

10 INDUSTRIAL AVE,
SUITE 3
MAHWAH NJ 07430
PHONE: 201.684.0055
FAX: 201.684.0066



May 25, 2021

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

RE: Notice of Exempt Modification
1069 Connecticut Avenue, Bridgeport, CT 06607
Latitude: 41.18362900
Longitude: -73.15806000
T-Mobile Site#: CT11452A - Anchor

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 116-foot level of the existing 126-foot Monopole at 1069 Connecticut Avenue, Bridgeport, Connecticut. The 126-foot Monopole 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 116-foot level of the tower. Mount modifications are also required as detailed in the enclosed mount analysis.

Planned Modifications:

Tower:

Remove

- (18) 1 5/8" Coax
- (1) 6x12 HCS
- (6) KRY 112 TMAs

Remove and Replace:

- (3) Ericsson AIR 3246 antennas for (3) Ericsson AIR 6449 2500 MHz antennas

Install New:

- (3) Ericsson Radio 4415 B25 RRU
- (2) Trunk 6/24 4AWG

Existing to Remain:

- (1) 6x12 HCS
- (3) APXVAARR24 Antennas
- (3) AIR32 Antennas
- (3) Radio 4449

Ground:

Install New:

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

This tower was originally approved by the Connecticut Siting Council in Petition No. 552 dated April 3, 2002. T-Mobile has been approved for subsequent modifications at their facility. This proposed modification complies with the original approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mayor -Joseph P. Ganim, Elected Official, and Dennis Buckley, Zoning Administrator, 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: Joseph P. Ganim – as Mayor of the City of Bridgeport
Dennis Buckley - Bridgeport Zoning Administrator
American Tower - Tower Owner
WR CT Avenue LLC - Property Owner

1069 CONNECTICUT AV

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

Location 1069 CONNECTICUT AV **Mblu** 44/ 723/ 3/A/
Acct# R--0004050 **Owner** WR CT AVENUE LLC
Assessment \$2,151,100 **Appraisal** \$3,072,960
PID 4911 **Building Count** 3

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$1,936,710	\$1,136,250	\$3,072,960

Assessment			
Valuation Year	Improvements	Land	Total
2020	\$1,355,720	\$795,380	\$2,151,100

Owner of Record

Owner WR CT AVENUE LLC **Sale Price** \$0
Co-Owner C/O WESTROCK DEVELOPMENT LLC **Certificate**
Address 440 MAMARONECK AVENUE **Book & Page** 7844/0040
SUITE N-503 **Sale Date** 06/27/2008
HARRISON, NY 10528 **Instrument** 14

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
WR CT AVENUE LLC	\$0		7844/0040	14	06/27/2008
WR CT AVENUE LLC	\$0		7844/0034	14	06/27/2008
BRIDGEPORT CITY OF	\$0		7370/0268	14	02/09/2007
AMERICAN FABRICS CO	\$0		2195/0149		11/25/1986

Building Information

Building 1 : Section 1

Year Built: 1939
Living Area: 106,726
Replacement Cost: \$5,316,109
Building Percent Good: 20
Replacement Cost Less Depreciation: \$1,063,220

Building Attributes	
Field	Description
Style:	Mill Building
Model:	Ind/Comm
Grade:	Average
Stories:	4
Occupancy:	1.00
Exterior Wall 1:	Brick
Exterior Wall 2:	
Roof Struct:	Irregular
Roof Cover:	T+G/Rubber
Interior Wall 1:	Minim/Masonry
Interior Wall 2:	
Interior Floor 1:	Hardwood
Interior Floor 2:	Carpet
Heating Fuel:	Oil
Heating Type:	Hot Water
AC Type:	None
Struct Class	
Bldg Use:	Mill Building
Ttl Rooms:	
Ttl Bedrms:	00
Ttl Baths:	0
Ttl Half Baths:	0

Building Photo



Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area

Ttl Xtra Fix:	0
1st Floor Use:	
Heat/AC:	None
Frame Type:	Masonry
Baths/Plumbing:	Average
Ceiling/Wall:	Ceiling Only
Rooms/Prtns:	Average
Wall Height:	16.00
% Conn Wall:	

BAS	First Floor	65,755	65,755
FUS	Finished Upper Story	40,971	40,971
UBM	Unfin Basement	13,657	0
ULP	Uncovered Loading Platform	502	0
		120,885	106,726

Building 2 : Section 1

Year Built: 1967
Living Area: 28,945
Replacement Cost: \$1,130,666
Building Percent Good: 23
Replacement Cost
Less Depreciation: \$260,050

Building Attributes : Bldg 2 of 3	
Field	Description
Style:	Industrial
Model	Ind/Comm
Grade:	Average
Stories:	1
Occupancy:	1.00
Exterior Wall 1:	Concr/CinderBl
Exterior Wall 2:	
Roof Struct:	Flat
Roof Cover:	T+G/Rubber
Interior Wall 1:	Minim/Masonry
Interior Wall 2:	
Interior Floor 1:	Concr-Finished
Interior Floor 2:	

Building Photo



Building Layout



Heating Fuel:	Oil
Heating Type:	Hot Air-No Duc
AC Type:	None
Struct Class	
Bldg Use:	Industrial Mdl 96
Ttl Rooms:	
Ttl Bedrms:	00
Ttl Baths:	0
Ttl Half Baths:	0
Ttl Xtra Fix:	10
1st Floor Use:	
Heat/AC:	None
Frame Type:	Masonry
Baths/Plumbing:	Average
Ceiling/Wall:	None
Rooms/Prtns:	Average
Wall Height:	14.00
% Corn Wall:	



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	28,945	28,945
UEP	Utility Enclosed Porch	112	0
		29,057	28,945

Building 3 : Section 1

Year Built: 1955
Living Area: 16,539
Replacement Cost: \$755,875
Building Percent Good: 20
Replacement Cost
Less Depreciation: \$151,180

Building Attributes : Bldg 3 of 3	
Field	Description
Style:	Mill Building
Model	Ind/Comm
Grade:	D+
Stories:	4

Building Photo



Exterior Wall 1:	Brick
Exterior Wall 2:	
Roof Struct:	Flat
Roof Cover:	Tar + Gravel
Interior Wall 1:	Minim/Masonry
Interior Wall 2:	
Interior Floor 1:	Concr-Finished
Interior Floor 2:	
Heating Fuel:	None
Heating Type:	None
AC Type:	None
Struct Class	
Bldg Use:	Industrial Mdl 96
Ttl Rooms:	
Ttl Bedrms:	00
Ttl Baths:	0
Ttl Half Baths:	0
Ttl Xtra Fix:	10
1st Floor Use:	
Heat/AC:	None
Frame Type:	Masonry
Baths/Plumbing:	Average
Ceiling/Wall:	None
Rooms/Prtns:	Average
Wall Height:	15.00
% Conn Wall:	

Building Layout

2024



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	16,539	16,539
UBM	Unfin Basement	7,600	0
ULP	Uncovered Loading Platform	315	0
		24,454	16,539

Extra Features

Extra Features					<u>Legend</u>
Code	Description	Size	Value	Bldg #	
SPR1	Sprinklers-Wet	106728.00 SF	\$59,770	1	
SPR1	Sprinklers-Wet	28651.00 SF	\$18,450	2	
SPR1	Sprinklers-Wet	81037.00 SF	\$45,380	3	
LDL1	Load Levler	2.00 UNITS	\$1,660	2	
ELV1	Freight	5.00 STOPS	\$31,200	1	
ELV1	Freight	5.00 STOPS	\$31,200	1	

Land

Land Use

Use Code 342
 Description Mill Building ⓘ
 Zone LI
 Neighborhood CTA
 Alt Land Appr No
 Category

Land Line Valuation

Size (Acres) 6.06
 Frontage 0
 Depth 0
 Assessed Value \$795,380
 Appraised Value \$1,136,250

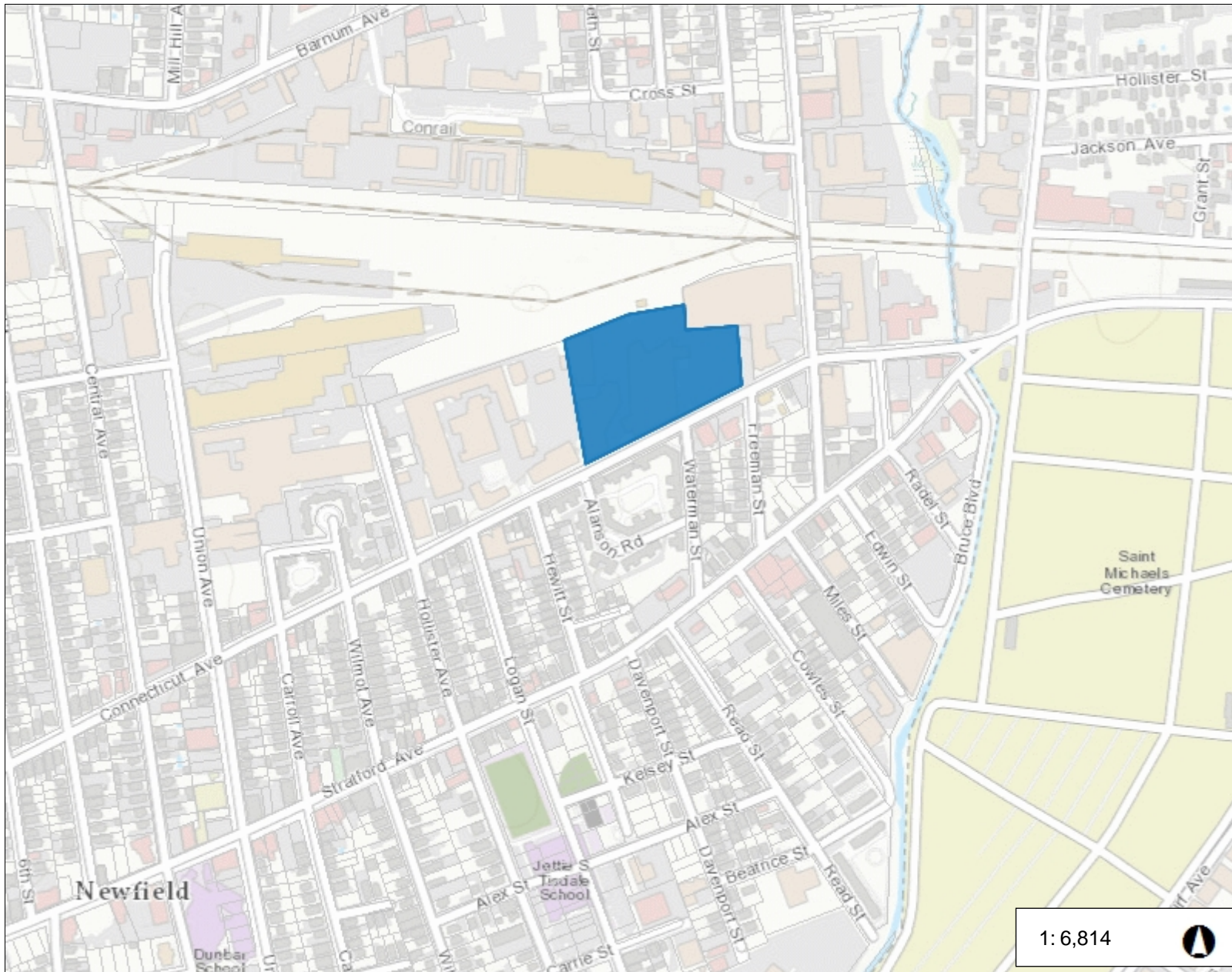
Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
SHD1	Shed	MT	Metal	336.00 SF	\$1,210	1
PAV1	Paving Asph			110000.00 SF	\$238,700	1
FN1	Fence, Chain	4	4 ft	668.00 LF	\$2,200	1
SHD3	Shed w/ Lt	CM	Comm	240.00 SF	\$4,540	1
TWR	Tower			130.00 LF	\$27,040	1
PAV2	Paving Conc			240.00 SF	\$910	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2019	\$1,808,490	\$909,000	\$2,717,490
2018	\$1,808,490	\$909,000	\$2,717,490
2017	\$1,808,490	\$909,000	\$2,717,490

Assessment			
Valuation Year	Improvements	Land	Total
2019	\$1,265,940	\$636,300	\$1,902,240
2018	\$1,265,940	\$636,300	\$1,902,240
2017	\$1,265,940	\$636,300	\$1,902,240



Legend

- Parcel Label
- Parcels

1:6,814



1,135.6 0 567.79 1,135.6 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Created by Greater Bridgeport Regional Council

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION



Petition No. 552
Spectrasite
Bridgeport, Connecticut
Staff Report
April 1, 2002

On April 1, 2002, Connecticut Siting Council (Council) member Brian O'Neill and Robert Mercier of the Council staff met Spectrasite Communications, Inc. (Spectrasite) representative Julie Donaldson for an inspection of an existing Spectrasite monopole located at 1069 Connecticut Avenue in Bridgeport, Connecticut. Spectrasite proposes to expand the compound lease area and is petitioning the Council for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) would be required for the proposed lease expansion.

Spectrasite proposes to allow Northcoast Communications LLC (Northcoast) to locate at the 100-foot level of Spectrasite's 132-foot monopole. Northcoast would install nine panel antennas and equipment cabinets on a 10 x 20 concrete pad located east of the tower. The existing fenced and graveled compound would be expanded approximately eighteen feet to the east to accommodate Northcoast's equipment pad. The existing 50-foot by 50-foot Spectrasite lease area is occupied entirely by the existing compound.

Under this petition, Spectrasite proposes to expand the lease area by approximately 900 square feet (50 feet by 18 feet) to accommodate Northcoast and a future telecommunications carrier. The proposed expansion area consists of a level paved area in an existing parking lot. An eight-foot tall chain link fence would enclose the proposed expanded compound.

The site is located in an urban commercial and residential area. The site is zoned light industrial. Site access and utility routing would be via established access and utility routes currently on site.

A structural analysis dated July 31, 2001 concluded that no additional reinforcement of the monopole or foundation is necessary for this proposal. The worst case power density for the proposed telecommunications operations at the site has been calculated to be approximately 31% of the applicable ANSI standard for uncontrolled environments.

Spectrasite contends that the proposed lease expansion and site modification would not have a significant adverse environmental effect and therefore, would not require a Certificate.

ERIC BREUN
2016387728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
MAYOR JOSEPH GANIM
999 BROAD STREET
BRIDGEPORT CT 06604



CT 066 9-04



UPS GROUND

TRACKING #: 1Z V25 742 43 9411 6171



BILLING: P/P



TM

XOL 21-03.15 NV-05-05-0A 04/2021*

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

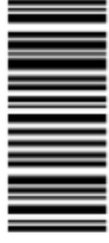
1 LBS

1 OF 1

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



MA 018 9-04



UPS GROUND

TRACKING #: 1Z V25 742 43 9059 0184



BILLING: P/P



XOL 21.03.15 NV45-45.0A 04/2021*

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
10 FRANKLIN SQUARE
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQUARE
NEW BRITAIN CT 06051



CT 067 9-06



UPS GROUND

TRACKING #: 1Z V25 742 03 9630 3245



BILLING: P/P

Reference #1: CT11452A

XOL 21.03.15 NV45-45.GA 04/2021*



TM

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
DENNIS BUCKLEY
ROOM 210
45 LYON TERRACE
BRIDGEPORT CT 06604



CT 066 9-04



UPS GROUND

TRACKING #: 1Z V25 742 03 9166 8192

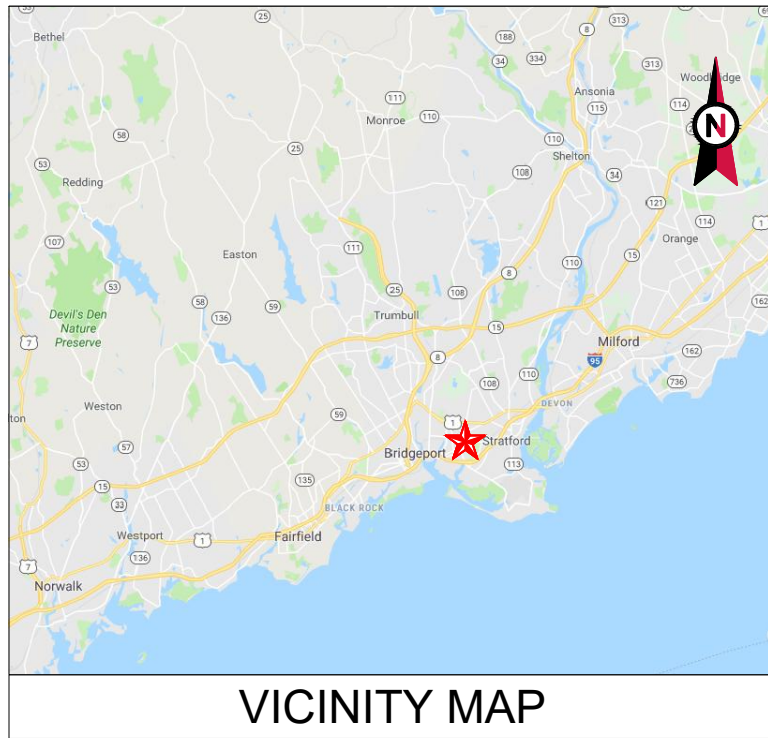


BILLING: P/P



TM

XOL 21.03.15 NV45-45.0A 04/2021*



VICINITY MAP



AMERICAN TOWER®

ATC SITE NAME: BRIDGEPORT CT 2
 ATC SITE NUMBER: 302469
 T-MOBILE SITE NAME:
 BRIDGEPORT/CONNECTICUT AV
 T-MOBILE SITE NUMBER: CT11452A
 SITE ADDRESS: 1069 CONNECTICUT AVENUE
 BRIDGEPORT, CT 06607



LOCATION MAP

**T-MOBILE ANCHOR ANTENNA AMENDMENT PLAN
 67D5A997DB HYBRID CONFIGURATION**



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

THE USE AND PUBLICATION OF THESE DRAWINGS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OR THE SPECIFIED CARRIER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION.

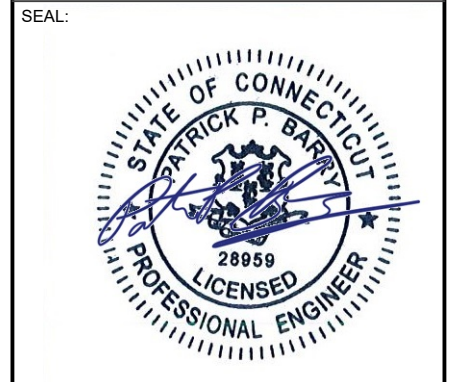
REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	TC	04/20/21
1	UPDATED RAD	JP	05/24/21

ATC SITE NUMBER:
302469

ATC SITE NAME:
BRIDGEPORT CT 2

T-MOBILE SITE NAME:
BRIDGEPORT/CONNECTICUT AV

SITE ADDRESS:
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607



Authorized by "EOR"
 24 May 2021 05:45:32
 T-Mobile eesign

DATE DRAWN:	04/20/21
ATC JOB NO:	13337502_G3
CUSTOMER ID:	BRIDGEPORT/CONNECTICUT AV
CUSTOMER #:	CT11452A

TITLE SHEET

SHEET NUMBER:
G-001

REVISION:
1

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES. 1. INTERNATIONAL BUILDING CODE (IBC) 2. NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 1069 CONNECTICUT AVENUE BRIDGEPORT, CT 06607 COUNTY: FAIRFIELD <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.18361667 LONGITUDE: -73.15838333 GROUND ELEVATION: 32' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: <u>TOWER WORK:</u> REMOVE (3) ANTENNA(s), (6) TTA(s), (1) 6X12 HCS AWG HYBRID CABLE(s), AND (18) 1-5/8" COAX CABLE(s) INSTALL (3) ANTENNA(s), (3) RRU(s), (1) HANDRAIL INSTALLATION KIT, AND (2) HYBRID TRUNK 6/24 4AWG CABLE(s) EXISTING (6) ANTENNA(s), (3) RRU(s), AND (1) 6X12 HCS AWG HYBRID CABLE(s) TO REMAIN <u>GROUND WORK:</u> REMOVE (1) RBS 3106 CABINET AND (1) RBS 6102 CABINET INSTALL (1) ENCLOSURE 6160 CABINET, (1) B160 BATTERY CABINET, AND (1) CSR IXRE EXISTING (1) RBS 6102 CABINET TO REMAIN	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
	<u>PROJECT TEAM</u> <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801 <u>ENGINEER:</u> ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518 <u>PROPERTY OWNER:</u> WR CT AVENUE LLC 1069 CONNECTICUT AVENUE BRIDGEPORT, CT 06607	<u>PROJECT NOTES</u> 1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED.	G-001	TITLE SHEET	1	05/24/21	JP
	<u>UTILITY COMPANIES</u> POWER COMPANY: UNITED ILLUMINATING PHONE: (800) 722-5584 TELEPHONE COMPANY: FRONTIER PHONE: (800) 376-6843	<u>PROJECT TEAM</u> <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801 <u>ENGINEER:</u> ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518 <u>PROPERTY OWNER:</u> WR CT AVENUE LLC 1069 CONNECTICUT AVENUE BRIDGEPORT, CT 06607	<u>PROJECT NOTES</u> 1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED.	G-002	GENERAL NOTES	0	04/20/21
811 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>ENGINEER:</u> ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518 <u>PROPERTY OWNER:</u> WR CT AVENUE LLC 1069 CONNECTICUT AVENUE BRIDGEPORT, CT 06607	<u>PROJECT NOTES</u> 1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED.	G-101	DETAILED SITE PLAN	0	04/20/21	TC
		<u>PROJECT LOCATION DIRECTIONS</u> FROM HARTFORD, CT TAKE I-91 SOUTH TO I-95 SOUTH TO EXIT 29. TURN LEFT OFF EXIT AND AT LIGHT TAKE A LEFT U-TURN ONTO STRATFORD AVENUE. FOLLOW STRATFORD TO FREEMAN STREET AND TURN LEFT. GO TO STOP SIGN AND CROSS OVER CONNECTICUT AVENUE INTO PARKING LOT. TOWER IS AT THE LEFT HAND END OF THE PARKING LOT.	C-102	DETAILED GROUND PLAN	0	04/20/21	TC
			C-201	TOWER ELEVATION	1	05/24/21	JP
			C-401	ANTENNA INFORMATION & SCHEDULE	1	05/24/21	JP
			C-501	CONSTRUCTION DETAILS	0	04/20/21	TC
			E-501	GROUNDING DETAILS	0	04/20/21	TC
			R-601	SUPPLEMENTAL			
			R-602	SUPPLEMENTAL			
			R-603	SUPPLEMENTAL			
			R-604	SUPPLEMENTAL			
			R-605	SUPPLEMENTAL			
			R-606	SUPPLEMENTAL			
				MOUNT MODIFICATIONS (3 PAGES)			

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GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
 - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
 - B. AC/TELCO INTERFACE BOX (PPC)
 - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
 - D. TOWERS, MONOPOLES
 - E. TOWER LIGHTING
 - F. GENERATORS & LIQUID PROPANE TANK
 - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
 - H. ANTENNAS (INSTALLED BY OTHERS)
 - I. TRANSMISSION LINE
 - J. TRANSMISSION LINE JUMPERS
 - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
 - L. TRANSMISSION LINE GROUND KITS
 - M. HANGERS
 - N. HOISTING GRIPS
 - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.

22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.

SPECIAL CONSTRUCTION

ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
 - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL 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 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE 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.



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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	TC	04/20/21

ATC SITE NUMBER:
302469

ATC SITE NAME:
BRIDGEPORT CT 2

T-MOBILE SITE NAME:
BRIDGEPORT/CONNECTICUT AV

SITE ADDRESS:
 1069 CONNECTICUT AVENUE
 BRIDGEPORT, CT 06607



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DATE DRAWN:	04/20/21
ATC JOB NO:	13337502_G3
CUSTOMER ID:	BRIDGEPORT/CONNECTICUT AV
CUSTOMER #:	CT11452A

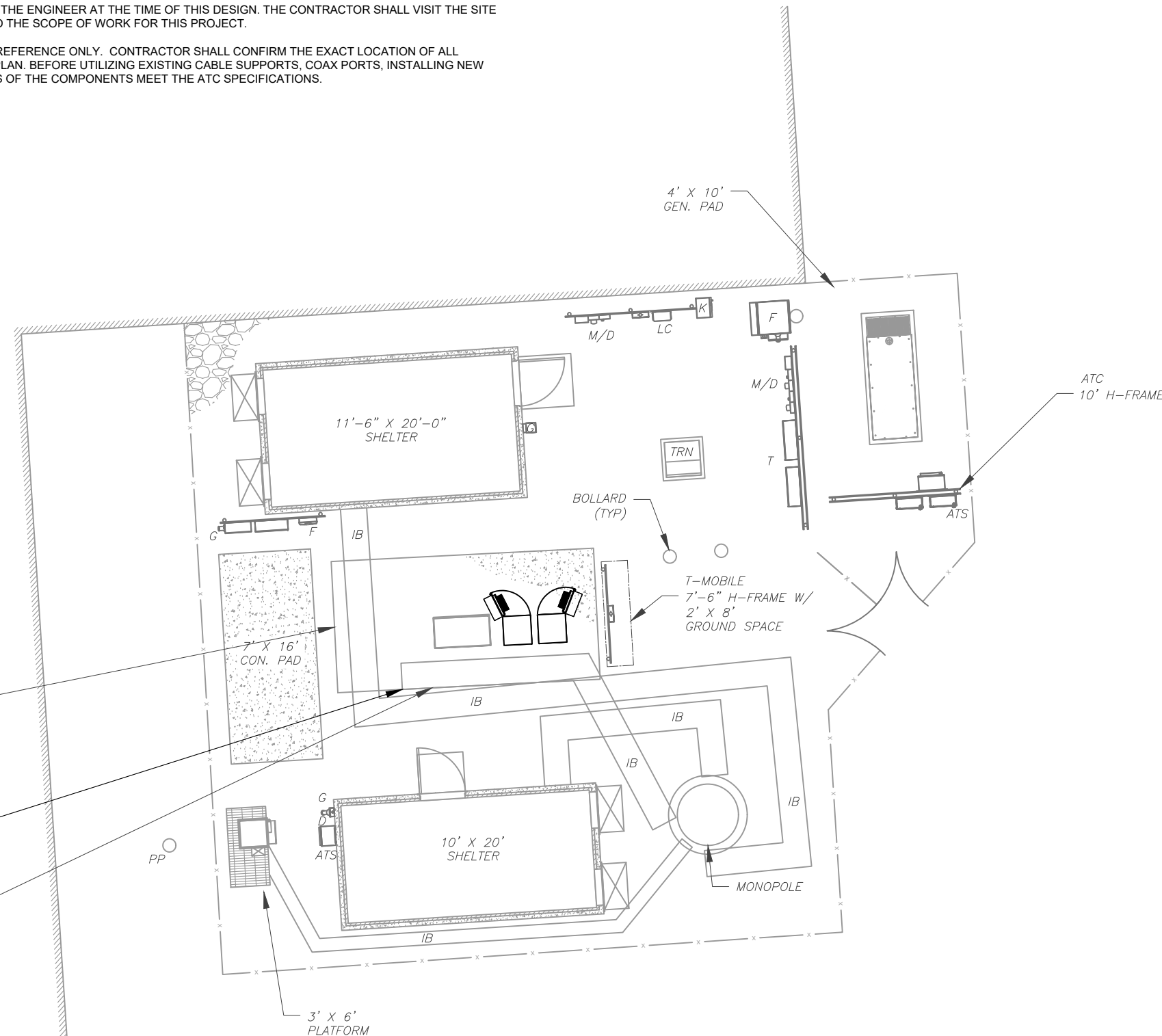
GENERAL NOTES

SHEET NUMBER: G-002	REVISION: 0
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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. THIS PROJECT INCLUDES NO INSTALL OR MODIFICATION AT GRADE.

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



EXISTING T-MOBILE EQUIPMENT ON A 10' X 20' CONCRETE PAD AND GROUND SPACE (MODIFIED AS REQUIRED FOR UPGRADE FROM 67D94DB HYBRID (EVOLVED FROM 4B) TO 67D5A997DB HYBRID CONFIGURATION)

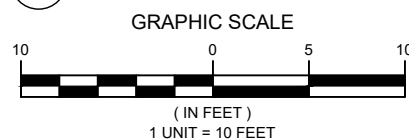
PROPOSED (2) HYBRID TRUNK 6/24 4AWG HYBRID CABLES (ROUTED PER PROPOSED CABLE LENGTH NOTE 2) (REFER TO PROPOSED CABLE LENGTH NOTE ON THIS PAGE)

EXISTING (1) 6X12 HCS AWG HYBRID CABLE (TO REMAIN)
(18) 1-5/8\"/>

PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **160'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.

1 DETAILED SITE PLAN



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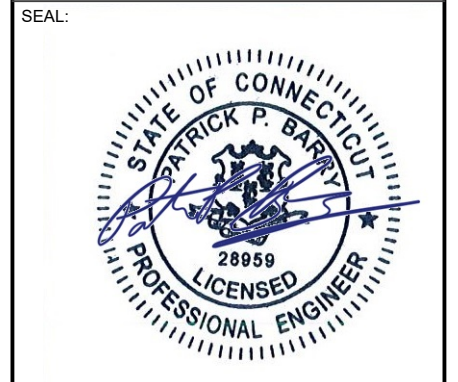
REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	TC	04/20/21

ATC SITE NUMBER:
302469

ATC SITE NAME:
BRIDGEPORT CT 2

T-MOBILE SITE NAME:
BRIDGEPORT/CONNECTICUT AV

SITE ADDRESS:
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607



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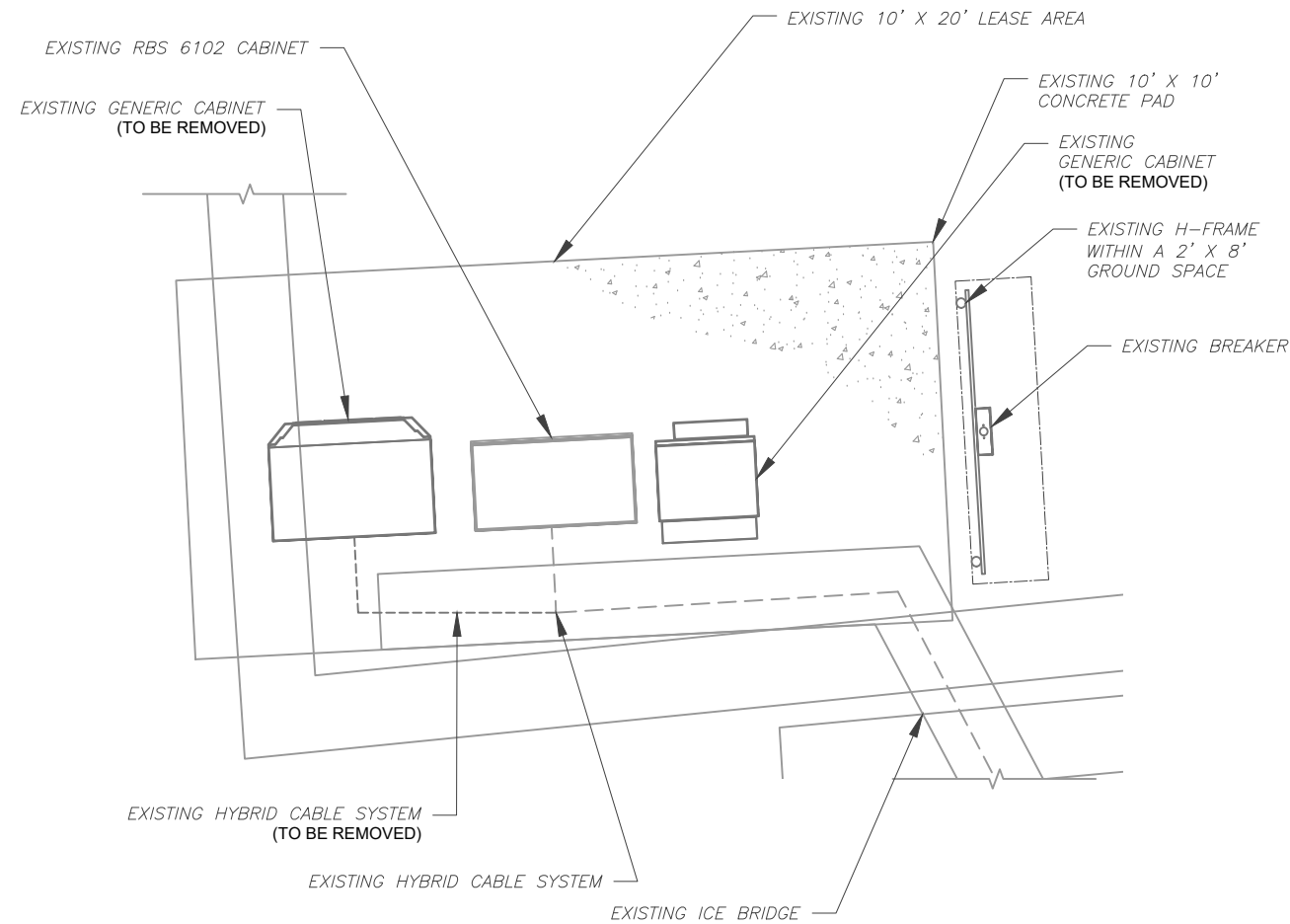
DATE DRAWN:	04/20/21
ATC JOB NO:	13337502_G3
CUSTOMER ID:	BRIDGEPORT/CONNECTICUT AV
CUSTOMER #:	CT11452A

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

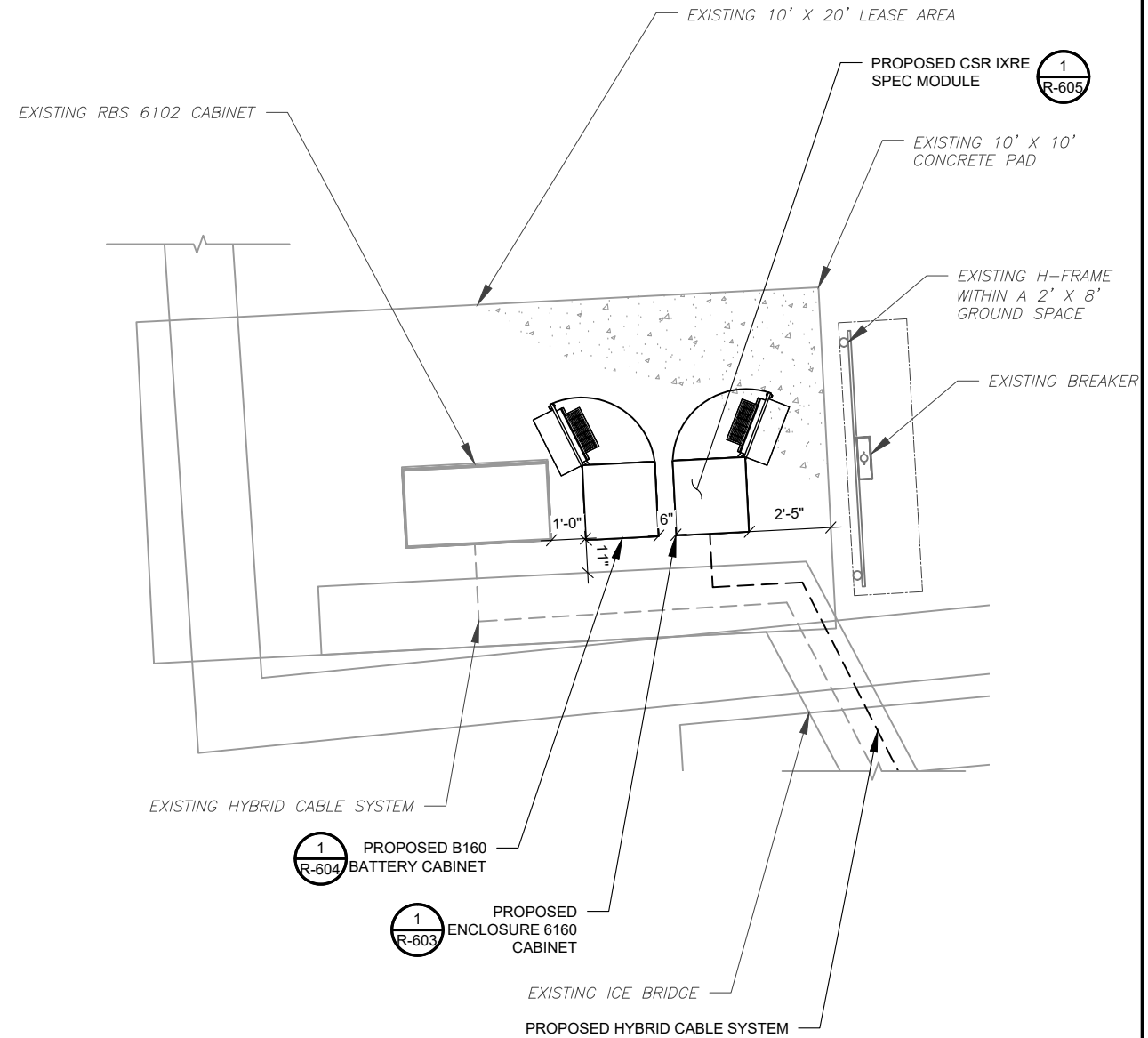
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SITE PLAN NOTES:

