Robinson+Cole

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
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Also admitted in Massachusetts
and New York

October 18, 2023

Melanie A. Bachman, Esq.
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Notice of Exempt Modification – Facility Modification**
Andrews Road, Wolcott, Connecticut

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains a wireless telecommunications facility at the above-referenced address (the "Property"). Cellco's facility consists of antennas and remote radio heads attached to a tower. Equipment associated with the facility is located on the ground adjacent to the tower. The tower was approved by the Siting Council ("Council") in March of 1981 (Petition No. 67). Cellco's use of the tower was approved by the Council in December of 2019 (PE1133-VER-20191104). A copy of the Council's Petition No. 67 and PE1133-VER-20191104 approvals are included in Attachment 1.

Cellco's proposed modification involves the installation of two (2) interference mitigation filters ("Filters") on its existing antenna mounting assembly. The specification sheet for the Filter is included in Attachment 2.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Wolcott's Chief Elected Official and Land Use Officer. A copy of this letter is being sent to the owner of the Property.

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 tower. The Filters will be installed on Cellco's existing antenna mounting assembly.

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, 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 installation of the Filters will not result in a change to radio frequency (RF) emissions from the facility. Therefore, no new RF emissions information is included in this filing.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. According to the attached Structural Analysis Report ("SA") and Antenna Mount Analysis Report ("MA"), the existing tower, foundation, mounting assembly can support Cellco's proposed modifications. A copy of the SA and MA are included in Attachment 3.

A copy of the parcel map and Property owner information is included in Attachment 4. A Certificate of Mailing verifying that this filing was sent to municipal officials and the property owner is included in Attachment 5.

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

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Thomas G. Dunn, Mayor
David Kalinowski, Zoning Enforcement Officer
Southern New England Telephone Company, Property Owner
Alex Tyurin, Verizon Wireless

Thomas G. Dunn, Mayor
Town of Wolcott
10 Kenea Avenue
Wolcott, CT 06716

David Kalinowski, Zoning Enforcement Officer
Town of Wolcott
10 Kenea Avenue
Wolcott, CT 06716

Southern New England Telephone Company
c/o Frontier Communications
attn: Tax Department
401 Merritt 7
Norwalk, CT 06851

Alex Tyurin
Verizon Wireless
20 Alexander Drive
Wallingford, CT 06492

ATTACHMENT 1

STATE OF CONNECTICUT

DEPARTMENT OF BUSINESS REGULATION

POWER FACILITY EVALUATION COUNCIL

Petition No. 67
Wolcott, Connecticut
March 26, 1981

Mr. Doocy, Mr. Clapp, Mr. Wood, and Mr. Reid met Mr. Kischell and Mr. Bailey of the Southern New England Telephone Company to review the first half of Petition No. 67. Telecommunication facilities were viewed in Wolcott, Waterbury, and Meriden. The second half of Petition No. 67 involves facilities in Shelton, Norwalk, and Bridgeport. These were reviewed on March 31, 1981.

The first half of this petition involves the following changes at the Barry Avenue site in Wolcott: (a) replacing an existing 90 foot tall triangular lattice steel tower with an 80 foot tall square lattice steel tower; (b) replacing two microwave dishes and two reflectors with four new microwave dishes; (c) adding a 12' x 16' concrete radio building and a new fuel storage tank at the base of the tower and extending the fence to encompass the new facilities. Additional changes include: (d) adding two microwave antennae to the Waterbury East Tower in Waterbury and another concrete radio building; and (e) adding one microwave antenna to the West Peak tower in Meriden.

The Wolcott site is in a single family dwelling residential area near the top of Clinton Hill. The tower is visible from several locations within the area. The tower base and radio building are partially screened by vegetation from the nearest residence and are not visible from other residences. The new tower will be located several feet northeast of the existing tower at approximately the same ground elevation. The proposed tower will be 80 feet tall and more narrow than the existing tower; it will be square instead of triangular. The new microwave antennae are to be mounted on a platform at the top of the tower.

The soil appears shallow but stable, and a few bedrock outcrops appear on the site. The proposed tower will require new foundations which will be set in soil or bedrock. If the soil is too shallow or the bedrock unsuitable, some blasting may be necessary.

A new concrete building will be constructed at the base of the tower and will accomodate the generator used for emergency power. The existing fence will be extended to enclose this facility.

The existing tower will remain in place for approximately six months or until the new facility is operating properly. Then the existing tower will be dismantled and removed.

According to the SNETCO representatives, this proposal has been approved by the Wolcott Planning and Zoning Commission.

The Waterbury East tower is located adjacent to a water tower and several other cable TV or telecommunication towers on top of Long Hill in Waterbury. The site is surrounded by single and multiple family dwellings, commercial, and industrial properties. Both the telecommunication tower and the water tower are visible

from many viewpoints in the Waterbury area. Two microwave antennae are to be mounted at the 80 foot level to the existing 90 foot tower. Once the new facilities are operating, two narrow 80 foot tall towers presently on the site can be removed. These two towers now support reflectors which relay signals from the Waterbury central office to Wolcott. A new radio building will be constructed at the base of the tower and the existing fence will be extended to surround this new building. The radio building will house an emergency generator, the new radio equipment, and future radio equipment when existing facilities are replaced. An existing building presently storing a temporary generator may be removed after the new building is constructed. According to SNETCO representatives, this proposal has received planning and zoning approval.

The Meriden tower is adjacent to West Peak State Park and several telecommunication towers on the top of West Peak. The existing telecommunication facilities on West Peak are relatively well screened from most locations within the state park, but they are a prominent feature on the ridge top as seen from viewpoints in the Meriden area and can be seen up to many miles away on clear days.

The telephone company's tower presently supports seven microwave antennae. SNETCO proposes to add one microwave dish to the existing tower at the 90 foot level to complete a route from Meriden to the Wolcott Tower. The existing North Branform to Wolcott route will be eliminated, and an antenna at the North Branford tower may be removed when the Meriden to Wolcott route is in service. No additional buildings are proposed at this site.

Duncan C. Reid
Environmentalist
March 30, 1981

STATE OF CONNECTICUT

DEPARTMENT OF BUSINESS REGULATION

POWER FACILITY EVALUATION COUNCIL

Petition No. 67
Norwalk, Connecticut
March 31, 1981

Commissioner Boucher, Mr. Clapp, Christopher Wood and Duncan Reid met Mr. Bailey and Mr. Kischell of the Southern New England Telephone Company to review the second part of Petition No. 67 which involved facilities in Norwalk, Bridgeport, and Shelton. The first part of this petition involves facilities located in Wolcott, Waterbury, and Meriden which were visited on Thursday, March 26th.

In Norwalk one dish is to be mounted on an existing 350 foot tower located at a telephone company service center immediately north of Route 1. The dish will be directed toward the existing tower in Bridgeport. The general area around the Norwalk site appears to be commercial, residential, and industrial. The tower is visible from many locations in the area.

The Bridgeport tower (40 feet tall) is located on top of the Central Office Building in downtown Bridgeport. One dish will be mounted at approximately the 30 foot level and directed tower the new dish in Norwalk. The location of the tower on top of the office building diminishes its visual impact.

The 181 foot tower in Shelton is located in a rural residential area. One 5 foot dish will be removed and a 12 foot dish mounted in the same location and directed toward an existing facility in Derby. A new and large dish is required in Shelton to prevent interference with transmissions from Shelton to New Haven. This tower is visible from selected locations within the immediate area and from some distant viewpoints.

No additional radio buildings, generators, or fuel tanks, are planned for the facilities in Norwalk, Bridgeport, and Shelton.

Duncan C. Reid
Environmentalist
March 31, 1981

Phone 566-5612
State Office Building — Hartford, Connecticut 06115

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

December 24, 2019

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **PE1133-VER-20191104** – Cellco Partnership d/b/a Verizon Wireless sub-petition for a declaratory ruling for approval of an eligible facility request for modifications to an existing telecommunications facility located off Andrews Road, Wolcott, Connecticut.

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) hereby approves your Eligible Facilities Request (EFR) to install antennas and associated equipment at the above-referenced facility pursuant to the Federal Communications Commission Wireless Infrastructure Report and Order, with the following conditions:

1. Approval of any minor changes be delegated to Council staff;
2. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
3. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by the Petitioner shall be removed within 60 days of the date the antenna ceased to function;
4. The validity of this action shall expire one year from the date of this letter; and
5. The Petitioner may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the EFR dated November 1, 2019 and additional information received December 2, 2019. Any minor changes to the eligible facility request require advance notification and approval

Thank you for your attention and cooperation.

Sincerely,

Melanie Bachman
Executive Director

MAB/IN/emr

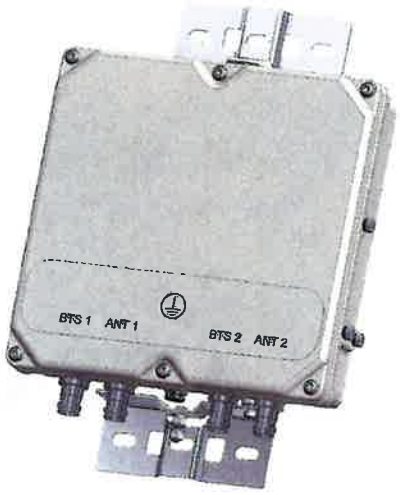
c: The Honorable Thomas G. Dunn, Mayor, Town of Wolcott
David Kalinowski, Zoning Inspector, Town of Wolcott

ATTACHMENT 2

BSF0020F3V1-1

TWIN BANDSTOP 900MHZ INTERFERENCE MITIGATION FILTER

The BSF0020 is ideal for co-located 700, 850 and 900 networks. Utilising a 2.6MHz guardband the BSF0020 provides rejection of the 900 UL band while passing 700/850 UL and DL bands. Capable of being used in an outdoor environment the BSF0020 contains two identical bandstop filters, suitable for 2x2 MIMO configuration, offering excellent insertion loss, group delay and rejection.



FEATURES

- Passes full 700 and 850 bands
- Low insertion loss
- Rejection of 900MHz uplink
- DC/AISG pass
- Twin unit
- Dual twin mounting available

TECHNICAL SPECIFICATIONS

BAND NAME	700 PATH / 850 UPLINK PATH	850 DOWNLINK PATH
Passband	698 - 849MHz	869 - 891.5MHz
Insertion loss	0.1dB typical / 0.3dB maximum	0.5dB typical, 1.45dB maximum
Return loss	24dB typical, 18dB minimum	
Maximum input power (Per Port)	100W average	200W average and 66W per 5MHz
Rejection	53dB minimum @ 894.1 - 896.5MHz	

ELECTRICAL	
Impedance	50Ohms
Intermodulation products	-160dBc maximum in UL Band (assuming 20MHz Signal), with 2 x 43dBm carriers -153dBc maximum with 2 x 43dBm

DC / AISG	
Passband	0 - 13MHz
Insertion loss	0.3dB maximum
Return loss	15dB minimum
Input voltage range	± 33V
DC current rating	2A continuous, 4A peak
Compliance	3GPP TS 25.461

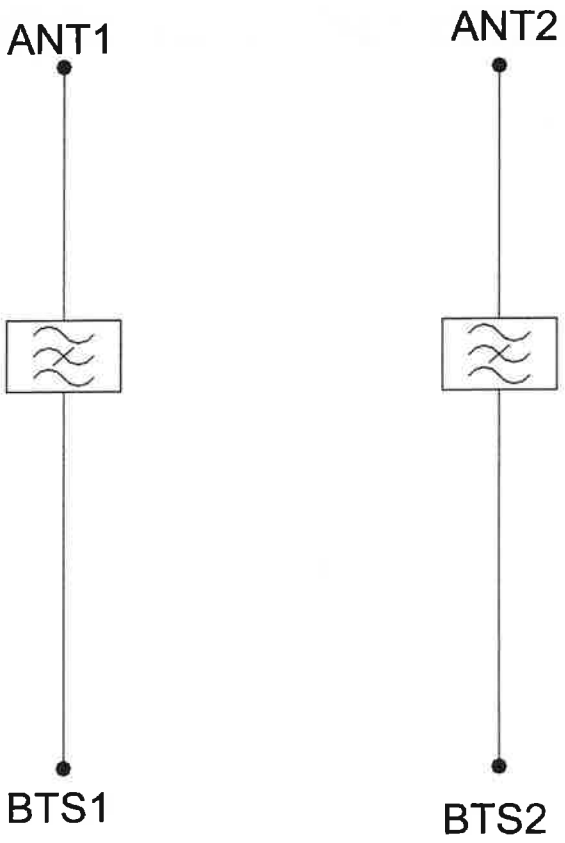
ENVIRONMENTAL	
For further details of environmental compliance, please contact Kaelus.	
Temperature range	-20°C to +60°C | -4°F to +140°F
Ingress protection	IP67
Altitude	2600m | 8530ft
Lightning protection	RF port: ±5kA maximum (8/20us), IEC 61000-4-5 – Unit must be terminated with some lightning protection circuits.
MTBF	>1,000,000 hours
Compliance	ETSI EN 300 019 class 4.1H, RoHS, NEBS GR-487-CORE

MECHANICAL	
Dimensions H x D x W	269 x 277 x 80mm | 10.60 x 10.90 x 3.15in (Excluding brackets and connectors)
Weight	8.0 kg | 17.6 lbs (no bracket)
Finish	Powder coated, light grey (RAL7035)
Connectors	RF: 4.3-10 (F) x 4
Mounting	Optional pole/wall bracket supplied with two metal clamps 45-178mm diameter poles or custom bracket. See ordering information.

ORDERING INFORMATION

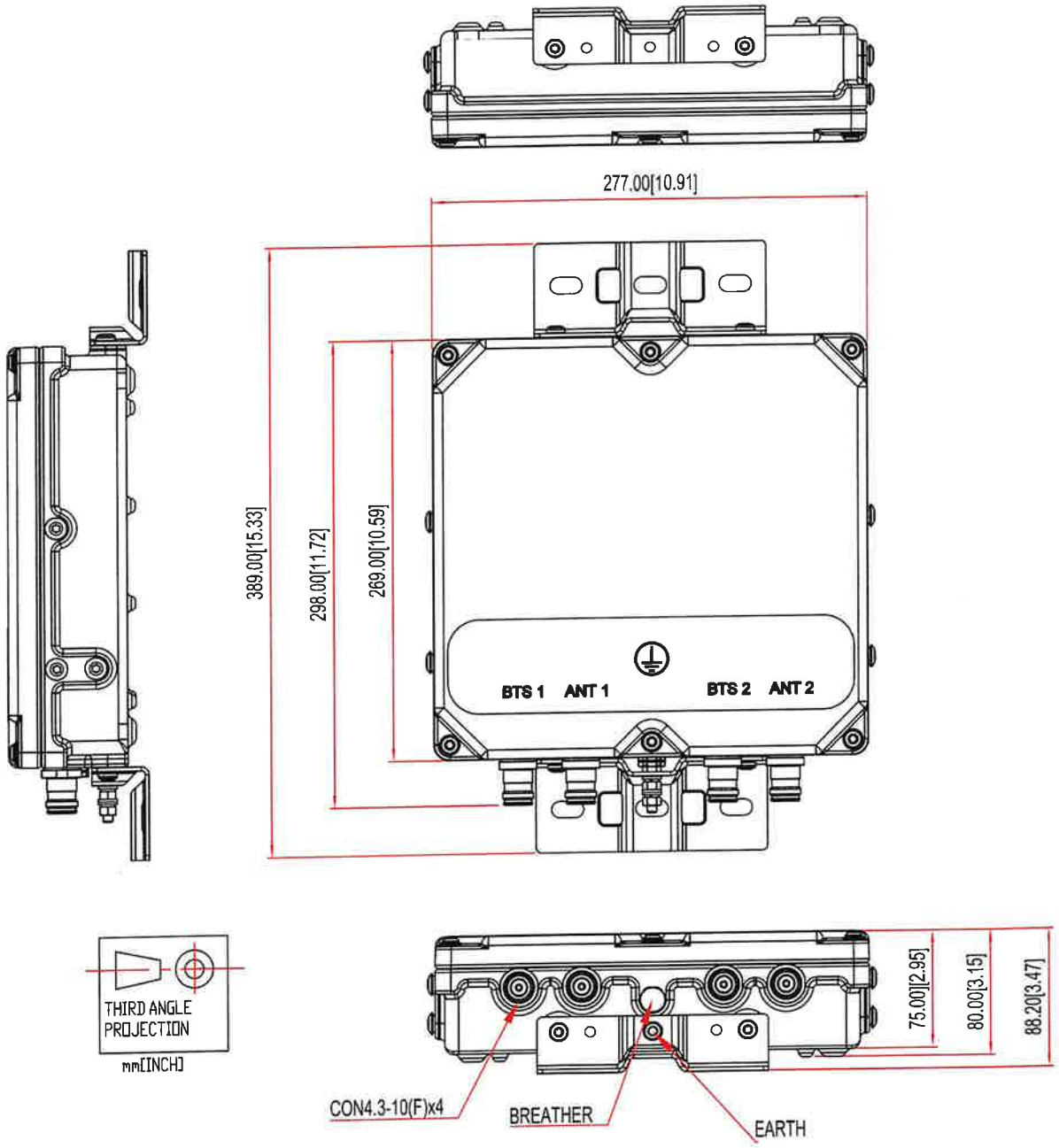
PART NUMBER	CONFIGURATION	OPTIONAL FEATURES	CONNECTORS
BSF0020F3V1	TWIN, 2 in / 2 out	DC/AISG PASS NO BRACKET	4.3-10 (F)
BSF0020F3V1-1	TWIN, 2 in / 2 out	DC/AISG PASS	4.3-10 (F)
BSF0020F3V1-2	QUAD, 4 in / 4 out	DC/AISG PASS	4.3-10 (F)

ELECTRICAL BLOCK DIAGRAM



Contact Us: +1 303 768 8080 | +61 (0) 7 3907 1200 | www.kaelus.com

MECHANICAL BLOCK DIAGRAM



Contact Us: +1 303 768 8080 | +61 (0) 7 3907 1200 | www.kaelus.com

ATTACHMENT 3

ARMOR TOWER ENGINEERING

Structural Analysis of an 80 ft Self-Supporting Tower

VZW Site Info: 2580172 – Wolcott NW CT
Everest Site Info: 701770 – Andrews Rd
County: New Haven
Location: Andrews Rd, Wolcott, CT

Checked By:

Ed Rosenbloom
Structural Design Engineer IV

STATE OF CONNECTICUT
KENNETH TANG
PEN.0034951
LICENSED
PROFESSIONAL ENGINEER

Kenneth K Tang

Digitally signed by Kenneth K Tang
Date: 2023.09.06 15:57:39 -07'00'

EVEREST
— INFRASTRUCTURE PARTNERS —

Two Allegheny Ctr

Nova Tower 2, Suite 1002

Pittsburgh, PA 15212

September 2023

9 North Main Street, 2nd Floor, Cortland, NY 13045
(607)591-5381 Fax: (866)870-0840 www.ArmorTower.com

September 6, 2023

Andrew Dykstra
Everest Infrastructure Partners
Two Allegheny Ctr
Nova Tower 2, Suite 1002
Pittsburgh, PA 15212

RE: Verizon Wireless – 2580172 - Wolcott NW CT
Everest – 701770 – Andrews Rd
107 Andrews Rd, Wolcott, CT

Andrew:

Armor Tower has completed the structural analysis of the subject tower and **have found it to be adequate within the scope of this analysis to support the proposed antenna loading**. The tower was analyzed according to the code-specified wind and ice parameters outlined in the Code Requirements section.

