Transcend Wireless

10 Industrial Avenue,
Suite 3
Mahwah, NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

July 26, 2019

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

Notice of Exempt Modification
153 East Haddam Road Salem CT
Latitude 41.46847222
Longitude -72.27330556
T-Mobile site: CTNH143C /L600

Dear Ms. Bachman:

T-Mobile currently maintains (6) antennas at the 17-foot level of the existing 190-foot self-support lattice located at 153 East Haddam Road in Salem CT. The self-support lattice and underlying property is owned by American Tower. 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 175-foot level of the tower.

Planned Modifications:

Remove and Replace:
Antennas:
(3) Andrew - LNX-6515DS (REMOVE) – (3) RFS APXVAARR24_43-U-NA20 (REPLACE) 600 MHz / 700 MHz
(3) Ericsson RRUS 11 B12 (REMOVE) – (3) Ericsson Radio 4449 B12, B71 (REPLACE)

Existing to Remain:
Antennas/TMAs/RRUs/coax:
(3) RFS APX16DWV-16DWVS-E-A20
(3) Ericsson RRUS 11 B2
(3) Ericsson RRUS 11 B4
(1) 1-5/8" Hybrid

Install New:
Coax Cables:
(2) 1-5/8" hybrid
(1) 1-1/4" hybrid

This facility was approved by the Town of Salem and a CO was issued August 10, 2004. There are no known conditions that would restrict exempt modifications. Therefore, this modification complies with the aforementioned approval. A copy of the CO from the Town of Salem 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 Kevin T. Lyden, First Selectman, and Justin LaFountain, Town Planner
.

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

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

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

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

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

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

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

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

Sincerely,

Elizabeth Jamieson

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

cc:
The Honorable Kevin T. Lyden, First Selectman
Justin LaFountain, Town Planner
American Tower, Tower and Property Owner

Exhibit A

Original Facility Approval

Town of Salem

Building Department

Certificate of Occupancy

This is to certify that the structure at: 153 East Haddam Road (Existing Tower)

constructed as Antenna(s) & Equipment Building

under Building Permit No. B2004-078 conforms substantially to the requirements of the Building Code Ordinances and Zoning Regulations as adopted by the Town of Salem and the State of Connecticut and is hereby approved for use and occupancy under Use Group B of the 1996 BOCA Building Code of Connecticut.

Type Construction:

Owner: American Tower Corp.

116 Hungtington Avenue

Boston, MA 02116

Special Conditions: none

Building Official Signature

Date 8/10/04

Exhibit B

Property card

Town of Salem, CT

Property Listing Report

Map Block Lot **05-016-A02** Account **1997**

Property Information

Property Location	**153 EAST HADDAM RD**
Owner	**AMERICAN TOWER CORP**
Co-Owner	
Mailing Address	**P O BOX 723597** **ATLANTA GA 31139**
Land Use	**4331 Cell Tower**
Land Class	**I**
Zoning Code	**HC**
Census Tract	**7151**

Neighborhood	**C100**
Acreage	**6.21**
Utilities	
Lot Setting/Desc	
Additional Info	

Photo

Sketch

Primary Construction Details

Year Built		Bedrooms		Exterior Walls	
Stories		Full Bathrooms		Interior Walls	
Building Style		Half Bathrooms		Heating Type	
Building Use		Bath Style		Heating Fuel	
Building Condition		Kitchen Style		AC Type	
Floors		Roof Style		Gross Bldg Area	
Total Rooms		Roof Cover		Total Living Area	

Report Created On **7/18/2019**

Town of Salem, CT

Property Listing Report | Map Block Lot **05-016-A02** | Account **1997**

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings		
Extras		
Improvements		
Outbuildings		
Land		
Total		

Outbuilding and Extra Items

Type	Description
Paving-Asphalt	9600 S.F.
W/Improv Good	500 S.F.

Sub Areas

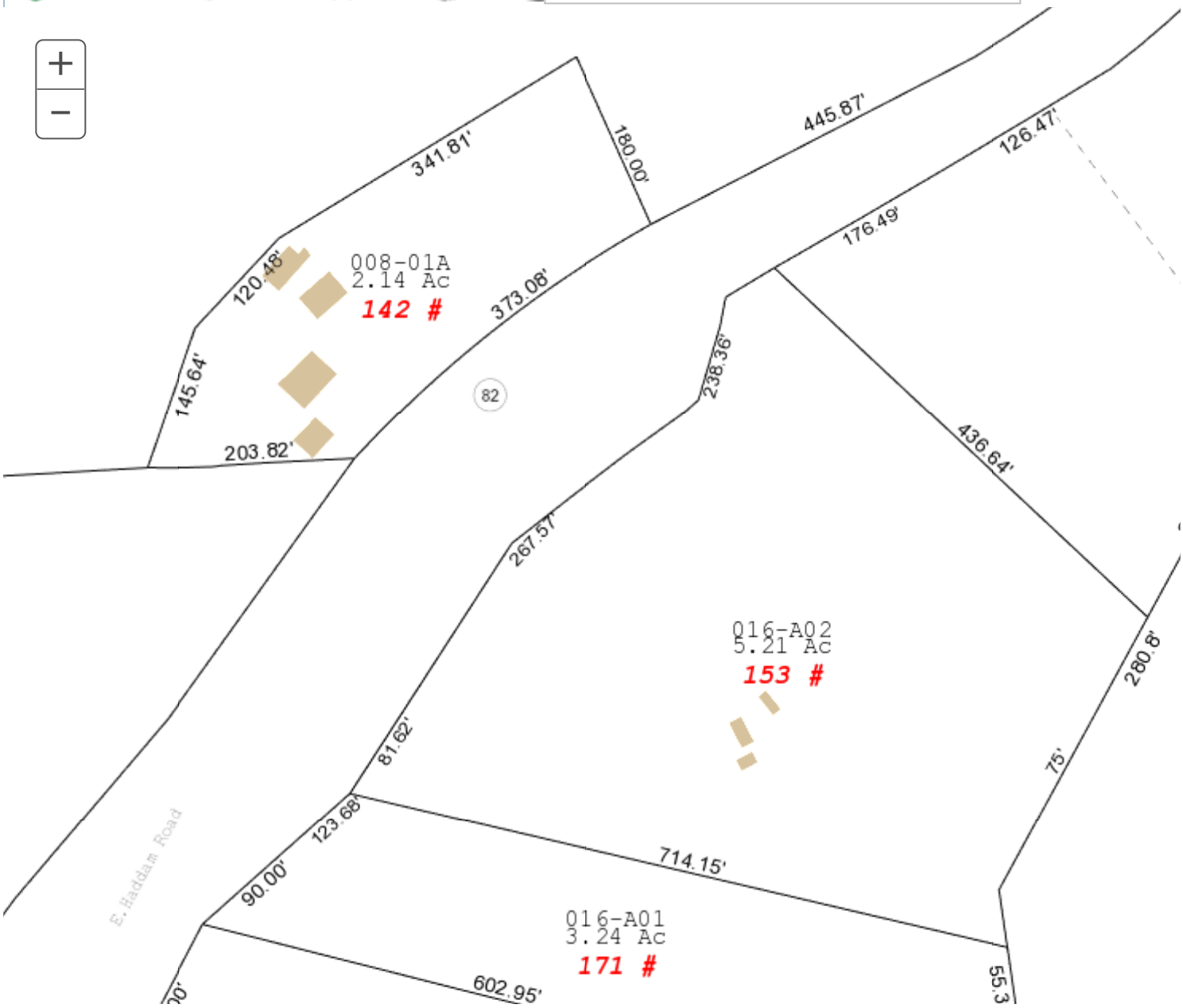
Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area		0

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
AMERICAN TOWER CORP	0122/0251	11/1/1999	180000

Report Created On **7/18/2019**

Full Town View | Reset Map | Search | Print | Map Layer

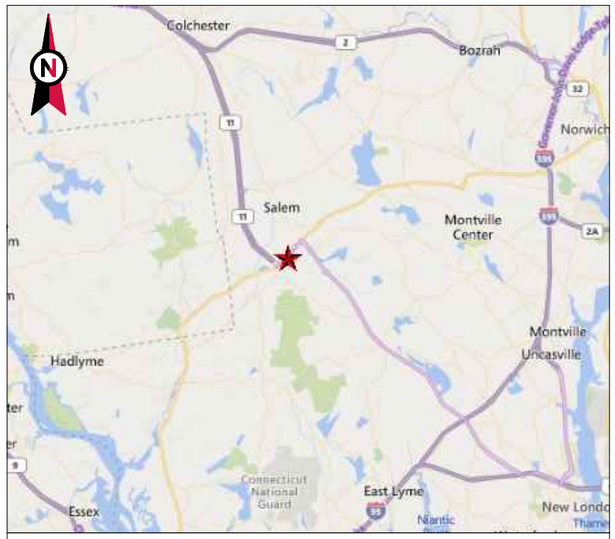


Full Extent | Zoom In | Zoom Out | Prev Extent | Next Extent | Pan | **Parcel Information** | Simple M

MapXpress v1.2

Exhibit C

Construction Drawings



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: SALEM CT
ATC SITE NUMBER: 10027
T-MOBILE SITE ID: CTNH143C
SITE ADDRESS: 153 E HADDAM RD SALEM, CT 06420

LOCATION MAP

T-MOBILE L600 ANTENNA AMENDMENT
67D07C CONFIGURATION

BIRD WATCH SITE:
PLEASE CONTACT BIRD.WATCH@AMERICANTOWER.COM OR AMERICAN TOWER NOC AT 877-518-6937 FOR ASSISTANCE

COMPLIANCE CODE

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

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

UTILITY COMPANIES

POWER COMPANY: EVERSOURCE
PHONE: (877) 659-6326

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

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

PROJECT SUMMARY

SITE ADDRESS:

153 E HADDAM RD
SALEM, CT 06420
COUNTY: NEW LONDON

1A CERTIFICATE SUMMARY:

LATITUDE: 41° 28' 06.482" N

LONGITUDE: 72° 16' 23.865" W

GROUND ELEVATION: 355.5' AMSL

TOWER HEIGHT: 190.4' AGL

HIGHEST APPURTENANCE: 194.9' 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:

AMERICAN TOWER
116 HUNTINGTON AVE
BOSTON, MA 02116

PROJECT DESCRIPTION

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

REMOVE (3) PANELS AND (3) RRUs

INSTALL (3) NEW PANELS, (3) RRUs, (2) 1-5/8" HYBRID CABLES, (1) 1-1/4" HYBRID CABLE, AND MOUNT MODS

EXISTING (3) PANELS, (6) RRUs, AND (1) 1-5/8" HYBRID CABLE TO REMAIN

PROJECT NOTES

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

PROJECT LOCATION DIRECTIONS

FROM I-395 W (NORWICH ROAD). GO THROUGH THE INTERSECTION OF RT. 85 (HARTFORD RD./NEW LONDON RD.). PASS SHINGLE MILL RD.. AFTER PASSING GETTY GRANITE ON YOUR RIGHT, THE TOWER WILL BE ON YOUR LEFT.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	1	07/19/19	MG
G-002	GENERAL NOTES	0	06/04/19	MG
C-101	DETAILED SITE PLAN & TOWER ELEVATION	1	07/19/19	MG
C-501	ANTENNA INFORMATION & SCHEDULE	1	07/19/19	MG
E-501	GROUNDING DETAILS	0	06/04/19	MG
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			
R-604	SUPPLEMENTAL			

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	MG	06/04/19
1	MOUNT MODS	MG	07/19/19

ATC SITE NUMBER:
10027

ATC SITE NAME:
SALEM CT

SITE ADDRESS:
153 E HADDAM RD
SALEM, CT 06420

SEAL:

Authorized by "EOR"
Jul 19 2019 5:42 PM

T-Mobile design

DRAWN BY:	MG
APPROVED BY:	PPB
DATE DRAWN:	06/04/19
ATC JOB NO:	12951828

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	MG	06/04/19

ATC SITE NUMBER:
10027

ATC SITE NAME:
SALEM CT

SITE ADDRESS:
153 E HADDAM RD
SALEM, CT 06420

SEAL:

Authorized by "EOR"
Jul 19 2019 5:42 PM

T-Mobile design

DRAWN BY:	MG
APPROVED BY:	PPB
DATE DRAWN:	06/04/19
ATC JOB NO:	12951828

GENERAL NOTES

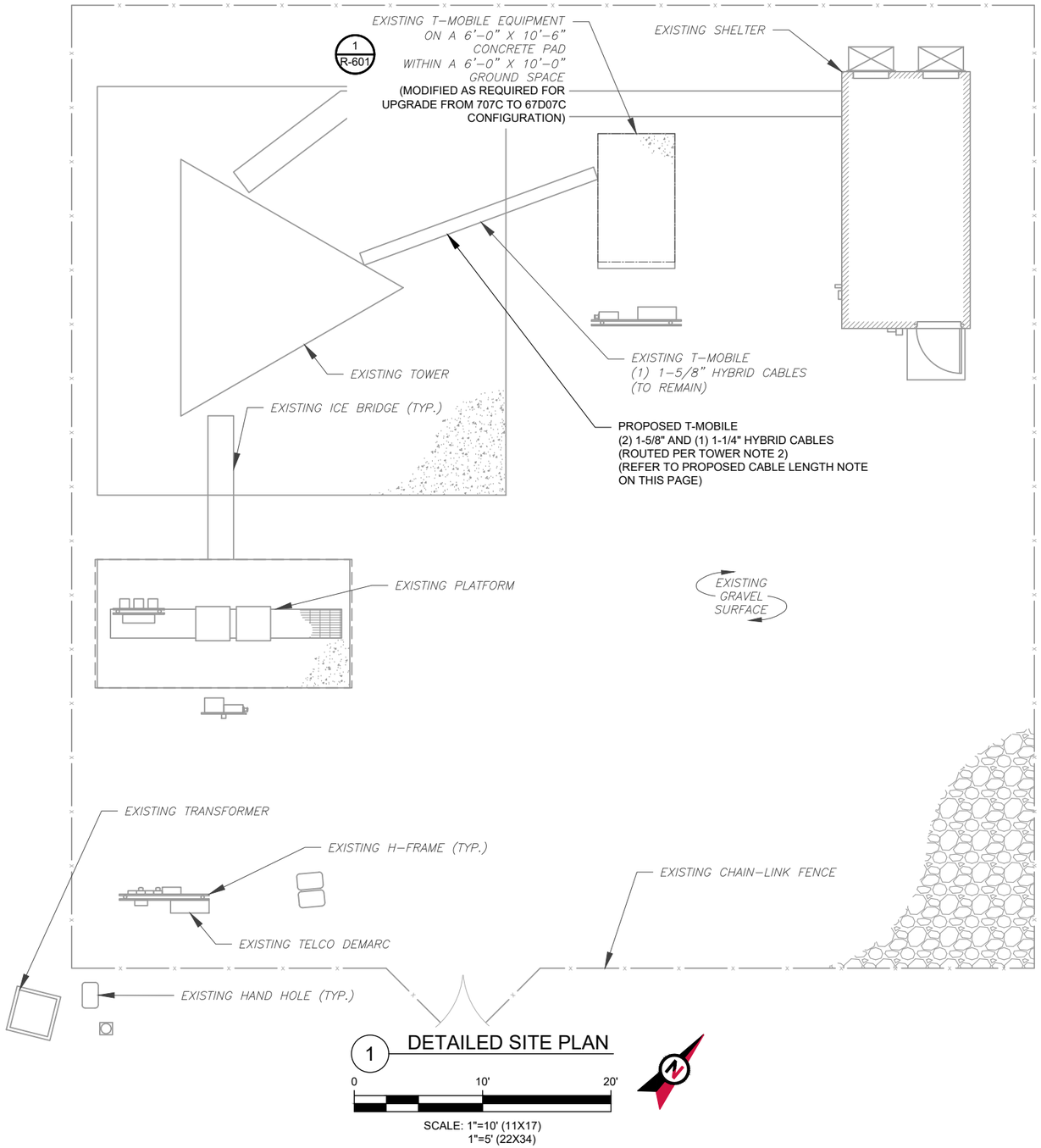
SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

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

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

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

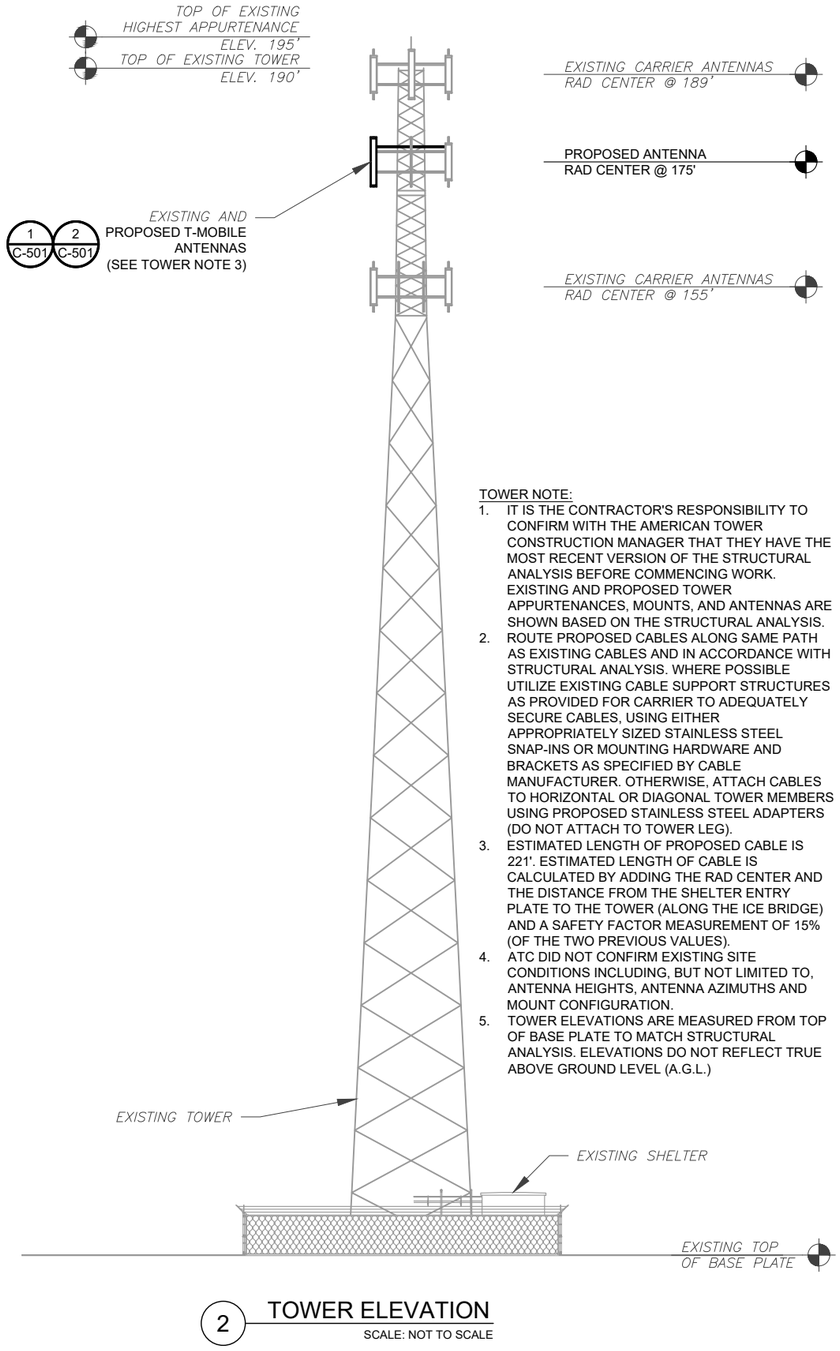


1 DETAILED SITE PLAN

0 10' 20'

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

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



2 TOWER ELEVATION

SCALE: NOT TO SCALE

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 221'. 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.)

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	MG	06/04/19
1	MOUNT MODS	MG	07/19/19

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T-Mobile design

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DATE DRAWN:	06/04/19
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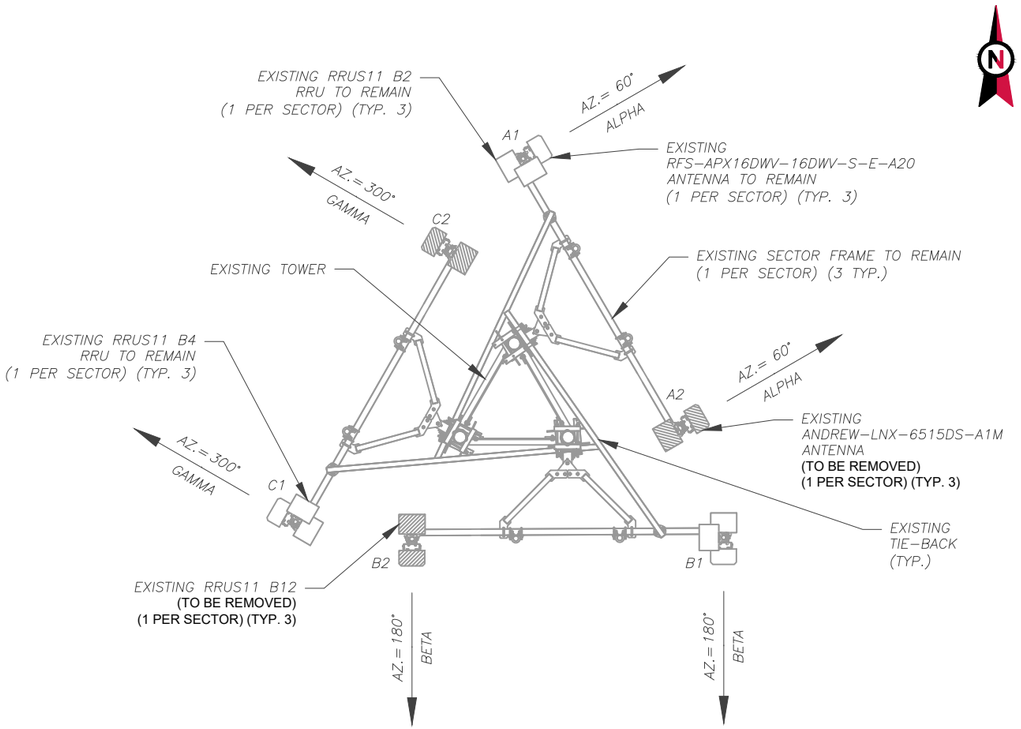
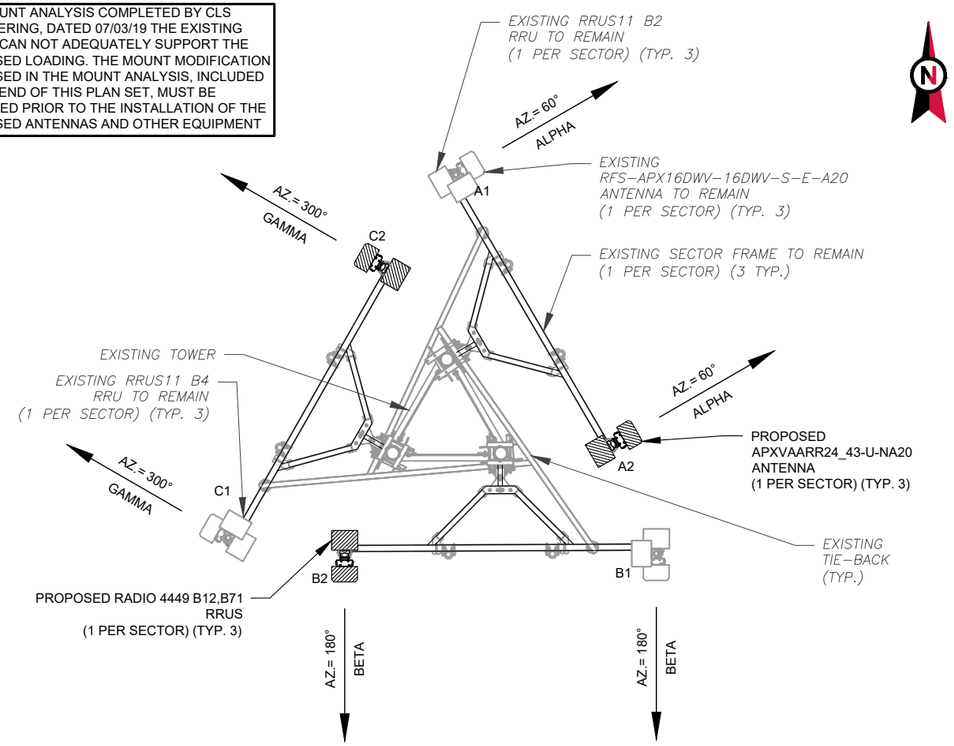
DETAILED SITE PLAN & TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-101	1



1 EXISTING ANTENNA PLAN

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



2 FINAL ANTENNA PLAN

EXISTING ANTENNA / EQUIPMENT SCHEDULE

SECTOR	ANT.	MANUFACTURER (MODEL #)	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	A1	APX16DWV–16DWVS–E–A20	175'–0"	60°	0°	2°	RRUS 11 B2 RRUS 11 B4
ALPHA	A2	LNX–6515DS–A1M	175'–0"	60°	0°	2°	RRUS 11 B12
BETA	B1	APX16DWV–16DWVS–E–A20	175'–0"	180°	0°	2°	RRUS 11 B2 RRUS 11 B4
BETA	B2	LNX–6515DS–A1M	175'–0"	180°	0°	2°	RRUS 11 B12
GAMMA	C1	APX16DWV–16DWVS–E–A20	175'–0"	300°	0°	2°	RRUS 11 B2 RRUS 11 B4
GAMMA	C2	LNX–6515DS–A1M	175'–0"	300°	0°	2°	RRUS 11 B12

NOTES

1. BASED ON APPROVED ATC APPLICATION 12927188, DATED 04/02/2019. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. ATC HAS NOT YET VERIFIED ANY EXISTING ANTENNA CONFIG OR MOUNT CONFIG. CONTRACTOR TO VERIFY MOUNT CONFIG HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (EQUIP) (I.E. CLEARANCES, MOUNT PIPE, SUFFICIENT LENGTH, ETC.) ATC DID NOT ANALYZE ANTENNA MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY LESSEE LOADING.
3. ALL PROPOSED EQUIP INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH ATC'S CM.
4. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
5. POSITIONS START WITH FIRST PIPE ON THE LEFT SIDE (AS VIEWED FROM BEHIND THE MOUNT).

FINAL ANTENNA / EQUIPMENT SCHEDULE

SECTOR	ANT.	MANUFACTURER (MODEL #)	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	A1	APX16DWV–16DWVS–E–A20	175'–0"	60°	0°	2°	RRUS 11 B2 RRUS 11 B4
ALPHA	A2	APXVAARR24_43-U-NA20	175'-0"	60°	0°	2°	RADIO 4449 B12,B71
BETA	B1	APX16DWV–16DWVS–E–A20	175'–0"	180°	0°	2°	RRUS 11 B2 RRUS 11 B4
BETA	B2	APXVAARR24_43-U-NA20	175'-0"	180°	0°	2°	RADIO 4449 B12,B71
GAMMA	C1	APX16DWV–16DWVS–E–A20	175'–0"	300°	0°	2°	RRUS 11 B2 RRUS 11 B4
GAMMA	C2	APXVAARR24_43-U-NA20	175'-0"	300°	0°	2°	RADIO 4449 B12,B71

CURRENT FIBER DISTRIBUTION/OVP BOX		CURRENT CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
–	–	–	(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

PROPOSED FIBER DISTRIBUTION/OVP BOX		PROPOSED CABLING SUMMARY			
MODEL NUMBER	STATUS	COAX	HYBRID	HYBRID	STATUS
-	-	-	(1) 1–5/8"	-	RMN
-	-	-	(2) 1-5/8"	(1) 1-1/4"	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	MG	06/04/19
1	MOUNT MODS	MG	07/19/19

ATC SITE NUMBER:
10027

ATC SITE NAME:
SALEM CT

SITE ADDRESS:
153 E HADDAM RD
SALEM, CT 06420

SEAL:

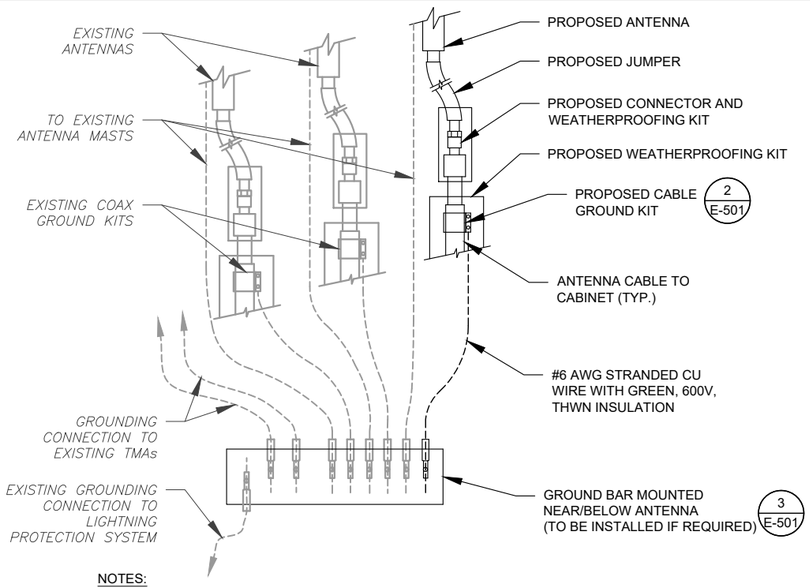
Authorized by "EOR"
Jul 19 2019 5:43 PM

T-Mobile design

DRAWN BY:	MG
APPROVED BY:	PPB
DATE DRAWN:	06/04/19
ATC JOB NO:	12951828

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-501	1

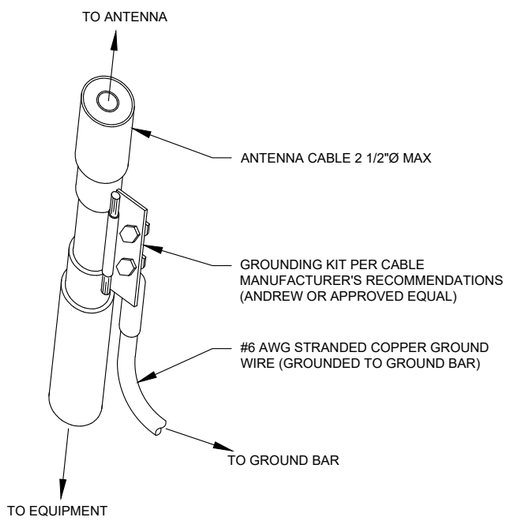


NOTES:

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

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: NOT TO SCALE

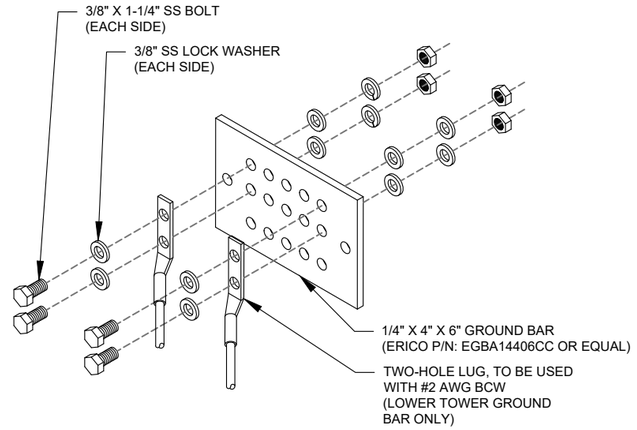


GROUND KIT NOTES:

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

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: NOT TO SCALE



GROUND BAR NOTES:

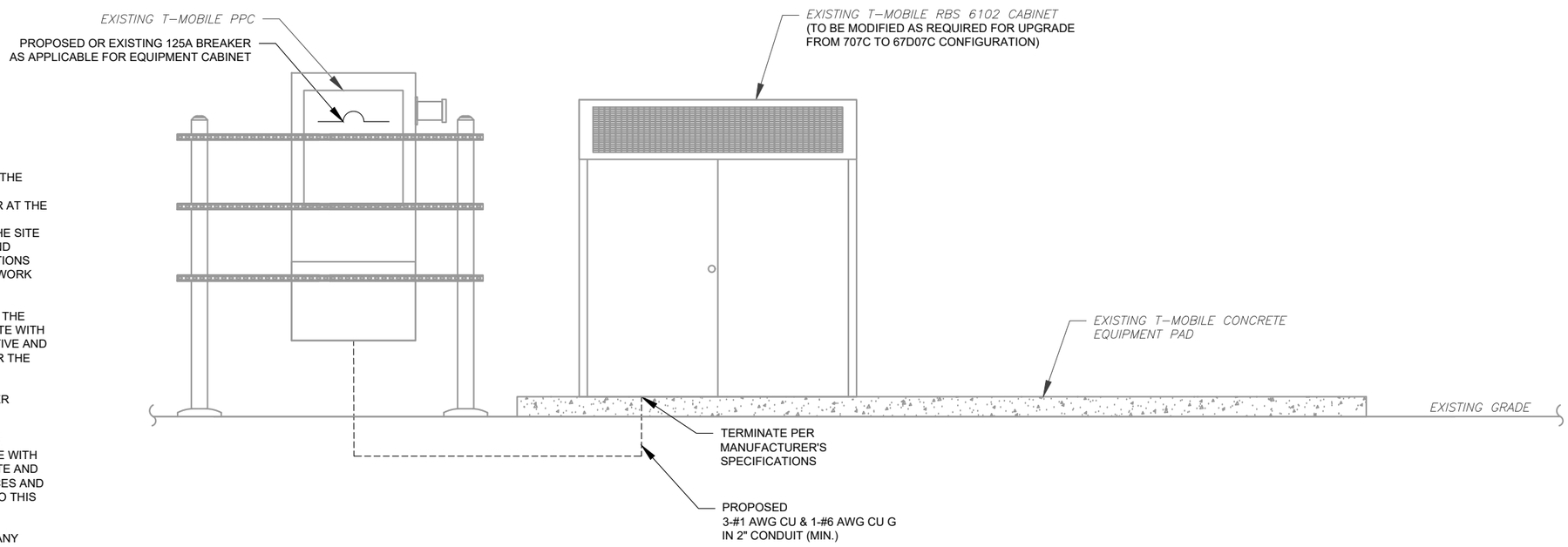
1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL

SCALE: NOT TO SCALE

ELECTRICAL NOTES:

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



4 ELECTRICAL UPGRADE DIAGRAM

SCALE: NOT TO SCALE

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	MG	06/04/19

ATC SITE NUMBER:
10027

ATC SITE NAME:
SALEM CT

SITE ADDRESS:
153 E HADDAM RD
SALEM, CT 06420

SEAL:

Authorized by "EOR"
Jul 19 2019 5:43 PM

T-Mobile design

DRAWN BY:	MG
APPROVED BY:	PPB
DATE DRAWN:	06/04/19
ATC JOB NO:	12951828

GROUNDING DETAILS

SHEET NUMBER: E-501

REVISION: 0

Existing RAN Equipment		
Template: 707C Tower		
Enclosure	1	2
Enclosure Type	RBS 6102 MU AC	Purcell SFX17 2824
Baseband	DUW30 U1900 / DUS41 L2100 L700	
Hybrid Cable System	Ericsson 9x18 HCS *Select Length*	

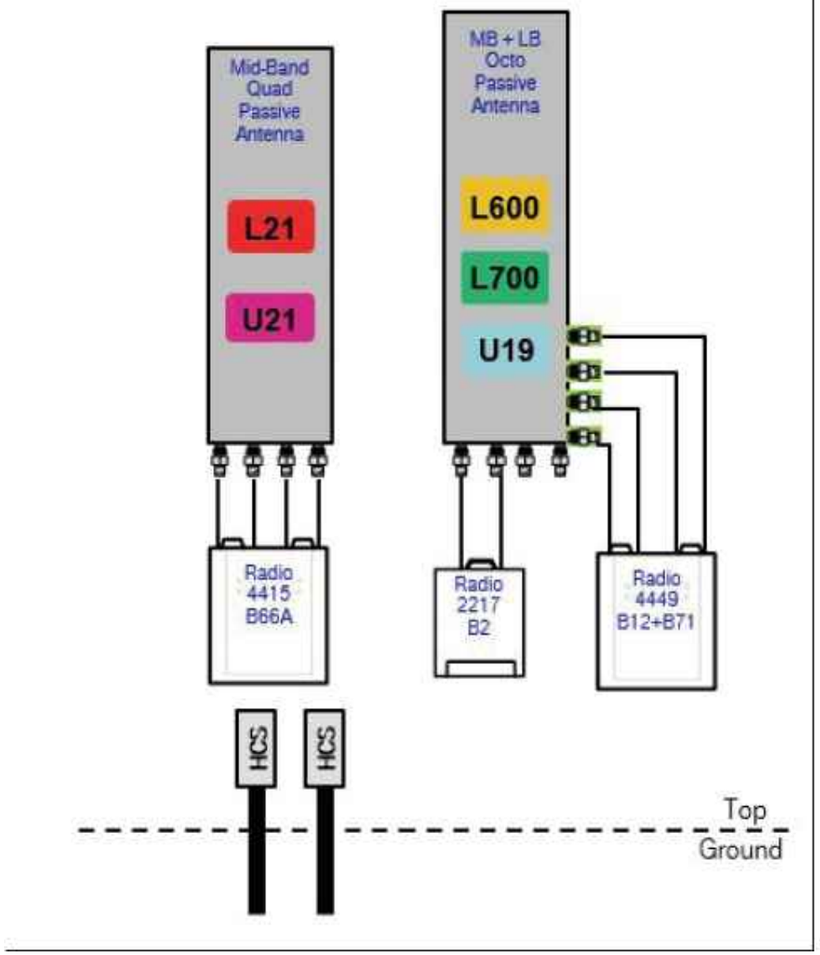
Proposed RAN Equipment		
Template: 67D07C 6102 MUAC		
Enclosure	1	2
Enclosure Type	RBS 6102 MU AC	Purcell SFX17 2824
Baseband	DUW30 U1900 / BB 6630 L2100 L700 L600 / BB 6630 N600 (DARK)	
Hybrid Cable System	Ericsson 9x18 HCS *Select Length* / Ericsson 6x12 HCS *Select Length & AWG* (x 3)	

RAN Scope of Work:

Replace DUS41 with (1) BB6630 for L2100, L700, and L600.
Add (1) BB6630 for future 5G N600.
Add (3) 6X12 HCS.

