

10 INDUSTRIAL AVE,
SUITE 3
MAHWAH NJ 07430

PHONE: 201.684.0055
FAX: 201.684.0066



May 12, 2021

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

RE: Notice of Exempt Modification
168 Catoona Lane, Stamford, CT 06902
Latitude: 41.05283800
Longitude: -73.56314400
T-Mobile Site#: CT11007A - Anchor

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 265-foot level of the existing 301-foot Self-Support Tower at 168 Catoona Lane, Stamford, Connecticut. The 301-foot Self-Support Tower is owned and operated by American Tower. T-Mobile now intends to swap three (3) existing antennas and with three (3) new 2500 MHz antennas. The new antennas support 5G services and will be installed at the same 265-foot level of the tower. Mount modifications are also required as detailed in the enclosed mount analysis.

Planned Modifications:

Tower:

Remove

- (3) ATMA1412D-1A20 TMAs
- (12) Coax Cables

Remove and Replace:

- (3) Ericsson AIR 32 B2A B66AA antennas for (3) Ericsson AIR 6449 B41 2500 MHz antennas

Install New:

- (3) Ericsson Radio 4424 B25 RRU
- (3) Ericsson Hybrid Trunk 6/24 4AWG 100mm

Existing to Remain:

- (3) Ericsson 6x12 HCS

- (3) RFS APXVAARR24 Antennas
- (3) Ericsson AIR3246 B66 Antennas
- (3) Ericsson Radio 4449

Ground:

Install New:

- (1) 6160 Cabinet and (1) B160 Battery Cabinet

This facility was not originally approved by the Connecticut Siting Council, and the City of Stamford has indicated the city does not retain records for the original approval of this tower.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-SOj-73, a copy of this letter is being sent to Mayor - David Martin, Elected Official, and Ralph Blessing, Land Use Bureau Chief, as well as the tower and property owner.

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

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

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

Sincerely,

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

Attachments

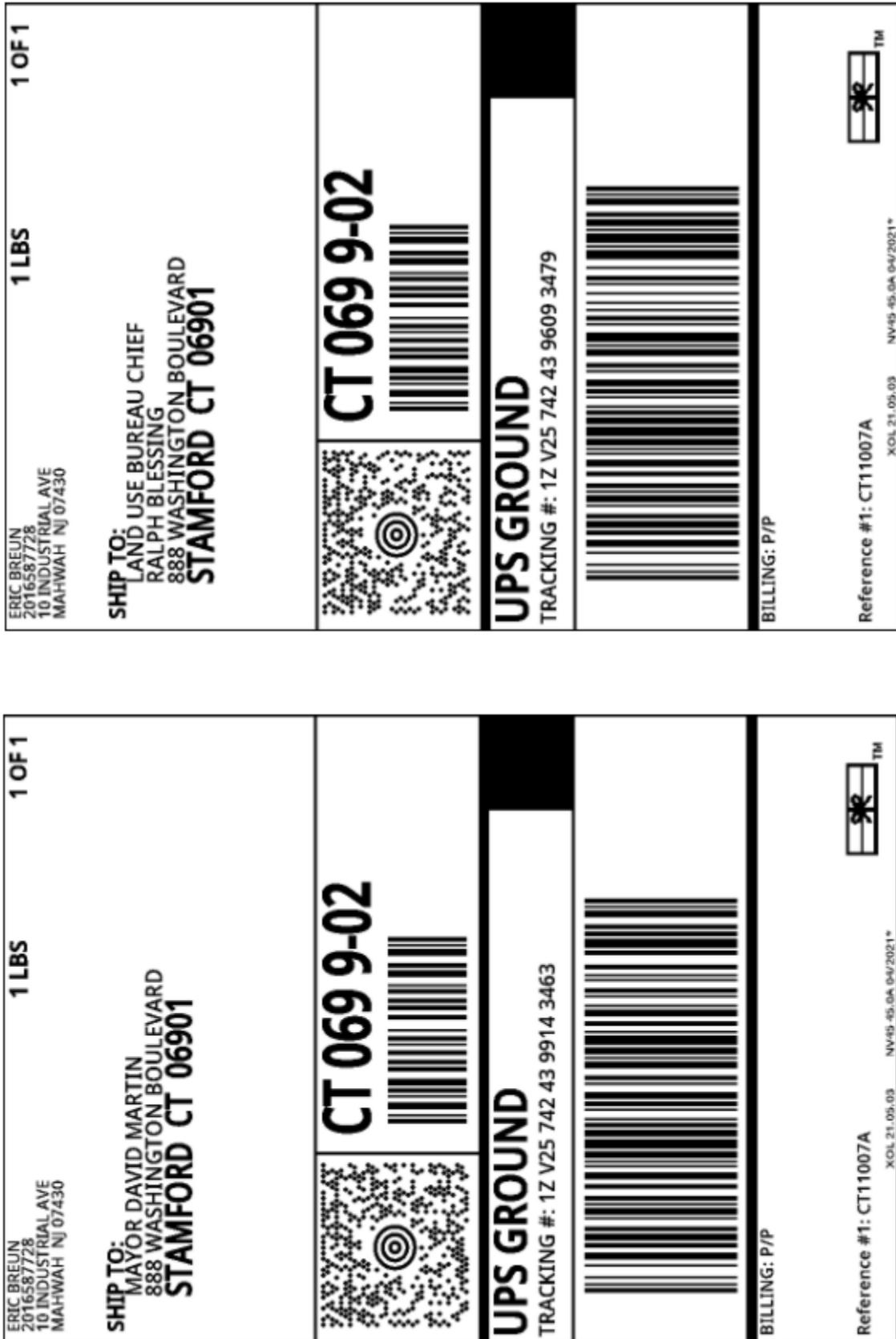
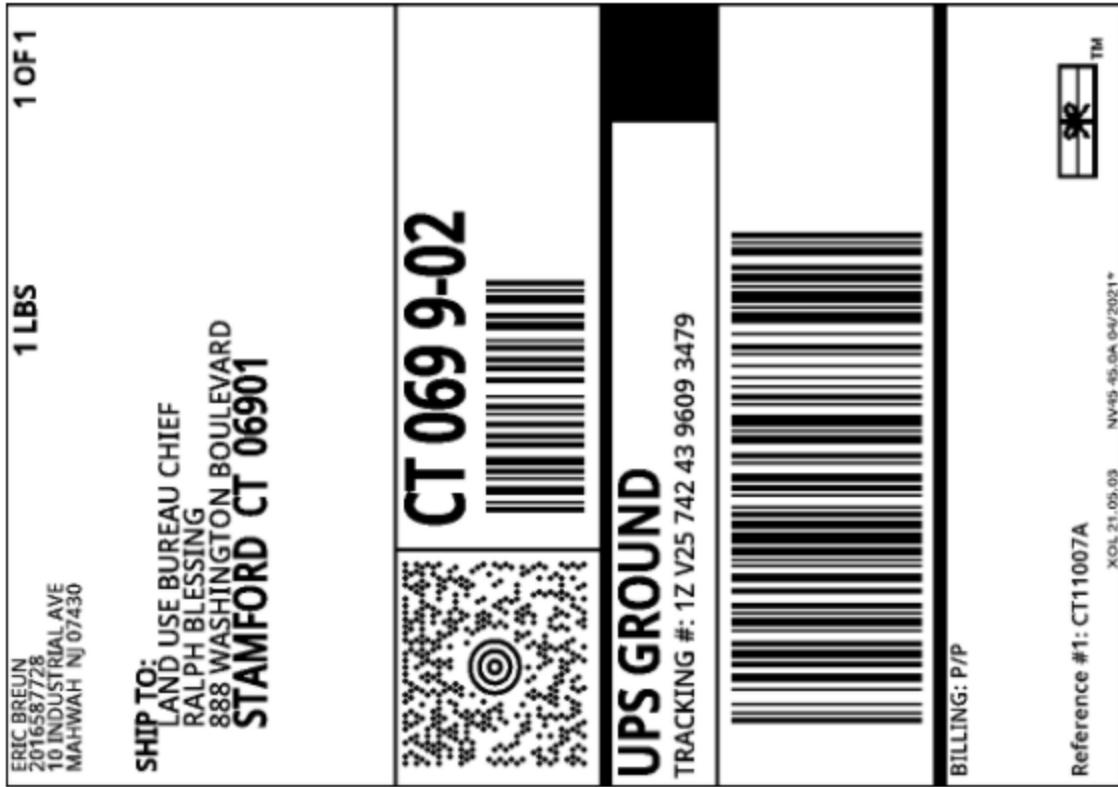
cc: David Martin – as Mayor of the City of Stamford
Ralph Blessing - Land Use Bureau Chief
American Tower - Land/Tower Owner

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

SHIP TO:
MAYOR DAVID MARTIN
888 WASHINGTON BOULEVARD
STAMFORD CT 06901

1 LBS

1 OF 1



1 OF 1
1 LBS

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

SHIP TO:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBBURN MA 01801

MA 018 9-04



UPS GROUND

TRACKING #: 1Z V25 742 43 9721 3453



BILLING: P/P



Reference #1: CT11007A
XOL 21.05.03
NVA-45.0A 04/2021*

168 CATOONA LANE

[Q Sales](#)
[Print](#)
[Field Card](#)
[Map It](#)

Location	168 CATOONA LANE	Mblu	000/ 0370/ /
Acct#	000-0370	Owner	AMERICAN TOWERS INC
Assessment	\$3,019,920	Appraisal	\$4,314,160
PID	116	Building Count	2

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$422,560	\$3,891,600	\$4,314,160
Assessment			
Valuation Year	Improvements	Land	Total
2020	\$295,800	\$2,724,120	\$3,019,920

Owner of Record

Owner	AMERICAN TOWERS INC	Sale Price	\$1,040,050
Co-Owner		Book & Page	5456/0339
Address	PO BOX 723597 ATLANTA, GA 31139	Sale Date	02/17/2000

Ownership History

Ownership History			
Owner	Sale Price	Book & Page	Sale Date
AMERICAN TOWERS INC	\$1,040,050	5456/0339	02/17/2000
AMERICAN T & T CO	\$0	1128/0268	03/15/1968

Building Information

Building 1 : Section 1

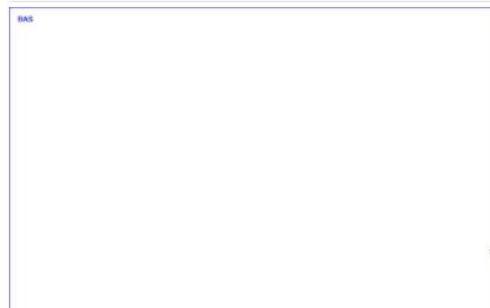
Year Built: 1968
Living Area: 3,249

Building Attributes	
Field	Description
Style:	Telephone Bldg
Model	Comm/Ind
Grade	C
Stories:	1
Occupancy	1.00
Exterior Wall 1	Reinforc Concr
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	T&G/Rubber
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete Slab
Interior Floor 2	
Heating Fuel	Gas/LP
Heating Type	Hot Air-no Duc
AC Type	Central
Struct Class	

Building Photo



Building Layout



Bldg Use	Industrial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	300C
Heat/AC	Heat/AC Pkgs
Frame Type	Masonry
Baths/Plumbing	None
Ceiling/Wall	Ceil & Wall
Rooms/Prtns	Average
Wall Height	15.00
% Comm Wall	



Building Sub-Areas (sq ft)		Legend	
Code	Description	Gross Area	Living Area
BAS	First Floor	3,249	3,249
		3,249	3,249

Building 2 : Section 1

Year Built: 1989
 Living Area: 600

Building Attributes : Bldg 2 of 2	
Field	Description
Style:	Telephone Bldg
Model	Comm/Ind
Grade	C
Stories:	1
Occupancy	1.00
Exterior Wall 1	Reinforc Concr

Building Photo



Roof Cover	T&G/Rubber
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete Slab
Interior Floor 2	
Heating Fuel	Gas/LP
Heating Type	Hot Air-no Duc
AC Type	Central
Struct Class	
Bldg Use	Industrial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	300C
Heat/AC	Heat/AC Pkgs
Frame Type	FireProofSteel
Baths/Plumbing	None
Ceiling/Wall	Ceil & Wall
Rooms/Prtns	Average
Wall Height	10.00
% Comn Wall	

Building Layout



20

30

Building Sub-Areas (sq ft)		Legend	
Code	Description	Gross Area	Living Area
BAS	First Floor	600	600
		600	600

Land

Land Use		Land Line Valuation	
Use Code	300C	Size (Acres)	3.64
Description	Industrial MDL-94 	Depth	
Zone	MZN	Assessed Value	\$2,724,120
Neighborhood	0300	Appraised Value	\$3,891,600
Alt Land Appr	No		
Category			

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
AP1	Fence Chn Lk			2400.00 L.F.	\$20,700	1
LP4	Pavng Asphalt			3880.00 S.F.	\$4,660	1
CEL1	Cell Tower			1.00 SITES	\$146,250	1
CSHD	Cell Equipment			240.00 S.F.	\$7,300	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2019	\$422,560	\$3,891,600	\$4,314,160
2018	\$422,560	\$3,891,600	\$4,314,160
2017	\$422,560	\$3,891,600	\$4,314,160

Assessment			
Valuation Year	Improvements	Land	Total
2019	\$295,800	\$2,724,120	\$3,019,920
2018	\$295,800	\$2,724,120	\$3,019,920
2017	\$295,800	\$2,724,120	\$3,019,920

168 CATOONA LANE

Location 168 CATOONA LANE

Mblu 000/ 0370/ / /

Acct# 000-0370

Owner AMERICAN TOWERS INC

Assessment \$3,252,940

Appraisal \$4,647,040

PID 116

Building Count 2

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2015	\$1,109,510	\$3,537,530	\$4,647,040
Assessment			
Valuation Year	Improvements	Land	Total
2015	\$776,670	\$2,476,270	\$3,252,940

Owner of Record

Owner AMERICAN TOWERS INC
Co-Owner
Address PO BOX 723597
ATLANTA, GA 31139

Sale Price \$1,040,050
Certificate
Book & Page 5456/ 339
Sale Date 02/17/2000

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
AMERICAN TOWERS INC	\$1,040,050		5456/ 339	02/17/2000
AMERICAN T & T CO	\$0		1128/ 268	03/15/1968


Building Information

Building 1 : Section 1

Year Built: 1968
Living Area: 3249

Building Attributes	
Field	Description
STYLE	Telephone Bldg
Stories:	1
Occupancy	1

Adjoining Map:



Disclaimer:
This map is for informational purposes only. All information is
subject to verification by user. The City of Stamford assume
no legal responsibility for the information contained herein.

This map is not intended to represent survey accuracy.
This map is formatted for 42° x 36° paper size only.
Printing these maps on smaller paper will render the map
scale (1"=100') inaccurate.



111 216 84 Map Block Lot 119 120
13 Address 125
003-6569 Parcel Id 125
Map Block Lot 126
126
Map Block Lot 131 132
131
Map Block Lot 132
132

City Boundaries
Buildings
Water Bodies
Parks
Streams and Rivers
Railroad
Paved Roads
Parcels

N
W
S
E

Map: 125

168 Catoona Lane Cell Tower Inbox x

⋮ ⌂ ⌂

Breun, Eric <ebreun@transcendwireless.com>
to stamfordlanduse ▾

Thu, May 6, 4:19 PM (6 days ago)

☆ ⌂ ⌂ ⌂

Good Afternoon,

A newer requirement of the Connecticut Siting Council (CSC) is to provide them with the original conditions of approval for the site. After doing some digging I could not find the original approval. Can you kindly send it over to me to proceed with the CSC process? If the original approval is not on file with your department please let me know, as that will be sufficient for the Council as well.

Site Address:
168 Catoona Lane

Thank you in advance for your assistance.

--
Eric Breun
Site Acquisition Agent
Transcend Wireless
10 Industrial Ave Suite 3
Mahwah NJ 07430
201-658-7728

Judge, Mary <MJudge@stamfordct.gov>
to me ▾

10:10 AM (2 hours ago)

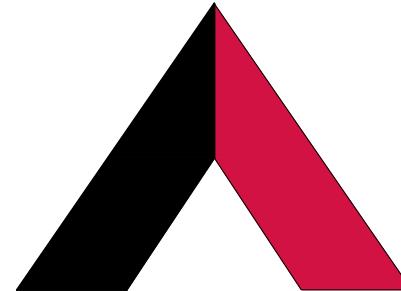
☆ ⌂ ⌂ ⌂

We do not have a Zoning Board file (certificate) for 168 Catoona Lane.

Ok, thanks.

Thank you!

Ok, thank you.



AMERICAN TOWER®

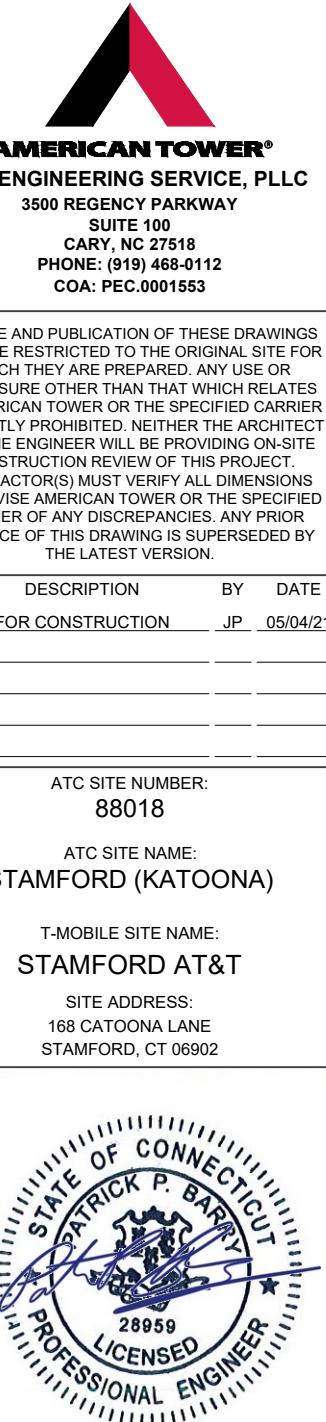
ATC SITE NAME: STAMFORD (KATOONA)
ATC SITE NUMBER: 88018
T-MOBILE SITE NAME: STAMFORD AT&T
T-MOBILE SITE NUMBER: CT11007A
SITE ADDRESS: 168 CATOONA LANE
STAMFORD, CT 06902



LOCATION MAP

T-MOBILE ANCHOR ANTENNA AMENDMENT PLAN 67D5A993M OUTDOOR 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.	<u>SITE ADDRESS:</u> 168 CATOONA LANE STAMFORD, CT 06902 COUNTY: FAIRFIELD <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.052825 LONGITUDE: -73.56304722 GROUND ELEVATION: 50' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: <u>TOWER WORK:</u> REMOVE (3) ANTENNA(s), (3) TTA(s), AND (10) 1-5/8" COAX CABLE(s) INSTALL MOUNT MODIFICATION(s), (3) ANTENNA(s), (3) RRUs, AND (3) HYBRID TRUNK 6/24 4AWG HYBRID CABLE(s) <u>EXISTING (6) ANTENNA(s), (3) RRUs, (1) 6X12 HCS 4AWG, AND (2) 6X12 HCS HYBRID CABLE(s) TO REMAIN</u> <u>GROUND WORK:</u> REMOVE (1) S8000 CABINET INSTALL (1) ENCLOSURE 6160 CABINET AND (1) B160 BATTERY CABINET <u>EXISTING (1) RBS 6131 CABINET TO REMAIN</u>	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
1. INTERNATIONAL BUILDING CODE (IBC) 2. NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES			G-001	TITLE SHEET	0	05/04/21	JP
			G-002	GENERAL NOTES	0	05/04/21	JP
			C-101	DETAILED SITE PLAN	0	05/04/21	JP
			C-102	DETAILED GROUND PLAN	0	05/04/21	JP
			C-201	TOWER ELEVATION	0	05/04/21	JP
			C-401	ANTENNA INFORMATION & SCHEDULE	0	05/04/21	JP
			C-501	CONSTRUCTION DETAILS	0	05/04/21	JP
			E-501	GROUNDING DETAILS	0	05/04/21	JP
			R-601	SUPPLEMENTAL			
			R-602	SUPPLEMENTAL			
			R-603	SUPPLEMENTAL			
			R-604	SUPPLEMENTAL			
			R-605	SUPPLEMENTAL			
				MOUNT MODIFICATIONS (4 PAGES)			
UTILITY COMPANIES							
POWER COMPANY: EVERSOURCE PHONE: (877) 659-6326							
TELEPHONE COMPANY: FRONTIER COMMUNICATIONS PHONE: (877) 641-3250							
 Know what's below. Call before you dig.		<u>PROJECT TEAM</u> <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801 <u>APPLICANT:</u> T-MOBILE NORTHEAST, LLC <u>ENGINEER:</u> ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518 <u>PROPERTY OWNER:</u> ANTHONY M FEMIA 82 CATOONA LANE STAMFORD, CT 06902	<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.			
			<u>PROJECT LOCATION DIRECTIONS</u>				
				COMING FROM NORTH I-95 TAKE EXIT 6. TURN RIGHT ONTO WEST AVE. TURN LEFT AT FIRST LIGHT ONTO W. MAIN ST. TURN RIGHT AT FIRST LIGHT AND FOLLOW ROAD TO END.			



Authorized by "EOR"
04 May 2021 02:43:38

DATE DRAWN:	05/04/21
ATC JOB NO:	13337525_G3
CUSTOMER ID:	STAMFORD AT&T
CUSTOMER #:	CT11007A

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. ACTELCO 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, GROUNDRING RINGS, GROUNDRING 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 CAISSENS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.

SPECIAL CONSTRUCTION

ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
 - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND
 - B. INSTALL ANTENNA AS INDICATE 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:
 2. ALL EXTERIOR #6 GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPICE WEATHERPROOFING KIT #221213 OR EQUAL.
 3. 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.

GENERAL NOTES

SHEET NUMBER: G-002

REVISION: 0

REV. DESCRIPTION BY DATE

FOR CONSTRUCTION JP 05/04/21

ATC SITE NUMBER: 88018

ATC SITE NAME: STAMFORD (KATOONA)

T-MOBILE SITE NAME: STAMFORD AT&T

SITE ADDRESS: 168 CATOONA LANE STAMFORD, CT 06902



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DATE DRAWN: 05/04/21

ATC JOB NO: 13337525_G3

CUSTOMER ID: STAMFORD AT&T

CUSTOMER #: CT11007A

GENERAL CONSTRUCTION NOTES

AMERICAN TOWER®

A.T. ENGINEERING SERVICE, PLLC

3500 REGENCY PARKWAY

SUITE 100

CARY, NC 27518

PHONE: (919) 468-0112

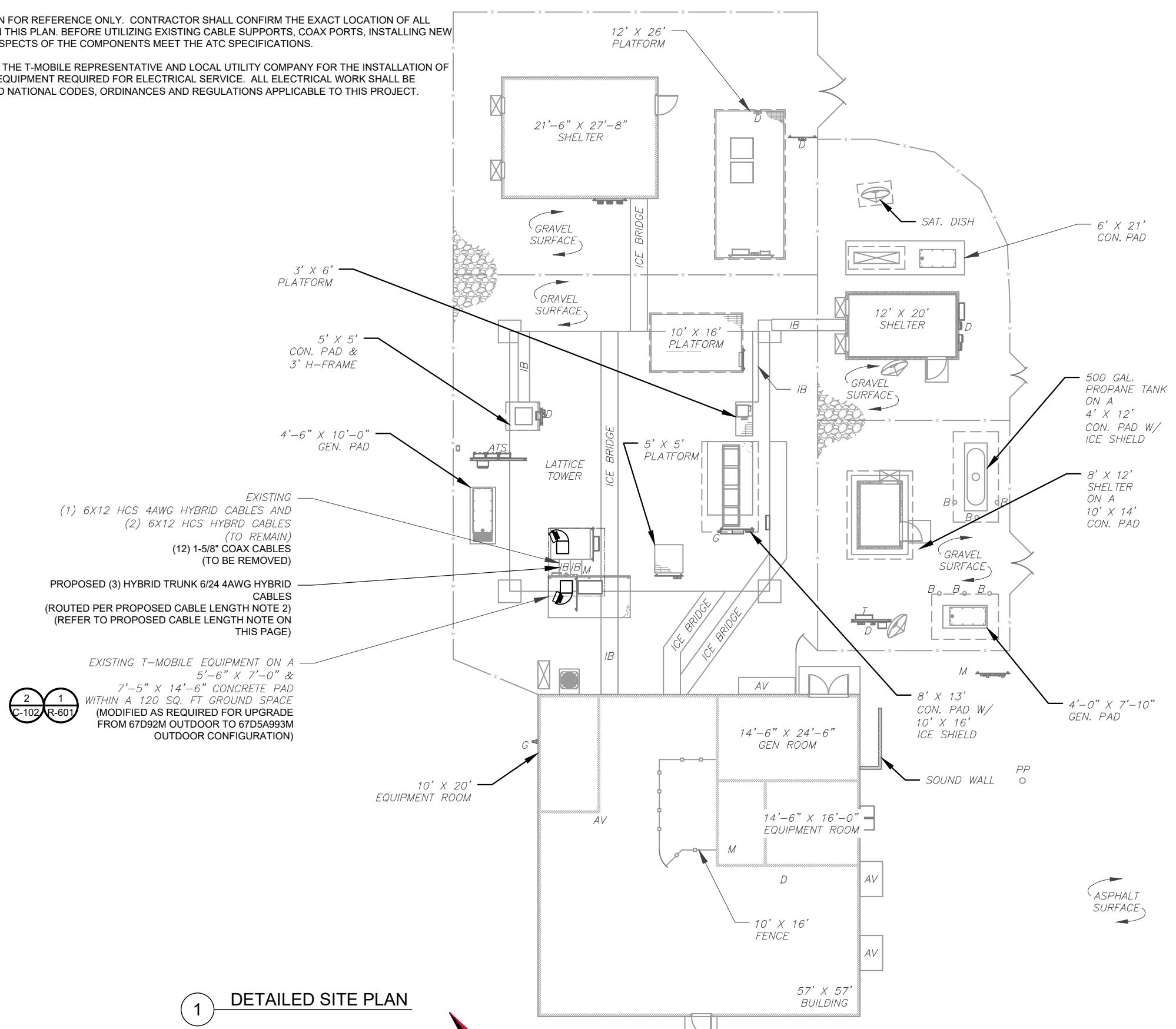
COA: PEC.0001553

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SITE PLAN NOTES:

1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.

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
—	CHAINLINK FENCE



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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JP	05/04/21
1			
2			
3			
4			

ATC SITE NUMBER:
88018

ATC SITE NAME:
STAMFORD (KATOONA)

T-MOBILE SITE NAME:
STAMFORD AT&T

SITE ADDRESS:
168 CATOONA LANE
STAMFORD, CT 06902

SEAL:



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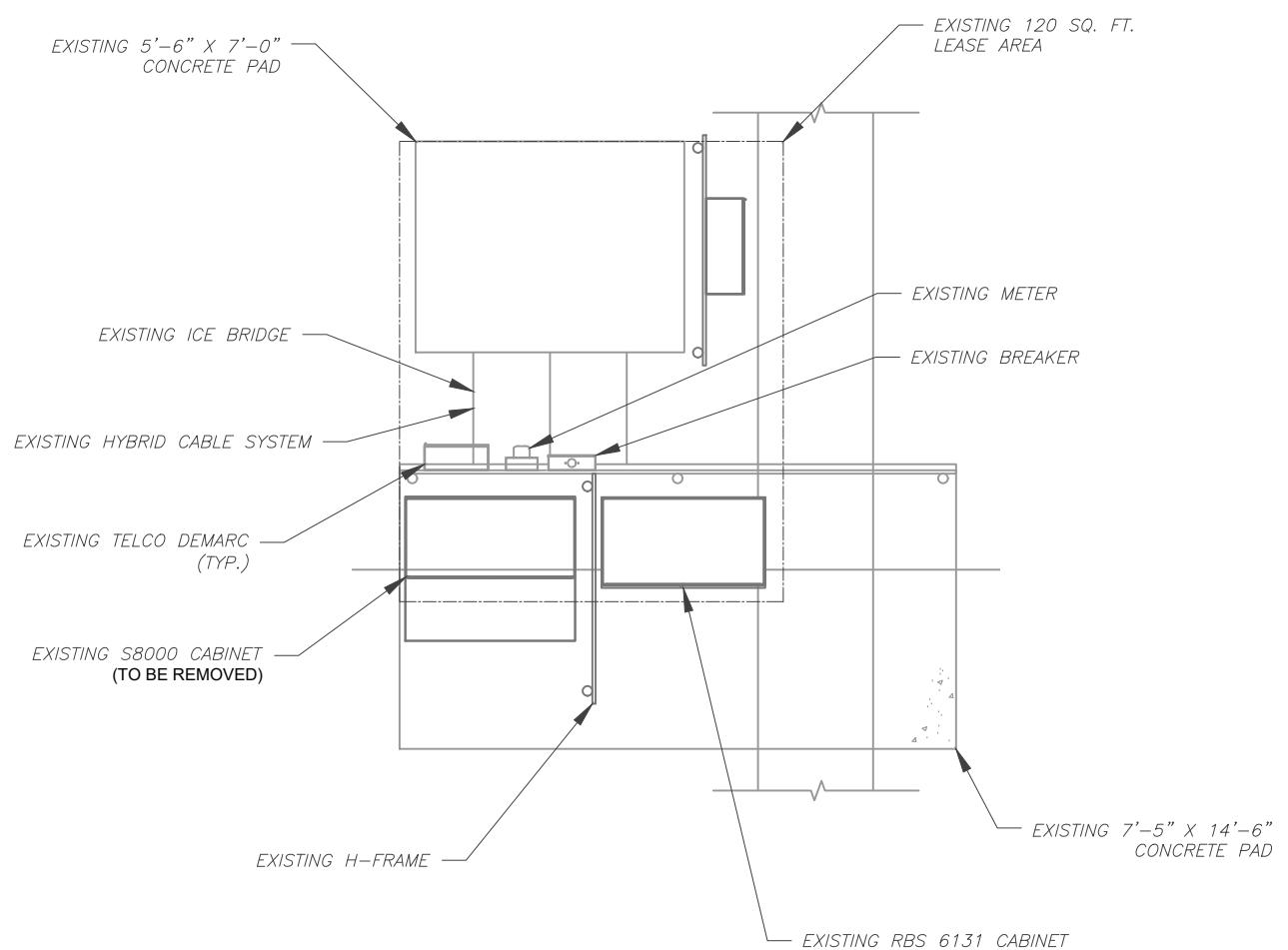
DATE DRAWN: 05/04/21
ATC JOB NO: 13337525_G3
CUSTOMER ID: STAMFORD AT&T
CUSTOMER #: CT11007A

DETAILED SITE PLAN

SHEET NUMBER: C-101	REVISION: 0
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SITE PLAN NOTES:

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

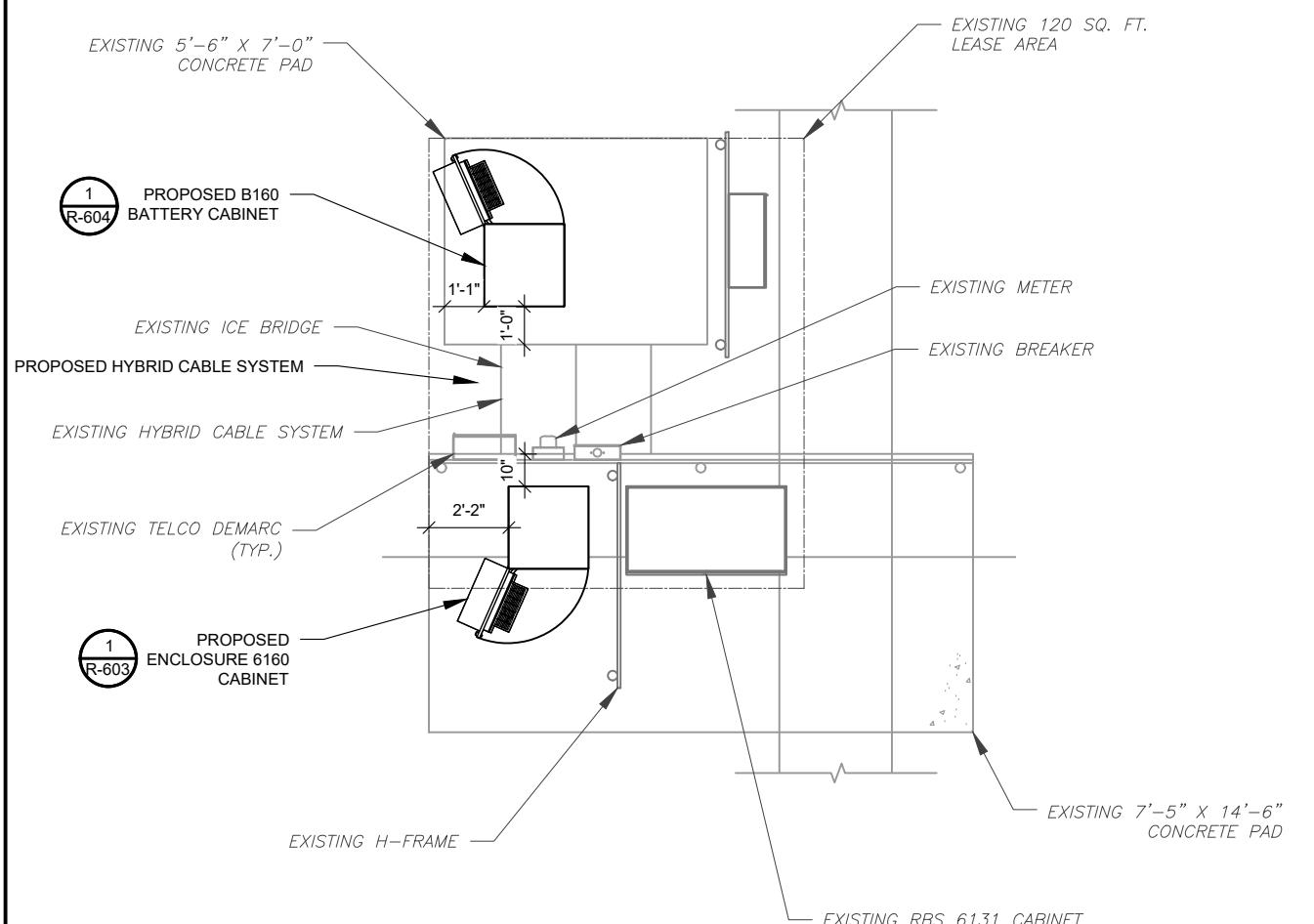


1 EXISTING GROUND EQUIPMENT LAYOUT

0 5' 10'
SCALE: 1"=5' (11X17)
1"=2.5' (22X34)



T-MOBILE CM APPROVAL REQUIRED
BEFORE INSTALLING CABINETS



2 PROPOSED GROUND EQUIPMENT LAYOUT

0 5' 10'
SCALE: 1"=5' (11X17)
1"=2.5' (22X34)



REV.	DESCRIPTION	BY	DATE
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4			
5			

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DETAILED GROUND PLAN

SHEET NUMBER: C-102 REVISION: 0



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CARY, NC 27518
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SITE ADDRESS:
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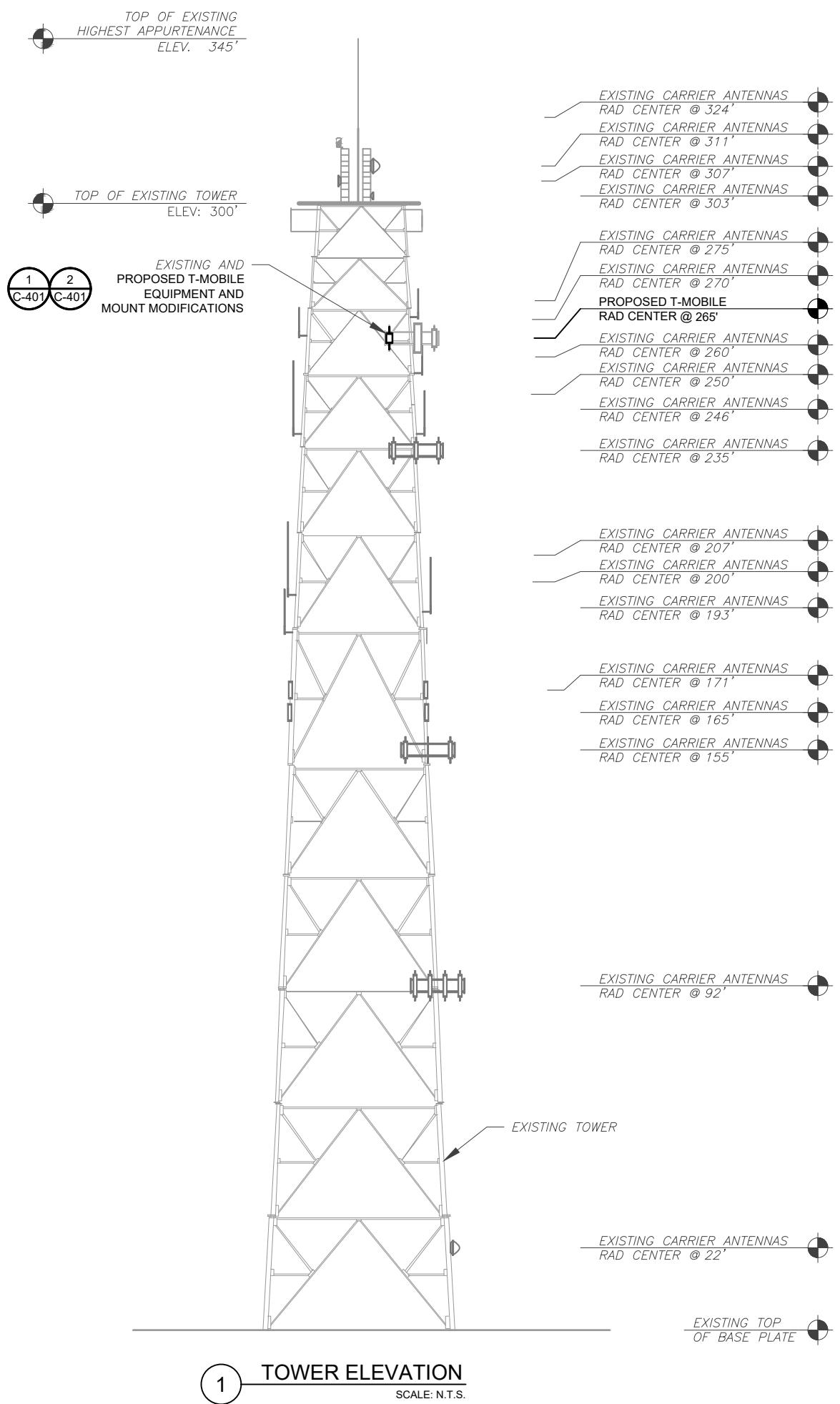


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DATE DRAWN: 05/04/21
ATC JOB NO: 13337525_G3
CUSTOMER ID: STAMFORD AT&T
CUSTOMER #: CT11007A

TOWER ELEVATION

SHEET NUMBER: C-201
REVISION: 0





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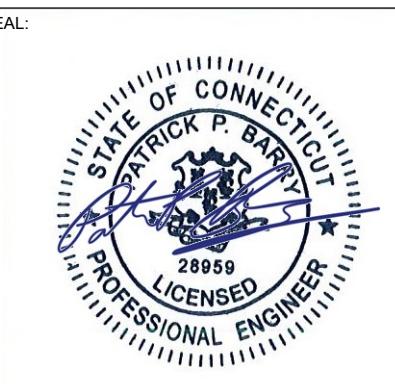
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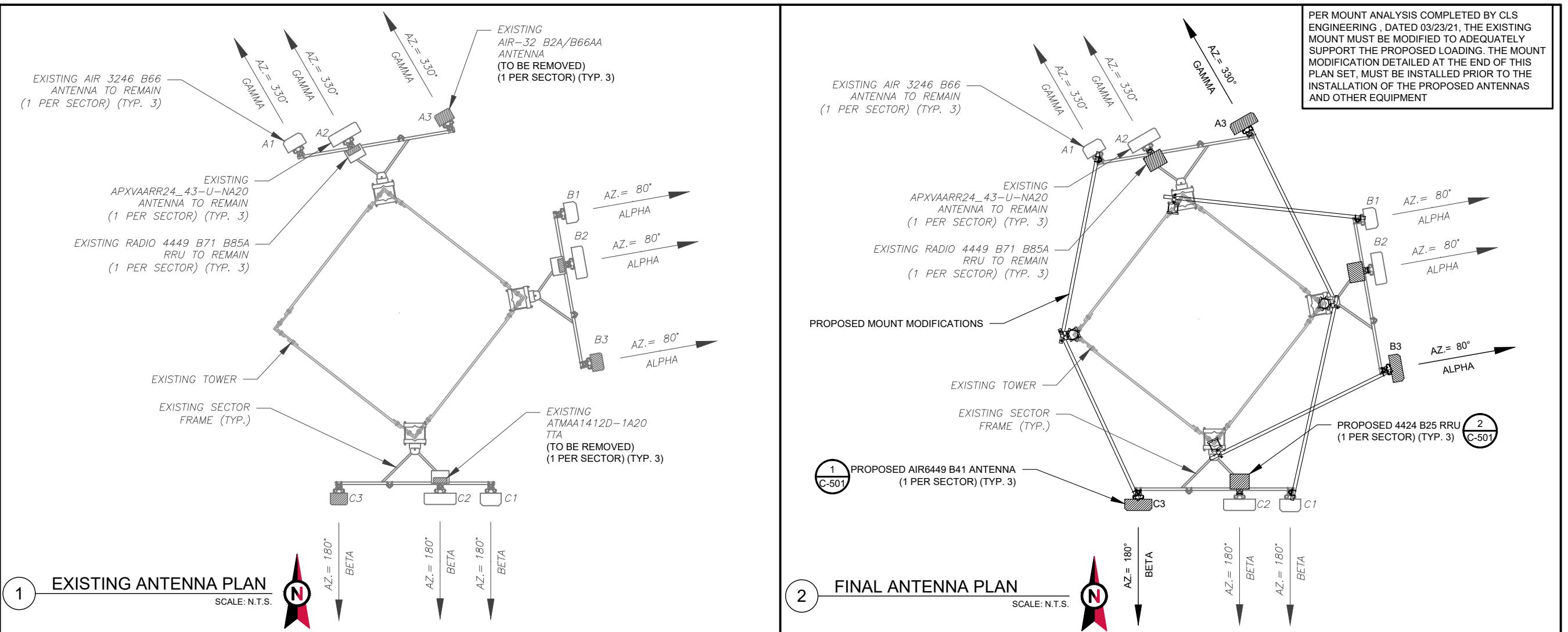
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DATE DRAWN:	05/04/21
ATC JOB NO.:	13337525_G3
CUSTOMER ID:	STAMFORD AT&T
CUSTOMER #:	CT11007A

