



**Cellco Partnership d/b/a
Verizon Wireless**
Cullen Morgan
Site Acquisition Consultant
750 W Center Street
Suite 301
West Bridgewater, MA 02379
(941)549-7263
cmorgan@clinellc.com

July 17, 2024

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

**RE: NOTICE OF EXEMPT MODIFICATION
93 Old Amity Road, Bethany, CT 06524
Latitude: 41.40475833
Longitude: -72.99998333
Site: BETHANY CT (ATC #88008)**

Dear Members of the Siting Council:

Cellco Partnership d/b/a Verizon Wireless ("Verizon") currently maintains twelve (12) antennas at the 180-foot level of the existing 339-foot tower at 93 Old Amity Road, Bethany, CT 06524. The 339-foot tower and the underlying property are owned by American Tower Corporation. Verizon now intends to Remove (12) Antennas and (6) Diplexers, and Install (3) Mounting Brackets, (9) Antennas, (6) RRUs, (1) OVP and (2) 1-5/8" Hybrid Cables. All tower-mounted equipment modifications will take place at the 180-foot level of the tower.

Planned Modifications:

Remove Existing:

- (6) DB844H90E-XY Antennas
- (3) P65-16-XL-2 Antennas
- (3) MGD3-800TX Antennas
- (6) Diplexers

Install New:

- (6) MX06FHG865-HG Antennas
- (3) MT6413-77A Antennas
- (3) RF4461D-13A RRUs
- (3) RF4439D-25A RRUs
- (2) 1-5/8" Hybrids

750 W Center St, Suite 301
West Bridgewater, MA 02379
781-713-4725

Existing to Remain:
(12) 1-5/8" Coax Cables

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, or construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to First Selectwoman Paula Cofrancesco, chief elected official for the Town of Bethany, Brian Donovan, Building Official for the Town of Bethany, and American Tower Corporation, the property/tower owner.

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

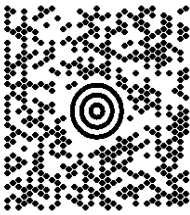
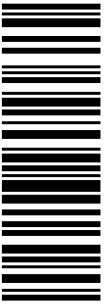
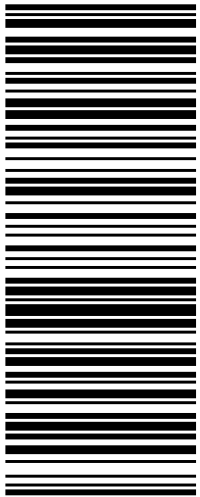
1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that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

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

Respectfully,
Cullen Morgan
Site Acquisition Consultant
Centerline Communications, LLC (Agent to Verizon)
Mobile: (941) 549-7263
cmorgan@clinellc.com

Attachments

cc: First Selectwoman Paula Cofrancesco, chief elected official – Town of Bethany
Brian Donovan, Building Official – Town of Easton
American Tower Corporation – Tower Owner & Property Owner

C/O CULLEN MORGAN 9415497263 CENTERLINE COMMUNICATIONS LLC 12579 SAGEWOOD DRIVE VENICE FL 34293		2 LBS	1 OF 1
SHIP TO: CONNECTICUT SITING COUNCIL 10 FRANKLIN SQUARE NEW BRITAIN CT 06051-2655			
	CT 067 9-06 		
UPS GROUND			
TRACKING #: 1Z 9Y4 503 03 1635 1426			
			
BILLING: P/P			
Reference # 1: 13685609 BETHANY CT			
CS 24.5.00. MACNV50 30.0A 07/202.4*			
 ™			



CENTERLINE

EXHIBIT A

Property Card

Location:		9 MEYERS RD		Map Id:		118/51C		Zone:		B&I		Date Printed:		7/10/2024			
				Neighborhood:		C-5						Last Update:		7/10/2024			
Owner Of Record						Volume/Page		Date		Sales Type			Valid		Sale Price		
AMERICAN TOWERS INC						0124/0716		2/16/2000					No		6,222,480		
RE: SITE # 88008 STE 205, P O BOX 723597, ATLANTA, GA 31139										Exempt							
Prior Owner History																	
AMERICAN TEL & TEL CO						0043/0554		8/10/1966					No		0		
Permit Number Date Permit Description																	
E-23-095		5/1/2023		INSTALL 200AMP FEEDER FROM EXISTING SERVICE FOR NEW TENANT - DISH WIRELESS. INSTALL 4 BRANCH CIRCUIT													
CERTAPPV		12/7/2022		RE: #B-22-381													
CERTAPPV		10/26/2022		RE: #E-22-443													
E-22-443		8/16/2022		WIRE FOR UPGRADED CELL EQUIPMENT TO 150 AMPS PER PLANS													
B-22-381		8/2/2022		REMOVE 3 ANTENNAS. 3 TMAS & 6 CABLES. INSTALL 3 ANTENNAS. 3 RRUS & 3 HYBRID CABLES. 2 GROUND ENCLOSU													
B-22-378		6/21/2022		INSTALL 3 ANTENNAS 6 RRHS 1 OVP 1 HYBRID CABLE ALL INSTALLED W/IN 5X7 AREA													
Supplemental Data										Appraised Value							
Census/Tract				490 App Date						Total Land Value		514,500					
Dev Map ID										Total Building Value		102,900					
GIS ID										Total Outbldg Value		13,000					
Route										Total Market Value		630,400					
District																	
Utilities																	
Acres								State Item Codes									
Land Type		Acres		490		Total Value		Code		Quantity		Value					
Commercial Excess		7.45		0.00		149,000		21-Com Land		9.20		360,150					
Primary Site		1.50		0.00		94,500		32-Indust Building		1.00		72,030					
Tower Site		0.25		0.00		271,000		33-Indust Improve		3.00		9,100					
Total		9.2000		0.00		514,500											
Assessment History (Prior Years as of Oct 1)										490 Appraised Totals							
2024		2023		2022		2021		2020		Type		Acres		Value			
Land		360,150		360,150		335,300		335,300		335,300							
Building		72,030		72,030		78,690		78,690		78,690							
Outbuilding		9,100		9,100		9,970		9,970		9,970							
Total		441,280		441,280		423,960		423,960		423,960		Totals		0.00 0			
Comments										Application Date:		Expiration Date:					
1/7/2013 BLDG 1 - RELAY STATION; BLDG 2 - EQUIPMENT SHELTER - PRICE AS SHED;																	

Bethany

EXHIBIT B

Structural Analysis Report



Structural Analysis Report

Structure : 340 ft Self Support Tower
ATC Asset Name : BETHANY CT
ATC Asset Number : 88008
Engineering Number : 14762850_C3_01
Proposed Carrier : VERIZON WIRELESS
Carrier Site Name : BETHANY CT
Carrier Site Number : 5000382257
Site Location : 9 Meyers Road
Bethany, CT 06524-3400
41.4048° N, 73° W
County : New Haven
Date : March 10, 2024
Max Usage : 99%
Analysis Result : Pass

Created By:

Timothy Kassakatis
Structural Engineer II

A handwritten signature in black ink, appearing to read 'Tim Kassakatis'.



COA: PEC.0001553

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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 340 ft Self Support tower to reflect the change in loading by VERIZON WIRELESS.

Supporting Documents

Tower:	CSEI Analysis ATC Engineering #73115244, dated November 18, 2002
Foundation:	Mapping by ETS Project #120302.01, dated June 18, 2012
Geotechnical:	Geotel Report #E12-221, dated June 5, 2012
Modification:	ATC Job #OAA712592_C6_13, dated August 13, 2018

Analysis

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

Basic Wind Speed:	119 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code(s):	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Feature:	Flat
Crest Height (H):	0 ft
Spectral Response:	$S_s = 0.20$, $S_i = 0.05$
Site Class:	D - Stiff Soil - Default

Conclusion

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

If you have any questions or require additional information, please reach out to your American Tower contact. If you do not have an American Tower contact and have an Engineering question, please contact Engineering@americantower.com. Please include the American Tower asset name, asset number, and engineering number in the subject line for any questions.

Structure Usages

Structural Component	Usage	Result
Legs	62%	Pass
Diagonals	99%	Pass
Lower Diagonals	81%	Pass
Horizontals	79%	Pass
Lower Horizontals	65%	Pass
Bolts	47%	Pass
Foundation	76%	Pass

Maximum Reactions

Foundation	Moment (k-ft)	Axial (k)	Uplift (k)	Shear (k)
Base (Local)	-	458.3	328.0	69.1

**Reactions shown are maximum overall and not limited by Load Case*

Structure base reactions were analyzed using available geotechnical and foundation information.

VERIZON WIRELESS Final Loading

Elev (ft)	Qty	Equipment	Lines
180.0	1	Raycap RCMD-6627-PF-48	(2) 1 5/8" Hybriflex
	3	Samsung B2/B66A RRH ORAN (RF 4439d-25A)	
	3	Samsung MT6413-77A	
	3	Samsung RF4461d-13A	
	6	JMA Wireless MX06FHG865-HG	
	3	Sector Frames	

Install proposed lines in the place of the existing VERIZON WIRELESS lines.

Other Existing/Reserved Loading

Elev (ft)	Qty	Equipment	Lines	Carrier
340.0	1	Rohde & Schwarz ADD090	(2) 7/8" Coax	US DEPT OF HOMELAND SECURITY
326.0	1	Kathrein Scala 750 10074	(1) 1 5/8" Coax	LIGADO NETWORKS LLC
317.0	1	Sinclair SC281-L	(1) 7/8" Coax	US DEPT OF HOMELAND SECURITY
314.0	1	Sinclair SC381-HL (160")	(1) 7/8" Coax	US DEPT OF HOMELAND SECURITY
291.0	2	8' Omni	-	UNKNOWN
283.0	1	Sinclair SC281-L	(1) 7/8" Coax	US DEPT OF HOMELAND SECURITY
266.0	1	8' Omni	-	UNKNOWN
253.0	12	Decibel DB844H90E-XY	(12) 1 5/8" Coax	SPRINT NEXTEL
243.0	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	(1) 1" (25.4mm) Hybrid	SPRINT NEXTEL
	3	Commscope NNVV-65B-R4		
	3	RFS APXVTM14-ALU-I20		
238.0	6	Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter	(3) 1 1/4" Hybriflex Cable	SPRINT NEXTEL
236.0	3	Alcatel-Lucent 1900 MHz 4X45 RRH	-	SPRINT NEXTEL
222.0	3	Ericsson 4460 BAND 2/25	(3) 1 1/4" (1.25"- 31.8mm) Fiber (3) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson AIR 6419 B41		
	3	Ericsson Radio 4449 B71 B85A		
	3	RFS APXVAARR24_43-U-NA20		
213.0	1	Andrew DB616E-BC	(1) 1 1/4" Coax	US DEPT OF HOMELAND SECURITY
158.0	1	KMW AM-X-CD-16-65-00T-RET	(1) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax (1) 3" conduit	AT&T MOBILITY
	1	Raycap FC12-PC6-10E		
	2	Andrew SBNH-1D6565C (60.8 lbs)		
	3	Ericsson RRUS 11 (Band 12)		
	3	Powerwave Allgon 7770.00		
	3	Powerwave Allgon LGP21901		
	3	Raycap DC2-48-60-0-9E		
	6	Powerwave Allgon LGP21401		
147.0	1	5" x 3" x 2" Cavity Filter	(1) 1/2" Coax	SIGFOX S.A.
	1	Low Noise Amplifier		
	1	Procom CXL 900-3LW		
140.0	1	Commscope RDIDC-9181-PF-48	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	3	Commscope FFVV-65B-R2		
	3	Fujitsu TA08025-B604		
	3	Fujitsu TA08025-B605		



Elev (ft)	Qty	Equipment	Lines	Carrier
103.0	3	RFS APXV18-206517S-C	(6) 1 5/8" Coax	METRO PCS INC
48.0	1	PCTEL GPS-TMG-HR-26N	(1) 1/2" Coax	SPRINT NEXTEL

(If table breaks across pages, please see previous page for data in merged cells)



Standard Conditions

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

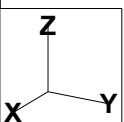
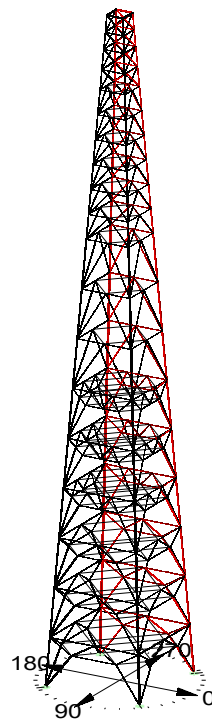
- Information supplied by the client regarding antenna, mounts, and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Services LLC

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

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

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

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



Project Name : 88008 - Bethany CT
Project Notes : Dish Wireless - 13709244 c3 03
Project File : X:\A-B\Bethany CT, CT (88008)\14762850 VERIZON WIRELESS\14762850_01_CUST_STR\88008- 14762850.TOW
Date run : 2:06:22 PM Thursday, March 14, 2024
by : Tower Version 19.00
Licensed to : American Tower Corp.

Successfully performed nonlinear analysis

The model has 0 warnings.

Member check option: ANSI/TIA 222-G-1
Connection rupture check: Not Checked
Crossing diagonal check: Fixed
Included angle check: None
Climbing load check: None
Redundant members checked with: Actual Force
Loads from file: X:\A-B\Bethany CT, CT (88008)\14762850 VERIZON WIRELESS\14762850_01_CUST_STR\88008- 14762850.eia

*** Analysis Results:

Maximum element usage is 99.15% for Angle "D 38X" in load case "W 180 Ice"

Foundation Design Forces For All Load Cases:

Note: loads are factored.

Load Case	Foundation Description	Axial Force (kips)	Shear Force (kips)	Resultant Force (kips)	Bending Moment (ft-k)	Foundation Usage %
W 0	OP	329.13	52.64	333.31	5.38	0.00
W 0	OX	322.76	51.57	326.85	5.10	0.00
W 0	OXY	-199.81	38.74	203.53	5.70	0.00
W 0	OY	-198.79	39.50	202.68	5.94	0.00
W 180	OP	-195.10	39.35	199.03	6.00	0.00
W 180	OX	-195.86	38.68	199.65	5.79	0.00
W 180	OXY	118.81	61.52	322.95	5.18	0.00
W 180	OY	325.45	52.49	329.65	5.44	0.00
W 45	OP	458.30	69.05	463.47	4.71	0.00
W 45	OX	51.54	25.46	66.60	5.93	0.00
W 45	OXY	-37.97	57.03	332.89	6.23	0.00
W 45	OY	61.42	25.40	66.46	5.92	0.00
W 45	OP	67.09	26.77	72.24	6.22	0.00
W 45	OX	452.75	68.59	457.92	4.75	0.00
W 45	OXY	59.58	24.61	64.46	5.73	0.00
W 45	OP	-326.13	57.15	331.10	6.31	0.00
W 90	OP	329.24	52.67	333.42	5.39	0.00
W 90	OX	-198.77	39.53	202.67	5.95	0.00
W 90	OXY	-199.70	38.71	203.42	5.70	0.00
W 90	OY	322.53	51.54	326.62	5.09	0.00
W 90	OP	-195.21	39.38	199.14	6.01	0.00
W 90	OX	325.68	52.52	329.88	5.45	0.00
W 90	OXY	318.71	51.49	322.84	5.17	0.00
W 90	OY	-195.88	38.65	199.66	5.78	0.00
W 0 Ice	OP	166.60	22.39	168.10	1.70	0.00
W 0 Ice	OX	161.56	21.89	163.04	1.58	0.00
W 0 Ice	OXY	23.97	4.03	24.31	3.39	0.00
W 0 Ice	OY	28.05	4.09	28.35	3.48	0.00
W 180 Ice	OP	32.55	4.29	32.83	3.54	0.00
W 180 Ice	OX	28.84	4.24	29.15	3.49	0.00
W 180 Ice	OXY	156.69	21.74	158.19	1.55	0.00
W 180 Ice	OY	162.10	22.12	163.61	1.71	0.00
W 45 Ice	OP	200.84	27.61	202.73	0.85	0.00
W 45 Ice	OX	94.72	11.87	95.46	2.72	0.00
W 45 Ice	OXY	-9.98	6.63	11.98	3.75	0.00
W 45 Ice	OY	94.60	11.86	95.34	2.71	0.00
W 45 Ice	OP	99.57	12.45	100.34	2.81	0.00
W 45 Ice	OX	195.99	27.23	197.88	0.82	0.00
W 45 Ice	OXY	90.32	11.76	91.08	2.65	0.00
W 45 Ice	OY	-5.70	6.50	8.65	3.83	0.00
W 90 Ice	OP	166.62	22.40	168.12	1.70	0.00
W 90 Ice	OX	28.15	4.10	28.45	3.48	0.00
W 90 Ice	OXY	23.99	4.02	24.33	3.39	0.00
W 90 Ice	OY	161.41	21.88	162.89	1.58	0.00
W 90 Ice	OP	32.53	4.29	32.81	3.54	0.00
W 90 Ice	OX	162.25	22.13	163.75	1.71	0.00
W 90 Ice	OXY	156.67	21.74	158.17	1.55	0.00
W 90 Ice	OY	28.74	4.23	29.05	3.49	0.00

