10 Industrial Ave,
Suite 3
Mahwah NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

Transcend Wireless

June 23, 2021

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

RE: Notice of Exempt Modification
47 Inwood Road, Rocky Hill, CT 06067
Latitude: 41.63858611
Longitude: -72.67928889
T-Mobile Site#: CTHA859A - Sprint Keep Project

Dear Ms. Bachman:

T-Mobile/Sprint currently maintains six (6) antennas at the 140-foot level of the existing 184-foot Monopole at 47 Inwood Road, Rocky Hill, Connecticut. The 184-foot Monopole is owned and operated by American Tower. The ground space is owned by Merrifield LLC. T-Mobile/Sprint now intends to remove all Sprint equipment including antennas, cables, and ground equipment. T-mobile will be adding nine (9) antennas. The new antennas will be installed at the same 140-foot level. The new antennas support 5G services.

Planned Modifications:
Tower:
Remove
(6) Sprint Antennas
(12) Sprint RRHs
(4) Sprint Hybrid Cables

Install New:
(3) APX16DWV-16DWV Antennas
(3) APXVAALL24 43-U-NA20 Antennas
(3) AIR6449 Antennas
(3) Ericsson Radio 4449 B71+B85
(3) Ericsson 4424 B25
(3) Ericsson Radio 4415 B66A RRU
(3) 6/24 Hybrid Cables

Ground:
Install New:
(1) 6160 Cabinet and (1) B160 Battery Cabinet
(3) BB 6648s
(1) DUG20
(1) RBS6601
(1) PSU 4813

To Be Removed:
All Sprint Ground Equipment

This facility was not originally approved by the Connecticut Siting Council. The Town of Rocky Hill originally approved the tower in 1993. The original approval is included in this package.

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 Mayor - Lisa Marotta, Elected Official, and Kim Ricci, Zoning Enforcement Officer, as well as the tower and property 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,

Eric Breun
Transcend Wireless
Cell: 201-658-7728
Email: ebreun@transcendwireless.com

Attachments
cc: Lisa Marotta – as Mayor of the Town of Rocky Hill
Kim Ricci - Zoning Enforcement Officer
American Tower - Tower Owner
Merrifield LLC - Land Owner


ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430
1 LBS
1 OF 1
SHIP TO:
KIM RICCI
PLANNING AND ZONING DEPARTMENT
761 OLD MAIN STREET
ROCKY HILL CT 06067
CT 061 9-02
UPS GROUND
TRACKING #: 1Z V25 742 03 9530 3943
BILLING: P/P
Reference #1: CTHA859A
XOL 21.05.18 NV45 25.0A 06/2021*


ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430
1 LBS
1 OF 1
SHIP TO:
MAYOR LISA MAROTTA
761 OLD MAIN STREET
ROCKY HILL CT 06067
CT 061 9-02
UPS GROUND
TRACKING #: 1Z V25 742 03 9741 3937
BILLING: P/P
Reference #1: CTHA859A
XOL 21.05.18 NV45 25.0A 06/2021*


ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430
1 LBS
1 OF 1
SHIP TO:
MERRIFIELD LLC
10 TALCOTT PLACE
WETHERSFIELD CT 06109
CT 061 9-02
UPS GROUND
TRACKING #: 1Z V25 742 03 9614 3963
BILLING: P/P
Reference #1: CTHA859A
XOL 21.05.18 NV45 25.0A 06/2021*


ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430
1 LBS
1 OF 1
SHIP TO:
CONTACTS MANAGEMENT
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN MA 01801
MA 018 9-04
UPS GROUND
TRACKING #: 1Z V25 742 03 9821 3955
BILLING: P/P
Reference #1: CTHA859A
XOL 21.05.18 NV45 25.0A 06/2021*

Town of Rocky Hill

699 OLD MAIN STREET • ROCKY HILL, CONNECTICUT 06067 • FAX (203) 563-1738

CERTIFIED

October 27, 1993

Ms. Barbara Bogle
Whalen & Company, Inc.
575 Corporate Drive, Suite 402
Mahwah, New Jersey 07430

RE: Site Plan Application, Smart SMR, 47 Inwood Road

Dear Ms. Bogle,

The Rocky Hill Planning and Zoning Commission at their regular meeting of Monday, October 25, 1993 voted to approve with conditions the aforementioned matter. The conditions of approval are compliance with the Staff Reports.

Please submit two (2) sets of plans, with live seals and signatures, to this office. One set can be mylar, the other is to conform to the requirements enclosed for filing with the Town Clerk. Staff will arrange for the Commission's signature. Also please submit a bond estimate for any improvements (pavement, erosion controls, etc.).

Upon receipt of the signed plans and a $10.00 per sheet recording fee, Staff will gladly record the plans with the Town Clerk. Please beware that plans are to be recorded within 90 days of approval.

Should you have any questions on this matter, please do not hesitate to contact this office.

Sincerely,

Kimberley A. Ricci
Town Planner

KAR/mn

enclosure

7c

RECEIVED
OCT 22 1993

TOWN OF ROCKY HILL
INTER-OFFICE

TO: Planning & Zoning Commission

FROM: Kimberley A. Ricci, Town Planner

DATE: October 21, 1993

SUBJECT: 47 Inwood Road - Smart SMR of New York

The following staff comments relate to site plans presented at the 9/27/93 Planning and Zoning Commission meeting:

Town Engineer:

1. Note to be on plan: "Remove topsoil before installing gravel road.

2. Note: All trees, stumps, brush should be chipped or removed from site.

3. Note: Erosion controls are to be installed prior to any clearing and/or excavation.

4. Note: The erosion control plan may be modified by the Town of Rocky Hill as field conditions warrant.

Town Planner:

1. Signature block for the Commission to be on all sheets.

2. Zoning Regulation Bulk Table to be on plan (see attached)

3. Outdoor storage will not be allowed on site unless in compliance with Zoning Regulations.

4. Individual/firm responsible for installation/maintenance of haybales is to be noted on the plans.

5. Note type of construction and height of communications shelter.

6. Note height of tower.

Kimberley A. Ricci
Town Planner

KAR/mn

cc: Barbara Bogle, Smart SMR


COLD SPRING RD
OLD COLD SPRING RD
3
91
INWOOD RD
CROMWELL AV
INTERSTATE 91
BINSON RD (PVT)

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 47 INWOOD ROAD | **PARCEL ID: 4145** | **Class: 300** | Card: 1 of 1 | Printed: March 5, 2020

CURRENT OWNER

MERRIFIELD LLC
10 TALCOTT PLACE
WETHERSFIELD CT 06109
503/959 05/08/2006

GENERAL INFORMATION

Living Units	
Neighborhood	I
Alternate ID	004208
Vol / Pg	503/959
Map/Lot	16-296
Zoning	BP
Class	INDUSTRIAL

Property Notes

16-296-001 12/09/2012

Land Information

Type		Size	Influence Factors	Influence %	Value
Primary	AC	1.0000			200,000

Total Acres: 1
Spot: Location:

Assessment Information

	Assessed	Appraised	Cost	Income	Market
Land	140,000	200,000	200,000	200,000	0
Building	228,830	326,900	326,900	56,400	0
Total	368,830	526,900	526,900	256,400	0

Value Flag COST APPROACH
Gross Building:
Manual Override Reason
Base Date of Value
Effective Date of Value

Entrance Information

Date	ID	Entry Code	Source
10/05/12	ST	Measured + 1visit	From Conversion
02/20/09	ST	Hearing No Change	From Conversion
08/19/08	ST	Reval Inspection	Owner

Permit Information

Date Issued	Number	Price	Purpose		% Complete
05/09/18	2018-459	20,000	CM	Scope Of Work Includes Upgradin	0
10/23/17	2018-189	25,000	CM	Empire Telecom For At&T, An Exis	0
11/08/16	2017-213	25,000	MS	Swap At&T'S Equipment On Existi	0
08/15/14	2015-75	27,000	MS	Upgrade And Replace Antennas A	100
04/16/14	2014-356	12,500	CM	Prep And Concrete Pad For New C	100

Sales/Ownership History

Transfer Date	Price	Type	Validity	Deed Reference	Deed Type	Grantee
05/08/06		Improved - L&B Sale	No Consideration	503/959	No Consideration	MERRIFIELD LLC
06/24/98		Improved - L&B Sale		346/452		MERRIFIELD BEVERLY

Inspection Witnessed By _____

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 47 INWOOD ROAD	Parcel Id: 4145	Class: 300	Card: 1 of 1	Printed: March 5, 2020

Building Information

Year Built/Eff Year	1962 /
Building #	1
Structure Type	Warehouse
Identical Units	1
Total Units	1
Grade	C
# Covered Parking	
# Uncovered Parking	
DBA	

Building Other Features

Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units	Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units
1	Ovrhd Dr 12'		2	1		1							

Interior/Exterior Information

Line	Level From	To	Int Fin	Area	Perim	Use Type	Wall Height	Ext Walls	Construction	Partitions	Heating	Cooling	Plumbing	Physical	Functional
1	01	01		448	84	Warehouse	16	Concrete Bl	Wood Frame/Joist/B	Normal	Hot Air	None	Normal	2	3
2	01	01		4,550	270	Warehouse	16	Concrete Bl	Wood Frame/Joist/B	Normal	Hot Air	None	Normal	2	3

Interior/Exterior Valuation Detail

Line	Area	Use Type	% Good	% Complete	Use Value/RCNLD
1	448	Warehouse	40		22,990
2	4,550	Warehouse	40		111,800

Outbuilding Data

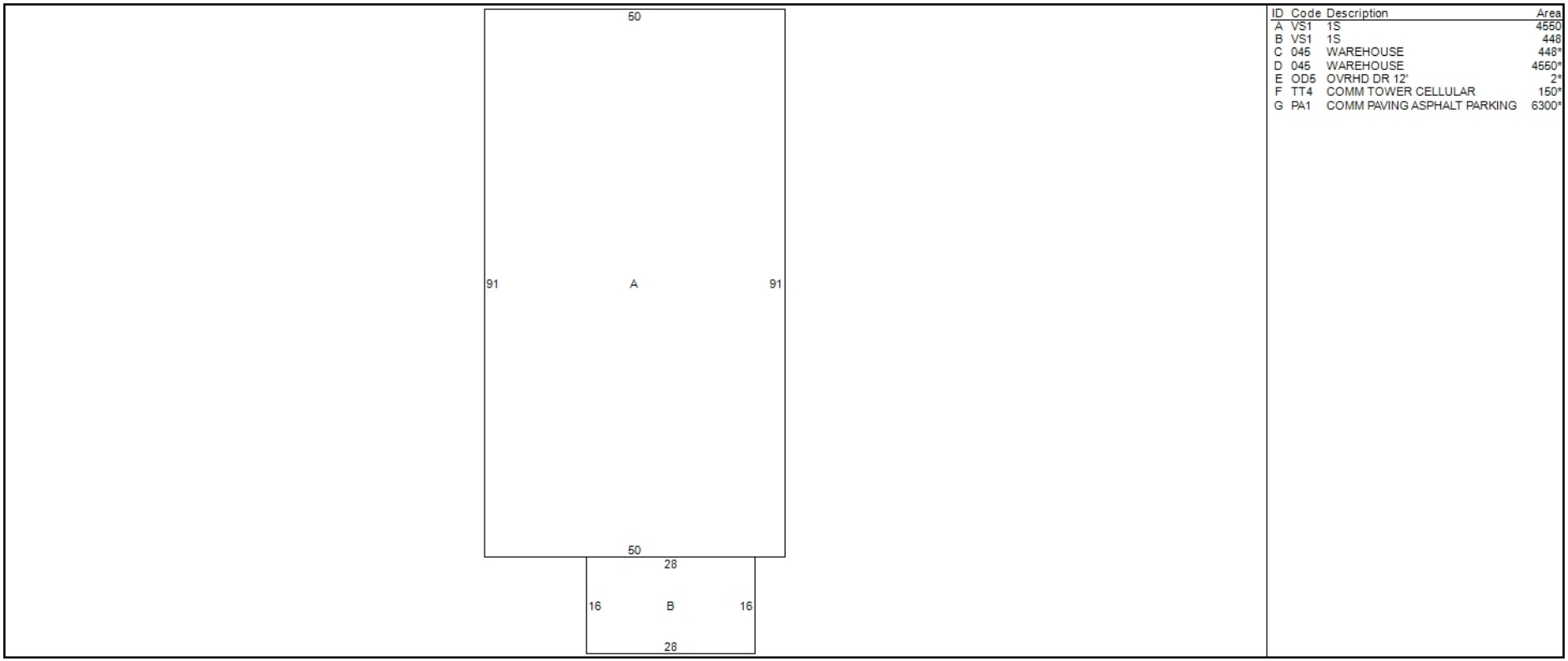
Line	Type	Yr Blt	Meas1	Meas2	Qty	Area	Grade	Phy Fun	Value
1	Tower Cell	2005			1	150	C	G	186,000
2	Asph Pav	1962			1	6,300	C	P	6,070

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 47 INWOOD ROAD	Parcel Id: 4145	Class: 300	Card: 1 of 1	Printed: March 5, 2020



ID	Code	Description	Area
A	VS1	1S	4550
B	VS1	1S	448
C	045	WAREHOUSE	448*
D	045	WAREHOUSE	4550*
E	OD5	OVRHD DR 12'	2*
F	TT4	COMM TOWER CELLULAR	150*
G	PA1	COMM PAVING ASPHALT PARKING	6300*

Addtional Property Photos

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 47 INWOOD ROAD	Parcel Id: 4145	Class: 300	Card: 1 of 1	Printed: March 5, 2020

Income Detail (Includes all Buildings on Parcel)

Use Grp	Mod Type	Inc Mod	Model Description	Units	Net Area	Income Rate	Econ Adjust	Potential Gross Income	Vac Model	Vac Adj	Additional Income	Effective Gross Income	Expense Model %	Expense Adj %	Expense Adj	Other Expenses	Total Expenses	Net Operating Income
07	S	1	Lt Manufacturing	0	4,998	6.00		29,988	5		0	28,489	10			2,849	2,849	25,640

Apartment Detail - Building 1 of 1

Line	Use Type	Per Bldg	Beds	Baths	Units	Rent	Income

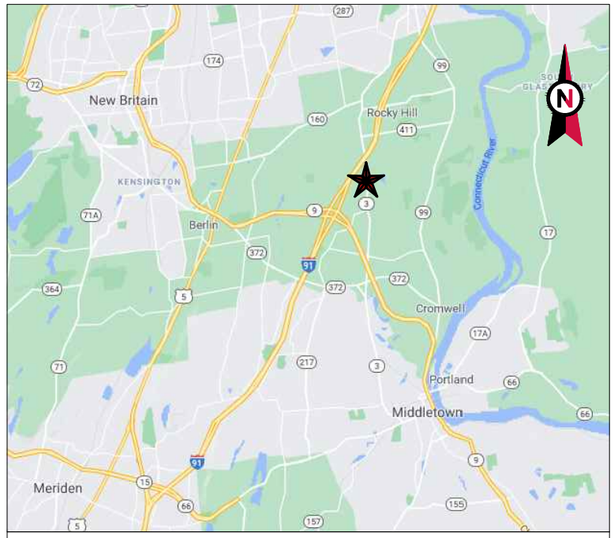
Building Cost Detail - Building 1 of 1

Total Gross Building Area	4,998
Replace, Cost New Less Depr	134,790
Percent Complete	100
Number of Identical Units	1
Economic Condition Factor	
Final Building Value	134,790
Value per SF	26.97

Notes - Building 1 of 1

Income Summary (Includes all Building on Parcel)

Total Net Income	25,640
Capitalization Rate	0.100000
Sub total	256,400
Residual Land Value	
Final Income Value	256,400
Total Gross Rent Area	4,998
Total Gross Building Area	4,998



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: MIDDLETOWN CT 3
ATC SITE NUMBER: 302537
T-MOBILE SITE NAME: CTHA859A
T-MOBILE SITE NUMBER: CTHA859A
SITE ADDRESS: 47 INWOOD ROAD
ROCKY HILL, CT 06067

LOCATION MAP

T-MOBILE SPRINT RETAIN ANTENNA AMENDMENT PLAN
67D5998C CONFIGURATION

COMPLIANCE CODE

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

1. 2015 INTERNATIONAL BUILDING CODE (IBC)
2. 2017 NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

UTILITY COMPANIES

POWER COMPANY: EVER SOURCE
PHONE: (800) 286-2000

TELEPHONE COMPANY: FRONTIER COMMUNICATIONS
PHONE: (866) 604-1892

CBYD.COM 811 Call Before You Dig, Inc.

PROJECT SUMMARY

SITE ADDRESS:

47 INWOOD ROAD

ROCKY HILL, CT 06067

COUNTY: HARTFORD

GEOGRAPHIC COORDINATES:

LATITUDE: 41.63858611

LONGITUDE: -72.67928889

GROUND ELEVATION: 140' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

ENGINEER:

KIMLEY-HORN
& ASSOCIATES, INC.
421 FAYETTEVILLE ST, STE 600
RALEIGH, NC 27601
COA: PEC.0000738

PROPERTY OWNER:

MERRIFIELD LLC
10 TALCOTT PLACE
WETHERSFIELD, CT 06109

APPLICANT:
T-MOBILE

WHITNEY JONES
WJONES@TRANSCENDWIRELESS.COM

PROJECT DESCRIPTION

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

TOWER WORK:

REMOVE (3) APXVSPP18-C-A20 ANTENNA(s), (3) DT465B-2XR ANTENNA(s), (3) 800MHZ 2X50W RRH(s), (3) RRH2X50-08 RRH(s), (3) 4X40W RRH(s), (3) TD-RRH8X20-25 RRH(s), AND (4) 6X12 (1-1/4") HYBRID CABLE(s)

INSTALL (3) APXVAALL24 43-U-NA20 ANTENNA(s), (3) APX16DWV-16DWV-S-E-A20 ANTENNA(s), (3) AIR6449 ANTENNA(s), (3) RADIO 4449 B71+B85 RRH(s), (3) RRUS 4415 B66A RRH(s), (3) 4424 B25 RRH(s), AND (3) 6/24 (1-5/8") HYBRID CABLE(s)

EXISTING PLATFORM MOUNT TO REMAIN

GROUND WORK:

REMOVE (2) CABINET(s) AND (1) EQUIPMENT ENCLOSURE

INSTALL (1) ENCLOSURE 6160, (1) B160 ENCLOSURE, (3) BB 6648(s), (1) DUG20, (1) RBS 6601, AND (1) PSU 4813

THE PROPOSED PROJECT DOES NOT INCLUDE ELECTRICAL SCOPE

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

PROCEED FROM ROCKY HILL, CT HEAD SOUTHWEST ON OLD MAIN ST TOWARD WASHINGTON ST 0.2 MI TURN RIGHT ONTO CT-160 / ELM ST, THEN IMMEDIATELY TURN LEFT ONTO CT-99 / MAIN ST 1.4 MI TURN RIGHT ONTO BROOK ST 1.7 MI TURN LEFT ONTO CT-3 / CROMWELL AVE 0.2 MI TURN RIGHT ONTO INWOOD RD 0.1 MI ARRIVE AT INWOOD RD THE LAST INTERSECTION BEFORE YOUR DESTINATION IS CT-3 / CROMWELL AVE 47 INWOOD RD, ROCKY HILL, CT 06067

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	0	06/02/21	GC
G-002	GENERAL NOTES	0	06/02/21	GC
C-101	DETAILED SITE PLAN	0	06/02/21	GC
C-102	DETAILED GROUND PLAN	0	06/02/21	GC
C-201	TOWER ELEVATION	0	06/02/21	GC
C-401	ANTENNA INFORMATION & SCHEDULE	0	06/02/21	GC
C-501	CONSTRUCTION DETAILS	0	06/02/21	GC
E-501	GROUNDING DETAILS	0	06/02/21	GC
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			
R-604	SUPPLEMENTAL			

AMERICAN TOWER®

Kimley»Horn

COA: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

REV.	DESCRIPTION	BY	DATE
A	PRELIM	GC	04/28/21
0	ISSUED FOR CONSTRUCTION	WCE	06/02/21

ATC SITE NUMBER:
302537
ATC SITE NAME:
MIDDLETOWN CT 3
T-MOBILE SITE NAME:
CTHA859A
SITE ADDRESS:
47 INWOOD ROAD
ROCKY HILL, CT 06067

SEAL:

T-Mobile

DATE DRAWN:	06/02/21
ATC JOB NO:	13668065
CUSTOMER ID:	CTHA859A
CUSTOMER #:	CTHA859A

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	0

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
   - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
   - B. AC/TELCO INTERFACE BOX (PPC)
   - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
   - D. TOWERS, MONOPOLES
   - E. TOWER LIGHTING
   - F. GENERATORS & LIQUID PROPANE TANK
   - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
   - H. ANTENNAS (INSTALLED BY OTHERS)
   - I. TRANSMISSION LINE
   - J. TRANSMISSION LINE JUMPERS
   - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
   - L. TRANSMISSION LINE GROUND KITS
   - M. HANGERS
   - N. HOISTING GRIPS
   - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. 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.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE 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.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. 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.
27. CONTRACTOR SHALL NOTIFY T-MOBILE 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.
28. 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.
29. 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.
30. 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 REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. 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.
32. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.

SPECIAL CONSTRUCTION ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
   - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL.
   - B. INSTALL ANTENNA AS INDICATED ON DRAWINGS AND T-MOBILE SPECIFICATIONS.
   - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.
   - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.
   - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
   - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
   - G. ANTENNA AND COAXIAL CABLE GROUNDING:

i. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.

ii. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS).

ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

AMERICAN TOWER®

Kimley»Horn

COA: PEC.0000738
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RALEIGH, NC 27601

REV.	DESCRIPTION	BY	DATE
A	PRELIM	GC	04/28/21
0	ISSUED FOR CONSTRUCTION	WCE	06/02/21

ATC SITE NUMBER:
302537
ATC SITE NAME:
MIDDLETOWN CT 3
T-MOBILE SITE NAME:
CTHA859A
SITE ADDRESS:
47 INWOOD ROAD
ROCKY HILL, CT 06067

SEAL:

T-Mobile

DATE DRAWN:	06/02/21
ATC JOB NO:	13668065
CUSTOMER ID:	CTHA859A
CUSTOMER #:	CTHA859A

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

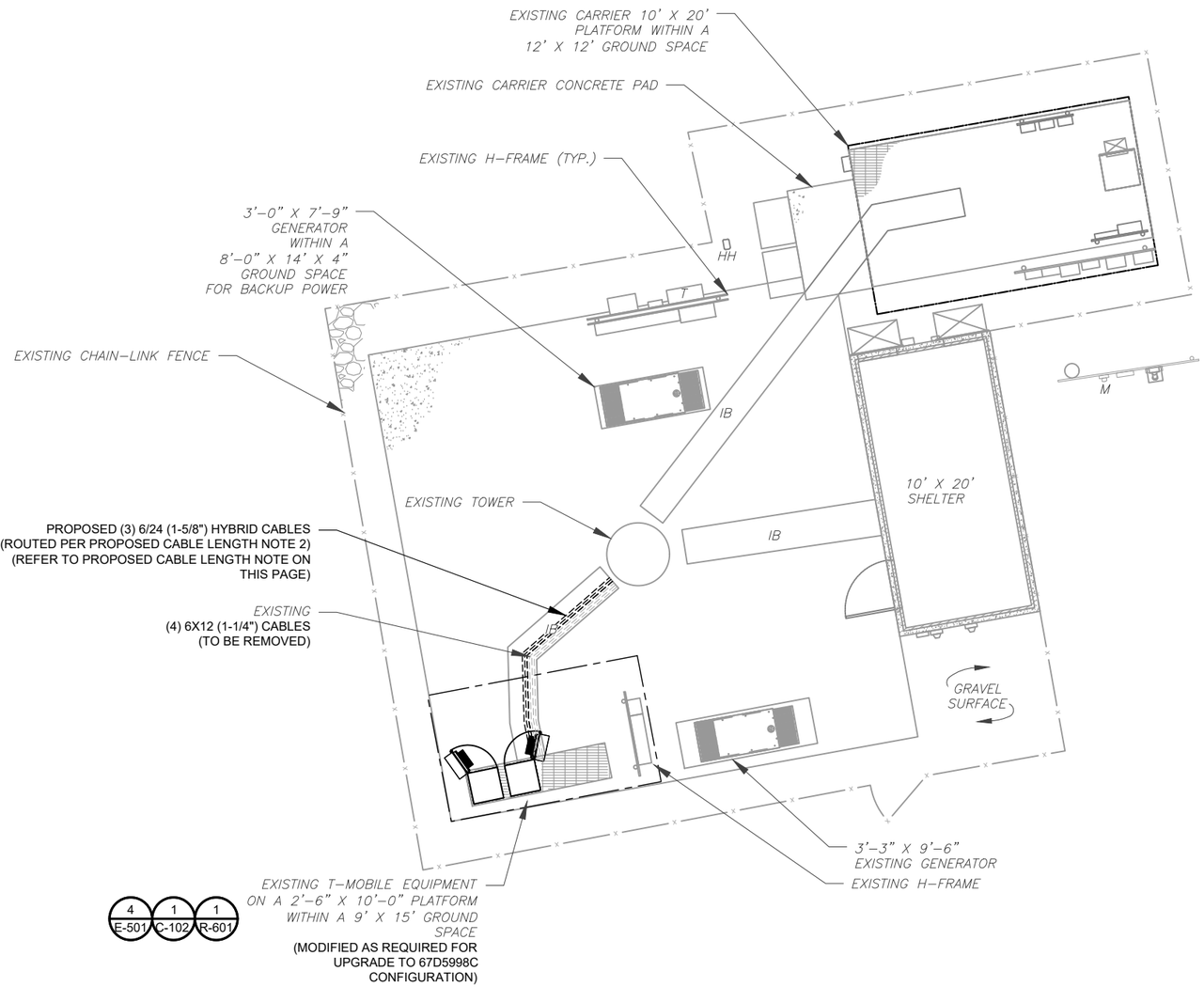
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

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. NO ELECTRICAL SCOPE IS INCLUDED IN THIS PROJECT.

LEGEND

⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
——x——	CHAINLINK FENCE



1 DETAILED SITE PLAN

0 10' 20'

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

N

PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **179'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR 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), CDS DEFER TO GREATEST CABLE LENGTH.
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.

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T-MOBILE SITE NAME:
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SITE ADDRESS:
47 INWOOD ROAD
ROCKY HILL, CT 06067

SEAL:

06/02/21

T-Mobile

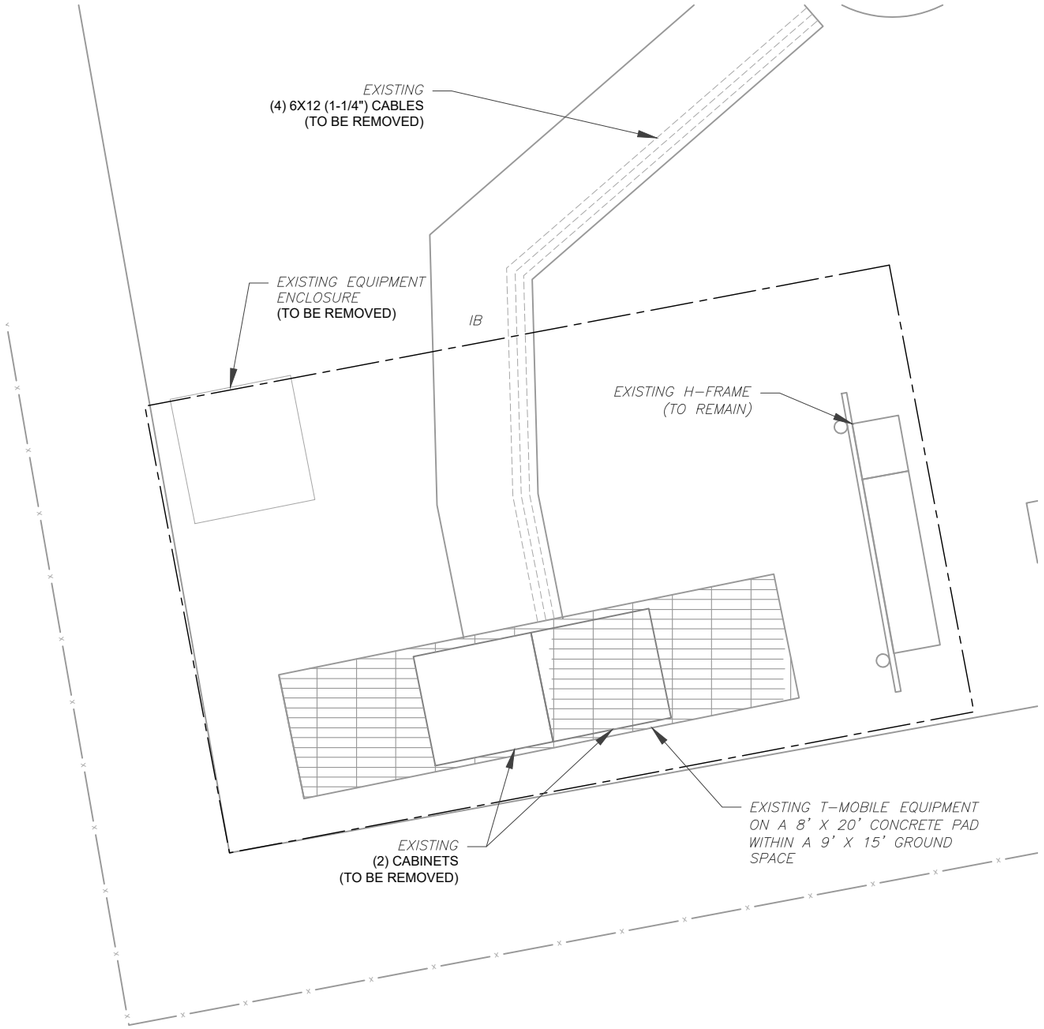
DATE DRAWN:	06/02/21
ATC JOB NO:	13668065
CUSTOMER ID:	CTHA859A
CUSTOMER #:	CTHA859A

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	0

SITE PLAN NOTES:

1. CONTRACTOR TO VERIFY THERE IS NO LIVE AAV FIBER RUNNING THROUGH EXISTING DEAD EQUIPMENT. IF SO, THIS WILL NEED TO BE RERUN THROUGH CONDUIT PRIOR TO REMOVING DEAD 2G (6201 CABS) EQUIPMENT.
2. REMOVE EXISTING 2G CABINETS, AND POWER / TELCO WHIPS ASSOCIATED WITH THE DEAD EQUIPMENT IF APPLICABLE.
3. ALL OPEN PORTS NEED TO BE SEALED / WEATHERPROOFED PROPERLY
4. ALL UNNEEDED / EXCESS EQUIPMENT AND GARBAGE TO BE REMOVED FROM EQUIPMENT AREA. DISPOSE OF MATERIALS PROPERLY OFF SITE.

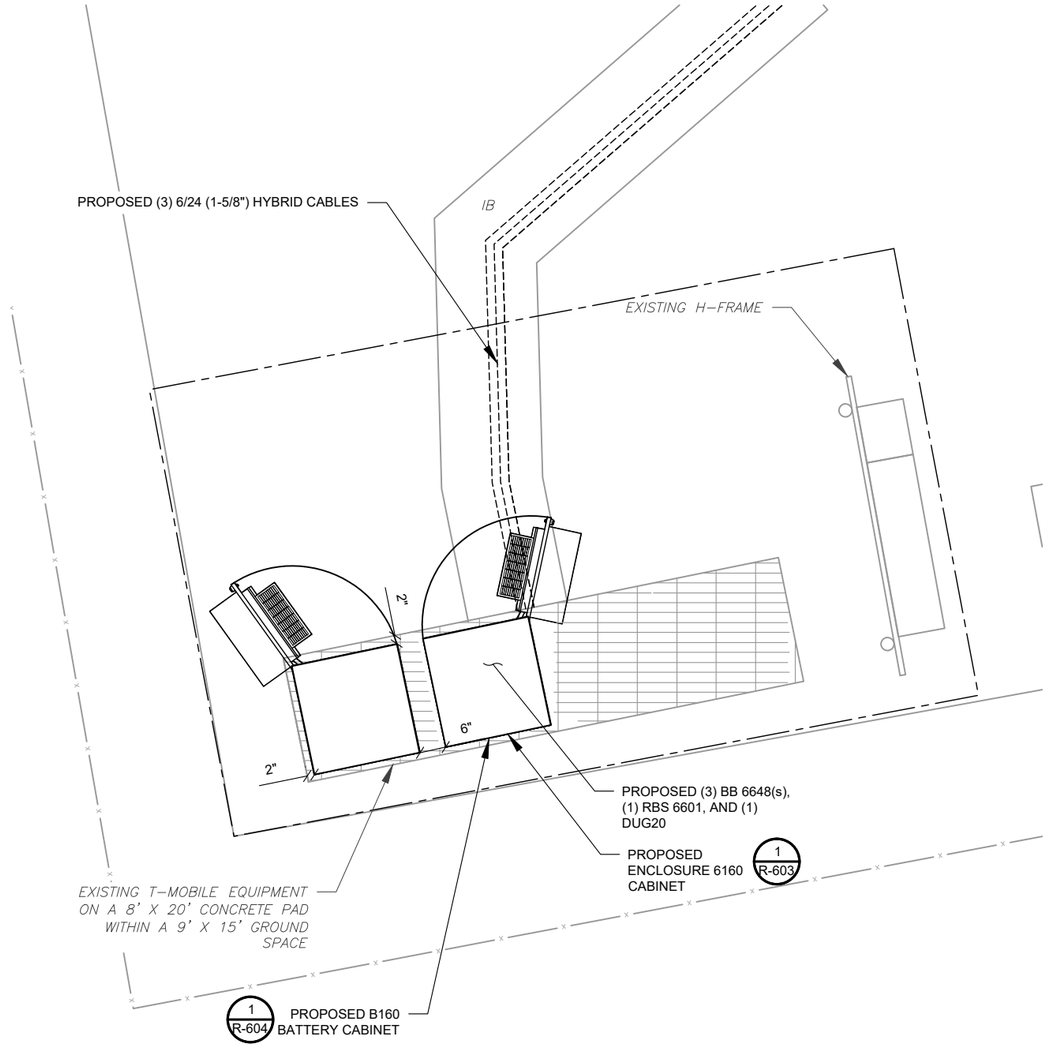


1 EXISTING GROUND EQUIPMENT LAYOUT

0 5' 10'

SCALE: 1"=5' (11X17)
1"=2.5' (22X34)

T-MOBILE CM APPROVAL REQUIRED BEFORE INSTALLING CABINETS



2 PROPOSED GROUND EQUIPMENT LAYOUT

0 5' 10'

SCALE: 1"=5' (11X17)
1"=2.5' (22X34)

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REV.	DESCRIPTION	BY	DATE
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0	ISSUED FOR CONSTRUCTION	WCE	06/02/21

ATC SITE NUMBER:
302537

ATC SITE NAME:
MIDDLETOWN CT 3

T-MOBILE SITE NAME:
CTHA859A

SITE ADDRESS:
47 INWOOD ROAD
ROCKY HILL, CT 06067

SEAL:

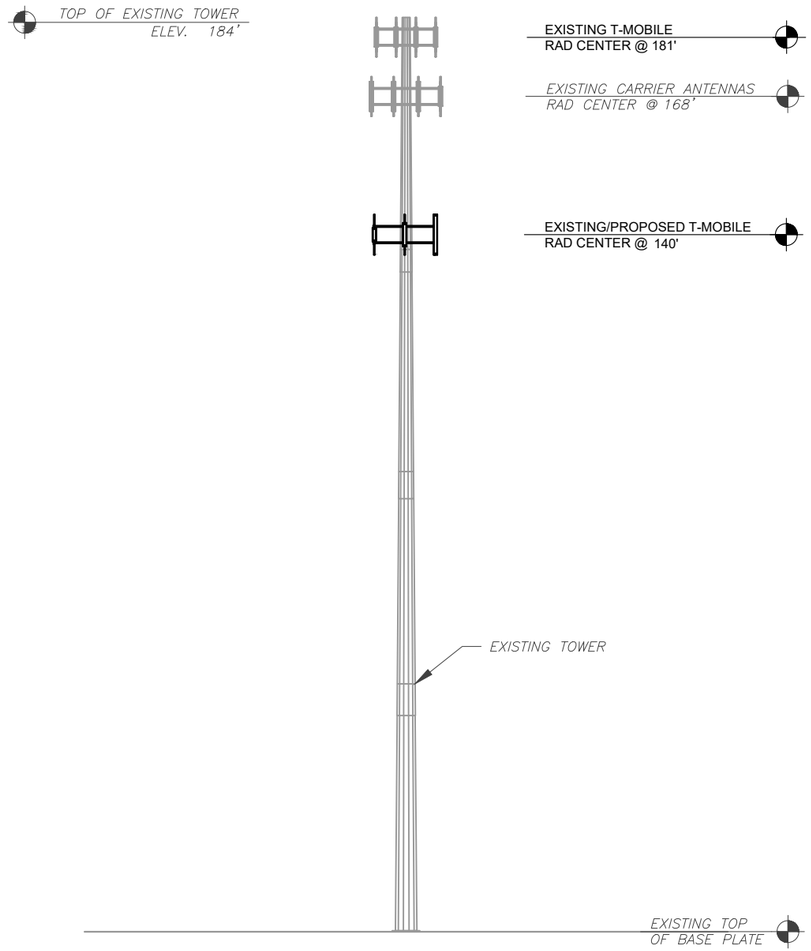
06/02/21

T-Mobile

DATE DRAWN:	06/02/21
ATC JOB NO:	13668065
CUSTOMER ID:	CTHA859A
CUSTOMER #:	CTHA859A

DETAILED GROUND PLAN

SHEET NUMBER:	REVISION:
C-102	0



1 TOWER ELEVATION
SCALE: N.T.S.

ATC IS ANALYZING THE ANTENNA MOUNT UNDER A SEPARATE PROJECT. CONSTRUCTION IS NOT TO PROCEED UNTIL THE MOUNT ANALYSIS IS COMPLETE AND INDICATES THE ADDITIONAL LOADING DOES NOT OVERSTRESS THE MOUNT.

TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT 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. WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
3. 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.
4. 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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T-MOBILE SITE NAME:
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SITE ADDRESS:
47 INWOOD ROAD
ROCKY HILL, CT 06067

SEAL:

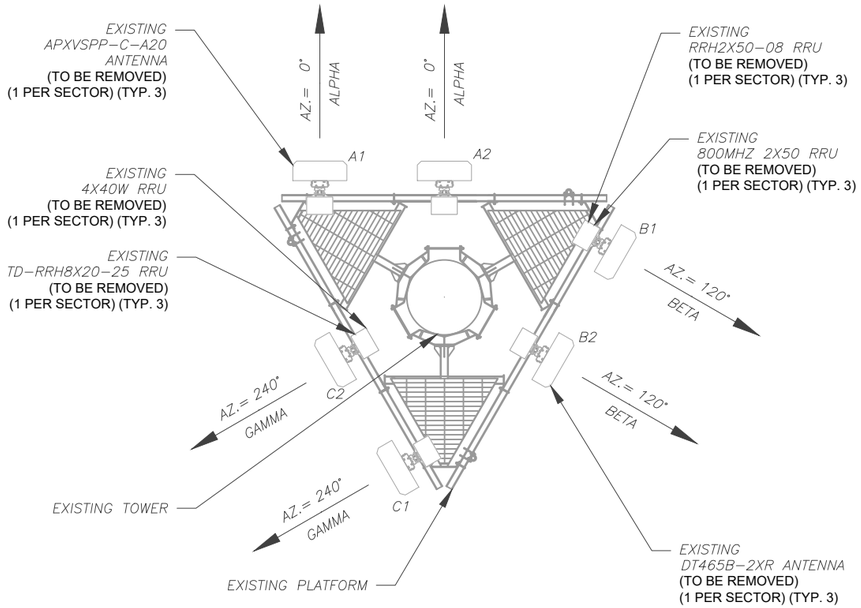
06/02/21

T-Mobile

DATE DRAWN:	06/02/21
ATC JOB NO:	13668065
CUSTOMER ID:	CTHA859A
CUSTOMER #:	CTHA859A

TOWER ELEVATION

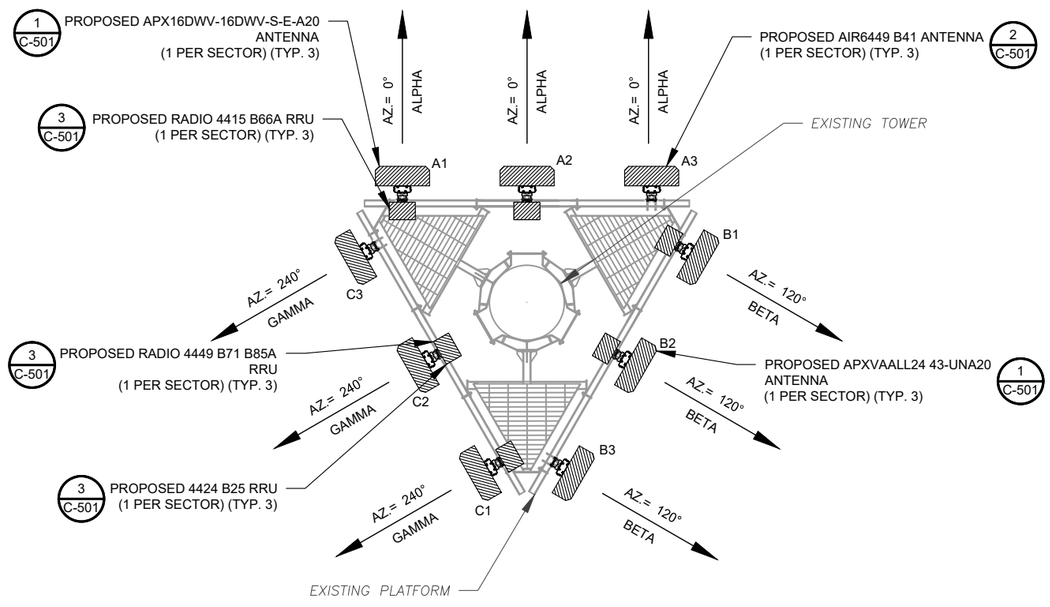
SHEET NUMBER:	REVISION:
C-201	0



1 EXISTING ANTENNA PLAN

SCALE: N.T.S.

ATC IS ANALYZING THE ANTENNA MOUNT UNDER A SEPARATE PROJECT. CONSTRUCTION IS NOT TO PROCEED UNTIL THE MOUNT ANALYSIS IS COMPLETE AND INDICATES THE ADDITIONAL LOADING DOES NOT OVERSTRESS THE MOUNT.



2 FINAL ANTENNA PLAN

SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	140'	0°	A1	APXVSPP-C-A20	–	–	RMV	800MHZ 2X50 RRH2X50-08	RMV
			A2	DT465B-2XR	–	–	RMV	4X40W TD-RRH8X20-25	RMV
BETA	140'	120°	B1	APXVSPP-C-A20	–	–	RMV	800MHZ 2X50 RRH2X50-08	RMV
			B2	DT465B-2XR	–	–	RMV	4X40W TD-RRH8X20-25	RMV
GAMMA	140'	240°	C1	APXVSPP-C-A20	–	–	RMV	800MHZ 2X50 RRH2X50-08	RMV
			C2	DT465B-2XR	–	–	RMV	4X40W TD-RRH8X20-25	RMV

NOTES

1. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.

STATUS ABBREVIATIONS

RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

CABLE LENGTHS FOR JUMPERS

JUNCTION BOX TO RRU: 15'
RRU TO ANTENNA: 10'

FINAL ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	140'	0°	A1	APX16DWV-16DWV-S-E-A20	L2100	0°/2°	ADD	RADIO 4415 B66A	ADD
			A2	APXVAALL24 43-U-NA20	L700, L600, N600	0°/2°	ADD	RADIO 4449 B71+B85 RADIO 4424 B25	ADD
			A3	AIR6449	L2500, N2500	0°/2°	ADD	-	-
BETA	140'	120°	B1	APX16DWV-16DWV-S-E-A20	L2100	0°/2°	ADD	RADIO 4415 B66A	ADD
			B2	APXVAALL24 43-U-NA20	L700, L600, N600	0°/2°	ADD	RADIO 4449 B71+B85 RADIO 4424 B25	ADD
			B3	AIR6449	L2500, N2500	0°/2°	ADD	-	-
GAMMA	140'	240°	C1	APX16DWV-16DWV-S-E-A20	L2100	0°/2°	ADD	RADIO 4415 B66A	ADD
			C2	APXVAALL24 43-U-NA20	L700, L600, N600	0°/2°	ADD	RADIO 4449 B71+B85 RADIO 4424 B25	ADD
			C3	AIR6449	L2500, N2500	0°/2°	ADD	-	-

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
–	–	–	(4) 6X12 (1-1/4")	RMV

3 EQUIPMENT SCHEDULES

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(3) 6/24 (1-5/8")	ADD

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06/02/21

T-Mobile

DATE DRAWN:	06/02/21
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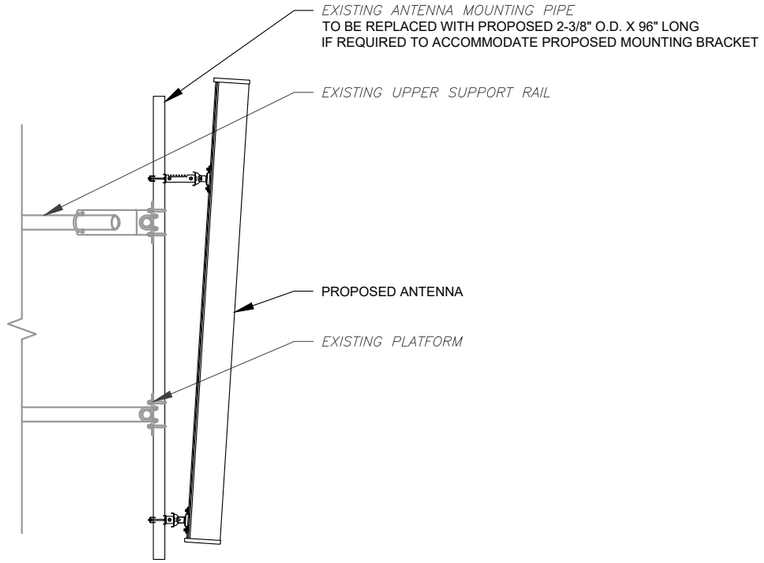
CUSTOMER ID:	CTHA859A
CUSTOMER #:	CTHA859A

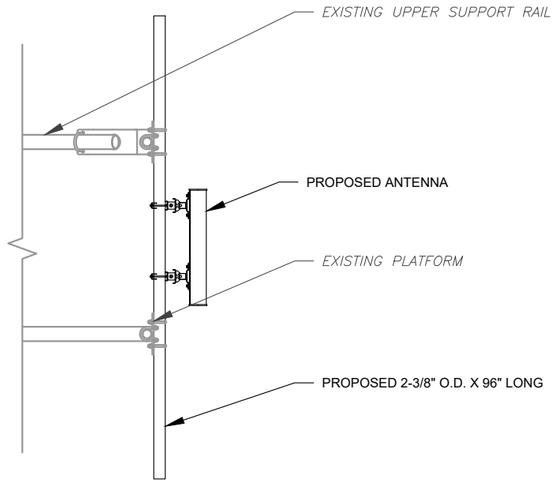
ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-401	0



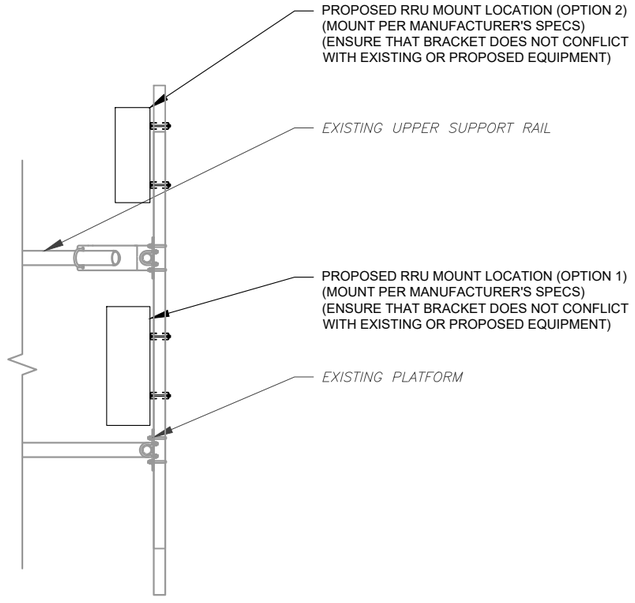
1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.



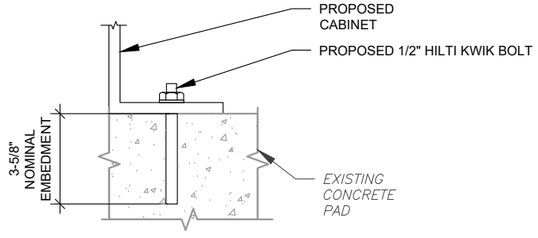
2 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.



3 PROPOSED RRU MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.



NOTE:

INSTALL HILTI KWIK BOLT ANCHORS STRICTLY PER INSTALLATION INSTRUCTIONS INCLUDED WITH PRODUCT OR FOUND ONLINE AT WWW.US.HILTI.COM. PROPER INSTALLATION IS CRITICAL FOR FULL PERFORMANCE.

4 CABINET ATTACHMENT DETAIL

SCALE: NOT TO SCALE

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SEAL:

T-Mobile

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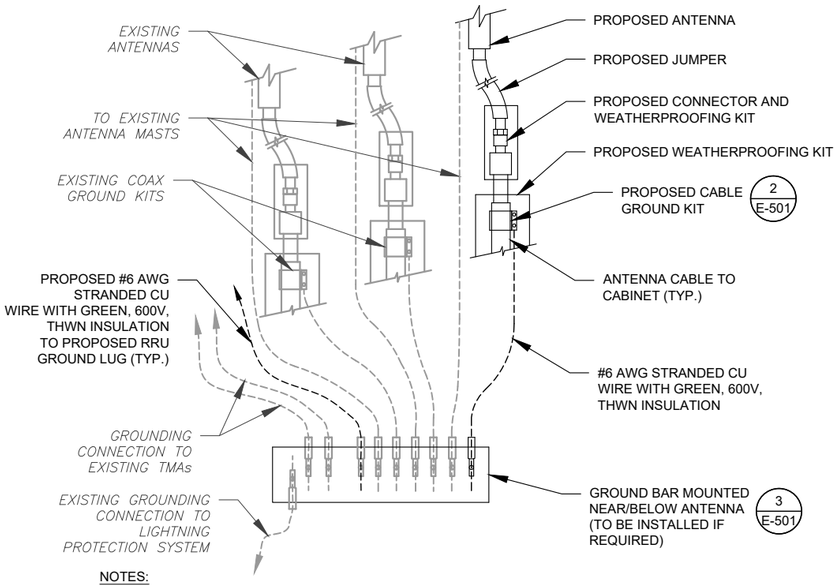
CUSTOMER ID:	CTHA859A
CUSTOMER #:	CTHA859A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-501	0

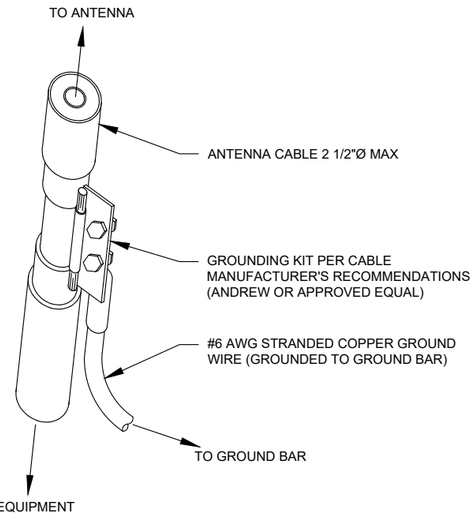


NOTES:

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

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

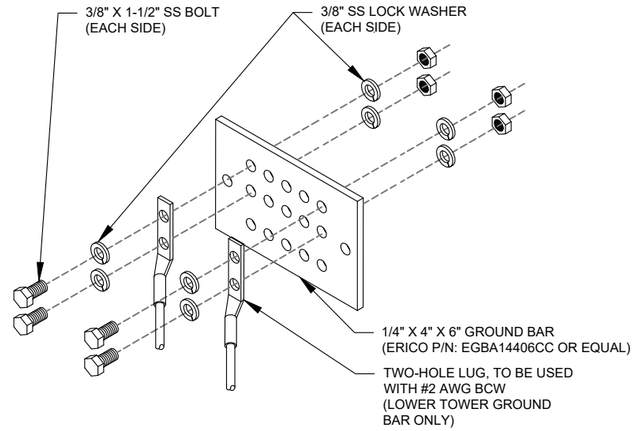


GROUND KIT NOTES:

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: N.T.S.

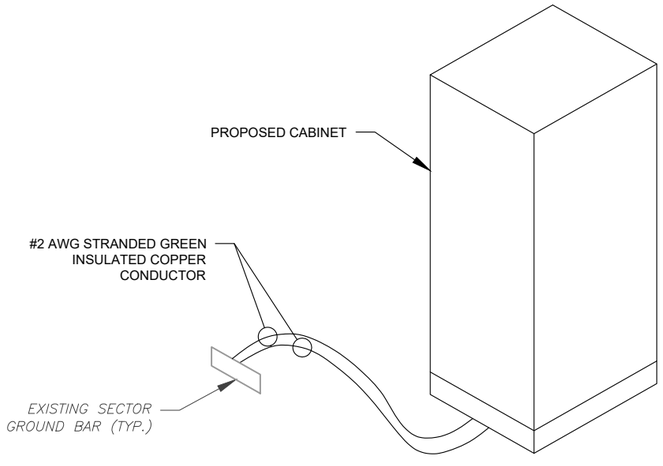


GROUND BAR NOTES:

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: N.T.S.



4 CABINET GROUNDING DETAIL

SCALE: N.T.S.

ELECTRICAL NOTES:

1. 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.
2. ATC HAS NOT 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. PROPOSED CABLE AND CONDUIT SHALL BE MINIMUM SIZE PER BELOW IN CHART.
3. FOR SPECIFIC CABINET / ANCILLARY EQUIPMENT WIRING REQUIREMENTS, THE T-MOBILE CONTRACTOR SHOULD REFERENCE DESIGN DOCUMENTS PROVIDED BY T-MOBILE FOR THIS CURRENT PROJECT CONFIGURATION, IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS & NEC STANDARDS & PRACTICES.

OCPD SIZE	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
80A/2P	2#3 AWG	#8 AWG	1-1/4"
100/2P	2#2 AWG	#8 AWG	1-1/4"
125A/2P	2#1 AWG	#8 AWG	1-1/2"
150A/2P	2#1/0 AWG	#8 AWG	1-1/2"

AMERICAN TOWER®

Kimley»Horn

COA: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

REV.	DESCRIPTION	BY	DATE
A	PRELIM	GC	04/28/21
0	ISSUED FOR CONSTRUCTION	WCE	06/02/21

ATC SITE NUMBER:
302537
ATC SITE NAME:
MIDDLETOWN CT 3
T-MOBILE SITE NAME:
CTHA859A
SITE ADDRESS:
47 INWOOD ROAD
ROCKY HILL, CT 06067

SEAL:

T-Mobile

DATE DRAWN:	06/02/21
ATC JOB NO:	13668065
CUSTOMER ID:	CTHA859A
CUSTOMER #:	CTHA859A

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

RAN Template:	A&L Template:
67D5A998C 6160 (GSM only)	67D5998C_1xAIR+1QP+1OP (GSM only)

CTHA859A_Sprint Retain_1_draft

Print Name: Standard
PORs: New Build_Sprint Keep

Section 5 - RAN Equipment

Existing RAN Equipment

----- This section is intentionally blank. -----

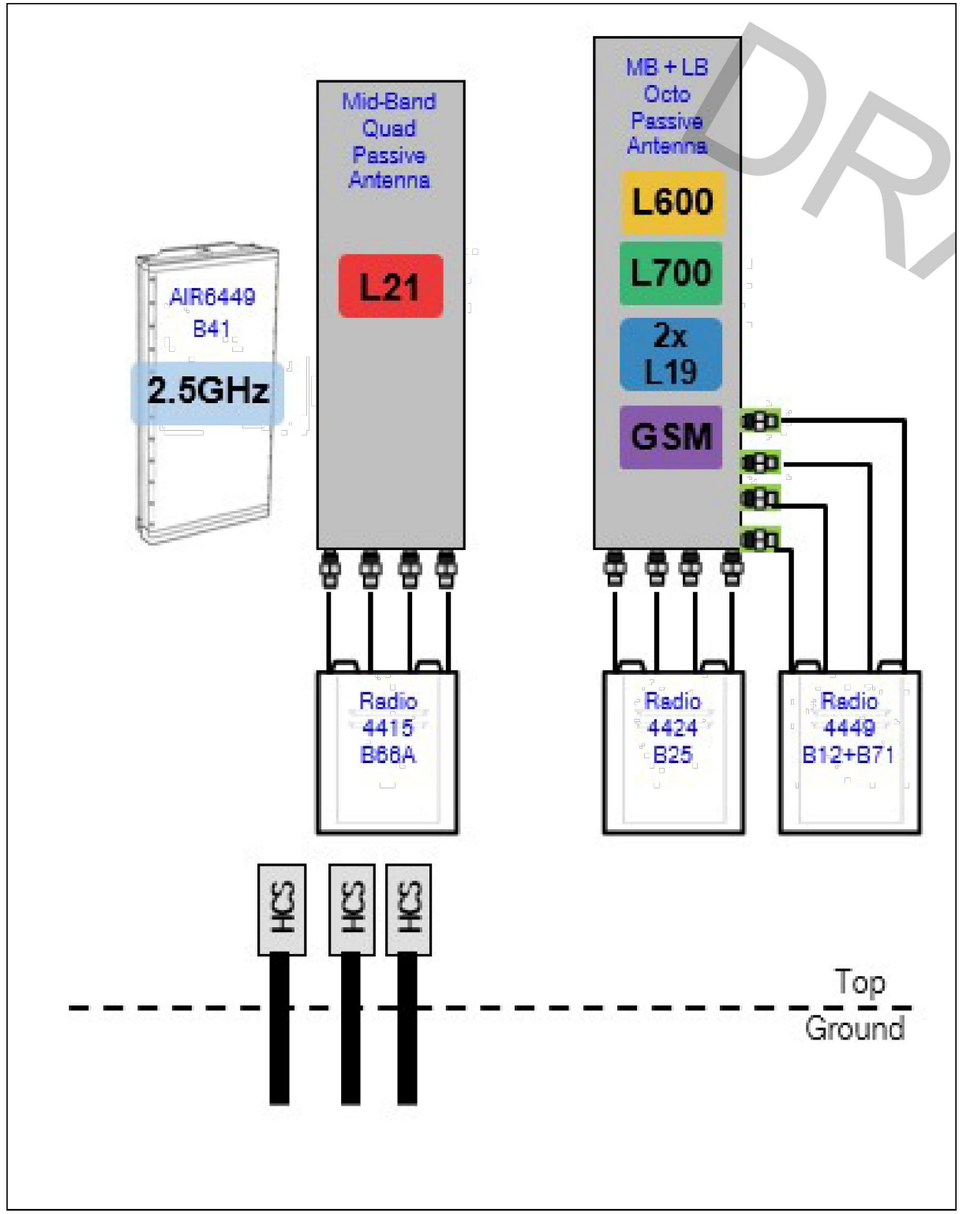
Proposed RAN Equipment

Template: 67D5A998C 6160 (GSM only)

Enclosure	1	2	3	4
Enclosure Type	Ancillary Equipment (Ericsson)	Enclosure 6160	B160	RBS 6601
Baseband		BB 6648 (L2500, N2500); BB 6648 (L2100, L1900); BB 6648 (L700, L600, N600)		DUG20 (G1900)
Hybrid Cable System	PSU 4813; Ericsson Hybrid Trunk 6/24 4AWG 100m **(x 3)**			
Transport System		CSR IXRe V2 (Gen2)		

RAN Scope of Work:

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE

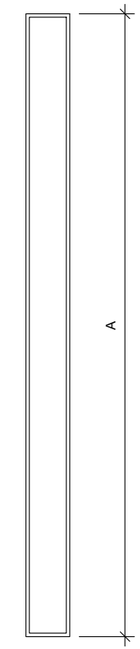


2 ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

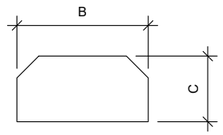
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	0



FRONT VIEW

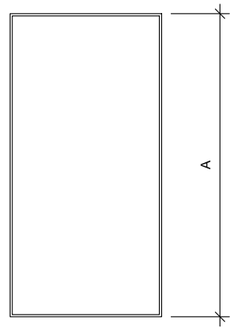


TOP VIEW

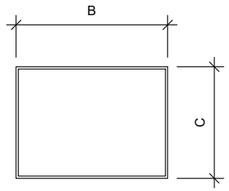
1 ANTENNA SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
APXVAALL24 43-U-NA20	95.9"	24.0"	8.5"	122.8
APX16DWV-16DWVS-E-A20	55.9"	13.3"	3.1"	40.7
AIR6449 B41	33.1"	20.6"	8.6"	104.0



FRONT VIEW



TOP VIEW

2 RRU SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

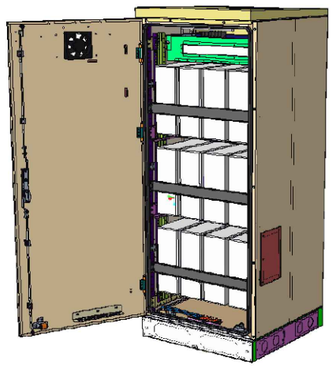
RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
RADIO 4449 B71 B85A	15.0"	13.2"	10.5"	75
RRUS 4415 B66	15.0"	13.2"	5.4"	46
4424 B25	17.1"	14.4"	11.3"	86

SUPPLEMENTAL

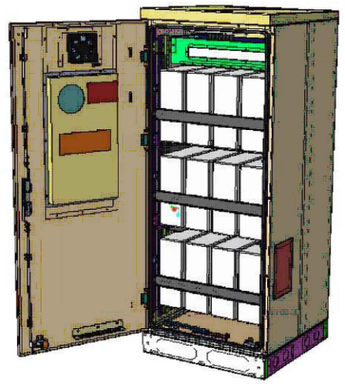
SHEET NUMBER: R-602

REVISION: 0

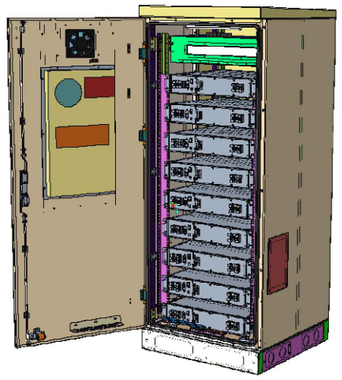
Enclosure B160



Enclosure B160
AirCon + VRLA



Enclosure B160
AirCon + Li-Ion



Enclosure B160
Convection Cooling
+ VRLA

Enclosure B160

Capacity
- VRLA 12V: 100Ah / 150Ah / 170Ah / 190Ah / 210Ah
- Li-Ion: 24U 19" / 23"
- Sodium-Nickel: 3x FIAMM

Electrical specification
- DC Output: -48VDC/200A
- Battery breakers: 2x 125/2p
- Alarms: Door open, Climate failure, MCB Connection

Mechanical specification
- Weight: 134kg
- Dimensions: 63 x 26 x 26 in. (incl. Base frame)
- Base frame height: 6 in.
- Material: Galvanized steel (180g/m^2)
- Color: Powder paint NCS 2002-B
- Door: Front access
- Locking type: Pad lock / cylinder

Environmental specification
- Ingress protection: VRLA/Sodium IP44
Li-Ion IP55
- Relative humidity: 15-100%

Climate system
- Air Conditioner
  - Fan type: DC
  - Cooling capacity: 500W @L35/L35
- Convection cooling
  - Emergency fan

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

SUPPLEMENTAL

SHEET NUMBER: R-603

REVISION: 0

Enclosure 6160 AC

The Enclosure 6160 is a multi-purpose site cabinet designed to support a multitude of equipment such as ERS Baseband, Transport, Li-Ion battery and 3PP vendor equipment. It also provides a highly capable power system and battery back-up - all in a streamlined design and minimized footprint to support cost efficient expansion of mobile broadband.

Being an all-in-one enclosure, the Enclosure 6160 is a very fitting choice for all types of sites where the capacity need is large or room for future expansion is needed. It is ideally used for modernizing existing sites or in greenfield scenarios to match both current and future needs.

With a robust design, IP65 compliance and a sealed Heat Exchanger (HEX) climate system the Enclosure 6160 ensures optimal environmental protection of the active equipment - enabling them for a long-lasting service. The complete system is also integrated and verified for the entire Ericsson Radio System and ensures best-in-class service.

The power system offers 31,5kW of power in total and provides 24kW of -48V DC power for both internal and external consumers.

The equipment space allows 19U of rack space ensuring well enough capacity for existing need and future expansion.

One of the main advantages of the Enclosure 6160 is its default integration with ENM - allowing for advanced remote monitoring and control such a fault management (alarms), inventory management and performance measurements. The cabinet also provides an open O&M interface for integration to 3PP O&M systems.

Preliminary technical specification for Enclosure 6160 AC

CAPACITY	
Rack space user equipment	19U (19" rack)
Hardware capabilities	Power and CPRI support for multi-standard remote radios (RRU or AIR) ERS Baseband and Transport units Li-Ion batteries 3PP equipment Additional power feed available as option
MECHANICAL SPECIFICATION	
Weight	145 kg (excluding active equipment) 320 lbs (excluding active equipment)
Dimension (H x W x D)	1600 x 650 x 650 mm (incl. Base frame) 63 x 26 x 26 in. (incl. Base frame)
Base frame height	150 mm 6 in.
Mounting position	Ground
Enclosure material	Aluminum
Color	Power paint NCS 2002-B
Door	Front access
Rack type	19" (IEC 60297-3-100)
Locking type	Pad lock or Cylinder
POWER SYSTEM	
Input voltage	3P+N+PE: 346/200-415/240 VAC 2P+N+PE: 208/120-220/127 VAC 1P+N+PE: 200-250 VAC
Input power	<33kW
Output load (-48VDC)	24kW
Total capacity (-48VDC)	31.5kW
AC SPD	Class 2/Type 2
DC SPD	Class 2/Type 2
PSU Slots	9x
Service outlet	Optional
Priority load	8x Circuit Breaker
LLVD 1	6x Circuit Breaker
LLVD 2	6x Circuit Breaker
CB ratings	3A / 5A / 10A / 15A / 20A / 25A / 30A / 40A / 50A / 60A / 80A / 100A
Battery Interface	2x Circuit Breaker
Battery Circuit Breaker rating	125A 2pol (200A)
PSU capacity	3500W

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

SUPPLEMENTAL

SHEET NUMBER: R-604

REVISION: 0

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

CLS ENGINEERING PLLC

Antenna Mount Analysis Report

ATC Site Name	:	**Middletown CT 3**
ATC Asset Number	:	**302537**
Engineering Number	:	**13668065_C8_01**
Mount Elevation	:	**140 ft**
Carrier	:	**Sprint Nextel**
Carrier Site Name	:	**CTHA859A**
Carrier Site Number	:	**CTHA859A**
Site Location	:	**47 Inwood Road** **Rocky Hill, CT 06067-3453** **41.63858611, -72.67928889**
County	:	**Hartford**
Date	:	**May 6, 2021**
Max Usage	:	**100%**
Result	:	**Pass**

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

Digitally signed by Tyler M. Barker PE
Date: 2021.05.06 16:42:45-04'00'

Tyler M. Barker
CLS Engineering PLLC
PE # 32402 Exp. 1/31/2021
COA # PEC.001833 Exp. 8/14/2022
05/06/2021

Prepared By:
Gunjan Donode
CLS Engineering PLLC

Reviewed By:
Tyler M. Barker, P.E.
CLS Engineering PLLC

Table of Contents

Introduction

The proposed equipment is to be mounted to the existing Platform w/ Support Rails. 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.

Supporting Documents

Structural Data	Site Photos dated August 29, 2018 Spec Sheet for Site Pro 1 RMQP-496-HK Platform Mount
Previous Analyses	Structural Analysis by ATC, Eng. #13668065_C3_02, dated April 27, 2021
Loading Data	ATC Application, Project #13668065 Sprint RFDS ID CTHA859A, Version 1.00, dated April 06, 2021

Analysis

Codes	2018 Connecticut State Building Code / TIA-222-H
Basic Wind Speed	118 mph, V_{ult} (3-Second Gust)
Basic Wind Speed w/ Ice	50 mph (3-Second Gust) w/ 1.5" Radial Ice (Escalating)
Exposure Category	B
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Risk Category	II
Maintenance Live Load	L_M: 500 lb
Spectral Response	S_s: 0.20; S_1: 0.06; Site Class: D

Conclusion

Based on the analysis, the antenna mount meets the requirements per the applicable codes listed above. The mount 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.

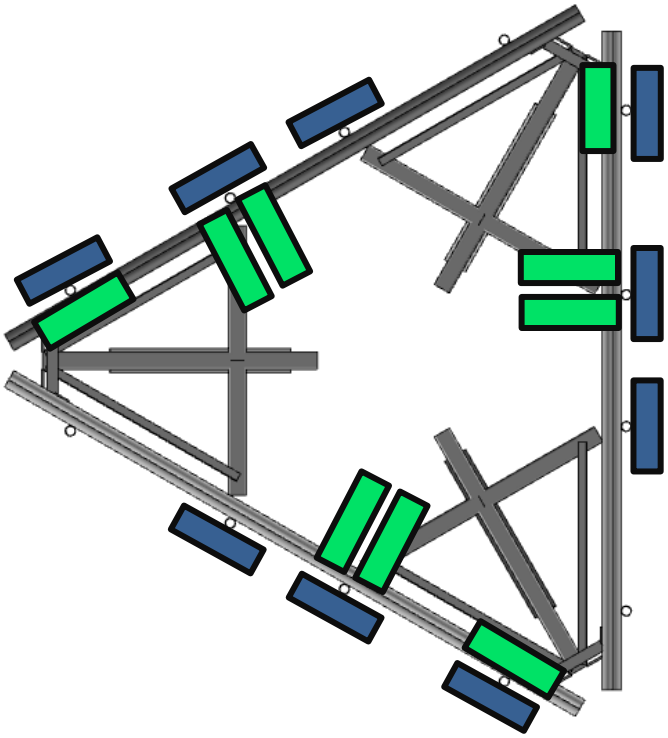
Antenna Loading

Elevation (ft)		Antennas	
Mount	Rad.	#	Name
140.0	140.0	3	RFS Celwave APXVAALL24_43-U-NA20
		3	RFS Celwave APX16DWV-16DWVS-E-A20
		3	Ericsson AIR6449 B41
		3	Ericsson 4424 B25
		3	Ericsson RADIO 4449 B71/B85A
		3	Ericsson RRUS 4415 B66

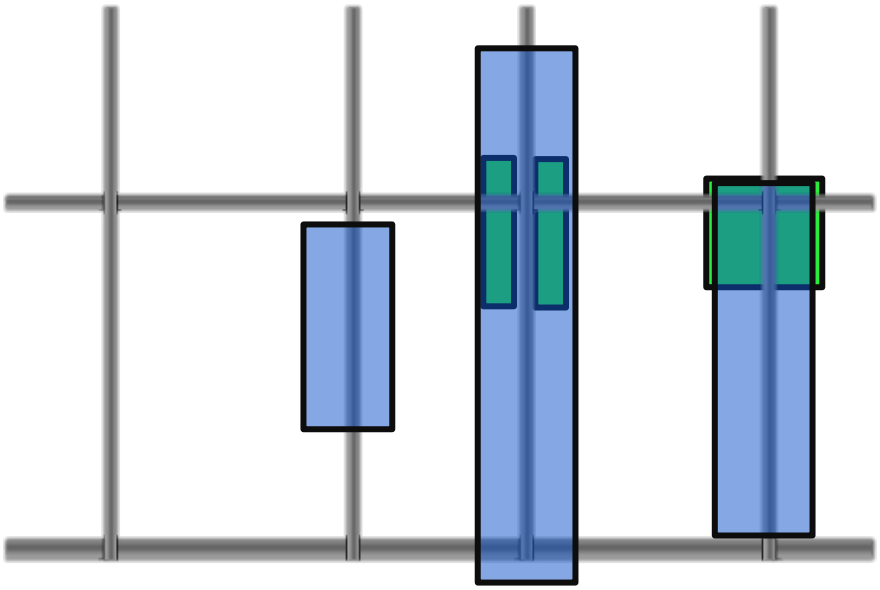
Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Corner Plates	100%	Pass
Mount Pipes	49%	Pass
Support Rail	46%	Pass
Bracing Members	20%	Pass
Stand-Off Horizontals	17%	Pass
Kicker Kit	14%	Pass
Platform Base	13%	Pass

Equipment Layout Plan View



Equipment Layout Front Elevation View



Standard 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.

