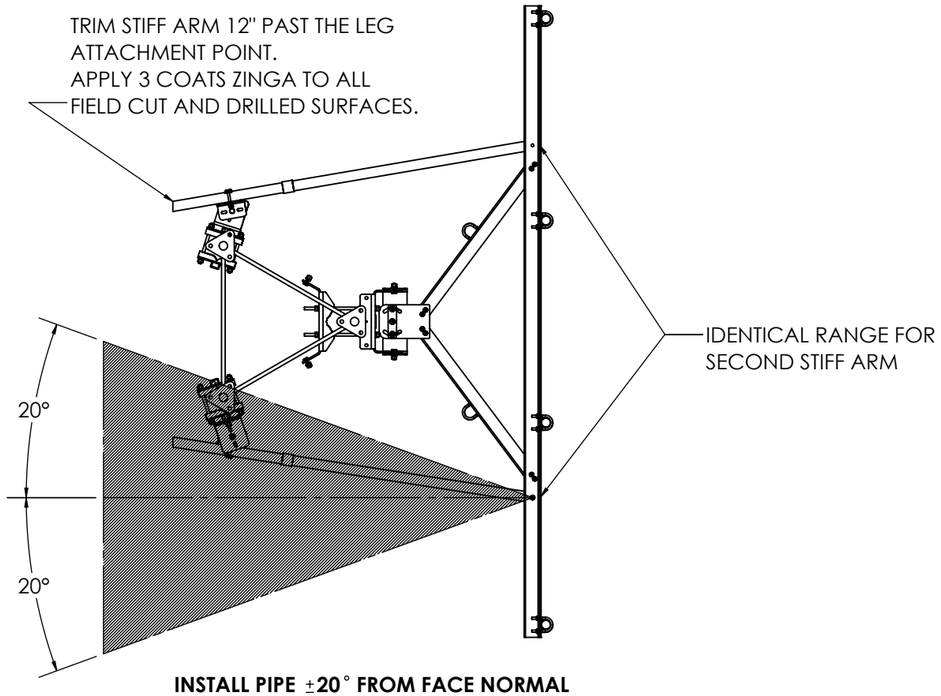
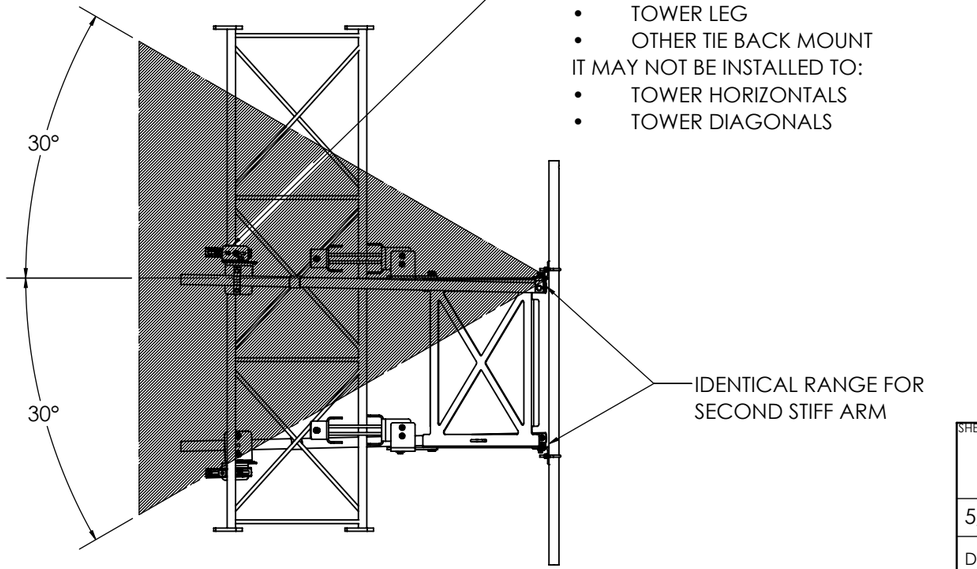
STIFF ARM INSTALLATION RANGE:

(SHOWN AS SINGLE SECTOR WITH PV-SAM-U)

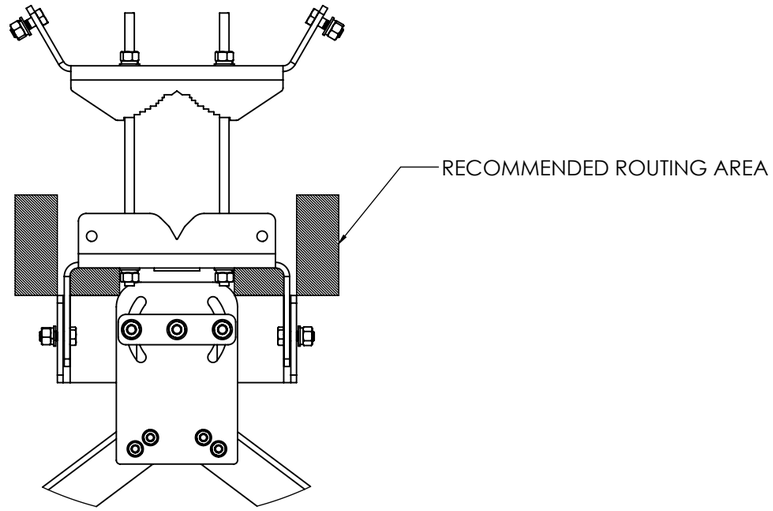


INSTALL PIPE ±20° FROM FACE NORMAL

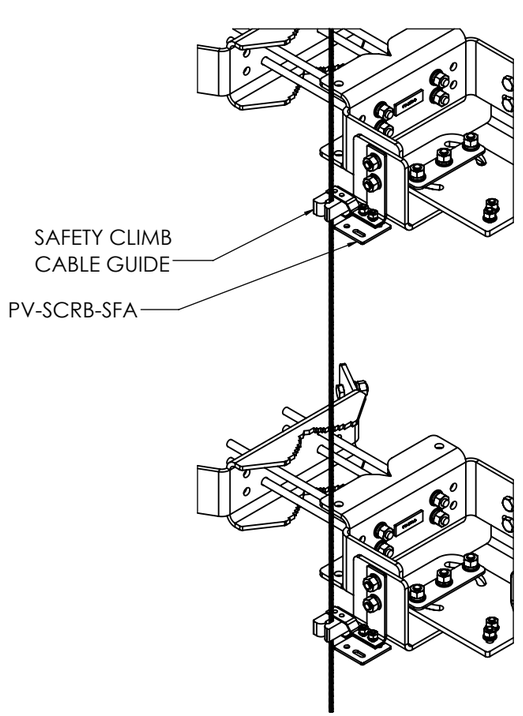


INSTALL PIPE ±30° FROM HORIZONTAL

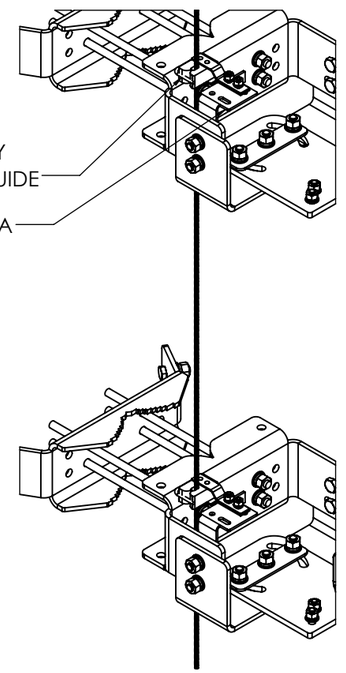
SAFETY CLIMB ROUTING:



SAFETY CLIMB CABLE RECOMMENDED ROUTING



SAFETY CLIMB EXTERIOR ROUTING



SAFETY CLIMB INTERIOR ROUTING

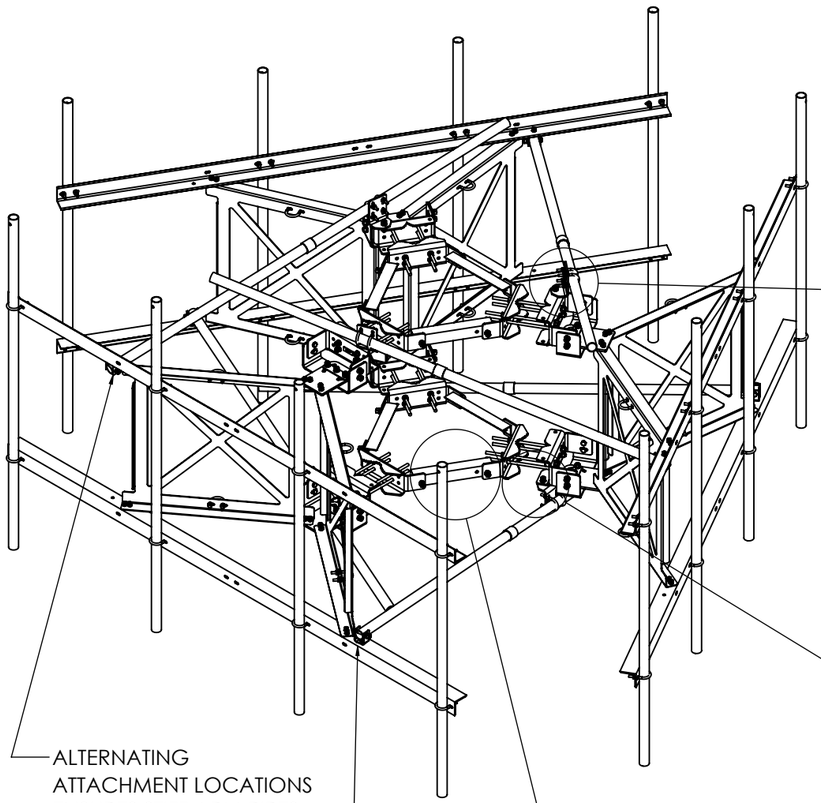
SHEET 4 OF 8	THIRD ANGLE PROJECTION	CATEGORY 01_Self Support	7	UPDATED CLASSIFICATIONS. ADDED ADDITIONAL NOTES	3/20/18
		SERIES 02_V-Frames - Assembled	6	UPDATED CLASSIFICATIONS / TEMPLATE	8/30/17
5/1/2018	SCALE NTS	TYPE PV-SFA	5	MOUNT CLASSIFICATIONS	1/19/17
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	4	ADDED TIE BACK PIPE RANGE	6/9/16
		CHECKED SJS	3	L.I.F.E. MOUNT™ UPDATE	2/24/16
		STATUS APPROVED	REV	DESCRIPTION	DATE

