Transcend Wireless

10 Industrial Ave,
Suite 3
Mahwah NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

June 10, 2020

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

RE: Notice of Exempt Modification
401-411 Lopus Road, Beacon Falls, CT 06403
Latitude: 41.4325973600
Longitude: -73.0703846000
T-Mobile Site#: CT11487B – L600

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 135-foot level of the existing 144-foot monopole at 401-411 Lopus Road, Beacon Falls, CT. The 144-foot monopole tower is owned by American Tower Corporation. The property is owned by Town of Beacon Falls. T-Mobile now intends to add three (3) new 600/700 MHz antennas. The new antennas will be installed at the same 135-foot level of the tower. Mount modifications are also required as detailed in the enclosed mount analysis.

Planned Modifications:
Tower:

Remove
(6) 1-5/8" coax

Remove and Replace:
N/A

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

Existing to Remain:
(6) AIR 21 1900/2100 MHZ
(6) 1-5/8" coax
(1) 1-5/8" Hybrid
(3) KRY 112 TMA

Ground:
Install New: Equipment inside existing 6131 cabinet

This tower was originally approved by the Town of Beacon Falls on March 20, 2004. Documentation on the original approval of the tower is enclosed with the submission. The proposed modification complies with all previous approvals.

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 First Selectmen -Gerard Smith, Elected Official, and Mike Mormile, Zoning Enforcement Officer for the Town of Beacon Falls, as well as the tower owner.

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

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

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

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

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

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

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

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

Sincerely,

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

Attachments
cc: Gerard Smith – Town of Beacon Falls First Selectmen
Mike Mormile– Town of Beacon Falls Zoning Enforcement Officer
American Tower – Tower Owner

UPS Internet Shipping: View/Print Label

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

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

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

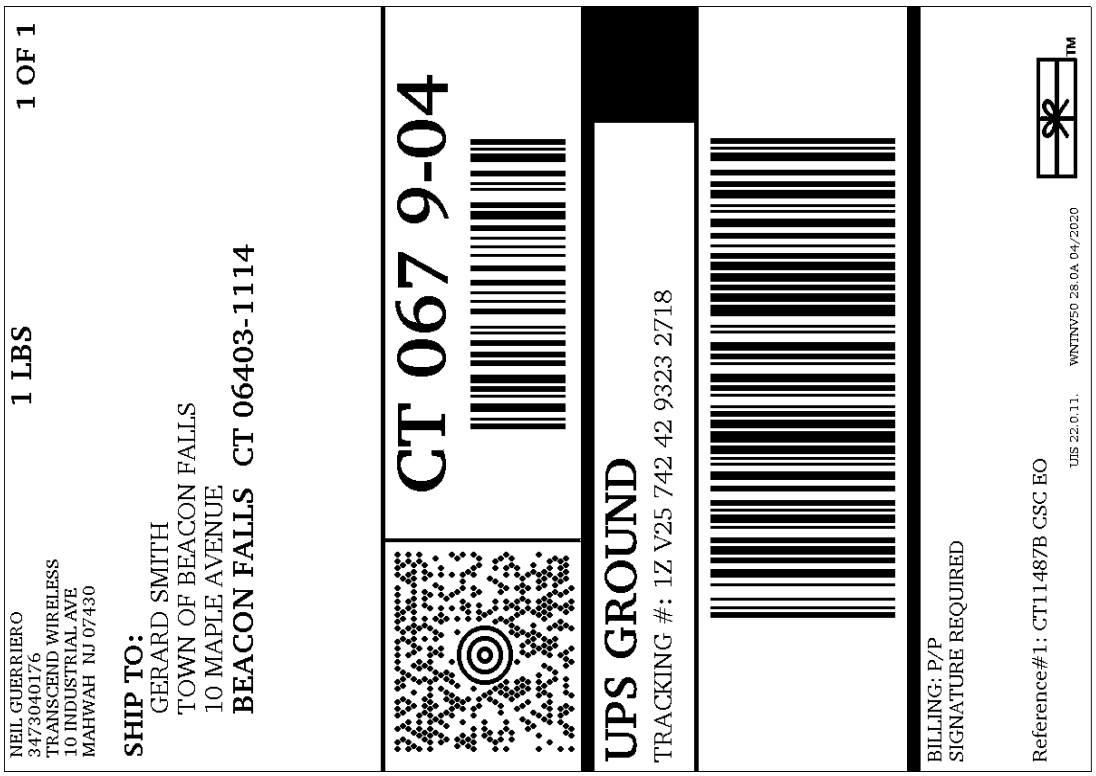
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To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

UPS Access Point™
MICHAELS STORE # 7773
75 INTERSTATE SHOP CTR
RAMSEY ,NJ 07446

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

FOLD HERE



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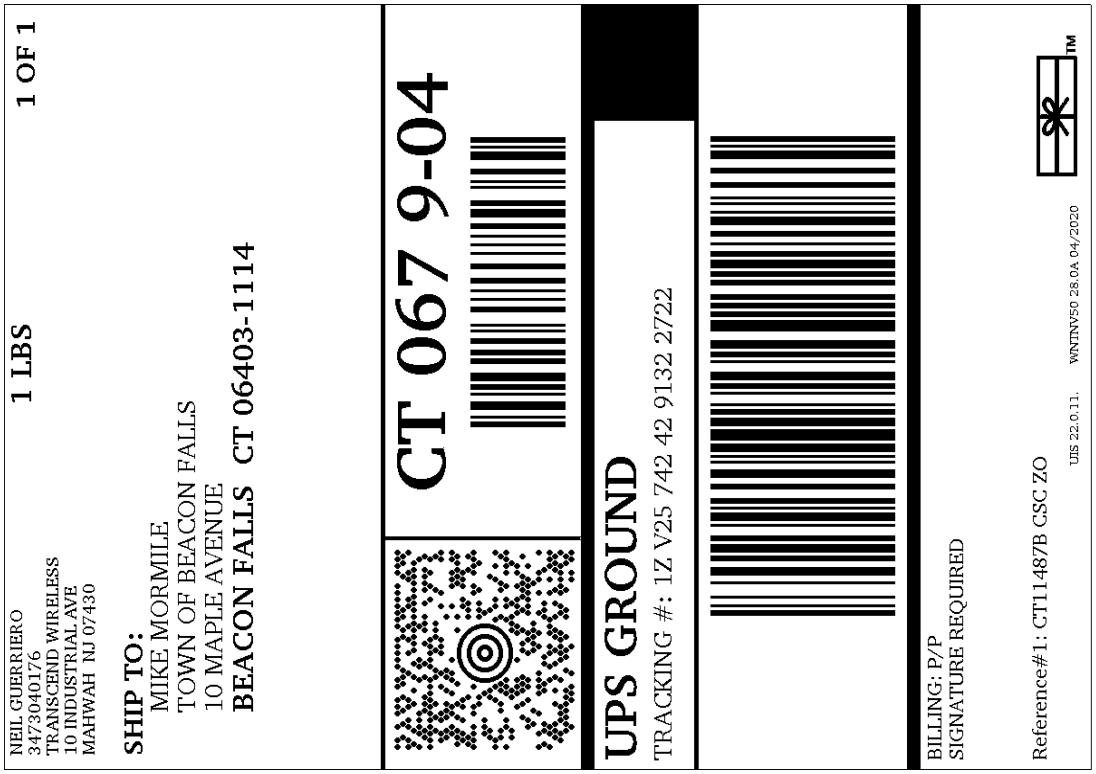

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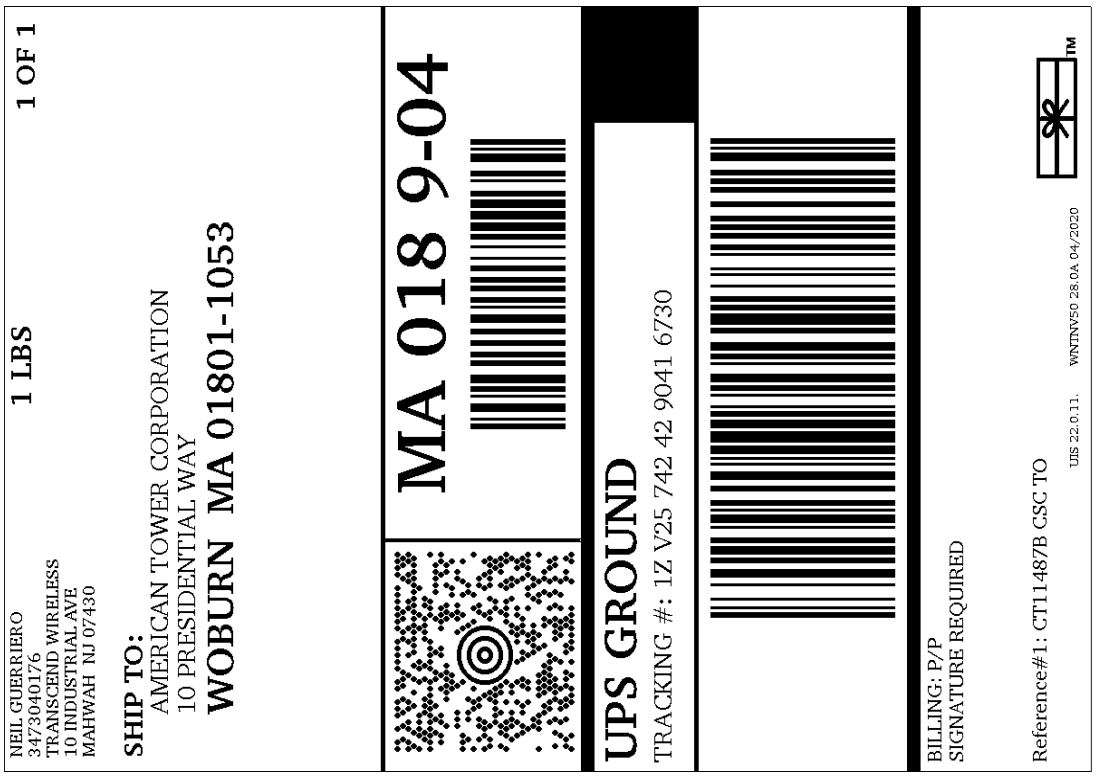


Tax ID 003-001-0016 Printed 04/26/2019 Card No. 1 of 1

BEACON FALLS TOWN OF
10 MAPLE AVE
BEACON FALLS, CT 06403
Census: 3411

Neighborhood Number
300
Neighborhood Name
General Industrial
TAXING DISTRICT INFORMATION

Jurisdiction Name	BEACON FALLS
Area	006
Routing Number	003-001-0016

Site Description

Topography
Level
Public Utilities
Electric
Street or Road
Paved
Neighborhood

Zoning:
IPD
Legal Acres:
3.0600

Transfer of Ownership

Owner	Consideration	Transfer Date	Deed Type	Deed Book/Page
NA	0	02/13/1975	37	413

Valuation Record

Assessment Year		2006	2011	2014	2016				
Reason for Change		2006 Reval	2011 Reval		2016 Reval				
2016 Market	L	229500	206550	206550	189720				
	I	328280	571150	321150	334780				
	T	557780	777700	527700	524500				
70% Assessed	L	160650	144590	144590	132800				
	I	229800	399810	224810	234350				
	T	390450	544400	369400	367150				

Land Size

Land Type	Rating, Soil ID - or - Actual Frontage	Acreage - or - Effective Frontage	Square Feet - or - Effective Depth	Influence Factor
Primary Industrial Land		3.0600		

Tax ID 003-001-0016 Printed 04/26/2019

Physical Characteristics

ROOFING
Metal

WALLS

	B	1	2	U
Frame		Yes		
Guard		Yes	Yes	Yes

FRAMING

	B	1	2	U

FINISH

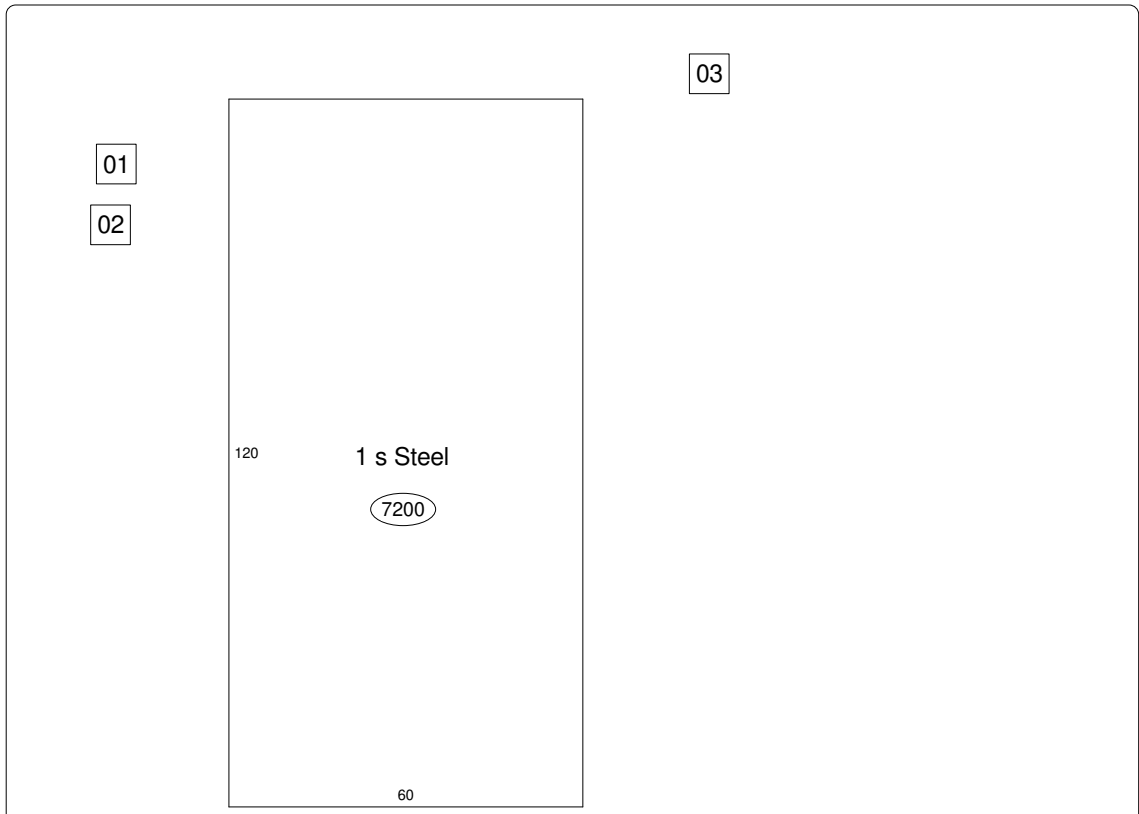
	UF	SF	FO	FD
1	7200	0	0	0
Total	7200	0	0	0

HEATING AND AIR CONDITIONING

	B	1	2	U
Heat	0	7200	0	0

PLUMBING

	Residential		Commercial	
	#	TF	#	TF
Full Baths				
Half Baths				
Extra Fixtures				4
TOTAL		0		4



Special Features

Description

Summary of Improvements

ID	USE	Story Height	Const Type	Grade	Year Cons	Eff Year	Cond	Size or Area
C	MUNIGAR	0.00		Fair	1979	1999	AV	7200
01	PAVING	0.00	85	AVG	1979	1979	AV	4300
02	FENCECL	5.00	51C	AVG	1979	1979	AV	80
03	POLEBLDG	1.00		EXE	1990	1990	AV	1000

Town of Beacon Falls

Geographic Information System (GIS)

Date Printed: 5/21/2020

MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of Beacon Falls and its mapping contractors assume no legal responsibility for the information contained herein.

Approximate Scale: 1 inch = 75 feet

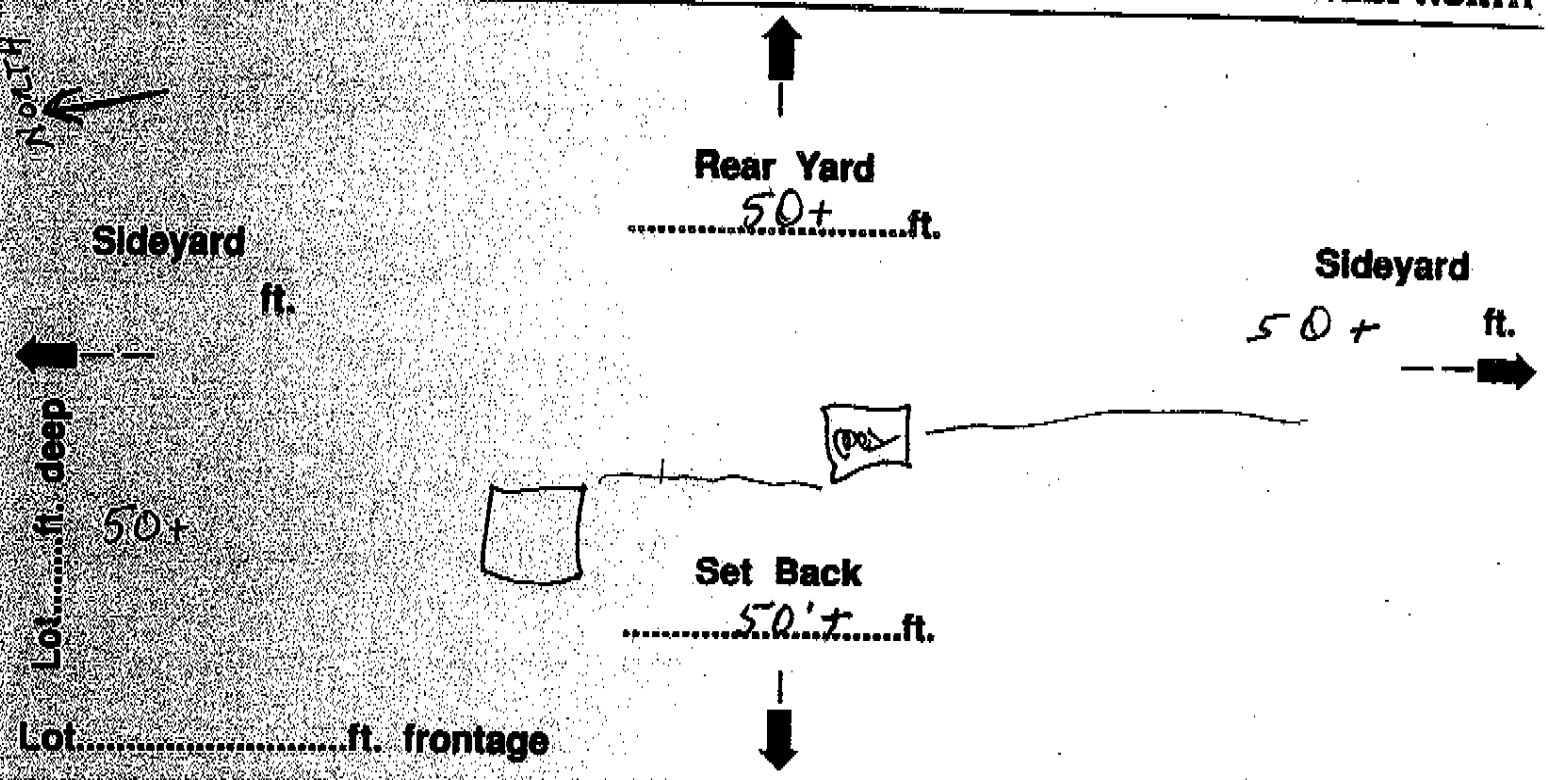
0 75 Feet

N W E S

PLOT PLAN

Indicate location of garage or accessory building with dashed lines

N ← MARK NORTH



401 LOPUS ROAD Street

Application for Certificate of Zoning Compliance

Date 10-27-05

NEW CINGULAR WIRELESS PCS, LLC of 500 ENTERPRISE DRIVE
Name of Applicant — Street Address

ROCKY HILL, CT 06067 hereby applies to the Beacon Falls Zoning Commission
City — State

for a certificate of Zoning Compliance for

CINGULAR CELL TOWER SITE AT BEACON FALLS PUBLIC WORKS
Size and Location - Zone

GARAGE ON LOPUS RD. MONOPOLE TOWER IN FENCED COMPOUND; EQUIPMENT SHELTER; COAXIAL CABLES; ANTENNAS.

NEW CINGULAR WIRELESS PCS, LLC
BY
Applicant's Signature STEVEN L. LEVINE

10/27/05
Date Approved

Zoning Enforcement Officer

FEE: $10.00 TOWN TO OWN

Town of Beacon Falls
Record of Building Permit

№ 011

Owner Cingular

Owner's Address 500 Enterprise Dr Rocky Hill

Site Location Lopus Road Town Garage

Construction: New ☒ Alteration ☐ Addition ☐ Repair ☐

Garage ☐ Shed ☐ Other Cell Tower

One family residence ☐

Permit Number #P-11-6-2005 Date Issued Nov 3 2005

Value of Permit $250,000.00

Fee Paid $ 1792.00 Pd check # 1072

Application Approved John Peterson

Building Inspector

APPLICATION FOR BUILDING PERMIT
CONNECTICUT STATE BUILDING CODE (SBC 111.0)
CITY/TOWN OF BEACON FALLS

RECEIVED
OCT 27 2005

1. 10-27-05 (Date) — (Please Print or Type All Entries)
2. PUBLIC WORKS GARAGE, LOPUS ROAD, B. FALLS (Property Location Street Address) 3. MAP 3 BLK 1 LOT 16 (Lot #)
4. TOWN OF BEACON FALLS (Owner's Name (As it appears in the Land Records))
5. TOWN HALL (Street Address) | BEACON FALLS (Town) | CT (State) | 06403 (Zip Code)
6. — (Home Phone #) | — (Work Phone #) | — (Fax #) | — (Mobile Phone #)
7. NEW CINGULAR WIRELESS PCS, LLC (STEVE LEVINE) (Applicant's Name)
8. 500 ENTERPRISE DR. (Street Address) | ROCKY HILL (Town) | CT (State) | 06067 (Zip Code)
9. — (Home Phone #) | 860-513-7636 (Work Phone #) | 860-513-7190 (Fax #) | 203-556-1655 (Mobile Phone #)
10. TO BE DETERMINED (Contractor/General Contractor) 11. — (Registration #)

12. Permit Type:

a) ☑ Building Permit — Estimated Cost $250,000.00
- ☑ Foundation ☐ Superstructure
- ☐ Tenant Fitout ☑ Other

b) ☐ Electrical Permit — Estimated Cost
c) ☐ Mechanical Permit — Estimated Cost
d) ☐ Plumbing Permit — Estimated Cost
e) ☐ Demolition Permit* — Estimated Cost
f) ☐ Other _____ — Estimated Cost

TOTAL $250,000

13. Project Type: CELL TOWER, FENCED COMPOUND, EQUIPMENT SHELTER, COAX CABLES

a) ☑ New Construction
b) ☐ Addition
c) ☐ Alteration
d) ☐ Repair/Replacement
e) ☐ Demolition*
f) ☐ Relocation
g) ☐ Change of Use
h) ☐ Article 32
i) ☐ Designated Historic Structure

• MOVE OIL TANK

Is Structure within the 100 year flood plain ☐ Yes ☑ No

14. Construction Type: ☐ 1A ☐ 1B ☐ 2A ☐ 2B ☑ 2C ☐ 3A ☐ 3B ☐ 4 ☐ 5A ☐ 5B

15. Use Group(s):

☐ A-1	☐ B	☐ H-1	☐ I-1	☐ M	☐ S-1	
☐ A-2		☐ H-2	☐ I-2		☑ S-2	UNMANNED
☐ A-3	☐ F-1	☐ H-3	☐ I-3	☐ R-1		
☐ A-4	☐ F-2	☐ H-4		☐ R-2	☐ U	
☐ A-5				☐ R-3		

Mixed Use: N/A ☐ Yes ☐ No ☐ Separated ☐ Nonseparated

STATE OF CONNECTICUT/OFFICE OF STATE BUILDING INSPECTOR

(Over)

PAGE 2 (Continuation of Building Permit Application)

16. LOPUS ROAD - PUBLIC WORKS GARAGE 17. 3-1-16
Property Location Street Address Lot #

18. Height of building: Stories: 1 Feet: 10'

19. Total Sq. Ft. of Building: 240 SQ FT

20. List below the gross square footage of each story, above and below grade:

Story	Area in Sq. Ft.	Story	Area in Sq. Ft.	Story	Area in Sq. Ft.
1	240				

21. Architect's Information: (Attach as applicable) License # 22038 TECTONIC ENGINEERING MIKE PATEL

22. Engineers Information: (Attach as applicable) License # 22038 " "

23. Interior Design: (Attach as Applicable) Registration # N/A

24. Documents Submitted /Attached:
☑ Zoning CSC ☑ Building Plans ☑ Site Plans ☑ Building Sections ☑ Building Elevations ☐ Health
☐ Reports ☑ Calculations ☐ Details ☐ Photographs ☐ Threshold Review*
☐ Correspondence ☑ Authorization of Applicant Other Than Owner ☐ Manufacturer's Literature
☐ Statement of Special Inspections* ☐ Other (describe)_____

25. Estimated Cost of Construction $250,000.00
(Value of Labor & Materials)

CERTIFICATION: I hereby certify that: ☐ I am the owner of record of the named property or ☑ that the proposed work is authorized by the owner of record and/or I have been authorized to make this application as an authorized agent, and we agree to conform to all applicable laws, regulations and ordinances. All information contained within is true and accurate to the best of my knowledge and belief.

NEW CINGULAR WIRELESS PCS, LLC
BY _____
Signature of Owner/Authorized Agent
STEVEN L. LEVINE

ITEMS 26 - 29 ARE FOR BUILDING OFFICIAL'S USE ONLY

26. Building Permit Fee: $ 1,792.00 #P-11-6-2005
27. Plan Review Fee: 0.00
28. Certificate of Occupancy Fee: 0.00 11/3/2005
29. Other Fees: 0.00
TOTAL FEE: ☐ Cash ☐ Check $ 1,792.00

Completed Application Received Date: 10/27/2005

BD check # 1072

John Peterson
(Signature Building Official)

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
www.ct.gov/csc

October 24, 2005

Steven Levine
Real Estate Consultant
New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, CT 06067-3900

RE: **TS-CING-006-051007** - New Cingular Wireless PCS, LLC. request for an order to approve tower sharing at an existing telecommunications facility located at Beacon Falls Public Works Department garage, Lopus Road, Beacon Falls, Connecticut.

Dear Mr. Levine:

At a public meeting held October 19, 2005, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility may require an explicit request to this agency pursuant to General Statutes § 16-50aa or notice pursuant to Regulations of Connecticut State Agencies Section 16-50j-73, as applicable. Such request or notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your letter dated October 7, 2005 and additional information received October 17, 2005, including the placement of all necessary equipment and shelters within the tower compound.

Thank you for your attention and cooperation.

Very truly yours,

Pamela B. Katz, P.E.
Chairman

PBK/laf

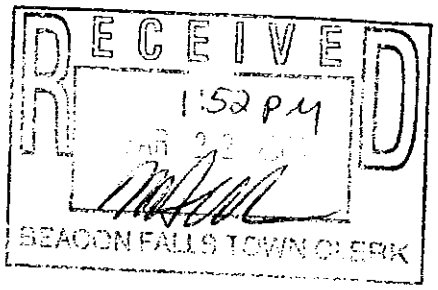
c: The Honorable Susan Ann Cable, First Selectman, Town of Beacon Falls
Brian Herb, Zoning Enforcement Officer, Town of Beacon Falls

G:\EM\CINGULAR\BeaconFalls\dc101905.DOC

CSC
CONNECTICUT SITING COUNCIL

Town of BEACON FALLS
Connecticut

Planning and Zoning Commission



Board of Selectman
10 Maple Avenue
Beacon Falls, CT. 06403

The Beacon Falls Planning and Zoning Commission, after review of site plan proposed by AT&T, respectfully recommends acceptance.

If you have any questions or concerns please contact Chairman Jeff Burkitt.

Mary Ellen Fernandes
Mary Ellen Fernandes
Clerk, P & Z Commission
March 20, 2004

10 Maple Avenue • Beacon Falls, CT 06403-1198 • (203) 729-4340 • Fax: (203) 720-1078

Town of BEACON FALLS
Connecticut

Planning and Zoning Commission
Regular Meeting Minutes
March 18, 2004
Draft Minutes Subject to Modification

I Call to Order

Chairman Burkitt called the regular meeting of the Beacon Falls Planning and Zoning Commission to order at 7:30 P.M.
Present: Chairman Burkitt, Commissioners Carl Vitale, Peter Betkoski, Richard Franco, David Chadderton and Bill Abromaitis.
Absent: Kevin McDuffie

II Approval of Minutes

A motion to approve the minutes of the Feb 2004 regular meeting as submitted was made by Comm. Abromaitis and 2nd by Comm. Franco. All in favor. A motion to approve the minutes of Public Hearing on 6 month moratorium was made by Comm. Vitale and 2nd by Comm. Abromaitis. All in favor. A motion to approve the minutes of the Public Hearing on Pond Spring was made by Comm. Abromaitis and 2nd by Comm. Franco. All in favor.

III Comments from the Public

John smith, E.J. Smith Company came forward and requested a extension for filing of the mylar for application P-2003-115 Smith Farms-Section IV. Chairman Burkitt stated that this would be handled under Old Business.

IV Zoning Enforcement Officers Report

A written report was submitted. Discussion followed. A motion to accept report as submitted was made by Comm. Abromaitis and 2nd by Comm. McDuffie. All in favor. Charlie Edwards requested permission to have site trailer on project for 18 months. Comm. Chadderton made a motion to grant request for construction trailer for up to 18 months or more specifically September 18, 2005. Seconded by Comm. Abromaitis. All in favor.

V Town Engineers Report

An written report was submitted. Discussion followed. A motion to accept report as submitted was made by Comm. Abromaitis and was 2nd by Comm. Franco. All in favor.

VI Comprehensive Plan of Conservation and Development

No report.

VII Old Business

A joint discussion between the Board of Selectman, Atty. Civitello, Planning & Zoning and Atty. Buemi. After hearing from both attorneys, it was decided that this discussion does not belong before the Planning and Zoning Commission.
1)Application P-2003-114SP- Chatfield/Woodhaven – A motion to set a Public Hearing date for May 4, 2004 at 7:30 PM was made by Comm. Vitale and 2nd by Comm. Abromaitis. All in favor.
3)Fawn Hill Estates – A motion to send a letter to Board of Selectman to recommend reducing the maintenance bond was made by Comm. Vitale and 2nd by Comm. Abromaitis. All in favor.
2)Pond Spring Village – Site Plan – Accept for review.
4)E J Smith – A motion to grant request of extension to file mylar was made by Comm. Chadderton and 2nd by Comm. Abromaitis. All in favor.

VIII New Business

1) Application P-2004-120- 6 month moratorium – A motion to table to April 15, 2004 was made by Comm. Vitale and 2nd by Comm. Betkoski. All in favor.
2)Joyce Van Lines – Application accepted under review.
3)Earth Works – Application accepted under review.

IX New Applications

1) ATT Cell Tower – A motion to recommend to Board of Selectman to accept was made by Comm. Chadderton and 2nd by Comm. Abromaitis. All in favor.
2) Cotton Hollow Rd – Multi unit – A brief discussion resulted in a motion to Table until issues are resolved was made by Comm. Chadderton and 2nd by Comm. Franco. All in favor.
3) Oakwood Estates – A motion to set Public Hearing for May 4, 2004 at 7:00 PM was made by Comm. Abromaitis and 2nd by Comm. Franco. All in favor.
4) Westwind Estates – Resubdivision Lot 22 & 23 – Public Hearing date set for March 18, 2004 at 7:15 P.M.
5) Charlie Edwards – Lot Line Revisions – A motion to approve was made by Comm. Chadderton and 2nd by Comm. Vitale. All in favor.

X Correspondence and Payment of Bills

The following bills were submitted for payment:
Nafis & Young $ 552.50 / M.E. Fernandes $ 192.00 / Wtby Republican $102.90 Nutmeg Printers $394.00 / Fasano, Ipplitio & Lee $730.00 / Karen Wilson $115.00. A motion to accept Payment of Bills as submitted was made by Comm. Abromaitis and 2nd by Comm. Franco. All in favor.
A motion to accept all correspondence and place on file was made by Comm. Chadderton and 2nd by Comm. Franco. All in favor.

XI Executive Session

A motion to go into executive session was made by Comm. Chadderton and 2nd by Comm. Vitale. All in favor. A motion to come out of executive session was made by Comm. Vitale and 2nd by Comm. Abromaitis. All in favor.

MAR 24 2004

XII Petitions from Commissioners

No activity

XII Adjournment

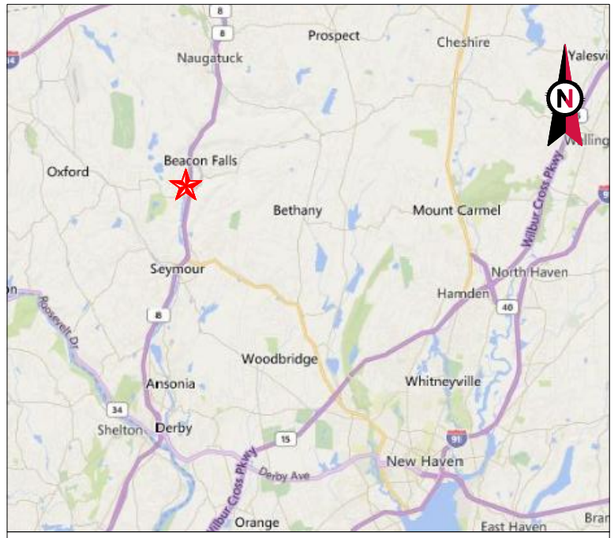
A motion to adjourn was made by Comm. Chadderton and 2nd by Comm. Abromaitis. All in favor.

Respectfully Submitted,

Mary Ellen Fernandes

Mary Ellen Fernandes

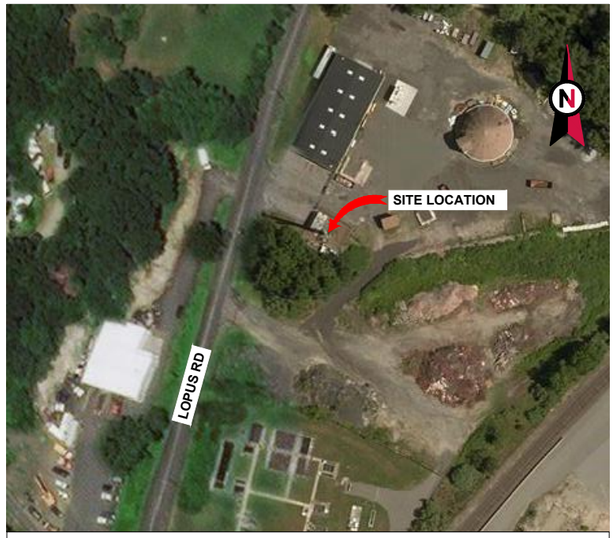
Clerk, March 20, 2004



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: BEACON FALLS CT
ATC SITE NUMBER: 370641
T-MOBILE SITE ID: CT11487B
SITE ADDRESS: 401-411 LOPUS ROAD
BEACON FALLS, CT 06403



LOCATION MAP

T-MOBILE L600 ANTENNA AMENDMENT
67D02C OUTDOOR CONFIGURATION

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

COMPLIANCE CODE

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

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

UTILITY COMPANIES

POWER COMPANY: CONNECTICUT LIGHT AND POWER
PHONE: (888) 783-6617

TELEPHONE COMPANY: AT&T
PHONE: (800) 288-2020

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

PROJECT SUMMARY

SITE ADDRESS:

401-411 LOPUS ROAD
BEACON FALLS, CT 06403
COUNTY: NEW HAVEN

1A CERTIFICATE SUMMARY:

LATITUDE: 41° 25' 58.22" N
LONGITUDE: 73° 04' 12.77" W
GROUND ELEVATION: 159' AMSL
TOWER HEIGHT: 144' 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 (6) 1-5/8" COAX CABLES

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

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

PROJECT NOTES

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

PROJECT LOCATION DIRECTIONS

FROM HAMDEN, CT:

TAKE WILBUR CROSS PARKWAY CT-15 SOUTH TOWARD NEW YORK CITY. TAKE EXIT 59 CT-69 WOODBRIDGE / NEW HAVEN. TURN LEFT ONTO CT-69; TURN LEFT ON LUCY ST; TURN RIGHT ON CT-63 AMITY ROAD; TURN LEFT ON SEYMOUR ROAD CT-67; MERGE ONTO CT-8 NORTH TOWARD WATERBURY; TAKE EXIT 23 CT-42 TO BEACON FALLS / OXFORD; TURN RIGHT ONTO SOUTH MAIN ST CT-42; TURN LEFT ON DEPOT ST; TURN RIGHT ON LOPUS ROAD. SITE IS ON THE LEFT

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	1	04/28/20	LR
G-002	GENERAL NOTES	0	07/24/19	LR
C-101	DETAILED SITE PLAN & TOWER ELEVATION	1	04/28/20	LR
C-501	ANTENNA INFORMATION & SCHEDULE	1	04/28/20	LR
E-501	GROUNDING DETAILS	0	07/24/19	LR
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			
R-604	SUPPLEMENTAL			
R-605	SUPPLEMENTAL			
R-606	SUPPLEMENTAL			
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R-608	SUPPLEMENTAL			
R-609	SUPPLEMENTAL			
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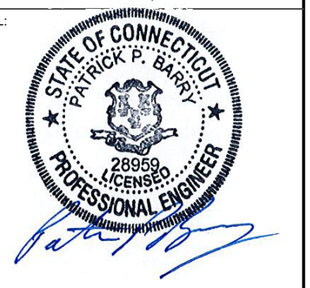
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	LR	07/24/19
1	UPDATE MA	LR	04/28/20

ATC SITE NUMBER:
370641
ATC SITE NAME:
BEACON FALLS CT

SITE ADDRESS:
401-411 LOPUS ROAD
BEACON FALLS, CT 06403

SEAL:



Authorized by "EOR"
Apr 28 2020 5:53 PM

T-Mobile cosign

DRAWN BY:	LR
APPROVED BY:	PPB
DATE DRAWN:	07/24/19
ATC JOB NO:	12958692

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	1

GENERAL CONSTRUCTION NOTES:

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

STRUCTURAL STEEL NOTES:

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

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	LR	07/24/19

ATC SITE NUMBER:
370641

ATC SITE NAME:
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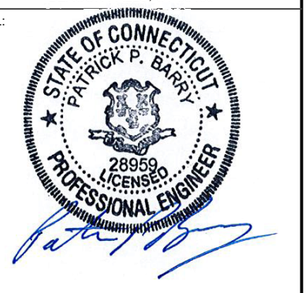
SITE ADDRESS:
401-411 LOPUS ROAD
BEACON FALLS, CT 06403

SEAL:



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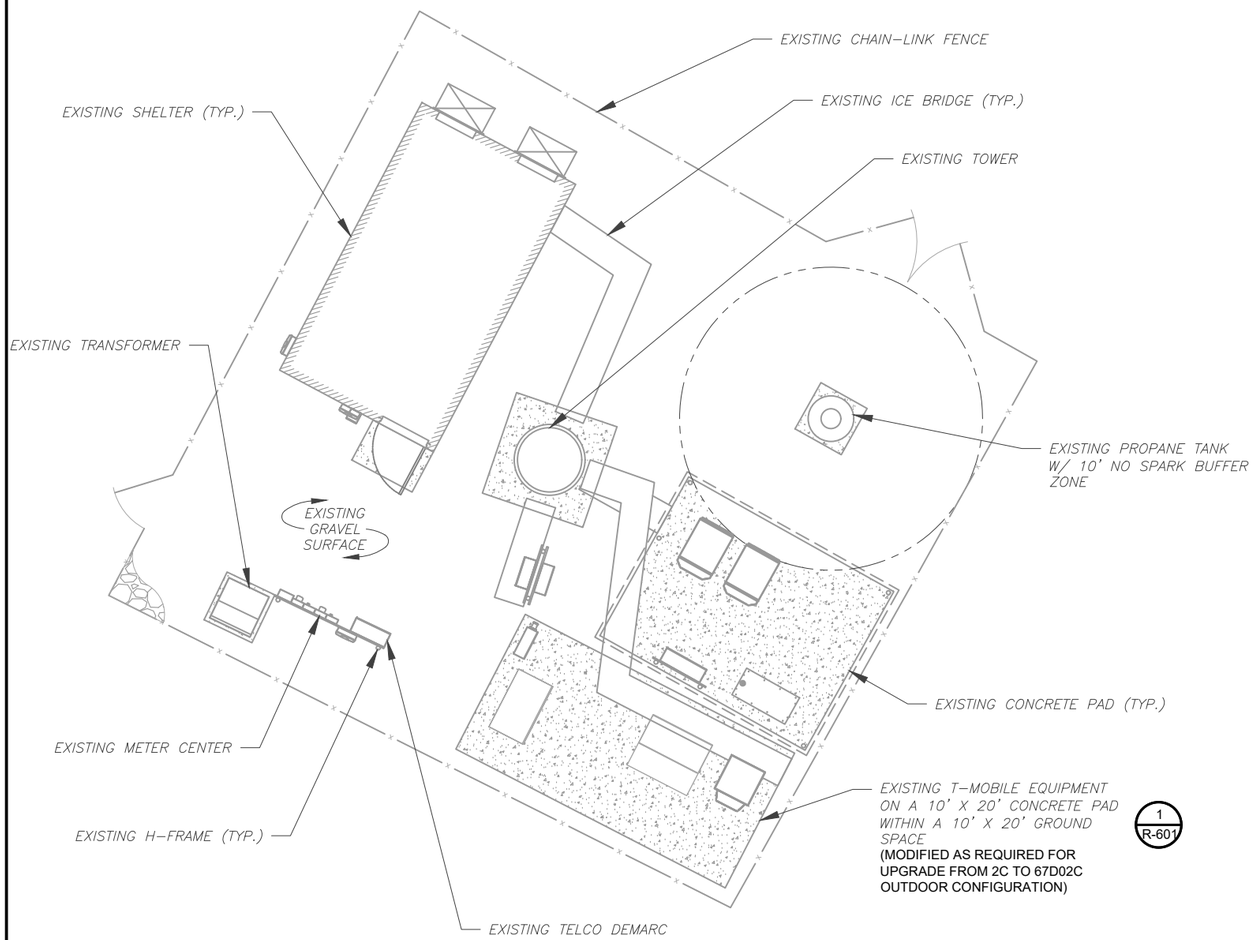
APPROVED BY:	PPB
DATE DRAWN:	07/24/19
ATC JOB NO:	12958692

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.