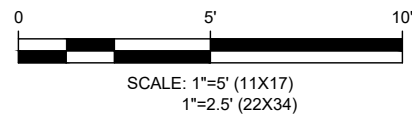
1. CONTRACTOR TO VERIFY THERE IS NO LIVE AAV FIBER RUNNING THROUGH EXISTING DEAD EQUIPMENT. IF SO, THIS WILL NEED TO BE RERUN THROUGH CONDUIT PRIOR TO REMOVING DEAD 2G (6201 CABS) EQUIPMENT.
2. REMOVE EXISTING 2G CABINETS, AND POWER / TELCO WHIPS ASSOCIATED WITH THE DEAD EQUIPMENT IF APPLICABLE.
3. ALL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



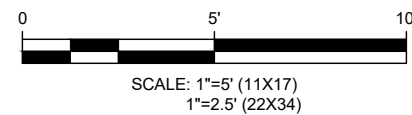
T-MOBILE CM APPROVAL REQUIRED BEFORE INSTALLING CABINETS



1 EXISTING GROUND EQUIPMENT LAYOUT



2 PROPOSED GROUND EQUIPMENT LAYOUT



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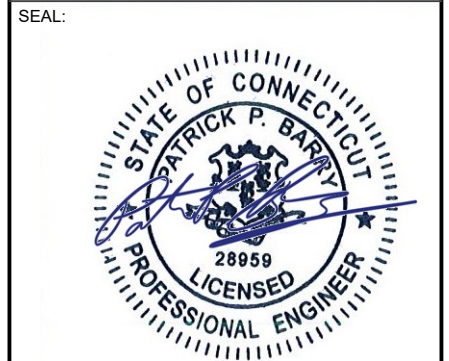
REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	TC	04/20/21

ATC SITE NUMBER:
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ATC SITE NAME:
BRIDGEPORT CT 2

T-MOBILE SITE NAME:
BRIDGEPORT/CONNECTICUT AV

SITE ADDRESS:
 1069 CONNECTICUT AVENUE
 BRIDGEPORT, CT 06607



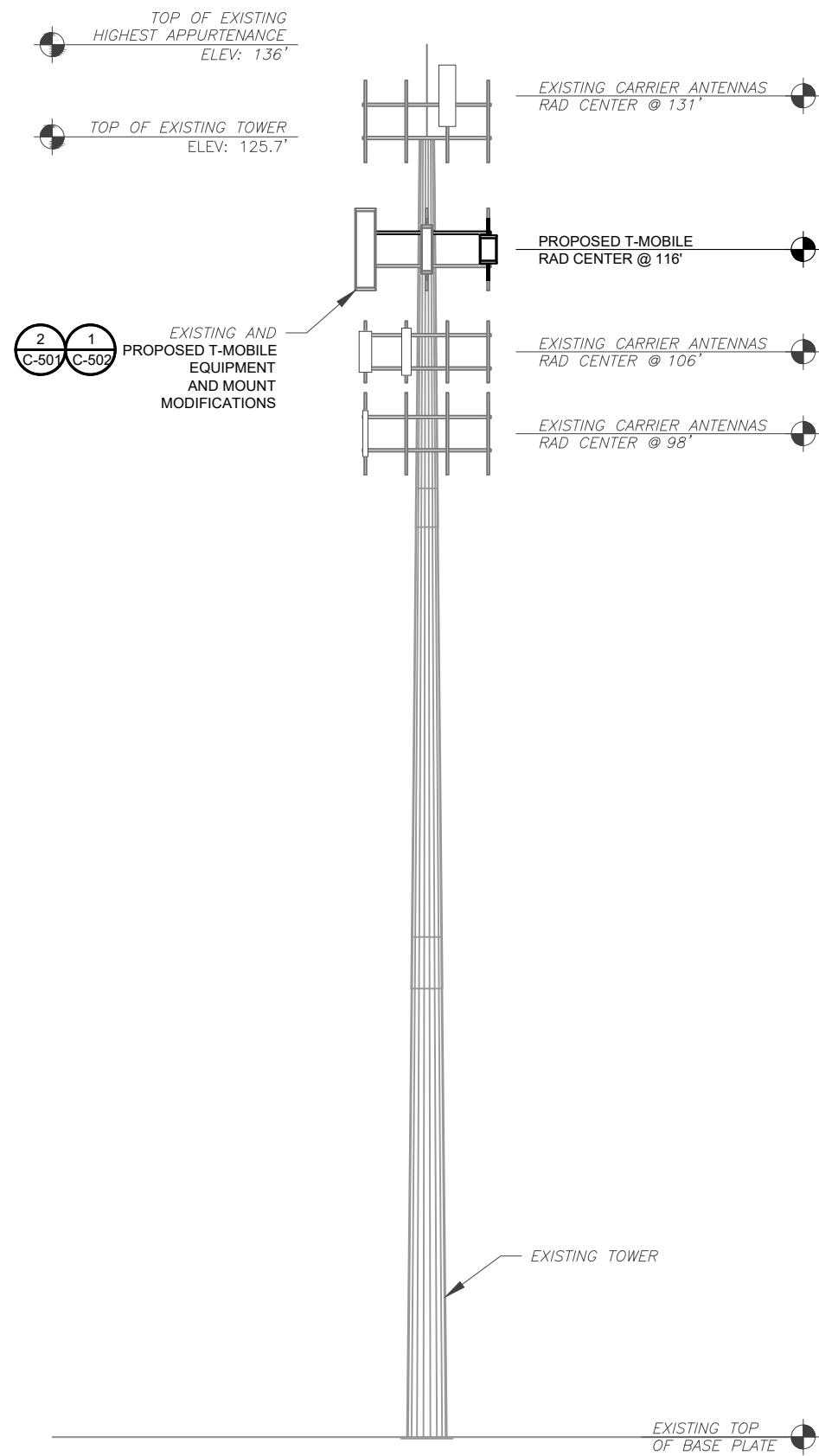
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ATC JOB NO:	13337502_G3
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CUSTOMER #:	CT11452A

DETAILED GROUND PLAN

SHEET NUMBER:	REVISION:
C-102	0

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PER MOUNT ANALYSIS COMPLETED BY CLS ENGINEERING, DATED 02/16/2021, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION DETAILED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT

- TOWER NOTE:**
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
 - WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
 - ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
 - TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

1 TOWER ELEVATION
SCALE: N.T.S.



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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	TC	04/20/21
1	UPDATED RAD	JP	05/24/21

ATC SITE NUMBER:
302469

ATC SITE NAME:
BRIDGEPORT CT 2

T-MOBILE SITE NAME:
BRIDGEPORT/CONNECTICUT AV

SITE ADDRESS:
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607



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DATE DRAWN:	04/20/21
ATC JOB NO:	13337502_G3
CUSTOMER ID:	BRIDGEPORT/CONNECTICUT AV
CUSTOMER #:	CT11452A

TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	1

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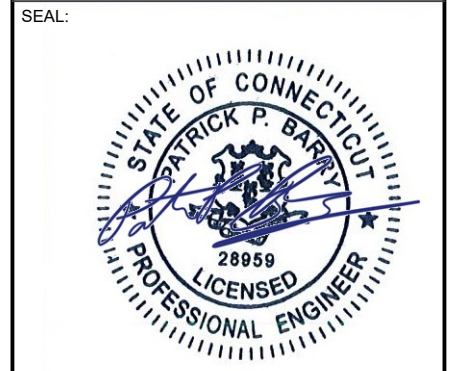
REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	TC	04/20/21
1	UPDATED RAD	JP	05/24/21

ATC SITE NUMBER:
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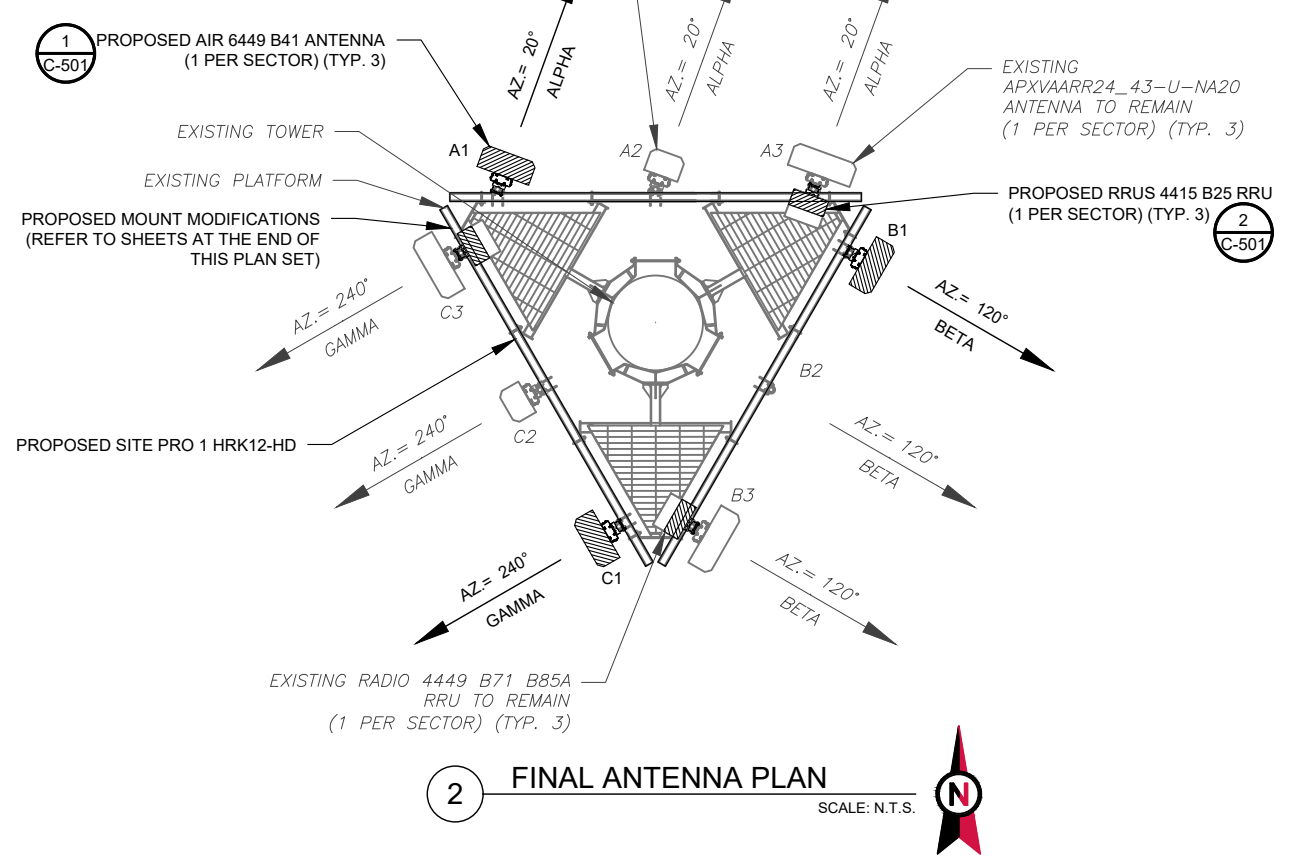
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DATE DRAWN:	04/20/21
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CUSTOMER #:	CT11452A

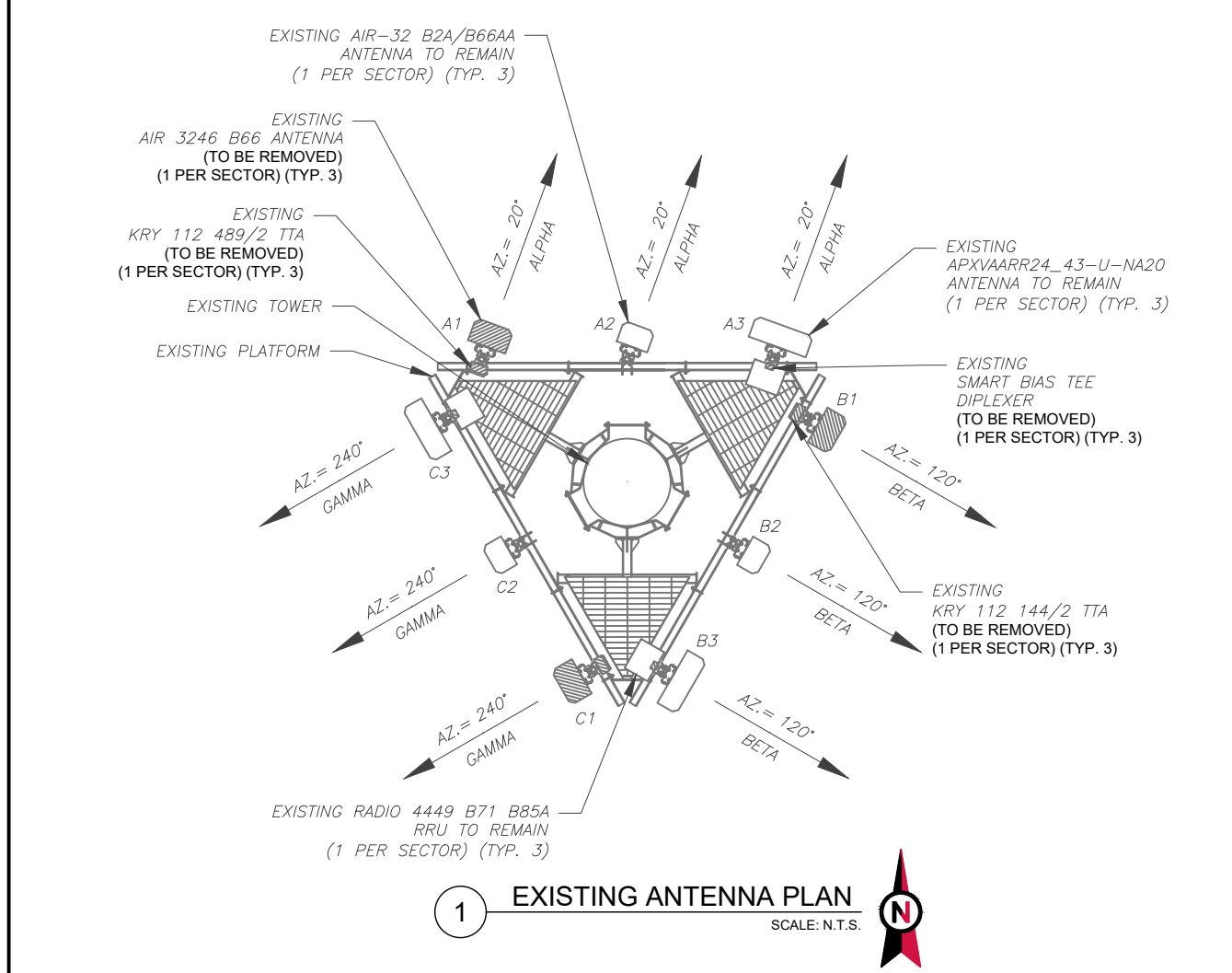
ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-401	1

PER MOUNT ANALYSIS COMPLETED BY CLS ENGINEERING, DATED 02/16/2021, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION DETAILED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT



2 FINAL ANTENNA PLAN
 SCALE: N.T.S.



1 EXISTING ANTENNA PLAN
 SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE									
LOCATION		ANTENNA SUMMARY					NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	116'	20°	A1	AIR 3246 B66	G1900/U2100	-	RMV	KRY 112 489/2 KRY 112 144/2	RMV RMV
			A2	AIR-32 B2A/B66AA	L2100/L1900	-	RMN	-	-
			A3	APXVAARR24_43-U-NA20	L700/L600/N600	-	RMN	SMART BIAS TEE RADIO 4449 B71 B85A	RMV RMN
BETA	116'	180°	B1	AIR 3246 B66	G1900/U2100	-	RMV	KRY 112 489/2 KRY 112 144/2	RMV RMV
			B2	AIR-32 B2A/B66AA	L2100/L1900	-	RMN	-	-
			B3	APXVAARR24_43-U-NA20	L700/L600/N600	-	RMN	SMART BIAS TEE RADIO 4449 B71 B85A	RMV RMN
GAMMA	116'	240°	C1	AIR 3246 B66	G1900/U2100	-	RMV	KRY 112 489/2 KRY 112 144/2	RMV RMV
			C2	AIR-32 B2A/B66AA	L2100/L1900	-	RMN	-	-
			C3	APXVAARR24_43-U-NA20	L700/L600/N600	-	RMN	SMART BIAS TEE RADIO 4449 B71 B85A	RMV RMN

NOTES

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

STATUS ABBREVIATIONS

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

CABLE LENGTHS FOR JUMPERS

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

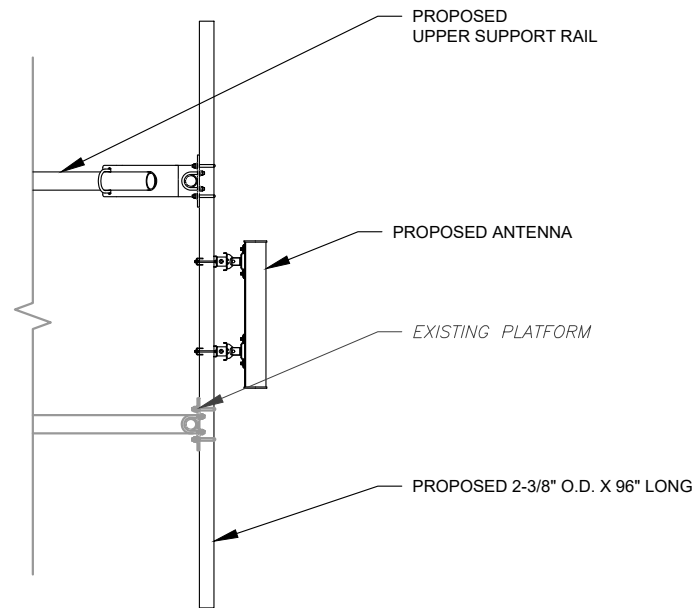
FINAL ANTENNA SCHEDULE									
LOCATION		ANTENNA SUMMARY					NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	116'	20°	A1	AIR 6449 B41	L2500/N2500	0°	ADD	-	-
			A2	AIR-32 B2A/B66AA	L2100/G1900/L1900	0°	RMN	-	-
			A3	APXVAARR24_43-U-NA20	L700/L600/N600/L1900	0°	RMN	RRUS 4415 B25 RADIO 4449 B71 B85A	ADD RMN
BETA	116'	120°	B1	AIR 6449 B41	L2500/N2500	0°	ADD	-	-
			B2	AIR-32 B2A/B66AA	L2100/G1900/L1900	0°	RMN	-	-
			B3	APXVAARR24_43-U-NA20	L700/L600/N600/L1900	0°	RMN	RRUS 4415 B25 RADIO 4449 B71 B85A	ADD RMN
GAMMA	116'	240°	C1	AIR 6449 B41	L2500/N2500	0°	ADD	-	-
			C2	AIR-32 B2A/B66AA	L2100/G1900/L1900	0°	RMN	-	-
			C3	APXVAARR24_43-U-NA20	L700/L600/N600/L1900	0°	RMN	RRUS 4415 B25 RADIO 4449 B71 B85A	ADD RMN

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	(18) 1-5/8"	6X12 HCS AWG	RMV
-	-	-	6X12 HCS AWG	RMN

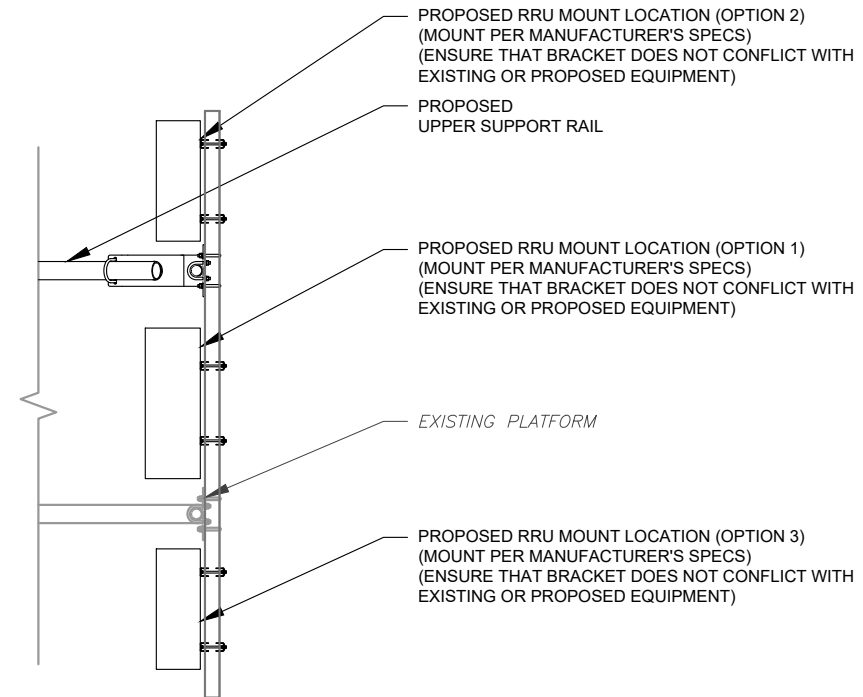
3 EQUIPMENT SCHEDULES

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(2) HYBRID TRUNK 6/24 4AWG	ADD
-	-	-	6X12 HCS AWG	RMN

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1 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



2 PROPOSED RRU MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



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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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	TC	04/20/21

ATC SITE NUMBER:
302469

ATC SITE NAME:
BRIDGEPORT CT 2

T-MOBILE SITE NAME:
BRIDGEPORT/CONNECTICUT AV

SITE ADDRESS:
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607

SEAL:

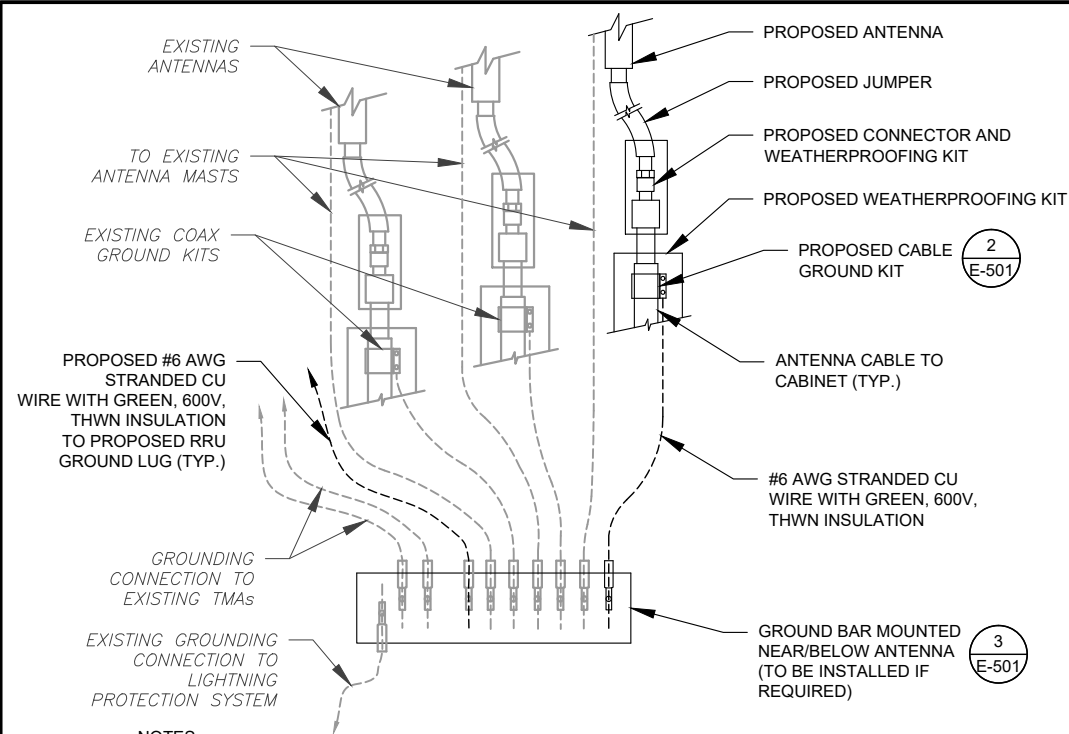


Authorized by "EOR"
 24 May 2021 05:45:34

DATE DRAWN:	04/20/21
ATC JOB NO:	13337502_G3
CUSTOMER ID:	BRIDGEPORT/CONNECTICUT AV
CUSTOMER #:	CT11452A

**CONSTRUCTION
 DETAILS**

SHEET NUMBER: **C-501**
 REVISION: **0**



NOTES:

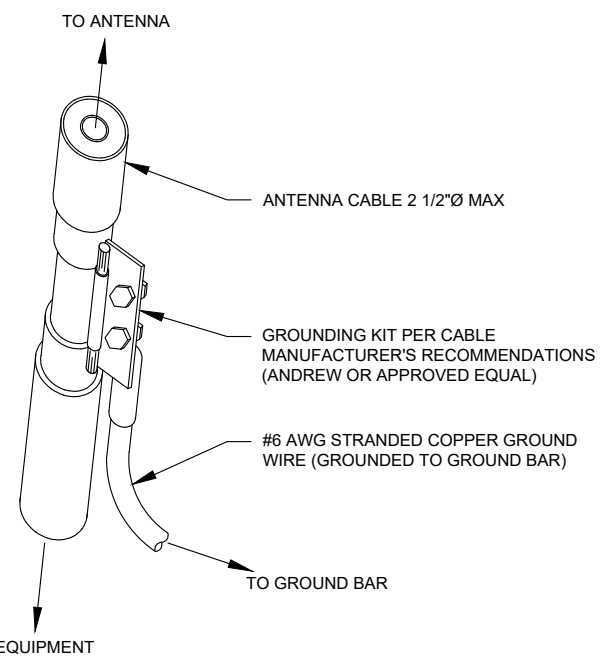
1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING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

1 TYPICAL ANTENNA GROUNDING DIAGRAM
SCALE: N.T.S.

ELECTRICAL NOTES:

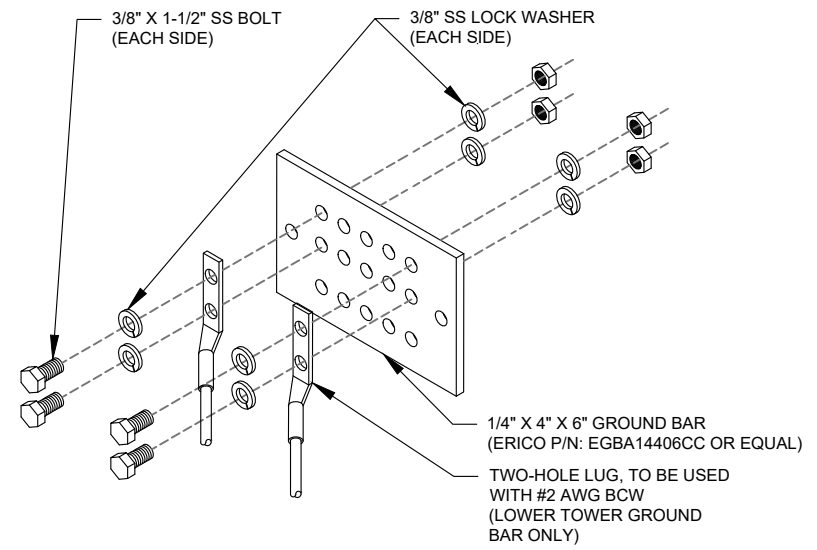
1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.
2. ATC HAS NOT VERIFIED ANY EXISTING T-MOBILE GROUND EQUIPMENT OR ELECTRICAL LOADING. PROPOSED WORK BASED ON INSTALLATION CONFIGURATION PROVIDED BY T-MOBILE. CONTRACTOR TO VERIFY EXISTING T-MOBILE PANEL HAS SUFFICIENT SPACE FOR PROPOSED BREAKER. PROPOSED CABLE AND CONDUIT SHALL BE MINIMUM SIZE PER BELOW:
3. FOR SPECIFIC CABINET/ANCILLARY EQUIPMENT WIRING REQUIREMENTS, 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"



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

2 CABLE GROUND KIT CONNECTION DETAIL
SCALE: N.T.S.



GROUND BAR NOTES:

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

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

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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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	TC	04/20/21

ATC SITE NUMBER:
302469

ATC SITE NAME:
BRIDGEPORT CT 2

T-MOBILE SITE NAME:
BRIDGEPORT/CONNECTICUT AV

SITE ADDRESS:
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607



Authorized by "EOR"
 24 May 2021 05:45:33
 T-Mobile eesign

DATE DRAWN:	04/20/21
ATC JOB NO:	13337502_G3
CUSTOMER ID:	BRIDGEPORT/CONNECTICUT AV
CUSTOMER #:	CT11452A

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

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Proposed RAN Equipment

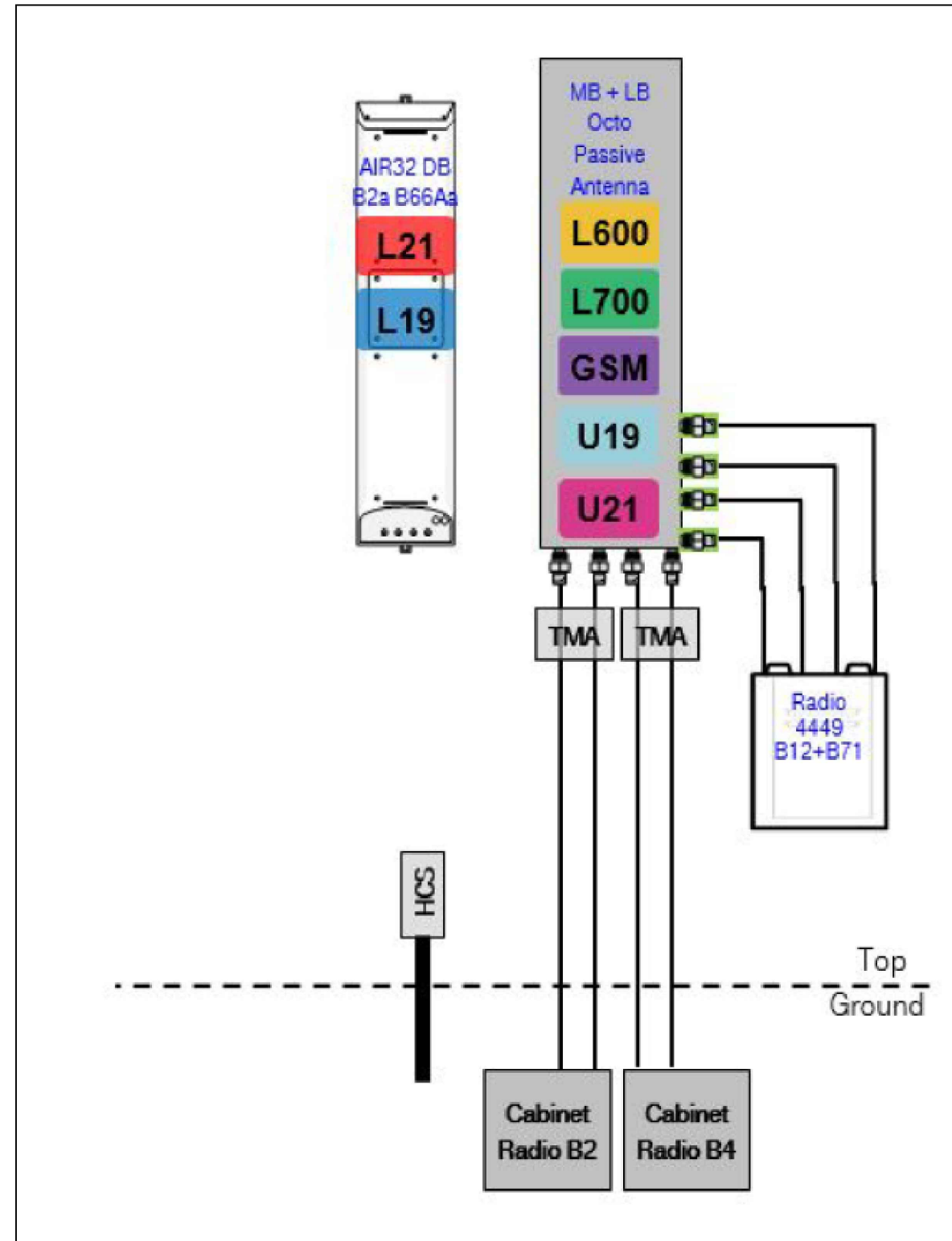
Template: 67D6A007DB Hybrid

Enclosure	1	2	3
Enclosure Type	RBS 6102	Enclosure 6160	B160
Baseband	DUW30 (x 2) DUG20 (G1900) BB 6630 (L2100, L1900) BB 6630 (L700, L600, N600)	BB 6630 (L2500) BB 6648 (N2500)	
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* Ericsson Hybrid Trunk 6/24 4AWG 50m	Ericsson Hybrid Trunk 6/24 4AWG 50m PSU 4813	
Radio	RUS01 B2 (x 6) RUS01 B4 (x 6)		
Transport System		CSR IXRe V2 (Gen2)	

RAN Scope of Work:

- U2100 will be decommissioned.
- Cabinet radios will become unused.
- Replace PPC.
- Remove Legacy Cabinet from Metro.
- 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; (1) 6X12 HCS; (1) 9X18 HCS
- Remove all coaxial lines.
- Replace 9X18 with (1) 6X24 HCS terminating at the RBS6102.
- Add (1) 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



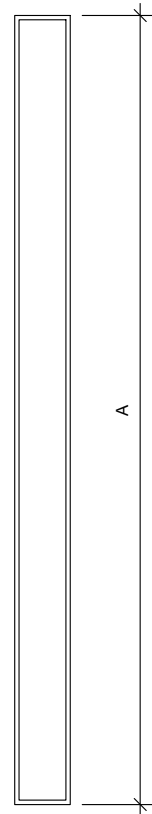
Notes:

2 ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

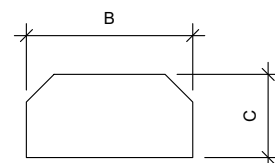
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SUPPLEMENTAL

SHEET NUMBER: R-601
REVISION: 0



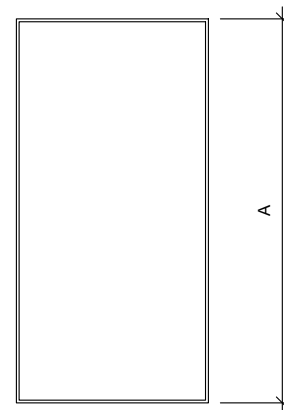
FRONT VIEW



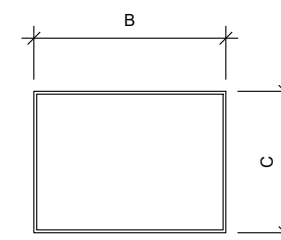
TOP VIEW

1 ANTENNA SPECIFICATIONS
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
AIR 6449 B41	33.0"	20.0"	8.5"	101.6



FRONT VIEW



TOP VIEW

2 RRU SPECIFICATIONS
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
RRUS 4415 B25	16.5"	13.4"	5.9"	46.0

SUPPLEMENTAL

SHEET NUMBER:
R-602

REVISION:
0



Enclosure 6160 AC

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

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

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

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

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

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



Preliminary technical specification for Enclosure 6160 AC

CAPACITY

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

MECHANICAL SPECIFICATION

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

POWER SYSTEM

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

SUPPLEMENTAL

SHEET NUMBER:

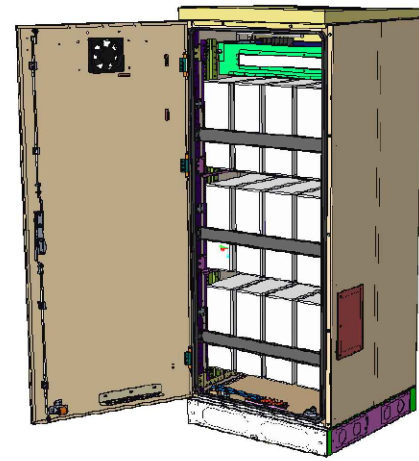
R-603

REVISION:

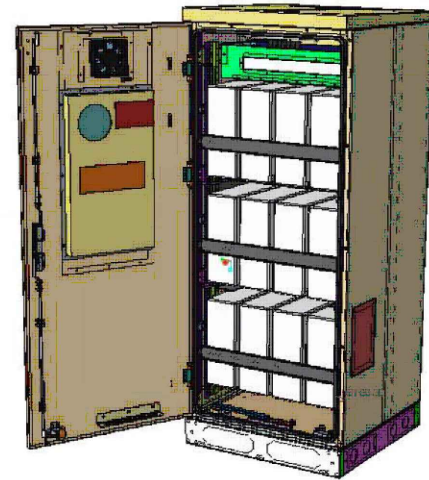
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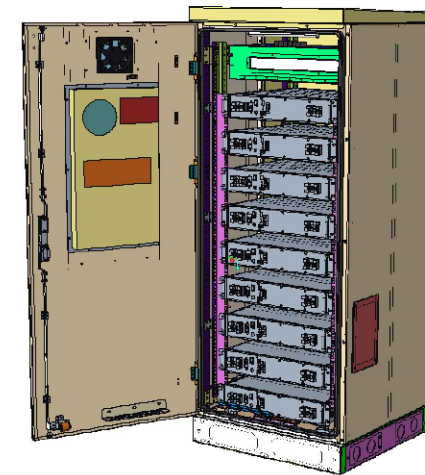
Enclosure B160



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

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

SUPPLEMENTAL

SHEET NUMBER:

R-604

REVISION:

0

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Nokia 7250 IXR-e Interconnect Routers

Release 20

Routers in the Nokia 7250 Interconnect Router (IXR)-e series¹ are used for access and aggregation and as 5G multi-access edge computing (MEC) leaf nodes. They are ideal for IP anyhaul and fixed-mobile convergence.