The subject tower is an 80' square self-supporting tower consisting of all-bolted sections with angle legs and bracing. Tower face dimensions range from 6'1" at the top to 10'7" at the base. Foundation capacities are based on a geotechnical report and foundation mapping.

The loading used in the analysis consisted of the existing and proposed equipment and equipment changes shown in Table 1.

A synopsis of the analysis results is as follows:

- Tower legs: 67%
- Bracing/bolts: 44%/50%
- Anchor bolts 75%
- Foundation 59%

We recommend a post-construction inspection be completed by a structural engineer to document that tower-mounted equipment has been placed in compliance with the requirements of this analysis. For a detailed listing of tower performance, please see page 20 of the calculations.

We appreciate the opportunity to provide our professional services to Everest Infrastructure Partners and Verizon Wireless and if you have any questions concerning this analysis, please contact us.

Sincerely,

ARMOR TOWER, INC.

Patrick Botimer
Structural Design Engineer V

STATE OF CONNECTICUT
KENNETH TANG
PEN.0034951
LICENSED
PROFESSIONAL ENGINEER

Kenneth K Tang
Digitally signed by Kenneth K Tang
Date: 2023.09.06 15:58:06 -07'00'

9 North Main Street, 2nd Floor, Cortland, NY 13045
(607)591-5381 Fax: (866)870-0840 www.ArmorTower.com

TABLE 1 - Existing/**Proposed**/Reserved **Antennas and Feed lines**

Status	Mount Elev.	Ant. CL	QTY	Antenna Model	Mount Type	Coax QTY/Size	Coax Location	Owner/ Tenant
Existing	80	90	2	DB212	Extended pipemounts	7/8" coax	Climbing Ladder	Unknown
Existing Reserved	77	77	3	APXVAARR24_43-U-NA20	Pipemounts below platform	(4) 1-1/4" hybrid	Face D	TMO
			3	VV-65A-R1				
			3	AIR6419 B41				
			3	Radio 4449				
			3	Radio 4460 B25/B66				
Existing **Proposed**	67	67	2	NNHH-65B-R4	(2) R5-216 sector mounts	(1) 1-7/8" hybrid	Leg A	VZW
			2	RFV01U-D1A				
			2	RFV01U-D2A				
			2	**BSF0020F3V1-1 Filter**				
			1	Raycap/12-circuit OVP				
	60	60	1	VHLPX3-11W	Dishmount			

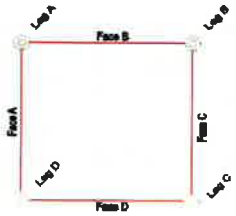
CODE REQUIREMENTS

Governing code:	2022 CT State Building Code
Code basis/adoption:	2021 International Building Code
Referenced standard:	ANSI/TIA 222-H
Basic wind speed: (3-sec. gust):	V_{ult}: 125 mph with no ice 50 mph with 1" concurrent ice
County of site location:	**New Haven**
ASCE 7 Special wind region:	No
Structure/Risk Category:	II
Exposure Category:	B
Topographic Category: (Method 1)	1 - no topographic escalation
Crest Height/Tower Base AMSL Elevation:	0 ft/ 1006 ft
Site Spectral Response:	S_s=0.190, S_1=0.054 *Does Not Govern*

TABLE 2 - Source Documents Referenced for Analysis

Document	Source	Date of Document
Prior Analysis	Armor Tower, Inc	May 2022
RF Design/CoLo Application	Everest Infrastructure	June 2023
Geotechnical report	Armor Tower, Inc	Dec 2017

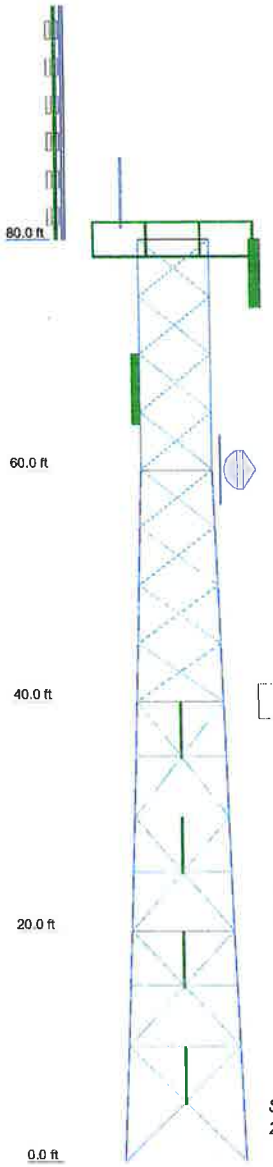
PRIMARY ASSUMPTIONS CONSIDERED IN THIS PROJECT



1. Leg A is assumed to be oriented Northwest.
2. Allowable steel stresses are defined by AISC-LRFD-99/360-16 and all welds conform to AWS D1.1 specification.
3. If reserved antennas/feed lines by other carriers or the tower owner are to be considered in this analysis, it is the responsibility of Everest and its affiliates to provide this information.
4. Any deviation from the analyzed antenna loading will require a re-analysis of the tower for verification of structural integrity. No changes are proposed for the feed lines.
5. This analysis assumes all tower members are galvanized adequately to prevent corrosion of the steel and that all tower members are in "like new" condition with no physical deterioration. This analysis also assumes the tower has been maintained properly per TIA 222-H Annex J recommended inspection and maintenance procedures for tower owners and is in a plumb condition. Armor Tower has not completed a condition assessment of the tower.
6. No accounting for residual stresses due to incorrect tower erection can be made. This analysis assumes all bolts are appropriately tightened providing necessary connection continuity and that the installation of the tower was performed by a qualified tower erector.
7. No conclusions, expressed or implied, shall indicate that Armor Tower has made an evaluation of the original design, materials, fabrication, or potential installation or erection deficiencies. Any information contrary to that assumed for the purpose of preparing this analysis could alter the findings and conclusions stated herein.
8. Armor Tower reserves the right to add to or modify this report as more information becomes available.
9. The investigation of the load carrying capacities of the antenna supporting frames/mounts is outside the scope of this analysis. Antenna mount certification can be completed under a separate contract.
10. Armor Tower can assist the contractor in providing a Class IV rigging plan for equipment lifting.

Section	T1	T2	T3	T4
Legs	L4x4x3/8	L5x5x1/2	L6x6x1/2	L6x6x5/8
Leg Grade			A36	
Diagonals	L2 1/2x2 1/2x1/4	L2 1/2x2x1/4	L3x3x1/4	L3x3x5/16
Diagonal Grade		A36		
Top Girts	L3x3x1/4	C7x12.25	L2 1/2x2 1/2x1/4	
Horizontals	N.A.		L2 1/2x2 1/2x1/4	
Sec. Horizontals	N.A.		L2 1/2x2 1/2x1/4	
Inner Bracing		SR 9/16		
Face Width (ft)	6.16927	7.53385	8.90104	10.5391
# Panels @ (ft)	8 @ 5		4 @ 10	
Weight (lb)	2001.5	2668.9	3914.9	4946.2

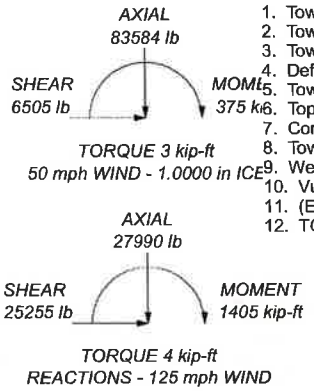
11931.5



ALL REACTIONS ARE FACTORED

MAX. CORNER REACT
DOWN: 101262 lb
SHEAR: 13513 lb

UPLIFT: -88894 lb
SHEAR: 11853 lb



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Top Platform - WolcottNW (E)	80	Samsung RFV01U-D1A (VZW-Delta)	67
DB224 (E)	80	Samsung RFV01U-D1A (VZW-Gamma)	67
2" Sch40 x 8ft (Dipole Mast)	80	RVZDC-6627-PF-48 (12Circuit OVP) (VZW-Delta)	67
DB224 (E)	80	Samsung RFV01U-D2A (VZW-Delta)	67
2" Sch40 x 8ft (Dipole Mast)	80	Samsung RFV01U-D2A (VZW-Gamma)	67
V V-65A-R1 w. Mtg Pipe (R-TMO-Alpha)	77	(2) R5-216 Mount Bracket (VZW)	67
V V-65A-R1 w. Mtg Pipe (R-TMO-Beta)	77	(2) R5-216 Mount Bracket (VZW)	67
V V-65A-R1 w. Mtg Pipe (R-TMO-Gamma)	77	(2) BSF0020F3V1 Filter (P-VZW-67)	67
Ericsson AIR6419 B41 w. MtgPipe (R-TMO-Alpha)	77	4"Sch40 x 4ft (Dishmount)	60
Ericsson AIR6419 B41 w. MtgPipe (R-TMO-Beta)	77	VHLPX3-11W (E-VZW)	60
Ericsson AIR6419 B41 w. MtgPipe (R-TMO-Gamma)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	37.5
		L2 1/2x2x1/4 @ 5ft Vert. (E)	37.5
APXVAARR24_43-U-NA20 w. MtgPipe (E-TMO-Alpha)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	37.5
		L2 1/2x2x1/4 @ 5ft Vert. (E)	37.5
APXVAARR24_43-U-NA20 w. MtgPipe (E-TMO-Beta)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	27.5
		L2 1/2x2x1/4 @ 5ft Vert. (E)	27.5
APXVAARR24_43-U-NA20 w. MtgPipe (E-TMO-Gamma)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	27.5
		L2 1/2x2x1/4 @ 5ft Vert. (E)	27.5
Ericsson Radio 4449 B71/B85 (E-TMO-Alpha)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	17.5
Ericsson Radio 4449 B71/B85 (E-TMO-Beta)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	17.5
Ericsson Radio 4449 B71/B85 (E-TMO-Gamma)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	17.5
Ericsson Radio 4460 B25+B66 (R-TMO-Alpha)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	17.5
Ericsson Radio 4460 B25+B66 (R-TMO-Beta)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	7.5
Ericsson Radio 4460 B25+B66 (R-TMO-Gamma)	77	L2 1/2x2x1/4 @ 5ft Vert. (E)	7.5
(2) NNHH-65B-R4 w. Mtg Pipe (VZW-Delta)	67	L2 1/2x2x1/4 @ 5ft Vert. (E)	7.5
(2) NNHH-65B-R4 w. Mtg Pipe (VZW-Gamma)	67	L2 1/2x2x1/4 @ 5ft Vert. (E)	7.5

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-G Standard.
2. Tower designed for a 125 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0'
7. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
8. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
9. Welds are fabricated with ER-70S-6 electrodes.
10. Vult(125 mph) = Vasd(97 mph) Per ASCE7
11. (E)xisting or (P)roposed.
12. TOWER RATING: 67.7%

ARMOR TOWER

ARMOR TOWER, INC
9 North Main
Cortland, NY 13045
Phone: 607-591-5381
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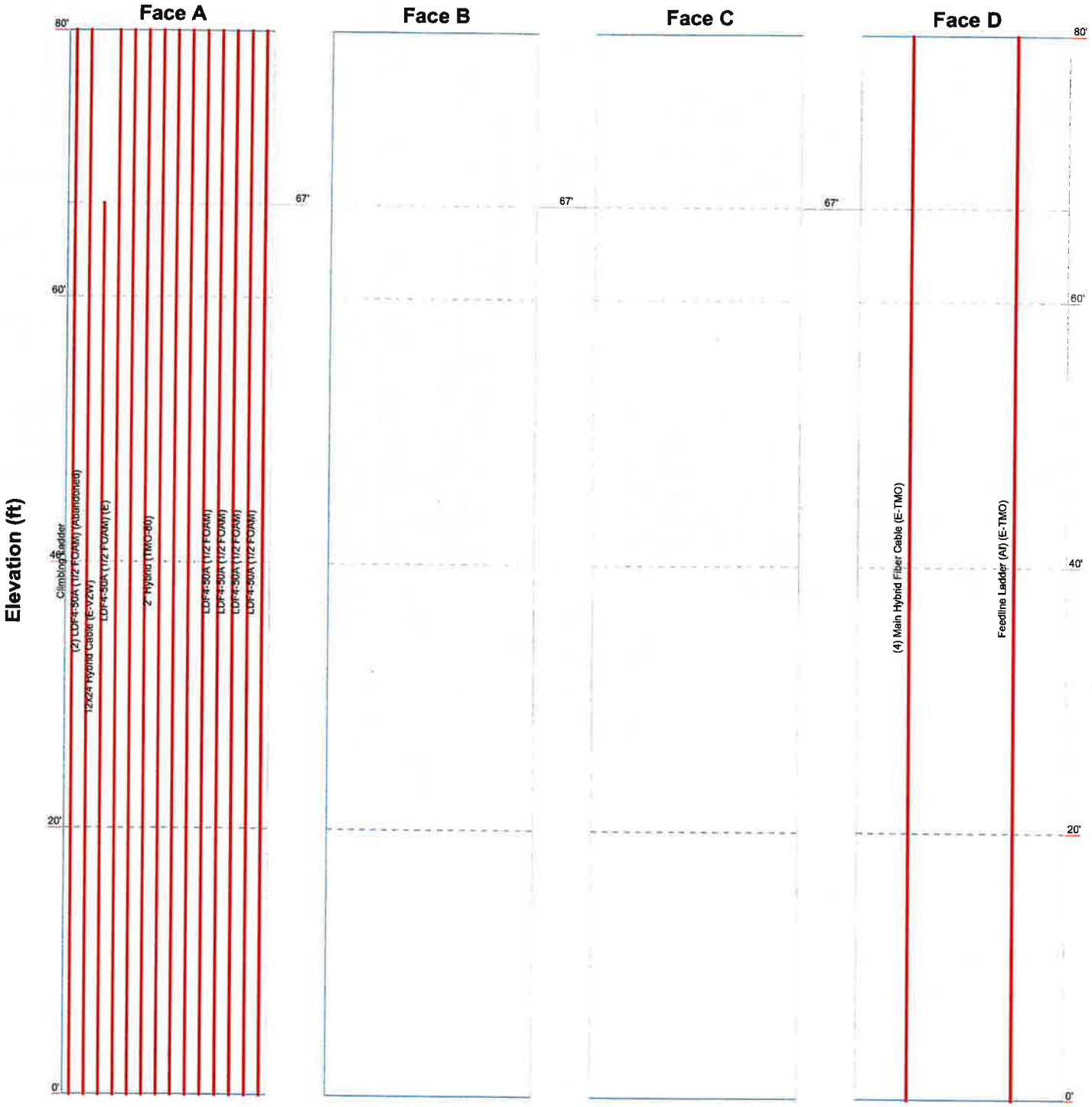
Job:	***80' SELF-SUPPORTING TOWER ANALYSIS***		
Project:	***Verizon Wireless - Wolcott, CT/Andrews Rd***		
Client:	Everest Infrastructure #701770	Drawn by: PB	App'd:
Code:	TIA-222-G	Date: 09/01/23	Scale: NTS
Path:			Dwg No. E-1

Feed Line Distribution Chart
0' - 80'

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



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Path:			Dwg No. E-7

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Job: 80' SELF-SUPPORTING TOWER ANALYSIS		Page: 1 of 20
Project: Verizon Wireless - Wolcott, CT/Andrews Rd		Date: 12:39:12 09/01/23
Client: Everest Infrastructure #701770		Designed by: PB

Tower Input Data

The main tower is a 4x free standing tower with an overall height of 80' above the ground line.
The base of the tower is set at an elevation of 0' above the ground line.
The face width of the tower is 6'2-1/32" at the top and 10'6-15/32" at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

ASCE 7-10 Wind Data is used.
Basic wind speed of 125 mph.
Risk Category II.
Exposure Category B.
Topographic Category 1.
Crest Height 0'.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..
Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..
Welds are fabricated with ER-70S-6 electrodes..
Vult(125 mph) = Vasd(97 mph) Per ASCE7.
(E)xisting or (P)roposed..
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