ANTENNA INFORMATION & SCHEDULE	
SHEET NUMBER:	REVISION:
C-401	0

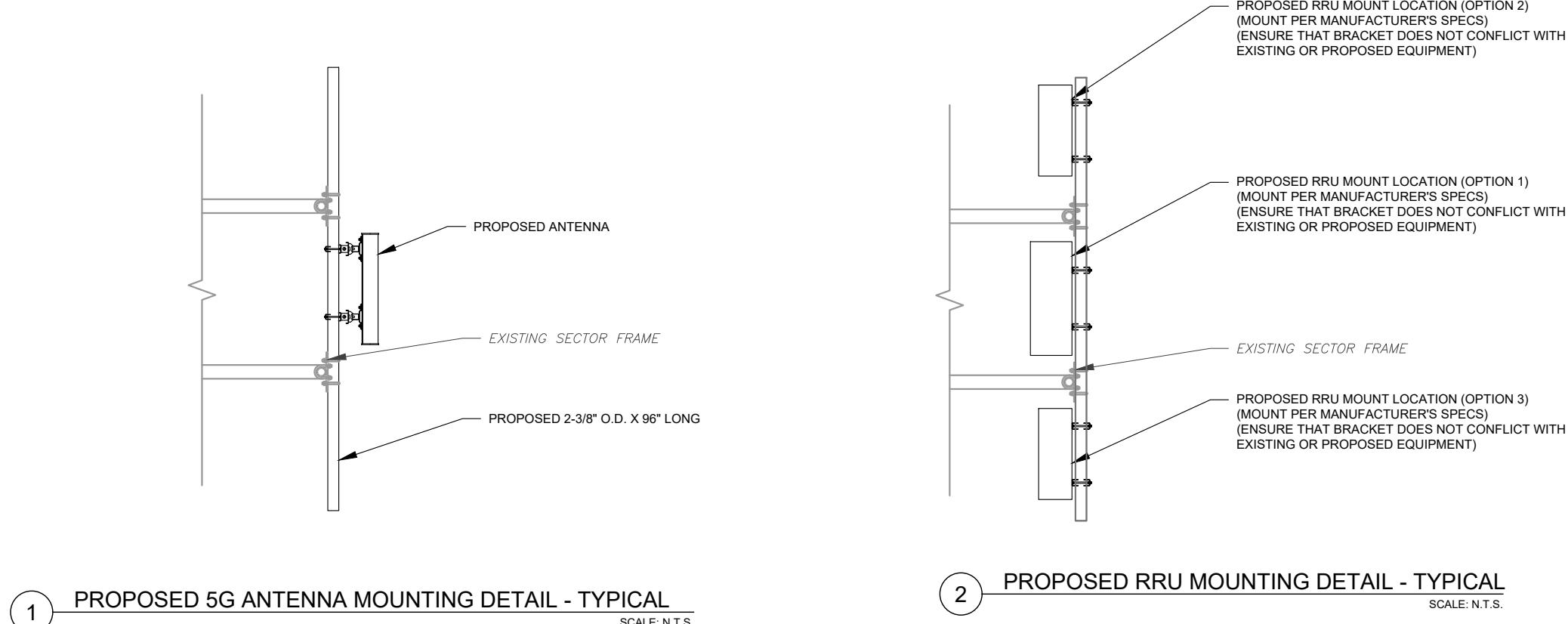


EXISTING ANTENNA SCHEDULE									
LOCATION			ANTENNA SUMMARY			NON ANTENNA SUMMARY			
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	265'	80°	A1	AIR 3246 B66	L2100	2°	RMN	—	—
			A2	APXVAARR24_43-U-NA20	L700/L600/N600/U2100	2°	RMN	ATMAA1412D-1A20 RADIO 4449 B71 B85A	RMV RMN
			A3	AIR-32 B2A/B66AA	L1900/G1900	2°	RMV	—	—
BETA	265'	180°	B1	AIR 3246 B66	L2100	2°	RMN	—	—
			B2	APXVAARR24_43-U-NA20	L700/L600/N600/U2100	2°	RMN	ATMAA1412D-1A20 RADIO 4449 B71 B85A	RMV RMN
			B3	AIR-32 B2A/B66AA	L1900/G1900	2°	RMV	—	—
GAMMA	265'	330°	C1	AIR 3246 B66	L2100	0°	RMN	—	—
			C2	APXVAARR24_43-U-NA20	L700/L600/N600/U2100	0°	RMN	ATMAA1412D-1A20 RADIO 4449 B71 B85A	RMV RMN
			C3	AIR-32 B2A/B66AA	L1900/G1900	0°	RMV	—	—

CABLE LENGTHS FOR JUMPERS
JUNCTION BOX TO RRU: 15'
RRU TO ANTENNA: 10'

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY			FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS	MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
—	—	(12) 1-5/8"	—	RMV	—	—	—	(3) HYBRID TRUNK 6/24 4AWG	ADD
—	—	—	6X12 HCS 4AWG (2) 6X12 HCS	RMN	—	—	—	6X12 HCS 4AWG (2) 6X12 HCS	RMN

EQUIPMENT SCHEDULES



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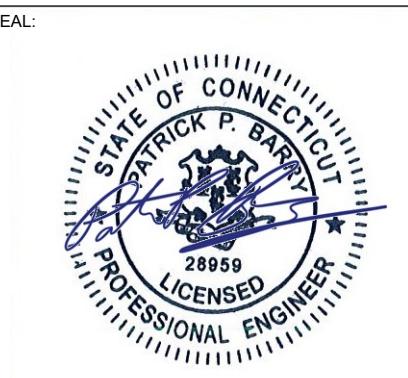
REV.	DESCRIPTION	BY	DATE
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88018

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STAMFORD (KATOONA)

T-MOBILE SITE NAME:
STAMFORD AT&T

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168 CATOONA LANE
STAMFORD, CT 06902



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DATE DRAWN:	05/04/21
ATC JOB NO:	13337525_G3
CUSTOMER ID:	STAMFORD AT&T
CUSTOMER #:	CT11007A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-501	0



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A.T. ENGINEERING SERVICE, PLLC
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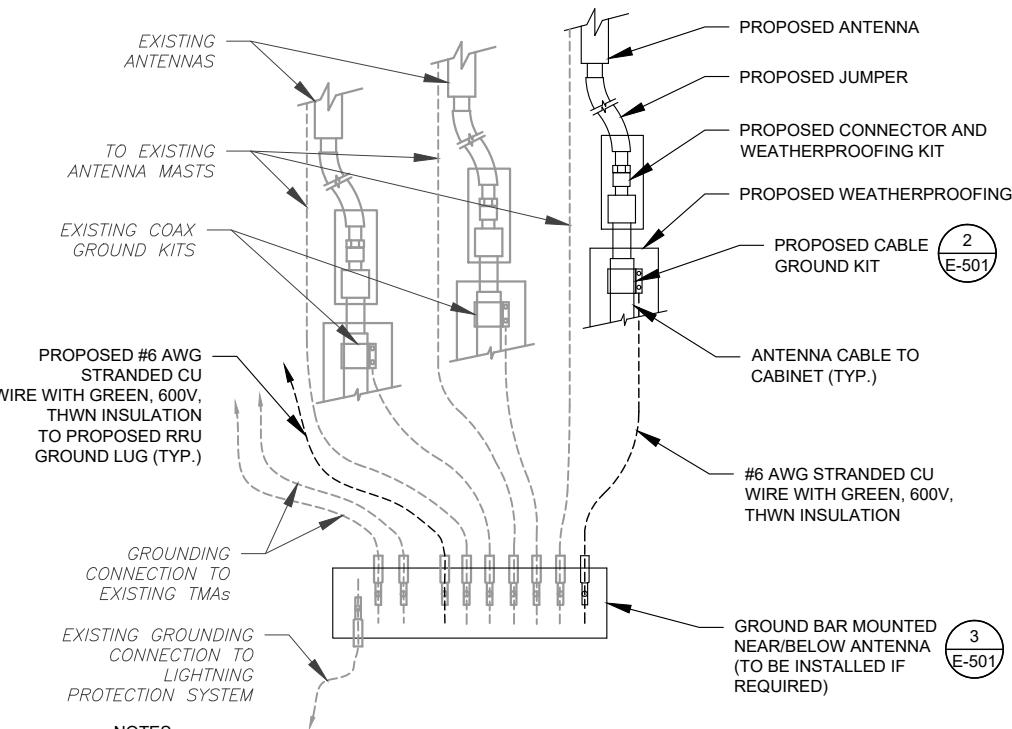


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DATE DRAWN:	05/04/21
ATC JOB NO:	13337525_G3
CUSTOMER ID:	STAMFORD AT&T
CUSTOMER #:	CT11007A

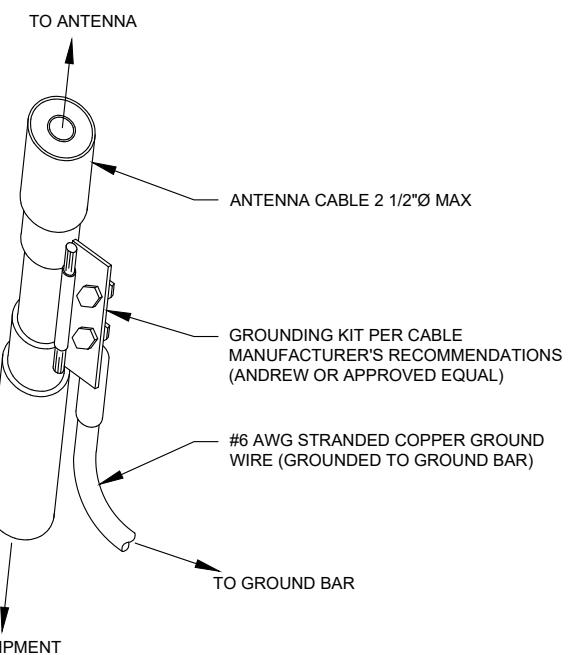
GROUNDING DETAILS

SHEET NUMBER:	E-501
REVISION:	0



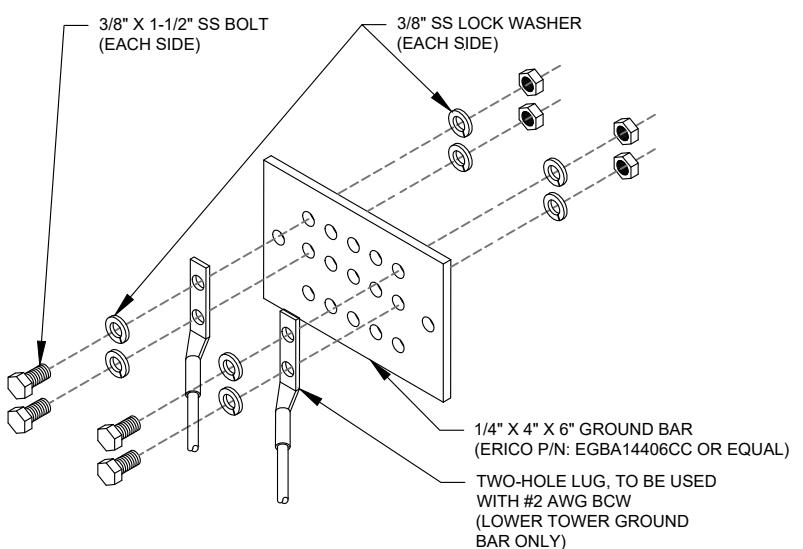
1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.



2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.



3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.

ELECTRICAL NOTES:

- 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.
- 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:
- FOR SPECIFIC CABINET/ANCILLARY EQUIPMENT WIRING REQUIREMENTS, THE T-MOBILE CONTRACTOR SHOULD REFERENCED THE T-MOBILE DESIGN DOCUMENTS 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"

DATE DRAWN:	05/04/21
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GROUNDING DETAILS

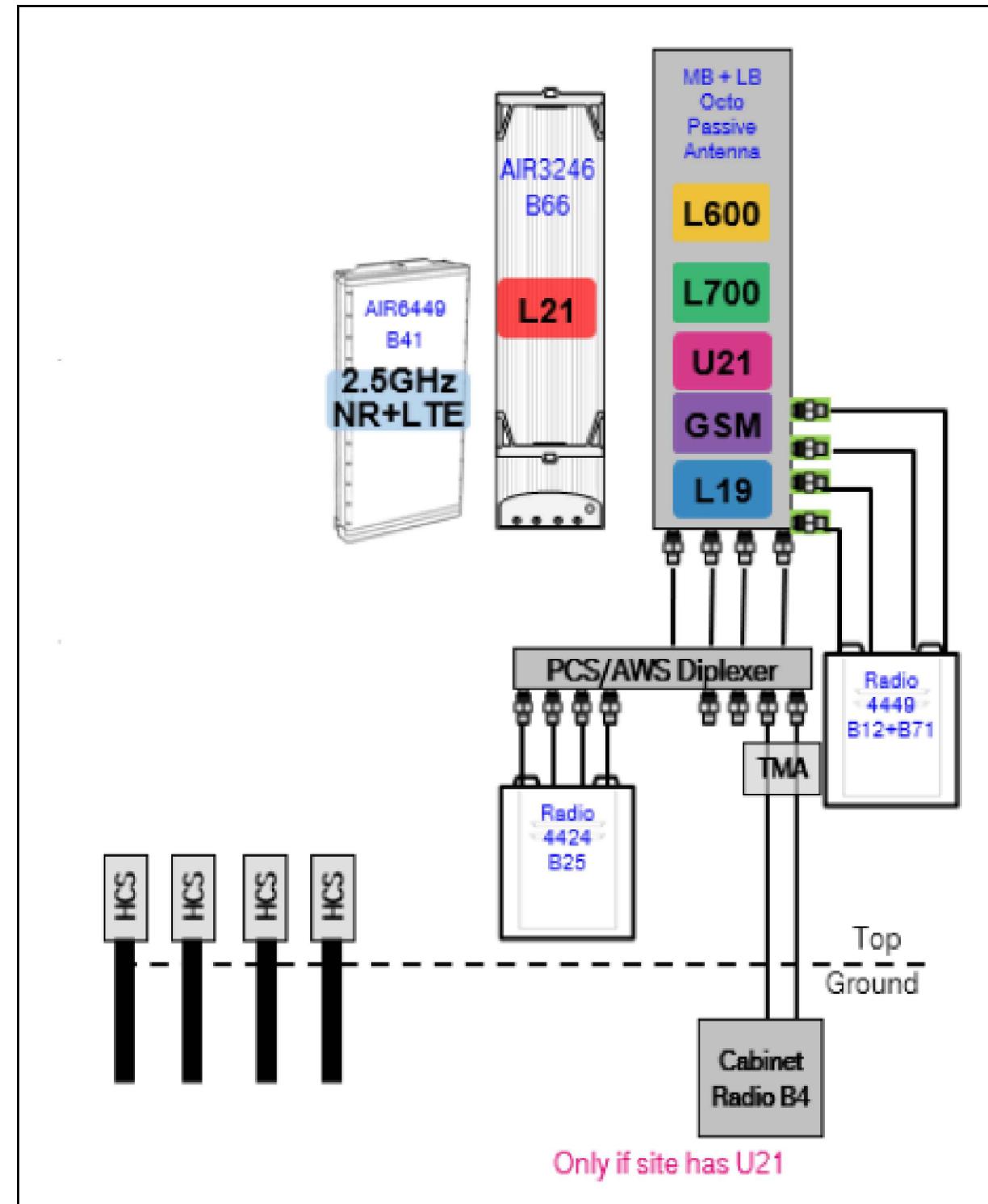
SHEET NUMBER:	E-501
REVISION:	0

Proposed RAN Equipment		
Template: 67D5A993M Outdoor		
Enclosure	1	2
Enclosure Type	RBS 6131	Enclosure 6160
Baseband	DUW30 (x 2) DUG20 BB 6630 BB 6630 BB 6630 L1000 L2100 BB 6630 L700 L600 N600	BB 6630 BB 6648 L2500 N2500
Hybrid Cable System	Ericsson 6x12 HCS 4AWG 100m Ericsson 6x12 HCS "Select Length & AWG" (x 2)	Ericsson Hybrid Trunk 6/24 4AWG 100m (x 3) PSU 4813
Radio	RU22 (x 6)	
Transport System		CSR IXRe V2 (Gen2)

RAN Scope of Work:

U2100 will be decommissioned.
 Remove both Nortel Cabinets.
 Add (1) Enclosure 6160.
 Add (1) Battery Cabinet B160.
 Add (1) iXRe Router to new Enclosure 6160.
 Add (1) BB6630 for L2500 to new Enclosure 6160.
 Add (1) BB6648 for N2500 to new Enclosure 6160.
 Add (1) PSU4813 Voltage Booster to new Enclosure 6160.
 Existing: (12) Coaxial Lines; (3) 3x8 HCS; (1) 9x18 HCS; (4) 6x12
 Remove all coaxial lines.
 Remove all 3x8 HCS.
 Remove 9x18 HCS
 Add (3) 6x24 HCS terminating at the Enclosure 6160. Connect DC for the AIR6449 B41 to the PSU4813 Voltage Booster.

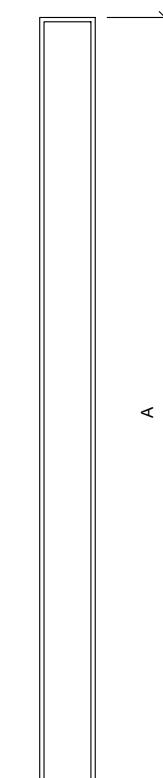
1 CABINET CONFIGURATION
SCALE: NOT TO SCALE



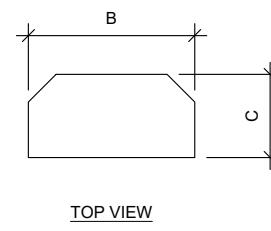
2 ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED
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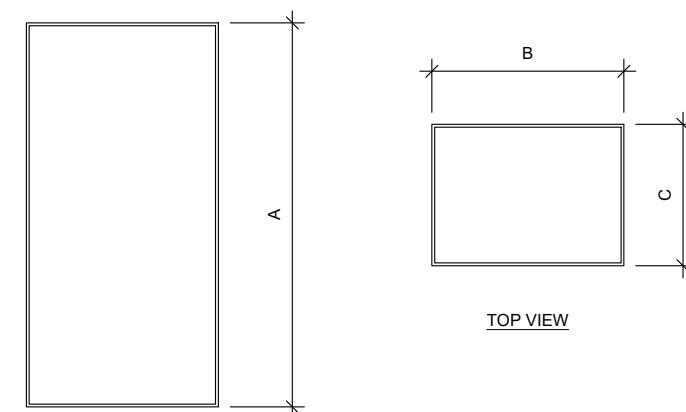
SUPPLEMENTAL
SHEET NUMBER: R-601 REVISION: 0



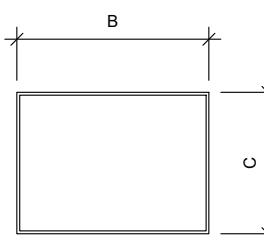
FRONT VIEW



TOP VIEW



FRONT VIEW



TOP VIEW

1 ANTENNA SPECIFICATIONS
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
Air6449 B41	33.1"	20.6"	8.6"	104.0

2 RRU SPECIFICATIONS
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
4424 B25	17.1"	14.4"	11.3"	86.0

SUPPLEMENTAL

SHEET NUMBER: R-602	REVISION: 0
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Enclosure 6160 AC

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

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

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

The power system offers 31.5kW of power in total and provides 24kW of -48V DC power for both internal and external consumers.

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

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



Preliminary technical specification for Enclosure 6160 AC

CAPACITY

Rack space user equipment	19U (19" rack)
Hardware capabilities	Power and CPRI support for multi-standard remote radios (RRU or AIR) ERS Baseband and Transport units Li-Ion batteries 3PP equipment Additional power feed available as option

MECHANICAL SPECIFICATION

Weight	145 kg (excluding active equipment) 320 lbs (excluding active equipment)
Dimension (H x W x D)	1600 x 650 x 650 mm (incl. Base frame) 63 x 26 x 26 in. (incl. Base frame)
Base frame height	150 mm 6 in.
Mounting position	Ground
Enclosure material	Aluminum
Color	Power paint NCS 2002-B
Door	Front access
Rack type	19" (IEC 60297-3-100)
Locking type	Pad lock or Cylinder

POWER SYSTEM

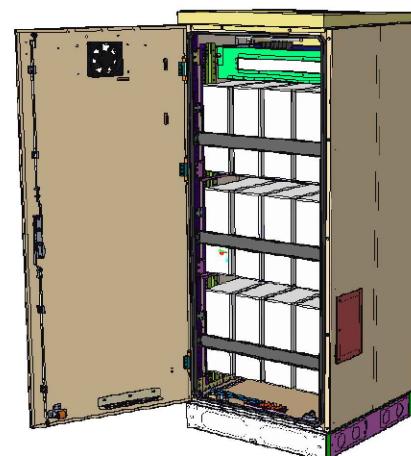
Input voltage	3P+N+PE: 346/200-415/240 VAC 2P+N+PE: 208/120-220/127 VAC 1P+N+PE: 200-250 VAC
Input power	<33kW
Output load (-48VDC)	24kW
Total capacity (-48VDC)	31.5kW
AC SPD	Class 2/Type 2
DC SPD	Class 2/Type 2
PSU Slots	9x
Service outlet	Optional
Priority load	8x Circuit Breaker
LLVD 1	6x Circuit Breaker
LLVD 2	6x Circuit Breaker
CB ratings	3A / 5A / 10A / 15A / 20A / 25A / 30A / 40A / 50A / 60A / 80A / 100A
Battery Interface	2x Circuit Breaker
Battery Circuit Breaker rating	125A 2pol (200A)
PSU capacity	3500W

SUPPLEMENTAL

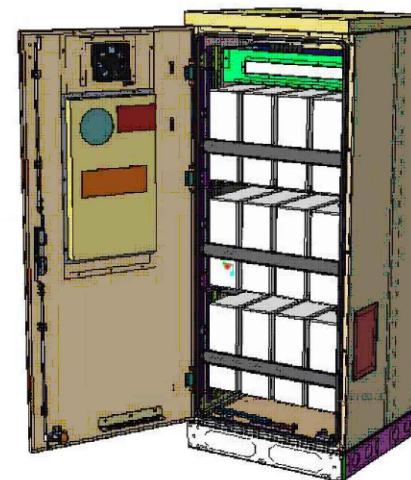
SHEET NUMBER:	REVISION:
R-603	0

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED
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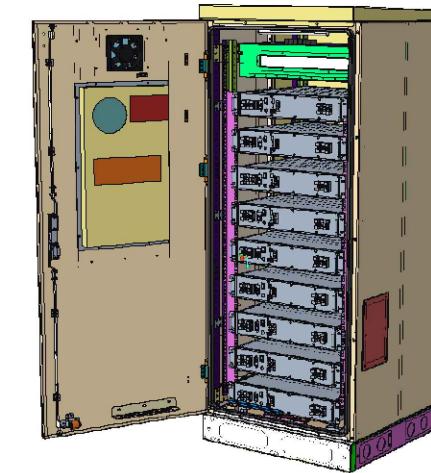
Enclosure B160



Enclosure B160
AirCon + VRLA



Enclosure B160
AirCon + Li-Ion



Enclosure B160
Convection Cooling
+ VRLA

PA1 | 2019-02-03 | Ericsson Confidential | Page 1

Enclosure B160

Capacity

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

Electrical specification

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

Mechanical specification

- Weight: 134kg
- Dimensions: 63 x 26 x 26 in. (incl. Base frame)
- Base frame height: 6 in.
- Material: Galvanized steel (180g/m²)
- Color: Powder paint NCS 2002-B
- Door: Front access
- Locking type: Pad lock / cylinder

Environmental specification

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

Climate system

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

SUPPLEMENTAL

PA1 | 2019-02-03 | Ericsson Confidential | Page 2

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED
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SHEET NUMBER: R-604 | REVISION: 0



This report was prepared for American Tower Corporation by



Antenna Mount Analysis Report

ATC Site Name : Stamford (Katoona)

ATC Asset Number : 88018

Engineering Number : 13337525_C9_04

Mount Elevation : 264.5 ft

Carrier : T-Mobile

Carrier Site Name : Stamford AT&T

Carrier Site Number : CT11007A

Site Location : 168 Catoona Lane
Stamford, CT 06902-4573
41.052825, -73.56304722

County : Fairfield

Date : March 23, 2021

Max Usage : 69%

Result : Pass (Pending Mods)

Prepared By:
Prathamesh Padwal
CLS Engineering PLLC

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



Mount Analysis for American Tower
88018 - Stamford (Katoona)

March 23, 2021

CLS Engineering PLLC Project #41124-13337525_C9_04-02-MOD

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 referenced modifications are installed.

This analysis incorporates modifications per CLS Engineering PLLC, dated March 23, 2021.

- Replace existing stiff arm with (2) proposed stiff arms at each existing sector frame mount (6 total) as shown. Use (2) 15'-0" long Pipe 2 STD in lieu of Site Pro 1 P2126 included in the proposed stiff arm kit at each sector (6 total). Connect to nearest adjacent tower leg with Site Pro 1 DCP kit. Connect to existing mount pipes at position 1 and 3 with Site Pro 1 DCP kits provided in the proposed stiff arm kit.

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
264.5	265.0	3	RFS Celwave APXVAARR24_43-U-NA20
		3	Ericsson AIR 3246 B66
		3	Ericsson AIR6449 B41
		3	Ericsson RADIO 4424 B25
		3	Ericsson RADIO 4449 B71 B85A

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Connections	69%	Pass
Face Horizontals	57%	Pass
Mount Pipes	39%	Pass
Bracing Members	18%	Pass

GENERAL NOTES

- THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF TIA/EIA-222, ASCE 7, AWS, ACI, AND AISC. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE-MENTIONED CODES AND THE CONTRACT SPECIFICATIONS.
- ALL MATERIALS UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS.
- ALL PRODUCT OR MATERIAL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER SUITABLE TO DETERMINE IF SUBSTITUTE IS ACCEPTABLE FOR USE AND MEETS THE ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
- PROVIDE STRUCTURAL STEEL SHOP DRAWING(S) TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION.
- UNLESS NOTED OTHERWISE, ALL NEW MEMBERS AND REINFORCING SHALL MAINTAIN THE EXISTING MEMBER WORK LINES AND NOT INTRODUCE ECCENTRICITIES INTO THE STRUCTURE.
- ANY CONTRACTOR-CAUSED DAMAGE TO PROPERTY OF THE LAND OWNER, PROPERTY OF THE STRUCTURE OWNER, PROPERTY OF THE CUSTOMER, SITE FENCING OR GATES, ANY AND ALL UTILITY AND/OR SERVICE LINES, SHOWN OR NOT SHOWN ON THE PLANS, SHALL BE REPAIRED OR REPLACED AT THE SOLE COST OF THE CONTRACTOR AND SHALL BE ACCOMPLISHED BY THE CONTRACTOR OR SUBCONTRACTOR AS APPROVED BY THE ENGINEER OF RECORD AND LAND OWNER. DAMAGE TO EQUIPMENT OR PROPERTY OF ANY KIND BELONGING TO OTHER COMPANIES (BESIDES THE INDICATED CUSTOMER) SHALL BE ADDRESSED BY THE CONTRACTOR WITH THE COMPANIES THAT OWN THE DAMAGED ITEMS.

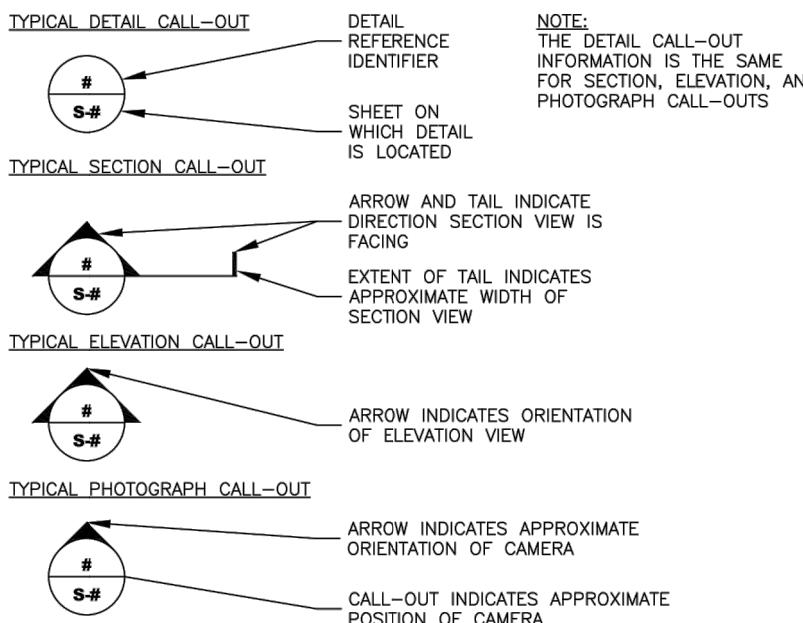
STRUCTURAL STEEL NOTES

- STRUCTURAL STEEL SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS:
 - STRUCTURAL STEEL SHAPES, PLATES AND BARS (EXCEPT W-SHAPES) - ASTM A36, Fy=36 KSI
 - PIPES - ASTM A53, GRADE B, Fy=35 KSI
 - HSS-SHAPES - ASTM A500, GRADE B, Fy=42 KSI (ROUND)
Fy=46 KSI (SQUARE & RECTANGULAR)
 - ANCHOR & ALL-THREAD RODS - ASTM F1554, GRADE 55
 - STRUCTURAL BOLTS 1/2" AND LARGER - ASTM A325
 - STRUCTURAL BOLTS SMALLER THAN 1/2" - DIMENSIONS: ASME B18.2.1
MATERIAL: SAE J429 GRADE 5 | THREADING: ASME B1.1, UNC, CLASS 2A | FINISH: HOT-DIP GALVANIZED OR ZINC-PLATED
 - sheet metal screws - dimensions: ASME B18.6.3
MATERIAL: SAE J933 | FINISH: HOT-DIP GALVANIZED OR ZINC-PLATED
 - NUTS FOR BOLTS/ALL-THREAD - ASTM A563 (THREADING TO MATCH BOLT)
 - WASHERS FOR BOLTS/ALL-THREAD - ASTM F436
 - W & WT SHAPES - ASTM A36, Fy=36 KSI
ALTERNATE SPEC: ASTM A992 (IF OTHER SPEC IS UNAVAILABLE)
- STRUCTURAL BOLTS SHALL CONFORM TO THIS NOTE. ALL BOLT HOLES SHALL BE STANDARD SIZE BOLT HOLES PER AISC 360, UNLESS OTHERWISE NOTED. ALL HOLES SHALL BE SHOP DRILLED OR SUB-PUNCHED AND REAMED. BURNING OF HOLES IS NOT PERMITTED. WHERE SLOTTED OR OVERTIME HOLES ARE SPECIFIED ON THE DRAWINGS, EXTRA-THICK ASTM F436 PLATE WASHERS SHALL BE USED (5/16" MINIMUM THICKNESS) WITH A DIAMETER SUITABLE TO COVER THE EXTENTS OF THE SLOT OR HOLE. BOLTS SHALL BE HEAVY-HEX WHERE AVAILABLE IN THE SIZE AND GRADE SPECIFIED, OTHERWISE BOLTS SHALL BE HEX HEAD CAP SCREWS.
- ALL STEEL HARDWARE, INCLUDING ADHESIVE OR EMBEDDED ANCHOR BOLTS AND THEIR ACCESSORIES, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153 (EXCEPT BOLTS SMALLER THAN 1/2" SHALL CONFORM TO FE/ZN 3 AT PER ASTM F1941 WHERE HOT-DIP GALVANIZED BOLTS ARE NOT AVAILABLE). ALL STEEL MEMBERS, INCLUDING WELDMENTS, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. REPAIR DAMAGE TO GALVANIZED COATINGS USING ASTM A780 PROCEDURES WITH A ZINC RICH PAINT (SUCH AS ZRC GALVILITE) FOR GALVANIZING DAMAGED BY HANDLING, TRANSPORTING, CUTTING, WELDING, OR BOLTING. DO NOT HEAT SURFACES TO WHICH REPAIR PAINT HAS BEEN APPLIED. CALL OUT HOLES REQUIRED FOR HOT-DIP GALVANIZING ON SHOP DRAWINGS.
- WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE - STEEL". WELD ELECTRODES SHALL BE E70XX. UNLESS OTHERWISE NOTED, PROVIDE CONTINUOUS FILLET WELDS WITH MINIMUM SIZE OF 3/16 INCH OR OF A SIZE EQUAL TO THE THICKNESS OF THE THINNER MATERIAL BEING JOINED (WHICHEVER IS LESS). FOR ACUTE OR OBTUSE JOINT ANGLES, THE FILLET WELD LEG SIZE SHALL BE ADJUSTED AS REQUIRED TO MAINTAIN THE EFFECTIVE THROAT OF A 3/16 INCH FILLET WELD IN A 90° JOINT. ALL WELD SIZES SHOWN IN INCHES.
- PRIOR TO WELDING, THE CONTRACTOR SHALL SUBMIT CERTIFICATION FOR EACH WELDER STATING THE TYPE OF WELDING AND POSITIONS QUALIFIED FOR, THE CODE AND PROCEDURE QUALIFIED UNDER, DATE QUALIFIED, AND THE FIRM AND INDIVIDUAL CERTIFYING THE QUALIFICATION TESTS. THIS INFORMATION SHALL BE SUBMITTED TO THE MODIFICATION INSPECTOR (SEE SHEET S-003) AS WELL AS ANY THIRD-PARTY CERTIFIED WELD INSPECTOR (CWI).
- MEMBERS SHALL BE SHOP-FABRICATED AND WELDED TO THE EXTENT PRACTICABLE IN ORDER TO REDUCE FIELD INSTALLATION COSTS.

CONTRACTOR NOTES

- PRIOR TO BEGINNING CONSTRUCTION, ALL CONTRACTORS AND SUBCONTRACTORS MUST ACKNOWLEDGE IN WRITING TO STRUCTURE OWNER THAT THEY HAVE OBTAINED, UNDERSTAND, AND WILL FOLLOW STRUCTURE OWNER STANDARDS OF PRACTICE, CONSTRUCTION GUIDELINES, ALL SITE AND STRUCTURE/TOWER SAFETY PROCEDURES, ALL PRODUCT LIMITATIONS AND INSTALLATION PROCEDURES USED ON SITE, AND PROPOSED MODIFICATIONS DESCRIBED. RECEIPT OF ACKNOWLEDGEMENT MUST OCCUR PRIOR TO BEGINNING CONSTRUCTION OR CLIMBING. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE THIS DOCUMENTATION FOR STRUCTURE OWNER ON COMPANY LETTERHEAD AND THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN THIS DOCUMENTATION FROM ANY SUBCONTRACTORS (ON SUBCONTRACTOR LETTERHEAD) AND DELIVER IT TO THE STRUCTURE OWNER.
- IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE MODIFICATIONS, THE ENGINEER OF RECORD SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE SIGNIFICANCE OF THE DEVIATION.
- THE CONTRACTOR SHALL SOLICIT AND HIRE THE SERVICES OF A QUALIFIED MODIFICATION INSPECTOR PRIOR TO BEGINNING CONSTRUCTION. THE MODIFICATION INSPECTOR MAY BE AN EMPLOYEE OF THE CONTRACTOR'S FIRM, HOWEVER THE INSPECTOR'S ONLY DUTIES SHALL BE INSPECTION, TESTING, AND REPORT CREATION AS REQUIRED ON THE "MODIFICATION INSPECTION NOTES" SHEET. THE INSPECTOR SHALL BE QUALIFIED AS A REGISTERED PROFESSIONAL ENGINEER (PE) OR AS AN ENGINEERING INTERN (EI) OR ENGINEER IN TRAINING (EIT) UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER (PE). IT IS ALSO ACCEPTABLE FOR THE CONTRACTOR TO SUBCONTRACT THE MODIFICATION INSPECTOR DUTIES TO A THIRD PARTY FIRM MEETING THE ABOVE REQUIREMENTS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AND TOWER OWNER OF THE PLANNED CONSTRUCTION & INSPECTION SCHEDULE, AS WELL AS ANY CHANGES TO THE SCHEDULE, WITHIN TWO BUSINESS DAYS OF THE COMPLETION OF THE SCHEDULE OR SCHEDULE REVISION BOTH PRIOR TO BEGINNING CONSTRUCTION AND DURING CONSTRUCTION AS THE SCHEDULE CHANGES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD WHEN PHASES OF CONSTRUCTION HAVE BEEN MOVED UP AND SHALL GIVE THE ENGINEER ADEQUATE NOTICE SO THAT THE ENGINEER OF RECORD MAY, AT THEIR DISCRETION, INSPECT PORTIONS OF THE WORK THAT ARE DEEMED CRITICAL TO THE INTEGRITY OF THE STRUCTURE. FAILURE TO PROVIDE THIS NOTICE MAY RESULT IN REJECTION OF THE CONTRACTOR'S WORK. THE CONTRACTOR SHALL ALSO NOTIFY THE ENGINEER OF RECORD AND THE STRUCTURE OWNER WHEN THE WORK HAS BEEN COMPLETED WITHIN 2 BUSINESS DAYS OF THE COMPLETION OF THE WORK AND ASSOCIATED MODIFICATION INSPECTIONS & TESTING.
- IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE. THIS INCLUDES PROVIDING THE NECESSARY CERTIFICATIONS TO THE STRUCTURE OWNER AND ENGINEER INCLUDING BUT NOT LIMITED TO TOWER CLIMBER AND RESCUE CLIMBER CERTIFICATIONS, QUALIFIED WELDER CERTIFICATES, CERTIFIED WELDING INSPECTOR CREDENTIALS, ET CETERA.
- THESE DRAWINGS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES AND PROCEDURES.
- CONTRACTOR SHALL WORK WITHIN THE LIMITS OF THE STRUCTURE OWNER'S PROPERTY OR LEASE AREA AND APPROVED EASEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WORK IS WITHIN THESE BOUNDARIES. CONTRACTOR SHALL EMPLOY A SURVEYOR AS REQUIRED. ANY WORK OUTSIDE THESE BOUNDARIES SHALL BE APPROVED IN WRITING BY THE LAND OWNER PRIOR TO MOBILIZATION. CONSTRUCTION STAKING AND BOUNDARY MARKING IS THE RESPONSIBILITY OF THE CONTRACTOR.