Ready for growth

The 7250 IXR-e series features high system throughput and a variety of interfaces. 100GE ports used for high-speed uplinks enable cost-effective 100GE ring architectures.

5G mobile and telco cloud infrastructures are moving toward 25GE interfaces. On the 7250 IXR-e series, the native 25GE ports are capable of supporting 1GE,² 10GE or 25GE transceivers. Combined with support for GE SFPs in all SFP+ cages, the 7250 IXR-e allows for seamless migrations from 1GE to 10GE to 25GE rates without the need to replace the router.



7250 IXR-e 2QSFP28 8SFP28 24SFP+



7250 IXR-e 14SFP+ 4RJ45

Compact and power saving

The 7250 IXR-e's compact (1RU) size and extended temperature range make it ideal for outside cabinet applications. It is ETSI 300-mm compliant, with all-up-front access and side-to-side air flow. A fan filter and redundant fans increase system lifetime and reduce maintenance costs.

7250 IXR-e systems consume approximately 15 percent less power than equivalent competing systems. Mass deployments for 5G will benefit significantly from this green design.

Differentiated service support

The 7250 IXR-e series supports low-latency applications while providing a large buffer memory for delay-tolerant applications. Very granular per-service and per-forwarding class policing and queuing features support differentiated quality of service (QoS), making the 7250 IXR-e series ideal for any-G aggregation and fixed-mobile network convergence.

¹ The 7250 IXR-e series is part of the 7250 IXR product family. Additional data sheets are available for other models in the product family.
² Future software deliverable

Technical specifications

Optical breakout solution available on QSFP28/QSFP+ ports: 4 x 10GE

Table 1. 7250 IXR-e series specifications

Feature	7250 IXR-e 2QSFP28 8SFP28 24SFP+	7250 IXR-e 14SFP+ 4RJ45
System throughput: Half duplex (HD) IMIX traffic	600 Gb/s	240 Gb/s
Service interfaces	<ul style="list-style-type: none"> 2 x QSFP28/QSFP+ 100/40GE 8 x SFP28/SFP+/SFP 25/10/1GE 24 x SFP+/SFP 10/1GE 	<ul style="list-style-type: none"> 14 x SFP+/SFP 10/1GE 4 x RJ-45 100/1000 Mb/s
Control interfaces	Console, management, USB*, 1PPS out, SD slot, reset button	Console, management, USB*, 1PPS out, SD slot, reset button
Timing and synchronization	<ul style="list-style-type: none"> Includes Stratum 3E oscillator ITU-T Synchronous Ethernet (SyncE) IEEE 1588v2 <ul style="list-style-type: none"> Boundary clock (BC) Profile: ITU-T G8275.1 ITU-T G.8273.2 Class B** RFC 5905 Network Time Protocol (NTP) Pulse-per-second (1PPS) timing Support for GNSS SFP 	<ul style="list-style-type: none"> Includes Stratum 3E oscillator ITU-T SyncE IEEE 1588v2 <ul style="list-style-type: none"> BC Profile: ITU-T G8275.1 ITU-T G.8273.2 Class B*** RFC 5905 NTP 1PPS timing Support for GNSS SFP
Indicators	<ul style="list-style-type: none"> Management, power status (1 & 2) LEDs Per port link and activity status LEDs System (Stat), fan, remote management (LOC) status LEDs 	<ul style="list-style-type: none"> Management, power status (1 & 2) LEDs Per port link and activity status LEDs System (Stat), fan, remote management (LOC) status LEDs
Memory buffer size	3 GB	1 GB
Hardware redundancy	Power supplies, cooling fans N+1	Power supplies, cooling fans N+1
Dimensions	<ul style="list-style-type: none"> Height: 1RU, 4.5 cm (1.75 in) Depth: 25.4 cm (10.0 in) Width: 43.8 cm (17.25 in) Rack-mountable in a 48.2-cm rack, 30-cm depth (standard 19-in equipment rack, 12-in depth) ETSI 300-mm compliant 	<ul style="list-style-type: none"> Height: 1RU, 4.5 cm (1.75 in) Depth: 25.4 cm (10.0 in) Width: 43.8 cm (17.25 in) Rack-mountable in a 48.2-cm rack, 30-cm depth (standard 19-in equipment rack, 12-in depth) ETSI 300-mm compliant
Power supply options	<ul style="list-style-type: none"> Two feeds: Modular AC and DC power supplies Supports concurrent use of AC and DC power supplies 	<ul style="list-style-type: none"> Two feeds: Modular AC and DC power supplies Supports concurrent use of AC and DC power supplies
Power requirements	<ul style="list-style-type: none"> AC input: 100 V to 240 V, 50 Hz to 60 Hz DC input: 20 V to 60 V Low-voltage DC with single feed: -40 V to -72 V 	<ul style="list-style-type: none"> AC input: 100 V to 240 V, 50 Hz to 60 Hz DC input: 20 V to 60 V Low-voltage DC with single feed: -40 V to -72 V
Cooling	<ul style="list-style-type: none"> Internal non-replaceable fans Replaceable filter Right-to-left airflow 	<ul style="list-style-type: none"> Internal non-replaceable fans Replaceable filter Right-to-left airflow
Normal operating temperature range	-40°C to +65°C (-40°F to +149°F) sustained	-40°C to +65°C (-40°F to +149°F) sustained
Shipping and storage temperature	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)
Normal humidity	5% to 95%, non-condensing	5% to 95%, non-condensing

* Future software deliverable
** For noise generation only
*** For noise generation only. Some exceptions apply.



This report was prepared for American Tower Corporation by

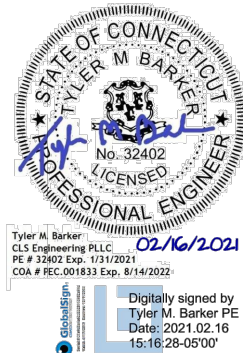


Antenna Mount Analysis Report

ATC Site Name : Bridgeport CT 2
ATC Asset Number : 302469
Engineering Number : 13337502_C8_01
Mount Elevation : 115 ft
Carrier : T-Mobile
Carrier Site Name : Bridgeport/Connecticut Av
Carrier Site Number : CT11452A
Site Location : 1069 Connecticut Avenue
 Bridgeport, CT 06607-1226
 41.183616, -73.158383
County : Fairfield
Date : February 16, 2021
Max Usage : 57%
Result : Pass (Add Support Rail)

Prepared By:
Jennifer Soza
CLS Engineering PLLC

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



Digitally signed by
Tyler M. Barker PE
Date: 2021.02.16
15:16:28-05'00'

Mount Analysis for American Tower
302469 - Bridgeport CT 2

February 16, 2021
CLS Engineering PLLC Project #41124-13337502_C8_01-01-MA-R1

Introduction

The proposed equipment is to be mounted to the existing Platform w/ Proposed Site Pro 1 HRK12-HD. 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 December 13, 2019 Site Pro 1 Assembly Drawings, Part #HRK12-HD, dated March 31, 2015
Previous Analyses	Structural Analysis by American Tower Corporation, Engineering #13202054_C3_08, dated October 29, 2020
Loading Data	ATC Application, Project #13337502 T-Mobile RFDS, Site ID: CT11452A Version: 6, dated January 19, 2021

Analysis

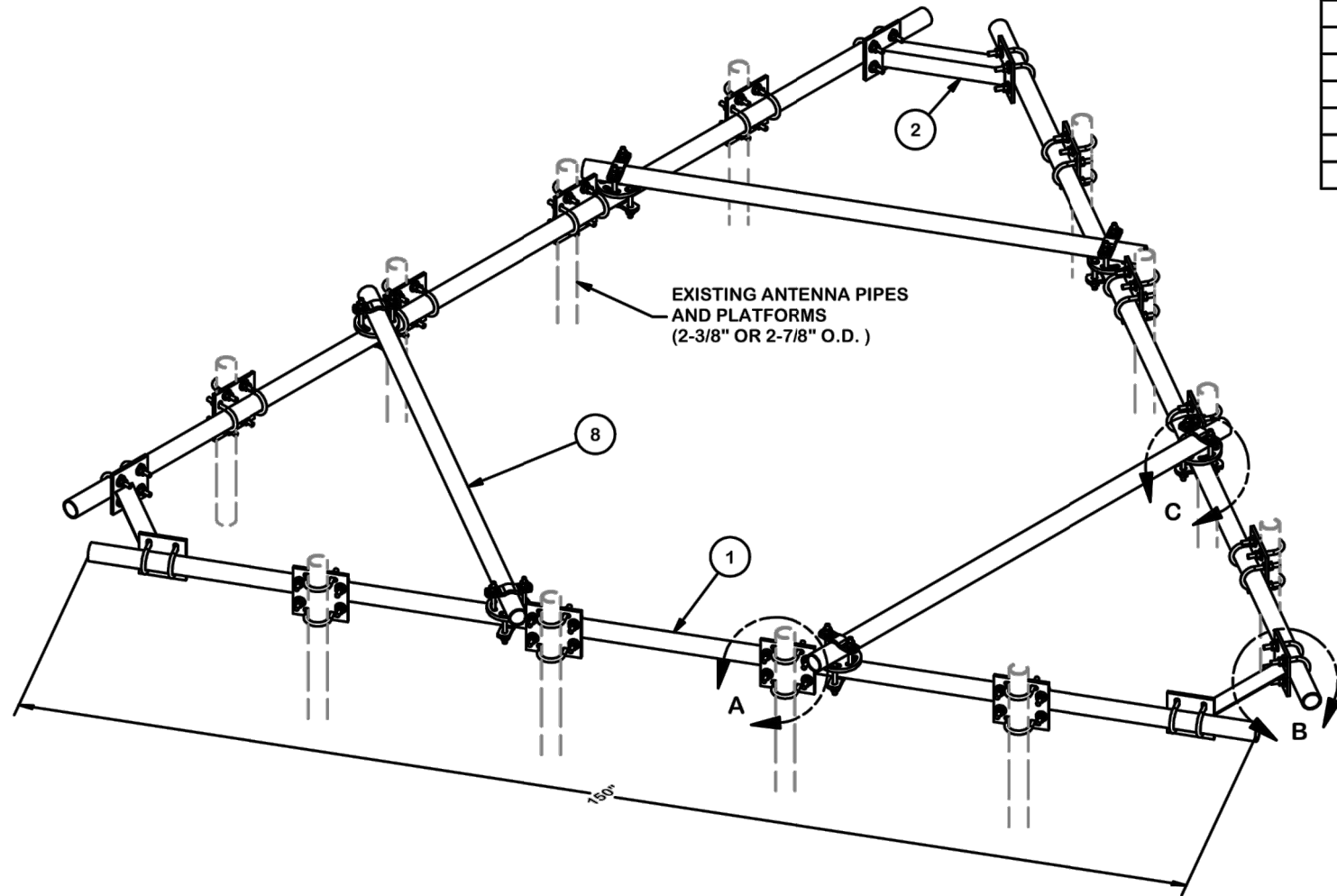
Codes	TIA-222-H
Basic Wind Speed	119 mph, V_{ult} (3-Second Gust)
Basic Wind Speed w/ Ice	50 mph (3-Second Gust) w/ 1" Radial Ice (Escalating)
Exposure Category	B
Max. Topographic Factor, K_{zt}	1.00
Risk Category	II
Maintenance Live Load	L_M : 500 lb
Spectral Response	S_s : 0.21; S_1 : 0.05; Site Class: D

Conclusion

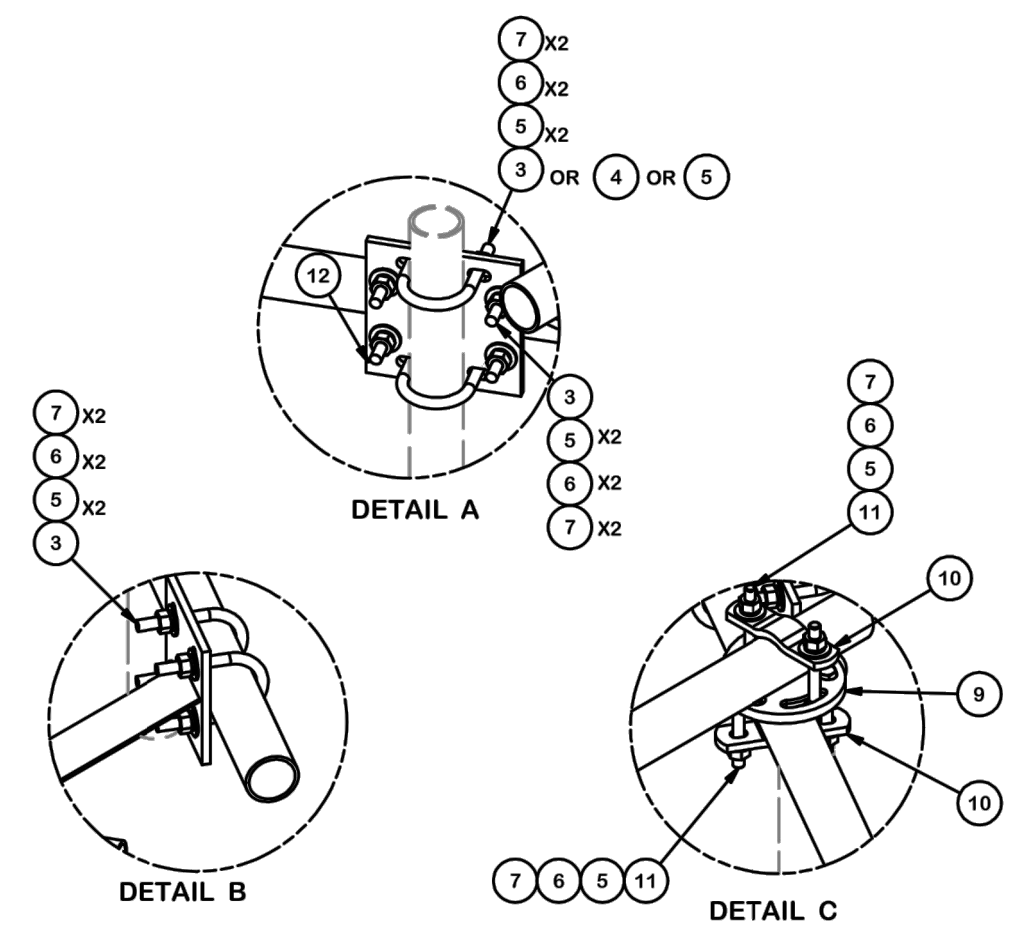
Based on the analysis, the antenna mount meets the requirements per the applicable codes listed above. The mounting configuration considered in this analysis will be capable of supporting the referenced loading pursuant to referenced standards once the following scope is executed:

- Install (1) proposed Site Pro 1 HRK12-HD support rail kit at $\pm 2'-6"$ above the Platform Base as shown. Connect to all mount pipes using Site Pro 1 SCX2 crossover plate (9 total) included in the support rail kit. Do not install Site Pro 1 AHCP kit. Install proposed bracing pipes as specified in the sketches below. Field-cut proposed bracing pipes as required.

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.



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	P2150	2-3/8" OD X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.31
2	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
3	60	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.26	15.42
4	24	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.26	6.17
5	144	G12FW	1/2" HDG USS FLATWASHER		0.03	4.91
6	144	G12LW	1/2" HDG LOCKWASHER		0.01	2.00
7	144	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	10.31
8	3	P272	2-3/8" X 72" SCH 40 GALVANIZED PIPE	72 in	23.07	69.20
9	6	X-127594	FLAT DISK CLAMP PLATE 4" CENTERS (GALV.)		2.48	14.90
10	12	X-100064	CLAMP (S) (4" V-CLAMP) GALVANIZED		0.91	10.95
11	24	G1204	1/2" x 4" HDG HEX BOLT GR5 FULL THREAD	4 in	0.27	6.48
12	12	SCX2	CROSSOVER PLATE	7 in	4.80	57.56
					TOTAL WT. #	406.61



TOLERANCE NOTES

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

PROPRIETARY NOTE:
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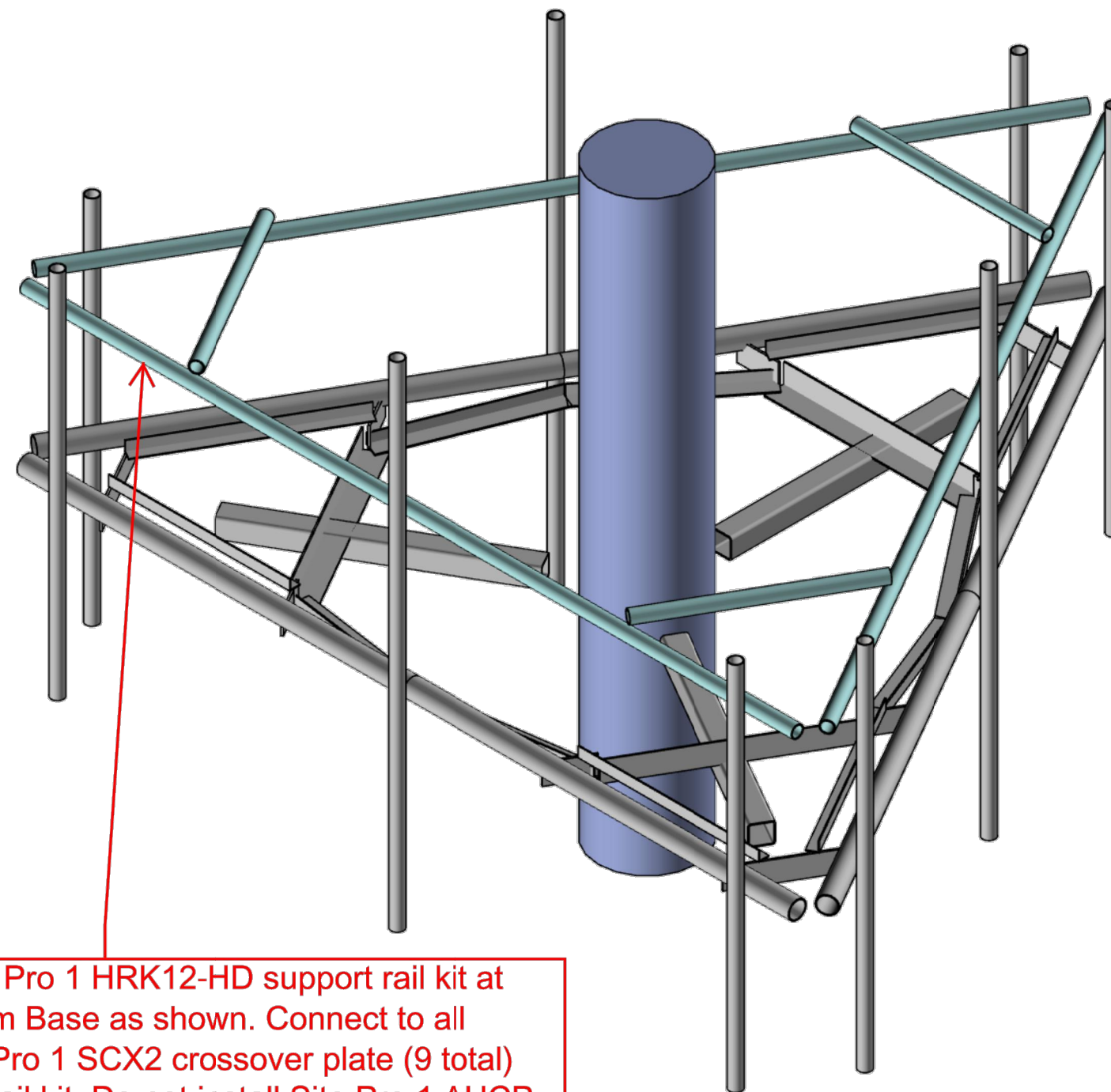
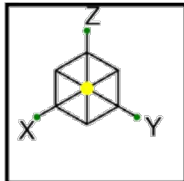
DESCRIPTION
HEAY DUTY HANDRAIL KIT FOR 12' PLATFORMS WITH 2-3/8" OR 2-7/8" ANTENNA PIPES

CPD NO.	DRAWN BY CEK	3/31/2015	ENG. APPROVAL
CLASS 81	SUB 01	DRAWING USAGE CUSTOMER	CHECKED BY BMC 3/31/2015

SITE PRO 1
 Engineering Support Team:
 1-888-753-7446

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

PART NO. HRK12-HD	PAGE 1 OF 1
DWG. NO. HRK12-HD	



Install (1) proposed Site Pro 1 HRK12-HD support rail kit at $\pm 2'-6"$ above the Platform Base as shown. Connect to all mount pipes using Site Pro 1 SCX2 crossover plate (9 total) included in the support rail kit. Do not install Site Pro 1 AHCP kit. Install proposed bracing pipes as specified in the sketches below. Field-cut proposed bracing pipes as required.

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41124-13337502_C8_01-01-MA

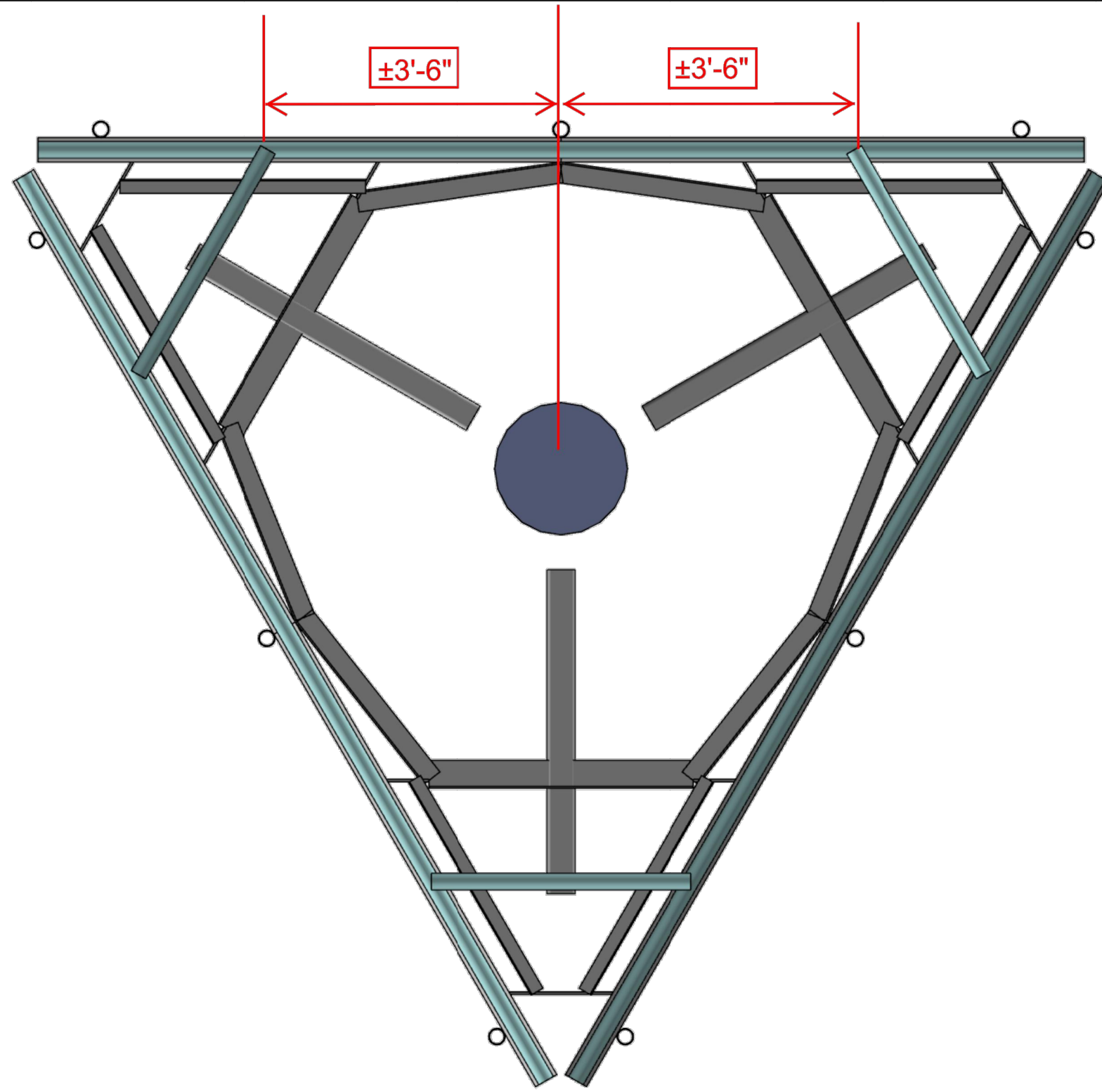
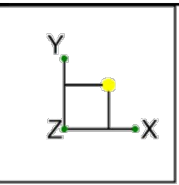
41124-13337502_C8_01-Bridgeport CT 2

Proposed Modification - Rendered

IN-1

Feb 10, 2021

41124-13337502_C8_01-01-MA.r3d



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41124-13337502_C8_01-01-MA

41124-13337502_C8_01-Bridgeport CT 2
Proposed Modification - Plan View

IN-2
Feb 10, 2021
41124-13337502_C8_01-01-MA.r3d



AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

CLSENGINEERING
PLLC

Antenna Mount Analysis Report

ATC Site Name : Bridgeport CT 2
ATC Asset Number : 302469
Engineering Number : 13337502_C8_01
Mount Elevation : 115 ft
Carrier : T-Mobile
Carrier Site Name : Bridgeport/Connecticut Av
Carrier Site Number : CT11452A
Site Location : 1069 Connecticut Avenue
Bridgeport, CT 06607-1226
41.183616, -73.158383
County : Fairfield
Date : February 16, 2021
Max Usage : 57%
Result : Pass (Add Support Rail)

Prepared By:
Jennifer Soza
CLS Engineering PLLC

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



Tyler M. Barker
CLS Engineering PLLC
PE # 32402 Exp. 1/31/2021
COA # PEC.001833 Exp. 8/14/2022
02/16/2021



Digitally signed by
Tyler M. Barker PE
Date: 2021.02.16
15:16:28-05'00'

Table of Contents

Introduction 2

Supporting Documents 2

Analysis 2

Conclusion 2

Antenna Loading 3

Structure Usages 3

Standard Conditions 4

Calculations Attached

Introduction

The proposed equipment is to be mounted to the existing Platform w/ Proposed Site Pro 1 HRK12-HD. 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 December 13, 2019 Site Pro 1 Assembly Drawings, Part #HRK12-HD, dated March 31, 2015
Previous Analyses	Structural Analysis by American Tower Corporation, Engineering #13202054_C3_08, dated October 29, 2020
Loading Data	ATC Application, Project #13337502 T-Mobile RFDS, Site ID: CT11452A Version: 6, dated January 19, 2021

Analysis

Codes	TIA-222-H
Basic Wind Speed	119 mph, V_{ult} (3-Second Gust)
Basic Wind Speed w/ Ice	50 mph (3-Second Gust) w/ 1" Radial Ice (Escalating)
Exposure Category	B
Max. Topographic Factor, K_{zt}	1.00
Risk Category	II
Maintenance Live Load	L_M : 500 lb
Spectral Response	S_s : 0.21; S_1 : 0.05; Site Class: D

Conclusion

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

- **Install (1) proposed Site Pro 1 HRK12-HD support rail kit at $\pm 2'-6"$ above the Platform Base as shown. Connect to all mount pipes using Site Pro 1 SCX2 crossover plate (9 total) included in the support rail kit. Do not install Site Pro 1 AHCP kit. Install proposed bracing pipes as specified in the sketches below. Field-cut proposed bracing pipes as required.**

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Antenna Loading

Elevation (ft)		Antennas	
Mount	Rad.	#	Name
115.0	116.0	3	RFS Celwave APXVAARR24_43-U-NA20
		3	Ericsson AIR 32 B66Aa/B2a
		3	Ericsson AIR 6449 B41
		3	Ericsson RRUS 4415 B25
		3	Ericsson RADIO 4449 B71/B85A

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Offset Side Angles	57%	Pass
Mount Pipes	45%	Pass
Stand-Off Horizontals	40%	Pass
Platform Base	24%	Pass
Support Rail	20%	Pass

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.

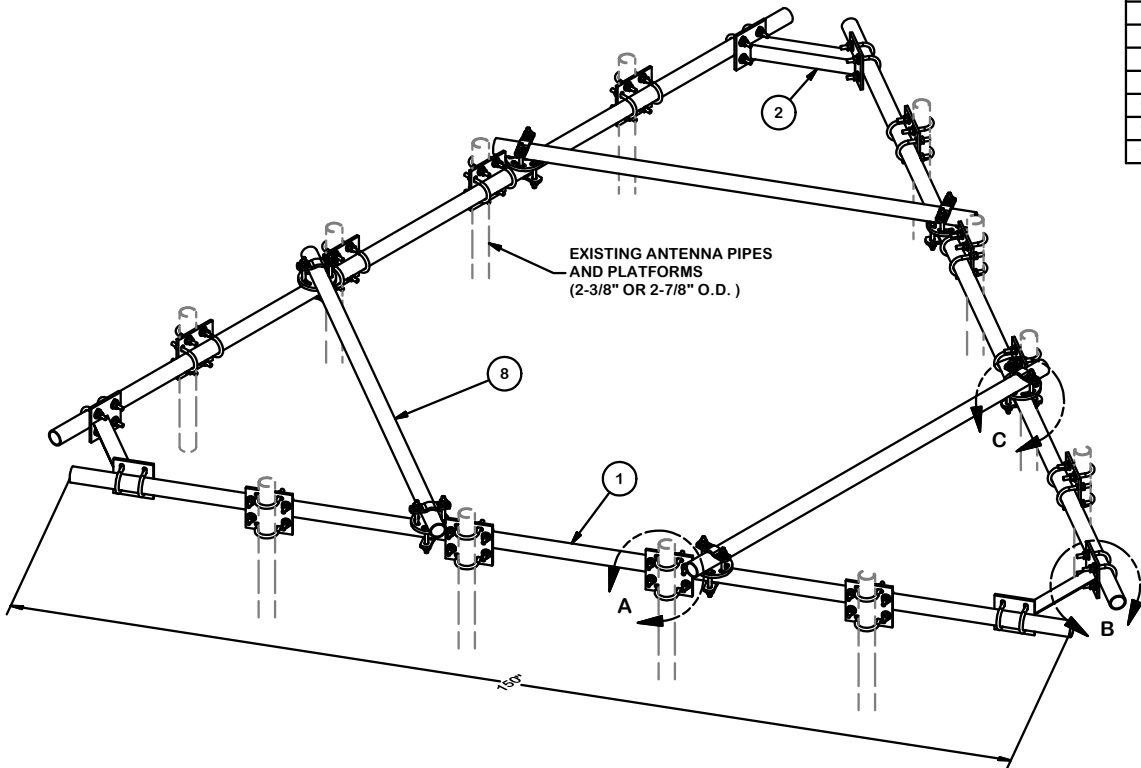
This analysis assumes the following:

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.

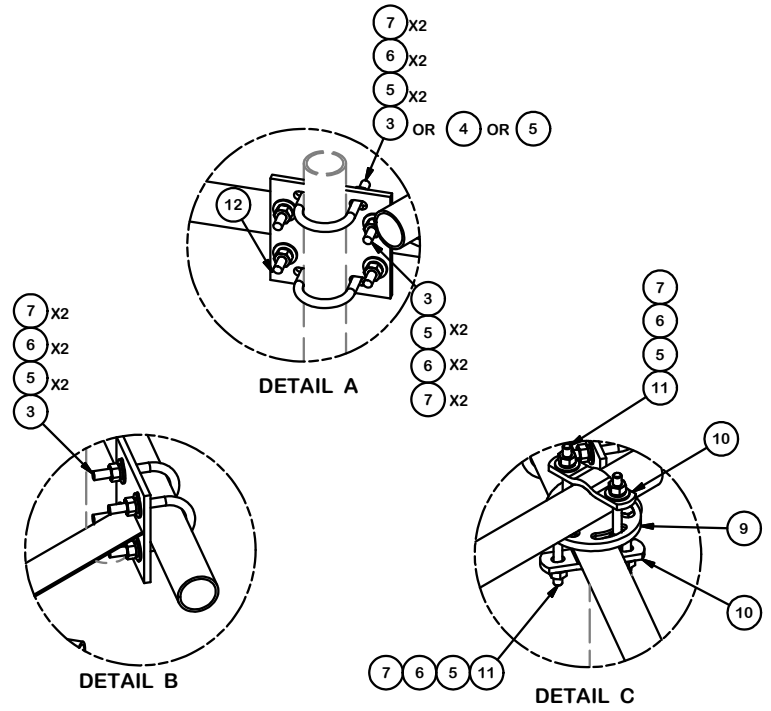
All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of the report. All opinions and conclusions contained herein are subject to revision based upon receipt of new or updated information. All services are provided 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.



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
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TOTAL WT. #						406.61

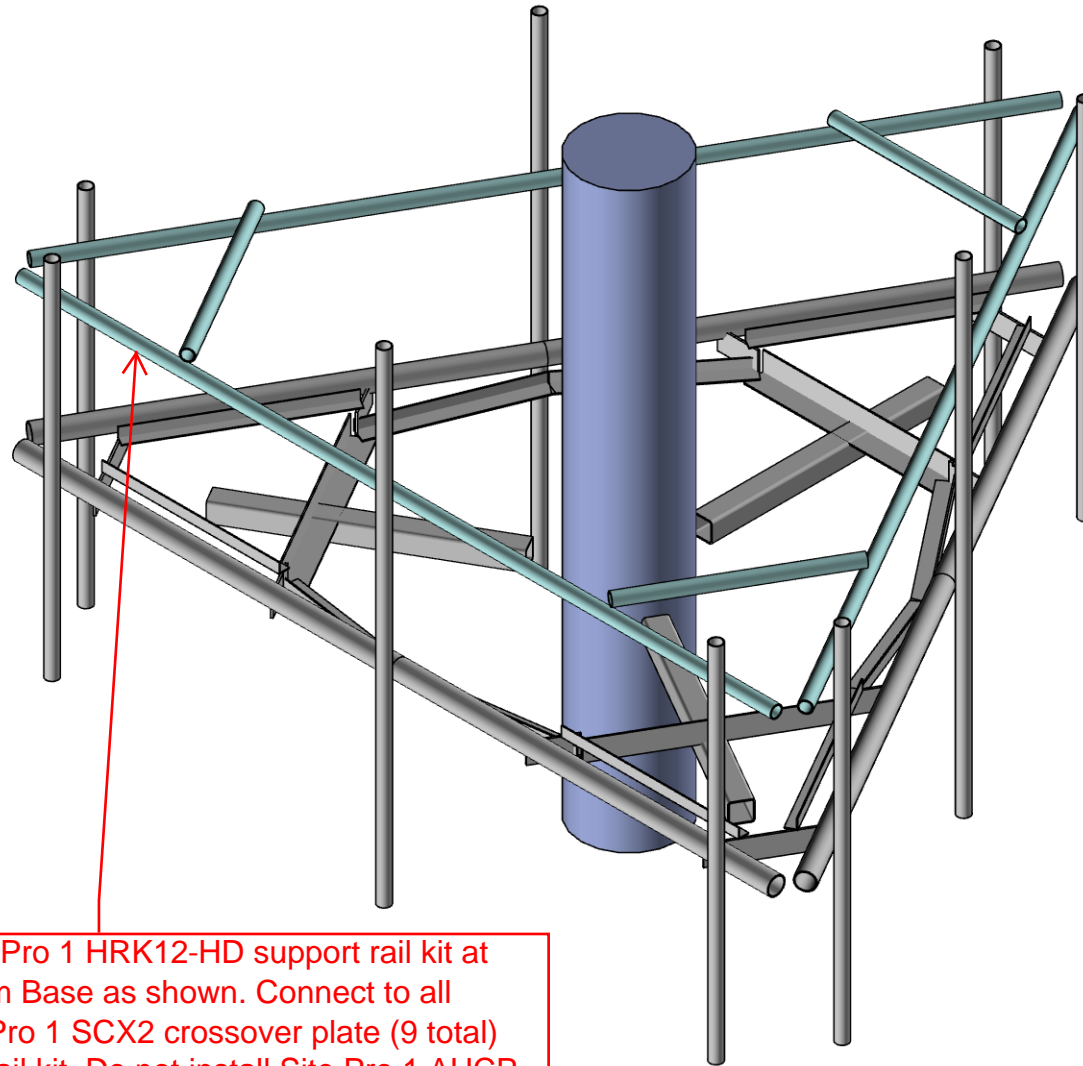
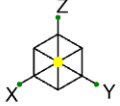


TOLERANCE NOTES
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 DRILLED AND GAS CUT HOLES ($\pm 0.030"$) - NO CONING OF HOLES
 LASER CUT EDGES AND HOLES ($\pm 0.010"$) - NO CONING OF HOLES
 BENDS ARE $\pm 1/2$ DEGREE
 ALL OTHER MACHINING ($\pm 0.030"$)
 ALL OTHER ASSEMBLY ($\pm 0.060"$)

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DESCRIPTION		HEAVY DUTY HANDRAIL KIT FOR 12' PLATFORMS WITH 2-3/8" OR 2-7/8" ANTENNA PIPES	
CPD NO.	DRAWN BY	ENG. APPROVAL	
	CEK 3/31/2015		
CLASS	SUB	DRAWING USAGE	CHECKED BY
81	01	CUSTOMER	BMC 3/31/2015

 A valmont COMPANY	Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX
	Engineering Support Team: 1-888-753-7446
PART NO.	HRK12-HD
DWG. NO.	HRK12-HD



Install (1) proposed Site Pro 1 HRK12-HD support rail kit at $\pm 2'-6"$ above the Platform Base as shown. Connect to all mount pipes using Site Pro 1 SCX2 crossover plate (9 total) included in the support rail kit. Do not install Site Pro 1 AHCP kit. Install proposed bracing pipes as specified in the sketches below. Field-cut proposed bracing pipes as required.