Wind & Ice Loading

Nominal Mount Elevation (AGL), z_{mount}	139 ft	**K_a**	0.90
Nominal Rad Elevation (AGL), z_{rad}	140 ft	**K_d**	0.95
Elevation AMSL (ft)	140 ft	**K_e**	0.99
TIA Standard	H	**K_z**	1.08
Basic Wind Speed, V_{ult} (bare)	118 mph	**K_{zt}**	1.00
Basic Wind Speed, V (ice)	50 mph	**K_s**	1.00
Design Ice Thickness, t_i	1 1/2 in	**t_{iz}**	1.73 in
Exposure Category	B	**G_h**	1.00
Risk Category	II	**q_z (bare)**	36.5 psf
Seismic Response Coeff., C_s	0.11	**q_z (ice)**	6.6 psf

Live Loading

At Mount Pipes, L_M	500 lb
Joint Labels Considered	1_M1
	1_M2
	1_M3
	1_M4

Member Distributed Loading

Section Set Label	Shape Label	F_A (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Offset End Plate	0.5 x 6 Plate	32.89	5.60	12.42
Offset Side Plate	0.38 X 6 Plate	32.89	5.59	12.25
Platform Horzontal Pipe	PIPE_3.0	11.51	4.11	11.07
Offset Tube	HSS4X4X4	21.93	2.34	14.44
Grating Angle	L2x2x3	10.96	2.19	8.80
PRK-1245	L2.5x2.5x3	13.70	2.23	10.15
HRKPlate	0.38 X 6 Plate	32.89	5.59	12.25
HRKAngle	L2.5x2.5x4	13.70	2.23	10.15
HRK12-U	PIPE_2.0	7.81	3.45	8.69
MOUNT_PIPE_2.0	PIPE_2.0	7.81	3.45	8.69

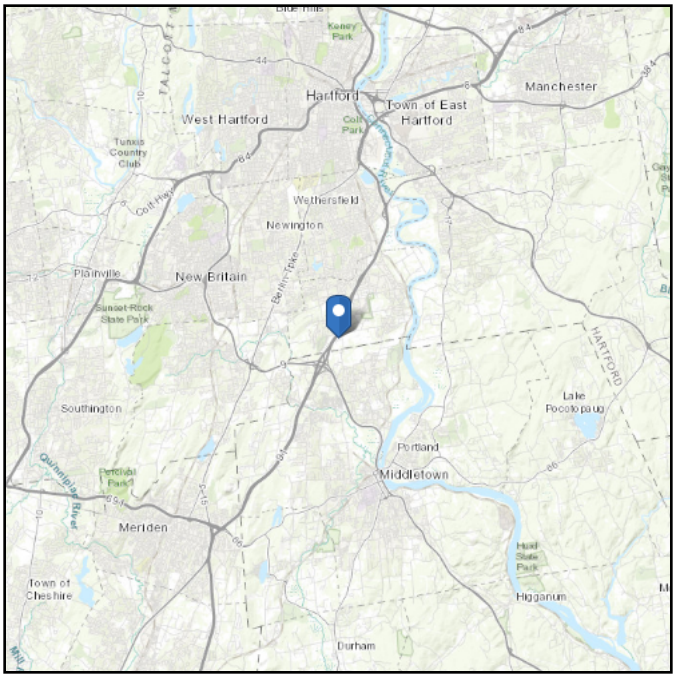
Appurtenances

Appurtenance Model	Status	Azimuth Offset (°, ↻)	Rad Elev. Override (ft)	Swap Width & Depth	Area Factor		Qty. per Azimuth			Total Qty. Override	0° Joints		120° Joints		240° Joints		Height (in)	Width (in)	Depth (in)	Weight (Bare) (lb)	Shape	Weight of Ice (lb)	EPA_A (Bare) (ft²)		EPA_A (Ice) (ft²)		F_A (Bare) (lb)		F_A (Ice) (lb)	
					Front	Side	0°	120°	240°		1	2	1	2	1	2							N	T	N	T	N	T	N	T
APXVAALL24_43-U-NA20				☐			1	1	1	3	1_A2T	1_A2B	2_A2T	2_A2B	3_A2T	3_A2B	95.9	24	8.5	149.9	Generic	387.58	14.67	5.32	17.30	7.64	483.96	175.51	102.50	45.27
APX16DWV-16DWVS-E-A20				☐			1	1	1	3	1_A1T	1_A1B	2_A1T	2_A1B	3_A1T	3_A1B	55.9	13.3	3.15	40.7	Generic	116.26	6.26	1.50	8.31	3.23	206.52	49.48	49.19	19.15
AIR6449 B41				☐			1	1	1	3	1_A3T	1_A3B	2_A3T	2_A3B	3_A3T	3_A3B	33.1	20.6	8.6	104	Flat	135.59	5.68	2.49	7.33	3.75	187.45	82.17	43.44	22.21
RADIO 4449 B71/B85A				☑	0.5	0.5	1	1	1	3	1_R2TT		2_R2TT		3_R2TT		14.96	13.19	10.51	74.95	Flat	59.86	0.66	0.82	1.07	1.28	21.61	27.12	6.36	7.57
RRUS 4415 B66				☐	0.5		1	1	1	3	1_R1TN		2_R1TN		3_R1TN		14.96	13.19	5.39	44	Flat	53.62	0.82	0.68	1.28	1.36	27.12	22.39	7.57	8.06
4424 B25				☑	0.5	0.5	1	1	1	3	1_R2TT		2_R2TT		3_R2TT		17.1	14.4	11.3	86	Flat	85.67	0.81	1.03	1.27	1.53	26.56	33.85	7.50	9.07

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Elevation:**	139.95 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.638586
Soil Class:	D - Default (see Section 11.4.3)	**Longitude:**	-72.679289



Wind

Results:

Wind Speed:	118 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Thu May 06 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

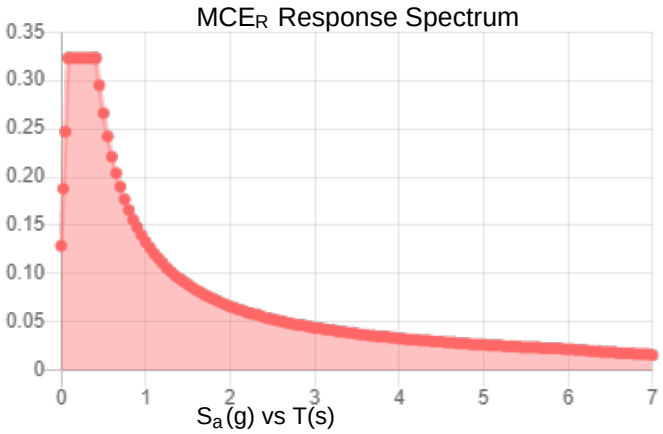
Seismic

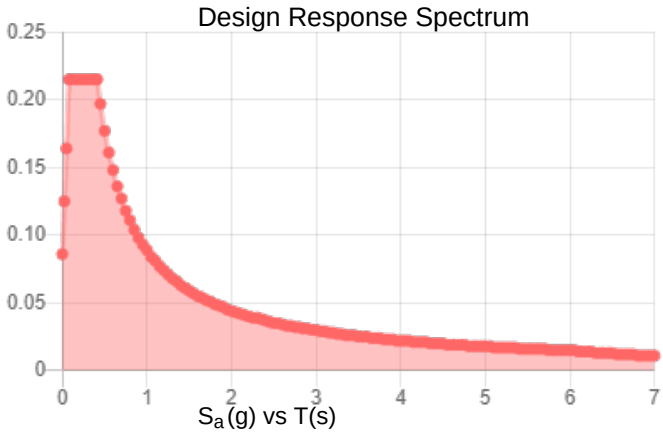
Site Soil Class: D - Default (see Section 11.4.3)

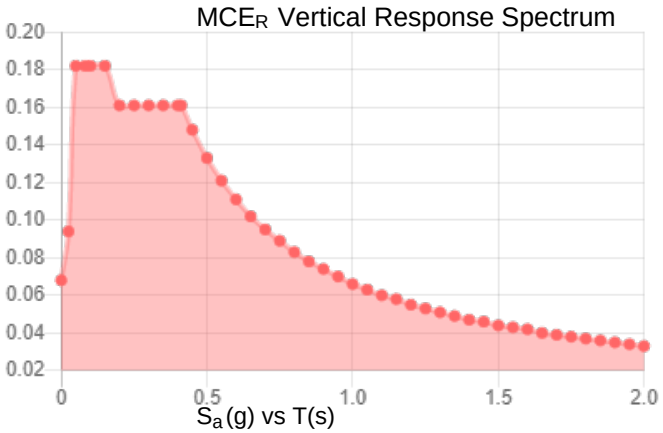
Results:

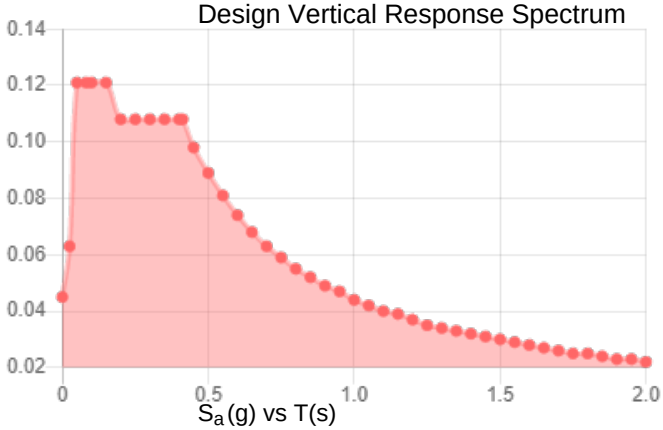
S_S :	0.202	S_{D1} :	0.089
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.111
F_v :	2.4	PGA_M :	0.175
S_{MS} :	0.323	F_{PGA} :	1.578
S_{M1} :	0.133	I_e :	1
S_{DS} :	0.215	C_v :	0.703

Seismic Design Category B









Data Accessed: Thu May 06 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

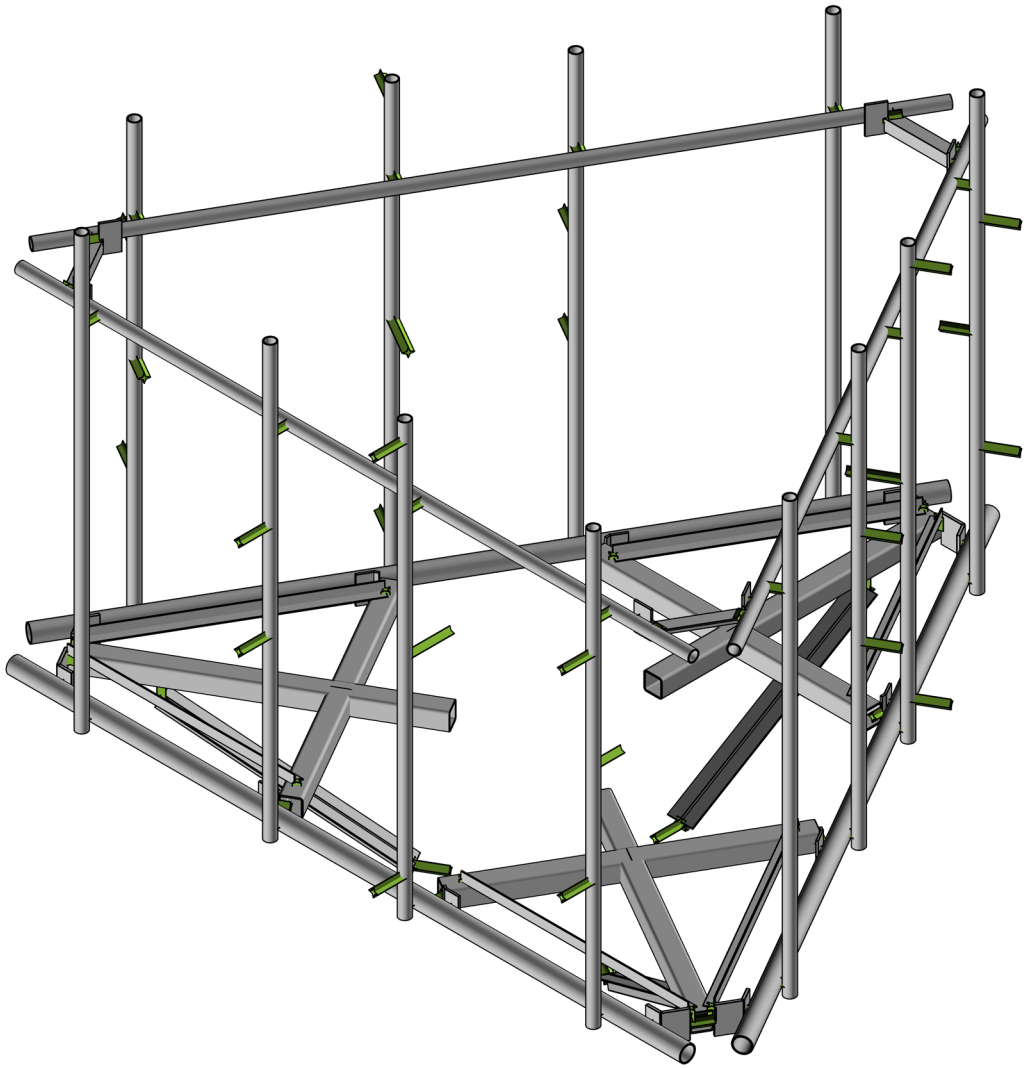
Ice

Results:

Ice Thickness:	1.50 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Thu May 06 2021

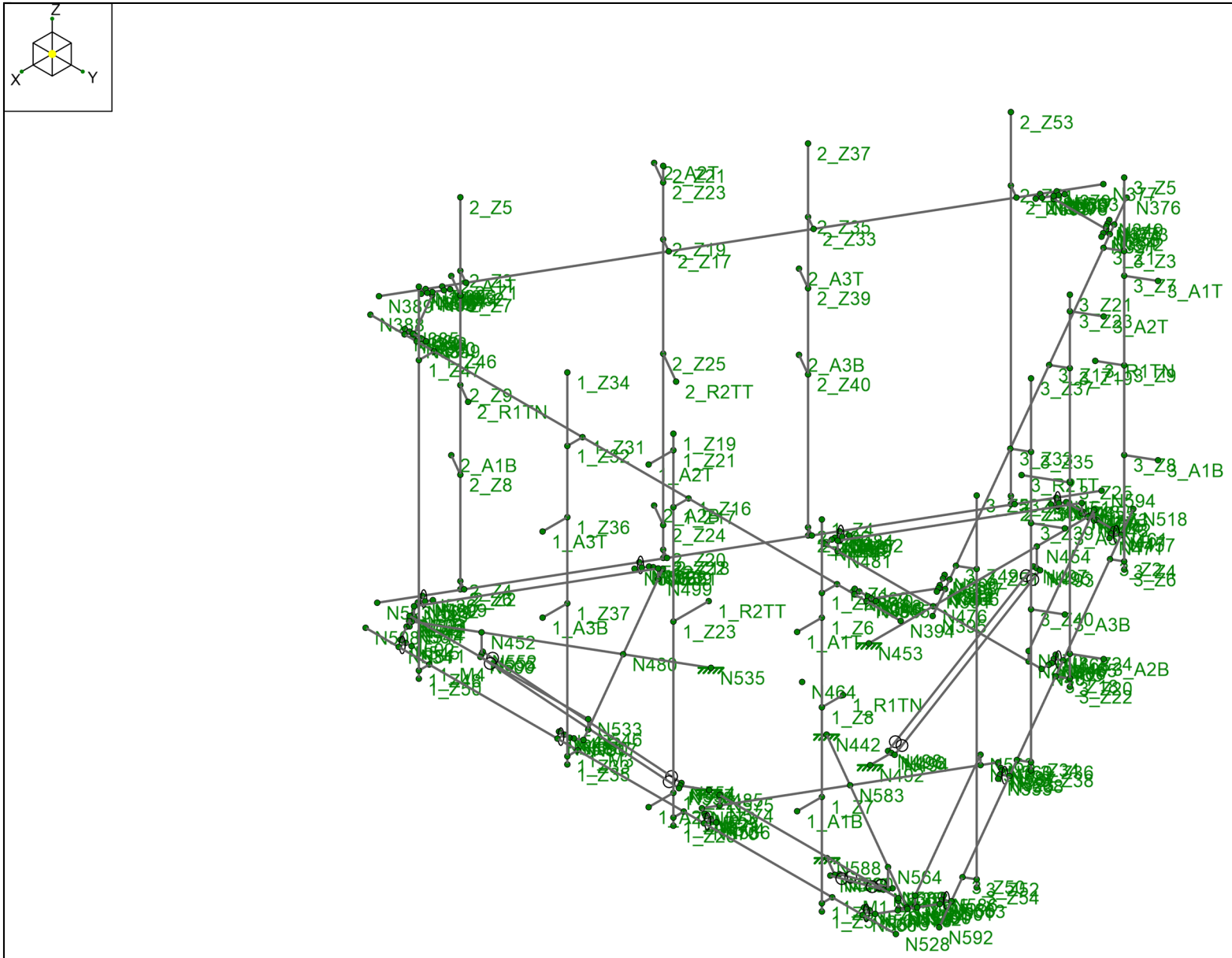
Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.



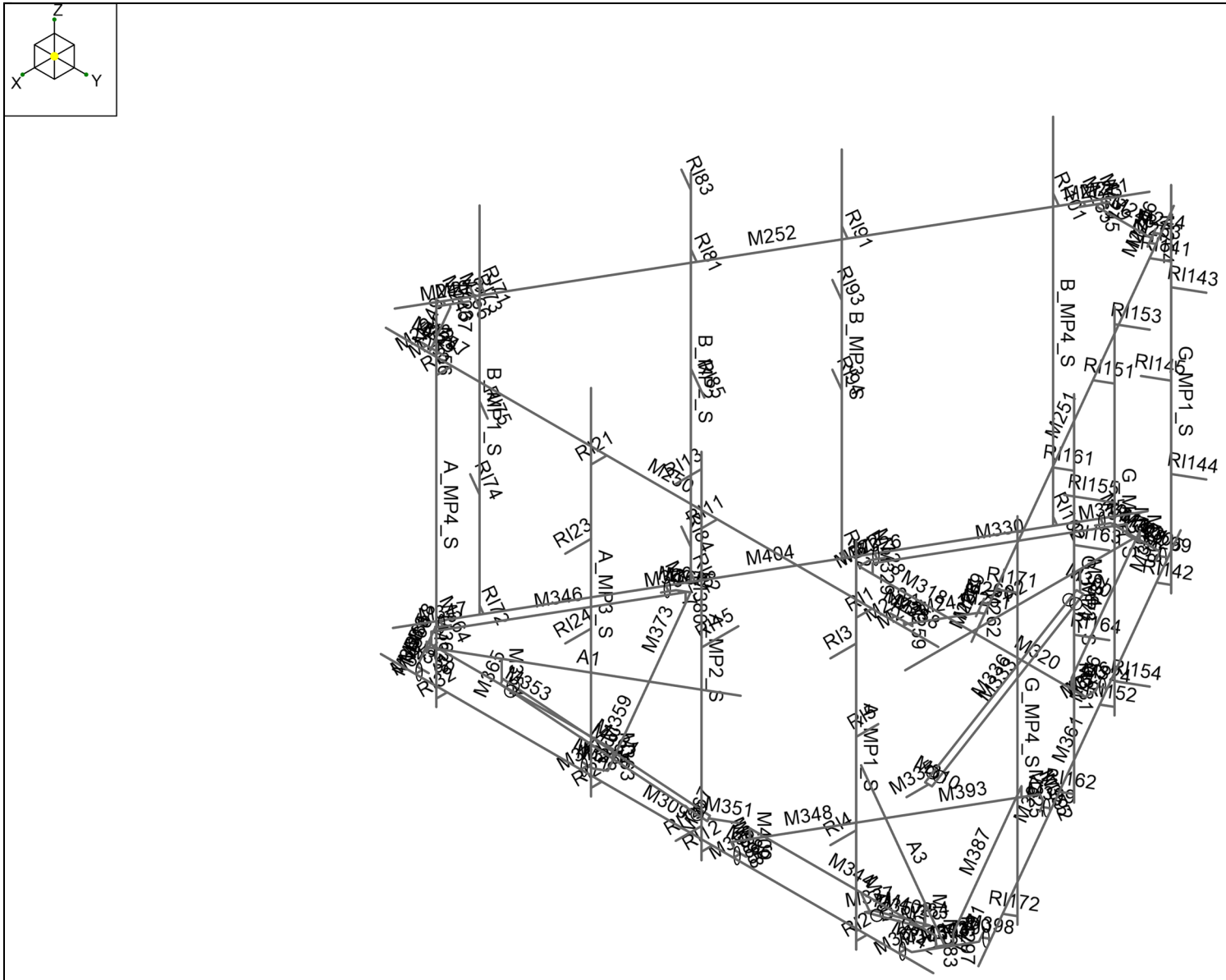
Envelope Only Solution

CLS	41124-13668065_C8_01-Middletown CT 3	SK-1
GD		May 06, 2021
41124-13668065_C8_01-01-MA	Rendered	41124-13668065_C8_01-01-MA.r3d



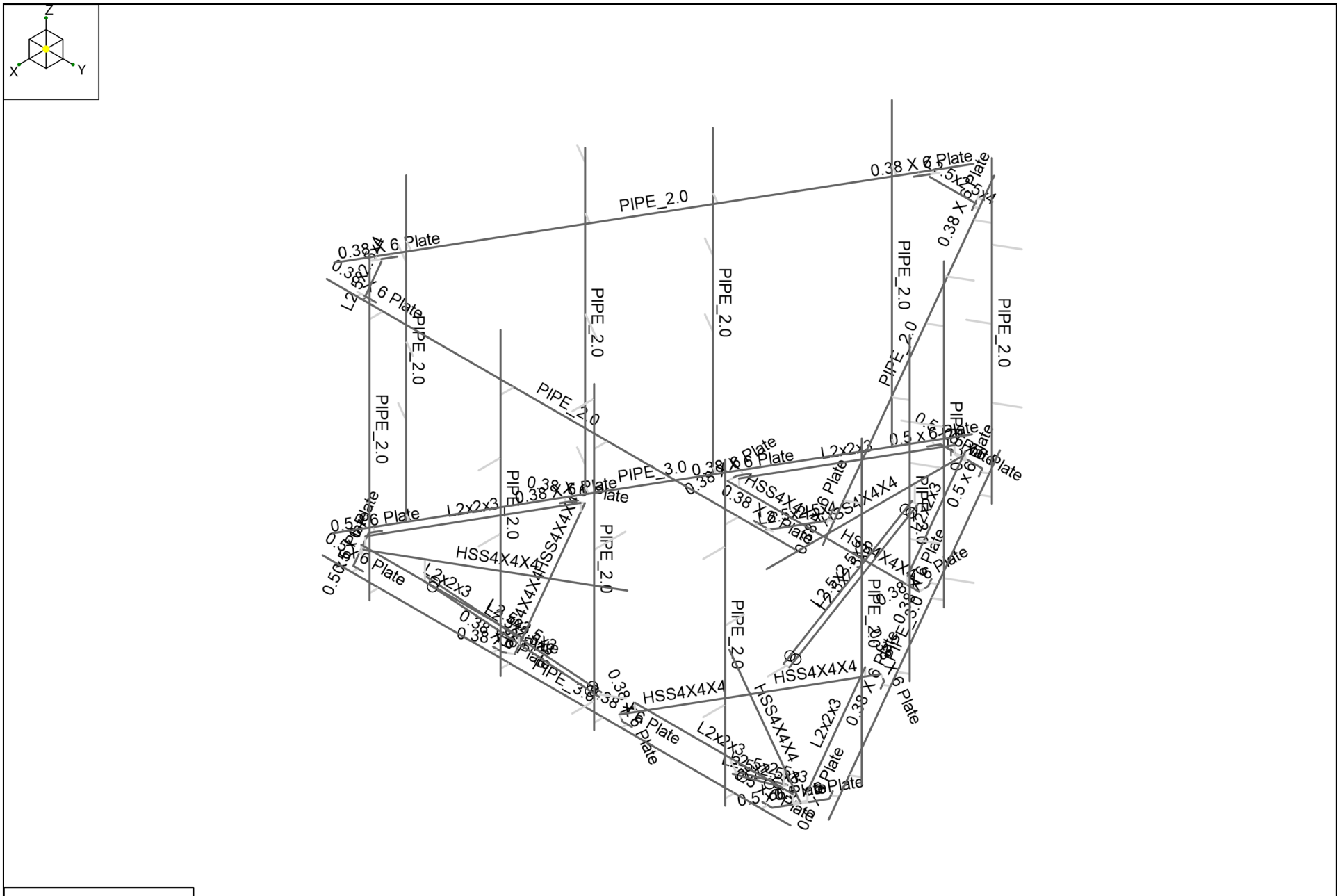
Envelope Only Solution

CLS	41124-13668065_C8_01-Middletown CT 3	SK-2
GD		May 06, 2021
41124-13668065_C8_01-01-MA	Joint Labels	41124-13668065_C8_01-01-MA.r3d



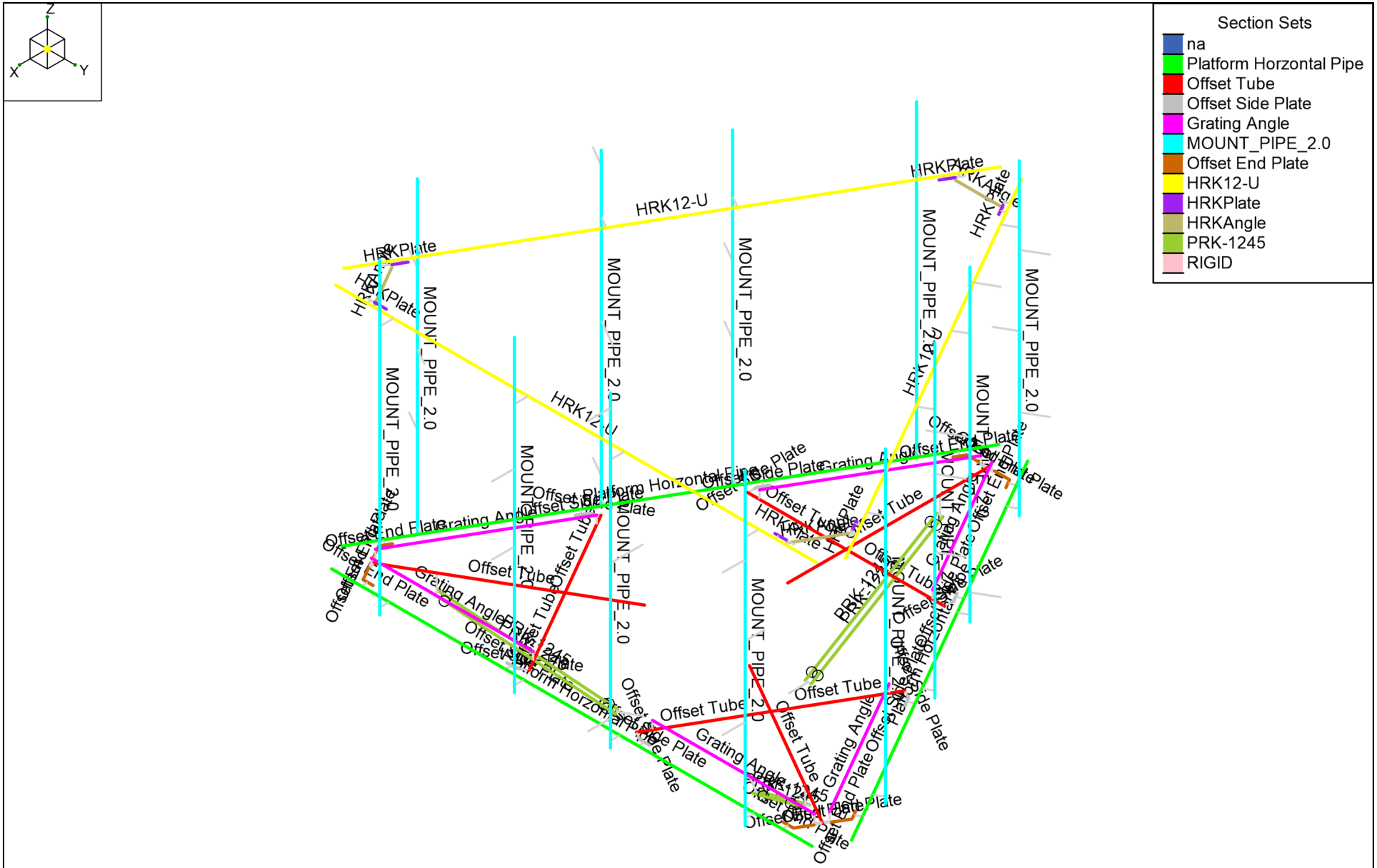
Envelope Only Solution

CLS	41124-13668065_C8_01-Middletown CT 3	SK-3
GD		May 06, 2021
41124-13668065_C8_01-01-MA	Member Labels	41124-13668065_C8_01-01-MA.r3d



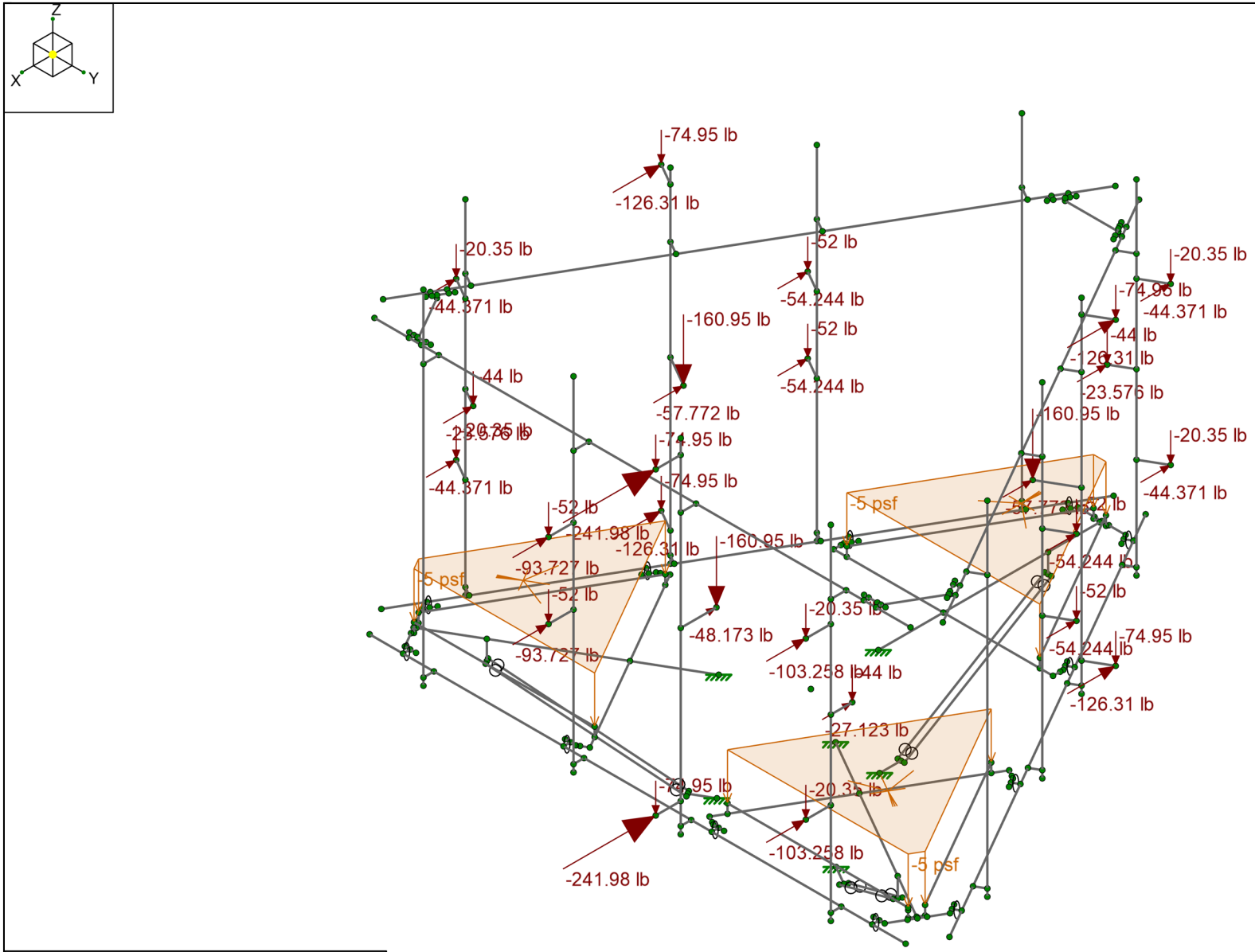
Envelope Only Solution

CLS	41124-13668065_C8_01-Middletown CT 3	SK-4
GD		May 06, 2021
41124-13668065_C8_01-01-MA	Member Shapes	41124-13668065_C8_01-01-MA.r3d



Envelope Only Solution

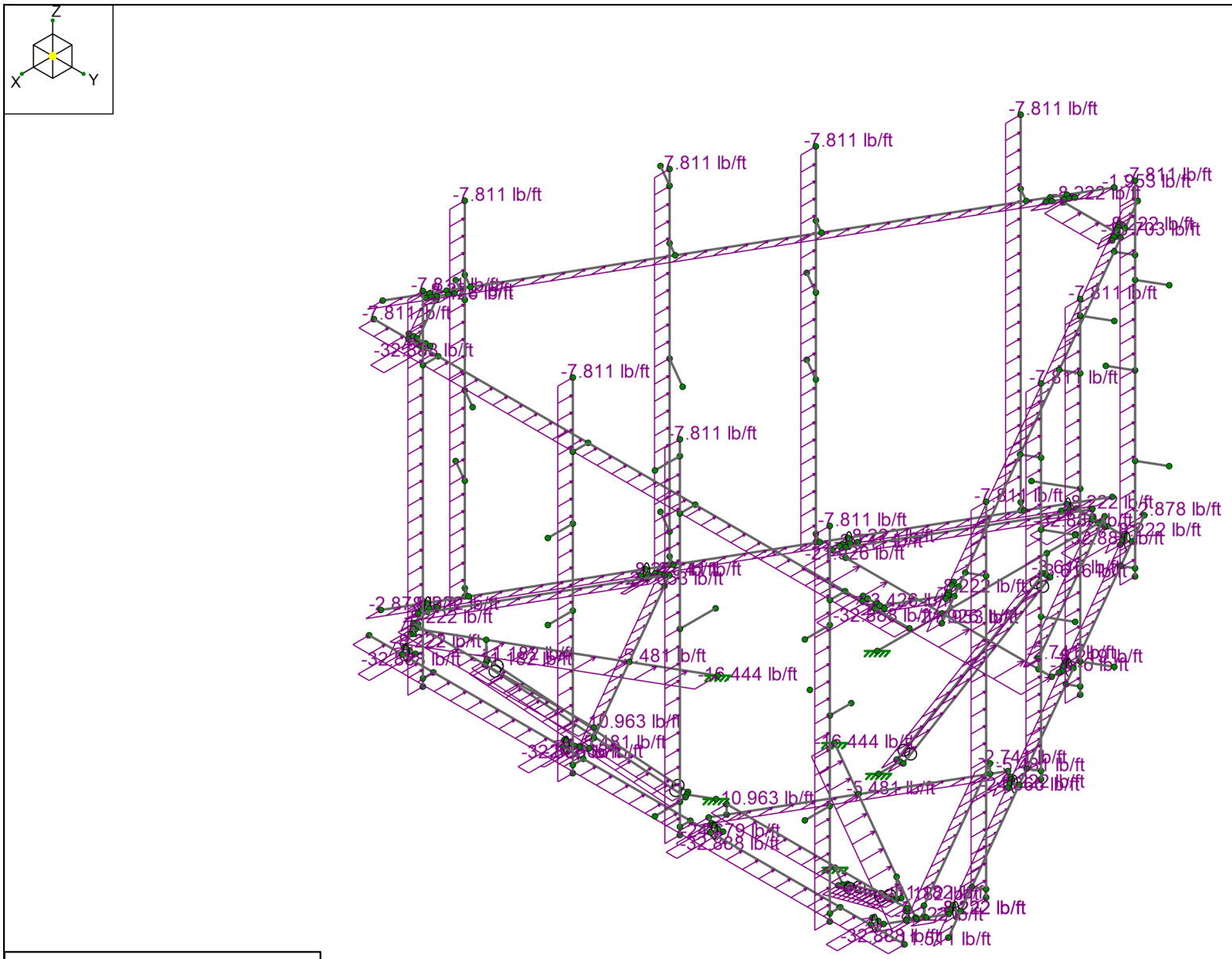
CLS	41124-13668065_C8_01-Middletown CT 3	SK-5
GD		May 06, 2021
41124-13668065_C8_01-01-MA	Section Sets	41124-13668065_C8_01-01-MA.r3d



