

INDUSTRIAL AVE,
SITE 3
AHWAH NJ 07430
PHONE: 201.684.0055
FAX: 201.684.0066



August 5, 2021

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

RE: Notice of Exempt Modification
77 Springbrook Road, Old Saybrook, CT, 06475
Latitude: 41.313833333
Longitude: -72.36402778
T-Mobile Site#: CTHA540A - L600

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 162' level of the 175' Monopole at the existing facility at 77 Springbrook Road in Old Saybrook, CT. The property is owned by Ron Swaney LLC. The tower is owned by American Tower. T-Mobile now intends to remove three (3) antennas and replace them with (6) L600/L700/N600/L2100 antennas. The new antennas support 5G services and will be installed at the 96' level of the monopole with a new mount.

Planned Modifications:

Tower:

Install New:

- (3) APX16DWV-16DWV-S-E-A20 Antennas
- (3) APXVAARR21 43-U-NA20 Antennas
- (3) Radio 4449 B71/B85
- (3) Radio 4415 B66A
- (3) Radio 4415 B25
- (3) 1 5/8" Hybrid Cables
- (3) Fiber Jumper Cables

Existing to Remain:

- (3) AIR21 KRC11823-1 B2P B4A Antennas
- (6) Fiber Jumper Cables

To Be Removed:

- (3) AIR21 KRC118023 B2P B4A Antennas
- (3) LNX-6515DS-A1M Antennas
- (6) 1 5/8" Coax Cables

Ground Work:

Install (1) RBS 6102 Cabinet

Remove: (1) RBS 6201 ODE Cabinet and (6) RUS01 B12 Radios

This tower was originally approved by the Town of Old Saybrook on April 28, 2008. Documentation on the original approval of the tower is enclosed with the submission. The proposed modification complies with all previous approvals.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to First Selectman Carl P. Fortuna Jr., Elected Official, and Christina M. Costa, Town Planner, as well as the property and tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Eric Breun

Transcend Wireless


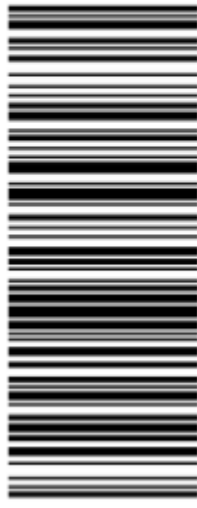

Cell: 201-658-7728

Email: ebreun@transcendwireless.com

Attachments

cc: Carl P. Fortuna Jr. - First Selectman of Old Saybrook
Christina M. Costa - Town Planner
Crossroads Communications of Old Saybrook - Property Owner
American Tower - Tower Owner

<p>ERIC BREUN 2016587728 10 INDUSTRIAL AVE MAHWAH NJ 07430</p>	<p>1 LBS</p>	<p>1 OF 1</p>
<p>SHIP TO: TOWN PLANNER CHRISTINA COSTA 302 MAIN STREET OLD SAYBROOK CT 06475</p>		
	<p>CT 063 5-02</p> 	
<p>UPS GROUND TRACKING #: 1Z V25 742 03 9206 9597</p>		
		
<p>BILLING: P/P</p>		
<p>Reference #1: CTHA540A <small>XGL 21.07.05 NV45 31.0A 07/2021*</small></p>		
		

<p>ERIC BREUN 2016587728 10 INDUSTRIAL AVE MAHWAH NJ 07430</p>	<p>1 LBS</p>	<p>1 OF 1</p>
<p>SHIP TO: CONTACTS MANAGEMENT AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN MA 01801</p>		
	<p>MA 018 9-04</p> 	
<p>UPS GROUND TRACKING #: 1Z V25 742 03 9586 4909</p>		
		
<p>BILLING: P/P</p>		
<p>Reference #1: CTHA540A <small>XGL 21.07.05 NV45 31.0A 07/2021*</small></p>		
		

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

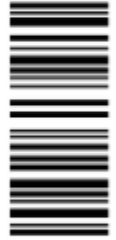
1 LBS

1 OF 1

SHIP TO:
FIRST SELECTMAN
CARL FORTUNA JR.
302 MAIN STREET
OLD SAYBROOK CT 06475

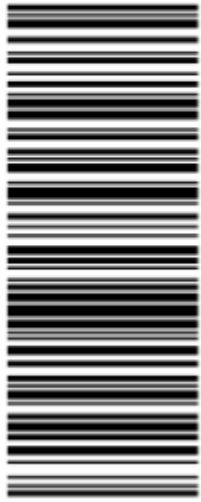


CT 063 5-02



UPS GROUND

TRACKING #: 1Z V25 742 03 9554 4924



BILLING: P/P

Reference #1: CTHA540A

XGL 21.07.05 NV45 31.0A 07/2021*



TM

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

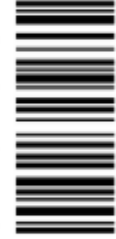
1 LBS

1 OF 1

SHIP TO:
CROSSROADS COMMUNICATIONS
157 NORTH SEIR HILL ROAD
NORWALK CT 06850



CT 069 9-04



UPS GROUND

TRACKING #: 1Z V25 742 03 9569 4914



BILLING: P/P

Reference #1: CTHA540A

XGL 21.07.05 NV45 31.0A 07/2021*



TM

Hello, your package has been delivered.

Delivery Date: Wednesday, 08/04/2021

Delivery Time: 10:22 AM

Left At: RECEIVER

Signed by: NERI

TRANSCEND WIRELESS

Tracking Number: [1ZV257420395544924](#)

Ship To: CARL FORTUNA JR.
302 MAIN STREET
OLD SAYBROOK, CT 06475
US

Number of Packages: 1

UPS Service: UPS Ground

Package Weight: 1.0 LBS

Reference Number: [CTHA540A](#)

Hello, your package has been delivered.

Delivery Date: Wednesday, 08/04/2021

Delivery Time: 10:22 AM

Left At: RECEIVER

Signed by: MACKAWACKI

TRANSCEND WIRELESS

Tracking Number: [1ZV257420392069597](#)

Ship To: CHRISTINA COSTA
302 MAIN STREET
OLD SAYBROOK, CT 06475
US

Number of Packages: 1

UPS Service: UPS Ground

Package Weight: 1.0 LBS

Reference Number: [CTHA540A](#)

Hello, your package has been delivered.

Delivery Date: Wednesday, 08/04/2021

Delivery Time: 11:39 AM

Left At: FRONT DESK

Signed by: ANCRI

TRANSCEND WIRELESS

Tracking Number:	<u>1ZV257420395864909</u>
Ship To:	AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	<u>CTHA540A</u>

Hello, your package has been delivered.

Delivery Date: Wednesday, 08/04/2021

Delivery Time: 6:47 PM

Left At: FRONT DOOR

Experience UPS My Choice® Premium Today

Be in total control of how, when and where your packages are delivered.

[Upgrade to Premium Now](#)



[Set Delivery Instructions](#)

[Manage Preferences](#)

[View My Packages](#)

TRANSCEND WIRELESS

Tracking Number: [1ZV257420395694914](#)

Ship To:

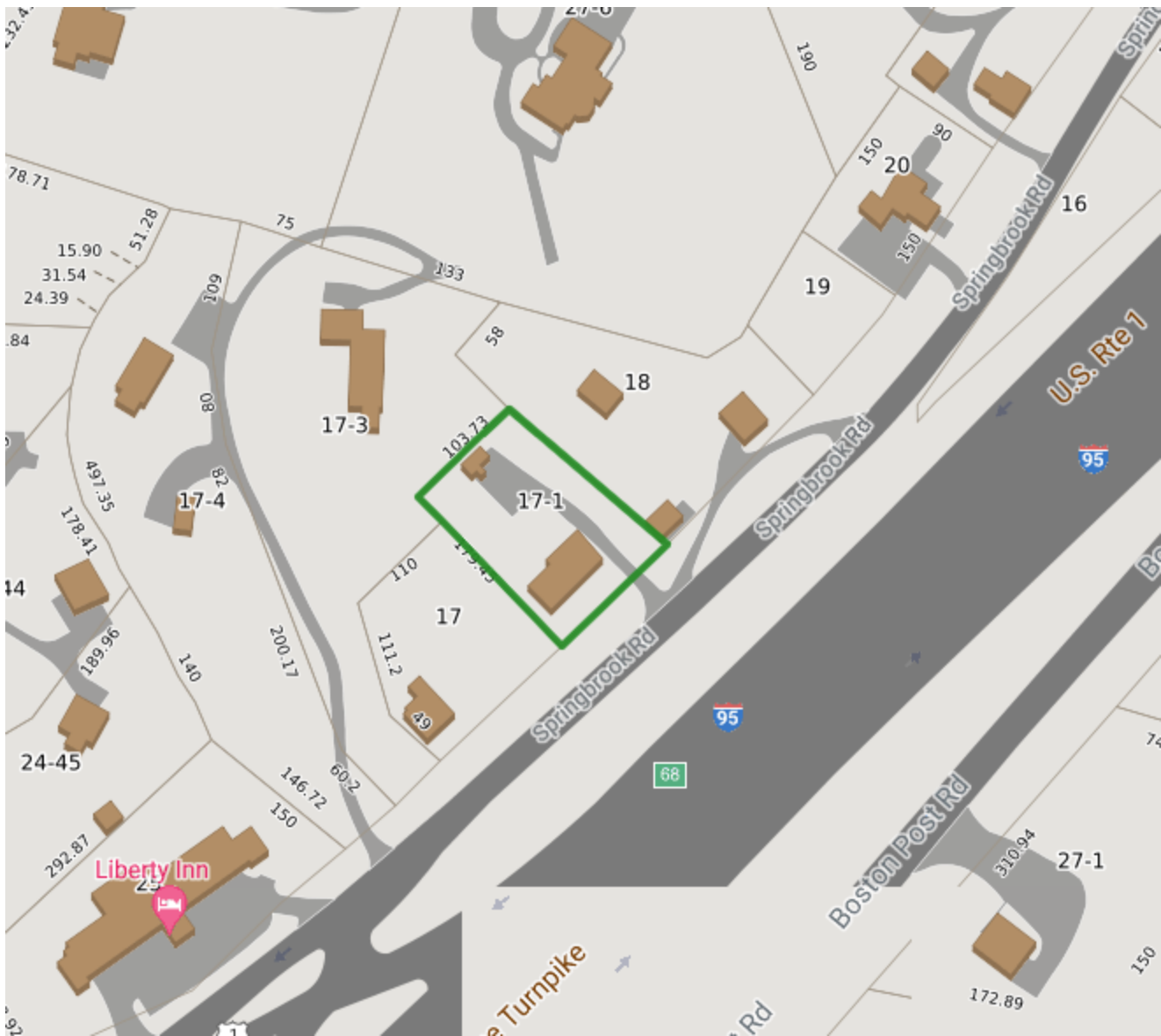
CROSSROADS COMMUNICATIONS
157 NORTH SEIR HILL ROAD
NORWALK, CT 06850
US

Number of Packages: 1

UPS Service: UPS Ground

Package Weight: 1.0 LBS

Reference Number: [CTHA540A](#)



77 SPRINGBROOK RD

[Print](#) [Map It](#)

Location 77 SPRINGBROOK RD **MBLU** 058/ 017/ 0001/ /
Acct# 00598500 **Owner** CROSSROADS COMMUNICATIONS OF OLD
Assessment \$224,500 **Appraisal** \$320,700
PID 6223 **Building Count** 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$141,100	\$179,600	\$320,700

Assessment			
Valuation Year	Improvements	Land	Total
2018	\$98,800	\$125,700	\$224,500

Owner of Record

Owner CROSSROADS COMMUNICATIONS OF OLD **Sale Price** \$275,000
Co-Owner SAYBROOK LLC **Certificate**
Address 157 NORTH SEIR HILL RD **Book & Page** 0339/0287
NORWALK, CT 06850 **Sale Date** 10/28/1998
Instrument UNKQ

Ownership History

Ownership History
No Data for Ownership History

Building Information

Building 1 : Section 1

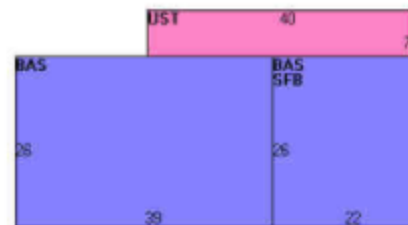
Year Built: 1958
Living Area: 2,044

Building Attributes	
Field	Description
STYLE	Office Bldg
MODEL	Commercial
Grade	Average
Stories:	1
Occupancy	1.00
Exterior Wall 1	Aluminum Sidng
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Plywood Panel
Interior Wall 2	Drywall/Sheet
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	RAD/TV TR
Total Rooms	
Total Bedrms	00
Total Baths	0
Usrfd 218	
Usrfd 219	
1st Floor Use:	4330
Heat/AC	NONE
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE

Building Photo



Building Layout



Building Sub-Areas (sq ft)			Legend	
Code	Description	Gross Area	Living Area	
BAS	First Floor	1,586	1,586	
SFB	Bsmt, Above grade-Finished	572	458	
UST	Utility, Storage, Unfinished	280	0	
		2,438	2,044	

Land

Land Use		Land Line Valuation	
Use Code	4330	Size (Acres)	0.46
Description	RAD/TV TR ⓘ	Depth	0
Zone	B2	Assessed Value	\$125,700
		Appraised Value	\$179,800

Outbuildings

Outbuildings	Legend
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$141,100	\$179,600	\$320,700
2016	\$106,700	\$217,900	\$324,600
2015	\$106,700	\$217,900	\$324,600

Assessment			
Valuation Year	Improvements	Land	Total
2018	\$98,800	\$125,700	\$224,500
2016	\$74,700	\$152,500	\$227,200
2015	\$74,700	\$152,500	\$227,200

TOWN OF OLD SAYBROOK, CONNECTICUT

302 Main Street, Old Saybrook, CT 06475 Phone - 860-395-3130, Fax - 860-395-1216

FOR OFFICE USE :

MAP: 58 LOT: 17-1
FM# 2899 ZC# 05-05-6

Building Permit # 24780
Date Received: 4.21.08
FLOOD ZONE:

APPLICATION FOR PLAN EXAMINATION AND BUILDING PERMIT:

LOCATION: 77 SPRINGBROOK ROAD, OLD SAYBROOK, CT

TYPE OF IMPROVEMENT: Construction of a 175' tower w/ Verizon
Collocation and demo of existing Guyed Tower

ROOFING -- # SQUARES RIP - YES NO

PROPOSED USE: Communications / Commercial
(Residence, Store, Commercial, etc.)

INCLUDE SITE PLAN FOR ALL NEW CONSTRUCTION

COST:

Improvement: \$ 138,000

Electrical: \$ 12,000

Plumbing: \$

Heating, A.C.: \$

CRS# - Lic Provided when
pulling Elect. Permit

TOTAL: \$ 150,000

OWNER OR LESSEE National Tower for Crossroads Communications of Old Saybrook, LLC
Mailing Address: Park Place West, 352 Park St. Suite 101
North Reading, MA 01864 Phone# 781-389-6909

CONTRACTOR: Bell Atlantic Inc. / Verizon
Address: 99 East River Drive, 9th Floor, East Hartford CT 06108

LICENSE NUMBER 900296 Phone# 860-982-4246

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the code official or the code official's authorized representative shall have the authority to enter areas covered by such permit at any reasonable hour to enforce provisions of the code(s) applicable to such permit.

Any application for which a permit has not been issued within 120 days of the date of application shall be considered void and any fees associated with that application will be forfeited.

Signature of Applicant: [Signature] Phone# 781-389-6909

Address: 352 Park Street, Suite 101
North Reading MA 01864

FOR OFFICE USE: BUILDING PERMIT FEES 1539 PAID ISSUED ON:

(Includes \$.16 per \$1000 educational training fee)

APPROVED BY: [Signature] 4/28/08 Building Official/Date

NOTE: No Accessory Structures
Included in this permit

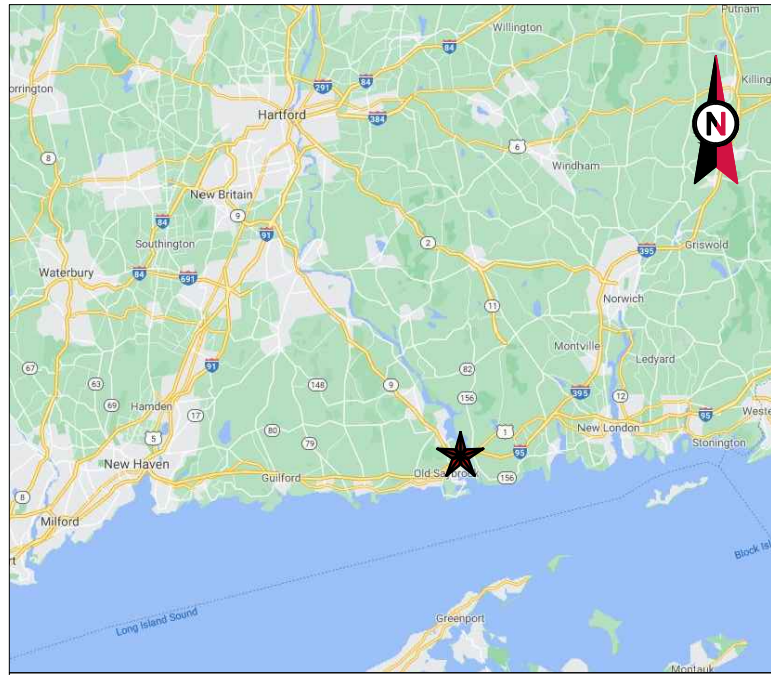
TYPE: 2B USE GROUP: B SEASONAL:
NOTE: WORK MUST BEGIN WITHIN 180 CALENDAR DAYS

OVER FOR ADDITIONAL INFORMATION

ORIGINAL

[Signature] SFM H

24

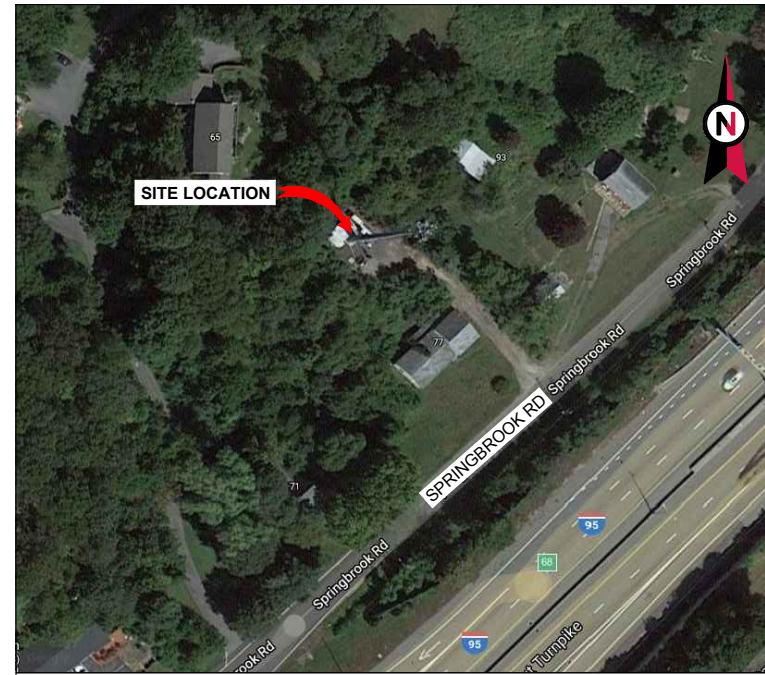


VICINITY MAP



AMERICAN TOWER®

ATC SITE NAME: OLD SAYBROOK
 ATC SITE NUMBER: 370625
 T-MOBILE SITE NAME: CROWN OLD SAYBROOK
 MONOPOLE
 T-MOBILE SITE NUMBER: CTHA540A
 SITE ADDRESS: 77 SPRINGBROOK RD
 OLD SAYBROOK, CT 06475



LOCATION MAP

T-MOBILE L600 ANTENNA AMENDMENT PLAN
 67D97C-U21 CONFIGURATION

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
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	<u>SITE ADDRESS:</u> 77 SPRINGBROOK RD OLD SAYBROOK, CT 06475 COUNTY: MIDDLESEX <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.31383333 LONGITUDE: -72.36402778 GROUND ELEVATION: 69' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: <u>TOWER WORK:</u> REMOVE (3) LNX-6515DS-A1M ANTENNA(S), (3) AIR21 KRC118023-1_B2P_B4A ANTENNA(S), AND (6) 1-5/8" COAX CABLE(S) INSTALL (3) RFS-APXVAARR21_43-U-NA20 ANTENNA(S), (3) RFS-APX16DWV-16DWV-S-E-A20 ANTENNA(S), (3) RADIO 4449 B71+B85 RRH(S), (3) RADIO 4415 B66A RRH(S), (3) RADIO 4415 B25 RRH(S), (3) 6X12 HCS (1-5/8") CABLE(S), AND (3) FIBER JUMPER CABLE(S) EXISTING (3) AIR21 KRC118023-1_B2P_B4A ANTENNA(S) AND (6) FIBER JUMPER CABLE(S) TO REMAIN <u>GROUND WORK:</u> REMOVE (1) RBS 6201 ODE CABINET, AND (6) RUS01 B12 RADIO(S) INSTALL (1) RBS 6102 CABINET EXISTING (1) DUW30, AND (2) BB 6630(S) TO REMAIN	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
	<u>PROJECT TEAM</u> <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801 <u>ENGINEER:</u> KIMLEY-HORN & ASSOCIATES, INC. 421 FAYETTEVILLE ST, STE 600 RALEIGHT, NC 27601 COA: PEC.0000738 <u>PROPERTY OWNER:</u> CROSSROADS COMMUNICATIONS OF OLD SAYBROOK 157 N SEIR HILL RD NORWALK, CT 06850	<u>PROJECT NOTES</u> 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.		G-001	TITLE SHEET	0	07/09/21
<u>UTILITY COMPANIES</u> POWER COMPANY: NORTHEAST UTILITIES PHONE: (888) 783-6617 TELEPHONE COMPANY: FRONTIER COMMUNICATIONS PHONE: (800) 921-8102	<u>APPLICANT:</u> T-MOBILE PETER FALES PFALES@CLINELLC.COM	THE PROPOSED PROJECT DOES NOT INCLUDE ELECTRICAL SCOPE <u>PROJECT LOCATION DIRECTIONS</u> FROM DOWNTOWN NEW HAVEN CT: START OUT GOING NORTHEAST ON CHURCH ST TOWARD WALL ST. CHURCH ST BECOMES WHITNEY AVE. TURN RIGHT ONTO TRUMBULL ST. TAKE THE I-91 S/I-91 N RAMP. MERGE ONTO I-91 S TOWARD I-95/NEW LONDON/N.Y.CITY. MERGE ONTO I-95 N/GOVERNOR JOHN DAVIS LODGE TPKE N VIA THE EXIT ON THE LEFT TOWARD NEW LONDON. TAKE THE CT-154 EXIT, EXIT 67, TOWARD OLD SAYBROOK. MERGE ONTO MIDDLESEX TURNPIKE/CT-154 TOWARD R R STATION. TURN LEFT ONTO BOSTON POST RD/US-1 N. TURN LEFT ONTO SPRINGBROOK RD. 77 SPRINGBROOK RD IS ON THE LEFT.	G-002	GENERAL NOTES	0	07/09/21	JW
			C-101	DETAILED SITE PLAN	0	07/09/21	JW
			C-102	DETAILED GROUND PLAN	0	07/09/21	JW
			C-201	TOWER ELEVATION	0	07/09/21	JW
			C-401	ANTENNA INFORMATION & SCHEDULE	0	07/09/21	JW
			C-501	CONSTRUCTION DETAILS	0	07/09/21	JW
			E-501	GROUNDING DETAILS	0	07/09/21	JW
			R-601	SUPPLEMENTAL			
			R-602	SUPPLEMENTAL			
			R-603	SUPPLEMENTAL			
			R-604	SUPPLEMENTAL			

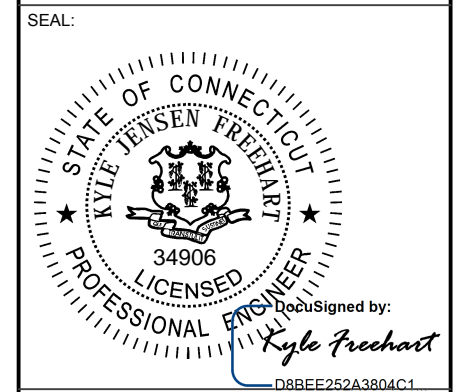


Kimley»Horn

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

REV.	DESCRIPTION	BY	DATE
A	PRELIM	KC	04/12/21
0	ISSUED FOR CONSTRUCTION	JW	07/12/21

ATC SITE NUMBER:
370625
 ATC SITE NAME:
OLD SAYBROOK
 T-MOBILE SITE NAME:
CROWN OLD SAYBROOK
 MONOPOLE
 SITE ADDRESS:
 77 SPRINGBROOK RD
 OLD SAYBROOK, CT 06475



DATE DRAWN:	07/12/21
ATC JOB NO:	13632988
CUSTOMER ID:	CROWN OLD SAYBROOK MONOPOLE
CUSTOMER #:	CTHA540A

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 NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE 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.



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

REV.	DESCRIPTION	BY	DATE
A	PRELIM	KC	04/12/21
0	ISSUED FOR CONSTRUCTION	JW	07/12/21

ATC SITE NUMBER:
370625
ATC SITE NAME:
OLD SAYBROOK
T-MOBILE SITE NAME:
CROWN OLD SAYBROOK
MONOPOLE
SITE ADDRESS:
77 SPRINGBROOK RD
OLD SAYBROOK, CT 06475

SEAL:

Digitally Signed by:
Kyle Frechart
D8BEE252A3804C1...



DATE DRAWN:	07/12/21
ATC JOB NO:	13632988
CUSTOMER ID:	CROWN OLD SAYBROOK MONOPOLE
CUSTOMER #:	CTHA540A

GENERAL NOTES

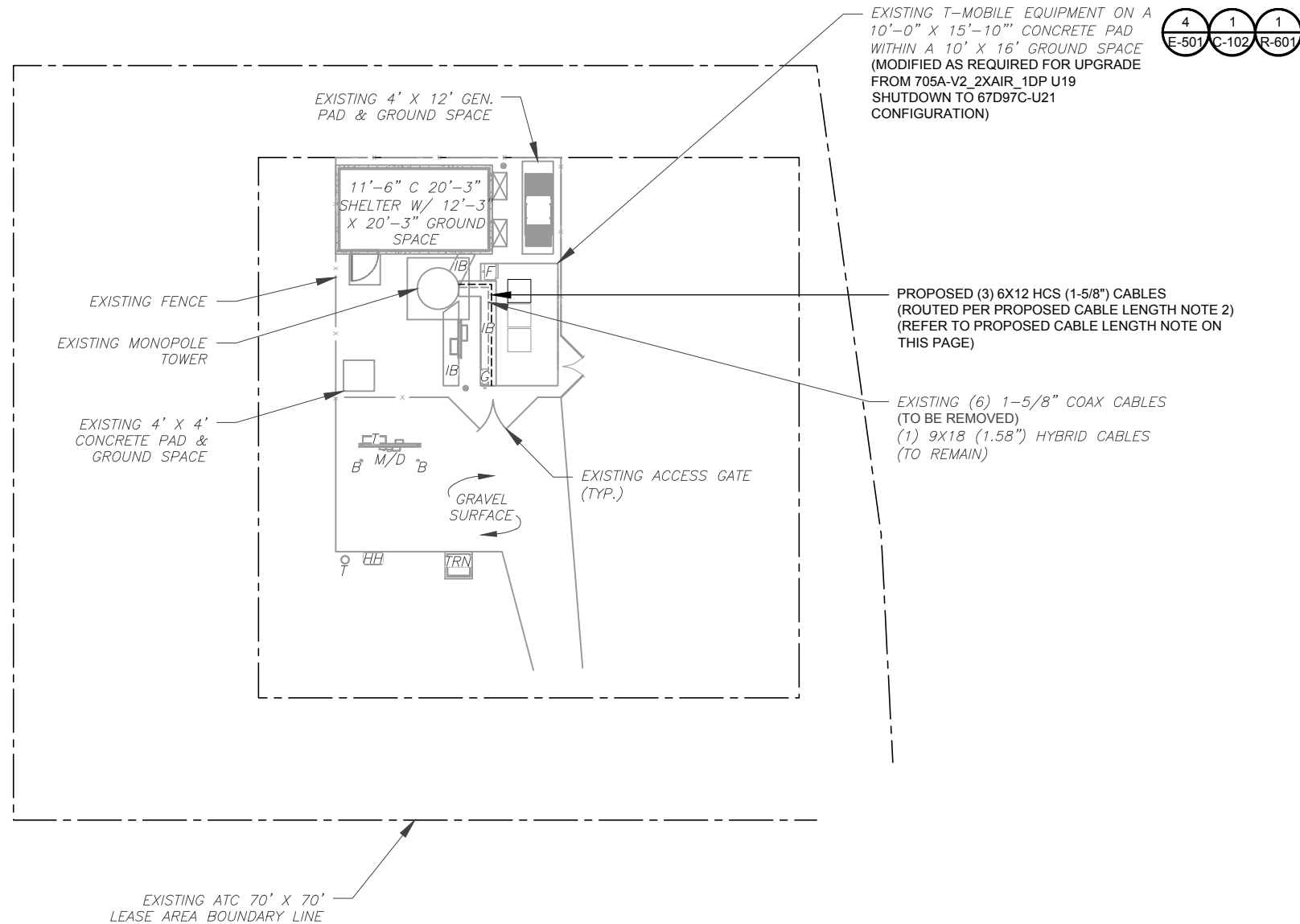
SHEET NUMBER: G-002	REVISION: 0
-------------------------------	-----------------------

Copyright © 2021 ATC IP LLC. All Rights Reserved.

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



PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **193'**. 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.



Kimley»Horn

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

REV.	DESCRIPTION	BY	DATE
A	PRELIM	KC	04/12/21
B	ISSUED FOR CONSTRUCTION	JW	07/12/21

ATC SITE NUMBER:
370625
ATC SITE NAME:
OLD SAYBROOK
T-MOBILE SITE NAME:
CROWN OLD SAYBROOK MONOPOLE
SITE ADDRESS:
77 SPRINGBROOK RD
OLD SAYBROOK, CT 06475

SEAL:

DocuSigned by:
Kyle Frechart
D8BEE252A3804C1



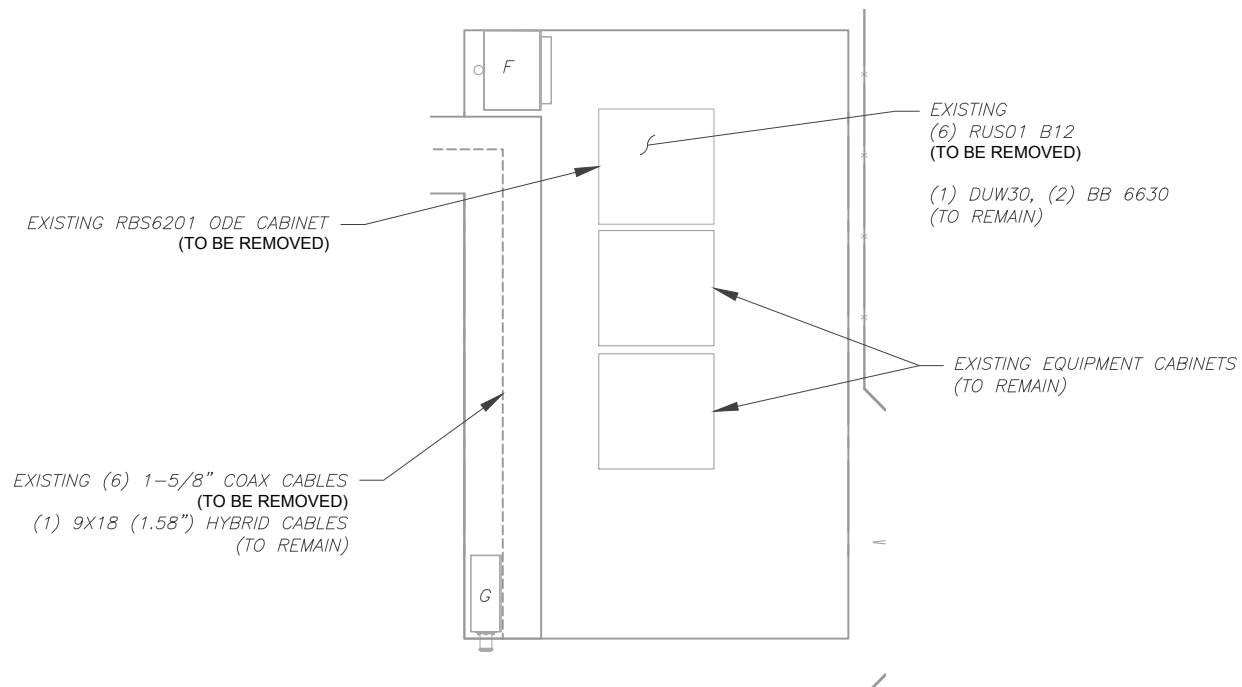
DATE DRAWN:	07/12/21
ATC JOB NO:	13632988
CUSTOMER ID:	CROWN OLD SAYBROOK MONOPOLE
CUSTOMER #:	CTHA540A

DETAILED SITE PLAN

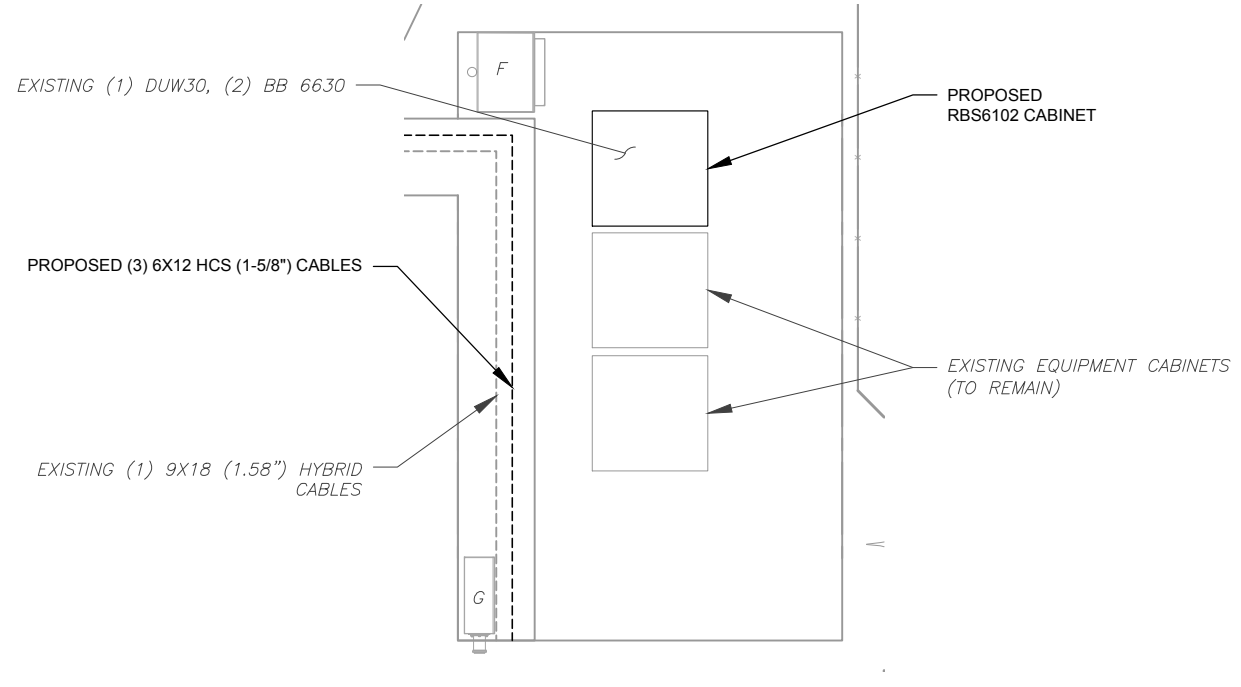
SHEET NUMBER:	REVISION:
C-101	0

SITE PLAN NOTES:

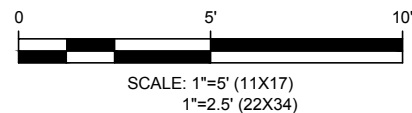
1. CONTRACTOR TO VERIFY THERE IS NO LIVE AAV FIBER RUNNING THROUGH EXISTING DEAD EQUIPMENT. IF SO, THIS WILL NEED TO BE RERUN THROUGH CONDUIT PRIOR TO REMOVING DEAD 2G (6201 CABS) EQUIPMENT.
2. REMOVE EXISTING 2G CABINETS, AND POWER / TELCO WHIPS ASSOCIATED WITH THE DEAD EQUIPMENT IF APPLICABLE.
3. ALL 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.



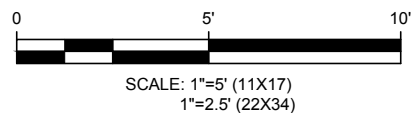
T-MOBILE CM APPROVAL REQUIRED BEFORE INSTALLING CABINETS



1 EXISTING GROUND EQUIPMENT LAYOUT



2 PROPOSED GROUND EQUIPMENT LAYOUT



Kimley»Horn

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

REV.	DESCRIPTION	BY	DATE
A	PRELIM	KC	04/12/21
0	ISSUED FOR CONSTRUCTION	JW	07/12/21

ATC SITE NUMBER:
370625
ATC SITE NAME:
OLD SAYBROOK
T-MOBILE SITE NAME:
CROWN OLD SAYBROOK MONOPOLE
SITE ADDRESS:
77 SPRINGBROOK RD
OLD SAYBROOK, CT 06475

SEAL:

Designed by:
Kyle Frechart
D8BEE252A3804C1...



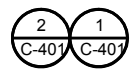
DATE DRAWN:	07/12/21
ATC JOB NO:	13632988
CUSTOMER ID:	CROWN OLD SAYBROOK MONOPOLE
CUSTOMER #:	CTHA540A

DETAILED GROUND PLAN

SHEET NUMBER:	REVISION:
C-102	0

Copyright © 2021 ATC IP, LLC. All Rights Reserved.

TOP OF EXISTING
HIGHEST APPURTENANCE
ELEV. 177'
TOP OF EXISTING TOWER
ELEV. 175'



EXISTING AND
PROPOSED T-MOBILE
EQUIPMENT

EXISTING CARRIER ANTENNAS
RAD CENTER @ 173'

EXISTING & PROPOSED T-MOBILE
RAD CENTER @ 162'

EXISTING CARRIER ANTENNAS
RAD CENTER @ 152'

EXISTING CARRIER OMNI
RAD CENTER @ 104'

EXISTING TOWER

EXISTING TOP
OF BASE PLATE

PER MOUNT ANALYSIS COMPLETED BY CLS,
DATED 3/19/21, THE EXISTING MOUNT CAN
ADEQUATELY SUPPORT THE PROPOSED
LOADING.

TOWER NOTE:

- 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.
- 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.
- 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.
- TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

1 TOWER ELEVATION
SCALE: N.T.S.



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

REV.	DESCRIPTION	BY	DATE
A	PRELIM	KC	04/12/21
0	ISSUED FOR CONSTRUCTION	JW	07/12/21

ATC SITE NUMBER:
370625
ATC SITE NAME:
OLD SAYBROOK
T-MOBILE SITE NAME:
**CROWN OLD SAYBROOK
MONOPOLE**
SITE ADDRESS:
77 SPRINGBROOK RD
OLD SAYBROOK, CT 06475

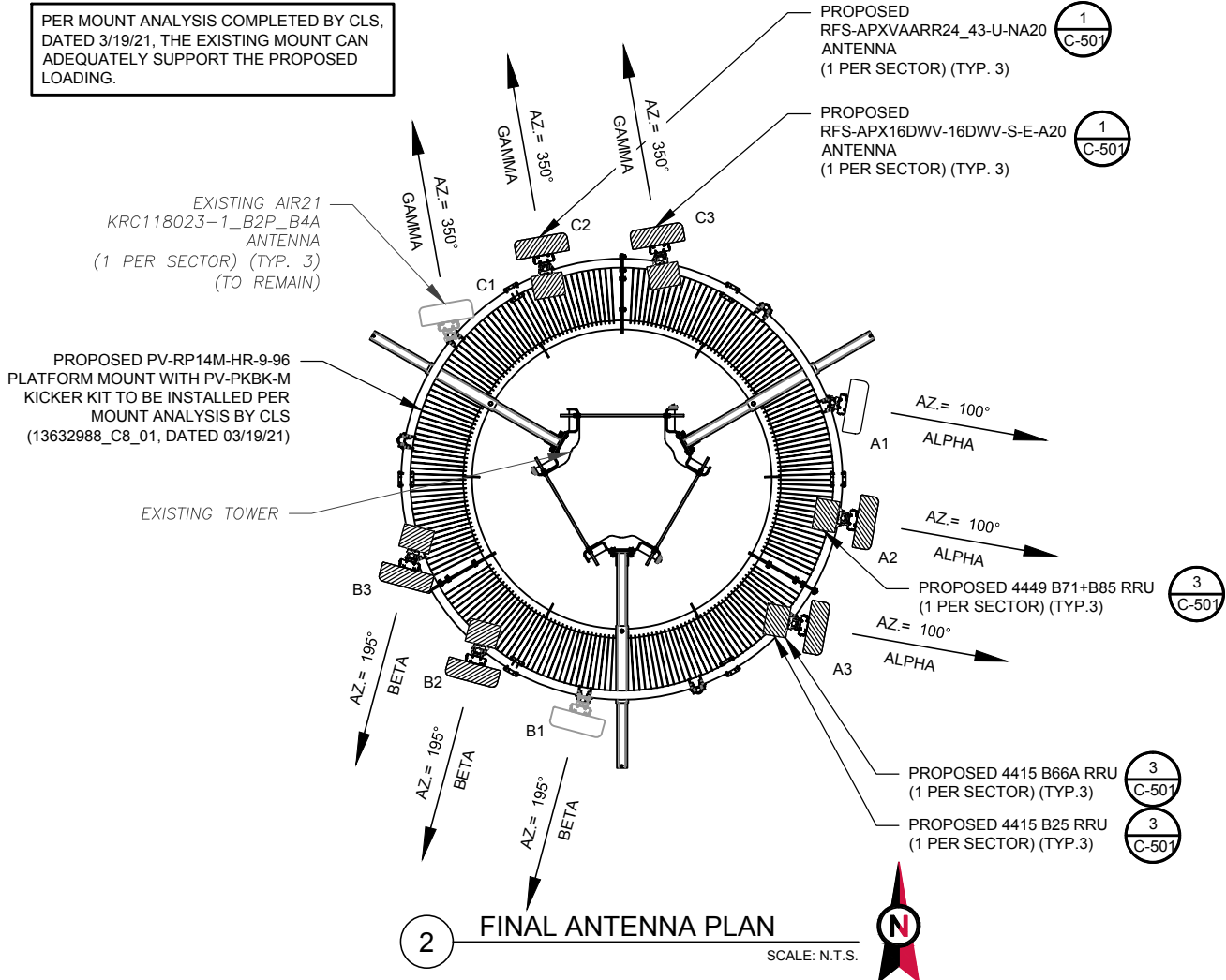
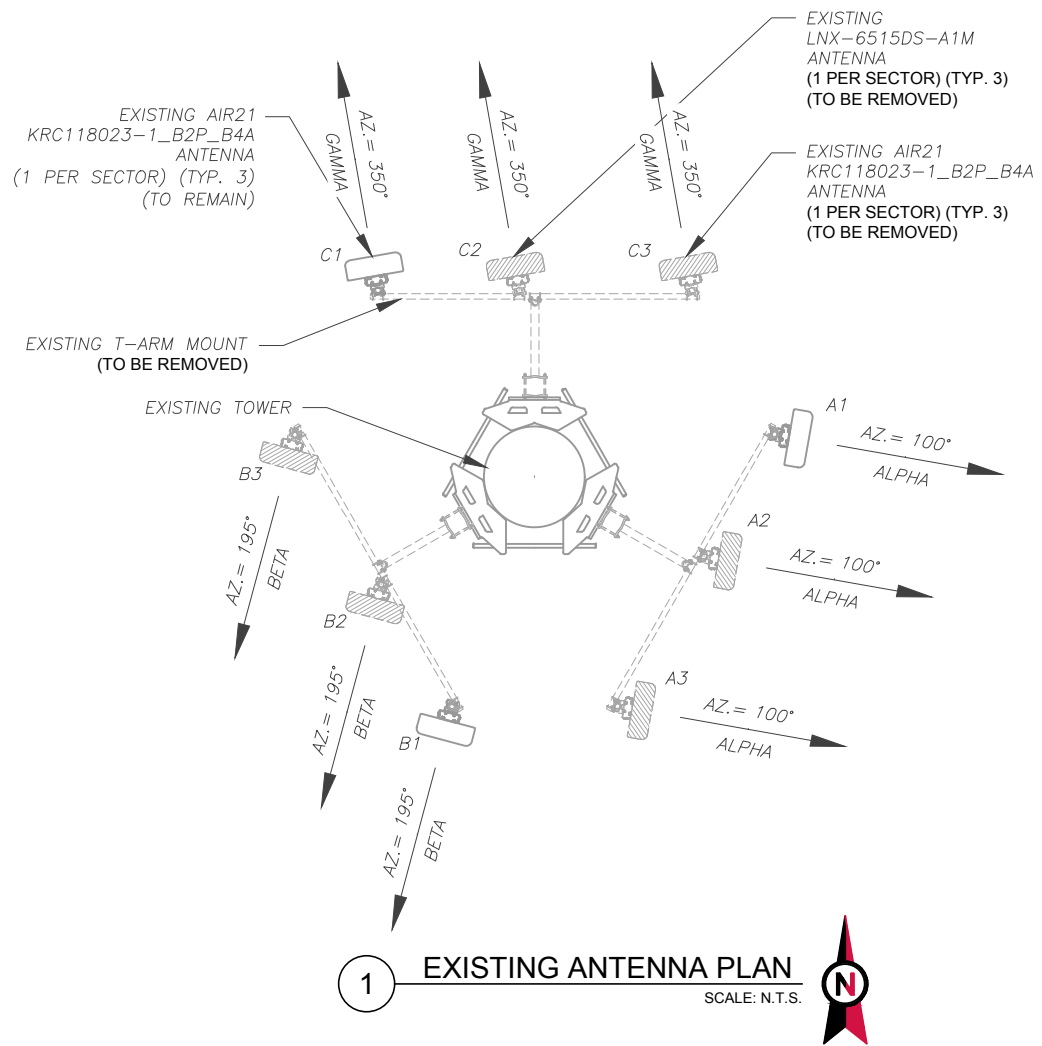
SEAL:

DocuSigned by:
Kyle Frechart
D8BEE252A3804C1

DATE DRAWN:	07/12/21
ATC JOB NO:	13632988
CUSTOMER ID:	CROWN OLD SAYBROOK MONOPOLE
CUSTOMER #:	CTHA540A

TOWER ELEVATION	
SHEET NUMBER: C-201	REVISION: 0

Copyright © 2021 ATC IP, LLC. All Rights Reserved.



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	162'	100°	A1	AIR21 KRC118023-1_B2P_B4 A	U2100	0°/2°	RMN	-	-
			A2	LNX-6515DS-A1M	L700	0°/2°	RMV	-	-
			A3	AIR21 KRC118023-1_B2P_B4 A	L2100	0°/2°	RMV	-	-
BETA	162'	195°	B1	AIR21 KRC118023-1_B2P_B4 A	U2100	0°/2°	RMN	-	-
			B2	LNX-6515DS-A1M	L700	0°/2°	RMV	-	-
			B3	AIR21 KRC118023-1_B2P_B4 A	L2100	0°/2°	RMV	-	-
GAMMA	162'	350°	C1	AIR21 KRC118023-1_B2P_B4 A	U2100	0°/2°	RMN	-	-
			C2	LNX-6515DS-A1M	L700	0°/2°	RMV	-	-
			C3	AIR21 KRC118023-1_B2P_B4 A	L2100	0°/2°	RMV	-	-

NOTES

- CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
- 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	162'	100°	A1	AIR21 KRC118023-1_B2P_B4 A	U2100	0°/2°	RMN	-	-
			A2	RFS-APXVAARR24_43-U-N A20	N600, L600, L700	0°/2°	ADD	RADIO 4449 B71+B85	ADD
			A3	RFS-APX16DWW-S-E-A20	L2100, L1900	0°/2°	ADD	RADIO 4415 B66A RADIO 4415 B25	ADD
BETA	162'	195°	B1	AIR21 KRC118023-1_B2P_B4 A	U2100	0°/2°	RMN	-	-
			B2	RFS-APXVAARR24_43-U-N A20	N600, L600, L700	0°/2°	ADD	RADIO 4449 B71+B85	ADD
			B3	RFS-APX16DWW-S-E-A20	L2100, L1900	0°/2°	ADD	RADIO 4415 B66A RADIO 4415 B25	ADD
GAMMA	162'	350°	C1	AIR21 KRC118023-1_B2P_B4 A	U2100	0°/2°	RMN	-	-
			C2	RFS-APXVAARR24_43-U-N A20	N600, L600, L700	0°/2°	ADD	RADIO 4449 B71+B85	ADD
			C3	RFS-APX16DWW-S-E-A20	L2100, L1900	0°/2°	ADD	RADIO 4415 B66A RADIO 4415 B25	ADD

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(1) 9X18 (1.58")	RMN
-	-	-	(6) FIBER JUMPER	RMN
-	-	(6) 1-5/8"	-	RMV

3 EQUIPMENT SCHEDULES

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(1) 9X18 (1.58")	RMN
-	-	-	(6) FIBER JUMPER	RMN
-	-	-	(3) 6X12 HCS (1-5/8")	ADD
-	-	-	(3) FIBER JUMPER	ADD

AMERICAN TOWER®

Kimley»Horn

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

REV.	DESCRIPTION	BY	DATE
A	PRELIM	KC	04/12/21
0	ISSUED FOR CONSTRUCTION	JW	07/12/21

ATC SITE NUMBER:
370625

ATC SITE NAME:
OLD SAYBROOK

T-MOBILE SITE NAME:
CROWN OLD SAYBROOK MONOPOLE

SITE ADDRESS:
77 SPRINGBROOK RD
OLD SAYBROOK, CT 06475

SEAL:

STATE OF CONNECTICUT
KYLE JENSEN FRESHART
34906
PROFESSIONAL ENGINEER
Signed by: Kyle Freshart
D8BEE252A3804C1...