Telamon CLS

ADK

41124-13337502_C8_01-01-MA

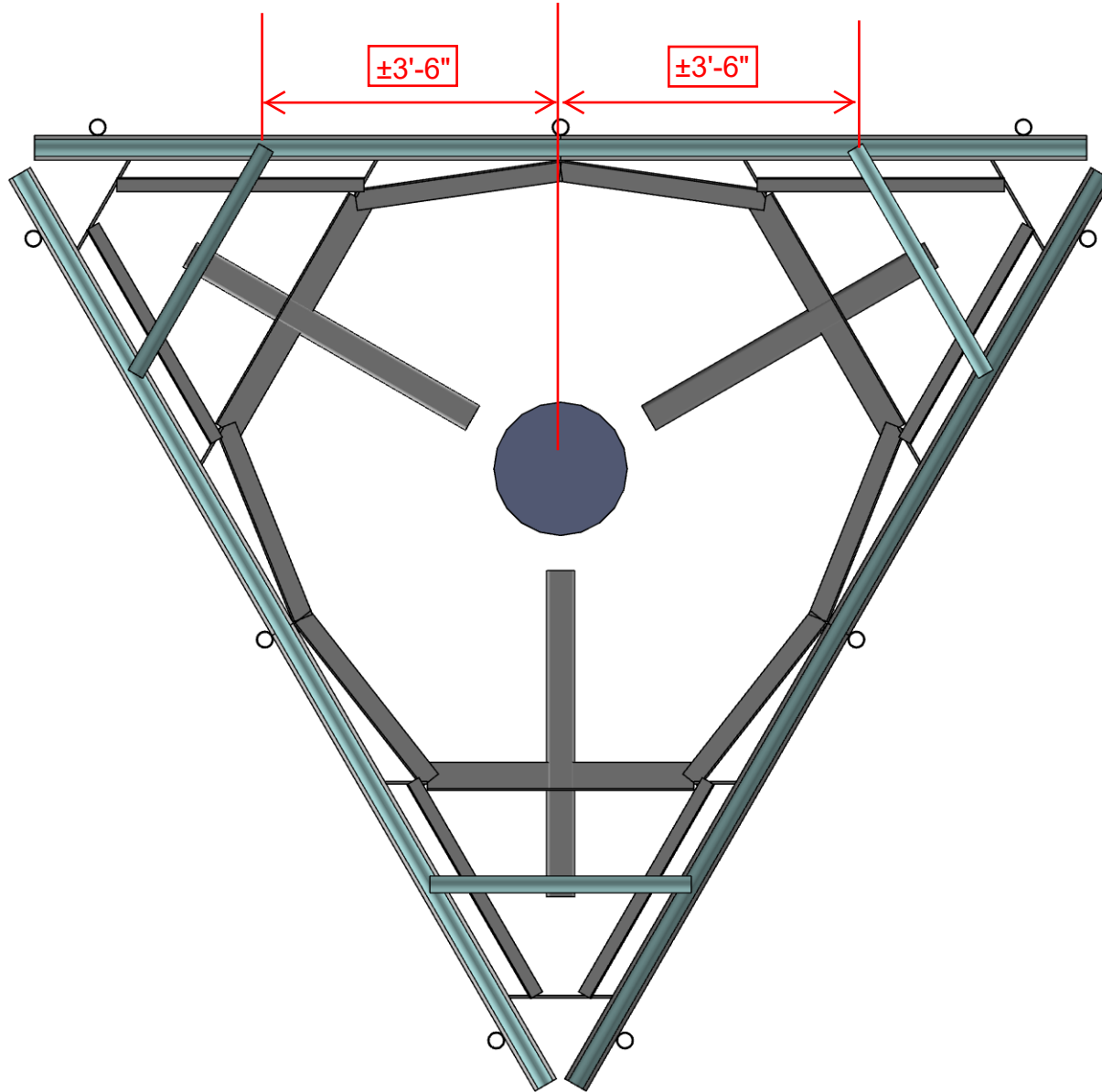
41124-13337502_C8_01-Bridgeport CT 2

Proposed Modification - Rendered

IN-1

Feb 10, 2021

41124-13337502_C8_01-01-MA.r3d



Telamon CLS

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41124-13337502_C8_01-01-MA

41124-13337502_C8_01-Bridgeport CT 2

Proposed Modification - Plan View

IN-2

Feb 10, 2021

41124-13337502_C8_01-01-MA.r3d

Wind & Ice Loading			
Nominal Mount Elevation (AGL), z_{mount}	115 ft	K_a	0.90
Nominal Rad Elevation (AGL), z_{rad}	116 ft	K_d	0.95
Elevation AMSL (ft)	30 ft	K_e	1.00
TIA Standard	H	K_z	1.03
Basic Wind Speed, V_{ult} (bare)	119 mph	K_{zt}	1.00
Basic Wind Speed, V (ice)	50 mph	K_s	1.00
Design Ice Thickness, t_i	1 in	t_{iz}	1.13 in
Exposure Category	B	G_h	1.00
Risk Category	II	q_z (bare)	35.4 psf
Seismic Response Coeff., C_s	0.11	q_z (ice)	6.2 psf

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

Section Set Label	Shape Label	F_A (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Offset Arm	HSS4X4X4	21.23	1.55	8.62
Face Horiz. Pipe	PIPE_3.0	11.15	3.24	6.41
Circular PL Angle 2	L3X2X.25	15.92	1.48	5.87
Offset Side PL	PL4x.375	21.23	3.53	5.42
Offset Side Angle	4x4x0.25	21.23	1.55	8.51
Offset End Plate	PL4x.375	21.23	3.53	5.42
Grating Angle	L2x2x3	10.61	1.41	4.99
MOD Support Rail	PIPE_2.0	7.56	2.61	4.86
MOD SR Bracing	PIPE_2.0	7.56	2.61	4.86
MOUNT_PIPE_2.0	PIPE_2.0	7.56	2.61	4.86

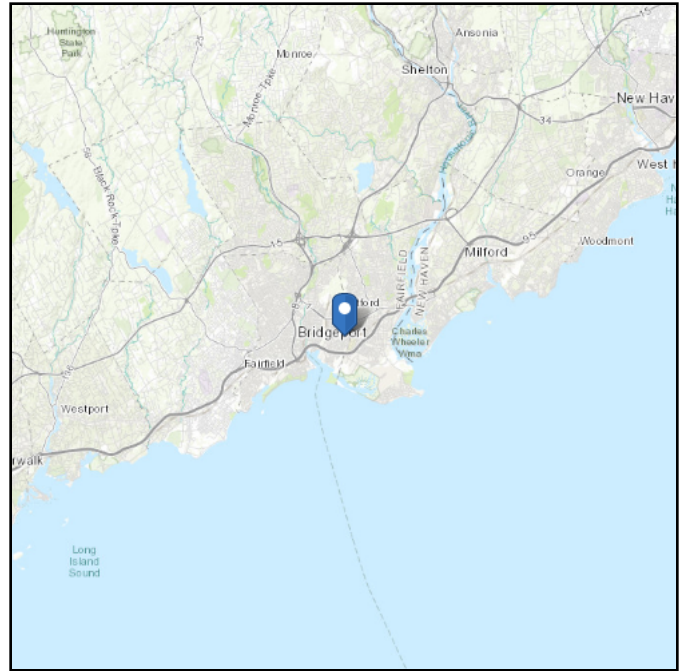
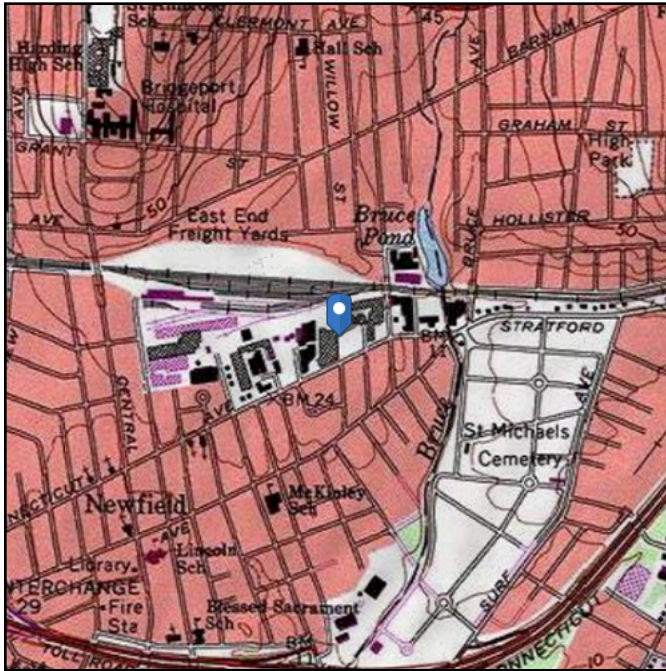
Appurtenances																														
Appurtenance Model	Status	Azimuth Offset ($^\circ$, \cup)	Rad Elev. Override (ft)	Swap Width & Depth	Area Factor		Qty. per Azimuth			Total Qty. Override	0° Joints		120° Joints		240° Joints		Height (in)	Width (in)	Depth (in)	Weight (Bare) (lb)	Shape	Weight of Ice (lb)	EPA_A (Bare) (ft ²)		EPA_A (Ice) (ft ²)		F_A (Bare) (lb)		F_A (Ice) (lb)	
					Front	Side	0°	120°	240°		1	2	1	2	1	2							N	T	N	T	N	T		
							1	2	1		2	1	2	1	2	1							2	N	T	N	T	N	T	
AIR 32 B66Aa/B2a				<input type="checkbox"/>			1	1	1		1_A3T	1_A3B	2_A3T	2_A3B	3_A3T	3_A3B	56.6	12.9	8.7	132.2	Flat	111.52	6.51	4.71	7.82	5.95	207.81	150.43	44.08	33.54
APXVAARR24_43-U-NA20				<input type="checkbox"/>			1	1	1		1_A2T	1_A2B	2_A2T	2_A2B	3_A2T	3_A2B	95.9	24	8.7	153.3	Generic	255.34	14.67	5.32	16.39	6.84	468.31	169.83	92.39	38.55
AIR 6449 B41				<input type="checkbox"/>			1	1	1		1_A1T	1_A1B	2_A1T	2_A1B	3_A1T	3_A1B	33	20	8.5	101.6	Flat	92.25	5.50	2.46	6.54	3.26	175.58	78.44	36.88	18.35
RRUS 4415 B25				<input checked="" type="checkbox"/>	0.5	0.5	1	1	1		1_R2TT		2_R2TT		3_R2TT		14.96	13.19	5.39	44	Flat	28.19	0.34	0.82	0.55	1.11	10.83	26.25	3.10	6.25
RADIO 4449 B71/B85A				<input checked="" type="checkbox"/>	0.5	0.5	1	1	1		1_R2TT		2_R2TT		3_R2TT		14.96	13.19	10.51	74.95	Flat	39.16	0.66	0.82	0.92	1.11	20.91	26.25	5.17	6.25

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 30.21 ft (NAVD 88)
Latitude: 41.183617
Longitude: -73.158383



Wind

Results:

Wind Speed:	119 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Tue Feb 16 2021

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

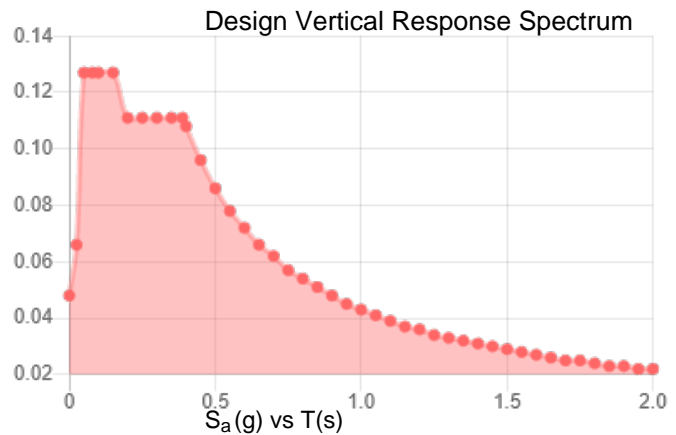
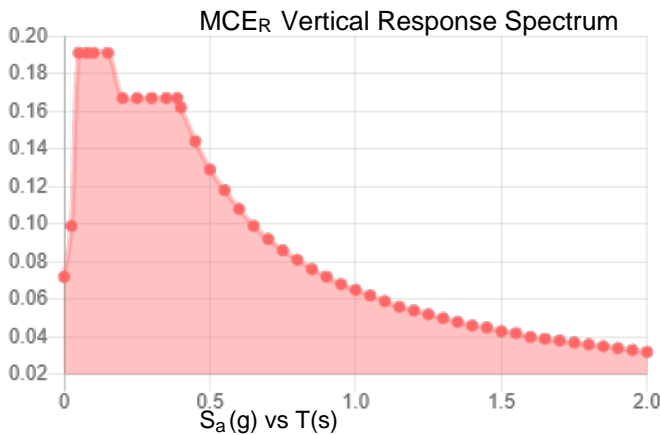
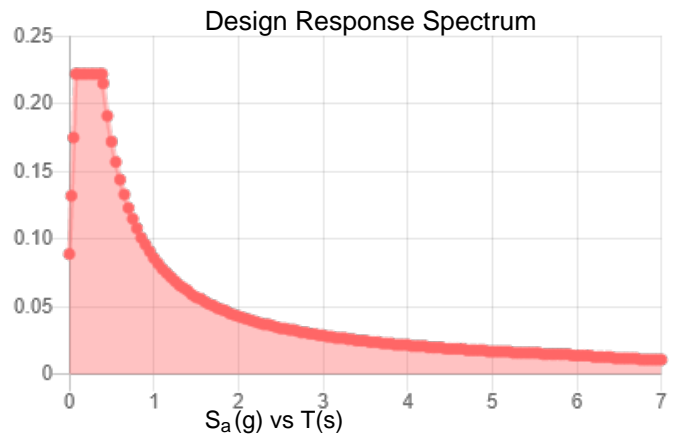
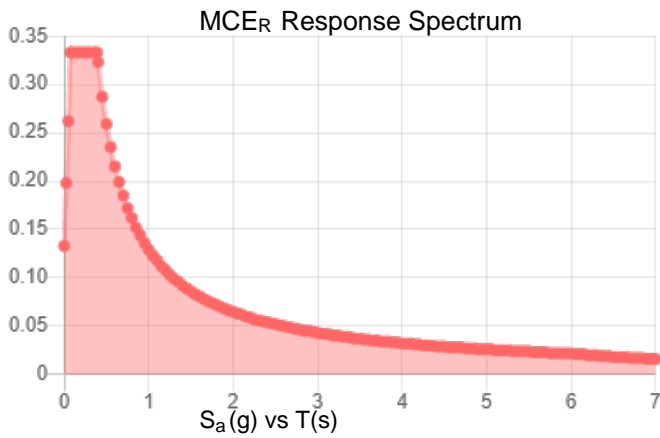
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.208	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.118
F_v :	2.4	PGA _M :	0.185
S_{MS} :	0.333	F_{PGA} :	1.564
S_{M1} :	0.129	I_e :	1
S_{DS} :	0.222	C_v :	0.716

Seismic Design Category B



Data Accessed:

Tue Feb 16 2021

Date Source:

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

Ice

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 15 F
Gust Speed: 50 mph

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

Date Accessed: Tue Feb 16 2021

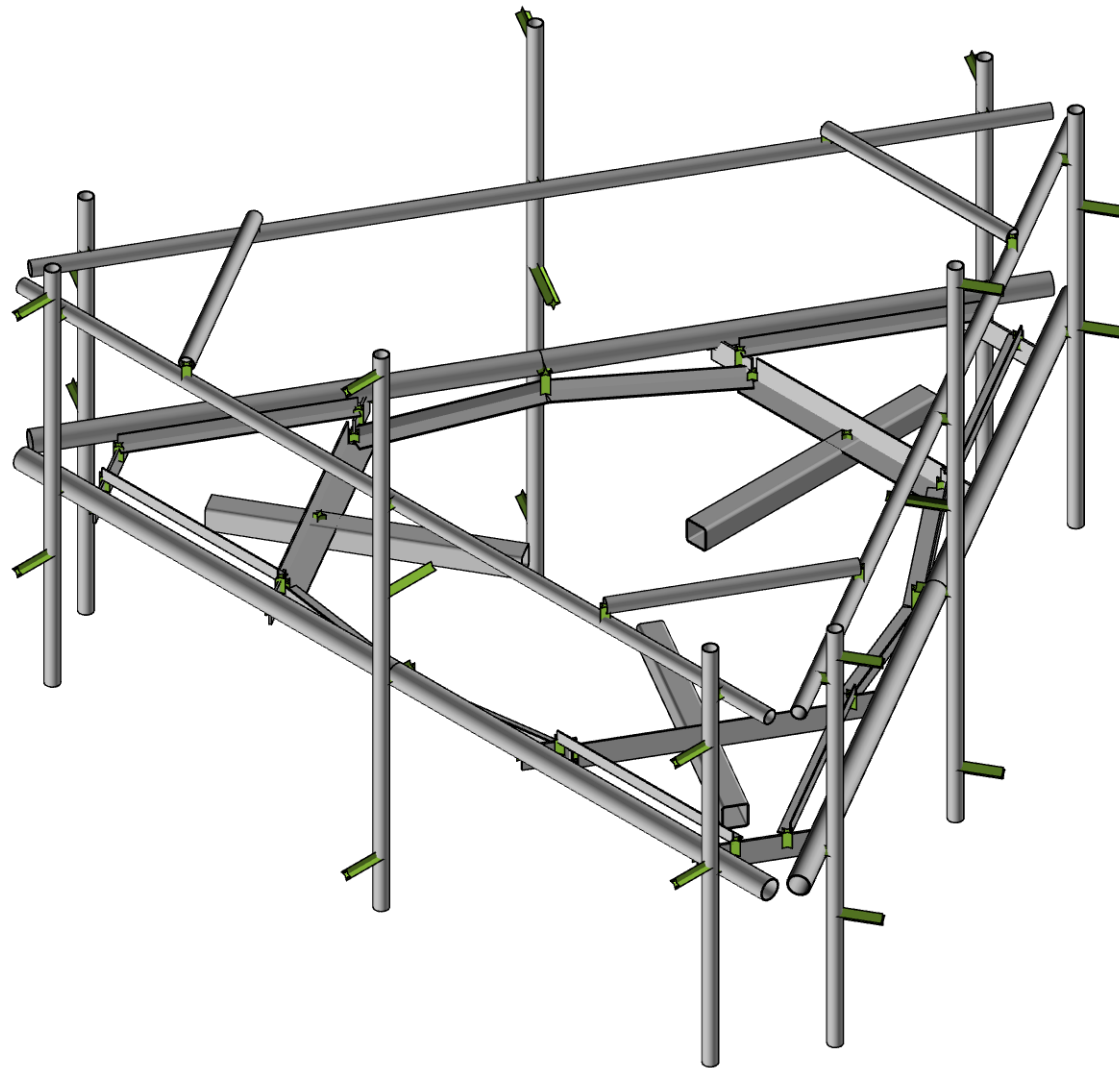
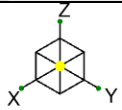
Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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

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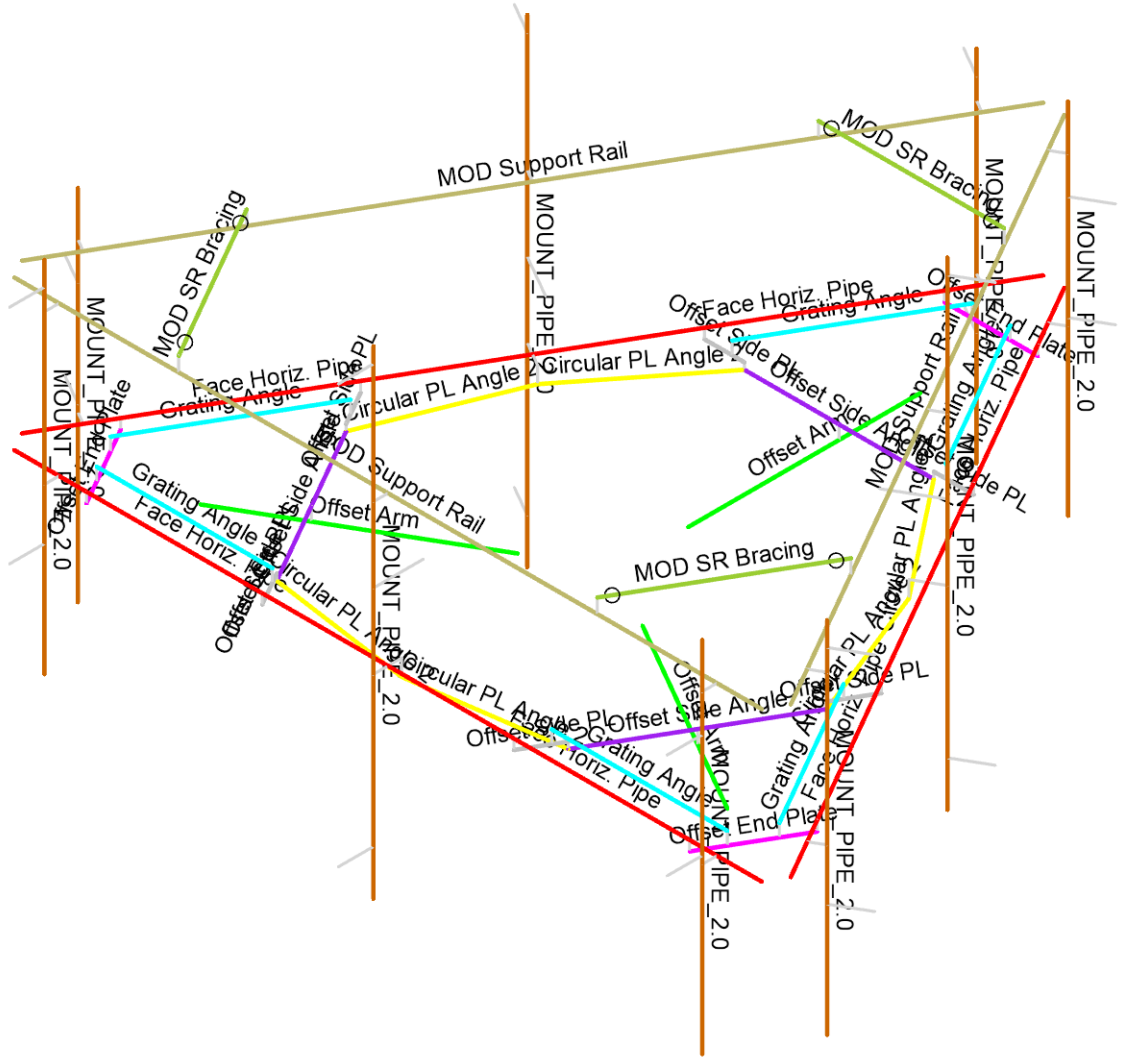
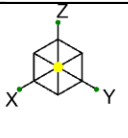


Envelope Only Solution

Telamon CLS
JLS
41124-13337502_C8_01-01-MA-R1

41124-13337502_C8_01-Bridgeport CT 2
Rendered

SK-1
Feb 16, 2021
41124-13337502_C8_01-01-MA-R1.r3d



Section Sets	
na	na
Offset Arm	Offset Arm
Face Horiz. Pipe	Face Horiz. Pipe
Offset Side PL	Offset Side PL
Offset End Plate	Offset End Plate
Grating Angle	Grating Angle
MOUNT_PIPE_2.0	MOUNT_PIPE_2.0
Circular PL Angle 2	Circular PL Angle 2
Offset Side Angle	Offset Side Angle
MOD Support Rail	MOD Support Rail
MOD SR Bracing	MOD SR Bracing
RIGID	RIGID

Envelope Only Solution

Telamon CLS

JLS

41124-13337502_C8_01-01-MA-R1

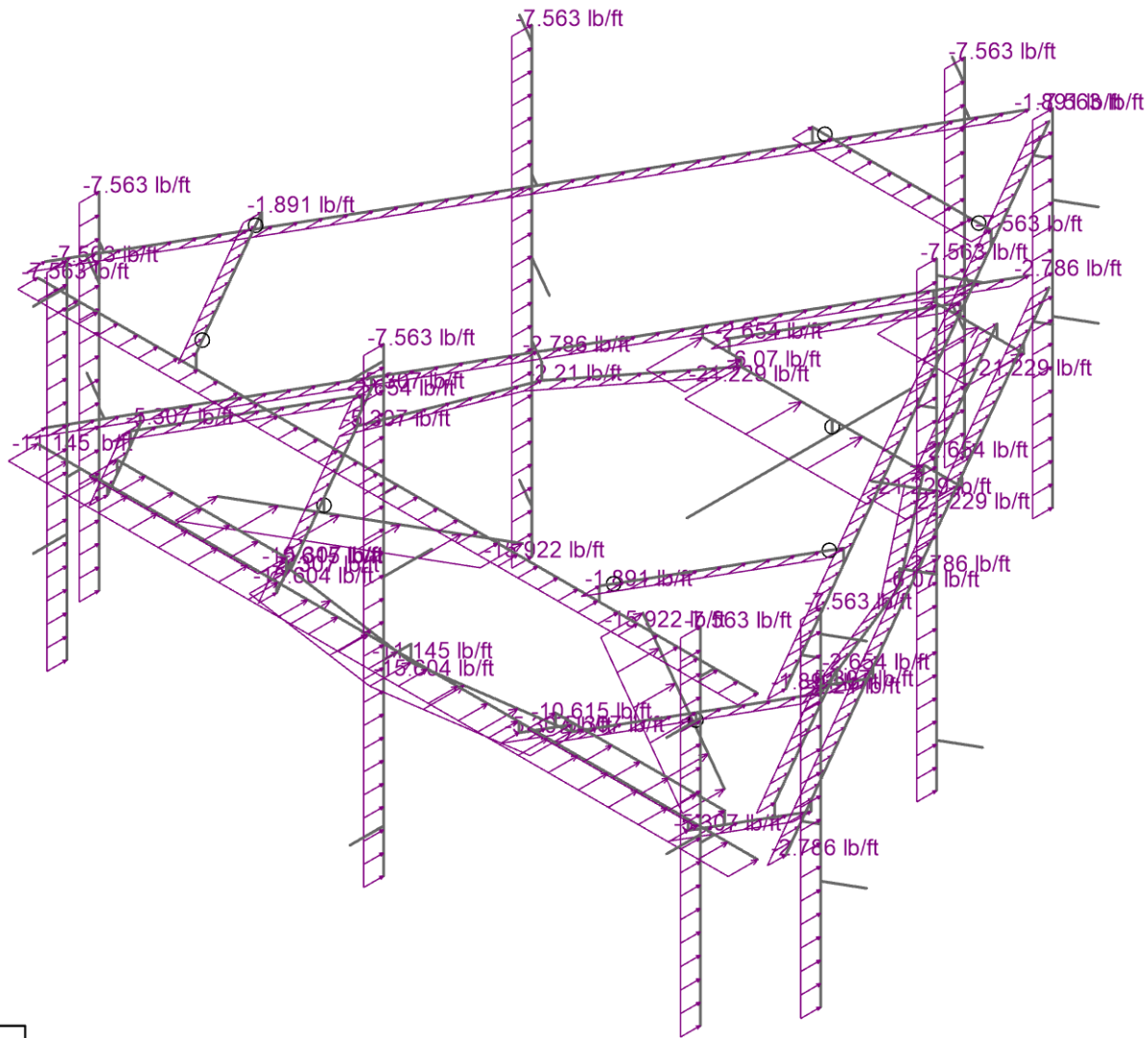
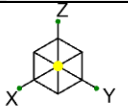
41124-13337502_C8_01-Bridgeport CT 2

Section Sets

SK-4

Feb 16, 2021

41124-13337502_C8_01-01-MA-R1.r3d

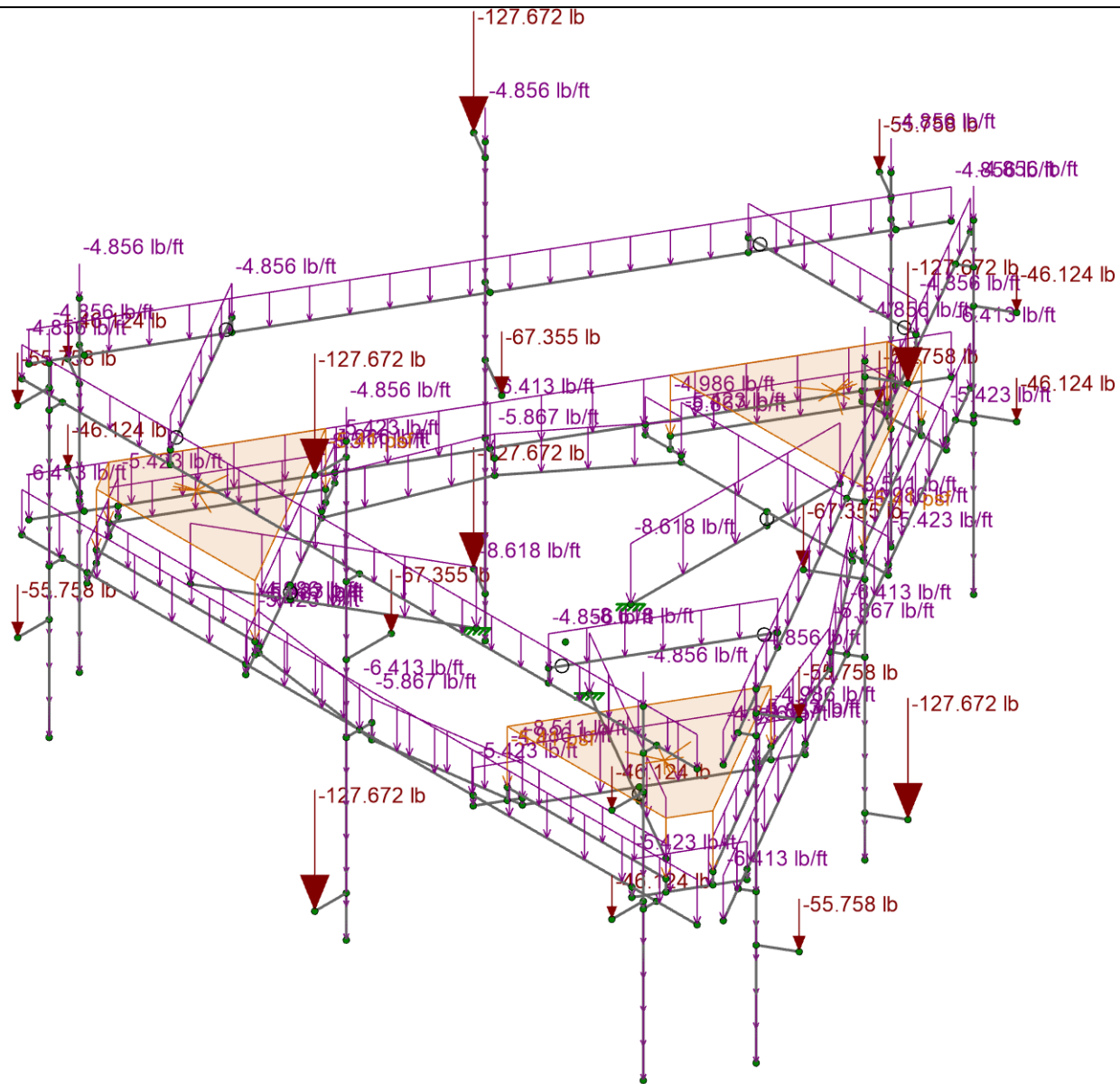
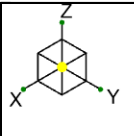


Loads: BLC 5, Structure Wind 0
Envelope Only Solution

Telamon CLS
JLS
41124-13337502_C8_01-01-MA-R1

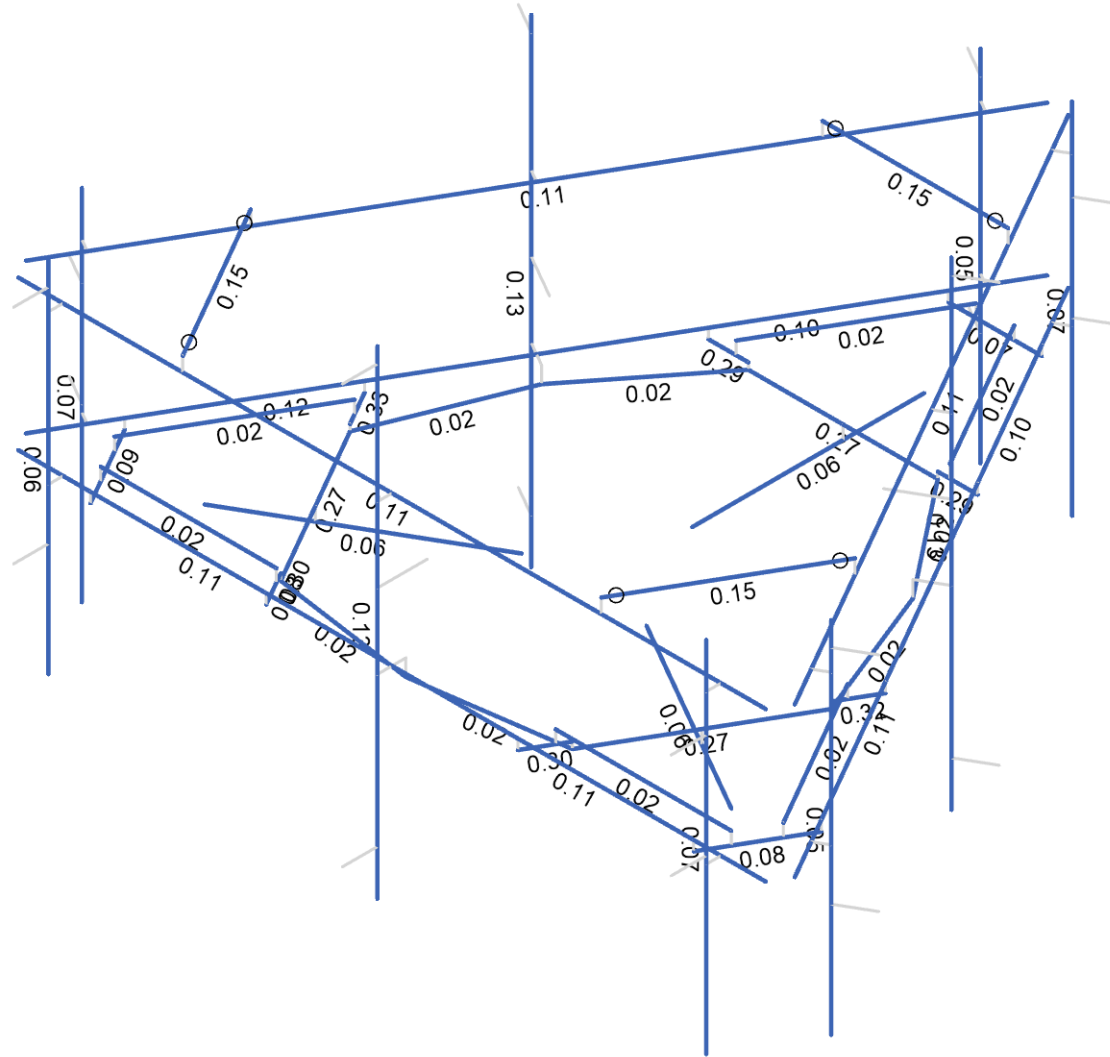
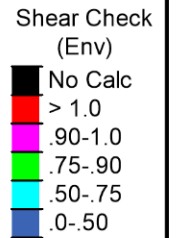
41124-13337502_C8_01-Bridgeport CT 2
Distributed Load – Normal Wind

SK-6
Feb 16, 2021
41124-13337502_C8_01-01-MA-R1.r3d



Loads: BLC 2, Ice Dead
Envelope Only Solution

Telamon CLS	41124-13337502_C8_01-Bridgeport CT 2	SK-7
JLS		Feb 16, 2021
41124-13337502_C8_01-01-MA-R1	Ice Dead Loads	41124-13337502_C8_01-01-MA-R1.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Telamon CLS	41124-13337502_C8_01-Bridgeport CT 2	SK-9
JLS		Feb 16, 2021
41124-13337502_C8_01-01-MA-R1	Envelope Member Check Results – Shear	41124-13337502_C8_01-01-MA-R1.r3d