PERFECTVISION MANUFACTURING

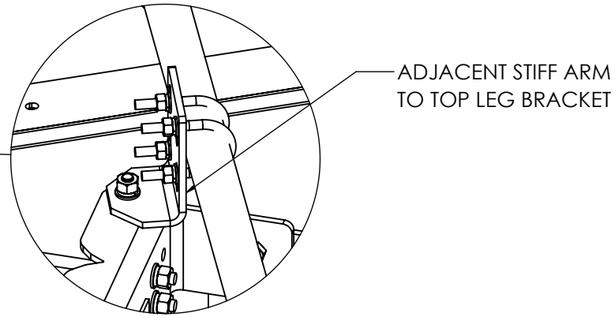
L.I.F.E. MOUNT™ SECTOR FRAME

DOCUMENT NUMBER SFA-ENG-01-R7 REV 7

3 SECTOR CONNECTION DETAILS:



ALTERNATING
ATTACHMENT LOCATIONS
ENSURES STIFF ARM PIPES
WON'T COLLIDE

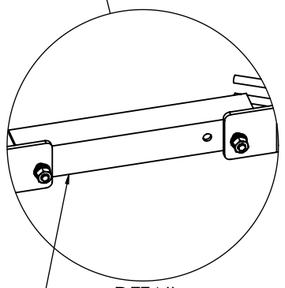


ADJACENT STIFF ARM
TO TOP LEG BRACKET

DETAIL
SCALE 1 : 8

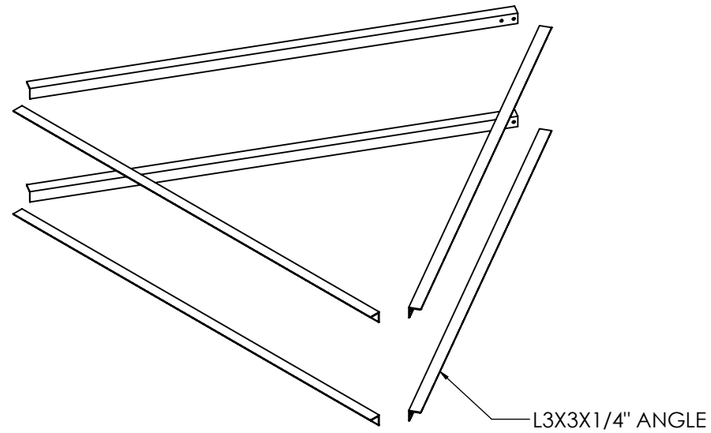
ADJACENT STIFF ARM TO
BOTTOM LEG BRACKET

DETAIL
SCALE 1 : 8



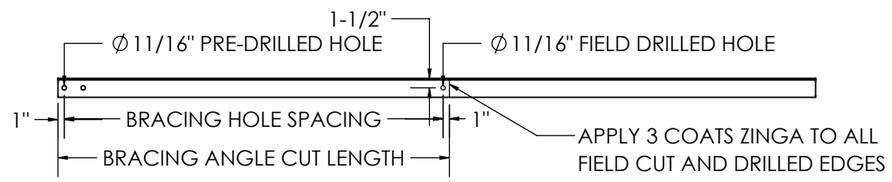
HORIZONTAL SUPPORT ANGLE

DETAIL
SCALE 1 : 12



L3X3X1/4" ANGLE

PV-HSK
HORIZONTAL SUPPORT KIT
WEIGHT: 300LBS



BRACE ANGLE FIELD CUT DETAIL
SCALE 1:24

FALL-SAFE L.I.F.E. MOUNTS™

SHEET: 5 OF 8	THIRD ANGLE PROJECTION	CATEGORY: 01_Self Support	7	UPDATED CLASSIFICATIONS. ADDED ADDITIONAL NOTES	3/20/18
		SERIES: 02_V-Frames - Assembled	6	UPDATED CLASSIFICATIONS / TEMPLATE	8/30/17
5/1/2018	SCALE: 1:36	TYPE: PV-SFA	5	MOUNT CLASSIFICATIONS	1/19/17
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY: DJN	4	ADDED TIE BACK PIPE RANGE	6/9/16
		CHECKED: SJS	3	L.I.F.E. MOUNT™ UPDATE	2/24/16
		STATUS: APPROVED	REV	DESCRIPTION	DATE

PERFECTVISION® MANUFACTURING

L.I.F.E. MOUNT™ SECTOR FRAME

DOCUMENT NUMBER: SFA-ENG-01-R7 | REV: 7

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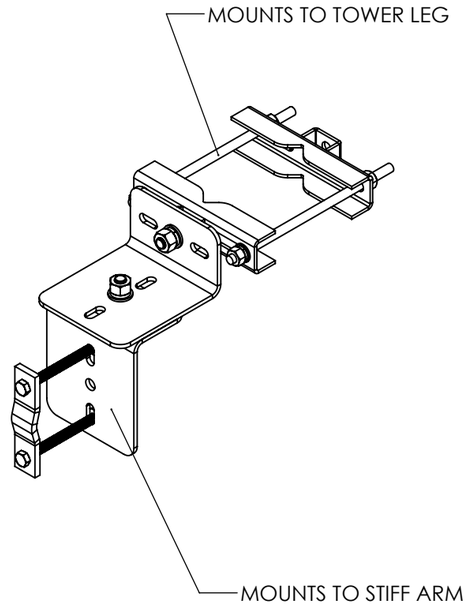
PV-SAM-U:

FOR SINGLE SECTOR INSTALLATIONS, (2) PV-SAM-U WILL BE REQUIRED PER FRAME TO ALLOW STIFF ARM PIPES TO ATTACH TO TOWER LEGS.

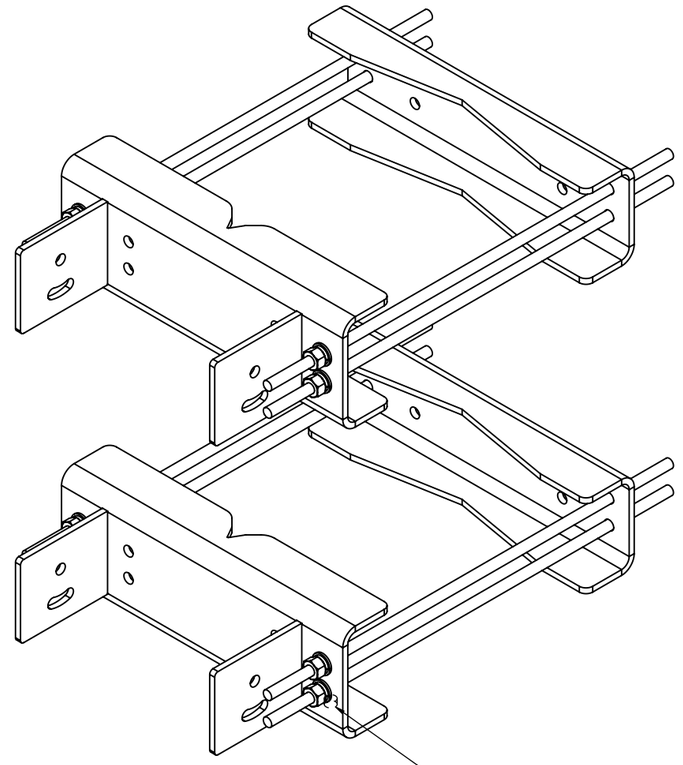
FOR 3 SECTOR INSTALLATIONS, THE PV-SAM-U IS NOT REQUIRED.



PV-SFA-8016

FOR LARGE LEG TOWERS, INSTALL THE PV-SFA-8016 LARGE LEG BRACKETS IN PLACE OF THE STANDARD SUPPLIED BRACKETS.

FOR LARGE LEG APPLICATIONS, THE PV-HSK IS NOT REQUIRED.



FALL-SAFE L.I.F.E. MOUNTS™

SHEET 6 OF 8	THIRD ANGLE PROJECTION	CATEGORY 01_Self Support	7	UPDATED CLASSIFICATIONS. ADDED ADDITIONAL NOTES	3/20/18
		SERIES 02_V-Frames - Assembled	6	UPDATED CLASSIFICATIONS / TEMPLATE	8/30/17
5/1/2018	SCALE 1:8	TYPE PV-SFA	5	MOUNT CLASSIFICATIONS	1/19/17
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY DJN	4	ADDED TIE BACK PIPE RANGE	6/9/16
		CHECKED SJS	3	L.I.F.E. MOUNT™ UPDATE	2/24/16
		STATUS APPROVED	REV	DESCRIPTION	DATE

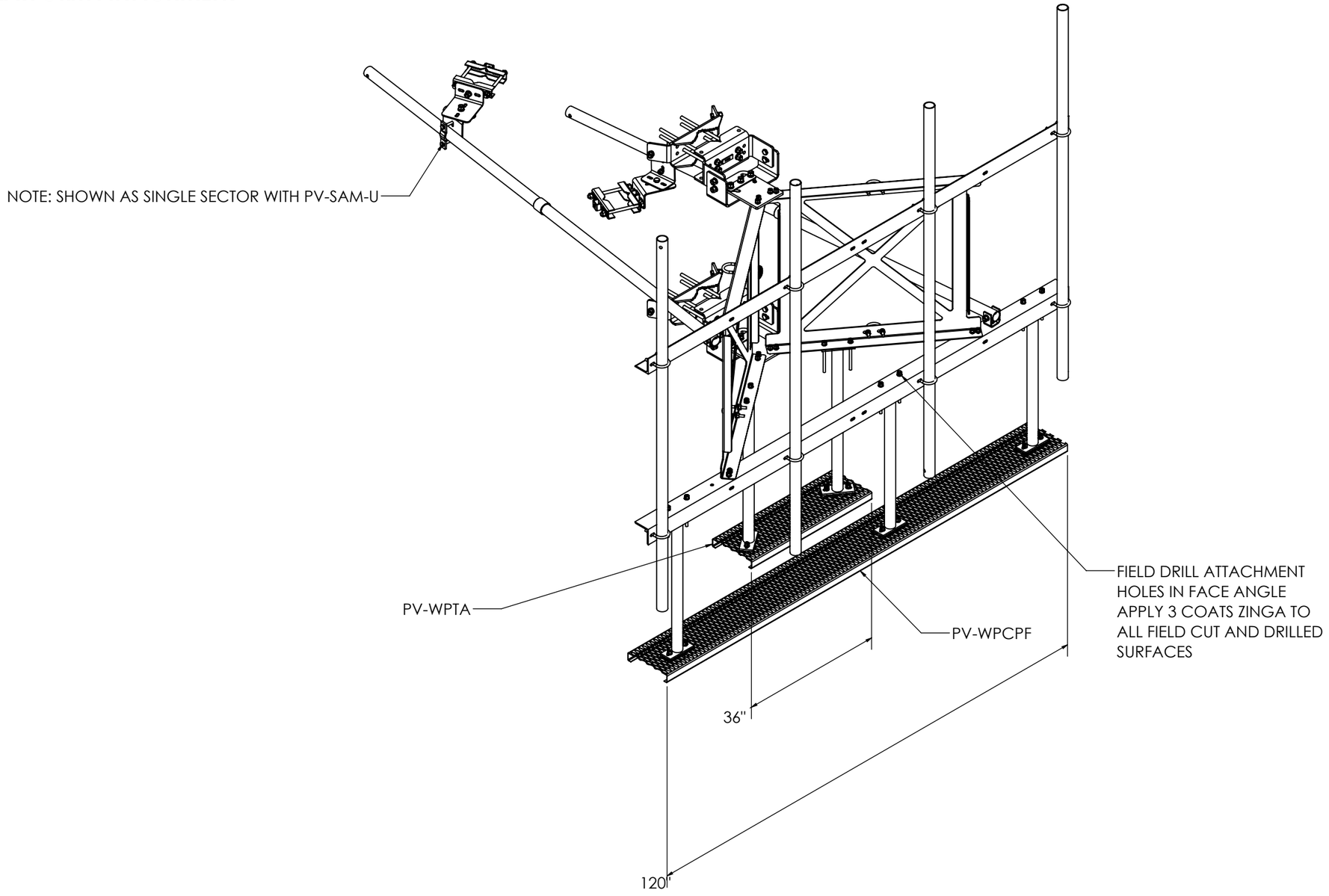
PERFECTVISION® MANUFACTURING

L.I.F.E. MOUNT™ SECTOR FRAME

DOCUMENT NUMBER SFA-ENG-01-R7 | REV 7

C:\Users\DominicN\Documents\PVMSteel\PVM Sales Catalog\SW Working Files\Engineering Details\

WORK PLATFORM ATTACHMENT



SHEET: 7 OF 8	THIRD ANGLE PROJECTION	CATEGORY: 01_Self Support	7	UPDATED CLASSIFICATIONS. ADDED ADDITIONAL NOTES	3/20/18
		SERIES: 02_V-Frames - Assembled	6	UPDATED CLASSIFICATIONS / TEMPLATE	8/30/17
5/1/2018	SCALE: 1:24	TYPE: PV-SFA	5	MOUNT CLASSIFICATIONS	1/19/17
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY: DJN	4	ADDED TIE BACK PIPE RANGE	6/9/16
		CHECKED: SJS	3	L.I.F.E. MOUNT™ UPDATE	2/24/16
		STATUS: APPROVED	REV	DESCRIPTION	DATE