ARMOR TOWER ENGINEERING **ARMOR TOWER, INC** 9 North Main Cortland, NY 13045 Phone: 607-591-5381 FAX: 866-570-0840	**Job** 80' SELF-SUPPORTING TOWER ANALYSIS	**Page** 2 of 20
	Project Verizon Wireless - Wolcott, CT/Andrews Rd	**Date** 12:39:12 09/01/23
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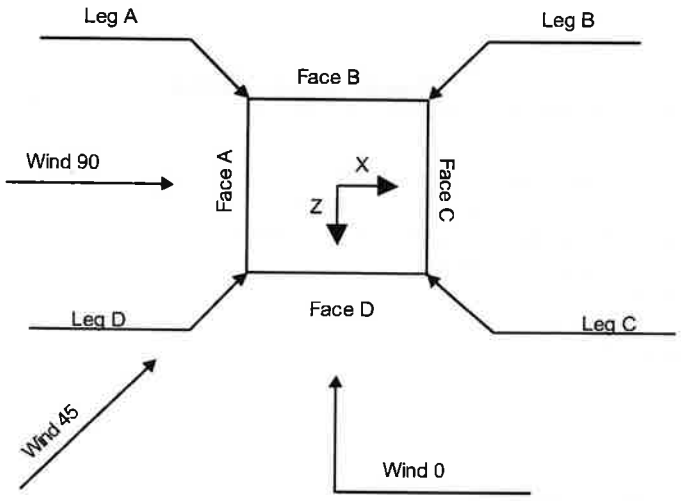

Square Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	80'-60'			6'2-1/32"	1	20'
T2	60'-40'			6'2-1/32"	1	20'
T3	40'-20'			7'6-3/8"	1	20'
T4	20'-0'			8'10-13/16"	1	20'

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	80'-60'	5'	X Brace	No	No	0.0000	0.0000
T2	60'-40'	5'	X Brace	No	No	0.0000	0.0000
T3	40'-20'	10'	X Brace	No	Yes	0.0000	0.0000
T4	20'-0'	10'	X Brace	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 80'-60'	Equal Angle	L4x4x3/8	A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)

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Job	Page
80' SELF-SUPPORTING TOWER ANALYSIS	3 of 20
Project	**Date**
Verizon Wireless - Wolcott, CT/Andrews Rd	12:39:12 09/01/23
Client	**Designed by**
Everest Infrastructure #701770	PB

Tower Elevation ft	*Leg Type*	*Leg Size*	*Leg Grade*	*Diagonal Type*	*Diagonal Size*	*Diagonal Grade*
T2 60'-40'	Equal Angle	L5x5x1/2	A36 (36 ksi)	Single Angle	L2 1/2x2x1/4	A36 (36 ksi)
T3 40'-20'	Equal Angle	L6x6x1/2	A36 (36 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T4 20'-0'	Equal Angle	L6x6x5/8	A36 (36 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	*Top Girt Type*	*Top Girt Size*	*Top Girt Grade*	*Bottom Girt Type*	*Bottom Girt Size*	*Bottom Girt Grade*
T1 80'-60'	Equal Angle	L3x3x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T2 60'-40'	Channel	C7x12.25	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T3 40'-20'	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T4 20'-0'	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	*No. of Mid Girts*	*Mid Girt Type*	*Mid Girt Size*	*Mid Girt Grade*	*Horizontal Type*	*Horizontal Size*	*Horizontal Grade*
T3 40'-20'	None	Flat Bar		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T4 20'-0'	None	Flat Bar		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	*Secondary Horizontal Type*	*Secondary Horizontal Size*	*Secondary Horizontal Grade*	*Inner Bracing Type*	*Inner Bracing Size*	*Inner Bracing Grade*
T1 80'-60'	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T2 60'-40'	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T3 40'-20'	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T4 20'-0'	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Solid Round	9/16	A572-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 80'-60'	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
T2 60'-40'	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
T3 40'-20'	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
T4 20'-0'	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000

Tower Section Geometry (cont'd)

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 80'-60'	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T2 60'-40'	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T3 40'-20'	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T4 20'-0'	No	No	1	1	1	1	1	0.5	1	1
				1	1	1	1	0.5	1	1

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

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 80'-60'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 60'-40'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 40'-20'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 20'-0'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

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Job	Page
80' SELF-SUPPORTING TOWER ANALYSIS	5 of 20
Project Verizon Wireless - Wolcott, CT/Andrews Rd	**Date** 12:39:12 09/01/23
Client Everest Infrastructure #701770	**Designed by** PB

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 80'-60'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T2 60'-40'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T3 40'-20'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T4 20'-0'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 80'-60'	Sleeve DS	0.7500 A307	8	0.7500 A307	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 60'-40'	Sleeve DS	0.7500 A307	12	0.7500 A307	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

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Job	Page
80' SELF-SUPPORTING TOWER ANALYSIS	6 of 20
Project Verizon Wireless - Wolcott, CT/Andrews Rd	**Date** 12:39:12 09/01/23
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Tower Elevation ft	*Leg Connection Type*	*Leg*		*Diagonal*		*Top Girt*		*Bottom Girt*		*Mid Girt*		*Long Horizontal*		*Short Horizontal*	
		Bolt Size in	*No.*	*Bolt Size in*	*No.*	*Bolt Size in*	*No.*	*Bolt Size in*	*No.*	*Bolt Size in*	*No.*	*Bolt Size in*	*No.*	*Bolt Size in*	*No.*
T3 40'-20'	Sleeve DS	0.7500 A307	16	0.7500 A307	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.7500 A307	2	0.7500 A307	2
T4 20'-0'	Sleeve DS	0.7500 A307	20	0.7500 A307	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.7500 A307	2	0.7500 A307	2

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	*Face or Leg*	*Allow Shield*	*Exclude From Torque Calculation*	*Component Type*	*Placement ft*	*Face Offset in*	*Lateral Offset (Frac FW)*	*#*	*# Per Row*	*Clear Spacing in*	*Width or Diameter in*	*Perimeter in*	*Weight plf*
Climbing Ladder	A	No	No	Af (CaAa)	80' - 0'	-29.0000	0.335	1	1	2.0000	4.0000		10.50
LDF4-50A (1/2 FOAM) (Abandoned)	A	No	No	Ar (CaAa)	80' - 0'	0.0000	0	2	2	0.6300	0.6300		0.15
12x24 Hybrid Cable (E-VZW) *	A	No	No	Ar (CaAa)	67' - 0'	1.0000	0.48	1	1	2.0000	2.0000		3.10
Main Hybrid Fiber Cable (E-TMO)	D	No	No	Ar (CaAa)	80' - 0'	1.0000	0.25	4	4	1.4300	1.4300		1.63
Feedline Ladder (Af) (E-TMO) *	D	No	No	Af (CaAa)	80' - 0'	0.0000	0.27	1	1	3.0000	3.0000		8.40
LDF4-50A (1/2 FOAM) (E)	A	No	No	Ar (CaAa)	80' - 0'	-22.5000	0.27	1	1	0.6300	0.6300		0.15
.	A	No	No	Ar (CaAa)	80' - 0'	-24.0000	0.28	1	1	1.9800	1.9800		0.72
.	A	No	No	Ar (CaAa)	80' - 0'	-26.0000	0.295	1	1	1.9800	1.9800		0.72
2" Hybrid (TMO-80)	A	No	No	Ar (CaAa)	80' - 0'	-28.0000	0.31	1	1	1.9800	1.9800		0.72
.	A	No	No	Ar (CaAa)	80' - 0'	-30.0000	0.325	1	1	1.9800	1.9800		0.72
.	A	No	No	Ar (CaAa)	80' - 0'	-32.0000	0.34	1	1	1.9800	1.9800		0.72
.	A	No	No	Ar (CaAa)	80' - 0'	-34.0000	0.355	1	1	1.9800	1.9800		0.72
LDF4-50A (1/2 FOAM)	A	No	No	Ar (CaAa)	80' - 0'	-36.0000	0.37	1	1	0.6300	0.6300		0.15
LDF4-50A (1/2 FOAM)	A	No	No	Ar (CaAa)	80' - 0'	-38.0000	0.385	1	1	0.6300	0.6300		0.15
LDF4-50A (1/2 FOAM)	A	No	No	Ar (CaAa)	80' - 0'	-40.0000	0.4	1	1	0.6300	0.6300		0.15
LDF4-50A (1/2 FOAM)	A	No	No	Ar (CaAa)	80' - 0'	-42.0000	0.415	1	1	0.6300	0.6300		0.15

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Job	Page
80' SELF-SUPPORTING TOWER ANALYSIS	7 of 20
Project	**Date**
Verizon Wireless - Wolcott, CT/Andrews Rd	12:39:12 09/01/23
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Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
T1	80'-60'	A	0.000	0.000	47.313	0.000	339.10
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
		D	0.000	0.000	21.440	0.000	298.40
T2	60'-40'	A	0.000	0.000	49.913	0.000	379.40
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
		D	0.000	0.000	21.440	0.000	298.40
T3	40'-20'	A	0.000	0.000	49.913	0.000	379.40
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
		D	0.000	0.000	21.440	0.000	298.40
T4	20'-0'	A	0.000	0.000	49.913	0.000	379.40
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
		D	0.000	0.000	21.440	0.000	298.40

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
T1	80'-60'	A	2.156	0.000	0.000	171.136	0.000	2929.45
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
		D		0.000	0.000	57.202	0.000	1171.20
T2	60'-40'	A	2.085	0.000	0.000	175.131	0.000	2970.17
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
		D		0.000	0.000	56.453	0.000	1136.23
T3	40'-20'	A	1.981	0.000	0.000	169.003	0.000	2769.94
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
		D		0.000	0.000	55.365	0.000	1086.31
T4	20'-0'	A	1.775	0.000	0.000	156.840	0.000	2394.64
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
		D		0.000	0.000	53.213	0.000	990.65

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	80'-60'	-3.8036	-3.5735	-5.5828	-6.1862
T2	60'-40'	-4.8614	-3.9527	-7.5946	-7.0443
T3	40'-20'	-6.2599	-4.2408	-10.6133	-8.0661
T4	20'-0'	-7.8203	-4.6947	-13.7165	-9.1021

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Job	Page
80' SELF-SUPPORTING TOWER ANALYSIS	8 of 20
Project	**Date**
Verizon Wireless - Wolcott, CT/Andrews Rd	12:39:12 09/01/23
Client	**Designed by**
Everest Infrastructure #701770	PB

Shielding Factor Ka

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
T1	2	Climbing Ladder	60.00 - 80.00	0.6000	0.5133
T1	9	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.5133
T1	10	12x24 Hybrid Cable	60.00 - 67.00	0.6000	0.5133
T1	12	Main Hybrid Fiber Cable	60.00 - 80.00	0.6000	0.5133
T1	13	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.5133
T1	15	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.5133
T1	16	.	60.00 - 80.00	0.6000	0.5133
T1	17	.	60.00 - 80.00	0.6000	0.5133
T1	19	2" Hybrid	60.00 - 80.00	0.6000	0.5133
T1	20	.	60.00 - 80.00	0.6000	0.5133
T1	21	.	60.00 - 80.00	0.6000	0.5133
T1	22	.	60.00 - 80.00	0.6000	0.5133
T1	23	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.5133
T1	24	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.5133
T1	25	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.5133
T1	26	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.5133
T2	2	Climbing Ladder	40.00 - 60.00	0.6000	0.5200
T2	9	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.5200
T2	10	12x24 Hybrid Cable	40.00 - 60.00	0.6000	0.5200
T2	12	Main Hybrid Fiber Cable	40.00 - 60.00	0.6000	0.5200
T2	13	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.5200
T2	15	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.5200
T2	16	.	40.00 - 60.00	0.6000	0.5200
T2	17	.	40.00 - 60.00	0.6000	0.5200
T2	19	2" Hybrid	40.00 - 60.00	0.6000	0.5200
T2	20	.	40.00 - 60.00	0.6000	0.5200
T2	21	.	40.00 - 60.00	0.6000	0.5200
T2	22	.	40.00 - 60.00	0.6000	0.5200
T2	23	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.5200
T2	24	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.5200
T2	25	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.5200
T2	26	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.5200
T3	2	Climbing Ladder	20.00 - 40.00	0.6000	0.5599
T3	9	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5599
T3	10	12x24 Hybrid Cable	20.00 - 40.00	0.6000	0.5599
T3	12	Main Hybrid Fiber Cable	20.00 - 40.00	0.6000	0.5599
T3	13	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.5599
T3	15	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5599
T3	16	.	20.00 - 40.00	0.6000	0.5599
T3	17	.	20.00 - 40.00	0.6000	0.5599
T3	19	2" Hybrid	20.00 - 40.00	0.6000	0.5599
T3	20	.	20.00 - 40.00	0.6000	0.5599
T3	21	.	20.00 - 40.00	0.6000	0.5599
T3	22	.	20.00 - 40.00	0.6000	0.5599
T3	23	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5599
T3	24	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5599
T3	25	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5599
T3	26	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5599
T4	2	Climbing Ladder	0.00 - 20.00	0.6000	0.6000
T4	9	LDF4-50A (1/2 FOAM)	0.00 - 20.00	0.6000	0.6000
T4	10	12x24 Hybrid Cable	0.00 - 20.00	0.6000	0.6000
T4	12	Main Hybrid Fiber Cable	0.00 - 20.00	0.6000	0.6000
T4	13	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T4	15	LDF4-50A (1/2 FOAM)	0.00 - 20.00	0.6000	0.6000
T4	16	.	0.00 - 20.00	0.6000	0.6000
T4	17	.	0.00 - 20.00	0.6000	0.6000

ARMOR TOWER ENGINEERING

ARMOR TOWER, INC
9 North Main
Cortland, NY 13045
Phone: 607-591-5381
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Job	80' SELF-SUPPORTING TOWER ANALYSIS
Project	Verizon Wireless - Wolcott, CT/Andrews Rd
Client	Everest Infrastructure #701770
Page	9 of 20
Date	12:39:12 09/01/23
Designed by	PB

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
T4	19	2" Hybrid	0.00 - 20.00	0.6000	0.6000
T4	20	.	0.00 - 20.00	0.6000	0.6000
T4	21	.	0.00 - 20.00	0.6000	0.6000
T4	22	.	0.00 - 20.00	0.6000	0.6000
T4	23	LDF4-50A (1/2 FOAM)	0.00 - 20.00	0.6000	0.6000
T4	24	LDF4-50A (1/2 FOAM)	0.00 - 20.00	0.6000	0.6000
T4	25	LDF4-50A (1/2 FOAM)	0.00 - 20.00	0.6000	0.6000
T4	26	LDF4-50A (1/2 FOAM)	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* *°*	*Placement* *ft*		*C_AA_A Front* *ft^2*	*C_AA_A Side* *ft^2*	*Weight* *lb*
Top Platform - WolcottNW (E)	A	None		0.0000	80'	No Ice	353.84	297.42	5260.00
						1/2" Ice	392.53	336.16	6838.00
						1" Ice	431.23	374.89	8416.00
L2 1/2x2x1/4 @ 5ft Vert. (E)	A	From Face	0.00 0' 0'	0.0000	7'6"	No Ice	1.67	2.05	20.00
						1/2" Ice	2.16	2.41	29.54
						1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert. (E)	B	From Face	0.00 0' 0'	0.0000	7'6"	No Ice	1.67	2.05	20.00
						1/2" Ice	2.16	2.41	29.54
						1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert. (E)	C	From Face	0.00 0' 0'	0.0000	7'6"	No Ice	1.67	2.05	20.00
						1/2" Ice	2.16	2.41	29.54
						1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert. (E)	D	From Face	0.00 0' 0'	0.0000	7'6"	No Ice	1.67	2.05	20.00
						1/2" Ice	2.16	2.41	29.54
						1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert. (E)	A	From Face	0.00 0' 0'	0.0000	17'6"	No Ice	1.67	2.05	20.00
						1/2" Ice	2.16	2.41	29.54
						1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert. (E)	B	From Face	0.00 0' 0'	0.0000	17'6"	No Ice	1.67	2.05	20.00
						1/2" Ice	2.16	2.41	29.54
						1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert. (E)	C	From Face	0.00 0' 0'	0.0000	17'6"	No Ice	1.67	2.05	20.00
						1/2" Ice	2.16	2.41	29.54
						1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert. (E)	D	From Face	0.00 0' 0'	0.0000	17'6"	No Ice	1.67	2.05	20.00
						1/2" Ice	2.16	2.41	29.54
						1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert. (E)	A	From Face	0.00 0' 0'	0.0000	27'6"	No Ice	1.67	2.05	20.00
						1/2" Ice	2.16	2.41	29.54
						1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert. (E)	B	From Face	0.00 0' 0'	0.0000	27'6"	No Ice	1.67	2.05	20.00
						1/2" Ice	2.16	2.41	29.54
						1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert. (E)	C	From Face	0.00 0' 0'	0.0000	27'6"	No Ice	1.67	2.05	20.00
						1/2" Ice	2.16	2.41	29.54
						1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert.	D	From Face	0.00	0.0000	27'6"	No Ice	1.67	2.05	20.00

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Job	Page
80' SELF-SUPPORTING TOWER ANALYSIS	10 of 20
Project	**Date**
Verizon Wireless - Wolcott, CT/Andrews Rd	12:39:12 09/01/23
Client	**Designed by**
Everest Infrastructure #701770	PB

