STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

NEW CINGULAR WIRELESS PCS, LLC ("AT&T") SUB-PETITION FOR A DECLARATORY RULING FOR COLLOCATION AND MODIFICATION TO THE EXISTING WIRELESS TELECOMMUNICATIONS FACILITY ON PROPERTY LOCATED AT 623 PINE STREET, BRIDGEPORT, CONNECTICUT	)))))))	**SUB-PETITION NO. _____** **November 23, 2021**

SUB-PETITION FOR A DECLARATORY RULING

I. INTRODUCTION

On behalf of New Cingular Wireless PCS, LLC d/b/a AT&T ("AT&T"), we respectfully submit this sub-petition (the "Sub-Petition") to the Connecticut Siting Council (the "Council") for an administrative approval of a modification to an existing wireless telecommunications facility qualifying as an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation Act of 2012 (the "Spectrum Act", codified at 47 U.S.C. §1455) and the Bridgeport Planning and Zoning Commission's approval to collocate a wireless telecommunications facility consisting of twelve (12) panel antennas at 138' above ground level ("AGL") antenna centerline height on the existing 256' AGL lattice tower (the "Tower"), located on property with an address of 623 Pine Street, Bridgeport, Connecticut (the "Site"). **Attachment 1** contains the authorization of the tower owner, Radio Communications Corporation, Inc., permitting AT&T to file this Sub-Petition. The modification and collocation will allow AT&T to provide its enhanced, state-of-the-art services, including 5G services, to its customers.

II. HISTORY OF EXISTING TELECOMMUNICATIONS FACILITY

The 256' Tower is owned by Radio Communications Corporation, Inc. The Tower was permitted in 1999 according to the Bridgeport Planning and Zoning Commission decision (the "Approval") attached as **Attachment 2**.

III. PROPOSED MODIFICATION

AT&T proposes to modify the eligible structure by collocating twelve (12) panel antennas at the 138' AGL antenna centerline height on the Tower, together with related amplifiers, cables, mounts, fiber and other associated antenna equipment, including, without limitation, remote radio heads, surge arrestors, and global positioning system antenna with associated electronic equipment located within the existing building under the Tower, a new natural gas generator on the roof of the existing building, a new ice bridge, and other appurtenances on and within the existing building (the "Facility"). The Site is located within the I-L (Industrial Light) zoning district. The surrounding area contains a mix of residential and commercial uses.

Attachment 3 contains a copy of the structural report evidencing that the proposed modification can be supported in accordance with applicable codes. Notice to the FAA is not required for the proposed modification.

AT&T proposes to install a natural gas-fueled backup power generator to provide power to the Facility during power outages. The backup power generator typically exercises once a week and will otherwise operate during power outages to support continuity of telecommunications services. **Attachment 4** contains the equipment specifications for the proposed generator.

Once AT&T receives all required approvals, the installation of the Facility will take approximately three (3) to four (4) weeks and will be constructed during normal business hours. Construction is scheduled to commence in 2022.

While there is a state and federal listed species area within three quarters of a mile to the southeast of the Site, given that AT&T's proposed Facility will be located on a Tower and at a Site which has previously been disturbed, AT&T respectfully asserts that the proposed Facility will not impact any state listed species. Please refer to the DEEP Map submitted as **Attachment 5.**

IV. SECTION 6409 OF THE SPECTRUM ACT

Section 6409(a) of the Spectrum Act mandates that state and local governments "may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station."[1] An eligible facilities request is defined in the Spectrum Act as any request to modify a Tower or Base Station that involves "collocations of new Transmission Equipment," "removal," or "replacement" of Transmission Equipment.[2]

Under this eligible facilities request, AT&T is proposing to collocate twelve (12) panel antennas at a 138' AGL antenna centerline height, together with related amplifiers, cables, fiber and other associated antenna equipment, including, without limitation, remote radio heads, surge arrestors, and global positioning system antennas with associated electronic equipment located in the existing building, an emergency natural gas-fueled backup power generator, and other appurtenances on and within the existing building, all as depicted on the plans submitted with this application as **Attachment 6** (the "Plans"). The modification proposed by AT&T in this Sub-Petition does not substantially change the physical dimensions of the Tower in accordance with the Spectrum Act as interpreted and implemented by regulations (the "Regulations") [3] promulgated by the Federal Communications Commission ("FCC").

The equipment to be collocated at the Site qualifies as transmission equipment pursuant to the FCC definition contained in the Regulations. The FCC has defined transmission equipment as "any equipment that facilitates transmission for any Commission-licensed or authorized wireless communication service, including, but not limited to, radio transceivers, antennas and other relevant equipment associated with and necessary to their operation, including coaxial or fiber-optic cable, and regular and back-up power supply. This definition includes equipment used in any technological configuration associated with any Commission-authorized wireless transmission, licensed or unlicensed, terrestrial or satellite, including commercial mobile, private

[1] 47 U.S.C. §1455(a)(1)
[2] 47 U.S.C. §1455(a)(2)
[3] 47 C.F.R. §1.6100(b)

mobile, broadcast and public safety services, as well as fixed wireless services such as microwave backhaul or fixed broadband." [4]

Pursuant to the Regulations, the FCC determined that any modification to an existing telecommunications tower that meets six (6) specified criteria does not substantially change the physical dimensions of the existing tower and, therefore, is an eligible facilities request, approval of which must be granted.[5] These six criteria and analysis of how this eligible facilities request satisfies each of the six (6) review criteria identified by the FCC are discussed below.

1. **For towers not in the public rights-of-way, in this case the Tower, the modification increases the height of the Tower by more than 10% or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet (20'), whichever is greater**;

   As depicted on the Plans, AT&T's proposed modification does not increase the height of the Tower by more than ten percent (10%) or twenty feet (20') from the nearest existing antenna. In fact, AT&T's proposed modification will not increase the height of the Tower at all.

2. **For towers not in the public rights-of-way, in this case the Tower, the modification involves adding an appurtenance to the body of the Tower that would protrude from the edge of the tower by twenty feet (20') or more than the width of the Tower at the level of the appurtenance, whichever is greater;**

   As depicted on the Plans, AT&T's antennas and appurtenances will not protrude from the edge of the Tower by more than twenty feet (20'). The outside face of the antenna is approximately six feet (6') from the edge of the Tower and consistent with the existing antenna installation on the Tower.

3. **For any eligible support structure, in this case the Tower, the modification involves installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets;**

   AT&T does not propose to install more than four cabinets as a part of the proposed modification.

4. **The modification entails any excavation or deployment outside the current Site;**

   AT&T does not propose excavation or deployment outside the current Site.

5. **The modification would defeat the concealment elements of the eligible support structure; or**

   The Tower does not currently incorporate concealment elements. The new panel antennas will be mounted in a similar fashion to the many antennas currently installed on the Tower.

[4] 47 C.F.R. §1.6100(b)(8)
[5] 47 C.F.R. §1.6100(b)(7)

6. **The modification does not comply with conditions associated with the siting approval of the construction or modification of the eligible support structure or base station equipment, provided however that this limitation does not apply to any modification that is non-compliant only in a manner that would not exceed the thresholds identified in § 1.40001(b)(7)(i) through (iv).**

   The modification is consistent with the applicable terms and conditions of the Planning and Zoning Commission's approval granted in 1999 and the Siting Council's tower sharing decisions with respect to the Tower.

V. MAXIMUM PERMISSIBLE EXPOSURE COMPLIANCE

When added to existing levels, the power density levels for AT&T's proposed Facility will be 26.35% of the federally permitted emission standards for the public. Please refer to the Radio Frequency Emissions analysis submitted as **Attachment 7**. The total radio frequency power density will comply with the standards adopted by the Maximum Permissible Exposure limits of the FCC.

VI. NOTICE TO MUNICIPAL OFFICIALS AND ABUTTING PROPERTY OWNERS

Pursuant to the Ruling, AT&T sent notice of its filing of this Sub-Petition to the City of Bridgeport, the owner of the Site and to each abutting property owner as listed in the City of Bridgeport's Assessor records. The notice indicates that comments or concerns should be submitted to the Council within thirty (30) days of the date the notice was sent. A certification of such notice, a copy of the notice, the list of City officials and abutting property owners, and a map produced from the City of Bridgeport's GIS mapping data are submitted herewith as **Attachment 8**.

VII. CONCLUSION

AT&T respectfully asserts that its proposed modification does not substantially change the physical dimensions of the Tower at the Site as enumerated in the Spectrum Act and the Regulations, and therefore qualifies as an eligible facilities request. For the foregoing reasons, AT&T respectfully requests that the Council issue an order approving AT&T's proposed wireless telecommunications facility.

Respectfully submitted,

/s/ Thomas J. Regan
Thomas J. Regan, Esq.

cc: Mayor Joseph P. Ganim, City of Bridgeport
Lydia N. Martinez, City Clerk, City of Bridgeport
Dennis Buckley, Zoning Administrator, City of Bridgeport
Thomas F. Gill, Planning & Economic Development, City of Bridgeport
Historic District Commission, City of Bridgeport
Andrew and Lillian Knapp, Property Owners

ATTACHMENT 1

Letter of Authorization

Mr. Alex Giannaras
SAI Communications (Agent for AT&T Mobility)
12 Industrial Way
Salem, NH 03079

RE: Letter of Authorization

Applicant: AT&T Mobility

Site Address: 623 Pine Street, Bridgeport, CT 06605

Dear Mr. Giannaras,

Radio Communications Corporation, Inc. is the owner of the tower at the above-referenced address on which AT&T Mobility intends to install a wireless antenna facility. As the owner of the property, permission is hereby granted to AT&T Mobility and its agents for the purpose of consummating any applications necessary to gain the required approvals or permits from the Connecticut Siting Council and/or the City of Bridgeport.

Any fees or charges associated with all applications or permits, and any conditions placed on the applicant shall be the responsibility of AT&T mobility, its subsidiaries and agents.

Sincerely,

RADIO COMMUNICATIONS CORPORATION, INC.

By: _____

Name: Robert Knapp

Title: ~~Owner~~ Vice President 10/25/21
Hereunto Duly Authorized

ATTACHMENT 2

Bridgeport Planning & Zoning Commission Decision

623 Pine St. South side 312' East of Fairfield Avenue lot: 50' x 100'

Robert C. Knapp, Lillian & Andrew, # 3 Knapp, owners (Paging Assoc., Inc. operator) Austin K. Wolf, Attorney

Petition of Robert C. Knapp, Lillian & Andrew Knapp d/b/a Paging Associates, Inc. for a variance of the maximum height requirements of Sec. 7-3-3 to permit the construction of a 250' high self-supporting communications tower to replace the existing 115' high tower in an Industrial Light Zone.

PUBLIC HEARING: Tuesday, August 11, 1998 to permit the construction of a 250' high self-supporting communications tower to replace the existing 115' high tower in an I-L1 Zone.

over

GRANTED CONDITIONALLY, Subject to the following condition(s):
The development of the subject property shall be in accord with the plans submitted and held on file in the Zoning Department.

The "Board" assigned the following reason(s) for its action:

1. Hardship exists based on the fact that prior to the adoption of the new Zoning Regulations, the applicant's proposed development was permitted.
2. The granting of this petition will not cause any adverse impacts.

NOTICE Signed - 8/20/98

NO. 040284

APPLICATION FOR CERTIFICATE OF ZONING COMPLIANCE

ZONING COMMISSION
CITY OF BRIDGEPORT, CONN.

CITY HALL
45 Lyon Terrace
Room No. 206
Bridgeport, Conn.

Applicant Robert, Lillian & Andrew Knapp (Owner or Tenant Only) Date January 28, 1999

Address of Work 623 (Number) Pine Street (Street)

on the West (North, South, East, West) side of the above street about 210 feet

North (North, South, East, West) from Peerless Place (Street) Lot No. 25

Block No. 0307 as shown on Tax Assessor's Maps. C.A.M. Area NO (Yes - No) Wetlands NO (Yes - No)

Dimension of Lot: 40' X 100' x 40' X 100'

Size of Proposed Building or Addition Construction of a 250' Radio Tower No. Stories 250' (25)

Wood Frame ..... Brick Veneer ..... Masonry .....

Other Work (Describe in Detail) Construction of foundation and removal of existing tower (ZBA Approval #98-79 dated Sept. 28, 1998

Proposed Use of Above (Describe in Detail) Interior Alterations inc. to Equipment Storage. 5/22/00 Mounting structure for telecommunications services. (CFR Title 47) Common Carrier wireless, TV, microwave, commercial mobile, Internet, Pagi

Presently Existing Use Same as above Zone I-LI

Previous use and date discontinued (if applicable) .....

Is pre-existing right claimed Yes (Yes — No) Improvement to existing use

Signature Robert C. Knapp Print Same Robert C. Knapp

If signed by agent state capacity (attorney, builder, etc.) .....

Mailing Address 24 Rockdale Road, West Haven, CT 06516 Phone No. 203-933-2432

INSTRUCTIONS
Fill Out This Application In Ink or Type

A detailed plot plan must be submitted with this application showing the proposed or existing lot and building dimensions and the location of all buildings in relation to the street line, side lot lines and rear lot line. NOTE: *The occupancy and use of land, buildings and structures prior to the issuance of a Certificate of Zoning Compliance is prohibited.* This is not the said certificate. Fees, payable at the time of making application, are not returnable and, are in an amount established by the Zoning Commission.

Fee received $250 Date 1-27 1999 By .....

PLAN AND APPLICATION	C.A.M. APPROVAL	FINAL INSPECTION
APPROVED FOR ZONING COMPLIANCE ONLY ZONING DEPARTMENT CITY OF BRIDGEPORT, CONN. DATE: 1-27-99		

Certificate Issued Date ..... 19.....

34

FORM 144

ATTACHMENT 3

Structural Report

STRUCTURAL ANALYSIS REPORT

For

CT1382 (NSB)

BRIDGEPORT PINE STREET

623 Pine Street
Bridgeport, CT 06605

Generator Mounted on New Steel Platform Located on the Roof

Prepared for:

SAI at&t

Dated: June 17, 2021

Prepared by:

HDG HUDSON

STATE OF CONNECTICUT
DANIEL HAMM
24178
LICENSED
PROFESSIONAL ENGINEER

45 Beechwood Drive
North Andover, MA 01845
(P) 978.557.5553 (F) 978.336.5586
www.hudsondesigngroup.com

HUDSON
Design Group LLC

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the structure supporting the proposed equipment located in the areas depicted in the latest HDG construction drawings.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's proposed antennas listed below.

This office conducted an on-site visual survey of the above site on March 12, 2021. Attendees included Patrick Barrett (HDG – Field Technician).

The following documents were used for our reference:

- Previous HDG Mount Analysis dated April 20, 2021.

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the new structure **IS CAPABLE** of supporting the proposed equipment loading.

	Member	Controlling Load Case	Stress Ratio	Pass/Fail
New Steel Platform	34	LC15	63%	**PASS**

Based on our evaluation, we have determined that the new connections **ARE CAPABLE** of supporting the proposed equipment loading.

	Member	Stress Ratio	Pass/Fail
Steel Platform Connection	1/2" Epoxy Anchor	45%	**PASS**

HUDSON Design Group LLC

APPURTENANCE CONFIGURATION:

Appurtenances	Dimensions	Weight	Elevation	Mount
(1) 15KW Polar Generator	54.0"x38.0"x38.0"	750 lbs	-	Steel Platform
(2) FIF Racks	63.0"x28.0"x24.0"	1500 lbs	-	Equipment Room
(1) DC Power Plant	84.0"x28.0"x28.0"	2260 lbs	-	Equipment Room

** Proposed equipment shown in bold.*

DESIGN CRITERIA:

International Building Code (IBC) 2015 with 2018 Connecticut State Building Code Amendments, and ASCE 7-10 (Minimum Design Loads for Buildings and Other Structures).		
Wind		
Reference Wind Speed:	125 mph	(2018 CSBC Appendix N)
Exposure Category:	C	(ASCE 7-10 Chapter 26)
Risk Category:	II	(ASCE 7-10 Table 1.5-1)
Snow		
Ground Snow, P_g:	30	(2018 CSBC Appendix N)
Importance Factor (I_s):	1.0	(ASCE 7-10 Table 1.5-2)
Exposure Factor (C_e):	1.0	(Partially Exposed, Table 7-2)
Thermal Factor (C_t):	1.0	(ASCE 7-10 Table 7-3)
Flat Roof Snow Load:	21 psf	(ASCE 7-10 Equation 7.3-1)
Min. Flat Roof Snow Load:	30 psf	
EIA/TIA-222-H Structural Standards for Steel Antenna Towers and Antenna Supporting Structures		
Wind		
City/Town:	Bridgeport	
County:	Fairfield	
Wind Load:	125 mph	(TIA-222-H Figure B-2)
Ice		
Design Ice Thickness (t_i):	1.0 in	(TIA-222-H Figure B-9)
Structure Class:	II	(TIA-222-H Table 2-1)
Importance Factor (I_i):	1.0	(TIA-222-H Table 2-3)
Factored Thickness of Radial Ice (t_{iz}):	1.15 in	(TIA-222-H Sec. 2.6.10)

HUDSON
Design Group LLC

EXISTING ROOF CONSTRUCTION:

The existing roof construction is assumed to consist of a roofing membrane over rigid insulation over metal decking supported by steel joists, and CMU bearing walls.

EQUIPMENT RECOMMENDATIONS:

The new AT&T generator is proposed to be installed on a new steel platform located on the roof of the existing building secured to the existing CMU bearing walls with epoxy anchors. The AT&T equipment is proposed to be installed within the proposed equipment room partition located on the first floor of the existing building.

Limitations and Assumptions:

1. Reference the latest HDG construction drawings for all the equipment locations and details.
2. All detail requirements will be designed and furnished in the construction drawings.
3. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
4. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
5. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.
6. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.

HUDSON
Design Group LLC

FIELD PHOTOS:

Photo 1: Sample photo illustrating the proposed location of the steel platform and equipment room.

Photo 2: Sample photo illustrating the existing roof framing.

HUDSON
Design Group LLC

Steel Platform
Calculations

Date: 6/17/2021
Project Name: BRIDGEPORT PINE STREET
Project No.: CT1382
Designed By: LBW **Checked By:** MSC

HUDSON Design Group LLC

Wind Analysis → Generator

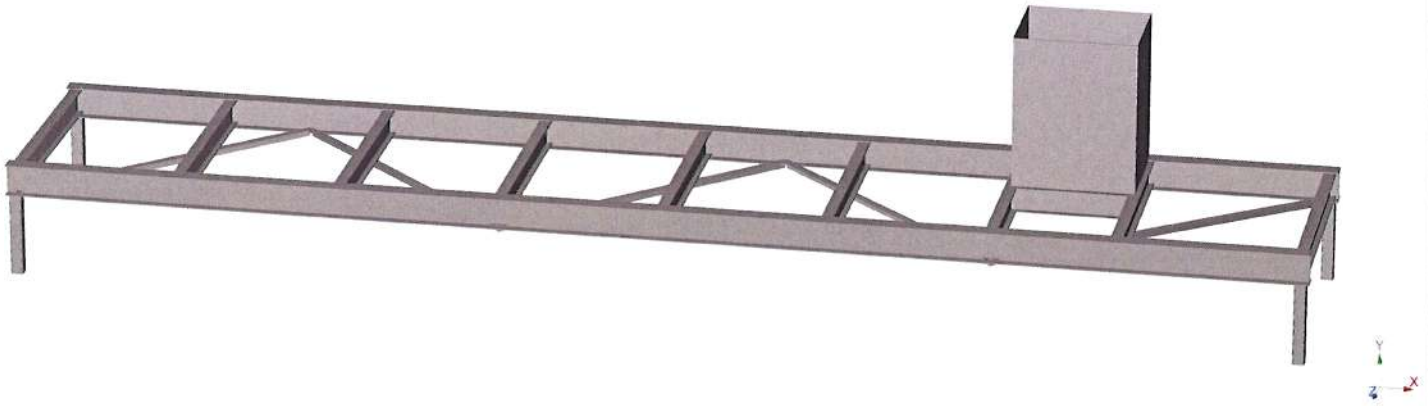
Reference Codes:

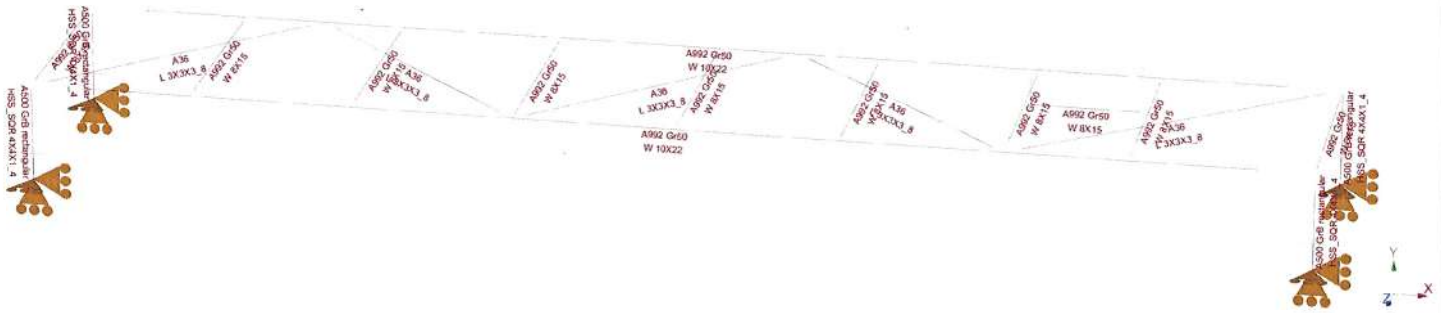
-Connecticut State Building Code

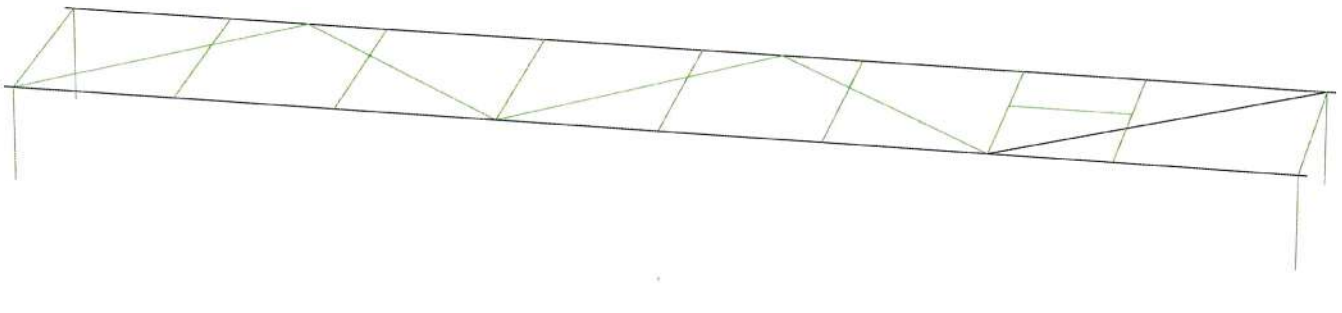
-International Building Code 2015 (IBC 2015)

-Minimum Design Loads for Buildings and Other Structures (ASCE 7-10)

Structure Classification		II		(ASCE 7-10 Table 1.5-1)
Basic Wind Speed, V		125	mph	(CT Building Code Appendix N)
Importance Factor, I		1		(ASCE 7-10 Table 1.5-2)
Exposure Category		C		(ASCE 7-10 Section 26.7)
Height Above Ground Level, z		19.5	ft	(Top of Generator)
Exposure Coefficient, K_z		0.90		(ASCE 7-10 Table 29-3.1)
Wind Directionality Coef., K_d		0.90		(ASCE 7-10 Table 26.6-1)
Topographic Factor, K_{zt}		1.00		(ASCE 7-10 Section 26.8.2)
Velocity Pressure, q_z	$= 0.00256K_zK_{zt}K_dV^2$			(ASCE 7-10 Equation 29.3-1)
	= **32.22 psf**			
Gust Factor, G		1.00		(ASCE 7-10 Section 26.9)
Enclosure Shape:		Square		
Net Force Coefficient, C_f		1.90		(ASCE 7-10 Figure 29.5-1)
Area Wind Force, F	= q_zGC_f			(ASCE 7-10 Equation 29.5-2)
	= **61.22 psf**			

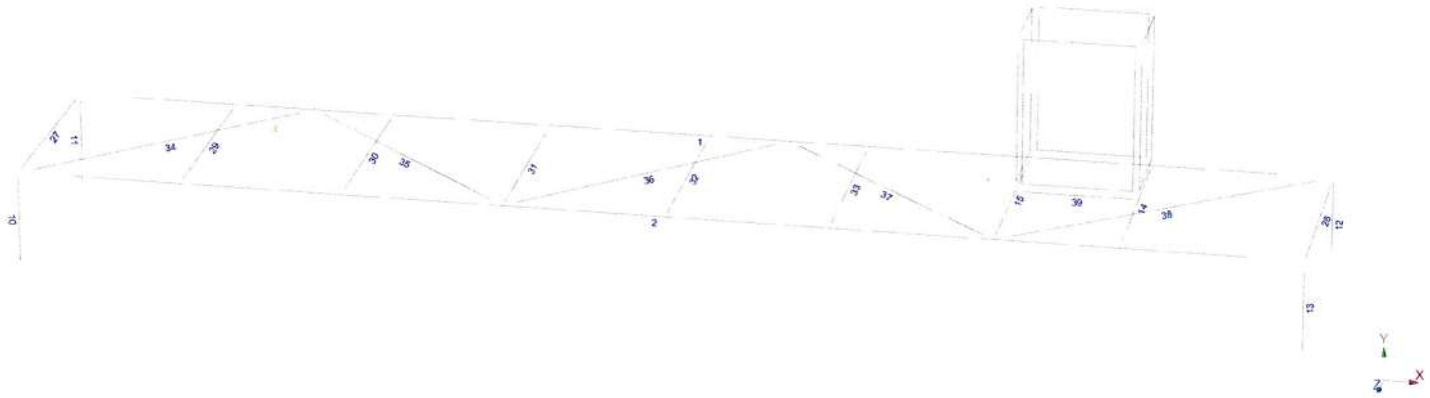

Y
Z
X


A36
L 3X3X3_8
A992 Gr50
W 8X15
A992 Gr50
W 10X22
A992 Gr50
W 8X13
A992 Gr50
W 8X15
A500 Gr B Rectangular
HSS SQR 4X4X1_4


Y
Z
X

Bentley

Current Date: 6/18/2021 3:52 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1382\SA\CT1382 (NSB).retx



Bentley

Current Date: 6/18/2021 3:53 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1382\SA\CT1382 (NSB).retx

Load data

GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
WL1	Wind Load Side 1	No	WIND
WL2	Wind Load Side 2	No	WIND
WL3	Wind Load Side 3	No	WIND
WL4	Wind Load Side 4	No	WIND

Load on nodes

Condition	Node	FX [Kip]	FY [Kip]	FZ [Kip]	MX [Kip*ft]	MY [Kip*ft]	MZ [Kip*ft]
DL	27	0.00	-0.188	0.00	0.00	0.00	0.00
	28	0.00	-0.188	0.00	0.00	0.00	0.00
	29	0.00	-0.188	0.00	0.00	0.00	0.00
	30	0.00	-0.188	0.00	0.00	0.00	0.00
	71	0.00	-0.188	0.00	0.00	0.00	0.00
	72	0.00	-0.188	0.00	0.00	0.00	0.00

Load on shells

Condition	Shell	Pressure [Kip/ft2]	Temp. [F]
WL1	10	0.062	0.00
WL2	12	0.062	0.00
WL3	11	0.062	0.00
WL4	9	0.062	0.00

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
WL1	Wind Load Side 1	No	0.00	0.00	0.00
WL2	Wind Load Side 2	No	0.00	0.00	0.00
WL3	Wind Load Side 3	No	0.00	0.00	0.00
WL4	Wind Load Side 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
WL1	0.00	0.00	0.00
WL2	0.00	0.00	0.00
WL3	0.00	0.00	0.00
WL4	0.00	0.00	0.00

Bentley

Current Date: 6/18/2021 3:54 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1382\SA\CT1382 (NSB).retx

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.4DL
LC4=1.2DL+0.5WL1
LC5=1.2DL+0.5WL2
LC6=1.2DL+0.5WL3
LC7=1.2DL+0.5WL4
LC13=0.9DL+WL1
LC14=0.9DL+WL2
LC15=0.9DL+WL3
LC16=0.9DL+WL4
LC17=0.9DL

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 4X4X1_4	**10**	LC15 at 0.00%	**0.43**	**OK**	
		11	LC13 at 0.00%	0.37	OK	
		12	LC6 at 0.00%	0.28	OK	
		13	LC1 at 0.00%	0.26	OK	
	L 3X3X3_8	**34**	LC15 at 65.63%	**0.63**	**OK**	
		35	LC15 at 31.25%	0.06	OK	
		36	LC15 at 68.75%	0.07	OK	
		37	LC13 at 0.00%	0.08	OK	
		38	LC15 at 40.63%	0.56	With warnings	
	W 10X22	**1**	LC15 at 99.04%	**0.50**	**With warnings**	
		2	LC15 at 1.25%	0.31	With warnings	
	W 8X15	**14**	LC15 at 60.94%	**0.41**	**OK**	
		15	LC15 at 43.75%	0.26	OK	
		27	LC13 at 0.00%	0.01	OK	
		28	LC15 at 0.00%	0.01	OK	
		29	LC15 at 65.63%	0.36	OK	
		30	LC15 at 65.63%	0.02	OK	
		31	LC13 at 50.00%	0.00	OK	
		32	LC13 at 65.63%	0.04	OK	
		33	LC15 at 65.63%	0.03	OK	
		39	LC13 at 50.00%	0.01	OK	

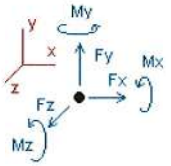

N 23
N 24
N 25
N 26
Y
Z
X

Bentley

Current Date: 6/18/2021 3:54 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1382\SA\CT1382 (NSB).retx

Analysis result

Reactions



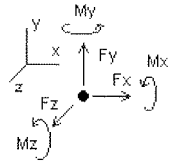
Direction of positive forces and moments

Node	Forces [Kip] FX	FY	FZ	Moments [Kip*ft] MX	MY	MZ
Condition **LC1=1.4DL**						
23	1.84604	1.15680	0.00008	0.00000	-0.00529	0.00000
24	1.83592	1.14444	-0.00101	0.00000	-0.00542	0.00000
25	-1.85416	1.70272	0.00032	0.00000	-0.00348	0.00000
26	-1.82780	1.62078	0.00061	0.00000	-0.00371	0.00000
SUM	0.00000	5.62473	0.00000	0.00000	-0.01791	0.00000
Condition **LC4=1.2DL+0.5WL1**						
23	2.29308	1.19964	-0.00673	0.00000	1.26934	0.00000
24	0.83042	0.77286	0.24809	0.00000	1.26136	0.00000
25	-1.53431	1.72609	0.24082	0.00000	-1.50339	0.00000
26	-1.58919	1.12261	-0.01764	0.00000	-1.49969	0.00000
SUM	0.00000	4.82120	0.46453	0.00000	-0.47237	0.00000
Condition **LC5=1.2DL+0.5WL2**						
23	1.77334	1.03384	0.00015	0.00000	-0.01429	0.00000
24	1.62715	0.99135	-0.00032	0.00000	-0.01454	0.00000
25	-1.49240	1.41910	0.00090	0.00000	-0.02715	0.00000
26	-1.53603	1.37691	-0.00074	0.00000	-0.02703	0.00000
SUM	0.37205	4.82120	0.00000	0.00000	-0.08302	0.00000
Condition **LC6=1.2DL+0.5WL3**						
23	0.85880	0.78256	-0.01538	0.00000	-1.26873	0.00000
24	2.32599	1.19001	-0.22694	0.00000	-1.26120	0.00000
25	-1.65233	1.19342	-0.27360	0.00000	1.51345	0.00000
26	-1.53246	1.65520	0.05138	0.00000	1.50800	0.00000
SUM	0.00000	4.82120	-0.46453	0.00000	0.49152	0.00000
Condition **LC7=1.2DL+0.5WL4**						
23	1.38918	0.94910	-0.00001	0.00000	0.00399	0.00000
24	1.51903	0.97071	-0.00160	0.00000	0.00402	0.00000
25	-1.68492	1.49978	-0.00025	0.00000	0.02211	0.00000
26	-1.59534	1.40161	0.00187	0.00000	0.02189	0.00000
SUM	-0.37205	4.82120	0.00000	0.00000	0.05201	0.00000

Condition **LC13=0.9DL+WL1**						
23	2.48711	1.11602	-0.00410	0.00000	2.13691	0.00000
24	-0.17772	0.36343	0.46683	0.00000	2.12337	0.00000
25	-1.08843	1.59004	0.43809	0.00000	-2.56478	0.00000
26	-1.22096	0.54640	0.02825	0.00000	-2.55796	0.00000
SUM	0.00000	3.61590	0.92907	0.00000	-0.86246	0.00000
Condition **LC14=0.9DL+WL2**						
23	1.56524	0.82735	0.00034	0.00000	-0.02933	0.00000
24	1.29079	0.75745	-0.00056	0.00000	-0.02965	0.00000
25	-0.99945	1.01329	0.00134	0.00000	-0.04212	0.00000
26	-1.11249	1.01780	-0.00112	0.00000	-0.04164	0.00000
SUM	0.74409	3.61590	0.00000	0.00000	-0.14275	0.00000
Condition **LC15=0.9DL+WL3**						
23	-0.14984	0.36866	-0.06367	0.00000	-2.11411	0.00000
24	2.56702	1.11090	-0.39824	0.00000	-2.10137	0.00000
25	-1.32135	0.60110	-0.54383	0.00000	2.60726	0.00000
26	-1.09583	1.53524	0.07667	0.00000	2.59786	0.00000
SUM	0.00000	3.61590	-0.92907	0.00000	0.98964	0.00000
Condition **LC16=0.9DL+WL4**						
23	0.80398	0.65961	-0.00031	0.00000	0.02004	0.00000
24	1.06785	0.71433	-0.00118	0.00000	0.02021	0.00000
25	-1.38234	1.17582	-0.00060	0.00000	0.03975	0.00000
26	-1.23359	1.06613	0.00209	0.00000	0.03957	0.00000
SUM	-0.74409	3.61590	0.00000	0.00000	0.11957	0.00000
Condition **LC17=0.9DL**						
23	1.18522	0.74367	0.00009	0.00000	-0.00382	0.00000
24	1.17860	0.73573	-0.00067	0.00000	-0.00390	0.00000
25	-1.19034	1.09452	0.00017	0.00000	-0.00193	0.00000
26	-1.17348	1.04198	0.00041	0.00000	-0.00207	0.00000
SUM	0.00000	3.61590	0.00000	0.00000	-0.01172	0.00000

Envelope for nodal reactions

Note.- **Ic** is the controlling load condition



Direction of positive forces and moments

Envelope of nodal reactions for :

LC1=1.4DL
LC4=1.2DL+0.5WL1
LC5=1.2DL+0.5WL2
LC6=1.2DL+0.5WL3
LC7=1.2DL+0.5WL4
LC13=0.9DL+WL1
LC14=0.9DL+WL2
LC15=0.9DL+WL3
LC16=0.9DL+WL4
LC17=0.9DL

Node		Forces						Moments					
		Fx [Kip]	lc	Fy [Kip]	lc	Fz [Kip]	lc	Mx [Kip*ft]	lc	My [Kip*ft]	lc	Mz [Kip*ft]	lc
23	Max	2.487	LC13	1.200	LC4	0.000	LC14	0.00000	LC1	2.13691	LC13	0.00000	LC1
	Min	-0.150	LC15	0.369	LC15	-0.064	LC15	0.00000	LC1	-2.11411	LC15	0.00000	LC1
24	Max	2.567	LC15	1.190	LC6	0.467	LC13	0.00000	LC1	2.12337	LC13	0.00000	LC1
	Min	-0.178	LC13	0.363	LC13	-0.398	LC15	0.00000	LC1	-2.10137	LC15	0.00000	LC1
25	Max	-0.999	LC14	1.726	LC4	0.438	LC13	0.00000	LC1	2.60726	LC15	0.00000	LC1
	Min	-1.854	LC1	0.601	LC15	-0.544	LC15	0.00000	LC1	-2.56478	LC13	0.00000	LC1
26	Max	-1.096	LC15	1.655	LC6	0.077	LC15	0.00000	LC1	2.59786	LC15	0.00000	LC1
	Min	-1.828	LC1	0.546	LC13	-0.018	LC4	0.00000	LC1	-2.55796	LC13	0.00000	LC1

Date: 6/18/2021
Project Name: BRIDGEPORT PINE STREET
Project No.: CT1382
Designed By: LBW **Checked By:** MSC

HUDSON Design Group LLC

CHECK EPOXY ANCHOR CONNECTION CAPACITY → PROPOSED ANCHORS

Reference: Hilti North American Product Technical Guide, 19th Edition

Epoxy Type =	HIT-HY 200		
Anchor Diameter =	1/2	in.	(HAS Threaded Rod)
Embedment Depth =	4-1/2	in.	
f'c of Concrete =	2500	psi	(Assumed)

	Allowable Loads (lbs)	Spacing Reduct. Factor	Edge Reduct. Factor	Conc. Thickness Reduct. Factor	Reduced Loads (lbs)
Tensile Load	7445	0.59	0.53	1	2328.0515
Shear Load	16035	0.5	0.18	1	1443.15

TENSILE FORCES

Reaction F = 0 lbs. (See Bentley Output)

SHEAR FORCES

Reactions in X direction: 2567 lbs. (See Bentley Output)
Reactions in Z direction: 467 lbs. (See Bentley Output)

Resultant: 2609 lbs.

No. of Supports = 1
No. of Anchors / Support = 4

Tension Design Load / Anchor =

f_t= 0.00 lbs. < 2328.1 lbs. **Therefore, OK !**

Shear Design Load / Anchor=

f_v= 652.28 lbs. < 1443.2 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0			
0.000	+	0.452	=	0.452	<	1.0	**Therefore, OK !**

March 24, 2021

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:		
	Site Number:	CT1382 (NSB)
	FA Number:	15371379
	PACE Number:	MRCTB050058
	PT Number:	2051A0XTE2
	Site Name:	BRIDGEPORT PINE STREET
	Site Address:	623 Pine Street Bridgeport, CT 06605

To Whom It May Concern:

Hudson Design Group LLC (HDG) has been authorized by SAI Communications to perform a mount analysis on the new AT&T antenna/RRH mounts to determine their capability of supporting the following additional loading:

- **(3) TPA65R-BU8DA-K Antennas (96.0"x20.7"x7.7" – Wt. = 87 lbs. /each)**
- **(3) DMP65R-BU8DA-K Antennas (96.0"x20.7"x7.7" – Wt. = 96 lbs. /each)**
- **(3) HPA65R-BU8A Antennas (96.0"x11.7"x7.6" – Wt. = 54 lbs. /each)**
- **(3) AIR6449 N77 Antennas (30.4"x15.9"x8.1" – Wt. = 106 lbs. /each)**
- **(3) B14 4478 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)**
- **(3) 4449 B5/B12 RRH's (17.9"x13.2"x9.4" – Wt. = 71 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)**
- **(3) 4415 B30 RRH's (16.5"x13.4"x5.9" – Wt. = 46 lbs. /each)**
- **(3) RRUS-E2 RRH's (20.4"x18.5"x7.5" – Wt. = 53 lbs. /each)**
- **(2) Squid Surge Arrestors (24.0"x9.7" Ø – Wt. = 33 lbs.)**

*Proposed equipment shown in bold.

Mount fabrication drawings prepared by Sabre Industries Towers and Poles, P/N C10857278C, dated November 5, 2018 were used to perform this analysis.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R13.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 125 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.15 in was used for this analysis.
- HDG considers this site to be exposure category C; tower is located near large, flat, open, terrain/grasslands.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- HDG considers this site to have a spectral response acceleration parameter at short periods, S_S, of 0.209 and a spectral response acceleration parameter at a period of 1 second, S_1, of 0.064.
- The mount has been analyzed with load combinations consisting of 250 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 1.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.

Based on our evaluation, we have determined that the New Sabre Industries C10857278C mounts **ARE CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
New Mount Rating	27	LC1	86%	**PASS**

Reference Documents:

- Fabrication drawings prepared by Sabre Industries Towers and Poles, P/N C10857278C, dated November 5, 2018.

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The proposed mount will be adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mounts must be tightened and re-plumbed prior to the installation of new appurtenances.
6. HDG performed a localized analysis on the mount itself and not on the supporting tower structure.

Please feel free to contact our office should you have any questions.

Respectfully Submitted,
Hudson Design Group LLC

Michael Cabral
Vice President

Daniel P. Hamm, PE
Principal

HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 3/24/2021
Project Name: BRIDGEPORT PINE STREET
Project No.: CT1382
Designed By: ID **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

$K_z = 2.01\,(z/z_g)^{2/\alpha}$

K_z= 1.354

z= 138 (ft)
z_g= 900 (ft)
α= 9.5

Kzmin ≤ Kz ≤ 2.01

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_c
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.2 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$K_{zt} = [1+(K_c K_t/K_h)]^2$

$K_h = e^{(f*z/H)}$

K_{zt}= 1

(If Category 1 then K_{zt}=1.0)

Category= 1

K_h= 1
K_c= 1 (from Table 2-4)
K_t= 0 (from Table 2-5)
f= 0 (from Table 2-5)
z= 138
z_s= 1 (Mean elevation of base of structure above sea level)
H= 0 (Ht. of the crest above surrounding terrain)
K_{zt}= 1.00 (from 2.6.6.2.1)
K_e= 1.00 (from 2.6.8)

2.6.10 Design Ice Thickness

Max Ice Thickness = t_i = 1.00 in
Importance Factor = I= 1.0 (from Table 2-3)
K_{iz} = 1.15 (from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$

t_{iz} = 1.15 in

Date: 3/24/2021
Project Name: BRIDGEPORT PINE STREET
Project No.: CT1382
Designed By: ID Checked By: MSC

HUDSON Design Group LLC

2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

G_h = 1.0 Latticed Structures > 600 ft

G_h = 0.85 Latticed Structures 450 ft or less

G_h = 0.85 + 0.15 [h/150 - 3.0] h= ht. of structure

h= 264 G_h= 0.85

2.6.9.2 Guyed Masts G_h= 0.85

2.6.9.3 Pole Structures G_h= 1.1

2.6.9 Appurtenances G_h= 1.0

2.6.9.4 Structures Supported on Other Structures
(Cantilivered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

G_h= 1.35 Gh= 1.00

2.6.11.2 Design Wind Force on Appurtenances

$F = q_z * G_h * (EPA)_A$

$q_z = 0.00256 * K_z * K_{zt} * K_s * K_e * K_d * V_{max}^2$

q_z=	46.05	K_z=	1.354	(from 2.6.5.2)
$q_{z\,(ice)}$=	7.37	K_{zt}=	1.0	(from 2.6.6.2.1)
$q_{z\,(30)}$=	2.65	K_s=	1.0	(from 2.6.7)
		K_e=	1.00	(from 2.6.8)
		K_d=	0.85	(from Table 2-2)
		V_{max}=	125	mph (Ultimate Wind Speed)
		$V_{max\,(ice)}$=	50	mph
		V_{30}=	30	mph

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95
Tubular pole structures supporting antennas enclosed within a cylindrical shroud	1.00

Date: 3/24/2021
Project Name: BRIDGEPORT PINE STREET
Project No.: CT1382
Designed By: ID Checked By: MSC

HUDSON Design Group LLC

Determine Ca:

Table 2-9

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Square/Rectangular HSS		1.2 - 2.8(r_s) ≥ 0.85	1.4 - 4.0(r_s) ≥ 0.90	2.0 - 6.0(r_s) ≥ 1.25
Round	C < 39 (Subcritical)	0.7	0.8	1.2
	39 ≤ C ≤ 78 (Transitional)	$4.14/(C^{0.485})$	$3.66/(C^{0.415})$	$46.8/(C^{1.0})$
	C > 78 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
(Aspect ratio is independent of the spacing between support points of a linear appurtenance,

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = 1.15 in | **Angle =** 0 (deg) | **Equivalent Angle =** 180 (deg)

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	4.64	1.30	823	150	47
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	4.64	1.30	823	150	47
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	8.21	1.44	517	101	30
AIR6449 N77 Antenna	30.4	15.9	8.1	3.36	1.91	1.20	185	37	11
4449 B5/B12 RRH	17.9	9.4	13.2	1.17	1.90	1.20	65	15	4
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.20	62	14	4
B14 4478 RRH	18.1	8.3	13.4	1.04	2.18	1.20	58	13	3
4415 B30 RRH	16.5	5.9	13.4	0.68	2.80	1.21	38	10	2
RRUS-E2 RRH	20.4	7.5	18.5	1.06	2.72	1.21	59	14	3
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	52	11	3
2" Pipe	2.4	12.0		0.20	0.20	1.20	11	4	1
3/4" Round Bar	0.8	12.0		0.06	0.06	1.20	3	3	0

Date: 3/24/2021
Project Name: BRIDGEPORT PINE STREET
Project No.: CT1382
Designed By: ID Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 30 (deg) | Ice Thickness = 1.15 in. | Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	823	374	711
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	823	374	711
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	517	370	481
AIR6449 N77 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	185	99	164
4449 B5/B12 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	65	91	71
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	62	75	66
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	58	93	67
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	38	85	50
RRUS-E2 RRH	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	59	145	81
WIND LOADS WITH ICE:												
TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.71	6.83	4.27	9.82	1.28	1.49	148	75	130
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.71	6.83	4.27	9.82	1.28	1.49	148	75	130
HPA65R-BU8A Antenna	98.3	14.0	9.9	9.56	6.76	7.02	9.92	1.40	1.50	99	75	93
AIR6449 N77 Antenna	32.7	18.2	10.4	4.14	2.36	1.80	3.14	1.20	1.23	37	21	33
4449 B5/B12 RRH	20.2	11.7	15.5	1.64	2.18	1.73	1.30	1.20	1.20	15	19	16
B2/B66A 8843 RRH	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	14	16	15
B14 4478 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	13	20	15
4415 B30 RRH	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	9	18	12
RRUS-E2 RRH	22.7	9.8	20.8	1.55	3.28	2.32	1.09	1.20	1.20	14	29	18
WIND LOADS AT 30 MPH:												
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	47	22	41
DMP6SR-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	47	22	41
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	30	21	28
AIR6449 N77 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	11	6	9
4449 B5/B12 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	5	4
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	4	4
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	4
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	3
RRUS-E2 RRH	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	3	8	5

Date: 3/24/2021
Project Name: BRIDGEPORT PINE STREET
Project No.: CT1382
Designed By: ID Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 60 (deg) | Ice Thickness = 1.15 in. | Equivalent Angle = 240 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	823	374	486
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	823	374	486
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	517	370	407
AIR6449 N77 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	185	99	121
4449 B5/B12 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	65	91	84
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	62	75	72
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	58	93	84
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	38	85	73
RRUS-E2 RRH	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	59	145	123
WIND LOADS WITH ICE:												
TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.71	6.83	4.27	9.82	1.28	1.49	148	75	93
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.71	6.83	4.27	9.82	1.28	1.49	148	75	93
HPA65R-BU8A Antenna	98.3	14.0	9.9	9.56	6.76	7.02	9.92	1.40	1.50	99	75	81
AIR6449 N77 Antenna	32.7	18.2	10.4	4.14	2.36	1.80	3.14	1.20	1.23	37	21	25
4449 B5/B12 RRH	20.2	11.7	15.5	1.64	2.18	1.73	1.30	1.20	1.20	15	19	18
B2/B66A 8843 RRH	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	14	16	16
B14 4478 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	13	20	18
4415 B30 RRH	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	9	18	16
RRUS-E2 RRH	22.7	9.8	20.8	1.55	3.28	2.32	1.09	1.20	1.20	14	29	25
WIND LOADS AT 30 MPH:												
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	47	22	28
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	47	22	28
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	30	21	23
AIR6449 N77 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	11	6	7
4449 B5/B12 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	5	5
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	4	4
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	5
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	4
RRUS-E2 RRH	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	3	8	7

Date: 3/24/2021
Project Name: BRIDGEPORT PINE STREET
Project No.: CT1382
Designed By: ID Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 90 (deg) | Ice Thickness = 1.15 in. | Equivalent Angle = 270 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	823	374	374
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	823	374	374
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	517	370	370
AIR6449 N77 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	185	99	99
4449 B5/B12 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	65	91	91
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	62	75	75
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	58	93	93
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	38	85	85
RRUS-E2 RRH	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	59	145	145
WIND LOADS WITH ICE:												
TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.71	6.83	4.27	9.82	1.28	1.49	148	75	75
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.71	6.83	4.27	9.82	1.28	1.49	148	75	75
HPA65R-BU8A Antenna	98.3	14.0	9.9	9.56	6.76	7.02	9.92	1.40	1.50	99	75	75
AIR6449 N77 Antenna	32.7	18.2	10.4	4.14	2.36	1.80	3.14	1.20	1.23	37	21	21
4449 B5/B12 RRH	20.2	11.7	15.5	1.64	2.18	1.73	1.30	1.20	1.20	15	19	19
B2/B66A 8843 RRH	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	14	16	16
B14 4478 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	13	20	20
4415 B30 RRH	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	9	18	18
RRUS-E2 RRH	22.7	9.8	20.8	1.55	3.28	2.32	1.09	1.20	1.20	14	29	29
WIND LOADS AT 30 MPH:												
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	47	22	22
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	47	22	22
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	30	21	21
AIR6449 N77 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	11	6	6
4449 B5/B12 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	5	5
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	4	4
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	5
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	5
RRUS-E2 RRH	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	3	8	8

Date: 3/24/2021
Project Name: BRIDGEPORT PINE STREET
Project No.: CT1382
Designed By: ID Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 120 (deg) | Ice Thickness = 1.15 in. | Equivalent Angle = 300 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	823	374	486
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	823	374	486
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	517	370	407
AIR6449 N77 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	185	99	121
4449 B5/B12 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	65	91	84
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	62	75	72
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	58	93	84
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	38	85	73
RRUS-E2 RRH	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	59	145	123
WIND LOADS WITH ICE:												
TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.71	6.83	4.27	9.82	1.28	1.49	148	75	93
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.71	6.83	4.27	9.82	1.28	1.49	148	75	93
HPA65R-BU8A Antenna	98.3	14.0	9.9	9.56	6.76	7.02	9.92	1.40	1.50	99	75	81
AIR6449 N77 Antenna	32.7	18.2	10.4	4.14	2.36	1.80	3.14	1.20	1.23	37	21	25
4449 B5/B12 RRH	20.2	11.7	15.5	1.64	2.18	1.73	1.30	1.20	1.20	15	19	18
B2/B66A 8843 RRH	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	14	16	16
B14 4478 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	13	20	18
4415 B30 RRH	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	9	18	16
RRUS-E2 RRH	22.7	9.8	20.8	1.55	3.28	2.32	1.09	1.20	1.20	14	29	25
WIND LOADS AT 30 MPH:												
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	47	22	28
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	47	22	28
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	30	21	23
AIR6449 N77 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	11	6	7
4449 B5/B12 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	5	5
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	4	4
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	5
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	4
RRUS-E2 RRH	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	3	8	7

Date: 3/24/2021
Project Name: BRIDGEPORT PINE STREET
Project No.: CT1382
Designed By: ID Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 150 (deg) | Ice Thickness = 1.15 in. | Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	823	374	711
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	823	374	711
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	517	370	481
AIR6449 N77 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	185	99	164
4449 B5/B12 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	65	91	71
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	62	75	66
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	58	93	67
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	38	85	50
RRUS-E2 RRH	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	59	145	81
WIND LOADS WITH ICE:												
TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.71	6.83	4.27	9.82	1.28	1.49	148	75	130
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.71	6.83	4.27	9.82	1.28	1.49	148	75	130
HPA65R-BU8A Antenna	98.3	14.0	9.9	9.56	6.76	7.02	9.92	1.40	1.50	99	75	93
AIR6449 N77 Antenna	32.7	18.2	10.4	4.14	2.36	1.80	3.14	1.20	1.23	37	21	33
4449 B5/B12 RRH	20.2	11.7	15.5	1.64	2.18	1.73	1.30	1.20	1.20	15	19	16
B2/B66A 8843 RRH	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	14	16	15
B14 4478 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	13	20	15
4415 B30 RRH	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	9	18	12
RRUS-E2 RRH	22.7	9.8	20.8	1.55	3.28	2.32	1.09	1.20	1.20	14	29	18
WIND LOADS AT 30 MPH:												
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	47	22	41
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	47	22	41
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	30	21	28
AIR6449 N77 Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	11	6	9
4449 B5/B12 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	5	4
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	4	4
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	4
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	3
RRUS-E2 RRH	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	3	8	5

Date: 3/24/2021
Project Name: BRIDGEPORT PINE STREET
Project No.: CT1382
Designed By: ID **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.15 in.
Density of ice: 56 pcf

TPA65R-BU8DA-K Antenna

Weight of ice based on total radial SF area:

Height (in):	96.0	
Width (in):	20.7	
Depth (in):	7.7	
Total weight of ice on object:		261 lbs
Weight of object:	87.0 lbs	
Combined weight of ice and object:		348 lbs

DMP65R-BU8DA-K Antenna

Weight of ice based on total radial SF area:

Height (in):	96.0	
Width (in):	20.7	
Depth (in):	7.7	
Total weight of ice on object:		261 lbs
Weight of object:	96.0 lbs	
Combined weight of ice and object:		357 lbs

HPA65R-BU8A Antenna

Weight of ice based on total radial SF area:

Height (in):	96.0	
Width (in):	11.7	
Depth (in):	7.6	
Total weight of ice on object:		170 lbs
Weight of object:	54.0 lbs	
Combined weight of ice and object:		224 lbs

AIR6449 N77 Antenna

Weight of ice based on total radial SF area:

Height (in):	30.4	
Width (in):	15.9	
Depth (in):	8.1	
Total weight of ice on object:		68 lbs
Weight of object:	106.0 lbs	
Combined weight of ice and object:		174 lbs

4449 B5/B12 RRH

Weight of ice based on total radial SF area:

Height (in):	17.9	
Width (in):	13.2	
Depth (in):	9.4	
Total weight of ice on object:		36 lbs
Weight of object:	71.0 lbs	
Combined weight of ice and object:		107 lbs

B2/B66A 8843 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.9	
Total weight of ice on object:		32 lbs
Weight of object:	72.0 lbs	
Combined weight of ice and object:		104 lbs

B14 4478 RRH

Weight of ice based on total radial SF area:

Height (in):	18.1	
Width (in):	13.4	
Depth (in):	8.3	
Total weight of ice on object:		36 lbs
Weight of object:	60.0 lbs	
Combined weight of ice and object:		96 lbs

4415 B30 RRH

Weight of ice based on total radial SF area:

Height (in):	16.5	
Width (in):	13.4	
Depth (in):	5.9	
Total weight of ice on object:		31 lbs
Weight of object:	46.0 lbs	
Combined weight of ice and object:		77 lbs

RRUS-E2 RRH

Weight of ice based on total radial SF area:

Height (in):	20.4	
Width (in):	18.5	
Depth (in):	7.5	
Total weight of ice on object:		50 lbs
Weight of object:	53.0 lbs	
Combined weight of ice and object:		103 lbs

3/4" Round Bar

Per foot weight of ice:

diameter (in):	0.75	
Per foot weight of ice on object:		3 plf

2" pipe

Per foot weight of ice:

diameter (in):	2.38	
Per foot weight of ice on object:		5 plf

Squid Surge Arrestor

Weight of ice based on total radial SF area:

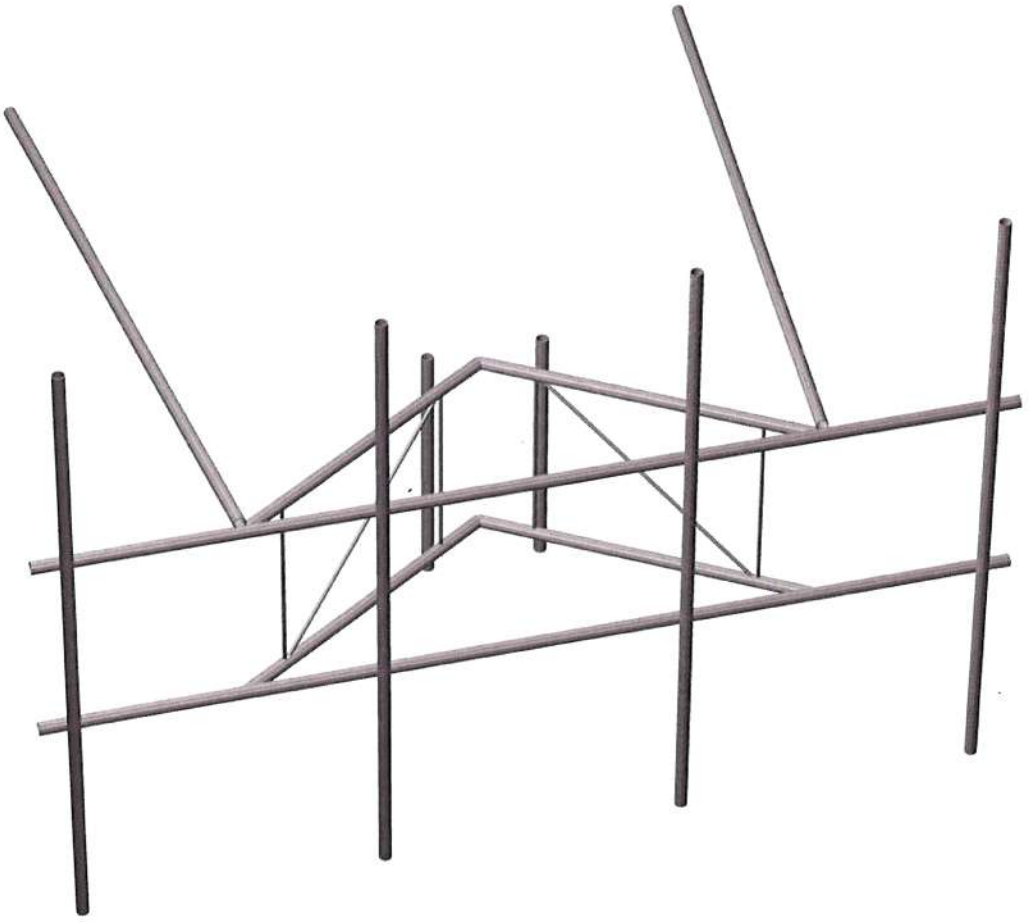
Depth (in):	24.0	
Diameter(in):	9.7	
Total weight of ice on object:		30 lbs
Weight of object:	33 lbs	
Combined weight of ice and object:		63 lbs

HUDSON
Design Group LLC

Mount Calculations
(Proposed Conditions)