FALL-SAFE L.I.F.E. MOUNTS™

PERFECTVISION® MANUFACTURING

L.I.F.E. MOUNT™ SECTOR FRAME

DOCUMENT NUMBER: SFA-ENG-01-R7 | REV: 7

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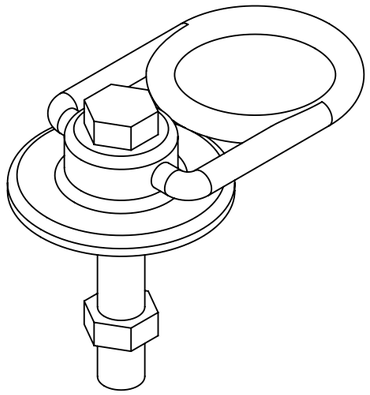
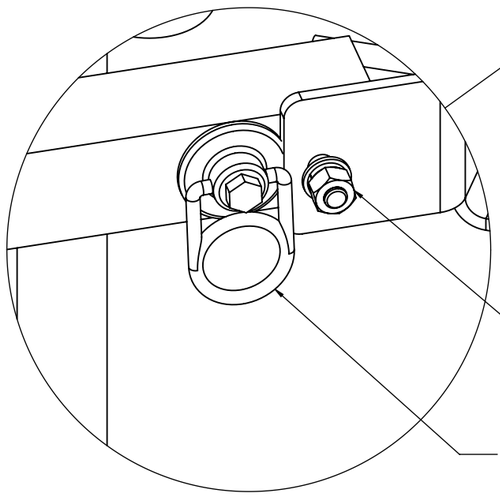
10K SWIVEL ANCHOR

SWIVEL ANCHOR ATTACHMENT NOTES:

- **4" OD AND SMALLER LEGS REQUIRE ADDITIONAL BRACING** BEFORE SWIVLE ANCHORS CAN BE INSTALLED. SEE SHEET 5 FOR PV-HSK INSTALLTION DETAILS.
- LARGE LEG TOWERS DO NOT REQUIRE BRACING DUE TO THE STRUCTURAL CAPACITY OF THE TOWER.
- MAX (1) SWIVEL ANCHORS MAY BE INSTALLED PER LEG ATTACHMENT BRACKET
- SWIVEL ANCHOR SPECS:
  - UTS: 10,000 LBF
  - MAX USER WEIGHT: 310 LBS
  - WORKING LOAD: 2,000 LBS
- FOLLOW MANUFACTURER SPECIFICATIONS FOR SWIVEL ANCHOR INSTALLATION AND MAINTENANCE.

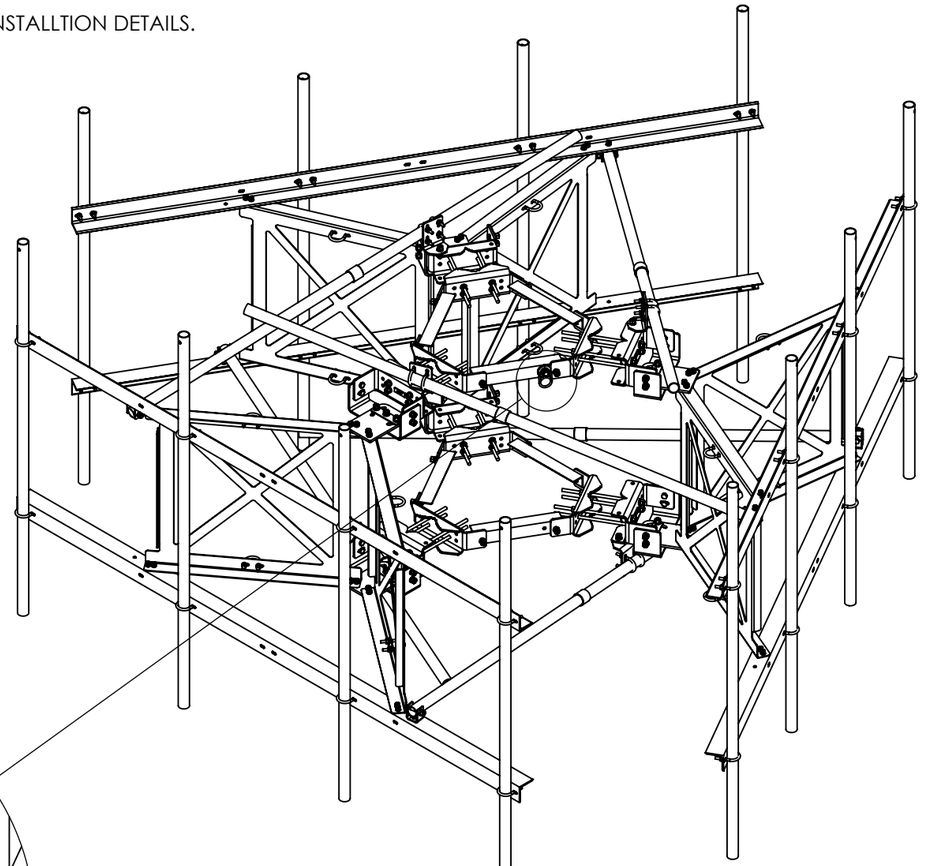


HD26226
10K SWIVEL ANCHOR



FOR LARGE LEG TOWERS, ANCHOR CAN BE ATTACHED DIRECTLY TO LEG BRACKETS

FOR FRAMES WITH PV-HSK, ANCHOR ATTACHES TO HOIRZONTAL BRACE ANGLE.



SHEET: 8 OF 8	THIRD ANGLE PROJECTION	CATEGORY: 01_Self Support	7	UPDATED CLASSIFICATIONS. ADDED ADDITIONAL NOTES	3/20/18
		SERIES: 02_V-Frames - Assembled	6	UPDATED CLASSIFICATIONS / TEMPLATE	8/30/17
5/1/2018	SCALE: NTS	TYPE: PV-SFA	5	MOUNT CLASSIFICATIONS	1/19/17
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY: DJN	4	ADDED TIE BACK PIPE RANGE	6/9/16
		CHECKED: SJS	3	L.I.F.E. MOUNT™ UPDATE	2/24/16
		STATUS: APPROVED	REV	DESCRIPTION	DATE

PERFECTVISION® MANUFACTURING

L.I.F.E. MOUNT™ SECTOR FRAME

DOCUMENT NUMBER: SFA-ENG-01-R7 | REV: 7

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Wind & Ice Loading

Nominal Mount Elevation (AGL), z_{mount}	147 ft	**K_a**	0.90
Nominal Rad Elevation (AGL), z_{rad}	147 ft	**K_d**	0.95
Elevation AMSL (ft)	-	**K_e**	-
TIA Standard	G	**K_z**	1.10
Basic Wind Speed, V_{ult} (bare)	120 mph	**K_{zt}**	1.00
Basic Wind Speed, V (ice)	50 mph	**K_s**	-
Design Ice Thickness, t_i	3/4 in	**t_{iz}**	1.74 in
Exposure Category	B	**G_h**	1.00
Risk Category	II	**q_z (bare)**	38.6 psf
Seismic Response Coeff., C_s	-	**q_z (ice)**	6.7 psf

Live Loading

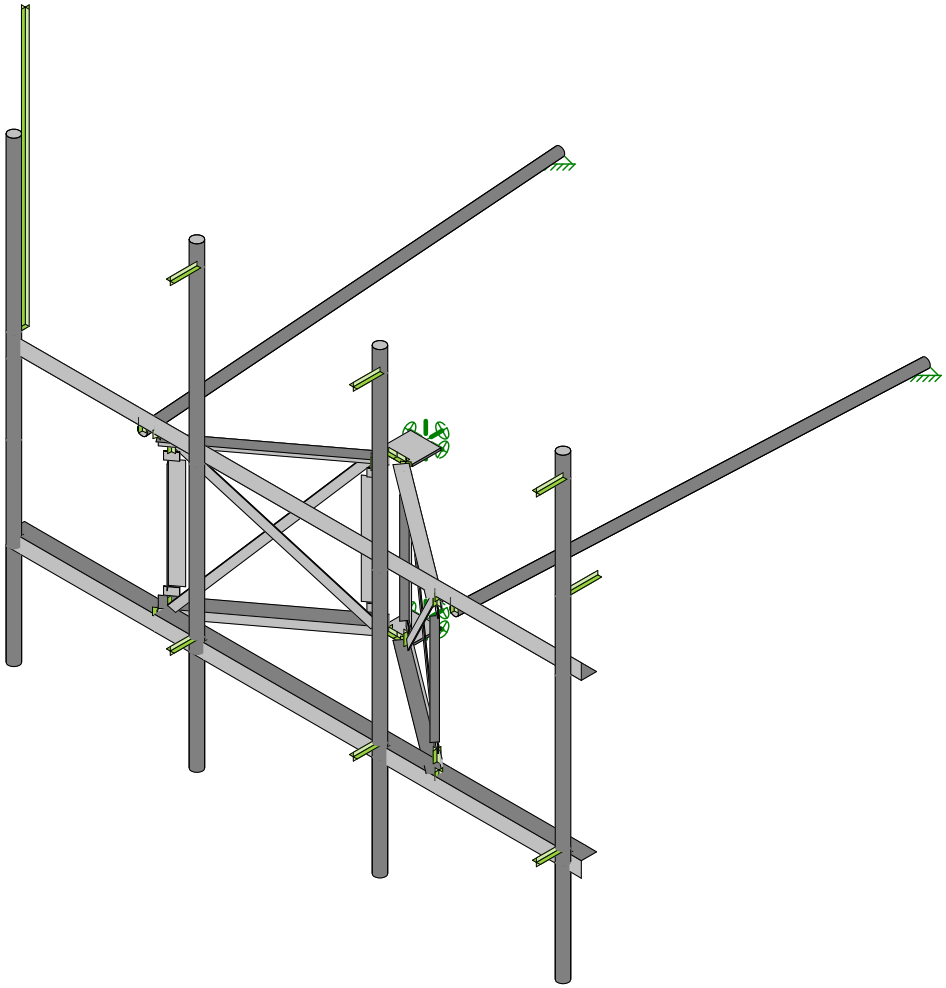
At Mount Pipes, L_M	500 lb
Joint Labels Considered	M1
	M2
	M3
	M4

Member Distributed Loading

Section Set Label	Shape Label	F_A (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Offset Horiz	L3x3x3/16_HRA	17.39	2.33	11.58
Face Horiz	L4X4X5	23.18	2.40	14.29
Rear PL	PL 8x.5	46.36	6.94	15.22
Mount Pipe	PIPE_2.5	10.00	3.84	9.82
Stiff Arm	PIPE_2.0	8.26	3.54	8.76
Offset Diag	PL 2 1/8x3/16	12.32	3.39	6.84
Offset Vert	L3.25x1.75x3/16	18.83	2.35	10.23
Offset Vert PL	PL3x.1875	17.39	3.92	8.02