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE

67D07C.JPG



2 ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	0

Mount Analysis of Existing Sector Frames for American Tower on behalf of T-Mobile
10027 - Salem CT
Project #: 12927188

T-Mobile Site ID: CTNH143C
Program: L600

CLS Engineering PLLC Project #41124-12927188-01-MA-R1
July 3, 2019

MOUNT DESCRIPTION	Existing Sector Frames at 173 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 175 ft AGL (Eccentricity of -2 ft)
SITE DESCRIPTION	190 ft Self-Supporting Tower
SITE ADDRESS	Intersection of Connecticut Rt. 82 and Rt. 11, Salem, CT 06420, New London County
GPS COORDINATES	41.46846667, -72.27329444
ANALYSIS STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	135 mph, V_{ult} / 104.6 mph, V_{asd} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 0.75"

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

MEMBER USAGE	78%	Pass

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

Prepared by:
Jennifer Soza

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

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

Tyler M. Barker
CLS Engineering, PLLC
Director of Engineering
PE # 32402 Exp. 12/31/2020
COA # PEC.001833 Exp. 8/14/2019

Digitally signed by Tyler Barker
DN: c=US, o=Talamon Corporation, ou=A01427E00000 16A4525ADF80000 1D17, cn=Tyler Barker
Date: 2019.07.03 21:59:01 -04'00'

■ CONCLUSION AND RECOMMENDATIONS

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

- **Install (1) 13' long Pipe 2½ STD, A53 Gr. B, face horizontal pipe at each sector frame mount (3 total). Pipes to be installed 9" above the existing top face horizontal pipe member. Connect to all existing antenna mount pipes with Site Pro 1 SCX2-K crossover plate kits or equal.**
- **Install (1) Site Pro 1 SFS-V Sector Frame Stabilizer kit at each sector frame mount (3 total). Connect to proposed face horizontal pipe and existing tower leg as shown in the following sketches.**
- **Relocate equipment, as required, to facilitate installation of proposed modifications on mount.**
- **All hardware for Site Pro 1 SFS-V connection to the tower leg should be installed with "turn of the nut" method per the following table:**

BOLT TIGHTENING PROCEDURE

1. TIGHTEN BOLTS BY AISC "TURN OF THE NUT" METHOD USING THE CHART BELOW:

   BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS:
   +1/3 TURN BEYOND SNUG TIGHT

   BOLT LENGTHS OVER FOUR AND UP TO EIGHT DIAMETERS:
   +1/2 TURN BEYOND SNUG TIGHT

   BOLT LENGTHS OVER EIGHT AND UP TO TWELVE DIAMETERS:
   +2/3 TURN BEYOND SNUG TIGHT

2. SPLICE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8(d)(1) OF THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS AS FOLLOWS:

   "FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND BE TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8(d)(1) THROUGH 8(d)(4).

   8(d)(1) TURN-OF-THE-NUT TIGHTENING.
   BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION. SNUG TIGHT IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN THE PLIES OF A JOINT ARE IN FIRM CONTACT. THIS MAY BE OBTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. SNUG TIGHTENING SHALL PROGRESS SYSTEMATICALLY...UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION, ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION, THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.

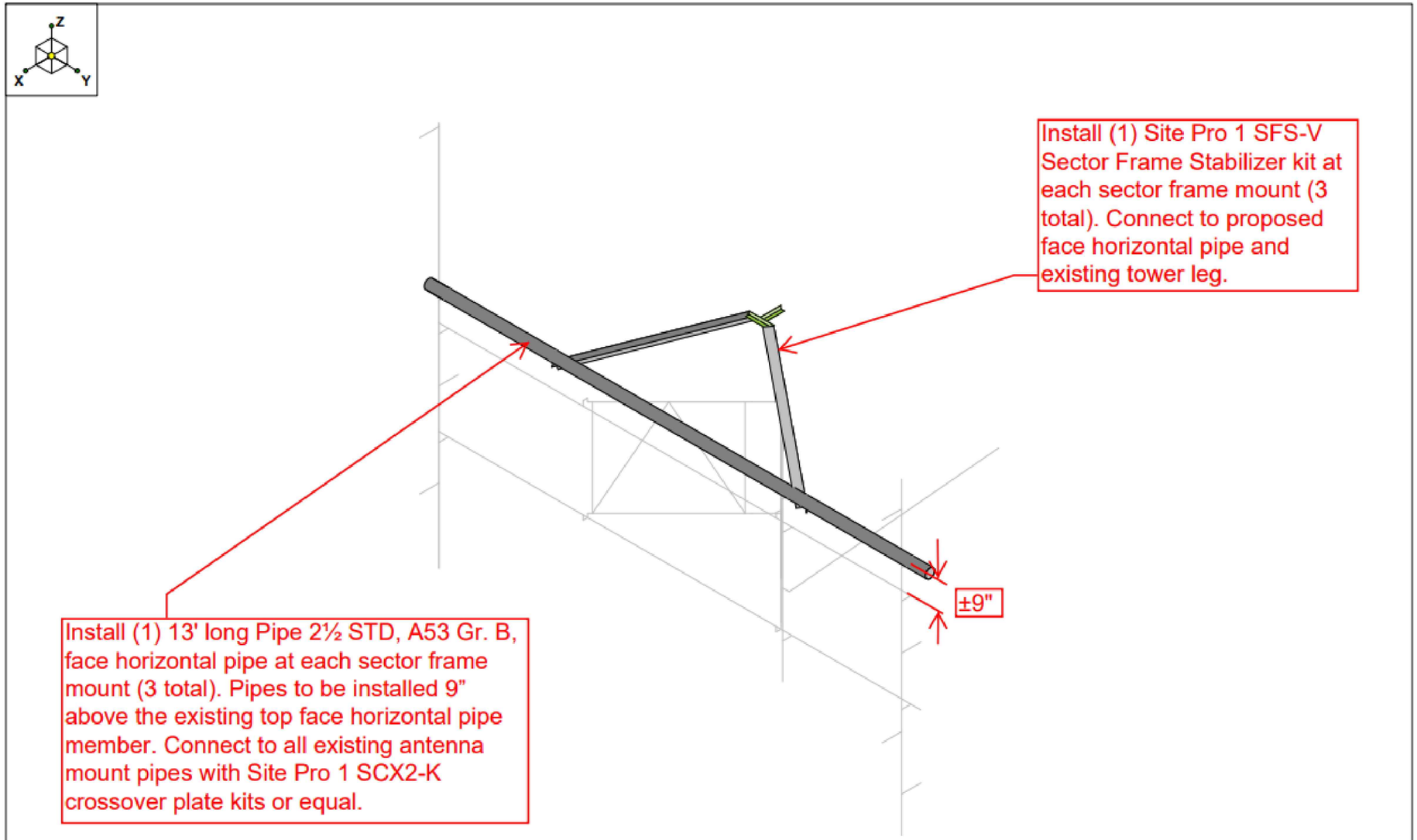
See following sketches and Site Pro 1 assembly drawings for additional details.

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

SUPPLEMENTAL

SHEET NUMBER: R-602

REVISION: 1



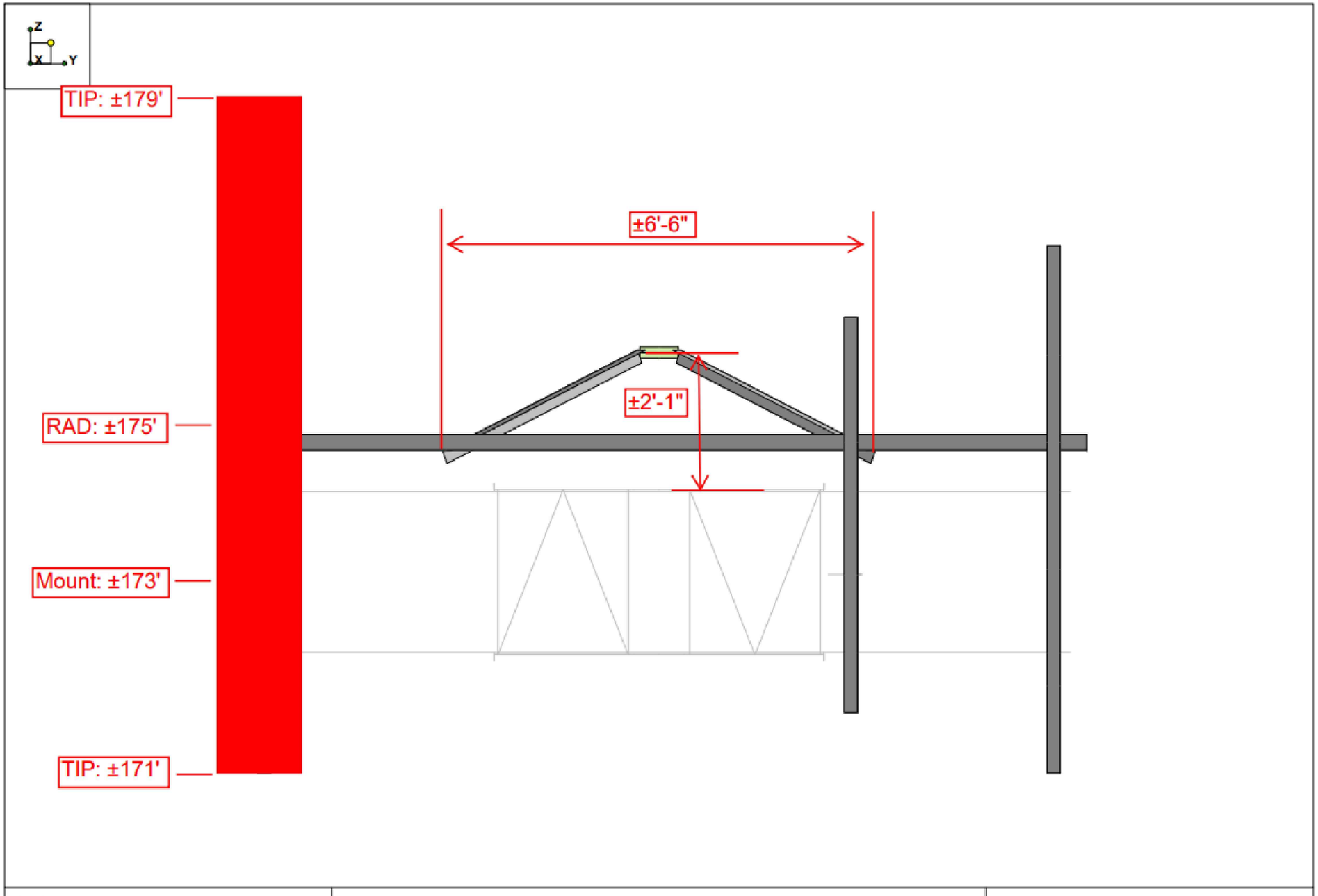
Envelope Only Solution

CLS		IN - 1
ZSB	41124-12927188-Salem CT	Apr 12, 2019 at 4:45 PM
41124-12927188-01-MA	Proposed Modifications - Rendered	41124-12927188-01-MA.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	41124-12927188-Salem CT	IN - 2
ZSB		Apr 12, 2019 at 4:50 PM
41124-12927188-01-MA	Proposed Modifications - Rendered	41124-12927188-01-MA.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	:	**190 ft Self Supported Tower**
ATC Site Name	:	**SALEM CT, CT**
ATC Site Number	:	**10027**
Engineering Number	:	**12927188_C3_02**
Proposed Carrier	:	**T-MOBILE**
Carrier Site Name	:	**CTNH143C**
Carrier Site Number	:	**CTNH143C**
Site Location	:	**153 East Haddam Road** **Salem, CT 06420-3903** **41.468500,-72.273300**
County	:	**New London**
Date	:	**July 18, 2019**
Max Usage	:	**74%**
Result	:	**Pass**

Prepared By:
Jeffrey B. DeLuca
Structural Engineer II

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32599
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
Jul 18 2019 3:20 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 190 ft self supported tower to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	PiRod 204997-B, dated September 21, 1999
Foundation Drawing	PiRod 204997-B, dated September 21, 1999
Geotechnical Report	Tectonic Engineering Consultants P.C 2174.Salem, dated August 27, 1999
Mount Analysis	CLS Engineering PLLC Project #41124-12927188-01-MA-R1, dated July 3, 2019

Analysis

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

Basic Wind Speed:	105 mph (3-Second Gust, V_{asd}) / 135 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.17, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
187.0	2	Powerwave Allgon P65-17-XLH-RR	Sector Frame	(1) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (1) 0.33" (8.7mm) Fiber (2) 0.65" (16.4mm) 8 AWG 2C (12) 1 5/8" Coax	AT&T MOBILITY
	1	Andrew SBNH-1D6565C (60.8 lbs)			
	6	Allgon 7770.00			
	3	Ericsson RRUS-11 800 MHz			
	1	Raycap DC6-48-60-18-8F (23.5" Height)			
	6	Powerwave Allgon LGP21401			
	6	LGP Allgon LGP21903			
175.0	3	RFS APX16DWV-16DWVS-E-A20 (60" Height)	Sector Frame	(1) 1 5/8" (1.63"-41.3mm) Fiber	T-MOBILE
	3	Ericsson RRUS 11 B2			
	3	Ericsson RRUS 11 B4			
155.0	-	-	Sector Frame	(6) 1 5/8" Coax	SPRINT NEXTEL
150.0	3	Commscope NNVV-65B-R4		(4) 1 1/4" Hybriflex Cable	
	3	RFS APXVTM14-ALU-I20			
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	6	Alcatel-Lucent RRH2x50-08			
	3	Alcatel-Lucent 1900 MHz 4X45 RRH			
75.0	1	Generic GPS	Leg	(1) 1/2" Coax	

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
175.0	3	Commscope LNX-6515DS-A1M (96.6" Height)	-	-	T-MOBILE
	3	Ericsson RRUS 11 B12			

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
175.0	3	Ericsson Radio 4449 B12,B71	Sector Frame w/ Site Pro 1 SFS-V Reinforcement Kit	(1) 1 1/4" Hybriflex Cable (2) 1 5/8" (1.63"-41.3mm) Fiber	T-MOBILE
	3	RFS APXVAARR24_43-U-NA20			

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

Install proposed lines alongside existing T-MOBILE lines.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	68%	Pass
Diagonals	74%	Pass
Horizontals	40%	Pass
Anchor Bolts	43%	Pass
Leg Bolts	51%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Uplift (Kips)	344.3	464.8	256.4	55%
Axial (Kips)	385.3	520.2	294.8	57%
Shear (Kips)	59.7	80.6	44.3	55%

*** 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) (°)
175.0	Ericsson Radio 4449 B12,B71	T-MOBILE	0.328	0.136	0.346
	RFS APXVAARR24_43-U-NA20				

***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:

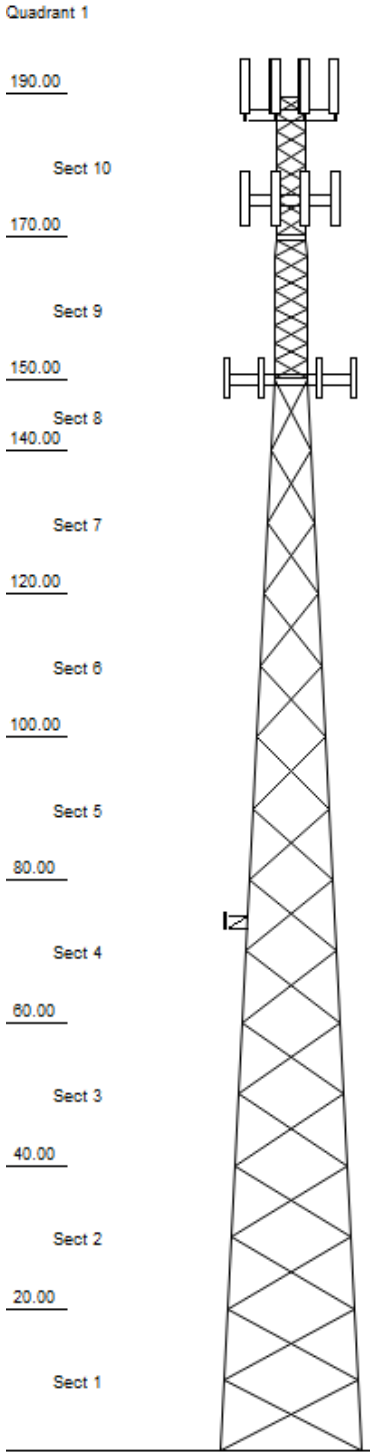
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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: 105 mph no ice
50 mph w/ 3/4" radial ice
Site Class: D Ss: 0.17 S1: 0.06
60 mph Serviceability

Job Information

Client : T-MOBILE		
Tower : 10027	Location : SALEM CT, CT	Base Width : 20.00 ft
Code : ANSI/TIA-222-G		Top Width : 4.00 ft
		Tower Ht : 190.00 ft
		Shape : Triangle

Sections Properties

Section	Leg Members		Diagonal Members	Horizontal Members
1 - 2	12B 50 ksi	12"BD 2.25"	SAE 36 ksi 3.5X3.5X0.3125	
3 - 4	12B 50 ksi	12"BD 2"	SAE 36 ksi 3X3X0.3125	
5	12B 50 ksi	12"BD 1.75"	SAE 36 ksi 3X3X0.1875	
6 - 7	12B 50 ksi	12"BD 1.5"	SAE 36 ksi 3X3X0.1875	
8	12B 50 ksi	12"BD 1.25"	SAE 36 ksi 2.5X2.5X0.1875	
9	SOL 50 ksi	2" SOLID	SOL 50 ksi 1" SOLID	SOL 50 ksi 1" SOLID
10	SOL 50 ksi	1 1/2" SOLID	SOL 50 ksi 3/4" SOLID	SOL 50 ksi 3/4" SOLID

Discrete Appurtenance

Elev (ft)	Type	Qty	Description
187.00	Mounting Frame	3	Flat Light Sector Frame
187.00	Panel	2	Powerwave Allgon P65-17-XLH-RR
187.00	Panel	1	Andrew SBNH-1D6565C (60.8 lbs)
187.00	Panel	6	Allgon 7770.00
187.00		3	Ericsson RRUS-11 800 MHz
187.00		1	Raycap DC6-48-60-18-8F (23.5"
187.00		6	Powerwave Allgon LGP21401
187.00		6	LGP Allgon LGP21903
175.00	Mounting Frame	3	Flat Light Sector Frame
175.00	Panel	3	RFS APXVAARR24_43-U-NA20
175.00	Panel	3	RFS APX16DWV-16DWVS-E-A20
175.00		3	Ericsson RRUS 11 B4
175.00		3	Ericsson RRUS 11 B2
175.00		3	Ericsson Radio 4449 B12,B71
150.00	Mounting Frame	3	Site Pro 1 STK-U Stabilizer
150.00	Mounting Frame	3	Round Sector Frame
150.00	Panel	3	Commscope NNVV-65B-R4
150.00	Panel	3	RFS APXVTM14-ALU-I20
150.00		3	Alcatel-Lucent TD-RRH8x20-25 w
150.00		3	Alcatel-Lucent 1900 MHz 4X45 R
150.00		6	Alcatel-Lucent RRH2x50-08
75.00	Straight Arm	1	Stand-Off
75.00	Whip	1	Generic GPS

Linear Appurtenance

Elev (ft) From	To	Qty	Description
0.00	189.00	2	0.78" (19.7mm) 8 AWG
0.00	189.00	1	0.39" (10mm) Fiber T
0.00	187.00	1	Waveguide
0.00	187.00	12	1 5/8" Coax
0.00	187.00	2	0.65" (16.4mm) 8 AWG
0.00	187.00	1	0.33" (8.7mm) Fiber
0.00	175.00	1	Waveguide
0.00	175.00	2	1 5/8" (1.63"-41.3mm
0.00	175.00	1	1 5/8" (1.63"-41.3mm
0.00	175.00	1	1 1/4" Hybriflex Cab
0.00	155.00	6	1 5/8" Coax
0.00	150.00	1	Waveguide
0.00	150.00	4	1 1/4" Hybriflex Cab
0.00	75.00	1	1/2" Coax

Job Information

Client : T-MOBILE			
Tower : 10027	Location : SALEM CT, CT	Base Width :	20.00 ft
Code : ANSI/TIA-222-G		Top Width :	4.00 ft
		Tower Ht :	190.00 ft
		Shape :	Triangle

Global Base Foundation Design Loads

Load Case	Moment (k-ft)	Vertical (kip)	Horizontal (kip)
DL + WL	4,809.08	51.34	44.31
DL + WL + IL	1,370.96	116.80	12.79

Individual Base Foundation Design Loads

Vertical (kip)	Uplift (kip)	Horizontal (kip)
294.77	256.39	28.89

Site Number:	10027	Code:	ANSI/TIA-222-G	
Site Name:	SALEM CT, CT	Engineering Number:	12927188_C3_02	7/18/2019 11:32:35 AM
Customer:	T-MOBILE			

Analysis Parameters

Location:	New London County, CT	Height (ft):	190
Code:	ANSI/TIA-222-G	Base Elevation (ft):	0.00
Shape:	Triangle	Bottom Face Width (ft):	20.00
Tower Manufacturer:	Pirod	Top Face Width (ft):	4.00
Tower Type:	Self Support	Anchor Bolt Detail Type	c
Kd:			
Ke:			

Ice & Wind Parameters

Structure Class:	II	Design Windspeed Without Ice:	105 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):	1.01				
T_L(sec):	6	p:	1.3	C_S:	0.032
S_S:	0.170	S_1:	0.060	C_S, Max:	0.032
F_a:	1.600	F_V:	2.400	C_S, Min:	0.030
S_{ds}:	0.181	S_{d1}:	0.096		

Load Cases

1.2D + 1.6W Normal	105 mph Normal with No Ice
1.2D + 1.6W 60 deg	105 mph 60 degree with No Ice
1.2D + 1.6W 90 deg	105 mph 90 degree with No Ice
1.2D + 1.6W 120 deg	105 mph 120 degree with No Ice
1.2D + 1.6W 180 deg	105 mph 180 degree with No Ice
1.2D + 1.6W 210 deg	105 mph 210 degree with No Ice
1.2D + 1.6W 240 deg	105 mph 240 degree with No Ice
1.2D + 1.6W 300 deg	105 mph 300 degree with No Ice
1.2D + 1.6W 330 deg	105 mph 330 degree with No Ice
0.9D + 1.6W Normal	105 mph Normal with No Ice (Reduced DL)
0.9D + 1.6W 60 deg	105 mph 60 deg with No Ice (Reduced DL)
0.9D + 1.6W 90 deg	105 mph 90 deg with No Ice (Reduced DL)
0.9D + 1.6W 120 deg	105 mph 120 deg with No Ice (Reduced DL)
0.9D + 1.6W 180 deg	105 mph 180 deg with No Ice (Reduced DL)
0.9D + 1.6W 210 deg	105 mph 210 deg with No Ice (Reduced DL)
0.9D + 1.6W 240 deg	105 mph 240 deg with No Ice (Reduced DL)
0.9D + 1.6W 300 deg	105 mph 300 deg with No Ice (Reduced DL)
0.9D + 1.6W 330 deg	105 mph 330 deg with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi Normal	50 mph Normal with 0.75 in Radial Ice

Analysis Parameters

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
1.2D + 1.0Di + 1.0Wi 120 deg	50 mph 120 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 180 deg	50 mph 180 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 210 deg	50 mph 210 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 240 deg	50 mph 240 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 300 deg	50 mph 300 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 330 deg	50 mph 330 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
(1.2 + 0.2Sds) * DL + E 120 deg	Seismic 120 deg
(1.2 + 0.2Sds) * DL + E 180 deg	Seismic 180 deg
(1.2 + 0.2Sds) * DL + E 210 deg	Seismic 210 deg
(1.2 + 0.2Sds) * DL + E 240 deg	Seismic 240 deg
(1.2 + 0.2Sds) * DL + E 300 deg	Seismic 300 deg
(1.2 + 0.2Sds) * DL + E 330 deg	Seismic 330 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
(0.9 - 0.2Sds) * DL + E 120 deg	Seismic (Reduced DL) 120 deg
(0.9 - 0.2Sds) * DL + E 180 deg	Seismic (Reduced DL) 180 deg
(0.9 - 0.2Sds) * DL + E 210 deg	Seismic (Reduced DL) 210 deg
(0.9 - 0.2Sds) * DL + E 240 deg	Seismic (Reduced DL) 240 deg
(0.9 - 0.2Sds) * DL + E 300 deg	Seismic (Reduced DL) 300 deg
(0.9 - 0.2Sds) * DL + E 330 deg	Seismic (Reduced DL) 330 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
1.0D + 1.0W Service 120 deg	Serviceability - 60 mph Wind 120 deg
1.0D + 1.0W Service 180 deg	Serviceability - 60 mph Wind 180 deg
1.0D + 1.0W Service 210 deg	Serviceability - 60 mph Wind 210 deg
1.0D + 1.0W Service 240 deg	Serviceability - 60 mph Wind 240 deg
1.0D + 1.0W Service 300 deg	Serviceability - 60 mph Wind 300 deg
1.0D + 1.0W Service 330 deg	Serviceability - 60 mph Wind 330 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)
187.00	LGP Allgon	6	6	0.2	0.4	6.3	3.0	0.80	0.50	2.0	42.7	28.44	21	40
187.00	Powerwave Allgon	6	14	1.1	1.2	9.2	2.6	0.80	0.50	2.0	204.2	28.44	102	102
187.00	Raycap DC6-48-60-18-	1	20	1.3	2.0	9.7	9.7	0.80	1.00	2.0	78.0	28.44	39	24
187.00	Ericsson RRUS-11	3	54	2.5	1.4	17.8	9.2	0.80	0.67	2.0	313.4	28.44	157	194
187.00	Allgon 7770.00	6	35	5.5	4.6	11.0	5.0	0.80	0.65	2.0	1329.7	28.44	665	252
187.00	Andrew SBNH-	1	61	11.4	8.0	11.9	7.1	0.80	1.00	2.0	707.9	28.44	354	73
187.00	Powerwave Allgon	2	59	11.5	8.0	12.0	6.0	0.80	0.76	2.0	1077.9	28.44	539	142
187.00	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	28.35	1165	1440
175.00	Ericsson Radio 4449	3	74	1.6	1.2	13.2	9.3	0.80	0.50	0.0	0.0	27.82	74	266
175.00	Ericsson RRUS 11 B2	3	51	2.8	1.6	17.0	7.2	0.80	0.67	4.0	683.3	28.00	171	183
175.00	Ericsson RRUS 11 B4	3	51	2.8	1.6	17.0	7.2	0.80	0.67	4.0	683.3	28.00	171	183
175.00	RFS APX16DWV-	3	42	7.0	5.0	13.0	3.1	0.80	0.60	4.0	1537.5	28.00	384	151
175.00	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	27.82	1143	1440
175.00	RFS	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.0	27.82	1158	460
150.00	Alcatel-Lucent	6	53	1.7	1.3	13.0	9.8	1.00	0.50	0.0	0.0	26.62	185	381
150.00	Alcatel-Lucent 1900	3	60	2.3	2.1	11.1	10.7	1.00	0.67	0.0	0.0	26.62	169	216
150.00	Site Pro 1 STK-U	3	64	2.5	12.5	2.4	2.4	0.75	0.75	0.0	0.0	26.62	151	230
150.00	Alcatel-Lucent TD-	3	70	4.1	2.2	18.6	6.7	1.00	0.61	0.0	0.0	26.62	268	252
150.00	RFS APXVTM14-ALU-	3	56	6.3	4.7	12.6	6.3	1.00	0.66	0.0	0.0	26.62	454	202
150.00	Commscope NNVV-	3	77	12.3	6.0	19.6	7.8	1.00	0.64	0.0	0.0	26.62	853	279
150.00	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	26.62	880	1080
75.00	Generic GPS	1	10	0.9	1.0	9.0	6.0	1.00	1.00	0.0	0.0	21.84	27	12
75.00	Stand-Off	1	100	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	21.84	89	120
	Totals	72	6434	434.7									9218	7720

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)
187.00	LGP Allgon	6	6	0.2	0.4	6.3	3.0	0.80	0.50	2.0	42.7	28.44	21	30
187.00	Powerwave Allgon	6	14	1.1	1.2	9.2	2.6	0.80	0.50	2.0	204.2	28.44	102	76
187.00	Raycap DC6-48-60-18-	1	20	1.3	2.0	9.7	9.7	0.80	1.00	2.0	78.0	28.44	39	18
187.00	Ericsson RRUS-11	3	54	2.5	1.4	17.8	9.2	0.80	0.67	2.0	313.4	28.44	157	146
187.00	Allgon 7770.00	6	35	5.5	4.6	11.0	5.0	0.80	0.65	2.0	1329.7	28.44	665	189
187.00	Andrew SBNH-	1	61	11.4	8.0	11.9	7.1	0.80	1.00	2.0	707.9	28.44	354	55
187.00	Powerwave Allgon	2	59	11.5	8.0	12.0	6.0	0.80	0.76	2.0	1077.9	28.44	539	106
187.00	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	28.35	1165	1080
175.00	Ericsson Radio 4449	3	74	1.6	1.2	13.2	9.3	0.80	0.50	0.0	0.0	27.82	74	200
175.00	Ericsson RRUS 11 B2	3	51	2.8	1.6	17.0	7.2	0.80	0.67	4.0	683.3	28.00	171	137
175.00	Ericsson RRUS 11 B4	3	51	2.8	1.6	17.0	7.2	0.80	0.67	4.0	683.3	28.00	171	137
175.00	RFS APX16DWV-	3	42	7.0	5.0	13.0	3.1	0.80	0.60	4.0	1537.5	28.00	384	113
175.00	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	27.82	1143	1080
175.00	RFS	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.0	27.82	1158	345
150.00	Alcatel-Lucent	6	53	1.7	1.3	13.0	9.8	1.00	0.50	0.0	0.0	26.62	185	286
150.00	Alcatel-Lucent 1900	3	60	2.3	2.1	11.1	10.7	1.00	0.67	0.0	0.0	26.62	169	162
150.00	Site Pro 1 STK-U	3	64	2.5	12.5	2.4	2.4	0.75	0.75	0.0	0.0	26.62	151	172
150.00	Alcatel-Lucent TD-	3	70	4.1	2.2	18.6	6.7	1.00	0.61	0.0	0.0	26.62	268	189
150.00	RFS APXVTM14-ALU-	3	56	6.3	4.7	12.6	6.3	1.00	0.66	0.0	0.0	26.62	454	152
150.00	Commscope NNVV-	3	77	12.3	6.0	19.6	7.8	1.00	0.64	0.0	0.0	26.62	853	209
150.00	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	26.62	880	810
75.00	Generic GPS	1	10	0.9	1.0	9.0	6.0	1.00	1.00	0.0	0.0	21.84	27	9
75.00	Stand-Off	1	100	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	21.84	89	90

Tower Loading

Totals	72	6434	434.7										9218	5790

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)
187.00	LGP Allgon	6	14	0.6	0.4	6.3	3.0	0.80	0.50	2.0	15.1	6.45	8	91
187.00	Powerwave Allgon	6	40	1.8	1.2	9.2	2.6	0.80	0.50	2.0	48.0	6.45	24	254
187.00	Raycap DC6-48-60-18-	1	74	1.9	2.0	9.7	9.7	0.80	1.00	2.0	16.9	6.45	8	78
187.00	Ericsson RRUS-11	3	131	3.6	1.4	17.8	9.2	0.80	0.67	2.0	63.1	6.45	32	425
187.00	Allgon 7770.00	6	173	6.6	4.6	11.0	5.0	0.80	0.65	2.0	225.3	6.45	113	1081
187.00	Andrew SBNH-	1	295	14.7	8.0	11.9	7.1	0.80	1.00	2.0	129.3	6.45	65	307
187.00	Powerwave Allgon	2	280	14.8	8.0	12.0	6.0	0.80	0.76	2.0	196.7	6.45	98	583
187.00	Flat Light Sector	3	707	33.3	0.0	0.0	0.0	0.75	0.75	0.0	0.0	6.43	307	2361
175.00	Ericsson Radio 4449	3	131	2.5	1.2	13.2	9.3	0.80	0.50	0.0	0.0	6.31	16	438
175.00	Ericsson RRUS 11 B2	3	125	3.9	1.6	17.0	7.2	0.80	0.67	4.0	135.7	6.35	34	404
175.00	Ericsson RRUS 11 B4	3	125	3.9	1.6	17.0	7.2	0.80	0.67	4.0	135.7	6.35	34	404
175.00	RFS APX16DWV-	3	167	9.4	5.0	13.0	3.1	0.80	0.60	4.0	291.3	6.35	73	527
175.00	Flat Light Sector	3	707	33.3	0.0	0.0	0.0	0.75	0.75	0.0	0.0	6.31	301	2361
175.00	RFS	3	529	24.0	8.0	24.0	8.7	0.80	0.63	0.0	0.0	6.31	195	1662
150.00	Alcatel-Lucent	6	112	2.6	1.3	13.0	9.8	1.00	0.50	0.0	0.0	6.04	39	736
150.00	Alcatel-Lucent 1900	3	140	3.4	2.1	11.1	10.7	1.00	0.67	0.0	0.0	6.04	35	457
150.00	Site Pro 1 STK-U	3	86	3.3	12.5	2.4	2.4	0.75	0.75	0.0	0.0	6.04	29	296
150.00	Alcatel-Lucent TD-	3	164	5.4	2.2	18.6	6.7	1.00	0.61	0.0	0.0	6.04	50	535
150.00	RFS APXVTM14-ALU-	3	194	8.5	4.7	12.6	6.3	1.00	0.66	0.0	0.0	6.04	86	615
150.00	Commscope NNVV-	3	328	15.1	6.0	19.6	7.8	1.00	0.64	0.0	0.0	6.04	148	1031
150.00	Round Sector Frame	3	667	30.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	6.04	268	2182
75.00	Generic GPS	1	37	1.5	1.0	9.0	6.0	1.00	1.00	0.0	0.0	4.95	6	39
75.00	Stand-Off	1	145	4.5	0.0	0.0	0.0	1.00	1.00	0.0	0.0	4.95	19	165
	Totals	72	15748	663.0									1989	17035

