T-Mobile
Ryan Clark
Real Estate Consultant
750 W. Center St, Suite 301
W. Bridgewater, MA 02379
Phone: (203) 300-7310
rclark@clinellc.com

October 6, 2021

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

Re: **Request for Tower Share**
T-Mobile Northeast, LLC ("T-Mobile") Request for Approval of the Shared Use of an Existing Tower at 244 Gates Road Lebanon, CT 06249
T-Mobile site: CTNL125A

Dear Members of the Council:

T-Mobile proposes to share an existing telecommunications tower located at 244 Gates Road Lebanon, CT 06249 (the facility). The subject parcel is identified by the Town of Lebanon, CT as Map 208, Block 55. The property and tower is owned by New Cingular Wireless PCS, LLC (AT&T). The property is roughly 1.74± acres and accommodates an existing telecommunication compound with two shelters and one concrete pad with telecommunications carriers' cabinets as well as the self support tower within the fenced compound. The facility is and will continue to be owned and operated by New Cingular Wireless PCS, LLC.

Pursuant to Connecticut General Statues Section 16-50aa (the Statute), T-Mobile requests a finding from the Connecticut Siting Council that the shared use of this facility is technically, legally, environmentally and economically feasible, will meet safety concerns, will avoid the unnecessary proliferation of towers and is in the public interest. It further requests an order approving the shared use of this facility.

The purpose of this request is to use an existing tower to develop T-Mobile's wireless network to provide high speed wireless data and wireless service within the State of Connecticut and in this part of Lebanon, CT: avoiding the need for an additional tower in Lebanon.

T-Mobile is licensed by the Federal Communications Commission ("FCC") to provide multiple technologies, including LTE, NR, 5G and GSM including (600,700,1900, 2100, 2500 MHz frequencies) in New London County. T-Mobile is building and enhancing its network to take advantage of its licensed spectrum, and improve its broadband high speed wireless voice and data services

Existing Facility & Proposed Modification

The existing facility is and will continue to be a 121' self support tower located at 244 Gates Road Lebanon, CT 06249. Site coordinates (NAD83) are N 41.682936 and W -72.216193. Currently there is one other major commercial wireless carrier located on this tower. T-Mobile now intends to use the vacant space on the lowest part of the tower, beneath AT&T. The site plan of the facility is included in the proposed Modifications drawings and Construction drawings, prepared by Centerline Communications dated July 22, 2021 respectively, and enclosed herewith.

T-Mobile intends to install three (3) RFS-APX16DWV-S-E-A20, three (3) RFS-APXVAALL24_43-U-NA20, (3) AIR6449 B41 antennas, three (3) 4460 B25+B66 and three (3) 4480 B71+B85 RRUs, as shown in the construction drawing, to be attached to the guyed tower at the 109' mount level. T-Mobile will also install three (3) 6x24 hybrid fiber cables on the tower. T-Mobile will add a 15' x 15' leased area with one (1) concrete pad and one (1) H-frame. T-Mobile intends to enter into a new agreement, at this tower height, in order to license the portion of space within the existing and proposed compound for the new 15'-0" x 15'-0" concrete pad with three (3) new cabinets and (1) 35 KW diesel generator.

Consistent with the requirements of the Statute, it is feasible for T-Mobile to collocate at this facility. T-Mobile is proposing to collocate on the existing monopole tower that will continue to remain in the ownership of New Cingular Wireless PCS, LLC. Included with this application is a Structural Analysis Report provided by AT&T and conducted by CLS Engineering dated September 22, 2021 that shows that the existing tower can support T-Mobile's proposed equipment once modified.

The Proposal is Legally Feasible.

The Council has authority, pursuant to statute, to issue an order approving of the shared use of this tower. By issuing an order approving T-Mobile's shared use of this tower, T-Mobile will be able to proceed with obtaining a building permit for the proposed installation. AT&T/New Cingular Wireless PCS, LLC has executed a Letter of Authorization that approved T-Mobile's Request for Tower Share filing, which approval is included with this application. T-Mobile's proposal is legally feasible.

T-Mobile is a telecommunication provider licensed by the FCC to provide service in the State of Connecticut, including but not limited to London County. T-Mobile will enter into an agreement with the owner of this facility, New Cingular Wireless PCS, LLC, for the location of this proposed equipment on the existing tower so that it may provide telecommunications services to the surrounding community. Consequently, the proposal is legally feasible.

The Proposal is Environmentally Feasible.

Pursuant to the Statute, the proposal will be environmentally feasible for the following reasons:

- The overall impact on the Lebanon area will be decreased with the sharing of a single tower versus the proliferation of multiple towers.

- There will be no material increase in the visibility of the tower with the addition of the antennas and associated equipment on the tower.

- There will be no increased impact on air quality because no air pollutants will be generated during normal operation of the facility.

- There will only be a brief, slight increase in noise pollution while the site is under construction.

- During construction, the proposed project will generate a small amount of traffic as construction takes place. Upon completion, traffic will be limited to an average of one trip per month for maintenance and inspections.

- There will be no adverse impact to the health and safety of the surrounding community or workers at the facility due to the addition of T-Mobile's new antennas to the tower. T-Mobile has performed an analysis of the radio frequency field emanating from the transmitting antennas on the tower to ensure compliance with the National Council on Radiation Protection and measurements (NCRP) standard for maximum permissible exposure (MPE) adopted by the FCC. The analysis indicates that T-Mobile and other antennas on the tower will cumulatively emit 11.54% of the NCRP standard for maximum permissible exposure. The report indicates that maximum level of exposure will be well below the FCC's mandated radio frequency exposure limits. The report is enclosed herewith.

- T-Mobile expects to enhance safety in this portion of by improving wireless telecommunications for local residents and travelers. T-Mobile is currently developing its network to provide its customers with quality and reliable coverage to comply with their FCC license, the site is a necessary part of T-Mobile's network development.

- Specifically, this proposal is designed to provide reliable wireless coverage for this section of Lebanon.

Conclusions:

For the reasons stated above, the attachment of T-Mobile's antennas and associated equipment to the tower would meet all the requirements set forth in the Statute. The proposal is legally, technically, economically and environmentally feasible and meets all public safety concerns. Therefore, T-Mobile respectfully requests that the Council approve this request for the shared use of this tower located at 244 Gates Road Lebanon, CT 06249.

Respectfully yours,

Ryan Clark
Real Estate Consultant – Site Acquisition
c/o T-Mobile
Centerline Communications, LLC
750 West Center Street, Floor 3 / Suite 301
West Bridgewater, MA 02379
Mobile: (203) 300-7310
rclark@clinellc.com

cc: New Cingular Wireless PCS, LLC - property and tower owner
Kevin Cwikla, chief elected official, Town of Montville
Philip Chester, Town Planner, Town of Montville.

Exhibit A

Letter of Authorization

Landlord Authorization

AT&T Towers hereby authorizes T-Mobile, to make application for a wireless facility upgrade to be located on the property with the following address:

Address: 244 Gates Road, Lebanon, New London County, CT

AT&T Site Name: Lebanon

AT&T FA#: 10137478

Authorization to make application for land use review and/or building permit shall not be construed to constitute an agreement to lease.

No construction shall commence before a lease is executed.

Sincerely,

Russell Baldwin

Principal – Client Services Proj/Prog Mgmt
AT&T Towers/Rooftops/DAS Tenant Add/DAS Owner Payments

Exhibit B

Original Facility Approval

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

136 Main Street, Suite 401
New Britain, Connecticut 06051
Phone : 827-7682

April 10, 1990

Peter J. Tyrrell
Senior Attorney
SNET Cellular, Inc
227 Church Street
New Haven, CT 06506

RE: SNET Cellular Inc., (SCI) Notice of Intent to Modify an Exempt Tower and Associated Equipment owned by the Southern New England Telephone Company (SNET) in Lebanon, Connecticut.

Dear Attorney Tyrrell:

At a meeting on April 9, 1990, the Connecticut Siting Council acknowledged your notice of intent to modify an exempt telecommunications tower and associated equipment located on Gates Road in Lebanon, Connecticut, pursuant to Section 16-50j-73 of the Regulations of State Agencies (RSA).

The proposed modifications are to be implemented as specified in your notice dated March 1, 1990, "Option Two", the replacement of both of the existing 80-foot and 120-foot guyed SNET towers with one self-supporting 120-foot tower. As proposed, the modifications are in compliance with the exception criteria specified in RSA Section 16-50j-72(b)(3) as a replacement of an existing CATV tower or telecommunications tower and associated equipment with a tower that is no taller than the tower to be replaced and that will not support public service company or state antennas, or antennas to be used for public cellular radio communications emitting total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to Section 22a-162 of the Connecticut General Statutes.

The Council is pleased to note that the shared use of an existing tower meets the Council's long-term goal and the public interest to avoid the proliferation of additional tower structures.

Enclosed for your reference is a copy of the Staff Report on this Exempt Modification, dated April 9, 1990. Please notify the Council upon completion of construction.

Very truly yours,

Gloria Dibble Pond

Gloria Dibble Pond
Chairperson

Enclosure

cc: Donald Chapman

4313E-4

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

136 Main Street, Suite 401
New Britain, Connecticut 06051
Phone : 827-7682

Notice of Intent of Modify an Existing Tower
SNET Cellular, Inc.
Lebanon, Connecticut
April 9, 1990

On March 1, 1990, SNET Cellular Inc. (SCI) submitted to the Siting Council a Notice of Intent to Modify a tower and associated equipment in the Town of Lebanon. On March 7, 1990, Robert A. Pulito of the Siting Council and Joel M. Rinebold and Robert K. Erling of the Council staff visited the Lebanon site on which the proposed modifications would take place. On March 30, 1990, Council members Mortimer A. Gelston and Colin C. Tait visited the site with Council staff members Joel M. Rinebold and Robert K. Erling.

SCI has proposed two options to replace an existing 120-foot guyed telecommunications tower on Gates Road in Lebanon. This tower site would be leased from its current owner, the Southern New England Telephone Company (SNET), and would be used to provide cellular telephone service in New London County, overlapping with coverage from an adjacent cell site in Colchester, and a planned cell site in Ashford.

There are currently four existing guyed towers on two adjacent properties on this hilltop site. Two of these towers are owned by SNET on SNET property containing 1.7 acres. These towers are 80 feet and 120 feet in height. Two towers on an adjacent property of 1.2 acres owned by Colin K. and Loretta L. Rice are 120 feet and 290 feet in height. The 120-foot tower on the Rice property is owned by Tele-Media Company of Northeastern Connecticut, and was certificated by the Council as part of Docket 43 in 1984. The 290-foot tower is owned by radio station WILI.

The 120-foot SNET tower is painted and lighted because it was constructed before the nearby WILI tower, which is also obstruction marked and lighted.

The following guying information was supplied by SCI.

Tower Owner	Height	No. of sets of 3-guy wires	Tower Distance to Farthest guy wires
SNET	80 feet	1	65 feet
SNET	120 feet	3	100 feet
Tele-Media	120 feet	3	80 feet
WILI	290 feet	6	150 feet

Both SNET towers were constructed in 1960. The WILI tower was constructed in 1980, and the Tele-Media tower was built in 1984. All four of these towers were erected prior to the construction of any of the nearby homes on Gates Hill Road. These homes were built between 1987 and 1988.

Option One of SCI involves the replacement of the existing 120-foot SNET tower with another 120-foot guyed tower which has the capacity to support both the existing antennas and new cellular transmit and receive antennas. The existing 120-foot tower cannot accommodate the proposed cellular antennas. The existing 80-foot SNET tower would remain in place.

Option Two of SCI would replace both of the existing SNET towers with a single 120-foot self-supporting tower. The replacement of the two existing towers would mean the removal of 1808 feet of guy wires. The proposed 120-foot tower would measure approximately 10 feet across at its base and taper to six feet at its top. Each of the two existing towers has a width of three feet The two existing SNET towers would be removed within six months after the installation of the new tower.

Neither Option One nor Option Two would increase the height of a tower on the SNET property, extend the boundaries of the SNET property, increase noise levels at the site boundary, or increase the total radio frequency electromagnetic radiation power density at the tower site boundary to or above the State Standard of 2.933 mW/cm^2.

SNET does not propose to paint or light the replacement tower or associated dish antennas. SNET has requested the elimination of this painting and lighting requirement for this tower from the Federal Aviation Administration, but has not yet received a response.

A meeting between SCI and the Lebanon Building Inspector indicates that the construction of the new equipment building on the SNET site is a permitted use at this location, requiring a building permit.

Pursuant to Section 16-50j-72(b) of the Connecticut Regulations of State Agencies, "None of the following shall constitute a modification to an existing community antenna television or telecommunications tower that may have substantial adverse environmental effect:

(1) Routine general maintenance and one-for-one replacement of facility components that is necessary for reliable operation;

(2) Changes on an existing tower site that do not increase the tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by 6 decibels, and add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to Section 22a-162 of the Connecticut General Statutes; or

(3) Replacement of an existing CATV tower or telecommunications tower and associated equipment with a tower that is no taller than the tower to be replaced and that will not support public service company or State antennas, or antennas to be used for public cellular radio communications emitting total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to Section 22a-162 of the Connecticut General Statutes.

Robert K. Erling
Senior Siting Analyst

RKE/cp

4237E

Permit No. 0822

Zone: RA

TOWN OF LEBANON

Building Permit Record Date: 5-15-90

VALID FOR ONE YEAR

Owner: Southern New England Telephone, ATTN: Mr. R. Archacki

Address: 195 Church Street, New Haven, CT 06510 Phone 771-5926

DESCRIPTION

New: ✓ Addition: Accessory: Remodel: Alteration: Other: Seasonal: Year Round:

New Precast Telephone Equipment Bldg. and new Tower. Bldg unoccupied No water!

The applicant agrees to conform to all requirements of the laws of the State of Conn. and all ordinances and zoning regulations of the Town of Lebanon, and to notify the Building Official of any changes in specifications for which this permit is issued, and to obtain a certificate of occupancy before using this structure. INSPECTION REQUIRED

Class: S - B	Flooring: Concrete		Lot No.:
Type: 3C		Tile Bath:	Lot Size:
	Int. Walls: Concrete	Walls:	Set Back: Lot Plan
No. of Rms: 1		Shower:	Side Yard:
No. of Stories: 1	Electrical:	Floors:	Back Yard:
		Heating:	Sub-Div.:
Floor Area: 312 ft		Wa. Htg:	Hot Water Supply
	No. of Bathrooms:	Stm. Htg:	
Foundation: Concrete		H. W. Htg:	Fireplace:
	No. of Toilet Rms.:	Space Htg:	
Construction: Concrete			City Water:
	Plumbing Fixtures:		Well Water:
Ext. Walls: Concrete	Sink:	Fuel:	
	Toilets:	Oil:	Septic:
	Basins:	Gas:	Sewer:
Roofing: Concrete	Bathtubs:	Elec.:	
	Shrstall:		
Basement: 1		Air Cond.:	

Separate Permits Required: Elect, Heat, Plumb, Septic, Well, Stove, All Masonry

Architect: Bayer & Associates, Engineers

Address: 109 Montgomery Ave, Scarsdale, N.Y.

Builder: Thomas Corp. License #:

Address: P.O. Box 2159 Vernon, Ct. 06066

Applicant's and/or Owner Signature: Edward M. Rhodes

Issued by Building Inspector: Donald C. Johnson

Zoning Officer: Gary Chesbro

Est Cost: $1,000.00

$5 per 1,000 Est Cost. 355.00
$10 Minimum Charge

Total: 355.00

Exhibit C

Property Card

244 GATES RD

Location	244 GATES RD	**Mblu**	208/ / 55/ /
Acct#	S0154300	**Owner**	NEW CINGULAR WIRELESS PCS LLC
Assessment	$179,780	**PID**	1091
Building Count	1		

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$21,500	$158,280	$179,780

Owner of Record

Owner	NEW CINGULAR WIRELESS PCS LLC	**Sale Price**	$1
Co-Owner		**Certificate**	
Address	909 CHESTNUT ST 36-M-01 ST LOUIS , MO 63101	**Book & Page**	0294/0582
		Sale Date	06/23/2015
		Instrument	25

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
NEW CINGULAR WIRELESS PCS LLC	$1		0294/0582	25	06/23/2015
AT&T CAPITAL SERVIES INC	$0		0291/1006	31	10/28/2014
SOUTHERN NEW ENGLAND TELEPHONE	$0		0072/0507	29	

Building Information

Building 1 : Section 1

Year Built:	1961
Living Area:	900
Replacement Cost:	$29,433
Building Percent Good:	70
Replacement Cost Less Depreciation:	$20,600

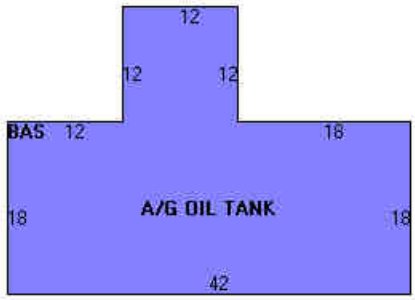
Building Attributes

Field	Description
Style	Support Shed
Model	Industrial
Grade	Average +10
Stories:	1
Occupancy	
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Shed
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	
Use:	CELL TOWR MDL-96
Total Rooms	
Total Bedrms	00
Total Baths	0
Usrfld 218	
Usrfld 219	
1st Floor Use:	4310
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	LIGHT
Wall Height	10.00
% Comn Wall	0.00
Usrfld 100	
Usrfld 302	
Usrfld 301	
Usrfld 303	
Usrfld 103	
Usrfld 107	
Usrfld 304	
Usrfld 104	
Usrfld 105	

Building Photo

(http://images.vgsi.com/photos/LebanonCTPhotos//\00\01\22\56.jpg)

Building Layout



(http://images.vgsi.com/photos/LebanonCTPhotos//Sketches/1091_1091.jp

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	900	900
		900	900

Usrfld 101	
Usrfld 225	
Usrfld 300	
Usrfld 220	
Usrfld 221	
Usrfld 102	
Usrfld 701	
Usrfld 106	
Usrfld 305	
Usrfld 900	No
Usrfld 901	No

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 4310
Description CELL TOWR MDL-96
Zone
Neighborhood 12
Alt Land Appr No
Category

Land Line Valuation

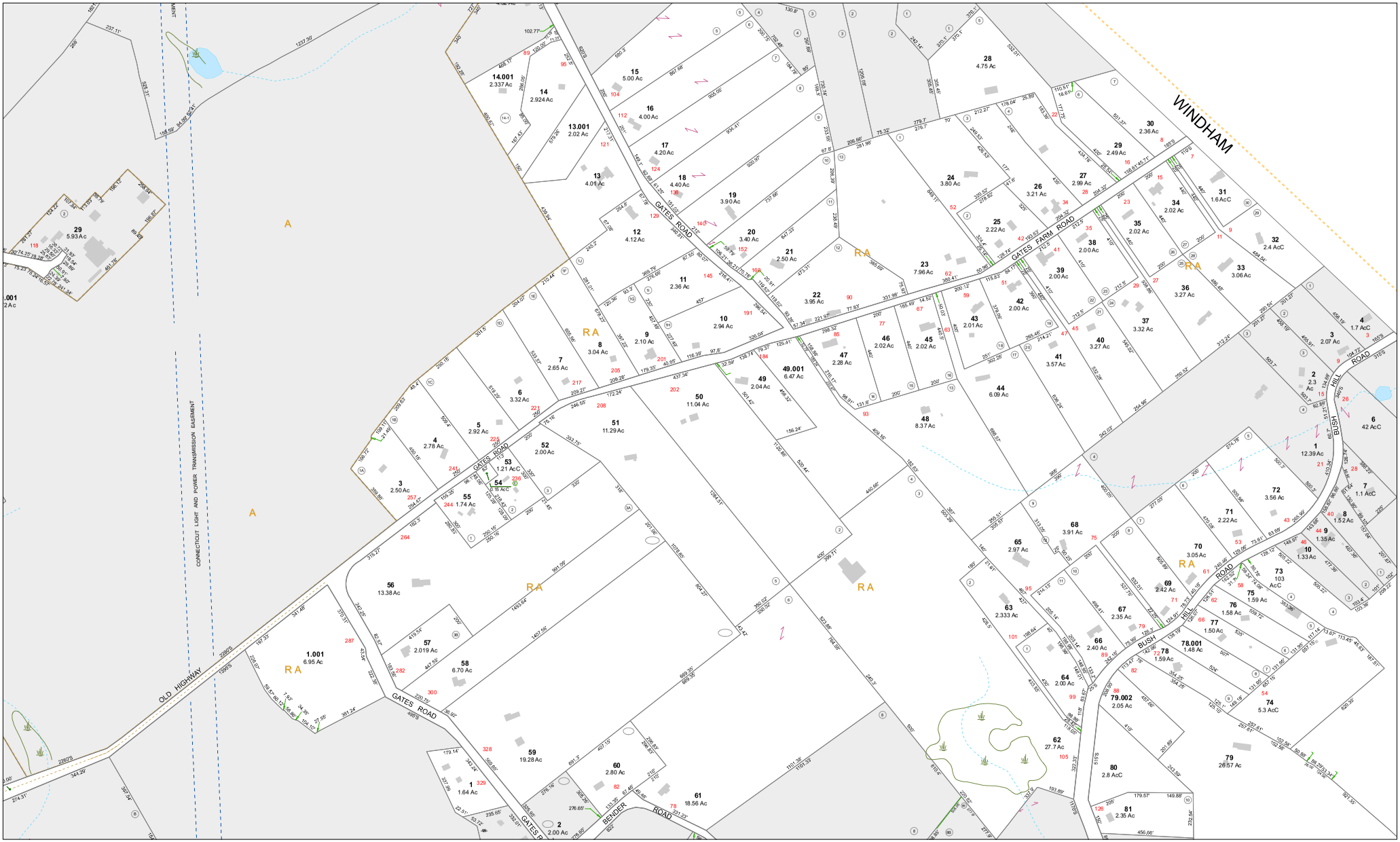
Size (Acres) 1.74
Frontage 0
Depth 0
Assessed Value $158,280

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
TW2	CELL TOWER			120.00 HEIGHT	$0	1
FN3	FENCE-6' CHAIN			340.00 L.F.	$1,530	1
SHDC	Shed - Cell tower			300.00 S.F.	$8,580	1

Valuation History

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$21,500	$158,280	$179,780
2019	$21,500	$158,280	$179,780
2018	$21,500	$158,280	$179,780



MainStreetMaps
by MainStreetGIS, LLC
www.mainstreetgis.com

Online mapping and property information available at:
www.mainstreetmaps.com

Parcel mapping is current through October 1, 2019

Publication Date: 7/14/2020

0 100 200 400 600 Feet

1 inch = 200 feet
(when printed at 36" x 24")

N W E S

Tax Map
TOWN OF LEBANON
Connecticut

Prepared by MainStreetGIS, LLC

Parcel Boundary
Zoning
Building
Water Body
Wetland
Parcel Hook
Stream
Intermittent Stream
Other Right of Way
Utility Corridor

123 Lot Number
(7) Sublot Number
1660 Street Number
100' Recorded Dimension

100'S Scaled Dimension
Ac Area Recorded
AcC Area Calculated

205	206	
209	208	207
214	215	216

Map
208

Exhibit D

Construction Drawings

PROJECT INFORMATION

SITE NAME:	CTNL125A
SITE NUMBER:	CTNL125A
SITE ADDRESS:	244 GATES ROAD LEBANON, CT 06249
COUNTY	NEW LONDON COUNTY
MUNICIPALITY:	TOWN OF LEBANON
ZONING:	N/A
LATITUDE:	N 41°40'58.56" (41.682936°) (NAD83)
LONGITUDE:	W 72°12'58.29" (-72.216193°) (NAD83)
TYPE OF SITE:	SELF SUPPORT TOWER
STRUCTURE HEIGHT:	121'-0" AGL
ANTENNA CENTER:	109' AGL
GROUND ELEVATION:	668' (NAVD 88)
BUILDING OWNER NAME:	AT&T CAPITAL SERVICES INC
BUILDING OWNER ADDRESS:	1025 LENOX PARK BLVD NE 3RD FLOOR ATLANTA, GA 30319
APPLICANT:	T-MOBILE NORTHEAST, LLC. 35 GRIFFIN RD S BLOOMFIELD, CONNECTICUT 06002
APPLICANT PHONE:	(860) 692-7100

PROJECT DIRECTORY

ENGINEERING FIRM:
CENTERLINE COMMUNICATIONS
750 WEST CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
DEREK CREASER (617) 306-3034

CARRIER:
T-MOBILE NORTHEAST, LLC.
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
PHONE: (860) 692-1700

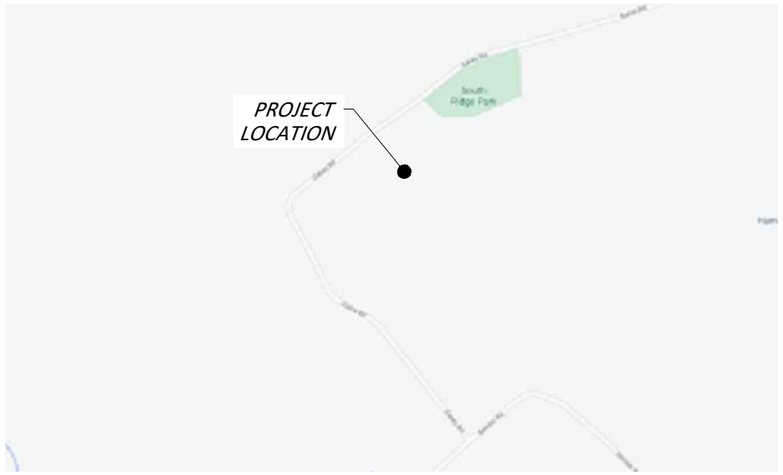
811 Know what's below. Call before you dig.

CENTERLINE COMMUNICATIONS

T - Mobile NORTHEAST LLC

SITE NAME: CTNL125A
SITE ID: CTNL125A
ADDRESS: 244 GATES ROAD
LEBANON, CT 06249

TECHNOLOGY: 67E5A998E 6160
MODIFICATION: COVERAGE STRATEGY_REGIONAL COVERAGE



VICINITY MAP
NOT TO SCALE

N

LOCATION MAP
NOT TO SCALE

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSE OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SCOPE OF WORK

1. INSTALL NINE NEW T-MOBILE ANTENNAS
2. INSTALL SIX NEW RRUs
3. INSTALL ONE NEW H-FRAME
4. INSTALL ONE NEW PURCELL CABINET
5. INSTALL ONE NEW PPC CABINET
6. INSTALL ONE NEW 35KW AC DIESEL GENERATOR
7. INSTALL THREE NEW ANTENNA MOUNT ASSEMBLY
8. INSTALL ONE NEW ICE BRIDGE
9. INSTALL ONE NEW 6160 AC ENCLOSURE
10. INSTALL ONE NEW B160 BATTERY ENCLOSURE
11. INSTALL THREE NEW 6X24 HYBRID CABLES
12. INSTALL ONE NEW CONC. EQUIPMENT SLAB ON GRADE
13. INSTALL ICE CANOPY OVER GROUND EQUIPMENT

DRAWING INDEX

NO.	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES, RF NOTES, CABLING NOTES
A-1	COMPOUND PLAN
A-2	EQUIPMENT LAYOUT
A-3	DETAILS
A-4	SOUTHWEST ELEVATION
A-5	ANTENNA LAYOUT
A-6	DETAILS
A-7	DETAILS
A-8	GENERATOR DETAIL
A-9	12'-6" HEAVY DUTY V-FRAME ASSEMBLY
A-10	12'-6" HEAVY DUTY V-FRAME ASSEMBLY
A-11	ATS SPEC SHEET
SN-1	STRUCTURAL NOTES & SPECIAL INSPECTIONS
S-1	ANTENNA & RRU MOUNTING DETAIL
S-2	STRUCTURAL DETAILS
S-3	STRUCTURAL DETAILS
G-1	GROUNDING DETAILS
G-2	GROUNDING & ONE LINE DIAGRAM
E-1	ELECTRICAL ONE-LINE DIAGRAMS & DETAILS
E-2	ELECTRICAL & TELCO PLAN

DRAWING SCALE NOTES:

THESE DRAWINGS ARE FORMATTED TO BE FULL SIZE AT 22"x34". CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

T - Mobile NORTHEAST LLC
T-MOBILE NORTHEAST, LLC.
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
PHONE: (860) 629-1700

CENTERLINE COMMUNICATIONS
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
0	07/22/21	ISSUED FOR CONSTRUCTION	KT
A	07/12/21	ISSUE FOR REVIEW	NMT

DESIGNED BY:	APPROVED BY:
NMT	WRD

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 0/22/21

SITE NAME: CTNL125A
SITE ID: CTNL125A
SITE ADDRESS: 244 GATES ROAD, LEBANON, CT 06249, NEW LONDON COUNTY
SHEET TITLE: TITLE SHEET
DRAWING: T-1

RF NOTES

1. ACTUAL LENGTHS SHALL BE DETERMINED PER SITE CONDITION BY SUBCONTRACTOR
2. THE DESIGN IS BASED ON RF DATA SHEETS, SIGNED AND APPROVED.
3. RADIO SIGNAL CABLE AND RACEWAY SHALL COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC, NFPA 70), CHAPTER 8.
4. ALL SPECIFIED MATERIAL FOR EACH LOCATION (E.G. OUT DOORS-OCCUPIED, INDOORS-UNOCCUPIED, PLENUMS, RISER SHAFTS, ETC.) SHALL BE APPROVED, LISTED, OR LABELED AS REQUIRED BY THE NEC.
5. RADIO SIGNAL CABLE SHALL BE SUPPORTED AT MINIMUM OF EVERY THREE (3) FEET EXCEPT INSIDE MONOPOLES OR MONOPOLES WHERE CABLE AND CONNECTOR MANUFACTURERS SUPPORT RECOMMENDATIONS SHALL BE FOLLOWED. MANUFACTURER RECOMMENDATION CABLES SUPPORT ACCESSORIES SHALL BE USED.
6. THE OUTDOOR CABLE SUPPORT SYSTEM SHALL BE PROVIDED WITH AN ICE SHIELD TO SUPPORT AND PROTECT ANTENNA CABLE RUNS.
7. DRIP LOOPS SHALL BE REQUIRED ON ALL OUTSIDE CABLES. CABLES SHALL BE SLOPED AWAY FROM BUILDING OR OUTDOOR BTS CABINETS TO PREVENT WATER FROM ENTERING THROUGH THE COAXIAL CABLE PORT.
8. ALL FEEDER LINE AND JUMPER CONNECTORS SHALL BE 7/16 DIN CABLE CONNECTORS THAT MEET IP68 STANDARDS.
9. 7/16 DIN CONNECTORS REQUIRE NO ADDITIONAL WEATHER PROOFING IN INDOOR APPLICATIONS IF INSTALLED AND TORQUED PROPERLY. IN OUTDOOR APPLICATIONS WEATHER PROOFING IS REQUIRED AND THE FOLLOWING PROCEDURE SHOULD BE FOLLOWED.
10. USING WEATHERPROOFING KIT APPROVED BY CABLE MANUFACTURER AND CONTRACTOR START TAPE APPROXIMATELY 5 INCHES FROM THE CONNECTOR, AND WRAP 2 INCHES TOWARD THE CONNECTOR, THEN REVERSE THE TAPE SO THAT THE STICKY SIDE IS UP. TAPE OVER THE CONNECTOR OR SURGE ARRESTOR UNTIL THREE (3) TO FOUR (4) INCHES BEYOND THE CONNECTOR AND REVERSE AGAIN WITH THE STICKY SIDE DOWN FOR ANOTHER INCH OR TWO. PASS THE BUTYL RUBBER AND FINISH WITH A FINAL LAYER OF TAPE.
11. ANTENNAS SHALL BE PAINTED,WHEN REQUIRED, BY THE LANDLORD OR AUTHORITY OF HAVING JURISDICTION IN ACCORDANCE WITH ANTENNA MANUFACTURERS' SURFACES PREPARATION AND PAINTING REQUIREMENTS.
12. CABLE SHIELDS AND TOWER CONDUITS SHALL BE GROUNDED AT THE TOP OF THE TOWER WITHIN 10 FEET OF THEIR CONNECTORS, AND AT THE BOTTOM OF THE TOWER ABOUT 6 INCHES BEFORE THEY TURN TOWARD THE FACILITY. THEY SHALL BE GROUNDED AT THE MIDPOINT OF THE TOWERS THAT ARE BETWEEN 60 FEET AND 200 FEET HIGH, AND AT INTERVALS OF 60 FEET OR LESS ON TOWERS THAT ARE HIGHER THAN 200 FEET.

ANTENNA CABLE & SCHEDULING NOTES

1. SUBCONTRACTOR SHALL VERIFY THE ACTUAL LENGTH IN THE FIELD BEFORE INSTALLATION.
2. TAG AND COLOR CODE ALL MAIN CABLES AT LOCATIONS PER T-MOBILE ANTENNA CABLE MARKING STANDARD:
   - TOP OF TOWER END OF MAIN COAX
   - BOTTOM OF TOWER END OF MAIN COAX
   - DIRECTLY BEFORE AND AFTER RF EQUIPMENT
   - END OF JUMPERS AT BTS EQUIPMENT
3. ANTENNAS SHALL BE PROCURED AND INSTALLED WITH DOWN TILT MOUNTING BRACKETS SUPPLIED BY ANTENNA MANUFACTURER.
4. PRIOR APPROVAL IS REQUIRED BEFORE PERFORMING ANY WORK ON EXISTING CELL SITE EQUIPMENT.

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR - CENTERLINE COMMUNICATIONS
   SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER - T-MOBILE MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE MOBILITY SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. APPLICABLE BUILDING CODES:
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE: IBC 2015 & CONNECTICUT STATE BUILDING CODE 2018
ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
LIGHTNING CODE: NFPA 70-2017

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL

ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCEIVER STATION	PROPOSED	NEW	TBR	TO BE REMOVED
EXISTING	EXISTING	N.T.S.	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED		

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WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
0	07/22/21	ISSUED FOR CONSTRUCTION	KT
A	07/12/21	ISSUE FOR REVIEW	NMT

DESIGNED BY:	APPROVED BY:
NMT	WRD

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 0/22/21

SITE NAME: CTNL125A

SITE ID: CTNL125A

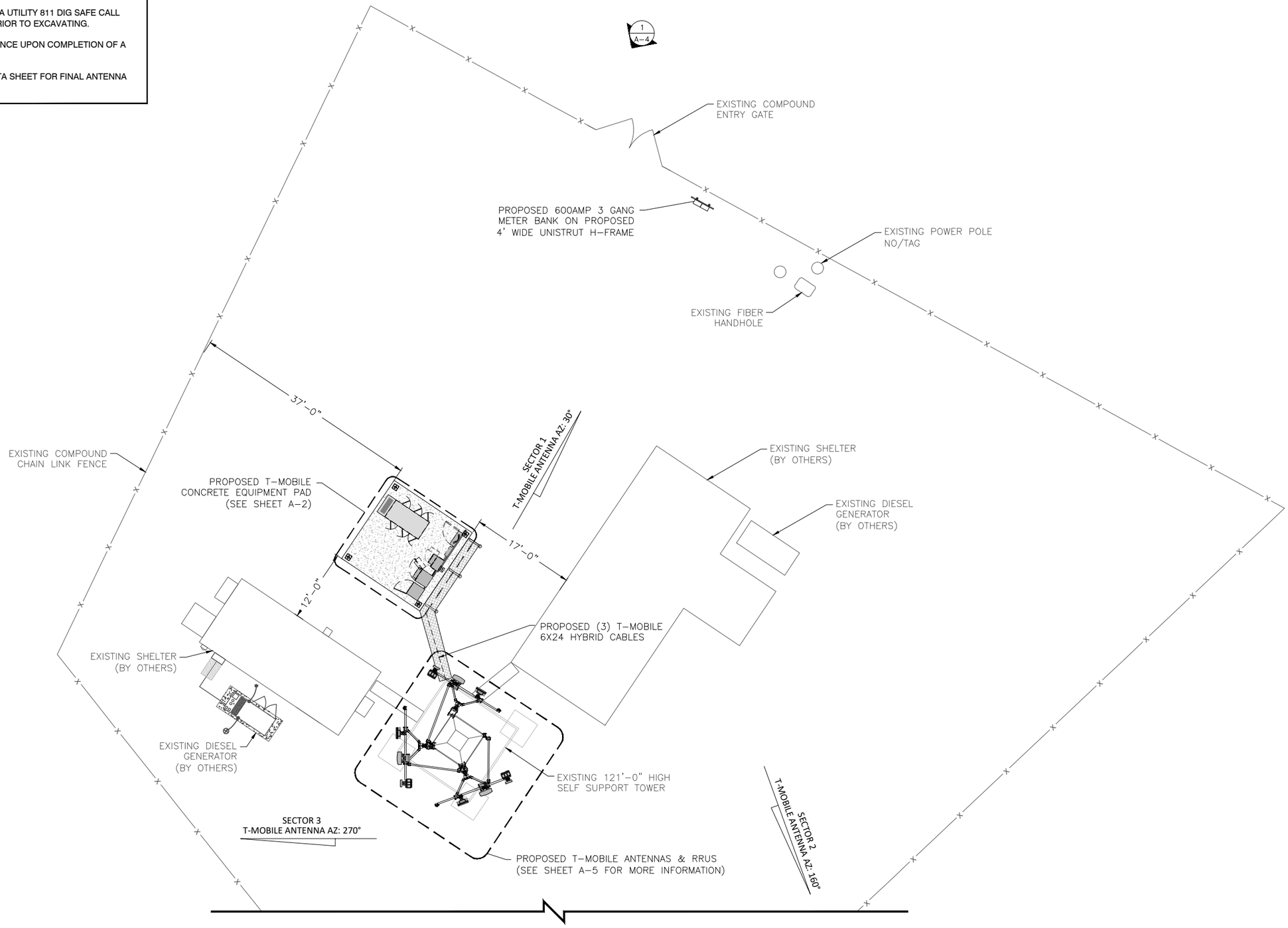
SITE ADDRESS:
244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

SHEET TITLE: GENERAL NOTES, RF NOTES, CABLING NOTES

DRAWING: GN-1

NOTES

1. CONTRACTOR SHALL MAKE A UTILITY 811 DIG SAFE CALL TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
2. CONSTRUCTION TO COMMENCE UPON COMPLETION OF A PASSING MOUNT ANALYSIS.
3. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA MODELS AND SETTINGS.



1 / A-1 COMPOUND PLAN

GRAPHIC SCALE

16 8 0 1 2 4 8 16

1/8 INCH = 1 FOOT (22X34)
1/16 INCH = 1 FOOT (11X17)

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DEREK J. CREASER
No. 27551
LICENSED PROFESSIONAL ENGINEER

DATE: 0/22/21

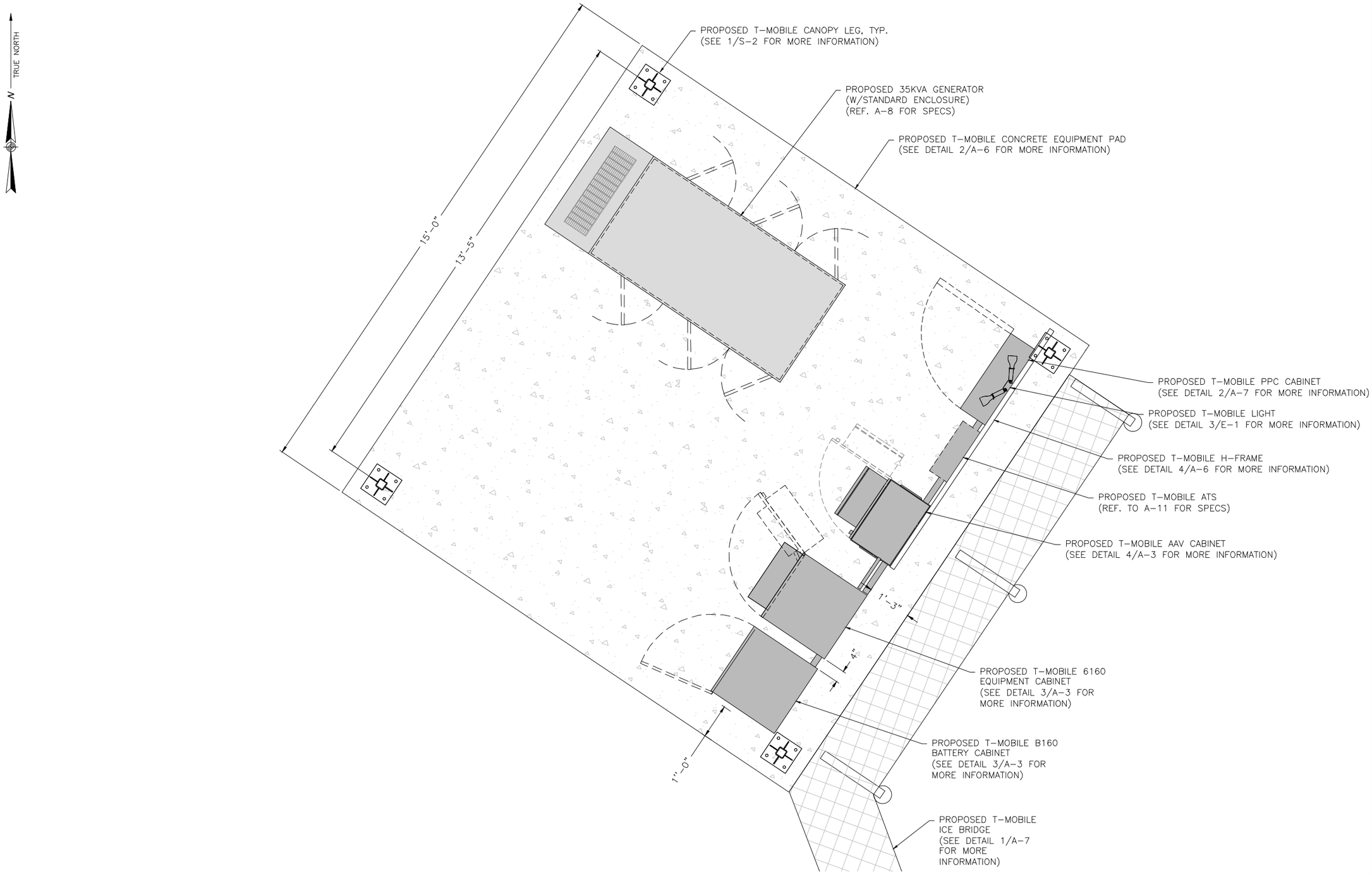
SITE NAME: CTNL125A

SITE ID: CTNL125A

SITE ADDRESS:
244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

SHEET TITLE: COMPOUND PLAN

DRAWING: A-1



1 / A-2 PROPOSED EQUIPMENT PLAN

GRAPHIC SCALE

4 2 0 1 2 4

3/4 INCH = 1 FOOT (22X34)
3/8 INCH = 1 FOOT (11X17)

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DEREK J. CREASER
No. 23551
LICENSED PROFESSIONAL ENGINEER

DATE: 0/22/21

SITE NAME: CTNL125A

SITE ID: CTNL125A

SITE ADDRESS:
244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

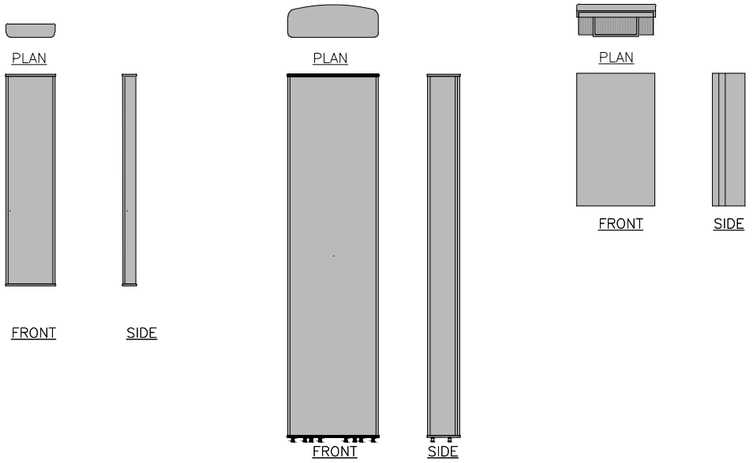
SHEET TITLE: EQUIPMENT LAYOUT

DRAWING: A-2

RFS APX16DWV-16DWVS-E-A20	
MODEL #	APX16DWV-16DWV-S-E-A20
MANUF.	RFS
HEIGHT	55.9"
WIDTH	13.3"
DEPTH	3.15"
WEIGHT	40.7 LBS

RFS APXVAALL24_43-U-NA20	
MODEL #	APXVAALL24_43-U-NA20
MANUF.	RFS
HEIGHT	95.9"
WIDTH	24.0"
DEPTH	8.5"
WEIGHT	128 LBS/153.3 LBS with Mounting Hardware

ERICSSON AIR 6449 B41	
MODEL #	AIR 6449 B41
MANUF.	ERICSSON
HEIGHT	33.1"
WIDTH	20.6"
DEPTH	8.6"
WEIGHT	104.0 LBS

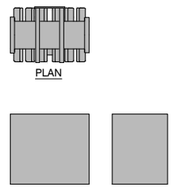


1 A-3 ANTENNA DETAILS

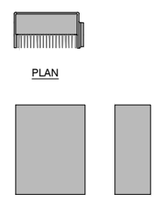
6160 AC ENCLOSURE	
CAPACITY	
RACK SPACE USER EQUIP.	19U(19" RACK)
HARDWARE CAPABILITIES	POWER AND CPRI SUPPORT FOR MULTI-STANDARD REMOTE RADIOS (RRU OR AIR) ERS BASEBAND AND TRANSPORT UNITS Li-ION BATTERIES 3PP EQUIPMENT ADDITIONAL POWER FEED OPTIONS AVAILABLE
MECHANICAL SPECIFICATIONS	
WEIGHT	320lbs (INCLUDING ACTIVE EQUIPMENT)
DIMENSIONS (HWD)	63"x26"x26" (INCLUDING BASE FRAME)
BASE FRAME HEIGHT	6"
MOUNTING POSITION	GROUND
ENCLOSURE MATERIAL	ALUMINUM
COLOR	POWDER PAINT NCS 2002-B
DOOR	FRONT ACCESS
RACK TYPE	19" (IEC 60297-3-100)
LOCK TYPE	CYLINDER/PAD LOCK
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

B160 BATTERY ENCLOSURE	
CAPACITY	
VRLA12V:	100Ah/150Ah/170Ah/190Ah/210Ah
Li-ION	24U 19"/23"
SODIUM-NICKEL	3xFIAMM
ELECTRICAL SPECIFICATIONS	
DC OUTPUT	-48VDC/200A
BATTERY BREAKERS	2x125/2p
ALARMS	DOOR OPEN, CLIMATE FAILURE, MCB CONNECTION
MECHANICAL SPECIFICATIONS	
WEIGHT	295 lbs (PLUS 3 STRINGS OF RECOMMENDED 190 aHR FOR ADDITIONAL 1588LBS)
DIMENSIONS (HWD)	63"x26"x26" (INCLUDING BASE FRAME)
BASE FRAME HEIGHT	6"
MATERIAL	GALVANIZED STEEL (180g/m²)
COLOR	POWDER PAINT NCS 2002-B
LOCKING TYPE	CYLINDER/PAD LOCK