Basic Load Cases

	BLC Description	Category	Z Gravity	Nodal	Distributed	Area(Member)
1	Dead	DL	-1	24		3
2	Ice Dead	RL		24	49	3
3	BLC 1 Transient Area Loads	None			30	
4	BLC 2 Transient Area Loads	None			30	
5	Structure Wind 0°	None			48	
6	Structure Wind 30°	None			78	
7	Structure Wind 45°	None			98	
8	Structure Wind 60°	None			96	
9	Structure Wind 90°	None			39	
10	Structure Wind 120°	None			96	
11	Structure Wind 135°	None			98	
12	Structure Wind 150°	None			76	
13	Structure Wind 180°	None			48	
14	Structure Wind 210°	None			78	
15	Structure Wind 225°	None			98	
16	Structure Wind 240°	None			96	
17	Structure Wind 270°	None			39	
18	Structure Wind 300°	None			96	
19	Structure Wind 315°	None			98	
20	Structure Wind 330°	None			76	
21	Structure Wind w/ Ice 0°	None			48	
22	Structure Wind w/ Ice 30°	None			78	
23	Structure Wind w/ Ice 45°	None			98	
24	Structure Wind w/ Ice 60°	None			96	
25	Structure Wind w/ Ice 90°	None			39	
26	Structure Wind w/ Ice 120°	None			96	
27	Structure Wind w/ Ice 135°	None			98	
28	Structure Wind w/ Ice 150°	None			76	
29	Structure Wind w/ Ice 180°	None			48	
30	Structure Wind w/ Ice 210°	None			78	
31	Structure Wind w/ Ice 225°	None			98	
32	Structure Wind w/ Ice 240°	None			96	
33	Structure Wind w/ Ice 270°	None			39	
34	Structure Wind w/ Ice 300°	None			96	
35	Structure Wind w/ Ice 315°	None			98	
36	Structure Wind w/ Ice 330°	None			76	
37	Antenna Wind 0°	None		24		
38	Antenna Wind 30°	None		48		
39	Antenna Wind 45°	None		48		
40	Antenna Wind 60°	None		48		
41	Antenna Wind 90°	None		24		
42	Antenna Wind 120°	None		48		
43	Antenna Wind 135°	None		48		
44	Antenna Wind 150°	None		48		
45	Antenna Wind 180°	None		24		
46	Antenna Wind 210°	None		48		
47	Antenna Wind 225°	None		48		
48	Antenna Wind 240°	None		48		
49	Antenna Wind 270°	None		24		
50	Antenna Wind 300°	None		48		
51	Antenna Wind 315°	None		48		
52	Antenna Wind 330°	None		48		
53	Antenna Wind w/ Ice 0°	None		24		
54	Antenna Wind w/ Ice 30°	None		48		
55	Antenna Wind w/ Ice 45°	None		48		
56	Antenna Wind w/ Ice 60°	None		48		
57	Antenna Wind w/ Ice 90°	None		24		
58	Antenna Wind w/ Ice 120°	None		48		

Basic Load Cases (Continued)

	BLC Description	Category	Z Gravity	Nodal	Distributed	Area(Member)
59	Antenna Wind w/ Ice 135°	None		48		
60	Antenna Wind w/ Ice 150°	None		48		
61	Antenna Wind w/ Ice 180°	None		24		
62	Antenna Wind w/ Ice 210°	None		48		
63	Antenna Wind w/ Ice 225°	None		48		
64	Antenna Wind w/ Ice 240°	None		48		
65	Antenna Wind w/ Ice 270°	None		24		
66	Antenna Wind w/ Ice 300°	None		48		
67	Antenna Wind w/ Ice 315°	None		48		
68	Antenna Wind w/ Ice 330°	None		48		
69	Seismic X	ELX		24	49	
70	Seismic Y	ELY		24	49	
71	Seismic Z	ELZ		24	49	
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	1.244	ELX	-1	ELY			
36	1.2D + 1.0Ev + 1.0Eh_ 30°	Yes	Y	DL	1.244	ELX	-0.866	ELY	0.5		
37	1.2D + 1.0Ev + 1.0Eh_ 45°	Yes	Y	DL	1.244	ELX	-0.707	ELY	0.707		
38	1.2D + 1.0Ev + 1.0Eh_ 60°	Yes	Y	DL	1.244	ELX	-0.5	ELY	0.866		
39	1.2D + 1.0Ev + 1.0Eh_ 90°	Yes	Y	DL	1.244	ELX		ELY	1		

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
40	1.2D + 1.0Ev + 1.0Eh 120°	Yes	Y	DL	1.244	ELX	0.5	ELY	0.866		
41	1.2D + 1.0Ev + 1.0Eh 135°	Yes	Y	DL	1.244	ELX	0.707	ELY	0.707		
42	1.2D + 1.0Ev + 1.0Eh 150°	Yes	Y	DL	1.244	ELX	0.866	ELY	0.5		
43	1.2D + 1.0Ev + 1.0Eh 180°	Yes	Y	DL	1.244	ELX	1	ELY			
44	1.2D + 1.0Ev + 1.0Eh 210°	Yes	Y	DL	1.244	ELX	0.866	ELY	-0.5		
45	1.2D + 1.0Ev + 1.0Eh 225°	Yes	Y	DL	1.244	ELX	0.707	ELY	-0.707		
46	1.2D + 1.0Ev + 1.0Eh 240°	Yes	Y	DL	1.244	ELX	0.5	ELY	-0.866		
47	1.2D + 1.0Ev + 1.0Eh 270°	Yes	Y	DL	1.244	ELX		ELY	-1		
48	1.2D + 1.0Ev + 1.0Eh 300°	Yes	Y	DL	1.244	ELX	-0.5	ELY	-0.866		
49	1.2D + 1.0Ev + 1.0Eh 315°	Yes	Y	DL	1.244	ELX	-0.707	ELY	-0.707		
50	1.2D + 1.0Ev + 1.0Eh 330°	Yes	Y	DL	1.244	ELX	-0.866	ELY	-0.5		
51	0.9D - 1.0Ev + 1.0Eh 0°	Yes	Y	DL	0.856	ELX	-1	ELY			
52	0.9D - 1.0Ev + 1.0Eh 30°	Yes	Y	DL	0.856	ELX	-0.866	ELY	0.5		
53	0.9D - 1.0Ev + 1.0Eh 45°	Yes	Y	DL	0.856	ELX	-0.707	ELY	0.707		
54	0.9D - 1.0Ev + 1.0Eh 60°	Yes	Y	DL	0.856	ELX	-0.5	ELY	0.866		
55	0.9D - 1.0Ev + 1.0Eh 90°	Yes	Y	DL	0.856	ELX		ELY	1		
56	0.9D - 1.0Ev + 1.0Eh 120°	Yes	Y	DL	0.856	ELX	0.5	ELY	0.866		
57	0.9D - 1.0Ev + 1.0Eh 135°	Yes	Y	DL	0.856	ELX	0.707	ELY	0.707		
58	0.9D - 1.0Ev + 1.0Eh 150°	Yes	Y	DL	0.856	ELX	0.866	ELY	0.5		
59	0.9D - 1.0Ev + 1.0Eh 180°	Yes	Y	DL	0.856	ELX	1	ELY			
60	0.9D - 1.0Ev + 1.0Eh 210°	Yes	Y	DL	0.856	ELX	0.866	ELY	-0.5		
61	0.9D - 1.0Ev + 1.0Eh 225°	Yes	Y	DL	0.856	ELX	0.707	ELY	-0.707		
62	0.9D - 1.0Ev + 1.0Eh 240°	Yes	Y	DL	0.856	ELX	0.5	ELY	-0.866		
63	0.9D - 1.0Ev + 1.0Eh 270°	Yes	Y	DL	0.856	ELX		ELY	-1		
64	0.9D - 1.0Ev + 1.0Eh 300°	Yes	Y	DL	0.856	ELX	-0.5	ELY	-0.866		
65	0.9D - 1.0Ev + 1.0Eh 315°	Yes	Y	DL	0.856	ELX	-0.707	ELY	-0.707		
66	0.9D - 1.0Ev + 1.0Eh 330°	Yes	Y	DL	0.856	ELX	-0.866	ELY	-0.5		
67	1.2D + 1.5Lm 1 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.067	37	0.067	OL1	1.5
68	1.2D + 1.5Lm 1 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.067	38	0.067	OL1	1.5
69	1.2D + 1.5Lm 1 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.067	39	0.067	OL1	1.5
70	1.2D + 1.5Lm 1 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.067	40	0.067	OL1	1.5
71	1.2D + 1.5Lm 1 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.067	41	0.067	OL1	1.5
72	1.2D + 1.5Lm 1 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.067	42	0.067	OL1	1.5
73	1.2D + 1.5Lm 1 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.067	43	0.067	OL1	1.5
74	1.2D + 1.5Lm 1 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.067	44	0.067	OL1	1.5
75	1.2D + 1.5Lm 1 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.067	45	-0.067	OL1	1.5
76	1.2D + 1.5Lm 1 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.067	46	-0.067	OL1	1.5
77	1.2D + 1.5Lm 1 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.067	47	-0.067	OL1	1.5
78	1.2D + 1.5Lm 1 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.067	48	-0.067	OL1	1.5
79	1.2D + 1.5Lm 1 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.067	49	-0.067	OL1	1.5
80	1.2D + 1.5Lm 1 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.067	50	-0.067	OL1	1.5
81	1.2D + 1.5Lm 1 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.067	51	-0.067	OL1	1.5
82	1.2D + 1.5Lm 1 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.067	52	-0.067	OL1	1.5
83	1.2D + 1.5Lm 2 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.067	37	0.067	OL2	1.5
84	1.2D + 1.5Lm 2 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.067	38	0.067	OL2	1.5
85	1.2D + 1.5Lm 2 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.067	39	0.067	OL2	1.5
86	1.2D + 1.5Lm 2 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.067	40	0.067	OL2	1.5
87	1.2D + 1.5Lm 2 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.067	41	0.067	OL2	1.5
88	1.2D + 1.5Lm 2 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.067	42	0.067	OL2	1.5
89	1.2D + 1.5Lm 2 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.067	43	0.067	OL2	1.5
90	1.2D + 1.5Lm 2 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.067	44	0.067	OL2	1.5
91	1.2D + 1.5Lm 2 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.067	45	-0.067	OL2	1.5
92	1.2D + 1.5Lm 2 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.067	46	-0.067	OL2	1.5
93	1.2D + 1.5Lm 2 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.067	47	-0.067	OL2	1.5
94	1.2D + 1.5Lm 2 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.067	48	-0.067	OL2	1.5
95	1.2D + 1.5Lm 2 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.067	49	-0.067	OL2	1.5
96	1.2D + 1.5Lm 2 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.067	50	-0.067	OL2	1.5
97	1.2D + 1.5Lm 2 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.067	51	-0.067	OL2	1.5

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
98	1.2D + 1.5Lm 2 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.067	52	-0.067	OL2	1.5
99	1.2D + 1.5Lm 3 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.067	37	0.067	OL3	1.5
100	1.2D + 1.5Lm 3 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.067	38	0.067	OL3	1.5
101	1.2D + 1.5Lm 3 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.067	39	0.067	OL3	1.5
102	1.2D + 1.5Lm 3 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.067	40	0.067	OL3	1.5
103	1.2D + 1.5Lm 3 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.067	41	0.067	OL3	1.5
104	1.2D + 1.5Lm 3 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.067	42	0.067	OL3	1.5
105	1.2D + 1.5Lm 3 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.067	43	0.067	OL3	1.5
106	1.2D + 1.5Lm 3 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.067	44	0.067	OL3	1.5
107	1.2D + 1.5Lm 3 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.067	45	-0.067	OL3	1.5
108	1.2D + 1.5Lm 3 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.067	46	-0.067	OL3	1.5
109	1.2D + 1.5Lm 3 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.067	47	-0.067	OL3	1.5
110	1.2D + 1.5Lm 3 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.067	48	-0.067	OL3	1.5
111	1.2D + 1.5Lm 3 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.067	49	-0.067	OL3	1.5
112	1.2D + 1.5Lm 3 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.067	50	-0.067	OL3	1.5
113	1.2D + 1.5Lm 3 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.067	51	-0.067	OL3	1.5
114	1.2D + 1.5Lm 3 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.067	52	-0.067	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	Offset Arm	HSS4X4X4	Beam	None	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
2	Face Horiz. Pipe	PIPE 3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
3	Offset Side PL	PL4x.375	Beam	None	A36 Gr.36	Typical	1.5	0.018	2	0.066
4	Offset End Plate	PL4x.375	Beam	None	A36 Gr.36	Typical	1.5	0.018	2	0.066
5	Grating Angle	L2x2x3	Beam	None	A36 Gr.36	Typical	0.722	0.271	0.271	0.009
6	MOD MOUNT PIPE 2.0	PIPE 2.0	None	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
7	Circular PL 1	PL4x.24	Beam	None	A36 Gr.36	Typical	0.96	0.005	1.28	0.018
8	Circular PL Angle 2	L3X2X.25	Beam	None	A36 Gr.36	Typical	1.188	0.392	1.087	0.023
9	Offset Side Angle	4x4x0.25	Beam	None	A36 Gr.36	Typical	1.938	3.039	3.039	0.039
10	MOD Support Rail	PIPE 2.0	Beam	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
11	MOD SR Conn Plate	PL6x0.375	Beam	None	A36 Gr.36	Typical	2.25	0.026	6.75	0.101
12	MOD SR Conn Angle	L2.5x2.5x4	Beam	None	A36 Gr.36	Typical	1.19	0.692	0.692	0.026
13	MOD SR Bracing	PIPE 2.0	Beam	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	Function
1	A2	Offset Arm	46.5				Lateral
2	A1	Offset Arm	46.5				Lateral
3	A3	Offset Arm	46.5				Lateral
4	M22	Face Horiz. Pipe	75	35	66		Lateral
5	M23	Face Horiz. Pipe	75	35	66		Lateral
6	M28	Circular PL Angle 2	29.552				Lateral
7	M29	Circular PL Angle 2	29.552				Lateral
8	M30	Face Horiz. Pipe	75	35	66		Lateral
9	M31	Face Horiz. Pipe	75	35	66		Lateral
10	M36	Circular PL Angle 2	29.552				Lateral
11	M37	Circular PL Angle 2	29.552				Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	Function
12	M38	Face Horiz. Pipe	75	35	66		Lateral
13	M39	Face Horiz. Pipe	75	35	66		Lateral
14	M44	Circular PL Angle 2	29.552				Lateral
15	M45	Circular PL Angle 2	29.552				Lateral
16	M40A	Offset Side PL	8				Lateral
17	M41A	Offset Side PL	2.439				Lateral
18	M42A	Offset Side Angle	38				Lateral
19	M42C	Offset Side PL	8				Lateral
20	M43A	Offset Side PL	8				Lateral
21	M44A	Offset Side Angle	38				Lateral
22	M49	Offset Side PL	8				Lateral
23	M50	Offset Side PL	8				Lateral
24	M51	Offset Side Angle	38				Lateral
25	M59	Offset End Plate	18.755				Lateral
26	M60	Offset End Plate	18.755				Lateral
27	M61	Offset End Plate	18.755				Lateral
28	M91	Grating Angle	35.245				Lateral
29	M104A	Offset Side PL	5.561				Lateral
30	M90	Grating Angle	35.245				Lateral
31	M93	Grating Angle	35.245				Lateral
32	M96	Grating Angle	35.245				Lateral
33	M99	Grating Angle	35.245				Lateral
34	M102	Grating Angle	35.245				Lateral
35	HR1	MOD Support Rail	150		66		Lateral
36	HR10	MOD Support Rail	150		66		Lateral
37	HR19	MOD Support Rail	150		66		Lateral
38	HR37	MOD SR Bracing	37.255				Lateral
39	HR38	MOD SR Bracing	37.255				Lateral
40	HR39	MOD SR Bracing	37.255				Lateral
41	A MP1 S	MOUNT_PIPE_2.0	72			Lbyy	Lateral
42	A MP2 S	MOUNT_PIPE_2.0	96			Lbyy	Lateral
43	A MP3 S	MOUNT_PIPE_2.0	72			Lbyy	Lateral
44	B MP1 S	MOUNT_PIPE_2.0	72			Lbyy	Lateral
45	B MP2 S	MOUNT_PIPE_2.0	96			Lbyy	Lateral
46	B MP3 S	MOUNT_PIPE_2.0	72			Lbyy	Lateral
47	G MP1 S	MOUNT_PIPE_2.0	72			Lbyy	Lateral
48	G MP2 S	MOUNT_PIPE_2.0	96			Lbyy	Lateral
49	G MP3 S	MOUNT_PIPE_2.0	72			Lbyy	Lateral

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	A2			Yes	Default	None
2	M6			Yes	** NA **	None
3	M7			Yes	** NA **	None
4	A1			Yes	Default	None
5	M13			Yes	** NA **	None
6	M14			Yes	** NA **	None
7	A3			Yes	Default	None
8	M20			Yes	** NA **	None
9	M21			Yes	** NA **	None
10	M22			Yes		None
11	M23			Yes		None
12	M24			Yes	** NA **	None
13	M25			Yes	** NA **	None
14	M26			Yes	** NA **	None
15	M27			Yes	** NA **	None
16	M28			Yes		None
17	M29			Yes		None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
18	M30			Yes		None
19	M31			Yes		None
20	M32			Yes	** NA **	None
21	M33			Yes	** NA **	None
22	M34			Yes	** NA **	None
23	M35			Yes	** NA **	None
24	M36			Yes		None
25	M37			Yes		None
26	M38			Yes		None
27	M39			Yes		None
28	M40			Yes	** NA **	None
29	M41			Yes	** NA **	None
30	M42			Yes	** NA **	None
31	M43			Yes	** NA **	None
32	M44			Yes		None
33	M45			Yes		None
34	M40A			Yes		None
35	M41A			Yes		None
36	M42A			Yes		None
37	M42C			Yes		None
38	M43A			Yes		None
39	M44A			Yes		None
40	M49			Yes		None
41	M50			Yes		None
42	M51			Yes		None
43	M53			Yes	** NA **	None
44	M54			Yes	** NA **	None
45	M55			Yes	** NA **	None
46	M56			Yes	** NA **	None
47	M57			Yes	** NA **	None
48	M58			Yes	** NA **	None
49	M59			Yes		None
50	M60			Yes		None
51	M61			Yes		None
52	M91			Yes		None
53	M104A			Yes		None
54	M105A			Yes	** NA **	None
55	M106			Yes	** NA **	None
56	M90			Yes		None
57	M91A			Yes	** NA **	None
58	M92			Yes	** NA **	None
59	M93			Yes		None
60	M94			Yes	** NA **	None
61	M95			Yes	** NA **	None
62	M96			Yes		None
63	M97			Yes	** NA **	None
64	M98			Yes	** NA **	None
65	M99			Yes		None
66	M100			Yes	** NA **	None
67	M101			Yes	** NA **	None
68	M102			Yes		None
69	M103			Yes	** NA **	None
70	M104			Yes	** NA **	None
71	M105		BenPIN	Yes	** NA **	None
72	M106A		BenPIN	Yes	** NA **	None
73	M107		BenPIN	Yes	** NA **	None
74	HR1			Yes	Default	None
75	HR10			Yes	Default	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
76	HR19			Yes	Default	None
77	HR31			Yes	** NA **	None
78	HR32			Yes	** NA **	None
79	HR33			Yes	** NA **	None
80	HR34			Yes	** NA **	None
81	HR35			Yes	** NA **	None
82	HR36			Yes	** NA **	None
83	HR37	BenPIN	BenPIN	Yes	Default	None
84	HR38	BenPIN	BenPIN	Yes	Default	None
85	HR39	BenPIN	BenPIN	Yes	Default	None
86	RI2			Yes	** NA **	None
87	RI1			Yes	** NA **	None
88	A MP1 S			Yes	** NA **	None
89	RI3			Yes	** NA **	None
90	RI4			Yes	** NA **	None
91	RI12			Yes	** NA **	None
92	RI11			Yes	** NA **	None
93	A MP2 S			Yes	** NA **	None
94	RI13			Yes	** NA **	None
95	RI14			Yes	** NA **	None
96	RI15			Yes	** NA **	None
97	RI22			Yes	** NA **	None
98	RI21			Yes	** NA **	None
99	A MP3 S			Yes	** NA **	None
100	RI23			Yes	** NA **	None
101	RI24			Yes	** NA **	None
102	RI72			Yes	** NA **	None
103	RI71			Yes	** NA **	None
104	B MP1 S			Yes	** NA **	None
105	RI73			Yes	** NA **	None
106	RI74			Yes	** NA **	None
107	RI82			Yes	** NA **	None
108	RI81			Yes	** NA **	None
109	B MP2 S			Yes	** NA **	None
110	RI83			Yes	** NA **	None
111	RI84			Yes	** NA **	None
112	RI85			Yes	** NA **	None
113	RI92			Yes	** NA **	None
114	RI91			Yes	** NA **	None
115	B MP3 S			Yes	** NA **	None
116	RI93			Yes	** NA **	None
117	RI94			Yes	** NA **	None
118	RI142			Yes	** NA **	None
119	RI141			Yes	** NA **	None
120	G MP1 S			Yes	** NA **	None
121	RI143			Yes	** NA **	None
122	RI144			Yes	** NA **	None
123	RI152			Yes	** NA **	None
124	RI151			Yes	** NA **	None
125	G MP2 S			Yes	** NA **	None
126	RI153			Yes	** NA **	None
127	RI154			Yes	** NA **	None
128	RI155			Yes	** NA **	None
129	RI162			Yes	** NA **	None
130	RI161			Yes	** NA **	None
131	G MP3 S			Yes	** NA **	None
132	RI163			Yes	** NA **	None
133	RI164			Yes	** NA **	None

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	N16	max	491.072	3	1850.236	15	2177.98	19	0	114	5437.27	19	3708.66	7
2		min	-671.473	11	-1851.516	7	273.666	11	0	1	657.174	11	-3710.23	15
3	N109	max	1643.083	18	946.665	17	2230.807	110	-568.763	6	-328.375	6	3708.44	18
4		min	-1566.904	10	-1081.679	9	273.498	6	-4842.025	110	-2795.545	110	-3710.046	10
5	N110	max	1637.756	4	1079.513	13	2230.647	72	4841.677	72	-328.165	16	3708.662	12
6		min	-1563.723	12	-943.142	5	273.331	16	568.398	16	-2795.344	72	-3710.244	4
7	Totals:	max	3369.361	3	3369.42	15	5932.039	31						
8		min	-3369.365	11	-3369.421	7	2213.193	55						

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

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn	
1	M44A	4x4x0.25	0.569	19	25	0.272	19	y	16	47938.761	62775	3209.898	6766.608	1.232	H2-1
2	M42A	4x4x0.25	0.569	19	29	0.272	19	y	6	47938.761	62775	3209.898	6766.608	1.232	H2-1
3	M51	4x4x0.25	0.569	19	20	0.272	19	y	11	47938.761	62775	3209.898	6766.608	1.241	H2-1
4	B_MP2_S	PIPE_2.0	0.446	56.589	8	0.127	41.937	12	14916.096	32130	1871.625	1871.625	1.495	H1-1b	
5	G_MP2_S	PIPE_2.0	0.446	56.589	14	0.127	41.937	18	14916.096	32130	1871.625	1871.625	1.501	H1-1b	
6	A_MP2_S	PIPE_2.0	0.446	56.589	3	0.126	41.937	7	14916.096	32130	1871.625	1871.625	3	H1-1b	
7	A3	HSS4X4X4	0.405	0	17	0.058	0	y	110	131020.234	139518	16180.5	16180.5	2.364	H1-1b
8	A2	HSS4X4X4	0.401	0	5	0.058	0	y	72	131020.234	139518	16180.5	16180.5	2.364	H1-1b
9	A1	HSS4X4X4	0.393	0	6	0.057	0	y	19	131020.234	139518	16180.5	16180.5	2.364	H1-1b
10	M28	L3X2X.25	0.328	0	16	0.023	29.552	y	14	30170.755	38475	842.711	2431.219	1.5	H2-1
11	M44	L3X2X.25	0.328	0	6	0.023	29.552	y	3	30170.755	38475	842.711	2431.219	1.5	H2-1
12	M36	L3X2X.25	0.328	0	11	0.023	29.552	y	8	30170.755	38475	842.711	2431.219	1.5	H2-1
13	M37	L3X2X.25	0.32	29.552	16	0.024	0	y	3	30170.755	38475	842.711	2431.219	1.5	H2-1
14	M29	L3X2X.25	0.32	29.552	6	0.023	0	y	8	30170.755	38475	842.711	2431.219	1.5	H2-1
15	M45	L3X2X.25	0.32	29.552	11	0.023	0	y	14	30170.755	38475	842.711	2431.219	1.5	H2-1
16	M40A	PL4x.375	0.316	0	107	0.326	8	y	107	36456.242	48600	379.688	4050	1.55	H1-1b
17	M43A	PL4x.375	0.312	8	75	0.325	0	y	75	36456.242	48600	379.688	4050	1.566	H1-1b
18	M42C	PL4x.375	0.298	0	5	0.302	8	y	70	36456.242	48600	379.688	4050	1.496	H1-1b
19	M49	PL4x.375	0.298	0	16	0.294	8	y	32	36456.242	48600	379.688	4050	1.553	H1-1b
20	A_MP3_S	PIPE_2.0	0.297	38.653	100	0.056	9.095	113	20866.733	32130	1871.625	1871.625	2.063	H1-1b	
21	G_MP3_S	PIPE_2.0	0.294	38.653	79	0.052	38.653	11	20866.733	32130	1871.625	1871.625	2.021	H1-1b	
22	M50	PL4x.375	0.29	8	6	0.293	0	y	22	36456.242	48600	379.688	4050	1.599	H1-1b
23	M104A	PL4x.375	0.29	5.561	16	0.081	0	y	31	42296.259	48600	379.688	4050	1.387	H1-1b
24	B_MP1_S	PIPE_2.0	0.289	38.653	103	0.073	16.295	11	20866.733	32130	1871.625	1871.625	1.948	H1-1b	
25	A_MP1_S	PIPE_2.0	0.288	38.653	82	0.073	16.295	6	20866.733	32130	1871.625	1871.625	2.067	H1-1b	
26	B_MP3_S	PIPE_2.0	0.261	38.653	26	0.052	38.653	6	20866.733	32130	1871.625	1871.625	2.936	H1-1b	
27	G_MP1_S	PIPE_2.0	0.243	38.653	28	0.073	16.295	16	20866.733	32130	1871.625	1871.625	3	H1-1b	
28	M39	PIPE_3.0	0.239	25.263	107	0.117	25.263	107	55456.817	65205	5748.75	5748.75	1.948	H1-1b	
29	M30	PIPE_3.0	0.237	49.737	75	0.11	49.737	75	55456.817	65205	5748.75	5748.75	1.922	H1-1b	
30	M23	PIPE_3.0	0.205	25.263	70	0.106	24.868	80	55456.817	65205	5748.75	5748.75	1.916	H1-1b	
31	M22	PIPE_3.0	0.203	49.737	112	0.112	50.132	102	55456.817	65205	5748.75	5748.75	1.89	H1-1b	
32	HR1	PIPE_2.0	0.199	75	9	0.107	116.842	11	6295.422	32130	1871.625	1871.625	1.6	H1-1b	
33	HR10	PIPE_2.0	0.198	75	3	0.111	75	5	6295.422	32130	1871.625	1871.625	1.653	H1-1b	
34	HR19	PIPE_2.0	0.198	75	14	0.107	116.842	16	6295.422	32130	1871.625	1871.625	1.653	H1-1b	
35	M61	PL4x.375	0.196	18.755	6	0.075	0	y	15	11289.949	48600	379.688	3725.533	1.031	H1-1b
36	M60	PL4x.375	0.196	18.755	11	0.08	18.755	y	75	11289.949	48600	379.688	3725.681	1.031	H1-1b
37	M59	PL4x.375	0.196	18.755	16	0.09	5.626	y	104	11289.949	48600	379.688	3727.626	1.031	H1-1b
38	M31	PIPE_3.0	0.192	25.263	16	0.102	25.263	17	55456.817	65205	5748.75	5748.75	1.804	H1-1b	
39	M38	PIPE_3.0	0.189	49.737	6	0.098	49.737	6	55456.817	65205	5748.75	5748.75	1.828	H1-1b	
40	M93	L2x2x3	0.17	0	75	0.016	0	y	75	15184.204	23392.8	557.717	1211.59	1.5	H2-1
41	M102	L2x2x3	0.169	0	107	0.017	0	z	107	15184.204	23392.8	557.717	1211.59	1.5	H2-1
42	M91	L2x2x3	0.167	0	112	0.016	0	y	32	15184.204	23392.8	557.717	1211.59	1.5	H2-1
43	M90	L2x2x3	0.167	0	70	0.017	0	z	22	15184.204	23392.8	557.717	1211.59	1.5	H2-1
44	M41A	PL4x.375	0.161	2.439	18	0.301	0	y	112	47318.425	48600	379.688	4050	1.301	H1-1b
45	M99	L2x2x3	0.155	0	22	0.016	0	y	21	15184.204	23392.8	557.717	1211.59	1.5	H2-1
46	M96	L2x2x3	0.154	0	32	0.017	0	z	33	15184.204	23392.8	557.717	1211.59	1.5	H2-1
47	HR39	PIPE_2.0	0.01	18.627	3	0.151	37.255	15	28623.527	32130	1871.625	1871.625	1.136	H1-1b	

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

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
48	HR37	PIPE_2.0	0.01	18.627	14	0.151	37.255	10	28623.527	32130	1871.625	1871.625	1.136	H1-1b
49	HR38	PIPE_2.0	0.01	18.627	8	0.151	37.255	4	28623.527	32130	1871.625	1871.625	1.136	H1-1b



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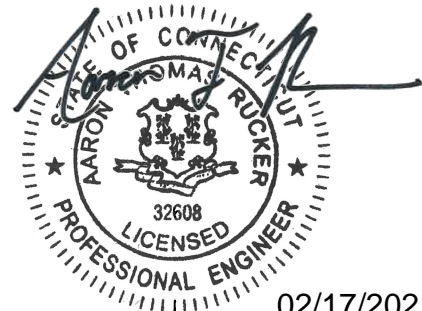
**TOWER
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PROFESSIONALS**

Structural Analysis Report

Structure : 125.7 ft Monopole
ATC Site Name : Bridgeport CT 2, CT
ATC Asset Number : 302469
Engineering Number : 13337502_C3_02
Proposed Carrier : T-Mobile
Carrier Site Name : Bridgeport/Connecticut Av
Carrier Site Number : CT11452A
Site Location : 1069 Connecticut Avenue
Bridgeport, CT 06607-1226
41.183600,-73.158400
County : Fairfield
Date : February 16, 2021
Max Usage : 79%
Result : Pass

Prepared By:
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TEP

Reviewed By:



02/17/2021

COA: PEC.0001553



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 125.7 ft monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	EI Project #5543, dated October 18, 1999
Foundation Drawing	EI Project #5543, dated October 18, 1999
Geotechnical Report	Applied Earth Technologies Project #9903A, dated November 23, 1999
Modifications	ATC Job #41045932, dated November 2, 2007
Mount Analysis	ATC Engineering #13337502_C8_01, dated February 17, 2021

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	119 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
Spectral Response:	$S_s = 0.208, S_1 = 0.054$
Site Class:	D - Stiff Soil

Conclusion

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

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



Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
131.0	2	DragonWave Horizon Compact	T-Arms	(3) 1 1/4" Hybriflex Cable (1) 1.7" (43.2mm) Hybrid (3) 1/2" Coax (2) 2" conduit	Clearwire Corporation
	1	DragonWave A-ANT-23G-1-C			
	6	Alcatel-Lucent RRH2x50-08			
	3	Alcatel-Lucent 1900 MHz 4X45 RRH			
	3	Alcatel-Lucent TD-RRH8x20			
	3	Commscope NNVV-65B-R4			
	3	Nokia 2.5G MAA - AAHC(64T64R)			
	1	DragonWave A-ANT-18G-2-C			
127.0	3	Argus LLPX310R			
116.0	3	RFS APXVAARR24_43-U-NA20	Platform with Handrails	(1) 1 1/4" (1.25"-31.8mm) Fiber	T-Mobile
	3	Ericsson AIR32 B66Aa/B2a			
106.0	4	Raycap DC6-48-60-18-8F ("Squid")	Site Pro 1 RMQLP-4120-H10 Platform with Handrails	(4) 0.39" (9.8mm) Cable (8) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax (2) 3" conduit	AT&T Mobility
	3	Ericsson Radio 8843 - B2 + B66A			
	3	CCI OPA65R-BU4DA-K			
	3	CCI DMP65R-BU4D			
	6	CCI OPA-65R-LCUU-H4			
	3	Ericsson RRUS E2 B29			
	3	Ericsson RRUS 4478 B14			
	3	Ericsson RRUS 4449 B5, B12			
98.0	3	RCU (Remote Control Unit)	Flush	(6) 1 5/8" Coax (1) 3/8" Coax	Metro PCS, Inc.
	3	Kathrein Scala 800 10504			
88.0	1	5" x 3" x 2" Cavity Filter	Side Arm	(1) 1/2" Coax	Sigfox S.A.
	1	Procom CXL 900-3LW			
	1	Low Noise Amplifier			

Equipment to be Removed

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
116.0	3	Kathrein Scala Smart Bias Tee	-	(1) 1 1/4" (1.25"-31.8mm) Fiber (1) 1 5/8" (1.63"-41.3mm) Fiber (18) 1 5/8" Coax	T-Mobile
	3	Ericsson KRY 112 144/2			
	3	Ericsson Air 3246 B66			
	3	Ericsson Radio 4449 B12,B71			
	3	Ericsson KRY 112 489/2			

Proposed Equipment

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
116.0	3	Ericsson Radio 4449 B71 B85A	Platform with Handrails	(2) 1 5/8" Hybriflex	T-Mobile
	3	Ericsson RRUS 4415 B25			
	3	Ericsson AIR 6449 B41			

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

Install proposed lines inside the pole shaft.