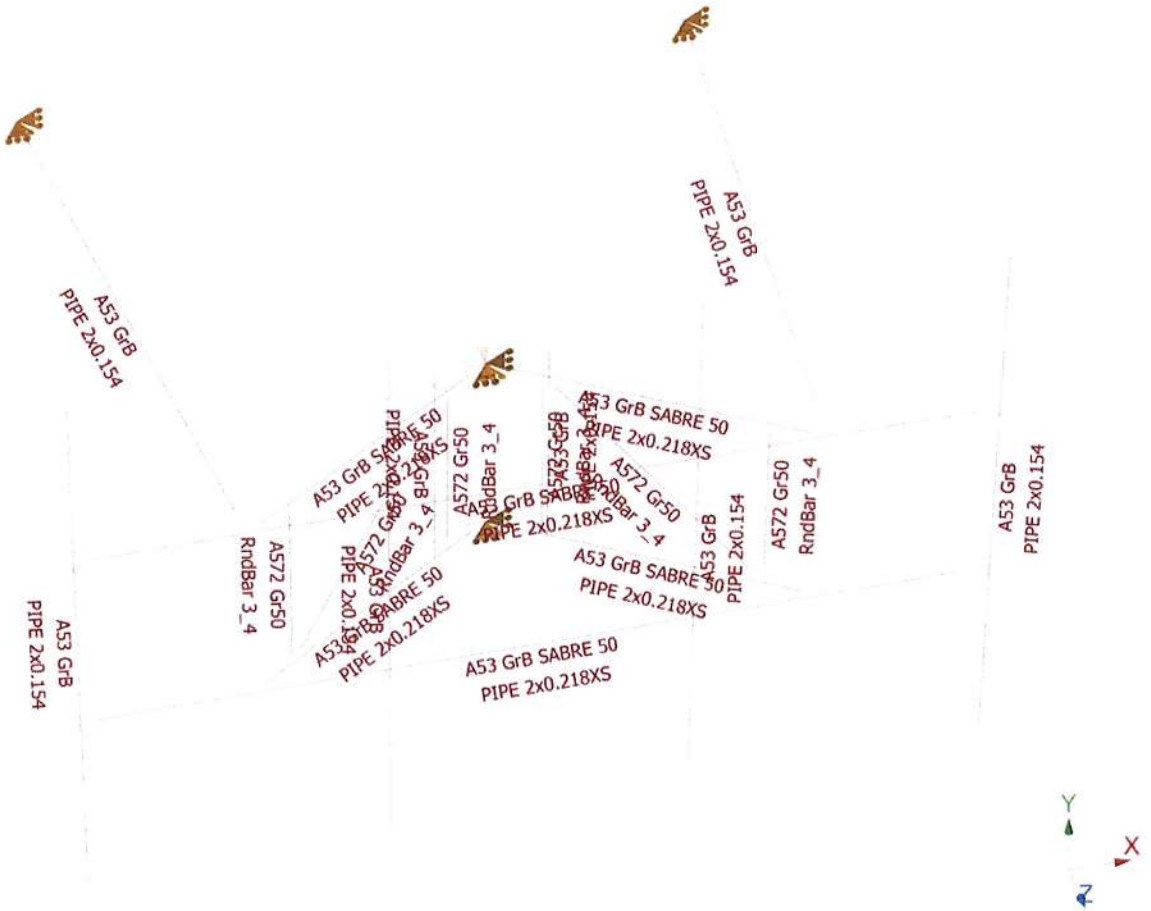
Bentley

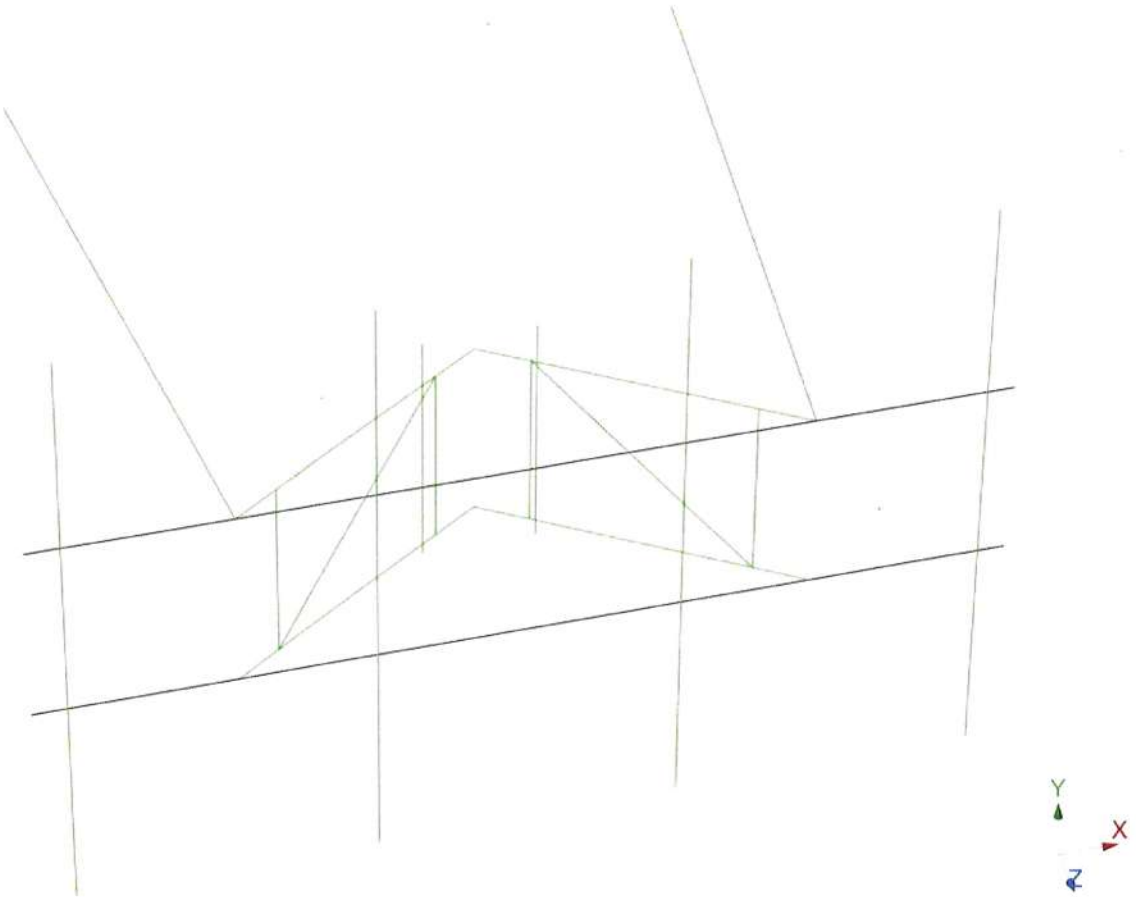
Current Date: 3/24/2021 5:38 PM
Units system: English
File name: Z:\Shared\Work2.0\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1382\CT1382 (NSB).retx



Bentley

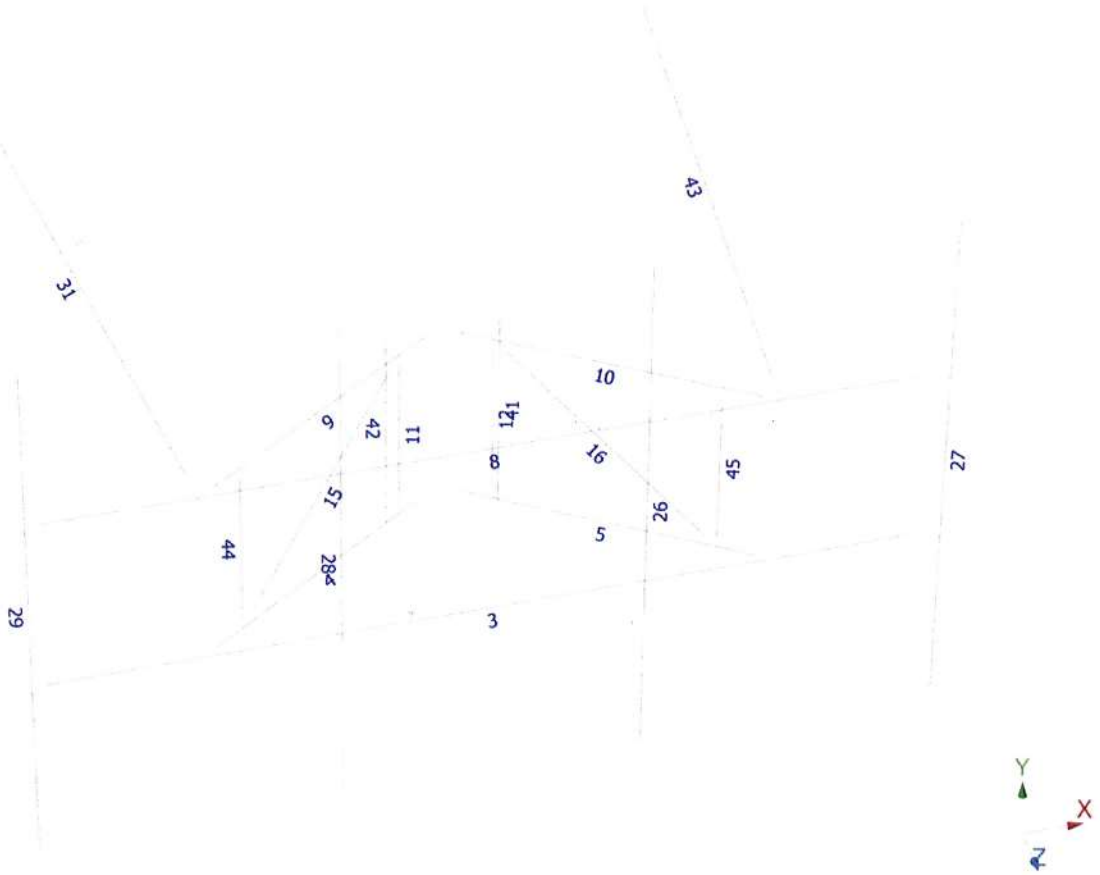
Current Date: 3/24/2021 5:38 PM
Units system: English
File name: Z:\Shared\Work2.0\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1382\CT1382 (NSB).retx




Y
X
Z

Bentley

Current Date: 3/24/2021 5:38 PM
Units system: English
File name: Z:\Shared\Work2.0\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1382\CT1382 (NSB).retx



Bentley

Current Date: 3/24/2021 5:39 PM
Units system: English
File name: Z:\Shared\Work2.0\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1382\CT1382 (NSB).retx

Load data

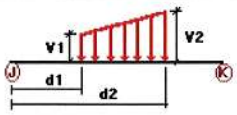
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
D	Dead Load	No	DL
Wo	Wind Load (NO ICE)	No	WIND
W30	WL 30deg	No	WIND
W60	WL 60deg	No	WIND
W90	WL 90deg	No	WIND
W120	WL 120deg	No	WIND
W150	WL 150deg	No	WIND
Di	Ice Load	No	LL
WI0	WL ICE 0deg	No	WIND
WI30	WL ICE 30deg	No	WIND
WI60	WL ICE 60deg	No	WIND
WI90	WL ICE 90deg	No	WIND
WI120	WL ICE 120deg	No	WIND
WI150	WL ICE 150deg	No	WIND
WL0	WL 30 mph 0deg	No	WIND
WL30	WL 30 mph 30deg	No	WIND
WL60	WL 30 mph 60deg	No	WIND
WL90	WL 30 mph 90deg	No	WIND
WL120	WL 30 mph 120deg	No	WIND
WL150	WL 30 mph 150deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load Right End of Mount	No	LL
LL3	250 lb Live Load Left End of Mount	No	LL
LLa1	250 lb Live Load Antenna 1	No	LL
LLa2	250 lb Live Load Antenna 2	No	LL
LLa3	250 lb Live Load Antenna 3	No	LL
LLa4	250 lb Live Load Antenna 4	No	LL

Distributed force on members

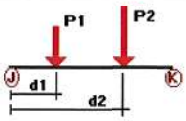


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	3	z	-0.011	0.00	0.00	No	0.00	No
	4	z	-0.011	0.00	0.00	No	0.00	No
	5	z	-0.011	0.00	0.00	No	0.00	No
	8	z	-0.011	0.00	0.00	No	0.00	No
	9	z	-0.011	0.00	0.00	No	0.00	No
	10	z	-0.011	0.00	0.00	No	0.00	No
	11	z	-0.003	0.00	0.00	No	0.00	No
	12	z	-0.003	0.00	0.00	No	0.00	No
	15	z	-0.003	0.00	0.00	No	0.00	No

	16	z	-0.003	0.00	0.00	No	0.00	No
	29	z	-0.011	0.00	0.00	No	0.00	No
	31	z	-0.011	0.00	0.00	No	0.00	No
	41	z	-0.011	0.00	0.00	No	0.00	No
	42	z	-0.011	0.00	0.00	No	0.00	No
	43	z	-0.011	0.00	0.00	No	0.00	No
	44	z	-0.003	0.00	0.00	No	0.00	No
	45	z	-0.003	0.00	0.00	No	0.00	No
W30	3	z	-0.011	0.00	0.00	No	0.00	No
	4	z	-0.011	0.00	0.00	No	0.00	No
	5	z	-0.011	0.00	0.00	No	0.00	No
	8	z	-0.011	0.00	0.00	No	0.00	No
	9	z	-0.011	0.00	0.00	No	0.00	No
	10	z	-0.011	0.00	0.00	No	0.00	No
	11	z	-0.003	0.00	0.00	No	0.00	No
	12	z	-0.003	0.00	0.00	No	0.00	No
	15	z	-0.003	0.00	0.00	No	0.00	No
	16	z	-0.003	0.00	0.00	No	0.00	No
	26	z	-0.011	0.00	0.00	No	0.00	No
	27	z	-0.011	0.00	0.00	No	0.00	No
	28	z	-0.011	0.00	0.00	No	0.00	No
	29	z	-0.011	0.00	0.00	No	0.00	No
	31	z	-0.011	0.00	0.00	No	0.00	No
	41	z	-0.011	0.00	0.00	No	0.00	No
	42	z	-0.011	0.00	0.00	No	0.00	No
	43	z	-0.011	0.00	0.00	No	0.00	No
	44	z	-0.003	0.00	0.00	No	0.00	No
	45	z	-0.003	0.00	0.00	No	0.00	No
W60	3	x	-0.011	0.00	0.00	No	0.00	No
	4	x	-0.011	0.00	0.00	No	0.00	No
	5	x	-0.011	0.00	0.00	No	0.00	No
	8	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.011	0.00	0.00	No	0.00	No
	10	x	-0.011	0.00	0.00	No	0.00	No
	11	x	-0.003	0.00	0.00	No	0.00	No
	12	x	-0.003	0.00	0.00	No	0.00	No
	15	x	-0.003	0.00	0.00	No	0.00	No
	16	x	-0.003	0.00	0.00	No	0.00	No
	26	x	-0.011	0.00	0.00	No	0.00	No
	27	x	-0.011	0.00	0.00	No	0.00	No
	28	x	-0.011	0.00	0.00	No	0.00	No
	29	x	-0.011	0.00	0.00	No	0.00	No
	31	x	-0.011	0.00	0.00	No	0.00	No
	41	x	-0.011	0.00	0.00	No	0.00	No
	42	x	-0.011	0.00	0.00	No	0.00	No
	43	x	-0.011	0.00	0.00	No	0.00	No
	44	x	-0.003	0.00	0.00	No	0.00	No
	45	x	-0.003	0.00	0.00	No	0.00	No
W90	4	x	-0.011	0.00	0.00	No	0.00	No
	5	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.011	0.00	0.00	No	0.00	No
	10	x	-0.011	0.00	0.00	No	0.00	No
	11	x	-0.003	0.00	0.00	No	0.00	No
	12	x	-0.003	0.00	0.00	No	0.00	No
	15	x	-0.003	0.00	0.00	No	0.00	No
	16	x	-0.003	0.00	0.00	No	0.00	No
	26	x	-0.011	0.00	0.00	No	0.00	No
	27	x	-0.011	0.00	0.00	No	0.00	No
	28	x	-0.011	0.00	0.00	No	0.00	No
	29	x	-0.011	0.00	0.00	No	0.00	No
	31	x	-0.011	0.00	0.00	No	0.00	No
	41	x	-0.011	0.00	0.00	No	0.00	No
	42	x	-0.011	0.00	0.00	No	0.00	No
	43	x	-0.011	0.00	0.00	No	0.00	No
	44	x	-0.003	0.00	0.00	No	0.00	No
	45	x	-0.003	0.00	0.00	No	0.00	No

W120	3	x	-0.011	0.00	0.00	No	0.00	No
	4	x	-0.011	0.00	0.00	No	0.00	No
	5	x	-0.011	0.00	0.00	No	0.00	No
	8	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.011	0.00	0.00	No	0.00	No
	10	x	-0.011	0.00	0.00	No	0.00	No
	11	x	-0.003	0.00	0.00	No	0.00	No
	12	x	-0.003	0.00	0.00	No	0.00	No
	15	x	-0.003	0.00	0.00	No	0.00	No
	16	x	-0.003	0.00	0.00	No	0.00	No
	26	x	-0.011	0.00	0.00	No	0.00	No
	27	x	-0.011	0.00	0.00	No	0.00	No
	28	x	-0.011	0.00	0.00	No	0.00	No
	29	x	-0.011	0.00	0.00	No	0.00	No
	31	x	-0.011	0.00	0.00	No	0.00	No
	41	x	-0.011	0.00	0.00	No	0.00	No
	42	x	-0.011	0.00	0.00	No	0.00	No
	43	x	-0.011	0.00	0.00	No	0.00	No
	44	x	-0.003	0.00	0.00	No	0.00	No
	45	x	-0.003	0.00	0.00	No	0.00	No
W150	3	z	0.011	0.00	0.00	No	0.00	No
	4	z	0.011	0.00	0.00	No	0.00	No
	5	z	0.011	0.00	0.00	No	0.00	No
	8	z	0.011	0.00	0.00	No	0.00	No
	9	z	0.011	0.00	0.00	No	0.00	No
	10	z	0.011	0.00	0.00	No	0.00	No
	11	z	0.003	0.00	0.00	No	0.00	No
	12	z	0.003	0.00	0.00	No	0.00	No
	15	z	0.003	0.00	0.00	No	0.00	No
	16	z	0.003	0.00	0.00	No	0.00	No
	26	z	0.011	0.00	0.00	No	0.00	No
	27	z	0.011	0.00	0.00	No	0.00	No
	28	z	0.011	0.00	0.00	No	0.00	No
	29	z	0.011	0.00	0.00	No	0.00	No
	31	z	0.011	0.00	0.00	No	0.00	No
	41	z	0.011	0.00	0.00	No	0.00	No
	42	z	0.011	0.00	0.00	No	0.00	No
	43	z	0.011	0.00	0.00	No	0.00	No
	44	z	0.003	0.00	0.00	No	0.00	No
	45	z	0.003	0.00	0.00	No	0.00	No
Di	3	y	-0.005	0.00	0.00	No	0.00	No
	4	y	-0.005	0.00	0.00	No	0.00	No
	5	y	-0.005	0.00	0.00	No	0.00	No
	8	y	-0.005	0.00	0.00	No	0.00	No
	9	y	-0.005	0.00	0.00	No	0.00	No
	10	y	-0.005	0.00	0.00	No	0.00	No
	11	y	-0.003	0.00	0.00	No	0.00	No
	12	y	-0.003	0.00	0.00	No	0.00	No
	15	y	-0.003	0.00	0.00	No	0.00	No
	16	y	-0.003	0.00	0.00	No	0.00	No
	26	y	-0.005	0.00	0.00	No	0.00	No
	27	y	-0.005	0.00	0.00	No	0.00	No
	28	y	-0.005	0.00	0.00	No	0.00	No
	29	y	-0.005	0.00	0.00	No	0.00	No
	31	y	-0.005	0.00	0.00	No	0.00	No
	41	y	-0.005	0.00	0.00	No	0.00	No
	42	y	-0.005	0.00	0.00	No	0.00	No
	43	y	-0.005	0.00	0.00	No	0.00	No
	44	y	-0.003	0.00	0.00	No	0.00	No
	45	y	-0.003	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	26	y	-0.044	1.50	No
		y	-0.044	8.50	No
	27	y	-0.048	1.50	No
		y	-0.048	8.50	No
	28	y	-0.027	1.50	No
		y	-0.027	8.50	No
	29	y	-0.053	3.75	No
		y	-0.053	6.25	No
	41	y	-0.06	1.50	No
		y	-0.046	1.50	No
		y	-0.053	2.50	No
	42	y	-0.071	2.00	No
		y	-0.072	2.00	No
		y	-0.033	1.00	No
Wo	26	z	-0.412	1.50	No
		z	-0.412	8.50	No
	27	z	-0.412	1.50	No
		z	-0.412	8.50	No
	28	z	-0.259	1.50	No
		z	-0.259	8.50	No
	29	z	-0.093	3.75	No
		z	-0.093	6.25	No
	41	z	-0.058	1.50	No
		z	-0.038	1.50	No
		z	-0.059	2.50	No
	42	z	-0.065	2.00	No
		z	-0.062	2.00	No
		z	-0.052	1.00	No
W30	26	3	-0.356	1.50	No
		3	-0.356	8.50	No
	27	3	-0.356	1.50	No
		3	-0.356	8.50	No
	28	3	-0.241	1.50	No
		3	-0.241	8.50	No
	29	3	-0.082	3.75	No
		3	-0.082	6.25	No
	41	3	-0.067	1.50	No
		3	-0.081	2.50	No
	42	3	-0.071	2.00	No
		3	-0.052	1.00	No
W60	26	3	-0.244	1.50	No
		3	-0.244	8.50	No
	27	3	-0.244	1.50	No
		3	-0.244	8.50	No
	28	3	-0.205	1.50	No
		3	-0.205	8.50	No
	29	3	-0.061	3.75	No
		3	-0.061	6.25	No
	41	3	-0.084	1.50	No
		3	-0.123	2.50	No
	42	3	-0.084	2.00	No
		3	-0.052	1.00	No
W90	26	x	-0.188	1.50	No
		x	-0.188	8.50	No
	27	x	-0.188	1.50	No
		x	-0.188	8.50	No
	28	x	-0.188	1.50	No
		x	-0.188	8.50	No
	29	x	-0.05	3.75	No
		x	-0.05	6.25	No
	41	x	-0.093	1.50	No

		x	-0.145	2.50	No
	42	x	-0.091	2.00	No
		x	-0.052	1.00	No
W120	26	2	-0.244	1.50	No
		2	-0.244	8.50	No
	27	2	-0.244	1.50	No
		2	-0.244	8.50	No
	28	2	-0.205	1.50	No
		2	-0.205	8.50	No
	29	2	-0.061	3.75	No
		2	-0.061	6.25	No
	41	2	-0.084	1.50	No
		2	-0.123	2.50	No
	42	2	-0.084	2.00	No
		2	-0.052	1.00	No
W150	26	2	-0.356	1.50	No
		2	-0.356	8.50	No
	27	2	-0.356	1.50	No
		2	-0.356	8.50	No
	28	2	-0.241	1.50	No
		2	-0.241	8.50	No
	29	2	-0.082	3.75	No
		2	-0.082	6.25	No
	41	2	-0.067	1.50	No
		2	-0.081	2.50	No
	42	2	-0.071	2.00	No
		2	-0.052	1.00	No
Di	26	y	-0.131	1.50	No
		y	-0.131	8.50	No
	27	y	-0.131	1.50	No
		y	-0.131	8.50	No
	28	y	-0.085	1.50	No
		y	-0.085	8.50	No
	29	y	-0.034	3.75	No
		y	-0.034	6.25	No
	41	y	-0.036	1.50	No
		y	-0.031	1.50	No
		y	-0.053	2.50	No
	42	y	-0.036	2.00	No
		y	-0.032	2.00	No
		y	-0.03	1.00	No
WI0	26	z	-0.075	1.50	No
		z	-0.075	8.50	No
	27	z	-0.075	1.50	No
		z	-0.075	8.50	No
	28	z	-0.051	1.50	No
		z	-0.051	8.50	No
	29	z	-0.019	3.75	No
		z	-0.019	6.25	No
	41	z	-0.013	1.50	No
		z	-0.01	1.50	No
		z	-0.014	2.50	No
	42	z	-0.015	2.00	No
		z	-0.014	2.00	No
		z	-0.011	1.00	No
WI30	26	3	-0.065	1.50	No
		3	-0.065	8.50	No
	27	3	-0.065	1.50	No
		3	-0.065	8.50	No
	28	3	-0.047	1.50	No
		3	-0.047	8.50	No
	29	3	-0.017	3.75	No
		3	-0.017	6.25	No
	41	3	-0.015	1.50	No
		3	-0.018	2.50	No
	42	3	-0.016	2.00	No

		3	-0.011	1.00	No
WI60	26	3	-0.047	1.50	No
		3	-0.047	8.50	No
	27	3	-0.047	1.50	No
		3	-0.047	8.50	No
	28	3	-0.041	1.50	No
		3	-0.041	8.50	No
	29	3	-0.013	3.75	No
		3	-0.013	6.25	No
	41	3	-0.018	1.50	No
		3	-0.025	2.50	No
	42	3	-0.018	2.00	No
		3	-0.011	1.00	No
WI90	26	x	-0.038	1.50	No
		x	-0.038	8.50	No
	27	x	-0.038	1.50	No
		x	-0.038	8.50	No
	28	x	-0.038	1.50	No
		x	-0.038	8.50	No
	29	x	-0.011	3.75	No
		x	-0.011	6.25	No
	41	x	-0.02	1.50	No
		x	-0.029	2.50	No
	42	x	-0.019	2.00	No
		x	-0.011	1.00	No
WI120	26	2	-0.047	1.50	No
		2	-0.047	8.50	No
	27	2	-0.047	1.50	No
		2	-0.047	8.50	No
	28	2	-0.041	1.50	No
		2	-0.041	8.50	No
	29	2	-0.013	3.75	No
		2	-0.013	6.25	No
	41	2	-0.018	1.50	No
		2	-0.025	2.50	No
	42	2	-0.018	2.00	No
		2	-0.011	1.00	No
WI150	26	2	-0.065	1.50	No
		2	-0.065	8.50	No
	27	2	-0.065	1.50	No
		2	-0.065	8.50	No
	28	2	-0.047	1.50	No
		2	-0.047	8.50	No
	29	2	-0.017	3.75	No
		2	-0.017	6.25	No
	41	2	-0.015	1.50	No
		2	-0.018	2.50	No
	42	2	-0.016	2.00	No
		2	-0.011	1.00	No
WL0	26	z	-0.024	1.50	No
		z	-0.024	8.50	No
	27	z	-0.024	1.50	No
		z	-0.024	8.50	No
	28	z	-0.015	1.50	No
		z	-0.015	8.50	No
	29	z	-0.006	3.75	No
		z	-0.006	6.25	No
	41	z	-0.003	1.50	No
		z	-0.002	1.50	No
		z	-0.003	2.50	No
	42	z	-0.004	2.00	No
		z	-0.004	2.00	No
		z	-0.003	1.00	No
WL30	26	3	-0.021	1.50	No
		3	-0.021	8.50	No
	27	3	-0.021	1.50	No

		3	-0.021	8.50	No
	28	3	-0.014	1.50	No
		3	-0.014	8.50	No
	29	3	-0.005	3.75	No
		3	-0.005	6.25	No
	41	3	-0.004	1.50	No
		3	-0.005	2.50	No
	42	3	-0.004	2.00	No
		3	-0.003	1.00	No
WL60	26	3	-0.015	1.50	No
		3	-0.015	8.50	No
	27	3	-0.015	1.50	No
		3	-0.015	8.50	No
	28	3	-0.012	1.50	No
		3	-0.012	8.50	No
	29	3	-0.004	3.75	No
		3	-0.004	6.25	No
	41	3	-0.005	1.50	No
		3	-0.007	2.50	No
	42	3	-0.005	2.00	No
		3	-0.003	1.00	No
WL90	26	x	-0.011	1.50	No
		x	-0.011	8.50	No
	27	x	-0.011	1.50	No
		x	-0.011	8.50	No
	28	x	-0.011	1.50	No
		x	-0.011	8.50	No
	29	x	-0.003	3.75	No
		x	-0.003	6.25	No
	41	x	-0.005	1.50	No
		x	-0.008	2.50	No
	42	x	-0.005	2.00	No
		x	-0.003	1.00	No
WL120	26	2	-0.015	1.50	No
		2	-0.015	8.50	No
	27	2	-0.015	1.50	No
		2	-0.015	8.50	No
	28	2	-0.012	1.50	No
		2	-0.012	8.50	No
	29	2	-0.004	3.75	No
		2	-0.004	6.25	No
	41	2	-0.005	1.50	No
		2	-0.007	2.50	No
	42	2	-0.005	2.00	No
		2	-0.003	1.00	No
WL150	26	2	-0.021	1.50	No
		2	-0.021	8.50	No
	27	2	-0.021	1.50	No
		2	-0.021	8.50	No
	28	2	-0.014	1.50	No
		2	-0.014	8.50	No
	29	2	-0.005	3.75	No
		2	-0.005	6.25	No
	41	2	-0.004	1.50	No
		2	-0.005	2.50	No
	42	2	-0.004	2.00	No
		2	-0.003	1.00	No
LL1	8	y	-0.25	50.00	Yes
LL2	8	y	-0.25	100.00	Yes
LL3	8	y	-0.25	0.00	Yes
LLa1	26	y	-0.25	50.00	Yes
LLa2	27	y	-0.25	50.00	Yes
LLa3	28	y	-0.25	50.00	Yes
LLa4	29	y	-0.25	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier Comb.	MultX	MultY	MultZ
D	Dead Load	No	0.00	-1.00	0.00
Wo	Wind Load (NO ICE)	No	0.00	0.00	0.00
W30	WL 30deg	No	0.00	0.00	0.00
W60	WL 60deg	No	0.00	0.00	0.00
W90	WL 90deg	No	0.00	0.00	0.00
W120	WL 120deg	No	0.00	0.00	0.00
W150	WL 150deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
WI0	WL ICE 0deg	No	0.00	0.00	0.00
WI30	WL ICE 30deg	No	0.00	0.00	0.00
WI60	WL ICE 60deg	No	0.00	0.00	0.00
WI90	WL ICE 90deg	No	0.00	0.00	0.00
WI120	WL ICE 120deg	No	0.00	0.00	0.00
WI150	WL ICE 150deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30deg	No	0.00	0.00	0.00
WL60	WL 30 mph 60deg	No	0.00	0.00	0.00
WL90	WL 30 mph 90deg	No	0.00	0.00	0.00
WL120	WL 30 mph 120deg	No	0.00	0.00	0.00
WL150	WL 30 mph 150deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load Right End of Mount	No	0.00	0.00	0.00
LL3	250 lb Live Load Left End of Mount	No	0.00	0.00	0.00
LLa1	250 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	250 lb Live Load Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
D	0.00	0.00	0.00
Wo	0.00	0.00	0.00
W30	0.00	0.00	0.00
W60	0.00	0.00	0.00
W90	0.00	0.00	0.00
W120	0.00	0.00	0.00
W150	0.00	0.00	0.00
Di	0.00	0.00	0.00
WI0	0.00	0.00	0.00
WI30	0.00	0.00	0.00
WI60	0.00	0.00	0.00
WI90	0.00	0.00	0.00
WI120	0.00	0.00	0.00
WI150	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
WL60	0.00	0.00	0.00
WL90	0.00	0.00	0.00
WL120	0.00	0.00	0.00
WL150	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LL3	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00

Bentley

Current Date: 3/24/2021 5:39 PM
Units system: English
File name: Z:\Shared\Work2.0\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1382\CT1382 (NSB).retx

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+Wo
LC2=1.2D+W30
LC3=1.2D+W60
LC4=1.2D+W90
LC5=1.2D+W120
LC6=1.2D+W150
LC7=1.2D-Wo
LC8=1.2D-W30
LC9=1.2D-W60
LC10=1.2D-W90
LC11=1.2D-W120
LC12=1.2D-W150
LC13=0.9D+Wo
LC14=0.9D+W30
LC15=0.9D+W60
LC16=0.9D+W90
LC17=0.9D+W120
LC18=0.9D+W150
LC19=0.9D-Wo
LC20=0.9D-W30
LC21=0.9D-W60
LC22=0.9D-W90
LC23=0.9D-W120
LC24=0.9D-W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120
LC36=1.2D+Di-WI150
LC37=1.2D+1.6LL1
LC38=1.2D+1.6LL2
LC39=1.2D+1.6LL3
LC40=1.2D+WL0+1.6LLa1
LC41=1.2D+WL30+1.6LLa1
LC42=1.2D+WL60+1.6LLa1
LC43=1.2D+WL90+1.6LLa1
LC44=1.2D+WL120+1.6LLa1
LC45=1.2D+WL150+1.6LLa1
LC46=1.2D-WL0+1.6LLa1
LC47=1.2D-WL30+1.6LLa1
LC48=1.2D-WL60+1.6LLa1
LC49=1.2D-WL90+1.6LLa1
LC50=1.2D-WL120+1.6LLa1
LC51=1.2D-WL150+1.6LLa1
LC52=1.2D+WL0+1.6LLa2
LC53=1.2D+WL30+1.6LLa2
LC54=1.2D+WL60+1.6LLa2
LC55=1.2D+WL90+1.6LLa2
LC56=1.2D+WL120+1.6LLa2
LC57=1.2D+WL150+1.6LLa2
LC58=1.2D-WL0+1.6LLa2
LC59=1.2D-WL30+1.6LLa2

LC60=1.2D-WL60+1.6LLa2
LC61=1.2D-WL90+1.6LLa2
LC62=1.2D-WL120+1.6LLa2
LC63=1.2D-WL150+1.6LLa2
LC64=1.2D+WL0+1.6LLa3
LC65=1.2D+WL30+1.6LLa3
LC66=1.2D+WL60+1.6LLa3
LC67=1.2D+WL90+1.6LLa3
LC68=1.2D+WL120+1.6LLa3
LC69=1.2D+WL150+1.6LLa3
LC70=1.2D-WL0+1.6LLa3
LC71=1.2D-WL30+1.6LLa3
LC72=1.2D-WL60+1.6LLa3
LC73=1.2D-WL90+1.6LLa3
LC74=1.2D-WL120+1.6LLa3
LC75=1.2D-WL150+1.6LLa3
LC76=1.2D+WL0+1.6LLa4
LC77=1.2D+WL30+1.6LLa4
LC78=1.2D+WL60+1.6LLa4
LC79=1.2D+WL90+1.6LLa4
LC80=1.2D+WL120+1.6LLa4
LC81=1.2D+WL150+1.6LLa4
LC82=1.2D-WL0+1.6LLa4
LC83=1.2D-WL30+1.6LLa4
LC84=1.2D-WL60+1.6LLa4
LC85=1.2D-WL90+1.6LLa4
LC86=1.2D-WL120+1.6LLa4
LC87=1.2D-WL150+1.6LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	PIPE 2x0.154	**26**	LC1 at 33.33%	0.86	OK	Eq. H1-1b
		27	LC1 at 33.33%	**0.86**	**OK**	Eq. H1-1b
		28	LC7 at 33.33%	0.54	OK	Eq. H1-1b
		29	LC39 at 35.42%	0.53	OK	Eq. H1-1b
		31	LC5 at 0.00%	0.29	OK	Eq. H1-1b
		41	LC4 at 85.42%	0.13	OK	Eq. H1-1b
		42	LC10 at 85.42%	0.10	OK	Eq. H1-1b
		43	LC12 at 100.00%	0.37	OK	Eq. H1-1a
	PIPE 2x0.218XS	**3**	LC7 at 78.57%	**0.85**	**With warnings**	Eq. H1-1a
		4	LC12 at 100.00%	0.30	OK	Eq. H1-1b
		5	LC5 at 100.00%	0.29	OK	Eq. H1-1b
		8	LC1 at 79.46%	0.58	With warnings	Eq. H1-1b
		9	LC25 at 100.00%	0.19	OK	Eq. H1-1b
		10	LC1 at 0.00%	0.25	OK	Eq. H1-1b
	RndBar 3_4	**11**	LC39 at 0.00%	0.25	OK	Eq. H1-1a
		12	LC35 at 100.00%	0.29	OK	Eq. H1-1a
		15	LC39 at 0.00%	0.14	OK	Eq. Sec. D2
		16	LC30 at 0.00%	0.17	OK	Eq. Sec. D2
		44	LC77 at 100.00%	0.42	OK	Eq. H1-1a
		45	LC25 at 100.00%	**0.49**	**OK**	Eq. H1-1a

Bentley

Current Date: 3/24/2021 5:39 PM
Units system: English
File name: Z:\Shared\Work2.0\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1382\CT1382 (NSB).retx

Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
2	7.50	0.00	0.00	0
3	-7.50	0.00	0.00	0
4	7.00	0.00	0.00	0
5	-7.00	0.00	0.00	0
6	7.00	0.00	0.20	0
7	-7.00	0.00	0.20	0
8	-4.40	0.00	0.00	0
9	4.40	0.00	0.00	0
10	0.00	0.00	-3.00	0
11	-3.6667	0.00	-0.50	0
12	3.6667	0.00	-0.50	0
13	0.7333	0.00	-2.50	0
14	-0.7333	0.00	-2.50	0
16	7.50	3.00	0.00	0
17	-7.50	3.00	0.00	0
18	7.00	3.00	0.00	0
19	-7.00	3.00	0.00	0
20	7.00	3.00	0.20	0
21	-7.00	3.00	0.20	0
22	-4.40	3.00	0.00	0
23	4.40	3.00	0.00	0
24	0.00	3.00	-3.00	0
27	0.7333	3.00	-2.50	0
28	-0.7333	3.00	-2.50	0
33	-7.00	6.50	0.20	0
34	7.00	6.50	0.20	0
35	-7.00	-3.50	0.20	0
36	7.00	-3.50	0.20	0

38	2.33	0.00	0.00	0
39	2.33	0.00	0.20	0
40	2.33	3.00	0.00	0
41	2.33	3.00	0.20	0
42	2.33	6.50	0.20	0
43	2.33	-3.50	0.20	0
44	-2.33	0.00	0.00	0
45	-2.33	0.00	0.20	0
46	-2.33	3.00	0.00	0
47	-2.33	3.00	0.20	0
48	-2.33	6.50	0.20	0
49	-2.33	-3.50	0.20	0
51	-5.50	3.00	-11.00	0
66	-0.8833	3.00	-2.70	0
67	-0.8833	0.00	-2.70	0
74	0.8833	3.00	-2.70	0
75	0.8833	0.00	-2.70	0
77	0.8833	3.50	-2.70	0
78	-0.8833	3.50	-2.70	0
81	0.8833	-0.50	-2.70	0
82	-0.8833	-0.50	-2.70	0
83	5.50	3.00	-11.00	0
84	-3.6667	3.00	-0.50	0
85	3.6667	3.00	-0.50	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
10	1	1	1	1	1	1
24	1	1	1	1	1	1
51	1	1	1	0	0	0
83	1	1	1	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
3	3	2		PIPE 2x0.218XS	A53 GrB SABRE 50	0.00	0.00	0.00
4	8	10		PIPE 2x0.218XS	A53 GrB SABRE 50	0.00	0.00	0.00
5	9	10		PIPE 2x0.218XS	A53 GrB SABRE 50	0.00	0.00	0.00
8	17	16		PIPE 2x0.218XS	A53 GrB SABRE 50	0.00	0.00	0.00
9	22	24		PIPE 2x0.218XS	A53 GrB SABRE 50	0.00	0.00	0.00
10	23	24		PIPE 2x0.218XS	A53 GrB SABRE 50	0.00	0.00	0.00
11	14	28		RndBar 3_4	A572 Gr50	0.00	0.00	0.00
12	27	13		RndBar 3_4	A572 Gr50	0.00	0.00	0.00
15	28	11		RndBar 3_4	A572 Gr50	0.00	0.00	0.00
16	27	12		RndBar 3_4	A572 Gr50	0.00	0.00	0.00
26	42	43		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
27	34	36		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
28	48	49		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
29	33	35		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
31	22	51		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
41	77	81		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
42	78	82		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
43	23	83		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
44	84	11		RndBar 3_4	A572 Gr50	0.00	0.00	0.00
45	12	85		RndBar 3_4	A572 Gr50	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
12	315.00	0	0.00	0.00	0.00
26	315.00	0	0.00	0.00	0.00
27	315.00	0	0.00	0.00	0.00
28	315.00	0	0.00	0.00	0.00
29	315.00	0	0.00	0.00	0.00
41	315.00	0	0.00	0.00	0.00
42	315.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
31	0.00	2.00	0.00	0.00	2.00	0.00
43	0.00	2.00	0.00	0.00	2.00	0.00

Hinges

	Node-J				Node-K						
Member	M33	M22	V3	V2	M33	M22	V3	V2	TOR	AXL	Axial rigidity
15	0	0	0	0	0	0	0	0	0	0	Tension only
16	0	0	0	0	0	0	0	0	0	0	Tension only

STRUCTURAL ANALYSIS REPORT

For

SAI Group
12 Industrial Way
Salem, NH 03079

Bridgeport
AT&T Site Number CT1382
KM No. 170518.03

250' Self-Support Tower
623 Pine Street
Bridgeport, CT 06605

Prepared By:

KM CONSULTING ENGINEERS, INC.
262 Upper Ferry Road Ewing, NJ 08628
Ph: (609) 538-0400 www.kmengr.com

June 14, 2021

Prepared to ANSI/TIA-222-G-4 December 2014
Structural Standard for Antenna Supporting
Structures and Antennas

Dewberry
Bridgeport (CT1382)

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

Structure

Owner: Radio Communications Tower

Location: 623 Pine Street
Bridgeport, CT 06605

Manufacturer: Rohn
Eng. File No. 3767AE dated 3/25/99

Equipment

Existing tower inventory plus the proposed installation are detailed in Section 2.0 "Tower Inventory."

Synopsis

Load Case No. 1: The existing tower superstructure with the existing inventory and proposed AT&T installation.

The existing tower superstructure and base foundation have sufficient capacity for the proposed installation and therefore meet the current ANSI/TIA-222-G design standards. The tower superstructure is rated at 102.9% and the foundation is rated at 76.4%. Structural ratings of 105% or less are considered acceptable based on reasonable engineering judgement and tolerances.

2.0 TOWER INVENTORY

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Yagi w/Radome	257	B2/B66A 8843 RRH (ATI)	138
9' Whip	257	B2/B66A 8843 RRH (ATI)	138
9' Whip	257	Radio 4415 B30 (ATI)	138
Beacon	256	Radio 4415 B30 (ATI)	138
Top Platform	256	Radio 4415 B30 (ATI)	138
18' Inverted Whip	256	RRUS-E2 RRH (ATI)	138
Yagi w/Radome	256	RRUS-E2 RRH (ATI)	138
18' Whip	256	RRUS-E2 RRH (ATI)	138
21' Whip	256	DC9-48-60-24-8C-EV Squid (ATI)	138
10' Whip	232	DC9-48-60-24-8C-EV Squid (ATI)	138
10' Whip	232	DC9-48-60-24-8C-EV Squid (ATI)	138
6' Side Arm	232	HPCPE-80BW (Sprint)	131
6' Side Arm	232	VHLP1-23-2WH (Sprint)	131
AIR 6449 B41 (T-Mobile)	181	VHLP2.5-11-4WH (Sprint)	131
AIR 6449 B41 (T-Mobile)	181	(2) 800 MHz RRH (Sprint)	119
AIR 6449 B41 (T-Mobile)	181	(2) 800 MHz RRH (Sprint)	119
AIR 3246 B66 (T-Mobile)	180	(2) 800 MHz RRH (Sprint)	119
AIR 3246 B66 (T-Mobile)	180	1900 MHz RRH (Sprint)	119
Radio 4449 B71/B85 (T-Mobile)	180	Junction Box (Sprint)	119
Radio 4449 B71/B85 (T-Mobile)	180	1900 MHz RRH (Sprint)	119
Radio 4449 B71/B85 (T-Mobile)	180	1900 MHz RRH (Sprint)	119
Radio 2212 B25 (T-Mobile)	180	VFA6-RRU (Sprint)	119
Radio 2212 B25 (T-Mobile)	180	VFA6-RRU (Sprint)	119
Radio 2212 B25 (T-Mobile)	180	VFA6-RRU (Sprint)	119
Twin style 1B TMA (T-Mobile)	180	NNVV-65B-R4 (Sprint)	119
Twin style 1B TMA (T-Mobile)	180	NNVV-65B-R4 (Sprint)	119
Twin style 1B TMA (T-Mobile)	180	NNVV-65B-R4 (Sprint)	119
SBX1926Q-43 TMA (T-Mobile)	180	2.5G MAA-AAHC(64T64R) (Sprint)	119
SBX1926Q-43 TMA (T-Mobile)	180	2.5G MAA-AAHC(64T64R) (Sprint)	119
SBX1926Q-43 TMA (T-Mobile)	180	2.5G MAA-AAHC(64T64R) (Sprint)	119
AIR 3246 B66 (T-Mobile)	180	Yagi	112
16' T-Frame Mount (T-Mobile)	180	(2) JAHH-65B-R3B on mount (Verizon)	110
16' T-Frame Mount (T-Mobile)	180	(2) JAHH-65B-R3B on mount (Verizon)	110
16' T-Frame Mount (T-Mobile)	180	(2) JAHH-65B-R3B on mount (Verizon)	110
APXVAARR24_43-U-NA20 (T-Mobile)	179	12' V-Frame Mount (Verizon)	110
APXVAARR24_43-U-NA20 (T-Mobile)	179	(2) APL-866513-42T9 (Verizon)	110
APXVAARR24_43-U-NA20 (T-Mobile)	179	12' V-Frame Mount (Verizon)	110
C10857278C V-Frame Mount (ATI)	138	12' V-Frame Mount (Verizon)	110
C10857278C V-Frame Mount (ATI)	138	(2) APL-866513-42T6 (Verizon)	110
C10857278C V-Frame Mount (ATI)	138	(2) APL-866513-42T9 (Verizon)	110
DMP65R-BU8DA-K (ATI)	138	GPS antenna (Verizon)	110
DMP65R-BU8DA-K (ATI)	138	Raycap 6-OVP (Verizon)	110
DMP65R-BU8DA-K (ATI)	138	C-band 64T64R MMU (Verizon)	110
TPA65R-BU8DA-K (ATI)	138	C-band 64T64R MMU (Verizon)	110
TPA65R-BU8DA-K (ATI)	138	C-band 64T64R MMU (Verizon)	110
TPA65R-BU8DA-K (ATI)	138	6' pipe mount (Verizon)	110
HPA65R-BU8A (ATI)	138	6' pipe mount (Verizon)	110
HPA65R-BU8A (ATI)	138	6' pipe mount (Verizon)	110
HPA65R-BU8A (ATI)	138	9' pipe mount (Verizon)	110
AIR 6449 N77 (ATI)	138	9' pipe mount (Verizon)	110
AIR 6449 N77 (ATI)	138	9' pipe mount (Verizon)	110
AIR 6449 N77 (ATI)	138	B2/B66A Dual RRH (Verizon)	110
B14 4478 RRH (ATI)	138	B2/B66A Dual RRH (Verizon)	110
B14 4478 RRH (ATI)	138	B2/B66A Dual RRH (Verizon)	110
B14 4478 RRH (ATI)	138	B5/B13 Dual RRH (Verizon)	110
Radio 4449 B5/B12 (ATI)	138	B5/B13 Dual RRH (Verizon)	110
Radio 4449 B5/B12 (ATI)	138	B5/B13 Dual RRH (Verizon)	110
Radio 4449 B5/B12 (ATI)	138	CBC78T-DS-43-2X (Verizon)	110
B2/B66A 8843 RRH (ATI)	138	CBC78T-DS-43-2X (Verizon)	110

Proposed AT&T Installation:

*(3) CCI DMP65R-BU8DA-K panel antennas @ 138' AGL
*(3) CCI TPA65R-BU8DA-K panel antennas @ 138' AGL
*(3) CCI HPA65R-BU8A panel antennas @ 138' AGL
*(3) Ericsson AIR6449 N77 panel antennas @ 138' AGL
*(3) B14 4478 RRH's @ 138' AGL
*(3) 4449 B5/B12 RRH's @ 138' AGL
*(3) B2/B66A 8843 RRH's @ 138' AGL
*(3) 4415 B30 RRH's @ 138' AGL
*(3) RRUS-E2 RRH's @ 138' AGL
*(3) DC9-48-60-24-8C-EV squids @ 138' AGL
*(3) C10857278C 14' V-Frame mounts @ 138' AGL
*(9) DC Lines (Model PWRT-606-S) up to 138' AGL
*(3) Fiber Lines (Model RFFT-48SM-001) up to 138' AGL

3.0 COMMENTARY

Our scope of work is to determine if the existing structure is capable of withstanding the additional stresses/forces imposed by the installation of the proposed AT&T equipment noted in the tower inventory. The tower is a 250' tall Rohn self-support tower with a triangular platform located at the top.

Tower member sizes, layout and foundation information was taken from previous structural analysis by KM Consulting Engineers, Inc. (KMCE) dated 6/11/21. Existing antenna inventory and coax cable layout was obtained as per tower mapping by Hightower Solutions dated 6/2/21. Proposed AT&T equipment was obtained from an LEs by SAI Group dated 5/11/21 and correspondence with the client. Proposed Sprint equipment obtained from a structural analysis report by Destek Engineering, LLC dated 8/20/18 and CD's by Com-Ex Consultants, LLC dated 5/9/18 is included in the analysis.

The following report will provide analytical calculations and commentary regarding the capacity of the proposed tower and subsequent recommendations.

4.0 ANALYSIS PROCEDURE

KM Consulting Engineers, Inc. carried out their structural analysis by correlating field inspection and tower member data into proprietary software designed specifically for communication tower analysis.

These programs run in conjunction with the guidelines set down in the ANSI/TIA-222-G Standard entitled "Structural Standard for Antenna Supporting Structures and Antennas."

The existing tower is analyzed by placing wind forces on the structure in 30° positional increments around the tower (i.e. wind pressure directly onto the tower corners, faces and parallel to the faces). This enables the user to "create" a three-dimensional representation, yielding results for worst case scenarios. In effect, the production of these results allows the user to study the structural integrity of the tower when influenced by wind forces from any direction.

The proceeding report includes analysis for the tower with the addition of antennas in the scenarios stated. For clarity, the analysis shall include worst case loadings and a typical elevation view with maximum foundation loads tabulated.

Should the client require to be furnished with a full copy of our analysis, we will gladly do so.

Codes and Standards

ACI - American Concrete Institute - Building Code Requirements for Structural Concrete (ACI 318-14), 2014

AISC - American Institute of Steel Construction - Manual of Steel Construction, 14th edition, 2011

TIA - Telecommunications Industry Association – ANSI/TIA-222-G-4 Structural Standard for Antenna Supporting Structures and Antennas, 2014

CSBC - Connecticut State Building Code 2018

5.0 TOWER ANALYSIS RESULTS

The tower was analyzed for the inventory detailed in Section 2.0 "Tower Inventory".

The basic wind speed of 97 MPH with no radial ice in accordance with ANSI/TIA-222-G is taken from Appendix N in the 2018 Connecticut State Building Code for the nominal design wind speed for the municipality of Bridgeport, CT. The basic wind speed of 50 MPH concurrent with ¾" design ice thickness is taken from the ANSI/TIA-222-G listing applicable for Fairfield County, CT. Additional criteria include Structure Class II, Exposure Category C, and Topographic Category 1.

Load Case No. 1: The proposed AT&T installation of (3) CCI DMP65R-BU8DA-K panel antennas, (3) CCI TPA65R-BU8DA-K panel antennas, (3) CCI HPA65R-BU8A panel antennas, (3) Ericsson AIR6449 N77 panel antennas, (3) B14 4478 RRH's @ 138' AGL, (3) 4449 B5/B12 RRH's, (3) B2/B66A 8843 RRH's @ 138' AGL, (3) 4415 B30 RRH's, (3) RRUS-E2 RRH's, (3) DC9-48-60-24-8C-EV squids, (3) C10857278C 14' V-Frame mounts, (9) DC Lines (Model PWRT-606-S), and (3) Fiber Lines (Model RFFT-48SM-001).

The existing tower superstructure and base foundation have sufficient capacity for the proposed installation and therefore meet the current ANSI/TIA-222-G design standards. The tower superstructure is rated at 102.9% and the foundation is rated at 76.4%. Structural ratings of 105% or less are considered acceptable based on reasonable engineering judgement and tolerances.

Table 1. Base Foundation Rating

Force	Actual (kip·ft)	Capacity (kip·ft)	% Capacity
Overturning Moment	13,374	17,504	**76.4%**

6.0 RECOMMENDATIONS

Further to our calculations, we conclude that the existing tower superstructure and base foundation have adequate capacity and therefore meet the current ANSI/TIA-222-G design standards. The tower is acceptable to support the proposed AT&T installation.

Please do not hesitate to contact our office with any questions or concerns regarding this report.

Sincerely,
KM CONSULTING ENGINEERS, INC.

Domenic Aversa, PE
Project Manager

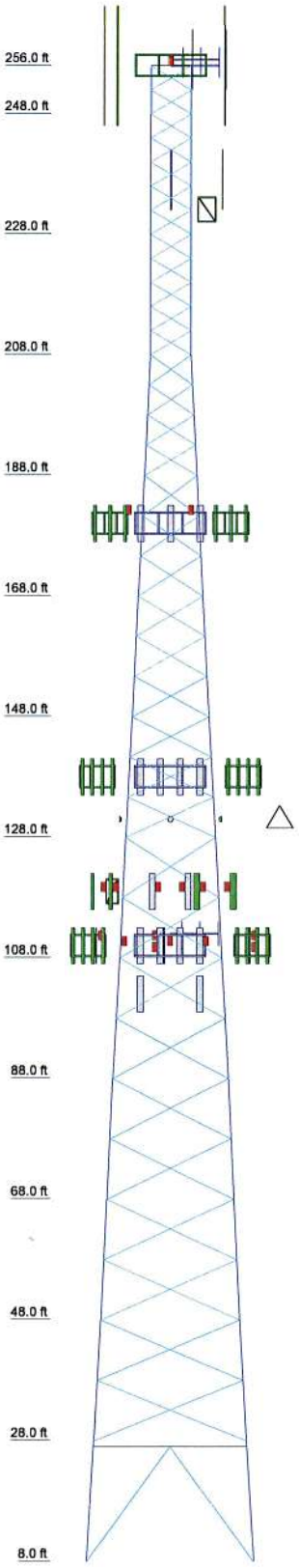
STATE OF CONNECTICUT
MICHAEL L BOHLINGER
20405
LICENSED
PROFESSIONAL ENGINEER
6/14/21

Reviewed and Approved by:

Michael L. Bohlinger, PE
Principal
CT License No. 20405

7.0 APPENDIX

Section	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs		P10x.5			ROHN 8 EH	ROHN 8 EHS		ROHN 6 EH		ROHN 5 EH	ROHN 4 EH	ROHN 3 EH	A
Leg Grade						A572-50							
Diagonals	C		L5x5x3/8		L4x4x0.31	L4x4x3/8	L3x3x1/4		L2 1/2x2 1/2x1/4		L2x2x1/4		B
Diagonal Grade						A572-50							
Top Girts	ROHN 3 STD						N.A.						D
Red. Horizontals	ROHN 1.5 STD						N.A.						
Red. Diagonals	ROHN 1.5 STD						N.A.						
Red. Hips	ROHN 1.5 STD						N.A.						
Inner Bracing	ROHN 3 STD						N.A.						
Face Width (ft)	25.333	23.229	21.25	19.25	17.0833	14.989	12.916	10.916	8.916	6.833		6.9	6.604
# Panels @ (ft)	1 @ 19			10 @ 10				9 @ 6.66667		4 @ 5		12 @ 4	
Weight (lb)	50089.0	6508.8	7164.6	5887.4	5622.3	4629.8	4195.6	3083.2	2933.5	2590.2	1965.2	1660.8	1379.5	478.2



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Yagi w/Radome	257	Radio 4415 B30 (ATI)	138
9' Whip	257	Radio 4415 B30 (ATI)	138
9' Whip	257	RRUS-E2 RRH (ATI)	138
Beacon	256	RRUS-E2 RRH (ATI)	138
Top Platform	256	RRUS-E2 RRH (ATI)	138
18' Inverted Whip	256	DC9-48-60-24-8C-EV Squid (ATI)	138
Yagi w/Radome	256	DC9-48-60-24-8C-EV Squid (ATI)	138
18' Whip	256	DC9-48-60-24-8C-EV Squid (ATI)	138
21' Whip	256	HPCPE-80BW (Sprint)	131
10' Whip	232	VHLP1-23-2WH (Sprint)	131
10' Whip	232	VHLP2.5-11-4WH (Sprint)	131
6' Side Arm	232	(2) 800 MHz RRH (Sprint)	119
6' Side Arm	232	(2) 800 MHz RRH (Sprint)	119
AIR 6449 B41 (T-Mobile)	181	(2) 800 MHz RRH (Sprint)	119
AIR 6449 B41 (T-Mobile)	181	1900 MHz RRH (Sprint)	119
AIR 6449 B41 (T-Mobile)	181	Junction Box (Sprint)	119
AIR 3246 B66 (T-Mobile)	180	1900 MHz RRH (Sprint)	119
AIR 3246 B66 (T-Mobile)	180	1900 MHz RRH (Sprint)	119
Radio 4449 B71/B85 (T-Mobile)	180	VFA6-RRU (Sprint)	119
Radio 4449 B71/B85 (T-Mobile)	180	VFA6-RRU (Sprint)	119
Radio 4449 B71/B85 (T-Mobile)	180	VFA6-RRU (Sprint)	119
Radio 2212 B25 (T-Mobile)	180	NNVV-65B-R4 (Sprint)	119
Radio 2212 B25 (T-Mobile)	180	NNVV-65B-R4 (Sprint)	119
Radio 2212 B25 (T-Mobile)	180	NNVV-65B-R4 (Sprint)	119
Twin style 1B TMA (T-Mobile)	180	2.5G MAA-AAHC(64T64R) (Sprint)	119
Twin style 1B TMA (T-Mobile)	180	2.5G MAA-AAHC(64T64R) (Sprint)	119
Twin style 1B TMA (T-Mobile)	180	2.5G MAA-AAHC(64T64R) (Sprint)	119
SBX1926Q-43 TMA (T-Mobile)	180	Yagi	112
SBX1926Q-43 TMA (T-Mobile)	180	(2) JAHH-65B-R3B on mount (Verizon)	110
SBX1926Q-43 TMA (T-Mobile)	180	(2) JAHH-65B-R3B on mount (Verizon)	110
AIR 3246 B66 (T-Mobile)	180	(2) JAHH-65B-R3B on mount (Verizon)	110
16' T-Frame Mount (T-Mobile)	180	12' V-Frame Mount (Verizon)	110
16' T-Frame Mount (T-Mobile)	180	(2) APL-866513-42T9 (Verizon)	110
16' T-Frame Mount (T-Mobile)	180	12' V-Frame Mount (Verizon)	110
APXVAARR24_43-U-NA20 (T-Mobile)	179	12' V-Frame Mount (Verizon)	110
APXVAARR24_43-U-NA20 (T-Mobile)	179	(2) APL-866513-42T6 (Verizon)	110
APXVAARR24_43-U-NA20 (T-Mobile)	179	(2) APL-866513-42T9 (Verizon)	110
C10857278C V-Frame Mount (ATI)	138	GPS antenna (Verizon)	110
C10857278C V-Frame Mount (ATI)	138	Raycap 6-OVP (Verizon)	110
C10857278C V-Frame Mount (ATI)	138	C-band 64T64R MMU (Verizon)	110
DMP65R-BU8DA-K (ATI)	138	C-band 64T64R MMU (Verizon)	110
DMP65R-BU8DA-K (ATI)	138	C-band 64T64R MMU (Verizon)	110
DMP65R-BU8DA-K (ATI)	138	6' pipe mount (Verizon)	110
TPA65R-BU8DA-K (ATI)	138	6' pipe mount (Verizon)	110
TPA65R-BU8DA-K (ATI)	138	6' pipe mount (Verizon)	110
TPA65R-BU8DA-K (ATI)	138	9' pipe mount (Verizon)	110
HPA65R-BU8A (ATI)	138	9' pipe mount (Verizon)	110
HPA65R-BU8A (ATI)	138	9' pipe mount (Verizon)	110
HPA65R-BU8A (ATI)	138	B2/B66A Dual RRH (Verizon)	110
AIR 6449 N77 (ATI)	138	B2/B66A Dual RRH (Verizon)	110
AIR 6449 N77 (ATI)	138	B2/B66A Dual RRH (Verizon)	110
AIR 6449 N77 (ATI)	138	B5/B13 Dual RRH (Verizon)	110
B14 4478 RRH (ATI)	138	B5/B13 Dual RRH (Verizon)	110
B14 4478 RRH (ATI)	138	B5/B13 Dual RRH (Verizon)	110
B14 4478 RRH (ATI)	138	CBC78T-DS-43-2X (Verizon)	110
Radio 4449 B5/B12 (ATI)	138	CBC78T-DS-43-2X (Verizon)	110
Radio 4449 B5/B12 (ATI)	138	CBC78T-DS-43-2X (Verizon)	110
Radio 4449 B5/B12 (ATI)	138	Raycap 6-OVP (Verizon)	110
B2/B66A 8843 RRH (ATI)	138	Raycap 6-OVP (Verizon)	110
B2/B66A 8843 RRH (ATI)	138	Sidearm Mount	102
B2/B66A 8843 RRH (ATI)	138	(2) TV 65 antenna	102
Radio 4415 B30 (ATI)	138	Junction Box (Sprint)	17