3 A-3 PROPOSED EQUIPMENT CABINET SPECIFICATIONS

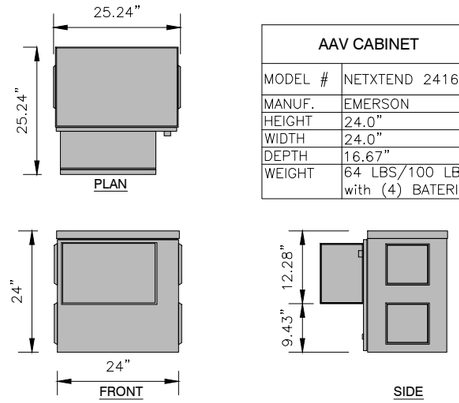


RADIO DIMENSIONS	
MODEL #	RADIO 4460 B25_B66
MANUF.	ERICSSON
HEIGHT	15.1"
WIDTH	17.0"
DEPTH	11.9"
WEIGHT	108 LBS



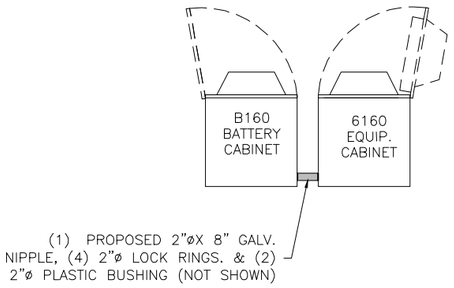
RADIO DIMENSIONS	
MODEL #	RADIO 4480 B66
MANUF.	ERICSSON
HEIGHT	19.5"
WIDTH	15.1"
DEPTH	7.8"
WEIGHT	87 LBS

2 A-3 RADIO DETAILS



AAV CABINET	
MODEL #	NETXTEND 2416
MANUF.	EMERSON
HEIGHT	24.0"
WIDTH	24.0"
DEPTH	16.67"
WEIGHT	64 LBS/100 LBS with (4) BATERIES

4 A-3 AAV CABINET DETAIL



5 A-3 PROPOSED EQUIPMENT CONDUIT DETAIL

T - Mobile NORTHEAST LLC

T-MOBILE NORTHEAST, LLC.
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CENTERLINE COMMUNICATIONS

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NMT	WRD

STATE OF CONNECTICUT · DEREK J. CREASER · No. 28551 · LICENSED PROFESSIONAL ENGINEER

DATE: 0/22/21

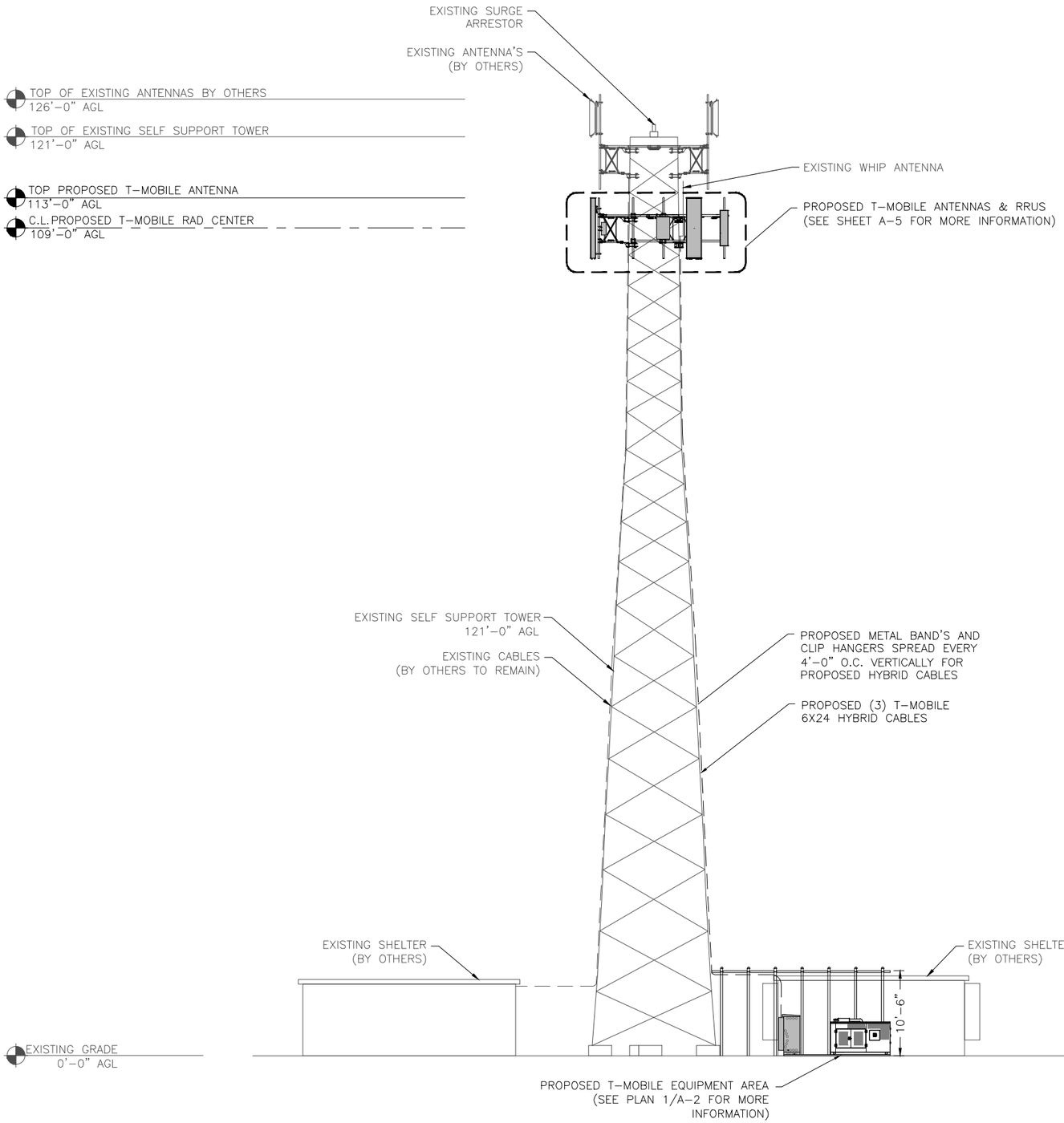
SITE NAME: CTNL125A

SITE ID: CTNL125A

SITE ADDRESS: 244 GATES ROAD, LEBANON, CT 06249, NEW LONDON COUNTY

SHEET TITLE: EQUIPMENT DETAILS

DRAWING: A-3



1 A-4 SOUTHWEST ELEVATION

NOTE:

1. FENCE NOT SHOWN FOR CLARITY.

GRAPHIC SCALE

16 8 0 1 2 4 8 16

1/8 INCH = 1 FOOT (22X34)
1/16 INCH = 1 FOOT (11X17)

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No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 0/22/21

SITE NAME: CTNL125A

SITE ID: CTNL125A

SITE ADDRESS:
244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

SHEET TITLE: SOUTHWEST ELEVATION

DRAWING: A-4

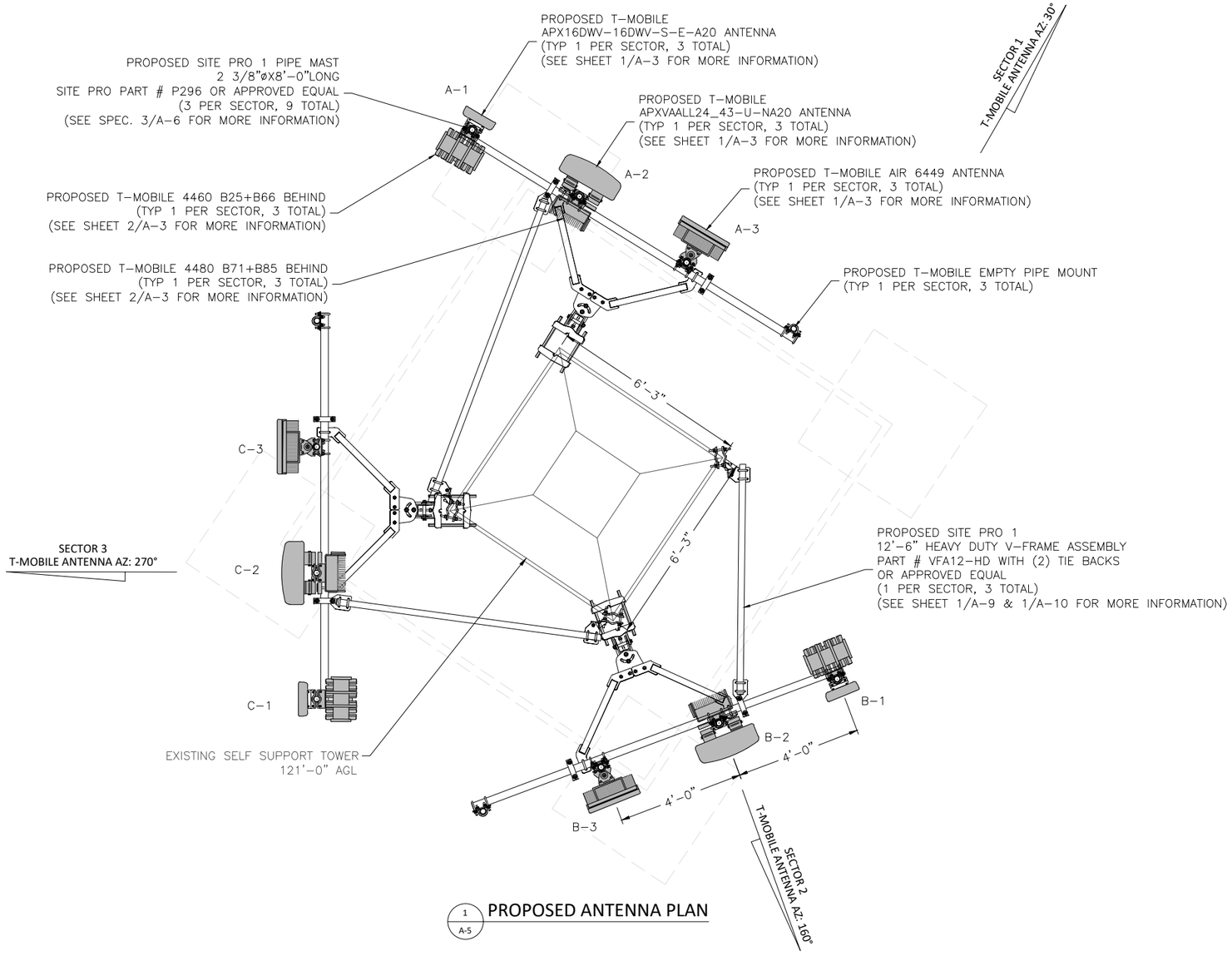
ANTENNA & CABLE SCHEDULE:

TRUE NORTH

ANTENNA & CABLE NOTES:

1. REFERENCE STRUCTURAL ANALYSIS BY OTHERS FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
2. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.
3. PAINT ANTENNAS AND EQUIP. TO MATCH EXISTING.

	LOCATION	AZIMUTH	RAD CENTER	STATUS	TECHNOLOGY	ANTENNA MODEL NO.	MECH DOWNTILT	ELEC DOWNTILT	CABLES	DIPLEXERS	TMA/RRU	CABLE SIZE	CABLE LENGTH
ALPHA	A-1	30°	109'	PROPOSED	L2100, L1900, G1900	APX16DWV-16DWV-S-E-A20	0°	2°/2°	(2) COAX JUMPER (X2)	N/A	4460 B25+B66	6x24 HYBRID	130'
	A-2	30°	109'	PROPOSED	L700, L600, N600	APXVAALL24_43-U-NA20	0°	2°/2°/2°/2°	(2) COAX JUMPER (X2)	N/A	4480 B71+B85	SHARED	N/A
	A-3	30°	109'	PROPOSED	L2500, N2500	AIR6449 B41	0°	2°/2°	N/A	N/A	N/A	SHARED	N/A
BETA	B-1	160°	109'	PROPOSED	L2100, L1900, G1900	APX16DWV-16DWV-S-E-A20	0°	2°/2°	(2) COAX JUMPER (X2)	N/A	4460 B25+B66	6x24 HYBRID	130'
	B-2	160°	109'	PROPOSED	L700, L600, N600	APXVAALL24_43-U-NA20	0°	2°/2°/2°/2°	(2) COAX JUMPER (X2)	N/A	4480 B71+B85	SHARED	N/A
	B-3	160°	109'	PROPOSED	L2500, N2500	AIR6449 B41	0°	2°/2°	N/A	N/A	N/A	SHARED	N/A
GAMMA	G-1	270°	109'	PROPOSED	L2100, L1900, G1900	APX16DWV-16DWV-S-E-A20	0°	2°/2°	(2) COAX JUMPER (X2)	N/A	4460 B25+B66	6x24 HYBRID	130'
	G-2	270°	109'	PROPOSED	L700, L600, N600	APXVAALL24_43-U-NA20	0°	2°/2°/2°/2°	(2) COAX JUMPER (X2)	N/A	4480 B71+B85	SHARED	N/A
	G-3	270°	109'	PROPOSED	L2500, N2500	AIR6449 B41	0°	2°/2°	N/A	N/A	N/A	SHARED	N/A
NOTE: DARK TEXT IN TABLE ABOVE DENOTES PROPOSED EQUIPMENT											(3) TOTAL 6x12 HYBRID CABLES		390'



1 / A-5 PROPOSED ANTENNA PLAN

GRAPHIC SCALE
4 2 0 1 2 4
1/2 INCH = 1 FOOT (22X34)
1/4 INCH = 1 FOOT (11X17)

T - Mobile
NORTHEAST LLC

T-MOBILE NORTHEAST, LLC.
35 GRIFFIN RD S
BLOOMFIELD, CT 06002
PHONE: (860) 629-1700

CENTERLINE COMMUNICATIONS

750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
0	07/22/21	ISSUED FOR CONSTRUCTION	KT
A	07/12/21	ISSUE FOR REVIEW	NMT

DESIGNED BY: NMT | APPROVED BY: WRD

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 0/22/21

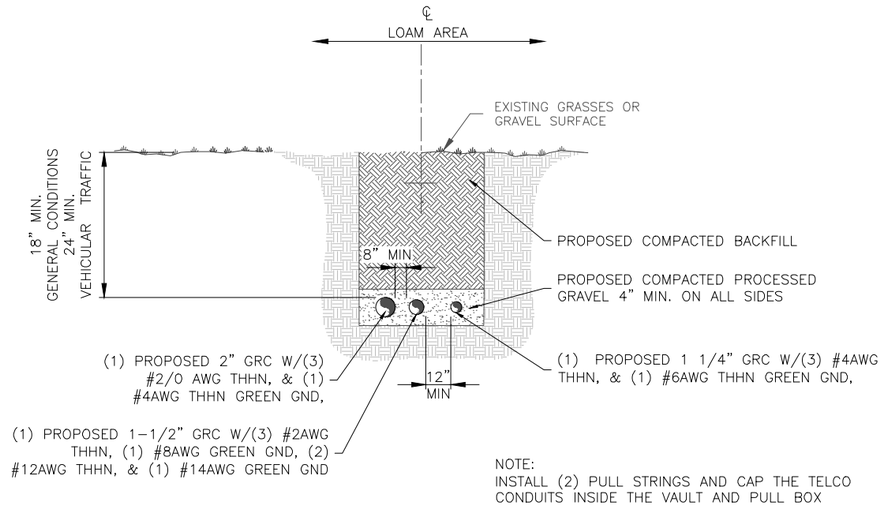
SITE NAME: CTNL125A

SITE ID: CTNL125A

SITE ADDRESS: 244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

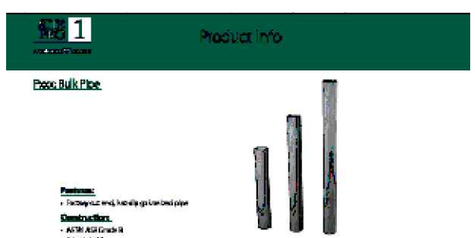
SHEET TITLE: **ANTENNA PLAN & SCHEDULE**

DRAWING: **A-5**



NOTE:
INSTALL (2) PULL STRINGS AND CAP THE TELCO CONDUITS INSIDE THE VAULT AND PULL BOX

1 / A-6 TELCO AND POWER JOINT TRENCH CONDUIT

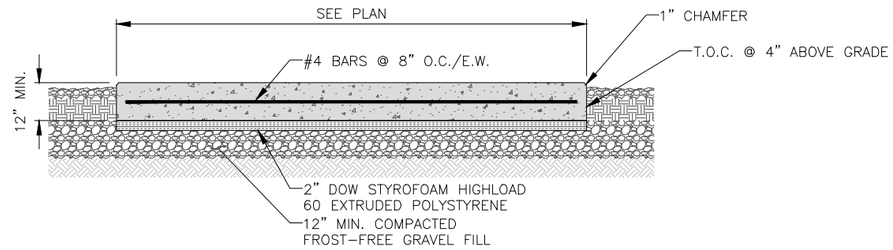


Part #	Length	OD x Length (in)	Weight
P296	8'-0"	2-3/8" x 96"	30 lb

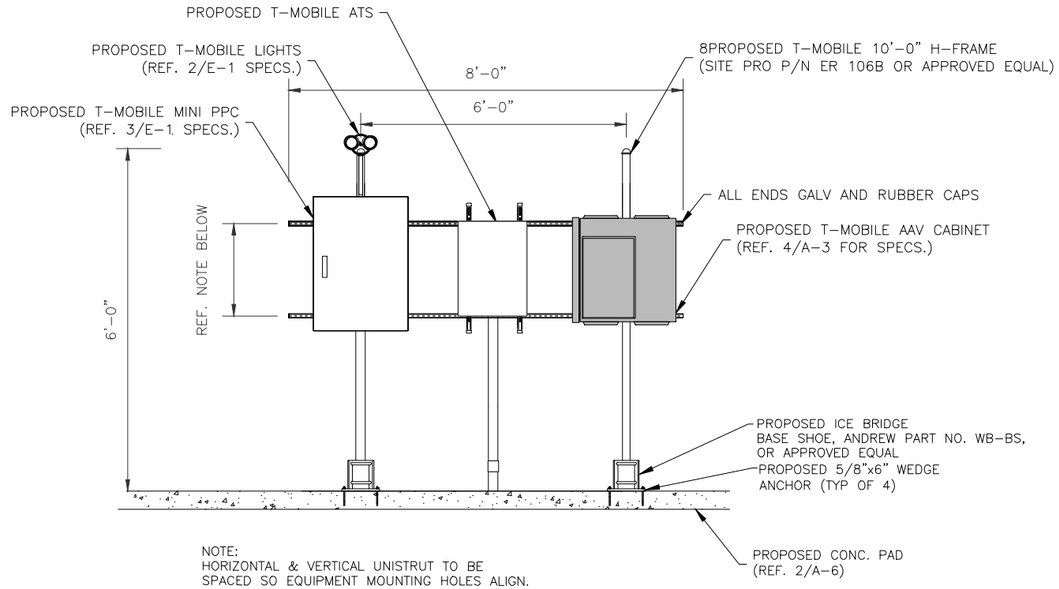
3 / A-6 ANTENNA MOUNTING PIPE SPECS.

FOUNDATION NOTES & CONCRETE SPECIFICATIONS:

1. FOUNDATION AREA SHALL BE EXCAVATED TO THE DEPTH AND DIMENSIONS SHOWN ON THE PLANS. EXISTING LEDGE AND ALL OTHER EXISTING UNSUITABLE MATERIAL SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE. THE SUBGRADE SHALL BE ROLLED WITH A 1-TON, VIBRATORY, WALK-BEHIND ROLLER AT A SPEED OF LESS THAN 2 FPS, 6 PASSES MINIMUM, TO PROVIDE UNYIELDING SURFACE.
2. UNDERCUT SOFT OR "WEAVING" AREAS A MINIMUM OF 12 INCHES DEEP. BACKFILL UNDERCUT AREA WITH FILL MEETING THE SPECIFICATIONS OF STRUCTURAL FILL.
3. CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c)=4000 psi. CONCRETE TO BE AIR ENTRAINED, DESIRED AIR CONTENT TO BE 6% (PLUS OR MINUS 2%)
4. REINFORCING BAR TO BE ASTM A615 GRADE 60.
5. WELDED WIRE FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A185. WIRES FOR FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A82.
6. ALL REINFORCING TO HAVE MINIMUM CONCRETE COVER PER ACI SPECIFICATIONS.
7. ALL CONCRETE MATERIALS AND WORKMANSHIP SHALL CONFORM TO LATEST EDITION OF ACI 318 AND APPLICABLE STATE BUILDING CODE.
8. LEASE AREA IS ON A SLOPE. GRADE LEASE AREA AS REQUIRED TO FACILITATE INSTALLATION OF LEVEL CONCRETE SLAB.
9. SLOPE SLAB TO ALLOW FOR WATER DRAINAGE AWAY FROM SITE.



2 / A-6 CONCRETE SLAB DETAIL



NOTE:
HORIZONTAL & VERTICAL UNISTRUT TO BE SPACED SO EQUIPMENT MOUNTING HOLES ALIGN.

4 / A-6 H-FRAME DETAIL

T - Mobile
NORTHEAST LLC
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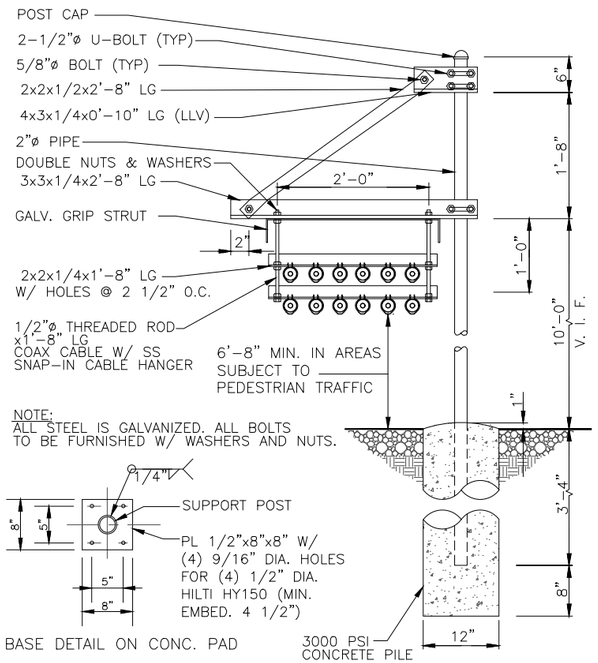
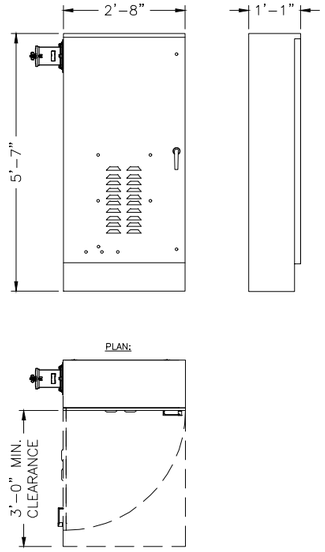
LEBANON, CT 06249
NEW LONDON COUNTY

SHEET TITLE:
DETAILS

DRAWING:
A-6



1 A-7 ICE BRIDGE DETAIL



PPC CABINET SPECIFICATIONS:

MANUFACTURER: TRANSTECTOR
MODEL: POWER TRANSFER SWITCH CABINET 1101-791-200

PHYSICAL:

CABINET TYPE:	UL TYPE 3R
CABINET MATERIAL:	5052-H32 ALUMINUM
WEIGHT:	APPROX. 150 LBS

POWER CENTER:

UL:	LISTED TO UL 891
SERVICE:	120/240V, 1 PHASE, 200 AMP
GENERATOR & UTILITY BREAKERS	SQUARE D, Q FRAME, 200 AMP
GENERATOR RECEPTACLE:	200A APPLETON AR20044RS OR 200A APPLETON AR20033RS
LOAD CENTER:	200A, 24 POSITION SQUARE D, QO

QO STYLE BRANCH BREAKERS:
(1) 20A DUAL POLE (TVSS)
(1) 15A SINGLE POLE (GFCI RECEPTACLE)
(1) 10A VENTILATION FAN (INCLUDED IF OPTION SELECTED)
SUPPRESSIONL 120/240V TRANSTECTOR MCP120TA-9M SUPPRESSION PRIMARY

TELCO CENTER:

GROUND:	10 POSITION MASTER COPPER GROUND BAR
RECEPTACLE:	15 A GFCI, DUPLEX

2 A-7 PPC CABINET DETAIL

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SHEET TITLE:
DETAILS

DRAWING:
A-7

SD035 | 3.4L | 35 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

Standby Power Rating
35 kW, 44 kVA, 60 Hz

Prime Power Rating*
32 kW, 39 kVA, 60 Hz

Image used for illustration purposes only

*EPA Certified Prime ratings are not available in the US or its Territories

Codes and Standards

Generac products are designed to the following standards:

- UL2200, UL508, UL489, UL142
- CSA 22.2
- BS5514 and DIN 6271
- SAE J1349
- NFPA 37, 70, 99, 110
- NEC700, 701, 702, 708
- ISO 3046, 7637, 8528, 9001
- NEMA ICS10, MG1, 250, ICS6, AB1
- ANSI C62.41
- IBC 2009, CBC 2010, IBC 2012, ASCE 7-05, ASCE 7-10, ICC-ES AC-156 (2012)

Powering Ahead

For over 50 years, Generac has provided innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial applications under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

SPEC SHEET 1 of 6

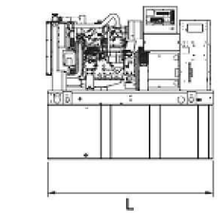
SD035 | 3.4L | 35 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

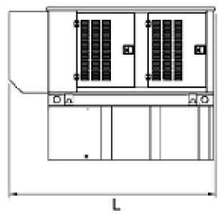
GENERAC | INDUSTRIAL POWER

DIMENSIONS AND WEIGHTS*



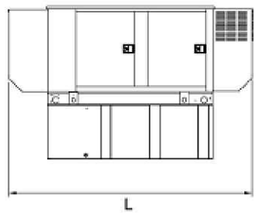
OPEN SET (Includes Exhaust Flex)

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Weight - lbs (kg)
No Tank	-	76.7 (1,948) x 37.4 (950) x 45.2 (1,147)	1,719 (780)
17	54 (204.4)	76.7 (1,948) x 37.4 (950) x 58.2 (1,477)	2,199 (998)
42	132 (499.7)	76.7 (1,948) x 37.4 (950) x 70.2 (1,782)	2,429 (1,102)
68	211 (798.7)	76.7 (1,948) x 37.4 (950) x 82.2 (2,087)	2,638 (1,197)
96	300 (1,135.6)	92.9 (2,360) x 37.4 (950) x 85.7 (2,176)	2,701 (1,225)



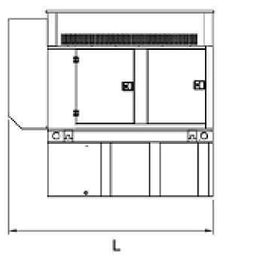
STANDARD ENCLOSURE

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Weight - lbs (kg) Enclosure Only Steel	Aluminum
No Tank	-	94.8 (2,409) x 38.0 (965) x 49.5 (1,258)	334 (152)	115 (52)
17	54 (204.4)	94.8 (2,409) x 38.0 (965) x 62.5 (1,588)		
42	132 (499.7)	94.8 (2,409) x 38.0 (965) x 74.5 (1,893)		
68	211 (798.7)	94.8 (2,409) x 38.0 (965) x 86.5 (2,198)		
96	300 (1,135.6)	94.8 (2,409) x 38.0 (965) x 90.0 (2,287)		



LEVEL 1 ACOUSTIC ENCLOSURE

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Weight - lbs (kg) Enclosure Only Steel	Aluminum
No Tank	-	112.5 (2,857) x 38.0 (965) x 49.5 (1,258)	435 (198)	150 (68)
17	54 (204.4)	112.5 (2,857) x 38.0 (965) x 62.5 (1,588)		
42	132 (499.7)	112.5 (2,857) x 38.0 (965) x 74.5 (1,893)		
68	211 (798.7)	112.5 (2,857) x 38.0 (965) x 86.5 (2,198)		
96	300 (1,135.6)	112.5 (2,857) x 38.0 (965) x 90.0 (2,287)		



LEVEL 2 ACOUSTIC ENCLOSURE

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Weight - lbs (kg) Enclosure Only Steel	Aluminum
No Tank	-	94.8 (2,409) x 38.0 (965) x 61.9 (1,572)	520 (236)	179 (81)
17	54 (204.4)	94.8 (2,409) x 38.0 (965) x 74.9 (1,902)		
42	132 (499.7)	94.8 (2,409) x 38.0 (965) x 86.9 (2,207)		
68	211 (798.7)	94.8 (2,409) x 38.0 (965) x 98.9 (2,512)		
96	300 (1,135.6)	94.8 (2,409) x 38.0 (965) x 102.4 (2,601)		

* All measurements are approximate and for estimation purposes only. Specification characteristics may change without notice. Please contact a Generac Power Systems Industrial Dealer for detailed installation drawings.

SPEC SHEET 6 of 6

Generac Power Systems, Inc. | P.O. Box 8 | Waukesha, WI 53189
P: (262) 544-4811

Part No. 0K5086
Rev. C 11/27/17

T - Mobile
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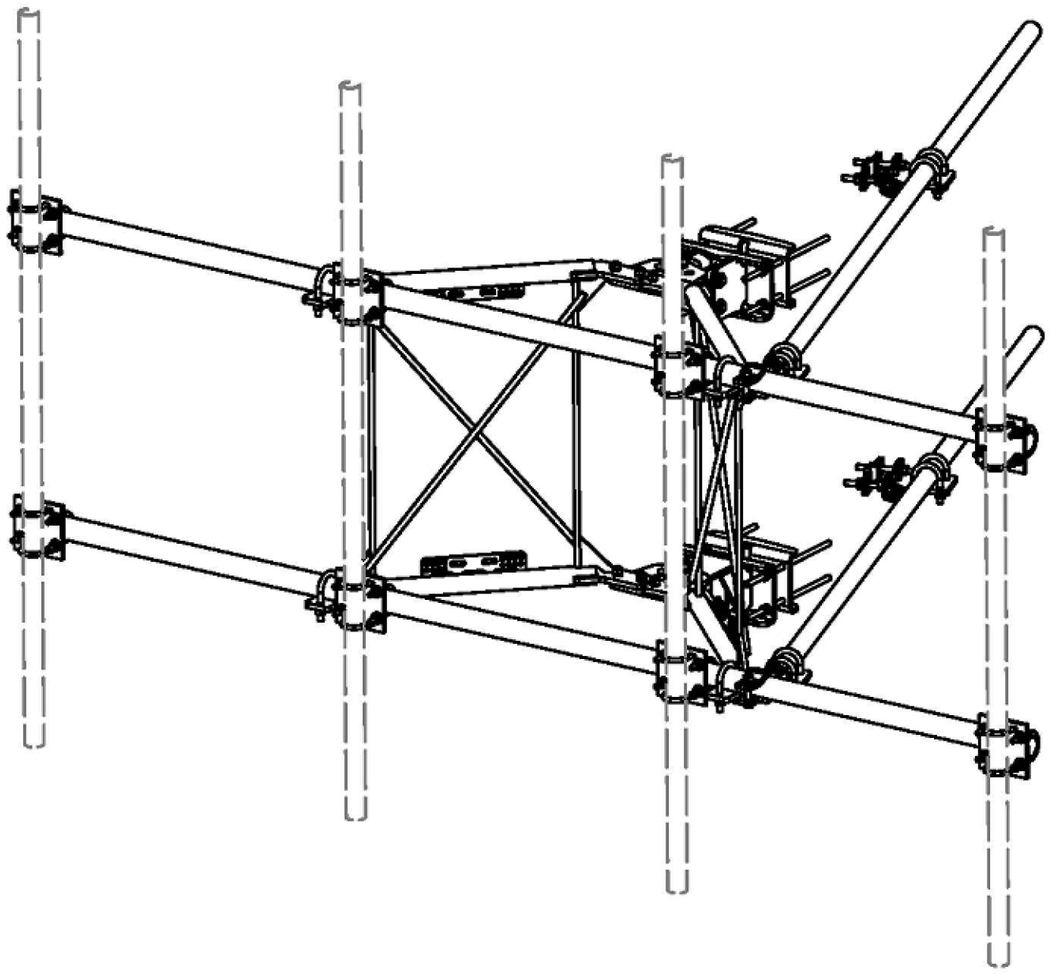
SITE ADDRESS:
244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

SHEET TITLE: **GENERATOR DETAIL**

DRAWING: **A-8**



PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	X-VFAW	SUPPORT ARM		71.41	142.81
2	1	X-HDCAMTBW	CLAMP WELDMENT FOR BCAM-HD		33.86	33.86
3	1	X-MHTPHD	MULTI-HOLE TAPER PLATE WELDMENT		36.24	36.24
4	2	X-VFAPL4	VFA-HD PIVOT PLATE	12 in	15.88	31.77
5	2	X-LCBP4	BENT BACKING PLATE	13 in	20.04	40.09
6	1	X-HDCAMSS	ANGLE ADJUSTMENT WELDMENT FOR BCAM-HD		16.39	16.39
7	4	X-SPTB	SLIDING PIPE TIE BACK PLATE	5 1/2 in	5.87	23.49
8	1	X-HDCAMSP	POSITIONING PLATE WELDMENT FOR BCAM-HD		2.58	2.58
9	4	X-TBCA	TIE BACK CLIP ANGLE		2.01	8.02
10	8	SCX2	CROSSOVER PLATE	7 in	4.80	38.37
11	4	MCP	CLAMP HALF 1/2" THICK, 11-5/8" LONG	12 1/16 in	3.59	14.37
12	8	DCP	1/2" THICK, 5-3/4" CNTER TO CENTER CLAMP HALF	8 1/8 in	2.36	18.90
13	2	P2126	2-3/8" X 126" (2" SCH. 40) GALVANIZED PIPE	126 in	40.75	81.50
14	2	P30150	2-7/8" X 150" (2-1/2" SCH. 40) GALVANIZED PIPE	150 in	76.94	153.87
15	4	A34212	3/4" x 2-1/2" UNC HEX BOLT (A325)	2 1/2 in	0.48	1.92
16	4	G34FW	3/4" HDG USS FLATWASHER		0.06	0.24
17	4	G34LW	3/4" HDG LOCKWASHER		0.04	0.17
18	4	G34NUT	3/4" HDG HEAVY 2H HEX NUT		0.21	0.85
19	8	G58R-18	5/8" x 18" THREADED ROD (HDG.)		1.57	12.54
20	4	G58R-12	5/8" x 12" THREADED ROD (HDG.)		1.05	4.18
21	4	G58R-8	5/8" x 8" THREADED ROD (HDG.)		0.70	2.79
22	4	X-UB5300	5/8" X 3" X 5-1/4" X 2-1/2" U-BOLT (HDG.)		1.15	4.60
23	8	X-UB5258	5/8" X 2-5/8" X 4-1/2" X 2" U-BOLT (HDG.)		1.00	8.00
24	2	G5807	5/8" x 7" HDG HEX BOLT GR5 FULL THREAD	7 in	0.70	1.41
25	1	G5806	5/8" x 6" HDG HEX BOLT GR5 FULL THREAD	6 in	0.62	0.62
26	8	G5804	5/8" x 4" HDG HEX BOLT GR5		0.44	3.55
27	4	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.08
28	8	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	2.50
29	25	G58FW	5/8" HDG USS FLATWASHER	1/8 in	0.07	1.76
30	66	G58LW	5/8" HDG LOCKWASHER		0.03	1.72
31	71	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	9.22
32	32	X-UB1300	1/2" X 3" X 5" X 2" GALV U-BOLT		0.74	23.64
33	16	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.60	9.56
34	64	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	2.18
35	64	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.89
36	64	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	4.58
					TOTAL WT. #	740.26

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
D	UPDATED BCAM VERSION 1 TO BCAM VERSION 2		CEK	6/29/2018
C	UPDATED PIN LEG CONNECTION TO B-CAM CONNECTION		CEK	12/7/2017
B	CHANGED TIE-BACK BACK CONNECTION		CEK	7/31/2017
A	CHANGED TIE-BACK FRONT CONNECTION		CEK	2/2/2017

REVISION HISTORY

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.050")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION: 12' 6" HEAVY DUTY V-FRAME ASSEMBLY WITH TWO STIFF ARMS

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
	CEK 1/25/2017		VFA12-HD	1 OF 5

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	CUSTOMER	BMC 12/13/2017	VFA12-HD

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

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

1 A-9 12'-6" HEAVY DUTY V-FRAME ASSEMBLY

T - Mobile
NORTHEAST LLC

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WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

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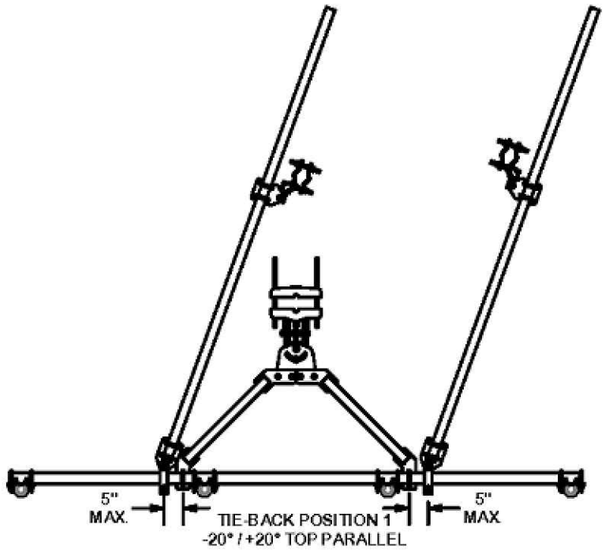
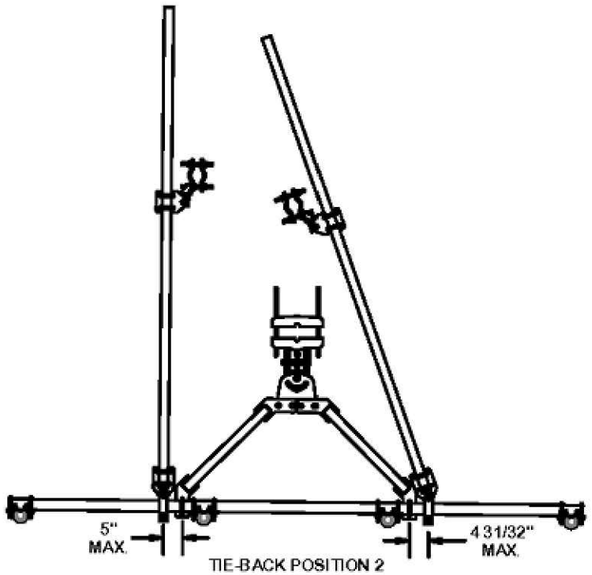
SITE ADDRESS: 244 GATES ROAD, LEBANON, CT 06249, NEW LONDON COUNTY
SHEET TITLE: 12'-6" HEAVY DUTY V-FRAME ASSEMBLY
DRAWING: A-9

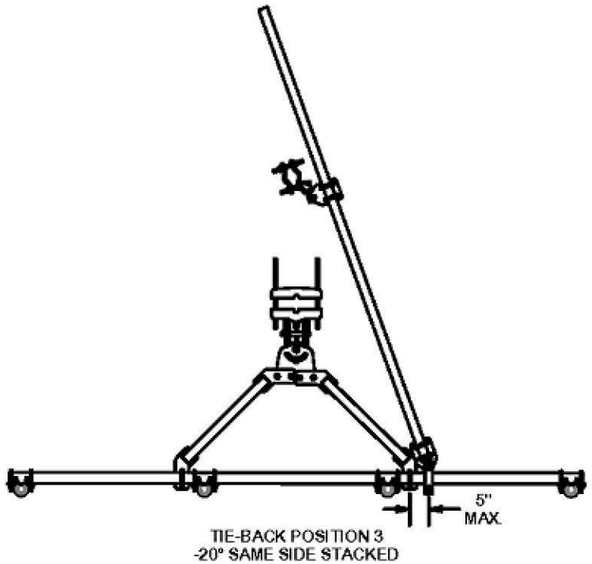
TIE-BACK POSITIONS



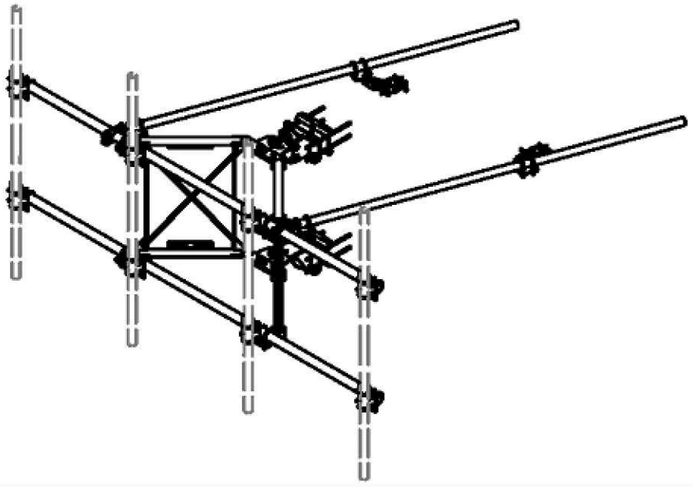
TIE-BACK POSITION 1
-20° / +20° TOP PARALLEL

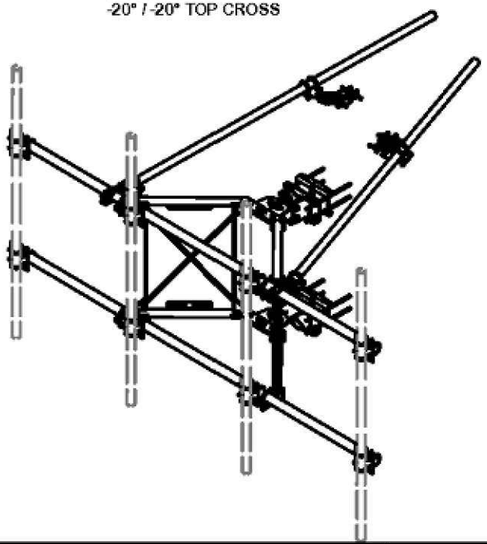


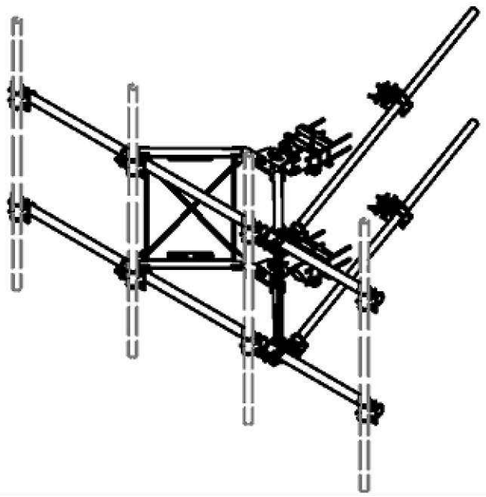
TIE-BACK POSITION 2
-20° / -20° TOP CROSS



TIE-BACK POSITION 3
-20° SAME SIDE STACKED







REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
D	UPDATED BCAM VERSION 1 TO BCAM VERSION 2		CEK	6/29/2018
C	UPDATED PIN LEG CONNECTION TO B-CAM CONNECTION		CEK	12/7/2017
B	CHANGED TIE-BACK BACK CONNECTION		CEK	7/31/2017
A	CHANGED TIE-BACK FRONT CONNECTION		CEK	2/2/2017

REVISION HISTORY

TOLERANCE NOTES

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

DESCRIPTION
12' 6" HEAVY DUTY
V-FRAME ASSEMBLY
WITH TWO STIFF ARMS

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	CEK 1/25/2017		VFA12-HD

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	CUSTOMER	BMC 12/13/2017	VFA12-HD

PAGE 2 OF 5

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

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

1 / A-10 12'-6" HEAVY DUTY V-FRAME ASSEMBLY

T - Mobile
NORTHEAST LLC

CENTERLINE COMMUNICATIONS
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
0	07/22/21	ISSUED FOR CONSTRUCTION	KT
A	07/12/21	ISSUE FOR REVIEW	NMT

DESIGNED BY:	APPROVED BY:
NMT	WRD

SITE NAME: CTNL125A

SITE ID: CTNL125A

SITE ADDRESS:
244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

SHEET TITLE: 12'-6" HEAVY DUTY V-FRAME ASSEMBLY

DRAWING: A-10

Automatic Transfer Switches

GENERAC®

Service and non-Service rated Automatic Smart Transfer Switches

Automatic Transfer Switches 1 of 2 | Automatic Transfer Switches 2 of 2

100 - 400 Amps, Single Phase

*CUL only applies to non-service rated switches

Description

Generac Automatic Transfer Switches are designed for use with single phase generators that utilize an Evolution™ or Nexus™ Controller. The 100, 200, and 400 amp open transition switches are available in single phase in both service equipment rated and non-service equipment rated configurations. The 150 and 300 amp open transition switches are only available in a service rated equipment configuration.

Standard Features

Service rated (RXSW) Generac Automatic Transfer Switches are housed in an aluminum NEMA/UL Type 3R enclosure*, with electrostatically applied and baked powder paint. The Heavy Duty Generac Contactor is a UL recognized device, designed for years of service. The controller at the generator handles all the timing, sensing, exercising functions, and transfer commands. All switches are covered by a 5 year limited warranty.

*Non-service rated (RXSC) switches are housed in a steel enclosure.

DPM Technology

Through the use of digital power technology (DPM), these switches have the capability to manage up to 4 individual HVAC (24 VAC controlled) loads with no additional hardware. When used in tandem with Smart Management Modules, up to 8 more loads can be managed as well, providing the most installation efficient power management options available.

GENERAC ISO 9001:2008

GENERAC

100-400 Amps, Single Phase — Automatic Smart Transfer Switches

Functions

All timing and sensing functions originate in the generator controller

Utility voltage drop-out	<65%
Timer to generator start	10 second factory set, adjustable between 2-1500 seconds by a qualified dealer**
Engine warm up delay	5 seconds
Standby voltage sensor	65% for 5 seconds
Utility voltage pickup	>80%
Re-transfer time delay	15 seconds
Engine cool-down timer	60 seconds
Exerciser	5 or 12 minutes adjustable weekly/Bi-weekly/Monthly**

The transfer switch can be operated manually without power applied.

