Transcend Wireless

10 Industrial Avenue,
Suite 3
Mahwah, NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

July 29, 2019

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

Notice of Exempt Modification
151 Waterbury Road, Prospect CT
Latitude 41.52298333
Longitude -72.997775
T-Mobile site: CTNH302A /L600

Dear Ms. Bachman:

T-Mobile currently maintains (9) antennas at the 137 foot level of the existing 150 -foot monopole located at 151 Waterbury Road in Prospect CT. The monopole and underlying property is owned by American Tower Corporation. 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 137 foot level of the tower with proposed mount modifications as per the attached mount analysis.

Planned Modifications:

Remove
(6) 1-5/8" coax

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) Ericsson AIR 21, 1.3M B2A B4P
(3) Ericsson AIR32 B66Aa/B2a
(3) KRY 112 144/1
(6) 1-5/8" coax
(1) 1-1/4" Hybrid
(1) 1-5/8" Hybrid

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

This facility was approved by the Town of Prospect with no record of approvals, however subsequent Exempt Modifications have been filed with the Citing Council with no known conditions that would restrict exempt modifications. A copy of the documentation from Prospect regarding no documentation of the original zoning decision is attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to The Honorable The Honorable Robert J. Chatfield, Mayor, and Mary Barton, Land Use Officer

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 Robert J. Chatfield, Mayor
Mary Barton, Land Use Officer
American Tower Corporation, Tower and Property Owner

Exhibit A

Original Facility Approval

Transcend Wireless

Shappy, Gregg <gshappy@transcendwireless.com>

151 Waterbury Road

3 messages

Rosalyn Moffo <landuse03@sbcglobal.net> Tue, Jun 21, 2016 at 3:24 PM
Reply-To: Rosalyn Moffo <landuse03@sbcglobal.net>
To: "gshappy@transcendwireless.com" <gshappy@transcendwireless.com>

To Whom It May Concern:

All Land Use records for the existing tower at 151 Waterbury Road have been reviewed and the original Zoning decision has not been found.

Please contact the Land Use office if you have any questions @ (203) 758-4461.

Thank you.

Rosalyn Moffo
Land Use Clerk

Shappy, Gregg <gshappy@transcendwireless.com> Tue, Jun 21, 2016 at 3:36 PM
To: Rosalyn Moffo <landuse03@sbcglobal.net>

Thank you Rosalyn

Gregg Shappy
Transcend Wireless
10 Industrial Avenue, Suite 3
Mahwah, NJ 07430
gshappy@transcendwireless.com
(845)553-2045

[Quoted text hidden]

Rosalyn Moffo <landuse03@sbcglobal.net> Wed, Jun 22, 2016 at 10:10 AM
Reply-To: Rosalyn Moffo <landuse03@sbcglobal.net>
To: "Shappy, Gregg" <gshappy@transcendwireless.com>

No Problem!

[Quoted text hidden]

Exhibit B

Property card

s

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2015.

www.townofprospect.org

Information on the Property Records for the Municipality of Prospect was last updated on 6/22/2019.

Parcel Information

Location:	151 WATERBURY RD	Property Use:	Office	Primary Use:	Office Building
Unique ID:	G0121400	Map Block Lot:	104 160 151	Acres:	3.91
490 Acres:	0.00	Zone:	B	Volume / Page:	0819/0091
Developers Map / Lot:		Census:	3472		

Value Information

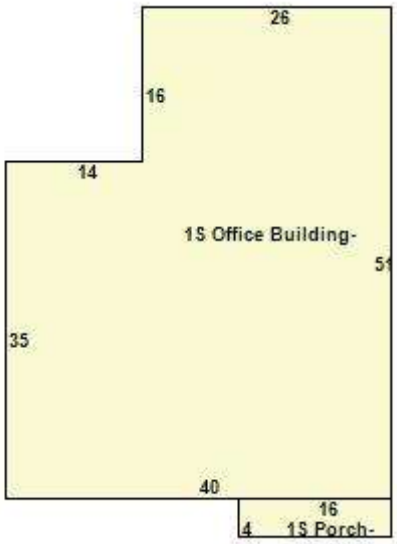
	Appraised Value	Assessed Value
Land	145,748	102,020
Buildings	18,751	13,130
Detached Outbuildings	615,568	430,900
Total	780,067	546,050

Owner's Information

Owner's Data
ATC WATERTOWN LLC AMERICAN TOWER PROP TAX P O BOX 723597 ATLANTA GA 31139

Building 1

Photo Not Available



Category:	Office	Use:	Office Building	GLA:	1,816
Stories:	1.00	Construction:	Masonry and Wood Frame	Year Built:	1973
Heating:	FHA	Fuel:	Oil	Cooling Percent:	100

Siding:	Concrete Block/B. V. Solid	Roof Material:		Beds/Units:	0

Special Features

Attached Components

Type:	Year Built:	Area:
Open Porch	1973	64

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Paving	1973	0.00	0.00	2,400
Average Shed	1973	0.00	0.00	120
Cell Tower	2008	0.00	0.00	1
Cell Tower	2008	0.00	0.00	1

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
ATC WATERTOWN LLC	0819	0091	04/09/2018	Warranty Deed	No	$0
RICHLAND TOWERS MANAGEMENT PARKVIEW LLC	0722	0095	03/01/2013	Quit Claim	No	$666,450
SFX BROADCASTING OF CONNECTICUT	0291	0059	06/30/1997	Warranty Deed	No	$0

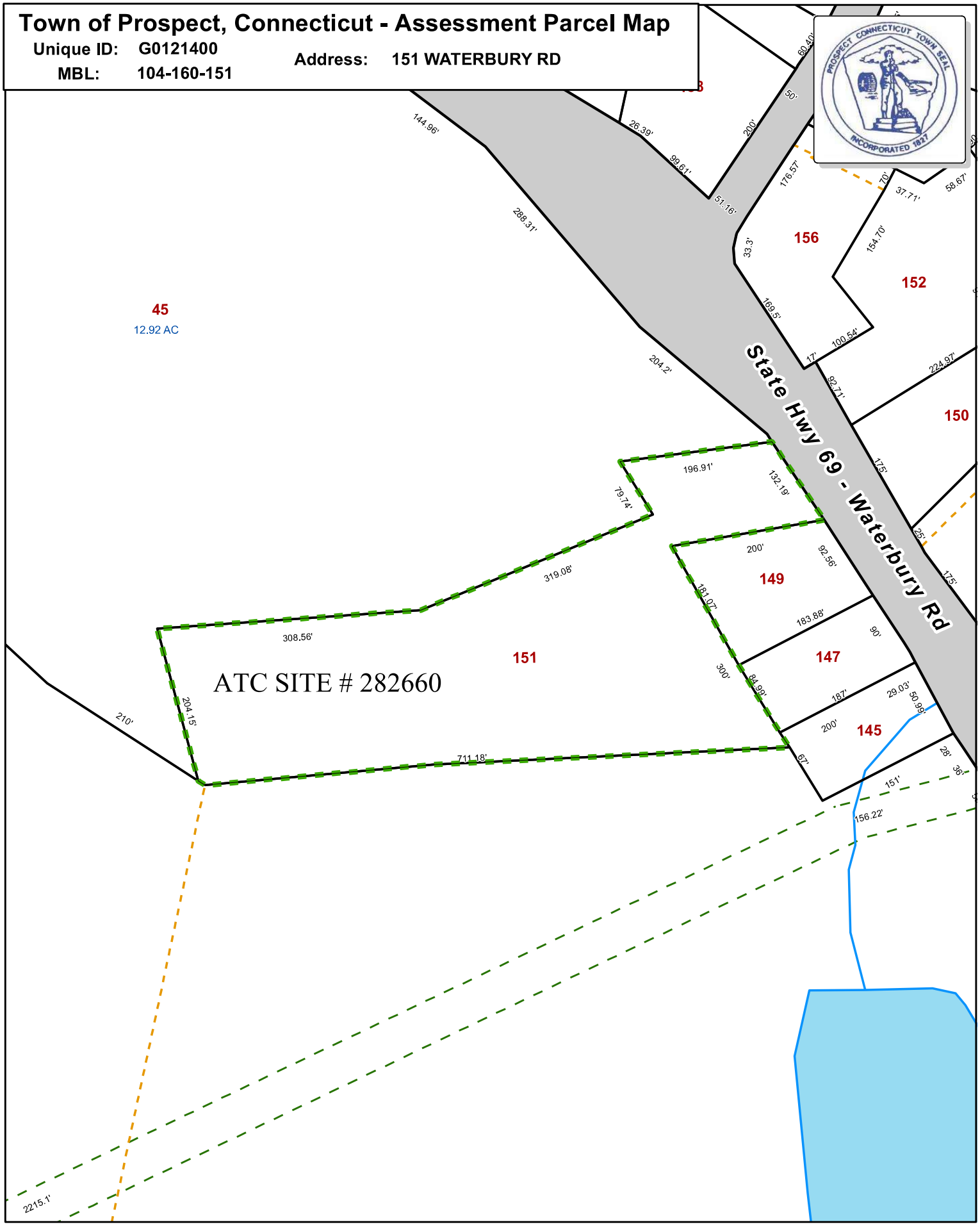
Building Permits

Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason

Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason
8240	Commercial	10/18/2018		Permit Issued	INSTALL OPTIIONAL STANDBY GENERATOR SYSTEM W/AUTO TRANSFER SWITCH FOR TOWER
8181	Commercial	08/06/2018		Permit Issued	EQUIPMENT UPGRADE
8169	Commercial	07/25/2018		Permit Issued	CELL TOWER T MOBILE INTENT TO MODIFY AN EXISTING COMMUNICATIONS FACILITY
8240	Commercial	06/29/2018			
7916	Commercial	11/29/2017		Permit Issued	REMOVE EXISTING TIMBER WALL & TREES INSTALL NEW REDI ROCK WALL & FENCING
7751	Commercial	04/02/2017		Permit Issued	REMOVE/REPLAE 3 ANTENNAS 3 RRUS 11 RRDE2
7624	Commercial	08/03/2016		Closed	MODIFICATION TO AN EXISTING TELECOMMUNICATIONS FACILITY
7523	Outbuilding/Yard Item	04/15/2016		Closed	REPLACE 3 ANTENNAS INSTALL 3 RRO S
7472	Outbuilding/Yard Item	12/29/2015			
7149	Commercial	10/14/2014		Needs Visit	INSTALL THREE (3} ADDITIONAL REMORE RADIO UNITS ON EXISTING TOWER
6603	Building	06/15/2012		Permit Issued	ADD 3 LTE ANTENNAS TO EXISTING TOWER ADD EQUIP TO EXISTING SHELTER
6034		01/20/2010		Closed	REPLC EXISTING 195' GUYED TOWER WITH NEW;150' MONOPOLE & FOUNDATION CHNINK FENC;
5004		10/21/2005		Closed	CERT OF COMPLETION10212005;;

Town of Prospect, Connecticut - Assessment Parcel Map

Unique ID: G0121400
MBL: 104-160-151
Address: 151 WATERBURY RD



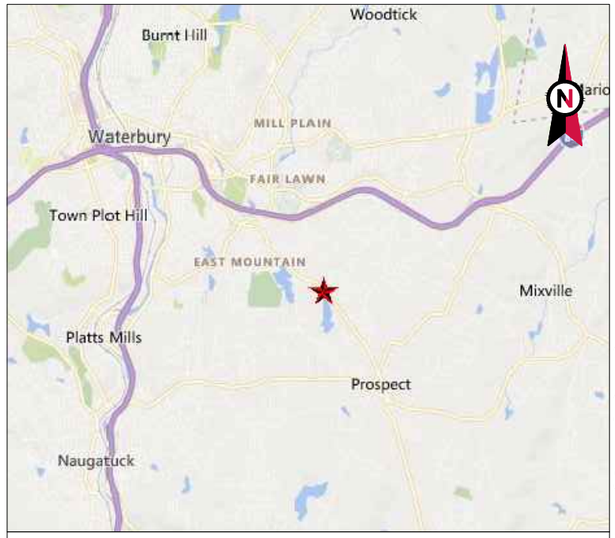
Approximate Scale:
1 inch = 200 feet

Disclaimer:
This map is for informational purposes only.
All information is subject to verification by any user.
The Town of Prospect and its mapping contractors
assume no legal responsibility for the information contained herein.

Map Produced July 2018

Exhibit C

Construction Drawings



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: PROSPECT CT
ATC SITE NUMBER: 282660
T-MOBILE SITE ID: CTNH302A
SITE ADDRESS: 151 WATERBURY PROSPECT ROAD PROSPECT, CT 06712

T-MOBILE L600 ANTENNA AMENDMENT
67D92DB CONFIGURATION

LOCATION MAP

COMPLIANCE CODE

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

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

UTILITY COMPANIES

POWER COMPANY: 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:

151 WATERBURY PROSPECT ROAD
PROSPECT, CT 06712
COUNTY: NEW HAVEN

1A CERTIFICATE SUMMARY:

LATITUDE: 41° 31' 22.91" N

LONGITUDE: 71° 59' 42.12" W

GROUND ELEVATION: 892' AMSL

TOWER HEIGHT: 150' 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, (3) RRUs, (6) 1-5/8" COAX CABLES, AND PLATFORM MOUNT

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

EXISTING (6) PANELS, (3) TTAs, (6) 1-5/8" COAX CABLES, (1) 1-5/8" HYBRID CABLE, AND (1) 1-1/4" HYBRID CABLE TO REMAIN

PROJECT NOTES

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

PROJECT LOCATION DIRECTIONS

FROM DOWNTOWN WATERBURY CT START OUT GOING EAST ON E MAIN ST TOWARD ORANGE ST. TAKE THE 1ST RIGHT ONTO BRASS MILL DR. TURN LEFT ONTO UNION ST. UNION ST BECOMES CT-69. TURN SHARP RIGHT ONTO MURPHY RD. 45 MURPHY RD, PROSPECT, CT 06712-1134, 45 MURPHY RD IS ON THE LEFT.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	2	07/19/19	EB
G-002	GENERAL NOTES	0	06/06/19	EB
C-101	DETAILED SITE PLAN & TOWER ELEVATION	2	07/19/19	EB
C-501	ANTENNA INFORMATION & SCHEDULE	2	07/19/19	EB
C-502	MOUNTING DETAIL	0	06/06/19	EB
E-501	GROUNDING AND MOUNTING DETAILS	0	06/06/19	EB
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	EB	06/06/19
1	REV CABLE LOADING	EB	06/26/19
2	REV MOUNT ANALYSIS	EB	07/19/19

ATC SITE NUMBER:
282660

ATC SITE NAME:
PROSPECT CT

SITE ADDRESS:
151 WATERBURY PROSPECT ROAD
PROSPECT, CT 06712

SEAL:

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

T-Mobile design

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	06/06/19
ATC JOB NO:	12951830

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	2

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	EB	06/06/19

ATC SITE NUMBER:
282660

ATC SITE NAME:
PROSPECT CT

SITE ADDRESS:
151 WATERBURY PROSPECT ROAD
PROSPECT, CT 06712

SEAL:

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

T-Mobile design

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	06/06/19
ATC JOB NO:	12951830

GENERAL NOTES

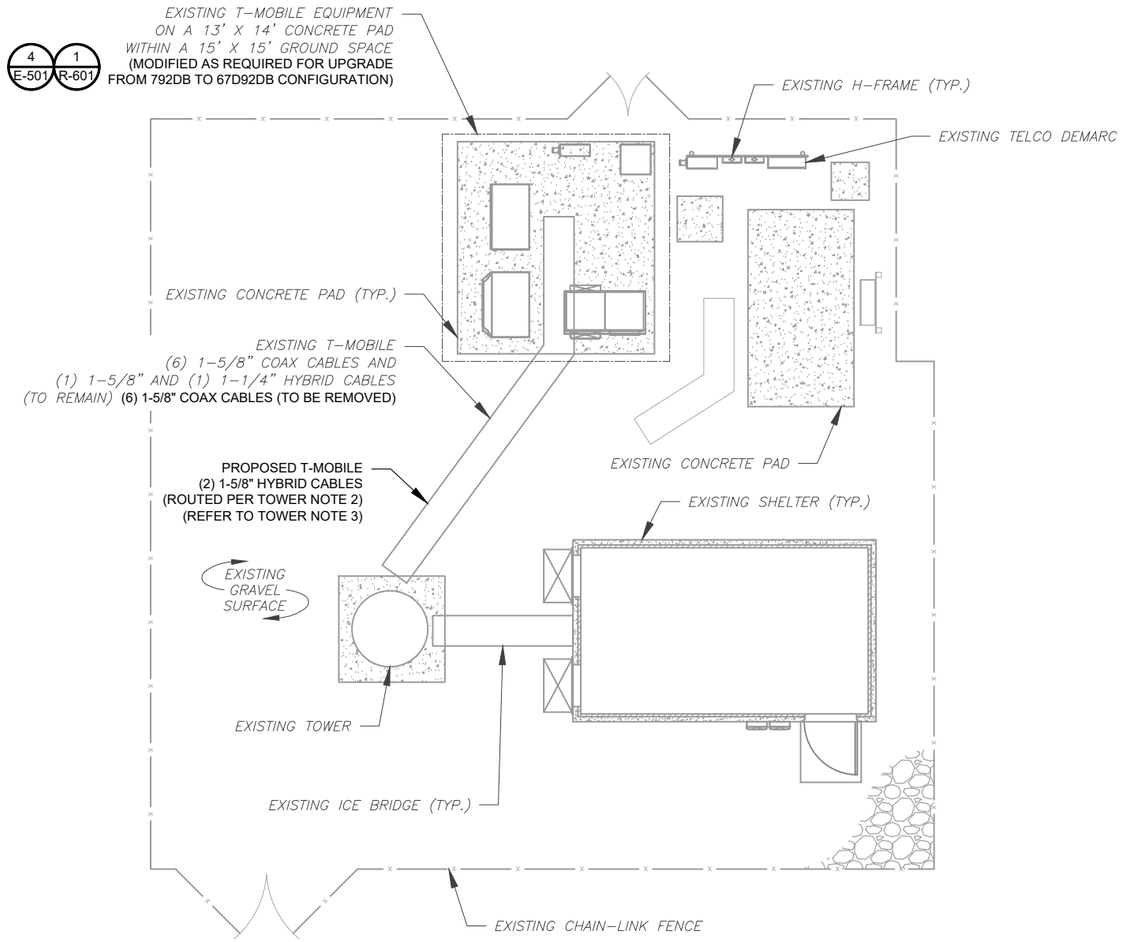
SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

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

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

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

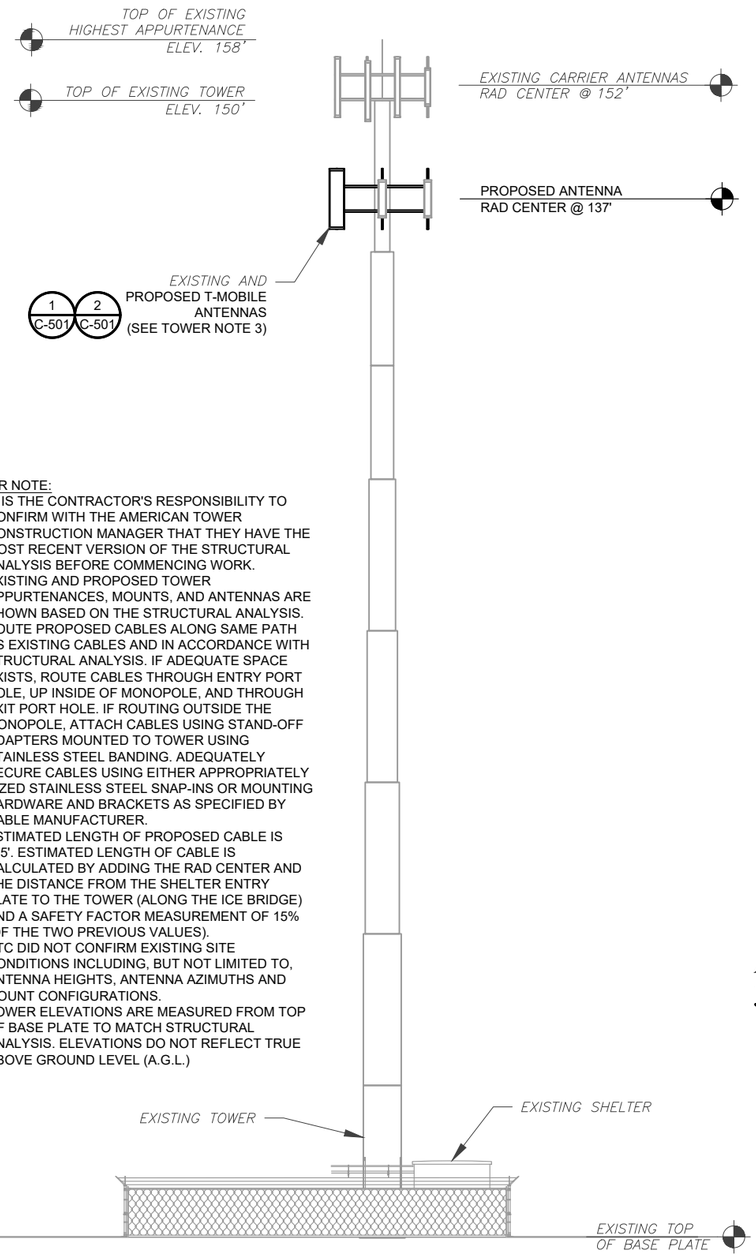


1 DETAILED SITE PLAN

0 10' 20'

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

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



TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
3. ESTIMATED LENGTH OF PROPOSED CABLE IS 175'. ESTIMATED LENGTH OF CABLE IS CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES).
4. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA HEIGHTS, ANTENNA AZIMUTHS AND MOUNT CONFIGURATIONS.
5. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

2 TOWER ELEVATION

SCALE: NOT TO SCALE

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	EB	06/06/19
1	REV CABLE LOADING	EB	06/26/19
2	REV MOUNT ANALYSIS	EB	07/19/19

ATC SITE NUMBER:
282660

ATC SITE NAME:
PROSPECT CT

SITE ADDRESS:
151 WATERBURY PROSPECT ROAD
PROSPECT, CT 06712

SEAL:

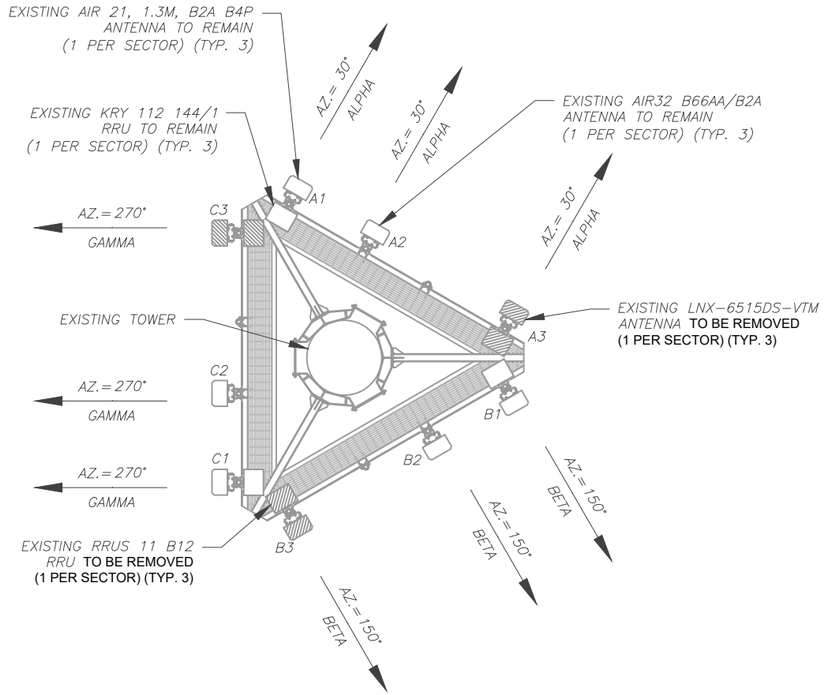
Authorized by "EOR"
Jul 19, 2019 5:43 PM

T-Mobile design

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	06/06/19
ATC JOB NO:	12951830

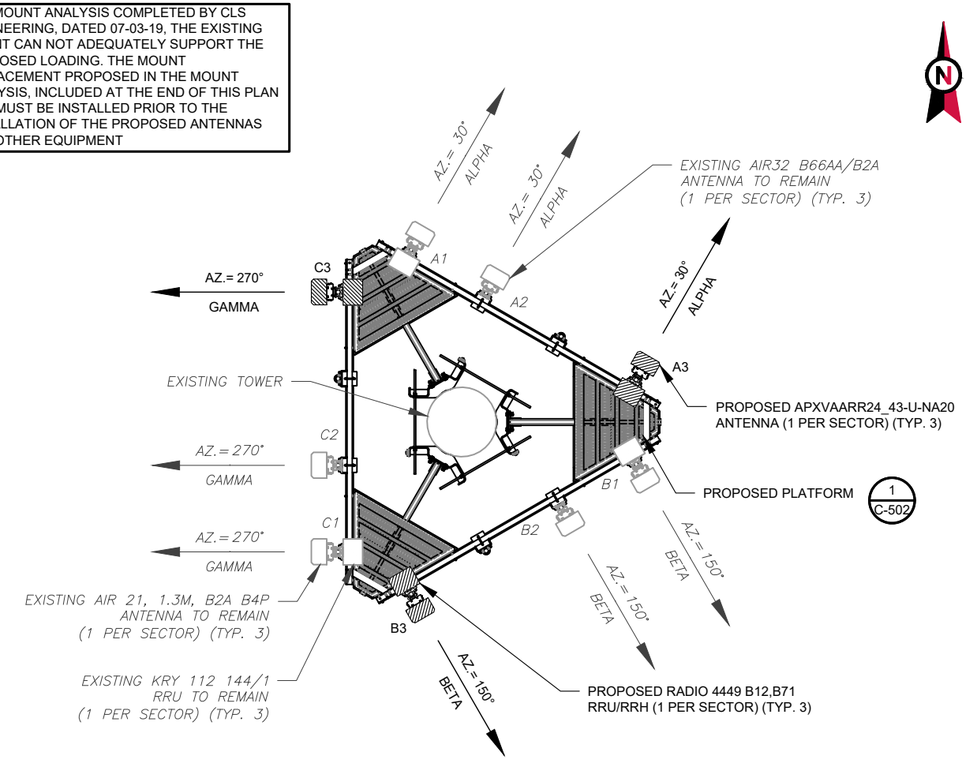
DETAILED SITE PLAN & TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-101	2



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 REPLACEMENT PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT



2 FINAL ANTENNA PLAN

EXISTING ANTENNA / EQUIPMENT SCHEDULE

SECTOR	ANT.	MANUFACTURER (MODEL #)	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	A1	AIR 21, 1.3 M, B2A B4P	137'-0"	30°	0°	6°	KRY 112 144/1
ALPHA	A2	AIR32 B66AA/B2A	137'-0"	30°	0°	6°	–
ALPHA	A3	LNX-6515DS-VTM	137'-0"	30°	0°	6°	RRUS 11 B12
BETA	B1	AIR 21, 1.3 M, B2A B4P	137'-0"	150°	0°	6°	KRY 112 144/1
BETA	B2	AIR32 B66AA/B2A	137'-0"	150°	0°	6°	–
BETA	B3	LNX-6515DS-VTM	137'-0"	150°	0°	6°	RRUS 11 B12
GAMMA	C1	AIR 21, 1.3 M, B2A B4P	137'-0"	270°	0°	6°	KRY 112 144/1
GAMMA	C2	AIR32 B66AA/B2A	137'-0"	270°	0°	6°	–
GAMMA	C3	LNX-6515DS-VTM	137'-0"	270°	0°	6°	RRUS 11 B12

NOTES

1. BASED ON APPROVED ATC APPLICATION 12927134, DATED 04/02/2019. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. ATC HAS NOT YET VERIFIED ANY EXISTING ANTENNA CONFIG OR MOUNT CONFIG. CONTRACTOR TO VERIFY MOUNT CONFIG HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (EQUIP) (I.E. CLEARANCES, MOUNT PIPE, SUFFICIENT LENGTH, ETC.) ATC DID NOT ANALYZE ANTENNA MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY LESSEE LOADING.
3. ALL PROPOSED EQUIP INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH ATC'S CM.
4. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
5. POSITIONS START WITH FIRST PIPE ON THE LEFT SIDE (AS VIEWED FROM BEHIND THE MOUNT).

FINAL ANTENNA / EQUIPMENT SCHEDULE

SECTOR	ANT.	MANUFACTURER (MODEL #)	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	A1	AIR 21, 1.3 M, B2A B4P	137'-0"	30°	0°	6°	KRY 112 144/1
ALPHA	A2	AIR32 B66AA/B2A	137'-0"	30°	0°	6°	–
ALPHA	A3	APXVAARR24_43-U-NA20	137'-0"	30°	0°	6°	RADIO 4449 B12,B71
BETA	B1	AIR 21, 1.3 M, B2A B4P	137'-0"	150°	0°	6°	KRY 112 144/1
BETA	B2	AIR32 B66AA/B2A	137'-0"	150°	0°	6°	–
BETA	B3	APXVAARR24_43-U-NA20	137'-0"	150°	0°	6°	RADIO 4449 B12,B71
GAMMA	C1	AIR 21, 1.3 M, B2A B4P	137'-0"	270°	0°	6°	KRY 112 144/1
GAMMA	C2	AIR32 B66AA/B2A	137'-0"	270°	0°	6°	–
GAMMA	C3	APXVAARR24_43-U-NA20	137'-0"	270°	0°	6°	RADIO 4449 B12,B71

CURRENT FIBER DISTRIBUTION/OVP BOX		CURRENT CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
–	–	(6) 1-5/8"		RMV
		(6) 1-5/8"	(1) 1-1/4" (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	STATUS
-	-		(2) 1-5/8"	ADD
-	-	(6) 1-5/8"	(1) 1-1/4" (1) 1-5/8"	RMN

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SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EB	06/06/19
1	REV CABLE LOADING	EB	06/26/19
2	REV MOUNT ANALYSIS	EB	07/19/19

ATC SITE NUMBER:
282660

ATC SITE NAME:
PROSPECT CT

SITE ADDRESS:
151 WATERBURY PROSPECT ROAD
PROSPECT, CT 06712

SEAL:

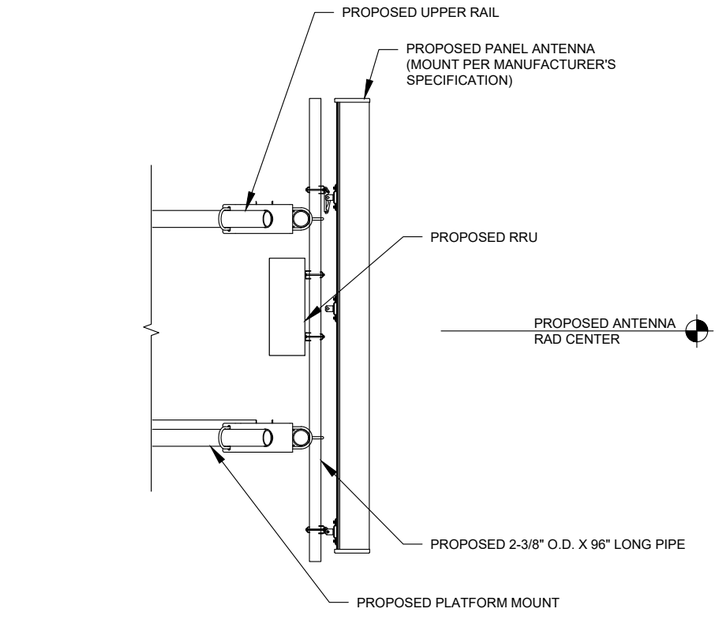
Authorized by "EOR"
Jul 19 2019 5:43 PM

T-Mobile design

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	06/06/19
ATC JOB NO:	12951830

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-501	2



1 PROPOSED ANTENNA MOUNTING DETAIL (ELEVATION)

SCALE: NOT TO SCALE

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EB	06/06/19

ATC SITE NUMBER:
282660

ATC SITE NAME:
PROSPECT CT

SITE ADDRESS:
151 WATERBURY PROSPECT ROAD
PROSPECT, CT 06712

SEAL:

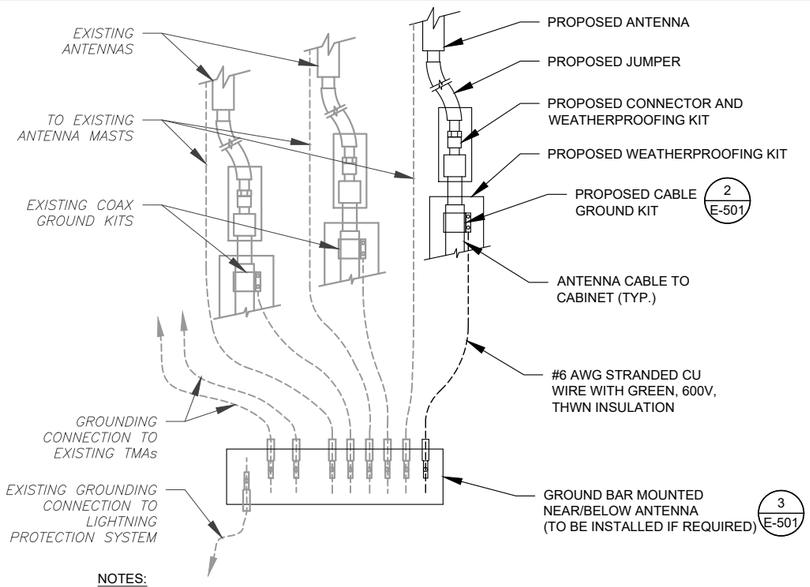
Authorized by "EOR"
Jul 19 2019 5:43 PM

T-Mobile design

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	06/06/19
ATC JOB NO:	12951830

MOUNTING DETAIL

SHEET NUMBER:	REVISION:
C-502	0

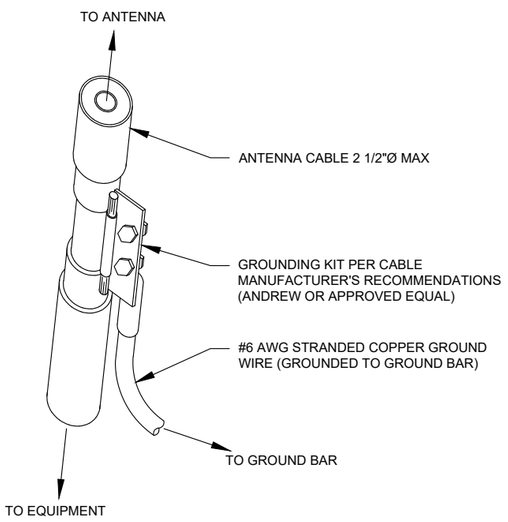


NOTES:

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

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: NOT TO SCALE

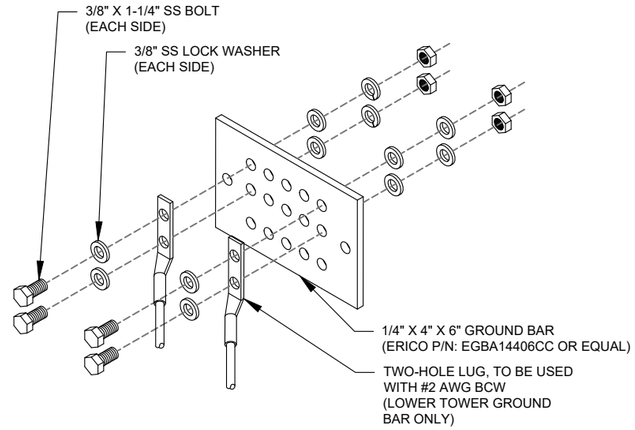


GROUND KIT NOTES:

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

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: NOT TO SCALE



GROUND BAR NOTES:

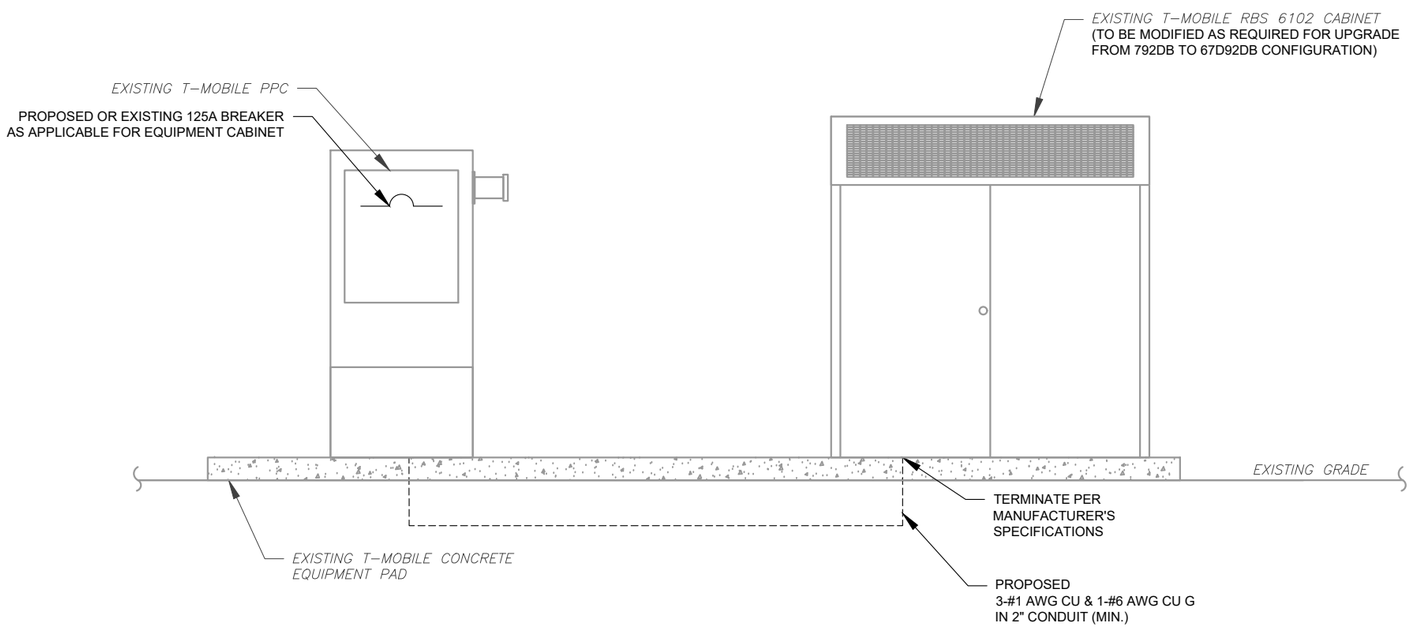
1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL

SCALE: NOT TO SCALE

ELECTRICAL NOTES:

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



4 ELECTRICAL UPGRADE DIAGRAM

SCALE: NOT TO SCALE

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SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EB	06/06/19

ATC SITE NUMBER:

282660

ATC SITE NAME:

PROSPECT CT

SITE ADDRESS:
151 WATERBURY PROSPECT ROAD
PROSPECT, CT 06712

SEAL:

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

T-Mobile design

DRAWN BY:	EF
APPROVED BY:	PB
DATE DRAWN:	06/06/19
ATC JOB NO:	12951830

GROUNDING AND MOUNTING DETAILS

SHEET NUMBER: E-501

REVISION: 0

Existing RAN Equipment		
Template: 792DB Outdoor		
Enclosure	1	2
Enclosure Type	RBS 6131	19 Inch Rack
Baseband	DUW30 (x 2) DUG20 DUS41 (x 2)	
Hybrid Cable System		Ericsson 9x18 HCS *Select Length* Ericsson 6x12 HCS *Select Length & AWG*
Multiplexer	XMU	
Radio	RU22 (x 6)	

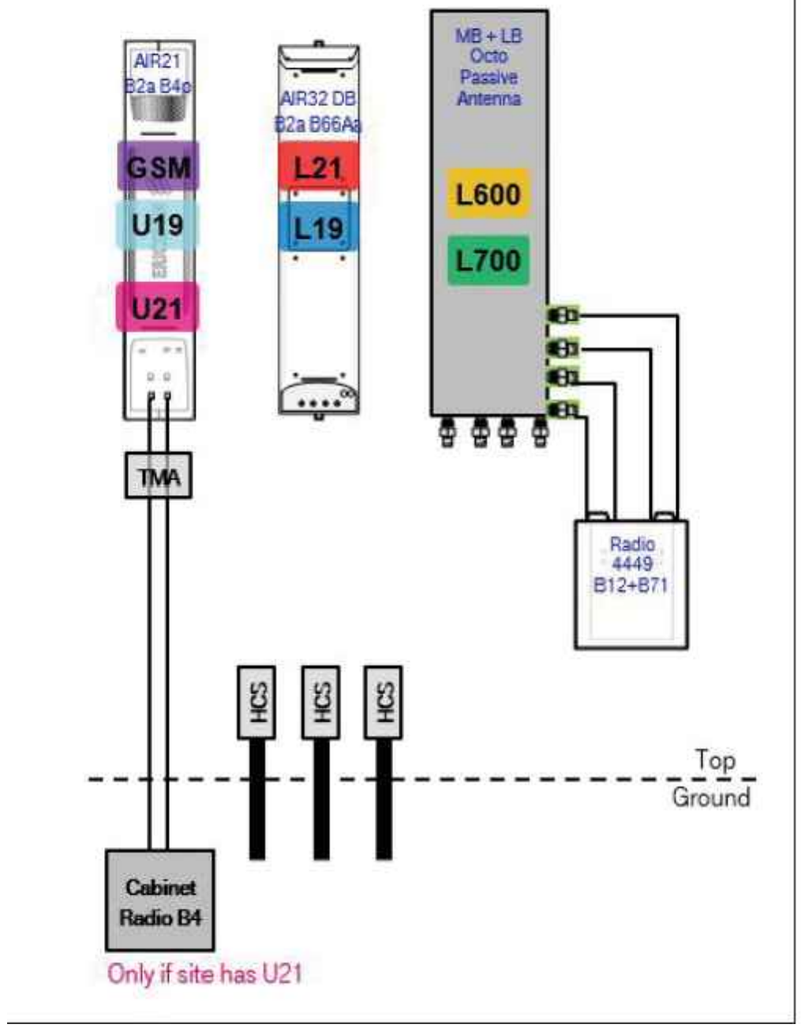
Proposed RAN Equipment		
Template: 67D92DB Outdoor		
Enclosure	1	2
Enclosure Type	RBS 6131	19 Inch Rack
Baseband	DUW30 U2100; DUW30 U1900; DUG20 G1900; BB 6630 L2100 L1900 L700 L600; BB 6630 N600 (DARK)	
Hybrid Cable System		Ericsson 9x18 HCS *Select Length* Ericsson 6x12 HCS *Select Length & AWG* (x 3)
Radio	RU22 (x 6) U2100	

RAN Scope of Work:

Replace (2) DUS41 with (1) BB6630 for L2100, L1900, L700, and L600.
Add (1) BB6630 for future 5G N600.
Remove XMU.
Add (2) 6X12 HCS.