Loads: LC 1, DISPLAY (1.0D + 1.0W_0)

Envelope Only Solution

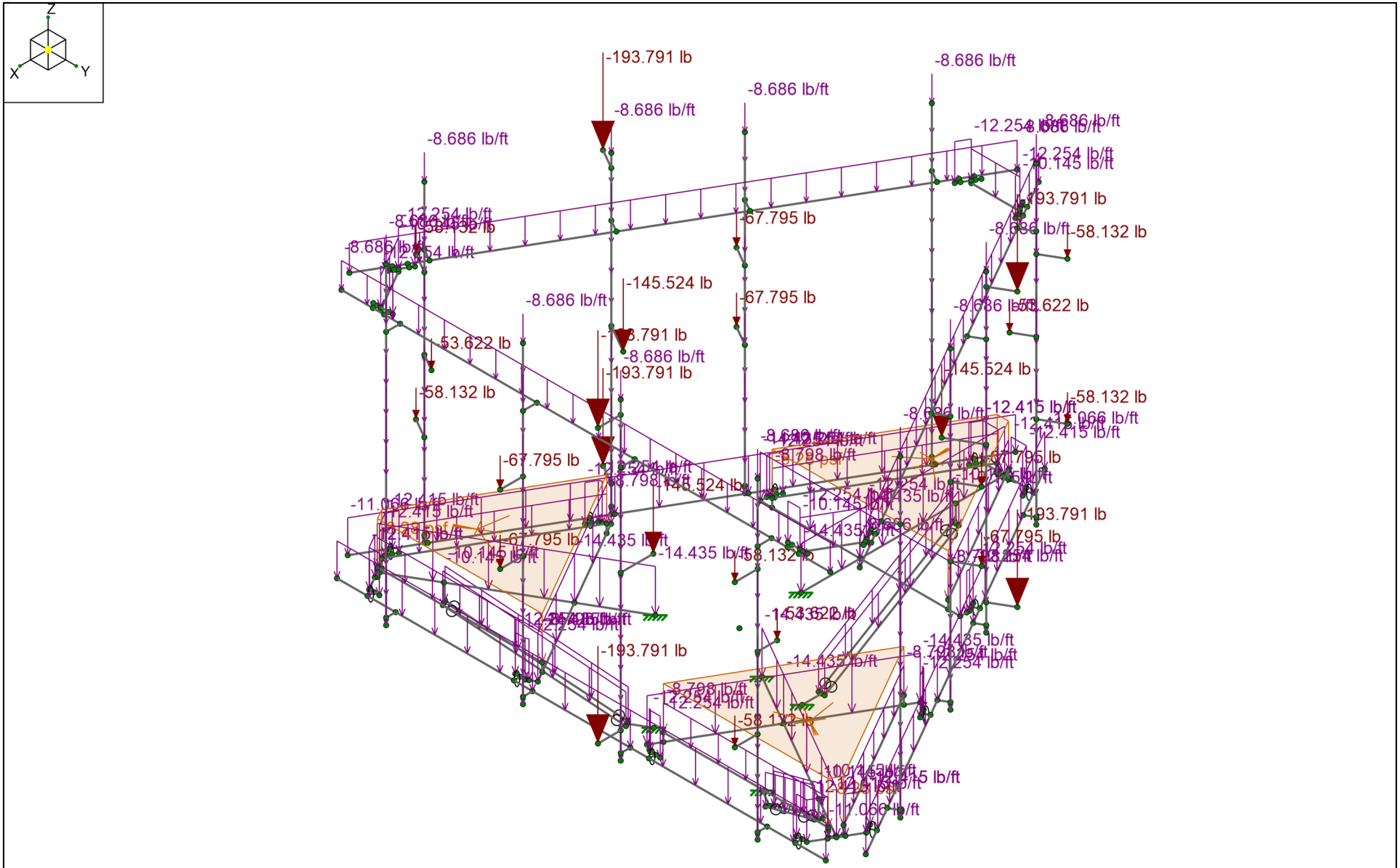
CLS	41124-13668065_C8_01-Middletown CT 3	SK-6
GD		May 06, 2021
41124-13668065_C8_01-01-MA	Joint Loads - Dead and Normal Wind	41124-13668065_C8_01-01-MA.r3d



Loads: BLC 5, Structure Wind 0

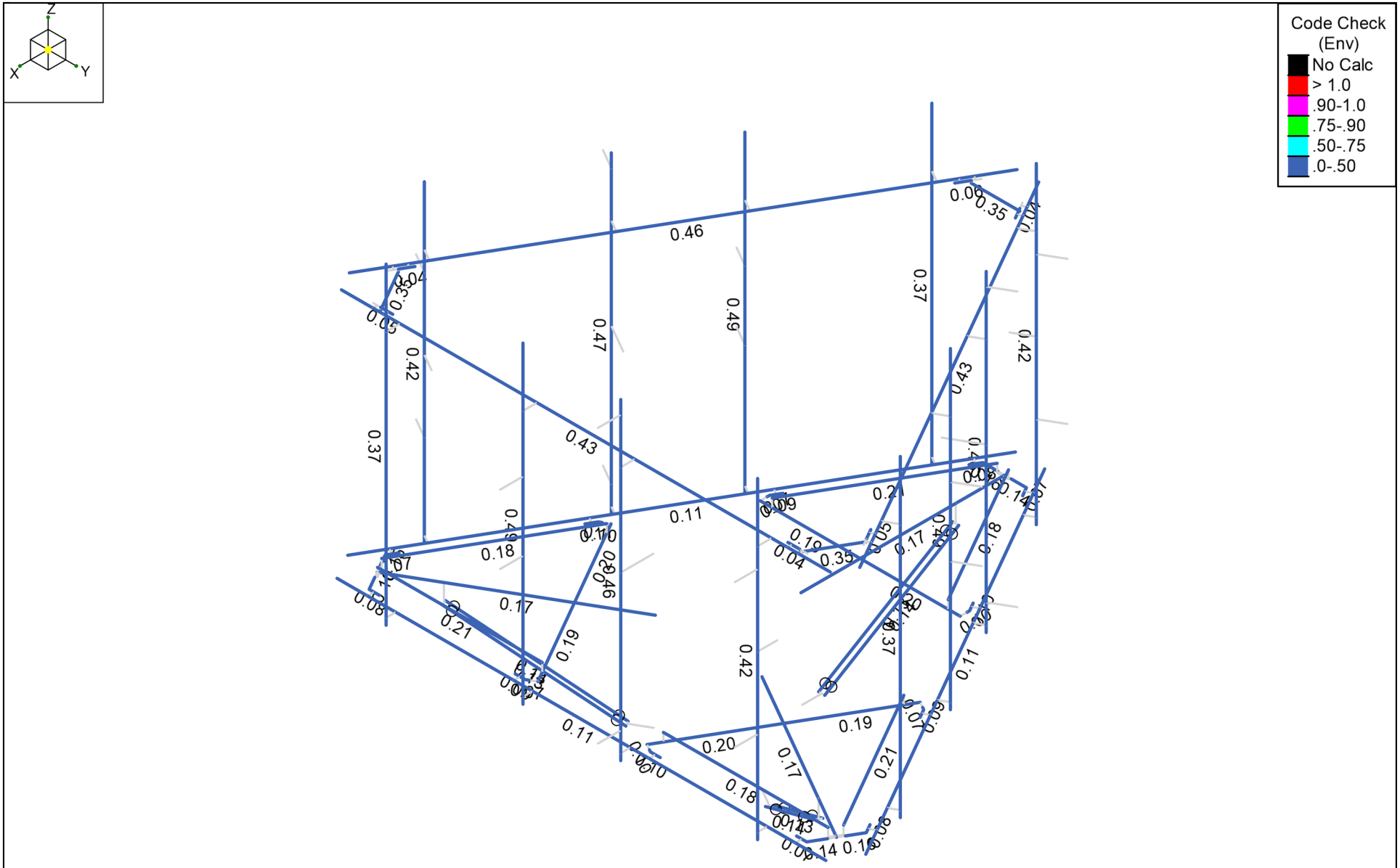
Envelope Only Solution

CLS	41124-13668065_C8_01-Middletown CT 3	SK-7
GD		May 06, 2021
41124-13668065_C8_01-01-MA	Distribute Load - Normal Wind	41124-13668065_C8_01-01-MA.r3d



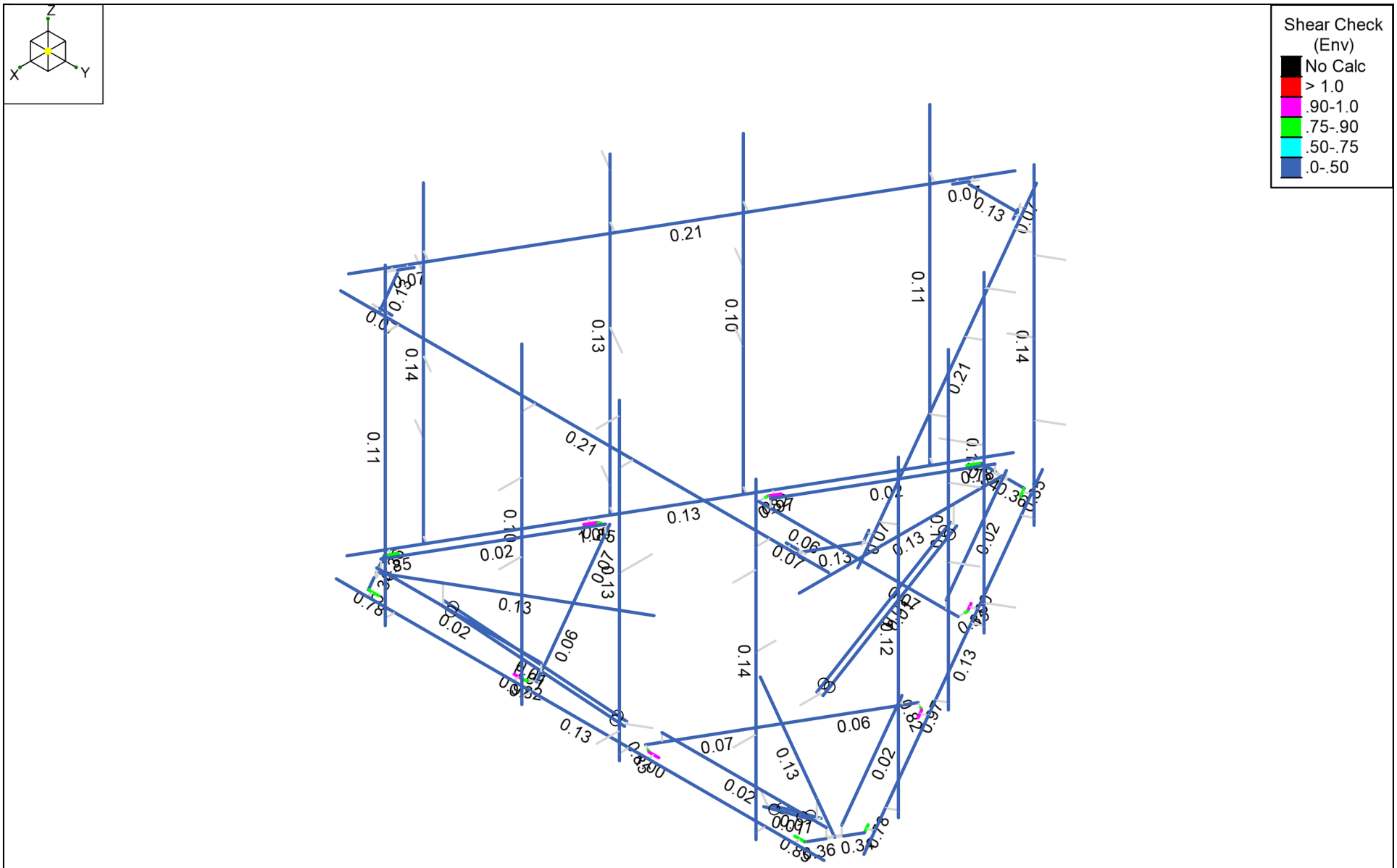
Loads: BLC 2, Ice Dead
Envelope Only Solution

CLS	41124-13668065_C8_01-Middletown CT 3	SK-8
GD		May 06, 2021
41124-13668065_C8_01-01-MA	Ice Dead Loads	41124-13668065_C8_01-01-MA.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

CLS	41124-13668065_C8_01-Middletown CT 3	SK-9
GD		May 06, 2021
41124-13668065_C8_01-01-MA	Envelope Member Unity Check Results - Bending	41124-13668065_C8_01-01-MA.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

CLS	41124-13668065_C8_01-Middletown CT 3	SK-10
GD		May 06, 2021
41124-13668065_C8_01-01-MA	Envelope Member Unity Check Results - Shear	41124-13668065_C8_01-01-MA.r3d

Basic Load Cases

	BLC Description	Category	Z Gravity	Nodal	Distributed	Area(Member)
1	Dead	DL	-1	27		3
2	Ice Dead	RL		27	72	3
3	BLC 1 Transient Area Loads	None			30	
4	BLC 2 Transient Area Loads	None			30	
5	Structure Wind 0°	None			70	
6	Structure Wind 30°	None			114	
7	Structure Wind 45°	None			144	
8	Structure Wind 60°	None			140	
9	Structure Wind 90°	None			57	
10	Structure Wind 120°	None			140	
11	Structure Wind 135°	None			144	
12	Structure Wind 150°	None			114	
13	Structure Wind 180°	None			70	
14	Structure Wind 210°	None			114	
15	Structure Wind 225°	None			144	
16	Structure Wind 240°	None			140	
17	Structure Wind 270°	None			57	
18	Structure Wind 300°	None			140	
19	Structure Wind 315°	None			144	
20	Structure Wind 330°	None			114	
21	Structure Wind w/ Ice 0°	None			70	
22	Structure Wind w/ Ice 30°	None			118	
23	Structure Wind w/ Ice 45°	None			144	
24	Structure Wind w/ Ice 60°	None			140	
25	Structure Wind w/ Ice 90°	None			59	
26	Structure Wind w/ Ice 120°	None			140	
27	Structure Wind w/ Ice 135°	None			144	
28	Structure Wind w/ Ice 150°	None			118	
29	Structure Wind w/ Ice 180°	None			70	
30	Structure Wind w/ Ice 210°	None			118	
31	Structure Wind w/ Ice 225°	None			144	
32	Structure Wind w/ Ice 240°	None			140	
33	Structure Wind w/ Ice 270°	None			59	
34	Structure Wind w/ Ice 300°	None			140	
35	Structure Wind w/ Ice 315°	None			144	
36	Structure Wind w/ Ice 330°	None			118	
37	Antenna Wind 0°	None		27		
38	Antenna Wind 30°	None		54		
39	Antenna Wind 45°	None		54		
40	Antenna Wind 60°	None		54		
41	Antenna Wind 90°	None		27		
42	Antenna Wind 120°	None		54		
43	Antenna Wind 135°	None		54		
44	Antenna Wind 150°	None		54		
45	Antenna Wind 180°	None		27		
46	Antenna Wind 210°	None		54		
47	Antenna Wind 225°	None		54		
48	Antenna Wind 240°	None		54		
49	Antenna Wind 270°	None		27		
50	Antenna Wind 300°	None		54		
51	Antenna Wind 315°	None		54		
52	Antenna Wind 330°	None		54		
53	Antenna Wind w/ Ice 0°	None		27		
54	Antenna Wind w/ Ice 30°	None		54		
55	Antenna Wind w/ Ice 45°	None		54		
56	Antenna Wind w/ Ice 60°	None		54		
57	Antenna Wind w/ Ice 90°	None		27		
58	Antenna Wind w/ Ice 120°	None		54		

Basic Load Cases (Continued)

	BLC Description	Category	Z Gravity	Nodal	Distributed	Area(Member)
59	Antenna Wind w/ Ice 135°	None		54		
60	Antenna Wind w/ Ice 150°	None		54		
61	Antenna Wind w/ Ice 180°	None		27		
62	Antenna Wind w/ Ice 210°	None		54		
63	Antenna Wind w/ Ice 225°	None		54		
64	Antenna Wind w/ Ice 240°	None		54		
65	Antenna Wind w/ Ice 270°	None		27		
66	Antenna Wind w/ Ice 300°	None		54		
67	Antenna Wind w/ Ice 315°	None		54		
68	Antenna Wind w/ Ice 330°	None		54		
69	Seismic X	ELX		27	72	
70	Seismic Y	ELY		27	72	
71	Seismic Z	ELZ		27	72	
72	Maintenance Live 500 (1)	OL1		1		
73	Maintenance Live 500 (2)	OL2		1		
74	Maintenance Live 500 (3)	OL3		1		
75	Maintenance Live 500 (4)	OL4		1		

Load Combinations

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	DISPLAY (1.0D + 1.0W_0°)	Yes	Y	DL	1	37	1				
2	1.4D	Yes	Y	DL	1.4						
3	1.2D + 1.0W_0°	Yes	Y	DL	1.2	5	1	37	1		
4	1.2D + 1.0W_30°	Yes	Y	DL	1.2	6	1	38	1		
5	1.2D + 1.0W_45°	Yes	Y	DL	1.2	7	1	39	1		
6	1.2D + 1.0W_60°	Yes	Y	DL	1.2	8	1	40	1		
7	1.2D + 1.0W_90°	Yes	Y	DL	1.2	9	1	41	1		
8	1.2D + 1.0W_120°	Yes	Y	DL	1.2	10	1	42	1		
9	1.2D + 1.0W_135°	Yes	Y	DL	1.2	11	1	43	1		
10	1.2D + 1.0W_150°	Yes	Y	DL	1.2	12	1	44	1		
11	1.2D + 1.0W_180°	Yes	Y	DL	1.2	13	-1	45	-1		
12	1.2D + 1.0W_210°	Yes	Y	DL	1.2	14	-1	46	-1		
13	1.2D + 1.0W_225°	Yes	Y	DL	1.2	15	-1	47	-1		
14	1.2D + 1.0W_240°	Yes	Y	DL	1.2	16	-1	48	-1		
15	1.2D + 1.0W_270°	Yes	Y	DL	1.2	17	-1	49	-1		
16	1.2D + 1.0W_300°	Yes	Y	DL	1.2	18	-1	50	-1		
17	1.2D + 1.0W_315°	Yes	Y	DL	1.2	19	-1	51	-1		
18	1.2D + 1.0W_330°	Yes	Y	DL	1.2	20	-1	52	-1		
19	1.2D + 1.0Di + 1.0Wi_0°	Yes	Y	DL	1.2	21	1	53	1	RL	1
20	1.2D + 1.0Di + 1.0Wi_30°	Yes	Y	DL	1.2	22	1	54	1	RL	1
21	1.2D + 1.0Di + 1.0Wi_45°	Yes	Y	DL	1.2	23	1	55	1	RL	1
22	1.2D + 1.0Di + 1.0Wi_60°	Yes	Y	DL	1.2	24	1	56	1	RL	1
23	1.2D + 1.0Di + 1.0Wi_90°	Yes	Y	DL	1.2	25	1	57	1	RL	1
24	1.2D + 1.0Di + 1.0Wi_120°	Yes	Y	DL	1.2	26	1	58	1	RL	1
25	1.2D + 1.0Di + 1.0Wi_135°	Yes	Y	DL	1.2	27	1	59	1	RL	1
26	1.2D + 1.0Di + 1.0Wi_150°	Yes	Y	DL	1.2	28	1	60	1	RL	1
27	1.2D + 1.0Di + 1.0Wi_180°	Yes	Y	DL	1.2	29	-1	61	-1	RL	1
28	1.2D + 1.0Di + 1.0Wi_210°	Yes	Y	DL	1.2	30	-1	62	-1	RL	1
29	1.2D + 1.0Di + 1.0Wi_225°	Yes	Y	DL	1.2	31	-1	63	-1	RL	1
30	1.2D + 1.0Di + 1.0Wi_240°	Yes	Y	DL	1.2	32	-1	64	-1	RL	1
31	1.2D + 1.0Di + 1.0Wi_270°	Yes	Y	DL	1.2	33	-1	65	-1	RL	1
32	1.2D + 1.0Di + 1.0Wi_300°	Yes	Y	DL	1.2	34	-1	66	-1	RL	1
33	1.2D + 1.0Di + 1.0Wi_315°	Yes	Y	DL	1.2	35	-1	67	-1	RL	1
34	1.2D + 1.0Di + 1.0Wi_330°	Yes	Y	DL	1.2	36	-1	68	-1	RL	1
35	1.2D + 1.0Ev + 1.0Eh_0°	Yes	Y	DL	1.243	ELX	-1	ELY			
36	1.2D + 1.0Ev + 1.0Eh_30°	Yes	Y	DL	1.243	ELX	-0.866	ELY	0.5		
37	1.2D + 1.0Ev + 1.0Eh_45°	Yes	Y	DL	1.243	ELX	-0.707	ELY	0.707		
38	1.2D + 1.0Ev + 1.0Eh_60°	Yes	Y	DL	1.243	ELX	-0.5	ELY	0.866		

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
39	1.2D + 1.0Ev + 1.0Eh_90°	Yes	Y	DL	1.243	ELX		ELY	1		
40	1.2D + 1.0Ev + 1.0Eh_120°	Yes	Y	DL	1.243	ELX	0.5	ELY	0.866		
41	1.2D + 1.0Ev + 1.0Eh_135°	Yes	Y	DL	1.243	ELX	0.707	ELY	0.707		
42	1.2D + 1.0Ev + 1.0Eh_150°	Yes	Y	DL	1.243	ELX	0.866	ELY	0.5		
43	1.2D + 1.0Ev + 1.0Eh_180°	Yes	Y	DL	1.243	ELX	1	ELY			
44	1.2D + 1.0Ev + 1.0Eh_210°	Yes	Y	DL	1.243	ELX	0.866	ELY	-0.5		
45	1.2D + 1.0Ev + 1.0Eh_225°	Yes	Y	DL	1.243	ELX	0.707	ELY	-0.707		
46	1.2D + 1.0Ev + 1.0Eh_240°	Yes	Y	DL	1.243	ELX	0.5	ELY	-0.866		
47	1.2D + 1.0Ev + 1.0Eh_270°	Yes	Y	DL	1.243	ELX		ELY	-1		
48	1.2D + 1.0Ev + 1.0Eh_300°	Yes	Y	DL	1.243	ELX	-0.5	ELY	-0.866		
49	1.2D + 1.0Ev + 1.0Eh_315°	Yes	Y	DL	1.243	ELX	-0.707	ELY	-0.707		
50	1.2D + 1.0Ev + 1.0Eh_330°	Yes	Y	DL	1.243	ELX	-0.866	ELY	-0.5		
51	0.9D - 1.0Ev + 1.0Eh_0°	Yes	Y	DL	0.857	ELX	-1	ELY			
52	0.9D - 1.0Ev + 1.0Eh_30°	Yes	Y	DL	0.857	ELX	-0.866	ELY	0.5		
53	0.9D - 1.0Ev + 1.0Eh_45°	Yes	Y	DL	0.857	ELX	-0.707	ELY	0.707		
54	0.9D - 1.0Ev + 1.0Eh_60°	Yes	Y	DL	0.857	ELX	-0.5	ELY	0.866		
55	0.9D - 1.0Ev + 1.0Eh_90°	Yes	Y	DL	0.857	ELX		ELY	1		
56	0.9D - 1.0Ev + 1.0Eh_120°	Yes	Y	DL	0.857	ELX	0.5	ELY	0.866		
57	0.9D - 1.0Ev + 1.0Eh_135°	Yes	Y	DL	0.857	ELX	0.707	ELY	0.707		
58	0.9D - 1.0Ev + 1.0Eh_150°	Yes	Y	DL	0.857	ELX	0.866	ELY	0.5		
59	0.9D - 1.0Ev + 1.0Eh_180°	Yes	Y	DL	0.857	ELX	1	ELY			
60	0.9D - 1.0Ev + 1.0Eh_210°	Yes	Y	DL	0.857	ELX	0.866	ELY	-0.5		
61	0.9D - 1.0Ev + 1.0Eh_225°	Yes	Y	DL	0.857	ELX	0.707	ELY	-0.707		
62	0.9D - 1.0Ev + 1.0Eh_240°	Yes	Y	DL	0.857	ELX	0.5	ELY	-0.866		
63	0.9D - 1.0Ev + 1.0Eh_270°	Yes	Y	DL	0.857	ELX		ELY	-1		
64	0.9D - 1.0Ev + 1.0Eh_300°	Yes	Y	DL	0.857	ELX	-0.5	ELY	-0.866		
65	0.9D - 1.0Ev + 1.0Eh_315°	Yes	Y	DL	0.857	ELX	-0.707	ELY	-0.707		
66	0.9D - 1.0Ev + 1.0Eh_330°	Yes	Y	DL	0.857	ELX	-0.866	ELY	-0.5		
67	1.2D + 1.5Lm_1 + 1.0Wm_0°	Yes	Y	DL	1.2	5	0.068	37	0.068	OL1	1.5
68	1.2D + 1.5Lm_1 + 1.0Wm_30°	Yes	Y	DL	1.2	6	0.068	38	0.068	OL1	1.5
69	1.2D + 1.5Lm_1 + 1.0Wm_45°	Yes	Y	DL	1.2	7	0.068	39	0.068	OL1	1.5
70	1.2D + 1.5Lm_1 + 1.0Wm_60°	Yes	Y	DL	1.2	8	0.068	40	0.068	OL1	1.5
71	1.2D + 1.5Lm_1 + 1.0Wm_90°	Yes	Y	DL	1.2	9	0.068	41	0.068	OL1	1.5
72	1.2D + 1.5Lm_1 + 1.0Wm_120°	Yes	Y	DL	1.2	10	0.068	42	0.068	OL1	1.5
73	1.2D + 1.5Lm_1 + 1.0Wm_135°	Yes	Y	DL	1.2	11	0.068	43	0.068	OL1	1.5
74	1.2D + 1.5Lm_1 + 1.0Wm_150°	Yes	Y	DL	1.2	12	0.068	44	0.068	OL1	1.5
75	1.2D + 1.5Lm_1 + 1.0Wm_180°	Yes	Y	DL	1.2	13	-0.068	45	-0.068	OL1	1.5
76	1.2D + 1.5Lm_1 + 1.0Wm_210°	Yes	Y	DL	1.2	14	-0.068	46	-0.068	OL1	1.5
77	1.2D + 1.5Lm_1 + 1.0Wm_225°	Yes	Y	DL	1.2	15	-0.068	47	-0.068	OL1	1.5
78	1.2D + 1.5Lm_1 + 1.0Wm_240°	Yes	Y	DL	1.2	16	-0.068	48	-0.068	OL1	1.5
79	1.2D + 1.5Lm_1 + 1.0Wm_270°	Yes	Y	DL	1.2	17	-0.068	49	-0.068	OL1	1.5
80	1.2D + 1.5Lm_1 + 1.0Wm_300°	Yes	Y	DL	1.2	18	-0.068	50	-0.068	OL1	1.5
81	1.2D + 1.5Lm_1 + 1.0Wm_315°	Yes	Y	DL	1.2	19	-0.068	51	-0.068	OL1	1.5
82	1.2D + 1.5Lm_1 + 1.0Wm_330°	Yes	Y	DL	1.2	20	-0.068	52	-0.068	OL1	1.5
83	1.2D + 1.5Lm_2 + 1.0Wm_0°	Yes	Y	DL	1.2	5	0.068	37	0.068	OL2	1.5
84	1.2D + 1.5Lm_2 + 1.0Wm_30°	Yes	Y	DL	1.2	6	0.068	38	0.068	OL2	1.5
85	1.2D + 1.5Lm_2 + 1.0Wm_45°	Yes	Y	DL	1.2	7	0.068	39	0.068	OL2	1.5
86	1.2D + 1.5Lm_2 + 1.0Wm_60°	Yes	Y	DL	1.2	8	0.068	40	0.068	OL2	1.5
87	1.2D + 1.5Lm_2 + 1.0Wm_90°	Yes	Y	DL	1.2	9	0.068	41	0.068	OL2	1.5
88	1.2D + 1.5Lm_2 + 1.0Wm_120°	Yes	Y	DL	1.2	10	0.068	42	0.068	OL2	1.5
89	1.2D + 1.5Lm_2 + 1.0Wm_135°	Yes	Y	DL	1.2	11	0.068	43	0.068	OL2	1.5
90	1.2D + 1.5Lm_2 + 1.0Wm_150°	Yes	Y	DL	1.2	12	0.068	44	0.068	OL2	1.5
91	1.2D + 1.5Lm_2 + 1.0Wm_180°	Yes	Y	DL	1.2	13	-0.068	45	-0.068	OL2	1.5
92	1.2D + 1.5Lm_2 + 1.0Wm_210°	Yes	Y	DL	1.2	14	-0.068	46	-0.068	OL2	1.5
93	1.2D + 1.5Lm_2 + 1.0Wm_225°	Yes	Y	DL	1.2	15	-0.068	47	-0.068	OL2	1.5
94	1.2D + 1.5Lm_2 + 1.0Wm_240°	Yes	Y	DL	1.2	16	-0.068	48	-0.068	OL2	1.5
95	1.2D + 1.5Lm_2 + 1.0Wm_270°	Yes	Y	DL	1.2	17	-0.068	49	-0.068	OL2	1.5
96	1.2D + 1.5Lm_2 + 1.0Wm_300°	Yes	Y	DL	1.2	18	-0.068	50	-0.068	OL2	1.5

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
97	1.2D + 1.5Lm_2 + 1.0Wm_315°	Yes	Y	DL	1.2	19	-0.068	51	-0.068	OL2	1.5
98	1.2D + 1.5Lm_2 + 1.0Wm_330°	Yes	Y	DL	1.2	20	-0.068	52	-0.068	OL2	1.5
99	1.2D + 1.5Lm_3 + 1.0Wm_0°	Yes	Y	DL	1.2	5	0.068	37	0.068	OL3	1.5
100	1.2D + 1.5Lm_3 + 1.0Wm_30°	Yes	Y	DL	1.2	6	0.068	38	0.068	OL3	1.5
101	1.2D + 1.5Lm_3 + 1.0Wm_45°	Yes	Y	DL	1.2	7	0.068	39	0.068	OL3	1.5
102	1.2D + 1.5Lm_3 + 1.0Wm_60°	Yes	Y	DL	1.2	8	0.068	40	0.068	OL3	1.5
103	1.2D + 1.5Lm_3 + 1.0Wm_90°	Yes	Y	DL	1.2	9	0.068	41	0.068	OL3	1.5
104	1.2D + 1.5Lm_3 + 1.0Wm_120°	Yes	Y	DL	1.2	10	0.068	42	0.068	OL3	1.5
105	1.2D + 1.5Lm_3 + 1.0Wm_135°	Yes	Y	DL	1.2	11	0.068	43	0.068	OL3	1.5
106	1.2D + 1.5Lm_3 + 1.0Wm_150°	Yes	Y	DL	1.2	12	0.068	44	0.068	OL3	1.5
107	1.2D + 1.5Lm_3 + 1.0Wm_180°	Yes	Y	DL	1.2	13	-0.068	45	-0.068	OL3	1.5
108	1.2D + 1.5Lm_3 + 1.0Wm_210°	Yes	Y	DL	1.2	14	-0.068	46	-0.068	OL3	1.5
109	1.2D + 1.5Lm_3 + 1.0Wm_225°	Yes	Y	DL	1.2	15	-0.068	47	-0.068	OL3	1.5
110	1.2D + 1.5Lm_3 + 1.0Wm_240°	Yes	Y	DL	1.2	16	-0.068	48	-0.068	OL3	1.5
111	1.2D + 1.5Lm_3 + 1.0Wm_270°	Yes	Y	DL	1.2	17	-0.068	49	-0.068	OL3	1.5
112	1.2D + 1.5Lm_3 + 1.0Wm_300°	Yes	Y	DL	1.2	18	-0.068	50	-0.068	OL3	1.5
113	1.2D + 1.5Lm_3 + 1.0Wm_315°	Yes	Y	DL	1.2	19	-0.068	51	-0.068	OL3	1.5
114	1.2D + 1.5Lm_3 + 1.0Wm_330°	Yes	Y	DL	1.2	20	-0.068	52	-0.068	OL3	1.5
115	1.2D + 1.5Lm_4 + 1.0Wm_0°	Yes	Y	DL	1.2	5	0.068	37	0.068	OL4	1.5
116	1.2D + 1.5Lm_4 + 1.0Wm_30°	Yes	Y	DL	1.2	6	0.068	38	0.068	OL4	1.5
117	1.2D + 1.5Lm_4 + 1.0Wm_45°	Yes	Y	DL	1.2	7	0.068	39	0.068	OL4	1.5
118	1.2D + 1.5Lm_4 + 1.0Wm_60°	Yes	Y	DL	1.2	8	0.068	40	0.068	OL4	1.5
119	1.2D + 1.5Lm_4 + 1.0Wm_90°	Yes	Y	DL	1.2	9	0.068	41	0.068	OL4	1.5
120	1.2D + 1.5Lm_4 + 1.0Wm_120°	Yes	Y	DL	1.2	10	0.068	42	0.068	OL4	1.5
121	1.2D + 1.5Lm_4 + 1.0Wm_135°	Yes	Y	DL	1.2	11	0.068	43	0.068	OL4	1.5
122	1.2D + 1.5Lm_4 + 1.0Wm_150°	Yes	Y	DL	1.2	12	0.068	44	0.068	OL4	1.5
123	1.2D + 1.5Lm_4 + 1.0Wm_180°	Yes	Y	DL	1.2	13	-0.068	45	-0.068	OL4	1.5
124	1.2D + 1.5Lm_4 + 1.0Wm_210°	Yes	Y	DL	1.2	14	-0.068	46	-0.068	OL4	1.5
125	1.2D + 1.5Lm_4 + 1.0Wm_225°	Yes	Y	DL	1.2	15	-0.068	47	-0.068	OL4	1.5
126	1.2D + 1.5Lm_4 + 1.0Wm_240°	Yes	Y	DL	1.2	16	-0.068	48	-0.068	OL4	1.5
127	1.2D + 1.5Lm_4 + 1.0Wm_270°	Yes	Y	DL	1.2	17	-0.068	49	-0.068	OL4	1.5
128	1.2D + 1.5Lm_4 + 1.0Wm_300°	Yes	Y	DL	1.2	18	-0.068	50	-0.068	OL4	1.5
129	1.2D + 1.5Lm_4 + 1.0Wm_315°	Yes	Y	DL	1.2	19	-0.068	51	-0.068	OL4	1.5
130	1.2D + 1.5Lm_4 + 1.0Wm_330°	Yes	Y	DL	1.2	20	-0.068	52	-0.068	OL4	1.5

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Platform Horzontal Pipe	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Offset Tube	HSS4X4X4	Beam	SquareTube	A36 Gr.36	Typical	3.37	7.8	7.8	12.8
3	Offset Side Plate	0.38 X 6 Plate	Beam	RECT	A36 Gr.36	Typical	2.28	0.027	6.84	0.105
4	Grating Angle	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	0.722	0.271	0.271	0.009
5	MOUNT_PIPE_2.0	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
6	Offset End Plate	0.5 x 6 Plate	Beam	RECT	A36 Gr.36	Typical	3	0.063	9	0.237
7	HRK12-U	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
8	HRKPlate	0.38 X 6 Plate	Beam	RECT	A36 Gr.36	Typical	2.28	0.027	6.84	0.105
9	HRKAngle	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	0.692	0.692	0.026
10	PRK-1245	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	0.901	0.535	0.535	0.011