SYMBOLS AND CALL-OUTS

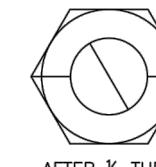


STANDARD ABBREVIATIONS

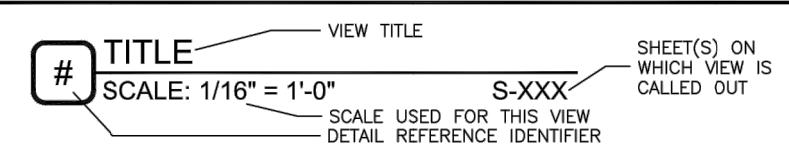
AFF	ABOVE FINISHED FLOOR	LONG	LONGITUDINAL
ARCH	ARCHITECT, -URAL	MAS	MASONRY
BLDG	BUILDING	MATL	MATERIAL
BOD	BOTTOM OF DECK	MAX	MAXIMUM
BOT	BOTTOM	MECH	MECHANICAL
BRCG	BRACING	MFR	MANUFACTURER
BRDG	BRIDGING	MIN	MINIMUM
C	CHANNEL	MOD	MODIFICATION
CL	CENTER LINE	MPH	MILES PER HOUR
CLR	CLEAR	MRI	MEAN RECURRENCE INTERVAL
CMU	CONCRETE MASONRY UNIT	#	NUMBER
CONC	CONCRETE	NTS	NOT TO SCALE
CONT	CONTINUOUS	OC	ON CENTER
DIA (OR) Ø	DIAMETER	OPH	OPPOSITE HAND
DWGS	DRAWINGS	OPNG	OPENING
EA	EACH	PC	PIECE
EL	ELEVATION	PL	PLATE
EQ, EQUIV	EQUAL, EQUIVALENT	PSF	POUNDS PER SQUARE FOOT
EW	EACH WAY	PSI	POUNDS PER SQUARE INCH
EXIST	EXISTING	REF	REFERENCE
' OR FT	FEET (DIMENSION)	REINF	REINFORCE/REINFORCEMENT
f'c	COMPRESSIVE STRESS	REQD	REQUIRED
FDN	FOUNDATION	REV	REVISION
FTG	FOOTING	SF	SQUARE FEET
GALV	GALVANIZED	SIM	SIMILAR
HORIZ	HORIZONTAL	SR	SOLID ROUND (SHAPE)
HSS	HOLLOW STRUCTURAL SHAPES	STD	STANDARD
KIP	KILOPOUNDS (1000 LBS PER UNIT)	T&B	TOP AND BOTTOM
KSI	KIPS PER SQUARE INCH	THK	THICKNESS
" OR IN	INCH	TOF	TOP OF FOOTING
L	ANGLE	TOM	TOP OF MASONRY
LB	POUND	TOS	TOP OF STEEL
LLH	LONG LEG HORIZONTAL	TYP	TYPICAL
LLV	LONG LEG VERTICAL	UON	UNLESS OTHERWISE NOTED
		VERT	VERTICAL
		W/	WITH

BOLT TIGHTENING PROCEDURE

- TIGHTEN BOLTS BY AISC "TURN OF THE NUT" METHOD USING THE CHART BELOW:
BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS:
+1/3 TURN BEYOND SNUG TIGHT
- BOLT LENGTHS OVER FOUR AND UP TO EIGHT DIAMETERS:
+1/2 TURN BEYOND SNUG TIGHT
- BOLT LENGTHS OVER EIGHT AND UP TO TWELVE DIAMETERS:
+2/3 TURN BEYOND SNUG TIGHT
- SPICE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8(d)(1) OF THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS AS FOLLOWS:
"FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND BE TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8(d)(1) THROUGH 8(d)(4).
8(d)(1) TURN-OF-THE-NUT TIGHTENING.
BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION. SNUG TIGHT IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN THE PILES OF A JOINT ARE IN FIRM CONTACT. THIS MAY BE OBTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. SNUG TIGHTENING SHALL PROGRESS SYSTEMATICALLY...UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION, ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION, THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.



SECTION / ELEVATION / DETAIL VIEW CALLOUTS



T-Mobile



CLS ENGINEERING PLLC
319 CHAPANOKE ROAD, SUITE 118, RALEIGH, NC 27603
PH: (405)348-5460 FAX: (405)341-4625
CLS ENGINEERING PROJECT ID: 41124-88018-13337525-TMOANC2020CT11007A
COA# PEC.001833 EXP. 08/14/2021

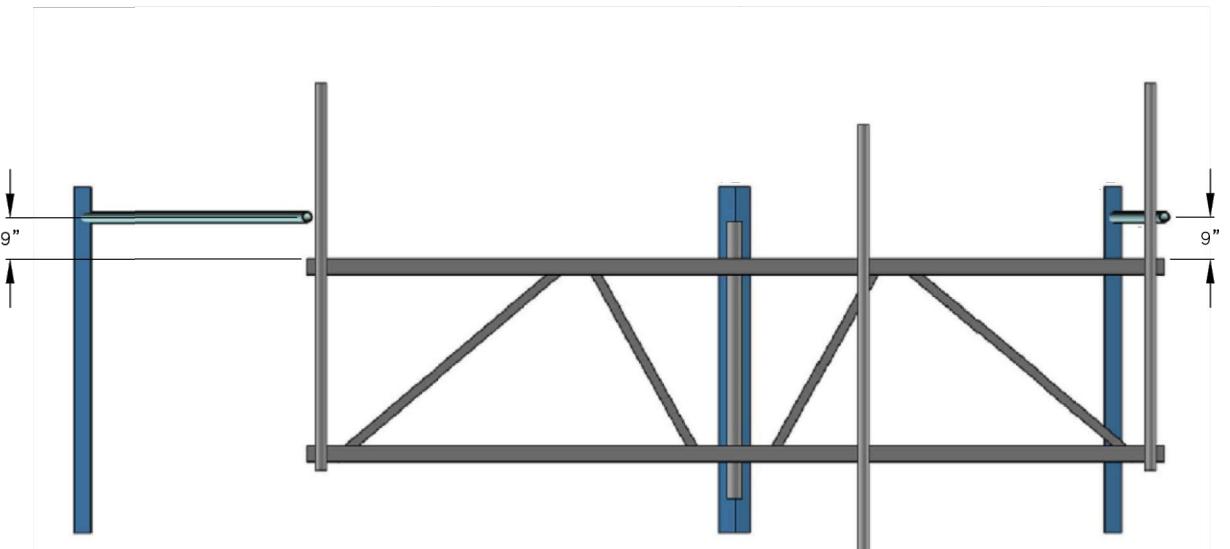
REV.	DATE	DESCRIPTION	INITIALS
A	03/22/21	PRELIMINARY ISSUE	HRP
O	03/23/21	FOR CONSTRUCTION	HRP

STATE OF CONNECTICUT
TYLER M BARKER
No. 32402
LICENSED PROFESSIONAL ENGINEER
03/23/2021
Tyler M. Barker
CLS Engineering PLLC
PE # 32402 Exp. 1/31/2021
COA # PEC.001833 Exp. 8/14/2022

PE# 32402 EXP: 1/31/2022
ATC SITE NAME:
STAMFORD (KATOONA)
ATC ASSET #: 88018
168 CATOONA LANE
STAMFORD, CT 06902-4573

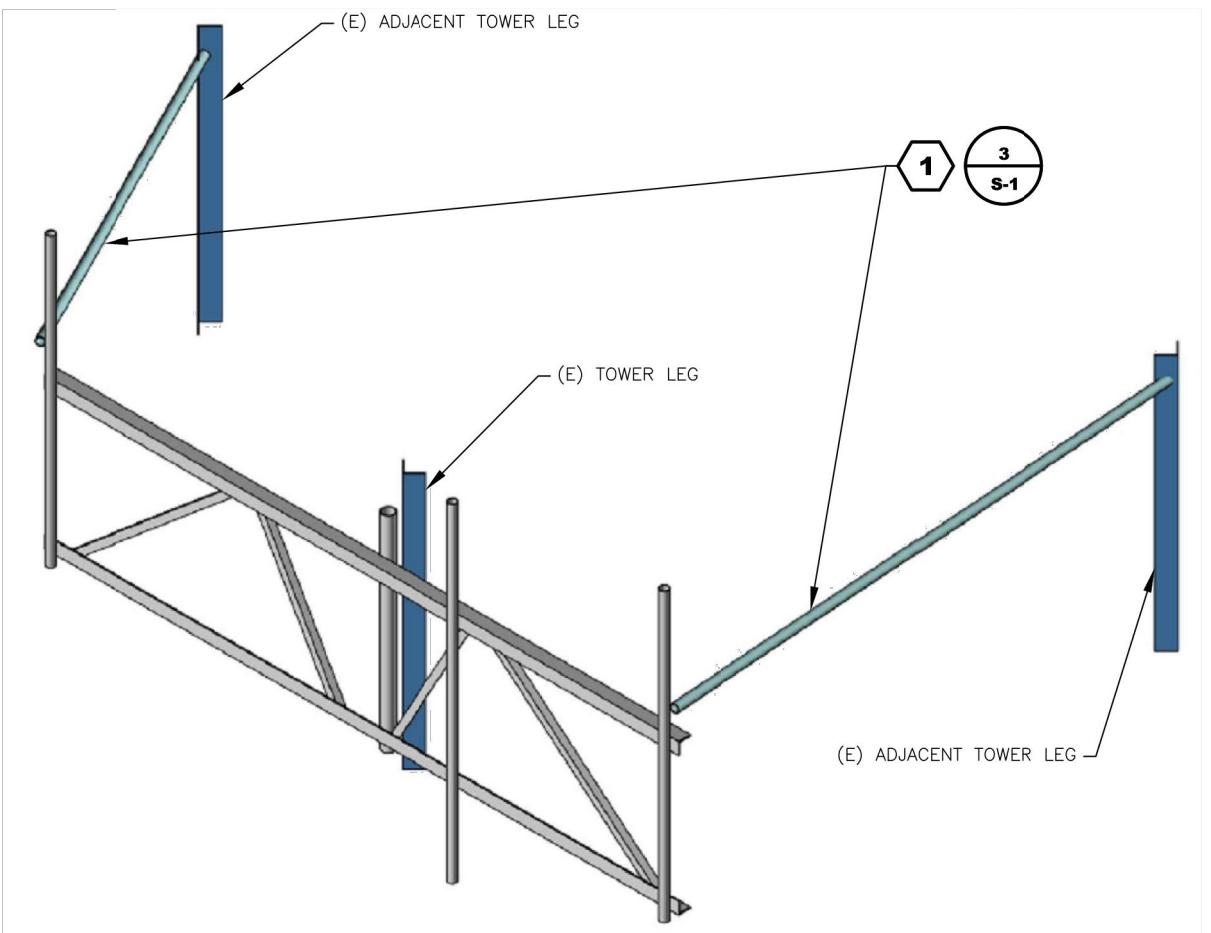
SHEET TITLE
STRUCTURAL NOTES
SHEET NUMBER
GN-1

NOTE:
EXISTING MOUNT SHOWN IS REPRESENTATIVE TO ILLUSTRATE
MODIFICATION AND MAY DIFFER SLIGHTLY ON SITE.



1 MOUNT - FRONT ELEVATION VIEW

SCALE: N.T.S.



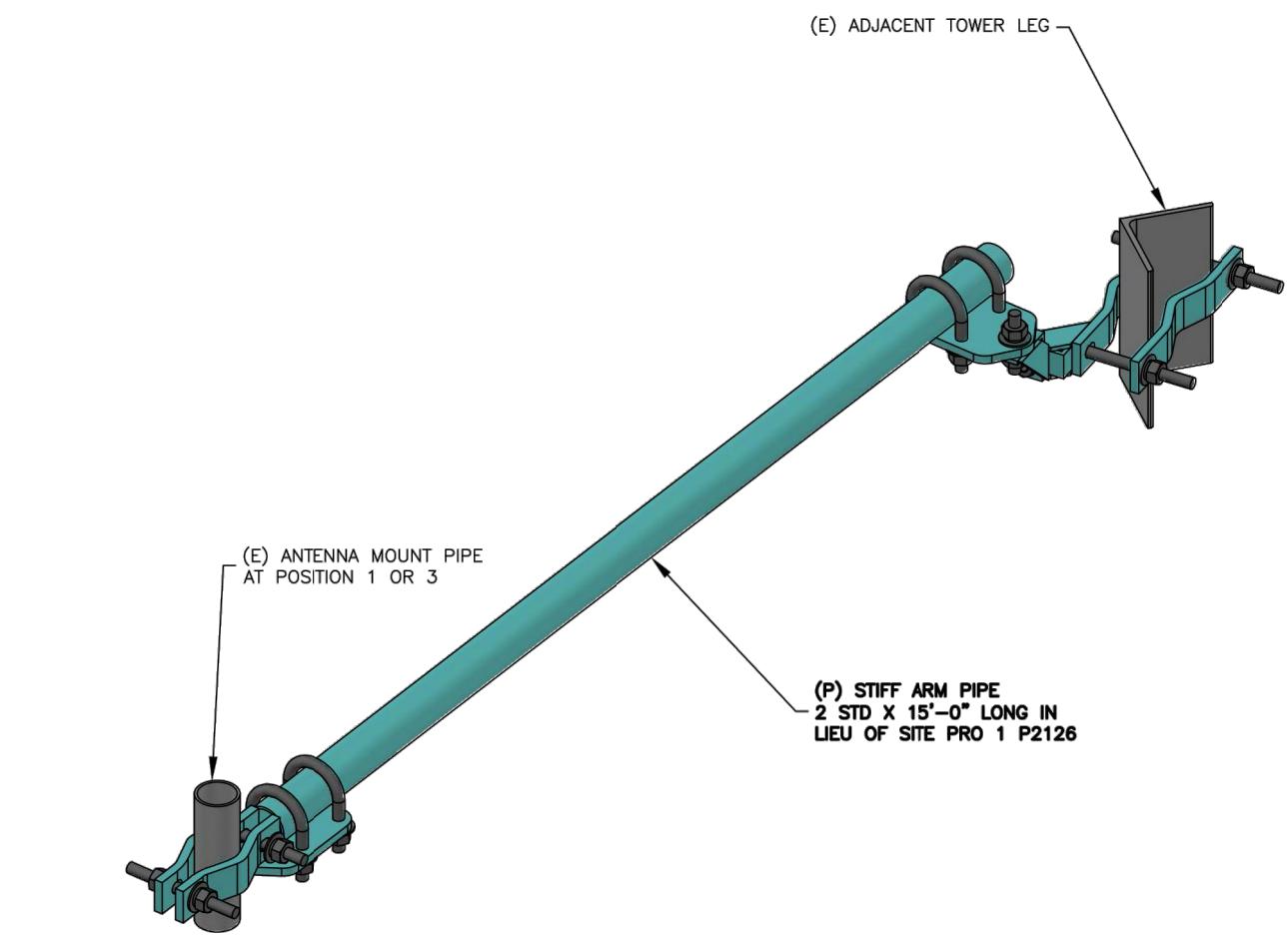
2 MOUNT - ISOMETRIC VIEW

SCALE: N.T.S.

CONSTRUCTION NOTES				
1. SCOPE OF WORK MUST BE COMPLETED AT WIND SPEEDS < 20 MPH.				
2. ALL DIMENSIONS ARE APPROXIMATE. CONTRACTOR SHOULD FIELD VERIFY ALL DIMENSIONS BEFORE FABRICATION OF STEEL AND COMMENCEMENT OF WORK. FIELD CUT MEMBERS AS REQUIRED.				
3. ALL HARDWARE SHOULD BE INSTALLED WITH "TURN OF THE NUT" METHOD (RE: GN-1).				

MODIFICATION SCHEDULE				
LABEL	ELEVATION	SCOPE	MATERIAL	NOTES
1	±264'-6"	REPLACE EXISTING STIFF ARM WITH (2) PROPOSED STIFF ARMS AT EACH EXISTING SECTOR FRAME MOUNT (6 TOTAL) AS SHOWN. USE (2) 15'-0" LONG PIPE 2 STD IN LIEU OF SITE PRO 1 P2126 INCLUDED IN THE PROPOSED STIFF ARM KIT AT EACH SECTOR (6 TOTAL). CONNECT TO NEAREST ADJACENT TOWER LEG WITH SITE PRO 1 DCP KIT. CONNECT TO EXISTING MOUNT PIPES AT POSITION 1 AND 3 WITH SITE PRO 1 DCP KITS PROVIDED IN THE PROPOSED STIFF ARM KIT.	PIPE 2 STD X 15'-0" LONG SITE PRO 1 SPTB	S-1

REVISIONS			
REV.	DATE	DESCRIPTION	INITIALS
A	03/22/21	PRELIMINARY ISSUE	HRP
0	03/23/21	FOR CONSTRUCTION	HRP



3 SITE PRO 1 SPTB

SCALE: N.T.S.

T-Mobile

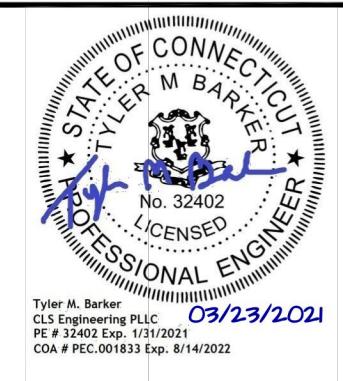


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CLS ENGINEERING PROJECT ID:
41124-88018-13337525-TMOANC2020CT11007A

COA# PEC.001833 EXP. 08/14/2021

REV.	DATE	DESCRIPTION	INITIALS
A	03/22/21	PRELIMINARY ISSUE	HRP
0	03/23/21	FOR CONSTRUCTION	HRP



PE# 32402 EXP: 1/31/2022

ATC SITE NAME:

STAMFORD (KATOONA)

ATC ASSET #:

168 CATOONA LANE
STAMFORD, CT 06902-4573

SHEET TITLE	
MOUNT VIEWS &	MODIFICATION SCHEDULE

SHEET NUMBER

S-1



Structural Analysis Report

Structure : 300 ft Self Supported Tower
ATC Site Name : Stamford (Katoona), CT
ATC Asset Number : 88018
Engineering Number : 13337525_C3_02
Proposed Carrier : T-Mobile
Carrier Site Name : Stamford AT&T
Carrier Site Number : CT11007A
Site Location : 168 Catoona Lane
Stamford, CT 06902-4573
41.052800,-73.563000
County : Fairfield
Date : March 31, 2021
Max Usage : 88%
Result : Pass

Prepared By:
Robert D. Barrett, E.I.
Structural Engineer II

Robert D. Barrett

Reviewed By:

Authorized by "EOR"
31 Mar 2021 10:26:48 

COA: PEC.0001553



Eng. Number 13337525_C3_02

March 31, 2021

Table of Contents

Introduction	1
Supporting Documents	1
Analysis	1
Conclusion	1
Existing and Reserved Equipment.....	2-3
Equipment to be Removed.....	3
Proposed Equipment	4
Structure Usages	4
Foundations	4
Standard Conditions	5
Calculations	Attached

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 300 ft self supported tower to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	CSEI Analysis, ATC Eng. #73123451, dated September 28, 2005
Foundation Drawing	Rose, Chulkoff, and Rose Job #C67229, dated August 9, 1967
Geotechnical Report	Rose, Chulkoff, and Rose Job #C67229, dated August 9, 1967
Modifications	ATC Eng. #42439132, dated September 26, 2008 ATC Eng. #44209632, dated December 2, 2009
Mount Analysis	CLS Project #41124-13337525_C8_01-01-MA, dated February 17, 2021
Mount Modifications	CLS Project #41124-13337525_C9_04-02-MOD, dated March 23, 2021

Analysis

The tower was analyzed using Power Line Systems, Inc. tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	117 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:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1

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
338.0	1	TX RX Systems 101-68-10-X-03N	Platform with Handrails	(1) 1 1/4" Coax	Marcus
324.0	1	Generic 15' Omni-Grid		(1) 1 5/8" Coax	Communications LLC
320.0	1	Generic 12' Omni		-	Other
311.0	1	Generic Radio/ODU		-	Marcus Communications LLC
307.0	1	Generic Radio/ODU		(1) 1/2" Coax	Other
	1	Generic 3' HP Dish		(5) 7/8" Coax	Clearwire Corporation
303.0	-	-		(3) 1/2" Coax	
300.0	3	DragonWave Horizon Compact		(1) 7/8" Coax	Marcus Communications LLC
	3	DragonWave A-ANT-18G-2-C			
	1	Generic 4' Std. Dish			
292.0	1	Procom CXL 900-3LW	Side Arm	(1) 7/8" Coax	Sigfox S.A.
	1	Generic 5" x 3" x 2" Cavity Filter			
	1	Generic Low Noise Amplifier			
275.0	1	Rohde & Schwarz ADD090	Side Arm	(2) 7/8" Coax	US Dept of Homeland Security
270.0	1	Dielectric TLP-08M-2E	Side Arm	-	Other
268.0	2	Til-Tek TA-2350-DAB	Leg	(1) 1 5/8" Coax	XM Satellite Radio Inc.
265.0	3	RFS APXVAARR24_43-U-NA20	Sector Frames	(2) 1 1/4" Fiber	T-Mobile
	3	Ericsson Air 3246 B66			
260.0	-	-	-	(1) EW20	XM Satellite Radio Inc.
250.0	1	Sinclair SC281-L	Side Arm	(1) 7/8" Coax	US Dept of Homeland Security
245.0	1	Sinclair SC381-HL	Side Arm	(1) 7/8" Coax	
235.0	2	Andrew SBNHH-1D65A	Sector Frames	(3) 0.39" Fiber Trunk (4) 0.74" 8 AWG 7 (2) 0.78" 8 AWG 6 (4) 0.96" Cable (10) 1 5/8" Coax	AT&T Mobility
	2	CCI OPA-65R-LCUU-H4			
	2	KMW EPBQ-654L8H6-L2			
	3	CCI BSA-M65R-BUU-H6 (101 lbs)			
	2	Ericsson RRUS E2 B29			
	2	Ericsson RRUS 11 B12			
	2	Ericsson RRUS 11 B5			
	2	Ericsson RRUS 32 B2			
	2	Ericsson RRUS 32 B30 (53 lbs)			
	1	Raycap DC6-48-60-18-8C			
	1	Ericsson RRUS 4449 B5, B12			
	3	Ericsson RRUS 4478 B14			
	2	Ericsson RRUS 4415 B30			
	2	Ericsson RRUS 4426 B66			
	2	Ericsson RRUS 8843 B2, B66A			
	3	Raycap DC6-48-60-18-8F ("Squid")			
	1	Raycap DC6-48-60-0-8C-EV			
	3	Powerwave Allgon TT19-08BP111-001			
	3	Powerwave Allgon 7770.00			

Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier		
210.0	1	Sinclair SC281-L	Side Arm	(1) 7/8" Coax	US Dept of Homeland Security		
200.0	2	TX RX Systems 101-68-10-X-03N	Side Arms	(2) 1 1/4" Coax	Marcus Communications LLC		
193.0	2	Antel BCD-87010	Side Arms	(3) 7/8" Coax	Spok Holdings, Inc.		
	1	Generic 30" x 30" Reflector					
175.0	1	Generic 12" x 12" Junction Box	Leg	(2) 2" Conduit (6) 5/16" Coax	Clearwire Corporation		
167.0	3	NextNet BTS-2500	T-Arms				
	3	Argus LLPX310R					
165.0	15	Generic RCU (Remote Control Unit)	Leg	(12) 1 5/8" Coax (1) 3/8" Coax	Metro PCS Inc		
	6	Kathrein Scala 800 10504					
155.0	6	Alcatel-Lucent 1900MHz RRH	Sector Frames	(3) 1 1/4" Hybriflex Cable (3) 1" Hybrid (1) 1.7" Hybrid	Sprint Nextel		
	3	Nokia 2.5G MAA - AAHC(64T64R)					
	3	RFS APXVSPP18-C-A20					
	3	Alcatel-Lucent 800 MHz RRH					
	3	Alcatel-Lucent ALU 800MHz External Notch Filter					
142.0	1	Antel BCD-87010 4°	Side Arm	(1) 7/8" Coax	Sensus USA Inc.		
135.0	1	L-com HG908U-PRO	Stand-Off	(1) 1/2" Coax	Senet, Inc.		
120.0	1	Channel Master Type 120	Stand-Off	(1) 1/2" Coax	Spok Holdings, Inc.		
107.0	1	TX RX Systems 101-68-10-X-03N	Side Arm	(1) 1 1/4" Coax	Marcus Communications LLC		
92.0	3	Alcatel-Lucent RRH2X60-1900A-4R	Sector Frames	(3) 1 1/4" Hybriflex Cable (2) 1 5/8" Hybriflex	Verizon Wireless		
	3	Alcatel-Lucent RRH2x60 700					
	3	Alcatel-Lucent RRH4x45-B66 w/o Solar Shield					
	2	RFS DB-T1-6Z-8AB-0Z					
	1	RFS DB-T1-6Z-8AB-0Z					
	6	Generic 72" x 14" Panel					
	12	Andrew SBNHH-1D65B					
25.0	1	Til-Tek TA-2324-LHCP	Leg	(1) 7/8" Coax	XM Satellite Radio Inc.		
6.0	1	Trimble Acutime 2000	Leg	(1) 1/2" Coax (1) 1/4" Coax	Spok Holdings, Inc.		
	1	Channel Master Type 120					

Equipment to be Removed

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
265.0	3	RFS ATMAA1412D-1A20	-	(1) 1 5/8" Fiber (12) 1 5/8" Coax	T-Mobile
	3	Ericsson AIR-32 B2A/B66Aa			
	3	Ericsson Radio 4449 B12,B71			

Proposed Equipment

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
265.0	3	Ericsson Radio 4449 B71 B85A	Modified Sector Frames	(1) 1 1/4" Fiber (3) 1 5/8" Hybriflex	T-Mobile
	3	Ericsson 4424 B25			
	3	Ericsson Air6449 B41			

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

Install proposed coax for a final configuration of 3-on-3.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	71%	Pass
Diagonals	79%	Pass
Truss Diagonals	76%	Pass
Horizontals	58%	Pass
Truss Horizontals	88%	Pass
Anchor Bolts	47%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	311.8	81%
Axial (Kips)	444.6	5%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.



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.

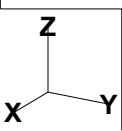
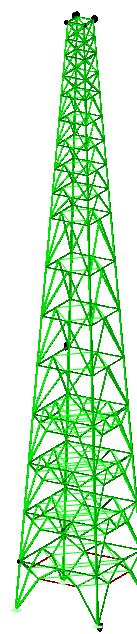
Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

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.

American Tower Corp., Project: "2021.03.30 - T-Mobile - 13337525_C3_02"

Tower Version 16.01, 12:08:28 AM Wednesday, March 31, 2021

Undeformed geometry displayed



Project Name : 88018 - Stamford (Katoona), CT
 Project Notes: 13337525_C3_02 - T-Mobile
 Project File : C:\Users\robert.barrett\Desktop\2021.03.30 - T-Mobile - 13337525_C3_02\2021.03.30 - T-Mobile - 13337525_C3_02.tow
 Date run : 11:40:20 PM Tuesday, March 30, 2021
 by : Tower Version 16.01
 Licensed to : American Tower Corp.

Successfully performed nonlinear analysis

Member check option: ANSI/TIA 222-G-1
 Connection rupture check: Not Checked
 Check for member fixity: Fixed
 Included angle check: None
 Climbing load check: None
 Redundant members checked with: Actual Force
 Loads from file: C:\Users\robert.barrett\Desktop\2021.03.30 - T-Mobile - 13337525_C3_02\2021.03.30 - T-Mobile - 13337525_C3_02.eia

*** Analysis Results:

Maximum element usage is 87.83% for Angle "LH 3X" in load case "W -45"

Foundation Design Forces For All Load Cases:

Note: loads are factored.

Load Case	Foundation	Axial	Shear	Bending	Foundation
Description	Force	Force	Moment	Usage	%
	(kip)	(kips)	(ft-k)		
W 0	OP	322.04	47.51	5.03	0.00
W 0	OX	312.71	46.16	4.73	0.00
W 0	OY	-186.09	34.83	5.53	0.00
W 180	OP	-186.09	34.83	5.53	0.00
W 180	OX	-182.69	34.10	5.37	0.00
W 180	OY	315.67	47.05	5.09	0.00
W 45	OP	444.61	62.59	4.53	0.00
W 45	OX	62.41	11.04	5.13	0.00
W 45	OY	-439.77	51.14	5.83	0.00
W 45	OP	63.35	21.76	5.48	0.00
W -45	OP	68.02	23.16	5.80	0.00
W -45	OX	437.02	61.74	4.57	0.00
W -45	OY	61.23	20.89	5.25	0.00
W -45	OP	-394.54	59.57	5.89	0.00
W 90	OP	322.35	47.77	5.07	0.00
W 90	OX	-186.58	35.00	5.56	0.00
W 90	OY	-189.88	34.39	5.27	0.00
W 90	OP	312.69	46.21	4.73	0.00
W 90	OP	312.69	46.21	4.73	0.00
W -90	OX	316.83	47.20	5.13	0.00
W -90	OY	309.94	46.18	4.80	0.00
W -90	OY	-184.24	34.10	5.34	0.00
W 0 Ice	OP	169.84	21.32	1.47	0.00
W 0 Ice	OX	164.54	26.10	1.44	0.00
W 0 Ice	OY	22.72	3.57	3.05	0.00
W 0 Ice	OP	26.70	3.66	3.13	0.00
W 180 Ice	OP	31.05	3.86	3.20	0.00
W 180 Ice	OX	27.86	3.76	3.15	0.00
W 180 Ice	OY	20.41	2.60	1.30	0.00
W 180 Ice	OX	164.73	21.03	1.48	0.00
W 45 Ice	OP	204.13	26.33	0.52	0.00
W 45 Ice	OX	95.63	11.17	2.43	0.00
W 45 Ice	OY	-11.33	6.30	3.40	0.00
W 45 Ice	OP	57.52	1.19	2.16	0.00
W 45 Ice	OP	100.11	11.68	2.53	0.00
W 45 Ice	OP	199.32	25.95	0.50	0.00
W 45 Ice	OY	91.60	11.08	2.34	0.00
W 45 Ice	OY	-7.30	6.16	3.48	0.00
W 45 Ice	OP	161.90	21.30	1.48	0.00
W 45 Ice	OX	21.13	3.70	3.15	0.00
W 45 Ice	OY	22.79	3.59	3.05	0.00
W 90 Ice	OY	163.97	20.76	1.33	0.00
W -90 Ice	OP	30.92	3.90	3.20	0.00
W -90 Ice	OX	165.52	21.08	1.49	0.00
W -90 Ice	OY	160.11	20.69	1.31	0.00
W -90 Ice	OY	27.23	3.74	3.14	0.00

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint	Loc	Force	Vert.	Shear	Tran.	Long.	Bending	Vect.	Found.	
Label	Joint	Force	Force	Force	Force	Moment	Moment	Moment	Moment	Usage	
		(kips)	(kips)	(kips)	(kips)	(ft-k)	(ft-k)	(ft-k)	(ft-k)	%	
W 0	OP	-42.73	-20.76	-322.04	47.51	-0.85	-4.95	5.03	-1.99	0.00	
W 0	OP	-41.04	21.13	-312.71	46.16	0.55	-4.70	4.73	2.11	0.00	
W 0	OP	-40.63	-13.53	190.40	34.83	0.45	-5.24	5.17	1.94	0.00	
W 0	OY	-32.22	16.00	-308.09	34.83	0.45	-5.24	5.17	1.94	0.00	
W 180	OP	32.56	12.38	183.38	34.83	-0.33	-5.58	5.58	1.81	0.00	
W 180	OX	31.52	-13.05	183.69	34.18	0.49	5.34	5.37	-1.95	0.00	
W 180	OY	41.15	1.54	-21.02	310.00	46.23	0.54	4.79	4.82	-2.12	0.00
W 180	OY	41.15	-20.32	-315.67	47.51	-0.85	5.02	5.17	2.12	0.00	
W 45	OP	-44.14	-10.54	164.54	62.59	0.53	-4.53	4.53	0.00	0.00	
W 45	OY	-18.98	-10.66	-62.41	21.77	4.34	-3.39	5.51	2.95	0.00	
W 45	OY	-36.14	-16.39	311.77	51.14	4.13	-4.11	5.83	-0.00	0.00	
W 45	OY	-10.44	-19.09	-63.35	21.76	3.40	-4.30	5.48	-2.95	0.00	
W 45	OP	-20.11	11.39	168.02	26.26	-4.50	-3.59	5.80	-3.00	0.00	
W 45	OP	-18.84	10.56	-43.00	61.74	-4.15	-4.07	5.47	-2.97	0.00	
W 45	OY	-9.78	18.56	-61.23	20.93	-3.30	-4.10	5.26	2.97	0.00	
W 45	OY	-36.62	35.44	307.74	50.97	-4.02	-4.31	5.89	0.03	0.00	
W 90	OP	-20.69	-43.06	-322.35	47.77	4.99	0.88	5.07	2.11	0.00	
W 90	OX	12.59	-32.65	186.58	35.00	5.55	0.34	5.56	1.91	0.00	
W 90	OY	-12.59	-32.65	186.58	34.89	5.55	0.34	5.56	1.91	0.00	
W 90	OY	21.22	-41.05	-312.69	46.21	4.70	-0.53	4.73	2.11	0.00	
W 90	OY	12.36	32.97	183.94	35.21	-5.61	0.32	5.61	-1.92	0.00	
W 90	OX	-20.29	42.92	-316.83	47.20	-5.05	0.89	5.13	-2.12	0.00	
W 90	OY	21.12	41.07	-309.96	46.18	-4.77	-0.51	4.80	2.12	0.00	
W 90	OX	-21.12	41.07	16.16	47.20	-5.05	-0.51	5.14	0.00	0.00	
W 0 Ice	OP	-17.61	-9.01	-169.81	21.22	-1.47	0.02	1.47	-0.52	0.00	
W 0 Ice	OY	-16.92	12.07	-164.54	20.78	1.34	0.06	1.34	0.53	0.00	
W 0 Ice	OY	-3.13	1.77	-22.72	3.57	1.40	-2.70	3.05	0.53	0.00	
W 0 Ice	OY	-3.13	-1.93	26.70	3.66	-1.44	-2.78	3.13	-0.51	0.00	
W 0 Ice	OP	3.13	-2.31	-31.04	3.76	-1.45	2.46	3.16	0.50	0.00	
W 0 Ice	OX	12.10	-23.10	-27.86	3.76	-1.11	2.82	3.15	0.54	0.00	
W 180 Ice	OY	16.92	11.84	-160.14	20.71	1.32	0.05	1.32	-0.54	0.00	
W 180 Ice	OY	17.51	-11.64	-164.73	21.03	-1.48	0.10	1.48	0.55	0.00	
W 45 Ice	OP	-18.59	18.65	-204.19	26.33	-0.36	0.37	0.52	0.02	0.00	
W 45 Ice	OP	-10.10	3.27	-95.63	21.11	2.49	0.42	2.41	0.00	0.00	
W 45 Ice	OY	-10.44	16.56	-6.06	6.30	-1.11	-3.00	3.10	-0.00	0.00	
W 45 Ice	OY	3.30	-10.67	-95.28	11.17	-0.42	-2.38	2.41	-0.78	0.00	
W -45 Ice	OP	-11.25	-3.14	-100.11	11.68	-2.50	0.36	2.53	-0.79	0.00	
W -45 Ice	OY	-18.66	-199.32	25.95	0.25	0.43	0.50	0.01	0.00	0.00	
W -45 Ice	OY	3.37	1.73	7.64	6.16	-0.46	3.46	3.18	0.79	0.00	
W 90 Ice	OY	-11.97	-17.70	-169.90	21.37	0.03	1.48	1.48	0.54	0.00	
W 90 Ice	OY	-1.77	-3.13	-27.86	3.70	2.79	1.45	3.18	0.51	0.00	
W 90 Ice	OY	1.77	-3.12	-22.79	3.59	2.71	-1.40	3.05	-0.53	0.00	
W 90 Ice	OY	12.77	-16.82	-163.97	20.17	-0.05	-1.32	1.33	-0.53	0.00	
W 90 Ice	OY	12.77	-25.16	3.90	16.66	-0.05	-1.32	3.00	-0.00	0.00	
W -90 Ice	OY	-11.65	17.57	-165.52	21.08	-0.10	1.49	1.49	-0.55	0.00	
W -90 Ice	OY	11.90	16.93	-160.11	20.69	-0.04	1.31	1.31	0.54	0.00	
W -90 Ice	OY	2.05	3.13	-27.23	3.74	-2.81	-1.41	3.14	0.54	0.00	

Summary of Joint Support Reactions For All Load Cases in Direction of Leg:

Load Case	Support	Origin	Leg	Force	Residual Shear	Residual Shear	Residual Shear	Total	Total	Total	Total	
Load Case	Joint	Joint	Member	Leg	Dir.	Horizontal	Horizontal	Horizontal	Long.	Tran.	Vect.	
					To Leg	To Leg - Res.	To Leg - Tran.	To Leg - Long.	Force	Force	Force	
					(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	
W 0	OP	IP	L L	324.72	22.842	22.874	22.874	0.903	42.73	-30.76	322.04	
W 0	OX	IP	L L	315.343	21.789	21.837	21.759	-1.845	-41.04	21.13	-312.71	
W 0	OY	IP	L L	-192.113	19.941	19.985	19.906	1.776	-31.63	-13.50	190.06	
W 0	OP	Y	L L	188.154	20.980	21.024	20.993	-1.128	-32.47	12.60	180.09	
W 180	OP	IP	L L	-185.448	21.232	21.276	21.250	-21.250	1.068	32.56	12.38	183.38
W 180	OX	IP	L L	186.154	20.797	20.837	20.797	1.776	-31.63	-13.50	189.59	
W 180	OY	IP	L L	312.652	22.056	22.114	22.032	-1.904	41.15	21.02	-310.00	
W 180	OX	IP	L L	318.334	22.940	22.986	22.970	0.852	42.44	-20.32	-315.67	
W 45	OP	IP	L L	448.366	23.723	23.813	23.754	16.922	-44.17	-44.34	-444.61	
W 45	OX	IP	L L	62.688	20.960	20.960	20.960	15.128	14.507	-18.98</td		

W -90	OY	LY	L LY	186,-287	20,135	20,180	1,788	-20,101,-13,31	31,46	184,24	
W 0	Ice	OP	L P	170,-988	7,285	7,304	7,141	1,534	-17,61	-12,01	
W 0	Ice	OP	L P	165,-695	7,012	7,032	6,764	-1,924	-16,91	12,07	
W 0	Ice	OXY	L LY	22,-554	4,517	4,526	4,510	-0,368	-3,11	1,76	
W 0	Ice	OY	L LY	27,-49	4,768	4,756	4,758	-0,368	-3,11	1,76	
180	Ice	OP	L P	170,-30,880	5,015	5,023	-5,008	0,392	3,09	-2,31	
180	Ice	OZ	L I	1X	27,-689	4,846	4,854	-4,838	-0,383	3,12	2,10
180	Ice	OXY	L LY	18,-310	7,351	7,372	-7,101	-1,948	16,98	-11,86	
180	Ice	OY	L LY	18,-664	7,799	7,799	-7,101	-1,488	16,98	-11,86	
W 45	Ice	OP	L P	205,-706	8,493	8,525	5,938	6,058	18,59	-18,65	
W 45	Ice	OZ	L I	1X	96,-127	5,458	5,459	4,783	2,632	-16,88	3,27
W 45	Ice	OXY	L LY	-11,-836	5,287	5,307	3,741	3,763	-4,44	-4,46	
W 45	Ice	OY	L LY	17,-136	5,444	5,446	2,575	4,793	-11,86	-10,69	
-45	Ice	OP	L P	100,-615	5,930	5,930	5,073	-3,031	-11,86	4,44	
-45	Ice	OZ	L I	200,-824	8,547	8,579	5,750	-6,367	-18,04	18,66	
-45	Ice	OXY	L LY	92,-146	5,446	5,448	2,337	4,922	3,31	10,57	
-45	Ice	OY	L LY	7,-807	5,520	5,520	3,925	3,348	-4,37	4,33	
W 90	Ice	OP	L P	187,-22,167	7,360	7,360	1,493	1,493	-16,90	-16,90	
W 90	Ice	OZ	L I	26,-945	4,807	4,815	0,290	4,807	-1,96	-3,13	
W 90	Ice	OXY	L LY	22,-617	4,534	4,541	-0,370	4,526	1,77	-3,12	
W 90	Ice	OY	L LY	165,-131	7,031	7,052	-1,964	6,772	12,08	-16,88	
-90	Ice	OP	L P	170,-38,008	5,071	5,071	0,368	-5,065	-11,86	-11,86	
-90	Ice	OZ	L I	166,-694	7,487	7,506	1,443	-7,366	-11,65	17,57	
-90	Ice	OXY	L LY	161,-277	7,320	7,341	-2,023	-7,057	11,90	16,93	
-90	Ice	OY	L LY	27,-060	4,812	4,820	-0,376	-4,805	2,05	3,13	

Overturning Moment Summary For All Load Cases:

EIA Sections Information:

Section Label	Top (ft)	Bottom (ft)	Joint Count	Member Count	Top Width (ft)	Bottom Width (ft)	Gross Area (ft ²)	Face Area Factor	Face Area Factor	Dead Load Factor
291.4-300.0	300.00	291.41	8	20	9.00	10.00	81.79	1.122	1.122	1.346
272.8-282.8	282.80	272.67	8	16	10.00	12.00	90.12	1.180	1.180	1.436
262.5-272.7	272.67	262.80	12	24	12.37	13.63	132.15	1.203	1.203	1.444
250.0-262.5	262.50	250.00	16	24	13.63	15.17	179.95	1.2010	1.2010	1.441
237.5-250.0	250.00	237.50	16	24	15.17	16.71	199.22	1.2070	1.2070	1.449
220.0-237.5	237.50	220.00	16	24	16.71	18.25	218.42	1.2130	1.2130	1.456
200.0-212.5	212.50	200.00	16	24	18.25	20.00	237.50	1.2200	1.2200	1.463
175.0-200.0	200.00	175.00	16	24	19.79	21.33	257.03	1.2250	1.2250	1.470
150.0-175.0	175.00	150.00	16	24	21.33	24.42	571.87	1.2320	1.2320	1.479
125.0-150.0	150.00	125.00	16	24	27.50	30.58	726.04	1.2660	1.2660	1.519
100.0-125.0	125.00	100.00	16	24	30.58	33.63	880.21	1.2730	1.2730	1.553
75.0-100.0	100.00	75.00	36	76	33.67	36.75	880.21	1.2760	1.2760	1.551
50.0-75.0	75.00	50.00	36	76	36.75	39.83	957.29	1.2790	1.2790	1.553
25.00-50.00	50.00	25.00	32	68	39.83	42.92	1034.39	1.2820	1.2820	1.539
0.00-25.00	25.00	0.00	20	40	42.92	46.00	1111.40	1.3210	1.3210	1.586

Printed capacities do not include the strength factor entered for each load case. The Group Summary reports on the member and load case that resulted in maximum usage which may not necessarily be the same as that which produces maximum force.