Existing: (12) Coaxial Lines; (1) 9X18 HCS and (1) 6X12 HCS. Removing (6) Coax.

67D92DB_2xAIR+1OP.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: R-601

REVISION: 0

Mount Analysis of Proposed Perfect Vision PV-LLP12M-HR-B for American Tower on behalf of T-Mobile
282660 - Prospect CT, CT
Project #: 12927134
T-Mobile Site ID: CTNH302A
Program: L600

CLS Engineering PLLC Project #41124-12927134-01-MR-R1
July 3, 2019

MOUNT DESCRIPTION	Proposed Perfect Vision PV-LLP12M-HR-B at 137 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 137 ft AGL
SITE DESCRIPTION	150 ft Monopole
SITE ADDRESS	151 Waterbury Prospect Road, Prospect, CT 06712-1228, New Haven County
GPS COORDINATES	41.5237, -72.9955
ANALYSIS STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	125 mph, V_{ult} / 96.8 mph, V_{asd} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 0.75" Ice

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

MEMBER USAGE	64%	Pass

Existing mounts to be replaced; 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

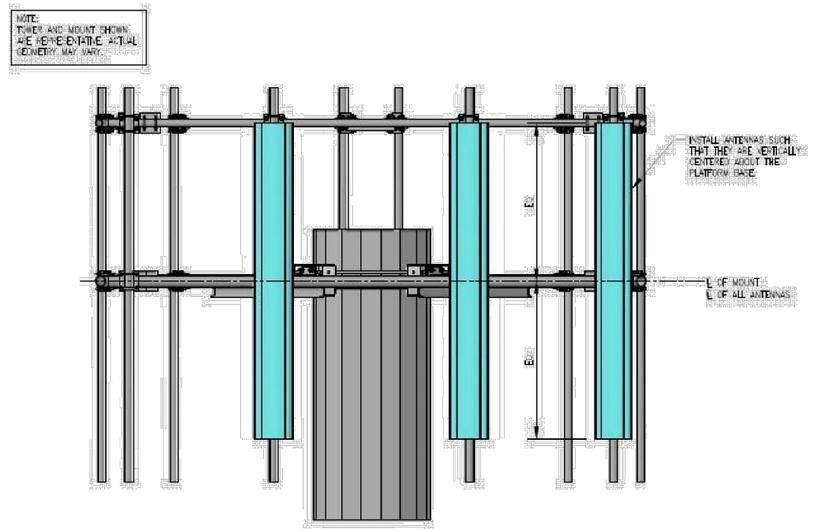
Tyler M. Barker
CLS Engineering, PLLC
Director of Engineering
PE # 32402 Exp. 1/31/2020
COA # PEC.001833 Exp. 8/14/2019

Digitally signed by Tyler Barker
DN: c=US, o=Telamon Corporation, ou=A01427E0000016A4525ADF800001D17, cn=Tyler Barker
Date: 2019.07.03 22:02:10 -04'00'

■ CONCLUSION AND RECOMMENDATIONS

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

- **Replace existing Platform Mount with (1) new Perfect Vison PV-LLP12M-HR-B Platform Mount.**
- **Install (1) Perfect Vision PV-PKBK Monopole Platform Kicker Kit as shown. Field-cut kicker angle as required. Maintain minimum bolt edge distance. Connect kicker kit to (1) proposed Perfect Vision PV-RM1045 Monopole Collar.**
- **Install (4) Perfect Vision PIPE-278X126 antenna mount pipes at each sector (12 total). Connect to platform base horizontal member using (12) Perfect Vision PV-XP-2530-HD crossover brackets such that they are equidistant from each other as shown in the assembly drawings.**
- **Install support rails 3'-0" above the platform base. Connect to all mount pipes using crossover angles included in proposed platform kit.**
- **Install existing and proposed antennas such that they are vertically centered about the face horizontal member. Install existing and proposed RRUS and TMAs behind the antennas.**

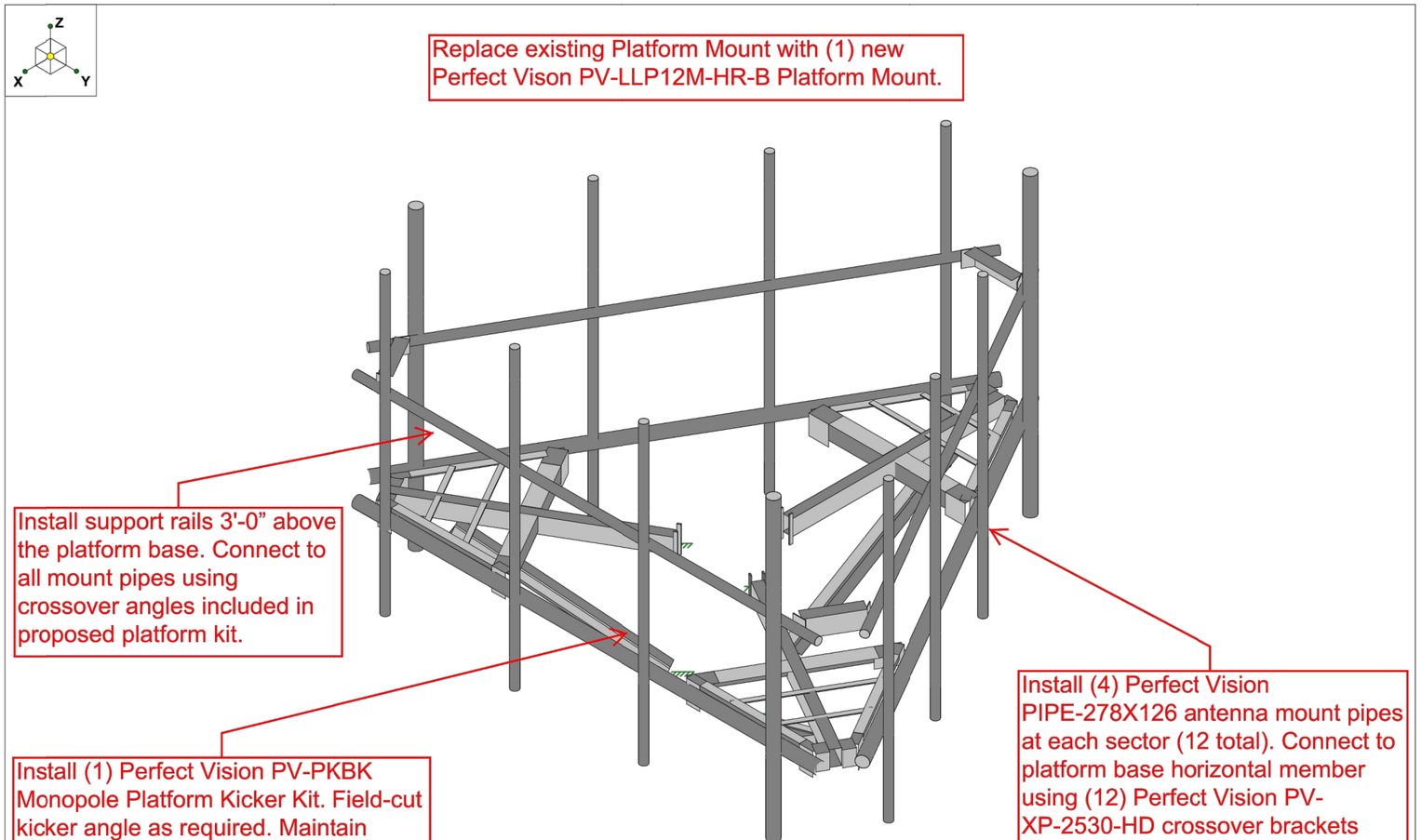


See following sketch and Perfect Vision assembly drawing for additional details.

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-602	2



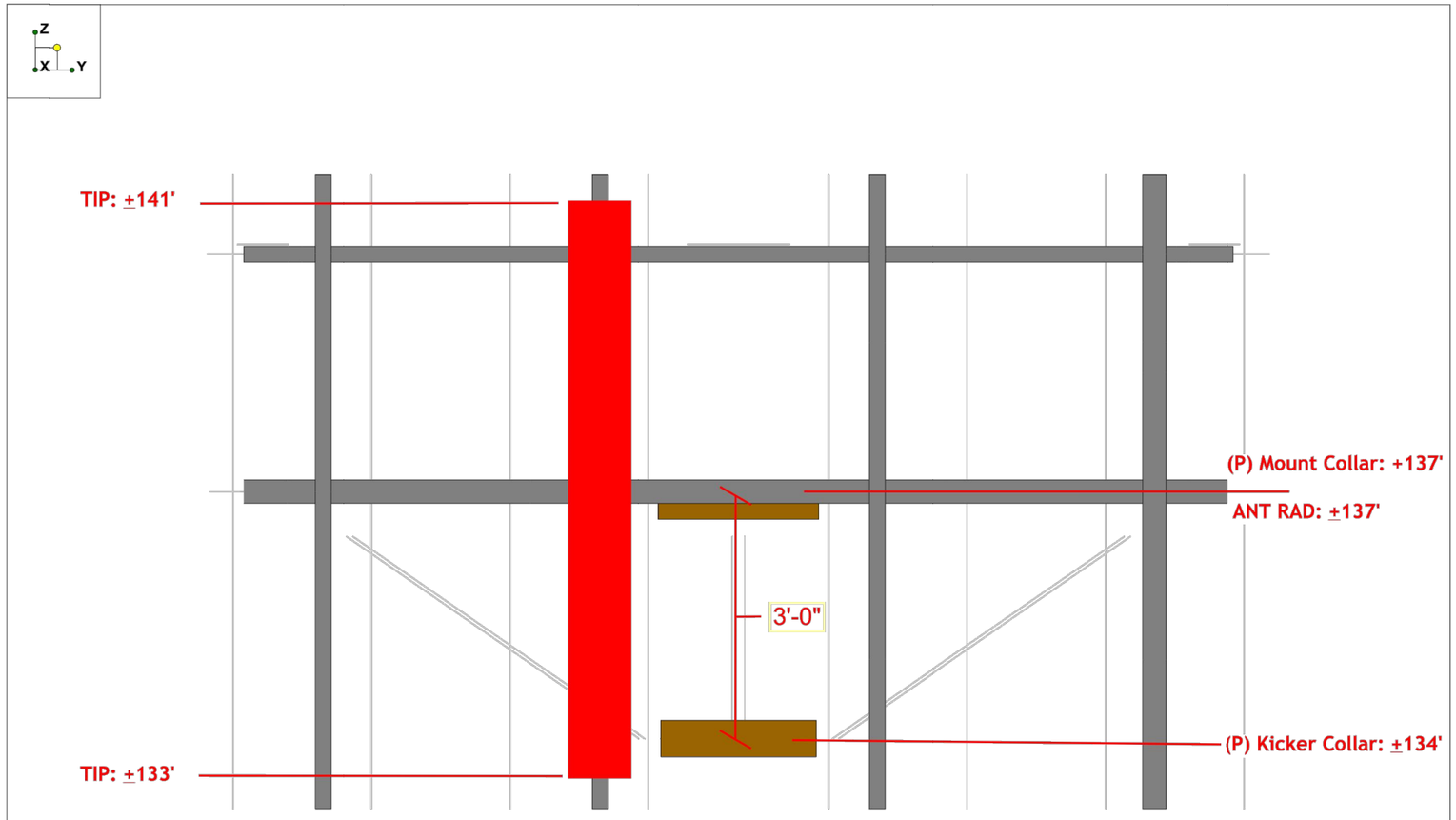
Envelope Only Solution

CLS	41124-12927134-Prospect CT, CT-282660 Proposed Mount - Rendered	SK - 0
SMR		Apr 12, 2019 at 11:07 AM
41124-12927134-01-MA		41124-12927134-01-MR.r3d

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-603	2



CLS	41124-12927134-Prospect CT, CT-282660 Installation Sketch	SK - 0
SMR		Apr 12, 2019 at 10:32 AM
41124-12927134-01-MA		41124-12927134-01-MR Collar.r3d

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-604	2

Exhibit D

Structural Analysis Report

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**150 ft Monopole**
ATC Site Name	:	**PROSPECT CT, CT**
ATC Site Number	:	**282660**
Engineering Number	:	**12927134_C3_02**
Proposed Carrier	:	**T-MOBILE**
Carrier Site Name	:	**CTNH302A**
Carrier Site Number	:	**CTNH302A**
Site Location	:	**151 Waterbury Prospect road** **PROSPECT, CT 06712-1228** **41.523700,-72.995500**
County	:	**New Haven**
Date	:	**July 19, 2019**
Max Usage	:	**67%**
Result	:	**Pass**

Prepared By:
Cole Melody Koffi
Structural Engineer I

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32598
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
Jul 24 2019 5:09 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 150 ft monopole to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	ERI Project #25148/001, dated November 13, 2009
Foundation Drawing	ERI Project #25148/002, dated November 13, 2009
Geotechnical Report	FDH Project #09-10144E G1, dated November 9, 2009
Mount Analysis	CLS Engineering PLLC Project #41124-12927134-01-MR-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:	97 mph (3-second gust, V_{ASD})/125 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 = 0.19, 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
152.0	3	Ericsson RRUS 12	Platform with Handrails	(2) 0.39" Fiber Trunk (8) 0.78" 8 AWG 6 (12) 1 5/8" Coax (3) 2" conduit (3) 3" conduit	AT&T MOBILITY
	1	Commscope WCS-IMFQ-AMT			
	6	Ericsson RRUS-11			
	1	Ericsson RRUS E2 B29			
	3	Raycap DC6-48-60-0-8F			
	3	Ericsson RRUS 4478 B5			
	3	Ericsson RRUS 32 (50.8 lbs)			
	3	Powerwave Allgon 7770.00			
	3	CCI HPA-65R-BUU-H8			
	6	Powerwave Allgon TT08-19DB111-001			
	2	CCI TPA-65R-LCUUUU-H8			
	1	Quintel QS66512-2			
	1	Raycap DC6-48-60-18-8F ("Squid")			
	3	Ericsson RRUS 4478 B14			
	3	Kathrein Scala 80010966			
	9	Kaelus DBCT108F1V92-1			
	3	Ericsson Radio 8843 - B2 + B66A			
137.0	3	Ericsson AIR32 B66Aa/B2a	-	(2) 0.27 – CAT5 (1) 0.33" Fiber (1) 1 1/4" Hybriflex Cable (6) 1 5/8" Coax (1) 1 5/8" Hybriflex	T-MOBILE
	3	Ericsson AIR 21, 1.3 M, B2A B4P			
	1	Fastback Networks Intelligent Backhaul Radio 1300 Series			
	3	Ericsson KRY 112 144/1			

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
137.0	3	Andrew LNX-6515DS-VTM	Low Profile Platform	(6) 1 5/8" Coax	T-MOBILE
	3	Ericsson RRUS 11 B12			

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
137.0	3	Ericsson Radio 4449 B12,B71	Perfect Vision PV-LLP12M-HR-B Platform w/ Handrails	(2) 1 5/8" Hybriflex	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 inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	42%	Pass
Shaft	53%	Pass
Base Plate	67%	Pass
Flanges	51%	Pass

Foundations

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	4,816.0	2,356.1	49%
Shear (Kips)	50.0	21.6	43%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
137.0	Ericsson Radio 4449 B12,B71	T-MOBILE	0.540	0.451
	RFS APXVAARR24_43-U-NA20			

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

AMERICAN TOWER®
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Standard Conditions

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

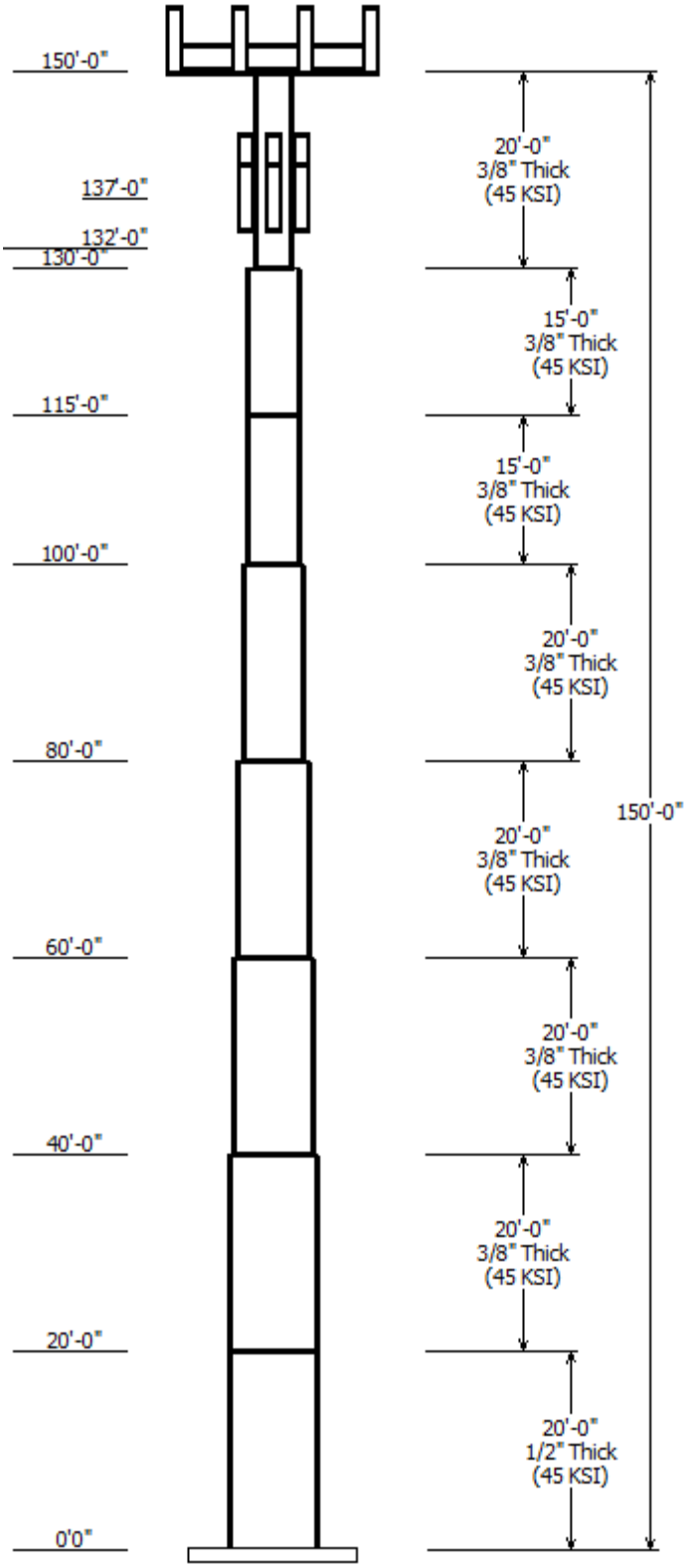
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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

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

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

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



Job Information

Client :	T-MOBILE		
Pole :	282660	Code:	ANSI/TIA-222-G
Location :	PROSPECT CT, CT		
Description :		Struct Class :	II
Shape :	Round	Exposure :	B
Height :	150.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.000000 (in/ft)		

Sections Properties

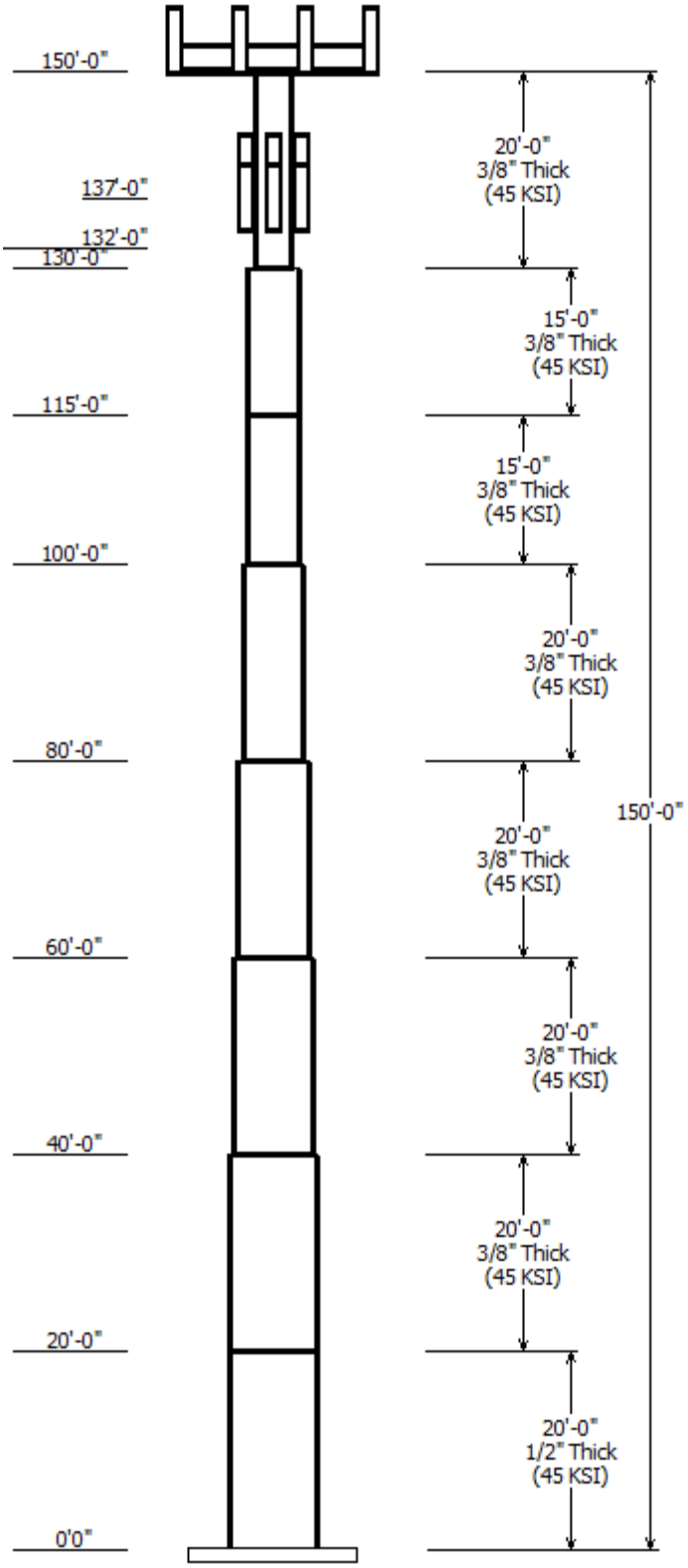
Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Steel Grade Shape	(ksi)
1	20.000	60.00	60.00	0.500		0.000	Round	45
2	20.000	60.00	60.00	0.375	Butt Joint	0.000	Round	45
3	20.000	54.00	54.00	0.375	Butt Joint	0.000	Round	45
4	20.000	48.00	48.00	0.375	Butt Joint	0.000	Round	45
5	20.000	42.00	42.00	0.375	Butt Joint	0.000	Round	45
6	15.000	36.00	36.00	0.375	Butt Joint	0.000	Round	45
7	15.000	36.00	36.00	0.375	Butt Joint	0.000	Round	45
8	20.000	24.00	24.00	0.375	Butt Joint	0.000	Round	45

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
150.000	155.000	3	CCI HPA-65R-BUU-H8
150.000	155.000	3	Powerwave Allgon 7770.00
150.000	155.000	3	Ericsson RRUS 32 (50.8 lbs)
150.000	152.000	3	Ericsson RRUS 4478 B5
150.000	155.000	3	Raycap DC6-48-60-0-8F
150.000	150.000	1	Round Platform w/ Handrails
150.000	155.000	2	CCI TPA-65R-LCUUUU-H8
150.000	152.000	1	Commscope WCS-IMFQ-AMT
150.000	155.000	6	Ericsson RRUS-11
150.000	152.000	1	Ericsson RRUS E2 B29
150.000	152.000	3	Ericsson Radio 8843 - B2 + B66
150.000	152.000	9	Kaelus DBCT108F1V92-1
150.000	152.000	3	Kathrein Scala 80010966
150.000	152.000	3	Ericsson RRUS 4478 B14
150.000	152.000	1	Raycap DC6-48-60-18-8F
150.000	155.000	1	Quintel QS66512-2
150.000	155.000	3	Ericsson RRUS 12
150.000	155.000	6	Powerwave Allgon TT08-
137.000	137.000	3	RFS APXVAARR24_43-U-NA20
137.000	141.000	3	Ericsson AIR32 B66Aa/B2a
137.000	141.000	3	Ericsson AIR 21, 1.3 M, B2A B4
137.000	137.000	3	Ericsson Radio 4449 B12,B71
137.000	137.000	1	Fastback Networks Intelligent
137.000	141.000	3	Ericsson KRY 112 144/1
132.000	132.000	1	Perfect Vision PV-LLP12M-HR-

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	137.0	0.27	No
0.000	137.0	0.33" (8.7mm)	No
0.000	137.0	1 1/4" Hybriflex	No
0.000	137.0	1 5/8" Coax	No
0.000	137.0	1 5/8" Hybriflex	No
0.000	137.0	1 5/8" Hybriflex	No
0.000	150.0	0.39" (10mm)	No



0.000	150.0	0.78" (19.7mm) 8	No
0.000	150.0	1 5/8" Coax	No
0.000	150.0	2" conduit	No
0.000	150.0	3" conduit	No

Load Cases

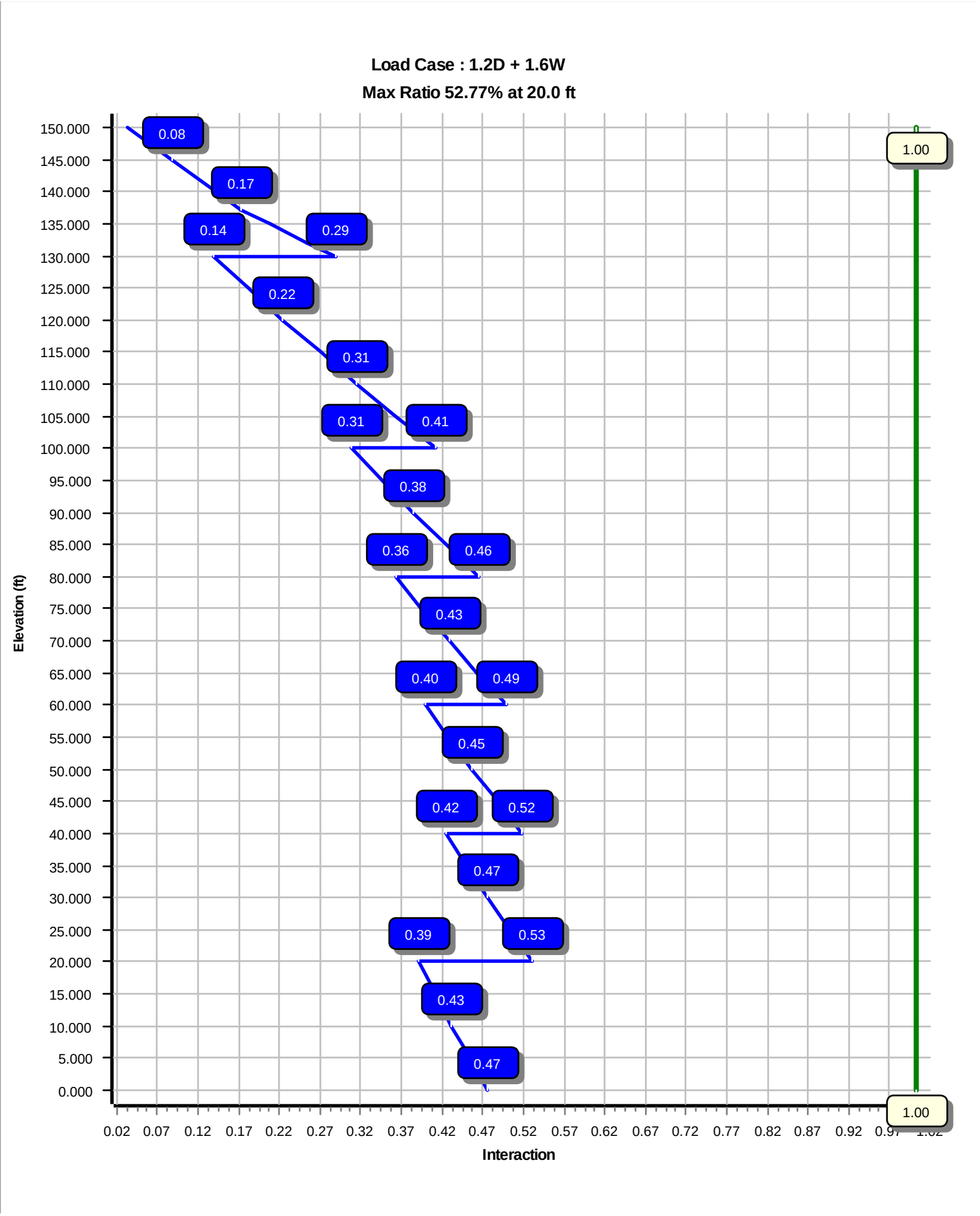
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2356.09	21.63	54.33
0.9D + 1.6W	2339.84	21.62	40.75
1.2D + 1.0Di + 1.0Wi	675.17	6.54	75.08
(1.2 + 0.2Sds) * DL + E ELFM	202.72	1.68	53.83
(1.2 + 0.2Sds) * DL + E EMAM	327.92	2.64	53.83
(0.9 - 0.2Sds) * DL + E ELFM	201.07	1.68	37.33
(0.9 - 0.2Sds) * DL + E EMAM	325.04	2.64	37.33
1.0D + 1.0W	501.85	4.63	45.29

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000


Load Case : 1.2D + 1.6W
Max Ratio 52.77% at 20.0 ft
Elevation (ft)
Interaction
150.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
0.02
0.07
0.12
0.17
0.22
0.27
0.32
0.37
0.42
0.47
0.52
0.57
0.62
0.67
0.72
0.77
0.82
0.87
0.92
0.08
0.17
0.14
0.29
0.22
0.31
0.31
0.41
0.38
0.36
0.46
0.43
0.40
0.49
0.45
0.42
0.52
0.47
0.39
0.53
0.43
0.47
1.00
1.00

Site Number: 282660
Site Name: PROSPECT CT, CT
Customer: T-MOBILE

Code: ANSI/TIA-222-G
Engineering Number:12927134_C3_02

7/19/2019 9:23:06 AM

Analysis Parameters

Location :	New Haven County, CT	Height (ft) :	150
Code :	ANSI/TIA-222-G	Base Diameter (in) :	60.00
Shape :	Round	Top Diameter (in) :	24.00
Pole Type :	Stepped	Taper (in/ft) :	0.000
Pole Manfacturer :	ERI	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	1.84				
T_L (sec):	6	p:	1	C_s:	0.037
S_s:	0.188	S_1:	0.064	C_s Max:	0.037
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.201	S_{d1}:	0.102		

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 282660 Code: ANSI/TIA-222-G

Site Name: PROSPECT CT, CT Engineering Number:12927134_C3_02 7/19/2019 9:23:06 AM

Customer: T-MOBILE

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-R	20.000	0.5000	45		0.00	6,361	60.00	0.00	93.46	41391.7	0.00	120.00	60.00	20.00	93.46	41391.7	0.00	120.00	0.000000
2-R	20.000	0.3750	45	Butt	0.00	4,780	60.00	20.00	70.24	31239.9	0.00	160.00	60.00	40.00	70.24	31239.9	0.00	160.00	0.000000
3-R	20.000	0.3750	45	Butt	0.00	4,299	54.00	40.00	63.18	22726.1	0.00	144.00	54.00	60.00	63.18	22726.1	0.00	144.00	0.000000
4-R	20.000	0.3750	45	Butt	0.00	3,818	48.00	60.00	56.11	15919.5	0.00	128.00	48.00	80.00	56.11	15919.5	0.00	128.00	0.000000
5-R	20.000	0.3750	45	Butt	0.00	3,337	42.00	80.00	49.04	10628.9	0.00	112.00	42.00	100.00	49.04	10628.9	0.00	112.00	0.000000
6-R	15.000	0.3750	45	Butt	0.00	2,142	36.00	100.00	41.97	6663.3	0.00	96.00	36.00	115.00	41.97	6663.3	0.00	96.00	0.000000
7-R	15.000	0.3750	45	Butt	0.00	2,142	36.00	115.00	41.97	6663.3	0.00	96.00	36.00	130.00	41.97	6663.3	0.00	96.00	0.000000
8-R	20.000	0.3750	45	Butt	0.00	1,894	24.00	130.00	27.83	1943.3	0.00	64.00	24.00	150.00	27.83	1943.3	0.00	64.00	0.000000
				Shaft Weight		28,775													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
150.00	Kaelus DBCT108F1V92-1	9	0.75	2.000	13.90	0.630	0.50	39.08	1.173	0.50
150.00	Powerwave Allgon TT08-	6	0.75	5.000	22.00	0.790	0.50	48.57	1.424	0.50
150.00	Commscope WCS-IMFQ-AMT	1	0.75	2.000	29.50	0.990	1.00	63.20	1.652	1.00
150.00	Raycap DC6-48-60-0-8F	3	0.75	5.000	32.80	1.360	1.00	90.95	2.023	1.00
150.00	Raycap DC6-48-60-18-8F	1	0.75	2.000	31.80	1.470	1.00	93.52	2.169	1.00
150.00	Ericsson Radio 8843 - B2 + B66A	3	0.75	2.000	71.90	1.650	0.50	133.53	2.497	0.50
150.00	Ericsson RRUS 4478 B5	3	0.75	2.000	59.90	1.840	0.50	115.21	2.736	0.50
150.00	Ericsson RRUS 4478 B14	3	0.75	2.000	59.90	1.840	0.50	115.21	2.736	0.50
150.00	Ericsson RRUS 32 (50.8 lbs)	3	0.75	5.000	50.80	2.690	0.67	122.35	3.845	0.67
150.00	Ericsson RRUS E2 B29	1	0.75	2.000	60.00	3.150	1.00	140.91	4.311	1.00
150.00	Ericsson RRUS 12	3	0.75	5.000	50.00	3.150	0.62	130.91	4.311	0.62
150.00	Ericsson RRUS-11	6	0.75	5.000	55.00	3.790	0.61	144.81	5.074	0.61
150.00	Powerwave Allgon 7770.00	3	0.75	5.000	35.00	5.510	0.65	169.89	6.563	0.65
150.00	Quintel QS66512-2	1	0.75	5.000	111.00	8.130	1.00	310.35	10.918	1.00
150.00	CCI HPA-65R-BUU-H8	3	0.75	5.000	68.00	12.980	0.67	325.04	16.562	0.67
150.00	CCI TPA-65R-LCUUUU-H8	2	0.75	5.000	81.60	13.300	0.77	358.49	17.035	0.77
150.00	Kathrein Scala 80010966	3	0.75	2.000	114.60	17.360	0.63	435.82	21.050	0.63
150.00	Round Platform w/ Handrails	1	1.00	0.000	2,000.00	27.200	1.00	3,296.26	51.653	1.00
137.00	Ericsson KRY 112 144/1	3	0.75	4.000	11.00	0.350	0.50	21.68	0.752	0.50
137.00	Fastback Networks Intelligent	1	0.75	0.000	8.80	0.670	1.00	27.51	1.219	1.00
137.00	Ericsson Radio 4449 B12,B71	3	0.75	0.000	74.00	1.640	0.50	129.55	2.478	0.50
137.00	Ericsson AIR 21, 1.3 M, B2A B4P	3	0.75	4.000	83.00	6.050	0.71	227.82	8.195	0.71
137.00	Ericsson AIR32 B66Aa/B2a	3	0.75	4.000	132.20	6.510	0.71	290.57	8.684	0.71
137.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.000	127.90	20.240	0.63	517.46	23.920	0.63
132.00	Perfect Vision PV-LLP12M-HR-B	1	1.00	0.000	2,000.00	36.800	1.00	3,377.39	62.144	1.00
Totals	Num Loadings:25	72			7,904.40			18,016.11		