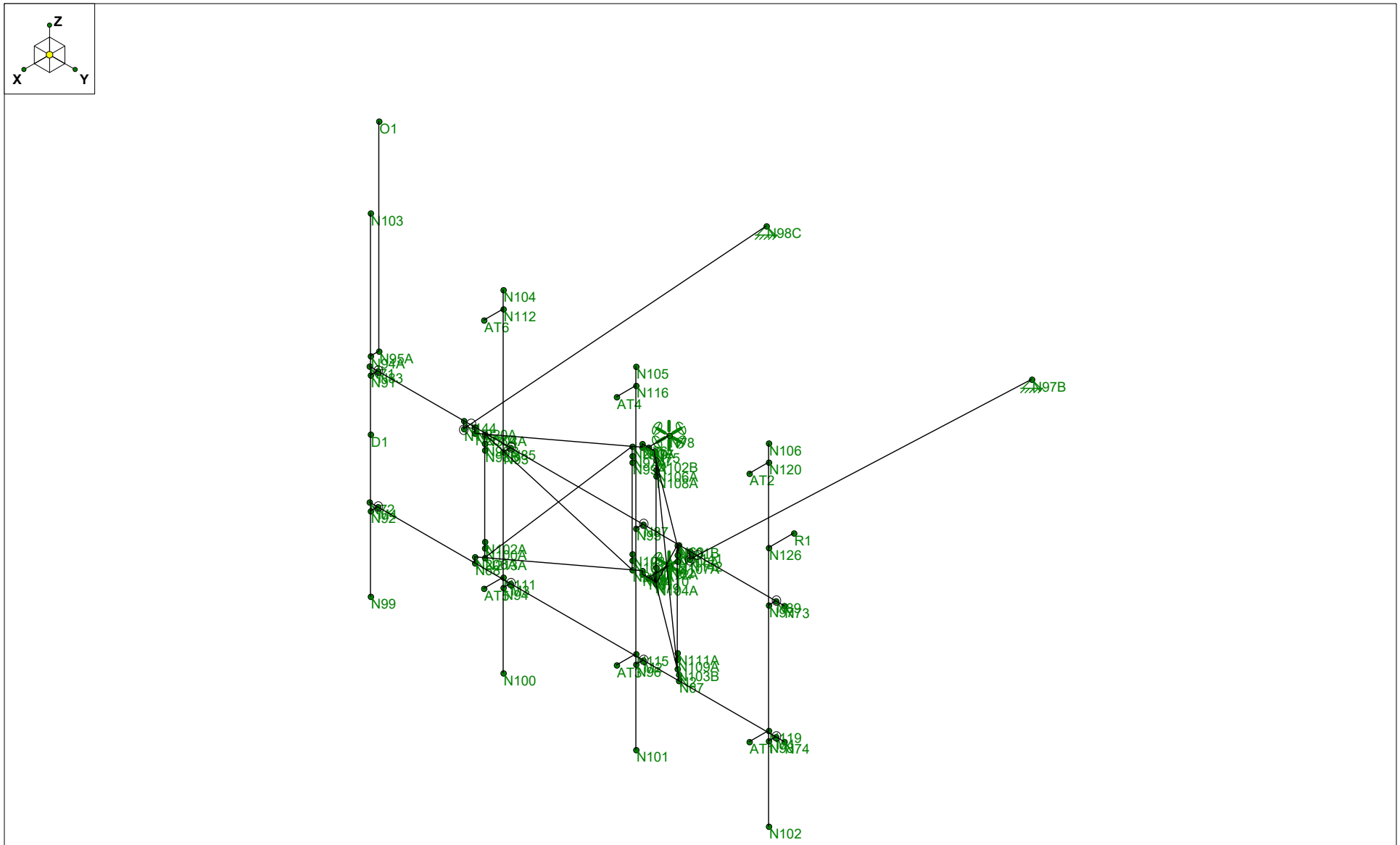
Appurtenances

Appurtenance Model	Status	Azimuth Offset (°, ↻)	Rad Elev. Override (ft)	Swap Width & Depth	Area Factor		Qty.	Total Qty. Override	0° 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°		1	2							N	T	N	T	N	T	N	T
APXVAARR24_43-U-NA20				☐			1	***3***	AT1	AT2	0	0	0	153.3	Generic	392.19	14.67	5.32	17.32	7.65	510.11	184.99	104.54	46.21
AIR 21				☐			1	***3***	AT3	AT4	56	12	7.9	91	Flat	145.18	6.05	4.31	8.06	6.21	210.35	149.87	48.64	37.50
AIR 21				☐			1	***3***	AT5	AT6	56	12	7.9	91	Flat	145.18	6.05	4.31	8.06	6.21	210.35	149.87	48.64	37.50
RADIO 4449 B12,B71				☐	0.5		1	***3***	R1		15	13.2	10.4	75	Flat	72.01	0.83	1.30	1.28	2.14	28.69	45.20	7.76	12.91
Omni				☐			1		O1		144	3	3	26.5	Round	124.80	3.60	3.60	7.64	7.64	125.18	125.18	46.10	46.10
Dipole 5'				☐			1		D1		0	0	0	15	Generic	56.43	1.74	1.74	4.00	4.00	60.50	60.50	24.17	24.17



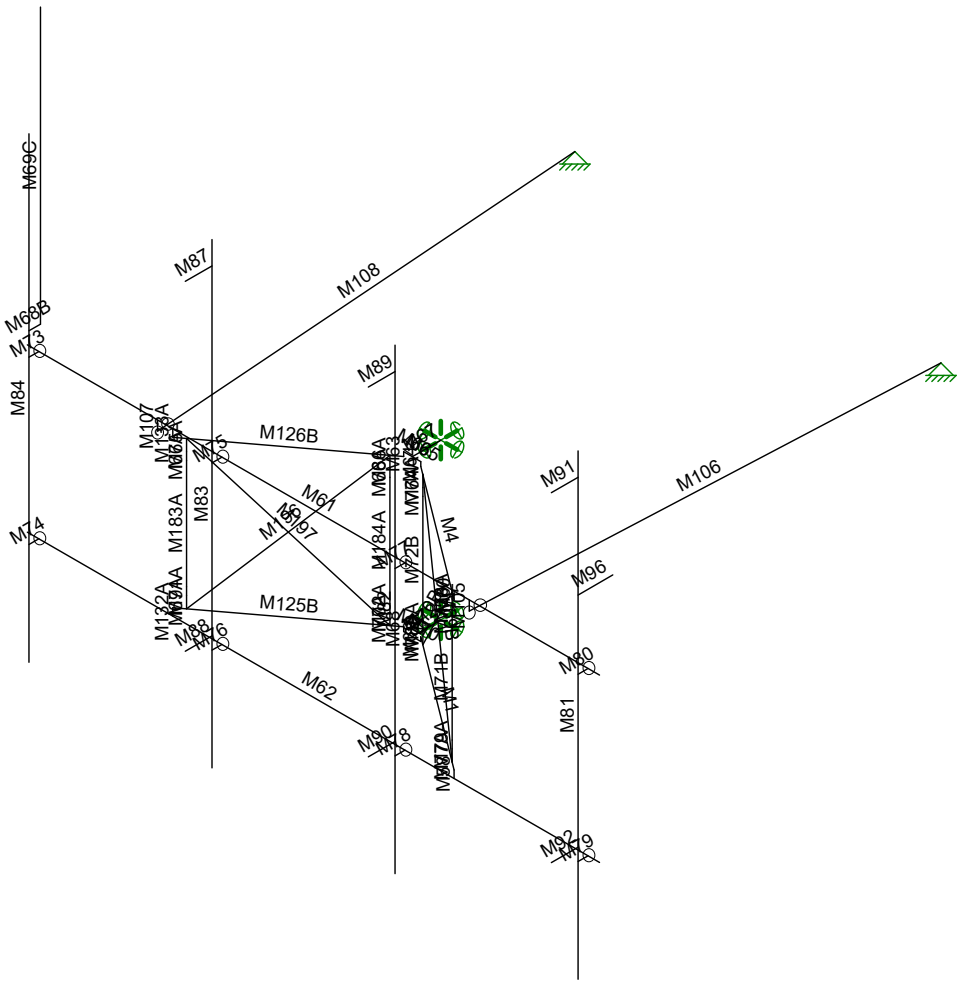
Envelope Only Solution

CLS	41124-12928768-Redding	SK - 1
SMR		July 9, 2019 at 10:49 AM
41124-12928768-01-MA-R1	Rendered	41124-12928768-01-MA-R1.r3d



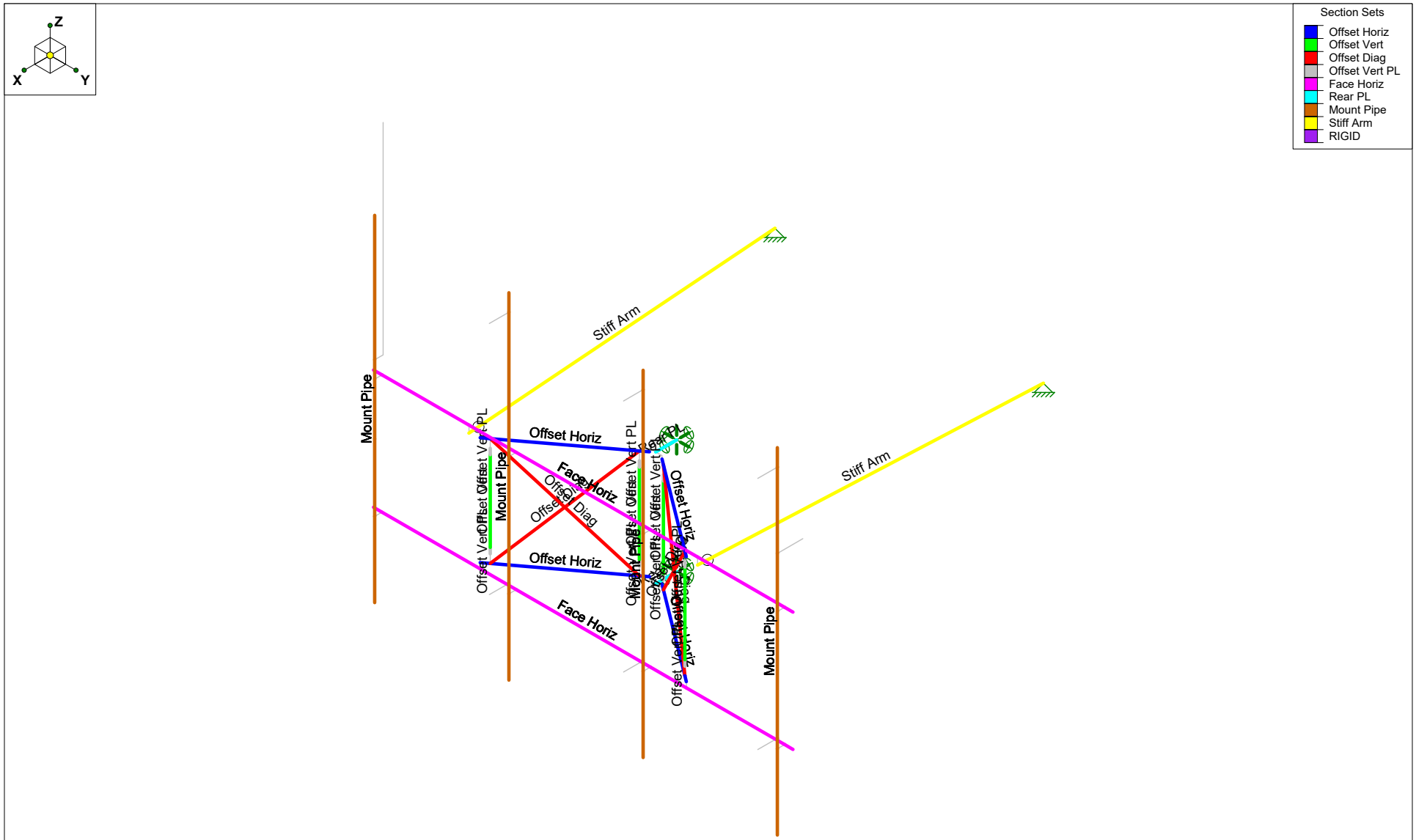
Envelope Only Solution

CLS	41124-12928768-Redding	SK - 2
SMR		July 9, 2019 at 10:50 AM
41124-12928768-01-MA-R1	Joint Labels	41124-12928768-01-MA-R1.r3d