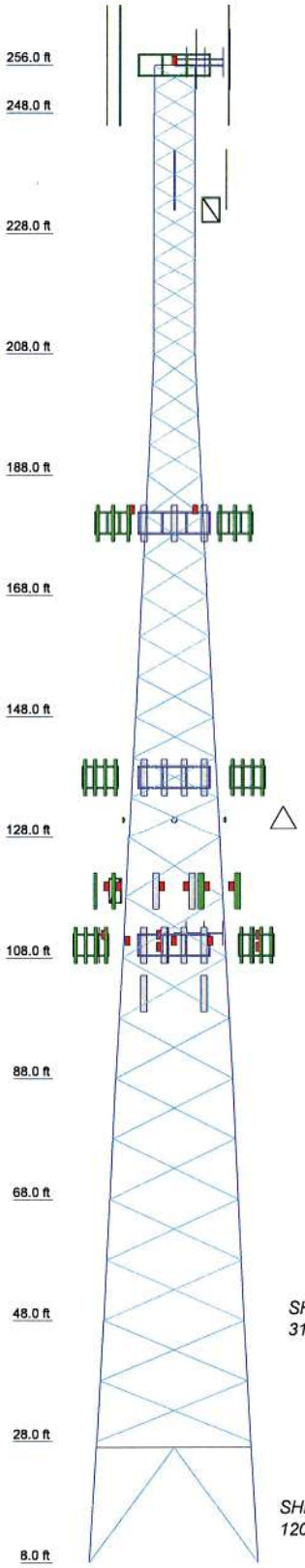
SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	ROHN 3 STD	C	ROHN 3 STD w/L4x4x1/4
B	L1 3/4x1 3/4x3/16	D	L3x3x1/4

KM Consulting Engineers
262 Upper Ferry Road
Ewing, NJ 08525
Phone: (609) 538-0400
FAX:
Consulting Engineers

Job: **Bridgeport (CT1382)**			
Project: ***KM Project #181110.02***			
Client: SAI Group	Drawn by: Domenic Aversa		App'd:
Code: TIA-222-G	Date: 06/14/21		Scale: NTS
Path: C:\Users\Domenic\Dropbox\Work\SAI Group\Bridgeport CT1382S\Engineering\Bridgeport LC1.eri			Dwg No. E-1

Section	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs		P10x.5			ROHN 8 EH	ROHN 8 EHS		ROHN 6 EH		ROHN 5 EH	ROHN 4 EH	ROHN 3 EH	A
Leg Grade						A572-50							
Diagonals	C		L5x5x3/8		L4x4x0.31	L4x4x3/8	L3x3x1/4		L2 1/2x2 1/2x1/4		L2x2x1/4		B
Diagonal Grade						A572-50							
Top Girts	ROHN 3 STD						N.A.						D
Red. Horizontals	ROHN 1.5 STD						N.A.						
Red. Diagonals	ROHN 1.5 STD						N.A.						
Red. Hips	ROHN 1.5 STD						N.A.						
Inner Bracing	ROHN 3 STD						N.A.						
Face Width (ft)	27.8333	25.333	23.229	21.25	19.25	17.0833	14.989	12.916	10.916	8.916	6.833	6.9	6.604
# Panels @ (ft)	1 @ 19			10 @ 10				9 @ 6.66667		4 @ 5		12 @ 4	
Weight (lb)	50069.0	6538.8	7164.6	6887.4	6622.3	4629.8	4186.8	3923.5	3383.2	2590.2	1965.2	1560.8	1379.5



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	ROHN 3 STD	C	ROHN 3 STD w/L4x4x1/4
B	L1 3/4x1 3/4x3/16	D	L3x3x1/4

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi			

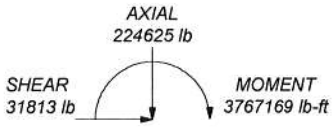
TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 102.9%

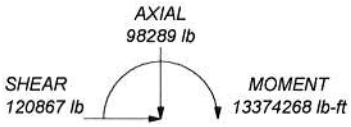
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 587611 lb
SHEAR: 72354 lb

UPLIFT: -505286 lb
SHEAR: 65268 lb



TORQUE 24094 lb-ft
50 mph WIND - 0.7500 in ICE



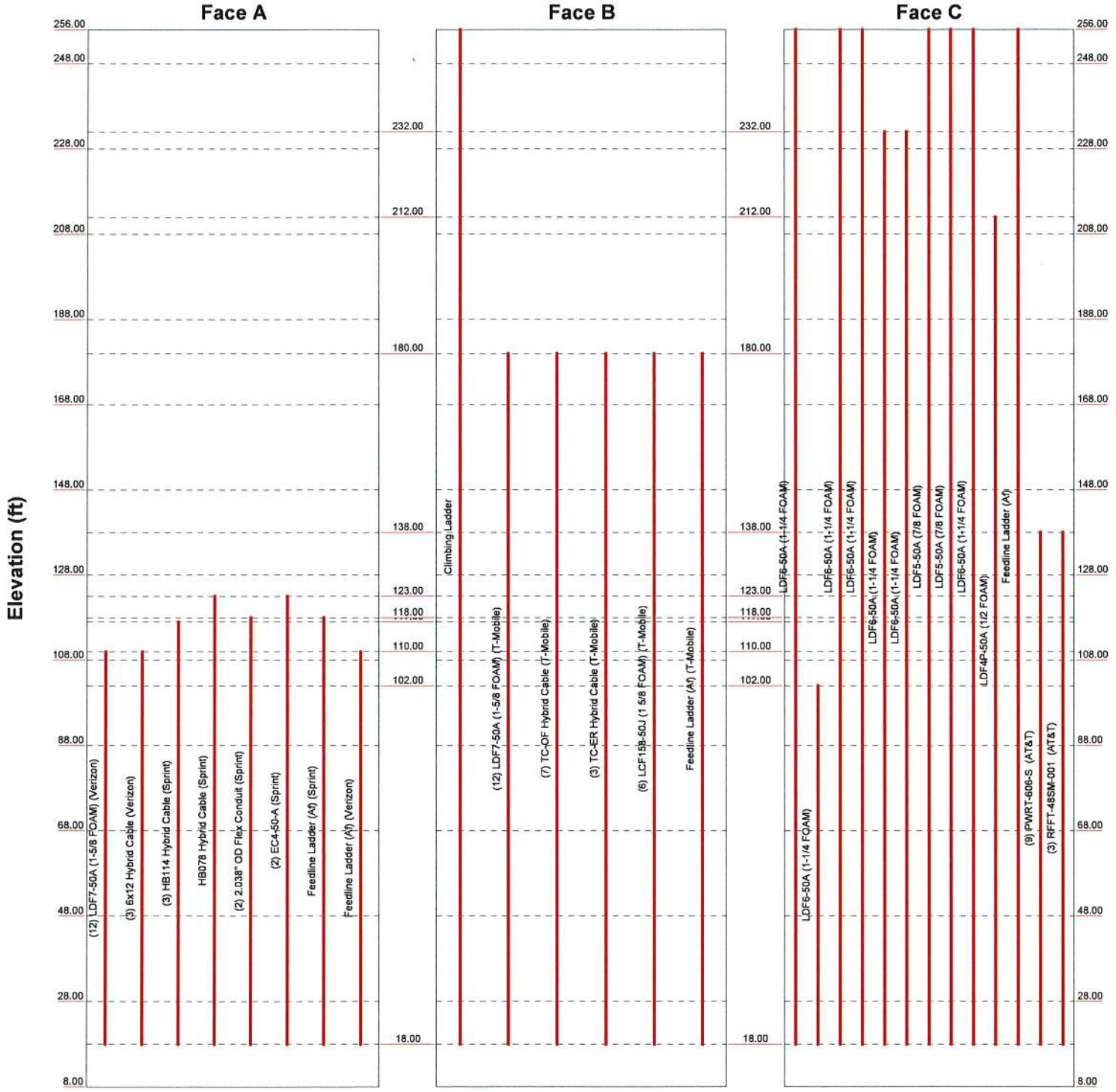
TORQUE 151122 lb-ft
REACTIONS - 97 mph WIND

KM Consulting Engineers
262 Upper Ferry Road
Ewing, NJ 08525
Phone: (609) 538-0400
FAX:
Consulting Engineers

Job: **Bridgeport (CT1382)**			
Project: ***KM Project #181110.02***			
Client: SAI Group	Drawn by: Domenic Aversa	App'd:	
Code: TIA-222-G	Date: 06/14/21	Scale: NTS	
Path: C:\Users\Domenic\Dropbox\Work\SAI Group\Bridgeport CT1382S\Engineering\Bridgeport LC1.eri		Dwg No. E-1	

Feed Line Distribution Chart
8' - 256'

Round | Flat | App In Face | App Out Face | Truss Leg

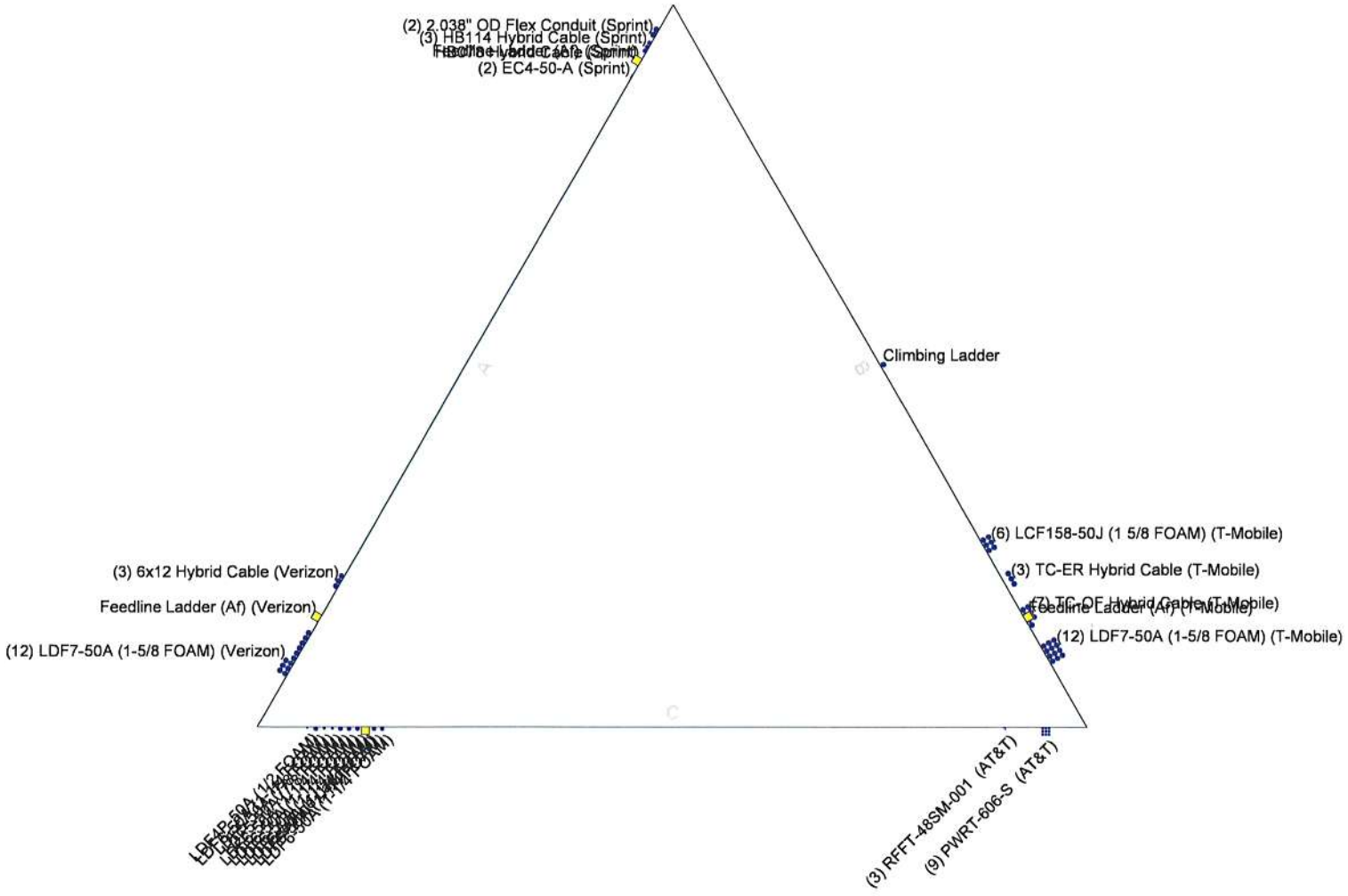


KM Consulting Engineers
262 Upper Ferry Road
Ewing, NJ 08525
Phone: (609) 538-0400
FAX:
Consulting Engineers

Job: **Bridgeport (CT1382)**			
Project: ***KM Project #181110.02***			
Client: SAI Group	Drawn by: Domenic Aversa		App'd:
Code: TIA-222-G	Date: 06/14/21		Scale: NTS
Path: C:\Users\Domenic\Dropbox\Work\SAI Group\Bridgeport CT1382S\Engineering\Bridgeport LC1.ec			Dwg No. E-7

Feed Line Plan

Round Flat App In Face App Out Face

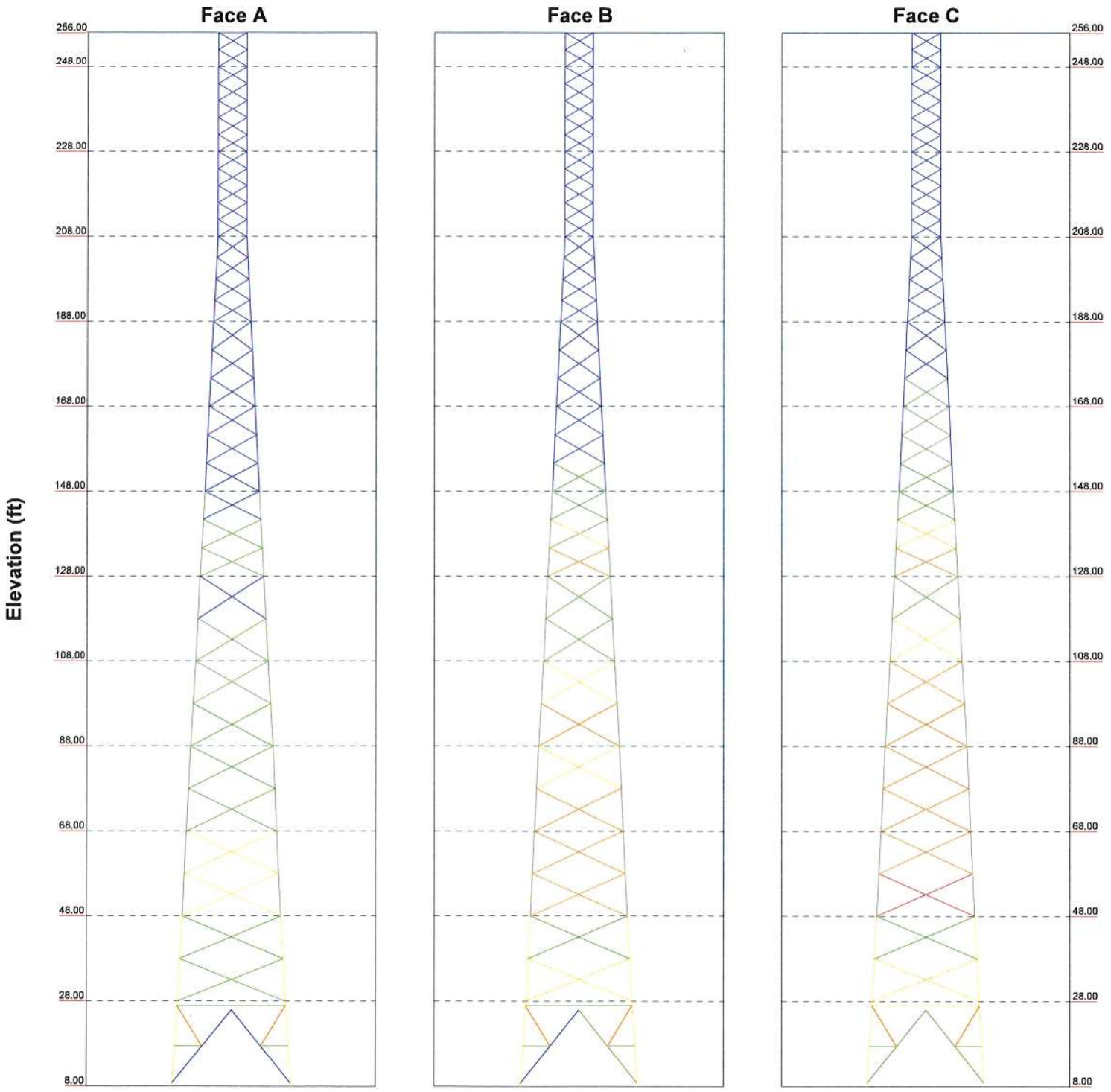


KM Consulting Engineers
262 Upper Ferry Road
Ewing, NJ 08525
Phone: (609) 538-0400
FAX:
Consulting Engineers

Job: **Bridgeport (CT1382)**			
Project: ***KM Project #181110.02***			
Client: SAI Group	Drawn by: Domenic Aversa	App'd:	
Code: TIA-222-G	Date: 06/14/21	Scale: NTS	
Path: C:\Users\Domenic\Dropbox\Work\SAI Group\Bridgeport CT1382S\Engineering\Bridgeport LC1.er		Dwg No. E-7	

Stress Distribution Chart
8' - 256'

> 100% | 90%-100% | 75%-90% | 50%-75% | < 50% Overstress



KM Consulting Engineers
262 Upper Ferry Road
Ewing, NJ 08525
Phone: (609) 538-0400
FAX:

Job: Bridgeport (CT1382)		
Project: KM Project #181110.02		
Client: SAI Group	Drawn by: Domenic Aversa	App'd:
Code: TIA-222-G	Date: 06/14/21	Scale: NTS
Path: C:\Users\Domenic\Dropbox\Work\SAI Group\Bridgeport CT1382\S\Engineering\Bridgeport LC1.eri		Dwg No. E-8

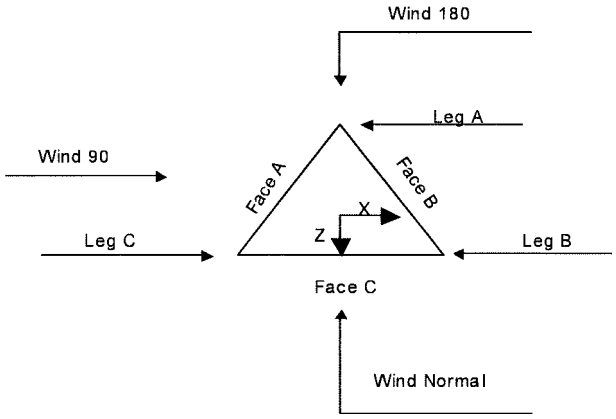
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 256.00 ft above the ground line.
The base of the tower is set at an elevation of 8.00 ft above the ground line.
The face width of the tower is 6.60 ft at the top and 27.83 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 97 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 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-G Bracing Resist. Exemption
√ Include Bolts In Member Capacity	√ Autocalc Torque Arm Areas	Use TIA-222-G 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



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	256.00-248.00			6.60	1	8.00
T2	248.00-228.00			6.90	1	20.00
T3	228.00-208.00			6.90	1	20.00
T4	208.00-188.00			6.83	1	20.00
T5	188.00-168.00			8.92	1	20.00
T6	168.00-148.00			10.92	1	20.00
T7	148.00-128.00			12.92	1	20.00
T8	128.00-108.00			14.99	1	20.00
T9	108.00-88.00			17.08	1	20.00
T10	88.00-68.00			19.25	1	20.00
T11	68.00-48.00			21.25	1	20.00
T12	48.00-28.00			23.23	1	20.00
T13	28.00-8.00			25.33	1	20.00

Tower Section Geometry *(cont'd)*

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
T1	256.00-248.00	4.00	X Brace	No	No	0.0000	0.0000
T2	248.00-228.00	4.00	X Brace	No	No	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
T3	228.00-208.00	4.00	X Brace	No	No	0.0000	0.0000
T4	208.00-188.00	5.00	X Brace	No	No	0.0000	0.0000
T5	188.00-168.00	6.67	X Brace	No	No	0.0000	0.0000
T6	168.00-148.00	6.67	X Brace	No	No	0.0000	0.0000
T7	148.00-128.00	6.67	X Brace	No	No	0.0000	0.0000
T8	128.00-108.00	10.00	X Brace	No	No	0.0000	0.0000
T9	108.00-88.00	10.00	X Brace	No	No	0.0000	0.0000
T10	88.00-68.00	10.00	X Brace	No	No	0.0000	0.0000
T11	68.00-48.00	10.00	X Brace	No	No	0.0000	0.0000
T12	48.00-28.00	10.00	X Brace	No	No	0.0000	0.0000
T13	28.00-8.00	19.00	K1 Down	No	Yes	12.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 256.00-248.00	Pipe	ROHN 3 STD	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A572-50 (50 ksi)
T2 248.00-228.00	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A572-50 (50 ksi)
T3 228.00-208.00	Pipe	ROHN 4 EH	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A572-50 (50 ksi)
T4 208.00-188.00	Pipe	ROHN 5 EH	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A572-50 (50 ksi)
T5 188.00-168.00	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A572-50 (50 ksi)
T6 168.00-148.00	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Single Angle	L3x3x1/4	A572-50 (50 ksi)
T7 148.00-128.00	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Single Angle	L3x3x1/4	A572-50 (50 ksi)
T8 128.00-108.00	Pipe	ROHN 8 EHS	A572-50 (50 ksi)	Single Angle	L4x4x3/8	A572-50 (50 ksi)
T9 108.00-88.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Single Angle	L4x4x0.31	A572-50 (50 ksi)
T10 88.00-68.00	Pipe	P10x.5	A572-50 (50 ksi)	Single Angle	L5x5x3/8	A572-50 (50 ksi)
T11 68.00-48.00	Pipe	P10x.5	A572-50 (50 ksi)	Single Angle	L5x5x3/8	A572-50 (50 ksi)
T12 48.00-28.00	Pipe	P10x.5	A572-50 (50 ksi)	Single Angle	L5x5x3/8	A572-50 (50 ksi)
T13 28.00-8.00	Pipe	P10x.5	A572-50 (50 ksi)	Arbitrary Shape	ROHN 3 STD w/L4x4x1/4	A572-50 (50 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
T13 28.00-8.00	Pipe	ROHN 3 STD	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T13 28.00-8.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 3 STD	A572-50 (50 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
T13 28.00-8.00	Pipe		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T13 28.00-8.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 1.5 STD	1
		Diagonal (1)	Pipe	ROHN 1.5 STD	0.75
		Vertical	Solid Round	3/8	1
		Hip (1)	Pipe	ROHN 1.5 STD	1
		Hip Diagonal (1)	Pipe	ROHN 1.5 STD	1

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
T1 256.00-248.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	6.0000	36.0000
T2 248.00-228.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	6.0000	36.0000
T3 228.00-208.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	6.0000	36.0000
T4 208.00-188.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	6.0000	36.0000
T5 188.00-168.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	6.0000	36.0000

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft^2	in					in	in	in
T6 168.00-148.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	6.0000	36.0000
T7 148.00-128.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	6.0000	36.0000
T8 128.00-108.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	6.0000	36.0000
T9 108.00-88.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	6.0000	36.0000
T10 88.00-68.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	6.0000	36.0000
T11 68.00-48.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	6.0000	36.0000
T12 48.00-28.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	6.0000	36.0000
T13 28.00-8.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	6.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation	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
ft										
T1 256.00-248.00	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 248.00-228.00	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 228.00-208.00	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 208.00-188.00	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 188.00-168.00	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 168.00-148.00	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 148.00-128.00	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 128.00-108.00	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 108.00-88.00	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T10 88.00-68.00	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T11 68.00-48.00	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T12 48.00-28.00	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T13 28.00-8.00	No	No	0.5	1 1	1 1	1 1	0.5 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 256.00-248.00	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 248.00-228.00	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
T3 228.00-208.00	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
T4 208.00-188.00	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
T5 188.00-168.00	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
T6 168.00-148.00	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
T7 148.00-128.00	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
T8 128.00-108.00	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
T9 108.00-88.00	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
T10 88.00-68.00	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
T11 68.00-48.00	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
T12 48.00-28.00	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
T13 28.00-8.00	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 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 256.00-248.00	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 248.00-228.00	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
T3 228.00-208.00	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
T4 208.00-188.00	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
T5 188.00-168.00	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
T6 168.00-148.00	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
T7 148.00-128.00	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
T8 128.00-108.00	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 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
T9 108.00-88.00	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
T10 88.00-68.00	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
T11 68.00-48.00	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
T12 48.00-28.00	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
T13 28.00-8.00	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	Connection Offsets							
	Diagonal				K-Bracing			
	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.
ft	in	in	in	in	in	in	in	in
T1 256.00-248.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T2 248.00-228.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T3 228.00-208.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T4 208.00-188.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T5 188.00-168.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T6 168.00-148.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T7 148.00-128.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T8 128.00-108.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T9 108.00-88.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T10 88.00-68.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T11 68.00-48.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T12 48.00-28.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T13 28.00-8.00	0.0000	0.0000	0.0000	0.0000	12.0000	0.0000	9.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg Bolt Size in	Leg No.	Diagonal Bolt Size in	Diagonal No.	Top Girt Bolt Size in	Top Girt No.	Bottom Girt Bolt Size in	Bottom Girt No.	Mid Girt Bolt Size in	Mid Girt No.	Long Horizontal Bolt Size in	Long Horizontal No.	Short Horizontal Bolt Size in	Short Horizontal No.
T1	Flange	0.7500	4	0.6250	1	0.0000	3	0.0000	0	0.6250	0	0.0000	4	0.6250	0
256.00-248.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T2	Flange	0.8750	4	0.6250	1	0.0000	3	0.0000	0	0.6250	0	0.0000	4	0.6250	0
248.00-228.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T3	Flange	1.0000	4	0.6250	1	0.0000	3	0.0000	0	0.6250	0	0.0000	4	0.6250	0
228.00-208.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T4	Flange	1.0000	6	0.6250	1	0.0000	3	0.0000	0	0.6250	0	0.0000	4	0.6250	0
208.00-188.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T5	Flange	1.0000	6	0.7500	1	0.0000	3	0.0000	0	0.6250	0	0.0000	4	0.6250	0
188.00-168.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T6	Flange	1.0000	6	0.7500	1	0.0000	3	0.0000	0	0.6250	0	0.0000	4	0.6250	0
168.00-148.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T7	Flange	1.0000	8	0.7500	1	0.0000	3	0.0000	0	0.6250	0	0.0000	4	0.6250	0
148.00-128.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T8	Flange	1.0000	8	0.7500	1	0.0000	3	0.0000	0	0.6250	0	0.0000	4	0.6250	0
128.00-108.00		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T9	Flange	1.0000	12	0.8750	1	0.0000	3	0.0000	0	0.6250	0	0.0000	4	0.6250	0
108.00-88.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T10	Flange	1.0000	12	0.8750	1	0.0000	3	0.0000	0	0.6250	0	0.0000	4	0.6250	0
88.00-68.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T11	Flange	1.0000	12	0.8750	1	0.0000	3	0.0000	0	0.6250	0	0.0000	4	0.6250	0
68.00-48.00		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T12	Flange	1.0000	12	0.8750	2	0.0000	3	0.0000	0	0.6250	0	0.0000	4	0.6250	0
48.00-28.00		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T13 28.00-8.00	Flange	1.0000	16	0.6250	6	0.7500	4	0.0000	0	0.6250	0	0.6250	1	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	

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 Ladder	B	No	No	Ar (CaAa)	256.00 - 18.00	0.0000	0	1	1	0.2500	2.0000		7.90
LDF7-50A (1-5/8 FOAM) (Verizon)	A	No	No	Ar (CaAa)	110.00 - 18.00	0.0000	-0.4	12	9	0.2500	1.9800		0.82
LDF7-50A (1-5/8 FOAM) (T-Mobile)	B	No	No	Ar (CaAa)	180.00 - 18.00	0.0000	0.4	12	4	0.2500	1.9800		0.82
TC-OF Hybrid Cable (T-Mobile)	B	No	No	Ar (CaAa)	180.00 - 18.00	0.0000	0.35	7	4	0.2500	1.9900		1.90
TC-ER Hybrid Cable (T-Mobile)	B	No	No	Ar (CaAa)	180.00 - 18.00	2.0000	0.3	3	3	0.2500	1.9900		1.90
6x12 Hybrid Cable (Verizon)	A	No	No	Ar (CaAa)	110.00 - 18.00	0.0000	-0.3	3	3	0.2500	1.9800		1.90
LCF158-50J (1 5/8 FOAM) (T-Mobile)	B	No	No	Ar (CaAa)	180.00 - 18.00	0.0000	0.25	6	3	0.2500	2.0100		0.92
HB114 Hybrid	A	No	No	Ar (CaAa)	117.00 -	0.0000	0.44	3	3	0.2500	1.5400		1.51

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
Cable (Sprint)					18.00								
HB078 Hybrid Cable (Sprint)	A	No	No	Ar (CaAa)	123.00 - 18.00	0.0000	0.42	1	1	0.2500	1.1300		0.93
2.038" OD Flex Conduit (Sprint)	A	No	No	Ar (CaAa)	118.00 - 18.00	0.0000	0.46	2	2	0.2500	2.0400		1.00
EC4-50-A (Sprint)	A	No	No	Ar (CaAa)	123.00 - 18.00	0.0000	0.4	2	2	0.2500	0.6300		0.15
Feedline Ladder (Af) (Sprint)	A	No	No	Af (CaAa)	118.00 - 18.00	0.0000	0.42	1	1	3.0000	3.0000		8.40
Feedline Ladder (Af) (Verizon)	A	No	No	Af (CaAa)	110.00 - 18.00	0.0000	-0.35	1	1	3.0000	3.0000		8.40
Feedline Ladder (Af) (T-Mobile)	B	No	No	Af (CaAa)	180.00 - 18.00	0.0000	0.35	1	1	3.0000	3.0000		8.40
LDF6-50A (1-1/4 FOAM)	C	No	No	Ar (CaAa)	256.00 - 18.00	0.0000	0.35	1	1	1.5500	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	No	No	Ar (CaAa)	102.00 - 18.00	0.0000	0.36	1	1	1.5500	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	No	No	Ar (CaAa)	256.00 - 18.00	0.0000	0.37	1	1	1.5500	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	No	No	Ar (CaAa)	256.00 - 18.00	0.0000	0.38	1	1	1.5500	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	No	No	Ar (CaAa)	232.00 - 18.00	0.0000	0.39	1	1	1.5500	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	C	No	No	Ar (CaAa)	232.00 - 18.00	0.0000	0.4	1	1	1.5500	1.5500		0.66
LDF5-50A (7/8 FOAM)	C	No	No	Ar (CaAa)	256.00 - 18.00	0.0000	0.41	1	1	1.0900	1.0900		0.33
LDF5-50A (7/8 FOAM)	C	No	No	Ar (CaAa)	256.00 - 18.00	0.0000	0.42	1	1	1.0900	1.0900		0.33
LDF6-50A (1-1/4 FOAM)	C	No	No	Ar (CaAa)	256.00 - 18.00	0.0000	0.43	1	1	1.5500	1.5500		0.66
LDF4P-50A (1/2 FOAM)	C	No	No	Ar (CaAa)	212.00 - 18.00	0.0000	0.44	1	1	0.6300	0.6300		0.15
Feedline Ladder (Af)	C	No	No	Af (CaAa)	256.00 - 18.00	0.0000	0.37	1	1	3.0000	3.0000		8.40
PWRT-606-S (AT&T)	C	No	No	Ar (CaAa)	138.00 - 18.00	0.0000	-0.45	9	3	0.2500	0.9200		0.89
RFFT-48SM-001 (AT&T)	C	No	No	Ar (CaAa)	138.00 - 18.00	0.0000	-0.4	3	2	0.2500	0.4000		0.20

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 lb
T1	256.00-248.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.600	0.000	63.20
		C	0.000	0.000	10.704	0.000	93.60
T2	248.00-228.00	A	0.000	0.000	0.000	0.000	0.00

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 lb
		B	0.000	0.000	4.000	0.000	158.00
		C	0.000	0.000	28.000	0.000	239.28
T3	228.00-208.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	4.000	0.000	158.00
		C	0.000	0.000	33.212	0.000	261.00
T4	208.00-188.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	4.000	0.000	158.00
		C	0.000	0.000	34.220	0.000	263.40
T5	188.00-168.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	76.864	0.000	671.12
		C	0.000	0.000	34.220	0.000	263.40
T6	168.00-148.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	125.440	0.000	1013.20
		C	0.000	0.000	34.220	0.000	263.40
T7	148.00-128.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	125.440	0.000	1013.20
		C	0.000	0.000	43.700	0.000	349.50
T8	128.00-108.00	A	0.000	0.000	23.763	0.000	211.10
		B	0.000	0.000	125.440	0.000	1013.20
		C	0.000	0.000	53.180	0.000	435.60
T9	108.00-88.00	A	0.000	0.000	101.580	0.000	802.00
		B	0.000	0.000	125.440	0.000	1013.20
		C	0.000	0.000	55.350	0.000	444.84
T10	88.00-68.00	A	0.000	0.000	101.580	0.000	802.00
		B	0.000	0.000	125.440	0.000	1013.20
		C	0.000	0.000	56.280	0.000	448.80
T11	68.00-48.00	A	0.000	0.000	101.580	0.000	802.00
		B	0.000	0.000	125.440	0.000	1013.20
		C	0.000	0.000	56.280	0.000	448.80
T12	48.00-28.00	A	0.000	0.000	101.580	0.000	802.00
		B	0.000	0.000	125.440	0.000	1013.20
		C	0.000	0.000	56.280	0.000	448.80
T13	28.00-8.00	A	0.000	0.000	50.790	0.000	401.00
		B	0.000	0.000	62.720	0.000	506.60
		C	0.000	0.000	28.140	0.000	224.40

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 lb
T1	256.00-248.00	A	1.838	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	4.541	0.000	132.16
		C		0.000	0.000	31.291	0.000	550.71
T2	248.00-228.00	A	1.828	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	11.311	0.000	328.94
		C		0.000	0.000	82.099	0.000	1432.51
T3	228.00-208.00	A	1.812	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	11.247	0.000	326.74
		C		0.000	0.000	99.882	0.000	1698.15
T4	208.00-188.00	A	1.794	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	11.177	0.000	324.36
		C		0.000	0.000	105.994	0.000	1764.66
T5	188.00-168.00	A	1.775	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	103.135	0.000	2071.38
		C		0.000	0.000	105.234	0.000	1740.35
T6	168.00-148.00	A	1.754	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	163.738	0.000	3209.37

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
		C		0.000	0.000	104.392	0.000	1713.65
T7	148.00-128.00	A	1.731	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	162.896	0.000	3177.66
		C		0.000	0.000	123.306	0.000	1967.73
T8	128.00-108.00	A	1.704	0.000	0.000	60.664	0.000	870.39
		B		0.000	0.000	161.935	0.000	3141.71
		C		0.000	0.000	141.708	0.000	2210.20
T9	108.00-88.00	A	1.672	0.000	0.000	194.654	0.000	3041.56
		B		0.000	0.000	160.815	0.000	3100.07
		C		0.000	0.000	146.863	0.000	2264.04
T10	88.00-68.00	A	1.635	0.000	0.000	192.921	0.000	2982.24
		B		0.000	0.000	159.467	0.000	3050.34
		C		0.000	0.000	147.606	0.000	2246.52
T11	68.00-48.00	A	1.587	0.000	0.000	190.732	0.000	2908.08
		B		0.000	0.000	157.763	0.000	2988.07
		C		0.000	0.000	144.831	0.000	2170.72
T12	48.00-28.00	A	1.521	0.000	0.000	187.719	0.000	2807.49
		B		0.000	0.000	155.418	0.000	2903.45
		C		0.000	0.000	141.010	0.000	2068.75
T13	28.00-8.00	A	1.412	0.000	0.000	91.351	0.000	1321.86
		B		0.000	0.000	75.756	0.000	1382.64
		C		0.000	0.000	67.321	0.000	952.48

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	256.00-248.00	-7.3803	6.4435	-9.7400	7.9512
T2	248.00-228.00	-8.3037	7.1707	-10.9107	8.8575
T3	228.00-208.00	-9.3331	7.9015	-12.3350	9.8693
T4	208.00-188.00	-10.8524	9.0410	-14.6141	11.4901
T5	188.00-168.00	13.9863	13.3706	1.7752	14.3492
T6	168.00-148.00	23.6081	15.7726	9.9581	16.4901
T7	148.00-128.00	28.1197	19.1185	13.7095	19.9618
T8	128.00-108.00	27.4367	15.5325	13.1426	11.5449
T9	108.00-88.00	8.5860	15.8453	-2.9598	9.3079
T10	88.00-68.00	8.5424	16.4599	-3.4147	10.0889
T11	68.00-48.00	9.1255	17.7289	-3.6334	10.8859
T12	48.00-28.00	9.6927	18.9711	-3.8181	11.6681
T13	28.00-8.00	9.1308	17.6482	-3.2112	10.1096

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	Climbing Ladder	248.00 - 256.00	0.8000	0.7000
T1	15	LDF6-50A (1-1/4 FOAM)	248.00 - 256.00	0.8200	0.7000
T1	17	LDF6-50A (1-1/4 FOAM)	248.00 -	0.8000	0.7000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	18	LDF6-50A (1-1/4 FOAM)	248.00 - 256.00	0.8000	0.7000
T1	21	LDF5-50A (7/8 FOAM)	248.00 - 256.00	0.8000	0.7000
T1	22	LDF5-50A (7/8 FOAM)	248.00 - 256.00	0.8000	0.7000
T1	23	LDF6-50A (1-1/4 FOAM)	248.00 - 256.00	0.8000	0.7000
T1	25	Feedline Ladder (Af)	248.00 - 256.00	0.8000	0.7000
T2	1	Climbing Ladder	228.00 - 248.00	0.8000	0.7000
T2	15	LDF6-50A (1-1/4 FOAM)	228.00 - 248.00	0.8200	0.7000
T2	17	LDF6-50A (1-1/4 FOAM)	228.00 - 248.00	0.8000	0.7000
T2	18	LDF6-50A (1-1/4 FOAM)	228.00 - 248.00	0.8000	0.7000
T2	19	LDF6-50A (1-1/4 FOAM)	228.00 - 232.00	0.8000	0.7000
T2	20	LDF6-50A (1-1/4 FOAM)	228.00 - 232.00	0.8000	0.7000
T2	21	LDF5-50A (7/8 FOAM)	228.00 - 248.00	0.8000	0.7000
T2	22	LDF5-50A (7/8 FOAM)	228.00 - 248.00	0.8000	0.7000
T2	23	LDF6-50A (1-1/4 FOAM)	228.00 - 248.00	0.8000	0.7000
T2	25	Feedline Ladder (Af)	228.00 - 248.00	0.8000	0.7000
T3	1	Climbing Ladder	208.00 - 228.00	0.8000	0.7000
T3	15	LDF6-50A (1-1/4 FOAM)	208.00 - 228.00	0.8200	0.7000
T3	17	LDF6-50A (1-1/4 FOAM)	208.00 - 228.00	0.8000	0.7000
T3	18	LDF6-50A (1-1/4 FOAM)	208.00 - 228.00	0.8000	0.7000
T3	19	LDF6-50A (1-1/4 FOAM)	208.00 - 228.00	0.8000	0.7000
T3	20	LDF6-50A (1-1/4 FOAM)	208.00 - 228.00	0.8000	0.7000
T3	21	LDF5-50A (7/8 FOAM)	208.00 - 228.00	0.8000	0.7000
T3	22	LDF5-50A (7/8 FOAM)	208.00 - 228.00	0.8000	0.7000
T3	23	LDF6-50A (1-1/4 FOAM)	208.00 - 228.00	0.8000	0.7000
T3	24	LDF4P-50A (1/2 FOAM)	208.00 - 212.00	0.8000	0.7000
T3	25	Feedline Ladder (Af)	208.00 - 228.00	0.8000	0.7000
T4	1	Climbing Ladder	188.00 - 208.00	0.8000	0.7000
T4	15	LDF6-50A (1-1/4 FOAM)	188.00 - 208.00	0.8200	0.7000
T4	17	LDF6-50A (1-1/4 FOAM)	188.00 - 208.00	0.8000	0.7000
T4	18	LDF6-50A (1-1/4 FOAM)	188.00 - 208.00	0.8000	0.7000
T4	19	LDF6-50A (1-1/4 FOAM)	188.00 -	0.8000	0.7000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T4	20	LDF6-50A (1-1/4 FOAM)	208.00 188.00 - 208.00	0.8000	0.7000
T4	21	LDF5-50A (7/8 FOAM)	188.00 - 208.00	0.8000	0.7000
T4	22	LDF5-50A (7/8 FOAM)	188.00 - 208.00	0.8000	0.7000
T4	23	LDF6-50A (1-1/4 FOAM)	188.00 - 208.00	0.8000	0.7000
T4	24	LDF4P-50A (1/2 FOAM)	188.00 - 208.00	0.8000	0.7000
T4	25	Feedline Ladder (Af)	188.00 - 208.00	0.8000	0.7000
T5	1	Climbing Ladder	168.00 - 188.00	0.8000	0.7000
T5	3	LDF7-50A (1-5/8 FOAM)	168.00 - 180.00	0.8400	0.7500
T5	4	TC-OF Hybrid Cable	168.00 - 180.00	0.8400	0.7500
T5	5	TC-ER Hybrid Cable	168.00 - 180.00	0.8400	0.7500
T5	7	LCF158-50J (1 5/8 FOAM)	168.00 - 180.00	0.8400	0.7000
T5	14	Feedline Ladder (Af)	168.00 - 180.00	0.8500	0.7500
T5	15	LDF6-50A (1-1/4 FOAM)	168.00 - 188.00	0.8200	0.7000
T5	17	LDF6-50A (1-1/4 FOAM)	168.00 - 188.00	0.8000	0.7000
T5	18	LDF6-50A (1-1/4 FOAM)	168.00 - 188.00	0.8000	0.7000
T5	19	LDF6-50A (1-1/4 FOAM)	168.00 - 188.00	0.8000	0.7000
T5	20	LDF6-50A (1-1/4 FOAM)	168.00 - 188.00	0.8000	0.7000
T5	21	LDF5-50A (7/8 FOAM)	168.00 - 188.00	0.8000	0.7000
T5	22	LDF5-50A (7/8 FOAM)	168.00 - 188.00	0.8000	0.7000
T5	23	LDF6-50A (1-1/4 FOAM)	168.00 - 188.00	0.8000	0.7000
T5	24	LDF4P-50A (1/2 FOAM)	168.00 - 188.00	0.8000	0.7000
T5	25	Feedline Ladder (Af)	168.00 - 188.00	0.8000	0.7000
T6	1	Climbing Ladder	148.00 - 168.00	0.8000	0.7000
T6	3	LDF7-50A (1-5/8 FOAM)	148.00 - 168.00	0.8400	0.7500
T6	4	TC-OF Hybrid Cable	148.00 - 168.00	0.8400	0.7500
T6	5	TC-ER Hybrid Cable	148.00 - 168.00	0.8400	0.7000
T6	7	LCF158-50J (1 5/8 FOAM)	148.00 - 168.00	0.8400	0.7000
T6	14	Feedline Ladder (Af)	148.00 - 168.00	0.8500	0.7500
T6	15	LDF6-50A (1-1/4 FOAM)	148.00 - 168.00	0.8200	0.7000
T6	17	LDF6-50A (1-1/4 FOAM)	148.00 - 168.00	0.8000	0.7000
T6	18	LDF6-50A (1-1/4 FOAM)	148.00 -	0.8000	0.7000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			168.00		
T6	19	LDF6-50A (1-1/4 FOAM)	148.00 - 168.00	0.8000	0.7000
T6	20	LDF6-50A (1-1/4 FOAM)	148.00 - 168.00	0.8000	0.7000
T6	21	LDF5-50A (7/8 FOAM)	148.00 - 168.00	0.8000	0.7000
T6	22	LDF5-50A (7/8 FOAM)	148.00 - 168.00	0.8000	0.7000
T6	23	LDF6-50A (1-1/4 FOAM)	148.00 - 168.00	0.8000	0.7000
T6	24	LDF4P-50A (1/2 FOAM)	148.00 - 168.00	0.8000	0.7000
T6	25	Feedline Ladder (Af)	148.00 - 168.00	0.8000	0.7000
T7	1	Climbing Ladder	128.00 - 148.00	0.8000	0.7000
T7	3	LDF7-50A (1-5/8 FOAM)	128.00 - 148.00	0.8400	0.7500
T7	4	TC-OF Hybrid Cable	128.00 - 148.00	0.8400	0.7500
T7	5	TC-ER Hybrid Cable	128.00 - 148.00	0.8400	0.7500
T7	7	LCF158-50J (1 5/8 FOAM)	128.00 - 148.00	0.8400	0.7000
T7	14	Feedline Ladder (Af)	128.00 - 148.00	0.8500	0.7500
T7	15	LDF6-50A (1-1/4 FOAM)	128.00 - 148.00	0.8200	0.7000
T7	17	LDF6-50A (1-1/4 FOAM)	128.00 - 148.00	0.8000	0.7000
T7	18	LDF6-50A (1-1/4 FOAM)	128.00 - 148.00	0.8000	0.7000
T7	19	LDF6-50A (1-1/4 FOAM)	128.00 - 148.00	0.8000	0.7000
T7	20	LDF6-50A (1-1/4 FOAM)	128.00 - 148.00	0.8000	0.7000
T7	21	LDF5-50A (7/8 FOAM)	128.00 - 148.00	0.8000	0.7000
T7	22	LDF5-50A (7/8 FOAM)	128.00 - 148.00	0.8000	0.7000
T7	23	LDF6-50A (1-1/4 FOAM)	128.00 - 148.00	0.8000	0.7000
T7	24	LDF4P-50A (1/2 FOAM)	128.00 - 148.00	0.8000	0.7000
T7	25	Feedline Ladder (Af)	128.00 - 148.00	0.8000	0.7000
T7	26	PWRT-606-S	128.00 - 138.00	0.8400	0.7000
T7	27	RFFT-48SM-001	128.00 - 138.00	0.8400	0.7000
T8	1	Climbing Ladder	108.00 - 128.00	0.8000	0.7000
T8	2	LDF7-50A (1-5/8 FOAM)	108.00 - 110.00	0.8500	0.7800
T8	3	LDF7-50A (1-5/8 FOAM)	108.00 - 128.00	0.8400	0.7500
T8	4	TC-OF Hybrid Cable	108.00 - 128.00	0.8400	0.7500
T8	5	TC-ER Hybrid Cable	108.00 - 128.00	0.8400	0.7500
T8	6	6x12 Hybrid Cable	108.00 -	0.8400	0.7500

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T8	7	LCF158-50J (1 5/8 FOAM)	110.00 - 108.00 - 128.00	0.8400	0.7000
T8	8	HB114 Hybrid Cable	108.00 - 117.00	0.8400	0.7800
T8	9	HB078 Hybrid Cable	108.00 - 123.00	0.8400	0.7800
T8	10	2.038" OD Flex Conduit	108.00 - 118.00	0.8400	0.7800
T8	11	EC4-50-A	108.00 - 123.00	0.8500	0.7800
T8	12	Feedline Ladder (Af)	108.00 - 118.00	0.8500	0.7800
T8	13	Feedline Ladder (Af)	108.00 - 110.00	0.8500	0.7800
T8	14	Feedline Ladder (Af)	108.00 - 128.00	0.8500	0.7500
T8	15	LDF6-50A (1-1/4 FOAM)	108.00 - 128.00	0.8200	0.7000
T8	17	LDF6-50A (1-1/4 FOAM)	108.00 - 128.00	0.8000	0.7000
T8	18	LDF6-50A (1-1/4 FOAM)	108.00 - 128.00	0.8000	0.7000
T8	19	LDF6-50A (1-1/4 FOAM)	108.00 - 128.00	0.8000	0.7000
T8	20	LDF6-50A (1-1/4 FOAM)	108.00 - 128.00	0.8000	0.7000
T8	21	LDF5-50A (7/8 FOAM)	108.00 - 128.00	0.8000	0.7000
T8	22	LDF5-50A (7/8 FOAM)	108.00 - 128.00	0.8000	0.7000
T8	23	LDF6-50A (1-1/4 FOAM)	108.00 - 128.00	0.8000	0.7000
T8	24	LDF4P-50A (1/2 FOAM)	108.00 - 128.00	0.8000	0.7000
T8	25	Feedline Ladder (Af)	108.00 - 128.00	0.8000	0.7000
T8	26	PWRT-606-S	108.00 - 128.00	0.8400	0.7000
T8	27	RFFT-48SM-001	108.00 - 128.00	0.8400	0.7000
T9	1	Climbing Ladder	88.00 - 108.00	0.8000	0.7000
T9	2	LDF7-50A (1-5/8 FOAM)	88.00 - 108.00	0.8500	0.7800
T9	3	LDF7-50A (1-5/8 FOAM)	88.00 - 108.00	0.8400	0.7500
T9	4	TC-OF Hybrid Cable	88.00 - 108.00	0.8400	0.7500
T9	5	TC-ER Hybrid Cable	88.00 - 108.00	0.8400	0.7500
T9	6	6x12 Hybrid Cable	88.00 - 108.00	0.8400	0.7500
T9	7	LCF158-50J (1 5/8 FOAM)	88.00 - 108.00	0.8400	0.7000
T9	8	HB114 Hybrid Cable	88.00 - 108.00	0.8400	0.7800
T9	9	HB078 Hybrid Cable	88.00 - 108.00	0.8400	0.7800
T9	10	2.038" OD Flex Conduit	88.00 - 108.00	0.8400	0.7800
T9	11	EC4-50-A	88.00 - 108.00	0.8500	0.7800
T9	12	Feedline Ladder (Af)	88.00 - 108.00	0.8500	0.7800
T9	13	Feedline Ladder (Af)	88.00 - 108.00	0.8500	0.7800
T9	14	Feedline Ladder (Af)	88.00 - 108.00	0.8500	0.7500
T9	15	LDF6-50A (1-1/4 FOAM)	88.00 - 108.00	0.8200	0.7000
T9	16	LDF6-50A (1-1/4 FOAM)	88.00 - 102.00	0.8500	0.7800
T9	17	LDF6-50A (1-1/4 FOAM)	88.00 - 108.00	0.8000	0.7000
T9	18	LDF6-50A (1-1/4 FOAM)	88.00 - 108.00	0.8000	0.7000
T9	19	LDF6-50A (1-1/4 FOAM)	88.00 - 108.00	0.8000	0.7000
T9	20	LDF6-50A (1-1/4 FOAM)	88.00 - 108.00	0.8000	0.7000
T9	21	LDF5-50A (7/8 FOAM)	88.00 - 108.00	0.8000	0.7000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	22	LDF5-50A (7/8 FOAM)	88.00 - 108.00	0.8000	0.7000
T9	23	LDF6-50A (1-1/4 FOAM)	88.00 - 108.00	0.8000	0.7000
T9	24	LDF4P-50A (1/2 FOAM)	88.00 - 108.00	0.8000	0.7000
T9	25	Feedline Ladder (Af)	88.00 - 108.00	0.8000	0.7000
T9	26	PWRT-606-S	88.00 - 108.00	0.8400	0.7000
T9	27	RFFT-48SM-001	88.00 - 108.00	0.8400	0.7000
T10	1	Climbing Ladder	68.00 - 88.00	0.8000	0.7000
T10	2	LDF7-50A (1-5/8 FOAM)	68.00 - 88.00	0.8500	0.7800
T10	3	LDF7-50A (1-5/8 FOAM)	68.00 - 88.00	0.8400	0.7500
T10	4	TC-OF Hybrid Cable	68.00 - 88.00	0.8400	0.7500
T10	5	TC-ER Hybrid Cable	68.00 - 88.00	0.8400	0.7500
T10	6	6x12 Hybrid Cable	68.00 - 88.00	0.8400	0.7500
T10	7	LCF158-50J (1 5/8 FOAM)	68.00 - 88.00	0.8400	0.7000
T10	8	HB114 Hybrid Cable	68.00 - 88.00	0.8400	0.7800
T10	9	HB078 Hybrid Cable	68.00 - 88.00	0.8400	0.7800
T10	10	2.038" OD Flex Conduit	68.00 - 88.00	0.8400	0.7800
T10	11	EC4-50-A	68.00 - 88.00	0.8500	0.7800
T10	12	Feedline Ladder (Af)	68.00 - 88.00	0.8500	0.7800
T10	13	Feedline Ladder (Af)	68.00 - 88.00	0.8500	0.7800
T10	14	Feedline Ladder (Af)	68.00 - 88.00	0.8500	0.7500
T10	15	LDF6-50A (1-1/4 FOAM)	68.00 - 88.00	0.8200	0.7000
T10	16	LDF6-50A (1-1/4 FOAM)	68.00 - 88.00	0.8500	0.7800
T10	17	LDF6-50A (1-1/4 FOAM)	68.00 - 88.00	0.8000	0.7000
T10	18	LDF6-50A (1-1/4 FOAM)	68.00 - 88.00	0.8000	0.7000
T10	19	LDF6-50A (1-1/4 FOAM)	68.00 - 88.00	0.8000	0.7000
T10	20	LDF6-50A (1-1/4 FOAM)	68.00 - 88.00	0.8000	0.7000
T10	21	LDF5-50A (7/8 FOAM)	68.00 - 88.00	0.8000	0.7000
T10	22	LDF5-50A (7/8 FOAM)	68.00 - 88.00	0.8000	0.7000
T10	23	LDF6-50A (1-1/4 FOAM)	68.00 - 88.00	0.8000	0.7000
T10	24	LDF4P-50A (1/2 FOAM)	68.00 - 88.00	0.8000	0.7000
T10	25	Feedline Ladder (Af)	68.00 - 88.00	0.8000	0.7000
T10	26	PWRT-606-S	68.00 - 88.00	0.8400	0.7000
T10	27	RFFT-48SM-001	68.00 - 88.00	0.8400	0.7000
T11	1	Climbing Ladder	48.00 - 68.00	0.8000	0.7000
T11	2	LDF7-50A (1-5/8 FOAM)	48.00 - 68.00	0.8500	0.7800
T11	3	LDF7-50A (1-5/8 FOAM)	48.00 - 68.00	0.8400	0.7500
T11	4	TC-OF Hybrid Cable	48.00 - 68.00	0.8400	0.7500
T11	5	TC-ER Hybrid Cable	48.00 - 68.00	0.8400	0.7500
T11	6	6x12 Hybrid Cable	48.00 - 68.00	0.8400	0.7500
T11	7	LCF158-50J (1 5/8 FOAM)	48.00 - 68.00	0.8400	0.7000
T11	8	HB114 Hybrid Cable	48.00 - 68.00	0.8400	0.7800
T11	9	HB078 Hybrid Cable	48.00 - 68.00	0.8400	0.7800
T11	10	2.038" OD Flex Conduit	48.00 - 68.00	0.8400	0.7800
T11	11	EC4-50-A	48.00 - 68.00	0.8500	0.7800
T11	12	Feedline Ladder (Af)	48.00 - 68.00	0.8500	0.7800
T11	13	Feedline Ladder (Af)	48.00 - 68.00	0.8500	0.7800
T11	14	Feedline Ladder (Af)	48.00 - 68.00	0.8500	0.7500
T11	15	LDF6-50A (1-1/4 FOAM)	48.00 - 68.00	0.8200	0.7000
T11	16	LDF6-50A (1-1/4 FOAM)	48.00 - 68.00	0.8500	0.7800
T11	17	LDF6-50A (1-1/4 FOAM)	48.00 - 68.00	0.8000	0.7000
T11	18	LDF6-50A (1-1/4 FOAM)	48.00 - 68.00	0.8000	0.7000
T11	19	LDF6-50A (1-1/4 FOAM)	48.00 - 68.00	0.8000	0.7000
T11	20	LDF6-50A (1-1/4 FOAM)	48.00 - 68.00	0.8000	0.7000
T11	21	LDF5-50A (7/8 FOAM)	48.00 - 68.00	0.8000	0.7000
T11	22	LDF5-50A (7/8 FOAM)	48.00 - 68.00	0.8000	0.7000
T11	23	LDF6-50A (1-1/4 FOAM)	48.00 - 68.00	0.8000	0.7000
T11	24	LDF4P-50A (1/2 FOAM)	48.00 - 68.00	0.8000	0.7000
T11	25	Feedline Ladder (Af)	48.00 - 68.00	0.8000	0.7000
T11	26	PWRT-606-S	48.00 - 68.00	0.8400	0.7000
T11	27	RFFT-48SM-001	48.00 - 68.00	0.8400	0.7000
T12	1	Climbing Ladder	28.00 - 48.00	0.8000	0.7000
T12	2	LDF7-50A (1-5/8 FOAM)	28.00 - 48.00	0.8500	0.7800

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T12	3	LDF7-50A (1-5/8 FOAM)	28.00 - 48.00	0.8400	0.7500
T12	4	TC-OF Hybrid Cable	28.00 - 48.00	0.8400	0.7500
T12	5	TC-ER Hybrid Cable	28.00 - 48.00	0.8400	0.7500
T12	6	6x12 Hybrid Cable	28.00 - 48.00	0.8400	0.7500
T12	7	LCF158-50J (1 5/8 FOAM)	28.00 - 48.00	0.8400	0.7000
T12	8	HB114 Hybrid Cable	28.00 - 48.00	0.8400	0.7800
T12	9	HB078 Hybrid Cable	28.00 - 48.00	0.8400	0.7800
T12	10	2.038" OD Flex Conduit	28.00 - 48.00	0.8400	0.7800
T12	11	EC4-50-A	28.00 - 48.00	0.8500	0.7800
T12	12	Feedline Ladder (Af)	28.00 - 48.00	0.8500	0.7800
T12	13	Feedline Ladder (Af)	28.00 - 48.00	0.8500	0.7800
T12	14	Feedline Ladder (Af)	28.00 - 48.00	0.8500	0.7500
T12	15	LDF6-50A (1-1/4 FOAM)	28.00 - 48.00	0.8200	0.7000
T12	16	LDF6-50A (1-1/4 FOAM)	28.00 - 48.00	0.8500	0.7800
T12	17	LDF6-50A (1-1/4 FOAM)	28.00 - 48.00	0.8000	0.7000
T12	18	LDF6-50A (1-1/4 FOAM)	28.00 - 48.00	0.8000	0.7000
T12	19	LDF6-50A (1-1/4 FOAM)	28.00 - 48.00	0.8000	0.7000
T12	20	LDF6-50A (1-1/4 FOAM)	28.00 - 48.00	0.8000	0.7000
T12	21	LDF5-50A (7/8 FOAM)	28.00 - 48.00	0.8000	0.7000
T12	22	LDF5-50A (7/8 FOAM)	28.00 - 48.00	0.8000	0.7000
T12	23	LDF6-50A (1-1/4 FOAM)	28.00 - 48.00	0.8000	0.7000
T12	24	LDF4P-50A (1/2 FOAM)	28.00 - 48.00	0.8000	0.7000
T12	25	Feedline Ladder (Af)	28.00 - 48.00	0.8000	0.7000
T12	26	PWRT-606-S	28.00 - 48.00	0.8400	0.7000
T12	27	RFFT-48SM-001	28.00 - 48.00	0.8400	0.7000
T13	1	Climbing Ladder	18.00 - 28.00	0.8000	0.7000
T13	2	LDF7-50A (1-5/8 FOAM)	18.00 - 28.00	0.8500	0.7800
T13	3	LDF7-50A (1-5/8 FOAM)	18.00 - 28.00	0.8400	0.7500
T13	4	TC-OF Hybrid Cable	18.00 - 28.00	0.8400	0.7500
T13	5	TC-ER Hybrid Cable	18.00 - 28.00	0.8400	0.7500
T13	6	6x12 Hybrid Cable	18.00 - 28.00	0.8400	0.7500
T13	7	LCF158-50J (1 5/8 FOAM)	18.00 - 28.00	0.8400	0.7000
T13	8	HB114 Hybrid Cable	18.00 - 28.00	0.8400	0.7800
T13	9	HB078 Hybrid Cable	18.00 - 28.00	0.8400	0.7800
T13	10	2.038" OD Flex Conduit	18.00 - 28.00	0.8400	0.7800
T13	11	EC4-50-A	18.00 - 28.00	0.8500	0.7800
T13	12	Feedline Ladder (Af)	18.00 - 28.00	0.8500	0.7800
T13	13	Feedline Ladder (Af)	18.00 - 28.00	0.8500	0.7800
T13	14	Feedline Ladder (Af)	18.00 - 28.00	0.8500	0.7500
T13	15	LDF6-50A (1-1/4 FOAM)	18.00 - 28.00	0.8200	0.7000
T13	16	LDF6-50A (1-1/4 FOAM)	18.00 - 28.00	0.8500	0.7800
T13	17	LDF6-50A (1-1/4 FOAM)	18.00 - 28.00	0.8000	0.7000
T13	18	LDF6-50A (1-1/4 FOAM)	18.00 - 28.00	0.8000	0.7000
T13	19	LDF6-50A (1-1/4 FOAM)	18.00 - 28.00	0.8000	0.7000
T13	20	LDF6-50A (1-1/4 FOAM)	18.00 - 28.00	0.8000	0.7000
T13	21	LDF5-50A (7/8 FOAM)	18.00 - 28.00	0.8000	0.7000
T13	22	LDF5-50A (7/8 FOAM)	18.00 - 28.00	0.8000	0.7000
T13	23	LDF6-50A (1-1/4 FOAM)	18.00 - 28.00	0.8000	0.7000
T13	24	LDF4P-50A (1/2 FOAM)	18.00 - 28.00	0.8000	0.7000
T13	25	Feedline Ladder (Af)	18.00 - 28.00	0.8000	0.7000
T13	26	PWRT-606-S	18.00 - 28.00	0.8400	0.7000
T13	27	RFFT-48SM-001	18.00 - 28.00	0.8400	0.7000