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* lb
(E)			0'			1/2" Ice	2.16	2.41	29.54
			0'			1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert.	A	From Face	0.00	0.0000	37'6"	No Ice	1.67	2.05	20.00
(E)			0'			1/2" Ice	2.16	2.41	29.54
			0'			1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert.	B	From Face	0.00	0.0000	37'6"	No Ice	1.67	2.05	20.00
(E)			0'			1/2" Ice	2.16	2.41	29.54
			0'			1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert.	C	From Face	0.00	0.0000	37'6"	No Ice	1.67	2.05	20.00
(E)			0'			1/2" Ice	2.16	2.41	29.54
			0'			1" Ice	2.53	2.78	44.94
L2 1/2x2x1/4 @ 5ft Vert.	D	From Face	0.00	0.0000	37'6"	No Ice	1.67	2.05	20.00
(E)			0'			1/2" Ice	2.16	2.41	29.54
			0'			1" Ice	2.53	2.78	44.94
** Exsiting Antennas									
DB224	A	From Leg	2.00	0.0000	80'	No Ice	3.15	3.15	32.00
(E)			-7'			1/2" Ice	5.67	5.67	41.60
			10'			1" Ice	8.19	8.19	51.20
2" Sch40 x 8ft	A	From Leg	2.00	0.0000	80'	No Ice	1.90	1.90	30.00
(Dipole Mast)			0'			1/2" Ice	2.73	2.73	43.34
			4'			1" Ice	3.40	3.40	62.96
DB224	D	From Leg	2.00	0.0000	80'	No Ice	3.15	3.15	32.00
(E)			8'			1/2" Ice	5.67	5.67	41.60
			10'			1" Ice	8.19	8.19	51.20
2" Sch40 x 8ft	D	From Leg	2.00	0.0000	80'	No Ice	1.90	1.90	30.00
(Dipole Mast)			8'			1/2" Ice	2.73	2.73	43.34
			4'			1" Ice	3.40	3.40	62.96
*									
TMO-2022									
V V-65A-R1 w. Mtg Pipe	A	From Face	2.00	0.0000	77'	No Ice	5.93	3.62	40.00
(P-TMO-Alpha)			-7'			1/2" Ice	6.29	4.20	88.12
			0'			1" Ice	6.66	4.81	138.74
V V-65A-R1 w. Mtg Pipe	B	From Face	2.00	0.0000	77'	No Ice	5.93	3.62	40.00
(P-TMO-Beta)			7'			1/2" Ice	6.29	4.20	88.12
			0'			1" Ice	6.66	4.81	138.74
V V-65A-R1 w. Mtg Pipe	D	From Face	2.00	0.0000	77'	No Ice	5.93	3.62	40.00
(P-TMO-Gamma)			-7'			1/2" Ice	6.29	4.20	88.12
			0'			1" Ice	6.66	4.81	138.74
Ericsson AIR6419 B41 w.	A	From Face	2.00	0.0000	77'	No Ice	6.53	3.74	100.00
MtgPipe			-7'			1/2" Ice	6.91	4.23	152.02
(P-TMO-Alpha)			0'			1" Ice	7.31	4.74	211.91
Ericsson AIR6419 B41 w.	B	From Face	2.00	0.0000	77'	No Ice	6.53	3.74	100.00
MtgPipe			7'			1/2" Ice	6.91	4.23	152.02
(P-TMO-Beta)			0'			1" Ice	7.31	4.74	211.91
Ericsson AIR6419 B41 w.	D	From Face	2.00	0.0000	77'	No Ice	6.53	3.74	100.00
MtgPipe			-7'			1/2" Ice	6.91	4.23	152.02
(P-TMO-Gamma)			0'			1" Ice	7.31	4.74	211.91
APXVAARR24_43-U-NA20	A	From Face	2.00	0.0000	77'	No Ice	20.24	10.79	180.00
w. MtgPipe			-7'			1/2" Ice	20.89	12.21	315.89
(E-TMobile)			0'			1" Ice	21.55	13.49	460.20
APXVAARR24_43-U-NA20	B	From Face	2.00	0.0000	77'	No Ice	20.24	10.79	180.00
w. MtgPipe			7'			1/2" Ice	20.89	12.21	315.89
(E-TMobile)			0'			1" Ice	21.55	13.49	460.20
APXVAARR24_43-U-NA20	D	From Face	2.00	0.0000	77'	No Ice	20.24	10.79	180.00
w. MtgPipe			-7'			1/2" Ice	20.89	12.21	315.89
(E-TMobile)			0'			1" Ice	21.55	13.49	460.20
Ericsson Radio 4449	A	From Face	2.00	0.0000	77'	No Ice	1.64	1.15	80.00

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Project	**Date**
Verizon Wireless - Wolcott, CT/Andrews Rd	12:39:12 09/01/23
Client	**Designed by**
Everest Infrastructure #701770	PB

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* lb
B71/B85 (E-TMobile) Ericsson Radio 4449	B	From Face	7' 0' 7.00	0.0000	77'	1/2" Ice	1.80	1.29	94.04
						1" Ice	1.97	1.43	112.70
						No Ice	1.64	1.15	80.00
B71/B85 (E-TMobile) Ericsson Radio 4449	D	From Face	-7' 0' 2.00	0.0000	77'	1/2" Ice	1.80	1.29	94.04
						1" Ice	1.97	1.43	112.70
						No Ice	1.64	1.15	80.00
B71/B85 (E-TMobile) Ericsson Radio 4460	A	From Face	5' 0' 2.00	0.0000	77'	1/2" Ice	1.80	1.29	94.04
						1" Ice	1.97	1.43	112.70
						No Ice	2.56	1.98	110.00
B25+B66 (P-TMO-Alpha) Ericsson Radio 4460	B	From Face	-7' 0' 2.00	0.0000	77'	1/2" Ice	2.76	2.16	134.38
						1" Ice	2.97	2.34	163.03
						No Ice	2.56	1.98	110.00
B25+B66 (P-TMO-Beta) Ericsson Radio 4460	D	From Face	7' 0' 2.00	0.0000	77'	1/2" Ice	2.76	2.16	134.38
						1" Ice	2.97	2.34	163.03
						No Ice	2.56	1.98	110.00
B25+B66 (P-TMO-Gamma) *			-7' 0'			1/2" Ice	2.76	2.16	134.38
						1" Ice	2.97	2.34	163.03
*VZW - 2019*** (2) NNHH-65B-R4 w. Mtg Pipe (VZW-Delta)	D	From Leg	0.50 0' 0'	0.0000	67'	No Ice	12.27	7.17	100.00
						1/2" Ice	12.77	8.13	187.33
						1" Ice	13.27	8.97	283.67
(2) NNHH-65B-R4 w. Mtg Pipe (VZW-Gamma)	A	From Leg	0.50 0' 0'	0.0000	67'	No Ice	12.27	7.17	100.00
						1/2" Ice	12.77	8.13	187.33
						1" Ice	13.27	8.97	283.67
Samsung RFV01U-D1A (VZW-Delta)	D	From Leg	0.50 0' 0'	0.0000	67'	No Ice	1.88	1.25	100.00
						1/2" Ice	2.05	1.39	115.34
						1" Ice	2.22	1.54	136.47
Samsung RFV01U-D1A (VZW-Gamma)	A	From Leg	0.50 0' 0'	0.0000	67'	No Ice	1.88	1.25	100.00
						1/2" Ice	2.05	1.39	115.34
						1" Ice	2.22	1.54	136.47
RVZDC-6627-PF-48 (12Circuit OVP) (VZW-Delta)	D	From Leg	0.50 0' 0'	0.0000	67'	No Ice	3.79	2.51	30.00
						1/2" Ice	4.04	2.73	63.48
						1" Ice	4.30	2.95	98.72
Samsung RFV01U-D2A (VZW-Delta)	D	From Leg	0.50 0' 0'	0.0000	67'	No Ice	1.88	1.01	80.00
						1/2" Ice	2.05	1.14	98.43
						1" Ice	2.22	1.28	117.53
Samsung RFV01U-D2A (VZW-Gamma)	A	From Leg	0.50 0' 0'	0.0000	67'	No Ice	1.88	1.01	80.00
						1/2" Ice	2.05	1.14	98.43
						1" Ice	2.22	1.28	117.53
(2) R5-216 Mount Bracket (VZW)	D	None		0.0000	67'	No Ice	8.31	8.31	150.00
						1/2" Ice	11.95	11.95	187.92
						1" Ice	14.13	14.13	274.19
(2) R5-216 Mount Bracket (VZW)	A	None		0.0000	67'	No Ice	8.31	8.31	150.00
						1/2" Ice	11.95	11.95	187.92
						1" Ice	14.13	14.13	274.19
4"Sch40 x 4ft (Dishmount)	B	From Leg	1.00 0' 0'	0.0000	60'	No Ice	1.11	1.11	50.00
						1/2" Ice	1.58	1.58	62.99
						1" Ice	1.84	1.84	79.03
*VZW-2023 (2) BSF0020F3V1 Filter (P-VZW-67)	D	From Leg	0.00 0' 0'	0.0000	67'	No Ice	0.96	0.30	17.60
						1/2" Ice	1.09	0.38	24.37
						1" Ice	1.22	0.46	32.93

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral / Vert	Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter		Aperture Area	Weight
*				ft	°	°	ft	ft		ft^2	lb
*VZW-2020 VHLPX3-11W (E-VZW)	B	Paraboloid w/Radome	From Leg	1.50 0' 0'	0.0000		60'	3.27	No Ice 1/2" Ice 1" Ice	8.42 8.86 9.29	40.00 80.00 130.00

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 45 deg - No Ice
5	0.9 Dead+1.0 Wind 45 deg - No Ice
6	1.2 Dead+1.0 Wind 90 deg - No Ice
7	0.9 Dead+1.0 Wind 90 deg - No Ice
8	1.2 Dead+1.0 Wind 135 deg - No Ice
9	0.9 Dead+1.0 Wind 135 deg - No Ice
10	1.2 Dead+1.0 Wind 180 deg - No Ice
11	0.9 Dead+1.0 Wind 180 deg - No Ice
12	1.2 Dead+1.0 Wind 225 deg - No Ice
13	0.9 Dead+1.0 Wind 225 deg - No Ice
14	1.2 Dead+1.0 Wind 270 deg - No Ice
15	0.9 Dead+1.0 Wind 270 deg - No Ice
16	1.2 Dead+1.0 Wind 315 deg - No Ice
17	0.9 Dead+1.0 Wind 315 deg - No Ice
18	1.2 Dead+1.0 Ice+1.0 Temp
19	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
20	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp
21	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
22	1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp
23	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
24	1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp
25	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
26	1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 45 deg - Service
29	Dead+Wind 90 deg - Service
30	Dead+Wind 135 deg - Service
31	Dead+Wind 180 deg - Service
32	Dead+Wind 225 deg - Service
33	Dead+Wind 270 deg - Service
34	Dead+Wind 315 deg - Service

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg D	Max. Vert	12	101271.84	9477.82	-9633.47
	Max. H_x	12	101271.84	9477.82	-9633.47
	Max. H_z	5	-88004.07	-8271.71	8393.67
	Min. Vert	5	-88004.07	-8271.71	8393.67
	Min. H_x	5	-88004.07	-8271.71	8393.67
	Min. H_z	12	101271.84	9477.82	-9633.47
Leg C	Max. Vert	8	99944.85	-9577.76	-9356.49
	Max. H_x	17	-88053.15	8384.03	8245.71
	Max. H_z	17	-88053.15	8384.03	8245.71
	Min. Vert	17	-88053.15	8384.03	8245.71
	Min. H_x	8	99944.85	-9577.76	-9356.49
	Min. H_z	8	99944.85	-9577.76	-9356.49
Leg B	Max. Vert	4	100140.19	-9573.79	9418.14
	Max. H_x	13	-88888.75	8441.71	-8319.74
	Max. H_z	4	100140.19	-9573.79	9418.14
	Min. Vert	13	-88888.75	8441.71	-8319.74
	Min. H_x	4	100140.19	-9573.79	9418.14
	Min. H_z	13	-88888.75	8441.71	-8319.74
Leg A	Max. Vert	16	100365.31	9375.74	9597.01
	Max. H_x	16	100365.31	9375.74	9597.01
	Max. H_z	16	100365.31	9375.74	9597.01
	Min. Vert	9	-87737.81	-8231.27	-8369.59
	Min. H_x	9	-87737.81	-8231.27	-8369.59
	Min. H_z	9	-87737.81	-8231.27	-8369.59

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	23351.62	-0.00	0.00	2.49	6.18	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	28021.95	5.74	-23786.73	-1340.76	7.08	-2.07
0.9 Dead+1.0 Wind 0 deg - No Ice	21016.46	5.74	-23786.73	-1341.50	5.22	-2.07
1.2 Dead+1.0 Wind 45 deg - No Ice	28021.95	17832.42	-17832.42	-983.77	-979.34	-2.88
0.9 Dead+1.0 Wind 45 deg - No Ice	21016.46	17832.42	-17832.42	-984.52	-981.19	-2.88
1.2 Dead+1.0 Wind 90 deg - No Ice	28021.95	23082.84	-5.74	2.65	-1295.08	0.05
0.9 Dead+1.0 Wind 90 deg - No Ice	21016.46	23082.84	-5.74	1.90	-1296.94	0.05
1.2 Dead+1.0 Wind 135 deg - No Ice	28021.95	17733.17	17772.20	985.87	-973.12	3.67
0.9 Dead+1.0 Wind 135 deg - No Ice	21016.46	17733.17	17772.20	985.12	-974.97	3.67
1.2 Dead+1.0 Wind 180 deg - No Ice	28021.95	-14.06	23853.03	1350.71	8.26	1.95
0.9 Dead+1.0 Wind 180 deg - No Ice	21016.46	-14.06	23853.03	1349.97	6.41	1.95
1.2 Dead+1.0 Wind 225 deg - No Ice	28021.95	-17857.67	17857.67	991.26	995.69	2.88
0.9 Dead+1.0 Wind 225 deg - No Ice	21016.46	-17857.67	17857.67	990.52	993.84	2.88
1.2 Dead+1.0 Wind 270 deg - No Ice	28021.95	-23149.14	14.06	3.83	1313.90	0.07

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
0.9 Dead+1.0 Wind 270 deg - No Ice	21016.46	-23149.14	14.06	3.09	1312.04	0.07
1.2 Dead+1.0 Wind 315 deg - No Ice	28021.95	-17772.20	-17733.17	-977.55	990.30	-3.67
0.9 Dead+1.0 Wind 315 deg - No Ice	21016.46	-17772.20	-17733.17	-978.30	988.45	-3.67
1.2 Dead+1.0 Ice+1.0 Temp	83589.72	-0.00	0.00	-0.36	27.55	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	83589.72	1.12	-6203.77	-344.28	27.48	-2.68
1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp	83589.72	4594.62	-4594.62	-251.39	-223.49	-2.88
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	83589.72	6020.68	-1.12	-0.42	-307.45	-1.42
1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp	83589.72	4575.59	4583.20	249.95	-222.30	1.15
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	83589.72	-2.74	6216.71	344.34	27.72	2.66
1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp	83589.72	-4599.55	4599.55	250.98	278.88	2.88
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	83589.72	-6033.61	2.74	-0.19	363.33	1.44
1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp	83589.72	-4583.20	-4575.59	-250.20	277.85	-1.15
Dead+Wind 0 deg - Service	23351.62	1.32	-5481.65	-307.18	6.10	-0.47
Dead+Wind 45 deg - Service	23351.62	4109.43	-4109.43	-224.91	-221.22	-0.66
Dead+Wind 90 deg - Service	23351.62	5319.47	-1.32	2.41	-293.98	0.01
Dead+Wind 135 deg - Service	23351.62	4086.56	4095.56	229.00	-219.78	0.84
Dead+Wind 180 deg - Service	23351.62	-3.24	5496.93	313.08	6.38	0.44
Dead+Wind 225 deg - Service	23351.62	-4115.25	4115.25	230.24	233.93	0.66
Dead+Wind 270 deg - Service	23351.62	-5334.75	3.24	2.69	307.27	0.02
Dead+Wind 315 deg - Service	23351.62	-4095.56	-4086.56	-223.47	232.69	-0.84

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	80 - 60	0.551	32	0.0542	0.0019
T2	60 - 40	0.324	32	0.0453	0.0010
T3	40 - 20	0.150	32	0.0303	0.0006
T4	20 - 0	0.041	32	0.0147	0.0002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
80'	Top Platform - WolcottNW	32	0.551	0.0542	0.0019	307168
77'	V V-65A-R1 w. Mtg Pipe	32	0.515	0.0531	0.0018	307168
67'	(2) NNHH-65B-R4 w. Mtg Pipe	32	0.400	0.0490	0.0013	118141
60'	VHLPX3-11W	32	0.324	0.0453	0.0010	80298
37'6"	L2 1/2x2x1/4 @ 5ft Vert.	32	0.132	0.0283	0.0005	74492
27'6"	L2 1/2x2x1/4 @ 5ft Vert.	32	0.073	0.0204	0.0004	62111
17'6"	L2 1/2x2x1/4 @ 5ft Vert.	32	0.033	0.0128	0.0002	63530

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
7'6"	L2 1/2x2x1/4 @ 5ft Vert.	32	0.011	0.0054	0.0001	147091

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	80 - 60	2.349	12	0.2297	0.0085
T2	60 - 40	1.388	12	0.1925	0.0045
T3	40 - 20	0.642	12	0.1293	0.0026
T4	20 - 0	0.176	12	0.0627	0.0011

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
80'	Top Platform - WolcottNW	12	2.349	0.2297	0.0085	73835
77'	V V-65A-R1 w. Mtg Pipe	12	2.198	0.2251	0.0079	73835
67'	(2) NNHH-65B-R4 w. Mtg Pipe	12	1.708	0.2080	0.0059	28398
60'	VHLPX3-11W	12	1.388	0.1925	0.0045	19274
37'6"	L2 1/2x2x1/4 @ 5ft Vert.	12	0.568	0.1207	0.0024	17482
27'6"	L2 1/2x2x1/4 @ 5ft Vert.	12	0.313	0.0872	0.0016	14548
17'6"	L2 1/2x2x1/4 @ 5ft Vert.	12	0.141	0.0547	0.0009	14866
7'6"	L2 1/2x2x1/4 @ 5ft Vert.	12	0.046	0.0233	0.0004	34418