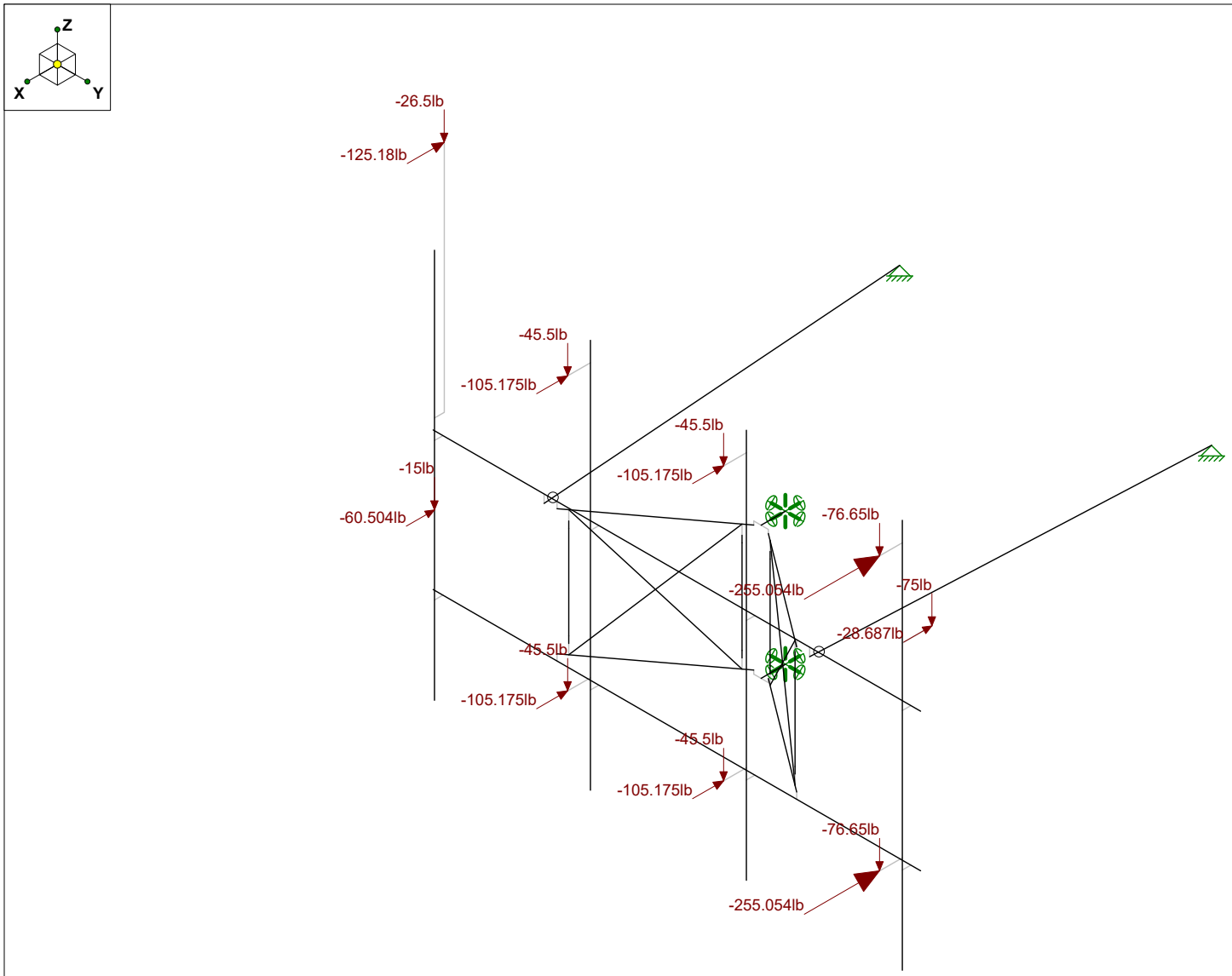
Envelope Only Solution

CLS	41124-12928768-Redding	SK - 3
SMR		July 9, 2019 at 10:50 AM
41124-12928768-01-MA-R1	Member Labels	41124-12928768-01-MA-R1.r3d



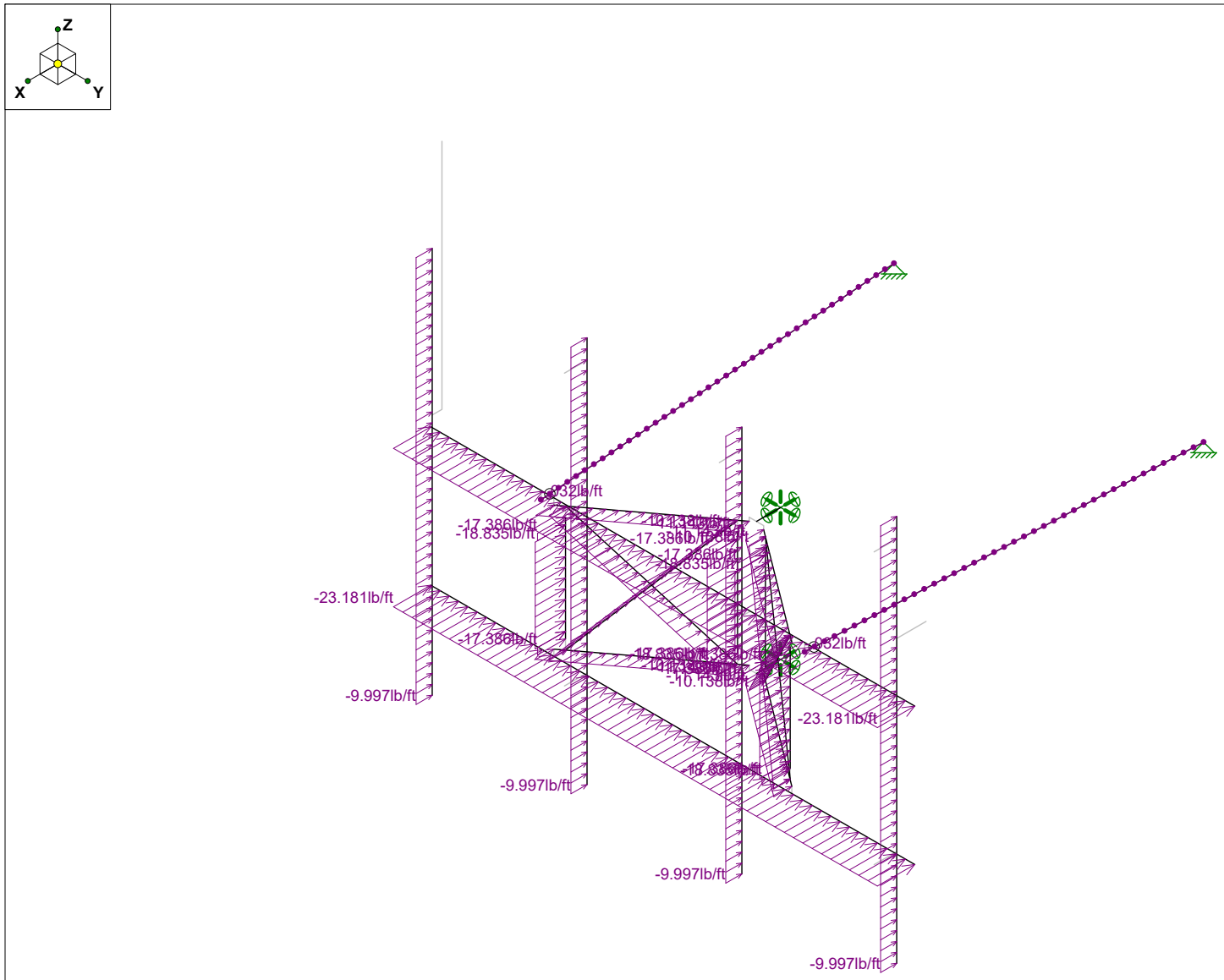
Envelope Only Solution

CLS		SK - 4
SMR	41124-12928768-Redding	July 9, 2019 at 10:50 AM
41124-12928768-01-MA-R1	Section Sets	41124-12928768-01-MA-R1.r3d



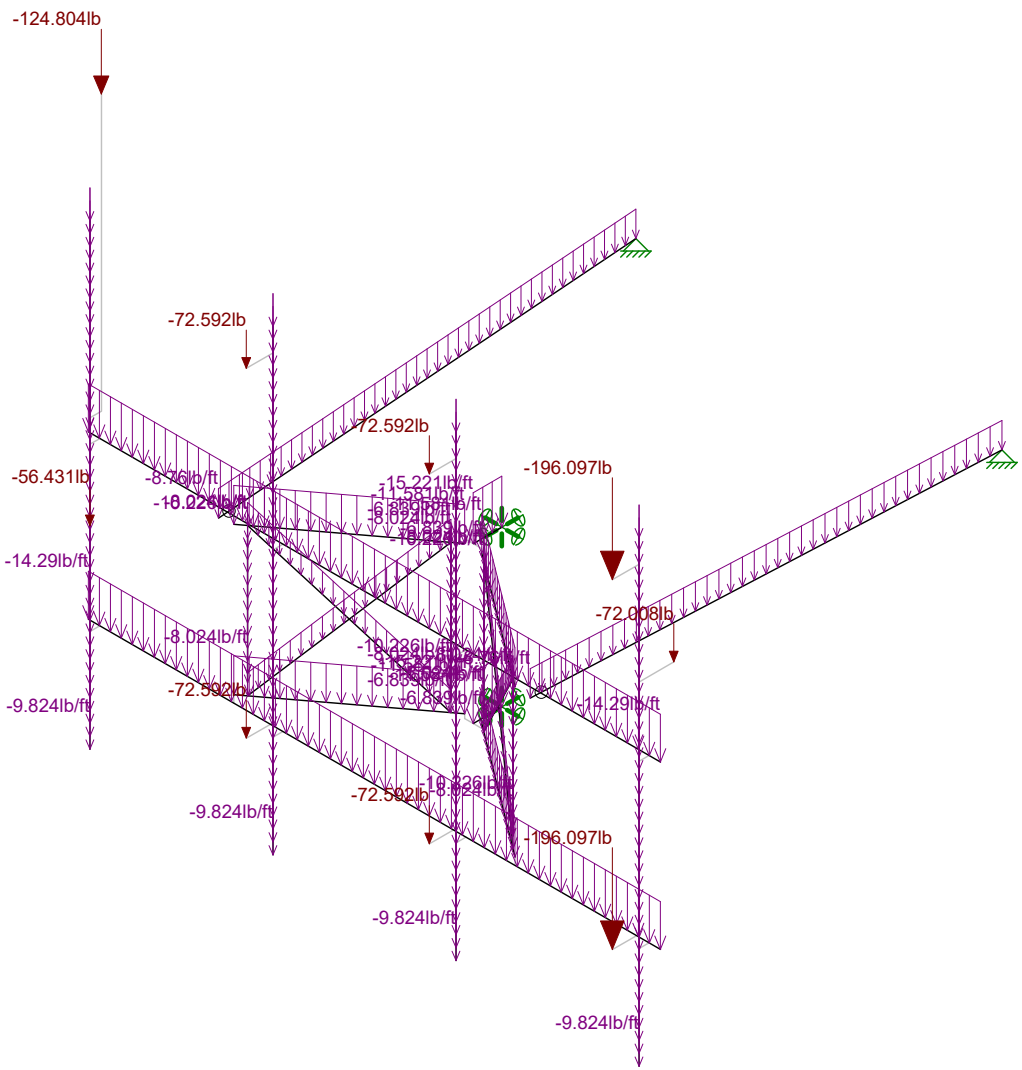
Loads: LC 1, DISPLAY (1.0D + 1.0W_0°)
Envelope Only Solution

CLS		SK - 5
SMR	41124-12928768-Redding	July 9, 2019 at 10:51 AM
41124-12928768-01-MA-R1	Joint Loads - Dead and Normal Wind	41124-12928768-01-MA-R1.r3d