Discrete Tower Loads

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 lb
(2) APL-866513-42T9	C	From Leg	5.50			5.0000	110.00	No Ice	5.01	5.40	41.25
(Verizon)			0.00					1/2" Ice	5.69	6.49	88.20
			0.00					1" Ice	6.26	7.30	145.47
(2) APL-866513-42T6	A	From Leg	5.50			5.0000	110.00	No Ice	5.01	5.40	41.25
(Verizon)			0.00					1/2" Ice	5.69	6.49	88.20
			0.00					1" Ice	6.26	7.30	145.47
(2) APL-866513-42T9	B	From Leg	5.50			5.0000	110.00	No Ice	5.01	5.40	41.25
(Verizon)			0.00					1/2" Ice	5.69	6.49	88.20
			0.00					1" Ice	6.26	7.30	145.47
12' V-Frame Mount	A	From Leg	0.00			0.0000	110.00	No Ice	16.00	16.00	500.00
(Verizon)			0.00					1/2" Ice	25.00	25.00	650.00
			0.00					1" Ice	34.00	34.00	800.00
12' V-Frame Mount	B	From Leg	0.00			0.0000	110.00	No Ice	16.00	16.00	500.00
(Verizon)			0.00					1/2" Ice	25.00	25.00	650.00
			0.00					1" Ice	34.00	34.00	800.00
12' V-Frame Mount	C	From Leg	0.00			0.0000	110.00	No Ice	16.00	16.00	500.00
(Verizon)			0.00					1/2" Ice	25.00	25.00	650.00
			0.00					1" Ice	34.00	34.00	800.00
16' T-Frame Mount	A	From Leg	0.00			0.0000	180.00	No Ice	14.10	14.10	350.00
(T-Mobile)			0.00					1/2" Ice	18.80	18.80	473.00
			0.00					1" Ice	23.50	23.50	596.00
16' T-Frame Mount	B	From Leg	0.00			0.0000	180.00	No Ice	14.10	14.10	350.00
(T-Mobile)			0.00					1/2" Ice	18.80	18.80	473.00
			0.00					1" Ice	23.50	23.50	596.00
16' T-Frame Mount	C	From Leg	0.00			0.0000	180.00	No Ice	14.10	14.10	350.00
(T-Mobile)			0.00					1/2" Ice	18.80	18.80	473.00
			0.00					1" Ice	23.50	23.50	596.00
Beacon	C	From Centroid-Leg	0.00			0.0000	256.00	No Ice	0.00	0.00	0.00
			0.00					1/2" Ice	0.00	0.00	0.00
			0.00					1" Ice	0.00	0.00	0.00
Top Platform	A	None				0.0000	256.00	No Ice	43.98	61.58	324.00
								1/2" Ice	61.58	0.00	453.00
								1" Ice	79.18	0.00	582.00
GPS antenna	A	From Leg	0.00			0.0000	110.00	No Ice	0.15	0.15	10.00
(Verizon)			0.00					1/2" Ice	0.20	0.20	15.00
			0.00					1" Ice	0.25	0.25	20.00
AIR 3246 B66	A	From Leg	1.50			0.0000	180.00	No Ice	8.00	5.12	200.00
(T-Mobile)			3.00					1/2" Ice	8.70	5.80	265.00
			0.00					1" Ice	9.40	6.48	330.00
AIR 3246 B66	B	From Leg	1.50			0.0000	180.00	No Ice	8.00	5.12	200.00
(T-Mobile)			3.00					1/2" Ice	8.70	5.80	265.00
			0.00					1" Ice	9.40	6.48	330.00
AIR 3246 B66	C	From Leg	1.50			0.0000	180.00	No Ice	8.00	5.12	200.00
(T-Mobile)			3.00					1/2" Ice	8.70	5.80	265.00
			0.00					1" Ice	9.40	6.48	330.00
APXVAARR24_43-U-NA20	A	From Leg	1.50			0.0000	179.00	No Ice	20.80	9.10	154.00
(T-Mobile)			7.50					1/2" Ice	21.90	10.30	290.00
			0.00					1" Ice	23.00	11.50	426.00
APXVAARR24_43-U-NA20	B	From Leg	1.50			0.0000	179.00	No Ice	20.80	9.10	154.00
(T-Mobile)			7.50					1/2" Ice	21.90	10.30	290.00
			0.00					1" Ice	23.00	11.50	426.00
APXVAARR24_43-U-NA20	C	From Leg	1.50			0.0000	179.00	No Ice	20.80	9.10	154.00
(T-Mobile)			7.50					1/2" Ice	21.90	10.30	290.00
			0.00					1" Ice	23.00	11.50	426.00
(2) JAHH-65B-R3B on	A	From Leg	5.50			5.0000	110.00	No Ice	18.80	13.50	225.00
mount			-2.50					1/2" Ice	12.30	10.30	360.00
(Verizon)			0.00					1" Ice	13.40	12.00	510.00

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 lb
(2) JAHH-65B-R3B on mount (Verizon)	B	From Leg	5.50 -2.50 0.00	5.0000	110.00	No Ice 1/2" Ice 1" Ice	18.80 12.30 13.40	13.50 10.30 12.00	225.00 360.00 510.00
(2) JAHH-65B-R3B on mount (Verizon)	C	From Leg	5.50 -2.50 0.00	5.0000	110.00	No Ice 1/2" Ice 1" Ice	18.80 12.30 13.40	13.50 10.30 12.00	225.00 360.00 510.00
VFA6-RRU (Sprint)	A	From Leg	2.00 0.00 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	8.20 9.90 11.60	8.20 9.90 11.60	400.00 500.00 600.00
VFA6-RRU (Sprint)	C	From Face	2.00 -7.50 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	8.20 9.90 11.60	8.20 9.90 11.60	400.00 500.00 600.00
VFA6-RRU (Sprint)	C	From Leg	2.00 0.00 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	8.20 9.90 11.60	8.20 9.90 11.60	400.00 500.00 600.00
NNVV-65B-R4 (Sprint)	A	From Leg	4.00 3.00 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	12.40 13.10 13.80	7.50 8.80 10.10	120.00 230.00 340.00
NNVV-65B-R4 (Sprint)	C	From Face	4.00 -4.50 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	12.40 13.10 13.80	7.50 8.80 10.10	120.00 230.00 340.00
NNVV-65B-R4 (Sprint)	C	From Leg	4.00 3.00 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	12.40 13.10 13.80	7.50 8.80 10.10	120.00 230.00 340.00
2.5G MAA-AAHC(64T64R) (Sprint)	A	From Leg	4.00 -3.00 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	5.10 5.80 6.50	3.70 4.60 5.50	145.00 200.00 255.00
2.5G MAA-AAHC(64T64R) (Sprint)	C	From Face	4.00 -10.50 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	5.10 5.80 6.50	3.70 4.60 5.50	145.00 200.00 255.00
2.5G MAA-AAHC(64T64R) (Sprint)	C	From Leg	4.00 -3.00 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	5.10 5.80 6.50	3.70 4.60 5.50	145.00 200.00 255.00
(2) 800 MHz RRH (Sprint)	A	From Leg	2.50 2.00 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	1.40 1.50 1.60	2.20 2.30 2.40	65.00 100.00 135.00
(2) 800 MHz RRH (Sprint)	C	From Face	2.50 -5.50 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	1.40 1.50 1.60	2.20 2.30 2.40	65.00 100.00 135.00
(2) 800 MHz RRH (Sprint)	C	From Leg	2.50 2.00 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	1.40 1.50 1.60	2.20 2.30 2.40	65.00 100.00 135.00
1900 MHz RRH (Sprint)	A	From Leg	2.50 -2.00 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	2.70 3.00 3.30	2.70 3.00 3.30	90.00 120.00 150.00
1900 MHz RRH (Sprint)	C	From Face	2.50 -9.50 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	2.70 3.00 3.30	2.70 3.00 3.30	90.00 120.00 150.00
1900 MHz RRH (Sprint)	C	From Leg	2.50 -2.00 0.00	0.0000	119.00	No Ice 1/2" Ice 1" Ice	2.70 3.00 3.30	2.70 3.00 3.30	90.00 120.00 150.00
AIR 6449 B41 (T-Mobile)	A	From Leg	0.50 -7.50 0.00	0.0000	181.00	No Ice 1/2" Ice 1" Ice	5.68 6.14 6.60	2.49 2.87 3.25	86.00 150.90 215.80
AIR 6449 B41 (T-Mobile)	B	From Leg	0.50 -7.50 0.00	0.0000	181.00	No Ice 1/2" Ice 1" Ice	5.68 6.14 6.60	2.49 2.87 3.25	86.00 150.90 215.80

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 lb
AIR 6449 B41	C	From Leg	0.50	0.0000	181.00	No Ice	5.68	2.49	86.00
(T-Mobile)			-7.50			1/2" Ice	6.14	2.87	150.90
			0.00			1" Ice	6.60	3.25	215.80
Radio 4449 B71/B85	A	From Leg	0.50	0.0000	180.00	No Ice	1.65	1.70	89.00
(T-Mobile)			3.50			1/2" Ice	1.90	2.00	110.00
			1.50			1" Ice	2.15	2.30	131.00
Radio 4449 B71/B85	B	From Leg	0.50	0.0000	180.00	No Ice	1.65	1.70	89.00
(T-Mobile)			3.50			1/2" Ice	1.90	2.00	110.00
			1.50			1" Ice	2.15	2.30	131.00
Radio 4449 B71/B85	C	From Leg	0.50	0.0000	180.00	No Ice	1.65	1.70	89.00
(T-Mobile)			3.50			1/2" Ice	1.90	2.00	110.00
			1.50			1" Ice	2.15	2.30	131.00
Radio 2212 B25	A	From Leg	0.50	0.0000	180.00	No Ice	2.10	1.70	100.00
(T-Mobile)			3.50			1/2" Ice	2.20	1.80	120.00
			-1.50			1" Ice	2.40	1.90	140.00
Radio 2212 B25	B	From Leg	0.50	0.0000	180.00	No Ice	2.10	1.70	100.00
(T-Mobile)			3.50			1/2" Ice	2.20	1.80	120.00
			-1.50			1" Ice	2.40	1.90	140.00
Radio 2212 B25	C	From Leg	0.50	0.0000	180.00	No Ice	2.10	1.70	100.00
(T-Mobile)			3.50			1/2" Ice	2.20	1.80	120.00
			-1.50			1" Ice	2.40	1.90	140.00
Twin style 1B TMA	A	From Leg	0.50	0.0000	180.00	No Ice	0.60	0.28	16.00
(T-Mobile)			-3.50			1/2" Ice	0.80	0.40	24.00
			0.00			1" Ice	1.00	0.52	32.00
Twin style 1B TMA	B	From Leg	0.50	0.0000	180.00	No Ice	0.60	0.28	16.00
(T-Mobile)			-3.50			1/2" Ice	0.80	0.40	24.00
			0.00			1" Ice	1.00	0.52	32.00
Twin style 1B TMA	C	From Leg	0.50	0.0000	180.00	No Ice	0.60	0.28	16.00
(T-Mobile)			-3.50			1/2" Ice	0.80	0.40	24.00
			0.00			1" Ice	1.00	0.52	32.00
SBX1926Q-43 TMA	A	From Leg	0.75	-90.0000	180.00	No Ice	0.28	0.17	7.00
(T-Mobile)			-0.25			1/2" Ice	0.31	0.20	10.00
			0.00			1" Ice	0.34	0.23	13.00
SBX1926Q-43 TMA	B	From Leg	0.75	-90.0000	180.00	No Ice	0.28	0.17	7.00
(T-Mobile)			-0.25			1/2" Ice	0.31	0.20	10.00
			0.00			1" Ice	0.34	0.23	13.00
SBX1926Q-43 TMA	C	From Leg	0.75	-90.0000	180.00	No Ice	0.28	0.17	7.00
(T-Mobile)			-0.25			1/2" Ice	0.31	0.20	10.00
			0.00			1" Ice	0.34	0.23	13.00
C-band 64T64R MMU	A	From Leg	5.50	5.0000	110.00	No Ice	5.40	3.40	135.00
(Verizon)			4.00			1/2" Ice	6.00	4.30	180.00
			0.00			1" Ice	6.60	5.20	225.00
C-band 64T64R MMU	B	From Leg	5.50	5.0000	110.00	No Ice	5.40	3.40	135.00
(Verizon)			4.00			1/2" Ice	6.00	4.30	180.00
			0.00			1" Ice	6.60	5.20	225.00
C-band 64T64R MMU	C	From Leg	5.50	5.0000	110.00	No Ice	5.40	3.40	135.00
(Verizon)			4.00			1/2" Ice	6.00	4.30	180.00
			0.00			1" Ice	6.60	5.20	225.00
6' pipe mount	A	From Leg	5.00	0.0000	110.00	No Ice	1.50	1.50	40.00
(Verizon)			-1.00			1/2" Ice	2.10	2.10	55.00
			0.00			1" Ice	2.70	2.70	70.00
6' pipe mount	B	From Leg	5.00	0.0000	110.00	No Ice	1.50	1.50	40.00
(Verizon)			-1.00			1/2" Ice	2.10	2.10	55.00
			0.00			1" Ice	2.70	2.70	70.00
6' pipe mount	C	From Leg	5.00	0.0000	110.00	No Ice	1.50	1.50	40.00
(Verizon)			-1.00			1/2" Ice	2.10	2.10	55.00
			0.00			1" Ice	2.70	2.70	70.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
9' pipe mount	A	From Leg	5.00	0.00	0.0000	110.00	No Ice	2.20	2.20	50.00
(Verizon)			0.00	0.00			1/2" Ice	3.10	3.10	75.00
							1" Ice	4.00	4.00	100.00
9' pipe mount	B	From Leg	5.00	0.00	0.0000	110.00	No Ice	2.20	2.20	50.00
(Verizon)			0.00	0.00			1/2" Ice	3.10	3.10	75.00
							1" Ice	4.00	4.00	100.00
9' pipe mount	C	From Leg	5.00	0.00	0.0000	110.00	No Ice	2.20	2.20	50.00
(Verizon)			0.00	0.00			1/2" Ice	3.10	3.10	75.00
							1" Ice	4.00	4.00	100.00
B2/B66A Dual RRH	A	From Leg	5.00	0.00	0.0000	110.00	No Ice	1.90	1.30	100.00
(Verizon)			-2.50	-1.00			1/2" Ice	2.10	1.40	125.00
							1" Ice	2.20	1.60	150.00
B2/B66A Dual RRH	B	From Leg	5.00	0.00	0.0000	110.00	No Ice	1.90	1.30	100.00
(Verizon)			-2.50	-1.00			1/2" Ice	2.10	1.40	125.00
							1" Ice	2.20	1.60	150.00
B2/B66A Dual RRH	A	From Leg	5.00	0.00	0.0000	110.00	No Ice	1.90	1.30	100.00
(Verizon)			-2.50	-1.00			1/2" Ice	2.10	1.40	125.00
							1" Ice	2.20	1.60	150.00
B5/B13 Dual RRH	A	From Leg	5.00	0.00	0.0000	110.00	No Ice	1.90	1.10	85.00
(Verizon)			-2.50	1.00			1/2" Ice	2.10	1.20	105.00
							1" Ice	2.20	1.30	125.00
B5/B13 Dual RRH	B	From Leg	5.00	0.00	0.0000	110.00	No Ice	1.90	1.10	85.00
(Verizon)			-2.50	1.00			1/2" Ice	2.10	1.20	105.00
							1" Ice	2.20	1.30	125.00
B5/B13 Dual RRH	C	From Leg	5.00	0.00	0.0000	110.00	No Ice	1.90	1.10	85.00
(Verizon)			-2.50	1.00			1/2" Ice	2.10	1.20	105.00
							1" Ice	2.20	1.30	125.00
CBC78T-DS-43-2X	A	From Leg	5.00	0.00	0.0000	110.00	No Ice	0.57	0.52	25.00
(Verizon)			-2.50	2.50			1/2" Ice	0.64	0.59	35.00
							1" Ice	0.71	0.66	45.00
CBC78T-DS-43-2X	B	From Leg	5.00	0.00	0.0000	110.00	No Ice	0.57	0.52	25.00
(Verizon)			-2.50	2.50			1/2" Ice	0.64	0.59	35.00
							1" Ice	0.71	0.66	45.00
CBC78T-DS-43-2X	C	From Leg	5.00	0.00	0.0000	110.00	No Ice	0.57	0.52	25.00
(Verizon)			-2.50	2.50			1/2" Ice	0.64	0.59	35.00
							1" Ice	0.71	0.66	45.00
(2) TV 65 antenna	A	From Leg	5.00	0.00	0.0000	102.00	No Ice	2.57	1.73	25.00
			0.00	0.00			1/2" Ice	2.91	2.04	45.80
							1" Ice	3.25	2.35	66.60
Sidearm Mount	A	From Leg	2.50	0.00	0.0000	102.00	No Ice	2.78	2.78	51.20
			0.00	0.00			1/2" Ice	3.97	3.97	76.40
							1" Ice	5.16	5.16	101.60
Raycap 6-OVP	A	From Face	0.50	0.00	0.0000	110.00	No Ice	3.79	2.51	32.00
(Verizon)			-6.00	0.00			1/2" Ice	4.17	2.85	64.10
							1" Ice	4.55	3.19	96.20
Raycap 6-OVP	B	From Face	0.50	0.00	0.0000	110.00	No Ice	3.79	2.51	32.00
(Verizon)			-6.00	0.00			1/2" Ice	4.17	2.85	64.10
							1" Ice	4.55	3.19	96.20
Raycap 6-OVP	C	From Face	0.50	0.00	0.0000	110.00	No Ice	3.79	2.51	32.00
(Verizon)			-6.00	0.00			1/2" Ice	4.17	2.85	64.10
							1" Ice	4.55	3.19	96.20
Yagi	A	From Leg	0.00	0.00	0.0000	112.00	No Ice	0.22	0.22	5.00
			0.00	0.00			1/2" Ice	0.86	0.86	9.10
							1" Ice	1.50	1.50	13.20
10' Whip	A	From Leg	6.00	0.00	0.0000	232.00	No Ice	2.50	2.50	20.00
			0.00	0.00			1/2" Ice	3.36	3.36	44.10
				5.00			1" Ice	4.22	4.22	68.20

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
10' Whip	B	From Leg	6.00	0.00	0.0000	232.00	No Ice	2.50	2.50	20.00
			0.00	5.00			1/2" Ice	3.36	3.36	44.10
							1" Ice	4.22	4.22	68.20
6' Side Arm	A	From Leg	3.00	0.00	0.0000	232.00	No Ice	5.20	2.60	150.00
			0.00	0.00			1/2" Ice	5.90	3.00	200.00
							1" Ice	6.60	3.40	250.00
6' Side Arm	B	From Leg	3.00	0.00	0.0000	232.00	No Ice	5.20	2.60	150.00
			0.00	0.00			1/2" Ice	5.90	3.00	200.00
							1" Ice	6.60	3.40	250.00
18' Inverted Whip	C	From Face	6.00	-9.00	0.0000	256.00	No Ice	4.32	4.32	45.00
			0.00	0.00			1/2" Ice	5.85	5.85	92.90
							1" Ice	7.38	7.38	140.80
Yagi w/Radome	A	From Leg	6.00	0.00	0.0000	256.00	No Ice	1.80	4.20	50.00
			0.00	0.00			1/2" Ice	2.06	4.59	111.90
							1" Ice	2.32	4.98	173.80
Yagi w/Radome	A	From Leg	6.00	0.00	90.0000	257.00	No Ice	1.80	4.20	50.00
			0.00	0.00			1/2" Ice	2.06	4.59	111.90
							1" Ice	2.32	4.98	173.80
18' Whip	C	From Face	6.00	9.00	0.0000	256.00	No Ice	4.32	4.32	45.00
			0.00	0.00			1/2" Ice	5.85	5.85	92.90
							1" Ice	7.38	7.38	140.80
21' Whip	C	From Leg	3.00	10.50	0.0000	256.00	No Ice	5.04	5.04	55.00
			0.00	0.00			1/2" Ice	6.82	6.82	99.30
							1" Ice	8.60	8.60	143.60
9' Whip	B	From Leg	3.00	4.50	0.0000	257.00	No Ice	2.16	2.16	15.00
			0.00	0.00			1/2" Ice	2.94	2.94	33.90
							1" Ice	3.72	3.72	52.80
9' Whip	B	From Face	6.00	4.50	0.0000	257.00	No Ice	2.16	2.16	15.00
			0.00	0.00			1/2" Ice	2.94	2.94	33.90
							1" Ice	3.72	3.72	52.80
Junction Box (Sprint)	A	From Face	0.00	0.00	0.0000	119.00	No Ice	2.85	1.01	15.00
			0.00	0.00			1/2" Ice	3.17	1.23	60.80
							1" Ice	3.49	1.45	106.60
Junction Box (Sprint)	A	From Face	0.00	0.00	0.0000	17.00	No Ice	2.85	1.01	15.00
			0.00	0.00			1/2" Ice	3.17	1.23	60.80
							1" Ice	3.49	1.45	106.60
C10857278C V-Frame Mount (AT&T)	A	From Leg	1.50	0.00	0.0000	138.00	No Ice	15.00	15.00	788.00
			0.00	0.00			1/2" Ice	20.60	20.60	933.00
							1" Ice	26.20	26.20	1078.00
C10857278C V-Frame Mount (AT&T)	B	From Leg	1.50	0.00	0.0000	138.00	No Ice	15.00	15.00	788.00
			0.00	0.00			1/2" Ice	20.60	20.60	933.00
							1" Ice	26.20	26.20	1078.00
C10857278C V-Frame Mount (AT&T)	C	From Leg	1.50	0.00	0.0000	138.00	No Ice	15.00	15.00	788.00
			0.00	0.00			1/2" Ice	20.60	20.60	933.00
							1" Ice	26.20	26.20	1078.00
DMP65R-BU8DA-K (AT&T)	A	From Leg	3.00	-6.00	0.0000	138.00	No Ice	17.36	8.12	96.00
			0.00	0.00			1/2" Ice	18.42	9.27	193.30
							1" Ice	19.48	10.42	290.60
DMP65R-BU8DA-K (AT&T)	B	From Leg	3.00	-6.00	0.0000	138.00	No Ice	17.36	8.12	96.00
			0.00	0.00			1/2" Ice	18.42	9.27	193.30
							1" Ice	19.48	10.42	290.60
DMP65R-BU8DA-K (AT&T)	C	From Leg	3.00	-6.00	0.0000	138.00	No Ice	17.36	8.12	96.00
			0.00	0.00			1/2" Ice	18.42	9.27	193.30
							1" Ice	19.48	10.42	290.60
TPA65R-BU8DA-K (AT&T)	A	From Leg	3.00	2.00	0.0000	138.00	No Ice	17.36	8.12	87.00
			0.00	0.00			1/2" Ice	18.42	9.27	184.30
							1" Ice	19.48	10.42	281.60

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
TPA65R-BU8DA-K	B	From Leg	3.00		0.0000	138.00	No Ice	17.36	8.12	87.00
(AT&T)			2.00				1/2" Ice	18.42	9.27	184.30
			0.00				1" Ice	19.48	10.42	281.60
TPA65R-BU8DA-K	C	From Leg	3.00		0.0000	138.00	No Ice	17.36	8.12	87.00
(AT&T)			2.00				1/2" Ice	18.42	9.27	184.30
			0.00				1" Ice	19.48	10.42	281.60
HPA65R-BU8A	A	From Leg	3.00		0.0000	138.00	No Ice	11.23	8.04	54.00
(AT&T)			-2.00				1/2" Ice	12.32	9.20	122.20
			0.00				1" Ice	13.41	10.36	190.40
HPA65R-BU8A	B	From Leg	3.00		0.0000	138.00	No Ice	11.23	8.04	54.00
(AT&T)			-2.00				1/2" Ice	12.32	9.20	122.20
			0.00				1" Ice	13.41	10.36	190.40
HPA65R-BU8A	C	From Leg	3.00		0.0000	138.00	No Ice	11.23	8.04	54.00
(AT&T)			-2.00				1/2" Ice	12.32	9.20	122.20
			0.00				1" Ice	13.41	10.36	190.40
AIR 6449 N77	A	From Leg	3.00		0.0000	138.00	No Ice	4.03	2.72	96.00
(AT&T)			-6.00				1/2" Ice	4.42	3.08	130.20
			0.00				1" Ice	4.81	3.44	164.40
AIR 6449 N77	B	From Leg	3.00		0.0000	138.00	No Ice	4.03	2.72	96.00
(AT&T)			-6.00				1/2" Ice	4.42	3.08	130.20
			0.00				1" Ice	4.81	3.44	164.40
AIR 6449 N77	C	From Leg	3.00		0.0000	138.00	No Ice	4.03	2.72	96.00
(AT&T)			-6.00				1/2" Ice	4.42	3.08	130.20
			0.00				1" Ice	4.81	3.44	164.40
B14 4478 RRH	A	From Leg	1.50		0.0000	138.00	No Ice	2.02	1.25	60.00
(AT&T)			2.00				1/2" Ice	2.29	1.48	78.10
			0.00				1" Ice	2.56	1.71	96.20
B14 4478 RRH	B	From Leg	1.50		0.0000	138.00	No Ice	2.02	1.25	60.00
(AT&T)			2.00				1/2" Ice	2.29	1.48	78.10
			0.00				1" Ice	2.56	1.71	96.20
B14 4478 RRH	C	From Leg	1.50		0.0000	138.00	No Ice	2.02	1.25	60.00
(AT&T)			2.00				1/2" Ice	2.29	1.48	78.10
			0.00				1" Ice	2.56	1.71	96.20
Radio 4449 B5/B12	A	From Leg	1.50		0.0000	138.00	No Ice	1.97	1.40	71.00
(AT&T)			1.00				1/2" Ice	2.24	1.64	89.90
			0.00				1" Ice	2.51	1.88	108.80
Radio 4449 B5/B12	B	From Leg	1.50		0.0000	138.00	No Ice	1.97	1.40	71.00
(AT&T)			1.00				1/2" Ice	2.24	1.64	89.90
			0.00				1" Ice	2.51	1.88	108.80
Radio 4449 B5/B12	C	From Leg	1.50		0.0000	138.00	No Ice	1.97	1.40	71.00
(AT&T)			1.00				1/2" Ice	2.24	1.64	89.90
			0.00				1" Ice	2.51	1.88	108.80
B2/B66A 8843 RRH	A	From Leg	1.50		0.0000	138.00	No Ice	1.64	1.35	72.00
(AT&T)			-1.00				1/2" Ice	1.88	1.58	90.00
			0.00				1" Ice	2.12	1.81	108.00
B2/B66A 8843 RRH	B	From Leg	1.50		0.0000	138.00	No Ice	1.64	1.35	72.00
(AT&T)			-1.00				1/2" Ice	1.88	1.58	90.00
			0.00				1" Ice	2.12	1.81	108.00
B2/B66A 8843 RRH	C	From Leg	1.50		0.0000	138.00	No Ice	1.64	1.35	72.00
(AT&T)			-1.00				1/2" Ice	1.88	1.58	90.00
			0.00				1" Ice	2.12	1.81	108.00
Radio 4415 B30	A	From Leg	1.50		0.0000	138.00	No Ice	1.84	0.82	48.00
(AT&T)			-2.00				1/2" Ice	2.10	1.02	62.40
			0.00				1" Ice	2.36	1.22	76.80
Radio 4415 B30	B	From Leg	1.50		0.0000	138.00	No Ice	1.84	0.82	48.00
(AT&T)			-2.00				1/2" Ice	2.10	1.02	62.40
			0.00				1" Ice	2.36	1.22	76.80

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 (lb)
Radio 4415 B30	C	From Leg	1.50	0.0000	138.00	No Ice	1.84	0.82	48.00
(AT&T)			-2.00			1/2" Ice	2.10	1.02	62.40
			0.00			1" Ice	2.36	1.22	76.80
RRUS-E2 RRH	A	From Leg	1.50	0.0000	138.00	No Ice	3.15	1.29	53.00
(AT&T)			-3.00			1/2" Ice	3.48	1.53	76.80
			0.00			1" Ice	3.81	1.77	100.60
RRUS-E2 RRH	B	From Leg	1.50	0.0000	138.00	No Ice	3.15	1.29	53.00
(AT&T)			-3.00			1/2" Ice	3.48	1.53	76.80
			0.00			1" Ice	3.81	1.77	100.60
RRUS-E2 RRH	C	From Leg	1.50	0.0000	138.00	No Ice	3.15	1.29	53.00
(AT&T)			-3.00			1/2" Ice	3.48	1.53	76.80
			0.00			1" Ice	3.81	1.77	100.60
DC9-48-60-24-8C-EV Squid	A	From Leg	1.50	0.0000	138.00	No Ice	4.79	2.73	16.00
(AT&T)			3.00			1/2" Ice	5.21	3.09	53.90
			0.00			1" Ice	5.63	3.45	91.80
DC9-48-60-24-8C-EV Squid	B	From Leg	1.50	0.0000	138.00	No Ice	4.79	2.73	16.00
(AT&T)			3.00			1/2" Ice	5.21	3.09	53.90
			0.00			1" Ice	5.63	3.45	91.80
DC9-48-60-24-8C-EV Squid	C	From Leg	1.50	0.0000	138.00	No Ice	4.79	2.73	16.00
(AT&T)			3.00			1/2" Ice	5.21	3.09	53.90
			0.00			1" Ice	5.63	3.45	91.80

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral / Vert (ft)	Azimuth Adjustment (°)	3 dB Beam Width (°)	Elevation (ft)	Outside Diameter (ft)		Aperture Area (ft^2)	Weight (lb)
HPCPE-80BW	A	Paraboloid w/o	From	1.00	0.0000		131.00	1.10	No Ice	1.07	35.00
(Sprint)		Radome	Leg	0.00					1/2" Ice	1.23	65.00
				0.00					1" Ice	1.39	95.00
VHLP1-23-2WH	B	Paraboloid w/o	From	1.00	0.0000		131.00	1.00	No Ice	0.78	25.00
(Sprint)		Radome	Leg	0.00					1/2" Ice	1.07	40.00
				0.00					1" Ice	1.36	55.00
VHLP2.5-11-4WH	C	Paraboloid w/o	From	1.00	0.0000		131.00	1.00	No Ice	4.91	49.00
(Sprint)		Radome	Leg	0.00					1/2" Ice	5.59	77.00
				0.00					1" Ice	6.27	105.00

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation (ft)	z (ft)	K_Z	q_z (psf)	A_G (ft^2)	Face	A_F (ft^2)	A_R (ft^2)	A_{leg} (ft^2)	Leg %	C_AA_A In Face (ft^2)	C_AA_A Out Face (ft^2)

Section Elevation	z	K_Z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
T1	252.00	1.537	31	56.350	A	5.958	4.668	4.668	43.93	0.000	0.000
256.00-248.00					B	5.958	4.668		43.93	1.600	0.000
					C	5.958	4.668		43.93	10.704	0.000
T2	238.00	1.519	31	143.833	A	12.731	11.667	11.667	47.82	0.000	0.000
248.00-228.00					B	12.731	11.667		47.82	4.000	0.000
					C	12.731	11.667		47.82	28.000	0.000
T3	218.00	1.491	31	144.830	A	12.521	15.000	15.000	54.50	0.000	0.000
228.00-208.00					B	12.521	15.000		54.50	4.000	0.000
					C	12.521	15.000		54.50	33.212	0.000
T4	198.00	1.461	30	166.774	A	11.712	18.577	18.577	61.33	0.000	0.000
208.00-188.00					B	11.712	18.577		61.33	4.000	0.000
					C	11.712	18.577		61.33	34.220	0.000
T5	178.00	1.429	29	209.375	A	14.110	22.120	22.120	61.05	0.000	0.000
188.00-168.00					B	14.110	22.120		61.05	76.864	0.000
					C	14.110	22.120		61.05	34.220	0.000
T6	158.00	1.394	29	249.375	A	19.538	22.120	22.120	53.10	0.000	0.000
168.00-148.00					B	19.538	22.120		53.10	125.440	0.000
					C	19.538	22.120		53.10	34.220	0.000
T7	138.00	1.354	28	290.106	A	22.282	22.123	22.123	49.82	0.000	0.000
148.00-128.00					B	22.282	22.123		49.82	125.440	0.000
					C	22.282	22.123		49.82	43.700	0.000
T8	118.00	1.31	27	335.118	A	24.074	28.802	28.802	54.47	23.763	0.000
128.00-108.00					B	24.074	28.802		54.47	125.440	0.000
					C	24.074	28.802		54.47	53.180	0.000
T9	98.00	1.26	26	377.729	A	26.561	28.806	28.806	52.03	101.580	0.000
108.00-88.00					B	26.561	28.806		52.03	125.440	0.000
					C	26.561	28.806		52.03	55.350	0.000
T10	78.00	1.201	25	422.939	A	35.980	35.893	35.893	49.94	101.580	0.000
88.00-68.00					B	35.980	35.893		49.94	125.440	0.000
					C	35.980	35.893		49.94	56.280	0.000
T11	58.00	1.128	23	462.729	A	39.008	35.892	35.892	47.92	101.580	0.000
68.00-48.00					B	39.008	35.892		47.92	125.440	0.000
					C	39.008	35.892		47.92	56.280	0.000
T12	38.00	1.032	21	503.561	A	42.155	35.899	35.899	45.99	101.580	0.000
48.00-28.00					B	42.155	35.899		45.99	125.440	0.000
					C	42.155	35.899		45.99	56.280	0.000
T13 28.00-8.00	18.00	0.882	18	549.615	A	14.782	48.213	35.927	57.03	50.790	0.000
					B	14.782	48.213		57.03	62.720	0.000
					C	14.782	48.213		57.03	28.140	0.000

Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation	z	K_Z	q_z	t_Z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	in	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
T1	252.00	1.537	8	1.8381	58.801	A	5.958	20.706	9.571	35.89	0.000	0.000
256.00-248.00						B	5.958	20.706		35.89	4.541	0.000
						C	5.958	20.706		35.89	31.291	0.000
T2	238.00	1.519	8	1.8277	149.926	A	12.731	47.119	23.851	39.85	0.000	0.000
248.00-228.00						B	12.731	47.119		39.85	11.311	0.000
						C	12.731	47.119		39.85	82.099	0.000
T3	218.00	1.491	8	1.8117	150.869	A	12.521	49.762	27.078	43.48	0.000	0.000
228.00-208.00						B	12.521	49.762		43.48	11.247	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						C	12.521	49.762		43.48	99.882	0.000
T4 208.00-188.00	198.00	1.461	8	1.7943	172.763	A	11.712	51.576	30.561	48.29	0.000	0.000
						B	11.712	51.576		48.29	11.177	0.000
						C	11.712	51.576		48.29	105.994	0.000
T5 188.00-168.00	178.00	1.429	8	1.7753	215.301	A	14.110	54.016	33.975	49.87	0.000	0.000
						B	14.110	54.016		49.87	103.135	0.000
						C	14.110	54.016		49.87	105.234	0.000
T6 168.00-148.00	158.00	1.394	8	1.7543	255.230	A	19.538	56.685	33.835	44.39	0.000	0.000
						B	19.538	56.685		44.39	163.738	0.000
						C	19.538	56.685		44.39	104.392	0.000
T7 148.00-128.00	138.00	1.354	7	1.7307	295.883	A	22.282	59.391	33.682	41.24	0.000	0.000
						B	22.282	59.391		41.24	162.896	0.000
						C	22.282	59.391		41.24	123.306	0.000
T8 128.00-108.00	118.00	1.31	7	1.7038	340.805	A	24.074	60.691	40.182	47.40	60.664	0.000
						B	24.074	60.691		47.40	161.935	0.000
						C	24.074	60.691		47.40	141.708	0.000
T9 108.00-88.00	98.00	1.26	7	1.6725	383.312	A	26.561	62.189	39.978	45.05	194.654	0.000
						B	26.561	62.189		45.05	160.815	0.000
						C	26.561	62.189		45.05	146.863	0.000
T10 88.00-68.00	78.00	1.201	7	1.6347	428.395	A	35.980	70.337	46.809	44.03	192.921	0.000
						B	35.980	70.337		44.03	159.467	0.000
						C	35.980	70.337		44.03	147.606	0.000
T11 68.00-48.00	58.00	1.128	6	1.5870	468.025	A	39.008	71.251	46.489	42.16	190.732	0.000
						B	39.008	71.251		42.16	157.763	0.000
						C	39.008	71.251		42.16	144.831	0.000
T12 48.00-28.00	38.00	1.032	6	1.5213	508.639	A	42.155	71.713	46.060	40.45	187.719	0.000
						B	42.155	71.713		40.45	155.418	0.000
						C	42.155	71.713		40.45	141.010	0.000
T13 28.00-8.00	18.00	0.882	5	1.4118	554.330	A	21.739	71.041	45.363	48.89	91.351	0.000
						B	21.739	71.041		48.89	75.756	0.000
						C	21.739	71.041		48.89	67.321	0.000

Tower Pressure - Service

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1 256.00-248.00	252.00	1.537	12	56.350	A	5.958	4.668	4.668	43.93	0.000	0.000
					B	5.958	4.668		43.93	1.600	0.000
					C	5.958	4.668		43.93	10.704	0.000
T2 248.00-228.00	238.00	1.519	12	143.833	A	12.731	11.667	11.667	47.82	0.000	0.000
					B	12.731	11.667		47.82	4.000	0.000
					C	12.731	11.667		47.82	28.000	0.000
T3 228.00-208.00	218.00	1.491	12	144.830	A	12.521	15.000	15.000	54.50	0.000	0.000
					B	12.521	15.000		54.50	4.000	0.000
					C	12.521	15.000		54.50	33.212	0.000
T4 208.00-188.00	198.00	1.461	11	166.774	A	11.712	18.577	18.577	61.33	0.000	0.000
					B	11.712	18.577		61.33	4.000	0.000
					C	11.712	18.577		61.33	34.220	0.000
T5 188.00-168.00	178.00	1.429	11	209.375	A	14.110	22.120	22.120	61.05	0.000	0.000
					B	14.110	22.120		61.05	76.864	0.000
					C	14.110	22.120		61.05	34.220	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T6	158.00	1.394	11	249.375	A	19.538	22.120	22.120	53.10	0.000	0.000
168.00-148.00					B	19.538	22.120		53.10	125.440	0.000
					C	19.538	22.120		53.10	34.220	0.000
T7	138.00	1.354	11	290.106	A	22.282	22.123	22.123	49.82	0.000	0.000
148.00-128.00					B	22.282	22.123		49.82	125.440	0.000
					C	22.282	22.123		49.82	43.700	0.000
T8	118.00	1.31	10	335.118	A	24.074	28.802	28.802	54.47	23.763	0.000
128.00-108.00					B	24.074	28.802		54.47	125.440	0.000
					C	24.074	28.802		54.47	53.180	0.000
T9	98.00	1.26	10	377.729	A	26.561	28.806	28.806	52.03	101.580	0.000
108.00-88.00					B	26.561	28.806		52.03	125.440	0.000
					C	26.561	28.806		52.03	55.350	0.000
T10	78.00	1.201	9	422.939	A	35.980	35.893	35.893	49.94	101.580	0.000
88.00-68.00					B	35.980	35.893		49.94	125.440	0.000
					C	35.980	35.893		49.94	56.280	0.000
T11	58.00	1.128	9	462.729	A	39.008	35.892	35.892	47.92	101.580	0.000
68.00-48.00					B	39.008	35.892		47.92	125.440	0.000
					C	39.008	35.892		47.92	56.280	0.000
T12	38.00	1.032	8	503.561	A	42.155	35.899	35.899	45.99	101.580	0.000
48.00-28.00					B	42.155	35.899		45.99	125.440	0.000
					C	42.155	35.899		45.99	56.280	0.000
T13 28.00-8.00	18.00	0.882	7	549.615	A	14.782	48.213	35.927	57.03	50.790	0.000
					B	14.782	48.213		57.03	62.720	0.000
					C	14.782	48.213		57.03	28.140	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	156.80	478.15	A	0.189	2.635	31	1	1	8.571	868.24	108.53	C
256.00-248.00			B	0.189	2.635		1	1	8.571			
			C	0.189	2.635		1	1	8.571			
T2	397.28	1379.45	A	0.17	2.701	31	1	1	19.231	2051.42	102.57	C
248.00-228.00			B	0.17	2.701		1	1	19.231			
			C	0.17	2.701		1	1	19.231			
T3	419.00	1660.78	A	0.19	2.63	31	1	1	20.341	2162.37	108.12	C
228.00-208.00			B	0.19	2.63		1	1	20.341			
			C	0.19	2.63		1	1	20.341			
T4	421.40	1965.16	A	0.182	2.659	30	1	1	20.562	2169.46	108.47	C
208.00-188.00			B	0.182	2.659		1	1	20.562			
			C	0.182	2.659		1	1	20.562			
T5	934.52	2590.18	A	0.173	2.689	29	1	1	23.639	3865.94	193.30	C
188.00-168.00			B	0.173	2.689		1	1	23.639			
			C	0.173	2.689		1	1	23.639			
T6	1276.60	2923.52	A	0.167	2.71	29	1	1	29.072	5129.91	256.50	C
168.00-148.00			B	0.167	2.71		1	1	29.072			
			C	0.167	2.71		1	1	29.072			
T7	1362.70	3083.25	A	0.153	2.76	28	1	1	31.750	5382.36	269.12	C
148.00-128.00			B	0.153	2.76		1	1	31.750			
			C	0.153	2.76		1	1	31.750			
T8	1659.90	4195.56	A	0.158	2.743	27	1	1	36.249	6116.56	305.83	C
128.00-108.00			B	0.158	2.743		1	1	36.249			
			C	0.158	2.743		1	1	36.249			
T9	2260.04	4629.82	A	0.147	2.784	26	1	1	38.572	7543.17	377.16	C
108.00-88.00			B	0.147	2.784		1	1	38.572			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
			C	0.147	2.784		1	1	38.572			
T10	2264.00	6622.30	A	0.17	2.699	25	1	1	51.382	7860.38	393.02	C
88.00-68.00			B	0.17	2.699		1	1	51.382			
			C	0.17	2.699		1	1	51.382			
T11	2264.00	6887.43	A	0.162	2.728	23	1	1	54.255	7568.13	378.41	C
68.00-48.00			B	0.162	2.728		1	1	54.255			
			C	0.162	2.728		1	1	54.255			
T12	2264.00	7164.56	A	0.155	2.753	21	1	1	57.278	7097.27	354.86	C
48.00-28.00			B	0.155	2.753		1	1	57.278			
			C	0.155	2.753		1	1	57.278			
T13	1132.00	6508.82	A	0.115	2.906	18	1	1	36.151	3434.36	171.72	C
28.00-8.00			B	0.115	2.906		1	1	36.151			
			C	0.115	2.906		1	1	36.151			
Sum Weight:	16812.24	50089.00						OTM	6203974.5 8 lb-ft	61249.56		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	156.80	478.15	A	0.189	2.635	31	0.8	1	7.379	784.23	98.03	C
256.00-248.00			B	0.189	2.635		0.8	1	7.379			
			C	0.189	2.635		0.8	1	7.379			
T2	397.28	1379.45	A	0.17	2.701	31	0.8	1	16.685	1869.64	93.48	C
248.00-228.00			B	0.17	2.701		0.8	1	16.685			
			C	0.17	2.701		0.8	1	16.685			
T3	419.00	1660.78	A	0.19	2.63	31	0.8	1	17.836	1991.47	99.57	C
228.00-208.00			B	0.19	2.63		0.8	1	17.836			
			C	0.19	2.63		0.8	1	17.836			
T4	421.40	1965.16	A	0.182	2.659	30	0.8	1	18.220	2011.09	100.55	C
208.00-188.00			B	0.182	2.659		0.8	1	18.220			
			C	0.182	2.659		0.8	1	18.220			
T5	934.52	2590.18	A	0.173	2.689	29	0.8	1	20.817	3677.26	183.86	C
188.00-168.00			B	0.173	2.689		0.8	1	20.817			
			C	0.173	2.689		0.8	1	20.817			
T6	1276.60	2923.52	A	0.167	2.71	29	0.8	1	25.165	4873.12	243.66	C
168.00-148.00			B	0.167	2.71		0.8	1	25.165			
			C	0.167	2.71		0.8	1	25.165			
T7	1362.70	3083.25	A	0.153	2.76	28	0.8	1	27.294	5092.42	254.62	C
148.00-128.00			B	0.153	2.76		0.8	1	27.294			
			C	0.153	2.76		0.8	1	27.294			
T8	1659.90	4195.56	A	0.158	2.743	27	0.8	1	31.434	5815.35	290.77	C
128.00-108.00			B	0.158	2.743		0.8	1	31.434			
			C	0.158	2.743		0.8	1	31.434			
T9	2260.04	4629.82	A	0.147	2.784	26	0.8	1	33.260	7218.80	360.94	C
108.00-88.00			B	0.147	2.784		0.8	1	33.260			
			C	0.147	2.784		0.8	1	33.260			
T10	2264.00	6622.30	A	0.17	2.699	25	0.8	1	44.186	7454.33	372.72	C
88.00-68.00			B	0.17	2.699		0.8	1	44.186			
			C	0.17	2.699		0.8	1	44.186			
T11	2264.00	6887.43	A	0.162	2.728	23	0.8	1	46.454	7150.12	357.51	C
68.00-48.00			B	0.162	2.728		0.8	1	46.454			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
			C	0.162	2.728		0.8	1	46.454			
T12	2264.00	7164.56	A	0.155	2.753	21	0.8	1	48.847	6680.24	334.01	C
48.00-28.00			B	0.155	2.753		0.8	1	48.847			
			C	0.155	2.753		0.8	1	48.847			
T13	1132.00	6508.82	A	0.115	2.906	18	0.8	1	33.194	3302.47	165.12	C
28.00-8.00			B	0.115	2.906		0.8	1	33.194			
			C	0.115	2.906		0.8	1	33.194			
Sum Weight:	16812.24	50089.00						OTM	5841921.3 5 lb-ft	57920.52		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	156.80	478.15	A	0.189	2.635	31	0.85	1	7.677	805.23	100.65	C
256.00-248.00			B	0.189	2.635		0.85	1	7.677			
			C	0.189	2.635		0.85	1	7.677			
T2	397.28	1379.45	A	0.17	2.701	31	0.85	1	17.322	1915.08	95.75	C
248.00-228.00			B	0.17	2.701		0.85	1	17.322			
			C	0.17	2.701		0.85	1	17.322			
T3	419.00	1660.78	A	0.19	2.63	31	0.85	1	18.462	2034.19	101.71	C
228.00-208.00			B	0.19	2.63		0.85	1	18.462			
			C	0.19	2.63		0.85	1	18.462			
T4	421.40	1965.16	A	0.182	2.659	30	0.85	1	18.806	2050.68	102.53	C
208.00-188.00			B	0.182	2.659		0.85	1	18.806			
			C	0.182	2.659		0.85	1	18.806			
T5	934.52	2590.18	A	0.173	2.689	29	0.85	1	21.522	3724.43	186.22	C
188.00-168.00			B	0.173	2.689		0.85	1	21.522			
			C	0.173	2.689		0.85	1	21.522			
T6	1276.60	2923.52	A	0.167	2.71	29	0.85	1	26.141	4937.32	246.87	C
168.00-148.00			B	0.167	2.71		0.85	1	26.141			
			C	0.167	2.71		0.85	1	26.141			
T7	1362.70	3083.25	A	0.153	2.76	28	0.85	1	28.408	5164.91	258.25	C
148.00-128.00			B	0.153	2.76		0.85	1	28.408			
			C	0.153	2.76		0.85	1	28.408			
T8	1659.90	4195.56	A	0.158	2.743	27	0.85	1	32.638	5890.65	294.53	C
128.00-108.00			B	0.158	2.743		0.85	1	32.638			
			C	0.158	2.743		0.85	1	32.638			
T9	2260.04	4629.82	A	0.147	2.784	26	0.85	1	34.588	7299.89	364.99	C
108.00-88.00			B	0.147	2.784		0.85	1	34.588			
			C	0.147	2.784		0.85	1	34.588			
T10	2264.00	6622.30	A	0.17	2.699	25	0.85	1	45.985	7555.84	377.79	C
88.00-68.00			B	0.17	2.699		0.85	1	45.985			
			C	0.17	2.699		0.85	1	45.985			
T11	2264.00	6887.43	A	0.162	2.728	23	0.85	1	48.404	7254.62	362.73	C
68.00-48.00			B	0.162	2.728		0.85	1	48.404			
			C	0.162	2.728		0.85	1	48.404			
T12	2264.00	7164.56	A	0.155	2.753	21	0.85	1	50.955	6784.49	339.22	C
48.00-28.00			B	0.155	2.753		0.85	1	50.955			
			C	0.155	2.753		0.85	1	50.955			
T13	1132.00	6508.82	A	0.115	2.906	18	0.85	1	33.933	3335.44	166.77	C
28.00-8.00			B	0.115	2.906		0.85	1	33.933			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
Sum Weight:	16812.24	50089.00	C	0.115	2.906		0.85	1 OTM	33.933 5932434.6 6 lb-ft	58752.78		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	682.87	1948.66	A	0.453	1.968	8	1	1	19.645	453.15	56.64	C
256.00-248.00			B	0.453	1.968		1	1	19.645			
			C	0.453	1.968		1	1	19.645			
T2	1761.45	4580.82	A	0.399	2.066	8	1	1	42.693	1078.74	53.94	C
248.00-228.00			B	0.399	2.066		1	1	42.693			
			C	0.399	2.066		1	1	42.693			
T3	2024.88	4947.47	A	0.413	2.039	8	1	1	44.463	1161.62	58.08	C
228.00-208.00			B	0.413	2.039		1	1	44.463			
			C	0.413	2.039		1	1	44.463			
T4	2089.02	5204.89	A	0.366	2.135	8	1	1	43.809	1186.13	59.31	C
208.00-188.00			B	0.366	2.135		1	1	43.809			
			C	0.366	2.135		1	1	43.809			
T5	3811.73	6163.86	A	0.316	2.253	8	1	1	46.746	1683.83	84.19	C
188.00-168.00			B	0.316	2.253		1	1	46.746			
			C	0.316	2.253		1	1	46.746			
T6	4923.01	7162.77	A	0.299	2.3	8	1	1	53.463	2040.66	102.03	C
168.00-148.00			B	0.299	2.3		1	1	53.463			
			C	0.299	2.3		1	1	53.463			
T7	5145.39	7661.55	A	0.276	2.362	7	1	1	57.431	2141.86	107.09	C
148.00-128.00			B	0.276	2.362		1	1	57.431			
			C	0.276	2.362		1	1	57.431			
T8	6222.31	8963.61	A	0.249	2.441	7	1	1	59.560	2491.61	124.58	C
128.00-108.00			B	0.249	2.441		1	1	59.560			
			C	0.249	2.441		1	1	59.560			
T9	8405.67	9622.24	A	0.232	2.494	7	1	1	62.674	3083.72	154.19	C
108.00-88.00			B	0.232	2.494		1	1	62.674			
			C	0.232	2.494		1	1	62.674			
T10	8279.10	12821.72	A	0.248	2.443	7	1	1	77.096	3108.10	155.41	C
88.00-68.00			B	0.248	2.443		1	1	77.096			
			C	0.248	2.443		1	1	77.096			
T11	8066.87	13237.66	A	0.236	2.481	6	1	1	80.448	2953.44	147.67	C
68.00-48.00			B	0.236	2.481		1	1	80.448			
			C	0.236	2.481		1	1	80.448			
T12	7779.69	13568.45	A	0.224	2.518	6	1	1	83.682	2722.63	136.13	C
48.00-28.00			B	0.224	2.518		1	1	83.682			
			C	0.224	2.518		1	1	83.682			
T13	3656.99	11182.77	A	0.167	2.709	5	1	1	62.199	1397.62	69.88	C
28.00-8.00			B	0.167	2.709		1	1	62.199			
			C	0.167	2.709		1	1	62.199			
Sum Weight:	62848.97	107066.49						OTM	2711281.7 9 lb-ft	25503.11		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	Face	e	C_F	q_z	D_F	D_R	A_E	F	w	Ctrl. Face
ft	lb	lb				psf			ft^2	lb	plf	
T1	682.87	1948.66	A	0.453	1.968	8	0.8	1	18.453	436.48	54.56	C
256.00-248.00			B	0.453	1.968		0.8	1	18.453			
			C	0.453	1.968		0.8	1	18.453			
T2	1761.45	4580.82	A	0.399	2.066	8	0.8	1	40.147	1041.80	52.09	C
248.00-228.00			B	0.399	2.066		0.8	1	40.147			
			C	0.399	2.066		0.8	1	40.147			
T3	2024.88	4947.47	A	0.413	2.039	8	0.8	1	41.959	1126.41	56.32	C
228.00-208.00			B	0.413	2.039		0.8	1	41.959			
			C	0.413	2.039		0.8	1	41.959			
T4	2089.02	5204.89	A	0.366	2.135	8	0.8	1	41.467	1152.34	57.62	C
208.00-188.00			B	0.366	2.135		0.8	1	41.467			
			C	0.366	2.135		0.8	1	41.467			
T5	3811.73	6163.86	A	0.316	2.253	8	0.8	1	43.924	1641.81	82.09	C
188.00-168.00			B	0.316	2.253		0.8	1	43.924			
			C	0.316	2.253		0.8	1	43.924			
T6	4923.01	7162.77	A	0.299	2.3	8	0.8	1	49.556	1982.76	99.14	C
168.00-148.00			B	0.299	2.3		0.8	1	49.556			
			C	0.299	2.3		0.8	1	49.556			
T7	5145.39	7661.55	A	0.276	2.362	7	0.8	1	52.975	2075.94	103.80	C
148.00-128.00			B	0.276	2.362		0.8	1	52.975			
			C	0.276	2.362		0.8	1	52.975			
T8	6222.31	8963.61	A	0.249	2.441	7	0.8	1	54.745	2420.38	121.02	C
128.00-108.00			B	0.249	2.441		0.8	1	54.745			
			C	0.249	2.441		0.8	1	54.745			
T9	8405.67	9622.24	A	0.232	2.494	7	0.8	1	57.362	3006.52	150.33	C
108.00-88.00			B	0.232	2.494		0.8	1	57.362			
			C	0.232	2.494		0.8	1	57.362			
T10	8279.10	12821.72	A	0.248	2.443	7	0.8	1	69.900	3010.47	150.52	C
88.00-68.00			B	0.248	2.443		0.8	1	69.900			
			C	0.248	2.443		0.8	1	69.900			
T11	8066.87	13237.66	A	0.236	2.481	6	0.8	1	72.647	2852.42	142.62	C
68.00-48.00			B	0.236	2.481		0.8	1	72.647			
			C	0.236	2.481		0.8	1	72.647			
T12	7779.69	13568.45	A	0.224	2.518	6	0.8	1	75.251	2621.27	131.06	C
48.00-28.00			B	0.224	2.518		0.8	1	75.251			
			C	0.224	2.518		0.8	1	75.251			
T13	3656.99	11182.77	A	0.167	2.709	5	0.8	1	57.851	1349.58	67.48	C
28.00-8.00			B	0.167	2.709		0.8	1	57.851			
			C	0.167	2.709		0.8	1	57.851			
Sum Weight:	62848.97	107066.49						OTM	2630316.0 0 lb-ft	24718.19		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	Face	e	C_F	q_z	D_F	D_R	A_E	F	w	Ctrl. Face
ft	lb	lb				psf			ft^2	lb	plf	
T1	682.87	1948.66	A	0.453	1.968	8	0.85	1	18.751	440.65	55.08	C

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
256.00-248.00			B	0.453	1.968		0.85	1	18.751			
			C	0.453	1.968		0.85	1	18.751			
T2	1761.45	4580.82	A	0.399	2.066	8	0.85	1	40.784	1051.03	52.55	C
248.00-228.00			B	0.399	2.066		0.85	1	40.784			
			C	0.399	2.066		0.85	1	40.784			
T3	2024.88	4947.47	A	0.413	2.039	8	0.85	1	42.585	1135.21	56.76	C
228.00-208.00			B	0.413	2.039		0.85	1	42.585			
			C	0.413	2.039		0.85	1	42.585			
T4	2089.02	5204.89	A	0.366	2.135	8	0.85	1	42.052	1160.79	58.04	C
208.00-188.00			B	0.366	2.135		0.85	1	42.052			
			C	0.366	2.135		0.85	1	42.052			
T5	3811.73	6163.86	A	0.316	2.253	8	0.85	1	44.630	1652.31	82.62	C
188.00-168.00			B	0.316	2.253		0.85	1	44.630			
			C	0.316	2.253		0.85	1	44.630			
T6	4923.01	7162.77	A	0.299	2.3	8	0.85	1	50.533	1997.24	99.86	C
168.00-148.00			B	0.299	2.3		0.85	1	50.533			
			C	0.299	2.3		0.85	1	50.533			
T7	5145.39	7661.55	A	0.276	2.362	7	0.85	1	54.089	2092.42	104.62	C
148.00-128.00			B	0.276	2.362		0.85	1	54.089			
			C	0.276	2.362		0.85	1	54.089			
T8	6222.31	8963.61	A	0.249	2.441	7	0.85	1	55.949	2438.19	121.91	C
128.00-108.00			B	0.249	2.441		0.85	1	55.949			
			C	0.249	2.441		0.85	1	55.949			
T9	8405.67	9622.24	A	0.232	2.494	7	0.85	1	58.690	3025.82	151.29	C
108.00-88.00			B	0.232	2.494		0.85	1	58.690			
			C	0.232	2.494		0.85	1	58.690			
T10	8279.10	12821.72	A	0.248	2.443	7	0.85	1	71.699	3034.87	151.74	C
88.00-68.00			B	0.248	2.443		0.85	1	71.699			
			C	0.248	2.443		0.85	1	71.699			
T11	8066.87	13237.66	A	0.236	2.481	6	0.85	1	74.597	2877.68	143.88	C
68.00-48.00			B	0.236	2.481		0.85	1	74.597			
			C	0.236	2.481		0.85	1	74.597			
T12	7779.69	13568.45	A	0.224	2.518	6	0.85	1	77.358	2646.61	132.33	C
48.00-28.00			B	0.224	2.518		0.85	1	77.358			
			C	0.224	2.518		0.85	1	77.358			
T13	3656.99	11182.77	A	0.167	2.709	5	0.85	1	58.938	1361.59	68.08	C
28.00-8.00			B	0.167	2.709		0.85	1	58.938			
			C	0.167	2.709		0.85	1	58.938			
Sum Weight:	62848.97	107066.49						OTM	2650557.4 5 lb-ft	24914.42		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	156.80	478.15	A	0.189	2.635	12	1	1	8.631	333.81	41.73	C
256.00-248.00			B	0.189	2.635		1	1	8.631			
			C	0.189	2.635		1	1	8.631			
T2	397.28	1379.45	A	0.17	2.701	12	1	1	19.379	788.92	39.45	C
248.00-228.00			B	0.17	2.701		1	1	19.379			
			C	0.17	2.701		1	1	19.379			
T3	419.00	1660.78	A	0.19	2.63	12	1	1	21.113	847.52	42.38	C