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	80	Leg	A307	0.7500	8	6190.15	17892.40	0.346 ✔	1	Bolt DS
		Diagonal	A307	0.7500	2	2270.23	8946.18	0.254 ✔	1	Bolt Shear
		Top Girt	A325N	0.7500	2	75.14	11146.90	0.007 ✔	1	Member Block Shear
T2	60	Leg	A307	0.7500	12	8707.60	17892.40	0.487 ✔	1	Bolt DS
		Diagonal	A307	0.7500	2	1924.24	8946.18	0.215 ✔	1	Bolt Shear
		Top Girt	A325N	0.7500	2	65.85	17892.40	0.004 ✔	1	Bolt Shear
T3	40	Leg	A307	0.7500	16	8598.17	17892.40	0.481 ✔	1	Bolt DS
		Diagonal	A307	0.7500	2	3704.87	8946.18	0.414 ✔	1	Bolt Shear
		Horizontal	A307	0.7500	2	2696.76	8946.18	0.301 ✔	1	Bolt Shear
		Secondary Horizontal	A307	0.7500	2	177.90	8946.18	0.020 ✔	1	Bolt Shear

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T4	20	Top Girt	A325N	0.7500	2	1415.64	10467.20	0.135 ✔	1	Member Block Shear
		Leg	A307	0.7500	20	9026.97	17892.40	0.505 ✔	1	Bolt DS
		Diagonal	A307	0.7500	2	3994.92	8946.18	0.447 ✔	1	Bolt Shear
		Horizontal	A307	0.7500	2	3132.35	8946.18	0.350 ✔	1	Bolt Shear
		Secondary Horizontal	A307	0.7500	2	205.13	8946.18	0.023 ✔	1	Bolt Shear
		Top Girt	A325N	0.7500	2	2397.80	10467.20	0.229 ✔	1	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	80 - 60	L4x4x3/8	20'	5'	76.1 K=1.00	2.8600	-24760.60	68290.30	0.363 [1] ✔
T2	60 - 40	L5x5x1/2	20'1/4"	5'1/8"	61.1 K=1.00	4.7500	-52245.60	126433.00	0.413 [1] ✔
T3	40 - 20	L6x6x1/2	20'1/4"	10'1/8"	101.8 K=1.00	5.7500	-68785.40	107948.00	0.637 [1] ✔
T4	20 - 0	L6x6x5/8	20'3/8"	10'1/4"	101.9 K=1.00	7.1100	-90269.80	133406.00	0.677 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	80 - 60	L2 1/2x2 1/2x1/4	7'11-9/32"	3'9-1/8"	91.8 K=1.00	1.1900	-4540.47	24742.10	0.184 [1] ✔
T2	60 - 40	L2 1/2x2x1/4	8'10-13/16"	4'3-19/32"	121.8 K=1.00	1.0600	-3816.79	15735.00	0.243 [1] ✔
T3	40 - 20	L3x3x1/4	13'2-1/32"	6'5-17/32"	131.0 K=1.00	1.4400	-7409.74	18906.10	0.392 [1] ✔
T4	20 - 0	L3x3x5/16	14'2-7/8"	7'23/32"	143.8 K=1.00	1.7800	-7989.84	19455.00	0.411 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T3	40 - 20	L2 1/2x2 1/2x1/4	8'2-5/8"	7'8-5/8"	188.6 K=1.00	1.1900	-4482.00	7556.83	0.593 [1] ✔
T4	20 - 0	L2 1/2x2 1/2x1/4	9'8-5/8"	9'2-5/8"	112.7 K=0.50	1.1900	-5242.97	19763.40	0.265 [1] ✔

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T3	40 - 20	L2 1/2x2 1/2x1/4	8'6-19/32"	8'19/32"	125.5 K=1.00	1.1900	-336.26	16815.50	0.020 [1] ✔
T4	20 - 0	L2 1/2x2 1/2x1/4	10'1-5/16"	9'7-5/16"	150.0 K=1.00	1.1900	-336.88	11947.00	0.028 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	80 - 60	L3x3x1/4	6'2-1/32"	5'10-3/32"	118.3 K=1.00	1.4400	-189.37	22333.70	0.008 [1] ✔
T2	60 - 40	C7x12.25	6'2-1/32"	5'9"	120.9 K=1.00	3.6000	-131.71	54036.40	0.002 [1] ✔
T3	40 - 20	L2 1/2x2 1/2x1/4	7'6-3/8"	7'3/8"	171.9 K=1.00	1.1900	-2418.40	9097.05	0.266 [1] ✔
T4	20 - 0	L2 1/2x2 1/2x1/4	8'10-13/16"	8'4-13/16"	205.3 K=1.00	1.1900	-4095.97	6377.07	0.642 [1] ✔
		KL/R > 200 (C) - 131							

[1] P_u / ϕP_n controls

Inner Bracing Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	80 - 60	9/16	8'8-5/8"	8'4-11/16"	716.1 K=1.00	0.2485	-16.51	109.49	0.151 [1] ✔
T2	60 - 40	KL/R > 250 (C) - 5 9/16 KL/R > 250 (C) - 47	8'8-5/8"	8'3-23/32"	708.9 K=1.00	0.2485	-4.57	111.70	0.041 [1] ✔

[1] $P_u / \phi P_n$ controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	80 - 60	L4x4x3/8	20'	5'	48.8	1.6528	19139.40	71897.30	0.266 [1] ✔
T2	60 - 40	L5x5x1/2	20'1/4"	5'1/8"	39.0	2.9062	44741.50	126422.00	0.354 [1] ✔
T3	40 - 20	L6x6x1/2	20'1/4"	10'1/8"	64.6	3.6562	60552.50	159047.00	0.381 [1] ✔
T4	20 - 0	L6x6x5/8	20'3/8"	10'1/4"	65.3	4.5122	79667.60	196280.00	0.406 [1] ✔

[1] $P_u / \phi P_n$ controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	80 - 60	L2 1/2x2 1/2x1/4	7'11-9/32"	3'9-1/8"	58.6	0.7284	4449.32	31687.00	0.140 [1] ✔
T2	60 - 40	L2 1/2x2x1/4	8'4-3/16'	4'3/8"	81.6	0.6309	3848.48	27445.80	0.140 [1] ✔
T3	40 - 20	L3x3x1/4	13'2-1/32"	6'5-17/32"	83.4	0.9159	6536.26	39843.30	0.164 [1] ✔
T4	20 - 0	L3x3x5/16	14'2-7/8'	7'23/32"	91.8	1.1299	6959.28	49151.60	0.142 [1] ✔

[1] $P_u / \phi P_n$ controls

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Job 80' SELF-SUPPORTING TOWER ANALYSIS		**Page** 19 of 20
Project Verizon Wireless - Wolcott, CT/Andrews Rd		**Date** 12:39:12 09/01/23
Client Everest Infrastructure #701770		**Designed by** PB

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T3	40 - 20	L2 1/2x2 1/2x1/4	8'2-5/8"	7'8-5/8"	120.4	0.7284	5393.52	31687.00	0.170 [1] ✔
T4	20 - 0	L2 1/2x2 1/2x1/4	9'8-5/8"	9'2-5/8"	143.9	0.7284	6264.70	31687.00	0.198 [1] ✔

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T3	40 - 20	L2 1/2x2 1/2x1/4	8'6-19/32"	8'19/32"	125.5	0.7284	355.80	31687.00	0.011 [1] ✔
T4	20 - 0	L2 1/2x2 1/2x1/4	9'3-15/32"	8'9-15/32"	137.2	0.7284	410.27	31687.00	0.013 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	80 - 60	L3x3x1/4	6'2-1/32'	5'10-3/32"	75.3	0.9159	150.28	39843.30	0.004 [1] ✔
T2	60 - 40	C7x12.25	6'2-1/32'	5'9"	120.9	2.4939	83.91	108486.00	0.001 [1] ✔
T3	40 - 20	L2 1/2x2 1/2x1/4	7'6-3/8"	7'3/8"	109.8	0.7284	2831.27	31687.00	0.089 [1] ✔
T4	20 - 0	L2 1/2x2 1/2x1/4	8'10-13/16"	8'4-13/16"	131.1	0.7284	4795.59	31687.00	0.151 [1] ✔

[1] P_u / ϕP_n controls

Inner Bracing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T3	40 - 20	9/16	10'7-13/16"	10'1-13/16"	866.5	0.2485	150.18	11182.70	0.013 [1] ✔

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Job	Page
80' SELF-SUPPORTING TOWER ANALYSIS	20 of 20
Project	**Date**
Verizon Wireless - Wolcott, CT/Andrews Rd	12:39:12 09/01/23
Client	**Designed by**
Everest Infrastructure #701770	PB

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T4	20 - 0	L/R > 500 (T) - 89 9/16 L/R > 500 (T) - 127	12'7-3/3 2"	12'1-3/3 2"	1031.5	0.2485	313.55	11182.70	0.028 [1] ✔

[1] P_u / ϕP_n controls

Section Capacity Table

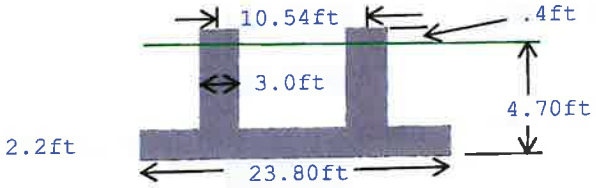
Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	80 - 60	Leg	L4x4x3/8	1	-24760.60	68290.30	36.3	Pass
T2	60 - 40	Leg	L5x5x1/2	43	-52245.60	126433.00	41.3 48.7 (b)	Pass
T3	40 - 20	Leg	L6x6x1/2	85	-68785.40	107948.00	63.7	Pass
T4	20 - 0	Leg	L6x6x5/8	123	-90269.80	133406.00	67.7	Pass
T1	80 - 60	Diagonal	L2 1/2x2 1/2x1/4	13	-4540.47	24742.10	18.4 25.4 (b)	Pass
T2	60 - 40	Diagonal	L2 1/2x2x1/4	55	-3816.79	15735.00	24.3	Pass
T3	40 - 20	Diagonal	L3x3x1/4	101	-7409.74	18906.10	39.2 41.4 (b)	Pass
T4	20 - 0	Diagonal	L3x3x5/16	139	-7989.84	19455.00	41.1 44.7 (b)	Pass
T3	40 - 20	Horizontal	L2 1/2x2 1/2x1/4	105	-4482.00	7556.83	59.3	Pass
T4	20 - 0	Horizontal	L2 1/2x2 1/2x1/4	143	-5242.97	19763.40	26.5 35.0 (b)	Pass
T3	40 - 20	Secondary Horizontal	L2 1/2x2 1/2x1/4	109	-336.26	16815.50	2.0	Pass
T4	20 - 0	Secondary Horizontal	L2 1/2x2 1/2x1/4	148	-336.88	11947.00	2.8	Pass
T1	80 - 60	Top Girt	L3x3x1/4	7	-189.37	22333.70	0.8	Pass
T2	60 - 40	Top Girt	C7x12.25	49	-126.03	54036.40	0.3 0.4 (b)	Pass
T3	40 - 20	Top Girt	L2 1/2x2 1/2x1/4	93	-2418.40	9097.05	26.6	Pass
T4	20 - 0	Top Girt	L2 1/2x2 1/2x1/4	131	-4095.97	6377.07	64.2	Pass
T1	80 - 60	Inner Bracing	9/16	5	-16.51	109.49	15.1	Pass
T2	60 - 40	Inner Bracing	9/16	47	-4.57	111.70	4.1	Pass
T3	40 - 20	Inner Bracing	9/16	89	150.18	11182.70	1.3	Pass
T4	20 - 0	Inner Bracing	9/16	128	313.55	11182.70	2.8	Pass
							Summary	
						Leg (T4)	67.7	Pass
						Diagonal (T4)	44.7	Pass
						Horizontal (T3)	59.3	Pass
						Secondary Horizontal (T4)	2.8	Pass
						Top Girt (T4)	64.2	Pass
						Inner Bracing (T1)	15.1	Pass
						Bolt Checks	50.5	Pass
						RATING =	**67.7**	**Pass**

SS Tower Pad & 3Pier Calculations

Client: EIP/TMO
Project: Wolcott, CT
09/01/23 13:50
Code: TIA-222-H

Applied Factored Loads:

OTM:	1405 kip-ft
Uplift:	89 kip
DownLoad:	101 kip
ΣDeadLoad:	28.00 kip
Total Shear	25.00 kip



Pier Depth:	2.5 ft
Total Moment:	1623 kip-ft

Specific Gravity:	2.65	
Soil Unit Weight:	110	lb/ft^3
Submerged Unit Wt:	68.49	lb/ft^3
Concrete Unit Wt:	150	lb/ft^3
Concrete f`c:	3000	psi
Rebar Fy:	60000	psi
Σ Concr Vol:	48.4	cuyd
Depth to Water:	4.7	ft

OTM Safety Factor: 0.75 TIA-G 9.4.1
Add Toe at Base of Pad? No

Toe:
0

Bearing Pressure: ϕs: 0.75

Soil Type @ Bearing Location:	Sand	fb(max):	1314 psf
SPT-N @ Bearing Location:	50	Fb:	9000 psf
			14.6% Loaded

Overturning Moment Capacity:
3654 kip ft 59.2% Loaded

Global Check:
OK

Foundation Design per ACI 318

Anchor Rods

TIA 4.9.9

Factored Reactions:		Shear:		
Uplift:	88.9	11.9	kip	
Download:	101.3	13.5	kip	

Client: EIP/VZW
Project: Wolcott, CT
09/01/23 14:07
Standard: TIA-H

# of Anchor Rods:	4		
Bolt Circle:	13.5	inch	
Anchor Rod d:	1.25	inch	7 tpi (UNC)
d_n:	1.111	inch, Tensile root diameter	
Anchor Rod Material:	A36	Fu: 58 ksi	*Assumed
		Fy: 36 ksi	

Clear distance between Top of Concrete to bottom of leveling nut (l_{ar}): 1 inch
lar<1(d)
Anchor Rod not in flexure

$\phi_t R_{nt}$:	42.2 kip	$\phi_c R_{nc}$:	34.9 kip
$\phi_v R_{nv}$:	26.7 kip	$\phi_c R_{nvc}$:	20.9 kip
M_{ut}:	1.93 kip-in	M_{uc}:	2.19 kip-in
$\phi_f M_n$:	7.40 kip-in		
$\phi_c R_{nb}$:	34.87 kip		

TIA-G calculations:

Detail Type: c: Grouted

η:	0.55	
Eq. 4.9.9-a	0.61	<1.05 OK
		<1.05 OK
Tension Check:	0.29	<1.05 OK
Compression Check:	0.75	<1.05 OK

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 1006.38 ft ()
Latitude: 41.617693
Longitude: -73.004574

Wind

Results:

Wind Speed	117 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	97 Vmph

125 mph
2022 CT State Builidng Code Appendix P
New Haven CT

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Wed May 11 2022

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

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

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

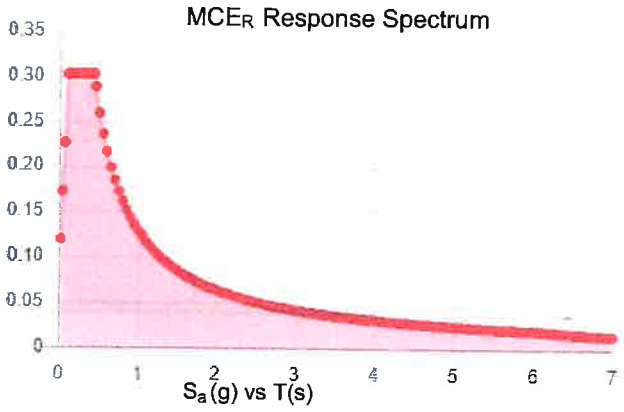
Seismic

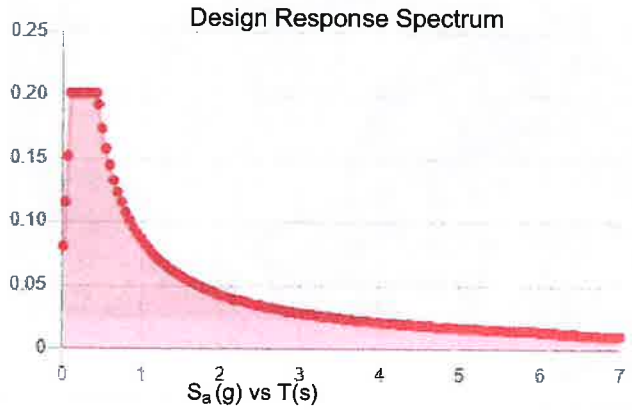
Site Soil Class: D - Stiff Soil

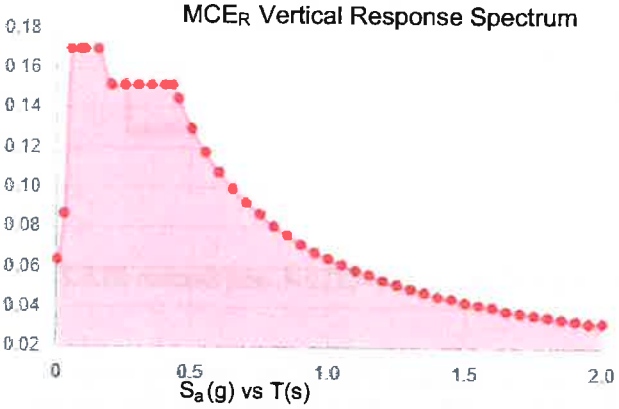
Results:

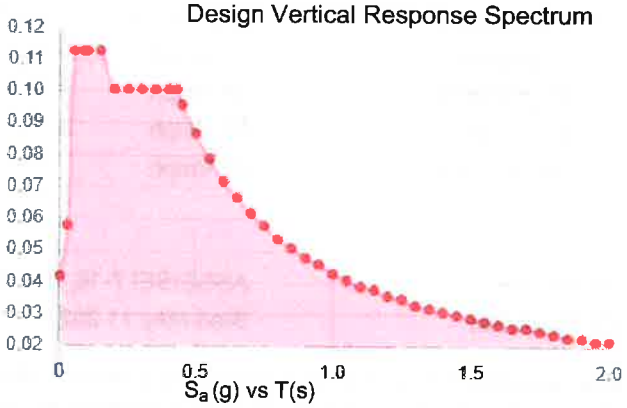
S_S :	0.19	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.104
F_v :	2.4	PGA_M :	0.165
S_{MS} :	0.303	F_{PGA} :	1.593
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.202	C_v :	0.7

Seismic Design Category B









Data Accessed: **Wed May 11 2022**

Date Source:

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

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Wed May 11 2022

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

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

September 9, 2019
November 21, 2019 (Rev. 1)
May 23, 2023 (Rev. 2)
July 14, 2023 (Rev.3)

verizon

20 Alexander Drive, 2nd Floor
Wallingford, CT 06492

RE:	TEP Project Number:	263231.866801
	Site Name:	Wolcott NW CT
	Site Address:	107/109 Andrews Road Wolcott, CT 06716

To Whom It May Concern:

TEP Northeast (TEP NE) has been authorized by Verizon to perform a mount analysis on the existing Verizon antenna/RRH mounts to determine their capability of supporting the following additional loading:

- (4) NNHH-65B-R4 Antennas (72.0"x19.6"x7.8" – Wt. 68 lbs. /each)
- (2) B2/B66A RRH-BR049 RRH's (RFV01U-D1A RRH) (15.0"x15.0"x10.0" – Wt. = 98 lbs. /each)
- (2) B5/B13 RRH-BR04C RRH's (RFV01U-D2A) (15.0"x15.0"x8.1" – Wt. = 82 lbs. /each)
- (1) OVP Box (28.9"x15.7"x10.3" – Wt. 32 lbs. /each)
- **(2) BSF0020F3V1-1 Mitigation Filters (15.3"x10.9"x3.5" – Wt. = 18 lbs. /each)**

**Proposed equipment shown in bold.*

Mount fabrication drawings prepared by SitePro1, P/N R5-LL, dated April 21, 2010; and P/N R5-216, dated February 19, 2013, were used to perform this analysis. This office conducted a survey climb and mapping of the existing Verizon antenna mounts on March 30, 2021.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, and the International Building Code 2021 with the 2022 Connecticut State Building Code.
- TEP NE considers this mount to be asymmetrical and has applied wind loads in 30-degree increments all around the mount. Per TIA-222-H and Appendix P of the Connecticut State Building Code, the max basic wind speed for this site is equal to 120 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.07 in was used for this analysis.
- TEP NE considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- TEP NE considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- TEP NE considers this site to have a spectral response acceleration parameter at short periods, S_S, of 0.191 and a spectral response acceleration parameter at a period of 1 second, S_1, of 0.054.
- This analysis does not include live load conditions for this mount.
- The existing mounts are secured to the existing self-supporting tower with threaded rods, angles, and clamps tightened around the tower leg. TEP NE considers the threaded rods as the governing connection members.

Based on our evaluation, we have determined that the existing mounts **ARE CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing Mount Rating	2	LC7	31%	**PASS**

Reference Documents:

- Fabrication drawings prepared by SitePro1, P/N R5-LL dated April 21, 2010.
- Fabrication drawings prepared by SitePro1, P/N R5-216 dated February 19, 2013.

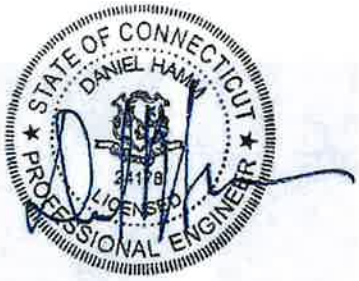
This determination was based on the following limitations and assumptions:

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

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

Respectfully Submitted,
TEP Northeast

Michael Cabral
Director

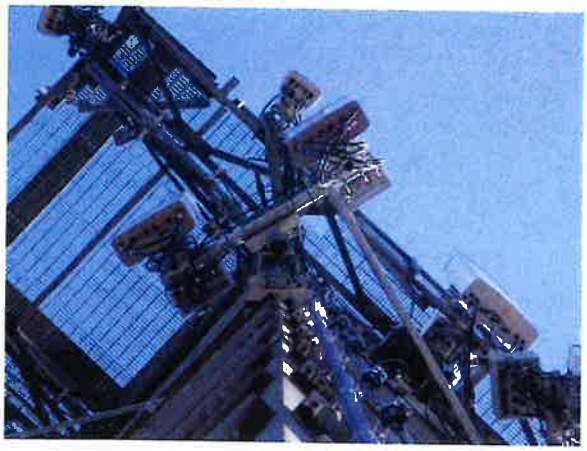
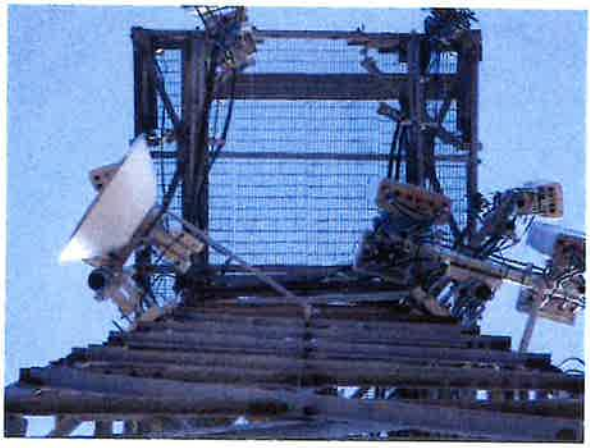


Daniel P. Hamm, PE
Vice President

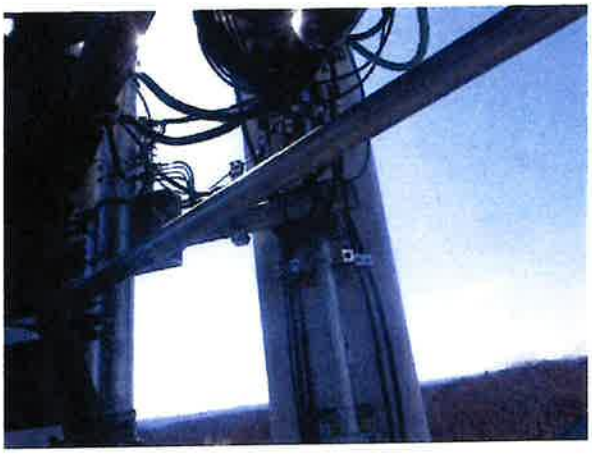
FIELD PHOTOS:

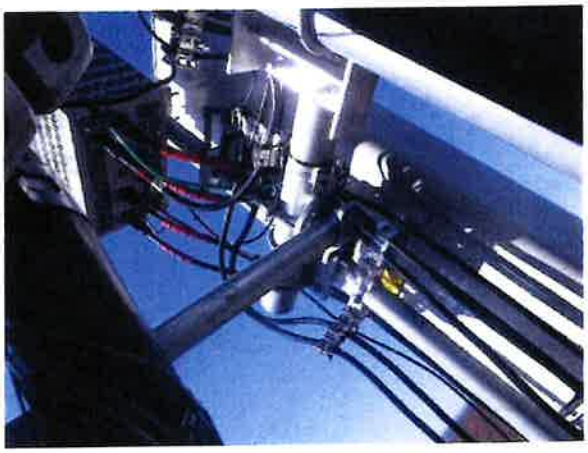




FIELD PHOTOS (CONT.):



TEP NORTHEAST

Wind & Ice Calculations

Date: 7/14/2023
Project Name: Wolcott NW CT
Designed By: CL **Checked By:** MSC

TEP NORTHEAST

2.6.5.2 Velocity Pressure Coeff:

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

z=	67	(ft)
z_g=	1200	(ft)
α=	7.0	

K_z= 0.881

Kzmin ≤ Kz ≤ 2.01

Table 2-4

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

2.6.6.2 Topographic Factor:

Table 2-5

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

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

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

K_{zt}= 1

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

Category= 1

K_h=	1.0	
K_c=	0.9	(from Table 2-4)
K_t=	0	(from Table 2-5)
f=	0.0	(from Table 2-5)
z=	67	
z_s=	1000	(Mean elevation of base of structure above sea level)
H=	0	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.00	(from 2.6.6.2.1)
K_e=	0.96	(from 2.6.8)

2.6.10 Design Ice Thickness

Max Ice Thickness =
Importance Factor =

t_i =	1.00	in
I=	1.00	(from Table 2-3)
K_{iz} =	1.07	(from Sec. 2.6.10)

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

t_{iz} = **1.07** in

Date: 7/14/2023
Project Name: Wolcott NW CT
Designed By: CL Checked By: MSC

2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

G_h = 1.0 Latticed Structures > 600 ft

G_h = 0.85 Latticed Structures 450 ft or less

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

h= 83 G_h= 0.85

2.6.9.2 Guyed Masts G_h= 0.85

2.6.9.3 Pole Structures G_h= 1.1

2.6.9 Appurtenances G_h= 1.0

2.6.9.4 Structures Supported on Other Structures

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

G_h= 1.35 Gh= **1.00**

2.6.11.2 Design Wind Force on Appurtenances

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

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

q_z=	**26.64**	K_z=	0.881 (from 2.6.5.2)
$q_{z\,(ice)}$=	**4.62**	K_{zt}=	1.0 (from 2.6.6.2.1)
$q_{z\,(30)}$=	**1.66**	K_s=	1.0 (from 2.6.7)
		K_e=	0.96 (from 2.6.8)
		K_d=	0.85 (from Table 2-2)
		V_{max}=	120 mph (Ultimate Wind Speed)
		$V_{max\,(ice)}$=	50 mph
		V_{30}=	30 mph

Table 2-2

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

Date: 7/14/2023
Project Name: Wolcott NW CT
Designed By: CL Checked By: MSC

Determine Ca:

Table 2-9

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

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

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

Ice Thickness = **1.07 in** **Angle = 0 (deg)** **Equivalent Angle = 180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)
NNHH-65B-R4 Antenna	72.0	19.6	7.8	9.80	3.67	1.25	327	65
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.00	1.20	50	11
B2/B66A RRH-BR049 RRH (Shielded)	15.0	7.5	10.0	0.78	0.00	1.20	25	6
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	1.00	1.20	50	11
B5/B13 RRH-BR04C RRH (Shielded)	15.0	7.5	8.1	0.78	0.00	1.20	25	6
OVP Box	28.9	15.7	10.3	3.15	1.84	1.20	101	21
OVP Box (Shielded)	28.9	7.9	10.3	1.58	0.00	1.20	50	12
BSF0020F3V1-1 Mitigation Filter	15.3	10.9	3.5	1.16	1.40	1.20	37	9
BSF0020F3V1-1 Mitigation Filter (Shield	15.3	5.5	3.5	0.58	0.00	1.20	19	5
2" Pipe	2.4	12.0	-	0.20	0.20	1.20	6	
3-1/2" Pipe	4.0	12.0	-	0.33	0.33	1.20	11	
4" Pipe	4.5	12.0	-	0.38	0.38	1.20	12	

Date: 7/14/2023
Project Name: Wolcott NW CT
Designed By: CL Checked By: MSC

TEP NORTHEAST

WIND LOADS

Angle = 30 (deg)

Ice Thickness = 1.07 in.

Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
NNHH-65B-R4 Antenna	72.0	19.6	7.8	9.80	3.90	3.67	9.23	1.25	1.47	327	153	283
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	50	39	46
B2/B66A RRH-BR049 RRH (Shielded)	15.0	7.5	10.0	0.78	1.04	2.00	1.50	1.20	1.20	25	39	27
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	50	27	44
B5/B13 RRH-BR04C RRH (Shielded)	15.0	7.5	8.1	0.78	0.84	2.00	1.85	1.20	1.20	25	27	25
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	101	67	92
OVP Box (Shielded)	28.9	7.9	10.3	1.58	2.07	3.68	2.81	1.25	1.21	53	67	56
BSF0020F3V1-1 Mitigation Filter	15.3	10.9	3.5	1.16	0.37	1.40	4.37	1.20	1.28	37	13	31
BSF0020F3V1-1 Mitigation Filter (Sh	15.3	5.5	3.5	0.58	0.37	2.81	4.37	1.21	1.28	19	13	17

WIND LOADS WITH ICE:

NNHH-65B-R4 Antenna	74.1	21.7	9.9	11.20	5.12	3.41	7.45	1.24	1.42	64	34	57
B2/B66A RRH-BR049 RRH	17.1	17.1	12.1	2.04	1.45	1.00	1.41	1.20	1.20	11	8	11
B2/B66A RRH-BR049 RRH (Shielded)	17.1	9.6	12.1	1.15	1.45	1.78	1.41	1.20	1.20	6	8	7
B5/B13 RRH-BR04C RRH	17.1	17.1	10.2	2.04	1.22	1.00	1.67	1.20	1.20	11	7	10
B5/B13 RRH-BR04C RRH (Shielded)	17.1	9.6	10.2	1.15	1.22	1.78	1.67	1.20	1.20	6	7	6
OVP Box	31.0	17.8	12.4	3.85	2.68	1.74	2.49	1.20	1.20	21	15	20
OVP Box (Shielded)	31.0	10.0	12.4	2.16	2.68	3.11	2.49	1.23	1.20	12	15	13
BSF0020F3V1-1 Mitigation Filter	17.4	13.0	5.6	1.66	0.34	1.34	3.09	1.20	1.23	9	2	7
BSF0020F3V1-1 Mitigation Filter (Sh	17.4	7.6	5.6	1.66	0.34	2.30	3.09	1.20	1.23	9	2	7

Date: 7/14/2023
Project Name: Wolcott NW CT
Designed By: CL Checked By: MSC

TEP NORTHEAST

WIND LOADS

Angle = 60 (deg)

Ice Thickness = 1.07 in.

Equivalent Angle = 240 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
NNHH-65B-R4 Antenna	72.0	19.6	7.8	9.80	3.90	3.67	9.23	1.25	1.47	327	153	197
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	50	33	37
B2/B66A RRH-BR049 RRH (Shielded)	15.0	7.5	10.0	0.78	1.04	2.00	1.50	1.20	1.20	25	33	31
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	50	27	33
B5/B13 RRH-BR04C RRH (Shielded)	15.0	7.5	8.1	0.78	0.84	2.00	1.85	1.20	1.20	25	27	26
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	101	67	75
OVP Box (Shielded)	28.9	7.9	10.3	1.58	2.07	3.68	2.81	1.25	1.21	53	67	63
BSF0020F3V1-1 Mitigation Filter	15.3	10.9	3.5	1.16	0.37	1.40	4.37	1.20	1.28	37	13	19
BSF0020F3V1-1 Mitigation Filter (Sh	15.3	5.5	3.5	0.58	0.37	2.81	4.37	1.21	1.28	19	13	14

WIND LOADS WITH ICE:

NNHH-65B-R4 Antenna	74.1	21.7	9.9	11.20	5.12	3.41	7.45	1.24	1.42	64	34	41
B2/B66A RRH-BR049 RRH	17.1	17.1	12.1	2.04	1.45	1.00	1.41	1.20	1.20	11	8	9
B2/B66A RRH-BR049 RRH (Shielded)	17.1	9.6	12.1	1.15	1.45	1.78	1.41	1.20	1.20	6	8	8
B5/B13 RRH-BR04C RRH	17.1	17.1	10.2	2.04	1.22	1.00	1.67	1.20	1.20	11	7	8
B5/B13 RRH-BR04C RRH (Shielded)	17.1	9.6	10.2	1.15	1.22	1.78	1.67	1.20	1.20	6	7	7
OVP Box	31.0	17.8	12.4	3.85	2.68	1.74	2.49	1.20	1.20	21	15	17
OVP Box (Shielded)	31.0	10.0	12.4	2.16	2.68	3.11	2.49	1.23	1.20	12	15	14
BSF0020F3V1-1 Mitigation Filter	17.4	13.0	5.6	1.66	0.34	1.34	3.09	1.20	1.23	9	2	4
BSF0020F3V1-1 Mitigation Filter (Sh	17.4	7.6	5.6	1.66	0.34	2.30	3.09	1.20	1.23	9	2	4

Date: 7/14/2023
Project Name: Wolcott NW CT
Designed By: CL Checked By: MSC

TEP NORTHEAST

WIND LOADS

Angle = 90 (deg)

Ice Thickness = 1.07 in.