Group Summary (Compression Portion):

Group Label	Group Angle Desc.	Angle Type	Angle Size	Steel Strength	Max Usage	Max Comp. Role	Comp. In Member	Comp. Force Control	Comp. Capacity	I/r Comp. Connect.	Comp. Connect.	RLX	RLY	RLZ	L/r	KL/r Comp. Member	Length Curve No.	Comp. No. of Bolts			
(ksi)	%	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(ft)			
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	71.43	Comp. 71.43	L 1P	-390.617	W 45	546.848	0.000	0.000	0.281	0.281	0.281	54.30	54.30	25.095	1	0	
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	60.75	Comp. 60.75	L 2P	-332.203	W 45	546.848	0.000	0.000	0.281	0.281	0.281	54.30	54.30	25.095	1	0	
Leg S3	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	52.55	Comp. 52.55	L 3P	-287.382	W 45	546.848	0.000	0.000	0.281	0.281	0.281	54.30	54.30	25.095	1	0	
Leg S4	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	44.35	Comp. 44.35	L 4P	-250.851	W 45	546.848	0.000	0.000	0.281	0.281	0.281	54.30	54.30	25.095	1	0	
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	55.54	Comp. 55.54	L 1P	-230.681	W 45	415.372	0.000	0.000	0.333	0.333	0.333	63.93	63.93	25.095	1	0	
Leg S6	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	46.22	Comp. 46.22	L 2P	-191.197	W 45	415.372	0.000	0.000	0.333	0.333	0.333	63.93	63.93	25.095	1	0	
Leg S7	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0	42.96	Comp. 42.96	L 3P	-154.373	W 45	359.367	0.000	0.000	0.333	0.333	0.333	63.53	63.53	25.095	1	0	
Leg S8	L 8" x 8" x 0.625"	SAE	8X8X0.63	36.0	39.59	Comp. 39.59	L 4P	-120.899	W 45	302.314	0.000	0.000	0.333	0.333	0.333	63.53	63.53	25.095	1	0	
Leg S9	L 6" x 6" x 1.125"	SAE	6X6X1.13	36.0	52.55	Comp. 52.55	L 1P	-307.107	W 45	404.844	0.000	0.000	0.500	0.500	0.500	64.85	64.85	13.847	1	0	
Leg S10	L 6" x 6" x 1.075"	SAE	6X6X1.07	36.0	51.61	Comp. 51.61	L 2P	-283.642	W 45	361.581	0.000	0.000	0.500	0.500	0.500	64.35	64.35	13.847	1	0	
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	33.48	Comp. 33.48	L 3P	-107.681	W 45	202.144	0.000	0.000	0.500	0.500	0.500	63.80	63.80	12.547	1	0	
Leg S12	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	25.26	Comp. 25.26	L 4P	-81.658	W 45	167.681	0.000	0.000	0.500	0.500	0.500	63.80	63.80	12.547	1	0	
Leg S13	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0	22.81	Comp. 22.81	L 1P	-30.314	W 45	159.219	0.000	0.000	0.500	0.500	0.500	63.26	63.26	12.547	1	0	
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	20.74	Comp. 20.74	L 2P	-20.93	W 45	132.288	0.000	0.000	0.500	0.500	0.500	62.10	62.10	10.206	1	0	
Leg S15	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	9.78	Comp. 9.78	L 3P	-10.418	W 45	105.418	0.000	0.000	0.500	0.500	0.500	61.66	61.66	10.206	1	0	
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	9.85	Comp. 9.85	L 4P	-9.523	W 45	96.705	0.000	0.000	0.500	0.500	0.500	62.01	62.01	8.616	1	0	
Leg S17	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	4.95	Comp. 4.95	L 1P	-4.790	W 45	96.705	0.000	0.000	0.500	0.500	0.500	62.01	62.01	8.616	1	0	
Diag S1	B/L 3X4" x 0.3125"	DAS	4X3X0.31	36.0	56.53	Comp. 56.53	D 2P	-44.665	W 90	79.015	0.000	0.000	0.310	0.920	0.310	124.62	124.62	21.786	6	0	
Diag S2	B/L 3X4" x 0.3125"	DAS	3.5X3X0.25	36.0	61.43	Comp. 61.43	D 4X	-49.807	W 90	81.084	0.000	0.000	0.310	0.620	0.310	94.31	94.31	20.916	1	0	
Diag S3	B/L 2X3" x 0.3125"	DAS	3.5X2X0.25	36.0	78.09	Comp. 78.09	D 2P	-49.807	W 90	82.438	0.000	0.000	0.333	0.667	0.333	109.94	109.94	20.204	1	0	
Diag S4	B/L 2X3" x 0.3125"	DAS	3.5X2X0.25	36.0	53.83	Comp. 53.83	D 9X	-30.249	W 90	56.194	0.000	0.000	0.333	0.667	0.333	134.71	134.71	12.05	6	0	
Diag S5	B/L 2X3" x 0.3125"	DAS	4X3X0.25	36.0	50.34	Comp. 50.34	D 11X	-29.554	W 90	58.704	0.000	0.000	0.333	0.667	0.333	131.00	131.00	12.79	6	0	
Diag S6	B/L 2X3" x 0.3125"	DAS	4X3X0.25	36.0	44.70	Comp. 44.70	D 13X	-27.305	W 90	61.090	0.000	0.000	0.333	0.667	0.333	127.55	127.55	28.573	6	0	
Diag S8	B/L 1.5" x 3" x 0.25"	DAS	3.5X3X.025	36.0	48.69	Comp. 48.69	D 15X	-25.682	W 90	52.749	0.000	0.000	0.333	0.667	0.333	140.77	140.77	23.864	1	0	
Diag S9	B/L 1.5" x 3" x 0.25"	DAS	3.5X3X.025	36.0	48.69	Comp. 48.69	D 17X	-25.682	W 90	52.749	0.000	0.000	0.333	0.667	0.333	143.27	143.27	23.864	1	0	
Diag S10	B/L 2.5" x 2.5" x 0.25"	DAS	2.5X2X.025	36.0	45.38	Comp. 45.38	D 19P	-13.467	W 90	29.675	0.000	0.000	0.500	1.000	0.500	160.96	160.96	145.19	15.962	6	
Diag S11	B/L 2.5" x 2.5" x 0.25"	DAS	2.5X2X.025	36.0	66.78	Comp. 66.78	D 21P	-13.440	W 90	20.126	0.000	0.000	0.480	0.960	0.480	190.92	190.92	163.61	14.959	6	
Diag S12	B/L 2.5" x 2.5" x 0.25"	DAS	2.5X2X.025	36.0	59.33	Comp. 59.33	D 24P	-11.705	W 90	19.730	0.000	0.000	0.500	1.000	0.500	193.21	193.21	165.03	15.054	6	
Diag S13	B/L 2.5" x 2.5" x 0.25"	DAS	2.5X2X.025	36.0	54.27	Comp. 54.27	D 26P	-11.219	W 90	20.673	0.000	0.000	0.500	1.000	0.500	187.90	187.90	161.76	14.641	6	
Diag S14	L 3" x 3" x 0.25"	DAS	3.5X3X.025	36.0	25.95	Comp. 25.95	D 28P	-25.95	W 90	6.240	0.000	0.000	0.500	0.520	0.520	154.54	154.54	14.514	5	0	
Diag S15	L 3" x 3" x 0.25"	DAS	3.5X3X.025	36.0	14.09	Comp. 14.09	D 31P	-3.045	W 90	21.604	0.000	0.000	0.520	0.520	0.520	143.77	143.77	13.640	5	0	
Diag S17	L 3" x 3" x 0.25"	DAS	3X3X.025	36.0	10.20	Comp. 10.20	D 33P	-2.425	W 180	23.778	0.000	0.000	0.520	0.520	0.520	135.30	135.30	11.69	12.836	5	0
Horiz 1	B/L 2.5" x 2.5" x 0.25"	DAS	3.5X2X.025	36.0	57.70	Comp. 57.70	H 1P	-35.468	W 90	61.473	0.000	0.000	0.480	0.480	0.480	113.39	113.39	21.458	1	0	
Horiz 2	B/L 3" x 2" x 0.25"	DAS	3.5X2X.025	36.0	43.91	Comp. 43.91	H 3P	-36.267	W 90	86.410	0.000	0.000	0.500	0.500	0.500	133.09	133.09	13.278	1	0	
Horiz 3	B/L 3" x 2" x 0.25"	DAS	3.5X2X.025	36.0	43.91	Comp. 43.91	H 5P	-36.267	W 90	86.410	0.000	0.000	0.500	1.000	0.500	149.01	149.01	13.278	1	0	
Horiz 4	B/L 3" x 2" x 0.25"	DAS	3.5X2X.025	36.0	54.28	Comp. 54.28	H 7P	-31.193	W 90	57.471	0.000	0.000	0.470	0.940	0.470	112.02	112.02	12.222	1	0	
Horiz 5	B/L 3" x 2" x 0.25"	DAS	3.5X2X.025	36.0	53.64	Comp. 53.64	H 9P	-14.701	W 90	27.400	0.000	0.000	1.000	1.000	1.000	194.18	194.18	165.52	15.292	6	
Horiz 6	B/L 3" x 2" x 0.25"	DAS	3.5X2X.025	36.0	41.94	Comp. 41.94	H 11P	-13.369	W 90	31.873	0.000	0.000	1.000	1.000	1.000	158.53	158.53	17.350	6	0	
Horiz 7	B/L 3" x 2" x 0.25"	DAS	3.5X2X.025	36.0	44.74	Comp. 44.74	H 13P	-11.406	W 90	25.495	0.000	0.000	1.000	1.000	1.000	190.54	190.54	163.36	12.208	6	
Horiz 8	B/L 3" x 2" x 0.25"	DAS	3.5X2X.025	36.0	44.74	Comp. 44.74	H 15P	-11.406	W 90	25.495	0.000	0.000	1.000	1.000	1.000	190.54	190.54	17.350	6	0	
Horiz 9	B/L 2.5" x 2.5" x 0.25"	DAS	2.5X2X.025	36.0	26.24	Comp. 26.24	H 17P	-8.958	W 90	34.139	0.000	0.000	1.000	1.000	1.000	154.42	154.42	9.896	6	0	
Horiz 10	B/L 2.5" x 2.5" x 0.25"	DAS	2.5X2X.025	36.0	19.75	Comp. 19.75	H 19X	-7.508	W 90	38.019	0.000	0.000	1.000	1.000	1.000	142.39	142.39	13.77	9.125	6	
Horiz 11	B/L 2.5" x 2.5" x 0.25"	DAS	2.5X2X.025	36.0	17.26	Comp. 17.26	H 22P	-7.353	W 180	42.599	0.000	0.000	1.000	1.000	1.000	130.36	130.36	12.37	8.354	6	
Horiz 12	B/L 2.5" x 2.5" x 0.25"	DAS	2.5X2X.025	36.0	13.27	Comp. 13.27	H 24P	-6.358	W 180	47.900	0.000	0.000	1.000	1.000	1.000	118.34	118.34	7.583	1	0	
Horiz 13	B/L 2.5" x 2.5" x 0.25"	DAS	2.5X2X.025	36.0	9.13	Comp. 9.13	H 26P	-5.069	W 180	55.156	0.000	0.000	1.000	1.000	1.000	115.13	115.13	5.813	1	0	
Horiz 14	B/L 2.5" x 2.5" x 0.25"	DAS	2.5X2X.025	36.0	4.73	Comp. 4.73	H 28P	-3.077	W 180	50.000	0.000	0.000	1.000	1.000	1.000	197.15	197.15	183.82	12.222	6	
Horiz 15	B/L 2.5" x 2.5" x 0.25"	DAS	2.5X2X.025	36.0	1.73	Comp. 1.73	Tens 0.50	-0.265	W 0	53.374	0.000	0.000	0.500	1.000	0.500	118.06	118.06	11.117	1	0	
Horiz 16	L 3" x 2.5" x 0.25"	DAS	3X2X.025	36.0	2.36	Comp. 0.00	Tens 0.32	-0.296	W 0	16.518	0.000	0.000	0.500	1.000	0.500	160.30	160.30	10.059	5	0	
Horiz 17	C8X11.5	CHU	C8X11.5	36.0	1.00	Comp. 1.00	Tens 0.32	-0.296	W 0	29.726	0.000	0.000	1.000	1.000	1.000	172.80	172.80	9.700	5	0	
LD 1	B/L 3X4" x 0.25"	DAS	3X2X.025	36.0	49.17	Comp. 49.17	L 1X	-17.931	W 90	36.466	0.000	0.000	0.850	0.850	0.850	146.95	146.95	12.836	6	0	
LD 2	B/L 3X4" x 0.25"	DAS	3X2X.025	36.0	49.17	Comp. 49.17	L 2X	-17.931	W 90	36.466	0.000	0.000	0.850	0.850	0.850	146.95	146.95	12.836	6	0	

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength	Max Usage %	Max Control	Tension Force	Tension Control	Net Section	Tension Connect.	Tension Connect.	Tension Length	No. Tens.	No. Bolts	Hole Dia.	
			(in)	(ksi)	(%)	(in)	(kips)	(kips)	(in)	(kips)	(kips)	(in)	(in)	(in)	(in)	
Leg S1	L 8"	x 8" x 1.125"	SAE	8X8X1.13	36.0	71.43	Comp. 48.50	L 1XX 262.913	W 45	542.051	0.000	0.000	0.000	25.095	0 0.000	0
Leg S2	L 8"	x 8" x 1.125"	SAE	8X8X1.13	36.0	60.75	Comp. 42.26	L 2XX 239.079	W 45	452.051	0.000	0.000	0.000	25.095	0 0.000	0

Leg S3	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0 52.55	Comp	36.48	L 3XY 197.756	W 45	542.051	0.000	0.000	0.000	0.000	0.000	0.000	0
Leg S4	L 8" x 8" x 1"	SAE	8X8X1	36.0 49.12	Comp	34.28	L 4XY 166.896	W 45	485.099	0.000	0.000	0.000	0.000	0.000	0.000	0
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0 55.54	Comp	38.01	L 5XY 162.924	W 45	428.651	0.000	0.000	0.000	0.000	0.000	0.000	0
Leg S6	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0 46.22	Comp	31.26	L 6XY 133.995	W 45	428.651	0.000	0.000	0.000	0.000	0.000	0.000	0
Leg S7	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0 42.96	Comp	31.26	L 7XY 106.179	W 45	370.655	0.000	0.000	0.000	0.000	0.000	0.000	0
Leg S8	L 8" x 8" x 0.625"	SAE	8X8X0.63	36.0 39.58	Comp	28.65	L 8XY 86.831	W 45	311.374	0.000	0.000	0.000	0.000	0.000	0.000	0
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0 40.53	Comp	34.17	L 9XY 66.456	W 45	273.565	0.000	0.000	0.000	0.000	0.000	0.000	0
Leg S10	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0 31.61	Comp	19.47	L 10XY 53.243	W 45	273.456	0.000	0.000	0.000	0.000	0.000	0.000	0
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0 33.44	Comp	19.43	L 11XY 40.474	W 45	208.332	0.000	0.000	0.000	0.000	0.000	0.000	0
Leg S12	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0 25.56	Comp	13.75	L 12XY 28.650	W 45	208.332	0.000	0.000	0.000	0.000	0.000	0.000	0
Leg S13	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0 22.81	Comp	10.47	L 13XY 17.160	W 45	163.944	0.000	0.000	0.000	0.000	0.000	0.000	0
Leg S14	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0 14.49	Comp	10.43	L 14XY 14.249	W 45	163.944	0.000	0.000	0.000	0.000	0.000	0.000	0
Leg S15	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0 13.78	Comp	4.45	L 15XY 6.030	W 45	135.432	0.000	0.000	0.000	0.000	0.000	0.000	0
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0 9.88	Comp	2.45	L 16XY 2.409	W 45	98.172	0.000	0.000	0.000	0.000	0.000	0.000	0
Leg S17	L 5" x 5" x 0.3125"	DAE	5X5X0.31	36.0 4.98	Comp	0.99	L 17Y 0.000	W 45	98.172	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S1	B/B L 8" x 8" x 0.3125"	DAE	8X8X0.31	36.0 56.53	Comp	39.268	D 2P 90	135.432	0.000	0.000	0.000	0.000	0.000	0.000	0	
Diag S2	B/B L 8" x 8" x 0.3125"	DAE	8X8X0.31	36.0 40.43	Comp	39.14	D 3P 90	135.432	0.000	0.000	0.000	0.000	0.000	0.000	0	
Diag S3	B/B L 2.5" x 3.5" x 0.25"	DAS	3.5X2.5X0.25	36.0 78.97	Comp	44.77	D 6P 41.775	W -90	93.312	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S4	B/B L 2.5" x 3.5" x 0.25"	DAS	3.5X2.5X0.25	36.0 53.87	Comp	43.95	D 8P 41.007	W -90	93.312	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S5	B/B L 3" x 4" x 0.25"	DAS	4X3X0.25	36.0 53.83	Comp	25.35	D 9P 27.766	W -90	109.512	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S6	B/B L 3" x 4" x 0.25"	DAS	4X3X0.25	36.0 50.34	Comp	24.71	D 11P 27.056	W -90	109.512	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S7	B/B L 3" x 4" x 0.25"	DAS	4X3X0.25	36.0 44.88	Comp	24.44	D 13P 27.056	W -90	109.512	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S8	B/B L 3" x 3.5" x 0.25"	DAS	2.5X2.5X0.25	36.0 46.69	Comp	22.15	D 15P 24.262	W -90	109.512	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S9	B/B L 2.5" x 2.5" x 0.25"	DAS	2.5X2.5X0.25	36.0 26.00	Comp	17.73	D 17P 13.673	W -90	77.112	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S10	B/B L 2.5" x 2.5" x 0.25"	DAS	2.5X2.5X0.25	36.0 45.30	Comp	16.25	D 19P 12.531	W -90	77.112	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S11	B/B L 2.5" x 2.5" x 0.25"	DAL	2.5X2.5X0.25	36.0 66.78	Comp	18.32	D 21X 12.645	W -90	69.012	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S12	B/B L 2.5" x 2.5" x 0.25"	DAL	2.5X2.5X0.25	36.0 51.05	Comp	18.05	D 23X 11.550	W -90	69.012	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S13	B/B L 2.5" x 2.5" x 0.25"	DAL	2.5X2.5X0.25	36.0 54.27	Comp	15.30	D 24X 10.857	W -90	69.012	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0 25.95	Comp	8.83	W 48.834	W 90	54.756	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S15	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0 17.81	Comp	6.35	W 29Y 3.475	W 0	54.756	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0 14.09	Comp	4.70	D 31P 2.193	W 0	46.656	0.000	0.000	0.000	0.000	0.000	0.000	0
Diag S17	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0 10.20	Comp	3.37	D 33P 1.538	W 0	46.656	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 1	B/B L 3" x 3" x 0.25"	DAL	3.5X2.5X0.25	36.0 44.88	Comp	49.48	H 1X 30.460	W 90	93.312	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 2	B/B L 3.5" x 3" x 0.25"	DAL	3.5X2.5X0.25	36.0 43.91	Comp	43.91	H 3X 40.973	W -90	93.312	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 3	B/B L 3.5" x 2.5" x 0.25"	DAL	3.5X2.5X0.25	36.0 41.21	Comp	41.26	H 5X 38.497	W -90	93.312	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 4	B/B L 3" x 2.5" x 0.25"	DAL	3.5X2.5X0.25	36.0 54.28	Comp	40.44	H 7P 34.460	W 90	85.212	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 5	B/B L 3" x 2.5" x 0.25"	DAL	3.5X2.5X0.25	36.0 53.64	Comp	18.08	H 9P 15.402	W 90	85.212	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 6	B/B L 3" x 2.5" x 0.25"	DAL	3.5X2.5X0.25	36.0 10.94	Comp	16.11	H 11P 10.752	W 90	85.212	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 7	B/B L 2.5" x 2.5" x 0.25"	DAL	2.5X2.5X0.25	36.0 44.74	Comp	14.98	H 13P 11.548	W 90	77.112	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 8	B/B L 2.5" x 2.5" x 0.25"	DAL	2.5X2.5X0.25	36.0 32.84	Comp	13.56	H 15P 10.458	W 90	77.112	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 9	B/B L 2.5" x 2.5" x 0.25"	DAL	2.5X2.5X0.25	36.0 26.24	Comp	11.75	H 17P 9.061	W 90	77.112	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 10	B/B L 2.5" x 2.5" x 0.25"	DAL	2.5X2.5X0.25	36.0 19.73	Comp	7.810	H 19P 7.712	W 90	77.112	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 11	B/B L 2.5" x 2.5" x 0.25"	DAL	2.5X2.5X0.25	36.0 12.26	Comp	9.61	H 21P 7.712	W 90	77.112	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 12	B/B L 2.5" x 2.5" x 0.25"	DAL	2.5X2.5X0.25	36.0 13.27	Comp	8.43	H 24P 6.498	W 90	77.112	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 13	B/B L 2.5" x 2.5" x 0.25"	DAL	2.5X2.5X0.25	36.0 9.17	Comp	7.58	H 25P 5.844	W 90	77.112	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 14	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0 6.08	Comp	6.00	H 28P 2.546	W 45	42.444	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 15	B/B L 3" x 2.5" x 0.25"	DAS	3X2.5X0.25	36.0 1.77	Comp	1.73	H 29P 1.471	W 0	85.212	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 16	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0 1.06	Comp	2.18	H 31P 1.426	W 45	93.077	0.000	0.000	0.000	0.000	0.000	0.000	0
Horiz 17	G8x11.5	CHN	G8x11.5	36.0 1.00	Comp	0.48	H 33P 0.523	W 90	109.512	0.000	0.000	0.000	0.000	0.000	0.000	0
LD 1	B/B L 3" x 2" x 0.25"	DAL	3X2X0.25	36.0 49.17	Comp	24.16	LD 2Y 18.631	W -45	77.112	0.000	0.000	0.000	0.000	0.000	0.000	0
LD 2	B/B L 4" x 3" x 0.25"	DAL	4X3X0.25	36.0 56.91	Comp	39.55	LD 3P 43.311	W -90	109.512	0.000	0.000	0.000	0.000	0.000	0.000	0
LD 3	B/B L 4" x 3" x 0.25"	DAL	4X3X0.25	36.0 44.88	Comp	39.55	LD 3P 43.311	W -90	109.512	0.000	0.000	0.000	0.000	0.000	0.000	0
LD 4	B/B L 2.5" x 2" x 0.25"	DAL	2.5X2.5X0.25	36.0 76.37	Comp	30.13	LD 7P 20.793	W -90	69.012	0.000	0.000	0.000	0.000	0.000	0.000	0
LD 5	B/B L 2.5" x 2" x 0.25"	DAL	2.5X2.5X0.25	36.0 70.25	Comp	40.44	LD 10P 20.793	W -90	69.012	0.000	0.000	0.000	0.000	0.000	0.000	0
LD 6	B/B L 2.5" x 2" x 0.25"	DAL	2.5X2.5X0.25	36.0 51.68	Comp	18.72	LD 11X 36.133	W -90	93.312	0.000	0.000	0.000	0.000	0.000	0.000	0
LD 7	B/B L 3" x 3" x 0.25"	DAL	3X3X0.25	36.0 41.60	Comp	21.82	LD 14Y 20.360	W -45	93.312	0.000	0.000	0.000	0.000	0.000	0.000	0
LD 8	B/B L 2.5" x 2" x 0.25"	DAL	2.5X2.5X0.25	36.0 61.10	Comp	40.39	LD 15P 27.876	W -90	69.012	0.000	0.000	0.000	0.000	0.000	0.000	0
LD 9	B/B L 2.5" x 2" x 0.25"	DAL	2.5X2.5X0.25	36.0 59.85	Comp	45.45	LD 17P 35.050	W -90	77.112	0.000	0.000	0.000	0.000	0.000	0.000	0
LD 10	B/B L 2.5" x 2" x 0.25"	DAL	2.5X2.5X0.25	36.0 20.35	Comp	29.70	LD 20P 28.400	W -45</								

Site #: 88018
Name: Stamford (Katoona), CT

Engineer: RDB
Date: 03/31/21

Windspeed: No Ice: 117 mph
Carrier: T-Mobile
Ice: 50 mph

Taper: -0.123333
FW @ Base: 46.00 ft
FW @ Top: 9 ft

Taper Change: 300 ft
FW @ Top: 9 ft

Joint Label	Symmetry Code	X Coord. (ft)	Y Coord. (ft)	Z Coord. (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.	Drop Sub-Brace (Y or Blank)	Spreadsheet Version Last Updated: 11/12/2014							
												# Vert	Drop (ft)	Height (ft)	Type	Count	Z-Elev. (ft)	FW (ft)	# Sub-Brace
0	XY-Symmetry	23	23		0 Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	3	7.033	25	1	1	0	46	3
1	XY-Symmetry	21.45833333	21.45833333		25 Free	Free	Free	Free	Free	Free	Free	2	7.033	25	2	2	25	42.91666667	3
2	XY-Symmetry	19.91666667	19.91666667		50 Free	Free	Free	Free	Free	Free	Free	2	7.033	25	2	3	50	39.83333333	3
3	XY-Symmetry	18.375	18.375		75 Free	Free	Free	Free	Free	Free	Free	2	7.033	25	2	4	75	36.75	3
4	XY-Symmetry	16.83333333	16.83333333		100 Free	Free	Free	Free	Free	Free	Free	25			5	100	33.66666667	2	
5	XY-Symmetry	15.29166667	15.29166667		125 Free	Free	Free	Free	Free	Free	Free	25			6	125	30.58333333	2	
6	XY-Symmetry	13.75	13.75		150 Free	Free	Free	Free	Free	Free	Free	25			7	150	27.5	2	
7	XY-Symmetry	12.20833333	12.20833333		175 Free	Free	Free	Free	Free	Free	Free	25			8	175	24.41666667	2	
8	XY-Symmetry	10.66666667	10.66666667		200 Free	Free	Free	Free	Free	Free	Free	12.5			9	200	21.33333333	1	
9	XY-Symmetry	9.895833333	9.895833333		212.5 Free	Free	Free	Free	Free	Free	Free	12.5			10	212.5	19.79166667	1	
10	XY-Symmetry	9.125	9.125		225 Free	Free	Free	Free	Free	Free	Free	12.5			11	225	18.25	1	
11	XY-Symmetry	8.354166667	8.354166667		237.5 Free	Free	Free	Free	Free	Free	Free	12.5			12	237.5	16.70833333	1	
12	XY-Symmetry	7.583333333	7.583333333		250 Free	Free	Free	Free	Free	Free	Free	12.5			13	250	15.16666667	1	
13	XY-Symmetry	6.8125	6.8125		262.5 Free	Free	Free	Free	Free	Free	Free	1	10.167	X	14	262.5	13.625	1	
14	XY-Symmetry	6.185535	6.185535		272.667 Free	Free	Free	Free	Free	Free	Free	1	10.167	X	15	272.667	12.37107	1	
15	XY-Symmetry	5.55857	5.55857		282.834 Free	Free	Free	Free	Free	Free	Free	1	8.583	X	16	282.834	11.11714	1	
16	XY-Symmetry	5.029285	5.029285		291.417 Free	Free	Free	Free	Free	Free	Free	8.583			17	291.417	10.05857	1	
17	XY-Symmetry	4.5	4.5		300 Free	Free	Free	Free	Free	Free	Free	18	300		9				

NOTES	
Types:	
1: Built up Horiz. w/ A	
2: Built up Horiz. w/ M	
A: Typical A brace	
X: Typical X brace	
Drop: Use only for types 1 & 2	
# Sections: 17	

A1	Y-Symmetry	21.45833333	0	25 Free	Free	Free	Free	Free	Free	Free	Free							
A2	X-Symmetry	0	21.45833333	25 Free	Free	Free	Free	Free	Free	Free	Free							
A3	XY-Symmetry	19.91666667	6.638888889	50 Free	Free	Free	Free	Free	Free	Free	Free							
A4	XY-Symmetry	6.638888889	19.91666667	50 Free	Free	Free	Free	Free	Free	Free	Free							
A5	XY-Symmetry	18.375	6.125	75 Free	Free	Free	Free	Free	Free	Free	Free							
A6	XY-Symmetry	6.125	18.375	75 Free	Free	Free	Free	Free	Free	Free	Free							
A7	XY-Symmetry	16.83333333	5.611111111	100 Free	Free	Free	Free	Free	Free	Free	Free							
A8	XY-Symmetry	5.611111111	16.83333333	100 Free	Free	Free	Free	Free	Free	Free	Free							
A9	Y-Symmetry	15.29166667	0	125 Free	Free	Free	Free	Free	Free	Free	Free							
A10	X-Symmetry	0	15.29166667	125 Free	Free	Free	Free	Free	Free	Free	Free							
A11	Y-Symmetry	13.75	0	150 Free	Free	Free	Free	Free	Free	Free	Free							
A12	X-Symmetry	0	13.75	150 Free	Free	Free	Free	Free	Free	Free	Free							
A13	XY-Symmetry	12.20833333	0	175 Free	Free	Free	Free	Free	Free	Free	Free							
A14	X-Symmetry	0	12.20833333	175 Free	Free	Free	Free	Free	Free	Free	Free							
A15	Y-Symmetry	10.66666667	0	200 Free	Free	Free	Free	Free	Free	Free	Free							
A16	X-Symmetry	0	10.66666667	200 Free	Free	Free	Free	Free	Free	Free	Free							
A17	Y-Symmetry	9.895833333	0	212.5 Free	Free	Free	Free	Free	Free	Free	Free							
A18	X-Symmetry	0	9.895833333	212.5 Free	Free	Free	Free	Free	Free	Free	Free							
A19	Y-Symmetry	9.125	0	225 Free	Free	Free	Free	Free	Free	Free	Free							
A20	X-Symmetry	0	9.125	225 Free	Free	Free	Free	Free	Free	Free	Free							
A21	XY-Symmetry	8.354166667	0	237.5 Free	Free	Free	Free	Free	Free	Free	Free							
A22	X-Symmetry	0	8.354166667	237.5 Free	Free	Free	Free	Free	Free	Free	Free							
A23	Y-Symmetry	7.583333333	0	250 Free	Free	Free	Free	Free	Free	Free	Free							
A24	X-Symmetry	0	7.583333333	250 Free	Free	Free	Free	Free	Free	Free	Free							
A25	Y-Symmetry	6.8125	0	262.5 Free	Free	Free	Free	Free	Free	Free	Free							
A26	X-Symmetry	0	6.8125	262.5 Free	Free	Free	Free	Free	Free	Free	Free							
H1	XY-Symmetry	21.892035	10.72916667	17.967 Free														
H2	XY-Symmetry	10.72916667	21.892035	17.967 Free														
H5	XY-Symmetry	20.35036833	10.807895	42.967 Free														
H6	XY-Symmetry	10.807895	20.35036833	42.967 Free														
H7	Y-Symmetry	20.35036833	0	42.967 Free														
H8	X-Symmetry	0	20.35036833	42.967 Free														
H9	XY-Symmetry	18.80870167	10.00487167	67.967 Free														
H10	XY-Symmetry	10.00487167	18.80870167	67.967 Free														
H11	Y-Symmetry	18.80870167	0	67.967 Free														
H12	X-Symmetry	0	18.80870167	67.967 Free														
H13	XY-Symmetry	17.267035	9.201848333	92.967 Free														
H14	XY-Symmetry	9.201848333	17.267035	92.967 Free														
H15	Y-Symmetry	17.267035	0	92.967 Free														
H16	X-Symmetry	0	17.267035	92.967 Free														

Legs

Site No.:	88018
Engineer:	RDB
Date:	03/31/2021
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape	Diameter or Length (in)	Thickness ^[2] (in)	F _Y (ksi)
1	0.000-25.00	L	8	1.125	36
2	25.00-50.00	L	8	1.125	36
3	50.00-75.00	L	8	1.125	36
4	75.00-100.0	L	8	1	36
5	100.0-125.0	L	8	0.875	36
6	125.0-150.0	L	8	0.875	36
7	150.0-175.0	L	8	0.75	36
8	175.0-200.0	L	8	0.625	36
9	200.0-212.5	L	6	0.75	36
10	212.5-225.0	L	6	0.75	36
11	225.0-237.5	L	6	0.5625	36
12	237.5-250.0	L	6	0.5625	36
13	250.0-262.5	L	6	0.4375	36
14	262.5-272.7	L	5	0.4375	36
15	272.7-282.8	L	5	0.4375	36
16	282.8-291.4	L	5	0.3125	36
17	291.4-300.0	L	5	0.3125	36

Notes:

^[1] Type of Leg Shape: **R** = Round or **P** = Bent Plate or **S** = Schifflerized Angle. **L** = Even Leg

^[2] For Solid Round Leg Shapes Thickness Equals Zero.

^[3] Adjust for Bent Plate Leg Shapes.

Diagonals

Site No.:	88018
Engineer:	RDB
Date:	03/31/2021
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	Is Diag. Tension Only? (Y/N)
1	0.000-25.00	2L		3	4	0.3125	36	
2	25.00-50.00	2L		3	3.5	0.25	36	
3	50.00-75.00	2L		2.5	3.5	0.25	36	
4	75.00-100.0	2L		2.5	3.5	0.25	36	
5	100.0-125.0	2L		3	4	0.25	36	
6	125.0-150.0	2L		3	4	0.25	36	
7	150.0-175.0	2L		3	4	0.25	36	
8	175.0-200.0	2L		3.5	3.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2	0.25	36	
12	237.5-250.0	2L		2.5	2	0.25	36	
13	250.0-262.5	2L		2.5	2	0.25	36	
14	262.5-272.7	L		3.5	3.5	0.25	36	
15	272.7-282.8	L		3.5	3.5	0.25	36	
16	282.8-291.4	L		3	3	0.25	36	
17	291.4-300.0	L		3	3	0.25	36	

Notes:^[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.^[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero^[3] Applies to Single-Angle and Double-Angle Shapes only.^[4] Applies to Double-Angle Shapes only.^[5] Applies to Single-Angle Shapes only.

Horizontals

Site No.:	88018
Engineer:	RDB
Date:	03/31/2021
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	B/B Spacing (in.)
1	0.000-25.00	2L		3.5	2.5	0.25	36	
2	25.00-50.00	2L		3.5	2.5	0.25	36	
3	50.00-75.00	2L		3.5	2.5	0.25	36	
4	75.00-100.0	2L		3	2.5	0.25	36	
5	100.0-125.0	2L		3	2.5	0.25	36	
6	125.0-150.0	2L		3	2.5	0.25	36	
7	150.0-175.0	2L		2.5	2.5	0.25	36	
8	175.0-200.0	2L		2.5	2.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2.5	0.25	36	
12	237.5-250.0	2L		2.5	2.5	0.25	36	
13	250.0-262.5	2L		2.5	2.5	0.25	36	
14	262.5-272.7	L		3	2.5	0.25	36	
15	272.7-282.8	2L		3	2.5	0.25	36	
16	282.8-291.4	L		3	2.5	0.25	36	
17	291.4-300.0	C		8	11.5		36	

Notes:^[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle, **2L** = Double-Angle, **C** = Channel, **W** = W Shape^[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero^[3] Applies to Single-Angle and Double-Angle Shapes only.^[4] Applies to Double-Angle Shapes only.^[5] Applies to Single-Angle Shapes only.

Built-up Diagonals

Site No.:	88018
Engineer:	RDB
Date:	03/31/2021
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.Input diags. from left to center & from base section upward.

Tower Built-up Diag. #	Section Elevations (ft)	Type of Shape	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)
1	0.000-25.00	2L		3	2	0.25	36
2	0.000-25.00	2L		4	3	0.25	36
3	25.00-50.00	2L		2.5	2	0.25	36
4	25.00-50.00	2L		2.5	2	0.25	36
5	25.00-50.00	2L		3	3	0.25	36
6	50.00-75.00	2L		3	3	0.25	36
7	50.00-75.00	2L		2.5	2	0.25	36
8	50.00-75.00	2L		3	2	0.25	36
9	75.00-100.0	2L		3	3	0.25	36
10	75.00-100.0	2L		2.5	2	0.25	36
11	75.00-100.0	2L		2.5	2.5	0.375	36

Notes:[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Built-up Horizontals

Site No.:	88018
Engineer:	RDB
Date:	03/31/2021
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	Is Horiz. Tension Only? (Y/N)
1	0.000-25.00	2L		2.5	3	0.25	36	
2	25.00-50.00	2L		2.5	3	0.25	36	
3	50.00-75.00	2L		2.5	3	0.375	36	
4	75.00-100.0	2L		3.5	3.5	0.25	36	

Notes:^[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.^[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero^[3] Applies to Single-Angle and Double-Angle Shapes only.^[4] Applies to Double-Angle Shapes only.^[5] Applies to Single-Angle Shapes only.