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb z-z [in]	Function
1	M305	Offset End Plate	4.688		Lateral
2	M306	Offset Side Plate	3		Lateral
3	M309	Platform Horzontal Pipe	149.998	42	Lateral
4	A2	Offset Tube	62.5		Lateral
5	M313	Offset End Plate	3.122		Lateral
6	M314	Offset End Plate	4.688		Lateral
7	M315	Offset End Plate	3.122		Lateral
8	M316	Offset Side Plate	0.875		Lateral
9	M317	Offset Side Plate	0.875		Lateral
10	M318	Offset Tube	30.688		Lateral
11	M320	Offset Tube	30.687		Lateral
12	M326	Offset Side Plate	3		Lateral
13	M330	Grating Angle	50.542		Lateral
14	M332	Grating Angle	50.542		Lateral
15	M333	PRK-1245	47.94		Lateral
16	M336	PRK-1245	47.94		Lateral
17	M342	Offset End Plate	3.122		Lateral
18	M344	Grating Angle	50.542		Lateral
19	A1	Offset Tube	62.5		Lateral
20	M346	Grating Angle	50.542		Lateral
21	M347	Offset End Plate	3.122		Lateral
22	M348	Offset Tube	30.687		Lateral
23	M350	Offset End Plate	3.122		Lateral
24	M353	Grating Angle	50.542		Lateral
25	M357	PRK-1245	47.94		Lateral
26	M358	Offset End Plate	4.688		Lateral
27	M359	Offset Tube	30.688		Lateral
28	M360	Offset Side Plate	3		Lateral
29	M361	Platform Horzontal Pipe	149.998	42	Lateral
30	M368	Offset End Plate	4.688		Lateral
31	M369	Offset Side Plate	0.875		Lateral
32	M371	Offset Side Plate	0.875		Lateral
33	M373	Offset Tube	30.687		Lateral
34	M378	Offset Side Plate	3		Lateral
35	M381	PRK-1245	47.94		Lateral
36	M382	PRK-1245	47.94		Lateral
37	M385	Offset End Plate	4.688		Lateral
38	M386	Offset Side Plate	3		Lateral
39	M387	Grating Angle	50.542		Lateral
40	M388	Offset Side Plate	0.875		Lateral
41	A3	Offset Tube	62.5		Lateral
42	M390	Offset End Plate	4.688		Lateral
43	M391	Offset End Plate	3.122		Lateral
44	M392	Offset Side Plate	0.875		Lateral
45	M393	Offset Tube	30.688		Lateral
46	M397	Offset Side Plate	3		Lateral
47	M402	PRK-1245	47.94		Lateral
48	M404	Platform Horzontal Pipe	149.998	42	Lateral
49	M238	HRKPlate	3.711		Lateral
50	M241	HRKAngle	14.902		Lateral
51	M247	HRKPlate	3.711		Lateral
52	M248	HRKAngle	14.902		Lateral
53	M249	HRKAngle	14.902		Lateral
54	M250	HRK12-U	150	42	Lateral
55	M251	HRK12-U	150	42	Lateral
56	M252	HRK12-U	150	42	Lateral
57	M269	HRKPlate	3.711		Lateral
58	M270	HRKPlate	3.711		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb z-z [in]	Function
59	M272	HRKPlate	3.711		Lateral
60	M273	HRKPlate	3.711		Lateral
61	A_MP1_S	MOUNT_PIPE_2.0	96		Lateral
62	A_MP2_S	MOUNT_PIPE_2.0	96		Lateral
63	A_MP3_S	MOUNT_PIPE_2.0	96		Lateral
64	A_MP4_S	MOUNT_PIPE_2.0	96		Lateral
65	B_MP1_S	MOUNT_PIPE_2.0	96		Lateral
66	B_MP2_S	MOUNT_PIPE_2.0	96		Lateral
67	B_MP3_S	MOUNT_PIPE_2.0	96		Lateral
68	B_MP4_S	MOUNT_PIPE_2.0	96		Lateral
69	G_MP1_S	MOUNT_PIPE_2.0	96		Lateral
70	G_MP2_S	MOUNT_PIPE_2.0	96		Lateral
71	G_MP3_S	MOUNT_PIPE_2.0	96		Lateral
72	G_MP4_S	MOUNT_PIPE_2.0	96		Lateral

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	M297			Yes	** NA **	None
2	M298			Yes	** NA **	None
3	M299		OOOXOO	Yes	** NA **	None
4	M300			Yes	** NA **	None
5	M302			Yes	** NA **	None
6	M305			Yes		None
7	M306			Yes		None
8	M308			Yes	** NA **	None
9	M309			Yes	Default	None
10	M310			Yes	** NA **	None
11	M311			Yes	** NA **	None
12	A2			Yes	Default	None
13	M313			Yes		None
14	M314			Yes		None
15	M315			Yes		None
16	M316			Yes		None
17	M317			Yes		None
18	M318			Yes		None
19	M319			Yes	** NA **	None
20	M320			Yes		None
21	M321			Yes	** NA **	None
22	M322			Yes	** NA **	None
23	M323			Yes	** NA **	None
24	M324		OOOXOO	Yes	** NA **	None
25	M325			Yes	** NA **	None
26	M326			Yes		None
27	M327		OOOXOO	Yes	** NA **	None
28	M328		OOOXOO	Yes	** NA **	None
29	M329			Yes	** NA **	None
30	M330			Yes		None
31	M331			Yes	** NA **	None
32	M332			Yes		None
33	M333	BenPIN	BenPIN	Yes		None
34	M334			Yes	** NA **	None
35	M335			Yes	** NA **	None
36	M336	BenPIN	BenPIN	Yes		None
37	M337			Yes	** NA **	None
38	M338			Yes	** NA **	None
39	M339		OOOXOO	Yes	** NA **	None
40	M340		OOOXOO	Yes	** NA **	None
41	M341		OOOXOO	Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
42	M342			Yes		None
43	M343			Yes	** NA **	None
44	M344			Yes		None
45	A1			Yes	Default	None
46	M346			Yes		None
47	M347			Yes		None
48	M348			Yes		None
49	M350			Yes		None
50	M351			Yes	** NA **	None
51	M353			Yes		None
52	M354			Yes	** NA **	None
53	M355			Yes	** NA **	None
54	M357	BenPIN	BenPIN	Yes		None
55	M358			Yes		None
56	M359			Yes		None
57	M360			Yes		None
58	M361			Yes	Default	None
59	M362			Yes	** NA **	None
60	M363			Yes	** NA **	None
61	M364		OOOXOO	Yes	** NA **	None
62	M365			Yes	** NA **	None
63	M366			Yes	** NA **	None
64	M367			Yes	** NA **	None
65	M368			Yes		None
66	M369			Yes		None
67	M371			Yes		None
68	M373			Yes		None
69	M374			Yes	** NA **	None
70	M375			Yes	** NA **	None
71	M377		OOOXOO	Yes	** NA **	None
72	M378			Yes		None
73	M380			Yes	** NA **	None
74	M381	BenPIN	BenPIN	Yes		None
75	M382	BenPIN	BenPIN	Yes		None
76	M383			Yes	** NA **	None
77	M384			Yes	** NA **	None
78	M385			Yes		None
79	M386			Yes		None
80	M387			Yes		None
81	M388			Yes		None
82	A3			Yes	Default	None
83	M390			Yes		None
84	M391			Yes		None
85	M392			Yes		None
86	M393			Yes		None
87	M394			Yes	** NA **	None
88	M395			Yes	** NA **	None
89	M396		OOOXOO	Yes	** NA **	None
90	M397			Yes		None
91	M398		OOOXOO	Yes	** NA **	None
92	M399		OOOXOO	Yes	** NA **	None
93	M400			Yes	** NA **	None
94	M401			Yes	** NA **	None
95	M402	BenPIN	BenPIN	Yes		None
96	M404			Yes	Default	None
97	M238			Yes		None
98	M239			Yes	** NA **	None
99	M240			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
100	M241			Yes		None
101	M242			Yes	** NA **	None
102	M243			Yes	** NA **	None
103	M244			Yes	** NA **	None
104	M245			Yes	** NA **	None
105	M246			Yes	** NA **	None
106	M247			Yes		None
107	M248			Yes		None
108	M249			Yes		None
109	M250			Yes		None
110	M251			Yes		None
111	M252			Yes		None
112	M253			Yes	** NA **	None
113	M254			Yes	** NA **	None
114	M255			Yes	** NA **	None
115	M256			Yes	** NA **	None
116	M257			Yes	** NA **	None
117	M258			Yes	** NA **	None
118	M259			Yes	** NA **	None
119	M260			Yes	** NA **	None
120	M261			Yes	** NA **	None
121	M262			Yes	** NA **	None
122	M263			Yes	** NA **	None
123	M264			Yes	** NA **	None
124	M265			Yes	** NA **	None
125	M266			Yes	** NA **	None
126	M267			Yes	** NA **	None
127	M268			Yes	** NA **	None
128	M269			Yes		None
129	M270			Yes		None
130	M271			Yes	** NA **	None
131	M272			Yes		None
132	M273			Yes		None
133	RI2			Yes	** NA **	None
134	RI1			Yes	** NA **	None
135	A_MP1_S			Yes	** NA **	None
136	RI3			Yes	** NA **	None
137	RI4			Yes	** NA **	None
138	RI5			Yes	** NA **	None
139	RI12			Yes	** NA **	None
140	RI11			Yes	** NA **	None
141	A_MP2_S			Yes	** NA **	None
142	RI13			Yes	** NA **	None
143	RI14			Yes	** NA **	None
144	RI15			Yes	** NA **	None
145	RI22			Yes	** NA **	None
146	RI21			Yes	** NA **	None
147	A_MP3_S			Yes	** NA **	None
148	RI23			Yes	** NA **	None
149	RI24			Yes	** NA **	None
150	RI32			Yes	** NA **	None
151	RI31			Yes	** NA **	None
152	A_MP4_S			Yes	** NA **	None
153	RI72			Yes	** NA **	None
154	RI71			Yes	** NA **	None
155	B_MP1_S			Yes	** NA **	None
156	RI73			Yes	** NA **	None
157	RI74			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
158	RI75			Yes	** NA **	None
159	RI82			Yes	** NA **	None
160	RI81			Yes	** NA **	None
161	B_MP2_S			Yes	** NA **	None
162	RI83			Yes	** NA **	None
163	RI84			Yes	** NA **	None
164	RI85			Yes	** NA **	None
165	RI92			Yes	** NA **	None
166	RI91			Yes	** NA **	None
167	B_MP3_S			Yes	** NA **	None
168	RI93			Yes	** NA **	None
169	RI94			Yes	** NA **	None
170	RI102			Yes	** NA **	None
171	RI101			Yes	** NA **	None
172	B_MP4_S			Yes	** NA **	None
173	RI142			Yes	** NA **	None
174	RI141			Yes	** NA **	None
175	G_MP1_S			Yes	** NA **	None
176	RI143			Yes	** NA **	None
177	RI144			Yes	** NA **	None
178	RI145			Yes	** NA **	None
179	RI152			Yes	** NA **	None
180	RI151			Yes	** NA **	None
181	G_MP2_S			Yes	** NA **	None
182	RI153			Yes	** NA **	None
183	RI154			Yes	** NA **	None
184	RI155			Yes	** NA **	None
185	RI162			Yes	** NA **	None
186	RI161			Yes	** NA **	None
187	G_MP3_S			Yes	** NA **	None
188	RI163			Yes	** NA **	None
189	RI164			Yes	** NA **	None
190	RI172			Yes	** NA **	None
191	RI171			Yes	** NA **	None
192	G_MP4_S			Yes	** NA **	None

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N442	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N453	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N485	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N492	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N535	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N588	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N453	max	4320.418	3	1211.654	15	1462.852	19	931.3	7	1737.154	19	1432.957	7
2		min	-2675.234	11	-1216.99	7	416.734	59	-730.649	15	483.267	59	-1448.522	15
3	N442	max	1356.326	16	2306.717	16	1462.851	24	1457.98	21	296.665	4	1432.718	12
4		min	-2183.996	8	-3728.566	8	416.73	64	135.2	13	-1302.954	28	-1448.283	4
5	N535	max	1319.539	6	3755.697	14	1462.851	30	-193.048	9	450.821	18	1432.836	18
6		min	-2137.073	14	-2327.975	6	416.732	54	-1737.662	33	-1066.656	106	-1448.403	10
7	N492	max	897.006	11	54.477	15	1883.501	19	65.453	7	941.751	19	134.393	7
8		min	-3051.14	19	-54.58	7	-530.96	11	-58.63	15	-265.48	11	-123.316	15
9	N588	max	1525.266	24	2642.703	24	1883.585	24	810.649	24	129.006	16	134.372	12
10		min	-448.732	16	-777.147	16	-531.193	16	-232.203	16	-479.5	24	-123.294	4

Envelope Node Reactions (Continued)

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
11	N485	max	1526.031	30	777.209	6	1883.605	30	227.833	6	136.59	6	134.377	18
12		min	-448.676	6	-2642.299	30	-531.209	6	-820.593	30	-462.296	30	-123.3	10
13	Totals:	max	3965.306	3	3965.855	15	8871.326	25						
14		min	-3965.307	11	-3965.852	7	2512.682	66						

Envelope AISC 15th (360-16): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1	M360	0.38 X 6 Plate	0.108	1.5	9	**1.004**	3	y	16	71020.258	73872	584.82	9234	3	H1-1b
2	M306	0.38 X 6 Plate	0.103	1.5	15	**1.004**	3	y	6	71020.258	73872	584.82	9234	3	H1-1b
3	M386	0.38 X 6 Plate	0.103	1.5	4	**1.004**	3	y	11	71020.258	73872	584.82	9234	3	H1-1b
4	M326	0.38 X 6 Plate	0.09	1.5	7	0.971	3	y	16	71019.885	73872	584.82	9234	3	H1-1b
5	M397	0.38 X 6 Plate	0.09	1.5	12	0.971	3	y	6	71019.885	73872	584.82	9234	3	H1-1b
6	M378	0.38 X 6 Plate	0.09	1.5	18	0.97	3	y	11	71019.885	73872	584.82	9234	3	H1-1b
7	M347	0.5 x 6 Plate	0.074	0	4	0.85	0	y	16	94834.571	97200	1012.5	12150	3	H1-1b
8	M313	0.5 x 6 Plate	0.074	0	10	0.85	0	y	6	94834.571	97200	1012.5	12150	3	H1-1b
9	M342	0.5 x 6 Plate	0.074	0	15	0.85	0	y	11	94834.571	97200	1012.5	12150	3	H1-1b
10	M369	0.38 X 6 Plate	0.103	0.875	16	0.85	0.875	y	8	73624.978	73872	584.82	9234	1.034	H1-1b
11	M316	0.38 X 6 Plate	0.103	0.875	6	0.85	0.875	y	14	73624.978	73872	584.82	9234	1.034	H1-1b
12	M388	0.38 X 6 Plate	0.103	0.875	11	0.849	0.875	y	3	73624.978	73872	584.82	9234	1.034	H1-1b
13	M317	0.38 X 6 Plate	0.068	0.875	16	0.825	0.875	y	8	73624.978	73872	584.82	9234	1.033	H1-1b
14	M392	0.38 X 6 Plate	0.073	0.875	5	0.825	0.875	y	14	73624.978	73872	584.82	9234	1.026	H1-1b
15	M371	0.38 X 6 Plate	0.068	0.875	11	0.825	0.875	y	3	73624.978	73872	584.82	9234	1.033	H1-1b
16	M315	0.5 x 6 Plate	0.078	0	12	0.782	0	y	16	94834.571	97200	1012.5	12150	3	H1-1b
17	M391	0.5 x 6 Plate	0.078	0	18	0.782	0	y	6	94834.571	97200	1012.5	12150	3	H1-1b
18	M350	0.5 x 6 Plate	0.078	0	7	0.782	0	y	11	94834.571	97200	1012.5	12150	3	H1-1b
19	M358	0.5 x 6 Plate	0.145	0	13	0.358	0	y	16	91950.093	97200	1012.5	12150	1.213	H1-1b
20	M305	0.5 x 6 Plate	0.145	0	3	0.358	0	y	6	91950.093	97200	1012.5	12150	1.185	H1-1b
21	M385	0.5 x 6 Plate	0.145	0	8	0.358	0	y	11	91950.093	97200	1012.5	12150	1.185	H1-1b
22	M314	0.5 x 6 Plate	0.155	4.688	3	0.338	4.688	y	16	91950.093	97200	1012.5	12150	1.167	H1-1b
23	M390	0.5 x 6 Plate	0.157	4.688	9	0.338	4.688	y	6	91950.093	97200	1012.5	12150	1.194	H1-1b
24	M368	0.5 x 6 Plate	0.155	4.688	14	0.338	4.688	y	11	91950.093	97200	1012.5	12150	1.167	H1-1b
25	M252	PIPE_2.0	0.458	11.842	5	0.213	15.789		15	6295.422	32130	1871.625	1871.625	3	H1-1a
26	M251	PIPE_2.0	0.429	11.842	10	0.213	15.789		4	6295.422	32130	1871.625	1871.625	3	H1-1a
27	M250	PIPE_2.0	0.429	11.842	15	0.213	15.789		10	6295.422	32130	1871.625	1871.625	3	H1-1a
28	G_MP1_S	PIPE_2.0	0.417	93.474	3	0.14	93.474		13	14916.096	32130	1871.625	1871.625	2.094	H1-1b
29	A_MP1_S	PIPE_2.0	0.417	93.474	8	0.137	93.474		3	14916.096	32130	1871.625	1871.625	2.078	H1-1b
30	B_MP1_S	PIPE_2.0	0.42	93.474	13	0.137	93.474		8	14916.096	32130	1871.625	1871.625	1.954	H1-1b
31	M404	PIPE_3.0	0.108	19.737	3	0.135	11.842		16	28251.192	65205	5748.75	5748.75	2.527	H1-1b
32	M361	PIPE_3.0	0.108	19.737	8	0.135	11.842		6	28251.192	65205	5748.75	5748.75	2.527	H1-1b
33	M309	PIPE_3.0	0.11	59.21	87	0.135	11.842		11	28251.192	65205	5748.75	5748.75	2.239	H1-1b
34	A_MP2_S	PIPE_2.0	0.463	93.474	8	0.13	93.474		9	14916.096	32130	1871.625	1871.625	1.957	H1-1b
35	M248	L2.5x2.5x4	0.351	14.902	4	0.129	14.902	z	15	36663.9	38556	1113.554	2537.388	1.5	H2-1
36	M249	L2.5x2.5x4	0.351	14.902	15	0.129	14.902	z	10	36663.9	38556	1113.554	2537.388	1.5	H2-1
37	M241	L2.5x2.5x4	0.351	14.902	10	0.129	14.902	z	4	36663.9	38556	1113.554	2537.388	1.5	H2-1
38	B_MP2_S	PIPE_2.0	0.469	93.474	13	0.128	93.474		15	14916.096	32130	1871.625	1871.625	2.071	H1-1b
39	G_MP2_S	PIPE_2.0	0.463	93.474	3	0.128	93.474		4	14916.096	32130	1871.625	1871.625	1.869	H1-1b
40	A2	HSS4X4X4	0.174	0	31	0.128	0	z	7	99905.429	109188	12663	12663	2.922	H1-1b
41	A1	HSS4X4X4	0.174	0	26	0.128	0	z	18	99905.429	109188	12663	12663	2.922	H1-1b
42	A3	HSS4X4X4	0.174	0	20	0.128	0	z	12	99905.429	109188	12663	12663	2.922	H1-1b
43	G_MP4_S	PIPE_2.0	0.372	93.474	11	0.117	93.474		5	14916.096	32130	1871.625	1871.625	1.708	H1-1b
44	B_MP4_S	PIPE_2.0	0.373	93.474	5	0.114	93.474		16	14916.096	32130	1871.625	1871.625	1.926	H1-1b
45	A_MP4_S	PIPE_2.0	0.372	93.474	16	0.114	93.474		11	14916.096	32130	1871.625	1871.625	1.808	H1-1b
46	G_MP3_S	PIPE_2.0	0.492	93.474	11	0.104	93.474		15	14916.096	32130	1871.625	1871.625	1.714	H1-1b
47	A_MP3_S	PIPE_2.0	0.492	93.474	16	0.104	93.474		4	14916.096	32130	1871.625	1871.625	1.921	H1-1b
48	B_MP3_S	PIPE_2.0	0.492	93.474	6	0.104	93.474		10	14916.096	32130	1871.625	1871.625	2.265	H1-1b
49	M272	0.38 X 6 Plate	0.055	0	5	0.073	0	y	7	69552.723	73872	584.82	9234	1.632	H1-1b
50	M269	0.38 X 6 Plate	0.053	0	11	0.073	0	y	12	69552.723	73872	584.82	9234	1.636	H1-1b
51	M247	0.38 X 6 Plate	0.053	0	16	0.073	0	y	18	69552.723	73872	584.82	9234	1.636	H1-1b

Envelope AISC 15th (360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
52	M270	0.38 X 6 Plate	0.044	2.344	15	0.07	0	y	15	69552.723	73872	584.82	9234	1.651	H1-1b
53	M273	0.38 X 6 Plate	0.044	2.344	10	0.07	0	y	10	69552.723	73872	584.82	9234	1.651	H1-1b
54	M238	0.38 X 6 Plate	0.044	2.344	4	0.07	0	y	4	69552.723	73872	584.82	9234	1.651	H1-1b
55	M373	HSS4X4X4	0.202	0	31	0.066	0	y	30	106874.166	109188	12663	12663	1.63	H1-1b
56	M348	HSS4X4X4	0.203	0	25	0.066	0	y	24	106874.166	109188	12663	12663	1.639	H1-1b
57	M320	HSS4X4X4	0.202	0	20	0.066	0	y	19	106874.166	109188	12663	12663	1.63	H1-1b
58	M359	HSS4X4X4	0.192	30.688	29	0.063	30.688	y	30	106874.106	109188	12663	12663	1.676	H1-1b
59	M393	HSS4X4X4	0.191	30.688	24	0.063	30.688	y	24	106874.106	109188	12663	12663	1.69	H1-1b
60	M318	HSS4X4X4	0.191	30.688	19	0.063	30.688	y	19	106874.106	109188	12663	12663	1.69	H1-1b
61	M353	L2x2x3	0.212	50.542	32	0.018	50.542	y	32	9618.888	23392.8	557.717	1137.587	1.5	H2-1
62	M330	L2x2x3	0.212	50.542	22	0.018	50.542	y	22	9618.888	23392.8	557.717	1137.587	1.5	H2-1
63	M387	L2x2x3	0.212	50.542	27	0.018	50.542	y	27	9618.888	23392.8	557.717	1137.587	1.5	H2-1
64	M344	L2x2x3	0.178	50.542	22	0.016	50.542	z	21	9618.956	23392.8	557.717	1137.588	1.5	H2-1
65	M332	L2x2x3	0.178	50.542	32	0.016	50.542	z	32	9618.956	23392.8	557.717	1137.588	1.5	H2-1
66	M346	L2x2x3	0.178	50.542	27	0.016	50.542	z	27	9618.956	23392.8	557.717	1137.588	1.5	H2-1
67	M333	L2.5x2.5x3	0.143	23.97	21	0.008	47.94	z	7	17342.093	29192.4	872.574	1713.748	1.137	H2-1
68	M336	L2.5x2.5x3	0.126	23.97	33	0.008	47.94	y	7	17342.093	29192.4	872.574	1713.748	1.137	H2-1
69	M381	L2.5x2.5x3	0.142	23.97	31	0.008	47.94	z	18	17342.093	29192.4	872.574	1713.748	1.137	H2-1
70	M382	L2.5x2.5x3	0.126	23.97	29	0.008	47.94	y	18	17342.093	29192.4	872.574	1713.748	1.137	H2-1
71	M357	L2.5x2.5x3	0.142	23.97	26	0.008	47.94	z	12	17342.093	29192.4	872.574	1713.748	1.137	H2-1
72	M402	L2.5x2.5x3	0.125	23.97	23	0.008	47.94	y	12	17342.093	29192.4	872.574	1713.748	1.137	H2-1

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Structural Analysis Report

Structure	:	**185 ft Monopole**
ATC Site Name	:	**Middletown CT 3, CT**
ATC Asset Number	:	**302537**
Engineering Number	:	**13668065_C3_02**
Proposed Carrier	:	**SPRINT NEXTEL**
Carrier Site Name	:	**CTHA859A**
Carrier Site Number	:	**CTHA859A**
Site Location	:	**47 Inwood Road** **Rocky Hill, CT 06067-3453** **41.638600,-72.679300**
County	:	**Hartford**
Date	:	**April 27, 2021**
Max Usage	:	**76%**
Result	:	**Pass**

Prepared By:
Christopher Jolly
Structural Engineer III

Reviewed By:

Authorized by "EOR"
27 Apr 2021 09:08:08 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 185 ft monopole to reflect the change in loading by SPRINT NEXTEL.

Supporting Documents

Tower Drawings	Valmont Drawing #DC1646Z, dated November 2, 1993
Foundation Drawing	H. Edmund Bergeron Civil Engineers Project #93127, dated December 21, 1993
Geotechnical Report	Materials Testing Inc File #99 GT 93, dated December 2, 1993
Modifications	ATC Project #51430332, dated December 12, 2012

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:	118 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1"1/2 radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Spectral Response:	Ss = 0.20, S_1 = 0.05
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
181.0	4	Decibel DB844H90E-XY	Platform with Handrails	(12) 1 5/8" Coax	SPRINT NEXTEL
	4	Decibel 844G90VTA-SX			
	4	Decibel 844G65VTZASX			
168.0	3	Ericsson RRUS 4478 B14	Platform with Handrails	(3) 0.39" (10mm) Fiber Trunk (6) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax (3) 2" conduit	AT&T MOBILITY
	3	CCI OPA65R-BU6D			
	3	Ericsson RRUS 4449 B5, B12			
	3	Ericsson RRUS 32 B30			
	3	Ericsson RRUS 32 B66			
	3	Powerwave Allgon 7770.00			
	3	Quintel QS66512-2			
	3	CCI DMP65R-BU6DA			
	1	Raycap DC6-48-60-0-8F			
	2	Raycap DC6-48-60-18-8F (23.5" Height)			
	6	Powerwave Allgon LGP21401			
	3	Ericsson RRUS E2 B29			

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
146.0	3	Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter	-	(4) 1 1/4" Hybriflex Cable	SPRINT NEXTEL
140.0	3	Commscope DT465B-2XR			
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	3	RFS APXVSPP18-C-A20			
	3	Alcatel-Lucent RRH2x50-08			
	3	Alcatel-Lucent 4x40W RRH (88 lb)			

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
140.0	3	Ericsson Radio 4449 B71 B85A	Platform with Handrails	(3) 1 5/8" Hybriflex	SPRINT NEXTEL
	3	Ericsson RRUS 4415 B66			
	3	Ericsson 4424 B25			
	3	Ericsson Air6449 B41			
	3	RFS APX16DWV-16DWVS-E-A20			
	3	RFS APXVAALL24 43-U-NA20			

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

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	55%	Pass
Shaft	76%	Pass
Base Plate	14%	Pass
Reinforcement	60%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,821.4	5,158.9	3,669.6	71%
Shear (Kips)	32.1	43.4	29.2	67%
* The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2				

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) (°)
140.0	Ericsson Radio 4449 B71 B85A	SPRINT NEXTEL	1.497	1.408
	Ericsson RRUS 4415 B66			
	Ericsson 4424 B25			
	Ericsson Air6449 B41			
	RFS APX16DWV-16DWVS-E-A20			
	RFS APXVAALL24 43-U-NA20			

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

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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.

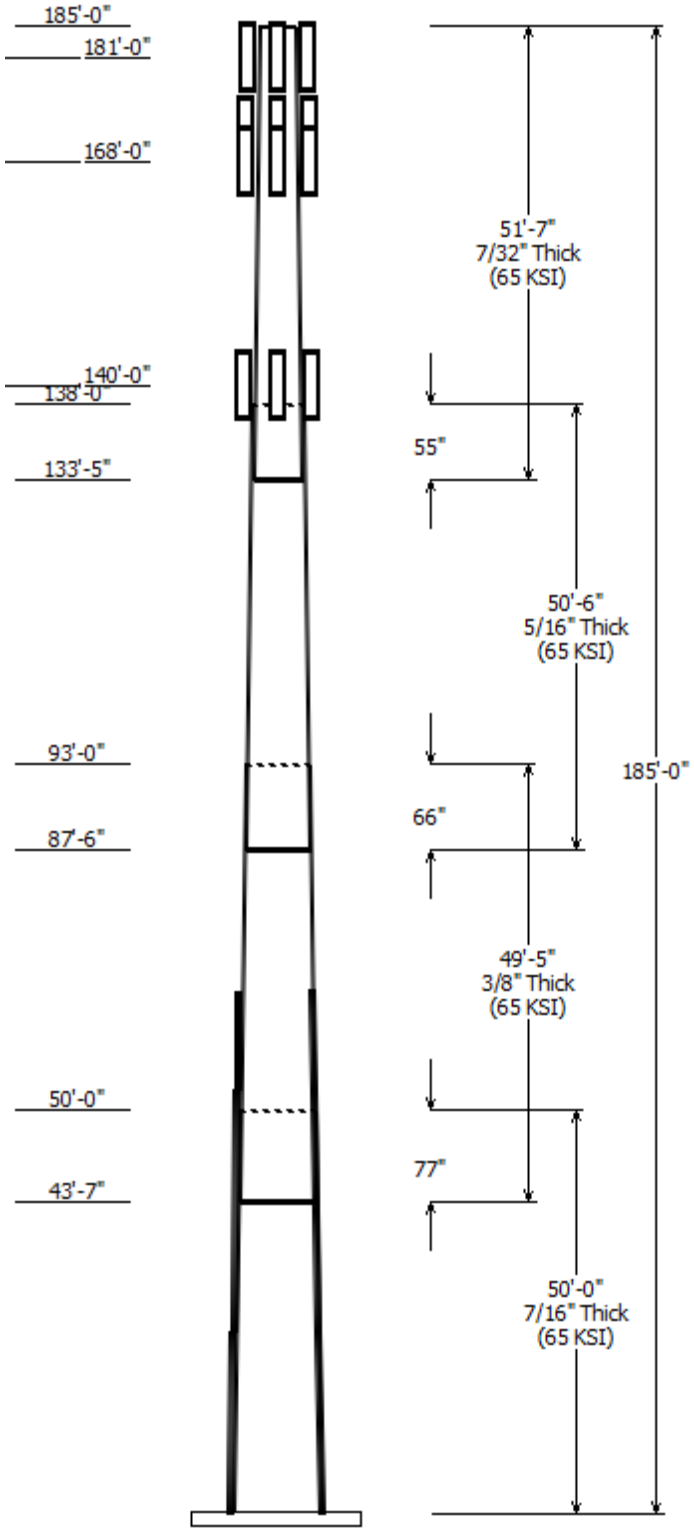
All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with 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 : SPRINT NEXTEL
Pole : 302537 Code: ANSI/TIA-222-H
Location : Middletown CT 3, CT
Description : 185 ft Valmont pole - Model verified 5/30/12 Risk Category : II
Shape : 12 Sides Exposure : B
Height : 185.00 (ft) Topo Method : Method 1
Base Elev (ft): 0.00 Topographic Category : 1
Taper: 0.188013 (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	50.000	42.59	52.00	0.438		0.000	12 Sides	65
2	49.417	35.26	44.55	0.375	Slip Joint	77.000	12 Sides	65
3	50.500	27.42	36.92	0.313	Slip Joint	66.000	12 Sides	65
4	51.583	19.03	28.72	0.219	Slip Joint	55.000	12 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
181.000	181.000	4	Decibel 844G65VTZASX
181.000	181.000	4	Decibel DB844H90E-XY
181.000	181.000	4	Decibel 844G90VTA-SX
181.000	181.000	1	Generic Heavy Platform with
168.000	168.000	3	CCI OPA65R-BU6D
168.000	168.000	3	CCI DMP65R-BU6DA
168.000	169.000	3	Quintel QS66512-2
168.000	169.000	3	Powerwave Allgon 7770.00
168.000	169.000	3	Ericsson RRUS 32 B66
168.000	168.000	3	Ericsson RRUS 32 B30
168.000	168.000	3	Ericsson RRUS 4449 B5, B12
168.000	168.000	3	Ericsson RRUS E2 B29
168.000	168.000	3	Ericsson RRUS 4478 B14
168.000	169.000	1	Raycap DC6-48-60-0-8F
168.000	168.000	2	Raycap DC6-48-60-18-8F (23.5"
168.000	169.000	6	Powerwave Allgon LGP21401
168.000	168.000	1	Generic Round Platform with
140.000	140.000	3	RFS APXVAALL24 43-U-NA20
140.000	140.000	3	RFS APX16DWV-16DWVS-E-A20
140.000	140.000	3	Ericsson Air6449 B41
140.000	140.000	3	Ericsson 4424 B25
140.000	140.000	3	Ericsson RRUS 4415 B66
140.000	140.000	3	Ericsson Radio 4449 B71 B85A
140.000	140.000	1	Generic Round Platform with

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	73.600	#20 w/ Angle	No
0.000	73.600	#20 w/ Angle	No
0.000	73.600	#20 w/ Angle	No
0.000	73.600	#20 w/ Angle	No
0.000	140.0	1 5/8" Hybriflex	No
0.000	168.0	0.39" (10mm)	Yes
0.000	168.0	0.78" (19.7mm) 8	Yes
0.000	168.0	1 5/8" Coax	Yes
0.000	168.0	2" conduit	Yes
0.000	181.0	1 5/8" Coax	No

Load Cases

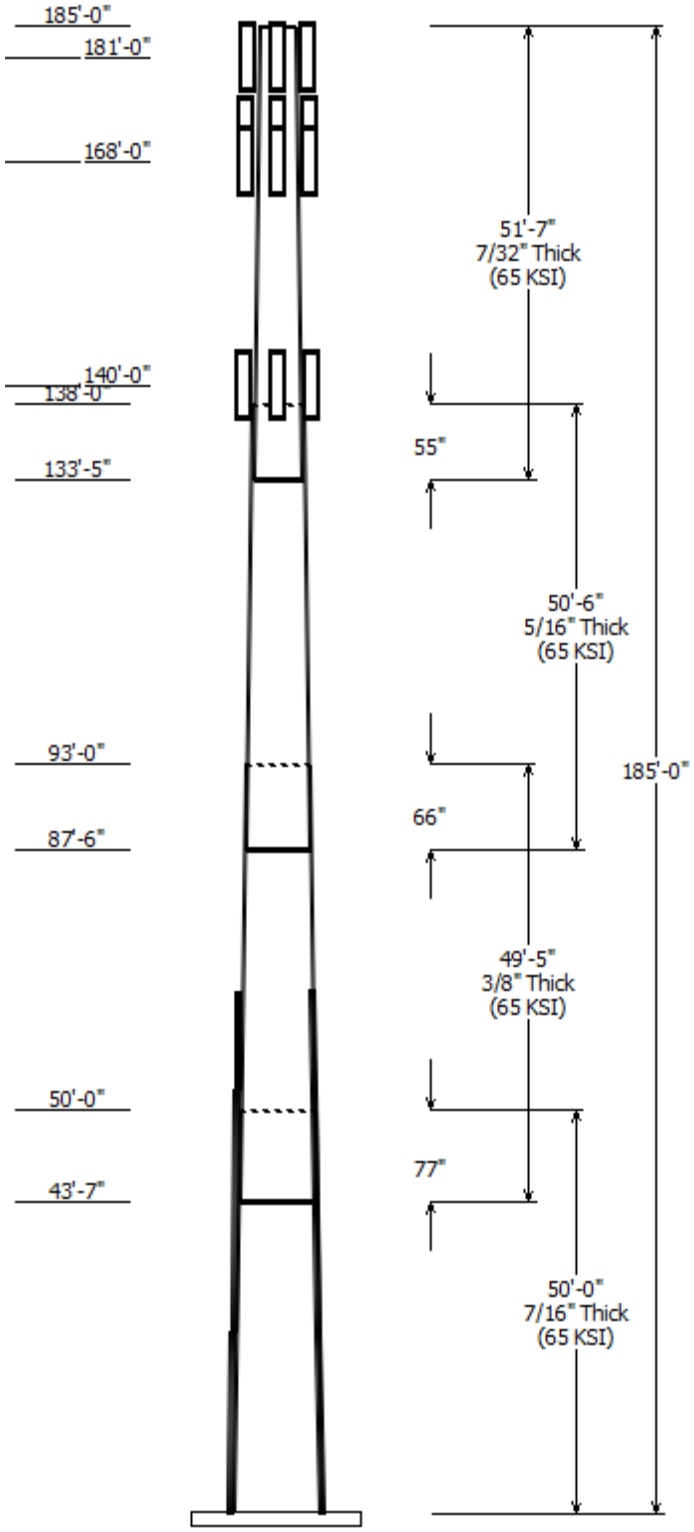
1.2D + 1.0W	118 mph with No Ice
0.9D + 1.0W	118 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.50 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