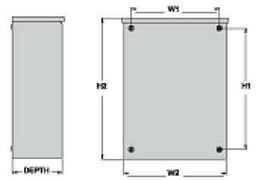
*When used in conjunction with units utilizing Evolution™ controls **Adjustable via the controller

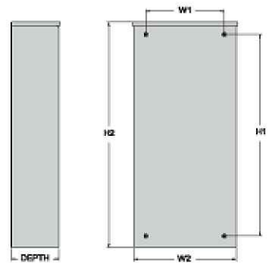
Specifications

Model	RXSC100A3		RXSC200A3
Amps	100		200
Voltage	120/240, 1ø		120/240, 1ø
Load Transition Type (Automatic)	Open Transition		Open Transition
Enclosure Type	NEMA/UL3R		NEMA/UL3R
UL Rating	UL/CUL		UL/CUL
Withstand Rating (Amps)	10,000		10,000
Lug Range	1/0 - #14		250 MCM - #6

Dimensions

Model		RXSC100A3	RXSC200A3
Height (in./mm)	H1	17.24/437.9	17.24/437.9
	H2	20/508	20/508
Width (in./mm)	W1	12.5/317.5	12.5/317.5
	W2	14.6/370.8	14.6/370.8
Depth (in./mm)		7.09/180.1	7.09/180.1
Weight (lbs./kilos)		20/9.07	20/9.07





GENERAC

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DESIGNED BY:	APPROVED BY:
NMT	WRD

SITE NAME: CTNL125A

SITE ID: CTNL125A

SITE ADDRESS: 244 GATES ROAD, LEBANON, CT 06249, NEW LONDON COUNTY

SHEET TITLE: ATS SPEC SHEET

DRAWING: A-11

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

SPECIAL INSPECTION CHECKLIST	
BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS [4]
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION [5]
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	**MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS [6]**
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	**PHOTOGRAPHS**
ADDITIONAL TESTING AND INSPECTIONS:	

NOTES:

1. REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
2. PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
3. PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
4. HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
5. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
6. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

NOTES:

1. ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
2. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
3. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
4. VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
5. CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
6. EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

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NMT	WRD

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 0/22/21

SITE NAME: CTNL125A

SITE ID: CTNL125A

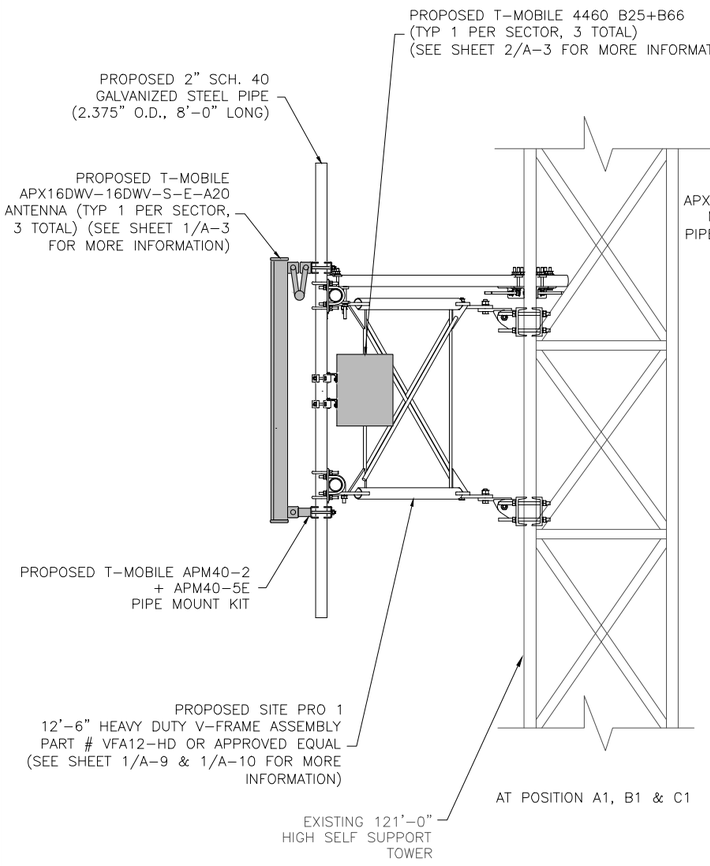
SITE ADDRESS:
244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

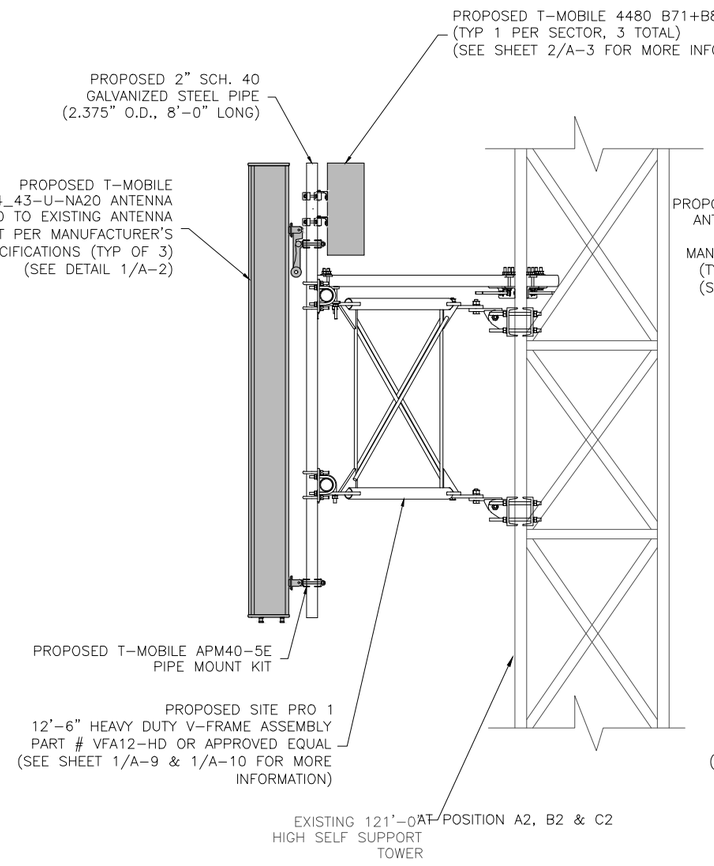
SHEET TITLE: STRUCTURAL NOTES & SPECIAL INSPECTIONS

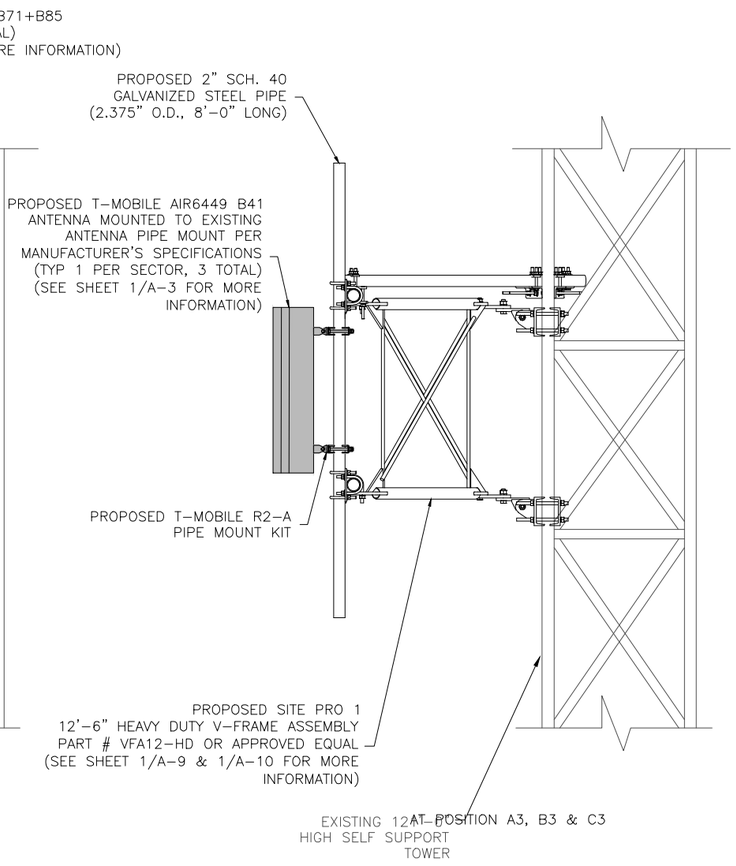
DRAWING: SN-1

NOTES FOR ANTENNA MOUNTS:

1. APX16DWV-16DWV-S-E-A20: APM40-5E PIPE MOUNT KIT
2. AIR6449: R2A PIPE MOUNT KIT
3. APXVAARR24-43-U-NA20: APM40-5E PIPE MOUNT KIT







1 / S-1 TYPICAL ANTENNA & RRU MOUNTING DETAIL

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DATE: 0/22/21

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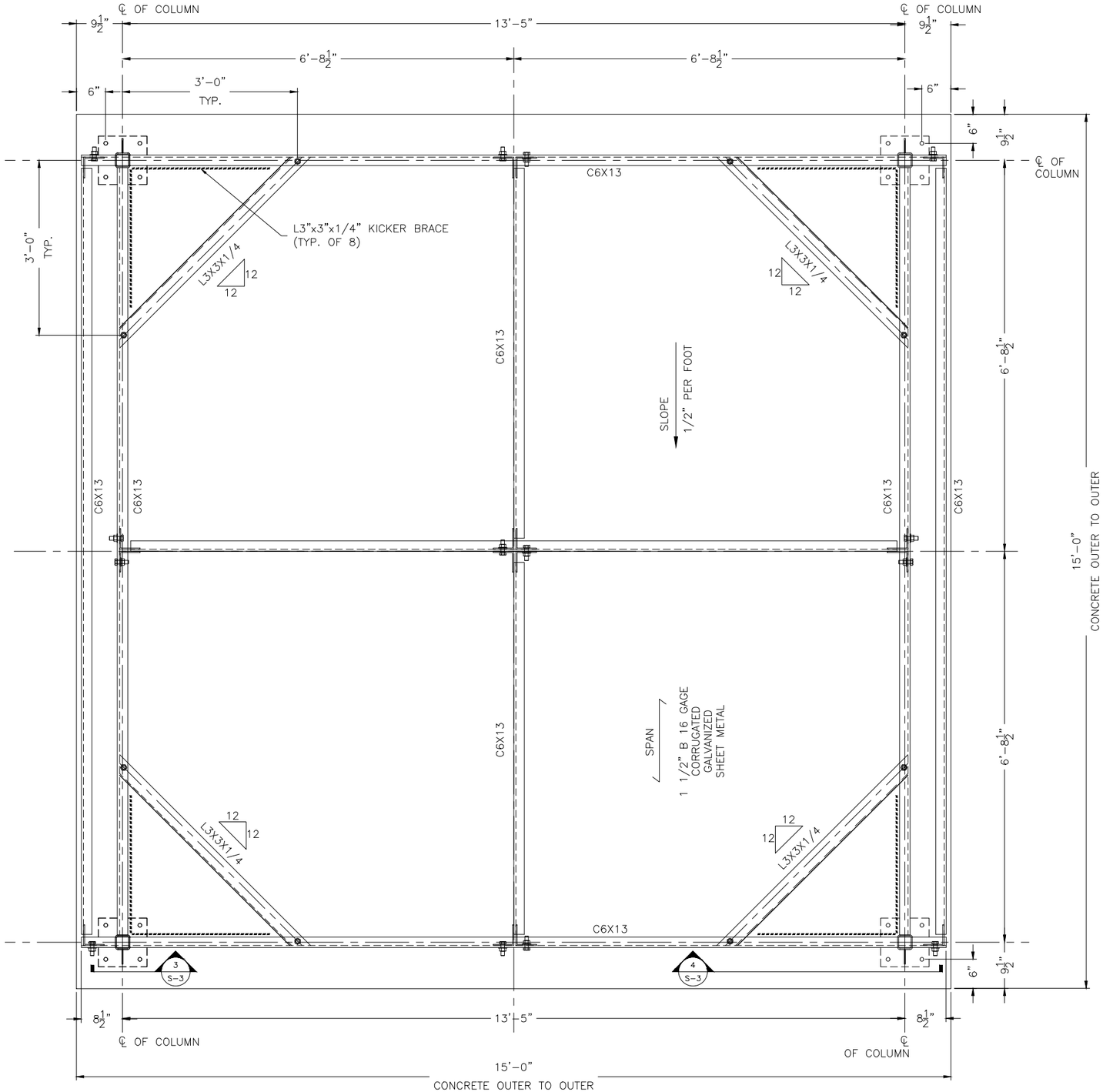
SITE ID: CTNL125A

SITE ADDRESS:
244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

SHEET TITLE: **ANTENNA & RRU MOUNTING DETAIL**

DRAWING: **S-1**

NOTES:
1. VERIFY DIMENSIONS IN FIELD PRIOR TO ORDERING STEEL.
2. SHOP DRAWING ENGINEER & APPROVAL REQUIRED MATERIAL.



1 S-2 ICE CANOPY FRAMING PLAN

GRAPHIC SCALE
1 0 0.5 1 2 4
1 INCH = 1 FOOT (22X34)
1/2 INCH = 1 FOOT (11X17)

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No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 0/22/21

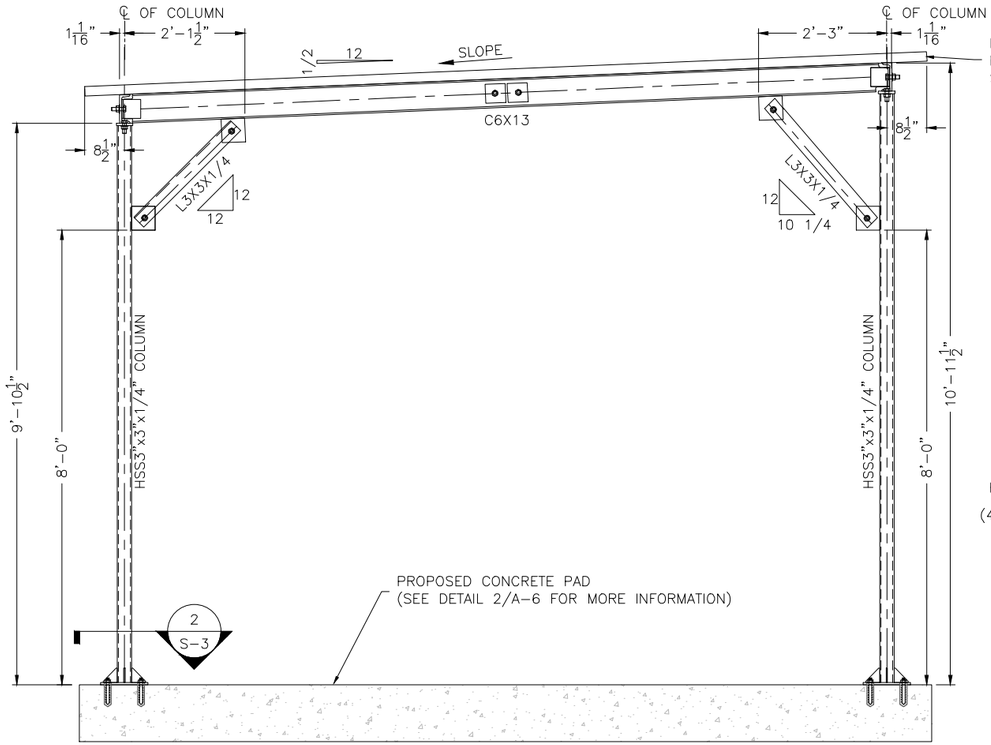
SITE NAME: CTNL125A

SITE ID: CTNL125A

SITE ADDRESS:
244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

SHEET TITLE: STRUCTURAL DETAILS

DRAWING: S-2



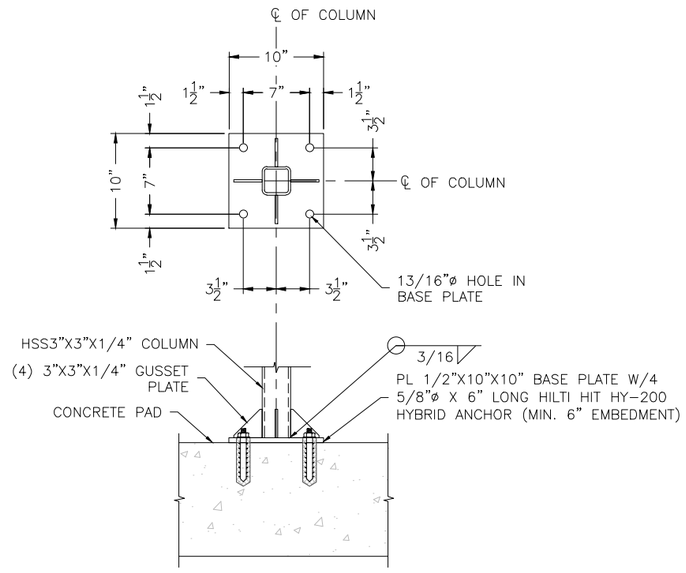
1 SECTION DETAIL (S-3)

GRAPHIC SCALE

4 2 0 1 2 4

3/4 INCH = 1 FOOT (22X34)
3/8 INCH = 1 FOOT (11X17)

PROPOSED 1 1/2" B 16 GAGE CORRUGATED GALVANIZED SHEET METAL, OVERLAP MIN. 6" W/ SILICONE SEALANT. FASTEN W/NO 12 S.S. SELF TAPPING SCREW @ 12" O.C. MAX

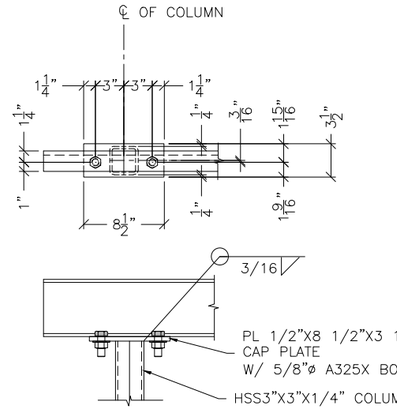


2 TYPICAL BASE PLATE DETAIL (S-3)

GRAPHIC SCALE

2 1 0 0.5 1 2

1-1/2 INCHES = 1 FOOT (22X34)
3/4 INCH = 1 FOOT (11X17)

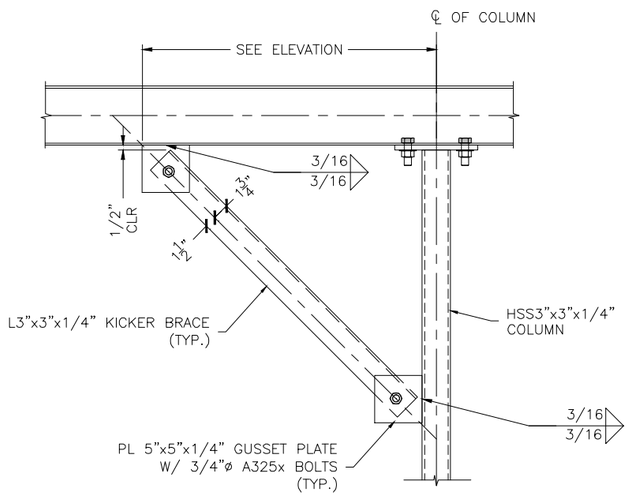


3 CONNECTION DETAIL (S-3)

GRAPHIC SCALE

4 2 0 1 2 4

3/4 INCH = 1 FOOT (22X34)
3/8 INCH = 1 FOOT (11X17)

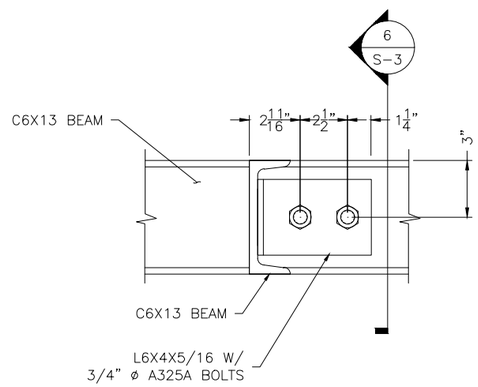


4 TYPICAL KICKER BRACE DETAIL (S-3)

GRAPHIC SCALE

2 1 0 0.5 1 2

1-1/2 INCHES = 1 FOOT (22X34)
3/4 INCH = 1 FOOT (11X17)

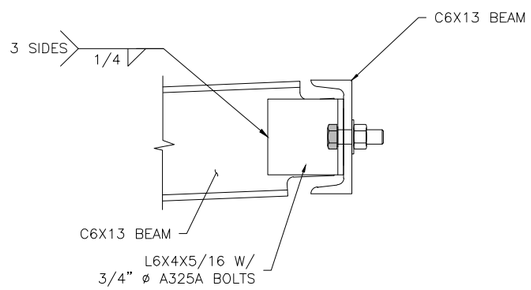


5 CONENCTION DETAIL (S-3)

GRAPHIC SCALE

2 1 0 0.5 1 2

1-1/2 INCHES = 1 FOOT (22X34)
3/4 INCH = 1 FOOT (11X17)



6 SECTION DETAIL (S-3)

GRAPHIC SCALE

2 1 0 0.5 1 2

1-1/2 INCHES = 1 FOOT (22X34)
3/4 INCH = 1 FOOT (11X17)

NOTES:
1. VERIFY DIMENSIONS IN FIELD PRIOR TO ORDERING STEEL.
2. SHOP DRAWING ENGINEER & APPROVAL REQUIRED MATERIAL.

T - Mobile
NORTHEAST LLC

T-MOBILE NORTHEAST, LLC.
35 GRIFFIN RD S
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PHONE: (860) 629-1700

CENTERLINE COMMUNICATIONS

750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
0	07/22/21	ISSUED FOR CONSTRUCTION	KT
A	07/12/21	ISSUE FOR REVIEW	NMT

DESIGNED BY:	APPROVED BY:
NMT	WRD

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 0/22/21

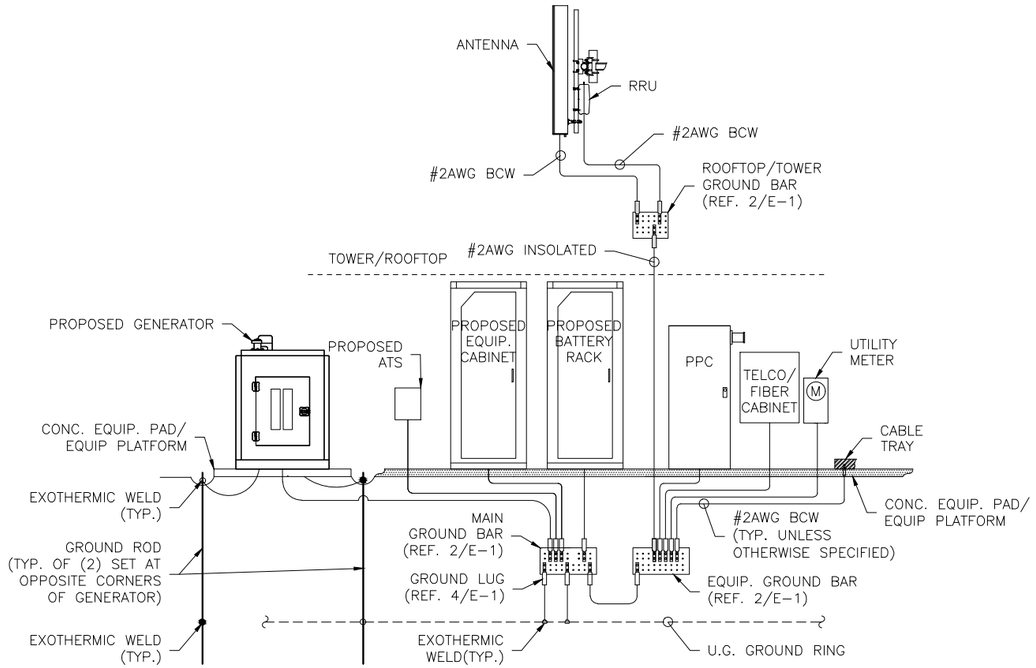
SITE NAME: CTNL125A

SITE ID: CTNL125A

SITE ADDRESS:
244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

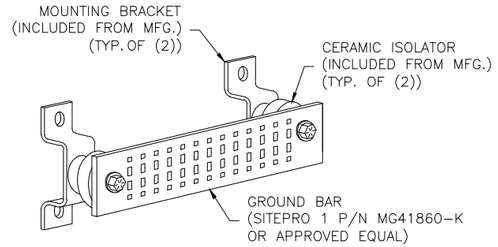
SHEET TITLE: STRUCTURAL DETAILS

DRAWING: S-3



GROUNDING RISER NOTE:
UNLESS OTHERWISE SPECIFIED ALL GROUNDING CONDUCTORS ARE TO BE #2AWG BCW

1 / G-1 GROUNDING RISER DIAGRAM



2 / G-1 GROUND BAR DETAIL

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

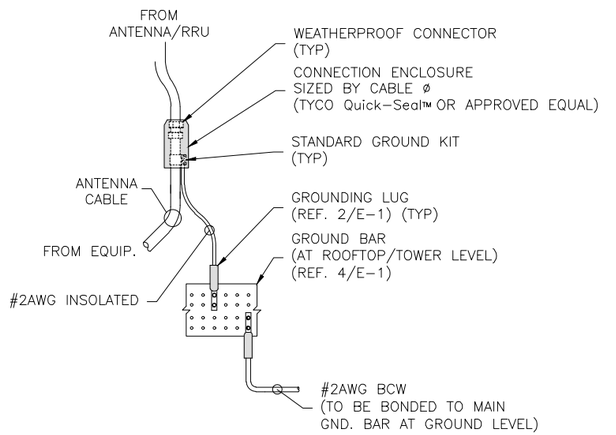
SECTION "P" – SURGE PRODUCERS

CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
+24V POWER SUPPLY RETURN BAR (#2)
-48V POWER SUPPLY RETURN BAR (#2)
RECTIFIER FRAMES.

SECTION "A" – SURGE ABSORBERS

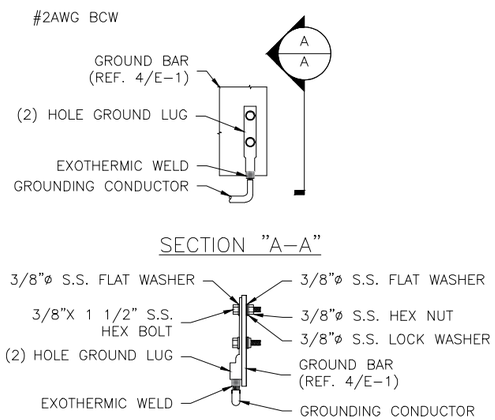
INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)

3 / G-1 GROUND WIRE SCHEDULE



NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT BEND IN CABLE.
2. GROUND CABLES DIRECTLY TO CIGBE
3. JUMPER REQUIRED ONLY WHEN CABLE IS 1 1/4" OR LARGER

4 / G-1 ANTENNA/RRU GROUNDING DETAIL



GROUNDING LUG NOTES:
1. DO NOT DOUBLE UP OR STACK LUGS.
2. OXIDE INHIBITING COMPOUND TO BE APPLIED TO ALL LUGS.
3. ALL LUGS ARE TO BE EXOTHERMIC WELDED TO GROUNDING CONDUCTORS.
4. FOR INSOLATED GROUNDING CONDUCTORS, EXPOSED BARE COPPER TO BE KEPT TO ABSOLUTE MINIMUM.
5. NO INSULATION IS ALLOWED WITHIN THE BARREL OF THE COMPRESSION TERMINAL.

5 / G-1 GROUND LUG DETAIL

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 0/22/21

SITE NAME: CTNL125A

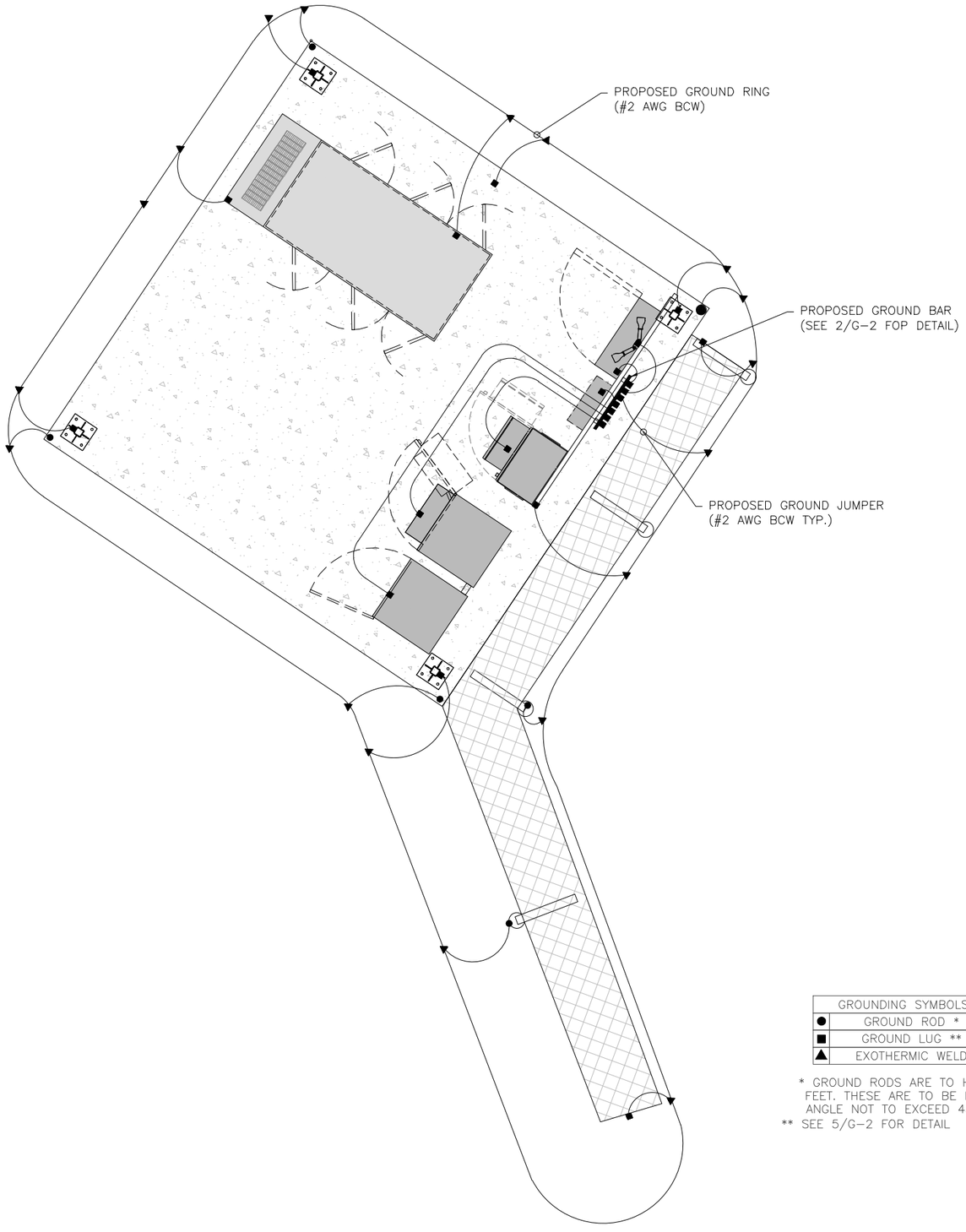
SITE ID: CTNL125A

SITE ADDRESS:
244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

SHEET TITLE: GROUNDING DETAILS

DRAWING: G-1

N TRUE NORTH



GROUNDING SYMBOLS	
●	GROUND ROD *
■	GROUND LUG **
▲	EXOTHERMIC WELD

* GROUND RODS ARE TO HAVE A MINIMUM DIAMETER OF 5/8" AND A MINIMUM LENGTH OF 10 FEET. THESE ARE TO BE DRIVEN INTO THE GROUND IN A VERTICAL POSITION OR AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES AT A LOCATION.

** SEE 5/G-2 FOR DETAIL

T - Mobile
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DEREK J. CREASER
No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 0/22/21

SITE NAME:
CTNL125A

SITE ID:
CTNL125A

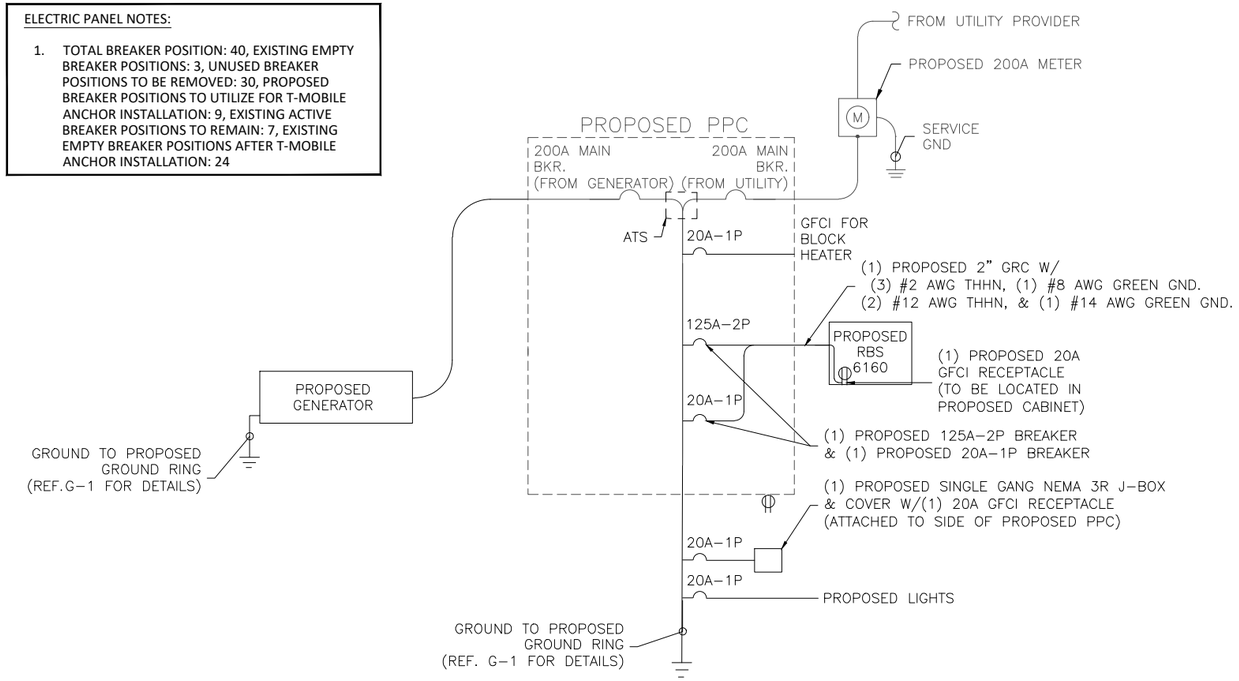
SITE ADDRESS:
244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

SHEET TITLE:
GROUNDING PLAN

DRAWING:
G-2

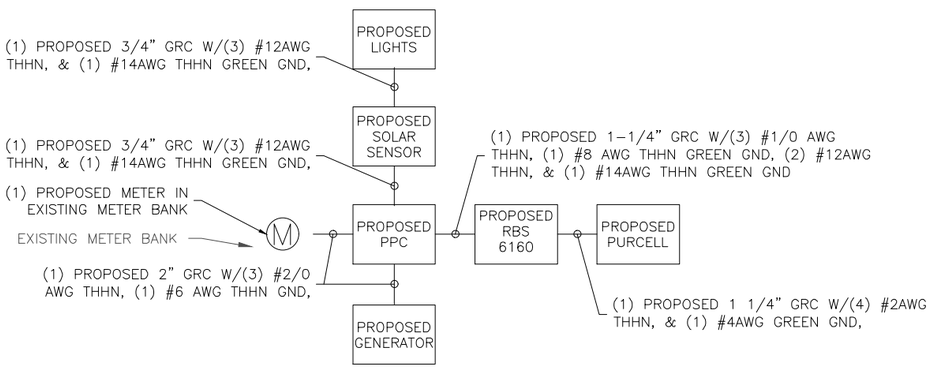
ELECTRIC PANEL NOTES:

1. TOTAL BREAKER POSITION: 40, EXISTING EMPTY BREAKER POSITIONS: 3, UNUSED BREAKER POSITIONS TO BE REMOVED: 30, PROPOSED BREAKER POSITIONS TO UTILIZE FOR T-MOBILE ANCHOR INSTALLATION: 9, EXISTING ACTIVE BREAKER POSITIONS TO REMAIN: 7, EXISTING EMPTY BREAKER POSITIONS AFTER T-MOBILE ANCHOR INSTALLATION: 24



ELEC. NOTES:
1. ALL WORK SHALL BE PERFORMED BY LICENSED ELEC. CONTRACTOR.
2. ALL WORK SHALL COMPLY WITH THE NEC VERSION AS SPECIFIED BY LOCAL MUNICIPALITIES.
3. ALL WORK SHALL COMPLY WITH ANY AND ADDITIONAL CODES AS SPECIFIED BY LOCAL MUNICIPALITIES.
4. ELEC. CONTRACTOR TO LABEL PNL/PPC TO REFLECT CORRECT CIRCUITRY.

1 E-1 ELECTRICAL ONE LINE DIAGRAM



2 E-1 CONDUIT & WIRE SIZE DETAIL

Contractor Select™

OLF & OVFL LED

Floodlighting

The OLF family from Lithonia Lighting® has the largest breadth of offering from one security floodlight family. The OLF family provides a multitude of lighting, energy saving packages and control options to meet the varying needs of your residential single and multi-family applications.

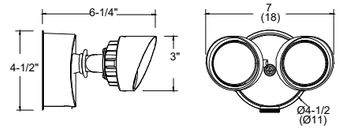
FEATURES:

¡ Replaces up to (2) 150W incandescent PAR lamps

¡ Small, compact form

¡ Pays for itself in less than 2 years

Catalog Number	UPC	Replaces Up To	Lumens	Input Watts	CCT	Voltage	Finish	Pallet qty.
OLF 2RH 40K 120 DDB M4	191848797921	90W PAR INCAND (2)	2,160	25	4000K	120V	DARK BRONZE	360
OLF 2RH 40K 120 MO WH M6	820476314636	90W PAR INCAND (2)	2,160	25	4000K	120V	WHITE	216



3 E-1 LIGHT SPECS. & DETAIL

T - Mobile NORTHEAST LLC

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NMT	WRD

STATE OF CONNECTICUT · DEREK J. CREASER · No. 28551 · LICENSED PROFESSIONAL ENGINEER

DATE: 0/22/21

SITE NAME: CTNL125A

SITE ID: CTNL125A

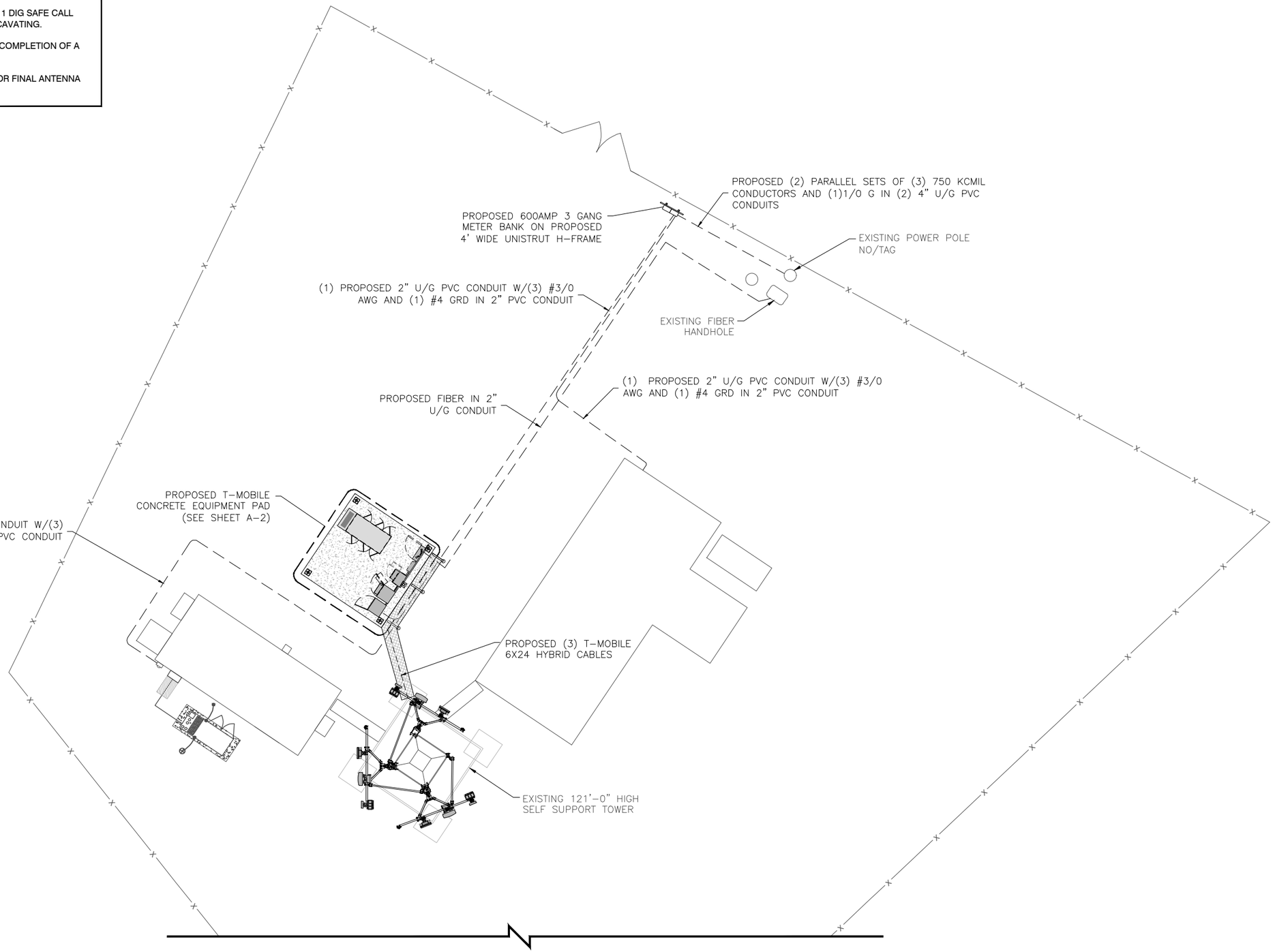
SITE ADDRESS:
244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

SHEET TITLE: ELECTRICAL ONE-LINE DIAGRAMS & DETAILS

DRAWING: E-1

NOTES

1. CONTRACTOR SHALL MAKE A UTILITY 811 DIG SAFE CALL TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
2. CONSTRUCTION TO COMMENCE UPON COMPLETION OF A PASSING MOUNT ANALYSIS.
3. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA MODELS AND SETTINGS.



1 / E-2 ELECTRICAL PLAN

GRAPHIC SCALE

16 8 0 1 2 4 8 16

1/8 INCH = 1 FOOT (22X34)
1/16 INCH = 1 FOOT (11X17)

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 23551
LICENSED PROFESSIONAL ENGINEER

DATE: 0/22/21

SITE NAME: CTNL125A

SITE ID: CTNL125A

SITE ADDRESS:
244 GATES ROAD
LEBANON, CT 06249
NEW LONDON COUNTY

SHEET TITLE: ELECTRICAL AND TELCO PLAN

DRAWING: E-2

Exhibit E

Structural Analysis Report

Rigorous Structural Analysis for AT&T Towers
CTL01065 - LEBANON
FA #: 10137478

T-Mobile Site #: CTNL125A
T-Mobile Site Name: N/A

CLS Engineering PLLC Project #63925-10137478-01-STR
September 22, 2021

STRUCTURE	121 ft Self-Supported Tower
ADDRESS	244 Gates Road, Lebanon, CT 06249, New London County
GPS COORDINATES	41.682933, -72.216192
ANALYSIS STANDARD	2015 IBC / 2018 Connecticut State Building Code / ASCE7-16 / TIA-222-H
WIND LOADING	121 mph, V_{ult} (3-Second Gust) w/o ice & 50 mph (3-Second Gust) w/ 1" Ice (Escalating)

- **ANALYSIS RESULTS**

TOWER USAGE	93%	Pass
FOUNDATION USAGE	87%	Pass

Prepared by:
Sean M. Rock, E.I.

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

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

Tyler M. Barker
CLS Engineering PLLC
PE # 32402 Exp. 1/31/2022
COA # PEC.001833 Exp. 8/14/2022
09/22/2021

TABLE OF CONTENTS

■ INTRODUCTION

A **Rigorous Structural Analysis** was performed on the **121 ft Self-Supported Tower** located in **New London County, CT**. Its purpose is to **determine the adequacy of the structure to support the loading listed in this report pursuant to** applicable standards and based on provided documentation. The analysis utilizes *tnxTower v. 8.1.1.0*, an industry-standard finite element analysis program.

■ STRUCTURAL DOCUMENTS PROVIDED

TOWER DATA	Tower Mapping by GPD Group, GPD Project #: 2012832.03, dated December 19, 2012
FOUNDATION DATA	Foundation Mapping by GPD Group, GPD# 2012832.03, dated December 10, 2012
GEOTECHNICAL DATA	Geotechnical Report by GPD Group, GPD# 2012832.03, dated December 10, 2012
LOADING DATA	Site Lease Application by AT&T, FA #10035007/10137478, dated May 28, 2021 RFDS by AT&T, RFDS ID #3719997 Ver. 2.00, dated January 7, 2021
PREVIOUS ANALYSES	Structural Analysis by GPD Group, GPD# 2020723.21.65054.05, dated September 16, 2020

It is assumed that all information provided to CLS Engineering PLLC for this analysis is accurate and, unless otherwise noted, the structure has been maintained in accordance with code standards and is in good condition.

■ ANALYSIS CRITERIA

STANDARD	2015 IBC / 2018 Connecticut State Building Code / ASCE7-16 / TIA-222-H
BASIC WIND SPEED	121 mph, V_{ult} (3-Second Gust)
BASIC WIND SPEED W/ ICE	50 mph (3-Second Gust) w/ 1" Radial Ice (Escalating)
SERVICE WIND SPEED	60 mph (3-Second Gust)
EXPOSURE CATEGORY	C
TOPOGRAPHIC CATEGORY	5 (Using Kt from the SEAW Rapid-Solutions Methodology)
CREST HEIGHT	200 ft
RISK CATEGORY	II

■ EXISTING AND RESERVED EQUIPMENT

ELEVATION		ANTENNAS		MOUNTS	FEEDLINES		CARRIER
MOUNT	RAD	#	NAME		#	NAME	
121.0	129.0	1	Generic 16' Dipole	Sidearm Mount	12 7 3 2	1 5/8" Coax DC Power Line Fiber Cable 1/2" Coax	AT&T Mobility
	124.0	6	Powerwave LGP21401				
		3	CCI HPA-65R-BUU-H8				
		3	CCI TPA-65R-BU8DA-K				
		3	CCI DMP65R-BU8DA				
		3	Powerwave 7770.00				
		3	Ericsson RRUS 32 B30				
		3	Ericsson RRUS 32 B2				
		3	Ericsson RRUS 8843 B2/B66A				
		3	Ericsson RRUS 4449 B5/B12				
		2	Raycap DC6-48-60-18-8F				
		1	Raycap DC9-48-60-24-8C-EV				
		3	Ericsson RRUS 4478 B14				

Mount elevation is measured from base of structure to center of mount; Rad elevation is measured from ground level to center of antenna. All loading information is based on supplied documents and is assumed to be accurate.

■ PROPOSED EQUIPMENT

ELEVATION		ANTENNAS		MOUNTS	FEEDLINES		CARRIER
MOUNT	RAD	#	NAME		#	NAME	
109.0	109.0	3	RFS APX16DWV-16DWV-S-E-A20	Sector Mount	3 3	1-1/4" Coax 6x12 Hybrid	T-Mobile
		3	RFS APXVAALL24_43-U-NA20				
		3	Ericsson AIR6449 B41				
		3	Ericsson RADIO 4460 B25+B66				
		3	Ericsson RADIO 4480 B71+B85				

■ INSTALLATION NOTES

Install proposed feedlines on the face with the least existing lines.

■ FOUNDATION REACTIONS

REACTION TYPE	ANALYSIS REACTIONS
Moment (ft-k)	3739.9
Total Compression (k)	41.9
Total Shear (k)	48.3
Compression/Leg (k)	239.8
Shear/Leg w/ Comp. (k)	23.4
Uplift/Leg (k)	232.7
Shear/Leg w/ Uplift (k)	23.4

■ RESULTS SUMMARY

COMPONENT	PEAK USAGE	RESULT
Legs	62%	Pass
Diagonals	68%	Pass
Horizontals	93%	Pass
Bolts	70%	Pass
Anchor Rods	60%	Pass
Foundation	87%	Pass

■ SERVICE DEFLECTION, TWIST AND TILT

MAXIMUM TOWER DEFLECTION (ft)	MAXIMUM TOWER TWIST (°)	MAXIMUM TOWER TILT (°)
0.186	0.011	0.14

■ CONCLUSION AND RECOMMENDATIONS

According to our structural analysis, the structure has been found to **PASS**. The structure is capable of supporting the referenced loading pursuant to applicable standards.