Site #:	88018
Name:	T-Mobile

Engineer:	RDB
Date:	03/31/21

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
L 1	Leg S1		XY-Symmetry	OP	1P		1	4	0.28132	0.28132
L 2	Leg S2		XY-Symmetry	1P	2P		1	4	0.28132	0.28132
L 3	Leg S3		XY-Symmetry	2P	3P		1	4	0.28132	0.28132
L 4	Leg S4		XY-Symmetry	3P	4P		1	4	0.28132	0.28132
L 5	Leg S5		XY-Symmetry	4P	5P		1	4	0.333333333	0.333333333
L 6	Leg S6		XY-Symmetry	5P	6P		1	4	0.333333333	0.333333333
L 7	Leg S7		XY-Symmetry	6P	7P		1	4	0.333333333	0.333333333
L 8	Leg S8		XY-Symmetry	7P	8P		1	4	0.333333333	0.333333333
L 9	Leg S9		XY-Symmetry	8P	9P		1	4	0.5	0.5
L 10	Leg S10		XY-Symmetry	9P	10P		1	4	0.5	0.5
L 11	Leg S11		XY-Symmetry	10P	11P		1	4	0.5	0.5
L 12	Leg S12		XY-Symmetry	11P	12P		1	4	0.5	0.5
L 13	Leg S13		XY-Symmetry	12P	13P		1	4	0.5	0.5
L 14	Leg S14		XY-Symmetry	13P	14P		1	4	0.5	0.5
L 15	Leg S15		XY-Symmetry	14P	15P		1	4	0.5	0.5
L 16	Leg S16		XY-Symmetry	15P	16P		1	4	0.5	0.5
L 17	Leg S17		XY-Symmetry	16P	17P		1	4	0.5	0.5
D 1	Diag S1		XY-Symmetry	OP	H2P	1	6	0.31	0.92	0.31
D 2	Diag S1		XY-Symmetry	OP	H1P	1	6	0.31	0.92	0.31
D 3	Diag S2		XY-Symmetry	1P	H6P	1	6	0.31	0.62	0.31
D 4	Diag S2		XY-Symmetry	1P	H5P	1	6	0.31	0.62	0.31
D 5	Diag S3		XY-Symmetry	2P	H10P	1	6	0.333333333	0.666666667	0.333333333
D 6	Diag S3		XY-Symmetry	2P	H9P	1	6	0.333333333	0.666666667	0.333333333
D 7	Diag S4		XY-Symmetry	3P	H14P	1	6	0.333333333	0.666666667	0.333333333
D 8	Diag S4		XY-Symmetry	3P	H13P	1	6	0.333333333	0.666666667	0.333333333
D 9	Diag S5		XY-Symmetry	4P	A9P	1	6	0.333333333	0.666666667	0.333333333
D 10	Diag S5		XY-Symmetry	4P	A10P	1	6	0.333333333	0.666666667	0.333333333
D 11	Diag S6		XY-Symmetry	5P	A11P	1	6	0.333333333	0.666666667	0.333333333
D 12	Diag S6		XY-Symmetry	5P	A12P	1	6	0.333333333	0.666666667	0.333333333
D 13	Diag S7		XY-Symmetry	6P	A13P	1	6	0.333333333	0.666666667	0.333333333
D 14	Diag S7		XY-Symmetry	6P	A14P	1	6	0.333333333	0.666666667	0.333333333
D 15	Diag S8		XY-Symmetry	7P	A15P	1	6	0.333333333	0.666666667	0.333333333
D 16	Diag S8		XY-Symmetry	7P	A16P	1	6	0.333333333	0.666666667	0.333333333
D 17	Diag S9		XY-Symmetry	8P	A17P	1	6	0.32	0.59	0.32
D 18	Diag S9		XY-Symmetry	8P	A18P	1	6	0.32	0.59	0.32
D 19	Diag S10		XY-Symmetry	9P	A19P	1	6	0.5	1	0.5
D 20	Diag S10		XY-Symmetry	9P	A20P	1	6	0.5	1	0.5
D 21	Diag S11		XY-Symmetry	10P	A21P	1	6	0.48	0.96	0.48
D 22	Diag S11		XY-Symmetry	10P	A22P	1	6	0.48	0.96	0.48
D 23	Diag S12		XY-Symmetry	11P	A23P	1	6	0.5	1	0.5
D 24	Diag S12		XY-Symmetry	11P	A24P	1	6	0.5	1	0.5
D 25	Diag S13		XY-Symmetry	12P	A25P	1	6	0.5	1	0.5
D 26	Diag S13		XY-Symmetry	12P	A26P	1	6	0.5	1	0.5
D 27	Diag S14		XY-Symmetry	13P	14Y	2	5	0.52	0.52	0.52
D 28	Diag S14		XY-Symmetry	13P	14X	2	5	0.52	0.52	0.52
D 29	Diag S15		XY-Symmetry	14P	15Y	2	5	0.52	0.52	0.52
D 30	Diag S15		XY-Symmetry	14P	15X	2	5	0.52	0.52	0.52
D 31	Diag S16		XY-Symmetry	15P	16Y	2	5	0.52	0.52	0.52
D 32	Diag S16		XY-Symmetry	15P	16X	2	5	0.52	0.52	0.52
D 33	Diag S17		XY-Symmetry	16P	17Y	2	5	0.52	0.52	0.52
D 34	Diag S17		XY-Symmetry	16P	17X	2	5	0.52	0.52	0.52
H 1	Horiz 1		XY-Symmetry	1P	A1P	1	6	0.48	0.48	0.48
H 2	Horiz 1		XY-Symmetry	1P	A2P	1	6	0.48	0.48	0.48
H 3	Horiz 2		XY-Symmetry	2P	A3P	1	6	0.5	0.5	0.5
H 4	Horiz 2		XY-Symmetry	2P	A4P	1	6	0.5	0.5	0.5
H 5	Horiz 3		XY-Symmetry	3P	A5P	1	6	0.5	0.5	0.5
H 6	Horiz 3		XY-Symmetry	3P	A6P	1	6	0.5	0.5	0.5
H 7	Horiz 4		XY-Symmetry	4P	A7P	1	6	0.47	0.94	0.47
H 8	Horiz 4		XY-Symmetry	4P	A8P	1	6	0.47	0.94	0.47
H 9	Horiz 5		XY-Symmetry	5P	A9P	1	6	1	1	1
H 10	Horiz 5		XY-Symmetry	5P	A10P	1	6	1	1	1
H 11	Horiz 6		XY-Symmetry	6P	A11P	1	6	1	1	1
H 12	Horiz 6		XY-Symmetry	6P	A12P	1	6	1	1	1
H 13	Horiz 7		XY-Symmetry	7P	A13P	1	6	1	1	1
H 14	Horiz 7		XY-Symmetry	7P	A14P	1	6	1	1	1
H 15	Horiz 8		XY-Symmetry	8P	A15P	1	6	1	1	1
H 16	Horiz 8		XY-Symmetry	8P	A16P	1	6	1	1	1
H 17	Horiz 9		XY-Symmetry	9P	A17P	1	6	1	1	1
H 18	Horiz 9		XY-Symmetry	9P	A18P	1	6	1	1	1
H 19	Horiz 10		XY-Symmetry	10P	A19P	1	6	1	1	1
H 20	Horiz 10		XY-Symmetry	10P	A20P	1	6	1	1	1
H 21	Horiz 11		XY-Symmetry	11P	A21P	1	6	1	1	1
H 22	Horiz 11		XY-Symmetry	11P	A22P	1	6	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
H 23	Horiz 12		XY-Symmetry	12P	A23P	1	6	1	1	1
H 24	Horiz 12		XY-Symmetry	12P	A24P	1	6	1	1	1
H 25	Horiz 13		XY-Symmetry	13P	A25P	1	6	1	1	1
H 26	Horiz 13		XY-Symmetry	13P	A26P	1	6	1	1	1
H 27	Horiz 14		Y-Symmetry	14P	14X	3	5	0.5	1	0.5
H 28	Horiz 14		X-Symmetry	14P	14Y	3	5	0.5	1	0.5
H 29	Horiz 15		Y-Symmetry	15P	15X	1	6	0.5	1	0.5
H 30	Horiz 15		X-Symmetry	15P	15Y	1	6	0.5	1	0.5
H 31	Horiz 16		Y-Symmetry	16P	16X	3	5	0.5	1	0.5
H 32	Horiz 16		X-Symmetry	16P	16Y	3	5	0.5	1	0.5
H 33	Horiz 17		Y-Symmetry	17P	17X	3	5	1	1	1
H 34	Horiz 17		X-Symmetry	17P	17Y	3	5	1	1	1
H 37	Horiz 2		Y-Symmetry	A3P	A3X	1	6	0.5	1	0.5
H 38	Horiz 2		X-Symmetry	A4P	A4Y	1	6	0.5	1	0.5
H 39	Horiz 3		Y-Symmetry	A5P	A5X	1	6	0.5	1	0.5
H 40	Horiz 3		X-Symmetry	A6P	A6Y	1	6	0.5	1	0.5
H 41	Horiz 4		Y-Symmetry	A7P	A7X	1	6	0.5	1	0.5
H 42	Horiz 4		X-Symmetry	A8P	A8Y	1	6	0.5	1	0.5
LH 1	LH 1		Y-Symmetry	H1P	H1X	1	6	100	100	100
LH 2	LH 1		X-Symmetry	H2P	H2Y	1	6	100	100	100
LH 3	LH 2		XY-Symmetry	H5P	H7P	1	6	1	2	1
LH 4	LH 2		XY-Symmetry	H6P	H8P	1	6	1	2	1
LH 5	LH 3		XY-Symmetry	H9P	H11P	1	6	1	2	1
LH 6	LH 3		XY-Symmetry	H10P	H12P	1	6	1	2	1
LH 7	LH 4		XY-Symmetry	H13P	H15P	1	6	0.998	1.995	0.998
LH 8	LH 4		XY-Symmetry	H14P	H16P	1	6	0.998	1.995	0.998
LD 1	LD 1		XY-Symmetry	H1P	1P	1	6	0.85	0.85	0.85
LD 2	LD 1		XY-Symmetry	H2P	1P	1	6	0.85	0.85	0.85
LD 3	LD 2		XY-Symmetry	H1P	A1P	1	6	0.82	0.82	0.82
LD 4	LD 2		XY-Symmetry	H2P	A2P	1	6	0.82	0.82	0.82
LD 7	LD 4		XY-Symmetry	H5P	2P	1	6	0.87	0.87	0.87
LD 8	LD 4		XY-Symmetry	H6P	2P	1	6	0.87	0.87	0.87
LD 9	LD 5		XY-Symmetry	H5P	A3P	1	6	0.8	0.8	0.8
LD 10	LD 5		XY-Symmetry	H6P	A4P	1	6	0.8	0.8	0.8
LD 11	LD 6		XY-Symmetry	A3P	H7P	1	6	0.84	0.84	0.84
LD 12	LD 6		XY-Symmetry	A4P	H8P	1	6	0.84	0.84	0.84
LD 13	LD 7		XY-Symmetry	H9P	3P	1	6	0.865	0.865	0.865
LD 14	LD 7		XY-Symmetry	H10P	3P	1	6	0.865	0.865	0.865
LD 15	LD 8		XY-Symmetry	H9P	A5P	1	6	0.82	0.82	0.82
LD 16	LD 8		XY-Symmetry	H10P	A6P	1	6	0.82	0.82	0.82
LD 17	LD 9		XY-Symmetry	A5P	H11P	1	6	0.82	0.82	0.82
LD 18	LD 9		XY-Symmetry	A6P	H12P	1	6	0.82	0.82	0.82
LD 19	LD 10		XY-Symmetry	H13P	4P	1	6	0.86	0.86	0.86
LD 20	LD 10		XY-Symmetry	H14P	4P	1	6	0.86	0.86	0.86
LD 21	LD 11		XY-Symmetry	H13P	A7P	1	6	0.82	0.82	0.82
LD 22	LD 11		XY-Symmetry	H14P	A8P	1	6	0.82	0.82	0.82
LD 23	LD 12		XY-Symmetry	A7P	H15P	1	6	0.85	0.85	0.85
LD 24	LD 12		XY-Symmetry	A8P	H16P	1	6	0.85	0.85	0.85
BR 1	DUM 1		XY-Symmetry	A1P	A2P	1	4	1	1	1
BR 3	DUM 1		XY-Symmetry	A3P	A4P	1	4	1	1	1
BR 4	DUM 1		XY-Symmetry	A3P	A4XY	1	4	1	1	1
BR 5	DUM 1		XY-Symmetry	A5P	A6P	1	4	1	1	1
BR 6	DUM 1		XY-Symmetry	A5P	A6XY	1	4	1	1	1
BR 7	DUM 1		XY-Symmetry	A7P	A8P	1	4	1	1	1
BR 8	DUM 1		XY-Symmetry	A7P	A8XY	1	4	1	1	1
BR 9	DUM 1		XY-Symmetry	A9P	A10P	1	4	1	1	1
BR 11	DUM 1		XY-Symmetry	A11P	A12P	1	4	1	1	1
BR 13	DUM 1		XY-Symmetry	A13P	A14P	1	4	1	1	1
BR 15	DUM 1		XY-Symmetry	A15P	A16P	1	4	1	1	1
BR 17	DUM 1		XY-Symmetry	A17P	A18P	1	4	1	1	1
BR 19	DUM 1		XY-Symmetry	A19P	A20P	1	4	1	1	1
BR 21	DUM 1		XY-Symmetry	A21P	A22P	1	4	1	1	1
BR 23	DUM 1		XY-Symmetry	A23P	A24P	1	4	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
BR 25	DUM 1		XY-Symmetry	A25P	A26P	1	4	1	1	1
BR 61	DUM 1		XY-Symmetry	H1P	H2P	1	4	1	1	1
BR 62	DUM 1		XY-Symmetry	H1P	H2XY	1	4	1	1	1
BR 64	DUM 1		XY-Symmetry	H5P	H6P	1	4	1	1	1
BR 65	DUM 1		XY-Symmetry	H5P	H6XY	1	4	1	1	1
BR 66	DUM 1		XY-Symmetry	H7P	H8P	1	4	1	1	1
BR 67	DUM 1		XY-Symmetry	H9P	H10P	1	4	1	1	1
BR 68	DUM 1		XY-Symmetry	H9P	H10XY	1	4	1	1	1
BR 69	DUM 1		XY-Symmetry	H11P	H12P	1	4	1	1	1
BR 70	DUM 1		XY-Symmetry	H13P	H14P	1	4	1	1	1
BR 71	DUM 1		XY-Symmetry	H13P	H14XY	1	4	1	1	1
BR 72	DUM 1		XY-Symmetry	H15P	H16P	1	4	1	1	1

Site No.:	88018
Engineer:	RDB
Date:	03/31/21
Carrier:	T-Mobile

Description	From (ft)	To (ft)	Quantity	Shape	Width or Diameter** (in)	Perimeter (in)	Unit Weight (lb/ft)	In Face Zone? (Yes/No)	Include in Wind Load (Yes/No)
1 Ladder	0	300	1	Flat	1.5	6.0	6	No	Yes
2 Short Ladder	8.3333	33.3333	2	Flat	1.5	6.0	6	Yes	Yes
3 Short Ladder	8.3333	33.3333	2	Flat	1.5	6.0	6	Yes	Yes
5 WG	5	300	1	Flat	1.5	6.0	6	Yes	Yes
6 WG	5	272	1	Flat	1.5	6.0	6	Yes	Yes
7 WG	5	235	1	Flat	1.5	6.0	6	Yes	Yes
8 WG	5	223	1	Flat	1.5	6.0	6	Yes	Yes
9 WG	5	160	1	Flat	1.5	6.0	6	Yes	Yes
10 Marcus Communications LLC	5	300	1	Round	1.55	4.9	0.63	No	Yes
11 Marcus Communications LLC	5	300	1	Round	1.98	6.2	0.82	No	Yes
12 Marcus Communications LLC	5	300	1	Round	1.09	3.4	0.33	No	Yes
13 Other	5	300	4	Round	0.63	2.0	0.15	No	Yes
14 Clearwire Corporation	5	300	5	Round	1.09	3.4	0.33	Yes	Yes
15 Sigfox S.A.	5	292	1	Round	1.09	3.4	0.33	Yes	Yes
16 US Dept Of Homeland Security	5	275	2	Round	1.09	3.4	0.33	Yes	Yes
17 XM Satellite Radio Inc.	5	268	1	Round	1.98	6.2	0.82	Yes	Yes
18 T-Mobile	5	265	3	Round	1.98	6.2	1.3	Yes	Yes
19 T-Mobile	5	265	1	Round	2.5	8.9	3.15	Yes	No
20 XM Satellite Radio Inc.	5	260	1	Round	5.02	15.8	1.85	Yes	No
21 US Dept Of Homeland Security	5	250	1	Round	1.09	3.4	0.33	Yes	Yes
22 US Dept Of Homeland Security	5	245	1	Round	1.09	3.4	0.33	Yes	Yes
23 AT&T Mobility	5	235	1	Flat	8.19	43.7	8.2	Yes	Yes
24 AT&T Mobility	5	235	1	Round	0.78	2.8	0.51	Yes	No
25 AT&T Mobility	5	235	2	Round	0.78	2.5	0.59	Yes	Yes
26 AT&T Mobility	5	235	1	Round	1.85	6.8	1.96	Yes	No
27 AT&T Mobility	5	235	1	Round	2.4	8.8	3.52	Yes	No
28 US Dept Of Homeland Security	5	210	1	Round	1.09	3.4	0.33	Yes	Yes
29 Marcus Communications LLC	5	200	2	Round	1.55	4.9	0.63	No	Yes
30 Spok Holdings, Inc.	5	193	2	Round	1.09	3.4	0.33	No	Yes
31 Spok Holdings, Inc.	5	193	1	Round	1.09	3.4	0.33	No	Yes
32 Clearwire Corporation	5	167	2	Round	2.38	7.5	3.65	Yes	Yes
33 Clearwire Corporation	5	167	6	Round	0.31	1.0	0.05	Yes	Yes
34 Metro PCS Inc	5	165	1	Flat	8.19	43.7	9.84	Yes	Yes
35 Metro PCS Inc	5	165	1	Round	0.38	1.2	0.23	Yes	Yes
36 Metro PCS Inc	5	165	1	Round	0.44	1.4	0.08	Yes	Yes
37 Sprint Nextel	5	155	3	Round	1	3.1	0.65	Yes	Yes
38 Sprint Nextel	5	155	3	Round	1.54	4.8	1	Yes	Yes
39 Sprint Nextel	5	155	1	Round	1.7	5.3	1.78	Yes	Yes
40 Sensus USA Inc.	5	142	1	Round	1.09	3.4	0.3	No	Yes
42 Senet, Inc.	5	135	1	Round	0.63	2.0	0.2	Yes	Yes
43 Spok Holdings, Inc.	5	120	1	Round	0.63	2.0	0.2	No	Yes
44 Marcus Communications LLC	5	107	1	Round	1.55	4.9	0.6	No	Yes
45 Verizon Wireless	5	92	3	Round	1.54	4.8	1.0	Yes	Yes
46 Verizon Wireless	5	92	2	Round	1.98	6.2	1.3	Yes	Yes
47 Sirius XM Radio Inc.	5	25	1	Round	1.09	3.4	0.3	Yes	Yes
48 Spok Holdings, Inc.	0	6	1	Round	0.63	2.0	0.2	No	Yes
49 Spok Holdings, Inc.	0	6	1	Round	0.34	1.1	0.1	No	Yes

**Note: Actual block width multiplied by 0.75 (1.5 block drag factor actual divided by 2.0 flat)

Coax (p. 2 of 2)

Tia Code: **TIA-222-H** Exposure: **B**
f Topo Cat: **1**

Ke 0.998264

0.998204

/ K_z max

2.01

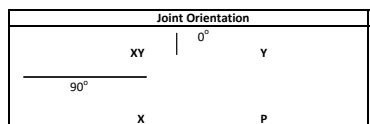
Site No.:	880
Engineer:	RE
Date:	03/3
Carrier:	T-Mc

Dishes

Dish Types	
S	Standard
R	Standard w/ Radome
H	High Performance
G	Grid

Dish Number	Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation	Equipment Status
1	307	3	0	H	Y	
2	300	4	51.4	S	XY	
3	300	2	90	H	XY	
4	300	2	180	H	X	
5	300	2	270	H	P	
6	120	4	90	S	XY	
7	25	2	197	R	X	
8	6	4	270	S	P	
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Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle (deg)
3' HP 1 @ 307'	17Y	3 ft HP Dish	0
4' STD 2 @ 300'	17XY	4 ft STD Dish	51.4
2' HP 3 @ 300'	17XY	2 ft HP Dish	90
2' HP 4 @ 300'	17X	2 ft HP Dish	180
2' HP 5 @ 300'	17P	2 ft HP Dish	270
4' STD 6 @ 120'	5XY	4 ft STD Dish	90
2' RAD 7 @ 25'	1X	2 ft RAD Dish	197
4' STD 8 @ 6'	0P	4 ft STD Dish	270



Task: Determine Point Loads

Tower Height:	300	ft
Gh:	0.85	
Wind Speed:	117	mph,Vult
Ice Wind Speed:	50	
Ice Density:	56	
Tower Type:	5	

Ice Thick:	1	in
Topographic Category (1-4):	1	
Exposure Category (B-D):	B	
Risk Category (1-4):	2	
Height of Crest (H) If Topo Cat. >1:	0	ft
Load Factor; Wind:	1	
Load Factor; Dead:	1.2	

Rooftop Speed Up Factor (Ks)	1
Ground Elevation (AMSL)	48 ft
Topographic Factor Procedure	Method 1

Site No.:	
Engineer:	
Date:	
Carrier:	

No.	Carrier	Elevation (ft)	Quantity	# of Azimuths	Proposed?	Manufacturer	Model	Height (in)	Width (in)	Depth (in)	Weight (lbs/ea)	Flat/Round (F/R)	Reduction	C _a A _c (ft ²)	Weight (k)	Ka	
1		300	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000	80.00	9.00	1	
2		300	1	4			Platform w/ HR	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	80.00	9.00	1
2		283	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	70.00	8.00	1
3		283	1	4			Catwalk	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	70.00	8.00	1
3		212.5	1	1			Access Platform	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	45.00	5.00	1
4		212.5	1	3			-	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	45.00	5.00	1
5		100	1	1			Access Platform	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	45.00	5.00	1
6	Marcus Communications LLC	338	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	5.53	0.07	1
7	Marcus Communications LLC	338	1	1			101-68-10-X-03N	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	13.41	0.08	1
7	Marcus Communications LLC	324	1	1			15' Omni-Grid	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	3.60	0.04	1
8	Marcus Communications LLC	324	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	1.60	0.03	1
8	Other	320	1	1			12' Omni	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	0.50	0.01	1
9	Marcus Communications LLC	311	1	1			Radio/ODU	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	0.50	0.01	1
10	Marcus Communications LLC	311	1	1			Radio/ODU	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	0.50	0.01	1
11	Clearwire Corporation	300	1	1			Horizon Compact	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	0.43	0.01	1
12	Clearwire Corporation	300	1	1			CXL 900-3LW	27.6	0.6	0.6	1.5	R	1.000	1.000	22.75	0.13	1
12	SigFox S.A.	292	1	1			5" x 3" x 2" Cavity Filter	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	0.17	0.00	1
13	SigFox S.A.	292	1	1			Low Noise Amplifier	5	4	2	2	F	1.000	1.000	6.30	0.15	1
13	SigFox S.A.	292	1	1			Flat Side Arm	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	0.00	0.00	1
14	US Dept Of Homeland Security	275	1	1			Round Side Arm	0.0001	0.0001	0.0001	0.0001	F	1.000	1.000	5.20	0.15	1
15	US Dept Of Homeland Security	275	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	0.00	0.00	1
16	US Dept Of Homeland Security	275	1	1			ADD090	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	20.76	0.09	1
16	Other	270	1	1			Dielectric	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	0.00	0.00	1
17	Other	270	1	1			TLP-08M-2E	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	0.00	0.00	1
17	Other	270	1	1			Round Side Arm	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	5.20	0.15	1
18	XM Satellite Radio Inc.	268	1	1			TA-2350-DAB	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	1.34	0.02	1
19	XM Satellite Radio Inc.	268	2	2			Round Side Arm	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	0.90	0.15	1
20	XM Satellite Radio Inc.	268	1	1			-	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	0.50	0.08	1
21	T-Mobile	265	1	1	Proposed		Radio 4449 B71 B85A	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	1.65	0.08	1
21	T-Mobile	265	3	3	Proposed		4424 B25	17.1	14.4	11.3	86	F	0.500	1.000	5.20	0.15	1
22	T-Mobile	265	3	3	Proposed		Air6449 B41	0.0001	0.0001	0.0001	0.0001	F	0.630	1.000	5.68	0.10	1
22	T-Mobile	265	3	3	Proposed		Air3246 B66	58.1	15.7	9.4	180	F	0.690	1.000	5.80	0.04	1
23	T-Mobile	265	3	3	Proposed		APXVA8000-A-43-U-NA20 Modified Flat Sector Frame	95.9	24	8.7	127.9	F	0.630	1.000	17.90	0.40	0.75
24	US Dept Of Homeland Security	250	1	1			SC281-A	251	5	5	79	R	1.000	1.000	5.20	0.15	1
25	US Dept Of Homeland Security	250	1	1			Round Side Arm	0.0001	0.0001	0.0001	0.0001	R	1.000	1.000	2.75	0.03	1
25	US Dept Of Homeland Security	245	1	1			SC381-HL	148.3	4.5	4.5	47	R	1.000	1.000	5.20	0.15	1
25	US Dept Of Homeland Security	245	1	1			Round Side Arm	0.0001	0.0001	0.0001	0.0001	R	1.000	1.000	5.20	0.15	1
26	AT&T Mobility	235	3	3			770	55	11	5	35	F	0.650	1.000	6.50	0.04	1
27	AT&T Mobility	235	2	2			SBNHH-1D65A	0.0001	0.0001	0.0001	0.0001	F	0.660	1.000	5.80	0.04	1
27	AT&T Mobility	235	2	2			OPE-65R-LCUU-H4	48	14.8	7.4	57	F	0.660	1.000	5.80	0.04	1
28	AT&T Mobility	235	1	3			(28) Diplexer/TIA/B0B/RET/RRU	0.0001	0.0001	0.0001	0.0001	F	0.610	1.000	55.30	1.29	0.8
28	AT&T Mobility	235	2	2			EPBQ-654LBH6-L2	73	21	6.3	72.8	F	0.610	1.000	17.12	0.10	0.8
29	AT&T Mobility	235	1	1			BSA-M65R-BUU-H6 (101 lbs)	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	0.00	0.00	1
29	AT&T Mobility	235	3	3			Sabre C1085728C Sector Frame	0.0001	0.0001	0.0001	0.0001	F	0.670	1.000	17.90	0.40	0.75
30	US Dept Of Homeland Security	210	1	1			SC281-A	251	5	5	79	R	1.000	1.000	5.20	0.15	1
30	US Dept Of Homeland Security	210	1	1			Round Side Arm	0.0001	0.0001	0.0001	0.0001	R	1.000	1.000	2.75	0.03	1
31	Marcus Communications LLC	200	2	2			101-68-10-X-03N	189.6	3.5	3.5	70	R	1.000	1.000	5.20	0.15	1
32	Spok Holdings, Inc.	193	2	2			Round Side Arm	0.0001	0.0001	0.0001	0.0001	R	1.000	1.000	5.20	0.15	1
33	Spok Holdings, Inc.	193	2	2			BCD-87010	134	2.6	2.6	26.5	R	1.000	1.000	5.20	0.15	1
33	Spok Holdings, Inc.	193	1	1			Round Side Arm	0.0001	0.0001	0.0001	0.0001	R	0.900	1.000	5.20	0.15	1
34	Clearwire Corporation	175	1	1			30" x 30" Reflector	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	7.50	0.03	1
35	Clearwire Corporation	175	1	1			12" x 12" Junction Box	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	1.20	0.01	1
35	Clearwire Corporation	167	3	3			BTS-2500	19.3	11.3	5.1	35	F	0.500	1.000	6.30	4.29	0.8
36	Clearwire Corporation	167	3	3			LLPX310R	0.0001	0.0001	0.0001	0.0001	F	0.000	1.000	0.670	12.90	0.25
37	Clearwire Corporation	167	1	1			Flat T-Arm	0.0001	0.0001	0.0001	0.0001	F	0.500	1.000	3.34	0.02	1
37	Metro PCS Inc.	165	6	3			RCU (Remote Control Unit)	8	2	2	1	F	0.660	1.000	0.50	0.40	1
38	Metro PCS Inc.	165	3	3			800-10500	0.0001	0.0001	0.0001	0.0001	F	0.500	1.000	27.95	0.45	0.8
38	Sprint Nextel	155	1	3			2.5G MAC-400 (CAT64R)	25.6	19.7	9.6	103.6	F	0.500	1.000	0.750	17.90	0.40
39	Sprint Nextel	155	1	3			(12) Filter/RRU	72	11.8	7	57	F	0.690	1.000	0.750	17.90	0.40
39	Sprint Nextel	155	3	3			APXVSP118-C-A20	0.0001	0.0001	0.0001	0.0001	F	0.750	1.000	0.500	33.87	0.63
40	Sensus USA Inc.	142	1	1			Flat Sector Frame	0.0001	0.0001	0.0001	0.0001	F	0.690	1.000	0.50	0.40	0.75
41	Sensus USA Inc.	142	1	1			BCD-87010	134	2.6	2.6	26.5	R	1.000	1.000	5.20	0.15	1
41	Senet, Inc.	135	1	1			4"	63	1.5	1.5	3.8	R	1.000	1.000	5.20	0.15	1
42	Senet, Inc.	135	1	1			Round Side Arm	0.0001	0.0001	0.0001	0.0001	R	0.000	1.000	5.20	0.15	1
42	Sen																

No.	Elevation (ft)	C _A C _C (ft ⁴)	C _A C _C (ice) (ft ⁴)	Force (lb)	Force (ice) (lb)	Weight (lb)	Weight (ice) (lb)	60 Atz Mult.	Force mean	F (ice) mean	Height	Sum of Forces (No.)	
											Flag	60 Atz.	180 Atz.
1	300	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5033333	2735.040831	
2	300	80.00	108.00	2735.041	674.320	10800	14040	1.00	1504.27	370.88	1.5033333	2735.040831	
2	298	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5033336	2353.60375	
3	283	70.00	94.50	2353.604	580.277	9600	12480	1.00	1204.48	319.15	1.5033345	1.5033345	
3	212.5	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5033345	1.5033345	
4	212.5	45.00	60.75	1394.110	343.716	6000	7800	1.00	765.76	189.04	1.5047059	1394.110206	
4	100	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.50470620	1.50470620	
5	100	45.00	60.75	1123.999	277.120	6000	7800	1.00	618.20	152.42	1.5100000	1123.999149	
5				#VALUE!				1.00	#VALUE!	#VALUE!	1.5100010		
6	338	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	#DIV/0!	#DIV/0!	
7	338	5.53	7.47	195.613	48.228	84	109	1.00	107.59	26.53	1.5029584	195.6129746	
7	324	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5029596		
8	320	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5030874		
8	320	3.60	4.86	125.367	30.909	48	62	1.00	68.95	17.00	1.5031260	125.3673756	
9	311	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5031260		
10	311	0.89	1.08	27.733	6.813	36	47	1.00	15.10	3.75	1.5032260	27.63326095	
10	307	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5032164		
10	307	0.89	1.08	21.531	6.788	36	47	1.00	15.14	3.77	1.5032573	27.5324484	
11	300	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5032583		
12	300	0.22	0.29	7.350	1.812	13	17	1.00	4.04	1.00	1.5033333	7.350422232	
12	292	0.14	0.48	4.682	2.972	2	11	1.00	2.57	1.63	1.5033343		
13	292	0.17	0.23	5.767	1.422	2	2	1.00	3.17	0.78	1.5033343	10.4489034	
13	292	0.17	0.41	5.654	2.530	2	7	1.00	3.11	1.39	1.5033353		
14	275	6.30	8.51	213.728	52.694	180	234	1.00	117.55	28.98	1.5034247	229.8306415	
14	275	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5034257		
15	275	5.20	7.02	173.413	42.755	180	234	1.00	95.38	23.52	1.5036364	173.4125159	
15	275	20.76	28.03	692.316	170.689	106	138	1.00	380.77	93.88	1.5036364	865.7286371	
16	270	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5036374		
17	270	22.75	30.71	754.713	186.073	156	203	1.00	416.29	102.34	1.5037037	754.7127022	
17	270	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5037037		
18	270	5.20	7.02	170.506	42.531	180	234	1.00	94.88	22.39	1.5037037	927.2184627	
18	268	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5037047		
19	268	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5037323		
19	268	8.42	11.37	250.980	61.879	360	468	1.00	138.04	34.03	1.5037313	339.6978337	
20	265	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5037323		
21	265	0.66	0.89	17.423	4.296	90	117	1.00	9.58	2.36	1.5037736	17.42267293	
21	265	2.46	3.65	81.253	22.023	310	422	1.00	44.69	12.11	1.5037746		
22	265	13.15	17.13	226.710	55.895	374	487	1.00	124.69	30.74	1.5037736	325.3885896	
23	265	30.61	37.42	433.841	103.210	648	948	1.00	238.61	56.77	1.5037746		
23	265	26.98	36.43	1009.948	225.488	460	939	1.00	555.47	124.02	1.5037746		
24	250	10.46	14.76	667.809	164.647	1440	1872	1.00	367.30	90.56	1.5037746	2436.9584081	
24	250	5.20	7.02	339.401	87.469	95	425	1.00	180.07	48.11	1.5037746		
25	245	5.56	7.86	168.754	41.807	180	234	1.00	92.81	22.58	1.5040000	508.1549355	
25	245	5.20	7.02	170.339	46.306	56	235	1.00	96.69	25.47	1.5040010		
26	235	8.59	11.24	167.783	41.367	180	234	1.00	92.38	22.75	1.5040816	347.2214124	
26	235	6.40	8.64	273.987	65.441	126	260	1.00	150.69	35.99	1.5040826		
27	235	6.42	8.62	204.810	40.268	98	128	1.00	89.83	22.15	1.5042553	437.314687	
27	235	22.12	29.86	564.240	139.112	1552	2018	1.00	310.33	76.51	1.5042553	1206.364766	
28	235	12.92	16.37	411.916	95.312	175	461	1.00	226.55	52.42	1.5042563		
28	235	25.06	33.84	639.304	157.619	364	473	1.00	351.62	86.69	1.5042553	2257.5848989	
29	235	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5042563		
29	235	26.98	36.43	645.274	159.091	1440	1872	1.00	354.90	87.50	1.5042553	2902.859353	
30	210	10.46	14.76	322.908	83.219	95	419	1.00	177.60	45.77	1.5042563		
30	210	5.20	7.02	160.553	39.584	180	234	1.00	88.30	21.77	1.5047619	483.4612364	
31	200	11.06	17.56	336.757	97.665	168	372	1.00	185.22	53.72	1.5047629		
31	200	8.42	11.37	230.846	56.915	360	468	1.00	126.07	31.30	1.5050000	567.6037078	
32	193	5.01	10.43	173.312	57.338	360	468	1.00	96.26	31.57	1.5050000		
32	193	8.42	11.37	228.508	56.338	360	468	1.00	125.68	30.99	1.5051813	403.5205207	
33	193	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5051823		
33	193	7.50	10.13	226.049	55.732	36	47	1.00	124.33	30.65	1.5051813	629.5694918	
34	175	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5051823		
34	175	1.20	1.62	35.170	8.671	12	16	1.00	19.34	4.77	1.5057143	35.17014487	
35	167	2.18	3.31	63.070	17.456	126	189	1.00	34.69	9.60	1.5057153		
36	167	6.49	8.76	150.067	36.999	103	134	1.00	82.54	20.35	1.5059886	213.1371646	
36	167	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5059896		
37	165	19.45	26.25	421.789	103.991	900	1170	1.00	231.98	57.20	1.5059880	634.9259618	
37	165	1.17	2.92	33.623	15.351	18	26	1.00	18.49	8.44	1.5059890		
37	165	13.23	17.86	381.183	93.980	127	165	1.00	209.65	51.69	1.5060616	414.8060437	
38	155	6.46	8.94	182.747	46.241	373	532	1.00	100.51	25.43	1.5060616		
38	155	11.18	15.09	253.210	62.429	538	701	1.00	139.27	34.34	1.5064548	435.9571908	
39	155	13.29	16.44	370.302	93.400	205	399	1.00	205.45	45.55	1.5064552		
39	155	30.21	40.78	641.345	158.123	1440	1872	1.00	352.74	86.97	1.5064516	1453.449403	
40	142	2.90	5.21	80.161	26.387	33	130	1.00	44.09	14.46	1.5064526		
40	142	5.20	7.02	143.571	35.397	180	234	1.00	78.96	19.47	1.5070423	223.7320121	
41	135	0.79	1.67	21.431	8.301	5	34	1.00	17.79	4.57	1.5070433		
41	135	5.20	7.02	141.513	34.890	180	234	1.00	77.83	19.19	1.5070474	162.9435653	
42	130	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5074084		
42	130	2.50	3.38	67.305	16.594	96	125	1.00	37.02	9.13	1.5076923	67.30521577	
43	107	5.53	8.78	140.823	40.841	84	259	1.00	77.45	22.46	1.5076933		
43	107	5.20	7.02	132.420	32.648	180	234	1.00	72.83	17.96	1.5093458	273.2426922	
44	92	27.07	33.43	660.217	148.925	365	585	1.00	363.12	81.91	1.5093466		
44	92	13.55	18.29	264.346	65.174	756	983	1.00	145.39	35.85	1.5108696	924.5623099	
45	92	29.66	37.02	723.367	164.895	324	552	1.00					

Foundation

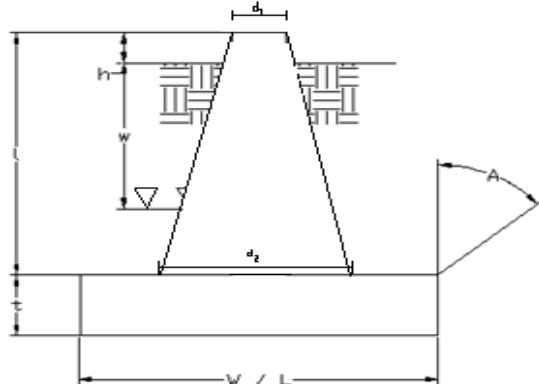
Design Loads (Factored)

Compression/Leg:	444.61	k
Uplift/Leg:	311.77	k
Shear/Leg:	62.59	k

Site No.:	88018
Engineer:	RDB
Date:	03/31/21
Carrier:	T-Mobile

Face Width @ Top of Pier (d_1):	4.00	ft
Face Width @ Bottom of Pier (d_2):	8.00	ft
Total Length of Pier (l):	8.00	ft
Height of Pedestal Above Ground (h):	0.50	ft
Width of Pad (W):	18.00	ft
Length of Pad (L):	18.00	ft
Thickness of Pad (t):	3.00	ft
Water Table Depth (w):	99.00	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil (Above Water Table):	100.0	pcf
Unit Weight of Soil (Below Water Table):	37.6	pcf
Friction Angle of Uplift (A):	20	°
Ultimate Compressive Bearing Pressure:	40000	psf
Ultimate Skin Friction:	197	psf

Volume Pier (Total):	298.67	ft ³
Volume Pad (Total):	972.00	ft ³
Volume Soil (Total):	2935.41	ft ³
Volume Pier (Buoyant):	0.00	ft ³
Volume Pad (Buoyant):	0.00	ft ³
Volume Soil (Buoyant):	0.00	ft ³
Weight Pier:	44.80	k
Weight Pad:	145.80	k
Weight Soil:	293.54	k
Uplift Skin Friction:	31.91	k



Uplift Check

ϕs Uplift Resistance (k)	Ratio	Result
387.04	0.81	OK

Axial Check

ϕs Axial Resistance (k)	Ratio	Result
9720.00	0.05	OK

Anchor Bolt Check

Bolt Diameter (in)	2.25
# of Bolts	6
Steel Grade	A36
Steel Fy	36
Steel Fu	58
Detail Type	C

Usage Ratio	Result
0.47	OK



This report was prepared for American Tower Corporation by



Antenna Mount Analysis Report

ATC Site Name : Stamford (Katoona)
ATC Asset Number : 88018
Engineering Number : 13337525_C9_04
Mount Elevation : 264.5 ft
Carrier : T-Mobile
Carrier Site Name : Stamford AT&T
Carrier Site Number : CT11007A
Site Location : 168 Catoona Lane
Stamford, CT 06902-4573
41.052825, -73.56304722
County : Fairfield
Date : March 23, 2021
Max Usage : 69%
Result : Pass (Pending Mods)

Prepared By:
Prathamesh Padwal
CLS Engineering PLLC

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



Digital signature
by Tyler M.
Barker PE
Date:
2021.03.23
17:35:21-04:00

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Introduction

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

Supporting Documents

Structural Data	Site Photos, dated June 08, 2020
Previous Analyses	Mount Analysis by CLS Engineering PLLC, Project #41124-13337525_C8_01-01-MA, dated February 17, 2021 Tower SA by ATC, Engineering #OAA759352_C3_01, dated July 22, 2020
Loading Data	ATC Application, Project #13337525 T-Mobile RFDS, Site ID: CT11007A, Version 7.00, dated January 19, 2021

Analysis

Codes	TIA-222-H
Basic Wind Speed	117 mph, V_{ult} (3-Second Gust)
Basic Wind Speed w/ Ice	50 mph (3-Second Gust) w/ 1" Radial Ice (Escalating)
Exposure Category	B
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Risk Category	II
Maintenance Live Load	L_M : 500 lb
Spectral Response	S_s : 0.27; S_1 : 0.06; Site Class: D

Conclusion

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

This analysis incorporates modifications per CLS Engineering PLLC, dated March 23, 2021.

- Replace existing stiff arm with (2) proposed stiff arms at each existing sector frame mount (6 total) as shown. Use (2) 15'-0" long Pipe 2 STD in lieu of Site Pro 1 P2126 included in the proposed stiff arm kit at each sector (6 total). Connect to nearest adjacent tower leg with Site Pro 1 DCP kit. Connect to existing mount pipes at position 1 and 3 with Site Pro 1 DCP kits provided in the proposed stiff arm kit.

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.