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	66%	Pass
Shaft	59%	Pass
Base Plate	26%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	2,049.1	2,766.3	1,997.4	72%
Shear (Kips)	20.7	27.9	22.0	79%

*The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
131.0	DragonWave A-ANT-23G-1-C	Clearwire Corporation	1.418	1.200
	DragonWave A-ANT-18G-2-C			
116.0	Ericsson Radio 4449 B71 B85A	T-Mobile	1.215	1.177
	Ericsson RRUS 4415 B25			
	Ericsson AIR 6449 B41			
	Ericsson AIR32 B66Aa/B2a			

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



Standard Conditions

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

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

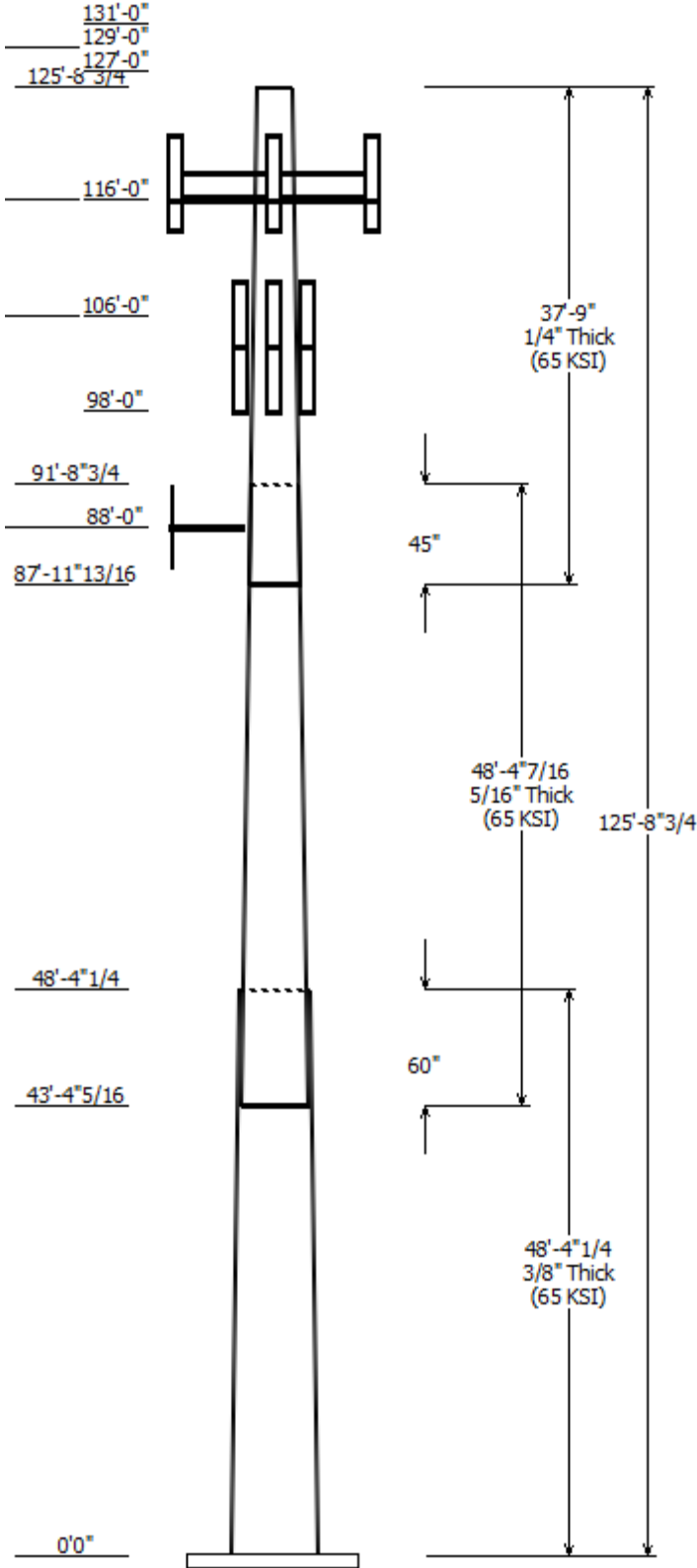
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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

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

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

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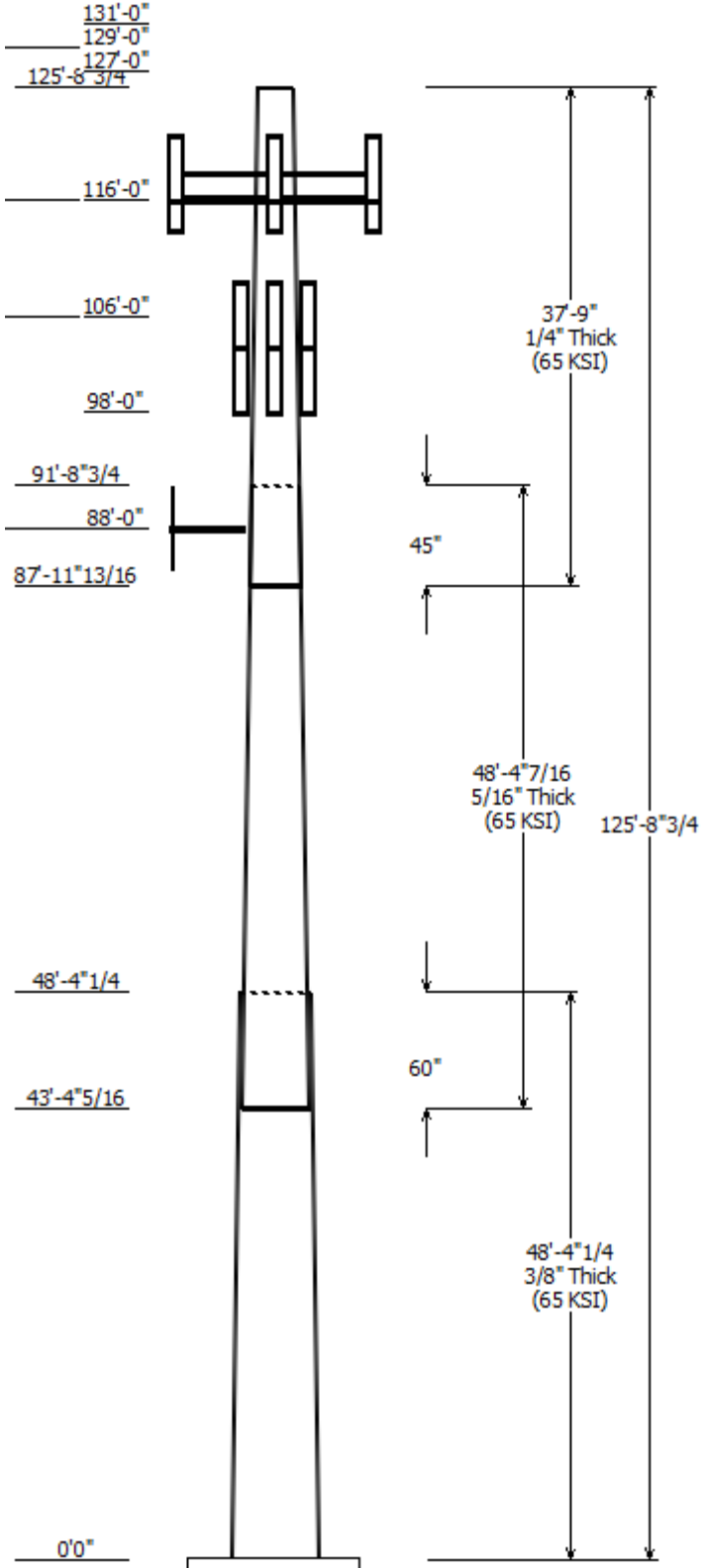


Job Information	
Client : T-MOBILE	Code: ANSI/TIA-222-H
Pole : 302469	
Location : Bridgeport CT 2, CT	
Description : 126 ft Monopole	Risk Category : II
Shape : 18 Sides	Exposure : B
Height : 125.73 (ft)	Topo Method : Method 1
Base Elev (ft): 0.00	Topographic Category : 1
Taper: 0.235624(in/ft)	

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Grade
		Across Top	Across Bottom				
1	48.352	34.10	45.50	0.375		0.000	18 Sides 65
2	48.370	24.51	35.90	0.313	Slip Joint	59.906	18 Sides 65
3	37.748	17.00	25.89	0.250	Slip Joint	44.969	18 Sides 65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
131.000	131.000	3	Commscope NNVV-65B-R4
131.000	131.000	1	DragonWave A-ANT-18G-2-C
131.000	131.000	3	Nokia 2.5G MAA -
131.000	131.000	3	Alcatel-Lucent TD-RRH8x20
131.000	131.000	3	Alcatel-Lucent 1900 MHz 4X45
131.000	131.000	6	Alcatel-Lucent RRH2x50-08
131.000	131.000	1	DragonWave A-ANT-23G-1-C
131.000	131.000	2	DragonWave Horizon Compact
129.000	129.000	3	Generic Round T-Arm
127.000	127.000	3	Argus LLPX310R
116.000	116.000	1	Round Platform w/ Handrails
116.000	120.000	3	RFS APXVAARR24_43-U-NA20
116.000	116.000	3	Ericsson AIR32 B66Aa/B2a
116.000	116.000	3	Ericsson AIR 6449 B41
116.000	116.000	3	Ericsson RRUS 4415 B25
116.000	116.000	3	Ericsson Radio 4449 B71 B85A
106.000	106.000	1	Site Pro 1 RMQLP-4120-H10 Plat
106.000	106.000	3	CCI OPA65R-BU4DA-K
106.000	106.000	3	CCI DMP65R-BU4D
106.000	106.000	6	CCI OPA-65R-LCUU-H4
106.000	106.000	3	Ericsson RRUS E2 B29
106.000	106.000	3	Ericsson RRUS 32 B30 (53 lbs)
106.000	106.000	3	Ericsson RRUS 4449 B5, B12
106.000	106.000	3	Ericsson RRUS 4478 B14
106.000	106.000	3	Ericsson Radio 8843 - B2 + B66
106.000	106.000	4	Raycap DC6-48-60-18-8F
98.000	101.000	3	Kathrein Scala 800 10504
98.000	101.000	3	Generic RCU (Remote Control)
88.000	88.000	1	Flat Side Arm
88.000	88.000	1	Generic Low Noise Amplifier
88.000	88.000	1	Generic 5" x 3" x 2" Cavity Fi
88.000	88.000	1	Procom CXL 900-3LW

Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
0.000	88.000	1/2" Coax	No
0.000	98.000	1 5/8" Coax	Yes
0.000	98.000	3/8" Coax	Yes
0.000	106.0	0.39" (9.8mm)	Yes
0.000	106.0	0.78" (19.7mm) 8	Yes
0.000	106.0	1 5/8" Coax	Yes



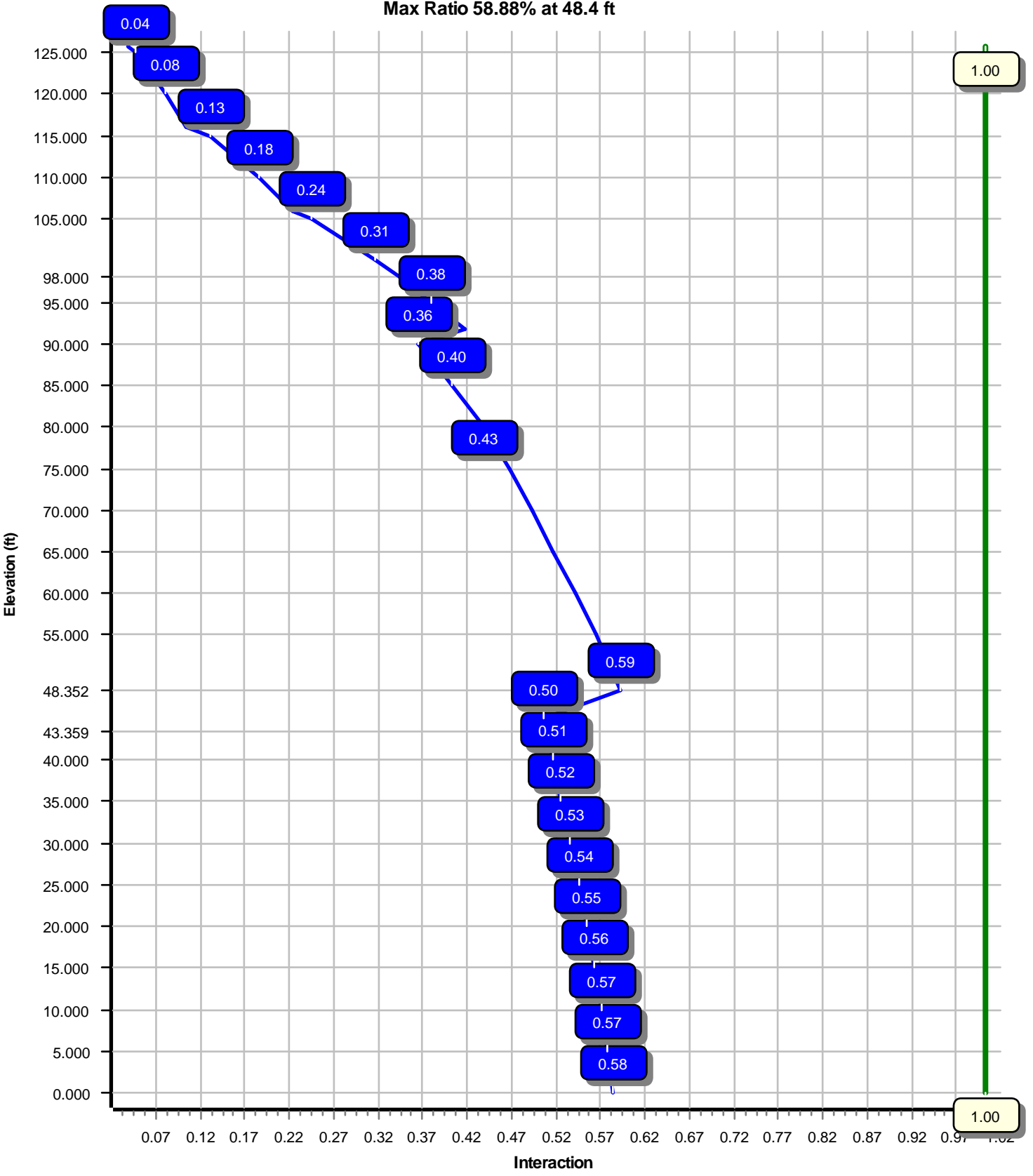
0.000	106.0	3" conduit	Yes
0.000	116.0	1 1/4" (1.25"-	No
0.000	116.0	1 5/8" Hybriflex	No
0.000	131.0	1 1/4" Hybriflex	No
0.000	131.0	1.7" (43.2mm)	No
0.000	131.0	1/2" Coax	No
0.000	131.0	2" conduit	No

Load Cases	
1.2D + 1.0W	119 mph with No Ice
0.9D + 1.0W	119 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.0W	1997.44	21.96	36.18
0.9D + 1.0W	1971.08	21.94	27.13
1.2D + 1.0Di + 1.0Wi	475.92	5.03	52.92
1.2D + 1.0Ev + 1.0Eh	98.26	0.91	36.15
0.9D - 1.0Ev + 1.0Eh	96.48	0.91	24.86
1.0D + 1.0W	450.78	4.99	30.18

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	125.73	17.006	1.203
1.0D + 1.0W	125.73	17.006	1.203

Load Case : 1.2D + 1.0W
Max Ratio 58.88% at 48.4 ft



Site Number: 302469

Code: ANSI/TIA-222-H

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Site Name: Bridgeport CT 2, CT

Engineering Number: 13337502_C3_02

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Customer: T-MOBILE

Analysis Parameters

Location :	Fairfield County, CT	Height (ft) :	125.73
Code :	ANSI/TIA-222-H	Base Diameter (in) :	45.50
Shape :	18 Sides	Top Diameter (in) :	17.00
Pole Type :	Taper	Taper (in/ft) :	0.236
Pole Manufacturer :	EEL	Rotation (deg) :	0.00
Kd (non-service) :	0.95	Ke :	1.00

Ice & Wind Parameters

Exposure Category:	B	Design Wind Speed Without Ice:	119 mph
Risk Category:	II	Design Wind Speed With Ice:	50 mph
Topographic Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	30.21 ft

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.37		
T_L (sec):	6	p :	1
S_s :	0.208	S_1 :	0.054
F_a :	1.600	F_v :	2.400
S_{ds} :	0.222	S_{d1} :	0.086
		C_s :	0.030
		C_s Max:	0.030
		C_s Min:	0.030

Load Cases

1.2D + 1.0W	119 mph with No Ice
0.9D + 1.0W	119 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Site Number: 302469

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Site Name: Bridgeport CT 2, CT

Engineering Number: 13337502_C3_02

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Customer: T-MOBILE

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	48.352	0.3750	65		0.00	7,721	45.50	0.00	53.71	13817.4	19.98	121.33	34.10	48.35	40.15	5771.8	14.63	90.95	0.235624
2-18	48.370	0.3125	65	Slip	59.91	4,881	35.90	43.36	35.31	5651.9	18.85	114.91	24.51	91.73	24.00	1775.7	12.42	78.44	0.235624
3-18	37.748	0.2500	65	Slip	44.97	2,160	25.89	87.98	20.35	1690.7	16.85	103.58	17.00	125.73	13.29	471.1	10.58	68.00	0.235624
Shaft Weight						14,762													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor
131.00	DragonWave Horizon Compact	2	0.80	0.000	10.60	0.721	0.50	25.35	1.094	0.50
131.00	DragonWave A-ANT-23G-1-C	1	1.00	0.000	15.00	1.610	1.00	38.18	2.107	1.00
131.00	Alcatel-Lucent RRH2x50-08	6	0.80	0.000	52.90	1.701	0.50	91.78	2.267	0.50
131.00	Alcatel-Lucent 1900 MHz 4X45	3	0.80	0.000	60.00	2.322	0.67	112.88	3.031	0.67
131.00	Alcatel-Lucent TD-RRH8x20	3	0.80	0.000	66.10	3.690	0.60	120.85	4.523	0.60
131.00	Nokia 2.5G MAA - AAHC(64T64R)	3	0.80	0.000	103.60	4.203	0.64	177.57	5.083	0.64
131.00	DragonWave A-ANT-18G-2-C	1	1.00	0.000	27.10	4.688	1.00	91.13	5.524	1.00
131.00	Commscope NNVV-65B-R4	3	0.80	0.000	77.40	12.271	0.64	242.27	14.111	0.64
129.00	Generic Round T-Arm	3	0.75	0.000	312.50	9.700	0.67	483.92	15.110	0.67
127.00	Argus LLPX310R	3	0.80	0.000	28.60	4.292	0.63	87.73	5.377	0.63
116.00	Ericsson Radio 4449 B71 B85A	3	0.75	0.000	75.00	1.650	0.50	114.14	2.203	0.50
116.00	Ericsson RRUS 4415 B25	3	0.75	0.000	46.00	1.842	0.50	77.91	2.426	0.50
116.00	Ericsson AIR 6449 B41	3	0.75	0.000	101.60	5.500	0.63	187.79	6.520	0.63
116.00	Ericsson AIR32 B66Aa/B2a	3	0.75	0.000	132.20	6.510	0.71	236.07	7.936	0.71
116.00	RFS APXVAARR24_43-U-NA20	3	0.75	4.000	127.90	20.243	0.63	383.39	22.657	0.63
116.00	Round Platform w/ Handrails	1	1.00	0.000	2,000.00	27.200	1.00	2,843.30	43.108	1.00
106.00	Raycap DC6-48-60-18-8F	4	0.75	0.000	31.80	1.470	1.00	71.59	1.920	1.00
106.00	Ericsson Radio 8843 - B2 + B66A	3	0.75	0.000	71.90	1.650	0.50	111.63	2.196	0.50
106.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.90	1.842	0.50	95.56	2.420	0.50
106.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	112.57	2.571	0.50
106.00	Ericsson RRUS 32 B30 (53 lbs)	3	0.75	0.000	53.00	2.743	0.67	100.44	3.497	0.67
106.00	Ericsson RRUS E2 B29	3	0.75	0.000	60.00	3.145	0.62	112.16	3.892	0.62
106.00	CCI OPA-65R-LCUU-H4	6	0.75	0.000	57.00	6.083	0.66	147.74	7.310	0.66
106.00	CCI DMP65R-BU4D	3	0.75	0.000	67.90	8.280	0.62	184.38	9.586	0.62
106.00	CCI OPA65R-BU4DA-K	3	0.75	0.000	52.50	8.435	0.62	170.72	9.750	0.62
106.00	Site Pro 1 RMQLP-4120-H10	1	1.00	0.000	2,500.00	42.400	1.00	3,623.24	61.450	1.00
98.00	Generic RCU (Remote Control)	3	1.00	3.000	1.00	0.141	1.00	4.54	0.357	1.00
98.00	Kathrein Scala 800 10504	3	1.00	3.000	17.60	3.344	0.66	57.74	4.503	0.66
88.00	Procom CXL 900-3LW	1	1.00	0.000	1.50	0.130	1.00	4.89	0.579	1.00
88.00	Generic 5" x 3" x 2" Cavity Filter	1	1.00	0.000	1.50	0.141	1.00	4.60	0.315	1.00
88.00	Generic Low Noise Amplifier	1	1.00	0.000	2.00	0.167	1.00	5.57	0.351	1.00
88.00	Flat Side Arm	1	1.00	0.000	150.00	6.300	1.00	196.33	7.857	1.00
Totals	Num Loadings:32									
		86			10,262.00			18,104.23		

Linear Appurtenance Properties

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Coax / Flat Row	Dist Between Rows (in)	Dist Between Cols (in)	Dist Azimuth (deg)	Dist Exposed From Face (in)	Dist Exposed To Wind Carrier
0.00	131.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	0	0.00	0.00	0	N CLEARWIRE
0.00	131.00	1	1.7" (43.2mm) Hybrid	1.70	1.78	N	0	0.00	0.00	0	N CLEARWIRE
0.00	131.00	3	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	N CLEARWIRE
0.00	131.00	2	2" conduit	2.38	3.65	N	0	0.00	0.00	0	N CLEARWIRE
0.00	116.00	1	1 1/4" (1.25"- 31.8mm)	1.25	1.05	N	0	0.00	0.00	0	N T-MOBILE

Site Number: 302469

Code: ANSI/TIA-222-H

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Site Name: Bridgeport CT 2, CT

Engineering Number: 13337502_C3_02

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Customer: T-MOBILE

0.00	116.00	2	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	106.00	4	0.39" (9.8mm) Cable	0.39	0.07	N	4	1.00	1.00	45	1.00	Y	AT&T MOBILITY
0.00	106.00	8	0.78" (19.7mm) 8 AWG	0.78	0.59	N	4	1.00	1.00	220	1.00	Y	AT&T MOBILITY
0.00	106.00	6	1 5/8" Coax	1.98	0.82	N	3	1.00	1.00	140	1.00	Y	AT&T MOBILITY
0.00	106.00	2	3" conduit	3.50	7.58	N	2	1.00	1.00	90	1.00	Y	AT&T MOBILITY
0.00	98.00	6	1 5/8" Coax	1.98	0.82	N	6	1.00	1.00	300	1.00	Y	METRO PCS INC
0.00	98.00	1	3/8" Coax	0.44	0.08	N	1	1.00	1.00	340	1.00	Y	METRO PCS INC
0.00	88.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	SIGFOX S.A.

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.3750	45.500	53.708	13,817.4	19.98	121.33	77.9	598.1	0.0	0.0
5.00		0.3750	44.322	52.306	12,763.2	19.43	118.19	78.5	567.2	0.0	901.9
10.00		0.3750	43.144	50.904	11,764.0	18.88	115.05	79.2	537.1	0.0	878.0
15.00		0.3750	41.966	49.501	10,818.4	18.32	111.91	79.9	507.8	0.0	854.1
20.00		0.3750	40.788	48.099	9,924.8	17.77	108.77	80.5	479.3	0.0	830.3
25.00		0.3750	39.609	46.697	9,081.9	17.21	105.63	81.2	451.6	0.0	806.4
30.00		0.3750	38.431	45.295	8,288.1	16.66	102.48	81.8	424.8	0.0	782.6
35.00		0.3750	37.253	43.893	7,541.9	16.11	99.34	82.5	398.8	0.0	758.7
40.00		0.3750	36.075	42.490	6,842.0	15.55	96.20	82.6	373.6	0.0	734.9
43.36	Bot - Section 2	0.3750	35.283	41.548	6,396.9	15.18	94.09	82.6	357.1	0.0	480.3
45.00		0.3750	34.897	41.088	6,186.7	15.00	93.06	82.6	349.2	0.0	426.7
48.35	Top - Section 1	0.3125	34.732	34.139	5,109.9	18.19	111.14	80.0	289.8	0.0	857.1
50.00		0.3125	34.344	33.754	4,938.9	17.97	109.90	80.3	283.2	0.0	190.4
55.00		0.3125	33.166	32.585	4,443.5	17.30	106.13	81.0	263.9	0.0	564.3
60.00		0.3125	31.988	31.417	3,982.4	16.64	102.36	81.8	245.2	0.0	544.5
65.00		0.3125	30.809	30.248	3,554.4	15.97	98.59	82.6	227.2	0.0	524.6
70.00		0.3125	29.631	29.080	3,158.2	15.31	94.82	82.6	209.9	0.0	504.7
75.00		0.3125	28.453	27.911	2,792.5	14.64	91.05	82.6	193.3	0.0	484.8
80.00		0.3125	27.275	26.743	2,456.3	13.98	87.28	82.6	177.4	0.0	464.9
85.00		0.3125	26.097	25.574	2,148.2	13.31	83.51	82.6	162.1	0.0	445.1
87.98	Bot - Section 3	0.3125	25.394	24.877	1,977.3	12.92	81.26	82.6	153.4	0.0	255.9
88.00		0.3125	25.390	24.873	1,976.3	12.92	81.25	82.6	153.3	0.0	2.8
90.00		0.3125	24.919	24.406	1,867.0	12.65	79.74	82.6	147.6	0.0	304.9
91.73	Top - Section 2	0.2500	25.011	19.647	1,522.0	16.23	100.05	82.3	119.9	0.0	259.0
95.00		0.2500	24.241	19.036	1,384.3	15.69	96.96	82.6	112.5	0.0	215.3
98.00		0.2500	23.534	18.475	1,265.5	15.19	94.14	82.6	105.9	0.0	191.5
100.0		0.2500	23.063	18.101	1,190.2	14.86	92.25	82.6	101.6	0.0	124.5
105.0		0.2500	21.884	17.166	1,015.1	14.02	87.54	82.6	91.4	0.0	300.0
106.0		0.2500	21.649	16.979	982.3	13.86	86.60	82.6	89.4	0.0	58.1
110.0		0.2500	20.706	16.232	858.2	13.19	82.83	82.6	81.6	0.0	226.0
115.0		0.2500	19.528	15.297	718.3	12.36	78.11	82.6	72.4	0.0	268.2
116.0		0.2500	19.293	15.110	692.3	12.20	77.17	82.6	70.7	0.0	51.7
120.0		0.2500	18.350	14.362	594.5	11.53	73.40	82.6	63.8	0.0	200.6
125.0		0.2500	17.172	13.427	485.8	10.70	68.69	82.6	55.7	0.0	236.4
125.7		0.2500	17.000	13.291	471.1	10.58	68.00	82.6	54.6	0.0	33.2
14,762.2											

Load Case: 1.2D + 1.0W	119 mph with No Ice	24 Iterations
Gust Response Factor :1.10		
Dead Load Factor :1.20		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		216.6	0.0					0.0	0.0	216.6	0.0	0.0	0.0
5.00		433.1	1,082.2					0.0	278.5	433.1	1,360.7	0.0	0.0
10.00		432.7	1,053.6					0.0	278.5	432.7	1,332.1	0.0	0.0
15.00		432.4	1,025.0					0.0	278.5	432.4	1,303.4	0.0	0.0
20.00		432.2	996.3					0.0	278.5	432.2	1,274.8	0.0	0.0
25.00		432.1	967.7					0.0	278.5	432.1	1,246.2	0.0	0.0
30.00		437.3	939.1					0.0	278.5	437.3	1,217.5	0.0	0.0
35.00		451.8	910.5					0.0	278.5	451.8	1,188.9	0.0	0.0
40.00		390.3	881.8					0.0	278.5	390.3	1,160.3	0.0	0.0
43.36	Bot - Section 2	240.5	576.4					0.0	187.1	240.5	763.5	0.0	0.0
45.00		250.2	512.0					0.0	91.4	250.2	603.4	0.0	0.0
48.35	Top - Section 1	252.5	1,028.5					0.0	186.7	252.5	1,215.1	0.0	0.0
50.00		344.8	228.5					0.0	91.8	344.8	320.3	0.0	0.0
55.00		525.8	677.2					0.0	278.5	525.8	955.7	0.0	0.0
60.00		524.7	653.4					108.0	278.5	632.6	931.8	0.0	0.0
65.00		517.0	629.5					114.5	278.5	631.6	908.0	0.0	0.0
70.00		507.9	605.6					121.0	278.5	629.0	884.1	0.0	0.0
75.00		497.5	581.8					124.2	278.5	621.7	860.2	0.0	0.0
80.00		485.7	557.9					126.9	278.5	612.6	836.4	0.0	0.0
85.00		379.6	534.1					129.4	278.5	509.0	812.5	0.0	0.0
87.98	Bot - Section 3	140.7	307.1					78.2	166.1	218.9	473.2	0.0	0.0
88.00	Appurtenance(s)	95.1	3.4	242.9	0.0	0.0	186.0	0.5	1.0	338.5	190.4	0.0	0.0
90.00		174.8	365.8					52.9	111.0	227.7	476.9	0.0	0.0
91.73	Top - Section 2	230.5	310.8					46.0	96.0	276.5	406.8	0.0	0.0
95.00		284.6	258.3					87.7	181.6	372.4	439.9	0.0	0.0
98.00	Appurtenance(s)	219.8	229.8	264.2	0.0	792.5	67.0	81.2	166.5	565.2	463.3	0.0	0.0
100.00		305.4	149.4					3.6	99.0	309.0	248.4	0.0	0.0
105.00		262.3	360.0					9.2	247.6	271.4	607.6	0.0	0.0
106.00	Appurtenance(s)	142.0	69.7	3,911.2	0.0	0.0	5,133.4	17.7	49.5	4,070.9	5,252.6	0.0	0.0
110.00		220.2	271.2					0.0	77.7	220.2	348.9	0.0	0.0
115.00		143.5	321.9					0.0	97.1	143.5	418.9	0.0	0.0
116.00	Appurtenance(s)	114.5	62.1	3,054.9	0.0	4,521.8	4,137.7	0.0	19.4	3,169.5	4,219.2	0.0	0.0
120.00		199.9	240.7					0.0	60.1	199.9	300.8	0.0	0.0
125.00		124.1	283.7					0.0	75.2	124.1	358.9	0.0	0.0
125.73		15.4	39.8					0.0	11.0	15.4	50.8	0.0	0.0
Totals:										19,431.7	33,431.2	0.00	0.00

Load Case: 1.2D + 1.0W

119 mph with No Ice

24 Iterations

Gust Response Factor :1.10

Dead Load Factor :1.20

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.18	-21.96	0.00	-1,997.44	0.00	1,997.44	3,765.29	942.58	3,841.82	3,494.42	0.00	0.00	0.582
5.00	-34.75	-21.64	0.00	-1,887.66	0.00	1,887.66	3,697.66	917.97	3,643.85	3,341.32	0.11	-0.20	0.575
10.00	-33.34	-21.33	0.00	-1,779.43	0.00	1,779.43	3,628.38	893.36	3,451.13	3,190.08	0.43	-0.40	0.568
15.00	-31.96	-21.00	0.00	-1,672.81	0.00	1,672.81	3,557.46	868.75	3,263.64	3,040.82	0.96	-0.61	0.560
20.00	-30.62	-20.67	0.00	-1,567.82	0.00	1,567.82	3,484.89	844.14	3,081.39	2,893.66	1.72	-0.83	0.551
25.00	-29.30	-20.33	0.00	-1,464.49	0.00	1,464.49	3,410.68	819.53	2,904.37	2,748.72	2.70	-1.04	0.542
30.00	-28.01	-19.97	0.00	-1,362.86	0.00	1,362.86	3,334.83	794.92	2,732.59	2,606.12	3.91	-1.26	0.532
35.00	-26.76	-19.60	0.00	-1,262.99	0.00	1,262.99	3,257.33	770.32	2,566.05	2,465.98	5.36	-1.49	0.521
40.00	-25.55	-19.26	0.00	-1,165.00	0.00	1,165.00	3,156.83	745.71	2,404.74	2,312.78	7.04	-1.72	0.512
43.36	-24.75	-19.05	0.00	-1,100.29	0.00	1,100.29	3,086.83	729.17	2,299.30	2,210.84	8.31	-1.88	0.506
45.00	-24.12	-18.83	0.00	-1,069.04	0.00	1,069.04	3,052.65	721.10	2,248.67	2,161.89	8.97	-1.96	0.503
48.35	-22.87	-18.58	0.00	-1,005.93	0.00	1,005.93	2,458.29	599.14	1,862.71	1,738.87	10.40	-2.12	0.589
50.00	-22.51	-18.30	0.00	-975.29	0.00	975.29	2,438.38	592.38	1,820.91	1,705.15	11.14	-2.20	0.582
55.00	-21.49	-17.83	0.00	-883.82	0.00	883.82	2,376.89	571.87	1,697.04	1,604.09	13.59	-2.46	0.561
60.00	-20.51	-17.25	0.00	-794.66	0.00	794.66	2,313.76	551.36	1,577.53	1,504.96	16.31	-2.73	0.538
65.00	-19.56	-16.67	0.00	-708.40	0.00	708.40	2,247.28	530.85	1,462.38	1,406.82	19.32	-3.00	0.513
70.00	-18.63	-16.08	0.00	-625.05	0.00	625.05	2,160.47	510.35	1,351.59	1,299.70	22.61	-3.27	0.491
75.00	-17.74	-15.49	0.00	-544.66	0.00	544.66	2,073.65	489.84	1,245.17	1,196.82	26.17	-3.53	0.465
80.00	-16.88	-14.90	0.00	-467.22	0.00	467.22	1,986.84	469.33	1,143.11	1,098.18	30.01	-3.79	0.435
85.00	-16.06	-14.39	0.00	-392.73	0.00	392.73	1,900.02	448.82	1,045.41	1,003.78	34.11	-4.04	0.401
87.98	-15.58	-14.16	0.00	-349.82	0.00	349.82	1,848.25	436.59	989.23	949.50	36.68	-4.19	0.378
88.00	-15.40	-13.82	0.00	-349.56	0.00	349.56	1,847.94	436.52	988.89	949.18	36.69	-4.19	0.378
90.00	-14.92	-13.58	0.00	-321.92	0.00	321.92	1,813.21	428.32	952.08	913.62	38.47	-4.28	0.362
91.73	-14.51	-13.30	0.00	-298.44	0.00	298.44	1,455.48	344.81	771.23	739.90	40.03	-4.36	0.415
95.00	-14.07	-12.93	0.00	-254.93	0.00	254.93	1,414.28	334.08	723.98	696.35	43.07	-4.51	0.378
98.00	-13.63	-12.36	0.00	-215.34	0.00	215.34	1,372.61	324.24	681.95	655.72	45.95	-4.65	0.340
100.00	-13.38	-12.07	0.00	-190.62	0.00	190.62	1,344.82	317.68	654.63	629.30	47.92	-4.75	0.314
105.00	-12.77	-11.77	0.00	-130.28	0.00	130.28	1,275.37	301.27	588.77	565.65	52.99	-4.94	0.242
106.00	-7.88	-7.27	0.00	-118.51	0.00	118.51	1,261.48	297.99	576.02	553.33	54.03	-4.97	0.221
110.00	-7.54	-7.04	0.00	-89.43	0.00	89.43	1,205.92	284.86	526.40	505.39	58.24	-5.09	0.184
115.00	-7.12	-6.86	0.00	-54.25	0.00	54.25	1,136.47	268.46	467.53	448.52	63.64	-5.21	0.128
116.00	-3.21	-3.33	0.00	-42.86	0.00	42.86	1,122.58	265.18	456.17	437.56	64.73	-5.23	0.101
120.00	-2.92	-3.10	0.00	-29.56	0.00	29.56	1,067.02	252.05	412.14	395.05	69.14	-5.29	0.078
125.00	-2.58	-2.95	0.00	-14.05	0.00	14.05	997.57	235.65	360.25	344.97	74.70	-5.34	0.043
125.73	0.00	-2.69	0.00	-11.90	0.00	11.90	987.43	233.25	352.96	337.94	75.52	-5.35	0.035

Load Case: 0.9D + 1.0W	119 mph with No Ice (Reduced DL)	24 Iterations
Gust Response Factor :1.10		
Dead Load Factor :0.90		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		216.6	0.0					0.0	0.0	216.6	0.0	0.0	0.0
5.00		433.1	811.7					0.0	208.8	433.1	1,020.5	0.0	0.0
10.00		432.7	790.2					0.0	208.8	432.7	999.0	0.0	0.0
15.00		432.4	768.7					0.0	208.8	432.4	977.6	0.0	0.0
20.00		432.2	747.3					0.0	208.8	432.2	956.1	0.0	0.0
25.00		432.1	725.8					0.0	208.8	432.1	934.6	0.0	0.0
30.00		437.3	704.3					0.0	208.8	437.3	913.2	0.0	0.0
35.00		451.8	682.8					0.0	208.8	451.8	891.7	0.0	0.0
40.00		390.3	661.4					0.0	208.8	390.3	870.2	0.0	0.0
43.36	Bot - Section 2	240.5	432.3					0.0	140.3	240.5	572.6	0.0	0.0
45.00		250.2	384.0					0.0	68.5	250.2	452.5	0.0	0.0
48.35	Top - Section 1	252.5	771.3					0.0	140.0	252.5	911.3	0.0	0.0
50.00		344.8	171.4					0.0	68.9	344.8	240.2	0.0	0.0
55.00		525.8	507.9					0.0	208.8	525.8	716.8	0.0	0.0
60.00		524.7	490.0					108.0	208.8	632.6	698.9	0.0	0.0
65.00		517.0	472.1					114.5	208.8	631.6	681.0	0.0	0.0
70.00		507.9	454.2					121.0	208.8	629.0	663.1	0.0	0.0
75.00		497.5	436.3					124.2	208.8	621.7	645.2	0.0	0.0
80.00		485.7	418.4					126.9	208.8	612.6	627.3	0.0	0.0
85.00		379.6	400.5					129.4	208.8	509.0	609.4	0.0	0.0
87.98	Bot - Section 3	140.7	230.4					78.2	124.5	218.9	354.9	0.0	0.0
88.00	Appurtenance(s)	95.1	2.5	242.9	0.0	0.0	139.5	0.5	0.8	338.5	142.8	0.0	0.0
90.00		174.8	274.4					52.9	83.3	227.7	357.6	0.0	0.0
91.73	Top - Section 2	230.5	233.1					46.0	72.0	276.5	305.1	0.0	0.0
95.00		284.6	193.7					87.7	136.2	372.4	329.9	0.0	0.0
98.00	Appurtenance(s)	219.8	172.3	264.2	0.0	792.5	50.2	81.2	124.9	565.2	347.4	0.0	0.0
100.00		305.4	112.0					3.6	74.3	309.0	186.3	0.0	0.0
105.00		262.3	270.0					9.2	185.7	271.4	455.7	0.0	0.0
106.00	Appurtenance(s)	142.0	52.3	3,911.2	0.0	0.0	3,850.0	17.7	37.1	4,070.9	3,939.4	0.0	0.0
110.00		220.2	203.4					0.0	58.2	220.2	261.7	0.0	0.0
115.00		143.5	241.4					0.0	72.8	143.5	314.2	0.0	0.0
116.00	Appurtenance(s)	114.5	46.6	3,054.9	0.0	4,521.8	3,103.3	0.0	14.6	3,169.5	3,164.4	0.0	0.0
120.00		199.9	180.5					0.0	45.1	199.9	225.6	0.0	0.0
125.00		124.1	212.8					0.0	56.4	124.1	269.1	0.0	0.0
125.73		15.4	29.9					0.0	8.2	15.4	38.1	0.0	0.0
Totals:										19,431.7	25,073.4	0.00	0.00

Load Case: 0.9D + 1.0W

119 mph with No Ice (Reduced DL)