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
228.00-208.00			B	0.19	2.63		1	1	21.113			
			C	0.19	2.63		1	1	21.113			
T4	421.40	1965.16	A	0.182	2.659	11	1	1	22.200	872.43	43.62	C
208.00-188.00			B	0.182	2.659		1	1	22.200			
			C	0.182	2.659		1	1	22.200			
T5	934.52	2590.18	A	0.173	2.689	11	1	1	25.992	1539.36	76.97	C
188.00-168.00			B	0.173	2.689		1	1	25.992			
			C	0.173	2.689		1	1	25.992			
T6	1276.60	2923.52	A	0.167	2.71	11	1	1	31.438	2022.25	101.11	C
168.00-148.00			B	0.167	2.71		1	1	31.438			
			C	0.167	2.71		1	1	31.438			
T7	1362.70	3083.25	A	0.153	2.76	11	1	1	34.176	2119.74	105.99	C
148.00-128.00			B	0.153	2.76		1	1	34.176			
			C	0.153	2.76		1	1	34.176			
T8	1659.90	4195.56	A	0.158	2.743	10	1	1	38.168	2386.19	119.31	C
128.00-108.00			B	0.158	2.743		1	1	38.168			
			C	0.158	2.743		1	1	38.168			
T9	2260.04	4629.82	A	0.147	2.784	10	1	1	40.680	2935.36	146.77	C
108.00-88.00			B	0.147	2.784		1	1	40.680			
			C	0.147	2.784		1	1	40.680			
T10	2264.00	6622.30	A	0.17	2.699	9	1	1	52.186	3024.84	151.24	C
88.00-68.00			B	0.17	2.699		1	1	52.186			
			C	0.17	2.699		1	1	52.186			
T11	2264.00	6887.43	A	0.162	2.728	9	1	1	55.370	2918.52	145.93	C
68.00-48.00			B	0.162	2.728		1	1	55.370			
			C	0.162	2.728		1	1	55.370			
T12	2264.00	7164.56	A	0.155	2.753	8	1	1	58.824	2744.76	137.24	C
48.00-28.00			B	0.155	2.753		1	1	58.824			
			C	0.155	2.753		1	1	58.824			
T13	1132.00	6508.82	A	0.115	2.906	7	1	1	38.629	1356.33	67.82	C
28.00-8.00			B	0.115	2.906		1	1	38.629			
			C	0.115	2.906		1	1	38.629			
Sum Weight:	16812.24	50089.00						OTM	2427473.78 lb-ft	23890.04		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	156.80	478.15	A	0.189	2.635	12	0.8	1	7.439	301.67	37.71	C
256.00-248.00			B	0.189	2.635		0.8	1	7.439			
			C	0.189	2.635		0.8	1	7.439			
T2	397.28	1379.45	A	0.17	2.701	12	0.8	1	16.833	719.37	35.97	C
248.00-228.00			B	0.17	2.701		0.8	1	16.833			
			C	0.17	2.701		0.8	1	16.833			
T3	419.00	1660.78	A	0.19	2.63	12	0.8	1	18.609	782.13	39.11	C
228.00-208.00			B	0.19	2.63		0.8	1	18.609			
			C	0.19	2.63		0.8	1	18.609			
T4	421.40	1965.16	A	0.182	2.659	11	0.8	1	19.858	811.84	40.59	C
208.00-188.00			B	0.182	2.659		0.8	1	19.858			
			C	0.182	2.659		0.8	1	19.858			
T5	934.52	2590.18	A	0.173	2.689	11	0.8	1	23.170	1467.17	73.36	C

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
188.00-168.00			B	0.173	2.689		0.8	1	23.170			
			C	0.173	2.689		0.8	1	23.170			
T6	1276.60	2923.52	A	0.167	2.71	11	0.8	1	27.530	1924.00	96.20	C
168.00-148.00			B	0.167	2.71		0.8	1	27.530			
			C	0.167	2.71		0.8	1	27.530			
T7	1362.70	3083.25	A	0.153	2.76	11	0.8	1	29.720	2008.81	100.44	C
148.00-128.00			B	0.153	2.76		0.8	1	29.720			
			C	0.153	2.76		0.8	1	29.720			
T8	1659.90	4195.56	A	0.158	2.743	10	0.8	1	33.353	2270.95	113.55	C
128.00-108.00			B	0.158	2.743		0.8	1	33.353			
			C	0.158	2.743		0.8	1	33.353			
T9	2260.04	4629.82	A	0.147	2.784	10	0.8	1	35.368	2811.25	140.56	C
108.00-88.00			B	0.147	2.784		0.8	1	35.368			
			C	0.147	2.784		0.8	1	35.368			
T10	2264.00	6622.30	A	0.17	2.699	9	0.8	1	44.990	2869.48	143.47	C
88.00-68.00			B	0.17	2.699		0.8	1	44.990			
			C	0.17	2.699		0.8	1	44.990			
T11	2264.00	6887.43	A	0.162	2.728	9	0.8	1	47.569	2758.58	137.93	C
68.00-48.00			B	0.162	2.728		0.8	1	47.569			
			C	0.162	2.728		0.8	1	47.569			
T12	2264.00	7164.56	A	0.155	2.753	8	0.8	1	50.393	2585.20	129.26	C
48.00-28.00			B	0.155	2.753		0.8	1	50.393			
			C	0.155	2.753		0.8	1	50.393			
T13	1132.00	6508.82	A	0.115	2.906	7	0.8	1	35.672	1305.87	65.29	C
28.00-8.00			B	0.115	2.906		0.8	1	35.672			
			C	0.115	2.906		0.8	1	35.672			
Sum Weight:	16812.24	50089.00						OTM	2288947.7 3 lb-ft	22616.31		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	156.80	478.15	A	0.189	2.635	12	0.85	1	7.737	309.71	38.71	C
256.00-248.00			B	0.189	2.635		0.85	1	7.737			
			C	0.189	2.635		0.85	1	7.737			
T2	397.28	1379.45	A	0.17	2.701	12	0.85	1	17.469	736.76	36.84	C
248.00-228.00			B	0.17	2.701		0.85	1	17.469			
			C	0.17	2.701		0.85	1	17.469			
T3	419.00	1660.78	A	0.19	2.63	12	0.85	1	19.235	798.48	39.92	C
228.00-208.00			B	0.19	2.63		0.85	1	19.235			
			C	0.19	2.63		0.85	1	19.235			
T4	421.40	1965.16	A	0.182	2.659	11	0.85	1	20.444	826.99	41.35	C
208.00-188.00			B	0.182	2.659		0.85	1	20.444			
			C	0.182	2.659		0.85	1	20.444			
T5	934.52	2590.18	A	0.173	2.689	11	0.85	1	23.876	1485.21	74.26	C
188.00-168.00			B	0.173	2.689		0.85	1	23.876			
			C	0.173	2.689		0.85	1	23.876			
T6	1276.60	2923.52	A	0.167	2.71	11	0.85	1	28.507	1948.57	97.43	C
168.00-148.00			B	0.167	2.71		0.85	1	28.507			
			C	0.167	2.71		0.85	1	28.507			
T7	1362.70	3083.25	A	0.153	2.76	11	0.85	1	30.834	2036.54	101.83	C

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
148.00-128.00			B	0.153	2.76		0.85	1	30.834			
			C	0.153	2.76		0.85	1	30.834			
T8	1659.90	4195.56	A	0.158	2.743	10	0.85	1	34.557	2299.76	114.99	C
128.00-108.00			B	0.158	2.743		0.85	1	34.557			
			C	0.158	2.743		0.85	1	34.557			
T9	2260.04	4629.82	A	0.147	2.784	10	0.85	1	36.696	2842.28	142.11	C
108.00-88.00			B	0.147	2.784		0.85	1	36.696			
			C	0.147	2.784		0.85	1	36.696			
T10	2264.00	6622.30	A	0.17	2.699	9	0.85	1	46.789	2908.32	145.42	C
88.00-68.00			B	0.17	2.699		0.85	1	46.789			
			C	0.17	2.699		0.85	1	46.789			
T11	2264.00	6887.43	A	0.162	2.728	9	0.85	1	49.519	2798.56	139.93	C
68.00-48.00			B	0.162	2.728		0.85	1	49.519			
			C	0.162	2.728		0.85	1	49.519			
T12	2264.00	7164.56	A	0.155	2.753	8	0.85	1	52.501	2625.09	131.25	C
48.00-28.00			B	0.155	2.753		0.85	1	52.501			
			C	0.155	2.753		0.85	1	52.501			
T13	1132.00	6508.82	A	0.115	2.906	7	0.85	1	36.412	1318.48	65.92	C
28.00-8.00			B	0.115	2.906		0.85	1	36.412			
			C	0.115	2.906		0.85	1	36.412			
Sum Weight:	16812.24	50089.00						OTM	2323579.2 4 lb-ft	22934.74		

Force Totals

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Leg Weight	25877.78					
Bracing Weight	24211.22					
Total Member Self-Weight	50089.00			20206.42	-29039.78	
Total Weight	81902.94			20206.42	-29039.78	
Wind 0 deg - No Ice		98.41	-75508.91	-8321136.80	-39406.71	59555.58
Wind 30 deg - No Ice		36478.89	-63185.59	-6962072.07	-4057899.70	88925.53
Wind 60 deg - No Ice		62373.73	-36087.71	-3967659.27	-6919657.60	94216.12
Wind 90 deg - No Ice		72843.88	-64.14	14055.33	-8075759.86	74265.29
Wind 120 deg - No Ice		65307.56	37676.78	4182829.10	-7241191.23	34676.37
Wind 150 deg - No Ice		36383.67	63189.19	7004664.70	-4049197.79	-14273.91
Wind 180 deg - No Ice		11.25	72137.90	7994333.42	-32161.45	-59337.49
Wind 210 deg - No Ice		-36366.40	63202.40	7004552.48	3985984.04	-88554.58
Wind 240 deg - No Ice		-65219.05	37739.32	4187511.05	7170487.18	-94231.96
Wind 270 deg - No Ice		-72799.06	-36.75	13948.40	8012166.92	-74664.57
Wind 300 deg - No Ice		-62331.90	-36076.55	-3969296.69	6858170.78	-34878.63
Wind 330 deg - No Ice		-36412.68	-63168.82	-6961746.33	3994686.15	14302.23
Member Ice	56977.50					
Total Weight Ice	208244.07			102756.62	-17355.96	
Wind 0 deg - Ice		26.61	-31808.95	-3566408.65	-19968.74	-1332.29
Wind 30 deg - Ice		15611.83	-27014.12	-3019034.32	-1820561.20	10790.39
Wind 60 deg - Ice		26843.80	-15503.74	-1689753.25	-3120440.24	19926.64
Wind 90 deg - Ice		31192.85	-18.02	101200.94	-3621121.25	23723.04
Wind 120 deg - Ice		27551.52	15880.35	1934943.95	-3194658.61	21256.98
Wind 150 deg - Ice		15587.55	27024.36	3226468.18	-1818719.24	13067.91
Wind 180 deg - Ice		12.03	31006.10	3688751.09	-19495.82	1409.13

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Wind 210 deg - Ice		-15567.50	27020.95	3225388.69	1780397.06	-10645.88
Wind 240 deg - Ice		-27512.27	15888.42	1934792.36	3154458.57	-19924.70
Wind 270 deg - Ice		-31177.06	-24.49	99083.36	3584466.71	-23863.73
Wind 300 deg - Ice		-26837.12	-15513.77	-1692131.43	3085567.74	-21335.77
Wind 330 deg - Ice		-15602.47	-27016.27	-3019959.50	1785841.58	-13071.74
Total Weight	81902.94			20206.42	-29039.78	
Wind 0 deg - Service		37.65	-29345.85	-3249215.07	-2667.71	22786.70
Wind 30 deg - Service		14184.87	-24569.80	-2722018.09	-1567071.04	34024.01
Wind 60 deg - Service		24259.18	-14035.20	-1556642.50	-2681691.22	36048.25
Wind 90 deg - Service		28326.17	-24.54	-6311.04	-3131232.24	28414.82
Wind 120 deg - Service		25381.70	14643.20	1615591.58	-2804713.97	13267.61
Wind 150 deg - Service		14148.44	24571.18	2714936.99	-1563741.58	-5461.38
Wind 180 deg - Service		4.31	28056.06	3100798.47	104.42	-22703.26
Wind 210 deg - Service		-14141.84	24576.24	2714894.05	1564374.79	-33882.08
Wind 240 deg - Service		-25347.83	14667.13	1617382.95	2802481.30	-36054.31
Wind 270 deg - Service		-28309.02	-14.06	-6351.95	3131720.36	-28567.59
Wind 300 deg - Service		-24243.17	-14030.94	-1557269.00	2682985.17	-13344.99
Wind 330 deg - Service		-14159.54	-24563.39	-2721893.46	1567704.32	5472.21

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T1	256 - 248	Leg	Max Tension	23	4072.71	-20.22	17.55
			Max. Compression	2	-4841.52	53.55	17.67
			Max. Mx	2	-4841.52	53.55	17.67
			Max. My	2	1681.61	-25.18	57.25
			Max. Vy	14	-1260.91	-0.00	0.00
			Max. Vx	12	-1360.02	0.00	-0.00
		Diagonal	Max Tension	16	1896.48	0.00	0.00
			Max. Compression	4	-1892.30	0.00	0.00
			Max. Mx	36	198.09	21.16	1.72
			Max. My	31	-10.55	20.27	-1.90
			Max. Vy	37	26.41	21.10	1.58
			Max. Vx	31	0.76	0.00	0.00
		Top Girt	Max Tension	11	665.48	0.00	0.00
			Max. Compression	22	-682.51	0.00	0.00
			Max. Mx	26	-44.83	-106.49	0.00
			Max. My	31	-151.23	0.00	1.14
			Max. Vy	26	64.50	0.00	0.00
			Max. Vx	31	-0.69	0.00	0.00
T2	248 - 228	Leg	Max Tension	23	24271.84	66.14	10.25
			Max. Compression	2	-27436.86	-7.62	86.69
			Max. Mx	8	-1291.84	-109.93	-0.88
			Max. My	2	11893.86	17.29	121.04
			Max. Vy	10	-280.17	-24.17	-33.37
			Max. Vx	2	308.91	15.65	40.44
		Diagonal	Max Tension	16	3359.44	0.00	0.00
			Max. Compression	4	-3367.58	0.00	0.00
			Max. Mx	35	917.97	28.51	-0.29
			Max. My	12	-1707.31	8.51	-2.34
			Max. Vy	35	-31.76	28.51	-0.29
			Max. Vx	12	-0.61	0.00	0.00
T3	228 - 208	Leg	Max Tension	23	56777.24	64.73	8.03
			Max. Compression	2	-63068.78	-745.20	44.99
			Max. Mx	2	-63068.78	-745.20	44.99
			Max. My	20	-2004.50	23.62	475.74
			Max. Vy	2	221.06	-745.20	44.99
			Max. Vx	24	161.33	25.09	-466.26

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
		Diagonal	Max Tension	16	4779.95	0.00	0.00
			Max. Compression	2	-4961.95	0.00	0.00
			Max. Mx	35	1142.07	32.29	0.35
			Max. My	24	-3953.23	-5.10	6.07
			Max. Vy	35	-32.34	32.29	0.35
			Max. Vx	24	1.54	0.00	0.00
T4	208 - 188	Leg	Max Tension	23	78026.14	-423.98	7.88
			Max. Compression	2	-87468.64	375.14	30.15
			Max. Mx	2	-70026.67	745.20	-44.88
			Max. My	24	-3108.77	-11.96	758.59
			Max. Vy	2	160.51	745.20	-44.88
			Max. Vx	24	-206.17	-31.38	740.46
		Diagonal	Max Tension	10	3364.32	0.00	0.00
			Max. Compression	10	-3422.43	0.00	0.00
			Max. Mx	37	451.82	42.33	6.44
			Max. My	32	-877.61	38.57	-7.36
			Max. Vy	33	39.39	42.32	-6.28
			Max. Vx	32	2.55	0.00	0.00
T5	188 - 168	Leg	Max Tension	15	101141.78	-881.89	46.90
			Max. Compression	10	-116557.22	737.23	-38.28
			Max. Mx	3	-101827.70	1186.12	-72.41
			Max. My	16	-5697.77	-44.66	1132.83
			Max. Vy	22	-1262.86	-1184.55	7.33
			Max. Vx	16	1211.39	-15.86	852.39
		Diagonal	Max Tension	20	6807.30	0.00	0.00
			Max. Compression	20	-6874.70	0.00	0.00
			Max. Mx	33	1267.30	75.63	-10.68
			Max. My	31	-376.83	72.36	-12.20
			Max. Vy	33	56.49	75.63	-10.68
			Max. Vx	31	3.48	0.00	0.00
T6	168 - 148	Leg	Max Tension	15	134506.03	-736.68	103.38
			Max. Compression	10	-154768.91	452.61	-1.85
			Max. Mx	3	-138887.03	771.67	-98.06
			Max. My	16	-7023.86	-17.02	771.41
			Max. Vy	22	-142.31	-742.92	4.02
			Max. Vx	16	243.97	-17.02	771.41
		Diagonal	Max Tension	20	8646.62	0.00	0.00
			Max. Compression	20	-8748.04	0.00	0.00
			Max. Mx	33	1542.93	116.30	-14.87
			Max. My	31	-458.14	110.91	-17.52
			Max. Vy	33	76.46	116.30	-14.87
			Max. Vx	31	4.43	0.00	0.00
T7	148 - 128	Leg	Max Tension	15	171766.17	-1497.47	39.45
			Max. Compression	10	-200320.79	1903.25	-138.66
			Max. Mx	22	155335.98	2040.19	4.22
			Max. My	4	-11703.47	56.32	-2301.84
			Max. Vy	22	-1170.25	-1712.64	4.22
			Max. Vx	16	1346.00	-62.02	1792.78
		Diagonal	Max Tension	20	12413.37	0.00	0.00
			Max. Compression	20	-12558.83	0.00	0.00
			Max. Mx	33	2340.93	146.53	18.22
			Max. My	6	-11307.58	31.96	-28.21
			Max. Vy	33	87.19	146.53	18.22
			Max. Vx	37	-4.97	0.00	0.00
T8	128 - 108	Leg	Max Tension	15	213656.11	-2231.02	303.80
			Max. Compression	10	-251163.78	2724.31	58.13
			Max. Mx	11	-246580.07	2726.83	57.06
			Max. My	16	-14543.32	-153.50	3322.38
			Max. Vy	14	1610.72	-2660.64	163.34
			Max. Vx	16	-1562.75	4.88	1892.10
		Diagonal	Max Tension	20	16848.27	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Compression	20	-17118.48	0.00	0.00
			Max. Mx	31	2842.83	323.02	-41.60
			Max. My	6	-13167.33	44.04	-54.38
			Max. Vy	33	146.38	309.32	-41.09
			Max. Vx	30	8.68	0.00	0.00
T9	108 - 88	Leg	Max Tension	15	267604.90	-1027.67	39.30
			Max. Compression	10	-313169.79	3006.46	-164.71
			Max. Mx	2	-311428.14	3012.64	-300.41
			Max. My	16	-20463.26	31.18	3216.94
			Max. Vy	3	362.34	2717.47	-167.14
			Max. Vx	18	-436.31	-1453.10	2953.53
		Diagonal	Max Tension	20	19740.04	0.00	0.00
			Max. Compression	20	-20062.85	0.00	0.00
			Max. Mx	33	3780.14	336.35	-44.60
			Max. My	6	-17142.43	71.32	-55.53
			Max. Vy	33	149.77	336.35	-44.60
			Max. Vx	35	8.77	0.00	0.00
T10	88 - 68	Leg	Max Tension	15	325707.29	-2669.53	40.86
			Max. Compression	10	-379524.01	2933.97	-66.15
			Max. Mx	2	-343434.37	3012.64	-300.43
			Max. My	16	-21452.94	31.17	3216.99
			Max. Vy	3	218.79	3004.76	-301.37
			Max. Vx	18	379.05	-1453.11	2953.57
		Diagonal	Max Tension	20	23182.73	0.00	0.00
			Max. Compression	20	-23478.05	0.00	0.00
			Max. Mx	31	4487.24	525.57	-62.31
			Max. My	6	-20716.82	144.35	-76.01
			Max. Vy	33	215.07	523.33	-61.90
			Max. Vx	35	11.36	0.00	0.00
T11	68 - 48	Leg	Max Tension	15	385783.73	-2822.97	95.79
			Max. Compression	10	-448492.20	2879.42	-41.60
			Max. Mx	10	-413358.53	2933.98	-66.15
			Max. My	16	-26161.41	-205.87	3812.50
			Max. Vy	22	-229.96	-2855.70	90.54
			Max. Vx	16	536.08	-205.88	3812.50
		Diagonal	Max Tension	20	25595.10	0.00	0.00
			Max. Compression	20	-26136.61	0.00	0.00
			Max. Mx	31	4810.45	606.52	-72.64
			Max. My	6	-21998.07	161.25	-79.64
			Max. Vy	33	230.58	602.84	-71.63
			Max. Vx	30	-11.74	0.00	0.00
T12	48 - 28	Leg	Max Tension	15	445029.23	-6738.82	157.73
			Max. Compression	10	-517250.15	-18628.41	1.24
			Max. Mx	2	-515215.28	-18704.63	438.23
			Max. My	4	-29028.66	-185.67	-5654.94
			Max. Vy	2	2748.28	7253.64	-123.41
			Max. Vx	5	-749.21	-178.44	-5648.54
		Diagonal	Max Tension	20	28204.20	0.00	0.00
			Max. Compression	8	-28545.04	0.00	0.00
			Max. Mx	31	6393.32	692.56	83.41
			Max. My	6	-22897.59	214.77	-103.30
			Max. Vy	32	244.79	687.59	-88.94
			Max. Vx	36	13.01	0.00	0.00
T13	28 - 8	Leg	Max Tension	15	463034.60	14846.37	-409.06
			Max. Compression	10	-537937.60	11317.36	-1287.94
			Max. Mx	2	-534005.54	-27296.86	1770.77
			Max. My	4	-31660.63	-1388.11	-16658.80
			Max. Vy	2	-30089.80	11453.71	-1805.60
			Max. Vx	4	14279.24	-421.96	-14992.02
		Diagonal	Max Tension	21	40491.68	-430.23	-158.59
			Max. Compression	20	-40735.44	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Mx	6	26538.24	-655.81	-62.40
			Max. My	20	-40588.77	227.41	-318.08
			Max. Vy	33	-126.04	-312.96	53.36
			Max. Vx	20	-32.37	0.00	0.00
		Top Girt	Max Tension	9	23535.23	21937.67	861.30
			Max. Compression	20	-24788.57	-22409.64	-854.52
			Max. Mx	20	-24788.57	-22409.64	-854.52
			Max. My	18	-24360.47	-20929.29	-1183.64
			Max. Vy	20	1818.42	-22409.64	-854.52
			Max. Vx	18	93.92	-20929.29	-1183.64
		Redund Horz 1 Bracing	Max Tension	4	3183.27	0.00	0.00
			Max. Compression	7	-3748.14	0.00	0.00
			Max. Mx	38	969.80	45.45	0.00
			Max. My	16	-2465.96	0.00	-0.00
			Max. Vy	36	28.57	0.00	0.00
			Max. Vx	16	0.00	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	7	3400.38	0.00	0.00
			Max. Compression	13	-2489.32	0.00	0.00
			Max. Mx	31	-656.26	72.19	0.00
			Max. My	8	-2385.82	0.00	-0.06
			Max. Vy	31	-25.97	0.00	0.00
			Max. Vx	8	0.02	0.00	0.00
		Redund Hip 1 Bracing	Max Tension	9	6.41	0.00	0.00
			Max. Compression	8	-134.62	0.00	0.00
			Max. Mx	26	-13.27	45.45	0.00
			Max. My	18	-11.56	0.00	0.00
			Max. Vy	26	28.57	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
		Redund Hip Diagonal 1 Bracing	Max Tension	8	156.09	0.00	0.00
			Max. Compression	18	-97.17	0.00	0.00
			Max. Mx	33	52.18	189.38	0.00
			Max. My	18	30.89	0.00	0.07
			Max. Vy	33	-51.09	0.00	0.00
			Max. Vx	18	0.02	0.00	0.00
		Inner Bracing	Max Tension	3	17.99	0.00	0.00
			Max. Compression	4	-31.74	0.00	0.00
			Max. Mx	26	-21.11	355.88	0.00
			Max. My	2	-1.85	0.00	23.19
			Max. Vy	26	111.83	0.00	0.00
			Max. Vx	2	-7.29	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg C	Max. Vert	18	584516.83	64082.07	-33503.11
	Max. H_x	18	584516.83	64082.07	-33503.11
	Max. H_z	5	-439187.83	-48090.66	30348.40
	Min. Vert	7	-504258.82	-58026.75	29826.02
	Min. H_x	7	-504258.82	-58026.75	29826.02
	Min. H_z	18	584516.83	64082.07	-33503.11
Leg B	Max. Vert	10	587611.05	-63224.20	-35181.93

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
	Max. H_x	23	-502216.97	56967.36	31490.21
	Max. H_z	25	-436965.90	46292.66	33295.86
	Min. Vert	23	-502216.97	56967.36	31490.21
	Min. H_x	10	587611.05	-63224.20	-35181.93
	Min. H_z	10	587611.05	-63224.20	-35181.93
Leg A	Max. Vert	2	585815.45	1968.04	72428.04
	Max. H_x	21	24199.83	7657.97	2184.82
	Max. H_z	2	585815.45	1968.04	72428.04
	Min. Vert	15	-505285.59	-2031.27	-65236.59
	Min. H_x	11	-252393.30	-8092.59	-32967.40
	Min. H_z	15	-505285.59	-2031.27	-65236.59

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	81903.01	0.93	0.83	20220.29	-29055.20	2.27
1.2 Dead+1.6 Wind 0 deg - No Ice	98288.81	268.46	-120866.75	-13330968.49	-53705.27	96738.91
0.9 Dead+1.6 Wind 0 deg - No Ice	73715.84	71.88	-120815.27	-13323919.83	-41792.19	94742.79
1.2 Dead+1.6 Wind 30 deg - No Ice	98282.76	58396.70	-101082.53	-11153175.35	-6485670.88	142627.38
0.9 Dead+1.6 Wind 30 deg - No Ice	73711.89	58399.56	-101081.04	-11149012.77	-6471042.88	142608.60
1.2 Dead+1.6 Wind 60 deg - No Ice	98282.88	99820.96	-57705.01	-6358800.64	-11066542.43	151121.98
0.9 Dead+1.6 Wind 60 deg - No Ice	73711.96	99822.60	-57701.87	-6359009.21	-11047693.56	151113.74
1.2 Dead+1.6 Wind 90 deg - No Ice	98283.36	116551.75	-76.11	15223.11	-12916940.48	119133.70
0.9 Dead+1.6 Wind 90 deg - No Ice	73712.64	116550.32	-72.25	9186.47	-12896344.16	119154.32
1.2 Dead+1.6 Wind 120 deg - No Ice	98286.55	104515.28	60256.16	6688360.08	-11581748.42	54978.00
0.9 Dead+1.6 Wind 120 deg - No Ice	73716.06	104513.01	60250.87	6676067.62	-11562355.41	54935.13
1.2 Dead+1.6 Wind 150 deg - No Ice	98286.42	58213.95	101111.32	11205925.36	-6470814.46	-23359.30
0.9 Dead+1.6 Wind 150 deg - No Ice	73716.21	58212.85	101107.18	11189511.40	-6456130.28	-23313.51
1.2 Dead+1.6 Wind 180 deg - No Ice	98287.82	-33.75	115410.21	12789757.64	-39367.65	-95385.98
0.9 Dead+1.6 Wind 180 deg - No Ice	73717.48	-33.39	115405.28	12771882.09	-30608.49	-95274.97
1.2 Dead+1.6 Wind 210 deg - No Ice	98283.38	-58159.41	101134.28	11206032.63	6391745.30	-141878.78
0.9 Dead+1.6 Wind 210 deg - No Ice	73712.48	-58158.01	101134.39	11189687.82	6394612.53	-141847.24
1.2 Dead+1.6 Wind 240 deg - No Ice	98283.42	-104328.13	60416.59	6697108.38	11490604.14	-151059.30
0.9 Dead+1.6 Wind 240 deg - No Ice	73712.59	-104326.88	60418.73	6684919.20	11488795.88	-151042.74
1.2 Dead+1.6 Wind 270 deg - No Ice	98283.38	-116479.54	-35.53	15021.87	12838110.52	-119673.49
0.9 Dead+1.6 Wind 270 deg -	73712.54	-116479.37	-34.20	8943.00	12835090.10	-119663.41

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
No Ice 1.2 Dead+1.6 Wind 300 deg - No Ice	98287.80	-99715.24	-57724.46	-6362323.11	10990273.70	-56139.45
0.9 Dead+1.6 Wind 300 deg - No Ice	73717.47	-99711.61	-57720.64	-6362509.72	10988892.47	-56118.70
1.2 Dead+1.6 Wind 330 deg - No Ice	98287.52	-58274.66	-101042.44	-11152716.45	6406688.67	22574.40
0.9 Dead+1.6 Wind 330 deg - No Ice	73717.16	-58274.69	-101036.01	-11148477.26	6409557.34	22508.62
1.2 Dead+1.0 Ice+1.0 Temp	224625.38	0.73	3.55	107389.41	-23222.91	4.95
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	224624.70	27.64	-31813.13	-3585584.74	-26006.10	-1310.22
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	224624.69	15612.63	-27018.49	-3034599.10	-1838556.49	10918.93
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	224624.69	26845.11	-15507.61	-1696484.53	-3147081.84	20123.63
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	224625.41	31214.76	-29.85	106230.25	-3651421.80	24026.01
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	224624.68	27555.59	15881.02	1952319.43	-3221802.64	21423.83
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	224624.69	15590.87	27026.90	3252442.67	-1836748.75	13139.12
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	224625.30	14.64	31029.34	3718130.46	-25591.27	1328.92
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	224624.71	-15570.62	27022.49	3251322.46	1786327.33	-10792.83
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	224624.70	-27517.44	15887.74	1952118.44	3169519.59	-20147.75
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	224624.69	-31181.26	-26.72	104223.76	3602412.04	-24094.28
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	224624.71	-26838.96	-15516.80	-1698889.02	3100195.13	-21517.11
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	224624.71	-15602.27	-27019.88	-3035532.36	1791813.41	-13161.29
Dead+Wind 0 deg - Service	81903.09	36.63	-29344.80	-3225045.68	-33117.49	22821.48
Dead+Wind 30 deg - Service	81903.10	14182.16	-24571.13	-2697732.11	-1597387.94	34074.66
Dead+Wind 60 deg - Service	81903.15	24256.71	-14037.05	-1532276.35	-2711956.86	36078.82
Dead+Wind 90 deg - Service	81903.09	28323.94	-26.23	17900.35	-3161516.78	28431.79
Dead+Wind 120 deg - Service	81903.09	25380.97	14642.41	1639845.47	-2835183.12	13261.07
Dead+Wind 150 deg - Service	81903.08	14148.11	24570.47	2739062.76	-1594121.04	-5490.25
Dead+Wind 180 deg - Service	81903.14	3.48	28055.17	3124824.19	-30380.61	-22749.38
Dead+Wind 210 deg - Service	81903.18	-14143.88	24573.67	2738992.03	1533907.32	-33942.69
Dead+Wind 240 deg - Service	81903.09	-25348.82	14663.56	1641607.32	2772085.03	-36106.68
Dead+Wind 270 deg - Service	81903.08	-28308.25	-15.55	17871.73	3101147.64	-28600.64
Dead+Wind 300 deg - Service	81903.14	-24242.20	-14030.60	-1532921.37	2652374.21	-13353.09
Dead+Wind 330 deg - Service	81903.17	-14158.30	-24561.42	-2697550.75	1537185.07	5491.61

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
1	0.00	-81902.93	-0.00	-0.93	81903.01	-0.83	0.002%
2	157.46	-98283.53	-120814.26	-268.46	98288.81	120866.75	0.079%
3	157.46	-73712.64	-120814.26	-71.88	73715.84	120815.27	0.061%
4	58366.22	-98283.53	-101096.95	-58396.70	98282.76	101082.53	0.022%
5	58366.22	-73712.65	-101096.95	-58399.56	73711.89	101081.04	0.027%
6	99797.96	-98283.53	-57740.33	-99820.96	98282.88	57705.01	0.028%

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
7	99797.96	-73712.65	-57740.33	-99822.60	73711.96	57701.87	0.033%
8	116550.21	-98283.53	-102.62	-116551.75	98283.36	76.11	0.017%
9	116550.21	-73712.65	-102.62	-116550.32	73712.64	72.25	0.022%
10	104492.09	-98283.52	60282.85	-104515.28	98286.55	-60256.16	0.023%
11	104492.09	-73712.64	60282.85	-104513.01	73716.06	-60250.87	0.027%
12	58213.88	-98283.52	101102.70	-58213.95	98286.42	-101111.32	0.006%
13	58213.88	-73712.64	101102.70	-58212.85	73716.21	-101107.18	0.004%
14	18.00	-98283.52	115420.65	33.75	98287.82	-115410.21	0.035%
15	18.00	-73712.64	115420.65	33.39	73717.48	-115405.28	0.039%
16	-58186.24	-98283.52	101123.84	58159.41	98283.38	-101134.28	0.019%
17	-58186.24	-73712.64	101123.84	58158.01	73712.48	-101134.39	0.022%
18	-104350.48	-98283.52	60382.91	104328.13	98283.42	-60416.59	0.026%
19	-104350.48	-73712.64	60382.91	104326.88	73712.59	-60418.73	0.030%
20	-116478.49	-98283.52	-58.80	116479.54	98283.38	35.53	0.015%
21	-116478.49	-73712.64	-58.80	116479.37	73712.54	34.20	0.018%
22	-99731.04	-98283.52	-57722.48	99715.24	98287.80	57724.46	0.011%
23	-99731.04	-73712.64	-57722.48	99711.61	73717.47	57720.64	0.015%
24	-58260.29	-98283.52	-101070.11	58274.66	98287.52	101042.44	0.021%
25	-58260.29	-73712.64	-101070.11	58274.69	73717.16	101036.01	0.027%
26	0.00	-224624.66	0.00	-0.73	224625.38	-3.55	0.002%
27	26.61	-224624.66	-31808.95	-27.64	224624.70	31813.13	0.002%
28	15611.83	-224624.66	-27014.12	-15612.63	224624.69	27018.49	0.002%
29	26843.80	-224624.66	-15503.74	-26845.11	224624.69	15507.61	0.002%
30	31192.85	-224624.66	-18.02	-31214.76	224625.41	29.85	0.011%
31	27551.52	-224624.66	15880.35	-27555.59	224624.68	-15881.02	0.002%
32	15587.55	-224624.66	27024.36	-15590.87	224624.69	-27026.90	0.002%
33	12.03	-224624.66	31006.10	-14.64	224625.30	-31029.34	0.010%
34	-15567.50	-224624.66	27020.95	15570.62	224624.71	-27022.49	0.002%
35	-27512.27	-224624.66	15888.42	27517.44	224624.70	-15887.74	0.002%
36	-31177.06	-224624.66	-24.49	31181.26	224624.69	26.72	0.002%
37	-26837.12	-224624.66	-15513.77	26838.96	224624.71	15516.80	0.002%
38	-15602.47	-224624.66	-27016.27	15602.27	224624.71	27019.88	0.002%
39	37.65	-81902.94	-29345.85	-36.63	81903.09	29344.80	0.002%
40	14184.88	-81902.94	-24569.80	-14182.16	81903.10	24571.13	0.003%
41	24259.18	-81902.94	-14035.20	-24256.71	81903.15	14037.05	0.004%
42	28326.17	-81902.94	-24.54	-28323.94	81903.09	26.23	0.003%
43	25381.70	-81902.94	14643.20	-25380.97	81903.09	-14642.41	0.001%
44	14148.44	-81902.93	24571.18	-14148.11	81903.08	-24570.47	0.001%
45	4.30	-81902.93	28056.06	-3.48	81903.14	-28055.17	0.001%
46	-14141.84	-81902.93	24576.24	14143.88	81903.18	-24573.67	0.004%
47	-25347.83	-81902.93	14667.13	25348.82	81903.09	-14663.56	0.004%
48	-28309.02	-81902.93	-14.06	28308.25	81903.08	15.55	0.002%
49	-24243.17	-81902.93	-14030.94	24242.20	81903.14	14030.60	0.001%
50	-14159.54	-81902.93	-24563.39	14158.30	81903.17	24561.42	0.003%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00039733
2	Yes	5	0.00006490	0.00080744
3	Yes	6	0.00000001	0.00090449
4	Yes	7	0.00000001	0.00022438
5	Yes	7	0.00000001	0.00023837
6	Yes	7	0.00000001	0.00028073
7	Yes	7	0.00000001	0.00030040

8	Yes	7	0.00000001	0.00017444
9	Yes	7	0.00000001	0.00021795
10	Yes	6	0.00000001	0.00052309
11	Yes	6	0.00000001	0.00054516
12	Yes	6	0.00000001	0.00056166
13	Yes	6	0.00000001	0.00051702
14	Yes	6	0.00000001	0.00088137
15	Yes	6	0.00000001	0.00084886
16	Yes	7	0.00000001	0.00027398
17	Yes	7	0.00000001	0.00026793
18	Yes	7	0.00000001	0.00031432
19	Yes	7	0.00000001	0.00031892
20	Yes	7	0.00000001	0.00019341
21	Yes	7	0.00000001	0.00019958
22	Yes	6	0.00000001	0.00051627
23	Yes	6	0.00000001	0.00052010
24	Yes	6	0.00000001	0.00045917
25	Yes	6	0.00000001	0.00053318
26	Yes	4	0.00000001	0.00044592
27	Yes	6	0.00000001	0.00026370
28	Yes	6	0.00000001	0.00027118
29	Yes	6	0.00000001	0.00025201
30	Yes	5	0.00000001	0.00095240
31	Yes	6	0.00000001	0.00024341
32	Yes	6	0.00000001	0.00024390
33	Yes	5	0.00000001	0.00083126
34	Yes	6	0.00000001	0.00022837
35	Yes	6	0.00000001	0.00034284
36	Yes	6	0.00000001	0.00033392
37	Yes	6	0.00000001	0.00026217
38	Yes	6	0.00000001	0.00024052
39	Yes	6	0.00000001	0.00011741
40	Yes	6	0.00000001	0.00021607
41	Yes	6	0.00000001	0.00026195
42	Yes	6	0.00000001	0.00020518
43	Yes	6	0.00000001	0.00010019
44	Yes	6	0.00000001	0.00008904
45	Yes	6	0.00000001	0.00013203
46	Yes	6	0.00000001	0.00025740
47	Yes	6	0.00000001	0.00025517
48	Yes	6	0.00000001	0.00013277
49	Yes	6	0.00000001	0.00012082
50	Yes	6	0.00000001	0.00017885

Maximum Tower Deflections - Service Wind

Section No.	*Elevation*	*Horz. Deflection*	*Gov. Load Comb.*	*Tilt*	*Twist*
	ft	*in*		°	°
T1	256 - 248	6.805	43	0.2458	0.0404
T2	248 - 228	6.388	43	0.2449	0.0403
T3	228 - 208	5.369	43	0.2324	0.0389
T4	208 - 188	4.422	43	0.2074	0.0387
T5	188 - 168	3.591	43	0.1821	0.0381
T6	168 - 148	2.849	43	0.1630	0.0360
T7	148 - 128	2.187	43	0.1414	0.0314
T8	128 - 108	1.609	43	0.1175	0.0242
T9	108 - 88	1.144	43	0.0940	0.0202
T10	88 - 68	0.755	43	0.0746	0.0153
T11	68 - 48	0.449	43	0.0576	0.0119

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T12	48 - 28	0.213	43	0.0392	0.0084
T13	28 - 8	0.053	39	0.0196	0.0047

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
257.00	Yagi w/Radome	43	6.805	0.2458	0.0404	268911
256.00	Beacon	43	6.805	0.2458	0.0404	268911
232.00	10' Whip	43	5.569	0.2361	0.0393	81599
181.00	AIR 6449 B41	43	3.323	0.1751	0.0376	61063
180.00	16' T-Frame Mount	43	3.285	0.1741	0.0375	60776
179.00	APXVAARR24_43-U-NA20	43	3.247	0.1732	0.0374	60491
138.00	C10857278C V-Frame Mount	43	1.885	0.1296	0.0277	46062
131.00	HPCPE-80BW	43	1.689	0.1211	0.0252	37761
119.00	VFA6-RRU	43	1.388	0.1066	0.0222	47535
112.00	Yagi	43	1.230	0.0985	0.0210	66101
110.00	(2) APL-866513-42T9	43	1.187	0.0962	0.0206	73250
102.00	(2) TV 65 antenna	43	1.020	0.0877	0.0188	71016
17.00	Junction Box	39	0.015	0.0088	0.0022	71662

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	256 - 248	27.799	10	1.0102	0.1692
T2	248 - 228	26.088	10	1.0058	0.1686
T3	228 - 208	21.907	10	0.9525	0.1627
T4	208 - 188	18.025	10	0.8479	0.1621
T5	188 - 168	14.635	10	0.7425	0.1596
T6	168 - 148	11.612	10	0.6636	0.1505
T7	148 - 128	8.918	10	0.5750	0.1314
T8	128 - 108	6.567	10	0.4779	0.1014
T9	108 - 88	4.673	10	0.3826	0.0846
T10	88 - 68	3.088	10	0.3038	0.0640
T11	68 - 48	1.839	10	0.2346	0.0498
T12	48 - 28	0.873	10	0.1596	0.0351
T13	28 - 8	0.216	3	0.0800	0.0197

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
257.00	Yagi w/Radome	10	27.799	1.0102	0.1692	68243
256.00	Beacon	10	27.799	1.0102	0.1692	68243
232.00	10' Whip	10	22.727	0.9683	0.1643	19735

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
181.00	AIR 6449 B41	10	13.540	0.7133	0.1573	14734
180.00	16' T-Frame Mount	10	13.386	0.7094	0.1568	14674
179.00	APXVAARR24_43-U-NA20	10	13.234	0.7056	0.1564	14614
138.00	C10857278C V-Frame Mount	10	7.689	0.5269	0.1159	11337
131.00	HPCPE-80BW	10	6.890	0.4926	0.1053	9290
119.00	VFA6-RRU	10	5.665	0.4337	0.0930	11731
112.00	Yagi	10	5.023	0.4006	0.0878	16391
110.00	(2) APL-866513-42T9	10	4.847	0.3915	0.0863	18196
102.00	(2) TV 65 antenna	10	4.167	0.3571	0.0787	17581
17.00	Junction Box	3	0.061	0.0360	0.0093	17607

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	256	Leg	A325N	0.7500	4	307.32	29820.60	0.010 ✓	1	Bolt Tension
		Diagonal	A325N	0.6250	1	1896.48	8775.00	0.216 ✓	1	Member Bearing
T2	248	Leg	A325N	0.8750	4	1814.60	40589.10	0.045 ✓	1	Bolt Tension
		Diagonal	A325N	0.6250	1	3359.45	11700.00	0.287 ✓	1	Member Bearing
T3	228	Leg	A325N	1.0000	4	7491.26	53014.40	0.141 ✓	1	Bolt Tension
		Diagonal	A325N	0.6250	1	4779.95	11700.00	0.409 ✓	1	Member Bearing
T4	208	Leg	A325N	1.0000	6	10519.30	53014.40	0.198 ✓	1	Bolt Tension
		Diagonal	A325N	0.6250	1	3364.32	11700.00	0.288 ✓	1	Member Bearing
T5	188	Leg	A325N	1.0000	6	13897.90	53014.40	0.262 ✓	1	Bolt Tension
		Diagonal	A325N	0.7500	1	6807.30	14137.50	0.482 ✓	1	Member Bearing
T6	168	Leg	A325N	1.0000	6	18656.20	53014.40	0.352 ✓	1	Bolt Tension
		Diagonal	A325N	0.7500	1	8646.62	14137.50	0.612 ✓	1	Member Bearing
T7	148	Leg	A325N	1.0000	8	18247.40	53014.40	0.344 ✓	1	Bolt Tension
		Diagonal	A325N	0.7500	1	12413.40	14137.50	0.878 ✓	1	Member Bearing
T8	128	Leg	A325N	1.0000	8	23807.60	53014.40	0.449 ✓	1	Bolt Tension
		Diagonal	A325X	0.7500	1	16848.30	21206.30	0.794 ✓	1	Member Bearing
T9	108	Leg	A325N	1.0000	12	19966.00	53014.40	0.377 ✓	1	Bolt Tension
		Diagonal	A325N	0.8750	1	19740.00	20553.00	0.960 ✓	1	Member Bearing
T10	88	Leg	A325N	1.0000	12	24689.80	53014.40	0.466 ✓	1	Bolt Tension
		Diagonal	A325N	0.8750	1	23478.00	24353.50	0.964 ✓	1	Bolt Shear
T11	68	Leg	A325N	1.0000	12	29650.20	53014.40	0.559 ✓	1	Bolt Tension
		Diagonal	A325X	0.8750	1	25595.10	24862.50	1.029 ✗	1	Member Bearing
T12	48	Leg	A325N	1.0000	12	34655.20	53014.40	0.654 ✓	1	Bolt Tension
		Diagonal	A325X	0.8750	2	14272.50	29765.40	0.480 ✓	1	Bolt Shear
T13	28	Leg	A325N	1.0000	16	28939.70	53014.40	0.546 ✓	1	Bolt Tension
		Diagonal	A325N	0.6250	6	6789.24	12425.20	0.546 ✓	1	Bolt Shear

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
		Top Girt	A325N	0.7500	4	6197.14	17892.40	0.346 ✓	1	Bolt Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	256 - 248	ROHN 3 STD	8.00	4.00	41.3 K=1.00	2.2285	-4841.52	88543.60	0.055 [1] ✓
T2	248 - 228	ROHN 3 EH	20.00	4.00	42.2 K=1.00	3.0159	-27436.90	119117.00	0.230 [1] ✓
T3	228 - 208	ROHN 4 EH	20.00	4.00	32.5 K=1.00	4.4074	-63068.80	183589.00	0.344 [1] ✓
T4	208 - 188	ROHN 5 EH	20.04	5.01	32.7 K=1.00	6.1120	-87468.60	254372.00	0.344 [1] ✓
T5	188 - 168	ROHN 6 EH	20.03	6.68	36.5 K=1.00	8.4049	-116557.00	343100.00	0.340 [1] ✓
T6	168 - 148	ROHN 6 EH	20.03	6.68	36.5 K=1.00	8.4049	-154769.00	343100.00	0.451 [1] ✓
T7	148 - 128	ROHN 6 EH	20.04	6.68	36.5 K=1.00	8.4049	-200321.00	343092.00	0.584 [1] ✓
T8	128 - 108	ROHN 8 EHS	20.04	10.02	41.2 K=1.00	9.7193	-251164.00	386381.00	0.650 [1] ✓
T9	108 - 88	ROHN 8 EH	20.04	10.02	41.8 K=1.00	12.7627	-313170.00	505517.00	0.620 [1] ✓
T10	88 - 68	P10x.5	20.03	10.02	33.1 K=1.00	16.1007	-379524.00	668659.00	0.568 [1] ✓
T11	68 - 48	P10x.5	20.03	10.02	33.1 K=1.00	16.1007	-448492.00	668663.00	0.671 [1] ✓
T12	48 - 28	P10x.5	20.04	10.02	33.1 K=1.00	16.1007	-517250.00	668640.00	0.774 [1] ✓
T13	28 - 8	P10x.5	20.05	9.52	15.8 K=0.50	16.1007	-537938.00	711505.00	0.756 [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 lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	256 - 248	L1 3/4x1 3/4x3/16	7.91	3.83	133.8 K=1.00	0.6211	-1892.30	7836.45	0.241 [1] ✔
T2	248 - 228	L2x2x1/4	7.98	3.82	117.2 K=1.00	0.9380	-3367.58	15423.50	0.218 [1] ✔
T3	228 - 208	L2x2x1/4	7.92	3.75	115.0 K=1.00	0.9380	-4961.95	16011.80	0.310 [1] ✔
T4	208 - 188	L2x2x1/4	10.00	4.88	149.8 K=1.00	0.9380	-3318.47	9442.17	0.351 [1] ✔
T5	188 - 168	L2 1/2x2 1/2x1/4	12.51	6.13	149.7 K=1.00	1.1900	-6874.71	11996.10	0.573 [1] ✔
T6	168 - 148	L3x3x1/4	14.24	7.00	141.8 K=1.00	1.4400	-8748.04	16173.10	0.541 [1] ✔
T7	148 - 128	L3x3x1/4	16.09	7.93	160.8 K=1.00	1.4400	-12558.80	12584.10	0.998 [1] ✔
T8	128 - 108	L4x4x3/8	19.35	9.56	145.6 K=1.00	2.8600	-17118.50	30486.60	0.562 [1] ✔
T9	108 - 88	L4x4x0.31	21.22	10.51	159.4 K=1.00	2.3839	-20062.90	21205.70	0.946 [1] ✔
T10	88 - 68	L5x5x3/8	23.04	11.30	136.9 K=1.00	3.6100	-23478.00	43484.70	0.540 [1] ✔
T11	68 - 48	L5x5x3/8	24.84	12.20	147.9 K=1.00	3.6100	-26136.60	37294.00	0.701 [1] ✔
T12	48 - 28	L5x5x3/8	26.75	13.17	159.7 K=1.00	3.6100	-28545.00	31978.80	0.893 [1] ✔
T13	28 - 8	ROHN 3 STD w/L4x4x1/4	22.17	11.09	103.3 K=1.00	4.1660	-40735.40	85927.60	0.474 [1] ✔

[1] $P_u / \phi P_n$ controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	256 - 248	L3x3x1/4	6.60	6.31	128.0 K=1.00	1.4400	-682.52	19705.80	0.035 [1] ✔
T13	28 - 8	ROHN 3 STD	25.46	12.28	126.7 K=1.00	2.2285	-24788.60	31030.70	0.799 [1] ✔

[1] $P_u / \phi P_n$ controls

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T13	28 - 8	ROHN 1.5 STD	6.36	5.92	114.0	0.7995	-9335.51	13888.30	0.672 [1]

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
					K=1.00				✓

[1] $P_u / \phi P_n$ controls

Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T13	28 - 8	ROHN 1.5 STD	11.12	10.26	148.3 K=0.75	0.7995	-8155.92	8212.23	0.993 [1] ✓

[1] $P_u / \phi P_n$ controls

Redundant Hip (1) Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T13	28 - 8	ROHN 1.5 STD	6.36	6.36	122.7 K=1.00	0.7995	-134.62	12002.20	0.011 [1] ✓

[1] $P_u / \phi P_n$ controls

Redundant Hip Diagonal (1) Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T13	28 - 8	ROHN 1.5 STD	14.83	14.83	285.7 K=1.00	0.7995	-97.17	2211.89	0.044 [1] ✓
		KL/R > 250 (C) - 269							

[1] $P_u / \phi P_n$ controls

Inner Bracing Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T13	28 - 8	ROHN 3 STD	12.73	12.73	131.3	2.2285	-31.74	29213.70	0.001 [1]

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
					K=1.00				✓

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	256 - 248	ROHN 3 STD	8.00	4.00	41.3	2.2285	4072.71	100281.00	0.041 [1] ✓
T2	248 - 228	ROHN 3 EH	20.00	4.00	42.2	3.0159	24298.20	135717.00	0.179 [1] ✓
T3	228 - 208	ROHN 4 EH	20.00	4.00	32.5	4.4074	56777.20	198335.00	0.286 [1] ✓
T4	208 - 188	ROHN 5 EH	20.04	5.01	32.7	6.1120	78026.10	275039.00	0.284 [1] ✓
T5	188 - 168	ROHN 6 EH	20.03	6.68	36.5	8.4049	101142.00	378222.00	0.267 [1] ✓
T6	168 - 148	ROHN 6 EH	20.03	6.68	36.5	8.4049	134506.00	378222.00	0.356 [1] ✓
T7	148 - 128	ROHN 6 EH	20.04	6.68	36.5	8.4049	171766.00	378222.00	0.454 [1] ✓
T8	128 - 108	ROHN 8 EHS	20.04	10.02	41.2	9.7193	213656.00	437369.00	0.489 [1] ✓
T9	108 - 88	ROHN 8 EH	20.04	10.02	41.8	12.7627	267605.00	574322.00	0.466 [1] ✓
T10	88 - 68	P10x.5	20.03	10.02	33.1	16.1007	325707.00	724530.00	0.450 [1] ✓
T11	68 - 48	P10x.5	20.03	10.02	33.1	16.1007	385784.00	724530.00	0.532 [1] ✓
T12	48 - 28	P10x.5	20.04	10.02	33.1	16.1007	445029.00	724530.00	0.614 [1] ✓
T13	28 - 8	P10x.5	20.05	9.52	31.5	16.1007	463035.00	724530.00	0.639 [1] ✓

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

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

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	256 - 248	L1 3/4x1 3/4x3/16	7.91	3.83	85.6	0.3604	1896.48	17567.10	0.108 [1] ✔
T2	248 - 228	L2x2x1/4	7.98	3.82	75.3	0.5629	3359.45	27440.20	0.122 [1] ✔
T3	228 - 208	L2x2x1/4	7.92	3.75	73.9	0.5629	4779.95	27440.20	0.174 [1] ✔
T4	208 - 188	L2x2x1/4	10.00	4.88	96.2	0.5629	3364.32	27440.20	0.123 [1] ✔
T5	188 - 168	L2 1/2x2 1/2x1/4	12.51	6.13	95.6	0.7284	6807.30	35511.30	0.192 [1] ✔
T6	168 - 148	L3x3x1/4	14.24	7.00	90.3	0.9159	8646.62	44652.00	0.194 [1] ✔
T7	148 - 128	L3x3x1/4	16.09	7.93	102.3	0.9159	12413.40	44652.00	0.278 [1] ✔
T8	128 - 108	L4x4x3/8	19.35	9.56	93.3	1.8989	16848.30	92571.70	0.182 [1] ✔
T9	108 - 88	L4x4x0.31	21.22	10.51	101.4	1.5554	19740.00	75827.00	0.260 [1] ✔
T10	88 - 68	L5x5x3/8	23.04	11.30	86.9	2.4262	23182.70	118280.00	0.196 [1] ✔
T11	68 - 48	L5x5x3/8	24.84	12.20	93.8	2.4262	25595.10	118280.00	0.216 [1] ✔
T12	48 - 28	L5x5x3/8	26.75	13.17	101.3	2.4262	28204.20	118280.00	0.238 [1] ✔
T13	28 - 8	ROHN 3 STD w/L4x4x1/4	22.17	11.09	103.3	4.1660	40491.70	187470.00	0.216 [1] ✔

[1] $P_u / \phi P_n$ controls

Top Girt Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	256 - 248	L3x3x1/4	6.60	6.31	81.4	1.4400	665.48	46656.00	0.014 [1] ✔
T13	28 - 8	ROHN 3 STD	25.46	12.28	126.7	2.2285	23535.20	72202.40	0.326 [1] ✔

[1] $P_u / \phi P_n$ controls

Redundant Horizontal (1) Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T13	28 - 8	ROHN 1.5 STD	6.36	5.92	114.0	0.7995	9335.51	35975.60	0.259 [1]

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

[1] $P_u / \phi P_n$ controls

Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T13	28 - 8	ROHN 1.5 STD	11.12	10.26	197.7	0.7995	8155.92	35975.60	0.227 [1]

[1] $P_u / \phi P_n$ controls

Redundant Hip (1) Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T13	28 - 8	ROHN 1.5 STD	6.36	6.36	122.7	0.7995	6.41	35975.60	0.000 [1]

[1] $P_u / \phi P_n$ controls

Redundant Hip Diagonal (1) Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T13	28 - 8	ROHN 1.5 STD	14.83	14.83	285.7	0.7995	156.09	35975.60	0.004 [1]

[1] $P_u / \phi P_n$ controls

Inner Bracing Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T13	28 - 8	ROHN 3 STD	12.73	12.73	131.3	2.2285	17.99	100281.00	0.000 [1]

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

[1] P_u / ϕP_n controls

Section Capacity Table

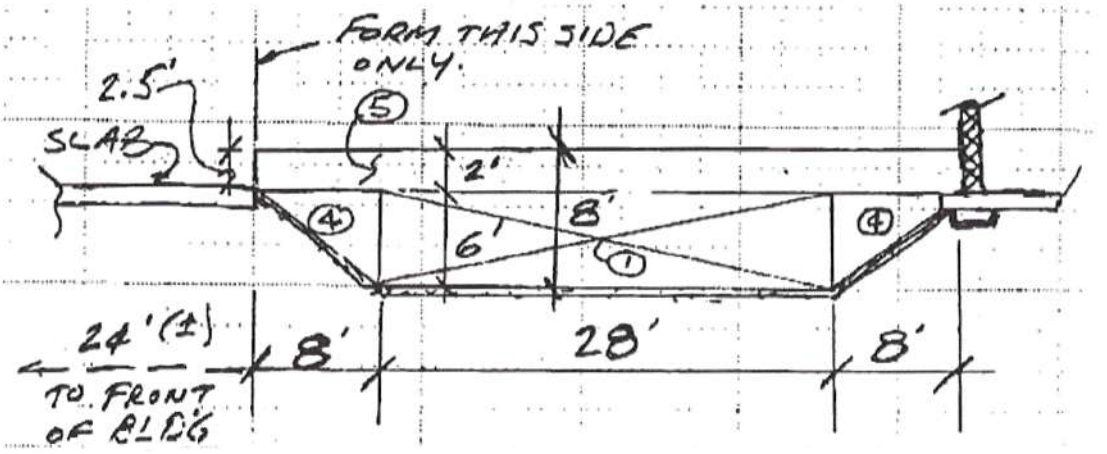
Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	256 - 248	Leg	ROHN 3 STD	3	-4841.52	88543.60	5.5	Pass
		Diagonal	L1 3/4x1 3/4x3/16	11	-1892.30	7836.45	24.1	Pass
		Top Girt	L3x3x1/4	6	-682.52	19705.80	3.5	Pass
T2	248 - 228	Leg	ROHN 3 EH	21	-27436.90	119117.00	23.0	Pass
		Diagonal	L2x2x1/4	26	-3367.58	15423.50	21.8	Pass
							28.7 (b)	
T3	228 - 208	Leg	ROHN 4 EH	54	-63068.80	183589.00	34.4	Pass
		Diagonal	L2x2x1/4	59	-4961.95	16011.80	31.0	Pass
							40.9 (b)	
T4	208 - 188	Leg	ROHN 5 EH	87	-87468.60	254372.00	34.4	Pass
		Diagonal	L2x2x1/4	89	-3318.47	9442.17	35.1	Pass
T5	188 - 168	Leg	ROHN 6 EH	113	-116557.00	343100.00	34.0	Pass
		Diagonal	L2 1/2x2 1/2x1/4	115	-6874.71	11996.10	57.3	Pass
T6	168 - 148	Leg	ROHN 6 EH	134	-154769.00	343100.00	45.1	Pass
		Diagonal	L3x3x1/4	136	-8748.04	16173.10	54.1	Pass
							61.2 (b)	
T7	148 - 128	Leg	ROHN 6 EH	155	-200321.00	343092.00	58.4	Pass
		Diagonal	L3x3x1/4	157	-12558.80	12584.10	99.8	Pass
T8	128 - 108	Leg	ROHN 8 EHS	176	-251164.00	386381.00	65.0	Pass
		Diagonal	L4x4x3/8	178	-17118.50	30486.60	56.2	Pass
							79.4 (b)	
T9	108 - 88	Leg	ROHN 8 EH	191	-313170.00	505517.00	62.0	Pass
		Diagonal	L4x4x0.31	193	-20062.90	21205.70	94.6	Pass
							96.0 (b)	
T10	88 - 68	Leg	P10x.5	206	-379524.00	668659.00	56.8	Pass
		Diagonal	L5x5x3/8	208	-23478.00	43484.70	54.0	Pass
							96.4 (b)	
T11	68 - 48	Leg	P10x.5	221	-448492.00	668663.00	67.1	Pass
		Diagonal	L5x5x3/8	223	-26136.60	37294.00	70.1	Pass
							102.9 (b)	
T12	48 - 28	Leg	P10x.5	236	-517250.00	668640.00	77.4	Pass
		Diagonal	L5x5x3/8	239	-28545.00	31978.80	89.3	Pass
T13	28 - 8	Leg	P10x.5	251	-537938.00	711505.00	75.6	Pass
		Diagonal	ROHN 3 STD w/L4x4x1/4	256	-40735.40	85927.60	47.4	Pass
							54.6 (b)	
		Top Girt	ROHN 3 STD	253	-24788.60	31030.70	79.9	Pass
		Redund Horz 1 Bracing	ROHN 1.5 STD	260	-9335.51	13888.30	67.2	Pass
		Redund Diag 1 Bracing	ROHN 1.5 STD	261	-8155.92	8212.23	99.3	Pass
		Redund Hip 1 Bracing	ROHN 1.5 STD	278	-134.62	12002.20	1.1	Pass
		Redund Hip Diagonal 1 Bracing	ROHN 1.5 STD	269	-97.17	2211.89	4.4	Pass
		Inner Bracing	ROHN 3 STD	280	-31.74	29213.70	28.2	Pass
							Summary	
						Leg (T12)	77.4	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
						Diagonal (T11)	102.9	Pass
						Top Girt (T13)	79.9	Pass
						Redund Horz 1 Bracing (T13)	67.2	Pass
						Redund Diag 1 Bracing (T13)	99.3	Pass
						Redund Hip 1 Bracing (T13)	1.1	Pass
						Redund Hip Diagonal 1 Bracing (T13)	4.4	Pass
						Inner Bracing (T13)	28.2	Pass
						Bolt Checks	102.9	Pass
						RATING =	**102.9**	**Pass**

KM Consulting Engineers, Inc.
262 Upper Ferry Road
Ewing, NJ 08628

Tel.: (609) 538-0400
www.kmengr.com
Email: info@kmengr.com

Foundation Calculations



Volume of Foundation:

$$V_1 := 6\ \text{ft} \cdot 28\ \text{ft} \cdot 31\ \text{ft} = 5208.0\ \text{ft}^3$$

$$V_2 := -1 \cdot \frac{1}{2} \cdot 2.83\ \text{ft} \cdot 4\ \text{ft} \cdot 28\ \text{ft} \cdot 2 = -317.0\ \text{ft}^3$$

$$V_3 := 1\ \text{ft} \cdot 1.67\ \text{ft} \cdot 44\ \text{ft} \cdot 2 = 147.0\ \text{ft}^3$$

$$V_4 := \frac{1}{2} \cdot 6\ \text{ft} \cdot 8\ \text{ft} \cdot 31\ \text{ft} \cdot 2 = 1488.0\ \text{ft}^3$$

$$V_5 := 2\ \text{ft} \cdot 33\ \text{ft} \cdot 44\ \text{ft} = 2904.0\ \text{ft}^3$$

$$V_{total} := V_1 + V_2 + V_3 + V_4 + V_5 = 9430.0\ \text{ft}^3$$

Weight of Foundation:

$$W_{found} := V_{total} \cdot 150\ \frac{\text{lbf}}{\text{ft}^3} = 1414.5\ \text{kip}$$

Resisting Moment:

$$\phi := 0.75$$

$$M_{found} := W_{found} \cdot 16.5\ \text{ft} \cdot \phi = 17504.4\ \text{kip} \cdot \text{ft}$$

ATTACHMENT 4

Generator Specifications

POLAR POWER INC.