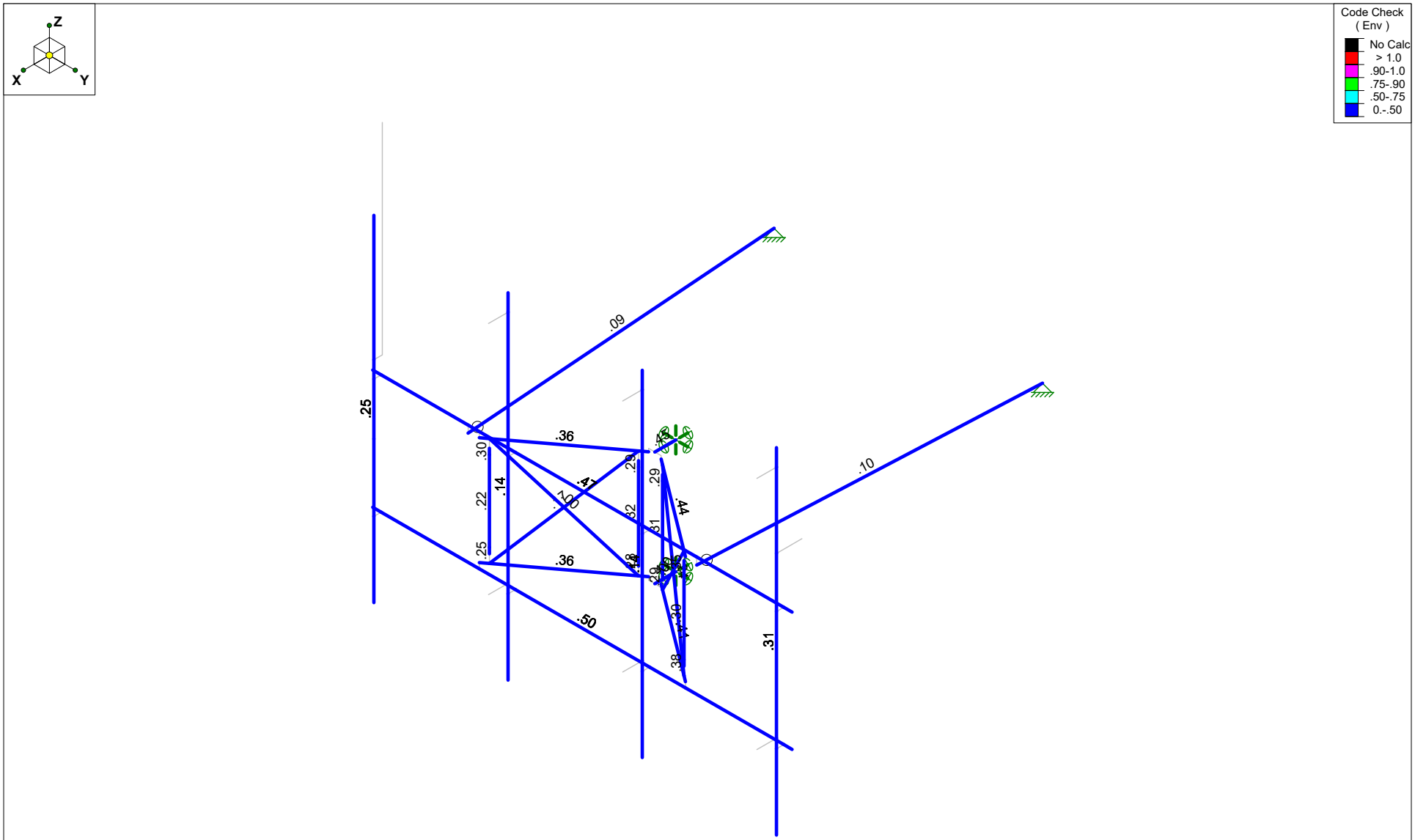
Loads: BLC 4, Structure Wind 0°
Envelope Only Solution

CLS		SK - 6
SMR	41124-12928768-Redding	July 9, 2019 at 10:51 AM
41124-12928768-01-MA-R1	Distributed Load - Normal Wind	41124-12928768-01-MA-R1.r3d



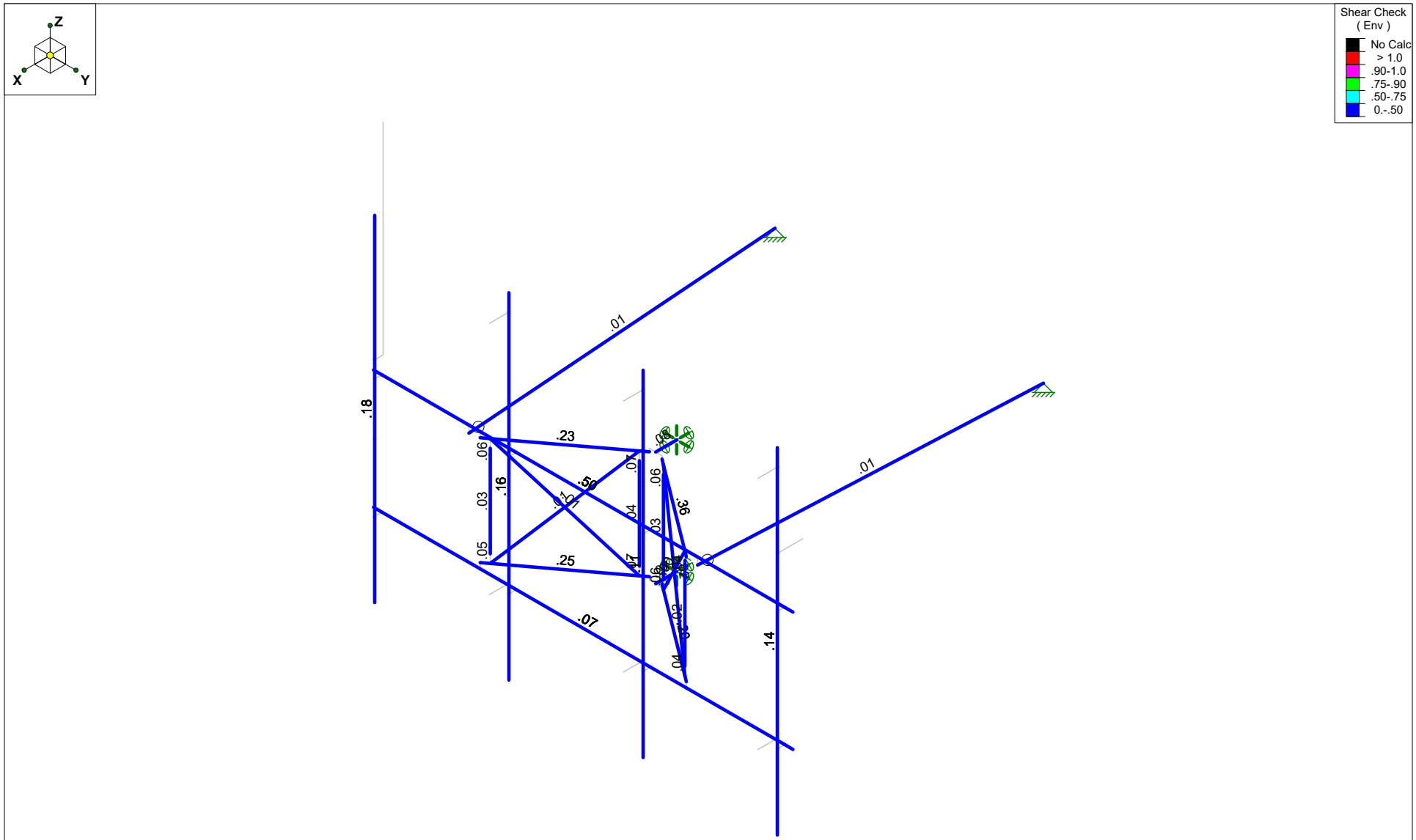
Loads: BLC 2, Ice Dead
Envelope Only Solution

CLS		SK - 7
SMR	41124-12928768-Redding	July 9, 2019 at 10:51 AM
41124-12928768-01-MA-R1	Ice Dead Loads	41124-12928768-01-MA-R1.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

CLS	41124-12928768-Redding	SK - 8
SMR		July 9, 2019 at 10:52 AM
41124-12928768-01-MA-R1	Envelope Member Unity Check Results - Bending	41124-12928768-01-MA-R1.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

CLS		SK - 9
SMR	41124-12928768-Redding	July 9, 2019 at 10:52 AM
41124-12928768-01-MA-R1	Envelope Member Check Results - Shear	41124-12928768-01-MA-R1.r3d

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Dead	DL			-1	9				
2	Ice Dead	RL				9		30		
4	Structure Wind 0Á	None						28		
5	Structure Wind 30Á	None						60		
6	Structure Wind 45Á	None						60		
7	Structure Wind 60Á	None						60		
8	Structure Wind 90Á	None						28		
9	Structure Wind 120Á	None						60		
10	Structure Wind 135Á	None						60		
11	Structure Wind 150Á	None						60		
12	Structure Wind w/ Ice 0Á	None						28		
13	Structure Wind w/ Ice 30Á	None						60		
14	Structure Wind w/ Ice 45Á	None						60		
15	Structure Wind w/ Ice 60Á	None						60		
16	Structure Wind w/ Ice 90Á	None						28		
17	Structure Wind w/ Ice 120Á	None						60		
18	Structure Wind w/ Ice 135Á	None						60		
19	Structure Wind w/ Ice 150Á	None						60		
20	Antenna Wind 0Á	None				9				
21	Antenna Wind 30Á	None				18				
22	Antenna Wind 45Á	None				18				
23	Antenna Wind 60Á	None				18				
24	Antenna Wind 90Á	None				9				
25	Antenna Wind 120Á	None				18				
26	Antenna Wind 135Á	None				18				
27	Antenna Wind 150Á	None				18				
28	Antenna Wind w/ Ice 0Á	None				9				
29	Antenna Wind w/ Ice 30Á	None				18				
30	Antenna Wind w/ Ice 45Á	None				18				
31	Antenna Wind w/ Ice 60Á	None				18				
32	Antenna Wind w/ Ice 90Á	None				9				
33	Antenna Wind w/ Ice 120Á	None				18				
34	Antenna Wind w/ Ice 135Á	None				18				
35	Antenna Wind w/ Ice 150Á	None				18				
39	Maintenance Live 500 (1)	OL1				1				
40	Maintenance Live 500 (2)	OL2				1				
41	Maintenance Live 500 (3)	OL3				1				
42	Maintenance Live 500 (4)	OL4				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																