■ ASSUMPTIONS AND CONDITIONS

This analysis considers only the theoretical capacity of structural components and it is not a condition assessment of the tower or foundation. The validity of the analysis is dependent on the accuracy of structural information supplied by others. The tower owner 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:

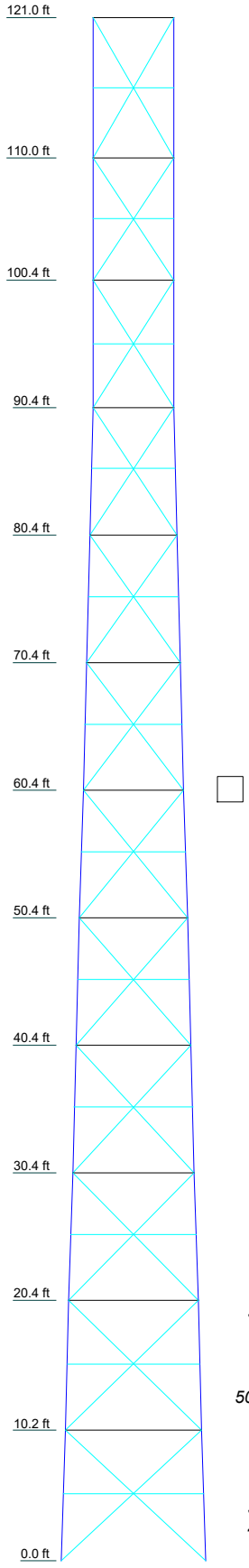
1. The tower and foundation (if applicable) were properly constructed as per the original design and have been properly maintained in accordance with applicable code standards.
2. Member sizes and strengths are accurate as supplied or are assumed as stated in the calculations.
3. In the absence of sufficient 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. The geotechnical properties are accurate as supplied or are assumed as stated in the calculations. If no data is available, the foundation is not verified. In these cases, it is the tower owner's responsibility to ensure that the foundation is adequate to support the new base reactions.
5. All prior structural modifications, if any, are assumed to be correctly installed and fully effective.
6. 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.
7. All mounts are assumed adequate to support their antenna loading. No structural verification of the mounts has been performed. This analysis is limited to analyzing only the tower and foundation (if applicable).
8. Some conservative assumptions are made 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 tower or foundation. The structural analysis by CLS Engineering PLLC verifies the adequacy of the main structural members of the tower. CLS Engineering PLLC provides a limited scope of service in that we cannot verify the adequacy of every weld, bolt, gusset, etc.

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12
Legs	L5x6x1/2					L6x6x3/4						
Leg Grade	A572-50											
Diagonals	L2 1/2x2 1/2x3/16	L3x3x1/4	L3x3x3/16	L3x3x1/4	2L2x2x3/16x1/2	L3x3x1/4						
Diagonal Grade	A36											
Top Girts	2L2x2x3/16x1/2					2L2x2x3/16x3/4	A	L3x3x1/4				2L2x2x3/16x3/4
Sec. Horizontals	L2x2x3/16											L2x2x1/4
Face Width (ft)	6.25				6.803	7.356	7.9089	8.4619	9.0149	9.5679	10.1208	10.6854
# Panels @ (ft)	1 @ 11	1 @ 9.58					8 @ 10					2 @ 10.21
Weight (K)	1.3	1.3	1.2	1.4	1.4	2.0	2.0	2.0	2.0	2.1	2.1	2.2



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	2L2 1/2x2 1/2x3/16x3/4		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

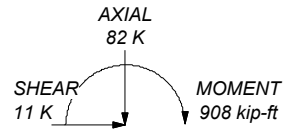
TOWER DESIGN NOTES

1. Tower is located in New London County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 121 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 5 with Crest Height of 200.00 ft
8. TOWER RATING: 92.7%

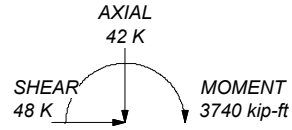
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 240 K
SHEAR: 23 K

UPLIFT: -233 K
SHEAR: 23 K



TORQUE 4 kip-ft
50 mph WIND - 1.0000 in ICE



TORQUE 14 kip-ft
REACTIONS - 121 mph WIND

CLS Engineering PLLC
319 Chapanoke Road, Suite 118
Raleigh, NC 27603
Phone: (405) 348-5460
FAX: (405) 341-6334

Job: ***63925-10137478-01-STR***			
Project: ***LEBANON - CTL01065 (FA #10137478)***			
Client: AT&T Towers	Drawn by: Sean.Rock	App'd:	
Code: TIA-222-H	Date: 09/22/21	Scale: NTS	
Path: T:\AT&T\63925 - AT&T Structurals\10137478\01 - STR\FEA\63925-10137478-01-STR.eri		Dwg No. E-1	

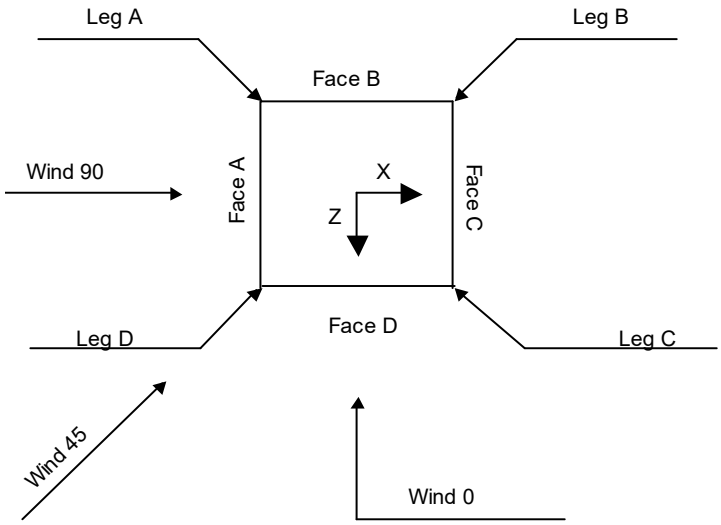
Tower Input Data

The main tower is a 4x free standing tower with an overall height of 121.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 6.25 ft at the top and 11.25 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in New London County, Connecticut.
Tower base elevation above sea level: 653.43 ft.
Basic wind speed of 121 mph.
Risk Category II.
Exposure Category C.
Crest Height: 200.00 ft.
Rigorous Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Feature: Flat Topped Ridge.
Slope Distance L: 1050.00 ft.
Distance from Crest x: 600.00 ft.
Horizontal Distance Downwind: No.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	√ SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-H Bracing Resist. Exemption
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-H Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
√ Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
√ SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric	Ignore KL/ry For 60 Deg. Angle Legs	Pole Without Linear Attachments
		Pole With Shroud Or No Appurtenances
		Outside and Inside Corner Radii Are Known



Square Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	121.00-110.00			6.25	1	11.00
T2	110.00-100.42			6.25	1	9.58
T3	100.42-90.42			6.25	1	10.00
T4	90.42-80.42			6.25	1	10.00
T5	80.42-70.42			6.80	1	10.00
T6	70.42-60.42			7.36	1	10.00
T7	60.42-50.42			7.91	1	10.00
T8	50.42-40.42			8.46	1	10.00
T9	40.42-30.42			9.01	1	10.00
T10	30.42-20.42			9.57	1	10.00
T11	20.42-10.21			10.12	1	10.21
T12	10.21-0.00			10.69	1	10.21

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	121.00-110.00	11.00	X Brace	No	Yes	0.0000	0.0000
T2	110.00-100.42	9.58	X Brace	No	Yes	0.0000	0.0000
T3	100.42-90.42	10.00	X Brace	No	Yes	0.0000	0.0000
T4	90.42-80.42	10.00	X Brace	No	Yes	0.0000	0.0000
T5	80.42-70.42	10.00	X Brace	No	Yes	0.0000	0.0000
T6	70.42-60.42	10.00	X Brace	No	Yes	0.0000	0.0000
T7	60.42-50.42	10.00	X Brace	No	Yes	0.0000	0.0000

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T8	50.42-40.42	10.00	X Brace	No	Yes	0.0000	0.0000
T9	40.42-30.42	10.00	X Brace	No	Yes	0.0000	0.0000
T10	30.42-20.42	10.00	X Brace	No	Yes	0.0000	0.0000
T11	20.42-10.21	10.21	X Brace	No	Yes	0.0000	0.0000
T12	10.21-0.00	10.21	X Brace	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 121.00-110.00	Equal Angle	L5x5x1/2	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T2 110.00-100.42	Equal Angle	L5x5x1/2	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T3 100.42-90.42	Equal Angle	L5x5x1/2	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T4 90.42-80.42	Equal Angle	L5x5x1/2	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T5 80.42-70.42	Equal Angle	L5x5x1/2	A572-50 (50 ksi)	Double Equal Angle	2L2x2x3/16x1/2	A36 (36 ksi)
T6 70.42-60.42	Equal Angle	L6x6x3/4	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T7 60.42-50.42	Equal Angle	L6x6x3/4	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T8 50.42-40.42	Equal Angle	L6x6x3/4	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T9 40.42-30.42	Equal Angle	L6x6x3/4	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T10 30.42-20.42	Equal Angle	L6x6x3/4	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T11 20.42-10.21	Equal Angle	L6x6x3/4	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T12 10.21-0.00	Equal Angle	L6x6x3/4	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 121.00-110.00	Double Equal Angle	2L2x2x3/16x1/2	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T2 110.00-100.42	Double Equal Angle	2L2x2x3/16x1/2	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T3 100.42-90.42	Double Equal Angle	2L2x2x3/16x1/2	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T4 90.42-80.42	Double Equal Angle	2L2x2x3/16x1/2	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T5 80.42-70.42	Double Equal Angle	2L2x2x3/16x1/2	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T6 70.42-60.42	Double Equal	2L2x2x3/16x3/4	A36	Equal Angle		A36

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
	Angle		(36 ksi)			(36 ksi)
T7 60.42-50.42	Double Equal Angle	2L2 1/2x2 1/2x3/16x3/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T8 50.42-40.42	Equal Angle	L3x3x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T9 40.42-30.42	Equal Angle	L3x3x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T10 30.42-20.42	Equal Angle	L3x3x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T11 20.42-10.21	Double Equal Angle	2L2x2x3/16x3/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T12 10.21-0.00	Double Equal Angle	2L2x2x3/16x3/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T1 121.00-110.00	Equal Angle	L2x2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T2 110.00-100.42	Equal Angle	L2x2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T3 100.42-90.42	Equal Angle	L2x2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T4 90.42-80.42	Equal Angle	L2x2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T5 80.42-70.42	Equal Angle	L2x2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T6 70.42-60.42	Equal Angle	L2x2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T7 60.42-50.42	Equal Angle	L2x2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T8 50.42-40.42	Equal Angle	L2x2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T9 40.42-30.42	Equal Angle	L2x2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T10 30.42-20.42	Equal Angle	L2x2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T11 20.42-10.21	Equal Angle	L2x2x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T12 10.21-0.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 121.00-110.00	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	Third-Pt	Third-Pt	36.0000
T2 110.00-100.42	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	Third-Pt	36.0000
T3 100.42-90.42	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	Third-Pt	36.0000
T4 90.42-80.42	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	Third-Pt	36.0000
T5 80.42-70.42	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	Third-Pt	Third-Pt	36.0000
T6 70.42-60.42	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	Third-Pt	36.0000
T7 60.42-50.42	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	Third-Pt	36.0000
T8 50.42-40.42	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	0.0000	36.0000
T9 40.42-30.42	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	0.0000	36.0000
T10 30.42-20.42	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	0.0000	36.0000
T11 20.42-10.21	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	24.0000	36.0000
T12 10.21-0.00	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	24.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1	Yes	Yes	1	1	1	1	1	1	1	1
121.00-110.00				1	1	1	1	1	1	1
T2	Yes	Yes	1	1	1	1	1	1	1	1
110.00-100.42				1	1	1	1	1	1	1
T3	Yes	Yes	1	1	1	1	1	1	1	1
100.42-90.42				1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1
90.42-80.42				1	1	1	1	1	1	1
T5	Yes	Yes	1	1	1	1	1	1	1	1
80.42-70.42				1	1	1	1	1	1	1
T6	Yes	Yes	1	1	1	1	1	1	1	1
70.42-60.42				1	1	1	1	1	1	1
T7	Yes	Yes	1	1	1	1	1	1	1	1
60.42-50.42				1	1	1	1	1	1	1
T8	Yes	Yes	1	1	1	1	1	1	1	1
50.42-40.42				1	1	1	1	1	1	1
T9	Yes	Yes	1	1	1	1	1	1	1	1
40.42-30.42				1	1	1	1	1	1	1
T10	Yes	Yes	1	1	1	1	1	1	1	1
30.42-20.42				1	1	1	1	1	1	1
T11	Yes	Yes	1	1	1	1	1	1	1	1
20.42-10.21				1	1	1	1	1	1	1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T12	Yes	Yes	1	1	1	1	1	1	1	1
10.21-0.00				1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 121.00-110.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 110.00-100.42	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 100.42-90.42	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 90.42-80.42	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 80.42-70.42	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 70.42-60.42	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 60.42-50.42	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 50.42-40.42	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 40.42-30.42	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 30.42-20.42	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 20.42-10.21	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 10.21-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 121.00-110.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 110.00-100.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 100.42-90.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 90.42-80.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 80.42-70.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 70.42-60.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 60.42-50.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 50.42-40.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 40.42-30.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T10 30.42-20.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 20.42-10.21	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 10.21-0.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 121.00-110.00	Sleeve DS	0.6250 A325N	8	0.6250 A325N	2 *	0.0000 A325N	1	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	1
T2 110.00-100.42	Sleeve DS	0.6250 A325N	8	0.6250 A325N	2 *	0.0000 A325N	1	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	1
T3 100.42-90.42	Sleeve DS	0.6250 A325N	16	0.6250 A325N	2 *	0.0000 A325N	1	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	1
T4 90.42-80.42	Sleeve DS	0.6250 A325N	16	0.6250 A325N	2 *	0.0000 A325N	1	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	1
T5 80.42-70.42	Sleeve DS	0.6250 A325N	24	0.6250 A325N	2 *	0.0000 A325N	2 *	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	1
T6 70.42-60.42	Sleeve DS	0.7500 A325N	24	0.6250 A325N	2 *	0.0000 A325N	2 *	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	1
T7 60.42-50.42	Sleeve DS	0.7500 A325N	24	0.6250 A325N	2 *	0.0000 A325N	2 *	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	1
T8 50.42-40.42	Sleeve DS	0.7500 A325N	28	0.6250 A325N	2 *	0.0000 A325N	2 *	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	1
T9 40.42-30.42	Sleeve DS	0.7500 A325N	32	0.6250 A325N	2 *	0.0000 A325N	2 *	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	1
T10 30.42-20.42	Sleeve DS	0.7500 A325N	36	0.6250 A325N	2 *	0.0000 A325N	2 *	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	1
T11 20.42-10.21	Sleeve DS	0.7500 A325N	40	0.6250 A325N	2 *	0.0000 A325N	2 *	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	1
T12 10.21-0.00	Sleeve DS	0.7500 A325N	40	0.6250 A325N	2 *	0.0000 A325N	2 *	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	1

* Out-of-plane partial restraint assumed

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
*** Climbing	A	No	No	Af (CaAa)	121.00 -	1.0000	0	1	1	0.5000	3.8400		4.81

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Ladder (Af)					8.00								
Safety Line 3/8 ***	A	No	No	Ar (CaAa)	121.00 - 8.00	1.0000	0	1	1	0.5000	0.3750		0.22
Feedline Ladder (Af) ***	B	No	No	Af (CaAa)	121.00 - 8.00	1.0000	0	1	1	0.5000	3.0000		8.40
Feedline Ladder (Af) ***	C	No	No	Af (CaAa)	109.00 - 8.00	1.0000	0	1	1	0.5000	3.0000		8.40
LDF4-50A(1/2")	A	No	No	Ar (CaAa)	121.00 - 8.00	0.5000	0.05	1	1	0.5000	0.6300		0.15
LDF7-50A(1-5/8)	A	No	No	Ar (CaAa)	121.00 - 8.00	0.5000	0.08	3	2	0.5000	1.9800		0.82
LDF7-50A(1-5/8)	A	No	No	Ar (CaAa)	121.00 - 8.00	0.5000	0.45	6	3	0.5000	1.9800		0.82
LDF7-50A(1-5/8)	B	No	No	Ar (CaAa)	121.00 - 8.00	0.5000	0	3	2	0.5000	1.9800		0.82
LDF4-50A(1/2")	B	No	No	Ar (CaAa)	121.00 - 8.00	0.5000	0.05	1	1	0.5000	0.6300		0.15
1/2" Fiber Cable	B	No	No	Ar (CaAa)	121.00 - 8.00	0.5000	0.03	3	3	0.5000	0.6300		0.15
3/4" DC Power Line ***	B	No	No	Ar (CaAa)	121.00 - 8.00	0.5000	0.09	7	7	0.5000	0.7500		0.33
1-1/4" coax	C	No	No	Ar (CaAa)	109.00 - 8.00	0.5000	0	3	3	0.5000	1.5400		1.00
MLCH HYBRID 6X12(1-3/8) ***	C	No	No	Ar (CaAa)	109.00 - 8.00	0.5000	0	3	3	1.4300	1.4300		1.72

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight plf
***								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	121.00-110.00	A	0.000	0.000	27.747	0.000	0.14
		B	0.000	0.000	20.581	0.000	0.15
		C	0.000	0.000	0.000	0.000	0.00
		D	0.000	0.000	0.000	0.000	0.00
T2	110.00-100.42	A	0.000	0.000	24.166	0.000	0.12

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	17.924	0.000	0.13
		C	0.000	0.000	11.935	0.000	0.14
		D	0.000	0.000	0.000	0.000	0.00
T3	100.42-90.42	A	0.000	0.000	25.225	0.000	0.13
		B	0.000	0.000	18.710	0.000	0.14
		C	0.000	0.000	13.910	0.000	0.17
		D	0.000	0.000	0.000	0.000	0.00
T4	90.42-80.42	A	0.000	0.000	25.225	0.000	0.13
		B	0.000	0.000	18.710	0.000	0.14
		C	0.000	0.000	13.910	0.000	0.17
		D	0.000	0.000	0.000	0.000	0.00
T5	80.42-70.42	A	0.000	0.000	25.225	0.000	0.13
		B	0.000	0.000	18.710	0.000	0.14
		C	0.000	0.000	13.910	0.000	0.17
		D	0.000	0.000	0.000	0.000	0.00
T6	70.42-60.42	A	0.000	0.000	25.225	0.000	0.13
		B	0.000	0.000	18.710	0.000	0.14
		C	0.000	0.000	13.910	0.000	0.17
		D	0.000	0.000	0.000	0.000	0.00
T7	60.42-50.42	A	0.000	0.000	25.225	0.000	0.13
		B	0.000	0.000	18.710	0.000	0.14
		C	0.000	0.000	13.910	0.000	0.17
		D	0.000	0.000	0.000	0.000	0.00
T8	50.42-40.42	A	0.000	0.000	25.225	0.000	0.13
		B	0.000	0.000	18.710	0.000	0.14
		C	0.000	0.000	13.910	0.000	0.17
		D	0.000	0.000	0.000	0.000	0.00
T9	40.42-30.42	A	0.000	0.000	25.225	0.000	0.13
		B	0.000	0.000	18.710	0.000	0.14
		C	0.000	0.000	13.910	0.000	0.17
		D	0.000	0.000	0.000	0.000	0.00
T10	30.42-20.42	A	0.000	0.000	25.225	0.000	0.13
		B	0.000	0.000	18.710	0.000	0.14
		C	0.000	0.000	13.910	0.000	0.17
		D	0.000	0.000	0.000	0.000	0.00
T11	20.42-10.21	A	0.000	0.000	25.755	0.000	0.13
		B	0.000	0.000	19.103	0.000	0.14
		C	0.000	0.000	14.202	0.000	0.17
		D	0.000	0.000	0.000	0.000	0.00
T12	10.21-0.00	A	0.000	0.000	5.575	0.000	0.03
		B	0.000	0.000	4.135	0.000	0.03
		C	0.000	0.000	3.074	0.000	0.04
		D	0.000	0.000	0.000	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	121.00-110.00	A	1.180	0.000	0.000	45.052	0.000	0.54
		B		0.000	0.000	48.156	0.000	0.52
		C		0.000	0.000	0.000	0.000	0.00
		D		0.000	0.000	0.000	0.000	0.00
T2	110.00-100.42	A	1.172	0.000	0.000	39.134	0.000	0.47
		B		0.000	0.000	41.829	0.000	0.45
		C		0.000	0.000	26.759	0.000	0.35
		D		0.000	0.000	0.000	0.000	0.00
T3	100.42-90.42	A	1.163	0.000	0.000	40.737	0.000	0.49

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	43.541	0.000	0.47
		C		0.000	0.000	31.114	0.000	0.41
		D		0.000	0.000	0.000	0.000	0.00
T4	90.42-80.42	A	1.153	0.000	0.000	40.608	0.000	0.48
		B		0.000	0.000	43.403	0.000	0.46
		C		0.000	0.000	31.029	0.000	0.41
		D		0.000	0.000	0.000	0.000	0.00
T5	80.42-70.42	A	1.142	0.000	0.000	40.462	0.000	0.48
		B		0.000	0.000	43.246	0.000	0.46
		C		0.000	0.000	30.933	0.000	0.40
		D		0.000	0.000	0.000	0.000	0.00
T6	70.42-60.42	A	1.129	0.000	0.000	40.294	0.000	0.48
		B		0.000	0.000	43.064	0.000	0.46
		C		0.000	0.000	30.822	0.000	0.40
		D		0.000	0.000	0.000	0.000	0.00
T7	60.42-50.42	A	1.114	0.000	0.000	40.095	0.000	0.47
		B		0.000	0.000	42.850	0.000	0.45
		C		0.000	0.000	30.692	0.000	0.40
		D		0.000	0.000	0.000	0.000	0.00
T8	50.42-40.42	A	1.095	0.000	0.000	39.854	0.000	0.46
		B		0.000	0.000	42.591	0.000	0.45
		C		0.000	0.000	30.533	0.000	0.39
		D		0.000	0.000	0.000	0.000	0.00
T9	40.42-30.42	A	1.072	0.000	0.000	39.550	0.000	0.46
		B		0.000	0.000	42.264	0.000	0.44
		C		0.000	0.000	30.333	0.000	0.39
		D		0.000	0.000	0.000	0.000	0.00
T10	30.42-20.42	A	1.041	0.000	0.000	39.142	0.000	0.45
		B		0.000	0.000	41.825	0.000	0.43
		C		0.000	0.000	30.065	0.000	0.38
		D		0.000	0.000	0.000	0.000	0.00
T11	20.42-10.21	A	0.993	0.000	0.000	39.329	0.000	0.44
		B		0.000	0.000	42.022	0.000	0.42
		C		0.000	0.000	30.280	0.000	0.38
		D		0.000	0.000	0.000	0.000	0.00
T12	10.21-0.00	A	0.893	0.000	0.000	8.226	0.000	0.09
		B		0.000	0.000	8.788	0.000	0.08
		C		0.000	0.000	6.366	0.000	0.08
		D		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	121.00-110.00	-4.4932	-6.5200	-6.1743	-9.4749
T2	110.00-100.42	-2.8952	-5.6405	-2.8384	-7.7421
T3	100.42-90.42	-2.7482	-5.5997	-2.5255	-7.6614
T4	90.42-80.42	-2.8187	-5.7636	-2.6031	-7.9128
T5	80.42-70.42	-3.1328	-6.4233	-2.8234	-8.6122
T6	70.42-60.42	-2.9400	-6.1011	-2.7835	-8.5446
T7	60.42-50.42	-3.0310	-6.3242	-2.8839	-8.8803
T8	50.42-40.42	-3.1130	-6.5274	-2.9754	-9.1817
T9	40.42-30.42	-3.2151	-6.7689	-3.0740	-9.4942
T10	30.42-20.42	-3.3134	-7.0017	-3.1653	-9.7700
T11	20.42-10.21	-3.4951	-7.4015	-3.2994	-10.1439

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T12	10.21-0.00	-0.9380	-2.0662	-0.9927	-3.0975

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	2	Climbing Ladder (Af)	110.00 - 121.00	0.6000	0.6000
T1	3	Safety Line 3/8	110.00 - 121.00	0.6000	0.6000
T1	5	Feedline Ladder (Af)	110.00 - 121.00	0.6000	0.6000
T1	9	LDF4-50A(1/2")	110.00 - 121.00	0.6000	0.6000
T1	10	LDF7-50A(1-5/8)	110.00 - 121.00	0.6000	0.6000
T1	11	LDF7-50A(1-5/8)	110.00 - 121.00	0.6000	0.6000
T1	12	LDF7-50A(1-5/8)	110.00 - 121.00	0.6000	0.6000
T1	13	LDF4-50A(1/2")	110.00 - 121.00	0.6000	0.6000
T1	14	1/2" Fiber Cable	110.00 - 121.00	0.6000	0.6000
T1	15	3/4" DC Power Line	110.00 - 121.00	0.6000	0.6000
T2	2	Climbing Ladder (Af)	100.42 - 110.00	0.6000	0.5905
T2	3	Safety Line 3/8	100.42 - 110.00	0.6000	0.5905
T2	5	Feedline Ladder (Af)	100.42 - 110.00	0.6000	0.5905
T2	7	Feedline Ladder (Af)	100.42 - 109.00	0.6000	0.5905
T2	9	LDF4-50A(1/2")	100.42 - 110.00	0.6000	0.5905
T2	10	LDF7-50A(1-5/8)	100.42 - 110.00	0.6000	0.5905
T2	11	LDF7-50A(1-5/8)	100.42 - 110.00	0.6000	0.5905
T2	12	LDF7-50A(1-5/8)	100.42 - 110.00	0.6000	0.5905
T2	13	LDF4-50A(1/2")	100.42 - 110.00	0.6000	0.5905
T2	14	1/2" Fiber Cable	100.42 - 110.00	0.6000	0.5905
T2	15	3/4" DC Power Line	100.42 - 110.00	0.6000	0.5905
T2	17	1-1/4" coax	100.42 - 109.00	0.6000	0.5905
T2	18	MLCH HYBRID 6X12(1-3/8)	100.42 - 109.00	0.6000	0.5905
T3	2	Climbing Ladder (Af)	90.42 - 100.42	0.6000	0.5962
T3	3	Safety Line 3/8	90.42 - 100.42	0.6000	0.5962
T3	5	Feedline Ladder (Af)	90.42 - 100.42	0.6000	0.5962

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T3	7	Feedline Ladder (Af)	90.42 - 100.42	0.6000	0.5962
T3	9	LDF4-50A(1/2")	90.42 - 100.42	0.6000	0.5962
T3	10	LDF7-50A(1-5/8)	90.42 - 100.42	0.6000	0.5962
T3	11	LDF7-50A(1-5/8)	90.42 - 100.42	0.6000	0.5962
T3	12	LDF7-50A(1-5/8)	90.42 - 100.42	0.6000	0.5962
T3	13	LDF4-50A(1/2")	90.42 - 100.42	0.6000	0.5962
T3	14	1/2" Fiber Cable	90.42 - 100.42	0.6000	0.5962
T3	15	3/4" DC Power Line	90.42 - 100.42	0.6000	0.5962
T3	17	1-1/4" coax	90.42 - 100.42	0.6000	0.5962
T3	18	MLCH HYBRID 6X12(1-3/8)	90.42 - 100.42	0.6000	0.5962
T4	2	Climbing Ladder (Af)	80.42 - 90.42	0.6000	0.6000
T4	3	Safety Line 3/8	80.42 - 90.42	0.6000	0.6000
T4	5	Feedline Ladder (Af)	80.42 - 90.42	0.6000	0.6000
T4	7	Feedline Ladder (Af)	80.42 - 90.42	0.6000	0.6000
T4	9	LDF4-50A(1/2")	80.42 - 90.42	0.6000	0.6000
T4	10	LDF7-50A(1-5/8)	80.42 - 90.42	0.6000	0.6000
T4	11	LDF7-50A(1-5/8)	80.42 - 90.42	0.6000	0.6000
T4	12	LDF7-50A(1-5/8)	80.42 - 90.42	0.6000	0.6000
T4	13	LDF4-50A(1/2")	80.42 - 90.42	0.6000	0.6000
T4	14	1/2" Fiber Cable	80.42 - 90.42	0.6000	0.6000
T4	15	3/4" DC Power Line	80.42 - 90.42	0.6000	0.6000
T4	17	1-1/4" coax	80.42 - 90.42	0.6000	0.6000
T4	18	MLCH HYBRID 6X12(1-3/8)	80.42 - 90.42	0.6000	0.6000
T5	2	Climbing Ladder (Af)	70.42 - 80.42	0.6000	0.6000
T5	3	Safety Line 3/8	70.42 - 80.42	0.6000	0.6000
T5	5	Feedline Ladder (Af)	70.42 - 80.42	0.6000	0.6000
T5	7	Feedline Ladder (Af)	70.42 - 80.42	0.6000	0.6000
T5	9	LDF4-50A(1/2")	70.42 - 80.42	0.6000	0.6000
T5	10	LDF7-50A(1-5/8)	70.42 - 80.42	0.6000	0.6000
T5	11	LDF7-50A(1-5/8)	70.42 - 80.42	0.6000	0.6000
T5	12	LDF7-50A(1-5/8)	70.42 - 80.42	0.6000	0.6000
T5	13	LDF4-50A(1/2")	70.42 - 80.42	0.6000	0.6000
T5	14	1/2" Fiber Cable	70.42 - 80.42	0.6000	0.6000
T5	15	3/4" DC Power Line	70.42 - 80.42	0.6000	0.6000
T5	17	1-1/4" coax	70.42 - 80.42	0.6000	0.6000
T5	18	MLCH HYBRID 6X12(1-3/8)	70.42 - 80.42	0.6000	0.6000
T6	2	Climbing Ladder (Af)	60.42 - 70.42	0.6000	0.6000
T6	3	Safety Line 3/8	60.42 - 70.42	0.6000	0.6000
T6	5	Feedline Ladder (Af)	60.42 - 70.42	0.6000	0.6000
T6	7	Feedline Ladder (Af)	60.42 - 70.42	0.6000	0.6000
T6	9	LDF4-50A(1/2")	60.42 - 70.42	0.6000	0.6000
T6	10	LDF7-50A(1-5/8)	60.42 - 70.42	0.6000	0.6000
T6	11	LDF7-50A(1-5/8)	60.42 - 70.42	0.6000	0.6000
T6	12	LDF7-50A(1-5/8)	60.42 - 70.42	0.6000	0.6000
T6	13	LDF4-50A(1/2")	60.42 - 70.42	0.6000	0.6000
T6	14	1/2" Fiber Cable	60.42 - 70.42	0.6000	0.6000
T6	15	3/4" DC Power Line	60.42 - 70.42	0.6000	0.6000
T6	17	1-1/4" coax	60.42 - 70.42	0.6000	0.6000
T6	18	MLCH HYBRID 6X12(1-3/8)	60.42 - 70.42	0.6000	0.6000
T7	2	Climbing Ladder (Af)	50.42 - 60.42	0.6000	0.6000
T7	3	Safety Line 3/8	50.42 - 60.42	0.6000	0.6000
T7	5	Feedline Ladder (Af)	50.42 - 60.42	0.6000	0.6000
T7	7	Feedline Ladder (Af)	50.42 - 60.42	0.6000	0.6000
T7	9	LDF4-50A(1/2")	50.42 - 60.42	0.6000	0.6000
T7	10	LDF7-50A(1-5/8)	50.42 - 60.42	0.6000	0.6000
T7	11	LDF7-50A(1-5/8)	50.42 - 60.42	0.6000	0.6000
T7	12	LDF7-50A(1-5/8)	50.42 - 60.42	0.6000	0.6000
T7	13	LDF4-50A(1/2")	50.42 - 60.42	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T7	14	1/2" Fiber Cable	50.42 - 60.42	0.6000	0.6000
T7	15	3/4" DC Power Line	50.42 - 60.42	0.6000	0.6000
T7	17	1-1/4" coax	50.42 - 60.42	0.6000	0.6000
T7	18	MLCH HYBRID 6X12(1-3/8)	50.42 - 60.42	0.6000	0.6000
T8	2	Climbing Ladder (Af)	40.42 - 50.42	0.6000	0.6000
T8	3	Safety Line 3/8	40.42 - 50.42	0.6000	0.6000
T8	5	Feedline Ladder (Af)	40.42 - 50.42	0.6000	0.6000
T8	7	Feedline Ladder (Af)	40.42 - 50.42	0.6000	0.6000
T8	9	LDF4-50A(1/2")	40.42 - 50.42	0.6000	0.6000
T8	10	LDF7-50A(1-5/8)	40.42 - 50.42	0.6000	0.6000
T8	11	LDF7-50A(1-5/8)	40.42 - 50.42	0.6000	0.6000
T8	12	LDF7-50A(1-5/8)	40.42 - 50.42	0.6000	0.6000
T8	13	LDF4-50A(1/2")	40.42 - 50.42	0.6000	0.6000
T8	14	1/2" Fiber Cable	40.42 - 50.42	0.6000	0.6000
T8	15	3/4" DC Power Line	40.42 - 50.42	0.6000	0.6000
T8	17	1-1/4" coax	40.42 - 50.42	0.6000	0.6000
T8	18	MLCH HYBRID 6X12(1-3/8)	40.42 - 50.42	0.6000	0.6000
T9	2	Climbing Ladder (Af)	30.42 - 40.42	0.6000	0.6000
T9	3	Safety Line 3/8	30.42 - 40.42	0.6000	0.6000
T9	5	Feedline Ladder (Af)	30.42 - 40.42	0.6000	0.6000
T9	7	Feedline Ladder (Af)	30.42 - 40.42	0.6000	0.6000
T9	9	LDF4-50A(1/2")	30.42 - 40.42	0.6000	0.6000
T9	10	LDF7-50A(1-5/8)	30.42 - 40.42	0.6000	0.6000
T9	11	LDF7-50A(1-5/8)	30.42 - 40.42	0.6000	0.6000
T9	12	LDF7-50A(1-5/8)	30.42 - 40.42	0.6000	0.6000
T9	13	LDF4-50A(1/2")	30.42 - 40.42	0.6000	0.6000
T9	14	1/2" Fiber Cable	30.42 - 40.42	0.6000	0.6000
T9	15	3/4" DC Power Line	30.42 - 40.42	0.6000	0.6000
T9	17	1-1/4" coax	30.42 - 40.42	0.6000	0.6000
T9	18	MLCH HYBRID 6X12(1-3/8)	30.42 - 40.42	0.6000	0.6000
T10	2	Climbing Ladder (Af)	20.42 - 30.42	0.6000	0.6000
T10	3	Safety Line 3/8	20.42 - 30.42	0.6000	0.6000
T10	5	Feedline Ladder (Af)	20.42 - 30.42	0.6000	0.6000
T10	7	Feedline Ladder (Af)	20.42 - 30.42	0.6000	0.6000
T10	9	LDF4-50A(1/2")	20.42 - 30.42	0.6000	0.6000
T10	10	LDF7-50A(1-5/8)	20.42 - 30.42	0.6000	0.6000
T10	11	LDF7-50A(1-5/8)	20.42 - 30.42	0.6000	0.6000
T10	12	LDF7-50A(1-5/8)	20.42 - 30.42	0.6000	0.6000
T10	13	LDF4-50A(1/2")	20.42 - 30.42	0.6000	0.6000
T10	14	1/2" Fiber Cable	20.42 - 30.42	0.6000	0.6000
T10	15	3/4" DC Power Line	20.42 - 30.42	0.6000	0.6000
T10	17	1-1/4" coax	20.42 - 30.42	0.6000	0.6000
T10	18	MLCH HYBRID 6X12(1-3/8)	20.42 - 30.42	0.6000	0.6000
T11	2	Climbing Ladder (Af)	10.21 - 20.42	0.6000	0.6000
T11	3	Safety Line 3/8	10.21 - 20.42	0.6000	0.6000
T11	5	Feedline Ladder (Af)	10.21 - 20.42	0.6000	0.6000
T11	7	Feedline Ladder (Af)	10.21 - 20.42	0.6000	0.6000
T11	9	LDF4-50A(1/2")	10.21 - 20.42	0.6000	0.6000
T11	10	LDF7-50A(1-5/8)	10.21 - 20.42	0.6000	0.6000
T11	11	LDF7-50A(1-5/8)	10.21 - 20.42	0.6000	0.6000
T11	12	LDF7-50A(1-5/8)	10.21 - 20.42	0.6000	0.6000
T11	13	LDF4-50A(1/2")	10.21 - 20.42	0.6000	0.6000
T11	14	1/2" Fiber Cable	10.21 - 20.42	0.6000	0.6000
T11	15	3/4" DC Power Line	10.21 - 20.42	0.6000	0.6000
T11	17	1-1/4" coax	10.21 - 20.42	0.6000	0.6000
T11	18	MLCH HYBRID 6X12(1-3/8)	10.21 - 20.42	0.6000	0.6000
T12	2	Climbing Ladder (Af)	8.00 - 10.21	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T12	3	Safety Line 3/8	8.00 - 10.21	0.6000	0.6000
T12	5	Feedline Ladder (Af)	8.00 - 10.21	0.6000	0.6000
T12	7	Feedline Ladder (Af)	8.00 - 10.21	0.6000	0.6000
T12	9	LDF4-50A(1/2")	8.00 - 10.21	0.6000	0.6000
T12	10	LDF7-50A(1-5/8)	8.00 - 10.21	0.6000	0.6000
T12	11	LDF7-50A(1-5/8)	8.00 - 10.21	0.6000	0.6000
T12	12	LDF7-50A(1-5/8)	8.00 - 10.21	0.6000	0.6000
T12	13	LDF4-50A(1/2")	8.00 - 10.21	0.6000	0.6000
T12	14	1/2" Fiber Cable	8.00 - 10.21	0.6000	0.6000
T12	15	3/4" DC Power Line	8.00 - 10.21	0.6000	0.6000
T12	17	1-1/4" coax	8.00 - 10.21	0.6000	0.6000
T12	18	MLCH HYBRID 6X12(1-3/8)	8.00 - 10.21	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
***									
Lightning Rod 4' x 0.75"	C	None		0.0000	121.00	No Ice	0.30	0.30	0.01
						1/2" Ice	0.71	0.71	0.01
						1" Ice	1.00	1.00	0.02
***									
16' Dipole	A	From Leg	4.00 0.00 8.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	5.01 6.84 8.49	5.01 6.84 8.49	0.06 0.10 0.14
7770.00 w/Mount Pipe	A	From Leg	4.00 0.00 3.00	18.0000	121.00	No Ice 1/2" Ice 1" Ice	5.55 5.92 6.29	4.04 4.67 5.32	0.05 0.10 0.15
7770.00 w/Mount Pipe	C	From Leg	4.00 0.00 3.00	-42.0000	121.00	No Ice 1/2" Ice 1" Ice	5.55 5.92 6.29	4.04 4.67 5.32	0.05 0.10 0.15
7770.00 w/Mount Pipe	D	From Leg	4.00 0.00 3.00	-12.0000	121.00	No Ice 1/2" Ice 1" Ice	5.55 5.92 6.29	4.04 4.67 5.32	0.05 0.10 0.15
HPA-65R-BUU-H8 w/ Mount Pipe	B	From Leg	4.00 0.00 3.00	-45.0000	121.00	No Ice 1/2" Ice 1" Ice	12.25 13.19 14.16	8.33 9.23 10.15	0.10 0.19 0.30
HPA-65R-BUU-H8 w/ Mount Pipe	C	From Leg	4.00 0.00 3.00	-25.0000	121.00	No Ice 1/2" Ice 1" Ice	12.25 13.19 14.16	8.33 9.23 10.15	0.10 0.19 0.30
HPA-65R-BUU-H8 w/ Mount Pipe	D	From Leg	4.00 0.00 3.00	-5.0000	121.00	No Ice 1/2" Ice 1" Ice	12.25 13.19 14.16	8.33 9.23 10.15	0.10 0.19 0.30
CCI TPA-65R-BU8DA-K w/ Mount Pipe	B	From Leg	4.00 0.00 3.00	-45.0000	121.00	No Ice 1/2" Ice 1" Ice	18.11 18.84 19.59	10.26 11.78 13.33	0.12 0.24 0.37
CCI TPA-65R-BU8DA-K w/ Mount Pipe	C	From Leg	4.00 0.00 3.00	-25.0000	121.00	No Ice 1/2" Ice 1" Ice	18.11 18.84 19.59	10.26 11.78 13.33	0.12 0.24 0.37

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
CCI TPA-65R-BU8DA-K w/ Mount Pipe	D	From Leg	4.00 0.00 3.00	-5.0000	121.00	No Ice 1/2" Ice 1" Ice	18.11 18.84 19.59	10.26 11.78 13.33	0.12 0.24 0.37
CCI DMP65R-BU8DA w/ Mount Pipe	B	From Leg	4.00 0.00 3.00	-45.0000	121.00	No Ice 1/2" Ice 1" Ice	15.89 16.81 17.76	7.89 8.74 9.60	0.14 0.25 0.38
CCI DMP65R-BU8DA w/ Mount Pipe	C	From Leg	4.00 0.00 3.00	-25.0000	121.00	No Ice 1/2" Ice 1" Ice	15.89 16.81 17.76	7.89 8.74 9.60	0.14 0.25 0.38
CCI DMP65R-BU8DA w/ Mount Pipe	D	From Leg	4.00 0.00 3.00	-5.0000	121.00	No Ice 1/2" Ice 1" Ice	15.89 16.81 17.76	7.89 8.74 9.60	0.14 0.25 0.38
(2) LGP21401	A	From Leg	4.00 0.00 3.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.21 0.27 0.35	0.01 0.02 0.03
(2) LGP21401	C	From Leg	4.00 0.00 3.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.21 0.27 0.35	0.01 0.02 0.03
(2) LGP21401	D	From Leg	4.00 0.00 3.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.21 0.27 0.35	0.01 0.02 0.03
RRUS 32 B30	B	From Leg	4.00 0.00 3.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	2.69 2.91 3.14	1.57 1.76 1.95	0.06 0.08 0.10
RRUS 32 B30	C	From Leg	4.00 0.00 3.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	2.69 2.91 3.14	1.57 1.76 1.95	0.06 0.08 0.10
RRUS 32 B30	D	From Leg	4.00 0.00 3.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	2.69 2.91 3.14	1.57 1.76 1.95	0.06 0.08 0.10
RRUS 32 B2	B	From Leg	4.00 0.00 3.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	2.73 2.95 3.18	1.67 1.86 2.05	0.05 0.07 0.10
RRUS 32 B2	C	From Leg	4.00 0.00 3.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	2.73 2.95 3.18	1.67 1.86 2.05	0.05 0.07 0.10
RRUS 32 B2	D	From Leg	4.00 0.00 3.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	2.73 2.95 3.18	1.67 1.86 2.05	0.05 0.07 0.10
RRUS 4478 B14	B	From Leg	4.00 0.00 0.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	0.06 0.08 0.09
RRUS 4478 B14	C	From Leg	4.00 0.00 0.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	0.06 0.08 0.09
RRUS 4478 B14	D	From Leg	4.00 0.00 0.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	0.06 0.08 0.09
RRUS 8843 B2/B66A	B	From Leg	4.00 0.00 3.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.35 1.50 1.65	0.07 0.09 0.11
RRUS 8843 B2/B66A	C	From Leg	4.00 0.00 3.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.35 1.50 1.65	0.07 0.09 0.11
RRUS 8843 B2/B66A	D	From Leg	4.00 0.00 3.00	0.0000	121.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.35 1.50 1.65	0.07 0.09 0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
RRUS 4449 B5/B12	B	From Leg	4.00	0.0000	121.00	No Ice	1.97	1.41	0.07
			0.00			1/2" Ice	2.14	1.56	0.09
			3.00			1" Ice	2.33	1.73	0.11
RRUS 4449 B5/B12	C	From Leg	4.00	0.0000	121.00	No Ice	1.97	1.41	0.07
			0.00			1/2" Ice	2.14	1.56	0.09
			3.00			1" Ice	2.33	1.73	0.11
RRUS 4449 B5/B12	D	From Leg	4.00	0.0000	121.00	No Ice	1.97	1.41	0.07
			0.00			1/2" Ice	2.14	1.56	0.09
			3.00			1" Ice	2.33	1.73	0.11
DC6-48-60-18-8F	B	From Leg	4.00	0.0000	121.00	No Ice	0.92	0.92	0.02
			0.00			1/2" Ice	1.46	1.46	0.04
			3.00			1" Ice	1.64	1.64	0.06
DC6-48-60-18-8F	C	From Leg	4.00	0.0000	121.00	No Ice	0.92	0.92	0.02
			0.00			1/2" Ice	1.46	1.46	0.04
			3.00			1" Ice	1.64	1.64	0.06
DC9-48-60-24-8C-EV	D	From Leg	4.00	0.0000	121.00	No Ice	2.74	4.78	0.03
			0.00			1/2" Ice	2.96	5.06	0.06
			3.00			1" Ice	3.20	5.35	0.10
Andrew Double Pipe Mount MC-DA14-B	A	From Leg	4.00	0.0000	121.00	No Ice	3.75	1.28	0.08
			0.00			1/2" Ice	4.45	1.39	0.11
			3.00			1" Ice	5.15	1.50	0.14
Andrew Double Pipe Mount MC-DA14-B	B	From Leg	4.00	0.0000	121.00	No Ice	3.75	1.28	0.08
			0.00			1/2" Ice	4.45	1.39	0.11
			3.00			1" Ice	5.15	1.50	0.14
MTS 60" Standoff	C	From Leg	6.00	0.0000	121.00	No Ice	0.98	2.60	0.05
			0.00			1/2" Ice	1.70	4.50	0.07
			3.00			1" Ice	2.42	6.40	0.09
Mounting Frame	A	From Leg	4.00	0.0000	121.00	No Ice	9.95	2.47	0.69
			0.00			1/2" Ice	12.85	3.21	0.82
			0.00			1" Ice	15.75	3.95	0.96
Mounting Frame	C	From Leg	4.00	0.0000	121.00	No Ice	9.95	2.47	0.69
			0.00			1/2" Ice	12.85	3.21	0.82
			0.00			1" Ice	15.75	3.95	0.96
Mounting Frame	D	From Leg	4.00	0.0000	121.00	No Ice	9.95	2.47	0.69
			0.00			1/2" Ice	12.85	3.21	0.82
			0.00			1" Ice	15.75	3.95	0.96
(2) Sabre 6' Sidearm C10-151-006	A	From Face	2.00	0.0000	121.00	No Ice	2.72	12.93	0.15
			0.00			1/2" Ice	4.11	17.82	0.22
			0.00			1" Ice	5.50	22.71	0.30
(2) Sabre 6' Sidearm C10-151-006	B	From Face	2.00	0.0000	121.00	No Ice	2.72	12.93	0.15
			0.00			1/2" Ice	4.11	17.82	0.22
			0.00			1" Ice	5.50	22.71	0.30
(2) Sabre 6' Sidearm C10-151-006	C	From Face	2.00	0.0000	121.00	No Ice	2.72	12.93	0.15
			0.00			1/2" Ice	4.11	17.82	0.22
			0.00			1" Ice	5.50	22.71	0.30
(2) Sabre 6' Sidearm C10-151-006	D	From Face	2.00	0.0000	121.00	No Ice	2.72	12.93	0.15
			0.00			1/2" Ice	4.11	17.82	0.22
			0.00			1" Ice	5.50	22.71	0.30
***									
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	A	From Leg	4.00	0.0000	109.00	No Ice	6.29	2.76	0.06
			0.00			1/2" Ice	6.86	3.27	0.11
			0.00			1" Ice	7.45	3.79	0.16
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	B	From Leg	4.00	40.0000	109.00	No Ice	6.29	2.76	0.06
			0.00			1/2" Ice	6.86	3.27	0.11
			0.00			1" Ice	7.45	3.79	0.16
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	C	From Leg	4.00	0.0000	109.00	No Ice	6.29	2.76	0.06
			0.00			1/2" Ice	6.86	3.27	0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	7.45	3.79	0.16
APXVAALL24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	109.00	No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23	6.87 7.55 8.25	0.18 0.31 0.45
APXVAALL24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	40.0000	109.00	No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23	6.87 7.55 8.25	0.18 0.31 0.45
APXVAALL24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	109.00	No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23	6.87 7.55 8.25	0.18 0.31 0.45
AIR6449 B41 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	109.00	No Ice 1/2" Ice 1" Ice	5.89 6.26 6.63	3.28 3.74 4.22	0.12 0.17 0.22
AIR6449 B41 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	40.0000	109.00	No Ice 1/2" Ice 1" Ice	5.89 6.26 6.63	3.28 3.74 4.22	0.12 0.17 0.22
AIR6449 B41 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	109.00	No Ice 1/2" Ice 1" Ice	5.89 6.26 6.63	3.28 3.74 4.22	0.12 0.17 0.22
Ericsson RADIO 4460 B25+B66	A	From Leg	4.00 0.00 0.00	0.0000	109.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0.11 0.13 0.16
Ericsson RADIO 4460 B25+B66	B	From Leg	4.00 0.00 0.00	40.0000	109.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0.11 0.13 0.16
Ericsson RADIO 4460 B25+B66	C	From Leg	4.00 0.00 0.00	0.0000	109.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0.11 0.13 0.16
Ericsson RADIO 4480 B71+B85	A	From Leg	4.00 0.00 0.00	0.0000	109.00	No Ice 1/2" Ice 1" Ice	2.85 3.06 3.28	1.38 1.54 1.71	0.09 0.11 0.14
Ericsson RADIO 4480 B71+B85	B	From Leg	4.00 0.00 0.00	40.0000	109.00	No Ice 1/2" Ice 1" Ice	2.85 3.06 3.28	1.38 1.54 1.71	0.09 0.11 0.14
Ericsson RADIO 4480 B71+B85	C	From Leg	4.00 0.00 0.00	0.0000	109.00	No Ice 1/2" Ice 1" Ice	2.85 3.06 3.28	1.38 1.54 1.71	0.09 0.11 0.14
Sector Mount [SM 502-3]	C	None		0.0000	109.00	No Ice 1/2" Ice 1" Ice	29.82 42.21 54.43	29.82 42.21 54.43	1.67 2.27 3.05
***									