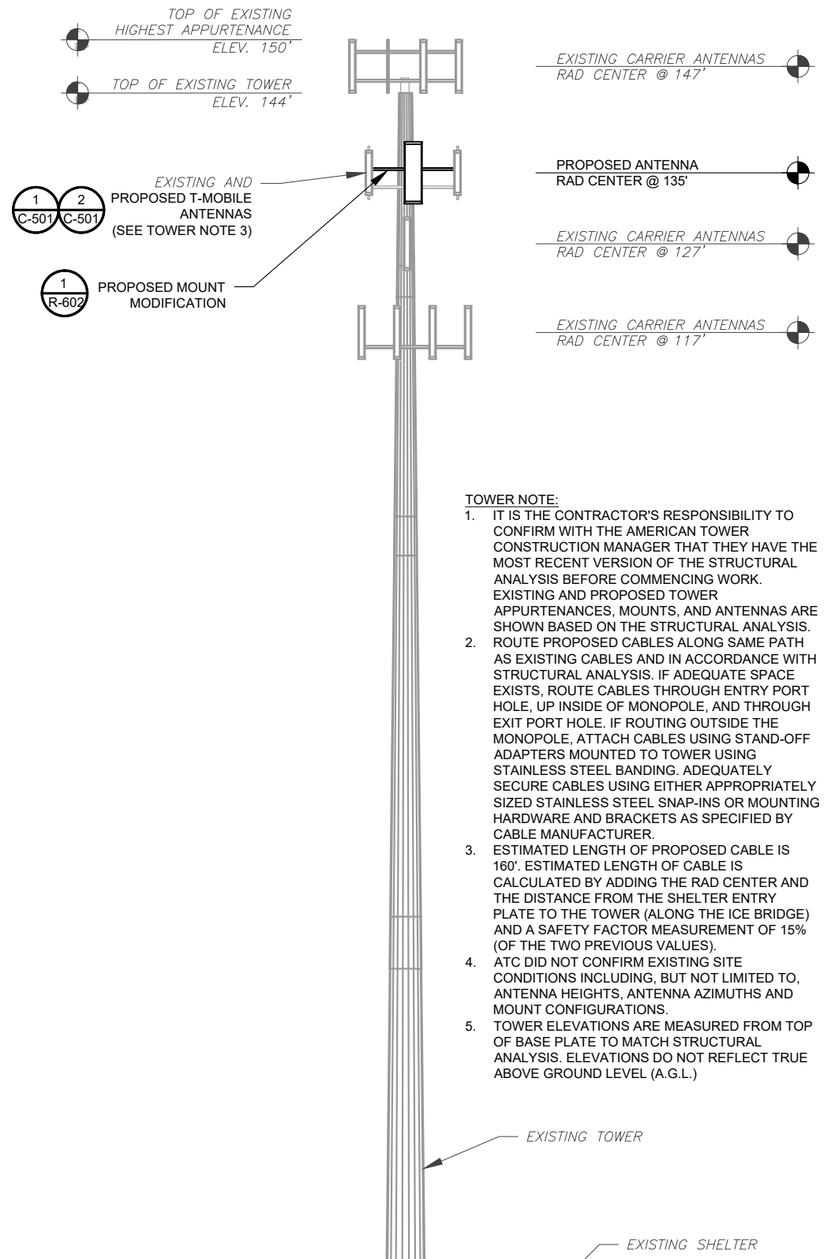


1 DETAILED SITE PLAN

0 10' 20'

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

PER MOUNT ANALYSIS COMPLETED BY CLS ENGINEERING, DATED 08-21-19, THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT



2 TOWER ELEVATION

SCALE: NOT TO SCALE

TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. 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 160'. 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.)

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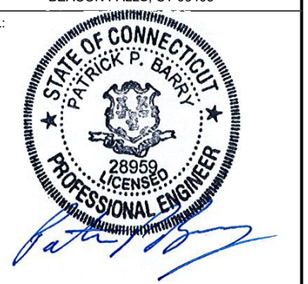

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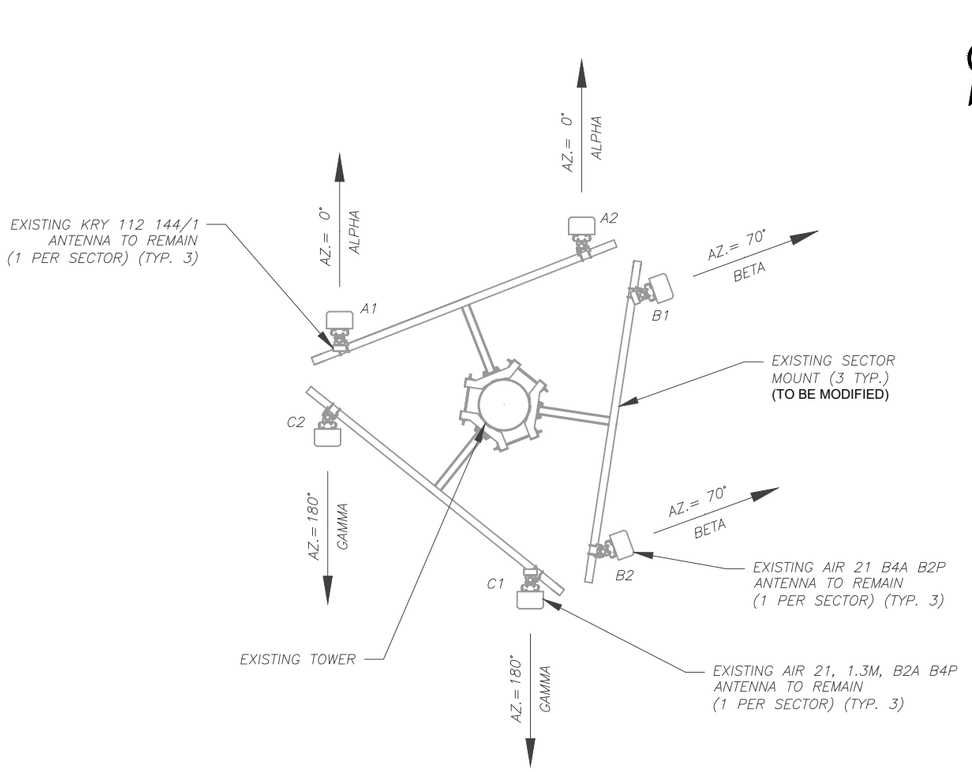
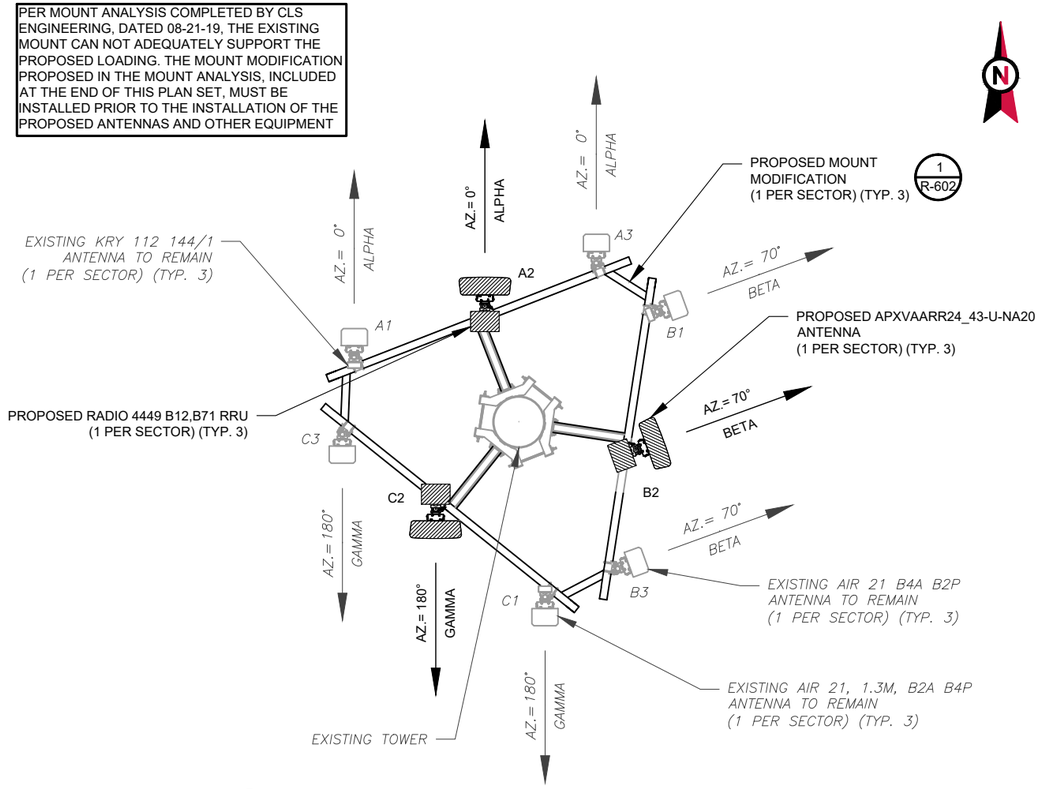
DETAILED SITE PLAN & TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-101	1



1 EXISTING ANTENNA PLAN

PER MOUNT ANALYSIS COMPLETED BY CLS ENGINEERING, DATED 08-21-19, THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT



2 FINAL ANTENNA PLAN

EXISTING ANTENNA / EQUIPMENT SCHEDULE

SECTOR	ANT.	MANUFACTURER (MODEL #)	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	A1	AIR 21, 1.3M, B2A B4P	135'–0"	0°	0°	2°	KRY 112 144/1
ALPHA	A2	AIR 21 B4A B2P	135'–0"	0°	0°	2°	–
BETA	B1	AIR 21 B2A B4P	135'–0"	70°	–	2°	KRY 112 144/1
BETA	B2	AIR 21 B4A B2P	135'–0"	70°	–	2°	–
GAMMA	C1	AIR 21 B2A B4P	135'–0"	180°	–	2°	KRY 112 144/1
GAMMA	C2	AIR 21 B4A B2P	135'–0"	180°	–	2°	–

NOTES

1. BASED ON APPROVED ATC APPLICATION 12927148, DATED 04/17/19. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. ATC HAS NOT YET VERIFIED ANY EXISTING ANTENNA CONFIG OR MOUNT CONFIG. CONTRACTOR TO VERIFY MOUNT CONFIG HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (EQUIP) (I.E. CLEARANCES, MOUNT PIPE, SUFFICIENT LENGTH, ETC.) ATC DID NOT ANALYZE ANTENNA MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY LESSEE LOADING.
3. ALL PROPOSED EQUIP INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH ATC'S CM.
4. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
5. POSITIONS START WITH FIRST PIPE ON THE LEFT SIDE (AS VIEWED FROM BEHIND THE MOUNT).

FINAL ANTENNA / EQUIPMENT SCHEDULE

SECTOR	ANT.	MANUFACTURER (MODEL #)	RAD CENTER	AZIMUTH (TN)	MECH. D-TILT	ELEC. D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	A1	AIR 21, 1.3M, B2A B4P	135'–0"	0°	0°	2°	KRY 112 144/1
ALPHA	A2	APXVAARR24_43-U-NA20	135'-0"	0°	0°	2°	RADIO 4449 B12,B71
ALPHA	A3	AIR 21 B4A B2P	135'–0"	0°	0°	2°	–
BETA	B1	AIR 21 B2A B4P	135'–0"	70°	–	2°	KRY 112 144/1
BETA	B2	APXVAARR24_43-U-NA20	135'-0"	70°	-	2°	RADIO 4449 B12,B71
BETA	B3	AIR 21 B4A B2P	135'–0"	70°	–	2°	–
GAMMA	C1	AIR 21 B2A B4P	135'–0"	180°	–	2°	KRY 112 144/1
GAMMA	C2	APXVAARR24_43-U-NA20	135'-0"	180°	-	2°	RADIO 4449 B12,B71
GAMMA	C3	AIR 21 B4A B2P	135'–0"	180°	–	2°	–

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

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

3 ANTENNA SCHEDULE

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

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

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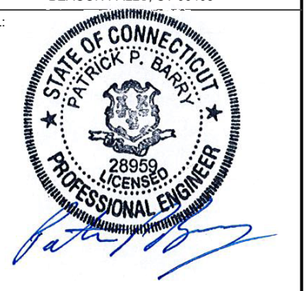
BEACON FALLS, CT 06403

SEAL:



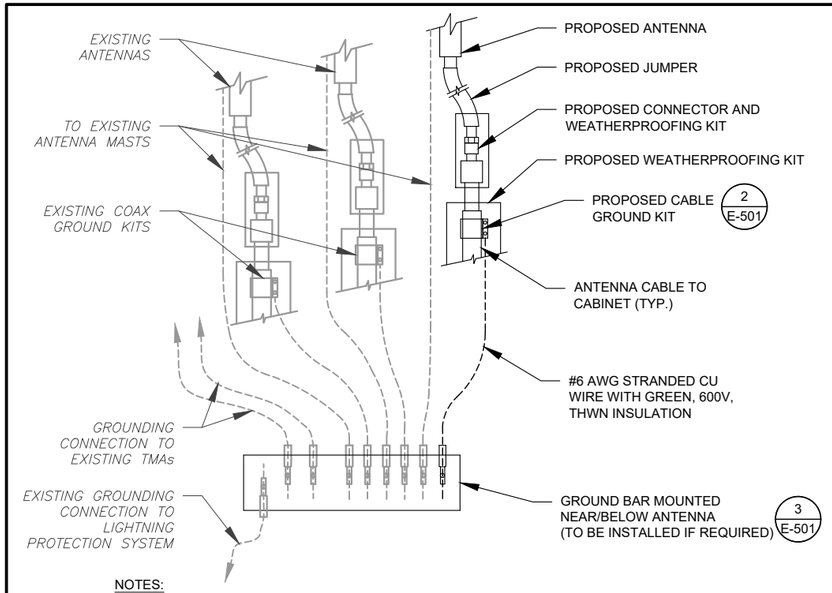
Authorized by "EOR"
Apr 28 2020 5:53 PM

T-Mobile cosign

DRAWN BY:	LR
APPROVED BY:	PPB
DATE DRAWN:	07/24/19
ATC JOB NO:	12958692

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-501	1

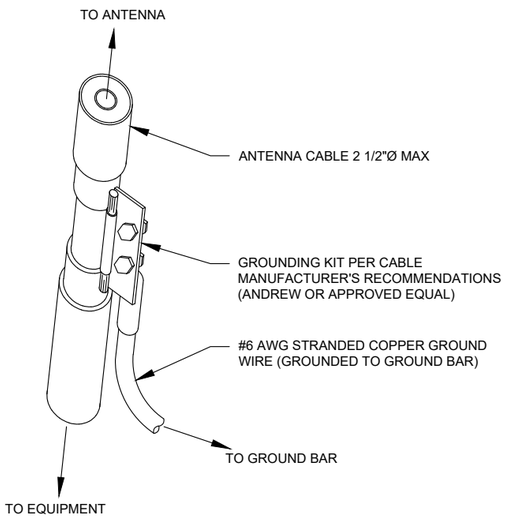


NOTES:

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

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: NOT TO SCALE

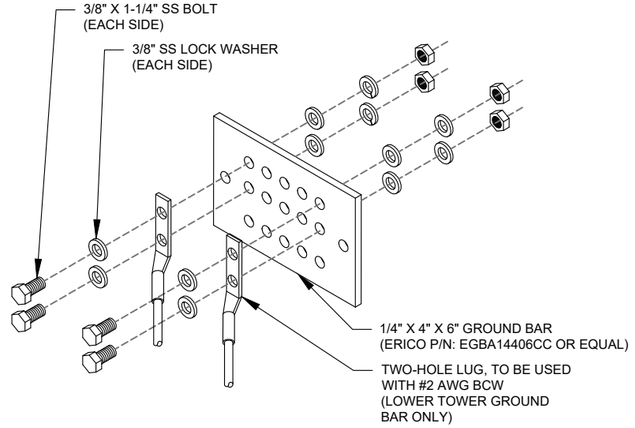


GROUND KIT NOTES:

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

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: NOT TO SCALE



GROUND BAR NOTES:

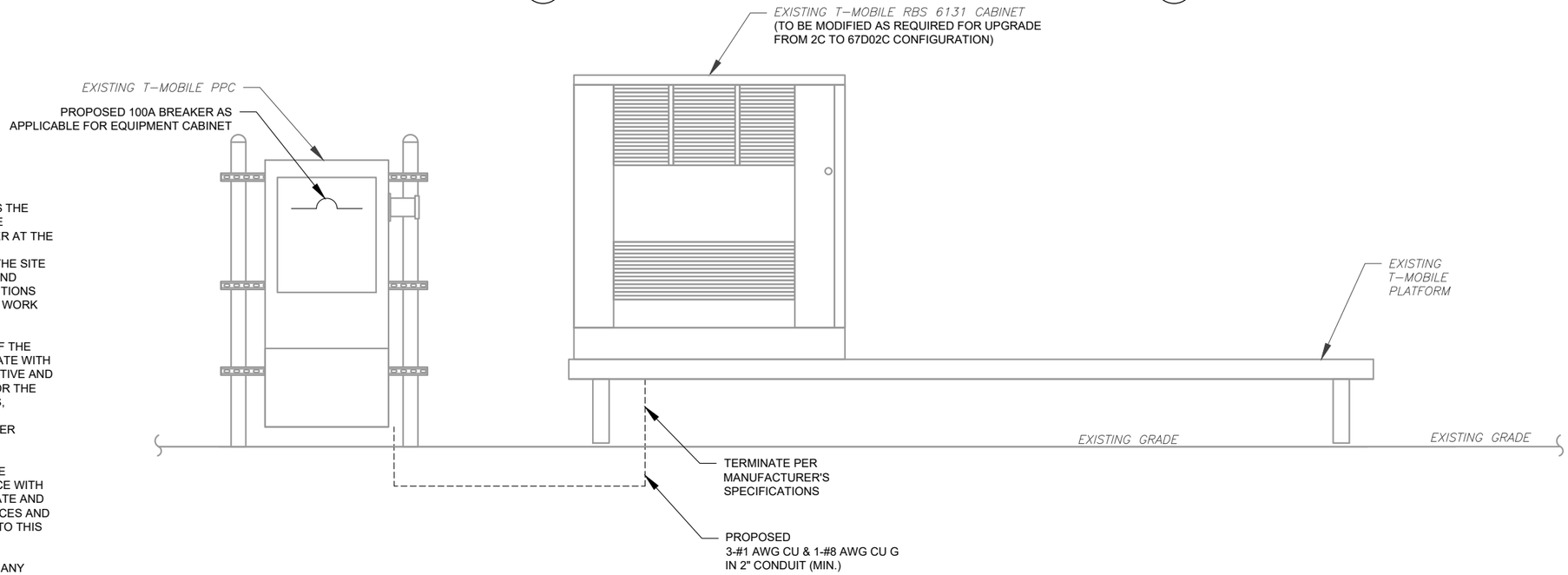
1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL

SCALE: NOT TO SCALE

ELECTRICAL NOTES:

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



4 ELECTRICAL UPGRADE DIAGRAM

SCALE: NOT TO SCALE

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	LR	07/24/19

ATC SITE NUMBER:

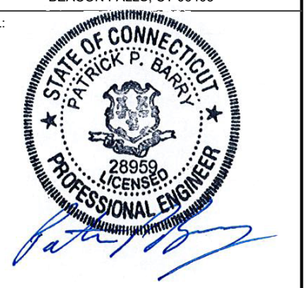
370641

ATC SITE NAME:

BEACON FALLS CT

SITE ADDRESS:
401-411 LOPUS ROAD
BEACON FALLS, CT 06403

SEAL:



Authorized by "EOR"
Apr 28 2020 5:53 PM

T-Mobile cosign

DRAWN BY:	LR
APPROVED BY:	PPB
DATE DRAWN:	07/24/19
ATC JOB NO:	12958692

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

RAN Template:	A&L Template:	Power System Template:
67D02C Outdoor	67D02C_2xAIR+1OP	Custom

CT11487B_L600_3.1_draft

Section 5 - RAN Equipment

Existing RAN Equipment		
Template: 2C		
Enclosure	1	2
Enclosure Type	RBS 6131	S12000 Outdoor
Baseband	DUW30 (x2) DUG20 DUS31	
Hybrid Cable System	Ericsson 9x18 HCS *Select Length*	
Radio	RU22 (x6)	

Proposed RAN Equipment		
Template: 67D02C Outdoor		
Enclosure	1	2
Enclosure Type	RBS 6131	S12000 Outdoor
Baseband	DUW30 U2100 DUW30 U1900 DUG20 G1900 BB 6630 L2100 L700 L600 BB 6630 N600 (DARK)	
Hybrid Cable System	Ericsson 9x18 HCS *Select Length* Ericsson 6x12 HCS *Select Length & AWG* (x3)	
Radio	RU22 (x6) U2100	

RAN Scope of Work:

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

Add (3) 6X12 HCS.

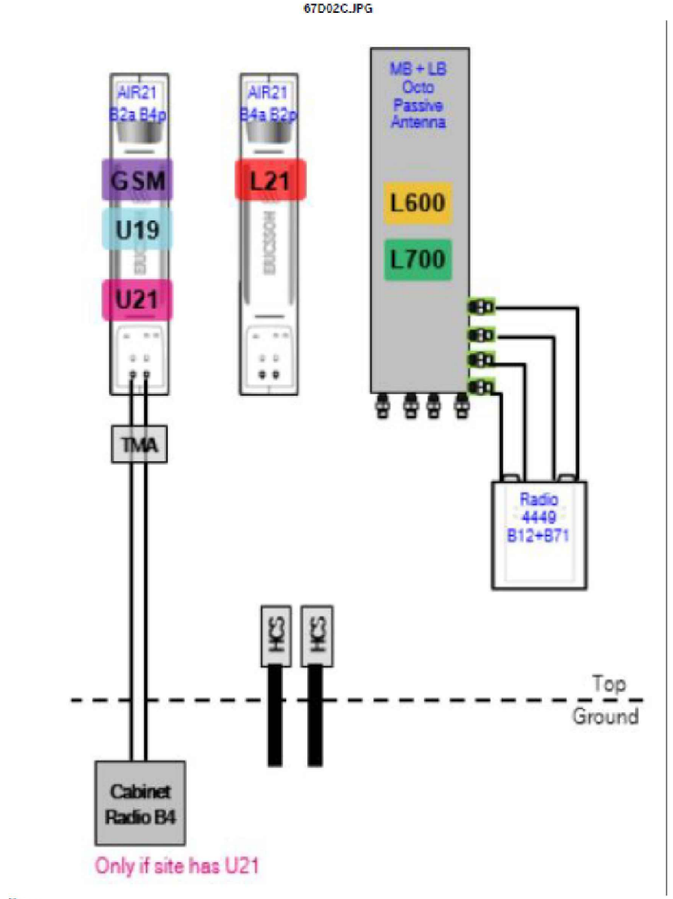
Existing: (12) Coaxial Lines; (1) 9x18. Remove (6) Coax.

Add Battery Backup Cabinet.

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE

Section 3 - Proposed Template Images

67D02C.JPG



Notes:

2 ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	0

Mount Analysis of Existing T-Arms for American Tower on behalf of T-Mobile
370641 - Beacon Falls CT
Project #: 12927148

T-Mobile Site ID: CT11487B
Program: L600

CLS Engineering PLLC Project #41124-12927148-01-MA-R2
August 21, 2019

MOUNT DESCRIPTION	Existing T-Arms at 134 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 135 ft AGL (Eccentricity of ~1 ft)
SITE DESCRIPTION	149 ft Monopole
SITE ADDRESS	401-411 Lopus Road, Beacon Falls, CT 06403-0000, New Haven County
GPS COORDINATES	41.43283333, -73.07022222
ANALYSIS STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	125 mph, V_{ult} / 97 mph, V_{asd} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 0.75" Ice

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

MEMBER USAGE	76%	Pass
CONNECTION USAGE	80%	Pass
COLLAR USAGE	37%	Pass

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

Prepared by:
Jennifer Soza

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

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

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

IdenTrust part of HID Global

Digitally signed by Tyler Barker
DN: c=US, o=Telamon Corporation, ou=A01427E000001 6A4525ADF800001 D17, cn=Tyler Barker
Date: 2019.08.22 17:47:57 -04'00'

■ CONCLUSION AND RECOMMENDATIONS

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

- **Install (1) 8ft. long proposed Pipe 2 STD, A53 Gr. B, mount pipe at empty Position 2 at each sector for proposed panel configuration (3 total) as shown. Connect to T-Arm face horizontal member using Site Pro 1 SP219 crossover plate or equal.**
- **Install (1) 12'-6" long proposed Pipe 2 STD, A53 Gr. B, support rail pipe at each sector (3 total). Connect to all existing and proposed antenna mount pipes using Site Pro 1 SCX1-K crossover plate or equal (12 total).**
- **Install (3) 7'-6" long Pipe 2 STD, A53 Gr. B, support rail bracing pipes at the existing T-Arm mount. Connect to proposed support rail pipes with Site Pro 1 PUCK or equal, as shown in the following sketches.**
- **Install (1) Site Pro 1 PRK-1245 kit at the offset arms on the existing T-Arm mount as shown in the following sketches. Field-Cut proposed angles as required. Maintain minimum bolt edge distance.**
- **All hardware for Site Pro 1 PUCK connection to the proposed horizontal pipe should be installed with "turn of the nut" method per the following table:**

BOLT TIGHTENING PROCEDURE

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

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

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

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

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

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

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

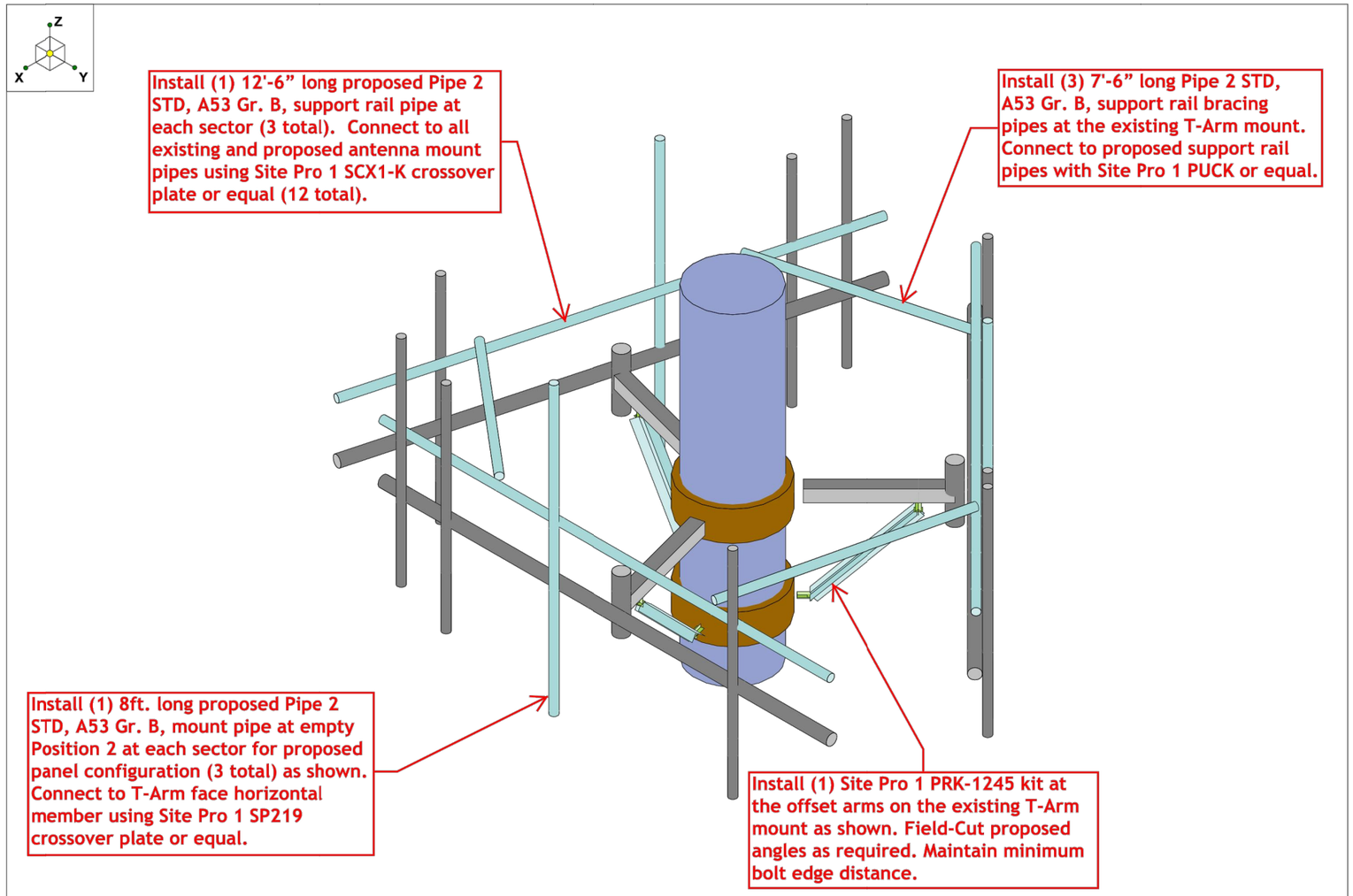
See following sketches and Site Pro 1 assembly drawings for additional details.

1 MOUNT ANALYSIS
SCALE: NOT TO SCALE

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

SUPPLEMENTAL

SHEET NUMBER: R-602
REVISION: 0



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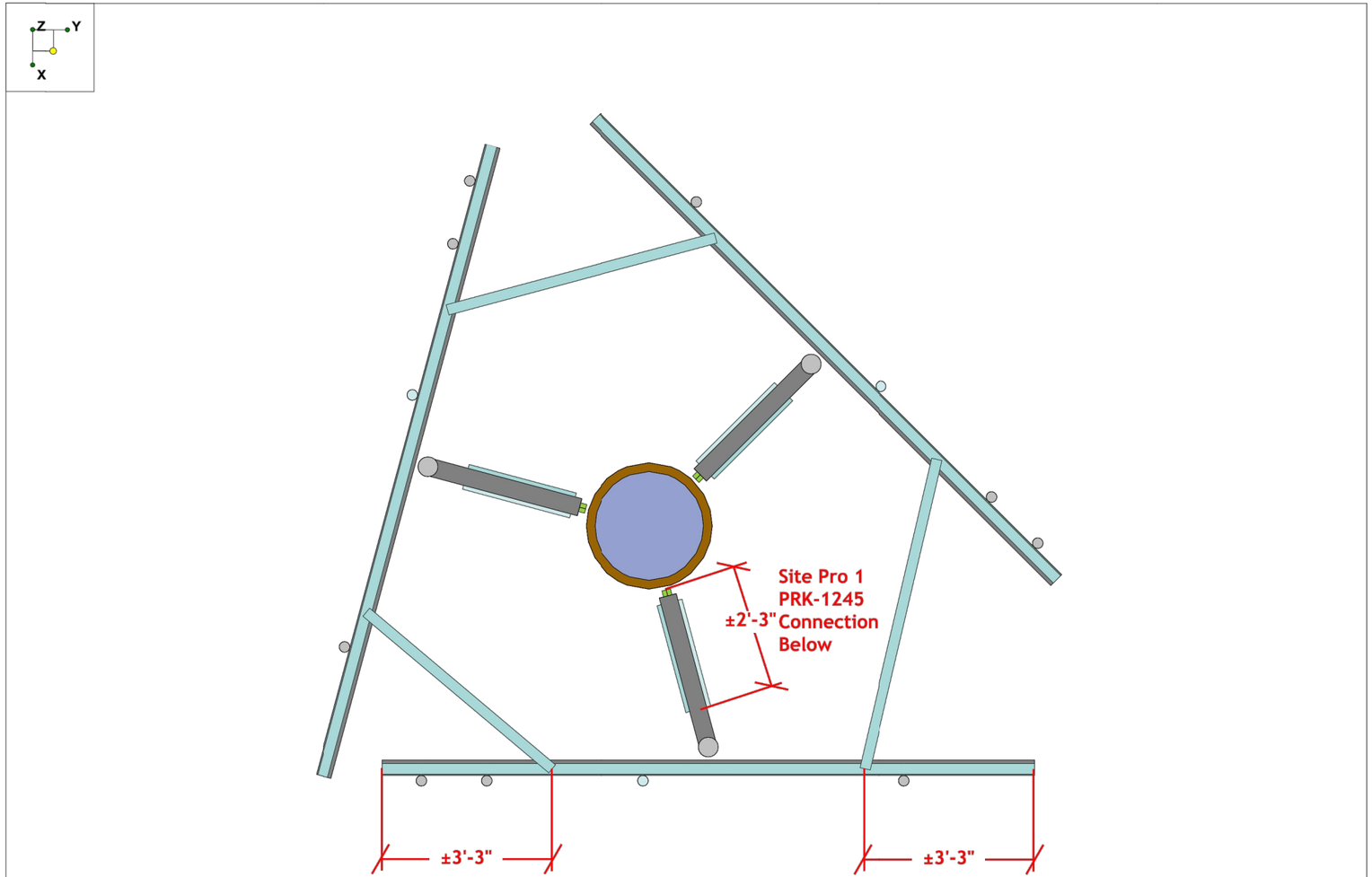
JLS		Aug 21, 2019 at 10:53 AM
41124-12927148-01-MA-R2	Installation Sketch	41124-12927148-01-MA-R2-Images.r3d

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-603	0



CLS	41124-12927148-Beacon Falls CT	IN - 2
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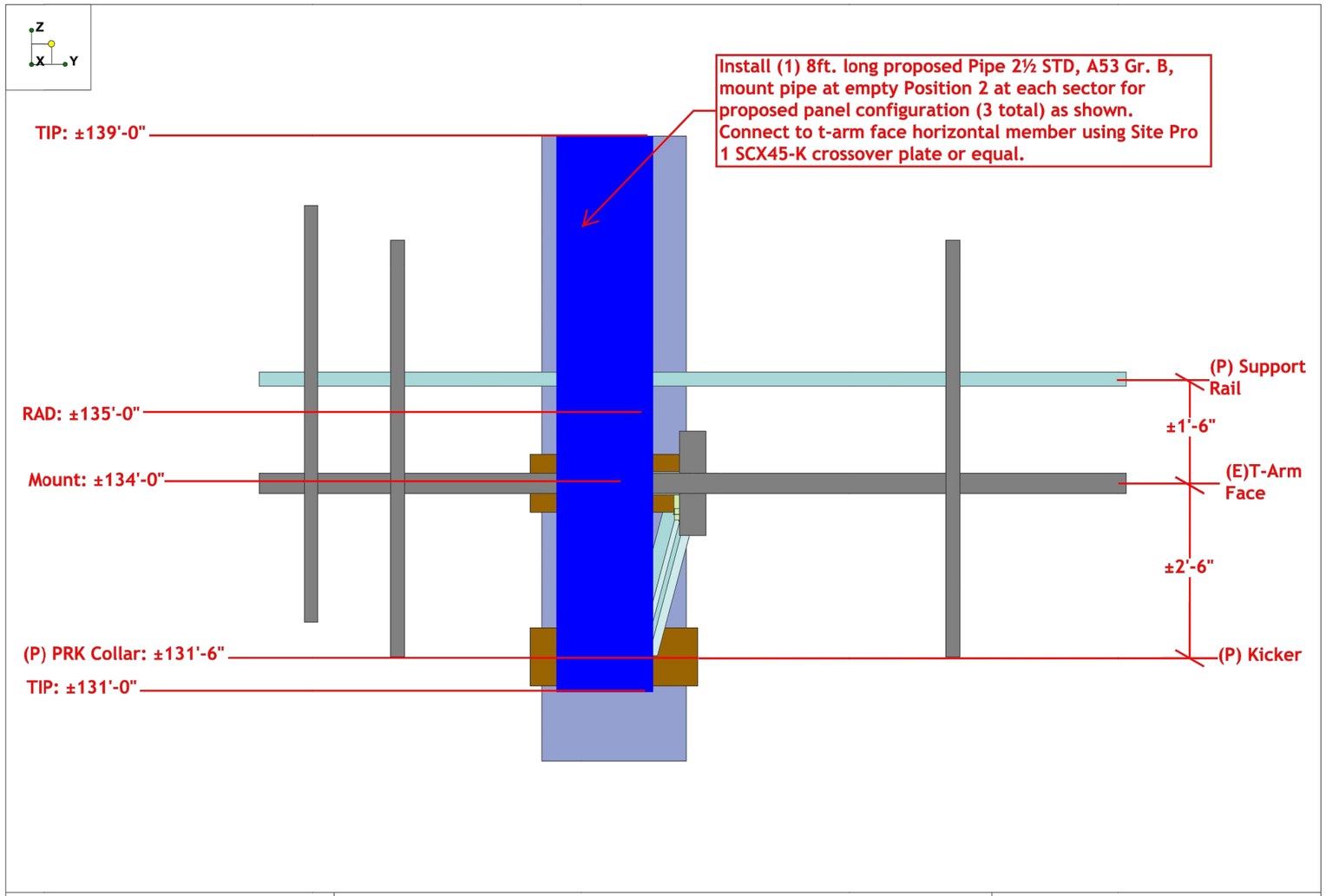
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-604	0