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...
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																
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	.066	20	.066	OL1	1.5														
36	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	5	.066	21	.066	OL1	1.5														
37	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	6	.066	22	.066	OL1	1.5														
38	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	7	.066	23	.066	OL1	1.5														
39	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	8	.066	24	.066	OL1	1.5														
40	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	9	.066	25	.066	OL1	1.5														
41	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	10	.066	26	.066	OL1	1.5														
42	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	11	.066	27	.066	OL1	1.5														
43	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	4	-.066	20	-.066	OL1	1.5														
44	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	5	-.066	21	-.066	OL1	1.5														
45	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	6	-.066	22	-.066	OL1	1.5														
46	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	7	-.066	23	-.066	OL1	1.5														
47	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	8	-.066	24	-.066	OL1	1.5														
48	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	9	-.066	25	-.066	OL1	1.5														
49	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	10	-.066	26	-.066	OL1	1.5														
50	1.2D + 1.5Lm_1 +..	Yes	Y		DL	1.2	11	-.066	27	-.066	OL1	1.5														
51	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	4	.066	20	.066	OL2	1.5														
52	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	5	.066	21	.066	OL2	1.5														
53	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	6	.066	22	.066	OL2	1.5														
54	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	7	.066	23	.066	OL2	1.5														
55	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	8	.066	24	.066	OL2	1.5														
56	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	9	.066	25	.066	OL2	1.5														
57	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	10	.066	26	.066	OL2	1.5														
58	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	11	.066	27	.066	OL2	1.5														
59	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	4	-.066	20	-.066	OL2	1.5														
60	1.2D + 1.5Lm_2 +..	Yes	Y		DL	1.2	5	-.066	21	-.066	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...
61	1.2D + 1.5Lm_2 +...	Yes	Y		DL	1.2	6	-.066	22	-.066	OL2	1.5														
62	1.2D + 1.5Lm_2 +...	Yes	Y		DL	1.2	7	-.066	23	-.066	OL2	1.5														
63	1.2D + 1.5Lm_2 +...	Yes	Y		DL	1.2	8	-.066	24	-.066	OL2	1.5														
64	1.2D + 1.5Lm_2 +...	Yes	Y		DL	1.2	9	-.066	25	-.066	OL2	1.5														
65	1.2D + 1.5Lm_2 +...	Yes	Y		DL	1.2	10	-.066	26	-.066	OL2	1.5														
66	1.2D + 1.5Lm_2 +...	Yes	Y		DL	1.2	11	-.066	27	-.066	OL2	1.5														
67	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	4	.066	20	.066	OL3	1.5														
68	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	5	.066	21	.066	OL3	1.5														
69	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	6	.066	22	.066	OL3	1.5														
70	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	7	.066	23	.066	OL3	1.5														
71	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	8	.066	24	.066	OL3	1.5														
72	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	9	.066	25	.066	OL3	1.5														
73	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	10	.066	26	.066	OL3	1.5														
74	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	11	.066	27	.066	OL3	1.5														
75	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	4	-.066	20	-.066	OL3	1.5														
76	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	5	-.066	21	-.066	OL3	1.5														
77	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	6	-.066	22	-.066	OL3	1.5														
78	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	7	-.066	23	-.066	OL3	1.5														
79	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	8	-.066	24	-.066	OL3	1.5														
80	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	9	-.066	25	-.066	OL3	1.5														
81	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	10	-.066	26	-.066	OL3	1.5														
82	1.2D + 1.5Lm_3 +...	Yes	Y		DL	1.2	11	-.066	27	-.066	OL3	1.5														
83	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	4	.066	20	.066	OL4	1.5														
84	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	5	.066	21	.066	OL4	1.5														
85	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	6	.066	22	.066	OL4	1.5														
86	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	7	.066	23	.066	OL4	1.5														
87	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	8	.066	24	.066	OL4	1.5														
88	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	9	.066	25	.066	OL4	1.5														
89	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	10	.066	26	.066	OL4	1.5														
90	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	11	.066	27	.066	OL4	1.5														
91	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	4	-.066	20	-.066	OL4	1.5														
92	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	5	-.066	21	-.066	OL4	1.5														
93	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	6	-.066	22	-.066	OL4	1.5														
94	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	7	-.066	23	-.066	OL4	1.5														
95	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	8	-.066	24	-.066	OL4	1.5														
96	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	9	-.066	25	-.066	OL4	1.5														
97	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	10	-.066	26	-.066	OL4	1.5														
98	1.2D + 1.5Lm_4 +...	Yes	Y		DL	1.2	11	-.066	27	-.066	OL4	1.5														

Hot Rolled Steel Properties

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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Offset Horiz	L3x3x3/16_HRA	Beam	None	A36 Gr.36	Typical	1.09	.962	.962	.012
2	Offset Vert	L3.25x1.75x3/16	Column	None	A36 Gr.36	Typical	.902	.213	1.001	.01
3	Offset Diag	PL 2 1/8x3/16	Beam	None	A36 Gr.36	Typical	.398	.001	.15	.004
4	Offset Vert PL	PL3x.1875	Beam	None	A36 Gr.36	Typical	.563	.002	.422	.006
5	Face Horiz	L4X4X5	Beam	None	A36 Gr.36	Typical	2.4	3.67	3.67	.083
6	Rear PL	PL 8x.5	Beam	None	A36 Gr.36	Typical	4	.083	21.333	.32
7	Mount Pipe	PIPE_2.5	Column	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
8	Stiff Arm	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp...	L-tor...	Kyy	Kzz	Cb	Functi...
1	M1	Offset Horiz	43.25			Lbyy						Lateral
2	M4	Offset Horiz	43.25			Lbyy						Lateral
3	M61	Face Horiz	150	74	48	Lbyy						Lateral
4	M62	Face Horiz	150	74	48	Lbyy						Lateral
5	M67	Rear PL	7.5			Lbyy						Lateral
6	M72	Rear PL	7.5			Lbyy						Lateral
7	M81	Mount Pipe	120			Lbyy						Lateral
8	M82	Mount Pipe	120			Lbyy						Lateral
9	M83	Mount Pipe	120			Lbyy						Lateral
10	M84	Mount Pipe	120			Lbyy						Lateral
11	M106	Stiff Arm	116.784			Lbyy						Lateral
12	M108	Stiff Arm	116.784			Lbyy						Lateral
13	M125B	Offset Horiz	43.25			Lbyy						Lateral
14	M126B	Offset Horiz	43.25			Lbyy						Lateral
15	M196	Offset Diag	54.296			Lbyy			.65	.65		Lateral
16	M197	Offset Diag	54.296			Lbyy			.65	.65		Lateral
17	M183A	Offset Vert	28.688			Lbyy			.65	.65		Lateral
18	M184A	Offset Vert	28.688			Lbyy			.65	.65		Lateral
19	M67A	Offset Vert PL	2			Lbyy						Lateral
20	M68A	Offset Vert PL	2			Lbyy						Lateral
21	M71A	Offset Vert PL	2			Lbyy						Lateral
22	M72A	Offset Vert PL	2			Lbyy						Lateral
23	M69B	Offset Diag	54.296			Lbyy			.65	.65		Lateral
24	M70B	Offset Diag	54.296			Lbyy			.65	.65		Lateral
25	M71B	Offset Vert	28.688			Lbyy			.65	.65		Lateral
26	M72B	Offset Vert	28.688			Lbyy			.65	.65		Lateral
27	M75A	Offset Vert PL	2			Lbyy						Lateral
28	M76A	Offset Vert PL	2			Lbyy						Lateral
29	M79A	Offset Vert PL	2			Lbyy						Lateral
30	M80A	Offset Vert PL	2			Lbyy						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	N78	max	584.597	3	1198.052	15	1728.083	27	49.47	12	-184.376	1	0	98
2		min	-1969.091	27	-1980.992	7	527.212	3	-33.737	4	-592.672	27	0	1
3	N82	max	2576.041	30	1698.961	50	1727.175	19	41.183	44	-179.925	1	0	98
4		min	443.514	1	-917.015	90	511.757	11	-28.906	84	-594.686	19	0	1

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
5	N97B	max	1041.026	4	91.578	14	73.946	29	0	98	0	98	0	98
6		min	-1338.514	12	-72.929	6	5.52	4	0	1	0	1	0	1
7	N98C	max	715.03	17	69.808	15	73.049	25	0	98	0	98	0	98
8		min	-1008.516	9	-88.076	7	10.184	17	0	1	0	1	0	1
9	Totals:	max	2672.713	3	1779.466	15	3558.35	28						
10		min	-2672.727	11	-1779.461	7	1069.611	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	M61	L4X4X5	.467	34.737	11	.500	34.737	z	12	48416.5...	77760	3776.855	5962.76	1	H2-1
2	M4	L3x3x3/16...	.435	43.25	3	.360	40.974	z	4	25007.0...	35310.9...	1354.173	2932.101	2.268	H2-1
3	M125B	L3x3x3/16...	.365	2.276	23	.248	40.974	z	11	25007.0...	35310.9...	1354.173	2854.663	3.934	H2-1
4	M126B	L3x3x3/16...	.362	0	7	.226	40.974	y	18	25007.0...	35310.9...	1354.173	2854.663	1.755	H2-1
5	M1	L3x3x3/16...	.411	0	49	.198	40.974	y	29	25007.0...	35310.9...	1354.173	2854.663	1.807	H2-1
6	M84	PIPE_2.5	.255	69.474	3	.180	68.211		11	22373.4...	50715	3596.25	3596.25	2.052	H1-1b
7	M83	PIPE_2.5	.144	69.474	11	.156	68.211		12	22373.4...	50715	3596.25	3596.25	1.683	H1-1b
8	M81	PIPE_2.5	.310	69.474	3	.144	68.211		27	22373.4...	50715	3596.25	3596.25	1.814	H1-1b
9	M82	PIPE_2.5	.144	69.474	11	.106	68.211		12	22373.4...	50715	3596.25	3596.25	1.683	H1-1b
10	M67	PL 8x.5	.447	7.5	27	.079	0	y	43	112219....	129600	1350	21600	1.655	H1-1b
11	M72	PL 8x.5	.452	7.5	19	.073	7.5	y	44	112219....	129600	1350	21600	1.655	H1-1b
12	M62	L4X4X5	.499	112.1...	43	.071	110.5...	y	34	48416.5...	77760	3776.855	5962.76	1	H2-1
13	M68A	PL3x.1875	.289	0	20	.069	0	y	43	16927.0...	18225	71.191	1139.063	1.05	H1-1b
14	M72A	PL3x.1875	.284	2	23	.069	2	y	40	16927.0...	18225	71.191	1139.063	1.053	H1-1b
15	M76A	PL3x.1875	.287	0	34	.063	0	y	44	16927.0...	18225	71.191	1139.063	1.048	H1-1b
16	M80A	PL3x.1875	.288	2	30	.063	0	y	44	16927.0...	18225	71.191	1139.063	1.054	H1-1b
17	M67A	PL3x.1875	.302	2	11	.057	0	y	12	16927.0...	18225	71.191	1139.063	1.051	H1-1b
18	M71A	PL3x.1875	.253	2	27	.051	0	y	12	16927.0...	18225	71.191	1139.063	1.053	H1-1b
19	M75A	PL3x.1875	.349	0	31	.038	0	y	12	16927.0...	18225	71.191	1139.063	1.051	H1-1b
20	M79A	PL3x.1875	.377	2	20	.038	2	y	20	16927.0...	18225	71.191	1139.063	1.049	H1-1b
21	M184A	L3.25x1.7...	.324	28.688	22	.038	28.688	y	43	22948.7...	29235.9...	473.675	1883.239	2.261	H2-1
22	M72B	L3.25x1.7...	.310	0	32	.034	0	y	44	22948.7...	29235.9...	473.675	1883.239	2.218	H2-1
23	M183A	L3.25x1.7...	.221	28.688	91	.031	0	y	12	22948.7...	29235.9...	473.675	1883.239	2.258	H2-1
24	M71B	L3.25x1.7...	.301	0	26	.022	28.688	y	21	22948.7...	29235.9...	473.675	1883.239	2.27	H2-1
25	M69B	PL 2 1/8x...	.244	0	23	.019	54.296	y	4	211.664	12909.3...	50.428	443.337	2.495	H1-1...
26	M196	PL 2 1/8x...	.173	0	96	.013	54.296	y	19	211.664	12909.3...	50.428	434.735	2.447	H1-1...
27	M197	PL 2 1/8x...	.001	54.296	40	.013	54.296	y	43	211.664	12909.3...	50.428	353.618	1.99	H1-1...
28	M106	PIPE_2.0	.100	116.7...	4	.007	116.7...		23	10385.7...	32130	1871.625	1871.625	1.14	H1-1...
29	M108	PIPE_2.0	.095	59.007	23	.007	116.7...		31	10385.7...	32130	1871.625	1871.625	1.14	H1-1b
30	M70B	PL 2 1/8x...	.000	0	98	.000	0	y	98	211.664	12909.3...	50.428	177.687	1	H1-1a

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: CTFF749A

ATC Redding Lattice Tower
100 Old Redding Road
Redding, Connecticut 06896

June 5, 2019

EBI Project Number: 6219001989

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**7.17%**

June 5, 2019

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

Emissions Analysis for Site: CTFF749A - ATC Redding Lattice Tower

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **100 Old Redding Road** in **Redding, 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 100 Old Redding Road in Redding, 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) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