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)
187.00	LGP Allgon	6	6	0.2	0.4	6.3	3.0	0.80	0.50	2.0	8.7	9.29	4	33
187.00	Powerwave Allgon	6	14	1.1	1.2	9.2	2.6	0.80	0.50	2.0	41.7	9.29	21	85
187.00	Raycap DC6-48-60-18-	1	20	1.3	2.0	9.7	9.7	0.80	1.00	2.0	15.9	9.29	8	20
187.00	Ericsson RRUS-11	3	54	2.5	1.4	17.8	9.2	0.80	0.67	2.0	64.0	9.29	32	162
187.00	Allgon 7770.00	6	35	5.5	4.6	11.0	5.0	0.80	0.65	2.0	271.4	9.29	136	210
187.00	Andrew SBNH-	1	61	11.4	8.0	11.9	7.1	0.80	1.00	2.0	144.5	9.29	72	61
187.00	Powerwave Allgon	2	59	11.5	8.0	12.0	6.0	0.80	0.76	2.0	220.0	9.29	110	118
187.00	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	9.26	238	1200
175.00	Ericsson Radio 4449	3	74	1.6	1.2	13.2	9.3	0.80	0.50	0.0	0.0	9.08	15	222
175.00	Ericsson RRUS 11 B2	3	51	2.8	1.6	17.0	7.2	0.80	0.67	4.0	139.5	9.14	35	152
175.00	Ericsson RRUS 11 B4	3	51	2.8	1.6	17.0	7.2	0.80	0.67	4.0	139.5	9.14	35	152
175.00	RFS APX16DWV-	3	42	7.0	5.0	13.0	3.1	0.80	0.60	4.0	313.8	9.14	78	126
175.00	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	9.08	233	1200
175.00	RFS	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.0	9.08	236	384
150.00	Alcatel-Lucent	6	53	1.7	1.3	13.0	9.8	1.00	0.50	0.0	0.0	8.69	38	317
150.00	Alcatel-Lucent 1900	3	60	2.3	2.1	11.1	10.7	1.00	0.67	0.0	0.0	8.69	34	180
150.00	Site Pro 1 STK-U	3	64	2.5	12.5	2.4	2.4	0.75	0.75	0.0	0.0	8.69	31	191
150.00	Alcatel-Lucent TD-	3	70	4.1	2.2	18.6	6.7	1.00	0.61	0.0	0.0	8.69	55	210
150.00	RFS APXVTM14-ALU-	3	56	6.3	4.7	12.6	6.3	1.00	0.66	0.0	0.0	8.69	93	169
150.00	Commscope NNVV-	3	77	12.3	6.0	19.6	7.8	1.00	0.64	0.0	0.0	8.69	174	232
150.00	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	8.69	180	900

Tower Loading

75.00	Generic GPS	1	10	0.9	1.0	9.0	6.0	1.00	1.00	0.0	0.0	7.13	5	10
75.00	Stand-Off	1	100	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.13	18	100
	Totals	72	6434	434.7									1881	6434

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	189.00	0.39" (10mm) Fiber	1	0.39	0.06	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	189.00	0.78" (19.7mm) 8	2	0.78	0.59	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	187.00	0.33" (8.7mm) Fiber	1	0.33	0.05	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	187.00	0.65" (16.4mm) 8	2	0.65	0.31	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	187.00	1 5/8" Coax	12	1.98	0.82	50	Lin App	Block	0.00	N	1.00	1.00	0.00
0.00	187.00	Waveguide	1	2.00	6.00	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	175.00	1 1/4" Hybriflex	1	1.54	1.00	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	175.00	1 5/8" (1.63"-	1	1.63	1.61	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	175.00	1 5/8" (1.63"-	2	1.63	1.61	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	175.00	Waveguide	1	2.00	6.00	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	155.00	1 5/8" Coax	6	1.98	0.82	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	150.00	1 1/4" Hybriflex	4	1.54	1.00	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	150.00	Waveguide	1	2.00	6.00	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	75.00	1/2" Coax	1	0.63	0.15	100	Lin App	Individual	0.00	N	1.00	1.00	0.00

Site Number: 10027 Code: ANSI/TIA-222-G

Site Name: SALEM CT, CT Engineering Number: 12927188_C3_02 7/18/2019 11:32:36 AM

Customer: T-MOBILE

Section Forces

LoadCase 1.2D + 1.6W Normal

105 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	1.00	1.00	0.0	5.89	17.04	0.00	1338	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	1.00	1.00	0.0	8.26	23.02	0.00	2420	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	1.00	1.00	0.0	8.76	22.43	0.00	1616	0	804	1244	2048
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	1.00	1.00	0.0	20.64	53.92	0.00	3812	0	1874	2411	4285
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	1.00	1.00	0.0	21.77	59.50	0.00	3879	0	1972	2299	4270
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	1.00	1.00	0.0	23.61	65.89	0.00	4408	0	2061	2171	4232
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	1.00	1.00	0.0	25.97	72.94	0.00	5829	0	2124	2037	4161
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	1.00	1.00	0.0	27.76	79.32	0.00	5973	0	2098	1855	3953
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	1.00	1.00	0.0	33.40	95.00	0.00	7083	0	2171	1603	3775
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	1.00	1.00	0.0	35.38	101.73	0.00	7265	0	2323	1602	3925
														43624	0			35087

LoadCase 1.2D + 1.6W 60 deg

105 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	0.80	1.00	0.0	5.89	17.04	0.00	1338	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	0.80	1.00	0.0	8.26	23.02	0.00	2420	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	0.80	1.00	0.0	7.84	20.08	0.00	1616	0	720	1244	1964
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	0.80	1.00	0.0	18.29	47.76	0.00	3812	0	1660	2411	4071
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	0.80	1.00	0.0	19.16	52.38	0.00	3879	0	1736	2299	4034
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	0.80	1.00	0.0	20.73	57.86	0.00	4408	0	1810	2171	3981
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	0.80	1.00	0.0	22.79	64.03	0.00	5829	0	1865	2037	3901
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	0.80	1.00	0.0	24.26	69.34	0.00	5973	0	1834	1855	3689
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	0.80	1.00	0.0	28.94	82.30	0.00	7083	0	1881	1603	3484
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	0.80	1.00	0.0	30.51	87.72	0.00	7265	0	2003	1602	3605
														43624	0			33168

LoadCase 1.2D + 1.6W 90 deg

105 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	0.85	1.00	0.0	5.89	17.04	0.00	1338	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	0.85	1.00	0.0	8.26	23.02	0.00	2420	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	0.85	1.00	0.0	8.07	20.67	0.00	1616	0	741	1244	1985
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	0.85	1.00	0.0	18.87	49.30	0.00	3812	0	1713	2411	4124
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	0.85	1.00	0.0	19.81	54.16	0.00	3879	0	1795	2299	4093
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	0.85	1.00	0.0	21.45	59.87	0.00	4408	0	1873	2171	4044
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	0.85	1.00	0.0	23.59	66.26	0.00	5829	0	1929	2037	3966
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	0.85	1.00	0.0	25.14	71.83	0.00	5973	0	1900	1855	3755
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	0.85	1.00	0.0	30.05	85.47	0.00	7083	0	1954	1603	3557
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	0.85	1.00	0.0	31.73	91.22	0.00	7265	0	2083	1602	3685

Section Forces

														43624	0			33648

LoadCase 1.2D + 1.6W 120 deg

105 mph 120 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	1.00	1.00	0.0	5.89	17.04	0.00	1338	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	1.00	1.00	0.0	8.26	23.02	0.00	2420	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	1.00	1.00	0.0	8.76	22.43	0.00	1616	0	804	1244	2048
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	1.00	1.00	0.0	20.64	53.92	0.00	3812	0	1874	2411	4285
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	1.00	1.00	0.0	21.77	59.50	0.00	3879	0	1972	2299	4270
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	1.00	1.00	0.0	23.61	65.89	0.00	4408	0	2061	2171	4232
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	1.00	1.00	0.0	25.97	72.94	0.00	5829	0	2124	2037	4161
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	1.00	1.00	0.0	27.76	79.32	0.00	5973	0	2098	1855	3953
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	1.00	1.00	0.0	33.40	95.00	0.00	7083	0	2171	1603	3775
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	1.00	1.00	0.0	35.38	101.73	0.00	7265	0	2323	1602	3925
														43624	0			35087

LoadCase 1.2D + 1.6W 180 deg

105 mph 180 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	0.80	1.00	0.0	5.89	17.04	0.00	1338	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	0.80	1.00	0.0	8.26	23.02	0.00	2420	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	0.80	1.00	0.0	7.84	20.08	0.00	1616	0	720	1244	1964
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	0.80	1.00	0.0	18.29	47.76	0.00	3812	0	1660	2411	4071
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	0.80	1.00	0.0	19.16	52.38	0.00	3879	0	1736	2299	4034
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	0.80	1.00	0.0	20.73	57.86	0.00	4408	0	1810	2171	3981
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	0.80	1.00	0.0	22.79	64.03	0.00	5829	0	1865	2037	3901
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	0.80	1.00	0.0	24.26	69.34	0.00	5973	0	1834	1855	3689
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	0.80	1.00	0.0	28.94	82.30	0.00	7083	0	1881	1603	3484
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	0.80	1.00	0.0	30.51	87.72	0.00	7265	0	2003	1602	3605
														43624	0			33168

LoadCase 1.2D + 1.6W 210 deg

105 mph 210 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	0.85	1.00	0.0	5.89	17.04	0.00	1338	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	0.85	1.00	0.0	8.26	23.02	0.00	2420	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	0.85	1.00	0.0	8.07	20.67	0.00	1616	0	741	1244	1985
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	0.85	1.00	0.0	18.87	49.30	0.00	3812	0	1713	2411	4124
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	0.85	1.00	0.0	19.81	54.16	0.00	3879	0	1795	2299	4093
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	0.85	1.00	0.0	21.45	59.87	0.00	4408	0	1873	2171	4044
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	0.85	1.00	0.0	23.59	66.26	0.00	5829	0	1929	2037	3966
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	0.85	1.00	0.0	25.14	71.83	0.00	5973	0	1900	1855	3755

Section Forces

2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	0.85	1.00	0.0	30.05	85.47	0.00	7083	0	1954	1603	3557
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	0.85	1.00	0.0	31.73	91.22	0.00	7265	0	2083	1602	3685
														43624	0			33648

LoadCase 1.2D + 1.6W 240 deg

105 mph 240 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	1.00	1.00	0.0	5.89	17.04	0.00	1338	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	1.00	1.00	0.0	8.26	23.02	0.00	2420	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	1.00	1.00	0.0	8.76	22.43	0.00	1616	0	804	1244	2048
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	1.00	1.00	0.0	20.64	53.92	0.00	3812	0	1874	2411	4285
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	1.00	1.00	0.0	21.77	59.50	0.00	3879	0	1972	2299	4270
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	1.00	1.00	0.0	23.61	65.89	0.00	4408	0	2061	2171	4232
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	1.00	1.00	0.0	25.97	72.94	0.00	5829	0	2124	2037	4161
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	1.00	1.00	0.0	27.76	79.32	0.00	5973	0	2098	1855	3953
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	1.00	1.00	0.0	33.40	95.00	0.00	7083	0	2171	1603	3775
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	1.00	1.00	0.0	35.38	101.73	0.00	7265	0	2323	1602	3925
														43624	0			35087

LoadCase 1.2D + 1.6W 300 deg

105 mph 300 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	0.80	1.00	0.0	5.89	17.04	0.00	1338	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	0.80	1.00	0.0	8.26	23.02	0.00	2420	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	0.80	1.00	0.0	7.84	20.08	0.00	1616	0	720	1244	1964
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	0.80	1.00	0.0	18.29	47.76	0.00	3812	0	1660	2411	4071
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	0.80	1.00	0.0	19.16	52.38	0.00	3879	0	1736	2299	4034
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	0.80	1.00	0.0	20.73	57.86	0.00	4408	0	1810	2171	3981
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	0.80	1.00	0.0	22.79	64.03	0.00	5829	0	1865	2037	3901
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	0.80	1.00	0.0	24.26	69.34	0.00	5973	0	1834	1855	3689
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	0.80	1.00	0.0	28.94	82.30	0.00	7083	0	1881	1603	3484
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	0.80	1.00	0.0	30.51	87.72	0.00	7265	0	2003	1602	3605
														43624	0			33168

LoadCase 1.2D + 1.6W 330 deg

105 mph 330 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	0.85	1.00	0.0	5.89	17.04	0.00	1338	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	0.85	1.00	0.0	8.26	23.02	0.00	2420	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	0.85	1.00	0.0	8.07	20.67	0.00	1616	0	741	1244	1985
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	0.85	1.00	0.0	18.87	49.30	0.00	3812	0	1713	2411	4124
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	0.85	1.00	0.0	19.81	54.16	0.00	3879	0	1795	2299	4093
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	0.85	1.00	0.0	21.45	59.87	0.00	4408	0	1873	2171	4044

Section Forces

4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	0.85	1.00	0.0	23.59	66.26	0.00	5829	0	1929	2037	3966
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	0.85	1.00	0.0	25.14	71.83	0.00	5973	0	1900	1855	3755
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	0.85	1.00	0.0	30.05	85.47	0.00	7083	0	1954	1603	3557
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	0.85	1.00	0.0	31.73	91.22	0.00	7265	0	2083	1602	3685
														43624	0			33648

LoadCase 0.9D + 1.6W Normal

105 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	1.00	1.00	0.0	5.89	17.04	0.00	1003	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	1.00	1.00	0.0	8.26	23.02	0.00	1815	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	1.00	1.00	0.0	8.76	22.43	0.00	1212	0	804	1244	2048
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	1.00	1.00	0.0	20.64	53.92	0.00	2859	0	1874	2411	4285
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	1.00	1.00	0.0	21.77	59.50	0.00	2909	0	1972	2299	4270
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	1.00	1.00	0.0	23.61	65.89	0.00	3306	0	2061	2171	4232
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	1.00	1.00	0.0	25.97	72.94	0.00	4372	0	2124	2037	4161
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	1.00	1.00	0.0	27.76	79.32	0.00	4480	0	2098	1855	3953
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	1.00	1.00	0.0	33.40	95.00	0.00	5313	0	2171	1603	3775
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	1.00	1.00	0.0	35.38	101.73	0.00	5448	0	2323	1602	3925
														32718	0			35087

LoadCase 0.9D + 1.6W 60 deg

105 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	0.80	1.00	0.0	5.89	17.04	0.00	1003	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	0.80	1.00	0.0	8.26	23.02	0.00	1815	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	0.80	1.00	0.0	7.84	20.08	0.00	1212	0	720	1244	1964
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	0.80	1.00	0.0	18.29	47.76	0.00	2859	0	1660	2411	4071
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	0.80	1.00	0.0	19.16	52.38	0.00	2909	0	1736	2299	4034
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	0.80	1.00	0.0	20.73	57.86	0.00	3306	0	1810	2171	3981
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	0.80	1.00	0.0	22.79	64.03	0.00	4372	0	1865	2037	3901
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	0.80	1.00	0.0	24.26	69.34	0.00	4480	0	1834	1855	3689
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	0.80	1.00	0.0	28.94	82.30	0.00	5313	0	1881	1603	3484
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	0.80	1.00	0.0	30.51	87.72	0.00	5448	0	2003	1602	3605
														32718	0			33168

LoadCase 0.9D + 1.6W 90 deg

105 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	0.85	1.00	0.0	5.89	17.04	0.00	1003	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	0.85	1.00	0.0	8.26	23.02	0.00	1815	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	0.85	1.00	0.0	8.07	20.67	0.00	1212	0	741	1244	1985
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	0.85	1.00	0.0	18.87	49.30	0.00	2859	0	1713	2411	4124

Section Forces

6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	0.85	1.00	0.0	19.81	54.16	0.00	2909	0	1795	2299	4093
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	0.85	1.00	0.0	21.45	59.87	0.00	3306	0	1873	2171	4044
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	0.85	1.00	0.0	23.59	66.26	0.00	4372	0	1929	2037	3966
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	0.85	1.00	0.0	25.14	71.83	0.00	4480	0	1900	1855	3755
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	0.85	1.00	0.0	30.05	85.47	0.00	5313	0	1954	1603	3557
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	0.85	1.00	0.0	31.73	91.22	0.00	5448	0	2083	1602	3685
														32718	0			33648

LoadCase 0.9D + 1.6W 120 deg

105 mph 120 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	1.00	1.00	0.0	5.89	17.04	0.00	1003	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	1.00	1.00	0.0	8.26	23.02	0.00	1815	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	1.00	1.00	0.0	8.76	22.43	0.00	1212	0	804	1244	2048
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	1.00	1.00	0.0	20.64	53.92	0.00	2859	0	1874	2411	4285
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	1.00	1.00	0.0	21.77	59.50	0.00	2909	0	1972	2299	4270
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	1.00	1.00	0.0	23.61	65.89	0.00	3306	0	2061	2171	4232
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	1.00	1.00	0.0	25.97	72.94	0.00	4372	0	2124	2037	4161
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	1.00	1.00	0.0	27.76	79.32	0.00	4480	0	2098	1855	3953
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	1.00	1.00	0.0	33.40	95.00	0.00	5313	0	2171	1603	3775
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	1.00	1.00	0.0	35.38	101.73	0.00	5448	0	2323	1602	3925
														32718	0			35087

LoadCase 0.9D + 1.6W 180 deg

105 mph 180 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	0.80	1.00	0.0	5.89	17.04	0.00	1003	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	0.80	1.00	0.0	8.26	23.02	0.00	1815	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	0.80	1.00	0.0	7.84	20.08	0.00	1212	0	720	1244	1964
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	0.80	1.00	0.0	18.29	47.76	0.00	2859	0	1660	2411	4071
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	0.80	1.00	0.0	19.16	52.38	0.00	2909	0	1736	2299	4034
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	0.80	1.00	0.0	20.73	57.86	0.00	3306	0	1810	2171	3981
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	0.80	1.00	0.0	22.79	64.03	0.00	4372	0	1865	2037	3901
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	0.80	1.00	0.0	24.26	69.34	0.00	4480	0	1834	1855	3689
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	0.80	1.00	0.0	28.94	82.30	0.00	5313	0	1881	1603	3484
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	0.80	1.00	0.0	30.51	87.72	0.00	5448	0	2003	1602	3605
														32718	0			33168

LoadCase 0.9D + 1.6W 210 deg

105 mph 210 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	0.85	1.00	0.0	5.89	17.04	0.00	1003	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	0.85	1.00	0.0	8.26	23.02	0.00	1815	0	849	1744	2593

Section Forces

8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	0.85	1.00	0.0	8.07	20.67	0.00	1212	0	741	1244	1985
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	0.85	1.00	0.0	18.87	49.30	0.00	2859	0	1713	2411	4124
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	0.85	1.00	0.0	19.81	54.16	0.00	2909	0	1795	2299	4093
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	0.85	1.00	0.0	21.45	59.87	0.00	3306	0	1873	2171	4044
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	0.85	1.00	0.0	23.59	66.26	0.00	4372	0	1929	2037	3966
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	0.85	1.00	0.0	25.14	71.83	0.00	4480	0	1900	1855	3755
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	0.85	1.00	0.0	30.05	85.47	0.00	5313	0	1954	1603	3557
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	0.85	1.00	0.0	31.73	91.22	0.00	5448	0	2083	1602	3685
														32718	0			33648

LoadCase 0.9D + 1.6W 240 deg

105 mph 240 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	1.00	1.00	0.0	5.89	17.04	0.00	1003	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	1.00	1.00	0.0	8.26	23.02	0.00	1815	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	1.00	1.00	0.0	8.76	22.43	0.00	1212	0	804	1244	2048
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	1.00	1.00	0.0	20.64	53.92	0.00	2859	0	1874	2411	4285
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	1.00	1.00	0.0	21.77	59.50	0.00	2909	0	1972	2299	4270
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	1.00	1.00	0.0	23.61	65.89	0.00	3306	0	2061	2171	4232
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	1.00	1.00	0.0	25.97	72.94	0.00	4372	0	2124	2037	4161
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	1.00	1.00	0.0	27.76	79.32	0.00	4480	0	2098	1855	3953
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	1.00	1.00	0.0	33.40	95.00	0.00	5313	0	2171	1603	3775
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	1.00	1.00	0.0	35.38	101.73	0.00	5448	0	2323	1602	3925
														32718	0			35087

LoadCase 0.9D + 1.6W 300 deg

105 mph 300 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)
10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	0.80	1.00	0.0	5.89	17.04	0.00	1003	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	0.80	1.00	0.0	8.26	23.02	0.00	1815	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	0.80	1.00	0.0	7.84	20.08	0.00	1212	0	720	1244	1964
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	0.80	1.00	0.0	18.29	47.76	0.00	2859	0	1660	2411	4071
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	0.80	1.00	0.0	19.16	52.38	0.00	2909	0	1736	2299	4034
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	0.80	1.00	0.0	20.73	57.86	0.00	3306	0	1810	2171	3981
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	0.80	1.00	0.0	22.79	64.03	0.00	4372	0	1865	2037	3901
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	0.80	1.00	0.0	24.26	69.34	0.00	4480	0	1834	1855	3689
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	0.80	1.00	0.0	28.94	82.30	0.00	5313	0	1881	1603	3484
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	0.80	1.00	0.0	30.51	87.72	0.00	5448	0	2003	1602	3605
														32718	0			33168

LoadCase 0.9D + 1.6W 330 deg

105 mph 330 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)

Section Forces

10	180.00	28.04	0.000	10.276	0.000	0.117	2.89	0.85	1.00	0.0	5.89	17.04	0.00	1003	0	650	1195	1845
9	160.00	27.12	0.000	14.309	0.000	0.146	2.79	0.85	1.00	0.0	8.26	23.02	0.00	1815	0	849	1744	2593
8	145.00	26.36	4.586	7.813	0.000	0.211	2.56	0.85	1.00	0.0	8.07	20.67	0.00	1212	0	741	1244	1985
7	130.00	25.55	11.787	17.229	0.000	0.195	2.61	0.85	1.00	0.0	18.87	49.30	0.00	2859	0	1713	2411	4124
6	110.00	24.36	13.022	17.229	0.000	0.160	2.73	0.85	1.00	0.0	19.81	54.16	0.00	2909	0	1795	2299	4093
5	90.00	23.01	14.383	18.831	0.000	0.145	2.79	0.85	1.00	0.0	21.45	59.87	0.00	3306	0	1873	2171	4044
4	70.00	21.41	15.857	22.037	0.000	0.140	2.81	0.85	1.00	0.0	23.59	66.26	0.00	4372	0	1929	2037	3966
3	50.00	19.45	17.472	22.037	0.000	0.127	2.86	0.85	1.00	0.0	25.14	71.83	0.00	4480	0	1900	1855	3755
2	30.00	16.81	22.326	23.639	0.000	0.131	2.84	0.85	1.00	0.0	30.05	85.47	0.00	5313	0	1954	1603	3557
1	10.00	16.79	24.365	23.639	0.000	0.123	2.88	0.85	1.00	0.0	31.73	91.22	0.00	5448	0	2083	1602	3685
														32718	0			33648

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)
10	180.00	6.36	0.000	47.793	37.51	0.512	1.89	1.00	1.00	1.8	33.14	62.48	37.52	4847	3509	338	309	647
9	160.00	6.15	0.000	53.745	39.43	0.516	1.88	1.00	1.00	1.8	37.45	70.42	39.44	7229	4809	368	474	842
8	145.00	5.98	4.586	20.239	12.42	0.402	2.06	1.00	1.00	1.7	17.48	36.01	12.43	4669	3053	183	446	629
7	130.00	5.79	11.787	42.729	25.50	0.353	2.16	1.00	1.00	1.7	38.16	82.58	25.50	10173	6361	407	909	1316
6	110.00	5.52	13.022	43.711	26.48	0.292	2.32	1.00	1.00	1.7	39.09	90.59	26.48	10252	6373	425	916	1341
5	90.00	5.22	14.383	46.347	27.51	0.259	2.41	1.00	1.00	1.7	41.59	100.33	27.52	10841	6432	445	884	1329
4	70.00	4.86	15.857	50.523	28.48	0.240	2.47	1.00	1.00	1.6	45.29	111.75	28.49	12411	6582	461	844	1305
3	50.00	4.41	17.472	51.276	29.23	0.217	2.54	1.00	1.00	1.6	47.09	119.57	29.24	12475	6502	448	773	1221
2	30.00	3.81	22.326	53.101	29.46	0.211	2.56	1.00	1.00	1.5	52.94	135.44	29.46	13676	6592	439	652	1090
1	10.00	3.81	24.365	51.586	27.94	0.192	2.62	1.00	1.00	1.3	53.93	141.50	27.95	13196	5931	458	622	1080
														99769	56145			10801

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)
10	180.00	6.36	0.000	47.793	37.51	0.512	1.89	0.80	1.00	1.8	33.14	62.48	37.52	4847	3509	338	309	647
9	160.00	6.15	0.000	53.745	39.43	0.516	1.88	0.80	1.00	1.8	37.45	70.42	39.44	7229	4809	368	474	842
8	145.00	5.98	4.586	20.239	12.42	0.402	2.06	0.80	1.00	1.7	16.56	34.12	12.43	4669	3053	173	446	620
7	130.00	5.79	11.787	42.729	25.50	0.353	2.16	0.80	1.00	1.7	35.80	77.48	25.50	10173	6361	382	909	1291
6	110.00	5.52	13.022	43.711	26.48	0.292	2.32	0.80	1.00	1.7	36.49	84.56	26.48	10252	6373	397	916	1313
5	90.00	5.22	14.383	46.347	27.51	0.259	2.41	0.80	1.00	1.7	38.72	93.39	27.52	10841	6432	414	884	1298
4	70.00	4.86	15.857	50.523	28.48	0.240	2.47	0.80	1.00	1.6	42.12	103.93	28.49	12411	6582	429	844	1272
3	50.00	4.41	17.472	51.276	29.23	0.217	2.54	0.80	1.00	1.6	43.60	110.70	29.24	12475	6502	415	773	1188
2	30.00	3.81	22.326	53.101	29.46	0.211	2.56	0.80	1.00	1.5	48.48	124.01	29.46	13676	6592	402	652	1053
1	10.00	3.81	24.365	51.586	27.94	0.192	2.62	0.80	1.00	1.3	49.05	128.71	27.95	13196	5931	417	622	1039
														99769	56145			10563

Section Forces

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)
10	180.00	6.36	0.000	47.793	37.51	0.512	1.89	0.85	1.00	1.8	33.14	62.48	37.52	4847	3509	338	309	647
9	160.00	6.15	0.000	53.745	39.43	0.516	1.88	0.85	1.00	1.8	37.45	70.42	39.44	7229	4809	368	474	842
8	145.00	5.98	4.586	20.239	12.42	0.402	2.06	0.85	1.00	1.7	16.79	34.60	12.43	4669	3053	176	446	622
7	130.00	5.79	11.787	42.729	25.50	0.353	2.16	0.85	1.00	1.7	36.39	78.75	25.50	10173	6361	388	909	1297
6	110.00	5.52	13.022	43.711	26.48	0.292	2.32	0.85	1.00	1.7	37.14	86.06	26.48	10252	6373	404	916	1320
5	90.00	5.22	14.383	46.347	27.51	0.259	2.41	0.85	1.00	1.7	39.44	95.13	27.52	10841	6432	422	884	1306
4	70.00	4.86	15.857	50.523	28.48	0.240	2.47	0.85	1.00	1.6	42.91	105.88	28.49	12411	6582	437	844	1280
3	50.00	4.41	17.472	51.276	29.23	0.217	2.54	0.85	1.00	1.6	44.47	112.91	29.24	12475	6502	423	773	1196
2	30.00	3.81	22.326	53.101	29.46	0.211	2.56	0.85	1.00	1.5	49.59	126.87	29.46	13676	6592	411	652	1063
1	10.00	3.81	24.365	51.586	27.94	0.192	2.62	0.85	1.00	1.3	50.27	131.91	27.95	13196	5931	427	622	1049
														99769	56145			10623

LoadCase 1.2D + 1.0Di + 1.0Wi 120 deg — 50 mph 120 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)
10	180.00	6.36	0.000	47.793	37.51	0.512	1.89	1.00	1.00	1.8	33.14	62.48	37.52	4847	3509	338	309	647
9	160.00	6.15	0.000	53.745	39.43	0.516	1.88	1.00	1.00	1.8	37.45	70.42	39.44	7229	4809	368	474	842
8	145.00	5.98	4.586	20.239	12.42	0.402	2.06	1.00	1.00	1.7	17.48	36.01	12.43	4669	3053	183	446	629
7	130.00	5.79	11.787	42.729	25.50	0.353	2.16	1.00	1.00	1.7	38.16	82.58	25.50	10173	6361	407	909	1316
6	110.00	5.52	13.022	43.711	26.48	0.292	2.32	1.00	1.00	1.7	39.09	90.59	26.48	10252	6373	425	916	1341
5	90.00	5.22	14.383	46.347	27.51	0.259	2.41	1.00	1.00	1.7	41.59	100.33	27.52	10841	6432	445	884	1329
4	70.00	4.86	15.857	50.523	28.48	0.240	2.47	1.00	1.00	1.6	45.29	111.75	28.49	12411	6582	461	844	1305
3	50.00	4.41	17.472	51.276	29.23	0.217	2.54	1.00	1.00	1.6	47.09	119.57	29.24	12475	6502	448	773	1221
2	30.00	3.81	22.326	53.101	29.46	0.211	2.56	1.00	1.00	1.5	52.94	135.44	29.46	13676	6592	439	652	1090
1	10.00	3.81	24.365	51.586	27.94	0.192	2.62	1.00	1.00	1.3	53.93	141.50	27.95	13196	5931	458	622	1080
														99769	56145			10801

LoadCase 1.2D + 1.0Di + 1.0Wi 180 deg — 50 mph 180 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)
10	180.00	6.36	0.000	47.793	37.51	0.512	1.89	0.80	1.00	1.8	33.14	62.48	37.52	4847	3509	338	309	647
9	160.00	6.15	0.000	53.745	39.43	0.516	1.88	0.80	1.00	1.8	37.45	70.42	39.44	7229	4809	368	474	842
8	145.00	5.98	4.586	20.239	12.42	0.402	2.06	0.80	1.00	1.7	16.56	34.12	12.43	4669	3053	173	446	620
7	130.00	5.79	11.787	42.729	25.50	0.353	2.16	0.80	1.00	1.7	35.80	77.48	25.50	10173	6361	382	909	1291
6	110.00	5.52	13.022	43.711	26.48	0.292	2.32	0.80	1.00	1.7	36.49	84.56	26.48	10252	6373	397	916	1313
5	90.00	5.22	14.383	46.347	27.51	0.259	2.41	0.80	1.00	1.7	38.72	93.39	27.52	10841	6432	414	884	1298
4	70.00	4.86	15.857	50.523	28.48	0.240	2.47	0.80	1.00	1.6	42.12	103.93	28.49	12411	6582	429	844	1272
3	50.00	4.41	17.472	51.276	29.23	0.217	2.54	0.80	1.00	1.6	43.60	110.70	29.24	12475	6502	415	773	1188
2	30.00	3.81	22.326	53.101	29.46	0.211	2.56	0.80	1.00	1.5	48.48	124.01	29.46	13676	6592	402	652	1053
1	10.00	3.81	24.365	51.586	27.94	0.192	2.62	0.80	1.00	1.3	49.05	128.71	27.95	13196	5931	417	622	1039

Section Forces

														99769	56145			10563

LoadCase 1.2D + 1.0Di + 1.0Wi 210 deg — 50 mph 210 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)
10	180.00	6.36	0.000	47.793	37.51	0.512	1.89	0.85	1.00	1.8	33.14	62.48	37.52	4847	3509	338	309	647
9	160.00	6.15	0.000	53.745	39.43	0.516	1.88	0.85	1.00	1.8	37.45	70.42	39.44	7229	4809	368	474	842
8	145.00	5.98	4.586	20.239	12.42	0.402	2.06	0.85	1.00	1.7	16.79	34.60	12.43	4669	3053	176	446	622
7	130.00	5.79	11.787	42.729	25.50	0.353	2.16	0.85	1.00	1.7	36.39	78.75	25.50	10173	6361	388	909	1297
6	110.00	5.52	13.022	43.711	26.48	0.292	2.32	0.85	1.00	1.7	37.14	86.06	26.48	10252	6373	404	916	1320
5	90.00	5.22	14.383	46.347	27.51	0.259	2.41	0.85	1.00	1.7	39.44	95.13	27.52	10841	6432	422	884	1306
4	70.00	4.86	15.857	50.523	28.48	0.240	2.47	0.85	1.00	1.6	42.91	105.88	28.49	12411	6582	437	844	1280
3	50.00	4.41	17.472	51.276	29.23	0.217	2.54	0.85	1.00	1.6	44.47	112.91	29.24	12475	6502	423	773	1196
2	30.00	3.81	22.326	53.101	29.46	0.211	2.56	0.85	1.00	1.5	49.59	126.87	29.46	13676	6592	411	652	1063
1	10.00	3.81	24.365	51.586	27.94	0.192	2.62	0.85	1.00	1.3	50.27	131.91	27.95	13196	5931	427	622	1049
														99769	56145			10623

LoadCase 1.2D + 1.0Di + 1.0Wi 240 deg — 50 mph 240 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)
10	180.00	6.36	0.000	47.793	37.51	0.512	1.89	1.00	1.00	1.8	33.14	62.48	37.52	4847	3509	338	309	647
9	160.00	6.15	0.000	53.745	39.43	0.516	1.88	1.00	1.00	1.8	37.45	70.42	39.44	7229	4809	368	474	842
8	145.00	5.98	4.586	20.239	12.42	0.402	2.06	1.00	1.00	1.7	17.48	36.01	12.43	4669	3053	183	446	629
7	130.00	5.79	11.787	42.729	25.50	0.353	2.16	1.00	1.00	1.7	38.16	82.58	25.50	10173	6361	407	909	1316
6	110.00	5.52	13.022	43.711	26.48	0.292	2.32	1.00	1.00	1.7	39.09	90.59	26.48	10252	6373	425	916	1341
5	90.00	5.22	14.383	46.347	27.51	0.259	2.41	1.00	1.00	1.7	41.59	100.33	27.52	10841	6432	445	884	1329
4	70.00	4.86	15.857	50.523	28.48	0.240	2.47	1.00	1.00	1.6	45.29	111.75	28.49	12411	6582	461	844	1305
3	50.00	4.41	17.472	51.276	29.23	0.217	2.54	1.00	1.00	1.6	47.09	119.57	29.24	12475	6502	448	773	1221
2	30.00	3.81	22.326	53.101	29.46	0.211	2.56	1.00	1.00	1.5	52.94	135.44	29.46	13676	6592	439	652	1090
1	10.00	3.81	24.365	51.586	27.94	0.192	2.62	1.00	1.00	1.3	53.93	141.50	27.95	13196	5931	458	622	1080
														99769	56145			10801

LoadCase 1.2D + 1.0Di + 1.0Wi 300 deg — 50 mph 300 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)
10	180.00	6.36	0.000	47.793	37.51	0.512	1.89	0.80	1.00	1.8	33.14	62.48	37.52	4847	3509	338	309	647
9	160.00	6.15	0.000	53.745	39.43	0.516	1.88	0.80	1.00	1.8	37.45	70.42	39.44	7229	4809	368	474	842
8	145.00	5.98	4.586	20.239	12.42	0.402	2.06	0.80	1.00	1.7	16.56	34.12	12.43	4669	3053	173	446	620
7	130.00	5.79	11.787	42.729	25.50	0.353	2.16	0.80	1.00	1.7	35.80	77.48	25.50	10173	6361	382	909	1291
6	110.00	5.52	13.022	43.711	26.48	0.292	2.32	0.80	1.00	1.7	36.49	84.56	26.48	10252	6373	397	916	1313
5	90.00	5.22	14.383	46.347	27.51	0.259	2.41	0.80	1.00	1.7	38.72	93.39	27.52	10841	6432	414	884	1298
4	70.00	4.86	15.857	50.523	28.48	0.240	2.47	0.80	1.00	1.6	42.12	103.93	28.49	12411	6582	429	844	1272
3	50.00	4.41	17.472	51.276	29.23	0.217	2.54	0.80	1.00	1.6	43.60	110.70	29.24	12475	6502	415	773	1188

Section Forces

2	30.00	3.81	22.326	53.101	29.46	0.211	2.56	0.80	1.00	1.5	48.48	124.01	29.46	13676	6592	402	652	1053
1	10.00	3.81	24.365	51.586	27.94	0.192	2.62	0.80	1.00	1.3	49.05	128.71	27.95	13196	5931	417	622	1039
														99769	56145			10563

LoadCase 1.2D + 1.0Di + 1.0Wi 330 deg

50 mph 330 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)
10	180.00	6.36	0.000	47.793	37.51	0.512	1.89	0.85	1.00	1.8	33.14	62.48	37.52	4847	3509	338	309	647
9	160.00	6.15	0.000	53.745	39.43	0.516	1.88	0.85	1.00	1.8	37.45	70.42	39.44	7229	4809	368	474	842
8	145.00	5.98	4.586	20.239	12.42	0.402	2.06	0.85	1.00	1.7	16.79	34.60	12.43	4669	3053	176	446	622
7	130.00	5.79	11.787	42.729	25.50	0.353	2.16	0.85	1.00	1.7	36.39	78.75	25.50	10173	6361	388	909	1297
6	110.00	5.52	13.022	43.711	26.48	0.292	2.32	0.85	1.00	1.7	37.14	86.06	26.48	10252	6373	404	916	1320
5	90.00	5.22	14.383	46.347	27.51	0.259	2.41	0.85	1.00	1.7	39.44	95.13	27.52	10841	6432	422	884	1306
4	70.00	4.86	15.857	50.523	28.48	0.240	2.47	0.85	1.00	1.6	42.91	105.88	28.49	12411	6582	437	844	1280
3	50.00	4.41	17.472	51.276	29.23	0.217	2.54	0.85	1.00	1.6	44.47	112.91	29.24	12475	6502	423	773	1196
2	30.00	3.81	22.326	53.101	29.46	0.211	2.56	0.85	1.00	1.5	49.59	126.87	29.46	13676	6592	411	652	1063
1	10.00	3.81	24.365	51.586	27.94	0.192	2.62	0.85	1.00	1.3	50.27	131.91	27.95	13196	5931	427	622	1049
														99769	56145			10623