Equivalent Angle = 270 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
NNHH-65B-R4 Antenna	72.0	19.6	7.8	9.80	3.90	3.67	9.23	1.25	1.47	327	153	153
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	50	33	33
B2/B66A RRH-BR049 RRH (Shielded)	15.0	7.5	10.0	0.78	1.04	0.00	1.50	1.20	1.20	25	33	33
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	50	27	27
B5/B13 RRH-BR04C RRH (Shielded)	15.0	7.5	8.1	0.78	0.84	0.00	1.85	1.20	1.20	25	27	27
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	101	67	67
OVP Box (Shielded)	28.9	7.9	10.3	1.58	2.07	0.00	2.81	1.20	1.21	50	67	67
BSF0020F3V1-1 Mitigation Filter	15.3	10.9	3.5	1.16	0.37	1.40	4.37	1.20	1.28	37	13	13
BSF0020F3V1-1 Mitigation Filter (Shi	15.3	5.5	3.5	0.58	0.37	0.00	4.37	1.20	1.28	19	13	13

WIND LOADS WITH ICE:

NNHH-65B-R4 Antenna	74.1	21.7	9.9	11.20	5.12	3.41	7.45	1.24	1.42	64	34	34
B2/B66A RRH-BR049 RRH	17.1	17.1	12.1	2.04	1.45	1.00	1.41	1.20	1.20	11	8	8
B2/B66A RRH-BR049 RRH (Shielded)	17.1	9.6	12.1	1.15	1.45	1.78	1.41	1.20	1.20	6	8	8
B5/B13 RRH-BR04C RRH	17.1	17.1	10.2	2.04	1.22	1.00	1.67	1.20	1.20	11	7	7
B5/B13 RRH-BR04C RRH (Shielded)	17.1	9.6	10.2	1.15	1.22	1.78	1.67	1.20	1.20	6	7	7
OVP Box	31.0	17.8	12.4	3.85	2.68	1.74	2.49	1.20	1.20	21	15	15
OVP Box (Shielded)	31.0	10.0	12.4	2.16	2.68	3.11	2.49	1.23	1.20	12	15	15
BSF0020F3V1-1 Mitigation Filter	17.4	13.0	5.6	1.66	0.34	1.34	3.09	1.20	1.23	9	2	2
BSF0020F3V1-1 Mitigation Filter (Shi	17.4	7.6	5.6	1.66	0.34	2.30	3.09	1.20	1.23	9	2	2

Date: 7/14/2023
Project Name: Wolcott NW CT
Designed By: CL Checked By: MSC

TEP NORTHEAST

WIND LOADS

Angle = 120 (deg)

Ice Thickness = 1.07 in.

Equivalent Angle = 300 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
NNHH-65B-R4 Antenna	72.0	19.6	7.8	9.80	3.90	3.67	9.23	1.25	1.47	327	153	197
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	50	33	37
B2/B66A RRH-BR049 RRH (Shielded)	15.0	7.5	10.0	0.78	1.04	2.00	1.50	1.20	1.20	25	33	31
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	50	27	33
B5/B13 RRH-BR04C RRH (Shielded)	15.0	7.5	8.1	0.78	0.84	2.00	1.85	1.20	1.20	25	27	26
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	101	67	75
OVP Box (Shielded)	28.9	7.9	10.3	1.58	2.07	3.68	2.81	1.25	1.21	53	67	63
BSF0020F3V1-1 Mitigation Filter	15.3	10.9	3.5	1.16	0.37	1.40	4.37	1.20	1.28	37	13	19
BSF0020F3V1-1 Mitigation Filter (Shi	15.3	5.5	3.5	0.58	0.37	2.81	4.37	1.21	1.28	19	13	14

WIND LOADS WITH ICE:

NNHH-65B-R4 Antenna	74.1	21.7	9.9	11.20	5.12	3.41	7.45	1.24	1.42	64	34	41
B2/B66A RRH-BR049 RRH	17.1	17.1	12.1	2.04	1.45	1.00	1.41	1.20	1.20	11	8	9
B2/B66A RRH-BR049 RRH (Shielded)	17.1	9.6	12.1	1.15	1.45	1.78	1.41	1.20	1.20	6	8	8
B5/B13 RRH-BR04C RRH	17.1	17.1	10.2	2.04	1.22	1.00	1.67	1.20	1.20	11	7	8
B5/B13 RRH-BR04C RRH (Shielded)	17.1	9.6	10.2	1.15	1.22	1.78	1.67	1.20	1.20	6	7	7
OVP Box	31.0	17.8	12.4	3.85	2.68	1.74	2.49	1.20	1.20	21	15	17
OVP Box (Shielded)	31.0	10.0	12.4	2.16	2.68	3.11	2.49	1.23	1.20	12	15	14
BSF0020F3V1-1 Mitigation Filter	17.4	13.0	5.6	1.66	0.34	1.34	3.09	1.20	1.23	9	2	4
BSF0020F3V1-1 Mitigation Filter (Shi	17.4	7.6	5.6	1.66	0.34	2.30	3.09	1.20	1.23	9	2	4

Date: 7/14/2023
Project Name: Wolcott NW CT
Designed By: CL Checked By: MSC

TEP NORTHEAST

WIND LOADS

Angle = 150 (deg)

Ice Thickness = 1.07 in.

Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
NNHH-65B-R4 Antenna	72.0	19.6	7.8	9.80	3.90	3.67	9.23	1.25	1.47	327	153	283
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	50	33	46
B2/B66A RRH-BR049 RRH (Shielded)	15.0	7.5	10.0	0.78	1.04	2.00	1.50	1.20	1.20	25	33	27
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	50	27	44
B5/B13 RRH-BR04C RRH (Shielded)	15.0	7.5	8.1	0.78	0.84	2.00	1.85	1.20	1.20	25	27	25
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	101	67	92
OVP Box (Shielded)	28.9	7.9	10.3	1.58	2.07	3.68	2.81	1.25	1.21	53	67	56
BSF0020F3V1-1 Mitigation Filter	15.3	10.9	3.5	1.16	0.37	1.40	4.37	1.20	1.28	37	13	31
BSF0020F3V1-1 Mitigation Filter (Shi	15.3	5.5	3.5	0.58	0.37	2.81	4.37	1.21	1.28	19	13	17

WIND LOADS WITH ICE:

NNHH-65B-R4 Antenna	74.1	21.7	9.9	11.20	5.12	3.41	7.45	1.24	1.42	64	34	57
B2/B66A RRH-BR049 RRH	17.1	17.1	12.1	2.04	1.45	1.00	1.41	1.20	1.20	11	8	11
B2/B66A RRH-BR049 RRH (Shielded)	17.1	9.6	12.1	1.15	1.45	1.78	1.41	1.20	1.20	6	8	7
B5/B13 RRH-BR04C RRH	17.1	17.1	10.2	2.04	1.22	1.00	1.67	1.20	1.20	11	7	10
B5/B13 RRH-BR04C RRH (Shielded)	17.1	9.6	10.2	1.15	1.22	1.78	1.67	1.20	1.20	6	7	6
OVP Box	31.0	17.8	12.4	3.85	2.68	1.74	2.49	1.20	1.20	21	15	20
OVP Box (Shielded)	31.0	10.0	12.4	2.16	2.68	3.11	2.49	1.23	1.20	12	15	13
BSF0020F3V1-1 Mitigation Filter	17.4	13.0	5.6	1.66	0.34	1.34	3.09	1.20	1.23	9	2	7
BSF0020F3V1-1 Mitigation Filter (Shi	17.4	7.6	5.6	1.66	0.34	2.30	3.09	1.20	1.23	9	2	7

Date: 7/14/2023
Project Name: Wolcott NW CT
Designed By: CL **Checked By:** MSC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.07 in.
Density of ice: 56 pcf

NNHH-65B-R4 Antenna

Weight of ice based on total radial SF area:

Height (in):	72.0	
Width (in):	19.6	
Depth (in):	7.8	
Total weight of ice on object:		174 lbs
Weight of object:	68.0 lbs	
Combined weight of ice and object:		242 lbs

B5/B13 RRH-BR04C RRH

Weight of ice based on total radial SF area:

Height (in):	15.0	
Width (in):	15.0	
Depth (in):	8.1	
Total weight of ice on object:		30 lbs
Weight of object:	82.0 lbs	
Combined weight of ice and object:		112 lbs

BSF0020F3V1-1 Mitigation Filter

Weight of ice based on total radial SF area:

Height (in):	15.3	
Width (in):	10.9	
Depth (in):	3.5	
Total weight of ice on object:		21 lbs
Weight of object:	18.0 lbs	
Combined weight of ice and object:		39 lbs

3-1/2" Pipe

Per foot weight of ice:

diameter (in):	4.00	
Per foot weight of ice on object:		7 plf

B2/B66A RRH-BR049 RRH

Weight of ice based on total radial SF area:

Height (in):	15.0	
Width (in):	15.0	
Depth (in):	10.0	
Total weight of ice on object:		31 lbs
Weight of object:	98.0 lbs	
Combined weight of ice and object:		129 lbs

OVP Box

Weight of ice based on total radial SF area:

Height (in):	28.9	
Width (in):	15.7	
Depth (in):	10.3	
Total weight of ice on object:		62 lbs
Weight of object:	32.0 lbs	
Combined weight of ice and object:		94 lbs

2" Pipe

Per foot weight of ice:

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

4" Pipe

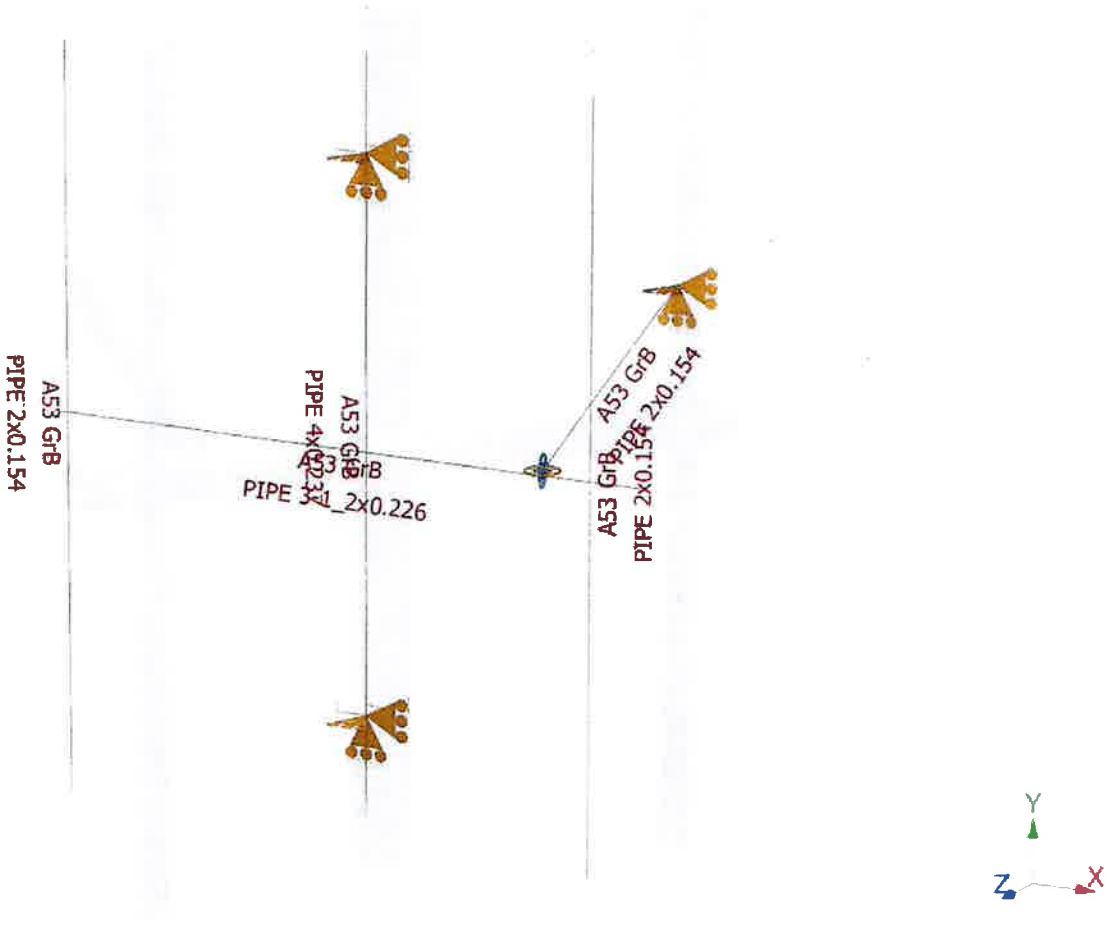
Per foot weight of ice:

diameter (in):	4.50	
Per foot weight of ice on object:		7 plf

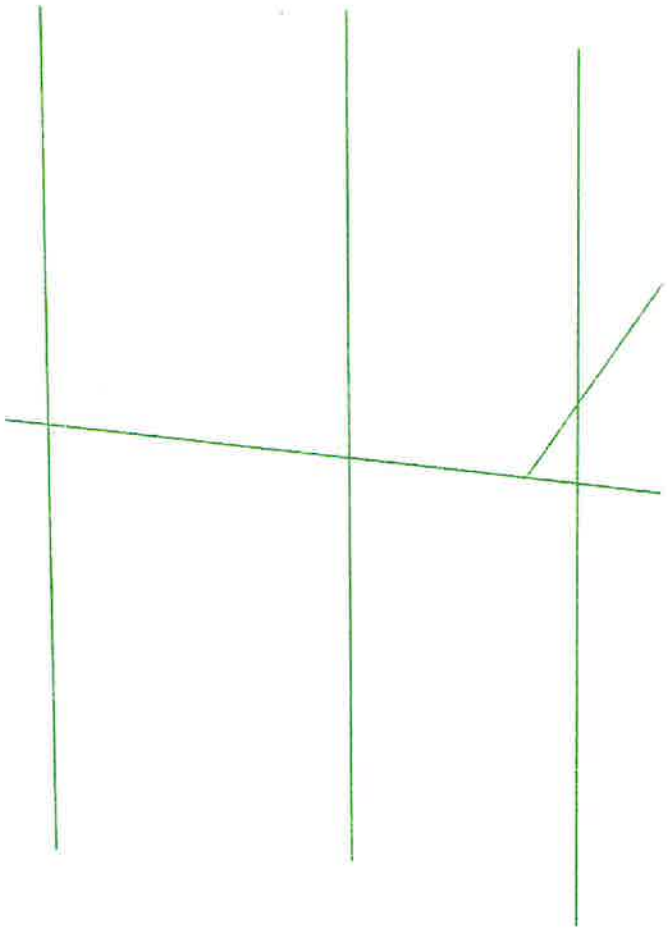
TEP NORTHEAST

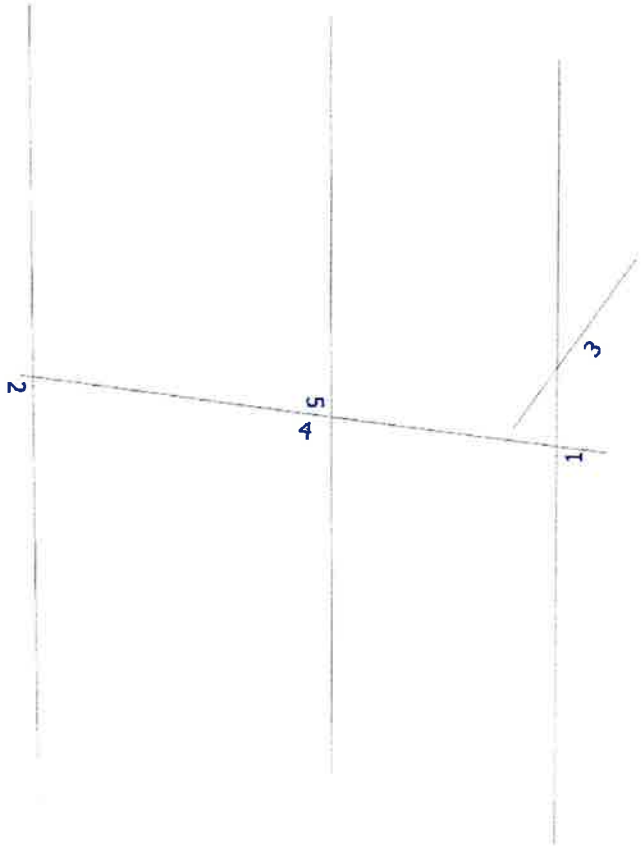
Mount Calculations
(Existing Conditions)


Y
Z
X


A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 4x0.237
A53 GrB
PIPE 3_1_2x0.226
A53 GrB
PIPE 2x0.154
Y
Z
X

Design status
- Not designed
- Error on design
- Design O.K.
- With warnings




2
5
4
3
1


Y
Z
X

RAM Elements
CONNECT Edition

Current Date: 7/14/2023 1:39 PM
Units system: English

Load data

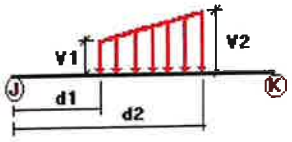
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
D	Dead Load	No	DL
Wo	Wind Load (NO ICE)	No	WIND
W30	WL 30deg	No	WIND
W60	WL 60deg	No	WIND
W90	WL 90deg	No	WIND
W120	WL 120deg	No	WIND
W150	WL 150deg	No	WIND
Di	Ice Load	No	LL
WI0	WL ICE 0deg	No	WIND
WI30	WL ICE 30deg	No	WIND
WI60	WL ICE 60deg	No	WIND
WI90	WL ICE 90deg	No	WIND
WI120	WL ICE 120deg	No	WIND
WI150	WL ICE 150deg	No	WIND

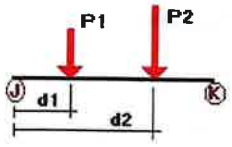
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	3	z	-0.006	-0.006	0.00	No	100.00	Yes
	4	z	-0.011	-0.011	0.00	No	100.00	Yes
	5	z	-0.012	-0.012	0.00	No	100.00	Yes
W30	3	z	-0.006	-0.006	0.00	No	100.00	Yes
	4	z	-0.011	-0.011	0.00	No	100.00	Yes
	5	z	-0.012	-0.012	0.00	No	100.00	Yes
W60	1	x	-0.006	-0.006	0.00	No	100.00	Yes
	2	x	-0.006	-0.006	0.00	No	100.00	Yes
	3	x	-0.006	-0.006	0.00	No	100.00	Yes
	5	x	-0.012	-0.012	0.00	No	100.00	Yes
W90	1	x	-0.006	-0.006	0.00	No	100.00	Yes
	2	x	-0.006	-0.006	0.00	No	100.00	Yes
	3	x	-0.006	-0.006	0.00	No	100.00	Yes
	5	x	-0.012	-0.012	0.00	No	100.00	Yes
W120	1	x	-0.006	-0.006	0.00	No	100.00	Yes
	2	x	-0.006	-0.006	0.00	No	100.00	Yes