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 APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR21 B2A_B4P for the 2100 MHz channel(s), the Ericsson AIR21 B2P_B4A for the 2100 MHz channel(s) in Sector A, the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR21 B2A_B4P for the 2100 MHz channel(s), the Ericsson AIR21 B2P_B4A for the 2100 MHz channel(s) in Sector B, the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR21 B2A_B4P for the 2100 MHz channel(s), the Ericsson AIR21 B2P_B4A for the 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antenna mounting height centerline of the proposed antennas is 147 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 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):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 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 A1 MPE %:	**0.95%**	Antenna B1 MPE %:	**0.95%**	Antenna C1 MPE %:	**0.95%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR21 B2A_B4P	Make / Model:	Ericsson AIR21 B2A_B4P	Make / Model:	Ericsson AIR21 B2A_B4P
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.35 dBd	Gain:	15.35 dBd	Gain:	15.35 dBd
Height (AGL):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	60 Watts	Total TX Power (W):	60 Watts	Total TX Power (W):	60 Watts
ERP (W):	2,056.61	ERP (W):	2,056.61	ERP (W):	2,056.61
Antenna A2 MPE %:	**0.34%**	Antenna B2 MPE %:	**0.34%**	Antenna C2 MPE %:	**0.34%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Ericsson AIR21 B2P_B4A	Make / Model:	Ericsson AIR21 B2P_B4A	Make / Model:	Ericsson AIR21 B2P_B4A
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.35 dBd	Gain:	15.35 dBd	Gain:	15.35 dBd
Height (AGL):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	4,113.21	ERP (W):	4,113.21	ERP (W):	4,113.21
Antenna A3 MPE %:	**0.68%**	Antenna B3 MPE %:	**0.68%**	Antenna C3 MPE %:	**0.68%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	1.98%
AT&T	1.41%
Verizon	1.29%
Sprint	2.15%
Nextel	0.23%
State Police	0.0013%
DMV	0.00037%
CMED	0.0012%
FBI	0.11%
Site Total MPE % :	7.17%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	1.98%
T-Mobile Sector B Total:	1.98%
T-Mobile Sector C Total:	1.98%
Site Total MPE % :	7.17%

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 600 MHz LTE	2	591.73	147.0	1.97	600 MHz LTE	400	0.49%
T-Mobile 700 MHz LTE	2	648.82	147.0	2.16	700 MHz LTE	467	0.46%
T-Mobile 2100 MHz UMTS	2	1028.30	147.0	3.42	2100 MHz UMTS	1000	0.34%
T-Mobile 2100 MHz LTE AWS	2	2056.61	147.0	6.84	2100 MHz LTE AWS	1000	0.68%
						Total:	**1.98%**

• 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:	1.98%
Sector B:	1.98%
Sector C:	1.98%
T-Mobile Maximum MPE % (Sector A):	1.98%
Site Total:	7.17%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **7.17%** 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

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.

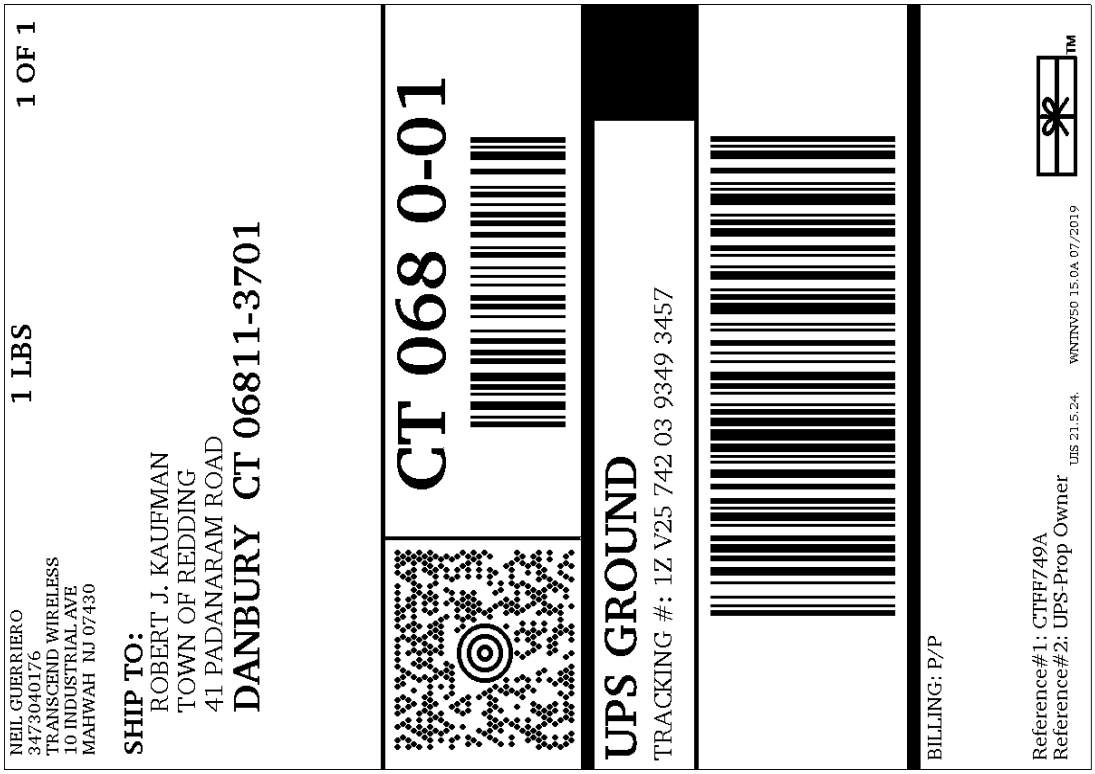
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To 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.

UPS Access Point™
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



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   Customers with a scheduled Pickup
   - Your driver will pickup your shipment(s) as usual.

   Customers without a scheduled Pickup
   - Schedule a Pickup on ups.com to have a UPS driver pickup all of your packages.
   - 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. To find the location nearest you, please visit the 'Locations' Quick link at ups.com.

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MICHAELS STORE # 7773
75 INTERSTATE SHOP CTR
RAMSEY NJ

UPS Access Point™
THE UPS STORE
115 FRANKLIN TPKE
MAHWAH NJ

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

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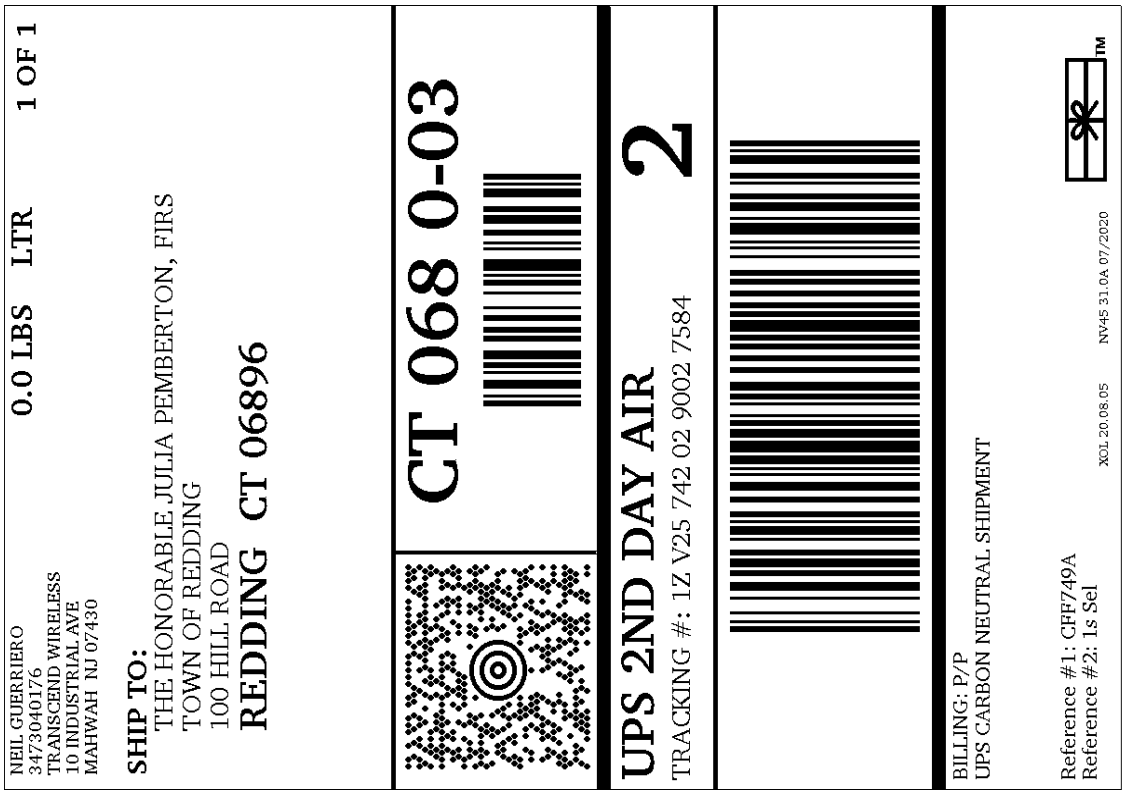

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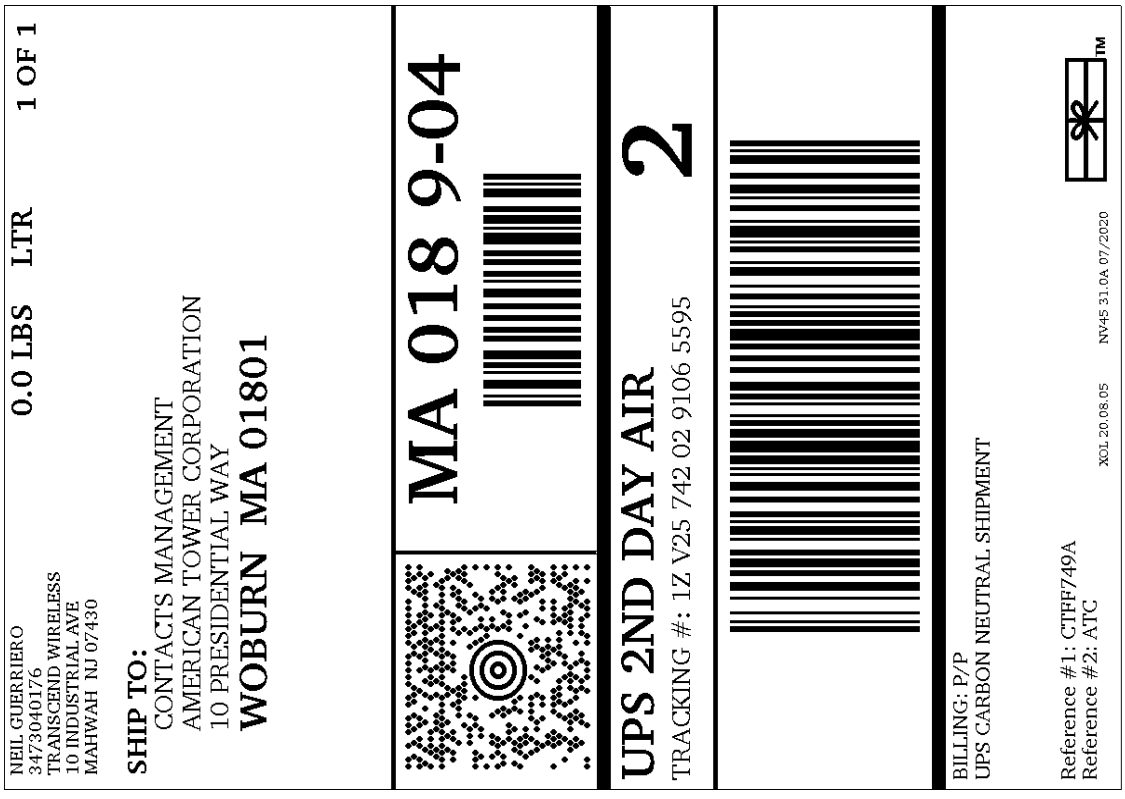

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