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Bending Moment (ft-k)	Vert. Moment (ft-k)	Found. Usage %
W 0	OP	-47.79	0.22	-0.07	329.13	52.64	-1.03	-5.28	5.38	-3.14 0.00
W 0	OX	-46.26	22.79	-322.76	51.57	0.74	-5.05	5.10	3.13 0.00	
W 0	OXY	-36.00	-14.29	199.81	38.74	0.51	-5.68	5.70	2.77 0.00	
W 0	OY	-37.10	13.56	198.79	39.50	-0.38	-5.93	5.94	-2.74 0.00	
W 180	OP	37.06	13.23	195.10	39.35	-0.36	5.99	6.00	2.76 0.00	
W 180	OX	36.05	-14.04	195.86	38.68	0.52	5.77	5.79	-2.78 0.00	
W 180	OXY	46.30	22.59	-318.81	51.52	0.72	5.13	5.18	-3.14 0.00	
W 180	OY	47.75	-12.79	-325.45	52.49	-1.04	5.34	5.44	3.15 0.00	
W 45	OP	-48.80	-48.85	-458.30	69.05	3.33	-3.32	4.71	0.00 0.00	
W 45	OX	-21.98	-12.86	-61.54	25.46	4.70	-3.63	5.93	4.24 0.00	
W 45	OXY	-40.35	40.30	-427.97	57.03	4.40	-4.41	6.23	-0.00 0.00	
W 45	OY	-12.81	-21.93	-61.42	25.40	3.62	-4.68	5.92	-4.24 0.00	
W 45	OP	-23.19	13.36	-67.09	26.77	-4.92	-3.80	6.22	-4.25 0.00	
W 45	OX	-47.64	49.35	-452.75	68.59	-3.56	-3.15	4.75	-0.01 0.00	
W 45	OXY	-12.10	21.43	-59.58	24.61	-3.55	4.50	5.73	4.26 0.00	
W 45	OY	-41.02	39.80	-326.13	57.15	-4.33	-4.58	6.31	0.02 0.00	
W 90	OP	-22.04	-47.84	-329.24	52.67	5.29	1.04	5.39	3.14 0.00	
W 90	OX	13.54	37.14	198.77	39.53	5.93	0.37	5.95	2.74 0.00	
W 90	OXY	-14.31	-35.97	199.70	38.71	5.67	-0.51	5.70	-2.77 0.00	
W 90	OY	22.81	-46.22	-322.53	51.54	5.04	-0.73	5.09	-3.13 0.00	
W 90	OP	13.21	37.10	195.21	39.38	-6.00	0.36	6.01	-2.75 0.00	
W 90	OX	-21.77	47.80	-325.48	52.52	-5.35	1.05	5.45	3.15 0.00	
W 90	OXY	22.62	46.26	-318.71	51.49	-5.13	-0.71	5.17	3.14 0.00	
W 90	OY	-14.06	36.01	195.88	38.65	-5.76	-0.52	5.78	2.78 0.00	
W 0 Ice	OP	-18.53	12.57	-166.60	22.39	-1.69	0.21	1.70	0.74 0.00	
W 0 Ice	OX	-17.82	12.71	-161.56	21.89	1.56	0.28	1.58	0.73 0.00	
W 0 Ice	OXY	-3.45	2.08	-23.97	4.03	1.63	-2.98	3.39	0.72 0.00	
W 0 Ice	OY	-3.44	-2.21	-28.05	4.09	-1.68	-3.04	3.48	-0.70 0.00	
W 180 Ice	OP	3.38	-2.63	-32.55	4.29	-1.66	3.12	3.54	3.72 0.00	
W 180 Ice	OX	3.50	2.39	-28.84	4.24	1.64	3.09	3.49	-0.73 0.00	
W 180 Ice	OXY	17.87	12.39	-156.69	21.74	1.54	-0.17	1.55	-0.74 0.00	
W 180 Ice	OY	18.48	-12.16	-162.25	22.13	-1.70	0.13	1.71	0.75 0.00	
W 45 Ice	OP	-19.52	-19.53	-200.84	27.61	-0.60	0.60	0.85	0.00 0.00	
W 45 Ice	OX	-11.42	3.24	-94.72	11.87	2.64	0.64	2.72	1.06 0.00	
W 45 Ice	OXY	-4.69	-4.68	-9.98	6.63	2.65	-2.55	3.75	-0.00 0.00	
W 45 Ice	OY	3.25	-11.41	-94.60	11.86	-0.64	-2.64	2.71	-1.06 0.00	
W 45 Ice	OP	-12.05	-3.16	-99.57	12.45	-2.75	0.58	2.81	-1.07 0.00	
W 45 Ice	OX	-18.90	19.61	-195.99	27.23	0.48	0.66	0.82	-0.01 0.00	
W 45 Ice	OXY	3.15	11.33	-90.32	11.76	0.57	-2.58	2.65	1.07 0.00	
W 45 Ice	OY	-4.59	4.60	5.70	6.50	-2.72	-2.70	3.83	0.02 0.00	
W 90 Ice	OP	-12.56	-18.54	-166.62	22.40	-0.20	1.69	1.70	0.74 0.00	
W 90 Ice	OX	-2.22	-3.45	-28.15	4.10	3.05	1.68	3.48	0.70 0.00	
W 90 Ice	OXY	2.08	-3.45	-23.99	4.02	2.98	-1.63	3.39	-0.72 0.00	
W 90 Ice	OY	12.71	-17.81	-161.41	21.88	-0.28	-1.55	1.58	-0.73 0.00	
W 90 Ice	OP	-2.63	3.40	-32.53	4.29	-3.12	1.66	3.54	-0.71 0.00	
W 90 Ice	OX	-12.16	18.49	-162.25	22.13	0.13	1.71	1.70	-0.75 0.00	
W 90 Ice	OXY	12.40	17.86	-156.67	21.74	0.17	-1.54	1.55	0.74 0.00	
W 90 Ice	OY	2.38	3.50	-28.74	4.23	-3.08	-1.64	3.49	0.73 0.00	

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

Load Case	Support Origin	Leg Member	Leg Dir.	Residual Shear Force (kips)	Residual Shear Force (kips)	Residual Shear Force (kips)	Residual Shear Force (kips)	Residual Shear Force (kips)	Residual Shear Force (kips)	Total Force (kips)	Total Force (kips)	Total Force (kips)
W 0	OP	1P	1P	329.13	52.64	332.89	6.23	26.881	1.163	-47.79	-22.07	-329.13
W 0	OX	1X	1X	325.831	25.799	25.860	25.758	-2.291	-46.26	22.79	-322.76	
W 0	OXY	1XY	1XY	-202.188	23.313	23.366	23.312	1.596	-36.00	-14.29	199.81	
W 0	OY	1Y	1Y	-201.196	24.439	24.492	24.474	-0.937	-37.10	13.56	198.79	
W 180	OP	1P	1P	-197.504	24.627	24.680	24.680	-24.666	37.06	13.23	195.10	
W 180	OX	1X	1X	-198.248	23.603	23.657	23.603	1.593	36.05	-14.04	195.86	
W 180	OXY	1XY	1XY	321.891	26.092	26.153	-26.049	-2.340	46.30	22.59	-318.81	
W 180	OY	1Y	1Y	319.544	27.040	27.099	-27.076	1.112	47.75	-22.07	-329.13	
W 45	OP	1P	1P	462.640	27.765	27.777	19.687	19.737	-48.80	-48.85	-458.30	
W 45	OX	1X	1X	61.869	24.650	24.650	18.070	16.765	-21.98	-12.86	-61.54	
W 45	OXY	1XY	1XY	-331.754	27.455	27.565	19.513	19.470	-40.35	-40.30	-427.97	
W 45	OY	1Y	1Y	-197.749	24.627	24.680	16.715	18.027	-12.81	-21.93	-61.42	
W 45	OP	1P	1P	67.446	25.864	25.864	18.931	-17.622	-23.19	13.36	-67.09	
W 45	OX	1X	1X	457.074	27.816	27.928	18.874	-20.585	-47.64	49.35	-452.75	
W 45	OXY	1XY	1XY	51.499	23.742	23.742	25.881	17.648	-12.10	21.43	-59.58	
W 45	OY	1Y	1Y	-329.937	27.747	27.859	20.297	-19.083	-41.02	39.80	-326.13	
W 90	OP	1P	1P	332.337	26.886	26.944	1.129	26.920	-22.04	-47.84	-329.24	
W 90	OX	1X	1X	-201.183	24.478	24.531	-0.910	24.514	13.54	-37.14	198.77	
W 90	OXY	1XY	1XY	-202.082	23.282	23.335	1.621	23.279	-14.31	-35.97	199.70	
W 90	OY	1Y	1Y	325.604	25.771	25.832	-2.325	25.727	22.81	-46.22	-322.53	
W 90	OP	1P	1P	-197.610	24.659	24.712	-0.810	-24.699	13.21	37.10	195.21	

W -90	OX	1X	L 1X	328.771	27.070	27.129	1.078	-27.108	-21.77	47.80	-325.68
W -90	IXY	1X	L 1X	321.756	26.111	26.171	2.375	-26.009	22.62	46.26	-318.71
W -90	OY	1Y	L 1Y	-198.262	23.564	23.618	1.620	-23.563	-14.06	36.01	195.88
W 0 tce	OP	1P	L 1P	167.900	8.169	8.193	7.947	1.991	-18.53	-12.57	-166.60
W 0 tce	OX	1X	L 1X	162.844	7.918	7.943	7.558	-2.444	-17.82	12.71	-161.56
W 0 tce	OXY	1XY	L 1XY	159.969	6.534	6.564	4.973	-0.553	-3.45	2.08	-23.97
W 0 tce	OY	1Y	L 1Y	27.859	5.235	5.244	5.226	0.427	-3.44	-2.21	-28.05
W 180 tce	OP	1P	L 1P	32.368	5.482	5.490	-5.462	0.558	3.39	-2.63	-32.55
W 180 tce	OX	1X	L 1X	31.454	5.354	5.364	-5.333	-0.561	3.50	2.39	-28.84
W 180 tce	OXY	1XY	L 1XY	157.976	8.256	8.282	-7.916	-2.434	17.87	12.39	-156.69
W 180 tce	OY	1Y	L 1Y	163.391	8.367	8.391	-8.183	1.857	18.48	-12.16	-162.10
W 45 tce	OP	1P	L 1P	202.504	9.533	9.572	6.761	6.776	-19.52	-19.53	-200.84
W 45 tce	OX	1X	L 1X	195.269	8.076	8.106	5.403	-1.361	-12.05	-3.16	-99.57
W 45 tce	OXY	1XY	L 1XY	-10.529	5.708	5.731	4.055	4.050	-4.69	-4.68	9.98
W 45 tce	OY	1Y	L 1Y	95.145	6.061	6.064	2.761	5.399	3.25	-11.41	-94.60
W -45 tce	OP	1P	L 1P	100.130	4.536	4.574	5.721	-1.162	-18.90	19.61	-195.99
W -45 tce	OX	1X	L 1X	197.644	9.597	9.636	6.446	-5.591	3.15	11.33	-90.32
W -45 tce	OXY	1XY	L 1XY	90.876	6.156	6.159	2.583	-4.243	-4.59	4.60	5.70
W -45 tce	OY	1Y	L 1Y	-6.262	5.969	5.993	4.232	7.860	-12.56	-18.54	-166.62
W 90 tce	OP	1P	L 1P	167.922	8.178	8.180	1.980	5.237	-2.22	-3.45	-28.15
W 90 tce	OX	1X	L 1X	27.961	5.246	5.255	0.430	4.970	2.08	-3.45	-23.99
W 90 tce	OXY	1XY	L 1XY	23.809	4.993	5.001	-0.552	7.553	12.71	-17.81	-161.41
W 90 tce	OY	1Y	L 1Y	162.698	9.916	9.942	2.453	-5.465	-2.63	3.40	-32.53
W -90 tce	OP	1P	L 1P	32.346	5.485	5.493	0.559	-8.188	-12.16	18.49	-162.25
W -90 tce	OX	1X	L 1X	163.537	8.370	8.394	1.848	-7.904	12.40	17.86	-156.67
W -90 tce	OXY	1XY	L 1XY	157.955	8.248	8.274	2.445	-5.322	2.38	3.10	-28.74
W -90 tce	OY	1Y	L 1Y	28.552	5.343	5.351	-0.557				

Overturning Moment Summary For All Load Cases:

Load Case	Transverse Moment (ft-k)	Longitudinal Moment (ft-k)	Torsional Moment (ft-k)	Resultant Moment (ft-k)	Transverse Force (kips)	Longitudinal Force (kips)	Vertical Force (kips)
W 0	191.765	-27249.504	105.647	27250.179	-0.000	167.158	253.291
W 180	191.919	26853.860	-105.735	26854.546	-0.000	-167.158	253.291
W 45	20392.634	-20398.877	-4.819	28843.955	123.941	123.941	253.291
W -45	-20009.325	20398.877	154.343	28874.529	-123.941	-123.941	253.291
W 90	27243.280	-198.017	-112.469	27243.999	167.158	-0.000	253.291
W -90	-26860.109	-198.174	112.557	26860.841	-167.158	-0.000	253.291
W 0 tce	23.564	25.161	71.67	102.100	43.264	102.100	1.880
W 180 tce	236.599	6677.103	-25.165	6681.293	-0.000	-43.246	380.180
W 45 tce	5465.317	-5471.741	-1.021	7733.670	32.382	32.382	380.180
W -45 tce	-4992.178	-5471.792	36.625	7406.912	-32.382	-32.382	380.180
W 90 tce	7156.684	-242.990	-26.604	7160.808	167.158	-0.000	380.180
W -90 tce	-6683.532	-243.027	26.609	6687.949	-167.158	-0.000	380.180

EIA Sections Information:

Section Label	Top & Bottom Count	Joint Count	Member Count	Top Width (ft)	Bottom Width (ft)	Gross Area (ft²)	Adjust Factor	Adjust Factor	Dead Load Factor
328.9-337.5	337.500	328.917	8	20	9.00	10.09	81.93	1.1220	1.1220
328.9-328.9	328.917	320.334	8	16	10.09	11.18	91.29	1.1610	1.1610
310.2-320.3	320.334	310.167	8	16	11.18	12.47	120.24	1.1970	1.1970
300.0-310.2	310.167	300.000	12	24	12.47	13.76	133.38	1.1540	1.1540
287.5-300.0	300.000	287.500	16	24	13.76	15.35	181.98	1.2010	1.2010
275.0-287.5	287.500	275.000	16	24	15.35	16.94	201.31	1.2080	1.2080
262.5-275.0	275.000	262.500	16	24	16.94	18.53	221.69	1.2140	1.2140
250.0-262.5	262.500	250.000	16	24	18.53	20.12	241.54	1.2200	1.2200
237.5-250.0	250.000	237.500	16	24	20.12	21.71	261.39	1.2260	1.2260
225.0-237.5	237.500	225.000	16	24	21.71	23.29	281.24	1.2320	1.2320
212.5-225.0	225.000	212.500	16	24	23.29	26.47	322.04	1.2640	1.2640
200.0-212.5	212.500	200.000	16	24	26.47	29.65	370.44	1.2730	1.2730
150.0-175.0	175.000	150.000	36	76	32.82	36.00	860.26	1.2300	1.2300
125.0-150.0	150.000	125.000	36	76	36.00	39.17	939.67	1.2250	1.2250
100.0-125.0	125.000	100.000	36	68	39.17	42.35	1019.07	1.2270	1.2270
75.0-100.0	100.000	75.000	32	68	42.35	45.53	1098.48	1.1880	1.1880
50.0-75.0	75.000	50.000	24	52	45.53	48.70	1177.89	1.3250	1.3250
25.0-50.0	50.000	25.000	24	40	48.70	51.88	1257.30	1.3210	1.3210
0.000-25.00	25.000	0.000	20	40	48.70	51.88	1257.30	1.3210	1.385

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

Group Summary (Compression Portion):

Group Label	Group Angle Desc.	Group Type	Angle Size	Steel Strength	Max Usage	Max Usage Control	Max Usage Comp. In Member	Comp. Force	Comp. Control Capacity	L/r	Comp. Connect.	Comp. Connect.	RLX	RLY	RLZ	L/r	KL/r Length	Curve No.	No. Of Bolts
				(ksi)	%			(kips)			Load Case	Shear Capacity	Bearing Capacity				(ft)		
Leg 51	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	60.41	Comp	62.20	L 1P	-402.658	W 45	647.310	0.000	0.000	0.281	0.281	0.281	54.29	54.29	25.101
Leg 52	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	60.41	Comp	60.41	L 2P	-359.389	W 45	594.930	0.000	0.000	0.281	0.281	0.281	54.29	54.29	25.101
Leg 53	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	58.21	Comp	58.21	L 3P	-317.205	W 45	544.890	0.000	0.000	0.281	0.281	0.281	54.29	54.29	25.101
Leg 54	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	47.69	Comp	47.69	L 4P	-260.797	W 45	546.883	0.000	0.000	0.281	0.281	0.281	54.29	54.29	25.101
Leg 55	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	44.93	Comp	44.93	L 5P	-220.338	W 45	490.433	0.000	0.000	0.281	0.281	0.281	54.29	54.29	25.101
Leg 56	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	44.93	Comp	44.93	L 5P	-220.338	W 45	490.433	0.000	0.000	0.281	0.281	0.281	54.29	54.29	25.101
Leg 57	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	60.41	Comp	60.41	L 7P	-166.736	W 45	413.358	0.000	0.000	0.333	0.333	0.333	63.94	63.94	25.101
Leg 58	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	58.21	Comp	58.21	L 7P	-166.736	W 45	413.358	0.000	0.000	0.333	0.333	0.333	63.94	63.94	25.101
Leg 59	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	27.85	Comp	27.85	L 9P	-100.091	W 45	359.355	0.000	0.000	0.333	0.333	0.333	63.94	63.94	25.101
Leg 60	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	27.85	Comp	27.85	L 9P	-100.091	W 45	359.355	0.000	0.000	0.333	0.333	0.333	63.94	63.94	25.101
Leg 61	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 62	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 63	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 64	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 65	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 66	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 67	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 68	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 69	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 70	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 71	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 72	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 73	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 74	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 75	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 76	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 77	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 78	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 79	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 80	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 81	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 82	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 83	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 84	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 85	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 86	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 87	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 88	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 89	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 90	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 91	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 92	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 93	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 94	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 95	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 96	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 97	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 98	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 99	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 100	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 101	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 102	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 103	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 104	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 105	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 106	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 107	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.550
Leg 108	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.85	Comp	27.85	L 10P	-84.078	W 45	304.972	0.000	0.000	0.500	0.500	0.500	64.36	64.36	12.5

LH 5	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	65.16	Comp	65.16	LH 9X	-23.947	W -90	36.752	0.000	0.000	0.940	1.880	0.940	152.80	140.17	9.821	6	0
LH 6	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	50.74	Comp	50.74	LH 11X	-20.253	W -45	41.375	0.000	0.000	0.940	1.880	0.940	139.93	132.25	8.993	6	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 15X1	-1.039	W 45	0.324	0.000	0.000	1.000	1.000	1.000	2.25	2.25	18.717	1	0