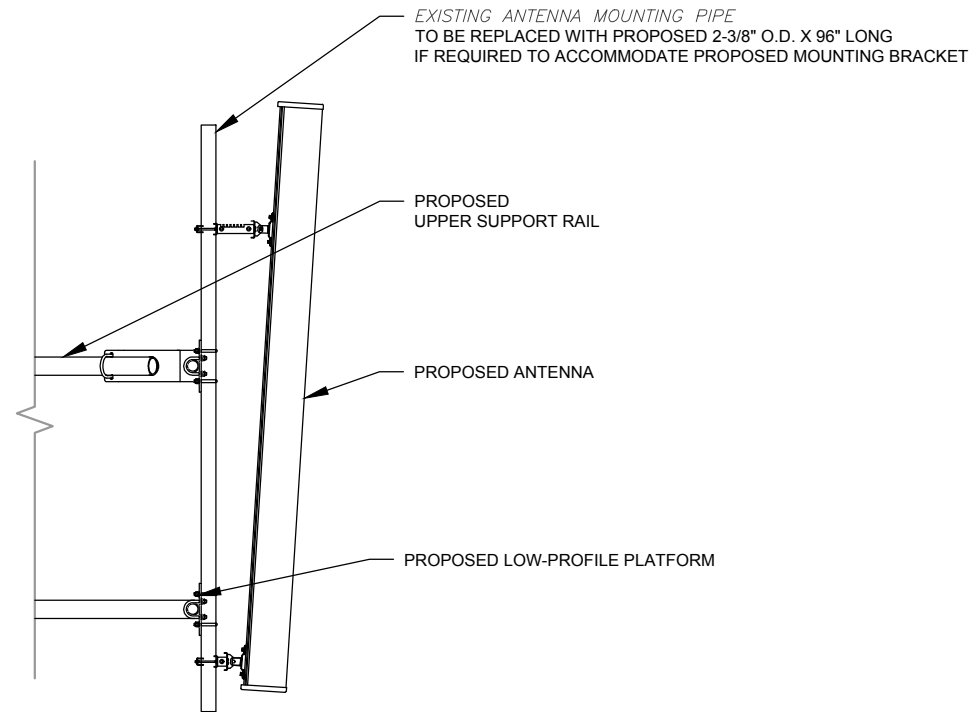
T-Mobile®

DATE DRAWN:	07/12/21
ATC JOB NO:	13632988
CUSTOMER ID:	CROWN OLD SAYBROOK MONOPOLE
CUSTOMER #:	CTHA540A

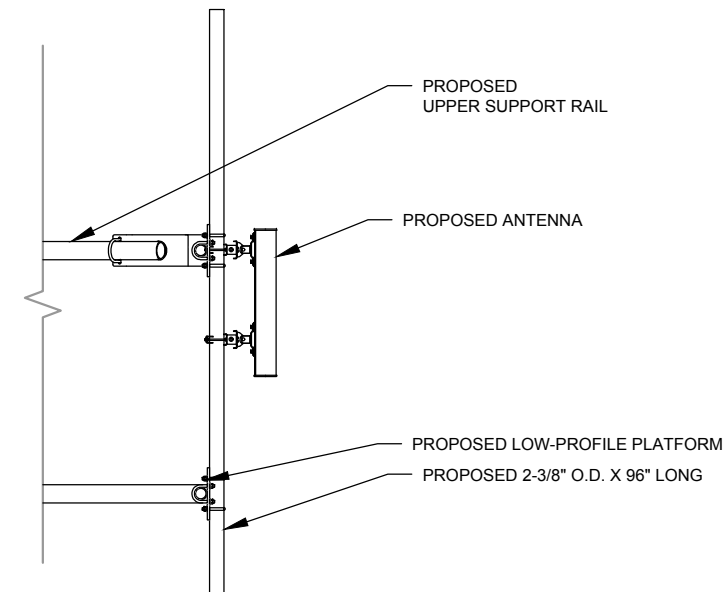
ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER: C-401	REVISION: 0
-------------------------------	-----------------------

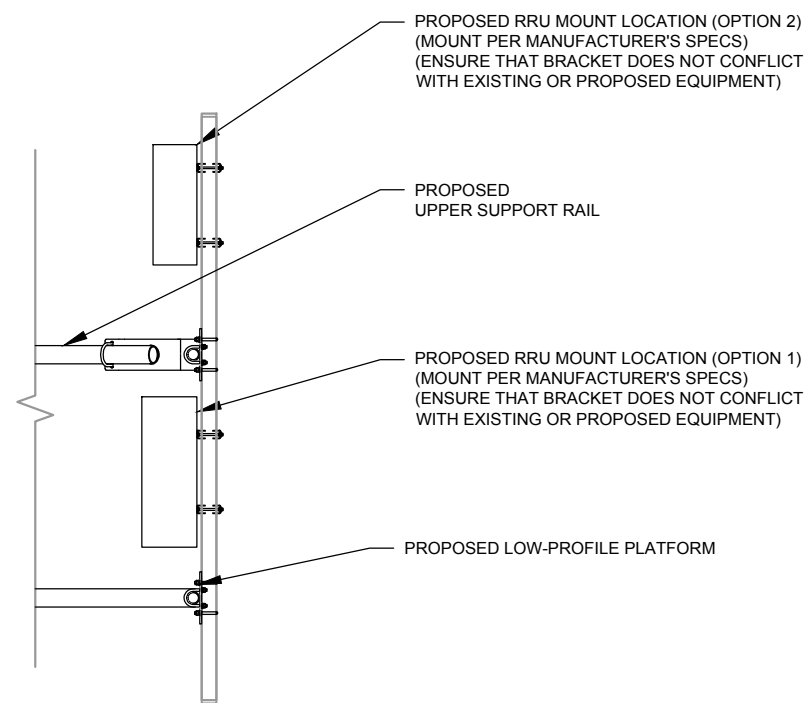
Copyright © 2021 ATC IP, LLC. All Rights Reserved.



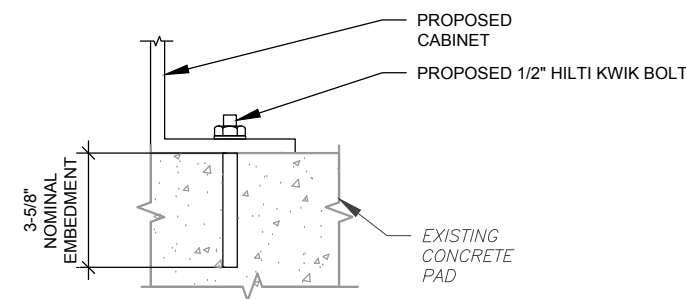
1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



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



Kimley»Horn

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

REV.	DESCRIPTION	BY	DATE
A	PRELIM	KC	04/12/21
0	ISSUED FOR CONSTRUCTION	JW	07/12/21

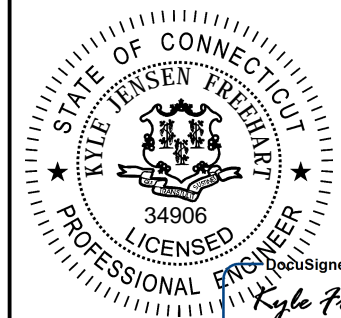
ATC SITE NUMBER:

370625

ATC SITE NAME:

OLD SAYBROOK
T-MOBILE SITE NAME:
CROWN OLD SAYBROOK
MONOPOLE
SITE ADDRESS:
77 SPRINGBROOK RD
OLD SAYBROOK, CT 06475

SEAL:



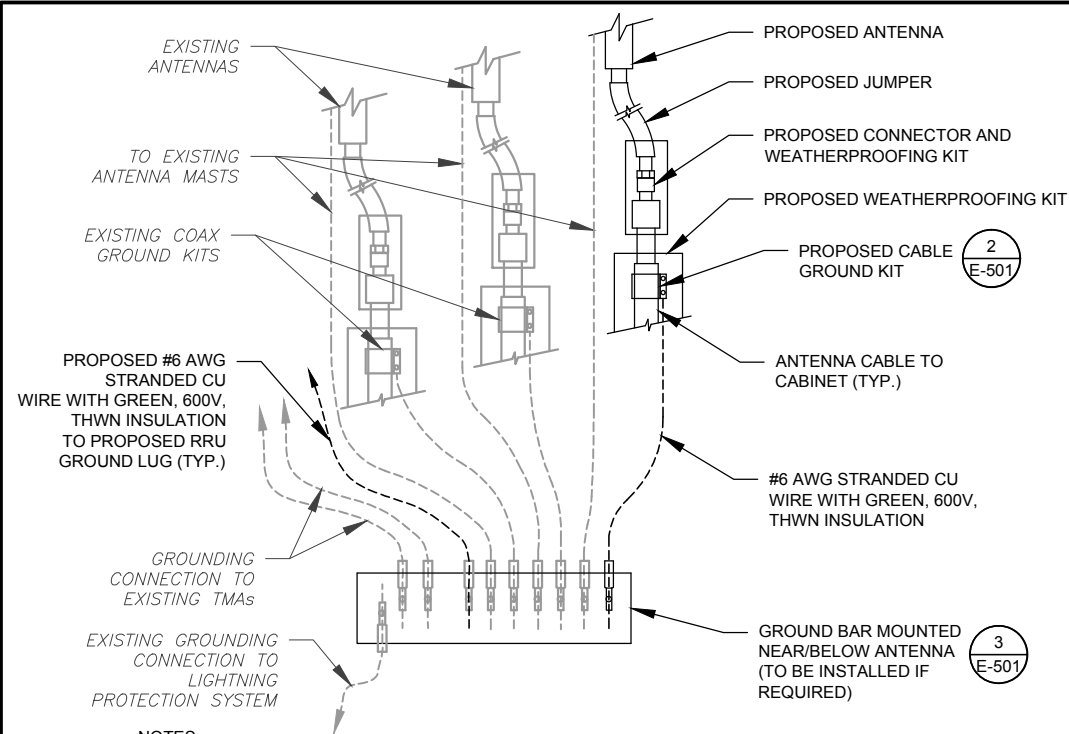
DocuSigned by:
Kyle Frehart
D8BEE252A3804C1



DATE DRAWN:	07/12/21
ATC JOB NO:	13632988
CUSTOMER ID:	CROWN OLD SAYBROOK MONOPOLE
CUSTOMER #:	CTHA540A

CONSTRUCTION
DETAILS

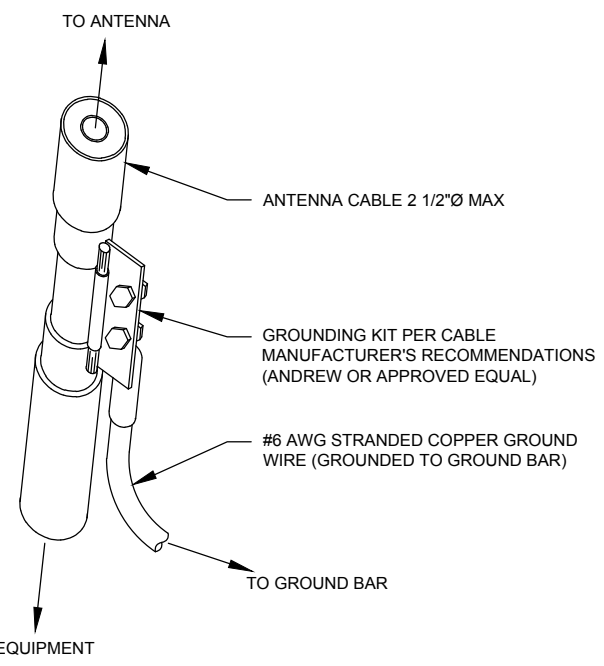
SHEET NUMBER: C-501
REVISION: 0



NOTES:

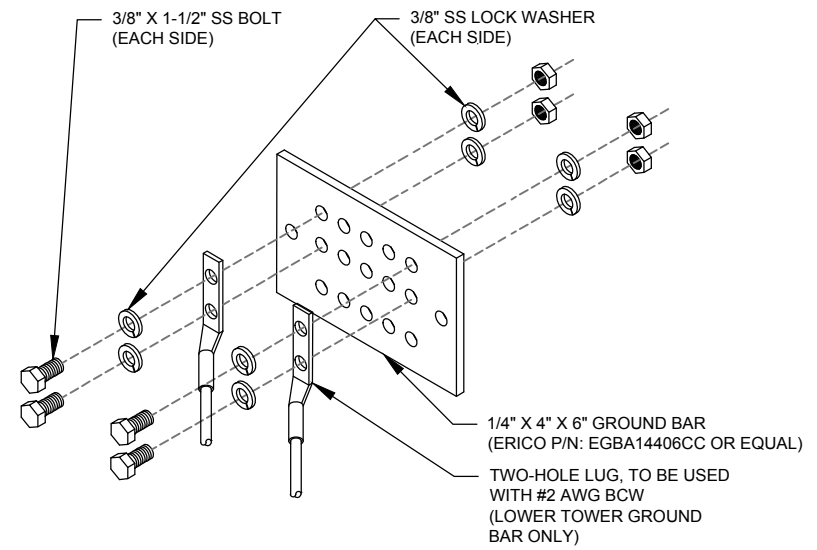
1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING 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:

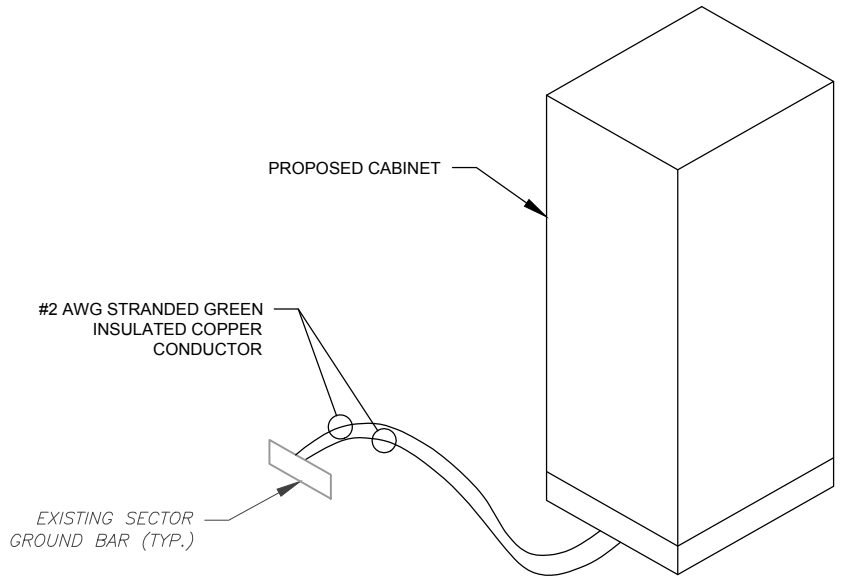
1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL
SCALE: N.T.S.

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"



4 CABINET GROUNDING DETAIL
SCALE: N.T.S.



Kimley»Horn

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

REV.	DESCRIPTION	BY	DATE
A	PRELIM	KC	04/12/21
0	ISSUED FOR CONSTRUCTION	JW	07/12/21

ATC SITE NUMBER:
370625
ATC SITE NAME:
OLD SAYBROOK
T-MOBILE SITE NAME:
CROWN OLD SAYBROOK MONOPOLE
SITE ADDRESS:
77 SPRINGBROOK RD
OLD SAYBROOK, CT 06475

SEAL:

Designed by:
Kyle Frechart
D8BEE252A3804C1...



DATE DRAWN:	07/12/21
ATC JOB NO:	13632988
CUSTOMER ID:	CROWN OLD SAYBROOK MONOPOLE
CUSTOMER #:	CTHA540A

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

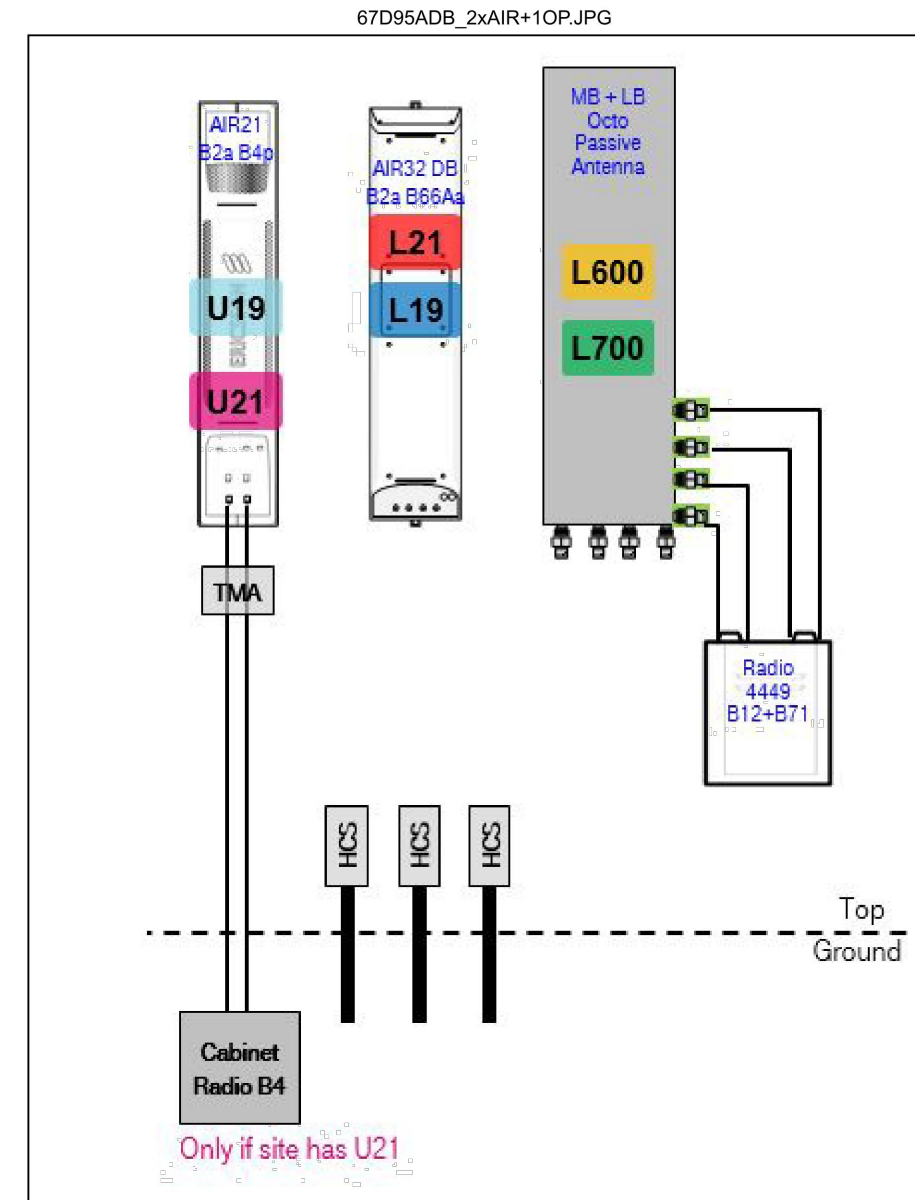
Copyright © 2021 ATC IP, LLC. All Rights Reserved.

Proposed RAN Equipment													
Template: 67D97C-U21													
Enclosure	1												
Enclosure Type	RBS 6102												
Baseband	<table border="1"> <tr> <td>DUW30</td> <td>BB 6630</td> <td>BB 6630</td> </tr> <tr> <td>U2100</td> <td>L2100</td> <td>N600</td> </tr> <tr> <td></td> <td>L1900</td> <td>L700</td> </tr> <tr> <td></td> <td></td> <td>L600</td> </tr> </table>	DUW30	BB 6630	BB 6630	U2100	L2100	N600		L1900	L700			L600
DUW30	BB 6630	BB 6630											
U2100	L2100	N600											
	L1900	L700											
		L600											
Hybrid Cable System	Ericsson 9x18 HCS *Select Length* Ericsson 6x12 HCS *Select Length & AWG* (x 3)												

RAN Scope of Work:

Replace existing RBS6201 ODE cabinet with (1) full RBS6102.
 Replace (2) DUS41 with (1) BB6630 for L2100, L1900, L700, and L600.
 Add (1) BB6630 for future 5G N600.
 Remove B12 Radios from existing cabinet.
 Add (3) 6X12 HCS.
 Existing: (6) 1-5/8"; (1) 9X18.

1 CABINET CONFIGURATION
 SCALE: NOT TO SCALE

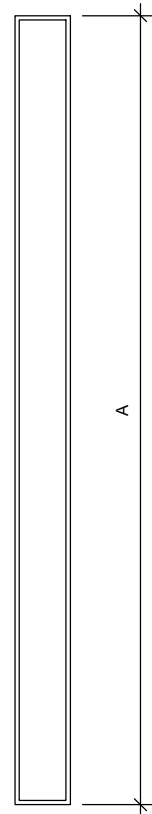


2 ANTENNA CONFIGURATION
 SCALE: NOT TO SCALE

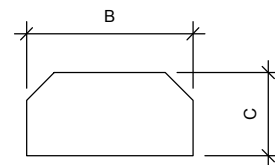
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER: R-601
 REVISION: 0



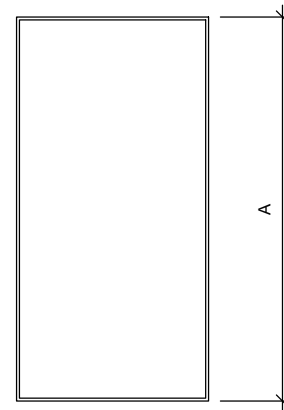
FRONT VIEW



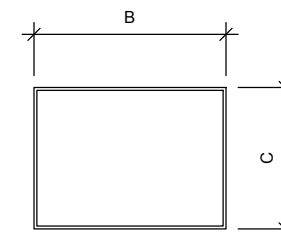
TOP VIEW

1 ANTENNA SPECIFICATIONS
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
APXVAARR24_43-U-NA20	95.9"	24.0"	8.7"	127.9
APX16DWV-16DWVS-E-A20	55.9"	13.3"	3.1"	40.7



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
RRUS 4415 B25	16.5"	13.4"	5.9"	46

SUPPLEMENTAL

SHEET NUMBER: **R-602** REVISION: **0**



This report was prepared for American Tower Corporation by



Antenna Mount Analysis Report

ATC Site Name : Old Saybrook, CT
ATC Asset Number : 370625
Engineering Number : 13632988_C8_01
Mount Elevation : 162 ft
Carrier : T-Mobile
Carrier Site Name : Crown Old Saybrook Monopole
Carrier Site Number : CTHA540A
Site Location : 77 Springbrook Road
 Old Saybrook, CT 06475-0000
 41.31383333, -72.36402778
County : Middlesex
Date : March 19, 2021
Max Usage : 61%
Result : Pass (Pending Previous Replacement)

Prepared By:
 Snehitha Narava
 CLS Engineering PLLC

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



Mount Analysis for American Tower
 370625 - Old Saybrook, CT

March 19, 2021
 CLS Engineering PLLC Project #41124-13632988_C8_01-01-MA-R1

Introduction

The proposed equipment is to be mounted to the proposed Perfect Vision PV-RP14M-HR-9-96 w/PV-PKBM Kicker Kit. 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	Perfect Vision Drawing #RP-ENG-01-R2 Rev. 2, dated August 9, 2018
Previous Analyses	Structural Analysis by American Tower Corporation, Eng. #12927162_C3_04, dated July 16, 2019
Construction Drawings	CD's by American Tower Corporation, Job #12951825, dated August 30, 2019
Loading Data	T-Mobile RFDS, Site ID #CTHA540A, Version 5.00, dated January 27, 2021
Modifications	Mount Analysis by CLS Engineering for American Tower Corporation, Project #12927162, dated August 22, 2019

Analysis

Codes	TIA-222-H
Basic Wind Speed	125 mph, V_{ult} (3-Second Gust)
Basic Wind Speed w/ Ice	50 mph (3-Second Gust) w/ 1" Radial Ice (Escalating)
Exposure Category	C
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 : 0.05; Site Class: D

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

SUPPLEMENTAL

SHEET NUMBER:
R-603

REVISION:
0

MONOPOLE ROUND PLATFORM

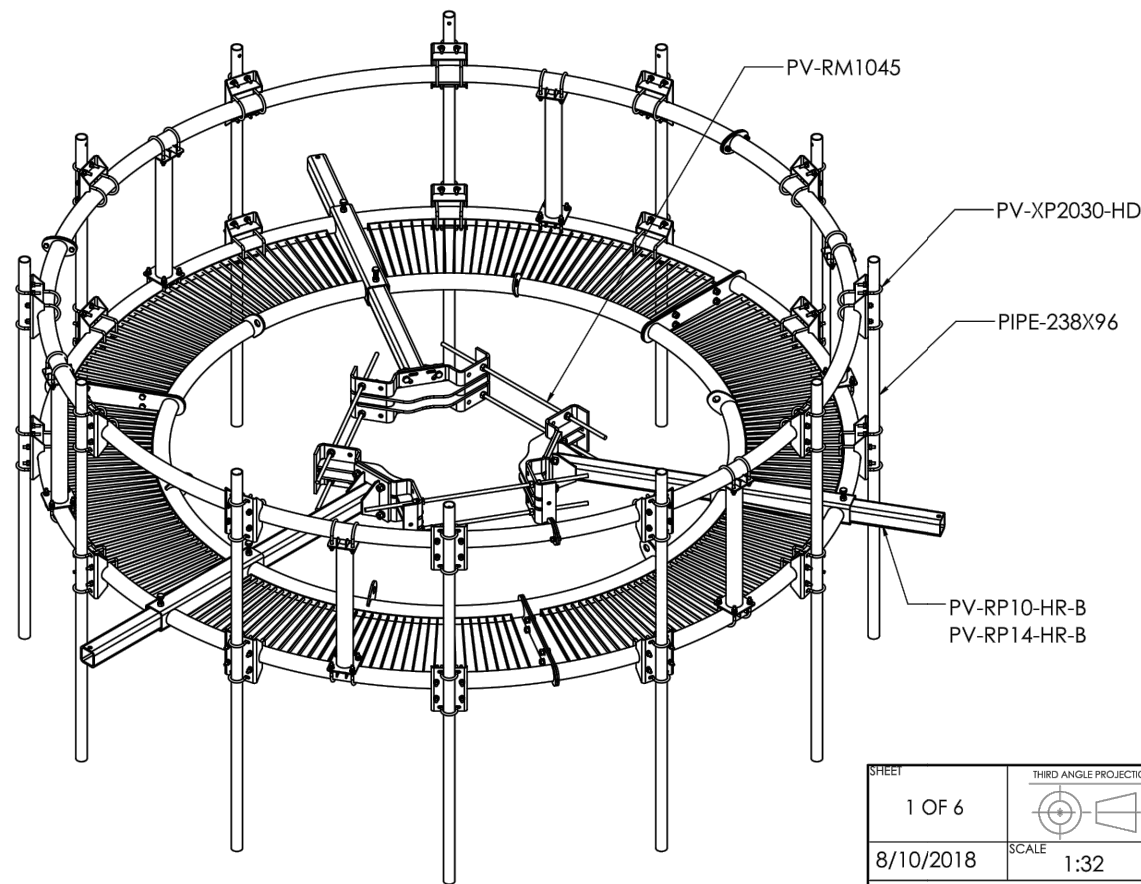
Table 1: Monopole Configurations

Part Number	Description	Pole Diameter Range	Weight (lbs)	Included Parts					
				PV-RM1045	PV-RP10-HR-B	PV-RP14-HR-B	PV-XP-2030-HD	PIPE-238X96	PV-PM-1
PV-RP10S-HR-12-B	10' Round Platform, w/ Handrail, W/ Ring Mount, Crossovers for (12) 2-3/8" Pipe, No Antenna Pipe	10" - 22"	1835	1	1	-	24	-	-
PV-RP10S-HR-6-96	10' Round Platform, w/ Handrail, W/ Ring Mount, Crossovers for (12) 2-3/8" Pipe, (6) 2-3/8" x 96" Pipe	10" - 22"	2010	1	1	-	24	6	-
PV-RP10S-HR-9-96	10' Round Platform, w/ Handrail, W/ Ring Mount, Crossovers for (12) 2-3/8" Pipe, (9) 2-3/8" x 96" Pipe	10" - 22"	2100	1	1	-	24	9	-
PV-RP10S-HR-12-96	10' Round Platform, w/ Handrail, W/ Ring Mount, Crossovers for (12) 2-3/8" Pipe, (12) 2-3/8" x 96" Pipe	10" - 22"	2190	1	1	-	24	12	-
PV-RP10S-HR-12-96-4XPMI	10' Round Platform, w/ Handrail, W/ Ring Mount, Crossovers for (12) 2-3/8" Pipe, (8) 2-3/8" x 96" Pipe, (4) Standoffs	10" - 22"	2443	1	1	-	24	8	4
PV-RP14MHR-12-B	14' Round Platform, w/ Handrail, W/ Ring Mount, Crossovers for (12) 2-3/8" Pipe, No Antenna Pipe	10" - 45"	2350	1	-	1	24	-	-
PV-RP14MHR-6-96	14' Round Platform, w/ Handrail, W/ Ring Mount, Crossovers for (12) 2-3/8" Pipe, (6) 2-3/8" x 96" Pipe	10" - 45"	2525	1	-	1	24	6	-
PV-RP14MHR-9-96	14' Round Platform, w/ Handrail, W/ Ring Mount, Crossovers for (12) 2-3/8" Pipe, (9) 2-3/8" x 96" Pipe	10" - 45"	2615	1	-	1	24	9	-
PV-RP14MHR-12-96	14' Round Platform, w/ Handrail, W/ Ring Mount, Crossovers for (12) 2-3/8" Pipe, (12) 2-3/8" x 96" Pipe	10" - 45"	2700	1	-	1	24	12	-
PV-RP14MHR-12-96-4XPMI	14' Round Platform, w/ Handrail, W/ Ring Mount, Crossovers for (12) 2-3/8" Pipe, (8) 2-3/8" x 96" Pipe, (4) Standoffs	10" - 45"	2972	1	-	1	24	8	4

Table 2: Platform EPA

Platform Size	Platform (EPA) _A (ft ²)	1/2" Radial Ice Platform (EPA) _A	1" Radial Ice Platform (EPA) _A
10'	25.3	32.2	39.1
14'	33.9	43.2	52.5
10' (4XPMI)	28.1	35.4	42.6
14' (4XPMI)	36.6	46.3	56

*EPA DOES NOT INCLUDE ANTENNA PIPES OR EQUIPMENT
SEE SHEET 4 FOR STANDOFF DETAILS



SHEET 1 OF 6	THIRD ANGLE PROJECTION	CATEGORY 02_Monopole	4		
8/10/2018	SCALE 1:32	SERIES 03_Round	3		
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		TYPE PV-RP_Round Platform Monopole	2	ADDED 4X 1" STANDOFF CONFIGURATIONS	8/9/18
		BY DJN	1	UPDATED CROSSOVERS, ADDED CLASSIFICATIONS	5/11/18
		CHECKED SJS	0	INITIAL RELEASE	7/18/16
		STATUS APPROVED	REV	DESCRIPTION	DATE
MONOPOLE ROUND PLATFORM					REV 2
DOCUMENT NUMBER RP-ENG-01-R2					

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

PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF PERFECTVISION MFG. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF PERFECTVISION MFG IS PROHIBITED.

SUPPLEMENTAL

SHEET NUMBER:
R-604

REVISION:
0

Copyright © 2021 ATC IP LLC, All Rights Reserved.



AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by



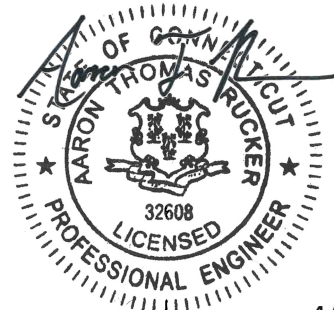
**TOWER
ENGINEERING
PROFESSIONALS**

Structural Analysis Report

Structure : 175 ft Monopole
ATC Site Name : Old Saybrook, CT
ATC Asset Number : 370625
Engineering Number : 13632988_C3_04
Proposed Carrier : T-MOBILE
Carrier Site Name : Crown Old Saybrook Monopole
Carrier Site Number : CTHA540A
Site Location : 77 Springbrook Road
Old Saybrook, CT 06475-0000
41.313800,-72.364000
County : Middlesex
Date : April 29, 2021
Max Usage : 70%
Result : Pass

Prepared By:
Austin Wilson
TEP

Reviewed By:



4/29/2021

COA: PEC.0001553



Table of Contents

Introduction 1

Supporting Documents 1

Analysis 1

Conclusion..... 1

Existing and Reserved Equipment..... 2

Equipment to be Removed..... 2

Proposed Equipment 2

Structure Usages 3

Foundations 3

Deflection, Twist, and Sway..... 3

Standard Conditions 4

Calculations Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 175 ft monopole to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	DaVinci, Valmont Job #08242-1120, dated April 17, 2008
Foundation Drawing	DaVinci, Valmont Job #08242-1120, dated April 17, 2008
Geotechnical Report	JGI Project #J2085121, dated March 12, 2008
Mount Analysis	CLS Project #41124-13632988_C8_01-01-MA-R, dated March 19, 2021

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:	125 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Spectral Response:	$S_s = 0.20, S_1 = 0.05$
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
173.0	3	RFS FDJ85020Q4-S1	Platform with Handrails	(2) 1 5/8" (1.63"-41.3mm) Fiber (16) 1 5/8" Coax	VERIZON WIRELESS
	3	Samsung B2/B66A RRH-BR049			
	3	Samsung B5/B13 RRH-BR04C			
	3	Antel BXA-80063/4CF			
	3	Samsung MT6407-77A			
	2	RFS DB-T1-6Z-8AB-0Z			
	6	Commscope JAHH-65B-R3B			
162.0	3	Ericsson AIR 21, 1.3M, B4A B2P	-	(4) 1 5/8" (1.63"-41.3mm) Fiber	T-MOBILE
	3	RFS APXVAARR24_43-U-NA20			
152.0	3	RFS APXV18-206517S-C	Flush	(6) 1 5/8" Coax	METRO PCS INC
104.0	1	7' Omni	Side Arm	(1) 7/8" Coax	OTHER

Equipment to be Removed

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
162.0	3	Ericsson AIR-32 B2A/B66Aa	T-Arms	(6) 1 5/8" Coax	T-MOBILE
	3	Ericsson Radio 4449 B12,B71			

Proposed Equipment

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
162.0	3	RFS APX16DWV-16DWVS-E-A20	Perfect Vision PV-RP14M -HR-9-96 Platform Mount	-	T-MOBILE
	3	Ericsson Radio 4449 B71 B85A			
	3	Ericsson RRUS 4415 B66			
	3	Ericsson RRUS 4415 B25			

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



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	44%	Pass
Shaft	67%	Pass
Base Plate	43%	Pass

Foundations

Reaction Component	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	5,400.0	3,796.0	70%
Shear (Kips)	48.0	33.1	69%

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) (°)
163.0	RFS APX16DWV-16DWVS-E-A20	T-MOBILE	1.505	1.180
	Ericsson Radio 4449 B71 B85A			
	Ericsson RRUS 4415 B66			
	Ericsson RRUS 4415 B25			

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



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

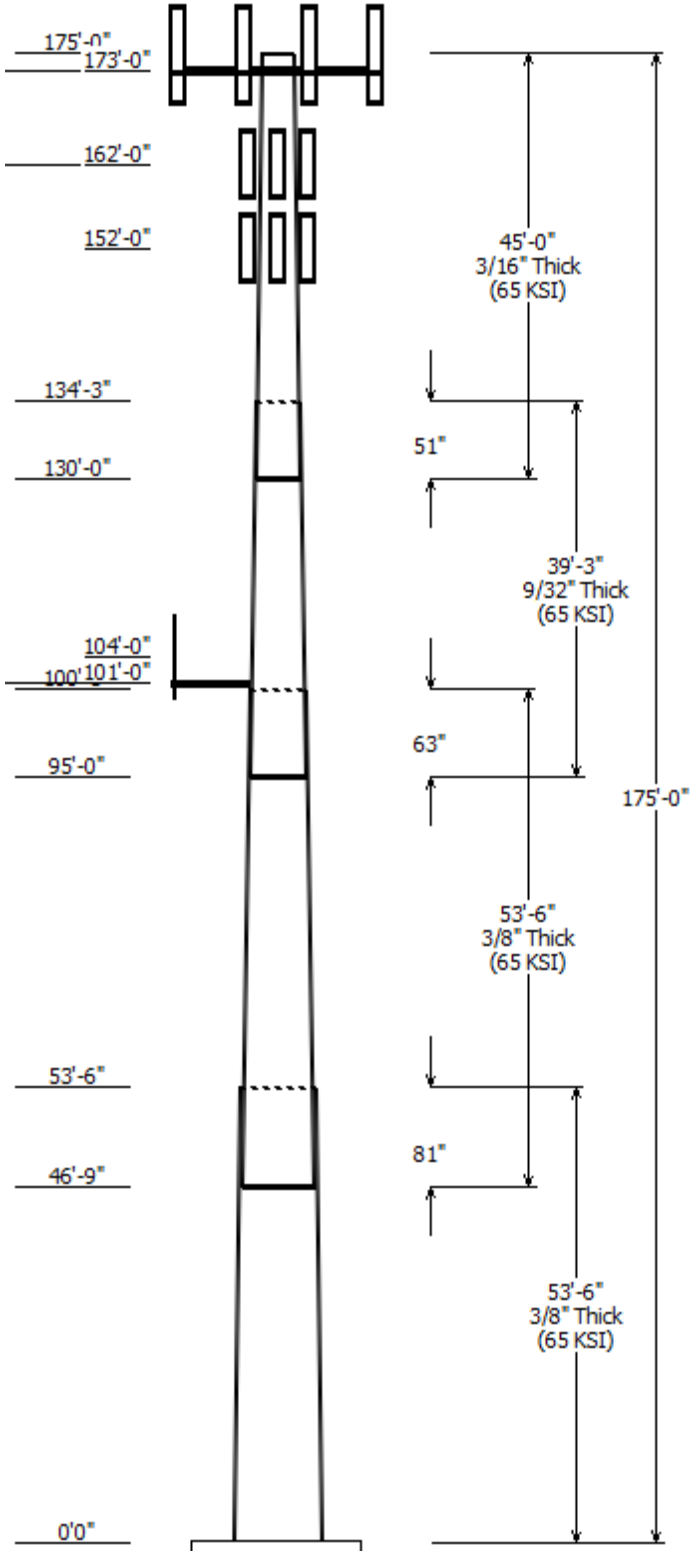
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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.

© 2007 - 2021 by ATC IP LLC. All rights reserved.



Job Information	
Client : T-MOBILE	Code: ANSI/TIA-222-H
Pole : 370625	
Location : Old Saybrook, CT	
Description :	Risk Category : II
Shape : 18 Sides	Exposure : C
Height : 175.00 (ft)	Topo Method : Method 1
Base Elev (ft): 0.00	Topographic Category : 1
Taper: 0.265014in/ft)	

Sections Properties						
Shaft Section	Length (ft)	Diameter (in)		Joint Type	Overlap Length (in)	Steel Grade
		Accross Top	Flats Bottom			
1	53.500	50.51	64.69	0.375	0.000	18 Sides 65
2	53.500	38.87	53.05	0.375 Slip Joint	81.000	18 Sides 65
3	39.250	30.42	40.82	0.281 Slip Joint	63.000	18 Sides 65
4	45.000	20.00	31.92	0.188 Slip Joint	51.000	18 Sides 65

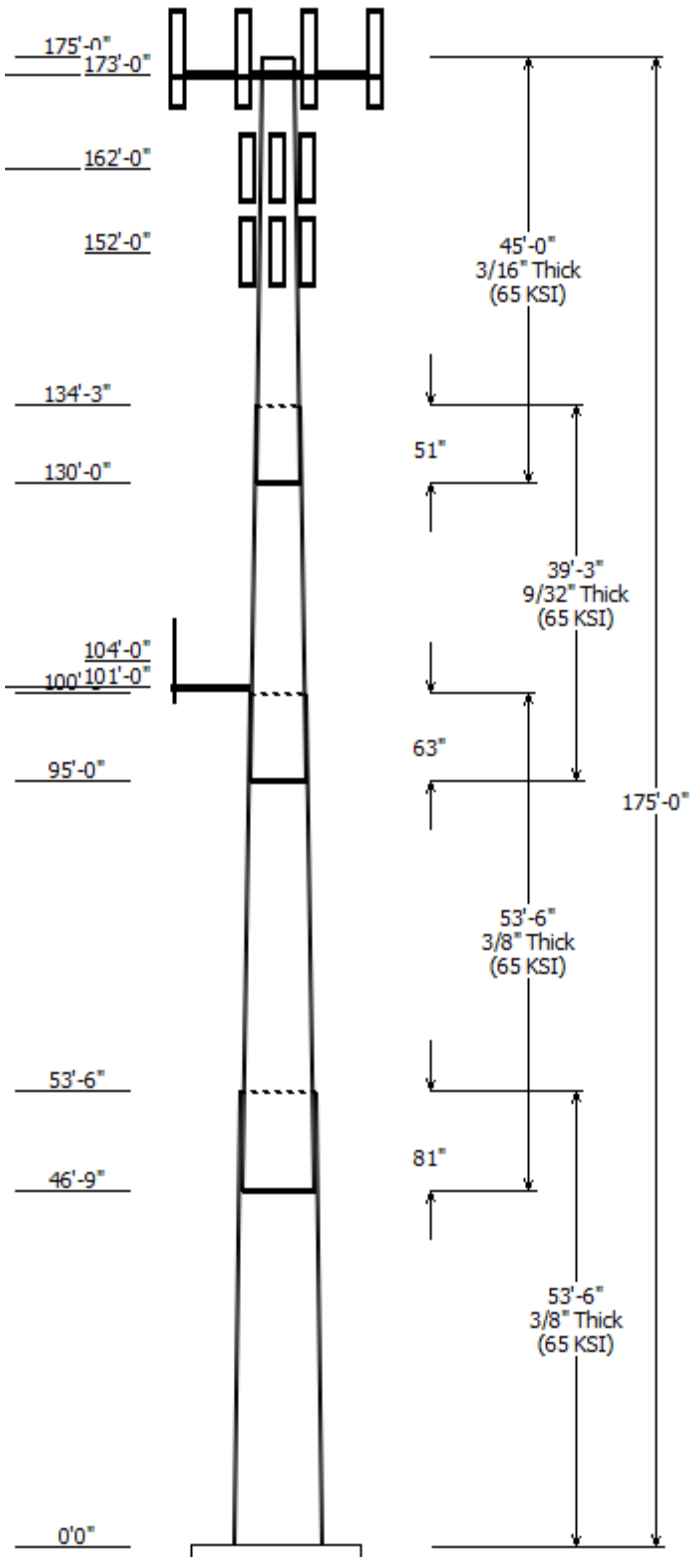
Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
173.000	173.000	1	Flat Platform w/ Handrails
173.000	175.000	6	Commscope JAHH-65B-R3B
173.000	175.000	2	RFS DB-T1-6Z-8AB-0Z
173.000	173.000	3	Samsung MT6407-77A
173.000	175.000	3	Antel BXA-80063/4CF
173.000	173.000	3	Samsung B5/B13 RRH-BR04C
173.000	175.000	3	Samsung B2/B66A RRH-BR049
173.000	175.000	3	RFS FDJ85020Q4-S1
162.000	162.000	1	Generic Circular Platform with
162.000	162.000	3	RFS APXVAARR24_43-U-NA20
162.000	162.000	3	RFS APX16DWV-16DWVS-E-A20
162.000	162.000	3	Ericsson RRUS 4415 B25
162.000	162.000	3	Ericsson RRUS 4415 B66
162.000	162.000	3	Ericsson Radio 4449 B71 B85A
162.000	162.000	3	Ericsson AIR 21, 1.3M, B4A B2P
152.000	152.000	3	RFS APXV18-206517S-C
104.000	104.000	1	Generic 7' Omni
101.000	101.000	1	Round Side Arm

Linear Appurtenance			
From Elev (ft)	To Elev (ft)	Description	Exposed To Wind
0.000	104.0	7/8" Coax	Yes
0.000	152.0	1 5/8" Coax	No
0.000	162.0	1 5/8" (1.63"-	No
0.000	164.0	1 1/4" Hybriflex	No
0.000	173.0	1 5/8" (1.63"-	No
0.000	173.0	1 5/8" Coax	No

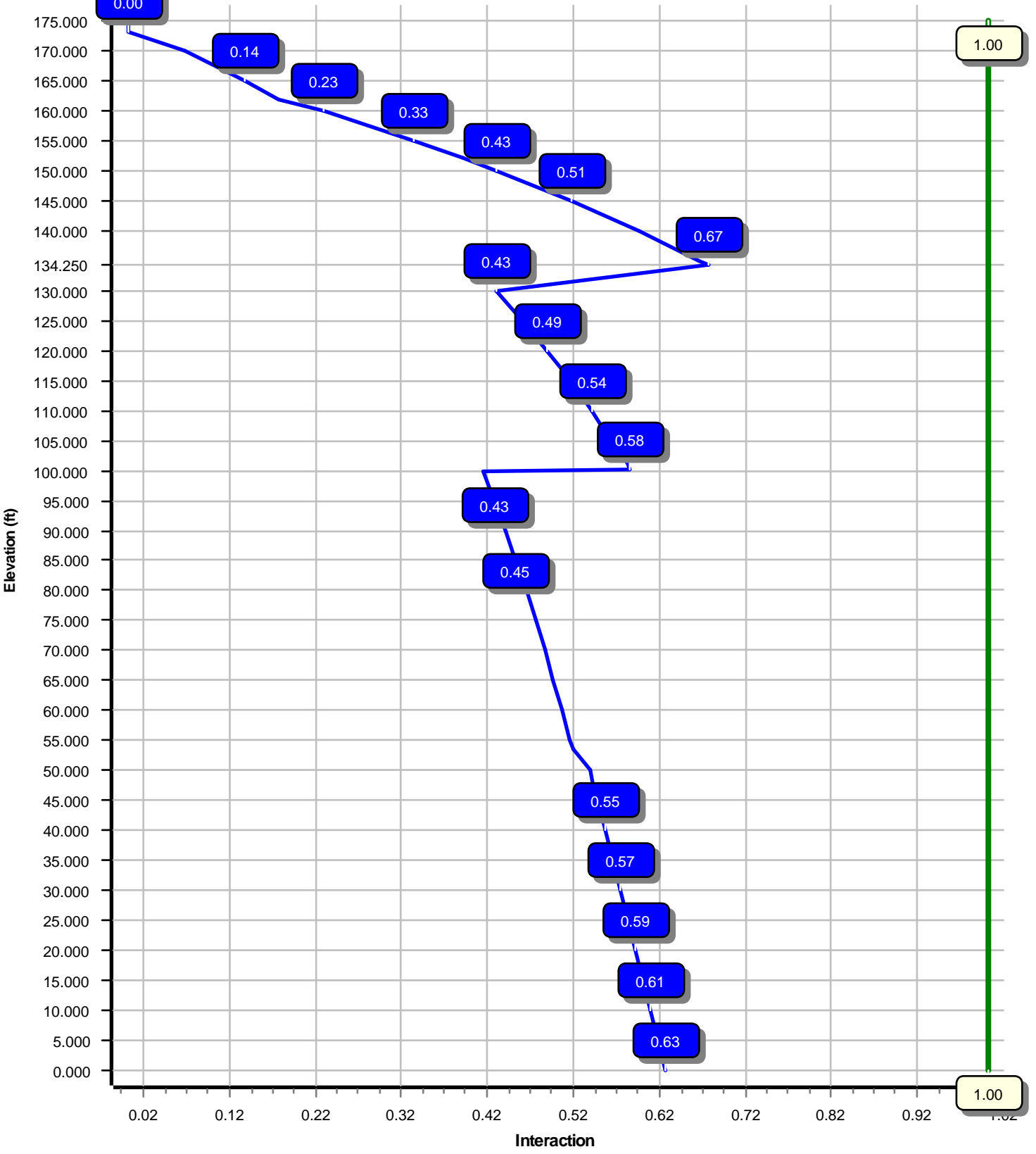
Load Cases	
1.2D + 1.0W	125 mph with No Ice
0.9D + 1.0W	125 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.0W	3795.99	33.09	49.55
0.9D + 1.0W	3758.97	33.08	37.15
1.2D + 1.0Di + 1.0Wi	975.58	8.61	64.30
1.2D + 1.0Ev + 1.0Eh	177.79	1.24	49.58
0.9D - 1.0Ev + 1.0Eh	175.53	1.24	34.18
1.0D + 1.0W	778.24	6.82	41.32

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 67.48% at 134.3 ft



Site Number: 370625

Code: ANSI/TIA-222-H

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: Old Saybrook, CT

Engineering Number: 13632988_C3_04

4/29/2021 5:02:37 PM

Customer: T-MOBILE

Analysis Parameters

Location :	Middlesex County, CT	Height (ft) :	175
Code :	ANSI/TIA-222-H	Base Diameter (in) :	64.69
Shape :	18 Sides	Top Diameter (in) :	20.00
Pole Type :	Taper	Taper (in/ft) :	0.265
Pole Manufacturer :	Valmont	Rotation (deg) :	0.00
Kd (non-service) :	0.95	Ke :	1.00

Ice & Wind Parameters

Exposure Category:	C	Design Wind Speed Without Ice:	125 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:	1.00 in
Crest Height:	0 ft	HMSL:	68.00 ft

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.39		
T_L (sec):	6	p :	1
S_s :	0.202	S_1 :	0.053
F_a :	1.600	F_v :	2.400
S_{ds} :	0.215	S_{d1} :	0.085
		C_s :	0.030
		C_s Max:	0.030
		C_s Min:	0.030

Load Cases

1.2D + 1.0W	125 mph with No Ice
0.9D + 1.0W	125 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 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: 370625

Code: ANSI/TIA-222-H

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: Old Saybrook, CT

Engineering Number: 13632988_C3_04

4/29/2021 5:02:37 PM

Customer: T-MOBILE

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	53.500	0.3750	65		0.00	12,399	64.69	0.00	76.55	40004.8	28.65	172.51	50.51	53.50	59.67	18951.5	21.99	134.70	0.265014
2-18	53.500	0.3750	65	Slip	81.00	9,877	53.05	46.75	62.69	21978.8	23.18	141.47	38.87	100.25	45.82	8579.6	16.51	103.66	0.265014
3-18	39.250	0.2813	65	Slip	63.00	4,214	40.82	95.00	36.19	7517.0	23.83	145.16	30.42	134.25	26.91	3088.9	17.31	108.18	0.265014
4-18	45.000	0.1875	65	Slip	51.00	2,349	31.92	130.00	18.89	2403.8	28.26	170.27	20.00	175.00	11.79	584.7	17.04	106.67	0.265014
Shaft Weight						28,839													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor
173.00	RFS FDJ85020Q4-S1	3	0.75	2.000	23.60	0.958	0.50	46.16	1.444	0.50
173.00	Samsung B2/B66A RRH-BR049	3	0.75	2.000	84.40	1.875	0.50	127.59	2.486	0.50
173.00	Samsung B5/B13 RRH-BR04C	3	0.75	0.000	70.30	1.875	0.50	109.03	2.486	0.50
173.00	Antel BXA-80063/4CF	3	0.75	2.000	9.90	4.708	0.65	77.80	5.954	0.65
173.00	Samsung MT6407-77A	3	0.75	0.000	81.60	4.709	0.61	150.61	5.737	0.61
173.00	RFS DB-T1-6Z-8AB-OZ	2	0.75	2.000	44.00	4.800	0.72	129.21	5.762	0.72
173.00	Commscope JAHH-65B-R3B	6	0.75	2.000	60.60	9.113	0.69	197.57	10.991	0.69
173.00	Flat Platform w/ Handrails	1	1.00	0.000	2,000.00	42.400	1.00	2,962.20	56.599	1.00
162.00	Ericsson Radio 4449 B71 B85A	3	0.75	0.000	75.00	1.650	0.50	115.46	2.222	0.50
162.00	Ericsson RRUS 4415 B66	3	0.75	0.000	46.00	1.650	0.50	75.13	2.222	0.50
162.00	Ericsson RRUS 4415 B25	3	0.75	0.000	46.00	1.842	0.50	78.99	2.445	0.50
162.00	Ericsson AIR 21, 1.3M, B4A B2P	3	0.75	0.000	81.50	6.092	0.70	179.33	7.548	0.70
162.00	RFS APX16DWV-16DWVS-E-A20	3	0.75	0.000	40.70	6.586	0.60	119.29	8.043	0.60
162.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.000	127.90	20.243	0.63	392.02	22.738	0.63
162.00	Generic Circular Platform with	1	1.00	0.000	2,900.00	33.900	1.00	4,354.36	77.435	1.00
152.00	RFS APXV18-206517S-C	3	1.00	0.000	26.40	5.160	0.68	88.34	6.741	0.68
104.00	Generic 7' Omni	1	1.00	0.000	25.00	2.100	1.00	59.44	3.302	1.00
101.00	Round Side Arm	1	1.00	0.000	150.00	5.200	1.00	196.95	6.944	1.00
Totals	Num Loadings:18	48			7,666.50			13,696.06		