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 45 deg - No Ice
5	0.9 Dead+1.0 Wind 45 deg - No Ice

Comb. No.	Description
6	1.2 Dead+1.0 Wind 90 deg - No Ice
7	0.9 Dead+1.0 Wind 90 deg - No Ice
8	1.2 Dead+1.0 Wind 135 deg - No Ice
9	0.9 Dead+1.0 Wind 135 deg - No Ice
10	1.2 Dead+1.0 Wind 180 deg - No Ice
11	0.9 Dead+1.0 Wind 180 deg - No Ice
12	1.2 Dead+1.0 Wind 225 deg - No Ice
13	0.9 Dead+1.0 Wind 225 deg - No Ice
14	1.2 Dead+1.0 Wind 270 deg - No Ice
15	0.9 Dead+1.0 Wind 270 deg - No Ice
16	1.2 Dead+1.0 Wind 315 deg - No Ice
17	0.9 Dead+1.0 Wind 315 deg - No Ice
18	1.2 Dead+1.0 Ice+1.0 Temp
19	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
20	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp
21	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
22	1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp
23	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
24	1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp
25	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
26	1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 45 deg - Service
29	Dead+Wind 90 deg - Service
30	Dead+Wind 135 deg - Service
31	Dead+Wind 180 deg - Service
32	Dead+Wind 225 deg - Service
33	Dead+Wind 270 deg - Service
34	Dead+Wind 315 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	121 - 110	Leg	Max Tension	13	7.37	0.04	0.07
			Max. Compression	12	-10.58	-0.16	-0.19
			Max. Mx	6	4.26	0.39	-0.05
			Max. My	2	3.41	-0.08	0.39
			Max. Vy	6	-2.84	-0.00	0.00
			Max. Vx	14	-2.84	0.00	-0.00
		Diagonal	Max Tension	7	6.00	0.00	-0.00
			Max. Compression	14	-6.55	0.00	0.00
			Max. Mx	23	1.04	0.03	0.00
			Max. My	12	-5.69	0.01	0.01
			Max. Vy	23	-0.02	0.03	0.00
			Max. Vx	12	0.00	0.01	0.01
		Secondary Horizontal	Max Tension	12	0.15	-0.00	-0.00
			Max. Compression	5	-0.14	0.01	0.00
			Max. Mx	6	-0.06	0.02	0.00
			Max. My	12	-0.04	0.02	0.00
			Max. Vy	21	0.02	0.01	-0.00
			Max. Vx	12	-0.00	0.00	0.00
		Top Girt	Max Tension	10	0.46	0.00	0.00
			Max. Compression	11	-0.30	0.00	0.00
			Max. Mx	18	0.25	0.07	0.00
			Max. My	16	-0.10	0.00	-0.00
			Max. Vy	18	-0.04	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	16	0.00	0.00	0.00
T2	110 - 100.42	Leg	Max Tension	9	20.70	0.28	0.17
			Max. Compression	8	-25.09	0.14	0.14
			Max. Mx	14	-16.98	0.55	0.07
			Max. My	6	-17.28	0.11	0.56
			Max. Vy	6	0.95	0.39	-0.05
			Max. Vx	14	0.95	-0.11	0.38
		Diagonal	Max Tension	3	8.20	0.02	-0.01
			Max. Compression	10	-9.09	0.00	0.00
			Max. Mx	10	7.32	0.04	0.00
			Max. My	4	-8.53	-0.01	-0.02
			Max. Vy	21	-0.03	0.04	0.00
			Max. Vx	4	-0.00	-0.01	-0.02
		Secondary Horizontal	Max Tension	6	0.52	-0.01	-0.00
			Max. Compression	7	-0.52	0.01	0.00
			Max. Mx	10	-0.42	0.02	0.00
			Max. My	6	0.10	0.00	-0.01
			Max. Vy	23	-0.02	0.01	-0.00
			Max. Vx	10	-0.00	0.00	0.00
		Top Girt	Max Tension	10	2.05	0.00	0.00
			Max. Compression	11	-1.45	0.00	0.00
			Max. Mx	18	0.80	0.07	0.00
			Max. My	16	-0.80	0.00	-0.00
			Max. Vy	18	0.04	0.00	0.00
			Max. Vx	16	0.00	0.00	0.00
T3	100.42 - 90.42	Leg	Max Tension	9	38.95	-0.13	-0.12
			Max. Compression	8	-45.09	0.03	0.04
			Max. Mx	10	-30.60	-0.48	0.15
			Max. My	6	-30.45	0.16	-0.49
			Max. Vy	14	0.21	-0.48	0.14
			Max. Vx	6	0.21	0.16	-0.49
		Diagonal	Max Tension	9	9.96	0.03	0.01
			Max. Compression	16	-10.70	0.00	0.00
			Max. Mx	10	8.72	0.05	0.00
			Max. My	4	-10.50	-0.01	-0.02
			Max. Vy	21	-0.03	0.04	0.00
			Max. Vx	4	-0.00	-0.01	-0.02
		Secondary Horizontal	Max Tension	6	0.37	-0.01	-0.00
			Max. Compression	7	-0.37	0.02	0.00
			Max. Mx	2	-0.34	0.02	0.00
			Max. My	10	0.04	0.00	0.01
			Max. Vy	23	-0.02	0.02	-0.00
			Max. Vx	10	-0.00	0.00	0.00
		Top Girt	Max Tension	10	3.88	0.00	0.00
			Max. Compression	11	-3.03	0.00	0.00
			Max. Mx	18	1.02	0.07	0.00
			Max. My	16	-1.96	0.00	-0.00
			Max. Vy	18	-0.04	0.00	0.00
			Max. Vx	16	0.00	0.00	0.00
T4	90.42 - 80.42	Leg	Max Tension	9	56.83	-0.04	-0.11
			Max. Compression	8	-63.42	0.19	0.17
			Max. Mx	10	-42.15	-0.57	0.14
			Max. My	6	-42.42	0.14	-0.57
			Max. Vy	14	-0.19	-0.56	0.12
			Max. Vx	6	-0.19	0.14	-0.57
		Diagonal	Max Tension	9	11.12	0.07	-0.00
			Max. Compression	16	-12.06	0.00	0.00
			Max. Mx	8	0.53	0.08	0.00
			Max. My	16	-12.03	-0.04	-0.05

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	22	0.03	0.05	-0.00
			Max. Vx	16	-0.01	0.00	0.00
		Secondary Horizontal	Max Tension	6	0.35	-0.01	-0.00
			Max. Compression	7	-0.39	0.01	0.01
			Max. Mx	2	-0.35	0.02	0.01
			Max. My	6	0.02	0.01	0.02
			Max. Vy	23	-0.02	0.01	0.00
			Max. Vx	6	-0.01	0.00	0.00
		Top Girt	Max Tension	6	5.09	0.00	0.00
			Max. Compression	7	-4.30	0.00	0.00
			Max. Mx	18	0.92	0.07	0.00
			Max. My	26	0.08	0.00	-0.00
			Max. Vy	18	0.04	0.00	0.00
			Max. Vx	26	0.00	0.00	0.00
T5	80.42 - 70.42	Leg	Max Tension	9	74.89	-0.14	-0.17
			Max. Compression	8	-82.07	0.27	0.24
			Max. Mx	10	-54.01	-0.67	0.12
			Max. My	6	-54.76	0.12	-0.68
			Max. Vy	14	0.22	-0.67	0.10
			Max. Vx	6	0.22	0.12	-0.68
		Diagonal	Max Tension	9	12.21	-0.04	0.00
			Max. Compression	16	-13.13	0.00	0.00
			Max. Mx	8	-0.44	-0.05	0.00
			Max. My	16	-13.09	0.01	0.06
			Max. Vy	22	-0.03	-0.05	0.00
			Max. Vx	16	0.01	0.00	0.00
		Secondary Horizontal	Max Tension	6	0.39	-0.00	-0.00
			Max. Compression	7	-0.48	0.01	0.01
			Max. Mx	23	-0.08	0.02	0.00
			Max. My	6	-0.02	0.00	0.02
			Max. Vy	23	-0.02	0.02	0.00
			Max. Vx	6	-0.01	0.00	0.00
		Top Girt	Max Tension	6	8.76	0.00	0.00
			Max. Compression	7	-7.58	0.00	0.00
			Max. Mx	18	1.35	0.08	0.00
			Max. My	26	-0.12	0.00	-0.00
			Max. Vy	18	0.05	0.00	0.00
			Max. Vx	26	-0.00	0.00	0.00
T6	70.42 - 60.42	Leg	Max Tension	9	97.62	-0.20	-0.23
			Max. Compression	8	-105.99	0.38	0.34
			Max. Mx	6	-73.13	-0.94	0.04
			Max. My	6	-70.73	0.07	-0.94
			Max. Vy	14	0.28	-0.94	0.04
			Max. Vx	6	0.28	0.07	-0.94
		Diagonal	Max Tension	9	10.46	0.06	-0.01
			Max. Compression	16	-10.92	0.00	0.00
			Max. Mx	8	2.01	0.07	-0.00
			Max. My	16	-10.89	-0.02	-0.04
			Max. Vy	22	0.03	0.05	-0.00
			Max. Vx	16	-0.01	0.00	0.00
		Secondary Horizontal	Max Tension	6	0.51	-0.00	-0.00
			Max. Compression	7	-0.58	0.01	0.01
			Max. Mx	25	-0.11	0.02	0.00
			Max. My	14	-0.12	0.00	0.01
			Max. Vy	25	0.02	0.02	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Top Girt	Max Tension	6	7.92	0.00	0.00
			Max. Compression	7	-6.92	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	18	1.13	0.10	0.00
			Max. My	26	-0.21	0.00	-0.00
			Max. Vy	18	0.05	0.00	0.00
			Max. Vx	26	0.00	0.00	0.00
T7	60.42 - 50.42	Leg	Max Tension	9	116.34	-0.29	-0.32
			Max. Compression	8	-125.09	0.48	0.45
			Max. Mx	6	-86.13	-1.05	0.02
			Max. My	6	-83.53	0.06	-1.05
			Max. Vy	14	0.31	-1.04	0.02
			Max. Vx	6	0.30	0.06	-1.05
		Diagonal	Max Tension	9	11.23	0.07	-0.00
			Max. Compression	16	-11.67	0.00	0.00
			Max. Mx	8	1.58	0.07	-0.00
			Max. My	16	-11.64	-0.03	-0.04
			Max. Vy	20	0.04	0.06	0.01
			Max. Vx	16	-0.01	0.00	0.00
		Secondary Horizontal	Max Tension	14	0.54	-0.00	-0.00
			Max. Compression	9	-0.62	0.01	0.01
			Max. Mx	25	-0.11	0.02	0.00
			Max. My	14	-0.18	0.01	0.01
			Max. Vy	25	0.02	0.02	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Top Girt	Max Tension	6	6.90	0.00	0.00
			Max. Compression	7	-6.07	0.00	0.00
			Max. Mx	18	0.92	0.13	0.00
			Max. My	26	-0.26	0.00	-0.00
			Max. Vy	18	-0.07	0.00	0.00
			Max. Vx	26	0.00	0.00	0.00
T8	50.42 - 40.42	Leg	Max Tension	9	136.00	-0.38	-0.41
			Max. Compression	8	-145.01	0.55	0.52
			Max. Mx	6	-99.70	-1.11	-0.07
			Max. My	6	-96.92	-0.05	-1.10
			Max. Vy	16	-0.32	-0.86	-0.88
			Max. Vx	8	-0.33	-0.88	-0.86
		Diagonal	Max Tension	9	11.56	0.07	-0.00
			Max. Compression	16	-11.90	0.00	0.00
			Max. Mx	8	1.70	0.08	-0.00
			Max. My	16	-11.87	-0.03	-0.04
			Max. Vy	20	0.04	0.06	0.01
			Max. Vx	16	-0.01	0.00	0.00
		Secondary Horizontal	Max Tension	12	0.54	0.00	-0.01
			Max. Compression	9	-0.72	0.01	0.01
			Max. Mx	25	-0.10	0.02	0.00
			Max. My	14	-0.27	0.01	0.01
			Max. Vy	25	0.02	0.02	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Top Girt	Max Tension	6	7.63	0.00	0.00
			Max. Compression	7	-6.71	0.00	0.00
			Max. Mx	18	0.98	-0.12	0.00
			Max. My	26	-0.33	0.00	0.00
			Max. Vy	18	0.06	0.00	0.00
			Max. Vx	26	0.00	0.00	0.00
T9	40.42 - 30.42	Leg	Max Tension	9	155.68	-0.44	-0.47
			Max. Compression	8	-164.66	0.61	0.59
			Max. Mx	6	-113.12	-1.17	-0.12
			Max. My	14	-109.59	-0.09	-1.16
			Max. Vy	16	0.35	-0.94	-0.96
			Max. Vx	8	0.35	-0.96	-0.94
		Diagonal	Max Tension	9	12.01	0.08	-0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	16	-12.24	0.00	0.00
			Max. Mx	8	1.65	0.09	-0.01
			Max. My	16	-12.21	-0.03	-0.03
			Max. Vy	26	0.04	0.06	0.01
			Max. Vx	16	-0.01	0.00	0.00
		Secondary Horizontal	Max Tension	12	0.57	0.00	-0.01
			Max. Compression	9	-0.79	0.01	0.01
			Max. Mx	25	-0.10	0.02	0.00
			Max. My	14	-0.33	0.01	0.01
			Max. Vy	25	0.02	0.02	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Top Girt	Max Tension	6	8.09	0.00	0.00
			Max. Compression	7	-7.13	0.00	0.00
			Max. Mx	18	1.01	-0.13	0.00
			Max. My	26	-0.38	0.00	0.00
			Max. Vy	18	0.06	0.00	0.00
			Max. Vx	26	-0.00	0.00	0.00
T10	30.42 - 20.42	Leg	Max Tension	9	175.61	-0.49	-0.53
			Max. Compression	8	-184.27	0.67	0.65
			Max. Mx	6	-126.57	-1.23	-0.17
			Max. My	14	-122.83	-0.13	-1.22
			Max. Vy	16	0.38	-1.02	-1.03
			Max. Vx	8	0.38	-1.04	-1.02
		Diagonal	Max Tension	9	12.39	0.08	0.00
			Max. Compression	16	-12.48	0.00	0.00
			Max. Mx	8	1.65	0.09	-0.01
			Max. My	16	-12.45	-0.04	-0.03
			Max. Vy	26	0.04	0.07	0.01
			Max. Vx	16	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	8	0.58	0.00	-0.01
			Max. Compression	9	-0.86	0.01	0.01
			Max. Mx	25	-0.10	0.03	0.00
			Max. My	16	-0.85	0.01	0.01
			Max. Vy	25	0.02	0.03	0.00
			Max. Vx	8	-0.00	0.00	0.00
		Top Girt	Max Tension	6	8.60	0.00	0.00
			Max. Compression	7	-7.59	0.00	0.00
			Max. Mx	18	1.01	-0.15	0.00
			Max. My	26	-0.47	0.00	0.00
			Max. Vy	18	0.06	0.00	0.00
			Max. Vx	26	0.00	0.00	0.00
T11	20.42 - 10.21	Leg	Max Tension	9	195.91	-0.54	-0.57
			Max. Compression	8	-203.95	0.70	0.68
			Max. Mx	6	-140.15	-1.25	-0.25
			Max. My	14	-136.23	-0.22	-1.24
			Max. Vy	16	0.40	-1.10	-1.11
			Max. Vx	8	0.40	-1.12	-1.10
		Diagonal	Max Tension	9	12.68	0.09	0.00
			Max. Compression	16	-12.58	0.00	0.00
			Max. Mx	16	1.86	0.10	0.01
			Max. My	8	-12.54	-0.04	0.03
			Max. Vy	26	0.04	0.08	0.01
			Max. Vx	8	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	12	0.58	0.01	-0.01
			Max. Compression	9	-0.93	0.01	0.01
			Max. Mx	25	-0.11	0.03	0.01
			Max. My	16	-0.92	0.02	0.01
			Max. Vy	25	0.03	0.03	0.01

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	8	-0.00	0.00	0.00
		Top Girt	Max Tension	6	8.87	0.00	0.00
			Max. Compression	7	-7.84	0.00	0.00
			Max. Mx	18	1.30	0.17	0.00
			Max. My	21	1.32	0.00	-0.00
			Max. Vy	18	-0.07	0.00	0.00
			Max. Vx	21	-0.00	0.00	0.00
T12	10.21 - 0	Leg	Max Tension	9	214.10	-0.58	-0.60
			Max. Compression	8	-220.76	-0.00	0.00
			Max. Mx	6	-151.86	-1.43	0.26
			Max. My	14	-147.85	0.30	-1.43
			Max. Vy	8	0.35	-0.87	-0.85
			Max. Vx	16	0.35	-0.86	-0.86
		Diagonal	Max Tension	9	14.47	0.08	-0.00
			Max. Compression	16	-14.51	0.00	0.00
			Max. Mx	8	-0.14	0.11	-0.02
			Max. My	6	-9.35	0.01	0.03
			Max. Vy	26	-0.04	0.07	0.01
			Max. Vx	14	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	7	0.52	0.00	-0.00
			Max. Compression	7	-0.76	0.02	0.00
			Max. Mx	26	-0.01	0.03	-0.00
			Max. My	6	-0.10	0.01	0.02
			Max. Vy	26	0.03	0.03	-0.00
			Max. Vx	6	0.00	0.00	0.00
		Top Girt	Max Tension	6	10.96	0.00	0.00
			Max. Compression	7	-9.67	0.00	0.00
			Max. Mx	18	-0.61	0.18	0.00
			Max. My	21	-0.59	0.00	-0.00
			Max. Vy	18	-0.07	0.00	0.00
			Max. Vx	21	0.00	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg D	Max. Vert	12	233.87	16.07	-16.35
	Max. H_x	12	233.87	16.07	-16.35
	Max. H_z	5	-226.88	-16.01	16.30
	Min. Vert	5	-226.88	-16.01	16.30
	Min. H_x	5	-226.88	-16.01	16.30
	Min. H_z	12	233.87	16.07	-16.35
Leg C	Max. Vert	8	239.78	-16.21	-16.87
	Max. H_x	17	-232.71	16.22	16.83
	Max. H_z	17	-232.71	16.22	16.83
	Min. Vert	17	-232.71	16.22	16.83
	Min. H_x	8	239.78	-16.21	-16.87
	Min. H_z	8	239.78	-16.21	-16.87
Leg B	Max. Vert	4	234.76	-16.39	16.10
	Max. H_x	13	-226.23	16.28	-15.99
	Max. H_z	4	234.76	-16.39	16.10
	Min. Vert	13	-226.23	16.28	-15.99
	Min. H_x	4	234.76	-16.39	16.10
	Min. H_z	13	-226.23	16.28	-15.99
Leg A	Max. Vert	16	239.75	16.87	16.21

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. H_x	16	239.75	16.87	16.21
	Max. H_z	16	239.75	16.87	16.21
	Min. Vert	9	-232.71	-16.83	-16.22
	Min. H_x	9	-232.71	-16.83	-16.22
	Min. H_z	9	-232.71	-16.83	-16.22

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	34.92	0.00	-0.00	-4.08	-4.21	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	41.91	-0.43	-42.21	-3340.19	41.10	3.25
0.9 Dead+1.0 Wind 0 deg - No Ice	31.43	-0.43	-42.21	-3335.77	42.32	3.24
1.2 Dead+1.0 Wind 45 deg - No Ice	41.91	33.64	-33.52	-2579.27	-2588.90	-6.57
0.9 Dead+1.0 Wind 45 deg - No Ice	31.43	33.64	-33.52	-2575.46	-2585.04	-6.58
1.2 Dead+1.0 Wind 90 deg - No Ice	41.91	43.86	0.43	41.28	-3443.28	-9.32
0.9 Dead+1.0 Wind 90 deg - No Ice	31.43	43.87	0.43	42.45	-3438.73	-9.32
1.2 Dead+1.0 Wind 135 deg - No Ice	41.91	34.24	34.12	2634.78	-2654.24	-14.17
0.9 Dead+1.0 Wind 135 deg - No Ice	31.43	34.24	34.12	2633.36	-2650.30	-14.16
1.2 Dead+1.0 Wind 180 deg - No Ice	41.91	0.43	42.21	3330.38	-51.26	-3.24
0.9 Dead+1.0 Wind 180 deg - No Ice	31.43	0.43	42.21	3328.41	-49.94	-3.23
1.2 Dead+1.0 Wind 225 deg - No Ice	41.91	-33.64	33.52	2569.48	2578.75	6.56
0.9 Dead+1.0 Wind 225 deg - No Ice	31.43	-33.64	33.52	2568.12	2577.44	6.57
1.2 Dead+1.0 Wind 270 deg - No Ice	41.91	-43.86	-0.43	-51.09	3433.13	9.31
0.9 Dead+1.0 Wind 270 deg - No Ice	31.43	-43.87	-0.43	-49.81	3431.13	9.30
1.2 Dead+1.0 Wind 315 deg - No Ice	41.91	-34.24	-34.12	-2644.63	2644.07	14.18
0.9 Dead+1.0 Wind 315 deg - No Ice	31.43	-34.24	-34.12	-2640.75	2642.68	14.17
1.2 Dead+1.0 Ice+1.0 Temp	81.64	-0.00	0.00	-21.09	-7.14	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	81.64	-0.08	-10.32	-850.38	1.99	0.46
1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp	81.64	7.95	-7.93	-641.80	-629.92	-2.83
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	81.64	10.58	0.08	-11.97	-851.50	-3.83
1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp	81.64	8.07	8.04	612.45	-642.99	-4.01
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	81.64	0.08	10.32	807.97	-16.48	-0.46
1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp	81.64	-7.95	7.93	599.40	615.43	2.83

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	81.64	-10.58	-0.08	-30.45	837.01	3.83
1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp	81.64	-8.07	-8.04	-654.86	628.49	4.01
Dead+Wind 0 deg - Service	34.92	-0.11	-10.38	-823.86	7.12	0.81
Dead+Wind 45 deg - Service	34.92	8.27	-8.24	-636.80	-639.26	-1.61
Dead+Wind 90 deg - Service	34.92	10.79	0.11	7.26	-849.29	-2.29
Dead+Wind 135 deg - Service	34.92	8.42	8.39	644.68	-655.31	-3.49
Dead+Wind 180 deg - Service	34.92	0.11	10.38	815.69	-15.58	-0.81
Dead+Wind 225 deg - Service	34.92	-8.27	8.24	628.63	630.81	1.61
Dead+Wind 270 deg - Service	34.92	-10.79	-0.11	-15.44	840.84	2.29
Dead+Wind 315 deg - Service	34.92	-8.42	-8.39	-652.85	646.86	3.49

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-34.92	0.00	-0.00	34.92	0.00	0.000%
2	-0.43	-41.91	-42.22	0.43	41.91	42.21	0.014%
3	-0.43	-31.43	-42.22	0.43	31.43	42.21	0.012%
4	33.64	-41.91	-33.52	-33.64	41.91	33.52	0.001%
5	33.64	-31.43	-33.52	-33.64	31.43	33.52	0.001%
6	43.87	-41.91	0.43	-43.86	41.91	-0.43	0.014%
7	43.87	-31.43	0.43	-43.87	31.43	-0.43	0.012%
8	34.24	-41.91	34.13	-34.24	41.91	-34.12	0.001%
9	34.24	-31.43	34.13	-34.24	31.43	-34.12	0.001%
10	0.43	-41.91	42.22	-0.43	41.91	-42.21	0.014%
11	0.43	-31.43	42.22	-0.43	31.43	-42.21	0.012%
12	-33.64	-41.91	33.52	33.64	41.91	-33.52	0.001%
13	-33.64	-31.43	33.52	33.64	31.43	-33.52	0.001%
14	-43.87	-41.91	-0.43	43.86	41.91	0.43	0.014%
15	-43.87	-31.43	-0.43	43.87	31.43	0.43	0.012%
16	-34.24	-41.91	-34.13	34.24	41.91	34.12	0.001%
17	-34.24	-31.43	-34.13	34.24	31.43	34.12	0.001%
18	0.00	-81.64	0.00	0.00	81.64	-0.00	0.000%
19	-0.08	-81.64	-10.32	0.08	81.64	10.32	0.001%
20	7.95	-81.64	-7.93	-7.95	81.64	7.93	0.001%
21	10.58	-81.64	0.08	-10.58	81.64	-0.08	0.001%
22	8.07	-81.64	8.04	-8.07	81.64	-8.04	0.001%
23	0.08	-81.64	10.32	-0.08	81.64	-10.32	0.001%
24	-7.95	-81.64	7.93	7.95	81.64	-7.93	0.001%
25	-10.58	-81.64	-0.08	10.58	81.64	0.08	0.001%
26	-8.07	-81.64	-8.04	8.07	81.64	8.04	0.001%
27	-0.11	-34.92	-10.38	0.11	34.92	10.38	0.005%
28	8.27	-34.92	-8.24	-8.27	34.92	8.24	0.001%
29	10.79	-34.92	0.11	-10.79	34.92	-0.11	0.005%
30	8.42	-34.92	8.39	-8.42	34.92	-8.39	0.001%
31	0.11	-34.92	10.38	-0.11	34.92	-10.38	0.005%
32	-8.27	-34.92	8.24	8.27	34.92	-8.24	0.001%
33	-10.79	-34.92	-0.11	10.79	34.92	0.11	0.005%
34	-8.42	-34.92	-8.39	8.42	34.92	8.39	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	6	0.00000001	0.00069806
3	Yes	6	0.00000001	0.00053002
4	Yes	8	0.00000001	0.00039165
5	Yes	8	0.00000001	0.00037989
6	Yes	6	0.00000001	0.00068772
7	Yes	6	0.00000001	0.00051992
8	Yes	8	0.00000001	0.00040490
9	Yes	8	0.00000001	0.00039403
10	Yes	6	0.00000001	0.00069077
11	Yes	6	0.00000001	0.00052236
12	Yes	8	0.00000001	0.00039174
13	Yes	8	0.00000001	0.00037995
14	Yes	6	0.00020801	0.00069968
15	Yes	6	0.00000001	0.00053286
16	Yes	8	0.00000001	0.00041506
17	Yes	8	0.00000001	0.00040149
18	Yes	6	0.00000001	0.00003046
19	Yes	7	0.00000001	0.00034892
20	Yes	7	0.00000001	0.00045941
21	Yes	7	0.00000001	0.00034963
22	Yes	7	0.00000001	0.00046335
23	Yes	7	0.00000001	0.00034604
24	Yes	7	0.00000001	0.00047543
25	Yes	7	0.00000001	0.00034438
26	Yes	7	0.00000001	0.00049213
27	Yes	6	0.00000001	0.00055525
28	Yes	7	0.00000001	0.00035588
29	Yes	6	0.00000001	0.00055378
30	Yes	7	0.00000001	0.00035659
31	Yes	6	0.00000001	0.00055424
32	Yes	7	0.00000001	0.00035644
33	Yes	6	0.00000001	0.00055513
34	Yes	7	0.00000001	0.00037993

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	121	Leg	A325N	0.6250	8	2.65	27.61	0.096	1	Bolt DS
		Diagonal	A325N	0.6250	2	3.00	7.19	0.418	1	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	0.16	6.83	0.023	1	Member Block Shear
T2	110	Leg	A325N	0.6250	8	6.27	27.61	0.227	1	Bolt DS
		Diagonal	A325N	0.6250	2	4.10	10.26	0.399	1	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	0.52	6.83	0.076	1	Member Block Shear
T3	100.42	Leg	A325N	0.6250	16	5.64	27.61	0.204	1	Bolt DS
		Diagonal	A325N	0.6250	2	4.98	7.70	0.647	1	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	0.68	6.83	0.099	1	Member Block Shear

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T4	90.42	Leg	A325N	0.6250	16	7.93	27.61	0.287	1	Bolt DS
		Diagonal	A325N	0.6250	2	5.56	10.26	0.542	1	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	0.95	6.83	0.139	1	Member Block Shear
T5	80.42	Leg	A325N	0.6250	24	6.84	27.61	0.248	1	Bolt DS
		Diagonal	A325N	0.6250	2	6.11	12.34	0.495	1	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	1.23	6.83	0.180	1	Member Block Shear
T6	70.42	Leg	A325N	0.7500	24	8.83	39.76	0.222	1	Bolt DS
		Diagonal	A325N	0.6250	2	5.23	10.26	0.509	1	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	1.59	6.83	0.233	1	Member Block Shear
T7	60.42	Leg	A325N	0.7500	24	10.42	39.76	0.262	1	Bolt DS
		Diagonal	A325N	0.6250	2	5.61	10.26	0.547	1	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	1.88	6.83	0.275	1	Member Block Shear
T8	50.42	Leg	A325N	0.7500	28	10.36	39.76	0.261	1	Bolt DS
		Diagonal	A325N	0.6250	2	5.78	10.26	0.563	1	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	2.18	6.83	0.319	1	Member Block Shear
T9	40.42	Leg	A325N	0.7500	32	10.29	39.76	0.259	1	Bolt DS
		Diagonal	A325N	0.6250	2	6.00	10.26	0.585	1	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	2.47	6.83	0.362	1	Member Block Shear
T10	30.42	Leg	A325N	0.7500	36	10.24	39.76	0.257	1	Bolt DS
		Diagonal	A325N	0.6250	2	6.19	10.26	0.603	1	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	2.77	6.83	0.405	1	Member Block Shear
T11	20.42	Leg	A325N	0.7500	40	10.20	39.76	0.256	1	Bolt DS
		Diagonal	A325N	0.6250	2	6.34	10.26	0.618	1	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	3.06	6.83	0.448	1	Member Block Shear
T12	10.21	Leg	A325N	0.7500	40	11.04	39.76	0.278	1	Bolt DS
		Diagonal	A325N	0.6250	2	7.24	10.26	0.705	1	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	3.31	9.11	0.364	1	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	121 - 110	L5x5x1/2	11.00	5.50	67.1 K=1.00	4.7500	-10.58	190.74	0.055 [1]
T2	110 - 100.42	L5x5x1/2	9.58	4.79	58.5 K=1.00	4.7500	-25.09	202.04	0.124 [1]
T3	100.42 - 90.42	L5x5x1/2	10.00	5.00	61.0 K=1.00	4.7500	-45.09	198.86	0.227 [1]
T4	90.42 - 80.42	L5x5x1/2	10.01	5.22	63.7 K=1.00	4.7500	-63.42	195.45	0.324 [1]
T5	80.42 - 70.42	L5x5x1/2	10.01	5.20	63.5 K=1.00	4.7500	-82.07	195.72	0.419 [1]
T6	70.42 - 60.42	L6x6x3/4	10.01	5.19	53.2 K=1.00	8.4400	-106.00	369.88	0.287 [1]
T7	60.42 - 50.42	L6x6x3/4	10.01	5.17	53.1 K=1.00	8.4400	-125.09	370.12	0.338 [1]
T8	50.42 - 40.42	L6x6x3/4	10.01	5.16	52.9 K=1.00	8.4400	-145.01	370.34	0.392 [1]
T9	40.42 - 30.42	L6x6x3/4	10.01	5.15	52.8 K=1.00	8.4400	-164.66	370.53	0.444 [1]
T10	30.42 - 20.42	L6x6x3/4	10.01	5.14	52.8 K=1.00	8.4400	-184.28	370.69	0.497 [1]
T11	20.42 - 10.21	L6x6x3/4	10.22	5.25	53.8 K=1.00	8.4400	-203.95	368.61	0.553 [1]
T12	10.21 - 0	L6x6x3/4	10.22	5.24	53.7 K=1.00	8.4400	-220.76	368.76	0.599 [1]

[1] $P_u / \phi P_n$ controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	121 - 110	L2 1/2x2 1/2x3/16	12.65	5.71	134.0 K=0.97	0.9020	-6.55	14.38	0.456 [1]
T2	110 - 100.42	L3x3x1/4	11.44	5.14	108.1 K=1.04	1.4400	-9.09	32.78	0.277 [1]
T3	100.42 - 90.42	L3x3x3/16	11.79	5.31	110.1 K=1.03	1.0900	-10.70	23.95	0.447 [1]
T4	90.42 - 80.42	L3x3x1/4	11.94	5.65	115.8 K=1.01	1.4400	-12.06	29.97	0.403 [1]
T5	80.42 - 70.42	2L2x2x3/16x1/2	12.26	5.81	112.9 K=1.00	1.4297	-13.13	30.83	0.426 [1]
T6	70.42 - 60.42	L3x3x1/4	12.58	5.91	119.8 K=1.00	1.4400	-10.92	28.43	0.384 [1]
T7	60.42 - 50.42	L3x3x1/4	12.93	6.09	122.6 K=0.99	1.4400	-11.67	27.32	0.427 [1]
T8	50.42 - 40.42	L3x3x1/4	13.28	6.27	125.5 K=0.99	1.4400	-11.90	26.16	0.455 [1]
T9	40.42 - 30.42	L3x3x1/4	13.65	6.46	128.5 K=0.98	1.4400	-12.24	24.98	0.490 [1]
T10	30.42 - 20.42	L3x3x1/4	14.04	6.66	131.5 K=0.97	1.4400	-12.48	23.84	0.524 [1]
T11	20.42 - 10.21	L3x3x1/4	14.58	6.94	135.8 K=0.97	1.4400	-12.58	22.36	0.563 [1]
T12	10.21 - 0	L3x3x1/4	14.99	7.15	139.0 K=0.96	1.4400	-14.51	21.33	0.680 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	121 - 110	L2x2x3/16	6.25	5.59	114.4 K=1.05	0.7150	-0.16	15.15	0.010 [1]
T2	110 - 100.42	L2x2x3/16	6.25	5.59	114.4 K=1.05	0.7150	-0.52	15.15	0.034 [1]
T3	100.42 - 90.42	L2x2x3/16	6.25	5.59	114.4 K=1.05	0.7150	-0.68	15.15	0.045 [1]
T4	90.42 - 80.42	L2x2x3/16	6.51	5.86	117.0 K=1.03	0.7150	-0.95	14.67	0.065 [1]
T5	80.42 - 70.42	L2x2x3/16	7.07	6.41	124.7 K=1.00	0.7150	-1.23	13.15	0.094 [1]
T6	70.42 - 60.42	L2x2x3/16	7.62	6.88	133.9 K=1.00	0.7150	-1.59	11.42	0.139 [1]
T7	60.42 - 50.42	L2x2x3/16	8.18	7.44	144.6 K=1.00	0.7150	-1.88	9.78	0.192 [1]
T8	50.42 - 40.42	L2x2x3/16	8.73	7.99	155.4 K=1.00	0.7150	-2.18	8.47	0.257 [1]
T9	40.42 - 30.42	L2x2x3/16	9.28	8.54	166.2 K=1.00	0.7150	-2.47	7.41	0.333 [1]
T10	30.42 - 20.42	L2x2x3/16	9.84	9.10	176.9 K=1.00	0.7150	-2.77	6.54	0.423 [1]
T11	20.42 - 10.21	L2x2x3/16	10.40	9.66	187.8 K=1.00	0.7150	-3.06	5.80	0.527 [1]
T12	10.21 - 0	L2x2x1/4	10.96	10.22	201.4 K=1.00	0.9380	-3.31	6.62	0.500 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	121 - 110	2L2x2x3/16x1/2	6.25	5.83	113.4 K=1.00	1.4297	-0.30	30.66	0.010 [1]
T2	110 - 100.42	2L2x2x3/16x1/2	6.25	5.83	113.4 K=1.00	1.4297	-1.45	30.66	0.047 [1]
T3	100.42 - 90.42	2L2x2x3/16x1/2	6.25	5.83	113.4 K=1.00	1.4297	-3.03	30.66	0.099 [1]
T4	90.42 - 80.42	2L2x2x3/16x1/2	6.25	5.83	113.4 K=1.00	1.4297	-4.30	30.66	0.140 [1]
T5	80.42 - 70.42	2L2x2x3/16x1/2	6.80	6.39	124.1 K=1.00	1.4297	-7.58	26.53	0.286 [1]
T6	70.42 - 60.42	2L2x2x3/16x3/4	7.36	6.86	133.3	1.4300	-6.92	23.02	0.300 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T7	60.42 - 50.42	2L2 1/2x2 1/2x3/16x3/4	7.91	7.41	K=1.00 114.3	1.8000	-6.07	38.19	0.159 [1]
T8	50.42 - 40.42	L3x3x1/4	8.46	7.96	K=1.00 161.4	1.4400	-6.71	15.82	0.424 [1]
T9	40.42 - 30.42	L3x3x1/4	9.01	8.51	K=1.00 172.6	1.4400	-7.13	13.84	0.515 [1]
T10	30.42 - 20.42	L3x3x1/4	9.57	9.07	K=1.00 183.8	1.4400	-7.59	12.20	0.622 [1]
T11	20.42 - 10.21	2L2x2x3/16x3/4	10.12	9.62	K=1.00 187.1	1.4300	-7.84	11.69	0.671 [1]
T12	10.21 - 0	2L2x2x3/16x3/4	10.69	10.19	K=1.00 198.1	1.4300	-9.67	10.43	0.927 [1]
					K=1.00				

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	121 - 110	L5x5x1/2	11.00	5.50	42.9	4.0000	7.37	195.00	0.038 [1]
T2	110 - 100.42	L5x5x1/2	9.58	4.79	37.3	4.0000	20.70	195.00	0.106 [1]
T3	100.42 - 90.42	L5x5x1/2	10.00	5.00	39.0	4.0000	38.95	195.00	0.200 [1]
T4	90.42 - 80.42	L5x5x1/2	10.01	4.79	37.3	4.0000	56.83	195.00	0.291 [1]
T5	80.42 - 70.42	L5x5x1/2	10.01	4.81	37.5	4.0000	74.89	195.00	0.384 [1]
T6	70.42 - 60.42	L6x6x3/4	10.01	4.82	31.6	7.1275	97.62	347.47	0.281 [1]
T7	60.42 - 50.42	L6x6x3/4	10.01	4.83	31.7	7.1275	116.34	347.47	0.335 [1]
T8	50.42 - 40.42	L6x6x3/4	10.01	4.85	31.8	7.1275	136.00	347.47	0.391 [1]
T9	40.42 - 30.42	L6x6x3/4	10.01	4.85	31.8	7.1275	155.68	347.47	0.448 [1]
T10	30.42 - 20.42	L6x6x3/4	10.01	4.86	31.9	7.1275	175.61	347.47	0.505 [1]
T11	20.42 - 10.21	L6x6x3/4	10.22	4.97	32.6	7.1275	195.91	347.47	0.564 [1]
T12	10.21 - 0	L6x6x3/4	10.22	4.98	32.6	7.1275	214.10	347.47	0.616 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	121 - 110	L2 1/2x2 1/2x3/16	12.65	5.71	91.1	0.5710	6.00	24.84	0.242 [1]
T2	110 - 100.42	L3x3x1/4	11.44	5.14	68.9	0.9394	8.20	40.86	0.201 [1]
T3	100.42 - 90.42	L3x3x3/16	11.79	5.31	70.3	0.7120	9.96	30.97	0.322 [1]
T4	90.42 - 80.42	L3x3x1/4	11.94	5.65	75.4	0.9394	11.12	40.86	0.272 [1]
T5	80.42 - 70.42	2L2x2x3/16x1/2	12.26	5.81	116.8	0.8613	12.21	37.47	0.326 [1]
T6	70.42 - 60.42	L3x3x1/4	12.58	5.91	78.8	0.9394	10.46	40.86	0.256 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T7	60.42 - 50.42	L3x3x1/4	12.93	6.09	81.1	0.9394	11.23	40.86	0.275 [1]
T8	50.42 - 40.42	L3x3x1/4	13.28	6.27	83.5	0.9394	11.56	40.86	0.283 [1]
T9	40.42 - 30.42	L3x3x1/4	13.65	6.46	86.0	0.9394	12.01	40.86	0.294 [1]
T10	30.42 - 20.42	L3x3x1/4	14.04	6.66	88.5	0.9394	12.39	40.86	0.303 [1]
T11	20.42 - 10.21	L3x3x1/4	14.58	6.94	92.1	0.9394	12.68	40.86	0.310 [1]
T12	10.21 - 0	L3x3x1/4	14.99	7.15	94.8	0.9394	14.47	40.86	0.354 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	121 - 110	L2x2x3/16	6.25	5.59	113.5	0.4308	0.16	18.74	0.008 [1]
T2	110 - 100.42	L2x2x3/16	6.25	5.59	113.5	0.4308	0.52	18.74	0.028 [1]
T3	100.42 - 90.42	L2x2x3/16	6.25	5.59	113.5	0.4308	0.68	18.74	0.036 [1]
T4	90.42 - 80.42	L2x2x3/16	6.51	5.86	118.6	0.4308	0.95	18.74	0.051 [1]
T5	80.42 - 70.42	L2x2x3/16	7.07	6.41	129.4	0.4308	1.23	18.74	0.066 [1]
T6	70.42 - 60.42	L2x2x3/16	7.62	6.88	138.5	0.4308	1.59	18.74	0.085 [1]
T7	60.42 - 50.42	L2x2x3/16	8.18	7.44	149.3	0.4308	1.88	18.74	0.100 [1]
T8	50.42 - 40.42	L2x2x3/16	8.73	7.99	160.1	0.4308	2.18	18.74	0.116 [1]
T9	40.42 - 30.42	L2x2x3/16	9.28	8.54	170.8	0.4308	2.47	18.74	0.132 [1]
T10	30.42 - 20.42	L2x2x3/16	9.84	9.10	181.6	0.4308	2.77	18.74	0.148 [1]
T11	20.42 - 10.21	L2x2x3/16	10.40	9.66	192.5	0.4308	3.06	18.74	0.163 [1]
T12	10.21 - 0	L2x2x1/4	10.96	10.22	206.1	0.5629	3.31	24.49	0.135 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	121 - 110	2L2x2x3/16x1/2	6.25	5.83	113.4	1.4297	0.46	46.32	0.010 [1]
T2	110 - 100.42	2L2x2x3/16x1/2	6.25	5.83	113.4	1.4297	2.05	46.32	0.044 [1]
T3	100.42 - 90.42	2L2x2x3/16x1/2	6.25	5.83	113.4	1.4297	3.88	46.32	0.084 [1]
T4	90.42 - 80.42	2L2x2x3/16x1/2	6.25	5.83	113.4	1.4297	5.09	46.32	0.110 [1]
T5	80.42 - 70.42	2L2x2x3/16x1/2	6.80	6.39	124.1	1.4297	8.76	46.32	0.189 [1]
T6	70.42 - 60.42	2L2x2x3/16x3/4	7.36	6.86	133.3	1.4300	7.92	46.33	0.171 [1]
T7	60.42 - 50.42	2L2 1/2x2 1/2x3/16x3/4	7.91	7.41	114.3	1.8000	6.90	58.32	0.118 [1]
T8	50.42 - 40.42	L3x3x1/4	8.46	7.96	102.7	1.4400	7.63	46.66	0.163 [1]
T9	40.42 - 30.42	L3x3x1/4	9.01	8.51	109.9	1.4400	8.09	46.66	0.173 [1]
T10	30.42 - 20.42	L3x3x1/4	9.57	9.07	117.0	1.4400	8.60	46.66	0.184 [1]
T11	20.42 - 10.21	2L2x2x3/16x3/4	10.12	9.62	187.1	1.4300	8.87	46.33	0.192 [1]
T12	10.21 - 0	2L2x2x3/16x3/4	10.69	10.19	198.1	1.4300	10.96	46.33	0.237 [1]