Linear Appurtenance Properties

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	150.00	2	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	150.00	8	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	150.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	150.00	3	2" conduit	2.38	3.65	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	150.00	3	3" conduit	3.50	7.58	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	137.00	2	0.27	0.01	0.01	N	0	0.00	0.00	0	0.00	N	T-MOBILE

0.00	137.00	1	0.33" (8.7mm) Fiber	0.33	0.05	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	137.00	1	1 1/4" Hybriflex Cable	1.54	1.00	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	137.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	137.00	1	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	137.00	2	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	0.00	N	T-MOBILE

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.5000	60.000	93.462	41,391.7	0.00	120.00	39.2	1379.	1770.	0.0
5.00		0.5000	60.000	93.462	41,391.7	0.00	120.00	39.2	1379.	1770.	1,590.2
10.00		0.5000	60.000	93.462	41,391.7	0.00	120.00	39.2	1379.	1770.	1,590.2
15.00		0.5000	60.000	93.462	41,391.7	0.00	120.00	39.2	1379.	1770.	1,590.2
20.00	Top - Section 1	0.5000	60.000	93.462	41,391.7	0.00	120.00	39.2	1379.	1770.	1,590.2
20.00	Bot - Section 2	0.3750	60.000	70.244	31,239.9	0.00	160.00	36.9	1041.	1333.	
25.00		0.3750	60.000	70.244	31,239.9	0.00	160.00	36.9	1041.	1333.	1,195.1
30.00		0.3750	60.000	70.244	31,239.9	0.00	160.00	36.9	1041.	1333.	1,195.1
35.00		0.3750	60.000	70.244	31,239.9	0.00	160.00	36.9	1041.	1333.	1,195.1
40.00	Top - Section 2	0.3750	60.000	70.244	31,239.9	0.00	160.00	36.9	1041.	1333.	1,195.1
40.00	Bot - Section 3	0.3750	54.000	63.175	22,726.1	0.00	144.00	37.6	841.7	1078.	
45.00		0.3750	54.000	63.175	22,726.1	0.00	144.00	37.6	841.7	1078.	1,074.9
50.00		0.3750	54.000	63.175	22,726.1	0.00	144.00	37.6	841.7	1078.	1,074.9
55.00		0.3750	54.000	63.175	22,726.1	0.00	144.00	37.6	841.7	1078.	1,074.9
60.00	Top - Section 3	0.3750	54.000	63.175	22,726.1	0.00	144.00	37.6	841.7	1078.	1,074.9
60.00	Bot - Section 4	0.3750	48.000	56.107	15,919.5	0.00	128.00	38.6	663.3	850.6	
65.00		0.3750	48.000	56.107	15,919.5	0.00	128.00	38.6	663.3	850.6	954.6
70.00		0.3750	48.000	56.107	15,919.5	0.00	128.00	38.6	663.3	850.6	954.6
75.00		0.3750	48.000	56.107	15,919.5	0.00	128.00	38.6	663.3	850.6	954.6
80.00	Top - Section 4	0.3750	48.000	56.107	15,919.5	0.00	128.00	38.6	663.3	850.6	954.6
80.00	Bot - Section 5	0.3750	42.000	49.038	10,628.9	0.00	112.00	39.8	506.1	649.8	
85.00		0.3750	42.000	49.038	10,628.9	0.00	112.00	39.8	506.1	649.8	834.3
90.00		0.3750	42.000	49.038	10,628.9	0.00	112.00	39.8	506.1	649.8	834.3
95.00		0.3750	42.000	49.038	10,628.9	0.00	112.00	39.8	506.1	649.8	834.3
100.0	Top - Section 5	0.3750	42.000	49.038	10,628.9	0.00	112.00	39.8	506.1	649.8	834.3
100.0	Bot - Section 6	0.3750	36.000	41.970	6,663.3	0.00	96.00	41.4	370.2	475.9	
105.0		0.3750	36.000	41.970	6,663.3	0.00	96.00	41.4	370.2	475.9	714.1
110.0		0.3750	36.000	41.970	6,663.3	0.00	96.00	41.4	370.2	475.9	714.1
115.0	Top - Section 6	0.3750	36.000	41.970	6,663.3	0.00	96.00	41.4	370.2	475.9	714.1
115.0	Bot - Section 7	0.3750	36.000	41.970	6,663.3	0.00	96.00	41.4	370.2	475.9	
120.0		0.3750	36.000	41.970	6,663.3	0.00	96.00	41.4	370.2	475.9	714.1
125.0		0.3750	36.000	41.970	6,663.3	0.00	96.00	41.4	370.2	475.9	714.1
130.0	Top - Section 7	0.3750	36.000	41.970	6,663.3	0.00	96.00	41.4	370.2	475.9	714.1
130.0	Bot - Section 8	0.3750	24.000	27.833	1,943.3	0.00	64.00	45.0	161.9	209.3	
132.0		0.3750	24.000	27.833	1,943.3	0.00	64.00	45.0	161.9	209.3	189.4
135.0		0.3750	24.000	27.833	1,943.3	0.00	64.00	45.0	161.9	209.3	284.1
137.0		0.3750	24.000	27.833	1,943.3	0.00	64.00	45.0	161.9	209.3	189.4
140.0		0.3750	24.000	27.833	1,943.3	0.00	64.00	45.0	161.9	209.3	284.1
145.0		0.3750	24.000	27.833	1,943.3	0.00	64.00	45.0	161.9	209.3	473.5
150.0		0.3750	24.000	27.833	1,943.3	0.00	64.00	45.0	161.9	209.3	473.5
											28,774.9

Load Case: 1.2D + 1.6W 97 mph with No Ice 20 Iterations

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

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		211.4	0.0					0.0	0.0	211.4	0.0	0.0	0.0
5.00		422.9	1,908.2					0.0	349.6	422.9	2,257.8	0.0	0.0
10.00		422.9	1,908.2					0.0	349.6	422.9	2,257.8	0.0	0.0
15.00		422.9	1,908.2					0.0	349.6	422.9	2,257.8	0.0	0.0
20.00	Top - Section 1	422.9	1,908.2					0.0	349.6	422.9	2,257.8	0.0	0.0
25.00		422.9	1,434.1					0.0	349.6	422.9	1,783.7	0.0	0.0
30.00		427.9	1,434.1					0.0	349.6	427.9	1,783.7	0.0	0.0
35.00		442.1	1,434.1					0.0	349.6	442.1	1,783.7	0.0	0.0
40.00	Top - Section 2	435.9	1,434.1					0.0	349.6	435.9	1,783.7	0.0	0.0
45.00		427.6	1,289.8					0.0	349.6	427.6	1,639.4	0.0	0.0
50.00		440.6	1,289.8					0.0	349.6	440.6	1,639.4	0.0	0.0
55.00		452.8	1,289.8					0.0	349.6	452.8	1,639.4	0.0	0.0
60.00	Top - Section 3	438.1	1,289.8					0.0	349.6	438.1	1,639.4	0.0	0.0
65.00		422.2	1,145.5					0.0	349.6	422.2	1,495.1	0.0	0.0
70.00		431.3	1,145.5					0.0	349.6	431.3	1,495.1	0.0	0.0
75.00		439.9	1,145.5					0.0	349.6	439.9	1,495.1	0.0	0.0
80.00	Top - Section 4	419.8	1,145.5					0.0	349.6	419.8	1,495.1	0.0	0.0
85.00		398.9	1,001.2					0.0	349.6	398.9	1,350.8	0.0	0.0
90.00		405.5	1,001.2					0.0	349.6	405.5	1,350.8	0.0	0.0
95.00		411.8	1,001.2					0.0	349.6	411.8	1,350.8	0.0	0.0
100.00	Top - Section 5	387.8	1,001.2					0.0	349.6	387.8	1,350.8	0.0	0.0
105.00		363.2	856.9					0.0	349.6	363.2	1,206.4	0.0	0.0
110.00		368.1	856.9					0.0	349.6	368.1	1,206.4	0.0	0.0
115.00	Top - Section 6	372.8	856.9					0.0	349.6	372.8	1,206.4	0.0	0.0
120.00		377.3	856.9					0.0	349.6	377.3	1,206.4	0.0	0.0
125.00		381.8	856.9					0.0	349.6	381.8	1,206.4	0.0	0.0
130.00	Top - Section 7	243.6	856.9					0.0	349.6	243.6	1,206.4	0.0	0.0
132.00	Appurtenance(s)	129.4	227.3	1,585.5	0.0	0.0	2,400.0	0.0	139.8	1,714.9	2,767.1	0.0	0.0
135.00		129.9	340.9					0.0	209.7	129.9	550.7	0.0	0.0
137.00	Appurtenance(s)	130.8	227.3	2,249.8	0.0	3,592.9	1,551.7	0.0	139.8	2,380.5	1,918.8	0.0	0.0
140.00		210.7	340.9					0.0	174.1	210.7	515.1	0.0	0.0
145.00		265.5	568.2					0.0	290.2	265.5	858.5	0.0	0.0
150.00	Appurtenance(s)	133.4	568.2	6,155.2	0.0	19,727.8	5,533.6	0.0	290.2	6,288.6	6,392.0	0.0	0.0
									Totals:	21,805.0	54,347.6	0.00	0.00

Site Number: 282660 Code: ANSI/TIA-222-G

Site Name: PROSPECT CT, CT Engineering Number:12927134_C3_02 7/19/2019 9:23:10 AM

Customer: T-MOBILE

Load Case: 1.2D + 1.6W 97 mph with No Ice 20 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-54.33	-21.63	0.00	-2,356.09	0.00	2,356.09	3,293.92	1,646.96	8,093.29	5,174.22	0.00	0.00	0.472
5.00	-52.05	-21.28	0.00	-2,247.93	0.00	2,247.93	3,293.92	1,646.96	8,093.29	5,174.22	0.04	-0.08	0.450
10.00	-49.76	-20.91	0.00	-2,141.54	0.00	2,141.54	3,293.92	1,646.96	8,093.29	5,174.22	0.17	-0.15	0.429
15.00	-47.48	-20.54	0.00	-2,036.97	0.00	2,036.97	3,293.92	1,646.96	8,093.29	5,174.22	0.37	-0.23	0.408
20.00	-45.20	-20.16	0.00	-1,934.27	0.00	1,934.27	3,293.92	1,646.96	8,093.29	5,174.22	0.64	-0.29	0.388
20.00	-45.20	-20.16	0.00	-1,934.27	0.00	1,934.27	2,330.87	1,165.43	5,751.12	3,807.50	0.64	-0.29	0.528
25.00	-43.40	-19.78	0.00	-1,833.47	0.00	1,833.47	2,330.87	1,165.43	5,751.12	3,807.50	0.98	-0.36	0.500
30.00	-41.59	-19.40	0.00	-1,734.55	0.00	1,734.55	2,330.87	1,165.43	5,751.12	3,807.50	1.40	-0.44	0.474
35.00	-39.78	-19.00	0.00	-1,637.55	0.00	1,637.55	2,330.87	1,165.43	5,751.12	3,807.50	1.91	-0.52	0.447
40.00	-37.98	-18.59	0.00	-1,542.58	0.00	1,542.58	2,330.87	1,165.43	5,751.12	3,807.50	2.49	-0.59	0.422
40.00	-37.98	-18.59	0.00	-1,542.58	0.00	1,542.58	2,139.71	1,069.86	4,744.89	3,103.93	2.49	-0.59	0.515
45.00	-36.32	-18.19	0.00	-1,449.64	0.00	1,449.64	2,139.71	1,069.86	4,744.89	3,103.93	3.14	-0.66	0.484
50.00	-34.66	-17.78	0.00	-1,358.68	0.00	1,358.68	2,139.71	1,069.86	4,744.89	3,103.93	3.88	-0.75	0.454
55.00	-33.00	-17.35	0.00	-1,269.76	0.00	1,269.76	2,139.71	1,069.86	4,744.89	3,103.93	4.71	-0.83	0.425
60.00	-31.35	-16.93	0.00	-1,182.99	0.00	1,182.99	2,139.71	1,069.86	4,744.89	3,103.93	5.61	-0.90	0.396
60.00	-31.35	-16.93	0.00	-1,182.99	0.00	1,182.99	1,948.48	974.24	3,834.02	2,471.99	5.61	-0.90	0.495
65.00	-29.84	-16.53	0.00	-1,098.34	0.00	1,098.34	1,948.48	974.24	3,834.02	2,471.99	6.60	-0.98	0.460
70.00	-28.33	-16.11	0.00	-1,015.70	0.00	1,015.70	1,948.48	974.24	3,834.02	2,471.99	7.67	-1.07	0.426
75.00	-26.82	-15.69	0.00	-935.13	0.00	935.13	1,948.48	974.24	3,834.02	2,471.99	8.84	-1.16	0.392
80.00	-25.31	-15.27	0.00	-856.70	0.00	856.70	1,948.48	974.24	3,834.02	2,471.99	10.10	-1.24	0.360
80.00	-25.31	-15.27	0.00	-856.70	0.00	856.70	1,757.14	878.57	3,018.53	1,911.67	10.10	-1.24	0.463
85.00	-23.95	-14.88	0.00	-780.36	0.00	780.36	1,757.14	878.57	3,018.53	1,911.67	11.44	-1.31	0.422
90.00	-22.58	-14.48	0.00	-705.99	0.00	705.99	1,757.14	878.57	3,018.53	1,911.67	12.86	-1.41	0.382
95.00	-21.22	-14.06	0.00	-633.61	0.00	633.61	1,757.14	878.57	3,018.53	1,911.67	14.39	-1.50	0.344
100.00	-19.86	-13.66	0.00	-563.31	0.00	563.31	1,757.14	878.57	3,018.53	1,911.67	16.00	-1.58	0.306
100.00	-19.86	-13.66	0.00	-563.31	0.00	563.31	1,565.64	782.82	2,298.42	1,422.98	16.00	-1.58	0.409
105.00	-18.65	-13.29	0.00	-495.00	0.00	495.00	1,565.64	782.82	2,298.42	1,422.98	17.70	-1.65	0.360
110.00	-17.43	-12.92	0.00	-428.53	0.00	428.53	1,565.64	782.82	2,298.42	1,422.98	19.48	-1.75	0.313
115.00	-16.22	-12.53	0.00	-363.94	0.00	363.94	1,565.64	782.82	2,298.42	1,422.98	21.36	-1.83	0.266
115.00	-16.22	-12.53	0.00	-363.94	0.00	363.94	1,565.64	782.82	2,298.42	1,422.98	21.36	-1.83	0.266
120.00	-15.01	-12.13	0.00	-301.30	0.00	301.30	1,565.64	782.82	2,298.42	1,422.98	23.32	-1.91	0.222
125.00	-13.81	-11.72	0.00	-240.65	0.00	240.65	1,565.64	782.82	2,298.42	1,422.98	25.35	-1.96	0.178
130.00	-12.61	-11.44	0.00	-182.05	0.00	182.05	1,565.64	782.82	2,298.42	1,422.98	27.43	-2.01	0.136
130.00	-12.61	-11.44	0.00	-182.05	0.00	182.05	1,127.22	563.61	1,091.62	660.47	27.43	-2.01	0.287
132.00	-9.90	-9.64	0.00	-159.17	0.00	159.17	1,127.22	563.61	1,091.62	660.47	28.27	-2.02	0.250
135.00	-9.34	-9.50	0.00	-130.26	0.00	130.26	1,127.22	563.61	1,091.62	660.47	29.56	-2.09	0.206
137.00	-7.51	-7.05	0.00	-107.68	0.00	107.68	1,127.22	563.61	1,091.62	660.47	30.44	-2.12	0.170
140.00	-6.99	-6.83	0.00	-86.52	0.00	86.52	1,127.22	563.61	1,091.62	660.47	31.79	-2.16	0.137
145.00	-6.14	-6.53	0.00	-52.39	0.00	52.39	1,127.22	563.61	1,091.62	660.47	34.09	-2.22	0.085
150.00	0.00	-6.29	0.00	-19.73	0.00	19.73	1,127.22	563.61	1,091.62	660.47	36.42	-2.24	0.030

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 20 Iterations

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

Wind Importance Factor 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		211.4	0.0					0.0	0.0	211.4	0.0	0.0	0.0
5.00		422.9	1,431.1					0.0	262.2	422.9	1,693.3	0.0	0.0
10.00		422.9	1,431.1					0.0	262.2	422.9	1,693.3	0.0	0.0
15.00		422.9	1,431.1					0.0	262.2	422.9	1,693.3	0.0	0.0
20.00	Top - Section 1	422.9	1,431.1					0.0	262.2	422.9	1,693.3	0.0	0.0
25.00		422.9	1,075.6					0.0	262.2	422.9	1,337.8	0.0	0.0
30.00		427.9	1,075.6					0.0	262.2	427.9	1,337.8	0.0	0.0
35.00		442.1	1,075.6					0.0	262.2	442.1	1,337.8	0.0	0.0
40.00	Top - Section 2	435.9	1,075.6					0.0	262.2	435.9	1,337.8	0.0	0.0
45.00		427.6	967.4					0.0	262.2	427.6	1,229.5	0.0	0.0
50.00		440.6	967.4					0.0	262.2	440.6	1,229.5	0.0	0.0
55.00		452.8	967.4					0.0	262.2	452.8	1,229.5	0.0	0.0
60.00	Top - Section 3	438.1	967.4					0.0	262.2	438.1	1,229.5	0.0	0.0
65.00		422.2	859.1					0.0	262.2	422.2	1,121.3	0.0	0.0
70.00		431.3	859.1					0.0	262.2	431.3	1,121.3	0.0	0.0
75.00		439.9	859.1					0.0	262.2	439.9	1,121.3	0.0	0.0
80.00	Top - Section 4	419.8	859.1					0.0	262.2	419.8	1,121.3	0.0	0.0
85.00		398.9	750.9					0.0	262.2	398.9	1,013.1	0.0	0.0
90.00		405.5	750.9					0.0	262.2	405.5	1,013.1	0.0	0.0
95.00		411.8	750.9					0.0	262.2	411.8	1,013.1	0.0	0.0
100.00	Top - Section 5	387.8	750.9					0.0	262.2	387.8	1,013.1	0.0	0.0
105.00		363.2	642.7					0.0	262.2	363.2	904.8	0.0	0.0
110.00		368.1	642.7					0.0	262.2	368.1	904.8	0.0	0.0
115.00	Top - Section 6	372.8	642.7					0.0	262.2	372.8	904.8	0.0	0.0
120.00		377.3	642.7					0.0	262.2	377.3	904.8	0.0	0.0
125.00		381.8	642.7					0.0	262.2	381.8	904.8	0.0	0.0
130.00	Top - Section 7	243.6	642.7					0.0	262.2	243.6	904.8	0.0	0.0
132.00	Appurtenance(s)	129.4	170.5	1,585.5	0.0	0.0	1,800.0	0.0	104.9	1,714.9	2,075.3	0.0	0.0
135.00		129.9	255.7					0.0	157.3	129.9	413.0	0.0	0.0
137.00	Appurtenance(s)	130.8	170.5	2,249.8	0.0	3,592.9	1,163.8	0.0	104.9	2,380.5	1,439.1	0.0	0.0
140.00		210.7	255.7					0.0	130.6	210.7	386.3	0.0	0.0
145.00		265.5	426.2					0.0	217.7	265.5	643.9	0.0	0.0
150.00	Appurtenance(s)	133.4	426.2	6,155.2	0.0	19,727.8	4,150.2	0.0	217.7	6,288.6	4,794.0	0.0	0.0
									Totals:	21,805.0	40,760.7	0.00	0.00

Site Number: 282660 Code: ANSI/TIA-222-G

Site Name: PROSPECT CT, CT Engineering Number:12927134_C3_02 7/19/2019 9:23:13 AM

Customer: T-MOBILE

Load Case: 0.9D + 1.6W 97 mph with No Ice (Reduced DL) 20 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-40.75	-21.62	0.00	-2,339.84	0.00	2,339.84	3,293.92	1,646.96	8,093.29	5,174.22	0.00	0.00	0.465
5.00	-39.02	-21.25	0.00	-2,231.74	0.00	2,231.74	3,293.92	1,646.96	8,093.29	5,174.22	0.04	-0.08	0.443
10.00	-37.30	-20.87	0.00	-2,125.49	0.00	2,125.49	3,293.92	1,646.96	8,093.29	5,174.22	0.17	-0.15	0.422
15.00	-35.59	-20.49	0.00	-2,021.13	0.00	2,021.13	3,293.92	1,646.96	8,093.29	5,174.22	0.36	-0.22	0.402
20.00	-33.87	-20.09	0.00	-1,918.70	0.00	1,918.70	3,293.92	1,646.96	8,093.29	5,174.22	0.64	-0.29	0.381
20.00	-33.87	-20.09	0.00	-1,918.70	0.00	1,918.70	2,330.87	1,165.43	5,751.12	3,807.50	0.64	-0.29	0.519
25.00	-32.51	-19.71	0.00	-1,818.23	0.00	1,818.23	2,330.87	1,165.43	5,751.12	3,807.50	0.98	-0.36	0.492
30.00	-31.15	-19.31	0.00	-1,719.70	0.00	1,719.70	2,330.87	1,165.43	5,751.12	3,807.50	1.39	-0.44	0.465
35.00	-29.79	-18.90	0.00	-1,623.15	0.00	1,623.15	2,330.87	1,165.43	5,751.12	3,807.50	1.89	-0.51	0.439
40.00	-28.44	-18.48	0.00	-1,528.67	0.00	1,528.67	2,330.87	1,165.43	5,751.12	3,807.50	2.47	-0.59	0.414
40.00	-28.44	-18.48	0.00	-1,528.67	0.00	1,528.67	2,139.71	1,069.86	4,744.89	3,103.93	2.47	-0.59	0.506
45.00	-27.19	-18.08	0.00	-1,436.27	0.00	1,436.27	2,139.71	1,069.86	4,744.89	3,103.93	3.12	-0.65	0.476
50.00	-25.94	-17.66	0.00	-1,345.88	0.00	1,345.88	2,139.71	1,069.86	4,744.89	3,103.93	3.85	-0.74	0.446
55.00	-24.69	-17.22	0.00	-1,257.58	0.00	1,257.58	2,139.71	1,069.86	4,744.89	3,103.93	4.67	-0.82	0.417
60.00	-23.45	-16.80	0.00	-1,171.45	0.00	1,171.45	2,139.71	1,069.86	4,744.89	3,103.93	5.57	-0.90	0.389
60.00	-23.45	-16.80	0.00	-1,171.45	0.00	1,171.45	1,948.48	974.24	3,834.02	2,471.99	5.57	-0.90	0.486
65.00	-22.31	-16.39	0.00	-1,087.47	0.00	1,087.47	1,948.48	974.24	3,834.02	2,471.99	6.55	-0.97	0.452
70.00	-21.17	-15.97	0.00	-1,005.52	0.00	1,005.52	1,948.48	974.24	3,834.02	2,471.99	7.61	-1.06	0.418
75.00	-20.04	-15.54	0.00	-925.66	0.00	925.66	1,948.48	974.24	3,834.02	2,471.99	8.77	-1.15	0.385
80.00	-18.90	-15.12	0.00	-847.96	0.00	847.96	1,948.48	974.24	3,834.02	2,471.99	10.02	-1.23	0.353
80.00	-18.90	-15.12	0.00	-847.96	0.00	847.96	1,757.14	878.57	3,018.53	1,911.67	10.02	-1.23	0.455
85.00	-17.88	-14.73	0.00	-772.35	0.00	772.35	1,757.14	878.57	3,018.53	1,911.67	11.34	-1.30	0.414
90.00	-16.85	-14.33	0.00	-698.72	0.00	698.72	1,757.14	878.57	3,018.53	1,911.67	12.75	-1.40	0.375
95.00	-15.83	-13.91	0.00	-627.09	0.00	627.09	1,757.14	878.57	3,018.53	1,911.67	14.27	-1.49	0.337
100.00	-14.81	-13.52	0.00	-557.54	0.00	557.54	1,757.14	878.57	3,018.53	1,911.67	15.87	-1.57	0.300
100.00	-14.81	-13.52	0.00	-557.54	0.00	557.54	1,565.64	782.82	2,298.42	1,422.98	15.87	-1.57	0.402
105.00	-13.89	-13.15	0.00	-489.96	0.00	489.96	1,565.64	782.82	2,298.42	1,422.98	17.54	-1.64	0.353
110.00	-12.98	-12.77	0.00	-424.22	0.00	424.22	1,565.64	782.82	2,298.42	1,422.98	19.31	-1.73	0.307
115.00	-12.07	-12.39	0.00	-360.34	0.00	360.34	1,565.64	782.82	2,298.42	1,422.98	21.17	-1.82	0.261
115.00	-12.07	-12.39	0.00	-360.34	0.00	360.34	1,565.64	782.82	2,298.42	1,422.98	21.17	-1.82	0.261
120.00	-11.17	-12.00	0.00	-298.40	0.00	298.40	1,565.64	782.82	2,298.42	1,422.98	23.11	-1.89	0.217
125.00	-10.26	-11.59	0.00	-238.42	0.00	238.42	1,565.64	782.82	2,298.42	1,422.98	25.12	-1.94	0.174
130.00	-9.36	-11.32	0.00	-180.45	0.00	180.45	1,565.64	782.82	2,298.42	1,422.98	27.18	-1.99	0.133
130.00	-9.36	-11.32	0.00	-180.45	0.00	180.45	1,127.22	563.61	1,091.62	660.47	27.18	-1.99	0.282
132.00	-7.34	-9.54	0.00	-157.80	0.00	157.80	1,127.22	563.61	1,091.62	660.47	28.02	-2.00	0.246
135.00	-6.93	-9.40	0.00	-129.18	0.00	129.18	1,127.22	563.61	1,091.62	660.47	29.30	-2.07	0.202
137.00	-5.57	-6.98	0.00	-106.78	0.00	106.78	1,127.22	563.61	1,091.62	660.47	30.17	-2.10	0.167
140.00	-5.19	-6.76	0.00	-85.85	0.00	85.85	1,127.22	563.61	1,091.62	660.47	31.51	-2.14	0.135
145.00	-4.55	-6.47	0.00	-52.07	0.00	52.07	1,127.22	563.61	1,091.62	660.47	33.78	-2.19	0.083
150.00	0.00	-6.29	0.00	-19.73	0.00	19.73	1,127.22	563.61	1,091.62	660.47	36.10	-2.22	0.030

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 19 Iterations

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

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		72.9	0.0					0.0	0.0	72.9	0.0	0.0	0.0
5.00		146.2	2,340.9					0.0	349.6	146.2	2,690.5	0.0	0.0
10.00		146.7	2,392.2					0.0	349.6	146.7	2,741.8	0.0	0.0
15.00		146.9	2,418.2					0.0	349.6	146.9	2,767.7	0.0	0.0
20.00	Top - Section 1	147.1	2,436.0					0.0	349.6	147.1	2,785.6	0.0	0.0
25.00		147.3	1,975.7					0.0	349.6	147.3	2,325.3	0.0	0.0
30.00		149.2	1,987.0					0.0	349.6	149.2	2,336.5	0.0	0.0
35.00		154.2	1,996.5					0.0	349.6	154.2	2,346.1	0.0	0.0
40.00	Top - Section 2	152.6	2,004.8					0.0	349.6	152.6	2,354.4	0.0	0.0
45.00		150.1	1,811.5					0.0	349.6	150.1	2,161.1	0.0	0.0
50.00		154.8	1,817.5					0.0	349.6	154.8	2,167.1	0.0	0.0
55.00		159.2	1,823.0					0.0	349.6	159.2	2,172.5	0.0	0.0
60.00	Top - Section 3	154.6	1,828.0					0.0	349.6	154.6	2,177.5	0.0	0.0
65.00		149.6	1,629.7					0.0	349.6	149.6	1,979.3	0.0	0.0
70.00		152.9	1,633.6					0.0	349.6	152.9	1,983.1	0.0	0.0
75.00		156.0	1,637.2					0.0	349.6	156.0	1,986.8	0.0	0.0
80.00	Top - Section 4	149.6	1,640.6					0.0	349.6	149.6	1,990.2	0.0	0.0
85.00		142.9	1,439.3					0.0	349.6	142.9	1,788.8	0.0	0.0
90.00		145.3	1,441.9					0.0	349.6	145.3	1,791.5	0.0	0.0
95.00		147.6	1,444.5					0.0	349.6	147.6	1,794.1	0.0	0.0
100.00	Top - Section 5	139.9	1,446.9					0.0	349.6	139.9	1,796.5	0.0	0.0
105.00		131.9	1,243.4					0.0	349.6	131.9	1,592.9	0.0	0.0
110.00		133.7	1,245.3					0.0	349.6	133.7	1,594.9	0.0	0.0
115.00	Top - Section 6	135.5	1,247.2					0.0	349.6	135.5	1,596.7	0.0	0.0
120.00		137.2	1,248.9					0.0	349.6	137.2	1,598.5	0.0	0.0
125.00		138.9	1,250.6					0.0	349.6	138.9	1,600.2	0.0	0.0
130.00	Top - Section 7	89.4	1,252.3					0.0	349.6	89.4	1,601.9	0.0	0.0
132.00	Appurtenance(s)	49.1	335.5	444.6	0.0	0.0	3,377.4	0.0	139.8	493.8	3,852.7	0.0	0.0
135.00		49.4	503.5					0.0	209.7	49.4	713.2	0.0	0.0
137.00	Appurtenance(s)	49.7	335.9	474.7	0.0	811.1	3,183.6	0.0	139.8	524.4	3,659.3	0.0	0.0
140.00		80.1	504.2					0.0	174.1	80.1	678.3	0.0	0.0
145.00		101.0	841.1					0.0	290.2	101.0	1,131.3	0.0	0.0
150.00	Appurtenance(s)	50.7	842.1	1,465.9	0.0	4,320.8	10,194.5	0.0	290.2	1,516.6	11,326.8	0.0	0.0
									Totals:	6,597.53	75,082.8	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 19 Iterations

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-75.08	-6.54	0.00	-675.17	0.00	675.17	3,293.92	1,646.96	8,093.29	5,174.22	0.00	0.00	0.153
5.00	-72.39	-6.42	0.00	-642.47	0.00	642.47	3,293.92	1,646.96	8,093.29	5,174.22	0.01	-0.02	0.146
10.00	-69.64	-6.30	0.00	-610.37	0.00	610.37	3,293.92	1,646.96	8,093.29	5,174.22	0.05	-0.04	0.139
15.00	-66.87	-6.17	0.00	-578.88	0.00	578.88	3,293.92	1,646.96	8,093.29	5,174.22	0.10	-0.06	0.132
20.00	-64.09	-6.04	0.00	-548.03	0.00	548.03	3,293.92	1,646.96	8,093.29	5,174.22	0.18	-0.08	0.125
20.00	-64.09	-6.04	0.00	-548.03	0.00	548.03	2,330.87	1,165.43	5,751.12	3,807.50	0.18	-0.08	0.171
25.00	-61.76	-5.91	0.00	-517.82	0.00	517.82	2,330.87	1,165.43	5,751.12	3,807.50	0.28	-0.10	0.163
30.00	-59.42	-5.78	0.00	-488.26	0.00	488.26	2,330.87	1,165.43	5,751.12	3,807.50	0.40	-0.13	0.154
35.00	-57.07	-5.64	0.00	-459.35	0.00	459.35	2,330.87	1,165.43	5,751.12	3,807.50	0.54	-0.15	0.145
40.00	-54.72	-5.50	0.00	-431.13	0.00	431.13	2,330.87	1,165.43	5,751.12	3,807.50	0.71	-0.17	0.137
40.00	-54.72	-5.50	0.00	-431.13	0.00	431.13	2,139.71	1,069.86	4,744.89	3,103.93	0.71	-0.17	0.164
45.00	-52.56	-5.37	0.00	-403.62	0.00	403.62	2,139.71	1,069.86	4,744.89	3,103.93	0.89	-0.19	0.155
50.00	-50.39	-5.22	0.00	-376.79	0.00	376.79	2,139.71	1,069.86	4,744.89	3,103.93	1.10	-0.21	0.145
55.00	-48.21	-5.08	0.00	-350.67	0.00	350.67	2,139.71	1,069.86	4,744.89	3,103.93	1.33	-0.23	0.136
60.00	-46.03	-4.93	0.00	-325.29	0.00	325.29	2,139.71	1,069.86	4,744.89	3,103.93	1.59	-0.25	0.126
60.00	-46.03	-4.93	0.00	-325.29	0.00	325.29	1,948.48	974.24	3,834.02	2,471.99	1.59	-0.25	0.155
65.00	-44.05	-4.79	0.00	-300.65	0.00	300.65	1,948.48	974.24	3,834.02	2,471.99	1.87	-0.27	0.144
70.00	-42.07	-4.64	0.00	-276.72	0.00	276.72	1,948.48	974.24	3,834.02	2,471.99	2.17	-0.30	0.134
75.00	-40.08	-4.49	0.00	-253.51	0.00	253.51	1,948.48	974.24	3,834.02	2,471.99	2.50	-0.32	0.123
80.00	-38.09	-4.34	0.00	-231.05	0.00	231.05	1,948.48	974.24	3,834.02	2,471.99	2.85	-0.35	0.113
80.00	-38.09	-4.34	0.00	-231.05	0.00	231.05	1,757.14	878.57	3,018.53	1,911.67	2.85	-0.35	0.143
85.00	-36.30	-4.20	0.00	-209.34	0.00	209.34	1,757.14	878.57	3,018.53	1,911.67	3.22	-0.36	0.130
90.00	-34.51	-4.06	0.00	-188.32	0.00	188.32	1,757.14	878.57	3,018.53	1,911.67	3.61	-0.39	0.118
95.00	-32.71	-3.91	0.00	-168.01	0.00	168.01	1,757.14	878.57	3,018.53	1,911.67	4.04	-0.42	0.107
100.00	-30.92	-3.77	0.00	-148.43	0.00	148.43	1,757.14	878.57	3,018.53	1,911.67	4.48	-0.44	0.095
100.00	-30.92	-3.77	0.00	-148.43	0.00	148.43	1,565.64	782.82	2,298.42	1,422.98	4.48	-0.44	0.124
105.00	-29.32	-3.64	0.00	-129.57	0.00	129.57	1,565.64	782.82	2,298.42	1,422.98	4.95	-0.46	0.110
110.00	-27.73	-3.50	0.00	-111.37	0.00	111.37	1,565.64	782.82	2,298.42	1,422.98	5.44	-0.48	0.096
115.00	-26.13	-3.36	0.00	-93.85	0.00	93.85	1,565.64	782.82	2,298.42	1,422.98	5.96	-0.50	0.083
115.00	-26.13	-3.36	0.00	-93.85	0.00	93.85	1,565.64	782.82	2,298.42	1,422.98	5.96	-0.50	0.083
120.00	-24.53	-3.22	0.00	-77.03	0.00	77.03	1,565.64	782.82	2,298.42	1,422.98	6.49	-0.52	0.070
125.00	-22.94	-3.07	0.00	-60.93	0.00	60.93	1,565.64	782.82	2,298.42	1,422.98	7.05	-0.54	0.057
130.00	-21.33	-2.97	0.00	-45.58	0.00	45.58	1,565.64	782.82	2,298.42	1,422.98	7.61	-0.55	0.046
130.00	-21.33	-2.97	0.00	-45.58	0.00	45.58	1,127.22	563.61	1,091.62	660.47	7.61	-0.55	0.088
132.00	-17.49	-2.44	0.00	-39.64	0.00	39.64	1,127.22	563.61	1,091.62	660.47	7.84	-0.55	0.076
135.00	-16.77	-2.39	0.00	-32.31	0.00	32.31	1,127.22	563.61	1,091.62	660.47	8.20	-0.57	0.064
137.00	-13.12	-1.83	0.00	-26.72	0.00	26.72	1,127.22	563.61	1,091.62	660.47	8.44	-0.58	0.052
140.00	-12.44	-1.75	0.00	-21.23	0.00	21.23	1,127.22	563.61	1,091.62	660.47	8.80	-0.59	0.043
145.00	-11.31	-1.64	0.00	-12.50	0.00	12.50	1,127.22	563.61	1,091.62	660.47	9.42	-0.60	0.029
150.00	0.00	-1.52	0.00	-4.32	0.00	4.32	1,127.22	563.61	1,091.62	660.47	10.05	-0.60	0.007

Site Number: 282660 Code: ANSI/TIA-222-G

Site Name: PROSPECT CT, CT Engineering Number:12927134_C3_02 7/19/2019 9:23:17 AM

Customer: T-MOBILE

Load Case: 1.0D + 1.0W Serviceability 60 mph 19 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		45.2	0.0					0.0	0.0	45.2	0.0	0.0	0.0
5.00		90.5	1,590.2					0.0	291.3	90.5	1,881.5	0.0	0.0
10.00		90.5	1,590.2					0.0	291.3	90.5	1,881.5	0.0	0.0
15.00		90.5	1,590.2					0.0	291.3	90.5	1,881.5	0.0	0.0
20.00	Top - Section 1	90.5	1,590.2					0.0	291.3	90.5	1,881.5	0.0	0.0
25.00		90.5	1,195.1					0.0	291.3	90.5	1,486.4	0.0	0.0
30.00		91.6	1,195.1					0.0	291.3	91.6	1,486.4	0.0	0.0
35.00		94.6	1,195.1					0.0	291.3	94.6	1,486.4	0.0	0.0
40.00	Top - Section 2	93.3	1,195.1					0.0	291.3	93.3	1,486.4	0.0	0.0
45.00		91.5	1,074.9					0.0	291.3	91.5	1,366.2	0.0	0.0
50.00		94.3	1,074.9					0.0	291.3	94.3	1,366.2	0.0	0.0
55.00		96.9	1,074.9					0.0	291.3	96.9	1,366.2	0.0	0.0
60.00	Top - Section 3	93.7	1,074.9					0.0	291.3	93.7	1,366.2	0.0	0.0
65.00		90.3	954.6					0.0	291.3	90.3	1,245.9	0.0	0.0
70.00		92.3	954.6					0.0	291.3	92.3	1,245.9	0.0	0.0
75.00		94.1	954.6					0.0	291.3	94.1	1,245.9	0.0	0.0
80.00	Top - Section 4	89.8	954.6					0.0	291.3	89.8	1,245.9	0.0	0.0
85.00		85.3	834.3					0.0	291.3	85.3	1,125.6	0.0	0.0
90.00		86.8	834.3					0.0	291.3	86.8	1,125.6	0.0	0.0
95.00		88.1	834.3					0.0	291.3	88.1	1,125.6	0.0	0.0
100.00	Top - Section 5	83.0	834.3					0.0	291.3	83.0	1,125.6	0.0	0.0
105.00		77.7	714.1					0.0	291.3	77.7	1,005.4	0.0	0.0
110.00		78.8	714.1					0.0	291.3	78.8	1,005.4	0.0	0.0
115.00	Top - Section 6	79.8	714.1					0.0	291.3	79.8	1,005.4	0.0	0.0
120.00		80.7	714.1					0.0	291.3	80.7	1,005.4	0.0	0.0
125.00		81.7	714.1					0.0	291.3	81.7	1,005.4	0.0	0.0
130.00	Top - Section 7	52.1	714.1					0.0	291.3	52.1	1,005.4	0.0	0.0
132.00	Appurtenance(s)	27.7	189.4	339.2	0.0	0.0	2,000.0	0.0	116.5	366.9	2,305.9	0.0	0.0
135.00		27.8	284.1					0.0	174.8	27.8	458.9	0.0	0.0
137.00	Appurtenance(s)	28.0	189.4	481.4	0.0	768.7	1,293.1	0.0	116.5	509.3	1,599.0	0.0	0.0
140.00		45.1	284.1					0.0	145.1	45.1	429.2	0.0	0.0
145.00		56.8	473.5					0.0	241.8	56.8	715.4	0.0	0.0
150.00	Appurtenance(s)	28.5	473.5	1,317.0	0.0	4,221.0	4,611.3	0.0	241.8	1,345.5	5,326.7	0.0	0.0
								Totals:		4,665.43	45,289.6	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 19 Iterations