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)
10	180.00	9.16	0.000	10.276	0.000	0.117	2.89	1.00	1.00	0.0	5.89	17.04	0.00	1115	0	133	244	377
9	160.00	8.85	0.000	14.309	0.000	0.146	2.79	1.00	1.00	0.0	8.26	23.02	0.00	2017	0	173	356	529
8	145.00	8.61	4.586	7.813	0.000	0.211	2.56	1.00	1.00	0.0	9.09	23.28	0.00	1346	0	170	254	424
7	130.00	8.34	11.787	17.229	0.000	0.195	2.61	1.00	1.00	0.0	21.67	56.60	0.00	3177	0	401	492	893
6	110.00	7.96	13.022	17.229	0.000	0.160	2.73	1.00	1.00	0.0	22.82	62.37	0.00	3232	0	422	469	891
5	90.00	7.51	14.383	18.831	0.000	0.145	2.79	1.00	1.00	0.0	25.06	69.93	0.00	3674	0	447	443	890
4	70.00	6.99	15.857	22.037	0.000	0.140	2.81	1.00	1.00	0.0	28.34	79.62	0.00	4858	0	473	416	889
3	50.00	6.35	17.472	22.037	0.000	0.127	2.86	1.00	1.00	0.0	29.93	85.55	0.00	4978	0	462	379	840
2	30.00	5.49	22.326	23.639	0.000	0.131	2.84	1.00	1.00	0.0	35.70	101.53	0.00	5903	0	474	327	801
1	10.00	5.48	24.365	23.639	0.000	0.123	2.88	1.00	1.00	0.0	37.73	108.47	0.00	6054	0	506	327	832
														36353	0			7366

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)
10	180.00	9.16	0.000	10.276	0.000	0.117	2.89	0.80	1.00	0.0	5.89	17.04	0.00	1115	0	133	244	377
9	160.00	8.85	0.000	14.309	0.000	0.146	2.79	0.80	1.00	0.0	8.26	23.02	0.00	2017	0	173	356	529
8	145.00	8.61	4.586	7.813	0.000	0.211	2.56	0.80	1.00	0.0	8.17	20.93	0.00	1346	0	153	254	407
7	130.00	8.34	11.787	17.229	0.000	0.195	2.61	0.80	1.00	0.0	19.31	50.44	0.00	3177	0	358	492	850
6	110.00	7.96	13.022	17.229	0.000	0.160	2.73	0.80	1.00	0.0	20.21	55.25	0.00	3232	0	374	469	843

Section Forces

5	90.00	7.51	14.383	18.831	0.000	0.145	2.79	0.80	1.00	0.0	22.18	61.91	0.00	3674	0	395	443	838
4	70.00	6.99	15.857	22.037	0.000	0.140	2.81	0.80	1.00	0.0	25.17	70.71	0.00	4858	0	420	416	836
3	50.00	6.35	17.472	22.037	0.000	0.127	2.86	0.80	1.00	0.0	26.44	75.56	0.00	4978	0	408	379	786
2	30.00	5.49	22.326	23.639	0.000	0.131	2.84	0.80	1.00	0.0	31.24	88.83	0.00	5903	0	414	327	742
1	10.00	5.48	24.365	23.639	0.000	0.123	2.88	0.80	1.00	0.0	32.85	94.46	0.00	6054	0	440	327	767
														36353	0			6975

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)
10	180.00	9.16	0.000	10.276	0.000	0.117	2.89	0.85	1.00	0.0	5.89	17.04	0.00	1115	0	133	244	377
9	160.00	8.85	0.000	14.309	0.000	0.146	2.79	0.85	1.00	0.0	8.26	23.02	0.00	2017	0	173	356	529
8	145.00	8.61	4.586	7.813	0.000	0.211	2.56	0.85	1.00	0.0	8.40	21.52	0.00	1346	0	157	254	411
7	130.00	8.34	11.787	17.229	0.000	0.195	2.61	0.85	1.00	0.0	19.90	51.98	0.00	3177	0	369	492	861
6	110.00	7.96	13.022	17.229	0.000	0.160	2.73	0.85	1.00	0.0	20.86	57.03	0.00	3232	0	386	469	855
5	90.00	7.51	14.383	18.831	0.000	0.145	2.79	0.85	1.00	0.0	22.90	63.91	0.00	3674	0	408	443	851
4	70.00	6.99	15.857	22.037	0.000	0.140	2.81	0.85	1.00	0.0	25.96	72.93	0.00	4858	0	433	416	849
3	50.00	6.35	17.472	22.037	0.000	0.127	2.86	0.85	1.00	0.0	27.31	78.06	0.00	4978	0	421	379	800
2	30.00	5.49	22.326	23.639	0.000	0.131	2.84	0.85	1.00	0.0	32.35	92.01	0.00	5903	0	429	327	756
1	10.00	5.48	24.365	23.639	0.000	0.123	2.88	0.85	1.00	0.0	34.07	97.96	0.00	6054	0	457	327	784
														36353	0			7073

LoadCase 1.0D + 1.0W Service 120 deg

Serviceability - 60 mph Wind 120 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)
10	180.00	9.16	0.000	10.276	0.000	0.117	2.89	1.00	1.00	0.0	5.89	17.04	0.00	1115	0	133	244	377
9	160.00	8.85	0.000	14.309	0.000	0.146	2.79	1.00	1.00	0.0	8.26	23.02	0.00	2017	0	173	356	529
8	145.00	8.61	4.586	7.813	0.000	0.211	2.56	1.00	1.00	0.0	9.09	23.28	0.00	1346	0	170	254	424
7	130.00	8.34	11.787	17.229	0.000	0.195	2.61	1.00	1.00	0.0	21.67	56.60	0.00	3177	0	401	492	893
6	110.00	7.96	13.022	17.229	0.000	0.160	2.73	1.00	1.00	0.0	22.82	62.37	0.00	3232	0	422	469	891
5	90.00	7.51	14.383	18.831	0.000	0.145	2.79	1.00	1.00	0.0	25.06	69.93	0.00	3674	0	447	443	890
4	70.00	6.99	15.857	22.037	0.000	0.140	2.81	1.00	1.00	0.0	28.34	79.62	0.00	4858	0	473	416	889
3	50.00	6.35	17.472	22.037	0.000	0.127	2.86	1.00	1.00	0.0	29.93	85.55	0.00	4978	0	462	379	840
2	30.00	5.49	22.326	23.639	0.000	0.131	2.84	1.00	1.00	0.0	35.70	101.53	0.00	5903	0	474	327	801
1	10.00	5.48	24.365	23.639	0.000	0.123	2.88	1.00	1.00	0.0	37.73	108.47	0.00	6054	0	506	327	832
														36353	0			7366

LoadCase 1.0D + 1.0W Service 180 deg

Serviceability - 60 mph Wind 180 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)
10	180.00	9.16	0.000	10.276	0.000	0.117	2.89	0.80	1.00	0.0	5.89	17.04	0.00	1115	0	133	244	377
9	160.00	8.85	0.000	14.309	0.000	0.146	2.79	0.80	1.00	0.0	8.26	23.02	0.00	2017	0	173	356	529
8	145.00	8.61	4.586	7.813	0.000	0.211	2.56	0.80	1.00	0.0	8.17	20.93	0.00	1346	0	153	254	407

Section Forces

7	130.00	8.34	11.787	17.229	0.000	0.195	2.61	0.80	1.00	0.0	19.31	50.44	0.00	3177	0	358	492	850
6	110.00	7.96	13.022	17.229	0.000	0.160	2.73	0.80	1.00	0.0	20.21	55.25	0.00	3232	0	374	469	843
5	90.00	7.51	14.383	18.831	0.000	0.145	2.79	0.80	1.00	0.0	22.18	61.91	0.00	3674	0	395	443	838
4	70.00	6.99	15.857	22.037	0.000	0.140	2.81	0.80	1.00	0.0	25.17	70.71	0.00	4858	0	420	416	836
3	50.00	6.35	17.472	22.037	0.000	0.127	2.86	0.80	1.00	0.0	26.44	75.56	0.00	4978	0	408	379	786
2	30.00	5.49	22.326	23.639	0.000	0.131	2.84	0.80	1.00	0.0	31.24	88.83	0.00	5903	0	414	327	742
1	10.00	5.48	24.365	23.639	0.000	0.123	2.88	0.80	1.00	0.0	32.85	94.46	0.00	6054	0	440	327	767
														36353	0			6975

LoadCase 1.0D + 1.0W Service 210 deg

Serviceability - 60 mph Wind 210 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)
10	180.00	9.16	0.000	10.276	0.000	0.117	2.89	0.85	1.00	0.0	5.89	17.04	0.00	1115	0	133	244	377
9	160.00	8.85	0.000	14.309	0.000	0.146	2.79	0.85	1.00	0.0	8.26	23.02	0.00	2017	0	173	356	529
8	145.00	8.61	4.586	7.813	0.000	0.211	2.56	0.85	1.00	0.0	8.40	21.52	0.00	1346	0	157	254	411
7	130.00	8.34	11.787	17.229	0.000	0.195	2.61	0.85	1.00	0.0	19.90	51.98	0.00	3177	0	369	492	861
6	110.00	7.96	13.022	17.229	0.000	0.160	2.73	0.85	1.00	0.0	20.86	57.03	0.00	3232	0	386	469	855
5	90.00	7.51	14.383	18.831	0.000	0.145	2.79	0.85	1.00	0.0	22.90	63.91	0.00	3674	0	408	443	851
4	70.00	6.99	15.857	22.037	0.000	0.140	2.81	0.85	1.00	0.0	25.96	72.93	0.00	4858	0	433	416	849
3	50.00	6.35	17.472	22.037	0.000	0.127	2.86	0.85	1.00	0.0	27.31	78.06	0.00	4978	0	421	379	800
2	30.00	5.49	22.326	23.639	0.000	0.131	2.84	0.85	1.00	0.0	32.35	92.01	0.00	5903	0	429	327	756
1	10.00	5.48	24.365	23.639	0.000	0.123	2.88	0.85	1.00	0.0	34.07	97.96	0.00	6054	0	457	327	784
														36353	0			7073

LoadCase 1.0D + 1.0W Service 240 deg

Serviceability - 60 mph Wind 240 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)
10	180.00	9.16	0.000	10.276	0.000	0.117	2.89	1.00	1.00	0.0	5.89	17.04	0.00	1115	0	133	244	377
9	160.00	8.85	0.000	14.309	0.000	0.146	2.79	1.00	1.00	0.0	8.26	23.02	0.00	2017	0	173	356	529
8	145.00	8.61	4.586	7.813	0.000	0.211	2.56	1.00	1.00	0.0	9.09	23.28	0.00	1346	0	170	254	424
7	130.00	8.34	11.787	17.229	0.000	0.195	2.61	1.00	1.00	0.0	21.67	56.60	0.00	3177	0	401	492	893
6	110.00	7.96	13.022	17.229	0.000	0.160	2.73	1.00	1.00	0.0	22.82	62.37	0.00	3232	0	422	469	891
5	90.00	7.51	14.383	18.831	0.000	0.145	2.79	1.00	1.00	0.0	25.06	69.93	0.00	3674	0	447	443	890
4	70.00	6.99	15.857	22.037	0.000	0.140	2.81	1.00	1.00	0.0	28.34	79.62	0.00	4858	0	473	416	889
3	50.00	6.35	17.472	22.037	0.000	0.127	2.86	1.00	1.00	0.0	29.93	85.55	0.00	4978	0	462	379	840
2	30.00	5.49	22.326	23.639	0.000	0.131	2.84	1.00	1.00	0.0	35.70	101.53	0.00	5903	0	474	327	801
1	10.00	5.48	24.365	23.639	0.000	0.123	2.88	1.00	1.00	0.0	37.73	108.47	0.00	6054	0	506	327	832
														36353	0			7366

LoadCase 1.0D + 1.0W Service 300 deg

Serviceability - 60 mph Wind 300 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)
10	180.00	9.16	0.000	10.276	0.000	0.117	2.89	0.80	1.00	0.0	5.89	17.04	0.00	1115	0	133	244	377

Section Forces

9	160.00	8.85	0.000	14.309	0.000	0.146	2.79	0.80	1.00	0.0	8.26	23.02	0.00	2017	0	173	356	529
8	145.00	8.61	4.586	7.813	0.000	0.211	2.56	0.80	1.00	0.0	8.17	20.93	0.00	1346	0	153	254	407
7	130.00	8.34	11.787	17.229	0.000	0.195	2.61	0.80	1.00	0.0	19.31	50.44	0.00	3177	0	358	492	850
6	110.00	7.96	13.022	17.229	0.000	0.160	2.73	0.80	1.00	0.0	20.21	55.25	0.00	3232	0	374	469	843
5	90.00	7.51	14.383	18.831	0.000	0.145	2.79	0.80	1.00	0.0	22.18	61.91	0.00	3674	0	395	443	838
4	70.00	6.99	15.857	22.037	0.000	0.140	2.81	0.80	1.00	0.0	25.17	70.71	0.00	4858	0	420	416	836
3	50.00	6.35	17.472	22.037	0.000	0.127	2.86	0.80	1.00	0.0	26.44	75.56	0.00	4978	0	408	379	786
2	30.00	5.49	22.326	23.639	0.000	0.131	2.84	0.80	1.00	0.0	31.24	88.83	0.00	5903	0	414	327	742
1	10.00	5.48	24.365	23.639	0.000	0.123	2.88	0.80	1.00	0.0	32.85	94.46	0.00	6054	0	440	327	767
														36353	0			6975

LoadCase 1.0D + 1.0W Service 330 deg — Serviceability - 60 mph Wind 330 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)
10	180.00	9.16	0.000	10.276	0.000	0.117	2.89	0.85	1.00	0.0	5.89	17.04	0.00	1115	0	133	244	377
9	160.00	8.85	0.000	14.309	0.000	0.146	2.79	0.85	1.00	0.0	8.26	23.02	0.00	2017	0	173	356	529
8	145.00	8.61	4.586	7.813	0.000	0.211	2.56	0.85	1.00	0.0	8.40	21.52	0.00	1346	0	157	254	411
7	130.00	8.34	11.787	17.229	0.000	0.195	2.61	0.85	1.00	0.0	19.90	51.98	0.00	3177	0	369	492	861
6	110.00	7.96	13.022	17.229	0.000	0.160	2.73	0.85	1.00	0.0	20.86	57.03	0.00	3232	0	386	469	855
5	90.00	7.51	14.383	18.831	0.000	0.145	2.79	0.85	1.00	0.0	22.90	63.91	0.00	3674	0	408	443	851
4	70.00	6.99	15.857	22.037	0.000	0.140	2.81	0.85	1.00	0.0	25.96	72.93	0.00	4858	0	433	416	849
3	50.00	6.35	17.472	22.037	0.000	0.127	2.86	0.85	1.00	0.0	27.31	78.06	0.00	4978	0	421	379	800
2	30.00	5.49	22.326	23.639	0.000	0.131	2.84	0.85	1.00	0.0	32.35	92.01	0.00	5903	0	429	327	756
1	10.00	5.48	24.365	23.639	0.000	0.123	2.88	0.85	1.00	0.0	34.07	97.96	0.00	6054	0	457	327	784
														36353	0			7073

Equivalent Lateral Force Method

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

Spectral Response Acceleration for Short Period (S_s):	0.17
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L - 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}):	0.18
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s:	0.03
Lower Limit C_s:	0.03
Period based on Rayleigh Method (sec):	1.01
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.25
Total Unfactored Dead Load:	42.79 k
Seismic Base Shear (E):	1.77 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)
10	180.00	1,115	747,405	0.060	107	1,378
9	160.00	2,017	1,166,63	0.094	167	2,494
8	145.00	1,346	688,372	0.056	98	1,665
7	130.00	3,177	1,416,42	0.114	202	3,927
6	110.00	3,232	1,168,91	0.094	167	3,996
5	90.00	3,674	1,033,15	0.083	147	4,542
4	70.00	4,858	997,072	0.080	142	6,006
3	50.00	4,978	670,152	0.054	96	6,154
2	30.00	5,903	418,987	0.034	60	7,298
1	10.00	6,054	108,452	0.009	15	7,484
LGP Allgon LGP21903	187.00	33	23,206	0.002	3	41
Powerwave Allgon LGP21401	187.00	85	59,491	0.005	8	105
Raycap DC6-48-60-18-8F (23.5" Height)	187.00	20	14,064	0.001	2	25
Ericsson RRUS-11 800 MHz	187.00	162	113,919	0.009	16	200
Allgon 7770.00	187.00	210	147,673	0.012	21	260
Andrew SBNH-1D6565C (60.8 lbs)	187.00	61	42,755	0.003	6	75
Powerwave Allgon P65-17-XLH-RR	187.00	118	82,978	0.007	12	146
Flat Light Sector Frame	187.00	1,200	843,848	0.068	120	1,484
Ericsson Radio 4449 B12,B71	175.00	222	143,661	0.012	21	274
Ericsson RRUS 11 B2	175.00	152	98,427	0.008	14	188
Ericsson RRUS 11 B4	175.00	152	98,427	0.008	14	188
RFS APX16DWV-16DWVS-E-A20 (60"	175.00	126	81,343	0.007	12	155
Flat Light Sector Frame	175.00	1,200	776,546	0.063	111	1,484
RFS APXVAARR24_43-U-NA20	175.00	384	248,301	0.020	35	474

Equivalent Lateral Force Method

Alcatel-Lucent RRH2x50-08	150.00	317	169,315	0.014	24	392
Alcatel-Lucent 1900 MHz 4X45 RRH	150.00	180	96,020	0.008	14	223
Site Pro 1 STK-U Stabilizer	150.00	191	102,101	0.008	15	237
Alcatel-Lucent TD-RRH8x20-25 w/ Solar	150.00	210	112,023	0.009	16	260
RFS APXVTM14-ALU-I20	150.00	169	89,939	0.007	13	208
Commscope NNVV-65B-R4	150.00	232	123,865	0.010	18	287
Round Sector Frame	150.00	900	480,099	0.039	69	1,113
Generic GPS	75.00	10	2,238	0.000	0	12
Stand-Off	75.00	100	22,379	0.002	3	124
		42,787	12,388,192	1.000	1,769	52,896

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)
10	180.00	1,115	747,405	0.060	107	963
9	160.00	2,017	1,166,63	0.094	167	1,742
8	145.00	1,346	688,372	0.056	98	1,163
7	130.00	3,177	1,416,42	0.114	202	2,744
6	110.00	3,232	1,168,91	0.094	167	2,792
5	90.00	3,674	1,033,15	0.083	147	3,173
4	70.00	4,858	997,072	0.080	142	4,196
3	50.00	4,978	670,152	0.054	96	4,299
2	30.00	5,903	418,987	0.034	60	5,099
1	10.00	6,054	108,452	0.009	15	5,229
LGP Allgon LGP21903	187.00	33	23,206	0.002	3	29
Powerwave Allgon LGP21401	187.00	85	59,491	0.005	8	73
Raycap DC6-48-60-18-8F (23.5" Height)	187.00	20	14,064	0.001	2	17
Ericsson RRUS-11 800 MHz	187.00	162	113,919	0.009	16	140
Allgon 7770.00	187.00	210	147,673	0.012	21	181
Andrew SBNH-1D6565C (60.8 lbs)	187.00	61	42,755	0.003	6	53
Powerwave Allgon P65-17-XLH-RR	187.00	118	82,978	0.007	12	102
Flat Light Sector Frame	187.00	1,200	843,848	0.068	120	1,036
Ericsson Radio 4449 B12,B71	175.00	222	143,661	0.012	21	192
Ericsson RRUS 11 B2	175.00	152	98,427	0.008	14	131
Ericsson RRUS 11 B4	175.00	152	98,427	0.008	14	131
RFS APX16DWV-16DWVS-E-A20 (60"	175.00	126	81,343	0.007	12	109
Flat Light Sector Frame	175.00	1,200	776,546	0.063	111	1,036
RFS APXVAARR24_43-U-NA20	175.00	384	248,301	0.020	35	331
Alcatel-Lucent RRH2x50-08	150.00	317	169,315	0.014	24	274
Alcatel-Lucent 1900 MHz 4X45 RRH	150.00	180	96,020	0.008	14	155
Site Pro 1 STK-U Stabilizer	150.00	191	102,101	0.008	15	165
Alcatel-Lucent TD-RRH8x20-25 w/ Solar	150.00	210	112,023	0.009	16	181
RFS APXVTM14-ALU-I20	150.00	169	89,939	0.007	13	146
Commscope NNVV-65B-R4	150.00	232	123,865	0.010	18	201
Round Sector Frame	150.00	900	480,099	0.039	69	777
Generic GPS	75.00	10	2,238	0.000	0	9
Stand-Off	75.00	100	22,379	0.002	3	86
		42,787	12,388,192	1.000	1,769	36,956

Equivalent Modal Analysis Method

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

Spectral Response Acceleration for Short Period (S_s):	0.17
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_e):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v:	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.18
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	1.01
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)
10	180.00	1,115	1.696	1.108	0.809	0.275	133	1,378
9	160.00	2,017	1.340	0.180	0.373	0.124	108	2,494
8	145.00	1,346	1.101	-0.069	0.187	0.063	37	1,665
7	130.00	3,177	0.885	-0.121	0.082	0.037	51	3,927
6	110.00	3,232	0.633	-0.065	0.019	0.037	52	3,996
5	90.00	3,674	0.424	0.010	0.006	0.044	69	4,542
4	70.00	4,858	0.257	0.054	0.016	0.042	88	6,006
3	50.00	4,978	0.131	0.069	0.033	0.034	74	6,154
2	30.00	5,903	0.047	0.071	0.042	0.027	69	7,298
1	10.00	6,054	0.005	0.045	0.026	0.015	40	7,484
LGP Allgon LGP21903	187.00	33	1.831	1.682	1.031	0.347	5	41
Powerwave Allgon LGP21401	187.00	85	1.831	1.682	1.031	0.347	13	105
Raycap DC6-48-60-18-8F (23.5"	187.00	20	1.831	1.682	1.031	0.347	3	25
Ericsson RRUS-11 800 MHz	187.00	162	1.831	1.682	1.031	0.347	24	200
Allgon 7770.00	187.00	210	1.831	1.682	1.031	0.347	32	260
Andrew SBNH-1D6565C (60.8 lbs)	187.00	61	1.831	1.682	1.031	0.347	9	75
Powerwave Allgon P65-17-XLH-RR	187.00	118	1.831	1.682	1.031	0.347	18	146
Flat Light Sector Frame	187.00	1,200	1.831	1.682	1.031	0.347	180	1,484
Ericsson Radio 4449 B12,B71	175.00	222	1.603	0.789	0.675	0.229	22	274
Ericsson RRUS 11 B2	175.00	152	1.603	0.789	0.675	0.229	15	188
Ericsson RRUS 11 B4	175.00	152	1.603	0.789	0.675	0.229	15	188
RFS APX16DWV-16DWVS-E-A20	175.00	126	1.603	0.789	0.675	0.229	12	155
Flat Light Sector Frame	175.00	1,200	1.603	0.789	0.675	0.229	119	1,484
RFS APXVAARR24_43-U-NA20	175.00	384	1.603	0.789	0.675	0.229	38	474
Alcatel-Lucent RRH2x50-08	150.00	317	1.178	-0.015	0.239	0.079	11	392
Alcatel-Lucent 1900 MHz 4X45	150.00	180	1.178	-0.015	0.239	0.079	6	223
Site Pro 1 STK-U Stabilizer	150.00	191	1.178	-0.015	0.239	0.079	7	237
Alcatel-Lucent TD-RRH8x20-25 w/	150.00	210	1.178	-0.015	0.239	0.079	7	260
RFS APXVTM14-ALU-I20	150.00	169	1.178	-0.015	0.239	0.079	6	208
Commscope NNVV-65B-R4	150.00	232	1.178	-0.015	0.239	0.079	8	287
Round Sector Frame	150.00	900	1.178	-0.015	0.239	0.079	31	1,113
Generic GPS	75.00	10	0.294	0.047	0.013	0.043	0	12
Stand-Off	75.00	100	0.294	0.047	0.013	0.043	2	124
		42,787	39.621	19.461	15.585	5.485	1,305	52,896

Equivalent Modal Analysis Method

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)
10	180.00	1,115	1.696	1.108	0.809	0.275	133	963
9	160.00	2,017	1.340	0.180	0.373	0.124	108	1,742
8	145.00	1,346	1.101	-0.069	0.187	0.063	37	1,163
7	130.00	3,177	0.885	-0.121	0.082	0.037	51	2,744
6	110.00	3,232	0.633	-0.065	0.019	0.037	52	2,792
5	90.00	3,674	0.424	0.010	0.006	0.044	69	3,173
4	70.00	4,858	0.257	0.054	0.016	0.042	88	4,196
3	50.00	4,978	0.131	0.069	0.033	0.034	74	4,299
2	30.00	5,903	0.047	0.071	0.042	0.027	69	5,099
1	10.00	6,054	0.005	0.045	0.026	0.015	40	5,229
LGP Allgon LGP21903	187.00	33	1.831	1.682	1.031	0.347	5	29
Powerwave Allgon LGP21401	187.00	85	1.831	1.682	1.031	0.347	13	73
Raycap DC6-48-60-18-8F (23.5"	187.00	20	1.831	1.682	1.031	0.347	3	17
Ericsson RRUS-11 800 MHz	187.00	162	1.831	1.682	1.031	0.347	24	140
Allgon 7770.00	187.00	210	1.831	1.682	1.031	0.347	32	181
Andrew SBNH-1D6565C (60.8 lbs)	187.00	61	1.831	1.682	1.031	0.347	9	53
Powerwave Allgon P65-17-XLH-RR	187.00	118	1.831	1.682	1.031	0.347	18	102
Flat Light Sector Frame	187.00	1,200	1.831	1.682	1.031	0.347	180	1,036
Ericsson Radio 4449 B12,B71	175.00	222	1.603	0.789	0.675	0.229	22	192
Ericsson RRUS 11 B2	175.00	152	1.603	0.789	0.675	0.229	15	131
Ericsson RRUS 11 B4	175.00	152	1.603	0.789	0.675	0.229	15	131
RFS APX16DWV-16DWVS-E-A20	175.00	126	1.603	0.789	0.675	0.229	12	109
Flat Light Sector Frame	175.00	1,200	1.603	0.789	0.675	0.229	119	1,036
RFS APXVAARR24_43-U-NA20	175.00	384	1.603	0.789	0.675	0.229	38	331
Alcatel-Lucent RRH2x50-08	150.00	317	1.178	-0.015	0.239	0.079	11	274
Alcatel-Lucent 1900 MHz 4X45	150.00	180	1.178	-0.015	0.239	0.079	6	155
Site Pro 1 STK-U Stabilizer	150.00	191	1.178	-0.015	0.239	0.079	7	165
Alcatel-Lucent TD-RRH8x20-25 w/	150.00	210	1.178	-0.015	0.239	0.079	7	181
RFS APXVTM14-ALU-I20	150.00	169	1.178	-0.015	0.239	0.079	6	146
Commscope NNVV-65B-R4	150.00	232	1.178	-0.015	0.239	0.079	8	201
Round Sector Frame	150.00	900	1.178	-0.015	0.239	0.079	31	777
Generic GPS	75.00	10	0.294	0.047	0.013	0.043	0	9
Stand-Off	75.00	100	0.294	0.047	0.013	0.043	2	86
		42,787	39.621	19.461	15.585	5.485	1,305	36,956

Force/Stress Summary

Section: 1 U20 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 12B - 12"BD 2.25"	-287.96	1.2D + 1.6W Normal	10.02	100	100	100	0.0	0.0	512.40	0	0	0.00	0.00	56	User Input
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE -	-7.16	1.2D + 1.6W 120 deg	21.91	50	50	50	190.6	36.0	13.00	1	1	49.70	43.50	55	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 12B - 12"BD 2.25"	247.42	1.2D + 1.6W 60 deg	50	65	536.80	0	0	0.00	0.00		46	User Input
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE -	6.93	1.2D + 1.6W 90 deg	36	58	54.17	1	1	49.70	26.64	20.54	33	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	235.84	0.9D + 1.6W 180 deg	0.00	0	0	
Top Compression	270.05	1.2D + 1.6W Normal	0.00	0		
Bot Tension	258.03	0.9D + 1.6W 180 deg	697.76	43	6	1.25" A687
Bot Compression	295.11	1.2D + 1.6W Normal	0.00	0		

Section: 2 U18 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 12B - 12"BD 2.25"	-263.27	1.2D + 1.6W Normal	10.02	100	100	100	0.0	0.0	512.40	0	0	0.00	0.00	51	User Input
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE -	-7.12	1.2D + 1.6W 90 deg	20.15	50	50	50	175.3	36.0	15.37	1	1	49.70	43.50	46	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 12B - 12"BD 2.25"	231.01	0.9D + 1.6W 180 deg	50	65	536.80	0	0	0.00	0.00		43	User Input
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE -	6.86	1.2D + 1.6W 90 deg	36	58	54.17	1	1	49.70	26.64	20.54	33	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	213.41	0.9D + 1.6W 180 deg	0.00	0	0	
Top Compression	242.77	1.2D + 1.6W Normal	0.00	0		
Bot Tension	235.84	0.9D + 1.6W 180 deg	523.32	45	6	1.25" A325
Bot Compression	0.00		0.00	0		

Force/Stress Summary

Section: 3 U16 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 12B - 12"BD 2"	-235.27	1.2D + 1.6W Normal	10.02	100	100	100	0.0	0.0	399.90	0	0	0.00	0.00	58	User Input
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 3X3X0.3125	-6.80	1.2D + 1.6W 90 deg	18.44	50	50	50	187.9	36.0	11.39	1	1	49.70	43.50	59	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 12B - 12"BD 2"	208.54	0.9D + 1.6W 180 deg	50	65	424.10	0	0	0.00	0.00		49	User Input
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE - 3X3X0.3125	6.53	1.2D + 1.6W 90 deg	36	58	44.05	1	1	49.70	26.64	17.14	38	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	190.19	0.9D + 1.6W 180 deg	0.00	0	0	
Top Compression	214.43	1.2D + 1.6W Normal	0.00	0		
Bot Tension	213.41	0.9D + 1.6W 180 deg	523.32	41	6	1.25" A325
Bot Compression	0.00		0.00	0		

Section: 4 U14 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 12B - 12"BD 2"	-206.79	1.2D + 1.6W Normal	10.02	100	100	100	0.0	0.0	399.90	0	0	0.00	0.00	51	User Input
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 3X3X0.3125	-6.46	1.2D + 1.6W 90 deg	16.80	50	50	50	171.2	36.0	13.73	1	1	49.70	43.50	47	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 12B - 12"BD 2"	182.71	1.2D + 1.6W 180 deg	50	65	424.10	0	0	0.00	0.00		43	User Input
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE - 3X3X0.3125	6.23	1.2D + 1.6W 90 deg	36	58	44.05	1	1	49.70	26.64	17.14	36	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	165.64	0.9D + 1.6W 180 deg	0.00	0	0	
Top Compression	185.09	1.2D + 1.6W Normal	0.00	0		
Bot Tension	190.19	0.9D + 1.6W 180 deg	523.32	36	6	1.25" A325
Bot Compression	0.00		0.00	0		

Force/Stress Summary

Section: 5 U12 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 12B - 12"BD 1.75"	-177.09	1.2D + 1.6W Normal	10.02	100	100	100	0.0	0.0	300.70	0	0	0.00	0.00	58	User Input
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 3X3X0.1875	-6.04	1.2D + 1.6W 90 deg	15.24	50	50	50	153.4	36.0	10.46	1	1	31.81	20.88	57	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 12B - 12"BD 1.75"	159.94	0.9D + 1.6W 180 deg	50	65	324.70	0	0	0.00	0.00		49	User Input
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE - 3X3X0.1875	5.74	1.2D + 1.6W 90 deg	36	58	28.68	1	1	31.81	12.72	10.16	56	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	140.30	0.9D + 1.6W 180 deg	0.00	0	0	
Top Compression	155.61	1.2D + 1.6W Normal	0.00	0		
Bot Tension	165.64	0.9D + 1.6W 180 deg	327.10	51	6	1 A325
Bot Compression	0.00		0.00	0		

Section: 6 U10 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 12B - 12"BD 1.5"	-147.21	1.2D + 1.6W Normal	10.02	100	100	100	0.0	0.0	214.90	0	0	0.00	0.00	68	User Input
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 3X3X0.1875	-5.96	1.2D + 1.6W 90 deg	13.79	50	50	50	138.9	36.0	12.77	1	1	31.81	20.88	46	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 12B - 12"BD 1.5"	133.87	0.9D + 1.6W 180 deg	50	65	238.60	0	0	0.00	0.00		56	User Input
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE - 3X3X0.1875	5.60	1.2D + 1.6W 90 deg	36	58	28.68	1	1	31.81	12.72	10.16	55	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	112.23	0.9D + 1.6W 180 deg	0.00	0	0	
Top Compression	124.11	1.2D + 1.6W Normal	0.00	0		
Bot Tension	140.30	0.9D + 1.6W 180 deg	327.10	43	6	1 A325
Bot Compression	0.00		0.00	0		

Force/Stress Summary

Section: 7 U8 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 12B - 12"BD 1.5"	-114.76	1.2D + 1.6W Normal	10.02	100	100	100	0.0	0.0	214.90	0	0	0.00	0.00	53	User Input
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE - 3X3X0.1875	-6.00	1.2D + 1.6W 90 deg	12.50	50	50	50	125.9	36.0	15.34	1	1	31.81	20.88	39	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 12B - 12"BD 1.5"	103.73	1.2D + 1.6W 180 deg	50	65	238.60	0	0	0.00	0.00		43	User Input
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE - 3X3X0.1875	6.11	1.2D + 1.6W 90 deg	36	58	28.68	1	1	31.81	12.72	10.16	60	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	80.07	0.9D + 1.6W 180 deg	0.00	0	0	
Top Compression	88.91	1.2D + 1.6W Normal	0.00	0		
Bot Tension	112.23	0.9D + 1.6W 180 deg	327.10	34	6	1 A325
Bot Compression	0.00		0.00	0		

Section: 8 U-6.0 Bot Elev (ft): 140.0 Height (ft): 10.000

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 12B - 12"BD 1.25"	-75.80	1.2D + 1.6W Normal	10.02	100	100	100	0.0	0.0	142.50	0	0	0.00	0.00	53	User Input
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SAE -	-7.40	1.2D + 1.6W 120 deg	11.41	50	50	50	138.4	36.0	10.64	1	1	31.81	20.88	69	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 12B - 12"BD 1.25"	68.47	1.2D + 1.6W 180 deg	50	65	165.70	0	0	0.00	0.00		41	User Input
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG SAE -	6.81	0.9D + 1.6W 60 deg	36	58	22.55	1	1	31.81	12.72	9.14	74	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	62.41	0.9D + 1.6W 180 deg	0.00	0	0	
Top Compression	70.10	1.2D + 1.6W Normal	0.00	0		
Bot Tension	80.07	0.9D + 1.6W 180 deg	327.10	24	6	1 A325
Bot Compression	0.00		0.00	0		

Force/Stress Summary

Section: 9 H-5.0 Bot Elev (ft): 150.0 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 SOL - 2" SOLID	-65.84	1.2D + 1.6W Normal	2.41	100	100	100	57.8	50.0	110.77	0	0	0.00	0.00	59	Member X
HORIZ SOL - 1" SOLID	-1.59	1.2D + 1.6W 60 deg	4.509	100	100	100	140.7	50.0	8.97	0	0	0.00	0.00	17	Member X
DIAG SOL - 1" SOLID	-3.57	1.2D + 1.6W 90 deg	5.513	50	50	50	119.1	50.0	12.51	0	0	0.00	0.00	28	Member X

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 SOL - 2" SOLID	63.11	1.2D + 1.6W 180 deg	50	65	141.37	0	0	0.00	0.00		44	Member
HORIZ SOL - 1" SOLID	1.71	1.2D + 1.6W Normal	50	65	35.34	0	0	0.00	0.00	0.00	4	Member
DIAG SOL - 1" SOLID	3.81	1.2D + 1.6W 90 deg	50	65	35.34	0	0	0.00	0.00	0.00	10	Member