[1] P_u / ϕP_n controls

Section Capacity Table

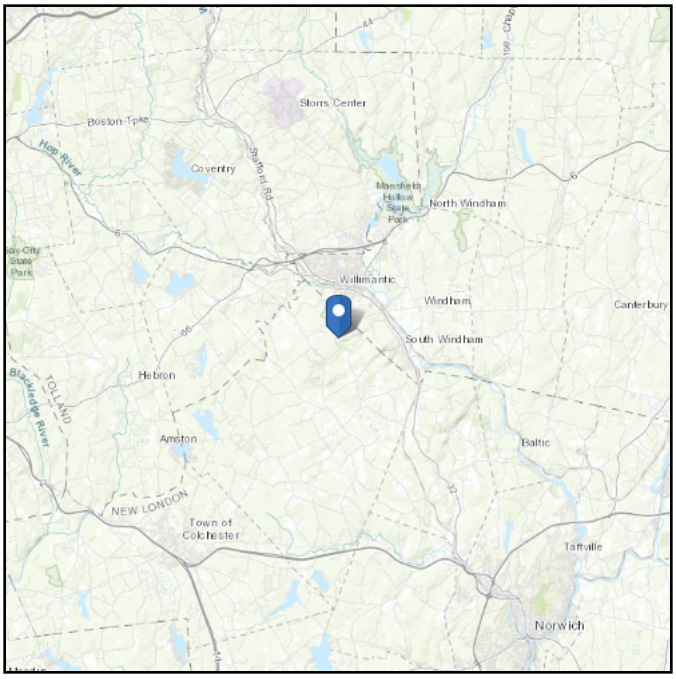
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	121 - 110	Leg	L5x5x1/2	1	-10.58	190.74	5.5	Pass
T2	110 - 100.42	Leg	L5x5x1/2	22	-25.09	202.04	12.4	Pass
T3	100.42 - 90.42	Leg	L5x5x1/2	42	-45.09	198.86	22.7	Pass
T4	90.42 - 80.42	Leg	L5x5x1/2	62	-63.42	195.45	32.4	Pass
T5	80.42 - 70.42	Leg	L5x5x1/2	82	-82.07	195.72	41.9	Pass
T6	70.42 - 60.42	Leg	L6x6x3/4	102	-106.00	369.88	28.7	Pass
T7	60.42 - 50.42	Leg	L6x6x3/4	122	-125.09	370.12	33.8	Pass
T8	50.42 - 40.42	Leg	L6x6x3/4	142	-145.01	370.34	39.2	Pass
T9	40.42 - 30.42	Leg	L6x6x3/4	164	155.68	347.47	44.8	Pass
T10	30.42 - 20.42	Leg	L6x6x3/4	184	175.61	347.47	50.5	Pass
T11	20.42 - 10.21	Leg	L6x6x3/4	204	195.91	347.47	56.4	Pass
T12	10.21 - 0	Leg	L6x6x3/4	224	214.10	347.47	61.6	Pass
T1	121 - 110	Diagonal	L2 1/2x2 1/2x3/16	9	-6.55	14.38	45.6	Pass
T2	110 - 100.42	Diagonal	L3x3x1/4	31	-9.09	32.78	27.7	Pass
T3	100.42 - 90.42	Diagonal	L3x3x3/16	54	-10.70	23.95	44.7	Pass
T4	90.42 - 80.42	Diagonal	L3x3x1/4	74	-12.06	29.97	40.3	Pass
T5	80.42 - 70.42	Diagonal	2L2x2x3/16x1/2	94	-13.13	30.83	42.6	Pass
T6	70.42 - 60.42	Diagonal	L3x3x1/4	114	-10.92	28.43	38.4	Pass
T7	60.42 - 50.42	Diagonal	L3x3x1/4	134	-11.67	27.32	42.7	Pass
T8	50.42 - 40.42	Diagonal	L3x3x1/4	154	-11.90	26.16	45.5	Pass
T9	40.42 - 30.42	Diagonal	L3x3x1/4	174	-12.24	24.98	49.0	Pass
T10	30.42 - 20.42	Diagonal	L3x3x1/4	194	-12.48	23.84	52.4	Pass
T11	20.42 - 10.21	Diagonal	L3x3x1/4	214	-12.58	22.36	56.3	Pass
T12	10.21 - 0	Diagonal	L3x3x1/4	234	-14.51	21.33	68.0	Pass
T1	121 - 110	Secondary Horizontal	L2x2x3/16	20	-0.16	15.15	1.0	Pass
T2	110 - 100.42	Secondary Horizontal	L2x2x3/16	39	-0.52	15.15	3.4	Pass
T3	100.42 - 90.42	Secondary Horizontal	L2x2x3/16	57	-0.68	15.15	4.5	Pass
T4	90.42 - 80.42	Secondary Horizontal	L2x2x3/16	77	-0.95	14.67	6.5	Pass
T5	80.42 - 70.42	Secondary Horizontal	L2x2x3/16	97	-1.23	13.15	9.4	Pass
T6	70.42 - 60.42	Secondary Horizontal	L2x2x3/16	117	-1.59	11.42	13.9	Pass
T7	60.42 - 50.42	Secondary Horizontal	L2x2x3/16	137	-1.88	9.78	19.2	Pass
T8	50.42 - 40.42	Secondary Horizontal	L2x2x3/16	157	-2.18	8.47	25.7	Pass
T9	40.42 - 30.42	Secondary Horizontal	L2x2x3/16	177	-2.47	7.41	33.3	Pass
T10	30.42 - 20.42	Secondary Horizontal	L2x2x3/16	197	-2.77	6.54	42.3	Pass
T11	20.42 - 10.21	Secondary Horizontal	L2x2x3/16	217	-3.06	5.80	52.7	Pass
T12	10.21 - 0	Secondary Horizontal	L2x2x1/4	237	-3.31	6.62	50.0	Pass
T1	121 - 110	Top Girt	2L2x2x3/16x1/2	5	0.46	46.32	1.0	Pass
T2	110 - 100.42	Top Girt	2L2x2x3/16x1/2	27	-1.45	30.66	4.7	Pass
T3	100.42 - 90.42	Top Girt	2L2x2x3/16x1/2	47	-3.03	30.66	9.9	Pass
T4	90.42 - 80.42	Top Girt	2L2x2x3/16x1/2	68	-4.30	30.66	14.0	Pass
T5	80.42 - 70.42	Top Girt	2L2x2x3/16x1/2	88	-7.58	26.53	28.6	Pass
T6	70.42 - 60.42	Top Girt	2L2x2x3/16x3/4	108	-6.92	23.02	30.0	Pass
T7	60.42 - 50.42	Top Girt	2L2 1/2x2 1/2x3/16x3/4	128	-6.07	38.19	15.9	Pass
T8	50.42 - 40.42	Top Girt	L3x3x1/4	148	-6.71	15.82	42.4	Pass
T9	40.42 - 30.42	Top Girt	L3x3x1/4	168	-7.13	13.84	51.5	Pass
T10	30.42 - 20.42	Top Girt	L3x3x1/4	188	-7.59	12.20	62.2	Pass
T11	20.42 - 10.21	Top Girt	2L2x2x3/16x3/4	208	-7.84	11.69	67.1	Pass
T12	10.21 - 0	Top Girt	2L2x2x3/16x3/4	228	-9.67	10.43	92.7	Pass
							Summary	
						Leg (T12)	61.6	Pass
						Diagonal (T12)	68.0	Pass
						Secondary Horizontal (T11)	52.7	Pass
						Top Girt (T12)	92.7	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
						Bolt Checks	70.5	Pass
						RATING =	**92.7**	**Pass**

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Elevation:**	653.43 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.682933
Soil Class:	D - Default (see Section 11.4.3)	**Longitude:**	-72.216192



Wind

Results:

Wind Speed:	121 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	93 Vmph
100-year MRI	99 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:	Mon Sep 20 2021

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

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

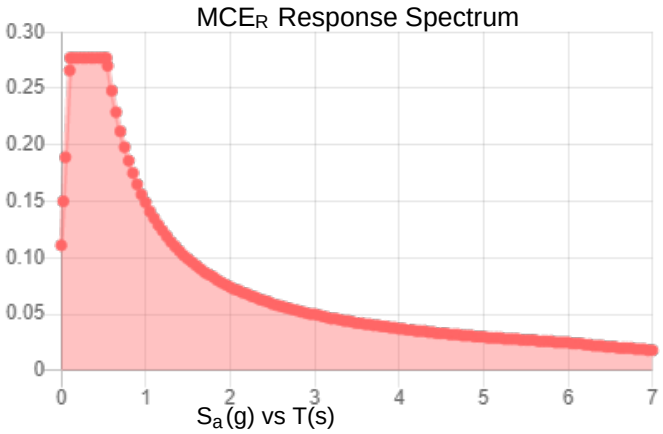
Seismic

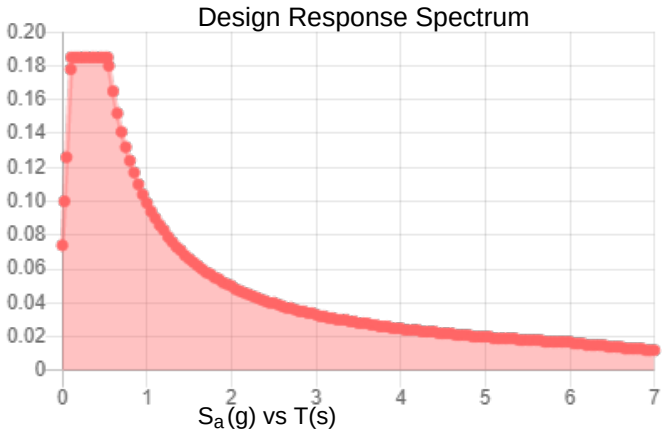
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.173	S_{DS} :	0.185
S_1 :	0.062	S_{D1} :	0.099
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.087
S_{MS} :	0.277	PGA_M :	0.139
S_{M1} :	0.149	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Mon Sep 20 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 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:	Mon Sep 20 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.

Self Support Anchor Rod Capacity

Site Info	
Site #	CTL01065 (FA #101374
Site Name	LEBANON
Job #	63925-10137478-01-S1

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	Yes

Applied Loads		
	Comp.	Uplift
Axial Force (kips)	239.78	232.71
Shear Force (kips)	23.40	23.37

Considered Eccentricity	
Leg Mod Eccentricity (in)	0.000
Anchor Rod N.A Shift (in)	0.000
Total Eccentricity (in)	0.000

**Anchor Rod Eccentricity Applied*

Connection Properties

Anchor Rod Data

(4) 2" ø bolts (A36 N; Fy=36 ksi, Fu=58 ksi)

l_{ar} (in): 0

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_c = 59.95	ϕPn_c = 101.79	**Stress Rating**
Vu = 5.85	ϕVn = 45.8	**60.5%**
Mu = n/a	ϕMn = n/a	**Pass**

Site Name: LEBANON
Site Number: CTL01065
Tower Type: SST w/4 Legs
Design Loads (Factored) - Analysis per TIA-222-H Standards

Monolithic Mat & Pier Foundation Analysis

Foundation Analysis Parameters		
Design / Analysis / Mapping:	Mapping	-
Compression/Leg:	239.8	k
Uplift/Leg:	232.7	k
Total Shear:	48.3	k
Moment:	3,739.9	k-ft
Tower + Appurtenance Weight:	34.9	k
Depth to Base of Foundation (l + t - h):	5.5	ft
Diameter of Pier (d):	3	ft
Length of Pier (l):	3.5	ft
Height of Pier above Ground (h):	1	ft
Width of Pad (W):	23	ft
Length of Pad (L):	23	ft
Thickness of Pad (t):	3	ft
Tower Leg Center to Center:	11.25	ft
Number of Tower Legs:	4	-
Tower Center from Mat Center:	0	ft
Depth Below Ground Surface to Water Table:	99	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil Above Water Table:	120	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	57.6	pcf
Friction Angle of Uplift:	15	°
Coefficient of Shear Friction:	0.7	-
Ultimate Compressive Bearing Pressure:	50,000	psf
Ultimate Passive Pressure on Pad Face:	0	psf
$f_{Soil\ and\ Concrete\ Weight}$:	0.9	-
f_{Soil}:	0.75	-

Overturning Moment Usage		
Design OTM:	4054.1	k-ft
OTM Resistance:	4640.3	k-ft
Design OTM / OTM Resistance:	87%	Pass

Soil Bearing Pressure Usage		
Net Bearing Pressure:	12412	psf
Factored Nominal Bearing Pressure:	37500	psf
Factored Nominal (Net) Bearing Pressure:	33%	Pass
Load Direction Controling Design Bearing Pressure:	*Diagonal to Pad Edge*	

Sliding Factor of Safety		
Ultimate Friction Resistance:	302.5	k
Ultimate Passive Pressure Resistance:	0.0	k
Total Factored Sliding Resistance:	226.9	k
Sliding Design / Sliding Resistance:	21%	Pass

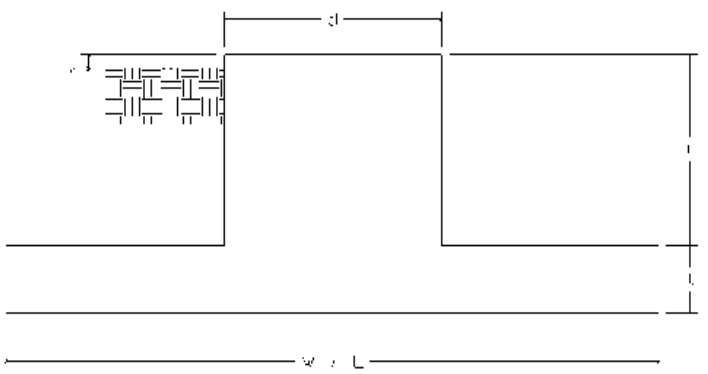


Exhibit F

Mount Analysis

CENTERLINE COMMUNICATIONS
750 West Center Street, Suite 301
West Bridgewater, MA 02379
781.713.4725

Mount Analysis Report

Site Address	244 Gates Rd Lebanon, CT 06249
Site Name	CTNL125A
Site ID	CTNL125A
Project Name	Coverage Strategy
Design Codes	2015 International Building Code ASCE 7-10 TIA-222-G Standards 2018 CT State Building Code

	Stress Ratio	Overall Result
Proposed Mount	**55%**	**PASS**

Client:

T - Mobile

NORTHEAST, LLC
35 Griffin Rd S
Bloomfield, CT 06002

Date: 9/28/2021

Scope of Work:

Centerline Communications was authorized by T-Mobile Northeast LLC to perform an analysis of the proposed antenna mounts to determine their capacity to support the proposed T-Mobile equipment listed in this report. These mounts were analyzed using RISA 3D v17.0.4.

Final Appurtenances Configuration:

Elevation (ft)	Position[1]	Azimuth (degrees)	Quantity	Appurtenance	Sector
109	**MP1**	**30**	**1**	**APX16DWV-16DWV-S-E-A20 Antenna**	Sector 1
109	**MP2**	**30**	**1**	**APXVAALL24_43-U-NA20 Antenna**	
109	**MP3**	**30**	**1**	**AIR6449 B41 Antenna**	
109	**MP1**	**30**	**1**	**4460 B25+B66 RRH**	
109	**MP2**	**30**	**1**	**4480 B71+B85 RRH**	
109	**-**	**160**	**1**	**APX16DWV-16DWV-S-E-A20 Antenna**	Sector 2
109	**-**	**160**	**1**	**APXVAALL24_43-U-NA20 Antenna**	
109	**-**	**160**	**1**	**AIR6449 B41 Antenna**	
109	**-**	**160**	**1**	**4460 B25+B66 RRH**	
109	**-**	**160**	**1**	**4480 B71+B85 RRH**	
109	**-**	**270**	**1**	**APX16DWV-16DWV-S-E-A20 Antenna**	Sector 3
109	**-**	**270**	**1**	**APXVAALL24_43-U-NA20 Antenna**	
109	**-**	**270**	**1**	**AIR6449 B41 Antenna**	
109	**-**	**270**	**1**	**4460 B25+B66 RRH**	
109	**-**	**270**	**1**	**4480 B71+B85 RRH**	

Notes:

1. MP represent Mount Pipe.
2. Existing Appurtenance
3. **Proposed Appurtenance**

Design Criteria:

Design Codes:

2015 International Building Code
ASCE 7-10
TIA-222-G Standards
2018 CT State Building Code

Ultimate Wind Speed	130 mph
Nominal Wind Speed	101 mph
Wind Speed with Ice	50 mph
Ice Thickness	0.75 in.
Exposure Category	B
Topographic Category	1
Structure Class	II
Site Soil Class (Assumed)	D-Stiff Soil
Seismic Design Category	B
Spectral Response Acceleration Parameter at a Short Periods, S_S	0.173 g
Spectral Response Acceleration Parameter at a Period of 1 Second, S_1	0.062 g
Short Period Site Coefficient, F_a	1.6
Long Period Site Coefficient, F_v	2.4

***Refer to calculations for additional design criteria.**

Conclusion:

Based on the results of the analysis, we have determined that the proposed T-Mobile mounts *are adequate* to support the proposed T-Mobile equipment loading.

- Install (3) Site Pro 1 VFA12-HD mount.

	Stress Ratio	Overall Result
Proposed Mount	**55%**	**PASS**

Reference Documents:

- T-Mobile RFDS CTNL125A_Coverage Strategy_1_draft, dated 07/12/2021
- Construction Drawings by Centerline Communications, LLC, dated 07/22/2021
- Structural Analysis by Fullerton Engineering Consultants, Inc, dated 12/07/2017

Assumptions and Limitations:

- The calculations performed by Centerline Communications are limited to the structural members in these calculations only.
- Structural calculations in this report do not check the adequacy of the supporting structure, other mounts, or coax mounting attachments.
- The calculation assumes all structural members to be in good condition i.e. no damage, rust, or other defects.

Site Photos:

Overall Tower

Design Calculations

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750 West Center Street, Suite 301
West Bridgewater, MA 02379
781.713.4725

Site Details	
Site Name	CTNL125A
Carrier	T-Mobile
City, State	Lebanon, CT
Project	Coverage Strategy

Mount Details		
Mount Type	Sector Frame	
Mount Height, z	109	ft
Number of Sectors	3	
Tower Type	SST	
Tower Height, h	121	ft

Topographic Factors		
Topographic Category	1	
Feature	Flat	
Crest Height, H	N/A	ft
Distance from Crest, x	N/A	ft
Slope (H/L)	N/A	
Topographic Factor, K_{zt}	1.00	

Seismic Factors		
Importance Factor, I_E	1	
Short Period Spectral Acceleration, S_s	0.173	g
1 Second Period Spectral Acceleration, S_1	0.062	g
Long-Period Transition Period, T_L	6	
Design Category	B	
Short Period Site Coefficient, F_a	1.60	
Long-Period Site Coefficient, F_v	2.4	

Site Parameters		
Ultimate Wind Speed, V_{ULT}	130	mph
Nominal Wind Speed, V	101	mph
Wind Speed with Ice, V_i	50	mph
Design Ice Thickness, t_i	0.75	in
Structural Class	II	
Exposure Category	B	
Site Soil Class	D-Stiff Soil (Assumed)	

Code	
Building Code	2015 IBC
TIA Code	TIA-222-G
ASCE Code	7-10

Site Constants		
Importance Factor, I (Wind no Ice)	1.00	
Importance Factor, I (Ice Thickness)	1.00	
Importance Factor, I (wind with Ice)	1.00	
Wind Direction Prob. Factor, K_d	0.95	
Velocity Pressure Coefficient, K_z	1.01	
Gust Effect Factor, G_h	1.00	
Design Ice Thickness, t_{iz}	1.69	in
Velocity Pressure, q_z	25.13	psf
Velocity Pressure with Ice, q_{zi}	6.16	psf
Shielding Factor, K_a	1.00	
Flat Velocity Pressure (Ca =2.0)	50.26	psf
Round Velocity Pressure (Ca = 1.2)	30.15	psf
Round Velocity Pressure with Ice (Ca = 1.2)	7.39	psf
Engineer Initials	**AP**	

CENTERLINE COMMUNICATIONS
750 West Center Street, Suite 301
West Bridgewater, MA 02379
781.713.4725

Members Forces							
Member Label	**Shape**	**Type**	**w, lbs/ft**	**q_z, psf**	**w_i, lbs/ft**	**q_{zi}, psf**	**V_s, lbs/ft**
Face Horizontal	PIPE_2.5	Beam	5.48	30.15	9.43	7.39	0.67
Standoff	PIPE_2.0	Beam	3.47	30.15	8.40	7.39	0.43
Bracing (Vert)	0.625" S.R.	Beam	1.04	30.15	4.78	7.39	0.13
Mount Pipe	PIPE_2.0	Beam	3.47	30.15	8.40	7.39	0.43
Conn. Plate	PL0.625x3.5	Beam	7.45	50.26	10.83	7.39	0.92
Pivot Plate	PL0.625x9.25	Beam	19.67	50.26	22.64	7.39	2.42
Connection Plate	PL3 1/2x5/8	Beam	7.45	50.26	9.77	7.39	0.92
Tieback	PIPE_2.0	Beam	3.47	30.15	8.40	7.39	0.43
Bracing (Diag)	SR 3/4	Beam	1.50	30.15	5.04	7.39	0.19

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Sector 1							
		Wind Force				Dimensions	Weights
Appurtenances	Rad. Ht., ft	Front EPA ft^2	Side EPA ft^2	0° Force lbs.	90° Force lbs.	H\W\D, in	Wt.\$Wt._{ice}$, lbs.
APX16DWV-16DWV-S-E-A20 Antenna	109	6.59	2.15	165.50	54.02	55.9\13.3\3.15	40.7\133.39
APXVAALL24_43-U-NA20 Antenna	109	20.24	8.73	508.66	219.45	95.9\24\8.5	153.3\412.64
AIR6449 B41 Antenna	109	5.68	2.49	142.78	62.59	33.1\20.6\8.6	104\149.63
4460 B25+B66 RRH	109	2.14	1.50	53.75	37.63	15.1\17\11.9	108\87.53
4480 B71+B85 RRH	109	2.45	1.27	61.66	31.85	19.5\15.1\7.8	87\78.79

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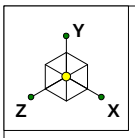
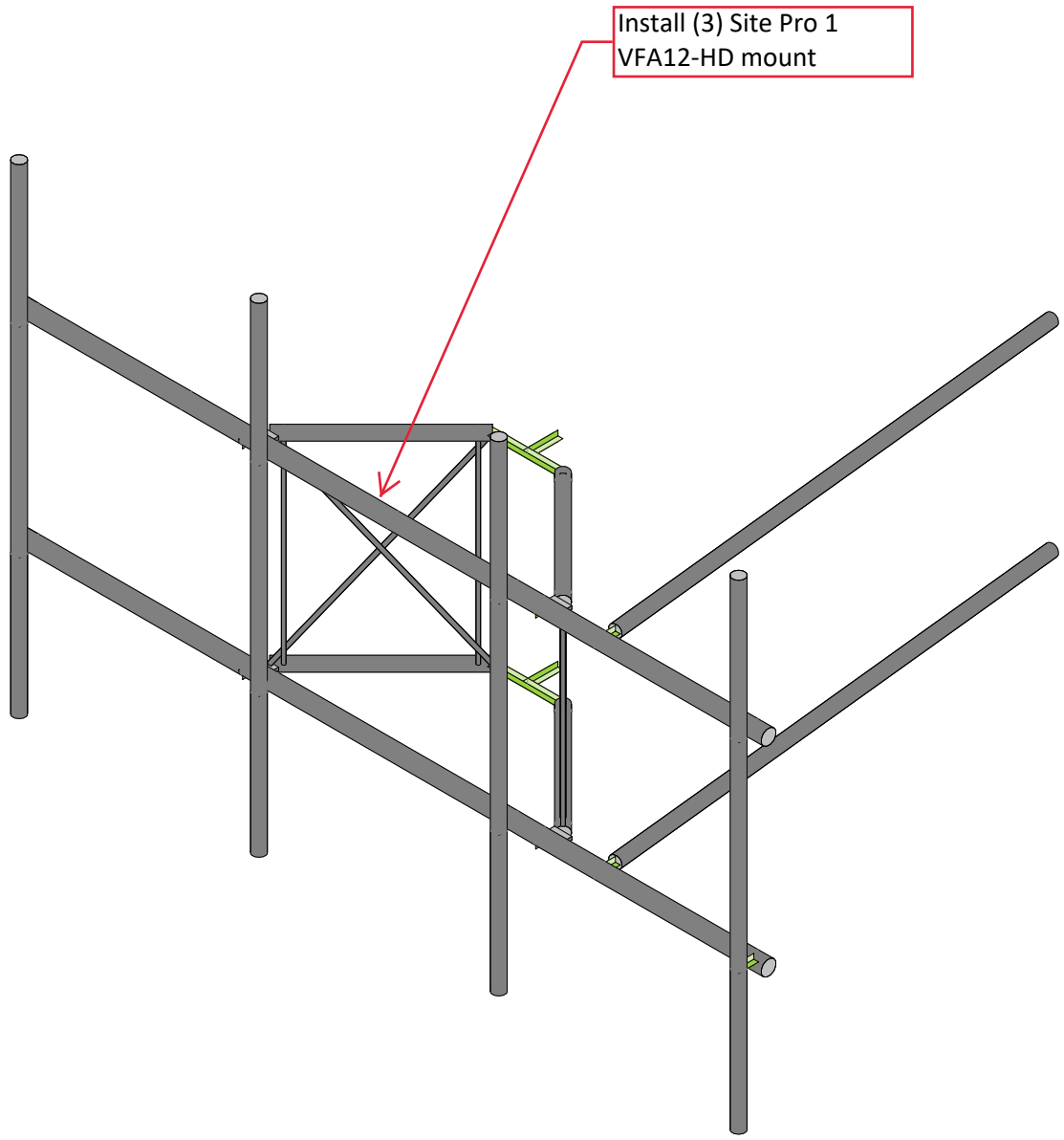
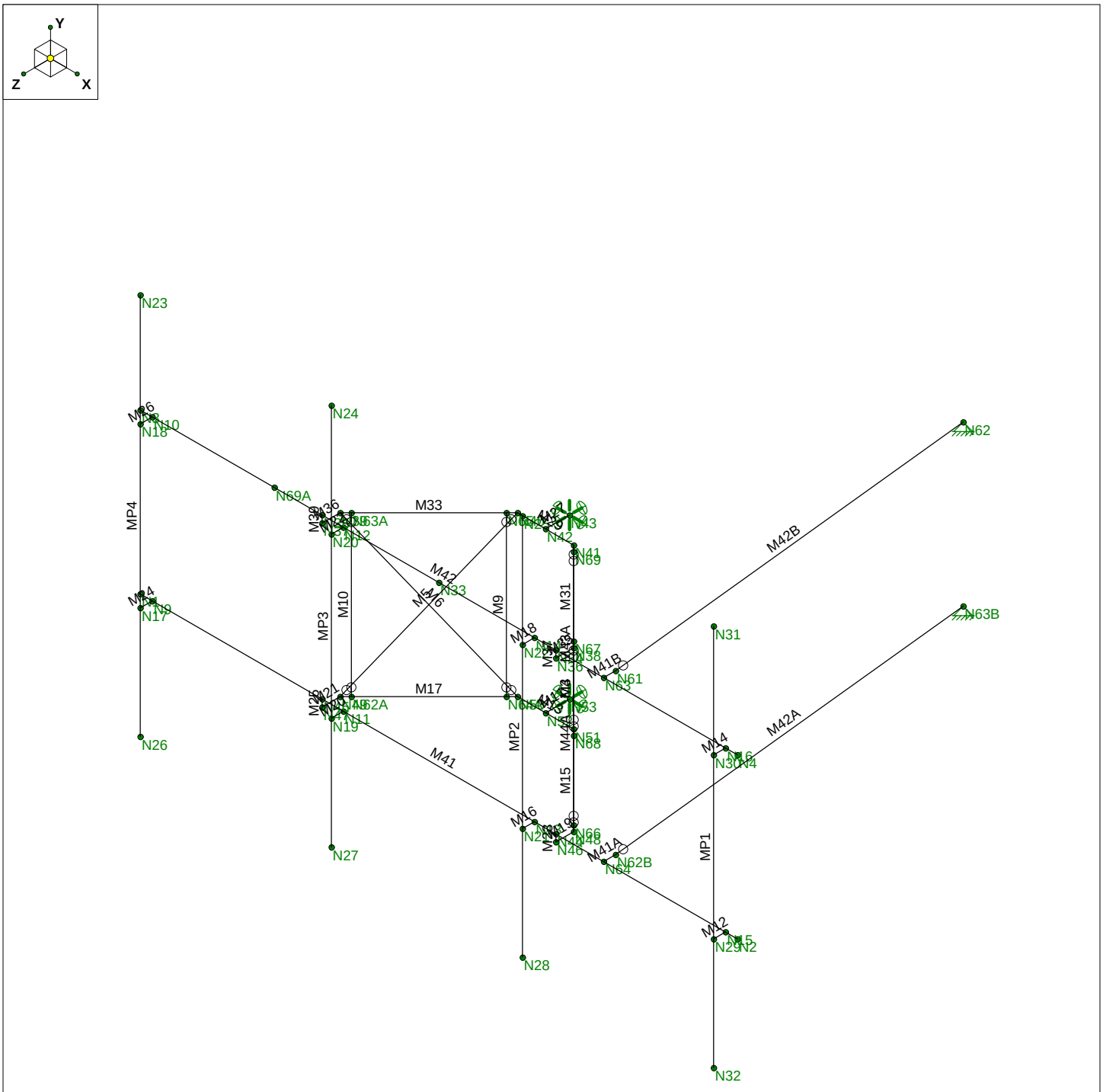
Sector 1 Continue…								
		Wind Force with Ice				Wind Force V = 30 mph		Seismic Force
Appurtenances	Rad. Ht., ft	Front EPA ft^2	Side EPA ft^2	0° Force lbs.	90° Force lbs.	0° Force lbs.	90° Force lbs.	Vs, lbs
APX16DWV-16DWV-S-E-A20 Antenna	109	4.97	2.27	71.15	27.25	14.60	4.77	5.01
APXVAALL24_43-U-NA20 Antenna	109	13.69	6.80	208.94	95.66	44.88	19.36	18.86
AIR6449 B41 Antenna	109	4.25	2.16	61.18	28.65	12.60	5.52	12.79
4460 B25+B66 RRH	109	1.83	1.37	24.45	17.68	4.74	3.32	13.29
4480 B71+B85 RRH	109	2.06	1.24	27.77	15.46	5.44	2.81	10.70

Proposed Mount Results

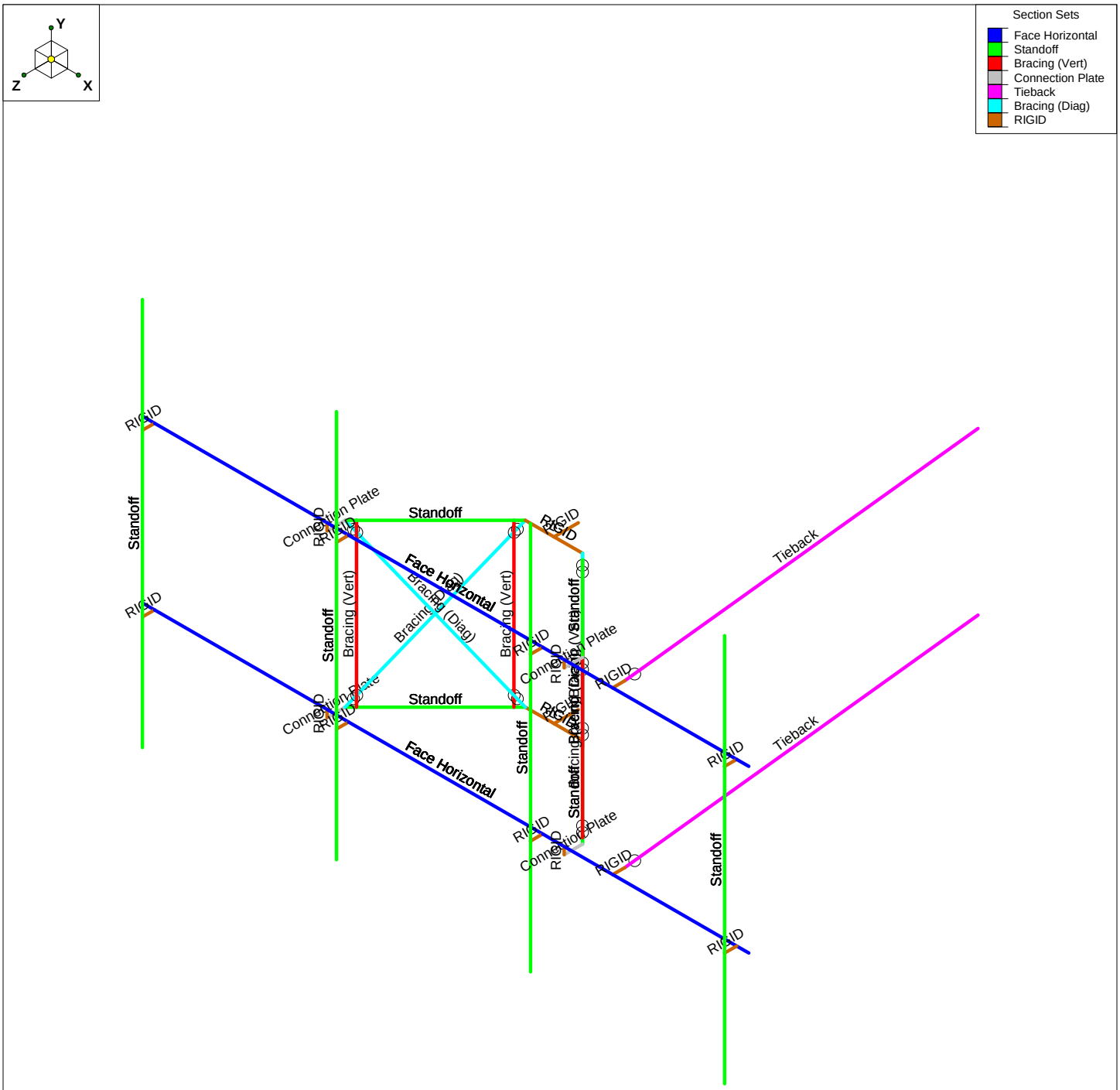




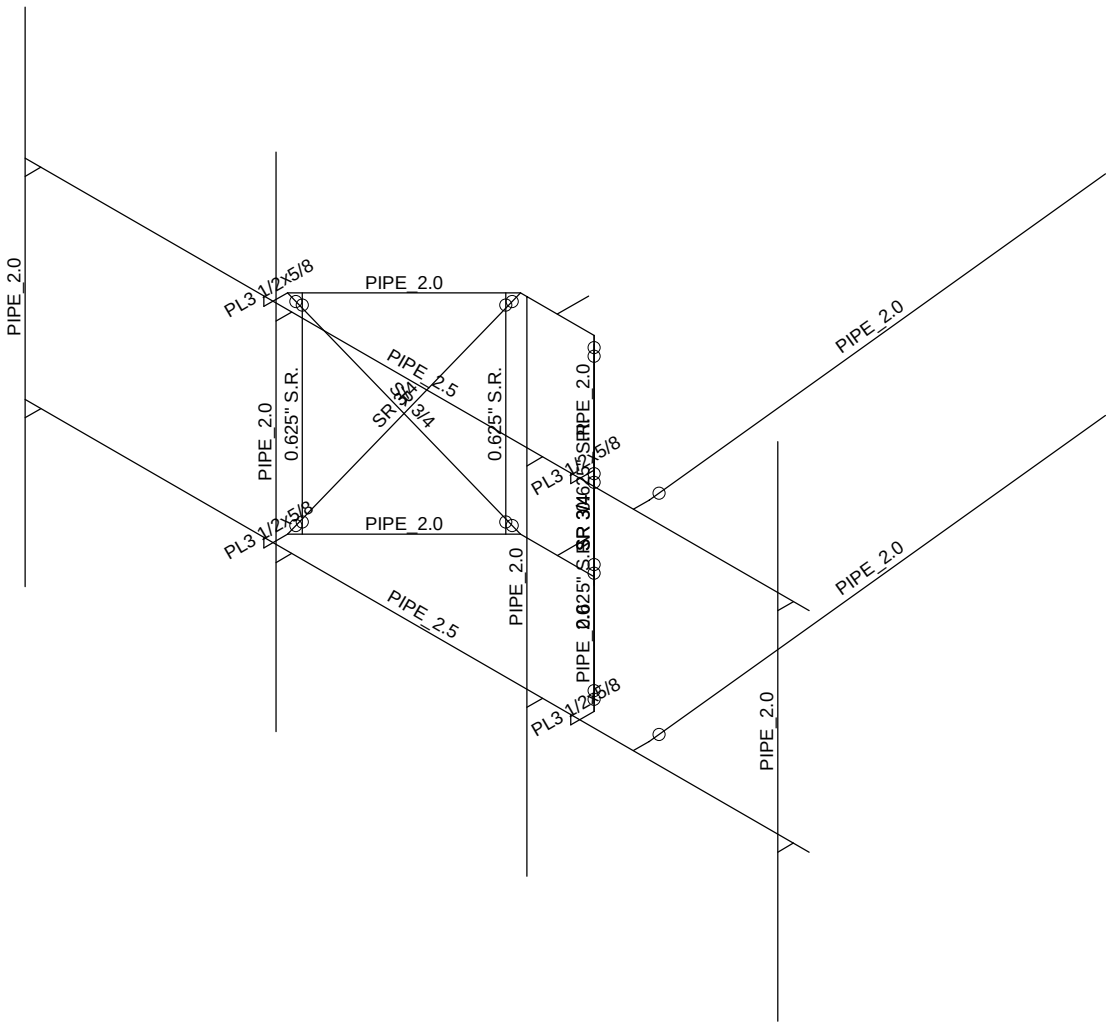
Centerline Communication...	CTNL125A_MA	Rendered
AP		Sept 27, 2021 at 12:01 PM
		CTNL125A_MA.r3d



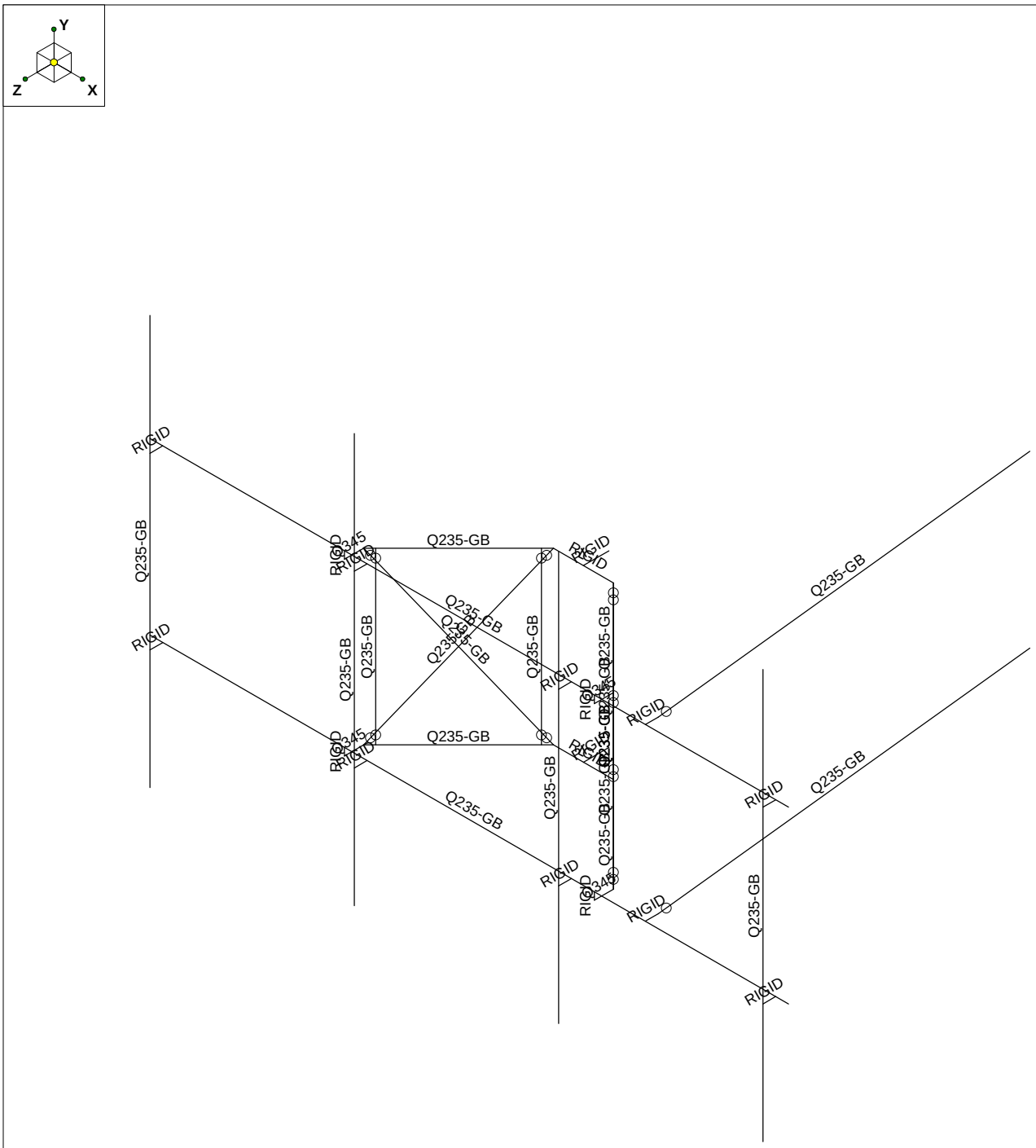
Centerline Communication...	CTNL125A_MA	Wireframe
AP		Sept 27, 2021 at 12:01 PM
		CTNL125A_MA.r3d



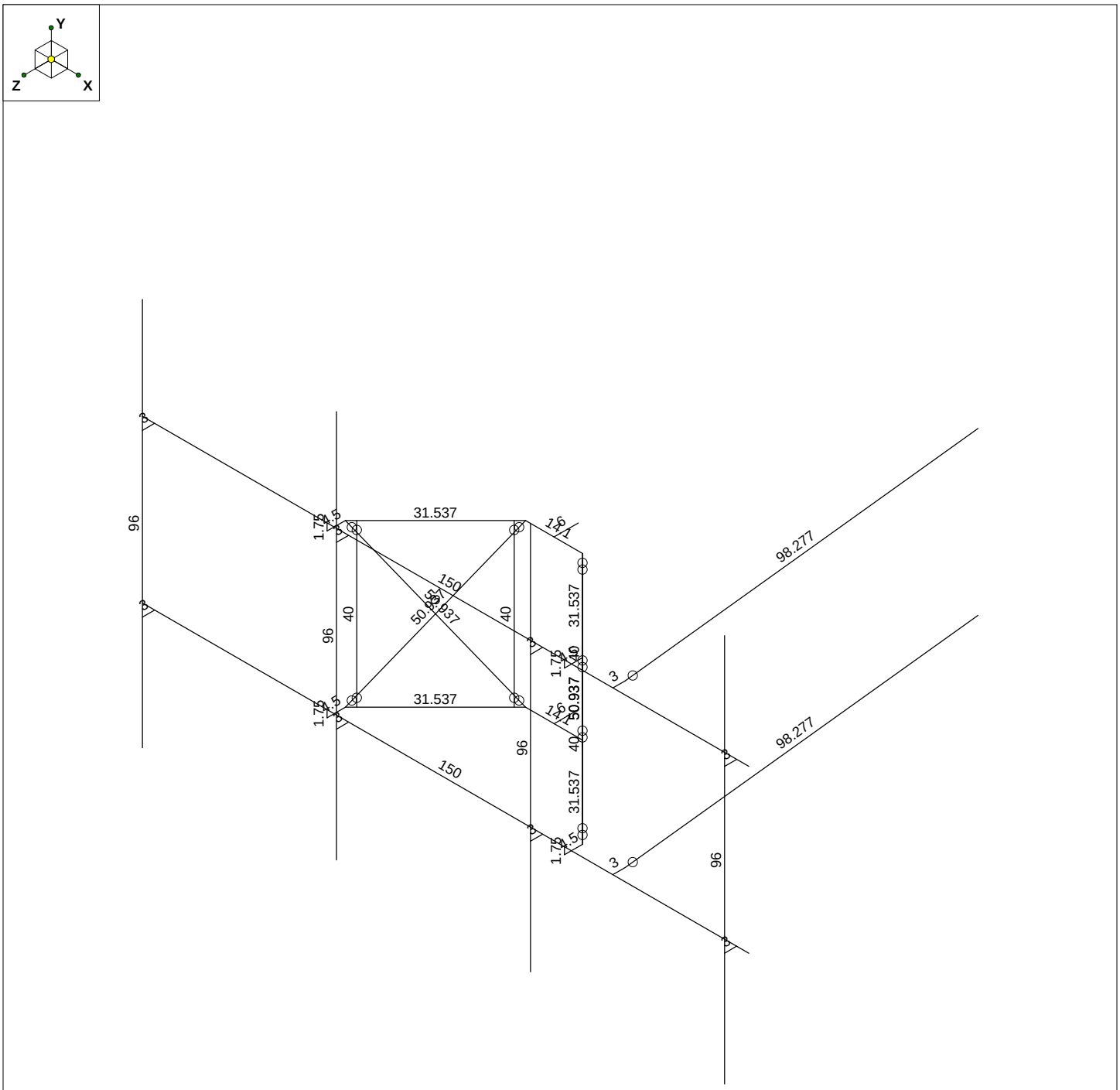
Centerline Communication...		Section Sets
AP	CTNL125A_MA	Sept 27, 2021 at 12:01 PM
		CTNL125A_MA.r3d



Centerline Communication...	CTNL125A_MA	Member Shape
AP		Sept 27, 2021 at 12:02 PM
		CTNL125A_MA.r3d

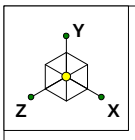


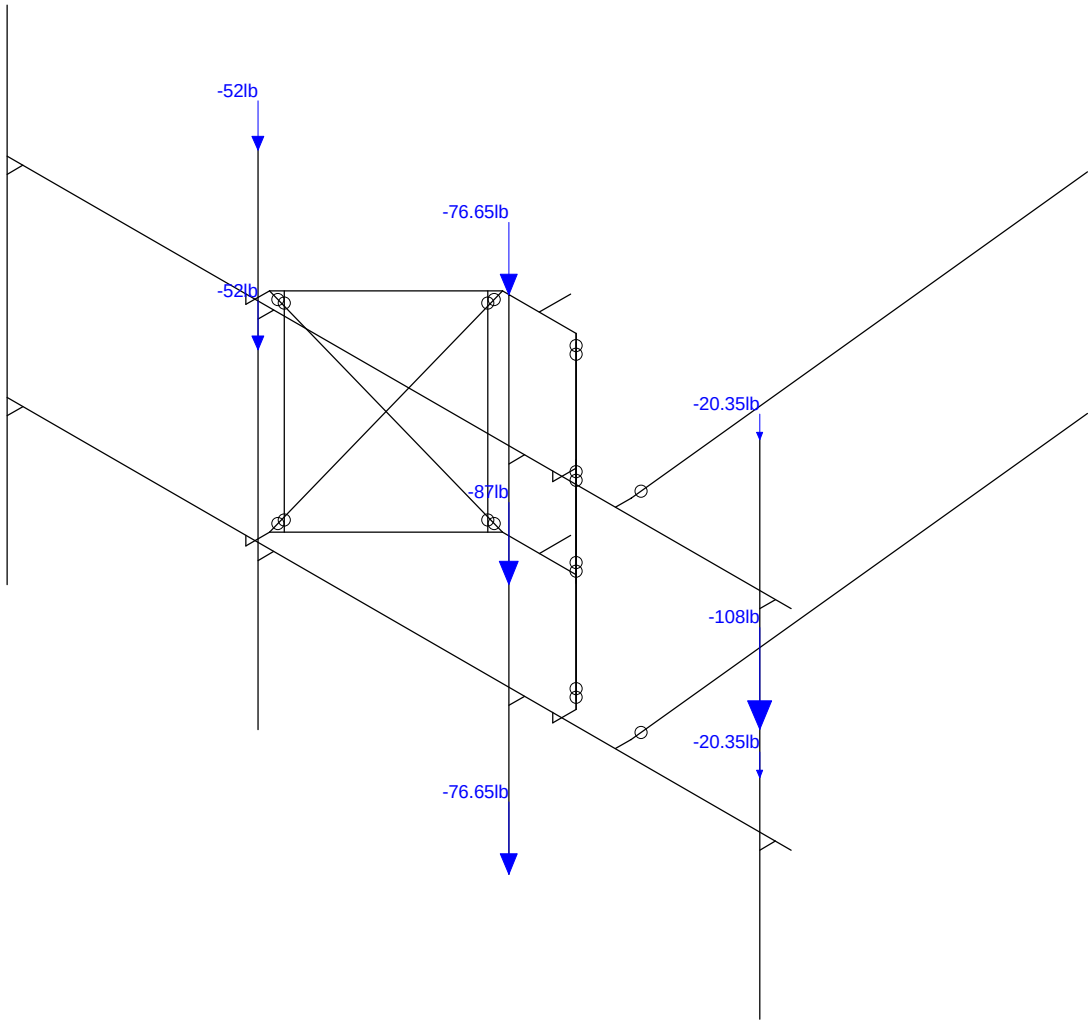
Centerline Communication...	CTNL125A_MA	Material Sets
AP		Sept 27, 2021 at 12:02 PM
		CTNL125A_MA.r3d



Member Length (in) Displayed

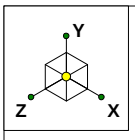
Centerline Communication...	CTNL125A_MA	Member Length
AP		Sept 27, 2021 at 12:02 PM
		CTNL125A_MA.r3d