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength	Max Usage	Max Tension	Tension In	Tension Force	Tension Control	Net Section Capacity	Tension Connect.	Tension Connect.	Tension Connect.	Length Tens.	No. Of	No. Of	Hole Diameter
				(ksi)	%	%	(kips)	(kips)		(kips)	(kips)	(kips)	(kips)	(ft)	Tens.	Member	Bolts
																	(in)
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	62.00	Comp	51.35	L 1XY 278.352	W 45	542.051	0.000	0.000	0.000	25.101	0	0	0.000
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	60.41	Comp	46.15	L 2XY 250.135	W 45	542.051	0.000	0.000	0.000	25.101	0	0	0.000
Leg S3	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	58.21	Comp	40.41	L 3XY 219.028	W 45	542.051	0.000	0.000	0.000	25.101	0	0	0.000
Leg S4	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	47.69	Comp	33.67	L 4XY 182.534	W 45	542.051	0.000	0.000	0.000	25.101	0	0	0.000
Leg S5	L 8" x 8" x 1"	SAE	8X8X1	36.0	44.93	Comp	31.43	L 5XY 152.769	W 45	485.999	0.000	0.000	0.000	25.101	0	0	0.000
Leg S6	L 8" x 8" x 1"	SAE	8X8X1	36.0	36.23	Comp	25.61	L 6XY 124.448	W 45	485.999	0.000	0.000	0.000	25.101	0	0	0.000
Leg S7	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	40.14	Comp	27.91	L 7XY 119.653	W 45	428.651	0.000	0.000	0.000	25.101	0	0	0.000
Leg S8	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0	36.68	Comp	25.31	L 8XY 93.819	W 45	370.655	0.000	0.000	0.000	25.101	0	0	0.000
Leg S9	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0	27.85	Comp	18.58	L 9XY 68.863	W 45	370.655	0.000	0.000	0.000	25.101	0	0	0.000
Leg S10	L 6" x 6" x 0.875"	SAE	6X6X0.88	36.0	27.57	Comp	18.37	L 10XY 57.922	W 45	315.252	0.000	0.000	0.000	12.550	0	0	0.000
Leg S11	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	26.17	Comp	17.59	L 11Y 48.110	W 45	273.456	0.000	0.000	0.000	12.550	0	0	0.000
Leg S12	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	21.98	Comp	14.31	L 12Y 39.141	W 45	273.456	0.000	0.000	0.000	12.550	0	0	0.000
Leg S13	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	23.35	Comp	14.45	L 13Y 30.107	W 45	208.332	0.000	0.000	0.000	12.550	0	0	0.000
Leg S14	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	18.09	Comp	10.34	L 14Y 21.532	W 45	208.332	0.000	0.000	0.000	12.550	0	0	0.000
Leg S15	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0	16.42	Comp	8.17	L 15Y 13.388	W 45	163.944	0.000	0.000	0.000	12.550	0	0	0.000
Leg S16	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	19.43	Comp	5.27	L 16Y 7.135	W 45	135.432	0.000	0.000	0.000	10.208	0	0	0.000
Leg S17	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	13.21	Comp	1.31	L 17Y 1.767	W 45	135.432	0.000	0.000	0.000	10.208	0	0	0.000
Leg S18	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	9.67	Comp	0.20	L 18Y 0.195	W 45	98.172	0.000	0.000	0.000	8.618	0	0	0.000
Leg S19	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	5.32	Comp	0.00	L 19Y 0.000		98.172	0.000	0.000	0.000	8.618	0	0	0.000
Diag S1	B/B L3"x4"x0.375"	DAS	4X3X0.38	36.0	51.67	Comp	26.04	D 2P 41.936	W -90	161.028	0.000	0.000	0.000	22.664	0	0	0.000
Diag S2	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	73.18	Comp	38.09	D 4P 41.715	W -90	109.512	0.000	0.000	0.000	22.191	0	0	0.000
Diag S3	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	68.87	Comp	37.70	D 6P 41.287	W -90	109.512	0.000	0.000	0.000	21.737	0	0	0.000
Diag S4	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	36.0	59.48	Comp	42.28	D 8P 42.872	W -90	101.412	0.000	0.000	0.000	20.858	0	0	0.000
Diag S5	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	36.0	56.78	Comp	41.23	D 10P 41.816	W -90	101.412	0.000	0.000	0.000	20.484	0	0	0.000
Diag S6	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	85.33	Comp	41.90	D 12P 39.098	W -90	93.312	0.000	0.000	0.000	20.133	0	0	0.000
Diag S7	B/B L3"x3"x0.375"	DAS	3X3X0.38	36.0	58.13	Comp	19.36	D 13P 26.474	W -90	136.728	0.000	0.000	0.000	29.947	0	0	0.000
Diag S8	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	78.35	Comp	27.22	D 16P 23.197	W 180	85.212	0.000	0.000	0.000	29.107	0	0	0.000
Diag S9	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	70.11	Comp	25.96	D 17P 22.120	W 90	85.212	0.000	0.000	0.000	28.332	0	0	0.000
Diag S10	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	52.85	Comp	15.20	D 19P 11.723	W -90	77.112	0.000	0.000	0.000	17.103	0	0	0.000
Diag S11	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	40.60	Comp	12.21	D 21P 9.413	W -90	77.112	0.000	0.000	0.000	16.573	0	0	0.000
Diag S12	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	34.73	Comp	11.05	D 23P 8.518	W -90	77.112	0.000	0.000	0.000	16.064	0	0	0.000
Diag S13	B/B L2.5"x2.5"x0.25"	DAS	2.5X2X0.25	36.0	29.12	Comp	9.35	D 25P 7.551	W -90	69.012	0.000	0.000	0.000	15.379	0	0	0.000
Diag S14	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	25.21	Comp	10.94	D 27P 7.551	W -90	69.012	0.000	0.000	0.000	15.120	0	0	0.000
Diag S15	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	39.46	Comp	10.01	D 30P 6.910	W 180	69.012	0.000	0.000	0.000	14.690	0	0	0.000
Diag S16	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	14.64	Tens	14.64	D 31P 14.646	W 180	54.756	0.000	0.000	0.000	15.610	0	0	0.000
Diag S17	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	11.19	Tens	11.19	D 33P 6.127	W 180	54.756	0.000	0.000	0.000	15.610	0	0	0.000
Diag S18	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	8.54	Tens	8.54	D 35P 3.986	W 180	46.656	0.000	0.000	0.000	13.678	0	0	0.000
Diag S19	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	99.15	Comp	6.64	D 37P 3.096	W 180	46.656	0.000	0.000	0.000	12.848	0	0	0.000
Horiz 1	B/B L4"x4"x0.25"	DAL	4X3X0.25	36.0	62.40	Comp	40.46	H 1X 44.305	W -90	109.512	0.000	0.000	0.000	24.352	0	0	0.000
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	78.66	Comp	44.59	H 3X 41.607	W -90	93.312	0.000	0.000	0.000	22.764	0	0	0.000
Horiz 3	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	70.49	Comp	46.06	H 5X 39.252	W -90	85.212	0.000	0.000	0.000	21.176	0	0	0.000
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	71.68	Comp	42.98	H 7X 40.104	W -90	93.312	0.000	0.000	0.000	21.058	0	0	0.000
Horiz 5	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	66.58	Comp	39.20	H 9X 36.579	W -90	93.312	0.000	0.000	0.000	12.000	0	0	0.000
Horiz 6	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	64.66	Comp	36.22	H 11P 30.862	W 90	85.212	0.000	0.000	0.000	10.941	0	0	0.000
Horiz 7	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	48.36	Comp	16.41	H 14P 13.982	W 0	85.212	0.000	0.000	0.000	14.823	0	0	0.000
Horiz 8	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	33.02	Comp	13.19	H 15P 11.245	W 90	85.212	0.000	0.000	0.000	13.235	0	0	0.000
Horiz 9	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	36.42	Comp	13.18	H 17P 10.165	W 90	77.112	0.000	0.000	0.000	11.647	0	0	0.000
Horiz 10	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	26.00	Comp	10.19	H 19X 7.859	W -90	77.112	0.000	0.000	0.000	10.853	0	0	0.000
Horiz 11	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	17.48	Comp	8.05	H 21X 6.208	W -90	77.112	0.000	0.000	0.000	10.059	0	0	0.000
Horiz 12	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	13.86	Comp	6.98	H 23P 5.379	W 90	77.112	0.000	0.000	0.000	9.264	0	0	0.000
Horiz 13	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	12.47	Comp	6.93	H 25P 5.347	W 90	77.112	0.000	0.000	0.000	8.470	0	0	0.000
Horiz 14	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	9.24	Comp	5.74	H 28P 4.426	W 0	77.112	0.000	0.000	0.000	7.676	0	0	0.000
Horiz 15	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	12.02	Comp	0.77	H 29X2 0.590	W -90	77.112	0.000	0.000	0.000	6.882	0	0	0.000
Horiz 16	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	28.87	Comp	0.00	H 32X 0.000		42.444	0.000	0.000	0.000	12.473	0	0	0.000
Horiz 17	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	8.40	Comp	0.00	H 34X 0.000		85.212	0.000	0.000	0.000	11.181	0	0	0.000
Horiz 18	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	15.32	Comp	0.00	H 36X 0.000		42.444	0.000	0.000	0.000	10.090	0	0	0.000
Horiz 19	C8x11.5	CHN	C8x11.5	36.0	5.26	Comp	0.00	H 38X 0.000		109.512	0.000	0.000	0.000	9.000	0	0	0.000
LD 1	B/B L3"x2.5"x0.3125"	DAL	3X2.5X0.31	36.0	47.60	Comp	19.68	LD 2Y 20.660	W -45	104.976	0.000	0.000	0.000	14.067	0	0	0.000
LD 2	B/B L4"x3"x0.3125"	DAL	4X3X0.31	36.0	66.40	Comp	35.78	LD 3P 48.459	W -90	135.432	0.000	0.000	0.000	14.067	0	0	0.000
LD 4	B/B L3"x2.5"x0.25"	DAL	3X2X0.25	36.0	68.28	Comp	24.81	LD 7P 19.131	W -90	77.112	0.000	0.000	0.000	13.385	0	0	0.000
LD 5	B/B L4"x3"x0.25"	DAL	4X3X0.25	36.0	73.87	Comp	42.65	LD 9P 46.706	W -90	109.512	0.000	0.000	0.000	13.385	0	0	0.000
LD 7	B/B L2.5"x2.5"x0.375"	DAS	2.5X2.5X0.38	36.0	47.03	Comp	16.21	LD 13P 18.223	W -90	112.428	0.000	0.000	0.000	12.717	0	0	0.000
LD 8	B/B L3. B																

Site #: 188008		Engineer: Daniel Sheek Date: mothy.Kassakitis		Windspeed: No Ice: 119 mph Ice: 50 mph		Taper: -0.127052		Taper Change: 337.5 ft											
Name: Bethany CT, CT				Carrier 3/14/2024		FW @ Base: 51.88 ft		FW @ Top: 9 ft											
Joint Label	Symmetry Code	X Coord. (ft)	Y Coord. (ft)	Z Coord. (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.	Drop Sub-Brace (Y or Blank)	Spreadsheet Version Last Updated: 11/12/2014							
												# Vert	Drop (ft)	Height (ft)	Type	Count	Z-Elev. (ft)	FW (ft)	# Sub-Brace
0	XY-Symmetry	25.94	25.94	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed		3	7.030	25	1	1	0	51.88	3
1	XY-Symmetry	24.35185185	24.35185185	25	Free	Free	Free	Free	Free	Free		3	7.030	25	1	2	25	48.7037037	3
2	XY-Symmetry	22.7637037	22.7637037	50	Free	Free	Free	Free	Free	Free		3	7.030	25	1	3	50	45.52740741	3
3	XY-Symmetry	21.17555556	21.17555556	75	Free	Free	Free	Free	Free	Free			7.030	25	2	4	75	42.35111111	3
4	XY-Symmetry	19.58740741	19.58740741	100	Free	Free	Free	Free	Free	Free			7.030	25	2	5	100	39.17481481	3
5	XY-Symmetry	17.99925926	17.99925926	125	Free	Free	Free	Free	Free	Free			7.03	25	2	6	125	35.99851852	3
6	XY-Symmetry	16.41111111	16.41111111	150	Free	Free	Free	Free	Free	Free				25	A	7	150	32.82222222	2
7	XY-Symmetry	14.82296296	14.82296296	175	Free	Free	Free	Free	Free	Free				25	A	8	175	29.64592593	2
8	XY-Symmetry	13.23481481	13.23481481	200	Free	Free	Free	Free	Free	Free				25	A	9	200	26.46962963	2
9	XY-Symmetry	11.64666667	11.64666667	225	Free	Free	Free	Free	Free	Free				12.5	A	10	225	23.29333333	1
10	XY-Symmetry	10.85259259	10.85259259	237.5	Free	Free	Free	Free	Free	Free				12.5	A	11	237.5	21.70518519	1
11	XY-Symmetry	10.05851852	10.05851852	250	Free	Free	Free	Free	Free	Free				12.5	A	12	250	20.11703704	1
12	XY-Symmetry	9.264444444	9.264444444	262.5	Free	Free	Free	Free	Free	Free				12.5	A	13	262.5	18.52888889	1
13	XY-Symmetry	8.47037037	8.47037037	275	Free	Free	Free	Free	Free	Free				12.5	A	14	275	16.94074074	1
14	XY-Symmetry	7.676296296	7.676296296	287.5	Free	Free	Free	Free	Free	Free				12.5	A	15	287.5	15.35259259	1
15	XY-Symmetry	6.882222222	6.882222222	300	Free	Free	Free	Free	Free	Free				10.167	X	16	300	13.76444444	1
16	XY-Symmetry	6.236354133	6.236354133	310.167	Free	Free	Free	Free	Free	Free		1	10.167	X	17	310.167	12.47270827	1	
17	XY-Symmetry	5.590486044	5.590486044	320.334	Free	Free	Free	Free	Free	Free			8.583	X	18	320.334	11.18097209	1	
18	XY-Symmetry	5.045243022	5.045243022	328.917	Free	Free	Free	Free	Free	Free			8.583	X	19	328.917	10.09048604	1	
19	XY-Symmetry	4.5	4.5	337.5	Free	Free	Free	Free	Free	Free						20	337.5	9	
A1	Y-Symmetry	24.35185185	0	25	Free	Free	Free	Free	Free	Free									
A2	X-Symmetry	0	24.35185185	25	Free	Free	Free	Free	Free	Free									
A3	Y-Symmetry	22.7637037	0	50	Free	Free	Free	Free	Free	Free									
A4	X-Symmetry	0	22.7637037	50	Free	Free	Free	Free	Free	Free									
A5	Y-Symmetry	21.17555556	0	75	Free	Free	Free	Free	Free	Free									
A6	X-Symmetry	0	21.17555556	75	Free	Free	Free	Free	Free	Free									
A7	XY-Symmetry	19.58740741	6.529135802	100	Free	Free	Free	Free	Free	Free									
A8	XY-Symmetry	6.529135802	19.58740741	100	Free	Free	Free	Free	Free	Free									
A9	XY-Symmetry	17.99925926	5.999753086	125	Free	Free	Free	Free	Free	Free									
A10	XY-Symmetry	5.999753086	17.99925926	125	Free	Free	Free	Free	Free	Free									
A11	XY-Symmetry	16.41111111	5.47037037	150	Free	Free	Free	Free	Free	Free									
A12	XY-Symmetry	5.47037037	16.41111111	150	Free	Free	Free	Free	Free	Free									
A13	Y-Symmetry	14.82296296	0	175	Free	Free	Free	Free	Free	Free									
A14	X-Symmetry	0	14.82296296	175	Free	Free	Free	Free	Free	Free									
A15	Y-Symmetry	13.23481481	0	200	Free	Free	Free	Free	Free	Free									
A16	X-Symmetry	0	13.23481481	200	Free	Free	Free	Free	Free	Free									
A17	Y-Symmetry	11.64666667	0	225	Free	Free	Free	Free	Free	Free									
A18	X-Symmetry	0	11.64666667	225	Free	Free	Free	Free	Free	Free									
A19	Y-Symmetry	10.85259259	0	237.5	Free	Free	Free	Free	Free	Free									
A20	X-Symmetry	0	10.85259259	237.5	Free	Free	Free	Free	Free	Free									
A21	Y-Symmetry	10.05851852	0	250	Free	Free	Free	Free	Free	Free									
A22	X-Symmetry	0	10.05851852	250	Free	Free	Free	Free	Free	Free									
A23	Y-Symmetry	9.264444444	0	262.5	Free	Free	Free	Free	Free	Free									
A24	X-Symmetry	0	9.264444444	262.5	Free	Free	Free	Free	Free	Free									
A25	Y-Symmetry	8.47037037	0	275	Free	Free	Free	Free	Free	Free									
A26	X-Symmetry	0	8.47037037	275	Free	Free	Free	Free	Free	Free									
A27	Y-Symmetry	7.676296296	0	287.5	Free	Free	Free	Free	Free	Free									
A28	X-Symmetry	0	7.676296296	287.5	Free	Free	Free	Free	Free	Free									
A29	Y-Symmetry	6.882222222	0	300	Free	Free	Free	Free	Free	Free									
A30	X-Symmetry	0	6.882222222	300	Free	Free	Free	Free	Free	Free									
H1	XY-Symmetry	24.79843911	12.17592593	17.97	Free	Free	Free	Free	Free	Free									
H2	XY-Symmetry	12.17592593	24.79843911	17.97	Free	Free	Free	Free	Free	Free									
H5	XY-Symmetry	23.21029096	11.38185185	42.97	Free	Free	Free	Free	Free	Free									
H6	XY-Symmetry	11.38185185	23.21029096	42.97	Free	Free	Free	Free	Free	Free									
H9	XY-Symmetry	21.62214281	10.58777778	67.97	Free	Free	Free	Free	Free	Free									
H10	XY-Symmetry	10.58777778	21.62214281	67.97	Free	Free	Free	Free	Free	Free									
H13	XY-Symmetry	20.03399467	10.64770904	92.97	Free	Free	Free	Free	Free	Free									
H14	XY-Symmetry	10.64770904	20.03399467	92.97	Free	Free	Free	Free	Free	Free									
H15	Y-Symmetry	20.03399467	0	92.97	Free	Free	Free	Free	Free	Free									
H16	X-Symmetry	0	20.03399467	92.97	Free	Free	Free	Free	Free	Free									
H17	XY-Symmetry	18.44584652	9.820601481	117.97	Free	Free	Free	Free	Free	Free									
H18	XY-Symmetry	9.820601481	18.44584652	117.97	Free	Free	Free	Free	Free	Free									
H19	Y-Symmetry	18.44584652	0	117.97	Free	Free	Free	Free	Free	Free									
H20	X-Symmetry	0	18.44584652	117.97	Free	Free	Free	Free	Free	Free									
H21	XY-Symmetry	16.85769837	8.993493926	142.97	Free	Free	Free	Free	Free	Free									
H22	XY-Symmetry	8.993493926	16.85769837	142.97	Free	Free	Free	Free	Free	Free									
H23	Y-Symmetry	16.85769837	0	142.97	Free	Free	Free	Free	Free	Free									
H24	X-Symmetry	0	16.85769837	142.97	Free	Free	Free	Free	Free	Free									

NOTES

Types:

1: Built up Horiz. w/ A

2: Built up Horiz. w/ M

A: Typical A brace

X: Typical X brace

Drop: Use only for types 1 & 2

Sections: 19

Legs

Site No.:	88008
Engineer:	Daniel.Sheek
Date:	Timothy.Kassakatis
Carrier:	45365

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter or Length (in)	Thickness ^[2] (in)	F _y (ksi)
1	0.000-25.00	L	8	1.125	36
2	25.00-50.00	L	8	1.125	36
3	50.00-75.00	L	8	1.125	36
4	75.00-100.0	L	8	1.125	36
5	100.0-125.0	L	8	1	36
6	125.0-150.0	L	8	1	36
7	150.0-175.0	L	8	0.875	36
8	175.0-200.0	L	8	0.75	36
9	200.0-225.0	L	8	0.75	36
10	225.0-237.5	L	6	0.875	36
11	237.5-250.0	L	6	0.75	36
12	250.0-262.5	L	6	0.75	36
13	262.5-275.0	L	6	0.5625	36
14	275.0-287.5	L	6	0.5625	36
15	287.5-300.0	L	6	0.4375	36
16	300.0-310.2	L	5	0.4375	36
17	310.2-320.3	L	5	0.4375	36
18	320.3-328.9	L	5	0.3125	36
19	328.9-337.5	L	5	0.3125	36

Notes:

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

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

^[3] Adjust for Bent Plate Leg Shapes.