CLS	41124-12927148-Beacon Falls CT	IN - 3
JLS		Aug 21, 2019 at 10:55 AM
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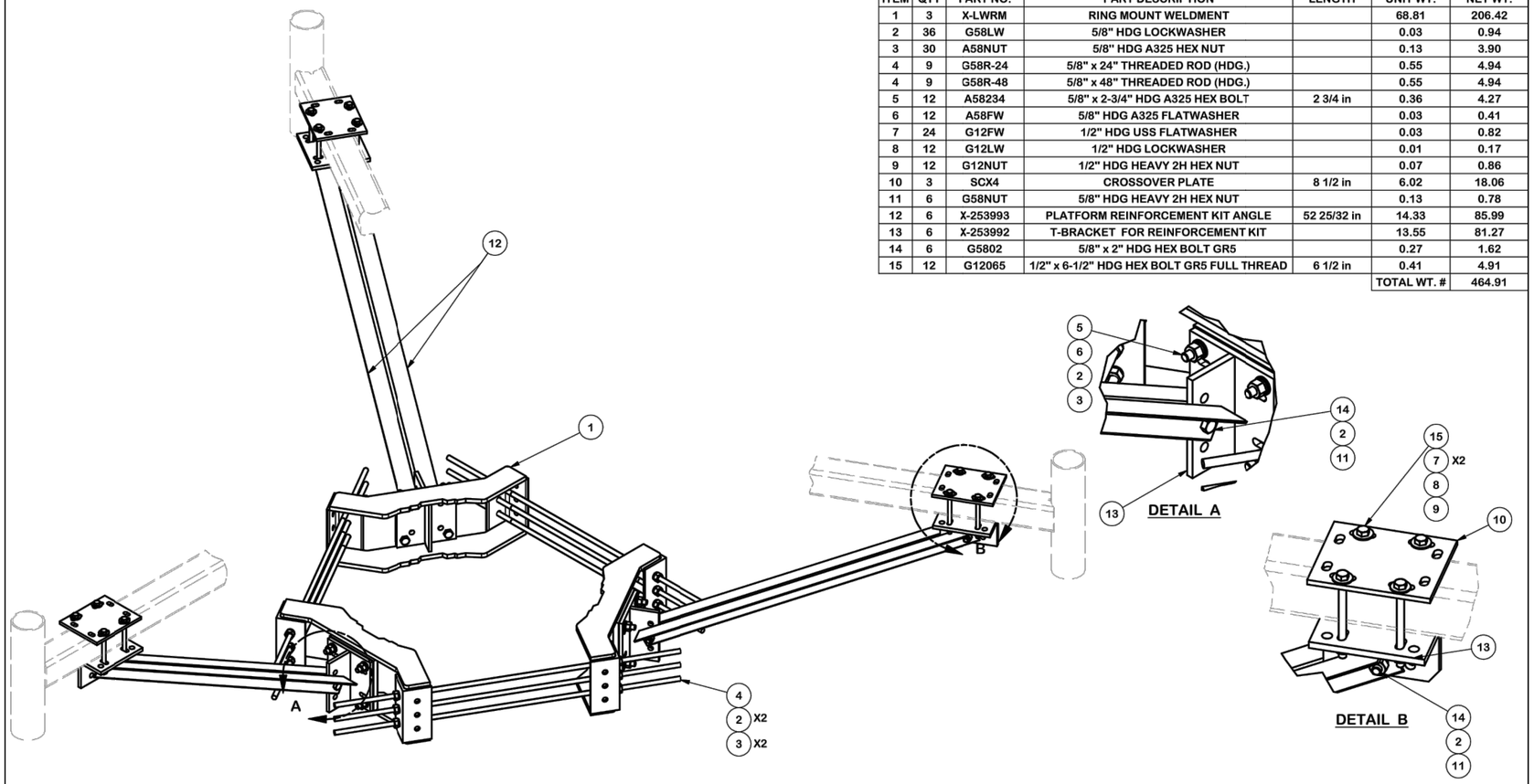
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-605	0

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



TOLERANCE NOTES

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

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

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

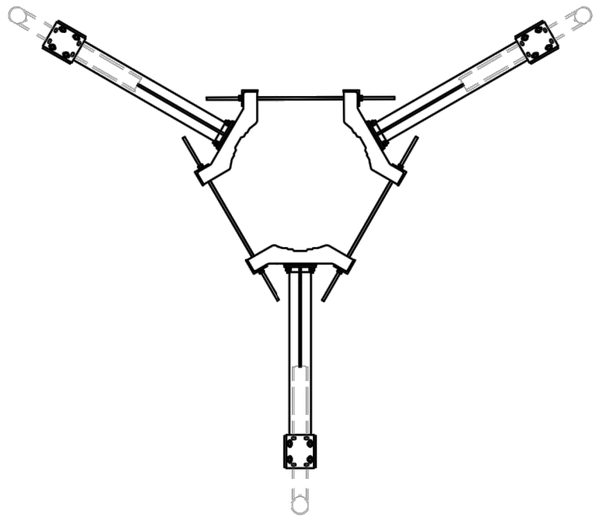
Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

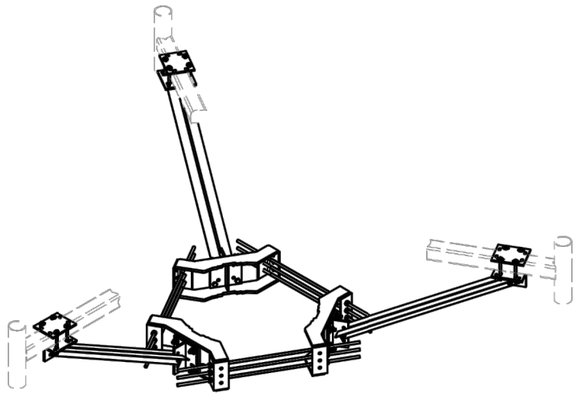
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
4488	CEK 4/10/2014		PRK-1245	1 OF 2
CLASS / SUB	DRAWING USAGE	CHECKED BY	DWG. NO.	
81 / 01	CUSTOMER	BMC 4/10/2014	PRK-1245	

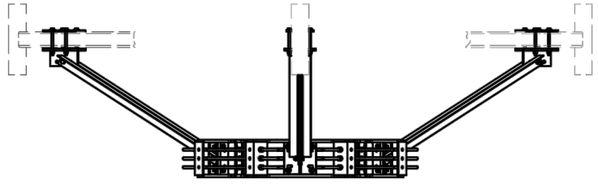
SUPPLEMENTAL

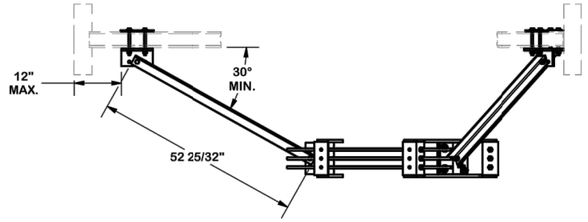
SHEET NUMBER: R-606

REVISION: 0









TOLERANCE NOTES

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

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

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1-888-753-7446

Locations:
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Salem, OR
Dallas, TX

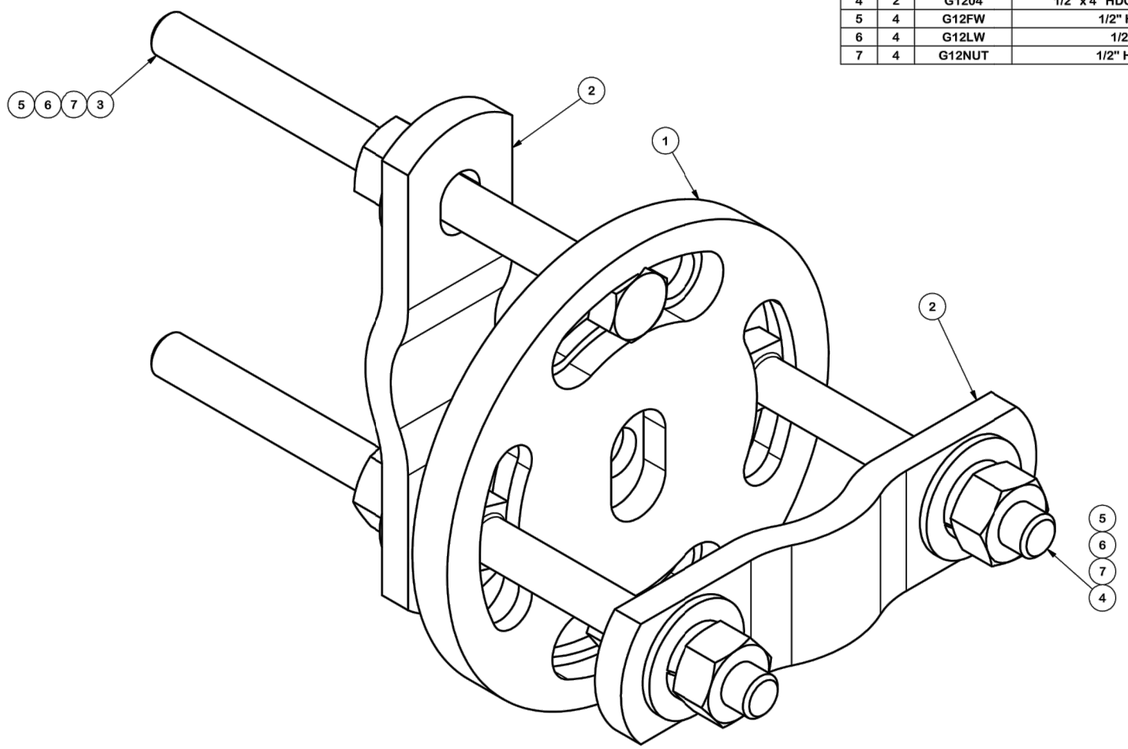
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
4488	CEK 4/10/2014		PRK-1245	2 OF 2

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

SUPPLEMENTAL

SHEET NUMBER: R-607

REVISION: 0



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	X-127594	FLAT DISK CLAMP PLATE 4" CENTERS (GALVANIZED)		2.48	2.48
2	2	X-100064	CLAMP (S) (4" V-CLAMP) GALVANIZED		0.91	1.83
3	2	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	0.82
4	2	G1204	1/2" x 4" HDG HEX BOLT GR5 FULL THREAD	4 in	0.27	0.54
5	4	G12FW	1/2" HDG USS FLATWASHER		0.03	0.14
6	4	G12LW	1/2" HDG LOCKWASHER		0.01	0.06
7	4	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.29
					TOTAL WT. #	6.16

TOLERANCE NOTES

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

DESCRIPTION: ADJUSTABLE CLAMP PLATE TIE-BACK ASSEMBLY

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

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

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
	CEK 8/30/2010		PUCK	1 OF 1

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 9/1/2010	PUCK

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-608	0

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	SCX1	CROSSOVER PLATE 2-3/8" X 2-3/8"		3.71	3.71
2	4	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	2.50
3	8	G12FW	1/2" HDG USS FLATWASHER		0.03	0.27
4	8	G12LW	1/2" HDG LOCKWASHER		0.01	0.11
5	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
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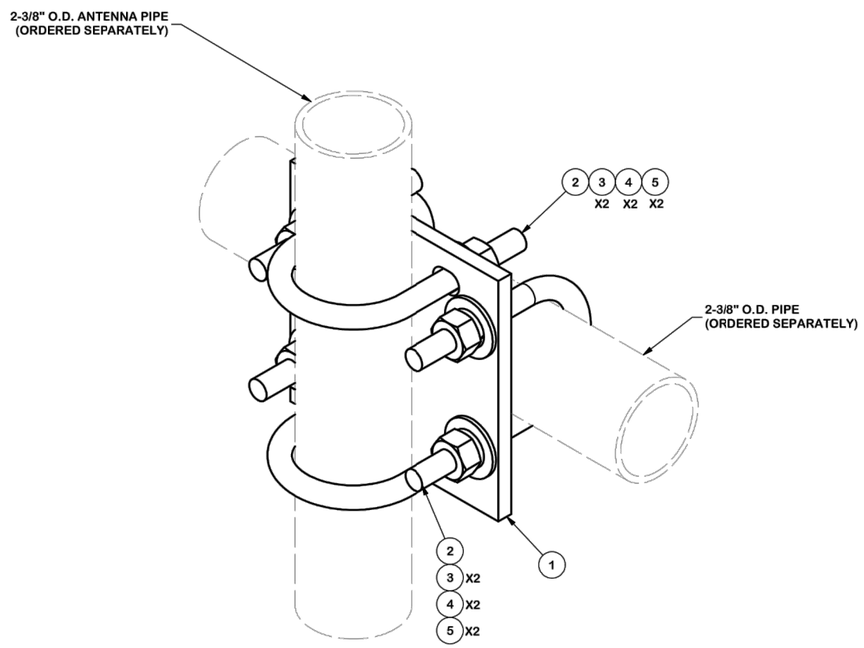

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	ADDED MISSING U-BOLT AND HRDWE		KC8	7/5/2012
REVISION HISTORY				

TOLERANCE NOTES

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

DESCRIPTION: CROSSOVER PLATE

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	CEK 6/30/2011		SCX1-K

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	CEK 8/23/2012	SCX1-K

PAGE 1 OF 1

SITE PRO 1
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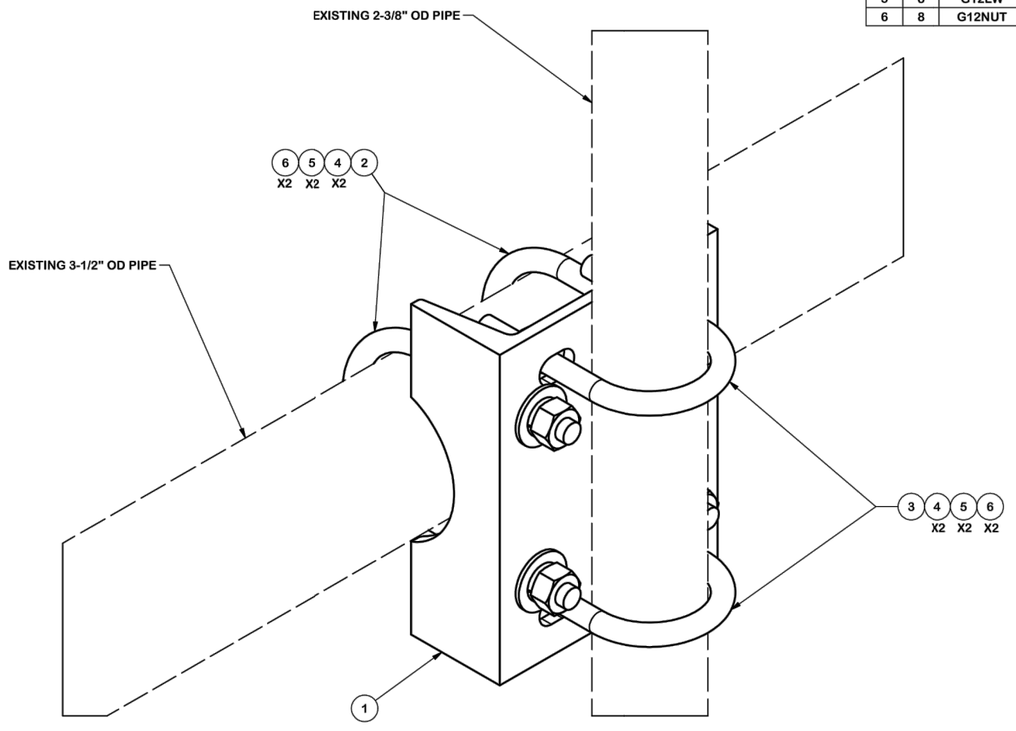
Salem, OR
Dallas, TX

SUPPLEMENTAL

SHEET NUMBER: R-609

REVISION: 0

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	X-SP219	SMALL SUPPORT CROSS PLATE	8 1/4 in	8.61	8.61
2	2	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.83	1.66
3	2	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	1.25
4	8	G12FW	1/2" HDG USS FLATWASHER		0.03	0.27
5	8	G12LW	1/2" HDG LOCKWASHER		0.01	0.11
6	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
					TOTAL WT. #	12.47



TOLERANCE NOTES

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

DESCRIPTION: PIPE MOUNT KIT

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

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

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
4518	KC8 6/26/2012		SP219	1 OF 1
CLASS / SUB	DRAWING USAGE	CHECKED BY	DWG. NO.	
81 / 01	CUSTOMER	CEK 1/23/2013	SP219	

SUPPLEMENTAL

SHEET NUMBER: R-610

REVISION: 0

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**149 ft Monopole**
ATC Site Name	:	**Beacon Falls CT, CT**
ATC Asset Number	:	**370641**
Engineering Number	:	**12927148_C3_04**
Proposed Carrier	:	**T-Mobile**
Carrier Site Name	:	**CT487/BeaconFalls**
Carrier Site Number	:	**CT11487B**
Site Location	:	**401-411 Lopus Road** **Beacon Falls, CT 06403-0000** **41.432800, -73.070200**
County	:	**New Haven**
Date	:	**April 30, 2020**
Max Usage	:	**40%**
Result	:	**Pass**

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Prepared By:
Julio Benitez Santiago
Structural Engineer I

Reviewed By:

Authorized by "EOR"
08 May 2020 05:25:51 cosign

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 149 ft monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	EEI Job #13674, dated October 19, 2005
Foundation Drawing	EEI Job #13674, dated October 19, 2005
Geotechnical Report	Tectonic Project #3917.BEACON, dated August 17, 2005
Mount Analysis	CLS Engineering PLLC Project #41124-12927148-01-MA-R2, dated August 21, 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:	B - Competent 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
145.0	6	Powerwave Allgon LGP21401	Platform with Handrails	(1) 3" conduit (1) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Coax (1) 2" conduit	AT&T Mobility
	6	Powerwave Allgon 7020.00 Dual Band RET			
	6	Powerwave Allgon LGP13519			
	3	Ericsson RRUS 32 B2			
	6	Allgon 7770.00			
	3	CCI HPA-65R-BUU-H6			
	1	Raycap DC6-48-60-18-8F ("Squid")			
	3	Ericsson RRUS 11 (Band 12)			
135.0	3	Ericsson AIR 21, 1.3M, B2A B4P (91.5 lbs)	T-Arms	(1) 1 5/8" (1.63"-41.3mm) Fiber (6) 1 5/8" Coax	T-Mobile
	3	Ericsson KRY 112 144/1			
	3	Ericsson AIR 21 B4A B2P			
127.0	3	Generic 34" x 6" Panel	Flush	(6) 1 5/8" Coax	Metro Pcs Inc
117.0	1	RFS DB-B1-6C-12AB-0Z	Low Profile Platform	(2) 1 1/4" Hybriflex Cable (2) 1 5/8" Hybriflex	Verizon Wireless
	1	RFS DB-B1-6C-12AB-0Z			
115.0	2	Samsung B5/B13 RRH-BR04C			
	2	Samsung B2/B66A RRH-BR049			
	1	RFS DB-B1-6C-12AB-0Z			
	1	RFS DB-B1-6C-12AB-0Z			
	4	JMA Wireless MX06FRO660-02			

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
135.0	-	-	-	(6) 1 5/8" Coax	T-Mobile

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
135.0	3	RFS APXVAARR24_43-U-NA20	T-Arms	(3) 1 5/8" (1.63"-41.3mm) Fiber	T-Mobile
	3	Ericsson Radio 4449 B12,B71			

[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	29%	Pass
Shaft	35%	Pass
Base Plate	17%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,762.3	5,079.1	1,908.1	38%
Shear (Kips)	34.9	47.1	18.8	40%
* The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1				

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
135.0	Ericsson Radio 4449 B12,B71	T-Mobile	0.728	0.656
	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**

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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:

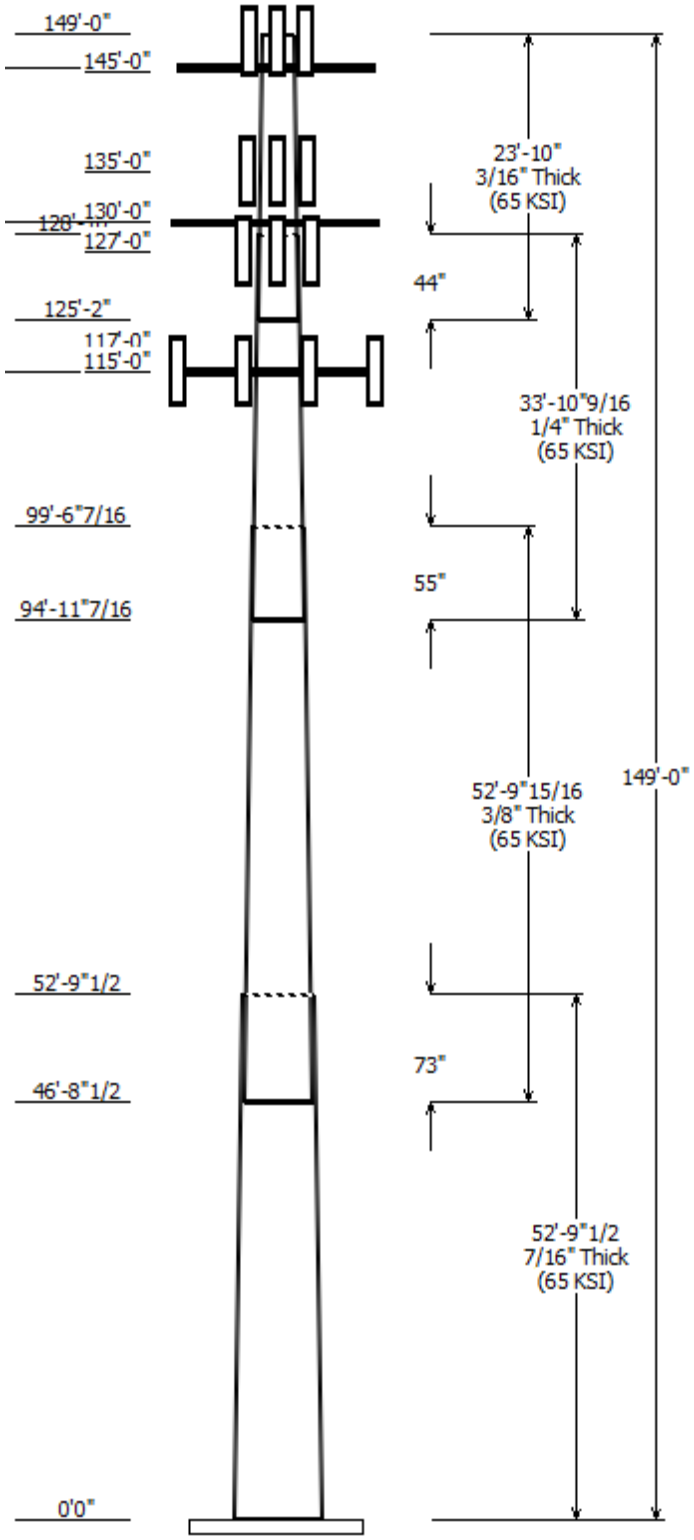
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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 :	370641	Code:	ANSI/TIA-222-G
Location :	Beacon Falls CT, CT		
Description :	149 ft EEI Monopole	Struct Class :	II
Shape :	18 Sides	Exposure :	B
Height :	149.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.262584 (in/ft)		

Sections Properties

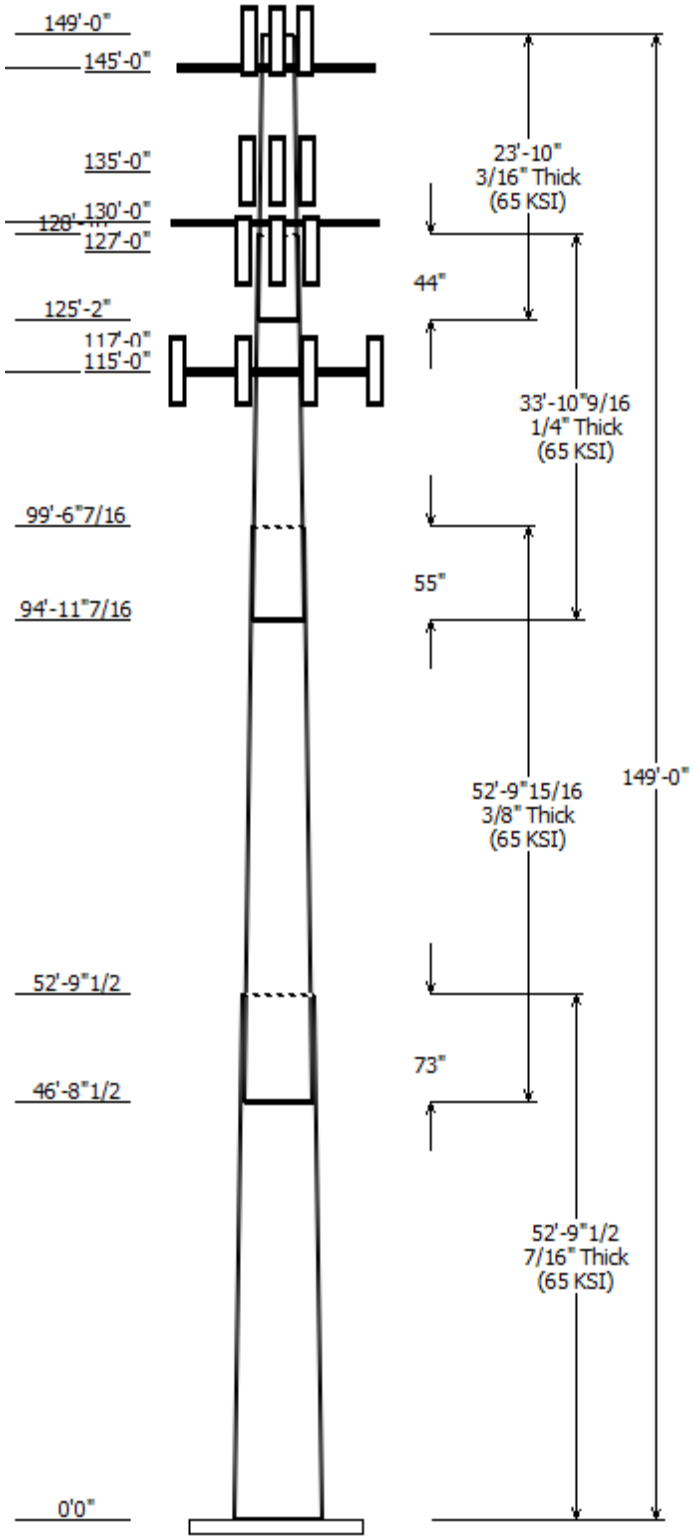
Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	52.790	42.13	56.00	0.438		0.000	18 Sides	65
2	52.830	30.61	44.48	0.375	Slip Joint	73.000	18 Sides	65
3	33.880	23.42	32.31	0.250	Slip Joint	55.000	18 Sides	65
4	23.833	18.50	24.75	0.188	Slip Joint	44.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
145.500	145.500	1	Flat Low Profile Platform
145.000	147.000	3	CCI HPA-65R-BUU-H6
145.000	147.000	6	Allgon 7770.00
145.000	145.000	3	Ericsson RRUS 32 B2
145.000	147.000	3	Ericsson RRUS 11 (Band 12)
145.000	147.000	1	Raycap DC6-48-60-18-8F
145.000	147.000	6	Powerwave Allgon LGP21401
145.000	145.000	6	Powerwave Allgon 7020.00
145.000	147.000	6	Powerwave Allgon LGP13519
135.000	135.000	3	RFS APXVAARR24_43-U-NA20
135.000	135.000	3	Ericsson AIR 21, 1.3M, B2A B4P
135.000	135.000	3	Ericsson AIR 21 B4A B2P
135.000	135.000	3	Ericsson Radio 4449 B12,B71
135.000	137.000	3	Ericsson KRY 112 144/1
130.000	130.000	3	Round T-Arm
127.000	127.000	3	Generic 34" x 6" Panel
117.000	119.000	1	RFS DB-B1-6C-12AB-0Z
117.000	119.000	1	RFS DB-B1-6C-12AB-0Z
115.000	115.000	1	Generic Round Low Profile
115.000	115.000	4	JMA Wireless MX06FRO660-02
115.000	117.000	1	RFS DB-B1-6C-12AB-0Z
115.000	117.000	1	RFS DB-B1-6C-12AB-0Z
115.000	115.000	2	Samsung B2/B66A RRH-BR049
115.000	115.000	2	Samsung B5/B13 RRH-BR04C

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	115.0	1 5/8" Hybriflex	No
0.000	117.0	1 1/4" Hybriflex	No
0.000	127.0	1 5/8" Coax	No
0.000	135.0	1 5/8" (1.63"-	No
0.000	135.0	1 5/8" (1.63"-	No
0.000	135.0	1 5/8" Coax	No
0.000	145.0	0.39" (10mm)	No
0.000	145.0	0.78" (19.7mm) 8	No
0.000	145.0	1 5/8" Coax	No
0.000	145.0	2" conduit	No
0.000	147.0	3" conduit	No



Load Cases

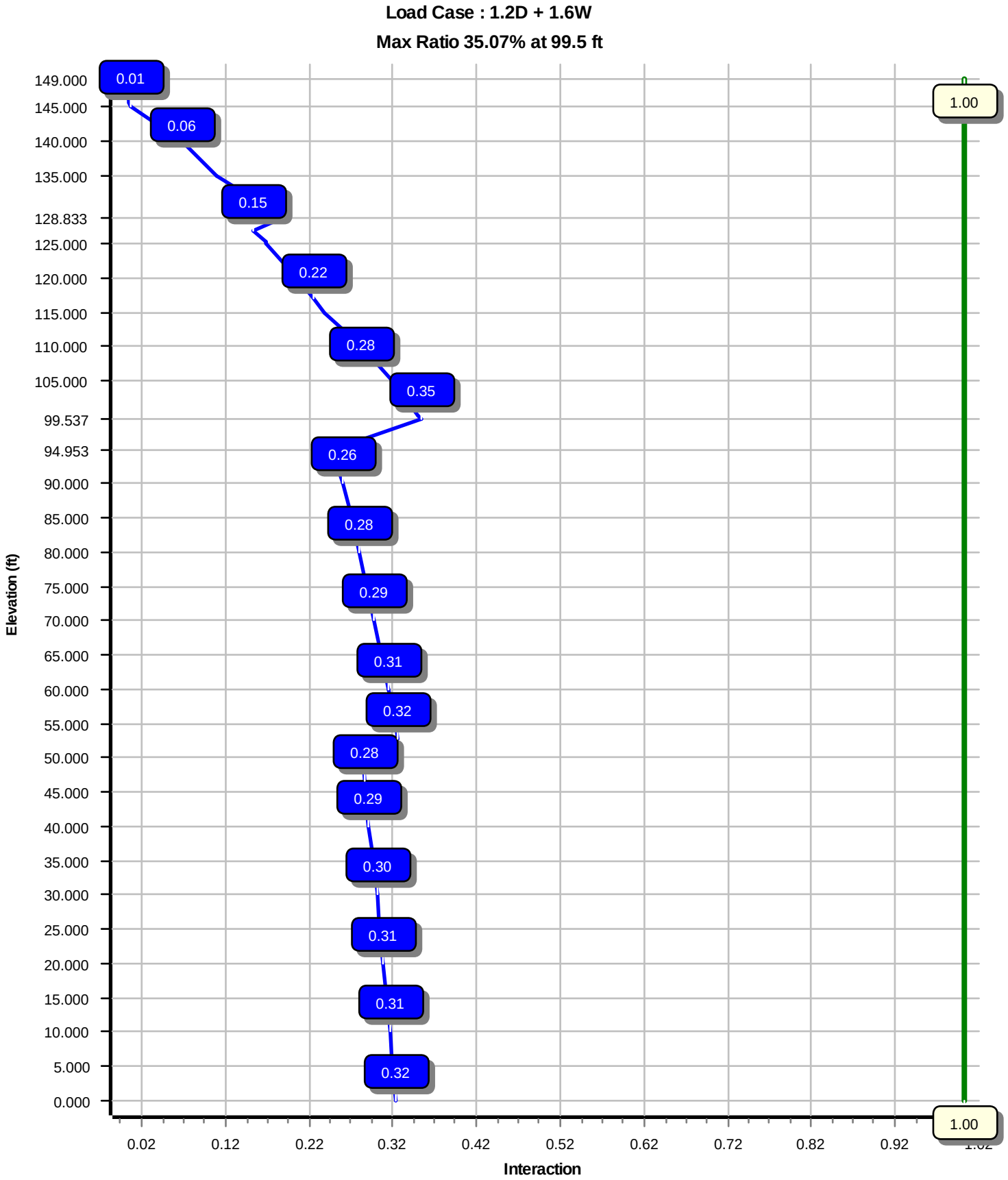
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) 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	1908.08	18.77	43.63
0.9D + 1.6W	1893.15	18.76	32.72
1.2D + 1.0Di + 1.0Wi	552.85	5.50	69.35
(1.2 + 0.2Sds) * DL + E ELFM	122.63	1.09	42.72
(1.2 + 0.2Sds) * DL + E EMAM	88.08	0.87	42.72
(0.9 - 0.2Sds) * DL + E ELFM	121.58	1.09	30.47
(0.9 - 0.2Sds) * DL + E EMAM	87.26	0.87	30.47
1.0D + 1.0W	406.20	4.01	36.37

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 35.07% at 99.5 ft
Elevation (ft)
149.000
145.000
140.000
135.000
128.833
125.000
120.000
115.000
110.000
105.000
99.537
94.953
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
0.01
0.06
0.15
0.22
0.28
0.35
0.26
0.28
0.29
0.31
0.32
0.28
0.29
0.30
0.31
0.31
0.32
1.00
1.00
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number: 370641 Code: ANSI/TIA-222-G

Site Name: Beacon Falls CT, CT Engineering Number:12927148_C3_04 4/30/2020 4:05:09 PM

Customer: T-MOBILE

Analysis Parameters

Location :	New Haven County, CT	Height (ft) :	149
Code :	ANSI/TIA-222-G	Base Diameter (in) :	56.00
Shape :	18 Sides	Top Diameter (in) :	18.50
Pole Type :	Taper	Taper (in/ft) :	0.263
Pole Manfacturer :	EEI	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:	B - Competent Soil				
Period Based on Rayleigh Method (sec):	1.90				
T_L (sec):	6	p:	1	C_s:	0.030
S_s:	0.193	S_1:	0.064	C_s Max:	0.030
F_a:	1.000	F_v:	1.000	C_s Min:	0.030
S_{ds}:	0.129	S_{d1}:	0.043		

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: 370641 Code: ANSI/TIA-222-G

Site Name: Beacon Falls CT, CT Engineering Number:12927148_C3_04 4/30/2020 4:05:09 PM

Customer: T-MOBILE

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	52.790	0.4375	65		0.00	12,130	56.00	0.00	77.15	30093.2	20.81	128.00	42.13	52.79	57.90	12721.9	15.22	96.32	0.262584
2-18	52.830	0.3750	65	Slip	73.00	7,954	44.48	46.71	52.50	12906.4	19.15	118.63	30.61	99.54	35.99	4157.6	12.63	81.64	0.262584
3-18	33.880	0.2500	65	Slip	55.00	2,526	32.31	94.95	25.44	3305.6	21.03	129.27	23.42	128.83	18.39	1247.1	14.76	93.68	0.262584
4-18	23.833	0.1875	65	Slip	44.00	1,035	24.75	125.17	14.62	1115.3	21.52	132.04	18.50	149.00	10.90	461.7	15.63	98.67	0.262584
				Shaft Weight		23,646													

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
145.50	Flat Low Profile Platform	1	1.00	0.000	1,500.00	26.100	1.00	2,147.13	45.170	1.00
145.00	Powerwave Allgon LGP13519	6	0.80	2.000	5.30	0.290	0.50	14.75	0.675	0.50
145.00	Powerwave Allgon 7020.00 Dual	6	0.80	0.000	2.20	0.339	0.50	12.38	0.747	0.50
145.00	Powerwave Allgon LGP21401	6	0.80	2.000	14.10	1.104	0.50	38.97	1.816	0.50
145.00	Raycap DC6-48-60-18-8F	1	0.80	2.000	31.80	1.470	1.00	93.31	2.166	1.00
145.00	Ericsson RRUS 11 (Band 12)	3	0.80	2.000	50.00	2.566	0.50	117.96	3.610	0.50
145.00	Ericsson RRUS 32 B2	3	0.80	0.000	53.00	2.743	0.67	126.32	3.909	0.67
145.00	Allgon 7770.00	6	0.80	2.000	35.00	5.508	0.65	169.32	6.559	0.65
145.00	CCI HPA-65R-BUU-H6	3	0.80	2.000	51.00	9.658	0.69	269.72	12.422	0.69
135.00	Ericsson KRY 112 144/1	3	0.80	2.000	11.00	0.351	0.50	21.65	0.753	0.50
135.00	Ericsson Radio 4449 B12,B71	3	0.80	0.000	74.00	1.639	0.50	129.41	2.474	0.50
135.00	Ericsson AIR 21 B4A B2P	3	0.80	0.000	90.00	5.800	0.71	229.74	7.867	0.71
135.00	Ericsson AIR 21, 1.3M, B2A B4P	3	0.80	0.000	91.50	6.037	0.70	235.59	8.160	0.70
135.00	RFS APXVAARR24_43-U-NA20	3	0.80	0.000	127.90	20.243	0.63	516.44	23.914	0.63
130.00	Round T-Arm	3	0.75	0.000	250.00	9.700	0.67	456.36	17.840	0.67
127.00	Generic 34" x 6" Panel	3	1.00	0.000	20.00	1.899	0.50	60.90	3.208	0.50
117.00	RFS DB-B1-6C-12AB-0Z	1	0.80	2.000	21.40	2.512	1.00	99.35	3.529	1.00
117.00	RFS DB-B1-6C-12AB-0Z	1	0.80	2.000	21.40	2.512	1.00	99.35	3.529	1.00
115.00	Samsung B5/B13 RRH-BR04C	2	0.80	0.000	70.30	1.875	0.50	125.99	2.754	0.50
115.00	Samsung B2/B66A RRH-BR049	2	0.80	0.000	84.40	1.875	0.50	146.51	2.754	0.50
115.00	RFS DB-B1-6C-12AB-0Z	1	0.80	2.000	21.40	2.512	0.67	99.12	3.526	0.67
115.00	RFS DB-B1-6C-12AB-0Z	1	0.80	2.000	21.40	2.512	0.67	99.12	3.526	0.67
115.00	JMA Wireless MX06FRO660-02	4	0.80	0.000	46.00	9.872	0.71	279.45	12.544	0.71
115.00	Generic Round Low Profile	1	1.00	0.000	1,875.00	21.700	1.00	2,663.51	40.393	1.00
Totals	Num Loadings:24	69			6,780.60			14,868.58		