Linear Appurtenance Properties

Load Case Azimuth (deg) : 0

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Coax / Flat Row	Dist Between Rows (in)	Dist Between Cols (in)	Dist Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	173.00	2	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0.00	0.00	0	N	VERIZON WIRELESS
0.00	173.00	16	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	N	VERIZON WIRELESS
0.00	164.00	1	1 1/4" Hybriflex Cable	1.54	1.00	N	0	0.00	0.00	0	N	T-MOBILE
0.00	162.00	4	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0.00	0.00	0	N	T-MOBILE
0.00	152.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	N	METRO PCS INC
0.00	104.00	1	7/8" Coax	1.09	0.33	N	1	1.00	1.00	90	Y	OTHER

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.3750	64.690	76.548	40,004.8	28.65	172.51	67.7	1218.	0.0	0.0
5.00		0.3750	63.365	74.971	37,582.8	28.03	168.97	68.4	1168.	0.0	1,289.0
10.00		0.3750	62.040	73.394	35,260.5	27.41	165.44	69.2	1119.	0.0	1,262.1
15.00		0.3750	60.715	71.817	33,036.0	26.79	161.91	69.9	1071.	0.0	1,235.3
20.00		0.3750	59.390	70.240	30,907.0	26.16	158.37	70.6	1025.	0.0	1,208.5
25.00		0.3750	58.065	68.663	28,871.5	25.54	154.84	71.4	979.4	0.0	1,181.6
30.00		0.3750	56.740	67.086	26,927.4	24.92	151.31	72.1	934.7	0.0	1,154.8
35.00		0.3750	55.415	65.508	25,072.6	24.29	147.77	72.8	891.2	0.0	1,128.0
40.00		0.3750	54.089	63.931	23,305.0	23.67	144.24	73.6	848.6	0.0	1,101.1
45.00		0.3750	52.764	62.354	21,622.4	23.05	140.70	74.3	807.1	0.0	1,074.3
46.75	Bot - Section 2	0.3750	52.301	61.802	21,053.3	22.83	139.47	74.6	792.9	0.0	369.7
50.00		0.3750	51.439	60.777	20,022.9	22.42	137.17	75.0	766.7	0.0	1,365.5
53.50	Top - Section 1	0.3750	51.262	60.566	19,814.8	22.34	136.70	75.1	761.3	0.0	1,445.2
55.00		0.3750	50.864	60.093	19,354.0	22.15	135.64	75.3	749.4	0.0	307.9
60.00		0.3750	49.539	58.516	17,869.9	21.53	132.10	76.1	710.5	0.0	1,009.0
65.00		0.3750	48.214	56.938	16,463.6	20.91	128.57	76.8	672.6	0.0	982.2
70.00		0.3750	46.889	55.361	15,133.1	20.28	125.04	77.5	635.7	0.0	955.3
75.00		0.3750	45.564	53.784	13,876.2	19.66	121.50	78.3	599.8	0.0	928.5
80.00		0.3750	44.239	52.207	12,691.0	19.04	117.97	79.0	565.0	0.0	901.7
85.00		0.3750	42.914	50.630	11,575.3	18.42	114.44	79.7	531.3	0.0	874.8
90.00		0.3750	41.589	49.053	10,526.9	17.79	110.90	80.5	498.5	0.0	848.0
95.00	Bot - Section 3	0.3750	40.264	47.476	9,543.8	17.17	107.37	81.2	466.9	0.0	821.2
100.00		0.3750	38.939	45.899	8,624.0	16.55	103.84	81.9	436.2	0.0	1,400.0
100.2	Top - Section 2	0.2813	39.435	34.951	6,769.4	22.96	140.21	74.4	338.1	0.0	68.8
101.0		0.2813	39.236	34.773	6,666.8	22.84	139.51	74.5	334.7	0.0	89.0
104.0		0.2813	38.441	34.064	6,266.9	22.34	136.68	75.1	321.1	0.0	351.4
105.0		0.2813	38.176	33.827	6,137.3	22.17	135.74	75.3	316.6	0.0	115.5
110.0		0.2813	36.851	32.644	5,515.7	21.34	131.03	76.3	294.8	0.0	565.5
115.0		0.2813	35.526	31.461	4,937.6	20.51	126.31	77.3	273.7	0.0	545.3
120.0		0.2813	34.201	30.278	4,401.4	19.68	121.60	78.3	253.5	0.0	525.2
125.0		0.2813	32.876	29.096	3,905.4	18.85	116.89	79.2	234.0	0.0	505.1
130.0	Bot - Section 4	0.2813	31.551	27.913	3,448.2	18.02	112.18	80.2	215.3	0.0	485.0
134.2	Top - Section 3	0.1875	30.799	18.217	2,156.8	27.20	164.26	69.4	137.9	0.0	664.7
135.0		0.1875	30.601	18.099	2,115.1	27.01	163.20	69.6	136.1	0.0	46.3
140.0		0.1875	29.276	17.310	1,850.5	25.77	156.14	71.1	124.5	0.0	301.2
145.0		0.1875	27.950	16.522	1,608.9	24.52	149.07	72.6	113.4	0.0	287.8
150.0		0.1875	26.625	15.733	1,389.4	23.28	142.00	74.0	102.8	0.0	274.4
152.0		0.1875	26.095	15.418	1,307.5	22.78	139.18	74.6	98.7	0.0	106.0
155.0		0.1875	25.300	14.945	1,190.8	22.03	134.93	75.5	92.7	0.0	155.0
160.0		0.1875	23.975	14.156	1,012.1	20.78	127.87	77.0	83.1	0.0	247.6
162.0		0.1875	23.445	13.841	945.9	20.28	125.04	77.5	79.5	0.0	95.3
165.0		0.1875	22.650	13.368	852.2	19.54	120.80	78.4	74.1	0.0	138.9
170.0		0.1875	21.325	12.579	710.1	18.29	113.73	79.9	65.6	0.0	220.7
173.0		0.1875	20.530	12.106	632.9	17.54	109.49	80.8	60.7	0.0	126.0
175.0		0.1875	20.000	11.790	584.7	17.04	106.67	81.4	57.6	0.0	81.3
28,839.5											

Load Case: 1.2D + 1.0W	125 mph with No Ice	25 Iterations
Gust Response Factor :1.10		
Dead Load Factor :1.20		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		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		350.4	0.0					0.0	0.0	350.4	0.0	0.0	0.0
5.00		693.6	1,546.8					0.0	174.2	693.6	1,720.9	0.0	0.0
10.00		679.1	1,514.6					0.0	174.2	679.1	1,688.7	0.0	0.0
15.00		675.0	1,482.4					0.0	174.2	675.0	1,656.5	0.0	0.0
20.00		688.7	1,450.2					0.0	174.2	688.7	1,624.3	0.0	0.0
25.00		706.1	1,418.0					0.0	174.2	706.1	1,592.1	0.0	0.0
30.00		717.2	1,385.8					0.0	174.2	717.2	1,559.9	0.0	0.0
35.00		723.7	1,353.6					0.0	174.2	723.7	1,527.7	0.0	0.0
40.00		726.6	1,321.4					0.0	174.2	726.6	1,495.5	0.0	0.0
45.00		490.8	1,289.2					0.0	174.2	490.8	1,463.3	0.0	0.0
46.75	Bot - Section 2	366.4	443.6					0.0	61.0	366.4	504.6	0.0	0.0
50.00		496.1	1,638.6					0.0	113.2	496.1	1,751.8	0.0	0.0
53.50	Top - Section 1	366.6	1,734.2					0.0	121.9	366.6	1,856.1	0.0	0.0
55.00		473.9	369.5					0.0	52.3	473.9	421.8	0.0	0.0
60.00		724.9	1,210.8					0.0	174.2	724.9	1,385.0	0.0	0.0
65.00		717.6	1,178.6					0.0	174.2	717.6	1,352.8	0.0	0.0
70.00		708.8	1,146.4					0.0	174.2	708.8	1,320.6	0.0	0.0
75.00		698.9	1,114.2					0.0	174.2	698.9	1,288.4	0.0	0.0
80.00		687.9	1,082.0					0.0	174.2	687.9	1,256.2	0.0	0.0
85.00		675.8	1,049.8					0.0	174.2	675.8	1,224.0	0.0	0.0
90.00		662.9	1,017.6					0.0	174.2	662.9	1,191.8	0.0	0.0
95.00	Bot - Section 3	653.7	985.4					0.0	174.2	653.7	1,159.6	0.0	0.0
100.00		341.7	1,680.1					0.0	174.2	341.7	1,854.2	0.0	0.0
100.25	Top - Section 2	64.2	82.5					0.0	8.7	64.2	91.2	0.0	0.0
101.00	Appurtenance(s)	239.1	106.8	275.0	0.0	0.0	180.0	0.0	26.1	514.0	312.9	0.0	0.0
104.00	Appurtenance(s)	253.9	421.6	111.7	0.0	0.0	30.0	0.0	104.5	365.7	556.1	0.0	0.0
105.00		373.4	138.6					0.0	34.4	373.4	173.0	0.0	0.0
110.00		612.7	678.6					0.0	172.2	612.7	850.8	0.0	0.0
115.00		596.3	654.4					0.0	172.2	596.3	826.6	0.0	0.0
120.00		579.2	630.3					0.0	172.2	579.2	802.5	0.0	0.0
125.00		561.6	606.1					0.0	172.2	561.6	778.3	0.0	0.0
130.00	Bot - Section 4	506.7	582.0					0.0	172.2	506.7	754.2	0.0	0.0
134.25	Top - Section 3	270.3	797.6					0.0	146.4	270.3	944.0	0.0	0.0
135.00		300.9	55.6					0.0	25.8	300.9	81.4	0.0	0.0
140.00		512.1	361.5					0.0	172.2	512.1	533.7	0.0	0.0
145.00		492.6	345.4					0.0	172.2	492.6	517.6	0.0	0.0
150.00		335.1	329.3					0.0	172.2	335.1	501.5	0.0	0.0
152.00	Appurtenance(s)	231.2	127.2	606.7	0.0	0.0	95.0	0.0	68.9	837.9	291.1	0.0	0.0
155.00		358.5	186.0					0.0	85.6	358.5	271.6	0.0	0.0
160.00		306.4	297.1					0.0	142.7	306.4	439.8	0.0	0.0
162.00	Appurtenance(s)	210.4	114.3	5,074.2	0.0	0.0	4,981.6	0.0	57.1	5,284.6	5,153.0	0.0	0.0
165.00		324.7	166.7					0.0	61.2	324.7	227.9	0.0	0.0
170.00		314.4	264.9					0.0	98.0	314.4	362.9	0.0	0.0
173.00	Appurtenance(s)	178.7	151.2	5,604.7	0.0	5,171.5	3,913.2	0.0	58.8	5,783.4	4,123.2	0.0	0.0
175.00		64.1	97.6					0.0	0.0	64.1	97.6	0.0	0.0
Totals:										33,385.2	49,586.7	0.00	0.00

Load Case: 1.2D + 1.0W

125 mph with No Ice

25 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	-49.55	-33.09	0.00	-3,795.99	0.00	3,795.99	4,663.96	1,343.42	7,803.58	6,184.38	0.00	0.00	0.625
5.00	-47.75	-32.51	0.00	-3,630.53	0.00	3,630.53	4,617.32	1,315.74	7,485.37	5,995.65	0.07	-0.13	0.616
10.00	-45.99	-31.93	0.00	-3,467.99	0.00	3,467.99	4,568.59	1,288.06	7,173.78	5,806.85	0.28	-0.27	0.608
15.00	-44.26	-31.35	0.00	-3,308.33	0.00	3,308.33	4,517.79	1,260.39	6,868.82	5,618.13	0.64	-0.40	0.599
20.00	-42.57	-30.76	0.00	-3,151.56	0.00	3,151.56	4,464.90	1,232.71	6,570.48	5,429.68	1.13	-0.54	0.591
25.00	-40.91	-30.14	0.00	-2,997.78	0.00	2,997.78	4,409.93	1,205.03	6,278.76	5,241.66	1.78	-0.68	0.582
30.00	-39.28	-29.50	0.00	-2,847.11	0.00	2,847.11	4,352.89	1,177.35	5,993.67	5,054.25	2.57	-0.83	0.573
35.00	-37.69	-28.85	0.00	-2,699.63	0.00	2,699.63	4,293.76	1,149.67	5,715.20	4,867.62	3.52	-0.97	0.564
40.00	-36.14	-28.19	0.00	-2,555.39	0.00	2,555.39	4,232.55	1,121.99	5,443.35	4,681.93	4.62	-1.12	0.555
45.00	-34.64	-27.73	0.00	-2,414.46	0.00	2,414.46	4,169.26	1,094.32	5,178.13	4,497.36	5.88	-1.27	0.546
46.75	-34.10	-27.40	0.00	-2,365.93	0.00	2,365.93	4,146.62	1,084.63	5,086.87	4,433.06	6.35	-1.33	0.543
50.00	-32.31	-26.92	0.00	-2,276.89	0.00	2,276.89	4,103.90	1,066.64	4,919.53	4,314.09	7.29	-1.43	0.536
53.50	-30.43	-26.55	0.00	-2,182.67	0.00	2,182.67	4,094.98	1,062.93	4,885.39	4,289.64	8.39	-1.54	0.517
55.00	-29.97	-26.12	0.00	-2,142.85	0.00	2,142.85	4,074.88	1,054.63	4,809.36	4,234.99	8.88	-1.59	0.514
60.00	-28.54	-25.43	0.00	-2,012.28	0.00	2,012.28	4,006.53	1,026.95	4,560.26	4,053.87	10.63	-1.74	0.504
65.00	-27.15	-24.74	0.00	-1,885.15	0.00	1,885.15	3,936.09	999.27	4,317.79	3,874.46	12.54	-1.90	0.494
70.00	-25.78	-24.06	0.00	-1,761.45	0.00	1,761.45	3,863.58	971.59	4,081.94	3,696.92	14.61	-2.06	0.484
75.00	-24.46	-23.38	0.00	-1,641.16	0.00	1,641.16	3,788.99	943.91	3,852.71	3,521.44	16.85	-2.22	0.473
80.00	-23.17	-22.71	0.00	-1,524.25	0.00	1,524.25	3,712.32	916.23	3,630.10	3,348.18	19.26	-2.38	0.462
85.00	-21.91	-22.04	0.00	-1,410.71	0.00	1,410.71	3,633.57	888.56	3,414.12	3,177.31	21.84	-2.54	0.451
90.00	-20.69	-21.39	0.00	-1,300.49	0.00	1,300.49	3,552.73	860.88	3,204.76	3,009.01	24.59	-2.71	0.439
95.00	-19.50	-20.74	0.00	-1,193.55	0.00	1,193.55	3,469.82	833.20	3,002.03	2,843.45	27.52	-2.88	0.426
100.00	-17.63	-20.33	0.00	-1,089.86	0.00	1,089.86	3,384.83	805.52	2,805.92	2,680.80	30.63	-3.05	0.412
100.25	-17.54	-20.26	0.00	-1,084.78	0.00	1,084.78	2,340.16	613.38	2,169.16	1,886.52	30.79	-3.06	0.584
101.00	-17.23	-19.76	0.00	-1,069.59	0.00	1,069.59	2,332.87	610.27	2,147.19	1,871.03	31.27	-3.08	0.580
104.00	-16.66	-19.39	0.00	-1,010.31	0.00	1,010.31	2,303.23	597.81	2,060.45	1,809.28	33.25	-3.22	0.567
105.00	-16.46	-19.04	0.00	-990.93	0.00	990.93	2,293.18	593.66	2,031.93	1,788.79	33.93	-3.26	0.562
110.00	-15.58	-18.44	0.00	-895.71	0.00	895.71	2,241.70	572.90	1,892.33	1,687.04	37.46	-3.48	0.539
115.00	-14.73	-17.85	0.00	-803.50	0.00	803.50	2,188.14	552.15	1,757.70	1,586.61	41.22	-3.70	0.514
120.00	-13.90	-17.27	0.00	-714.25	0.00	714.25	2,132.50	531.39	1,628.03	1,487.67	45.22	-3.92	0.488
125.00	-13.10	-16.71	0.00	-627.89	0.00	627.89	2,074.78	510.63	1,503.33	1,390.39	49.44	-4.14	0.459
130.00	-12.33	-16.19	0.00	-544.35	0.00	544.35	2,014.98	489.87	1,383.60	1,294.95	53.88	-4.35	0.428
134.25	-11.38	-15.87	0.00	-475.55	0.00	475.55	1,137.98	319.71	883.94	718.00	57.83	-4.53	0.675
135.00	-11.28	-15.59	0.00	-463.65	0.00	463.65	1,134.17	317.64	872.50	710.92	58.54	-4.56	0.665
140.00	-10.71	-15.09	0.00	-385.69	0.00	385.69	1,107.59	303.80	798.13	663.83	63.47	-4.85	0.593
145.00	-10.18	-14.60	0.00	-310.24	0.00	310.24	1,078.93	289.96	727.08	617.00	68.69	-5.11	0.515
150.00	-9.67	-14.25	0.00	-237.25	0.00	237.25	1,048.18	276.12	659.34	570.62	74.17	-5.36	0.428
152.00	-9.43	-13.40	0.00	-208.75	0.00	208.75	1,035.30	270.58	633.17	552.23	76.44	-5.45	0.390
155.00	-9.16	-13.04	0.00	-168.54	0.00	168.54	1,015.36	262.28	594.91	524.85	79.90	-5.57	0.333
160.00	-8.73	-12.71	0.00	-103.32	0.00	103.32	980.46	248.44	533.79	479.87	85.81	-5.73	0.227
162.00	-4.13	-6.94	0.00	-77.89	0.00	77.89	965.91	242.90	510.27	462.14	88.22	-5.78	0.174
165.00	-3.93	-6.60	0.00	-57.07	0.00	57.07	943.48	234.60	475.99	435.85	91.87	-5.84	0.136
170.00	-3.59	-6.25	0.00	-24.07	0.00	24.07	904.41	220.76	421.49	392.95	98.03	-5.91	0.066

Site Number: 370625

Code: ANSI/TIA-222-H

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: Old Saybrook, CT

Engineering Number: 13632988_C3_04

4/29/2021 5:02:40 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0W

125 mph with No Ice

25 Iterations

Gust Response Factor :1.10

Dead Load Factor :1.20

Wind Load Factor :1.00

173.00	-0.09	-0.07	0.00	-0.15	0.00	0.15	879.98	212.46	390.39	367.83	101.74	-5.93	0.001
175.00	0.00	-0.06	0.00	0.00	0.00	0.00	863.27	206.92	370.31	351.36	104.22	-5.93	0.000

Load Case: 0.9D + 1.0W	125 mph with No Ice (Reduced DL)	25 Iterations
Gust Response Factor :1.10		
Dead Load Factor :0.90		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		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		350.4	0.0					0.0	0.0	350.4	0.0	0.0	0.0
5.00		693.6	1,160.1					0.0	130.6	693.6	1,290.7	0.0	0.0
10.00		679.1	1,135.9					0.0	130.6	679.1	1,266.6	0.0	0.0
15.00		675.0	1,111.8					0.0	130.6	675.0	1,242.4	0.0	0.0
20.00		688.7	1,087.6					0.0	130.6	688.7	1,218.3	0.0	0.0
25.00		706.1	1,063.5					0.0	130.6	706.1	1,194.1	0.0	0.0
30.00		717.2	1,039.3					0.0	130.6	717.2	1,170.0	0.0	0.0
35.00		723.7	1,015.2					0.0	130.6	723.7	1,145.8	0.0	0.0
40.00		726.6	991.0					0.0	130.6	726.6	1,121.7	0.0	0.0
45.00		490.8	966.9					0.0	130.6	490.8	1,097.5	0.0	0.0
46.75	Bot - Section 2	366.4	332.7					0.0	45.7	366.4	378.4	0.0	0.0
50.00		496.1	1,228.9					0.0	84.9	496.1	1,313.8	0.0	0.0
53.50	Top - Section 1	366.6	1,300.6					0.0	91.4	366.6	1,392.1	0.0	0.0
55.00		473.9	277.1					0.0	39.2	473.9	316.3	0.0	0.0
60.00		724.9	908.1					0.0	130.6	724.9	1,038.7	0.0	0.0
65.00		717.6	883.9					0.0	130.6	717.6	1,014.6	0.0	0.0
70.00		708.8	859.8					0.0	130.6	708.8	990.4	0.0	0.0
75.00		698.9	835.6					0.0	130.6	698.9	966.3	0.0	0.0
80.00		687.9	811.5					0.0	130.6	687.9	942.1	0.0	0.0
85.00		675.8	787.3					0.0	130.6	675.8	918.0	0.0	0.0
90.00		662.9	763.2					0.0	130.6	662.9	893.8	0.0	0.0
95.00	Bot - Section 3	653.7	739.0					0.0	130.6	653.7	869.7	0.0	0.0
100.00		341.7	1,260.0					0.0	130.6	341.7	1,390.7	0.0	0.0
100.25	Top - Section 2	64.2	61.9					0.0	6.5	64.2	68.4	0.0	0.0
101.00	Appurtenance(s)	239.1	80.1	275.0	0.0	0.0	135.0	0.0	19.6	514.0	234.7	0.0	0.0
104.00	Appurtenance(s)	253.9	316.2	111.7	0.0	0.0	22.5	0.0	78.4	365.7	417.1	0.0	0.0
105.00		373.4	104.0					0.0	25.8	373.4	129.8	0.0	0.0
110.00		612.7	508.9					0.0	129.1	612.7	638.1	0.0	0.0
115.00		596.3	490.8					0.0	129.1	596.3	620.0	0.0	0.0
120.00		579.2	472.7					0.0	129.1	579.2	601.8	0.0	0.0
125.00		561.6	454.6					0.0	129.1	561.6	583.7	0.0	0.0
130.00	Bot - Section 4	506.7	436.5					0.0	129.1	506.7	565.6	0.0	0.0
134.25	Top - Section 3	270.3	598.2					0.0	109.8	270.3	708.0	0.0	0.0
135.00		300.9	41.7					0.0	19.4	300.9	61.1	0.0	0.0
140.00		512.1	271.1					0.0	129.1	512.1	400.3	0.0	0.0
145.00		492.6	259.0					0.0	129.1	492.6	388.2	0.0	0.0
150.00		335.1	247.0					0.0	129.1	335.1	376.1	0.0	0.0
152.00	Appurtenance(s)	231.2	95.4	606.7	0.0	0.0	71.3	0.0	51.7	837.9	218.3	0.0	0.0
155.00		358.5	139.5					0.0	64.2	358.5	203.7	0.0	0.0
160.00		306.4	222.8					0.0	107.0	306.4	329.8	0.0	0.0
162.00	Appurtenance(s)	210.4	85.7	5,074.2	0.0	0.0	3,736.2	0.0	42.8	5,284.6	3,864.7	0.0	0.0
165.00		324.7	125.0					0.0	45.9	324.7	170.9	0.0	0.0
170.00		314.4	198.7					0.0	73.5	314.4	272.2	0.0	0.0
173.00	Appurtenance(s)	178.7	113.4	5,604.7	0.0	5,171.5	2,934.9	0.0	44.1	5,783.4	3,092.4	0.0	0.0
175.00		64.1	73.2					0.0	0.0	64.1	73.2	0.0	0.0
Totals:										33,385.2	37,190.0	0.00	0.00

Load Case: 0.9D + 1.0W

125 mph with No Ice (Reduced DL)

25 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	-37.15	-33.08	0.00	-3,758.97	0.00	3,758.97	4,663.96	1,343.42	7,803.58	6,184.38	0.00	0.00	0.616
5.00	-35.79	-32.47	0.00	-3,593.58	0.00	3,593.58	4,617.32	1,315.74	7,485.37	5,995.65	0.07	-0.13	0.608
10.00	-34.45	-31.86	0.00	-3,431.26	0.00	3,431.26	4,568.59	1,288.06	7,173.78	5,806.85	0.28	-0.26	0.599
15.00	-33.14	-31.26	0.00	-3,271.95	0.00	3,271.95	4,517.79	1,260.39	6,868.82	5,618.13	0.63	-0.40	0.590
20.00	-31.85	-30.64	0.00	-3,115.65	0.00	3,115.65	4,464.90	1,232.71	6,570.48	5,429.68	1.12	-0.54	0.582
25.00	-30.59	-29.99	0.00	-2,962.47	0.00	2,962.47	4,409.93	1,205.03	6,278.76	5,241.66	1.76	-0.68	0.573
30.00	-29.35	-29.34	0.00	-2,812.50	0.00	2,812.50	4,352.89	1,177.35	5,993.67	5,054.25	2.54	-0.82	0.564
35.00	-28.15	-28.67	0.00	-2,665.82	0.00	2,665.82	4,293.76	1,149.67	5,715.20	4,867.62	3.48	-0.96	0.555
40.00	-26.97	-27.99	0.00	-2,522.49	0.00	2,522.49	4,232.55	1,121.99	5,443.35	4,681.93	4.57	-1.11	0.546
45.00	-25.83	-27.52	0.00	-2,382.55	0.00	2,382.55	4,169.26	1,094.32	5,178.13	4,497.36	5.81	-1.26	0.537
46.75	-25.42	-27.18	0.00	-2,334.39	0.00	2,334.39	4,146.62	1,084.63	5,086.87	4,433.06	6.28	-1.31	0.533
50.00	-24.07	-26.70	0.00	-2,246.05	0.00	2,246.05	4,103.90	1,066.64	4,919.53	4,314.09	7.21	-1.42	0.527
53.50	-22.65	-26.33	0.00	-2,152.61	0.00	2,152.61	4,094.98	1,062.93	4,885.39	4,289.64	8.29	-1.52	0.508
55.00	-22.31	-25.88	0.00	-2,113.12	0.00	2,113.12	4,074.88	1,054.63	4,809.36	4,234.99	8.78	-1.57	0.505
60.00	-21.22	-25.19	0.00	-1,983.70	0.00	1,983.70	4,006.53	1,026.95	4,560.26	4,053.87	10.51	-1.72	0.495
65.00	-20.16	-24.49	0.00	-1,857.78	0.00	1,857.78	3,936.09	999.27	4,317.79	3,874.46	12.39	-1.88	0.485
70.00	-19.13	-23.80	0.00	-1,735.33	0.00	1,735.33	3,863.58	971.59	4,081.94	3,696.92	14.44	-2.03	0.475
75.00	-18.13	-23.12	0.00	-1,616.33	0.00	1,616.33	3,788.99	943.91	3,852.71	3,521.44	16.65	-2.19	0.464
80.00	-17.15	-22.44	0.00	-1,500.75	0.00	1,500.75	3,712.32	916.23	3,630.10	3,348.18	19.03	-2.35	0.453
85.00	-16.20	-21.77	0.00	-1,388.55	0.00	1,388.55	3,633.57	888.56	3,414.12	3,177.31	21.58	-2.51	0.442
90.00	-15.28	-21.11	0.00	-1,279.69	0.00	1,279.69	3,552.73	860.88	3,204.76	3,009.01	24.29	-2.67	0.430
95.00	-14.38	-20.46	0.00	-1,174.12	0.00	1,174.12	3,469.82	833.20	3,002.03	2,843.45	27.18	-2.84	0.418
100.00	-12.98	-20.07	0.00	-1,071.81	0.00	1,071.81	3,384.83	805.52	2,805.92	2,680.80	30.25	-3.01	0.404
100.25	-12.91	-20.00	0.00	-1,066.80	0.00	1,066.80	2,340.16	613.38	2,169.16	1,886.52	30.40	-3.02	0.572
101.00	-12.68	-19.50	0.00	-1,051.79	0.00	1,051.79	2,332.87	610.27	2,147.19	1,871.03	30.88	-3.04	0.569
104.00	-12.25	-19.13	0.00	-993.30	0.00	993.30	2,303.23	597.81	2,060.45	1,809.28	32.83	-3.17	0.555
105.00	-12.10	-18.78	0.00	-974.18	0.00	974.18	2,293.18	593.66	2,031.93	1,788.79	33.50	-3.22	0.551
110.00	-11.43	-18.17	0.00	-880.30	0.00	880.30	2,241.70	572.90	1,892.33	1,687.04	36.99	-3.43	0.528
115.00	-10.78	-17.58	0.00	-789.45	0.00	789.45	2,188.14	552.15	1,757.70	1,586.61	40.70	-3.65	0.504
120.00	-10.15	-17.00	0.00	-701.57	0.00	701.57	2,132.50	531.39	1,628.03	1,487.67	44.63	-3.86	0.477
125.00	-9.55	-16.43	0.00	-616.59	0.00	616.59	2,074.78	510.63	1,503.33	1,390.39	48.79	-4.08	0.449
130.00	-8.97	-15.92	0.00	-534.43	0.00	534.43	2,014.98	489.87	1,383.60	1,294.95	53.17	-4.29	0.418
134.25	-8.26	-15.61	0.00	-466.79	0.00	466.79	1,137.98	319.71	883.94	718.00	57.06	-4.46	0.660
135.00	-8.18	-15.33	0.00	-455.08	0.00	455.08	1,134.17	317.64	872.50	710.92	57.77	-4.49	0.650
140.00	-7.75	-14.82	0.00	-378.46	0.00	378.46	1,107.59	303.80	798.13	663.83	62.62	-4.77	0.579
145.00	-7.34	-14.33	0.00	-304.36	0.00	304.36	1,078.93	289.96	727.08	617.00	67.76	-5.04	0.503
150.00	-6.96	-13.98	0.00	-232.72	0.00	232.72	1,048.18	276.12	659.34	570.62	73.16	-5.27	0.417
152.00	-6.79	-13.14	0.00	-204.76	0.00	204.76	1,035.30	270.58	633.17	552.23	75.39	-5.36	0.380
155.00	-6.59	-12.78	0.00	-165.35	0.00	165.35	1,015.36	262.28	594.91	524.85	78.79	-5.48	0.324
160.00	-6.27	-12.45	0.00	-101.46	0.00	101.46	980.46	248.44	533.79	479.87	84.62	-5.64	0.220
162.00	-2.94	-6.81	0.00	-76.56	0.00	76.56	965.91	242.90	510.27	462.14	86.99	-5.69	0.169
165.00	-2.80	-6.48	0.00	-56.12	0.00	56.12	943.48	234.60	475.99	435.85	90.58	-5.75	0.132
170.00	-2.56	-6.14	0.00	-23.73	0.00	23.73	904.41	220.76	421.49	392.95	96.64	-5.82	0.064

Site Number: 370625

Code: ANSI/TIA-222-H

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: Old Saybrook, CT

Engineering Number: 13632988_C3_04

4/29/2021 5:02:42 PM

Customer: T-MOBILE

Load Case: 0.9D + 1.0W

125 mph with No Ice (Reduced DL)

25 Iterations

Gust Response Factor :1.10

Dead Load Factor :0.90

Wind Load Factor :1.00

173.00	-0.07	-0.07	0.00	-0.14	0.00	0.14	879.98	212.46	390.39	367.83	100.30	-5.84	0.000
175.00	0.00	-0.06	0.00	0.00	0.00	0.00	863.27	206.92	370.31	351.36	102.74	-5.84	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice	24 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

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		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		94.4	0.0					0.0	0.0	94.4	0.0	0.0	0.0
5.00		187.1	1,857.2					0.0	177.7	187.1	2,034.9	0.0	0.0
10.00		183.6	1,854.4					0.0	178.2	183.6	2,032.6	0.0	0.0
15.00		182.9	1,832.7					0.0	178.5	182.9	2,011.2	0.0	0.0
20.00		186.9	1,804.9					0.0	178.6	186.9	1,983.5	0.0	0.0
25.00		191.8	1,773.9					0.0	178.8	191.8	1,952.7	0.0	0.0
30.00		195.1	1,740.9					0.0	178.9	195.1	1,919.8	0.0	0.0
35.00		197.1	1,706.4					0.0	179.0	197.1	1,885.5	0.0	0.0
40.00		198.2	1,671.0					0.0	179.1	198.2	1,850.1	0.0	0.0
45.00		134.0	1,634.8					0.0	179.2	134.0	1,814.0	0.0	0.0
46.75	Bot - Section 2	100.1	564.5					0.0	62.7	100.1	627.2	0.0	0.0
50.00		135.6	1,863.8					0.0	116.5	135.6	1,980.3	0.0	0.0
53.50	Top - Section 1	100.3	1,974.1					0.0	125.5	100.3	2,099.7	0.0	0.0
55.00		129.8	472.1					0.0	53.8	129.8	525.9	0.0	0.0
60.00		198.7	1,545.9					0.0	179.4	198.7	1,725.3	0.0	0.0
65.00		197.0	1,507.7					0.0	179.5	197.0	1,687.1	0.0	0.0
70.00		194.9	1,469.1					0.0	179.5	194.9	1,648.7	0.0	0.0
75.00		192.4	1,430.3					0.0	179.6	192.4	1,609.9	0.0	0.0
80.00		189.7	1,391.3					0.0	179.6	189.7	1,570.9	0.0	0.0
85.00		186.7	1,351.9					0.0	179.7	186.7	1,531.6	0.0	0.0
90.00		183.5	1,312.4					0.0	179.7	183.5	1,492.1	0.0	0.0
95.00	Bot - Section 3	181.2	1,272.7					0.0	179.7	181.2	1,452.4	0.0	0.0
100.00		94.8	1,963.6					0.0	179.8	94.8	2,143.4	0.0	0.0
100.25	Top - Section 2	17.8	96.7					0.0	9.0	17.8	105.7	0.0	0.0
101.00	Appurtenance(s)	66.4	149.2	58.8	0.0	0.0	216.5	0.0	27.0	125.2	392.6	0.0	0.0
104.00	Appurtenance(s)	70.6	588.2	28.1	0.0	0.0	56.8	0.0	107.9	98.7	752.8	0.0	0.0
105.00		104.0	193.9					0.0	34.4	104.0	228.3	0.0	0.0
110.00		170.9	946.3					0.0	172.2	170.9	1,118.5	0.0	0.0
115.00		166.7	914.0					0.0	172.2	166.7	1,086.2	0.0	0.0
120.00		162.3	881.6					0.0	172.2	162.3	1,053.8	0.0	0.0
125.00		157.8	849.0					0.0	172.2	157.8	1,021.2	0.0	0.0
130.00	Bot - Section 4	142.7	816.4					0.0	172.2	142.7	988.6	0.0	0.0
134.25	Top - Section 3	76.2	993.0					0.0	146.4	76.2	1,139.4	0.0	0.0
135.00		85.1	89.9					0.0	25.8	85.1	115.8	0.0	0.0
140.00		145.2	581.3					0.0	172.2	145.2	753.5	0.0	0.0
145.00		140.1	556.4					0.0	172.2	140.1	728.6	0.0	0.0
150.00		95.6	531.4					0.0	172.2	95.6	703.6	0.0	0.0
152.00	Appurtenance(s)	66.2	206.7	126.8	0.0	0.0	241.0	0.0	68.9	193.0	516.5	0.0	0.0
155.00		102.9	301.9					0.0	85.6	102.9	387.6	0.0	0.0
160.00		88.2	481.2					0.0	142.7	88.2	623.8	0.0	0.0
162.00	Appurtenance(s)	60.8	186.6	1,310.0	0.0	0.0	7,407.3	0.0	57.1	1,370.8	7,651.0	0.0	0.0
165.00		94.2	271.7					0.0	61.2	94.2	332.9	0.0	0.0
170.00		91.6	430.6					0.0	98.0	91.6	528.7	0.0	0.0
173.00	Appurtenance(s)	53.4	247.4	1,145.5	0.0	1,016.1	6,023.9	0.0	58.8	1,199.0	6,330.1	0.0	0.0
175.00		20.0	160.2					0.0	0.0	20.0	160.2	0.0	0.0
Totals:										8,683.93	64,297.9	0.00	0.00

Site Number: 370625

Code: ANSI/TIA-222-H

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: Old Saybrook, CT

Engineering Number: 13632988_C3_04

4/29/2021 5:02:44 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

24 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	-64.30	-8.61	0.00	-975.58	0.00	975.58	4,663.96	1,343.42	7,803.58	6,184.38	0.00	0.00	0.172
5.00	-62.26	-8.46	0.00	-932.53	0.00	932.53	4,617.32	1,315.74	7,485.37	5,995.65	0.02	-0.03	0.169
10.00	-60.22	-8.31	0.00	-890.25	0.00	890.25	4,568.59	1,288.06	7,173.78	5,806.85	0.07	-0.07	0.167
15.00	-58.20	-8.16	0.00	-848.70	0.00	848.70	4,517.79	1,260.39	6,868.82	5,618.13	0.16	-0.10	0.164
20.00	-56.21	-8.00	0.00	-807.91	0.00	807.91	4,464.90	1,232.71	6,570.48	5,429.68	0.29	-0.14	0.161
25.00	-54.26	-7.84	0.00	-767.89	0.00	767.89	4,409.93	1,205.03	6,278.76	5,241.66	0.46	-0.18	0.159
30.00	-52.33	-7.67	0.00	-728.69	0.00	728.69	4,352.89	1,177.35	5,993.67	5,054.25	0.66	-0.21	0.156
35.00	-50.44	-7.50	0.00	-690.32	0.00	690.32	4,293.76	1,149.67	5,715.20	4,867.62	0.90	-0.25	0.154
40.00	-48.59	-7.33	0.00	-652.82	0.00	652.82	4,232.55	1,121.99	5,443.35	4,681.93	1.18	-0.29	0.151
45.00	-46.77	-7.21	0.00	-616.18	0.00	616.18	4,169.26	1,094.32	5,178.13	4,497.36	1.51	-0.33	0.148
46.75	-46.14	-7.12	0.00	-603.57	0.00	603.57	4,146.62	1,084.63	5,086.87	4,433.06	1.63	-0.34	0.147
50.00	-44.16	-6.99	0.00	-580.44	0.00	580.44	4,103.90	1,066.64	4,919.53	4,314.09	1.87	-0.37	0.145
53.50	-42.06	-6.89	0.00	-555.98	0.00	555.98	4,094.98	1,062.93	4,885.39	4,289.64	2.15	-0.39	0.140
55.00	-41.53	-6.78	0.00	-545.64	0.00	545.64	4,074.88	1,054.63	4,809.36	4,234.99	2.28	-0.41	0.139
60.00	-39.80	-6.59	0.00	-511.76	0.00	511.76	4,006.53	1,026.95	4,560.26	4,053.87	2.72	-0.45	0.136
65.00	-38.11	-6.41	0.00	-478.80	0.00	478.80	3,936.09	999.27	4,317.79	3,874.46	3.21	-0.49	0.133
70.00	-36.46	-6.22	0.00	-446.76	0.00	446.76	3,863.58	971.59	4,081.94	3,696.92	3.74	-0.53	0.130
75.00	-34.85	-6.04	0.00	-415.64	0.00	415.64	3,788.99	943.91	3,852.71	3,521.44	4.31	-0.57	0.127
80.00	-33.28	-5.86	0.00	-385.44	0.00	385.44	3,712.32	916.23	3,630.10	3,348.18	4.93	-0.61	0.124
85.00	-31.74	-5.68	0.00	-356.14	0.00	356.14	3,633.57	888.56	3,414.12	3,177.31	5.59	-0.65	0.121
90.00	-30.25	-5.50	0.00	-327.75	0.00	327.75	3,552.73	860.88	3,204.76	3,009.01	6.29	-0.69	0.117
95.00	-28.79	-5.32	0.00	-300.25	0.00	300.25	3,469.82	833.20	3,002.03	2,843.45	7.04	-0.73	0.114
100.00	-26.65	-5.21	0.00	-273.64	0.00	273.64	3,384.83	805.52	2,805.92	2,680.80	7.83	-0.78	0.110
100.25	-26.55	-5.19	0.00	-272.34	0.00	272.34	2,340.16	613.38	2,169.16	1,886.52	7.87	-0.78	0.156
101.00	-26.15	-5.07	0.00	-268.44	0.00	268.44	2,332.87	610.27	2,147.19	1,871.03	7.99	-0.78	0.155
104.00	-25.40	-4.97	0.00	-253.23	0.00	253.23	2,303.23	597.81	2,060.45	1,809.28	8.50	-0.82	0.151
105.00	-25.17	-4.88	0.00	-248.26	0.00	248.26	2,293.18	593.66	2,031.93	1,788.79	8.67	-0.83	0.150
110.00	-24.05	-4.71	0.00	-223.86	0.00	223.86	2,241.70	572.90	1,892.33	1,687.04	9.57	-0.88	0.143
115.00	-22.96	-4.55	0.00	-200.29	0.00	200.29	2,188.14	552.15	1,757.70	1,586.61	10.52	-0.94	0.137
120.00	-21.91	-4.39	0.00	-177.53	0.00	177.53	2,132.50	531.39	1,628.03	1,487.67	11.54	-0.99	0.130
125.00	-20.88	-4.24	0.00	-155.56	0.00	155.56	2,074.78	510.63	1,503.33	1,390.39	12.61	-1.05	0.122
130.00	-19.90	-4.09	0.00	-134.38	0.00	134.38	2,014.98	489.87	1,383.60	1,294.95	13.73	-1.10	0.114
134.25	-18.76	-4.00	0.00	-116.99	0.00	116.99	1,137.98	319.71	883.94	718.00	14.73	-1.14	0.180
135.00	-18.64	-3.93	0.00	-113.98	0.00	113.98	1,134.17	317.64	872.50	710.92	14.91	-1.15	0.177
140.00	-17.88	-3.79	0.00	-94.35	0.00	94.35	1,107.59	303.80	798.13	663.83	16.16	-1.22	0.158
145.00	-17.15	-3.65	0.00	-75.41	0.00	75.41	1,078.93	289.96	727.08	617.00	17.47	-1.29	0.138
150.00	-16.45	-3.55	0.00	-57.15	0.00	57.15	1,048.18	276.12	659.34	570.62	18.85	-1.35	0.116
152.00	-15.94	-3.35	0.00	-50.05	0.00	50.05	1,035.30	270.58	633.17	552.23	19.42	-1.37	0.106
155.00	-15.55	-3.25	0.00	-39.99	0.00	39.99	1,015.36	262.28	594.91	524.85	20.29	-1.40	0.092
160.00	-14.93	-3.15	0.00	-23.75	0.00	23.75	980.46	248.44	533.79	479.87	21.78	-1.44	0.065
162.00	-7.31	-1.59	0.00	-17.44	0.00	17.44	965.91	242.90	510.27	462.14	22.38	-1.45	0.045
165.00	-6.98	-1.49	0.00	-12.67	0.00	12.67	943.48	234.60	475.99	435.85	23.30	-1.46	0.037
170.00	-6.46	-1.39	0.00	-5.22	0.00	5.22	904.41	220.76	421.49	392.95	24.83	-1.48	0.020

Site Number: 370625

Code: ANSI/TIA-222-H

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: Old Saybrook, CT

Engineering Number: 13632988_C3_04

4/29/2021 5:02:45 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

24 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

173.00	-0.16	-0.02	0.00	-0.05	0.00	0.05	879.98	212.46	390.39	367.83	25.76	-1.48	0.000
175.00	0.00	-0.02	0.00	0.00	0.00	0.00	863.27	206.92	370.31	351.36	26.38	-1.48	0.000

Load Case: 1.0D + 1.0W	Serviceability 60 mph	24 Iterations
Gust Response Factor :1.10		
Dead Load Factor :1.00		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		72.2	0.0					0.0	0.0	72.2	0.0	0.0	0.0
5.00		143.0	1,289.0					0.0	145.2	143.0	1,434.1	0.0	0.0
10.00		140.0	1,262.1					0.0	145.2	140.0	1,407.3	0.0	0.0
15.00		139.2	1,235.3					0.0	145.2	139.2	1,380.5	0.0	0.0
20.00		142.0	1,208.5					0.0	145.2	142.0	1,353.6	0.0	0.0
25.00		145.6	1,181.6					0.0	145.2	145.6	1,326.8	0.0	0.0
30.00		147.8	1,154.8					0.0	145.2	147.8	1,300.0	0.0	0.0
35.00		149.2	1,128.0					0.0	145.2	149.2	1,273.1	0.0	0.0
40.00		149.8	1,101.1					0.0	145.2	149.8	1,246.3	0.0	0.0
45.00		101.2	1,074.3					0.0	145.2	101.2	1,219.5	0.0	0.0
46.75	Bot - Section 2	75.5	369.7					0.0	50.8	75.5	420.5	0.0	0.0
50.00		102.3	1,365.5					0.0	94.3	102.3	1,459.8	0.0	0.0
53.50	Top - Section 1	75.6	1,445.2					0.0	101.6	75.6	1,546.8	0.0	0.0
55.00		97.7	307.9					0.0	43.5	97.7	351.5	0.0	0.0
60.00		149.4	1,009.0					0.0	145.2	149.4	1,154.1	0.0	0.0
65.00		147.9	982.2					0.0	145.2	147.9	1,127.3	0.0	0.0
70.00		146.1	955.3					0.0	145.2	146.1	1,100.5	0.0	0.0
75.00		144.1	928.5					0.0	145.2	144.1	1,073.6	0.0	0.0
80.00		141.8	901.7					0.0	145.2	141.8	1,046.8	0.0	0.0
85.00		139.3	874.8					0.0	145.2	139.3	1,020.0	0.0	0.0
90.00		136.7	848.0					0.0	145.2	136.7	993.1	0.0	0.0
95.00	Bot - Section 3	134.8	821.2					0.0	145.2	134.8	966.3	0.0	0.0
100.00		70.4	1,400.0					0.0	145.2	70.4	1,545.2	0.0	0.0
100.25	Top - Section 2	13.2	68.8					0.0	7.3	13.2	76.0	0.0	0.0
101.00	Appurtenance(s)	49.3	89.0	56.7	0.0	0.0	150.0	0.0	21.8	106.0	260.7	0.0	0.0
104.00	Appurtenance(s)	52.3	351.4	23.0	0.0	0.0	25.0	0.0	87.1	75.4	463.4	0.0	0.0
105.00		77.0	115.5					0.0	28.7	77.0	144.2	0.0	0.0
110.00		126.3	565.5					0.0	143.5	126.3	709.0	0.0	0.0
115.00		122.9	545.3					0.0	143.5	122.9	688.8	0.0	0.0
120.00		119.4	525.2					0.0	143.5	119.4	668.7	0.0	0.0
125.00		115.8	505.1					0.0	143.5	115.8	648.6	0.0	0.0
130.00	Bot - Section 4	104.5	485.0					0.0	143.5	104.5	628.5	0.0	0.0
134.25	Top - Section 3	55.7	664.7					0.0	122.0	55.7	786.7	0.0	0.0
135.00		62.0	46.3					0.0	21.5	62.0	67.9	0.0	0.0
140.00		105.6	301.2					0.0	143.5	105.6	444.7	0.0	0.0
145.00		101.5	287.8					0.0	143.5	101.5	431.3	0.0	0.0
150.00		69.1	274.4					0.0	143.5	69.1	417.9	0.0	0.0
152.00	Appurtenance(s)	47.7	106.0	125.1	0.0	0.0	79.2	0.0	57.4	172.7	242.6	0.0	0.0
155.00		73.9	155.0					0.0	71.3	73.9	226.3	0.0	0.0
160.00		63.2	247.6					0.0	118.9	63.2	366.5	0.0	0.0
162.00	Appurtenance(s)	43.4	95.3	1,046.0	0.0	0.0	4,151.3	0.0	47.6	1,089.4	4,294.1	0.0	0.0
165.00		66.9	138.9					0.0	51.0	66.9	189.9	0.0	0.0
170.00		64.8	220.7					0.0	81.7	64.8	302.4	0.0	0.0
173.00	Appurtenance(s)	36.8	126.0	1,155.4	0.0	1,066.1	3,261.0	0.0	49.0	1,192.2	3,436.0	0.0	0.0
175.00		13.2	81.3					0.0	0.0	13.2	81.3	0.0	0.0
Totals:										6,882.29	41,322.2	0.00	0.00

Site Number: 370625

Code: ANSI/TIA-222-H

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: Old Saybrook, CT

Engineering Number: 13632988_C3_04

4/29/2021 5:02:47 PM

Customer: T-MOBILE

Load Case: 1.0D + 1.0W

Serviceability 60 mph

24 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	-41.32	-6.82	0.00	-778.24	0.00	778.24	4,663.96	1,343.42	7,803.58	6,184.38	0.00	0.00	0.135
5.00	-39.88	-6.70	0.00	-744.15	0.00	744.15	4,617.32	1,315.74	7,485.37	5,995.65	0.01	-0.03	0.133
10.00	-38.47	-6.57	0.00	-710.67	0.00	710.67	4,568.59	1,288.06	7,173.78	5,806.85	0.06	-0.05	0.131
15.00	-37.09	-6.45	0.00	-677.81	0.00	677.81	4,517.79	1,260.39	6,868.82	5,618.13	0.13	-0.08	0.129
20.00	-35.73	-6.32	0.00	-645.55	0.00	645.55	4,464.90	1,232.71	6,570.48	5,429.68	0.23	-0.11	0.127
25.00	-34.40	-6.19	0.00	-613.93	0.00	613.93	4,409.93	1,205.03	6,278.76	5,241.66	0.36	-0.14	0.125
30.00	-33.10	-6.06	0.00	-582.97	0.00	582.97	4,352.89	1,177.35	5,993.67	5,054.25	0.53	-0.17	0.123
35.00	-31.82	-5.92	0.00	-552.68	0.00	552.68	4,293.76	1,149.67	5,715.20	4,867.62	0.72	-0.20	0.121
40.00	-30.58	-5.78	0.00	-523.06	0.00	523.06	4,232.55	1,121.99	5,443.35	4,681.93	0.95	-0.23	0.119
45.00	-29.35	-5.69	0.00	-494.14	0.00	494.14	4,169.26	1,094.32	5,178.13	4,497.36	1.20	-0.26	0.117
46.75	-28.93	-5.62	0.00	-484.19	0.00	484.19	4,146.62	1,084.63	5,086.87	4,433.06	1.30	-0.27	0.116
50.00	-27.47	-5.52	0.00	-465.92	0.00	465.92	4,103.90	1,066.64	4,919.53	4,314.09	1.49	-0.29	0.115
53.50	-25.92	-5.44	0.00	-446.60	0.00	446.60	4,094.98	1,062.93	4,885.39	4,289.64	1.72	-0.32	0.110
55.00	-25.57	-5.35	0.00	-438.44	0.00	438.44	4,074.88	1,054.63	4,809.36	4,234.99	1.82	-0.33	0.110
60.00	-24.42	-5.21	0.00	-411.67	0.00	411.67	4,006.53	1,026.95	4,560.26	4,053.87	2.18	-0.36	0.108
65.00	-23.29	-5.07	0.00	-385.62	0.00	385.62	3,936.09	999.27	4,317.79	3,874.46	2.57	-0.39	0.105
70.00	-22.18	-4.93	0.00	-360.27	0.00	360.27	3,863.58	971.59	4,081.94	3,696.92	2.99	-0.42	0.103
75.00	-21.11	-4.79	0.00	-335.64	0.00	335.64	3,788.99	943.91	3,852.71	3,521.44	3.45	-0.45	0.101
80.00	-20.06	-4.65	0.00	-311.70	0.00	311.70	3,712.32	916.23	3,630.10	3,348.18	3.94	-0.49	0.099
85.00	-19.04	-4.51	0.00	-288.46	0.00	288.46	3,633.57	888.56	3,414.12	3,177.31	4.47	-0.52	0.096
90.00	-18.04	-4.38	0.00	-265.91	0.00	265.91	3,552.73	860.88	3,204.76	3,009.01	5.04	-0.55	0.093
95.00	-17.08	-4.24	0.00	-244.03	0.00	244.03	3,469.82	833.20	3,002.03	2,843.45	5.64	-0.59	0.091
100.00	-15.53	-4.16	0.00	-222.82	0.00	222.82	3,384.83	805.52	2,805.92	2,680.80	6.27	-0.62	0.088
100.25	-15.46	-4.15	0.00	-221.78	0.00	221.78	2,340.16	613.38	2,169.16	1,886.52	6.30	-0.63	0.124
101.00	-15.19	-4.04	0.00	-218.67	0.00	218.67	2,332.87	610.27	2,147.19	1,871.03	6.40	-0.63	0.123
104.00	-14.73	-3.97	0.00	-206.54	0.00	206.54	2,303.23	597.81	2,060.45	1,809.28	6.81	-0.66	0.121
105.00	-14.59	-3.90	0.00	-202.57	0.00	202.57	2,293.18	593.66	2,031.93	1,788.79	6.95	-0.67	0.120
110.00	-13.87	-3.77	0.00	-183.10	0.00	183.10	2,241.70	572.90	1,892.33	1,687.04	7.67	-0.71	0.115
115.00	-13.18	-3.65	0.00	-164.24	0.00	164.24	2,188.14	552.15	1,757.70	1,586.61	8.44	-0.76	0.110
120.00	-12.52	-3.53	0.00	-146.00	0.00	146.00	2,132.50	531.39	1,628.03	1,487.67	9.26	-0.80	0.104
125.00	-11.87	-3.41	0.00	-128.34	0.00	128.34	2,074.78	510.63	1,503.33	1,390.39	10.12	-0.85	0.098
130.00	-11.24	-3.31	0.00	-111.27	0.00	111.27	2,014.98	489.87	1,383.60	1,294.95	11.03	-0.89	0.092
134.25	-10.45	-3.24	0.00	-97.21	0.00	97.21	1,137.98	319.71	883.94	718.00	11.84	-0.93	0.145
135.00	-10.38	-3.19	0.00	-94.77	0.00	94.77	1,134.17	317.64	872.50	710.92	11.99	-0.93	0.143
140.00	-9.94	-3.08	0.00	-78.84	0.00	78.84	1,107.59	303.80	798.13	663.83	13.00	-0.99	0.128
145.00	-9.50	-2.98	0.00	-63.42	0.00	63.42	1,078.93	289.96	727.08	617.00	14.07	-1.05	0.112
150.00	-9.08	-2.91	0.00	-48.50	0.00	48.50	1,048.18	276.12	659.34	570.62	15.19	-1.10	0.094
152.00	-8.84	-2.74	0.00	-42.67	0.00	42.67	1,035.30	270.58	633.17	552.23	15.65	-1.11	0.086
155.00	-8.62	-2.66	0.00	-34.46	0.00	34.46	1,015.36	262.28	594.91	524.85	16.36	-1.14	0.074
160.00	-8.25	-2.60	0.00	-21.14	0.00	21.14	980.46	248.44	533.79	479.87	17.57	-1.17	0.053
162.00	-3.98	-1.42	0.00	-15.95	0.00	15.95	965.91	242.90	510.27	462.14	18.07	-1.18	0.039
165.00	-3.79	-1.35	0.00	-11.69	0.00	11.69	943.48	234.60	475.99	435.85	18.82	-1.20	0.031
170.00	-3.49	-1.28	0.00	-4.93	0.00	4.93	904.41	220.76	421.49	392.95	20.08	-1.21	0.016