Diagonals

Site No.:	88008
Engineer:	Daniel.Sheek
Date:	Timothy.Kassakatis
Carrier:	45365

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	Is Diag. Tension Only? (Y/N)
1	0.000-25.00	2L		3	4	0.375	36	
2	25.00-50.00	2L		3	4	0.25	36	
3	50.00-75.00	2L		3	4	0.25	36	
4	75.00-100.0	2L		3	3.5	0.25	36	
5	100.0-125.0	2L		3	3.5	0.25	36	
6	125.0-150.0	2L		2.5	3.5	0.25	36	
7	150.0-175.0	2L		3	3	0.375	36	
8	175.0-200.0	2L		2.5	3	0.25	36	
9	200.0-225.0	2L		2.5	3	0.25	36	
10	225.0-237.5	2L		2.5	2.5	0.25	36	
11	237.5-250.0	2L		2.5	2.5	0.25	36	
12	250.0-262.5	2L		2.5	2.5	0.25	36	
13	262.5-275.0	2L		2.5	2	0.25	36	
14	275.0-287.5	2L		2.5	2	0.25	36	
15	287.5-300.0	2L		2.5	2	0.25	36	
16	300.0-310.2	L		3.5	3.5	0.25	36	Y
17	310.2-320.3	L		3.5	3.5	0.25	36	Y
18	320.3-328.9	L		3	3	0.25	36	Y
19	328.9-337.5	L		3	3	0.25	36	Y

Notes:

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

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

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

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Horizontals

Site No.:	88008
Engineer:	Daniel.Sheek
Date:	Timothy.Kassakatis
Carrier:	45365

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	B/B Spacing (in.)
1	0.000-25.00	2L		4	3	0.25	36	
2	25.00-50.00	2L		3.5	2.5	0.25	36	
3	50.00-75.00	2L		3	2.5	0.25	36	
4	75.00-100.0	2L		3.5	2.5	0.25	36	
5	100.0-125.0	2L		3.5	2.5	0.25	36	
6	125.0-150.0	2L		3	2.5	0.25	36	
7	150.0-175.0	2L		3	2.5	0.25	36	
8	175.0-200.0	2L		3	2.5	0.25	36	
9	200.0-225.0	2L		2.5	2.5	0.25	36	
10	225.0-237.5	2L		2.5	2.5	0.25	36	
11	237.5-250.0	2L		2.5	2.5	0.25	36	
12	250.0-262.5	2L		2.5	2.5	0.25	36	
13	262.5-275.0	2L		2.5	2.5	0.25	36	
14	275.0-287.5	2L		2.5	2.5	0.25	36	
15	287.5-300.0	2L		2.5	2.5	0.25	36	
16	300.0-310.2	L		3	2.5	0.25	36	
17	310.2-320.3	2L		3	2.5	0.25	36	
18	320.3-328.9	L		3	2.5	0.25	36	
19	328.9-337.5	C		8	11.5		36	

Notes:

^[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle, **2L** = Double-Angle, **C** = Channel, **W** = W Shape

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

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

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Built-up Diagonals

Site No.:	88008
Engineer:	Daniel.Sheek
Date:	Timothy.Kassakatis
Carrier:	45365

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

Tower Built-up Diag. #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)
1	0.000-25.00	2L		3	2.5	0.3125	36
2	0.000-25.00	2L		4	3	0.3125	36
3	25.00-50.00	2L		3	2	0.25	36
4	25.00-50.00	2L		4	3	0.25	36
5	50.00-75.00	2L		2.5	2.5	0.375	36
6	50.00-75.00	2L		3.5	3	0.25	36
7	75.00-100.0	2L		3	3	0.25	36
8	75.00-100.0	2L		2.5	2	0.25	36
9	75.00-100.0	2L		3	2	0.25	36
10	100.0-125.0	2L		2.5	2	0.25	36
11	100.0-125.0	2L		2.5	2	0.25	36
12	100.0-125.0	2L		3	3	0.25	36
13	125.0-150.0	2L		2.5	2	0.25	36
14	125.0-150.0	2L		2.5	2	0.25	36
15	125.0-150.0	2L		2.5	2	0.25	36

Notes:

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

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

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

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Built-up Horizontals

Site No.:	88008
Engineer:	Daniel.Sheek
Date:	Timothy.Kassakatis
Carrier:	45365

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	Is Horiz. Tension Only? (Y/N)
1	0.000-25.00	2L		2.5	3	0.25	36	Y
2	25.00-50.00	2L		2.5	3	0.25	36	Y
3	50.00-75.00	2L		2.5	3	0.25	36	Y
4	75.00-100.0	2L		3	3	0.375	36	
5	100.0-125.0	2L		2.5	3	0.25	36	
6	125.0-150.0	2L		2.5	3	0.25	36	

Notes:

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

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

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

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Description	From	To	Quantity	Shape	Width or Diameter**	Perimeter	Unit	In Face Zone?	Include in Wind Load
	(ft)	(ft)			(ft)	(ft)	(sq/ft)	(Yes/No)	(Yes/No)
1 Climbing Ladder	0	237.5	1	Flat	1.000	6.0	6	No	Yes
2 US Dept	0	237.5	2	Round	1.000	3.4	0.33	Yes	Yes
3 US Dept	0	237.5	1	Round	0.630	2.0	0.15	Yes	Yes
4 Ligade	0	319	1	Round	1.980	6.2	0.82	Yes	Yes
5 US Dept	0	319	2	Round	1.000	3.4	0.33	Yes	Yes
6 US Dept	0	375	1	Round	1.000	3.4	0.33	Yes	Yes
7 Sprint	0	240	4	Round	1.540	4.8	1	No	Yes
8 TMO	0	220	3	Round	1.900	6.3	1.0	Yes	Yes
9 TMO	0	220	3	Round	1.250	3.9	1.05	Yes	Yes
10 US Dept	0	194	1	Round	1.550	4.9	0.63	Yes	Yes
12 ATT	0	165	6	Round	1.980	6.2	0.82	Yes	Yes
13 ATT	0	165	1	Round	0.930	1.2	0.17	Yes	Yes
14 ATT	0	165	2	Round	0.780	2.5	0.59	Yes	Yes
15 ATT	0	165	1	Round	0.560	11.0	1.16	Yes	Yes
16 Meins	0	100	6	Round	1.980	6.2	0.82	Yes	Yes
17 Sprint	0	48	1	Round	0.650	2.0	0.15	No	Yes
18 Coax Cage	12.5	32.5	2	Flat	12.000	48.0	25	Yes	Yes
19 Coax Cage	12.5	32.5	2	Flat	12.000	48.0	25	Yes	Yes
20 Wave Guide	0	180	1	Flat	2.000	6.0	2	Yes	Yes
21 Wave Guide	0	165	1	Flat	2.000	6.0	2	Yes	Yes
22 Wave Guide	0	100	1	Flat	2.000	6.0	2	Yes	Yes
23 Spline	0	147	1	Flat	0.630	2.5	0.15	No	Yes
24 Sprint	0	204.8	1	Flat	1.061	10.6	4.03	No	Yes
25 Version	0	180	1	Round	2.970	10.2	1.64	Yes	Yes
26 Gish	0	140	1	Round	1.600	5.0	2.34	No	Yes
27 US Dept	0	213	1	Round	1.550	4.9	0.63	Yes	Yes
28 Sprint Nextel	0	253	12	Round	1.980	6.2	0.82	No	Yes

[illegible]

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

Site No.:
Engineer:
Date:

ID	Elevation	C/A ₁		Force	Force (in)		Weight		Weight (in)		60 Axi	Force		Flight	Start of Forces (in)	
		C/A ₁ (in)	(lb)		C/A ₁ (in)	(lb)	(lb)	(lb)	Force	F (in)		60 Axi	60 Axi			
1	338	20.76	28.03	784.097	177.141	1028	1400	1.000	0.00	0.00	0.000000	744.038754				
2	338	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	744.038754				
3	338	70.00	94.50	2508.997	597.971	1200	9500	0.000	0.00	0.00	1.000000	744.038754				
4	338	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	744.038754				
5	338	1.73	2.34	60.993	14.536	24	31	0.000	0.00	0.00	1.000000	60.9049672				
6	338	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	60.9049672				
7	338	5.00	7.02	188.327	43.602	180	234	0.000	0.00	0.00	1.000000	244.185380				
8	338	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	244.185380				
9	338	8.00	8.10	209.800	46.000	60	78	0.000	0.00	0.00	1.000000	270.886061				
10	338	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	270.886061				
11	338	30.48	43.12	871.173	196.765	78	125	0.000	0.00	0.00	1.000000	355.974905				
12	338	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	355.974905				
13	338	14.00	19.12	321.029	71.976	90	124	0.000	0.00	0.00	1.000000	370.359608				
14	287	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	320.026828				
15	287	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	320.026828				
16	287	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	320.026828				
17	287	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	320.026828				
18	275	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	303.4539474				
19	275	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	303.4539474				
20	275	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	303.4539474				
21	275	14.00	20.12	503.492	109.126	900	1248	0.000	0.00	0.00	1.000000	756.000261				
22	262	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	756.000261				
23	262	24.00	3.24	357.099	19.053	35	47	0.000	0.00	0.00	1.000000	756.000261				
24	262	32.72	24.654	616.578	222.322	222	222	0.000	0.00	0.00	1.000000	756.000261				
25	253	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	3078.088674				
26	253	11.13	0.00	301.710	61.925	41	61	0.000	0.00	0.00	1.000000	3078.088674				
27	253	5.30	7.02	185.346	38.930	180	234	0.000	0.00	0.00	1.000000	355.9504041				
28	253	1.98	1.00	42.507	9.645	18	24	0.000	0.00	0.00	1.000000	355.9504041				
29	222	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	42.9771136				
30	222	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	42.9771136				
31	222	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	42.9771136				
32	222	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	42.9771136				
33	222	14.00	20.12	503.492	109.126	900	1248	0.000	0.00	0.00	1.000000	756.000261				
34	222	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	756.000261				
35	222	30.48	37.89	977.879	220.730	300	488	0.000	0.00	0.00	1.000000	947.804061				
36	222	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	947.804061				
37	222	30.48	37.89	977.879	220.730	300	488	0.000	0.00	0.00	1.000000	947.804061				
38	222	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	947.804061				
39	185	0.24	0.56	7.009	2.887	20	28	0.000	0.00	0.00	1.000000	7.00037626				
40	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	7.00037626				
41	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	7.00037626				
42	185	1.06	1.77	30.161	9.100	18	89	0.000	0.00	0.00	1.000000	30.1610000				
43	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	30.1610000				
44	185	2.65	4.29	77.375	22.096	102	144	0.000	0.00	0.00	1.000000	77.3750000				
45	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	77.3750000				
46	185	8.44	1.25	24.593	6.421	30	78	0.000	0.00	0.00	1.000000	24.5930000				
47	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	24.5930000				
48	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	24.5930000				
49	185	8.59	1.24	250.945	128	145	108	0.000	0.00	0.00	1.000000	250.9450000				
50	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	250.9450000				
51	185	4.30	1.00	125.435	58	143	58	0.000	0.00	0.00	1.000000	125.4350000				
52	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	125.4350000				
53	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	125.4350000				
54	185	12.82	1.00	788.193	146	383	124	0.000	0.00	0.00	1.000000	788.1930000				
55	185	21.71	29.31	475.447	113.314	2880	1944	0.000	0.00	0.00	1.000000	475.4470000				
56	185	30.34	0.00	265.185	59.845	95	199	0.000	0.00	0.00	1.000000	265.1850000				
57	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	265.1850000				
58	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	265.1850000				
59	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	265.1850000				
60	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	265.1850000				
61	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	265.1850000				
62	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	265.1850000				
63	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	265.1850000				
64	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	265.1850000				
65	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	265.1850000				
66	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	265.1850000				
67	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	265.1850000				
68	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	265.1850000				
69	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	265.1850000				
70	185	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	265.1850000				
71	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
72	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
73	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
74	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
75	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
76	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
77	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
78	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
79	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
80	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
81	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
82	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
83	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
84	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
85	209	0.00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	0.00	0.000000	209.0000000				
86	209	0.00	0.00	0.00	0.00	0.00	0.00	1.0								

Site Name: Bethany CT

Site Number: 88008

Tower Type: SST

Design Loads (Factored) - Analysis per TIA-222-H Standards

Mat & Pier Foundation Analysis

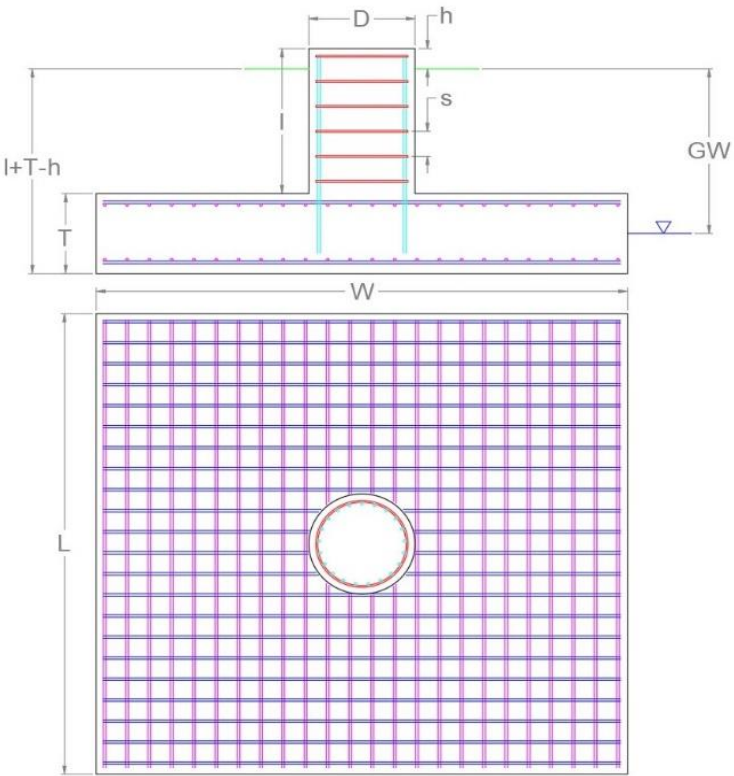
Foundation Analysis Parameters		
Design / Analysis / Mapping:	Mapping	-
Compression/Leg:	458.3	k
Uplift/Leg:	328.0	k
Shear/Leg:	69.1	k
Global Moment:	0.0	k-ft
Global Axial:	0.0	k
Depth to Base of Foundation (l + t - h):	9.25	ft
Diameter of Pier (d):	4.08	ft
Length of Pier (l):	7.25	ft
Height of Pier above Ground (h):	0.5	ft
Pier Shape:	Square	
If Square: Pier Taper:	Pyramidal	
Pier Width at Base:	7.583	ft
Width of Pad (W):	21.583	ft
Length of Pad (L):	21.583	ft
Thickness of Pad (t):	2.5	ft
Tower Leg Center to Center:	51.88	ft
Number of Connection to Tower:	1	-
Tower Center from Mat Center:	0	ft
Depth Below Ground Surface to Water Table:	99	ft
Unit Weight of Soil Above Water Table:	131	pcf
Angle of Uplift:	15	°
Coefficient of Shear Friction:	0.3	-
Ultimate Compressive Bearing Pressure:	48,200	psf
Bearing Pressure Type:	Net	-
Ultimate Passive Pressure on Pad Face:	1,048	psf
Ultimate Skin Friction:	0	psf
Soil Type:	Rock	-
Φ _{Soil} and Concrete Weight:	1.2	-
Φ _{Soil} :	0.75	-

Overturning Moment Usage		
Design OTM:	681.8	k-ft
OTM Resistance:	5487.3	k-ft
M _u /Φ _s M _n :	12.4%	Pass

Soil Bearing Pressure Usage		
Applied Bearing Pressure:	1204.6	psf
Factored Nominal Bearing Pressure:	36150.0	psf
P _u /Φ _s P _n :	3.3%	Pass
Load Direction Controlling Design Bearing Pressure:	Parallel to Pad Edge	

Sliding Factor of Safety		
Ultimate Friction Resistance:	151.0	k
Ultimate Passive Pressure Resistance:	56.5	k
Total Factored Sliding Resistance:	155.7	k
V _u /Φ _s V _n :	44.9%	Pass

Uplift and Pullout Usage		
Applied Uplift Force:	330.6	k
Ultimate Skin Friction Resistance:	0.0	k
Factored Uplift Capacity per Leg (Φ _s T _n):	432.2	k
T _u /Φ _s T _n :	76%	Pass



Site Number
Site Name
TIA Revision
Date

Bethany CT, CT
88008
ANSI/TIA-222-H
3/14/2024

SST Anchor Rod Interaction Check

Reactions & Layout			
Uplift	T _u	328.0	k
Axial	P _u	458.3	k
Shear	V _u	69.1	k
Rod Quantity	n	6	
Rod Diameter	d	2 1/4	in
Rod Grade		A36	
Rod F _y	F _y	36	ksi
Rod F _u	F _u	58	ksi
Clear Distance		3	in
Grouted? (Type c)		Yes	

Rod Properties			
Threads per Inch	n ^b	4.5	
Net Area	A _n	3.25	in ²
Gross Area	A _g	3.98	in ²

Tension			
Tension Reduction Factor	Φ _t	0.75	
Nominal Tensile Strength	R _{nt}	188.37	k

[ANSI/TIA-222-H, 4.9.6.5]

Shear			
Shear Reduction Factor	Φ _v	0.75	
Nominal Shear Strength	R _{nv}	115.31	k
Compression Reduction Factor	Φ _c	0.90	
Nominal Shear Yielding Strength	R _{nvc}	64.41	k

[ANSI/TIA-222-H, 4.9.6.3]

Flexure			
Flexure Reduction Factor	Φ _f	0.90	
Plastic Section Modulus	Z	1.90	in ³
Nominal Flexural Strength	M _n	68.34	k-in

[ANSI/TIA-222-H, 4.7.1]