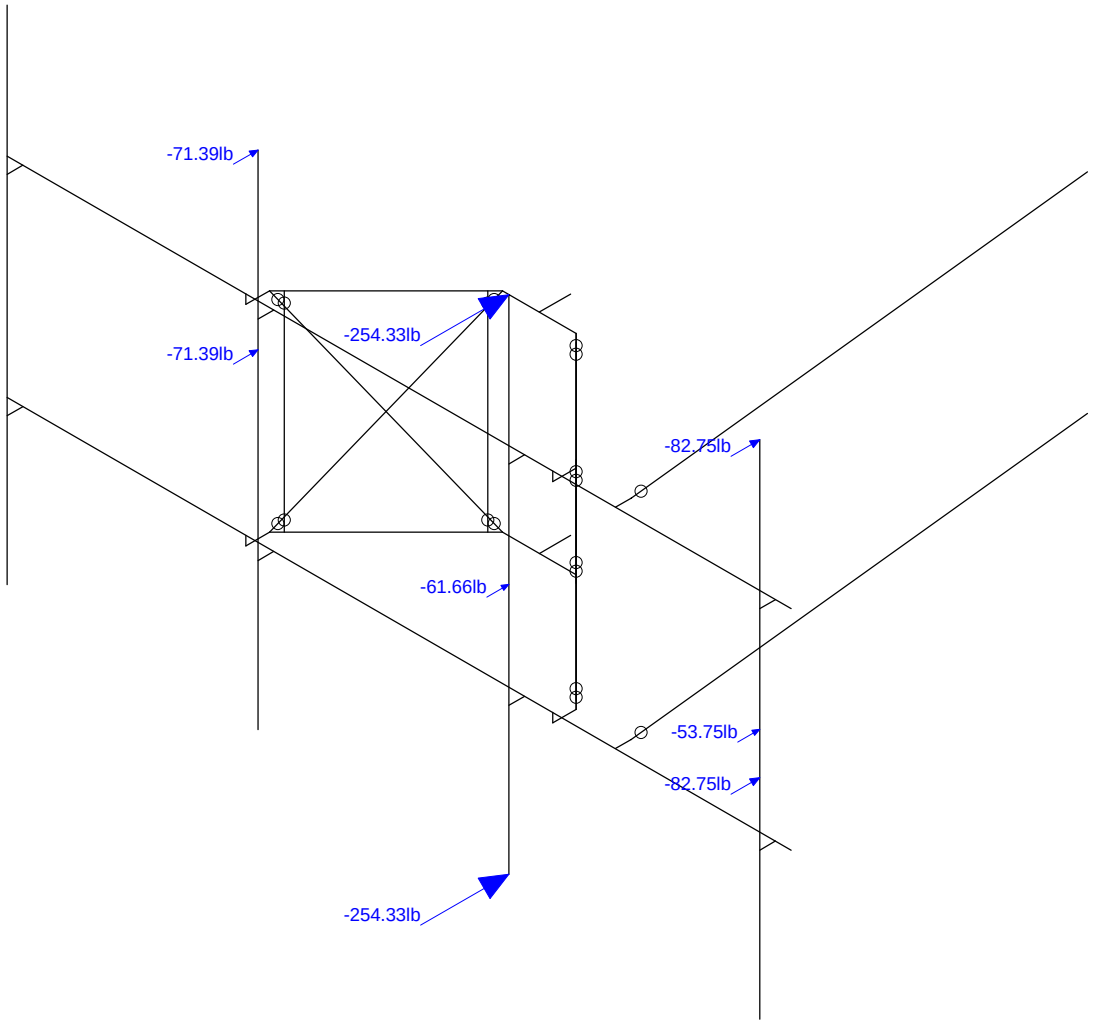




Loads: BLC 1, Dead Load

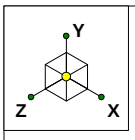
Centerline Communication...	CTNL125A_MA	Dead Load
AP		Sept 27, 2021 at 12:02 PM
		CTNL125A_MA.r3d

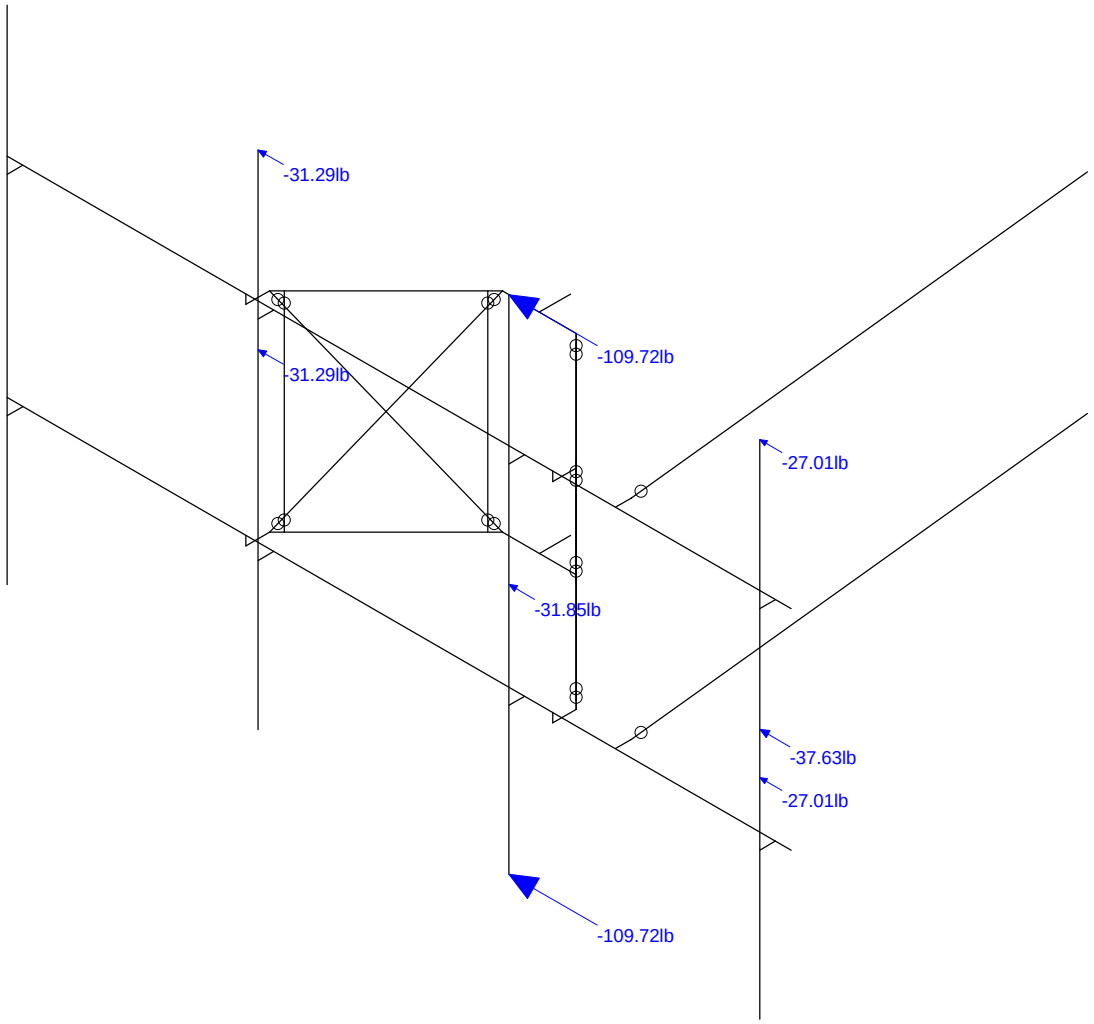




Loads: BLC 2, Wind 0

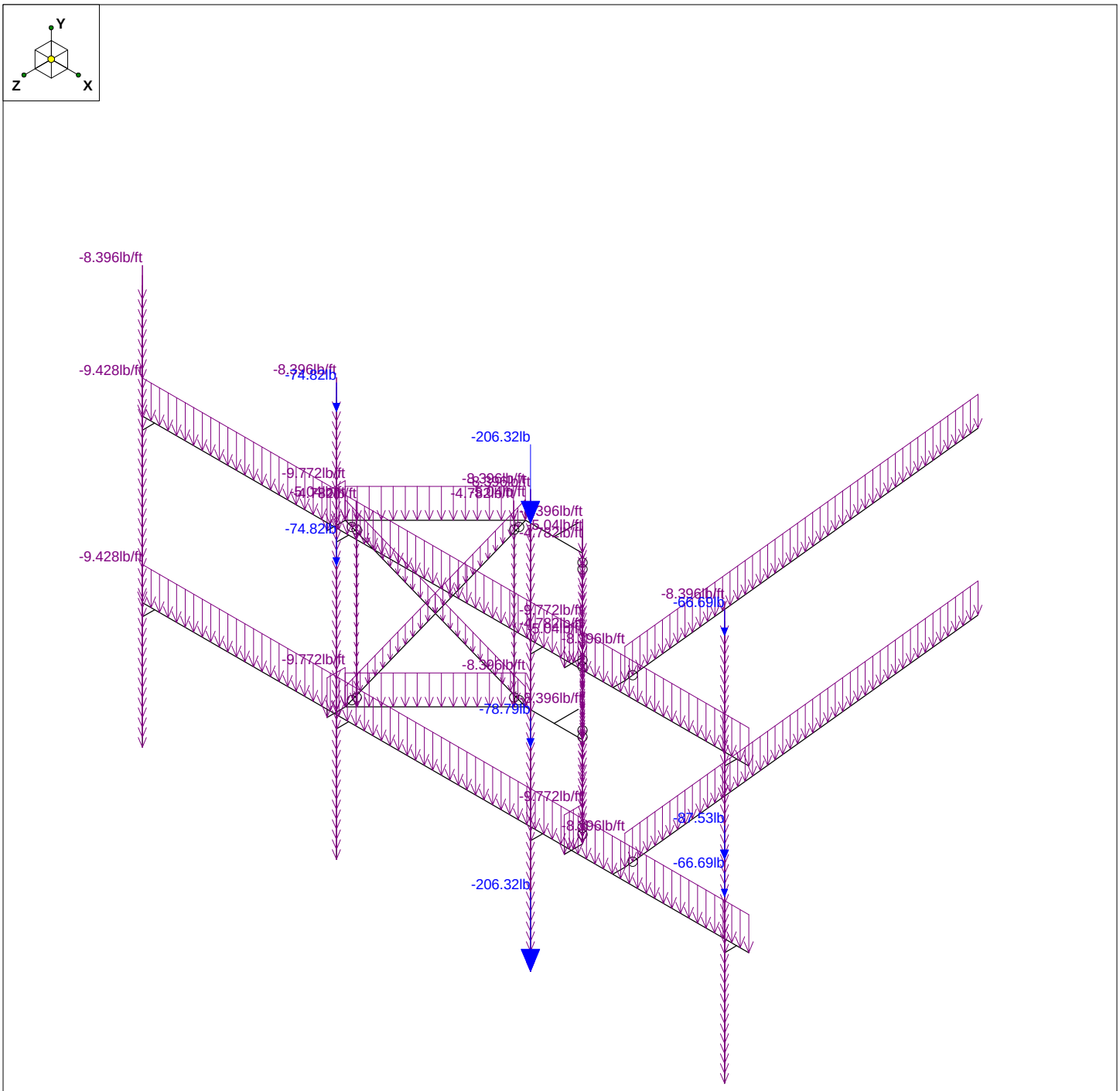
Centerline Communication...	CTNL125A_MA	Wind 0
AP		Sept 27, 2021 at 12:03 PM
		CTNL125A_MA.r3d





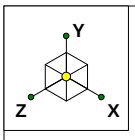
Loads: BLC 5, Wind 90

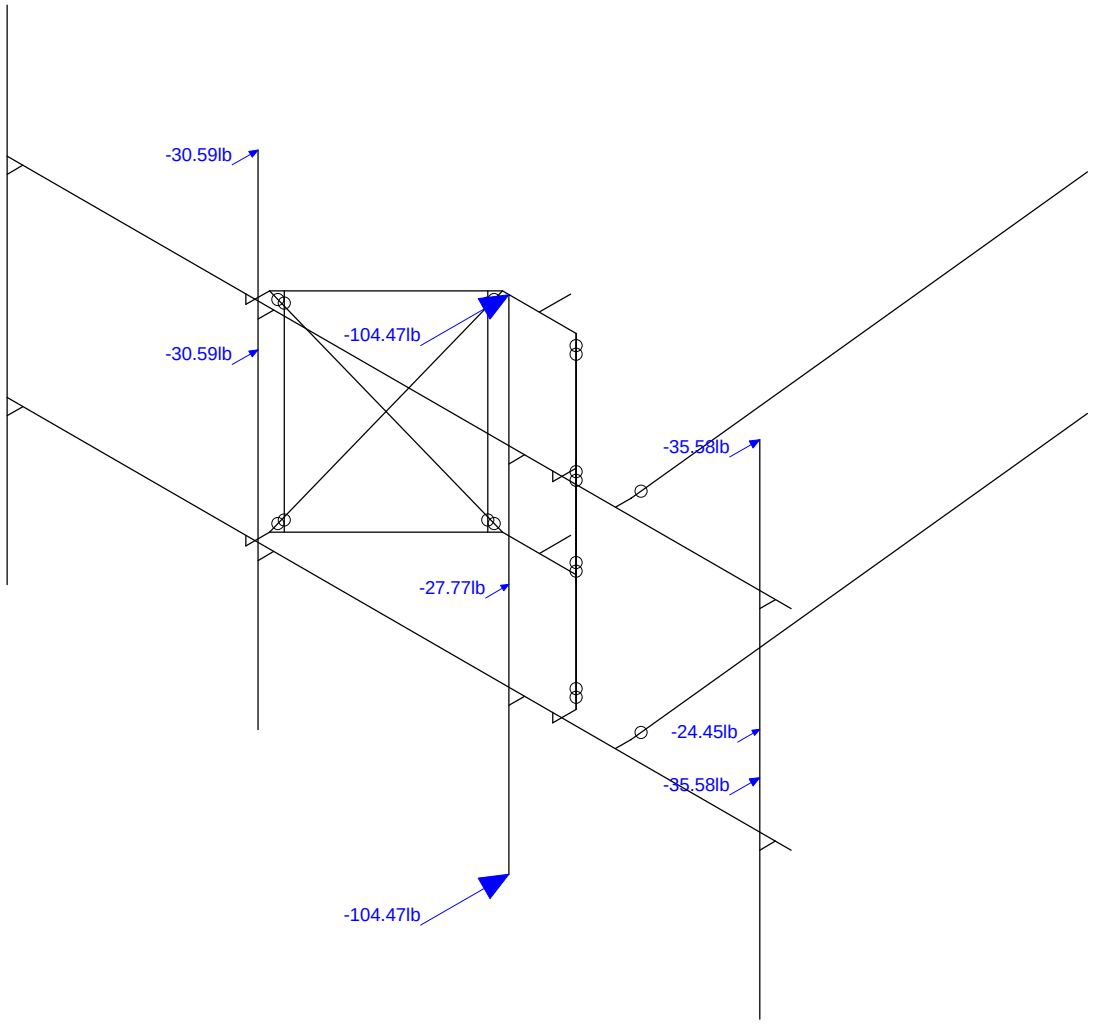
Centerline Communication...	CTNL125A_MA	Wind 90
AP		Sept 27, 2021 at 12:03 PM
		CTNL125A_MA.r3d



Loads: BLC 9, Ice Weight

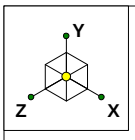
Centerline Communication...	CTNL125A_MA	Ice Weight
AP		Sept 27, 2021 at 12:03 PM
		CTNL125A_MA.r3d

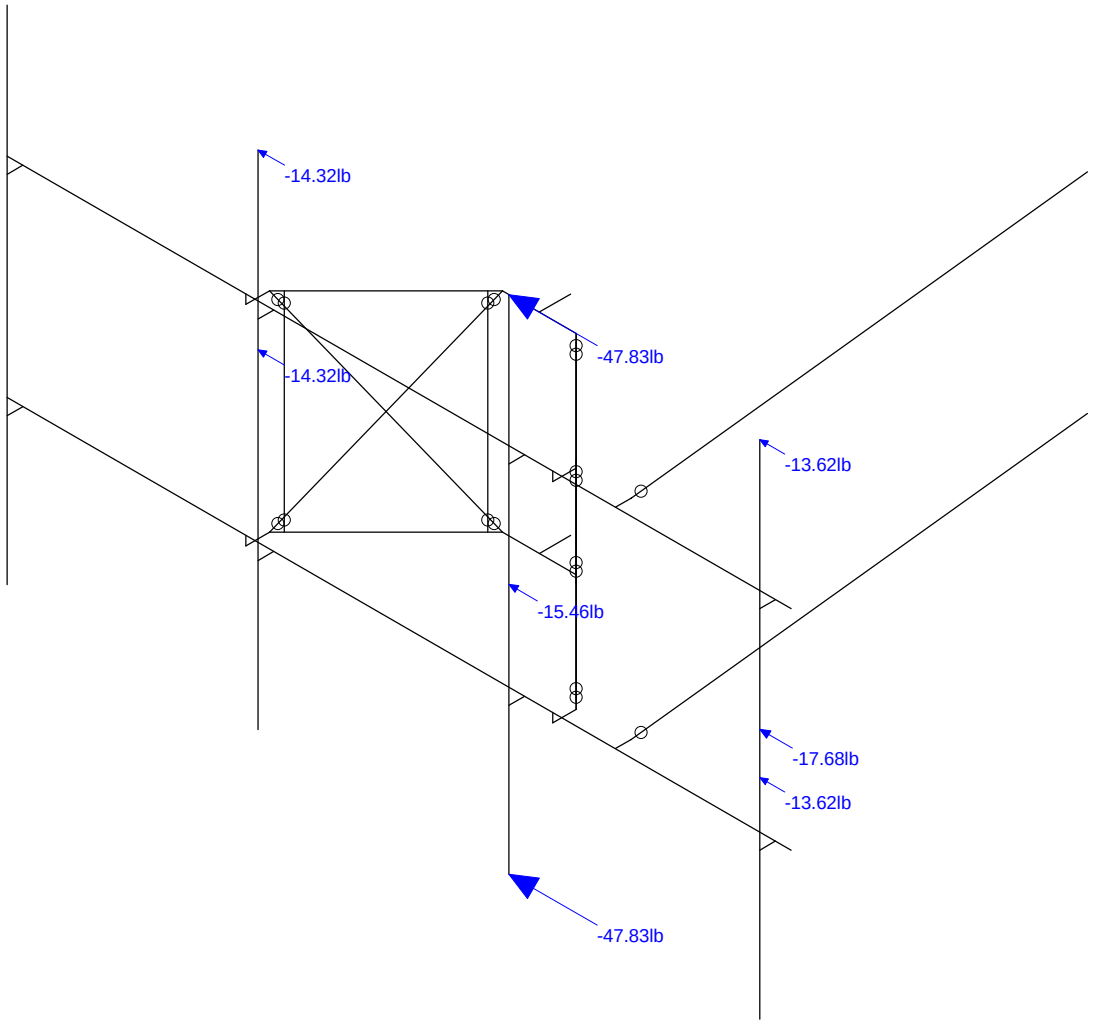




Loads: BLC 10, Ice + Wind 0

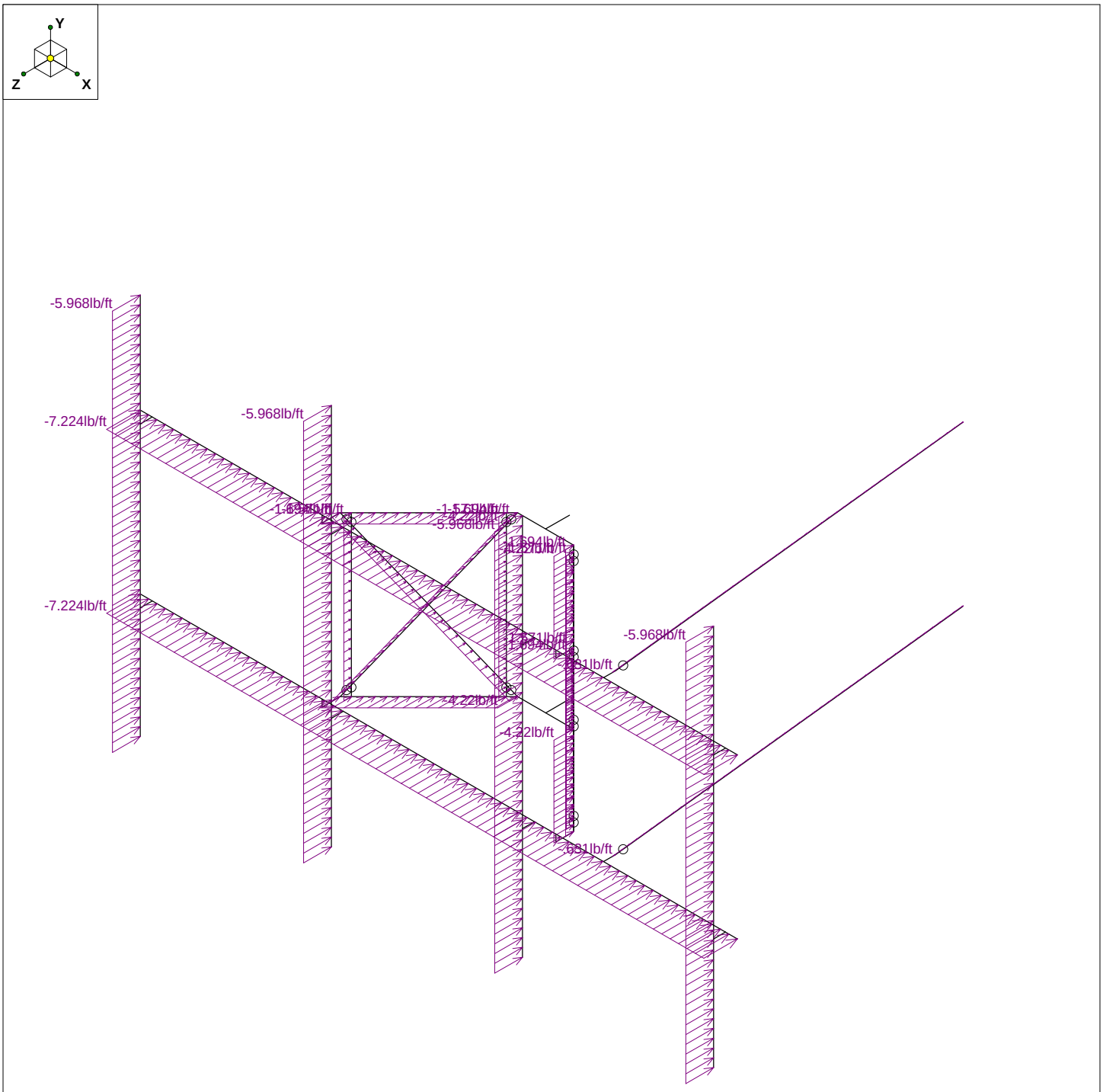
Centerline Communication...	CTNL125A_MA	Ice + Wind 0
AP		Sept 27, 2021 at 12:03 PM
		CTNL125A_MA.r3d





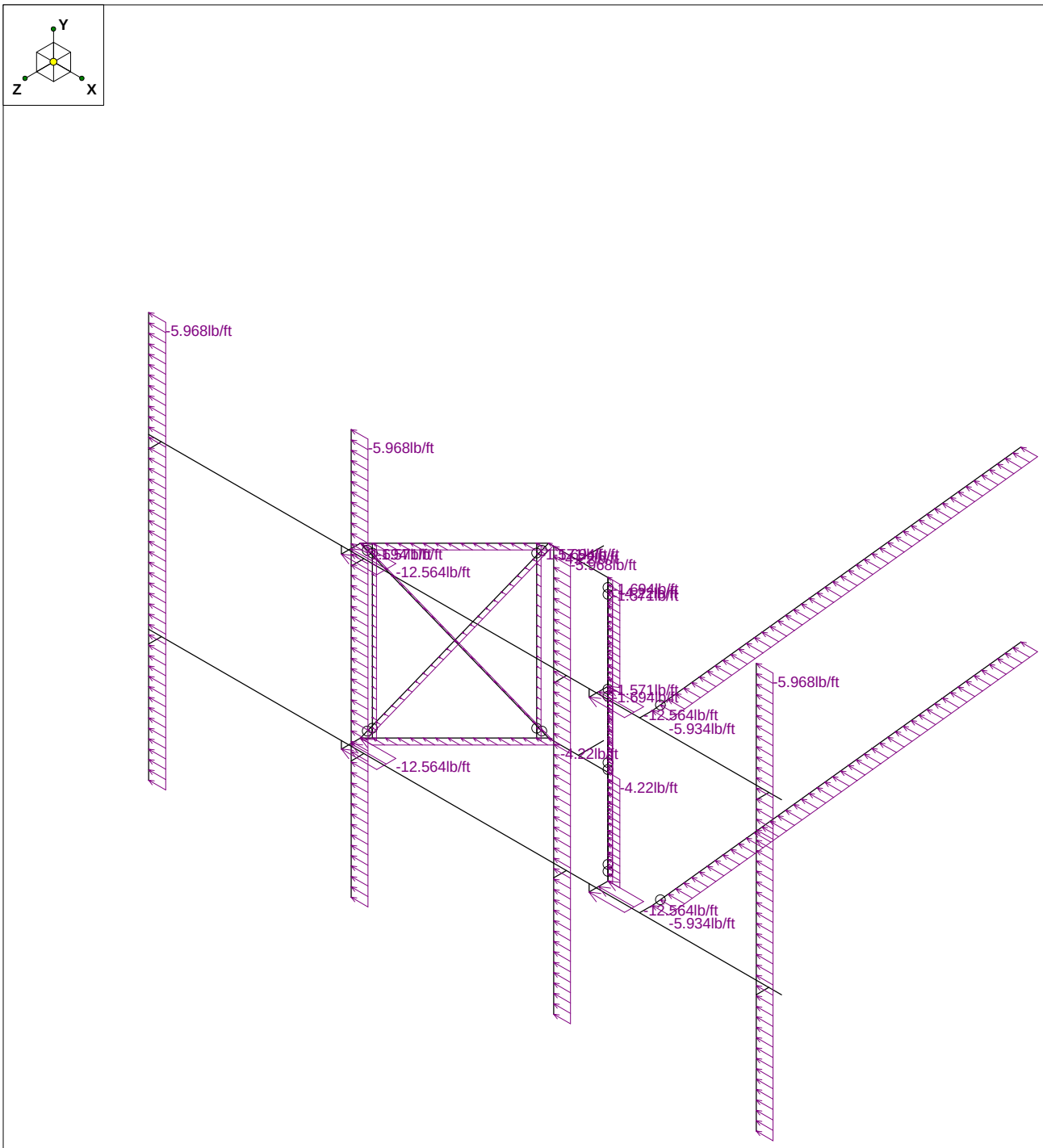
Loads: BLC 13, Ice + Wind 90

Centerline Communication...	CTNL125A_MA	Ice + Wind 90
AP		Sept 27, 2021 at 12:03 PM
		CTNL125A_MA.r3d



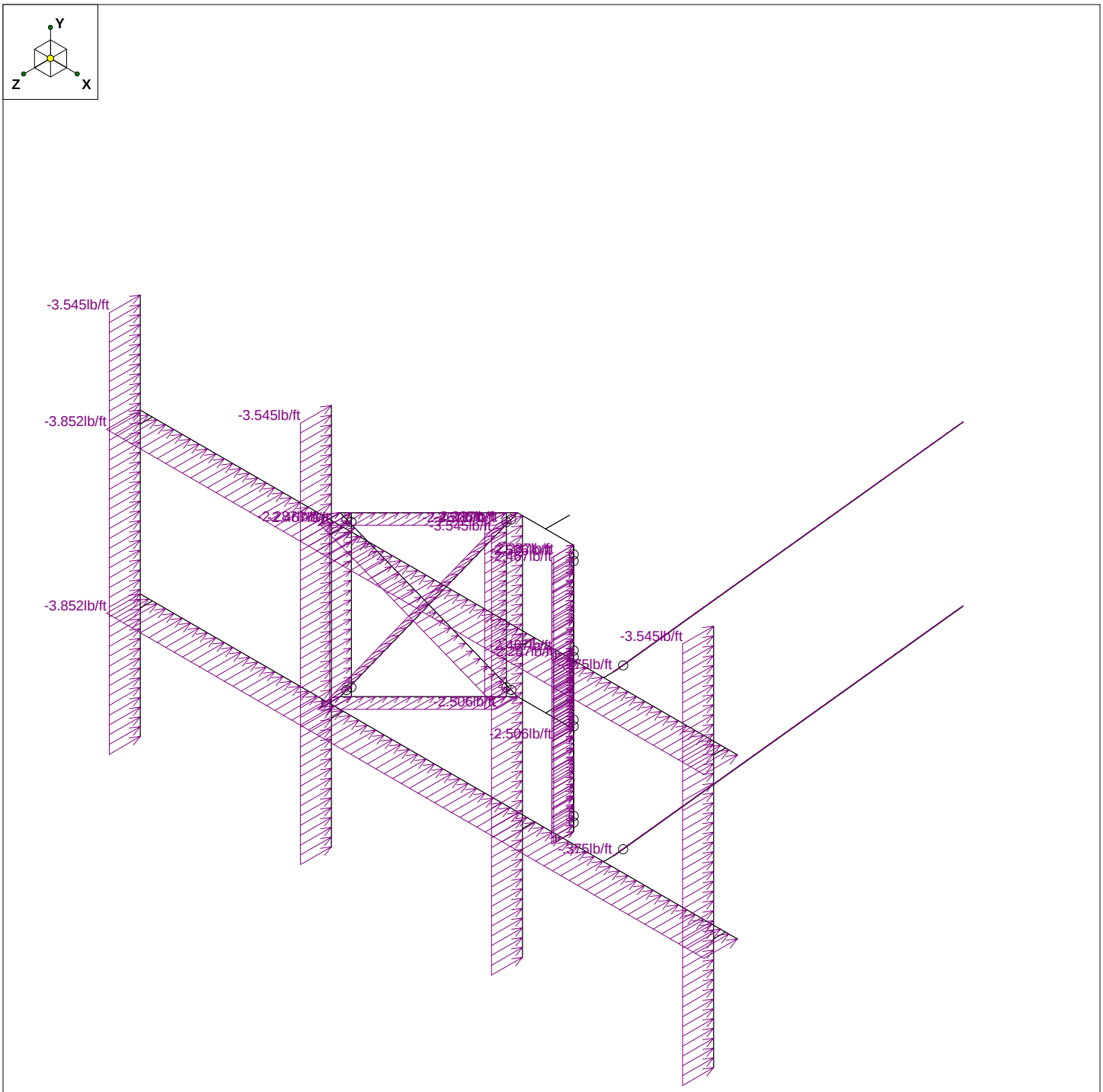
Loads: BLC 17, Distri. Wind Z

Centerline Communication...		Distr. Wind 0
AP	CTNL125A_MA	Sept 27, 2021 at 12:04 PM
		CTNL125A_MA.r3d



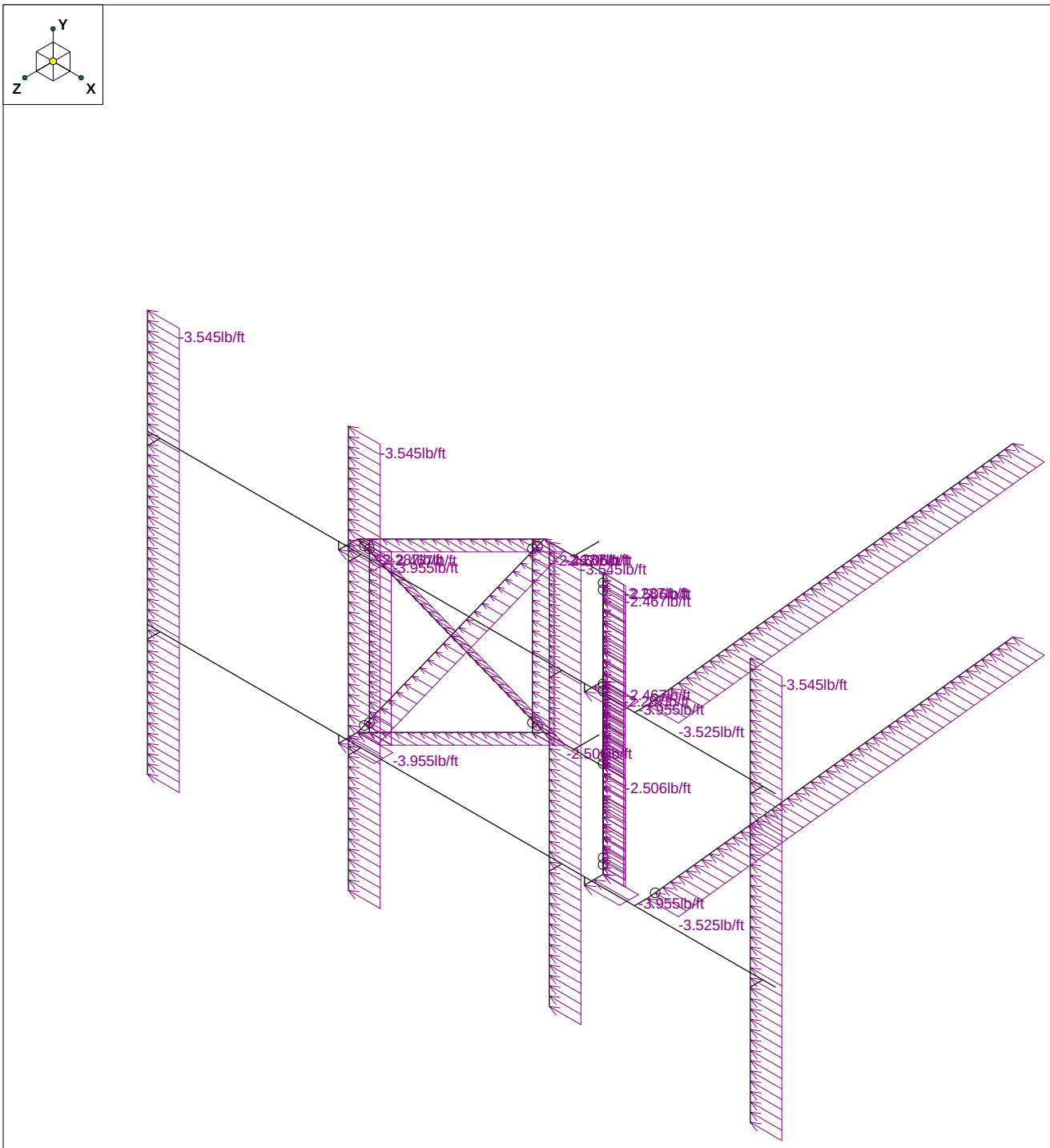
Loads: BLC 18, Distri. Wind X

Centerline Communication...		Distr. Wind 90
AP	CTNL125A_MA	Sept 27, 2021 at 12:04 PM
		CTNL125A_MA.r3d



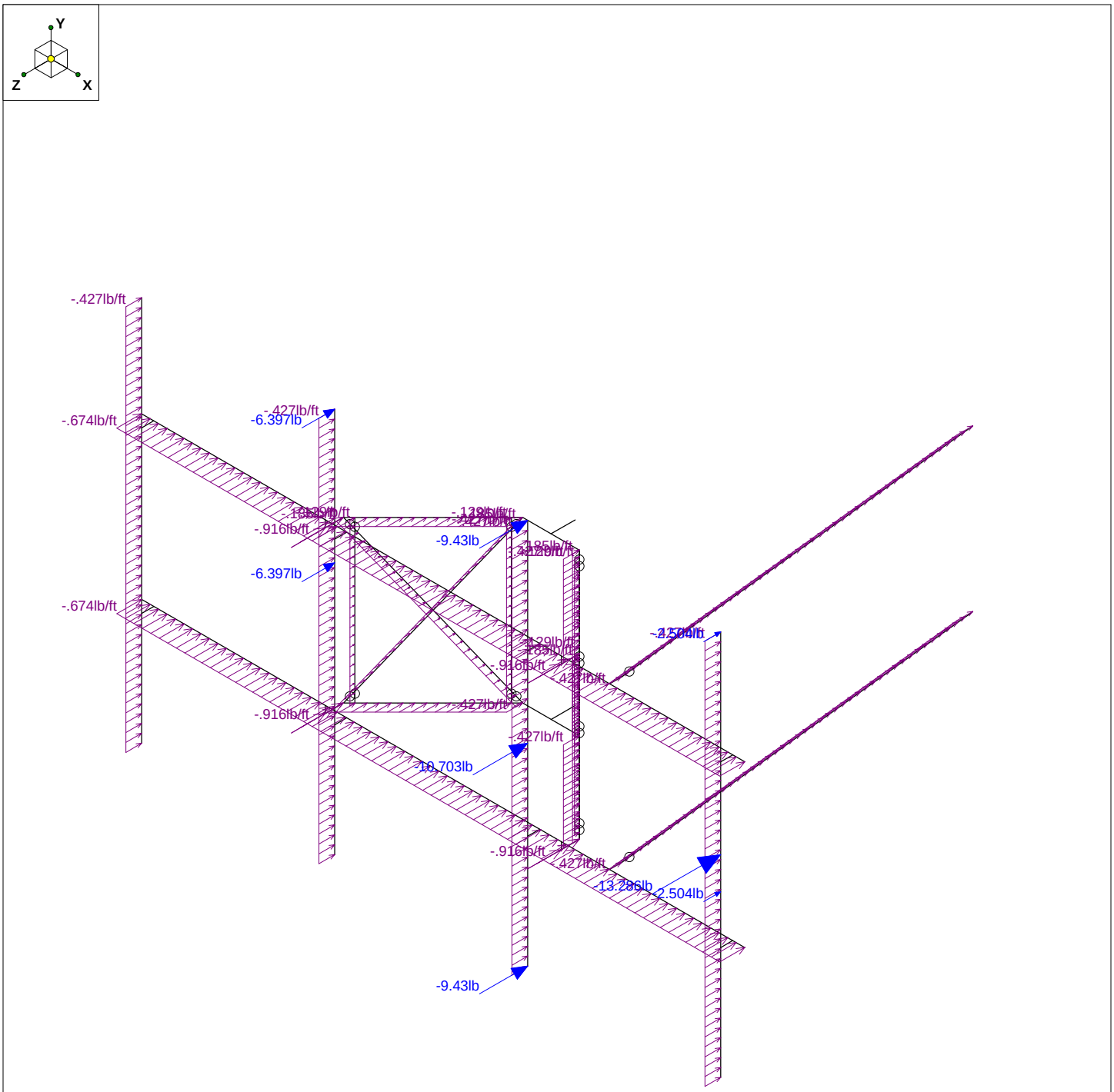
Loads: BLC 19, Distri. Ice + Wind Z

Centerline Communication...		Distr. Ice + Wind 0
AP	CTNL125A_MA	Sept 27, 2021 at 12:04 PM
		CTNL125A_MA.r3d



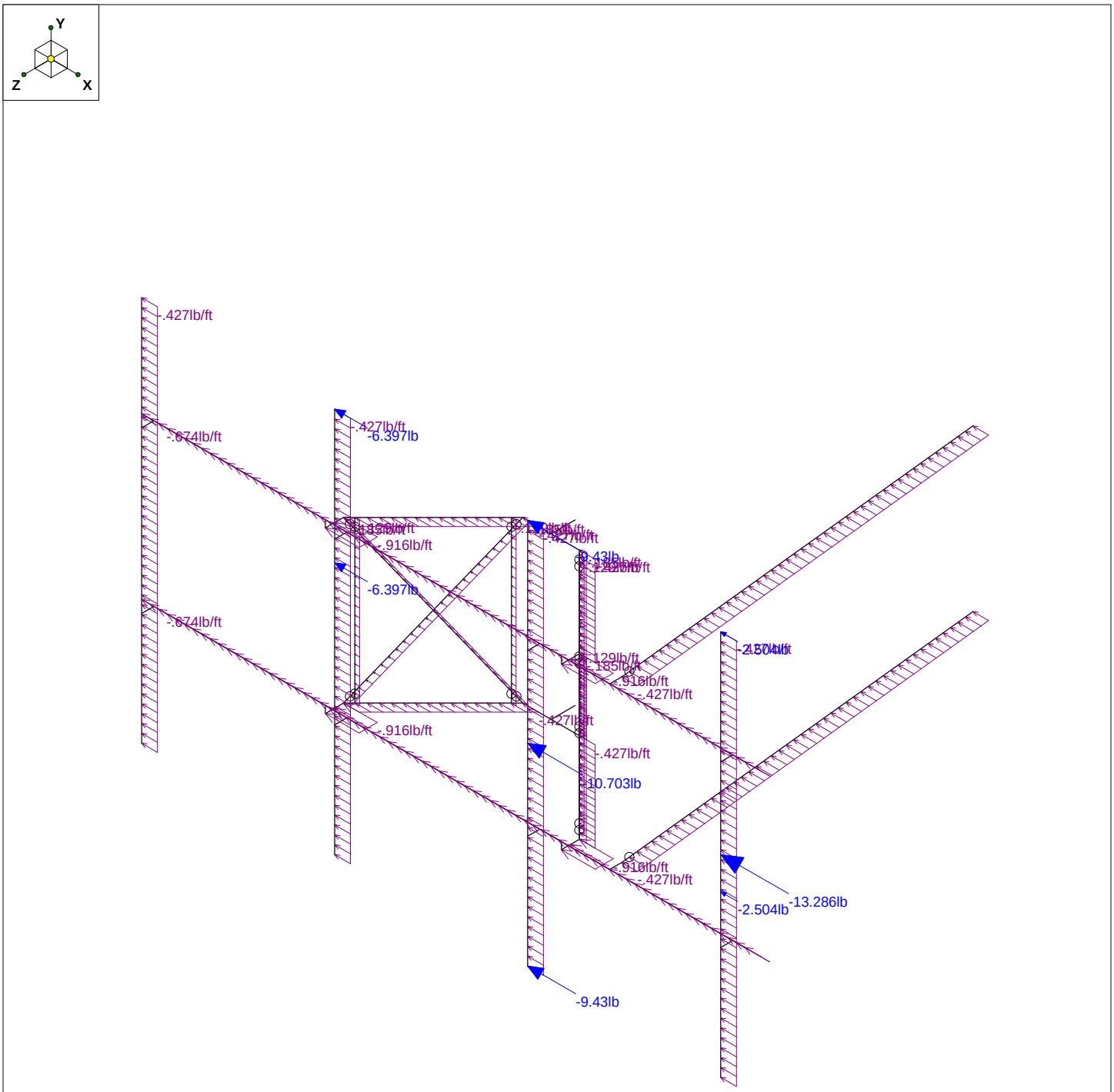
Loads: BLC 20, Distrr. Ice + Wind X

Centerline Communication...		Distr. Ice + Wind 90
AP	CTNL125A_MA	Sept 27, 2021 at 12:04 PM
		CTNL125A_MA.r3d



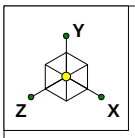
Loads: BLC 21, Seismic Load Z

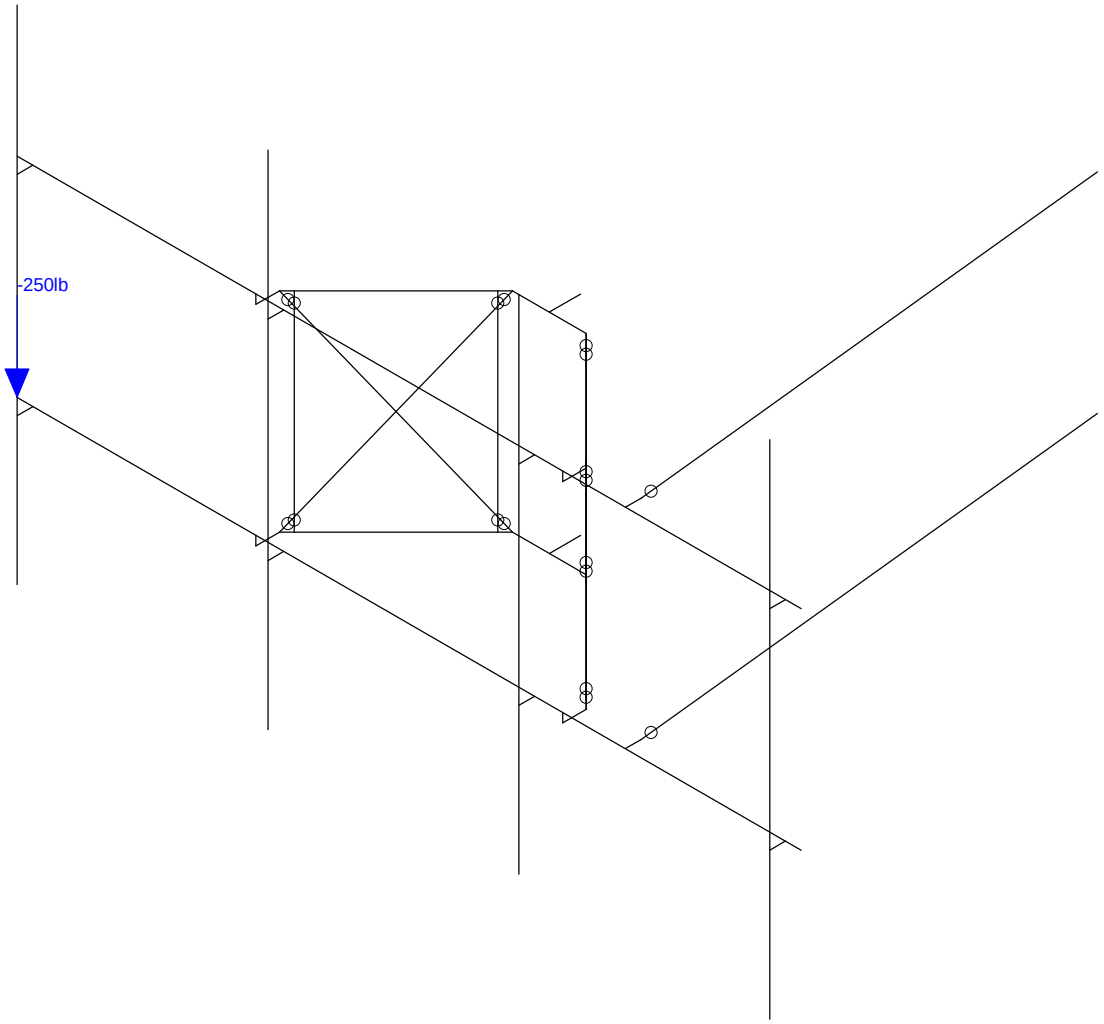
Centerline Communication...		Seismic Z
AP	CTNL125A_MA	Sept 27, 2021 at 12:04 PM
		CTNL125A_MA.r3d



Loads: BLC 22, Seismic Load X

Centerline Communication...		Seismic X
AP	CTNL125A_MA	Sept 27, 2021 at 12:04 PM
		CTNL125A_MA.r3d





Loads: BLC 23, Live Load 1

Centerline Communication...	CTNL125A_MA	Live Load
AP		Sept 27, 2021 at 12:04 PM
		CTNL125A_MA.r3d

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/...	Density[lb/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	490	50	1.1	65	1.1
2	Q345	29000	11154	.3	.65	490	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	527	46	1.4	58	1.3
6	Q235-GB	29000	11154	.3	.65	490	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	490	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Face Horizontal	PIPE_2.5	Beam	None	Q235-GB	Typical	1.61	1.45	1.45	2.89
2	Standoff	PIPE_2.0	Beam	None	Q235-GB	Typical	1.02	.627	.627	1.25
3	Bracing (Vert)	0.625" S.R.	Beam	None	Q235-GB	Typical	.307	.007	.007	.015
4	Mount Pipe	PIPE_2.0	Beam	None	Q235-GB	Typical	1.02	.627	.627	1.25
5	Conn. Plate	PL0.625x3.5	Beam	None	Q345	Typical	2.188	.071	2.233	.253
6	Pivot Plate	PL0.625x9.25	Beam	None	Q345	Typical	5.781	.188	41.222	.721
7	Connection Plate	PL3 1/2x5/8	Beam	None	Q345	Typical	2.188	.071	2.233	.253
8	Tieback	PIPE_2.0	Beam	None	Q235-GB	Typical	1.02	.627	.627	1.25
9	Bracing (Diag)	SR 3/4	Beam	None	Q235-GB	Typical	.442	.016	.016	.031