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	147.00	1	3" conduit	3.50	7.58	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	145.00	1	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	145.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	145.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	145.00	1	2" conduit	2.38	3.65	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	135.00	1	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	135.00	3	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0.00	0.00	0	0.00	N	T-Mobile
0.00	135.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	127.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	METRO PCS INC
0.00	117.00	2	1 1/4" Hybriflex Cable	1.54	1.00	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	115.00	2	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.4375	56.000	77.153	30,093.2	20.81	128.00	76.9	1058.	0.0	0.0
5.00		0.4375	54.687	75.330	28,009.9	20.28	125.00	77.6	1008.	0.0	1,297.2
10.00		0.4375	53.374	73.507	26,025.1	19.75	122.00	78.2	960.4	0.0	1,266.1
15.00		0.4375	52.061	71.683	24,136.3	19.22	119.00	78.8	913.1	0.0	1,235.1
20.00		0.4375	50.748	69.860	22,341.2	18.69	116.00	79.4	867.1	0.0	1,204.1
25.00		0.4375	49.435	68.037	20,637.4	18.16	113.00	80.0	822.2	0.0	1,173.1
30.00		0.4375	48.122	66.214	19,022.5	17.63	109.99	80.7	778.6	0.0	1,142.1
35.00		0.4375	46.810	64.391	17,494.1	17.10	106.99	81.3	736.1	0.0	1,111.1
40.00		0.4375	45.497	62.568	16,049.9	16.57	103.99	81.9	694.8	0.0	1,080.0
45.00		0.4375	44.184	60.745	14,687.4	16.04	100.99	82.5	654.7	0.0	1,049.0
46.71	Bot - Section 2	0.4375	43.736	60.123	14,240.6	15.86	99.97	82.6	641.3	0.0	351.0
50.00		0.4375	42.871	58.922	13,404.3	15.52	97.99	82.6	615.8	0.0	1,249.6
52.79	Top - Section 1	0.3750	42.888	50.600	11,554.4	18.40	114.37	79.8	530.6	0.0	1,039.1
55.00		0.3750	42.308	49.909	11,087.7	18.13	112.82	80.1	516.2	0.0	377.9
60.00		0.3750	40.995	48.346	10,078.5	17.51	109.32	80.8	484.2	0.0	835.8
65.00		0.3750	39.682	46.784	9,132.4	16.90	105.82	81.5	453.3	0.0	809.3
70.00		0.3750	38.369	45.221	8,247.6	16.28	102.32	82.3	423.4	0.0	782.7
75.00		0.3750	37.056	43.658	7,421.8	15.66	98.82	82.6	394.5	0.0	756.1
80.00		0.3750	35.743	42.096	6,653.0	15.04	95.32	82.6	366.6	0.0	729.5
85.00		0.3750	34.430	40.533	5,939.3	14.43	91.81	82.6	339.8	0.0	702.9
90.00		0.3750	33.117	38.970	5,278.5	13.81	88.31	82.6	313.9	0.0	676.3
94.95	Bot - Section 3	0.3750	31.817	37.422	4,674.1	13.20	84.84	82.6	289.3	0.0	643.8
95.00		0.3750	31.805	37.408	4,668.6	13.19	84.81	82.6	289.1	0.0	10.0
99.54	Top - Section 2	0.2500	31.113	24.489	2,947.2	20.18	124.45	77.7	186.6	0.0	951.9
100.0		0.2500	30.992	24.393	2,912.5	20.10	123.97	77.8	185.1	0.0	38.5
105.0		0.2500	29.679	23.351	2,555.0	19.17	118.71	78.9	169.6	0.0	406.2
110.0		0.2500	28.366	22.309	2,228.1	18.24	113.46	79.9	154.7	0.0	388.4
115.0		0.2500	27.053	21.267	1,930.3	17.32	108.21	81.0	140.5	0.0	370.7
117.0		0.2500	26.528	20.851	1,819.1	16.95	106.11	81.5	135.1	0.0	143.3
120.0		0.2500	25.740	20.226	1,660.3	16.39	102.96	82.1	127.0	0.0	209.7
125.0		0.2500	24.427	19.184	1,416.7	15.47	97.71	82.6	114.2	0.0	335.3
125.1	Bot - Section 4	0.2500	24.383	19.149	1,409.1	15.43	97.53	82.6	113.8	0.0	10.9
127.0		0.2500	23.902	18.767	1,326.4	15.09	95.61	82.6	109.3	0.0	208.6
128.8	Top - Section 3	0.1875	23.795	14.049	989.3	20.61	126.91	77.2	81.9	0.0	204.4
130.0		0.1875	23.489	13.867	951.3	20.33	125.28	77.5	79.8	0.0	55.4
135.0		0.1875	22.176	13.086	799.4	19.09	118.27	78.9	71.0	0.0	229.3
140.0		0.1875	20.863	12.304	664.6	17.86	111.27	80.4	62.7	0.0	216.0
145.0		0.1875	19.550	11.523	545.8	16.62	104.27	81.8	55.0	0.0	202.7
145.5		0.1875	19.419	11.445	534.8	16.50	103.57	82.0	54.2	0.0	19.5
149.0		0.1875	18.500	10.898	461.7	15.63	98.67	82.6	49.2	0.0	133.0
											23,645.5

Site Number: 370641 Code: ANSI/TIA-222-G

Site Name: Beacon Falls CT, CT Engineering Number:12927148_C3_04 4/30/2020 4:05:10 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.6W 97 mph with No Ice 23 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		214.5	0.0					0.0	0.0	214.5	0.0	0.0	0.0
5.00		424.0	1,556.6					0.0	259.1	424.0	1,815.7	0.0	0.0
10.00		413.8	1,519.4					0.0	259.1	413.8	1,778.5	0.0	0.0
15.00		403.6	1,482.1					0.0	259.1	403.6	1,741.3	0.0	0.0
20.00		393.5	1,444.9					0.0	259.1	393.5	1,704.1	0.0	0.0
25.00		383.3	1,407.7					0.0	259.1	383.3	1,666.8	0.0	0.0
30.00		377.5	1,370.5					0.0	259.1	377.5	1,629.6	0.0	0.0
35.00		379.3	1,333.3					0.0	259.1	379.3	1,592.4	0.0	0.0
40.00		383.0	1,296.0					0.0	259.1	383.0	1,555.2	0.0	0.0
45.00		257.9	1,258.8					0.0	259.1	257.9	1,518.0	0.0	0.0
46.71	Bot - Section 2	194.7	421.2					0.0	88.5	194.7	509.6	0.0	0.0
50.00		238.2	1,499.5					0.0	170.7	238.2	1,670.2	0.0	0.0
52.79	Top - Section 1	195.6	1,246.9					0.0	144.6	195.6	1,391.5	0.0	0.0
55.00		281.0	453.5					0.0	114.5	281.0	568.0	0.0	0.0
60.00		387.6	1,003.0					0.0	259.1	387.6	1,262.2	0.0	0.0
65.00		383.9	971.1					0.0	259.1	383.9	1,230.3	0.0	0.0
70.00		379.2	939.2					0.0	259.1	379.2	1,198.4	0.0	0.0
75.00		373.5	907.3					0.0	259.1	373.5	1,166.4	0.0	0.0
80.00		367.0	875.4					0.0	259.1	367.0	1,134.5	0.0	0.0
85.00		359.7	843.5					0.0	259.1	359.7	1,102.6	0.0	0.0
90.00		350.0	811.6					0.0	259.1	350.0	1,070.7	0.0	0.0
94.95	Bot - Section 3	173.8	772.6					0.0	256.7	173.8	1,029.3	0.0	0.0
95.00		157.8	12.0					0.0	2.4	157.8	14.4	0.0	0.0
99.54	Top - Section 2	171.9	1,142.3					0.0	235.1	171.9	1,377.4	0.0	0.0
100.00		182.9	46.2					0.0	24.0	182.9	70.2	0.0	0.0
105.00		329.3	487.4					0.0	259.1	329.3	746.5	0.0	0.0
110.00		319.0	466.1					0.0	259.1	319.0	725.3	0.0	0.0
115.00	Appurtenance(s)	218.0	444.8	2,064.2	0.0	224.2	2,893.4	0.0	259.1	2,282.2	3,597.4	0.0	0.0
117.00	Appurtenance(s)	151.3	172.0	168.1	0.0	336.2	51.4	0.0	97.4	319.4	320.8	0.0	0.0
120.00		235.5	251.6					0.0	138.9	235.5	390.5	0.0	0.0
125.00		150.2	402.3					0.0	231.5	150.2	633.8	0.0	0.0
125.17	Bot - Section 4	57.3	13.0					0.0	7.7	57.3	20.8	0.0	0.0
127.00	Appurtenance(s)	104.3	250.3	121.4	0.0	0.0	72.0	0.0	84.9	225.7	407.2	0.0	0.0
128.83	Top - Section 3	84.2	245.3					0.0	74.1	84.2	319.4	0.0	0.0
130.00	Appurtenance(s)	167.9	66.5	627.3	0.0	0.0	900.0	0.0	47.1	795.2	1,013.6	0.0	0.0
135.00	Appurtenance(s)	264.4	275.1	2,299.2	0.0	36.7	1,419.8	0.0	202.0	2,563.6	1,897.0	0.0	0.0
140.00		251.3	259.2					0.0	133.9	251.3	393.0	0.0	0.0
145.00	Appurtenance(s)	134.2	243.2	2,043.1	0.0	3,623.7	1,000.1	0.0	133.9	2,177.3	1,377.2	0.0	0.0
145.50	Appurtenance(s)	93.0	23.4	1,156.2	0.0	0.0	1,800.0	0.0	4.5	1,249.2	1,828.0	0.0	0.0
149.00		81.1	159.7					0.0	13.6	81.1	173.3	0.0	0.0
								Totals:		18,947.9	43,641.2	0.00	0.00

Load Case: 1.2D + 1.6W 97 mph with No Ice 23 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	-43.63	-18.77	0.00	-1,908.08	0.00	1,908.08	5,341.71	2,670.85	12,195.3	6,106.74	0.00	0.00	0.321
5.00	-41.78	-18.41	0.00	-1,814.25	0.00	1,814.25	5,257.68	2,628.84	11,717.6	5,867.53	0.05	-0.09	0.317
10.00	-39.98	-18.05	0.00	-1,722.22	0.00	1,722.22	5,171.61	2,585.81	11,244.6	5,630.68	0.19	-0.18	0.314
15.00	-38.21	-17.70	0.00	-1,631.96	0.00	1,631.96	5,083.50	2,541.75	10,776.6	5,396.35	0.42	-0.27	0.310
20.00	-36.48	-17.36	0.00	-1,543.45	0.00	1,543.45	4,993.34	2,496.67	10,314.0	5,164.71	0.76	-0.36	0.306
25.00	-34.78	-17.02	0.00	-1,456.65	0.00	1,456.65	4,901.14	2,450.57	9,857.18	4,935.92	1.19	-0.46	0.302
30.00	-33.13	-16.69	0.00	-1,371.53	0.00	1,371.53	4,806.90	2,403.45	9,406.30	4,710.14	1.72	-0.56	0.298
35.00	-31.51	-16.35	0.00	-1,288.09	0.00	1,288.09	4,710.62	2,355.31	8,961.79	4,487.55	2.36	-0.66	0.294
40.00	-29.93	-16.00	0.00	-1,206.35	0.00	1,206.35	4,612.30	2,306.15	8,523.97	4,268.32	3.10	-0.76	0.289
45.00	-28.40	-15.75	0.00	-1,126.35	0.00	1,126.35	4,511.93	2,255.96	8,093.18	4,052.61	3.95	-0.86	0.284
46.71	-27.88	-15.58	0.00	-1,099.46	0.00	1,099.46	4,466.81	2,233.41	7,929.36	3,970.57	4.26	-0.90	0.283
50.00	-26.20	-15.34	0.00	-1,048.16	0.00	1,048.16	4,377.60	2,188.80	7,614.23	3,812.78	4.90	-0.97	0.281
52.79	-24.79	-15.15	0.00	-1,005.35	0.00	1,005.35	3,632.02	1,816.01	6,338.65	3,174.03	5.49	-1.03	0.324
55.00	-24.21	-14.89	0.00	-971.88	0.00	971.88	3,596.86	1,798.43	6,190.85	3,100.03	5.98	-1.08	0.320
60.00	-22.92	-14.53	0.00	-897.43	0.00	897.43	3,515.84	1,757.92	5,860.24	2,934.48	7.17	-1.20	0.312
65.00	-21.67	-14.16	0.00	-824.79	0.00	824.79	3,432.77	1,716.39	5,535.16	2,771.69	8.49	-1.32	0.304
70.00	-20.45	-13.80	0.00	-753.98	0.00	753.98	3,347.66	1,673.83	5,215.92	2,611.84	9.94	-1.44	0.295
75.00	-19.27	-13.44	0.00	-684.99	0.00	684.99	3,243.59	1,621.79	4,877.42	2,442.34	11.51	-1.57	0.286
80.00	-18.12	-13.08	0.00	-617.80	0.00	617.80	3,127.49	1,563.75	4,532.82	2,269.78	13.22	-1.69	0.278
85.00	-17.00	-12.72	0.00	-552.42	0.00	552.42	3,011.40	1,505.70	4,200.83	2,103.54	15.06	-1.82	0.268
90.00	-15.91	-12.37	0.00	-488.81	0.00	488.81	2,895.30	1,447.65	3,881.48	1,943.62	17.03	-1.94	0.257
94.95	-14.88	-12.18	0.00	-427.54	0.00	427.54	2,780.28	1,390.14	3,577.55	1,791.43	19.11	-2.06	0.244
95.00	-14.86	-12.03	0.00	-426.97	0.00	426.97	2,779.20	1,389.60	3,574.75	1,790.03	19.13	-2.06	0.244
99.54	-13.47	-11.82	0.00	-372.38	0.00	372.38	1,711.73	855.87	2,170.26	1,086.74	21.14	-2.17	0.351
100.00	-13.39	-11.66	0.00	-366.90	0.00	366.90	1,707.20	853.60	2,155.91	1,079.56	21.35	-2.19	0.348
105.00	-12.63	-11.34	0.00	-308.60	0.00	308.60	1,657.18	828.59	2,002.65	1,002.81	23.73	-2.35	0.316
110.00	-11.89	-11.02	0.00	-251.92	0.00	251.92	1,605.11	802.56	1,852.46	927.61	26.28	-2.51	0.279
115.00	-8.38	-8.59	0.00	-196.60	0.00	196.60	1,551.00	775.50	1,705.69	854.11	28.99	-2.65	0.236
117.00	-8.07	-8.27	0.00	-179.08	0.00	179.08	1,528.79	764.39	1,648.01	825.23	30.11	-2.71	0.222
120.00	-7.67	-8.03	0.00	-154.28	0.00	154.28	1,494.85	747.43	1,562.67	782.50	31.83	-2.78	0.202
125.00	-7.04	-7.85	0.00	-114.15	0.00	114.15	1,425.26	712.63	1,412.43	707.26	34.81	-2.90	0.166
125.17	-7.02	-7.80	0.00	-112.85	0.00	112.85	1,422.68	711.34	1,407.29	704.69	34.91	-2.90	0.165
127.00	-6.62	-7.55	0.00	-98.55	0.00	98.55	1,394.30	697.15	1,351.43	676.72	36.04	-2.94	0.151
128.83	-6.30	-7.46	0.00	-84.71	0.00	84.71	975.56	487.78	946.27	473.84	37.17	-2.98	0.185
130.00	-5.32	-6.61	0.00	-76.01	0.00	76.01	967.13	483.57	925.83	463.60	37.90	-3.00	0.170
135.00	-3.56	-3.96	0.00	-42.90	0.00	42.90	929.74	464.87	839.48	420.37	41.10	-3.09	0.106
140.00	-3.18	-3.69	0.00	-23.10	0.00	23.10	890.31	445.15	755.47	378.30	44.36	-3.15	0.065
145.00	-1.92	-1.44	0.00	-1.04	0.00	1.04	848.83	424.42	674.13	337.57	47.68	-3.18	0.005
145.50	-0.17	-0.09	0.00	-0.32	0.00	0.32	844.57	422.29	666.16	333.57	48.01	-3.18	0.001
149.00	0.00	-0.08	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	50.34	-3.18	0.000

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 23 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

		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		214.5	0.0					0.0	0.0	214.5	0.0	0.0	0.0
5.00		424.0	1,167.4					0.0	194.4	424.0	1,361.8	0.0	0.0
10.00		413.8	1,139.5					0.0	194.4	413.8	1,333.9	0.0	0.0
15.00		403.6	1,111.6					0.0	194.4	403.6	1,306.0	0.0	0.0
20.00		393.5	1,083.7					0.0	194.4	393.5	1,278.0	0.0	0.0
25.00		383.3	1,055.8					0.0	194.4	383.3	1,250.1	0.0	0.0
30.00		377.5	1,027.9					0.0	194.4	377.5	1,222.2	0.0	0.0
35.00		379.3	999.9					0.0	194.4	379.3	1,194.3	0.0	0.0
40.00		383.0	972.0					0.0	194.4	383.0	1,166.4	0.0	0.0
45.00		257.9	944.1					0.0	194.4	257.9	1,138.5	0.0	0.0
46.71	Bot - Section 2	194.7	315.9					0.0	66.3	194.7	382.2	0.0	0.0
50.00		238.2	1,124.6					0.0	128.0	238.2	1,252.7	0.0	0.0
52.79	Top - Section 1	195.6	935.2					0.0	108.5	195.6	1,043.6	0.0	0.0
55.00		281.0	340.1					0.0	85.9	281.0	426.0	0.0	0.0
60.00		387.6	752.3					0.0	194.4	387.6	946.6	0.0	0.0
65.00		383.9	728.3					0.0	194.4	383.9	922.7	0.0	0.0
70.00		379.2	704.4					0.0	194.4	379.2	898.8	0.0	0.0
75.00		373.5	680.5					0.0	194.4	373.5	874.8	0.0	0.0
80.00		367.0	656.6					0.0	194.4	367.0	850.9	0.0	0.0
85.00		359.7	632.6					0.0	194.4	359.7	827.0	0.0	0.0
90.00		350.0	608.7					0.0	194.4	350.0	803.1	0.0	0.0
94.95	Bot - Section 3	173.8	579.4					0.0	192.5	173.8	772.0	0.0	0.0
95.00		157.8	9.0					0.0	1.8	157.8	10.8	0.0	0.0
99.54	Top - Section 2	171.9	856.7					0.0	176.3	171.9	1,033.0	0.0	0.0
100.00		182.9	34.7					0.0	18.0	182.9	52.7	0.0	0.0
105.00		329.3	365.5					0.0	194.4	329.3	559.9	0.0	0.0
110.00		319.0	349.6					0.0	194.4	319.0	543.9	0.0	0.0
115.00	Appurtenance(s)	218.0	333.6	2,064.2	0.0	224.2	2,170.1	0.0	194.4	2,282.2	2,698.1	0.0	0.0
117.00	Appurtenance(s)	151.3	129.0	168.1	0.0	336.2	38.5	0.0	73.1	319.4	240.6	0.0	0.0
120.00		235.5	188.7					0.0	104.2	235.5	292.9	0.0	0.0
125.00		150.2	301.7					0.0	173.7	150.2	475.4	0.0	0.0
125.17	Bot - Section 4	57.3	9.8					0.0	5.8	57.3	15.6	0.0	0.0
127.00	Appurtenance(s)	104.3	187.7	121.4	0.0	0.0	54.0	0.0	63.7	225.7	305.4	0.0	0.0
128.83	Top - Section 3	84.2	184.0					0.0	55.6	84.2	239.5	0.0	0.0
130.00	Appurtenance(s)	167.9	49.9	627.3	0.0	0.0	675.0	0.0	35.4	795.2	760.2	0.0	0.0
135.00	Appurtenance(s)	264.4	206.4	2,299.2	0.0	36.7	1,064.9	0.0	151.5	2,563.6	1,422.7	0.0	0.0
140.00		251.3	194.4					0.0	100.4	251.3	294.8	0.0	0.0
145.00	Appurtenance(s)	134.2	182.4	2,043.1	0.0	3,623.7	750.1	0.0	100.4	2,177.3	1,032.9	0.0	0.0
145.50	Appurtenance(s)	93.0	17.6	1,156.2	0.0	0.0	1,350.0	0.0	3.4	1,249.2	1,371.0	0.0	0.0
149.00		81.1	119.7					0.0	10.2	81.1	130.0	0.0	0.0
								Totals:		18,947.9	32,730.9	0.00	0.00

Site Number: 370641 Code: ANSI/TIA-222-G

Site Name: Beacon Falls CT, CT Engineering Number:12927148_C3_04 4/30/2020 4:05:15 PM

Customer: T-MOBILE

Load Case: 0.9D + 1.6W 97 mph with No Ice (Reduced DL) 23 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	-32.72	-18.76	0.00	-1,893.15	0.00	1,893.15	5,341.71	2,670.85	12,195.3	6,106.74	0.00	0.00	0.316
5.00	-31.33	-18.38	0.00	-1,799.36	0.00	1,799.36	5,257.68	2,628.84	11,717.6	5,867.53	0.05	-0.09	0.313
10.00	-29.97	-18.01	0.00	-1,707.45	0.00	1,707.45	5,171.61	2,585.81	11,244.6	5,630.68	0.19	-0.18	0.309
15.00	-28.63	-17.65	0.00	-1,617.40	0.00	1,617.40	5,083.50	2,541.75	10,776.6	5,396.35	0.42	-0.27	0.305
20.00	-27.33	-17.29	0.00	-1,529.15	0.00	1,529.15	4,993.34	2,496.67	10,314.0	5,164.71	0.75	-0.36	0.302
25.00	-26.05	-16.94	0.00	-1,442.69	0.00	1,442.69	4,901.14	2,450.57	9,857.18	4,935.92	1.18	-0.45	0.298
30.00	-24.81	-16.60	0.00	-1,357.97	0.00	1,357.97	4,806.90	2,403.45	9,406.30	4,710.14	1.71	-0.55	0.294
35.00	-23.59	-16.25	0.00	-1,274.98	0.00	1,274.98	4,710.62	2,355.31	8,961.79	4,487.55	2.34	-0.65	0.289
40.00	-22.40	-15.89	0.00	-1,193.74	0.00	1,193.74	4,612.30	2,306.15	8,523.97	4,268.32	3.07	-0.75	0.285
45.00	-21.24	-15.64	0.00	-1,114.29	0.00	1,114.29	4,511.93	2,255.96	8,093.18	4,052.61	3.91	-0.85	0.280
46.71	-20.85	-15.46	0.00	-1,087.60	0.00	1,087.60	4,466.81	2,233.41	7,929.36	3,970.57	4.22	-0.89	0.279
50.00	-19.58	-15.22	0.00	-1,036.68	0.00	1,036.68	4,377.60	2,188.80	7,614.23	3,812.78	4.86	-0.96	0.276
52.79	-18.53	-15.03	0.00	-994.21	0.00	994.21	3,632.02	1,816.01	6,338.65	3,174.03	5.44	-1.02	0.318
55.00	-18.09	-14.77	0.00	-961.00	0.00	961.00	3,596.86	1,798.43	6,190.85	3,100.03	5.92	-1.07	0.315
60.00	-17.12	-14.40	0.00	-887.17	0.00	887.17	3,515.84	1,757.92	5,860.24	2,934.48	7.10	-1.19	0.307
65.00	-16.18	-14.03	0.00	-815.19	0.00	815.19	3,432.77	1,716.39	5,535.16	2,771.69	8.41	-1.31	0.299
70.00	-15.26	-13.66	0.00	-745.06	0.00	745.06	3,347.66	1,673.83	5,215.92	2,611.84	9.84	-1.43	0.290
75.00	-14.36	-13.29	0.00	-676.77	0.00	676.77	3,243.59	1,621.79	4,877.42	2,442.34	11.40	-1.55	0.282
80.00	-13.50	-12.93	0.00	-610.31	0.00	610.31	3,127.49	1,563.75	4,532.82	2,269.78	13.09	-1.67	0.273
85.00	-12.65	-12.57	0.00	-545.65	0.00	545.65	3,011.40	1,505.70	4,200.83	2,103.54	14.91	-1.80	0.264
90.00	-11.84	-12.22	0.00	-482.78	0.00	482.78	2,895.30	1,447.65	3,881.48	1,943.62	16.86	-1.92	0.253
94.95	-11.06	-12.03	0.00	-422.24	0.00	422.24	2,780.28	1,390.14	3,577.55	1,791.43	18.92	-2.04	0.240
95.00	-11.04	-11.89	0.00	-421.68	0.00	421.68	2,779.20	1,389.60	3,574.75	1,790.03	18.94	-2.04	0.240
99.54	-10.00	-11.69	0.00	-367.75	0.00	367.75	1,711.73	855.87	2,170.26	1,086.74	20.93	-2.15	0.344
100.00	-9.94	-11.52	0.00	-362.33	0.00	362.33	1,707.20	853.60	2,155.91	1,079.56	21.14	-2.16	0.342
105.00	-9.36	-11.19	0.00	-304.74	0.00	304.74	1,657.18	828.59	2,002.65	1,002.81	23.49	-2.33	0.310
110.00	-8.80	-10.88	0.00	-248.77	0.00	248.77	1,605.11	802.56	1,852.46	927.61	26.01	-2.48	0.274
115.00	-6.20	-8.49	0.00	-194.17	0.00	194.17	1,551.00	775.50	1,705.69	854.11	28.69	-2.62	0.231
117.00	-5.96	-8.16	0.00	-176.87	0.00	176.87	1,528.79	764.39	1,648.01	825.23	29.80	-2.68	0.218
120.00	-5.67	-7.92	0.00	-152.38	0.00	152.38	1,494.85	747.43	1,562.67	782.50	31.50	-2.75	0.199
125.00	-5.19	-7.75	0.00	-112.77	0.00	112.77	1,425.26	712.63	1,412.43	707.26	34.45	-2.87	0.163
125.17	-5.17	-7.70	0.00	-111.48	0.00	111.48	1,422.68	711.34	1,407.29	704.69	34.55	-2.87	0.162
127.00	-4.88	-7.46	0.00	-97.36	0.00	97.36	1,394.30	697.15	1,351.43	676.72	35.66	-2.91	0.147
128.83	-4.64	-7.37	0.00	-83.68	0.00	83.68	975.56	487.78	946.27	473.84	36.78	-2.94	0.182
130.00	-3.91	-6.54	0.00	-75.09	0.00	75.09	967.13	483.57	925.83	463.60	37.51	-2.97	0.166
135.00	-2.62	-3.91	0.00	-42.37	0.00	42.37	929.74	464.87	839.48	420.37	40.66	-3.05	0.104
140.00	-2.34	-3.64	0.00	-22.84	0.00	22.84	890.31	445.15	755.47	378.30	43.89	-3.11	0.063
145.00	-1.43	-1.41	0.00	-1.01	0.00	1.01	848.83	424.42	674.13	337.57	47.17	-3.14	0.005
145.50	-0.13	-0.09	0.00	-0.31	0.00	0.31	844.57	422.29	666.16	333.57	47.50	-3.14	0.001
149.00	0.00	-0.08	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	49.80	-3.14	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 23 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		68.5	0.0					0.0	0.0	68.5	0.0	0.0	0.0
5.00		135.7	1,962.0					0.0	259.1	135.7	2,221.2	0.0	0.0
10.00		133.1	1,962.3					0.0	259.1	133.1	2,221.5	0.0	0.0
15.00		130.2	1,937.7					0.0	259.1	130.2	2,196.8	0.0	0.0
20.00		127.3	1,904.9					0.0	259.1	127.3	2,164.0	0.0	0.0
25.00		124.3	1,867.8					0.0	259.1	124.3	2,126.9	0.0	0.0
30.00		122.8	1,828.0					0.0	259.1	122.8	2,087.2	0.0	0.0
35.00		123.7	1,786.4					0.0	259.1	123.7	2,045.6	0.0	0.0
40.00		125.2	1,743.5					0.0	259.1	125.2	2,002.6	0.0	0.0
45.00		84.4	1,699.4					0.0	259.1	84.4	1,958.5	0.0	0.0
46.71	Bot - Section 2	63.9	571.2					0.0	88.5	63.9	659.7	0.0	0.0
50.00		78.2	1,790.0					0.0	170.7	78.2	1,960.7	0.0	0.0
52.79	Top - Section 1	64.3	1,490.5					0.0	144.6	64.3	1,635.1	0.0	0.0
55.00		92.5	644.9					0.0	114.5	92.5	759.4	0.0	0.0
60.00		127.9	1,425.9					0.0	259.1	127.9	1,685.0	0.0	0.0
65.00		127.1	1,384.5					0.0	259.1	127.1	1,643.6	0.0	0.0
70.00		125.9	1,342.7					0.0	259.1	125.9	1,601.8	0.0	0.0
75.00		124.4	1,300.4					0.0	259.1	124.4	1,559.6	0.0	0.0
80.00		122.7	1,257.8					0.0	259.1	122.7	1,516.9	0.0	0.0
85.00		120.7	1,214.9					0.0	259.1	120.7	1,474.0	0.0	0.0
90.00		117.9	1,171.7					0.0	259.1	117.9	1,430.8	0.0	0.0
94.95	Bot - Section 3	58.6	1,117.9					0.0	256.7	58.6	1,374.6	0.0	0.0
95.00		53.4	15.3					0.0	2.4	53.4	17.7	0.0	0.0
99.54	Top - Section 2	58.2	1,453.5					0.0	235.1	58.2	1,688.7	0.0	0.0
100.00		62.2	78.0					0.0	24.0	62.2	102.0	0.0	0.0
105.00		112.3	817.3					0.0	259.1	112.3	1,076.4	0.0	0.0
110.00		109.3	783.8					0.0	259.1	109.3	1,042.9	0.0	0.0
115.00	Appurtenance(s)	75.0	750.1	530.3	0.0	52.3	7,418.0	0.0	259.1	605.3	8,427.2	0.0	0.0
117.00	Appurtenance(s)	52.3	292.2	39.2	0.0	78.4	250.1	0.0	97.4	91.5	639.7	0.0	0.0
120.00		81.8	427.3					0.0	138.9	81.8	566.2	0.0	0.0
125.00		52.2	682.1					0.0	231.5	52.2	913.7	0.0	0.0
125.17	Bot - Section 4	20.0	22.4					0.0	7.7	20.0	30.1	0.0	0.0
127.00	Appurtenance(s)	36.4	352.6	34.1	0.0	0.0	254.7	0.0	84.9	70.5	692.2	0.0	0.0
128.83	Top - Section 3	29.5	345.9					0.0	74.1	29.5	420.0	0.0	0.0
130.00	Appurtenance(s)	59.1	129.8	191.6	0.0	0.0	2,269.1	0.0	47.1	250.7	2,446.0	0.0	0.0
135.00	Appurtenance(s)	93.5	533.0	483.5	0.0	13.1	4,818.3	0.0	202.0	577.0	5,553.4	0.0	0.0
140.00		89.7	503.9					0.0	133.9	89.7	637.7	0.0	0.0
145.00	Appurtenance(s)	48.1	474.6	451.0	0.0	783.3	3,838.0	0.0	133.9	499.1	4,446.4	0.0	0.0
145.50	Appurtenance(s)	33.6	46.5	332.3	0.0	0.0	3,947.1	0.0	4.5	366.0	3,998.2	0.0	0.0
149.00		29.4	314.1					0.0	13.6	29.4	327.8	0.0	0.0
								Totals:		5,557.21	69,351.9	0.00	0.00

Site Number: 370641 Code: ANSI/TIA-222-G

Site Name: Beacon Falls CT, CT Engineering Number:12927148_C3_04 4/30/2020 4:05:18 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 23 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	-69.35	-5.50	0.00	-552.85	0.00	552.85	5,341.71	2,670.85	12,195.3	6,106.74	0.00	0.00	0.104
5.00	-67.13	-5.40	0.00	-525.33	0.00	525.33	5,257.68	2,628.84	11,717.6	5,867.53	0.01	-0.03	0.102
10.00	-64.90	-5.29	0.00	-498.34	0.00	498.34	5,171.61	2,585.81	11,244.6	5,630.68	0.05	-0.05	0.101
15.00	-62.70	-5.19	0.00	-471.88	0.00	471.88	5,083.50	2,541.75	10,776.6	5,396.35	0.12	-0.08	0.100
20.00	-60.54	-5.09	0.00	-445.93	0.00	445.93	4,993.34	2,496.67	10,314.0	5,164.71	0.22	-0.11	0.098
25.00	-58.41	-4.99	0.00	-420.49	0.00	420.49	4,901.14	2,450.57	9,857.18	4,935.92	0.34	-0.13	0.097
30.00	-56.32	-4.89	0.00	-395.55	0.00	395.55	4,806.90	2,403.45	9,406.30	4,710.14	0.50	-0.16	0.096
35.00	-54.27	-4.78	0.00	-371.11	0.00	371.11	4,710.62	2,355.31	8,961.79	4,487.55	0.68	-0.19	0.094
40.00	-52.27	-4.68	0.00	-347.19	0.00	347.19	4,612.30	2,306.15	8,523.97	4,268.32	0.90	-0.22	0.093
45.00	-50.31	-4.60	0.00	-323.79	0.00	323.79	4,511.93	2,255.96	8,093.18	4,052.61	1.14	-0.25	0.091
46.71	-49.65	-4.55	0.00	-315.94	0.00	315.94	4,466.81	2,233.41	7,929.36	3,970.57	1.23	-0.26	0.091
50.00	-47.69	-4.48	0.00	-300.95	0.00	300.95	4,377.60	2,188.80	7,614.23	3,812.78	1.42	-0.28	0.090
52.79	-46.05	-4.42	0.00	-288.45	0.00	288.45	3,632.02	1,816.01	6,338.65	3,174.03	1.59	-0.30	0.104
55.00	-45.29	-4.34	0.00	-278.68	0.00	278.68	3,596.86	1,798.43	6,190.85	3,100.03	1.73	-0.31	0.102
60.00	-43.60	-4.23	0.00	-256.97	0.00	256.97	3,515.84	1,757.92	5,860.24	2,934.48	2.07	-0.35	0.100
65.00	-41.96	-4.12	0.00	-235.82	0.00	235.82	3,432.77	1,716.39	5,535.16	2,771.69	2.45	-0.38	0.097
70.00	-40.35	-4.01	0.00	-215.22	0.00	215.22	3,347.66	1,673.83	5,215.92	2,611.84	2.87	-0.41	0.094
75.00	-38.79	-3.89	0.00	-195.18	0.00	195.18	3,243.59	1,621.79	4,877.42	2,442.34	3.32	-0.45	0.092
80.00	-37.27	-3.78	0.00	-175.71	0.00	175.71	3,127.49	1,563.75	4,532.82	2,269.78	3.81	-0.49	0.089
85.00	-35.80	-3.67	0.00	-156.80	0.00	156.80	3,011.40	1,505.70	4,200.83	2,103.54	4.34	-0.52	0.086
90.00	-34.37	-3.56	0.00	-138.44	0.00	138.44	2,895.30	1,447.65	3,881.48	1,943.62	4.91	-0.56	0.083
94.95	-32.99	-3.50	0.00	-120.80	0.00	120.80	2,780.28	1,390.14	3,577.55	1,791.43	5.50	-0.59	0.079
95.00	-32.97	-3.45	0.00	-120.64	0.00	120.64	2,779.20	1,389.60	3,574.75	1,790.03	5.51	-0.59	0.079
99.54	-31.28	-3.39	0.00	-104.96	0.00	104.96	1,711.73	855.87	2,170.26	1,086.74	6.09	-0.62	0.115
100.00	-31.18	-3.34	0.00	-103.40	0.00	103.40	1,707.20	853.60	2,155.91	1,079.56	6.15	-0.63	0.114
105.00	-30.10	-3.24	0.00	-86.71	0.00	86.71	1,657.18	828.59	2,002.65	1,002.81	6.83	-0.67	0.105
110.00	-29.06	-3.14	0.00	-70.52	0.00	70.52	1,605.11	802.56	1,852.46	927.61	7.56	-0.72	0.094
115.00	-20.64	-2.43	0.00	-54.78	0.00	54.78	1,551.00	775.50	1,705.69	854.11	8.33	-0.76	0.077
117.00	-20.00	-2.34	0.00	-49.84	0.00	49.84	1,528.79	764.39	1,648.01	825.23	8.65	-0.77	0.073
120.00	-19.44	-2.26	0.00	-42.82	0.00	42.82	1,494.85	747.43	1,562.67	782.50	9.14	-0.79	0.068
125.00	-18.52	-2.20	0.00	-31.53	0.00	31.53	1,425.26	712.63	1,412.43	707.26	9.99	-0.83	0.058
125.17	-18.49	-2.18	0.00	-31.16	0.00	31.16	1,422.68	711.34	1,407.29	704.69	10.02	-0.83	0.057
127.00	-17.80	-2.10	0.00	-27.16	0.00	27.16	1,394.30	697.15	1,351.43	676.72	10.34	-0.84	0.053
128.83	-17.38	-2.07	0.00	-23.31	0.00	23.31	975.56	487.78	946.27	473.84	10.66	-0.85	0.067
130.00	-14.94	-1.79	0.00	-20.89	0.00	20.89	967.13	483.57	925.83	463.60	10.87	-0.85	0.061
135.00	-9.39	-1.13	0.00	-11.94	0.00	11.94	929.74	464.87	839.48	420.37	11.78	-0.88	0.039
140.00	-8.76	-1.03	0.00	-6.30	0.00	6.30	890.31	445.15	755.47	378.30	12.71	-0.89	0.026
145.00	-4.32	-0.46	0.00	-0.35	0.00	0.35	848.83	424.42	674.13	337.57	13.65	-0.90	0.006
145.50	-0.33	-0.03	0.00	-0.12	0.00	0.12	844.57	422.29	666.16	333.57	13.74	-0.90	0.001
149.00	0.00	-0.03	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	14.40	-0.90	0.000

Load Case: 1.0D + 1.0W Serviceability 60 mph 22 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		45.9	0.0					0.0	0.0	45.9	0.0	0.0	0.0
5.00		90.7	1,297.2					0.0	216.0	90.7	1,513.1	0.0	0.0
10.00		88.5	1,266.1					0.0	216.0	88.5	1,482.1	0.0	0.0
15.00		86.4	1,235.1					0.0	216.0	86.4	1,451.1	0.0	0.0
20.00		84.2	1,204.1					0.0	216.0	84.2	1,420.1	0.0	0.0
25.00		82.0	1,173.1					0.0	216.0	82.0	1,389.0	0.0	0.0
30.00		80.8	1,142.1					0.0	216.0	80.8	1,358.0	0.0	0.0
35.00		81.1	1,111.1					0.0	216.0	81.1	1,327.0	0.0	0.0
40.00		82.0	1,080.0					0.0	216.0	82.0	1,296.0	0.0	0.0
45.00		55.2	1,049.0					0.0	216.0	55.2	1,265.0	0.0	0.0
46.71	Bot - Section 2	41.7	351.0					0.0	73.7	41.7	424.7	0.0	0.0
50.00		51.0	1,249.6					0.0	142.2	51.0	1,391.8	0.0	0.0
52.79	Top - Section 1	41.8	1,039.1					0.0	120.5	41.8	1,159.6	0.0	0.0
55.00		60.1	377.9					0.0	95.4	60.1	473.4	0.0	0.0
60.00		82.9	835.8					0.0	216.0	82.9	1,051.8	0.0	0.0
65.00		82.1	809.3					0.0	216.0	82.1	1,025.2	0.0	0.0
70.00		81.1	782.7					0.0	216.0	81.1	998.6	0.0	0.0
75.00		79.9	756.1					0.0	216.0	79.9	972.0	0.0	0.0
80.00		78.5	729.5					0.0	216.0	78.5	945.5	0.0	0.0
85.00		77.0	702.9					0.0	216.0	77.0	918.9	0.0	0.0
90.00		74.9	676.3					0.0	216.0	74.9	892.3	0.0	0.0
94.95	Bot - Section 3	37.2	643.8					0.0	213.9	37.2	857.7	0.0	0.0
95.00		33.8	10.0					0.0	2.0	33.8	12.0	0.0	0.0
99.54	Top - Section 2	36.8	951.9					0.0	195.9	36.8	1,147.8	0.0	0.0
100.00		39.1	38.5					0.0	20.0	39.1	58.5	0.0	0.0
105.00		70.5	406.2					0.0	216.0	70.5	622.1	0.0	0.0
110.00		68.2	388.4					0.0	216.0	68.2	604.4	0.0	0.0
115.00	Appurtenance(s)	46.6	370.7	441.7	0.0	48.0	2,411.2	0.0	216.0	488.3	2,997.9	0.0	0.0
117.00	Appurtenance(s)	32.4	143.3	36.0	0.0	71.9	42.8	0.0	81.2	68.3	267.3	0.0	0.0
120.00		50.4	209.7					0.0	115.8	50.4	325.4	0.0	0.0
125.00		32.1	335.3					0.0	193.0	32.1	528.2	0.0	0.0
125.17	Bot - Section 4	12.3	10.9					0.0	6.4	12.3	17.3	0.0	0.0
127.00	Appurtenance(s)	22.3	208.6	26.0	0.0	0.0	60.0	0.0	70.7	48.3	339.3	0.0	0.0
128.83	Top - Section 3	18.0	204.4					0.0	61.7	18.0	266.2	0.0	0.0
130.00	Appurtenance(s)	35.9	55.4	134.2	0.0	0.0	750.0	0.0	39.3	170.1	844.7	0.0	0.0
135.00	Appurtenance(s)	56.6	229.3	491.9	0.0	7.8	1,183.2	0.0	168.4	548.5	1,580.8	0.0	0.0
140.00		53.8	216.0					0.0	111.6	53.8	327.5	0.0	0.0
145.00	Appurtenance(s)	28.7	202.7	437.1	0.0	775.3	833.4	0.0	111.6	465.9	1,147.6	0.0	0.0
145.50	Appurtenance(s)	19.9	19.5	247.4	0.0	0.0	1,500.0	0.0	3.8	267.3	1,523.3	0.0	0.0
149.00		17.4	133.0					0.0	11.4	17.4	144.4	0.0	0.0
								Totals:		4,054.13	36,367.6	0.00	0.00