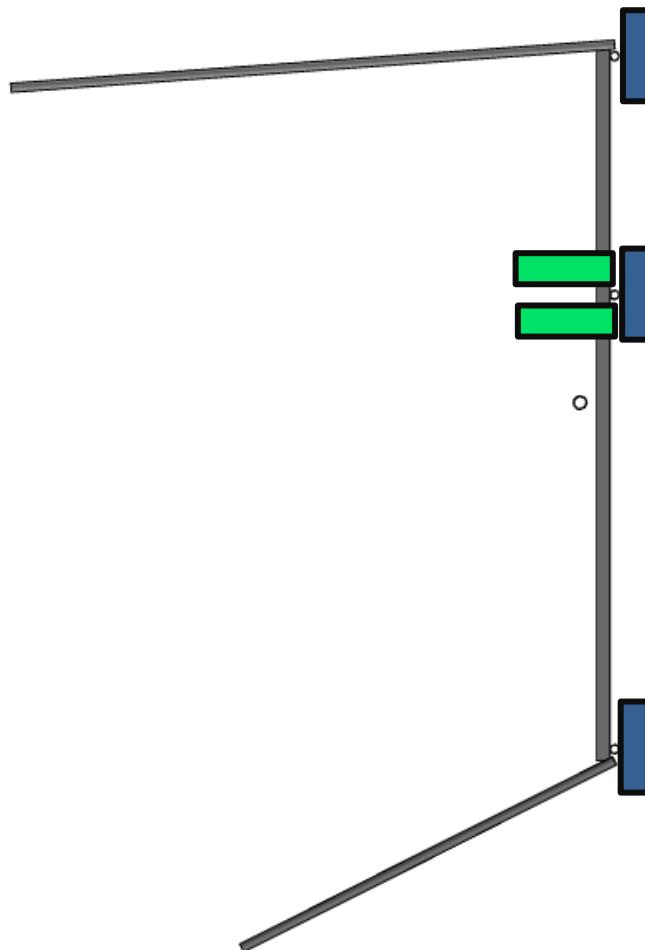
Antenna Loading

Elevation (ft)		Antennas	
Mount	Rad.	#	Name
264.5	265.0	3	RFS Celwave APXVAARR24_43-U-NA20
		3	Ericsson AIR 3246 B66
		3	Ericsson AIR6449 B41
		3	Ericsson RADIO 4424 B25
		3	Ericsson RADIO 4449 B71 B85A

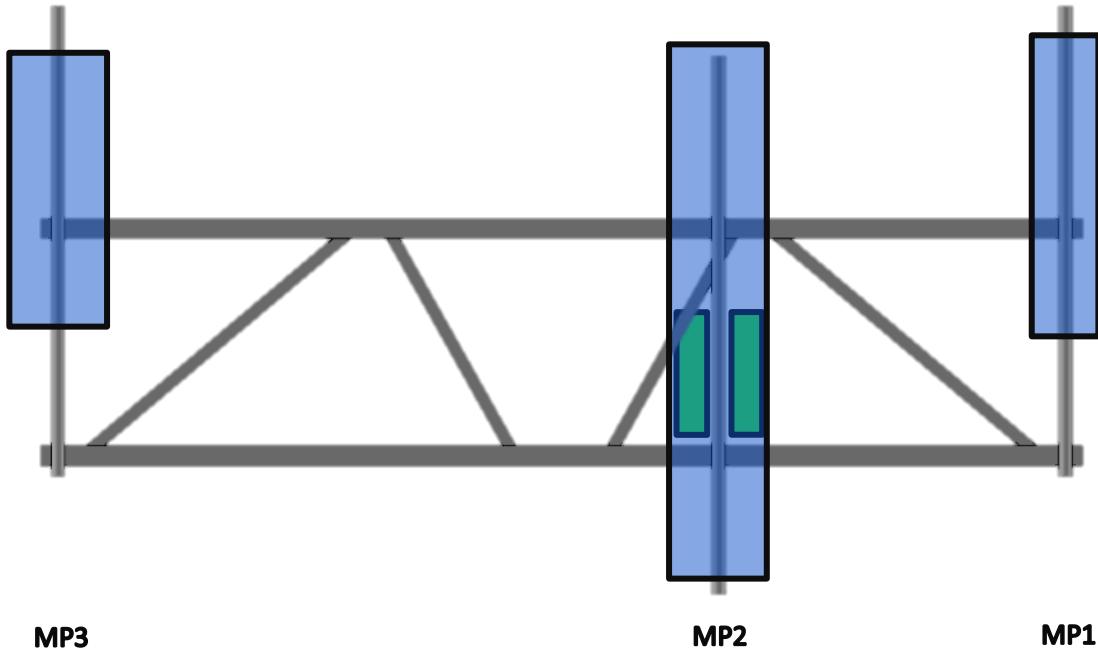
Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Connections	69%	Pass
Face Horizontals	57%	Pass
Mount Pipes	39%	Pass
Bracing Members	18%	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.

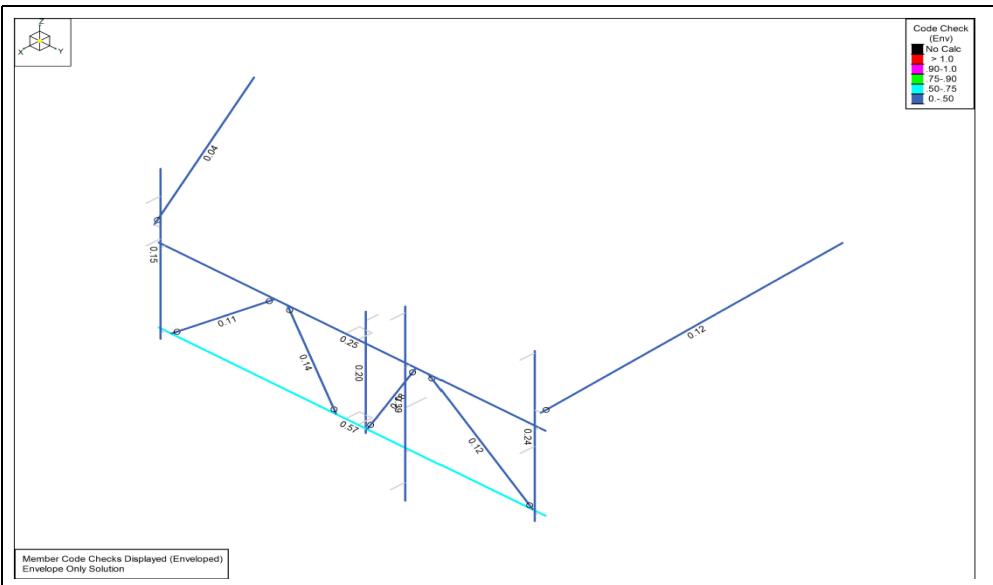
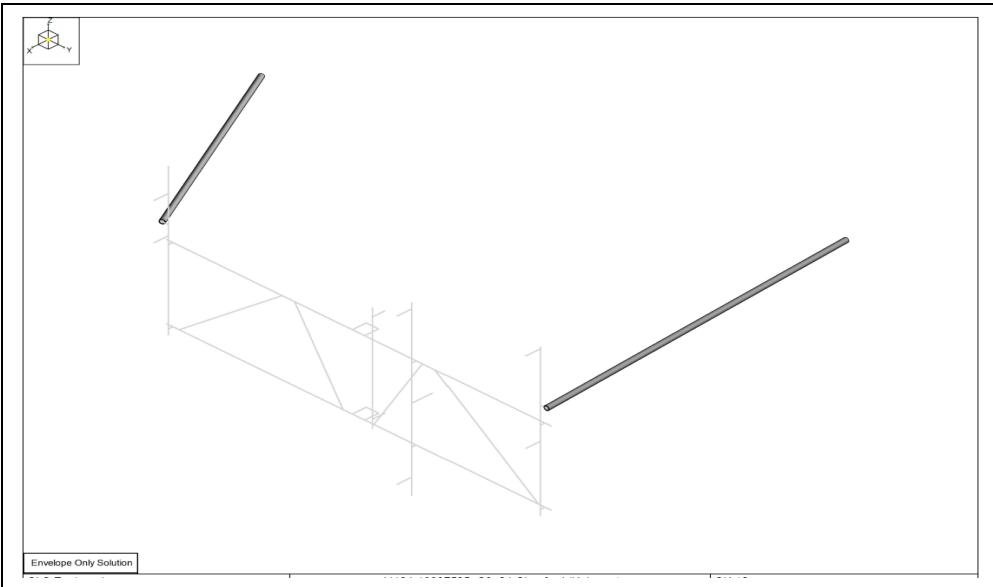
It is not possible to have the fully detailed information necessary to perform a complete and thorough analysis of every structural sub-component of an existing structure. The structural analysis by CLS Engineering PLLC verifies the adequacy of the primary members of the structure. CLS Engineering PLLC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

Project & Site Information		
CLS Project ID		41124-13337525_C9_04-02-MOD
Client Information	Carrier Name	T-Mobile
	Client Name	American Tower
	Site #	88018
	Site Name	Stamford (Katoona)
	Application #	13337525_C9_04
Site Location	Address	168 Catoona Lane, Stamford, CT 06902-4573
	County	Fairfield
	GPS	41.052825, -73.56304722
	Elevation AMSL (ft)	0

Mount & Supporting Structure		
Mount Configuration	Mount Type	Sector Frames
Nominal AGL Elevations (ft)	Mount Elevation	264.5
	Default Antenna Rad	265
Supporting Structure	Structure Type	Self-Supporting Tower
	Height (TOS) (ft)	300

Wind & Ice Loading	
TIA Standard	TIA-222-H
Building Code	2018 IBC
Basic Wind Speed, V (bare)	117.0 mph
Basic Wind Speed, V (ice)	50.0 mph
Design Ice Thickness, t _i	1.00 in

Replacement Summary Cost Estimate





CARRIER SITE NAME: **STAMFORD AT&T**

CARRIER SITE NUMBER: **CT11007A**

ATC SITE NAME: **STAMFORD (KATOONA)**

ATC ASSET NUMBER: **88018**

ENGINEERING NUMBER: **13337525_C9_04**

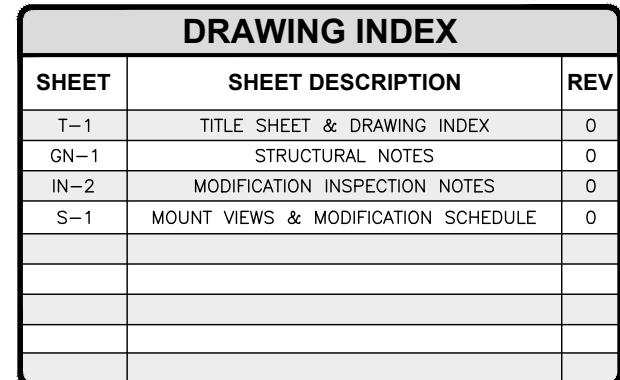
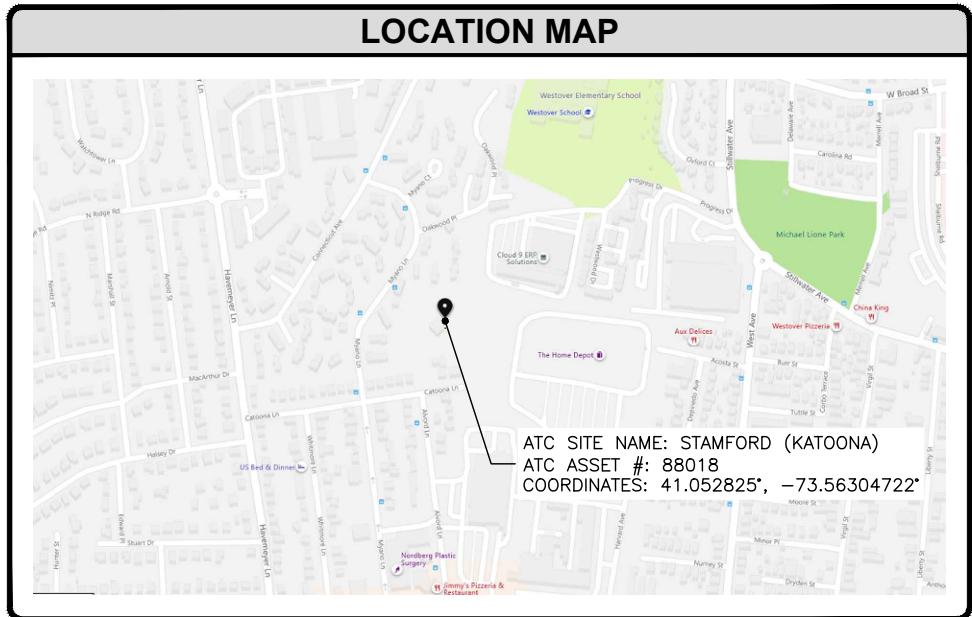
STRUCTURE TYPE: **300'-0" SELF-SUPPORTING TOWER**

PROJECT SCOPE: **MOUNT REINFORCEMENT**



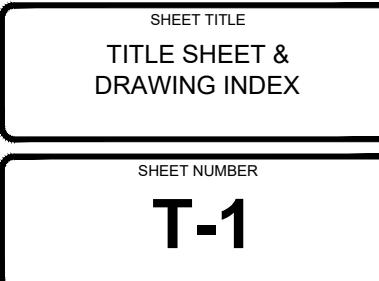
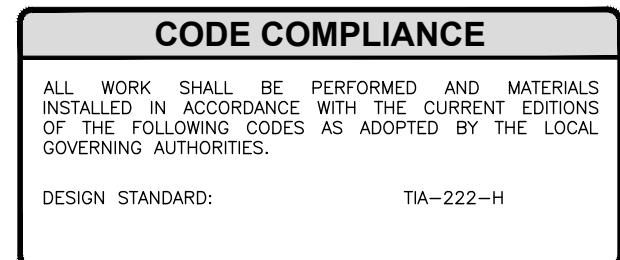
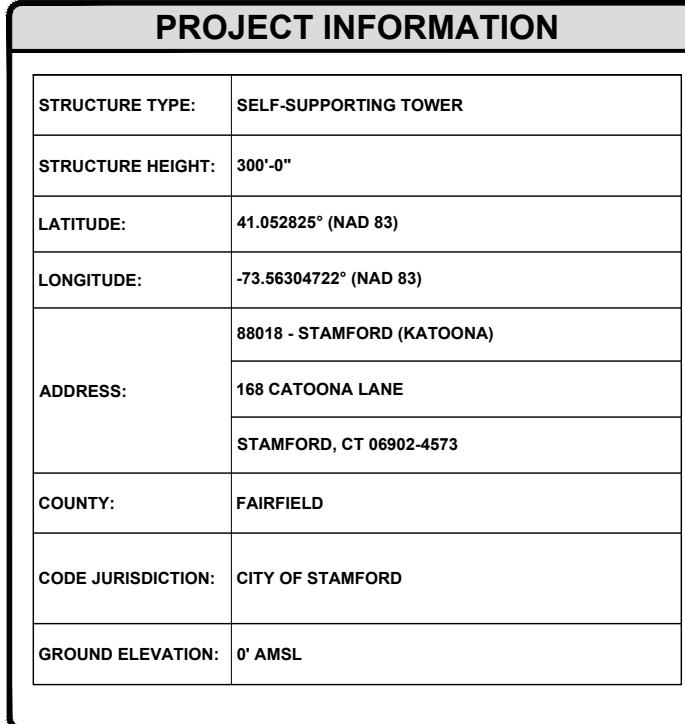
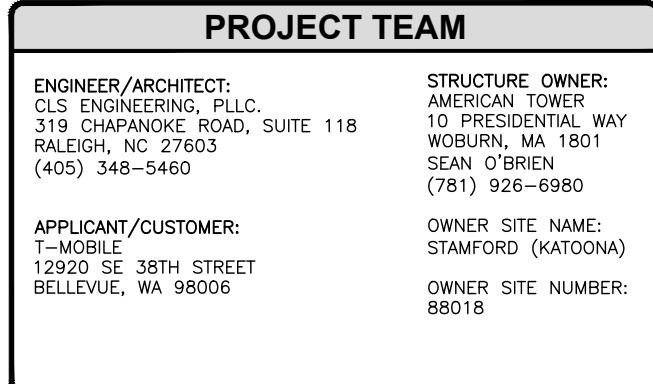
CLS ENGINEERING PROJECT ID:
41124-88018-13337525-TM0ANC2020CT11007A

COA# PEC.001833 EXP. 08/14/2021



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

DRIVING DIRECTIONS



DO NOT SCALE DRAWINGS



GENERAL NOTES

- THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF TIA/EIA-222, ASCE 7, AWS, ACI, AND AISC. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE-MENTIONED CODES AND THE CONTRACT SPECIFICATIONS.
- ALL MATERIALS UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS.
- ALL PRODUCT OR MATERIAL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER SUITABLE TO DETERMINE IF SUBSTITUTE IS ACCEPTABLE FOR USE AND MEETS THE ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
- PROVIDE STRUCTURAL STEEL SHOP DRAWING(S) TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION.
- UNLESS NOTED OTHERWISE, ALL NEW MEMBERS AND REINFORCING SHALL MAINTAIN THE EXISTING MEMBER WORK LINES AND NOT INTRODUCE ECCENTRICITIES INTO THE STRUCTURE.
- ANY CONTRACTOR-CAUSED DAMAGE TO PROPERTY OF THE LAND OWNER, PROPERTY OF THE STRUCTURE OWNER, PROPERTY OF THE CUSTOMER, SITE FENCING OR GATES, ANY AND ALL UTILITY AND/OR SERVICE LINES, SHOWN OR NOT SHOWN ON THE PLANS, SHALL BE REPAIRED OR REPLACED AT THE SOLE COST OF THE CONTRACTOR AND SHALL BE ACCOMPLISHED BY THE CONTRACTOR OR SUBCONTRACTOR AS APPROVED BY THE ENGINEER OF RECORD AND LAND OWNER. DAMAGE TO EQUIPMENT OR PROPERTY OF ANY KIND BELONGING TO OTHER COMPANIES (BESIDES THE INDICATED CUSTOMER) SHALL BE ADDRESSED BY THE CONTRACTOR WITH THE COMPANIES THAT OWN THE DAMAGED ITEMS.

STRUCTURAL STEEL NOTES

- STRUCTURAL STEEL SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS:
 - STRUCTURAL STEEL SHAPES, PLATES AND BARS (EXCEPT W-SHAPES) - ASTM A36, Fy=36 KSI
 - PIPES - ASTM A53, GRADE B, Fy=35 KSI
 - HSS-SHAPES - ASTM A500, GRADE B, Fy=42 KSI (ROUND)
Fy=46 KSI (SQUARE & RECTANGULAR)
 - ANCHOR & ALL-THREAD RODS - ASTM F1554, GRADE 55
 - STRUCTURAL BOLTS 1/2" AND LARGER - ASTM A325
 - STRUCTURAL BOLTS SMALLER THAN 1/2" - DIMENSIONS: ASME B18.2.1
MATERIAL: SAE J429 GRADE 5 | THREADING: ASME B1.1, UNC, CLASS 2A | FINISH: HOT-DIP GALVANIZED OR ZINC-PLATED
 - sheet metal screws - dimensions: ASME B18.6.3
MATERIAL: SAE J933 | FINISH: HOT-DIP GALVANIZED OR ZINC-PLATED
 - NUTS FOR BOLTS/ALL-THREAD - ASTM A563 (THREADING TO MATCH BOLT)
 - WASHERS FOR BOLTS/ALL-THREAD - ASTM F436
 - W & WT SHAPES - ASTM A36, Fy=36 KSI
ALTERNATE SPEC: ASTM A992 (IF OTHER SPEC IS UNAVAILABLE)
- STRUCTURAL BOLTS SHALL CONFORM TO THIS NOTE. ALL BOLT HOLES SHALL BE STANDARD SIZE BOLT HOLES PER AISC 360, UNLESS OTHERWISE NOTED. ALL HOLES SHALL BE SHOP DRILLED OR SUB-PUNCHED AND REAMED. BURNING OF HOLES IS NOT PERMITTED. WHERE SLOTTED OR OVERTIME HOLES ARE SPECIFIED ON THE DRAWINGS, EXTRA-THICK ASTM F436 PLATE WASHERS SHALL BE USED (5/16" MINIMUM THICKNESS) WITH A DIAMETER SUITABLE TO COVER THE EXTENTS OF THE SLOT OR HOLE. BOLTS SHALL BE HEAVY-HEX WHERE AVAILABLE IN THE SIZE AND GRADE SPECIFIED, OTHERWISE BOLTS SHALL BE HEX HEAD CAP SCREWS.
- ALL STEEL HARDWARE, INCLUDING ADHESIVE OR EMBEDDED ANCHOR BOLTS AND THEIR ACCESSORIES, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153 (EXCEPT BOLTS SMALLER THAN 1/2" SHALL CONFORM TO FE/ZN 3 AT PER ASTM F1941 WHERE HOT-DIP GALVANIZED BOLTS ARE NOT AVAILABLE). ALL STEEL MEMBERS, INCLUDING WELDMENTS, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. REPAIR DAMAGE TO GALVANIZED COATINGS USING ASTM A780 PROCEDURES WITH A ZINC RICH PAINT (SUCH AS ZRC GALVILITE) FOR GALVANIZING DAMAGED BY HANDLING, TRANSPORTING, CUTTING, WELDING, OR BOLTING. DO NOT HEAT SURFACES TO WHICH REPAIR PAINT HAS BEEN APPLIED. CALL OUT HOLES REQUIRED FOR HOT-DIP GALVANIZING ON SHOP DRAWINGS.
- WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE - STEEL". WELD ELECTRODES SHALL BE E70XX. UNLESS OTHERWISE NOTED, PROVIDE CONTINUOUS FILLET WELDS WITH MINIMUM SIZE OF 3/16 INCH OR OF A SIZE EQUAL TO THE THICKNESS OF THE THINNER MATERIAL BEING JOINED (WHICHEVER IS LESS). FOR ACUTE OR OBTUSE JOINT ANGLES, THE FILLET WELD LEG SIZE SHALL BE ADJUSTED AS REQUIRED TO MAINTAIN THE EFFECTIVE THROAT OF A 3/16 INCH FILLET WELD IN A 90° JOINT. ALL WELD SIZES SHOWN IN INCHES.
- PRIOR TO WELDING, THE CONTRACTOR SHALL SUBMIT CERTIFICATION FOR EACH WELDER STATING THE TYPE OF WELDING AND POSITIONS QUALIFIED FOR, THE CODE AND PROCEDURE QUALIFIED UNDER, DATE QUALIFIED, AND THE FIRM AND INDIVIDUAL CERTIFYING THE QUALIFICATION TESTS. THIS INFORMATION SHALL BE SUBMITTED TO THE MODIFICATION INSPECTOR (SEE SHEET S-003) AS WELL AS ANY THIRD-PARTY CERTIFIED WELD INSPECTOR (CWI).
- MEMBERS SHALL BE SHOP-FABRICATED AND WELDED TO THE EXTENT PRACTICABLE IN ORDER TO REDUCE FIELD INSTALLATION COSTS.

CONTRACTOR NOTES

- PRIOR TO BEGINNING CONSTRUCTION, ALL CONTRACTORS AND SUBCONTRACTORS MUST ACKNOWLEDGE IN WRITING TO STRUCTURE OWNER THAT THEY HAVE OBTAINED, UNDERSTAND, AND WILL FOLLOW STRUCTURE OWNER STANDARDS OF PRACTICE, CONSTRUCTION GUIDELINES, ALL SITE AND STRUCTURE/TOWER SAFETY PROCEDURES, ALL PRODUCT LIMITATIONS AND INSTALLATION PROCEDURES USED ON SITE, AND PROPOSED MODIFICATIONS DESCRIBED. RECEIPT OF ACKNOWLEDGEMENT MUST OCCUR PRIOR TO BEGINNING CONSTRUCTION OR CLIMBING. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE THIS DOCUMENTATION FOR STRUCTURE OWNER ON COMPANY LETTERHEAD AND THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN THIS DOCUMENTATION FROM ANY SUBCONTRACTORS (ON SUBCONTRACTOR LETTERHEAD) AND DELIVER IT TO THE STRUCTURE OWNER.
- IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE MODIFICATIONS, THE ENGINEER OF RECORD SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE SIGNIFICANCE OF THE DEVIATION.
- THE CONTRACTOR SHALL SOLICIT AND HIRE THE SERVICES OF A QUALIFIED MODIFICATION INSPECTOR PRIOR TO BEGINNING CONSTRUCTION. THE MODIFICATION INSPECTOR MAY BE AN EMPLOYEE OF THE CONTRACTOR'S FIRM, HOWEVER THE INSPECTOR'S ONLY DUTIES SHALL BE INSPECTION, TESTING, AND REPORT CREATION AS REQUIRED ON THE "MODIFICATION INSPECTION NOTES" SHEET. THE INSPECTOR SHALL BE QUALIFIED AS A REGISTERED PROFESSIONAL ENGINEER (PE) OR AS AN ENGINEERING INTERN (EI) OR ENGINEER IN TRAINING (EIT) UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER (PE). IT IS ALSO ACCEPTABLE FOR THE CONTRACTOR TO SUBCONTRACT THE MODIFICATION INSPECTOR DUTIES TO A THIRD PARTY FIRM MEETING THE ABOVE REQUIREMENTS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AND TOWER OWNER OF THE PLANNED CONSTRUCTION & INSPECTION SCHEDULE, AS WELL AS ANY CHANGES TO THE SCHEDULE, WITHIN TWO BUSINESS DAYS OF THE COMPLETION OF THE SCHEDULE OR SCHEDULE REVISION BOTH PRIOR TO BEGINNING CONSTRUCTION AND DURING CONSTRUCTION AS THE SCHEDULE CHANGES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD WHEN PHASES OF CONSTRUCTION HAVE BEEN MOVED UP AND SHALL GIVE THE ENGINEER ADEQUATE NOTICE SO THAT THE ENGINEER OF RECORD MAY, AT THEIR DISCRETION, INSPECT PORTIONS OF THE WORK THAT ARE DEEMED CRITICAL TO THE INTEGRITY OF THE STRUCTURE. FAILURE TO PROVIDE THIS NOTICE MAY RESULT IN REJECTION OF THE CONTRACTOR'S WORK. THE CONTRACTOR SHALL ALSO NOTIFY THE ENGINEER OF RECORD AND THE STRUCTURE OWNER WHEN THE WORK HAS BEEN COMPLETED WITHIN 2 BUSINESS DAYS OF THE COMPLETION OF THE WORK AND ASSOCIATED MODIFICATION INSPECTIONS & TESTING.
- IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE. THIS INCLUDES PROVIDING THE NECESSARY CERTIFICATIONS TO THE STRUCTURE OWNER AND ENGINEER INCLUDING BUT NOT LIMITED TO TOWER CLIMBER AND RESCUE CLIMBER CERTIFICATIONS, QUALIFIED WELDER CERTIFICATES, CERTIFIED WELDING INSPECTOR CREDENTIALS, ET CETERA.
- THESE DRAWINGS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES AND PROCEDURES.
- CONTRACTOR SHALL WORK WITHIN THE LIMITS OF THE STRUCTURE OWNER'S PROPERTY OR LEASE AREA AND APPROVED EASEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WORK IS WITHIN THESE BOUNDARIES. CONTRACTOR SHALL EMPLOY A SURVEYOR AS REQUIRED. ANY WORK OUTSIDE THESE BOUNDARIES SHALL BE APPROVED IN WRITING BY THE LAND OWNER PRIOR TO MOBILIZATION. CONSTRUCTION STAKING AND BOUNDARY MARKING IS THE RESPONSIBILITY OF THE CONTRACTOR.

STANDARD ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	LONG	LONGITUDINAL
ARCH	ARCHITECT, -URAL	MAS	MASONRY
BLDG	BUILDING	MATL	MATERIAL
BOD	BOTTOM OF DECK	MAX	MAXIMUM
BOT	BOTTOM	MECH	MECHANICAL
BRCG	BRACING	MFR	MANUFACTURER
BRDG	BRIDGING	MIN	MINIMUM
C	CHANNEL	MOD	MODIFICATION
CL	CENTER LINE	MPH	MILES PER HOUR
CLR	CLEAR	MRI	MEAN RECURRENCE INTERVAL
CMU	CONCRETE MASONRY UNIT	#	NUMBER
CONC	CONCRETE	NTS	NOT TO SCALE
CONT	CONTINUOUS	OC	ON CENTER
DIA (OR) Ø	DIAMETER	OPH	OPPOSITE HAND
DWGS	DRAWINGS	OPNG	OPENING
EA	EACH	PC	PIECE
EL	ELEVATION	PL	PLATE
EQ, EQUIV	EQUAL, EQUIVALENT	PSF	POUNDS PER SQUARE FOOT
EW	EACH WAY	PSI	POUNDS PER SQUARE INCH
EXIST	EXISTING	REF	REFERENCE
' OR FT	FEET (DIMENSION)	REINF	REINFORCE/REINFORCEMENT
f'c	COMPRESSIVE STRESS	REQD	REQUIRED
FDN	FOUNDATION	REV	REVISION
FTG	FOOTING	SF	SQUARE FEET
GALV	GALVANIZED	SIM	SIMILAR
HORIZ	HORIZONTAL	SR	SOLID ROUND (SHAPE)
HSS	HOLLOW STRUCTURAL SHAPES	STD	STANDARD
KIP	KILOPOUNDS (1000 LBS PER UNIT)	T&B	TOP AND BOTTOM
KSI	KIPS PER SQUARE INCH	THK	THICKNESS
" OR IN	INCH	TOF	TOP OF FOOTING
L	ANGLE	TOM	TOP OF MASONRY
LB	POUND	TOS	TOP OF STEEL
LLH	LONG LEG HORIZONTAL	TYP	TYPICAL
LLV	LONG LEG VERTICAL	UON	UNLESS OTHERWISE NOTED
		VERT	VERTICAL
		W/	WITH

BOLT TIGHTENING PROCEDURE

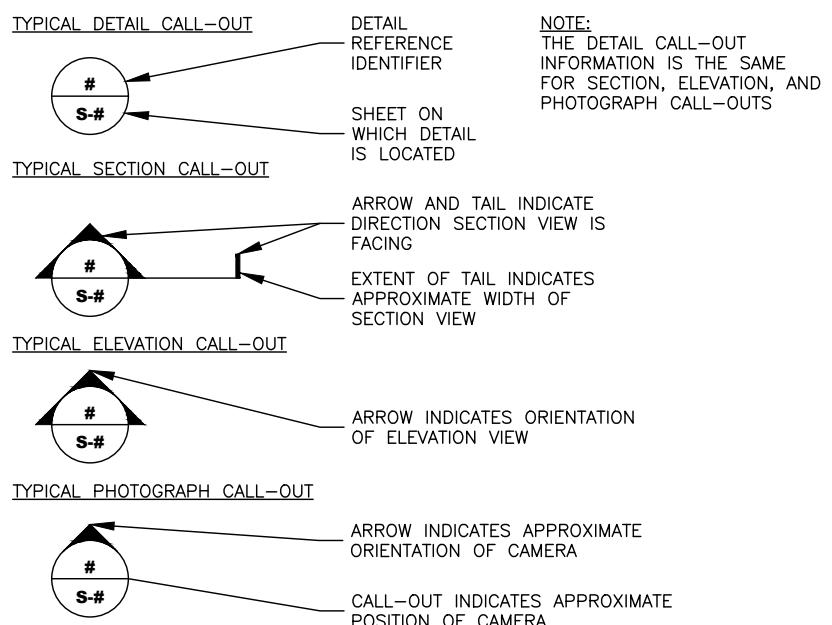
- TIGHTEN BOLTS BY AISC "TURN OF THE NUT" METHOD USING THE CHART BELOW:

BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS: +1/3 TURN BEYOND SNUG TIGHT
BOLT LENGTHS OVER FOUR AND UP TO EIGHT DIAMETERS: +1/2 TURN BEYOND SNUG TIGHT
BOLT LENGTHS OVER EIGHT AND UP TO TWELVE DIAMETERS: +2/3 TURN BEYOND SNUG TIGHT
- SPICE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8(d)(1) OF THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS AS FOLLOWS:

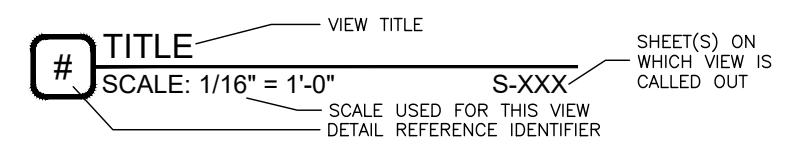
"FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND BE TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8(d)(1) THROUGH 8(d)(4).

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

SYMBOLS AND CALL-OUTS



SECTION / ELEVATION / DETAIL VIEW CALLOUTS

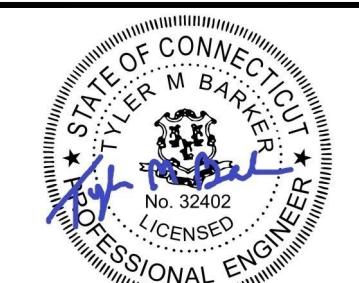


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CORPORATION

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CLS ENGINEERING PROJECT ID:
41124-88018-13337525-TMOANC2020CT11007A
COA# PEC.001833 EXP. 08/14/2021

REV.	DATE	DESCRIPTION	INITIALS
A	03/22/21	PRELIMINARY ISSUE	HRP
O	03/23/21	FOR CONSTRUCTION	HRP



ATC SITE NAME:
STAMFORD (KATOONA)
ATC ASSET #: 88018
168 CATOONA LANE
STAMFORD, CT 06902-4573

STRUCTURAL NOTES
SHEET NUMBER
GN-1

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CLS ENGINEERING

319 CHAPANOKE ROAD, SUITE 118, RALEIGH, NC 27603

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CLS ENGINEERING PROJECT ID:
41124-88018-13337525-TMOANC2020CT11007A

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REVISIONS

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PE# 32402 EXP: 1/31/2022

ATC SITE NAME:

STAMFORD (KATOONA)

ATC ASSET #: 88018

168 CATOONA LANE
STAMFORD, CT 06902-4573

SHEET TITLE

MODIFICATION
INSPECTION NOTES

SHEET NUMBER

IN-1

PRE-CONSTRUCTION INSPECTION CHECKLIST

CONSTRUCTION AND/OR INSTALLATION INSPECTIONS REQUIRED FOR REPORT? (CHECK=YES, BLANK=NO)	INSPECTION REPORT ITEM
✓	MODIFICATION INSPECTION CHECKLIST
✓	SHOP DRAWINGS APPROVED BY ENGINEER OF RECORD (LATEST REVISION)
✓	FABRICATION INSPECTION
	FABRICATOR'S CERTIFIED WELD INSPECTOR (CWI)
	FABRICATOR'S QUALIFIED PERSONNEL FOR WELDING
✓	MATERIAL TEST REPORT(S) / MILL CERTIFICATE(S)
	FABRICATOR'S NON-DESTRUCTIVE TESTING (NDT) TECHNICIAN
✓	PACKING SLIPS FOR STRUCTURAL MATERIALS

CONSTRUCTION INSPECTION CHECKLIST

CONSTRUCTION AND/OR INSTALLATION INSPECTIONS REQUIRED FOR REPORT? (CHECK=YES, BLANK=NO)	INSPECTION REPORT ITEM
✓	CONSTRUCTION INSPECTIONS
	FOUNDATION INSPECTIONS
	CONCRETE COMPRESSIVE STRENGTH AND SLUMP TESTING RESULTS/CERTIFICATES
	ADHESIVE ANCHOR ROD(S) INSTALLATION INSPECTION
	BASE PLATE GROUT INSPECTION
	THIRD-PARTY CERTIFIED WELD INSPECTION (INCLUDING IBC SPECIAL INSPECTIONS)
	SOIL EXCAVATION - DENSITY TESTING, COMPACTION INSPECTION/VERIFICATION, USE OF SUITABLE FILL
✓	GALVANIZING REPAIR MATERIAL PREPARATION, INSPECTION, & PAINT APPLICATION
	GUY WIRE (RE-)TENSION REPORT AND INSPECTION
✓	PRIME CONTRACTOR'S AS-BUILT DOCUMENTS (SIGNED & DATED)

POST-CONSTRUCTION INSPECTION CHECKLIST

CONSTRUCTION AND/OR INSTALLATION INSPECTIONS REQUIRED FOR REPORT? (CHECK=YES, BLANK=NO)	INSPECTION REPORT ITEM
✓	MODIFICATION INSPECTOR'S ISSUE LIST (INCLUDING CORRECTIVE ACTIONS TAKEN) AND/OR REDLINED RECORD DRAWINGS
	POST-INSTALLED ADHESIVE ANCHOR ROD PULL-OUT TESTING
✓	PHOTOGRAPHS OF MODIFICATIONS (INCLUDE PHOTOS OF BOTH SIDES OF WELDED OR BOLTED CONNECTIONS, OF OVERALL AND DETAIL VIEWS OF INSTALLED MODIFICATIONS, AND BEFORE/AFTER PHOTOS OF ANY ISSUES IDENTIFIED BY THE INSPECTOR)

GENERAL NOTES

1. THE POST-MODIFICATION INSPECTION IS A VISUAL EXAMINATION OF STRUCTURE MODIFICATIONS AND A REVIEW OF ANY REQUIRED CONSTRUCTION INSPECTIONS, TESTING, AND OTHER DATA TO VERIFY THAT THE MODIFICATIONS ARE INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AS DESIGNED BY THE ENGINEER OF RECORD. THE CONTRACT DOCUMENTS INCLUDE THESE MODIFICATION DRAWINGS, ANY PROJECT SPECIFICATIONS REFERENCED TO IN THE PROJECT NOTES OR OTHERWISE PROVIDED WITH THE DRAWINGS, AND OTHER DOCUMENTS OR DRAWINGS PROVIDED WITH THE MODIFICATION DRAWINGS WITH THE INTENT THAT THEY BE USED AS A DESIGN AID OR GUIDELINE FOR CONSTRUCTION.
2. THE POST-MODIFICATION INSPECTION SHALL CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A QUALITATIVE REVIEW OF THE ENGINEERING ASPECTS OF THE DESIGN OR THE DESIGN DRAWINGS. THE MODIFICATION INSPECTOR IS NOT TAKING OWNERSHIP OF THE MODIFICATION DESIGN IN THE PERFORMANCE OF THEIR DUTIES. OWNERSHIP OF THE MODIFICATION DESIGN'S EFFECTIVENESS AND INTENT, AS WELL AS ALL ASSOCIATED RISK, LIES WITH THE ENGINEER OF RECORD AT ALL TIMES.
3. TO ENSURE THAT THE REQUIREMENTS OF THE POST-MODIFICATION INSPECTION ARE MET, IT IS ESSENTIAL THAT COORDINATION BETWEEN THE PRIME CONTRACTOR AND THE MODIFICATION INSPECTOR BEGIN AS SOON AS THE PROJECT IS FUNDED AND WORK ENTERS THE PLANNING STAGE. THE PRIME CONTRACTOR AND MODIFICATION INSPECTOR SHALL BE PROACTIVE IN IDENTIFYING CONSTRUCTION ISSUES AND COMMUNICATING THESE ISSUES TO EACH OTHER AND TO THE ENGINEER OF RECORD AND STRUCTURE OWNER & CUSTOMER, AS REQUIRED.

MODIFICATION INSPECTOR'S RESPONSIBILITIES

1. THE MODIFICATION INSPECTOR SHALL CONTACT THE PRIME CONTRACTOR AS SOON AS THEY HAVE RECEIVED A PURCHASE ORDER OR PAYMENT FOR THIS INSPECTION. THE MODIFICATION INSPECTOR SHALL REVIEW THE REQUIREMENTS OF THE INSPECTION CHECKLIST, SHALL WORK WITH THE PRIME CONTRACTOR TO DEVELOP A SCHEDULE OF NECESSARY ON-SITE INSPECTIONS, AND SHALL DISCUSS ANY SITE-SPECIFIC INSPECTION REQUIREMENTS OR OTHER CONCERNs.
2. THE MODIFICATION INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL PRIME CONTRACTOR INSPECTION AND TEST REPORTS (INCLUDING THOSE OF ASSIGNED SUB-CONTRACTORS), SHALL REVIEW THE REPORTS FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, SHALL CONDUCT THE NECESSARY ON-SITE INSPECTIONS, AND SHALL COMPILE AND SUBMIT THE MODIFICATION INSPECTION REPORT.

INSPECTION AND REPORT RECOMMENDATIONS

1. THE FOLLOWING ARE PROVIDED WITH THE INTENT OF ENHANCING THE EFFECTIVENESS OF THE MODIFICATION INSPECTION AND IMPROVING THE EFFICIENCY OF THE PROCESS OF COLLECTING AND COMPILED THE INFORMATION INTO A USABLE REPORT:
 - 1.1. IT IS RECOMMENDED THAT THE PRIME CONTRACTOR PROVIDE THE MODIFICATION INSPECTOR AT LEAST 5 BUSINESS DAYS NOTICE FOR WHEN THE SITE WILL BE READY FOR THE MODIFICATION INSPECTION.
 - 1.2. THE PRIME CONTRACTOR AND THE MODIFICATION INSPECTOR SHALL COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
 - 1.3. THE PRIME CONTRACTOR AND MODIFICATION INSPECTOR SHALL BOTH BE PRESENT DURING THE INITIAL INSPECTION IN ORDER TO ALLOW FOR THE REMEDIATION OF DEFICIENCIES DURING THE INSPECTION, AS PRACTICABLE. IT MAY BE PREFERABLE TO KEEP WORK CREWS AND THEIR EQUIPMENT ON-SITE TO REMEDIATE DEFICIENCIES DURING INSPECTIONS.

PRIME CONTRACTOR'S RESPONSIBILITIES

1. THE PRIME CONTRACTOR SHALL CONTACT THE MODIFICATION INSPECTOR AS SOON AS THEY HAVE RECEIVED A PURCHASE ORDER OR PAYMENT FOR THE MODIFICATION INSTALLATION OR PROJECT. THE PRIME CONTRACTOR SHALL REVIEW THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST, SHALL WORK WITH THE MODIFICATION INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, AND SHALL DISCUSS SPECIFIC INSPECTION AND TESTING REQUIREMENTS WITH THE MODIFICATION INSPECTOR IN DETAIL TO OBTAIN A FULL UNDERSTANDING OF THE REQUIRED INSPECTIONS AND TESTING.
2. THE PRIME CONTRACTOR SHALL PERFORM AND RECORD THE TESTING AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST.