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	22.92	0.9D + 1.6W 180 deg	87.50	26	0	
Top Compression	26.66	1.2D + 1.6W Normal	141.40	19		
Bot Tension	62.41	0.9D + 1.6W 180 deg	327.10	19	6	1 A325
Bot Compression	0.00		0.00	0		

Section: 10 S-4.5 Bot Elev (ft): 170.0 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 SOL - 1 1/2" SOLID	-24.06	1.2D + 1.6W Normal	2.41	100	100	100	77.0	50.0	51.54	0	0	0.00	0.00	46	Member X
HORIZ SOL - 3/4" SOLID	-1.17	1.2D + 1.6W Normal	4.491	100	100	100	186.8	50.0	2.86	0	0	0.00	0.00	40	Member X
DIAG SOL - 3/4" SOLID	-3.26	1.2D + 1.6W 90 deg	5.068	50	50	50	145.9	50.0	4.69	0	0	0.00	0.00	69	Member X

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 SOL - 1 1/2" SOLID	22.56	1.2D + 1.6W 180 deg	50	65	79.52	0	0	0.00	0.00		28	Member
HORIZ SOL - 3/4" SOLID	1.17	1.2D + 1.6W 60 deg	50	65	19.88	0	0	0.00	0.00	0.00	5	Member
DIAG SOL - 3/4" SOLID	3.27	1.2D + 1.6W 90 deg	50	65	19.88	0	0	0.00	0.00	0.00	16	Member

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	0.00		0.00	0	0	
Top Compression	0.22	(1.2 + 0.2Sds) * DL	0.00	0		
Bot Tension	22.92	0.9D + 1.6W 180 deg	0.00	0		
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	**11.55**	**00.00**	**0**	**1**	**0.00**	**294.77**	**-28.89**	
	11.55	**00.00**	**120**	**1a**	**10.11**	**-121.71**	**-7.71**	
	11.55	**00.00**	**240**	**1b**	**-10.11**	**-121.71**	**-7.71**	
1.2D + 1.6W 60 deg	**11.55**	**00.00**	**0**	**1**	**-1.41**	**151.93**	**-14.55**	
	11.55	**00.00**	**120**	**1a**	**-13.29**	**151.34**	**6.06**	
	11.55	**00.00**	**240**	**1b**	**-22.00**	**-251.92**	**-12.70**	
1.2D + 1.6W 90 deg	**11.55**	**00.00**	**0**	**1**	**-1.71**	**17.12**	**-1.27**	
	11.55	**00.00**	**120**	**1a**	**-21.61**	**251.67**	**11.53**	
	11.55	**00.00**	**240**	**1b**	**-19.55**	**-217.45**	**-10.26**	
1.2D + 1.6W 120 deg	**11.55**	**00.00**	**0**	**1**	**-1.63**	**-121.71**	**12.61**	
	11.55	**00.00**	**120**	**1a**	**-25.02**	**294.18**	**14.43**	
	11.55	**00.00**	**240**	**1b**	**-11.72**	**-121.12**	**-4.89**	
1.2D + 1.6W 180 deg	**11.55**	**00.00**	**0**	**1**	**0.00**	**-252.51**	**25.42**	
	11.55	**00.00**	**120**	**1a**	**-11.91**	**151.93**	**8.49**	
	11.55	**00.00**	**240**	**1b**	**11.91**	**151.93**	**8.49**	
1.2D + 1.6W 210 deg	**11.55**	**00.00**	**0**	**1**	**0.89**	**-218.13**	**22.07**	
	11.55	**00.00**	**120**	**1a**	**-0.26**	**17.46**	**2.11**	
	11.55	**00.00**	**240**	**1b**	**20.80**	**252.01**	**12.94**	
1.2D + 1.6W 240 deg	**11.55**	**00.00**	**0**	**1**	**1.63**	**-121.71**	**12.61**	
	11.55	**00.00**	**120**	**1a**	**11.72**	**-121.12**	**-4.89**	
	11.55	**00.00**	**240**	**1b**	**25.02**	**294.18**	**14.43**	
1.2D + 1.6W 300 deg	**11.55**	**00.00**	**0**	**1**	**1.41**	**151.93**	**-14.55**	
	11.55	**00.00**	**120**	**1a**	**22.00**	**-251.92**	**-12.70**	
	11.55	**00.00**	**240**	**1b**	**13.29**	**151.34**	**6.06**	
1.2D + 1.6W 330 deg	**11.55**	**00.00**	**0**	**1**	**0.82**	**252.35**	**-24.49**	
	11.55	**00.00**	**120**	**1a**	**18.67**	**-217.79**	**-11.79**	
	11.55	**00.00**	**240**	**1b**	**1.94**	**16.78**	**-0.84**	
0.9D + 1.6W Normal	**11.55**	**00.00**	**0**	**1**	**0.00**	**290.08**	**-28.56**	
	11.55	**00.00**	**120**	**1a**	**10.38**	**-125.79**	**-7.87**	
	11.55	**00.00**	**240**	**1b**	**-10.38**	**-125.79**	**-7.87**	
0.9D + 1.6W 60 deg	**11.55**	**00.00**	**0**	**1**	**-1.42**	**147.45**	**-14.23**	
	11.55	**00.00**	**120**	**1a**	**-13.01**	**146.86**	**5.89**	
	11.55	**00.00**	**240**	**1b**	**-22.28**	**-255.80**	**-12.85**	
0.9D + 1.6W 90 deg	**11.55**	**00.00**	**0**	**1**	**-1.72**	**12.84**	**-0.95**	
	11.55	**00.00**	**120**	**1a**	**-21.33**	**247.04**	**11.36**	
	11.55	**00.00**	**240**	**1b**	**-19.82**	**-221.38**	**-10.41**	
0.9D + 1.6W 120 deg	**11.55**	**00.00**	**0**	**1**	**-1.64**	**-125.79**	**12.92**	
	11.55	**00.00**	**120**	**1a**	**-24.73**	**289.50**	**14.27**	
	11.55	**00.00**	**240**	**1b**	**-12.00**	**-125.20**	**-5.04**	
0.9D + 1.6W 180 deg	**11.55**	**00.00**	**0**	**1**	**0.00**	**-256.39**	**25.73**	
	11.55	**00.00**	**120**	**1a**	**-11.62**	**147.45**	**8.33**	
	11.55	**00.00**	**240**	**1b**	**11.62**	**147.45**	**8.33**	
0.9D + 1.6W 210 deg	**11.55**	**00.00**	**0**	**1**	**0.89**	**-222.06**	**22.39**	
	11.55	**00.00**	**120**	**1a**	**0.03**	**13.18**	**1.96**	
	11.55	**00.00**	**240**	**1b**	**20.51**	**247.38**	**12.78**	

0.9D + 1.6W 240 deg	**11.55**	**00.00**	**0**	**1**	**1.64**	**-125.79**	**12.92**
	11.55	**00.00**	**120**	**1a**	**12.00**	**-125.20**	**-5.04**
	11.55	**00.00**	**240**	**1b**	**24.73**	**289.50**	**14.27**
0.9D + 1.6W 300 deg	**11.55**	**00.00**	**0**	**1**	**1.42**	**147.45**	**-14.23**
	11.55	**00.00**	**120**	**1a**	**22.28**	**-255.80**	**-12.85**
	11.55	**00.00**	**240**	**1b**	**13.01**	**146.86**	**5.89**
0.9D + 1.6W 330 deg	**11.55**	**00.00**	**0**	**1**	**0.83**	**247.72**	**-24.16**
	11.55	**00.00**	**120**	**1a**	**18.94**	**-221.72**	**-11.95**
	11.55	**00.00**	**240**	**1b**	**1.67**	**12.51**	**-1.01**
1.2D + 1.0Di + 1.0Wi Normal	**11.55**	**00.00**	**0**	**1**	**0.00**	**118.09**	**-5.77**
	11.55	**00.00**	**120**	**1a**	**5.14**	**-0.64**	**-3.51**
	11.55	**00.00**	**240**	**1b**	**-5.14**	**-0.64**	**-3.51**
1.2D + 1.0Di + 1.0Wi 60 deg	**11.55**	**00.00**	**0**	**1**	**-0.45**	**78.02**	**-1.71**
	11.55	**00.00**	**120**	**1a**	**-1.71**	**77.91**	**0.47**
	11.55	**00.00**	**240**	**1b**	**-8.71**	**-39.12**	**-5.03**
1.2D + 1.0Di + 1.0Wi 90 deg	**11.55**	**00.00**	**0**	**1**	**-0.53**	**38.94**	**2.21**
	11.55	**00.00**	**120**	**1a**	**-4.12**	**106.71**	**2.08**
	11.55	**00.00**	**240**	**1b**	**-7.96**	**-28.84**	**-4.29**
1.2D + 1.0Di + 1.0Wi 120 deg	**11.55**	**00.00**	**0**	**1**	**-0.47**	**-0.64**	**6.20**
	11.55	**00.00**	**120**	**1a**	**-5.00**	**117.97**	**2.88**
	11.55	**00.00**	**240**	**1b**	**-5.61**	**-0.53**	**-2.69**
1.2D + 1.0Di + 1.0Wi 180 deg	**11.55**	**00.00**	**0**	**1**	**0.00**	**-39.24**	**10.06**
	11.55	**00.00**	**120**	**1a**	**-1.26**	**78.02**	**1.24**
	11.55	**00.00**	**240**	**1b**	**1.26**	**78.02**	**1.24**
1.2D + 1.0Di + 1.0Wi 210 deg	**11.55**	**00.00**	**0**	**1**	**0.27**	**-28.98**	**9.04**
	11.55	**00.00**	**120**	**1a**	**2.17**	**39.00**	**-0.65**
	11.55	**00.00**	**240**	**1b**	**3.86**	**106.78**	**2.53**
1.2D + 1.0Di + 1.0Wi 240 deg	**11.55**	**00.00**	**0**	**1**	**0.47**	**-0.64**	**6.20**
	11.55	**00.00**	**120**	**1a**	**5.61**	**-0.53**	**-2.69**
	11.55	**00.00**	**240**	**1b**	**5.00**	**117.97**	**2.88**
1.2D + 1.0Di + 1.0Wi 300 deg	**11.55**	**00.00**	**0**	**1**	**0.45**	**78.02**	**-1.71**
	11.55	**00.00**	**120**	**1a**	**8.71**	**-39.12**	**-5.03**
	11.55	**00.00**	**240**	**1b**	**1.71**	**77.91**	**0.47**
1.2D + 1.0Di + 1.0Wi 330 deg	**11.55**	**00.00**	**0**	**1**	**0.26**	**106.85**	**-4.61**
	11.55	**00.00**	**120**	**1a**	**7.70**	**-28.91**	**-4.75**
	11.55	**00.00**	**240**	**1b**	**-1.65**	**38.87**	**-1.56**
(1.2 + 0.2Sds) * DL + E Normal M1	**11.55**	**00.00**	**0**	**1**	**0.00**	**30.19**	**-2.48**
	11.55	**00.00**	**120**	**1a**	**-0.66**	**10.11**	**0.37**
	11.55	**00.00**	**240**	**1b**	**0.66**	**10.11**	**0.37**
(1.2 + 0.2Sds) * DL + E Normal M2	**11.55**	**00.00**	**0**	**1**	**0.00**	**26.95**	**-2.17**
	11.55	**00.00**	**120**	**1a**	**-0.78**	**11.73**	**0.46**
	11.55	**00.00**	**240**	**1b**	**0.78**	**11.73**	**0.46**
(1.2 + 0.2Sds) * DL + E 60 deg M1	**11.55**	**00.00**	**0**	**1**	**0.00**	**23.40**	**-1.90**
	11.55	**00.00**	**120**	**1a**	**-1.65**	**23.40**	**0.94**
	11.55	**00.00**	**240**	**1b**	**0.17**	**3.61**	**0.10**
(1.2 + 0.2Sds) * DL + E 60 deg M2	**11.55**	**00.00**	**0**	**1**	**0.01**	**21.88**	**-1.75**
	11.55	**00.00**	**120**	**1a**	**-1.51**	**21.88**	**0.88**
	11.55	**00.00**	**240**	**1b**	**0.42**	**6.65**	**0.25**
(1.2 + 0.2Sds) * DL + E 90 deg M1	**11.55**	**00.00**	**0**	**1**	**0.00**	**16.80**	**-1.33**

	11.55	00.00	120	1a	-2.01	28.40	1.16
	11.55	00.00	240	1b	0.29	5.20	0.17
(1.2 + 0.2Sds) * DL + E 90 deg M2	11.55	00.00	0	1	0.01	16.80	-1.33
	11.55	00.00	120	1a	-1.78	25.59	1.03
	11.55	00.00	240	1b	0.52	8.01	0.30
(1.2 + 0.2Sds) * DL + E 120 deg M1	11.55	00.00	0	1	0.00	10.20	-0.76
	11.55	00.00	120	1a	-2.13	30.00	1.23
	11.55	00.00	240	1b	0.66	10.20	0.39
(1.2 + 0.2Sds) * DL + E 120 deg M2	11.55	00.00	0	1	0.01	11.73	-0.91
	11.55	00.00	120	1a	-1.88	26.95	1.08
	11.55	00.00	240	1b	0.79	11.72	0.45
(1.2 + 0.2Sds) * DL + E 180 deg M1	11.55	00.00	0	1	0.00	3.41	-0.18
	11.55	00.00	120	1a	-1.65	23.50	0.96
	11.55	00.00	240	1b	1.65	23.50	0.96
(1.2 + 0.2Sds) * DL + E 180 deg M2	11.55	00.00	0	1	0.00	6.65	-0.49
	11.55	00.00	120	1a	-1.52	21.88	0.87
	11.55	00.00	240	1b	1.52	21.88	0.87
(1.2 + 0.2Sds) * DL + E 210 deg M1	11.55	00.00	0	1	0.00	5.37	-0.35
	11.55	00.00	120	1a	-1.15	16.80	0.67
	11.55	00.00	240	1b	2.00	28.23	1.16
(1.2 + 0.2Sds) * DL + E 210 deg M2	11.55	00.00	0	1	0.00	8.01	-0.60
	11.55	00.00	120	1a	-1.16	16.80	0.66
	11.55	00.00	240	1b	1.78	25.59	1.02
(1.2 + 0.2Sds) * DL + E 240 deg M1	11.55	00.00	0	1	0.00	10.20	-0.76
	11.55	00.00	120	1a	-0.66	10.20	0.39
	11.55	00.00	240	1b	2.13	30.00	1.23
(1.2 + 0.2Sds) * DL + E 240 deg M2	11.55	00.00	0	1	-0.01	11.73	-0.91
	11.55	00.00	120	1a	-0.79	11.72	0.45
	11.55	00.00	240	1b	1.88	26.95	1.08
(1.2 + 0.2Sds) * DL + E 300 deg M1	11.55	00.00	0	1	0.00	23.40	-1.90
	11.55	00.00	120	1a	-0.17	3.61	0.10
	11.55	00.00	240	1b	1.65	23.40	0.94
(1.2 + 0.2Sds) * DL + E 300 deg M2	11.55	00.00	0	1	-0.01	21.88	-1.75
	11.55	00.00	120	1a	-0.42	6.65	0.25
	11.55	00.00	240	1b	1.51	21.88	0.88
(1.2 + 0.2Sds) * DL + E 330 deg M1	11.55	00.00	0	1	0.00	28.23	-2.31
	11.55	00.00	120	1a	-0.30	5.37	0.17
	11.55	00.00	240	1b	1.15	16.80	0.66
(1.2 + 0.2Sds) * DL + E 330 deg M2	11.55	00.00	0	1	0.00	25.59	-2.06
	11.55	00.00	120	1a	-0.52	8.01	0.31
	11.55	00.00	240	1b	1.15	16.80	0.67
(0.9 - 0.2Sds) * DL + E Normal M1	11.55	00.00	0	1	0.00	25.10	-2.08
	11.55	00.00	120	1a	-0.31	5.05	0.17
	11.55	00.00	240	1b	0.31	5.05	0.17
(0.9 - 0.2Sds) * DL + E Normal M2	11.55	00.00	0	1	0.00	21.87	-1.77
	11.55	00.00	120	1a	-0.44	6.67	0.26
	11.55	00.00	240	1b	0.44	6.67	0.26
(0.9 - 0.2Sds) * DL + E 60 deg M1	11.55	00.00	0	1	-0.01	18.32	-1.50
	11.55	00.00	120	1a	-1.30	18.32	0.74
	11.55	00.00	240	1b	-0.18	-1.44	-0.10

(0.9 - 0.2Sds) * DL + E 60 deg M2	11.55	00.00	0	1	0.01	16.80	-1.35
	11.55	00.00	120	1a	-1.16	16.80	0.68
	11.55	00.00	240	1b	0.08	1.61	0.05
(0.9 - 0.2Sds) * DL + E 90 deg M1	11.55	00.00	0	1	-0.01	11.74	-0.93
	11.55	00.00	120	1a	-1.67	23.31	0.96
	11.55	00.00	240	1b	-0.06	0.16	-0.03
(0.9 - 0.2Sds) * DL + E 90 deg M2	11.55	00.00	0	1	0.01	11.74	-0.93
	11.55	00.00	120	1a	-1.43	20.51	0.83
	11.55	00.00	240	1b	0.18	2.96	0.10
(0.9 - 0.2Sds) * DL + E 120 deg M1	11.55	00.00	0	1	-0.01	5.15	-0.36
	11.55	00.00	120	1a	-1.79	24.91	1.03
	11.55	00.00	240	1b	0.31	5.15	0.19
(0.9 - 0.2Sds) * DL + E 120 deg M2	11.55	00.00	0	1	0.01	6.67	-0.51
	11.55	00.00	120	1a	-1.53	21.87	0.88
	11.55	00.00	240	1b	0.45	6.67	0.25
(0.9 - 0.2Sds) * DL + E 180 deg M1	11.55	00.00	0	1	0.00	-1.63	0.22
	11.55	00.00	120	1a	-1.30	18.42	0.76
	11.55	00.00	240	1b	1.30	18.42	0.76
(0.9 - 0.2Sds) * DL + E 180 deg M2	11.55	00.00	0	1	0.00	1.61	-0.09
	11.55	00.00	120	1a	-1.17	16.80	0.67
	11.55	00.00	240	1b	1.17	16.80	0.67
(0.9 - 0.2Sds) * DL + E 210 deg M1	11.55	00.00	0	1	0.00	0.33	0.05
	11.55	00.00	120	1a	-0.80	11.74	0.47
	11.55	00.00	240	1b	1.65	23.15	0.96
(0.9 - 0.2Sds) * DL + E 210 deg M2	11.55	00.00	0	1	0.00	2.96	-0.20
	11.55	00.00	120	1a	-0.81	11.74	0.46
	11.55	00.00	240	1b	1.44	20.51	0.82
(0.9 - 0.2Sds) * DL + E 240 deg M1	11.55	00.00	0	1	0.01	5.15	-0.36
	11.55	00.00	120	1a	-0.31	5.15	0.19
	11.55	00.00	240	1b	1.79	24.91	1.03
(0.9 - 0.2Sds) * DL + E 240 deg M2	11.55	00.00	0	1	-0.01	6.67	-0.51
	11.55	00.00	120	1a	-0.45	6.67	0.25
	11.55	00.00	240	1b	1.53	21.87	0.88
(0.9 - 0.2Sds) * DL + E 300 deg M1	11.55	00.00	0	1	0.01	18.32	-1.50
	11.55	00.00	120	1a	0.18	-1.44	-0.10
	11.55	00.00	240	1b	1.30	18.32	0.74
(0.9 - 0.2Sds) * DL + E 300 deg M2	11.55	00.00	0	1	-0.01	16.80	-1.35
	11.55	00.00	120	1a	-0.08	1.61	0.05
	11.55	00.00	240	1b	1.16	16.80	0.68
(0.9 - 0.2Sds) * DL + E 330 deg M1	11.55	00.00	0	1	0.00	23.15	-1.91
	11.55	00.00	120	1a	0.04	0.33	-0.03
	11.55	00.00	240	1b	0.81	11.74	0.46
(0.9 - 0.2Sds) * DL + E 330 deg M2	11.55	00.00	0	1	0.00	20.51	-1.66
	11.55	00.00	120	1a	-0.17	2.96	0.11
	11.55	00.00	240	1b	0.80	11.74	0.47
1.0D + 1.0W Service Normal	11.55	00.00	0	1	0.00	71.70	-6.84
	11.55	00.00	120	1a	1.40	-14.46	-1.20
	11.55	00.00	240	1b	-1.40	-14.46	-1.20
1.0D + 1.0W Service 60 deg	11.55	00.00	0	1	-0.31	42.16	-3.85

	11.55	**00.00**	**120**	**1a**	**-3.48**	**42.04**	**1.65**
	11.55	**00.00**	**240**	**1b**	**-3.87**	**-41.42**	**-2.23**
1.0D + 1.0W Service 90 deg	**11.55**	**00.00**	**0**	**1**	**-0.37**	**14.26**	**-1.07**
	11.55	**00.00**	**120**	**1a**	**-5.22**	**62.80**	**2.80**
	11.55	**00.00**	**240**	**1b**	**-3.36**	**-34.28**	**-1.73**
1.0D + 1.0W Service 120 deg	**11.55**	**00.00**	**0**	**1**	**-0.35**	**-14.46**	**1.81**
	11.55	**00.00**	**120**	**1a**	**-5.92**	**71.58**	**3.42**
	11.55	**00.00**	**240**	**1b**	**-1.74**	**-14.34**	**-0.61**
1.0D + 1.0W Service 180 deg	**11.55**	**00.00**	**0**	**1**	**0.00**	**-41.54**	**4.47**
	11.55	**00.00**	**120**	**1a**	**-3.18**	**42.16**	**2.19**
	11.55	**00.00**	**240**	**1b**	**3.18**	**42.16**	**2.19**
1.0D + 1.0W Service 210 deg	**11.55**	**00.00**	**0**	**1**	**0.19**	**-34.42**	**3.78**
	11.55	**00.00**	**120**	**1a**	**-0.75**	**14.33**	**0.86**
	11.55	**00.00**	**240**	**1b**	**5.04**	**62.87**	**3.12**
1.0D + 1.0W Service 240 deg	**11.55**	**00.00**	**0**	**1**	**0.35**	**-14.46**	**1.81**
	11.55	**00.00**	**120**	**1a**	**1.74**	**-14.34**	**-0.61**
	11.55	**00.00**	**240**	**1b**	**5.92**	**71.58**	**3.42**
1.0D + 1.0W Service 300 deg	**11.55**	**00.00**	**0**	**1**	**0.31**	**42.16**	**-3.85**
	11.55	**00.00**	**120**	**1a**	**3.87**	**-41.42**	**-2.23**
	11.55	**00.00**	**240**	**1b**	**3.48**	**42.04**	**1.65**
1.0D + 1.0W Service 330 deg	**11.55**	**00.00**	**0**	**1**	**0.18**	**62.94**	**-5.92**
	11.55	**00.00**	**120**	**1a**	**3.18**	**-34.35**	**-2.05**
	11.55	**00.00**	**240**	**1b**	**1.11**	**14.19**	**0.22**

Max Uplift:	256.39 (kip)	Moment Ice:	1,370.96 (kip-ft)	Moment:	4,809.08 (kip-ft)	1.2D + 1.6W Normal
Max Down:	294.77 (kip)	Total Down Ice:	116.80 (kip)	Total Down:	51.34 (kip)	
Max Shear:	28.89 (kip)	Total Shear Ice:	12.79 (kip)	Total Shear:	44.31 (kip)	

Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
105 mph Normal with No Ice	70.00	0.199	0.0118	0.3265	0.3267
105 mph Normal with No Ice	150.00	1.081	0.0328	1.0353	1.0358
105 mph Normal with No Ice	175.19	1.595	0.4242	1.6891	1.7416
105 mph Normal with No Ice	187.22	1.864	0.6983	1.8391	1.9672
105 mph 60 degree with No Ice	70.00	0.193	0.0181	0.3178	0.3180
105 mph 60 degree with No Ice	150.00	1.057	0.0607	1.0131	1.0149
105 mph 60 degree with No Ice	175.19	1.557	1.1970	1.1853	1.6846
105 mph 60 degree with No Ice	187.22	1.817	1.8962	1.1462	2.2157
105 mph 90 degree with No Ice	70.00	0.193	-0.0195	0.3192	0.3198
105 mph 90 degree with No Ice	150.00	1.059	-0.0637	1.0223	1.0243
105 mph 90 degree with No Ice	175.19	1.558	-0.6029	0.8584	1.0323
105 mph 90 degree with No Ice	187.22	1.815	-0.9235	0.6858	1.1415
105 mph 120 degree with No Ice	70.00	0.198	-0.0215	0.3256	0.3258
105 mph 120 degree with No Ice	150.00	1.076	-0.0743	1.0259	1.0262
105 mph 120 degree with No Ice	175.19	1.581	-1.2430	1.1638	1.7028
105 mph 120 degree with No Ice	187.22	1.843	-1.9422	1.1390	2.2414
105 mph 180 degree with No Ice	70.00	0.193	0.0115	0.3188	0.3190
105 mph 180 degree with No Ice	150.00	1.062	0.0320	1.0232	1.0237
105 mph 180 degree with No Ice	175.19	1.571	0.4335	1.6791	1.7342
105 mph 180 degree with No Ice	187.22	1.838	0.7148	1.8290	1.9637
105 mph 210 degree with No Ice	70.00	0.194	0.0141	0.3207	0.3208
105 mph 210 degree with No Ice	150.00	1.065	0.0506	1.0343	1.0346
105 mph 210 degree with No Ice	175.19	1.572	1.0158	1.5544	1.8432
105 mph 210 degree with No Ice	187.22	1.837	1.5948	1.6618	2.2741
105 mph 240 degree with No Ice	70.00	0.198	0.0215	0.3256	0.3258
105 mph 240 degree with No Ice	150.00	1.076	0.0743	1.0259	1.0262
105 mph 240 degree with No Ice	175.19	1.581	1.2430	1.1638	1.7028
105 mph 240 degree with No Ice	187.22	1.843	1.9422	1.1390	2.2414
105 mph 300 degree with No Ice	70.00	0.193	0.0128	0.3178	0.3180
105 mph 300 degree with No Ice	150.00	1.057	0.0372	1.0131	1.0149
105 mph 300 degree with No Ice	175.19	1.557	-0.1922	1.1853	1.6846
105 mph 300 degree with No Ice	187.22	1.817	-0.3310	1.1462	2.2157
105 mph 330 degree with No Ice	70.00	0.194	0.0058	0.3204	0.3207
105 mph 330 degree with No Ice	150.00	1.065	0.0144	1.0333	1.0351
105 mph 330 degree with No Ice	175.19	1.572	-0.4143	1.5728	2.0042
105 mph 330 degree with No Ice	187.22	1.837	-0.6716	1.6693	2.5916
105 mph Normal with No Ice (Reduced DL)	70.00	0.198	0.0118	0.3259	0.3261
105 mph Normal with No Ice (Reduced DL)	150.00	1.079	0.0327	1.0318	1.0323
105 mph Normal with No Ice (Reduced DL)	175.19	1.591	0.4244	1.6849	1.7376
105 mph Normal with No Ice (Reduced DL)	187.22	1.859	0.6984	1.8350	1.9634
105 mph 60 deg with No Ice (Reduced DL)	70.00	0.193	0.0181	0.3172	0.3174
105 mph 60 deg with No Ice (Reduced DL)	150.00	1.054	0.0605	1.0107	1.0125
105 mph 60 deg with No Ice (Reduced DL)	175.19	1.553	1.1948	1.1812	1.6801
105 mph 60 deg with No Ice (Reduced DL)	187.22	1.812	1.8927	1.1426	2.2108
105 mph 90 deg with No Ice (Reduced DL)	70.00	0.193	-0.0195	0.3186	0.3192
105 mph 90 deg with No Ice (Reduced DL)	150.00	1.057	-0.0636	1.0193	1.0213
105 mph 90 deg with No Ice (Reduced DL)	175.19	1.554	-0.6027	0.8542	1.0289
105 mph 90 deg with No Ice (Reduced DL)	187.22	1.811	-0.9233	0.6818	1.1390
105 mph 120 deg with No Ice (Reduced DL)	70.00	0.198	-0.0215	0.3250	0.3251
105 mph 120 deg with No Ice (Reduced DL)	150.00	1.073	-0.0741	1.0224	1.0227
105 mph 120 deg with No Ice (Reduced DL)	175.19	1.577	-1.2407	1.1597	1.6983
105 mph 120 deg with No Ice (Reduced DL)	187.22	1.838	-1.9385	1.1353	2.2364
105 mph 180 deg with No Ice (Reduced DL)	70.00	0.193	0.0114	0.3182	0.3184
105 mph 180 deg with No Ice (Reduced DL)	150.00	1.060	0.0319	1.0207	1.0212
105 mph 180 deg with No Ice (Reduced DL)	175.19	1.567	0.4336	1.6751	1.7303
105 mph 180 deg with No Ice (Reduced DL)	187.22	1.833	0.7150	1.8250	1.9601
105 mph 210 deg with No Ice (Reduced DL)	70.00	0.193	0.0140	0.3200	0.3202

105 mph 210 deg with No Ice (Reduced DL)	150.00	1.062	0.0504	1.0313	1.0316
105 mph 210 deg with No Ice (Reduced DL)	175.19	1.568	1.0135	1.5504	1.8384
105 mph 210 deg with No Ice (Reduced DL)	187.22	1.832	1.5912	1.6579	2.2688
105 mph 240 deg with No Ice (Reduced DL)	70.00	0.198	0.0215	0.3250	0.3251
105 mph 240 deg with No Ice (Reduced DL)	150.00	1.073	0.0741	1.0224	1.0227
105 mph 240 deg with No Ice (Reduced DL)	175.19	1.577	1.2407	1.1597	1.6983
105 mph 240 deg with No Ice (Reduced DL)	187.22	1.838	1.9385	1.1353	2.2364
105 mph 300 deg with No Ice (Reduced DL)	70.00	0.193	0.0127	0.3172	0.3174
105 mph 300 deg with No Ice (Reduced DL)	150.00	1.054	0.0372	1.0107	1.0125
105 mph 300 deg with No Ice (Reduced DL)	175.19	1.553	-0.1902	1.1812	1.6801
105 mph 300 deg with No Ice (Reduced DL)	187.22	1.812	-0.3277	1.1426	2.2108
105 mph 330 deg with No Ice (Reduced DL)	70.00	0.193	0.0058	0.3198	0.3201
105 mph 330 deg with No Ice (Reduced DL)	150.00	1.062	0.0144	1.0303	1.0321
105 mph 330 deg with No Ice (Reduced DL)	175.19	1.568	-0.4122	1.5686	1.9995
105 mph 330 deg with No Ice (Reduced DL)	187.22	1.832	-0.6682	1.6654	2.5864
50 mph Normal with 0.75 in Radial Ice	70.00	0.056	0.0036	0.0924	0.0925
50 mph Normal with 0.75 in Radial Ice	150.00	0.302	0.0099	0.2877	0.2878
50 mph Normal with 0.75 in Radial Ice	175.19	0.440	0.0767	0.4239	0.4307
50 mph Normal with 0.75 in Radial Ice	187.22	0.512	0.1273	0.4464	0.4642
50 mph 60 deg with 0.75 in Radial Ice	70.00	0.057	-0.0044	0.0913	0.0913
50 mph 60 deg with 0.75 in Radial Ice	150.00	0.298	-0.0132	0.2815	0.2815
50 mph 60 deg with 0.75 in Radial Ice	175.19	0.435	0.1267	0.3141	0.3387
50 mph 60 deg with 0.75 in Radial Ice	187.22	0.505	0.1983	0.3015	0.3609
50 mph 90 deg with 0.75 in Radial Ice	70.00	0.057	-0.0053	0.0914	0.0915
50 mph 90 deg with 0.75 in Radial Ice	150.00	0.299	-0.0163	0.2825	0.2826
50 mph 90 deg with 0.75 in Radial Ice	175.19	0.435	-0.1184	0.2644	0.2842
50 mph 90 deg with 0.75 in Radial Ice	187.22	0.505	-0.1772	0.2332	0.2904
50 mph 120 deg with 0.75 in Radial Ice	70.00	0.056	-0.0049	0.0922	0.0923
50 mph 120 deg with 0.75 in Radial Ice	150.00	0.301	-0.0151	0.2858	0.2860
50 mph 120 deg with 0.75 in Radial Ice	175.19	0.438	-0.1392	0.3114	0.3397
50 mph 120 deg with 0.75 in Radial Ice	187.22	0.508	-0.2109	0.3025	0.3654
50 mph 180 deg with 0.75 in Radial Ice	70.00	0.057	0.0036	0.0915	0.0915
50 mph 180 deg with 0.75 in Radial Ice	150.00	0.299	0.0098	0.2831	0.2831
50 mph 180 deg with 0.75 in Radial Ice	175.19	0.438	0.0770	0.4220	0.4278
50 mph 180 deg with 0.75 in Radial Ice	187.22	0.509	0.1279	0.4446	0.4626
50 mph 210 deg with 0.75 in Radial Ice	70.00	0.057	0.0029	0.0916	0.0917
50 mph 210 deg with 0.75 in Radial Ice	150.00	0.300	0.0091	0.2841	0.2842
50 mph 210 deg with 0.75 in Radial Ice	175.19	0.437	0.0953	0.3885	0.4000
50 mph 210 deg with 0.75 in Radial Ice	187.22	0.509	0.1451	0.4038	0.4241
50 mph 240 deg with 0.75 in Radial Ice	70.00	0.056	0.0049	0.0922	0.0923
50 mph 240 deg with 0.75 in Radial Ice	150.00	0.301	0.0151	0.2858	0.2860
50 mph 240 deg with 0.75 in Radial Ice	175.19	0.438	0.1392	0.3114	0.3397
50 mph 240 deg with 0.75 in Radial Ice	187.22	0.508	0.2109	0.3025	0.3654
50 mph 300 deg with 0.75 in Radial Ice	70.00	0.057	0.0044	0.0913	0.0913
50 mph 300 deg with 0.75 in Radial Ice	150.00	0.298	0.0132	0.2815	0.2815
50 mph 300 deg with 0.75 in Radial Ice	175.19	0.435	0.0661	0.3141	0.3387
50 mph 300 deg with 0.75 in Radial Ice	187.22	0.505	0.0964	0.3015	0.3609
50 mph 330 deg with 0.75 in Radial Ice	70.00	0.057	0.0024	0.0917	0.0917
50 mph 330 deg with 0.75 in Radial Ice	150.00	0.300	0.0072	0.2844	0.2844
50 mph 330 deg with 0.75 in Radial Ice	175.19	0.437	0.0227	0.3918	0.4138
50 mph 330 deg with 0.75 in Radial Ice	187.22	0.509	0.0315	0.4042	0.4567
Seismic Normal M1	70.00	0.010	0.0007	0.0167	0.0167
Seismic Normal M1	150.00	0.057	0.0024	0.0598	0.0598
Seismic Normal M1	175.19	0.086	0.0015	0.0724	0.0724
Seismic Normal M1	187.22	0.101	0.0011	0.0708	0.0708
Seismic Normal M2	70.00	0.008	0.0005	0.0129	0.0130
Seismic Normal M2	150.00	0.047	0.0020	0.0551	0.0551
Seismic Normal M2	175.19	0.075	0.0013	0.0722	0.0722
Seismic Normal M2	187.22	0.090	0.0010	0.0702	0.0702
Seismic 60 deg M1	70.00	0.010	-0.0007	0.0165	0.0165
Seismic 60 deg M1	150.00	0.056	-0.0023	0.0588	0.0588
Seismic 60 deg M1	175.19	0.084	0.0014	0.0714	0.0714
Seismic 60 deg M1	187.22	0.099	0.0010	0.0692	0.0693
Seismic 60 deg M2	70.00	0.007	-0.0005	0.0130	0.0130