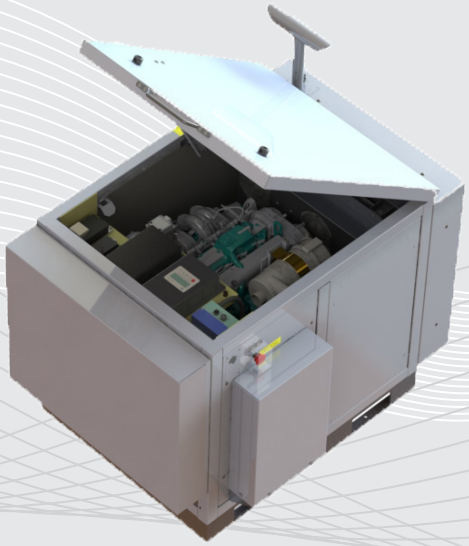
15 KW LPG DC GENERATOR
PART NUMBER 8340-100-NG-15-03-Q

All APUs include:

- Ethernet module with SNMP
- Powder coated aluminum enclosure
- V-belt driven radiator fan
- 5 Year Warranty

Options available:

- Electric radiator fans
- Level 2 sound enclosure
- 8-alarm relay board
- Oil refining kit



Standards:

- *UL STD 2000*
- *EPA / CARB Compliant*

Made in USA

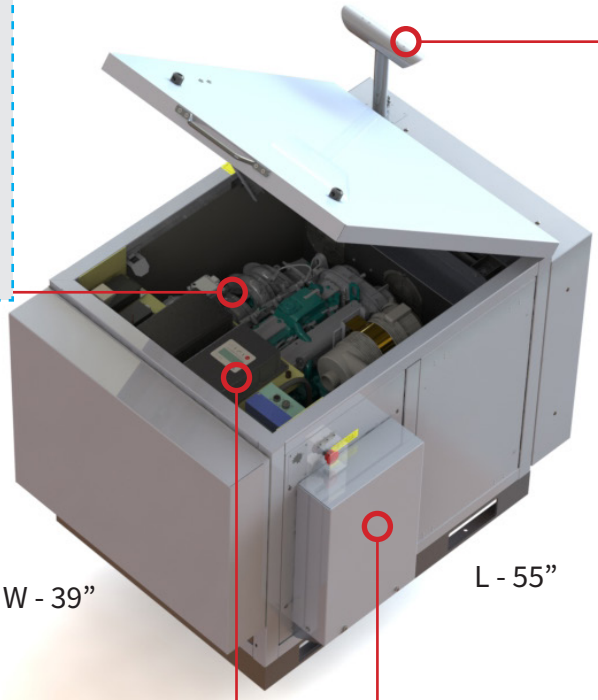
Founded in 1979 Polar Power specialized in solar photovoltaic systems, solar air conditioning and refrigeration. We developed and provided photovoltaic charging controls for telecommunications in the 1980s along with DC generators for the military. In 1994 we were first to provide DC generators with remote control and monitoring to the telecommunications industry.

Polar's success is based on engineering generators to meet the very specific needs of each application. Telecom site optimization is best met with the DC generator technology as the loads and batteries are DC. It makes no sense to install an AC generator and convert the output to DC. The AC generators are designed for a wide range of applications and they are not specifically produced for telecom applications so there are issues with reliability, space, and fuel efficiency.

Polar can save you considerable time and cost in permitting, installing, purchasing, and maintaining a backup generator. We reduce CAPEX and OPEX costs while improving backup reliability.

NG DC Generator

Rainguard Exhaust



H - 40”

W - 39”

L - 55”

Supra controller

Electrical tie on

SMALL FOOTPRINT.
Polar’s DC generator is considerably smaller in size than an AC generator. You can now backup sites that could not accommodate an AC generator. Smaller also means less cost for space leasing.

LOW MAINTENANCE.

LOW ACOUSTIC NOISE. <65 dBA @ 7 meters, and low vibration so as not to disturb the local residents or building landlords.

CORROSION RESISTANT. All-aluminum enclosure with stainless hardware for low maintenance, and long service life.

FUEL EFFICIENT. Up to 85% fuel savings due to smaller engine displacement, high efficiency alternator, and variable speed operation.

ADVANCED MONITORING. Remote diagnostics, control, and monitoring. Ethernet and RS232 standard, with SNMP.

RODENT RESISTANT. Small animals can quickly destroy a generator set by gnawing on wires, fuel lines, radiator hoses, etc. Cooling air inlets and outlets have perforated aluminum screens to keep small rodents and large insects out. Stainless steel wire braid is placed over fuel and radiator lines to prevent damage.

LONG LIFE. Controls and wire harnesses are designed to exceed a 20 year life. Higher grade, longer life electrical wire (UL 3173), weather tight connectors, gold plated connector pins on signal circuits. No transfer switches are required.

SPECIFICATIONS PN 8340-100-NG-15-03-Q

Engine

Engine Model	Ford TSG 415
Cylinders	4 In-line
Displacement (L)	1.5
Bore (in./mm)	3.11/79
Stroke (in./mm)	3.01/76.4
Intake Air System	Naturally Aspirated
Engine HP	47
Emissions	U.S. EPA Tier 4
Emissions Compliance	EPA Certified
Variable RPM	2650 to 3600

Engine lubrication system

Oil Filter Type	Full flow spin-on canister
Oil Capacity (L)	4.25
Oil Pressure Switch	Yes
Oil Pressure Transducer	Optional

Fuel consumption LPG

Output (kW)	gal/hr	L/hr
4	0.97	3.67
5	1.1	4.16
6	1.26	4.77
7	1.475	5.58
8	1.69	6.4
9	1.945	7.36
10	2.2	8.33
12	2.52	9.54
14.5	3.55	13.44

Fuel pressure

Minimum	Recommended	Maximum
0.14 psi	0.39 psi	0.5 psi
4 in H2O	11 in H2O	13.9 in H2O
10 mbar	27.4 mbar	34.5 mbar

Engine cooling system

Type	Pressurized Aluminum Radiator
Water Pump	Belt-driven, Pre-lubed, self-sealing
Fan Type	Electric Fans
Airflow CFM	1300
Fan Mode	Pusher
Temperature Sensor	Yes

Environmental

Operating Temperature (°C/°F)	-40 to 72 / -40 to 162
Operating Humidity %	100
Cold Start Aids	Spark Plugs

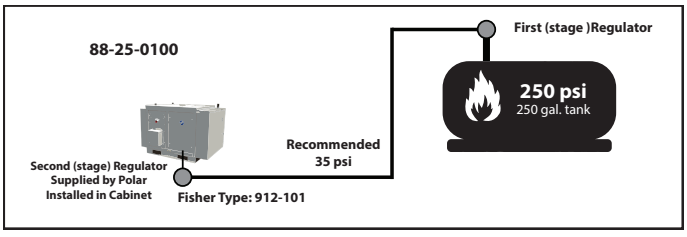
Optional: manifold heater available for temperatures < -40 ºF

Power adjustment for conditions

Temperature Deration	1% derate for every 5.6 ºC (10 ºF) above 25 ºC (77 ºF)
Altitude Deration	3% derate for every 300 m (1000 ft) above 91 m (300 ft)

Fuel system

Type	Natural Gas
Fuel Pump Type	Electrical
Fuel Tank/Line	Supplied by customer
Max fuel flow rate (BTU/hr)	325,000



Engine cooling

System coolant capacity (gal/L)	2.2/8.3
Maximum operation air temperature on radiator (°C/°F)	54/129
Maximum ambient temperature (°C/°F)	49/120

Exhaust

Exhaust flow at rated output (cfm/cmm)	90/2.55
Exhaust temperature at rated output (°C/°F)	480/900

Alternator

Alternator Model	8340
Type	Permanent Magnets, NdFeB
Weight (lb/kg)	58.5/26.5
Regulation Type	Variable engine speed
Stator	3 phase/32 poles
Overcurrent Protection (A)	15 kW - 500
Disconnect Means	Pull fuse block or Circuit breaker
Voltage Range (VDC)	44 to 62
Alternator Exhaust Flow (cfm/cmm)	130 to 180 / 3.68 to 5.1
MTBF (hr)	100,000+

Enclosure

Model	88-25-0100
Type	Weather Protective
Materials	Powder coated aluminum
Door Hardware	Three Point with Padlock Hasp, and Removable Side Panels
Mounting	Secure Mounting Tabs
Dims.	L 55” x W 39” x H 40”

Optional: L2 option

Starter Supercapacitor

Model	20-16-0001
Storage Rating (Ah)	500
Voltage (VDC)	13-14.4
Weight (lb/kg)	12.1/5.5
Operating Temperature (°C/°F)	-40 to 65 / -40 to 149
Service Life (year)	10 to 15

Charger

Model	00-10-0015
Input Voltage (VDC)	28 to 60
Output Voltage (VDC)	14 to 14.4
Recharge time from 0 VDC (min)	10
Recharge time from 8 VDC (min)	2
Weight (lb/kg)	2.2/1

Controller features

Controller Type.....Supra Model 250
4-Line Plain Text LCD Display.....Simple user interface for ease of operation
Engine Run Hours Indication.....Standard
Programmable Start Delay.....Standard
Run/Alarm/Maintenance Logs.....Standard
Engine Start Sequence.....Cyclic cranking: 5 sec on, 45 sec rest (3 attempts maximum)
Starter Supercapacitor Charger.....Standard
Automatic Voltage Regulation with Over and Under Voltage Protection.....Standard
Automatic Low Oil Pressure/High Oil Temperature Shutdown.....Standard
Overcrank/Overspeed.....Standard
Automatic High Engine Temperature Shutdown.....Standard
Field Upgradeable Firmware.....Standard
Glow Plug Delay .....Automatic With Temperature
Engine Start Delay.....Adjustable, Set at 60 sec
Return to Utility Delay.....Adjustable, Set at 60 sec
Engine Cool-down.....Adjustable, Set at 60 sec
Exerciser.....Programmable

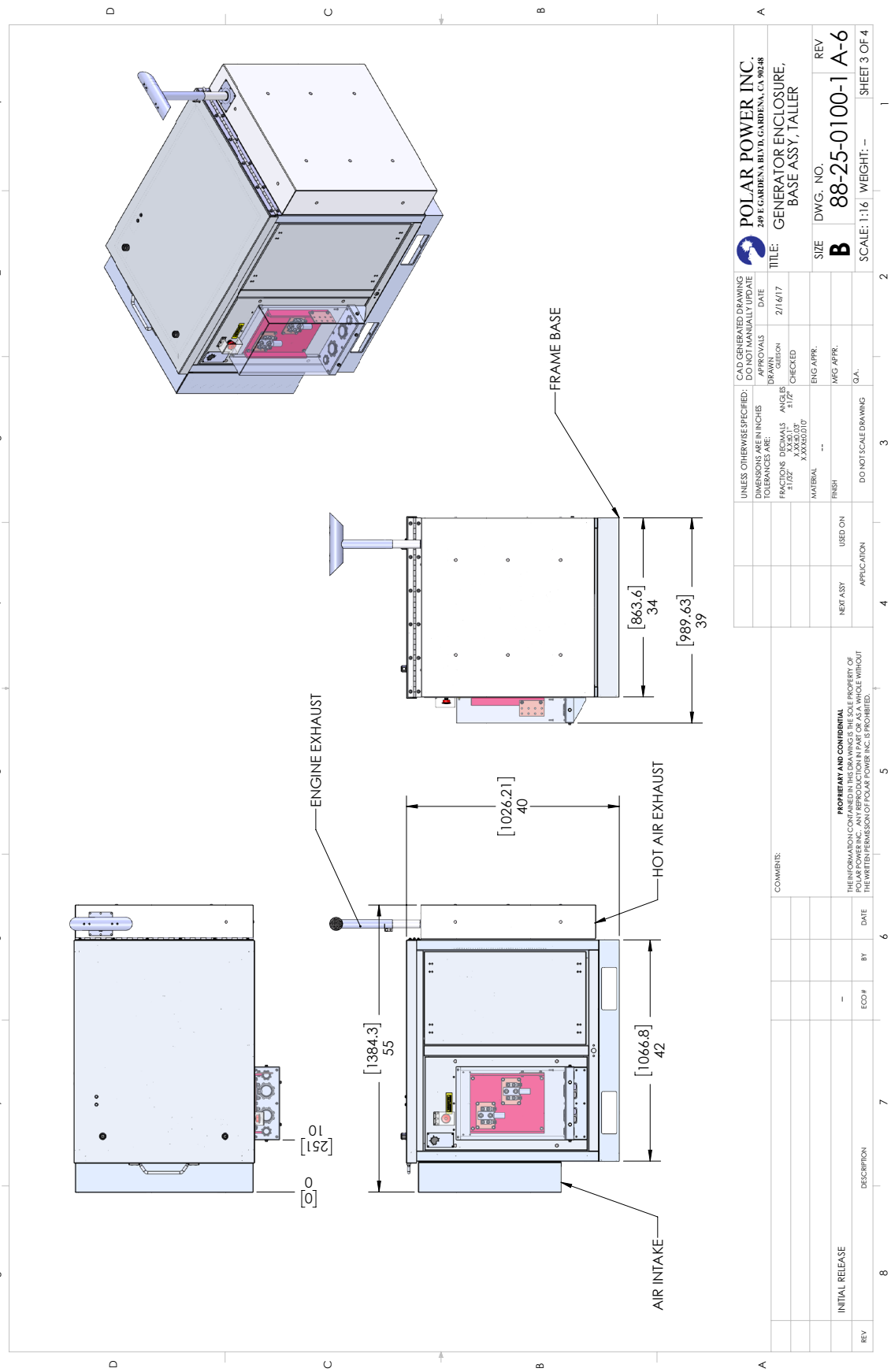
Monitoring

Alarm monitoring and remote control through Ethernet.

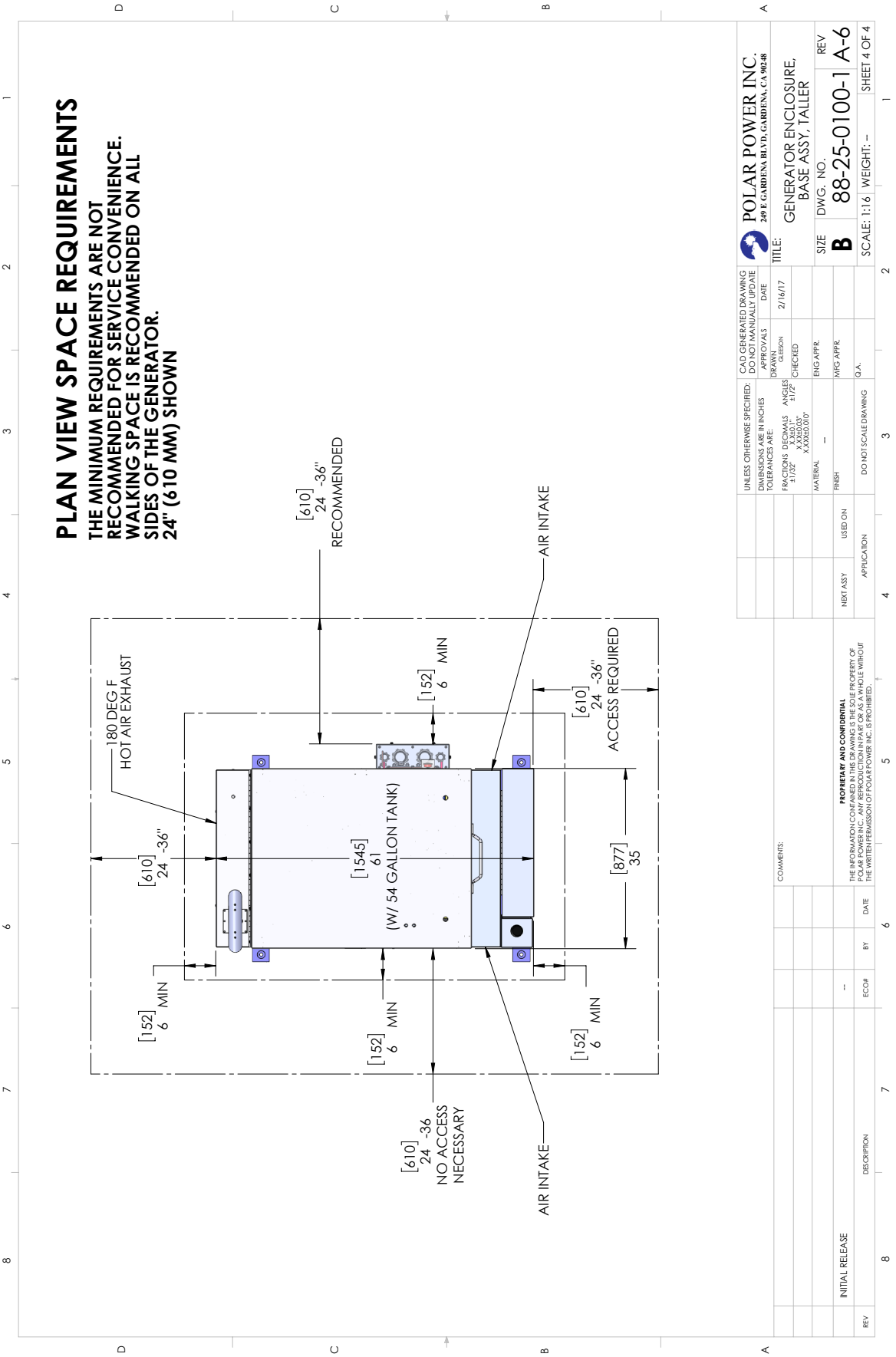
Contact closure alarm board

Shutdown Alarm.....Standard
Warning Alarm.....Standard
Engine Run.....Standard
E-Stop Depressed.....Standard

DRAWING FOR PN 8340-100-NG-15-03-Q



PLANNING FOR PN 8340-100-NG-15-03-Q



249 E. Gardena Blvd., Gardena, CA 90248
Tel.: +1(310)8309153 • Fax: +1(310)7192385
info@polarpowerinc.com • www.polarpower.com

ATTACHMENT 5

DEEP Map

Natural Diversity Data Base Areas

BRIDGEPORT, CT

June 2021

State and Federal Listed Species

Critical Habitat

Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Critical Habitats. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a variety of data sources . Exact locations of species have been buffered to produce the generalized locations.

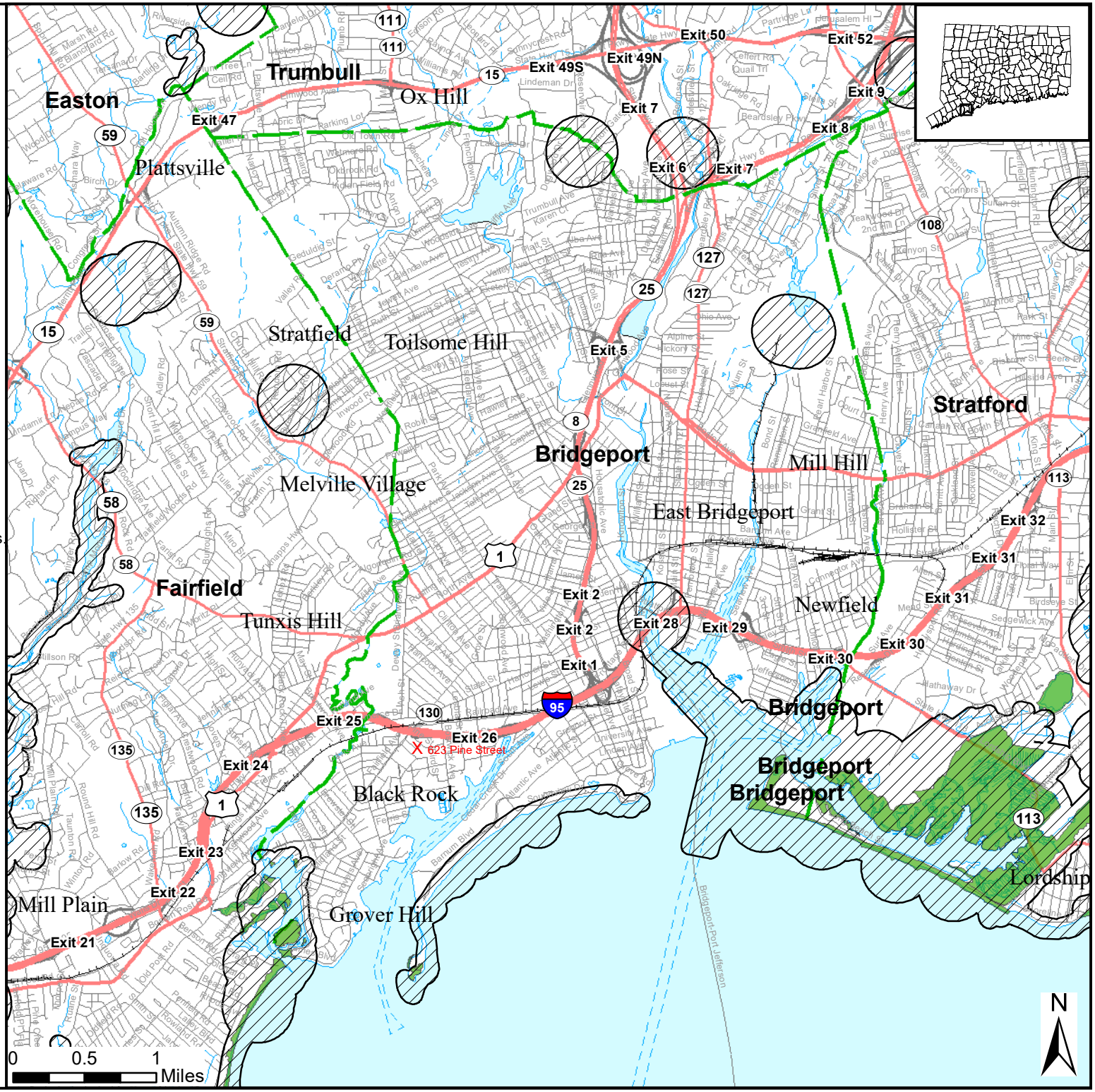
This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a hatched area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at http://cteco.uconn.edu to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St, Hartford, CT 06106
email: deep.nddbrequest@ct.gov
Phone: (860) 424-3011

Connecticut Department of Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division



ATTACHMENT 6

Site Plans

PROJECT INFORMATION

SCOPE OF WORK:	TELECOMMUNICATIONS FACILITY (NSB A EXISTING 256'–0" A.G.L. TALL SELF SUPPORT TOWER. PROPOSED EQUIPMENT INSTALLED IN AN PROPOSED SHELTER IN EXISTING BUILDING. PROPOSED TWELVE PANEL ANTENNAS AND ASSOCIATED EQUIPMENT WILL BE INSTALLED AT A HEIGHT OF 138'–0" A.G.L.):
SITE ADDRESS:	623 PINE STREET BRIDGEPORT, CT 06605
APPLICANT:	AT&T 550 COCHITUATE ROAD FRAMINGHAM, MA 01701
SITE OWNER:	ANDREW & LILLIAN KNAPP 24 ROCKDALE RD WEST HAVEN, CT 06516
LATITUDE:	41.16577 N, 41° 09' 56.8" N
LONGITUDE:	73.21668 W, 73° 13' 00.1" W
TYPE OF SITE:	SELF SUPPORT TOWER/ WALK–IN CABINET
TOWER HEIGHT:	256'–0"±
RAD CENTER:	138'–0"±

SITE NUMBER: CT1382

SITE NAME: BRIDGEPORT PINE STREET

FA CODE:15371379

PACE ID: MRCTB050320, MRCTB050326, MRCTB050325, MRCTB050324, MRCTB050322, MRCTB050321, MRCTB050058

PROJECT: NSB

DRAWING INDEX

VICINITY MAP

DIRECTIONS TO SITE:

GET ON I–90 W, HEAD SOUTHWEST, TURN RIGHT TOWARD LEGGATT MCCALL CONN, TURN LEFT ONTO LEGGATT MCCALL CONN, CONTINUE ONTO BURR ST, TURN LEFT ONTO COCHITUATE RD, USE THE RIGHT LANE TO MERGE ONTO I–90 W VIA THE RAMP TO SPRINGFIELD, (TOLL ROAD), CONTINUE ON I–90 W. TAKE I–84, I–91 S AND CT–15 S TO CT–130 W/FAIRFIELD AVE IN BRIDGEPORT. TAKE EXIT 25 FROM I–95 S, MERGE ONTO I–90 W, (TOLL ROAD), KEEP LEFT TO STAY ON I–90 W, (TOLL ROAD), USE THE RIGHT 2 LANES TO TAKE EXIT 78 FOR I–84 TOWARD HARTFORD CT/NEW YORK CITY, (TOLL ROAD) CONTINUE ONTO I–84, (TOLL ROAD), ENTERING CONNECTICUT, KEEP LEFT TO STAY ON I–84, KEEP LEFT TO STAY ON I–84, USE THE LEFT 2 LANES TO TAKE EXIT 57 FOR CT–15 S TOWARD I–91 S/CHARTER OAK BRIDGE/N.Y.CITY, CONTINUE ONTO CT–15 S, CONTINUE ONTO CT–15 S/US–5 S, TAKE EXIT 86 TO MERGE ONTO I–91 S TOWARD NEW HAVEN/NEW YORK CITY, KEEP RIGHT TO STAY ON I–91 S, TAKE EXIT 17 TO MERGE ONTO CT–15 S, KEEP RIGHT TO STAY ON CT–15 S, FOLLOW SIGNS FOR W CROSS PKWY, TAKE EXIT 52 FOR STATE ROUTE 108 S/STATE ROUTE 8 S TOWARD BRIDGEPORT, KEEP LEFT, FOLLOW SIGNS FOR CT–8 S/BRIDGEPORT AND MERGE ONTO CT–8 S, TAKE THE EXIT ONTO I–95 S TOWARD N.Y. CITY, TAKE EXIT 25 FOR CT–130/FAIRFIELD AVENUE, DRIVE TO PINE ST, TURN LEFT ONTO CT–130 W/FAIRFIELD AVE, TURN LEFT ONTO PINE ST, DESTINATION WILL BE ON THE RIGHT

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES 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 AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

72 HOURS

CALL
BEFORE YOU DIG
CALL TOLL FREE 1–800–922–4455
OR CALL 811

UNDERGROUND SERVICE ALERT

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET
(NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1382	T–1	2

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

   CONTRACTOR – SAI
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T 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. TOUCH UP 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 AT&T 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 WITH 2018 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL 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-H, STRUCTURAL STANDARDS FOR STEEL

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	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFER		

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
(NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1382	GN-1	2

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-H 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.

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.

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.

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]
REQUIRED	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
REQUIRED	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:	

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

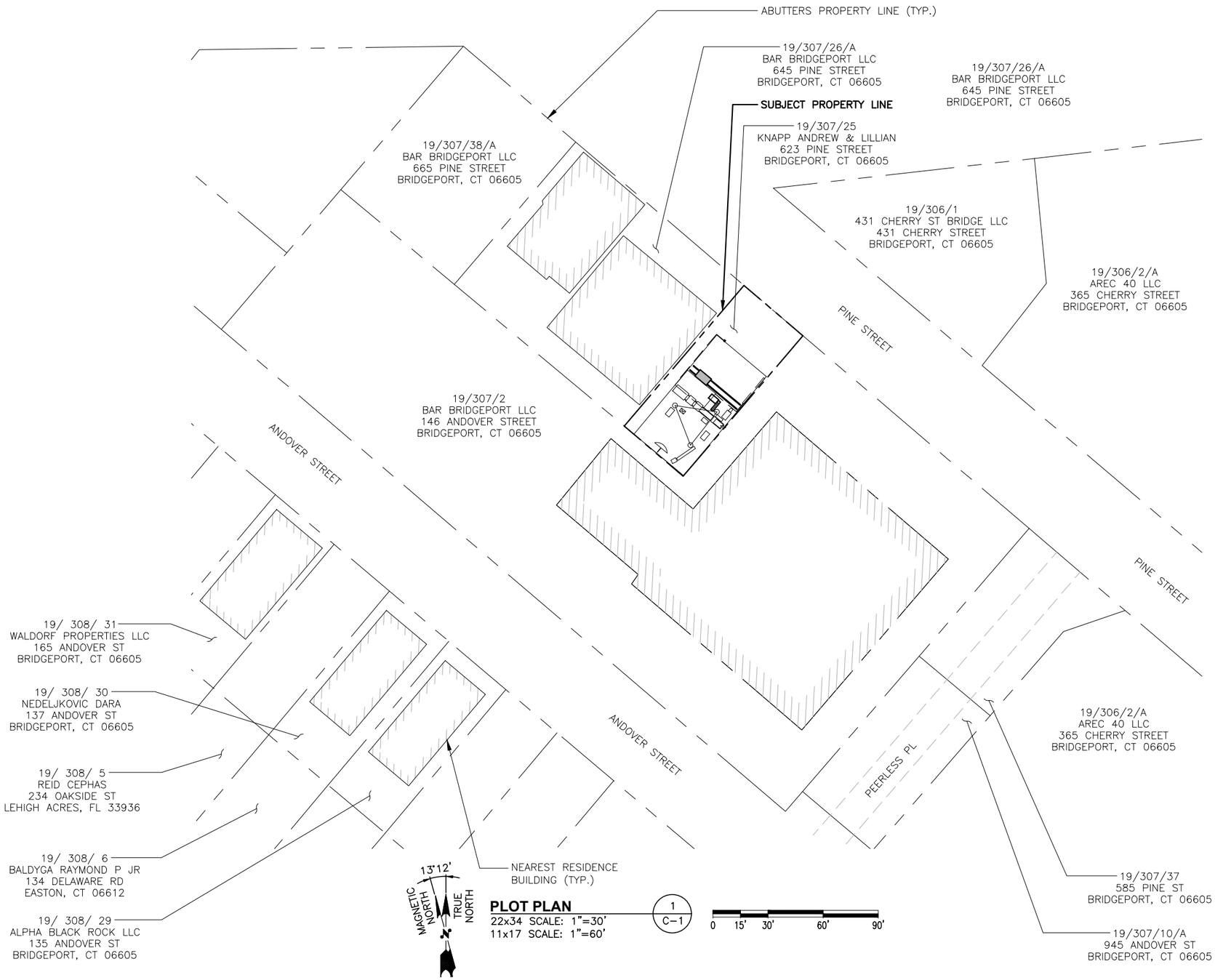
SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

SPECIAL INSPECTION NOTES (NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1382	SN-1	2



INFORMATION TAKEN FROM PLANS BY CONNECTICUT GIS

DIMENSIONS REQUIREMENTS:	REQUIRED	EXISTING	PROPOSED
ANTENNA SETBACKS			
FRONT YARD SETBACK:	N/A	29'±	NO CHANGE
SIDE YARD SETBACK:	N/A	1'±	NO CHANGE
SIDE YARD SETBACK:	N/A	6'	NO CHANGE
REAR YARD SETBACK:	N/A	1'±	NO CHANGE

GENERAL NOTES:

1. PROPERTY LINE INFORMATION (WHEN APPLICABLE) WAS PREPARED USING TAX MAPS, AND PLANS OF RECORD AND SHOULD NOT BE CONSTRUCTED AS A BOUNDARY SURVEY.
2. NO NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
3. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (THERE IS NO HANDICAP ACCESS REQUIRED).
4. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
5. CONNECTION TO ELECTRICAL & TELEPHONE UTILITIES TO BE DETERMINED BY THE APPROPRIATE UTILITY COMPANY.
6. SUBCONTRACTOR TO VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEER PRIOR TO INSTALLATION. SEE ANTENNA CONFIGURATION SHEETS FOR SITE SPECIFIC DETAILS.
7. SUBCONTRACTOR SHALL LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
8. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION.
9. THE MAXIMUM AREA OF DISTURBANCE IS LESS THAN 1 ACRE. THE PROJECT IMPACT AREA IS BELOW THE EXEMPTION THRESHOLD OF 43,560 SQUARE FEET IN 40 CFR PARTS 9, 122–124 AND THEREFORE IS NOT SUBJECT TO REGULATION UNDER THE EPA OR STATE–MANAGED NPDES GENERAL CONSTRUCTION PERMIT PROGRAM. THE PROJECT OWNER'S GENERAL CONTRACTOR SHALL CONDUCT ALL SITE DEVELOPMENT IN ACCORDANCE WITH THE "LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL" ISSUED BY THE VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION. ADDITIONALLY, THE PROJECT OWNERS GENERAL CONTRACTOR SHALL CONDUCT ALL CONSTRUCTION ACTIVITIES IN A MANNER THAT DOES NOT RESULT IN STORM WATER DISCHARGES WITH AN ADVERSE IMPACT ON ANY STORM WATER COLLECTION/CONVEYANCE SYSTEM, WETLAND, WATER BODY, OR OTHER WATER RESOURCE AREAS.

LIST OF HOMES WITHIN 1,000 FEET RADIUS

PARCEL ID	QTY	PARCEL ID	QTY
19/ 308/ 29	1	19/ 308/ 6	1
19/ 308/ 30	1	19/ 308/ 5	1
19/ 308/ 31	1		
TOTAL: 5			

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

12 INDUSTRIAL WAY
SALEM, NH 03079

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	JC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

PLOT PLAN
(NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1382	C-1	2

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC. DATED: JUNE 17, 2021, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

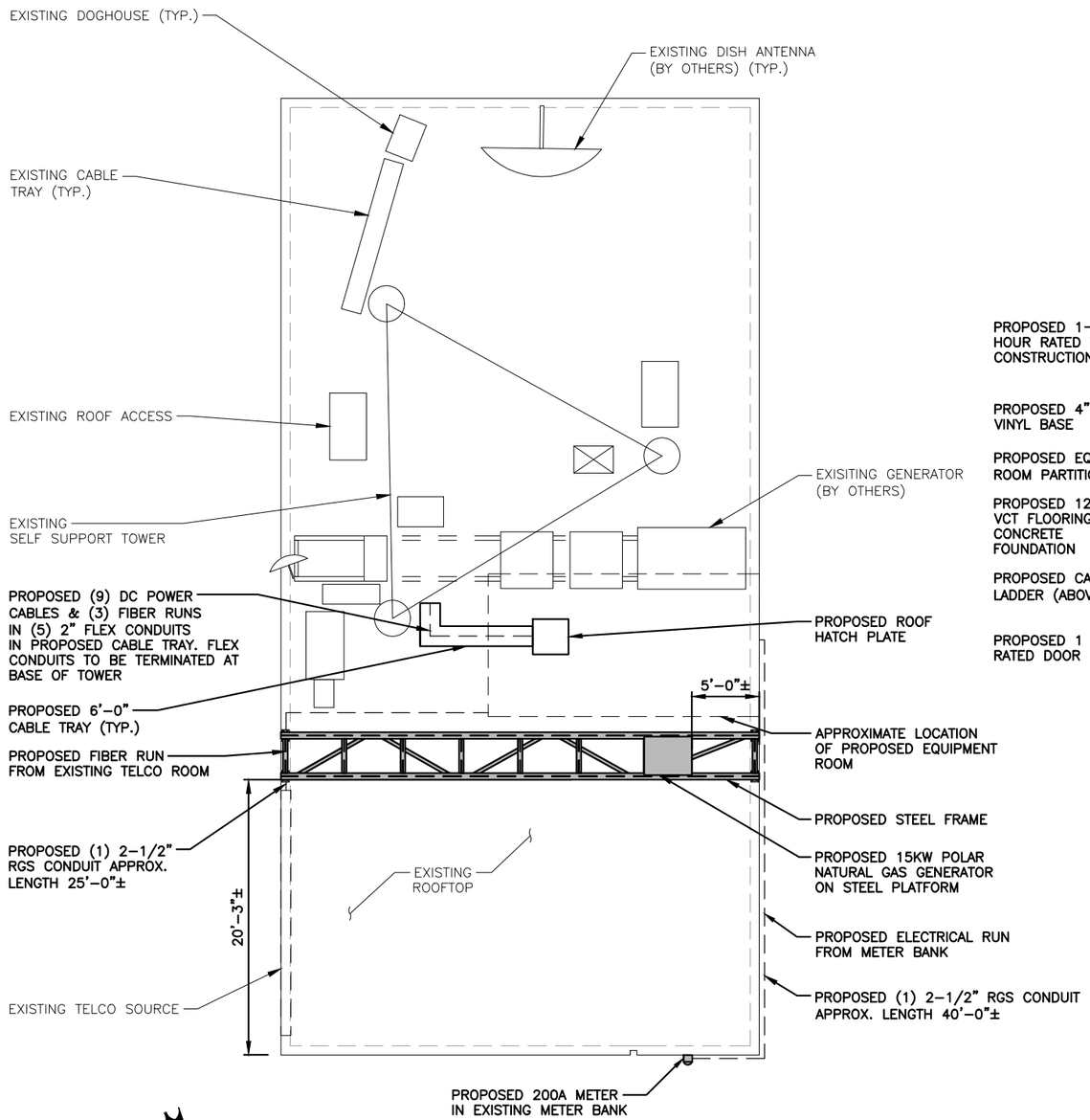
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

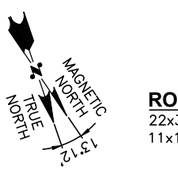
NOTE:

REFER TO STRUCTURAL ANALYSIS BY: KM CONSULTING ENGINEERS, INC, DATED: JUNE 14, 2021, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

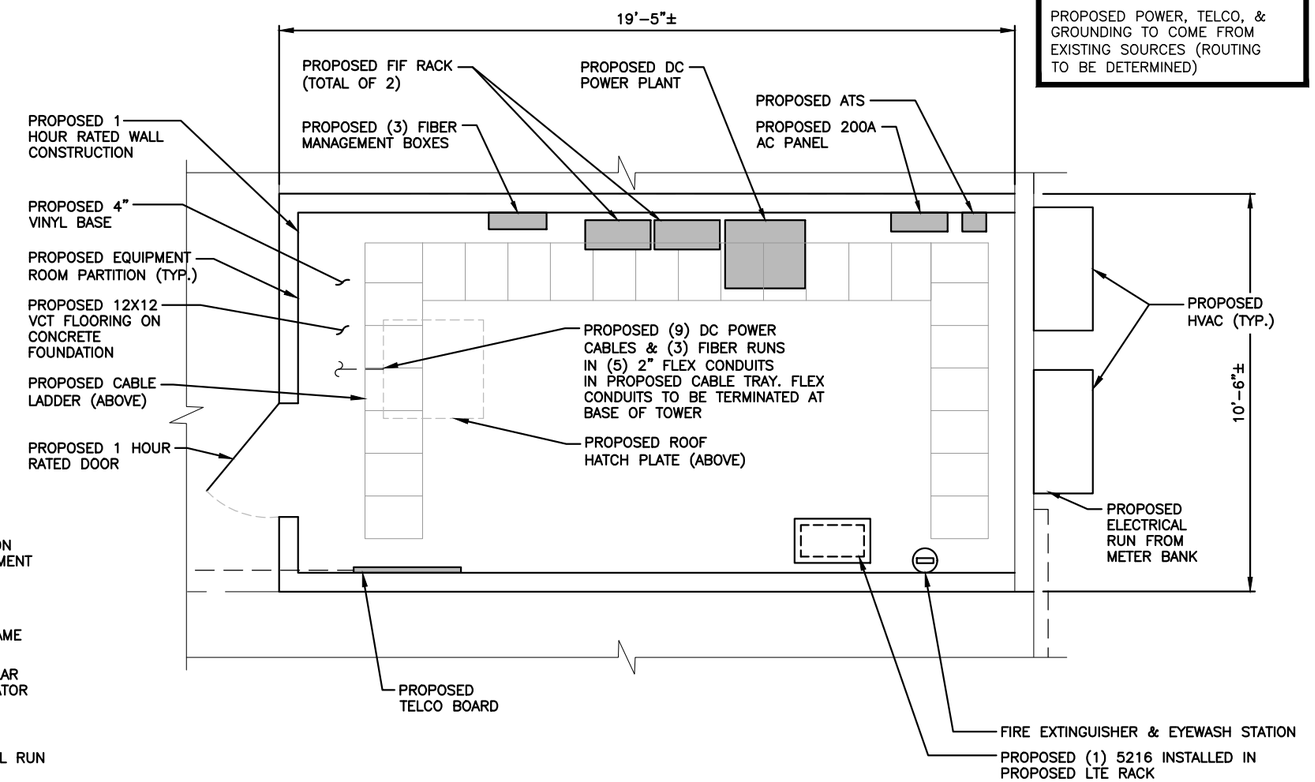
PROPOSED POWER, TELCO, & GROUNDING TO COME FROM EXISTING SOURCES (ROUTING TO BE DETERMINED)





ROOFTOP PLAN (1 / A-1)
22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/32"=1'-0"

0 2'-8" 5'-4" 10'-8" 16'-0"



EQUIPMENT PLAN (2 / A-1)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"

0 8" 1'-4" 2'-8" 4'-0"

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

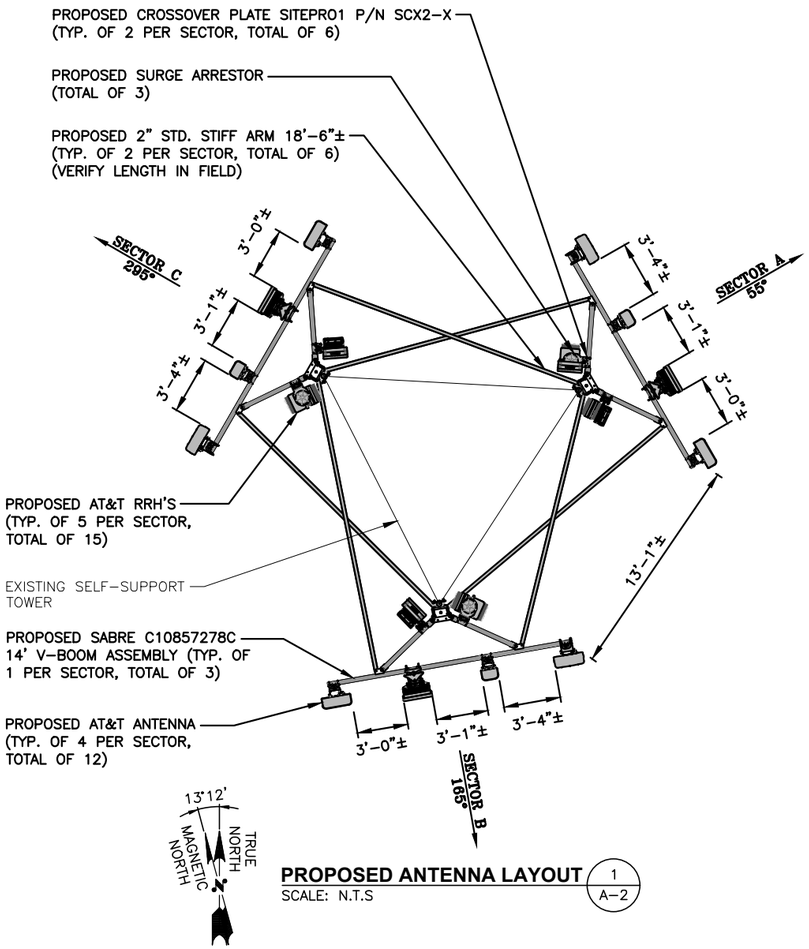
SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

ROOFTOP & EQUIPMENT PLANS (NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1382	A-1	2



PROPOSED ANTENNA LAYOUT (1 / A-2)
SCALE: N.T.S

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

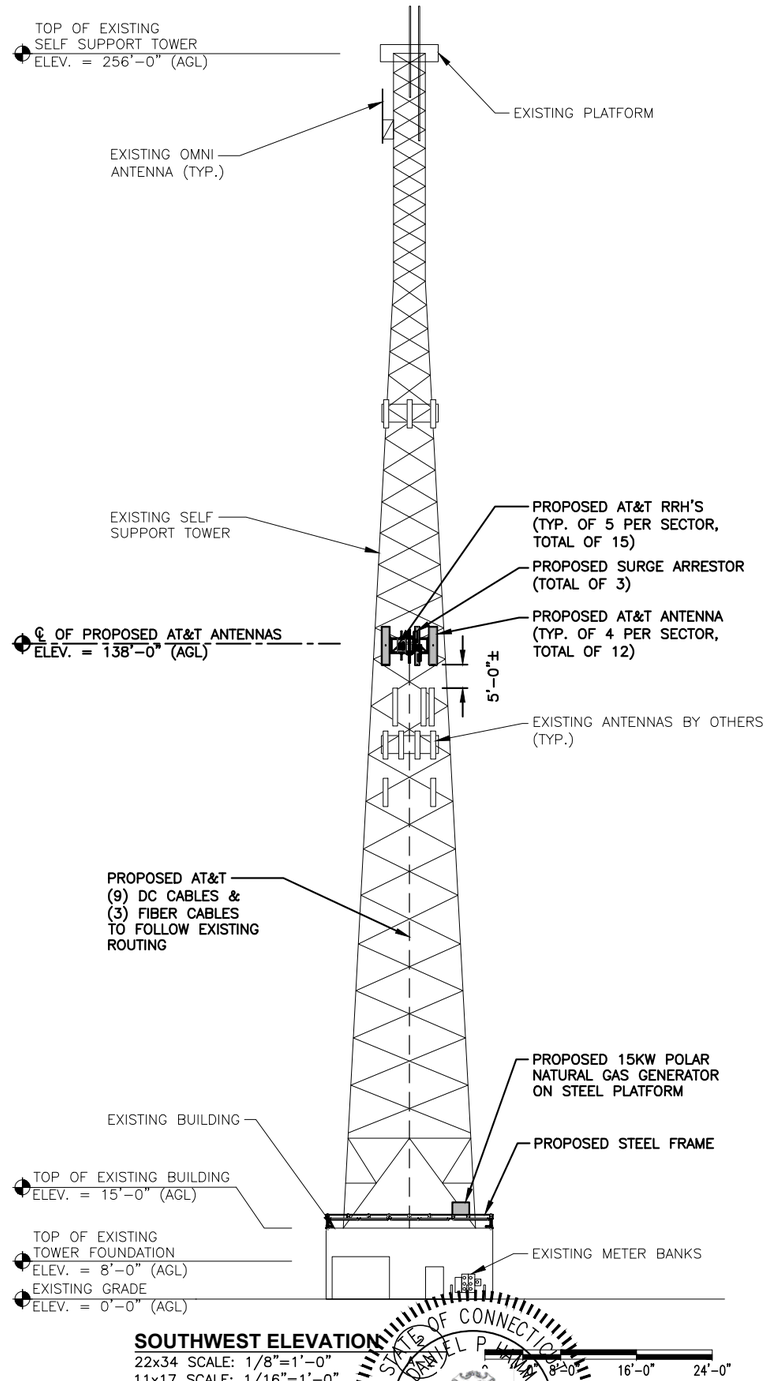
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC. DATED: JUNE 17, 2021, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: KM CONSULTING ENGINEERS, INC, DATED: JUNE 14, 2021, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: APRIL 20, 2021. (REV.1)



SOUTHWEST ELEVATION
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

AT&T

ANTENNA LAYOUT & ELEVATION
(NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1382	A-2	2

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: KM CONSULTING ENGINEERS, INC, DATED: JUNE 14, 2021, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: APRIL 20, 2021. (REV.1)

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

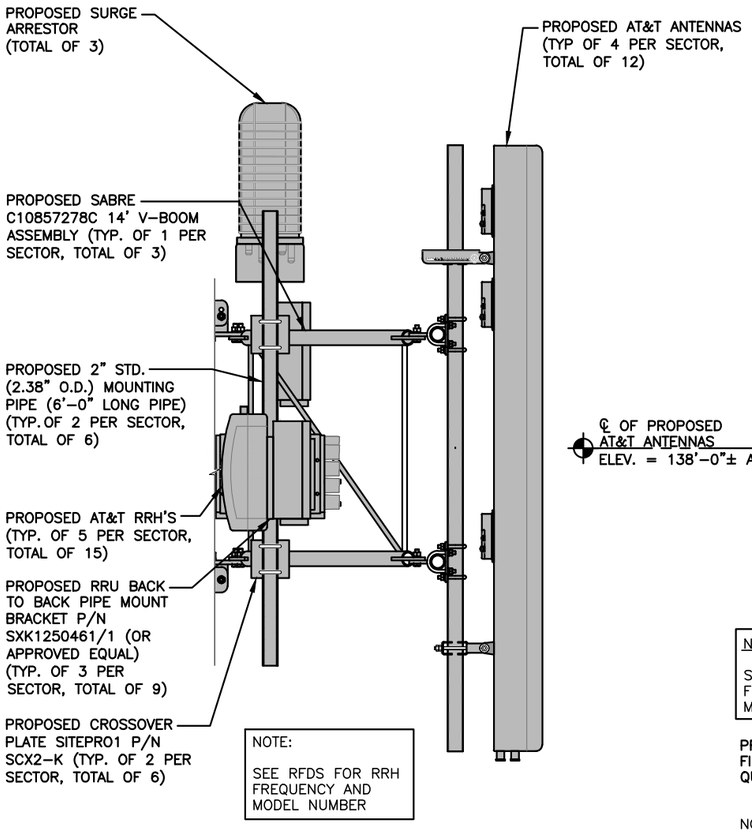
NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC. DATED: JUNE 17, 2021, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	PROPOSED	LTE B14/AWS	TPA65R-BU8DA-K	96X21X7.8	138'-0"	55°	–	(P) (1) B14 4478	18.1X13.4X8.3	(9) DC POWER CABLES & (3) FIBER RUNS	(P) (3) RAYCAP DC9-48-60-24-8C-EV
A2	PROPOSED	LTE DE/WCS	HPA65R-BU8A	96X11.7X7.6	138'-0"	55°	–	(P) (1) 4415 B30 (P) (1) RRUS-E2	16.5X13.4X5.9 20.4X18.5X7.5		
A3	PROPOSED	C-BAND	AIR 6449	31X16X8	138'-0"	55°	–	–	–		
A4	PROPOSED	LTE 700 BC/850/PCS	DMP65R-BU8DA-K	96X20.7X7.7	138'-0"	55°	–	(P) (1) 4449 B5/B12 (P) (1) 8843 B2/B66A	14.9X13.2X10.4 14.9X13.2X10.9		
B1	PROPOSED	LTE B14/AWS	TPA65R-BU8DA-K	96X21X7.8	138'-0"	165°	–	(P) (1) B14 4478	18.1X13.4X8.3		
B2	PROPOSED	LTE DE/WCS	HPA65R-BU8A	96X11.7X7.6	138'-0"	165°	–	(P) (1) 4415 B30 (P) (1) RRUS-E2	16.5X13.4X5.9 20.4X18.5X7.5		
B3	PROPOSED	C-BAND	AIR 6449	31X16X8	138'-0"	165°	–	–	–		
B4	PROPOSED	LTE 700 BC/850/PCS	DMP65R-BU8DA-K	96X20.7X7.7	138'-0"	165°	–	(P) (1) 4449 B5/B12 (P) (1) 8843 B2/B66A	14.9X13.2X10.4 14.9X13.2X10.9		
C1	PROPOSED	LTE B14/AWS	TPA65R-BU8DA-K	96X21X7.8	138'-0"	295°	–	(P) (1) B14 4478	18.1X13.4X8.3		
C2	PROPOSED	LTE DE/WCS	HPA65R-BU8A	96X11.7X7.6	138'-0"	295°	–	(P) (1) 4415 B30 (P) (1) RRUS-E2	16.5X13.4X5.9 20.4X18.5X7.5		
C3	PROPOSED	C-BAND	AIR 6449	31X16X8	138'-0"	295°	–	–	–		
C4	PROPOSED	LTE 700 BC/850/PCS	DMP65R-BU8DA-K	96X20.7X7.7	138'-0"	295°	–	(P) (1) 4449 B5/B12 (P) (1) 8843 B2/B66A	14.9X13.2X10.4 14.9X13.2X10.9		

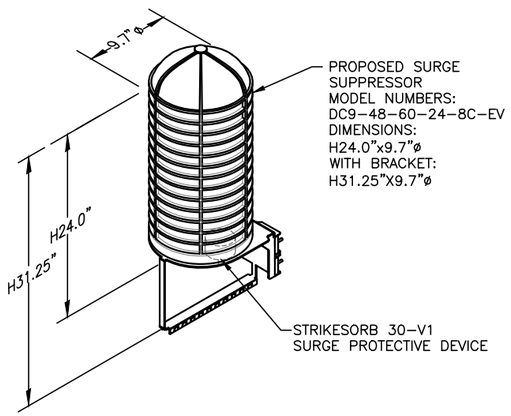
FINAL ANTENNA SCHEDULE (1 / A-3)
SCALE: N.T.S



PROPOSED SECTOR FRAME, ANTENNA,SURGE SUPPRESSOR & RRH'S MOUNTING DETAIL (2 / A-3)
SCALE: N.T.S

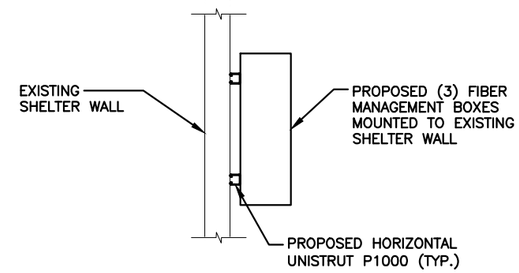
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL (3 / A-3)
SCALE: N.T.S



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL (4 / A-3)
SCALE: N.T.S



PROPOSED FIBER MANAGEMENT BOX MOUNTING DETAIL (5 / A-3)
SCALE: N.T.S

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

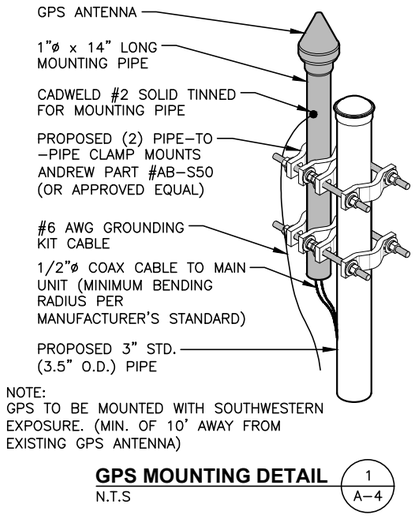
SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
(NSB)

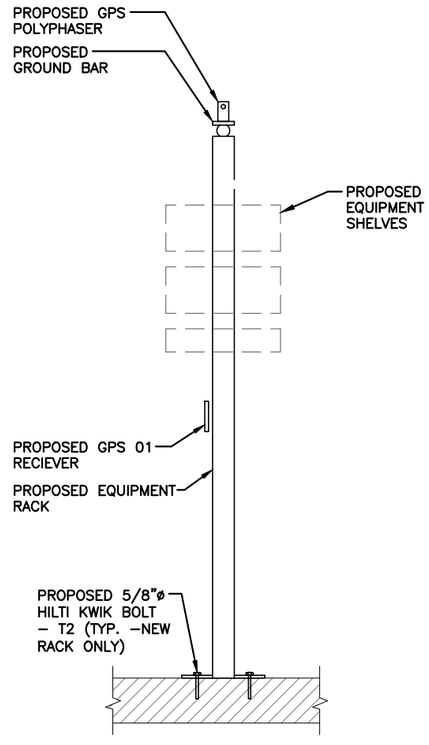
SITE NUMBER	DRAWING NUMBER	REV
CT1382	A-3	2



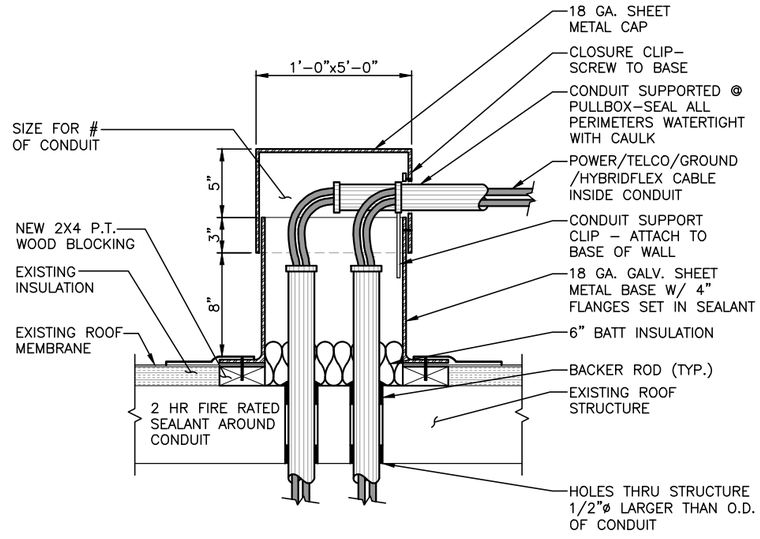
NOTE:
GPS TO BE MOUNTED WITH SOUTHWESTERN EXPOSURE. (MIN. OF 10' AWAY FROM EXISTING GPS ANTENNA)

GPS MOUNTING DETAIL 1/A–4
N.T.S

PROPOSED NETSURE 7100 POWER PLANT 2/A–4
SCALE: N.T.S



PROPOSED EQUIPMENT RACK DETAIL 3/A–4
SCALE: N.T.S



UTILITY CONDUIT PENETRATION DETAIL 4/A–4
SCALE: N.T.S

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
(NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1382	A–4	2

COLD FORMED STEEL REQUIREMENTS

1. THE CONTRACTOR AND/OR FABRICATOR MUST VERIFY ALL DIMENSIONS AND QUANTITIES (INCLUDING BUT NOT LIMITED TO CLEAR OPENINGS AT THE R.O.) PRIOR TO FABRICATION/ERECTION.

2. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE ALL NECESSARY TEMPORARY BRACING REQUIRED DURING CONSTRUCTION.