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N1	-75	0	31.3	0	
2	N2	75	0	31.3	0	
3	N3	-75	40	31.3	0	
4	N4	75	40	31.3	0	
5	N9	-72	0	31.3	0	
6	N10	-72	40	31.3	0	
7	N11	-24	0	31.3	0	
8	N12	-24	40	31.3	0	
9	N13	24	0	31.3	0	
10	N14	24	40	31.3	0	
11	N15	72	0	31.3	0	
12	N16	72	40	31.3	0	
13	N17	-72	0	34.3	0	
14	N18	-72	40	34.3	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
15	N19	-24	0	34.3	0	
16	N20	-24	40	34.3	0	
17	N21	24	0	34.3	0	
18	N22	24	40	34.3	0	
19	N23	-72	68	34.3	0	
20	N24	-24	68	34.3	0	
21	N25	24	68	34.3	0	
22	N26	-72	-28	34.3	0	
23	N27	-24	-28	34.3	0	
24	N28	24	-28	34.3	0	
25	N29	72	0	34.3	0	
26	N30	72	40	34.3	0	
27	N31	72	68	34.3	0	
28	N32	72	-28	34.3	0	
29	N33	0	40	31.3	0	
30	N34	29.35	40	31.3	0	
31	N35	-29.35	40	31.3	0	
32	N36	29.35	38.25	31.3	0	
33	N37	-29.35	38.25	31.3	0	
34	N38	29.35	38.25	26.8	0	
35	N39	-29.35	38.25	26.8	0	
36	N40	-7.05	38.25	4.5	0	
37	N41	7.05	38.25	4.5	0	
38	N42	0	38.25	4.5	0	
39	N43	0	38.25	-1.5	0	
40	N44	29.35	0	31.3	0	
41	N45	-29.35	0	31.3	0	
42	N46	29.35	-1.75	31.3	0	
43	N47	-29.35	-1.75	31.3	0	
44	N48	29.35	-1.75	26.8	0	
45	N49	-29.35	-1.75	26.8	0	
46	N50	-7.05	-1.75	4.5	0	
47	N51	7.05	-1.75	4.5	0	
48	N52	0	-1.75	4.5	0	
49	N53	0	-1.75	-1.5	0	
50	N62A	-27.935813	-1.75	25.385813	0	
51	N63A	-27.935813	38.25	25.385813	0	
52	N64A	-8.464214	-1.75	5.914214	0	
53	N65	-8.464214	38.25	5.914214	0	
54	N66	27.935813	-1.75	25.385813	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
55	N67	27.935813	38.25	25.385813	0	
56	N68	8.464214	-1.75	5.914214	0	
57	N69	8.464214	38.25	5.914214	0	
58	N69A	-41.35	40	31.3	0	
59	N61	41.35	40	28.3	0	
60	N62	30.965133	40	-69.426852	0	
61	N63	41.35	40	31.3	0	
62	N62B	41.35	0	28.3	0	
63	N63B	30.965133	0	-69.426852	0	
64	N64	41.35	0	31.3	0	

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N43	max	535.734	12	2378.277	22	420.313	10	92.982	9	0	78	1198.097	16
2		min	-956.506	51	-220.555	9	-2122.141	22	-1296.591	16	0	1	-152.188	9
3	N53	max	1161.331	20	991.65	9	2116.504	18	97.139	15	0	78	301.726	51
4		min	-302.045	37	-225.904	15	164.581	15	-491.344	9	0	1	-432.862	16
5	N62	max	92.364	2	51.608	20	874.688	2	0	78	0	78	0	78
6		min	-74.112	15	12.626	9	-882.622	14	0	1	0	1	0	1
7	N63B	max	38.657	9	51.658	20	368.043	9	0	78	0	78	0	78
8		min	-44.733	7	12.765	9	-644.542	6	0	1	0	1	0	1
9	Totals:	max	1290.579	5	2818.09	20	2253.341	9						
10		min	0	9	796.484	15	-2253.341	8						

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N43	Reaction	Reaction	Reaction	Reaction		Reaction
2	N53	Reaction	Reaction	Reaction	Reaction		Reaction
3	N62	Reaction	Reaction	Reaction			
4	N63B	Reaction	Reaction	Reaction			

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M3	Bracing (Di...	50.937			Lbyy						Lateral
2	M4	Bracing (Di...	50.937			Lbyy						Lateral
3	M5	Bracing (Di...	50.937			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
4	M6	Bracing (Di...	50.937			Lbyy						Lateral
5	M9	Bracing (Ve...	40			Lbyy						Lateral
6	M10	Bracing (Ve...	40			Lbyy						Lateral
7	M15	Standoff	31.537			Lbyy						Lateral
8	M17	Standoff	31.537			Lbyy						Lateral
9	M19	Connection ...	4.5			Lbyy						Lateral
10	M21	Connection ...	4.5			Lbyy						Lateral
11	MP1	Standoff	96			Lbyy						Lateral
12	MP2	Standoff	96			Lbyy						Lateral
13	M31	Standoff	31.537			Lbyy						Lateral
14	MP3	Standoff	96			Lbyy						Lateral
15	M33	Standoff	31.537			Lbyy						Lateral
16	MP4	Standoff	96			Lbyy						Lateral
17	M35	Connection ...	4.5			Lbyy						Lateral
18	M36	Connection ...	4.5			Lbyy						Lateral
19	M41	Face Horizo...	150			Lbyy						Lateral
20	M42	Face Horizo...	150			Lbyy						Lateral
21	M43A	Bracing (Ve...	40			Lbyy						Lateral
22	M44A	Bracing (Ve...	40			Lbyy						Lateral
23	M42B	Tieback	98.277			Lbyy						Lateral
24	M42A	Tieback	98.277			Lbyy						Lateral

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M3	N38	N51			Bracing (Diag)	Beam	None	Q235-GB	Typical
2	M4	N41	N48			Bracing (Diag)	Beam	None	Q235-GB	Typical
3	M5	N40	N49			Bracing (Diag)	Beam	None	Q235-GB	Typical
4	M6	N39	N50			Bracing (Diag)	Beam	None	Q235-GB	Typical
5	M9	N65	N64A			Bracing (Vert)	Beam	None	Q235-GB	Typical
6	M10	N63A	N62A			Bracing (Vert)	Beam	None	Q235-GB	Typical
7	M11	N53	N52		90	RIGID	None	None	RIGID	Typical
8	M12	N15	N29			RIGID	None	None	RIGID	Typical
9	M13	N50	N51			RIGID	None	None	RIGID	Typical
10	M14	N16	N30			RIGID	None	None	RIGID	Typical
11	M15	N51	N48			Standoff	Beam	None	Q235-GB	Typical
12	M16	N13	N21			RIGID	None	None	RIGID	Typical
13	M17	N50	N49			Standoff	Beam	None	Q235-GB	Typical
14	M18	N14	N22			RIGID	None	None	RIGID	Typical
15	M19	N48	N46		90	Connection Pl...	Beam	None	Q345	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
16	M20	N11	N19			RIGID	None	None	RIGID	Typical
17	M21	N49	N47		90	Connection Pl...	Beam	None	Q345	Typical
18	M22	N12	N20			RIGID	None	None	RIGID	Typical
19	M23	N44	N46			RIGID	None	None	RIGID	Typical
20	M24	N9	N17			RIGID	None	None	RIGID	Typical
21	M25	N45	N47			RIGID	None	None	RIGID	Typical
22	M26	N10	N18			RIGID	None	None	RIGID	Typical
23	M27	N43	N42		90	RIGID	None	None	RIGID	Typical
24	MP1	N31	N32			Standoff	Beam	None	Q235-GB	Typical
25	M29	N40	N41			RIGID	None	None	RIGID	Typical
26	MP2	N25	N28			Standoff	Beam	None	Q235-GB	Typical
27	M31	N41	N38			Standoff	Beam	None	Q235-GB	Typical
28	MP3	N24	N27			Standoff	Beam	None	Q235-GB	Typical
29	M33	N40	N39			Standoff	Beam	None	Q235-GB	Typical
30	MP4	N23	N26			Standoff	Beam	None	Q235-GB	Typical
31	M35	N38	N36		90	Connection Pl...	Beam	None	Q345	Typical
32	M36	N39	N37		90	Connection Pl...	Beam	None	Q345	Typical
33	M37	N34	N36			RIGID	None	None	RIGID	Typical
34	M39	N35	N37			RIGID	None	None	RIGID	Typical
35	M41	N1	N2			Face Horizontal	Beam	None	Q235-GB	Typical
36	M42	N3	N4			Face Horizontal	Beam	None	Q235-GB	Typical
37	M43A	N69	N68			Bracing (Vert)	Beam	None	Q235-GB	Typical
38	M44A	N67	N66			Bracing (Vert)	Beam	None	Q235-GB	Typical
39	M41B	N61	N63			RIGID	None	None	RIGID	Typical
40	M42B	N61	N62			Tieback	Beam	None	Q235-GB	Typical
41	M41A	N62B	N64			RIGID	None	None	RIGID	Typical
42	M42A	N62B	N63B			Tieback	Beam	None	Q235-GB	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M3	BenPIN	BenPIN			Euler Buc...	Yes				None
2	M4	BenPIN	BenPIN			Euler Buc...	Yes				None
3	M5	BenPIN	BenPIN			Euler Buc...	Yes				None
4	M6	BenPIN	BenPIN			Euler Buc...	Yes				None
5	M9	BenPIN	BenPIN			Euler Buc...	Yes				None
6	M10	BenPIN	BenPIN			Euler Buc...	Yes				None
7	M11						Yes	** NA **			None
8	M12						Yes	** NA **			None
9	M13						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
10	M14						Yes	** NA **			None
11	M15						Yes				None
12	M16						Yes	** NA **			None
13	M17						Yes				None
14	M18						Yes	** NA **			None
15	M19						Yes				None
16	M20						Yes	** NA **			None
17	M21						Yes				None
18	M22						Yes	** NA **			None
19	M23						Yes	** NA **			None
20	M24						Yes	** NA **			None
21	M25						Yes	** NA **			None
22	M26						Yes	** NA **			None
23	M27						Yes	** NA **			None
24	MP1						Yes				None
25	M29						Yes	** NA **			None
26	MP2						Yes				None
27	M31						Yes				None
28	MP3						Yes				None
29	M33						Yes	Default			None
30	MP4						Yes	Default			None
31	M35						Yes				None
32	M36						Yes				None
33	M37						Yes	** NA **			None
34	M39						Yes	** NA **			None
35	M41						Yes				None
36	M42						Yes				None
37	M43A	BenPIN	BenPIN			Euler Buc...	Yes				None
38	M44A	BenPIN	BenPIN			Euler Buc...	Yes				None
39	M41B						Yes	** NA **			None
40	M42B	BenPIN					Yes				None
41	M41A						Yes	** NA **			None
42	M42A	BenPIN					Yes				None

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Dead Load	DL		-1			8			
2	Wind 0	WLZ					16			
3	Wind 30	None					16			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
4	Wind 60	None					16			
5	Wind 90	WLX					16			
6	Wind 120	None					16			
7	Wind 150	None					16			
8	Wind 180	WLZ					16			
9	Ice Weight	DL					8	42		
10	Ice + Wind 0	WLZ					16			
11	Ice + Wind 30	None					16			
12	Ice + Wind 60	None					16			
13	Ice + Wind 90	WLX					16			
14	Ice + Wind 120	None					16			
15	Ice + Wind 150	None					16			
16	Ice + Wind 180	WLZ					16			
17	Distri. Wind Z	WLZ						42		
18	Distri. Wind X	WLX						42		
19	Distri. Ice + Wind Z	WLZ						42		
20	Distrr. Ice + Wind X	WLX						42		
21	Seismic Load Z	ELZ					8	42		
22	Seismic Load X	ELX					8	42		
23	Live Load 1	LL					1			
24	Live Load 2	LL					1			
25	Live Load 3	LL					1			

Load Combinations

	Description	Solve	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4D	Yes	Y		1	1.4																		
2	1.2D + 1.6W 0°	Yes	Y		1	1.2	2	1.6	17	1.6	18													
3	1.2D + 1.6W 30°	Yes	Y		1	1.2	3	1.6	17	1.3...	18	.8												
4	1.2D + 1.6W 60°	Yes	Y		1	1.2	4	1.6	17	.8	18	1.3...												
5	1.2D + 1.6W 90°	Yes	Y		1	1.2	5	1.6	17		18	1.6												
6	1.2D + 1.6W 120°	Yes	Y		1	1.2	6	1.6	17	-.8	18	1.3...												
7	1.2D + 1.6W 150°	Yes	Y		1	1.2	7	1.6	17	-1....	18	.8												
8	1.2D + 1.6W 180°	Yes	Y		1	1.2	8	1.6	17	-1.6	18													
9	0.9D + 1.6W 0°	Yes	Y		1	.9	2	1.6	17	1.6	18													
10	0.9D + 1.6W 30°	Yes	Y		1	.9	3	1.6	17	1.3...	18	.8												
11	0.9D + 1.6W 60°	Yes	Y		1	.9	4	1.6	17	.8	18	1.3...												
12	0.9D + 1.6W 90°	Yes	Y		1	.9	5	1.6	17		18	1.6												
13	0.9D + 1.6W 120°	Yes	Y		1	.9	6	1.6	17	-.8	18	1.3...												
14	0.9D + 1.6W 150°	Yes	Y		1	.9	7	1.6	17	-1....	18	.8												

Load Combinations (Continued)

	Description	Solve	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
15	0.9D + 1.6W 180°	Yes	Y		1	.9	8	1.6	17	-1.6	18													
16	1.2D + 1.0Di + 1.0Wi 0°	Yes	Y		1	1.2	9	1	10	1	19	1	20											
17	1.2D + 1.0Di + 1.0Wi 3...	Yes	Y		1	1.2	9	1	11	1	19	.866	20	.5										
18	1.2D + 1.0Di + 1.0Wi 6...	Yes	Y		1	1.2	9	1	12	1	19	.5	20	.866										
19	1.2D + 1.0Di + 1.0Wi 9...	Yes	Y		1	1.2	9	1	13	1	19		20	1										
20	1.2D + 1.0Di + 1.0Wi 1...	Yes	Y		1	1.2	9	1	14	1	19	-.5	20	.866										
21	1.2D + 1.0Di + 1.0Wi 1...	Yes	Y		1	1.2	9	1	15	1	19	-.866	20	.5										
22	1.2D + 1.0Di + 1.0Wi 1...	Yes	Y		1	1.2	9	1	16	1	19	-1	20											
23	1.2D + 1.0Eh 0°	Yes	Y		1	1.2	21	1	22															
24	1.2D + 1.0Eh 30°	Yes	Y		1	1.2	21	.866	22	.5														
25	1.2D + 1.0Eh 60°	Yes	Y		1	1.2	21	.5	22	.866														
26	1.2D + 1.0Eh 90°	Yes	Y		1	1.2	21		22	1														
27	1.2D + 1.0Eh 120°	Yes	Y		1	1.2	21	-.5	22	.866														
28	1.2D + 1.0Eh 150°	Yes	Y		1	1.2	21	-.866	22	.5														
29	1.2D + 1.0Eh 180°	Yes	Y		1	1.2	21	-1	22															
30	0.9D + 1.0Eh 0°	Yes	Y		1	.9	21	1	22															
31	0.9D + 1.0Eh 30°	Yes	Y		1	.9	21	.866	22	.5														
32	0.9D + 1.0Eh 60°	Yes	Y		1	.9	21	.5	22	.866														
33	0.9D + 1.0Eh 90°	Yes	Y		1	.9	21		22	1														
34	0.9D + 1.0Eh 120°	Yes	Y		1	.9	21	-.5	22	.866														
35	0.9D + 1.0Eh 150°	Yes	Y		1	.9	21	-.866	22	.5														
36	0.9D + 1.0Eh 180°	Yes	Y		1	.9	21	-1	22															
37	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	23	1.5	2	.316	17	.316	18											
38	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	23	1.5	3	.316	17	.273	18	.158										
39	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	23	1.5	4	.316	17	.158	18	.273										
40	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	23	1.5	5	.316	17		18	.316										
41	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	23	1.5	6	.316	17	-.158	18	.273										
42	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	23	1.5	7	.316	17	-.273	18	.158										
43	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	23	1.5	8	.316	17	-.316	18											
44	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	24	1.5	2	.316	17	.316	18											
45	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	24	1.5	3	.316	17	.273	18	.158										
46	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	24	1.5	4	.316	17	.158	18	.273										
47	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	24	1.5	5	.316	17		18	.316										
48	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	24	1.5	6	.316	17	-.158	18	.273										
49	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	24	1.5	7	.316	17	-.273	18	.158										
50	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	24	1.5	8	.316	17	-.316	18											
51	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	25	1.5	2	.316	17	.316	18											
52	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	25	1.5	3	.316	17	.273	18	.158										
53	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	25	1.5	4	.316	17	.158	18	.273										
54	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	25	1.5	5	.316	17		18	.316										

Load Combinations (Continued)

	Description	Solve	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
55	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	25	1.5	6	.316	17	-.158	18	.273										
56	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	25	1.5	7	.316	17	-.273	18	.158										
57	1.0D +1.5Lv + 1.0W (6...	Yes	Y		1	1	25	1.5	8	.316	17	-.316	18											
58	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	23	1	2	.088	17	.088	18											
59	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	23	1	3	.088	17	.076	18	.044										
60	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	23	1	4	.088	17	.044	18	.076										
61	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	23	1	5	.088	17		18	.088										
62	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	23	1	6	.088	17	-.044	18	.076										
63	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	23	1	7	.088	17	-.076	18	.044										
64	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	23	1	8	.088	17	-.088	18											
65	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	24	1	2	.088	17	.088	18											
66	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	24	1	3	.088	17	.076	18	.044										
67	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	24	1	4	.088	17	.044	18	.076										
68	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	24	1	5	.088	17		18	.088										
69	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	24	1	6	.088	17	-.044	18	.076										
70	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	24	1	7	.088	17	-.076	18	.044										
71	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	24	1	8	.088	17	-.088	18											
72	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	25	1	2	.088	17	.088	18											
73	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	25	1	3	.088	17	.076	18	.044										
74	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	25	1	4	.088	17	.044	18	.076										
75	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	25	1	5	.088	17		18	.088										
76	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	25	1	6	.088	17	-.044	18	.076										
77	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	25	1	7	.088	17	-.076	18	.044										
78	1.2D + 1.0Lv + 1.0W (...	Yes	Y		1	1.2	25	1	8	.088	17	-.088	18											

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*M...	...	Eqn
1	MP2	PIPE_2.0	.554	68	15	.054	28		8	14916...	32130	1871....	1871....	...	H1-1b
2	M35	PL3 1/2x...	.414	4.5	9	.154	0	y	57	68591...	70875	922.8...	5167....	...	H1-1b
3	M19	PL3 1/2x...	.413	4.5	19	.188	0	y	17	68591...	70875	922.8...	5167....	...	H1-1b
4	MP1	PIPE_2.0	.298	68	16	.059	28		8	14916...	32130	1871....	1871....	...	H1-1b
5	M41	PIPE_2.5	.258	104.688	17	.235	103....		8	14558...	50715	3596....	3596....	...	H1-1b
6	M36	PL3 1/2x...	.253	4.5	2	.103	0	y	43	68591...	70875	922.8...	5167....	...	H1-1b
7	MP4	PIPE_2.0	.213	68	43	.032	28		38	14916...	32130	1871....	1871....	...	H1-1b
8	M42	PIPE_2.5	.210	117.188	8	.174	103....		9	14558...	50715	3596....	3596....	...	H1-1b
9	M15	PIPE_2.0	.193	31.537	17	.114	31.5...		20	29576...	32130	1871....	1871....	...	H1-1b
10	M31	PIPE_2.0	.190	0	2	.084	29.5...		9	29576...	32130	1871....	1871....	...	H1-1b
11	M4	SR 3/4	.183	0	22	.012	50.9...		16	1352....	13916...	173.9...	173.9...	...	H1-1...
12	MP3	PIPE_2.0	.182	28	2	.025	28		8	14916...	32130	1871....	1871....	...	H1-1b

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*M...	...	Eqn
13	M21	PL3 1/2x..	.127	4.5	8	.092	4.5	y	38	68591...	70875	922.8...	5167....	...	H1-1b
14	M42B	PIPE_2.0	.069	49.139	16	.006	98.2...		19	14376...	32130	1871....	1871....	...	H1-1b
15	M42A	PIPE_2.0	.063	49.139	20	.006	98.2...		19	14376...	32130	1871....	1871....	...	H1-1b
16	M44A	0.625" S...	.061	0	8	.003	0		22	988.3...	9670.5	94.08	94.08	1	H1-1...
17	M33	PIPE_2.0	.058	31.537	42	.044	29.5...		2	29576...	32130	1871....	1871....	...	H1-1b
18	M17	PIPE_2.0	.053	31.537	43	.037	29.5...		8	29576...	32130	1871....	1871....	...	H1-1b
19	M5	SR 3/4	.040	0	43	.003	50.9...		16	1352....	13916...	173.9...	173.9...	...	H1-1...
20	M10	0.625" S...	.018	0	8	.003	0		22	988.3...	9670.5	94.08	94.08	1	H1-1...
21	M3	SR 3/4	.008	50.937	15	.004	50.9...		4	1352....	13916...	173.9...	173.9...	...	H1-1...
22	M6	SR 3/4	.006	50.937	15	.004	0		3	1352....	13916...	173.9...	173.9...	...	H1-1...
23	M43A	0.625" S...	.003	0	9	.005	0		8	988.3...	9670.5	94.08	94.08	1	H1-1...
24	M9	0.625" S...	.002	0	16	.005	0		8	988.3...	9670.5	94.08	94.08	1	H1-1...

Exhibit G

Power Density/RF Emissions Report

Radio Frequency Emissions Analysis Report

October 4, 2021

T-Mobile Connecticut on behalf of T-Mobile

Site Name: CTNL125A
Site Address: 244 Gates Road, Lenanon, CT 06249

Site Compliance Summary

Compliance Status:	Compliant
Carrier MPE% of FCC General Population Allowable Limit:	11.53614100%
Composite MPE% of FCC General Population Allowable Limit:	11.53699100%

October 4, 2021

T-Mobile Connecticut
Attn: Ryan Clark, Site Acquisition Consultant

Emissions Analysis for Site: **CTNL125A**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed T-Mobile facility to be located a tower near **244 Gates Road, Lenanon CT 06249** for the purpose of determining whether the emissions from the proposed facility 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 (µW/cm2). The number of µW/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.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (µW/cm^2). The general population exposure limits for the 600 MHz (LTE & NR) is 400 µW/cm^2 , 700 MHz (LTE) is 467 µW/cm^2, 1900 MHz (LTE), 2100 MHz (LTE), and 2500 MHz (LTE & NR) 1000 µW/cm^2.

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, 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 performed for the proposed facility using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Real world emissions values from this facility are expected to be lower than values listed in this report at ground level. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

RRH #	Frequency Band	Technology	Channel Count	Transmit Power per Channel (W)
1	2100	L	2	140
1	1900	L	1	140
1	1900	G	1	140
2	700	L	2	40
2	600	L	4	60
2	600	N	2	40
3	2500	L	1	30
3	2500	N	1	30
3	2500	L	1	90
3	2500	N	1	90
4	2100	L	2	140
4	1900	L	1	140
4	1900	G	1	140
5	700	L	2	40
5	600	L	4	60
5	600	N	2	40
6	2500	L	1	30
6	2500	N	1	30
6	2500	L	1	90

RRH #	Frequency Band	Technology	Channel Count	Transmit Power per Channel (W)
6	2500	N	1	90
7	2100	L	2	140
7	1900	L	1	140
7	1900	G	1	140
8	700	L	2	40
8	600	L	4	60
8	600	N	2	40
9	2500	L	1	30
9	2500	N	1	30
9	2500	L	1	90
9	2500	N	1	90

Table 1: Channel Data Table

The following antennas listed in Table 2 were used in the modeling for transmission in the 600 MHz (LTE & NR), 700 MHz, 1900 MHz (LTE), 2100 MHz (LTE) and 2500 MHz (LTE & NR) frequency bands. This is based on information from the carrier with regard to anticipated antenna selection.

Sector	Antenna Number	Make / Model	Centerline (ft)
A	1	RFS APX16DWV-16DWVS-E-A20	109
A	1	RFS APX16DWV-16DWVS-E-A20	109
A	1	RFS APX16DWV-16DWVS-E-A20	109
A	2	RFS APXVAALL24 43-U-NA20	109
A	2	RFS APXVAALL24 43-U-NA20	109
A	2	RFS APXVAALL24 43-U-NA20	109
A	3	ERICSSON SON AIR 6449 LTE BrM	109
A	3	ERICSSON SON AIR 6449 NR BrM	109
A	3	ERICSSON SON AIR 6449 LTE TB	109
A	3	ERICSSON SON AIR 6449 NR TB	109
B	4	RFS APX16DWV-16DWVS-E-A20	109
B	4	RFS APX16DWV-16DWVS-E-A20	109
B	4	RFS APX16DWV-16DWVS-E-A20	109
B	5	RFS APXVAALL24 43-U-NA20	109
B	5	RFS APXVAALL24 43-U-NA20	109
B	5	RFS APXVAALL24 43-U-NA20	109
B	6	ERICSSON SON AIR 6449 LTE BrM	109
B	6	ERICSSON SON AIR 6449 NR BrM	109
B	6	ERICSSON SON AIR 6449 LTE TB	109
B	6	ERICSSON SON AIR 6449 NR TB	109
C	7	RFS APX16DWV-16DWVS-E-A20	109
C	7	RFS APX16DWV-16DWVS-E-A20	109
C	7	RFS APX16DWV-16DWVS-E-A20	109
C	8	RFS APXVAALL24 43-U-NA20	109
C	8	RFS APXVAALL24 43-U-NA20	109
C	8	RFS APXVAALL24 43-U-NA20	109
C	9	ERICSSON SON AIR 6449 LTE BrM	109
C	9	ERICSSON SON AIR 6449 NR BrM	109
C	9	ERICSSON SON AIR 6449 LTE TB	109
C	9	ERICSSON SON AIR 6449 NR TB	109
AT&T	10	CCI HPA-65R-BUU-H8	124
AT&T	10	CCI HPA-65R-BUU-H8	124
AT&T	11	CCI TPA65R-BU8D	124
AT&T	12	CCI DMP65R-BU8D	124

AT&T	12	CCI DMP65R-BU8D	124
AT&T	12	CCI DMP65R-BU8D	124
AT&T	12	CCI DMP65R-BU8D	124
AT&T	13	POWERWAVE 7770 00	124
AT&T	14	CCI HPA-65R-BUU-H8	124
AT&T	14	CCI HPA-65R-BUU-H8	124
AT&T	15	CCI TPA65R-BU8D	124
AT&T	16	CCI DMP65R-BU8D	124
AT&T	16	CCI DMP65R-BU8D	124
AT&T	16	CCI DMP65R-BU8D	124
AT&T	16	CCI DMP65R-BU8D	124
AT&T	17	POWERWAVE 7770 00	124
AT&T	18	CCI HPA-65R-BUU-H8	124
AT&T	18	CCI HPA-65R-BUU-H8	124
AT&T	19	CCI TPA65R-BU8D	124
AT&T	20	CCI DMP65R-BU8D	124
AT&T	20	CCI DMP65R-BU8D	124
AT&T	20	CCI DMP65R-BU8D	124
AT&T	20	CCI DMP65R-BU8D	124
AT&T	21	POWERWAVE 7770 00	124
AT&T	22	GENERIC OMNI 1FT	129

Table 2: Antenna Data

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

T-Mobile Results

Per the calculations completed for the proposed T-Mobile configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

ID	Make / Model	Freq. Band	Gain (dBd)	Centerline (ft)	Channel Count	TX Power (W)	ERP (W)	MPE %
A1	RFS APX16DWV-16DWVS-E-A20	2100	16.25	109.0	2	140	11807.50	0.000071000
A1	RFS APX16DWV-16DWVS-E-A20	1900	16.25	109.0	1	140	5903.75	0.000035000
A1	RFS APX16DWV-16DWVS-E-A20	1900	16.25	109.0	1	140	5903.75	0.000035000
A2	RFS APXVAALL24 43-U-NA20	700	13.65	109.0	2	40	1853.92	0.000038000
A2	RFS APXVAALL24 43-U-NA20	600	12.95	109.0	4	60	4733.81	0.000120000
A2	RFS APXVAALL24 43-U-NA20	600	12.95	109.0	2	40	1577.94	0.000040000
A3	ERICSSON SON AIR 6449 LTE BrM	2500	15.15	109.0	1	30	982.02	0.000007000
A3	ERICSSON SON AIR 6449 NR BrM	2500	15.15	109.0	1	30	982.02	0.000007000
A3	ERICSSON SON AIR 6449 LTE TB	2500	22.35	109.0	1	90	15461.18	1.922517000
A3	ERICSSON SON AIR 6449 NR TB	2500	22.35	109.0	1	90	15461.18	1.922517000
B4	RFS APX16DWV-16DWVS-E-A20	2100	16.25	109.0	2	140	11807.50	0.000071000
B4	RFS APX16DWV-16DWVS-E-A20	1900	16.25	109.0	1	140	5903.75	0.000035000
B4	RFS APX16DWV-16DWVS-E-A20	1900	16.25	109.0	1	140	5903.75	0.000035000
B5	RFS APXVAALL24 43-U-NA20	700	13.65	109.0	2	40	1853.92	0.000038000
B5	RFS APXVAALL24 43-U-NA20	600	12.95	109.0	4	60	4733.81	0.000120000
B5	RFS APXVAALL24 43-U-NA20	600	12.95	109.0	2	40	1577.94	0.000040000
B6	ERICSSON SON AIR 6449 LTE BrM	2500	15.15	109.0	1	30	982.02	0.000007000
B6	ERICSSON SON AIR 6449 NR BrM	2500	15.15	109.0	1	30	982.02	0.000007000
B6	ERICSSON SON AIR 6449 LTE TB	2500	22.35	109.0	1	90	15461.18	1.922507000
B6	ERICSSON SON AIR 6449 NR TB	2500	22.35	109.0	1	90	15461.18	1.922507000
C7	RFS APX16DWV-16DWVS-E-A20	2100	16.25	109.0	2	140	11807.50	0.000071000
C7	RFS APX16DWV-16DWVS-E-A20	1900	16.25	109.0	1	140	5903.75	0.000035000
C7	RFS APX16DWV-16DWVS-E-A20	1900	16.25	109.0	1	140	5903.75	0.000035000
C8	RFS APXVAALL24 43-U-NA20	700	13.65	109.0	2	40	1853.92	0.000038000

ID	Make / Model	Freq. Band	Gain (dBd)	Centerline (ft)	Channel Count	TX Power (W)	ERP (W)	MPE %
C8	RFS APXVAALL24 43-U-NA20	600	12.95	109.0	4	60	4733.81	0.000120000
C8	RFS APXVAALL24 43-U-NA20	600	12.95	109.0	2	40	1577.94	0.000040000
C9	ERICSSON SON AIR 6449 LTE BrM	2500	15.15	109.0	1	30	982.02	0.000007000
C9	ERICSSON SON AIR 6449 NR BrM	2500	15.15	109.0	1	30	982.02	0.000007000
C9	ERICSSON SON AIR 6449 LTE TB	2500	22.35	109.0	1	90	15461.18	1.922517000
C9	ERICSSON SON AIR 6449 NR TB	2500	22.35	109.0	1	90	15461.18	1.922517000
							T-Mobile MPE%	**11.53614100%**

Table 3: T-Mobile Antenna Inventory & Power Level

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 4* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-Mobile sector(s).

Frequency Band	Technology	Centerline (ft.)	# of Channels	ERP W (Per Channel)	Total Power Density ($\mu W/cm^2$)	Allowable MPE ($\mu W/cm^2$)	MPE %
2100	L	109.0	2	5903.751048	0.0007060	1000	0.00007100
1900	L	109.0	1	5903.751048	0.0003510	1000	0.00003500
1900	G	109.0	1	5903.751048	0.0003510	1000	0.00003500
700	L	109.0	2	926.95786	0.0001770	467	0.00003800
600	L	109.0	4	1183.453642	0.0004810	400	0.00012000
600	N	109.0	2	788.9690944	0.0001600	400	0.00004000
2500	L	109.0	1	982.0220846	0.0000740	1000	0.00000700
2500	N	109.0	1	982.0220846	0.0000740	1000	0.00000700
2500	L	109.0	1	15461.17548	19.2251680	1000	1.92251700
2500	N	109.0	1	15461.17548	19.2251680	1000	1.92251700
2100	L	109.0	2	5903.751048	0.0007060	1000	0.00007100
1900	L	109.0	1	5903.751048	0.0003510	1000	0.00003500
1900	G	109.0	1	5903.751048	0.0003510	1000	0.00003500
700	L	109.0	2	926.95786	0.0001770	467	0.00003800
600	L	109.0	4	1183.453642	0.0004810	400	0.00012000
600	N	109.0	2	788.9690944	0.0001600	400	0.00004000
2500	L	109.0	1	982.0220846	0.0000740	1000	0.00000700
2500	N	109.0	1	982.0220846	0.0000740	1000	0.00000700
2500	L	109.0	1	15461.17548	19.2250710	1000	1.92250700
2500	N	109.0	1	15461.17548	19.2250710	1000	1.92250700
2100	L	109.0	2	5903.751048	0.0007070	1000	0.00007100
1900	L	109.0	1	5903.751048	0.0003510	1000	0.00003500
1900	G	109.0	1	5903.751048	0.0003510	1000	0.00003500
700	L	109.0	2	926.95786	0.0001770	467	0.00003800
600	L	109.0	4	1183.453642	0.0004810	400	0.00012000
600	N	109.0	2	788.9690944	0.0001600	400	0.00004000
2500	L	109.0	1	982.0220846	0.0000740	1000	0.00000700
2500	N	109.0	1	982.0220846	0.0000740	1000	0.00000700
2500	L	109.0	1	15461.17548	19.2251660	1000	1.92251700
2500	N	109.0	1	15461.17548	19.2251660	1000	1.92251700
						T-Mobile MPE%	**11.53614100%**

Table 4: T-Mobile Maximum Sector MPE Power Values

AT&T Results

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 4* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s).

Frequency Band	Technology	Centerline (ft.)	# of Channels	ERP W (Per Channel)	Total Power Density (µW/cm²)	Allowable MPE (µW/cm²)	MPE %
700	L	124.0	4	865.0874095	0.0003120	467	0.00006700
2300	L	124.0	4	856.9194664	0.0002200	1000	0.00002200
1900	L	124.0	4	1089.080523	0.0002680	1000	0.00002700
700	L	124.0	4	671.5216072	0.0002840	467	0.00006100
850	L	124.0	4	719.5483661	0.0002720	567	0.00004800
1900	L	124.0	4	1040.063825	0.0002480	1000	0.00002500
2100	L	124.0	4	1309.36278	0.0002440	1000	0.00002400
850	U	124.0	1	545.8332546	0.0000480	567	0.00000800
700	L	124.0	4	865.0874095	0.0003120	467	0.00006700
2300	L	124.0	4	856.9194664	0.0002200	1000	0.00002200
1900	L	124.0	4	1089.080523	0.0002680	1000	0.00002700
700	L	124.0	4	671.5216072	0.0002840	467	0.00006100
850	L	124.0	4	719.5483661	0.0002720	567	0.00004800
1900	L	124.0	4	1040.063825	0.0002480	1000	0.00002500
2100	L	124.0	4	1309.36278	0.0002440	1000	0.00002400
850	U	124.0	1	545.8332546	0.0000480	567	0.00000800
700	L	124.0	4	865.0874095	0.0003120	467	0.00006700
2300	L	124.0	4	856.9194664	0.0002200	1000	0.00002200
1900	L	124.0	4	1089.080523	0.0002680	1000	0.00002700
700	L	124.0	4	671.5216072	0.0002840	467	0.00006100
850	L	124.0	4	719.5483661	0.0002720	567	0.00004800
1900	L	124.0	4	1040.063825	0.0002480	1000	0.00002500
2100	L	124.0	4	1309.36278	0.0002440	1000	0.00002400
850	U	124.0	1	545.8332546	0.0000480	567	0.00000800
2100	-	129.0	1	192.7524913	0.0000370	1000	0.00000400
						AT&T MPE%	**0.000850000%**

Table 4: AT&T Maximum Sector MPE Power Values

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:

Carrier	Predicted MPE %
T-Mobile	11.53614100%
AT&T	0.00085000%
Composite	**11.53699100%**

Table 5: Total Predicted MPE(%) by Carrier

Compliance Status:

The anticipated composite MPE value for this site assuming all carriers present is **11.53699100%** of the allowable FCC established general population limit sampled at the ground level.

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.

Erin Kavanaugh
RF Compliance Consultant
Centerline Communications, LLC
750 West Center St. Suite 301
West Bridgewater, MA 02379

Exhibit H

Mailing Receipts/Proof of Notice

UPS CampusShip: View/Print Label

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

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

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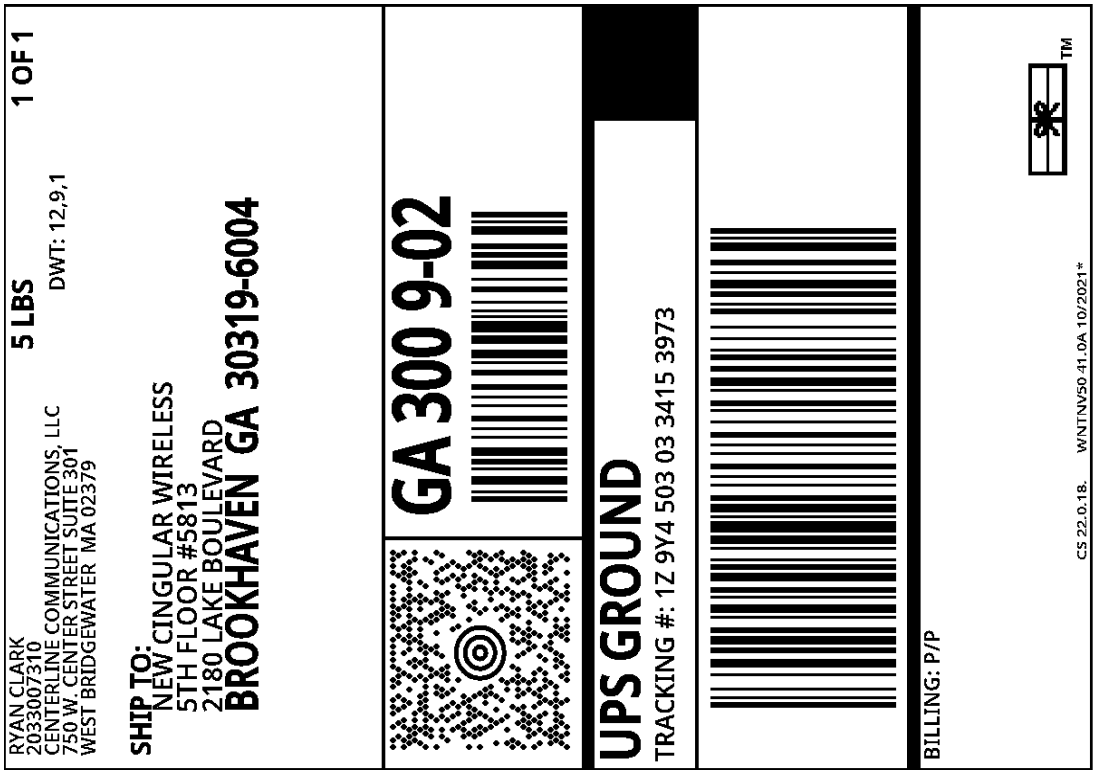

UPS CampusShip: View/Print Label

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

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

3. **GETTING YOUR SHIPMENT TO UPS**
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   Your driver will pickup your shipment(s) as usual.

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   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
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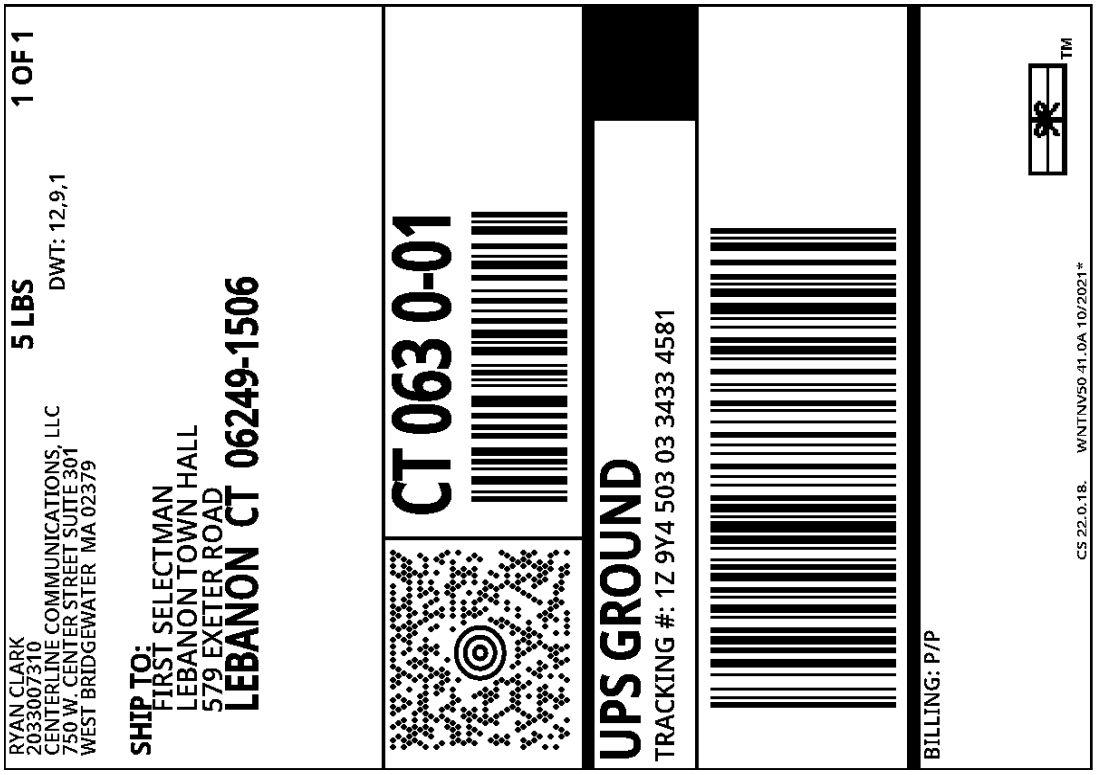


UPS CampusShip: View/Print Label

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

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

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

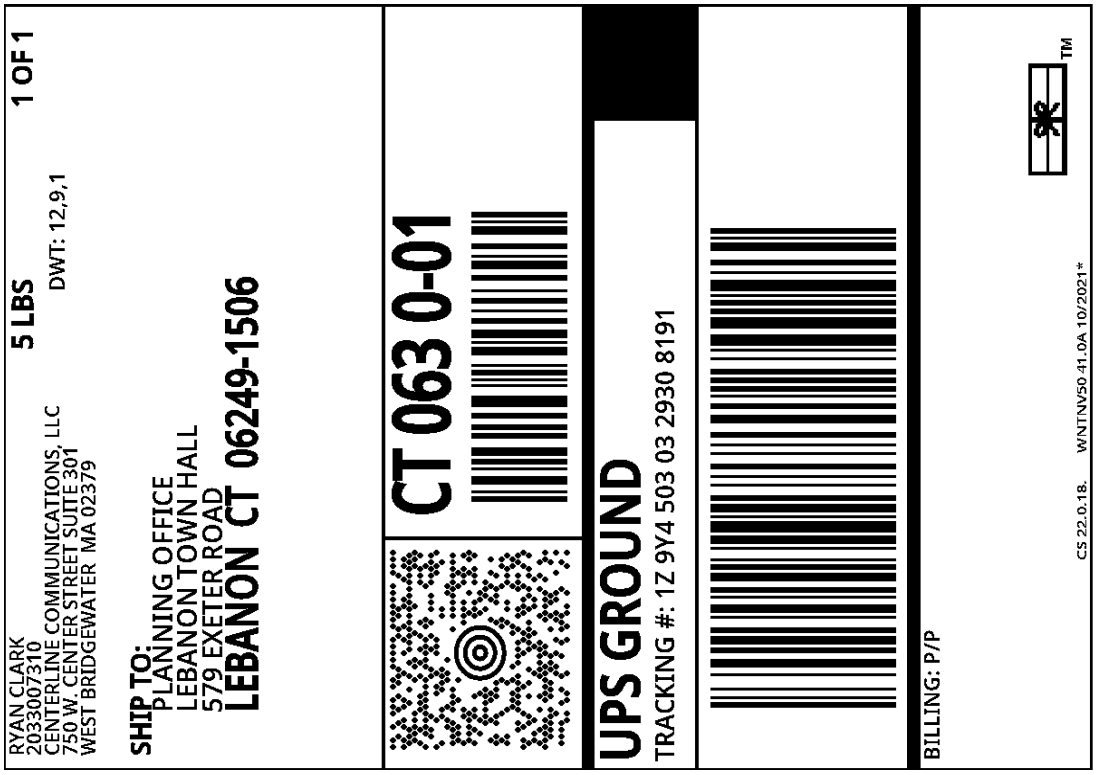
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To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

UPS Access Point™
CVS STORE # 972
555 WASHINGTON ST
SOUTH EASTON ,MA 02375

UPS Access Point™
CVS STORE # 7232
689 DEPOT ST
NORTH EASTON ,MA 02356

UPS Access Point™
TOWN LINE GENERAL STORE
450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

FOLD HERE



1 of 1

Service Impacts Related to Coronavirus ...More (/us/en/service-alerts.page?id=alert1)

(https://www.
loc=en_US&re

Your shipment
1Z9Y45030334153973

Estimated delivery
Monday, October 11 by 7:00 P.M.

- ✓ Label Created
- ✓ Shipped
- On the Way
- Delivery

Ship To
BROOKHAVEN, GA US

Get Updates

Change My Delivery

View Details

Get updates for your package

Enroll in UPS My Choice and take the worry out of missed deliveries, or having packages sit outside while you're away.

Sign up

Already Enrolled? Log in

Track Another Package

Track

Customer Service **Ask UPS**

1 of 1

Service Impacts Related to Coronavirus ...More (/us/en/service-alerts.page?id=alert1)

(https://www.
loc=en_US&re

Your shipment
1Z9Y45030334334581

Estimated delivery
Thursday, October 07 by 7:00 P.M.

- ✓ Label Created
- ✓ Shipped
- Out for Delivery
- Delivery

Ship To
LEBANON, CT US

Get Updates

Change My Delivery

View Details

Get updates for your package

Enroll in UPS My Choice and take the worry out of missed deliveries, or having packages sit outside while you're away.

Sign up

Already Enrolled? Log in

Track Another Package

Track

Customer Service **Ask UPS**

1 of 1

Service Impacts Related to Coronavirus ...More (/us/en/service-alerts.page?id=alert1)

(https://www.
loc=en_US&re

Your shipment
1Z9Y45030329308191

Estimated delivery
Thursday, October 07 by 7:00 P.M.

- ✓ Label Created
- ✓ Shipped
- Out for Delivery
- Delivery

Ship To
LEBANON, CT US

Get Updates

Change My Delivery

View Details

Get updates for your package

Enroll in UPS My Choice and take the worry out of missed deliveries, or having packages sit outside while you're away.

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Customer Service **Ask UPS**