Seismic 60 deg M2	150.00	0.047	-0.0020	0.0546	0.0546
Seismic 60 deg M2	175.19	0.075	0.0013	0.0728	0.0728
Seismic 60 deg M2	187.22	0.090	0.0010	0.0700	0.0700
Seismic 90 deg M1	70.00	0.010	-0.0008	0.0167	0.0167
Seismic 90 deg M1	150.00	0.057	-0.0027	0.0600	0.0600
Seismic 90 deg M1	175.19	0.086	-0.0017	0.0727	0.0727
Seismic 90 deg M1	187.22	0.101	-0.0013	0.0708	0.0708
Seismic 90 deg M2	70.00	0.008	-0.0006	0.0130	0.0130
Seismic 90 deg M2	150.00	0.047	-0.0023	0.0549	0.0549
Seismic 90 deg M2	175.19	0.075	-0.0015	0.0726	0.0726
Seismic 90 deg M2	187.22	0.090	-0.0011	0.0701	0.0701
Seismic 120 deg M1	70.00	0.010	-0.0007	0.0165	0.0165
Seismic 120 deg M1	150.00	0.056	-0.0023	0.0587	0.0587
Seismic 120 deg M1	175.19	0.084	0.0014	0.0709	0.0709
Seismic 120 deg M1	187.22	0.099	0.0010	0.0694	0.0694
Seismic 120 deg M2	70.00	0.008	-0.0005	0.0129	0.0130
Seismic 120 deg M2	150.00	0.047	-0.0020	0.0551	0.0551
Seismic 120 deg M2	175.19	0.075	0.0013	0.0722	0.0722
Seismic 120 deg M2	187.22	0.090	0.0010	0.0702	0.0702
Seismic 180 deg M1	70.00	0.010	0.0007	0.0167	0.0167
Seismic 180 deg M1	150.00	0.057	0.0024	0.0599	0.0599
Seismic 180 deg M1	175.19	0.086	0.0015	0.0729	0.0729
Seismic 180 deg M1	187.22	0.101	0.0011	0.0707	0.0707
Seismic 180 deg M2	70.00	0.007	0.0005	0.0130	0.0130
Seismic 180 deg M2	150.00	0.047	0.0020	0.0546	0.0546
Seismic 180 deg M2	175.19	0.075	0.0013	0.0728	0.0728
Seismic 180 deg M2	187.22	0.090	0.0010	0.0700	0.0700
Seismic 210 deg M1	70.00	0.010	0.0004	0.0165	0.0165
Seismic 210 deg M1	150.00	0.056	0.0013	0.0589	0.0589
Seismic 210 deg M1	175.19	0.084	0.0008	0.0712	0.0712
Seismic 210 deg M1	187.22	0.099	0.0006	0.0694	0.0694
Seismic 210 deg M2	70.00	0.008	0.0003	0.0130	0.0130
Seismic 210 deg M2	150.00	0.047	0.0011	0.0549	0.0549
Seismic 210 deg M2	175.19	0.075	0.0007	0.0726	0.0726
Seismic 210 deg M2	187.22	0.090	0.0006	0.0701	0.0701
Seismic 240 deg M1	70.00	0.010	0.0007	0.0165	0.0165
Seismic 240 deg M1	150.00	0.056	0.0023	0.0587	0.0587
Seismic 240 deg M1	175.19	0.084	0.0014	0.0709	0.0709
Seismic 240 deg M1	187.22	0.099	0.0010	0.0694	0.0694
Seismic 240 deg M2	70.00	0.008	0.0005	0.0129	0.0130
Seismic 240 deg M2	150.00	0.047	0.0020	0.0551	0.0551
Seismic 240 deg M2	175.19	0.075	0.0013	0.0722	0.0722
Seismic 240 deg M2	187.22	0.090	0.0010	0.0702	0.0702
Seismic 300 deg M1	70.00	0.010	0.0007	0.0165	0.0165
Seismic 300 deg M1	150.00	0.056	0.0023	0.0588	0.0588
Seismic 300 deg M1	175.19	0.084	0.0014	0.0714	0.0714
Seismic 300 deg M1	187.22	0.099	0.0010	0.0692	0.0693
Seismic 300 deg M2	70.00	0.007	0.0005	0.0130	0.0130
Seismic 300 deg M2	150.00	0.047	0.0020	0.0546	0.0546
Seismic 300 deg M2	175.19	0.075	0.0013	0.0728	0.0728
Seismic 300 deg M2	187.22	0.090	0.0010	0.0700	0.0700
Seismic 330 deg M1	70.00	0.010	0.0004	0.0165	0.0165
Seismic 330 deg M1	150.00	0.056	0.0013	0.0589	0.0589
Seismic 330 deg M1	175.19	0.084	0.0008	0.0712	0.0712
Seismic 330 deg M1	187.22	0.099	0.0006	0.0694	0.0694
Seismic 330 deg M2	70.00	0.008	0.0003	0.0130	0.0130
Seismic 330 deg M2	150.00	0.047	0.0011	0.0549	0.0549
Seismic 330 deg M2	175.19	0.075	0.0007	0.0726	0.0726
Seismic 330 deg M2	187.22	0.090	0.0006	0.0701	0.0701
Seismic (Reduced DL) Normal M1	70.00	0.010	0.0007	0.0167	0.0167
Seismic (Reduced DL) Normal M1	150.00	0.057	0.0024	0.0588	0.0589
Seismic (Reduced DL) Normal M1	175.19	0.086	0.0015	0.0721	0.0721
Seismic (Reduced DL) Normal M1	187.22	0.101	0.0011	0.0704	0.0704
Seismic (Reduced DL) Normal M2	70.00	0.008	0.0005	0.0129	0.0129

Seismic (Reduced DL) Normal M2	150.00	0.047	0.0019	0.0542	0.0542
Seismic (Reduced DL) Normal M2	175.19	0.075	0.0013	0.0720	0.0720
Seismic (Reduced DL) Normal M2	187.22	0.090	0.0010	0.0698	0.0698
Seismic (Reduced DL) 60 deg M1	70.00	0.010	-0.0007	0.0164	0.0164
Seismic (Reduced DL) 60 deg M1	150.00	0.056	-0.0023	0.0573	0.0573
Seismic (Reduced DL) 60 deg M1	175.19	0.084	0.0014	0.0711	0.0711
Seismic (Reduced DL) 60 deg M1	187.22	0.099	0.0010	0.0690	0.0690
Seismic (Reduced DL) 60 deg M2	70.00	0.007	-0.0005	0.0129	0.0129
Seismic (Reduced DL) 60 deg M2	150.00	0.047	-0.0019	0.0531	0.0531
Seismic (Reduced DL) 60 deg M2	175.19	0.075	0.0013	0.0724	0.0724
Seismic (Reduced DL) 60 deg M2	187.22	0.090	0.0010	0.0698	0.0698
Seismic (Reduced DL) 90 deg M1	70.00	0.010	-0.0008	0.0167	0.0167
Seismic (Reduced DL) 90 deg M1	150.00	0.057	-0.0027	0.0586	0.0586
Seismic (Reduced DL) 90 deg M1	175.19	0.086	-0.0017	0.0724	0.0724
Seismic (Reduced DL) 90 deg M1	187.22	0.101	-0.0013	0.0704	0.0704
Seismic (Reduced DL) 90 deg M2	70.00	0.007	-0.0006	0.0129	0.0129
Seismic (Reduced DL) 90 deg M2	150.00	0.047	-0.0022	0.0536	0.0536
Seismic (Reduced DL) 90 deg M2	175.19	0.075	-0.0015	0.0723	0.0723
Seismic (Reduced DL) 90 deg M2	187.22	0.090	-0.0011	0.0698	0.0698
Seismic (Reduced DL) 120 deg M1	70.00	0.010	-0.0007	0.0164	0.0164
Seismic (Reduced DL) 120 deg M1	150.00	0.056	-0.0023	0.0577	0.0578
Seismic (Reduced DL) 120 deg M1	175.19	0.084	0.0014	0.0706	0.0706
Seismic (Reduced DL) 120 deg M1	187.22	0.099	0.0010	0.0690	0.0690
Seismic (Reduced DL) 120 deg M2	70.00	0.008	-0.0005	0.0129	0.0129
Seismic (Reduced DL) 120 deg M2	150.00	0.047	-0.0019	0.0542	0.0542
Seismic (Reduced DL) 120 deg M2	175.19	0.075	0.0013	0.0720	0.0720
Seismic (Reduced DL) 120 deg M2	187.22	0.090	0.0010	0.0698	0.0698
Seismic (Reduced DL) 180 deg M1	70.00	0.010	0.0007	0.0167	0.0167
Seismic (Reduced DL) 180 deg M1	150.00	0.057	0.0024	0.0583	0.0583
Seismic (Reduced DL) 180 deg M1	175.19	0.086	0.0015	0.0725	0.0725
Seismic (Reduced DL) 180 deg M1	187.22	0.101	0.0011	0.0704	0.0704
Seismic (Reduced DL) 180 deg M2	70.00	0.007	0.0005	0.0129	0.0129
Seismic (Reduced DL) 180 deg M2	150.00	0.047	0.0019	0.0531	0.0531
Seismic (Reduced DL) 180 deg M2	175.19	0.075	0.0013	0.0724	0.0724
Seismic (Reduced DL) 180 deg M2	187.22	0.090	0.0010	0.0698	0.0698
Seismic (Reduced DL) 210 deg M1	70.00	0.010	0.0004	0.0164	0.0164
Seismic (Reduced DL) 210 deg M1	150.00	0.056	0.0013	0.0575	0.0576
Seismic (Reduced DL) 210 deg M1	175.19	0.084	0.0008	0.0709	0.0709
Seismic (Reduced DL) 210 deg M1	187.22	0.099	0.0006	0.0690	0.0690
Seismic (Reduced DL) 210 deg M2	70.00	0.007	0.0003	0.0129	0.0129
Seismic (Reduced DL) 210 deg M2	150.00	0.047	0.0011	0.0536	0.0536
Seismic (Reduced DL) 210 deg M2	175.19	0.075	0.0007	0.0723	0.0723
Seismic (Reduced DL) 210 deg M2	187.22	0.090	0.0006	0.0698	0.0698
Seismic (Reduced DL) 240 deg M1	70.00	0.010	0.0007	0.0164	0.0164
Seismic (Reduced DL) 240 deg M1	150.00	0.056	0.0023	0.0577	0.0578
Seismic (Reduced DL) 240 deg M1	175.19	0.084	0.0014	0.0706	0.0706
Seismic (Reduced DL) 240 deg M1	187.22	0.099	0.0010	0.0690	0.0690
Seismic (Reduced DL) 240 deg M2	70.00	0.008	0.0005	0.0129	0.0129
Seismic (Reduced DL) 240 deg M2	150.00	0.047	0.0019	0.0542	0.0542
Seismic (Reduced DL) 240 deg M2	175.19	0.075	0.0013	0.0720	0.0720
Seismic (Reduced DL) 240 deg M2	187.22	0.090	0.0010	0.0698	0.0698
Seismic (Reduced DL) 300 deg M1	70.00	0.010	0.0007	0.0164	0.0164
Seismic (Reduced DL) 300 deg M1	150.00	0.056	0.0023	0.0573	0.0573
Seismic (Reduced DL) 300 deg M1	175.19	0.084	0.0014	0.0711	0.0711
Seismic (Reduced DL) 300 deg M1	187.22	0.099	0.0010	0.0690	0.0690
Seismic (Reduced DL) 300 deg M2	70.00	0.007	0.0005	0.0129	0.0129
Seismic (Reduced DL) 300 deg M2	150.00	0.047	0.0019	0.0531	0.0531
Seismic (Reduced DL) 300 deg M2	175.19	0.075	0.0013	0.0724	0.0724
Seismic (Reduced DL) 300 deg M2	187.22	0.090	0.0010	0.0698	0.0698
Seismic (Reduced DL) 330 deg M1	70.00	0.010	0.0004	0.0164	0.0164
Seismic (Reduced DL) 330 deg M1	150.00	0.056	0.0013	0.0575	0.0576
Seismic (Reduced DL) 330 deg M1	175.19	0.084	0.0008	0.0709	0.0709
Seismic (Reduced DL) 330 deg M1	187.22	0.099	0.0006	0.0690	0.0690
Seismic (Reduced DL) 330 deg M2	70.00	0.007	0.0003	0.0129	0.0129

Seismic (Reduced DL) 330 deg M2	150.00	0.047	0.0011	0.0536	0.0536
Seismic (Reduced DL) 330 deg M2	175.19	0.075	0.0007	0.0723	0.0723
Seismic (Reduced DL) 330 deg M2	187.22	0.090	0.0006	0.0698	0.0698
Serviceability - 60 mph Wind Normal	70.00	0.041	0.0025	0.0674	0.0674
Serviceability - 60 mph Wind Normal	150.00	0.222	0.0067	0.2138	0.2139
Serviceability - 60 mph Wind Normal	175.19	0.328	0.0865	0.3456	0.3563
Serviceability - 60 mph Wind Normal	187.22	0.383	0.1420	0.3761	0.4021
Serviceability - 60 mph Wind 60 deg	70.00	0.040	-0.0033	0.0655	0.0655
Serviceability - 60 mph Wind 60 deg	150.00	0.217	-0.0105	0.2059	0.2061
Serviceability - 60 mph Wind 60 deg	175.19	0.320	0.1267	0.2318	0.2642
Serviceability - 60 mph Wind 60 deg	187.22	0.373	0.1999	0.2245	0.3005
Serviceability - 60 mph Wind 90 deg	70.00	0.040	-0.0040	0.0659	0.0660
Serviceability - 60 mph Wind 90 deg	150.00	0.218	-0.0131	0.2094	0.2098
Serviceability - 60 mph Wind 90 deg	175.19	0.320	-0.1227	0.1760	0.2105
Serviceability - 60 mph Wind 90 deg	187.22	0.373	-0.1872	0.1406	0.2322
Serviceability - 60 mph Wind 120 deg	70.00	0.041	-0.0037	0.0672	0.0672
Serviceability - 60 mph Wind 120 deg	150.00	0.221	-0.0122	0.2118	0.2119
Serviceability - 60 mph Wind 120 deg	175.19	0.325	-0.1363	0.2311	0.2666
Serviceability - 60 mph Wind 120 deg	187.22	0.378	-0.2094	0.2253	0.3050
Serviceability - 60 mph Wind 180 deg	70.00	0.040	0.0024	0.0657	0.0657
Serviceability - 60 mph Wind 180 deg	150.00	0.218	0.0066	0.2079	0.2080
Serviceability - 60 mph Wind 180 deg	175.19	0.322	0.0870	0.3426	0.3535
Serviceability - 60 mph Wind 180 deg	187.22	0.377	0.1428	0.3735	0.3999
Serviceability - 60 mph Wind 210 deg	70.00	0.040	0.0022	0.0661	0.0662
Serviceability - 60 mph Wind 210 deg	150.00	0.219	0.0073	0.2118	0.2119
Serviceability - 60 mph Wind 210 deg	175.19	0.323	0.0899	0.3099	0.3217
Serviceability - 60 mph Wind 210 deg	187.22	0.377	0.1387	0.3323	0.3552
Serviceability - 60 mph Wind 240 deg	70.00	0.041	0.0037	0.0672	0.0672
Serviceability - 60 mph Wind 240 deg	150.00	0.221	0.0122	0.2118	0.2119
Serviceability - 60 mph Wind 240 deg	175.19	0.325	0.1363	0.2311	0.2666
Serviceability - 60 mph Wind 240 deg	187.22	0.378	0.2094	0.2253	0.3050
Serviceability - 60 mph Wind 300 deg	70.00	0.040	0.0033	0.0655	0.0655
Serviceability - 60 mph Wind 300 deg	150.00	0.217	0.0105	0.2059	0.2061
Serviceability - 60 mph Wind 300 deg	175.19	0.320	0.0766	0.2318	0.2642
Serviceability - 60 mph Wind 300 deg	187.22	0.373	0.1154	0.2245	0.3005
Serviceability - 60 mph Wind 330 deg	70.00	0.040	0.0018	0.0661	0.0662
Serviceability - 60 mph Wind 330 deg	150.00	0.219	0.0058	0.2118	0.2120
Serviceability - 60 mph Wind 330 deg	175.19	0.323	0.0317	0.3126	0.3410
Serviceability - 60 mph Wind 330 deg	187.22	0.377	0.0468	0.3332	0.3981

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	51.34	116.80	294.77	28.89	44.31	12.79	4809.08	1370.96

Exhibit E

Mount Analysis

Mount Analysis of Existing Sector Frames for American Tower on behalf of T-Mobile
10027 - Salem CT
Project #: 12927188

T-Mobile Site ID: CTNH143C
Program: L600

CLS Engineering PLLC Project #41124-12927188-01-MA-R1
July 3, 2019

MOUNT DESCRIPTION	Existing Sector Frames at 173 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 175 ft AGL (Eccentricity of ~2 ft)
SITE DESCRIPTION	190 ft Self-Supporting Tower
SITE ADDRESS	Intersection of Connecticut Rt. 82 and Rt. 11, Salem, CT 06420, New London County
GPS COORDINATES	41.46846667, -72.27329444
ANALYSIS STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	135 mph, V_{ult} / 104.6 mph, V_{asd} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 0.75"

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

MEMBER USAGE	**78%**	**Pass**

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

Prepared by:
Jennifer Soza

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

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

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

IdenTrust part of HID Global
Digitally signed by Tyler Barker
DN: c=US, o=Telamon Corporation, ou=A01427E00000 16A4525ADF80000 1D17, cn=Tyler Barker
Date: 2019.07.03 21:59:01 -04'00'

■ INTRODUCTION

The proposed equipment is to be mounted to the existing 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	Photos dated July 18, 2018 Site Pro 1 Assembly Drawing, #SCX2-K, dated June 30, 2011 Site Pro 1 Assembly Drawing, #SFS-V, dated April 29, 2014
PREVIOUS ANALYSES	Structural Analysis by ATC, Engineering #OAA714423_C3_03, dated March 22, 2018
LOADING DATA	American Tower Application, Project #12927188, dated April 2, 2019

■ ANALYSIS CRITERIA

STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
BASIC WIND SPEED	135 mph, V_{ult} / 104.6 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	
MOUNT	**RAD.**	**#**	**NAME**
173.0	175.0	3	RFS Celwave APX16DWV-16DWVS-E-A20
		3	Ericsson RRUS 11 B2
		3	Ericsson RRUS 11 B4
		3	Ericsson RADIO 4449 B12/B71
		3	RFS Celwave APXVAARR24_43-U-NA20

■ RESULTS SUMMARY

Existing Mount Usage:

COMPONENT	PEAK USAGE	RESULT
Face Horizontals	131%	Pass
Mount Pipes	105%	Pass
Bracing Members	88%	Pass
Offset Conn Plate	65%	Pass

Modified Mount Usage:

COMPONENT	PEAK USAGE	RESULT
Mount Pipes	78%	Pass
Bracing Members	68%	Pass
Offset Conn Plate	65%	Pass
Face Horizontals	59%	Pass

■ CONCLUSION AND RECOMMENDATIONS

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

- **Install (1) 13' long Pipe 2½ STD, A53 Gr. B, face horizontal pipe at each sector frame mount (3 total). Pipes to be installed 9" above the existing top face horizontal pipe member. Connect to all existing antenna mount pipes with Site Pro 1 SCX2-K crossover plate kits or equal.**
- **Install (1) Site Pro 1 SFS-V Sector Frame Stabilizer kit at each sector frame mount (3 total). Connect to proposed face horizontal pipe and existing tower leg as shown in the following sketches.**
- **Relocate equipment, as required, to facilitate installation of proposed modifications on mount.**
- **All hardware for Site Pro 1 SFS-V connection to the tower leg should be installed with "turn of the nut" method per the following table:**

BOLT TIGHTENING PROCEDURE

1. TIGHTEN BOLTS BY AISC "TURN OF THE NUT" METHOD USING THE CHART BELOW:

   BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS:
   +1/3 TURN BEYOND SNUG TIGHT

   BOLT LENGTHS OVER FOUR AND UP TO EIGHT DIAMETERS:
   +1/2 TURN BEYOND SNUG TIGHT

   BOLT LENGTHS OVER EIGHT AND UP TO TWELVE DIAMETERS:
   +2/3 TURN BEYOND SNUG TIGHT

2. SPLICE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8(d)(1) OF THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS AS FOLLOWS:

   "FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND BE TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8(d)(1) THROUGH 8(d)(4).

   8(d)(1) TURN-OF-THE-NUT TIGHTENING.
   BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION. SNUG TIGHT IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN THE PLIES OF A JOINT ARE IN FIRM CONTACT. THIS MAY BE OBTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. SNUG TIGHTENING SHALL PROGRESS SYSTEMATICALLY...UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION, ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION, THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.

BEFORE ⅓ TURN AFTER ⅓ TURN

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

■ ASSUMPTIONS AND CONDITIONS

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

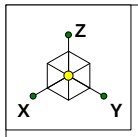
This analysis assumes the following:

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

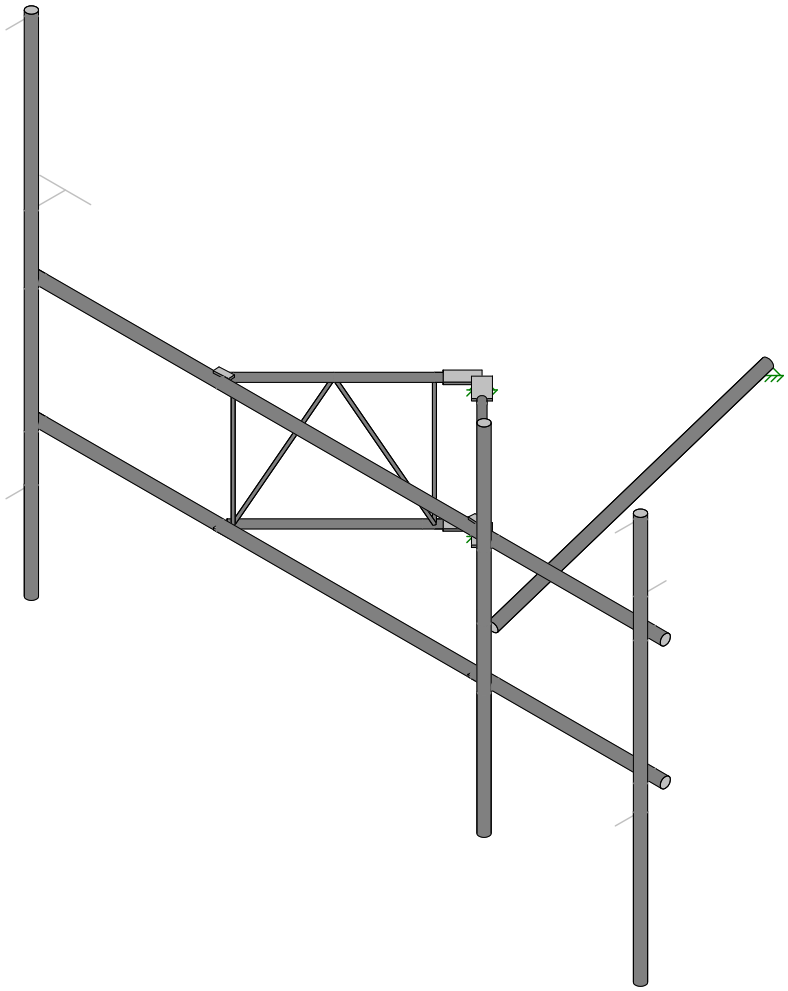
All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of the report. All opinions and conclusions contained herein are subject to revision based upon receipt of new or updated information. All services are provided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

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

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



Existing Mount - To Be Modified



Envelope Only Solution

CLS		EX - 1
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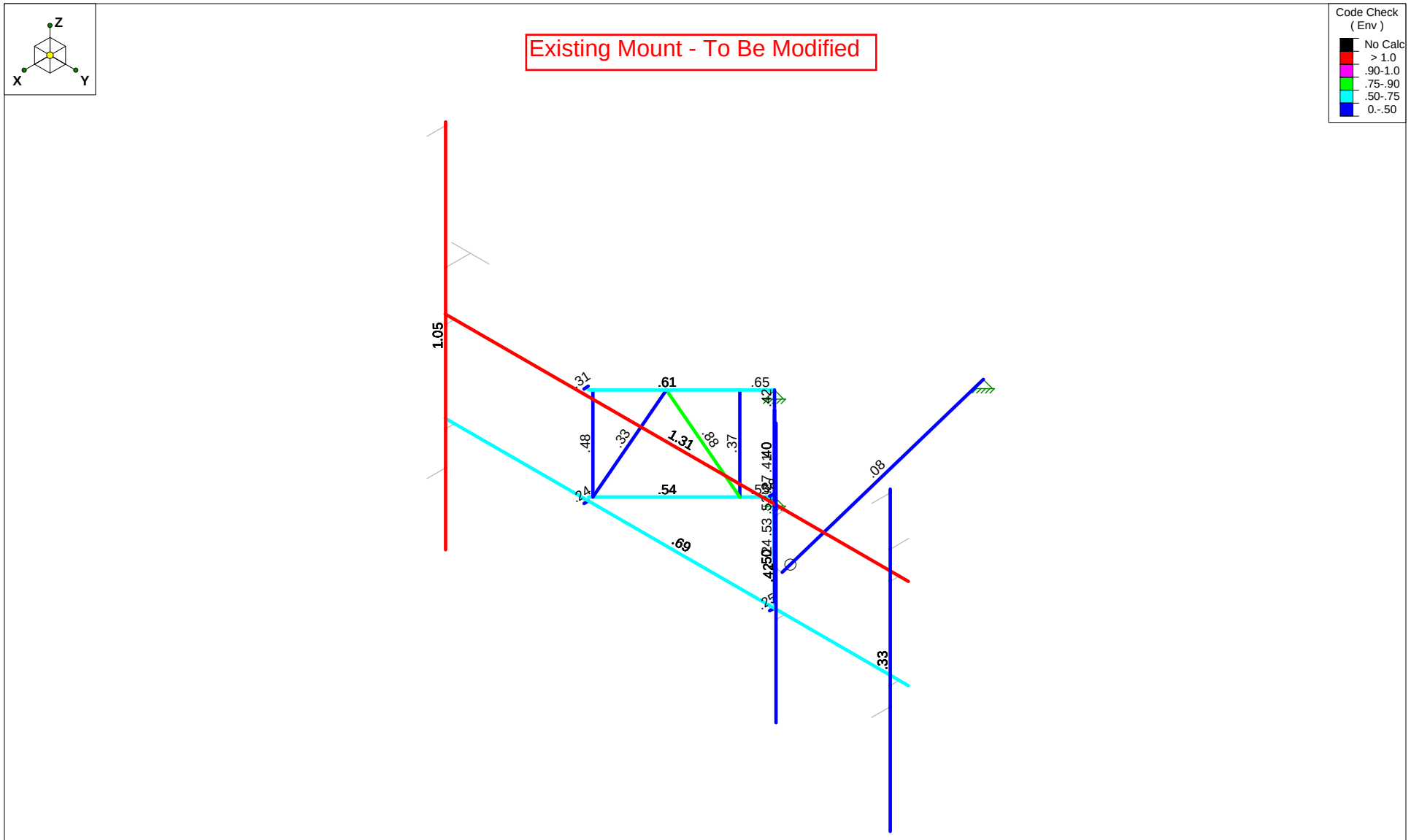
41124-12927188-01-MA	Existing Mount - Rendered	41124-12927188-01-MA-Pre.r3d



CLS		EX - 1
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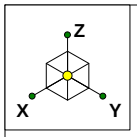

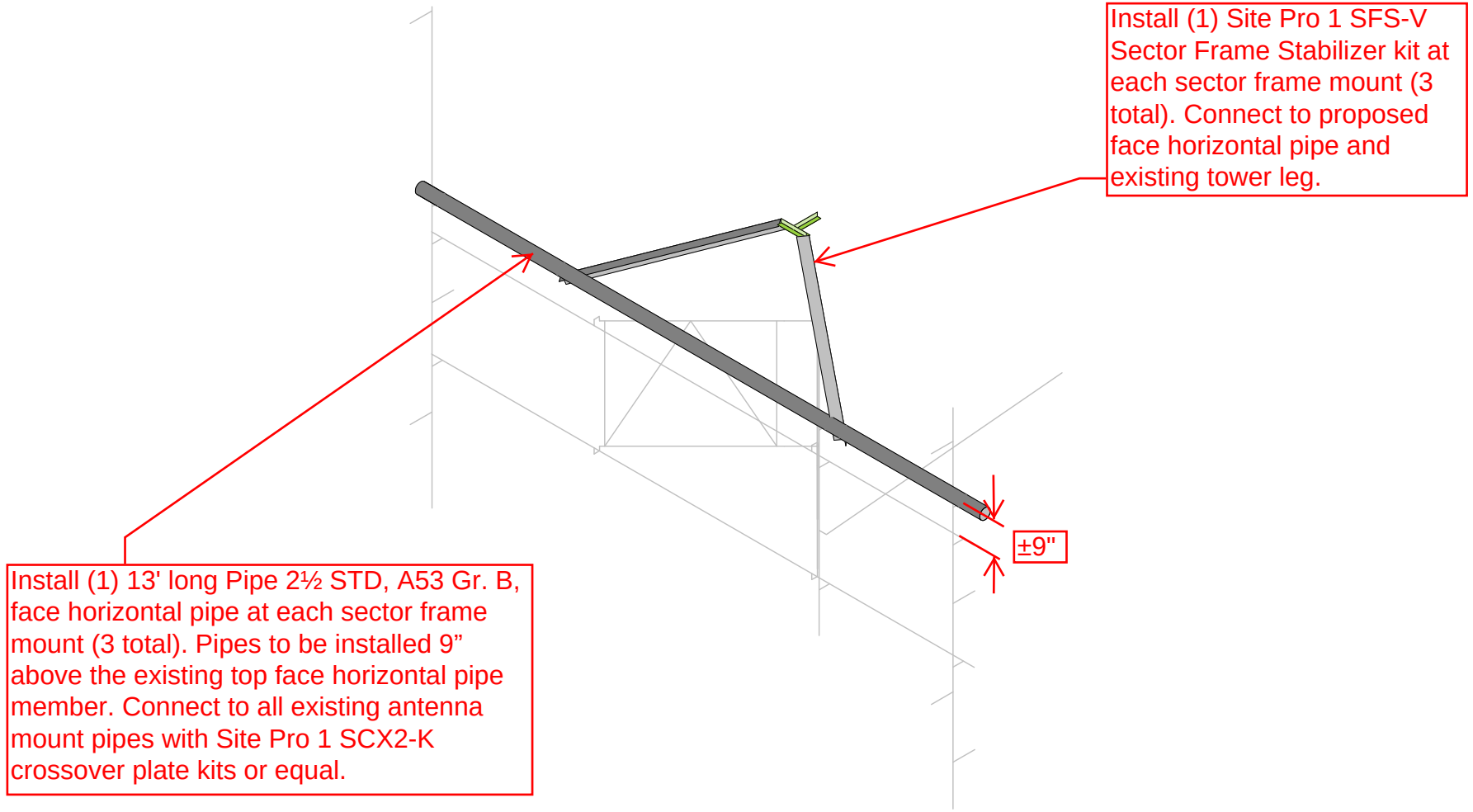

Envelope Only Solution

CLS		IN - 1
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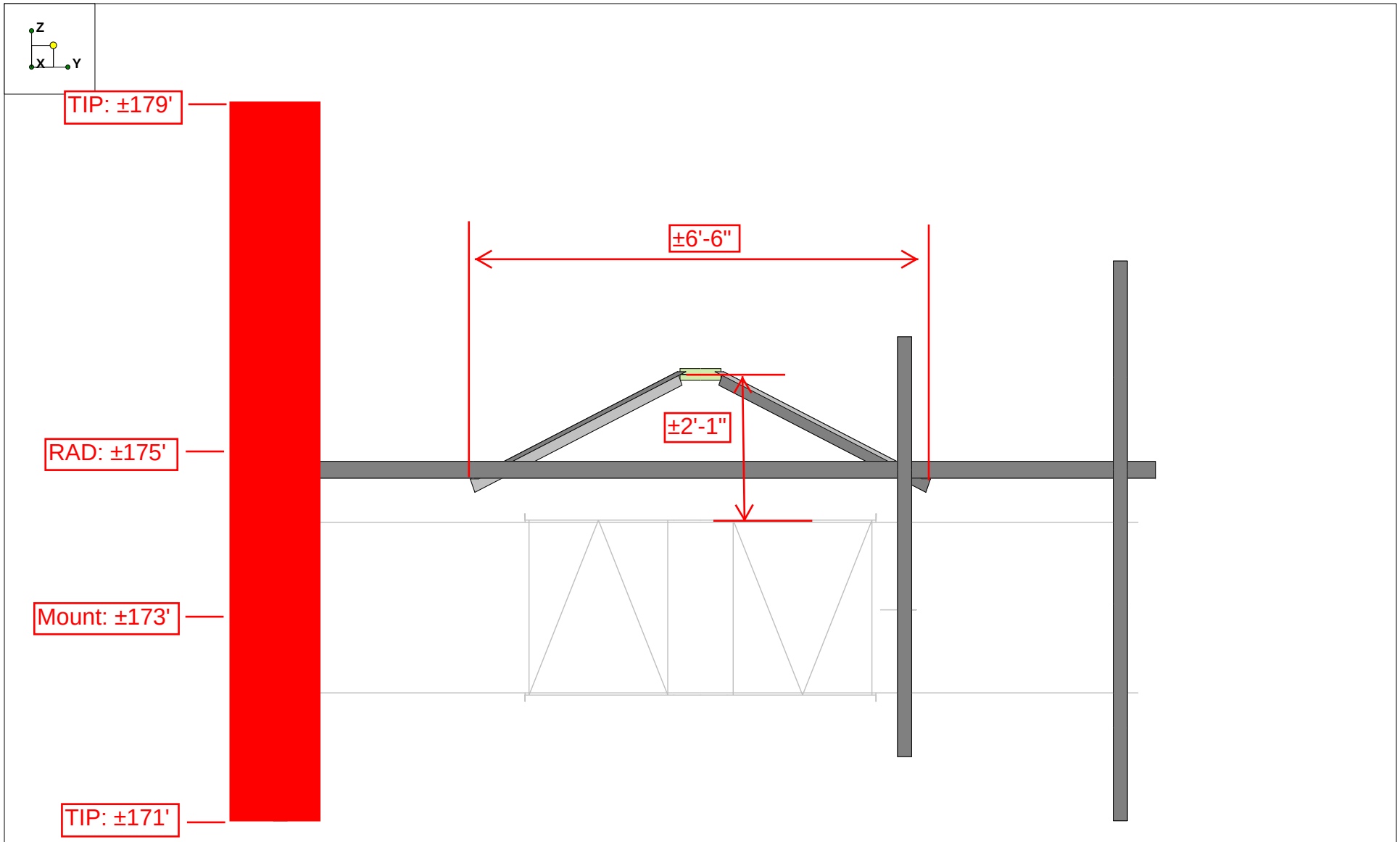
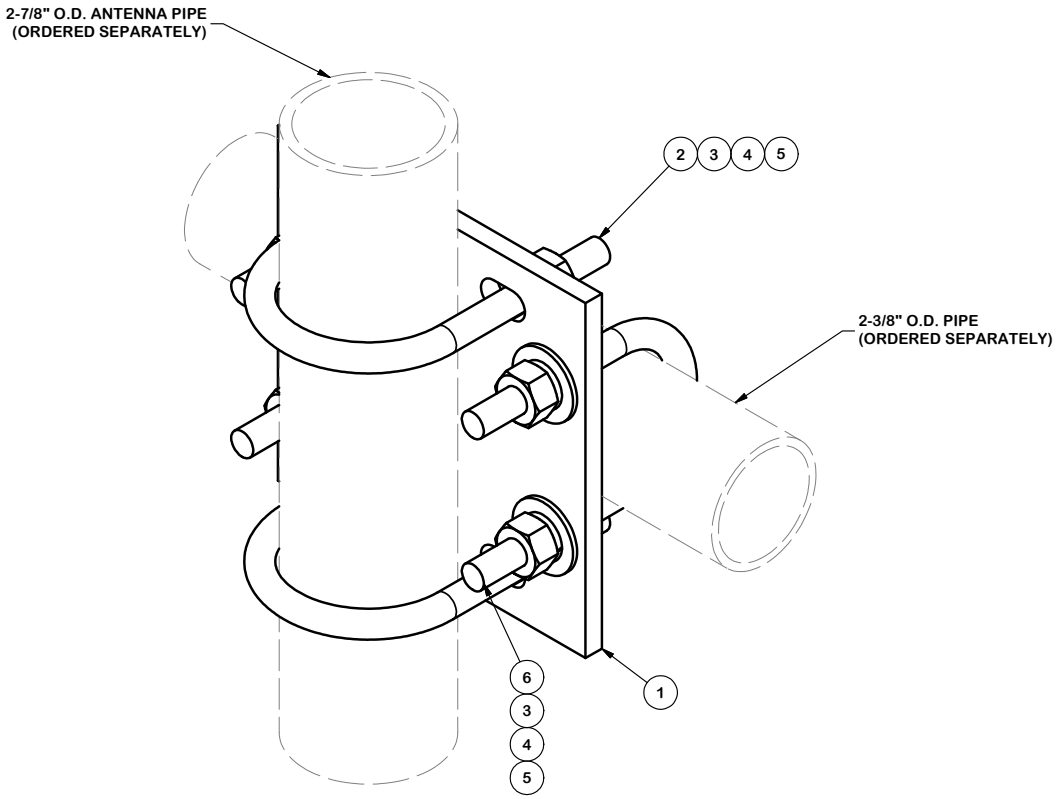