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-45.29	-4.63	0.00	-501.85	0.00	501.85	3,293.92	1,646.96	8,093.29	5,174.22	0.00	0.00	0.111
5.00	-43.41	-4.55	0.00	-478.71	0.00	478.71	3,293.92	1,646.96	8,093.29	5,174.22	0.01	-0.02	0.106
10.00	-41.52	-4.47	0.00	-455.97	0.00	455.97	3,293.92	1,646.96	8,093.29	5,174.22	0.04	-0.03	0.101
15.00	-39.64	-4.39	0.00	-433.63	0.00	433.63	3,293.92	1,646.96	8,093.29	5,174.22	0.08	-0.05	0.096
20.00	-37.76	-4.30	0.00	-411.70	0.00	411.70	3,293.92	1,646.96	8,093.29	5,174.22	0.14	-0.06	0.091
20.00	-37.76	-4.30	0.00	-411.70	0.00	411.70	2,330.87	1,165.43	5,751.12	3,807.50	0.14	-0.06	0.124
25.00	-36.27	-4.22	0.00	-390.18	0.00	390.18	2,330.87	1,165.43	5,751.12	3,807.50	0.21	-0.08	0.118
30.00	-34.78	-4.14	0.00	-369.07	0.00	369.07	2,330.87	1,165.43	5,751.12	3,807.50	0.30	-0.09	0.112
35.00	-33.30	-4.05	0.00	-348.38	0.00	348.38	2,330.87	1,165.43	5,751.12	3,807.50	0.41	-0.11	0.106
40.00	-31.81	-3.96	0.00	-328.13	0.00	328.13	2,330.87	1,165.43	5,751.12	3,807.50	0.53	-0.13	0.100
40.00	-31.81	-3.96	0.00	-328.13	0.00	328.13	2,139.71	1,069.86	4,744.89	3,103.93	0.53	-0.13	0.121
45.00	-30.44	-3.88	0.00	-308.32	0.00	308.32	2,139.71	1,069.86	4,744.89	3,103.93	0.67	-0.14	0.114
50.00	-29.07	-3.79	0.00	-288.94	0.00	288.94	2,139.71	1,069.86	4,744.89	3,103.93	0.83	-0.16	0.107
55.00	-27.71	-3.69	0.00	-270.01	0.00	270.01	2,139.71	1,069.86	4,744.89	3,103.93	1.00	-0.18	0.100
60.00	-26.34	-3.60	0.00	-251.53	0.00	251.53	2,139.71	1,069.86	4,744.89	3,103.93	1.20	-0.19	0.093
60.00	-26.34	-3.60	0.00	-251.53	0.00	251.53	1,948.48	974.24	3,834.02	2,471.99	1.20	-0.19	0.115
65.00	-25.09	-3.52	0.00	-233.52	0.00	233.52	1,948.48	974.24	3,834.02	2,471.99	1.41	-0.21	0.107
70.00	-23.85	-3.43	0.00	-215.93	0.00	215.93	1,948.48	974.24	3,834.02	2,471.99	1.63	-0.23	0.100
75.00	-22.60	-3.34	0.00	-198.79	0.00	198.79	1,948.48	974.24	3,834.02	2,471.99	1.88	-0.25	0.092
80.00	-21.35	-3.25	0.00	-182.11	0.00	182.11	1,948.48	974.24	3,834.02	2,471.99	2.15	-0.26	0.085
80.00	-21.35	-3.25	0.00	-182.11	0.00	182.11	1,757.14	878.57	3,018.53	1,911.67	2.15	-0.26	0.107
85.00	-20.23	-3.16	0.00	-165.88	0.00	165.88	1,757.14	878.57	3,018.53	1,911.67	2.43	-0.28	0.098
90.00	-19.10	-3.08	0.00	-150.07	0.00	150.07	1,757.14	878.57	3,018.53	1,911.67	2.74	-0.30	0.089
95.00	-17.98	-2.99	0.00	-134.69	0.00	134.69	1,757.14	878.57	3,018.53	1,911.67	3.06	-0.32	0.081
100.00	-16.85	-2.90	0.00	-119.75	0.00	119.75	1,757.14	878.57	3,018.53	1,911.67	3.41	-0.34	0.072
100.00	-16.85	-2.90	0.00	-119.75	0.00	119.75	1,565.64	782.82	2,298.42	1,422.98	3.41	-0.34	0.095
105.00	-15.84	-2.82	0.00	-105.24	0.00	105.24	1,565.64	782.82	2,298.42	1,422.98	3.77	-0.35	0.084
110.00	-14.84	-2.74	0.00	-91.11	0.00	91.11	1,565.64	782.82	2,298.42	1,422.98	4.14	-0.37	0.074
115.00	-13.83	-2.66	0.00	-77.39	0.00	77.39	1,565.64	782.82	2,298.42	1,422.98	4.54	-0.39	0.063
115.00	-13.83	-2.66	0.00	-77.39	0.00	77.39	1,565.64	782.82	2,298.42	1,422.98	4.54	-0.39	0.063
120.00	-12.83	-2.58	0.00	-64.08	0.00	64.08	1,565.64	782.82	2,298.42	1,422.98	4.96	-0.41	0.053
125.00	-11.82	-2.49	0.00	-51.20	0.00	51.20	1,565.64	782.82	2,298.42	1,422.98	5.39	-0.42	0.044
130.00	-10.82	-2.43	0.00	-38.74	0.00	38.74	1,565.64	782.82	2,298.42	1,422.98	5.84	-0.43	0.034
130.00	-10.82	-2.43	0.00	-38.74	0.00	38.74	1,127.22	563.61	1,091.62	660.47	5.84	-0.43	0.068
132.00	-8.51	-2.05	0.00	-33.88	0.00	33.88	1,127.22	563.61	1,091.62	660.47	6.01	-0.43	0.059
135.00	-8.05	-2.02	0.00	-27.73	0.00	27.73	1,127.22	563.61	1,091.62	660.47	6.29	-0.44	0.049
137.00	-6.46	-1.50	0.00	-22.92	0.00	22.92	1,127.22	563.61	1,091.62	660.47	6.48	-0.45	0.040
140.00	-6.03	-1.45	0.00	-18.43	0.00	18.43	1,127.22	563.61	1,091.62	660.47	6.76	-0.46	0.033
145.00	-5.32	-1.39	0.00	-11.17	0.00	11.17	1,127.22	563.61	1,091.62	660.47	7.25	-0.47	0.022
150.00	0.00	-1.35	0.00	-4.22	0.00	4.22	1,127.22	563.61	1,091.62	660.47	7.75	-0.48	0.006

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.19	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.04	
Upper Limit C_s	0.04	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	1.84	
Redundancy Factor (p):	1.00	
Seismic Force Distribution Exponent (k):	1.67	
Total Unfactored Dead Load:	45.29	k
Seismic Base Shear (E):	1.68	k

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
32	147.50	715	2,998	0.038	63	887
31	142.50	715	2,830	0.035	60	887
30	138.50	429	1,619	0.020	34	532
29	136.00	306	1,120	0.014	24	379
28	133.50	459	1,628	0.020	34	569
27	131.00	306	1,052	0.013	22	379
26	127.50	1,005	3,303	0.041	69	1,247
25	122.50	1,005	3,090	0.039	65	1,247
24	117.50	1,005	2,882	0.036	61	1,247
23	112.50	1,005	2,680	0.034	56	1,247
22	107.50	1,005	2,484	0.031	52	1,247
21	102.50	1,005	2,294	0.029	48	1,247
20	97.50	1,126	2,363	0.030	50	1,396
19	92.50	1,126	2,164	0.027	45	1,396
18	87.50	1,126	1,972	0.025	41	1,396
17	82.50	1,126	1,788	0.022	38	1,396
16	77.50	1,246	1,782	0.022	37	1,545
15	72.50	1,246	1,594	0.020	34	1,545
14	67.50	1,246	1,415	0.018	30	1,545
13	62.50	1,246	1,244	0.016	26	1,545
12	57.50	1,366	1,187	0.015	25	1,694
11	52.50	1,366	1,020	0.013	21	1,694
10	47.50	1,366	863	0.011	18	1,694

9	42.50	1,366	717	0.009	15	1,694
8	37.50	1,486	633	0.008	13	1,843
7	32.50	1,486	498	0.006	10	1,843
6	27.50	1,486	377	0.005	8	1,843
5	22.50	1,486	269	0.003	6	1,843
4	17.50	1,881	224	0.003	5	2,333
3	12.50	1,881	128	0.002	3	2,333
2	7.50	1,881	54	0.001	1	2,333
1	2.50	1,881	9	0.000	0	2,333
Kaelus DBCT108F1V92-	150.00	125	539	0.007	11	155
Powerwave Allgon TT0	150.00	132	569	0.007	12	164
Commscope WCS-IMFQ-A	150.00	30	127	0.002	3	37
Raycap DC6-48-60-0-8	150.00	98	424	0.005	9	122
Raycap DC6-48-60-18-	150.00	32	137	0.002	3	39
Ericsson Radio 8843	150.00	216	930	0.012	20	267
Ericsson RRUS 4478 B	150.00	180	775	0.010	16	223
Ericsson RRUS 4478 B	150.00	180	775	0.010	16	223
Ericsson RRUS 32 (50	150.00	152	657	0.008	14	189
Ericsson RRUS E2 B29	150.00	60	259	0.003	5	74
Ericsson RRUS 12	150.00	150	647	0.008	14	186
Ericsson RRUS-11	150.00	330	1,422	0.018	30	409
Powerwave Allgon 777	150.00	105	453	0.006	10	130
Quintel QS66512-2	150.00	111	478	0.006	10	138
CCI HPA-65R-BUU-H8	150.00	204	879	0.011	18	253
CCI TPA-65R-LCUUUU-H	150.00	163	703	0.009	15	202
Kathrein Scala 80010	150.00	344	1,482	0.019	31	426
Round Platform w/ Ha	150.00	2,000	8,620	0.108	181	2,480
Ericsson KRY 112 144	137.00	33	122	0.002	3	41
Fastback Networks In	137.00	9	33	0.000	1	11
Ericsson Radio 4449	137.00	222	822	0.010	17	275
Ericsson AIR 21, 1.3	137.00	249	922	0.012	19	309
Ericsson AIR32 B66Aa	137.00	397	1,469	0.018	31	492
RFS APXVAARR24_43-U-	137.00	384	1,421	0.018	30	476
Perfect Vision PV-LL	132.00	2,000	6,963	0.087	146	2,480
		45,290	79,910	1.000	1,680	56,164

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
32	147.50	715	2,998	0.038	63	615
31	142.50	715	2,830	0.035	60	615
30	138.50	429	1,619	0.020	34	369
29	136.00	306	1,120	0.014	24	263
28	133.50	459	1,628	0.020	34	395
27	131.00	306	1,052	0.013	22	263
26	127.50	1,005	3,303	0.041	69	865
25	122.50	1,005	3,090	0.039	65	865
24	117.50	1,005	2,882	0.036	61	865
23	112.50	1,005	2,680	0.034	56	865
22	107.50	1,005	2,484	0.031	52	865
21	102.50	1,005	2,294	0.029	48	865
20	97.50	1,126	2,363	0.030	50	968
19	92.50	1,126	2,164	0.027	45	968
18	87.50	1,126	1,972	0.025	41	968
17	82.50	1,126	1,788	0.022	38	968
16	77.50	1,246	1,782	0.022	37	1,071
15	72.50	1,246	1,594	0.020	34	1,071
14	67.50	1,246	1,415	0.018	30	1,071
13	62.50	1,246	1,244	0.016	26	1,071

12	57.50	1,366	1,187	0.015	25	1,175
11	52.50	1,366	1,020	0.013	21	1,175
10	47.50	1,366	863	0.011	18	1,175
9	42.50	1,366	717	0.009	15	1,175
8	37.50	1,486	633	0.008	13	1,278
7	32.50	1,486	498	0.006	10	1,278
6	27.50	1,486	377	0.005	8	1,278
5	22.50	1,486	269	0.003	6	1,278
4	17.50	1,881	224	0.003	5	1,618
3	12.50	1,881	128	0.002	3	1,618
2	7.50	1,881	54	0.001	1	1,618
1	2.50	1,881	9	0.000	0	1,618
Kaelus DBCT108F1V92-	150.00	125	539	0.007	11	108
Powerwave Allgon TT0	150.00	132	569	0.007	12	114
Commscope WCS-IMFQ-A	150.00	30	127	0.002	3	25
Raycap DC6-48-60-0-8	150.00	98	424	0.005	9	85
Raycap DC6-48-60-18-	150.00	32	137	0.002	3	27
Ericsson Radio 8843	150.00	216	930	0.012	20	185
Ericsson RRUS 4478 B	150.00	180	775	0.010	16	155
Ericsson RRUS 4478 B	150.00	180	775	0.010	16	155
Ericsson RRUS 32 (50	150.00	152	657	0.008	14	131
Ericsson RRUS E2 B29	150.00	60	259	0.003	5	52
Ericsson RRUS 12	150.00	150	647	0.008	14	129
Ericsson RRUS-11	150.00	330	1,422	0.018	30	284
Powerwave Allgon 777	150.00	105	453	0.006	10	90
Quintel QS66512-2	150.00	111	478	0.006	10	95
CCI HPA-65R-BUU-H8	150.00	204	879	0.011	18	175
CCI TPA-65R-LCUUUU-H	150.00	163	703	0.009	15	140
Kathrein Scala 80010	150.00	344	1,482	0.019	31	296
Round Platform w/ Ha	150.00	2,000	8,620	0.108	181	1,720
Ericsson KRY 112 144	137.00	33	122	0.002	3	28
Fastback Networks In	137.00	9	33	0.000	1	8
Ericsson Radio 4449	137.00	222	822	0.010	17	191
Ericsson AIR 21, 1.3	137.00	249	922	0.012	19	214
Ericsson AIR32 B66Aa	137.00	397	1,469	0.018	31	341
RFS APXVAARR24_43-U-	137.00	384	1,421	0.018	30	330
Perfect Vision PV-LL	132.00	2,000	6,963	0.087	146	1,720
		45,290	79,910	1.000	1,680	38,944

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-53.83	-1.68	0.00	-202.72	0.00	202.72	3,293.92	1,646.96	8,093.29	5,174.22	0.00	0.00	0.056
5.00	-51.50	-1.69	0.00	-194.31	0.00	194.31	3,293.92	1,646.96	8,093.29	5,174.22	0.00	-0.01	0.053
10.00	-49.16	-1.69	0.00	-185.88	0.00	185.88	3,293.92	1,646.96	8,093.29	5,174.22	0.01	-0.01	0.051
15.00	-46.83	-1.69	0.00	-177.43	0.00	177.43	3,293.92	1,646.96	8,093.29	5,174.22	0.03	-0.02	0.049
20.00	-44.99	-1.69	0.00	-168.98	0.00	168.98	3,293.92	1,646.96	8,093.29	5,174.22	0.06	-0.03	0.046
20.00	-44.99	-1.69	0.00	-168.98	0.00	168.98	2,330.87	1,165.43	5,751.12	3,807.50	0.06	-0.03	0.064
25.00	-43.14	-1.68	0.00	-160.55	0.00	160.55	2,330.87	1,165.43	5,751.12	3,807.50	0.09	-0.03	0.061
30.00	-41.30	-1.68	0.00	-152.13	0.00	152.13	2,330.87	1,165.43	5,751.12	3,807.50	0.12	-0.04	0.058
35.00	-39.46	-1.67	0.00	-143.75	0.00	143.75	2,330.87	1,165.43	5,751.12	3,807.50	0.17	-0.05	0.055
40.00	-37.76	-1.65	0.00	-135.42	0.00	135.42	2,330.87	1,165.43	5,751.12	3,807.50	0.22	-0.05	0.052
40.00	-37.76	-1.65	0.00	-135.42	0.00	135.42	2,139.71	1,069.86	4,744.89	3,103.93	0.22	-0.05	0.061
45.00	-36.07	-1.64	0.00	-127.15	0.00	127.15	2,139.71	1,069.86	4,744.89	3,103.93	0.27	-0.06	0.058
50.00	-34.37	-1.62	0.00	-118.95	0.00	118.95	2,139.71	1,069.86	4,744.89	3,103.93	0.34	-0.07	0.054
55.00	-32.68	-1.60	0.00	-110.85	0.00	110.85	2,139.71	1,069.86	4,744.89	3,103.93	0.41	-0.07	0.051
60.00	-31.13	-1.57	0.00	-102.87	0.00	102.87	2,139.71	1,069.86	4,744.89	3,103.93	0.49	-0.08	0.048
60.00	-31.13	-1.57	0.00	-102.87	0.00	102.87	1,948.48	974.24	3,834.02	2,471.99	0.49	-0.08	0.058
65.00	-29.59	-1.54	0.00	-95.01	0.00	95.01	1,948.48	974.24	3,834.02	2,471.99	0.58	-0.09	0.054
70.00	-28.04	-1.51	0.00	-87.29	0.00	87.29	1,948.48	974.24	3,834.02	2,471.99	0.67	-0.09	0.050
75.00	-26.50	-1.48	0.00	-79.73	0.00	79.73	1,948.48	974.24	3,834.02	2,471.99	0.77	-0.10	0.046
80.00	-25.10	-1.44	0.00	-72.36	0.00	72.36	1,948.48	974.24	3,834.02	2,471.99	0.88	-0.11	0.042
80.00	-25.10	-1.44	0.00	-72.36	0.00	72.36	1,757.14	878.57	3,018.53	1,911.67	0.88	-0.11	0.052
85.00	-23.71	-1.40	0.00	-65.17	0.00	65.17	1,757.14	878.57	3,018.53	1,911.67	1.00	-0.11	0.048
90.00	-22.31	-1.35	0.00	-58.18	0.00	58.18	1,757.14	878.57	3,018.53	1,911.67	1.12	-0.12	0.043
95.00	-20.91	-1.30	0.00	-51.43	0.00	51.43	1,757.14	878.57	3,018.53	1,911.67	1.25	-0.13	0.039
100.00	-19.67	-1.25	0.00	-44.92	0.00	44.92	1,757.14	878.57	3,018.53	1,911.67	1.39	-0.14	0.035
100.00	-19.67	-1.25	0.00	-44.92	0.00	44.92	1,565.64	782.82	2,298.42	1,422.98	1.39	-0.14	0.044
105.00	-18.42	-1.20	0.00	-38.66	0.00	38.66	1,565.64	782.82	2,298.42	1,422.98	1.54	-0.14	0.039
110.00	-17.17	-1.14	0.00	-32.67	0.00	32.67	1,565.64	782.82	2,298.42	1,422.98	1.69	-0.15	0.034
115.00	-15.93	-1.08	0.00	-26.96	0.00	26.96	1,565.64	782.82	2,298.42	1,422.98	1.85	-0.16	0.029
115.00	-15.93	-1.08	0.00	-26.96	0.00	26.96	1,565.64	782.82	2,298.42	1,422.98	1.85	-0.16	0.029
120.00	-14.68	-1.01	0.00	-21.56	0.00	21.56	1,565.64	782.82	2,298.42	1,422.98	2.01	-0.16	0.025
125.00	-13.43	-0.94	0.00	-16.50	0.00	16.50	1,565.64	782.82	2,298.42	1,422.98	2.18	-0.16	0.020
130.00	-13.05	-0.92	0.00	-11.80	0.00	11.80	1,565.64	782.82	2,298.42	1,422.98	2.36	-0.17	0.017
130.00	-13.05	-0.92	0.00	-11.80	0.00	11.80	1,127.22	563.61	1,091.62	660.47	2.36	-0.17	0.029
132.00	-10.01	-0.73	0.00	-9.97	0.00	9.97	1,127.22	563.61	1,091.62	660.47	2.43	-0.17	0.024
135.00	-9.63	-0.70	0.00	-7.78	0.00	7.78	1,127.22	563.61	1,091.62	660.47	2.54	-0.17	0.020
137.00	-7.49	-0.56	0.00	-6.38	0.00	6.38	1,127.22	563.61	1,091.62	660.47	2.61	-0.17	0.016
140.00	-6.60	-0.50	0.00	-4.69	0.00	4.69	1,127.22	563.61	1,091.62	660.47	2.72	-0.18	0.013
145.00	-5.72	-0.44	0.00	-2.18	0.00	2.18	1,127.22	563.61	1,091.62	660.47	2.91	-0.18	0.008
150.00	0.00	-0.42	0.00	0.00	0.00	0.00	1,127.22	563.61	1,091.62	660.47	3.09	-0.18	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-37.33	-1.68	0.00	-201.07	0.00	201.07	3,293.92	1,646.96	8,093.29	5,174.22	0.00	0.00	0.050
5.00	-35.71	-1.68	0.00	-192.66	0.00	192.66	3,293.92	1,646.96	8,093.29	5,174.22	0.00	-0.01	0.048
10.00	-34.09	-1.69	0.00	-184.24	0.00	184.24	3,293.92	1,646.96	8,093.29	5,174.22	0.01	-0.01	0.046
15.00	-32.47	-1.68	0.00	-175.81	0.00	175.81	3,293.92	1,646.96	8,093.29	5,174.22	0.03	-0.02	0.044
20.00	-31.19	-1.68	0.00	-167.40	0.00	167.40	3,293.92	1,646.96	8,093.29	5,174.22	0.05	-0.03	0.042
20.00	-31.19	-1.68	0.00	-167.40	0.00	167.40	2,330.87	1,165.43	5,751.12	3,807.50	0.05	-0.03	0.057
25.00	-29.92	-1.68	0.00	-159.00	0.00	159.00	2,330.87	1,165.43	5,751.12	3,807.50	0.08	-0.03	0.055
30.00	-28.64	-1.67	0.00	-150.62	0.00	150.62	2,330.87	1,165.43	5,751.12	3,807.50	0.12	-0.04	0.052
35.00	-27.36	-1.66	0.00	-142.28	0.00	142.28	2,330.87	1,165.43	5,751.12	3,807.50	0.16	-0.04	0.049
40.00	-26.18	-1.64	0.00	-134.00	0.00	134.00	2,330.87	1,165.43	5,751.12	3,807.50	0.21	-0.05	0.046
40.00	-26.18	-1.64	0.00	-134.00	0.00	134.00	2,139.71	1,069.86	4,744.89	3,103.93	0.21	-0.05	0.055
45.00	-25.01	-1.63	0.00	-125.79	0.00	125.79	2,139.71	1,069.86	4,744.89	3,103.93	0.27	-0.06	0.052
50.00	-23.83	-1.61	0.00	-117.66	0.00	117.66	2,139.71	1,069.86	4,744.89	3,103.93	0.33	-0.06	0.049
55.00	-22.66	-1.58	0.00	-109.62	0.00	109.62	2,139.71	1,069.86	4,744.89	3,103.93	0.41	-0.07	0.046
60.00	-21.59	-1.56	0.00	-101.71	0.00	101.71	2,139.71	1,069.86	4,744.89	3,103.93	0.48	-0.08	0.043
60.00	-21.59	-1.56	0.00	-101.71	0.00	101.71	1,948.48	974.24	3,834.02	2,471.99	0.48	-0.08	0.052
65.00	-20.52	-1.53	0.00	-93.91	0.00	93.91	1,948.48	974.24	3,834.02	2,471.99	0.57	-0.08	0.049
70.00	-19.44	-1.50	0.00	-86.27	0.00	86.27	1,948.48	974.24	3,834.02	2,471.99	0.66	-0.09	0.045
75.00	-18.37	-1.46	0.00	-78.78	0.00	78.78	1,948.48	974.24	3,834.02	2,471.99	0.76	-0.10	0.041
80.00	-17.41	-1.42	0.00	-71.48	0.00	71.48	1,948.48	974.24	3,834.02	2,471.99	0.87	-0.11	0.038
80.00	-17.41	-1.42	0.00	-71.48	0.00	71.48	1,757.14	878.57	3,018.53	1,911.67	0.87	-0.11	0.047
85.00	-16.44	-1.38	0.00	-64.37	0.00	64.37	1,757.14	878.57	3,018.53	1,911.67	0.99	-0.11	0.043
90.00	-15.47	-1.34	0.00	-57.46	0.00	57.46	1,757.14	878.57	3,018.53	1,911.67	1.11	-0.12	0.039
95.00	-14.50	-1.29	0.00	-50.78	0.00	50.78	1,757.14	878.57	3,018.53	1,911.67	1.24	-0.13	0.035
100.00	-13.64	-1.24	0.00	-44.36	0.00	44.36	1,757.14	878.57	3,018.53	1,911.67	1.38	-0.13	0.031
100.00	-13.64	-1.24	0.00	-44.36	0.00	44.36	1,565.64	782.82	2,298.42	1,422.98	1.38	-0.13	0.040
105.00	-12.77	-1.18	0.00	-38.17	0.00	38.17	1,565.64	782.82	2,298.42	1,422.98	1.52	-0.14	0.035
110.00	-11.91	-1.13	0.00	-32.25	0.00	32.25	1,565.64	782.82	2,298.42	1,422.98	1.67	-0.15	0.030
115.00	-11.04	-1.07	0.00	-26.61	0.00	26.61	1,565.64	782.82	2,298.42	1,422.98	1.83	-0.15	0.026
115.00	-11.04	-1.07	0.00	-26.61	0.00	26.61	1,565.64	782.82	2,298.42	1,422.98	1.83	-0.15	0.026
120.00	-10.18	-1.00	0.00	-21.28	0.00	21.28	1,565.64	782.82	2,298.42	1,422.98	1.99	-0.16	0.021
125.00	-9.31	-0.93	0.00	-16.29	0.00	16.29	1,565.64	782.82	2,298.42	1,422.98	2.16	-0.16	0.017
130.00	-9.05	-0.91	0.00	-11.65	0.00	11.65	1,565.64	782.82	2,298.42	1,422.98	2.33	-0.17	0.014
130.00	-9.05	-0.91	0.00	-11.65	0.00	11.65	1,127.22	563.61	1,091.62	660.47	2.33	-0.17	0.026
132.00	-6.94	-0.72	0.00	-9.84	0.00	9.84	1,127.22	563.61	1,091.62	660.47	2.40	-0.17	0.021
135.00	-6.67	-0.69	0.00	-7.68	0.00	7.68	1,127.22	563.61	1,091.62	660.47	2.51	-0.17	0.018
137.00	-5.19	-0.56	0.00	-6.29	0.00	6.29	1,127.22	563.61	1,091.62	660.47	2.58	-0.17	0.014
140.00	-4.58	-0.49	0.00	-4.62	0.00	4.62	1,127.22	563.61	1,091.62	660.47	2.69	-0.17	0.011
145.00	-3.96	-0.43	0.00	-2.15	0.00	2.15	1,127.22	563.61	1,091.62	660.47	2.87	-0.18	0.007
150.00	0.00	-0.42	0.00	0.00	0.00	0.00	1,127.22	563.61	1,091.62	660.47	3.06	-0.18	0.000

Equivalent Modal Analysis Method

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

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	1.84
Redundancy Factor (p):	1.00

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
32	147.50	715	1.828	1.667	1.025	0.345	165	887
31	142.50	715	1.706	1.144	0.823	0.270	129	887
30	138.50	429	1.611	0.814	0.686	0.215	62	532
29	136.00	306	1.554	0.642	0.609	0.184	38	379
28	133.50	459	1.497	0.494	0.539	0.156	48	569
27	131.00	306	1.442	0.367	0.476	0.129	26	379
26	127.50	1,005	1.366	0.222	0.397	0.095	64	1,247
25	122.50	1,005	1.261	0.069	0.302	0.054	36	1,247
24	117.50	1,005	1.160	-0.030	0.226	0.022	14	1,247
23	112.50	1,005	1.063	-0.088	0.165	-0.003	-2	1,247
22	107.50	1,005	0.971	-0.116	0.117	-0.019	-13	1,247
21	102.50	1,005	0.883	-0.121	0.081	-0.027	-18	1,247
20	97.50	1,126	0.799	-0.112	0.053	-0.028	-21	1,396
19	92.50	1,126	0.719	-0.092	0.034	-0.022	-17	1,396
18	87.50	1,126	0.643	-0.068	0.020	-0.012	-9	1,396
17	82.50	1,126	0.572	-0.043	0.012	0.001	1	1,396
16	77.50	1,246	0.505	-0.018	0.007	0.015	12	1,545
15	72.50	1,246	0.442	0.005	0.006	0.027	22	1,545
14	67.50	1,246	0.383	0.023	0.007	0.037	30	1,545
13	62.50	1,246	0.328	0.039	0.010	0.043	36	1,545
12	57.50	1,366	0.278	0.050	0.014	0.047	43	1,694
11	52.50	1,366	0.232	0.058	0.019	0.049	45	1,694
10	47.50	1,366	0.190	0.064	0.025	0.049	45	1,694
9	42.50	1,366	0.152	0.068	0.030	0.049	44	1,694
8	37.50	1,486	0.118	0.070	0.035	0.048	47	1,843
7	32.50	1,486	0.089	0.071	0.039	0.046	46	1,843
6	27.50	1,486	0.064	0.072	0.041	0.045	44	1,843
5	22.50	1,486	0.043	0.070	0.042	0.043	43	1,843
4	17.50	1,881	0.026	0.067	0.040	0.040	51	2,333
3	12.50	1,881	0.013	0.059	0.034	0.036	45	2,333
2	7.50	1,881	0.005	0.044	0.025	0.028	35	2,333
1	2.50	1,881	0.001	0.018	0.010	0.012	16	2,333
Kaelus DBCT108F1V92-	150.00	125	1.890	1.980	1.140	0.386	32	155
Powerwave Allgon TT0	150.00	132	1.890	1.980	1.140	0.386	34	164

Commscope WCS-	150.00	30	1.890	1.980	1.140	0.386	8	37
Raycap DC6-48-60-0-8	150.00	98	1.890	1.980	1.140	0.386	25	122
Raycap DC6-48-60-18-	150.00	32	1.890	1.980	1.140	0.386	8	39
Ericsson Radio 8843	150.00	216	1.890	1.980	1.140	0.386	56	267
Ericsson RRUS 4478 B	150.00	180	1.890	1.980	1.140	0.386	46	223
Ericsson RRUS 4478 B	150.00	180	1.890	1.980	1.140	0.386	46	223
Ericsson RRUS 32 (50	150.00	152	1.890	1.980	1.140	0.386	39	189
Ericsson RRUS E2 B29	150.00	60	1.890	1.980	1.140	0.386	15	74
Ericsson RRUS 12	150.00	150	1.890	1.980	1.140	0.386	39	186
Ericsson RRUS-11	150.00	330	1.890	1.980	1.140	0.386	85	409
Powerwave Allgon 777	150.00	105	1.890	1.980	1.140	0.386	27	130
Quintel QS66512-2	150.00	111	1.890	1.980	1.140	0.386	29	138
CCI HPA-65R-BUU-H8	150.00	204	1.890	1.980	1.140	0.386	53	253
CCI TPA-65R-LCUUUU-H	150.00	163	1.890	1.980	1.140	0.386	42	202
Kathrein Scala 80010	150.00	344	1.890	1.980	1.140	0.386	89	426
Round Platform w/ Ha	150.00	2,000	1.890	1.980	1.140	0.386	515	2,480
Ericsson KRY 112 144	137.00	33	1.577	0.708	0.639	0.197	4	41
Fastback Networks In	137.00	9	1.577	0.708	0.639	0.197	1	11
Ericsson Radio 4449	137.00	222	1.577	0.708	0.639	0.197	29	275
Ericsson AIR 21, 1.3	137.00	249	1.577	0.708	0.639	0.197	33	309
Ericsson AIR32 B66Aa	137.00	397	1.577	0.708	0.639	0.197	52	492
RFS APXVAARR24_43-U-	137.00	384	1.577	0.708	0.639	0.197	50	476
Perfect Vision PV-LL	132.00	2,000	1.464	0.415	0.501	0.139	186	2,480
		45,290	66.879	45.811	30.801	10.248	2,649	56,164

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
32	147.50	715	1.828	1.667	1.025	0.345	165	615
31	142.50	715	1.706	1.144	0.823	0.270	129	615
30	138.50	429	1.611	0.814	0.686	0.215	62	369
29	136.00	306	1.554	0.642	0.609	0.184	38	263
28	133.50	459	1.497	0.494	0.539	0.156	48	395
27	131.00	306	1.442	0.367	0.476	0.129	26	263
26	127.50	1,005	1.366	0.222	0.397	0.095	64	865
25	122.50	1,005	1.261	0.069	0.302	0.054	36	865
24	117.50	1,005	1.160	-0.030	0.226	0.022	14	865
23	112.50	1,005	1.063	-0.088	0.165	-0.003	-2	865
22	107.50	1,005	0.971	-0.116	0.117	-0.019	-13	865
21	102.50	1,005	0.883	-0.121	0.081	-0.027	-18	865
20	97.50	1,126	0.799	-0.112	0.053	-0.028	-21	968
19	92.50	1,126	0.719	-0.092	0.034	-0.022	-17	968
18	87.50	1,126	0.643	-0.068	0.020	-0.012	-9	968
17	82.50	1,126	0.572	-0.043	0.012	0.001	1	968
16	77.50	1,246	0.505	-0.018	0.007	0.015	12	1,071
15	72.50	1,246	0.442	0.005	0.006	0.027	22	1,071
14	67.50	1,246	0.383	0.023	0.007	0.037	30	1,071
13	62.50	1,246	0.328	0.039	0.010	0.043	36	1,071
12	57.50	1,366	0.278	0.050	0.014	0.047	43	1,175
11	52.50	1,366	0.232	0.058	0.019	0.049	45	1,175
10	47.50	1,366	0.190	0.064	0.025	0.049	45	1,175
9	42.50	1,366	0.152	0.068	0.030	0.049	44	1,175
8	37.50	1,486	0.118	0.070	0.035	0.048	47	1,278
7	32.50	1,486	0.089	0.071	0.039	0.046	46	1,278
6	27.50	1,486	0.064	0.072	0.041	0.045	44	1,278
5	22.50	1,486	0.043	0.070	0.042	0.043	43	1,278
4	17.50	1,881	0.026	0.067	0.040	0.040	51	1,618
3	12.50	1,881	0.013	0.059	0.034	0.036	45	1,618

2	7.50	1,881	0.005	0.044	0.025	0.028	35	1,618
1	2.50	1,881	0.001	0.018	0.010	0.012	16	1,618
Kaelus DBCT108F1V92-	150.00	125	1.890	1.980	1.140	0.386	32	108
Powerwave Allgon TT0	150.00	132	1.890	1.980	1.140	0.386	34	114
Commscope WCS-	150.00	30	1.890	1.980	1.140	0.386	8	25
Raycap DC6-48-60-0-8	150.00	98	1.890	1.980	1.140	0.386	25	85
Raycap DC6-48-60-18-	150.00	32	1.890	1.980	1.140	0.386	8	27
Ericsson Radio 8843	150.00	216	1.890	1.980	1.140	0.386	56	185
Ericsson RRUS 4478 B	150.00	180	1.890	1.980	1.140	0.386	46	155
Ericsson RRUS 4478 B	150.00	180	1.890	1.980	1.140	0.386	46	155
Ericsson RRUS 32 (50	150.00	152	1.890	1.980	1.140	0.386	39	131
Ericsson RRUS E2 B29	150.00	60	1.890	1.980	1.140	0.386	15	52
Ericsson RRUS 12	150.00	150	1.890	1.980	1.140	0.386	39	129
Ericsson RRUS-11	150.00	330	1.890	1.980	1.140	0.386	85	284
Powerwave Allgon 777	150.00	105	1.890	1.980	1.140	0.386	27	90
Quintel QS66512-2	150.00	111	1.890	1.980	1.140	0.386	29	95
CCI HPA-65R-BUU-H8	150.00	204	1.890	1.980	1.140	0.386	53	175
CCI TPA-65R-LCUUUU-H	150.00	163	1.890	1.980	1.140	0.386	42	140
Kathrein Scala 80010	150.00	344	1.890	1.980	1.140	0.386	89	296
Round Platform w/ Ha	150.00	2,000	1.890	1.980	1.140	0.386	515	1,720
Ericsson KRY 112 144	137.00	33	1.577	0.708	0.639	0.197	4	28
Fastback Networks In	137.00	9	1.577	0.708	0.639	0.197	1	8
Ericsson Radio 4449	137.00	222	1.577	0.708	0.639	0.197	29	191
Ericsson AIR 21, 1.3	137.00	249	1.577	0.708	0.639	0.197	33	214
Ericsson AIR32 B66Aa	137.00	397	1.577	0.708	0.639	0.197	52	341
RFS APXVAARR24_43-U-	137.00	384	1.577	0.708	0.639	0.197	50	330
Perfect Vision PV-LL	132.00	2,000	1.464	0.415	0.501	0.139	186	1,720
		45,290	66.879	45.811	30.801	10.248	2,649	38,944