INSPECTION RESCHEDULING AND CANCELLATION

1. IF THE PRIME CONTRACTOR AND MODIFICATION INSPECTOR HAVE AGREED UPON A TIME AND DATE FOR A GIVEN INSPECTION AND EITHER PARTY RESCHEDULES OR CANCELS THE INSPECTION, THE STRUCTURE OWNER SHALL NOT BE RESPONSIBLE FOR COSTS, FEES, LOST DEPOSITS, OR OTHER EXPENSES INCURRED BY THE PRIME CONTRACTOR, THEIR SUBCONTRACTOR(S), OR THE MODIFICATION INSPECTOR DUE TO THESE SCHEDULING CHANGES. EXCEPTIONS MAY BE MADE IN THE EVENT OF UNCONTROLLABLE SITUATIONS SUCH AS NATURAL DISASTERS, SEVERE WEATHER, OR OTHER CONDITIONS THAT COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

PHOTOGRAPHY REQUIREMENTS

1. THE PRIME CONTRACTOR AND MODIFICATION INSPECTOR SHALL, BETWEEN THE EFFORTS OF BOTH PARTIES AND THEIR EMPLOYED PERSONNEL, PROVIDE PHOTOGRAPHS WITH THE INSPECTION REPORT TO INCLUDE THE FOLLOWING:
 - a. GENERAL SITE PHOTOGRAPHS PRE-CONSTRUCTION
 - b. MODIFICATION INSTALLATION PHOTOGRAPHS DURING CONSTRUCTION/ERCTION OPERATIONS AND INSPECTIONS
 - b.1. RAW MATERIALS
 - b.2. PHOTOS OF DETAILED WORK REQUIRED ON THE DRAWINGS (CONNECTIONS, WELDMENTS, FIELD-FABRICATED MEMBERS, ETC)
 - b.3. WELD PREPARATION AND COMPLETED WELD INSPECTION (INCLUDING A FILLET WELD SIZE GAUGE, AS APPLICABLE)
 - b.4. BOLT INSTALLATION AND TORQUE/PRETENSION.
 - b.5. FINAL INSTALLED CONDITION (AFTER DEFICIENT CONDITIONS, IF ANY, ARE REMEDIATED).
 - b.6. REPAIR OF SURFACE COATINGS (INCLUDING GALVANIZING AND/OR PAINT COATING)
 - c. POST-MODIFICATION PHOTOGRAPHS OF THE SITE & WORK.
 - d. PHOTOGRAPHS OF THE FINAL STATE OF THE SITE AT CONCLUSION OF THE WORK BY THE PRIME CONTRACTOR, ASSOCIATED SUBCONTRACTORS, AND THE MODIFICATION INSPECTOR.
 - e. OTHER PHOTOS MAY BE INCLUDED AT PRIME CONTRACTOR & MODIFICATION INSPECTOR'S DISCRETION.

NOTE: PHOTOS OF MODIFICATIONS INSTALLED ON THE STRUCTURE ABOVE AN ELEVATION OF 20 FT SHALL REQUIRE PHOTOS TAKEN FROM THE STRUCTURE AS WELL AS OVERALL PHOTOGRAPHS OF THE MODIFICATIONS TAKEN FROM THE GROUND.

OWNER INSPECTIONS

1. THE STRUCTURE OWNER MAY CONDUCT INSPECTIONS TO VERIFY THE QUALITY AND COMPLETENESS OF THE PREVIOUSLY COMPLETED MODIFICATION INSPECTION REPORTS FOR THE MODIFICATION INSTALLATION WORK.
2. INSPECTIONS MAY BE COMPLETED BY A 3RD-PARTY FIRM OF THE STRUCTURE OWNER'S CHOOSING AFTER A MODIFICATION PROJECT IS COMPLETED AND A PASSING MODIFICATION INSPECTION REPORT IS ISSUED.

ATC SITE NAME:

STAMFORD (KATOONA)

ATC ASSET #: 88018

168 CATOONA LANE
STAMFORD, CT 06902-4573

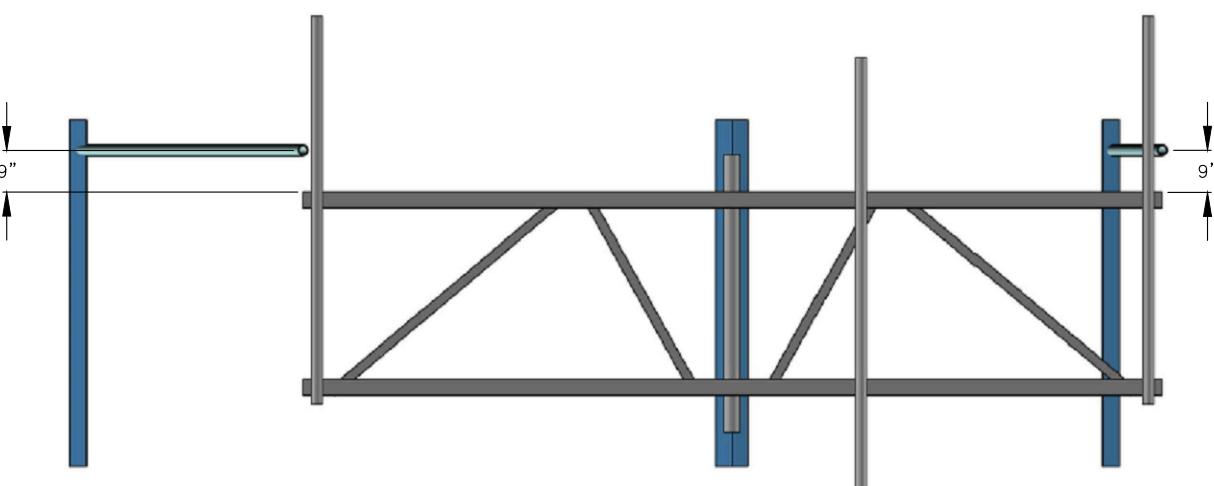
SHEET TITLE

MODIFICATION
INSPECTION NOTES

SHEET NUMBER

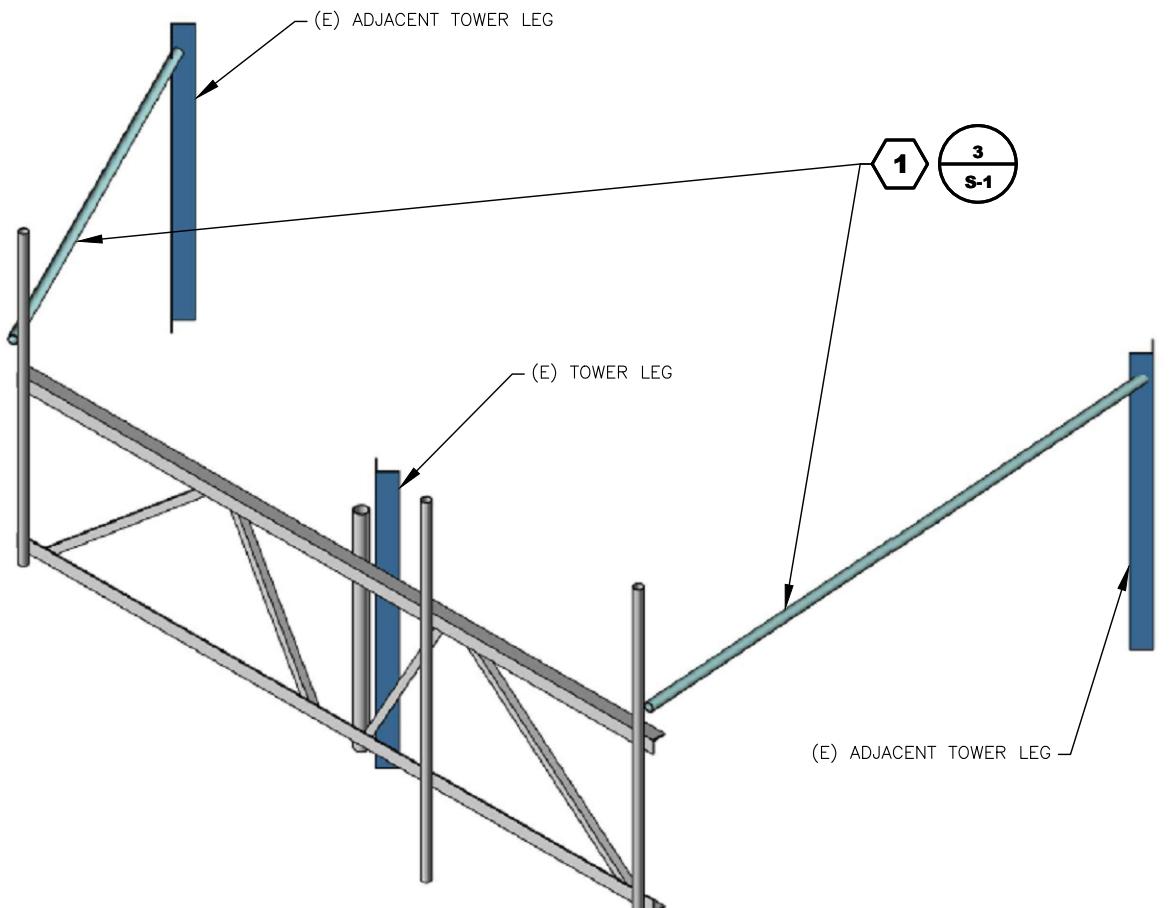
IN-1

NOTE:
EXISTING MOUNT SHOWN IS REPRESENTATIVE TO ILLUSTRATE
MODIFICATION AND MAY DIFFER SLIGHTLY ON SITE.



1 MOUNT - FRONT ELEVATION VIEW

SCALE: N.T.S.



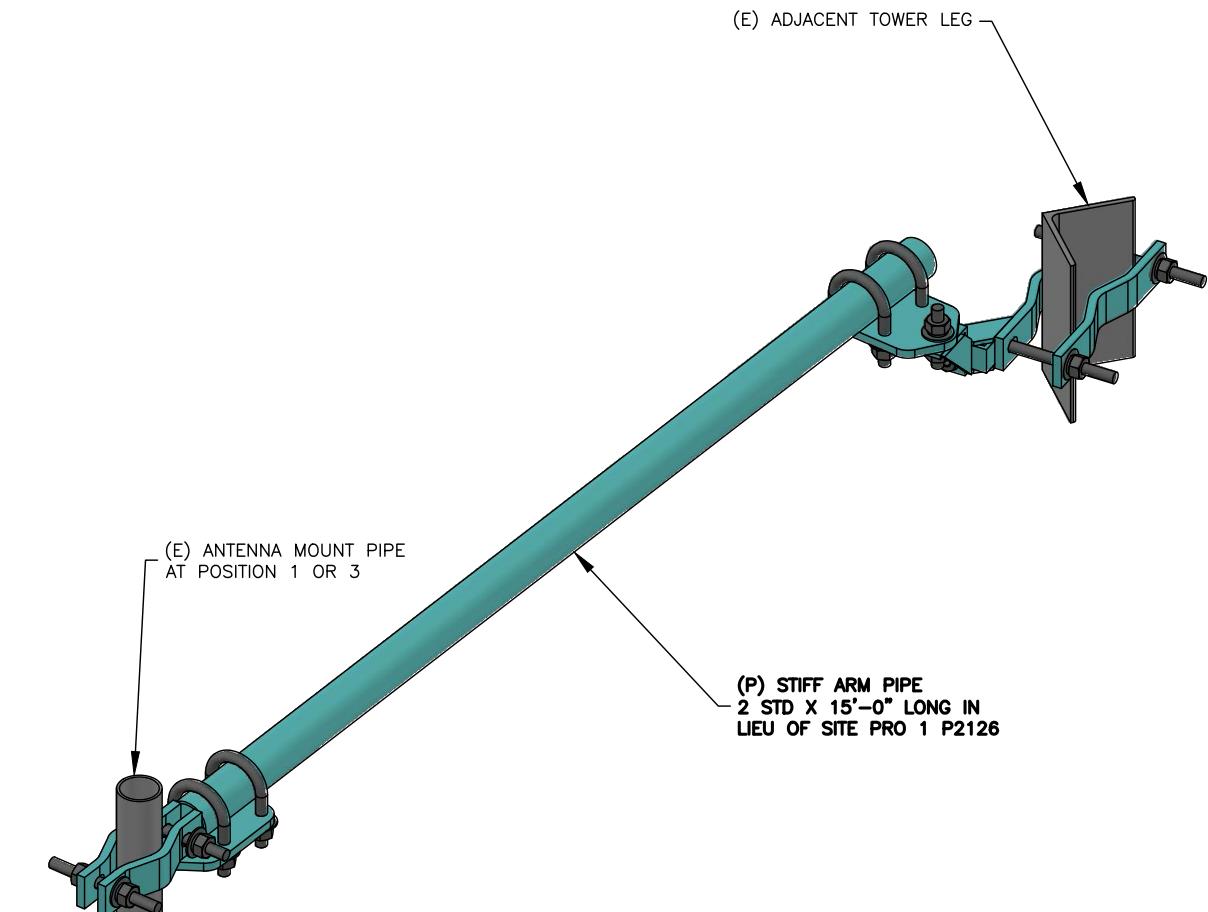
2 MOUNT - ISOMETRIC VIEW

SCALE: N.T.S.

CONSTRUCTION NOTES				
1. SCOPE OF WORK MUST BE COMPLETED AT WIND SPEEDS < 20 MPH.				
2. ALL DIMENSIONS ARE APPROXIMATE. CONTRACTOR SHOULD FIELD VERIFY ALL DIMENSIONS BEFORE FABRICATION OF STEEL AND COMMENCEMENT OF WORK. FIELD CUT MEMBERS AS REQUIRED.				
3. ALL HARDWARE SHOULD BE INSTALLED WITH "TURN OF THE NUT" METHOD (RE: GN-1).				

MODIFICATION SCHEDULE				
LABEL	ELEVATION	SCOPE	MATERIAL	NOTES
1	±264'-6"	REPLACE EXISTING STIFF ARM WITH (2) PROPOSED STIFF ARMS AT EACH EXISTING SECTOR FRAME MOUNT (6 TOTAL) AS SHOWN. USE (2) 15'-0" LONG PIPE 2 STD IN LIEU OF SITE PRO 1 P2126 INCLUDED IN THE PROPOSED STIFF ARM KIT AT EACH SECTOR (6 TOTAL). CONNECT TO NEAREST ADJACENT TOWER LEG WITH SITE PRO 1 DCP KIT. CONNECT TO EXISTING MOUNT PIPES AT POSITION 1 AND 3 WITH SITE PRO 1 DCP KITS PROVIDED IN THE PROPOSED STIFF ARM KIT.	PIPE 2 STD X 15'-0" LONG SITE PRO 1 SPTB	S-1

REVISIONS			
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3 SITE PRO 1 SPTB

SCALE: N.T.S.

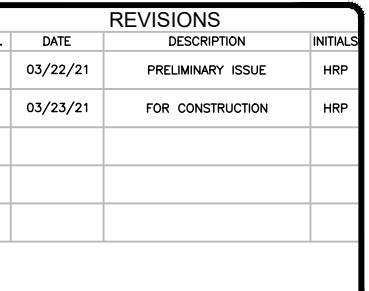
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CLS ENGINEERING PROJECT ID:
41124-88018-13337525-TMOANC2020CT11007A

COA# PEC.001833 EXP. 08/14/2021

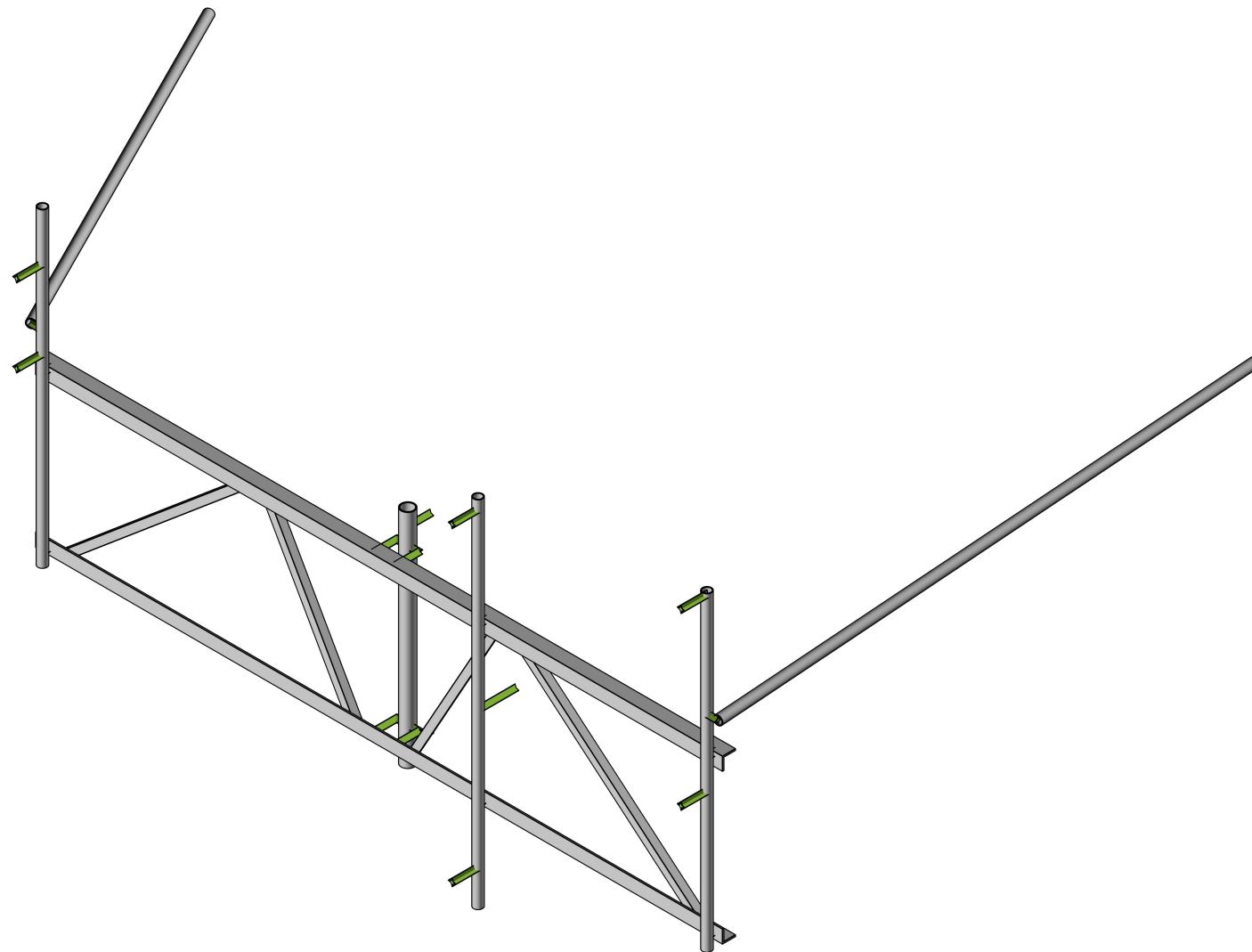
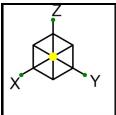


PE# 32402 EXP: 1/31/2022

ATC SITE NAME:
STAMFORD (KATOONA)
ATC ASSET #: 88018
168 CATOONA LANE
STAMFORD, CT 06902-4573

SHEET TITLE
MOUNT VIEWS &
MODIFICATION SCHEDULE

SHEET NUMBER
S-1



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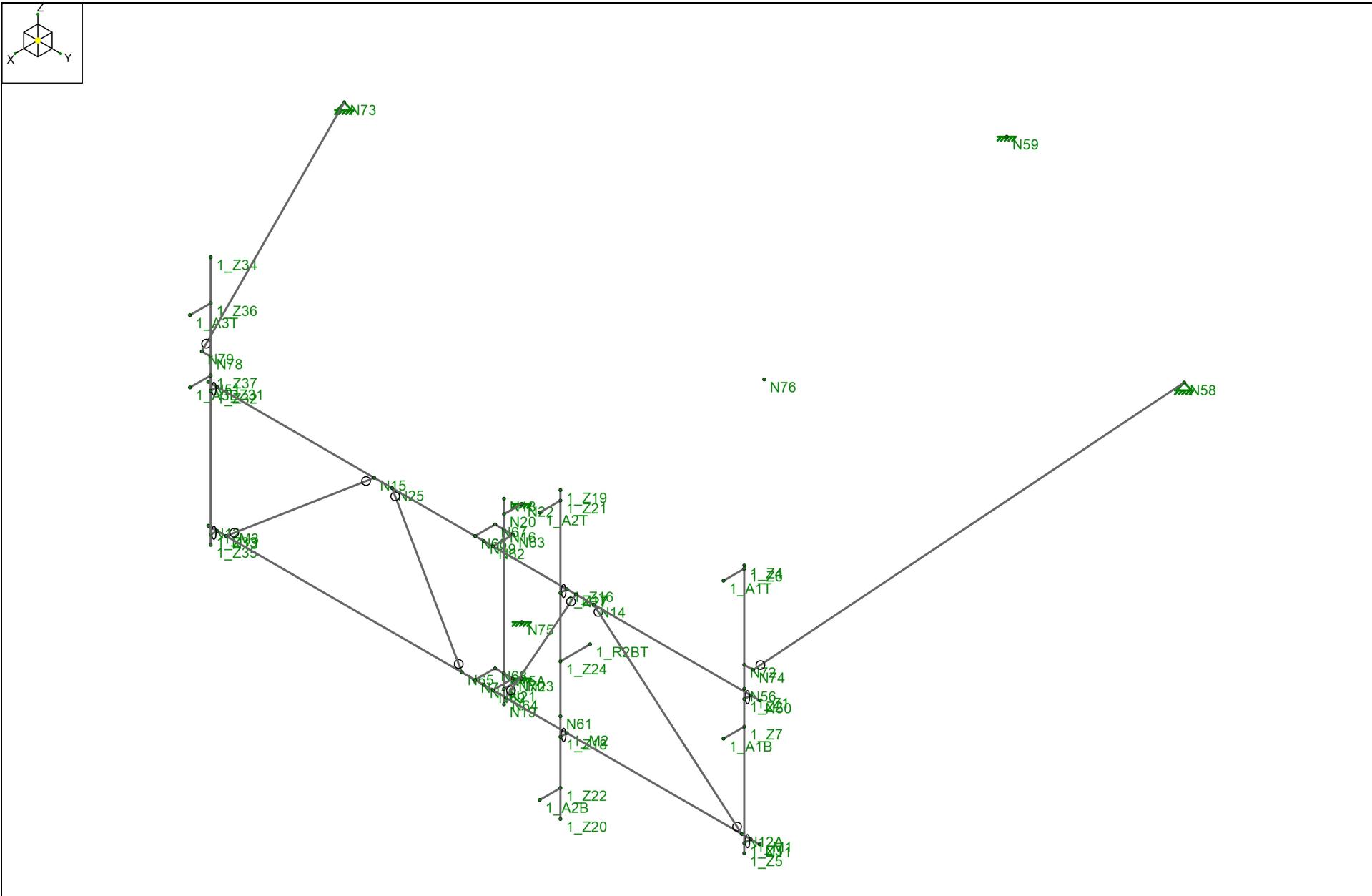
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Rendered

SK-1

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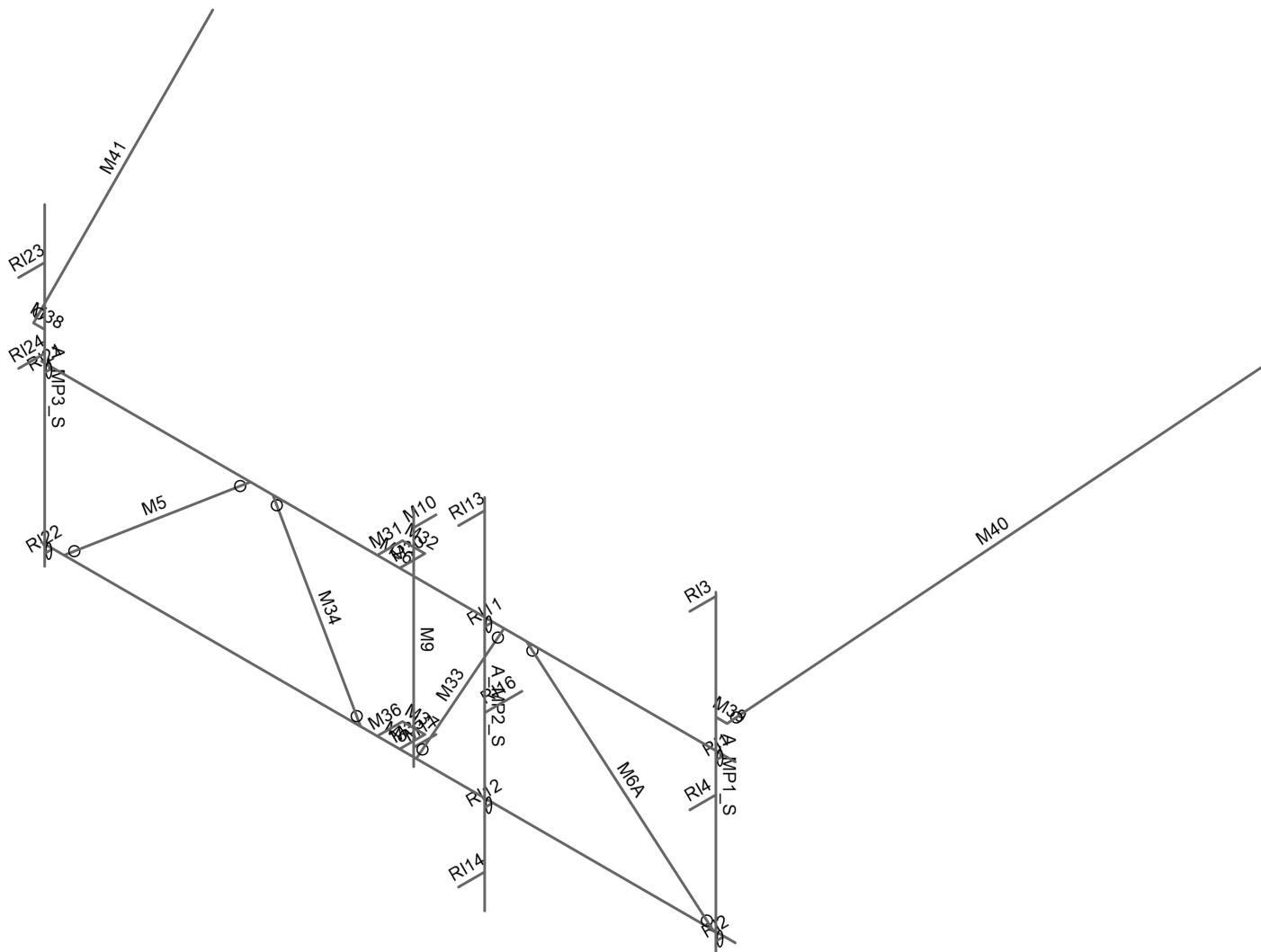
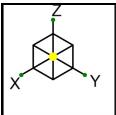
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Joint Labels

SK-2

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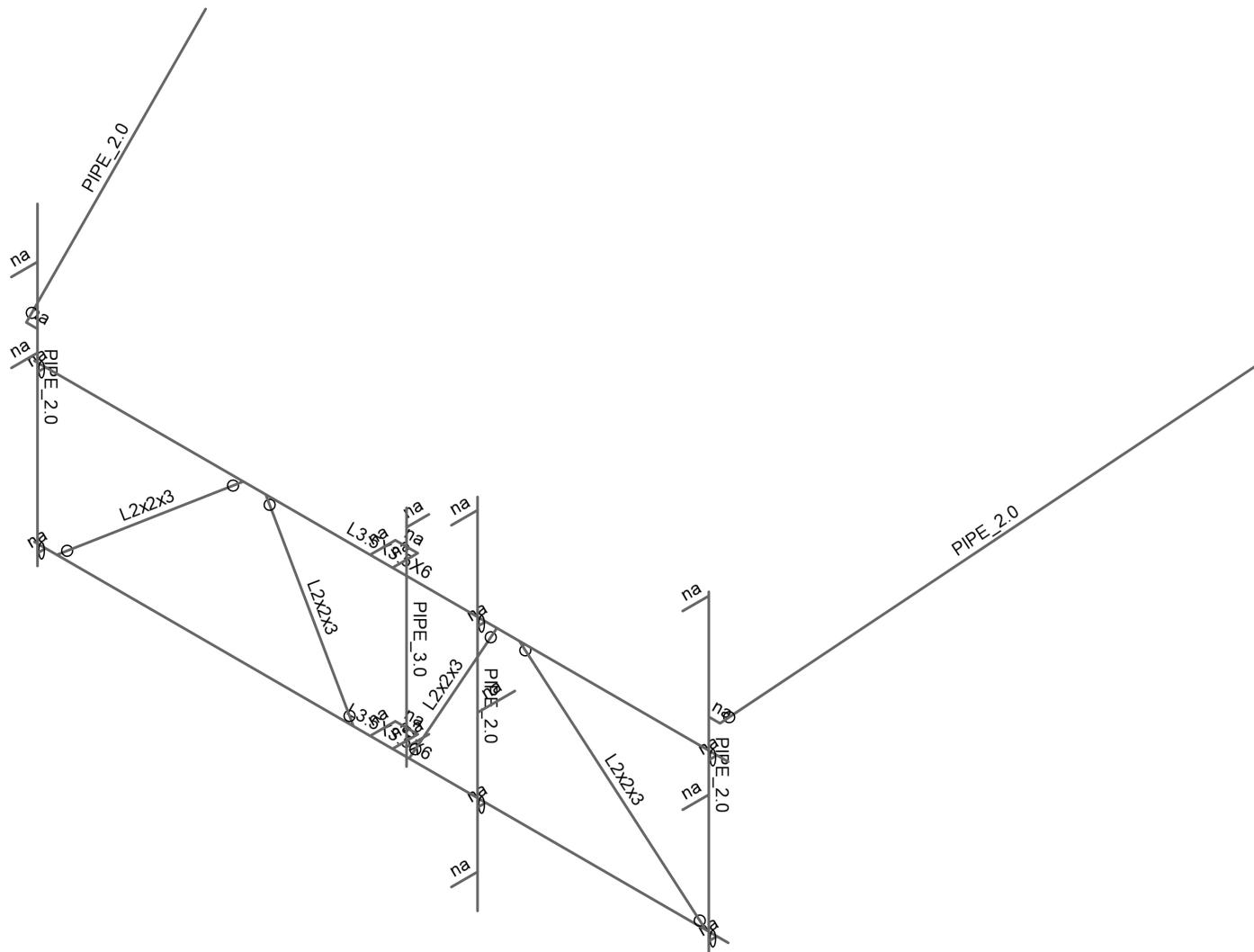
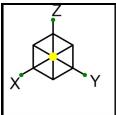
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Member Labels

SK-3

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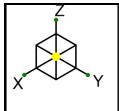
41124-13337525_C9_04-Stamford (Katoona)

Member Shapes

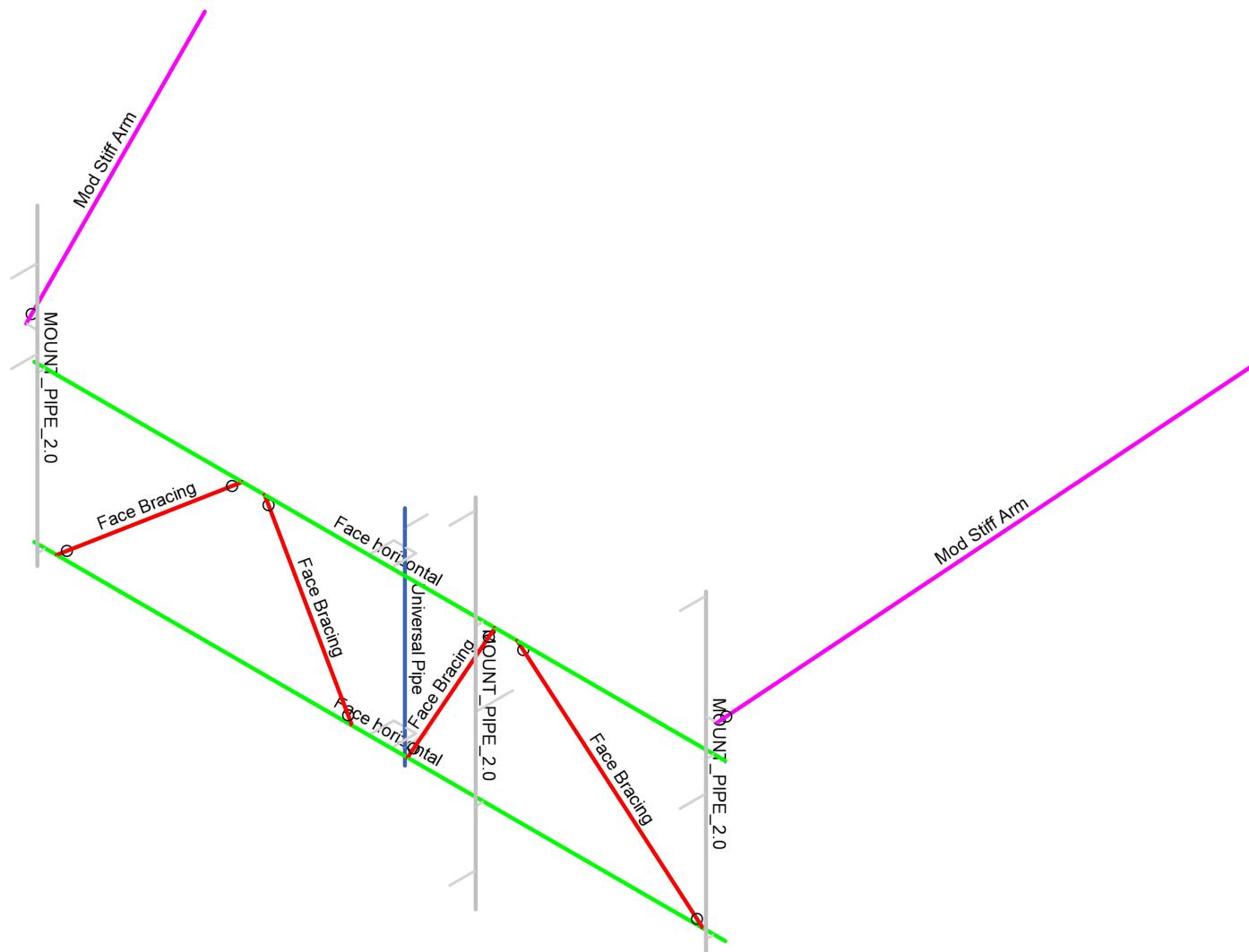
SK-3.1

Mar 23, 2021

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Section Sets
Universal Pipe
Face horizontal
Face Bracing
MOUNT_PIPE_2.0
Mod Stiff Arm
RIGID



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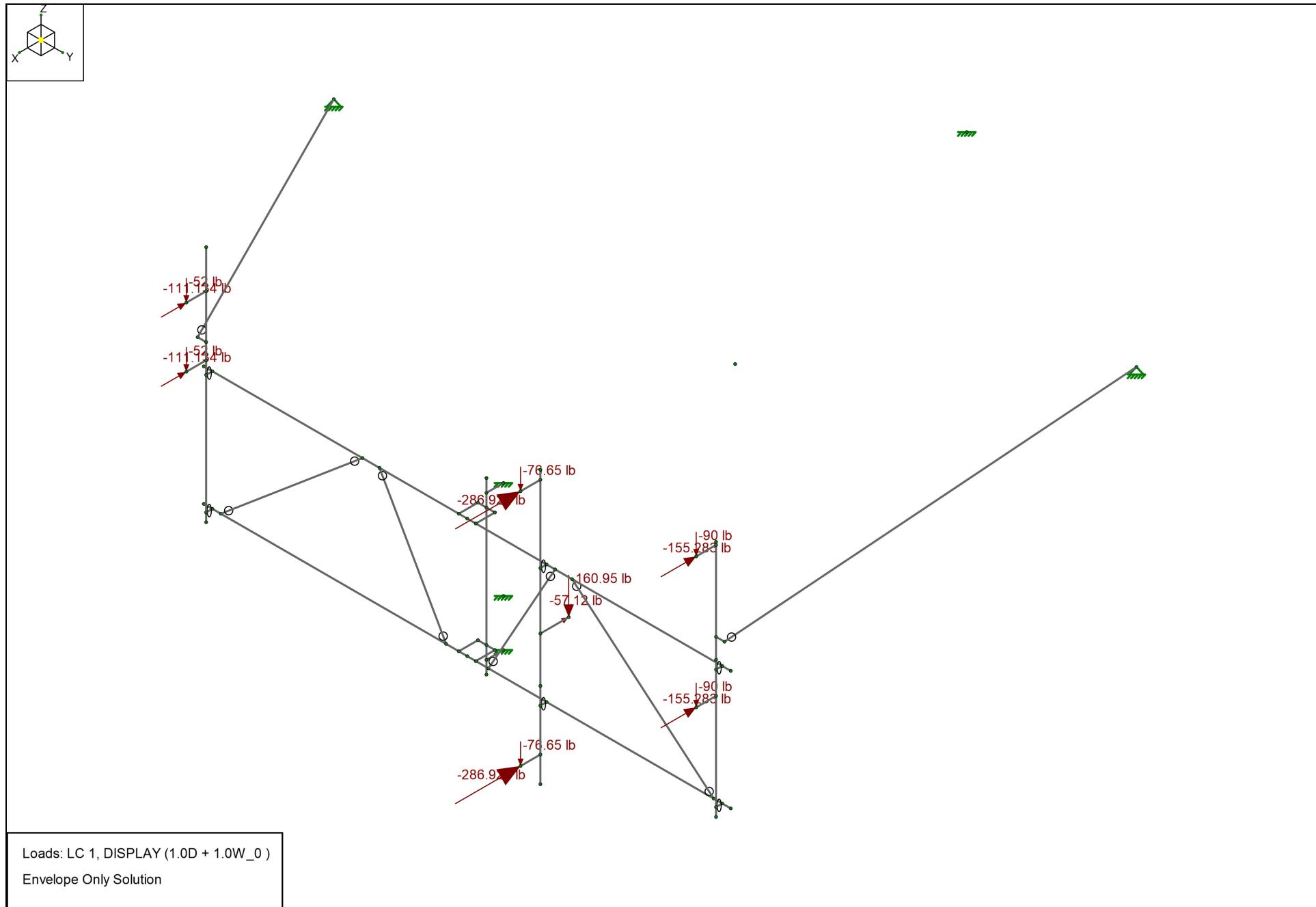
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Section Sets

SK-4

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Loads: LC 1, DISPLAY (1.0D + 1.0W_0)
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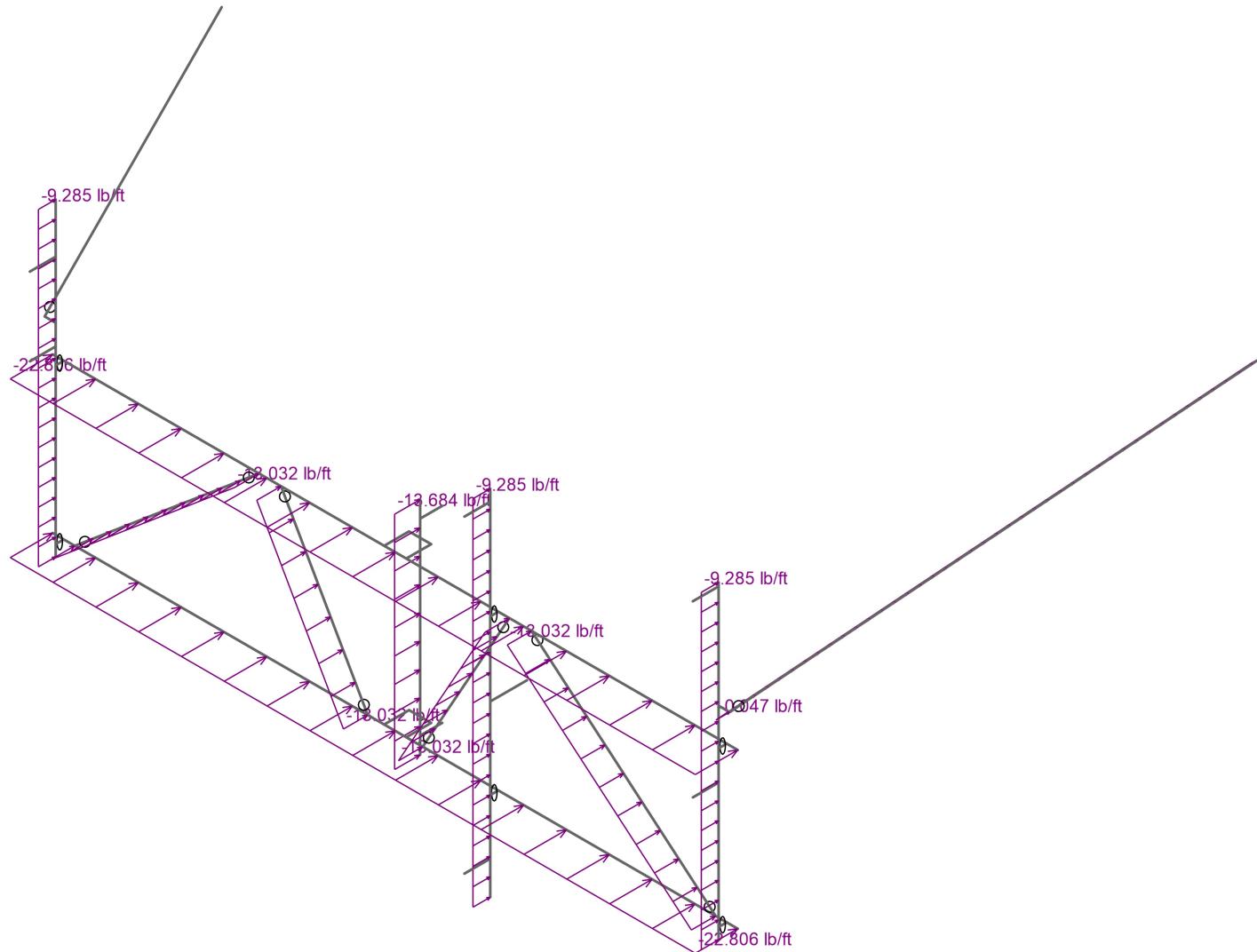
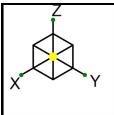
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Joint Loads – Dead and Normal Wind