CLS		IN - 2
ZSB	41124-12927188-Salem CT	Apr 12, 2019 at 4:50 PM
41124-12927188-01-MA	Proposed Modifications - Rendered	41124-12927188-01-MA.r3d

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	SCX2	CROSSOVER PLATE	7 in	4.80	4.80
2	2	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.66	1.31
3	8	G12FW	1/2" HDG USS FLATWASHER		0.03	0.27
4	8	G12LW	1/2" HDG LOCKWASHER		0.01	0.11
5	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
6	2	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	1.25
					TOTAL WT. #	8.39



TOLERANCE NOTES

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

DESCRIPTION: CROSSOVER PLATE KIT

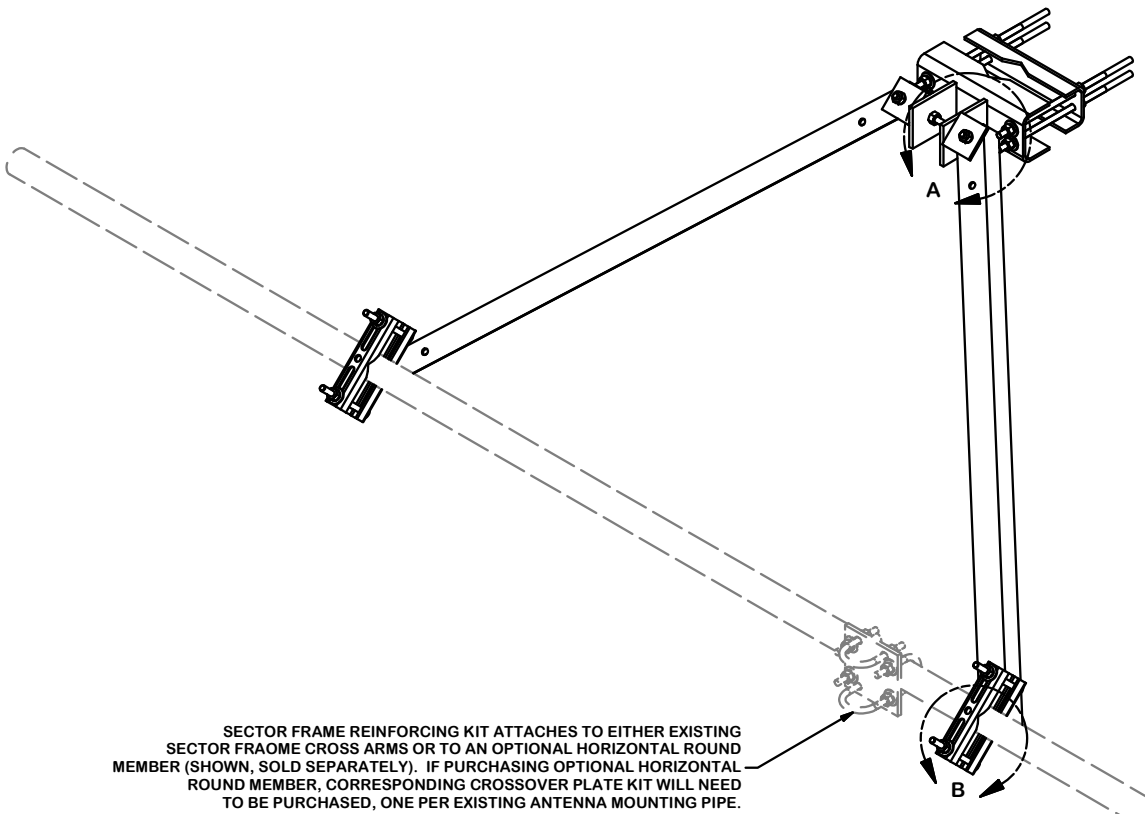
SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

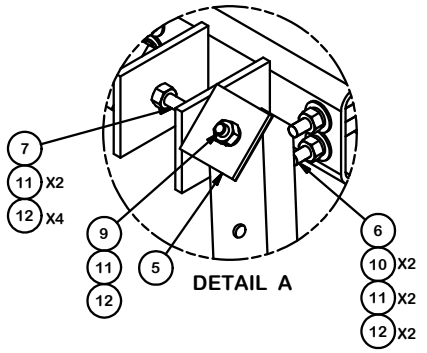
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
	CEK 6/30/2011		SCX2-K	1 OF 1
CLASS / SUB	DRAWING USAGE	CHECKED BY	DWG. NO.	
	SHOP	BMC 7/1/2011	SCX2-K	

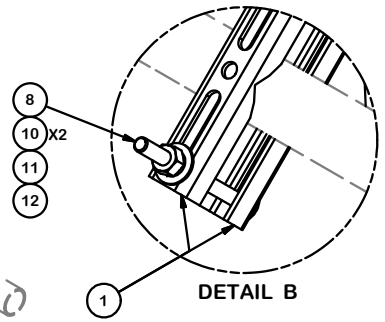
PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	4	X-STU	STIFF ARM CHANNEL BRACKET		1.37	5.49
2	2	X-232697	TRPD-HD DIAGONAL ANGLE - SITR PRO 1	52 1/2 in	14.21	28.42
3	1	CFS	LOWER GATE FOOT WELDMENT		12.72	12.72
4	1	GBB	GATE BACKING BAR		4.53	4.53
5	2	SHCM-T	CHAIN MOUNT TIGHTENER BRACKET	3 in	1.84	3.68
6	4	G12R-15	1/2" x 15" THREADED ROD (HDG.)		0.55	2.20
6	4	G12R-12	1/2" x 12" THREADED ROD (HDG.)		0.55	2.20
7	1	G12R-6	1/2" x 6" GALV. THREADED ROD		0.33	0.33
8	4	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	1.64
9	4	G12112	1/2" x 1-1/2" HDG HEX BOLT GR5	1 1/2 in	0.15	0.59
10	16	G12FW	1/2" HDG USS FLATWASHER		0.03	0.54
11	18	G12LW	1/2" HDG LOCKWASHER		0.01	0.25
12	20	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	1.43
					TOTAL WT. #	65.66



SECTOR FRAME REINFORCING KIT ATTACHES TO EITHER EXISTING SECTOR FRAOME CROSS ARMS OR TO AN OPTIONAL HORIZONTAL ROUND MEMBER (SHOWN, SOLD SEPARATELY). IF PURCHASING OPTIONAL HORIZONTAL ROUND MEMBER, CORRESPONDING CROSSOVER PLATE KIT WILL NEED TO BE PURCHASED, ONE PER EXISTING ANTENNA MOUNTING PIPE.



DETAIL A



DETAIL B

TOLERANCE NOTES

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ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION
SECTOR FRAME
STABILIZER - VERTICAL

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

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

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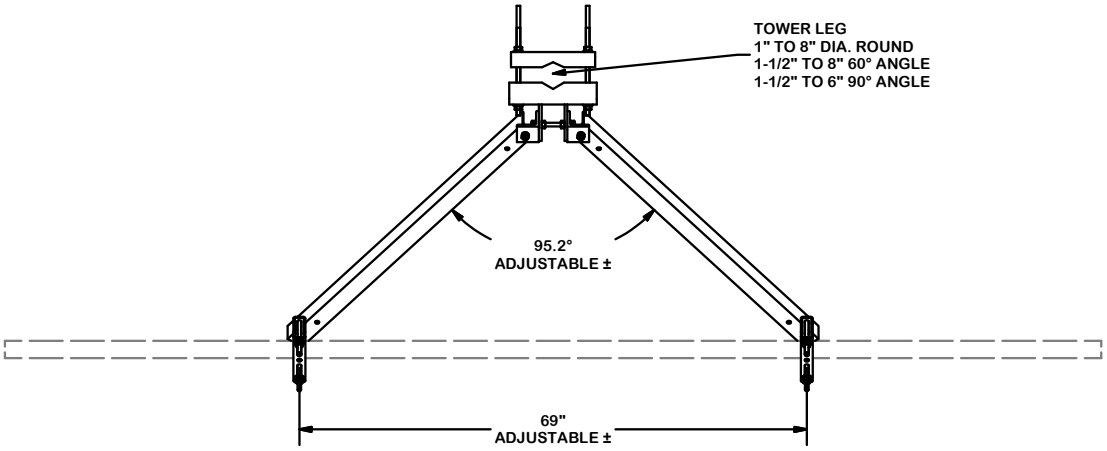

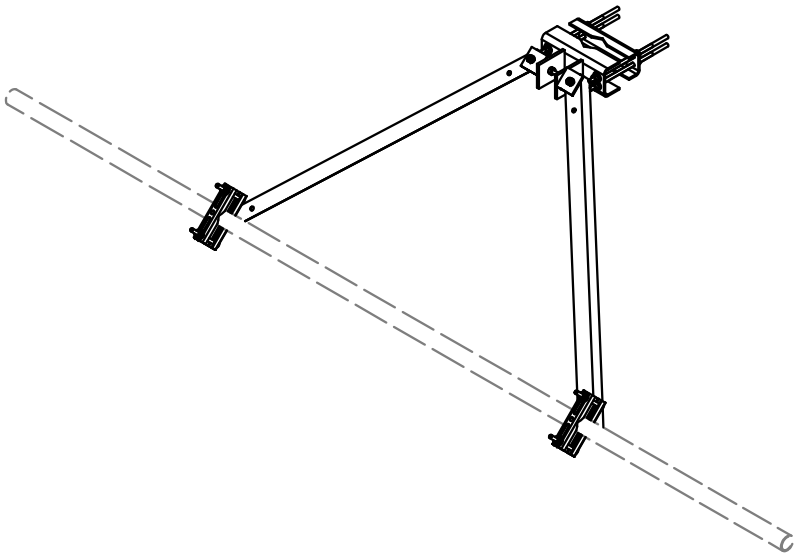

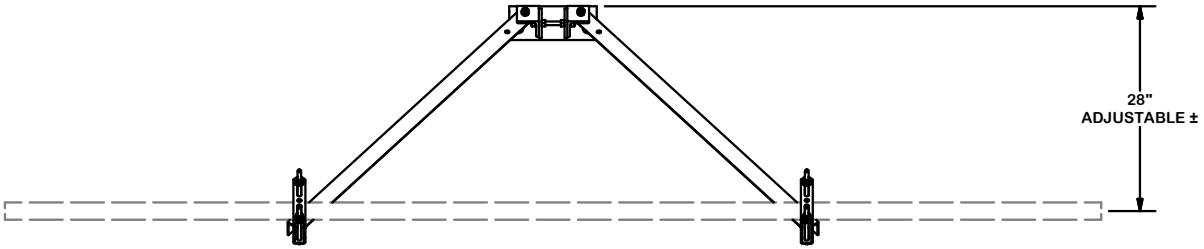

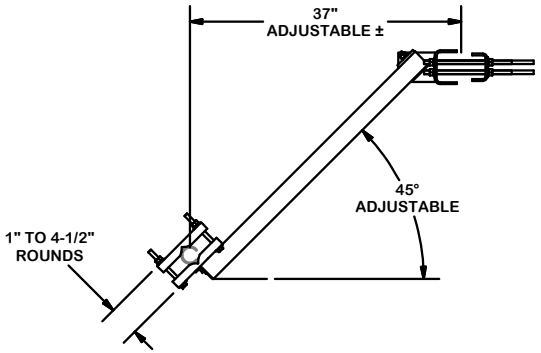

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DESCRIPTION: SECTOR FRAME
STABILIZER - VERTICAL

SITE PRO 1 — A valmont COMPANY

Engineering Support Team:
1-888-753-7446

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

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
5563	CEK 4/29/2014		SFS-V

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
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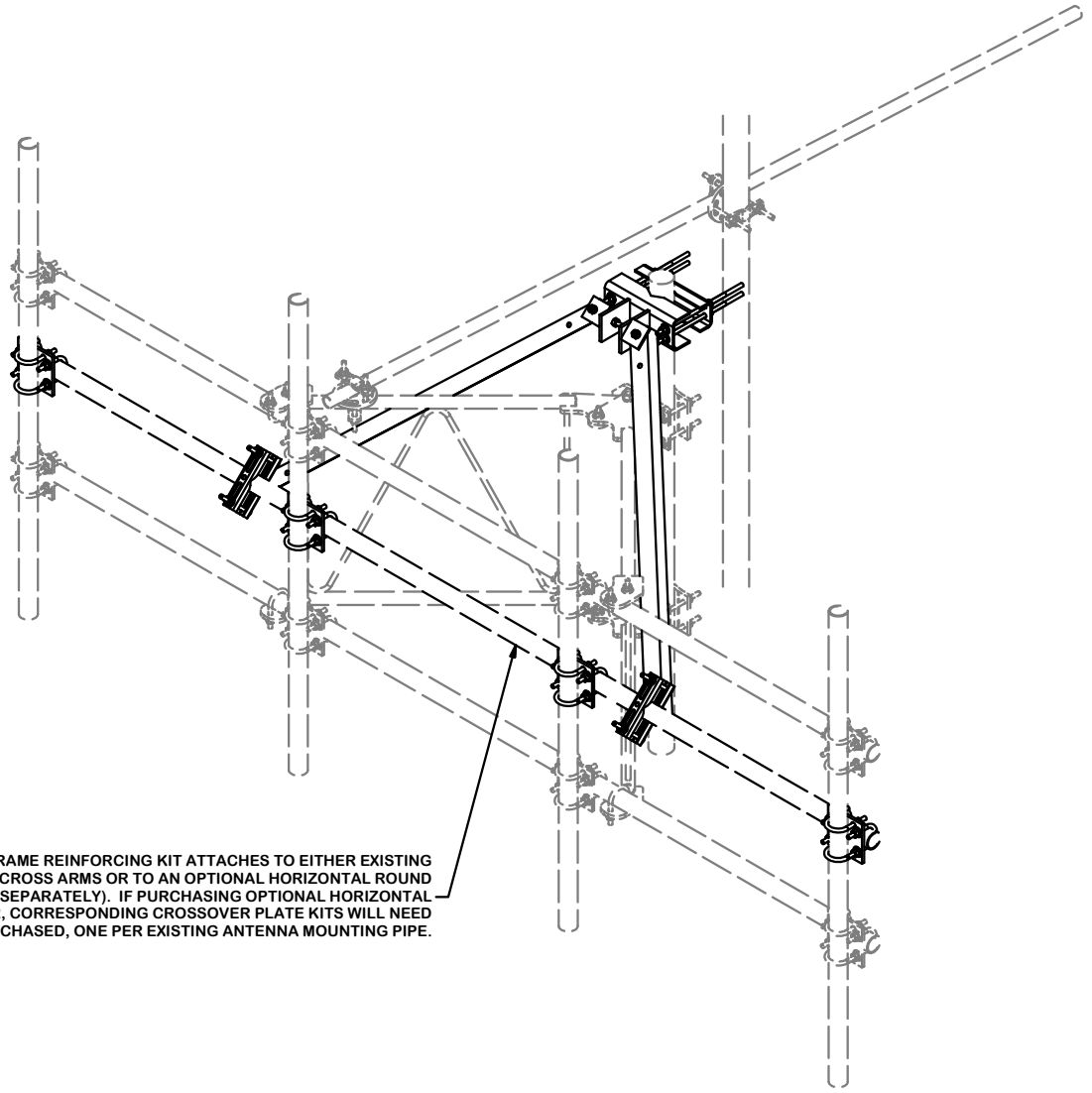

SECTOR FRAME REINFORCING KIT ATTACHES TO EITHER EXISTING SECTOR FRAME CROSS ARMS OR TO AN OPTIONAL HORIZONTAL ROUND MEMBER (SHOWN, SOLD SEPARATELY). IF PURCHASING OPTIONAL HORIZONTAL ROUND MEMBER, CORRESPONDING CROSSOVER PLATE KITS WILL NEED TO BE PURCHASED, ONE PER EXISTING ANTENNA MOUNTING PIPE.

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DESCRIPTION
SECTOR FRAME
STABILIZER - VERTICAL

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
5563	CEK 4/29/2014		SFS-V

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 4/30/2014	SFS-V

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Wind & Ice Loading

Nominal Mount Elevation (AGL), z_{mount}	173 ft	**K_a**	0.90
Nominal Rad Elevation (AGL), z_{rad}	175 ft	**K_d**	0.95
Elevation AMSL (ft)	-	**K_e**	-
TIA Standard	G	**K_z**	1.16
Basic Wind Speed, V_{ult} (bare)	135 mph	**K_{zt}**	1.00
Basic Wind Speed, V (ice)	50 mph	**K_s**	-
Design Ice Thickness, t_i	3/4 in	**t_{iz}**	1.77 in
Exposure Category	B	**G_h**	1.00
Risk Category	II	**q_z (bare)**	51.2 psf
Seismic Response Coeff., C_s	-	**q_z (ice)**	7.0 psf

Live Loading

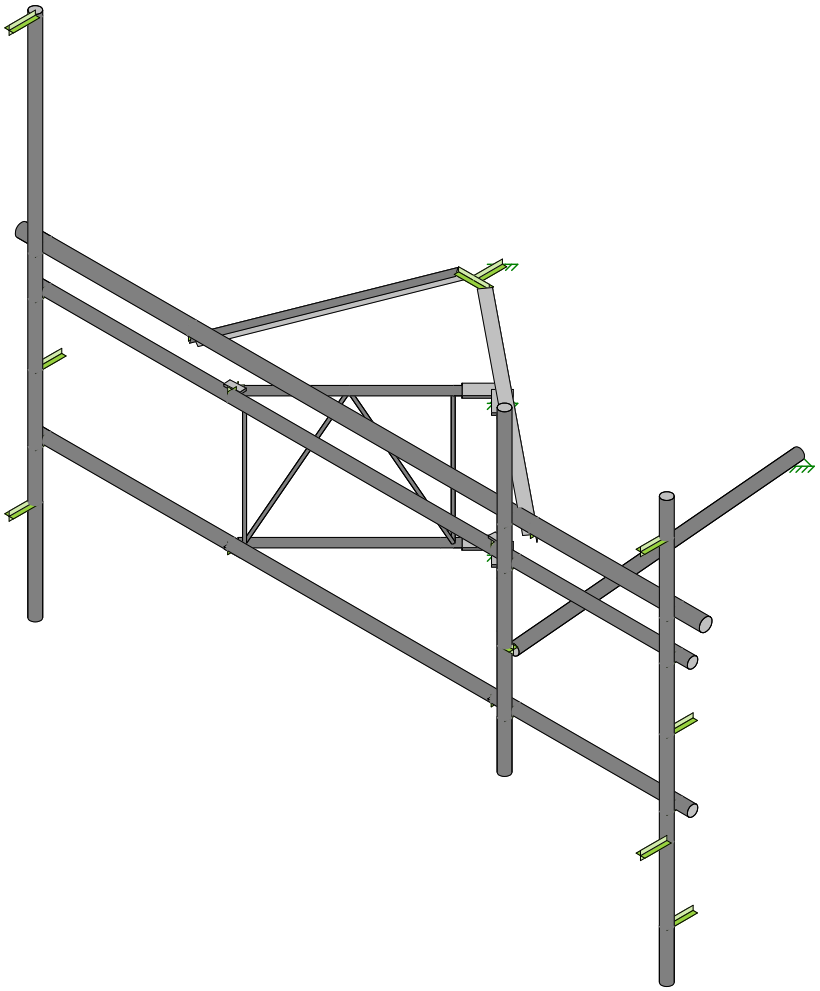
At Mount Pipes, L_M	500 lb
Joint Labels Considered	N63
	N54
	N10

Member Distributed Loading

Section Set Label	Shape Label	F_A (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Main Horizontal	PIPE_2.0	10.95	3.74	8.97
Offset Arm Internal	.625 Dia._HRA	2.88	2.63	5.18
Mount Pipe	PIPE_2.0	10.95	3.74	8.97
Offset Conn PL	PL3.5x.5	26.89	4.48	9.34
Offset Arm	PIPE_1.25	7.65	3.29	7.42
Stiff arm	PIPE_2.0	10.95	3.74	8.97
MOD SFS	L2.5x2.5x3	19.21	2.44	10.45
MOD FH	PIPE_2.5	13.26	4.06	10.05

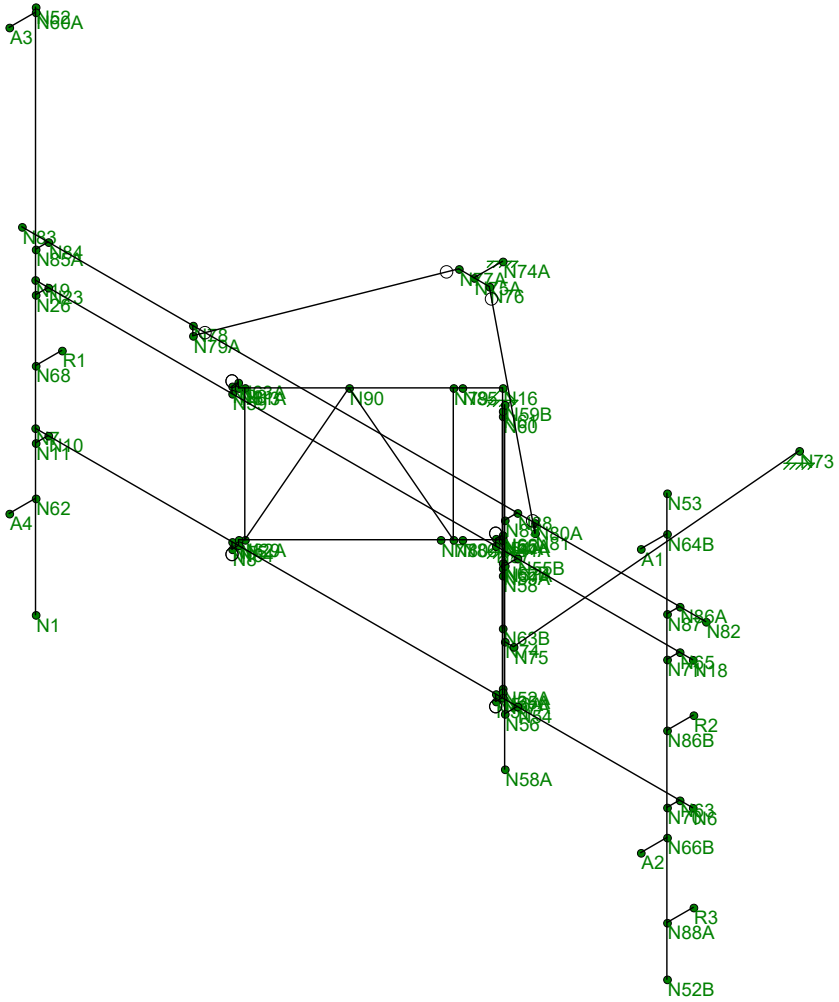
Appurtenances

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
APX16DWV-16DWVS-E-A20				☐			1	**3**	A1	A2	59.9	13	3.15	41.8	Flat	124.68	7.00	2.36	9.18	4.37	323.60	109.13	58.25	27.75
APXVAARR24_43-U-NA20				☐			1	**3**	A3	A4	0	0	0	153.3	Generic	399.09	14.67	5.32	17.36	7.69	678.58	246.08	110.18	48.83
RRUS 11 B2				☑	0.5	0.5	1	**3**	R2		20	17	7	50.7	Flat	73.98	0.59	1.42	1.03	2.02	27.34	65.53	6.56	12.79
RADIO 4449 B12/B71				☐	0.5		1	**3**	R1		15	13.2	10.4	75	Flat	60.98	0.83	1.30	1.29	2.15	38.16	60.13	8.21	13.67
RRUS 11 B4				☑	0.5	0.5	1	**3**	R3		19.7	17	7.2	50.7	Flat	73.98	0.60	1.40	1.04	1.99	27.58	64.55	6.60	12.63



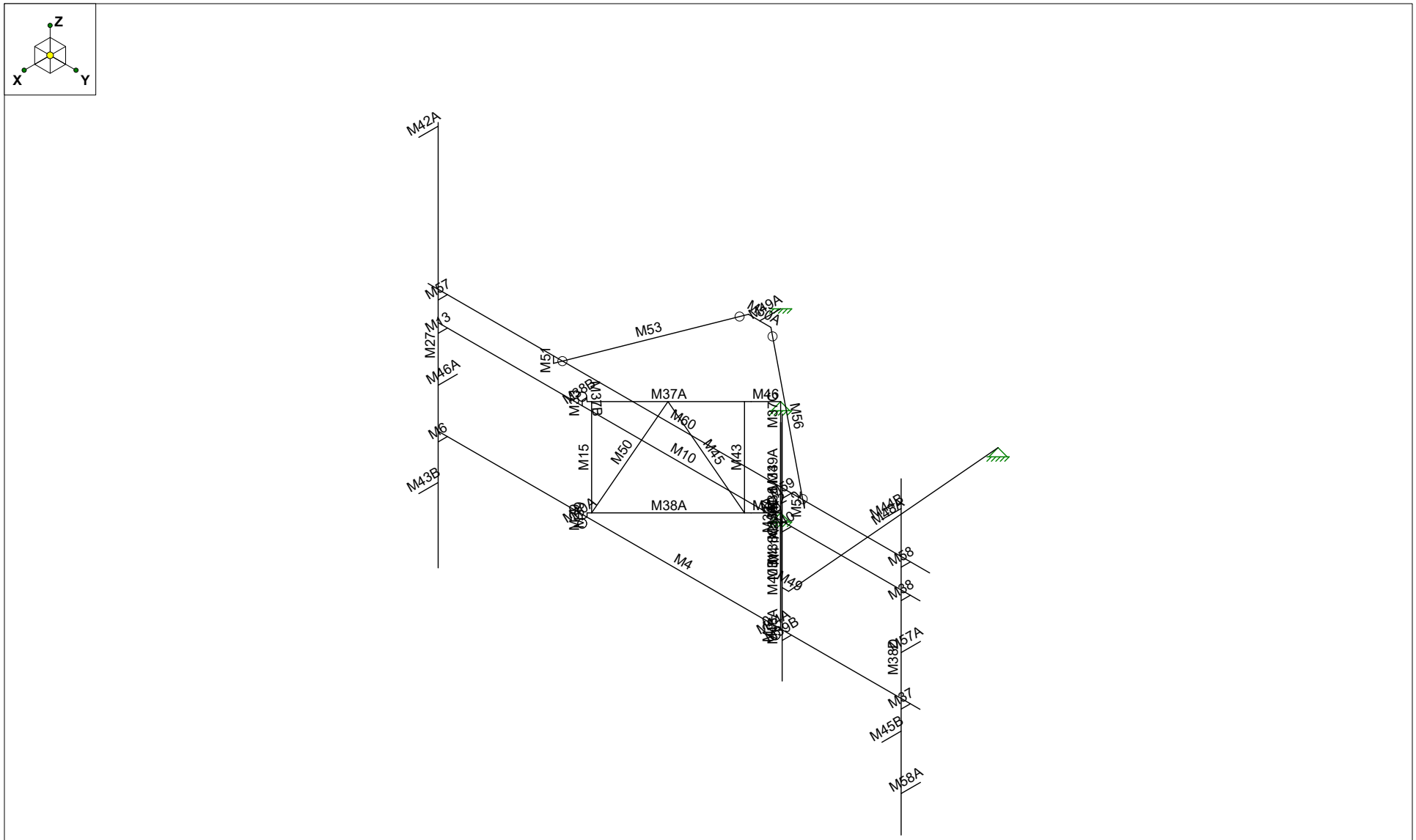
Envelope Only Solution

CLS	41124-12927188-Salem CT	SK - 1
ZSB		July 3, 2019 at 3:44 PM
41124-12927188-01-MA-R1	Rendered	41124-12927188-01-MA-R1.r3d



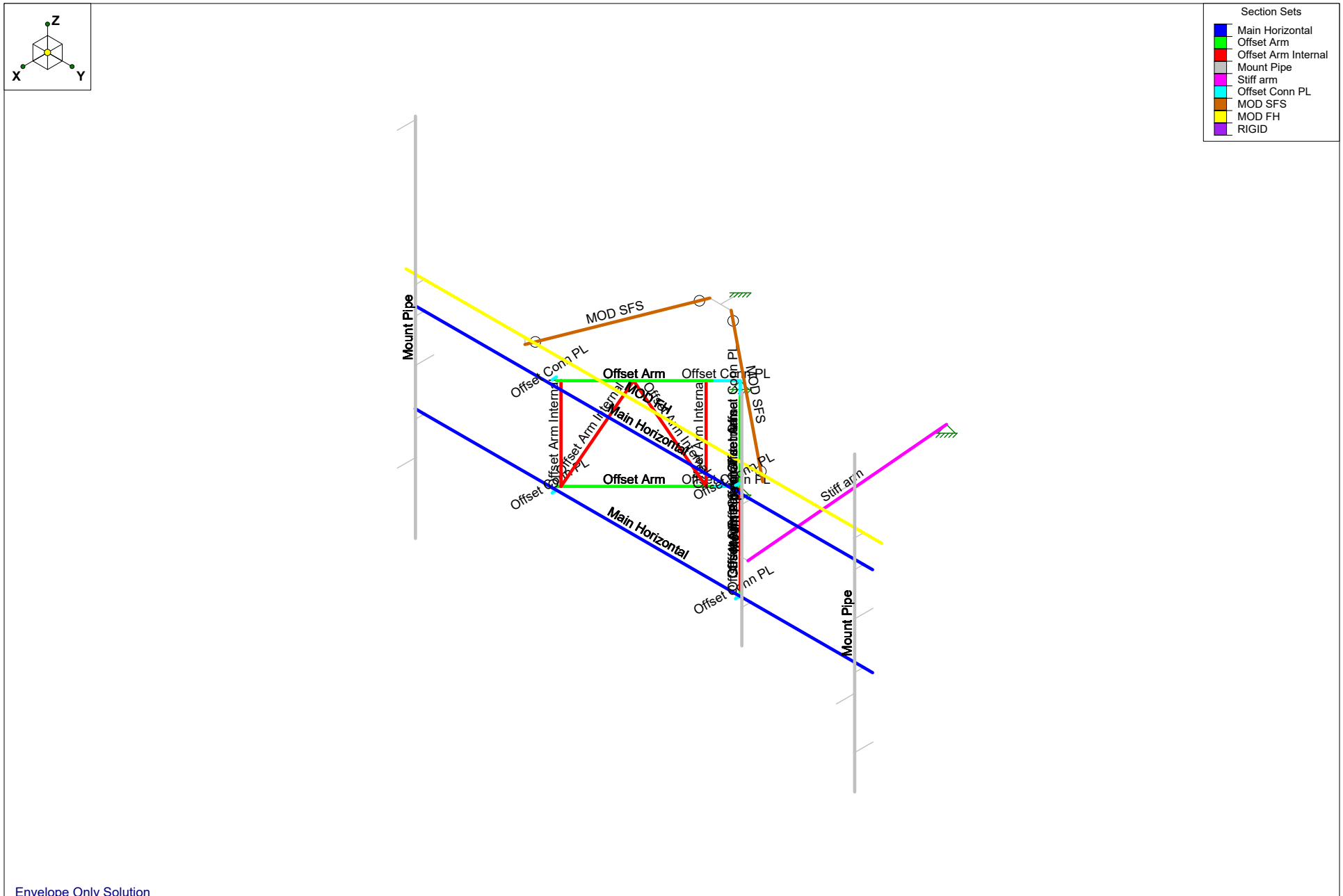
Envelope Only Solution

CLS	41124-12927188-Salem CT	SK - 2
ZSB		July 3, 2019 at 3:44 PM
41124-12927188-01-MA-R1	Joint Labels	41124-12927188-01-MA-R1.r3d



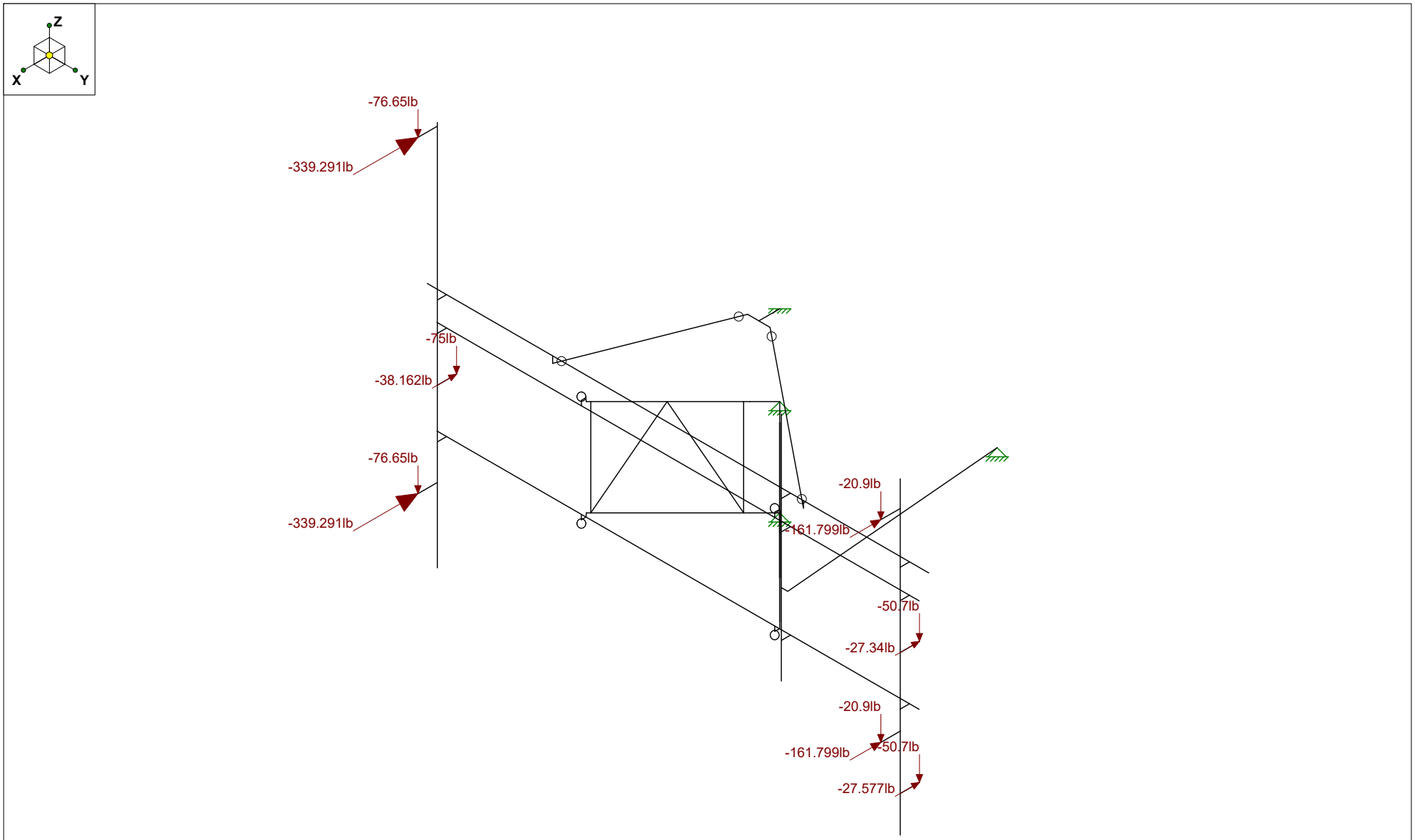
Envelope Only Solution

CLS	41124-12927188-Salem CT	SK - 3
ZSB		July 3, 2019 at 3:44 PM
41124-12927188-01-MA-R1	Member Labels	41124-12927188-01-MA-R1.r3d