Site Number: 370625

Code: ANSI/TIA-222-H

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: Old Saybrook, CT

Engineering Number: 13632988_C3_04

4/29/2021 5:02:47 PM

Customer: T-MOBILE

Load Case: 1.0D + 1.0W

Serviceability 60 mph

24 Iterations

Gust Response Factor :1.10

Dead Load Factor :1.00

Wind Load Factor :1.00

173.00	-0.08	-0.01	0.00	-0.03	0.00	0.03	879.98	212.46	390.39	367.83	20.84	-1.21	0.000
175.00	0.00	-0.01	0.00	0.00	0.00	0.00	863.27	206.92	370.31	351.36	21.35	-1.21	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_{d1}):	0.05
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.22
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.08
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):	2.39
Redundancy Factor (ρ):	1.00
Seismic Force Distribution Exponent (k):	1.95
Total Unfactored Dead Load:	41.32 k
Seismic Base Shear (E):	1.24 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)
44	174.00	81	1,870	0.006	7	101
43	171.50	175	3,913	0.012	15	218
42	167.50	302	6,459	0.020	24	376
41	163.50	190	3,869	0.012	15	236
40	161.00	143	2,824	0.009	11	178
39	157.50	366	6,942	0.021	26	456
38	153.50	226	4,078	0.012	15	281
37	151.00	163	2,852	0.009	11	203
36	147.50	418	6,968	0.021	26	519
35	142.50	431	6,724	0.020	25	536
34	137.50	445	6,468	0.020	24	553
33	134.63	68	947	0.003	4	84
32	132.13	787	10,587	0.032	40	978
31	127.50	628	7,891	0.024	30	781
30	122.50	649	7,533	0.023	28	806
29	117.50	669	7,162	0.022	27	831
28	112.50	689	6,778	0.021	25	856
27	107.50	709	6,386	0.019	24	881
26	104.50	144	1,229	0.004	5	179
25	102.50	438	3,599	0.011	14	545
24	100.63	111	877	0.003	3	138
23	100.13	76	596	0.002	2	95
22	97.50	1,545	11,508	0.035	43	1,921
21	92.50	966	6,496	0.020	24	1,201
20	87.50	993	5,992	0.018	22	1,235

Site Number: 370625

Code: ANSI/TIA-222-H

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: Old Saybrook, CT

Engineering Number: 13632988_C3_04

4/29/2021 5:02:47 PM

Customer: T-MOBILE

19	82.50	1,020	5,488	0.017	21	1,268
18	77.50	1,047	4,987	0.015	19	1,301
17	72.50	1,074	4,492	0.014	17	1,335
16	67.50	1,100	4,006	0.012	15	1,368
15	62.50	1,127	3,533	0.011	13	1,401
14	57.50	1,154	3,075	0.009	12	1,435
13	54.25	351	836	0.003	3	437
12	51.75	1,547	3,357	0.010	13	1,923
11	48.38	1,460	2,778	0.008	10	1,815
10	45.88	420	722	0.002	3	523
9	42.50	1,219	1,804	0.005	7	1,516
8	37.50	1,246	1,445	0.004	5	1,549
7	32.50	1,273	1,117	0.003	4	1,583
6	27.50	1,300	824	0.002	3	1,616
5	22.50	1,327	569	0.002	2	1,649
4	17.50	1,354	356	0.001	1	1,683
3	12.50	1,380	189	0.001	1	1,716
2	7.50	1,407	71	0.000	0	1,749
1	2.50	1,434	9	0.000	0	1,783
RFS FDJ85020Q4-S1	173.00	71	1,610	0.005	6	88
Samsung B2/B66A RRH-	173.00	253	5,758	0.017	22	315
Samsung B5/B13 RRH-B	173.00	211	4,796	0.015	18	262
Antel BXA-80063/4CF	173.00	30	675	0.002	3	37
Samsung MT6407-77A	173.00	245	5,567	0.017	21	304
RFS DB-T1-6Z-8AB-0Z	173.00	88	2,001	0.006	8	109
Commscope JAHH-65B-R	173.00	364	8,269	0.025	31	452
Flat Platform w/ Han	173.00	2,000	45,485	0.138	171	2,486
Ericsson Radio 4449	162.00	225	4,503	0.014	17	280
Ericsson RRUS 4415 B	162.00	138	2,762	0.008	10	172
Ericsson RRUS 4415 B	162.00	138	2,762	0.008	10	172
Ericsson AIR 21, 1.3	162.00	244	4,893	0.015	18	304
RFS APX16DWV-16DWVS-	162.00	122	2,444	0.007	9	152
RFS APXVAARR24_43-U-	162.00	384	7,679	0.023	29	477
Generic Circular Pla	162.00	2,900	58,036	0.176	218	3,605
RFS APXV18-206517S-C	152.00	79	1,400	0.004	5	98
Generic 7' Omni	104.00	25	211	0.001	1	31
Round Side Arm	101.00	150	1,197	0.004	4	186
		41,322	330,254	1.000	1,240	51,367

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)
44	174.00	81	1,870	0.006	7	70
43	171.50	175	3,913	0.012	15	150
42	167.50	302	6,459	0.020	24	259
41	163.50	190	3,869	0.012	15	163
40	161.00	143	2,824	0.009	11	122
39	157.50	366	6,942	0.021	26	314
38	153.50	226	4,078	0.012	15	194
37	151.00	163	2,852	0.009	11	140
36	147.50	418	6,968	0.021	26	358
35	142.50	431	6,724	0.020	25	370
34	137.50	445	6,468	0.020	24	381
33	134.63	68	947	0.003	4	58
32	132.13	787	10,587	0.032	40	674
31	127.50	628	7,891	0.024	30	539
30	122.50	649	7,533	0.023	28	556
29	117.50	669	7,162	0.022	27	573
28	112.50	689	6,778	0.021	25	590
27	107.50	709	6,386	0.019	24	608

Site Number: 370625

Code: ANSI/TIA-222-H

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: Old Saybrook, CT

Engineering Number: 13632988_C3_04

4/29/2021 5:02:47 PM

Customer: T-MOBILE

26	104.50	144	1,229	0.004	5	124
25	102.50	438	3,599	0.011	14	376
24	100.63	111	877	0.003	3	95
23	100.13	76	596	0.002	2	65
22	97.50	1,545	11,508	0.035	43	1,324
21	92.50	966	6,496	0.020	24	828
20	87.50	993	5,992	0.018	22	851
19	82.50	1,020	5,488	0.017	21	874
18	77.50	1,047	4,987	0.015	19	897
17	72.50	1,074	4,492	0.014	17	920
16	67.50	1,100	4,006	0.012	15	943
15	62.50	1,127	3,533	0.011	13	966
14	57.50	1,154	3,075	0.009	12	989
13	54.25	351	836	0.003	3	301
12	51.75	1,547	3,357	0.010	13	1,325
11	48.38	1,460	2,778	0.008	10	1,251
10	45.88	420	722	0.002	3	360
9	42.50	1,219	1,804	0.005	7	1,045
8	37.50	1,246	1,445	0.004	5	1,068
7	32.50	1,273	1,117	0.003	4	1,091
6	27.50	1,300	824	0.002	3	1,114
5	22.50	1,327	569	0.002	2	1,137
4	17.50	1,354	356	0.001	1	1,160
3	12.50	1,380	189	0.001	1	1,183
2	7.50	1,407	71	0.000	0	1,206
1	2.50	1,434	9	0.000	0	1,229
RFS FDJ85020Q4-S1	173.00	71	1,610	0.005	6	61
Samsung B2/B66A RRH-	173.00	253	5,758	0.017	22	217
Samsung B5/B13 RRH-B	173.00	211	4,796	0.015	18	181
Antel BXA-80063/4CF	173.00	30	675	0.002	3	25
Samsung MT6407-77A	173.00	245	5,567	0.017	21	210
RFS DB-T1-6Z-8AB-QZ	173.00	88	2,001	0.006	8	75
Commscope JAHH-65B-R	173.00	364	8,269	0.025	31	312
Flat Platform w/ Han	173.00	2,000	45,485	0.138	171	1,714
Ericsson Radio 4449	162.00	225	4,503	0.014	17	193
Ericsson RRUS 4415 B	162.00	138	2,762	0.008	10	118
Ericsson RRUS 4415 B	162.00	138	2,762	0.008	10	118
Ericsson AIR 21, 1.3	162.00	244	4,893	0.015	18	210
RFS APX16DWV-16DWVS-	162.00	122	2,444	0.007	9	105
RFS APXVAARR24_43-U-	162.00	384	7,679	0.023	29	329
Generic Circular Pla	162.00	2,900	58,036	0.176	218	2,485
RFS APXV18-206517S-C	152.00	79	1,400	0.004	5	68
Generic 7' Omni	104.00	25	211	0.001	1	21
Round Side Arm	101.00	150	1,197	0.004	4	129
		41,322	330,254	1.000	1,240	35,409

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	-49.58	-1.24	0.00	-177.79	0.00	177.79	4,663.96	1,343.42	7,803.58	6,184.38	0.00	0.00	0.039
5.00	-47.84	-1.25	0.00	-171.59	0.00	171.59	4,617.32	1,315.74	7,485.37	5,995.65	0.00	-0.01	0.039
10.00	-46.12	-1.25	0.00	-165.36	0.00	165.36	4,568.59	1,288.06	7,173.78	5,806.85	0.01	-0.01	0.039
15.00	-44.44	-1.25	0.00	-159.11	0.00	159.11	4,517.79	1,260.39	6,868.82	5,618.13	0.03	-0.02	0.038
20.00	-42.79	-1.26	0.00	-152.84	0.00	152.84	4,464.90	1,232.71	6,570.48	5,429.68	0.05	-0.03	0.038
25.00	-41.17	-1.26	0.00	-146.56	0.00	146.56	4,409.93	1,205.03	6,278.76	5,241.66	0.08	-0.03	0.037
30.00	-39.59	-1.26	0.00	-140.27	0.00	140.27	4,352.89	1,177.35	5,993.67	5,054.25	0.12	-0.04	0.037
35.00	-38.04	-1.26	0.00	-133.99	0.00	133.99	4,293.76	1,149.67	5,715.20	4,867.62	0.17	-0.05	0.036
40.00	-36.52	-1.25	0.00	-127.71	0.00	127.71	4,232.55	1,121.99	5,443.35	4,681.93	0.22	-0.05	0.036
45.00	-36.00	-1.25	0.00	-121.46	0.00	121.46	4,169.26	1,094.32	5,178.13	4,497.36	0.28	-0.06	0.036
46.75	-34.18	-1.24	0.00	-119.27	0.00	119.27	4,146.62	1,084.63	5,086.87	4,433.06	0.31	-0.06	0.035
50.00	-32.26	-1.23	0.00	-115.23	0.00	115.23	4,103.90	1,066.64	4,919.53	4,314.09	0.35	-0.07	0.035
53.50	-31.82	-1.23	0.00	-110.93	0.00	110.93	4,094.98	1,062.93	4,885.39	4,289.64	0.41	-0.08	0.034
55.00	-30.39	-1.22	0.00	-109.08	0.00	109.08	4,074.88	1,054.63	4,809.36	4,234.99	0.43	-0.08	0.033
60.00	-28.99	-1.21	0.00	-103.00	0.00	103.00	4,006.53	1,026.95	4,560.26	4,053.87	0.52	-0.09	0.033
65.00	-27.62	-1.19	0.00	-96.96	0.00	96.96	3,936.09	999.27	4,317.79	3,874.46	0.61	-0.09	0.032
70.00	-26.29	-1.18	0.00	-91.00	0.00	91.00	3,863.58	971.59	4,081.94	3,696.92	0.71	-0.10	0.031
75.00	-24.98	-1.16	0.00	-85.11	0.00	85.11	3,788.99	943.91	3,852.71	3,521.44	0.82	-0.11	0.031
80.00	-23.72	-1.14	0.00	-79.31	0.00	79.31	3,712.32	916.23	3,630.10	3,348.18	0.94	-0.12	0.030
85.00	-22.48	-1.12	0.00	-73.60	0.00	73.60	3,633.57	888.56	3,414.12	3,177.31	1.07	-0.13	0.029
90.00	-21.28	-1.10	0.00	-68.01	0.00	68.01	3,552.73	860.88	3,204.76	3,009.01	1.21	-0.14	0.029
95.00	-19.36	-1.05	0.00	-62.54	0.00	62.54	3,469.82	833.20	3,002.03	2,843.45	1.36	-0.14	0.028
100.00	-19.26	-1.05	0.00	-57.28	0.00	57.28	3,384.83	805.52	2,805.92	2,680.80	1.51	-0.15	0.027
100.25	-19.13	-1.05	0.00	-57.02	0.00	57.02	2,340.16	613.38	2,169.16	1,886.52	1.52	-0.15	0.038
101.00	-18.40	-1.03	0.00	-56.24	0.00	56.24	2,332.87	610.27	2,147.19	1,871.03	1.55	-0.16	0.038
104.00	-18.19	-1.02	0.00	-53.16	0.00	53.16	2,303.23	597.81	2,060.45	1,809.28	1.65	-0.16	0.037
105.00	-17.30	-1.00	0.00	-52.13	0.00	52.13	2,293.18	593.66	2,031.93	1,788.79	1.68	-0.16	0.037
110.00	-16.45	-0.97	0.00	-47.14	0.00	47.14	2,241.70	572.90	1,892.33	1,687.04	1.86	-0.18	0.035
115.00	-15.62	-0.95	0.00	-42.27	0.00	42.27	2,188.14	552.15	1,757.70	1,586.61	2.05	-0.19	0.034
120.00	-14.81	-0.92	0.00	-37.53	0.00	37.53	2,132.50	531.39	1,628.03	1,487.67	2.25	-0.20	0.032
125.00	-14.03	-0.89	0.00	-32.94	0.00	32.94	2,074.78	510.63	1,503.33	1,390.39	2.47	-0.21	0.030
130.00	-13.05	-0.85	0.00	-28.49	0.00	28.49	2,014.98	489.87	1,383.60	1,294.95	2.70	-0.22	0.028
134.25	-12.97	-0.85	0.00	-24.88	0.00	24.88	1,137.98	319.71	883.94	718.00	2.90	-0.23	0.046
135.00	-12.41	-0.82	0.00	-24.25	0.00	24.25	1,134.17	317.64	872.50	710.92	2.93	-0.23	0.045
140.00	-11.88	-0.80	0.00	-20.14	0.00	20.14	1,107.59	303.80	798.13	663.83	3.19	-0.25	0.041
145.00	-11.36	-0.77	0.00	-16.15	0.00	16.15	1,078.93	289.96	727.08	617.00	3.45	-0.26	0.037
150.00	-11.15	-0.76	0.00	-12.30	0.00	12.30	1,048.18	276.12	659.34	570.62	3.74	-0.27	0.032
152.00	-10.77	-0.74	0.00	-10.77	0.00	10.77	1,035.30	270.58	633.17	552.23	3.85	-0.28	0.030
155.00	-10.32	-0.71	0.00	-8.55	0.00	8.55	1,015.36	262.28	594.91	524.85	4.03	-0.29	0.026
160.00	-10.14	-0.70	0.00	-4.99	0.00	4.99	980.46	248.44	533.79	479.87	4.33	-0.29	0.021
162.00	-4.75	-0.35	0.00	-3.58	0.00	3.58	965.91	242.90	510.27	462.14	4.46	-0.30	0.013
165.00	-4.37	-0.32	0.00	-2.54	0.00	2.54	943.48	234.60	475.99	435.85	4.64	-0.30	0.010
170.00	-4.15	-0.31	0.00	-0.92	0.00	0.92	904.41	220.76	421.49	392.95	4.96	-0.30	0.007
173.00	0.00	0.00	0.00	0.00	0.00	0.00	879.98	212.46	390.39	367.83	5.15	-0.30	0.000
175.00	0.00	0.00	0.00	0.00	0.00	0.00	863.27	206.92	370.31	351.36	5.28	-0.30	0.000

Site Number: 370625

Code: ANSI/TIA-222-H

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: Old Saybrook, CT

Engineering Number: 13632988_C3_04

4/29/2021 5:02:47 PM

Customer: T-MOBILE

Site Number: 370625

Code: ANSI/TIA-222-H

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: Old Saybrook, CT

Engineering Number: 13632988_C3_04

4/29/2021 5:02:47 PM

Customer: T-MOBILE

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	-34.18	-1.24	0.00	-175.53	0.00	175.53	4,663.96	1,343.42	7,803.58	6,184.38	0.00	0.00	0.036
5.00	-32.97	-1.24	0.00	-169.33	0.00	169.33	4,617.32	1,315.74	7,485.37	5,995.65	0.00	-0.01	0.035
10.00	-31.79	-1.25	0.00	-163.11	0.00	163.11	4,568.59	1,288.06	7,173.78	5,806.85	0.01	-0.01	0.035
15.00	-30.63	-1.25	0.00	-156.88	0.00	156.88	4,517.79	1,260.39	6,868.82	5,618.13	0.03	-0.02	0.035
20.00	-29.49	-1.25	0.00	-150.64	0.00	150.64	4,464.90	1,232.71	6,570.48	5,429.68	0.05	-0.03	0.034
25.00	-28.38	-1.25	0.00	-144.39	0.00	144.39	4,409.93	1,205.03	6,278.76	5,241.66	0.08	-0.03	0.034
30.00	-27.29	-1.25	0.00	-138.15	0.00	138.15	4,352.89	1,177.35	5,993.67	5,054.25	0.12	-0.04	0.034
35.00	-26.22	-1.24	0.00	-131.91	0.00	131.91	4,293.76	1,149.67	5,715.20	4,867.62	0.17	-0.05	0.033
40.00	-25.18	-1.24	0.00	-125.69	0.00	125.69	4,232.55	1,121.99	5,443.35	4,681.93	0.22	-0.05	0.033
45.00	-24.82	-1.24	0.00	-119.49	0.00	119.49	4,169.26	1,094.32	5,178.13	4,497.36	0.28	-0.06	0.033
46.75	-23.56	-1.23	0.00	-117.32	0.00	117.32	4,146.62	1,084.63	5,086.87	4,433.06	0.30	-0.06	0.032
50.00	-22.24	-1.22	0.00	-113.33	0.00	113.33	4,103.90	1,066.64	4,919.53	4,314.09	0.35	-0.07	0.032
53.50	-21.94	-1.21	0.00	-109.07	0.00	109.07	4,094.98	1,062.93	4,885.39	4,289.64	0.40	-0.07	0.031
55.00	-20.95	-1.20	0.00	-107.25	0.00	107.25	4,074.88	1,054.63	4,809.36	4,234.99	0.42	-0.08	0.030
60.00	-19.98	-1.19	0.00	-101.23	0.00	101.23	4,006.53	1,026.95	4,560.26	4,053.87	0.51	-0.08	0.030
65.00	-19.04	-1.18	0.00	-95.27	0.00	95.27	3,936.09	999.27	4,317.79	3,874.46	0.60	-0.09	0.029
70.00	-18.12	-1.16	0.00	-89.38	0.00	89.38	3,863.58	971.59	4,081.94	3,696.92	0.70	-0.10	0.029
75.00	-17.22	-1.14	0.00	-83.57	0.00	83.57	3,788.99	943.91	3,852.71	3,521.44	0.81	-0.11	0.028
80.00	-16.35	-1.12	0.00	-77.85	0.00	77.85	3,712.32	916.23	3,630.10	3,348.18	0.93	-0.12	0.028
85.00	-15.50	-1.10	0.00	-72.23	0.00	72.23	3,633.57	888.56	3,414.12	3,177.31	1.06	-0.13	0.027
90.00	-14.67	-1.08	0.00	-66.72	0.00	66.72	3,552.73	860.88	3,204.76	3,009.01	1.19	-0.13	0.026
95.00	-13.34	-1.03	0.00	-61.32	0.00	61.32	3,469.82	833.20	3,002.03	2,843.45	1.34	-0.14	0.025
100.00	-13.28	-1.03	0.00	-56.15	0.00	56.15	3,384.83	805.52	2,805.92	2,680.80	1.49	-0.15	0.025
100.25	-13.18	-1.03	0.00	-55.90	0.00	55.90	2,340.16	613.38	2,169.16	1,886.52	1.50	-0.15	0.035
101.00	-12.68	-1.01	0.00	-55.12	0.00	55.12	2,332.87	610.27	2,147.19	1,871.03	1.52	-0.15	0.035
104.00	-12.53	-1.01	0.00	-52.09	0.00	52.09	2,303.23	597.81	2,060.45	1,809.28	1.62	-0.16	0.034
105.00	-11.93	-0.98	0.00	-51.08	0.00	51.08	2,293.18	593.66	2,031.93	1,788.79	1.65	-0.16	0.034
110.00	-11.34	-0.96	0.00	-46.18	0.00	46.18	2,241.70	572.90	1,892.33	1,687.04	1.83	-0.17	0.032
115.00	-10.76	-0.93	0.00	-41.39	0.00	41.39	2,188.14	552.15	1,757.70	1,586.61	2.02	-0.18	0.031
120.00	-10.21	-0.90	0.00	-36.74	0.00	36.74	2,132.50	531.39	1,628.03	1,487.67	2.22	-0.20	0.029
125.00	-9.67	-0.87	0.00	-32.23	0.00	32.23	2,074.78	510.63	1,503.33	1,390.39	2.43	-0.21	0.028
130.00	-9.00	-0.83	0.00	-27.86	0.00	27.86	2,014.98	489.87	1,383.60	1,294.95	2.65	-0.22	0.026
134.25	-8.94	-0.83	0.00	-24.32	0.00	24.32	1,137.98	319.71	883.94	718.00	2.85	-0.23	0.042
135.00	-8.56	-0.80	0.00	-23.70	0.00	23.70	1,134.17	317.64	872.50	710.92	2.89	-0.23	0.041
140.00	-8.19	-0.78	0.00	-19.68	0.00	19.68	1,107.59	303.80	798.13	663.83	3.13	-0.24	0.037
145.00	-7.83	-0.75	0.00	-15.78	0.00	15.78	1,078.93	289.96	727.08	617.00	3.40	-0.26	0.033
150.00	-7.69	-0.74	0.00	-12.01	0.00	12.01	1,048.18	276.12	659.34	570.62	3.67	-0.27	0.028
152.00	-7.43	-0.72	0.00	-10.52	0.00	10.52	1,035.30	270.58	633.17	552.23	3.79	-0.27	0.026
155.00	-7.11	-0.70	0.00	-8.35	0.00	8.35	1,015.36	262.28	594.91	524.85	3.96	-0.28	0.023
160.00	-6.99	-0.69	0.00	-4.87	0.00	4.87	980.46	248.44	533.79	479.87	4.26	-0.29	0.017
162.00	-3.27	-0.34	0.00	-3.50	0.00	3.50	965.91	242.90	510.27	462.14	4.38	-0.29	0.011
165.00	-3.01	-0.32	0.00	-2.48	0.00	2.48	943.48	234.60	475.99	435.85	4.56	-0.29	0.009
170.00	-2.86	-0.30	0.00	-0.90	0.00	0.90	904.41	220.76	421.49	392.95	4.87	-0.30	0.005
173.00	0.00	0.00	0.00	0.00	0.00	0.00	879.98	212.46	390.39	367.83	5.06	-0.30	0.000
175.00	0.00	0.00	0.00	0.00	0.00	0.00	863.27	206.92	370.31	351.36	5.18	-0.30	0.000

Site Number: 370625

Code: ANSI/TIA-222-H

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: Old Saybrook, CT

Engineering Number: 13632988_C3_04

4/29/2021 5:02:47 PM

Customer: T-MOBILE

Analysis Summary

Load Case	Reactions						Max Usage	
	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	33.09	0.00	49.55	0.00	0.00	3795.99	134.25	0.67
0.9D + 1.0W	33.08	0.00	37.15	0.00	0.00	3758.97	134.25	0.66
1.2D + 1.0Di + 1.0Wi	8.61	0.00	64.30	0.00	0.00	975.58	134.25	0.18
1.2D + 1.0Ev + 1.0Eh	1.24	0.00	49.58	0.00	0.00	177.79	134.25	0.05
0.9D - 1.0Ev + 1.0Eh	1.24	0.00	34.18	0.00	0.00	175.53	134.25	0.04
1.0D + 1.0W	6.82	0.00	41.32	0.00	0.00	778.24	134.25	0.14



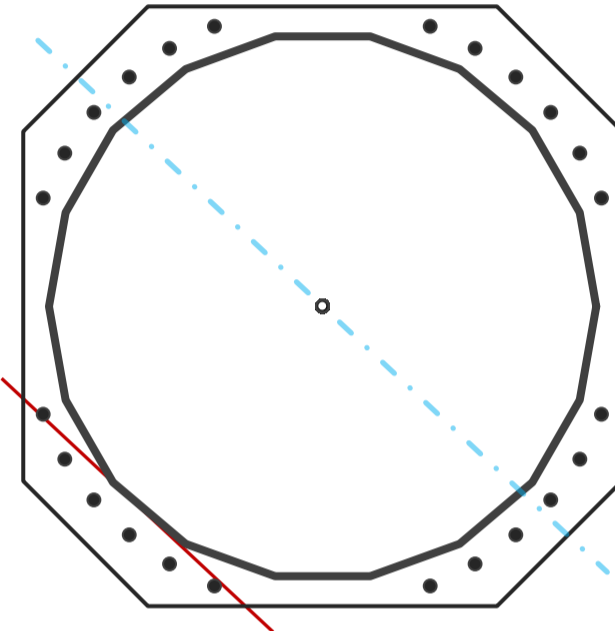
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	64.69	in
Thickness	3/8	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	3,796.0	k-ft
Axial, Pu	49.6	k
Shear, Vu	33.1	k
Neutral Axis	137	°

Report Capacities		
Component	Capacity	Result
Base Plate	43%	Pass
Anchor Rods	44%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	72	in
Thickness	2 3/4	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	15	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	1348.9	k
Bending Stress, φMn	3148.6	k



Original Anchor Rods		
Arrangement	Cluster	-
Quantity	24	-
Diameter, φ	2 1/4	in
Bolt Circle	72	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	107.3	k
Anchor Rods, φPn	243.6	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	33.1	3796.0	1.00
Anchor Rod Forces	33.1	3796.0	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in ²	in ²	in ⁴	#	in ⁴
Pole	75.3852	4.1881	0.1969		38981.66
Bolt	3.9761	3.2477	0.8393	4.5	50528.21
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate

Shape	Square	-
Width, W	72	in
Thickness, t	2.75	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	31.610	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods

Anchor Rod Quantity, N	24	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	72	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	107.3	k
Applied Shear, Vu	0.1	k
Compressive Capacity, ϕP_n	243.6	k
Tensile Capacity, ϕR_n	0.441	OK
Interaction Capacity	0.442	OK

External Base Plate

Chord Length AA	37.008	in
Additional AA	0.000	in
Section Modulus, Z	69.969	in ³
Applied Moment, Mu	1348.9	k-ft
Bending Capacity, ϕM_n	3148.6	k-ft
Capacity, Mu/ ϕM_n	0.428	OK

Chord Length AB	36.009	in
Additional AB	0.000	in
Section Modulus, Z	68.079	in ³
Applied Moment, Mu	1087.8	k-ft
Bending Capacity, ϕM_n	3063.5	k-ft
Capacity, Mu/ ϕM_n	0.355	OK

Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in ³
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕM_n	0.0	k-ft
Capacity, Mu/ ϕM_n		

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, ϕM_n	0.0	k-ft
Capacity, Mu/ ϕM_n		

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

T-Mobile Existing Facility

Site ID: CTHA540A

Crown Old Saybrook Monopole
85 Springbrook Road
Old Saybrook, Connecticut 06475

July 20, 2021

EBI Project Number: 6221003742

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	4.34%

July 20, 2021

T-Mobile

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

Emissions Analysis for Site: CTHA540A - Crown Old Saybrook Monopole

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **85 Springbrook Road** in **Old Saybrook, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is $1000 \mu\text{W}/\text{cm}^2$. 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 85 Springbrook Road in Old Saybrook, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 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.
- 4) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 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.
- 6) 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.
- 7) 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.
 - 8) The antennas used in this modeling are the Ericsson AIR 21 for the 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 21 for the 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 21 for the 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 700 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
 - 9) The antenna mounting height centerline of the proposed antennas is 162 feet above ground level (AGL).
 - 10) 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.
 - 11) All calculations were done with respect to uncontrolled / general population threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.35 dBd	Gain:	15.35 dBd	Gain:	15.35 dBd
Height (AGL):	162 feet	Height (AGL):	162 feet	Height (AGL):	162 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	60 Watts	Total TX Power (W):	60 Watts	Total TX Power (W):	60 Watts
ERP (W):	2,056.61	ERP (W):	2,056.61	ERP (W):	2,056.61
Antenna A1 MPE %:	0.30%	Antenna B1 MPE %:	0.30%	Antenna C1 MPE %:	0.30%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 700 MHz	Frequency Bands:	600 MHz / 700 MHz	Frequency Bands:	600 MHz / 700 MHz
Gain:	12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 13.35 dBd
Height (AGL):	162 feet	Height (AGL):	162 feet	Height (AGL):	162 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	2,481.08	ERP (W):	2,481.08	ERP (W):	2,481.08
Antenna A2 MPE %:	0.85%	Antenna B2 MPE %:	0.85%	Antenna C2 MPE %:	0.85%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd
Height (AGL):	162 feet	Height (AGL):	162 feet	Height (AGL):	162 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	8,728.31	ERP (W):	8,728.31	ERP (W):	8,728.31
Antenna A3 MPE %:	1.29%	Antenna B3 MPE %:	1.29%	Antenna C3 MPE %:	1.29%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	2.44%
Verizon	1.9%
Site Total MPE % :	4.34%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	2.44%
T-Mobile Sector B Total:	2.44%
T-Mobile Sector C Total:	2.44%
Site Total MPE % :	
	4.34%

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 ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2100 MHz UMTS	2	1028.30	162.0	3.04	2100 MHz UMTS	1000	0.30%
T-Mobile 600 MHz LTE	2	591.73	162.0	1.75	600 MHz LTE	400	0.44%
T-Mobile 700 MHz LTE	2	648.82	162.0	1.92	700 MHz LTE	467	0.41%
T-Mobile 1900 MHz LTE	2	2056.61	162.0	6.08	1900 MHz LTE	1000	0.61%
T-Mobile 2100 MHz LTE	2	2307.55	162.0	6.82	2100 MHz LTE	1000	0.68%
						Total:	2.44%

• 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:	2.44%
Sector B:	2.44%
Sector C:	2.44%
T-Mobile Maximum MPE % (Sector A):	2.44%
Site Total:	4.34%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **4.34%** 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.

RAN Template: 67D97C-U21	A&L Template: 67D97C-U21_1QP_10P
------------------------------------	------------------------------------------------

CTHA540A_L600_5

Print Name: Standard (1)
PORs: L600_5G POPs

Section 1 - Site Information

Site ID: CTHA540A
Status: Final
Version: 5
Project Type: L600
Approved: 1/27/2021 12:9:05 PM
Approved By: Michael.Lucey@T-Mobile.com
Last Modified: 1/27/2021 12:9:05 PM
Last Modified By: Michael.Lucey@T-Mobile.com

Site Name: Crown Old Saybrook Monopole
Site Class: Monopole
Site Type: Structure Non Building
Plan Year:
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: <undefined>

Latitude: 41.31390000
Longitude: -72.36420000
Address: 85 Springbrook Rd
City, State: Old Saybrook, CT
Region: NORTHEAST

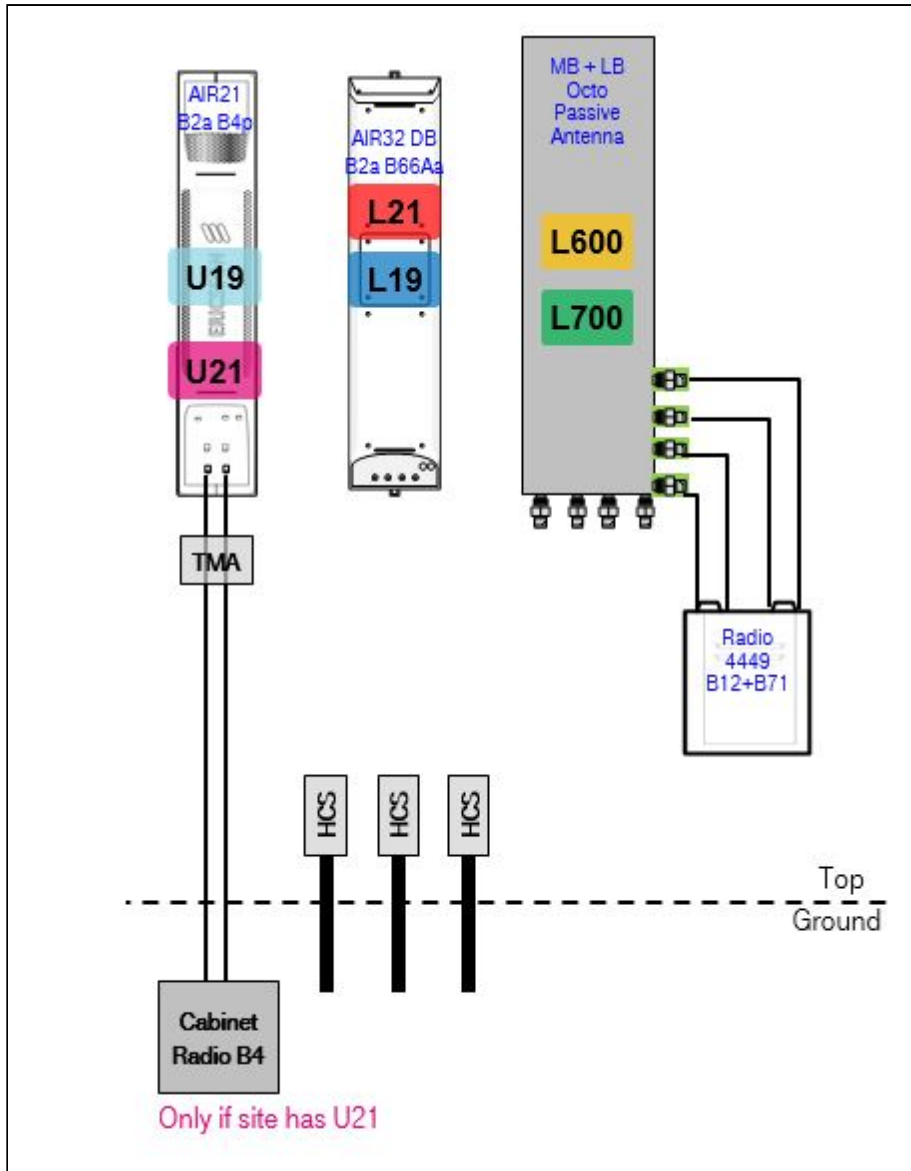
RAN Template: 67D97C-U21**AL Template:** 67D97C-U21_1QP_10P**Sector Count:** 3**Antenna Count:** 9**Coax Line Count:** 0**TMA Count:** 0**RRU Count:** 9

Section 2 - Existing Template Images

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

Section 3 - Proposed Template Images

67D95ADB_2xAIR+1OP.JPG



Notes:

Section 4 - Siteplan Images

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

RAN Template: 67D97C-U21	A&L Template: 67D97C-U21_1QP_10P
------------------------------------	------------------------------------------------

Section 5 - RAN Equipment

Existing RAN Equipment

Template: 705A-V2 U19 Shutdown

Enclosure	1						
Enclosure Type	RBS 6201 ODE						
Baseband	<table border="0"> <tr> <td>DUW30</td> <td>BB 6630</td> <td>BB 6630</td> </tr> <tr> <td>U2100</td> <td>L2100</td> <td>L700</td> </tr> </table>	DUW30	BB 6630	BB 6630	U2100	L2100	L700
DUW30	BB 6630	BB 6630					
U2100	L2100	L700					
Radio	RUS01 B12 (x 6) L700						

Proposed RAN Equipment

Template: 67D97C-U21

Enclosure	1												
Enclosure Type	RBS 6102												
Baseband	<table border="0"> <tr> <td>DUW30</td> <td>BB 6630</td> <td>BB 6630</td> </tr> <tr> <td>U2100</td> <td>L2100</td> <td>N600</td> </tr> <tr> <td></td> <td>L1900</td> <td>L700</td> </tr> <tr> <td></td> <td></td> <td>L600</td> </tr> </table>	DUW30	BB 6630	BB 6630	U2100	L2100	N600		L1900	L700			L600
DUW30	BB 6630	BB 6630											
U2100	L2100	N600											
	L1900	L700											
		L600											
Hybrid Cable System	Ericsson 9x18 HCS *Select Length* Ericsson 6x12 HCS *Select Length & AWG* (x 3)												

RAN Scope of Work:

Replace existing RBS6201 ODE cabinet with (1) full RBS6102.
 Replace (2) DUS41 with (1) BB6630 for L2100, L1900, L700, and L600.
 Add (1) BB6630 for future 5G N600.
 Remove B12 Radios from existing cabinet.

Add (3) 6X12 HCS.
 Existing: (6) 1-5/8"; (1) 9X18.

RAN Template: 67D97C-U21	A&L Template: 67D97C-U21_1QP_10P
------------------------------------	------------------------------------------------

Section 6 - A&L Equipment

Existing Template: 705A-V2_2xAIR_1DP U19 Shutdown
Proposed Template: 67D97C-U21_1QP_10P

Sector 1 (Existing) view from behind						
Coverage Type	A - Outdoor Macro					
Antenna	1		2		3	
Antenna Model	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)		Andrew - LNX-6515DS-A1M (Dual)		Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)	
Azimuth	100		100		100	
M. Tilt	0		0		0	
Height	163		163		163	
Ports	P1	P2	P3		P4	P5
Active Tech.	U2100		L700		L2100	
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt	2		2		2	
Cables	Fiber Jumper - 15 ft.		1-5/8" Coax - 175 ft. (x2)		Fiber Jumper - 15 ft.	
TMA's						
Diplexers / Combiners						
Radio						
Sector Equipment						
Unconnected Equipment:						
Scope of Work:						

RAN Template: 67D97C-U21	A&L Template: 67D97C-U21_1QP_10P
------------------------------------	------------------------------------------------

Sector 1 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2			3		
Antenna Model	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)			RFS - APX16DWV-16DWV-S-E-A20 (Quad)		
Azimuth	100		100			100		
M. Tilt	0		0			0		
Height	163		163			163		
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	U2100		N600 L700 L600	N600 L700 L600			L2100	L1900
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2		2	2			2	2
Cables	Fiber Jumper - 15 ft.		Coax Jumper (x2) Fiber Jumper - 15 ft.	Coax Jumper (x2)			Fiber Jumper - 15 ft.	
TMAs								
Diplexers / Combiners								
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)			Radio 4415 B66A (At Antenna)	Radio 4415 B25 (At Antenna)
Sector Equipment								

Unconnected Equipment:

Cable: Fiber Jumper - 15 ft.

Scope of Work:

Remove coaxial lines for LB Dual in Position 2.
 Replace LB Dual in Position 2 with (1) LB/MB Octo.
 Add (1) Radio 4449 B71+B12 to Position 2 for L600 and L700.

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

RAN Template: 67D97C-U21	A&L Template: 67D97C-U21_1QP_10P
------------------------------------	------------------------------------------------

Sector 2 (Existing) view from behind				
Coverage Type	A - Outdoor Macro			
Antenna	1	2		3
Antenna Model	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)	Andrew - LNX-6515DS-A1M (Dual)		Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)
Azimuth	195	195		195
M. Tilt	0	0		0
Height	163	163		163
Ports	P1	P2	P3	P4
Active Tech.	U2100	L700		L2100
Dark Tech.				
Restricted Tech.				
Decomm. Tech.				
E. Tilt	2	2		2
Cables	Fiber Jumper - 15 ft.	1-5/8" Coax - 175 ft. (x2)		Fiber Jumper - 15 ft.
TMA's				
Diplexers / Combiners				
Radio				
Sector Equipment				
Unconnected Equipment:				
Scope of Work:				

RAN Template: 67D97C-U21	A&L Template: 67D97C-U21_1QP_10P
------------------------------------	------------------------------------------------

Sector 2 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2			3		
Antenna Model	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)			RFS - APX16DWV-16DWV-S-E-A20 (Quad)		
Azimuth	195		195			195		
M. Tilt	0		0			0		
Height	163		163			163		
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	U2100		N600 L700 L600	N600 L700 L600			L2100	L1900
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2		2	2			2	2
Cables	Fiber Jumper - 15 ft.		Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2)			Fiber Jumper - 15 ft.	
TMA's								
Diplexers / Combiners								
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)			Radio 4415 B66A (At Antenna)	Radio 4415 B25 (At Antenna)
Sector Equipment								

Unconnected Equipment:

Cable: Fiber Jumper - 15 ft.

Scope of Work:

Remove coaxial lines for LB Dual in Position 2.
 Replace LB Dual in Position 2 with (1) LB/MB Octo.
 Add (1) Radio 4449 B71+B12 to Position 2 for L600 and L700.

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

RAN Template: 67D97C-U21	A&L Template: 67D97C-U21_1QP_10P
------------------------------------	------------------------------------------------

Sector 3 (Existing) view from behind					
Coverage Type	A - Outdoor Macro				
Antenna	1	2		3	
Antenna Model	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)	Andrew - LNX-6515DS-A1M (Dual)		Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)	
Azimuth	350	350		350	
M. Tilt	0	0		0	
Height	163	163		163	
Ports	P1	P2	P3	P4	P5
Active Tech.	U2100	L700		L2100	
Dark Tech.					
Restricted Tech.					
Decomm. Tech.					
E. Tilt	2	2		2	
Cables	Fiber Jumper - 15 ft.	1-5/8" Coax - 175 ft. (x2)		Fiber Jumper - 15 ft.	
TMA's					
Diplexers / Combiners					
Radio					
Sector Equipment					
Unconnected Equipment:					
Scope of Work:					

RAN Template: 67D97C-U21	A&L Template: 67D97C-U21_1QP_10P
------------------------------------	------------------------------------------------

Sector 3 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2			3		
Antenna Model	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)			RFS - APX16DWV-16DWV-S-E-A20 (Quad)		
Azimuth	350		350			350		
M. Tilt	0		0			0		
Height	163		163			163		
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	U2100		N600 L700 L600	N600 L700 L600			L2100	L1900
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2		2	2			2	2
Cables	Fiber Jumper - 15 ft.		Coax Jumper (x2) Fiber Jumper - 15 ft.	Coax Jumper (x2)			Fiber Jumper - 15 ft.	
TMAs								
Diplexers / Combiners								
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)			Radio 4415 B66A (At Antenna)	Radio 4415 B25 (At Antenna)
Sector Equipment								

Unconnected Equipment:

Cable: Fiber Jumper - 15 ft.

Scope of Work:

Remove coaxial lines for LB Dual in Position 2.
 Replace LB Dual in Position 2 with (1) LB/MB Octo.
 Add (1) Radio 4449 B71+B12 to Position 2 for L600 and L700.

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

RAN Template: 67D97C-U21	A&L Template: 67D97C-U21_1QP_10P
------------------------------------	------------------------------------------------

Section 7 - Power Systems Equipment

Existing Power Systems Equipment

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

Proposed Power Systems Equipment



AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

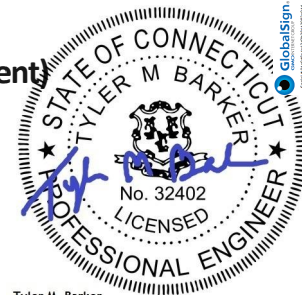
CLSENGINEERING
PLLC

Antenna Mount Analysis Report

ATC Site Name : Old Saybrook, CT
ATC Asset Number : 370625
Engineering Number : 13632988_C8_01
Mount Elevation : 162 ft
Carrier : T-Mobile
Carrier Site Name : Crown Old Saybrook Monopole
Carrier Site Number : CTHA540A
Site Location : 77 Springbrook Road
Old Saybrook, CT 06475-0000
41.31383333, -72.36402778
County : Middlesex
Date : March 19, 2021
Max Usage : 61%
Result : Pass (Pending Previous Replacement)

Prepared By:
Snehitha Narava
CLS Engineering PLLC

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



Tyler M. Barker
CLS Engineering PLLC
PE # 32402 Exp. 1/31/2021
COA # PEC.001833 Exp. 8/14/2022
03/19/2021

Digitally signed
by Tyler M.
Barker PE
Date: 2021.03.19
16:58:01-04'00'

Table of Contents

Introduction 2

Supporting Documents 2

Analysis 2

Conclusion 3

Antenna Loading 4

Structure Usages 4

Equipment Layout Plan View 5

Equipment Layout Front Elevation View 6

Standard Conditions 7

Calculations Attached

Introduction

The proposed equipment is to be mounted to the proposed Perfect Vision PV-RP14M-HR-9-96 w/PV-PKBK M Kicker Kit. 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	Perfect Vision Drawing #RP-ENG-01-R2 Rev. 2, dated August 9, 2018
Previous Analyses	Structural Analysis by American Tower Corporation, Eng. #12927162_C3_04, dated July 16, 2019
Construction Drawings	CD's by American Tower Corporation, Job #12951825, dated August 30, 2019
Loading Data	T-Mobile RFDS, Site ID #CTHA540A, Version 5.00, dated January 27, 2021
Modifications	Mount Analysis by CLS Engineering for American Tower Corporation, Project #12927162, dated August 22, 2019

Analysis

Codes	TIA-222-H
Basic Wind Speed	125 mph, V_{ult} (3-Second Gust)
Basic Wind Speed w/ Ice	50 mph (3-Second Gust) w/ 1" Radial Ice (Escalating)
Exposure Category	C
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_5 : 0.20; S_1 : 0.05; Site Class: D

Conclusion

Based on the analysis, the antenna mount meets the requirements per the applicable codes listed above. The mounting configuration considered in this analysis will be capable of supporting the referenced loading pursuant to referenced standards once the following scope is executed:

Contractor to confirm that following is installed:

- **Replace existing T-Arm mounts with (1) new Perfect Vision PV-RP14M-HR-9-96 Platform Mount.**
- **Install (1) Perfect Vision PV-PKBK-M Monopole Platform Kicker Kit as shown. Field-cut angles as required. Maintain minimum bolt edge distance.**
- **Install (3) 2 STD x 8'-0" long mount pipes, included in the kit, per sector (9 total).**
- **Install support rails 3'-0" above the platform base. Connect to all mount pipes using crossover plates included in proposed platform kit.**
- **Install proposed antennas such that they are vertically centered about the platform base horizontal members. Install proposed RRUS behind the antennas.**

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.