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-53.83	-2.64	0.00	-327.92	0.00	327.92	3,293.92	1,646.96	8,093.29	5,174.22	0.00	0.00	0.080
5.00	-51.50	-2.61	0.00	-314.73	0.00	314.73	3,293.92	1,646.96	8,093.29	5,174.22	0.01	-0.01	0.076
10.00	-49.16	-2.58	0.00	-301.67	0.00	301.67	3,293.92	1,646.96	8,093.29	5,174.22	0.02	-0.02	0.073
15.00	-46.83	-2.53	0.00	-288.79	0.00	288.79	3,293.92	1,646.96	8,093.29	5,174.22	0.05	-0.03	0.070
20.00	-44.99	-2.50	0.00	-276.13	0.00	276.13	3,293.92	1,646.96	8,093.29	5,174.22	0.09	-0.04	0.067
20.00	-44.99	-2.50	0.00	-276.13	0.00	276.13	2,330.87	1,165.43	5,751.12	3,807.50	0.09	-0.04	0.092
25.00	-43.14	-2.46	0.00	-263.65	0.00	263.65	2,330.87	1,165.43	5,751.12	3,807.50	0.14	-0.05	0.088
30.00	-41.30	-2.42	0.00	-251.36	0.00	251.36	2,330.87	1,165.43	5,751.12	3,807.50	0.20	-0.06	0.084
35.00	-39.45	-2.38	0.00	-239.27	0.00	239.27	2,330.87	1,165.43	5,751.12	3,807.50	0.27	-0.07	0.080
40.00	-37.76	-2.34	0.00	-227.38	0.00	227.38	2,330.87	1,165.43	5,751.12	3,807.50	0.35	-0.08	0.076
40.00	-37.76	-2.34	0.00	-227.38	0.00	227.38	2,139.71	1,069.86	4,744.89	3,103.93	0.35	-0.08	0.091
45.00	-36.07	-2.30	0.00	-215.69	0.00	215.69	2,139.71	1,069.86	4,744.89	3,103.93	0.45	-0.09	0.086
50.00	-34.37	-2.26	0.00	-204.21	0.00	204.21	2,139.71	1,069.86	4,744.89	3,103.93	0.55	-0.11	0.082
55.00	-32.68	-2.22	0.00	-192.93	0.00	192.93	2,139.71	1,069.86	4,744.89	3,103.93	0.67	-0.12	0.077
60.00	-31.13	-2.18	0.00	-181.84	0.00	181.84	2,139.71	1,069.86	4,744.89	3,103.93	0.80	-0.13	0.073
60.00	-31.13	-2.18	0.00	-181.84	0.00	181.84	1,948.48	974.24	3,834.02	2,471.99	0.80	-0.13	0.090
65.00	-29.59	-2.16	0.00	-170.92	0.00	170.92	1,948.48	974.24	3,834.02	2,471.99	0.95	-0.14	0.084
70.00	-28.04	-2.14	0.00	-160.14	0.00	160.14	1,948.48	974.24	3,834.02	2,471.99	1.10	-0.16	0.079
75.00	-26.49	-2.13	0.00	-149.46	0.00	149.46	1,948.48	974.24	3,834.02	2,471.99	1.28	-0.17	0.074
80.00	-25.10	-2.13	0.00	-138.82	0.00	138.82	1,948.48	974.24	3,834.02	2,471.99	1.46	-0.18	0.069
80.00	-25.10	-2.13	0.00	-138.82	0.00	138.82	1,757.14	878.57	3,018.53	1,911.67	1.46	-0.18	0.087
85.00	-23.70	-2.14	0.00	-128.19	0.00	128.19	1,757.14	878.57	3,018.53	1,911.67	1.66	-0.20	0.081
90.00	-22.31	-2.16	0.00	-117.50	0.00	117.50	1,757.14	878.57	3,018.53	1,911.67	1.88	-0.21	0.074
95.00	-20.91	-2.18	0.00	-106.72	0.00	106.72	1,757.14	878.57	3,018.53	1,911.67	2.11	-0.23	0.068
100.00	-19.66	-2.19	0.00	-95.84	0.00	95.84	1,757.14	878.57	3,018.53	1,911.67	2.35	-0.24	0.061
100.00	-19.66	-2.19	0.00	-95.84	0.00	95.84	1,565.64	782.82	2,298.42	1,422.98	2.35	-0.24	0.080
105.00	-18.41	-2.21	0.00	-84.87	0.00	84.87	1,565.64	782.82	2,298.42	1,422.98	2.61	-0.25	0.071
110.00	-17.17	-2.21	0.00	-73.84	0.00	73.84	1,565.64	782.82	2,298.42	1,422.98	2.89	-0.27	0.063
115.00	-15.92	-2.19	0.00	-62.81	0.00	62.81	1,565.64	782.82	2,298.42	1,422.98	3.18	-0.28	0.054
115.00	-15.92	-2.19	0.00	-62.81	0.00	62.81	1,565.64	782.82	2,298.42	1,422.98	3.18	-0.28	0.054
120.00	-14.67	-2.15	0.00	-51.86	0.00	51.86	1,565.64	782.82	2,298.42	1,422.98	3.48	-0.30	0.046
125.00	-13.43	-2.08	0.00	-41.11	0.00	41.11	1,565.64	782.82	2,298.42	1,422.98	3.80	-0.31	0.037
130.00	-13.05	-2.05	0.00	-30.71	0.00	30.71	1,565.64	782.82	2,298.42	1,422.98	4.13	-0.31	0.030
130.00	-13.05	-2.05	0.00	-30.71	0.00	30.71	1,127.22	563.61	1,091.62	660.47	4.13	-0.31	0.058
132.00	-10.00	-1.81	0.00	-26.60	0.00	26.60	1,127.22	563.61	1,091.62	660.47	4.26	-0.32	0.049
135.00	-9.62	-1.77	0.00	-21.18	0.00	21.18	1,127.22	563.61	1,091.62	660.47	4.46	-0.33	0.041
137.00	-7.48	-1.52	0.00	-17.65	0.00	17.65	1,127.22	563.61	1,091.62	660.47	4.60	-0.33	0.033
140.00	-6.60	-1.39	0.00	-13.07	0.00	13.07	1,127.22	563.61	1,091.62	660.47	4.81	-0.34	0.026
145.00	-5.71	-1.22	0.00	-6.11	0.00	6.11	1,127.22	563.61	1,091.62	660.47	5.17	-0.35	0.014
150.00	0.00	-1.19	0.00	0.00	0.00	0.00	1,127.22	563.61	1,091.62	660.47	5.54	-0.35	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-37.33	-2.64	0.00	-325.04	0.00	325.04	3,293.92	1,646.96	8,093.29	5,174.22	0.00	0.00	0.074
5.00	-35.71	-2.61	0.00	-311.86	0.00	311.86	3,293.92	1,646.96	8,093.29	5,174.22	0.01	-0.01	0.071
10.00	-34.09	-2.57	0.00	-298.82	0.00	298.82	3,293.92	1,646.96	8,093.29	5,174.22	0.02	-0.02	0.068
15.00	-32.47	-2.52	0.00	-285.97	0.00	285.97	3,293.92	1,646.96	8,093.29	5,174.22	0.05	-0.03	0.065
20.00	-31.19	-2.48	0.00	-273.36	0.00	273.36	3,293.92	1,646.96	8,093.29	5,174.22	0.09	-0.04	0.062
20.00	-31.19	-2.48	0.00	-273.36	0.00	273.36	2,330.87	1,165.43	5,751.12	3,807.50	0.09	-0.04	0.085
25.00	-29.91	-2.44	0.00	-260.94	0.00	260.94	2,330.87	1,165.43	5,751.12	3,807.50	0.14	-0.05	0.081
30.00	-28.64	-2.40	0.00	-248.71	0.00	248.71	2,330.87	1,165.43	5,751.12	3,807.50	0.20	-0.06	0.078
35.00	-27.36	-2.36	0.00	-236.69	0.00	236.69	2,330.87	1,165.43	5,751.12	3,807.50	0.27	-0.07	0.074
40.00	-26.18	-2.32	0.00	-224.89	0.00	224.89	2,330.87	1,165.43	5,751.12	3,807.50	0.35	-0.08	0.070
40.00	-26.18	-2.32	0.00	-224.89	0.00	224.89	2,139.71	1,069.86	4,744.89	3,103.93	0.35	-0.08	0.085
45.00	-25.01	-2.28	0.00	-213.30	0.00	213.30	2,139.71	1,069.86	4,744.89	3,103.93	0.44	-0.09	0.080
50.00	-23.83	-2.24	0.00	-201.92	0.00	201.92	2,139.71	1,069.86	4,744.89	3,103.93	0.55	-0.11	0.076
55.00	-22.66	-2.19	0.00	-190.74	0.00	190.74	2,139.71	1,069.86	4,744.89	3,103.93	0.66	-0.12	0.072
60.00	-21.58	-2.16	0.00	-179.77	0.00	179.77	2,139.71	1,069.86	4,744.89	3,103.93	0.80	-0.13	0.068
60.00	-21.58	-2.16	0.00	-179.77	0.00	179.77	1,948.48	974.24	3,834.02	2,471.99	0.80	-0.13	0.084
65.00	-20.51	-2.13	0.00	-168.97	0.00	168.97	1,948.48	974.24	3,834.02	2,471.99	0.94	-0.14	0.079
70.00	-19.44	-2.11	0.00	-158.30	0.00	158.30	1,948.48	974.24	3,834.02	2,471.99	1.09	-0.16	0.074
75.00	-18.37	-2.10	0.00	-147.75	0.00	147.75	1,948.48	974.24	3,834.02	2,471.99	1.26	-0.17	0.069
80.00	-17.40	-2.10	0.00	-137.24	0.00	137.24	1,948.48	974.24	3,834.02	2,471.99	1.45	-0.18	0.064
80.00	-17.40	-2.10	0.00	-137.24	0.00	137.24	1,757.14	878.57	3,018.53	1,911.67	1.45	-0.18	0.082
85.00	-16.43	-2.11	0.00	-126.74	0.00	126.74	1,757.14	878.57	3,018.53	1,911.67	1.65	-0.19	0.076
90.00	-15.46	-2.13	0.00	-116.18	0.00	116.18	1,757.14	878.57	3,018.53	1,911.67	1.86	-0.21	0.070
95.00	-14.50	-2.15	0.00	-105.54	0.00	105.54	1,757.14	878.57	3,018.53	1,911.67	2.09	-0.23	0.063
100.00	-13.63	-2.17	0.00	-94.79	0.00	94.79	1,757.14	878.57	3,018.53	1,911.67	2.33	-0.24	0.057
100.00	-13.63	-2.17	0.00	-94.79	0.00	94.79	1,565.64	782.82	2,298.42	1,422.98	2.33	-0.24	0.075
105.00	-12.77	-2.18	0.00	-83.96	0.00	83.96	1,565.64	782.82	2,298.42	1,422.98	2.59	-0.25	0.067
110.00	-11.90	-2.18	0.00	-73.06	0.00	73.06	1,565.64	782.82	2,298.42	1,422.98	2.86	-0.27	0.059
115.00	-11.04	-2.16	0.00	-62.16	0.00	62.16	1,565.64	782.82	2,298.42	1,422.98	3.14	-0.28	0.051
115.00	-11.04	-2.16	0.00	-62.16	0.00	62.16	1,565.64	782.82	2,298.42	1,422.98	3.14	-0.28	0.051
120.00	-10.17	-2.13	0.00	-51.34	0.00	51.34	1,565.64	782.82	2,298.42	1,422.98	3.45	-0.29	0.043
125.00	-9.31	-2.06	0.00	-40.71	0.00	40.71	1,565.64	782.82	2,298.42	1,422.98	3.76	-0.30	0.035
130.00	-9.04	-2.03	0.00	-30.41	0.00	30.41	1,565.64	782.82	2,298.42	1,422.98	4.08	-0.31	0.027
130.00	-9.04	-2.03	0.00	-30.41	0.00	30.41	1,127.22	563.61	1,091.62	660.47	4.08	-0.31	0.054
132.00	-6.93	-1.79	0.00	-26.35	0.00	26.35	1,127.22	563.61	1,091.62	660.47	4.21	-0.31	0.046
135.00	-6.67	-1.75	0.00	-20.99	0.00	20.99	1,127.22	563.61	1,091.62	660.47	4.41	-0.32	0.038
137.00	-5.19	-1.51	0.00	-17.49	0.00	17.49	1,127.22	563.61	1,091.62	660.47	4.55	-0.33	0.031
140.00	-4.57	-1.38	0.00	-12.95	0.00	12.95	1,127.22	563.61	1,091.62	660.47	4.76	-0.34	0.024
145.00	-3.96	-1.21	0.00	-6.06	0.00	6.06	1,127.22	563.61	1,091.62	660.47	5.12	-0.34	0.013
150.00	0.00	-1.19	0.00	0.00	0.00	0.00	1,127.22	563.61	1,091.62	660.47	5.48	-0.35	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	21.63	0.00	54.33	0.00	0.00	2356.09	20.00	0.53
0.9D + 1.6W	21.62	0.00	40.75	0.00	0.00	2339.84	20.00	0.52
1.2D + 1.0Di + 1.0Wi	6.54	0.00	75.08	0.00	0.00	675.17	20.00	0.17
(1.2 + 0.2Sds) * DL + E ELFM	1.68	0.00	53.83	0.00	0.00	202.72	20.00	0.06
(1.2 + 0.2Sds) * DL + E EMAM	2.64	0.00	53.83	0.00	0.00	327.92	20.00	0.09
(0.9 - 0.2Sds) * DL + E ELFM	1.68	0.00	37.33	0.00	0.00	201.07	20.00	0.06
(0.9 - 0.2Sds) * DL + E EMAM	2.64	0.00	37.33	0.00	0.00	325.04	20.00	0.09
1.0D + 1.0W	4.63	0.00	45.29	0.00	0.00	501.85	20.00	0.12

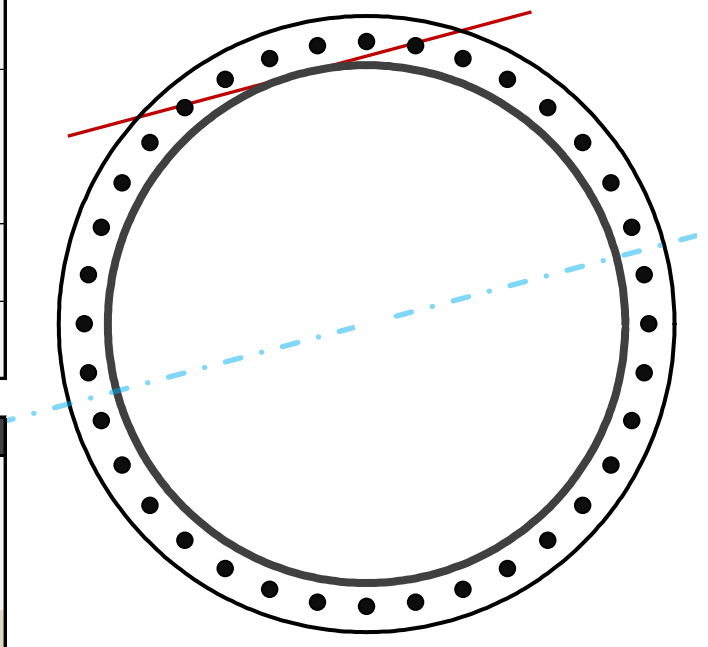
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Shape	Round	-
Diameter	60	in
Thickness	0.5	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	2356.1	k-ft
Axial, Pu	54.3	k
Shear, Vu	21.6	k
Neutral Axis	15	°

Report Capacities		
Component	Capacity	Result
Base Plate	67%	Pass
Anchor Rods	42%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	72	in
Thickness	1 1/2	in
Grade	A572-50	-
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	N/A	in
Applied Moment, Mu	411.1	k
Bending Stress, ϕMn	617.7	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	36	-
Diameter, ø	1 1/2	in
Bolt Circle	66	in
Grade	Other	
Yield Strength, Fy	81	ksi
Tensile Strength, Fu	105	ksi
Spacing	5.8	in
Orientation Offset	0	°
Applied Force, Pu	48.9	k
Anchor Rods, ϕPn	118.0	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	21.6	2356.1	1.00
Anchor Rod Forces	21.6	2356.1	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	93.4612	0.2596	0.0217		41367.32
Bolt	1.7671	1.4053	0.1571	6	27551.41
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Round	-
Diameter, D	72	in
Thickness, t	1.5	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	39.799	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	N/A	-

Anchor Rods		
Anchor Rod Quantity, N	36	-
Rod Diameter, d	1.5	in
Bolt Circle, BC	66	in
Yield Strength, Fy	81	ksi
Tensile Strength, Fu	105	ksi
Applied Axial, Pu	48.9	k
Applied Shear, Vu	0.1	k
Compressive Capacity, ϕPn	118.0	k
Tensile Capacity, ϕRnt	0.414	OK
Interaction Capacity	0.416	OK

External Base Plate		
Chord Length AA	30.493	in
Additional AA	3.000	in
Section Modulus, Z	18.840	in^3
Applied Moment, Mu	411.1	k-ft
Bending Capacity, ϕMn	847.8	k-ft
Capacity, Mu/ϕMn	0.485	OK
Chord Length AB	30.493	in
Additional AB	3.000	in
Section Modulus, Z	18.840	in^3
Applied Moment, Mu	411.1	k-ft
Bending Capacity, ϕMn	847.8	k-ft
Capacity, Mu/ϕMn	0.485	OK
Bend Line Length	24.403	in
Additional Bend Line	0.000	in
Section Modulus, Z	13.727	in^3
Applied Moment, Mu	411.1	k-ft
Bending Capacity, ϕMn	617.7	k-ft
Capacity, Mu/ϕMn	0.666	OK

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

Base/Flange Plate			
	Plate Type	***Flange***	***@ 20 ft***
	Pole Diameter	60	in
	Pole Thickness	0.375	in
	Plate Diameter	72	in
	Plate Thickness	1.5	in
	Plate Fy	50	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	131.83	k-in
	Applied	58.01	k-in

Stiffeners			
	#	***9***	***Show***
	Thickness	0.5	in
	Length	24	in
	Height	6	in
	Chamfer		in
	Offset Angle		°
	Fy	36	ksi

Bolts			
	#	***44***	
	Bolt Circle	66	in
	(R)adial / (S)quare	R	
●	Diameter	1.5	in
	Hole Diameter	1.625	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	126.47	k
	Applied	30.94	k

Reinforcement ●		
#	***0***	

Extra Bolts O		
#	***0***	

Code Rev. ***G***

Moment 1934.3 k-ft

Axial 45.2 k

Date	7/19/2019
Engineer	Cole.Koffi
Site #	282660
Carrier	T-MOBILE

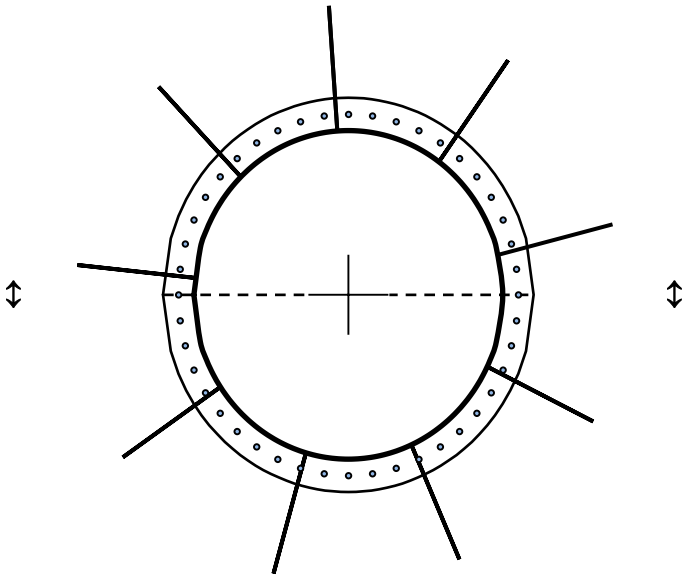


Plate Stress Ratio:

0.44 (Pass)

Bolt Stress Ratio:

0.24 (Pass)

Base/Flange Plate	Plate Type	***Flange***	***@ 40 ft***
	Pole Diameter	54	in
	Pole Thickness	0.375	in
	Plate Diameter	60	in
	Plate Thickness	1.25	in
	Plate Fy	50	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	62.13	k-in
	Applied	16.42	k-in
Stiffeners	#		

Bolts	#	***48***	
	Bolt Circle	57	in
	(R)adial / (S)quare	R	
	Diameter	1	in
	Hole Diameter	1.125	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	54.52	k
	Applied	26.27	k
Reinforcement ●	#	***0***	
Extra Bolts O	#	***0***	

Code Rev. ***G***

Date	7/19/2019
Engineer	Cole.Koffi
Site #	282660
Carrier	T-MOBILE

Moment	1542.6 k-ft
Axial	38.0 k

Required Flange Thickness:

0.64 in OK

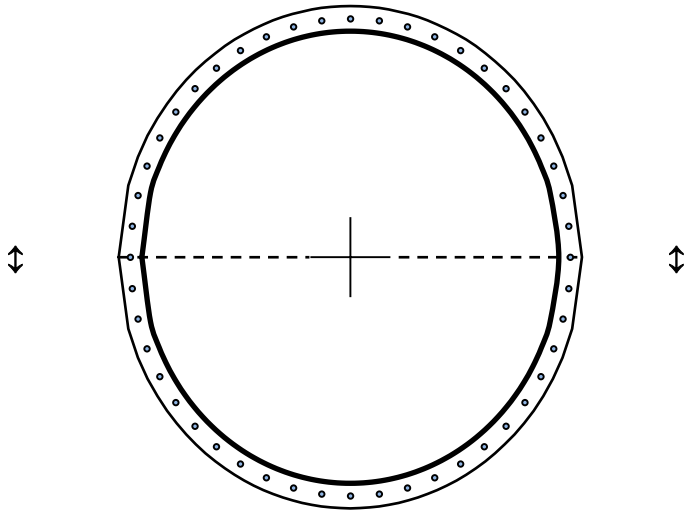


Plate Stress Ratio:

0.26 (Pass)

Bolt Stress Ratio:

0.48 (Pass)

Base/Flange Plate	Plate Type	***Flange***	***@ 60 ft***
	Pole Diameter	48	in
	Pole Thickness	0.375	in
	Plate Diameter	54	in
	Plate Thickness	1.25	in
	Plate Fy	50	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	66.27	k-in
	Applied	16.90	k-in
Stiffeners	#		

Bolts	#	***40***	
	Bolt Circle	51	in
	(R)adial / (S)quare	R	
	Diameter	1	in
	Hole Diameter	1.125	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	54.52	k
	Applied	27.05	k
Reinforcement ●	#	***0***	
Extra Bolts O	#	***0***	

Code Rev. ***G***

Moment 1183.0 k-ft

Axial 31.4 k

Date	7/19/2019
Engineer	Cole.Koffi
Site #	282660
Carrier	T-MOBILE

Required Flange Thickness:

0.63 in OK

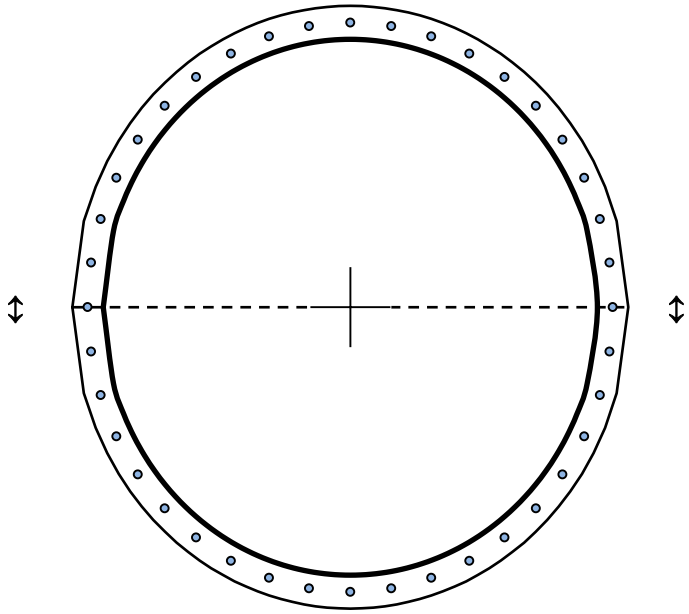


Plate Stress Ratio:

0.26 (Pass)

Bolt Stress Ratio:

0.50 (Pass)

Base/Flange Plate	Plate Type	***Flange*** *@ 80 ft*	
	Pole Diameter	42	in
	Pole Thickness	0.375	in
	Plate Diameter	48	in
	Plate Thickness	1.5	in
	Plate Fy	50	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	104.13	k-in
	Applied	17.35	k-in
Stiffeners	#		

Bolts	#	***32***	
	Bolt Circle	45	in
	(R)adial / (S)quare	R	
	Diameter	1	in
	Hole Diameter	1.125	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	54.52	k
	Applied	27.76	k
Reinforcement ●	#	***0***	
Extra Bolts O	#	***0***	

Code Rev. ***G***

Moment	856.7 k-ft
Axial	25.3 k

Date	7/19/2019
Engineer	Cole.Koffi
Site #	282660
Carrier	T-MOBILE

Required Flange Thickness:

0.61 in OK

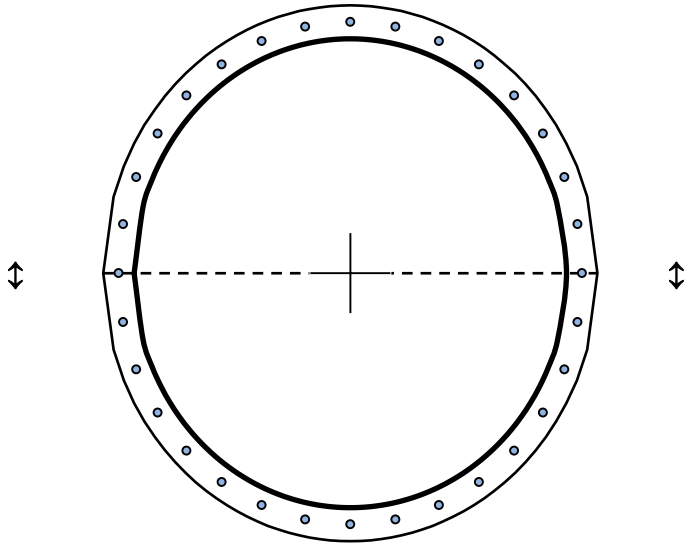


Plate Stress Ratio:

0.17 (Pass)

Bolt Stress Ratio:

0.51 (Pass)

Base/Flange Plate	Plate Type	***Flange***	***@ 100 ft***
	Pole Diameter	36	in
	Pole Thickness	0.375	in
	Plate Diameter	48	in
	Plate Thickness	1.5	in
	Plate Fy	50	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	119.28	k-in
	Applied	48.72	k-in
Stiffeners	#		

Bolts	#	***24***	
	Bolt Circle	42	in
	(R)adial / (S)quare	R	
	Diameter	1.5	in
	Hole Diameter	1.625	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	126.47	k
	Applied	25.98	k
Reinforcement ●	#	***0***	
Extra Bolts O	#	***0***	

Code Rev. ***G***

Moment 563.3 k-ft
Axial 19.9 k

Date	7/19/2019
Engineer	Cole.Koffi
Site #	282660
Carrier	T-MOBILE

Required Flange Thickness:
0.96 in OK

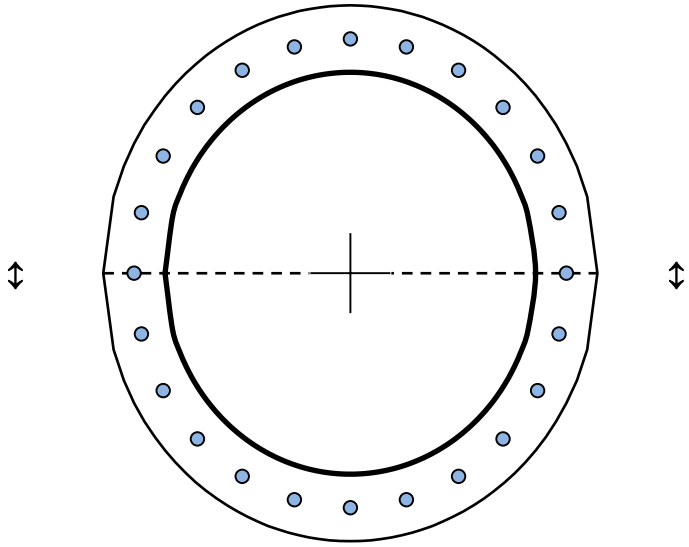


Plate Stress Ratio:
0.41 (Pass)

Bolt Stress Ratio:
0.21 (Pass)

Base/Flange Plate	Plate Type	***Flange***	***@ 115 ft***
	Pole Diameter	36	in
	Pole Thickness	0.375	in
	Plate Diameter	48	in
	Plate Thickness	1.5	in
	Plate Fy	50	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	119.28	k-in
	Applied	31.21	k-in
Stiffeners	#		

Bolts	#	***24***	
	Bolt Circle	42	in
	(R)adial / (S)quare	R	
●	Diameter	1.5	in
	Hole Diameter	1.625	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	126.47	k
	Applied	16.65	k
Reinforcement ●	#	***0***	
Extra Bolts O	#	***0***	

Code Rev. ***G***

Date	7/19/2019
Engineer	Cole.Koffi
Site #	282660
Carrier	T-MOBILE

Moment	363.9 k-ft
Axial	16.2 k

Required Flange Thickness:

0.77 in OK

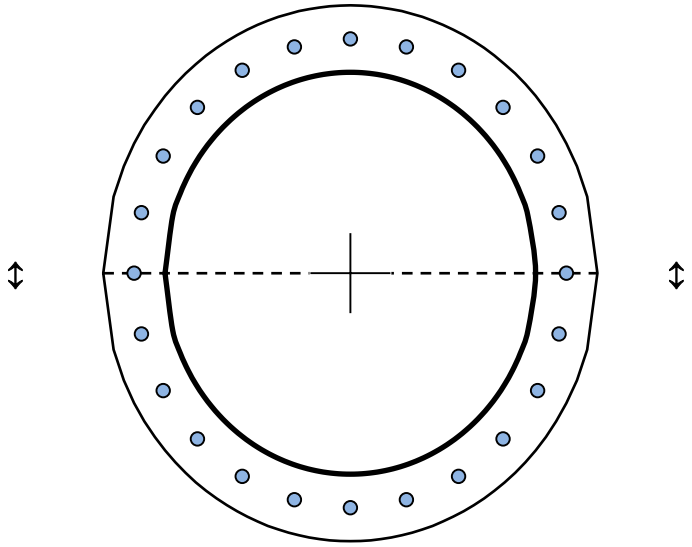


Plate Stress Ratio:

0.26 (Pass)

Bolt Stress Ratio:

0.13 (Pass)

Base/Flange Plate	Plate Type	***Flange***	***@ 130 ft***
	Pole Diameter	24	in
	Pole Thickness	0.375	in
	Plate Diameter	30	in
	Plate Thickness	1	in
	Plate Fy	50	ksi
	Weld Length	0.25	in
	ϕ_s Resistance	42.41	k-in
	Applied	10.69	k-in
Stiffeners	#		

Bolts	#	***20***	
	Bolt Circle	27	in
	(R)adial / (S)quare	R	
	Diameter	1	in
	Hole Diameter	1.125	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	54.52	k
	Applied	15.54	k
Reinforcement ●	#	***0***	
Extra Bolts O	#	***0***	

Code Rev. ***G***

Moment	182.1 k-ft
Axial	12.6 k

Date	7/19/2019
Engineer	Cole.Koffi
Site #	282660
Carrier	T-MOBILE

Required Flange Thickness:

0.50 in OK

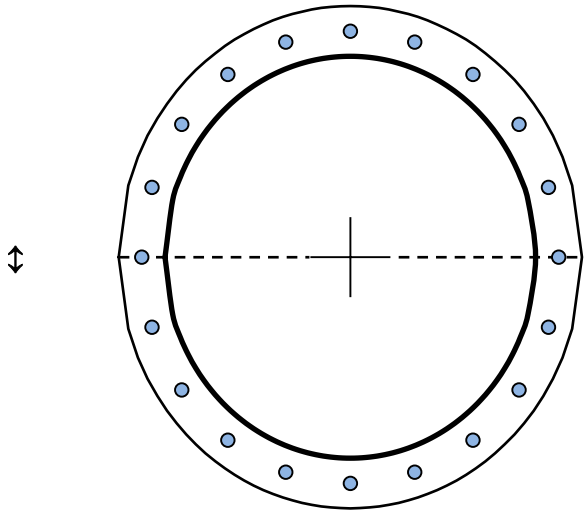


Plate Stress Ratio:

0.25 (Pass)

Bolt Stress Ratio:

0.29 (Pass)

Exhibit E

Mount Analysis

Mount Analysis of Proposed Perfect Vision PV-LLP12M-HR-B for American Tower on behalf of T-Mobile
282660 - Prospect CT, CT
Project #: 12927134
T-Mobile Site ID: CTNH302A
Program: L600

CLS Engineering PLLC Project #41124-12927134-01-MR-R1
July 3, 2019

MOUNT DESCRIPTION	Proposed Perfect Vision PV-LLP12M-HR-B at 137 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 137 ft AGL
SITE DESCRIPTION	150 ft Monopole
SITE ADDRESS	151 Waterbury Prospect Road, Prospect, CT 06712-1228, New Haven County
GPS COORDINATES	41.5237, -72.9955
ANALYSIS STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	125 mph, V_{ult} / 96.8 mph, V_{asd} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 0.75" Ice

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

MEMBER USAGE	**64%**	**Pass**

Existing mounts to be replaced; 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

Digitally signed by Tyler Barker
DN: c=US, o=Telamon Corporation, ou=A01427E0000016A4525ADF800001D17, cn=Tyler Barker
Date: 2019.07.03 22:02:10 -04'00'

■ INTRODUCTION

The proposed equipment is to be mounted to the proposed Perfect Vision PV-LLP12M-HR-B. 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	Perfect Vision Drawing #LLP-ENG-01-R7 Rev. 7, dated January 16, 2018 Perfect Vision, Part # PV-RM1045, Rev. 2, dated July 8, 2016 Perfect Vision Monopole Platform Kicker, #PV-PKBK, Rev. 0, dated July 21, 2015 Site Photos by ATC, dated July 26, 2017
PREVIOUS ANALYSES	Structural Analysis by ATC, Eng. #OAA734974_C3_01, dated July 6, 2018

■ ANALYSIS CRITERIA

STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
BASIC WIND SPEED	125 mph, V_{ult} / 96.8 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**
137.0	137.0	3	Ericsson AIR32 DB B66AA B2A
		3	Ericsson AIR 21, 1.3 M, B2A B4P
		3	Ericsson RADIO 4449 B12/B71
		1	Fastback Networks Intelligent Backhaul Radio 1300 Series
		3	Ericsson KRY 112 144/1
		3	RFS Celwave APXVAARR24_43-U-NA20

■ RESULTS SUMMARY- EXISTING MOUNT

COMPONENT	PEAK USAGE	RESULT
Platform Base	**187%**	**Fail**
Mount Pipes	**108%**	**Fail**
Stand-Off Horizontals	83%	Pass
Face Horizontals	24%	Pass

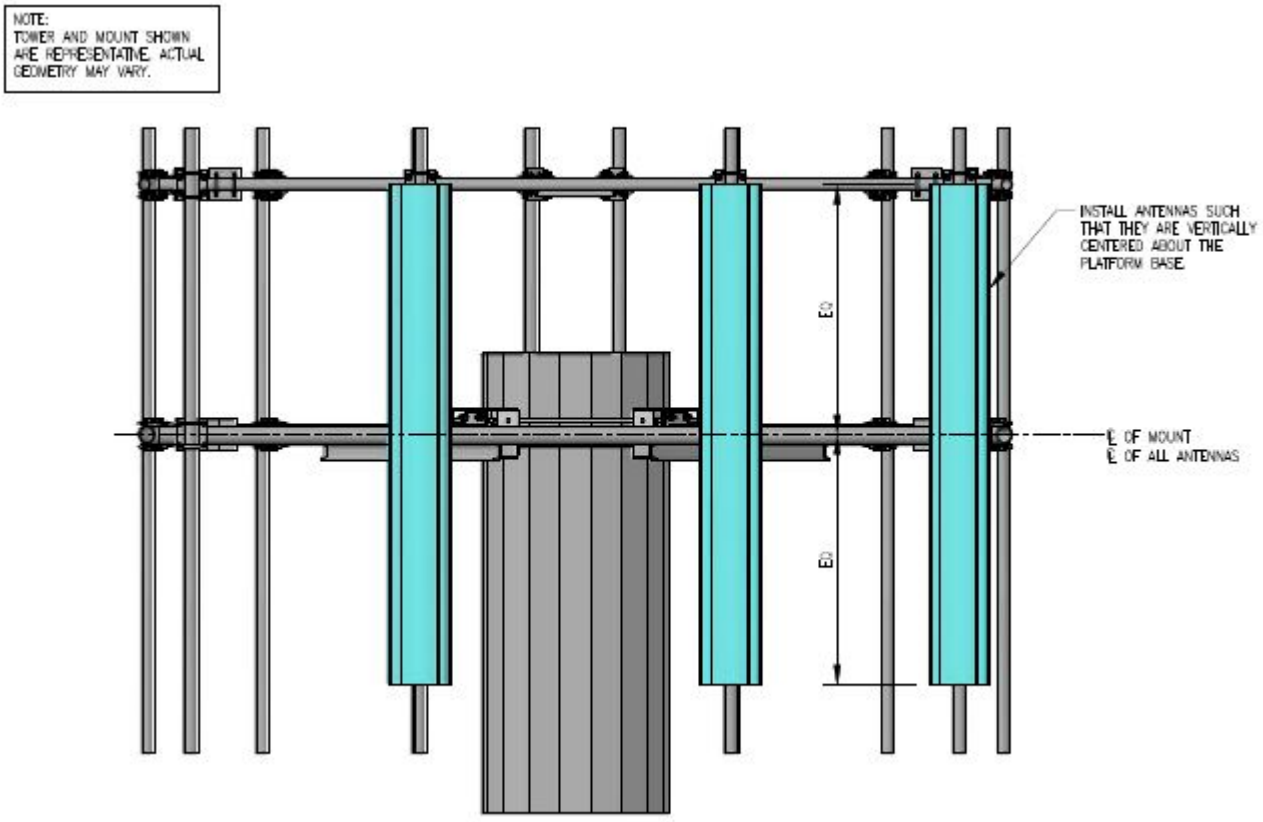
■ RESULTS SUMMARY – PROPOSED MOUNT

COMPONENT	PEAK USAGE	RESULT
Bracing Members	64%	Pass
Platform Base	56%	Pass
Support Rail	53%	Pass
Mount Pipes	40%	Pass
Stand-Off Horizontals	15%	Pass

■ CONCLUSION AND RECOMMENDATIONS

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

- **Replace existing Platform Mount with (1) new Perfect Vison PV-LLP12M-HR-B Platform Mount.**
- **Install (1) Perfect Vision PV-PKBK Monopole Platform Kicker Kit as shown. Field-cut kicker angle as required. Maintain minimum bolt edge distance. Connect kicker kit to (1) proposed Perfect Vision PV-RM1045 Monopole Collar.**
- **Install (4) Perfect Vision PIPE-278X126 antenna mount pipes at each sector (12 total). Connect to platform base horizontal member using (12) Perfect Vision PV-XP-2530-HD crossover brackets such that they are equidistant from each other as shown in the assembly drawings.**
- **Install support rails 3'-0" above the platform base. Connect to all mount pipes using crossover angles included in proposed platform kit.**
- **Install existing and proposed antennas such that they are vertically centered about the face horizontal member. Install existing and proposed RRUS and TMAs behind the antennas.**



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

■ ASSUMPTIONS AND CONDITIONS

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

This analysis assumes the following:

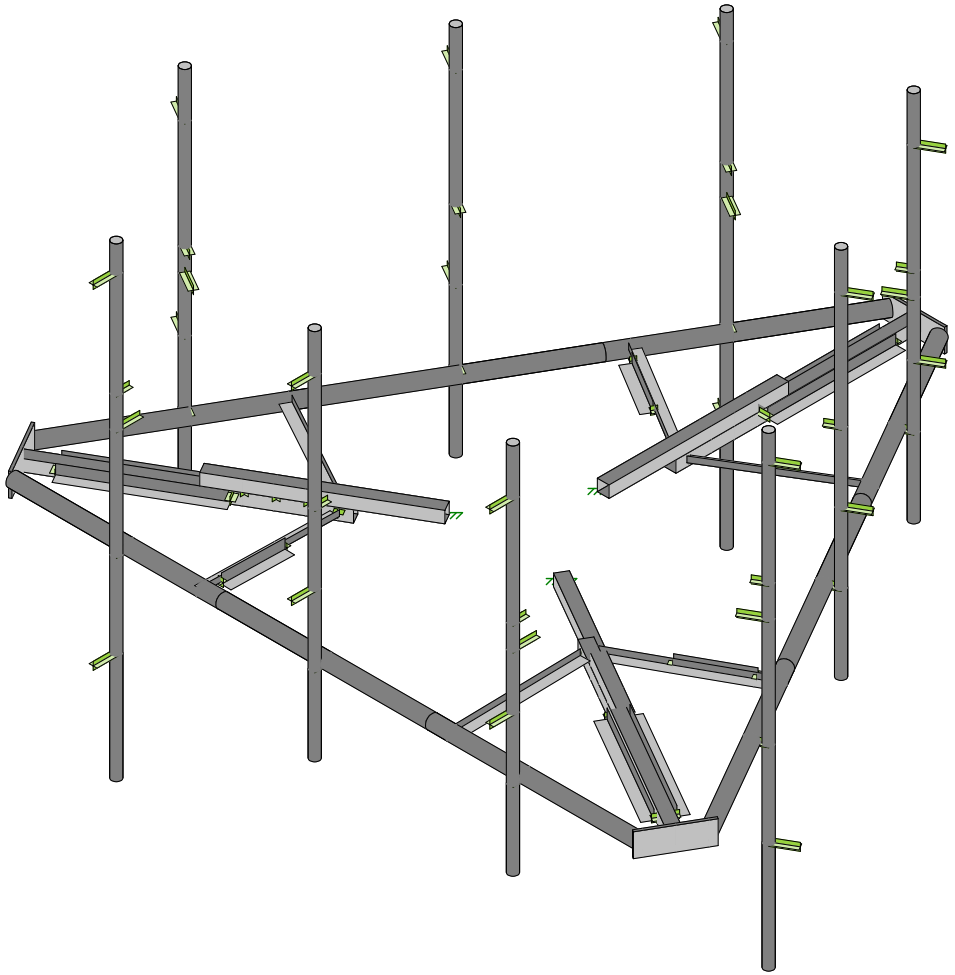
1. The tower or other superstructure and mounts (if existing) were properly constructed as per the original design and have been properly maintained in accordance with applicable code standards.
2. Member sizes and strengths are accurate as supplied or are assumed as stated in the calculations.
3. In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