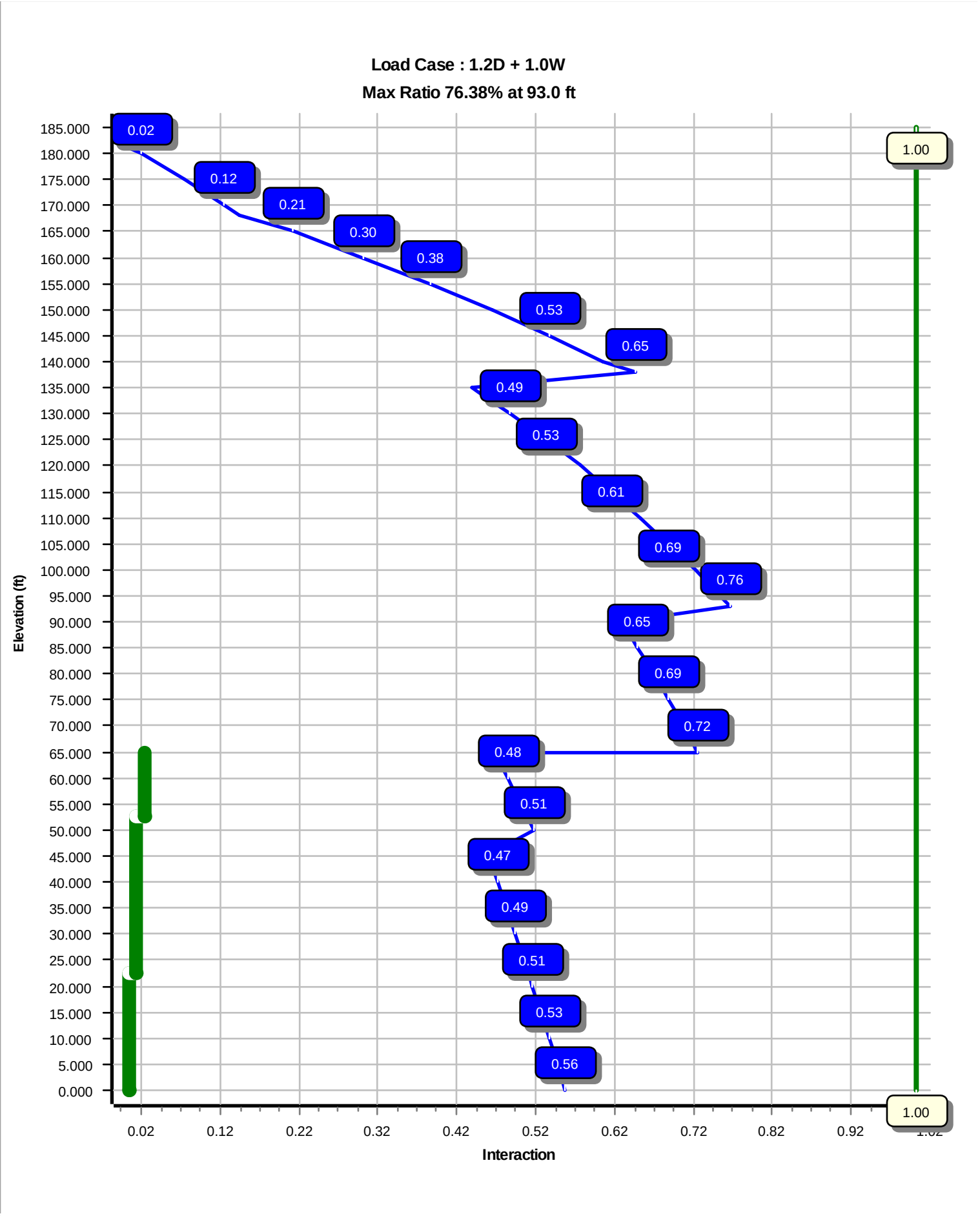
Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.0W	3669.61	29.16	61.53
0.9D + 1.0W	3605.71	29.14	46.14
1.2D + 1.0Di + 1.0Wi	999.95	7.38	94.80
1.2D + 1.0Ev + 1.0Eh	312.60	2.01	61.52
0.9D - 1.0Ev + 1.0Eh	305.33	2.00	42.41
1.0D + 1.0W	840.46	6.74	51.30

Dish Deflections

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




Load Case : 1.2D + 1.0W
Max Ratio 76.38% at 93.0 ft
Elevation (ft)
185.000
180.000
175.000
170.000
165.000
160.000
155.000
150.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
0.02
0.12
0.21
0.30
0.38
0.53
0.65
0.49
0.53
0.61
0.69
0.76
0.65
0.69
0.72
0.48
0.51
0.47
0.49
0.51
0.53
0.56
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: 302537 Code: ANSI/TIA-222-H

Site Name: Middletown CT 3, CT Engineering Number:13668065 4/27/2021 9:04:05 AM

Customer: SPRINT NEXTEL

Analysis Parameters

Location :	Hartford County, CT	Height (ft) :	185
Code :	ANSI/TIA-222-H	Base Diameter (in) :	52.00
Shape :	12 Sides	Top Diameter (in) :	19.03
Pole Type :	Taper	Taper (in/ft) :	0.188
Pole Manfacturer :	Valmont	Rotation (deg) :	0.00
Kd (non-service) :	0.95	Ke :	0.99

Ice & Wind Parameters

Exposure Category:	B	Design Wind Speed Without Ice:	118 mph
Risk Category:	II	Design Wind Speed With Ice:	50 mph
Topographic Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.50 in
Crest Height:	0 ft	HMSL:	139.00 ft

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	3.22				
T_L (sec):	6	p:	1.3	C_s:	0.030
S_s:	0.202	S_1:	0.055	C_s Max:	0.030
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.215	S_{d1}:	0.088		

Load Cases

1.2D + 1.0W	118 mph with No Ice
0.9D + 1.0W	118 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.50 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Site Number: 302537 Code: ANSI/TIA-222-H

Site Name: Middletown CT 3, CT Engineering Number:13668065 4/27/2021 9:04:05 AM

Customer: SPRINT NEXTEL

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-12	50.000	0.4375	65		0.00	11,232	52.00	0.00	72.64	24650.3	29.17	118.86	42.59	50.00	59.40	13476.5	23.41	97.37	0.188013
2-12	49.417	0.3750	65	Slip	77.00	8,028	44.55	43.58	53.35	13291.4	29.16	118.82	35.26	93.00	42.13	6545.8	22.52	94.04	0.188013
3-12	50.500	0.3125	65	Slip	66.00	5,510	36.92	87.50	36.84	6302.8	28.98	118.16	27.42	138.00	27.29	2560.9	20.84	87.77	0.188013
4-12	51.583	0.2188	65	Slip	55.00	2,925	28.72	133.42	20.08	2083.3	32.51	131.33	19.03	185.00	13.25	598.5	20.63	86.99	0.188013
				Shaft Weight		27,695													

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
181.00	Decibel 844G90VTA-SX	4	0.75	0.000	11.50	3.615	0.67	105.01	5.522	0.67
181.00	Decibel DB844H90E-XY	4	0.75	0.000	14.00	3.615	0.67	127.26	3.940	0.67
181.00	Decibel 844G65VTZASX	4	0.75	0.000	16.00	5.310	0.67	175.53	6.333	0.67
181.00	Generic Heavy Platform with	1	1.00	0.000	3,750.00	59.800	1.00	6,496.73	86.591	1.00
168.00	Powerwave Allgon LGP21401	6	0.75	1.000	14.10	1.104	0.50	39.36	1.827	0.50
168.00	Raycap DC6-48-60-18-8F (23.5"	2	0.75	0.000	20.00	1.260	1.00	73.31	1.927	1.00
168.00	Raycap DC6-48-60-0-8F	1	0.75	1.000	32.80	1.360	1.00	91.66	2.032	1.00
168.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.90	1.842	0.50	115.89	2.750	0.50
168.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	136.26	2.913	0.50
168.00	Ericsson RRUS 32 B30	3	0.75	0.000	60.00	2.743	0.67	134.49	3.927	0.67
168.00	Ericsson RRUS 32 B66	3	0.75	1.000	53.00	2.743	0.50	127.47	3.927	0.50
168.00	Ericsson RRUS E2 B29	3	0.75	0.000	60.00	3.145	0.62	141.90	4.319	0.62
168.00	Powerwave Allgon 7770.00	3	0.75	1.000	35.00	5.508	0.65	171.92	6.577	0.65
168.00	Quintel QS66512-2	3	0.75	1.000	111.00	8.133	0.67	312.78	10.956	0.67
168.00	CCI DMP65R-BU6DA	3	0.75	0.000	79.40	12.709	0.63	340.24	15.533	0.63
168.00	CCI OPA65R-BU6D	3	0.75	0.000	63.20	12.871	0.63	327.84	15.704	0.63
168.00	Generic Round Platform with	1	1.00	0.000	2,500.00	27.200	1.00	4,140.08	51.951	1.00
140.00	Ericsson Radio 4449 B71 B85A	3	0.75	0.000	75.00	1.650	0.50	134.81	2.495	0.50
140.00	Ericsson RRUS 4415 B66	3	0.75	0.000	46.00	1.650	0.50	89.05	2.495	0.50
140.00	Ericsson 4424 B25	3	0.75	0.000	86.00	2.052	0.67	158.51	2.990	0.67
140.00	Ericsson Air6449 B41	3	0.75	0.000	104.00	5.682	0.63	239.53	7.261	0.63
140.00	RFS APX16DWV-16DWVS-E-A20	3	0.75	0.000	40.70	6.586	0.60	156.87	8.740	0.60
140.00	RFS APXVAALL24 43-U-NA20	3	0.75	0.000	122.80	20.243	0.63	510.14	23.931	0.63
140.00	Generic Round Platform with	1	1.00	0.000	2,500.00	27.200	1.00	4,110.74	51.509	1.00
Totals	Num Loadings:24	69			12,274.40			26,146.27		

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	181.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	168.00	3	0.39" (10mm) Fiber	0.39	0.06	N	3	0.50	0.50	15	0.50	Y	AT&T MOBILITY
0.00	168.00	6	0.78" (19.7mm) 8 AWG	0.78	0.59	N	6	0.50	0.50	22	0.50	Y	AT&T MOBILITY
0.00	168.00	6	1 5/8" Coax	1.98	0.82	N	6	0.50	0.50	0	0.50	Y	AT&T MOBILITY
0.00	168.00	3	2" conduit	2.38	3.65	N	3	0.50	0.50	30	0.50	Y	AT&T MOBILITY
0.00	140.00	3	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	73.60	1	#20 w/ Angle Brackets	4.00	4.68	N	0	0.00	0.00	90	0.00	N	
0.00	73.60	1	#20 w/ Angle Brackets	4.00	4.68	N	0	0.00	0.00	270	0.00	N	
0.00	73.60	1	#20 w/ Angle Brackets	4.00	4.68	N	0	0.00	0.00	0	0.00	N	
0.00	73.60	1	#20 w/ Angle Brackets	4.00	4.68	N	0	0.00	0.00	180	0.00	N	

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connections				Continuation?
						Description	Spacing (in)	Len (in)	Connectors	
0.00	22.50	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	No
22.50	52.50	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	Yes
52.50	65.00	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	Yes

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)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.4375	52.000	72.639	24,650.3	29.17	118.86	72.9	915.8	0.0	0.0	19.64	8,518	0.0
5.00		0.4375	51.060	71.314	23,326.5	28.59	116.71	73.5	882.6	0.0	1,224.6	19.64	8,249	334.0
10.00		0.4375	50.120	69.990	22,050.9	28.02	114.56	74.2	849.9	0.0	1,202.1	19.64	7,983	334.0
15.00		0.4375	49.180	68.666	20,822.7	27.44	112.41	74.8	817.9	0.0	1,179.5	19.64	7,723	334.0
20.00		0.4375	48.240	67.341	19,641.0	26.87	110.26	75.4	786.6	0.0	1,157.0	19.64	7,466	334.0
22.50	Reinf. Top Reinf	0.4375	47.770	66.679	19,067.3	26.58	109.19	75.7	771.1	0.0	570.1	19.64	7,339	167.0
25.00		0.4375	47.300	66.017	18,504.9	26.29	108.11	76.0	755.8	0.0	564.4	19.64	7,214	167.0
30.00		0.4375	46.360	64.693	17,413.5	25.71	105.96	76.7	725.6	0.0	1,111.9	19.64	6,966	334.0
35.00		0.4375	45.420	63.368	16,365.8	25.14	103.82	77.3	696.1	0.0	1,089.4	19.64	6,722	334.0
40.00		0.4375	44.479	62.044	15,361.0	24.56	101.67	77.9	667.2	0.0	1,066.9	19.64	6,483	334.0
43.58	Bot - Section 2	0.4375	43.806	61.095	14,666.8	24.15	100.13	78.4	646.8	0.0	750.7	19.64	6,314	239.4
45.00		0.4375	43.539	60.720	14,398.2	23.99	99.52	78.6	638.9	0.0	550.0	19.64	6,435	94.6
50.00	Top - Section 1	0.3750	43.349	51.891	12,232.1	28.29	115.60	73.9	545.1	0.0	1,914.3	19.64	6,201	334.0
52.50	Reinf. Top Reinf	0.3750	42.879	51.324	11,835.1	27.96	114.34	74.2	533.2	0.0	439.0	19.64	6,086	167.0
55.00		0.3750	42.409	50.756	11,446.8	27.62	113.09	74.6	521.4	0.0	434.2	19.64	5,971	167.0
60.00		0.3750	41.469	49.621	10,695.8	26.95	110.58	75.3	498.3	0.0	853.9	19.64	5,746	334.0
65.00	Reinf. Top	0.3750	40.529	48.486	9,978.5	26.28	108.08	76.1	475.6	0.0	834.6	19.64	5,525	334.0
70.00		0.3750	39.589	47.351	9,293.9	25.61	105.57	76.8	453.5	0.0	815.3			
75.00		0.3750	38.649	46.216	8,641.4	24.94	103.06	77.5	431.9	0.0	796.0			
80.00		0.3750	37.709	45.081	8,020.2	24.26	100.56	78.3	410.9	0.0	776.7			
85.00		0.3750	36.769	43.946	7,429.5	23.59	98.05	79.0	390.3	0.0	757.3			
87.50	Bot - Section 3	0.3750	36.299	43.378	7,145.3	23.26	96.80	79.3	380.3	0.0	371.5			
90.00		0.3750	35.829	42.810	6,868.5	22.92	95.54	79.7	370.3	0.0	677.9			
93.00	Top - Section 2	0.3125	35.890	35.800	5,783.7	28.09	114.85	74.1	311.3	0.0	802.0			
95.00		0.3125	35.514	35.421	5,602.3	27.77	113.64	74.4	304.7	0.0	242.3			
100.0		0.3125	34.574	34.475	5,165.3	26.97	110.64	75.3	288.6	0.0	594.6			
105.0		0.3125	33.634	33.529	4,751.7	26.16	107.63	76.2	272.9	0.0	578.5			
110.0		0.3125	32.694	32.583	4,360.8	25.35	104.62	77.1	257.7	0.0	562.4			
115.0		0.3125	31.753	31.637	3,991.9	24.55	101.61	77.9	242.9	0.0	546.3			
120.0		0.3125	30.813	30.692	3,644.4	23.74	98.60	78.8	228.5	0.0	530.2			
125.0		0.3125	29.873	29.746	3,317.7	22.94	95.59	79.7	214.6	0.0	514.1			
130.0		0.3125	28.933	28.800	3,011.2	22.13	92.59	80.6	201.1	0.0	498.0			
133.4	Bot - Section 4	0.3125	28.291	28.153	2,812.9	21.58	90.53	81.2	192.1	0.0	331.1			
135.0		0.3125	27.993	27.854	2,724.1	21.32	89.58	81.5	188.0	0.0	258.4			
138.0	Top - Section 3	0.2188	27.867	19.474	1,900.1	31.45	127.39	70.4	131.7	0.0	482.3			
140.0		0.2188	27.491	19.210	1,823.6	30.99	125.67	70.9	128.2	0.0	131.6			
145.0		0.2188	26.551	18.547	1,641.5	29.84	121.37	72.2	119.4	0.0	321.2			
150.0		0.2188	25.610	17.885	1,471.9	28.69	117.08	73.4	111.0	0.0	309.9			
155.0		0.2188	24.670	17.223	1,314.4	27.54	112.78	74.7	102.9	0.0	298.7			
160.0		0.2188	23.730	16.561	1,168.5	26.39	108.48	75.9	95.1	0.0	287.4			
165.0		0.2188	22.790	15.899	1,033.9	25.24	104.18	77.2	87.6	0.0	276.1			
168.0		0.2188	22.226	15.502	958.3	24.55	101.61	77.9	83.3	0.0	160.3			
170.0		0.2188	21.850	15.237	910.0	24.09	99.89	78.4	80.5	0.0	104.6			
175.0		0.2188	20.910	14.575	796.5	22.93	95.59	79.7	73.6	0.0	253.6			
180.0		0.2188	19.970	13.912	692.8	21.78	91.29	81.0	67.0	0.0	242.3			
181.0		0.2188	19.782	13.780	673.2	21.55	90.43	81.2	65.7	0.0	47.1			
185.0		0.2188	19.030	13.250	598.5	20.63	86.99	81.9	60.8	0.0	184.0			
											27,694.6			4,342.0

Site Number: 302537 Code: ANSI/TIA-222-H

Site Name: Middletown CT 3, CT Engineering Number:13668065 4/27/2021 9:04:05 AM

Customer: SPRINT NEXTEL

Load Case: 1.2D + 1.0W 118 mph with No Ice 28 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
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		273.9	0.0					0.0	0.0	273.9	0.0	0.0	0.0
5.00		542.9	1,469.5					0.0	713.1	542.9	2,182.6	0.0	0.0
10.00		532.9	1,442.5					0.0	713.1	532.9	2,155.6	0.0	0.0
15.00		522.9	1,415.4					0.0	713.1	522.9	2,128.5	0.0	0.0
20.00		386.5	1,388.4					0.0	713.1	386.5	2,101.5	0.0	0.0
22.50	Reinf. Top Reinf	253.9	684.1					0.0	356.5	253.9	1,040.6	0.0	0.0
25.00		375.3	677.3					0.0	356.5	375.3	1,033.9	0.0	0.0
30.00		498.7	1,334.3					0.0	713.1	498.7	2,047.4	0.0	0.0
35.00		504.7	1,307.3					0.0	713.1	504.7	2,020.4	0.0	0.0
40.00		439.9	1,280.3					0.0	713.1	439.9	1,993.4	0.0	0.0
43.58	Bot - Section 2	259.9	900.9					0.0	511.1	259.9	1,411.9	0.0	0.0
45.00		340.7	660.0					0.0	202.0	340.7	862.0	0.0	0.0
50.00	Top - Section 1	399.5	2,297.2					0.0	713.1	399.5	3,010.3	0.0	0.0
52.50	Reinf. Top Reinf	267.7	526.8					0.0	356.5	267.7	883.4	0.0	0.0
55.00		402.7	521.0					0.0	356.5	402.7	877.6	0.0	0.0
60.00		537.7	1,024.7					0.0	713.1	537.7	1,737.8	0.0	0.0
65.00	Reinf. Top	537.7	1,001.5					0.0	713.1	537.7	1,714.6	0.0	0.0
70.00		536.5	978.3					0.0	312.3	536.5	1,290.6	0.0	0.0
75.00		534.2	955.2					0.0	280.9	534.2	1,236.0	0.0	0.0
80.00		530.9	932.0					0.0	200.0	530.9	1,132.0	0.0	0.0
85.00		396.0	908.8					0.0	200.0	396.0	1,108.8	0.0	0.0
87.50	Bot - Section 3	264.5	445.8					0.0	100.0	264.5	545.8	0.0	0.0
90.00		291.8	813.5					0.0	100.0	291.8	913.4	0.0	0.0
93.00	Top - Section 2	264.1	962.4					0.0	120.0	264.1	1,082.4	0.0	0.0
95.00		366.4	290.8					0.0	80.0	366.4	370.7	0.0	0.0
100.00		518.8	713.5					0.0	200.0	518.8	913.5	0.0	0.0
105.00		511.8	694.2					0.0	200.0	511.8	894.2	0.0	0.0
110.00		504.2	674.9					0.0	200.0	504.2	874.9	0.0	0.0
115.00		495.9	655.6					0.0	200.0	495.9	855.6	0.0	0.0
120.00		487.2	636.3					0.0	200.0	487.2	836.3	0.0	0.0
125.00		477.8	617.0					0.0	200.0	477.8	816.9	0.0	0.0
130.00		395.3	597.6					0.0	200.0	395.3	797.6	0.0	0.0
133.42	Bot - Section 4	232.6	397.3					0.0	136.7	232.6	534.0	0.0	0.0
135.00		212.4	310.1					0.0	63.3	212.4	373.5	0.0	0.0
138.00	Top - Section 3	229.8	578.8					0.0	120.0	229.8	698.8	0.0	0.0
140.00	Appurtenance(s)	315.6	157.9	3,211.5	0.0	0.0	4,708.2	0.0	80.0	3,527.1	4,946.1	0.0	0.0
145.00		443.1	385.4					0.0	176.6	443.1	562.0	0.0	0.0
150.00		431.6	371.9					0.0	176.6	431.6	548.5	0.0	0.0
155.00		419.6	358.4					0.0	176.6	419.6	535.0	0.0	0.0
160.00		407.3	344.9					0.0	176.6	407.3	521.5	0.0	0.0
165.00		317.8	331.4					0.0	176.6	317.8	507.9	0.0	0.0
168.00	Appurtenance(s)	194.1	192.3	4,464.9	0.0	1,144.9	5,321.9	0.0	105.9	4,659.0	5,620.2	0.0	0.0
170.00		264.4	125.5					0.0	23.6	264.4	149.1	0.0	0.0
175.00		368.2	304.3					0.0	59.0	368.2	363.4	0.0	0.0
180.00		216.0	290.8					0.0	59.0	216.0	349.8	0.0	0.0
181.00	Appurtenance(s)	159.2	56.5	3,688.6	0.0	0.0	4,699.2	0.0	11.8	3,847.8	4,767.5	0.0	0.0
185.00		123.9	220.7					0.0	0.0	123.9	220.7	0.0	0.0

Code: ANSI/TIA-222-H
Engineering Number:13668065

Load Case: 1.2D + 1.0W

118 mph with No Ice

28 Iterations

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

Totals:	29,353.6	61,568.3	0.00	0.00

Load Case: 1.2D + 1.0W — 118 mph with No Ice — 28 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
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	-61.53	-29.16	0.00	-3,669.61	0.00	3,669.61	4,765.98	1,274.81	6,200.72	5,007.21	0.00	0.00	0.555
5.00	-59.27	-28.78	0.00	-3,523.79	0.00	3,523.79	4,719.39	1,251.57	5,976.75	4,867.10	0.08	-0.15	0.545
10.00	-57.04	-28.39	0.00	-3,379.90	0.00	3,379.90	4,671.31	1,228.33	5,756.90	4,727.29	0.33	-0.31	0.535
15.00	-54.84	-28.01	0.00	-3,237.94	0.00	3,237.94	4,621.73	1,205.08	5,541.16	4,587.84	0.74	-0.47	0.525
20.00	-52.68	-27.71	0.00	-3,097.92	0.00	3,097.92	4,570.65	1,181.84	5,329.55	4,448.85	1.31	-0.62	0.514
22.50	-51.61	-27.52	0.00	-3,028.65	0.00	3,028.65	4,544.55	1,170.22	5,225.29	4,379.56	1.66	-0.70	0.509
22.50	-51.61	-27.52	0.00	-3,028.65	0.00	3,028.65	4,544.55	1,170.22	5,225.29	4,379.56	1.66	-0.70	0.509
25.00	-50.52	-27.23	0.00	-2,959.86	0.00	2,959.86	4,518.07	1,158.60	5,122.06	4,310.41	2.05	-0.79	0.503
30.00	-48.40	-26.84	0.00	-2,823.70	0.00	2,823.70	4,464.00	1,135.36	4,918.68	4,172.60	2.96	-0.95	0.492
35.00	-46.32	-26.43	0.00	-2,689.50	0.00	2,689.50	4,408.43	1,112.12	4,719.43	4,035.51	4.04	-1.11	0.481
40.00	-44.27	-26.05	0.00	-2,557.36	0.00	2,557.36	4,351.36	1,088.87	4,524.29	3,899.22	5.28	-1.27	0.470
43.58	-42.83	-25.82	0.00	-2,464.00	0.00	2,464.00	4,309.55	1,072.22	4,386.98	3,802.09	6.28	-1.38	0.461
45.00	-41.93	-25.54	0.00	-2,427.42	0.00	2,427.42	4,292.80	1,065.63	4,333.28	3,763.83	6.70	-1.43	0.454
50.00	-38.88	-25.14	0.00	-2,299.73	0.00	2,299.73	3,449.19	910.70	3,691.93	3,019.48	8.28	-1.59	0.514
52.50	-37.97	-24.91	0.00	-2,236.88	0.00	2,236.88	3,428.39	900.74	3,611.63	2,968.15	9.14	-1.68	0.506
52.50	-37.97	-24.91	0.00	-2,236.88	0.00	2,236.88	3,428.39	900.74	3,611.63	2,968.15	9.14	-1.68	0.506
55.00	-37.04	-24.56	0.00	-2,174.61	0.00	2,174.61	3,407.21	890.77	3,532.22	2,916.91	10.04	-1.76	0.499
60.00	-35.25	-24.07	0.00	-2,051.81	0.00	2,051.81	3,363.73	870.85	3,376.04	2,814.72	11.98	-1.94	0.482
65.00	-33.49	-23.58	0.00	-1,931.44	0.00	1,931.44	3,318.75	850.93	3,223.39	2,712.97	14.10	-2.11	0.466
65.00	-33.49	-23.58	0.00	-1,931.44	0.00	1,931.44	3,318.75	850.93	3,223.39	2,712.97	14.10	-2.11	0.723
70.00	-32.13	-23.11	0.00	-1,813.56	0.00	1,813.56	3,272.27	831.01	3,074.28	2,611.78	16.40	-2.28	0.705
75.00	-30.81	-22.67	0.00	-1,697.99	0.00	1,697.99	3,224.30	811.09	2,928.69	2,511.21	18.93	-2.55	0.687
80.00	-29.60	-22.23	0.00	-1,584.62	0.00	1,584.62	3,174.83	791.17	2,786.64	2,411.36	21.74	-2.82	0.667
85.00	-28.44	-21.88	0.00	-1,473.47	0.00	1,473.47	3,123.86	771.24	2,648.12	2,312.31	24.84	-3.09	0.647
87.50	-27.85	-21.65	0.00	-1,418.77	0.00	1,418.77	3,097.81	761.28	2,580.17	2,263.11	26.49	-3.23	0.637
90.00	-26.90	-21.38	0.00	-1,364.64	0.00	1,364.64	3,071.40	751.32	2,513.13	2,214.15	28.22	-3.37	0.626
93.00	-25.79	-21.11	0.00	-1,300.49	0.00	1,300.49	2,386.65	628.28	2,108.62	1,729.58	30.39	-3.53	0.764
95.00	-25.36	-20.82	0.00	-1,258.27	0.00	1,258.27	2,372.63	621.64	2,064.30	1,701.09	31.89	-3.64	0.751
100.00	-24.38	-20.37	0.00	-1,154.18	0.00	1,154.18	2,336.55	605.04	1,955.55	1,630.09	35.87	-3.95	0.720
105.00	-23.42	-19.92	0.00	-1,052.33	0.00	1,052.33	2,298.97	588.44	1,849.74	1,559.47	40.16	-4.25	0.686
110.00	-22.48	-19.47	0.00	-952.74	0.00	952.74	2,259.89	571.84	1,746.88	1,489.31	44.77	-4.55	0.651
115.00	-21.57	-19.01	0.00	-855.41	0.00	855.41	2,219.31	555.24	1,646.95	1,419.70	49.70	-4.85	0.613
120.00	-20.69	-18.56	0.00	-760.35	0.00	760.35	2,177.24	538.64	1,549.97	1,350.73	54.92	-5.14	0.574
125.00	-19.84	-18.10	0.00	-667.57	0.00	667.57	2,133.67	522.03	1,455.93	1,282.49	60.45	-5.42	0.531
130.00	-19.01	-17.70	0.00	-577.06	0.00	577.06	2,088.60	505.43	1,364.84	1,215.06	66.25	-5.68	0.485
133.42	-18.47	-17.46	0.00	-516.57	0.00	516.57	2,056.94	494.09	1,304.27	1,169.49	70.38	-5.86	0.452
135.00	-18.08	-17.25	0.00	-488.94	0.00	488.94	2,042.04	488.83	1,276.68	1,148.53	72.33	-5.94	0.436
138.00	-17.38	-16.98	0.00	-437.20	0.00	437.20	1,234.05	341.78	891.35	695.59	76.10	-6.08	0.645
140.00	-12.79	-12.99	0.00	-403.24	0.00	403.24	1,225.96	337.13	867.28	681.55	78.67	-6.18	0.604
145.00	-12.22	-12.54	0.00	-338.31	0.00	338.31	1,204.66	325.51	808.54	646.44	85.28	-6.47	0.535
150.00	-11.67	-12.10	0.00	-275.58	0.00	275.58	1,181.87	313.89	751.85	611.39	92.19	-6.73	0.462
155.00	-11.15	-11.67	0.00	-215.06	0.00	215.06	1,157.58	302.27	697.23	576.46	99.35	-6.97	0.384
160.00	-10.65	-11.23	0.00	-156.73	0.00	156.73	1,131.80	290.65	644.66	541.76	106.74	-7.17	0.300

Load Case: 1.2D + 1.0W 118 mph with No Ice 28 Iterations

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

165.00	-10.16	-10.87	0.00	-100.57	0.00	100.57	1,104.51	279.02	594.16	507.37	114.32	-7.33	0.209
168.00	-5.18	-5.54	0.00	-66.81	0.00	66.81	1,087.43	272.05	564.84	486.92	118.94	-7.40	0.142
170.00	-5.06	-5.26	0.00	-55.74	0.00	55.74	1,075.73	267.40	545.71	473.37	122.04	-7.43	0.123
175.00	-4.74	-4.85	0.00	-29.45	0.00	29.45	1,045.46	255.78	499.33	439.85	129.84	-7.50	0.072
180.00	-4.42	-4.59	0.00	-5.20	0.00	5.20	1,013.69	244.16	455.00	406.91	137.69	-7.53	0.017
181.00	-0.20	-0.15	0.00	-0.61	0.00	0.61	1,007.15	241.84	446.38	400.39	139.27	-7.53	0.002
185.00	0.00	-0.12	0.00	0.00	0.00	0.00	976.67	232.54	412.74	373.18	145.56	-7.53	0.000

Load Case: 0.9D + 1.0W — 118 mph with No Ice (Reduced DL) — 27 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
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		273.9	0.0					0.0	0.0	273.9	0.0	0.0	0.0
5.00		542.9	1,102.1					0.0	534.8	542.9	1,637.0	0.0	0.0
10.00		532.9	1,081.9					0.0	534.8	532.9	1,616.7	0.0	0.0
15.00		522.9	1,061.6					0.0	534.8	522.9	1,596.4	0.0	0.0
20.00		386.5	1,041.3					0.0	534.8	386.5	1,576.1	0.0	0.0
22.50	Reinf. Top Reinf	253.9	513.0					0.0	267.4	253.9	780.5	0.0	0.0
25.00		375.3	508.0					0.0	267.4	375.3	775.4	0.0	0.0
30.00		498.7	1,000.7					0.0	534.8	498.7	1,535.6	0.0	0.0
35.00		504.7	980.5					0.0	534.8	504.7	1,515.3	0.0	0.0
40.00		439.9	960.2					0.0	534.8	439.9	1,495.0	0.0	0.0
43.58	Bot - Section 2	259.9	675.7					0.0	383.3	259.9	1,059.0	0.0	0.0
45.00		340.7	495.0					0.0	151.5	340.7	646.5	0.0	0.0
50.00	Top - Section 1	399.5	1,722.9					0.0	534.8	399.5	2,257.7	0.0	0.0
52.50	Reinf. Top Reinf	267.7	395.1					0.0	267.4	267.7	662.5	0.0	0.0
55.00		402.7	390.8					0.0	267.4	402.7	658.2	0.0	0.0
60.00		537.7	768.5					0.0	534.8	537.7	1,303.3	0.0	0.0
65.00	Reinf. Top	537.7	751.1					0.0	534.8	537.7	1,286.0	0.0	0.0
70.00		536.5	733.8					0.0	234.2	536.5	968.0	0.0	0.0
75.00		534.2	716.4					0.0	210.6	534.2	927.0	0.0	0.0
80.00		530.9	699.0					0.0	150.0	530.9	849.0	0.0	0.0
85.00		396.0	681.6					0.0	150.0	396.0	831.6	0.0	0.0
87.50	Bot - Section 3	264.5	334.3					0.0	75.0	264.5	409.3	0.0	0.0
90.00		291.8	610.1					0.0	75.0	291.8	685.1	0.0	0.0
93.00	Top - Section 2	264.1	721.8					0.0	90.0	264.1	811.8	0.0	0.0
95.00		366.4	218.1					0.0	60.0	366.4	278.1	0.0	0.0
100.00		518.8	535.1					0.0	150.0	518.8	685.1	0.0	0.0
105.00		511.8	520.7					0.0	150.0	511.8	670.6	0.0	0.0
110.00		504.2	506.2					0.0	150.0	504.2	656.2	0.0	0.0
115.00		495.9	491.7					0.0	150.0	495.9	641.7	0.0	0.0
120.00		487.2	477.2					0.0	150.0	487.2	627.2	0.0	0.0
125.00		477.8	462.7					0.0	150.0	477.8	612.7	0.0	0.0
130.00		395.3	448.2					0.0	150.0	395.3	598.2	0.0	0.0
133.42	Bot - Section 4	232.6	298.0					0.0	102.5	232.6	400.5	0.0	0.0
135.00		212.4	232.6					0.0	47.5	212.4	280.1	0.0	0.0
138.00	Top - Section 3	229.8	434.1					0.0	90.0	229.8	524.1	0.0	0.0
140.00	Appurtenance(s)	315.6	118.5	3,211.5	0.0	0.0	3,531.1	0.0	60.0	3,527.1	3,709.6	0.0	0.0
145.00		443.1	289.1					0.0	132.4	443.1	421.5	0.0	0.0
150.00		431.6	278.9					0.0	132.4	431.6	411.4	0.0	0.0
155.00		419.6	268.8					0.0	132.4	419.6	401.2	0.0	0.0
160.00		407.3	258.7					0.0	132.4	407.3	391.1	0.0	0.0
165.00		317.8	248.5					0.0	132.4	317.8	381.0	0.0	0.0
168.00	Appurtenance(s)	194.1	144.2	4,464.9	0.0	1,144.9	3,991.4	0.0	79.5	4,659.0	4,215.1	0.0	0.0
170.00		264.4	94.1					0.0	17.7	264.4	111.8	0.0	0.0
175.00		368.2	228.2					0.0	44.3	368.2	272.5	0.0	0.0
180.00		216.0	218.1					0.0	44.3	216.0	262.4	0.0	0.0
181.00	Appurtenance(s)	159.2	42.4	3,688.6	0.0	0.0	3,524.4	0.0	8.9	3,847.8	3,575.7	0.0	0.0
185.00		123.9	165.6					0.0	0.0	123.9	165.6	0.0	0.0