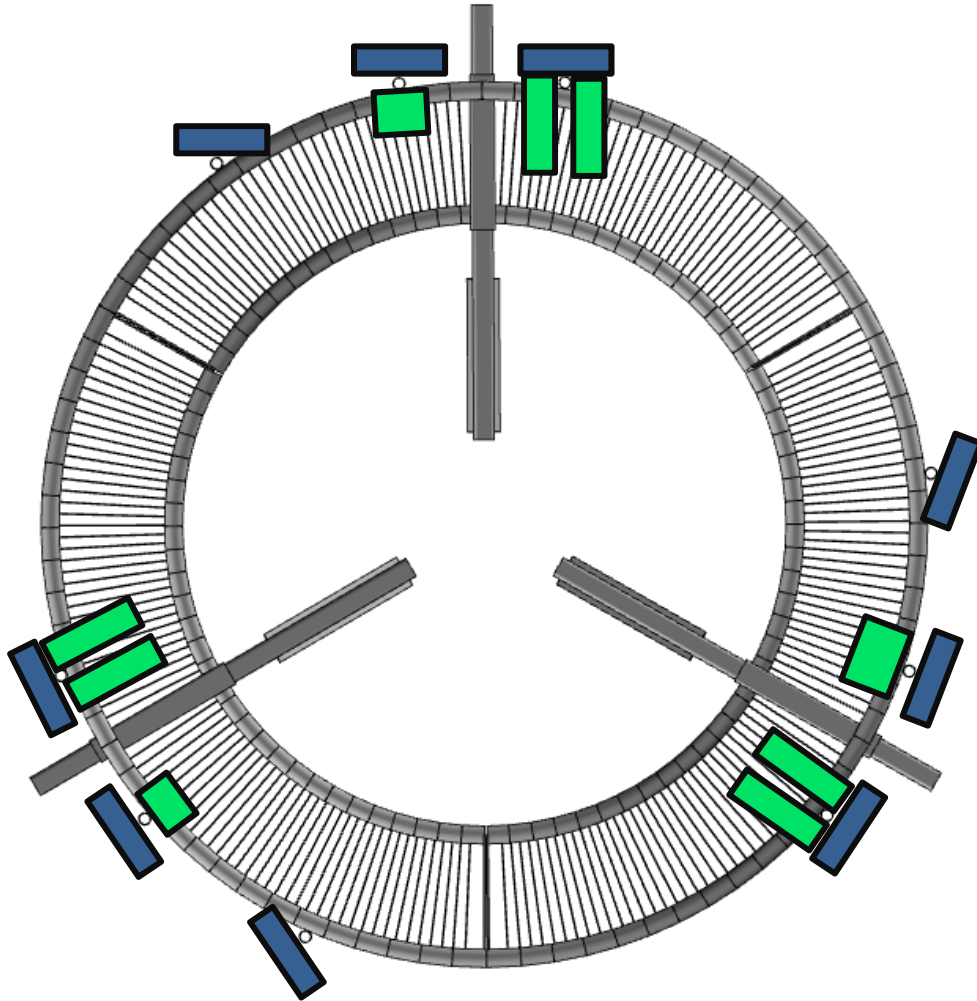
Antenna Loading

Elevation (ft)		Antennas	
Mount	Rad.	#	Name
162.0	162.0	3	RFS Celwave APXVAARR24_43-U-NA20
		3	RFS Celwave APX16DWV-16DWV-S-E-A20
		3	Ericsson AIR21 KRC118023-1_B2P_B4A
		3	Ericsson RADIO 4415 B66A
		3	Ericsson RADIO 4415 B25_TMO
		3	Ericsson RADIO 4449 B71/B85A

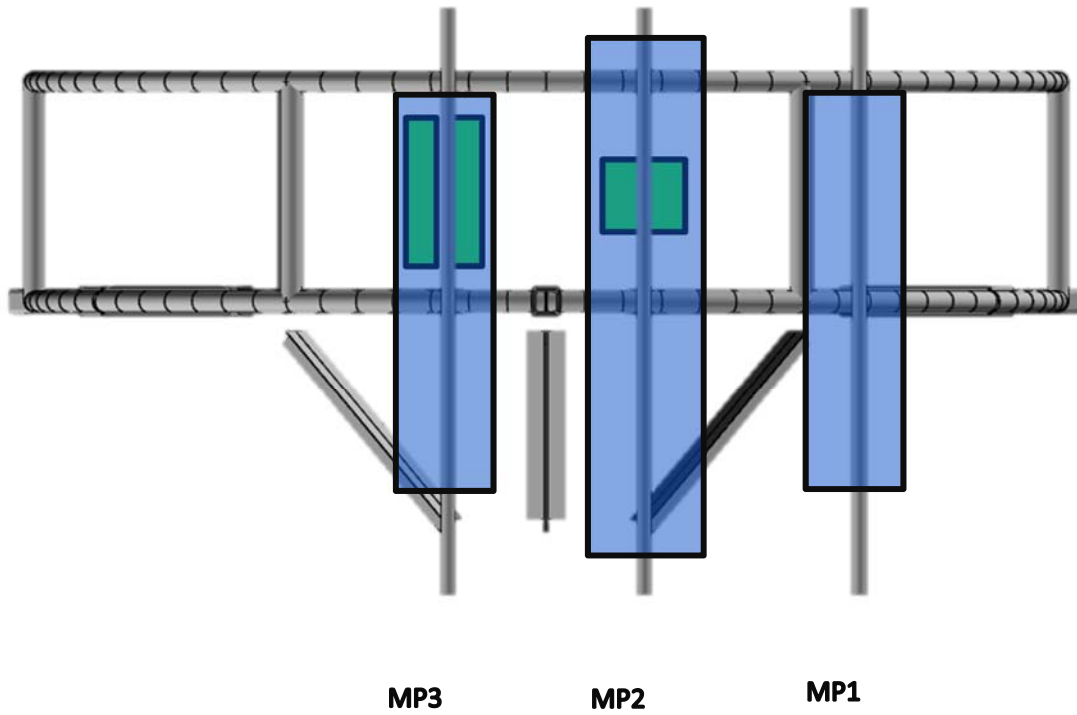
Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Intermediate Plate	61%	Pass
Mount Pipes	57%	Pass
Platform Base	25%	Pass
Stand-Off Horizontals	25%	Pass
Connections	18%	Pass
Support Rail	18%	Pass
Reinforcement Members	16%	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.

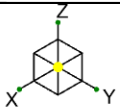
This analysis assumes the following:

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.

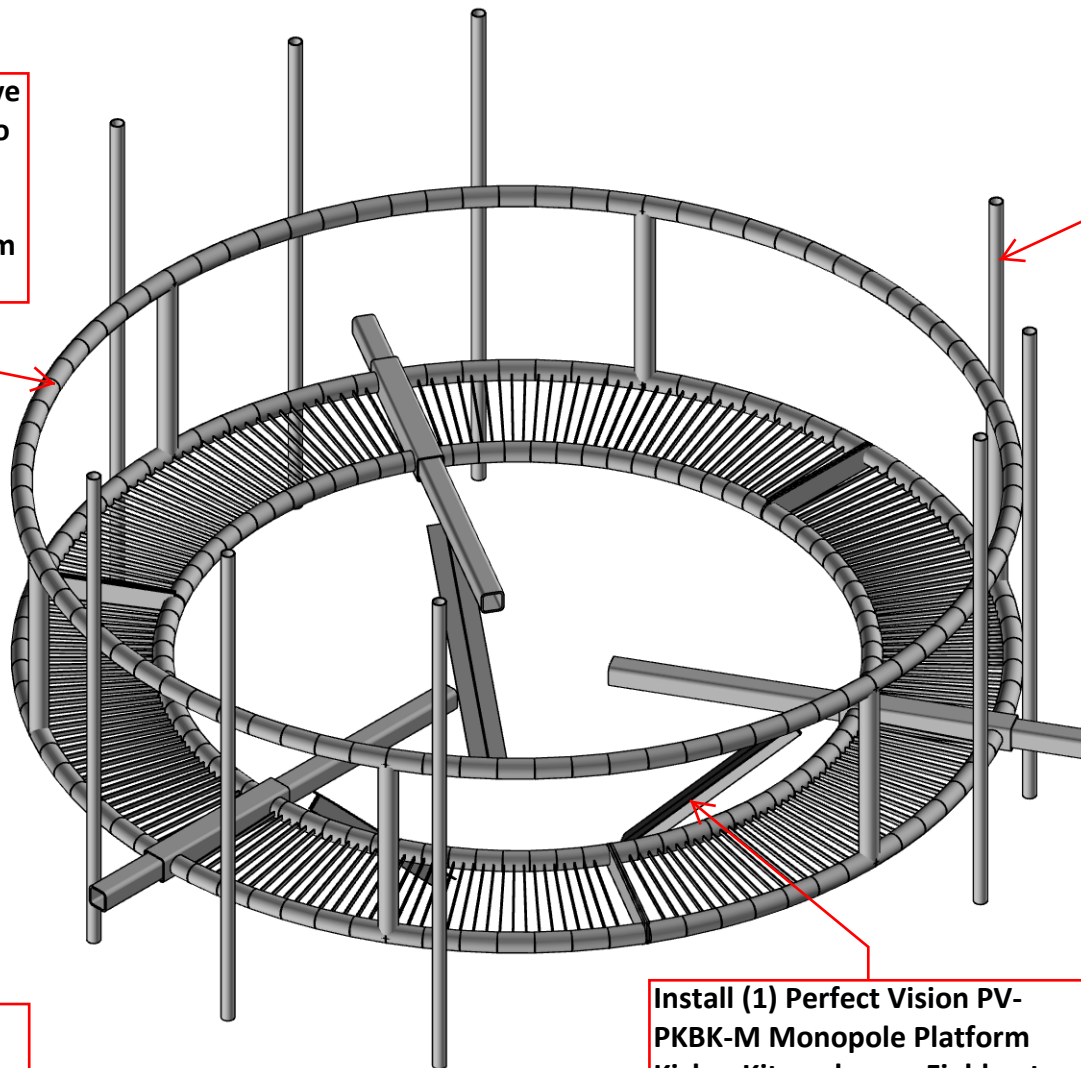
It is not possible to have the fully detailed information necessary to perform a complete and thorough analysis of every structural sub-component of an existing structure. The structural analysis by CLS Engineering PLLC verifies the adequacy of the primary members of the structure. CLS Engineering PLLC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



Replace existing T-Arm mounts with (1) new Perfect Vision PV-RP14M-HR-9-96 Platform Mount.

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

Install (3) 2 STD x 8'-0" long mount pipes, included in the kit, per sector (9 total).



Note:
*Contractor to confirm that following is installed:

Install (1) Perfect Vision PV-PKBK-M Monopole Platform Kicker Kit as shown. Field-cut angles as required. Maintain minimum bolt edge distance.

Envelope Only Solution

Telamon CLS

SN

41124-13632988_C8_01-01-MA

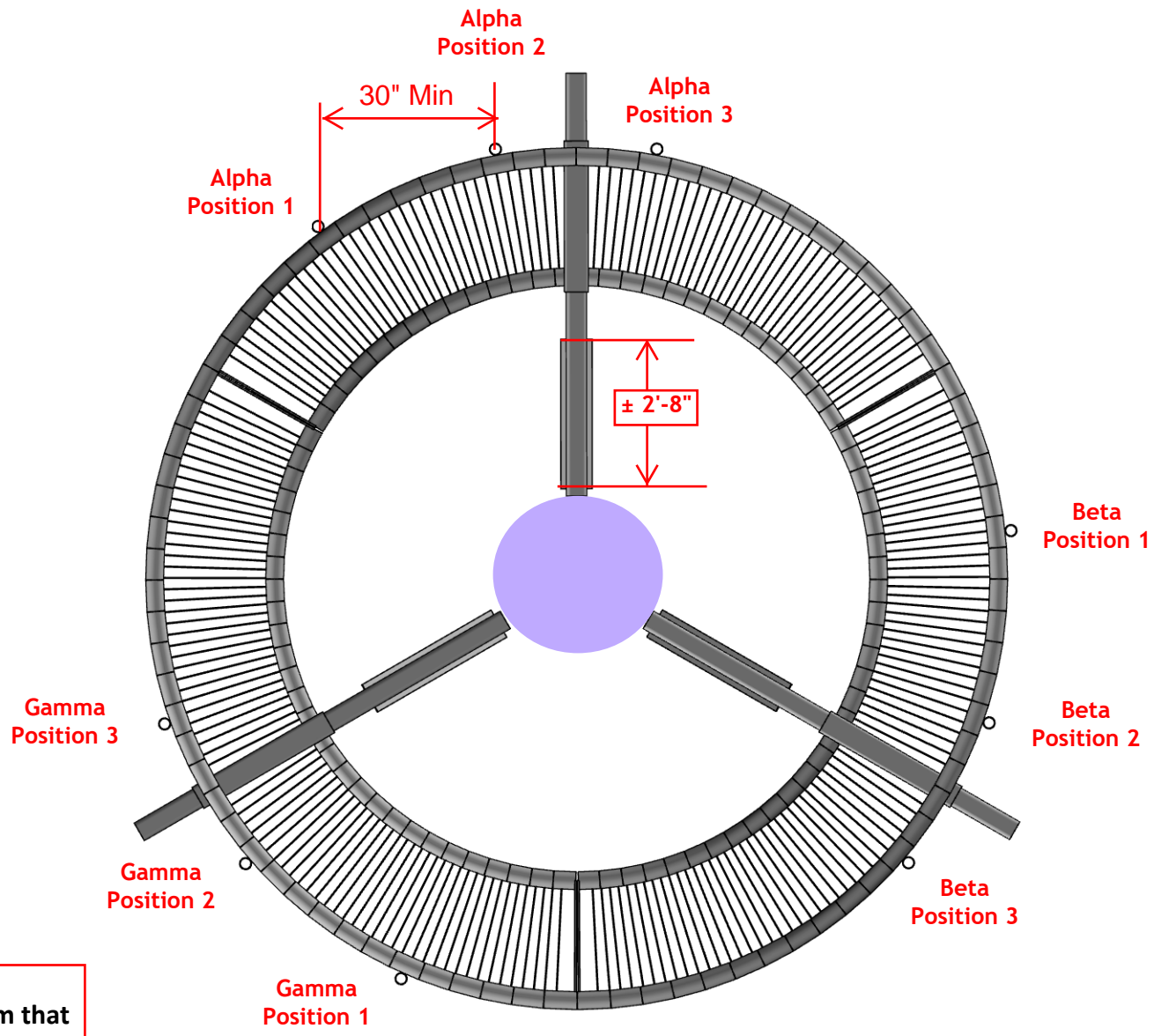
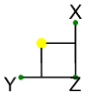
41124-13632988_C8_01-Old Saybrook, CT

Proposed Modification - Rendered

SK-1

Mar 13, 2021

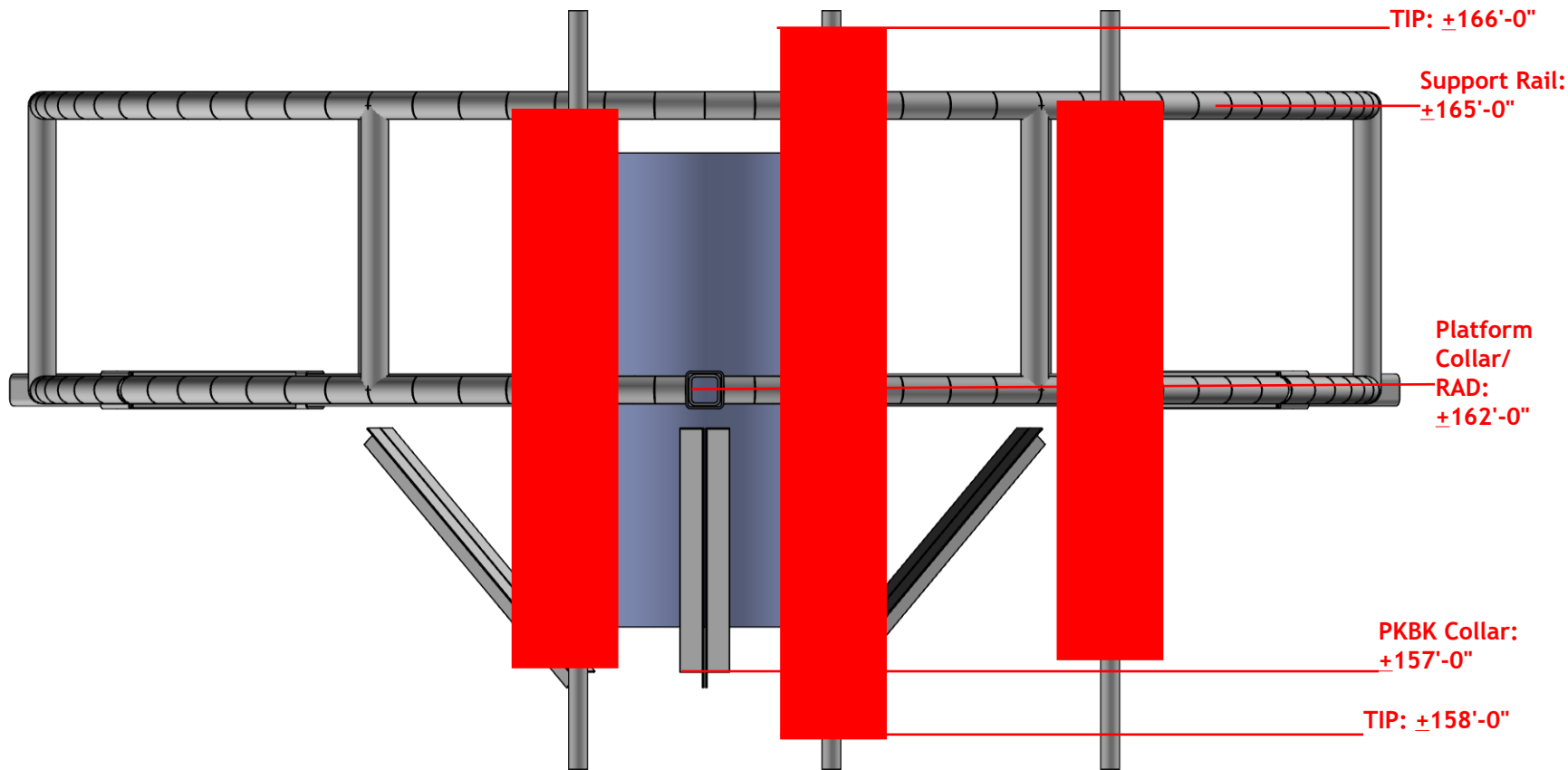
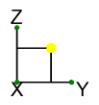
41124-13632988_C8_01-01-MA_R1.r3d



Note:
*Contractor to confirm that following is installed:

Envelope Only Solution

Telamon CLS	41124-13632988_C8_01-Old Saybrook, CT	SK-2
SN		Mar 13, 2021
41124-13632988_C8_01-01-MA	Proposed Modification - Plan View	41124-13632988_C8_01-01-MA-R1.r3d



Note:
***Contractor to confirm that following is installed:**

Telamon CLS

SN

41124-13632988_C8_01-01-MA

41124-13632988_C8_01-Old Saybrook, CT

Proposed Modification - Front View

SK-3

Mar 13, 2021

41124-13632988_C8_01-01-MA.r3d

Wind & Ice Loading			
Nominal Mount Elevation (AGL), z_{mount}	162 ft	K_a	0.90
Nominal Rad Elevation (AGL), z_{rad}	162 ft	K_d	0.95
Elevation AMSL (ft)	68 ft	K_e	1.00
TIA Standard	H	K_z	1.40
Basic Wind Speed, V_{ult} (bare)	125 mph	K_{zt}	1.00
Basic Wind Speed, V (ice)	50 mph	K_s	1.00
Design Ice Thickness, t_i	1 in	t_{iz}	1.17 in
Exposure Category	C	G_h	1.00
Risk Category	II	q_z (bare)	53.1 psf
Seismic Response Coeff., C_s	0.11	q_z (ice)	8.5 psf

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

Section Set Label	Shape Label	F_A (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Standoff Arm	HSS4X4X6	31.86	2.18	8.97
Intermediate Plate	PL4.5x0.375	35.84	5.25	6.13
Face horizontal	PIPE 3.0 SCH10	16.73	4.47	6.69
Vertical Brace	PIPE 3.0 SCH10	16.73	4.47	6.69
Handrail	PIPE 3.0 SCH10	16.73	4.47	6.69
Plate Grating	PL0.75X0.1875	5.97	2.38	2.53
Mount Pipe	PIPE_2.0	11.35	3.61	5.08
PKBK	L3X3X3	23.90	2.08	7.04
Standoff Tube	HSS4.75x4.75x4	37.84	2.25	10.34

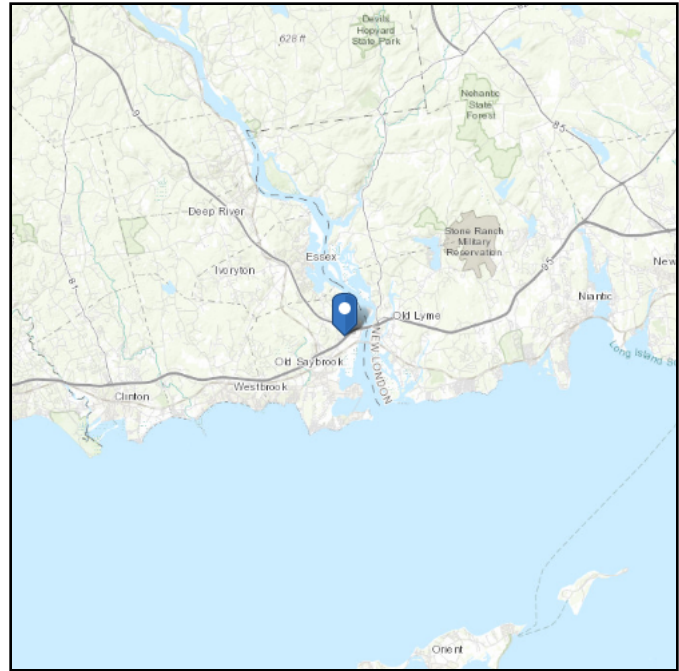
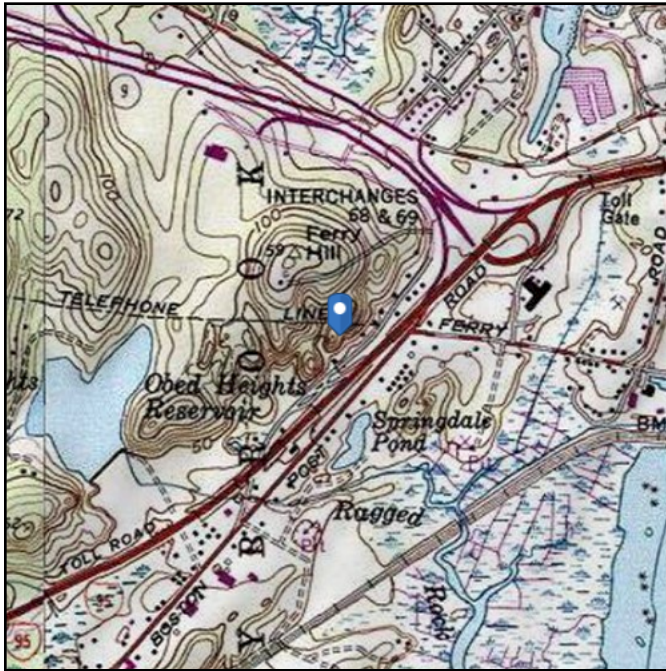
Appurtenances																														
Appurtenance Model	Status	Azimuth Offset ($^\circ$, \cup)	Rad Elev. Override (ft)	Swap Width & Depth	Area Factor		Qty. per Azimuth			Total Qty. Override	0° Joints		120° Joints		240° Joints		Height (in)	Width (in)	Depth (in)	Weight (Bare) (lb)	Shape	Weight of 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
																									N	T	N	T	N	T
AIR 21 B4A/B2P				<input type="checkbox"/>			1	1	1	3	1_A1T	1_A1B	2_A1T	2_A1B	3_A1T	3_A1B	55	12	7.9	83	Generic	96.14	3.19	1.98	3.94	2.68	152.46	94.63	30.13	20.52
APXVAARR24_43-U-NA20				<input type="checkbox"/>			1	1	1	3	1_A2T	1_A2B	2_A2T	2_A2B	3_A2T	3_A2B	95.9	24	8.7	153.3	Generic	264.02	14.67	5.32	16.45	6.89	701.12	254.26	125.81	52.70
APX16DWV-16DWV-S-E-A20				<input type="checkbox"/>			1	1	1	3	1_A3T	1_A3B	2_A3T	2_A3B	3_A3T	3_A3B	55.9	13.3	3.2	40.7	Generic	78.65	6.26	1.50	7.64	2.67	299.18	71.69	58.45	20.44
RADIO 4449 B71/B85A				<input type="checkbox"/>	0		1	1	1	3	1_R2BN		2_R2BN		3_R2BN		14.96	13.19	10.51	74.95	Flat	40.49	0.00	1.31	0.00	1.85	0.00	62.62	0.00	14.18
RADIO 4415 B66A				<input checked="" type="checkbox"/>	0.5	0.5	1	1	1	3	1_R3TT		2_R3TT		3_R3TT		16.5	13.5	6.3	49.6	Flat	34.12	0.44	0.93	0.68	1.24	20.79	44.36	5.19	9.51
RADIO 4415 B25_TMO				<input checked="" type="checkbox"/>	0.5	0.5	1	1	1	3	1_R3TT		2_R3TT		3_R3TT		16.5	13.5	6.3	47.4	Flat	34.12	0.44	0.93	0.68	1.24	20.79	44.36	5.19	9.51

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 68.49 ft (NAVD 88)
Latitude: 41.313833
Longitude: -72.364028



Wind

Results:

Wind Speed:	125 Vmph
10-year MRI	76 Vmph
25-year MRI	85 Vmph
50-year MRI	96 Vmph
100-year MRI	102 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: Sat Mar 13 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).

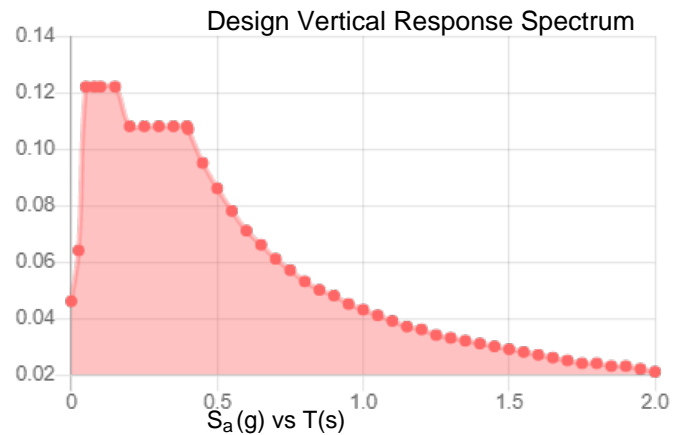
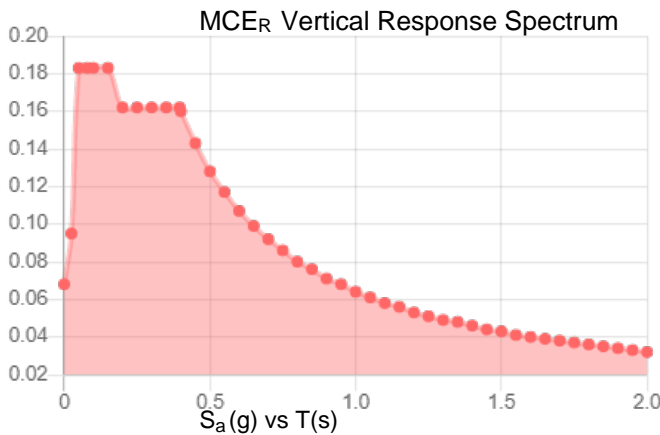
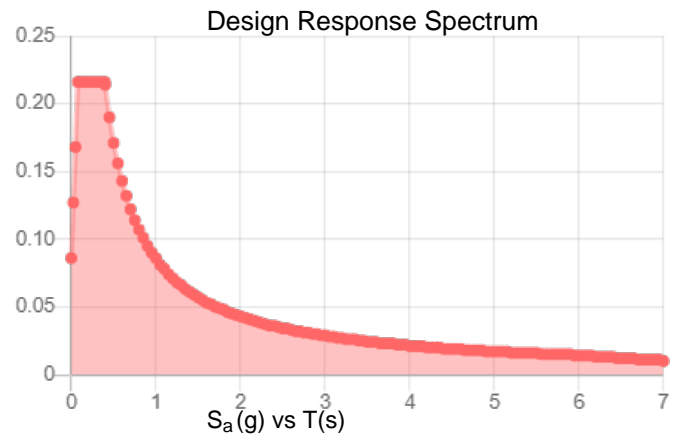
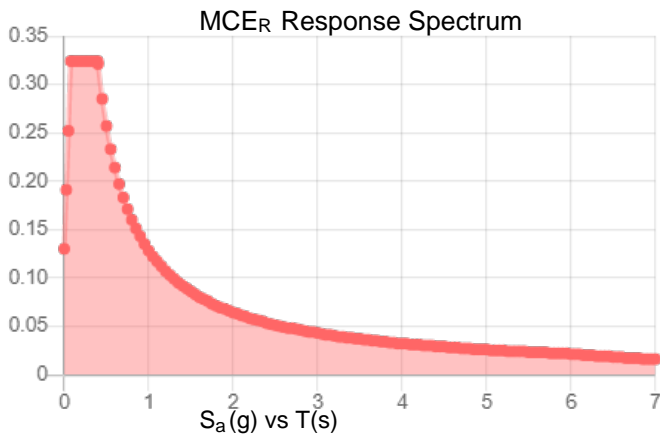
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.202	S_{D1} :	0.086
S_1 :	0.053	T_L :	6
F_a :	1.6	PGA :	0.113
F_v :	2.4	PGA _M :	0.178
S_{MS} :	0.324	F_{PGA} :	1.574
S_{M1} :	0.128	I_e :	1
S_{DS} :	0.216	C_v :	0.705

Seismic Design Category B



Data Accessed:

Sat Mar 13 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: 1.00 in.

Concurrent Temperature: 15 F

Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Sat Mar 13 2021

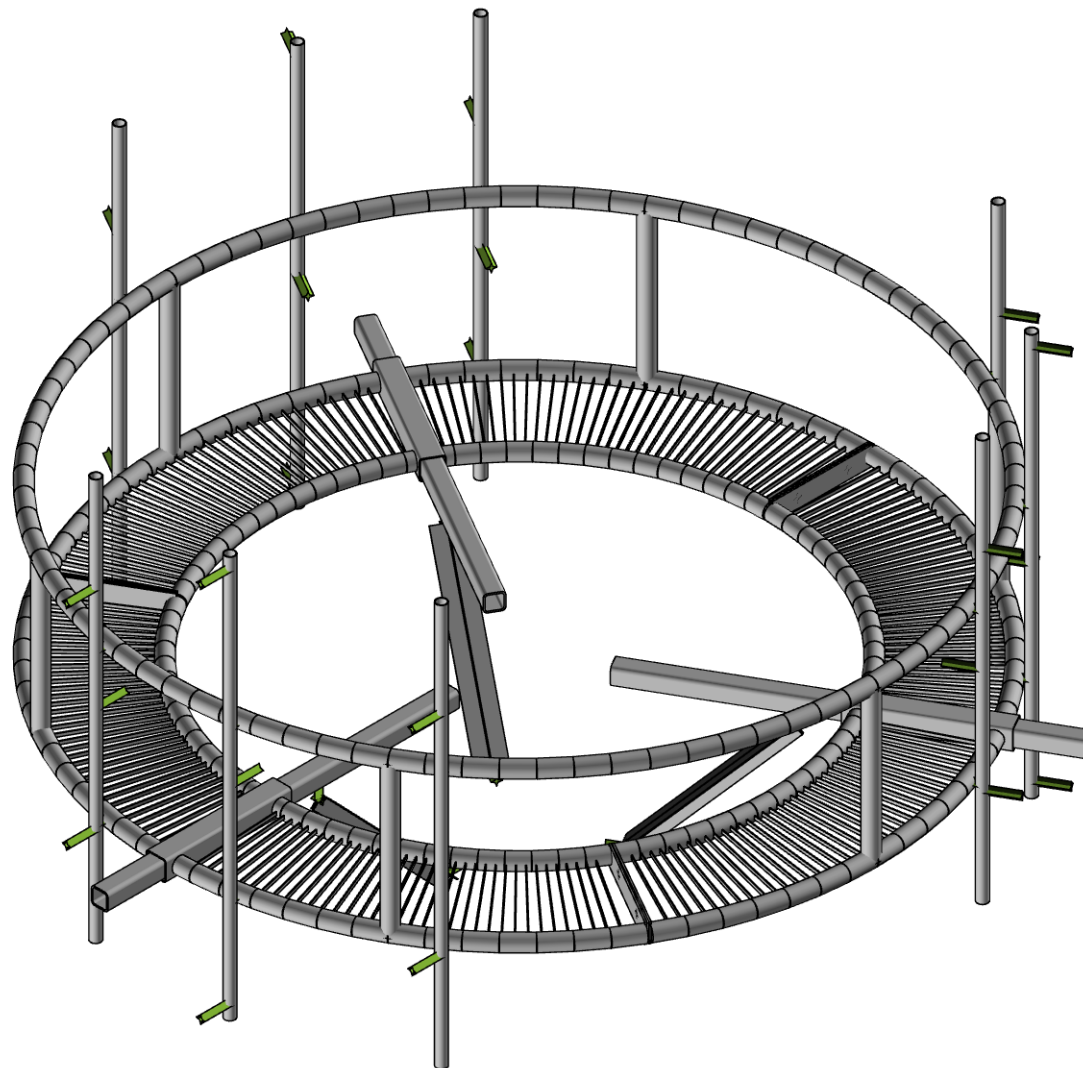
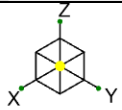
Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.



Envelope Only Solution

Telamon CLS

SN

41124-13632988_C8_01-01-MA-R1

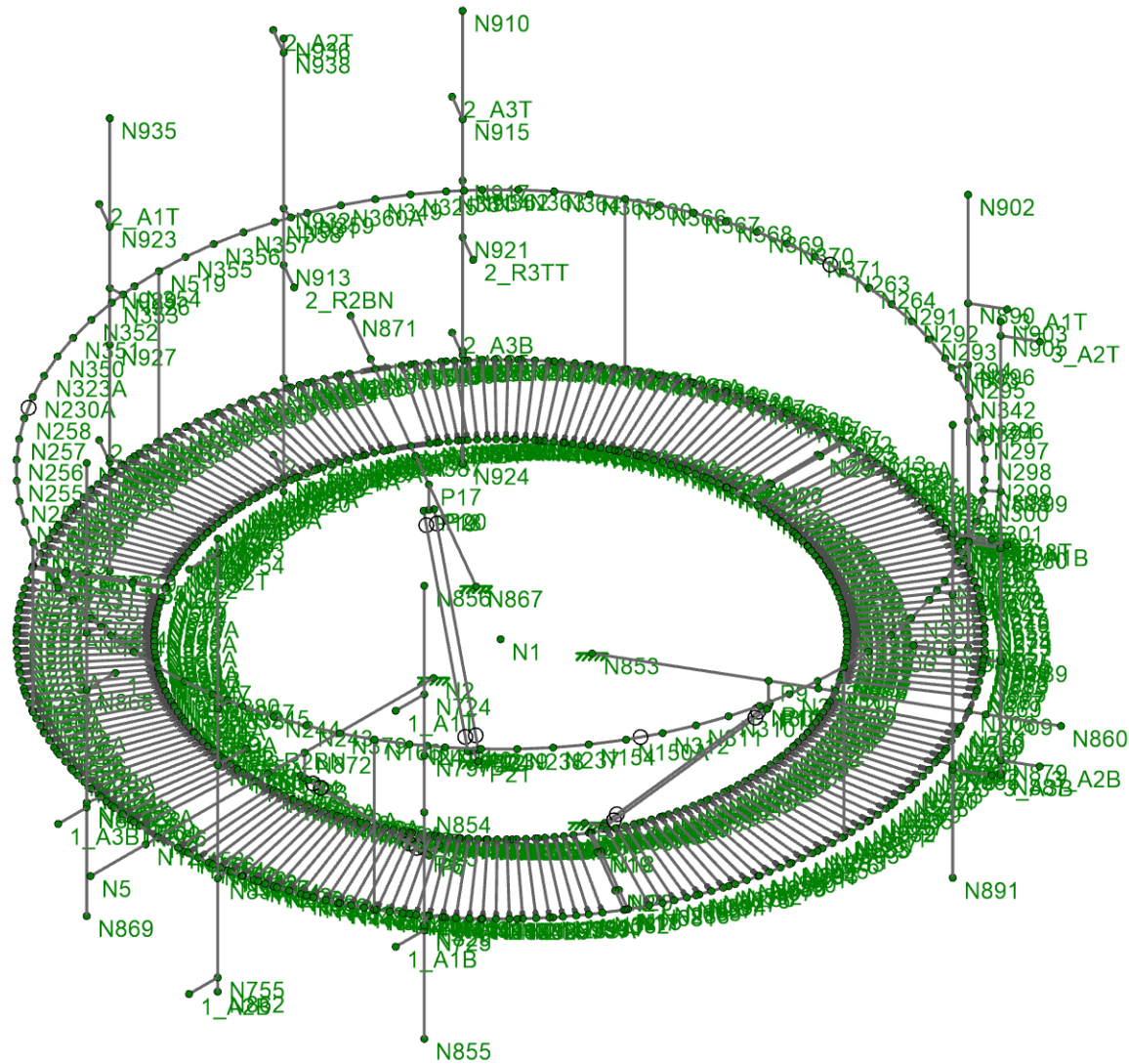
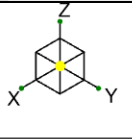
41124-13632988_C8_01-Old Saybrook, CT

Rendered

SK-1

Mar 19, 2021

41124-13632988_C8_01-01-MA-R1.r3d

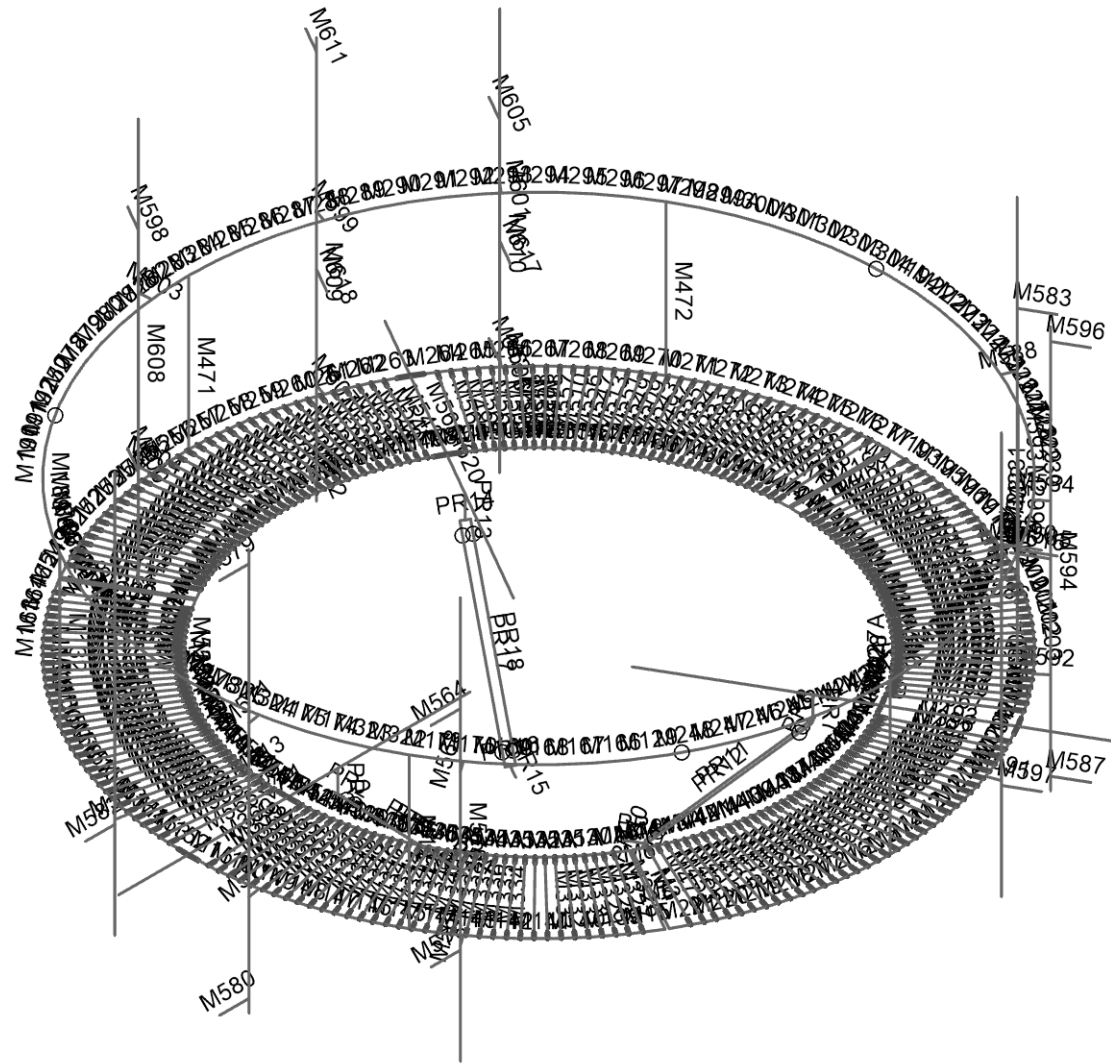
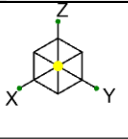


Envelope Only Solution

Telamon CLS
SN
41124-13632988_C8_01-01-MA-R1

41124-13632988_C8_01-Old Saybrook, CT
Joint Labels

SK-2
Mar 19, 2021
41124-13632988_C8_01-01-MA-R1.r3d



Envelope Only Solution

Telamon CLS

SN

41124-13632988_C8_01-01-MA-R1

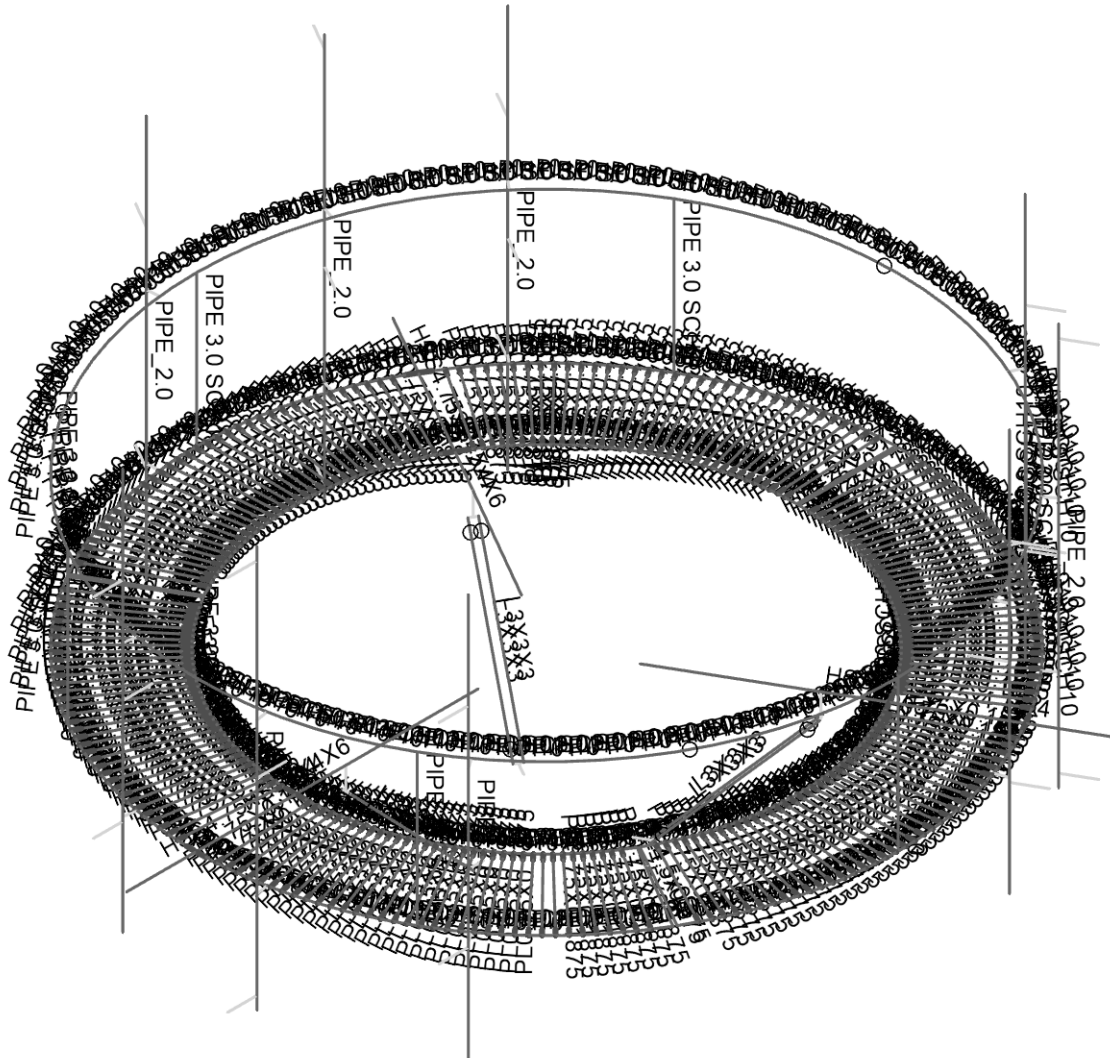
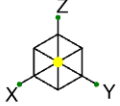
41124-13632988_C8_01-Old Saybrook, CT

Member Labels

SK-3

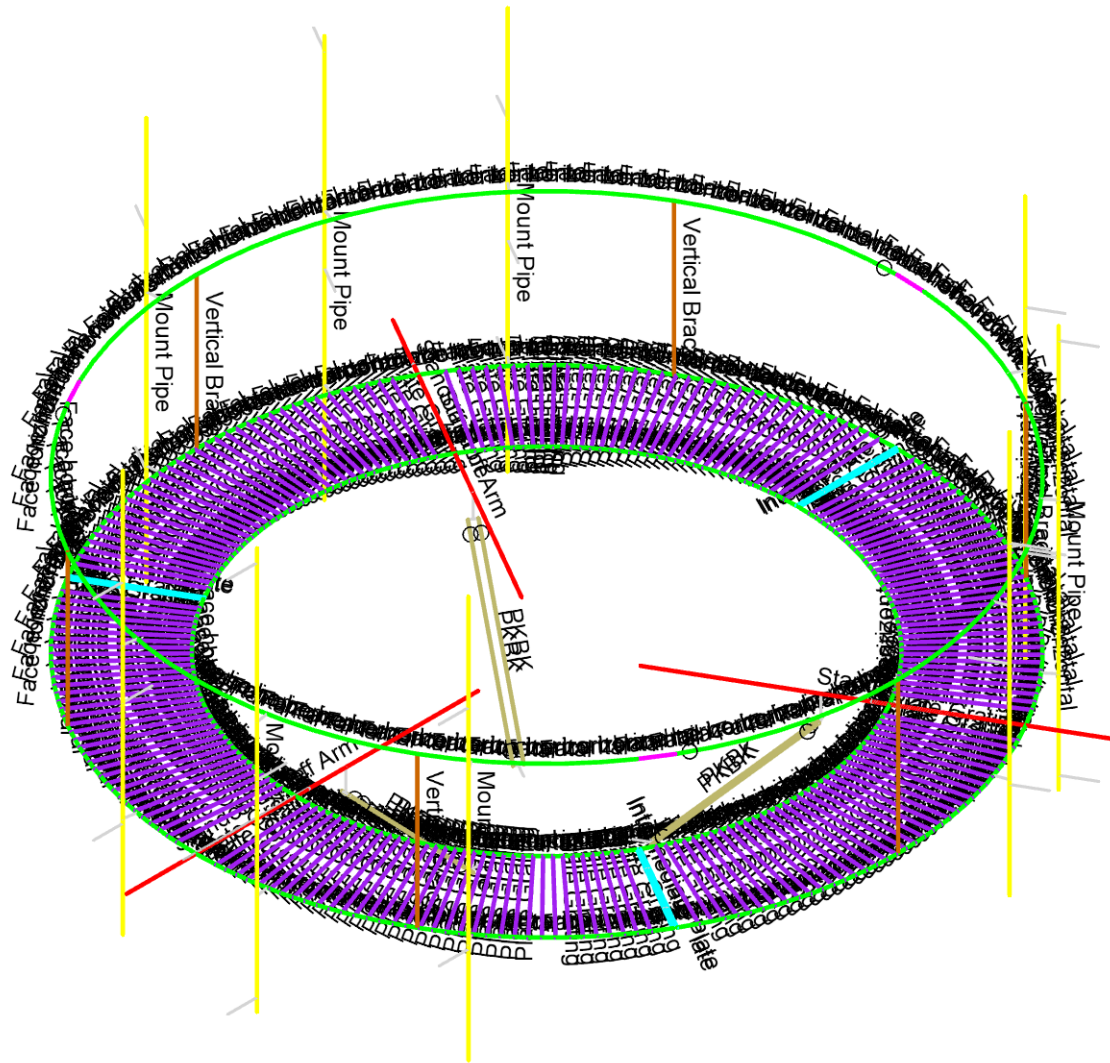
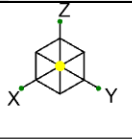
Mar 19, 2021

41124-13632988_C8_01-01-MA-R1.r3d



Envelope Only Solution

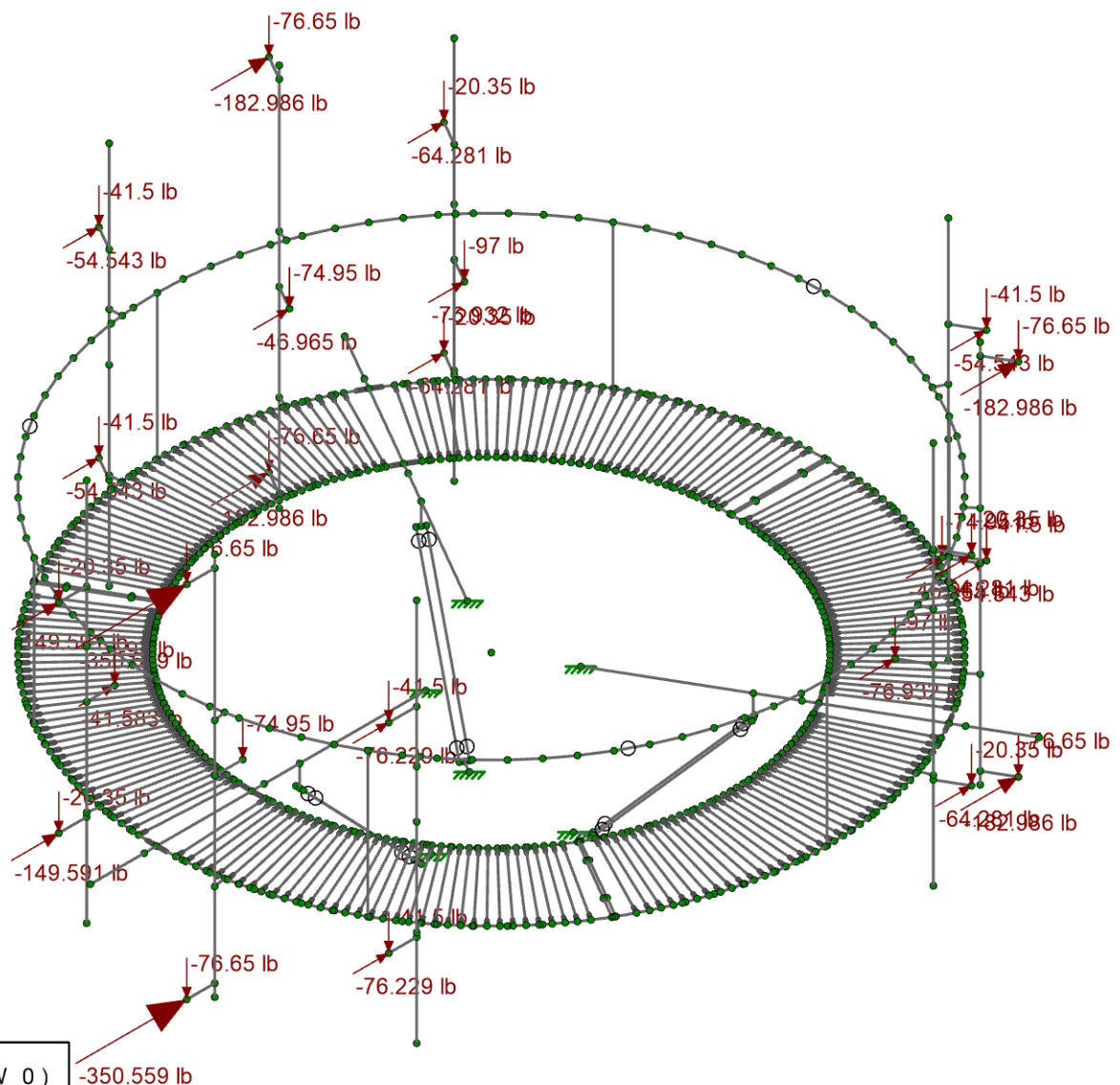
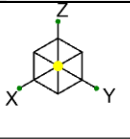
Telamon CLS	41124-13632988_C8_01-Old Saybrook, CT	SK-3.1
SN		Mar 19, 2021
41124-13632988_C8_01-01-MA-R1	Member Shapes	41124-13632988_C8_01-01-MA-R1.r3d



Section Sets	
na	na
Face horizontal	Face horizontal
Standoff Arm	Standoff Arm
Standoff Tube	Standoff Tube
Handrail	Handrail
Intermediate Plate	Intermediate Plate
Vertical Brace	Vertical Brace
Mount Pipe	Mount Pipe
Plate Grating	Plate Grating
PKBK	PKBK
RIGID	RIGID

Envelope Only Solution

Telamon CLS	41124-13632988_C8_01-Old Saybrook, CT	SK-4
SN		Mar 19, 2021
41124-13632988_C8_01-01-MA-R1	Section Sets	41124-13632988_C8_01-01-MA-R1.r3d