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

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

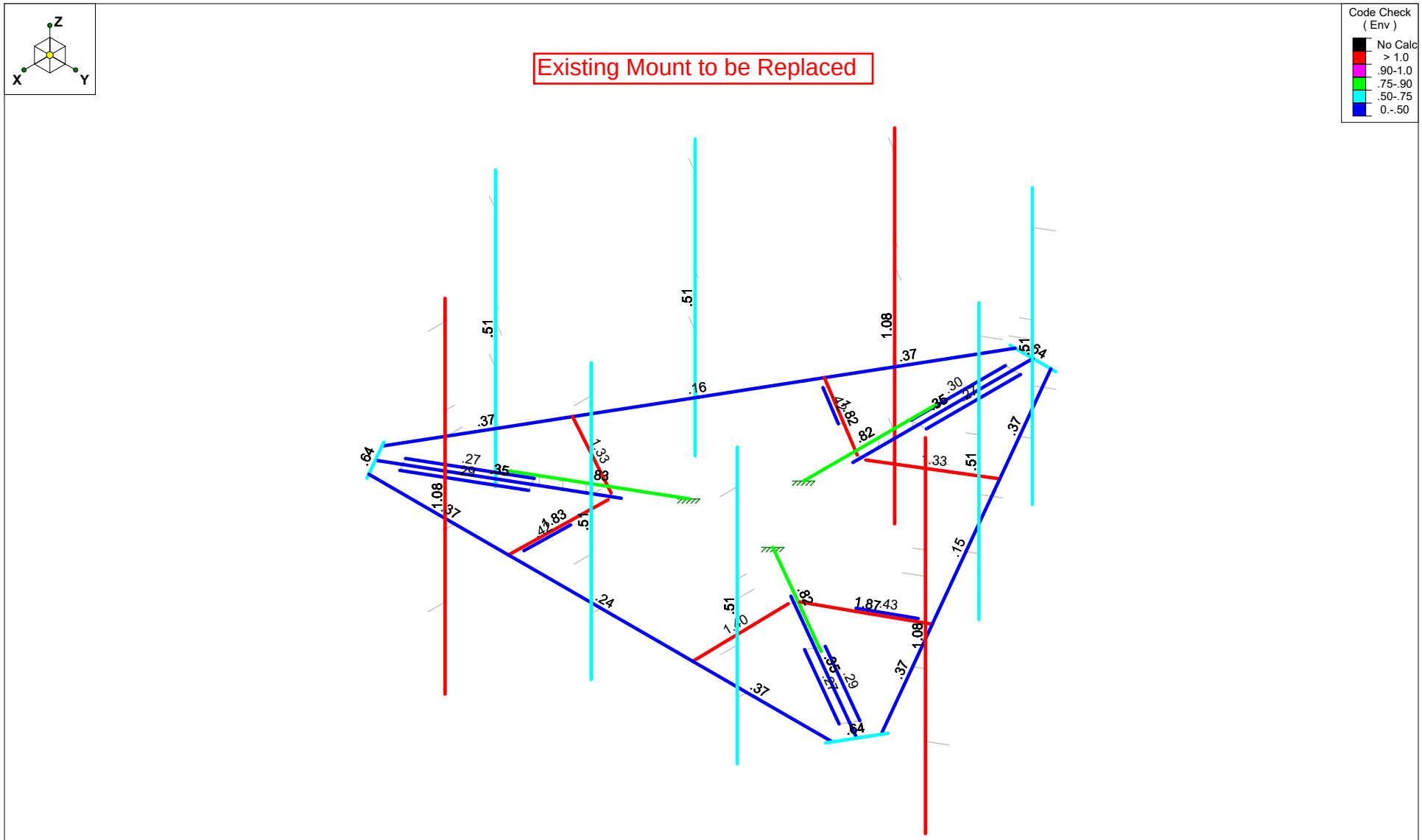
It is not possible to have the fully detailed information necessary to perform a complete and thorough analysis of every structural sub-component of an existing structure. The structural analysis by CLS Engineering PLLC verifies the adequacy of the primary members of the structure. CLS Engineering PLLC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

Existing Mount to be Replaced



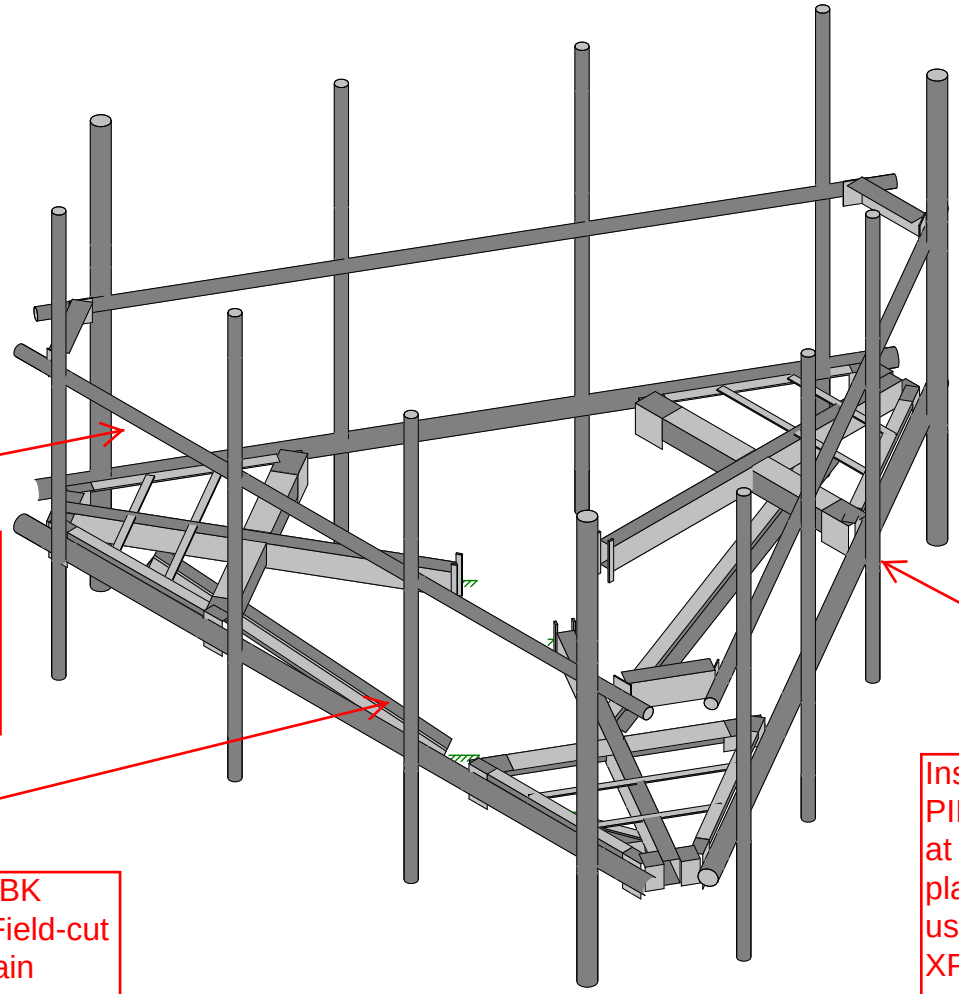
Envelope Only Solution

CLS	41124-12927134-Prospect CT, CT-282660	SK - 0
SMR		Apr 8, 2019 at 6:15 PM
41124-12927134-01-MA	Existing Mount - Rendered	41124-12927134-01-MA.r3d



CLS		SK - 0
SMR	41124-12927134-Prospect CT, CT-282660	Apr 8, 2019 at 6:16 PM
41124-12927134-01-MA	Existing Mount Envelope Unity Check - Bending	41124-12927134-01-MA.r3d

Replace existing Platform Mount with (1) new Perfect Vison PV-LLP12M-HR-B Platform Mount.



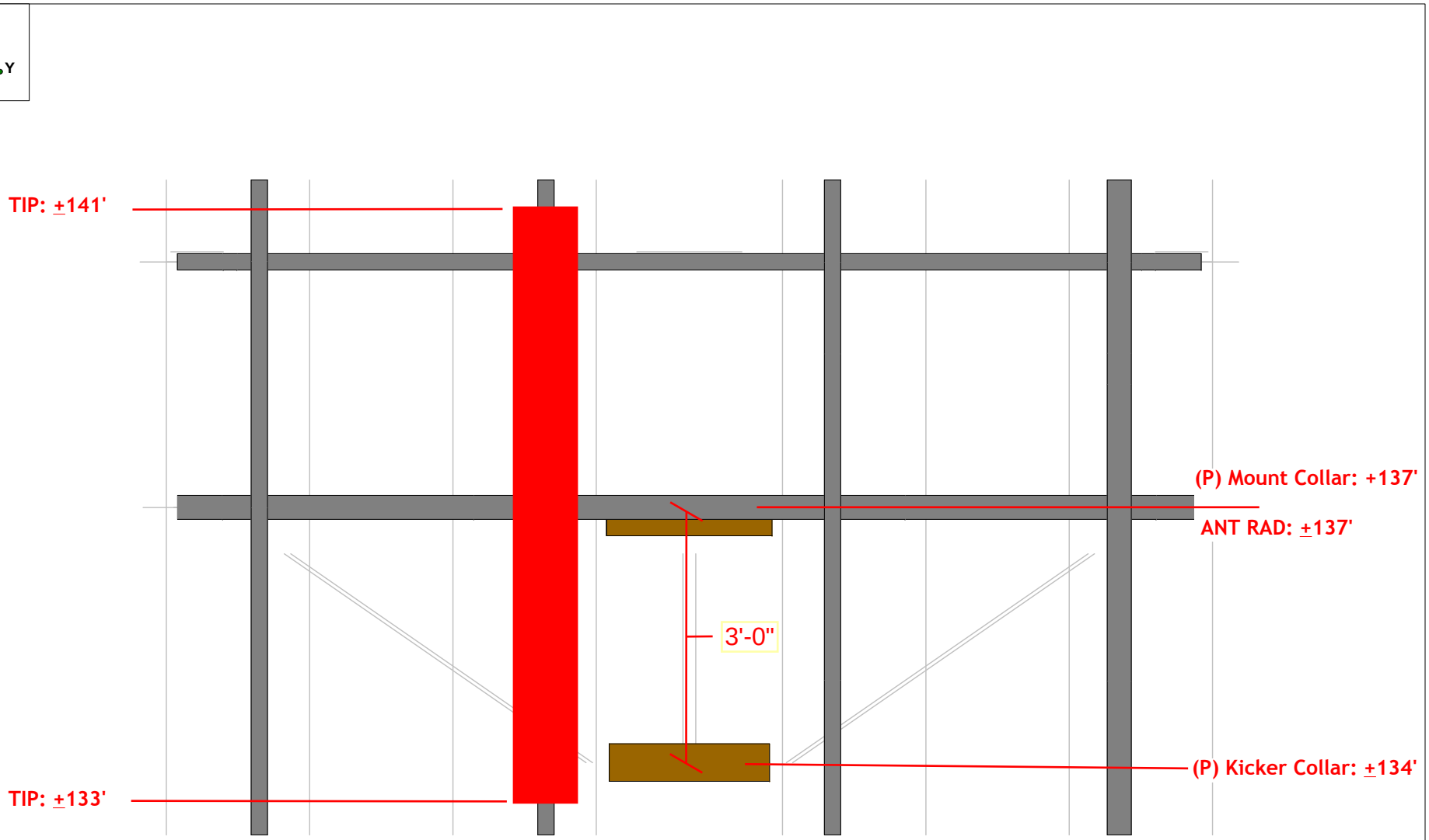
Install support rails 3'-0" above the platform base. Connect to all mount pipes using crossover angles included in proposed platform kit.

Install (1) Perfect Vision PV-PKBK Monopole Platform Kicker Kit. Field-cut kicker angle as required. Maintain minimum bolt edge distance. Connect kicker kit to (1) proposed Perfect Vision PV-RM1045 Monopole Collar.

Install (4) Perfect Vision PIPE-278X126 antenna mount pipes at each sector (12 total). Connect to platform base horizontal member using (12) Perfect Vision PV-XP-2530-HD crossover brackets such that they are equidistant from each other as shown in the assembly drawings.

Envelope Only Solution

CLS		SK - 0
SMR	41124-12927134-Prospect CT, CT-282660	Apr 12, 2019 at 11:07 AM
41124-12927134-01-MA	Proposed Mount - Rendered	41124-12927134-01-MR.r3d



CLS		SK - 0
SMR	41124-12927134-Prospect CT, CT-282660	Apr 12, 2019 at 10:32 AM
41124-12927134-01-MA	Installation Sketch	41124-12927134-01-MR Collar.r3d

PV-LPP
L.I.F.E. MOUNT™ LOW PROFILE PLATFORM

TABLE 1: PLATFORM CONFIGURATIONS

PART NUMBER	DESCRIPTION	MIN POLE OD	MAX POLE OD	WEIGHT (LBS)	INCLUDED PARTS									
					PIPE-312X150	PIPE-312X174	PIPE-238X150	PIPE-238X174	PV-RM1045	PV-RM3060	PV-LPP12-01	PV-LPP14-01	PV-LPPH	PV-PHK12-B
PV-LPP12M-B	12'6" FACE PLATFORM	10"	34"	1267	3	-	-	-	1	-	3	-	1	0
PV-LPP14M-B	14'6" FACE PLATFORM	10"	35"	1365	-	3	-	-	1	-	-	3	1	0
PV-LPP14L-B	14'6" FACE PLATFORM, LARGE POLE	33"	60"	1370	-	3	-	-	-	1	3	-	1	0
PV-LPP12M-HR-B	12'6" FACE PLATFORM W/ HANDRAIL	10"	34"	1522	3	-	3	-	1	-	3	-	1	1
PV-LPP14M-HR-B	14'6" FACE PLATFORM W/ HANDRAIL	10"	35"	1641	-	3	-	3	1	-	-	3	1	1
PV-LPP14L-HR-B	14'6" FACE PLATFORM W/ HANDRAIL, LARGE POLE	33"	60"	1647	-	3	-	3	-	1	3	-	1	1

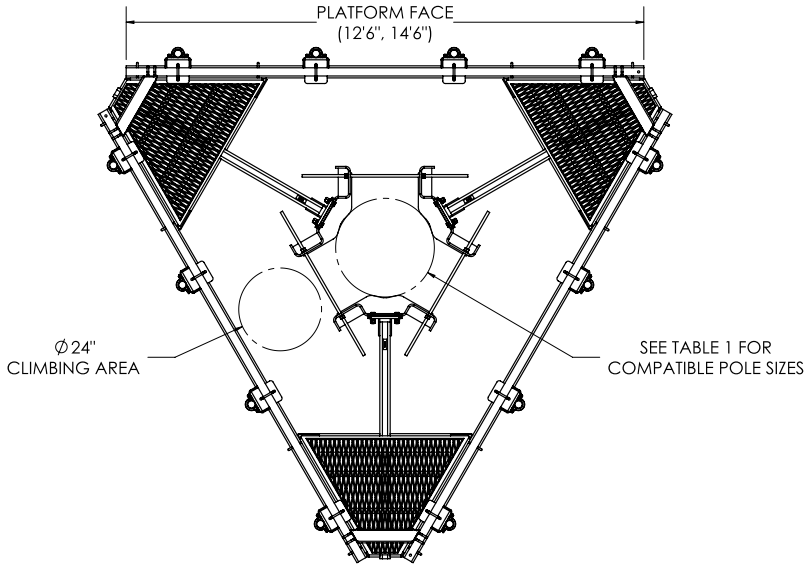


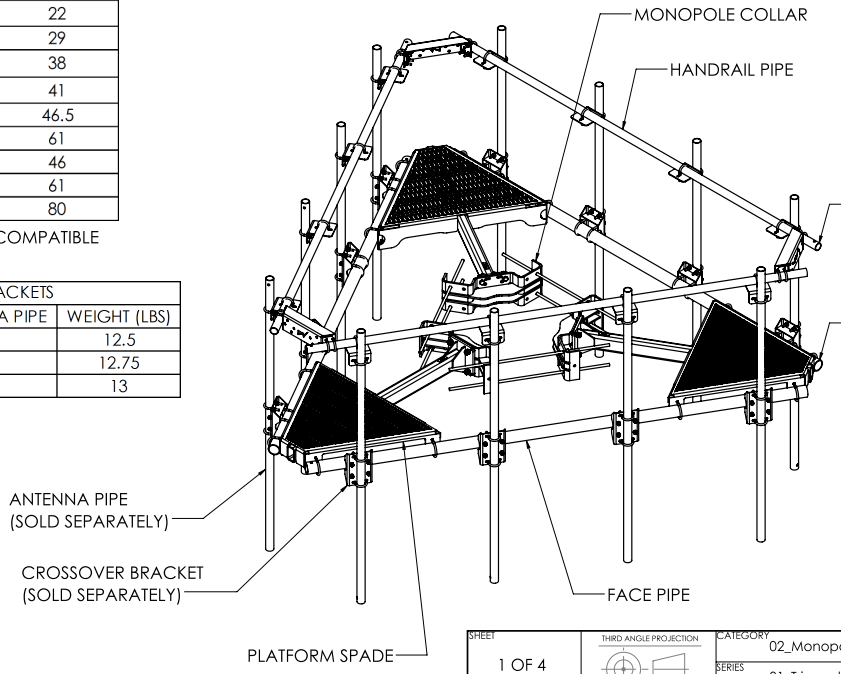
TABLE 2: ANTENNA PIPE OPTIONS***

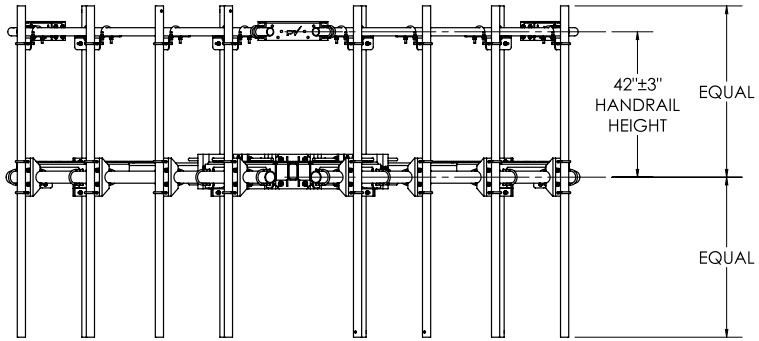
OD	LENGTH	ANTENNA PIPE	WEIGHT (LBS)
2-3/8"	72"	PIPE-238X72	22
	96"	PIPE-238X96	29
	126"	PIPE-238X126	38
2-7/8"	84"	PIPE-278X84	41
	96"	PIPE-278X96	46.5
	126"	PIPE-278X126	61
3-1/2"	72"	PIPE-312X72	46
	96"	PIPE-312X96	61
	126"	PIPE-312X126	80

***PLATFORM WITH HANDRAIL KITS ARE COMPATIBLE WITH 2-3/8" OD HANDRAIL PIPE ONLY

TABLE 3: CROSSOVER BRACKETS

PART NUMBER	COMPATIBLE ANTENNA PIPE	WEIGHT (LBS)
PV-XP-2030-HD	2-3/8" OD	12.5
PV-XP-2530-HD	2-7/8" OD	12.75
PV-XP-3030-HD	3-1/2" OD	13





FALL-SAFE L.I.F.E. MOUNTS™

SHEET: 1 OF 4	THIRD ANGLE PROJECTION	CATEGORY: 02_Monopole	7	UPDATED LOADING, TEMPLATE	1/16/18
		SERIES: 01_Triangular	6	VZW LOADING	1/19/17
3/13/2018	SCALE: 1:36	TYPE: PV-LPP_LIFE Mount	5	HEAVY-5 LOADING	6/13/16
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE±1/4°, BEND±2° ALL OTHERS: ±1/16"		BY: DJN	4	L.I.F.E. MOUNT™ UPDATE	2/22/16
		CHECKED: SJS	3	REDESIGNED COLLAR	12/30/15
		STATUS: APPROVED	REV	DESCRIPTION	DATE

PERFECTVISION MANUFACTURING

L.I.F.E. MOUNT™ LOW PROFILE PLATFORM

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

MOUNT CLASSIFICATIONS:

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

MOUNT CLASSIFICATION INFORMATION:

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

APPROVED MOUNT CLASSIFICATIONS*

APPROVED MOUNT CLASSIFICATIONS (4 PIPE)						
		REQUIRED EXTREME WIND LOAD (LBS)				
		700	750	1150	1550	1800
REQUIRED EXTREME ICE LOAD (LBS)	0	M750R(0)-4[6]	M750R(0)-4[6]	M1150R(0)-4[6]	M1550R(0)-4[6]	M1800R(0)-4[6]
	600	M750R(600)-4[6]	M750R(600)-4[6]	M1150R(600)-4[6]	M1550R(600)-4[6]	M1800R(600)-4[6]
	800	M750R(800)-4[6]	M750R(800)-4[6]	M1150R(800)-4[6]	M1550R(800)-4[6]	M1800R(800)-4[6]
	1100	M750R(1100)-4[6]	M750R(1100)-4[6]	M1150R(1100)-4[6]	M1550R(1100)-4[6]	M1800R(1100)-4[6]
	1250	M750R(1250)-4[6]	M750R(1250)-4[6]	M1150R(1250)-4[6]	M1550R(1250)-4[6]	M1800R(1250)-4[6]

- HEAVY-5

APPLIES TO ALL PV-LPP12M, PV-LPP14M, AND PV-LPP14L SERIES PLATFORMS WITH ANTENNAS AND APPURTENANCES SYMMETRICALLY MOUNTED ABOUT THE PLATFORM CENTERLINE.

POLE THICKNESS LIMITATIONS:

ON POLES WITH WALL THICKNESS EQUAL TO OR GREATER THAN THE VALUES LISTED BELOW, THE PERFECT VISION PV-LPP MOUNT SERIES IS STRUCTURALLY CAPABLE OF SUPPORTING THE ABOVE LOADING SCENARIOS WITHOUT THE NEED FOR AN ADDITIONAL KICKER BRACE.

FOR THIN WALL POLES, USE PV-PKBK PLATFORM KICKER BRACE TO AVOID POLE CRIMPING FAILURES. KICKER BRACE CAN BE INSTALLED ABOVE OR BELOW PLATFORM.

POLE THICKNESS LIMITATIONS	
MOUNT CLASSIFICATION	MINIMUM POLE THICKNESS
M750R-4[6]	1/4"
M800R-4[6]	1/4"
M900R-4[6]	1/4"
M950R-4[6]	1/4"
M1000R-4[6]	5/16"
M1400R-4[6]	5/16"
M1000R(i)-4[6]	5/16"
M1150R(i)-4[6]	5/16"

PLATFORM EPA:

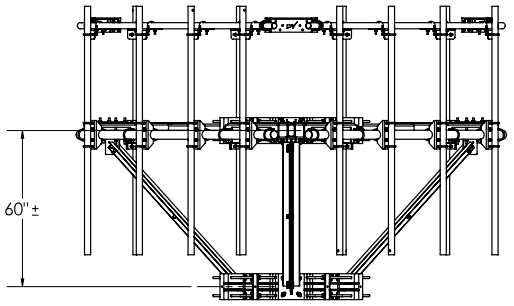
PLATFORM EPA		
PLATFORM TYPE	NO ICE (FT^2)	1/2" RADIAL ICE (FT^2)
12'6" FACE	20.3*	25.8*
12'6" FACE WITH HANDRAIL	34.4**	43.0**
14'6" FACE	22.1*	28.1*
14'6" FACE WITH HANDRAIL	36.8**	46.2**

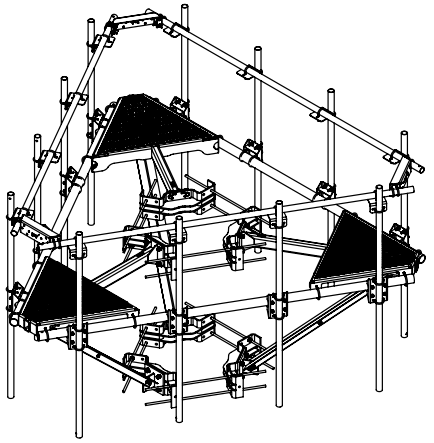
*DOES NOT INCLUDE CROSSOVER PLATES OR ANTENNA PIPES
**DOES NOT INCLUDE ANTENNA PIPES

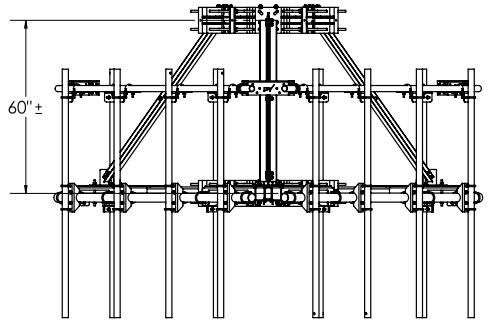
KICKER ATTACHMENT:

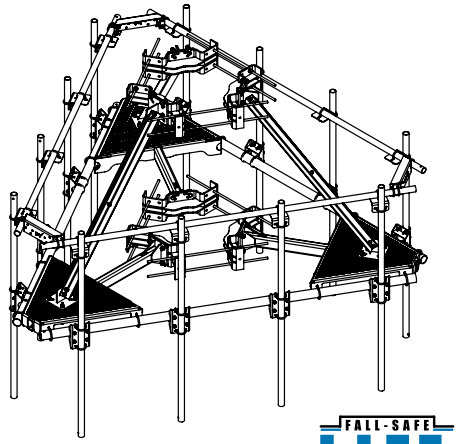
SEE CLASSIFICATIONS SECTION FOR KICKER REQUIREMENT DETAILS.

INSTALL KICKER ABOVE OR BELOW PLATFORM









FALL-SAFE L.I.F.E. MOUNTS™

SHEET 2 OF 4	THIRD ANGLE PROJECTION	CATEGORY 02_Monopole	7	UPDATED LOADING, TEMPLATE	1/16/18
		SERIES 01_Triangular	6	VZW LOADING	1/19/17
3/13/2018	SCALE 1:48	TYPE PV-LPP_LIFE Mount	5	HEAVY-5 LOADING	6/13/16
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE±1/4°, BEND±2° ALL OTHERS: ±1/16"		BY DJN	4	L.I.F.E. MOUNT™ UPDATE	2/22/16
		CHECKED SJS	3	REDESIGNED COLLAR	12/30/15
		STATUS APPROVED	REV	DESCRIPTION	DATE

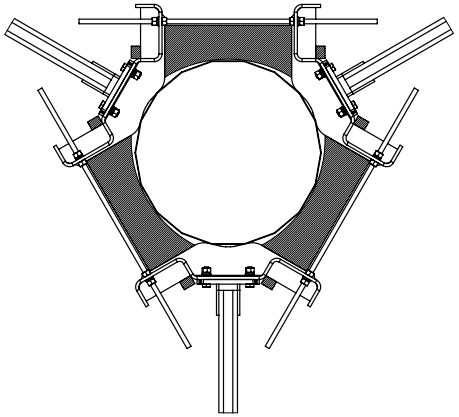
PERFECT VISION MANUFACTURING

L.I.F.E. MOUNT™ LOW PROFILE PLATFORM

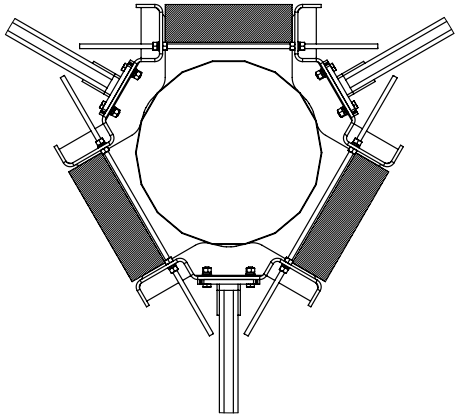
DOCUMENT NUMBER LPP-ENG-01-R7 | REV 7

SAFETY CLIMB ROUTING:

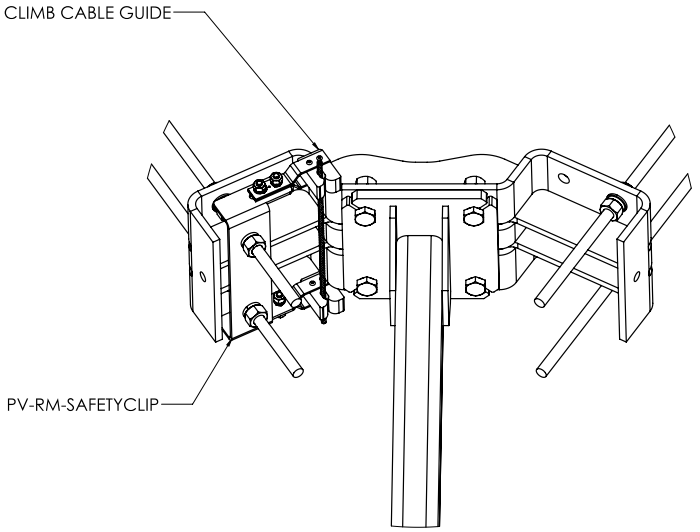
CABLE GUIDES AND PV-RM-SAFETYCLIP SOLD SEPARATELY.



SAFETY CLIMB CABLE
RECOMMENDED ROUTING
(ALL THREAD IN EXTERIOR HOLES)



SAFETY CLIMB CABLE
RECOMMENDED ROUTING
(ALL THREAD IN INTERIOR HOLES)



SAFETY CLIMB CABLE GUIDE ATTACHMENT
IF RING MOUNT IS TO BE INSTALLED ON THE SAFETY CLIMB FACE, USE THE RECOMMENDED ROUTING AS SHOWN

SHEET: 3 OF 4	THIRD ANGLE PROJECTION	CATEGORY: 02_Monopole	7	UPDATED LOADING, TEMPLATE	1/16/18
		SERIES: 01_Triangular	6	VZW LOADING	1/19/17
3/13/2018	SCALE: NTS	TYPE: PV-LPP_LIFE Mount	5	HEAVY-5 LOADING	6/13/16
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE±1/4°, BEND±2° ALL OTHERS: ±1/16"		BY: DJN	4	L.I.F.E. MOUNT™ UPDATE	2/22/16
		CHECKED: SJS	3	REDESIGNED COLLAR	12/30/15
		STATUS: APPROVED	REV	DESCRIPTION	DATE

FALL-SAFE L.I.F.E. MOUNTS™

PERFECT VISION® MANUFACTURING

L.I.F.E. MOUNT™ LOW PROFILE PLATFORM

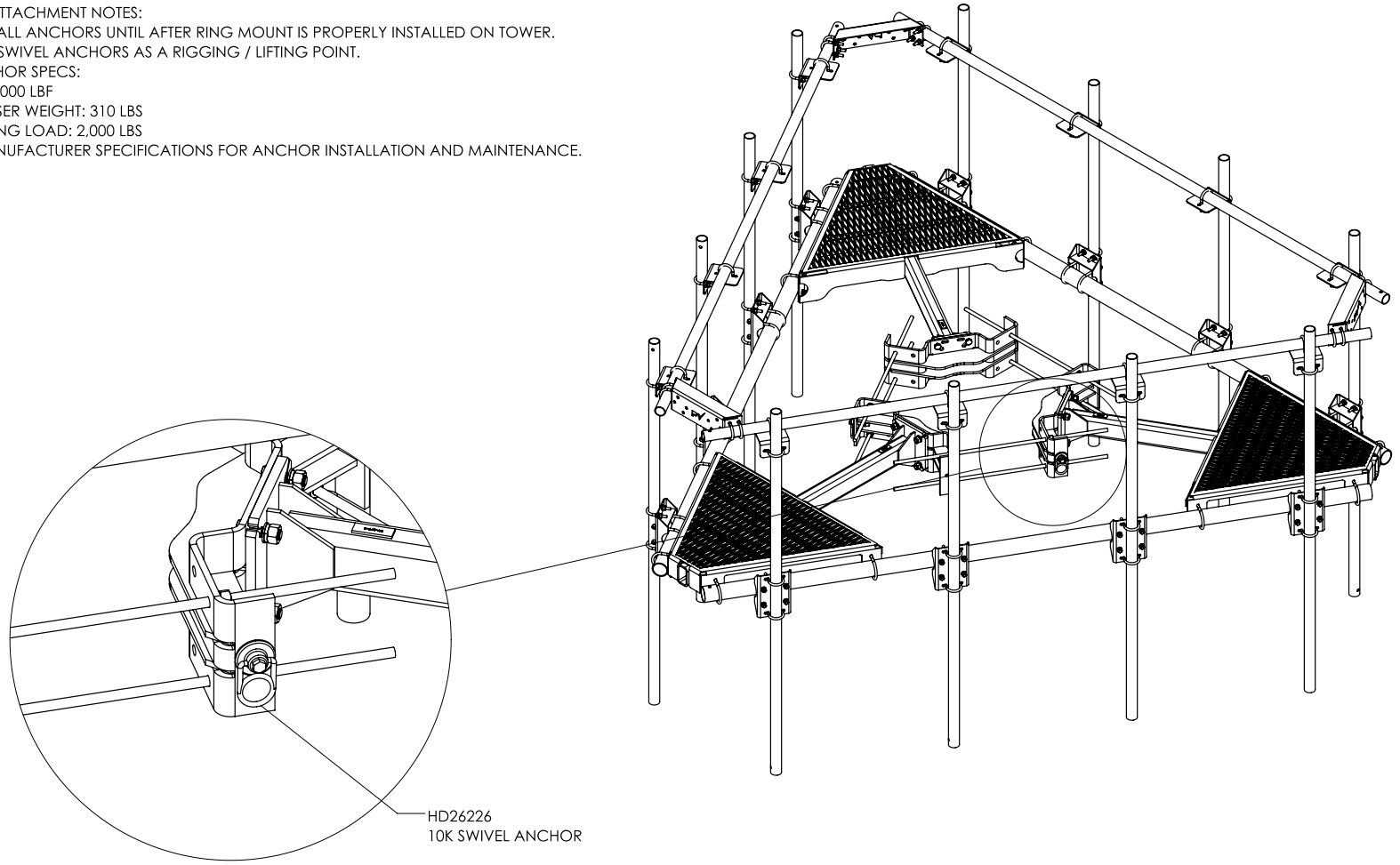
DOCUMENT NUMBER: LPP-ENG-01-R7

REV: 7

10K SWIVEL ANCHOR

SWIVEL ANCHOR ATTACHMENT NOTES:

- DO NOT INSTALL ANCHORS UNTIL AFTER RING MOUNT IS PROPERLY INSTALLED ON TOWER.
- DO NOT USE SWIVEL ANCHORS AS A RIGGING / LIFTING POINT.
- SWIVEL ANCHOR SPECS:
  - UTS: 10,000 LBF
  - MAX USER WEIGHT: 310 LBS
  - WORKING LOAD: 2,000 LBS
- FOLLOW MANUFACTURER SPECIFICATIONS FOR ANCHOR INSTALLATION AND MAINTENANCE.