3. ALL STUD MEMBERS SHOWN HEREIN ARE BASED ON INDUSTRY STANDARD SSMA DESIGNATION. ALL CFSS MEMBERS SHOWN ON THESE DRAWINGS MEET THE MIN. STRUCTURAL REQUIREMENTS. HEAVY GAGE MEMBERS MAY BE SUBSTITUTED AS PER ARCHITECTURAL SPECIFICATIONS.

4. ALL STUDS SHALL BE MARKED WITH THE MANUFACTURER'S NAME, GAGE SIZE OF MATERIAL, AND YIELD STRENGTH. ALL STUD, JOISTS AND RAFTERS 16 GA. OR HEAVIER MUST BE 50 KSI MATERIAL

5. ALL STUD MATERIAL 16 GAGE AND HEAVIER SHALL CONFORM TO ASTM A-446 GRADE D WITH A MINIMUM YIELD OF 50 KSI.

6. ALL WORK SHALL MEET THE REQUIREMENTS OF THE LATEST EDITIONS OF THE FOLLOWING STANDARDS:
   a. AMERICAN IRON AND STEEL INSTITUTE (A.I.S.I.) SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS.
   b. AMERICAN WELDING SOCIETY (A.W.S.) D1.3 STRUCTURAL WELDING CODE – SHEET STEEL.
   c. AMERICAN SOCIETY FOR TESTING AND MATERIALS (A.S.T.M.)
   d. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (A.I.S.C.) MANUAL OF STEEL CONSTRUCTION.

7. ALL FASTENERS CONNECTING COLD-FORMED STEEL MEMBERS AND ACCESSORIES SHALL BE A MINIMUM OF NO. 10 SIZE HAVING A MINIMUM DIAMETER OF 0.190 INCHES, EXCEPT FASTENERS CONNECTING 14 GAGE OR HEAVIER MATERIAL SHALL BE NO. 12 SIZE HAVING A MINIMUM DIAMETER OF 0.216 INCHES.

8. STRUCTURAL PROPERTIES OF COMPONENTS SHALL BE COMPUTED IN ACCORDANCE WITH THE LATEST EDITION OF THE A.I.S.I. SPECIFICATION.

9. ALL JOIST FRAMING SHALL HAVE BRIDGING INSTALLED: BRIDGING STRAPS TO BE AT 7'-0" O.C. ALONG JOIST SPAN LOCATE BLOCKING AT FIRST AND SECOND SPACES, EA. END & @ 10'-0" O.C. BETWEEN IF REQUIRED.

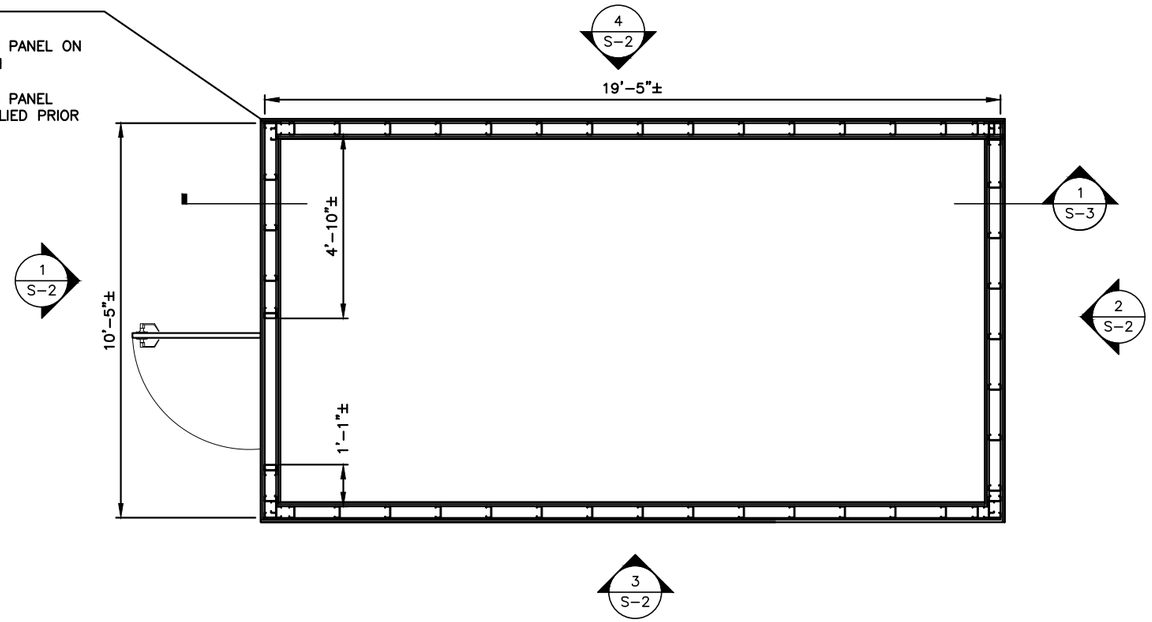
10. ALL NESTED STUD AND TRACK COMBINATION SHALL BE FASTENED AT EACH FLANGE @ 12" O.C.

11. ALL TRACKS NOT SPECIFICALLY CALLED FOR ON PLAN SHALL BE OF THE SAME GAGE AS THE WALL STUDS OR HEAVIER.

12. PROVIDE MECHANICAL BRIDGING –SEE FRAMING DETAIL SHEET.

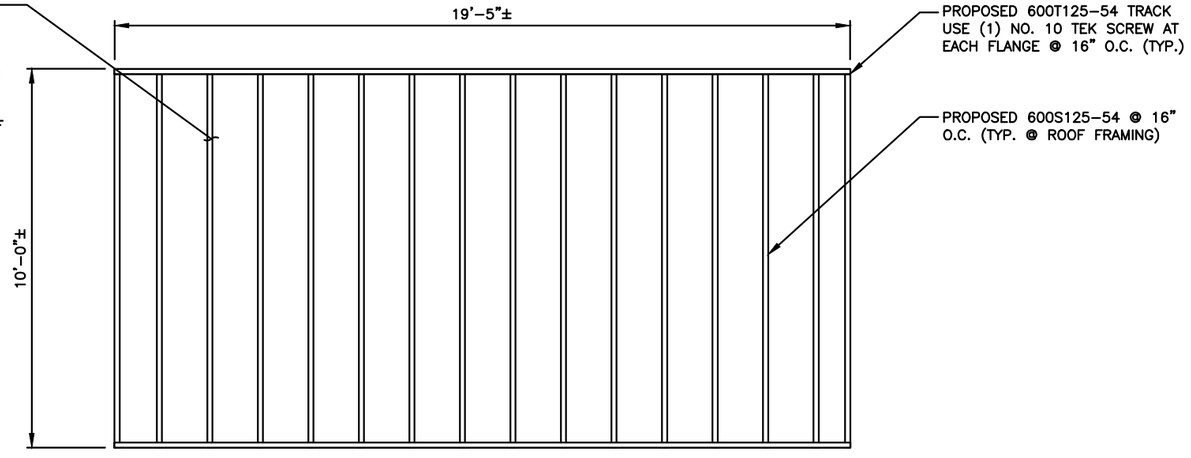
13. ALL CLIP ANGLES SHALL BE 16 GAGE x 50 KSI MIN. UNLESS OTHERWISE NOTED.

WALL CONSTRUCTION:
(1) 1/8" WHITE FIBERGLASS PANEL ON
(2) 5/8" SHEETROCK FIRECODE "X" GYPSUM PANEL ON 3-5/8" 20 GA. STUDS @ 16" O.C. WITH 3" MINERAL WOOL INSULATION ON
(2) 5/8" SHEETROCK FIRECODE "X" GYPSUM PANEL WITH WATERPROOF COATING SYSTEM APPLIED PRIOR TO INSTALLATION:
STEP 1: ANDEK POLAPRIME (PRIMER)
STEP 2: ANDEK FIREGARD (COATING)
UL DESIGN U419



WALL FRAMING PLAN (1 / S-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"
0 1'-0" 2'-0" 4'-0" 6'-0"

CEILING/ROOF CONSTRUCTION:
1/8" WHITE FIBERGLASS PANEL ON
(1) 5/8" SHEETROCK FIRECODE "X" GYPSUM PANEL ON 7/8" FURRING CHANNEL ON
(3) 5/8" SHEETROCK FIRECODE "X" GYPSUM PANELS ON 2"X6" 20 GA. STUDS @ 16" O.C. & PERIMETER TRACK WITH R-30 INSULATION ON
3/4" T+G FRX PLYWOOD & FIRE RESISTANT WATERPROOF COATING SYSTEM:
STEP 1: ANDEK POLAPRIME (PRIMER)
STEP 2: ANDEK FIREGARD (COATING)



CEILING/ROOF FRAMING PLAN (2 / S-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"
0 1'-0" 2'-0" 4'-0" 6'-0"

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

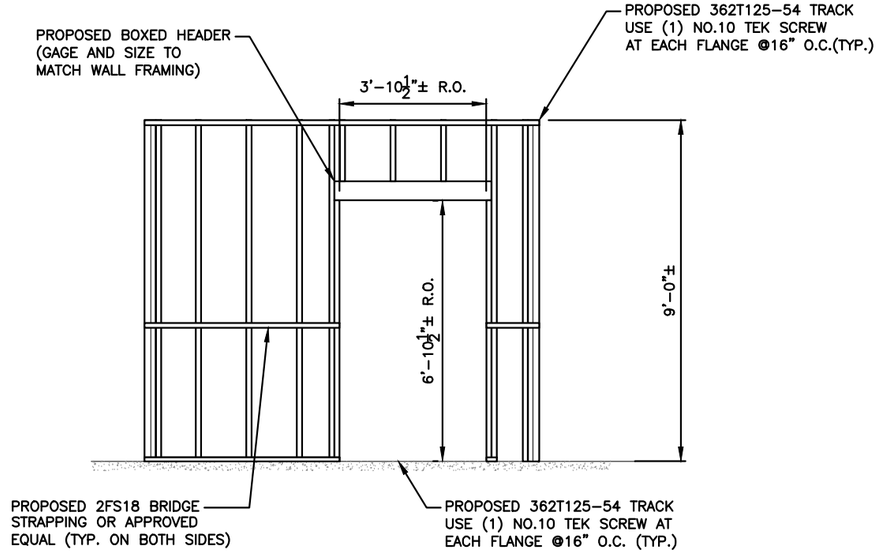
NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

AT&T

FRAMING DETAILS
(NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1382	S-1	2

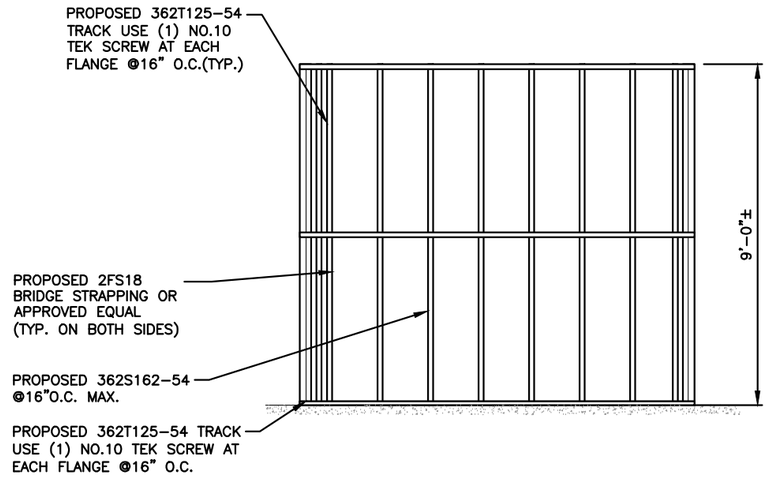


USE NESTED KING AND JACK POSTS AT ALL ROUGH OPENINGS

WALL FRAMING ELEVATION 1 S-2

22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

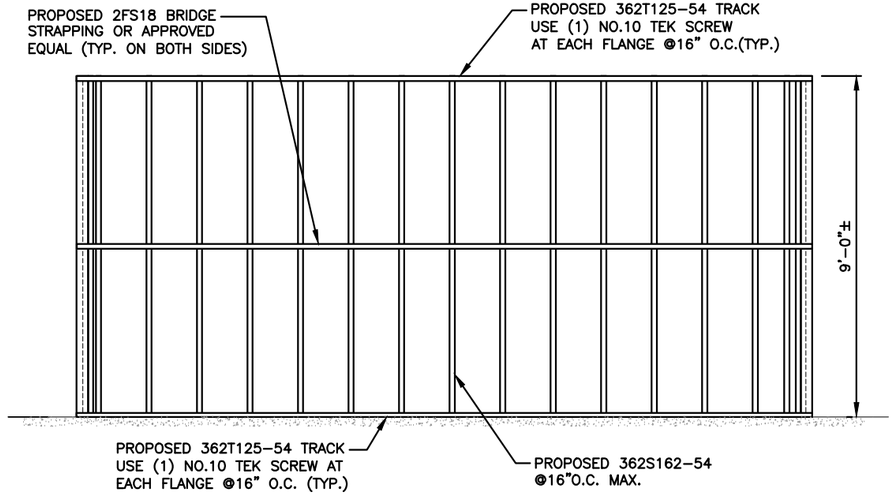
0 1'-0" 2'-0" 4'-0" 6'-0"



WALL FRAMING ELEVATION 2 S-2

22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

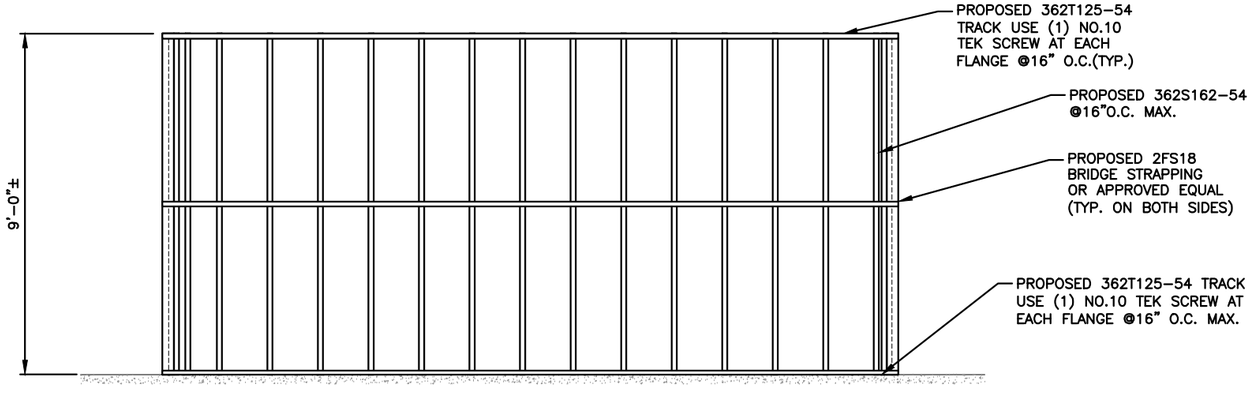
0 1'-0" 2'-0" 4'-0" 6'-0"



WALL FRAMING ELEVATION 3 S-2

22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"



WALL FRAMING ELEVATION 4 S-2

22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

FRAMING DETAILS
(NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1382	S-2	2

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: APRIL 20, 2021. (REV.1)

NOTE:

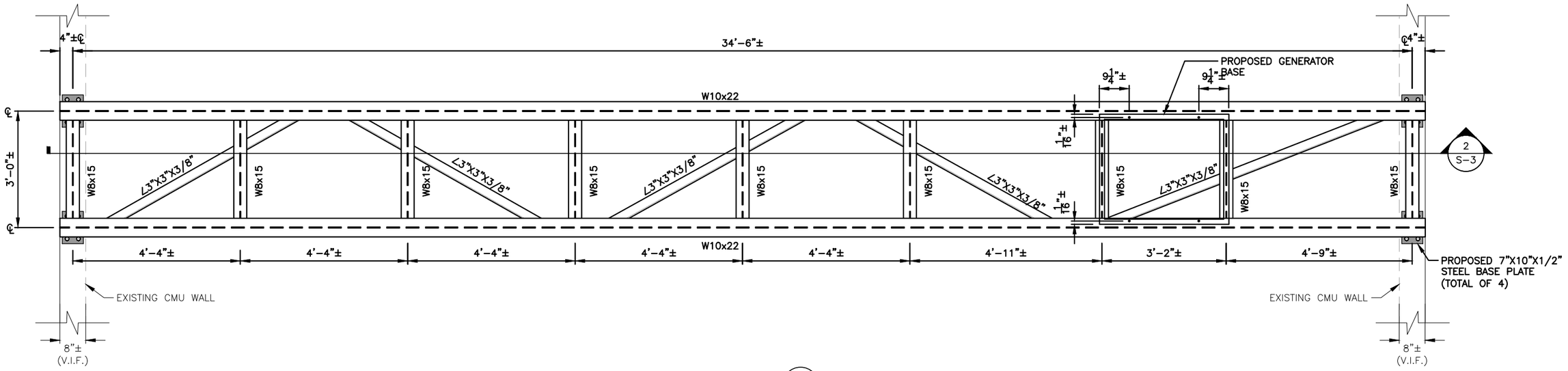
REFER TO STRUCTURAL ANALYSIS BY: KM CONSULTING ENGINEERS, INC, DATED: JUNE 14, 2021, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC. DATED: JUNE 17, 2021, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

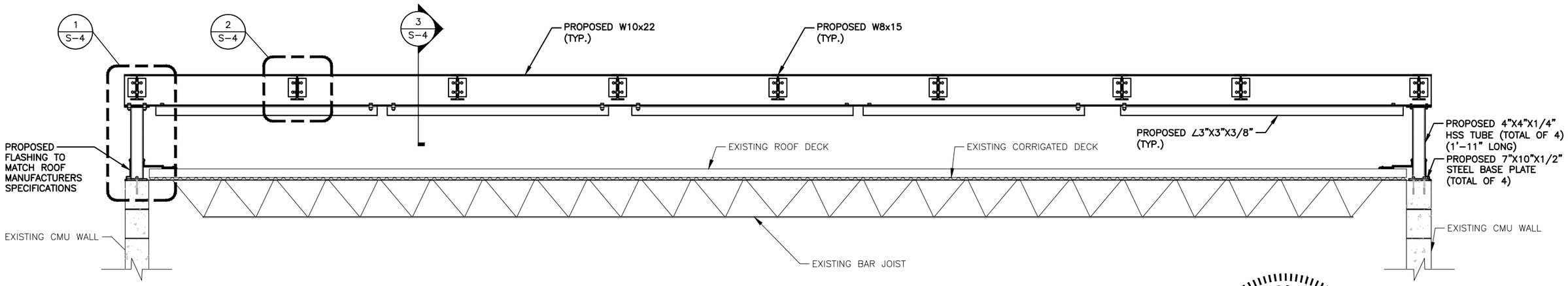
NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.



GENERATOR PLATFORM FRAMING PLAN (1 / S-3)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"



GENERATOR PLATFORM ELEVATION (2 / S-3)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

STRUCTURAL FRAMING PLAN & ELEVATION (NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1382	S-3	2

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: APRIL 20, 2021. (REV.1)

NOTE:

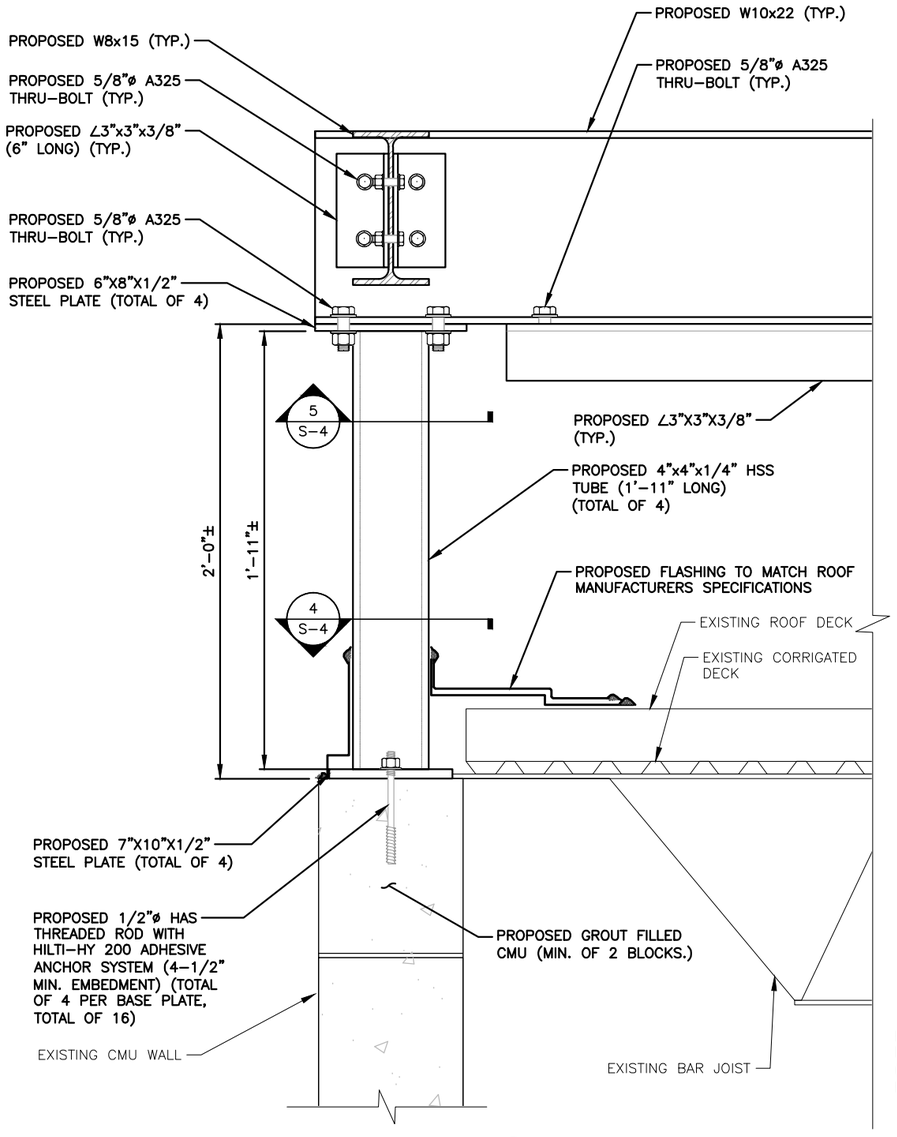
REFER TO STRUCTURAL ANALYSIS BY: KM CONSULTING ENGINEERS, INC, DATED: JUNE 14, 2021, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC. DATED: JUNE 17, 2021, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

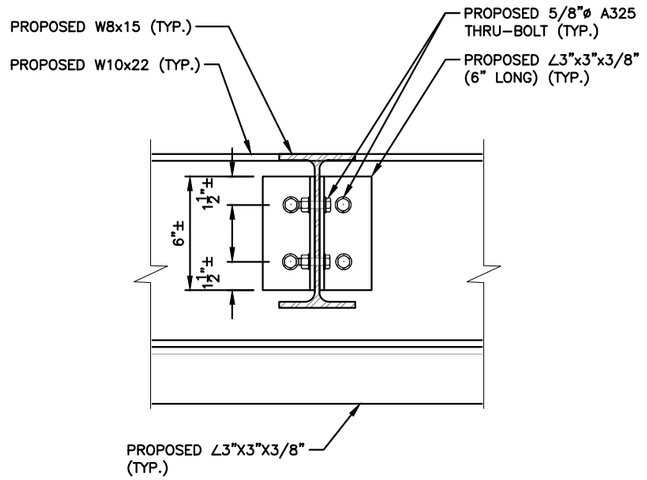


STUB-UP DETAIL

1 S-4

22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

0 0'-2" 0'-4" 0'-8" 1'-0"

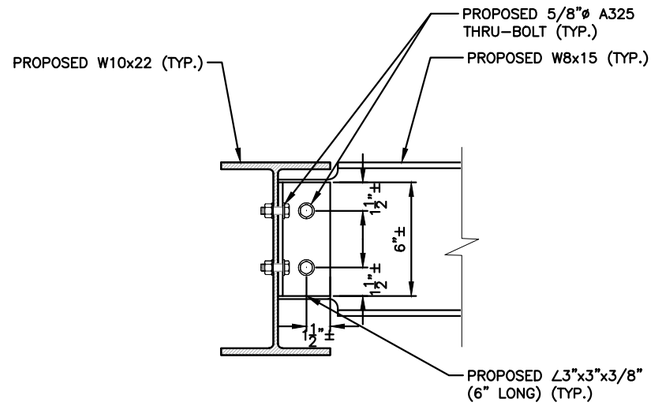


W8X15 TO W10X22 CONNECTION DETAIL

2 S-4

22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

0 0'-2" 0'-4" 0'-8" 1'-0"

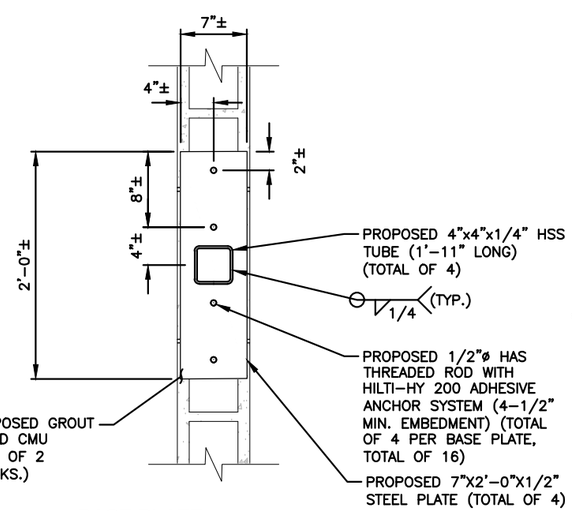


W8X15 TO W10X22 CONNECTION DETAIL

3 S-4

22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

0 0'-2" 0'-4" 0'-8" 1'-0"

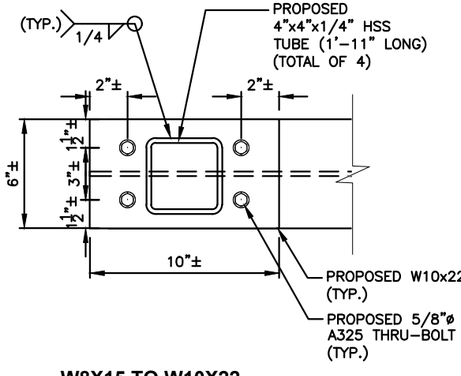


BASE PLATE CONNECTION DETAIL

4 S-4

22x34 SCALE: 1-1/2"=1'-0"
11x17 SCALE: 3/4"=1'-0"

0 0'-4" 0'-8" 1'-4" 2'-0"

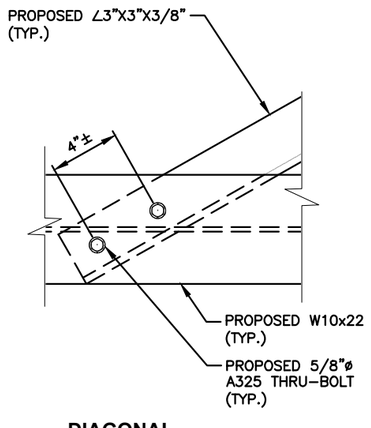


W8X15 TO W10X22 CONNECTION DETAIL

5 S-4

22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

0 0'-2" 0'-4" 0'-8" 1'-0"



DIAGONAL CONNECTION DETAIL

6 S-4

22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

0 0'-2" 0'-4" 0'-8" 1'-0"

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

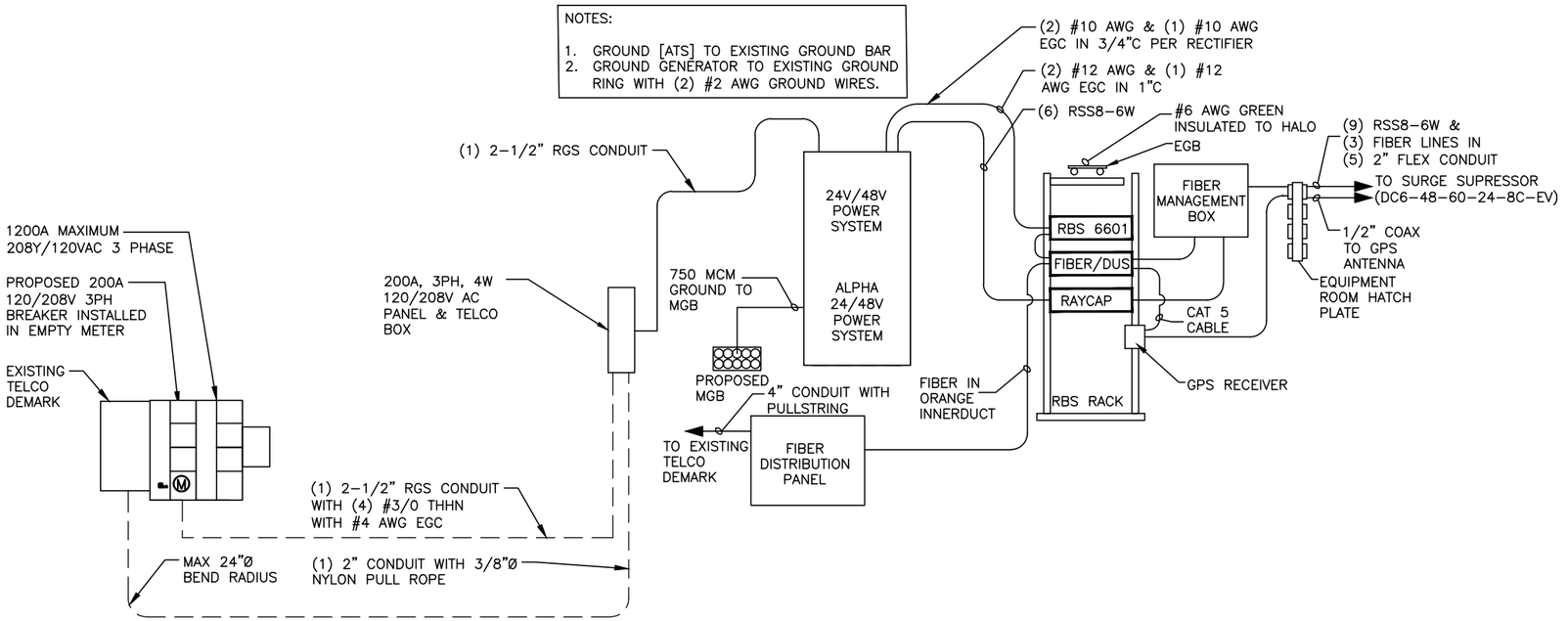
SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

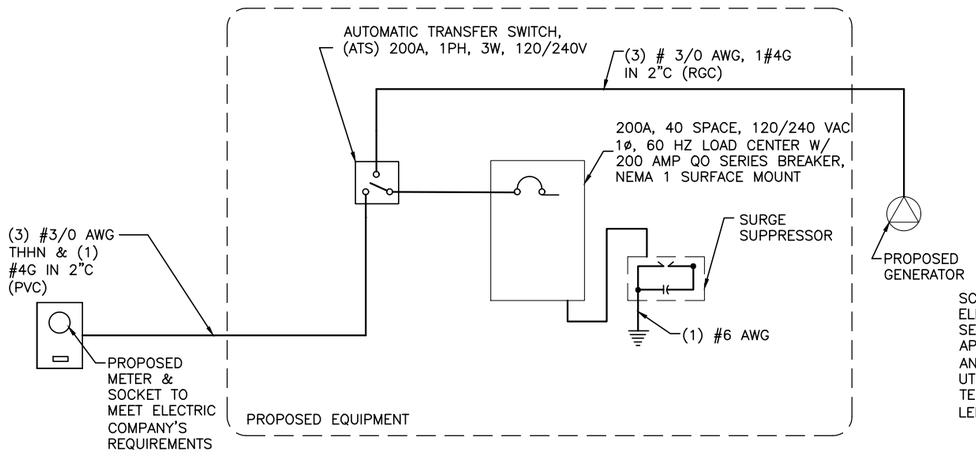
AT&T

STRUCTURAL DETAILS
(NSB)

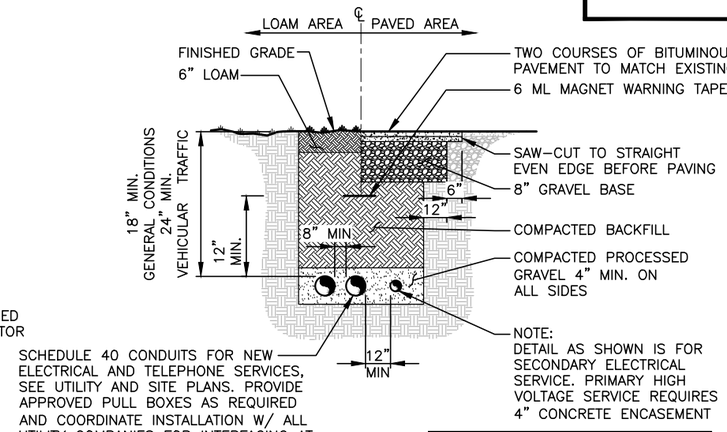
SITE NUMBER	DRAWING NUMBER	REV
CT1382	S-4	2



GENERATOR WIRING DETAIL (1 / E-1)
SCALE: N.T.S



TYPICAL ONE-LINE DIAGRAM (2 / E-1)
SCALE: N.T.S



BURIED CONDUIT DETAIL (3 / E-1)
SCALE: N.T.S

ELECTRICAL LEGEND & ABBREVIATIONS

	NEW PANEL BOARD, SURFACE MOUNTED
	EXISTING PANEL BOARD, SURFACE MOUNTED
T	DRY TYPE TRANSFORMER
M	METER
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.
FD	FUSIBLE DISCONNECT SWITCH, MOUNTED 54"A.F.F.
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR WITH BUILT-IN FUSES, SURFACE MOUNTED
	DUPLEX OUTLET, SURFACE MOUNTED, 20 AMPS, 125 VOLTS, SINGLE PHASE
J	JUNCTION BOX, SURFACE MOUNTED 18" A.F.F.
	EXPOSED WIRING
	HOME RUNS, MINIMUM 2#10 + 1#8G IN 3/4" CONDUIT U.O.N.
A.F.F.	ABOVE FINISHED FLOOR
U.O.N.	UNLESS OTHERWISE NOTED
WP	WEATHERPROOF
GFI	GROUND FAULT INTERRUPTER
A	AMPERE
V	VOLT
KWH	KILOWATT - HOUR
C	CONDUIT
PVC	POLYVINYL CHLORIDE
HZ	HERTZ
PH, ø	PHASE
W	WATTS
NEC	NATIONAL ELECTRIC CODE
PPC	POWER PROTECTION CABINET
UL	UNDERWRITER LABORATORIES
PTS	POWER TRANSFER SWITCH
QO	QUICK OPEN
GRC	GALVANIZED RIGID CONDUIT
G	GROUND
	GROUND
MGB	MASTER GROUND BAR — ○ MECHANICAL CONNECTION ● CADWELD CONNECTION
EGB	EQUIPMENT GROUND BAR
G	GROUND COPPER WIRE, SIZE AS NOTED
	EXPOSED WIRING
	COAXIAL CABLE
	5/8"x8" COPPER CLAD STAINLESS STEEL GROUND ROD
	● EXOTHERMIC (CAD WELD) OR ○ MECHANICAL (COMPRESSION TYPE) CONNECTION
PF	POWER FACTOR

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THININSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY PROJECT OWNER.
13. GROUNDING SHALL COMPLY WITH NEC ART. 250.
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
15. USE #6 AWG COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 AWG SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
17. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 AWG WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
21. BOND ANTENNA EGB'S AND MGB TO GROUND RING.
22. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MAXIMUM RESISTANCE REQUIRED.
23. CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE-TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.
24. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL, MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50.

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

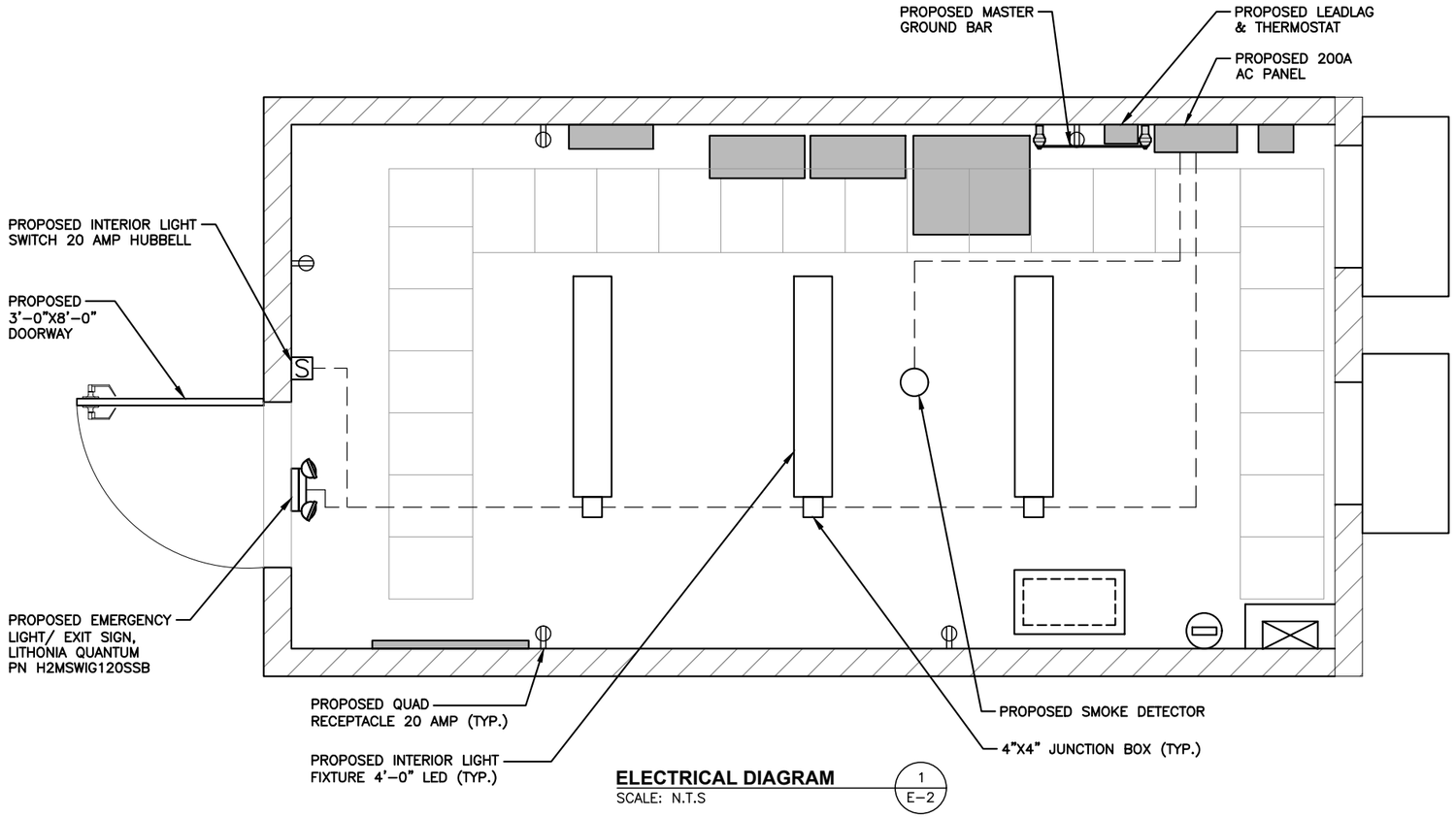
NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

AT&T

ELECTRICAL NOTES & ONE-LINE DIAGRAM (NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1382	E-1	2



ELECTRICAL DIAGRAM 1/E-2
SCALE: N.T.S

ELECTRICAL LEGEND & ABBREVIATIONS

	NEW PANEL BOARD, SURFACE MOUNTED
	EXISTING PANEL BOARD, SURFACE MOUNTED
T	DRY TYPE TRANSFORMER
M	METER
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.
F	FUSIBLE DISCONNECT SWITCH, MOUNTED 54"A.F.F.
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR WITH BUILT-IN FUSES, SURFACE MOUNTED
	DUPLEX OUTLET, SURFACE MOUNTED, 20 AMPS, 125 VOLTS, SINGLE PHASE
J	JUNCTION BOX, SURFACE MOUNTED 18" A.F.F.
	EXPOSED WIRING
	HOME RUNS, MINIMUM 2#10 + 1#8G IN 3/4" CONDUIT U.O.N.
A.F.F.	ABOVE FINISHED FLOOR
U.O.N.	UNLESS OTHERWISE NOTED
WP	WEATHERPROOF
GFI	GROUND FAULT INTERRUPTER
A	AMPERE
V	VOLT
KWH	KILOWATT – HOUR
C	CONDUIT
PVC	POLYVINYL CHLORIDE
HZ	HERTZ
PH, ø	PHASE
W	WATTS
NEC	NATIONAL ELECTRIC CODE
PPC	POWER PROTECTION CABINET
UL	UNDERWRITER LABORATORIES
PTS	POWER TRANSFER SWITCH
QO	QUICK OPEN
GRC	GALVANIZED RIGID CONDUIT
G	GROUND
	GROUND
MGB	MASTER GROUND BAR — ○ MECHANICAL CONNECTION ● CADWELD CONNECTION
EGB	EQUIPMENT GROUND BAR
G	GROUND COPPER WIRE, SIZE AS NOTED
	EXPOSED WIRING
	COAXIAL CABLE
	5/8"x8" COPPER CLAD STAINLESS STEEL GROUND ROD
	● EXOTHERMIC (CAD WELD) OR ○ MECHANICAL (COMPRESSION TYPE) CONNECTION
PF	POWER FACTOR

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THININSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY PROJECT OWNER.
13. GROUNDING SHALL COMPLY WITH NEC ART. 250.
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
15. USE #6 AWG COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 AWG SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
17. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 AWG WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
21. BOND ANTENNA EGB'S AND MGB TO GROUND RING.
22. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MAXIMUM RESISTANCE REQUIRED.
23. CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE-TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.
24. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL, MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50.

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

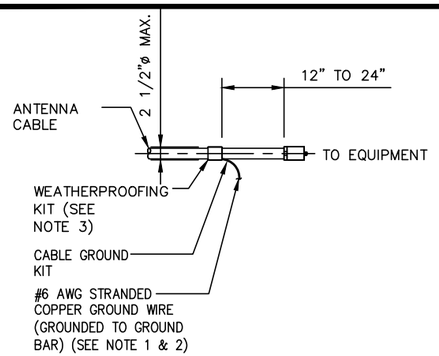
SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

ELECTRICAL DIAGRAM
(NSB)

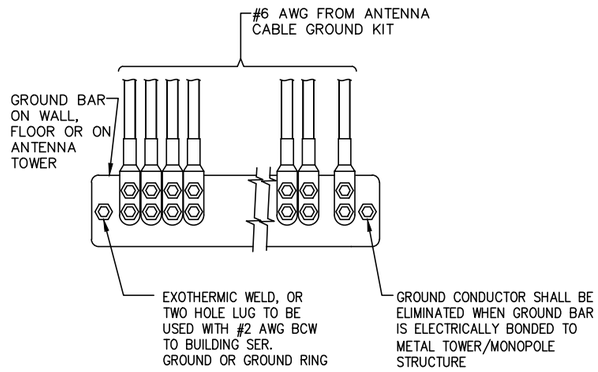
SITE NUMBER	DRAWING NUMBER	REV
CT1382	E-2	2



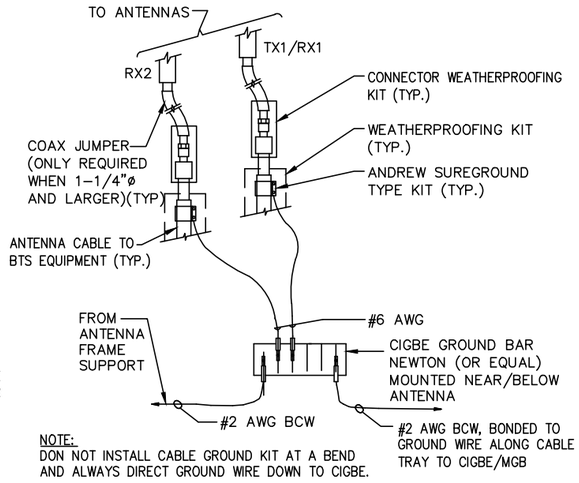
NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED.

CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE (1 / G-1)
SCALE: N.T.S



INSTALLATION OF GROUND WIRE TO GROUND BAR (2 / G-1)
SCALE: N.T.S



NOTE:
DON NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

INSTALLATION OF GROUNDING BAR TOWER (3 / G-1)
SCALE: N.T.S

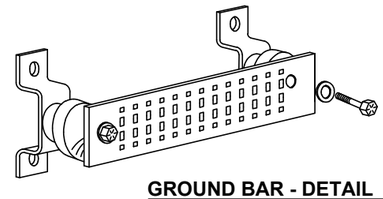
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

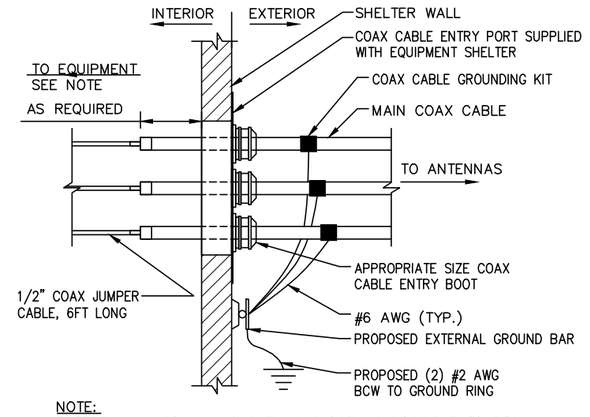
CABLE ENTRY PORTS (HATCH PLATES) (#2 AWG)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2 AWG)
+24V POWER SUPPLY RETURN BAR (#2 AWG)
-48V POWER SUPPLY RETURN BAR (#2 AWG)
RECTIFIER FRAMES.

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL (4 / G-1)
SCALE: N.T.S



NOTE:
EXTEND MAIN COAXIAL CABLE AS CLOSE AS POSSIBLE TO BTS EQUIPMENT. MAX LENGTH OF BTS JUMPER IS 6 FT.

INSTALLATION OF GROUND WIRE TO GROUND BAR (5 / G-1)
SCALE: N.T.S

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

12 INDUSTRIAL WAY
SALEM, NH 03079

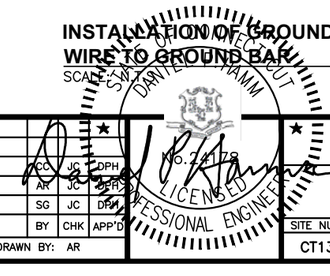
SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

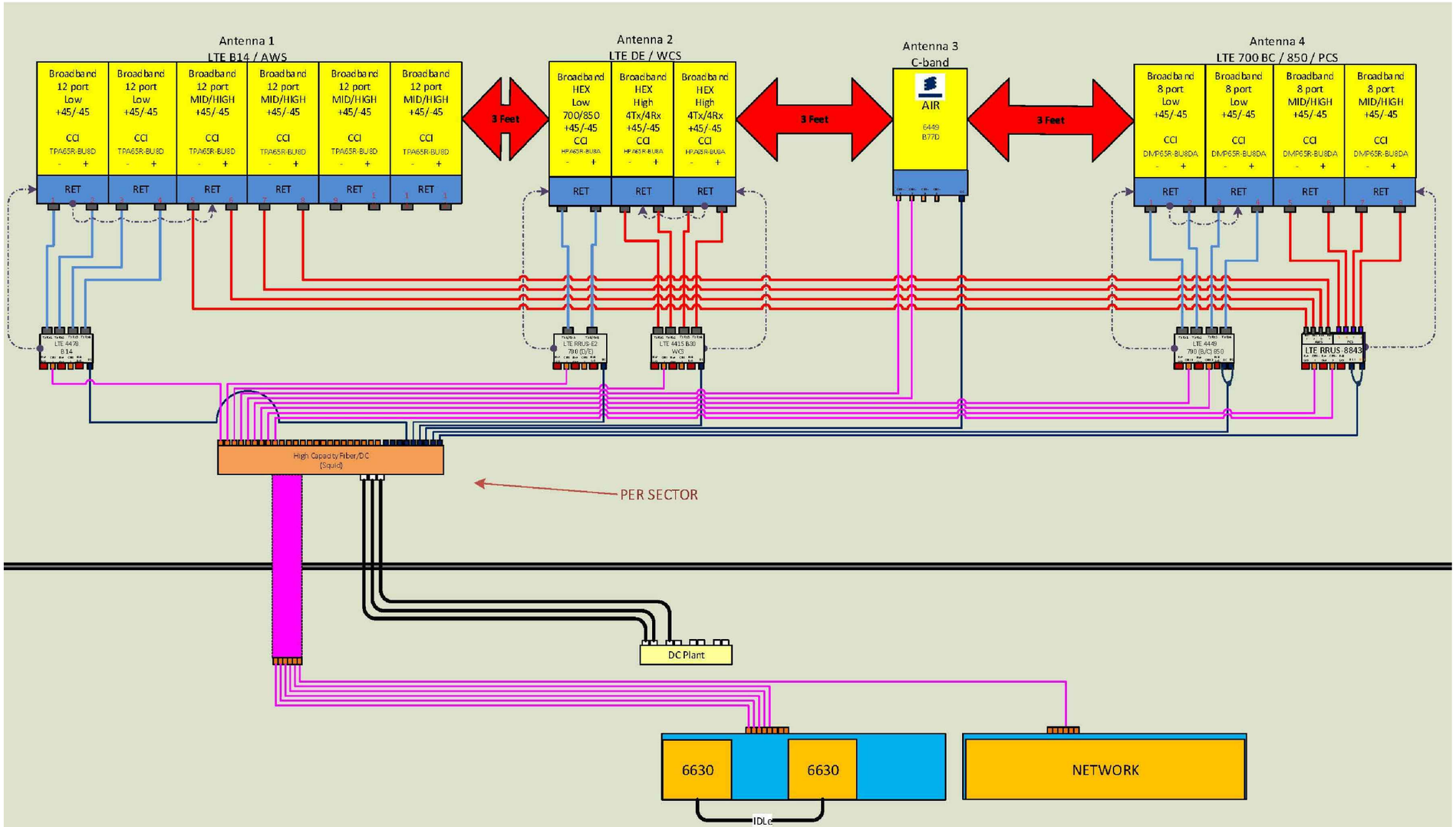
SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR



AT&T

GROUNDING DETAILS
(NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1382	G-1	2



RF PLUMBING DIAGRAM (1 / RF–1)
SCALE: N.T.S

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1382
SITE NAME: BRIDGEPORT PINE STREET

623 PINE STREET
BRIDGEPORT, CT 06605
FAIRFIELD COUNTY

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/27/21	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	07/29/21	ISSUED FOR REVIEW	AR	JC	DPH
0	07/07/21	ISSUED FOR REVIEW	SG	JC	DPH

SCALE: AS SHOWN | DESIGNED BY: JC | DRAWN BY: AR

AT&T

RF PLUMBING DIAGRAM
(NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1382	RF–1	2

ATTACHMENT 7

RF Emissions Report

C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
603-644-2800
support@csquaredsystems.com

Calculated and Measured Radio Frequency Emissions

CT1382

Bridgeport Pine Street

623 Pine Street, Bridgeport, CT

October 12, 2021

Table of Contents

List of Tables

List of Figures

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed installation of AT&T antenna arrays to be mounted on an extension of the existing lattice tower located at 623 Pine Street in Bridgeport, CT. The coordinates of the tower are 41-9-56.8 N, 73-13-0.10 W

AT&T is proposing the following:

1) Install twelve (12) multi-band antennas (four per sector) to support its commercial LTE network and the FirstNet National Public Safety Broadband Network ("NPSBN").
2) Install twelve (12) Remote Radio Units (four per sector).

This report considers the planned antenna configuration for AT&T[1] to derive the overall resulting % MPE of its proposed installation based on measurements of existing RF exposure levels.

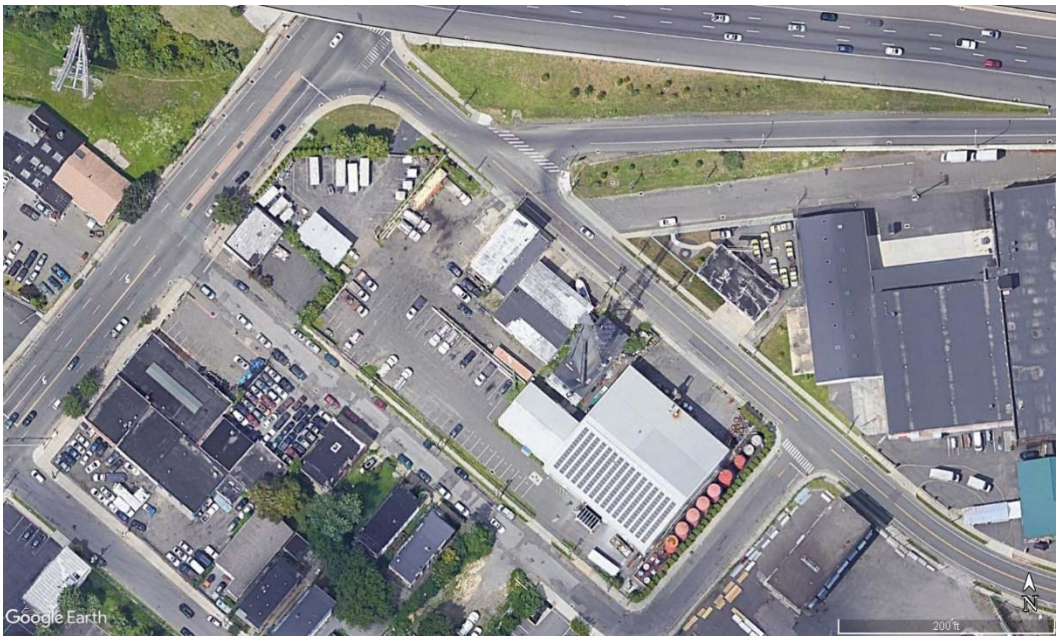


Figure 1: View of CT1382

Site Address	623 Pine Street, Bridgeport, CT
Latitude	41° 09' 56.8" N
Longitude	73° 13' 00.10" W
Site Elevation AMSL	15'
AT&T Antenna Centerline AGL	138'
Cellular License Information	KNKA256
PCS License Information	KNLG502, WQGG892
LTE License Information	WPWU948, WPWV368, WQJU424, WQJU459, WPWV366
AWS License Information	WQVN685
WCS License Information	KNLB297, KNLB204, KNLB312, WPQL636
Name of Individual Conducting Survey	Martin Lavin
Date and Time of Survey	9/24/2021; ~ 5:30 – 7:00 pm

Table 1: Site Specific Data

[1] As referenced to AT&T's Radio Frequency Design Sheet updated 06/11/2021.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

3. Measurement Procedure

Frequencies from 300 KHz to 50 GHz were measured using the Narda Probe EA 5091, E-Field, shaped, FCC probe in conjunction with the NBM550 survey meter. The EA 5091 probe is "shaped" such that in a mixed signal environment (i.e.: more than one frequency band is used in a particular location), it accurately measures the percent of MPE.

From FCC OET Bulletin No. 65 - Edition 97-01 – "A useful characteristic of broadband probes used in multiple-frequency RF environments is a frequency-dependent response that corresponds to the variation in MPE limits with frequency. Broadband probes having such a "shaped" response permit direct assessment of compliance at sites where RF fields result from antennas transmitting over a wide range of frequencies. Such probes can express the composite RF field as a percentage of the applicable MPEs".

Probe Description - As suggested in FCC OET Bulletin No. 65 - Edition 97-01, the response of the measurement instrument should be essentially isotropic, (i.e., independent of orientation or rotation angle of the probe). For this reason, the Narda EA 5091 probe was used for these measurements.

Sampling Description - At each measurement location, a spatially averaged measurement is collected over the height of an average human body. The NBM550 survey meter performs a time average measurement while the user slowly moves the probe over a distance range of 20 cm to 200 cm (about 6 feet) above ground level. The results recorded at each measurement location include average values over the spatial distance.

Instrumentation Information - A summary of specifications for the equipment used is provided in the table below.

Manufacturer	Narda Microwave			
Probe	EA 5091, Serial# 01135			
Calibration Date	January 2021			
Calibration Interval	24 Months			
Meter	NBM550, Serial# B-1149			
Calibration Date	January 2021			
Calibration Interval	24 Months			
Probe Specifications	**Frequency Range**	**Field Measured**	**Standard**	**Measurement Range**
	300 KHz-50 GHz	Electric Field	U.S. FCC 1997 Occupational/Controlled	0.5 – 600 % of Standard

Table 2: Instrumentation Information

Instrument Measurement Uncertainty - The total measurement uncertainty of the NARDA measurement probe and meter is no greater than ±2 dB. The factors which contribute to this include the probe's frequency response deviation, calibration uncertainty, ellipse ratio, and isotropic response. Every effort is taken to reduce the overall uncertainty during measurement collection including pointing the probe directly at the likely highest source of emissions.

4. RF Exposure Calculation Methods

The power density calculation results were generated using the following formula as outlined in FCC bulletin OET 65, and Connecticut Siting Council recommendations:

$$\text{Power Density} = \left(\frac{EIRP}{\pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna

V = Vertical Distance from bottom of antenna

Off Beam Loss is determined by the selected antenna patterns

These calculations assume that the antennas are operating at 100 percent capacity and power, and that all antenna channels are transmitting simultaneously. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not consider actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final installations.

5. Calculation Results

Table 1 below outlines the cumulative power density information for the proposed AT&T equipment at the site. The proposed antennas are directional in nature; therefore, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tower. Please refer to Attachment C for the vertical pattern of the proposed AT&T antennas. The calculated results for AT&T in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antennas.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm^2)	Limit	% MPE
AT&T	138	722	1	3540	0.0073	0.5133	1.52%
AT&T	138	739	1	3155	0.0065	0.5133	1.32%
AT&T	138	763	1	1730	0.0036	0.5133	0.70%
AT&T	138	850	1	3155	0.0065	0.5667	1.15%
AT&T	138	1900	1	5876	0.0121	1.0000	1.21%
AT&T	138	2100	1	6443	0.0133	1.0000	1.33%
AT&T	138	2300	1	6153	0.0127	1.0000	1.27%
AT&T	138	3500	1	79433	0.1640	1.0000	16.40%
						Total	**24.91%**

Table 3: Calculated Results[2] [3]

[2] Please note that % MPE values listed are rounded to two decimal points and the total % MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not identically match the total value reflected in the table.

[3] Antenna height listed for AT&T is in reference to the Hudson Design Group, LLC. Lease Exhibit dated June 23, 2021 (Rev. 3).

6. Survey Results

Results and a description of each survey location are detailed in the table and photos below. Measurements were performed on September 24, 2021, between the hours of 5:30 PM and 7:00 PM. The calculated % MPE contribution from the proposed AT&T installation at each survey point are shown and then added to the existing, measured % MPE values in the "Composite % MPE" column. All % MPE values are in reference to the FCC Uncontrolled/General Population exposure limit.

The current %MPE value given in the CSC MPE database for the existing installation is 79.55%. Combining this existing calculation with the calculated %MPE of the proposed AT&T installation would yield a %MPE slightly above the Uncontrolled/General Population limit. Given that the actual %MPE at the tower is very likely to be much lower than the worst case calculations, the survey was undertaken to determine the actual levels.

Measurement Point	Latitude	Longitude	Dist. From Tower	Measured % MPE
1	41.167928	-73.216879	795	<1.00%
2	41.165879	-73.217754	303	<1.00%
3	41.165043	-73.216460	267	<1.00%
4	41.165459	-73.215930	232	<1.00%
5	41.165031	-73.214883	558	<1.00%
6	41.165495	-73.212937	1032	<1.00%
7	41.163282	-73.214689	1056	1.04%
8	41.163589	-73.218717	963	1.12%
9	41.164110	-73.216460	585	1.22%
10	41.164771	-73.217750	452	1.35%
11	41.165356	-73.221692	1398	1.40%
12	41.167552	-73.213042	1178	1.43%
13	41.169004	-73.213249	1503	1.39%
14	41.168712	-73.219308	1306	1.44%

Table 4: Measured Results

Figure 2: Aerial View of Tower & Measurement Locations

7. Survey Locations

The photos below detail the location of each measurement.