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

Telamon CLS

SN

41124-13632988_C8_01-01-MA-R1

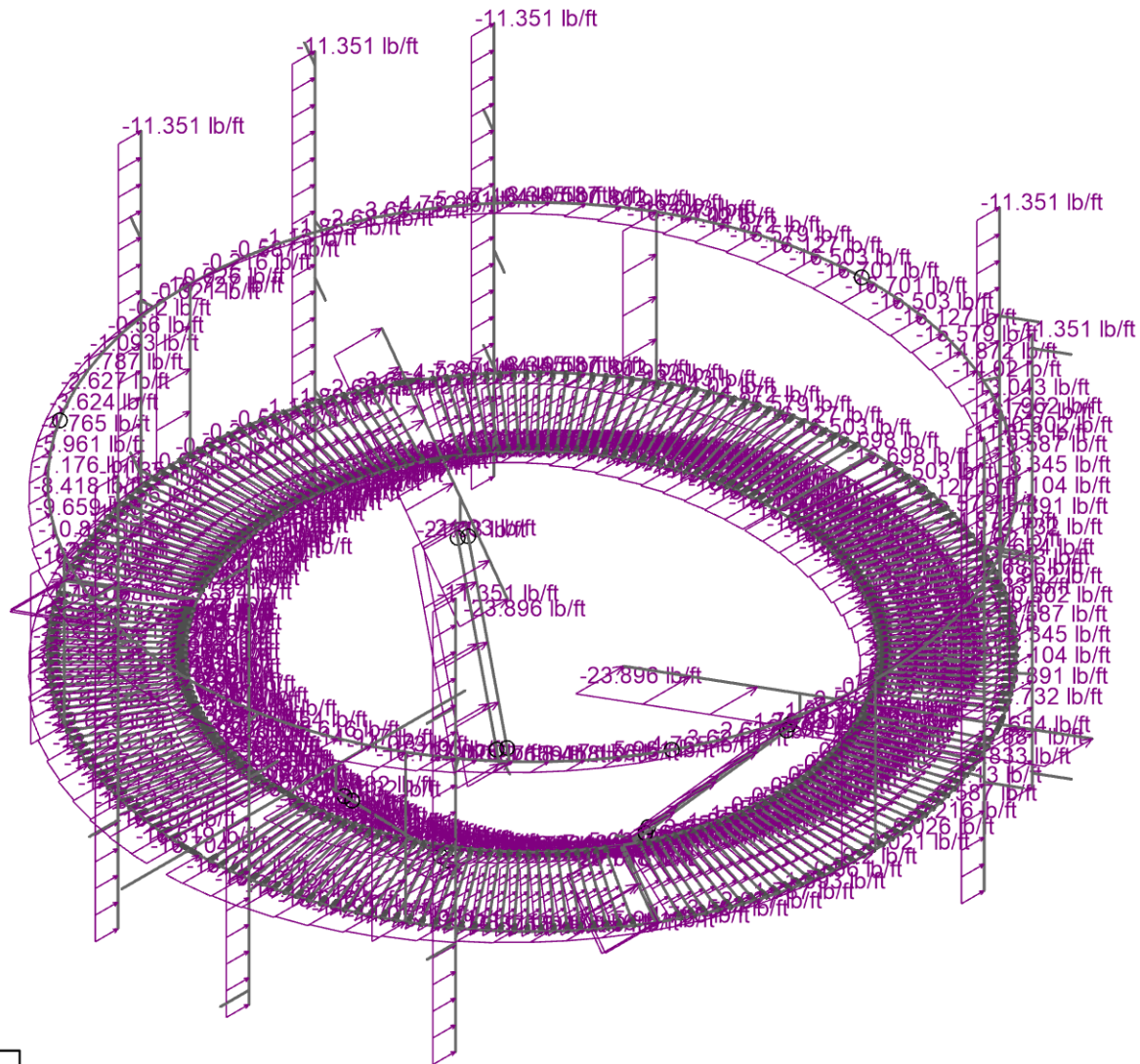
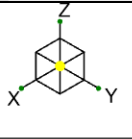
41124-13632988_C8_01-Old Saybrook, CT

Joint Loads - Dead and Normal Wind

SK-5

Mar 19, 2021

41124-13632988_C8_01-01-MA-R1.r3d



Loads: BLC 5, Structure Wind 0
Envelope Only Solution

Telamon CLS

SN

41124-13632988_C8_01-01-MA-R1

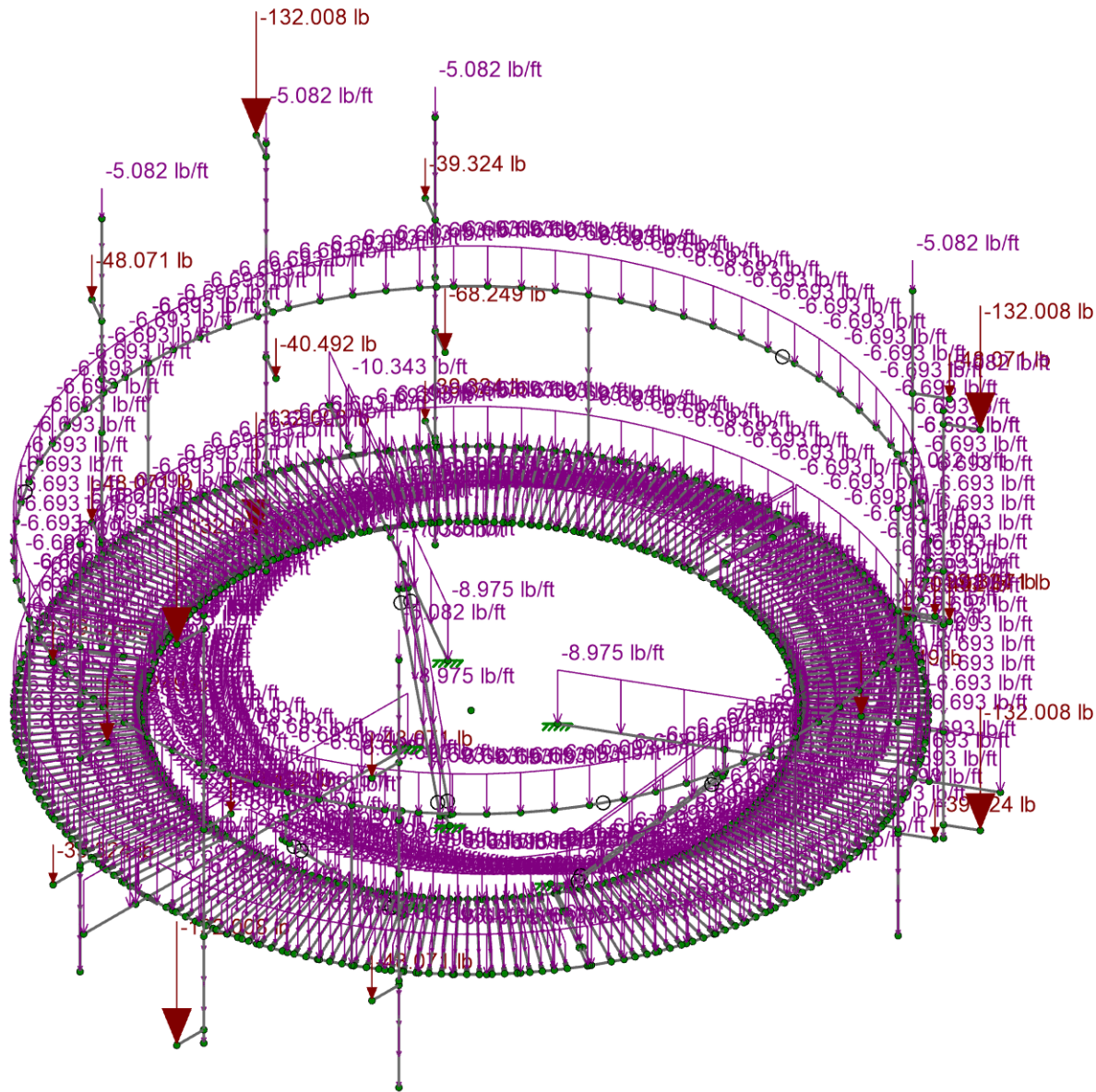
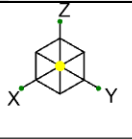
41124-13632988_C8_01-Old Saybrook, CT

Distributed Load - Normal Wind

SK-6

Mar 19, 2021

41124-13632988_C8_01-01-MA-R1.r3d



Loads: BLC 2, Ice Dead
Envelope Only Solution

Telamon CLS

SN

41124-13632988_C8_01-01-MA-R1

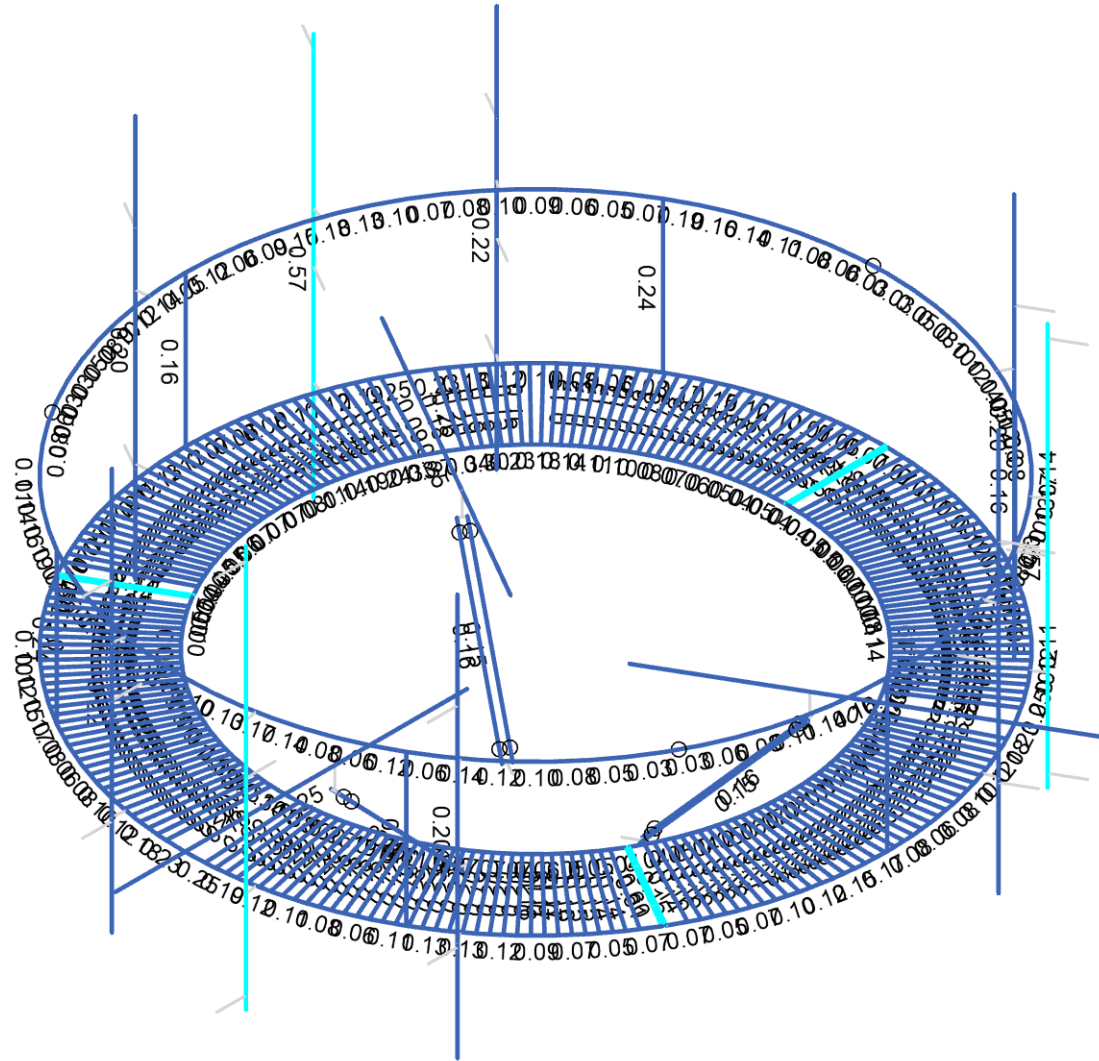
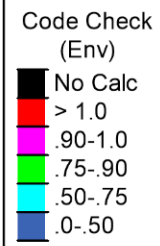
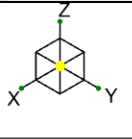
41124-13632988_C8_01-Old Saybrook, CT

Ice Dead Loads

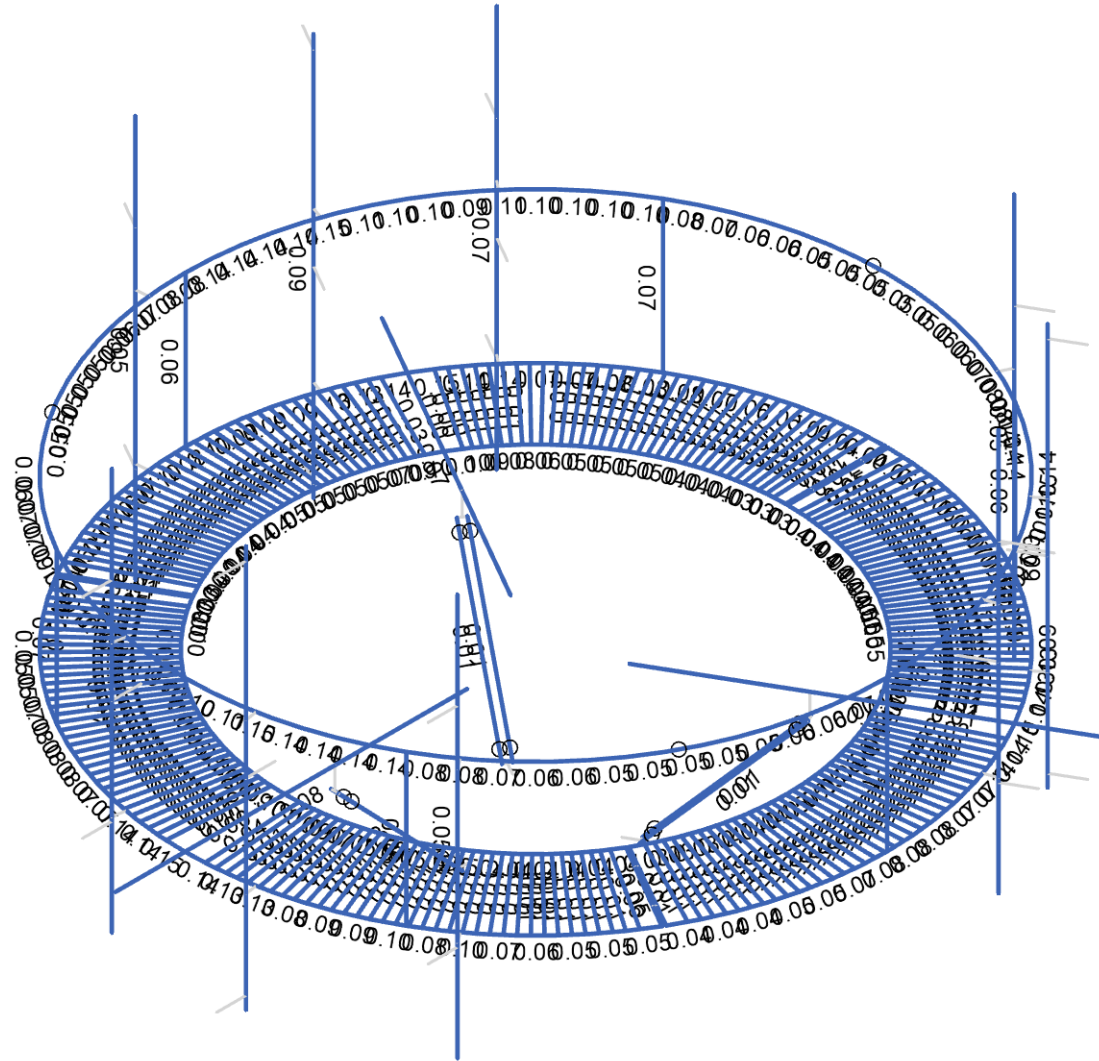
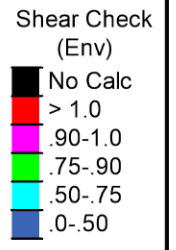
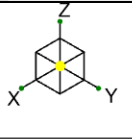
SK-7

Mar 19, 2021

41124-13632988_C8_01-01-MA-R1.r3d



Member Code Checks Displayed (Enveloped) Envelope Only Solution		
Telamon CLS	41124-13632988_C8_01-Old Saybrook, CT	SK-8
SN		Mar 19, 2021
41124-13632988_C8_01-01-MA-R1	Envelope Member Unity Check Results - Bending	41124-13632988_C8_01-01-MA-R1.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Telamon CLS	41124-13632988_C8_01-Old Saybrook, CT	SK-9
SN		Mar 19, 2021
41124-13632988_C8_01-01-MA-R1	Envelope Member Check Results - Shear	41124-13632988_C8_01-01-MA-R1.r3d

Basic Load Cases

	BLC Description	Category	Z Gravity	Nodal	Distributed
1	Dead	DL	-1	27	
2	Ice Dead	RL		27	495
5	Structure Wind 0°	None			493
6	Structure Wind 30°	None			990
7	Structure Wind 45°	None			990
8	Structure Wind 60°	None			986
9	Structure Wind 90°	None			495
10	Structure Wind 120°	None			986
11	Structure Wind 135°	None			990
12	Structure Wind 150°	None			990
13	Structure Wind 180°	None			493
14	Structure Wind 210°	None			990
15	Structure Wind 225°	None			990
16	Structure Wind 240°	None			986
17	Structure Wind 270°	None			495
18	Structure Wind 300°	None			986
19	Structure Wind 315°	None			990
20	Structure Wind 330°	None			990
21	Structure Wind w/ Ice 0°	None			493
22	Structure Wind w/ Ice 30°	None			990
23	Structure Wind w/ Ice 45°	None			990
24	Structure Wind w/ Ice 60°	None			986
25	Structure Wind w/ Ice 90°	None			495
26	Structure Wind w/ Ice 120°	None			986
27	Structure Wind w/ Ice 135°	None			990
28	Structure Wind w/ Ice 150°	None			990
29	Structure Wind w/ Ice 180°	None			493
30	Structure Wind w/ Ice 210°	None			990
31	Structure Wind w/ Ice 225°	None			990
32	Structure Wind w/ Ice 240°	None			986
33	Structure Wind w/ Ice 270°	None			495
34	Structure Wind w/ Ice 300°	None			986
35	Structure Wind w/ Ice 315°	None			990
36	Structure Wind w/ Ice 330°	None			990
37	Antenna Wind 0°	None		26	
38	Antenna Wind 30°	None		54	
39	Antenna Wind 45°	None		54	
40	Antenna Wind 60°	None		52	
41	Antenna Wind 90°	None		27	
42	Antenna Wind 120°	None		52	
43	Antenna Wind 135°	None		54	
44	Antenna Wind 150°	None		54	
45	Antenna Wind 180°	None		26	
46	Antenna Wind 210°	None		54	
47	Antenna Wind 225°	None		54	
48	Antenna Wind 240°	None		52	
49	Antenna Wind 270°	None		27	
50	Antenna Wind 300°	None		52	
51	Antenna Wind 315°	None		54	
52	Antenna Wind 330°	None		54	
53	Antenna Wind w/ Ice 0°	None		26	
54	Antenna Wind w/ Ice 30°	None		54	
55	Antenna Wind w/ Ice 45°	None		54	
56	Antenna Wind w/ Ice 60°	None		52	
57	Antenna Wind w/ Ice 90°	None		27	
58	Antenna Wind w/ Ice 120°	None		52	
59	Antenna Wind w/ Ice 135°	None		54	
60	Antenna Wind w/ Ice 150°	None		54	

Basic Load Cases (Continued)

	BLC Description	Category	Z Gravity	Nodal	Distributed
61	Antenna Wind w/ Ice 180°	None		26	
62	Antenna Wind w/ Ice 210°	None		54	
63	Antenna Wind w/ Ice 225°	None		54	
64	Antenna Wind w/ Ice 240°	None		52	
65	Antenna Wind w/ Ice 270°	None		27	
66	Antenna Wind w/ Ice 300°	None		52	
67	Antenna Wind w/ Ice 315°	None		54	
68	Antenna Wind w/ Ice 330°	None		54	
69	Seismic X	ELX		27	495
70	Seismic Y	ELY		27	495
71	Seismic Z	ELZ		27	495
72	Maintenance Live 500 (1)	OL1		1	
73	Maintenance Live 500 (2)	OL2		1	
74	Maintenance Live 500 (3)	OL3		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		
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		

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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	0.061	37	0.061	OL1	1.5
68	1.2D + 1.5Lm 1 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.061	38	0.061	OL1	1.5
69	1.2D + 1.5Lm 1 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.061	39	0.061	OL1	1.5
70	1.2D + 1.5Lm 1 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.061	40	0.061	OL1	1.5
71	1.2D + 1.5Lm 1 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.061	41	0.061	OL1	1.5
72	1.2D + 1.5Lm 1 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.061	42	0.061	OL1	1.5
73	1.2D + 1.5Lm 1 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.061	43	0.061	OL1	1.5
74	1.2D + 1.5Lm 1 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.061	44	0.061	OL1	1.5
75	1.2D + 1.5Lm 1 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.061	45	-0.061	OL1	1.5
76	1.2D + 1.5Lm 1 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.061	46	-0.061	OL1	1.5
77	1.2D + 1.5Lm 1 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.061	47	-0.061	OL1	1.5
78	1.2D + 1.5Lm 1 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.061	48	-0.061	OL1	1.5
79	1.2D + 1.5Lm 1 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.061	49	-0.061	OL1	1.5
80	1.2D + 1.5Lm 1 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.061	50	-0.061	OL1	1.5
81	1.2D + 1.5Lm 1 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.061	51	-0.061	OL1	1.5
82	1.2D + 1.5Lm 1 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.061	52	-0.061	OL1	1.5
83	1.2D + 1.5Lm 2 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.061	37	0.061	OL2	1.5
84	1.2D + 1.5Lm 2 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.061	38	0.061	OL2	1.5
85	1.2D + 1.5Lm 2 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.061	39	0.061	OL2	1.5
86	1.2D + 1.5Lm 2 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.061	40	0.061	OL2	1.5
87	1.2D + 1.5Lm 2 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.061	41	0.061	OL2	1.5
88	1.2D + 1.5Lm 2 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.061	42	0.061	OL2	1.5
89	1.2D + 1.5Lm 2 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.061	43	0.061	OL2	1.5
90	1.2D + 1.5Lm 2 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.061	44	0.061	OL2	1.5
91	1.2D + 1.5Lm 2 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.061	45	-0.061	OL2	1.5
92	1.2D + 1.5Lm 2 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.061	46	-0.061	OL2	1.5
93	1.2D + 1.5Lm 2 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.061	47	-0.061	OL2	1.5
94	1.2D + 1.5Lm 2 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.061	48	-0.061	OL2	1.5
95	1.2D + 1.5Lm 2 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.061	49	-0.061	OL2	1.5
96	1.2D + 1.5Lm 2 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.061	50	-0.061	OL2	1.5
97	1.2D + 1.5Lm 2 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.061	51	-0.061	OL2	1.5
98	1.2D + 1.5Lm 2 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.061	52	-0.061	OL2	1.5
99	1.2D + 1.5Lm 3 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.061	37	0.061	OL3	1.5

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
100	1.2D + 1.5Lm 3 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.061	38	0.061	OL3	1.5
101	1.2D + 1.5Lm 3 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.061	39	0.061	OL3	1.5
102	1.2D + 1.5Lm 3 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.061	40	0.061	OL3	1.5
103	1.2D + 1.5Lm 3 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.061	41	0.061	OL3	1.5
104	1.2D + 1.5Lm 3 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.061	42	0.061	OL3	1.5
105	1.2D + 1.5Lm 3 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.061	43	0.061	OL3	1.5
106	1.2D + 1.5Lm 3 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.061	44	0.061	OL3	1.5
107	1.2D + 1.5Lm 3 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.061	45	-0.061	OL3	1.5
108	1.2D + 1.5Lm 3 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.061	46	-0.061	OL3	1.5
109	1.2D + 1.5Lm 3 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.061	47	-0.061	OL3	1.5
110	1.2D + 1.5Lm 3 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.061	48	-0.061	OL3	1.5
111	1.2D + 1.5Lm 3 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.061	49	-0.061	OL3	1.5
112	1.2D + 1.5Lm 3 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.061	50	-0.061	OL3	1.5
113	1.2D + 1.5Lm 3 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.061	51	-0.061	OL3	1.5
114	1.2D + 1.5Lm 3 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.061	52	-0.061	OL3	1.5

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e ⁻⁶ F ⁻¹]	Density [lb/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	490	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	490	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	490	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	490	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	Face horizontal	PIPE 3.0 SCH10	Beam	None	A500 Gr.B RND	Typical	1.274	1.822	1.822	3.644
2	Standoff Arm	HSS4X4X6	Beam	None	A500 Gr.B Rect	Typical	4.78	10.3	10.3	17.5
3	Standoff Tube	HSS4.75x4.75x4	Beam	None	A500 Gr.B Rect	Typical	4.5	15.234	15.234	22.781
4	Handrail	PIPE 3.0 SCH10	Beam	None	A500 Gr.B RND	Typical	1.274	1.822	1.822	3.644
5	Intermediate Plate	PL4.5x0.375	Beam	None	A36 Gr.36	Typical	1.688	0.02	2.848	0.075
6	Vertical Brace	PIPE 3.0 SCH10	Column	None	A500 Gr.B RND	Typical	1.274	1.822	1.822	3.644
7	Mount Pipe	PIPE 2.0	Column	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
8	Plate Grating	PL0.75X0.1875	Column	None	A36 Gr.36	Typical	0.141	0.000412	0.007	0.001
9	PKBK	L3X3X3	Beam	None	A36 Gr.36	Typical	1.09	0.948	0.948	0.014

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
1	A1	Standoff Arm	84				Lateral
2	M3	Intermediate Plate	23.85				Lateral
3	M4	Intermediate Plate	23.85				Lateral
4	M7	Intermediate Plate	23.85				Lateral
5	M8	Intermediate Plate	23.85				Lateral
6	M11	Intermediate Plate	23.85				Lateral
7	M12	Intermediate Plate	23.85				Lateral
8	M15	Face horizontal	6.244				Lateral
9	M16	Face horizontal	4.468				Lateral
10	M127	Vertical Brace	36				Lateral
11	M132	Vertical Brace	36				Lateral
12	M129	Handrail	6.61				Lateral
13	M299	Vertical Brace	36				Lateral
14	M300	Vertical Brace	36				Lateral
15	M471	Vertical Brace	36				Lateral
16	M472	Vertical Brace	36				Lateral
17	M530A	Face horizontal	4.487				Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
18	M531A	Face horizontal	4.487				Lateral
19	M532A	Face horizontal	4.487				Lateral
20	M533A	Face horizontal	4.487				Lateral
21	M534A	Face horizontal	4.487				Lateral
22	M535A	Face horizontal	4.487				Lateral
23	M536A	Face horizontal	4.487				Lateral
24	M537A	Face horizontal	4.487				Lateral
25	M538A	Face horizontal	4.487				Lateral
26	M539A	Face horizontal	4.487				Lateral
27	M540A	Face horizontal	4.487				Lateral
28	M541A	Face horizontal	4.487				Lateral
29	M542A	Face horizontal	4.244				Lateral
30	M515A	Face horizontal	4.468				Lateral
31	M516A	Face horizontal	4.487				Lateral
32	M517A	Face horizontal	4.487				Lateral
33	M518A	Face horizontal	4.487				Lateral
34	M519A	Face horizontal	4.487				Lateral
35	M520A	Face horizontal	4.487				Lateral
36	M521A	Face horizontal	4.487				Lateral
37	M522A	Face horizontal	4.487				Lateral
38	M523A	Face horizontal	4.487				Lateral
39	M524A	Face horizontal	4.487				Lateral
40	M525A	Face horizontal	4.487				Lateral
41	M526A	Face horizontal	4.487				Lateral
42	M527A	Face horizontal	4.487				Lateral
43	M528A	Face horizontal	4.244				Lateral
44	M417A	Face horizontal	4.468				Lateral
45	M418	Face horizontal	4.487				Lateral
46	M419A	Face horizontal	4.487				Lateral
47	M420	Face horizontal	4.487				Lateral
48	M421A	Face horizontal	4.487				Lateral
49	M422	Face horizontal	4.487				Lateral
50	M423A	Face horizontal	4.487				Lateral
51	M424	Face horizontal	4.487				Lateral
52	M425A	Face horizontal	4.487				Lateral
53	M426	Face horizontal	4.487				Lateral
54	M427A	Face horizontal	4.487				Lateral
55	M428	Face horizontal	4.487				Lateral
56	M429A	Face horizontal	4.487				Lateral
57	M430	Face horizontal	4.244				Lateral
58	M431A	Face horizontal	4.468				Lateral
59	M432	Face horizontal	4.487				Lateral
60	M433A	Face horizontal	4.487				Lateral
61	M434	Face horizontal	4.487				Lateral
62	M435A	Face horizontal	4.487				Lateral
63	M436	Face horizontal	4.487				Lateral
64	M437A	Face horizontal	4.487				Lateral
65	M438	Face horizontal	4.487				Lateral
66	M439A	Face horizontal	4.487				Lateral
67	M440	Face horizontal	4.487				Lateral
68	M441A	Face horizontal	4.487				Lateral
69	M442	Face horizontal	4.487				Lateral
70	M443A	Face horizontal	4.487				Lateral
71	M444	Face horizontal	4.244				Lateral
72	M445A	Face horizontal	4.468				Lateral
73	M446	Face horizontal	4.487				Lateral
74	M447A	Face horizontal	4.487				Lateral
75	M448	Face horizontal	4.487				Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
76	M449A	Face horizontal	4.487				Lateral
77	M450	Face horizontal	4.487				Lateral
78	M451A	Face horizontal	4.487				Lateral
79	M452	Face horizontal	4.487				Lateral
80	M453A	Face horizontal	4.487				Lateral
81	M454	Face horizontal	4.487				Lateral
82	M455A	Face horizontal	4.487				Lateral
83	M457A	Face horizontal	4.601				Lateral
84	M458	Face horizontal	4.244				Lateral
85	M459A	Face horizontal	4.468				Lateral
86	M460	Face horizontal	4.487				Lateral
87	M461A	Face horizontal	4.487				Lateral
88	M462	Face horizontal	4.487				Lateral
89	M463A	Face horizontal	4.487				Lateral
90	M464	Face horizontal	4.487				Lateral
91	M465A	Face horizontal	4.487				Lateral
92	M466	Face horizontal	4.487				Lateral
93	M467A	Face horizontal	4.487				Lateral
94	M468	Face horizontal	4.487				Lateral
95	M469A	Face horizontal	4.487				Lateral
96	M470	Face horizontal	4.487	Lbyy			Lateral
97	M471A	Face horizontal	4.487	Lbyy			Lateral
98	M472A	Face horizontal	4.244	Lbyy			Lateral
99	M139	Face horizontal	6.244	Lbyy			Lateral
100	M140	Face horizontal	6.244	Lbyy			Lateral
101	M141	Face horizontal	6.244	Lbyy			Lateral
102	M142	Face horizontal	6.244	Lbyy			Lateral
103	M143	Face horizontal	6.244	Lbyy			Lateral
104	M144	Face horizontal	6.244	Lbyy			Lateral
105	M145	Face horizontal	6.244	Lbyy			Lateral
106	M146	Face horizontal	6.244	Lbyy			Lateral
107	M147	Face horizontal	6.244	Lbyy			Lateral
108	M148	Face horizontal	6.244	Lbyy			Lateral
109	M149	Face horizontal	6.244	Lbyy			Lateral
110	M150	Face horizontal	6.244	Lbyy			Lateral
111	M151	Face horizontal	6.244	Lbyy			Lateral
112	M152	Face horizontal	6.244	Lbyy			Lateral
113	M153	Face horizontal	6.244	Lbyy			Lateral
114	M154	Face horizontal	6.244	Lbyy			Lateral
115	M155	Face horizontal	6.244	Lbyy			Lateral
116	M156	Face horizontal	6.244	Lbyy			Lateral
117	M157	Face horizontal	6.244	Lbyy			Lateral
118	M158	Face horizontal	6.244	Lbyy			Lateral
119	M159	Face horizontal	6.244	Lbyy			Lateral
120	M160	Face horizontal	6.244	Lbyy			Lateral
121	M161	Face horizontal	6.244	Lbyy			Lateral
122	M162	Face horizontal	6.244	Lbyy			Lateral
123	M163	Face horizontal	6.244	Lbyy			Lateral
124	M164	Face horizontal	6.244	Lbyy			Lateral
125	M165	Face horizontal	6.244	Lbyy			Lateral
126	M166	Face horizontal	6.244	Lbyy			Lateral
127	M167	Face horizontal	6.244	Lbyy			Lateral
128	M168	Face horizontal	6.244	Lbyy			Lateral
129	M169	Face horizontal	6.244	Lbyy			Lateral
130	M170	Face horizontal	6.244	Lbyy			Lateral
131	M171	Face horizontal	6.244	Lbyy			Lateral
132	M174	Face horizontal	6.244	Lbyy			Lateral
133	M175	Face horizontal	6.244	Lbyy			Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
134	M178	Face horizontal	6.244	Lbyy			Lateral
135	M179	Face horizontal	6.244	Lbyy			Lateral
136	M180	Face horizontal	6.244	Lbyy			Lateral
137	M181	Face horizontal	6.244	Lbyy			Lateral
138	M182	Face horizontal	6.244	Lbyy			Lateral
139	M183	Face horizontal	6.244	Lbyy			Lateral
140	M184	Face horizontal	6.244	Lbyy			Lateral
141	M185A	Face horizontal	6.244	Lbyy			Lateral
142	M186A	Face horizontal	6.244	Lbyy			Lateral
143	M187	Face horizontal	6.244	Lbyy			Lateral
144	M188	Face horizontal	6.244	Lbyy			Lateral
145	M189	Face horizontal	6.244	Lbyy			Lateral
146	M190	Face horizontal	6.244	Lbyy			Lateral
147	M191	Face horizontal	6.244	Lbyy			Lateral
148	M192	Face horizontal	6.61	Lbyy			Lateral
149	M193	Face horizontal	6.244	Lbyy			Lateral
150	M194	Handrail	6.61	Lbyy			Lateral
151	M195	Face horizontal	6.244	Lbyy			Lateral
152	M196	Face horizontal	6.244	Lbyy			Lateral
153	M197	Face horizontal	6.244	Lbyy			Lateral
154	M198	Face horizontal	6.244	Lbyy			Lateral
155	M199	Face horizontal	6.244	Lbyy			Lateral
156	M200	Face horizontal	6.244	Lbyy			Lateral
157	M201	Face horizontal	6.244	Lbyy			Lateral
158	M202	Face horizontal	6.244	Lbyy			Lateral
159	M203	Face horizontal	6.244	Lbyy			Lateral
160	M204	Face horizontal	6.244	Lbyy			Lateral
161	M205	Face horizontal	6.244	Lbyy			Lateral
162	M206	Face horizontal	6.244	Lbyy			Lateral
163	M207	Face horizontal	6.244	Lbyy			Lateral
164	M208	Face horizontal	6.244	Lbyy			Lateral
165	M209	Face horizontal	6.244	Lbyy			Lateral
166	M210	Face horizontal	6.244	Lbyy			Lateral
167	M211	Face horizontal	6.244	Lbyy			Lateral
168	M212	Face horizontal	6.244	Lbyy			Lateral
169	M213	Face horizontal	6.244	Lbyy			Lateral
170	M214	Face horizontal	6.244	Lbyy			Lateral
171	M215	Face horizontal	6.244	Lbyy			Lateral
172	M216	Face horizontal	6.244	Lbyy			Lateral
173	M217	Face horizontal	6.244	Lbyy			Lateral
174	M218	Face horizontal	6.244	Lbyy			Lateral
175	M219	Face horizontal	6.244	Lbyy			Lateral
176	M220	Face horizontal	6.244	Lbyy			Lateral
177	M221	Face horizontal	6.244	Lbyy			Lateral
178	M222	Face horizontal	6.244	Lbyy			Lateral
179	M223	Face horizontal	6.244	Lbyy			Lateral
180	M224	Face horizontal	6.244	Lbyy			Lateral
181	M225	Face horizontal	6.244	Lbyy			Lateral
182	M226	Face horizontal	6.244	Lbyy			Lateral
183	M227	Face horizontal	6.244	Lbyy			Lateral
184	M228	Face horizontal	6.244	Lbyy			Lateral
185	M229	Face horizontal	6.244	Lbyy			Lateral
186	M230	Face horizontal	6.244	Lbyy			Lateral
187	M231	Face horizontal	6.244	Lbyy			Lateral
188	M232	Face horizontal	6.244	Lbyy			Lateral
189	M233	Face horizontal	6.244	Lbyy			Lateral
190	M234	Face horizontal	6.244	Lbyy			Lateral
191	M235	Face horizontal	6.244	Lbyy			Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
192	M236	Face horizontal	6.244	Lbyy			Lateral
193	M237	Face horizontal	6.244	Lbyy			Lateral
194	M238	Face horizontal	6.244	Lbyy			Lateral
195	M239	Face horizontal	6.244	Lbyy			Lateral
196	M240	Face horizontal	6.244	Lbyy			Lateral
197	M241	Face horizontal	6.244	Lbyy			Lateral
198	M242	Face horizontal	6.244	Lbyy			Lateral
199	M243	Face horizontal	6.244	Lbyy			Lateral
200	M244	Face horizontal	6.244	Lbyy			Lateral
201	M245	Face horizontal	6.244	Lbyy			Lateral
202	M246	Face horizontal	6.244	Lbyy			Lateral
203	M247	Face horizontal	6.244	Lbyy			Lateral
204	M248	Face horizontal	6.61	Lbyy			Lateral
205	M249	Face horizontal	6.244	Lbyy			Lateral
206	M250	Handrail	6.61	Lbyy			Lateral
207	M251	Face horizontal	6.244	Lbyy			Lateral
208	M252	Face horizontal	6.244	Lbyy			Lateral
209	M253	Face horizontal	6.244	Lbyy			Lateral
210	M254	Face horizontal	6.244	Lbyy			Lateral
211	M255	Face horizontal	6.244	Lbyy			Lateral
212	M256	Face horizontal	6.244	Lbyy			Lateral
213	M257	Face horizontal	6.244	Lbyy			Lateral
214	M258	Face horizontal	6.244	Lbyy			Lateral
215	M259	Face horizontal	6.244	Lbyy			Lateral
216	M260	Face horizontal	6.244	Lbyy			Lateral
217	M261	Face horizontal	6.244	Lbyy			Lateral
218	M262	Face horizontal	6.244	Lbyy			Lateral
219	M263	Face horizontal	6.244	Lbyy			Lateral
220	M264	Face horizontal	6.244	Lbyy			Lateral
221	M265	Face horizontal	6.244	Lbyy			Lateral
222	M266	Face horizontal	6.244	Lbyy			Lateral
223	M267	Face horizontal	6.244	Lbyy			Lateral
224	M268	Face horizontal	6.244	Lbyy			Lateral
225	M269	Face horizontal	6.244	Lbyy			Lateral
226	M270	Face horizontal	6.244	Lbyy			Lateral
227	M271	Face horizontal	6.244	Lbyy			Lateral
228	M272	Face horizontal	6.244	Lbyy			Lateral
229	M273	Face horizontal	6.244	Lbyy			Lateral
230	M274	Face horizontal	6.244	Lbyy			Lateral
231	M275	Face horizontal	6.244	Lbyy			Lateral
232	M276	Face horizontal	6.244	Lbyy			Lateral
233	M277	Face horizontal	6.244	Lbyy			Lateral
234	M278	Face horizontal	6.244	Lbyy			Lateral
235	M279	Face horizontal	6.244	Lbyy			Lateral
236	M280	Face horizontal	6.244	Lbyy			Lateral
237	M281	Face horizontal	6.244	Lbyy			Lateral
238	M282	Face horizontal	6.244	Lbyy			Lateral
239	M283	Face horizontal	6.244	Lbyy			Lateral
240	M284	Face horizontal	6.244	Lbyy			Lateral
241	M285	Face horizontal	6.244	Lbyy			Lateral
242	M286	Face horizontal	6.244	Lbyy			Lateral
243	M287	Face horizontal	6.244	Lbyy			Lateral
244	M288	Face horizontal	6.244	Lbyy			Lateral
245	M289	Face horizontal	6.244	Lbyy			Lateral
246	M290	Face horizontal	6.244	Lbyy			Lateral
247	M291	Face horizontal	6.244	Lbyy			Lateral
248	M292	Face horizontal	6.244	Lbyy			Lateral
249	M293	Face horizontal	6.244	Lbyy			Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
250	M294	Face horizontal	6.244	Lbyy			Lateral
251	M295	Face horizontal	6.244	Lbyy			Lateral
252	M296	Face horizontal	6.244	Lbyy			Lateral
253	M297	Face horizontal	6.244	Lbyy			Lateral
254	M298	Face horizontal	6.244	Lbyy			Lateral
255	M299A	Face horizontal	6.244	Lbyy			Lateral
256	M300A	Face horizontal	6.244	Lbyy			Lateral
257	M301	Face horizontal	6.244	Lbyy			Lateral
258	M302	Face horizontal	6.244	Lbyy			Lateral
259	M303	Face horizontal	6.244	Lbyy			Lateral
260	M304	Face horizontal	6.61	Lbyy			Lateral
261	M322	Face horizontal	6.244	Lbyy			Lateral
262	M323	Face horizontal	6.244	Lbyy			Lateral
263	M324	Face horizontal	6.244	Lbyy			Lateral
264	M325	Face horizontal	6.244	Lbyy			Lateral
265	M577	Face horizontal	4.373	Lbyy			Lateral
266	M326	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
267	M327	Plate Grating	23.85	Lbyy	0.65	0.65	Lateral
268	M328	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
269	M329	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
270	M330	Plate Grating	23.844	Lbyy	0.65	0.65	Lateral
271	M331	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
272	M332	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
273	M333	Plate Grating	23.839	Lbyy	0.65	0.65	Lateral
274	M334	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
275	M335	Plate Grating	23.848	Lbyy	0.65	0.65	Lateral
276	M336	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
277	M337	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
278	M338	Plate Grating	23.844	Lbyy	0.65	0.65	Lateral
279	M339	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
280	M340	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
281	M341	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
282	M342	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
283	M343	Plate Grating	23.849	Lbyy	0.65	0.65	Lateral
284	M344	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
285	M345	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
286	M346	Plate Grating	23.84	Lbyy	0.65	0.65	Lateral
287	M347	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral
288	M348	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
289	M349	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
290	M350	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
291	M351	Plate Grating	23.849	Lbyy	0.65	0.65	Lateral
292	M352	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
293	M353	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
294	M354	Plate Grating	23.846	Lbyy	0.65	0.65	Lateral
295	M355	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral
296	M356	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
297	M357	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
298	M358	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
299	M359	Plate Grating	23.849	Lbyy	0.65	0.65	Lateral
300	M360	Plate Grating	23.832	Lbyy	0.65	0.65	Lateral
301	M361	Plate Grating	23.843	Lbyy	0.65	0.65	Lateral
302	M362	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
303	M363	Plate Grating	23.851	Lbyy	0.65	0.65	Lateral
304	M364	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
305	M365	Plate Grating	23.836	Lbyy	0.65	0.65	Lateral
306	M366	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
307	M367	Plate Grating	23.851	Lbyy	0.65	0.65	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
308	M368	Plate Grating	23.829	Lbyy	0.65	0.65	Lateral
309	M369	Plate Grating	23.856	Lbyy	0.65	0.65	Lateral
310	M370	Plate Grating	23.841	Lbyy	0.65	0.65	Lateral
311	M371	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
312	M372	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral
313	M373	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
314	M374	Plate Grating	23.851	Lbyy	0.65	0.65	Lateral
315	M375	Plate Grating	23.843	Lbyy	0.65	0.65	Lateral
316	M376	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral
317	M377	Plate Grating	23.84	Lbyy	0.65	0.65	Lateral
318	M378	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
319	M379	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
320	M380	Plate Grating	23.851	Lbyy	0.65	0.65	Lateral
321	M381	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
322	M382	Plate Grating	23.836	Lbyy	0.65	0.65	Lateral
323	M383	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral
324	M384	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
325	M385	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
326	M386	Plate Grating	23.844	Lbyy	0.65	0.65	Lateral
327	M387	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
328	M388	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
329	M389	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
330	M390	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
331	M391	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
332	M392	Plate Grating	23.843	Lbyy	0.65	0.65	Lateral
333	M393	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
334	M394	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
335	M395	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
336	M396	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
337	M397	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
338	M398	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
339	M399	Plate Grating	23.836	Lbyy	0.65	0.65	Lateral
340	M400	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
341	M401	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
342	M402	Plate Grating	23.851	Lbyy	0.65	0.65	Lateral
343	M403	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
344	M404	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
345	M405	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
346	M406	Plate Grating	23.843	Lbyy	0.65	0.65	Lateral
347	M407	Plate Grating	23.851	Lbyy	0.65	0.65	Lateral
348	M408	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral
349	M409	Plate Grating	23.856	Lbyy	0.65	0.65	Lateral
350	M410	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
351	M411	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral
352	M412	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
353	M413	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral
354	M414	Plate Grating	23.84	Lbyy	0.65	0.65	Lateral
355	M415	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
356	M416	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
357	M417	Plate Grating	23.85	Lbyy	0.65	0.65	Lateral
358	M419	Plate Grating	23.849	Lbyy	0.65	0.65	Lateral
359	M421	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
360	M423	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
361	M425	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
362	M427	Plate Grating	23.844	Lbyy	0.65	0.65	Lateral
363	M429	Plate Grating	23.839	Lbyy	0.65	0.65	Lateral
364	M431	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
365	M433	Plate Grating	23.848	Lbyy	0.65	0.65	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
366	M435	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
367	M437	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
368	M439	Plate Grating	23.844	Lbyy	0.65	0.65	Lateral
369	M441	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
370	M443	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
371	M445	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
372	M447	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral
373	M449	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
374	M451	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
375	M453	Plate Grating	23.856	Lbyy	0.65	0.65	Lateral
376	M455	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
377	M456	Plate Grating	23.849	Lbyy	0.65	0.65	Lateral
378	M457	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
379	M459	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral
380	M461	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
381	M463	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
382	M465	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
383	M467	Plate Grating	23.849	Lbyy	0.65	0.65	Lateral
384	M469	Plate Grating	23.832	Lbyy	0.65	0.65	Lateral
385	M473	Plate Grating	23.843	Lbyy	0.65	0.65	Lateral
386	M474	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
387	M475	Plate Grating	23.836	Lbyy	0.65	0.65	Lateral
388	M476	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
389	M477	Plate Grating	23.851	Lbyy	0.65	0.65	Lateral
390	M478	Plate Grating	23.829	Lbyy	0.65	0.65	Lateral
391	M479	Plate Grating	23.841	Lbyy	0.65	0.65	Lateral
392	M480	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
393	M481	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
394	M482	Plate Grating	23.84	Lbyy	0.65	0.65	Lateral
395	M483	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
396	M484	Plate Grating	23.851	Lbyy	0.65	0.65	Lateral
397	M485	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
398	M486	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
399	M487	Plate Grating	23.844	Lbyy	0.65	0.65	Lateral
400	M488	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
401	M489	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
402	M490	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
403	M491	Plate Grating	23.843	Lbyy	0.65	0.65	Lateral
404	M492	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
405	M493	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
406	M494	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
407	M495	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
408	M496	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
409	M497	Plate Grating	23.836	Lbyy	0.65	0.65	Lateral
410	M498	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
411	M499	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
412	M500	Plate Grating	23.851	Lbyy	0.65	0.65	Lateral
413	M501	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
414	M502	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
415	M503	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
416	M504	Plate Grating	23.843	Lbyy	0.65	0.65	Lateral
417	M505	Plate Grating	23.851	Lbyy	0.65	0.65	Lateral
418	M506	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral
419	M507	Plate Grating	23.85	Lbyy	0.65	0.65	Lateral
420	M508	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
421	M509	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral
422	M510	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
423	M511	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
424	M512	Plate Grating	23.84	Lbyy	0.65	0.65	Lateral
425	M513	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
426	M514	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
427	M515	Plate Grating	23.85	Lbyy	0.65	0.65	Lateral
428	M516	Plate Grating	23.849	Lbyy	0.65	0.65	Lateral
429	M517	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
430	M518	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
431	M519	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
432	M520	Plate Grating	23.844	Lbyy	0.65	0.65	Lateral
433	M521	Plate Grating	23.839	Lbyy	0.65	0.65	Lateral
434	M522	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
435	M523	Plate Grating	23.848	Lbyy	0.65	0.65	Lateral
436	M524	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
437	M525	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
438	M526	Plate Grating	23.844	Lbyy	0.65	0.65	Lateral
439	M527	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
440	M528	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
441	M529	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
442	M530	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral
443	M531	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
444	M532	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
445	M533	Plate Grating	23.856	Lbyy	0.65	0.65	Lateral
446	M534	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
447	M535	Plate Grating	23.849	Lbyy	0.65	0.65	Lateral
448	M536	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
449	M537	Plate Grating	23.833	Lbyy	0.65	0.65	Lateral
450	M538	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
451	M539	Plate Grating	23.845	Lbyy	0.65	0.65	Lateral
452	M540	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
453	M541	Plate Grating	23.85	Lbyy	0.65	0.65	Lateral
454	M542	Plate Grating	23.832	Lbyy	0.65	0.65	Lateral
455	M543	Plate Grating	23.843	Lbyy	0.65	0.65	Lateral
456	M544	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
457	M545	Plate Grating	23.836	Lbyy	0.65	0.65	Lateral
458	M546	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
459	M547	Plate Grating	23.851	Lbyy	0.65	0.65	Lateral
460	M548	Plate Grating	23.829	Lbyy	0.65	0.65	Lateral
461	M549	Plate Grating	23.841	Lbyy	0.65	0.65	Lateral
462	M550	Plate Grating	23.837	Lbyy	0.65	0.65	Lateral
463	M551	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
464	M552	Plate Grating	23.84	Lbyy	0.65	0.65	Lateral
465	M553	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
466	M554	Plate Grating	23.851	Lbyy	0.65	0.65	Lateral
467	M555	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
468	M556	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
469	M557	Plate Grating	23.844	Lbyy	0.65	0.65	Lateral
470	M558	Plate Grating	23.842	Lbyy	0.65	0.65	Lateral
471	M559	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
472	M560	Plate Grating	23.835	Lbyy	0.65	0.65	Lateral
473	M561	Plate Grating	23.843	Lbyy	0.65	0.65	Lateral
474	M562	Plate Grating	23.834	Lbyy	0.65	0.65	Lateral
475	M563	Plate Grating	23.838	Lbyy	0.65	0.65	Lateral
476	M570	Mount Pipe	96	Lbyy			Lateral
477	M573	Mount Pipe	96	Lbyy			Lateral
478	M576	Mount Pipe	96	Lbyy			Lateral
479	M593	Mount Pipe	96	Lbyy			Lateral
480	M594	Mount Pipe	96	Lbyy			Lateral
481	M595	Mount Pipe	96	Lbyy			Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
482	M608	Mount Pipe	96	Lbyy			Lateral
483	M609	Mount Pipe	96	Lbyy			Lateral
484	M610	Mount Pipe	96	Lbyy			Lateral
485	M619	Standoff Arm	84				Lateral
486	M620	Standoff Arm	84				Lateral
487	PR5	PKBK	42.681	Lbyy			Lateral
488	PR6	PKBK	42.681	Lbyy			Lateral
489	PR11	PKBK	42.681	Lbyy			Lateral
490	PR12	PKBK	42.681	Lbyy			Lateral
491	PR17	PKBK	42.681	Lbyy			Lateral
492	PR18	PKBK	42.681	Lbyy			Lateral
493	M565	Standoff Tube	30	Lbyy			Lateral
494	M566	Standoff Tube	30	Lbyy			Lateral
495	M567	Standoff Tube	30	Lbyy			Lateral