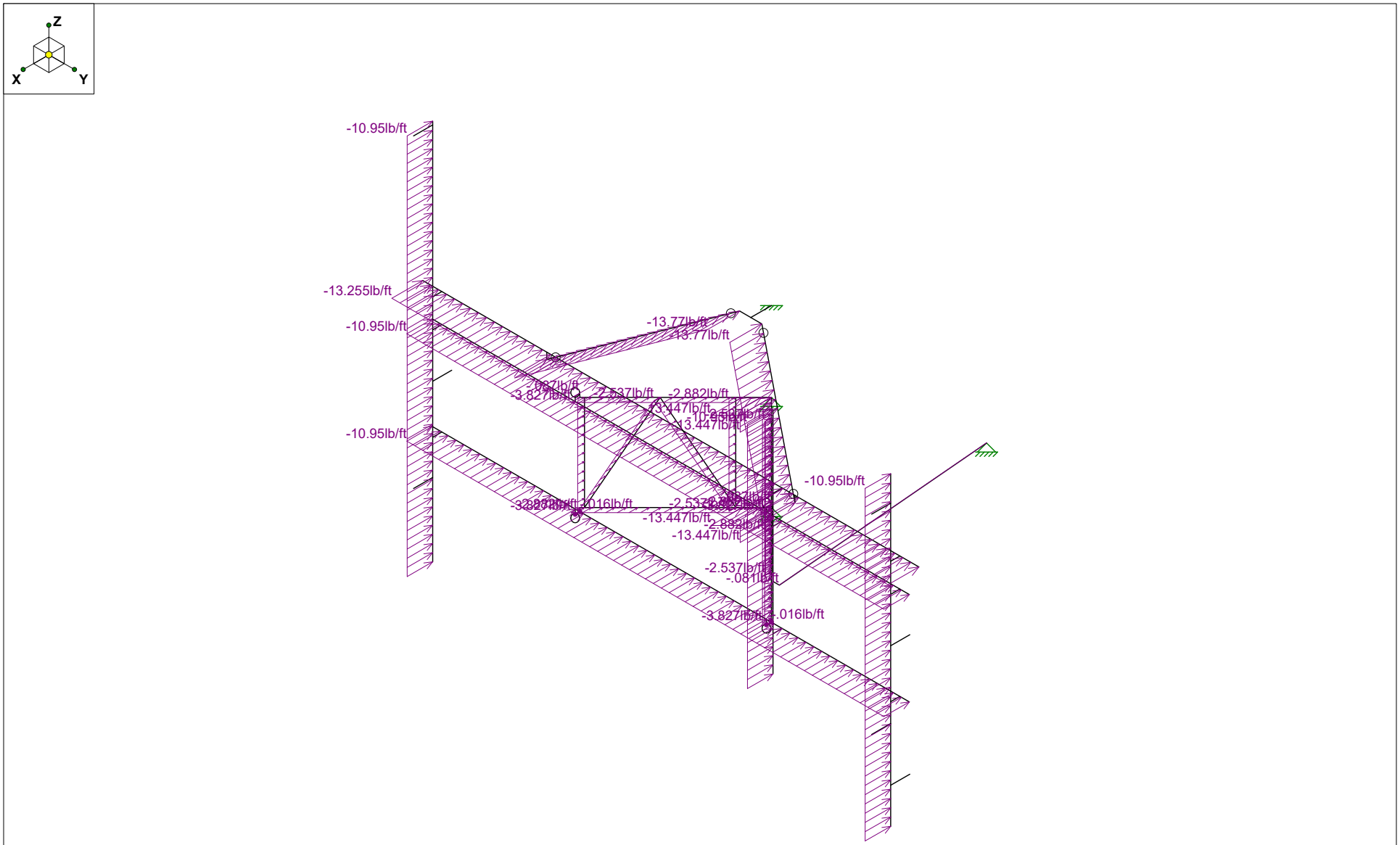
Envelope Only Solution

CLS	41124-12927188-Salem CT	SK - 4
ZSB		July 3, 2019 at 3:44 PM
41124-12927188-01-MA-R1	Section Sets	41124-12927188-01-MA-R1.r3d



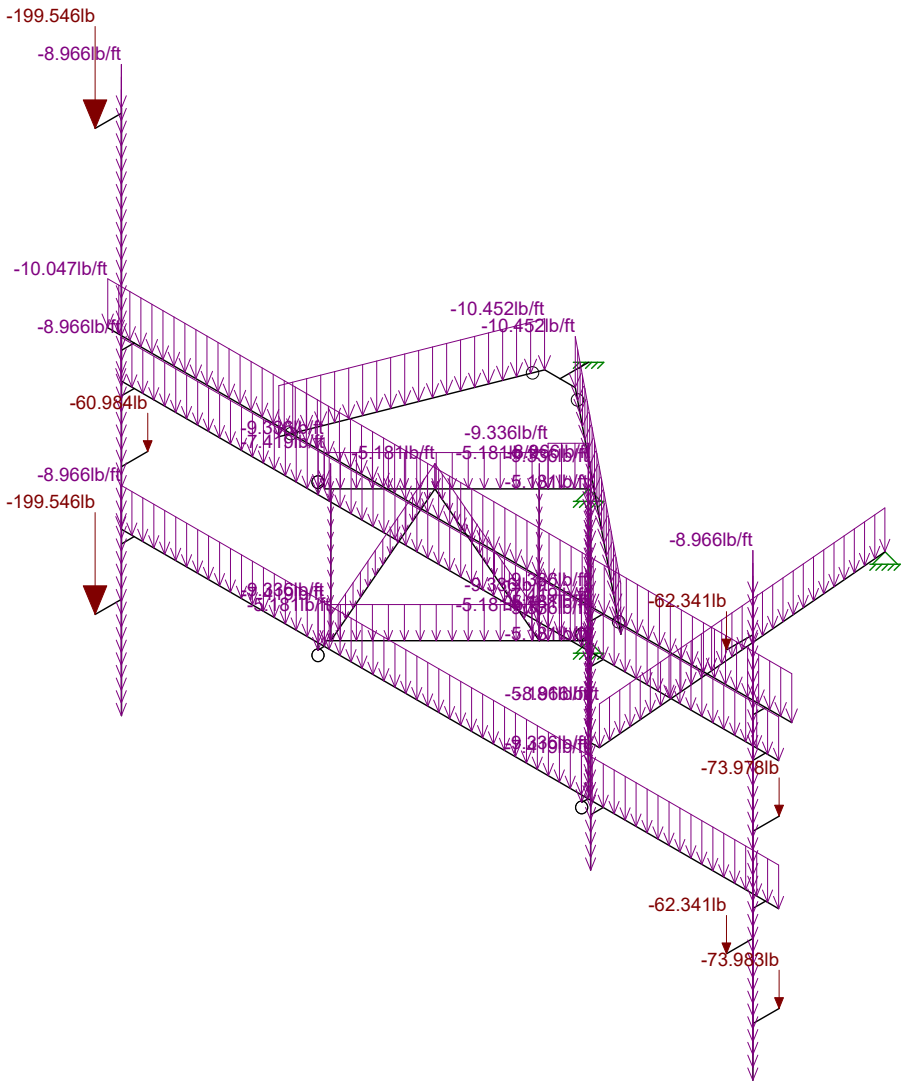
Loads: LC 1, DISPLAY (1.0D + 1.0W_0°)
Envelope Only Solution

CLS		SK - 5
ZSB	41124-12927188-Salem CT	July 3, 2019 at 3:44 PM
41124-12927188-01-MA-R1	Joint Loads - Dead and Normal Wind	41124-12927188-01-MA-R1.r3d



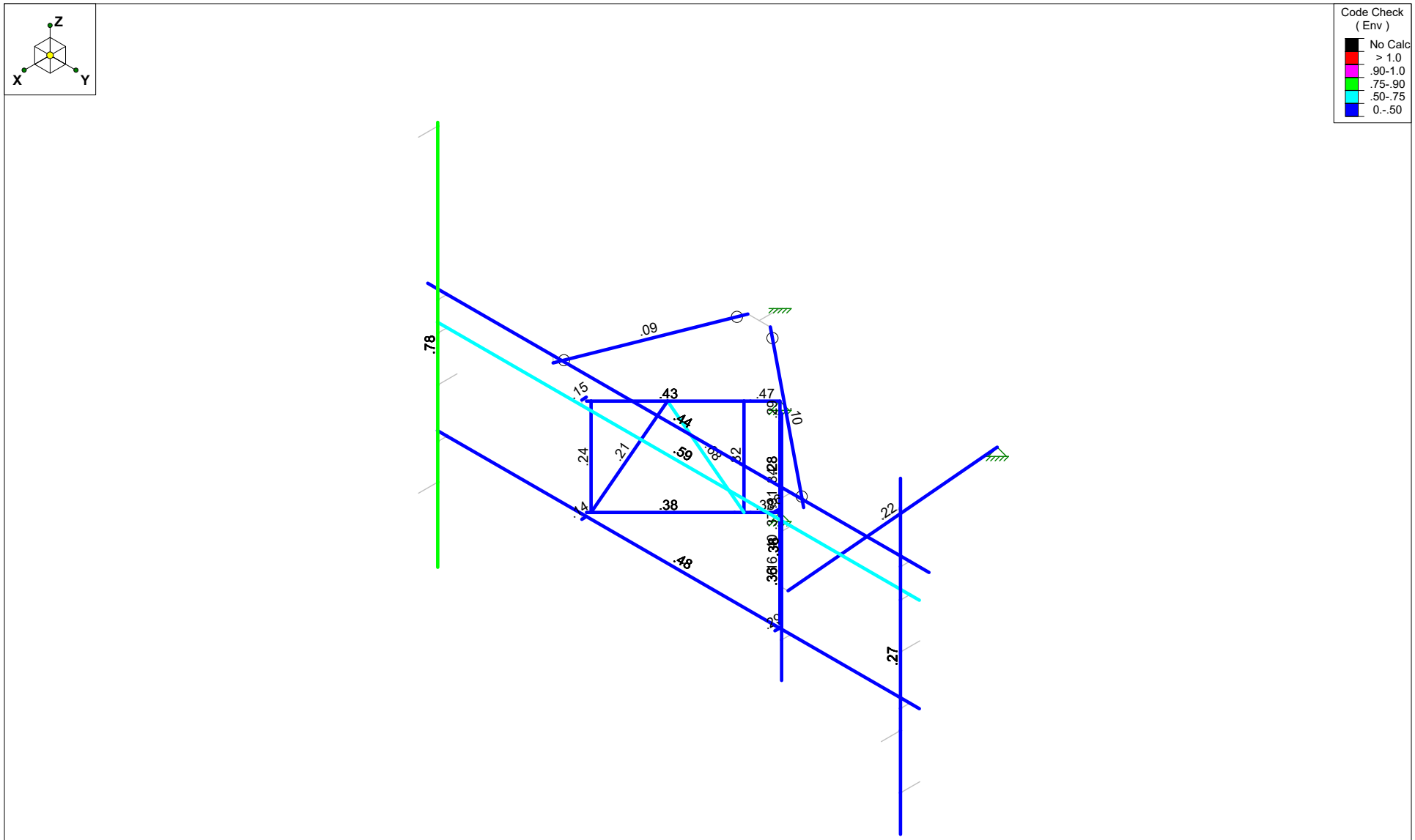
Loads: BLC 4, Structure Wind 0°
Envelope Only Solution

CLS		SK - 6
ZSB	41124-12927188-Salem CT	July 3, 2019 at 3:45 PM
41124-12927188-01-MA-R1	Distributed Load - Normal Wind	41124-12927188-01-MA-R1.r3d



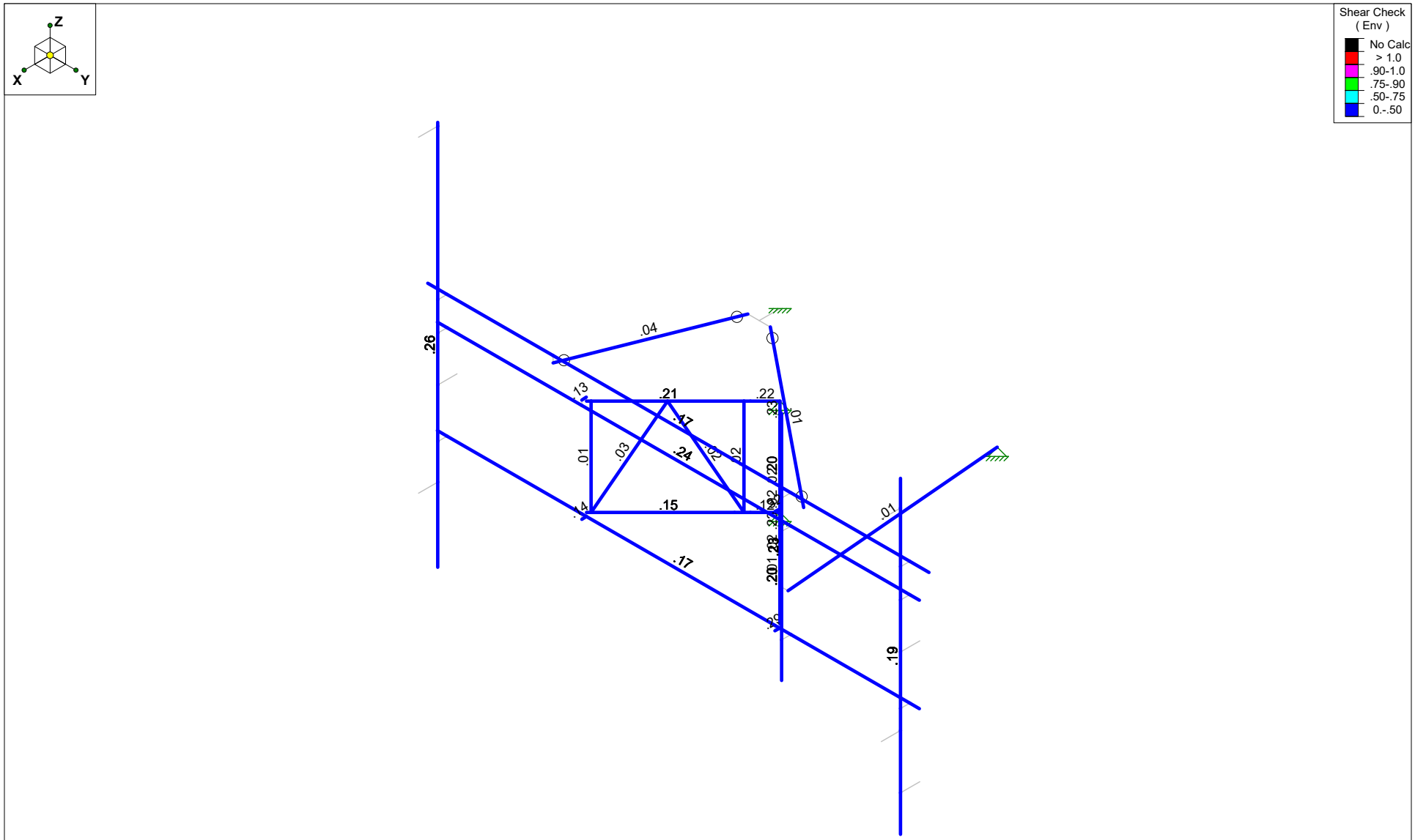
Loads: BLC 2, Ice Dead
Envelope Only Solution

CLS		SK - 7
ZSB	41124-12927188-Salem CT	July 3, 2019 at 3:45 PM
41124-12927188-01-MA-R1	Ice Dead Loads	41124-12927188-01-MA-R1.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

CLS		SK - 8
ZSB	41124-12927188-Salem CT	July 3, 2019 at 3:45 PM
41124-12927188-01-MA-R1	Envelope Member Unity Check Results - Bending	41124-12927188-01-MA-R1.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

CLS	41124-12927188-Salem CT	SK - 9
ZSB		July 3, 2019 at 3:45 PM
41124-12927188-01-MA-R1	Envelope Member Check Results - Shear	41124-12927188-01-MA-R1.r3d

Basic Load Cases

	BLC Description	Category	X Gravi...	Y Gravi...	Z Gravity	Joint	Point	Distributed	Area(Member)	Surfac...
1	Dead	DL			-1	7				
2	Ice Dead	RL				7		29		
4	Structure Wind 0°	None						29		
5	Structure Wind 30°	None						58		
6	Structure Wind 45°	None						50		
7	Structure Wind 60°	None						58		
8	Structure Wind 90°	None						26		
9	Structure Wind 120°	None						58		
10	Structure Wind 135°	None						50		
11	Structure Wind 150°	None						58		
12	Structure Wind w/ Ice 0°	None						29		
13	Structure Wind w/ Ice 30°	None						58		
14	Structure Wind w/ Ice 45°	None						58		
15	Structure Wind w/ Ice 60°	None						58		
16	Structure Wind w/ Ice 90°	None						26		
17	Structure Wind w/ Ice 120°	None						58		
18	Structure Wind w/ Ice 135°	None						58		
19	Structure Wind w/ Ice 150°	None						58		
20	Antenna Wind 0°	None				7				
21	Antenna Wind 30°	None				14				
22	Antenna Wind 45°	None				14				
23	Antenna Wind 60°	None				14				
24	Antenna Wind 90°	None				7				
25	Antenna Wind 120°	None				14				
26	Antenna Wind 135°	None				14				
27	Antenna Wind 150°	None				14				
28	Antenna Wind w/ Ice 0°	None				7				
29	Antenna Wind w/ Ice 30°	None				14				
30	Antenna Wind w/ Ice 45°	None				14				
31	Antenna Wind w/ Ice 60°	None				14				
32	Antenna Wind w/ Ice 90°	None				7				
33	Antenna Wind w/ Ice 120°	None				14				
34	Antenna Wind w/ Ice 135°	None				14				
35	Antenna Wind w/ Ice 150°	None				14				
39	Maintenance Live 500 (1)	OL1				1				
40	Maintenance Live 500 (2)	OL2				1				
41	Maintenance Live 500 (3)	OL3				1				

Load Combinations

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

Load Combinations (Continued)

	Description	S...	P...	S...	BLC	Factor	BLC	Factor	BLC	Factor	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
15	1.2D + 1.0W_270°	Y...	Y		DL	1.2	8	-1	24	-1														
16	1.2D + 1.0W_300°	Y...	Y		DL	1.2	9	-1	25	-1														
17	1.2D + 1.0W_315°	Y...	Y		DL	1.2	10	-1	26	-1														
18	1.2D + 1.0W_330°	Y...	Y		DL	1.2	11	-1	27	-1														
19	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	12	1	28	1	RL	1												
20	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	13	1	29	1	RL	1												
21	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	14	1	30	1	RL	1												
22	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	15	1	31	1	RL	1												
23	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	16	1	32	1	RL	1												
24	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	17	1	33	1	RL	1												
25	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	18	1	34	1	RL	1												
26	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	19	1	35	1	RL	1												
27	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	12	-1	28	-1	RL	1												
28	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	13	-1	29	-1	RL	1												
29	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	14	-1	30	-1	RL	1												
30	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	15	-1	31	-1	RL	1												
31	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	16	-1	32	-1	RL	1												
32	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	17	-1	33	-1	RL	1												
33	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	18	-1	34	-1	RL	1												
34	1.2D + 1.0Di + 1.0...	Y...	Y		DL	1.2	19	-1	35	-1	RL	1												
35	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	4	.052	20	.052	O...	1.5												
36	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	5	.052	21	.052	O...	1.5												
37	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	6	.052	22	.052	O...	1.5												
38	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	7	.052	23	.052	O...	1.5												
39	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	8	.052	24	.052	O...	1.5												
40	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	9	.052	25	.052	O...	1.5												
41	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	10	.052	26	.052	O...	1.5												
42	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	11	.052	27	.052	O...	1.5												
43	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	4	-.052	20	-.052	O...	1.5												
44	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	5	-.052	21	-.052	O...	1.5												
45	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	6	-.052	22	-.052	O...	1.5												
46	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	7	-.052	23	-.052	O...	1.5												
47	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	8	-.052	24	-.052	O...	1.5												
48	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	9	-.052	25	-.052	O...	1.5												
49	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	10	-.052	26	-.052	O...	1.5												
50	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	11	-.052	27	-.052	O...	1.5												
51	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	4	.052	20	.052	O...	1.5												
52	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	5	.052	21	.052	O...	1.5												
53	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	6	.052	22	.052	O...	1.5												
54	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	7	.052	23	.052	O...	1.5												
55	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	8	.052	24	.052	O...	1.5												
56	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	9	.052	25	.052	O...	1.5												
57	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	10	.052	26	.052	O...	1.5												
58	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	11	.052	27	.052	O...	1.5												
59	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	4	-.052	20	-.052	O...	1.5												
60	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	5	-.052	21	-.052	O...	1.5												
61	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	6	-.052	22	-.052	O...	1.5												
62	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	7	-.052	23	-.052	O...	1.5												
63	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	8	-.052	24	-.052	O...	1.5												
64	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	9	-.052	25	-.052	O...	1.5												
65	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	10	-.052	26	-.052	O...	1.5												
66	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	11	-.052	27	-.052	O...	1.5												
67	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	4	.052	20	.052	O...	1.5												
68	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	5	.052	21	.052	O...	1.5												
69	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	6	.052	22	.052	O...	1.5												
70	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	7	.052	23	.052	O...	1.5												
71	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	8	.052	24	.052	O...	1.5												

Load Combinations (Continued)

	Description	S...	P...	S...	BLC	Factor	BLC	Factor	BLC	Factor	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
72	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	9	.052	25	.052	O...	1.5												
73	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	10	.052	26	.052	O...	1.5												
74	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	11	.052	27	.052	O...	1.5												
75	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	4	-.052	20	-.052	O...	1.5												
76	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	5	-.052	21	-.052	O...	1.5												
77	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	6	-.052	22	-.052	O...	1.5												
78	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	7	-.052	23	-.052	O...	1.5												
79	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	8	-.052	24	-.052	O...	1.5												
80	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	9	-.052	25	-.052	O...	1.5												
81	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	10	-.052	26	-.052	O...	1.5												
82	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	11	-.052	27	-.052	O...	1.5												

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Main Horizontal	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	Offset Arm	PIPE_1.25	Beam	Pipe	A53 Gr.B	Typical	.625	.184	.184	.368
3	Offset Arm Internal	.625 Dia. HRA	Beam	BAR	A36 Gr.36	Typical	.307	.007	.007	.015
4	Mount Pipe	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
5	Stiff arm	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
6	Offset Conn PL	PL3.5x.5	Beam	Pipe	A36 Gr.36	Typical	1.75	.036	1.786	.133
7	MOD SFS	L2.5x2.5x3	Beam	Pipe	A36 Gr.36	Typical	.901	.535	.535	.011
8	MOD FH	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M4	Main Horizo...	150	60	107	Lbyy						Lateral
2	M10	Main Horizo...	150	60	107	Lbyy						Lateral
3	M15	Offset Arm I...	30			Lbyy			.65	.65		Lateral
4	M27	Mount Pipe	120			Lbyy						Lateral
5	M43	Offset Arm I...	30			Lbyy			.65	.65		Lateral
6	M44	Offset Conn...	6.5			Lbyy						Lateral
7	M45	Offset Arm I...	34.392			Lbyy			.65	.65		Lateral
8	M46	Offset Conn...	6.5			Lbyy						Lateral
9	M50	Offset Arm I...	34.392			Lbyy			.65	.65		Lateral
10	M37A	Offset Arm	36.068		17	Lbyy						Lateral
11	M38A	Offset Arm	36.068		34	Lbyy						Lateral
12	M38B	Offset Conn...	1.481			Lbyy						Lateral
13	M40A	Offset Conn...	1.525			Lbyy						Lateral
14	M31	Offset Arm I...	30			Lbyy			.65	.65		Lateral
15	M34	Offset Arm I...	30			Lbyy			.65	.65		Lateral
16	M35A	Offset Conn...	6.5			Lbyy						Lateral
17	M36	Offset Arm I...	34.392			Lbyy			.65	.65		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
18	M37C	Offset Conn...	6.5			Lbyy						Lateral
19	M38C	Offset Arm I...	34.392			Lbyy			.65	.65		Lateral
20	M39A	Offset Arm	36.068		34	Lbyy						Lateral
21	M40B	Offset Arm	36.068		17	Lbyy						Lateral
22	M42	Offset Conn...	1.481			Lbyy						Lateral
23	M44A	Offset Conn...	1.525			Lbyy						Lateral
24	M38D	Mount Pipe	96			Lbyy						Lateral
25	M41A	Mount Pipe	72			Lbyy						Lateral
26	M48A	Stiff arm	71.535			Lbyy						Lateral
27	M53	MOD SFS	47.214			Lbyy						Lateral
28	M56	MOD SFS	47.214			Lbyy						Lateral
29	M60	MOD FH	156			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	N74A	max	1311.637	3	698.713	82	1451.78	11	186.881	42	503.213	3	237.202	82
2		min	-2037.844	11	-1230.249	42	-922.197	3	-108.183	82	-789.34	11	-414.929	42
3	N16	max	882.649	11	1275.443	11	1016.408	19	0	82	0	82	0	82
4		min	-1245.57	3	-532.952	3	-301.757	11	0	1	0	1	0	1
5	N4	max	2850.677	18	525.61	49	884.71	19	0	82	0	82	0	82
6		min	-1741.71	10	-1458.744	73	-304.571	11	0	1	0	1	0	1
7	N73	max	1369.709	10	79.808	5	40.61	26	0	82	0	82	0	82
8		min	-1385.19	18	-78.084	13	-1.767	82	0	1	0	1	0	1
9	Totals:	max	2045.905	3	1152.021	14	2529.348	26						
10		min	-2045.91	11	-1152.023	6	721.429	1						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn...		Eqn
1	M27	PIPE_2.0	.779	47.368	11	.263	50.526		82	9836.5...	32130	1871.6...	1871.6...	...	H1-1b
2	M45	.625 Dia._HRA	.676	0	19	.017	0		3	3385.9...	9940.19	103.542	103.542	...	H1-1a
3	M10	PIPE_2.0	.591	3.947	67	.238	106.5...		41	12371....	32130	1871.6...	1871.6...	1	H1-1b
4	M4	PIPE_2.0	.478	43.421	3	.174	106.5...		18	12371....	32130	1871.6...	1871.6...	....	H1-1b
5	M46	PL3.5x.5	.465	0	19	.216	6.5	y	3	50959....	56700	590.625	4134.3...	....	H1-1b
6	M60	PIPE_2.5	.436	41.053	11	.165	41.053		11	13460....	50715	3596.25	3596.25	...	H1-1b
7	M37A	PIPE_1.25	.428	35.119	19	.211	36.068		3	15702....	19687.5	800.625	800.625	...	H1-1b
8	M38C	.625 Dia._HRA	.402	0	3	.019	34.392		30	3385.9...	9940.19	103.542	103.542	...	H1-1a
9	M41A	PIPE_2.0	.383	24.632	11	.227	60.632		10	20866....	32130	1871.6...	1871.6...	....	H1-1b
10	M44	PL3.5x.5	.378	0	19	.121	6.5	y	18	50959....	56700	590.625	4134.3...	....	H1-1b
11	M38A	PIPE_1.25	.377	35.119	19	.147	36.068		34	15702....	19687.5	800.625	800.625	...	H1-1b
12	M35A	PL3.5x.5	.367	0	3	.227	6.5	y	19	50959....	56700	590.625	4134.3...	....	H1-1b
13	M40B	PIPE_1.25	.359	35.119	3	.196	36.068		19	15702....	19687.5	800.625	800.625	...	H1-1b
14	M34	.625 Dia._HRA	.336	0	3	.025	30		42	4378.1...	9940.19	103.542	103.542	...	H1-1b
15	M43	.625 Dia._HRA	.322	30	19	.023	0		42	4378.1...	9940.19	103.542	103.542	...	H1-1b
16	M36	.625 Dia._HRA	.308	34.392	11	.022	34.392		82	3385.9...	9940.19	103.542	103.542	...	H1-1a
17	M44A	PL3.5x.5	.293	1.525	18	.286	0	y	10	56367....	56700	590.625	4134.3...	....	H1-1b
18	M37C	PL3.5x.5	.289	0	3	.232	6.5	y	19	50959....	56700	590.625	4134.3...	....	H1-1b
19	M39A	PIPE_1.25	.282	35.119	3	.195	36.068		19	15702....	19687.5	800.625	800.625	...	H1-1b
20	M38D	PIPE_2.0	.266	25.263	43	.192	30.316		44	14916....	32130	1871.6...	1871.6...	....	H1-1b
21	M42	PL3.5x.5	.260	1.481	4	.320	0	y	44	56386....	56700	590.625	4134.3...	....	H1-1b
22	M15	.625 Dia._HRA	.244	0	18	.012	0		42	4378.1...	9940.19	103.542	103.542	...	H1-1b
23	M48A	PIPE_2.0	.217	0	3	.007	0		3	20983....	32130	1871.6...	1871.6...	....	H1-1b
24	M50	.625 Dia._HRA	.210	34.392	18	.032	34.392		3	3385.9...	9940.19	103.542	103.542	...	H1-1b
25	M31	.625 Dia._HRA	.160	30	9	.015	30		10	4378.1...	9940.19	103.542	103.542	...	H1-1b*
26	M38B	PL3.5x.5	.146	1.481	3	.126	0	y	3	56386....	56700	590.625	4134.3...	....	H1-1b

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn...	...	Eqn
27	M40A	PL3.5x.5	.137	1.525	67	.138	0	y	3	56367....	56700	590.625	4134.3...	....	H1-1b
28	M56	L2.5x2.5x3	.104	23.607	3	.014	47.214	z	36	17473....	29192.4	872.574	1759.5...	....	H2-1
29	M53	L2.5x2.5x3	.086	23.607	10	.039	47.214	z	3	17473....	29192.4	872.574	1759.5...	....	H2-1

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTNH143C

CTNH143C
153 East Haddam Road
Salem, Connecticut 06420

June 3, 2019

EBI Project Number: 6219001991

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**5.00%**

June 3, 2019

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

Emissions Analysis for Site: CTNH143C - CTNH143C

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **153 East Haddam Road** in **Salem, 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 153 East Haddam Road in Salem, 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 APX16DWV-16DWV-S-E-A20 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s) in Sector A, the RFS APX16DWV-16DWV-S-E-A20 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s) in Sector B, the RFS APX16DWV-16DWV-S-E-A20 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antenna mounting height centerline of the proposed antennas is 175 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 APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.9 dBd / 15.9 dBd	Gain:	15.9 dBd / 15.9 dBd	Gain:	15.9 dBd / 15.9 dBd
Height (AGL):	175 feet	Height (AGL):	175 feet	Height (AGL):	175 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts
ERP (W):	7,002.81	ERP (W):	7,002.81	ERP (W):	7,002.81
Antenna A1 MPE %:	**0.82%**	Antenna B1 MPE %:	**0.82%**	Antenna C1 MPE %:	**0.82%**
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 700 MHz	Frequency Bands:	600 MHz / 700 MHz	Frequency Bands:	600 MHz / 700 MHz
Gain:	12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 13.35 dBd
Height (AGL):	175 feet	Height (AGL):	175 feet	Height (AGL):	175 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	2,481.08	ERP (W):	2,481.08	ERP (W):	2,481.08
Antenna A2 MPE %:	**0.67%**	Antenna B2 MPE %:	**0.67%**	Antenna C2 MPE %:	**0.67%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	1.50%
Sprint	2.66%
AT&T	0.84%
Site Total MPE % :	5.00%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	1.50%
T-Mobile Sector B Total:	1.50%
T-Mobile Sector C Total:	1.50%
Site Total MPE % :	5.00%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz UMTS	2	1167.14	175.0	2.74	1900 MHz UMTS	1000	0.27%
T-Mobile 2100 MHz LTE AWS	2	2334.27	175.0	5.48	2100 MHz LTE AWS	1000	0.55%
T-Mobile 600 MHz LTE	2	591.73	175.0	1.39	600 MHz LTE	400	0.35%
T-Mobile 700 MHz LTE	2	648.82	175.0	1.52	700 MHz LTE	467	0.33%
						Total:	**1.50%**

• 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:	1.50%
Sector B:	1.50%
Sector C:	1.50%
T-Mobile Maximum MPE % (Sector A):	1.50%
Site Total:	5.00%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **5.00%** 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™
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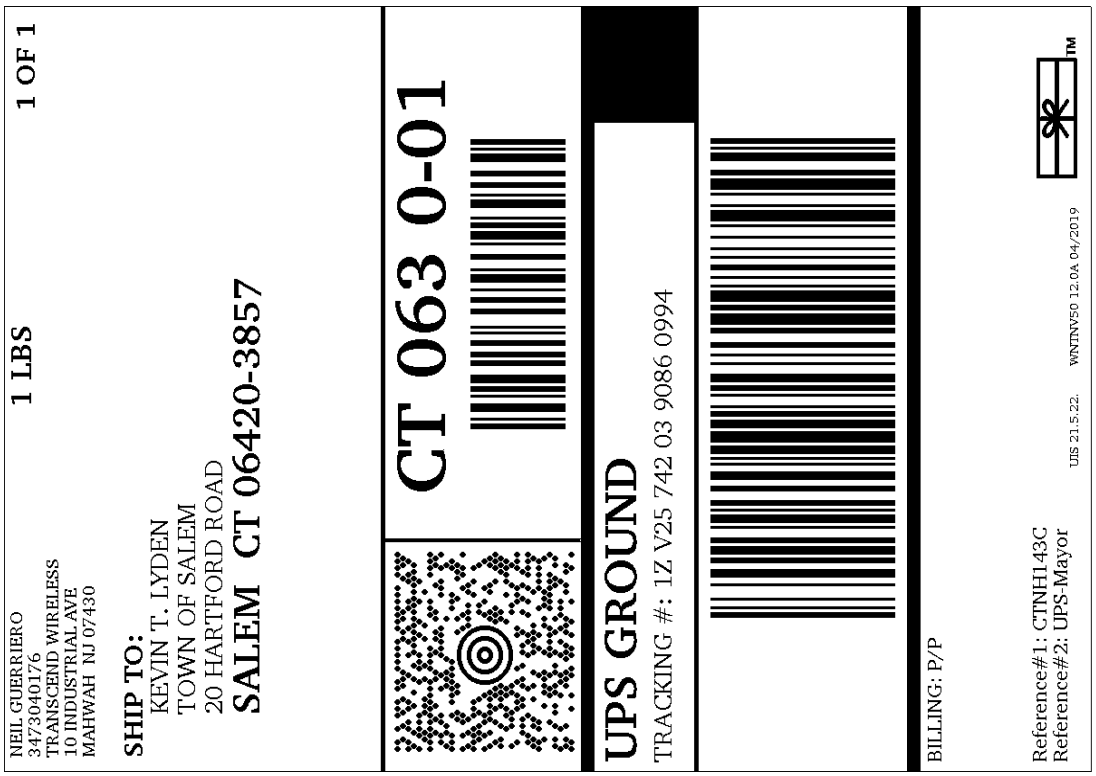
MAHWAH ,NJ 07430

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

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

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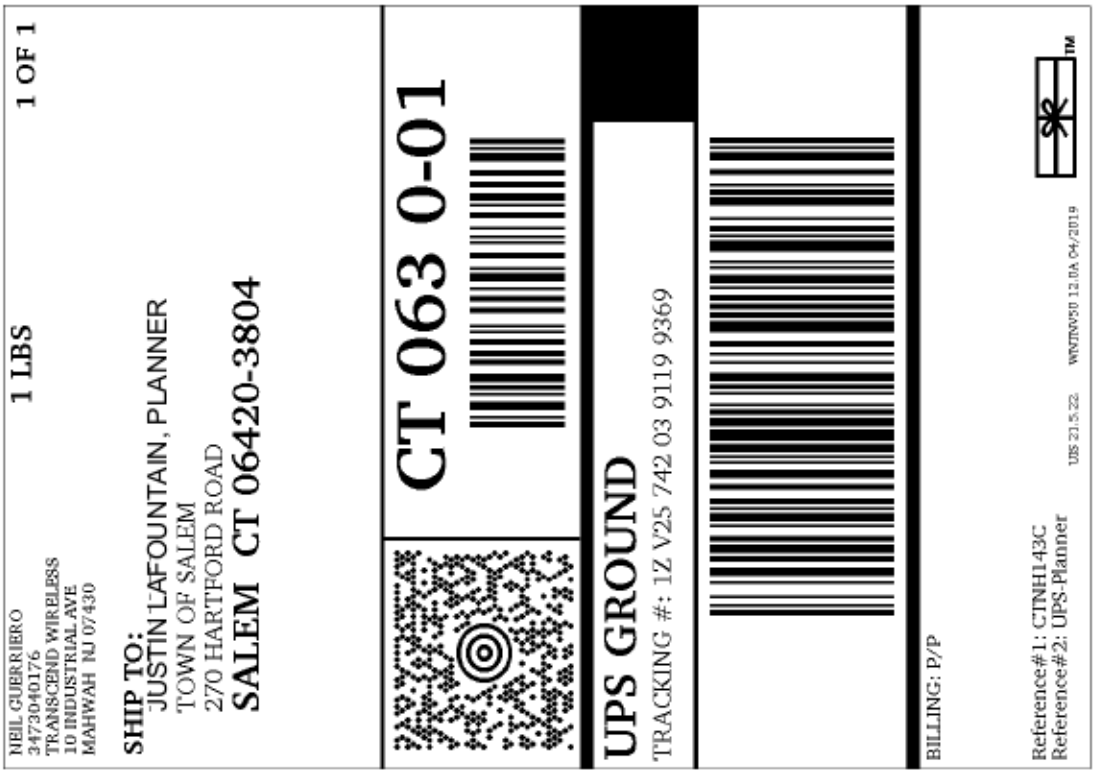

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   Schedule a same day or future day Pickup to have a UPS driver pickup all of your Internet Shipping packages.
   Hand the package to any UPS driver in your area.

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