Load Case: 0.9D + 1.0W 118 mph with No Ice (Reduced DL) 27 Iterations

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

Totals:	29,353.6	46,176.2	0.00	0.00

Load Case: 0.9D + 1.0W 118 mph with No Ice (Reduced DL) 27 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
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	-46.14	-29.14	0.00	-3,605.71	0.00	3,605.71	4,765.98	1,274.81	6,200.72	5,007.21	0.00	0.00	0.543
5.00	-44.42	-28.71	0.00	-3,460.00	0.00	3,460.00	4,719.39	1,251.57	5,976.75	4,867.10	0.08	-0.15	0.533
10.00	-42.73	-28.29	0.00	-3,316.44	0.00	3,316.44	4,671.31	1,228.33	5,756.90	4,727.29	0.32	-0.30	0.523
15.00	-41.07	-27.87	0.00	-3,174.99	0.00	3,174.99	4,621.73	1,205.08	5,541.16	4,587.84	0.72	-0.46	0.512
20.00	-39.44	-27.55	0.00	-3,035.66	0.00	3,035.66	4,570.65	1,181.84	5,329.55	4,448.85	1.29	-0.61	0.502
22.50	-38.62	-27.34	0.00	-2,966.80	0.00	2,966.80	4,544.55	1,170.22	5,225.29	4,379.56	1.63	-0.69	0.496
22.50	-38.62	-27.34	0.00	-2,966.80	0.00	2,966.80	4,544.55	1,170.22	5,225.29	4,379.56	1.63	-0.69	0.496
25.00	-37.80	-27.03	0.00	-2,898.46	0.00	2,898.46	4,518.07	1,158.60	5,122.06	4,310.41	2.01	-0.77	0.491
30.00	-36.20	-26.61	0.00	-2,763.32	0.00	2,763.32	4,464.00	1,135.36	4,918.68	4,172.60	2.90	-0.93	0.480
35.00	-34.62	-26.17	0.00	-2,630.29	0.00	2,630.29	4,408.43	1,112.12	4,719.43	4,035.51	3.96	-1.08	0.469
40.00	-33.07	-25.78	0.00	-2,499.45	0.00	2,499.45	4,351.36	1,088.87	4,524.29	3,899.22	5.18	-1.24	0.457
43.58	-31.98	-25.54	0.00	-2,407.07	0.00	2,407.07	4,309.55	1,072.22	4,386.98	3,802.09	6.16	-1.36	0.449
45.00	-31.30	-25.24	0.00	-2,370.89	0.00	2,370.89	4,292.80	1,065.63	4,333.28	3,763.83	6.57	-1.40	0.441
50.00	-29.00	-24.84	0.00	-2,244.70	0.00	2,244.70	3,449.19	910.70	3,691.93	3,019.48	8.12	-1.56	0.500
52.50	-28.31	-24.60	0.00	-2,182.60	0.00	2,182.60	3,428.39	900.74	3,611.63	2,968.15	8.96	-1.64	0.492
52.50	-28.31	-24.60	0.00	-2,182.60	0.00	2,182.60	3,428.39	900.74	3,611.63	2,968.15	8.96	-1.64	0.492
55.00	-27.61	-24.24	0.00	-2,121.11	0.00	2,121.11	3,407.21	890.77	3,532.22	2,916.91	9.84	-1.73	0.484
60.00	-26.26	-23.73	0.00	-1,999.93	0.00	1,999.93	3,363.73	870.85	3,376.04	2,814.72	11.74	-1.89	0.469
65.00	-24.92	-23.23	0.00	-1,881.26	0.00	1,881.26	3,318.75	850.93	3,223.39	2,712.97	13.81	-2.06	0.452
65.00	-24.92	-23.23	0.00	-1,881.26	0.00	1,881.26	3,318.75	850.93	3,223.39	2,712.97	13.81	-2.06	0.702
70.00	-23.89	-22.74	0.00	-1,765.13	0.00	1,765.13	3,272.27	831.01	3,074.28	2,611.78	16.06	-2.23	0.684
75.00	-22.88	-22.28	0.00	-1,651.42	0.00	1,651.42	3,224.30	811.09	2,928.69	2,511.21	18.53	-2.49	0.665
80.00	-21.96	-21.81	0.00	-1,540.04	0.00	1,540.04	3,174.83	791.17	2,786.64	2,411.36	21.28	-2.75	0.646
85.00	-21.08	-21.44	0.00	-1,431.01	0.00	1,431.01	3,123.86	771.24	2,648.12	2,312.31	24.31	-3.02	0.626
87.50	-20.63	-21.21	0.00	-1,377.39	0.00	1,377.39	3,097.81	761.28	2,580.17	2,263.11	25.92	-3.15	0.616
90.00	-19.91	-20.93	0.00	-1,324.39	0.00	1,324.39	3,071.40	751.32	2,513.13	2,214.15	27.61	-3.29	0.605
93.00	-19.07	-20.66	0.00	-1,261.60	0.00	1,261.60	2,386.65	628.28	2,108.62	1,729.58	29.72	-3.45	0.738
95.00	-18.74	-20.34	0.00	-1,220.28	0.00	1,220.28	2,372.63	621.64	2,064.30	1,701.09	31.19	-3.55	0.726
100.00	-17.99	-19.88	0.00	-1,118.56	0.00	1,118.56	2,336.55	605.04	1,955.55	1,630.09	35.07	-3.85	0.695
105.00	-17.25	-19.41	0.00	-1,019.18	0.00	1,019.18	2,298.97	588.44	1,849.74	1,559.47	39.26	-4.15	0.662
110.00	-16.54	-18.94	0.00	-922.15	0.00	922.15	2,259.89	571.84	1,746.88	1,489.31	43.75	-4.44	0.628
115.00	-15.85	-18.47	0.00	-827.46	0.00	827.46	2,219.31	555.24	1,646.95	1,419.70	48.55	-4.72	0.591
120.00	-15.18	-18.01	0.00	-735.11	0.00	735.11	2,177.24	538.64	1,549.97	1,350.73	53.63	-5.00	0.552
125.00	-14.53	-17.54	0.00	-645.08	0.00	645.08	2,133.67	522.03	1,455.93	1,282.49	59.01	-5.27	0.511
130.00	-13.91	-17.14	0.00	-557.37	0.00	557.37	2,088.60	505.43	1,364.84	1,215.06	64.66	-5.53	0.467
133.42	-13.50	-16.90	0.00	-498.79	0.00	498.79	2,056.94	494.09	1,304.27	1,169.49	68.67	-5.70	0.434
135.00	-13.21	-16.69	0.00	-472.04	0.00	472.04	2,042.04	488.83	1,276.68	1,148.53	70.57	-5.78	0.419
138.00	-12.68	-16.43	0.00	-421.97	0.00	421.97	1,234.05	341.78	891.35	695.59	74.24	-5.92	0.619
140.00	-9.32	-12.57	0.00	-389.11	0.00	389.11	1,225.96	337.13	867.28	681.55	76.73	-6.01	0.580
145.00	-8.89	-12.12	0.00	-326.27	0.00	326.27	1,204.66	325.51	808.54	646.44	83.16	-6.28	0.513
150.00	-8.48	-11.69	0.00	-265.65	0.00	265.65	1,181.87	313.89	751.85	611.39	89.87	-6.54	0.443
155.00	-8.09	-11.25	0.00	-207.22	0.00	207.22	1,157.58	302.27	697.23	576.46	96.83	-6.77	0.368
160.00	-7.71	-10.82	0.00	-150.96	0.00	150.96	1,131.80	290.65	644.66	541.76	104.01	-6.96	0.287

Load Case: 0.9D + 1.0W 118 mph with No Ice (Reduced DL) 27 Iterations

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

165.00	-7.36	-10.48	0.00	-96.83	0.00	96.83	1,104.51	279.02	594.16	507.37	111.37	-7.11	0.199
168.00	-3.75	-5.33	0.00	-64.26	0.00	64.26	1,087.43	272.05	564.84	486.92	115.86	-7.18	0.136
170.00	-3.67	-5.06	0.00	-53.60	0.00	53.60	1,075.73	267.40	545.71	473.37	118.86	-7.22	0.117
175.00	-3.44	-4.66	0.00	-28.30	0.00	28.30	1,045.46	255.78	499.33	439.85	126.44	-7.28	0.068
180.00	-3.21	-4.42	0.00	-4.99	0.00	4.99	1,013.69	244.16	455.00	406.91	134.06	-7.31	0.016
181.00	-0.15	-0.14	0.00	-0.58	0.00	0.58	1,007.15	241.84	446.38	400.39	135.59	-7.31	0.002
185.00	0.00	-0.12	0.00	0.00	0.00	0.00	976.67	232.54	412.74	373.18	141.70	-7.31	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.50 in Radial Ice 27 Iterations

Gust Response Factor :1.10 Ice Dead Load 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		64.8	0.0					0.0	0.0	64.8	0.0	0.0	0.0
5.00		128.8	1,861.5					0.0	868.1	128.8	2,729.6	0.0	0.0
10.00		127.0	1,873.2					0.0	884.5	127.0	2,757.7	0.0	0.0
15.00		125.0	1,861.0					0.0	893.0	125.0	2,754.0	0.0	0.0
20.00		92.6	1,841.0					0.0	898.9	92.6	2,739.9	0.0	0.0
22.50	Reinf. Top Reinf	61.0	912.7					0.0	451.2	61.0	1,363.9	0.0	0.0
25.00		90.2	906.4					0.0	452.2	90.2	1,358.6	0.0	0.0
30.00		120.1	1,790.5					0.0	907.2	120.1	2,697.7	0.0	0.0
35.00		121.8	1,762.3					0.0	910.4	121.8	2,672.7	0.0	0.0
40.00		106.4	1,732.7					0.0	913.3	106.4	2,646.0	0.0	0.0
43.58	Bot - Section 2	62.9	1,224.0					0.0	656.1	62.9	1,880.1	0.0	0.0
45.00		82.5	789.9					0.0	259.7	82.5	1,049.6	0.0	0.0
50.00	Top - Section 1	96.9	2,749.5					0.0	918.0	96.9	3,667.5	0.0	0.0
52.50	Reinf. Top Reinf	65.0	752.4					0.0	459.8	65.0	1,212.2	0.0	0.0
55.00		98.0	745.3					0.0	460.3	98.0	1,205.6	0.0	0.0
60.00		131.0	1,466.7					0.0	922.0	131.0	2,388.6	0.0	0.0
65.00	Reinf. Top	131.3	1,437.6					0.0	923.8	131.3	2,361.3	0.0	0.0
70.00		131.3	1,408.1					0.0	524.6	131.3	1,932.7	0.0	0.0
75.00		131.0	1,378.2					0.0	494.7	131.0	1,872.9	0.0	0.0
80.00		130.5	1,348.0					0.0	415.3	130.5	1,763.3	0.0	0.0
85.00		97.5	1,317.5					0.0	416.7	97.5	1,734.2	0.0	0.0
87.50	Bot - Section 3	65.2	648.6					0.0	208.9	65.2	857.5	0.0	0.0
90.00		72.0	1,017.7					0.0	209.1	72.0	1,226.8	0.0	0.0
93.00	Top - Section 2	65.2	1,204.6					0.0	251.4	65.2	1,456.0	0.0	0.0
95.00		90.7	451.1					0.0	167.8	90.7	618.9	0.0	0.0
100.00		128.7	1,105.6					0.0	420.4	128.7	1,526.1	0.0	0.0
105.00		127.3	1,078.1					0.0	421.5	127.3	1,499.7	0.0	0.0
110.00		125.8	1,050.5					0.0	422.6	125.8	1,473.1	0.0	0.0
115.00		124.1	1,022.6					0.0	423.7	124.1	1,446.3	0.0	0.0
120.00		122.3	994.6					0.0	424.7	122.3	1,419.3	0.0	0.0
125.00		120.4	966.4					0.0	425.7	120.4	1,392.1	0.0	0.0
130.00		99.9	938.1					0.0	426.6	99.9	1,364.7	0.0	0.0
133.42	Bot - Section 4	58.9	625.9					0.0	292.1	58.9	918.0	0.0	0.0
135.00		53.9	416.7					0.0	135.4	53.9	552.2	0.0	0.0
138.00	Top - Section 3	58.4	777.4					0.0	257.0	58.4	1,034.4	0.0	0.0
140.00	Appurtenance(s)	80.4	288.9	851.7	0.0	0.0	8,177.0	0.0	171.4	932.1	8,637.3	0.0	0.0
145.00		113.2	703.1					0.0	405.8	113.2	1,109.0	0.0	0.0
150.00		110.8	680.2					0.0	406.7	110.8	1,086.8	0.0	0.0
155.00		108.2	657.1					0.0	407.5	108.2	1,064.5	0.0	0.0
160.00		105.6	633.9					0.0	408.2	105.6	1,042.1	0.0	0.0
165.00		82.7	610.6					0.0	409.0	82.7	1,019.6	0.0	0.0
168.00	Appurtenance(s)	50.7	356.5	1,172.1	0.0	276.5	10,191.4	0.0	245.8	1,222.9	10,793.6	0.0	0.0
170.00		69.5	233.4					0.0	23.6	69.5	257.0	0.0	0.0
175.00		97.2	563.8					0.0	59.0	97.2	622.8	0.0	0.0
180.00		57.3	540.3					0.0	59.0	57.3	599.3	0.0	0.0
181.00	Appurtenance(s)	46.4	106.1	922.0	0.0	0.0	8,472.3	0.0	11.8	968.3	8,590.2	0.0	0.0
185.00		37.0	412.3					0.0	0.0	37.0	412.3	0.0	0.0

Code: ANSI/TIA-222-H
Engineering Number:13668065

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 1.50 in Radial Ice — 27 Iterations

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

Ice Dead Load Factor :1.00

Ice Importance Factor :1.00

Totals:	7,413.12	94,807.6	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.50 in Radial Ice 27 Iterations

Gust Response Factor :1.10 Ice Dead Load 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	-94.80	-7.38	0.00	-999.95	0.00	999.95	4,765.98	1,274.81	6,200.72	5,007.21	0.00	0.00	0.164
5.00	-92.07	-7.32	0.00	-963.04	0.00	963.04	4,719.39	1,251.57	5,976.75	4,867.10	0.02	-0.04	0.162
10.00	-89.31	-7.26	0.00	-926.43	0.00	926.43	4,671.31	1,228.33	5,756.90	4,727.29	0.09	-0.08	0.159
15.00	-86.55	-7.19	0.00	-890.14	0.00	890.14	4,621.73	1,205.08	5,541.16	4,587.84	0.20	-0.13	0.156
20.00	-83.80	-7.14	0.00	-854.18	0.00	854.18	4,570.65	1,181.84	5,329.55	4,448.85	0.36	-0.17	0.153
22.50	-82.44	-7.11	0.00	-836.32	0.00	836.32	4,544.55	1,170.22	5,225.29	4,379.56	0.45	-0.19	0.152
22.50	-82.44	-7.11	0.00	-836.32	0.00	836.32	4,544.55	1,170.22	5,225.29	4,379.56	0.45	-0.19	0.152
25.00	-81.08	-7.06	0.00	-818.55	0.00	818.55	4,518.07	1,158.60	5,122.06	4,310.41	0.56	-0.22	0.151
30.00	-78.37	-6.99	0.00	-783.25	0.00	783.25	4,464.00	1,135.36	4,918.68	4,172.60	0.81	-0.26	0.148
35.00	-75.70	-6.91	0.00	-748.30	0.00	748.30	4,408.43	1,112.12	4,719.43	4,035.51	1.11	-0.30	0.145
40.00	-73.05	-6.84	0.00	-713.74	0.00	713.74	4,351.36	1,088.87	4,524.29	3,899.22	1.45	-0.35	0.142
43.58	-71.16	-6.80	0.00	-689.22	0.00	689.22	4,309.55	1,072.22	4,386.98	3,802.09	1.73	-0.38	0.139
45.00	-70.11	-6.74	0.00	-679.59	0.00	679.59	4,292.80	1,065.63	4,333.28	3,763.83	1.84	-0.40	0.137
50.00	-66.44	-6.66	0.00	-645.88	0.00	645.88	3,449.19	910.70	3,691.93	3,019.48	2.28	-0.44	0.156
52.50	-65.23	-6.61	0.00	-629.24	0.00	629.24	3,428.39	900.74	3,611.63	2,968.15	2.52	-0.46	0.154
52.50	-65.23	-6.61	0.00	-629.24	0.00	629.24	3,428.39	900.74	3,611.63	2,968.15	2.52	-0.46	0.154
55.00	-64.02	-6.54	0.00	-612.71	0.00	612.71	3,407.21	890.77	3,532.22	2,916.91	2.77	-0.49	0.152
60.00	-61.62	-6.44	0.00	-580.00	0.00	580.00	3,363.73	870.85	3,376.04	2,814.72	3.30	-0.54	0.147
65.00	-59.26	-6.34	0.00	-547.78	0.00	547.78	3,318.75	850.93	3,223.39	2,712.97	3.89	-0.59	0.143
65.00	-59.26	-6.34	0.00	-547.78	0.00	547.78	3,318.75	850.93	3,223.39	2,712.97	3.89	-0.59	0.220
70.00	-57.32	-6.25	0.00	-516.09	0.00	516.09	3,272.27	831.01	3,074.28	2,611.78	4.53	-0.63	0.215
75.00	-55.44	-6.17	0.00	-484.83	0.00	484.83	3,224.30	811.09	2,928.69	2,511.21	5.24	-0.71	0.210
80.00	-53.67	-6.09	0.00	-453.97	0.00	453.97	3,174.83	791.17	2,786.64	2,411.36	6.02	-0.79	0.205
85.00	-51.93	-6.02	0.00	-423.52	0.00	423.52	3,123.86	771.24	2,648.12	2,312.31	6.89	-0.87	0.200
87.50	-51.07	-5.98	0.00	-408.47	0.00	408.47	3,097.81	761.28	2,580.17	2,263.11	7.36	-0.91	0.197
90.00	-49.84	-5.93	0.00	-393.52	0.00	393.52	3,071.40	751.32	2,513.13	2,214.15	7.84	-0.95	0.194
93.00	-48.38	-5.87	0.00	-375.75	0.00	375.75	2,386.65	628.28	2,108.62	1,729.58	8.45	-0.99	0.238
95.00	-47.76	-5.82	0.00	-364.01	0.00	364.01	2,372.63	621.64	2,064.30	1,701.09	8.87	-1.03	0.234
100.00	-46.23	-5.73	0.00	-334.92	0.00	334.92	2,336.55	605.04	1,955.55	1,630.09	10.00	-1.11	0.225
105.00	-44.72	-5.64	0.00	-306.26	0.00	306.26	2,298.97	588.44	1,849.74	1,559.47	11.21	-1.20	0.216
110.00	-43.24	-5.55	0.00	-278.05	0.00	278.05	2,259.89	571.84	1,746.88	1,489.31	12.52	-1.29	0.206
115.00	-41.79	-5.46	0.00	-250.29	0.00	250.29	2,219.31	555.24	1,646.95	1,419.70	13.92	-1.38	0.195
120.00	-40.37	-5.36	0.00	-223.01	0.00	223.01	2,177.24	538.64	1,549.97	1,350.73	15.40	-1.46	0.184
125.00	-38.97	-5.25	0.00	-196.23	0.00	196.23	2,133.67	522.03	1,455.93	1,282.49	16.98	-1.54	0.171
130.00	-37.61	-5.16	0.00	-169.96	0.00	169.96	2,088.60	505.43	1,364.84	1,215.06	18.64	-1.62	0.158
133.42	-36.69	-5.10	0.00	-152.33	0.00	152.33	2,056.94	494.09	1,304.27	1,169.49	19.82	-1.67	0.148
135.00	-36.13	-5.05	0.00	-144.26	0.00	144.26	2,042.04	488.83	1,276.68	1,148.53	20.38	-1.70	0.143
138.00	-35.10	-4.98	0.00	-129.11	0.00	129.11	1,234.05	341.78	891.35	695.59	21.46	-1.74	0.214
140.00	-26.49	-3.81	0.00	-119.15	0.00	119.15	1,225.96	337.13	867.28	681.55	22.19	-1.77	0.197
145.00	-25.38	-3.70	0.00	-100.09	0.00	100.09	1,204.66	325.51	808.54	646.44	24.09	-1.85	0.176
150.00	-24.29	-3.59	0.00	-81.59	0.00	81.59	1,181.87	313.89	751.85	611.39	26.07	-1.93	0.154
155.00	-23.23	-3.47	0.00	-63.67	0.00	63.67	1,157.58	302.27	697.23	576.46	28.13	-2.00	0.131
160.00	-22.19	-3.34	0.00	-46.34	0.00	46.34	1,131.80	290.65	644.66	541.76	30.26	-2.06	0.105

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.50 in Radial Ice 27 Iterations

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

165.00	-21.17	-3.24	0.00	-29.61	0.00	29.61	1,104.51	279.02	594.16	507.37	32.45	-2.11	0.078
168.00	-10.43	-1.62	0.00	-19.63	0.00	19.63	1,087.43	272.05	564.84	486.92	33.78	-2.13	0.050
170.00	-10.17	-1.54	0.00	-16.39	0.00	16.39	1,075.73	267.40	545.71	473.37	34.67	-2.14	0.044
175.00	-9.55	-1.42	0.00	-8.68	0.00	8.68	1,045.46	255.78	499.33	439.85	36.92	-2.16	0.029
180.00	-8.96	-1.35	0.00	-1.56	0.00	1.56	1,013.69	244.16	455.00	406.91	39.19	-2.17	0.013
181.00	-0.41	-0.05	0.00	-0.21	0.00	0.21	1,007.15	241.84	446.38	400.39	39.64	-2.17	0.001
185.00	0.00	-0.04	0.00	0.00	0.00	0.00	976.67	232.54	412.74	373.18	41.46	-2.17	0.000

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

Gust Response Factor :1.10
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		63.4	0.0					0.0	0.0	63.4	0.0	0.0	0.0
5.00		125.6	1,224.6					0.0	594.2	125.6	1,818.8	0.0	0.0
10.00		123.3	1,202.1					0.0	594.2	123.3	1,796.3	0.0	0.0
15.00		121.0	1,179.5					0.0	594.2	121.0	1,773.8	0.0	0.0
20.00		89.4	1,157.0					0.0	594.2	89.4	1,751.3	0.0	0.0
22.50	Reinf. Top Reinf	58.7	570.1					0.0	297.1	58.7	867.2	0.0	0.0
25.00		86.8	564.4					0.0	297.1	86.8	861.5	0.0	0.0
30.00		115.4	1,111.9					0.0	594.2	115.4	1,706.2	0.0	0.0
35.00		116.7	1,089.4					0.0	594.2	116.7	1,683.7	0.0	0.0
40.00		101.8	1,066.9					0.0	594.2	101.8	1,661.1	0.0	0.0
43.58	Bot - Section 2	60.1	750.7					0.0	425.9	60.1	1,176.6	0.0	0.0
45.00		78.8	550.0					0.0	168.4	78.8	718.4	0.0	0.0
50.00	Top - Section 1	92.4	1,914.3					0.0	594.2	92.4	2,508.6	0.0	0.0
52.50	Reinf. Top Reinf	61.9	439.0					0.0	297.1	61.9	736.1	0.0	0.0
55.00		93.2	434.2					0.0	297.1	93.2	731.3	0.0	0.0
60.00		124.4	853.9					0.0	594.2	124.4	1,448.2	0.0	0.0
65.00	Reinf. Top	124.4	834.6					0.0	594.2	124.4	1,428.8	0.0	0.0
70.00		124.1	815.3					0.0	260.2	124.1	1,075.5	0.0	0.0
75.00		123.6	796.0					0.0	234.0	123.6	1,030.0	0.0	0.0
80.00		122.8	776.7					0.0	166.6	122.8	943.3	0.0	0.0
85.00		91.6	757.3					0.0	166.6	91.6	924.0	0.0	0.0
87.50	Bot - Section 3	61.2	371.5					0.0	83.3	61.2	454.8	0.0	0.0
90.00		67.5	677.9					0.0	83.3	67.5	761.2	0.0	0.0
93.00	Top - Section 2	61.1	802.0					0.0	100.0	61.1	902.0	0.0	0.0
95.00		84.8	242.3					0.0	66.6	84.8	309.0	0.0	0.0
100.00		120.0	594.6					0.0	166.6	120.0	761.3	0.0	0.0
105.00		118.4	578.5					0.0	166.6	118.4	745.2	0.0	0.0
110.00		116.6	562.4					0.0	166.6	116.6	729.1	0.0	0.0
115.00		114.7	546.3					0.0	166.6	114.7	713.0	0.0	0.0
120.00		112.7	530.2					0.0	166.6	112.7	696.9	0.0	0.0
125.00		110.5	514.1					0.0	166.6	110.5	680.8	0.0	0.0
130.00		91.4	498.0					0.0	166.6	91.4	664.7	0.0	0.0
133.42	Bot - Section 4	53.8	331.1					0.0	113.9	53.8	445.0	0.0	0.0
135.00		49.1	258.4					0.0	52.8	49.1	311.2	0.0	0.0
138.00	Top - Section 3	53.2	482.3					0.0	100.0	53.2	582.3	0.0	0.0
140.00	Appurtenance(s)	73.0	131.6	742.9	0.0	0.0	3,923.5	0.0	66.6	815.9	4,121.8	0.0	0.0
145.00		102.5	321.2					0.0	147.1	102.5	468.3	0.0	0.0
150.00		99.8	309.9					0.0	147.1	99.8	457.1	0.0	0.0
155.00		97.1	298.7					0.0	147.1	97.1	445.8	0.0	0.0
160.00		94.2	287.4					0.0	147.1	94.2	434.5	0.0	0.0
165.00		73.5	276.1					0.0	147.1	73.5	423.3	0.0	0.0
168.00	Appurtenance(s)	44.9	160.3	1,032.9	0.0	264.8	4,434.9	0.0	88.3	1,077.8	4,683.5	0.0	0.0
170.00		61.2	104.6					0.0	19.7	61.2	124.3	0.0	0.0
175.00		85.2	253.6					0.0	49.2	85.2	302.8	0.0	0.0
180.00		50.0	242.3					0.0	49.2	50.0	291.5	0.0	0.0
181.00	Appurtenance(s)	36.8	47.1	853.3	0.0	0.0	3,916.0	0.0	9.8	890.1	3,973.0	0.0	0.0
185.00		28.7	184.0					0.0	0.0	28.7	184.0	0.0	0.0

Code: ANSI/TIA-222-H
Engineering Number:13668065

Load Case: 1.0D + 1.0W

Serviceability 60 mph

26 Iterations

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

Totals:	6,790.40	51,306.9	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

Gust Response Factor :1.10
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	-51.30	-6.74	0.00	-840.46	0.00	840.46	4,765.98	1,274.81	6,200.72	5,007.21	0.00	0.00	0.133
5.00	-49.48	-6.65	0.00	-806.75	0.00	806.75	4,719.39	1,251.57	5,976.75	4,867.10	0.02	-0.04	0.131
10.00	-47.68	-6.55	0.00	-773.52	0.00	773.52	4,671.31	1,228.33	5,756.90	4,727.29	0.08	-0.07	0.128
15.00	-45.90	-6.46	0.00	-740.76	0.00	740.76	4,621.73	1,205.08	5,541.16	4,587.84	0.17	-0.11	0.126
20.00	-44.15	-6.38	0.00	-708.47	0.00	708.47	4,570.65	1,181.84	5,329.55	4,448.85	0.30	-0.14	0.123
22.50	-43.28	-6.34	0.00	-692.51	0.00	692.51	4,544.55	1,170.22	5,225.29	4,379.56	0.38	-0.16	0.122
22.50	-43.28	-6.34	0.00	-692.51	0.00	692.51	4,544.55	1,170.22	5,225.29	4,379.56	0.38	-0.16	0.122
25.00	-42.42	-6.27	0.00	-676.67	0.00	676.67	4,518.07	1,158.60	5,122.06	4,310.41	0.47	-0.18	0.120
30.00	-40.71	-6.17	0.00	-645.33	0.00	645.33	4,464.00	1,135.36	4,918.68	4,172.60	0.68	-0.22	0.117
35.00	-39.02	-6.07	0.00	-614.46	0.00	614.46	4,408.43	1,112.12	4,719.43	4,035.51	0.92	-0.25	0.115
40.00	-37.36	-5.99	0.00	-584.09	0.00	584.09	4,351.36	1,088.87	4,524.29	3,899.22	1.21	-0.29	0.112
43.58	-36.18	-5.93	0.00	-562.64	0.00	562.64	4,309.55	1,072.22	4,386.98	3,802.09	1.44	-0.32	0.110
45.00	-35.46	-5.86	0.00	-554.24	0.00	554.24	4,292.80	1,065.63	4,333.28	3,763.83	1.53	-0.33	0.108
50.00	-32.95	-5.77	0.00	-524.92	0.00	524.92	3,449.19	910.70	3,691.93	3,019.48	1.89	-0.36	0.122
52.50	-32.21	-5.72	0.00	-510.50	0.00	510.50	3,428.39	900.74	3,611.63	2,968.15	2.09	-0.38	0.120
52.50	-32.21	-5.72	0.00	-510.50	0.00	510.50	3,428.39	900.74	3,611.63	2,968.15	2.09	-0.38	0.120
55.00	-31.48	-5.63	0.00	-496.21	0.00	496.21	3,407.21	890.77	3,532.22	2,916.91	2.30	-0.40	0.118
60.00	-30.02	-5.52	0.00	-468.04	0.00	468.04	3,363.73	870.85	3,376.04	2,814.72	2.74	-0.44	0.115
65.00	-28.59	-5.40	0.00	-440.44	0.00	440.44	3,318.75	850.93	3,223.39	2,712.97	3.22	-0.48	0.111
65.00	-28.59	-5.40	0.00	-440.44	0.00	440.44	3,318.75	850.93	3,223.39	2,712.97	3.22	-0.48	0.171
70.00	-27.51	-5.29	0.00	-413.43	0.00	413.43	3,272.27	831.01	3,074.28	2,611.78	3.75	-0.52	0.167
75.00	-26.48	-5.19	0.00	-386.96	0.00	386.96	3,224.30	811.09	2,928.69	2,511.21	4.33	-0.58	0.162
80.00	-25.53	-5.08	0.00	-361.02	0.00	361.02	3,174.83	791.17	2,786.64	2,411.36	4.97	-0.64	0.158
85.00	-24.61	-5.00	0.00	-335.60	0.00	335.60	3,123.86	771.24	2,648.12	2,312.31	5.68	-0.71	0.153
87.50	-24.15	-4.95	0.00	-323.10	0.00	323.10	3,097.81	761.28	2,580.17	2,263.11	6.06	-0.74	0.151
90.00	-23.39	-4.88	0.00	-310.73	0.00	310.73	3,071.40	751.32	2,513.13	2,214.15	6.45	-0.77	0.148
93.00	-22.48	-4.82	0.00	-296.08	0.00	296.08	2,386.65	628.28	2,108.62	1,729.58	6.95	-0.81	0.181
95.00	-22.17	-4.75	0.00	-286.44	0.00	286.44	2,372.63	621.64	2,064.30	1,701.09	7.29	-0.83	0.178
100.00	-21.40	-4.65	0.00	-262.68	0.00	262.68	2,336.55	605.04	1,955.55	1,630.09	8.20	-0.90	0.170
105.00	-20.66	-4.54	0.00	-239.45	0.00	239.45	2,298.97	588.44	1,849.74	1,559.47	9.18	-0.97	0.163
110.00	-19.92	-4.43	0.00	-216.75	0.00	216.75	2,259.89	571.84	1,746.88	1,489.31	10.23	-1.04	0.154
115.00	-19.21	-4.33	0.00	-194.57	0.00	194.57	2,219.31	555.24	1,646.95	1,419.70	11.35	-1.11	0.146
120.00	-18.51	-4.22	0.00	-172.93	0.00	172.93	2,177.24	538.64	1,549.97	1,350.73	12.55	-1.17	0.137
125.00	-17.83	-4.12	0.00	-151.81	0.00	151.81	2,133.67	522.03	1,455.93	1,282.49	13.81	-1.23	0.127
130.00	-17.16	-4.03	0.00	-131.22	0.00	131.22	2,088.60	505.43	1,364.84	1,215.06	15.13	-1.30	0.116
133.42	-16.71	-3.97	0.00	-117.46	0.00	117.46	2,056.94	494.09	1,304.27	1,169.49	16.08	-1.34	0.109
135.00	-16.40	-3.92	0.00	-111.18	0.00	111.18	2,042.04	488.83	1,276.68	1,148.53	16.52	-1.35	0.105
138.00	-15.82	-3.86	0.00	-99.41	0.00	99.41	1,234.05	341.78	891.35	695.59	17.38	-1.39	0.156
140.00	-11.72	-2.96	0.00	-91.69	0.00	91.69	1,225.96	337.13	867.28	681.55	17.97	-1.41	0.144
145.00	-11.25	-2.85	0.00	-76.91	0.00	76.91	1,204.66	325.51	808.54	646.44	19.48	-1.47	0.128
150.00	-10.79	-2.75	0.00	-62.64	0.00	62.64	1,181.87	313.89	751.85	611.39	21.06	-1.53	0.112
155.00	-10.35	-2.65	0.00	-48.88	0.00	48.88	1,157.58	302.27	697.23	576.46	22.69	-1.59	0.094
160.00	-9.91	-2.55	0.00	-35.62	0.00	35.62	1,131.80	290.65	644.66	541.76	24.38	-1.63	0.075

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

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

165.00	-9.49	-2.47	0.00	-22.85	0.00	22.85	1,104.51	279.02	594.16	507.37	26.11	-1.67	0.054
168.00	-4.84	-1.26	0.00	-15.17	0.00	15.17	1,087.43	272.05	564.84	486.92	27.17	-1.69	0.036
170.00	-4.72	-1.19	0.00	-12.66	0.00	12.66	1,075.73	267.40	545.71	473.37	27.87	-1.69	0.031
175.00	-4.42	-1.10	0.00	-6.68	0.00	6.68	1,045.46	255.78	499.33	439.85	29.66	-1.71	0.019
180.00	-4.13	-1.04	0.00	-1.18	0.00	1.18	1,013.69	244.16	455.00	406.91	31.45	-1.72	0.007
181.00	-0.18	-0.03	0.00	-0.14	0.00	0.14	1,007.15	241.84	446.38	400.39	31.81	-1.72	0.001
185.00	0.00	-0.03	0.00	0.00	0.00	0.00	976.67	232.54	412.74	373.18	33.25	-1.72	0.000

Equivalent Lateral Forces Method Analysis

Spectral Response Acceleration for Short Period (S_s):	0.20
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.05
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coeffiecient F_v:	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.22
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.09
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):	3.22
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	51.31 k
Seismic Base Shear (E):	2.00 k

Load Case 1.2D + 1.0Ev + 1.0Eh Seismic

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
46	183.00	184	6,160	0.011	21	229
45	180.50	57	1,856	0.003	6	71
44	177.50	292	9,185	0.016	32	362
43	172.50	303	9,010	0.015	31	376
42	169.00	124	3,549	0.006	12	154
41	166.50	249	6,891	0.012	24	309
40	162.50	423	11,177	0.019	38	526
39	157.50	435	10,780	0.019	37	540
38	152.50	446	10,368	0.018	36	554
37	147.50	457	9,944	0.017	34	568
36	142.50	468	9,510	0.016	33	582
35	139.00	198	3,831	0.007	13	246
34	136.50	582	10,850	0.019	37	724
33	134.21	311	5,605	0.010	19	387
32	131.71	445	7,719	0.013	27	553
31	127.50	665	10,805	0.019	37	826
30	122.50	681	10,216	0.018	35	846
29	117.50	697	9,621	0.017	33	866
28	112.50	713	9,024	0.015	31	886
27	107.50	729	8,425	0.014	29	906
26	102.50	745	7,829	0.013	27	926
25	97.50	761	7,237	0.012	25	946
24	94.00	309	2,730	0.005	9	384
23	91.50	902	7,552	0.013	26	1,121
22	88.75	761	5,996	0.010	21	946

21	86.25	455	3,383	0.006	12	565
20	82.50	924	6,289	0.011	22	1,149
19	77.50	943	5,666	0.010	19	1,173
18	72.50	1,030	5,414	0.009	19	1,280
17	67.50	1,076	4,900	0.008	17	1,337
16	62.50	1,429	5,581	0.010	19	1,776
15	57.50	1,448	4,788	0.008	16	1,800
14	53.75	731	2,113	0.004	7	909
13	51.25	736	1,934	0.003	7	915
12	47.50	2,509	5,660	0.010	19	3,118
11	44.29	718	1,409	0.002	5	893
10	41.79	1,177	2,055	0.004	7	1,463
9	37.50	1,661	2,336	0.004	8	2,065
8	32.50	1,684	1,778	0.003	6	2,093
7	27.50	1,706	1,290	0.002	4	2,121
6	23.75	862	486	0.001	2	1,071
5	21.25	867	392	0.001	1	1,078
4	17.50	1,751	536	0.001	2	2,177
3	12.50	1,774	277	0.000	1	2,205
2	7.50	1,796	101	0.000	0	2,233
1	2.50	1,819	11	0.000	0	2,261
Decibel 844G90VTA-SX	181.00	46	1,507	0.003	5	57
Decibel DB844H90E-XY	181.00	56	1,835	0.003	6	70
Decibel 844G65VTZASX	181.00	64	2,097	0.004	7	80
Generic Heavy Platfo	181.00	3,750	122,854	0.211	422	4,662
Powerwave Allgon LGP	168.00	85	2,388	0.004	8	105
Raycap DC6-48-60-18-	168.00	40	1,129	0.002	4	50
Raycap DC6-48-60-0-8	168.00	33	926	0.002	3	41
Ericsson RRUS 4478 B	168.00	180	5,072	0.009	17	223
Ericsson RRUS 4449 B	168.00	213	6,012	0.010	21	265
Ericsson RRUS 32 B30	168.00	180	5,080	0.009	17	224
Ericsson RRUS 32 B66	168.00	159	4,488	0.008	15	198
Ericsson RRUS E2 B29	168.00	180	5,080	0.009	17	224
Powerwave Allgon 777	168.00	105	2,964	0.005	10	131
Quintel QS66512-2	168.00	333	9,399	0.016	32	414
CCI DMP65R-BU6DA	168.00	238	6,723	0.012	23	296
CCI OPA65R-BU6D	168.00	190	5,351	0.009	18	236
Generic Round Platfo	168.00	2,500	70,560	0.121	242	3,108
Ericsson Radio 4449	140.00	225	4,410	0.008	15	280
Ericsson RRUS 4415 B	140.00	138	2,705	0.005	9	172
Ericsson 4424 B25	140.00	258	5,057	0.009	17	321
Ericsson Air6449 B41	140.00	312	6,115	0.010	21	388
RFS APX16DWV-16DWVS-	140.00	122	2,393	0.004	8	152
RFS APXVAALL24 43-U-	140.00	368	7,221	0.012	25	458
Generic Round Platfo	140.00	2,500	49,000	0.084	168	3,108
		51,307	582,635	1.000	2,001	63,779