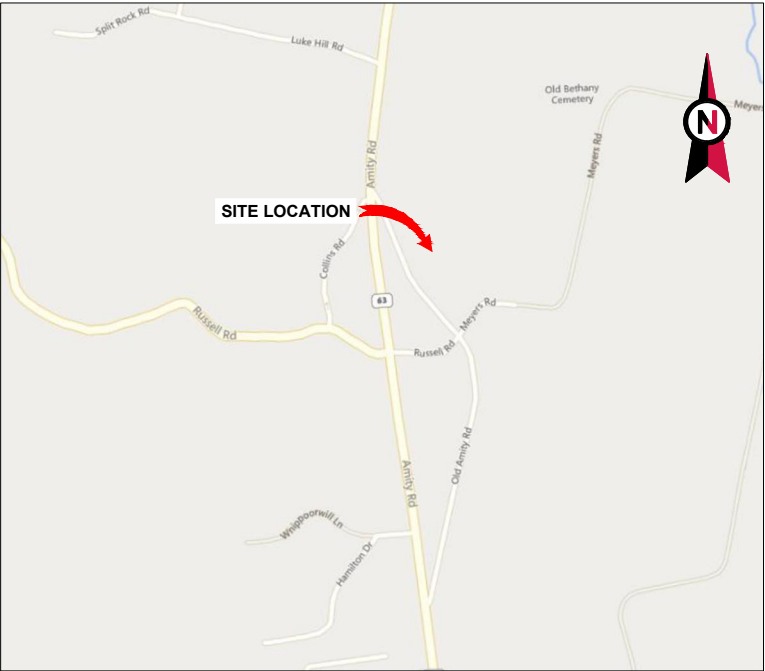
Compression			
Radius of Gyration	r	0.56	ksi
Effective Yield Strss	F _y '	36.00	ksi
λ _c		0.01	k-in
Critical Compression Stress	F _{cr}	36.00	k
Nominal Compression Yielding Strength	R _{nc}	143.14	k
Nominal Buckling Strength	R _{nb}	143.13	k
Anchor Rod Projection to Nut	l _{ar}	0.85	in

[ANSI/TIA-222-H, 4.5.4.2]

Tensile Interaction Result	16.7%	Pass
Compressive Interaction Result	3.9%	Pass

EXHIBIT C

Construction Drawings



VICINITY MAP



AMERICAN TOWER®

ATC SITE NAME: BETHANY CT
ATC SITE NUMBER: 88008
VERIZON SITE NAME: BETHANY CT
VERIZON SITE NUMBER: 469372
SITE ADDRESS: 93 OLD AMITY ROAD
BETHANY, CT 06524



LOCATION MAP

VERIZON
ANTENNA AMENDMENT DRAWINGS

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES. 1. 2022 CONNECTICUT STATE BUILDING CODE, INCORPORATING THE 2021 IBC. 2. 2020 NATIONAL ELECTRICAL CODE - NFPA 70 3. 2020 NFPA 101 4. AMERICAN INSTITUTE OF STEEL CONSTRUCTION 360-16 5. AMERICAN CONCRETE INSTITUTE 6. 2020 NATIONAL ELECTRICAL SAFETY CODE (NESC) 7. TIA 607 FOR GROUNDING 8. INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81 IEEE C2 9. TELCORDIA GR-1275 10.ANSI T1.311	<u>SITE ADDRESS:</u> 93 OLD AMITY ROAD BETHANY, CT 06524 COUNTY: NEW HAVEN <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.40475833 LONGITUDE: -72.99998333 GROUND ELEVATION: 620' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: REMOVE (12) ANTENNA(s) AND (6) DIPLEXER(s) INSTALL (3) DUAL MOUNTING BRACKETS, (9) ANTENNA(s), (6) RRH(s), (1) OVP(s) AND (2) 1-5/8" HYBRID CABLE(s) EXISTING (12) 1-5/8" COAX CABLE(s) TO REMAIN	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
			G-001	TITLE SHEET	1	05/10/24	AJC
			G-002	GENERAL NOTES	1	05/10/24	AJC
			C-101	DETAILED SITE PLAN	1	05/10/24	AJC
			C-201	TOWER ELEVATION	1	05/10/24	AJC
			C-401	ANTENNA INFORMATION & SCHEDULE	1	05/10/24	AJC
			C-501	CONSTRUCTION DETAILS	1	05/10/24	AJC
			E-501	GROUNDING DETAILS	1	05/10/24	AJC
			R-601	SUPPLEMENTAL			
			R-602	SUPPLEMENTAL			
PROJECT TEAM			R-603	SUPPLEMENTAL			
<u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801 <u>APPLICANT:</u> VERIZON WIRELESS <u>ENGINEER:</u> COLLIERS ENGINEERING & DESIGN CT, P.C. dba MASER CONSULTING 135 NEW ROAD MADISON, CT 06443 PROJECT #: 21904026 <u>PROPERTY OWNER:</u> N/A 93 OLD AMITY ROAD BETHANY, CT 06524			PROJECT NOTES				
1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED. 6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).							
PROJECT LOCATION DIRECTIONS							
FROM NEW HAVEN, CT TAKE RT 34 WEST TO RT 63 NORTH. FOLLOW RT 63 NORTH TO OLD AMITY ROAD. FORK RIGHT ONTO OLD AMITY ROAD AND FOLLOW UP THE HILL TO THE FORK. FORK RIGHT AGAIN TO DEAD END STREET. ACCESS ROAD ENTRANCE WILL BE ON THE LEFT.							



Colliers Engineering & Design

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Doing Business as MASER
MADISON
135 New Road
Madison, CT 06443
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COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

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REV.	DESCRIPTION	BY	DATE
A	PRELIM	DR	06/16/21
B	FOR CONSTRUCTION	AMN	12/20/21
C	FOR CONSTRUCTION	AJC	05/10/24

ATC SITE NUMBER:
88008

ATC SITE NAME:
BETHANY CT

VERIZON SITE NAME:
BETHANY CT

SITE ADDRESS:
93 OLD AMITY ROAD
BETHANY, CT 06524

SEAL:



Dejian Xu

33733

LICENSED PROFESSIONAL ENGINEER

Digitally signed by Dejian Xu
Date: 2024.07.01 14:11:50 +04'00'

C.T. JPC.0000131

	
DATE DRAWN:	06/16/21
ATC JOB NO:	13685609_D1
CUSTOMER ID:	BETHANY CT
CUSTOMER #:	469372

TITLE SHEET	
SHEET NUMBER: G-001	REVISION: 1

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, VERIZON "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL

A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)

B. AC/TELCO INTERFACE BOX (PPC)

C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)

D. TOWERS, MONOPOLES

E. TOWER LIGHTING

F. GENERATORS & LIQUID PROPANE TANK

G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING

H. ANTENNAS (INSTALLED BY OTHERS)

I. TRANSMISSION LINE

J. TRANSMISSION LINE JUMPERS

K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS

L. TRANSMISSION LINE GROUND KITS

M. HANGERS

N. HOISTING GRIPS

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

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

SPECIAL CONSTRUCTION

ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:

A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY VERIZON UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OD COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND

B. INSTALL ANTENNA AS INDICATE ON DRAWINGS AND VERIZON SPECIFICATIONS.

C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS

D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.

E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.

F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.

G. ANTENNA AND COAXIAL CABLE GROUNDING:
2. ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPICE WEATHERPROOFING KIT #221213 OR EQUAL.
3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)

ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.



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REV.	DESCRIPTION	BY	DATE
A	PRELIM	DR	06/16/21
0	FOR CONSTRUCTION	AMN	12/20/21
1	FOR CONSTRUCTION	AJC	05/10/24

ATC SITE NUMBER:
88008

ATC SITE NAME:
BETHANY CT

VERIZON SITE NAME:
BETHANY CT

SITE ADDRESS:
93 OLD AMITY ROAD
BETHANY, CT 06524

SEAL:

Digitally signed by Dejian Xu
Date: 2024.07.01 14:11:57'04'00'

C.T. JPC.0000131

verizon	
DATE DRAWN:	06/16/21
ATC JOB NO:	13685609_D1
CUSTOMER ID:	BETHANY CT
CUSTOMER #:	469372

GENERAL NOTES	
SHEET NUMBER: G-002	REVISION: 1

SITE PLAN NOTES:

1.

THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2.

ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3.

THIS PROJECT INCLUDES NO INSTALL OR MODIFICATION AT GRADE.

LEGEND

⊗

GROUNDING TEST WELL

ATS

AUTOMATIC TRANSFER SWITCH

B

BOLLARD

CSC

CELL SITE CABINET

D

DISCONNECT

E

ELECTRICAL

F

FIBER

GEN

GENERATOR

G

GENERATOR RECEPTACAL

HH, V

HAND HOLE, VAULT

IB

ICE BRIDGE

K

KENTROX BOX

LC

LIGHTING CONTROL

M

METER

PB

PULL BOX

PP

POWER POLE

T

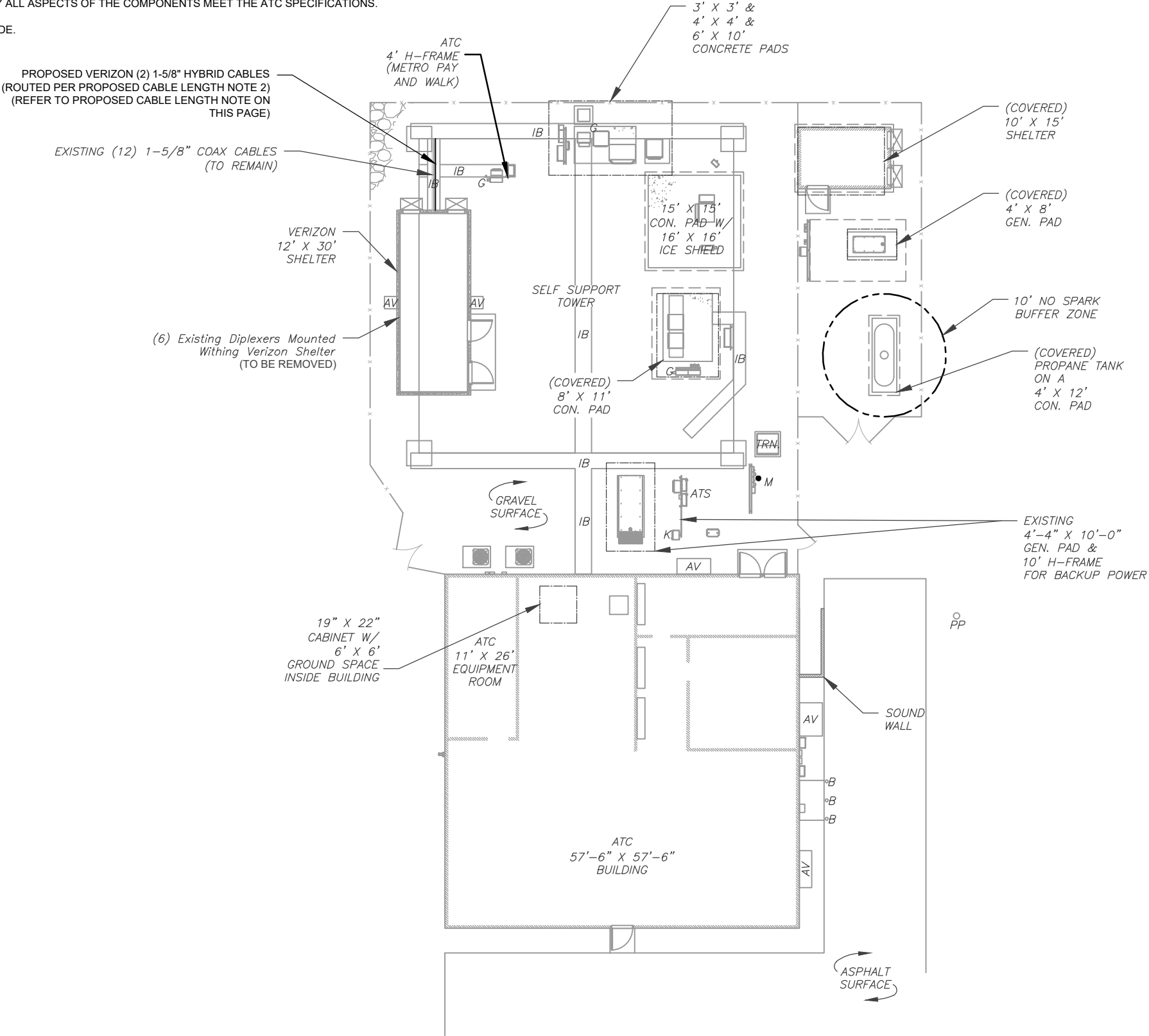
TELCO

TRN

TRANSFORMER

— x —

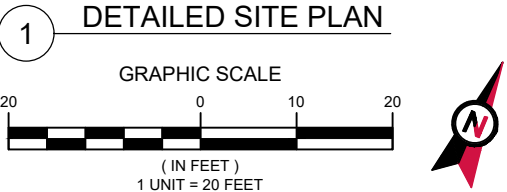
CHAINLINK FENCE



- PROPOSED CABLE LENGTH:
1.

ESTIMATED LENGTH OF PROPOSED CABLE IS 225'. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES). CDS DEFER TO GREATEST CABLE LENGTH.
2.

ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).



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88008

ATC SITE NAME:
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VERIZON SITE NAME:
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SITE ADDRESS:
93 OLD AMITY ROAD
BETHANY, CT 06524

SEAL:

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Date: 2024.07.01 14:11:57 +04'00'

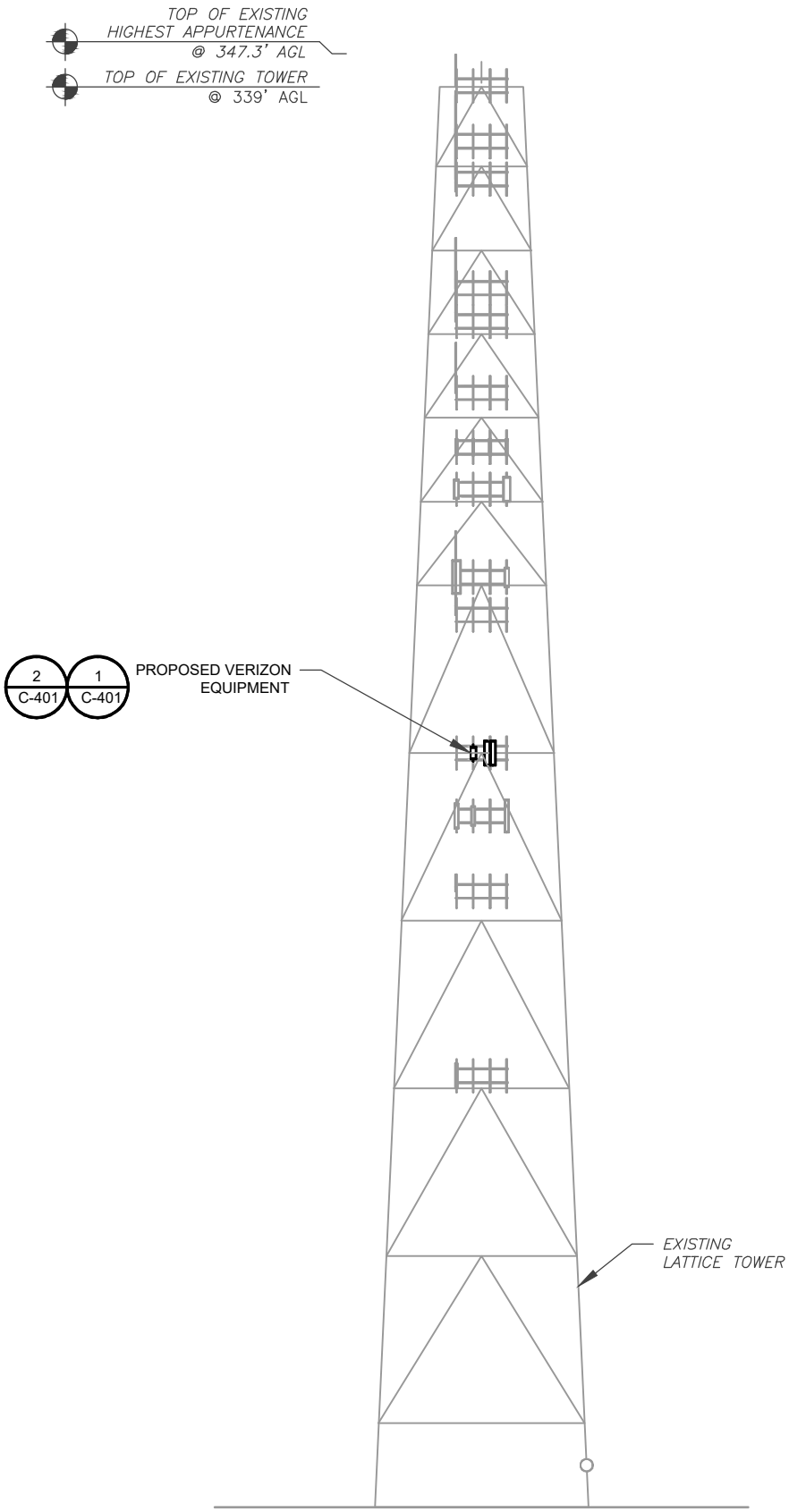
C.T. JPC.0000131



DATE DRAWN:	06/16/21
ATC JOB NO:	13685609_D1
CUSTOMER ID:	BETHANY CT
CUSTOMER #:	469372

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	1



PER MOUNT ANALYSIS COMPLETED BY COLLIERS ENGINEERING & DESIGN, ARCHITECTURE, LANDSCAPING ARCHITECTURE, SURVEYING, CT, P.C., DATED 01/23/24, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING UPON COMPLETION OF THE PMI REQUIREMENTS.