Site Number: 370641 Code: ANSI/TIA-222-G

Site Name: Beacon Falls CT, CT Engineering Number:12927148_C3_04 4/30/2020 4:05:21 PM

Customer: T-MOBILE

Load Case: 1.0D + 1.0W Serviceability 60 mph 22 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	-36.37	-4.01	0.00	-406.20	0.00	406.20	5,341.71	2,670.85	12,195.3	6,106.74	0.00	0.00	0.073
5.00	-34.85	-3.93	0.00	-386.13	0.00	386.13	5,257.68	2,628.84	11,717.6	5,867.53	0.01	-0.02	0.072
10.00	-33.37	-3.86	0.00	-366.46	0.00	366.46	5,171.61	2,585.81	11,244.6	5,630.68	0.04	-0.04	0.072
15.00	-31.92	-3.78	0.00	-347.18	0.00	347.18	5,083.50	2,541.75	10,776.6	5,396.35	0.09	-0.06	0.071
20.00	-30.50	-3.70	0.00	-328.28	0.00	328.28	4,993.34	2,496.67	10,314.0	5,164.71	0.16	-0.08	0.070
25.00	-29.11	-3.63	0.00	-309.76	0.00	309.76	4,901.14	2,450.57	9,857.18	4,935.92	0.25	-0.10	0.069
30.00	-27.75	-3.56	0.00	-291.61	0.00	291.61	4,806.90	2,403.45	9,406.30	4,710.14	0.37	-0.12	0.068
35.00	-26.42	-3.48	0.00	-273.82	0.00	273.82	4,710.62	2,355.31	8,961.79	4,487.55	0.50	-0.14	0.067
40.00	-25.12	-3.41	0.00	-256.41	0.00	256.41	4,612.30	2,306.15	8,523.97	4,268.32	0.66	-0.16	0.066
45.00	-23.86	-3.35	0.00	-239.37	0.00	239.37	4,511.93	2,255.96	8,093.18	4,052.61	0.84	-0.18	0.064
46.71	-23.43	-3.32	0.00	-233.64	0.00	233.64	4,466.81	2,233.41	7,929.36	3,970.57	0.91	-0.19	0.064
50.00	-22.04	-3.27	0.00	-222.72	0.00	222.72	4,377.60	2,188.80	7,614.23	3,812.78	1.04	-0.21	0.063
52.79	-20.88	-3.22	0.00	-213.61	0.00	213.61	3,632.02	1,816.01	6,338.65	3,174.03	1.17	-0.22	0.073
55.00	-20.40	-3.17	0.00	-206.49	0.00	206.49	3,596.86	1,798.43	6,190.85	3,100.03	1.27	-0.23	0.072
60.00	-19.35	-3.09	0.00	-190.64	0.00	190.64	3,515.84	1,757.92	5,860.24	2,934.48	1.52	-0.25	0.070
65.00	-18.32	-3.01	0.00	-175.20	0.00	175.20	3,432.77	1,716.39	5,535.16	2,771.69	1.81	-0.28	0.069
70.00	-17.33	-2.93	0.00	-160.14	0.00	160.14	3,347.66	1,673.83	5,215.92	2,611.84	2.11	-0.31	0.066
75.00	-16.35	-2.86	0.00	-145.48	0.00	145.48	3,243.59	1,621.79	4,877.42	2,442.34	2.45	-0.33	0.065
80.00	-15.41	-2.78	0.00	-131.20	0.00	131.20	3,127.49	1,563.75	4,532.82	2,269.78	2.81	-0.36	0.063
85.00	-14.49	-2.70	0.00	-117.31	0.00	117.31	3,011.40	1,505.70	4,200.83	2,103.54	3.20	-0.39	0.061
90.00	-13.59	-2.63	0.00	-103.81	0.00	103.81	2,895.30	1,447.65	3,881.48	1,943.62	3.62	-0.41	0.058
94.95	-12.74	-2.59	0.00	-90.79	0.00	90.79	2,780.28	1,390.14	3,577.55	1,791.43	4.06	-0.44	0.055
95.00	-12.72	-2.56	0.00	-90.67	0.00	90.67	2,779.20	1,389.60	3,574.75	1,790.03	4.07	-0.44	0.055
99.54	-11.58	-2.51	0.00	-79.08	0.00	79.08	1,711.73	855.87	2,170.26	1,086.74	4.50	-0.46	0.080
100.00	-11.52	-2.48	0.00	-77.92	0.00	77.92	1,707.20	853.60	2,155.91	1,079.56	4.54	-0.46	0.079
105.00	-10.89	-2.41	0.00	-65.54	0.00	65.54	1,657.18	828.59	2,002.65	1,002.81	5.05	-0.50	0.072
110.00	-10.29	-2.34	0.00	-53.50	0.00	53.50	1,605.11	802.56	1,852.46	927.61	5.59	-0.53	0.064
115.00	-7.29	-1.82	0.00	-41.76	0.00	41.76	1,551.00	775.50	1,705.69	854.11	6.16	-0.56	0.054
117.00	-7.03	-1.76	0.00	-38.04	0.00	38.04	1,528.79	764.39	1,648.01	825.23	6.40	-0.57	0.051
120.00	-6.70	-1.70	0.00	-32.77	0.00	32.77	1,494.85	747.43	1,562.67	782.50	6.77	-0.59	0.046
125.00	-6.17	-1.67	0.00	-24.25	0.00	24.25	1,425.26	712.63	1,412.43	707.26	7.40	-0.62	0.039
125.17	-6.16	-1.66	0.00	-23.98	0.00	23.98	1,422.68	711.34	1,407.29	704.69	7.42	-0.62	0.038
127.00	-5.82	-1.60	0.00	-20.94	0.00	20.94	1,394.30	697.15	1,351.43	676.72	7.66	-0.63	0.035
128.83	-5.55	-1.58	0.00	-18.00	0.00	18.00	975.56	487.78	946.27	473.84	7.90	-0.63	0.044
130.00	-4.71	-1.41	0.00	-16.15	0.00	16.15	967.13	483.57	925.83	463.60	8.06	-0.64	0.040
135.00	-3.13	-0.84	0.00	-9.11	0.00	9.11	929.74	464.87	839.48	420.37	8.74	-0.66	0.025
140.00	-2.81	-0.78	0.00	-4.91	0.00	4.91	890.31	445.15	755.47	378.30	9.43	-0.67	0.016
145.00	-1.66	-0.30	0.00	-0.22	0.00	0.22	848.83	424.42	674.13	337.57	10.14	-0.68	0.003
145.50	-0.14	-0.02	0.00	-0.07	0.00	0.07	844.57	422.29	666.16	333.57	10.21	-0.68	0.000
149.00	0.00	-0.02	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	10.70	-0.68	0.000

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:	1.00	
Site Coeffiecient F_v:	1.00	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.13	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.04	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	1.90	
Redundancy Factor (p):	1.00	
Seismic Force Distribution Exponent (k):	1.70	
Total Unfactored Dead Load:	36.37	k
Seismic Base Shear (E):	1.09	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)
39	147.25	144	695	0.011	12	177
38	145.25	23	110	0.002	2	29
37	142.50	314	1,431	0.023	25	385
36	137.50	328	1,404	0.022	24	401
35	132.50	398	1,600	0.025	28	487
34	129.42	95	366	0.006	6	116
33	127.92	266	1,009	0.016	17	326
32	126.08	279	1,033	0.016	18	342
31	125.08	17	63	0.001	1	21
30	122.50	528	1,860	0.029	32	647
29	118.50	325	1,083	0.017	19	399
28	116.00	224	721	0.011	12	275
27	112.50	587	1,788	0.028	31	719
26	107.50	604	1,705	0.027	29	741
25	102.50	622	1,619	0.026	28	763
24	99.77	59	145	0.002	3	72
23	97.27	1,148	2,732	0.043	47	1,407
22	94.98	12	27	0.000	0	15
21	92.48	858	1,874	0.030	32	1,051
20	87.50	892	1,775	0.028	31	1,094
19	82.50	919	1,654	0.026	28	1,126
18	77.50	945	1,530	0.024	26	1,159
17	72.50	972	1,405	0.022	24	1,191

16	67.50	999	1,278	0.020	22	1,224
15	62.50	1,025	1,151	0.018	20	1,257
14	57.50	1,052	1,025	0.016	18	1,289
13	53.90	473	413	0.007	7	580
12	51.40	1,160	934	0.015	16	1,421
11	48.35	1,392	1,011	0.016	17	1,706
10	45.85	425	282	0.004	5	521
9	42.50	1,265	738	0.012	13	1,551
8	37.50	1,296	611	0.010	11	1,589
7	32.50	1,327	491	0.008	8	1,627
6	27.50	1,358	378	0.006	7	1,665
5	22.50	1,389	275	0.004	5	1,703
4	17.50	1,420	184	0.003	3	1,741
3	12.50	1,451	106	0.002	2	1,779
2	7.50	1,482	45	0.001	1	1,817
1	2.50	1,513	7	0.000	0	1,855
Flat Low Profile Pla	145.50	1,500	7,077	0.112	122	1,839
Powerwave Allgon LGP	145.00	32	149	0.002	3	39
Powerwave Allgon 702	145.00	13	62	0.001	1	16
Powerwave Allgon LGP	145.00	85	397	0.006	7	104
Raycap DC6-48-60-18-	145.00	32	149	0.002	3	39
Ericsson RRUS 11 (Ba	145.00	150	704	0.011	12	184
Ericsson RRUS 32 B2	145.00	159	746	0.012	13	195
Allgon 7770.00	145.00	210	985	0.016	17	257
CCI HPA-65R-BUU-H6	145.00	153	718	0.011	12	188
Ericsson KRY 112 144	135.00	33	137	0.002	2	40
Ericsson Radio 4449	135.00	222	922	0.015	16	272
Ericsson AIR 21 B4A	135.00	270	1,122	0.018	19	331
Ericsson AIR 21, 1.3	135.00	275	1,140	0.018	20	336
RFS APXVAARR24_43-U-	135.00	384	1,594	0.025	27	470
Round T-Arm	130.00	750	2,922	0.046	50	919
Generic 34" x 6" Pan	127.00	60	225	0.004	4	74
RFS DB-B1-6C-12AB-0Z	117.00	21	70	0.001	1	26
RFS DB-B1-6C-12AB-0Z	117.00	21	70	0.001	1	26
Samsung B5/B13 RRH-B	115.00	141	445	0.007	8	172
Samsung B2/B66A RRH-	115.00	169	534	0.008	9	207
RFS DB-B1-6C-12AB-0Z	115.00	21	68	0.001	1	26
RFS DB-B1-6C-12AB-0Z	115.00	21	68	0.001	1	26
JMA Wireless MX06FRO	115.00	184	582	0.009	10	226
Generic Round Low Pr	115.00	1,875	5,932	0.094	102	2,298
		36,368	63,377	1.000	1,091	44,577

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)
39	147.25	144	695	0.011	12	126
38	145.25	23	110	0.002	2	20
37	142.50	314	1,431	0.023	25	275
36	137.50	328	1,404	0.022	24	286
35	132.50	398	1,600	0.025	28	348
34	129.42	95	366	0.006	6	83
33	127.92	266	1,009	0.016	17	233
32	126.08	279	1,033	0.016	18	244
31	125.08	17	63	0.001	1	15
30	122.50	528	1,860	0.029	32	462
29	118.50	325	1,083	0.017	19	285
28	116.00	224	721	0.011	12	196
27	112.50	587	1,788	0.028	31	513
26	107.50	604	1,705	0.027	29	528

25	102.50	622	1,619	0.026	28	544
24	99.77	59	145	0.002	3	51
23	97.27	1,148	2,732	0.043	47	1,003
22	94.98	12	27	0.000	0	10
21	92.48	858	1,874	0.030	32	750
20	87.50	892	1,775	0.028	31	780
19	82.50	919	1,654	0.026	28	803
18	77.50	945	1,530	0.024	26	827
17	72.50	972	1,405	0.022	24	850
16	67.50	999	1,278	0.020	22	873
15	62.50	1,025	1,151	0.018	20	896
14	57.50	1,052	1,025	0.016	18	920
13	53.90	473	413	0.007	7	414
12	51.40	1,160	934	0.015	16	1,014
11	48.35	1,392	1,011	0.016	17	1,217
10	45.85	425	282	0.004	5	371
9	42.50	1,265	738	0.012	13	1,106
8	37.50	1,296	611	0.010	11	1,133
7	32.50	1,327	491	0.008	8	1,160
6	27.50	1,358	378	0.006	7	1,187
5	22.50	1,389	275	0.004	5	1,214
4	17.50	1,420	184	0.003	3	1,242
3	12.50	1,451	106	0.002	2	1,269
2	7.50	1,482	45	0.001	1	1,296
1	2.50	1,513	7	0.000	0	1,323
Flat Low Profile Pla	145.50	1,500	7,077	0.112	122	1,311
Powerwave Allgon LGP	145.00	32	149	0.002	3	28
Powerwave Allgon 702	145.00	13	62	0.001	1	12
Powerwave Allgon LGP	145.00	85	397	0.006	7	74
Raycap DC6-48-60-18-	145.00	32	149	0.002	3	28
Ericsson RRUS 11 (Ba	145.00	150	704	0.011	12	131
Ericsson RRUS 32 B2	145.00	159	746	0.012	13	139
Allgon 7770.00	145.00	210	985	0.016	17	184
CCI HPA-65R-BUU-H6	145.00	153	718	0.011	12	134
Ericsson KRY 112 144	135.00	33	137	0.002	2	29
Ericsson Radio 4449	135.00	222	922	0.015	16	194
Ericsson AIR 21 B4A	135.00	270	1,122	0.018	19	236
Ericsson AIR 21, 1.3	135.00	275	1,140	0.018	20	240
RFS APXVAARR24_43-U-	135.00	384	1,594	0.025	27	335
Round T-Arm	130.00	750	2,922	0.046	50	656
Generic 34" x 6" Pan	127.00	60	225	0.004	4	52
RFS DB-B1-6C-12AB-0Z	117.00	21	70	0.001	1	19
RFS DB-B1-6C-12AB-0Z	117.00	21	70	0.001	1	19
Samsung B5/B13 RRH-B	115.00	141	445	0.007	8	123
Samsung B2/B66A RRH-	115.00	169	534	0.008	9	148
RFS DB-B1-6C-12AB-0Z	115.00	21	68	0.001	1	19
RFS DB-B1-6C-12AB-0Z	115.00	21	68	0.001	1	19
JMA Wireless MX06FRO	115.00	184	582	0.009	10	161
Generic Round Low Pr	115.00	1,875	5,932	0.094	102	1,639
		36,368	63,377	1.000	1,091	31,795

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	-42.72	-1.09	0.00	-122.63	0.00	122.63	5,341.71	2,670.85	12,195.3	6,106.74	0.00	0.00	0.028
5.00	-40.91	-1.10	0.00	-117.17	0.00	117.17	5,257.68	2,628.84	11,717.6	5,867.53	0.00	-0.01	0.028
10.00	-39.13	-1.10	0.00	-111.69	0.00	111.69	5,171.61	2,585.81	11,244.6	5,630.68	0.01	-0.01	0.027
15.00	-37.39	-1.10	0.00	-106.20	0.00	106.20	5,083.50	2,541.75	10,776.6	5,396.35	0.03	-0.02	0.027
20.00	-35.68	-1.10	0.00	-100.71	0.00	100.71	4,993.34	2,496.67	10,314.0	5,164.71	0.05	-0.02	0.027
25.00	-34.02	-1.09	0.00	-95.23	0.00	95.23	4,901.14	2,450.57	9,857.18	4,935.92	0.08	-0.03	0.026
30.00	-32.39	-1.09	0.00	-89.77	0.00	89.77	4,806.90	2,403.45	9,406.30	4,710.14	0.11	-0.04	0.026
35.00	-30.80	-1.08	0.00	-84.33	0.00	84.33	4,710.62	2,355.31	8,961.79	4,487.55	0.15	-0.04	0.025
40.00	-29.25	-1.07	0.00	-78.94	0.00	78.94	4,612.30	2,306.15	8,523.97	4,268.32	0.20	-0.05	0.025
45.00	-28.73	-1.07	0.00	-73.60	0.00	73.60	4,511.93	2,255.96	8,093.18	4,052.61	0.26	-0.06	0.025
46.71	-27.03	-1.05	0.00	-71.78	0.00	71.78	4,466.81	2,233.41	7,929.36	3,970.57	0.28	-0.06	0.024
50.00	-25.60	-1.03	0.00	-68.33	0.00	68.33	4,377.60	2,188.80	7,614.23	3,812.78	0.32	-0.06	0.024
52.79	-25.02	-1.03	0.00	-65.45	0.00	65.45	3,632.02	1,816.01	6,338.65	3,174.03	0.36	-0.07	0.028
55.00	-23.74	-1.01	0.00	-63.18	0.00	63.18	3,596.86	1,798.43	6,190.85	3,100.03	0.39	-0.07	0.027
60.00	-22.48	-0.99	0.00	-58.13	0.00	58.13	3,515.84	1,757.92	5,860.24	2,934.48	0.47	-0.08	0.026
65.00	-21.25	-0.97	0.00	-53.18	0.00	53.18	3,432.77	1,716.39	5,535.16	2,771.69	0.55	-0.09	0.025
70.00	-20.06	-0.95	0.00	-48.33	0.00	48.33	3,347.66	1,673.83	5,215.92	2,611.84	0.65	-0.09	0.024
75.00	-18.90	-0.92	0.00	-43.60	0.00	43.60	3,243.59	1,621.79	4,877.42	2,442.34	0.75	-0.10	0.024
80.00	-17.78	-0.89	0.00	-38.99	0.00	38.99	3,127.49	1,563.75	4,532.82	2,269.78	0.86	-0.11	0.023
85.00	-16.68	-0.86	0.00	-34.53	0.00	34.53	3,011.40	1,505.70	4,200.83	2,103.54	0.98	-0.12	0.022
90.00	-15.63	-0.83	0.00	-30.21	0.00	30.21	2,895.30	1,447.65	3,881.48	1,943.62	1.11	-0.13	0.021
94.95	-15.62	-0.83	0.00	-26.10	0.00	26.10	2,780.28	1,390.14	3,577.55	1,791.43	1.24	-0.13	0.020
95.00	-14.21	-0.78	0.00	-26.06	0.00	26.06	2,779.20	1,389.60	3,574.75	1,790.03	1.24	-0.13	0.020
99.54	-14.14	-0.78	0.00	-22.52	0.00	22.52	1,711.73	855.87	2,170.26	1,086.74	1.37	-0.14	0.029
100.00	-13.38	-0.75	0.00	-22.16	0.00	22.16	1,707.20	853.60	2,155.91	1,079.56	1.38	-0.14	0.028
105.00	-12.64	-0.72	0.00	-18.40	0.00	18.40	1,657.18	828.59	2,002.65	1,002.81	1.54	-0.15	0.026
110.00	-11.92	-0.69	0.00	-14.79	0.00	14.79	1,605.11	802.56	1,852.46	927.61	1.70	-0.16	0.023
115.00	-8.69	-0.54	0.00	-11.34	0.00	11.34	1,551.00	775.50	1,705.69	854.11	1.87	-0.17	0.019
117.00	-8.23	-0.52	0.00	-10.26	0.00	10.26	1,528.79	764.39	1,648.01	825.23	1.94	-0.17	0.018
120.00	-7.59	-0.48	0.00	-8.71	0.00	8.71	1,494.85	747.43	1,562.67	782.50	2.05	-0.18	0.016
125.00	-7.57	-0.48	0.00	-6.29	0.00	6.29	1,425.26	712.63	1,412.43	707.26	2.24	-0.18	0.014
125.17	-7.22	-0.46	0.00	-6.21	0.00	6.21	1,422.68	711.34	1,407.29	704.69	2.24	-0.18	0.014
127.00	-6.82	-0.44	0.00	-5.36	0.00	5.36	1,394.30	697.15	1,351.43	676.72	2.31	-0.18	0.013
128.83	-6.71	-0.44	0.00	-4.55	0.00	4.55	975.56	487.78	946.27	473.84	2.39	-0.19	0.016
130.00	-5.30	-0.35	0.00	-4.04	0.00	4.04	967.13	483.57	925.83	463.60	2.43	-0.19	0.014
135.00	-3.45	-0.24	0.00	-2.27	0.00	2.27	929.74	464.87	839.48	420.37	2.63	-0.19	0.009
140.00	-3.07	-0.21	0.00	-1.07	0.00	1.07	890.31	445.15	755.47	378.30	2.83	-0.19	0.006
145.00	-0.18	-0.01	0.00	-0.01	0.00	0.01	848.83	424.42	674.13	337.57	3.04	-0.20	0.000
145.50	0.00	0.00	0.00	0.00	0.00	0.00	844.57	422.29	666.16	333.57	3.06	-0.20	0.000
149.00	0.00	0.00	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	3.20	-0.20	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	-30.47	-1.09	0.00	-121.58	0.00	121.58	5,341.71	2,670.85	12,195.3	6,106.74	0.00	0.00	0.026
5.00	-29.18	-1.09	0.00	-116.12	0.00	116.12	5,257.68	2,628.84	11,717.6	5,867.53	0.00	-0.01	0.025
10.00	-27.91	-1.09	0.00	-110.65	0.00	110.65	5,171.61	2,585.81	11,244.6	5,630.68	0.01	-0.01	0.025
15.00	-26.67	-1.09	0.00	-105.17	0.00	105.17	5,083.50	2,541.75	10,776.6	5,396.35	0.03	-0.02	0.025
20.00	-25.45	-1.09	0.00	-99.71	0.00	99.71	4,993.34	2,496.67	10,314.0	5,164.71	0.05	-0.02	0.024
25.00	-24.26	-1.09	0.00	-94.25	0.00	94.25	4,901.14	2,450.57	9,857.18	4,935.92	0.08	-0.03	0.024
30.00	-23.10	-1.08	0.00	-88.81	0.00	88.81	4,806.90	2,403.45	9,406.30	4,710.14	0.11	-0.04	0.024
35.00	-21.97	-1.07	0.00	-83.41	0.00	83.41	4,710.62	2,355.31	8,961.79	4,487.55	0.15	-0.04	0.023
40.00	-20.86	-1.06	0.00	-78.05	0.00	78.05	4,612.30	2,306.15	8,523.97	4,268.32	0.20	-0.05	0.023
45.00	-20.49	-1.06	0.00	-72.75	0.00	72.75	4,511.93	2,255.96	8,093.18	4,052.61	0.25	-0.06	0.022
46.71	-19.28	-1.04	0.00	-70.94	0.00	70.94	4,466.81	2,233.41	7,929.36	3,970.57	0.27	-0.06	0.022
50.00	-18.26	-1.02	0.00	-67.52	0.00	67.52	4,377.60	2,188.80	7,614.23	3,812.78	0.32	-0.06	0.022
52.79	-17.85	-1.02	0.00	-64.66	0.00	64.66	3,632.02	1,816.01	6,338.65	3,174.03	0.35	-0.07	0.025
55.00	-16.93	-1.00	0.00	-62.42	0.00	62.42	3,596.86	1,798.43	6,190.85	3,100.03	0.38	-0.07	0.025
60.00	-16.03	-0.98	0.00	-57.42	0.00	57.42	3,515.84	1,757.92	5,860.24	2,934.48	0.46	-0.08	0.024
65.00	-15.16	-0.96	0.00	-52.51	0.00	52.51	3,432.77	1,716.39	5,535.16	2,771.69	0.55	-0.08	0.023
70.00	-14.31	-0.94	0.00	-47.71	0.00	47.71	3,347.66	1,673.83	5,215.92	2,611.84	0.64	-0.09	0.023
75.00	-13.48	-0.91	0.00	-43.02	0.00	43.02	3,243.59	1,621.79	4,877.42	2,442.34	0.74	-0.10	0.022
80.00	-12.68	-0.88	0.00	-38.47	0.00	38.47	3,127.49	1,563.75	4,532.82	2,269.78	0.85	-0.11	0.021
85.00	-11.90	-0.85	0.00	-34.06	0.00	34.06	3,011.40	1,505.70	4,200.83	2,103.54	0.97	-0.12	0.020
90.00	-11.15	-0.82	0.00	-29.80	0.00	29.80	2,895.30	1,447.65	3,881.48	1,943.62	1.09	-0.12	0.019
94.95	-11.14	-0.82	0.00	-25.74	0.00	25.74	2,780.28	1,390.14	3,577.55	1,791.43	1.23	-0.13	0.018
95.00	-10.14	-0.77	0.00	-25.70	0.00	25.70	2,779.20	1,389.60	3,574.75	1,790.03	1.23	-0.13	0.018
99.54	-10.08	-0.77	0.00	-22.20	0.00	22.20	1,711.73	855.87	2,170.26	1,086.74	1.36	-0.14	0.026
100.00	-9.54	-0.74	0.00	-21.84	0.00	21.84	1,707.20	853.60	2,155.91	1,079.56	1.37	-0.14	0.026
105.00	-9.01	-0.71	0.00	-18.14	0.00	18.14	1,657.18	828.59	2,002.65	1,002.81	1.52	-0.15	0.024
110.00	-8.50	-0.68	0.00	-14.58	0.00	14.58	1,605.11	802.56	1,852.46	927.61	1.68	-0.16	0.021
115.00	-6.19	-0.53	0.00	-11.17	0.00	11.17	1,551.00	775.50	1,705.69	854.11	1.85	-0.17	0.017
117.00	-5.87	-0.51	0.00	-10.11	0.00	10.11	1,528.79	764.39	1,648.01	825.23	1.92	-0.17	0.016
120.00	-5.41	-0.48	0.00	-8.58	0.00	8.58	1,494.85	747.43	1,562.67	782.50	2.03	-0.17	0.015
125.00	-5.40	-0.48	0.00	-6.20	0.00	6.20	1,425.26	712.63	1,412.43	707.26	2.21	-0.18	0.013
125.17	-5.15	-0.46	0.00	-6.12	0.00	6.12	1,422.68	711.34	1,407.29	704.69	2.22	-0.18	0.012
127.00	-4.87	-0.44	0.00	-5.28	0.00	5.28	1,394.30	697.15	1,351.43	676.72	2.29	-0.18	0.011
128.83	-4.78	-0.43	0.00	-4.48	0.00	4.48	975.56	487.78	946.27	473.84	2.36	-0.18	0.014
130.00	-3.78	-0.35	0.00	-3.98	0.00	3.98	967.13	483.57	925.83	463.60	2.40	-0.18	0.012
135.00	-2.46	-0.24	0.00	-2.24	0.00	2.24	929.74	464.87	839.48	420.37	2.60	-0.19	0.008
140.00	-2.19	-0.21	0.00	-1.06	0.00	1.06	890.31	445.15	755.47	378.30	2.80	-0.19	0.005
145.00	-0.13	-0.01	0.00	-0.01	0.00	0.01	848.83	424.42	674.13	337.57	3.00	-0.19	0.000
145.50	0.00	0.00	0.00	0.00	0.00	0.00	844.57	422.29	666.16	333.57	3.02	-0.19	0.000
149.00	0.00	0.00	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	3.16	-0.19	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:	1.00
Site Coefficient F_v	1.00
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.13
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.04
Period Based on Rayleigh Method (sec):	1.90
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)
39	147.25	144	1.846	1.755	1.058	0.223	22	177
38	145.25	23	1.796	1.521	0.970	0.203	3	29
37	142.50	314	1.729	1.234	0.859	0.176	37	385
36	137.50	328	1.610	0.808	0.683	0.131	29	401
35	132.50	398	1.495	0.488	0.536	0.091	24	487
34	129.42	95	1.426	0.335	0.459	0.070	4	116
33	127.92	266	1.393	0.271	0.425	0.060	11	326
32	126.08	279	1.353	0.201	0.385	0.048	9	342
31	125.08	17	1.332	0.167	0.365	0.043	0	21
30	122.50	528	1.278	0.091	0.317	0.028	10	647
29	118.50	325	1.195	0.000	0.251	0.009	2	399
28	116.00	224	1.146	-0.041	0.216	-0.001	0	275
27	112.50	587	1.077	-0.082	0.173	-0.014	-5	719
26	107.50	604	0.984	-0.114	0.123	-0.027	-11	741
25	102.50	622	0.894	-0.122	0.085	-0.036	-15	763
24	99.77	59	0.847	-0.119	0.068	-0.038	-1	72
23	97.27	1,148	0.805	-0.113	0.055	-0.039	-30	1,407
22	94.98	12	0.768	-0.105	0.045	-0.038	0	15
21	92.48	858	0.728	-0.095	0.036	-0.036	-21	1,051
20	87.50	892	0.652	-0.071	0.021	-0.029	-17	1,094
19	82.50	919	0.579	-0.045	0.012	-0.017	-11	1,126
18	77.50	945	0.511	-0.020	0.008	-0.003	-2	1,159
17	72.50	972	0.447	0.002	0.006	0.011	7	1,191
16	67.50	999	0.388	0.022	0.007	0.022	15	1,224
15	62.50	1,025	0.333	0.037	0.010	0.030	21	1,257
14	57.50	1,052	0.281	0.049	0.014	0.035	25	1,289
13	53.90	473	0.247	0.056	0.017	0.037	12	580
12	51.40	1,160	0.225	0.059	0.020	0.038	29	1,421
11	48.35	1,392	0.199	0.063	0.023	0.038	35	1,706
10	45.85	425	0.179	0.065	0.026	0.038	11	521
9	42.50	1,265	0.154	0.068	0.030	0.038	32	1,551
8	37.50	1,296	0.120	0.070	0.034	0.037	32	1,589
7	32.50	1,327	0.090	0.071	0.038	0.036	32	1,627
6	27.50	1,358	0.064	0.072	0.041	0.035	32	1,665

5	22.50	1,389	0.043	0.071	0.042	0.034	32	1,703
4	17.50	1,420	0.026	0.067	0.040	0.033	31	1,741
3	12.50	1,451	0.013	0.059	0.034	0.030	29	1,779
2	7.50	1,482	0.005	0.044	0.025	0.024	24	1,817
1	2.50	1,513	0.001	0.018	0.010	0.012	12	1,855
Flat Low Profile Pla	145.50	1,500	1.802	1.549	0.981	0.205	205	1,839
Powerwave Allgon LGP	145.00	32	1.790	1.493	0.960	0.200	4	39
Powerwave Allgon 702	145.00	13	1.790	1.493	0.960	0.200	2	16
Powerwave Allgon LGP	145.00	85	1.790	1.493	0.960	0.200	11	104
Raycap DC6-48-60-18-	145.00	32	1.790	1.493	0.960	0.200	4	39
Ericsson RRUS 11 (Ba	145.00	150	1.790	1.493	0.960	0.200	20	184
Ericsson RRUS 32 B2	145.00	159	1.790	1.493	0.960	0.200	21	195
Allgon 7770.00	145.00	210	1.790	1.493	0.960	0.200	28	257
CCI HPA-65R-BUU-H6	145.00	153	1.790	1.493	0.960	0.200	20	188
Ericsson KRY 112 144	135.00	33	1.552	0.636	0.606	0.110	2	40
Ericsson Radio 4449	135.00	222	1.552	0.636	0.606	0.110	16	272
Ericsson AIR 21 B4A	135.00	270	1.552	0.636	0.606	0.110	20	331
Ericsson AIR 21, 1.3	135.00	275	1.552	0.636	0.606	0.110	20	336
RFS APXVAARR24_43-U-	135.00	384	1.552	0.636	0.606	0.110	28	470
Round T-Arm	130.00	750	1.439	0.361	0.473	0.073	37	919
Generic 34" x 6" Pan	127.00	60	1.373	0.235	0.405	0.054	2	74
RFS DB-B1-6C-12AB-0Z	117.00	21	1.165	-0.025	0.230	0.003	0	26
RFS DB-B1-6C-12AB-0Z	117.00	21	1.165	-0.025	0.230	0.003	0	26
Samsung B5/B13 RRH-B	115.00	141	1.126	-0.054	0.203	-0.005	0	172
Samsung B2/B66A RRH-	115.00	169	1.126	-0.054	0.203	-0.005	-1	207
RFS DB-B1-6C-12AB-0Z	115.00	21	1.126	-0.054	0.203	-0.005	0	26
RFS DB-B1-6C-12AB-0Z	115.00	21	1.126	-0.054	0.203	-0.005	0	26
JMA Wireless MX06FRO	115.00	184	1.126	-0.054	0.203	-0.005	-1	226
Generic Round Low Pr	115.00	1,875	1.126	-0.054	0.203	-0.005	-7	2,298
		36,368	64.036	23.730	21.819	3.790	882	44,577

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)
39	147.25	144	1.846	1.755	1.058	0.223	22	126
38	145.25	23	1.796	1.521	0.970	0.203	3	20
37	142.50	314	1.729	1.234	0.859	0.176	37	275
36	137.50	328	1.610	0.808	0.683	0.131	29	286
35	132.50	398	1.495	0.488	0.536	0.091	24	348
34	129.42	95	1.426	0.335	0.459	0.070	4	83
33	127.92	266	1.393	0.271	0.425	0.060	11	233
32	126.08	279	1.353	0.201	0.385	0.048	9	244
31	125.08	17	1.332	0.167	0.365	0.043	0	15
30	122.50	528	1.278	0.091	0.317	0.028	10	462
29	118.50	325	1.195	0.000	0.251	0.009	2	285
28	116.00	224	1.146	-0.041	0.216	-0.001	0	196
27	112.50	587	1.077	-0.082	0.173	-0.014	-5	513
26	107.50	604	0.984	-0.114	0.123	-0.027	-11	528
25	102.50	622	0.894	-0.122	0.085	-0.036	-15	544
24	99.77	59	0.847	-0.119	0.068	-0.038	-1	51
23	97.27	1,148	0.805	-0.113	0.055	-0.039	-30	1,003
22	94.98	12	0.768	-0.105	0.045	-0.038	0	10
21	92.48	858	0.728	-0.095	0.036	-0.036	-21	750
20	87.50	892	0.652	-0.071	0.021	-0.029	-17	780
19	82.50	919	0.579	-0.045	0.012	-0.017	-11	803
18	77.50	945	0.511	-0.020	0.008	-0.003	-2	827
17	72.50	972	0.447	0.002	0.006	0.011	7	850
16	67.50	999	0.388	0.022	0.007	0.022	15	873

15	62.50	1,025	0.333	0.037	0.010	0.030	21	896
14	57.50	1,052	0.281	0.049	0.014	0.035	25	920
13	53.90	473	0.247	0.056	0.017	0.037	12	414
12	51.40	1,160	0.225	0.059	0.020	0.038	29	1,014
11	48.35	1,392	0.199	0.063	0.023	0.038	35	1,217
10	45.85	425	0.179	0.065	0.026	0.038	11	371
9	42.50	1,265	0.154	0.068	0.030	0.038	32	1,106
8	37.50	1,296	0.120	0.070	0.034	0.037	32	1,133
7	32.50	1,327	0.090	0.071	0.038	0.036	32	1,160
6	27.50	1,358	0.064	0.072	0.041	0.035	32	1,187
5	22.50	1,389	0.043	0.071	0.042	0.034	32	1,214
4	17.50	1,420	0.026	0.067	0.040	0.033	31	1,242
3	12.50	1,451	0.013	0.059	0.034	0.030	29	1,269
2	7.50	1,482	0.005	0.044	0.025	0.024	24	1,296
1	2.50	1,513	0.001	0.018	0.010	0.012	12	1,323
Flat Low Profile Pla	145.50	1,500	1.802	1.549	0.981	0.205	205	1,311
Powerwave Allgon LGP	145.00	32	1.790	1.493	0.960	0.200	4	28
Powerwave Allgon 702	145.00	13	1.790	1.493	0.960	0.200	2	12
Powerwave Allgon LGP	145.00	85	1.790	1.493	0.960	0.200	11	74
Raycap DC6-48-60-18-	145.00	32	1.790	1.493	0.960	0.200	4	28
Ericsson RRUS 11 (Ba	145.00	150	1.790	1.493	0.960	0.200	20	131
Ericsson RRUS 32 B2	145.00	159	1.790	1.493	0.960	0.200	21	139
Allgon 7770.00	145.00	210	1.790	1.493	0.960	0.200	28	184
CCI HPA-65R-BUU-H6	145.00	153	1.790	1.493	0.960	0.200	20	134
Ericsson KRY 112 144	135.00	33	1.552	0.636	0.606	0.110	2	29
Ericsson Radio 4449	135.00	222	1.552	0.636	0.606	0.110	16	194
Ericsson AIR 21 B4A	135.00	270	1.552	0.636	0.606	0.110	20	236
Ericsson AIR 21, 1.3	135.00	275	1.552	0.636	0.606	0.110	20	240
RFS APXVAARR24_43-U-	135.00	384	1.552	0.636	0.606	0.110	28	335
Round T-Arm	130.00	750	1.439	0.361	0.473	0.073	37	656
Generic 34" x 6" Pan	127.00	60	1.373	0.235	0.405	0.054	2	52
RFS DB-B1-6C-12AB-0Z	117.00	21	1.165	-0.025	0.230	0.003	0	19
RFS DB-B1-6C-12AB-0Z	117.00	21	1.165	-0.025	0.230	0.003	0	19
Samsung B5/B13 RRH-B	115.00	141	1.126	-0.054	0.203	-0.005	0	123
Samsung B2/B66A RRH-	115.00	169	1.126	-0.054	0.203	-0.005	-1	148
RFS DB-B1-6C-12AB-0Z	115.00	21	1.126	-0.054	0.203	-0.005	0	19
RFS DB-B1-6C-12AB-0Z	115.00	21	1.126	-0.054	0.203	-0.005	0	19
JMA Wireless MX06FRO	115.00	184	1.126	-0.054	0.203	-0.005	-1	161
Generic Round Low Pr	115.00	1,875	1.126	-0.054	0.203	-0.005	-7	1,639
		36,368	64.036	23.730	21.819	3.790	882	31,795