DETAIL A
SCALE 1 : 8

SHEET: 4 OF 4	THIRD ANGLE PROJECTION	CATEGORY: 02_Monopole	7	UPDATED LOADING, TEMPLATE	1/16/18
		SERIES: 01_Triangular	6	VZW LOADING	1/19/17
3/13/2018	SCALE: 1:24	TYPE: PV-LPP_LIFE Mount	5	HEAVY-5 LOADING	6/13/16
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE±1/4°, BEND±2° ALL OTHERS: ±1/16"		BY: DJN	4	L.I.F.E. MOUNT™ UPDATE	2/22/16
		CHECKED: SJS	3	REDESIGNED COLLAR	12/30/15
		STATUS: APPROVED	REV	DESCRIPTION	DATE

FALL-SAFE L.I.F.E. MOUNTS™

PERFECT VISION MANUFACTURING

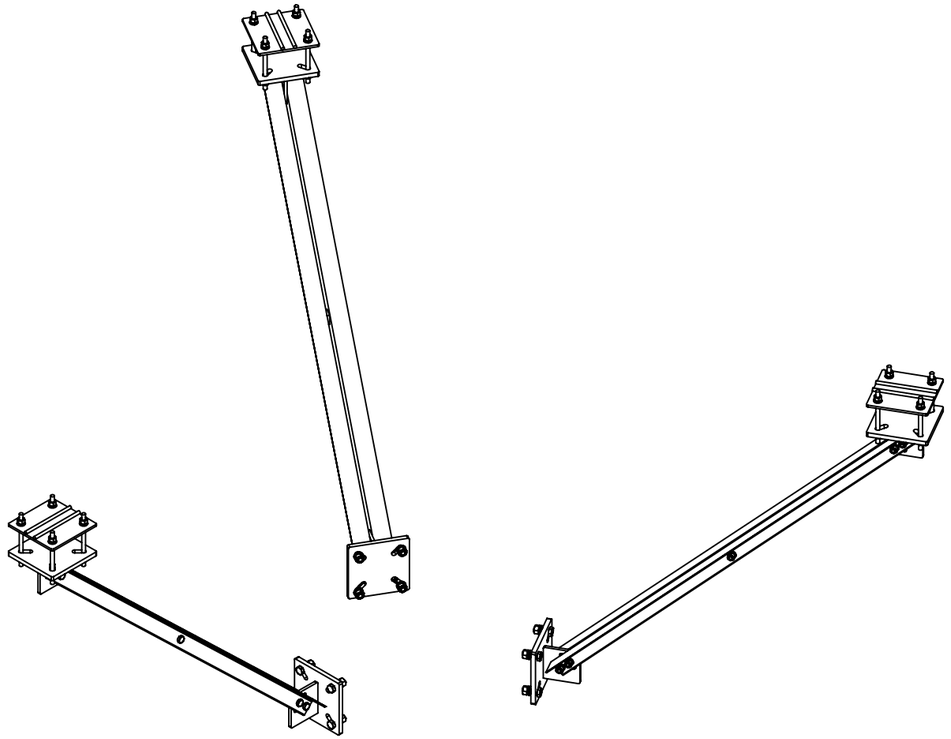
L.I.F.E. MOUNT™ LOW PROFILE PLATFORM

DOCUMENT NUMBER: LPP-ENG-01-R7

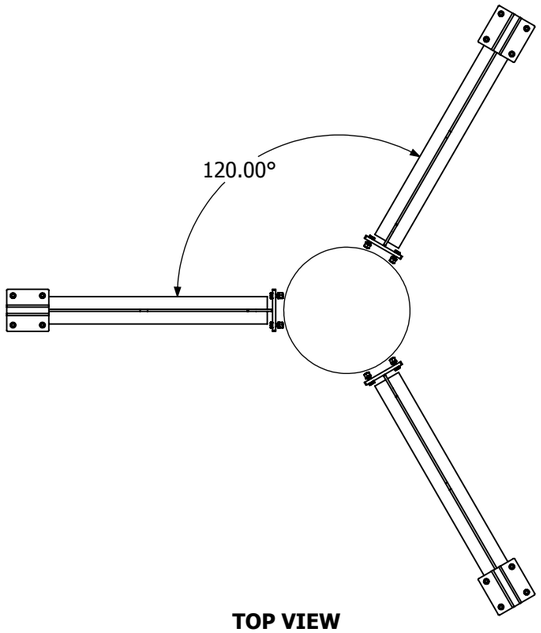
REV: 7

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

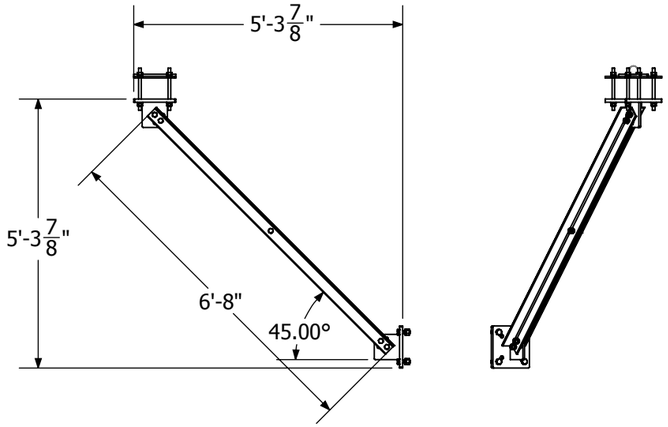
MONOPOLE PLATFORM KICKER
PV-PKBK



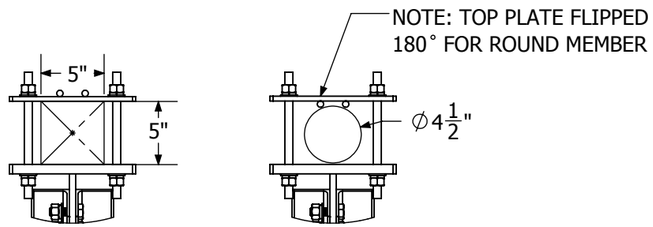
MONOPOLE PLATFORM KICKER
WEIGHT: 355 LBS



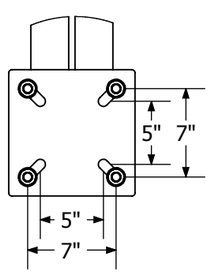
TOP VIEW



SIDE VIEW



PLATFORM ARM ATTACHMENT
CLAMPS TO RECT HSS UP TO 5"X5" AND ROUND PIPE UP TO 4-1/2" OD



COLLAR ATTACHMENT

PERFECT VISION MANUFACTURING
16101 La Grande Dr.
Little Rock, AR 72223
(630)-201-4012

STAMP:

REVISIONS:

NO.	DATE	DESCRIPTION	BY	CHK	APD
0	7/21/15	INITIAL RELEASE	DJN	AM	SS
1					
2					
3					
4					
5					

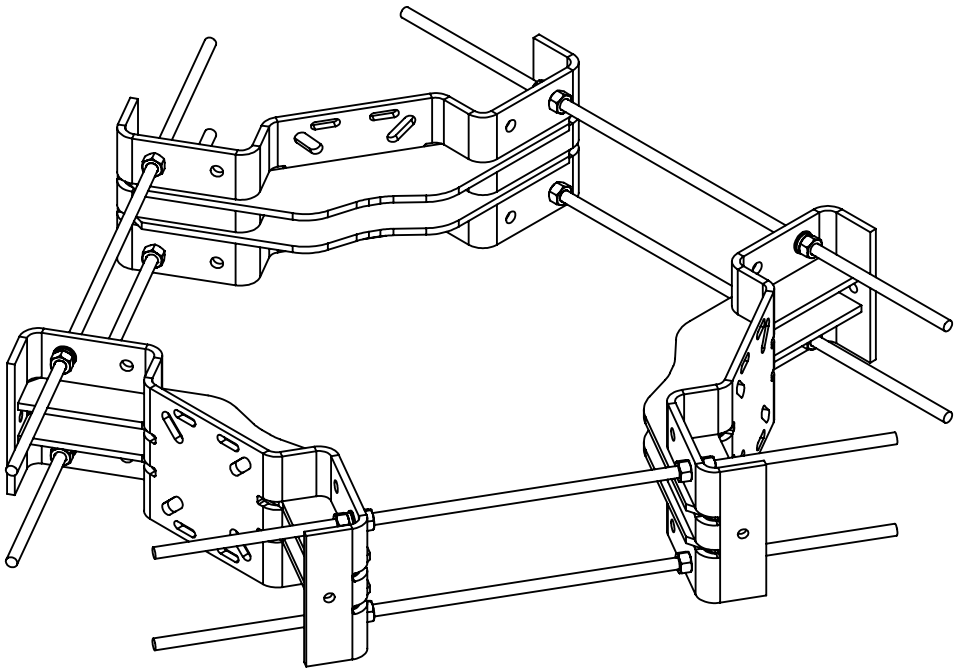
SITE INFORMATION:

DESIGN TYPE:
MONOPOLE
PLATFORM KICKER

SHEET TITLE:
ENGINEERING DETAIL

SHEET TITLE:	REVISION:
E-1	0

ITEM NO.	PART #	DESCRIPTION	REV.	QTY.
1	H02-0012-10	3/4" A563DH GALVANIZED NUT	0	24
2	H03-0012-02	3/4" DIA. F436 HARDENED GALVANIZED WASHER	0	12
3	H04-0012-01	3/4" SPRING LOCK WASHER	0	12
4	H15-2075-04	3/4"Dia x 4' x 10TPI Anchor Rod - A193-B7 HDG	0	6
5	W097-039-01	P10 - MONOPOLE COLLAR MOUNT - SMALL 3 SECTOR WELDMENT	3	3
6	P097-000-30	P10 - INSTALLATION INSTRUCTIONS - RING MOUNT	0	1



PART #: PV-RM1045	P10 - MONOPOLE COLLAR - 10"-45" POLE - 3 SECTOR			
PERFECTVISION MANUFACTURING	FILE: PV-RM1045 REV 2.SLDDRW			SCALE : 1:12
	PAGE NUMBER	REVISION	DRAWN BY	DATE: 7/8/2016
	1 OF 2	2	DJN	ASSEMBLY WEIGHT = 311.94 LBS.

Wind & Ice Loading

Nominal Mount Elevation (AGL), z_{mount}	137 ft	**K_a**	0.90
Nominal Rad Elevation (AGL), z_{rad}	137 ft	**K_d**	0.95
Elevation AMSL (ft)	-	**K_e**	-
TIA Standard	G	**K_z**	1.08
Basic Wind Speed, V_{ult} (bare)	125 mph	**K_{zt}**	1.00
Basic Wind Speed, V (ice)	50 mph	**K_s**	-
Design Ice Thickness, t_i	3/4 in	**t_{iz}**	1.73 in
Exposure Category	B	**G_h**	1.00
Risk Category	II	**q_z (bare)**	41.1 psf
Seismic Response Coeff., C_s	-	**q_z (ice)**	6.6 psf

Live Loading

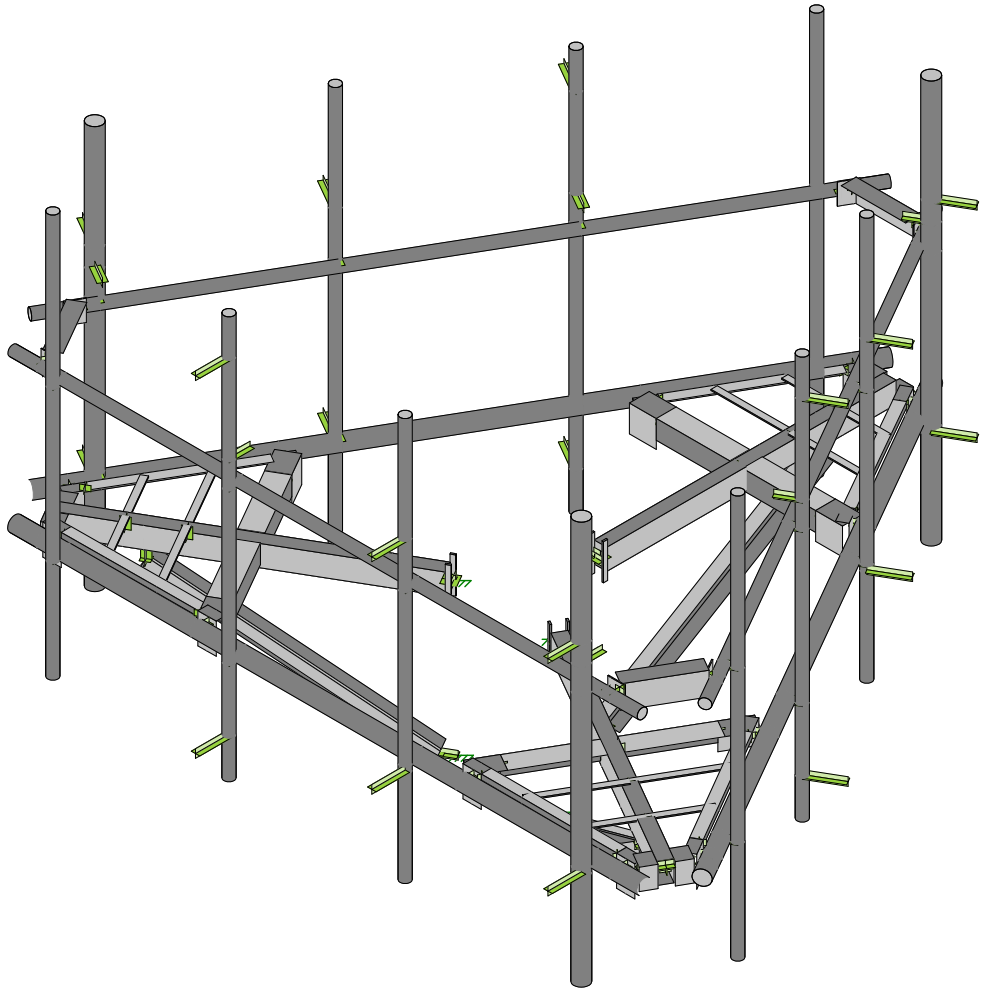
At Mount Pipes, L_M	500 lb
Joint Labels Considered	M1
	M2
	M3

Member Distributed Loading

Section Set Label	Shape Label	F_A (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Offsett Tube	HSS5x3x3/8"	30.82	2.42	14.42
End Plate Angle	L5x4x0.25	30.82	2.42	15.51
Grating Angle 2	L6.4x4.750x0.25	39.44	2.52	18.40
Grating Angle 4	L7.25x2.375x0.25	44.68	2.58	16.35
Grating Angle 3	L2.375x1.25x0.25	14.64	3.63	9.33
Grating PL 2	PL1.50x0.25	9.24	2.95	6.01
Grating Angle 1	L4.75x4.5x0.25	29.27	2.40	15.85
Platform Horizontal Pipe	PIPE_3.0	12.94	4.12	11.05
Proposed Mount Pipe	PIPE_3.0	12.94	4.12	11.05
Mount Pipe	PIPE_2.0	8.78	3.45	8.67
Support Rail	PIPE_2.0	8.78	3.45	8.67
MOD Stabilizer	L3X3X3	18.49	2.27	11.48
Conn. PL	PL8.5x3/8	52.39	7.08	15.59
SR Conn Plate	PL5x0.1875	30.82	5.01	10.63
SR Conn Angle	L5.50X3.5625X3	33.90	2.45	15.59

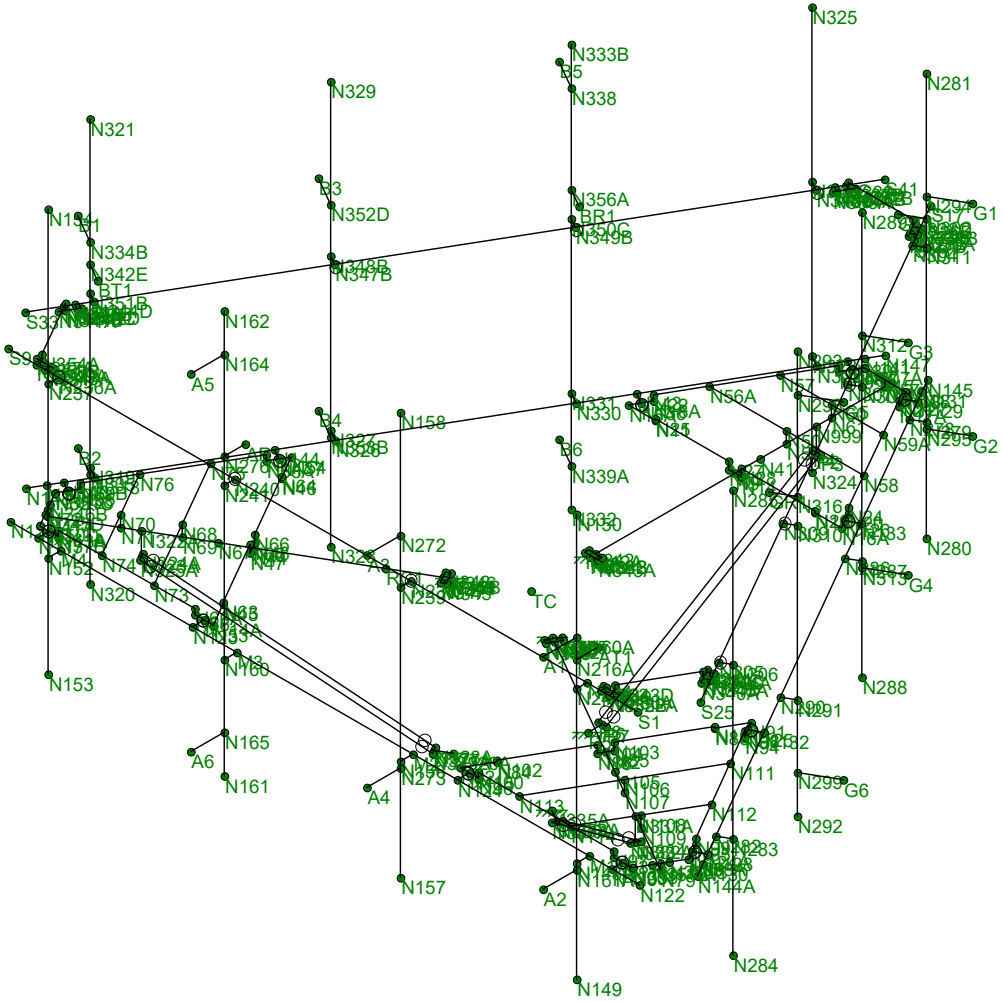
Appurtenances

Appurtenance Model	Status	Azimuth Offset (°, ↻)	Rad Elev. Override (ft)	Swap Width & Depth	Area Factor		Qty. per Azimuth			Total Qty. Override	0° Joints		120° Joints		240° Joints		Height (in)	Width (in)	Depth (in)	Weight (Bare) (lb)	Shape	Weight of Ice (lb)	EPA_A (Bare) (ft^2)		EPA_A (Ice) (ft^2)		F_A (Bare) (lb)		F_A (Ice) (lb)	
					Front	Side	0°	120°	240°		1	2	1	2	1	2							N	T	N	T	N	T	N	T
APXVAARR24_43-U-NA20				☐			1	1	1		A5	A6	B5	B6	G5	G6	0	0	0	153.3	Generic	389.44	14.67	5.32	17.30	7.64	542.47	196.72	102.35	45.19
AIR32 DB B66AA B2A				☐			1	1	1		A1	A2	B1	B2	G1	G2	56.6	12.9	8.7	105.8	Flat	158.50	6.51	4.71	8.54	6.64	240.72	174.25	50.54	39.26
AIR 21, 1.3 M, B2A B4P				☐			1	1	1		A3	A4	B3	B4	G3	G4	56	12	8	83	Flat	144.94	6.05	4.36	8.04	6.24	223.70	161.06	47.58	36.94
KRY 112 144/1				☐		0.5	1	1	1		AT1		BT1		GT1		7	6	3	11	Flat	10.99	0.35	0.09	0.82	0.28	12.94	3.24	4.88	1.67
RADIO 4449 B12/B71				☐			1	1	1		AR1		BR1		GR1		15	13.2	10.4	75	Flat	59.51	1.65	1.30	2.56	2.13	61.01	48.07	15.16	12.61
Intelligent Backhaul Radio 1300 Series				☐			1				RC1						10.24	7.87	3.54	8.82	Flat	25.96	0.67	0.31	1.29	0.80	24.83	11.33	7.65	4.73



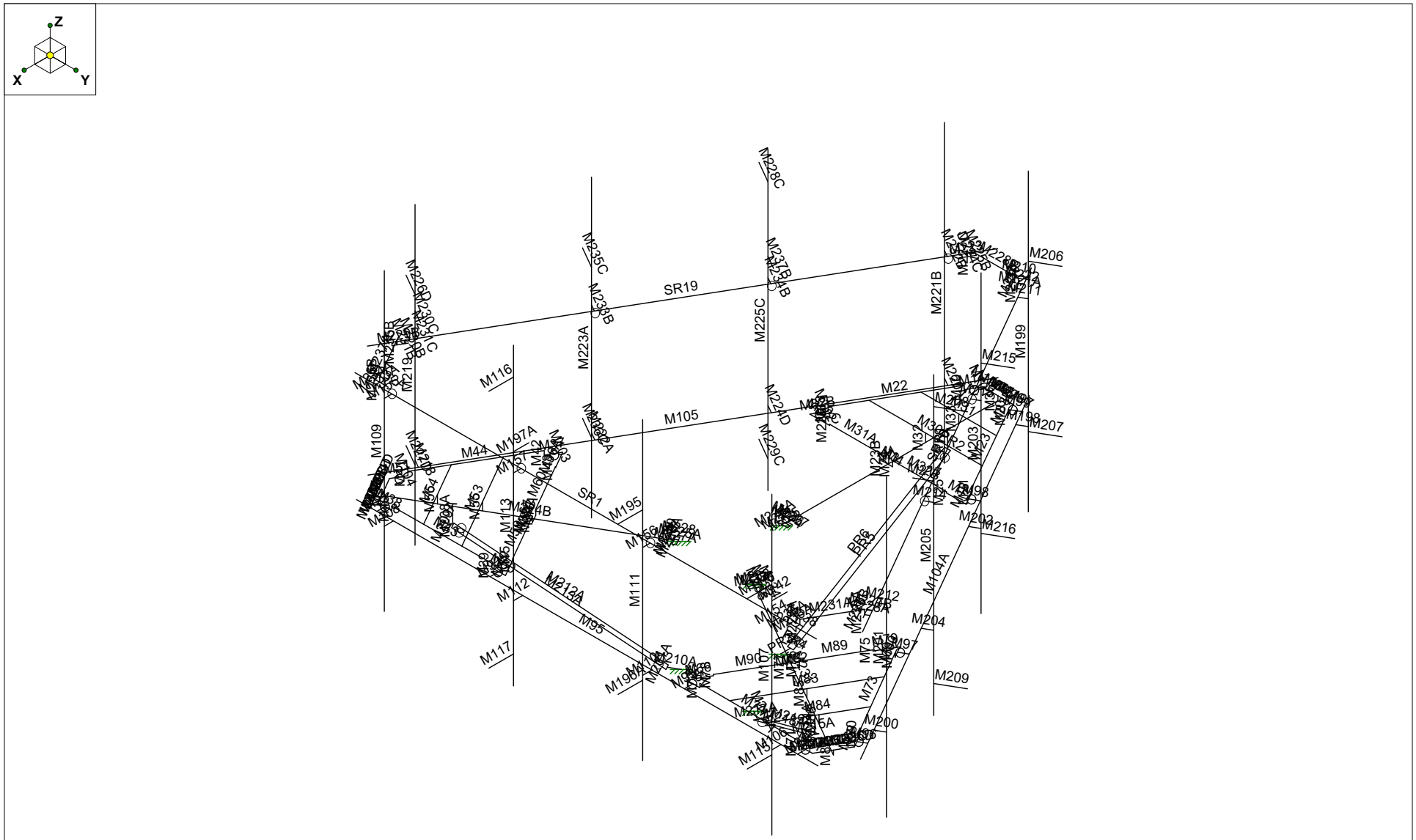
Envelope Only Solution

CLS	41124-12927134-Prospect CT, CT-282660	SK - 1
SMR		July 3, 2019 at 11:45 AM
41124-12927134-01-MR-R1	Rendered	41124-12927134-01-MR-R1.r3d



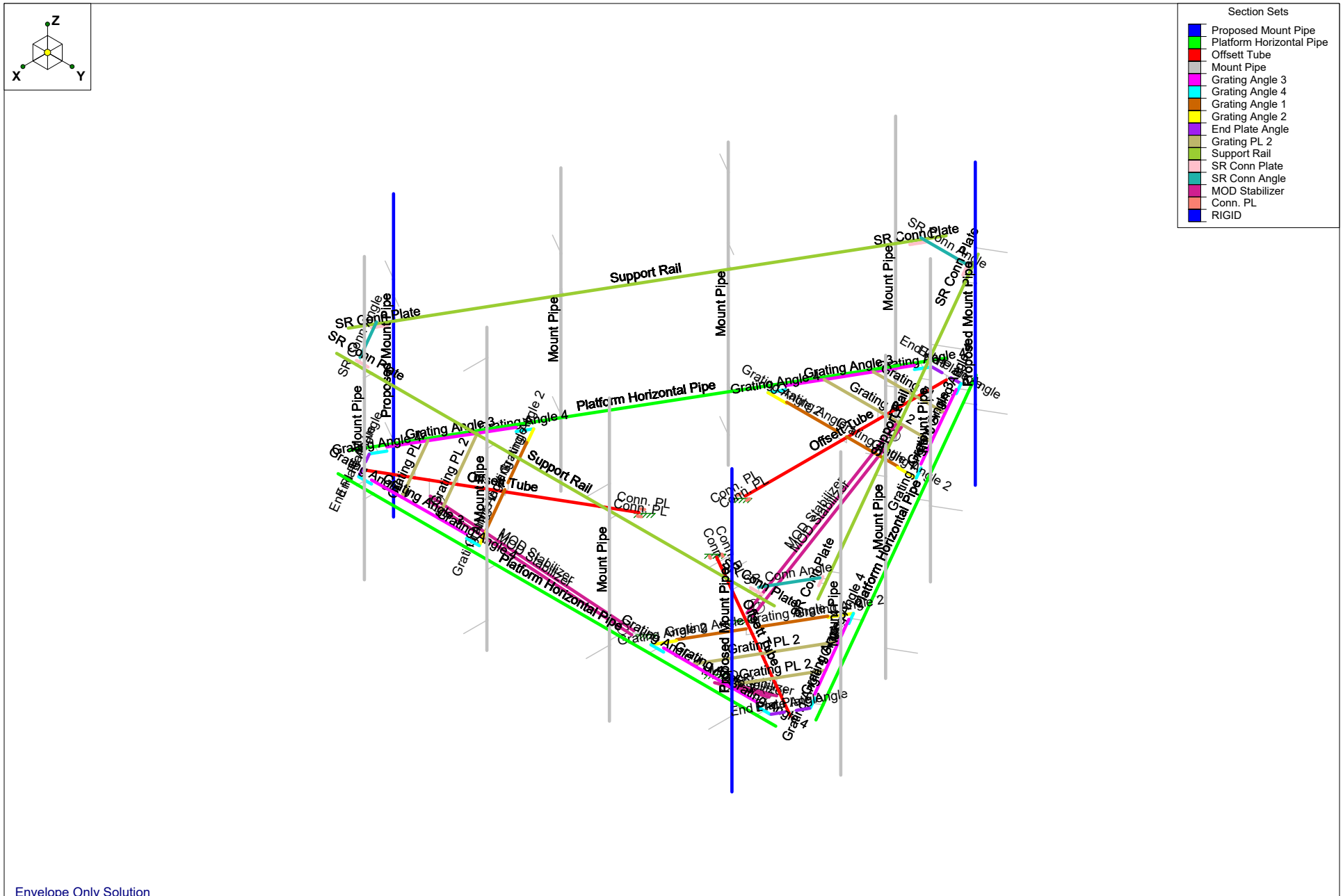
Envelope Only Solution

CLS	41124-12927134-Prospect CT, CT-282660	SK - 2
SMR		July 3, 2019 at 11:45 AM
41124-12927134-01-MR-R1	Joint Labels	41124-12927134-01-MR-R1.r3d



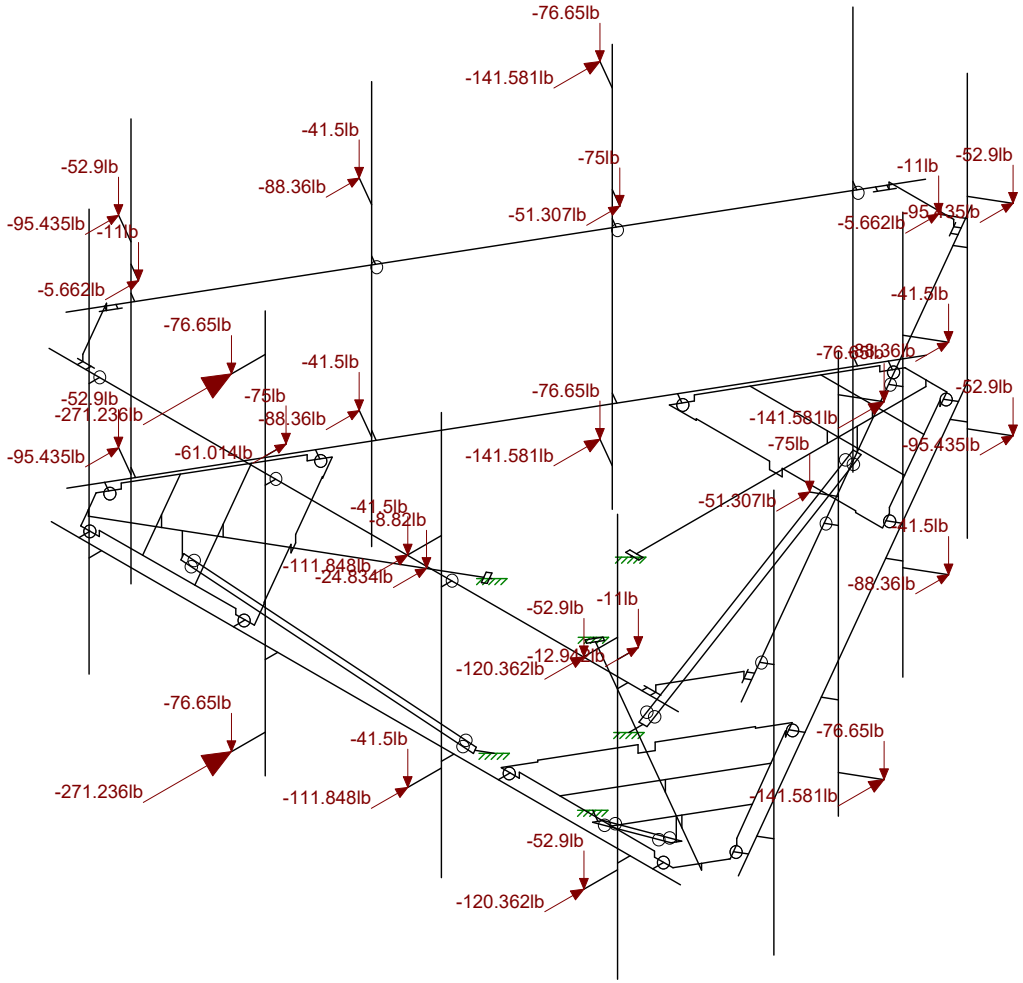
Envelope Only Solution

CLS	41124-12927134-Prospect CT, CT-282660	SK - 3
SMR		July 3, 2019 at 11:45 AM
41124-12927134-01-MR-R1	Member Labels	41124-12927134-01-MR-R1.r3d



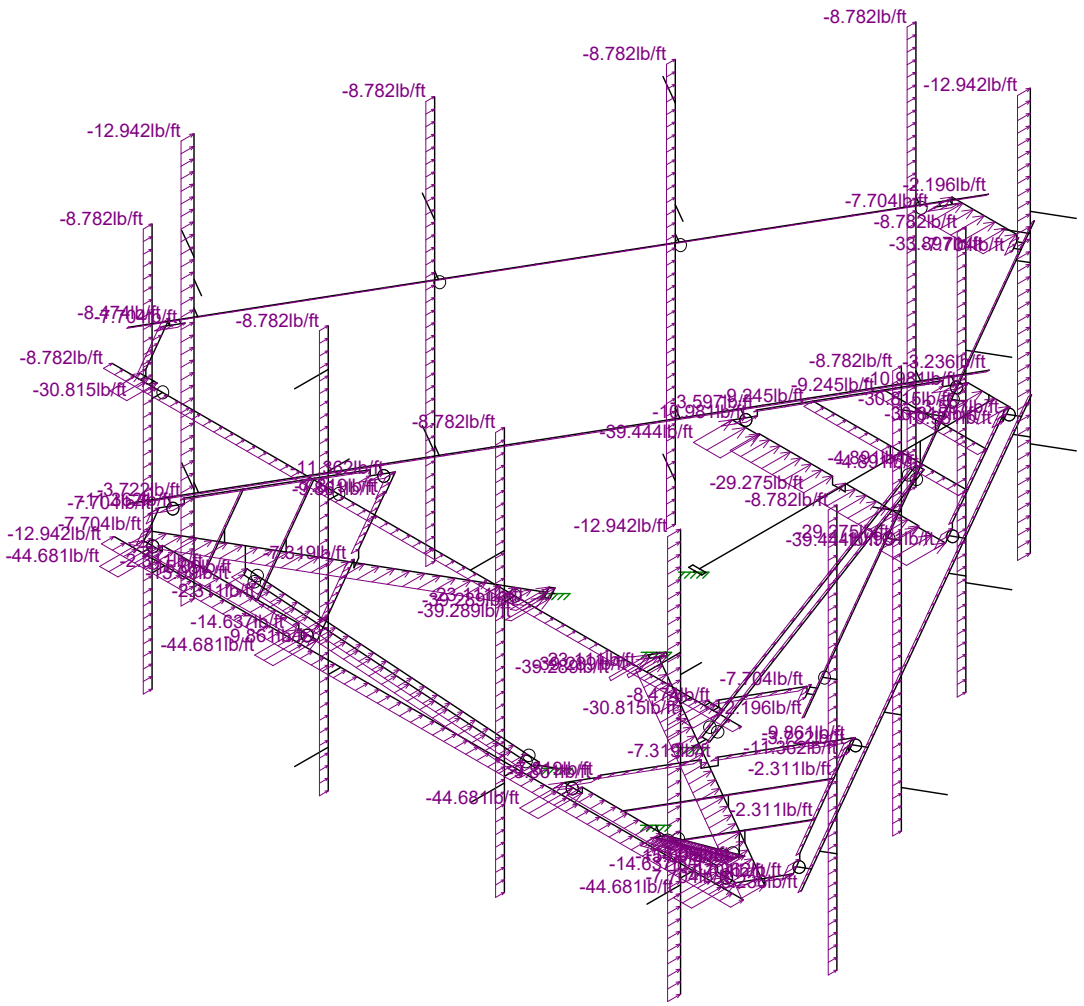
Envelope Only Solution

CLS	41124-12927134-Prospect CT, CT-282660	SK - 4
SMR		July 3, 2019 at 11:46 AM
41124-12927134-01-MR-R1	Section Sets	41124-12927134-01-MR-R1.r3d



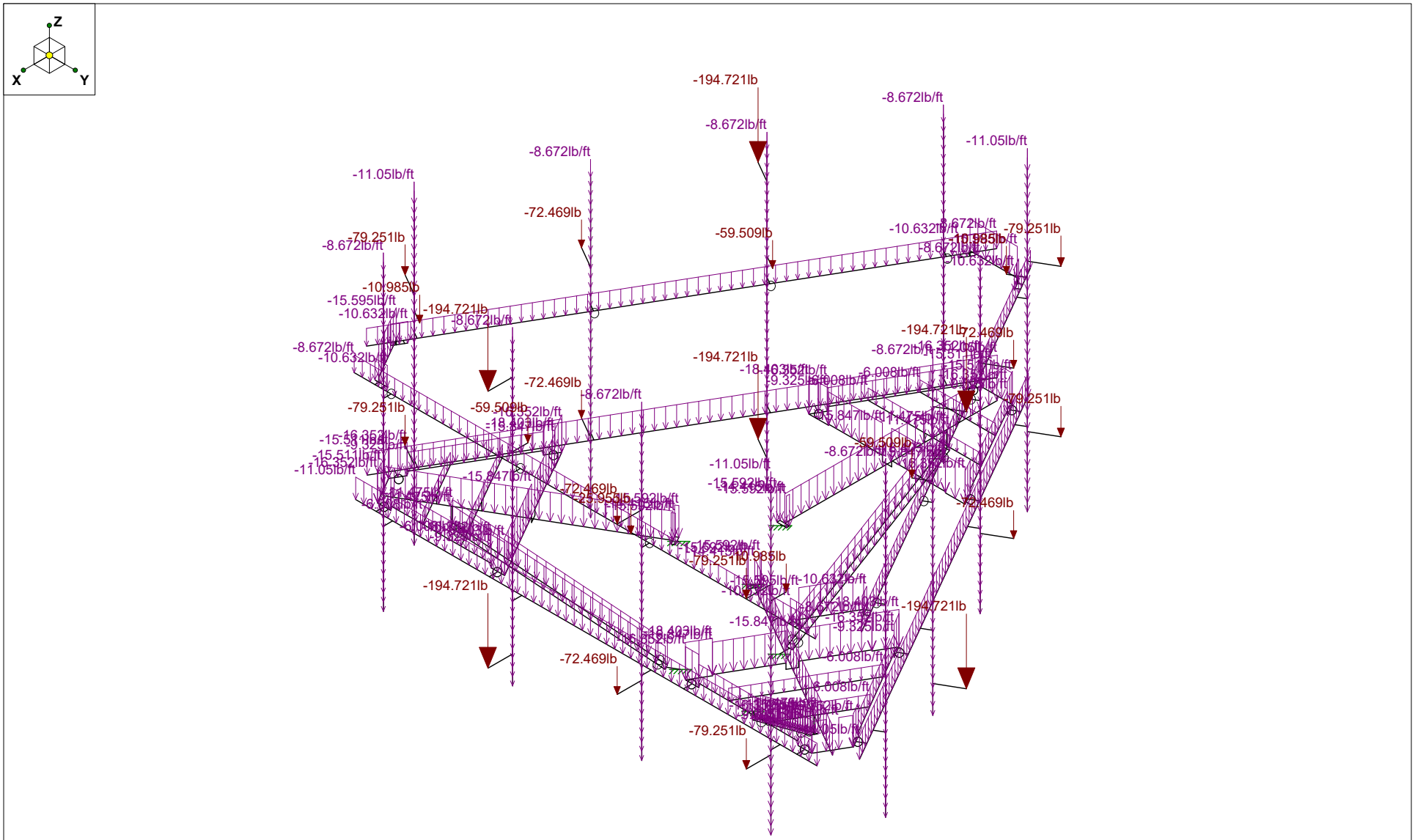
Loads: LC 1, DISPLAY (1.0D + 1.0W_0°)
Envelope Only Solution

CLS	41124-12927134-Prospect CT, CT-282660	SK - 5
SMR		July 3, 2019 at 11:46 AM
41124-12927134-01-MR-R1	Joint Loads - Dead and Normal Wind	41124-12927134-01-MR-R1.r3d



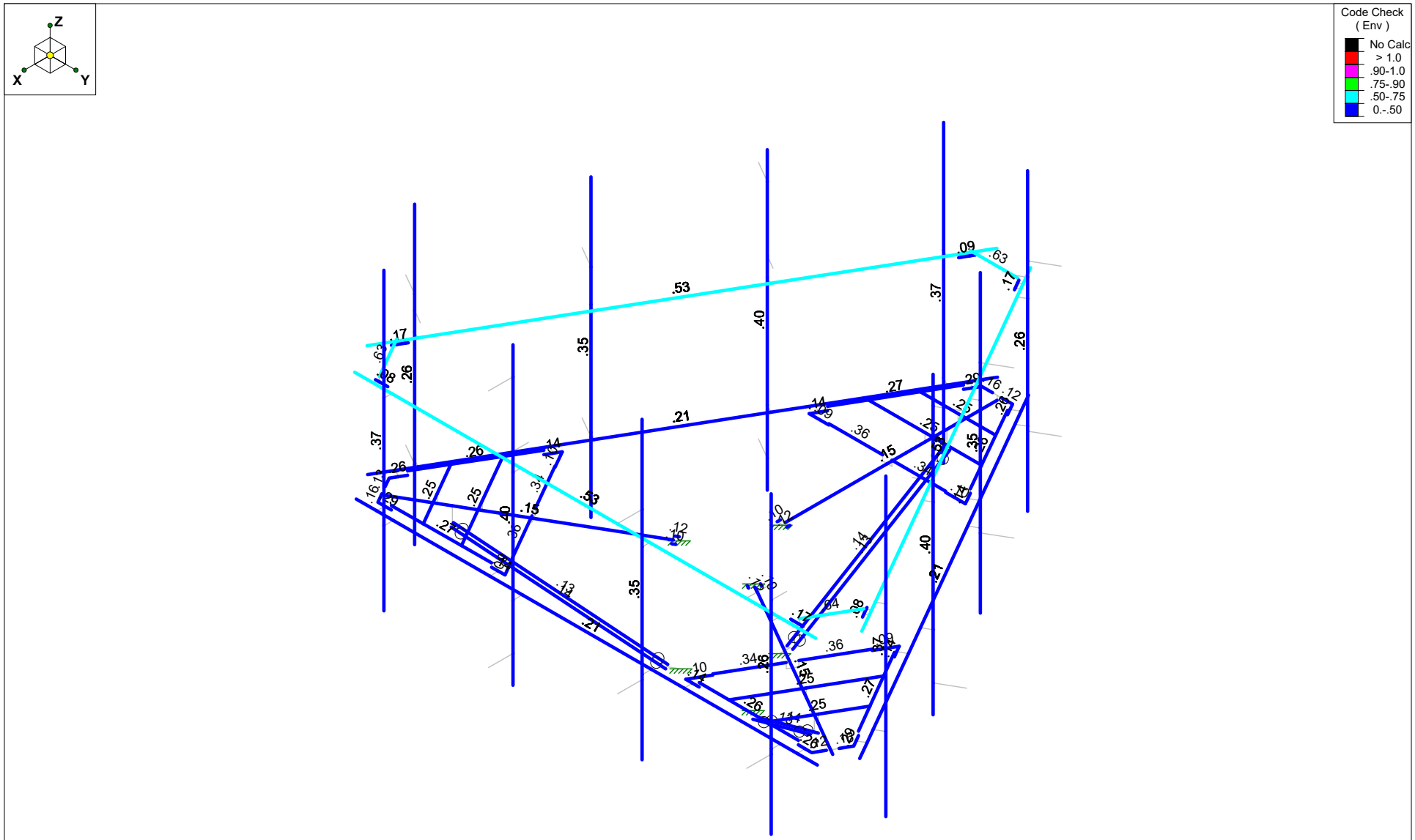
Loads: BLC 4, Structure Wind 0°
Envelope Only Solution