SK-5

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Loads: BLC 5, Structure Wind 0
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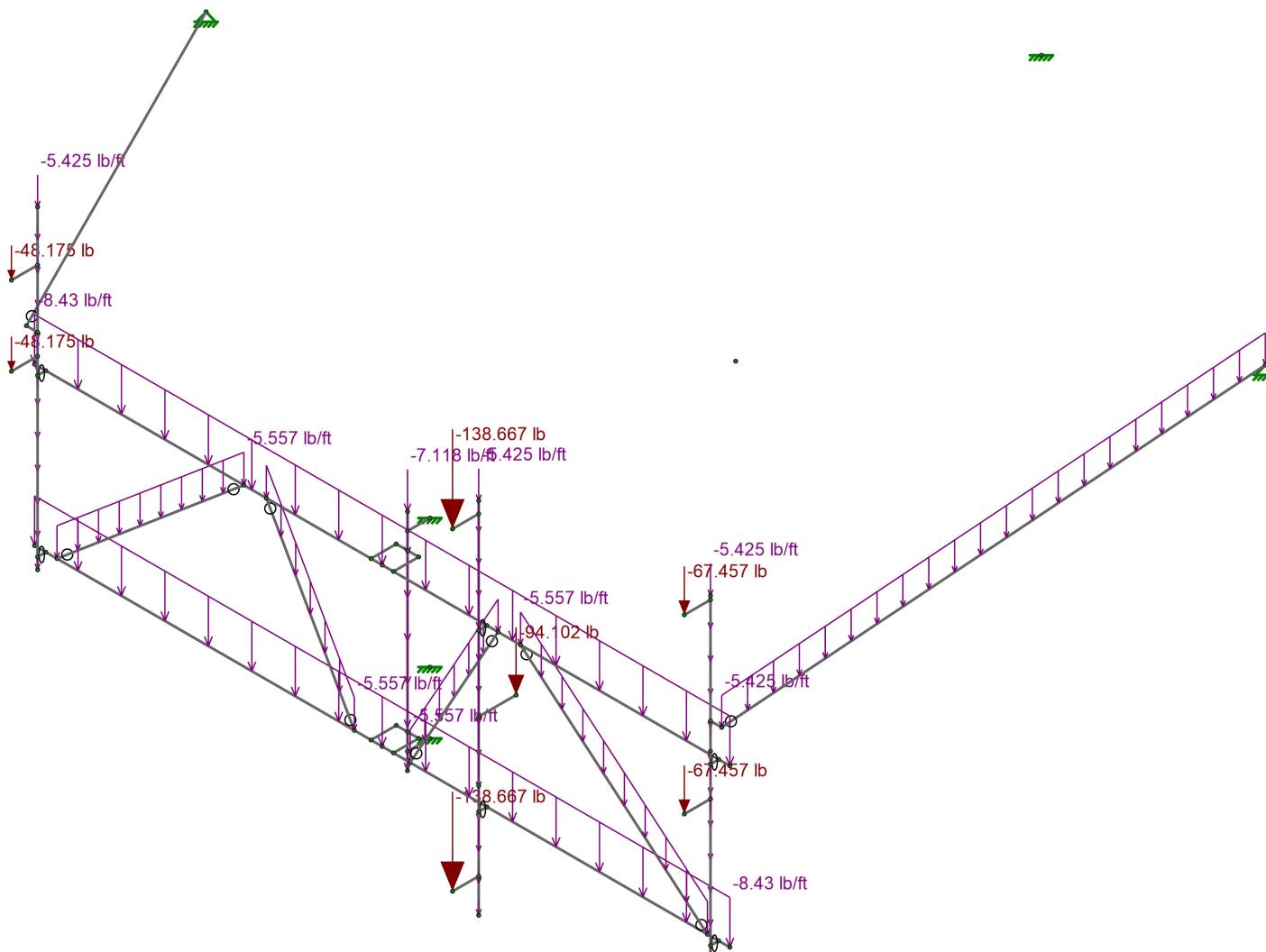
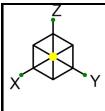
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Distributed Load – Normal Wind

SK-6

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Loads: BLC 2, Ice Dead
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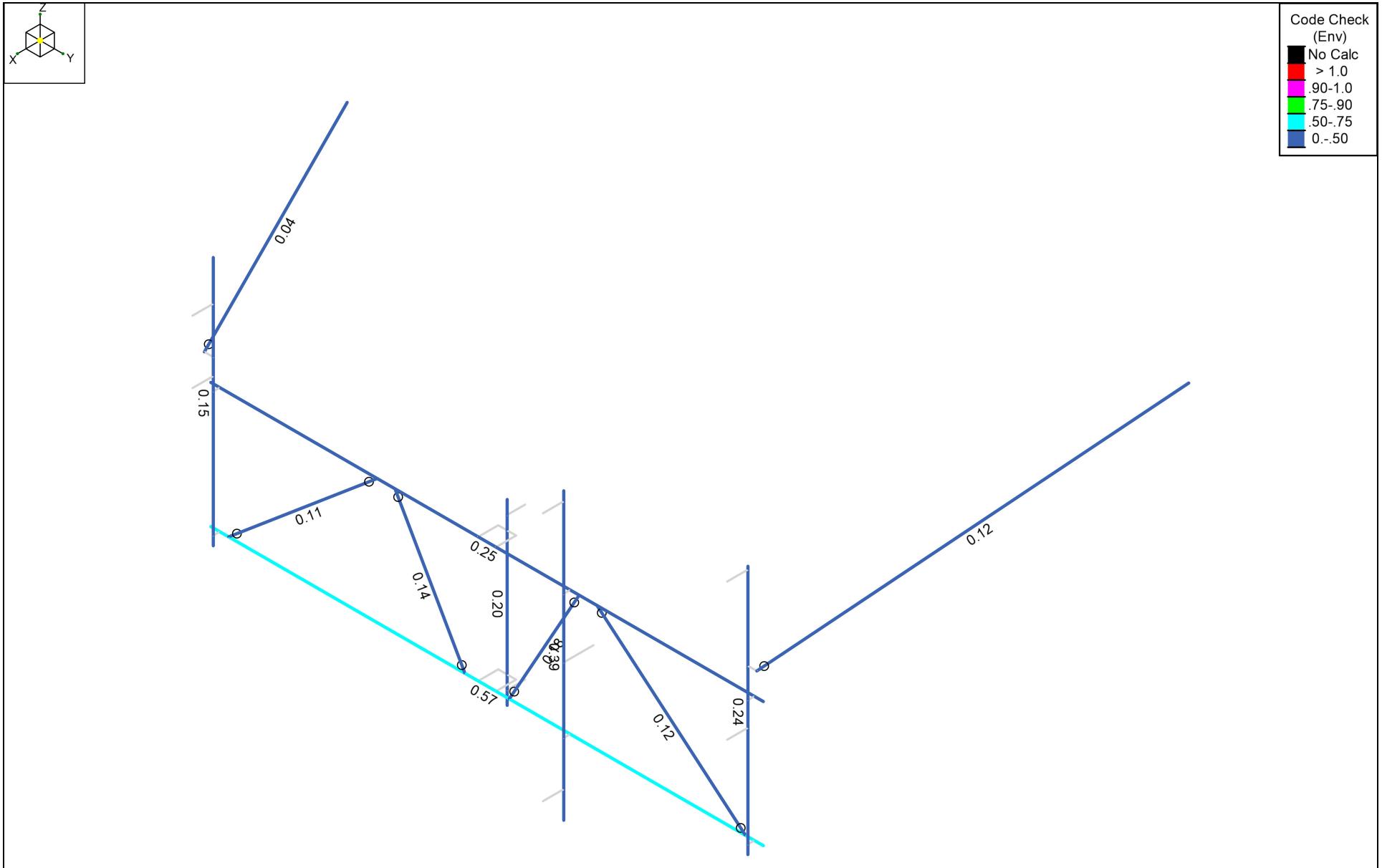
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Ice Dead Loads

SK-7

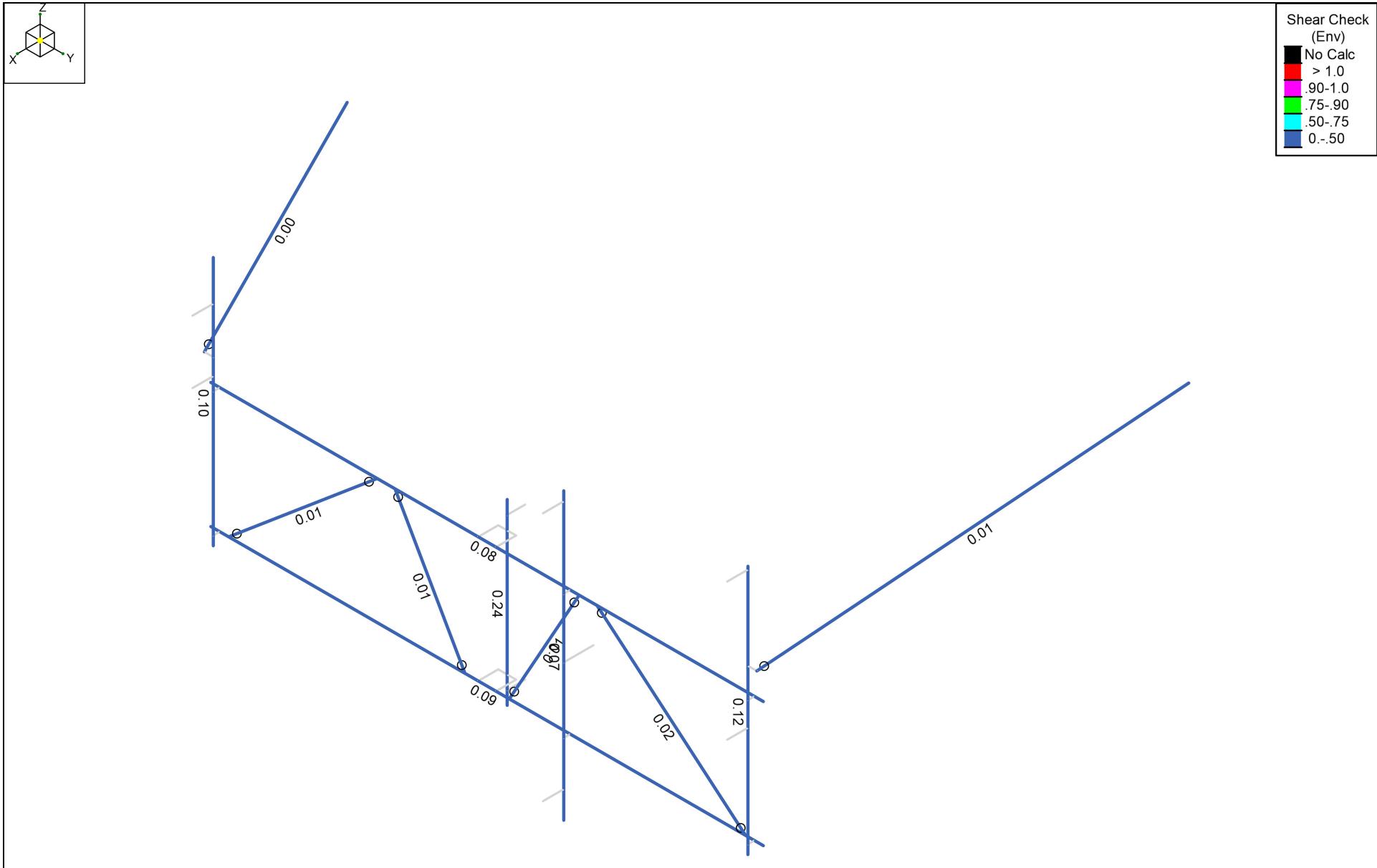
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Envelope Member Unity Check Results – Bending



Member Shear Checks Displayed (Enveloped)
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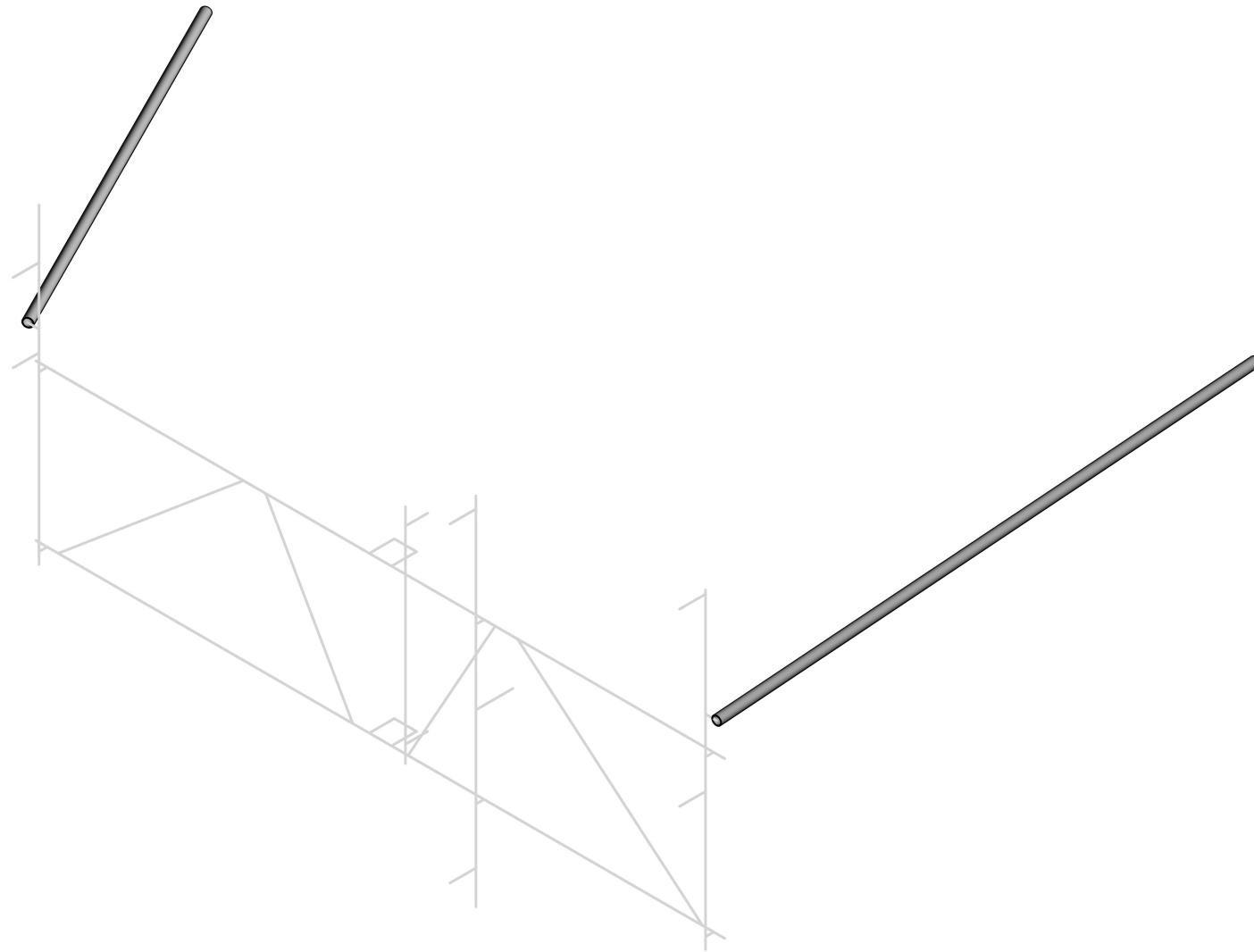
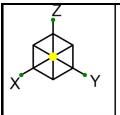
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Envelope Member Check Results – Shear

SK-9

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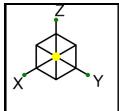
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Proposed Modifications - Rendered

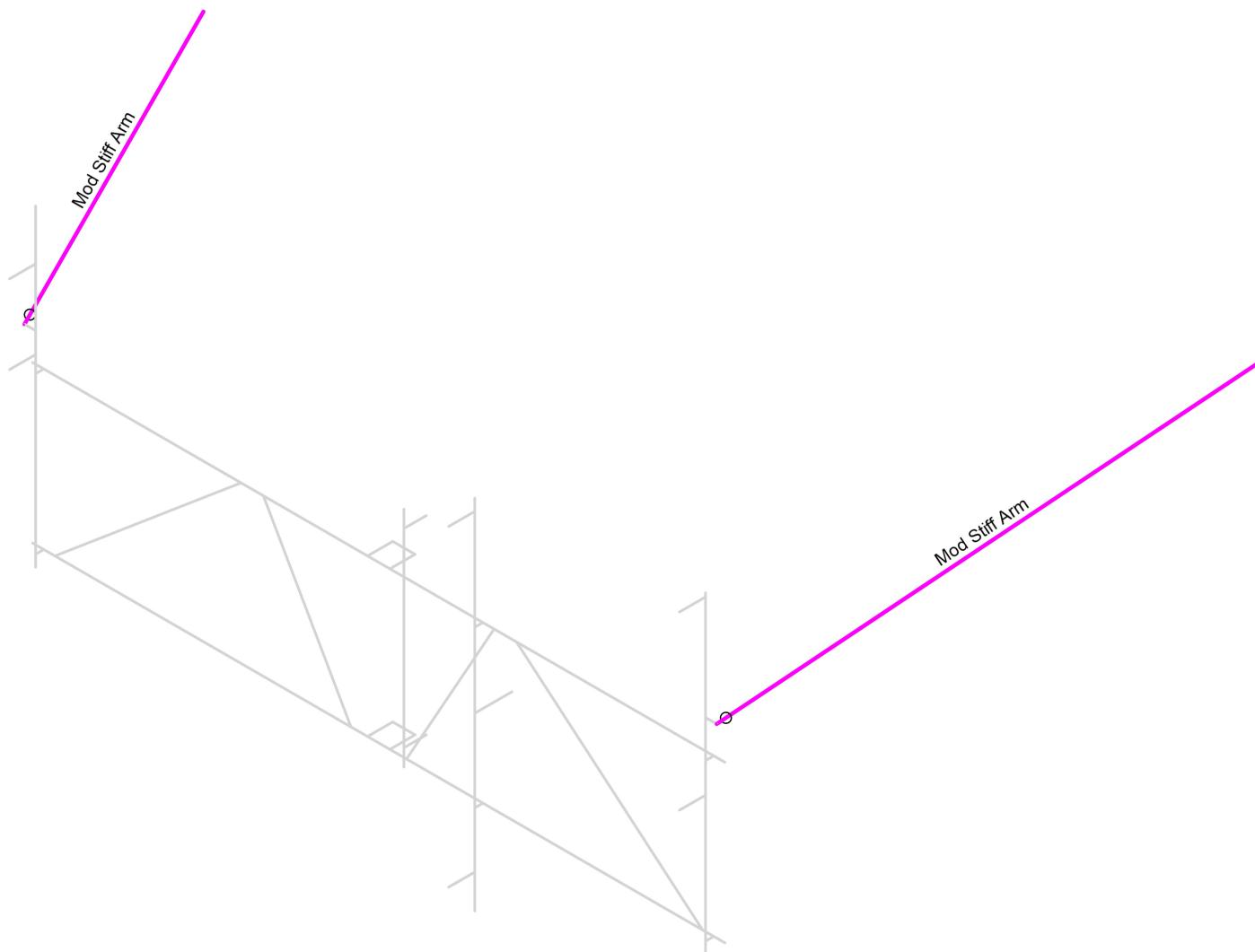
SK-10

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Section Sets
Universal Pipe
Face horizontal
Face Bracing
MOUNT_PIPE_2.0
Mod Stiff Arm
RIGID



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Proposed Modifications - Section Sets

SK-11

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Basic Load Cases

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

Basic Load Cases (Continued)

	BLC Description	Category	Z Gravity	Nodal	Distributed
61	Antenna Wind w/ Ice 180°	None		8	
62	Antenna Wind w/ Ice 210°	None		16	
63	Antenna Wind w/ Ice 225°	None		16	
64	Antenna Wind w/ Ice 240°	None		16	
65	Antenna Wind w/ Ice 270°	None		8	
66	Antenna Wind w/ Ice 300°	None		16	
67	Antenna Wind w/ Ice 315°	None		16	
68	Antenna Wind w/ Ice 330°	None		16	
69	Seismic X	ELX		8	11
70	Seismic Y	ELY		8	11
71	Seismic Z	ELZ		8	11
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	1.256	ELX	-1	ELY			
36	1.2D + 1.0Ev + 1.0Eh_30°	Yes	Y	DL	1.256	ELX	-0.866	ELY	0.5		
37	1.2D + 1.0Ev + 1.0Eh_45°	Yes	Y	DL	1.256	ELX	-0.707	ELY	0.707		
38	1.2D + 1.0Ev + 1.0Eh_60°	Yes	Y	DL	1.256	ELX	-0.5	ELY	0.866		
39	1.2D + 1.0Ev + 1.0Eh_90°	Yes	Y	DL	1.256	ELX		ELY	1		
40	1.2D + 1.0Ev + 1.0Eh_120°	Yes	Y	DL	1.256	ELX	0.5	ELY	0.866		
41	1.2D + 1.0Ev + 1.0Eh_135°	Yes	Y	DL	1.256	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	1.256	ELX	0.866	ELY	0.5		
43	1.2D + 1.0Ev + 1.0Eh 180°	Yes	Y	DL	1.256	ELX	1	ELY			
44	1.2D + 1.0Ev + 1.0Eh 210°	Yes	Y	DL	1.256	ELX	0.866	ELY	-0.5		
45	1.2D + 1.0Ev + 1.0Eh 225°	Yes	Y	DL	1.256	ELX	0.707	ELY	-0.707		
46	1.2D + 1.0Ev + 1.0Eh 240°	Yes	Y	DL	1.256	ELX	0.5	ELY	-0.866		
47	1.2D + 1.0Ev + 1.0Eh 270°	Yes	Y	DL	1.256	ELX		ELY	-1		
48	1.2D + 1.0Ev + 1.0Eh 300°	Yes	Y	DL	1.256	ELX	-0.5	ELY	-0.866		
49	1.2D + 1.0Ev + 1.0Eh 315°	Yes	Y	DL	1.256	ELX	-0.707	ELY	-0.707		
50	1.2D + 1.0Ev + 1.0Eh 330°	Yes	Y	DL	1.256	ELX	-0.866	ELY	-0.5		
51	0.9D - 1.0Ev + 1.0Eh 0°	Yes	Y	DL	0.844	ELX	-1	ELY			
52	0.9D - 1.0Ev + 1.0Eh 30°	Yes	Y	DL	0.844	ELX	-0.866	ELY	0.5		
53	0.9D - 1.0Ev + 1.0Eh 45°	Yes	Y	DL	0.844	ELX	-0.707	ELY	0.707		
54	0.9D - 1.0Ev + 1.0Eh 60°	Yes	Y	DL	0.844	ELX	-0.5	ELY	0.866		
55	0.9D - 1.0Ev + 1.0Eh 90°	Yes	Y	DL	0.844	ELX		ELY	1		
56	0.9D - 1.0Ev + 1.0Eh 120°	Yes	Y	DL	0.844	ELX	0.5	ELY	0.866		
57	0.9D - 1.0Ev + 1.0Eh 135°	Yes	Y	DL	0.844	ELX	0.707	ELY	0.707		
58	0.9D - 1.0Ev + 1.0Eh 150°	Yes	Y	DL	0.844	ELX	0.866	ELY	0.5		
59	0.9D - 1.0Ev + 1.0Eh 180°	Yes	Y	DL	0.844	ELX	1	ELY			
60	0.9D - 1.0Ev + 1.0Eh 210°	Yes	Y	DL	0.844	ELX	0.866	ELY	-0.5		
61	0.9D - 1.0Ev + 1.0Eh 225°	Yes	Y	DL	0.844	ELX	0.707	ELY	-0.707		
62	0.9D - 1.0Ev + 1.0Eh 240°	Yes	Y	DL	0.844	ELX	0.5	ELY	-0.866		
63	0.9D - 1.0Ev + 1.0Eh 270°	Yes	Y	DL	0.844	ELX		ELY	-1		
64	0.9D - 1.0Ev + 1.0Eh 300°	Yes	Y	DL	0.844	ELX	-0.5	ELY	-0.866		
65	0.9D - 1.0Ev + 1.0Eh 315°	Yes	Y	DL	0.844	ELX	-0.707	ELY	-0.707		
66	0.9D - 1.0Ev + 1.0Eh 330°	Yes	Y	DL	0.844	ELX	-0.866	ELY	-0.5		
67	1.2D + 1.5Lm 1 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.069	37	0.069	OL1	1.5
68	1.2D + 1.5Lm 1 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.069	38	0.069	OL1	1.5
69	1.2D + 1.5Lm 1 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.069	39	0.069	OL1	1.5
70	1.2D + 1.5Lm 1 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.069	40	0.069	OL1	1.5
71	1.2D + 1.5Lm 1 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.069	41	0.069	OL1	1.5
72	1.2D + 1.5Lm 1 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.069	42	0.069	OL1	1.5
73	1.2D + 1.5Lm 1 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.069	43	0.069	OL1	1.5
74	1.2D + 1.5Lm 1 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.069	44	0.069	OL1	1.5
75	1.2D + 1.5Lm 1 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.069	45	-0.069	OL1	1.5
76	1.2D + 1.5Lm 1 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.069	46	-0.069	OL1	1.5
77	1.2D + 1.5Lm 1 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.069	47	-0.069	OL1	1.5
78	1.2D + 1.5Lm 1 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.069	48	-0.069	OL1	1.5
79	1.2D + 1.5Lm 1 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.069	49	-0.069	OL1	1.5
80	1.2D + 1.5Lm 1 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.069	50	-0.069	OL1	1.5
81	1.2D + 1.5Lm 1 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.069	51	-0.069	OL1	1.5
82	1.2D + 1.5Lm 1 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.069	52	-0.069	OL1	1.5
83	1.2D + 1.5Lm 2 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.069	37	0.069	OL2	1.5
84	1.2D + 1.5Lm 2 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.069	38	0.069	OL2	1.5
85	1.2D + 1.5Lm 2 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.069	39	0.069	OL2	1.5
86	1.2D + 1.5Lm 2 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.069	40	0.069	OL2	1.5
87	1.2D + 1.5Lm 2 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.069	41	0.069	OL2	1.5
88	1.2D + 1.5Lm 2 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.069	42	0.069	OL2	1.5
89	1.2D + 1.5Lm 2 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.069	43	0.069	OL2	1.5
90	1.2D + 1.5Lm 2 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.069	44	0.069	OL2	1.5
91	1.2D + 1.5Lm 2 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.069	45	-0.069	OL2	1.5
92	1.2D + 1.5Lm 2 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.069	46	-0.069	OL2	1.5
93	1.2D + 1.5Lm 2 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.069	47	-0.069	OL2	1.5
94	1.2D + 1.5Lm 2 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.069	48	-0.069	OL2	1.5
95	1.2D + 1.5Lm 2 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.069	49	-0.069	OL2	1.5
96	1.2D + 1.5Lm 2 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.069	50	-0.069	OL2	1.5
97	1.2D + 1.5Lm 2 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.069	51	-0.069	OL2	1.5
98	1.2D + 1.5Lm 2 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.069	52	-0.069	OL2	1.5
99	1.2D + 1.5Lm 3 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.069	37	0.069	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	0.069	38	0.069	OL3	1.5
101	1.2D + 1.5Lm 3 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.069	39	0.069	OL3	1.5
102	1.2D + 1.5Lm 3 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.069	40	0.069	OL3	1.5
103	1.2D + 1.5Lm 3 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.069	41	0.069	OL3	1.5
104	1.2D + 1.5Lm 3 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.069	42	0.069	OL3	1.5
105	1.2D + 1.5Lm 3 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.069	43	0.069	OL3	1.5
106	1.2D + 1.5Lm 3 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.069	44	0.069	OL3	1.5
107	1.2D + 1.5Lm 3 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.069	45	-0.069	OL3	1.5
108	1.2D + 1.5Lm 3 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.069	46	-0.069	OL3	1.5
109	1.2D + 1.5Lm 3 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.069	47	-0.069	OL3	1.5
110	1.2D + 1.5Lm 3 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.069	48	-0.069	OL3	1.5
111	1.2D + 1.5Lm 3 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.069	49	-0.069	OL3	1.5
112	1.2D + 1.5Lm 3 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.069	50	-0.069	OL3	1.5
113	1.2D + 1.5Lm 3 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.069	51	-0.069	OL3	1.5
114	1.2D + 1.5Lm 3 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.069	52	-0.069	OL3	1.5

Hot Rolled Steel Properties

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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	Universal Pipe	PIPE_3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Face horizontal	L3.5X3.5X6	Beam	None	A36 Gr.36	Typical	2.5	2.86	2.86	0.123
3	Face Bracing	L2x2x3	Beam	None	A36 Gr.36	Typical	0.722	0.271	0.271	0.009
4	MOUNT_PIPE_2.0	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
5	Stiff Arm	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
6	Mod Stiff Arm	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb z-z [in]	Lcomp top [in]	Function
1	M6	Face horizontal	185.978	79.53		Lateral
2	M26	Face horizontal	185.978	58.99		Lateral
3	M33	Face Bracing	48.143			Lateral
4	M34	Face Bracing	48.143			Lateral
5	M5	Face Bracing	65.294		Lbyy	Lateral
6	M6A	Face Bracing	65.294		Lbyy	Lateral
7	M9	Universal Pipe	60		Lbyy	Lateral
8	A_MP1_S	MOUNT_PIPE_2.0	84			Lateral
9	A_MP2_S	MOUNT_PIPE_2.0	96			Lateral
10	A_MP3_S	MOUNT_PIPE_2.0	84			Lateral
11	M40	Mod Stiff Arm	156.995		Lbyy	Lateral
12	M41	Mod Stiff Arm	108.277		Lbyy	Lateral

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	M6			Yes	Default	None
2	M26			Yes	Default	None
3	M33	BenPIN	BenPIN	Yes		None
4	M34	BenPIN	BenPIN	Yes	Default	None

Member Advanced Data (Continued)

Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
5 M5	BenPIN	BenPIN	Yes		None
6 M6A	BenPIN	BenPIN	Yes	Default	None
7 M9			Yes		None
8 M10			Yes	** NA **	None
9 M11			Yes	** NA **	None
10 RI2		OOOXOO	Yes	** NA **	None
11 RI1		OOOXOO	Yes	** NA **	None
12 A_MP1_S			Yes	** NA **	None
13 RI3			Yes	** NA **	None
14 RI4			Yes	** NA **	None
15 RI12		OOOXOO	Yes	** NA **	None
16 RI11		OOOXOO	Yes	** NA **	None
17 A_MP2_S			Yes	** NA **	None
18 RI13			Yes	** NA **	None
19 RI14			Yes	** NA **	None
20 RI16			Yes	** NA **	None
21 RI22		OOOXOO	Yes	** NA **	None
22 RI21		OOOXOO	Yes	** NA **	None
23 A_MP3_S			Yes	** NA **	None
24 RI23			Yes	** NA **	None
25 RI24			Yes	** NA **	None
26 M30			Yes	** NA **	None
27 M31			Yes	** NA **	None
28 M32			Yes	** NA **	None
29 M35			Yes	** NA **	None
30 M36			Yes	** NA **	None
31 M37			Yes	** NA **	None
32 M39			Yes	** NA **	None
33 M40	BenPIN		Yes	** NA **	None
34 M38			Yes	** NA **	None
35 M41	BenPIN		Yes	** NA **	None

Node Boundary Conditions

Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1 N22	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2 N23	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3 N58	Reaction	Reaction	Reaction			
4 N59	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5 N73	Reaction	Reaction	Reaction			
6 N75	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 N22	max 685.642	3	1102.719	109	449.436	11	265.509	108	111.629	68	894.439	108
2	min -864.445	11	-1860.014	69	-116.845	3	-364.024	68	-102.582	92	-1529.033	68
3 N23	max 932.911	3	1829.477	81	2144.733	19	279.835	90	-683.176	59	1625.947	76
4	min -640.969	11	-1045.44	105	758.519	59	-96.406	18	-1858.599	19	-1107.675	100
5 N58	max 468.498	3	55.44	15	62.78	27	0	114	0	114	0	114
6	min -534.389	11	-60.153	7	19.158	51	0	1	0	1	0	1
7 N59	max 0	114	0	114	0	114	0	114	0	114	0	114
8	min 0	1	0	1	0	1	0	1	0	1	0	1
9 N73	max 303.247	3	152.641	3	21.926	2	0	114	0	114	0	114
10	min -350.527	11	-176.205	11	13.214	51	0	1	0	1	0	1
11 N75	max 0	114	0	114	0	114	0	114	0	114	0	114
12	min 0	1	0	1	0	1	0	1	0	1	0	1
13 Totals:	max 2390.298	3	1246.244	14	2511.019	19						
14	min -2390.331	11	-1246.243	6	925.485	59						

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

Member	Shape	Code Check Loc [in]	LC Shear Check Loc [in]	Dir	Cphi * Pnc [lb]	phi * Pnt [lb]	Mn y-y [lb-ft]	phi * Mn z-z [lb-ft]	Cb	Eqn
1 M6	L3.5X3.5X6	0.568	89.074	3	0.089	89.074	y 3	7617.248	81000	3339.808
2 A_MP2_S	PIPE_2.0	0.389	29.811	11	0.071	29.811	5	14916.096	32130	1871.625
3 M26	L3.5X3.5X6	0.246	96.904	3	0.079	96.904	z 11	7617.248	81000	3339.808
4 A_MP1_S	PIPE_2.0	0.243	29.179	11	0.117	29.179	11	17855.085	32130	1871.625
5 M9	PIPE_3.0	0.2	51.158	67	0.237	4.737	4	57037.472	65205	5748.75
6 M33	L2x2x3	0.184	23.058	19	0.012	48.143	z 11	10444.532	23392.8	557.717
7 A_MP3_S	PIPE_2.0	0.152	38.905	12	0.096	38.905	12	17855.085	32130	1871.625
8 M34	L2x2x3	0.137	23.311	113	0.006	48.143	y 3	10444.532	23392.8	557.717
9 M6A	L2x2x3	0.124	32.647	11	0.015	65.294	z 11	5789.398	23392.8	557.717
10 M40	PIPE_2.0	0.118	78.498	31	0.007	156.995	31	5746.908	32130	1871.625
11 M5	L2x2x3	0.113	32.647	3	0.006	65.294	y 3	5789.398	23392.8	557.717
12 M41	PIPE_2.0	0.037	54.138	3	0.002	108.277	2	12081.982	32130	1871.625

BOLTED CONNECTION ROTATIONAL SLIP RESISTANCE

At Membr M11

v. 2017.11.20

DESIGN LOADS	
Factored Moment, M_u (lb-ft)	1625.947

FACTORS	
Nut Factor, K	0.20
$\phi_{(BOLT\ TENSION)}$	0.75
$\phi_{(SLIP-CRITICAL)}$	1.00
Mean Slip Coefficient, μ	0.30
Installed Pretension Ratio, D_u	1.13

Rule-of-thumb estimate

AISC 15th, J3.6

AISC 15th, J3.8

AISC 15th, J3.8

AISC 15th, J3.8

AISC 15th, J3.8

BOLT PROPERTIES	
Bolt Type	U-Bolt
# of U-Bolts	2
Hole Type	Standard
Bolt Grade	A36
Bolt Diameter, d (in)	0.5
Leg Width, W_{leg} (in)	3.5
Bolt Torque Override, T (lb-ft)	50
Bolt Pretension Stress Override (ksi)	
Bolt Ultimate Strength, F_u (ksi)	58
Specified Torque, T (lb-ft)	50.00
Clamping Force per Bolt, P_u (lb)	6000.00
Bolt Pretension Stress (ksi)	30.56
Tensile Strength per Bolt, ϕP_n (lb)	6405.90
Slip Resistance per Bolt, ϕM_n (lb-ft)	593.25
Total Slip Resistance, ϕM_n (lb-ft)	2373.00
Connection Slip Usage, $M_u / \phi M_n$	0.69

Using Torque Override



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

T-Mobile Existing Facility

Site ID: CT11007A

Stamford AT&T
168 Catoona Lane
Stamford, Connecticut 06902

May 3, 2021

EBI Project Number: 6221002114

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	18.78%



May 3, 2021

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

Emissions Analysis for Site: CT11007A - Stamford AT&T

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **168 Catoona Lane in Stamford, 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 168 Catoona Lane in Stamford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.



- 6) 4 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 7) 1 LTE channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 8) 1 NR channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 9) 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.
- 10) 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.
- 11) The antennas used in this modeling are the Ericsson AIR 3246 for the 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector A, the Ericsson AIR 3246 for the 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector B, the Ericsson AIR 3246 for the 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz 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.
- 12) The antenna mounting height centerline of the proposed antennas is 265 feet above ground level (AGL).



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environmental | engineering | due diligence

- 13) 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.
- 14) 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 #:	I	Antenna #:	I	Antenna #:	I
Make / Model:	Ericsson AIR 3246	Make / Model:	Ericsson AIR 3246	Make / Model:	Ericsson AIR 3246
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.85 dBd	Gain:	15.85 dBd	Gain:	15.85 dBd
Height (AGL):	265 feet	Height (AGL):	265 feet	Height (AGL):	265 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts
ERP (W):	6,153.47	ERP (W):	6,153.47	ERP (W):	6,153.47
Antenna A1 MPE %:	0.33%	Antenna B1 MPE %:	0.33%	Antenna C1 MPE %:	0.33%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-UNA20	Make / Model:	RFS APXVAARR24_43-UNA20	Make / Model:	RFS APXVAARR24_43-UNA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd
Height (AGL):	265 feet	Height (AGL):	265 feet	Height (AGL):	265 feet
Channel Count:	11	Channel Count:	11	Channel Count:	11
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	12,873.80	ERP (W):	12,873.80	ERP (W):	12,873.80
Antenna A2 MPE %:	0.99%	Antenna B2 MPE %:	0.99%	Antenna C2 MPE %:	0.99%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd
Height (AGL):	265 feet	Height (AGL):	265 feet	Height (AGL):	265 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	12,888.76	ERP (W):	12,888.76	ERP (W):	12,888.76
Antenna A3 MPE %:	0.69%	Antenna B3 MPE %:	0.69%	Antenna C3 MPE %:	0.69%



Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	2.01%
SIGFOX	0%
Verizon	6.08%
Various Others	5.83%
AT&T	2.13%
Nextel	0.16%
Clearwire	0.05%
Sprint	1.74%
Metro PCS	0.78%
Site Total MPE % :	18.78%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	2.01%
T-Mobile Sector B Total:	2.01%
T-Mobile Sector C Total:	2.01%
Site Total MPE % :	18.78%

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 LTE	4	1538.37	265.0	3.30	2100 MHz LTE	1000	0.33%
T-Mobile 600 MHz LTE	2	591.73	265.0	0.63	600 MHz LTE	400	0.16%
T-Mobile 600 MHz NR	1	1577.94	265.0	0.85	600 MHz NR	400	0.21%
T-Mobile 700 MHz LTE	2	648.82	265.0	0.70	700 MHz LTE	467	0.15%
T-Mobile 1900 MHz GSM	4	1101.85	265.0	2.36	1900 MHz GSM	1000	0.24%
T-Mobile 1900 MHz LTE	2	2203.69	265.0	2.36	1900 MHz LTE	1000	0.24%
T-Mobile 2500 MHz LTE	1	6444.38	265.0	3.45	2500 MHz LTE	1000	0.35%
T-Mobile 2500 MHz NR	1	6444.38	265.0	3.45	2500 MHz NR	1000	0.35%
						Total:	2.01%

• 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:	2.01%
Sector B:	2.01%
Sector C:	2.01%
T-Mobile Maximum MPE % (Sector A):	2.01%
Site Total:	18.78%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **18.78%** 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.