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	-42.72	-0.87	0.00	-88.08	0.00	88.08	5,341.71	2,670.85	12,195.34	6,106.74	0.00	0.00	0.022
5.00	-40.91	-0.85	0.00	-83.73	0.00	83.73	5,257.68	2,628.84	11,717.65	5,867.53	0.00	0.00	0.022
10.00	-39.13	-0.82	0.00	-79.48	0.00	79.48	5,171.61	2,585.81	11,244.65	5,630.68	0.01	-0.01	0.022
15.00	-37.39	-0.79	0.00	-75.36	0.00	75.36	5,083.50	2,541.75	10,776.69	5,396.35	0.02	-0.01	0.021
20.00	-35.68	-0.77	0.00	-71.39	0.00	71.39	4,993.34	2,496.67	10,314.08	5,164.71	0.03	-0.02	0.021
25.00	-34.02	-0.74	0.00	-67.56	0.00	67.56	4,901.14	2,450.57	9,857.18	4,935.92	0.05	-0.02	0.021
30.00	-32.39	-0.71	0.00	-63.88	0.00	63.88	4,806.90	2,403.45	9,406.30	4,710.14	0.08	-0.03	0.020
35.00	-30.80	-0.67	0.00	-60.36	0.00	60.36	4,710.62	2,355.31	8,961.79	4,487.55	0.11	-0.03	0.020
40.00	-29.25	-0.64	0.00	-56.98	0.00	56.98	4,612.30	2,306.15	8,523.97	4,268.32	0.14	-0.04	0.020
45.00	-28.73	-0.63	0.00	-53.76	0.00	53.76	4,511.93	2,255.96	8,093.18	4,052.61	0.18	-0.04	0.020
46.71	-27.03	-0.60	0.00	-52.68	0.00	52.68	4,466.81	2,233.41	7,929.36	3,970.57	0.20	-0.04	0.019
50.00	-25.61	-0.57	0.00	-50.71	0.00	50.71	4,377.60	2,188.80	7,614.23	3,812.78	0.23	-0.05	0.019
52.79	-25.03	-0.56	0.00	-49.11	0.00	49.11	3,632.02	1,816.01	6,338.65	3,174.03	0.25	-0.05	0.022
55.00	-23.74	-0.54	0.00	-47.88	0.00	47.88	3,596.86	1,798.43	6,190.85	3,100.03	0.28	-0.05	0.022
60.00	-22.48	-0.52	0.00	-45.20	0.00	45.20	3,515.84	1,757.92	5,860.24	2,934.48	0.33	-0.06	0.022
65.00	-21.26	-0.50	0.00	-42.62	0.00	42.62	3,432.77	1,716.39	5,535.16	2,771.69	0.40	-0.06	0.022
70.00	-20.06	-0.50	0.00	-40.11	0.00	40.11	3,347.66	1,673.83	5,215.92	2,611.84	0.47	-0.07	0.021
75.00	-18.90	-0.50	0.00	-37.63	0.00	37.63	3,243.59	1,621.79	4,877.42	2,442.34	0.54	-0.08	0.021
80.00	-17.78	-0.51	0.00	-35.14	0.00	35.14	3,127.49	1,563.75	4,532.82	2,269.78	0.62	-0.08	0.021
85.00	-16.68	-0.53	0.00	-32.59	0.00	32.59	3,011.40	1,505.70	4,200.83	2,103.54	0.72	-0.09	0.021
90.00	-15.63	-0.55	0.00	-29.96	0.00	29.96	2,895.30	1,447.65	3,881.48	1,943.62	0.81	-0.10	0.021
94.95	-15.62	-0.55	0.00	-27.24	0.00	27.24	2,780.28	1,390.14	3,577.55	1,791.43	0.92	-0.11	0.021
95.00	-14.21	-0.58	0.00	-27.21	0.00	27.21	2,779.20	1,389.60	3,574.75	1,790.03	0.92	-0.11	0.020
99.54	-14.14	-0.58	0.00	-24.59	0.00	24.59	1,711.73	855.87	2,170.26	1,086.74	1.02	-0.11	0.031
100.00	-13.38	-0.59	0.00	-24.32	0.00	24.32	1,707.20	853.60	2,155.91	1,079.56	1.03	-0.11	0.030
105.00	-12.64	-0.61	0.00	-21.35	0.00	21.35	1,657.18	828.59	2,002.65	1,002.81	1.16	-0.12	0.029
110.00	-11.92	-0.61	0.00	-18.31	0.00	18.31	1,605.11	802.56	1,852.46	927.61	1.30	-0.14	0.027
115.00	-8.69	-0.61	0.00	-15.25	0.00	15.25	1,551.00	775.50	1,705.69	854.11	1.44	-0.15	0.023
117.00	-8.23	-0.61	0.00	-14.02	0.00	14.02	1,528.79	764.39	1,648.01	825.23	1.51	-0.15	0.022
120.00	-7.59	-0.60	0.00	-12.18	0.00	12.18	1,494.85	747.43	1,562.67	782.50	1.60	-0.16	0.021
125.00	-7.57	-0.60	0.00	-9.17	0.00	9.17	1,425.26	712.63	1,412.43	707.26	1.77	-0.17	0.018
125.17	-7.22	-0.59	0.00	-9.07	0.00	9.07	1,422.68	711.34	1,407.29	704.69	1.78	-0.17	0.018
127.00	-6.82	-0.58	0.00	-7.99	0.00	7.99	1,394.30	697.15	1,351.43	676.72	1.84	-0.17	0.017
128.83	-6.71	-0.57	0.00	-6.93	0.00	6.93	975.56	487.78	946.27	473.84	1.91	-0.17	0.021
130.00	-5.30	-0.51	0.00	-6.26	0.00	6.26	967.13	483.57	925.83	463.60	1.95	-0.17	0.019
135.00	-3.45	-0.39	0.00	-3.71	0.00	3.71	929.74	464.87	839.48	420.37	2.14	-0.18	0.013
140.00	-3.06	-0.35	0.00	-1.77	0.00	1.77	890.31	445.15	755.47	378.30	2.33	-0.19	0.008
145.00	-0.18	-0.02	0.00	-0.01	0.00	0.01	848.83	424.42	674.13	337.57	2.52	-0.19	0.000
145.50	0.00	0.00	0.00	0.00	0.00	0.00	844.57	422.29	666.16	333.57	2.54	-0.19	0.000
149.00	0.00	0.00	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	2.68	-0.19	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-30.47	-0.87	0.00	-87.26	0.00	87.26	5,341.71	2,670.85	12,195.34	6,106.74	0.00	0.00	0.020
5.00	-29.18	-0.85	0.00	-82.90	0.00	82.90	5,257.68	2,628.84	11,717.65	5,867.53	0.00	0.00	0.020
10.00	-27.91	-0.82	0.00	-78.66	0.00	78.66	5,171.61	2,585.81	11,244.65	5,630.68	0.01	-0.01	0.019
15.00	-26.67	-0.79	0.00	-74.56	0.00	74.56	5,083.50	2,541.75	10,776.69	5,396.35	0.02	-0.01	0.019
20.00	-25.45	-0.76	0.00	-70.60	0.00	70.60	4,993.34	2,496.67	10,314.08	5,164.71	0.03	-0.02	0.019
25.00	-24.26	-0.73	0.00	-66.79	0.00	66.79	4,901.14	2,450.57	9,857.18	4,935.92	0.05	-0.02	0.018
30.00	-23.10	-0.70	0.00	-63.13	0.00	63.13	4,806.90	2,403.45	9,406.30	4,710.14	0.08	-0.03	0.018
35.00	-21.97	-0.67	0.00	-59.63	0.00	59.63	4,710.62	2,355.31	8,961.79	4,487.55	0.11	-0.03	0.018
40.00	-20.87	-0.64	0.00	-56.28	0.00	56.28	4,612.30	2,306.15	8,523.97	4,268.32	0.14	-0.03	0.018
45.00	-20.49	-0.63	0.00	-53.09	0.00	53.09	4,511.93	2,255.96	8,093.18	4,052.61	0.18	-0.04	0.018
46.71	-19.28	-0.59	0.00	-52.01	0.00	52.01	4,466.81	2,233.41	7,929.36	3,970.57	0.20	-0.04	0.017
50.00	-18.26	-0.56	0.00	-50.06	0.00	50.06	4,377.60	2,188.80	7,614.23	3,812.78	0.22	-0.04	0.017
52.79	-17.85	-0.55	0.00	-48.48	0.00	48.48	3,632.02	1,816.01	6,338.65	3,174.03	0.25	-0.05	0.020
55.00	-16.93	-0.53	0.00	-47.26	0.00	47.26	3,596.86	1,798.43	6,190.85	3,100.03	0.27	-0.05	0.020
60.00	-16.03	-0.51	0.00	-44.62	0.00	44.62	3,515.84	1,757.92	5,860.24	2,934.48	0.33	-0.06	0.020
65.00	-15.16	-0.49	0.00	-42.07	0.00	42.07	3,432.77	1,716.39	5,535.16	2,771.69	0.39	-0.06	0.020
70.00	-14.31	-0.49	0.00	-39.60	0.00	39.60	3,347.66	1,673.83	5,215.92	2,611.84	0.46	-0.07	0.019
75.00	-13.48	-0.49	0.00	-37.16	0.00	37.16	3,243.59	1,621.79	4,877.42	2,442.34	0.54	-0.07	0.019
80.00	-12.68	-0.50	0.00	-34.71	0.00	34.71	3,127.49	1,563.75	4,532.82	2,269.78	0.62	-0.08	0.019
85.00	-11.90	-0.52	0.00	-32.20	0.00	32.20	3,011.40	1,505.70	4,200.83	2,103.54	0.71	-0.09	0.019
90.00	-11.15	-0.54	0.00	-29.60	0.00	29.60	2,895.30	1,447.65	3,881.48	1,943.62	0.80	-0.10	0.019
94.95	-11.14	-0.54	0.00	-26.92	0.00	26.92	2,780.28	1,390.14	3,577.55	1,791.43	0.91	-0.10	0.019
95.00	-10.14	-0.57	0.00	-26.90	0.00	26.90	2,779.20	1,389.60	3,574.75	1,790.03	0.91	-0.10	0.019
99.54	-10.08	-0.57	0.00	-24.31	0.00	24.31	1,711.73	855.87	2,170.26	1,086.74	1.01	-0.11	0.028
100.00	-9.54	-0.59	0.00	-24.05	0.00	24.05	1,707.20	853.60	2,155.91	1,079.56	1.02	-0.11	0.028
105.00	-9.01	-0.60	0.00	-21.11	0.00	21.11	1,657.18	828.59	2,002.65	1,002.81	1.15	-0.12	0.026
110.00	-8.50	-0.60	0.00	-18.12	0.00	18.12	1,605.11	802.56	1,852.46	927.61	1.28	-0.13	0.025
115.00	-6.19	-0.61	0.00	-15.10	0.00	15.10	1,551.00	775.50	1,705.69	854.11	1.43	-0.14	0.022
117.00	-5.87	-0.61	0.00	-13.88	0.00	13.88	1,528.79	764.39	1,648.01	825.23	1.49	-0.15	0.021
120.00	-5.41	-0.60	0.00	-12.06	0.00	12.06	1,494.85	747.43	1,562.67	782.50	1.58	-0.15	0.019
125.00	-5.40	-0.60	0.00	-9.09	0.00	9.09	1,425.26	712.63	1,412.43	707.26	1.75	-0.16	0.017
125.17	-5.15	-0.59	0.00	-8.99	0.00	8.99	1,422.68	711.34	1,407.29	704.69	1.76	-0.16	0.016
127.00	-4.87	-0.57	0.00	-7.91	0.00	7.91	1,394.30	697.15	1,351.43	676.72	1.82	-0.17	0.015
128.83	-4.78	-0.57	0.00	-6.86	0.00	6.86	975.56	487.78	946.27	473.84	1.88	-0.17	0.019
130.00	-3.78	-0.50	0.00	-6.20	0.00	6.20	967.13	483.57	925.83	463.60	1.93	-0.17	0.017
135.00	-2.46	-0.39	0.00	-3.68	0.00	3.68	929.74	464.87	839.48	420.37	2.11	-0.18	0.011
140.00	-2.19	-0.35	0.00	-1.75	0.00	1.75	890.31	445.15	755.47	378.30	2.30	-0.18	0.007
145.00	-0.13	-0.02	0.00	-0.01	0.00	0.01	848.83	424.42	674.13	337.57	2.50	-0.19	0.000
145.50	0.00	0.00	0.00	0.00	0.00	0.00	844.57	422.29	666.16	333.57	2.52	-0.19	0.000
149.00	0.00	0.00	0.00	0.00	0.00	0.00	809.65	404.83	607.80	304.35	2.65	-0.19	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	18.77	0.00	43.63	0.00	0.00	1908.08	99.54	0.35
0.9D + 1.6W	18.76	0.00	32.72	0.00	0.00	1893.15	99.54	0.34
1.2D + 1.0Di + 1.0Wi	5.50	0.00	69.35	0.00	0.00	552.85	99.54	0.11
(1.2 + 0.2Sds) * DL + E ELFM	1.09	0.00	42.72	0.00	0.00	122.63	99.54	0.03
(1.2 + 0.2Sds) * DL + E EMAM	0.87	0.00	42.72	0.00	0.00	88.08	99.54	0.03
(0.9 - 0.2Sds) * DL + E ELFM	1.09	0.00	30.47	0.00	0.00	121.58	99.54	0.03
(0.9 - 0.2Sds) * DL + E EMAM	0.87	0.00	30.47	0.00	0.00	87.26	99.54	0.03
1.0D + 1.0W	4.01	0.00	36.37	0.00	0.00	406.20	99.54	0.08

Base Plate & Anchor Rod Analysis

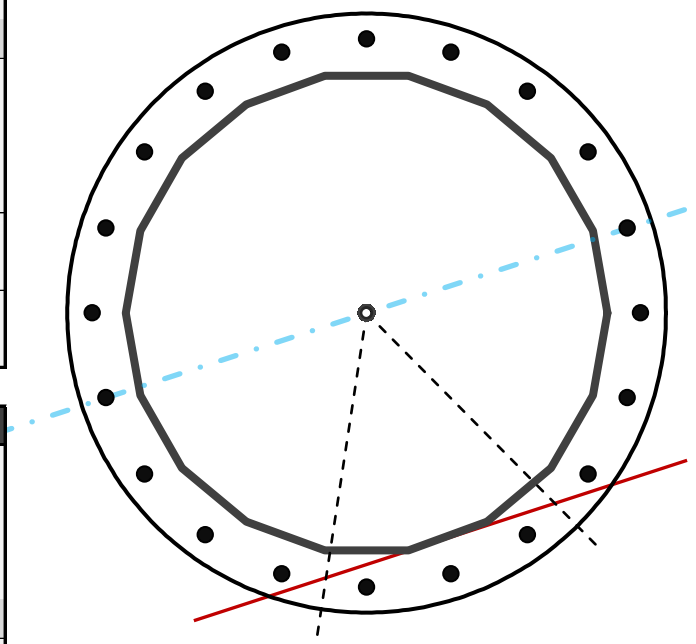
Pole Dimensions		
Number of Sides	18	-
Diameter	56	in
Thickness	0.4375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	1908.1	k-ft
Axial, Pu	43.6	k
Shear, Vu	18.8	k
Neutral Axis	198	°

Report Capacities		
Component	Capacity	Result
Base Plate	17%	Pass
Anchor Rods	29%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	71	in
Thickness	2 1/2	in
Grade	A572-60	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	477.2	k
Bending Stress, ϕMn	2772.4	k

Original Anchor Rods		
Arrangement	Radial	-
Quantity	20	-
Diameter, ø	2 1/4	in
Bolt Circle	65	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	10.2	in
Orientation Offset	0	°
Applied Force, Pu	75.3	k
Anchor Rods, ϕPn	259.8	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	18.8	1908.1	1.00
Anchor Rod Forces	18.8	1908.1	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	75.9806	4.2211	0.2704		29325.69
Bolt	3.9761	3.2477	0.8393	4.5	31859.49
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	71	in
Thickness, t	2.5	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	43.646	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	20	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	65	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	75.3	k
Applied Shear, Vu	0.5	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.290	OK
Interaction Capacity	0.293	OK

External Base Plate		
Chord Length AA	37.312	in
Additional AA	5.000	in
Section Modulus, Z	66.113	in^3
Applied Moment, Mu	477.2	k-ft
Bending Capacity, ϕMn	3570.1	k-ft
Capacity, Mu/ϕMn	0.134	OK
Chord Length AB	35.970	in
Additional AB	5.000	in
Section Modulus, Z	64.015	in^3
Applied Moment, Mu	382.3	k-ft
Bending Capacity, ϕMn	3456.8	k-ft
Capacity, Mu/ϕMn	0.111	OK
Bend Line Length	32.859	in
Additional Bend Line	0.000	in
Section Modulus, Z	51.342	in^3
Applied Moment, Mu	477.2	k-ft
Bending Capacity, ϕMn	2772.4	k-ft
Capacity, Mu/ϕMn	0.172	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		

Mount Analysis of Existing T-Arms for American Tower on behalf of T-Mobile
370641 - Beacon Falls CT
Project #: 12927148
T-Mobile Site ID: CT11487B
Program: L600

CLS Engineering PLLC Project #41124-12927148-01-MA-R2
August 21, 2019

MOUNT DESCRIPTION	Existing T-Arms at 134 ft AGL
ANTENNA ELEVATION	Nominal Rad. Elevation of 135 ft AGL (Eccentricity of ~1 ft)
SITE DESCRIPTION	149 ft Monopole
SITE ADDRESS	401-411 Lopus Road, Beacon Falls, CT 06403-0000, New Haven County
GPS COORDINATES	41.43283333, -73.07022222
ANALYSIS STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
LOADING CRITERIA	125 mph, V_{ult} / 97 mph, V_{asd} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 0.75" Ice

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

MEMBER USAGE	**76%**	**Pass**
CONNECTION USAGE	**80%**	**Pass**
COLLAR USAGE	**37%**	**Pass**

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

Prepared by:
Jennifer Soza

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

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

IdenTrust part of HID Global

Digitally signed by Tyler Barker
DN: c=US, o=Telamon Corporation, ou=A01427E000001 6A4525ADF800001 D17, cn=Tyler Barker
Date: 2019.08.22 17:47:57 -04'00'

■ INTRODUCTION

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

■ STRUCTURAL DOCUMENTS PROVIDED

STRUCTURAL DATA	Site Photos, dated February 27, 2019 Site Pro 1 Drawing Par #PRK-1245, dated April 10, 2014 Site Pro 1 Drawing Part #SP219, January 23, 2013 Site Pro 1 Drawing Part #SCX1-K Rev. A, dated August 23, 2012 Site Pro 1 Drawing Part #PUCK, dated September 1, 2010
PREVIOUS ANALYSES	Structural Analysis by ATC, Engineering #OAA597776_C3_10, dated October 31, 2016
LOADING DATA	ATC Application Project #12927148, dated April 17, 2019

■ ANALYSIS CRITERIA

STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
BASIC WIND SPEED	125 mph, V_{ult} / 97 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**
134.0	135.0	3	Ericsson AIR 21, 1.3 M, B2A B4P
		3	Ericsson AIR 21 B4A/B2P
		3	Ericsson RADIO 4449 B12/B71
		3	Ericsson KRY 112 144/1
		3	RFS Celwave APXVAARR24_43-U-NA20

■ RESULTS SUMMARY

COMPONENT	PEAK USAGE	RESULT
Connections	80%	Pass
Mount Pipes	76%	Pass
Face Horizontals	55%	Pass
Stand-Off Horizontals	46%	Pass
Collar Reactions	37%	Pass

■ CONCLUSION AND RECOMMENDATIONS

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

- **Install (1) 8ft. long proposed Pipe 2 STD, A53 Gr. B, mount pipe at empty Position 2 at each sector for proposed panel configuration (3 total) as shown. Connect to T-Arm face horizontal member using Site Pro 1 SP219 crossover plate or equal.**
- **Install (1) 12'-6" long proposed Pipe 2 STD, A53 Gr. B, support rail pipe at each sector (3 total). Connect to all existing and proposed antenna mount pipes using Site Pro 1 SCX1-K crossover plate or equal (12 total).**
- **Install (3) 7'-6" long Pipe 2 STD, A53 Gr. B, support rail bracing pipes at the existing T-Arm mount. Connect to proposed support rail pipes with Site Pro 1 PUCK or equal, as shown in the following sketches.**
- **Install (1) Site Pro 1 PRK-1245 kit at the offset arms on the existing T-Arm mount as shown in the following sketches. Field-Cut proposed angles as required. Maintain minimum bolt edge distance.**
- **All hardware for Site Pro 1 PUCK connection to the proposed horizontal pipe should be installed with "turn of the nut" method per the following table:**

BOLT TIGHTENING PROCEDURE

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

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

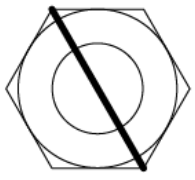
   BOLT LENGTHS OVER FOUR AND UP TO EIGHT DIAMETERS:
   +1/2 TURN BEYOND SNUG TIGHT

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

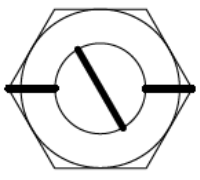
2. SPLICE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8(d)(1) OF THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS AS FOLLOWS:

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

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



BEFORE ⅓ TURN



AFTER ⅓ TURN

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

■ ASSUMPTIONS AND CONDITIONS

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

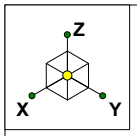
This analysis assumes the following:

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

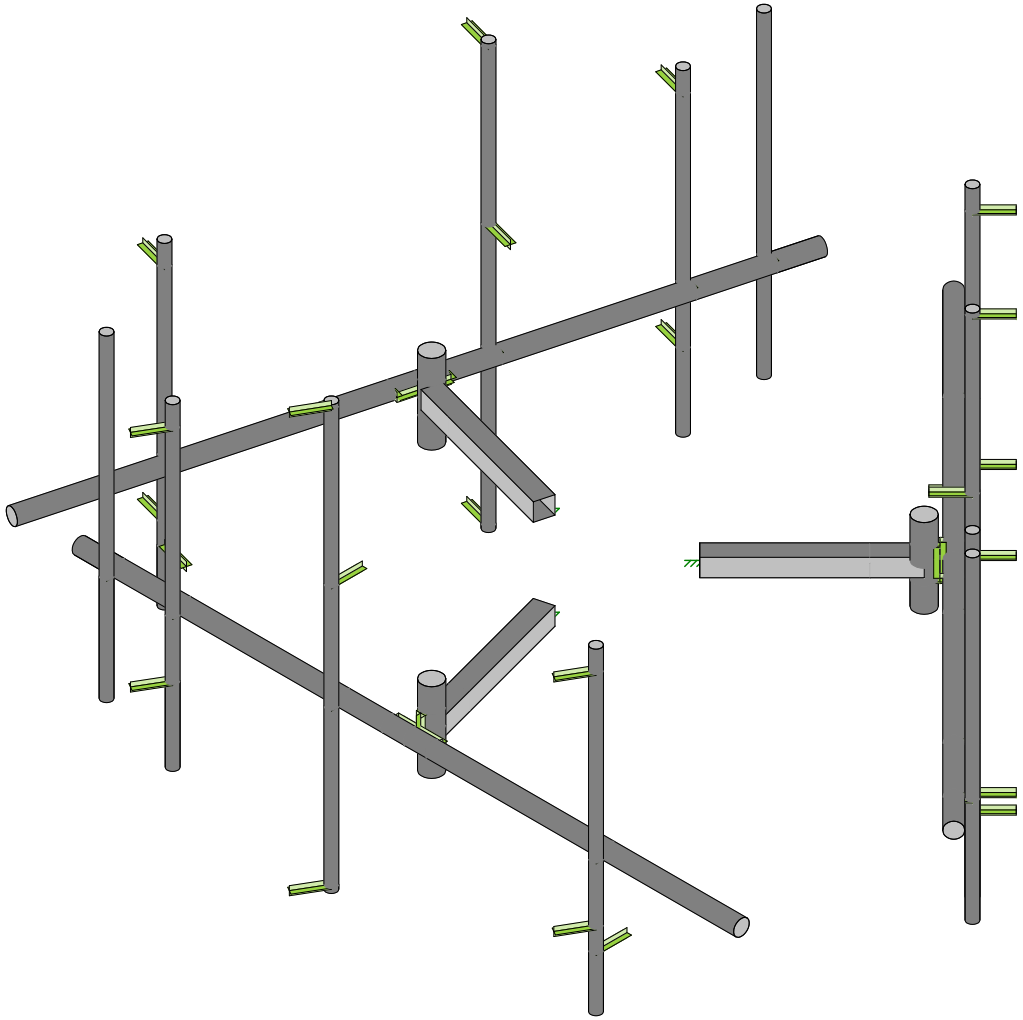
All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of the report. All opinions and conclusions contained herein are subject to revision based upon receipt of new or updated information. All services are provided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

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

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

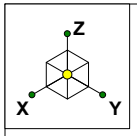


Existing Mount to be Modified



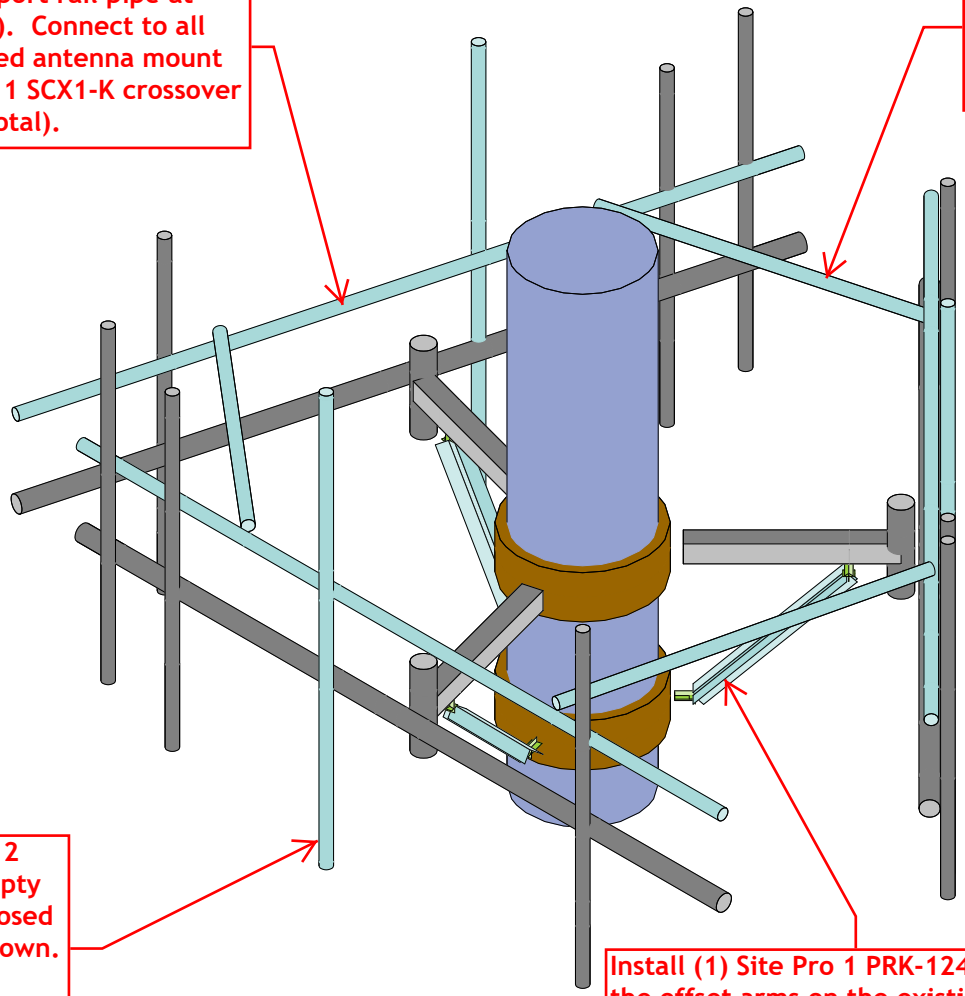
Envelope Only Solution

CLS	41124-12927148-Beacon Falls CT	EX - 1
JLS		Aug 21, 2019 at 10:57 AM
41124-12927148-01-MA-R2	Existing - Rendered	41124-12927148-01-MA-R2.r3d



Install (1) 12'-6" long proposed Pipe 2 STD, A53 Gr. B, support rail pipe at each sector (3 total). Connect to all existing and proposed antenna mount pipes using Site Pro 1 SCX1-K crossover plate or equal (12 total).

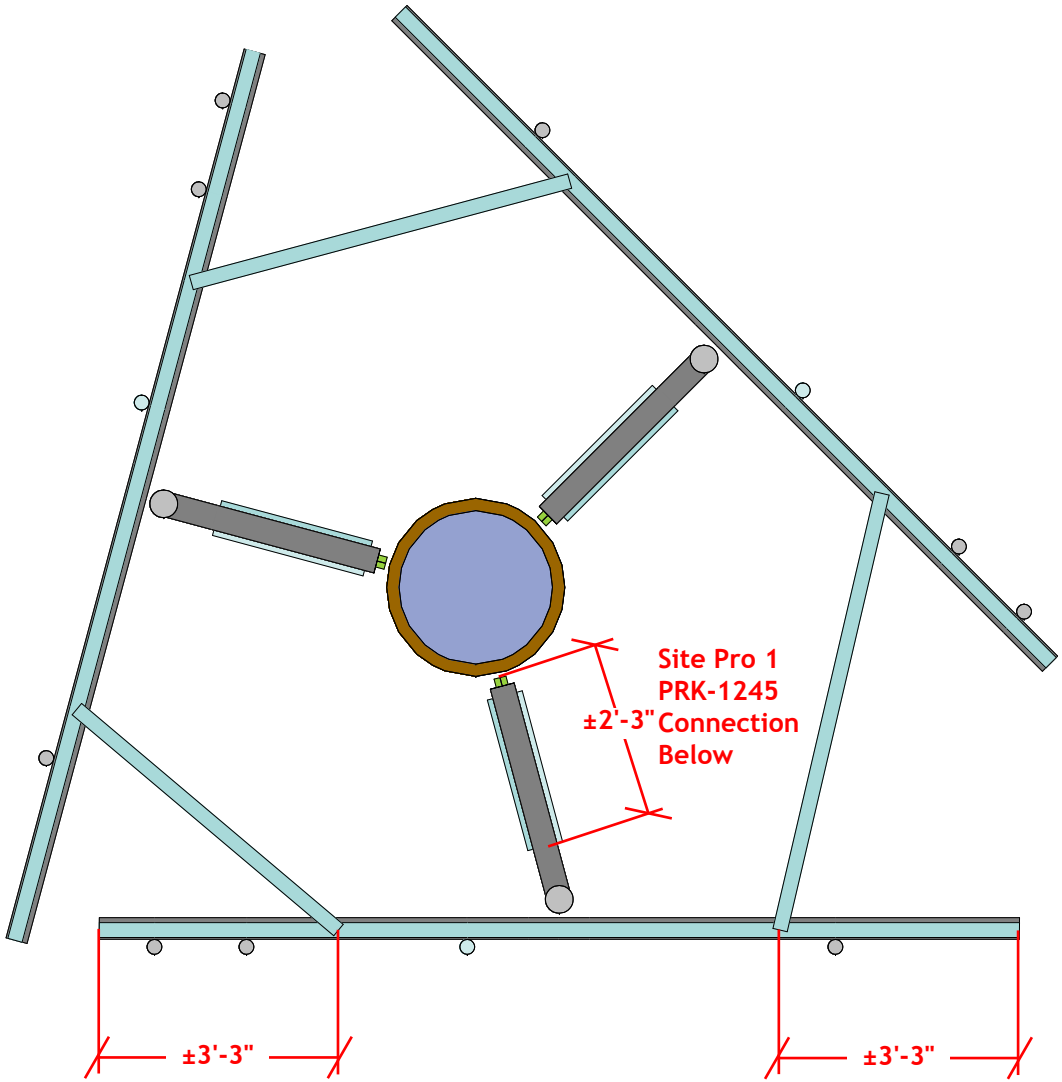
Install (3) 7'-6" long Pipe 2 STD, A53 Gr. B, support rail bracing pipes at the existing T-Arm mount. Connect to proposed support rail pipes with Site Pro 1 PUCK or equal.



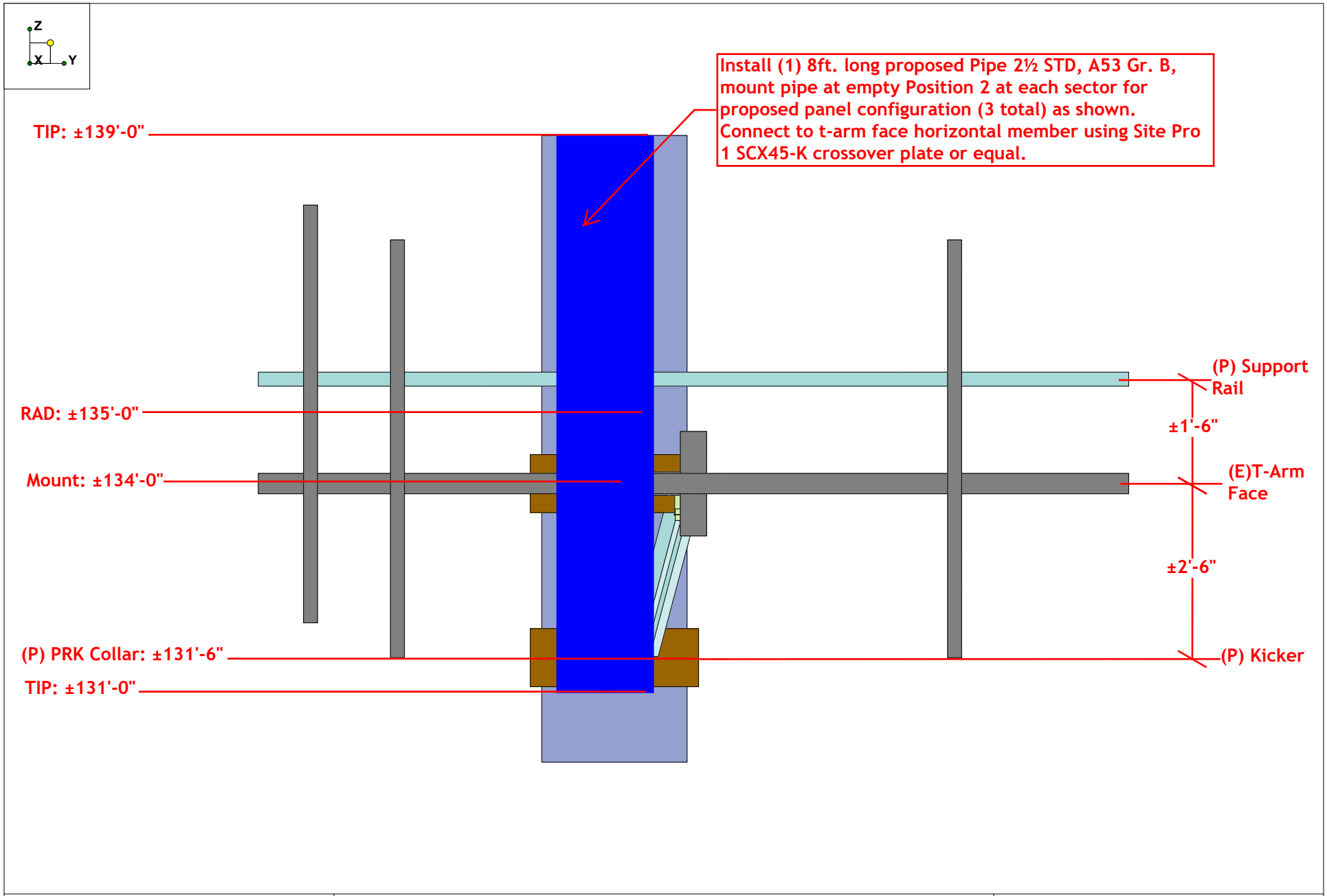
Install (1) 8ft. long proposed Pipe 2 STD, A53 Gr. B, mount pipe at empty Position 2 at each sector for proposed panel configuration (3 total) as shown. Connect to T-Arm face horizontal member using Site Pro 1 SP219 crossover plate or equal.

Install (1) Site Pro 1 PRK-1245 kit at the offset arms on the existing T-Arm mount as shown. Field-Cut proposed angles as required. Maintain minimum bolt edge distance.