Remove and replace the pipe in position 2 (as seen from behind the mount) with a proposed 6' long P2 1/2 STD to be used for the dual antennas. Connect the proposed pipe to the existing face horizontals using crossover plate (VZWSMART P/N: MSK1)

- EXISTING CARRIER ANTENNAS
RAD CENTER @ 340' AGL
- EXISTING CARRIER ANTENNAS
RAD CENTER @ 326' AGL
- EXISTING CARRIER ANTENNAS
RAD CENTER @ 317' AGL
- EXISTING CARRIER ANTENNAS
RAD CENTER @ 291' AGL
- EXISTING CARRIER ANTENNAS
RAD CENTER @ 283' AGL
- EXISTING CARRIER ANTENNAS
RAD CENTER @ 266' AGL
- EXISTING CARRIER ANTENNAS
RAD CENTER @ 253' AGL
- EXISTING CARRIER ANTENNAS
RAD CENTER @ 243' AGL
- EXISTING CARRIER ANTENNAS
RAD CENTER @ 222' AGL
- EXISTING CARRIER ANTENNAS
RAD CENTER @ 213' AGL
- PROPOSED VERIZON
RAD CENTER @ 180' AGL
- EXISTING CARRIER ANTENNAS
RAD CENTER @ 158' AGL
- EXISTING CARRIER ANTENNAS
RAD CENTER @ 147' AGL
- EXISTING CARRIER ANTENNAS
RAD CENTER @ 103' AGL

- TOWER NOTE:
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
 - WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
 - ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).
 - TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

1 TOWER ELEVATION
SCALE: N.T.S.



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REV.	DESCRIPTION	BY	DATE
A	PRELIM	DR	06/16/21
0	FOR CONSTRUCTION	AMN	12/20/21
1	FOR CONSTRUCTION	AJC	05/10/24

ATC SITE NUMBER:
88008

ATC SITE NAME:
BETHANY CT

VERIZON SITE NAME:
BETHANY CT

SITE ADDRESS:
93 OLD AMITY ROAD
BETHANY, CT 06524

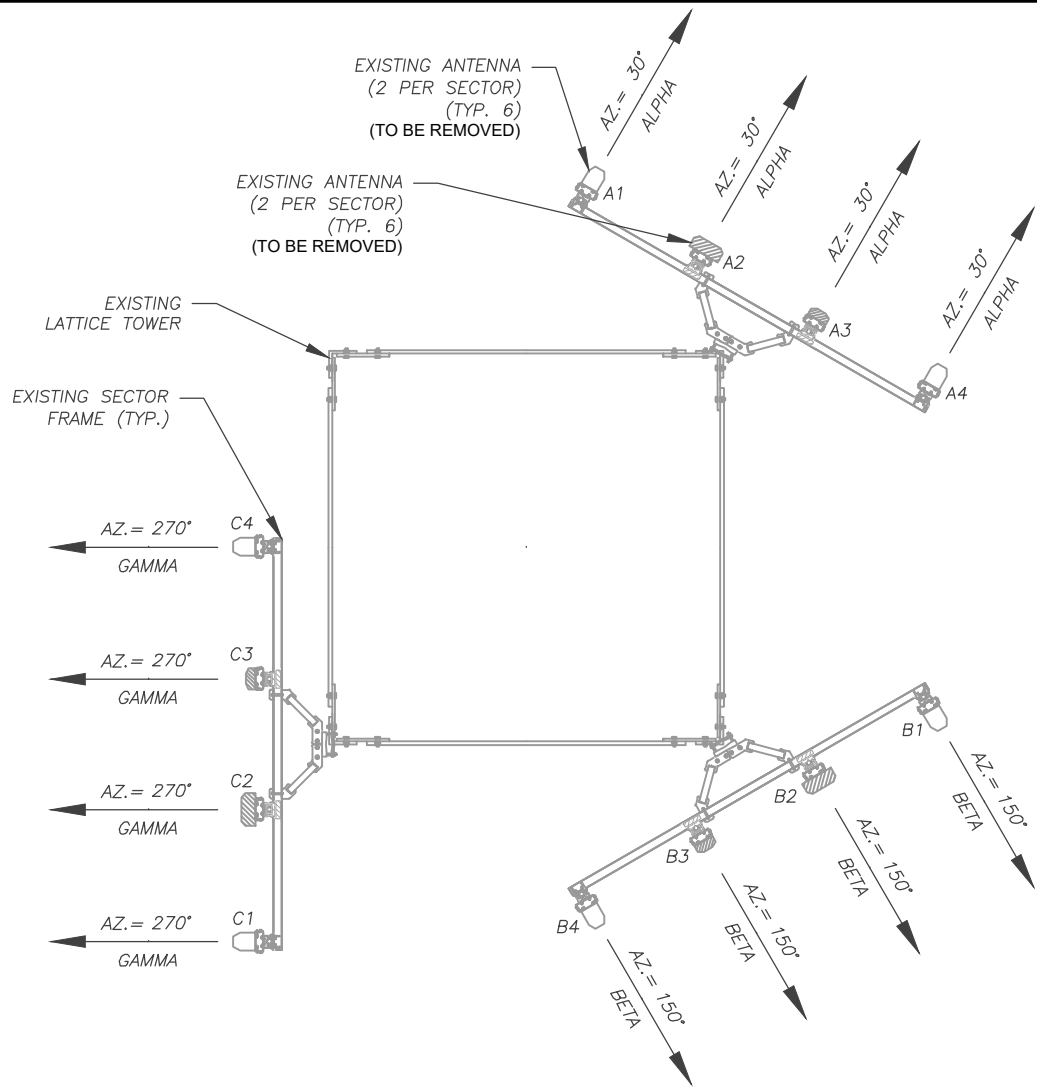
SEAL:

Digitally signed by Dejian Xu
Date: 2024.07.01 14:11:58 -0400

C.T. JPC.0000131

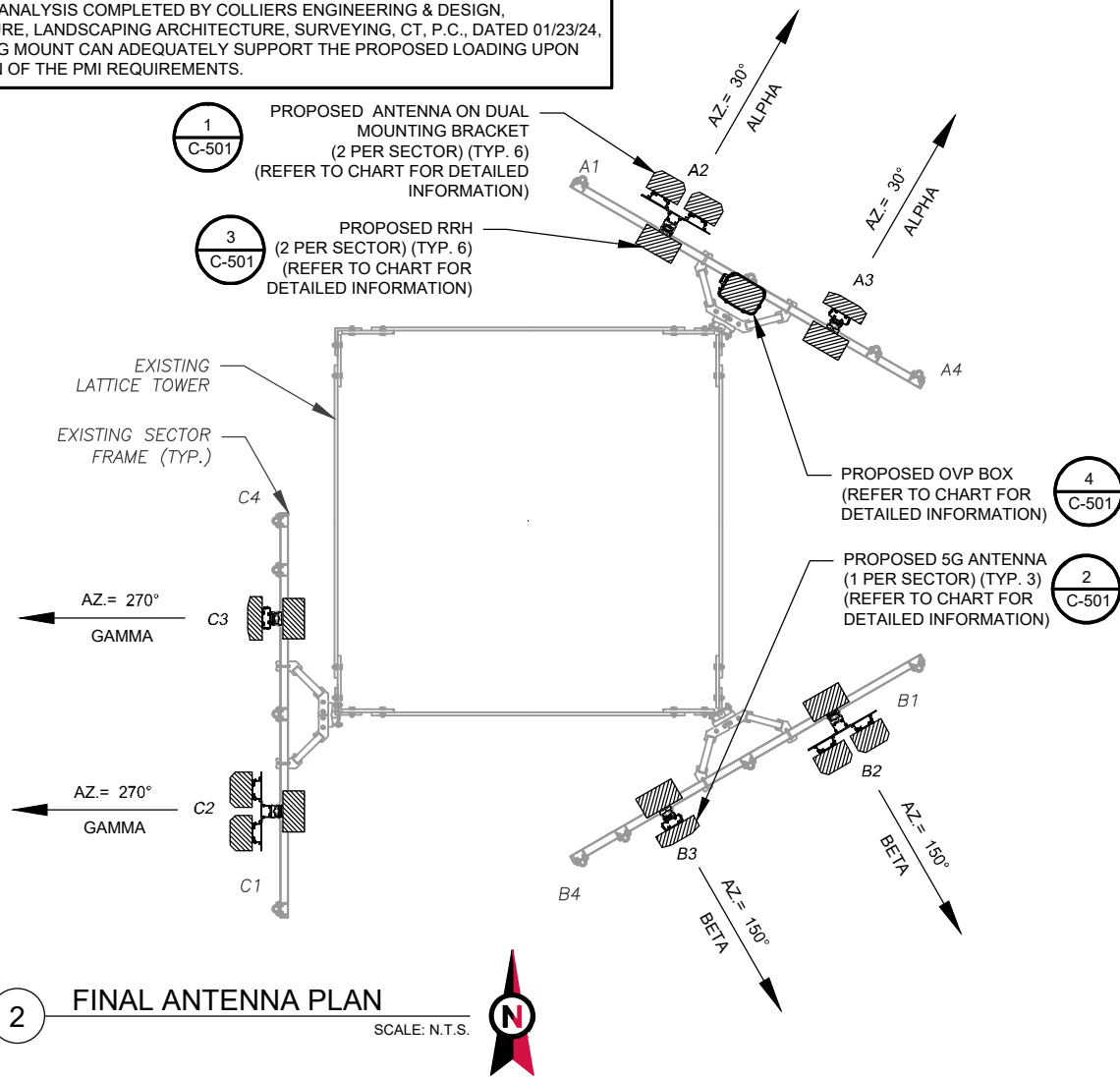
DATE DRAWN:	06/16/21
ATC JOB NO:	13685609_D1
CUSTOMER ID:	BETHANY CT
CUSTOMER #:	469372

TOWER ELEVATION	
SHEET NUMBER: C-201	REVISION: 1



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

PER MOUNT ANALYSIS COMPLETED BY COLLIERS ENGINEERING & DESIGN, ARCHITECTURE, LANDSCAPING ARCHITECTURE, SURVEYING, CT, P.C., DATED 01/23/24, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING UPON COMPLETION OF THE PMI REQUIREMENTS.



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

Remove and replace the pipe in position 2 (as seen from behind the mount) with a proposed 6' long P2 1/2 STD to be used for the dual antennas. Connect the proposed pipe to the existing face horizontals using crossover plate (VZWSMART P/N: MSK1)

EXISTING ANTENNA SCHEDULE								
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	180'	30°	A1	DB844H90E-XY	850-CDMA	0/0	RMN	-
			A2	P65-16-XL-2	700-LTE	5/0	RMV	-
			A3	MGD3-800TX	850-LTE	5/0	RMV	-
			A4	DB844H90E-XY	850-CDMA	0/0	RMN	-
			-	-	-	-	-	-
BETA	180'	150°	B1	DB844H90E-XY	850-CDMA	0/0	RMN	-
			B2	P65-16-XL-2	700-LTE	4/0	RMV	-
			B3	MGD3-800TX	850-LTE	4/0	RMV	-
			B4	DB844H90E-XY	850-CDMA	0/0	RMN	-
			-	-	-	-	-	-
GAMMA	180'	270°	C1	DB844H90E-XY	850-CDMA	4/0	RMN	-
			C2	P65-16-XL-2	700-LTE	6/0	RMV	-
			C3	MGD3-800TX	850-LTE	6/0	RMV	-
			C4	DB844H90E-XY	850-CDMA	4/0	RMN	-
			-	-	-	-	-	-

NOTES

1. CONFIRM WITH VERIZON REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.

2. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.

STATUS ABBREVIATIONS

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

CABLE LENGTHS FOR JUMPERS

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

FINAL ANTENNA SCHEDULE								
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	-	30°	A1	-	-	-	-	-
	180'		A2	MX06FHG865-HG	700/850-LTE	5/6	ADD	RF4439d-25A
	180'		A3	MT6413-77A	5G	0/6	ADD	RF4461d-13A
	-		A4	-	-	-	-	RVZDC-6627-PF-48
	-		B1	-	-	-	-	-
BETA	180'	150°	B2	MX06FHG865-HG	700/850-LTE	5/6	ADD	RF4439d-25A
	180'		B3	MT6413-77A	5G	0/6	ADD	RF4461d-13A
	-		B4	-	-	-	-	-
	-		C1	-	-	-	-	-
	-		C2	MX06FHG865-HG	700/850-LTE	5/6	ADD	RF4439d-25A
GAMMA	180'	270°	C2	MX06FHG865-HG	1900/2100-LTE	5/0	ADD	-
	180'		C3	MT6413-77A	5G	0/6	ADD	RF4461d-13A
	-		C4	-	-	-	-	-
	-		-	-	-	-	-	-

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	(12) 1-5/8"	-	RMN

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
RVZDC-6627-PF-48	ADD	(12) 1-5/8"	-	RMN
-	-	-	(2) 1-5/8"	ADD

3 EQUIPMENT SCHEDULES



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VERIZON SITE NAME:
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SITE ADDRESS:
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BETHANY, CT 06524

SEAL:



C.T. JPC.0000131

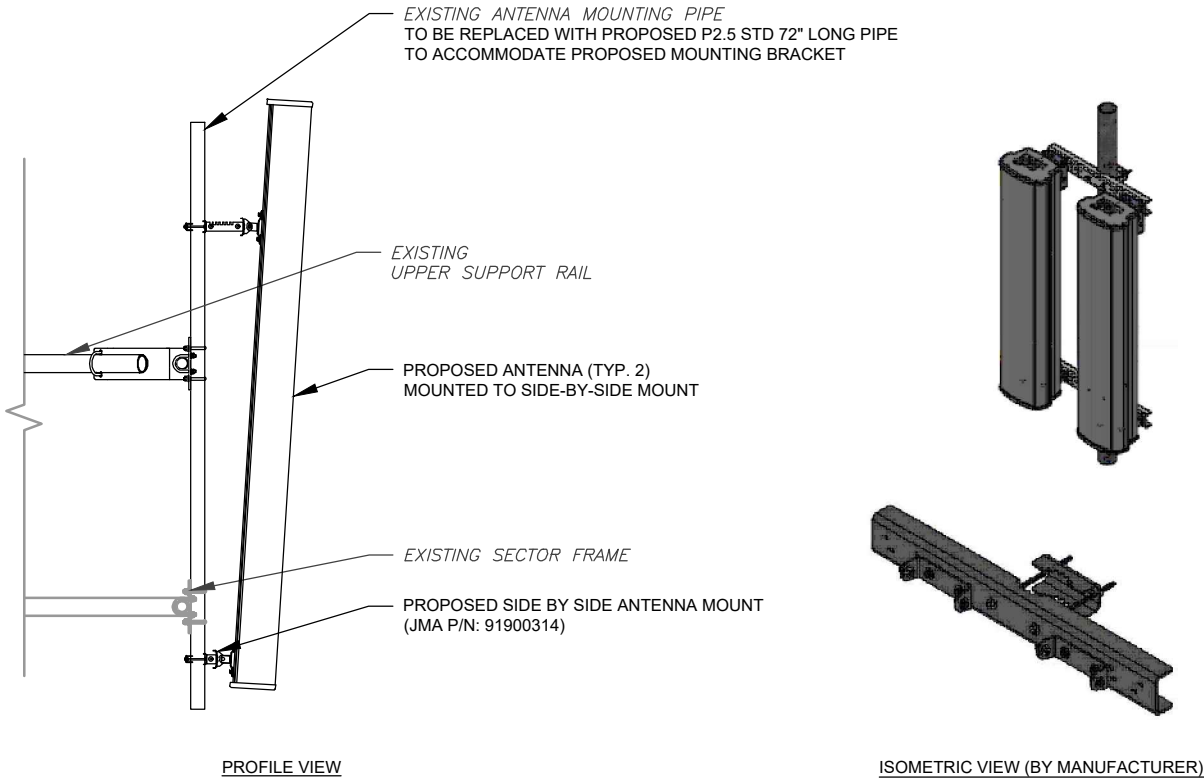


DATE DRAWN:	06/16/21
ATC JOB NO:	13685609_D1
CUSTOMER ID:	BETHANY CT
CUSTOMER #:	469372

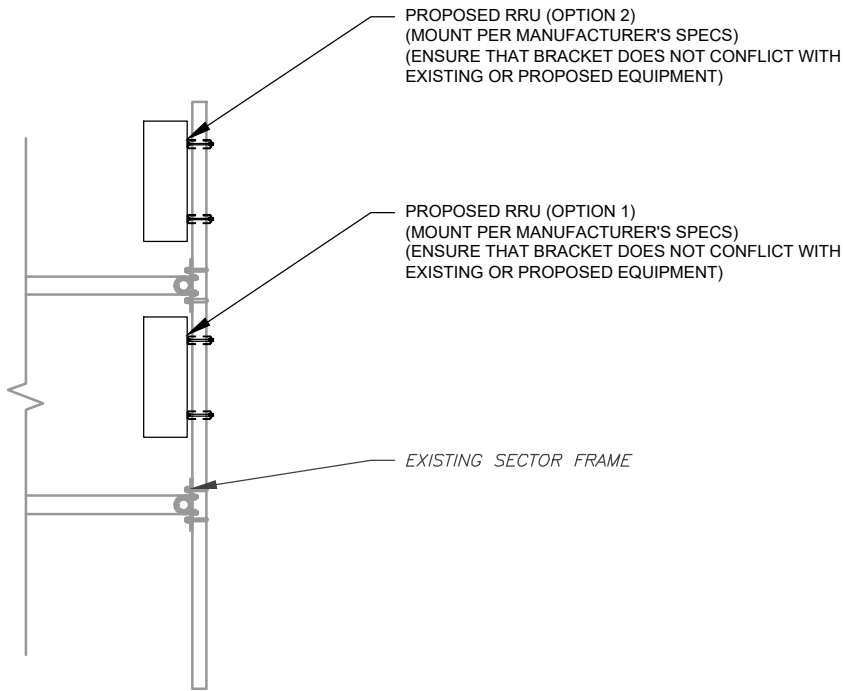
ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:
C-401

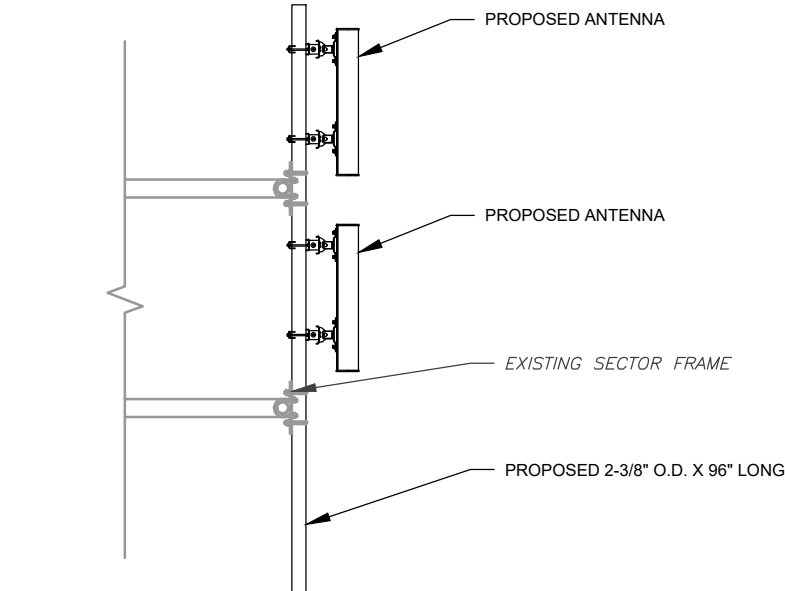
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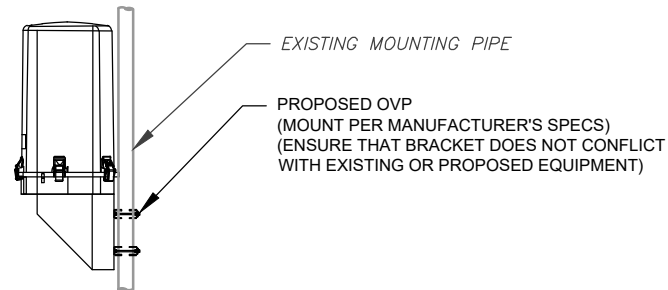
1 PROPOSED SIDE-BY-SIDE MOUNT
SCALE: NOT TO SCALE



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



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



4 PROPOSED OVP MOUNTING
SCALE: N.T.S.



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SEAL:



Digitally signed by Dejian Xu
Date: 2024.07.01 14:11:58 -0400

C.T. JPC.0000131



DATE DRAWN:	06/16/21
ATC JOB NO:	13685609_D1
CUSTOMER ID:	BETHANY CT
CUSTOMER #:	469372

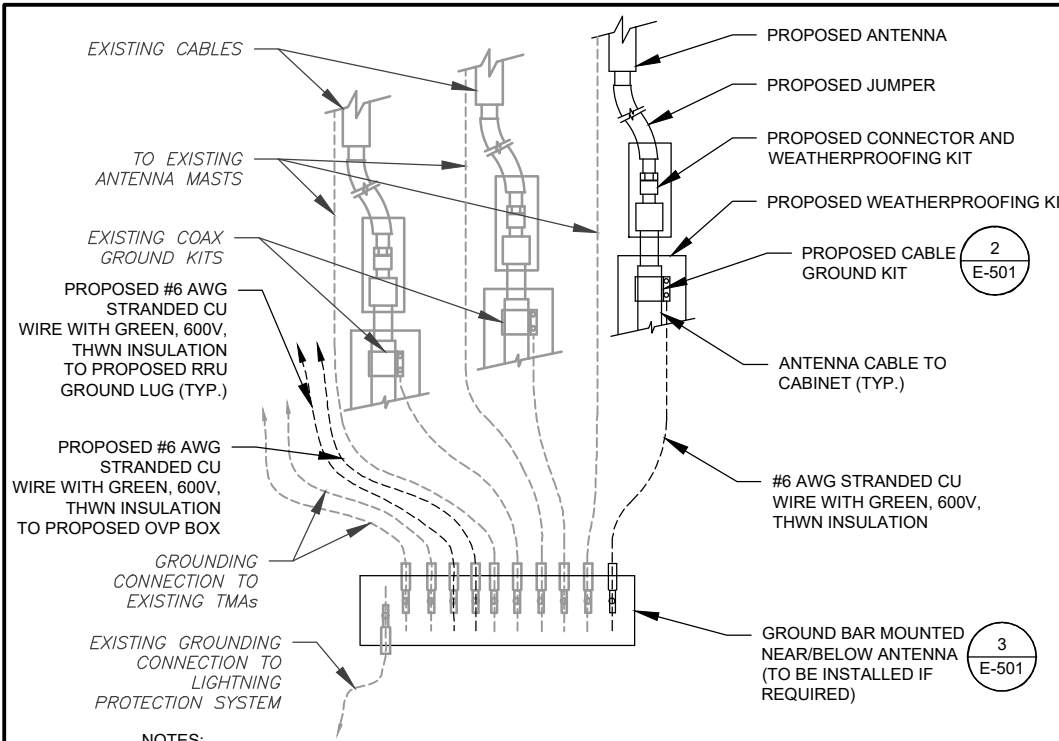
CONSTRUCTION
DETAILS

SHEET NUMBER:

C-501

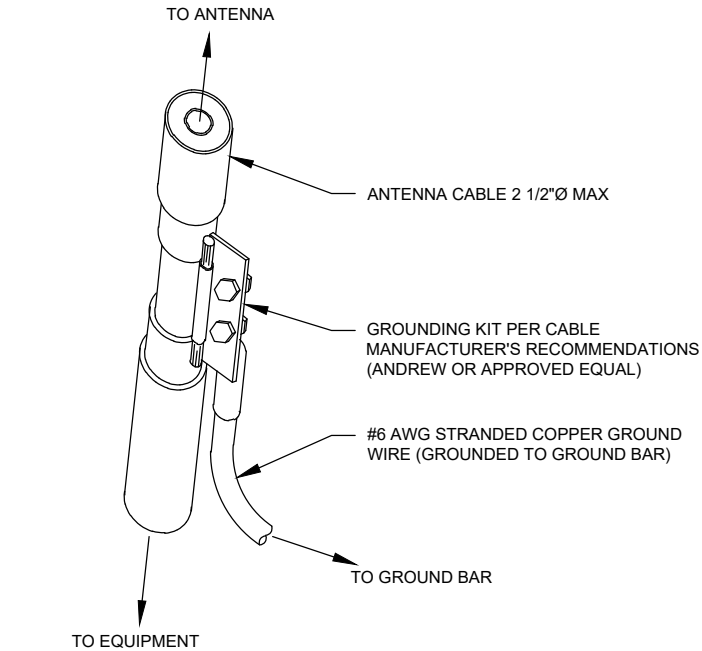
REVISION:

0



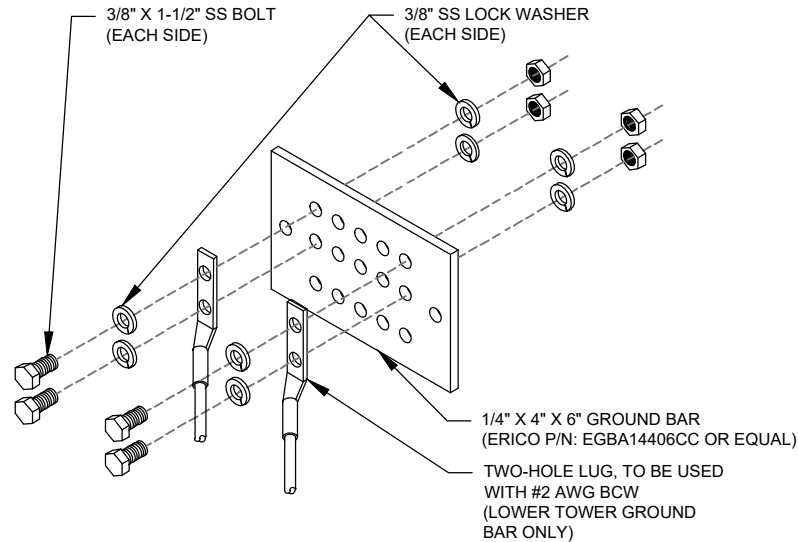
- NOTES:
- THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
 - SITE GROUNDING SHALL COMPLY WITH VERIZON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

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



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

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



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

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

Engineering & Design

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135 New Road
Madison, CT 06443
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REV.	DESCRIPTION	BY	DATE
A	PRELIM	DR	06/16/21
B	FOR CONSTRUCTION	AMN	12/20/21
C	FOR CONSTRUCTION	AJC	05/10/24

ATC SITE NUMBER:
88008

ATC SITE NAME:
BETHANY CT

VERIZON SITE NAME:
BETHANY CT

SITE ADDRESS:
93 OLD AMITY ROAD
BETHANY, CT 06524

SEAL:

Dejian Xu
33733
LICENSED PROFESSIONAL ENGINEER

Digitally signed by Dejian Xu
Date: 2024.07.01 14:11:58 -04'00'

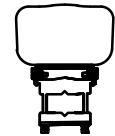
C.T. JPC.0000131

DATE DRAWN:	06/16/21
ATC JOB NO:	13685609_D1
CUSTOMER ID:	BETHANY CT
CUSTOMER #:	469372

GROUNDING DETAILS

SHEET NUMBER: E-501	REVISION: 0
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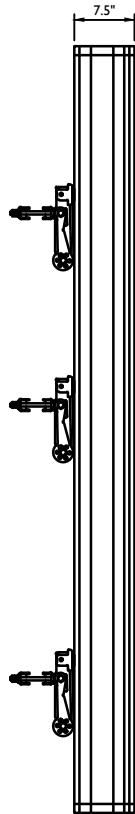
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PLAN VIEW



FRONT VIEW



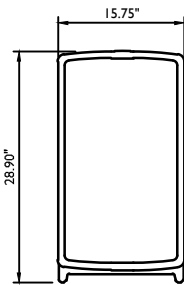
SIDE VIEW

WEIGHT W/OUT MOUNTING BRACKETS= 51 LBS
WEIGHT W/ BRACKETS = 77 LBS
VOLUME = 5.08 FT³

JMA MX06FHG865-HG
NOT TO SCALE



PLAN VIEW



FRONT VIEW

WEIGHT = 57.32 LBS
VOLUME = 1.5 FT³



SIDE VIEW

SAMSUNG MT6413-77A
NOT TO SCALE

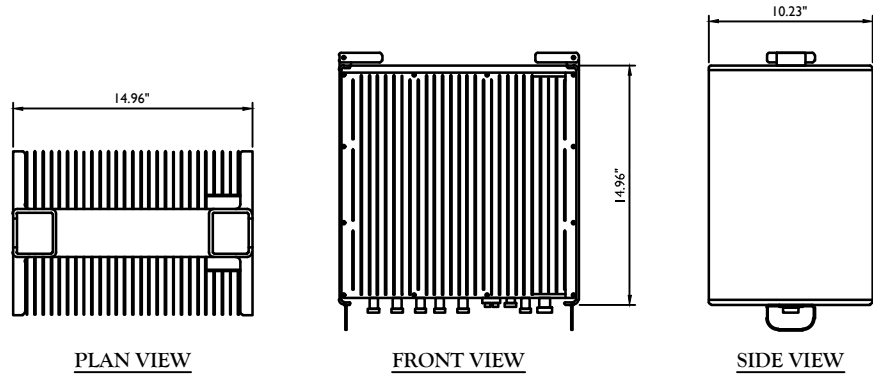
SUPPLEMENTAL

SHEET NUMBER:

R-601

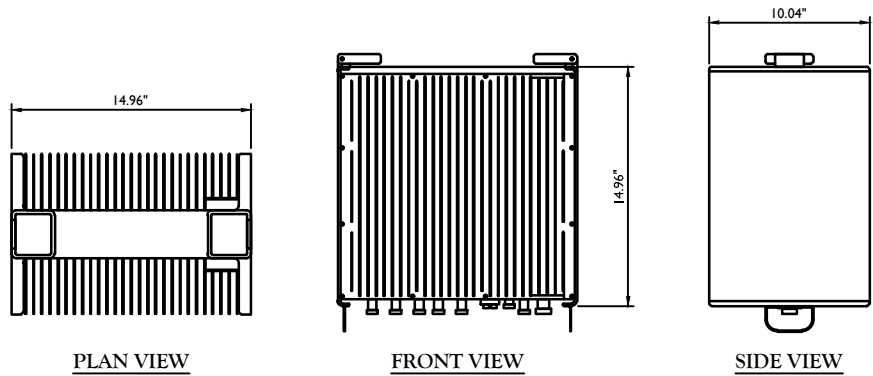
REVISION:

-



WEIGHT = 79.1 LBS
VOLUME = 1.32 FT³

SAMSUNG RF4461D-13A
REMOTE RADIO HEAD
NOT TO SCALE



WEIGHT = 74.70 LBS
VOLUME = 1.30 FT³

SAMSUNG RF4439D-25A (B2/B66)
REMOTE RADIO HEAD
NOT TO SCALE

SUPPLEMENTAL

SHEET NUMBER:

R-602

REVISION:

-



Colliers Engineering & Design,
Architecture, Landscaping Architecture,
Surveying, CT, P.C.
1055 Washington Boulevard
Stamford, CT 06901
203.324.0800
peter.albano@collierseng.com

Antenna Mount Analysis Report with Hardware Upgrades
and PMI Requirements

Mount ReAnalysis-VZW
SMART Tool Project #: 10220099
Colliers Engineering & Design Project #: 21777876 (Rev. 1)
January 23, 2024

Site Information
Site ID: 5000382257-VZW / BETHANY CT
Site Name: BETHANY CT
Carrier Name: Verizon Wireless
Address: 93 Old Amity Rd.
Bethany, Connecticut 06524
New Haven County
Latitude: 41.404758°
Longitude: -72.999983°

Structure Information
Tower Type: 300-Ft Self Support
Mount Type: 14.00-Ft T-Frame

FUZE ID # 15288115

Analysis Results

T-Frame: 71.2% Pass w/ Hardware Upgrades*

* Antennas and equipment to be installed in compliance with PMI Requirements of this mount analysis.

***Contractor PMI Requirements:
Included at the end of this MA report
Available & Submitted via portal at <https://pmi.vzwsmart.com>
For additional questions and support, please reach out to:
pmisupport@colliersengineering.com

Report Prepared By: Frank Centone



Mount Structural Analysis Report
(3) 14.00-Ft T-Frame

January 23, 2024
Site ID: 5000382257-VZW / BETHANY CT
Page | 4

7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
- Channel, Solid Round, Angle, Plate ASTM A36 (Gr. 36)
 - HSS (Rectangular) ASTM 500 (Gr. B-46)
 - Pipe ASTM A53 (Gr. B-35)
 - Threaded Rod F1554 (Gr. 36)
 - Bolts ASTM A325

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Colliers Engineering & Design.

Analysis Results:

Component	Utilization %	Pass/Fail
Face Horizontals	71.2%	Pass
Mast Pipe	9.5%	Pass
Antenna Pipe	38.8%	Pass
Dual Antenna Pipe	22.4%	Pass
Tie Back	1.5%	Pass
Plate	45.5%	Pass
Mount Connection	4.7%	Pass

Structure Rating – (Controlling Utilization of all Components)	71.2%*
--	--------

* Results valid after hardware upgrades noted in the PMI Requirements are installed.

Mount Connection Envelope Reactions:

Connection Description	Elev. AGL (Ft)	Node Label	Envelope Wind Reactions				Envelope Wind + Ice Reactions			
			Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)	Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)
Sector A Top Standoff	181.3	N14	453	1283	0.006	0.331	852	743	0.003	0.127
Sector A Bottom Standoff	177.8	N13	451	833	0.005	0.370	847	647	0.003	0.130

- Notes:
- Axial loads act along the axis of the tower leg
 - Lateral reactions act perpendicular to the tower leg
 - Moment loads introduce bending moment to the tower leg
 - Torsion loads introduce twisting moment to the tower leg
 - Batch solutions by individual load cases are included at the end of this document

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



CENTERLINE

EXHIBIT D

Power Density/RF Emissions Report





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Non-Ionizing Electromagnetic Radiation (NIER) Study

Site Number:

88008

Site Name:

Bethany CT

Location:

Bethany, Connecticut

Tenants:

Department of Homeland Security, Legado Networks LLC.,
AT&T Mobility, Dish Wireless, T-Mobile, & Verizon Wireless

Prepared For:

American Tower, Inc.
Woburn, Massachusetts

July 8th, 2024

25609 P-405150

Prepared By:

Adam Carlson MS, CBRE, CPI
Program Manager RF Design & Service
Tower Engineering Professionals

Approved By:





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TOWER ENGINEERING PROFESSIONALS

RALEIGH, NORTH CAROLINA



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Non-Ionizing Electromagnetic Radiation (NIER) Study

88008 Bethany CT
Bethany, Connecticut

INTRODUCTION

Tower Engineering Professionals RF Design & Services Division (TEP-RF) of Raleigh, North Carolina, has been retained by American Tower, Inc. (ATC), of Woburn, Massachusetts to evaluate the RF emissions compared to the Maximum Permissible Exposure (MPE) limit for facilities at this location. This evaluation uses compliance standards as outlined in Federal Communications Commission (FCC) document OET-65.

SITE AND FACILITY CONSIDERATIONS

Site 88008 Bethany CT is located at 9 Meyers Rd. in Bethany, Connecticut at coordinates 41.404758, -72.999983. The support structure is a 340' self-support. An aerial view of the tower can be found in Appendix 1, Site Photos. The tenants are Ligado Networks LLC. (Ligado), The Department of Homeland Security (DHS), AT&T Mobility (AT&T), Dish Wireless (Dish), T-Mobile (TMO), & Verizon Wireless (VZW). A table listing all antennae and effective radiated power (ERP) levels that were used in this study may be found in Appendix 2, Antenna Inventory.

POWER DENSITY CALCULATIONS

Power densities were calculated based on FCC MPE limits for both General Population/Uncontrolled and Occupational/Controlled environments.

For the purpose of this study, a radius of 100' from the base of the tower with a height of 6' above ground level was used, beyond 100' the MPE levels become *di minimus*. This study utilized FCC recognized and accepted software programs using the maximum ERP levels for the antenna models provided by ATC. Diagrams depicting the predicted spatial average power density level at any specific location may be found in Appendix 3, MPE Limit Study. A discussion regarding the FCC limits may be found in Appendix 4, Information Pertaining to MPE Studies. Study methodology describing Non-ionizing Radiation Prediction Models used in this study may be found in Appendix 5, MPE Standards Methodology.



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All data used in this study was collected from one or more of the following sources:

- ATC furnished data and does not include other unidentified communication facilities.
- Load List at 88008 BETHANY CT.RF NIER Study 06/26/2024.
- FCC databases.
- Carrier standard configurations.
- Empirical data collected by TEP.

SITE MITIGATION & CONTROL

In order to comply with FCC, tenant, & ATC requirements, TEP recommends the placement of signage at the following points:

Site Entrance

1. Site ID Sign (tower owner defined)
2. RF Information Sign (Green)

Tower Access Point

1. RF Exposure Sign (Red)

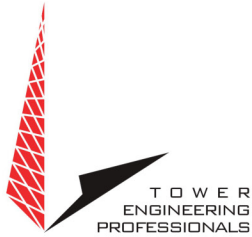
COMPLIANCE DETERMINATION

This installation **WILL BE** in compliance with current FCC MPE limits as described in FCC OET-65.