24 Iterations

Gust Response Factor :1.10

Dead Load Factor :0.90

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-27.13	-21.94	0.00	-1,971.08	0.00	1,971.08	3,765.29	942.58	3,841.82	3,494.42	0.00	0.00	0.572
5.00	-26.03	-21.60	0.00	-1,861.37	0.00	1,861.37	3,697.66	917.97	3,643.85	3,341.32	0.11	-0.20	0.565
10.00	-24.96	-21.25	0.00	-1,753.39	0.00	1,753.39	3,628.38	893.36	3,451.13	3,190.08	0.42	-0.40	0.557
15.00	-23.91	-20.89	0.00	-1,647.16	0.00	1,647.16	3,557.46	868.75	3,263.64	3,040.82	0.95	-0.60	0.549
20.00	-22.88	-20.53	0.00	-1,542.69	0.00	1,542.69	3,484.89	844.14	3,081.39	2,893.66	1.69	-0.81	0.540
25.00	-21.88	-20.17	0.00	-1,440.02	0.00	1,440.02	3,410.68	819.53	2,904.37	2,748.72	2.66	-1.03	0.531
30.00	-20.90	-19.79	0.00	-1,339.18	0.00	1,339.18	3,334.83	794.92	2,732.59	2,606.12	3.86	-1.25	0.521
35.00	-19.95	-19.40	0.00	-1,240.21	0.00	1,240.21	3,257.33	770.32	2,566.05	2,465.98	5.28	-1.47	0.510
40.00	-19.02	-19.05	0.00	-1,143.21	0.00	1,143.21	3,156.83	745.71	2,404.74	2,312.78	6.94	-1.69	0.501
43.36	-18.42	-18.83	0.00	-1,079.22	0.00	1,079.22	3,086.83	729.17	2,299.30	2,210.84	8.18	-1.85	0.495
45.00	-17.94	-18.60	0.00	-1,048.34	0.00	1,048.34	3,052.65	721.10	2,248.67	2,161.89	8.83	-1.92	0.491
48.35	-17.00	-18.35	0.00	-986.00	0.00	986.00	2,458.29	599.14	1,862.71	1,738.87	10.24	-2.08	0.575
50.00	-16.72	-18.05	0.00	-955.75	0.00	955.75	2,438.38	592.38	1,820.91	1,705.15	10.97	-2.16	0.568
55.00	-15.94	-17.57	0.00	-865.52	0.00	865.52	2,376.89	571.87	1,697.04	1,604.09	13.37	-2.42	0.547
60.00	-15.19	-16.97	0.00	-777.69	0.00	777.69	2,313.76	551.36	1,577.53	1,504.96	16.05	-2.69	0.524
65.00	-14.47	-16.38	0.00	-692.82	0.00	692.82	2,247.28	530.85	1,462.38	1,406.82	19.00	-2.95	0.500
70.00	-13.77	-15.77	0.00	-610.95	0.00	610.95	2,160.47	510.35	1,351.59	1,299.70	22.23	-3.21	0.477
75.00	-13.10	-15.17	0.00	-532.08	0.00	532.08	2,073.65	489.84	1,245.17	1,196.82	25.73	-3.47	0.452
80.00	-12.44	-14.58	0.00	-456.21	0.00	456.21	1,986.84	469.33	1,143.11	1,098.18	29.50	-3.72	0.423
85.00	-11.82	-14.07	0.00	-383.33	0.00	383.33	1,900.02	448.82	1,045.41	1,003.78	33.52	-3.96	0.389
87.98	-11.47	-13.84	0.00	-341.38	0.00	341.38	1,848.25	436.59	989.23	949.50	36.04	-4.10	0.367
88.00	-11.34	-13.50	0.00	-341.13	0.00	341.13	1,847.94	436.52	988.89	949.18	36.05	-4.11	0.366
90.00	-10.98	-13.26	0.00	-314.13	0.00	314.13	1,813.21	428.32	952.08	913.62	37.79	-4.20	0.351
91.73	-10.67	-12.99	0.00	-291.19	0.00	291.19	1,455.48	344.81	771.23	739.90	39.33	-4.28	0.402
95.00	-10.34	-12.62	0.00	-248.72	0.00	248.72	1,414.28	334.08	723.98	696.35	42.31	-4.42	0.366
98.00	-10.01	-12.05	0.00	-210.08	0.00	210.08	1,372.61	324.24	681.95	655.72	45.13	-4.56	0.329
100.00	-9.82	-11.75	0.00	-185.99	0.00	185.99	1,344.82	317.68	654.63	629.30	47.06	-4.65	0.304
105.00	-9.37	-11.46	0.00	-127.25	0.00	127.25	1,275.37	301.27	588.77	565.65	52.03	-4.84	0.234
106.00	-5.78	-7.07	0.00	-115.80	0.00	115.80	1,261.48	297.99	576.02	553.33	53.05	-4.87	0.214
110.00	-5.52	-6.84	0.00	-87.50	0.00	87.50	1,205.92	284.86	526.40	505.39	57.18	-4.99	0.178
115.00	-5.21	-6.68	0.00	-53.28	0.00	53.28	1,136.47	268.46	467.53	448.52	62.46	-5.11	0.124
116.00	-2.34	-3.24	0.00	-42.08	0.00	42.08	1,122.58	265.18	456.17	437.56	63.53	-5.13	0.098
120.00	-2.13	-3.02	0.00	-29.12	0.00	29.12	1,067.02	252.05	412.14	395.05	67.85	-5.19	0.076
125.00	-1.88	-2.88	0.00	-14.00	0.00	14.00	997.57	235.65	360.25	344.97	73.30	-5.24	0.043
125.73	0.00	-2.69	0.00	-11.90	0.00	11.90	987.43	233.25	352.96	337.94	74.10	-5.24	0.035

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice	23 Iterations
Gust Response Factor :1.10	Ice Dead Load Factor :1.00	
Dead Load Factor :1.20		Ice Importance Factor :1.00
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		55.1	0.0					0.0	0.0	55.1	0.0	0.0	0.0
5.00		109.1	1,300.5					0.0	509.9	109.1	1,810.4	0.0	0.0
10.00		106.6	1,291.3					0.0	525.4	106.6	1,816.7	0.0	0.0
15.00		104.0	1,268.7					0.0	533.3	104.0	1,802.0	0.0	0.0
20.00		101.3	1,241.7					0.0	538.8	101.3	1,780.4	0.0	0.0
25.00		98.6	1,212.3					0.0	543.0	98.6	1,755.3	0.0	0.0
30.00		97.0	1,181.5					0.0	546.5	97.0	1,728.0	0.0	0.0
35.00		97.4	1,149.7					0.0	549.5	97.4	1,699.2	0.0	0.0
40.00		82.0	1,117.1					0.0	552.1	82.0	1,669.2	0.0	0.0
43.36	Bot - Section 2	49.5	732.8					0.0	372.2	49.5	1,105.0	0.0	0.0
45.00		50.0	589.4					0.0	182.1	50.0	771.5	0.0	0.0
48.35	Top - Section 1	50.1	1,183.9					0.0	372.8	50.1	1,556.7	0.0	0.0
50.00		66.4	304.5					0.0	183.7	66.4	488.2	0.0	0.0
55.00		99.7	901.7					20.4	558.3	120.2	1,460.0	0.0	0.0
60.00		99.9	872.1					21.4	560.1	121.2	1,432.2	0.0	0.0
65.00		100.2	842.3					22.3	561.7	122.5	1,404.0	0.0	0.0
70.00		100.1	812.2					23.2	563.2	123.3	1,375.4	0.0	0.0
75.00		99.4	781.9					24.1	564.6	123.5	1,346.5	0.0	0.0
80.00		98.4	751.4					25.0	565.9	123.4	1,317.3	0.0	0.0
85.00		77.9	720.7					26.6	567.2	104.4	1,287.9	0.0	0.0
87.98	Bot - Section 3	29.1	416.1					16.7	338.8	45.8	754.9	0.0	0.0
88.00	Appurtenance(s)	19.8	4.0	57.9	0.0	0.0	229.6	0.1	2.1	77.8	235.7	0.0	0.0
90.00		36.5	439.2					11.6	227.1	48.1	666.3	0.0	0.0
91.73	Top - Section 2	48.4	373.4					10.3	196.5	58.6	569.9	0.0	0.0
95.00		60.1	373.6					19.7	372.1	79.7	745.7	0.0	0.0
98.00	Appurtenance(s)	45.6	332.9	66.1	0.0	198.3	168.6	18.7	341.7	130.5	843.1	0.0	0.0
100.00		58.7	217.0					12.9	183.0	71.6	399.9	0.0	0.0
105.00		49.9	521.4					54.1	458.0	104.0	979.4	0.0	0.0
106.00	Appurtenance(s)	40.3	101.7	904.1	0.0	0.0	7,606.1	11.1	91.7	955.6	7,799.5	0.0	0.0
110.00		70.8	394.4					0.0	77.7	70.8	472.0	0.0	0.0
115.00		46.3	468.1					0.0	97.1	46.3	565.2	0.0	0.0
116.00	Appurtenance(s)	37.2	91.1	707.1	0.0	893.5	5,789.0	0.0	19.4	744.3	5,899.5	0.0	0.0
120.00		65.1	351.6					0.0	60.1	65.1	411.7	0.0	0.0
125.00		40.6	414.4					0.0	75.2	40.6	489.6	0.0	0.0
125.73		5.0	58.8					0.0	11.0	5.0	69.7	0.0	0.0
Totals:										4,449.35	48,508.2	0.00	0.00

Site Number: 302469

Code: ANSI/TIA-222-H

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Site Name: Bridgeport CT 2, CT

Engineering Number: 13337502_C3_02

2/16/2021 9:08:41 AM

Customer: T-MOBILE

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

23 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-52.92	-5.03	0.00	-475.92	0.00	475.92	3,765.29	942.58	3,841.82	3,494.42	0.00	0.00	0.150
5.00	-51.11	-4.96	0.00	-450.79	0.00	450.79	3,697.66	917.97	3,643.85	3,341.32	0.03	-0.05	0.149
10.00	-49.29	-4.89	0.00	-425.99	0.00	425.99	3,628.38	893.36	3,451.13	3,190.08	0.10	-0.10	0.147
15.00	-47.48	-4.83	0.00	-401.53	0.00	401.53	3,557.46	868.75	3,263.64	3,040.82	0.23	-0.15	0.145
20.00	-45.70	-4.76	0.00	-377.39	0.00	377.39	3,484.89	844.14	3,081.39	2,893.66	0.41	-0.20	0.144
25.00	-43.94	-4.70	0.00	-353.58	0.00	353.58	3,410.68	819.53	2,904.37	2,748.72	0.65	-0.25	0.142
30.00	-42.21	-4.63	0.00	-330.10	0.00	330.10	3,334.83	794.92	2,732.59	2,606.12	0.94	-0.30	0.139
35.00	-40.50	-4.56	0.00	-306.94	0.00	306.94	3,257.33	770.32	2,566.05	2,465.98	1.28	-0.36	0.137
40.00	-38.83	-4.50	0.00	-284.12	0.00	284.12	3,156.83	745.71	2,404.74	2,312.78	1.69	-0.41	0.135
43.36	-37.72	-4.46	0.00	-269.00	0.00	269.00	3,086.83	729.17	2,299.30	2,210.84	1.99	-0.45	0.134
45.00	-36.95	-4.43	0.00	-261.68	0.00	261.68	3,052.65	721.10	2,248.67	2,161.89	2.15	-0.47	0.133
48.35	-35.39	-4.38	0.00	-246.84	0.00	246.84	2,458.29	599.14	1,862.71	1,738.87	2.50	-0.51	0.156
50.00	-34.90	-4.34	0.00	-239.62	0.00	239.62	2,438.38	592.38	1,820.91	1,705.15	2.68	-0.53	0.155
55.00	-33.44	-4.24	0.00	-217.94	0.00	217.94	2,376.89	571.87	1,697.04	1,604.09	3.27	-0.60	0.150
60.00	-32.00	-4.14	0.00	-196.74	0.00	196.74	2,313.76	551.36	1,577.53	1,504.96	3.93	-0.66	0.145
65.00	-30.59	-4.04	0.00	-176.04	0.00	176.04	2,247.28	530.85	1,462.38	1,406.82	4.66	-0.73	0.139
70.00	-29.22	-3.93	0.00	-155.86	0.00	155.86	2,160.47	510.35	1,351.59	1,299.70	5.46	-0.80	0.134
75.00	-27.87	-3.82	0.00	-136.22	0.00	136.22	2,073.65	489.84	1,245.17	1,196.82	6.33	-0.86	0.127
80.00	-26.55	-3.70	0.00	-117.13	0.00	117.13	1,986.84	469.33	1,143.11	1,098.18	7.27	-0.93	0.120
85.00	-25.26	-3.60	0.00	-98.62	0.00	98.62	1,900.02	448.82	1,045.41	1,003.78	8.28	-0.99	0.112
87.98	-24.50	-3.55	0.00	-87.89	0.00	87.89	1,848.25	436.59	989.23	949.50	8.91	-1.03	0.106
88.00	-24.27	-3.47	0.00	-87.82	0.00	87.82	1,847.94	436.52	988.89	949.18	8.91	-1.03	0.106
90.00	-23.60	-3.42	0.00	-80.88	0.00	80.88	1,813.21	428.32	952.08	913.62	9.34	-1.05	0.102
91.73	-23.03	-3.36	0.00	-74.97	0.00	74.97	1,455.48	344.81	771.23	739.90	9.73	-1.07	0.117
95.00	-22.29	-3.28	0.00	-63.97	0.00	63.97	1,414.28	334.08	723.98	696.35	10.48	-1.11	0.108
98.00	-21.44	-3.15	0.00	-53.93	0.00	53.93	1,372.61	324.24	681.95	655.72	11.18	-1.14	0.098
100.00	-21.04	-3.08	0.00	-47.64	0.00	47.64	1,344.82	317.68	654.63	629.30	11.67	-1.17	0.091
105.00	-20.06	-2.97	0.00	-32.23	0.00	32.23	1,275.37	301.27	588.77	565.65	12.92	-1.21	0.073
106.00	-12.29	-1.85	0.00	-29.27	0.00	29.27	1,261.48	297.99	576.02	553.33	13.17	-1.22	0.063
110.00	-11.82	-1.77	0.00	-21.88	0.00	21.88	1,205.92	284.86	526.40	505.39	14.21	-1.25	0.053
115.00	-11.25	-1.72	0.00	-13.01	0.00	13.01	1,136.47	268.46	467.53	448.52	15.54	-1.28	0.039
116.00	-5.37	-0.84	0.00	-10.40	0.00	10.40	1,122.58	265.18	456.17	437.56	15.81	-1.29	0.029
120.00	-4.96	-0.77	0.00	-7.03	0.00	7.03	1,067.02	252.05	412.14	395.05	16.89	-1.30	0.022
125.00	-4.47	-0.72	0.00	-3.19	0.00	3.19	997.57	235.65	360.25	344.97	18.26	-1.31	0.014
125.73	0.00	-0.62	0.00	-2.66	0.00	2.66	987.43	233.25	352.96	337.94	18.46	-1.31	0.008

Site Number: 302469

Code: ANSI/TIA-222-H

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Site Name: Bridgeport CT 2, CT

Engineering Number: 13337502_C3_02

2/16/2021 9:08:41 AM

Customer: T-MOBILE

Load Case: 1.0D + 1.0W **Serviceability 60 mph** **23 Iterations**

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

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		49.3	0.0					0.0	0.0	49.3	0.0	0.0	0.0
5.00		98.5	901.9					0.0	232.1	98.5	1,133.9	0.0	0.0
10.00		98.4	878.0					0.0	232.1	98.4	1,110.0	0.0	0.0
15.00		98.4	854.1					0.0	232.1	98.4	1,086.2	0.0	0.0
20.00		98.3	830.3					0.0	232.1	98.3	1,062.3	0.0	0.0
25.00		98.3	806.4					0.0	232.1	98.3	1,038.5	0.0	0.0
30.00		99.5	782.6					0.0	232.1	99.5	1,014.6	0.0	0.0
35.00		102.8	758.7					0.0	232.1	102.8	990.8	0.0	0.0
40.00		88.8	734.9					0.0	232.1	88.8	966.9	0.0	0.0
43.36	Bot - Section 2	54.7	480.3					0.0	155.9	54.7	636.2	0.0	0.0
45.00		56.9	426.7					0.0	76.1	56.9	502.8	0.0	0.0
48.35	Top - Section 1	57.4	857.1					0.0	155.5	57.4	1,012.6	0.0	0.0
50.00		78.4	190.4					0.0	76.5	78.4	266.9	0.0	0.0
55.00		119.6	564.3					0.0	232.1	119.6	796.4	0.0	0.0
60.00		119.3	544.5					24.6	232.1	143.9	776.5	0.0	0.0
65.00		117.6	524.6					26.0	232.1	143.7	756.6	0.0	0.0
70.00		115.5	504.7					27.5	232.1	143.1	736.7	0.0	0.0
75.00		113.2	484.8					28.3	232.1	141.4	716.9	0.0	0.0
80.00		110.5	464.9					28.9	232.1	139.4	697.0	0.0	0.0
85.00		86.4	445.1					29.4	232.1	115.8	677.1	0.0	0.0
87.98	Bot - Section 3	32.0	255.9					17.8	138.4	49.8	394.3	0.0	0.0
88.00	Appurtenance(s)	21.6	2.8	55.3	0.0	0.0	155.0	0.1	0.8	77.0	158.6	0.0	0.0
90.00		39.8	304.9					12.0	92.5	51.8	397.4	0.0	0.0
91.73	Top - Section 2	52.4	259.0					10.5	80.0	62.9	339.0	0.0	0.0
95.00		64.7	215.3					20.0	151.3	84.7	366.6	0.0	0.0
98.00	Appurtenance(s)	50.0	191.5	60.1	0.0	180.3	55.8	18.5	138.8	128.6	386.0	0.0	0.0
100.00		69.5	124.5					0.8	82.5	70.3	207.0	0.0	0.0
105.00		59.7	300.0					2.1	206.3	61.7	506.3	0.0	0.0
106.00	Appurtenance(s)	32.3	58.1	889.6	0.0	0.0	4,277.8	4.0	41.3	926.0	4,377.2	0.0	0.0
110.00		50.1	226.0					0.0	64.7	50.1	290.7	0.0	0.0
115.00		32.6	268.2					0.0	80.9	32.6	349.1	0.0	0.0
116.00	Appurtenance(s)	26.1	51.7	694.9	0.0	1,028.5	3,448.1	0.0	16.2	720.9	3,516.0	0.0	0.0
120.00		45.5	200.6					0.0	50.1	45.5	250.7	0.0	0.0
125.00		28.2	236.4					0.0	62.6	28.2	299.0	0.0	0.0
125.73		3.5	33.2					0.0	9.1	3.5	42.3	0.0	0.0
								Totals:		4,419.94	27,859.4	0.00	0.00

Site Number: 302469

Code: ANSI/TIA-222-H

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Site Name: Bridgeport CT 2, CT

Engineering Number: 13337502_C3_02

2/16/2021 9:08:44 AM

Customer: T-MOBILE

Load Case: 1.0D + 1.0W

Serviceability 60 mph

23 Iterations

Gust Response Factor :1.10

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-30.18	-4.99	0.00	-450.78	0.00	450.78	3,765.29	942.58	3,841.82	3,494.42	0.00	0.00	0.137
5.00	-29.04	-4.92	0.00	-425.83	0.00	425.83	3,697.66	917.97	3,643.85	3,341.32	0.02	-0.05	0.135
10.00	-27.93	-4.84	0.00	-401.25	0.00	401.25	3,628.38	893.36	3,451.13	3,190.08	0.10	-0.09	0.134
15.00	-26.84	-4.76	0.00	-377.05	0.00	377.05	3,557.46	868.75	3,263.64	3,040.82	0.22	-0.14	0.132
20.00	-25.78	-4.68	0.00	-353.25	0.00	353.25	3,484.89	844.14	3,081.39	2,893.66	0.39	-0.19	0.130
25.00	-24.73	-4.60	0.00	-329.85	0.00	329.85	3,410.68	819.53	2,904.37	2,748.72	0.61	-0.24	0.127
30.00	-23.71	-4.52	0.00	-306.85	0.00	306.85	3,334.83	794.92	2,732.59	2,606.12	0.88	-0.29	0.125
35.00	-22.72	-4.43	0.00	-284.26	0.00	284.26	3,257.33	770.32	2,566.05	2,465.98	1.21	-0.34	0.122
40.00	-21.75	-4.35	0.00	-262.12	0.00	262.12	3,156.83	745.71	2,404.74	2,312.78	1.59	-0.39	0.120
43.36	-21.11	-4.30	0.00	-247.50	0.00	247.50	3,086.83	729.17	2,299.30	2,210.84	1.87	-0.42	0.119
45.00	-20.61	-4.25	0.00	-240.45	0.00	240.45	3,052.65	721.10	2,248.67	2,161.89	2.02	-0.44	0.118
48.35	-19.59	-4.19	0.00	-226.20	0.00	226.20	2,458.29	599.14	1,862.71	1,738.87	2.34	-0.48	0.138
50.00	-19.33	-4.13	0.00	-219.29	0.00	219.29	2,438.38	592.38	1,820.91	1,705.15	2.51	-0.49	0.137
55.00	-18.53	-4.02	0.00	-198.66	0.00	198.66	2,376.89	571.87	1,697.04	1,604.09	3.06	-0.56	0.132
60.00	-17.75	-3.89	0.00	-178.56	0.00	178.56	2,313.76	551.36	1,577.53	1,504.96	3.68	-0.62	0.126
65.00	-16.99	-3.75	0.00	-159.13	0.00	159.13	2,247.28	530.85	1,462.38	1,406.82	4.35	-0.68	0.121
70.00	-16.25	-3.62	0.00	-140.37	0.00	140.37	2,160.47	510.35	1,351.59	1,299.70	5.09	-0.74	0.116
75.00	-15.53	-3.48	0.00	-122.29	0.00	122.29	2,073.65	489.84	1,245.17	1,196.82	5.90	-0.79	0.110
80.00	-14.83	-3.35	0.00	-104.88	0.00	104.88	1,986.84	469.33	1,143.11	1,098.18	6.76	-0.85	0.103
85.00	-14.16	-3.23	0.00	-88.15	0.00	88.15	1,900.02	448.82	1,045.41	1,003.78	7.68	-0.91	0.095
87.98	-13.76	-3.18	0.00	-78.52	0.00	78.52	1,848.25	436.59	989.23	949.50	8.26	-0.94	0.090
88.00	-13.60	-3.10	0.00	-78.46	0.00	78.46	1,847.94	436.52	988.89	949.18	8.27	-0.94	0.090
90.00	-13.21	-3.05	0.00	-72.25	0.00	72.25	1,813.21	428.32	952.08	913.62	8.66	-0.96	0.086
91.73	-12.87	-2.99	0.00	-66.98	0.00	66.98	1,455.48	344.81	771.23	739.90	9.02	-0.98	0.099
95.00	-12.50	-2.90	0.00	-57.22	0.00	57.22	1,414.28	334.08	723.98	696.35	9.70	-1.01	0.091
98.00	-12.11	-2.77	0.00	-48.33	0.00	48.33	1,372.61	324.24	681.95	655.72	10.35	-1.05	0.083
100.00	-11.91	-2.70	0.00	-42.79	0.00	42.79	1,344.82	317.68	654.63	629.30	10.79	-1.07	0.077
105.00	-11.40	-2.64	0.00	-29.26	0.00	29.26	1,275.37	301.27	588.77	565.65	11.93	-1.11	0.061
106.00	-7.04	-1.63	0.00	-26.63	0.00	26.63	1,261.48	297.99	576.02	553.33	12.17	-1.12	0.054
110.00	-6.75	-1.58	0.00	-20.11	0.00	20.11	1,205.92	284.86	526.40	505.39	13.12	-1.15	0.045
115.00	-6.40	-1.54	0.00	-12.22	0.00	12.22	1,136.47	268.46	467.53	448.52	14.33	-1.17	0.033
116.00	-2.90	-0.75	0.00	-9.66	0.00	9.66	1,122.58	265.18	456.17	437.56	14.58	-1.18	0.025
120.00	-2.65	-0.70	0.00	-6.67	0.00	6.67	1,067.02	252.05	412.14	395.05	15.57	-1.19	0.019
125.00	-2.35	-0.66	0.00	-3.19	0.00	3.19	997.57	235.65	360.25	344.97	16.82	-1.20	0.012
125.73	0.00	-0.61	0.00	-2.71	0.00	2.71	987.43	233.25	352.96	337.94	17.01	-1.20	0.008

Equivalent Lateral Forces Method Analysis

Spectral Response Acceleration for Short Period (S_s):	0.21
Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.05
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.22
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.09
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	2.37
Redundancy Factor (ρ):	1.00
Seismic Force Distribution Exponent (k):	1.93
Total Unfactored Dead Load:	30.18 k
Seismic Base Shear (E):	0.91 k

Load Case 1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
34	125.37	42	485	0.003	3	53
33	122.50	299	3,277	0.021	19	372
32	118.00	251	2,556	0.017	15	312
31	115.50	68	664	0.004	4	85
30	112.50	349	3,245	0.021	19	434
29	108.00	291	2,497	0.016	15	362
28	105.50	99	816	0.005	5	124
27	102.50	506	3,930	0.026	23	630
26	99.00	207	1,502	0.010	9	258
25	96.50	330	2,281	0.015	14	411
24	93.36	367	2,375	0.016	14	456
23	90.86	339	2,084	0.014	12	422
22	89.00	397	2,347	0.015	14	494
21	87.99	4	21	0.000	0	5
20	86.49	394	2,204	0.014	13	491
19	82.50	677	3,454	0.023	20	843
18	77.50	697	3,150	0.021	19	867
17	72.50	717	2,848	0.019	17	892
16	67.50	737	2,549	0.017	15	917
15	62.50	757	2,256	0.015	13	942
14	57.50	777	1,970	0.013	12	966
13	52.50	796	1,694	0.011	10	991
12	49.18	267	500	0.003	3	332
11	46.68	1,013	1,716	0.011	10	1,260
10	44.18	503	766	0.005	5	626

9	41.68	636	866	0.006	5	792
8	37.50	967	1,073	0.007	6	1,203
7	32.50	991	834	0.005	5	1,233
6	27.50	1,015	618	0.004	4	1,263
5	22.50	1,038	429	0.003	3	1,292
4	17.50	1,062	270	0.002	2	1,322
3	12.50	1,086	144	0.001	1	1,352
2	7.50	1,110	55	0.000	0	1,381
1	2.50	1,134	7	0.000	0	1,411
DragonWave Horizon C	125.73	21	244	0.002	1	26
DragonWave A-ANT-23G	125.73	15	173	0.001	1	19
Alcatel-Lucent RRH2x	125.73	317	3,658	0.024	22	395
Alcatel-Lucent 1900	125.73	180	2,075	0.014	12	224
Alcatel-Lucent TD-RR	125.73	198	2,285	0.015	14	247
Nokia 2.5G MAA - AAH	125.73	311	3,582	0.023	21	387
DragonWave A-ANT-18G	125.73	27	312	0.002	2	34
Commscope NNVV-65B-R	125.73	232	2,676	0.017	16	289
Generic Round T-Arm	125.73	938	10,805	0.071	64	1,167
Argus LLPX310R	125.73	86	989	0.006	6	107
Ericsson Radio 4449	116.00	225	2,219	0.015	13	280
Ericsson RRUS 4415 B	116.00	138	1,361	0.009	8	172
Ericsson AIR 6449 B4	116.00	305	3,006	0.020	18	379
Ericsson AIR32 B66Aa	116.00	397	3,911	0.026	23	494
RFS APXVAARR24_43-U-	116.00	384	3,784	0.025	22	477
Round Platform w/ Ha	116.00	2,000	19,725	0.129	117	2,489
Raycap DC6-48-60-18-	106.00	127	1,054	0.007	6	158
Ericsson Radio 8843	106.00	216	1,787	0.012	11	268
Ericsson RRUS 4478 B	106.00	180	1,489	0.010	9	224
Ericsson RRUS 4449 B	106.00	213	1,764	0.012	10	265
Ericsson RRUS 32 B30	106.00	159	1,317	0.009	8	198
Ericsson RRUS E2 B29	106.00	180	1,491	0.010	9	224
CCI OPA-65R-LCUU-H4	106.00	342	2,833	0.019	17	426
CCI DMP65R-BU4D	106.00	204	1,687	0.011	10	253
CCI OPA65R-BU4DA-K	106.00	157	1,305	0.009	8	196
Site Pro 1 RMQLP-412	106.00	2,500	20,710	0.135	123	3,111
Generic RCU (Remote	98.00	3	21	0.000	0	4
Kathrein Scala 800 1	98.00	53	376	0.002	2	66
Procom CXL 900-3LW	88.00	2	9	0.000	0	2
Generic 5" x 3" x 2"	88.00	2	9	0.000	0	2
Generic Low Noise Am	88.00	2	12	0.000	0	2
Flat Side Arm	88.00	150	867	0.006	5	187
		30,185	153,019	1.000	906	37,561

Load Case 0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
34	125.37	42	485	0.003	3	36
33	122.50	299	3,277	0.021	19	256
32	118.00	251	2,556	0.017	15	214
31	115.50	68	664	0.004	4	58
30	112.50	349	3,245	0.021	19	299
29	108.00	291	2,497	0.016	15	249
28	105.50	99	816	0.005	5	85
27	102.50	506	3,930	0.026	23	433
26	99.00	207	1,502	0.010	9	177
25	96.50	330	2,281	0.015	14	283
24	93.36	367	2,375	0.016	14	314
23	90.86	339	2,084	0.014	12	290
22	89.00	397	2,347	0.015	14	340
21	87.99	4	21	0.000	0	3

20	86.49	394	2,204	0.014	13	337
19	82.50	677	3,454	0.023	20	579
18	77.50	697	3,150	0.021	19	596
17	72.50	717	2,848	0.019	17	613
16	67.50	737	2,549	0.017	15	630
15	62.50	757	2,256	0.015	13	647
14	57.50	777	1,970	0.013	12	664
13	52.50	796	1,694	0.011	10	681
12	49.18	267	500	0.003	3	228
11	46.68	1,013	1,716	0.011	10	866
10	44.18	503	766	0.005	5	430
9	41.68	636	866	0.006	5	544
8	37.50	967	1,073	0.007	6	827
7	32.50	991	834	0.005	5	848
6	27.50	1,015	618	0.004	4	868
5	22.50	1,038	429	0.003	3	889
4	17.50	1,062	270	0.002	2	909
3	12.50	1,086	144	0.001	1	929
2	7.50	1,110	55	0.000	0	950
1	2.50	1,134	7	0.000	0	970
DragonWave Horizon C	125.73	21	244	0.002	1	18
DragonWave A-ANT-23G	125.73	15	173	0.001	1	13
Alcatel-Lucent RRH2x	125.73	317	3,658	0.024	22	272
Alcatel-Lucent 1900	125.73	180	2,075	0.014	12	154
Alcatel-Lucent TD-RR	125.73	198	2,285	0.015	14	170
Nokia 2.5G MAA - AAH	125.73	311	3,582	0.023	21	266
DragonWave A-ANT-18G	125.73	27	312	0.002	2	23
Commscope NNVV-65B-R	125.73	232	2,676	0.017	16	199
Generic Round T-Arm	125.73	938	10,805	0.071	64	802
Argus LLPX310R	125.73	86	989	0.006	6	73
Ericsson Radio 4449	116.00	225	2,219	0.015	13	193
Ericsson RRUS 4415 B	116.00	138	1,361	0.009	8	118
Ericsson AIR 6449 B4	116.00	305	3,006	0.020	18	261
Ericsson AIR32 B66Aa	116.00	397	3,911	0.026	23	339
RFS APXVAARR24_43-U-	116.00	384	3,784	0.025	22	328
Round Platform w/ Ha	116.00	2,000	19,725	0.129	117	1,711
Raycap DC6-48-60-18-	106.00	127	1,054	0.007	6	109
Ericsson Radio 8843	106.00	216	1,787	0.012	11	185
Ericsson RRUS 4478 B	106.00	180	1,489	0.010	9	154
Ericsson RRUS 4449 B	106.00	213	1,764	0.012	10	182
Ericsson RRUS 32 B30	106.00	159	1,317	0.009	8	136
Ericsson RRUS E2 B29	106.00	180	1,491	0.010	9	154
CCI OPA-65R-LCUU-H4	106.00	342	2,833	0.019	17	293
CCI DMP65R-BU4D	106.00	204	1,687	0.011	10	174
CCI OPA65R-BU4DA-K	106.00	157	1,305	0.009	8	135
Site Pro 1 RMQLP-412	106.00	2,500	20,710	0.135	123	2,139
Generic RCU (Remote	98.00	3	21	0.000	0	3
Kathrein Scala 800 1	98.00	53	376	0.002	2	45
Procom CXL 900-3LW	88.00	2	9	0.000	0	1
Generic 5" x 3" x 2"	88.00	2	9	0.000	0	1
Generic Low Noise Am	88.00	2	12	0.000	0	2
Flat Side Arm	88.00	150	867	0.006	5	128
		30,185	153,019	1.000	906	25,827

Load Case 1.2D + 1.0Ev + 1.0Eh

Seismic

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.15	-0.91	0.00	-98.26	0.00	98.26	3,765.29	942.58	3,841.82	3,494.42	0.00	0.00	0.038
5.00	-34.77	-0.91	0.00	-93.71	0.00	93.71	3,697.66	917.97	3,643.85	3,341.32	0.01	-0.01	0.037
10.00	-33.42	-0.92	0.00	-89.15	0.00	89.15	3,628.38	893.36	3,451.13	3,190.08	0.02	-0.02	0.037
15.00	-32.09	-0.92	0.00	-84.55	0.00	84.55	3,557.46	868.75	3,263.64	3,040.82	0.05	-0.03	0.037
20.00	-30.80	-0.93	0.00	-79.94	0.00	79.94	3,484.89	844.14	3,081.39	2,893.66	0.09	-0.04	0.036
25.00	-29.54	-0.93	0.00	-75.31	0.00	75.31	3,410.68	819.53	2,904.37	2,748.72	0.13	-0.05	0.036
30.00	-28.31	-0.93	0.00	-70.68	0.00	70.68	3,334.83	794.92	2,732.59	2,606.12	0.20	-0.06	0.036
35.00	-27.10	-0.92	0.00	-66.05	0.00	66.05	3,257.33	770.32	2,566.05	2,465.98	0.27	-0.08	0.035
40.00	-26.31	-0.92	0.00	-61.44	0.00	61.44	3,156.83	745.71	2,404.74	2,312.78	0.35	-0.09	0.035
43.36	-25.69	-0.92	0.00	-58.34	0.00	58.34	3,086.83	729.17	2,299.30	2,210.84	0.42	-0.10	0.035
45.00	-24.43	-0.91	0.00	-56.83	0.00	56.83	3,052.65	721.10	2,248.67	2,161.89	0.45	-0.10	0.034
48.35	-24.09	-0.91	0.00	-53.78	0.00	53.78	2,458.29	599.14	1,862.71	1,738.87	0.53	-0.11	0.041
50.00	-23.10	-0.90	0.00	-52.28	0.00	52.28	2,438.38	592.38	1,820.91	1,705.15	0.57	-0.11	0.040
55.00	-22.14	-0.89	0.00	-47.78	0.00	47.78	2,376.89	571.87	1,697.04	1,604.09	0.69	-0.13	0.039
60.00	-21.19	-0.88	0.00	-43.32	0.00	43.32	2,313.76	551.36	1,577.53	1,504.96	0.83	-0.14	0.038
65.00	-20.28	-0.87	0.00	-38.90	0.00	38.90	2,247.28	530.85	1,462.38	1,406.82	0.99	-0.16	0.037
70.00	-19.38	-0.86	0.00	-34.55	0.00	34.55	2,160.47	510.35	1,351.59	1,299.70	1.16	-0.17	0.036
75.00	-18.52	-0.84	0.00	-30.28	0.00	30.28	2,073.65	489.84	1,245.17	1,196.82	1.35	-0.19	0.034
80.00	-17.67	-0.82	0.00	-26.08	0.00	26.08	1,986.84	469.33	1,143.11	1,098.18	1.55	-0.20	0.033
85.00	-17.18	-0.81	0.00	-21.98	0.00	21.98	1,900.02	448.82	1,045.41	1,003.78	1.77	-0.21	0.031
87.98	-17.18	-0.81	0.00	-19.57	0.00	19.57	1,848.25	436.59	989.23	949.50	1.91	-0.22	0.030
88.00	-16.49	-0.79	0.00	-19.55	0.00	19.55	1,847.94	436.52	988.89	949.18	1.91	-0.22	0.030
90.00	-16.07	-0.78	0.00	-17.98	0.00	17.98	1,813.21	428.32	952.08	913.62	2.00	-0.23	0.029
91.73	-15.61	-0.76	0.00	-16.63	0.00	16.63	1,455.48	344.81	771.23	739.90	2.08	-0.23	0.033
95.00	-15.20	-0.75	0.00	-14.14	0.00	14.14	1,414.28	334.08	723.98	696.35	2.25	-0.24	0.031
98.00	-14.88	-0.74	0.00	-11.89	0.00	11.89	1,372.61	324.24	681.95	655.72	2.40	-0.25	0.029
100.00	-14.25	-0.71	0.00	-10.42	0.00	10.42	1,344.82	317.68	654.63	629.30	2.51	-0.25	0.027
105.00	-14.12	-0.71	0.00	-6.85	0.00	6.85	1,275.37	301.27	588.77	565.65	2.78	-0.26	0.023
106.00	-8.44	-0.46	0.00	-6.14	0.00	6.14	1,261.48	297.99	576.02	553.33	2.83	-0.27	0.018
110.00	-8.00	-0.44	0.00	-4.30	0.00	4.30	1,205.92	284.86	526.40	505.39	3.06	-0.27	0.015
115.00	-7.92	-0.44	0.00	-2.10	0.00	2.10	1,136.47	268.46	467.53	448.52	3.35	-0.28	0.012
116.00	-3.32	-0.20	0.00	-1.67	0.00	1.67	1,122.58	265.18	456.17	437.56	3.40	-0.28	0.007
120.00	-2.95	-0.18	0.00	-0.88	0.00	0.88	1,067.02	252.05	412.14	395.05	3.64	-0.28	0.005
125.00	0.00	0.00	0.00	0.00	0.00	0.00	997.57	235.65	360.25	344.97	3.93	-0.28	0.000
125.73	0.00	0.00	0.00	0.00	0.00	0.00	987.43	233.25	352.96	337.94	3.98	-0.28	0.000