CLS	41124-12927148-Beacon Falls CT	IN - 1
JLS		Aug 21, 2019 at 10:53 AM
41124-12927148-01-MA-R2	Installation Sketch	41124-12927148-01-MA-R2-Images.r3d



CLS		IN - 2
JLS	41124-12927148-Beacon Falls CT	Aug 21, 2019 at 10:53 AM
41124-12927148-01-MA-R2	Installation Sketch	41124-12927148-01-MA-R2-Images.r3d



CLS		IN - 3
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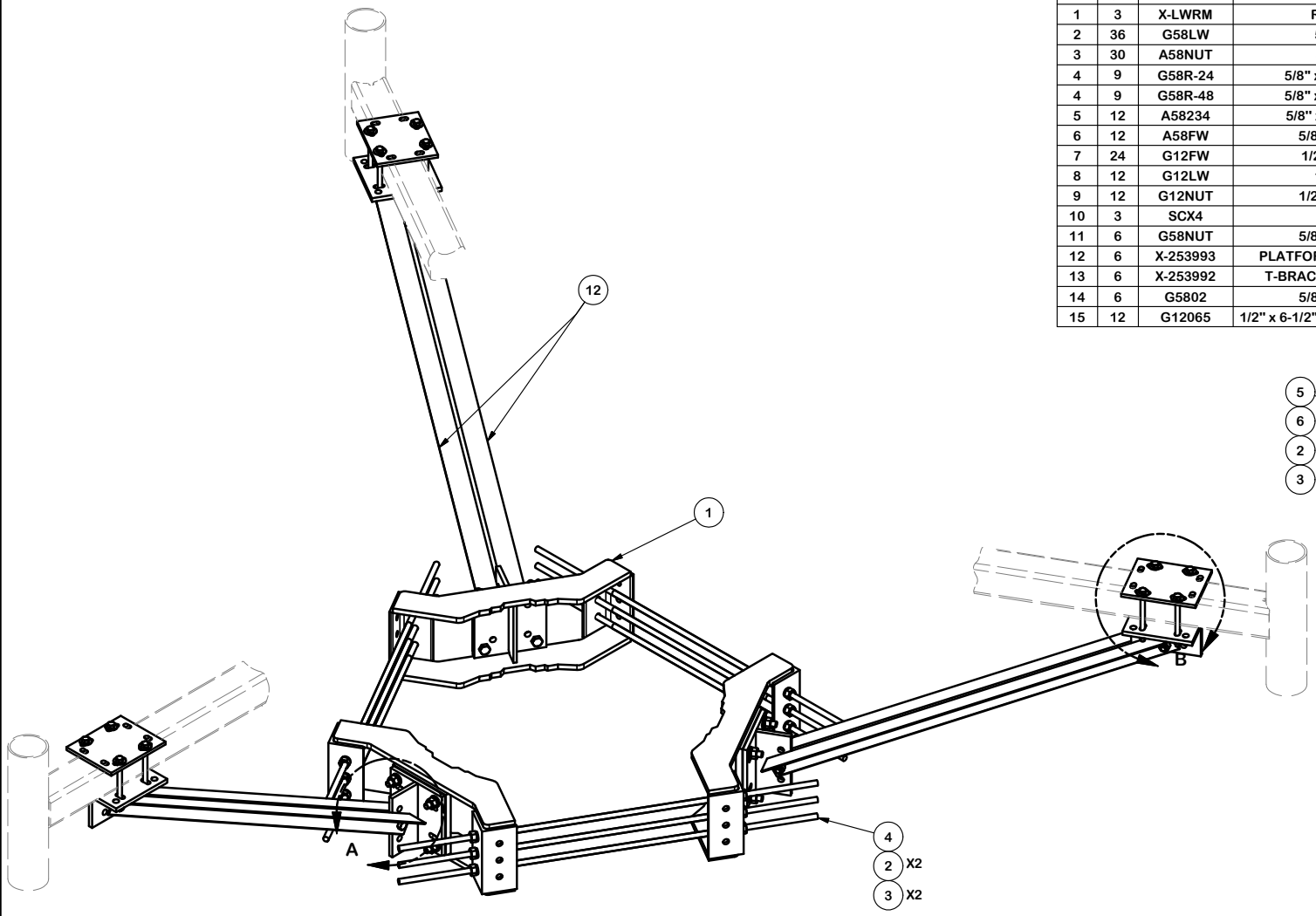
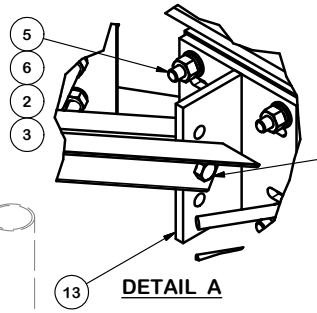
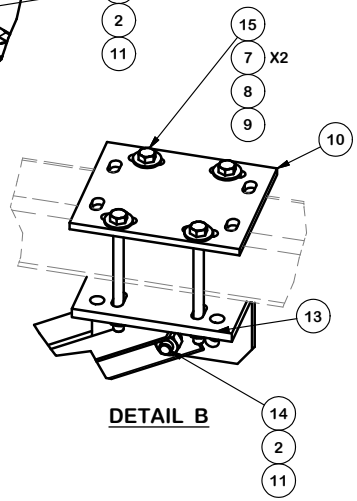






PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	36	G58LW	5/8" HDG LOCKWASHER		0.03	0.94
3	30	A58NUT	5/8" HDG A325 HEX NUT		0.13	3.90
4	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)		0.55	4.94
4	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)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

TOLERANCE NOTES

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

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

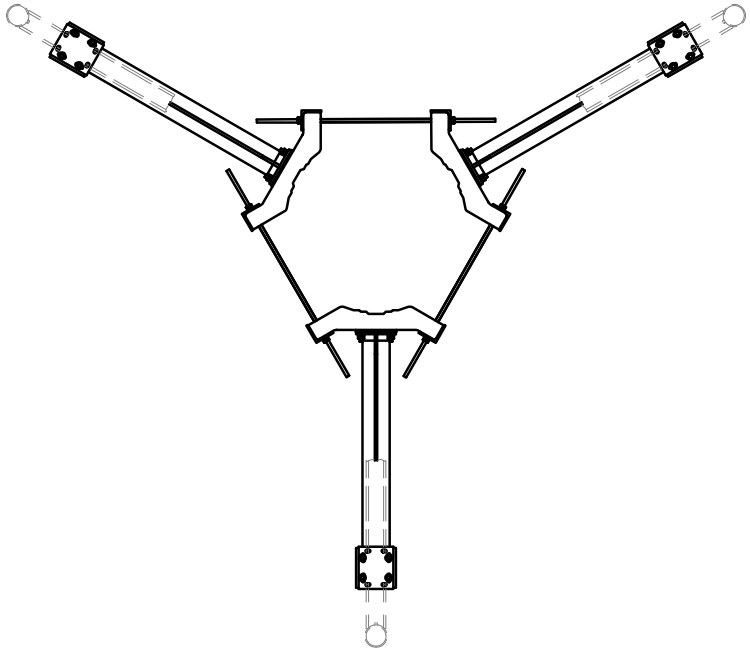
SITE PRO 1 — A valmont COMPANY

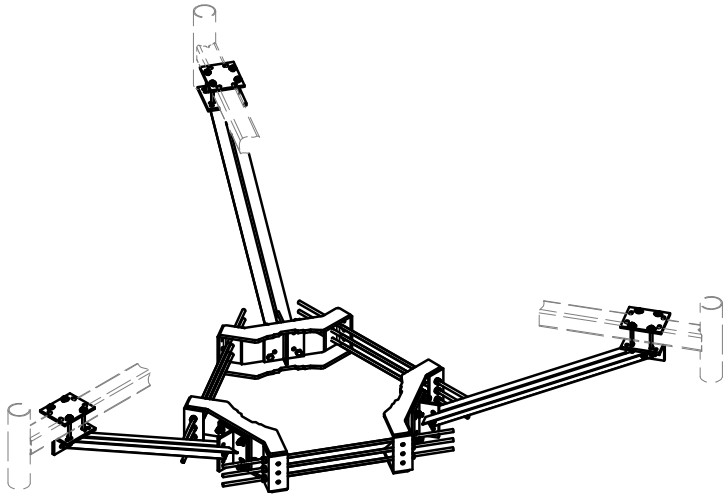
Engineering Support Team: 1-888-753-7446

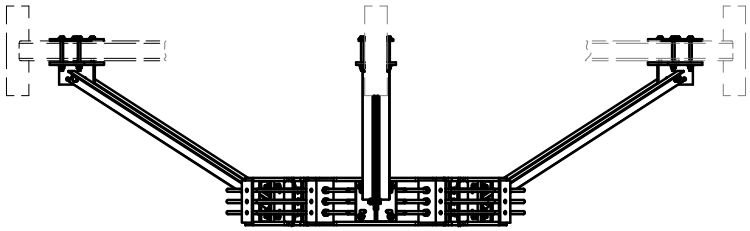
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

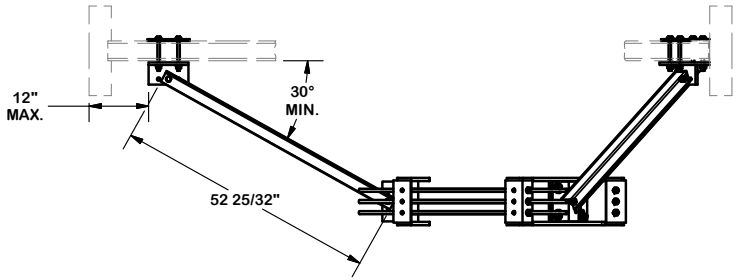
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
4488	CEK 4/10/2014		PRK-1245

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









TOLERANCE NOTES

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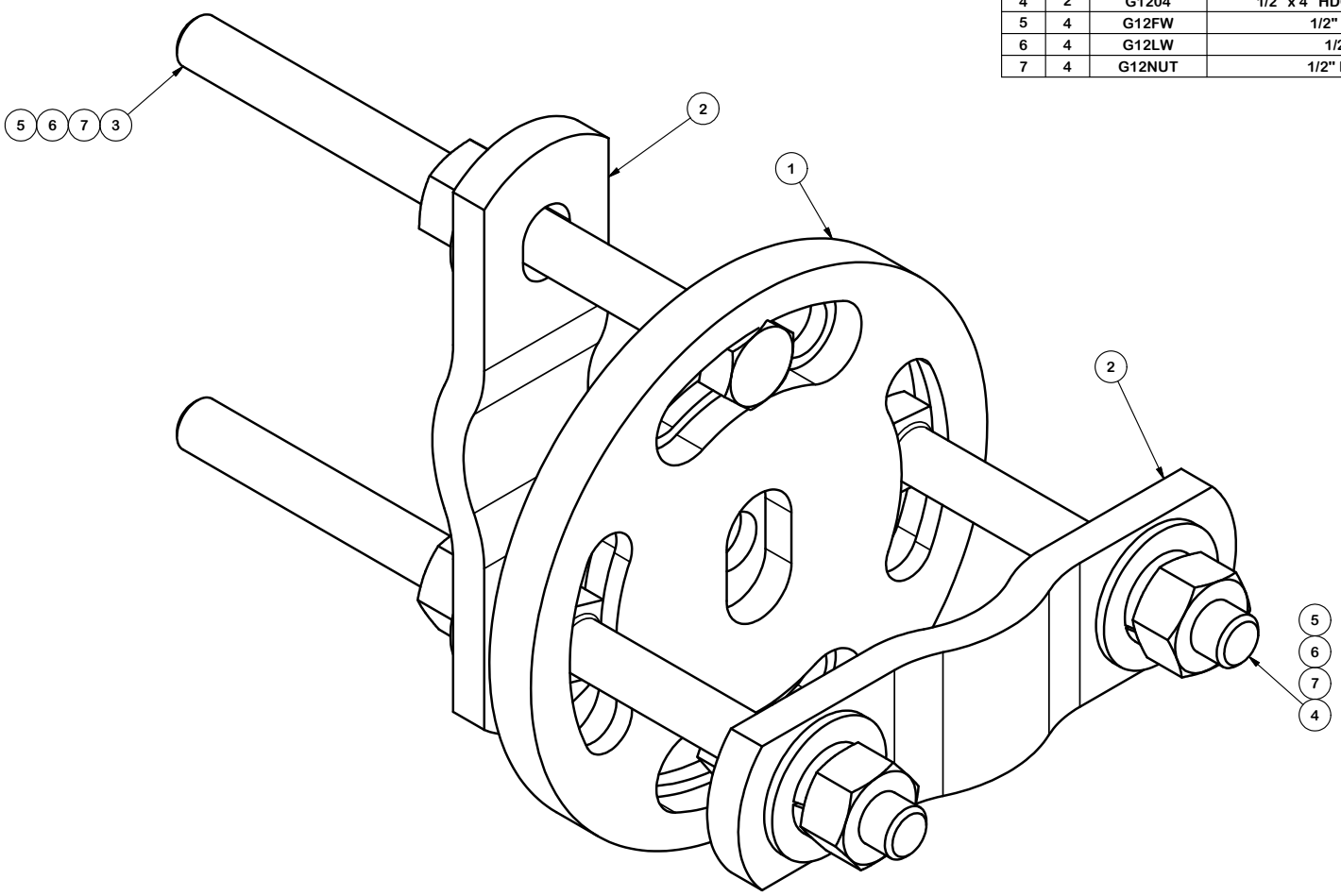
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

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

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

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

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	X-127594	FLAT DISK CLAMP PLATE 4" CENTERS (GALVANIZED)		2.48	2.48
2	2	X-100064	CLAMP (S) (4" V-CLAMP) GALVANIZED		0.91	1.83
3	2	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	0.82
4	2	G1204	1/2" x 4" HDG HEX BOLT GR5 FULL THREAD	4 in	0.27	0.54
5	4	G12FW	1/2" HDG USS FLATWASHER		0.03	0.14
6	4	G12LW	1/2" HDG LOCKWASHER		0.01	0.06
7	4	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.29
					TOTAL WT. #	6.16



TOLERANCE NOTES

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

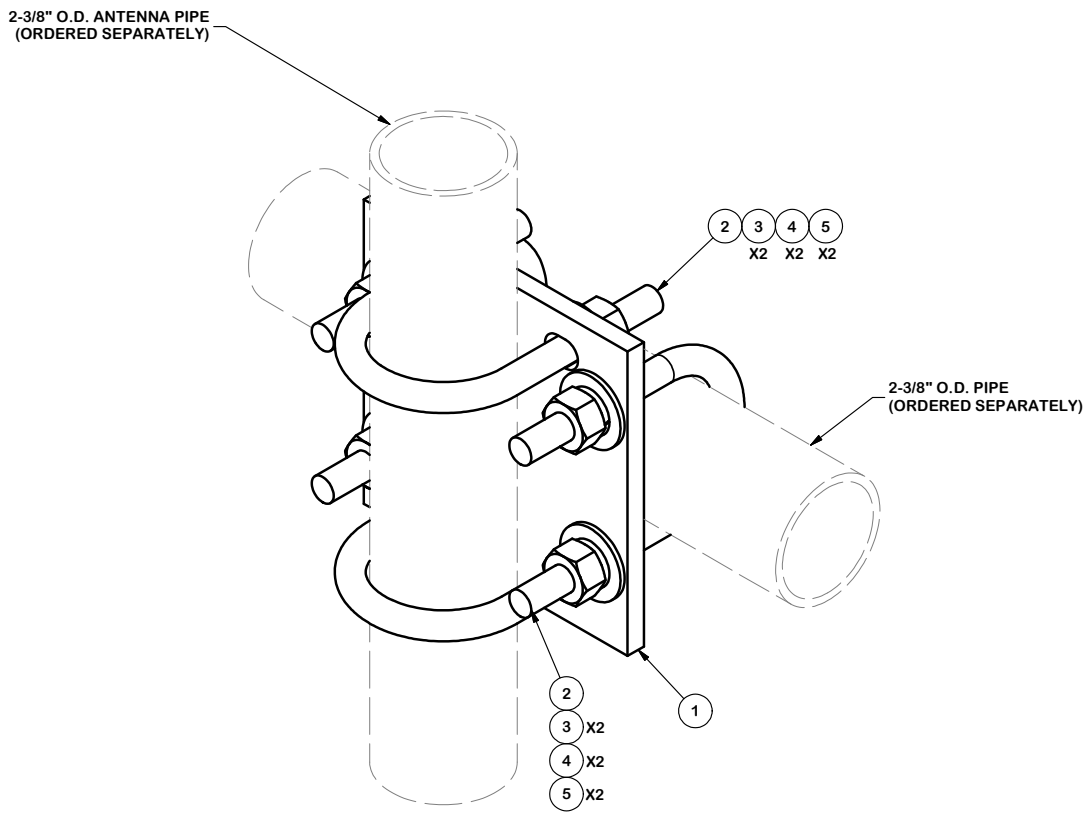
DESCRIPTION
ADJUSTABLE CLAMP PLATE
TIE-BACK ASSEMBLY

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

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	CEK 8/30/2010		PUCK

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 9/1/2010	PUCK

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	SCX1	CROSSOVER PLATE 2-3/8" X 2-3/8"		3.71	3.71
2	4	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	2.50
3	8	G12FW	1/2" HDG USS FLATWASHER		0.03	0.27
4	8	G12LW	1/2" HDG LOCKWASHER		0.01	0.11
5	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
					TOTAL WT. #	7.16



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ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	ADDED MISSING U-BOLT AND HRDWE		KC8	7/5/2012

REVISION HISTORY

DESCRIPTION: CROSSOVER PLATE

CPD NO.:

DRAWN BY: CEK 6/30/2011

ENG. APPROVAL:

CLASS: 81 SUB: 01

DRAWING USAGE: CUSTOMER

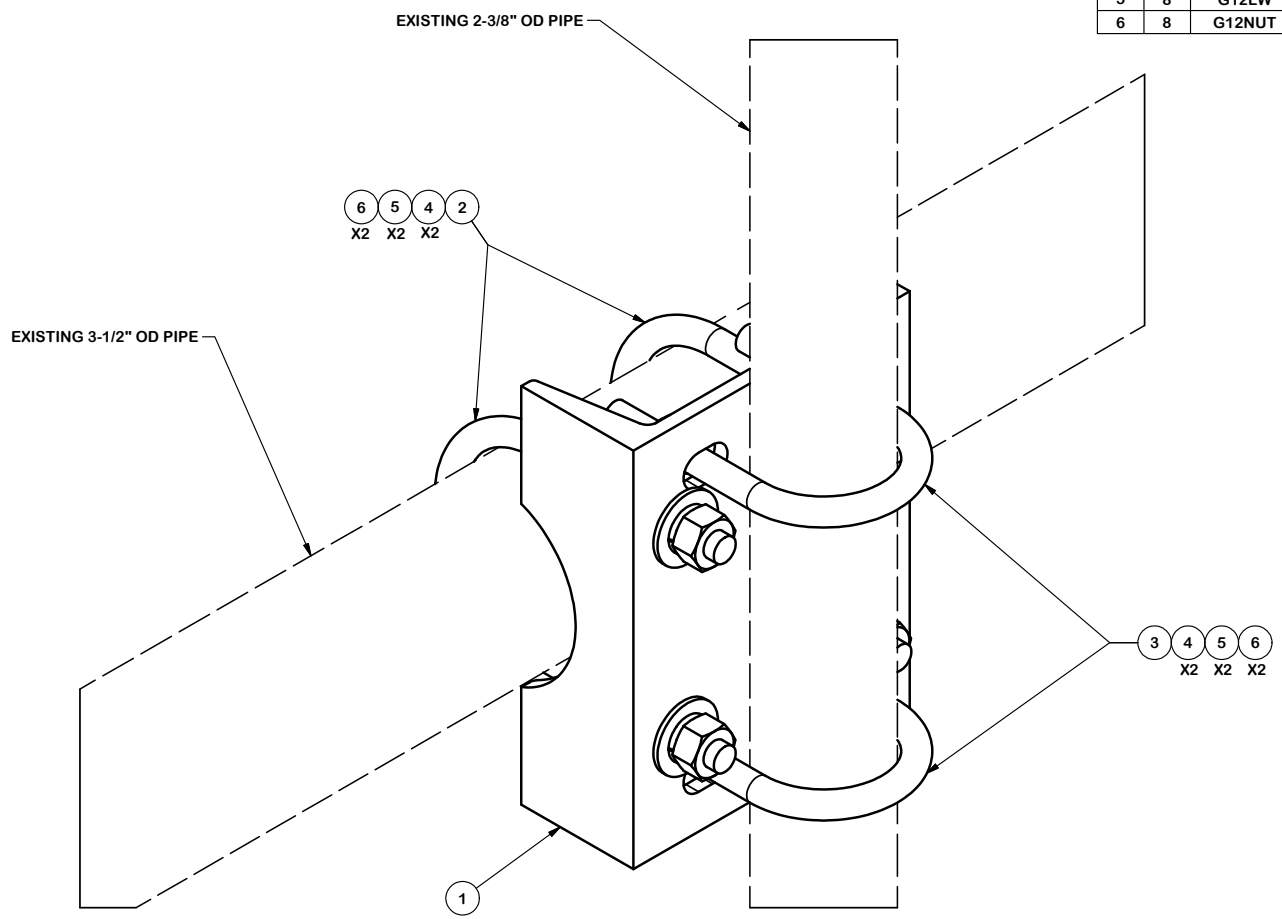
CHECKED BY: CEK 8/23/2012

PART NO.: SCX1-K

DWG. NO.: SCX1-K

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

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	X-SP219	SMALL SUPPORT CROSS PLATE	8 1/4 in	8.61	8.61
2	2	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.83	1.66
3	2	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	1.25
4	8	G12FW	1/2" HDG USS FLATWASHER		0.03	0.27
5	8	G12LW	1/2" HDG LOCKWASHER		0.01	0.11
6	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
					TOTAL WT. #	12.47



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

DESCRIPTION: PIPE MOUNT KIT

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

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

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
4518	KC8 6/26/2012		SP219	1 OF 1
CLASS / SUB: 81 / 01	DRAWING USAGE: CUSTOMER	CHECKED BY: CEK 1/23/2013	DWG. NO.: SP219	

Wind & Ice Loading

Nominal Mount Elevation (AGL), z_{mount}	134 ft	**K_a**	0.90
Nominal Rad Elevation (AGL), z_{rad}	135 ft	**K_d**	0.95
Elevation AMSL (ft)	-	**K_e**	-
TIA Standard	G	**K_z**	1.07
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)**	40.8 psf
Seismic Response Coeff., C_s	-	**q_z (ice)**	6.5 psf

Live Loading

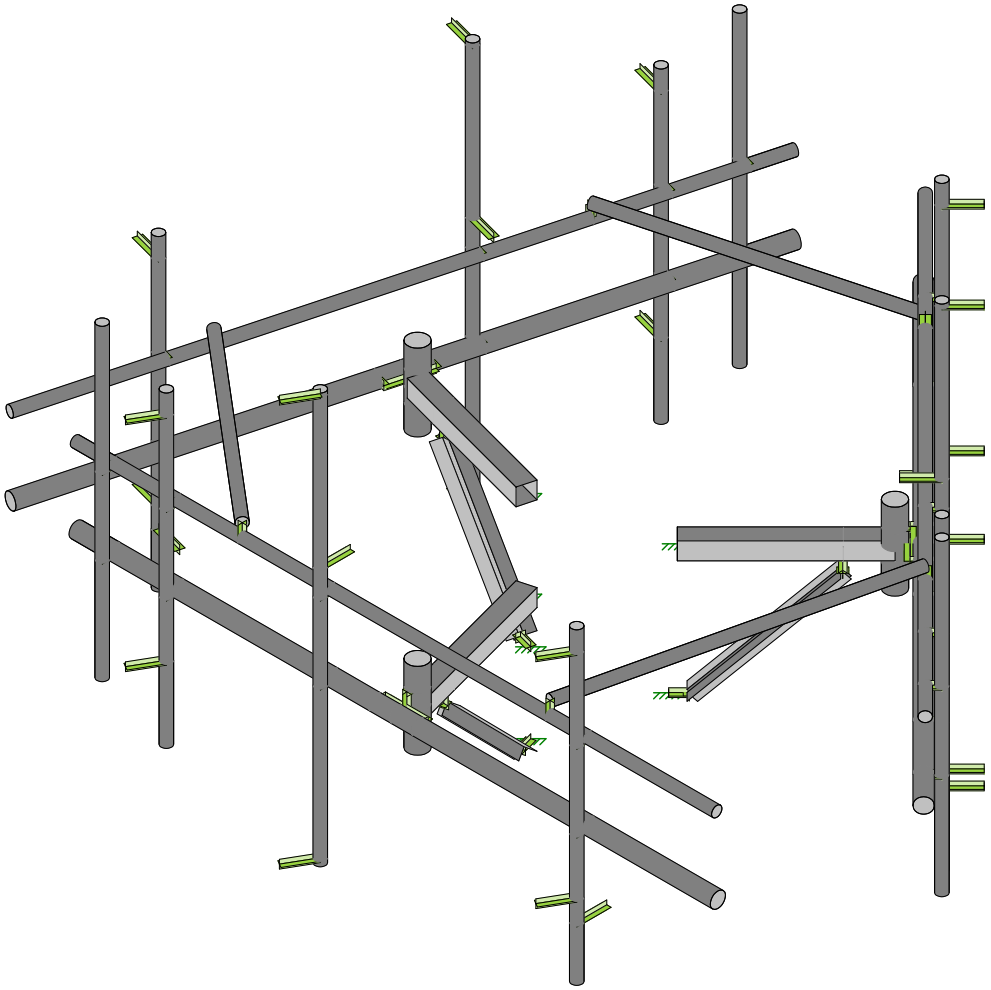
At Mount Pipes, L_M	500 lb
Joint Labels Considered	m1
	m2
	m3
	m4

Member Distributed Loading

Section Set Label	Shape Label	F_A (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Standoff Horizontal	HSS4X4X4	24.50	2.32	14.38
Vertical Pipe	PIPE_4.0	16.54	4.67	13.13
Face Horizontal	PIPE_3.0	12.86	4.09	11.02
Mount Pipe	PIPE_2.0	8.73	3.43	8.65
MOD Mount Pipe	PIPE_2.5	10.56	3.72	9.70
MOD SUPPORT RAIL	PIPE_2.0	8.73	3.43	8.65
MOD BRACING PIPES	PIPE_2.0	8.73	3.43	8.65
MOD PRK	L2.5x2.5x3	15.31	2.21	10.10

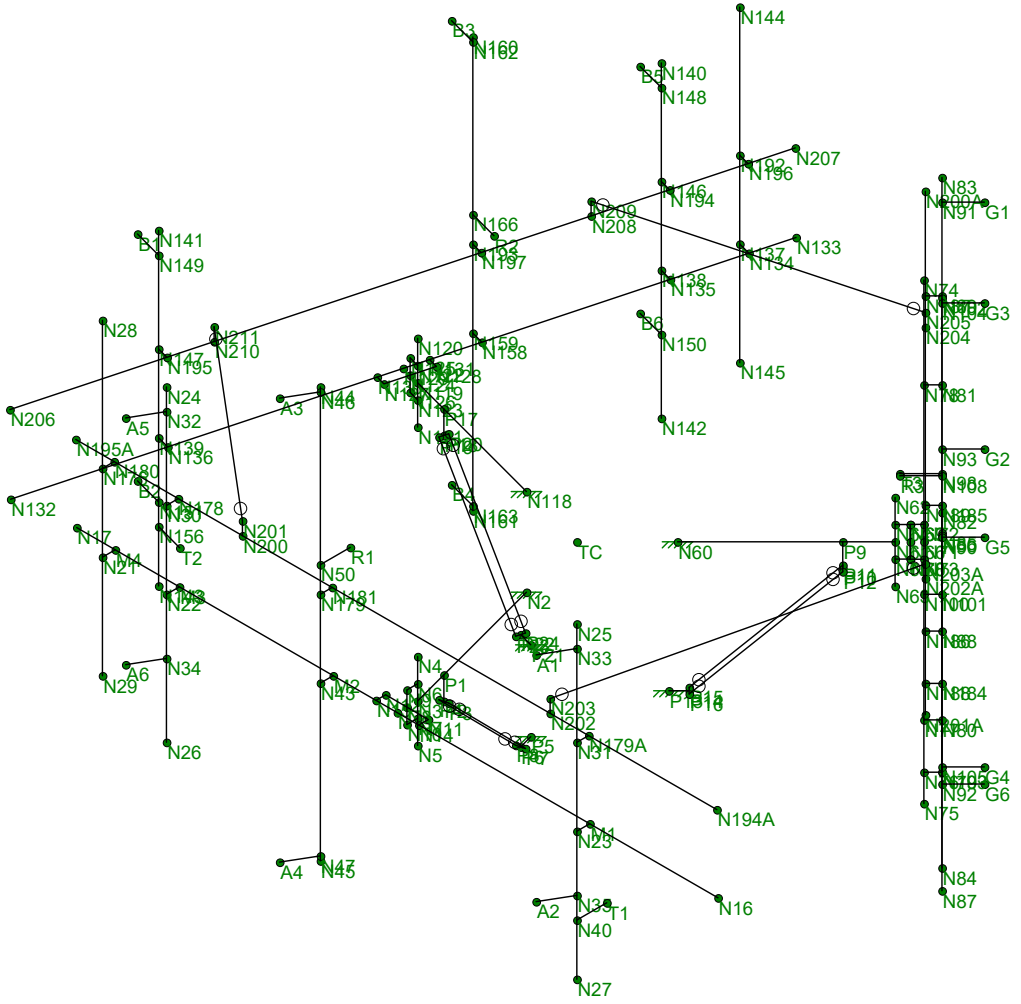
Appurtenances

Appurtenance Model	Status	Azimuth Offset (°, ↻)	Rad Elev. Override (ft)	Swap Width & Depth	Area Factor		Qty. per Azimuth			Total Qty. Override	0° Joints		70° Joints		180° 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°	70°	180°		1	2	1	2	1	2							N	T	N	T	N	T	N	T
AIR 21, 1.3 M, B2A B4P				☐			1	1	1	3	a1	a2	B1	B2	G1	G2	56	12	8	83	Flat	144.73	6.05	4.36	8.04	6.24	222.76	160.39	47.36	36.77
KRY 112 144/1				☐	0.2		1	1	1	3	t1		T2		T3		7	6	3	11	Flat	10.97	0.07	0.18	0.16	0.56	2.58	6.44	0.97	3.31
APXVAARR24_43-U-NA20				☐			1	1	1	3	a3	a4	B3	B4	G3	G4	0	0	0	153.3	Generic	388.87	14.67	5.32	17.29	7.63	540.20	195.90	101.90	44.98
RADIO 4449 B12/B71				☐	0.5		1	1	1	3	r1		R2		R3		15	13.2	10.4	75	Flat	59.42	0.83	1.30	1.28	2.13	30.38	47.87	7.54	12.55
AIR 21 B4A/B2P				☐			1	1	1	3	a5	a6	B5	B6	G5	G6	55	12	7.9	83	Flat	141.61	5.92	4.22	7.89	6.07	218.16	155.37	46.46	35.78



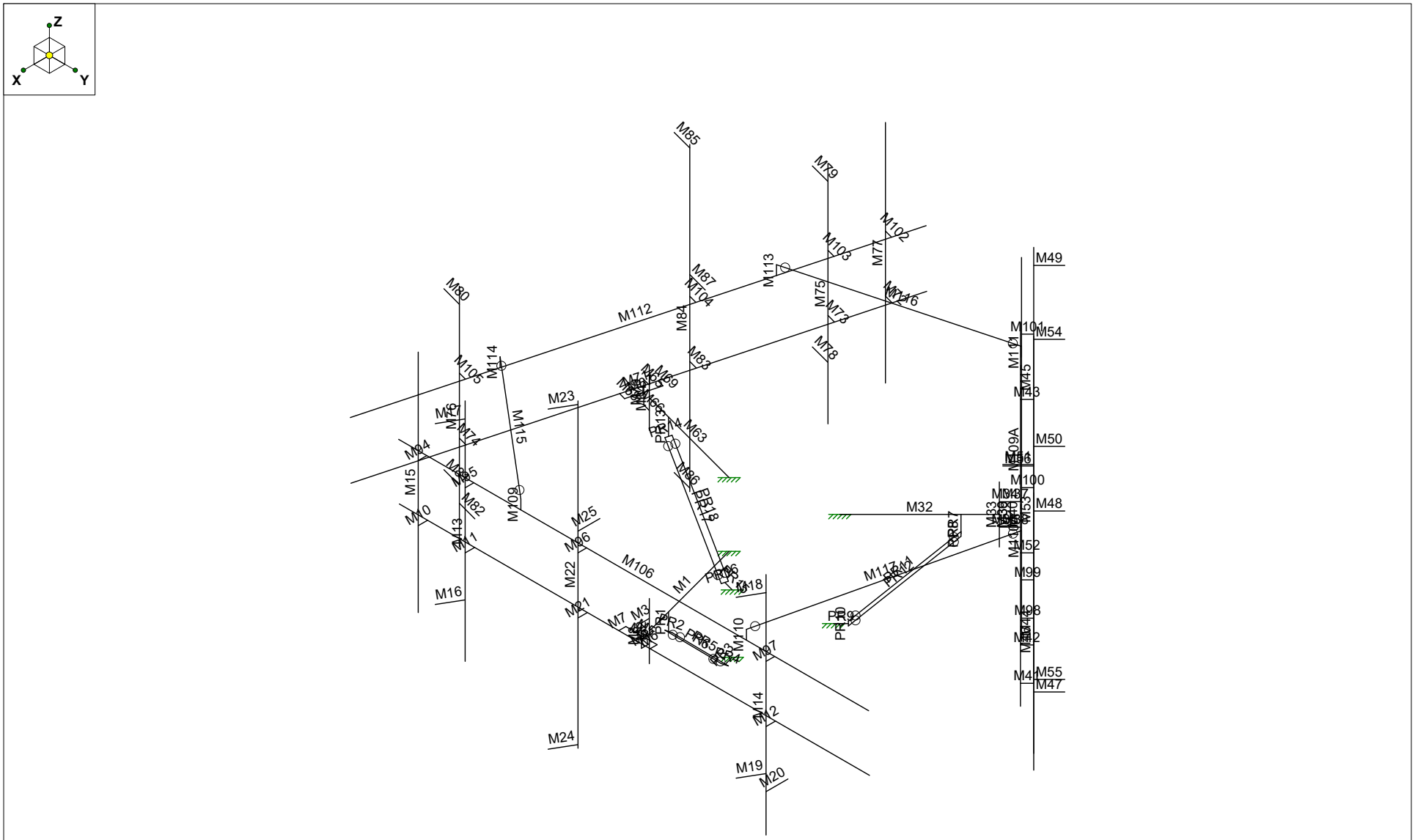
Envelope Only Solution

CLS	41124-12927148-Beacon Falls CT	SK - 1
JLS		Aug 21, 2019 at 10:46 AM
41124-12927148-01-MA-R2	Rendered	41124-12927148-01-MA-R2.r3d



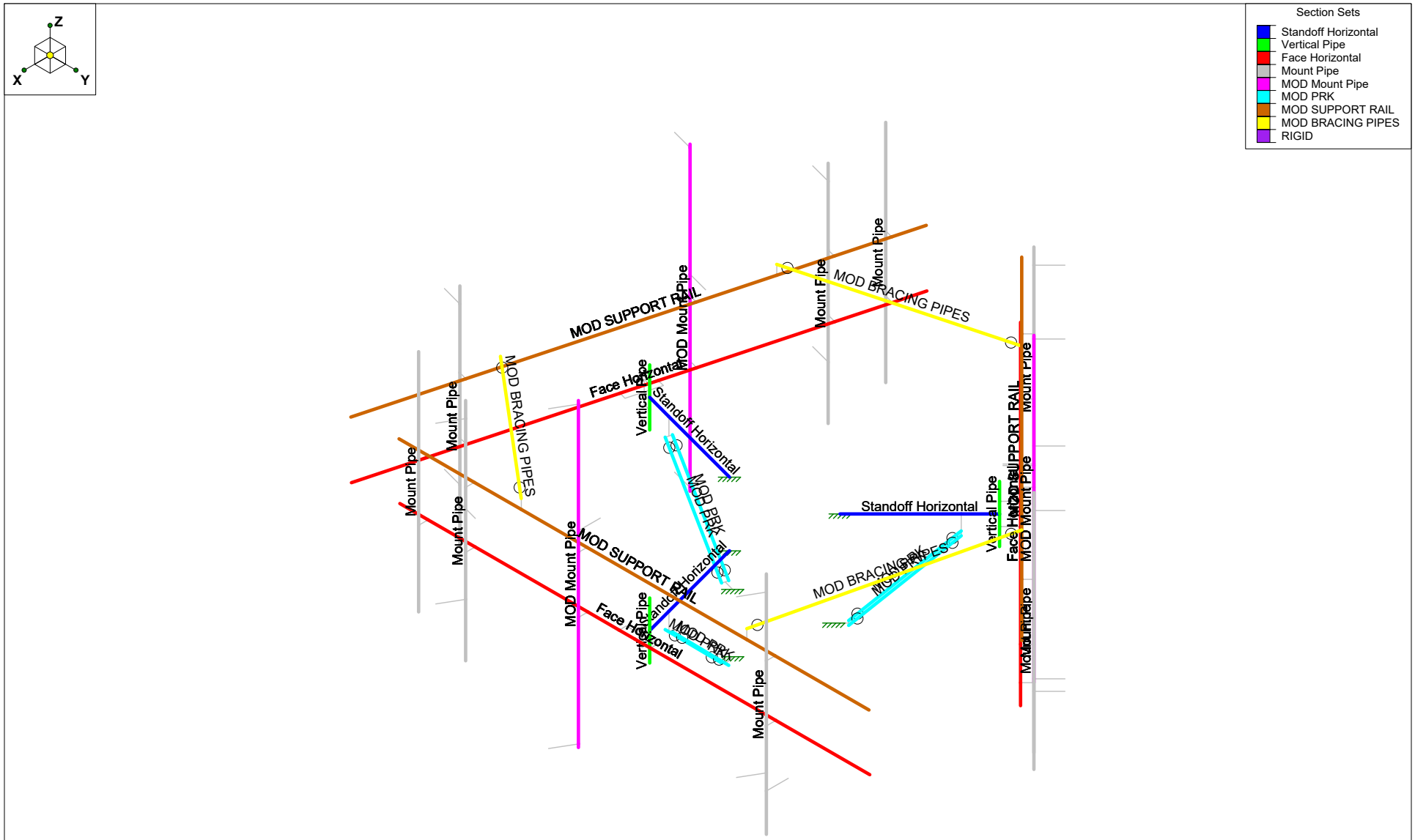
Envelope Only Solution

CLS	41124-12927148-Beacon Falls CT	SK - 2
JLS		Aug 21, 2019 at 10:46 AM
41124-12927148-01-MA-R2	Joint Labels	41124-12927148-01-MA-R2.r3d



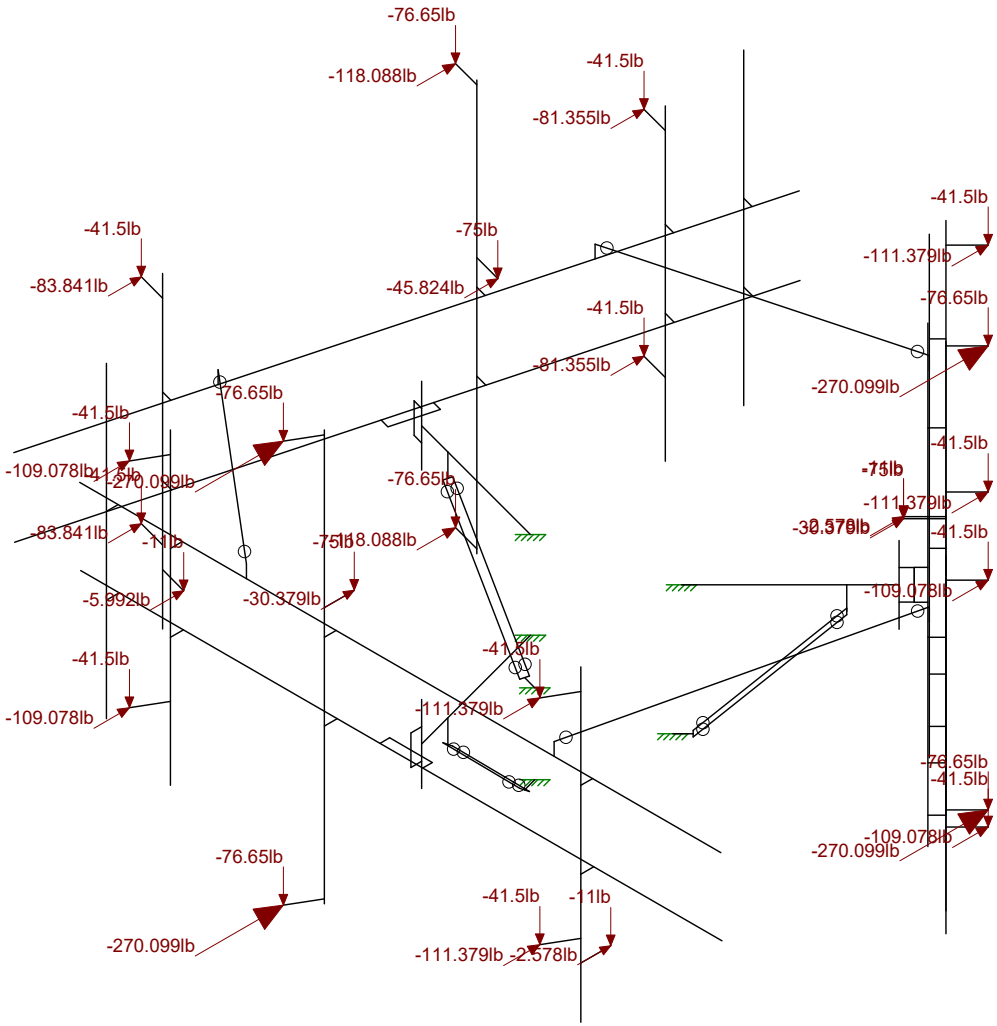
Envelope Only Solution

CLS	41124-12927148-Beacon Falls CT	SK - 3
JLS		Aug 21, 2019 at 10:46 AM
41124-12927148-01-MA-R2	Member Labels	41124-12927148-01-MA-R2.r3d



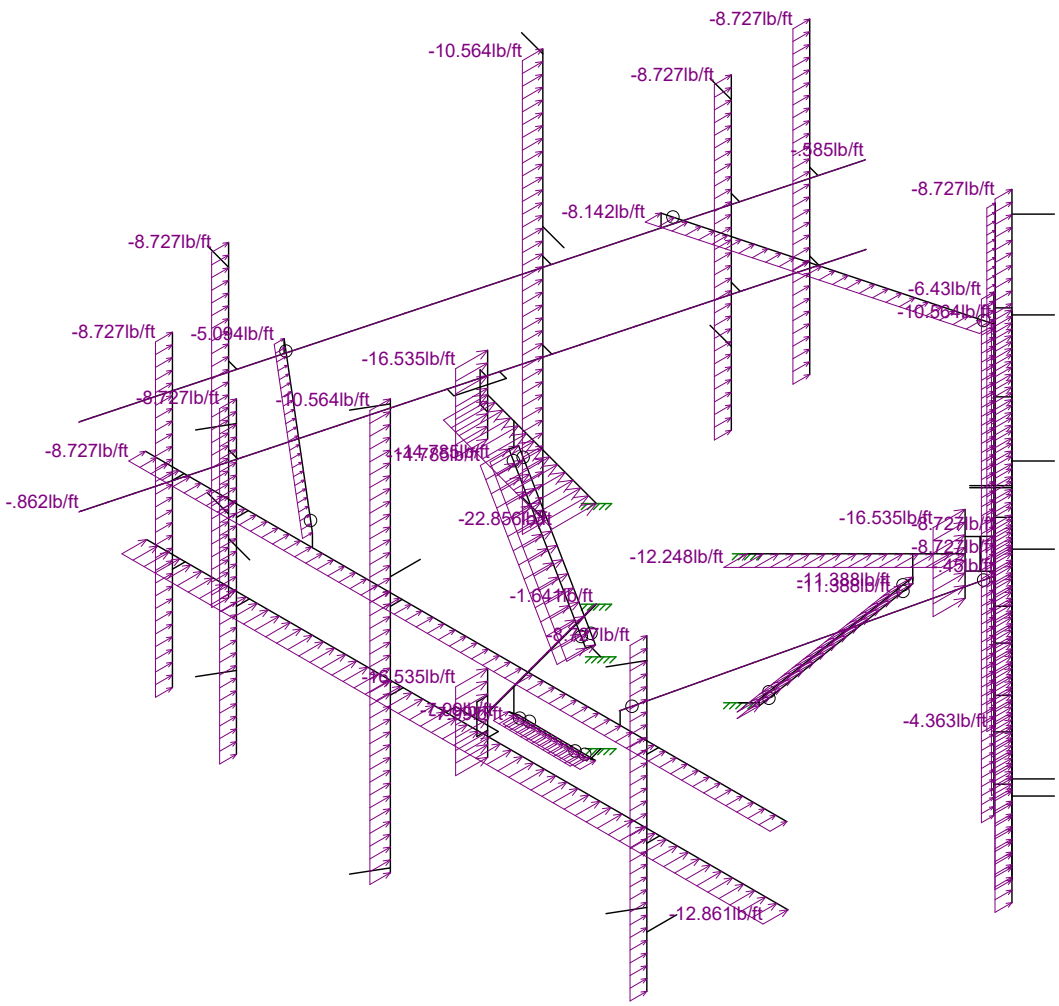
Envelope Only Solution

CLS	41124-12927148-Beacon Falls CT	SK - 4
JLS		Aug 21, 2019 at 10:46 AM
41124-12927148-01-MA-R2	Section Sets	41124-12927148-01-MA-R2.r3d