Figure 3: Measurement Location 1 (McDonald's, State Street Extension)

‘

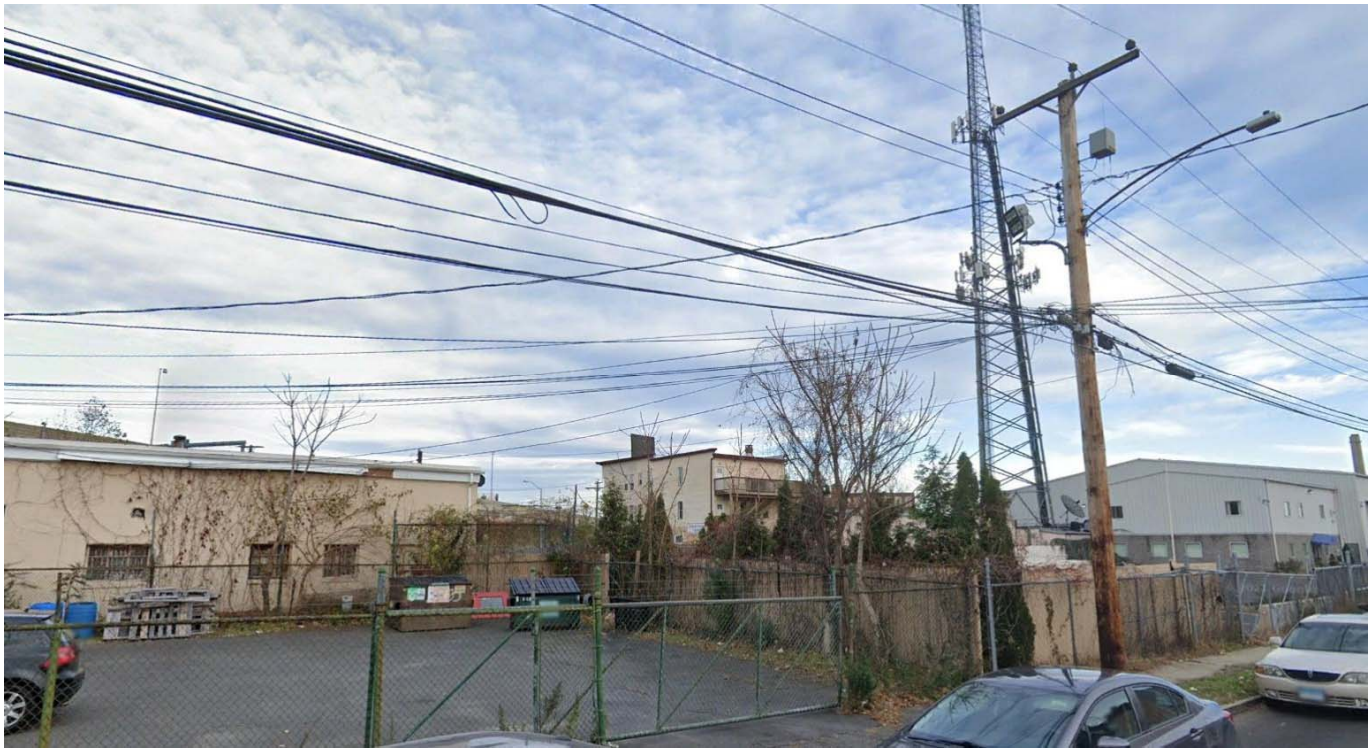


Figure 4: Measurement Location 2 (Andover Street near Fairfield)

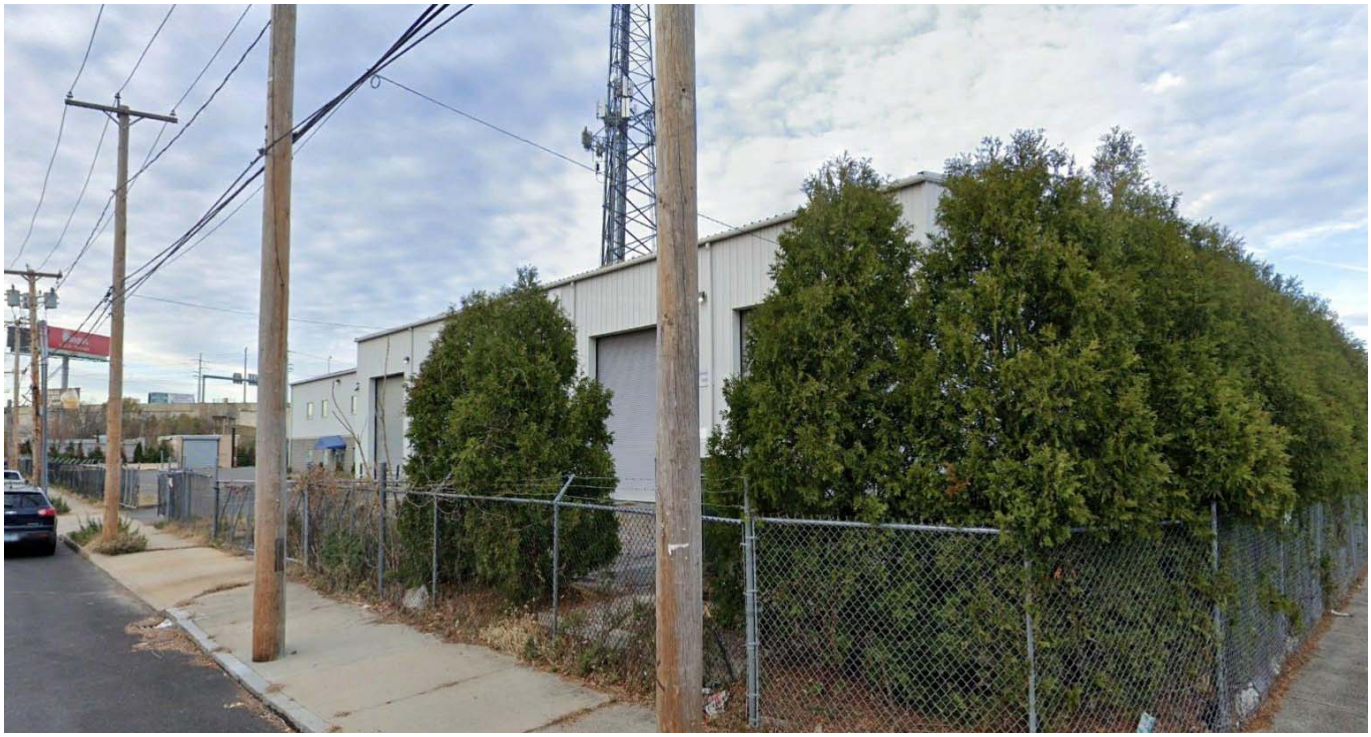


Figure 5: Measurement Location 3 (Int of Andover and Peerless)

Figure 6: Measurement Location 4 (Intersection of Peerless and Pine)

Figure 7: Measurement Location 5 (526 Pine Street)

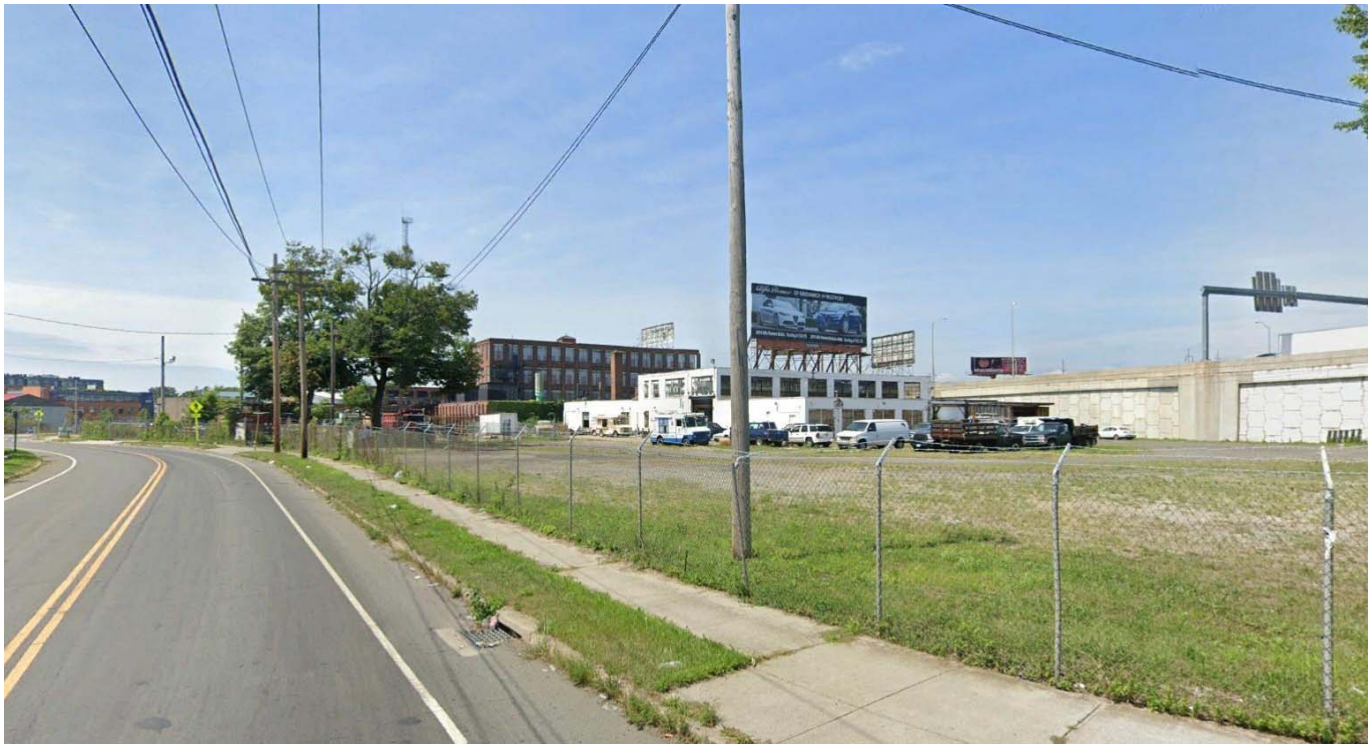


Figure 8: Measurement Location 6 (Pine Street at Bostwick)

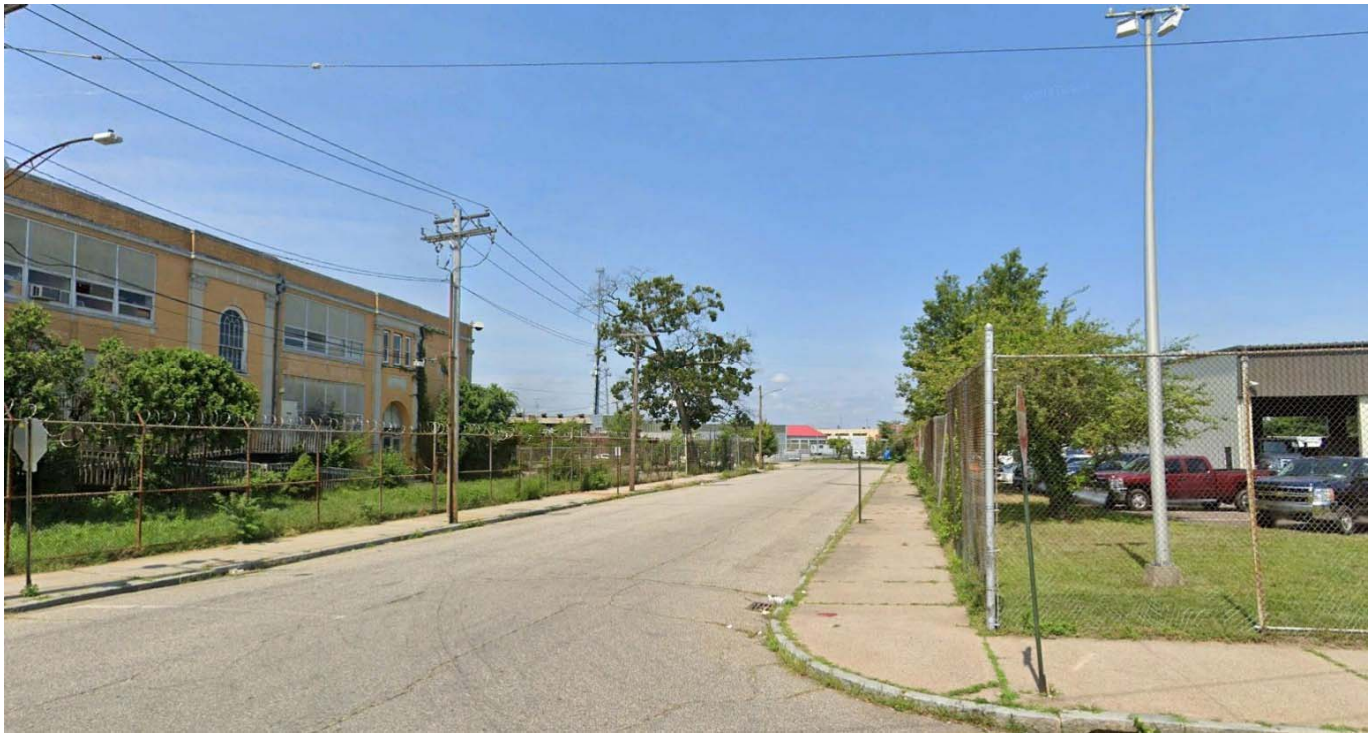


Figure 9: Measurement Location 7 (Wordin Avenue at Bird Street)

Figure 10: Measurement Location 8 (Wordin Avenue at Ocean Terrace)

Figure 11: Measurement Location 9 (Corner of Spruce, Bird and Albion)

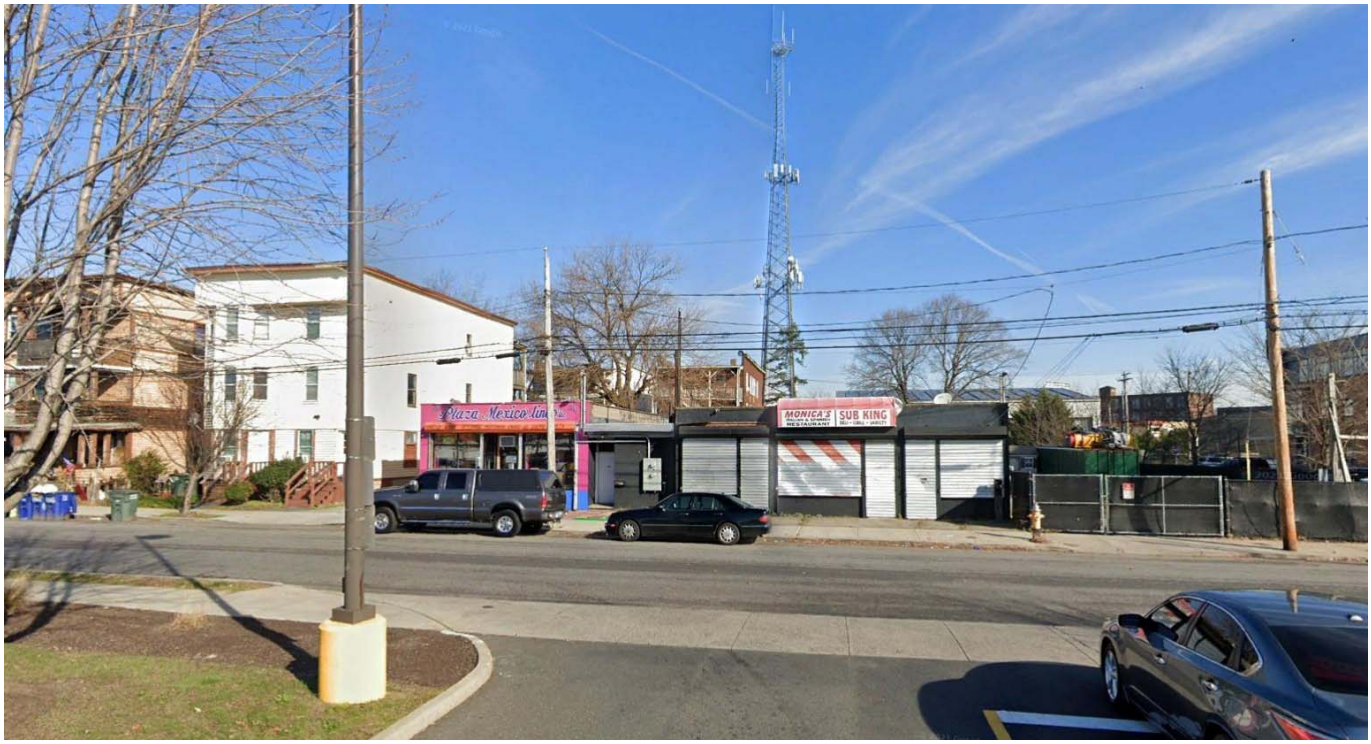


Figure 12: Measurement Location 10 (Albion at Stop&Shop entrance)

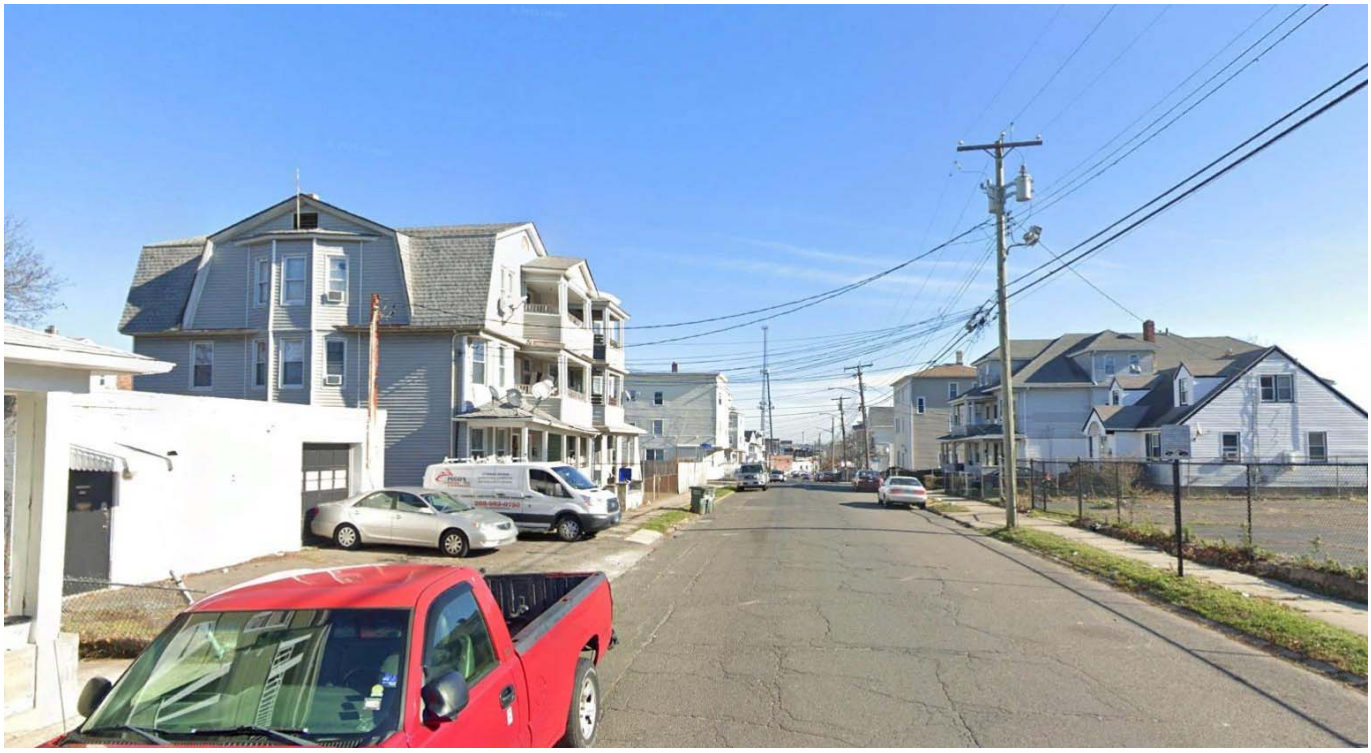


Figure 13: Measurement Location 11 (Orland and Bryant Streets)

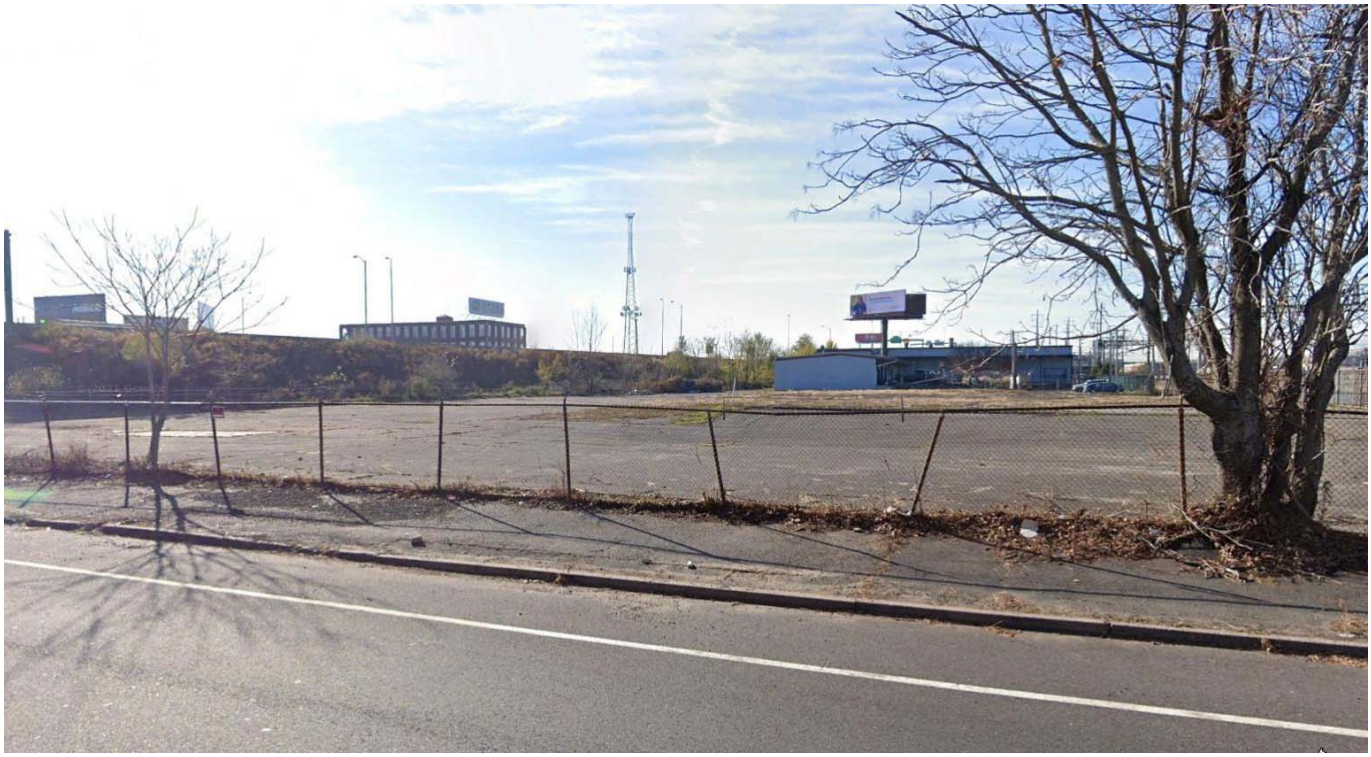


Figure 14: Measurement Location 12 (Bostwick Avenue at Railroad Avenue)

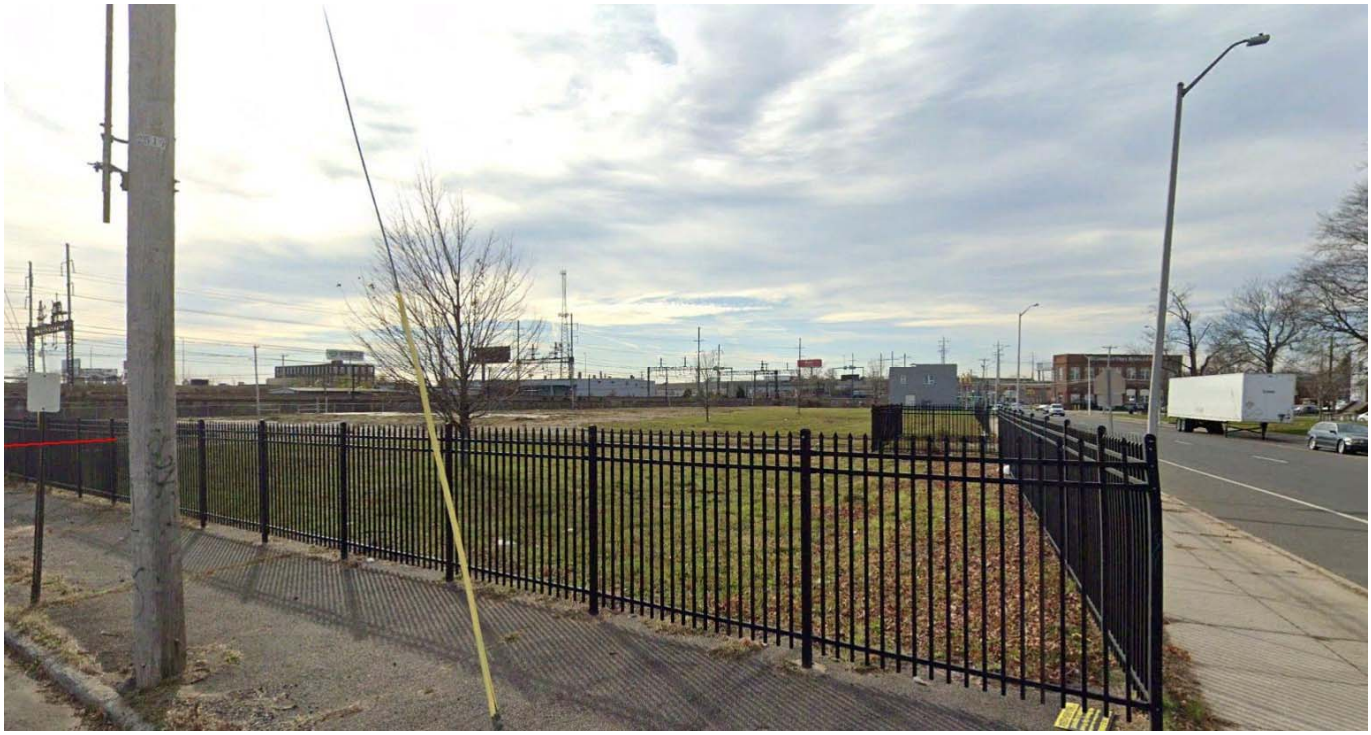


Figure 15: Measurement Location 13 (Bostwick at State)

Figure 16: Measurement Location 14 (Edgewood Street)

8. Conclusion

A number of locations in the vicinity of 623 Pine Street, Bridgeport, CT, were surveyed to determine actual %MPE levels and found to be well within the mandated General Population/Uncontrolled limits for Maximum Permissible Exposure, as delineated in the Federal Communications Commission's Radio Frequency exposure rules published in 47 CFR 1.1307(b)(1)-(b)(3).

The maximum measured power density of all surveyed points, based on the 1997 FCC standard for exposure to the general population, was 1.44% MPE. This measurement was taken at Point 14, approximately 1306' northwest of the tower site.

The maximum calculated power density due to AT&T's proposed installation is 24.91%. Based on these measurements and calculations, the maximum combined % MPE is 26.35%. Given that the maximum measured %MPE for the current installation was approximately 1/50th of the calculated worst case, it is very likely that %MPE from the AT&T installation will be much lower than the calculated value of 24.91% and therefore, the overall % MPE will be much less than 26.35%.

The above analysis verifies that with AT&T's planned installation, the facility will not approach power density levels that would be considered harmful on the ground level, as outlined by the FCC in the OET Bulletin 65 Ed. 97-01.

9. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in FCC OET Bulletin 65 Edition 97-01, ANSI/IEEE Std. C95.1, and ANSI/IEEE Std. C95.3.

October 12, 2021

Reviewed/Approved By: Martin J. Lavin
Senior RF Engineer
C Squared Systems, LLC

Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2005, IEEE Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2002 (R2008), IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to Such Fields, 100 kHz-300 GHz IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure [4]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure[5]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 5: FCC Limits for Maximum Permissible Exposure (MPE)

[4] Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure

[5] General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure

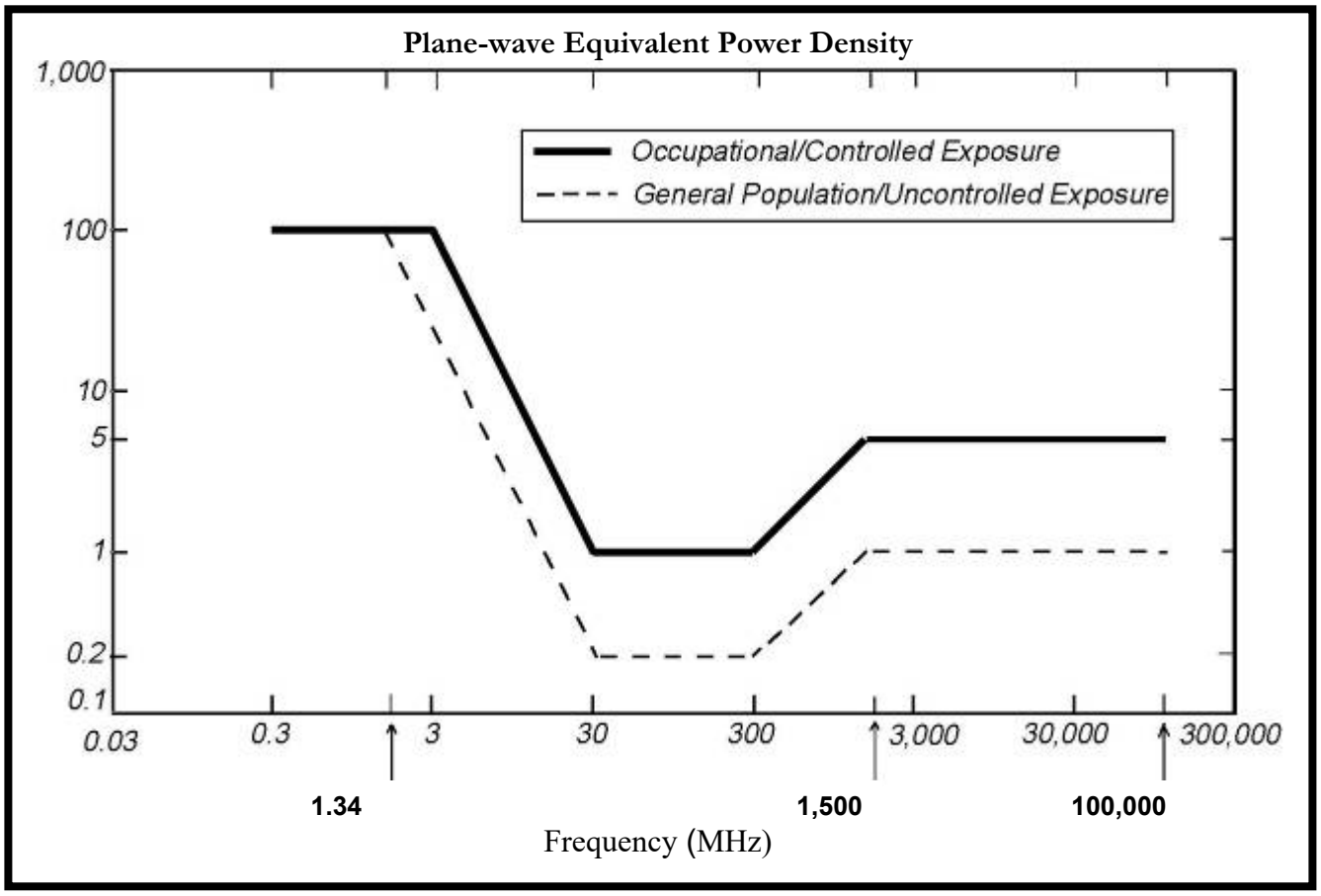
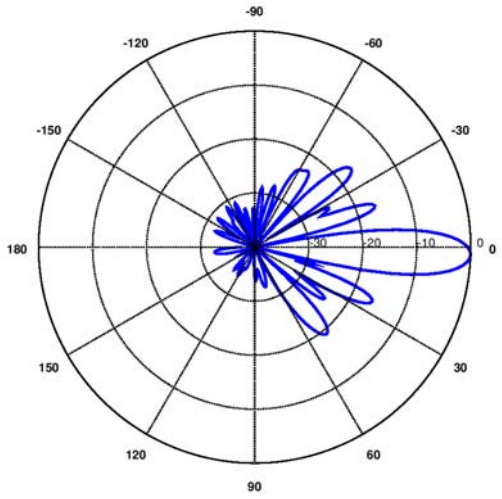
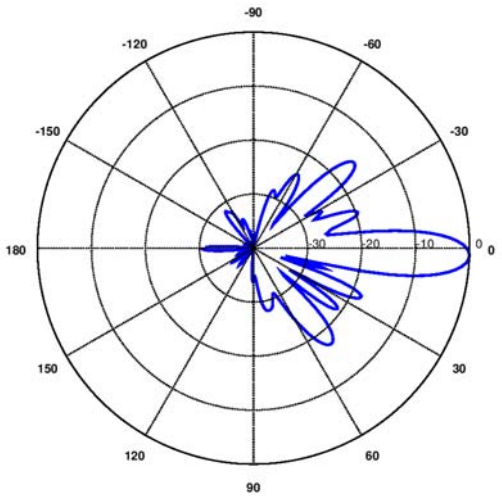
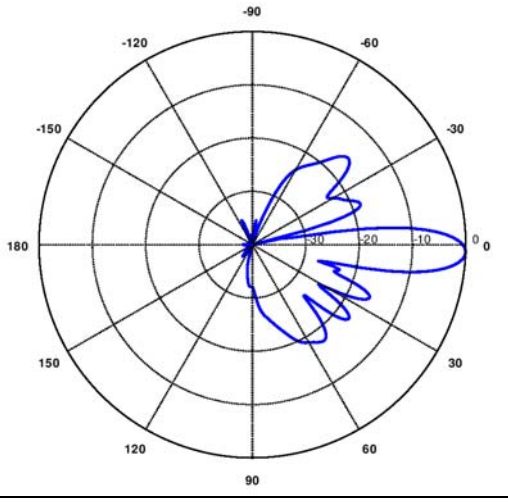


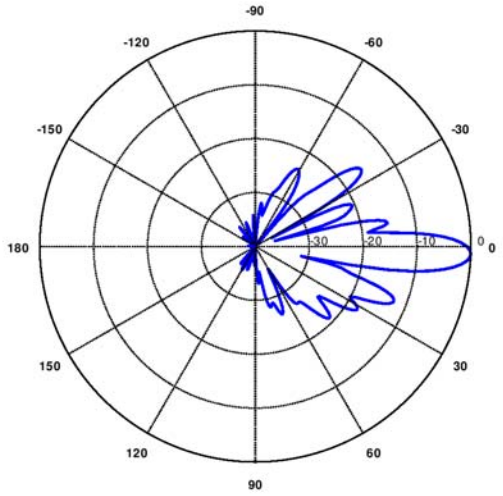
Figure 17: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Antenna Data Sheets and Electrical Patterns

739 MHz *Manufacturer:* CCI Products *Model #:* DMP65R-BU8D *Frequency Band:* 698-798 MHz *Gain:* 12.95 dBd *Vertical Beamwidth:* 9.5° *Horizontal Beamwidth:* 75° *Polarization:* Dual Linear 45° *Size L x W x D:* 96.0” x 20.7” x 7.7”	
763 MHz *Manufacturer:* CCI Products *Model #:* TPA65R-BU8D *Frequency Band:* 698 - 806MHz *Gain:* 13.45 dBd *Vertical Beamwidth:* 9.5° *Horizontal Beamwidth:* 74° *Polarization:* Dual Linear 45° *Size L x W x D:* 96.0” x 20.7” x 7.7”	
722 MHz *Manufacturer:* CCI Products *Model #:* HPA65R-BU8D *Frequency Band:* 698 - 806MHz *Gain:* 13.9 dBd *Vertical Beamwidth:* 9.7° *Horizontal Beamwidth:* 67° *Polarization:* Dual Linear 45° *Size L x W x D:* 96.0” x 11.7” x 7.6”	

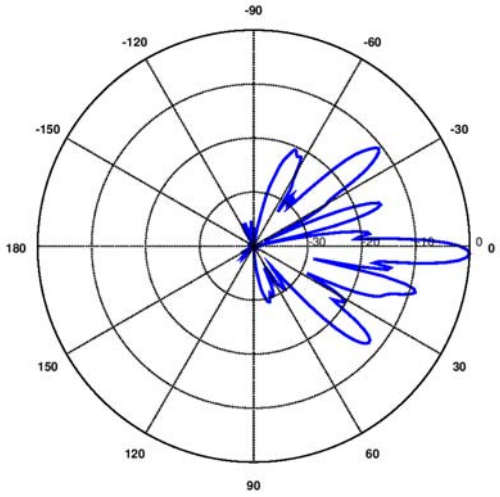
885 MHz

Manufacturer:	CCI Products
Model #:	DMP65R-BU8D
Frequency Band:	824 - 896 MHz
Gain:	13.85 dBd
Vertical Beamwidth:	8.0°
Horizontal Beamwidth:	64°
Polarization:	Dual Linear 45°
Size L x W x D:	96.0” x 20.7” x 7.7”



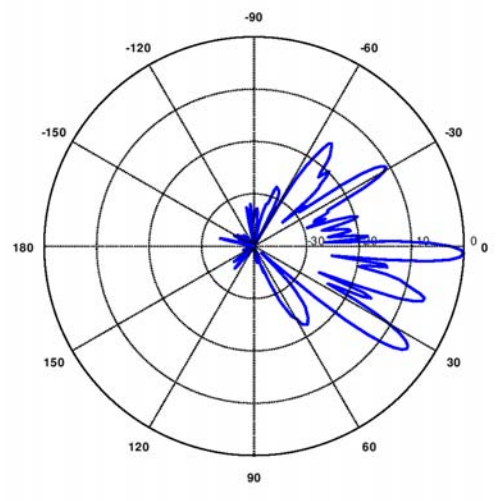
1900 MHz

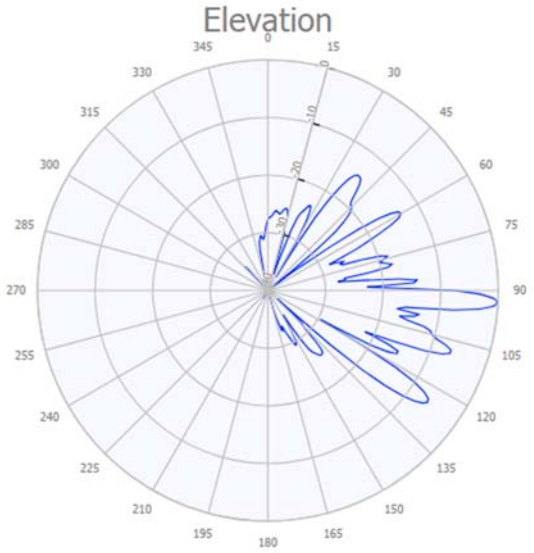
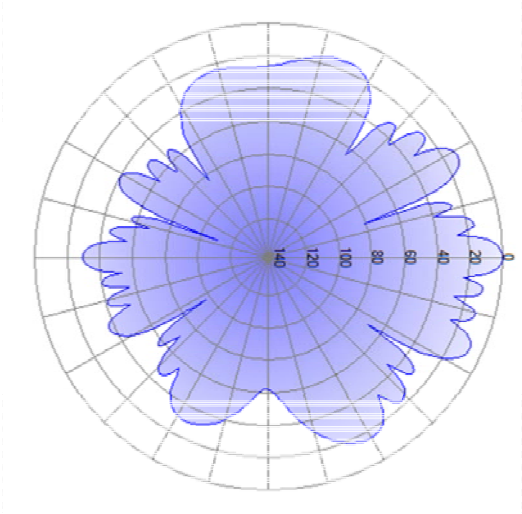
Manufacturer:	CCI Products
Model #:	DMP65R-BU8D
Frequency Band:	1850-1990 MHz
Gain:	15.65 dBd
Vertical Beamwidth:	5.1°
Horizontal Beamwidth:	68°
Polarization:	Dual Linear 45°
Size L x W x D:	96.0” x 20.7” x 7.7”



2100 MHz

Manufacturer:	CCI Products
Model #:	TPA65R-BU8D
Frequency Band:	1920-2180 MHz
Gain:	16.15 dBd
Vertical Beamwidth:	4.7°
Horizontal Beamwidth:	67°
Polarization:	Dual Linear 45°
Size L x W x D:	96.0” x 20.7” x 7.7”



2300 MHz *Manufacturer:* CCI Products *Model #:* HPA65R-BU8D *Frequency Band:* 2300 - 2400 MHz *Gain:* 15.1 dBd *Vertical Beamwidth:* 4.0° *Horizontal Beamwidth:* 60 *Polarization:* Dual Linear 45° *Size L x W x D:* 96.0” x 11.7” x 7.6”	
3500 MHz *Manufacturer:* Ericsson *Model #:* AIR 6449 *Frequency Band:* C-Band *Gain:* 25.65 dBi *Vertical Beamwidth:* 6.0° *Horizontal Beamwidth:* 11° *Polarization:* ±45° *Dimensions (L x W x D):* 33.1” x 20.6” x 8.3”	

ATTACHMENT 8

Notice to Municipality & Abutters

CERTIFICATE OF SERVICE

I hereby certify that on the 19th day of November, 2021, a copy of the following letter and notice of the intended filing of a Sub-Petition for a declaratory ruling filed with the Connecticut Siting Council was sent by certified mail, return receipt requested, to the attached list of Town officials:

Dated: November 19, 2021

Brown Rudnick LLP
Joseph A. Giammarco

City of Bridgeport

JOSEPH P. GANIM, MAYOR MARGARET E. MORTON GOVERNMENT CENTER 999 BROAD STREET BRIDGEPORT, CT 06604	DENNIS BUCKLEY ZONING ADMINISTRATOR CITY HALL 45 LYON TERRACE BRIDGEPORT, CT 06604
INLAND WETLANDS & WATERCOURSES AGENCY CITY HALL 45 LYON TERRACE BRIDGEPORT, CT 06604	LYDIA N. MARTINEZ, CITY CLERK CITY HALL 45 LYON TERRACE BRIDGEPORT, CT 06604
PLANNING AND ZONING COMMISSION CITY HALL 45 LYON TERRACE BRIDGEPORT, CT 06604	HISTORIC DISTRICT COMMISSION C/O PAUL BOUCHER, ASSISTANT ZONING ADMINISTRATOR CITY HALL 45 LYON TERRACE BRIDGEPORT, CT 06604
THOMAS F. GILL, DIRECTOR OFFICE OF PLANNING AND ECONOMIC DEVELOPMENT 999 BROAD STREET BRIDGEPORT, CT 06604	

CERTIFICATE OF SERVICE

I hereby certify that on the 19th day of November, 2021, a copy of the following letter and notice of the intended filing of a Sub-Petition for a declaratory ruling filed with the Connecticut Siting Council was sent by certified mail, return receipt requested, to the attached list of abutting property owners:

Dated: November 19, 2021

Brown Rudnick LLP
Joseph A. Giammarco

KNAPP, ANDREW AND LILLIAN AND ROBERT KNAPP 24 ROCKDALE ROAD WEST HAVEN, CT 06516 *Parcel ID 2504* *Map 19, Block 307, Lot 25* ***Subject Property:*** *623 Pine Street, Bridgeport, CT* *Identified as parcel **A** on Abutters Map*	PATEL, JAY V. 21 MANOR DRIVE TRUMBULL, CT 06611 *Parcel ID: 2501* *Map 19, Block 307, Lot 1* *Property Address: 2045 Fairfield Avenue, Bridgeport, CT* *Identified as parcel **B** on Abutters Map*
CITY OF BRIDGEPORT CITY HALL 45 LYON TERRACE BRIDGEPORT, CT 06604 *Parcel ID: 2507* *Map 19, Block 307, Lot 37* *Property Address: 585 Pine Street, Bridgeport, CT* *Identified as parcel **C** on Abutters Map* *Parcel ID: 2503* *Map 19, Block 307, Lot 10A* *Property Address: 94 Andover Street, Bridgeport, CT* *Identified as parcel **D** on Abutters Map*	431 CHERRY STREET BRIDGE, LLC 431 CHERRY STREET BRIDGEPORT, CT 06605 *Parcel ID: 2494* *Map 19, Block 306, Lot 1* *Property Address: 431 Cherry Street, Bridgeport, CT* *Identified as parcel **E** on Abutters Map*
AREA 40, LLC 2727 NORTH CENTRAL AVENUE PHOENIX, AZ 85004 Parcel ID: 2495 Map 19, Block 306, Lot 2A	JESAJ HOLDINGS, LLC 885 CONKLIN STREET FARMINGDALE, NY 11753 Parcel ID: 2528 Map 12, Block 308, Lot 39D

Property Address: 365 Cherry Street, Bridgeport, CT *Identified as parcel F on Abutters Map*	*Property Address: 55 Andover Street, Bridgeport, CT* *Identified as parcel **G** on Abutters Map*
SOUTHWEST COMMUNITY HEALTH CENTER, INC. 968 FAIRFIELD AVENUE BRIDGEPORT, CT 06605 Parcel ID: 35924 Map 19, Block 308 Lot 10A 0001 *Property Address: 46 Albion Street #0001, Bridgeport, CT* *Identified as parcel **H** on Abutters Map* *Parcel ID: 35922* *Map 19, Block 308, Lot 10A 0003* *Property Address: 46 Albion Street #0003 Bridgeport, CT* *Identified as parcel **I** on Abutters Map*	ALPHA BLACK ROCK, LLC 1700 DIXWELL AVENUE, BUILDING D, SUITE K HAMDEN, CT 06473 Parcel ID: 2519 Map 19, Block 308, Lot 29 *Property Address: 135 Andover Street, Bridgeport, CT* *Identified as parcel **J** on Abutters Map* Parcel ID: 2520 *Map 19, Block 308, Lot 30* *Property Address: 137 Andover Street, Bridgeport, CT* *Identified as Parcel **T** on Abutters Map*
WALDORF PROPERTIES, LLC 478 ALBANY AVENUE BROOKLYN, NY 11203 Parcel ID: 2521 Map 19, Block 308, Lot 31 *Property Address: 165 Andover Street, Bridgeport, CT* *Identified as parcel **K** on Abutters Map*	JOSE E. TROJILLO 1452 WOOD AVENUE BRIDGEPORT, CT 06604 Parcel ID: 2522 Map 19, Block 308, Lot 32 *Property Address: 163 Andover Street, Bridgeport, CT* *Identified as parcel **L** on Abutters Map*
BAR BRIDGEPORT, LLC 645 PINE STREET BRIDGEPORT, CT 06605-2310 Parcel ID: 2505 *Map 19, Block 307, Lot 26A* *Property Address: 645 Pine Street, Bridgeport, CT* *Identified as Parcel **N** on Abutters Map* Parcel ID: 2508 *Map 19, Block 307, Lot 38A* *Property Address: 665 Pine Street, Bridgeport, CT* *Identified as Parcel **O** on Abutters Map* Parcel ID: 2506 *Map 19, Block 307, Lot 30A* *Property Address: 2033 Fairfield Avenue, Bridgeport, CT*	BALDWIN ALBION TAX CREDIT ENTITY, LLC 150 HIGHLAND AVENUE, BRIDGEPORT, CT 06604 Parcel ID: 35923 Map 19, Block 308, Lot 10A 002 *Property Address: 46 Albion Street #0002, Bridgeport, CT* *Identified as parcel **M** on Abutters Map*

*Identified as Parcel **P** on Abutters Map* Parcel ID: 2518 *Map 19, Block 308, Lot 28* *Property Address: 117 Andover Street, Bridgeport, CT* *Identified as Parcel **Q** on Abutters Map* Parcel ID: 2527 *Map 19, Block 308, Lot 37* *Property Address: 129 Andover Street, Bridgeport, CT* *Identified as Parcel **R** on Abutters Map* Parcel ID: 2526 *Map 19, Block 308, Lot 36* *Property Address: 145 Andover Street #151, Bridgeport, CT* *Identified as Parcel **S** on Abutters Map* Parcel ID: 2502 *Map 19, Block 307, Lot 2* *Property Address: 146 Andover Street, Bridgeport, CT* *Identified as Parcel **U** on Abutters Map*	
SECRETARY OF STATE 165 CAPITAL AVENUE P.O. BOX 150470 HARTFORD, CT 06115-0470 *As registered agent for BAR Bridgeport, LLC*	BAR BRIDGEPORT, LLC ATTENTION: JAMES E. BALISE. JR., MANAGER 122 DOTY CIRCLE WEST SPRINGFIELD, MA 01089

November 19, 2021

VIA CERTIFIED MAIL/
RETURN RECEIPT REQUESTED

[Insert Abutter/official
Name and Address]

Re: New Cingular Wireless PCS, LLC ("AT&T") – Connecticut Siting Council Sub-Petition for a Declaratory Ruling – Modification of an Existing Monopole and Collocation of a Wireless Telecommunications Facility at 623 Pine Street, Bridgeport, Connecticut

To Whom it May Concern:

On behalf of our client New Cingular Wireless PCS, LLC ("AT&T"), we are providing this notice to you with respect to the above-referenced matter pursuant to the City of Bridgeport Planning and Zoning Commission's approval in 1998. AT&T is filing a sub-petition (the "Sub-Petition") for a declaratory ruling with the Connecticut Siting Council (the "Siting Council") for approval to collocate a new wireless telecommunications facility (the "Facility") on the existing 256' lattice tower located at 623 Pine Street, Bridgeport, Connecticut. The Facility consists of twelve (12) panel antennas at the 138' antenna centerline height on the existing lattice tower (the "Tower") together with related amplifiers, cables, fiber and other associated antenna equipment, including, without limitation, remote radio heads, surge arrestors, and global positioning system antennas with associated electronic equipment on and within the existing building under the Tower, a new natural gas generator on the roof of the existing building, a new ice bridge, and other appurtenances on and within the existing building, all as depicted on the plans submitted with the Sub-Petition. The Tower is owned by Radio Communications Corporation, Inc.

The Sub-Petition is an eligible facilities request submitted pursuant to the Federal Middle Class Tax Relief and Job Creation Act of 2012, also known as the Spectrum Act and codified at 47 U.S.C. § 1455(a). AT&T's proposed modification qualifies as an eligible facilities request under the Spectrum Act and associated regulations promulgated by the Federal Communications Commission.

Any comments or concerns regarding this Sub-Petition should be submitted to the Siting Council within thirty (30) days of the date of this notice.

If you have any questions, please do not hesitate to contact us or the Council at 860.827.2935.

Sincerely,

_____

Thomas J. Regan, Esq.

NOTICE

Notice is hereby given, pursuant to Section 16-50j-40(a) of the Regulations of Connecticut State Agencies of a Petition being filed with the Connecticut Siting Council ("Siting Council") on or after November 22, 2021 by New Cingular Wireless PCS, LLC ("AT&T"). AT&T seeks a declaratory ruling that no Certificate of Environmental Compatibility and Public Need ("Certificate") is required under Section 16-50k(a) of the Connecticut General Statutes ("C.G.S.") to modify an existing facility and collocate a new wireless telecommunications facility on the existing lattice tower.

The proposed telecommunications facility will be located on an existing lattice tower owned by Radio Communications Corporation, Inc. at 623 Pine Street, in the City of Bridgeport and identified on the City of Bridgeport's GIS as Parcel ID 2504 (Map 19, Block 307, Lot 25) (the "Site"). AT&T proposes to collocate a new wireless telecommunications facility consisting of twelve (12) panel antennas at the 138' above ground level ("AGL") antenna centerline height on the existing lattice tower (the "Tower"). This Facility will work to allow for increased coverage, data capacity and speed within the coverage area of the proposed facility. By addressing network coverage and capacity, the proposed Facility will aid in reaching AT&T's goal of providing reliable wireless telecommunications services in and around the City of Bridgeport and to all of Connecticut.

The Petition will provide additional details of the proposal and discuss AT&T's assertion that this Facility presents no significant adverse environmental effects. The location, height and other features of the proposal are subject to review and potential change under the provisions of Connecticut General Statutes Sections 16-50g et. seq.

Copies of the Petition will be available for review during normal business hours on or after November 22, 2021 at the following:

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

City Clerk of Bridgeport
Lydia N. Martinez
45 Lyon Terrace
Bridgeport, CT 06604

or this office. A copy of the Petition will also be available on the Connecticut Siting Council website: https://www.ct.gov/cSc/site/default.asp under Pending Matters. All inquiries should be addressed to the Connecticut Siting Council or to the undersigned.

Thomas J. Regan, Esq.
Brown Rudnick LLP
185 Asylum Street
Hartford, CT 06103

Abutters List

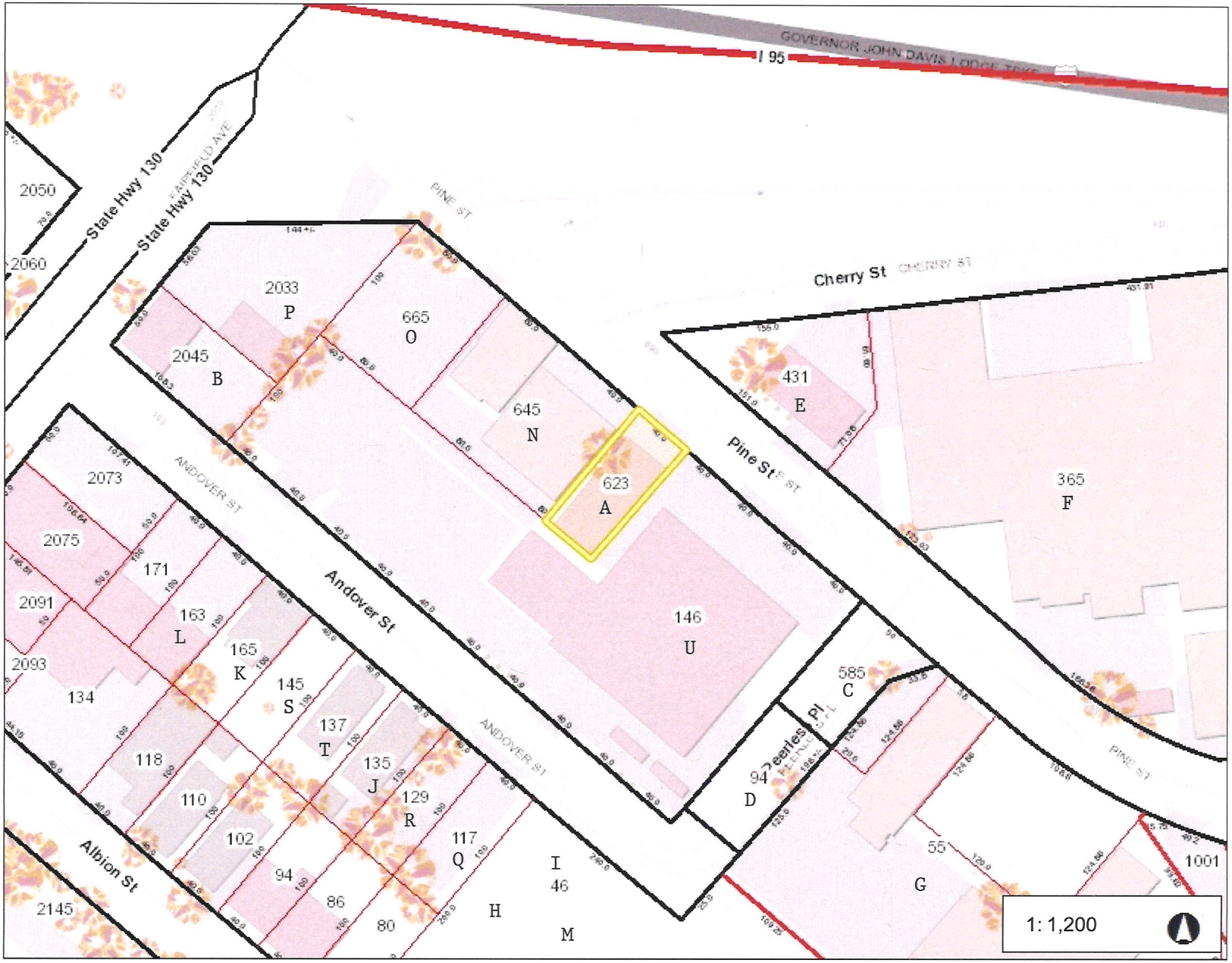
Parcel ID	Physical Address	Owner Name	Mailing Address	City	State	Zip Code
2504	623 Pine Street Bridgeport, CT 06605	Knapp, Andrew & Lillian & Robert	24 Rockdale Road	West Haven	CT	06516
2501	2045 Fairfield Avenue Bridgeport, CT 06605	Patel, Jay V.	21 Manor Drive	Trumbull	CT	06611
2507	585 Pine Street Bridgeport, CT 06605	City of Bridgeport	45 Lyon Terrace	Bridgeport	CT	06605
2503	94 Andover Street Bridgeport, CT 06605	City of Bridgeport	45 Lyon Terrace	Bridgeport	CT	06605
2494	431 Cherry Street Bridgeport, CT 06605	431 Cherry Street Bridge, LLC	431 Cherry Street	Bridgeport	CT	06605
2495	365 Cherry Street Bridgeport, CT 06605	Area 40, LLC	2727 North Central Avenu	Phoenix	AZ	85004
2528	55 Andover Street Bridgeport, CT 06605	Jesaj Holdings, LLC	885 Conklin Street	Farmingdale	NY	11753
35924	46 Albion Street #0001 Bridgeport, CT 06605	Southwest Community Health Center Inc.	968 Fairfield Avenue	Bridgeport	CT	06605
35922	46 Albion Street #0003 Bridgeport, CT 06605	Southwest Community Health Center LLC	968 Fairfield Avenue	Bridgeport	CT	06605
2519	135 Andover Street Bridgeport, CT 06605	Alpha Black, LLC	1700 Dixwell Avenue, Building D, Suite K	Hamden	CT	06473
2520	137 Andover Street Bridgeport, CT 06605	Alpha Black, LLC	1700 Dixwell Avenue, Building D, Suite K	Hamden	CT	06473
2521	165 Andover Street Bridgeport, CT 06605	Waldorf Properties, LLC	478 Albany Avenue	Brooklyn	NY	011203

2522	163 Andover Street Bridgeport, CT 06605	Jose E. Trojillo	1452 Wood Avenue	Bridgeport	CT	06604
2505	645 Pine Street Bridgeport, CT 06605	BAR Bridgeport, LLC	645 Pine Street	Bridgeport	CT	06605-231
35923	46 Albion Street #0002 Bridgeport, CT 06605	Baldwin Albion Tax Credit Entity, L	150 Highland Avenue	Bridgeport	CT	06604
2508	665 Pine Street Bridgeport, CT 06605	BAR Bridgeport, LLC	665 Pine Street	Bridgeport	CT	06605
2506	2033 Fairfield Avenue Bridgeport, CT 06605	BAR Bridgeport, LLC	2033 Fairfield Avenue	Bridgeport	CT	06605
2518	117 Andover Street Bridgeport, CT 06605	BAR Bridgeport, LLC	117 Andover Street	Bridgeport	CT	06605
2527	129 Andover Street Bridgeport, CT 06605	BAR Bridgeport, LLC	129 Andover Street	Bridgeport	CT	06605
2626	145 Andover Street #151 Bridgeport, CT 06605	BAR Bridgeport, LLC	145 Andover Street #151	Bridgeport	CT	06605
2502	146 Andover Street Bridgeport, CT 06605	BAR Bridgeport, LLC	146 Andover Street	Bridgeport	CT	06605
		BAR Bridgeport, LLC Attention: James E. Balise, Jr., Manager	122 Doty Circle	West Springfield	MA	01089
		Secretary of State	165 Capital Avenue P.O. Box 150470	Hartford	CT	06115- 0470

Abutters Map

City of Bridgeport

My Map



Legend

- Parcels
- Streetname
- Roadways
  - Local
  - Collector
  - Minor Collector
  - Minor Arterial
  - Major Collector
  - PA Other
  - PA Other Expwy
  - PA Interstate

200.0 0 100.00 200.0 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Created by Connecticut Metropolitan Council of Governments

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

METROCOG
Connecticut Metropolitan Council of Governments