APPENDIX 1 Site Photos



Aerial View of Site



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Appendix 2.1 Antenna Inventory

88008 Bethany CT							
Antenna Inventory							
Antenna #	Carrier	Antenna Manufacturer	Antenna Model	Frequency Band (MHz)	Azimuth (°)	Effective Radiated Power (W)	Radiation Center (ft)
1	Ligado	Scala	750 10074	1000	1	28117	326
2	TMO	Ericsson	Air 6419	2500/2600	030	24400	222
3	TMO	Ericsson	Air 6419	2500/2600	150	24400	222
4	TMO	Ericsson	Air 6419	2500/2600	270	24400	222
5	TMO	RFS	APXVAALL24	600/1900/2100	030	23200	222
6	TMO	RFS	APXVAALL24	600/1900/2100	150	23200	222
7	TMO	RFS	APXVAALL24	600/1900/2100	270	23200	222
8	DHS	Andrew	DB616E-BC	100	000	1774	213
9	DHS	Andrew	DB616E-BC	100	000	1774	204
10	VZW	JMA	MX06FHG865-HG	700/800/1900/2100	030	19522	180
11	VZW	JMA	MX06FHG865-HG	700/800/1900/2100	150	19522	180
12	VZW	JMA	MX06FHG865-HG	700/800/1900/2100	270	19522	180
13	VZW	JMA	MX06FHG865-HG	700/800/1900/2100	030	19522	180
14	VZW	JMA	MX06FHG865-HG	700/800/1900/2100	150	19522	180
15	VZW	JMA	MX06FHG865-HG	700/800/1900/2100	270	19522	180
16	VZW	Samsung	MT6413	3700/3800/3900	030	18286	180
17	VZW	Samsung	MT6413	3700/3800/3900	150	18286	180
18	VZW	Samsung	MT6413	3700/3800/3900	270	18286	180

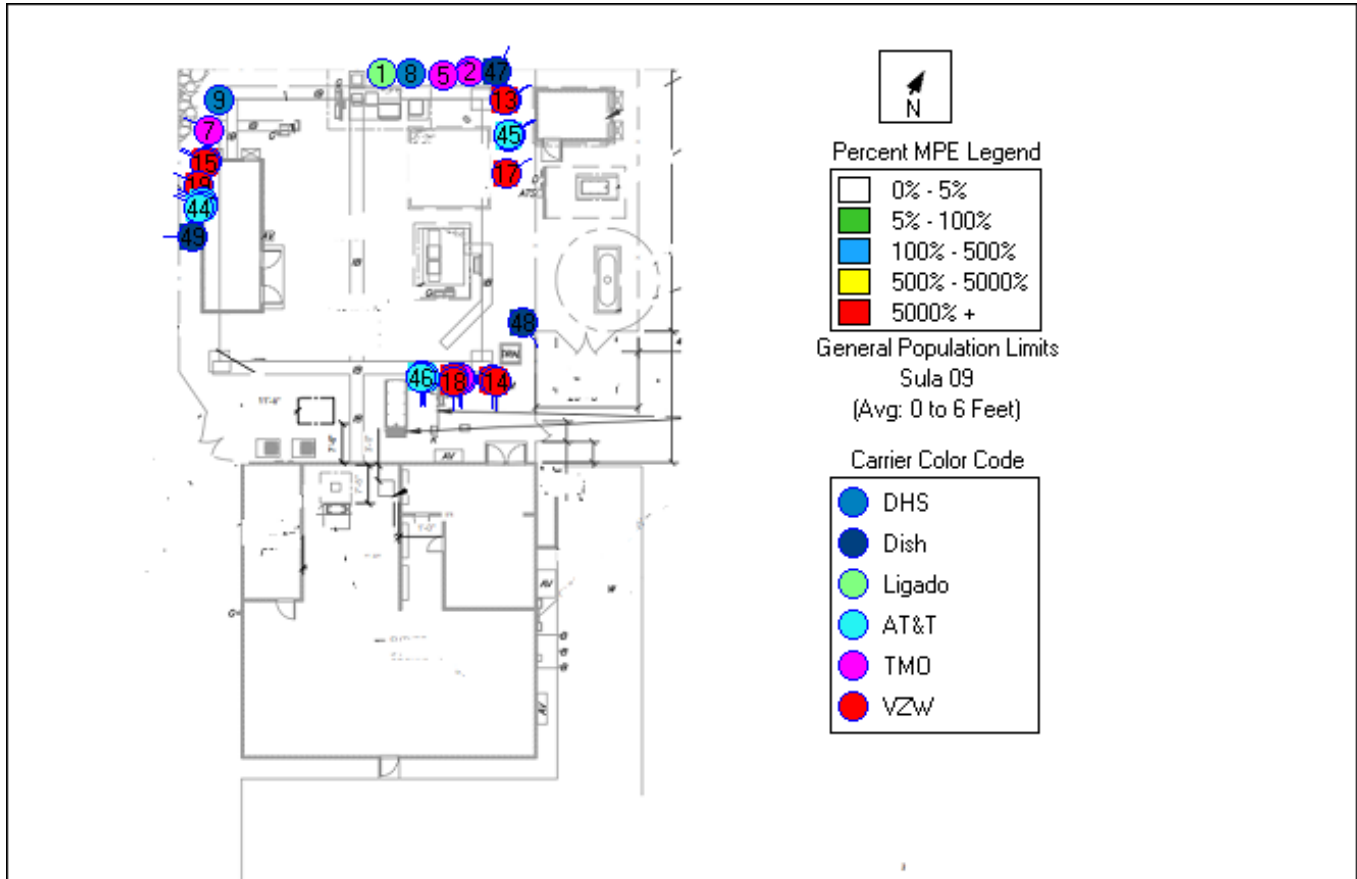


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Appendix 2.2 Antenna Inventory

88008 Bethany CT							
Antenna Inventory							
Antenna #	Carrier	Antenna Manufacturer	Antenna Model	Frequency Band (MHz)	Azimuth (°)	Effective Radiated Power (W)	Radiation Center (ft)
19	AT&T	KMW	AM-X-CD	700/800/2100	070	48332	165
20	AT&T	Powerwave	7770	800	070	18373	165
21	AT&T	Powerwave	7770	800	150	18373	165
22	AT&T	Powerwave	7770	800	270	18373	165
23	AT&T	Andrew	SBNH-1D6565C	700/800/2100	150	37788	165
24	AT&T	Andrew	SBNH-1D6565C	700/800/2100	270	37788	165
25	AT&T	Andrew	SBNH-1D6565C	700/800/2100	150	37788	165
26	AT&T	Andrew	SBNH-1D6565C	700/800/2100	270	37788	165
27	AT&T	KMW	AM-X-CD	700/800/2100	070	48332	158
28	AT&T	Powerwave	7770	800	000	18373	158
29	AT&T	Powerwave	7770	800	000	18373	158
30	AT&T	Powerwave	7770	800	000	18373	158
31	Dish	Commscope	FFVV-65B-R2	600/1900/2000/2100	000	40000	140
32	Dish	Commscope	FFVV-65B-R2	600/1900/2000/2100	120	40000	140
33	Dish	Commscope	FFVV-65B-R2	600/1900/2000/2100	240	40000	140

Appendix 3 MPE Limit Study



Appendix 4 RF Hazard Signs

RF Safety Exposure Categorization								
Exposure Conditions	Control Measures	Signage						
- Operational of the source(s) or locations where RF fields are too weak to cause exposures greater than General Public limit. <table border="1"> <tr> <th>Cat.</th><th>Occupational Worker</th><th>General Public</th></tr> <tr> <td>1</td><td><20%</td><td><100%</td></tr> </table> - Green zone is where the time and spatial-average is below 20% of Occupational Worker limit or <100% of General Public limit.	Cat.	Occupational Worker	General Public	1	<20%	<100%	- RF Safety Guideline/NIER report must be submitted to RFSO for approval. - No special EME safety practices required in these areas. - No signage required except Information sign.	 *the antenna owner information and Antenna Structure Registration Number and must be displayed on the sign. INFORMATION sign for access to rooftop/access door.
Cat.	Occupational Worker	General Public						
1	<20%	<100%						
- Operational of the source(s) or locations where RF exposure could cause exposure greater than General Public limit but not the Occupational Worker limit to be exceeded in accessible areas. <table border="1"> <tr> <th>Cat.</th><th>Occupational Worker</th><th>General</th></tr> <tr> <td>2</td><td>≥20% but <100%</td><td>>100%</td></tr> </table> - Blue zone is where the spatial average is between 20%-100% of Occupational Worker limit. This limit MUST be less than the Occupational limit.	Cat.	Occupational Worker	General	2	≥20% but <100%	>100%	- RF Safety Guideline/NIER report must be submitted to RFSO for approval. - Recommended RF safety awareness training for all workers in this area. - Controlled areas with barriers and/or signage required in these area. - Do not walk in front of the antenna face or no loitering in this controlled area. - Individual MUST have full control over any area where the exposure levels exceed the limit.	 NOTICE signage shall be posted on the barriers/stanchion to prevent anyone from entering into the area (must be cordon off around the antennas - 4 posts /3 signs). Or must be posted in location that can be easily viewed by individuals that enter the areas of concerns.
Cat.	Occupational Worker	General						
2	≥20% but <100%	>100%						
- Operational of the source(s) or locations where RF exposure exceeded the Occupational Worker limit in accessible areas. <table border="1"> <tr> <th>Cat.</th><th>Occupational Worker</th><th>General Public</th></tr> <tr> <td>3</td><td>≥100%</td><td>≥500%</td></tr> </table> - Yellow zone is where the spatial average is above 100% of Occupational Worker limit.	Cat.	Occupational Worker	General Public	3	≥100%	≥500%	- RF Safety Guideline/NIER report must be submitted to RFSO for approval. - Individual shall not enter and work in these areas without RS approval - Required RF safety training and access area is restricted only for authorized worker. - Controlled areas with barriers and signage required in these area. - Do not walk in front of the antenna face. - Require reduction of RF power and approval from Radiation Safety prior any work on the antennas.	 CAUTION signage shall be posted on the barriers/stanchion to prevent anyone from entering into the area (must be cordon off around the antennas - 4 posts /3 signs).
Cat.	Occupational Worker	General Public						
3	≥100%	≥500%						
- Exposure will exceed exposure limit in accessible areas. <table border="1"> <tr> <th>Cat.</th><th>Occupational Worker</th><th>General Public</th></tr> <tr> <td>4</td><td>>500%</td><td>>1000%</td></tr> </table> - Red zone is where the time and spatial-averaged levels fall above 500% of Occupational Worker limit or is not feasible to prevent exposures.	Cat.	Occupational Worker	General Public	4	>500%	>1000%	- RF Safety Guideline/NIER report must be submitted to RFSO for approval. - MUST re-engineer site to reduce the EME fields. No access allowed-Prohibited access! There must be controls to detect any unauthorized enter and terminate the RF energy in the area. - Lock out tag out of transmitters during the maintenance of the antenna system. - PPE is not sufficient. - Special RF training and PPE are required. (Applies only to individuals trained by RS).	 RF WARNING & Pacemaker DANGER signage or appropriate DANGER sign shall be posted very near radiation RF sources or if appropriate DANGER sign.
Cat.	Occupational Worker	General Public						
4	>500%	>1000%						



Appendix 5 Information Pertaining to MPE Studies

In 1985, the FCC first adopted guidelines to be used for evaluating human exposure to RF emissions. The FCC revised and updated these guidelines on August 1, 1996, as a result of a rule-making proceeding initiated in 1993. The new guidelines incorporate limits for Maximum Permissible Exposure (MPE) in terms of electric and magnetic field strength and power density for transmitters operating at frequencies between 300 kHz and 100 GHz.

The FCC's MPE limits are based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP), and, over a wide range of frequencies, the exposure limits were developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC's limits, and the NCRP and ANSI/IEEE limits on which they are based, are derived from exposure criteria quantified in terms of specific absorption rate (SAR). The basis for these limits is a whole-body averaged SAR threshold level of 4 watts per kilogram (4 W/kg), as averaged over the entire mass of the body, above which expert organizations have determined that potentially hazardous exposures may occur. The MPE limits are derived by incorporating safety factors that lead, in some cases, to limits that are more conservative than the limits originally adopted by the FCC in 1985. Where more conservative limits exist, they do not arise from a fundamental change in the RF safety criteria for whole-body averaged SAR, but from a precautionary desire to protect subgroups of the general population who, potentially, may be more at risk.

The FCC exposure limits are also based on data showing that the human body absorbs RF energy at some frequencies more efficiently than at others. The most restrictive limits occur in the frequency range of 30-300 MHz where whole-body absorption of RF energy by human beings is most efficient. At other frequencies, whole-body absorption is less efficient, and consequently, the MPE limits are less restrictive.



MPE limits are defined in terms of power density (units of milliwatts per centimeter squared: mW/cm^2), electric field strength (units of volts per meter: V/m) and magnetic field strength (units of amperes per meter: A/m). The far-field of a transmitting antenna is where the electric field vector (E), the magnetic field vector (H), and the direction of propagation can be considered to be all mutually orthogonal ("plane-wave" conditions).

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment-related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area. Additional details can be found in FCC OET 65.



Appendix 6 MPE Standards Methodology

This study predicts RF field strength and power density levels that emanate from communications system antennae. It considers all transmitter power levels (less filter and line losses) delivered to each active transmitting antenna at the communications site. Calculations are performed to determine power density and MPE levels for each antenna as well as composite levels from all antennas. The calculated levels are based on where a human (Observer) would be standing at various locations at the site. The point of interest where the MPE level is predicted is based on the height of the Observer.

Compliance with the FCC limits on RF emissions are determined by spatially averaging a person's exposure over the projected area of an adult human body, that is approximately six-feet or two-meters, as defined in the ANSI/IEEE C95.1 standard. The MPE limits are specified as time-averaged exposure limits. This means that exposure is averaged over an identifiable time interval. It is 30 minutes for the general population/uncontrolled RF environment and 6 minutes for the occupational/controlled RF environment. However, in the case of the general public, time averaging should not be applied because the general public is typically not aware of RF exposure, and they do not have control of their exposure time. Therefore, it should be assumed that any RF exposure to the general public will be continuous.

The FCC's limits for exposure at different frequencies are shown in the following Tables.

Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (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

f = frequency

* = Plane-wave equivalent power density

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.

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (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

* = Plane-wave equivalent power density

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.

It is important to understand that these limits apply cumulatively to all sources of RF emissions affecting a given area. For example, if several different communications system antennas occupy a shared facility such as a tower or rooftop, then the total exposure from all systems at the facility must be within compliance of the FCC guidelines.



The field strength emanating from an antenna can be estimated based on the characteristics of an antenna radiating in free space. There are basically two field areas associated with a radiating antenna. When close to the antenna, the region is known as the Near Field. Within this region, the characteristics of the RF fields are very complex, and the wave front is extremely curved. As you move further from the antenna, the wave front has less curvature and becomes planar. The wave front still has a curvature, but it appears to occupy a flat plane in space (plane-wave radiation). This region is known as the Far Field.

Two models are utilized to predict Near and Far field power densities. They are based on the formulae in FCC OET 65.

Cylindrical Model (Near Field Predictions)

Spatially averaged plane-wave equivalent power densities parallel to the antenna may be estimated by dividing the antenna input power by the surface area of an imaginary cylinder surrounding the length of the radiating antenna. While the actual power density will vary along the height of the antenna, the average value along its length will closely follow the relation given by the following equation:

$$S = P \div 2\pi RL$$

Where:

S = Power Density

P = Total Power into antenna

R = Distance from the antenna

L = Antenna aperture length



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RALEIGH, NC 27607
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For directional-type antennas, power densities can be estimated by dividing the input power by that portion of a cylindrical surface area corresponding to the angular beam width of the antenna. For example, for the case of a 120-degree azimuthal beam width, the surface area should correspond to 1/3 that of a full cylinder. This would increase the power density near the antenna by a factor of three over that for a purely omni-directional antenna. Mathematically, this can be represented by the following formula:

$$S = (180 / \theta_{BW}) P \div \pi RL$$

Where:

S = Power Density

θ_{BW} = Beam width of antenna in degrees (3 dB half-power point)

P = Total Power into antenna

R = Distance from the antenna

L = Antenna aperture length

If the antenna is a 360-degree omni-directional antenna, this formula would be equivalent to the previous formula.



Spherical Model (Far Field Predictions)

Spatially averaged plane-wave power densities in the Far Field of an antenna may be estimated by considering the additional factors of antenna gain and reflective waves that would contribute to exposure.

The radiation pattern of an antenna has developed in the Far Field region and the power gain needs to be considered in exposure predictions. Also, if the vertical radiation pattern of the antenna is considered, the exposure predictions would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential four-fold increase in power density.

These additional factors are considered, and the Far Field prediction model is determined by the following equation:

$$S = EIRP \times Rc \div 4\pi R^2$$

Where:

S = Power Density

EIRP = Effective Radiated Power from antenna

Rc = Reflection Coefficient (2.56)

R = Distance from the antenna

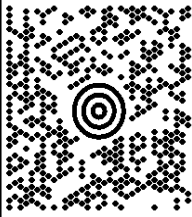
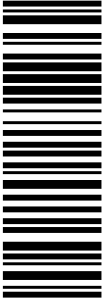
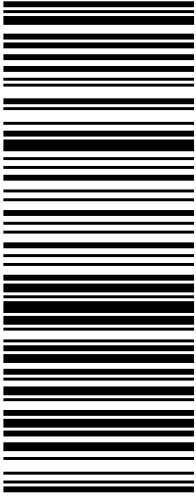
The EIRP includes the antenna gain. If the antenna pattern is considered, the antenna gain is relative based on the horizontal and vertical pattern gain values at that particular location in space, on a rooftop or on the ground. However, it is recommended that the antenna radiation pattern characteristics not be considered to provide a conservative "worst case" prediction. This is the equation is utilized for the Far Field exposure predictions herein.



CENTERLINE

EXHIBIT E

Mailing Receipts/Proof of Notice

C/O CULLEN MORGAN 9415497263 CENTERLINE COMMUNICATIONS LLC 12579 SAGEWOOD DRIVE VENICE FL 34293		1 LBS	1 OF 1
SHIP TO: AMERICAN TOWER CORP 10 PRESIDENTIAL WAY WOBURN MA 01801-1053			
	MA 018 9-04 		
UPS GROUND TRACKING #: 1Z 9Y4 503 03 0482 6178			
			
BILLING: P/P			
Reference # 1: 13685609 LAND/TOWER OWNER CC			
CS 24.5.00. MACNV50 29.0A 07/202.4*			
 TM			

Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030304826178

Date: Monday, July 22, 2024 at 12:34:32 PM Eastern Daylight Time

From: UPS <pkginfo@ups.com>

To: Cullen Morgan <CMORGAN@CLINELLC.COM>



Hello, your package has been delivered.

Delivery Date: Monday, 07/22/2024

Delivery Time: 12:32 PM

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030304826178
Ship To:	AMERICAN TOWER CORP 10 PRESIDENTIAL WAY WOBURN, MA 018011053 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	0.8 LBS
Reference Number:	13685609 LAND/TOWER OWNER CC

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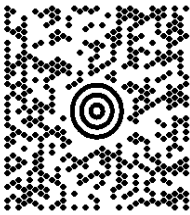
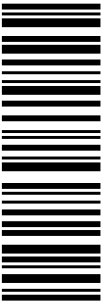
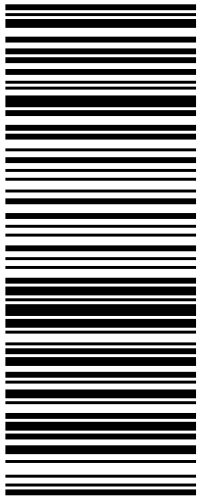
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C/O CULLEN MORGAN 9415497263 CENTERLINE COMMUNICATIONS LLC 12579 SAGEWOOD DRIVE VENICE FL 34293		1 LBS	1 OF 1
SHIP TO: ATTN: 1ST SELECTWOMAN & BLDG OFCL TOWN OF BETHANY 40 PECK ROAD BETHANY CT 06524-3322			
		CT 067 9-04 	
UPS GROUND			
TRACKING #: 1Z 9Y4 503 03 1006 3187			
			
BILLING: P/P			
Reference # 1: 13685609 TOWN CC		 ™	
CS 24.5.00. MACNV50 29.0A 07/202.4*			

Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030310063187

Date: Monday, July 22, 2024 at 11:15:12 AM Eastern Daylight Time

From: UPS <pkginfo@ups.com>

To: Cullen Morgan <CMORGAN@CLINELLC.COM>



Hello, your package has been delivered.

Delivery Date: Monday, 07/22/2024

Delivery Time: 11:13 AM

Signed by: SELECT

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030310063187
Ship To:	TOWN OF BETHANY 40 PECK ROAD BETHANY, CT 065243322 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	0.8 LBS
Reference Number:	13685609 TOWN CC

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