Load Case 0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-24.86	-0.91	0.00	-96.48	0.00	96.48	3,765.29	942.58	3,841.82	3,494.42	0.00	0.00	0.034
5.00	-23.91	-0.91	0.00	-91.95	0.00	91.95	3,697.66	917.97	3,643.85	3,341.32	0.01	-0.01	0.034
10.00	-22.98	-0.91	0.00	-87.39	0.00	87.39	3,628.38	893.36	3,451.13	3,190.08	0.02	-0.02	0.034
15.00	-22.07	-0.92	0.00	-82.83	0.00	82.83	3,557.46	868.75	3,263.64	3,040.82	0.05	-0.03	0.033
20.00	-21.18	-0.92	0.00	-78.25	0.00	78.25	3,484.89	844.14	3,081.39	2,893.66	0.08	-0.04	0.033
25.00	-20.31	-0.92	0.00	-73.67	0.00	73.67	3,410.68	819.53	2,904.37	2,748.72	0.13	-0.05	0.033
30.00	-19.46	-0.91	0.00	-69.09	0.00	69.09	3,334.83	794.92	2,732.59	2,606.12	0.19	-0.06	0.032
35.00	-18.64	-0.91	0.00	-64.52	0.00	64.52	3,257.33	770.32	2,566.05	2,465.98	0.26	-0.07	0.032
40.00	-18.09	-0.91	0.00	-59.97	0.00	59.97	3,156.83	745.71	2,404.74	2,312.78	0.35	-0.09	0.032
43.36	-17.66	-0.90	0.00	-56.92	0.00	56.92	3,086.83	729.17	2,299.30	2,210.84	0.41	-0.09	0.031
45.00	-16.79	-0.89	0.00	-55.44	0.00	55.44	3,052.65	721.10	2,248.67	2,161.89	0.44	-0.10	0.031
48.35	-16.57	-0.89	0.00	-52.44	0.00	52.44	2,458.29	599.14	1,862.71	1,738.87	0.52	-0.11	0.037
50.00	-15.88	-0.88	0.00	-50.97	0.00	50.97	2,438.38	592.38	1,820.91	1,705.15	0.55	-0.11	0.036
55.00	-15.22	-0.87	0.00	-46.55	0.00	46.55	2,376.89	571.87	1,697.04	1,604.09	0.68	-0.12	0.035
60.00	-14.57	-0.86	0.00	-42.17	0.00	42.17	2,313.76	551.36	1,577.53	1,504.96	0.82	-0.14	0.034
65.00	-13.94	-0.85	0.00	-37.86	0.00	37.86	2,247.28	530.85	1,462.38	1,406.82	0.97	-0.15	0.033
70.00	-13.33	-0.84	0.00	-33.60	0.00	33.60	2,160.47	510.35	1,351.59	1,299.70	1.14	-0.17	0.032
75.00	-12.73	-0.82	0.00	-29.43	0.00	29.43	2,073.65	489.84	1,245.17	1,196.82	1.32	-0.18	0.031
80.00	-12.15	-0.80	0.00	-25.34	0.00	25.34	1,986.84	469.33	1,143.11	1,098.18	1.52	-0.20	0.029
85.00	-11.81	-0.79	0.00	-21.34	0.00	21.34	1,900.02	448.82	1,045.41	1,003.78	1.73	-0.21	0.027
87.98	-11.81	-0.79	0.00	-19.00	0.00	19.00	1,848.25	436.59	989.23	949.50	1.86	-0.22	0.026
88.00	-11.34	-0.77	0.00	-18.99	0.00	18.99	1,847.94	436.52	988.89	949.18	1.86	-0.22	0.026
90.00	-11.05	-0.75	0.00	-17.45	0.00	17.45	1,813.21	428.32	952.08	913.62	1.96	-0.22	0.025
91.73	-10.73	-0.74	0.00	-16.15	0.00	16.15	1,455.48	344.81	771.23	739.90	2.04	-0.23	0.029
95.00	-10.45	-0.73	0.00	-13.73	0.00	13.73	1,414.28	334.08	723.98	696.35	2.20	-0.23	0.027
98.00	-10.23	-0.72	0.00	-11.54	0.00	11.54	1,372.61	324.24	681.95	655.72	2.35	-0.24	0.025
100.00	-9.79	-0.69	0.00	-10.11	0.00	10.11	1,344.82	317.68	654.63	629.30	2.45	-0.25	0.023
105.00	-9.71	-0.69	0.00	-6.65	0.00	6.65	1,275.37	301.27	588.77	565.65	2.71	-0.26	0.019
106.00	-5.80	-0.45	0.00	-5.96	0.00	5.96	1,261.48	297.99	576.02	553.33	2.77	-0.26	0.015
110.00	-5.50	-0.43	0.00	-4.18	0.00	4.18	1,205.92	284.86	526.40	505.39	2.99	-0.26	0.013
115.00	-5.44	-0.42	0.00	-2.04	0.00	2.04	1,136.47	268.46	467.53	448.52	3.27	-0.27	0.009
116.00	-2.28	-0.19	0.00	-1.62	0.00	1.62	1,122.58	265.18	456.17	437.56	3.32	-0.27	0.006
120.00	-2.03	-0.17	0.00	-0.85	0.00	0.85	1,067.02	252.05	412.14	395.05	3.55	-0.27	0.004
125.00	0.00	0.00	0.00	0.00	0.00	0.00	997.57	235.65	360.25	344.97	3.84	-0.27	0.000
125.73	0.00	0.00	0.00	0.00	0.00	0.00	987.43	233.25	352.96	337.94	3.88	-0.27	0.000

Site Number: 302469

Code: ANSI/TIA-222-H

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Site Name: Bridgeport CT 2, CT

Engineering Number: 13337502_C3_02

2/16/2021 9:08:45 AM

Customer: T-MOBILE

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W	21.96	0.00	36.18	0.00	0.00	1997.44	48.35	0.59
0.9D + 1.0W	21.94	0.00	27.13	0.00	0.00	1971.08	48.35	0.57
1.2D + 1.0Di + 1.0Wi	5.03	0.00	52.92	0.00	0.00	475.92	48.35	0.16
1.2D + 1.0Ev + 1.0Eh	0.91	0.00	36.15	0.00	0.00	98.26	48.35	0.04
0.9D - 1.0Ev + 1.0Eh	0.91	0.00	24.86	0.00	0.00	96.48	48.35	0.04
1.0D + 1.0W	4.99	0.00	30.18	0.00	0.00	450.78	48.35	0.14

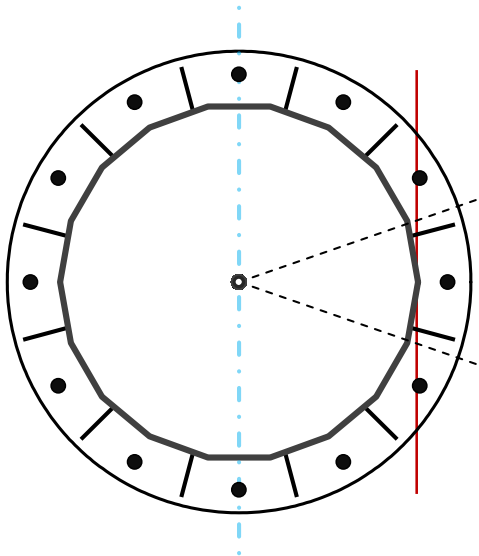
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	45.5	in
Thickness	3/8	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	1,997.4	k-ft
Axial, Pu	36.2	k
Shear, Vu	22.0	k
Neutral Axis	270	°

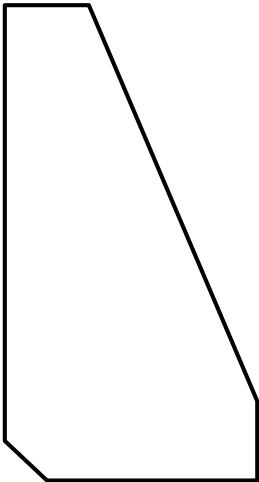
Report Capacities		
Component	Capacity	Result
Base Plate	26%	Pass
Anchor Rods	66%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ϕ	60	in
Thickness	1 3/4	in
Grade	A871-60	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	3	in
Applied Moment, Mu	473.0	k
Bending Stress, ϕMn	1796.5	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	12	-
Diameter, ϕ	2 1/4	in
Bolt Circle	54	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	14.1	in
Orientation Offset	0	°
Applied Force, Pu	157.7	k
Anchor Rods, ϕPn	243.6	k

Stiffeners		
Arrangement	Radial	-
Quantity	12	-
Height	12	in
Width	6	in
Effective Width	6.000	in
Thickness	1/2	in
Effective Thickness	0.500	in
Notch	1	in
Flat Edge	2	in
Grade	A572-50	-
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Horizontal Weld	Bevel+Fillet	
Horizontal Fillet Size	1/2	in
Bevel Depth	1/2	in
Vertical Weld	Fillet	
Vertical Fillet Size	3/8	in
Weld Strength	70	ksi
Electrode Coefficient	1	-
Orientation Offset		°
Vertical Weld, ϕRn	198.2	k
Horz. Weld, ϕRn	222.5	k
Ten. Capacity, ϕTn	109.7	k
Comp. Capacity, ϕPn	227.0	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	22.0	1997.4	1.00
Anchor Rod Forces	22.0	1997.4	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	8.8	800.5	0.40

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in ²	in ²	in ⁴	#	in ⁴
Pole	52.8921	2.9385	0.1383		13465.30
Bolt	3.9761	3.2477	0.8393	4.5	12993.40
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	2.5000	2.2500	36.0000		9005.72

Base Plate		
Shape	Round	-
Diameter, D	60	in
Thickness, t	1.75	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	39.112	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	12	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	54	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	157.7	k
Applied Shear, Vu	1.5	k
Compressive Capacity, φPn	243.6	k
Tensile Capacity, φRnt	0.647	OK
Interaction Capacity	0.659	OK

Base Plate Stiffeners		
Applied Axial Force, Pu	60.9	k
Applied Horizontal Force, Vu	0.37	k

Vertical Weld		
Vert.-to-Stiffener a=e _x /l	0.167	-
Spacing Ratio, k	0.042	-
Weld Coefficient, C	3.670	-
Compressive Capacity, φPn	198.2	k
Vert.-to-Plate a=e _x /l	0.333	-
Spacing Ratio, k	0.042	-
Weld Coefficient, C	2.940	-
Shear Capacity, φVn	158.8	k
P _u /φ _p P _n + V _u /φ _v V _n	0.310	OK

External Base Plate		
Chord Length AA	33.326	in
Additional AA	10.128	in
Section Modulus, Z	33.269	in ³
Applied Moment, Mu	473.0	k-ft
Bending Capacity, φMn	1796.5	k-ft
Capacity, Mu/φMn	0.263	OK

Chord Length AB	32.340	in
Additional AB	9.167	in
Section Modulus, Z	31.779	in ³
Applied Moment, Mu	417.5	k-ft
Bending Capacity, φMn	1716.0	k-ft
Capacity, Mu/φMn	0.243	OK

Bend Line Length	21.434	in
Additional Bend Line	55.175	in
Section Modulus, Z	58.653	in ³
Applied Moment, Mu	473.0	k-ft
Bending Capacity, φMn	3167.3	k-ft
Capacity, Mu/φMn	0.149	OK

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

Horizontal Weld		
Horz.-to-Stiffener a=e _x /l	0.167	-
Spacing Ratio, k	0.083	-
Weld Coefficient, C	2.940	-
Effective Fillet	1.000	in
Compressive Capacity, φPn	211.7	k
Horz.-to-Pole a=e _x /l	0.333	-
Spacing Ratio, k	0.083	-
Weld Coefficient, C	3.090	-
Shear Capacity, φVn	222.5	k
P _u /φ _p P _n + V _u /φ _v V _n	0.289	OK

Plate Tension		
Gross Cross Section	2.500	in ²
Net Cross Section	2.250	in ²
Tensile Capacity, φTn	109.7	k
Capacity, Tu/φTn	0.278	OK

Plate Compression		
Radius of Gyration	0.144	in ³
kl/r	49.88	-
4.71 √(E/Fy)	113.43	-
Buckling Stress(Fe)	115.0	-
Crit. Buckling Stress(Fcr)	100.9	ksi
Compressive Capacity, φPn	227.0	k
Capacity, Pu/φPn	0.134	OK

RAN Template: 67D5A997DB Hybrid	A&L Template: 67D5997DB_2xAIR+1OP
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Section 1 - Site Information

Site ID: CT11452A
Status: Draft
Version: 6
Project Type: Anchor
Approved: Not Approved
Approved By: Not Approved
Last Modified: 1/19/2021 6:23:17 PM
Last Modified By: Dominic.Kallas2@T-Mobile.com

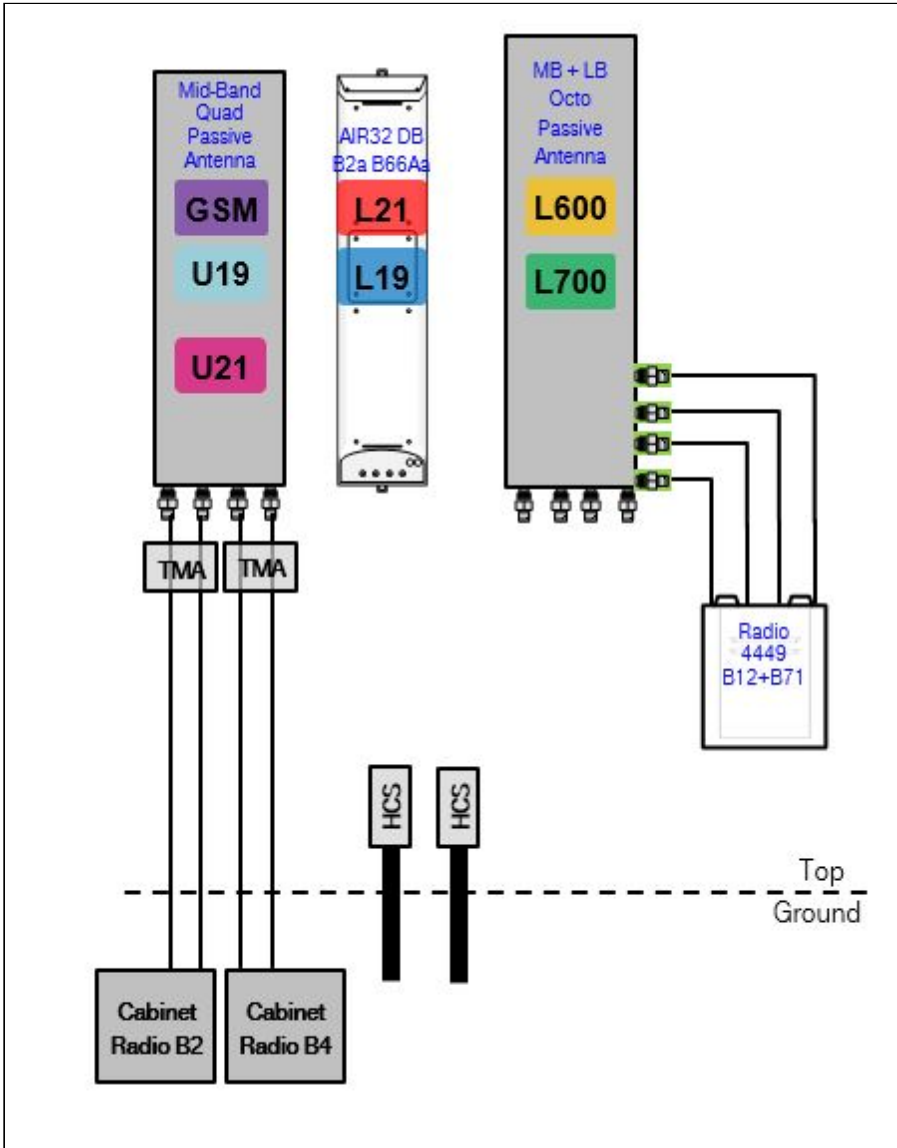
Site Name: Bridgeport/Connecticut Av
Site Class: Monopole
Site Type: Structure Non Building
Plan Year: 2020
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: <undefined>

Latitude: 41.18362900
Longitude: -73.15806000
Address: 1069 Connecticut Avenue
City, State: Bridgeport, CT
Region: NORTHEAST

RAN Template: 67D5A997DB Hybrid		AL Template: 67D5997DB_2xAIR+1OP		
Sector Count: 3	Antenna Count: 9	Coax Line Count: 0	TMA Count: 0	RRU Count: 6

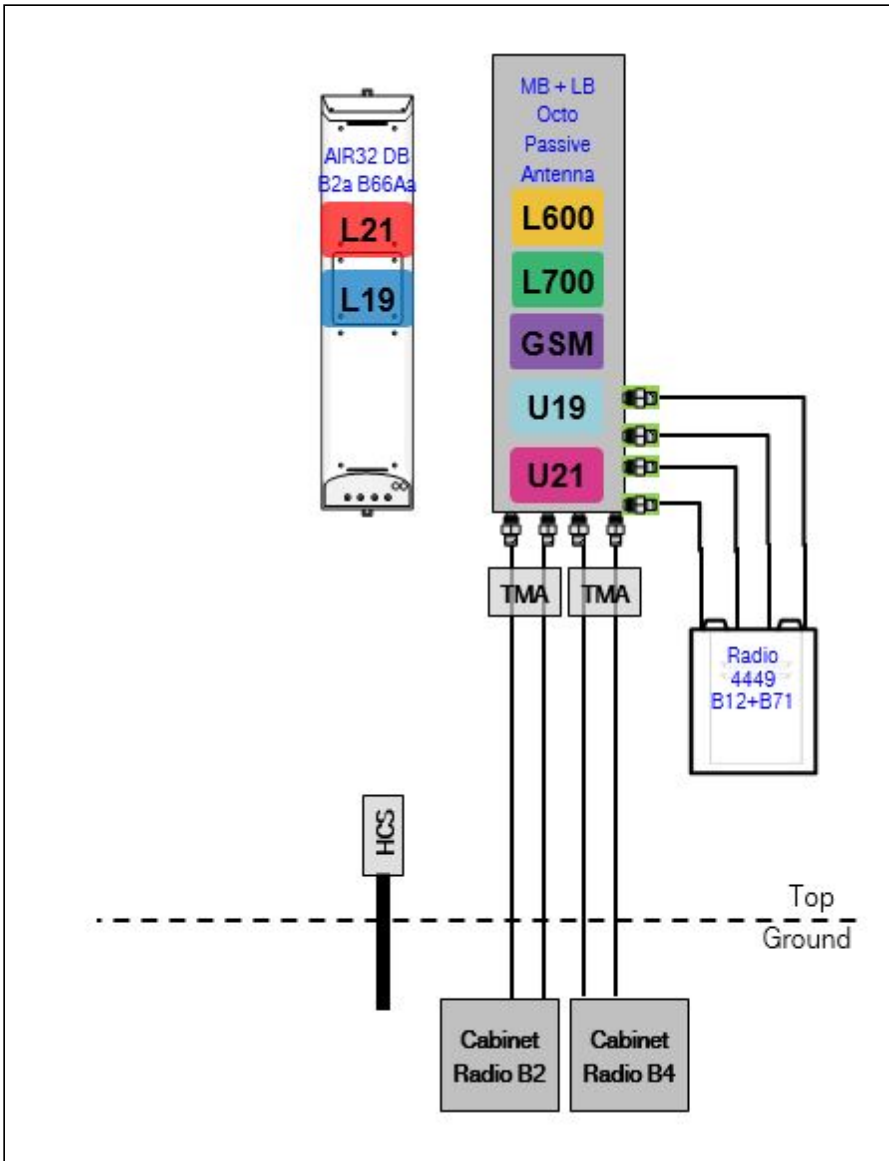
Section 2 - Existing Template Images

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Notes:

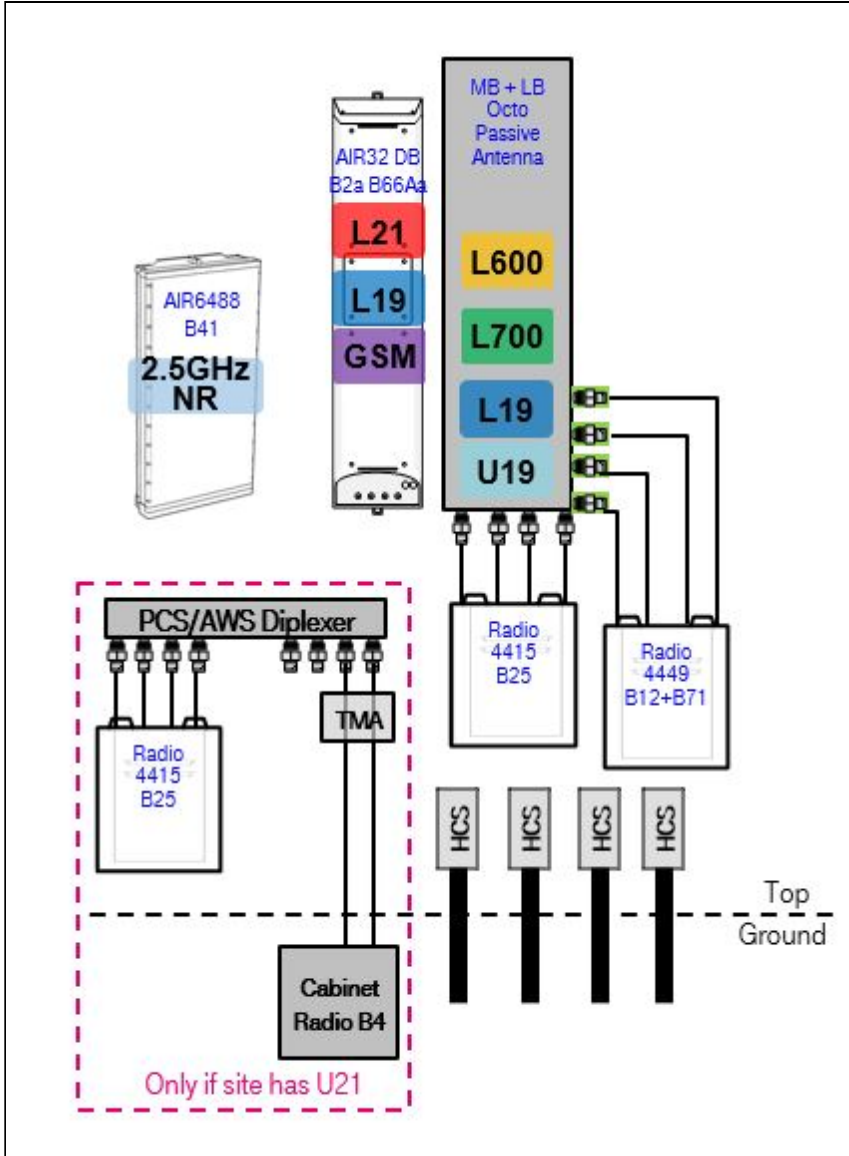
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Notes:

Section 3 - Proposed Template Images

67D5997DB_2xAIR+1OP.JPG



Notes:

Section 4 - Siteplan Images

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

RAN Template: 67D5A997DB Hybrid	A&L Template: 67D5997DB_2xAIR+1OP
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Section 5 - RAN Equipment

Existing RAN Equipment		
Template: 67D94DB Hybrid (evolved from 4B)		
Enclosure	1	2
Enclosure Type	RBS 6102	Ancillary Equipment (Ericsson)
Baseband	DUW30 U2100 DUW30 DUG20 G1900 BB 6630 L2100 L1900 BB 6630 L700 L600 N600	
Hybrid Cable System		Ericsson 6x12 HCS *Select Length & AWG* (x 2)
Radio	RUS01 B2 (x 3) G1900 RUS01 B2 (x 3) RUS01 B4 (x 6) U2100	

Proposed RAN Equipment			
Template: 67D5A997DB Hybrid			
Enclosure	1	2	3
Enclosure Type	RBS 6102	Enclosure 6160	B160
Baseband	DUW30 (x 2) DUG20 G1900 BB 6630 L2100 L1900 BB 6630 L700 L600 N600	BB 6630 L2500 BB 6648 N2500	
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* Ericsson Hybrid Trunk 6/24 4AWG 50m	Ericsson Hybrid Trunk 6/24 4AWG 50m PSU 4813	
Radio	RUS01 B2 (x 6) RUS01 B4 (x 6)		
Transport System		CSR IXRe V2 (Gen2)	

RAN Scope of Work:

U2100 will be decommissioned.

Cabinet radios will become unused.

Replace PPC.

Remove Legacy Cabinet from Metro.

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; (1) 6X12 HCS; (1) 9X18 HCS

Remove all coaxial lines.

Replace 9X18 with (1) 6X24 HCS terminating at the RBS6102.

Add (1) 6X24 HCS terminating at the Enclosure 6160. Connect DC for the AIR6449 B41 to the PSU4813 Voltage Booster.

RAN Template: 67D5A997DB Hybrid	A&L Template: 67D5997DB_2xAIR+1OP
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Section 6 - A&L Equipment

Existing Template: 67D94DB_1xAIR+1QP+1OP
 Proposed Template: 67D5997DB_2xAIR+1OP

Sector 1 (Existing) view from behind

Coverage Type	A - Outdoor Macro											
Antenna	1			2				3				
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)			Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				RFS - APXVAARR24_43-U-NA20 (Octo)				
Azimuth	(20)			(20)				(20)				
M. Tilt												
Height	(119)			(119)				(119)				
Ports	P1		P2		P3	P4	P5	P6	P7	P8	P9	P10
Active Tech.	G1900	U2100		L2100	L2100	L1900	L1900	L700	L700	L600	L600	N600
Dark Tech.												
Restricted Tech.												
Decomm. Tech.												
E. Tilt												
Cables	Generic Feeder Coax (x2) Coax Jumper (x2)		Generic Feeder Coax (x2) Coax Jumper (x2)						Coax Jumper (x2)	Coax Jumper (x2)		
TMA's	Generic Twin Style 1A - PCS (AtAntenna)		Generic Twin Style 1B - AWS (AtAntenna)									
Diplexers / Combiners												
Radio	Radio 4449 B71+B8 5 (At Antenna)											
Sector Equipment												

Unconnected Equipment:

Scope of Work:

RAN Template: 67D5A997DB Hybrid	A&L Template: 67D5997DB_2xAIR+1OP
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Sector 1 (Proposed) view from behind												
Coverage Type	A - Outdoor Macro											
Antenna	1			2				3				
Antenna Model	Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)			Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				RFS - APXVAARR24_43-U-NA20 (Octo)				
Azimuth	20			20				20				
M. Tilt	0			0				0				
Height	119			119				119				
Ports	P1		P2		P3	P4	P5	P6	P7	P8	P9	P10
Active Tech.	L2500	N2500	L2500	N2500	L2100	L2100	G1900 L1900	L1900	L700 L600 N600	L700 L600 N600	L1900	L1900
Dark Tech.												
Restricted Tech.												
Decomm. Tech.												
E. Tilt												
Cables	Fiber Jumper (x2)		Fiber Jumper (x2)		Fiber Jumper	Fiber Jumper	Fiber Jumper	Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper
TMA's												
Diplexers / Combiners												
Radio									Radio 4449 B71+B8 5 (At Antenna)	SHARED Radio 4449 B71+B8 5 (At Antenna)	Radio 4415 B25 (At Antenna)	SHARED Radio 4415 B25 (At Antenna)
Sector Equipment												

Unconnected Equipment:

Scope of Work:

Add handrail kit.

Remove Mid-Band Quad from Position 1.

Remove all TMA's from Position 1.

Remove all Coaxial Lines.

Install (1) AIR6449 B41 for L2500 and N2500 in Position 1.

Move GSM to AIR32 Dual Band antenna in Position 2. GSM will share B2 radios with L1900 1st Carrier.

Add (1) Radio 4415 B25 for L1900 2nd Carrier to Position 2 at antenna, and connect its ports to the Mid-Band ports of the Octo Antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents.

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

RAN Template: 67D5A997DB Hybrid	A&L Template: 67D5997DB_2xAIR+1OP
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Sector 2 (Existing) view from behind												
Coverage Type	A - Outdoor Macro											
Antenna	1			2				3				
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)			Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				RFS - APXVAARR24_43-U-NA20 (Octo)				
Azimuth	120			120				120				
M. Tilt												
Height	119			119				119				
Ports	P1		P2		P3	P4	P5	P6	P7	P8	P9	P10
Active Tech.	G1900		U2100		L2100	L2100	L1900	L1900	L700 L600 N600	L700 L600 N600		
Dark Tech.												
Restricted Tech.												
Decomm. Tech.												
E. Tilt												
Cables	Generic Feeder Coax (x2) Coax Jumper (x2)		Generic Feeder Coax (x2) Coax Jumper (x2)						Coax Jumper (x2)	Coax Jumper (x2)		
TMA's	Generic Twin Style 1A - PCS (AtAntenna)		Generic Twin Style 1B - AWS (AtAntenna)									
Diplexers / Combiners												
Radio											Radio 4449 B71+B8 5 (At Antenna)	
Sector Equipment												
Unconnected Equipment:												
Scope of Work:												

RAN Template: 67D5A997DB Hybrid	A&L Template: 67D5997DB_2xAIR+1OP
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Sector 2 (Proposed) view from behind												
Coverage Type	A - Outdoor Macro											
Antenna	1			2				3				
Antenna Model	Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)			Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				RFS - APXVAARR24_43-U-NA20 (Octo)				
Azimuth	120			120				120				
M. Tilt	0			0				0				
Height	119			119				119				
Ports	P1		P2		P3	P4	P5	P6	P7	P8	P9	P10
Active Tech.	L2500	N2500	L2500	N2500	L2100	L2100	G1900 L1900	L1900	L700 L600 N600	L700 L600 N600	L1900	L1900
Dark Tech.												
Restricted Tech.												
Decomm. Tech.												
E. Tilt												
Cables	Fiber Jumper (x2)		Fiber Jumper (x2)		Fiber Jumper	Fiber Jumper	Fiber Jumper	Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper
TMA's												
Diplexers / Combiners												
Radio									Radio 4449 B71+B8 5 (At Antenna)	SHARED Radio 4449 B71+B8 5 (At Antenna)	Radio 4415 B25 (At Antenna)	SHARED Radio 4415 B25 (At Antenna)
Sector Equipment												

Unconnected Equipment:

Scope of Work:

Add handrail kit.

Remove Mid-Band Quad from Position 1.

Remove all TMA's from Position 1.

Remove all Coaxial Lines.

Install (1) AIR6449 B41 for L2500 and N2500 in Position 1.

Move GSM to AIR32 Dual Band antenna in Position 2. GSM will share B2 radios with L1900 1st Carrier.

Add (1) Radio 4415 B25 for L1900 2nd Carrier to Position 2 at antenna, and connect its ports to the Mid-Band ports of the Octo Antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents.

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

RAN Template: 67D5A997DB Hybrid	A&L Template: 67D5997DB_2xAIR+1OP
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Sector 3 (Existing) view from behind												
Coverage Type	A - Outdoor Macro											
Antenna	1			2				3				
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)			Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				RFS - APXVAARR24_43-U-NA20 (Octo)				
Azimuth	240			240				240				
M. Tilt												
Height	119			119				119				
Ports	P1		P2		P3	P4	P5	P6	P7	P8	P9	P10
Active Tech.	G1900		U2100		L2100	L2100	L1900	L1900	L700	L700		
									L600	L600		
									N600	N600		
Dark Tech.												
Restricted Tech.												
Decomm. Tech.												
E. Tilt												
Cables	Generic Feeder Coax (x2)		Generic Feeder Coax (x2)						Coax Jumper (x2)	Coax Jumper (x2)		
	Coax Jumper (x2)		Coax Jumper (x2)									
TMA's	Generic Twin Style 1A - PCS (AtAntenna)		Generic Twin Style 1B - AWS (AtAntenna)									
Diplexers / Combiners												
Radio											Radio 4449 B71+B8 5 (At Antenna)	
Sector Equipment												
Unconnected Equipment:												
Scope of Work:												

RAN Template: 67D5A997DB Hybrid	A&L Template: 67D5997DB_2xAIR+1OP
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Sector 3 (Proposed) view from behind												
Coverage Type	A - Outdoor Macro											
Antenna	1			2				3				
Antenna Model	Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)			Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				RFS - APXVAARR24_43-U-NA20 (Octo)				
Azimuth	240			240				240				
M. Tilt	0			0				0				
Height	119			119				119				
Ports	P1		P2		P3	P4	P5	P6	P7	P8	P9	P10
Active Tech.	L2500	N2500	L2500	N2500	L2100	L2100	G1900 L1900	L1900	L700 L600 N600	L700 L600 N600	L1900	L1900
Dark Tech.												
Restricted Tech.												
Decomm. Tech.												
E. Tilt												
Cables	Fiber Jumper (x2)		Fiber Jumper (x2)		Fiber Jumper	Fiber Jumper	Fiber Jumper	Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper
TMA's												
Diplexers / Combiners												
Radio									Radio 4449 B71+B8 5 (At Antenna)	SHARED Radio 4449 B71+B8 5 (At Antenna)	Radio 4415 B25 (At Antenna)	SHARED Radio 4415 B25 (At Antenna)
Sector Equipment												

Unconnected Equipment:

Scope of Work:

Add handrail kit.

Remove Mid-Band Quad from Position 1.

Remove all TMA's from Position 1.

Remove all Coaxial Lines.

Install (1) AIR6449 B41 for L2500 and N2500 in Position 1.

Move GSM to AIR32 Dual Band antenna in Position 2. GSM will share B2 radios with L1900 1st Carrier.

Add (1) Radio 4415 B25 for L1900 2nd Carrier to Position 2 at antenna, and connect its ports to the Mid-Band ports of the Octo Antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents.

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

RAN Template: 67D5A997DB Hybrid	A&L Template: 67D5997DB_2xAIR+1OP
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Section 7 - Power Systems Equipment

Existing Power Systems Equipment

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

Proposed Power Systems Equipment

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

T-Mobile Existing Facility

Site ID: CT11452A

Bridgeport/Connecticut Av
1069 Connecticut Avenue
Bridgeport, Connecticut 06607

March 18, 2021

EBI Project Number: 6221001298

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	25.57%

March 18, 2021

T-Mobile

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

Emissions Analysis for Site: CT11452A - Bridgeport/Connecticut Av

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **1069 Connecticut Avenue in Bridgeport, 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 1069 Connecticut Avenue in Bridgeport, 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) 4 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

- 6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 7) 1 LTE 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 6449 for the 2500 MHz / 2500 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s) in Sector B, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 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 116 feet above ground level (AGL).
- 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 #:	1	Antenna #:	1	Antenna #:	1
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):	116 feet	Height (AGL):	116 feet	Height (AGL):	116 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 AI MPE %:	3.83%	Antenna BI MPE %:	3.83%	Antenna CI MPE %:	3.83%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd
Height (AGL):	116 feet	Height (AGL):	116 feet	Height (AGL):	116 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts
ERP (W):	12,841.53	ERP (W):	12,841.53	ERP (W):	12,841.53
Antenna A2 MPE %:	3.82%	Antenna B2 MPE %:	3.82%	Antenna C2 MPE %:	3.82%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd
Height (AGL):	116 feet	Height (AGL):	116 feet	Height (AGL):	116 feet
Channel Count:	7	Channel Count:	7	Channel Count:	7
Total TX Power (W):	320 Watts	Total TX Power (W):	320 Watts	Total TX Power (W):	320 Watts
ERP (W):	8,466.41	ERP (W):	8,466.41	ERP (W):	8,466.41
Antenna A3 MPE %:	4.19%	Antenna B3 MPE %:	4.19%	Antenna C3 MPE %:	4.19%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	11.83%
SIGFOX	0%
Clearwire	0.18%
Sprint	4.9%
AT&T	6.48%
Metro PCS	2.18%
Site Total MPE % :	25.57%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	11.83%
T-Mobile Sector B Total:	11.83%
T-Mobile Sector C Total:	11.83%
Site Total MPE % :	25.57%

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 2500 MHz LTE	1	6444.38	116.0	19.15	2500 MHz LTE	1000	1.91%
T-Mobile 2500 MHz NR	1	6444.38	116.0	19.15	2500 MHz NR	1000	1.91%
T-Mobile 1900 MHz GSM	4	1028.30	116.0	12.22	1900 MHz GSM	1000	1.22%
T-Mobile 1900 MHz LTE	2	2056.61	116.0	12.22	1900 MHz LTE	1000	1.22%
T-Mobile 2100 MHz LTE	2	2307.55	116.0	13.71	2100 MHz LTE	1000	1.37%
T-Mobile 600 MHz LTE	2	591.73	116.0	3.52	600 MHz LTE	400	0.88%
T-Mobile 600 MHz NR	1	1577.94	116.0	4.69	600 MHz NR	400	1.17%
T-Mobile 700 MHz LTE	2	648.82	116.0	3.86	700 MHz LTE	467	0.83%
T-Mobile 1900 MHz LTE	2	2203.69	116.0	13.10	1900 MHz LTE	1000	1.31%
						Total:	11.83%

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	11.83%
Sector B:	11.83%
Sector C:	11.83%
T-Mobile Maximum MPE % (Sector A):	11.83%
Site Total:	25.57%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **25.57%** 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.