CLS	41124-12927134-Prospect CT, CT-282660	SK - 6
SMR		July 3, 2019 at 11:46 AM
41124-12927134-01-MR-R1	Distributed Load - Normal Wind	41124-12927134-01-MR-R1.r3d



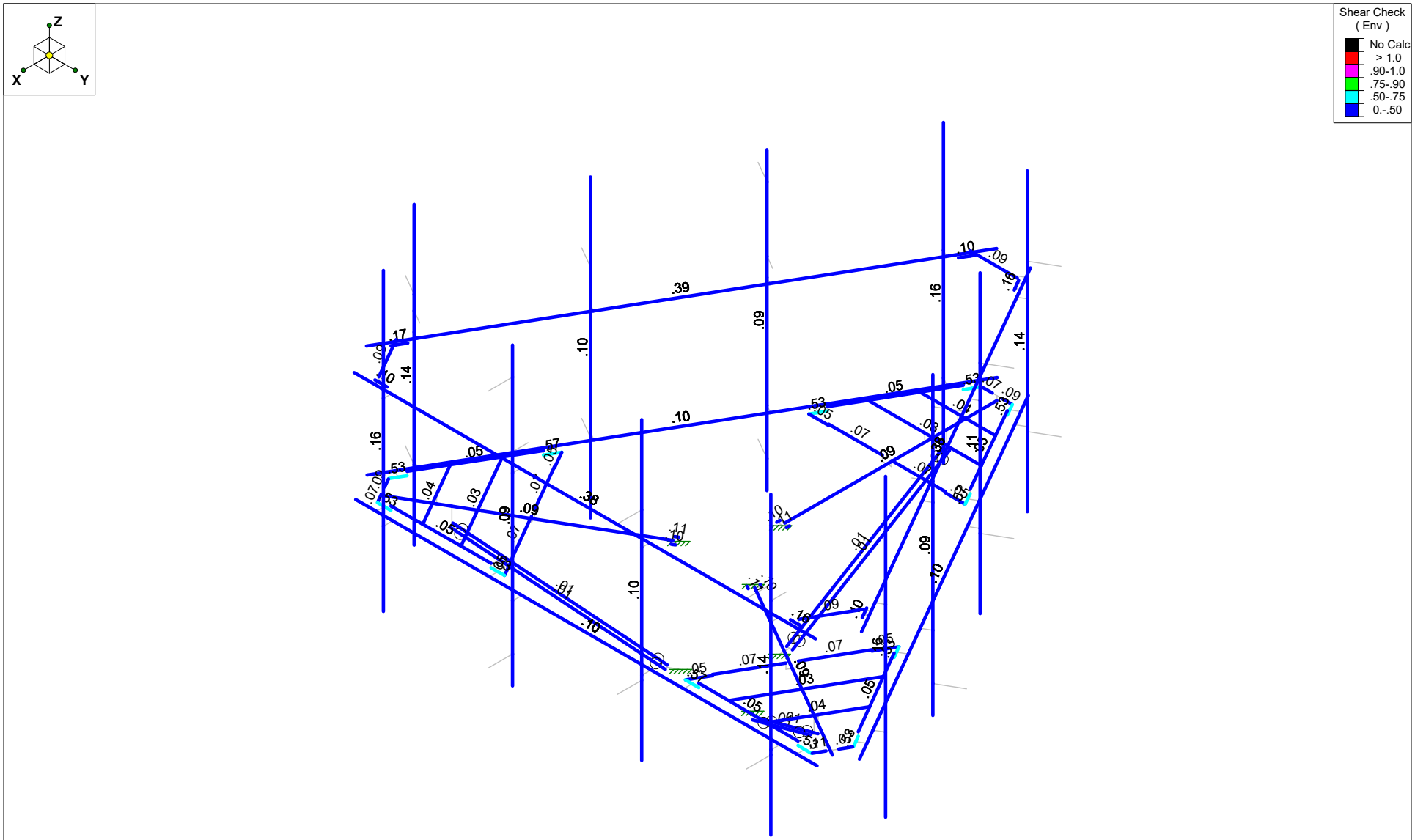
Loads: BLC 2, Ice Dead
Envelope Only Solution

CLS	41124-12927134-Prospect CT, CT-282660	SK - 7
SMR		July 3, 2019 at 11:46 AM
41124-12927134-01-MR-R1	Ice Dead Loads	41124-12927134-01-MR-R1.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

CLS	41124-12927134-Prospect CT, CT-282660	SK - 8
SMR		July 3, 2019 at 11:46 AM
41124-12927134-01-MR-R1	Envelope Member Unity Check Results - Bending	41124-12927134-01-MR-R1.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

CLS		SK - 9
SMR	41124-12927134-Prospect CT, CT-282660	July 3, 2019 at 11:47 AM
41124-12927134-01-MR-R1	Envelope Member Check Results - Shear	41124-12927134-01-MR-R1.r3d

Basic Load Cases

	BLC Description	Category	X Gravi..	Y Gravi..	Z Gravity	Joint	Point	Distributed	Area(Member)	Surfac...
1	Dead	DL			-1	25				
2	Ice Dead	RL				25		84		
4	Structure Wind 0°	None						81		
5	Structure Wind 30°	None						142		
6	Structure Wind 45°	None						168		
7	Structure Wind 60°	None						162		
8	Structure Wind 90°	None						71		
9	Structure Wind 120°	None						162		
10	Structure Wind 135°	None						168		
11	Structure Wind 150°	None						142		
12	Structure Wind w/ Ice 0°	None						81		
13	Structure Wind w/ Ice 30°	None						142		
14	Structure Wind w/ Ice 45°	None						168		
15	Structure Wind w/ Ice 60°	None						162		
16	Structure Wind w/ Ice 90°	None						71		
17	Structure Wind w/ Ice 120°	None						162		
18	Structure Wind w/ Ice 135°	None						168		
19	Structure Wind w/ Ice 150°	None						142		
20	Antenna Wind 0°	None				25				
21	Antenna Wind 30°	None				50				
22	Antenna Wind 45°	None				50				
23	Antenna Wind 60°	None				50				
24	Antenna Wind 90°	None				25				
25	Antenna Wind 120°	None				50				
26	Antenna Wind 135°	None				50				
27	Antenna Wind 150°	None				50				
28	Antenna Wind w/ Ice 0°	None				25				
29	Antenna Wind w/ Ice 30°	None				50				
30	Antenna Wind w/ Ice 45°	None				50				
31	Antenna Wind w/ Ice 60°	None				50				
32	Antenna Wind w/ Ice 90°	None				25				
33	Antenna Wind w/ Ice 120°	None				50				
34	Antenna Wind w/ Ice 135°	None				50				
35	Antenna Wind w/ Ice 150°	None				50				
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	.061	20	.061	O...	1.5												
36	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	5	.061	21	.061	O...	1.5												
37	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	6	.061	22	.061	O...	1.5												
38	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	7	.061	23	.061	O...	1.5												
39	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	8	.061	24	.061	O...	1.5												
40	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	9	.061	25	.061	O...	1.5												
41	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	10	.061	26	.061	O...	1.5												
42	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	11	.061	27	.061	O...	1.5												
43	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	4	-.061	20	-.061	O...	1.5												
44	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	5	-.061	21	-.061	O...	1.5												
45	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	6	-.061	22	-.061	O...	1.5												
46	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	7	-.061	23	-.061	O...	1.5												
47	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	8	-.061	24	-.061	O...	1.5												
48	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	9	-.061	25	-.061	O...	1.5												
49	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	10	-.061	26	-.061	O...	1.5												
50	1.2D + 1.5Lm_1 +...	Y...	Y		DL	1.2	11	-.061	27	-.061	O...	1.5												
51	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	4	.061	20	.061	O...	1.5												
52	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	5	.061	21	.061	O...	1.5												
53	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	6	.061	22	.061	O...	1.5												
54	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	7	.061	23	.061	O...	1.5												
55	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	8	.061	24	.061	O...	1.5												
56	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	9	.061	25	.061	O...	1.5												
57	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	10	.061	26	.061	O...	1.5												
58	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	11	.061	27	.061	O...	1.5												
59	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	4	-.061	20	-.061	O...	1.5												
60	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	5	-.061	21	-.061	O...	1.5												
61	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	6	-.061	22	-.061	O...	1.5												
62	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	7	-.061	23	-.061	O...	1.5												
63	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	8	-.061	24	-.061	O...	1.5												
64	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	9	-.061	25	-.061	O...	1.5												
65	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	10	-.061	26	-.061	O...	1.5												
66	1.2D + 1.5Lm_2 +...	Y...	Y		DL	1.2	11	-.061	27	-.061	O...	1.5												
67	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	4	.061	20	.061	O...	1.5												
68	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	5	.061	21	.061	O...	1.5												
69	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	6	.061	22	.061	O...	1.5												
70	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	7	.061	23	.061	O...	1.5												
71	1.2D + 1.5Lm_3 +...	Y...	Y		DL	1.2	8	.061	24	.061	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	.061	25	.061	O...	1.5												
73	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	10	.061	26	.061	O...	1.5												
74	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	11	.061	27	.061	O...	1.5												
75	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	4	-.061	20	-.061	O...	1.5												
76	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	5	-.061	21	-.061	O...	1.5												
77	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	6	-.061	22	-.061	O...	1.5												
78	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	7	-.061	23	-.061	O...	1.5												
79	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	8	-.061	24	-.061	O...	1.5												
80	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	9	-.061	25	-.061	O...	1.5												
81	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	10	-.061	26	-.061	O...	1.5												
82	1.2D + 1.5Lm_3 +..	Y...	Y		DL	1.2	11	-.061	27	-.061	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	Proposed Mount Pipe	PIPE_3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Platform Horizontal Pipe	PIPE_3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
3	Offsett Tube	HSS5x3x3/8"	Beam	None	A500 Gr....	Typical	5.438	7.216	16.856	15.248
4	Mount Pipe	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
5	Grating Angle 3	L2.375x1.25x0.25	Beam	None	A36 Gr.36	Typical	.844	.093	.479	.016
6	Grating Angle 4	L7.25x2.375x0.25	Beam	None	A36 Gr.36	Typical	2.344	.789	12.975	.047
7	Grating Angle 1	L4.75x4.5x0.25	Beam	None	A36 Gr.36	Typical	2.25	4.444	5.077	.045
8	Grating Angle 2	L6.4x4.750x0.25	Beam	None	A36 Gr.36	Typical	2.725	5.633	11.713	.055
9	End Plate Angle	L5x4x0.25	Beam	None	A36 Gr.36	Typical	2.188	3.248	5.631	.044
10	Grating PL 2	PL1.50x0.25	Beam	None	A36 Gr.36	Typical	.375	.002	.07	.007
11	Support Rail	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
12	SR Conn Plate	PL5x0.1875	Beam	None	A36 Gr.36	Typical	.938	.003	1.953	.011
13	SR Conn Angle	L5.50X3.5625X3	Beam	None	A36 Gr.36	Typical	1.664	1.848	5.368	.019
14	MOD Stabilizer	L3X3X3	Beam	None	A36 Gr.36	Typical	1.09	.948	.948	.014
15	Conn. PL	PL8.5x3/8	Beam	None	A36 Gr.36	Typical	3.188	.037	19.191	.145
16	Grating Plate 1	PL4.75x0.25	Beam	None	A36 Gr.36	Typical	1.188	.006	2.233	.024
17	Grapting Plate 2	PL6.4x0.25	Beam	None	A36 Gr.36	Typical	1.6	.008	5.461	.033

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	Offsett Tube	69			Lbyy						Lateral
2	M8	End Plate A...	3.313			Lbyy			.65	.65		Lateral
3	M11	Grating Ang...	6.406			Lbyy			.65	.65		Lateral
4	M13	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
5	M14	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
6	M22	Grating Ang...	32.414			Lbyy			.65	.65		Lateral
7	M23	Grating Ang...	32.414			Lbyy			.65	.65		Lateral
8	M83C	Grating Ang...	6.406			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
9	M82B	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
10	M83D	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
11	M29	End Plate A...	3.313			Lbyy			.65	.65		Lateral
12	M30	Grating PL 2	36.828						.65	.65		Lateral
13	M31	Grating PL 2	24.556						.65	.65		Lateral
14	M31A	Grating Ang...	17.5			Lbyy			.65	.65		Lateral
15	M32B	Grating Ang...	17.5			Lbyy			.65	.65		Lateral
16	M36A	Grating Ang...	6.406			Lbyy			.65	.65		Lateral
17	M37	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
18	M38	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
19	M43	Grating Ang...	32.414			Lbyy			.65	.65		Lateral
20	M44	Grating Ang...	32.414			Lbyy			.65	.65		Lateral
21	M49	Grating Ang...	6.406			Lbyy			.65	.65		Lateral
22	M50	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
23	M51	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
24	M53	Grating PL 2	36.828						.65	.65		Lateral
25	M54	Grating PL 2	24.556						.65	.65		Lateral
26	M59	Grating Ang...	17.5			Lbyy			.65	.65		Lateral
27	M60	Grating Ang...	17.5			Lbyy			.65	.65		Lateral
28	M66	Grating Ang...	6.406			Lbyy			.65	.65		Lateral
29	M67	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
30	M68	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
31	M73	Grating Ang...	32.414			Lbyy			.65	.65		Lateral
32	M74	Grating Ang...	32.414			Lbyy			.65	.65		Lateral
33	M79	Grating Ang...	6.406			Lbyy			.65	.65		Lateral
34	M80	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
35	M81	Grating Ang...	4.375			Lbyy			.65	.65		Lateral
36	M83	Grating PL 2	36.828						.65	.65		Lateral
37	M84	Grating PL 2	24.556						.65	.65		Lateral
38	M89	Grating Ang...	17.5			Lbyy			.65	.65		Lateral
39	M90	Grating Ang...	17.5			Lbyy			.65	.65		Lateral
40	M95	Platform Ho...	149.999			Lbyy						Lateral
41	M104A	Platform Ho...	149.999			Lbyy						Lateral
42	M105	Platform Ho...	149.999			Lbyy						Lateral
43	M107	Proposed M...	96			Lbyy						Lateral
44	M109	Mount Pipe	96			Lbyy						Lateral
45	M111	Mount Pipe	96			Lbyy						Lateral
46	M113	Mount Pipe	96			Lbyy						Lateral
47	SR1	Support Rail	150									Lateral
48	SR10	Support Rail	150									Lateral
49	SR19	Support Rail	150									Lateral
50	PR5	MOD Stabili...	59.542									Lateral
51	PR6	MOD Stabili...	59.542									Lateral
52	M212A	MOD Stabili...	59.542									Lateral
53	M213A	MOD Stabili...	59.542									Lateral
54	M218A	MOD Stabili...	59.542									Lateral
55	M219A	MOD Stabili...	59.542									Lateral
56	M224A	Conn. PL	1			Lbyy			.65	.65		Lateral
57	M225	Conn. PL	1			Lbyy			.65	.65		Lateral
58	M224B	Offsett Tube	69			Lbyy						Lateral
59	M227A	Conn. PL	1			Lbyy			.65	.65		Lateral
60	M228	Conn. PL	1			Lbyy			.65	.65		Lateral
61	M231	Offsett Tube	69			Lbyy						Lateral
62	M234	Conn. PL	1			Lbyy			.65	.65		Lateral
63	M235	Conn. PL	1			Lbyy			.65	.65		Lateral
64	M238	SR Conn Pl...	4									Lateral
65	M226B	SR Conn Pl...	4									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
66	M231A	SR Conn A...	15.399									Lateral
67	M220	SR Conn Pl...	4									Lateral
68	M223	SR Conn Pl...	4									Lateral
69	M228B	SR Conn A...	15.399									Lateral
70	M229B	SR Conn Pl...	4									Lateral
71	M232A	SR Conn Pl...	4									Lateral
72	M237A	SR Conn A...	15.399									Lateral
73	M227E	End Plate A...	3.313			Lbyy			.65	.65		Lateral
74	M228D	End Plate A...	3.313			Lbyy			.65	.65		Lateral
75	M233C	End Plate A...	3.313			Lbyy			.65	.65		Lateral
76	M234C	End Plate A...	3.313			Lbyy			.65	.65		Lateral
77	M199	Proposed M...	96			Lbyy						Lateral
78	M201	Mount Pipe	96			Lbyy						Lateral
79	M203	Mount Pipe	96			Lbyy						Lateral
80	M205	Mount Pipe	96			Lbyy						Lateral
81	M219	Proposed M...	96			Lbyy						Lateral
82	M221B	Mount Pipe	96			Lbyy						Lateral
83	M223A	Mount Pipe	96			Lbyy						Lateral
84	M225C	Mount Pipe	96			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	N344	max	1433.304	4	3985.396	14	1220.611	20	359.17	11	144.388	3	2275.174	18
2		min	-2312.421	12	-2447.945	6	9.358	12	-1721.5	19	-1144.826	75	-2285.856	10
3	N338B	max	4554.449	3	1281.982	15	1188.515	25	892.94	8	1859.425	25	2257.816	7
4		min	-2783.458	11	-1282.602	7	-.718	18	-903.727	16	81.964	17	-2268.151	15
5	N354	max	1440.858	17	2384.125	16	1185.958	31	1551.892	33	732.968	6	2257.198	12
6		min	-2327.616	9	-3915.456	8	-.719	7	386.009	9	-1398.464	14	-2267.96	4
7	N326A	max	1603.641	30	306.844	6	2005.225	30	45.464	5	45.13	6	114.213	18
8		min	-177.201	6	-2777.468	30	-204.974	6	-486.14	29	-287.058	30	-111.74	10
9	P5	max	355.246	11	90.539	15	2003.679	19	54.173	7	563.535	19	114.182	7
10		min	-3204.596	19	-91.15	7	-205.52	11	-52.726	15	-57.802	11	-111.701	15
11	N335A	max	1602.236	24	2775.275	24	2003.667	24	490.965	24	16.287	15	114.147	12
12		min	-177.55	16	-307.601	16	-205.472	16	-59.474	16	-276.687	24	-111.683	4
13	Totals:	max	5098.356	3	5084.879	15	8527.113	26						
14		min	-5098.368	11	-5084.894	7	2803.631	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	M231A	L5.50X3.5625X3	.643	0	13	.094	15.399	z	11	26491...	53915...	966.11	2943.7...	H2-1
2	M237A	L5.50X3.5625X3	.628	0	18	.094	15.399	z	17	26491...	53915...	966.11	2943.7...	H2-1
3	M228B	L5.50X3.5625X3	.628	0	7	.094	15.399	z	6	26491...	53915...	966.11	2943.7...	H2-1
4	SR1	PIPE_2.0	.533	142.1...	6	.377	138.1...		12	6295.4...	32130	1871.6...	1871.6...	H1-1a
5	SR19	PIPE_2.0	.533	142.1...	11	.390	138.1...		17	6295.4...	32130	1871.6...	1871.6...	H1-1a
6	SR10	PIPE_2.0	.533	142.1...	16	.377	138.1...		7	6295.4...	32130	1871.6...	1871.6...	H1-1a
7	M225C	PIPE_2.0	.404	70.737	5	.087	70.737		18	14916...	32130	1871.6...	1871.6...	H1-1b
8	M205	PIPE_2.0	.401	70.737	11	.087	70.737		7	14916...	32130	1871.6...	1871.6...	H1-1b
9	M113	PIPE_2.0	.401	70.737	16	.087	70.737		12	14916...	32130	1871.6...	1871.6...	H1-1b
10	M221B	PIPE_2.0	.373	70.737	3	.161	37.895		16	14916...	32130	1871.6...	1871.6...	H1-1b
11	M109	PIPE_2.0	.373	70.737	14	.161	37.895		11	14916...	32130	1871.6...	1871.6...	H1-1b
12	M201	PIPE_2.0	.373	70.737	8	.161	37.895		6	14916...	32130	1871.6...	1871.6...	H1-1b
13	M31A	L4.75x4.5x0.25	.360	0	22	.068	0	z	22	60192...	72900	4381.6...	8212.7...	H2-1
14	M89	L4.75x4.5x0.25	.360	0	27	.068	0	z	27	60192...	72900	4381.6...	8212.7...	H2-1
15	M59	L4.75x4.5x0.25	.360	0	32	.068	0	z	32	60192...	72900	4381.6...	8212.7...	H2-1

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
16	M223A	PIPE_2.0	.352	70.737	13	.102	70.737		15	14916....	32130	1871.6...	1871.6...	H1-1b
17	M203	PIPE_2.0	.352	70.737	18	.106	70.737		5	14916....	32130	1871.6...	1871.6...	H1-1b
18	M111	PIPE_2.0	.352	70.737	7	.102	70.737		10	14916....	32130	1871.6...	1871.6...	H1-1b
19	M90	L4.75x4.5x0.25	.343	17.5	30	.066	17.5	z	30	60192....	72900	4381.6...	8212.7...	H2-1
20	M32B	L4.75x4.5x0.25	.343	17.5	24	.066	17.5	z	24	60192....	72900	4381.6...	8212.7...	H2-1
21	M60	L4.75x4.5x0.25	.343	17.5	19	.066	17.5	z	19	60192....	72900	4381.6...	8212.7...	H2-1
22	M68	L7.25x2.375x0.25	.295	0	4	.532	2.187	z	6	38519....	75945.6	631.129	5474.5...	H2-1
23	M38	L7.25x2.375x0.25	.295	0	10	.532	2.187	z	11	38519....	75945.6	631.129	5474.5...	H2-1
24	M14	L7.25x2.375x0.25	.295	0	15	.532	2.188	z	16	38519....	75945.6	631.129	5474.5...	H2-1
25	M22	L2.375x1.25x0.25	.274	32.414	18	.048	22.178	y	8	19702....	27345.6	330.185	1346.2...	H2-1
26	M73	L2.375x1.25x0.25	.274	32.414	7	.048	22.178	y	14	19702....	27345.6	330.185	1346.2...	H2-1
27	M43	L2.375x1.25x0.25	.274	32.414	12	.048	22.178	y	3	19702....	27345.6	330.185	1346.2...	H2-1
28	M83D	L7.25x2.375x0.25	.265	4.375	7	.526	2.187	z	6	38519....	75945.6	631.129	5474.5...	H2-1
29	M51	L7.25x2.375x0.25	.265	4.375	18	.526	2.187	z	16	38519....	75945.6	631.129	5474.5...	H2-1
30	M81	L7.25x2.375x0.25	.265	4.375	12	.526	2.188	z	11	38519....	75945.6	631.129	5474.5...	H2-1
31	M219	PIPE_3.0	.264	70.737	13	.140	70.737		18	46290....	65205	5748.75	5748.75...	H1-1b
32	M199	PIPE_3.0	.261	70.737	3	.140	70.737		7	46290....	65205	5748.75	5748.75...	H1-1b
33	M107	PIPE_3.0	.261	70.737	8	.140	70.737		12	46290....	65205	5748.75	5748.75...	H1-1b
34	M74	L2.375x1.25x0.25	.259	0	11	.050	23.031	y	11	19702....	27345.6	330.185	1354.4...	H2-1
35	M23	L2.375x1.25x0.25	.259	0	6	.050	23.031	y	6	19702....	27345.6	330.185	1354.4...	H2-1
36	M44	L2.375x1.25x0.25	.259	0	16	.050	23.031	y	16	19702....	27345.6	330.185	1354.4...	H2-1
37	M53	PL1.50x0.25	.251	18.414	4	.033	18.414	y	16	769.952	12150	63.283	379.688...	H1-1a
38	M30	PL1.50x0.25	.251	18.414	10	.033	18.414	y	5	769.952	12150	63.283	379.688...	H1-1a
39	M83	PL1.50x0.25	.251	18.414	15	.033	18.414	y	5	769.952	12150	63.283	379.688...	H1-1a
40	M84	PL1.50x0.25	.249	24.556	3	.044	12.278	y	12	1731.8...	12150	63.283	379.688...	H1-1b
41	M54	PL1.50x0.25	.249	24.556	8	.044	12.278	y	18	1731.8...	12150	63.283	379.688...	H1-1b
42	M31	PL1.50x0.25	.249	24.556	14	.044	12.278	y	7	1731.8...	12150	63.283	379.688...	H1-1b
43	M104A	PIPE_3.0	.207	134.2...	10	.104	106.5...		5	28250....	65205	5748.75	5748.75...	H1-1b
44	M105	PIPE_3.0	.207	134.2...	4	.099	106.5...		16	28250....	65205	5748.75	5748.75...	H1-1b
45	M95	PIPE_3.0	.207	134.2...	15	.099	106.5...		11	28250....	65205	5748.75	5748.75...	H1-1b
46	M229B	PL5x0.1875	.166	.842	18	.168	.842	y	17	17775....	30375	118.652	3164.0...	H1-1b
47	M238	PL5x0.1875	.166	.842	12	.164	.842	y	12	17775....	30375	118.652	3164.0...	H1-1b
48	M220	PL5x0.1875	.166	.842	7	.164	.842	y	7	17775....	30375	118.652	3164.0...	H1-1b
49	M227E	L5x4x0.25	.155	0	10	.072	0	z	15	57000....	70875	2842.6...	6820.0...	H2-1
50	M233C	L5x4x0.25	.155	0	4	.072	0	z	9	57000....	70875	2842.6...	6820.0...	H2-1
51	M8	L5x4x0.25	.155	0	15	.072	0	z	4	57000....	70875	2842.6...	6820.0...	H2-1
52	M224B	HSS5x3x3/8"	.154	0	18	.087	0	z	10	16489....	20553....	18493....	27058....	H1-1b
53	M1	HSS5x3x3/8"	.153	0	7	.086	0	z	15	16489....	20553....	18493....	27058....	H1-1b
54	M231	HSS5x3x3/8"	.153	0	12	.088	0	z	5	16489....	20553....	18493....	27058....	H1-1b
55	M37	L7.25x2.375x0.25	.143	0	10	.568	0	z	16	38519....	75945.6	631.129	5474.5...	H2-1
56	M67	L7.25x2.375x0.25	.143	0	4	.568	0	z	11	38519....	75945.6	631.129	5474.5...	H2-1
57	M13	L7.25x2.375x0.25	.143	0	15	.568	0	z	6	38519....	75945.6	631.129	5474.5...	H2-1
58	M80	L7.25x2.375x0.25	.139	4.375	13	.528	4.375	z	14	38519....	75945.6	631.129	5474.5...	H2-1
59	M50	L7.25x2.375x0.25	.138	4.375	18	.528	4.375	z	3	38519....	75945.6	631.129	5474.5...	H2-1
60	M82B	L7.25x2.375x0.25	.138	4.375	7	.528	4.375	z	8	38519....	75945.6	631.129	5474.5...	H2-1
61	M213A	L3X3X3	.135	29.771	27	.007	59.542	y	18	19627....	35316	1320.0...	2439.2...	H2-1
62	M219A	L3X3X3	.135	29.771	22	.008	0	y	13	19627....	35316	1320.0...	2439.2...	H2-1
63	PR6	L3X3X3	.135	29.771	32	.007	59.542	y	7	19627....	35316	1320.0...	2439.2...	H2-1
64	M212A	L3X3X3	.129	29.771	29	.007	0	z	18	19627....	35316	1320.0...	2439.2...	H2-1
65	PR5	L3X3X3	.128	29.771	34	.007	59.542	z	7	19627....	35316	1320.0...	2439.2...	H2-1
66	M218A	L3X3X3	.128	29.771	23	.008	0	z	13	19627....	35316	1320.0...	2439.2...	H2-1
67	M228D	L5x4x0.25	.125	3.313	17	.092	3.313	z	12	57000....	70875	2842.6...	6820.0...	H2-1
68	M228	PL8.5x3/8	.123	0	18	.107	0	y	3	84967....	103275	806.836	18288....	H1-1b
69	M29	L5x4x0.25	.123	3.313	6	.094	3.313	z	17	57000....	70875	2842.6...	6820.0...	H2-1
70	M234C	L5x4x0.25	.123	3.313	11	.113	3.313	y	38	57000....	70875	2842.6...	6820.0...	H2-1
71	M225	PL8.5x3/8	.122	0	7	.107	0	y	8	84967....	103275	806.836	18288....	H1-1b
72	M235	PL8.5x3/8	.122	0	12	.107	0	y	14	84967....	103275	806.836	18288....	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
73	M36A	L6.4x4.750x0.25	.105	0	17	.047	0	z	24	57754....	88290	2962.2...	7667.7.....	H2-1
74	M66	L6.4x4.750x0.25	.105	0	12	.047	0	z	19	57754....	88290	2962.2...	7667.7.....	H2-1
75	M11	L6.4x4.750x0.25	.105	0	7	.047	0	z	29	57754....	88290	2962.2...	7667.7.....	H2-1
76	M227A	PL8.5x3/8	.104	0	18	.098	0	y	11	84967....	103275	806.836	18288.....	H1-1b
77	M224A	PL8.5x3/8	.103	0	7	.098	0	y	16	84967....	103275	806.836	18288.....	H1-1b
78	M234	PL8.5x3/8	.103	0	12	.098	0	y	6	84967....	103275	806.836	18288.....	H1-1b
79	M83C	L6.4x4.750x0.25	.093	6.406	33	.051	0	z	7	57754....	88290	2962.2...	7667.7.....	H2-1
80	M79	L6.4x4.750x0.25	.093	6.406	22	.053	6.406	z	13	57754....	88290	2962.2...	7667.7.....	H2-1
81	M49	L6.4x4.750x0.25	.093	6.406	27	.051	0	z	18	57754....	88290	2962.2...	7667.7.....	H2-1
82	M223	PL5x0.1875	.089	.842	13	.098	.842	y	17	17775....	30375	118.652	3164.0.....	H1-1b*
83	M226B	PL5x0.1875	.083	.842	18	.097	.842	y	6	17775....	30375	118.652	3164.0.....	H1-1b*
84	M232A	PL5x0.1875	.083	.842	7	.097	.842	y	11	17775....	30375	118.652	3164.0.....	H1-1b*

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: CTNH302A

CTNH302/ClrChannel/Prosp.
151 Waterbury Road
Prospect, Connecticut 06712

June 3, 2019

EBI Project Number: 6219001992

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**12.89%**

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

June 3, 2019

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

Emissions Analysis for Site: CTNH302A - CTNH302/ClrChannel/Prosp.

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **151 Waterbury Road** in **Prospect, 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 151 Waterbury Road in Prospect, 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 GSM/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 (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

5) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

6) 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.

7) 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.

8) 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.

9) The antennas used in this modeling are the Ericsson AIR21 B2A_B4P for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR32 B66A_B2A 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 Ericsson AIR21 B2A_B4P for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR32 B66A_B2A 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 Ericsson AIR21 B2A_B4P for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR32 B66A_B2A 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.

10) The antenna mounting height centerline of the proposed antennas is 137 feet above ground level (AGL).

11) 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.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR21 B2A_B4P	Make / Model:	Ericsson AIR21 B2A_B4P	Make / Model:	Ericsson AIR21 B2A_B4P
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd
Height (AGL):	137 feet	Height (AGL):	137 feet	Height (AGL):	137 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):	4,113.21	ERP (W):	4,113.21	ERP (W):	4,113.21
Antenna A1 MPE %:	**0.79%**	Antenna B1 MPE %:	**0.79%**	Antenna C1 MPE %:	**0.79%**
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR32 B66A_B2A	Make / Model:	Ericsson AIR32 B66A_B2A	Make / Model:	Ericsson AIR32 B66A_B2A
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd
Height (AGL):	137 feet	Height (AGL):	137 feet	Height (AGL):	137 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	8,728.31	ERP (W):	8,728.31	ERP (W):	8,728.31
Antenna A2 MPE %:	**1.67%**	Antenna B2 MPE %:	**1.67%**	Antenna C2 MPE %:	**1.67%**
Antenna #:	3	Antenna #:	3	Antenna #:	3
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):	137 feet	Height (AGL):	137 feet	Height (AGL):	137 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 A3 MPE %:	**1.10%**	Antenna B3 MPE %:	**1.10%**	Antenna C3 MPE %:	**1.10%**

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	3.56%
AT&T	9.33%
Site Total MPE % :	12.89%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	3.56%
T-Mobile Sector B Total:	3.56%
T-Mobile Sector C Total:	3.56%
Site Total MPE % :	12.89%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz GSM/UMTS	2	1028.30	137.0	3.94	1900 MHz GSM/UMTS	1000	0.39%
T-Mobile 2100 MHz UMTS	2	1028.30	137.0	3.94	2100 MHz UMTS	1000	0.39%
T-Mobile 1900 MHz LTE PCS	2	2056.61	137.0	7.88	1900 MHz LTE PCS	1000	0.79%
T-Mobile 2100 MHz LTE AWS	2	2307.55	137.0	8.84	2100 MHz LTE AWS	1000	0.88%
T-Mobile 600 MHz LTE	2	591.73	137.0	2.27	600 MHz LTE	400	0.57%
T-Mobile 700 MHz LTE	2	648.82	137.0	2.49	700 MHz LTE	467	0.53%
						Total:	**3.56%**

• 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:	3.56%
Sector B:	3.56%
Sector C:	3.56%
T-Mobile Maximum MPE % (Sector A):	3.56%
Site Total:	12.89%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **12.89%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Exhibit G

Mailing Receipts/Proof of Notice

UPS Internet Shipping: View/Print Label

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

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

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

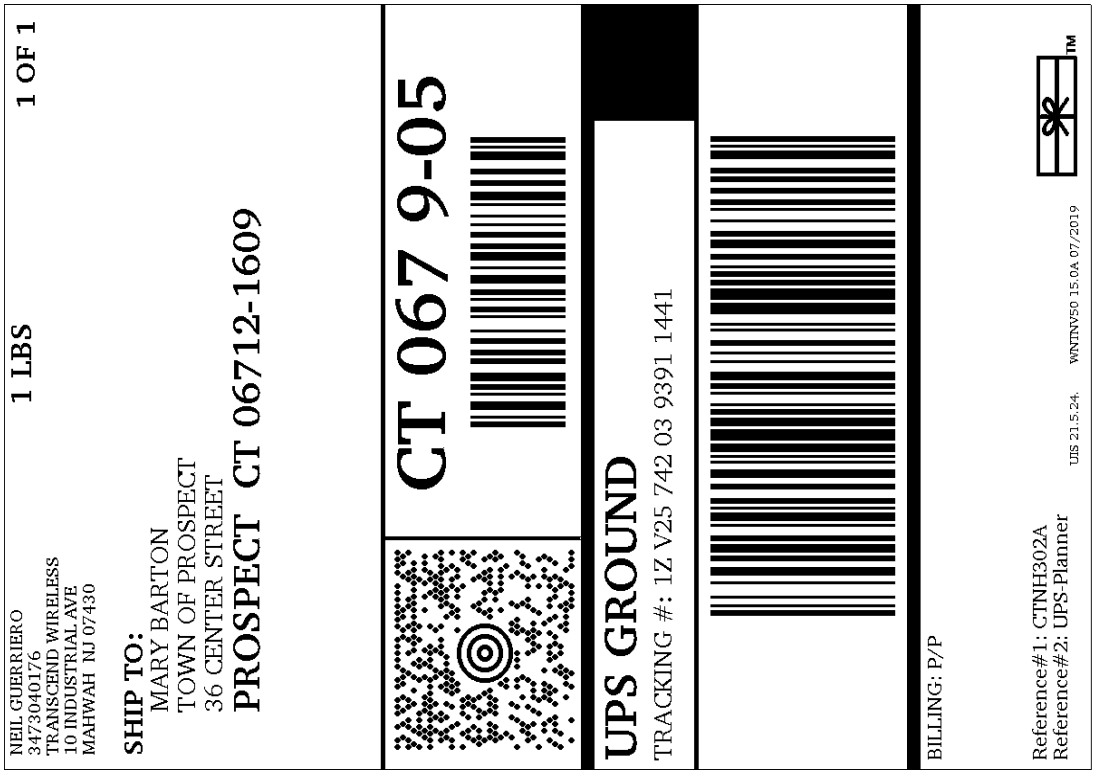
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To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

UPS Access Point™
THE UPS STORE
115 FRANKLIN TPKE
MAHWAH ,NJ 07430

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

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

FOLD HERE



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   Customers 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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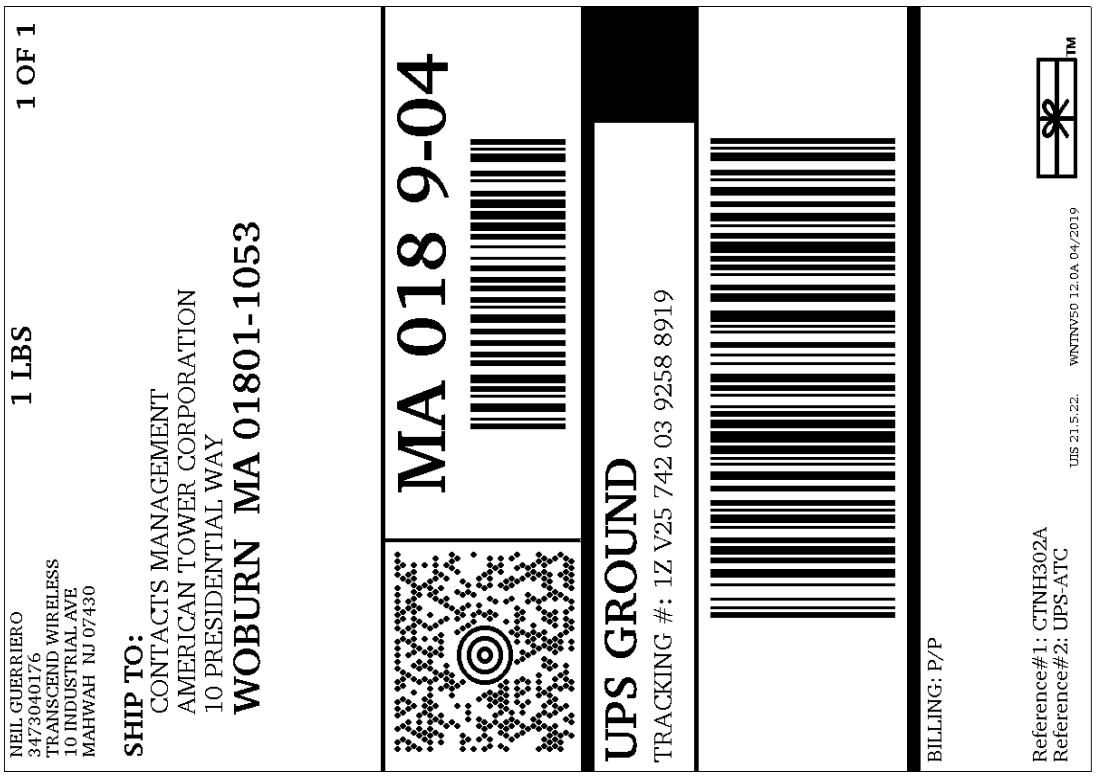

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