Member Advanced Data

	Label	I Release	J Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
1	A1					Yes		None
2	M3					Yes		None
3	M4					Yes		None
4	M5					Yes	** NA **	None
5	M6					Yes	** NA **	None
6	M7					Yes		None
7	M8					Yes		None
8	M9					Yes	** NA **	None
9	M10					Yes	** NA **	None
10	M11					Yes		None
11	M12					Yes		None
12	M13					Yes	** NA **	None
13	M14					Yes	** NA **	None
14	M15					Yes		None
15	M16					Yes		None
16	M127					Yes	** NA **	None
17	M132					Yes	** NA **	None
18	M129					Yes		None
19	M299					Yes	** NA **	None
20	M300					Yes	** NA **	None
21	M471					Yes	** NA **	None
22	M472					Yes	** NA **	None
23	M530A					Yes		None
24	M531A					Yes		None
25	M532A					Yes		None
26	M533A					Yes		None
27	M534A					Yes		None
28	M535A					Yes		None
29	M536A					Yes		None
30	M537A					Yes		None
31	M538A					Yes		None
32	M539A					Yes		None
33	M540A					Yes		None
34	M541A					Yes		None
35	M542A				2.375	Yes	Default	None
36	M515A			2.375		Yes	Default	None
37	M516A					Yes		None
38	M517A					Yes		None
39	M518A					Yes		None
40	M519A					Yes		None
41	M520A					Yes		None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
42	M521A					Yes		None
43	M522A					Yes		None
44	M523A					Yes		None
45	M524A					Yes		None
46	M525A					Yes		None
47	M526A					Yes		None
48	M527A					Yes		None
49	M528A					Yes		None
50	M417A					Yes		None
51	M418					Yes		None
52	M419A					Yes		None
53	M420					Yes		None
54	M421A					Yes		None
55	M422					Yes		None
56	M423A					Yes		None
57	M424					Yes		None
58	M425A					Yes		None
59	M426					Yes		None
60	M427A					Yes		None
61	M428					Yes		None
62	M429A					Yes		None
63	M430				2.375	Yes	Default	None
64	M431A			2.375		Yes	Default	None
65	M432					Yes		None
66	M433A					Yes		None
67	M434					Yes		None
68	M435A					Yes		None
69	M436					Yes		None
70	M437A					Yes		None
71	M438					Yes		None
72	M439A					Yes		None
73	M440					Yes		None
74	M441A					Yes		None
75	M442					Yes		None
76	M443A					Yes		None
77	M444					Yes		None
78	M445A					Yes		None
79	M446					Yes		None
80	M447A					Yes		None
81	M448					Yes		None
82	M449A					Yes		None
83	M450					Yes		None
84	M451A					Yes		None
85	M452					Yes		None
86	M453A					Yes		None
87	M454					Yes		None
88	M455A					Yes		None
89	M457A					Yes		None
90	M458				2.375	Yes	Default	None
91	M459A			2.375		Yes	Default	None
92	M460					Yes		None
93	M461A					Yes		None
94	M462					Yes		None
95	M463A					Yes		None
96	M464					Yes		None
97	M465A					Yes		None
98	M466					Yes		None
99	M467A					Yes		None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
100	M468					Yes		None
101	M469A					Yes		None
102	M470					Yes		None
103	M471A					Yes		None
104	M472A					Yes		None
105	M139					Yes		None
106	M140					Yes		None
107	M141					Yes		None
108	M142					Yes		None
109	M143					Yes		None
110	M144					Yes		None
111	M145					Yes		None
112	M146					Yes		None
113	M147					Yes		None
114	M148					Yes		None
115	M149					Yes		None
116	M150					Yes		None
117	M151				2.375	Yes	Default	None
118	M152			2.375		Yes	Default	None
119	M153					Yes		None
120	M154					Yes		None
121	M155					Yes		None
122	M156					Yes		None
123	M157					Yes		None
124	M158					Yes		None
125	M159					Yes		None
126	M160					Yes		None
127	M161					Yes		None
128	M162					Yes		None
129	M163					Yes		None
130	M164					Yes		None
131	M165					Yes		None
132	M166					Yes		None
133	M167					Yes		None
134	M168					Yes		None
135	M169					Yes		None
136	M170					Yes		None
137	M171					Yes		None
138	M174					Yes		None
139	M175					Yes		None
140	M178					Yes		None
141	M179					Yes		None
142	M180					Yes		None
143	M181					Yes		None
144	M182					Yes		None
145	M183					Yes		None
146	M184					Yes		None
147	M185A					Yes		None
148	M186A					Yes		None
149	M187					Yes		None
150	M188					Yes		None
151	M189					Yes		None
152	M190					Yes		None
153	M191					Yes		None
154	M192		OOOOOX			Yes	Default	None
155	M193					Yes		None
156	M194					Yes		None
157	M195					Yes		None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
158	M196					Yes		None
159	M197					Yes		None
160	M198					Yes		None
161	M199					Yes		None
162	M200					Yes		None
163	M201					Yes		None
164	M202					Yes		None
165	M203					Yes		None
166	M204					Yes		None
167	M205					Yes		None
168	M206					Yes		None
169	M207				2.375	Yes	Default	None
170	M208			2.375		Yes	Default	None
171	M209					Yes		None
172	M210					Yes		None
173	M211					Yes		None
174	M212					Yes		None
175	M213					Yes		None
176	M214					Yes		None
177	M215					Yes		None
178	M216					Yes		None
179	M217					Yes		None
180	M218					Yes		None
181	M219					Yes		None
182	M220					Yes		None
183	M221					Yes		None
184	M222					Yes		None
185	M223					Yes		None
186	M224					Yes		None
187	M225					Yes		None
188	M226					Yes		None
189	M227					Yes		None
190	M228					Yes		None
191	M229					Yes		None
192	M230					Yes		None
193	M231					Yes		None
194	M232					Yes		None
195	M233					Yes		None
196	M234					Yes		None
197	M235					Yes		None
198	M236					Yes		None
199	M237					Yes		None
200	M238					Yes		None
201	M239					Yes		None
202	M240					Yes		None
203	M241					Yes		None
204	M242					Yes		None
205	M243					Yes		None
206	M244					Yes		None
207	M245					Yes		None
208	M246					Yes		None
209	M247					Yes		None
210	M248		OOOOOX			Yes	Default	None
211	M249					Yes		None
212	M250					Yes		None
213	M251					Yes		None
214	M252					Yes		None
215	M253					Yes		None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
216	M254					Yes		None
217	M255					Yes		None
218	M256					Yes		None
219	M257					Yes		None
220	M258					Yes		None
221	M259					Yes		None
222	M260					Yes		None
223	M261					Yes		None
224	M262					Yes		None
225	M263				2.375	Yes	Default	None
226	M264			2.375		Yes	Default	None
227	M265					Yes		None
228	M266					Yes		None
229	M267					Yes		None
230	M268					Yes		None
231	M269					Yes		None
232	M270					Yes		None
233	M271					Yes		None
234	M272					Yes		None
235	M273					Yes		None
236	M274					Yes		None
237	M275					Yes		None
238	M276					Yes		None
239	M277					Yes		None
240	M278					Yes		None
241	M279					Yes		None
242	M280					Yes		None
243	M281					Yes		None
244	M282					Yes		None
245	M283					Yes		None
246	M284					Yes		None
247	M285					Yes		None
248	M286					Yes		None
249	M287					Yes		None
250	M288					Yes		None
251	M289					Yes		None
252	M290					Yes		None
253	M291					Yes		None
254	M292					Yes		None
255	M293					Yes		None
256	M294					Yes		None
257	M295					Yes		None
258	M296					Yes		None
259	M297					Yes		None
260	M298					Yes		None
261	M299A					Yes		None
262	M300A					Yes		None
263	M301					Yes		None
264	M302					Yes		None
265	M303					Yes		None
266	M304		OOOOOX			Yes	Default	None
267	M322					Yes	Default	None
268	M323					Yes	Default	None
269	M324					Yes	Default	None
270	M325					Yes	Default	None
271	M577					Yes	Default	None
272	M326			1.75	1.75	Yes	** NA **	None
273	M327			1.75	1.75	Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
274	M328			1.75	1.75	Yes	** NA **	None
275	M329			1.75	1.75	Yes	** NA **	None
276	M330			1.75	1.75	Yes	** NA **	None
277	M331			1.75	1.75	Yes	** NA **	None
278	M332			1.75	1.75	Yes	** NA **	None
279	M333			1.75	1.75	Yes	** NA **	None
280	M334			1.75	1.75	Yes	** NA **	None
281	M335			1.75	1.75	Yes	** NA **	None
282	M336			1.75	1.75	Yes	** NA **	None
283	M337			1.75	1.75	Yes	** NA **	None
284	M338			1.75	1.75	Yes	** NA **	None
285	M339			1.75	1.75	Yes	** NA **	None
286	M340			1.75	1.75	Yes	** NA **	None
287	M341			1.75	1.75	Yes	** NA **	None
288	M342			1.75	1.75	Yes	** NA **	None
289	M343			1.75	1.75	Yes	** NA **	None
290	M344			1.75	1.75	Yes	** NA **	None
291	M345			1.75	1.75	Yes	** NA **	None
292	M346			1.75	1.75	Yes	** NA **	None
293	M347			1.75	1.75	Yes	** NA **	None
294	M348			1.75	1.75	Yes	** NA **	None
295	M349			1.75	1.75	Yes	** NA **	None
296	M350			1.75	1.75	Yes	** NA **	None
297	M351			1.75	1.75	Yes	** NA **	None
298	M352			1.75	1.75	Yes	** NA **	None
299	M353			1.75	1.75	Yes	** NA **	None
300	M354			1.75	1.75	Yes	** NA **	None
301	M355			1.75	1.75	Yes	** NA **	None
302	M356			1.75	1.75	Yes	** NA **	None
303	M357			1.75	1.75	Yes	** NA **	None
304	M358			1.75	1.75	Yes	** NA **	None
305	M359			1.75	1.75	Yes	** NA **	None
306	M360			1.75	1.75	Yes	** NA **	None
307	M361			1.75	1.75	Yes	** NA **	None
308	M362			1.75	1.75	Yes	** NA **	None
309	M363			1.75	1.75	Yes	** NA **	None
310	M364			1.75	1.75	Yes	** NA **	None
311	M365			1.75	1.75	Yes	** NA **	None
312	M366			1.75	1.75	Yes	** NA **	None
313	M367			1.75	1.75	Yes	** NA **	None
314	M368			1.75	1.75	Yes	** NA **	None
315	M369			1.75	1.75	Yes	** NA **	None
316	M370			1.75	1.75	Yes	** NA **	None
317	M371			1.75	1.75	Yes	** NA **	None
318	M372			1.75	1.75	Yes	** NA **	None
319	M373			1.75	1.75	Yes	** NA **	None
320	M374			1.75	1.75	Yes	** NA **	None
321	M375			1.75	1.75	Yes	** NA **	None
322	M376			1.75	1.75	Yes	** NA **	None
323	M377			1.75	1.75	Yes	** NA **	None
324	M378			1.75	1.75	Yes	** NA **	None
325	M379			1.75	1.75	Yes	** NA **	None
326	M380			1.75	1.75	Yes	** NA **	None
327	M381			1.75	1.75	Yes	** NA **	None
328	M382			1.75	1.75	Yes	** NA **	None
329	M383			1.75	1.75	Yes	** NA **	None
330	M384			1.75	1.75	Yes	** NA **	None
331	M385			1.75	1.75	Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
332	M386			1.75	1.75	Yes	** NA **	None
333	M387			1.75	1.75	Yes	** NA **	None
334	M388			1.75	1.75	Yes	** NA **	None
335	M389			1.75	1.75	Yes	** NA **	None
336	M390			1.75	1.75	Yes	** NA **	None
337	M391			1.75	1.75	Yes	** NA **	None
338	M392			1.75	1.75	Yes	** NA **	None
339	M393			1.75	1.75	Yes	** NA **	None
340	M394			1.75	1.75	Yes	** NA **	None
341	M395			1.75	1.75	Yes	** NA **	None
342	M396			1.75	1.75	Yes	** NA **	None
343	M397			1.75	1.75	Yes	** NA **	None
344	M398			1.75	1.75	Yes	** NA **	None
345	M399			1.75	1.75	Yes	** NA **	None
346	M400			1.75	1.75	Yes	** NA **	None
347	M401			1.75	1.75	Yes	** NA **	None
348	M402			1.75	1.75	Yes	** NA **	None
349	M403			1.75	1.75	Yes	** NA **	None
350	M404			1.75	1.75	Yes	** NA **	None
351	M405			1.75	1.75	Yes	** NA **	None
352	M406			1.75	1.75	Yes	** NA **	None
353	M407			1.75	1.75	Yes	** NA **	None
354	M408			1.75	1.75	Yes	** NA **	None
355	M409			1.75	1.75	Yes	** NA **	None
356	M410			1.75	1.75	Yes	** NA **	None
357	M411			1.75	1.75	Yes	** NA **	None
358	M412			1.75	1.75	Yes	** NA **	None
359	M413			1.75	1.75	Yes	** NA **	None
360	M414			1.75	1.75	Yes	** NA **	None
361	M415			1.75	1.75	Yes	** NA **	None
362	M416			1.75	1.75	Yes	** NA **	None
363	M417			1.75	1.75	Yes	** NA **	None
364	M419			1.75	1.75	Yes	** NA **	None
365	M421			1.75	1.75	Yes	** NA **	None
366	M423			1.75	1.75	Yes	** NA **	None
367	M425			1.75	1.75	Yes	** NA **	None
368	M427			1.75	1.75	Yes	** NA **	None
369	M429			1.75	1.75	Yes	** NA **	None
370	M431			1.75	1.75	Yes	** NA **	None
371	M433			1.75	1.75	Yes	** NA **	None
372	M435			1.75	1.75	Yes	** NA **	None
373	M437			1.75	1.75	Yes	** NA **	None
374	M439			1.75	1.75	Yes	** NA **	None
375	M441			1.75	1.75	Yes	** NA **	None
376	M443			1.75	1.75	Yes	** NA **	None
377	M445			1.75	1.75	Yes	** NA **	None
378	M447			1.75	1.75	Yes	** NA **	None
379	M449			1.75	1.75	Yes	** NA **	None
380	M451			1.75	1.75	Yes	** NA **	None
381	M453			1.75	1.75	Yes	** NA **	None
382	M455			1.75	1.75	Yes	** NA **	None
383	M456			1.75	1.75	Yes	** NA **	None
384	M457			1.75	1.75	Yes	** NA **	None
385	M459			1.75	1.75	Yes	** NA **	None
386	M461			1.75	1.75	Yes	** NA **	None
387	M463			1.75	1.75	Yes	** NA **	None
388	M465			1.75	1.75	Yes	** NA **	None
389	M467			1.75	1.75	Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
390	M469			1.75	1.75	Yes	** NA **	None
391	M473			1.75	1.75	Yes	** NA **	None
392	M474			1.75	1.75	Yes	** NA **	None
393	M475			1.75	1.75	Yes	** NA **	None
394	M476			1.75	1.75	Yes	** NA **	None
395	M477			1.75	1.75	Yes	** NA **	None
396	M478			1.75	1.75	Yes	** NA **	None
397	M479			1.75	1.75	Yes	** NA **	None
398	M480			1.75	1.75	Yes	** NA **	None
399	M481			1.75	1.75	Yes	** NA **	None
400	M482			1.75	1.75	Yes	** NA **	None
401	M483			1.75	1.75	Yes	** NA **	None
402	M484			1.75	1.75	Yes	** NA **	None
403	M485			1.75	1.75	Yes	** NA **	None
404	M486			1.75	1.75	Yes	** NA **	None
405	M487			1.75	1.75	Yes	** NA **	None
406	M488			1.75	1.75	Yes	** NA **	None
407	M489			1.75	1.75	Yes	** NA **	None
408	M490			1.75	1.75	Yes	** NA **	None
409	M491			1.75	1.75	Yes	** NA **	None
410	M492			1.75	1.75	Yes	** NA **	None
411	M493			1.75	1.75	Yes	** NA **	None
412	M494			1.75	1.75	Yes	** NA **	None
413	M495			1.75	1.75	Yes	** NA **	None
414	M496			1.75	1.75	Yes	** NA **	None
415	M497			1.75	1.75	Yes	** NA **	None
416	M498			1.75	1.75	Yes	** NA **	None
417	M499			1.75	1.75	Yes	** NA **	None
418	M500			1.75	1.75	Yes	** NA **	None
419	M501			1.75	1.75	Yes	** NA **	None
420	M502			1.75	1.75	Yes	** NA **	None
421	M503			1.75	1.75	Yes	** NA **	None
422	M504			1.75	1.75	Yes	** NA **	None
423	M505			1.75	1.75	Yes	** NA **	None
424	M506			1.75	1.75	Yes	** NA **	None
425	M507			1.75	1.75	Yes	** NA **	None
426	M508			1.75	1.75	Yes	** NA **	None
427	M509			1.75	1.75	Yes	** NA **	None
428	M510			1.75	1.75	Yes	** NA **	None
429	M511			1.75	1.75	Yes	** NA **	None
430	M512			1.75	1.75	Yes	** NA **	None
431	M513			1.75	1.75	Yes	** NA **	None
432	M514			1.75	1.75	Yes	** NA **	None
433	M515			1.75	1.75	Yes	** NA **	None
434	M516			1.75	1.75	Yes	** NA **	None
435	M517			1.75	1.75	Yes	** NA **	None
436	M518			1.75	1.75	Yes	** NA **	None
437	M519			1.75	1.75	Yes	** NA **	None
438	M520			1.75	1.75	Yes	** NA **	None
439	M521			1.75	1.75	Yes	** NA **	None
440	M522			1.75	1.75	Yes	** NA **	None
441	M523			1.75	1.75	Yes	** NA **	None
442	M524			1.75	1.75	Yes	** NA **	None
443	M525			1.75	1.75	Yes	** NA **	None
444	M526			1.75	1.75	Yes	** NA **	None
445	M527			1.75	1.75	Yes	** NA **	None
446	M528			1.75	1.75	Yes	** NA **	None
447	M529			1.75	1.75	Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
448	M530			1.75	1.75	Yes	** NA **	None
449	M531			1.75	1.75	Yes	** NA **	None
450	M532			1.75	1.75	Yes	** NA **	None
451	M533			1.75	1.75	Yes	** NA **	None
452	M534			1.75	1.75	Yes	** NA **	None
453	M535			1.75	1.75	Yes	** NA **	None
454	M536			1.75	1.75	Yes	** NA **	None
455	M537			1.75	1.75	Yes	** NA **	None
456	M538			1.75	1.75	Yes	** NA **	None
457	M539			1.75	1.75	Yes	** NA **	None
458	M540			1.75	1.75	Yes	** NA **	None
459	M541			1.75	1.75	Yes	** NA **	None
460	M542			1.75	1.75	Yes	** NA **	None
461	M543			1.75	1.75	Yes	** NA **	None
462	M544			1.75	1.75	Yes	** NA **	None
463	M545			1.75	1.75	Yes	** NA **	None
464	M546			1.75	1.75	Yes	** NA **	None
465	M547			1.75	1.75	Yes	** NA **	None
466	M548			1.75	1.75	Yes	** NA **	None
467	M549			1.75	1.75	Yes	** NA **	None
468	M550			1.75	1.75	Yes	** NA **	None
469	M551			1.75	1.75	Yes	** NA **	None
470	M552			1.75	1.75	Yes	** NA **	None
471	M553			1.75	1.75	Yes	** NA **	None
472	M554			1.75	1.75	Yes	** NA **	None
473	M555			1.75	1.75	Yes	** NA **	None
474	M556			1.75	1.75	Yes	** NA **	None
475	M557			1.75	1.75	Yes	** NA **	None
476	M558			1.75	1.75	Yes	** NA **	None
477	M559			1.75	1.75	Yes	** NA **	None
478	M560			1.75	1.75	Yes	** NA **	None
479	M561			1.75	1.75	Yes	** NA **	None
480	M562			1.75	1.75	Yes	** NA **	None
481	M563			1.75	1.75	Yes	** NA **	None
482	M568					Yes	** NA **	None
483	M569					Yes	** NA **	None
484	M570					Yes	** NA **	None
485	M571					Yes	** NA **	None
486	M572					Yes	** NA **	None
487	M573					Yes	** NA **	None
488	M574					Yes	** NA **	None
489	M575					Yes	** NA **	None
490	M576					Yes	** NA **	None
491	M564					Yes	** NA **	None
492	M578					Yes	** NA **	None
493	M579					Yes	** NA **	None
494	M580					Yes	** NA **	None
495	M581					Yes	** NA **	None
496	M582					Yes	** NA **	None
497	M583					Yes	** NA **	None
498	M584					Yes	** NA **	None
499	M585					Yes	** NA **	None
500	M586					Yes	** NA **	None
501	M587					Yes	** NA **	None
502	M588					Yes	** NA **	None
503	M589					Yes	** NA **	None
504	M590					Yes	** NA **	None
505	M591					Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
506	M592					Yes	** NA **	None
507	M593					Yes	** NA **	None
508	M594					Yes	** NA **	None
509	M595					Yes	** NA **	None
510	M596					Yes	** NA **	None
511	M597					Yes	** NA **	None
512	M598					Yes	** NA **	None
513	M599					Yes	** NA **	None
514	M600					Yes	** NA **	None
515	M601					Yes	** NA **	None
516	M602					Yes	** NA **	None
517	M603					Yes	** NA **	None
518	M604					Yes	** NA **	None
519	M605					Yes	** NA **	None
520	M606					Yes	** NA **	None
521	M607					Yes	** NA **	None
522	M608					Yes	** NA **	None
523	M609					Yes	** NA **	None
524	M610					Yes	** NA **	None
525	M611					Yes	** NA **	None
526	M612					Yes	** NA **	None
527	M613					Yes	** NA **	None
528	M614					Yes	** NA **	None
529	M615					Yes	** NA **	None
530	M616					Yes	** NA **	None
531	M617					Yes	** NA **	None
532	M618					Yes	** NA **	None
533	M619					Yes	** NA **	None
534	M620					Yes	** NA **	None
535	PR1					Yes	** NA **	None
536	PR2					Yes	** NA **	None
537	PR3					Yes	** NA **	None
538	PR4					Yes	** NA **	None
539	PR5	BenPIN	BenPIN			Yes	** NA **	None
540	PR6	BenPIN	BenPIN			Yes	** NA **	None
541	PR7					Yes	** NA **	None
542	PR8					Yes	** NA **	None
543	PR9					Yes	** NA **	None
544	PR10					Yes	** NA **	None
545	PR11	BenPIN	BenPIN			Yes	** NA **	None
546	PR12	BenPIN	BenPIN			Yes	** NA **	None
547	PR13					Yes	** NA **	None
548	PR14					Yes	** NA **	None
549	PR15					Yes	** NA **	None
550	PR16					Yes	** NA **	None
551	PR17	BenPIN	BenPIN			Yes	** NA **	None
552	PR18	BenPIN	BenPIN			Yes	** NA **	None
553	M565					Yes	Default	None
554	M566					Yes	Default	None
555	M567					Yes	Default	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	P5	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	P21	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	P13	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N853	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Node Boundary Conditions (Continued)

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]
6 N867	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 N2	max	2156.844	3	1774.506	15	117.275	3	790.422	72	1507.428	27	3904.558	16
	min	-5817.438	11	-1761.603	7	-1847.183	27	-238.692	112	-96.514	3	-3897.672	8
3 P5	max	4438.323	27	81.785	15	4669.175	27	146.885	9	-102.429	3	142.877	16
	min	378.745	3	-81.77	7	364.193	3	-131.359	17	-1313.205	27	-156.787	8
5 N867	max	3553.311	18	5281.818	15	117.251	8	1215.13	33	119.259	7	3904.715	6
	min	-1706.282	10	-2114.049	7	-1847.155	32	-108.942	9	-941.958	31	-3897.83	14
7 P13	max	-189.392	14	3843.811	22	4669.163	22	1129.288	23	690.137	20	142.886	11
	min	-2218.947	22	328.024	14	364.222	14	86.47	14	-14.036	12	-156.795	3
8 P21	max	-189.387	8	-328.04	8	4669.132	32	-85.044	7	657.682	34	142.874	6
	min	-2219.35	32	-3843.544	32	364.234	8	-1148.453	31	-14.206	10	-156.783	14
11 N853	max	3737.342	4	1930.663	15	117.269	14	99.967	13	153.111	15	3905.028	11
	min	-1912.864	12	-5111.613	7	-1847.175	22	-1407.002	21	-627.041	7	-3898.16	3
13 Totals:	max	6883.124	3	6882.974	15	7939.445	23						
	min	-6883.116	11	-6882.972	7	2598.836	64						

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 M8	PL4.5x0.375	0.613	23.85	3	0.052	23.85	z	3	7853.795	54675	427.148	5125.783	2.496	H1-1b	
2 M4	PL4.5x0.375	0.613	23.85	8	0.057	5.9	y	67	7853.795	54675	427.148	5125.783	2.496	H1-1b	
3 M12	PL4.5x0.375	0.613	23.85	14	0.052	23.85	z	14	7853.795	54675	427.148	5125.783	2.496	H1-1b	
4 M7	PL4.5x0.375	0.601	23.85	3	0.05	23.85	z	3	7853.795	54675	427.148	5125.783	1.378	H1-1b	
5 M3	PL4.5x0.375	0.601	23.85	8	0.05	23.85	z	8	7853.795	54675	427.148	5125.783	1.378	H1-1b	
6 M11	PL4.5x0.375	0.601	23.85	14	0.05	23.85	z	14	7853.795	54675	427.148	5125.783	1.378	H1-1b	
7 M573	PIPE 2.0	0.572	35.874	11	0.088	35.874	5	14916.096	32130	1871.625	1871.625	1.847	H1-1b		
8 M594	PIPE 2.0	0.572	35.874	6	0.086	35.874	15	14916.096	32130	1871.625	1871.625	1.847	H1-1b		
9 M609	PIPE 2.0	0.572	35.874	16	0.086	35.874	10	14916.096	32130	1871.625	1871.625	1.847	H1-1b		
10 M542A	PIPE 3.0 SCH10	0.376	1.869	17	0.1	1.869	17	48158.667	48165.894	4320.238	4320.238	1.035	H1-1b		
11 M430	PIPE 3.0 SCH10	0.372	1.869	12	0.1	1.869	11	48158.667	48165.894	4320.238	4320.238	1.034	H1-1b		
12 M458	PIPE 3.0 SCH10	0.372	1.869	7	0.1	1.869	6	48158.667	48165.894	4320.238	4320.238	1.034	H1-1b		
13 M515A	PIPE 3.0 SCH10	0.345	0	5	0.102	0	11	48156.829	48165.894	4320.238	4320.238	1.038	H1-1b		
14 M431A	PIPE 3.0 SCH10	0.338	0	15	0.102	0	6	48156.829	48165.894	4320.238	4320.238	1.038	H1-1b		
15 M459A	PIPE 3.0 SCH10	0.338	0	10	0.102	0	16	48156.829	48165.894	4320.238	4320.238	1.038	H1-1b		
16 M541A	PIPE 3.0 SCH10	0.335	4.487	17	0.093	4.487	17	48124.259	48165.894	4320.238	4320.238	1.095	H1-1b		
17 M429A	PIPE 3.0 SCH10	0.33	4.487	12	0.092	4.487	11	48124.259	48165.894	4320.238	4320.238	1.092	H1-1b		
18 M457A	PIPE 3.0 SCH10	0.33	4.601	7	0.092	4.601	6	48122.116	48165.894	4320.238	4320.238	1.094	H1-1b		
19 M500	PL0.75X0.1875	0.329	20.351	7	0.007	0	y	29	531.91	4556.25	17.798	71.191	2.059	H1-1a	
20 M402	PL0.75X0.1875	0.329	20.351	12	0.007	0	y	19	531.91	4556.25	17.798	71.191	2.059	H1-1a	
21 M541	PL0.75X0.1875	0.308	0	5	0.007	0	y	30	531.969	4556.25	17.798	71.191	1.999	H1-1a	
22 M516A	PIPE 3.0 SCH10	0.306	0	5	0.095	0	11	48124.259	48165.894	4320.238	4320.238	1.088	H1-1b		
23 M540	PL0.75X0.1875	0.306	0	5	0.008	0	y	30	532.586	4556.25	17.798	71.191	2.063	H1-1a	
24 M358	PL0.75X0.1875	0.301	0	16	0.009	0	y	73	532.82	4556.25	17.798	71.191	2.035	H1-1a	
25 M432	PIPE 3.0 SCH10	0.299	0	15	0.095	0	6	48124.259	48165.894	4320.238	4320.238	1.091	H1-1b		
26 M359	PL0.75X0.1875	0.299	0	15	0.008	0	y	73	532.041	4556.25	17.798	71.191	2.25	H1-1a	
27 M460	PIPE 3.0 SCH10	0.299	0	10	0.095	0	16	48124.259	48165.894	4320.238	4320.238	1.091	H1-1b		
28 M467	PL0.75X0.1875	0.298	0	10	0.007	0	y	19	532.041	4556.25	17.798	71.191	2.25	H1-1a	
29 M465	PL0.75X0.1875	0.298	0	11	0.008	0	y	19	532.82	4556.25	17.798	71.191	2.035	H1-1a	
30 M357	PL0.75X0.1875	0.295	0	16	0.01	0	y	73	532.642	4556.25	17.798	71.191	2.07	H1-1a	
31 M463	PL0.75X0.1875	0.289	0	11	0.008	0	y	19	532.642	4556.25	17.798	71.191	2.07	H1-1a	
32 M539	PL0.75X0.1875	0.289	0	6	0.008	0	y	30	532.247	4556.25	17.798	71.191	2.069	H1-1a	
33 M396	PL0.75X0.1875	0.284	0	17	0.004	0	y	8	532.357	4556.25	17.798	71.191	2.005	H1-1a	
34 M356	PL0.75X0.1875	0.273	0	17	0.01	0	y	73	532.401	4556.25	17.798	71.191	2.061	H1-1a	
35 M494	PL0.75X0.1875	0.265	0	11	0.004	0	y	3	532.357	4556.25	17.798	71.191	1.999	H1-1a	
36 M394	PL0.75X0.1875	0.264	0	6	0.005	0	y	110	532.357	4556.25	17.798	71.191	1.999	H1-1a	

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	
37	M538	PL0.75X0.1875	0.257	20.342	7	0.008	0	y	30	532.401	4556.25	17.798	71.191	2.016	H1-1a
38	M461	PL0.75X0.1875	0.257	20.342	12	0.008	0	y	19	532.401	4556.25	17.798	71.191	2.016	H1-1a
39	M540A	PIPE 3.0 SCH10	0.252	4.487	17	0.071	4.487		11	48124.259	48165.894	4320.238	4320.238	1.114	H1-1b
40	M151	PIPE 3.0 SCH10	0.252	3.869	26	0.139	3.869		31	48134.927	48165.894	4320.238	4320.238	1.15	H1-1b
41	M207	PIPE 3.0 SCH10	0.252	3.869	20	0.139	3.869		26	48134.927	48165.894	4320.238	4320.238	1.15	H1-1b
42	M263	PIPE 3.0 SCH10	0.252	3.869	31	0.139	3.869		21	48134.927	48165.894	4320.238	4320.238	1.15	H1-1b
43	A1	HSS4X4X6	0.248	31.832	27	0.081	31.832	y	73	158769.041	197892	22045.5	22045.5	2.826	H1-1b
44	M619	HSS4X4X6	0.248	31.832	22	0.066	31.832	y	19	158769.041	197892	22045.5	22045.5	2.826	H1-1b
45	M620	HSS4X4X6	0.248	31.832	32	0.066	31.832	y	30	158769.041	197892	22045.5	22045.5	2.826	H1-1b
46	M428	PIPE 3.0 SCH10	0.242	4.487	12	0.071	4.487		6	48124.259	48165.894	4320.238	4320.238	1.112	H1-1b
47	M577	PIPE 3.0 SCH10	0.24	4.373	7	0.071	4.373		16	48126.354	48165.894	4320.238	4320.238	1.109	H1-1b
48	M517A	PIPE 3.0 SCH10	0.237	0	5	0.078	0		11	48124.259	48165.894	4320.238	4320.238	1.101	H1-1b
49	M300	PIPE 3.0 SCH10	0.235	0	4	0.07	36		6	45557.813	48165.894	4320.238	4320.238	2.248	H1-1b
50	M132	PIPE 3.0 SCH10	0.235	0	10	0.07	36		11	45557.813	48165.894	4320.238	4320.238	2.248	H1-1b
51	M472	PIPE 3.0 SCH10	0.235	0	15	0.07	36		16	45557.813	48165.894	4320.238	4320.238	2.248	H1-1b
52	M425	PL0.75X0.1875	0.231	20.335	12	0.014	0	y	24	532.756	4556.25	17.798	71.191	2.134	H1-1b
53	M519	PL0.75X0.1875	0.231	20.335	7	0.014	0	y	19	532.756	4556.25	17.798	71.191	2.134	H1-1b
54	M344	PL0.75X0.1875	0.231	20.335	18	0.014	0	y	29	532.756	4556.25	17.798	71.191	2.134	H1-1b
55	M433A	PIPE 3.0 SCH10	0.228	0	7	0.08	0		5	48124.259	48165.894	4320.238	4320.238	1.054	H1-1b
56	M461A	PIPE 3.0 SCH10	0.228	0	18	0.078	0		16	48124.259	48165.894	4320.238	4320.238	1.054	H1-1b
57	M419	PL0.75X0.1875	0.226	20.349	12	0.014	0	y	24	532.033	4556.25	17.798	71.191	2.137	H1-1b
58	M516	PL0.75X0.1875	0.226	20.349	7	0.014	0	y	19	532.033	4556.25	17.798	71.191	2.137	H1-1b
59	M343	PL0.75X0.1875	0.226	20.349	18	0.014	0	y	29	532.033	4556.25	17.798	71.191	2.137	H1-1b
60	M264	PIPE 3.0 SCH10	0.225	0	18	0.15	0		26	48134.927	48165.894	4320.238	4320.238	1.126	H1-1b
61	M152	PIPE 3.0 SCH10	0.225	0	12	0.15	0		21	48134.927	48165.894	4320.238	4320.238	1.126	H1-1b
62	M208	PIPE 3.0 SCH10	0.225	0	7	0.15	0		31	48134.927	48165.894	4320.238	4320.238	1.126	H1-1b
63	M404	PL0.75X0.1875	0.224	20.337	12	0.013	0	y	24	532.641	4556.25	17.798	71.191	2.13	H1-1b
64	M502	PL0.75X0.1875	0.224	20.337	7	0.013	0	y	19	532.641	4556.25	17.798	71.191	2.13	H1-1b
65	M345	PL0.75X0.1875	0.224	20.337	18	0.013	0	y	29	532.641	4556.25	17.798	71.191	2.13	H1-1b
66	M595	PIPE 2.0	0.217	71.747	13	0.073	71.747		4	14916.096	32130	1871.625	1871.625	1.92	H1-1b
67	M576	PIPE 2.0	0.217	71.747	3	0.074	71.747		10	14916.096	32130	1871.625	1871.625	2.173	H1-1b
68	M610	PIPE 2.0	0.217	71.747	8	0.074	71.747		15	14916.096	32130	1871.625	1871.625	2.173	H1-1b
69	M445	PL0.75X0.1875	0.209	20.334	12	0.014	0	y	24	532.782	4556.25	17.798	71.191	2.135	H1-1b
70	M529	PL0.75X0.1875	0.209	20.334	7	0.014	0	y	19	532.782	4556.25	17.798	71.191	2.135	H1-1b
71	M342	PL0.75X0.1875	0.208	20.334	18	0.014	0	y	29	532.782	4556.25	17.798	71.191	2.135	H1-1b
72	M338	PL0.75X0.1875	0.204	0	5	0.011	0	y	30	532.281	4556.25	17.798	71.191	2.193	H1-1b
73	M570	PIPE 2.0	0.203	71.747	4	0.052	71.747		11	14916.096	32130	1871.625	1871.625	1.793	H1-1b
74	M608	PIPE 2.0	0.203	71.747	10	0.052	71.747		16	14916.096	32130	1871.625	1871.625	1.793	H1-1b
75	M593	PIPE 2.0	0.203	71.747	15	0.052	71.747		6	14916.096	32130	1871.625	1871.625	1.793	H1-1b
76	M337	PL0.75X0.1875	0.203	0	5	0.011	0	y	78	532.638	4556.25	17.798	71.191	2.194	H1-1b
77	M526	PL0.75X0.1875	0.201	0	11	0.011	0	y	19	532.281	4556.25	17.798	71.191	2.196	H1-1b
78	M439	PL0.75X0.1875	0.201	0	16	0.011	0	y	24	532.281	4556.25	17.798	71.191	2.197	H1-1b
79	M397	PL0.75X0.1875	0.2	20.338	12	0.014	0	y	24	532.573	4556.25	17.798	71.191	2.132	H1-1b
80	M495	PL0.75X0.1875	0.2	20.338	7	0.014	0	y	19	532.573	4556.25	17.798	71.191	2.132	H1-1b
81	M341	PL0.75X0.1875	0.2	20.338	18	0.014	0	y	30	532.573	4556.25	17.798	71.191	2.132	H1-1b
82	M542	PL0.75X0.1875	0.2	0	5	0.006	0	y	30	532.919	4556.25	17.798	71.191	2.156	H1-1b*
83	M525	PL0.75X0.1875	0.198	0	11	0.011	0	y	19	532.638	4556.25	17.798	71.191	2.197	H1-1b
84	M437	PL0.75X0.1875	0.198	0	16	0.011	0	y	25	532.638	4556.25	17.798	71.191	2.197	H1-1b
85	M562	PL0.75X0.1875	0.197	0	12	0.005	0	y	11	532.811	4556.25	17.798	71.191	2.116	H1-1b
86	M354	PL0.75X0.1875	0.197	0	3	0.01	0	y	72	532.197	4556.25	17.798	71.191	1.933	H1-1b*
87	M336	PL0.75X0.1875	0.197	0	5	0.011	0	y	67	532.738	4556.25	17.798	71.191	2.194	H1-1b
88	M339	PL0.75X0.1875	0.197	0	5	0.012	0	y	30	532.814	4556.25	17.798	71.191	2.191	H1-1b
89	M393	PL0.75X0.1875	0.197	0	7	0.005	0	y	110	532.811	4556.25	17.798	71.191	2.116	H1-1b
90	M492	PL0.75X0.1875	0.195	0	18	0.005	0	y	16	532.811	4556.25	17.798	71.191	2.116	H1-1b
91	M527	PL0.75X0.1875	0.195	0	11	0.012	0	y	19	532.814	4556.25	17.798	71.191	2.195	H1-1b
92	M441	PL0.75X0.1875	0.195	0	16	0.012	0	y	24	532.814	4556.25	17.798	71.191	2.195	H1-1b
93	M360	PL0.75X0.1875	0.195	0	16	0.006	0	y	73	532.919	4556.25	17.798	71.191	1.816	H1-1b*
94	M443	PL0.75X0.1875	0.194	20.342	12	0.013	0	y	24	532.39	4556.25	17.798	71.191	2.13	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
95	M528	PL0.75X0.1875	0.194	20.342	7	0.013	0	y	19	532.39	4556.25	17.798	71.191	2.13	H1-1b				
96	M340	PL0.75X0.1875	0.194	20.342	18	0.013	0	y	30	532.39	4556.25	17.798	71.191	2.13	H1-1b				
97	M469	PL0.75X0.1875	0.194	0	11	0.006	0	y	19	532.919	4556.25	17.798	71.191	1.816	H1-1b*				
98	M539A	PIPE 3.0 SCH10	0.192	4.487	17	0.053	4.487		16	48124.259	48165.894	4320.238	4320.238	1.141	H1-1b				
99	M561	PL0.75X0.1875	0.192	0	12	0.006	0	y	11	532.308	4556.25	17.798	71.191	2.101	H1-1b				
100	M447	PL0.75X0.1875	0.191	20.333	12	0.011	0	y	24	532.831	4556.25	17.798	71.191	2.12	H1-1b				
101	M530	PL0.75X0.1875	0.191	20.333	7	0.011	0	y	19	532.831	4556.25	17.798	71.191	2.12	H1-1b				
102	M347	PL0.75X0.1875	0.191	20.333	18	0.011	0	y	29	532.831	4556.25	17.798	71.191	2.12	H1-1b				
103	M524	PL0.75X0.1875	0.191	0	11	0.01	0	y	20	532.738	4556.25	17.798	71.191	2.197	H1-1b				
104	M435	PL0.75X0.1875	0.191	0	16	0.01	0	y	25	532.738	4556.25	17.798	71.191	2.197	H1-1b				
105	M392	PL0.75X0.1875	0.19	0	7	0.006	0	y	6	532.308	4556.25	17.798	71.191	2.101	H1-1b				
106	M355	PL0.75X0.1875	0.19	0	3	0.01	0	y	72	532.856	4556.25	17.798	71.191	1.775	H1-1b*				
107	M481	PL0.75X0.1875	0.189	20.338	15	0.014	0	y	20	532.586	4556.25	17.798	71.191	2.107	H1-1b				
108	M335	PL0.75X0.1875	0.189	0	5	0.011	0	y	68	532.043	4556.25	17.798	71.191	2.193	H1-1b				
109	M373	PL0.75X0.1875	0.189	20.338	4	0.014	0	y	25	532.586	4556.25	17.798	71.191	2.107	H1-1b				
110	M551	PL0.75X0.1875	0.189	20.338	10	0.014	0	y	31	532.586	4556.25	17.798	71.191	2.107	H1-1b				
111	M491	PL0.75X0.1875	0.189	0	17	0.006	0	y	16	532.308	4556.25	17.798	71.191	2.09	H1-1b				
112	M409	PL0.75X0.1875	0.188	0	17	0.008	0	y	34	531.655	4556.25	17.798	71.191	2.106	H1-1b				
113	M242	PIPE 3.0 SCH10	0.187	0	4	0.084	0		4	48085.289	48165.894	4320.238	4320.238	1.068	H1-1b				
114	M186A	PIPE 3.0 SCH10	0.187	0	10	0.086	0		9	48085.289	48165.894	4320.238	4320.238	1.068	H1-1b				
115	M298	PIPE 3.0 SCH10	0.187	0	15	0.084	0		15	48085.289	48165.894	4320.238	4320.238	1.068	H1-1b				
116	M427A	PIPE 3.0 SCH10	0.187	4.487	11	0.052	4.487		11	48124.259	48165.894	4320.238	4320.238	1.135	H1-1b				
117	M455A	PIPE 3.0 SCH10	0.187	4.487	6	0.052	4.487		17	48124.259	48165.894	4320.238	4320.238	1.135	H1-1b				
118	M150	PIPE 3.0 SCH10	0.186	6.244	10	0.129	0.822		32	48085.289	48165.894	4320.238	4320.238	1.618	H1-1b				
119	M206	PIPE 3.0 SCH10	0.186	6.244	4	0.129	0.822		27	48085.289	48165.894	4320.238	4320.238	1.618	H1-1b				
120	M262	PIPE 3.0 SCH10	0.186	6.244	15	0.129	0.822		21	48085.289	48165.894	4320.238	4320.238	1.618	H1-1b				
121	M518A	PIPE 3.0 SCH10	0.185	0	13	0.062	0		10	48124.259	48165.894	4320.238	4320.238	1.059	H1-1b				
122	M415	PL0.75X0.1875	0.185	20.334	15	0.014	0	y	20	532.796	4556.25	17.798	71.191	2.102	H1-1b				
123	M364	PL0.75X0.1875	0.185	20.334	4	0.014	0	y	25	532.796	4556.25	17.798	71.191	2.102	H1-1b				
124	M501	PL0.75X0.1875	0.184	0	12	0.006	0	y	11	532.62	4556.25	17.798	71.191	2.115	H1-1b				
125	M513	PL0.75X0.1875	0.184	20.334	10	0.014	0	y	31	532.796	4556.25	17.798	71.191	2.102	H1-1b				
126	M153	PIPE 3.0 SCH10	0.184	0	13	0.143	5.423		21	48085.289	48165.894	4320.238	4320.238	1.303	H1-1b				
127	M493	PL0.75X0.1875	0.183	0	17	0.003	0	z	10	532.593	4556.25	17.798	71.191	2.155	H1-1b*				
128	M265	PIPE 3.0 SCH10	0.182	0	18	0.143	5.423		26	48085.289	48165.894	4320.238	4320.238	1.344	H1-1b				
129	M509	PL0.75X0.1875	0.182	0	6	0.013	0	y	31	532.84	4556.25	17.798	71.191	2.173	H1-1b				
130	M383	PL0.75X0.1875	0.182	0	16	0.013	0	y	25	532.84	4556.25	17.798	71.191	2.173	H1-1b				
131	M411	PL0.75X0.1875	0.182	0	11	0.013	0	y	20	532.84	4556.25	17.798	71.191	2.173	H1-1b				
132	M391	PL0.75X0.1875	0.182	0	7	0.006	0	y	6	532.62	4556.25	17.798	71.191	2.115	H1-1b				
133	M209	PIPE 3.0 SCH10	0.182	0	7	0.143	5.423		31	48085.289	48165.894	4320.238	4320.238	1.344	H1-1b				
134	M549	PL0.75X0.1875	0.182	0	6	0.014	0	y	31	532.416	4556.25	17.798	71.191	2.168	H1-1b				
135	M370	PL0.75X0.1875	0.181	0	16	0.014	0	y	25	532.416	4556.25	17.798	71.191	2.168	H1-1b				
136	M479	PL0.75X0.1875	0.181	20.341	15	0.014	0	y	20	532.416	4556.25	17.798	71.191	2.11	H1-1b				
137	M563	PL0.75X0.1875	0.181	0	12	0.003	0	z	4	532.593	4556.25	17.798	71.191	2.549	H1-1b				
138	M395	PL0.75X0.1875	0.181	0	7	0.004	0	y	110	532.593	4556.25	17.798	71.191	2.549	H1-1b				
139	M334	PL0.75X0.1875	0.181	0	5	0.012	0	y	68	532.777	4556.25	17.798	71.191	2.19	H1-1b				
140	M414	PL0.75X0.1875	0.181	0	17	0.012	0	y	24	532.494	4556.25	17.798	71.191	2.172	H1-1b				
141	M523	PL0.75X0.1875	0.181	0	11	0.009	0	y	25	532.043	4556.25	17.798	71.191	2.195	H1-1b				
142	M433	PL0.75X0.1875	0.181	0	16	0.009	0	y	31	532.043	4556.25	17.798	71.191	2.195	H1-1b				
143	M485	PL0.75X0.1875	0.18	0	11	0.009	0	y	19	532.775	4556.25	17.798	71.191	2.181	H1-1b				
144	M381	PL0.75X0.1875	0.18	0	16	0.009	0	y	24	532.775	4556.25	17.798	71.191	2.181	H1-1b				
145	M555	PL0.75X0.1875	0.18	0	6	0.009	0	y	30	532.775	4556.25	17.798	71.191	2.181	H1-1b				
146	M537	PL0.75X0.1875	0.18	0	8	0.007	0	y	29	532.856	4556.25	17.798	71.191	1.775	H1-1b*				
147	M459	PL0.75X0.1875	0.18	0	14	0.007	0	y	19	532.856	4556.25	17.798	71.191	1.775	H1-1b*				
148	M399	PL0.75X0.1875	0.18	0	11	0.01	0	y	19	532.676	4556.25	17.798	71.191	2.179	H1-1b				
149	M382	PL0.75X0.1875	0.18	0	16	0.01	0	y	25	532.676	4556.25	17.798	71.191	2.179	H1-1b				
150	M497	PL0.75X0.1875	0.18	0	6	0.01	0	y	30	532.676	4556.25	17.798	71.191	2.179	H1-1b				
151	M403	PL0.75X0.1875	0.18	0	17	0.007	0	y	17	532.62	4556.25	17.798	71.191	2.104	H1-1b				
152	M462	PIPE 3.0 SCH10	0.18	0	11	0.062	0		15	48124.259	48165.894	4320.238	4320.238	1.105	H1-1b				

Company :Telamon CLS
 Designer :SN
 Job Number :41124-13632988_C8_01-01-MA-R1
 Model Name:41124-13632988_C8_01-Old Saybrook, ...