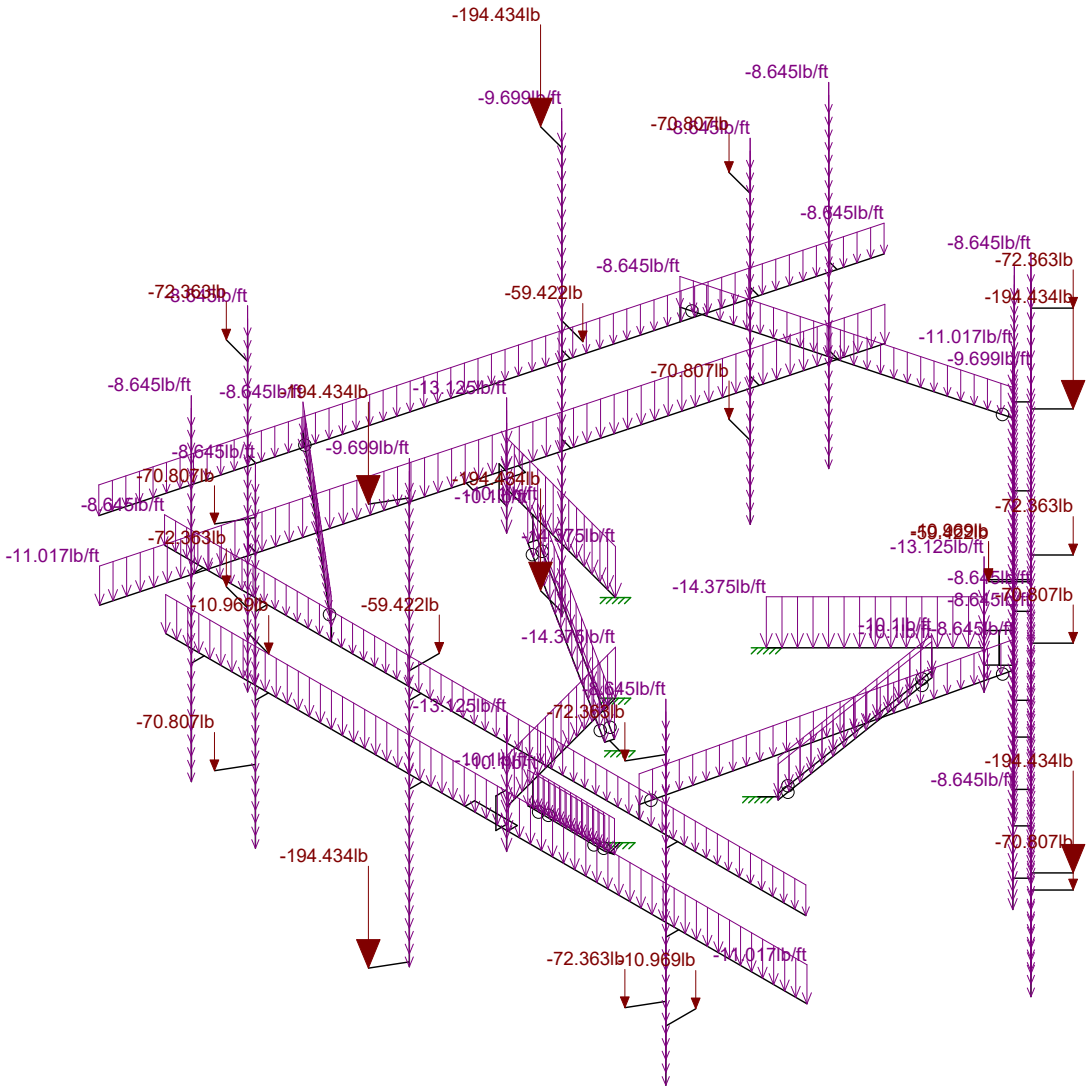
Loads: LC 1, DISPLAY (1.0D + 1.0W_0°)
Envelope Only Solution

CLS	41124-12927148-Beacon Falls CT	SK - 5
JLS		Aug 21, 2019 at 10:47 AM
41124-12927148-01-MA-R2	Joint Loads - Dead and Normal Wind	41124-12927148-01-MA-R2.r3d



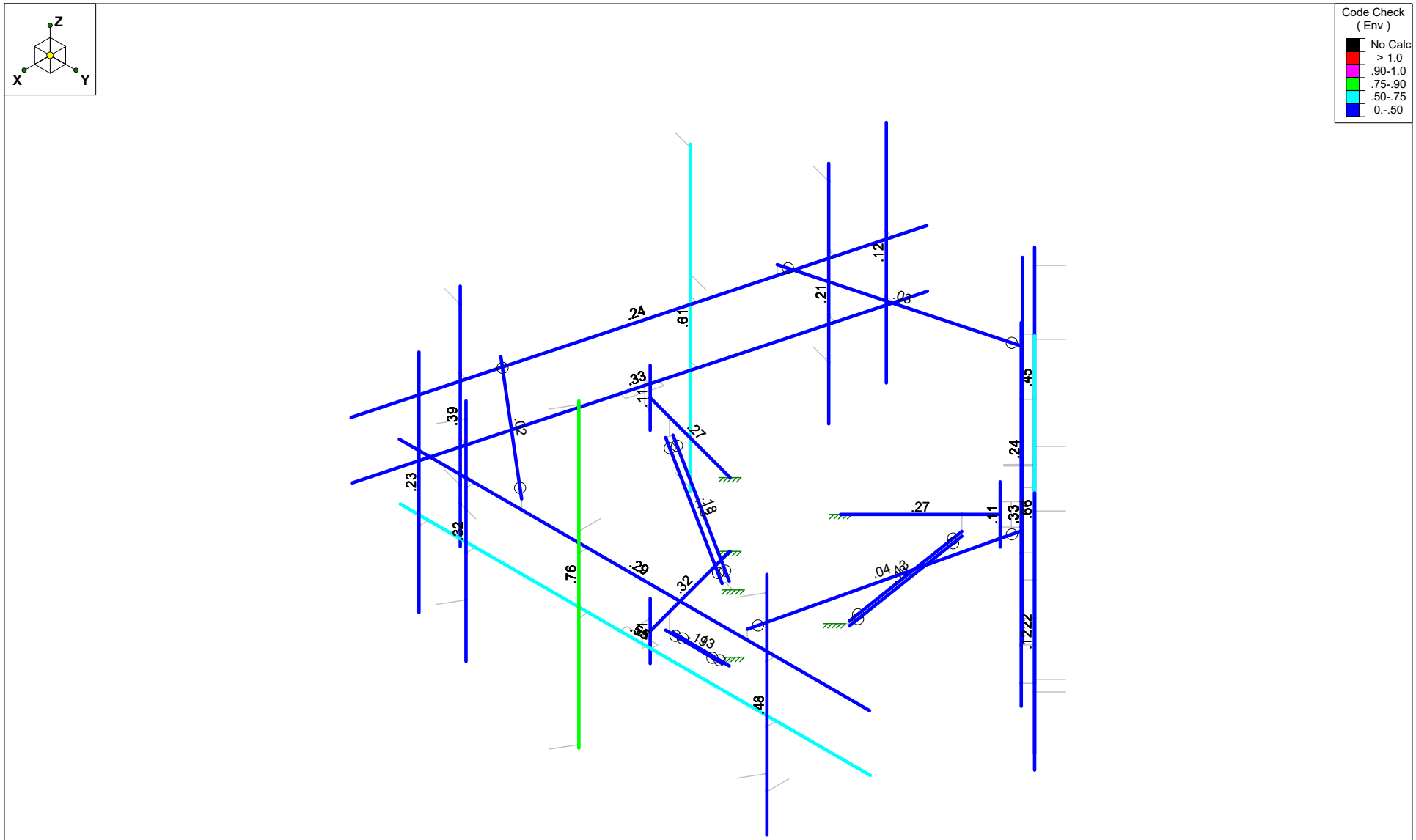
Loads: BLC 4, Structure Wind 0°
Envelope Only Solution

CLS		SK - 6
JLS	41124-12927148-Beacon Falls CT	Aug 21, 2019 at 10:47 AM
41124-12927148-01-MA-R2	Distributed Load - Normal Wind	41124-12927148-01-MA-R2.r3d



Loads: BLC 2, Ice Dead
Envelope Only Solution

CLS	41124-12927148-Beacon Falls CT	SK - 7
JLS		Aug 21, 2019 at 10:47 AM
41124-12927148-01-MA-R2	Ice Dead Loads	41124-12927148-01-MA-R2.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

CLS	41124-12927148-Beacon Falls CT	SK - 8
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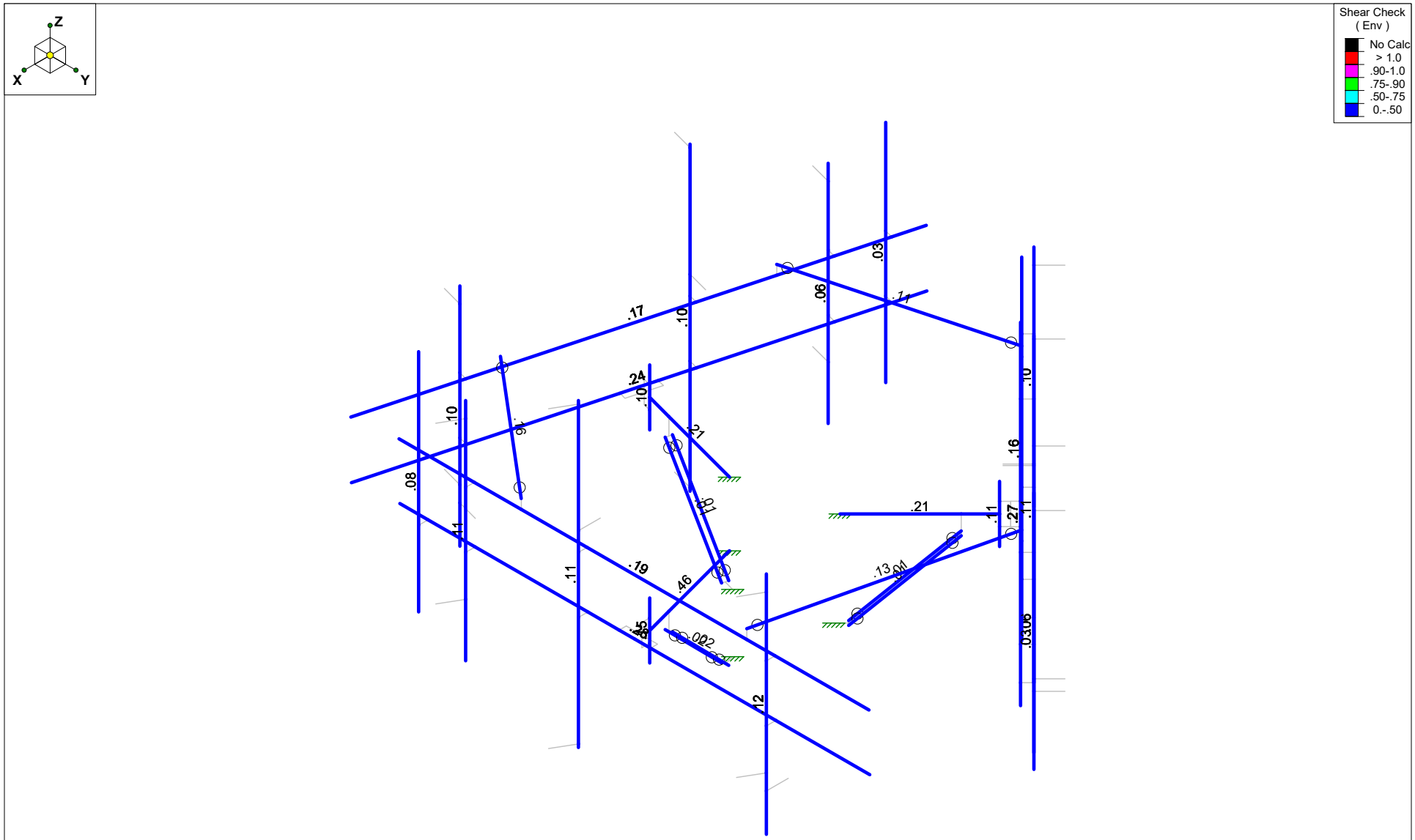
41124-12927148-01-MA-R2	Envelope Member Unity Check Results - Bending	41124-12927148-01-MA-R2.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

CLS	41124-12927148-Beacon Falls CT	SK - 9
JLS		Aug 21, 2019 at 10:47 AM
41124-12927148-01-MA-R2	Envelope Member Check Results - Shear	41124-12927148-01-MA-R2.r3d

Basic Load Cases

	BLC Description	Category	X Gravi..	Y Gravi..	Z Gravity	Joint	Point	Distributed	Area(Member)	Surfac...
1	Dead	DL			-1	24				
2	Ice Dead	RL				24		33		
4	Structure Wind 0°	None						33		
5	Structure Wind 30°	None						66		
6	Structure Wind 45°	None						64		
7	Structure Wind 60°	None						66		
8	Structure Wind 90°	None						31		
9	Structure Wind 120°	None						66		
10	Structure Wind 135°	None						62		
11	Structure Wind 150°	None						66		
12	Structure Wind w/ Ice 0°	None						33		
13	Structure Wind w/ Ice 30°	None						66		
14	Structure Wind w/ Ice 45°	None						64		
15	Structure Wind w/ Ice 60°	None						66		
16	Structure Wind w/ Ice 90°	None						31		
17	Structure Wind w/ Ice 120°	None						66		
18	Structure Wind w/ Ice 135°	None						62		
19	Structure Wind w/ Ice 150°	None						66		
20	Antenna Wind 0°	None				24				
21	Antenna Wind 30°	None				48				
22	Antenna Wind 45°	None				48				
23	Antenna Wind 60°	None				48				
24	Antenna Wind 90°	None				24				
25	Antenna Wind 120°	None				48				
26	Antenna Wind 135°	None				48				
27	Antenna Wind 150°	None				48				
28	Antenna Wind w/ Ice 0°	None				24				
29	Antenna Wind w/ Ice 30°	None				48				
30	Antenna Wind w/ Ice 45°	None				48				
31	Antenna Wind w/ Ice 60°	None				48				
32	Antenna Wind w/ Ice 90°	None				24				
33	Antenna Wind w/ Ice 120°	None				48				
34	Antenna Wind w/ Ice 135°	None				48				
35	Antenna Wind w/ Ice 150°	None				48				
39	Maintenance Live 500 (1)	OL1				1				
40	Maintenance Live 500 (2)	OL2				1				
41	Maintenance Live 500 (3)	OL3				1				
42	Maintenance Live 500 (4)	OL4				1				

Load Combinations

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

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
14	1.2D + 1.0W_240°	Yes	Y		DL	1.2	7	-1	23	-1																
15	1.2D + 1.0W_270°	Yes	Y		DL	1.2	8	-1	24	-1																
16	1.2D + 1.0W_300°	Yes	Y		DL	1.2	9	-1	25	-1																
17	1.2D + 1.0W_315°	Yes	Y		DL	1.2	10	-1	26	-1																
18	1.2D + 1.0W_330°	Yes	Y		DL	1.2	11	-1	27	-1																
19	1.2D + 1.0Di + 1.0Wi_0°	Yes	Y		DL	1.2	12	1	28	1	RL	1														
20	1.2D + 1.0Di + 1.0Wi_30°	Yes	Y		DL	1.2	13	1	29	1	RL	1														
21	1.2D + 1.0Di + 1.0Wi_45°	Yes	Y		DL	1.2	14	1	30	1	RL	1														
22	1.2D + 1.0Di + 1.0Wi_60°	Yes	Y		DL	1.2	15	1	31	1	RL	1														
23	1.2D + 1.0Di + 1.0Wi_90°	Yes	Y		DL	1.2	16	1	32	1	RL	1														
24	1.2D + 1.0Di + 1.0Wi_120°	Yes	Y		DL	1.2	17	1	33	1	RL	1														
25	1.2D + 1.0Di + 1.0Wi_135°	Yes	Y		DL	1.2	18	1	34	1	RL	1														
26	1.2D + 1.0Di + 1.0Wi_150°	Yes	Y		DL	1.2	19	1	35	1	RL	1														
27	1.2D + 1.0Di + 1.0Wi_180°	Yes	Y		DL	1.2	12	-1	28	-1	RL	1														
28	1.2D + 1.0Di + 1.0Wi_210°	Yes	Y		DL	1.2	13	-1	29	-1	RL	1														
29	1.2D + 1.0Di + 1.0Wi_225°	Yes	Y		DL	1.2	14	-1	30	-1	RL	1														
30	1.2D + 1.0Di + 1.0Wi_240°	Yes	Y		DL	1.2	15	-1	31	-1	RL	1														
31	1.2D + 1.0Di + 1.0Wi_270°	Yes	Y		DL	1.2	16	-1	32	-1	RL	1														
32	1.2D + 1.0Di + 1.0Wi_300°	Yes	Y		DL	1.2	17	-1	33	-1	RL	1														
33	1.2D + 1.0Di + 1.0Wi_315°	Yes	Y		DL	1.2	18	-1	34	-1	RL	1														
34	1.2D + 1.0Di + 1.0Wi_330°	Yes	Y		DL	1.2	19	-1	35	-1	RL	1														
35	1.2D + 1.5Lm_1 + 1.0Wm_0°	Yes	Y		DL	1.2	4	.061	20	.061	O...	1.5														
36	1.2D + 1.5Lm_1 + 1.0Wm_30°	Yes	Y		DL	1.2	5	.061	21	.061	O...	1.5														
37	1.2D + 1.5Lm_1 + 1.0Wm_45°	Yes	Y		DL	1.2	6	.061	22	.061	O...	1.5														
38	1.2D + 1.5Lm_1 + 1.0Wm_60°	Yes	Y		DL	1.2	7	.061	23	.061	O...	1.5														
39	1.2D + 1.5Lm_1 + 1.0Wm_90°	Yes	Y		DL	1.2	8	.061	24	.061	O...	1.5														
40	1.2D + 1.5Lm_1 + 1.0Wm_1...	Yes	Y		DL	1.2	9	.061	25	.061	O...	1.5														
41	1.2D + 1.5Lm_1 + 1.0Wm_1...	Yes	Y		DL	1.2	10	.061	26	.061	O...	1.5														
42	1.2D + 1.5Lm_1 + 1.0Wm_1...	Yes	Y		DL	1.2	11	.061	27	.061	O...	1.5														
43	1.2D + 1.5Lm_1 + 1.0Wm_1...	Yes	Y		DL	1.2	4	-.061	20	-.061	O...	1.5														
44	1.2D + 1.5Lm_1 + 1.0Wm_2...	Yes	Y		DL	1.2	5	-.061	21	-.061	O...	1.5														
45	1.2D + 1.5Lm_1 + 1.0Wm_2...	Yes	Y		DL	1.2	6	-.061	22	-.061	O...	1.5														
46	1.2D + 1.5Lm_1 + 1.0Wm_2...	Yes	Y		DL	1.2	7	-.061	23	-.061	O...	1.5														
47	1.2D + 1.5Lm_1 + 1.0Wm_2...	Yes	Y		DL	1.2	8	-.061	24	-.061	O...	1.5														
48	1.2D + 1.5Lm_1 + 1.0Wm_3...	Yes	Y		DL	1.2	9	-.061	25	-.061	O...	1.5														
49	1.2D + 1.5Lm_1 + 1.0Wm_3...	Yes	Y		DL	1.2	10	-.061	26	-.061	O...	1.5														
50	1.2D + 1.5Lm_1 + 1.0Wm_3...	Yes	Y		DL	1.2	11	-.061	27	-.061	O...	1.5														
51	1.2D + 1.5Lm_2 + 1.0Wm_0°	Yes	Y		DL	1.2	4	.061	20	.061	O...	1.5														
52	1.2D + 1.5Lm_2 + 1.0Wm_30°	Yes	Y		DL	1.2	5	.061	21	.061	O...	1.5														
53	1.2D + 1.5Lm_2 + 1.0Wm_45°	Yes	Y		DL	1.2	6	.061	22	.061	O...	1.5														
54	1.2D + 1.5Lm_2 + 1.0Wm_60°	Yes	Y		DL	1.2	7	.061	23	.061	O...	1.5														
55	1.2D + 1.5Lm_2 + 1.0Wm_90°	Yes	Y		DL	1.2	8	.061	24	.061	O...	1.5														
56	1.2D + 1.5Lm_2 + 1.0Wm_1...	Yes	Y		DL	1.2	9	.061	25	.061	O...	1.5														
57	1.2D + 1.5Lm_2 + 1.0Wm_1...	Yes	Y		DL	1.2	10	.061	26	.061	O...	1.5														
58	1.2D + 1.5Lm_2 + 1.0Wm_1...	Yes	Y		DL	1.2	11	.061	27	.061	O...	1.5														
59	1.2D + 1.5Lm_2 + 1.0Wm_1...	Yes	Y		DL	1.2	4	-.061	20	-.061	O...	1.5														
60	1.2D + 1.5Lm_2 + 1.0Wm_2...	Yes	Y		DL	1.2	5	-.061	21	-.061	O...	1.5														
61	1.2D + 1.5Lm_2 + 1.0Wm_2...	Yes	Y		DL	1.2	6	-.061	22	-.061	O...	1.5														
62	1.2D + 1.5Lm_2 + 1.0Wm_2...	Yes	Y		DL	1.2	7	-.061	23	-.061	O...	1.5														
63	1.2D + 1.5Lm_2 + 1.0Wm_2...	Yes	Y		DL	1.2	8	-.061	24	-.061	O...	1.5														
64	1.2D + 1.5Lm_2 + 1.0Wm_3...	Yes	Y		DL	1.2	9	-.061	25	-.061	O...	1.5														
65	1.2D + 1.5Lm_2 + 1.0Wm_3...	Yes	Y		DL	1.2	10	-.061	26	-.061	O...	1.5														
66	1.2D + 1.5Lm_2 + 1.0Wm_3...	Yes	Y		DL	1.2	11	-.061	27	-.061	O...	1.5														
67	1.2D + 1.5Lm_3 + 1.0Wm_0°	Yes	Y		DL	1.2	4	.061	20	.061	O...	1.5														
68	1.2D + 1.5Lm_3 + 1.0Wm_30°	Yes	Y		DL	1.2	5	.061	21	.061	O...	1.5														
69	1.2D + 1.5Lm_3 + 1.0Wm_45°	Yes	Y		DL	1.2	6	.061	22	.061	O...	1.5														
70	1.2D + 1.5Lm_3 + 1.0Wm_60°	Yes	Y		DL	1.2	7	.061	23	.061	O...	1.5														

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
71	1.2D + 1.5Lm_3 + 1.0Wm_90°	Yes	Y		DL	1.2	8	.061	24	.061	O...	1.5														
72	1.2D + 1.5Lm_3 + 1.0Wm_1...	Yes	Y		DL	1.2	9	.061	25	.061	O...	1.5														
73	1.2D + 1.5Lm_3 + 1.0Wm_1...	Yes	Y		DL	1.2	10	.061	26	.061	O...	1.5														
74	1.2D + 1.5Lm_3 + 1.0Wm_1...	Yes	Y		DL	1.2	11	.061	27	.061	O...	1.5														
75	1.2D + 1.5Lm_3 + 1.0Wm_1...	Yes	Y		DL	1.2	4	-.061	20	-.061	O...	1.5														
76	1.2D + 1.5Lm_3 + 1.0Wm_2...	Yes	Y		DL	1.2	5	-.061	21	-.061	O...	1.5														
77	1.2D + 1.5Lm_3 + 1.0Wm_2...	Yes	Y		DL	1.2	6	-.061	22	-.061	O...	1.5														
78	1.2D + 1.5Lm_3 + 1.0Wm_2...	Yes	Y		DL	1.2	7	-.061	23	-.061	O...	1.5														
79	1.2D + 1.5Lm_3 + 1.0Wm_2...	Yes	Y		DL	1.2	8	-.061	24	-.061	O...	1.5														
80	1.2D + 1.5Lm_3 + 1.0Wm_3...	Yes	Y		DL	1.2	9	-.061	25	-.061	O...	1.5														
81	1.2D + 1.5Lm_3 + 1.0Wm_3...	Yes	Y		DL	1.2	10	-.061	26	-.061	O...	1.5														
82	1.2D + 1.5Lm_3 + 1.0Wm_3...	Yes	Y		DL	1.2	11	-.061	27	-.061	O...	1.5														
83	1.2D + 1.5Lm_4 + 1.0Wm_0°	Yes	Y		DL	1.2	4	.061	20	.061	O...	1.5														
84	1.2D + 1.5Lm_4 + 1.0Wm_30°	Yes	Y		DL	1.2	5	.061	21	.061	O...	1.5														
85	1.2D + 1.5Lm_4 + 1.0Wm_45°	Yes	Y		DL	1.2	6	.061	22	.061	O...	1.5														
86	1.2D + 1.5Lm_4 + 1.0Wm_60°	Yes	Y		DL	1.2	7	.061	23	.061	O...	1.5														
87	1.2D + 1.5Lm_4 + 1.0Wm_90°	Yes	Y		DL	1.2	8	.061	24	.061	O...	1.5														
88	1.2D + 1.5Lm_4 + 1.0Wm_1...	Yes	Y		DL	1.2	9	.061	25	.061	O...	1.5														
89	1.2D + 1.5Lm_4 + 1.0Wm_1...	Yes	Y		DL	1.2	10	.061	26	.061	O...	1.5														
90	1.2D + 1.5Lm_4 + 1.0Wm_1...	Yes	Y		DL	1.2	11	.061	27	.061	O...	1.5														
91	1.2D + 1.5Lm_4 + 1.0Wm_1...	Yes	Y		DL	1.2	4	-.061	20	-.061	O...	1.5														
92	1.2D + 1.5Lm_4 + 1.0Wm_2...	Yes	Y		DL	1.2	5	-.061	21	-.061	O...	1.5														
93	1.2D + 1.5Lm_4 + 1.0Wm_2...	Yes	Y		DL	1.2	6	-.061	22	-.061	O...	1.5														
94	1.2D + 1.5Lm_4 + 1.0Wm_2...	Yes	Y		DL	1.2	7	-.061	23	-.061	O...	1.5														
95	1.2D + 1.5Lm_4 + 1.0Wm_2...	Yes	Y		DL	1.2	8	-.061	24	-.061	O...	1.5														
96	1.2D + 1.5Lm_4 + 1.0Wm_3...	Yes	Y		DL	1.2	9	-.061	25	-.061	O...	1.5														
97	1.2D + 1.5Lm_4 + 1.0Wm_3...	Yes	Y		DL	1.2	10	-.061	26	-.061	O...	1.5														
98	1.2D + 1.5Lm_4 + 1.0Wm_3...	Yes	Y		DL	1.2	11	-.061	27	-.061	O...	1.5														

Hot Rolled Steel Properties

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

Hot Rolled Steel Section Sets

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

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	Standoff Ho...	36			Lbyy						Lateral
2	M2	Vertical Pipe	18			Lbyy						Lateral
3	M9	Face Horizo...	150			Lbyy						Lateral
4	M13	Mount Pipe	72			Lbyy						Lateral
5	M14	Mount Pipe	72			Lbyy						Lateral
6	M15	Mount Pipe	72			Lbyy						Lateral
7	M22	MOD Mount...	96			Lbyy						Lateral
8	M32	Standoff Ho...	36			Lbyy						Lateral
9	M33	Vertical Pipe	18			Lbyy						Lateral
10	M40	Face Horizo...	150			Lbyy						Lateral
11	M44	Mount Pipe	72			Lbyy						Lateral
12	M45	Mount Pipe	72			Lbyy						Lateral
13	M46	Mount Pipe	72			Lbyy						Lateral
14	M53	MOD Mount...	96			Lbyy						Lateral
15	M63	Standoff Ho...	36			Lbyy						Lateral
16	M64	Vertical Pipe	18			Lbyy						Lateral
17	M71	Face Horizo...	150			Lbyy						Lateral
18	M75	Mount Pipe	72			Lbyy						Lateral
19	M76	Mount Pipe	72			Lbyy						Lateral
20	M77	Mount Pipe	72			Lbyy						Lateral
21	M84	MOD Mount...	96			Lbyy						Lateral
22	M106	MOD SUPP...	150			Lbyy						Lateral
23	M109A	MOD SUPP...	150			Lbyy						Lateral
24	M112	MOD SUPP...	150			Lbyy						Lateral
25	M115	MOD BRAC...	55.799			Lbyy						Lateral
26	M116	MOD BRAC...	63.853			Lbyy						Lateral
27	M117	MOD BRAC...	73.074			Lbyy						Lateral
28	PR5	MOD PRK	35.5			Lbyy						Lateral
29	PR6	MOD PRK	35.5			Lbyy						Lateral
30	PR11	MOD PRK	35.5			Lbyy						Lateral
31	PR12	MOD PRK	35.5			Lbyy						Lateral
32	PR17	MOD PRK	35.5			Lbyy						Lateral
33	PR18	MOD PRK	35.5			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	N118	max	1374.408	18	3154.647	31	313.89	8	898.727	33	1210.199	20	2955.743	5
2		min	-819.563	10	-946.418	7	-918.943	32	-264.547	10	-313.07	12	-2923.972	13
3	N60	max	2521.922	4	1154.164	14	487.426	13	700.219	11	276.358	15	2785.179	10
4		min	-1049.831	12	-2617.635	6	-1026.372	5	-355.017	3	-1341.334	23	-2916.135	18
5	N2	max	1643.48	3	728.26	16	601.532	3	1457.567	36	855.378	42	2032.942	13
6		min	-3464.336	11	-1211.531	8	-937.241	11	-3859.75	92	-1196.156	98	-2221.43	5
7	P5	max	2841.999	27	766.178	27	2916.063	27	294.923	40	-69.596	3	323.837	94
8		min	264.577	3	64.689	3	254.197	3	-198.87	96	-833.973	27	-133.236	38
9	P21	max	-152.106	8	-544.7	8	3163.709	32	-125.844	7	381.357	19	257.694	5
10		min	-824.627	32	-3088.792	32	540.189	8	-831.856	31	-64.107	12	-174.854	12
11	P13	max	-275.595	13	2292.501	21	3210.314	21	727.578	23	584.151	19	237.93	10
12		min	-2296.207	21	275.526	13	369.43	13	33.254	15	-19.936	11	-167.734	18
13	Totals:	max	4250.66	3	3662.319	15	6747.886	21						
14		min	-4250.656	11	-3662.327	7	2139.629	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	M22	PIPE_2.0	.762	60	3	.108	60		18	14916....	32130	1871.6...	1871.6...	...	H1-1b
2	M53	PIPE_2.0	.657	60	12	.108	36		10	14916....	32130	1871.6...	1871.6...	...	H1-1b
3	M84	PIPE_2.0	.611	60	7	.105	36		5	14916....	32130	1871.6...	1871.6...	...	H1-1b
4	M9	PIPE_3.0	.554	81.25	95	.280	81.25		11	28250....	65205	5748.75	5748.75	...	H1-1b
5	M14	PIPE_2.0	.482	42	3	.118	24		91	20866....	32130	1871.6...	1871.6...	...	H1-1b
6	M45	PIPE_2.0	.455	42	12	.104	42		12	20866....	32130	1871.6...	1871.6...	...	H1-1b
7	M76	PIPE_2.0	.390	42	22	.099	42		33	20866....	32130	1871.6...	1871.6...	...	H1-1b
8	M40	PIPE_3.0	.331	81.25	12	.266	81.25		6	28250....	65205	5748.75	5748.75	...	H1-1b
9	M71	PIPE_3.0	.326	81.25	23	.239	81.25		17	28250....	65205	5748.75	5748.75	...	H1-1b
10	M1	HSS4X4X4	.324	27.375	91	.457	27.375	y	93	10601...	109188	12663	12663	...	H3-6
11	M13	PIPE_2.0	.318	42	84	.105	42		91	20866....	32130	1871.6...	1871.6...	...	H1-1b
12	M106	PIPE_2.0	.291	118.75	96	.190	59.375		11	6295.4...	32130	1871.6...	1871.6...	...	H1-1b
13	M32	HSS4X4X4	.270	0	3	.208	27.375	y	24	10601...	109188	12663	12663	...	H1-1b
14	M63	HSS4X4X4	.269	0	13	.214	27.375	y	20	10601...	109188	12663	12663	...	H1-1b
15	M109A	PIPE_2.0	.241	59.375	18	.157	59.375		3	6295.4...	32130	1871.6...	1871.6...	...	H1-1b
16	M112	PIPE_2.0	.235	59.375	13	.166	59.375		15	6295.4...	32130	1871.6...	1871.6...	...	H1-1b
17	M15	PIPE_2.0	.226	48	84	.082	30		91	20866....	32130	1871.6...	1871.6...	...	H1-1b
18	M44	PIPE_2.0	.225	42	13	.060	42		18	20866....	32130	1871.6...	1871.6...	...	H1-1b
19	M75	PIPE_2.0	.215	42	8	.057	42		12	20866....	32130	1871.6...	1871.6...	...	H1-1b
20	M2	PIPE_4.0	.209	9	93	.153	12.375		91	92571....	93240	10631....	10631....	...	H1-1b
21	PR6	L2.5x2.5x3	.190	18.12	92	.020	0	y	89	21687....	29192.4	872.574	1860.9...	...	H2-1
22	PR18	L2.5x2.5x3	.183	18.12	19	.008	0	y	30	21687....	29192.4	872.574	1860.9...	...	H2-1
23	PR12	L2.5x2.5x3	.176	18.12	23	.008	35.5	y	19	21687....	29192.4	872.574	1860.9...	...	H2-1
24	PR5	L2.5x2.5x3	.135	18.12	40	.020	0	z	89	21687....	29192.4	872.574	1860.9...	...	H2-1
25	PR17	L2.5x2.5x3	.132	17.75	13	.008	35.5	z	30	21687....	29192.4	872.574	1860.9...	...	H2-1
26	PR11	L2.5x2.5x3	.126	17.75	3	.008	35.5	z	19	21687....	29192.4	872.574	1860.9...	...	H2-1
27	M46	PIPE_2.0	.124	48	12	.025	48		13	20866....	32130	1871.6...	1871.6...	...	H1-1b
28	M77	PIPE_2.0	.117	48	7	.025	48		10	20866....	32130	1871.6...	1871.6...	...	H1-1b
29	M33	PIPE_4.0	.111	9	6	.105	9		4	92571....	93240	10631....	10631....	...	H1-1b
30	M64	PIPE_4.0	.106	9	34	.099	9		16	92571....	93240	10631....	10631....	...	H1-1b
31	M117	PIPE_2.0	.036	36.537	32	.132	73.074		84	20597....	32130	1871.6...	1871.6...	...	H1-1b
32	M116	PIPE_2.0	.029	31.926	27	.109	0		31	22881....	32130	1871.6...	1871.6...	...	H1-1b
33	M115	PIPE_2.0	.023	27.9	21	.156	55.799		91	24792....	32130	1871.6...	1871.6...	...	H1-1b

BOLTED CONNECTION ROTATIONAL SLIP RESISTANCE

v. 2017.11.20

DESIGN LOADS	
Factored Moment, M_u (lb-ft)	979

BOLT PROPERTIES	
Bolt Type	U-Bolt
# of U-Bolts	1
Hole Type	Standard
Bolt Grade	A36
Bolt Diameter, d (in)	0.625
Leg Width, W_{leg} (in)	4.5
Bolt Torque Override, T (lb-ft)	50
Bolt Pretension Stress Override (ksi)	
Bolt Ultimate Strength, F_u (ksi)	58
Specified Torque, T (lb-ft)	50.00
Clamping Force per Bolt, P_u (lb)	4800.00
Bolt Pretension Stress (ksi)	15.65
Tensile Strength per Bolt, ϕP_n (lb)	10009.22
Slip Resistance per Bolt, ϕM_n (lb-ft)	610.20
Total Slip Resistance, ϕM_n (lb-ft)	1220.40
Bolt Tensile Usage, P_u / ϕP_n	**0.48**
Connection Slip Usage, M_u / ϕM_n	**0.80**

Using Torque Override

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

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11487B

CT487/BeaconFalls
139 Lopus Road
Beacon Falls, Connecticut 06403

June 11, 2019

EBI Project Number: 6219002188

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**11.08%**

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

June 11, 2019

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

Emissions Analysis for Site: CT11487B - CT487/BeaconFalls

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **139 Lopus Road** in **Beacon Falls, 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 139 Lopus Road in Beacon Falls, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

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

5) 2 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 AIR 21 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 2100 MHz channel(s) in Sector A, the Ericsson AIR 21 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 2100 MHz channel(s) in Sector B, the Ericsson AIR 21 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

10) The antenna mounting height centerline of the proposed antennas is 135 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 AIR 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.35 dBd
Height (AGL):	135 feet	Height (AGL):	135 feet	Height (AGL):	135 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	8,226.43	ERP (W):	8,226.43	ERP (W):	8,226.43
Antenna A1 MPE %:	**1.62%**	Antenna B1 MPE %:	**1.62%**	Antenna C1 MPE %:	**1.62%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 700 MHz	Frequency Bands:	600 MHz / 700 MHz	Frequency Bands:	600 MHz / 700 MHz
Gain:	12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 13.35 dBd
Height (AGL):	135 feet	Height (AGL):	135 feet	Height (AGL):	135 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	2,481.08	ERP (W):	2,481.08	ERP (W):	2,481.08
Antenna A2 MPE %:	**1.13%**	Antenna B2 MPE %:	**1.13%**	Antenna C2 MPE %:	**1.13%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.35 dBd	Gain:	15.35 dBd	Gain:	15.35 dBd
Height (AGL):	135 feet	Height (AGL):	135 feet	Height (AGL):	135 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	4,113.21	ERP (W):	4,113.21	ERP (W):	4,113.21
Antenna A3 MPE %:	**0.81%**	Antenna B3 MPE %:	**0.81%**	Antenna C3 MPE %:	**0.81%**

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	3.57%
Verizon	4.86%
AT&T	2.17%
Metro PCS	0.48%
Site Total MPE % :	11.08%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	3.57%
T-Mobile Sector B Total:	3.57%
T-Mobile Sector C Total:	3.57%
Site Total MPE % :	11.08%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz GSM	4	1028.30	135.0	8.11	1900 MHz GSM	1000	0.81%
T-Mobile 1900 MHz UMTS	2	1028.30	135.0	4.06	1900 MHz UMTS	1000	0.41%
T-Mobile 2100 MHz UMTS	2	1028.30	135.0	4.06	2100 MHz UMTS	1000	0.41%
T-Mobile 600 MHz LTE	2	591.73	135.0	2.33	600 MHz LTE	400	0.58%
T-Mobile 700 MHz LTE	2	648.82	135.0	2.56	700 MHz LTE	467	0.55%
T-Mobile 2100 MHz LTE	2	2056.61	135.0	8.11	2100 MHz LTE	1000	0.81%
						Total:	**3.57%**

• 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:	3.57%
Sector B:	3.57%
Sector C:	3.57%
T-Mobile Maximum MPE % (Sector A):	3.57%
Site Total:	11.08%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **11.08%** 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.