Load Case 0.9D - 1.0Ev + 1.0Eh Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
46	183.00	184	6,160	0.011	21	158
45	180.50	57	1,856	0.003	6	49
44	177.50	292	9,185	0.016	32	250
43	172.50	303	9,010	0.015	31	259
42	169.00	124	3,549	0.006	12	106
41	166.50	249	6,891	0.012	24	213
40	162.50	423	11,177	0.019	38	363
39	157.50	435	10,780	0.019	37	372
38	152.50	446	10,368	0.018	36	382
37	147.50	457	9,944	0.017	34	392

36	142.50	468	9,510	0.016	33	401
35	139.00	198	3,831	0.007	13	170
34	136.50	582	10,850	0.019	37	499
33	134.21	311	5,605	0.010	19	267
32	131.71	445	7,719	0.013	27	381
31	127.50	665	10,805	0.019	37	570
30	122.50	681	10,216	0.018	35	583
29	117.50	697	9,621	0.017	33	597
28	112.50	713	9,024	0.015	31	611
27	107.50	729	8,425	0.014	29	625
26	102.50	745	7,829	0.013	27	639
25	97.50	761	7,237	0.012	25	652
24	94.00	309	2,730	0.005	9	265
23	91.50	902	7,552	0.013	26	773
22	88.75	761	5,996	0.010	21	652
21	86.25	455	3,383	0.006	12	390
20	82.50	924	6,289	0.011	22	792
19	77.50	943	5,666	0.010	19	808
18	72.50	1,030	5,414	0.009	19	883
17	67.50	1,076	4,900	0.008	17	922
16	62.50	1,429	5,581	0.010	19	1,224
15	57.50	1,448	4,788	0.008	16	1,241
14	53.75	731	2,113	0.004	7	627
13	51.25	736	1,934	0.003	7	631
12	47.50	2,509	5,660	0.010	19	2,150
11	44.29	718	1,409	0.002	5	616
10	41.79	1,177	2,055	0.004	7	1,008
9	37.50	1,661	2,336	0.004	8	1,423
8	32.50	1,684	1,778	0.003	6	1,443
7	27.50	1,706	1,290	0.002	4	1,462
6	23.75	862	486	0.001	2	738
5	21.25	867	392	0.001	1	743
4	17.50	1,751	536	0.001	2	1,501
3	12.50	1,774	277	0.000	1	1,520
2	7.50	1,796	101	0.000	0	1,539
1	2.50	1,819	11	0.000	0	1,559
Decibel 844G90VTA-SX	181.00	46	1,507	0.003	5	39
Decibel DB844H90E-XY	181.00	56	1,835	0.003	6	48
Decibel 844G65VTZASX	181.00	64	2,097	0.004	7	55
Generic Heavy Platfo	181.00	3,750	122,854	0.211	422	3,213
Powerwave Allgon LGP	168.00	85	2,388	0.004	8	72
Raycap DC6-48-60-18-	168.00	40	1,129	0.002	4	34
Raycap DC6-48-60-0-8	168.00	33	926	0.002	3	28
Ericsson RRUS 4478 B	168.00	180	5,072	0.009	17	154
Ericsson RRUS 4449 B	168.00	213	6,012	0.010	21	183
Ericsson RRUS 32 B30	168.00	180	5,080	0.009	17	154
Ericsson RRUS 32 B66	168.00	159	4,488	0.008	15	136
Ericsson RRUS E2 B29	168.00	180	5,080	0.009	17	154
Powerwave Allgon 777	168.00	105	2,964	0.005	10	90
Quintel QS66512-2	168.00	333	9,399	0.016	32	285
CCI DMP65R-BU6DA	168.00	238	6,723	0.012	23	204
CCI OPA65R-BU6D	168.00	190	5,351	0.009	18	162
Generic Round Platfo	168.00	2,500	70,560	0.121	242	2,142
Ericsson Radio 4449	140.00	225	4,410	0.008	15	193
Ericsson RRUS 4415 B	140.00	138	2,705	0.005	9	118
Ericsson 4424 B25	140.00	258	5,057	0.009	17	221
Ericsson Air6449 B41	140.00	312	6,115	0.010	21	267
RFS APX16DWV-16DWVS-	140.00	122	2,393	0.004	8	105
RFS APXVAALL24 43-U-	140.00	368	7,221	0.012	25	316
Generic Round Platfo	140.00	2,500	49,000	0.084	168	2,142
		51,307	582,635	1.000	2,001	43,965

Load Case 1.2D + 1.0Ev + 1.0Eh Seismic

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	-61.52	-2.01	0.00	-312.60	0.00	312.60	4,765.98	1,274.81	6,200.72	5,007.21	0.00	0.00	0.057
5.00	-59.28	-2.02	0.00	-302.56	0.00	302.56	4,719.39	1,251.57	5,976.75	4,867.10	0.01	-0.01	0.056
10.00	-57.08	-2.03	0.00	-292.46	0.00	292.46	4,671.31	1,228.33	5,756.90	4,727.29	0.03	-0.03	0.055
15.00	-54.90	-2.04	0.00	-282.30	0.00	282.30	4,621.73	1,205.08	5,541.16	4,587.84	0.06	-0.04	0.054
20.00	-53.82	-2.05	0.00	-272.09	0.00	272.09	4,570.65	1,181.84	5,329.55	4,448.85	0.11	-0.05	0.053
22.50	-52.75	-2.05	0.00	-266.97	0.00	266.97	4,544.55	1,170.22	5,225.29	4,379.56	0.14	-0.06	0.053
22.50	-52.75	-2.05	0.00	-266.97	0.00	266.97	4,544.55	1,170.22	5,225.29	4,379.56	0.14	-0.06	0.053
25.00	-50.63	-2.06	0.00	-261.83	0.00	261.83	4,518.07	1,158.60	5,122.06	4,310.41	0.18	-0.07	0.052
30.00	-48.54	-2.06	0.00	-251.55	0.00	251.55	4,464.00	1,135.36	4,918.68	4,172.60	0.26	-0.08	0.051
35.00	-46.47	-2.06	0.00	-241.26	0.00	241.26	4,408.43	1,112.12	4,719.43	4,035.51	0.35	-0.10	0.050
40.00	-45.01	-2.06	0.00	-230.96	0.00	230.96	4,351.36	1,088.87	4,524.29	3,899.22	0.46	-0.11	0.050
43.58	-44.12	-2.06	0.00	-223.58	0.00	223.58	4,309.55	1,072.22	4,386.98	3,802.09	0.55	-0.12	0.049
45.00	-41.00	-2.04	0.00	-220.66	0.00	220.66	4,292.80	1,065.63	4,333.28	3,763.83	0.58	-0.13	0.048
50.00	-40.08	-2.04	0.00	-210.46	0.00	210.46	3,449.19	910.70	3,691.93	3,019.48	0.72	-0.14	0.055
52.50	-39.17	-2.03	0.00	-205.37	0.00	205.37	3,428.39	900.74	3,611.63	2,968.15	0.80	-0.15	0.054
52.50	-39.17	-2.03	0.00	-205.37	0.00	205.37	3,428.39	900.74	3,611.63	2,968.15	0.80	-0.15	0.054
55.00	-37.37	-2.02	0.00	-200.28	0.00	200.28	3,407.21	890.77	3,532.22	2,916.91	0.88	-0.16	0.053
60.00	-35.59	-2.01	0.00	-190.18	0.00	190.18	3,363.73	870.85	3,376.04	2,814.72	1.05	-0.17	0.052
65.00	-34.26	-2.00	0.00	-180.14	0.00	180.14	3,318.75	850.93	3,223.39	2,712.97	1.24	-0.19	0.050
65.00	-34.26	-2.00	0.00	-180.14	0.00	180.14	3,318.75	850.93	3,223.39	2,712.97	1.24	-0.19	0.077
70.00	-32.98	-1.98	0.00	-170.17	0.00	170.17	3,272.27	831.01	3,074.28	2,611.78	1.45	-0.20	0.075
75.00	-31.80	-1.97	0.00	-160.25	0.00	160.25	3,224.30	811.09	2,928.69	2,511.21	1.67	-0.23	0.074
80.00	-30.65	-1.96	0.00	-150.38	0.00	150.38	3,174.83	791.17	2,786.64	2,411.36	1.93	-0.26	0.072
85.00	-30.09	-1.96	0.00	-140.57	0.00	140.57	3,123.86	771.24	2,648.12	2,312.31	2.21	-0.28	0.070
87.50	-29.14	-1.94	0.00	-135.67	0.00	135.67	3,097.81	761.28	2,580.17	2,263.11	2.36	-0.29	0.069
90.00	-28.02	-1.91	0.00	-130.83	0.00	130.83	3,071.40	751.32	2,513.13	2,214.15	2.52	-0.31	0.068
93.00	-27.63	-1.91	0.00	-125.08	0.00	125.08	2,386.65	628.28	2,108.62	1,729.58	2.72	-0.32	0.084
95.00	-26.69	-1.89	0.00	-121.26	0.00	121.26	2,372.63	621.64	2,064.30	1,701.09	2.86	-0.33	0.083
100.00	-25.76	-1.87	0.00	-111.82	0.00	111.82	2,336.55	605.04	1,955.55	1,630.09	3.22	-0.36	0.080
105.00	-24.85	-1.85	0.00	-102.48	0.00	102.48	2,298.97	588.44	1,849.74	1,559.47	3.62	-0.39	0.077
110.00	-23.97	-1.82	0.00	-93.24	0.00	93.24	2,259.89	571.84	1,746.88	1,489.31	4.05	-0.42	0.073
115.00	-23.10	-1.79	0.00	-84.13	0.00	84.13	2,219.31	555.24	1,646.95	1,419.70	4.50	-0.45	0.070
120.00	-22.25	-1.76	0.00	-75.16	0.00	75.16	2,177.24	538.64	1,549.97	1,350.73	4.99	-0.48	0.066
125.00	-21.43	-1.73	0.00	-66.35	0.00	66.35	2,133.67	522.03	1,455.93	1,282.49	5.51	-0.51	0.062
130.00	-20.87	-1.71	0.00	-57.71	0.00	57.71	2,088.60	505.43	1,364.84	1,215.06	6.06	-0.53	0.057
133.42	-20.49	-1.69	0.00	-51.88	0.00	51.88	2,056.94	494.09	1,304.27	1,169.49	6.44	-0.55	0.054
135.00	-19.76	-1.65	0.00	-49.21	0.00	49.21	2,042.04	488.83	1,276.68	1,148.53	6.63	-0.56	0.053
138.00	-19.52	-1.64	0.00	-44.27	0.00	44.27	1,234.05	341.78	891.35	695.59	6.99	-0.57	0.079
140.00	-14.06	-1.29	0.00	-41.00	0.00	41.00	1,225.96	337.13	867.28	681.55	7.23	-0.58	0.072
145.00	-13.49	-1.25	0.00	-34.56	0.00	34.56	1,204.66	325.51	808.54	646.44	7.86	-0.61	0.065
150.00	-12.94	-1.22	0.00	-28.28	0.00	28.28	1,181.87	313.89	751.85	611.39	8.51	-0.64	0.057
155.00	-12.40	-1.18	0.00	-22.19	0.00	22.19	1,157.58	302.27	697.23	576.46	9.20	-0.67	0.049
160.00	-11.87	-1.14	0.00	-16.29	0.00	16.29	1,131.80	290.65	644.66	541.76	9.91	-0.69	0.041
165.00	-11.56	-1.11	0.00	-10.59	0.00	10.59	1,104.51	279.02	594.16	507.37	10.63	-0.70	0.031
168.00	-5.90	-0.60	0.00	-7.24	0.00	7.24	1,087.43	272.05	564.84	486.92	11.08	-0.71	0.020
170.00	-5.52	-0.57	0.00	-6.03	0.00	6.03	1,075.73	267.40	545.71	473.37	11.38	-0.71	0.018
175.00	-5.16	-0.53	0.00	-3.19	0.00	3.19	1,045.46	255.78	499.33	439.85	12.13	-0.72	0.012

180.00	-5.09	-0.53	0.00	-0.53	0.00	0.53	1,013.69	244.16	455.00	406.91	12.89	-0.72	0.006
181.00	0.00	0.00	0.00	0.00	0.00	0.00	1,007.15	241.84	446.38	400.39	13.04	-0.72	0.000
185.00	0.00	0.00	0.00	0.00	0.00	0.00	976.67	232.54	412.74	373.18	13.64	-0.72	0.000

Load Case 0.9D - 1.0Ev + 1.0Eh Seismic (Reduced DL)

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	-42.41	-2.00	0.00	-305.33	0.00	305.33	4,765.98	1,274.81	6,200.72	5,007.21	0.00	0.00	0.052
5.00	-40.87	-2.01	0.00	-295.31	0.00	295.31	4,719.39	1,251.57	5,976.75	4,867.10	0.01	-0.01	0.052
10.00	-39.35	-2.02	0.00	-285.24	0.00	285.24	4,671.31	1,228.33	5,756.90	4,727.29	0.03	-0.03	0.051
15.00	-37.85	-2.03	0.00	-275.13	0.00	275.13	4,621.73	1,205.08	5,541.16	4,587.84	0.06	-0.04	0.050
20.00	-37.10	-2.03	0.00	-264.99	0.00	264.99	4,570.65	1,181.84	5,329.55	4,448.85	0.11	-0.05	0.049
22.50	-36.36	-2.03	0.00	-259.91	0.00	259.91	4,544.55	1,170.22	5,225.29	4,379.56	0.14	-0.06	0.049
22.50	-36.36	-2.03	0.00	-259.91	0.00	259.91	4,544.55	1,170.22	5,225.29	4,379.56	0.14	-0.06	0.049
25.00	-34.90	-2.03	0.00	-254.83	0.00	254.83	4,518.07	1,158.60	5,122.06	4,310.41	0.17	-0.07	0.048
30.00	-33.46	-2.03	0.00	-244.66	0.00	244.66	4,464.00	1,135.36	4,918.68	4,172.60	0.25	-0.08	0.048
35.00	-32.03	-2.03	0.00	-234.48	0.00	234.48	4,408.43	1,112.12	4,719.43	4,035.51	0.34	-0.09	0.047
40.00	-31.02	-2.03	0.00	-224.32	0.00	224.32	4,351.36	1,088.87	4,524.29	3,899.22	0.45	-0.11	0.046
43.58	-30.41	-2.03	0.00	-217.05	0.00	217.05	4,309.55	1,072.22	4,386.98	3,802.09	0.53	-0.12	0.045
45.00	-28.26	-2.01	0.00	-214.18	0.00	214.18	4,292.80	1,065.63	4,333.28	3,763.83	0.57	-0.12	0.044
50.00	-27.63	-2.01	0.00	-204.14	0.00	204.14	3,449.19	910.70	3,691.93	3,019.48	0.71	-0.14	0.051
52.50	-27.00	-2.00	0.00	-199.12	0.00	199.12	3,428.39	900.74	3,611.63	2,968.15	0.78	-0.14	0.050
52.50	-27.00	-2.00	0.00	-199.12	0.00	199.12	3,428.39	900.74	3,611.63	2,968.15	0.78	-0.14	0.050
55.00	-25.76	-1.99	0.00	-194.12	0.00	194.12	3,407.21	890.77	3,532.22	2,916.91	0.86	-0.15	0.049
60.00	-24.53	-1.97	0.00	-184.19	0.00	184.19	3,363.73	870.85	3,376.04	2,814.72	1.02	-0.17	0.048
65.00	-23.61	-1.96	0.00	-174.35	0.00	174.35	3,318.75	850.93	3,223.39	2,712.97	1.21	-0.18	0.046
65.00	-23.61	-1.96	0.00	-174.35	0.00	174.35	3,318.75	850.93	3,223.39	2,712.97	1.21	-0.18	0.071
70.00	-22.73	-1.94	0.00	-164.56	0.00	164.56	3,272.27	831.01	3,074.28	2,611.78	1.41	-0.20	0.070
75.00	-21.92	-1.93	0.00	-154.85	0.00	154.85	3,224.30	811.09	2,928.69	2,511.21	1.63	-0.22	0.068
80.00	-21.13	-1.91	0.00	-145.20	0.00	145.20	3,174.83	791.17	2,786.64	2,411.36	1.88	-0.25	0.067
85.00	-20.74	-1.91	0.00	-135.63	0.00	135.63	3,123.86	771.24	2,648.12	2,312.31	2.15	-0.27	0.065
87.50	-20.09	-1.89	0.00	-130.86	0.00	130.86	3,097.81	761.28	2,580.17	2,263.11	2.30	-0.29	0.064
90.00	-19.31	-1.86	0.00	-126.14	0.00	126.14	3,071.40	751.32	2,513.13	2,214.15	2.45	-0.30	0.063
93.00	-19.05	-1.86	0.00	-120.55	0.00	120.55	2,386.65	628.28	2,108.62	1,729.58	2.64	-0.31	0.078
95.00	-18.39	-1.83	0.00	-116.83	0.00	116.83	2,372.63	621.64	2,064.30	1,701.09	2.77	-0.32	0.076
100.00	-17.75	-1.81	0.00	-107.66	0.00	107.66	2,336.55	605.04	1,955.55	1,630.09	3.13	-0.35	0.074
105.00	-17.13	-1.79	0.00	-98.60	0.00	98.60	2,298.97	588.44	1,849.74	1,559.47	3.51	-0.38	0.071
110.00	-16.52	-1.76	0.00	-89.66	0.00	89.66	2,259.89	571.84	1,746.88	1,489.31	3.93	-0.41	0.068
115.00	-15.92	-1.73	0.00	-80.85	0.00	80.85	2,219.31	555.24	1,646.95	1,419.70	4.37	-0.44	0.064
120.00	-15.34	-1.70	0.00	-72.20	0.00	72.20	2,177.24	538.64	1,549.97	1,350.73	4.84	-0.46	0.061
125.00	-14.77	-1.66	0.00	-63.70	0.00	63.70	2,133.67	522.03	1,455.93	1,282.49	5.34	-0.49	0.057
130.00	-14.38	-1.64	0.00	-55.38	0.00	55.38	2,088.60	505.43	1,364.84	1,215.06	5.87	-0.52	0.052
133.42	-14.12	-1.62	0.00	-49.78	0.00	49.78	2,056.94	494.09	1,304.27	1,169.49	6.25	-0.53	0.049
135.00	-13.62	-1.58	0.00	-47.22	0.00	47.22	2,042.04	488.83	1,276.68	1,148.53	6.43	-0.54	0.048
138.00	-13.45	-1.57	0.00	-42.47	0.00	42.47	1,234.05	341.78	891.35	695.59	6.77	-0.55	0.072
140.00	-9.69	-1.24	0.00	-39.33	0.00	39.33	1,225.96	337.13	867.28	681.55	7.00	-0.56	0.066
145.00	-9.30	-1.21	0.00	-33.14	0.00	33.14	1,204.66	325.51	808.54	646.44	7.61	-0.59	0.059
150.00	-8.91	-1.17	0.00	-27.11	0.00	27.11	1,181.87	313.89	751.85	611.39	8.25	-0.62	0.052
155.00	-8.54	-1.13	0.00	-21.26	0.00	21.26	1,157.58	302.27	697.23	576.46	8.91	-0.64	0.044
160.00	-8.18	-1.09	0.00	-15.61	0.00	15.61	1,131.80	290.65	644.66	541.76	9.59	-0.66	0.036
165.00	-7.97	-1.07	0.00	-10.15	0.00	10.15	1,104.51	279.02	594.16	507.37	10.29	-0.68	0.027
168.00	-4.06	-0.58	0.00	-6.95	0.00	6.95	1,087.43	272.05	564.84	486.92	10.72	-0.68	0.018
170.00	-3.81	-0.55	0.00	-5.79	0.00	5.79	1,075.73	267.40	545.71	473.37	11.01	-0.69	0.016
175.00	-3.56	-0.51	0.00	-3.06	0.00	3.06	1,045.46	255.78	499.33	439.85	11.73	-0.70	0.010

180.00	-3.51	-0.50	0.00	-0.50	0.00	0.50	1,013.69	244.16	455.00	406.91	12.46	-0.70	0.005
181.00	0.00	0.00	0.00	0.00	0.00	0.00	1,007.15	241.84	446.38	400.39	12.61	-0.70	0.000
185.00	0.00	0.00	0.00	0.00	0.00	0.00	976.67	232.54	412.74	373.18	13.19	-0.70	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 + 1.0W	29.16	0.00	61.53	0.00	0.00	3669.61	93.00	0.76
0.9D + 1.0W	29.14	0.00	46.14	0.00	0.00	3605.71	93.00	0.74
1.2D + 1.0Di + 1.0Wi	7.38	0.00	94.80	0.00	0.00	999.95	93.00	0.24
1.2D + 1.0Ev + 1.0Eh	2.01	0.00	61.52	0.00	0.00	312.60	93.00	0.08
0.9D - 1.0Ev + 1.0Eh	2.00	0.00	42.41	0.00	0.00	305.33	93.00	0.08
1.0D + 1.0W	6.74	0.00	51.30	0.00	0.00	840.46	93.00	0.18

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Ratio	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	22.50	(4) SOL-#20 All Thread Bar	139.8	4.2	16.8	0.249	195.2	330.5	0.591
22.50	52.50	(4) SOL-#20 All Thread Bar	169.8	5.1	16.8	0.303	187.6	330.5	0.568
52.50	65.00	(4) SOL-#20 All Thread Bar	177.0	5.3	16.8	0.316	185.6	330.5	0.562

Elev From (ft)	Elev To (ft)	Member	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio	Lower Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio
0.00	22.50	(4) SOL-#20 All Thread Bar	0.0	12.0	0	0	0.000	0.0	12.0	0	0	0.000
22.50	52.50	(4) SOL-#20 All Thread Bar	0.0	12.0	0	0	0.000	0.0	12.0	0	0	0.000
52.50	65.00	(4) SOL-#20 All Thread Bar	174.0	12.0	15	24	0.604	0.0	12.0	0	0	0.000

Base Plate & Anchor Rod Analysis

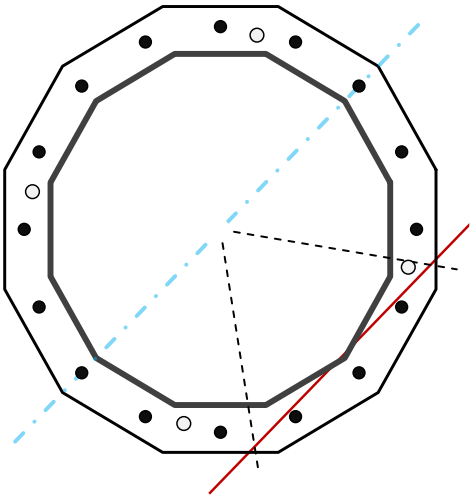
Pole Dimensions		
Number of Sides	12	-
Diameter	52	in
Thickness	7/16	in
Orientation Offset	15	°

Base Reactions		
Moment, Mu	3669.6	k-ft
Axial, Pu	61.5	k
Shear, Vu	29.2	k
Neutral Axis	225	°

Report Capacities		
Component	Capacity	Result
Base Plate	14%	Pass
Anchor Rods	55%	Pass
Dwyidag	43%	Pass

Base Plate		
Number of Sides	12	-
Diameter, ø	66.34	in
Thickness	2 3/4	in
Grade	A871-60	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset	15	°
Anchor Rod Detail	c	η=0.55
Clear Distance	N/A	in
Applied Moment, Mu	576.1	k
Bending Stress, ϕMn	4007.0	k

Original Anchor Rods		
Arrangement	Radial	-
Quantity	16	-
Diameter, ø	2 1/4	in
Bolt Circle	60.34	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	11.8	in
Orientation Offset		°
Applied Force, Pu	141.8	k
Anchor Rods, ϕPn	259.8	k



Dywidag Reinforcement		
Quantity	4	-
Bar Size	#20	in
Diameter, ø	2.5	in
Bracket Type	Angle	-
Circle	58.88	in
Orientation Offset	79	°
Applied Force, Pu	170.0	k
Dywidag Bar, ϕPn	392.7	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	29.2	2687.0	0.73
Anchor Rod Forces	29.2	2687.0	0.73
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	982.6	0.27
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	70.0631	5.8386	0.3741		23289.02
Bolt	3.9761	3.2477	0.8393	4.5	21837.52
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	4.9087	4.9087	1.9175		8516.61
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	12	-
Width, W	66.34	in
Thickness, t	2.75	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	41.195	in
Detail Type	c	-
Detail Factor	0.55	-
Clear Distance	N/A	-

Anchor Rods		
Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	60.34	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	141.8	k
Applied Shear, Vu	0.9	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.546	OK
Interaction Capacity	0.552	OK

External Base Plate		
Chord Length AA	41.569	in
Additional AA	5.500	in
Section Modulus, Z	88.990	in^3
Applied Moment, Mu	576.1	k-ft
Bending Capacity, ϕMn	4805.4	k-ft
Capacity, Mu/ϕMn	0.120	OK
Chord Length AB	39.726	in
Additional AB	5.500	in
Section Modulus, Z	85.505	in^3
Applied Moment, Mu	274.5	k-ft
Bending Capacity, ϕMn	4617.3	k-ft
Capacity, Mu/ϕMn	0.059	OK
Bend Line Length	39.248	in
Additional Bend Line	0.000	in
Section Modulus, Z	74.203	in^3
Applied Moment, Mu	576.1	k-ft
Bending Capacity, ϕMn	4007.0	k-ft
Capacity, Mu/ϕMn	0.144	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		

Dywidag Reinforcement		
Dywidag Quantity, N	4	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	58.88	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	170.0	k
Compressive Capacity, ϕPn	392.7	k
Capacity, Pu/ϕPn	0.433	OK

RAN Template:	A&L Template:
67D5A998C 6160 (GSM only)	67D5998C_1xAIR+1QP+1OP (GSM only)

CTHA859A_Sprint Retain_1_draft

Print Name: Standard
PORs: New Build_Sprint Keep

Section 1 - Site Information

Site ID: CTHA859A
Status: Draft
Version: 1
Project Type: Sprint Retain
Approved: Not Approved
Approved By: Not Approved
Last Modified: 3/30/2021 10:38:01 AM
Last Modified By: ANKIT.JAISWAL20@T-Mobile.com

Site Name: CTHA859A
Site Class: Monopole
Site Type: Structure Non Building
Plan Year: 2021
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: Not Specified

Latitude: 41.63858611
Longitude: -72.67928888
Address: 47 Inwood Rd
City, State: Rocky Hill, CT
Region: NORTHEAST

RAN Template: 67D5A998C 6160 (GSM only)			**AL Template:** 67D5998C_1xAIR+1QP+1OP (GSM only)	
Sector Count: 3	**Antenna Count:** 9	**Coax Line Count:** 0	**TMA Count:** 0	**RRU Count:** 9

Section 2 - Existing Template Images

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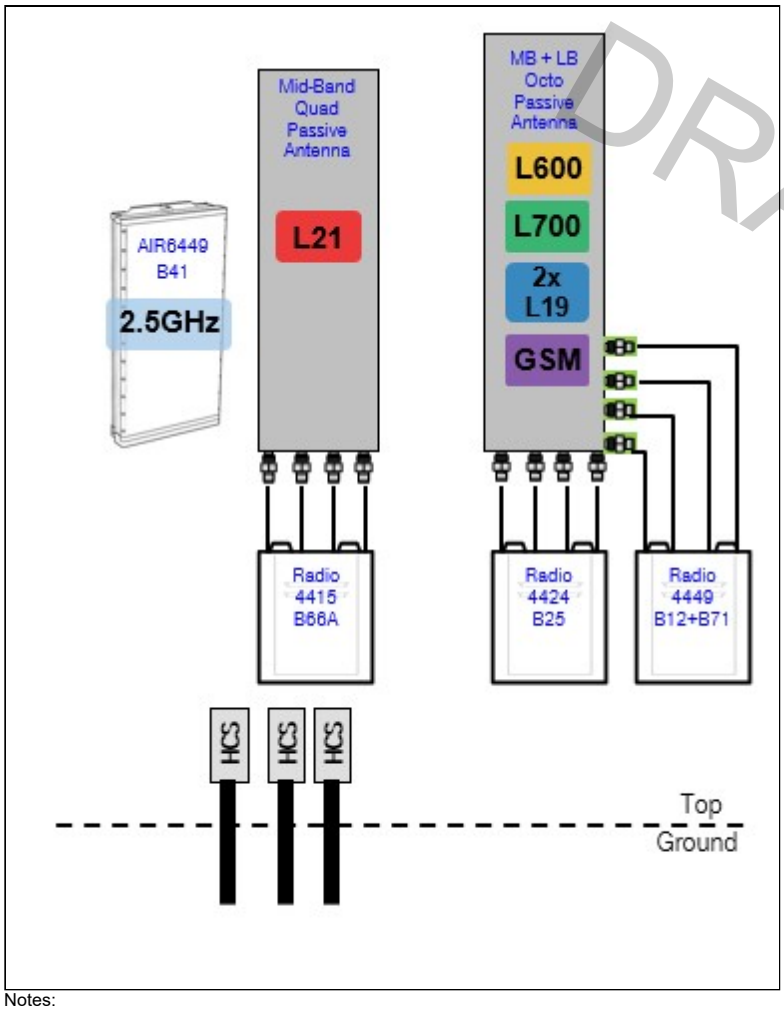
Section 3 - Proposed Template Images

67D5A998C_1xAIR+1xQP+1xOP.jpg



Notes:

Section 4 - Siteplan Images

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RAN Template:	A&L Template:
67D5A998C 6160 (GSM only)	67D5998C_1xAIR+1QP+1OP (GSM only)

CTHA859A_Sprint Retain_1_draft

Print Name: Standard
PORs: New Build_Sprint Keep

Section 5 - RAN Equipment

Existing RAN Equipment

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Proposed RAN Equipment

Template: 67D5A998C 6160 (GSM only)

Enclosure	1	2	3	4
Enclosure Type	Ancillary Equipment (Ericsson)	Enclosure 6160	B160	RBS 6601
Baseband		BB 6648 [L2500, N2500] BB 6648 [L2100, L1900] BB 6648 [L700, L600, N600]		DUG20 [G1900]
Hybrid Cable System	PSU 4813 Ericsson Hybrid Trunk 6/24 4AWG 100m **(x 3)**			
Transport System		CSR IXRe V2 (Gen2)		

RAN Scope of Work:

RAN Template:	A&L Template:
67D5A998C 6160 (GSM only)	67D5998C_1xAIR+1QP+1OP (GSM only)

CTHA859A_Sprint Retain_1_draft

Print Name: Standard
PORs: New Build_Sprint Keep

Section 6 - A&L Equipment

Existing Template: Custom
Proposed Template: 67D5998C_1xAIR+1QP+1OP (GSM only)

Sector 1 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	0		0				0	
M. Tilt								
Height	140		140				140	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100	L2100	L700 L600 N600	L700 L600 N600	L1900 G1900	L1900 G1900	L2500 N2500	L2500 N2500
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2	2		2		2	2
Cables	Coax Jumper **(x4)**	SHARED Coax Jumper **(x4)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**		
TMAs								
Diplexers / Combiners								
Radio	Radio 4415 B66A (At Antenna)	SHARED Radio 4415 B66A (At Antenna)	Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)	Radio 4424 B25 (At Antenna)	SHARED Radio 4424 B25 (At Antenna)		
Sector Equipment								

Unconnected Equipment:

Scope of Work:

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5A998C 6160 (GSM only)	67D5998C_1xAIR+1QP+1OP (GSM only)

CTHA859A_Sprint Retain_1_draft

Print Name: Standard
PORs: New Build_Sprint Keep

Sector 2 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	120		120				120	
M. Tilt								
Height	140		140				140	
Ports	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**
Active Tech.	L2100	L2100	L700 L600 N600	L700 L600 N600	L1900 G1900	L1900 G1900	L2500 N2500	L2500 N2500
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2	2		2		2	2
Cables	Coax Jumper **(x4)**	SHARED Coax Jumper **(x4)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**		
TMAs								
Diplexers / Combiners								
Radio	Radio 4415 B66A (At Antenna)	SHARED Radio 4415 B66A (At Antenna)	Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)	Radio 4424 B25 (At Antenna)	SHARED Radio 4424 B25 (At Antenna)		
Sector Equipment								

Unconnected Equipment:

Scope of Work:

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5A998C 6160 (GSM only)	67D5998C_1xAIR+1QP+1OP (GSM only)

CTHA859A_Sprint Retain_1_draft

Print Name: Standard
PORs: New Build_Sprint Keep

Sector 3 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	240		240				240	
M. Tilt								
Height	140		140				140	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100	L2100	L700 L600 N600	L700 L600 N600	L1900 G1900	L1900 G1900	L2500 N2500	L2500 N2500
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2	2		2		2	2
Cables	Coax Jumper **(x4)**	SHARED Coax Jumper **(x4)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**		
TMAs								
Diplexers / Combiners								
Radio	Radio 4415 B66A (At Antenna)	SHARED Radio 4415 B66A (At Antenna)	Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)	Radio 4424 B25 (At Antenna)	SHARED Radio 4424 B25 (At Antenna)		
Sector Equipment								

Unconnected Equipment:

Scope of Work:

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5A998C 6160 (GSM only)	67D5998C_1xAIR+1QP+1OP (GSM only)

CTHA859A_Sprint Retain_1_draft

Print Name: Standard
PORs: New Build_Sprint Keep

Section 7 - Power Systems Equipment

Existing Power Systems Equipment

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Proposed Power Systems Equipment

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: CTHA859A

47 Inwood Road
Rocky Hill, Connecticut 06067

June 17, 2021

EBI Project Number: 6221002962

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**15.80%**

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

June 17, 2021

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

Emissions Analysis for Site: CTHA859A

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **47 Inwood Road** in **Rocky Hill, 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 47 Inwood Road in Rocky Hill, 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 power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 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.

4) 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.

5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

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) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

11) 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.

12) 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.

13) The antennas used in this modeling are the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector A, the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector B, the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 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.

14) The antenna mounting height centerline of the proposed antennas is 140 feet above ground level (AGL).

15) 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.

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

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	140 feet	Height (AGL):	140 feet	Height (AGL):	140 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):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE %:	**0.93%**	Antenna B1 MPE %:	**0.93%**	Antenna C1 MPE %:	**0.93%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd
Height (AGL):	140 feet	Height (AGL):	140 feet	Height (AGL):	140 feet
Channel Count:	11	Channel Count:	11	Channel Count:	11
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	12,569.87	ERP (W):	12,569.87	ERP (W):	12,569.87
Antenna A2 MPE %:	**3.66%**	Antenna B2 MPE %:	**3.66%**	Antenna C2 MPE %:	**3.66%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	140 feet	Height (AGL):	140 feet	Height (AGL):	140 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A3 MPE %:	**7.28%**	Antenna B3 MPE %:	**7.28%**	Antenna C3 MPE %:	**7.28%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	11.88%
Nextel	0.79%
AT&T	3.13%
Site Total MPE % :	15.80%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	11.88%
T-Mobile Sector B Total:	11.88%
T-Mobile Sector C Total:	11.88%
Site Total MPE % :	15.80%

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 2100 MHz LTE	2	2334.27	140.0	9.35	2100 MHz LTE	1000	0.93%
T-Mobile 600 MHz LTE	2	591.73	140.0	2.37	600 MHz LTE	400	0.59%
T-Mobile 600 MHz NR	1	1577.94	140.0	3.16	600 MHz NR	400	0.79%
T-Mobile 700 MHz LTE	2	695.22	140.0	2.78	700 MHz LTE	467	0.60%
T-Mobile 1900 MHz GSM	4	1052.26	140.0	8.43	1900 MHz GSM	1000	0.84%
T-Mobile 1900 MHz LTE	2	2104.51	140.0	8.43	1900 MHz LTE	1000	0.84%
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	140.0	22.11	2500 MHz LTE 1C & 2C Traffic	1000	2.21%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	140.0	2.15	2500 MHz LTE 1C & 2C Broadcast	1000	0.22%
T-Mobile 2500 MHz NR Traffic	1	22089.26	140.0	44.23	2500 MHz NR Traffic	1000	4.42%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	140.0	4.30	2500 MHz NR Broadcast	1000	0.43%
						Total:	**11.88%**

• 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:	11.88%
Sector B:	11.88%
Sector C:	11.88%
T-Mobile Maximum MPE % (Sector A):	11.88%
Site Total:	15.80%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **15.80%** 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.