3/19/2021
 1:55:21 PM
 Checked By : JLC

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
153	M543	PL0.75X0.1875	0.18	0	6	0.011	0	y	30	532.306	4556.25	17.798	71.191	2.177	H1-1b							
154	M361	PL0.75X0.1875	0.18	0	16	0.011	0	y	25	532.306	4556.25	17.798	71.191	2.177	H1-1b							
155	M473	PL0.75X0.1875	0.18	0	11	0.011	0	y	19	532.306	4556.25	17.798	71.191	2.177	H1-1b							
156	M288	PIPE 3.0 SCH10	0.18	3.122	17	0.154	0		9	48085.289	48165.894	4320.238	4320.238	1.301	H1-1b							
157	M484	PL0.75X0.1875	0.18	0	11	0.007	0	y	34	531.917	4556.25	17.798	71.191	2.181	H1-1b							
158	M380	PL0.75X0.1875	0.18	0	16	0.007	0	y	23	531.917	4556.25	17.798	71.191	2.181	H1-1b							
159	M554	PL0.75X0.1875	0.18	0	6	0.007	0	y	29	531.917	4556.25	17.798	71.191	2.181	H1-1b							
160	M434	PIPE 3.0 SCH10	0.179	0	16	0.063	0		5	48124.259	48165.894	4320.238	4320.238	1.105	H1-1b							
161	M483	PL0.75X0.1875	0.178	0	11	0.006	0	y	34	532.826	4556.25	17.798	71.191	2.18	H1-1b							
162	M379	PL0.75X0.1875	0.178	0	16	0.006	0	y	23	532.826	4556.25	17.798	71.191	2.18	H1-1b							
163	M553	PL0.75X0.1875	0.178	0	6	0.006	0	y	28	532.826	4556.25	17.798	71.191	2.18	H1-1b							
164	M431	PL0.75X0.1875	0.176	0	16	0.009	0	y	31	532.777	4556.25	17.798	71.191	2.2	H1-1b							
165	M522	PL0.75X0.1875	0.176	0	11	0.009	0	y	26	532.777	4556.25	17.798	71.191	2.2	H1-1b							
166	M477	PL0.75X0.1875	0.176	20.351	15	0.013	0	y	20	531.915	4556.25	17.798	71.191	2.097	H1-1b							
167	M333	PL0.75X0.1875	0.176	0	5	0.012	0	y	68	532.553	4556.25	17.798	71.191	2.186	H1-1b							
168	M346	PL0.75X0.1875	0.176	0	7	0.012	0	y	29	532.494	4556.25	17.798	71.191	2.339	H1-1b							
169	M367	PL0.75X0.1875	0.176	20.351	4	0.013	0	y	25	531.915	4556.25	17.798	71.191	2.097	H1-1b							
170	M512	PL0.75X0.1875	0.176	0	12	0.012	0	y	19	532.494	4556.25	17.798	71.191	2.339	H1-1b							
171	M547	PL0.75X0.1875	0.175	20.351	10	0.013	0	y	31	531.915	4556.25	17.798	71.191	2.097	H1-1b							
172	M401	PL0.75X0.1875	0.175	0	11	0.006	0	y	29	532.601	4556.25	17.798	71.191	2.178	H1-1b							
173	M378	PL0.75X0.1875	0.175	0	16	0.006	0	y	34	532.601	4556.25	17.798	71.191	2.178	H1-1b							
174	M499	PL0.75X0.1875	0.175	0	6	0.006	0	y	23	532.601	4556.25	17.798	71.191	2.178	H1-1b							
175	M560	PL0.75X0.1875	0.175	0	12	0.007	0	y	28	532.75	4556.25	17.798	71.191	2.12	H1-1b							
176	M215	PIPE 3.0 SCH10	0.175	0	4	0.081	0.427		13	48085.289	48165.894	4320.238	4320.238	1.071	H1-1b							
177	M159	PIPE 3.0 SCH10	0.175	0	10	0.08	0.427		3	48085.289	48165.894	4320.238	4320.238	1.071	H1-1b							
178	M271	PIPE 3.0 SCH10	0.175	0	15	0.08	0.427		8	48085.289	48165.894	4320.238	4320.238	1.071	H1-1b							
179	M348	PL0.75X0.1875	0.175	0	15	0.01	0	y	29	532.391	4556.25	17.798	71.191	2.141	H1-1b							
180	M449	PL0.75X0.1875	0.175	0	10	0.01	0	y	24	532.391	4556.25	17.798	71.191	2.141	H1-1b							
181	M531	PL0.75X0.1875	0.175	0	4	0.01	0	y	19	532.391	4556.25	17.798	71.191	2.141	H1-1b							
182	M482	PL0.75X0.1875	0.172	0	11	0.005	0	y	28	532.466	4556.25	17.798	71.191	2.175	H1-1b							
183	M377	PL0.75X0.1875	0.172	0	16	0.005	0	y	114	532.466	4556.25	17.798	71.191	2.175	H1-1b							
184	M552	PL0.75X0.1875	0.172	0	6	0.005	0	y	23	532.466	4556.25	17.798	71.191	2.175	H1-1b							
185	M390	PL0.75X0.1875	0.172	0	7	0.007	0	y	23	532.75	4556.25	17.798	71.191	2.12	H1-1b							
186	M332	PL0.75X0.1875	0.172	0	5	0.012	0	y	68	532.398	4556.25	17.798	71.191	2.179	H1-1b							
187	M429	PL0.75X0.1875	0.171	0	16	0.009	0	y	31	532.553	4556.25	17.798	71.191	2.213	H1-1b							
188	M521	PL0.75X0.1875	0.171	0	11	0.009	0	y	26	532.553	4556.25	17.798	71.191	2.213	H1-1b							
189	M324	PIPE 3.0 SCH10	0.171	3.122	12	0.153	0		3	48085.289	48165.894	4320.238	4320.238	1.315	H1-1b							
190	M232	PIPE 3.0 SCH10	0.171	3.122	7	0.153	0		14	48085.289	48165.894	4320.238	4320.238	1.315	H1-1b							
191	M376	PL0.75X0.1875	0.17	0	17	0.005	0	y	114	532.868	4556.25	17.798	71.191	2.176	H1-1b							
192	M408	PL0.75X0.1875	0.168	0	11	0.005	0	y	28	532.868	4556.25	17.798	71.191	2.17	H1-1b							
193	M506	PL0.75X0.1875	0.168	0	6	0.005	0	y	23	532.868	4556.25	17.798	71.191	2.17	H1-1b							
194	M349	PL0.75X0.1875	0.167	0	15	0.01	0	y	68	532.603	4556.25	17.798	71.191	2.144	H1-1b							
195	M490	PL0.75X0.1875	0.167	0	17	0.007	0	y	34	532.75	4556.25	17.798	71.191	2.109	H1-1b							
196	M451	PL0.75X0.1875	0.167	0	10	0.009	0	y	24	532.603	4556.25	17.798	71.191	2.144	H1-1b							
197	M532	PL0.75X0.1875	0.167	0	4	0.009	0	y	19	532.603	4556.25	17.798	71.191	2.144	H1-1b							
198	M331	PL0.75X0.1875	0.167	0	5	0.012	0	y	68	532.807	4556.25	17.798	71.191	2.17	H1-1b							
199	M375	PL0.75X0.1875	0.166	0	17	0.005	0	y	18	532.319	4556.25	17.798	71.191	2.17	H1-1b							
200	M405	PL0.75X0.1875	0.166	0	16	0.008	0	y	31	532.398	4556.25	17.798	71.191	2.224	H1-1b							
201	M503	PL0.75X0.1875	0.166	0	11	0.008	0	y	26	532.398	4556.25	17.798	71.191	2.224	H1-1b							
202	M486	PL0.75X0.1875	0.164	20.335	15	0.013	0	y	19	532.758	4556.25	17.798	71.191	2.094	H1-1b							
203	M384	PL0.75X0.1875	0.164	20.335	4	0.013	0	y	25	532.758	4556.25	17.798	71.191	2.094	H1-1b							
204	M556	PL0.75X0.1875	0.164	20.335	10	0.013	0	y	30	532.758	4556.25	17.798	71.191	2.094	H1-1b							
205	M406	PL0.75X0.1875	0.163	0	11	0.005	0	y	12	532.319	4556.25	17.798	71.191	2.177	H1-1b							
206	M504	PL0.75X0.1875	0.163	0	6	0.005	0	y	7	532.319	4556.25	17.798	71.191	2.177	H1-1b							
207	M365	PL0.75X0.1875	0.163	0	17	0.005	0	y	18	532.718	4556.25	17.798	71.191	2.161	H1-1b							
208	M475	PL0.75X0.1875	0.163	0	3	0.005	0	y	12	532.718	4556.25	17.798	71.191	2.029	H1-1b							
209	M545	PL0.75X0.1875	0.163	0	14	0.005	0	y	7	532.718	4556.25	17.798	71.191	2.029	H1-1b							
210	M407	PL0.75X0.1875	0.162	0	3	0.006	0	y	12	531.928	4556.25	17.798	71.191	1.996	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
211	M374	PL0.75X0.1875	0.162	0	8	0.006	0	y	18	531.928	4556.25	17.798	71.191	1.996 H1-1b
212	M505	PL0.75X0.1875	0.162	0	14	0.006	0	y	7	531.928	4556.25	17.798	71.191	1.996 H1-1b
213	M243	PIPE 3.0 SCH10	0.161	0	4	0.071	6.244		11	48085.289	48165.894	4320.238	4320.238	1.079 H1-1b
214	M187	PIPE 3.0 SCH10	0.161	0	10	0.073	6.244		17	48085.289	48165.894	4320.238	4320.238	1.079 H1-1b
215	M476	PL0.75X0.1875	0.161	0	3	0.006	0	y	12	532.802	4556.25	17.798	71.191	2.016 H1-1b
216	M299A	PIPE 3.0 SCH10	0.161	0	15	0.071	6.244		6	48085.289	48165.894	4320.238	4320.238	1.079 H1-1b
217	M366	PL0.75X0.1875	0.161	0	8	0.006	0	y	18	532.802	4556.25	17.798	71.191	2.016 H1-1b
218	M546	PL0.75X0.1875	0.161	0	14	0.006	0	y	7	532.802	4556.25	17.798	71.191	2.016 H1-1b
219	M413	PL0.75X0.1875	0.161	0	3	0.006	0	y	12	532.866	4556.25	17.798	71.191	1.967 H1-1b
220	M372	PL0.75X0.1875	0.161	0	8	0.006	0	y	18	532.866	4556.25	17.798	71.191	1.967 H1-1b
221	M511	PL0.75X0.1875	0.161	0	14	0.006	0	y	7	532.866	4556.25	17.798	71.191	1.967 H1-1b
222	M363	PL0.75X0.1875	0.161	0	7	0.008	0	y	23	531.923	4556.25	17.798	71.191	2.117 H1-1b
223	M371	PL0.75X0.1875	0.161	0	8	0.006	0	y	18	532.626	4556.25	17.798	71.191	1.887 H1-1b
224	M480	PL0.75X0.1875	0.161	0	3	0.006	0	y	12	532.626	4556.25	17.798	71.191	1.887 H1-1b
225	M550	PL0.75X0.1875	0.161	0	14	0.006	0	y	7	532.626	4556.25	17.798	71.191	1.887 H1-1b
226	M330	PL0.75X0.1875	0.161	0	5	0.012	0	y	68	532.259	4556.25	17.798	71.191	2.156 H1-1b
227	M455	PL0.75X0.1875	0.161	0	9	0.008	0	y	24	532.796	4556.25	17.798	71.191	2.165 H1-1b
228	M350	PL0.75X0.1875	0.16	0	15	0.011	0	y	68	532.796	4556.25	17.798	71.191	2.146 H1-1b
229	PR5	L3X3X3	0.16	21.116	9	0.006	42.681	y	15	24882.989	35316	1320.097	2591.149	1.136 H2-1
230	M410	PL0.75X0.1875	0.159	0	16	0.008	0	y	31	532.807	4556.25	17.798	71.191	2.232 H1-1b
231	M508	PL0.75X0.1875	0.159	0	11	0.008	0	y	26	532.807	4556.25	17.798	71.191	2.232 H1-1b
232	M127	PIPE 3.0 SCH10	0.159	0	12	0.06	36		11	45557.813	48165.894	4320.238	4320.238	2.22 H1-1b
233	M471	PIPE 3.0 SCH10	0.159	0	18	0.06	36		16	45557.813	48165.894	4320.238	4320.238	2.22 H1-1b
234	M299	PIPE 3.0 SCH10	0.159	0	7	0.06	36		6	45557.813	48165.894	4320.238	4320.238	2.22 H1-1b
235	M456	PL0.75X0.1875	0.159	0	9	0.007	0	y	25	532.032	4556.25	17.798	71.191	2.167 H1-1b
236	M534	PL0.75X0.1875	0.159	0	4	0.008	0	y	19	532.796	4556.25	17.798	71.191	2.146 H1-1b
237	M559	PL0.75X0.1875	0.157	0	12	0.009	0	y	29	532.775	4556.25	17.798	71.191	2.116 H1-1b
238	PR11	L3X3X3	0.157	21.116	4	0.006	42.681	y	10	24882.989	35316	1320.097	2591.149	1.136 H2-1
239	PR17	L3X3X3	0.157	21.116	15	0.007	42.681	y	5	24882.989	35316	1320.097	2591.149	1.136 H2-1
240	M398	PL0.75X0.1875	0.156	0	9	0.006	0	y	26	532.784	4556.25	17.798	71.191	2.168 H1-1b
241	M351	PL0.75X0.1875	0.155	0	15	0.011	0	y	69	532.032	4556.25	17.798	71.191	2.147 H1-1b
242	M329	PL0.75X0.1875	0.154	0	5	0.012	0	y	68	532.644	4556.25	17.798	71.191	2.145 H1-1b
243	M510	PL0.75X0.1875	0.154	20.337	10	0.012	0	y	30	532.643	4556.25	17.798	71.191	2.092 H1-1b
244	M385	PL0.75X0.1875	0.154	20.337	4	0.012	0	y	25	532.643	4556.25	17.798	71.191	2.092 H1-1b
245	M412	PL0.75X0.1875	0.154	20.337	15	0.012	0	y	19	532.643	4556.25	17.798	71.191	2.092 H1-1b
246	M389	PL0.75X0.1875	0.154	0	7	0.009	0	y	23	532.775	4556.25	17.798	71.191	2.116 H1-1b
247	M535	PL0.75X0.1875	0.153	0	4	0.007	0	y	19	532.032	4556.25	17.798	71.191	2.147 H1-1b
248	M544	PL0.75X0.1875	0.152	0	12	0.01	0	y	29	532.58	4556.25	17.798	71.191	2.113 H1-1b
249	M520	PL0.75X0.1875	0.152	0	11	0.008	0	y	26	532.259	4556.25	17.798	71.191	2.238 H1-1b
250	M427	PL0.75X0.1875	0.152	0	16	0.008	0	y	31	532.259	4556.25	17.798	71.191	2.239 H1-1b
251	M421	PL0.75X0.1875	0.152	0	8	0.008	0	y	15	532.729	4556.25	17.798	71.191	1.699 H1-1b
252	M517	PL0.75X0.1875	0.152	0	3	0.008	0	y	10	532.729	4556.25	17.798	71.191	1.699 H1-1b
253	M328	PL0.75X0.1875	0.152	0	14	0.011	0	y	68	532.729	4556.25	17.798	71.191	1.699 H1-1b
254	M423	PL0.75X0.1875	0.152	0	8	0.008	0	y	15	532.644	4556.25	17.798	71.191	1.786 H1-1b
255	M518	PL0.75X0.1875	0.152	0	3	0.008	0	y	10	532.644	4556.25	17.798	71.191	1.786 H1-1b
256	M457	PL0.75X0.1875	0.152	0	9	0.006	0	y	34	532.653	4556.25	17.798	71.191	2.167 H1-1b
257	M496	PL0.75X0.1875	0.151	0	4	0.006	0	y	20	532.784	4556.25	17.798	71.191	2.147 H1-1b
258	M557	PL0.75X0.1875	0.151	0	12	0.011	0	y	30	532.302	4556.25	17.798	71.191	2.1 H1-1b
259	M352	PL0.75X0.1875	0.151	0	15	0.011	0	y	71	532.784	4556.25	17.798	71.191	2.147 H1-1b
260	M353	PL0.75X0.1875	0.151	0	15	0.01	0	y	72	532.653	4556.25	17.798	71.191	2.147 H1-1b
261	M558	PL0.75X0.1875	0.151	0	12	0.01	0	y	30	532.382	4556.25	17.798	71.191	2.11 H1-1b
262	M386	PL0.75X0.1875	0.151	0	7	0.011	0	y	25	532.302	4556.25	17.798	71.191	2.101 H1-1b
263	M287	PIPE 3.0 SCH10	0.151	6.244	17	0.144	0		9	48085.289	48165.894	4320.238	4320.238	1.245 H1-1b
264	M362	PL0.75X0.1875	0.15	0	7	0.01	0	y	24	532.58	4556.25	17.798	71.191	2.113 H1-1b
265	M487	PL0.75X0.1875	0.15	0	18	0.011	0	y	19	532.302	4556.25	17.798	71.191	2.101 H1-1b
266	M498	PL0.75X0.1875	0.15	0	12	0.011	0	y	30	532.821	4556.25	17.798	71.191	2.106 H1-1b
267	M388	PL0.75X0.1875	0.149	0	7	0.01	0	y	24	532.382	4556.25	17.798	71.191	2.11 H1-1b
268	M387	PL0.75X0.1875	0.149	0	7	0.011	0	y	24	532.821	4556.25	17.798	71.191	2.106 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
269	M216	PIPE 3.0 SCH10	0.149	0	4	0.067	1.15	14	48085.289	48165.894	4320.238	4320.238	1.082	H1-1b	
270	M160	PIPE 3.0 SCH10	0.149	0	10	0.067	1.15	3	48085.289	48165.894	4320.238	4320.238	1.082	H1-1b	
271	M272	PIPE 3.0 SCH10	0.149	0	15	0.067	1.15	8	48085.289	48165.894	4320.238	4320.238	1.082	H1-1b	
272	M489	PL0.75X0.1875	0.149	0	18	0.009	0	y	34	532.775	4556.25	17.798	71.191	2.116	H1-1b
273	M400	PL0.75X0.1875	0.148	0	18	0.011	0	y	19	532.821	4556.25	17.798	71.191	2.106	H1-1b
274	M536	PL0.75X0.1875	0.148	0	4	0.006	0	y	29	532.653	4556.25	17.798	71.191	2.147	H1-1b
275	M369	PL0.75X0.1875	0.148	0	17	0.006	0	y	18	531.643	4556.25	17.798	71.191	2.163	H1-1b
276	PR6	L3X3X3	0.148	21.116	13	0.006	42.681	z	15	24882.989	35316	1320.097	2591.149	1.136	H2-1
277	M488	PL0.75X0.1875	0.147	0	18	0.01	0	y	19	532.382	4556.25	17.798	71.191	2.11	H1-1b
278	M368	PL0.75X0.1875	0.147	0	8	0.006	20.329	y	10	533.065	4556.25	17.798	71.191	1.413	H1-1b
279	M478	PL0.75X0.1875	0.147	0	3	0.006	20.329	y	4	533.065	4556.25	17.798	71.191	1.413	H1-1b
280	M548	PL0.75X0.1875	0.147	0	14	0.006	20.329	y	15	533.065	4556.25	17.798	71.191	1.413	H1-1b
281	M474	PL0.75X0.1875	0.147	0	18	0.01	0	y	19	532.58	4556.25	17.798	71.191	2.113	H1-1b
282	PR18	L3X3X3	0.146	21.116	18	0.007	42.681	z	5	24882.989	35316	1320.097	2591.149	1.136	H2-1
283	PR12	L3X3X3	0.146	21.116	7	0.006	42.681	z	10	24882.989	35316	1320.097	2591.149	1.136	H2-1
284	M507	PL0.75X0.1875	0.146	0	12	0.008	0	y	28	531.961	4556.25	17.798	71.191	2.117	H1-1b
285	M426	PIPE 3.0 SCH10	0.145	4.487	11	0.052	4.487	11	48124.259	48165.894	4320.238	4320.238	1.168	H1-1b	
286	M454	PIPE 3.0 SCH10	0.145	4.487	6	0.053	3.897	5	48124.259	48165.894	4320.238	4320.238	1.168	H1-1b	
287	M538A	PIPE 3.0 SCH10	0.145	4.487	17	0.053	4.487	16	48124.259	48165.894	4320.238	4320.238	1.184	H1-1b	
288	M519A	PIPE 3.0 SCH10	0.144	0	13	0.054	0	6	48124.259	48165.894	4320.238	4320.238	1.062	H1-1b	
289	M453	PL0.75X0.1875	0.144	0	12	0.006	0	y	12	531.643	4556.25	17.798	71.191	2.056	H1-1b
290	M533	PL0.75X0.1875	0.144	0	7	0.006	0	y	7	531.643	4556.25	17.798	71.191	2.056	H1-1b
291	M175	PIPE 3.0 SCH10	0.143	6.244	12	0.143	0	3	48085.289	48165.894	4320.238	4320.238	1.246	H1-1b	
292	M231	PIPE 3.0 SCH10	0.143	6.244	7	0.143	0	14	48085.289	48165.894	4320.238	4320.238	1.246	H1-1b	
293	M435A	PIPE 3.0 SCH10	0.141	0	8	0.056	0	17	48124.259	48165.894	4320.238	4320.238	1.067	H1-1b	
294	M463A	PIPE 3.0 SCH10	0.141	0	3	0.055	0	11	48124.259	48165.894	4320.238	4320.238	1.067	H1-1b	
295	M417	PL0.75X0.1875	0.14	0	8	0.008	0	y	15	531.963	4556.25	17.798	71.191	1.57	H1-1b
296	M515	PL0.75X0.1875	0.14	0	3	0.008	0	y	10	531.963	4556.25	17.798	71.191	1.57	H1-1b
297	M327	PL0.75X0.1875	0.14	0	14	0.011	0	y	68	531.963	4556.25	17.798	71.191	1.57	H1-1b
298	M514	PL0.75X0.1875	0.14	0	3	0.007	0	y	10	532.795	4556.25	17.798	71.191	1.352	H1-1b
299	M416	PL0.75X0.1875	0.14	0	8	0.007	0	y	15	532.795	4556.25	17.798	71.191	1.352	H1-1b
300	M326	PL0.75X0.1875	0.14	0	14	0.011	0	y	68	532.795	4556.25	17.798	71.191	1.352	H1-1b
301	M170	PIPE 3.0 SCH10	0.136	3.122	4	0.077	6.244	3	48085.289	48165.894	4320.238	4320.238	1.211	H1-1b	
302	M282	PIPE 3.0 SCH10	0.136	3.122	10	0.077	3.122	9	48085.289	48165.894	4320.238	4320.238	1.211	H1-1b	
303	M226	PIPE 3.0 SCH10	0.136	3.122	15	0.077	6.244	14	48085.289	48165.894	4320.238	4320.238	1.211	H1-1b	
304	M244	PIPE 3.0 SCH10	0.135	0	4	0.064	6.244	11	48085.289	48165.894	4320.238	4320.238	1.094	H1-1b	
305	M188	PIPE 3.0 SCH10	0.135	0	10	0.066	6.244	17	48085.289	48165.894	4320.238	4320.238	1.094	H1-1b	
306	M300A	PIPE 3.0 SCH10	0.135	0	15	0.064	6.244	6	48085.289	48165.894	4320.238	4320.238	1.094	H1-1b	
307	M325	PIPE 3.0 SCH10	0.135	0	18	0.112	6.244	10	48085.289	48165.894	4320.238	4320.238	1.126	H1-1b	
308	M233	PIPE 3.0 SCH10	0.135	0	12	0.112	6.244	4	48085.289	48165.894	4320.238	4320.238	1.126	H1-1b	
309	M289	PIPE 3.0 SCH10	0.135	0	7	0.112	6.244	15	48085.289	48165.894	4320.238	4320.238	1.126	H1-1b	
310	M143	PIPE 3.0 SCH10	0.134	3.122	4	0.104	3.122	3	48085.289	48165.894	4320.238	4320.238	1.149	H1-1b	
311	M255	PIPE 3.0 SCH10	0.134	3.122	10	0.104	3.122	8	48085.289	48165.894	4320.238	4320.238	1.149	H1-1b	
312	M199	PIPE 3.0 SCH10	0.134	3.122	15	0.104	3.122	14	48085.289	48165.894	4320.238	4320.238	1.149	H1-1b	
313	M256	PIPE 3.0 SCH10	0.134	6.244	9	0.076	5.817	8	48085.289	48165.894	4320.238	4320.238	1.212	H1-1b	
314	M144	PIPE 3.0 SCH10	0.129	6.244	4	0.076	5.817	3	48085.289	48165.894	4320.238	4320.238	1.193	H1-1b	
315	M200	PIPE 3.0 SCH10	0.129	6.244	15	0.076	5.817	14	48085.289	48165.894	4320.238	4320.238	1.193	H1-1b	
316	M169	PIPE 3.0 SCH10	0.125	6.244	4	0.067	6.244	11	48085.289	48165.894	4320.238	4320.238	1.09	H1-1b	
317	M281	PIPE 3.0 SCH10	0.125	6.244	10	0.068	6.244	17	48085.289	48165.894	4320.238	4320.238	1.09	H1-1b	
318	M225	PIPE 3.0 SCH10	0.125	6.244	15	0.067	6.244	6	48085.289	48165.894	4320.238	4320.238	1.09	H1-1b	
319	M149	PIPE 3.0 SCH10	0.124	3.122	17	0.127	4.765	32	48085.289	48165.894	4320.238	4320.238	1.238	H1-1b	
320	M154	PIPE 3.0 SCH10	0.124	0	13	0.141	1.479	4	48085.289	48165.894	4320.238	4320.238	1.909	H1-1b	
321	M217	PIPE 3.0 SCH10	0.123	0	4	0.055	1.84	14	48085.289	48165.894	4320.238	4320.238	1.097	H1-1b	
322	M161	PIPE 3.0 SCH10	0.123	0	10	0.055	1.84	3	48085.289	48165.894	4320.238	4320.238	1.097	H1-1b	
323	M273	PIPE 3.0 SCH10	0.123	0	15	0.055	1.84	8	48085.289	48165.894	4320.238	4320.238	1.097	H1-1b	
324	M266	PIPE 3.0 SCH10	0.122	0	3	0.142	1.479	10	48085.289	48165.894	4320.238	4320.238	1.8	H1-1b	
325	M210	PIPE 3.0 SCH10	0.122	0	8	0.14	1.479	15	48085.289	48165.894	4320.238	4320.238	1.8	H1-1b	
326	M284	PIPE 3.0 SCH10	0.121	0	17	0.138	0	9	48085.289	48165.894	4320.238	4320.238	1.311	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
327	M205	PIPE 3.0 SCH10	0.119	3.122	4	0.127	4.765	27	48085.289	48165.894	4320.238	4320.238	1.496	H1-1b
328	M261	PIPE 3.0 SCH10	0.119	3.122	15	0.128	4.765	21	48085.289	48165.894	4320.238	4320.238	1.496	H1-1b
329	M322	PIPE 3.0 SCH10	0.119	0	12	0.138	0	3	48085.289	48165.894	4320.238	4320.238	1.299	H1-1b
330	M228	PIPE 3.0 SCH10	0.119	0	7	0.138	0	14	48085.289	48165.894	4320.238	4320.238	1.299	H1-1b
331	M142	PIPE 3.0 SCH10	0.119	6.244	4	0.074	4.404	3	48085.289	48165.894	4320.238	4320.238	1.105	H1-1b
332	M254	PIPE 3.0 SCH10	0.119	6.244	10	0.074	4.404	8	48085.289	48165.894	4320.238	4320.238	1.105	H1-1b
333	M198	PIPE 3.0 SCH10	0.119	6.244	15	0.074	4.404	14	48085.289	48165.894	4320.238	4320.238	1.105	H1-1b
334	M148	PIPE 3.0 SCH10	0.111	6.244	17	0.085	1.709	18	48085.289	48165.894	4320.238	4320.238	2.224	H1-1b
335	M204	PIPE 3.0 SCH10	0.109	6.244	11	0.085	1.709	12	48085.289	48165.894	4320.238	4320.238	1.636	H1-1b
336	M260	PIPE 3.0 SCH10	0.109	6.244	6	0.085	1.709	7	48085.289	48165.894	4320.238	4320.238	1.636	H1-1b
337	M245	PIPE 3.0 SCH10	0.109	0	4	0.059	6.244	11	48085.289	48165.894	4320.238	4320.238	1.118	H1-1b
338	M189	PIPE 3.0 SCH10	0.109	0	10	0.059	6.244	17	48085.289	48165.894	4320.238	4320.238	1.118	H1-1b
339	M301	PIPE 3.0 SCH10	0.109	0	15	0.059	6.244	6	48085.289	48165.894	4320.238	4320.238	1.118	H1-1b
340	M145	PIPE 3.0 SCH10	0.108	0	78	0.103	1.873	18	48085.289	48165.894	4320.238	4320.238	1.209	H1-1b
341	M520A	PIPE 3.0 SCH10	0.108	0	13	0.053	0	7	48124.259	48165.894	4320.238	4320.238	1.065	H1-1b
342	M436	PIPE 3.0 SCH10	0.107	0	3	0.054	0	17	48124.259	48165.894	4320.238	4320.238	1.067	H1-1b
343	M464	PIPE 3.0 SCH10	0.107	0	14	0.053	0	12	48124.259	48165.894	4320.238	4320.238	1.067	H1-1b
344	M425A	PIPE 3.0 SCH10	0.105	4.487	3	0.052	4.487	11	48124.259	48165.894	4320.238	4320.238	1.098	H1-1b
345	M453A	PIPE 3.0 SCH10	0.105	4.487	14	0.053	4.487	5	48124.259	48165.894	4320.238	4320.238	1.098	H1-1b
346	M537A	PIPE 3.0 SCH10	0.105	4.487	8	0.052	4.487	16	48124.259	48165.894	4320.238	4320.238	1.098	H1-1b
347	M155	PIPE 3.0 SCH10	0.103	0	5	0.071	4.535	25	48085.289	48165.894	4320.238	4320.238	1.198	H1-1b
348	M178	PIPE 3.0 SCH10	0.102	0	18	0.103	6.244	10	48085.289	48165.894	4320.238	4320.238	1.175	H1-1b
349	M234	PIPE 3.0 SCH10	0.102	0	12	0.103	6.244	4	48085.289	48165.894	4320.238	4320.238	1.175	H1-1b
350	M290	PIPE 3.0 SCH10	0.102	0	7	0.103	6.244	15	48085.289	48165.894	4320.238	4320.238	1.175	H1-1b
351	M168	PIPE 3.0 SCH10	0.102	6.244	4	0.061	6.244	11	48085.289	48165.894	4320.238	4320.238	1.115	H1-1b
352	M280	PIPE 3.0 SCH10	0.102	6.244	10	0.061	6.244	16	48085.289	48165.894	4320.238	4320.238	1.115	H1-1b
353	M224	PIPE 3.0 SCH10	0.102	6.244	15	0.061	6.244	6	48085.289	48165.894	4320.238	4320.238	1.115	H1-1b
354	M237	PIPE 3.0 SCH10	0.101	3.122	5	0.119	6.244	5	48085.289	48165.894	4320.238	4320.238	1.264	H1-1b
355	M211	PIPE 3.0 SCH10	0.101	0	16	0.071	4.535	19	48085.289	48165.894	4320.238	4320.238	1.282	H1-1b
356	M181	PIPE 3.0 SCH10	0.1	3.122	11	0.112	3.122	18	48085.289	48165.894	4320.238	4320.238	1.174	H1-1b
357	M293	PIPE 3.0 SCH10	0.1	3.122	16	0.112	3.122	7	48085.289	48165.894	4320.238	4320.238	1.174	H1-1b
358	M267	PIPE 3.0 SCH10	0.099	0	11	0.071	4.535	30	48085.289	48165.894	4320.238	4320.238	1.282	H1-1b
359	M218	PIPE 3.0 SCH10	0.097	0	4	0.047	0.263	14	48085.289	48165.894	4320.238	4320.238	1.119	H1-1b
360	M162	PIPE 3.0 SCH10	0.097	0	10	0.047	0.263	3	48085.289	48165.894	4320.238	4320.238	1.119	H1-1b
361	M274	PIPE 3.0 SCH10	0.097	0	15	0.047	0.263	8	48085.289	48165.894	4320.238	4320.238	1.119	H1-1b
362	M437A	PIPE 3.0 SCH10	0.097	0	3	0.051	0	17	48124.259	48165.894	4320.238	4320.238	1.069	H1-1b
363	M521A	PIPE 3.0 SCH10	0.097	0	8	0.051	0	7	48124.259	48165.894	4320.238	4320.238	1.069	H1-1b
364	M465A	PIPE 3.0 SCH10	0.097	0	14	0.051	0	12	48124.259	48165.894	4320.238	4320.238	1.069	H1-1b
365	M141	PIPE 3.0 SCH10	0.093	6.244	4	0.064	5.981	3	48085.289	48165.894	4320.238	4320.238	1.127	H1-1b
366	M253	PIPE 3.0 SCH10	0.093	6.244	10	0.064	5.981	8	48085.289	48165.894	4320.238	4320.238	1.127	H1-1b
367	M197	PIPE 3.0 SCH10	0.093	6.244	15	0.064	5.981	14	48085.289	48165.894	4320.238	4320.238	1.127	H1-1b
368	M567	HSS4.75x4.75x4	0.091	3	3	0.033	0	y 19	182998.026	186300	26225.392	26225.392	1.81	H1-1b
369	M566	HSS4.75x4.75x4	0.091	27	14	0.033	30	y 30	182998.026	186300	26225.392	26225.392	1.82	H1-1b
370	M565	HSS4.75x4.75x4	0.091	27	8	0.041	30	y 73	182998.026	186300	26225.392	26225.392	1.82	H1-1b
371	M522A	PIPE 3.0 SCH10	0.088	0	9	0.048	0	7	48124.259	48165.894	4320.238	4320.238	1.065	H1-1b
372	M238	PIPE 3.0 SCH10	0.087	0	6	0.112	6.244	13	48085.289	48165.894	4320.238	4320.238	1.22	H1-1b
373	M182	PIPE 3.0 SCH10	0.087	0	11	0.105	6.244	18	48085.289	48165.894	4320.238	4320.238	1.22	H1-1b
374	M294	PIPE 3.0 SCH10	0.087	0	16	0.105	6.244	7	48085.289	48165.894	4320.238	4320.238	1.22	H1-1b
375	M286	PIPE 3.0 SCH10	0.086	6.244	17	0.138	0	8	48085.289	48165.894	4320.238	4320.238	1.542	H1-1b
376	M438	PIPE 3.0 SCH10	0.084	0	3	0.048	0	18	48124.259	48165.894	4320.238	4320.238	1.073	H1-1b
377	M466	PIPE 3.0 SCH10	0.084	0	14	0.048	0	12	48124.259	48165.894	4320.238	4320.238	1.073	H1-1b
378	M147	PIPE 3.0 SCH10	0.083	6.244	17	0.088	0.986	18	48085.289	48165.894	4320.238	4320.238	1.572	H1-1b
379	M246	PIPE 3.0 SCH10	0.082	0	4	0.055	6.244	11	48085.289	48165.894	4320.238	4320.238	1.16	H1-1b
380	M190	PIPE 3.0 SCH10	0.082	0	10	0.055	6.244	16	48085.289	48165.894	4320.238	4320.238	1.16	H1-1b
381	M302	PIPE 3.0 SCH10	0.082	0	15	0.055	6.244	6	48085.289	48165.894	4320.238	4320.238	1.16	H1-1b
382	M203	PIPE 3.0 SCH10	0.082	6.244	3	0.088	0.986	12	48085.289	48165.894	4320.238	4320.238	1.24	H1-1b
383	M259	PIPE 3.0 SCH10	0.082	6.244	14	0.088	0.986	7	48085.289	48165.894	4320.238	4320.238	1.24	H1-1b
384	M156	PIPE 3.0 SCH10	0.081	0	5	0.074	5.258	24	48085.289	48165.894	4320.238	4320.238	1.334	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
385	M174	PIPE 3.0 SCH10	0.08	6.244	12	0.138	0	3	48085.289	48165.894	4320.238	4320.238	1.562	H1-1b	
386	M230	PIPE 3.0 SCH10	0.08	6.244	7	0.138	0	14	48085.289	48165.894	4320.238	4320.238	1.562	H1-1b	
387	M536A	PIPE 3.0 SCH10	0.079	4.487	13	0.052	4.487	16	48124.259	48165.894	4320.238	4320.238	1.084	H1-1b	
388	M158	PIPE 3.0 SCH10	0.078	6.244	9	0.082	4.371	23	48085.289	48165.894	4320.238	4320.238	1.221	H1-1b	
389	M268	PIPE 3.0 SCH10	0.078	0	11	0.074	5.258	30	48085.289	48165.894	4320.238	4320.238	1.68	H1-1b	
390	M212	PIPE 3.0 SCH10	0.078	0	16	0.074	5.258	19	48085.289	48165.894	4320.238	4320.238	1.68	H1-1b	
391	M270	PIPE 3.0 SCH10	0.078	6.244	15	0.083	4.371	29	48085.289	48165.894	4320.238	4320.238	1.219	H1-1b	
392	M214	PIPE 3.0 SCH10	0.078	6.244	4	0.082	4.371	34	48085.289	48165.894	4320.238	4320.238	1.219	H1-1b	
393	M452	PIPE 3.0 SCH10	0.078	4.487	3	0.053	4.487	5	48124.259	48165.894	4320.238	4320.238	1.099	H1-1b	
394	M424	PIPE 3.0 SCH10	0.078	4.487	8	0.052	4.487	11	48124.259	48165.894	4320.238	4320.238	1.099	H1-1b	
395	M523A	PIPE 3.0 SCH10	0.077	0	9	0.045	0	7	48124.259	48165.894	4320.238	4320.238	1.075	H1-1b	
396	M167	PIPE 3.0 SCH10	0.077	6.244	4	0.056	6.244	11	48085.289	48165.894	4320.238	4320.238	1.159	H1-1b	
397	M279	PIPE 3.0 SCH10	0.077	6.244	10	0.056	6.244	16	48085.289	48165.894	4320.238	4320.238	1.159	H1-1b	
398	M223	PIPE 3.0 SCH10	0.077	6.244	15	0.056	6.244	6	48085.289	48165.894	4320.238	4320.238	1.159	H1-1b	
399	M180	PIPE 3.0 SCH10	0.076	6.244	13	0.093	0	10	48085.289	48165.894	4320.238	4320.238	1.192	H1-1b	
400	M292	PIPE 3.0 SCH10	0.076	6.244	18	0.093	0	15	48085.289	48165.894	4320.238	4320.238	1.127	H1-1b	
401	M236	PIPE 3.0 SCH10	0.076	6.244	7	0.093	0	4	48085.289	48165.894	4320.238	4320.238	1.127	H1-1b	
402	M241	PIPE 3.0 SCH10	0.074	6.244	5	0.109	6.244	13	48085.289	48165.894	4320.238	4320.238	1.385	H1-1b	
403	M467A	PIPE 3.0 SCH10	0.073	0	15	0.045	0	12	48124.259	48165.894	4320.238	4320.238	1.07	H1-1b	
404	M439A	PIPE 3.0 SCH10	0.073	0	4	0.045	0	18	48124.259	48165.894	4320.238	4320.238	1.07	H1-1b	
405	M235	PIPE 3.0 SCH10	0.073	0	5	0.097	0	4	48085.289	48165.894	4320.238	4320.238	1.174	H1-1b	
406	M219	PIPE 3.0 SCH10	0.073	0	5	0.042	5.653	15	48085.289	48165.894	4320.238	4320.238	1.159	H1-1b	
407	M535A	PIPE 3.0 SCH10	0.073	4.487	5	0.048	4.487	15	48124.259	48165.894	4320.238	4320.238	1.162	H1-1b	
408	M179	PIPE 3.0 SCH10	0.072	0	10	0.097	0	10	48085.289	48165.894	4320.238	4320.238	1.263	H1-1b	
409	M291	PIPE 3.0 SCH10	0.072	0	15	0.097	0	15	48085.289	48165.894	4320.238	4320.238	1.263	H1-1b	
410	M163	PIPE 3.0 SCH10	0.072	0	10	0.042	5.653	4	48085.289	48165.894	4320.238	4320.238	1.159	H1-1b	
411	M275	PIPE 3.0 SCH10	0.072	0	15	0.042	5.653	10	48085.289	48165.894	4320.238	4320.238	1.159	H1-1b	
412	M185A	PIPE 3.0 SCH10	0.071	6.244	10	0.104	6.244	18	48085.289	48165.894	4320.238	4320.238	1.343	H1-1b	
413	M297	PIPE 3.0 SCH10	0.071	6.244	15	0.104	6.244	7	48085.289	48165.894	4320.238	4320.238	1.343	H1-1b	
414	M140	PIPE 3.0 SCH10	0.069	6.244	4	0.055	5.258	3	48085.289	48165.894	4320.238	4320.238	1.168	H1-1b	
415	M252	PIPE 3.0 SCH10	0.069	6.244	10	0.055	5.258	8	48085.289	48165.894	4320.238	4320.238	1.168	H1-1b	
416	M196	PIPE 3.0 SCH10	0.069	6.244	15	0.056	5.258	13	48085.289	48165.894	4320.238	4320.238	1.168	H1-1b	
417	M451A	PIPE 3.0 SCH10	0.069	4.085	10	0.049	4.487	5	48124.259	48165.894	4320.238	4320.238	1.16	H1-1b	
418	M423A	PIPE 3.0 SCH10	0.069	4.085	15	0.048	4.487	10	48124.259	48165.894	4320.238	4320.238	1.16	H1-1b	
419	M201	PIPE 3.0 SCH10	0.069	0	24	0.103	1.873	12	48085.289	48165.894	4320.238	4320.238	1.202	H1-1b	
420	M257	PIPE 3.0 SCH10	0.069	0	19	0.103	1.873	7	48085.289	48165.894	4320.238	4320.238	1.202	H1-1b	
421	M534A	PIPE 3.0 SCH10	0.069	4.487	4	0.042	4.487	15	48124.259	48165.894	4320.238	4320.238	1.062	H1-1b	
422	M450	PIPE 3.0 SCH10	0.069	4.487	10	0.042	4.487	5	48124.259	48165.894	4320.238	4320.238	1.062	H1-1b	
423	M422	PIPE 3.0 SCH10	0.069	4.487	15	0.042	4.487	10	48124.259	48165.894	4320.238	4320.238	1.062	H1-1b	
424	M193	PIPE 3.0 SCH10	0.069	0	3	0.054	3.812	12	48085.289	48165.894	4320.238	4320.238	1.449	H1-1b	
425	M15	PIPE 3.0 SCH10	0.069	0	8	0.054	3.812	18	48085.289	48165.894	4320.238	4320.238	1.449	H1-1b	
426	M249	PIPE 3.0 SCH10	0.069	0	14	0.054	3.812	7	48085.289	48165.894	4320.238	4320.238	1.449	H1-1b	
427	M277	PIPE 3.0 SCH10	0.068	6.244	3	0.044	2.432	10	48085.289	48165.894	4320.238	4320.238	1.311	H1-1b	
428	M221	PIPE 3.0 SCH10	0.068	6.244	8	0.044	2.432	15	48085.289	48165.894	4320.238	4320.238	1.311	H1-1b	
429	M165	PIPE 3.0 SCH10	0.068	6.244	14	0.044	2.432	4	48085.289	48165.894	4320.238	4320.238	1.311	H1-1b	
430	M533A	PIPE 3.0 SCH10	0.065	4.487	4	0.039	4.487	15	48124.259	48165.894	4320.238	4320.238	1.007	H1-1b	
431	M449A	PIPE 3.0 SCH10	0.065	4.487	10	0.039	4.487	4	48124.259	48165.894	4320.238	4320.238	1.007	H1-1b	
432	M421A	PIPE 3.0 SCH10	0.065	4.487	15	0.039	4.487	10	48124.259	48165.894	4320.238	4320.238	1.007	H1-1b	
433	M524A	PIPE 3.0 SCH10	0.065	0	9	0.041	0	7	48124.259	48165.894	4320.238	4320.238	1.091	H1-1b	
434	M468	PIPE 3.0 SCH10	0.065	0	15	0.041	0	12	48124.259	48165.894	4320.238	4320.238	1.085	H1-1b	
435	M440	PIPE 3.0 SCH10	0.065	0	4	0.041	0	18	48124.259	48165.894	4320.238	4320.238	1.085	H1-1b	
436	M323	PIPE 3.0 SCH10	0.065	0	76	0.136	0	3	48085.289	48165.894	4320.238	4320.238	1.353	H1-1b	
437	M146	PIPE 3.0 SCH10	0.065	0	77	0.094	0.263	18	48085.289	48165.894	4320.238	4320.238	1.377	H1-1b	
438	M239	PIPE 3.0 SCH10	0.065	0	6	0.109	6.244	13	48085.289	48165.894	4320.238	4320.238	1.406	H1-1b	
439	M183	PIPE 3.0 SCH10	0.065	0	11	0.102	6.244	18	48085.289	48165.894	4320.238	4320.238	1.406	H1-1b	
440	M295	PIPE 3.0 SCH10	0.065	0	16	0.102	6.244	7	48085.289	48165.894	4320.238	4320.238	1.406	H1-1b	
441	M171	PIPE 3.0 SCH10	0.064	0	69	0.08	6.244	3	48085.289	48165.894	4320.238	4320.238	1.511	H1-1b	
442	M157	PIPE 3.0 SCH10	0.06	6.244	9	0.078	5.981	24	48085.289	48165.894	4320.238	4320.238	1.439	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
443	M258	PIPE 3.0 SCH10	0.06	0	18	0.093	0.263	7		48085.289	48165.894	4320.238	4320.238	1.044	H1-1b
444	M202	PIPE 3.0 SCH10	0.06	0	7	0.093	0.263	12		48085.289	48165.894	4320.238	4320.238	1.044	H1-1b
445	M285	PIPE 3.0 SCH10	0.059	0	17	0.136	0	8		48085.289	48165.894	4320.238	4320.238	2.077	H1-1b
446	M269	PIPE 3.0 SCH10	0.059	0	3	0.078	5.981	30		48085.289	48165.894	4320.238	4320.238	1.039	H1-1b
447	M229	PIPE 3.0 SCH10	0.059	0	7	0.136	0	14		48085.289	48165.894	4320.238	4320.238	1.977	H1-1b
448	M213	PIPE 3.0 SCH10	0.059	0	8	0.078	5.981	19		48085.289	48165.894	4320.238	4320.238	1.039	H1-1b
449	M240	PIPE 3.0 SCH10	0.056	6.244	5	0.108	6.244	13		48085.289	48165.894	4320.238	4320.238	2.207	H1-1b
450	M247	PIPE 3.0 SCH10	0.056	0	4	0.052	6.244	11		48085.289	48165.894	4320.238	4320.238	1.252	H1-1b
451	M191	PIPE 3.0 SCH10	0.056	0	10	0.052	6.244	16		48085.289	48165.894	4320.238	4320.238	1.252	H1-1b
452	M303	PIPE 3.0 SCH10	0.056	0	15	0.052	6.244	6		48085.289	48165.894	4320.238	4320.238	1.252	H1-1b
453	M532A	PIPE 3.0 SCH10	0.056	4.487	4	0.039	4.487	15		48124.259	48165.894	4320.238	4320.238	1.023	H1-1b
454	M448	PIPE 3.0 SCH10	0.056	4.487	10	0.039	4.487	4		48124.259	48165.894	4320.238	4320.238	1.023	H1-1b
455	M420	PIPE 3.0 SCH10	0.056	4.487	15	0.039	4.487	10		48124.259	48165.894	4320.238	4320.238	1.023	H1-1b
456	M184	PIPE 3.0 SCH10	0.055	6.244	11	0.102	6.244	18		48085.289	48165.894	4320.238	4320.238	2.248	H1-1b
457	M296	PIPE 3.0 SCH10	0.055	6.244	16	0.102	6.244	7		48085.289	48165.894	4320.238	4320.238	2.248	H1-1b
458	M469A	PIPE 3.0 SCH10	0.055	0	15	0.037	0	12		48124.259	48165.894	4320.238	4320.238	1.111	H1-1b
459	M441A	PIPE 3.0 SCH10	0.055	0	4	0.037	0	18		48124.259	48165.894	4320.238	4320.238	1.111	H1-1b
460	M525A	PIPE 3.0 SCH10	0.055	0	10	0.037	0	7		48124.259	48165.894	4320.238	4320.238	1.111	H1-1b
461	M166	PIPE 3.0 SCH10	0.053	6.244	4	0.053	6.244	11		48085.289	48165.894	4320.238	4320.238	1.257	H1-1b
462	M278	PIPE 3.0 SCH10	0.053	6.244	10	0.053	6.244	16		48085.289	48165.894	4320.238	4320.238	1.257	H1-1b
463	M222	PIPE 3.0 SCH10	0.053	6.244	15	0.053	6.244	6		48085.289	48165.894	4320.238	4320.238	1.257	H1-1b
464	M220	PIPE 3.0 SCH10	0.05	0	5	0.044	4.042	15		48085.289	48165.894	4320.238	4320.238	1.249	H1-1b
465	M530A	PIPE 3.0 SCH10	0.05	3.283	17	0.035	1.582	32		48124.259	48165.894	4320.238	4320.238	1.018	H1-1b
466	M531A	PIPE 3.0 SCH10	0.049	0.449	17	0.037	4.487	15		48124.259	48165.894	4320.238	4320.238	1.054	H1-1b
467	M418	PIPE 3.0 SCH10	0.049	3.283	11	0.035	1.582	27		48124.259	48165.894	4320.238	4320.238	1.162	H1-1b
468	M446	PIPE 3.0 SCH10	0.049	3.283	6	0.035	1.582	22		48124.259	48165.894	4320.238	4320.238	1.162	H1-1b
469	M276	PIPE 3.0 SCH10	0.049	0	16	0.044	4.042	10		48085.289	48165.894	4320.238	4320.238	1.247	H1-1b
470	M164	PIPE 3.0 SCH10	0.049	0	11	0.044	4.042	4		48085.289	48165.894	4320.238	4320.238	1.247	H1-1b
471	M419A	PIPE 3.0 SCH10	0.049	0.449	11	0.037	4.487	10		48124.259	48165.894	4320.238	4320.238	1.203	H1-1b
472	M447A	PIPE 3.0 SCH10	0.049	0.449	6	0.037	4.487	4		48124.259	48165.894	4320.238	4320.238	1.203	H1-1b
473	M227	PIPE 3.0 SCH10	0.049	6.244	7	0.08	6.244	14		48085.289	48165.894	4320.238	4320.238	1.281	H1-1b
474	M283	PIPE 3.0 SCH10	0.049	6.244	18	0.08	6.244	8		48085.289	48165.894	4320.238	4320.238	1.281	H1-1b
475	M251	PIPE 3.0 SCH10	0.048	6.244	9	0.053	2.202	7		48085.289	48165.894	4320.238	4320.238	1.264	H1-1b
476	M139	PIPE 3.0 SCH10	0.046	6.244	4	0.053	2.202	18		48085.289	48165.894	4320.238	4320.238	1.263	H1-1b
477	M195	PIPE 3.0 SCH10	0.046	6.244	15	0.053	2.202	12		48085.289	48165.894	4320.238	4320.238	1.263	H1-1b
478	M527A	PIPE 3.0 SCH10	0.046	0.992	13	0.028	0	7		48124.259	48165.894	4320.238	4320.238	1.185	H1-1b
479	M471A	PIPE 3.0 SCH10	0.046	0.992	11	0.028	0	12		48124.259	48165.894	4320.238	4320.238	2.277	H1-1b
480	M443A	PIPE 3.0 SCH10	0.046	0.992	16	0.028	0	18		48124.259	48165.894	4320.238	4320.238	2.277	H1-1b
481	M526A	PIPE 3.0 SCH10	0.045	3.802	13	0.035	0	7		48124.259	48165.894	4320.238	4320.238	1.131	H1-1b
482	M470	PIPE 3.0 SCH10	0.045	3.802	3	0.035	0	12		48124.259	48165.894	4320.238	4320.238	1.124	H1-1b
483	M442	PIPE 3.0 SCH10	0.045	3.802	8	0.035	0	18		48124.259	48165.894	4320.238	4320.238	1.124	H1-1b
484	M16	PIPE 3.0 SCH10	0.045	4.468	17	0.04	0	16		48124.605	48165.894	4320.238	4320.238	1.009	H1-1b
485	M417A	PIPE 3.0 SCH10	0.045	4.468	11	0.04	0	11		48124.605	48165.894	4320.238	4320.238	1.152	H1-1b
486	M445A	PIPE 3.0 SCH10	0.045	4.468	6	0.04	0	6		48124.605	48165.894	4320.238	4320.238	1.152	H1-1b
487	M472A	PIPE 3.0 SCH10	0.042	0	11	0.032	4.244	11		48128.644	48165.894	4320.238	4320.238	1.721	H1-1b
488	M444	PIPE 3.0 SCH10	0.042	0	16	0.032	4.244	16		48128.644	48165.894	4320.238	4320.238	1.721	H1-1b
489	M528A	PIPE 3.0 SCH10	0.042	0	6	0.032	4.244	6		48128.644	48165.894	4320.238	4320.238	1.721	H1-1b
490	M129	PIPE 3.0 SCH10	0.033	6.61	72	0.051	6.61	11		48075.583	48165.894	4320.238	4320.238	1.556	H1-1b
491	M194	PIPE 3.0 SCH10	0.032	6.61	11	0.051	6.61	6		48075.583	48165.894	4320.238	4320.238	1.72	H1-1b
492	M250	PIPE 3.0 SCH10	0.032	6.61	6	0.051	6.61	16		48075.583	48165.894	4320.238	4320.238	1.72	H1-1b
493	M304	PIPE 3.0 SCH10	0.031	6.61	11	0.05	6.61	6		48075.583	48165.894	4320.238	4320.238	1.688	H1-1b
494	M248	PIPE 3.0 SCH10	0.031	6.61	16	0.05	6.61	11		48075.583	48165.894	4320.238	4320.238	1.688	H1-1b
495	M192	PIPE 3.0 SCH10	0.031	6.61	6	0.05	6.61	16		48075.583	48165.894	4320.238	4320.238	1.688	H1-1b

Description	LC	Tensile Load, T_u (kips)	Shear Load, V_u (kips)	Bolt Diameter (in)	Number of Bolts	Shear Planes per Bolt	U-Bolt?	Bolt Grade	Connected Member Thickness (in)	Connected Member Edge Clear Distance (in)	Connected Member Ultimate Strength, F_u (ksi)	Bolt Tensile Usage	Bolt Shear Usage	Combined Tensile & Shear Usage	Member Bearing Usage
Standoff to Collar	Env.	21.767	3.125	0.75	4	1	No	A325-X (1/2" to 1.5" Dia.)	0.75	1	58	18%	3%	-	2%
U-bolt to Face	Env.	0.506	1.023	0.5	2	1	Yes	A36	0.25	0.75	58	2%	7%	-	3%