	3	x	-0.006	-0.006	0.00	No	100.00	Yes
	5	x	-0.012	-0.012	0.00	No	100.00	Yes
W150	1	z	0.006	0.006	0.00	No	100.00	Yes
	2	z	0.006	0.006	0.00	No	100.00	Yes
	3	z	0.006	0.006	0.00	No	100.00	Yes
	4	z	0.011	0.011	0.00	No	100.00	Yes
	5	z	0.012	0.012	0.00	No	100.00	Yes
Di	1	y	-0.005	-0.005	0.00	No	100.00	Yes
	2	y	-0.005	-0.005	0.00	No	100.00	Yes
	3	y	-0.005	-0.005	0.00	No	100.00	Yes
	4	y	-0.007	-0.007	0.00	No	100.00	Yes
	5	y	-0.007	-0.007	0.00	No	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	1	y	-0.034	0.50	No
		y	-0.034	5.50	No
		y	-0.082	2.00	No
		y	-0.018	4.50	No
	2	y	-0.034	0.50	No
		y	-0.034	5.50	No
		y	-0.098	2.00	No
		y	-0.032	4.50	No
Wo	1	z	-0.164	0.50	No
		z	-0.164	5.50	No
	2	z	-0.164	0.50	No
		z	-0.164	5.50	No
W30	1	3	-0.142	0.50	No
		3	-0.142	5.50	No
		3	-0.025	2.00	No
		3	-0.017	4.50	No
	2	3	-0.142	0.50	No
		3	-0.142	5.50	No
		3	-0.027	2.00	No
		3	-0.056	4.50	No
W60	1	3	-0.099	0.50	No
		3	-0.099	5.50	No
		3	-0.026	2.00	No
		3	-0.014	4.50	No
	2	3	-0.099	0.50	No
		3	-0.099	5.50	No
		3	-0.031	2.00	No
		3	-0.063	4.50	No
W90	1	x	-0.077	0.50	No
		x	-0.077	5.50	No
		x	-0.027	2.00	No
		x	-0.013	4.50	No
	2	x	-0.077	0.50	No

		x	-0.077	5.50	No
		x	-0.033	2.00	No
		x	-0.067	4.50	No
W120	1	2	-0.099	0.50	No
		2	-0.099	5.50	No
		2	-0.033	2.00	No
		2	-0.019	4.50	No
	2	2	-0.099	0.50	No
		2	-0.099	5.50	No
		2	-0.037	2.00	No
		2	-0.075	4.50	No
W150	1	2	-0.142	0.50	No
		2	-0.142	5.50	No
		2	-0.044	2.00	No
		2	-0.031	4.50	No
	2	2	-0.142	0.50	No
		2	-0.142	5.50	No
		2	-0.046	2.00	No
		2	-0.092	4.50	No
Di	1	y	-0.087	0.50	No
		y	-0.087	5.50	No
		y	-0.03	2.00	No
		y	-0.021	4.50	No
	2	y	-0.087	0.50	No
		y	-0.087	5.50	No
		y	-0.031	2.00	No
		y	-0.062	4.50	No
WI0	1	z	-0.033	0.50	No
		z	-0.033	5.50	No
	2	z	-0.033	0.50	No
		z	-0.033	5.50	No
WI30	1	3	-0.029	0.50	No
		3	-0.029	5.50	No
		3	-0.006	2.00	No
		3	-0.007	4.50	No
	2	3	-0.029	0.50	No
		3	-0.029	5.50	No
		3	-0.007	2.00	No
		3	-0.013	4.50	No
WI60	1	3	-0.021	0.50	No
		3	-0.021	5.50	No
		3	-0.007	2.00	No
		3	-0.004	4.50	No
	2	3	-0.021	0.50	No
		3	-0.021	5.50	No
		3	-0.008	2.00	No
		3	-0.014	4.50	No
WI90	1	x	-0.017	0.50	No
		x	-0.017	5.50	No
		x	-0.007	2.00	No
		x	-0.002	4.50	No
	2	x	-0.017	0.50	No
		x	-0.017	5.50	No
		x	-0.008	2.00	No
		x	-0.015	4.50	No
WI120	1	2	-0.021	0.50	No
		2	-0.021	5.50	No
		2	-0.008	2.00	No
		2	-0.004	4.50	No
	2	2	-0.021	0.50	No

		2	-0.021	5.50	No
		2	-0.009	2.00	No
		2	-0.017	4.50	No
WI150	1	2	-0.029	0.50	No
		2	-0.029	5.50	No
		2	-0.01	2.00	No
		2	-0.007	4.50	No
	2	2	-0.029	0.50	No
		2	-0.029	5.50	No
		2	-0.011	2.00	No
		2	-0.02	4.50	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
D	Dead Load	No	0.00	-1.00	0.00
Wo	Wind Load (NO ICE)	No	0.00	0.00	0.00
W30	WL 30deg	No	0.00	0.00	0.00
W60	WL 60deg	No	0.00	0.00	0.00
W90	WL 90deg	No	0.00	0.00	0.00
W120	WL 120deg	No	0.00	0.00	0.00
W150	WL 150deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
WI0	WL ICE 0deg	No	0.00	0.00	0.00
WI30	WL ICE 30deg	No	0.00	0.00	0.00
WI60	WL ICE 60deg	No	0.00	0.00	0.00
WI90	WL ICE 90deg	No	0.00	0.00	0.00
WI120	WL ICE 120deg	No	0.00	0.00	0.00
WI150	WL ICE 150deg	No	0.00	0.00	0.00

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CONNECT Edition

Current Date: 7/14/2023 1:40 PM
Units system: English

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+Wo
LC2=1.2D+W30
LC3=1.2D+W60
LC4=1.2D+W90
LC5=1.2D+W120
LC6=1.2D+W150
LC7=1.2D-Wo
LC8=1.2D-W30
LC9=1.2D-W60
LC10=1.2D-W90
LC11=1.2D-W120
LC12=1.2D-W150
LC13=0.9D+Wo
LC14=0.9D+W30
LC15=0.9D+W60
LC16=0.9D+W90
LC17=0.9D+W120
LC18=0.9D+W150
LC19=0.9D-Wo
LC20=0.9D-W30
LC21=0.9D-W60
LC22=0.9D-W90
LC23=0.9D-W120
LC24=0.9D-W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120
LC36=1.2D+Di-WI150

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	PIPE 2x0.154	1	LC7 at 50.00%	0.31	OK	
		2	LC7 at 50.00%	**0.31**	**OK**	
		3	LC9 at 50.00%	0.03	OK	
	PIPE 3-1_2x0.226	4	LC2 at 50.00%	**0.17**	**OK**	
	PIPE 4x0.237	5	LC2 at 50.00%	**0.08**	**OK**	

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CONNECT Edition

Current Date: 7/14/2023 1:40 PM
Units system: English

Geometry data

GLOSSARY

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

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	0.00	0.00	0
2	2.50	0.00	0.00	0
3	-2.50	0.00	0.00	0
4	0.00	3.00	-0.36	0
5	0.00	-3.00	-0.36	0
6	0.00	0.00	-0.36	0
7	2.00	0.00	0.00	0
8	2.00	0.00	0.25	0
9	-2.00	0.00	0.00	0
10	-2.00	0.00	0.25	0
11	2.00	3.00	0.25	0
12	-2.00	3.00	0.25	0
13	-2.00	-3.00	0.25	0
14	2.00	-3.00	0.25	0
15	0.00	2.00	-0.36	0
16	0.00	-2.00	-0.36	0
17	1.50	0.00	0.00	0
18	0.00	0.00	-5.50	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
15	1	1	1	1	0	1
16	1	1	1	1	0	1
18	1	1	1	0	0	0

Members

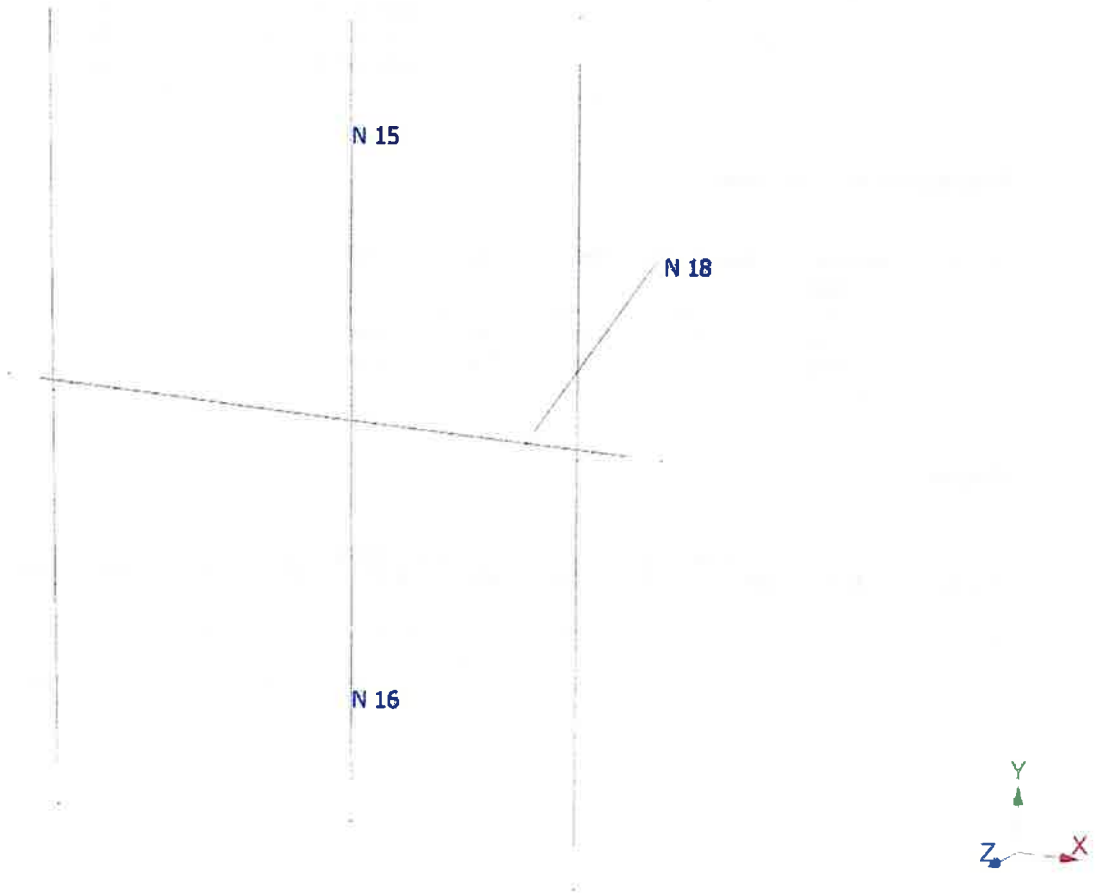
Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	11	14		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
2	12	13		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
3	17	18		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
4	3	2		PIPE 3-1_2x0.226	A53 GrB	0.00	0.00	0.00
5	4	5		PIPE 4x0.237	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
1	315.00	0	0.00	0.00	0.00
2	315.00	0	0.00	0.00	0.00

Hinges

Member	Node-J				Node-K				TOR	AXL	Axial rigidity
	M33	M22	V3	V2	M33	M22	V3	V2			
3	1	1	0	0	0	0	0	0	0	0	Full


N 15
N 18
N 16
Y
Z
X

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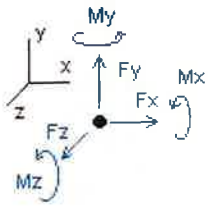
Current Date: 7/14/2023 1:40 PM
Units system: English

Analysis result

Reactions



Direction of positive forces and moments

Node	Forces [Kip] FX	FY	FZ	Moments [Kip*ft] MX	MY	MZ
Condition **LC1=1.2D+Wo**						
15	0.01869	0.31445	0.27820	-0.29933	0.00000	0.01064
16	-0.01995	0.31445	0.50467	0.43156	0.00000	0.01191
18	0.00126	0.01157	0.00912	0.00000	0.00000	0.00000
SUM	0.00000	0.64047	0.79200	0.13223	0.00000	0.02255
Condition **LC2=1.2D+W30**						
15	0.28443	0.31444	0.30774	-0.33496	0.00000	0.28218
16	0.27368	0.31444	0.56354	0.48433	0.00000	-0.27593
18	-0.06808	0.01160	-0.24526	0.00000	0.00000	0.00000
SUM	0.49002	0.64047	0.62602	0.14936	0.00000	0.00625
Condition **LC3=1.2D+W60**						
15	0.30716	0.31444	0.18566	-0.23904	0.00000	0.27906
16	0.29710	0.31444	0.44219	0.38882	0.00000	-0.27320
18	-0.05249	0.01160	-0.25309	0.00000	0.00000	0.00000
SUM	0.55177	0.64047	0.37477	0.14977	0.00000	0.00585
Condition **LC4=1.2D+W90**						
15	0.33415	0.31443	0.00133	-0.04874	0.00000	0.30877
16	0.33718	0.31443	0.22913	0.18173	0.00000	-0.31056
18	-0.04633	0.01160	-0.23046	0.00000	0.00000	0.00000
SUM	0.62500	0.64047	0.00000	0.13299	0.00000	-0.00179
Condition **LC5=1.2D+W120**						
15	0.30025	0.31444	-0.22071	0.18055	0.00000	0.27345
16	0.29644	0.31444	-0.02778	-0.06794	0.00000	-0.27125
18	-0.02371	0.01159	-0.14749	0.00000	0.00000	0.00000
SUM	0.57298	0.64047	-0.39598	0.11261	0.00000	0.00220

Condition **LC6=1.2D+W150**						
15	0.29707	0.31444	-0.37769	0.31389	0.00000	0.29866
16	0.30478	0.31444	-0.19615	-0.20794	0.00000	-0.30319
18	-0.04960	0.01160	-0.18641	0.00000	0.00000	0.00000
SUM	0.55225	0.64047	-0.76025	0.10595	0.00000	-0.00453
Condition **LC7=1.2D-Wo**						
15	0.02000	0.31445	-0.50578	0.43209	0.00000	0.01196
16	-0.01863	0.31445	-0.27671	-0.29840	0.00000	0.01059
18	-0.00137	0.01157	-0.00951	0.00000	0.00000	0.00000
SUM	0.00000	0.64047	-0.79200	0.13369	0.00000	0.02255
Condition **LC8=1.2D-W30**						
15	-0.24581	0.31444	-0.53560	0.46798	0.00000	-0.25965
16	-0.31238	0.31444	-0.33574	-0.35135	0.00000	0.29854
18	0.06816	0.01159	0.24531	0.00000	0.00000	0.00000
SUM	-0.49002	0.64047	-0.62602	0.11663	0.00000	0.03889
Condition **LC9=1.2D-W60**						
15	-0.26854	0.31444	-0.41352	0.37206	0.00000	-0.25653
16	-0.33580	0.31444	-0.21441	-0.25586	0.00000	0.29582
18	0.05257	0.01159	0.25316	0.00000	0.00000	0.00000
SUM	-0.55177	0.64047	-0.37477	0.11620	0.00000	0.03929
Condition **LC10=1.2D-W90**						
15	-0.29549	0.31444	-0.22915	0.18174	0.00000	-0.28622
16	-0.37592	0.31444	-0.00142	-0.04882	0.00000	0.33319
18	0.04641	0.01159	0.23057	0.00000	0.00000	0.00000
SUM	-0.62500	0.64047	0.00000	0.13293	0.00000	0.04698
Condition **LC11=1.2D-W120**						
15	-0.26155	0.31445	-0.00697	-0.04771	0.00000	-0.25085
16	-0.33508	0.31445	0.25574	0.20107	0.00000	0.29379
18	0.02366	0.01158	0.14721	0.00000	0.00000	0.00000
SUM	-0.57298	0.64047	0.39598	0.15336	0.00000	0.04295
Condition **LC12=1.2D-W150**						
15	-0.25829	0.31444	0.15016	-0.18122	0.00000	-0.27599
16	-0.34340	0.31444	0.42436	0.34131	0.00000	0.32570
18	0.04944	0.01159	0.18573	0.00000	0.00000	0.00000
SUM	-0.55225	0.64047	0.76025	0.16009	0.00000	0.04971
Condition **LC13=0.9D+Wo**						
15	0.01385	0.23584	0.30653	-0.31586	0.00000	0.00782
16	-0.01511	0.23584	0.47635	0.41502	0.00000	0.00908
18	0.00126	0.00867	0.00912	0.00000	0.00000	0.00000
SUM	0.00000	0.48036	0.79200	0.09915	0.00000	0.01691

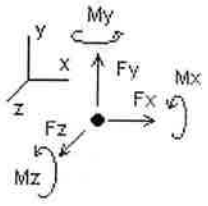
Condition	**LC14=0.9D+W30**					
15	0.27950	0.23582	0.33613	-0.35154	0.00000	0.27930
16	0.27861	0.23582	0.53515	0.46774	0.00000	-0.27880
18	-0.06808	0.00871	-0.24526	0.00000	0.00000	0.00000
SUM	0.49002	0.48036	0.62602	0.11620	0.00000	0.00050
Condition	**LC15=0.9D+W60**					
15	0.30225	0.23582	0.21409	-0.25564	0.00000	0.27619
16	0.30201	0.23582	0.41376	0.37222	0.00000	-0.27607
18	-0.05249	0.00871	-0.25309	0.00000	0.00000	0.00000
SUM	0.55177	0.48036	0.37477	0.11658	0.00000	0.00013
Condition	**LC16=0.9D+W90**					
15	0.32924	0.23582	0.02982	-0.06537	0.00000	0.30590
16	0.34209	0.23582	0.20064	0.16509	0.00000	-0.31343
18	-0.04633	0.00871	-0.23046	0.00000	0.00000	0.00000
SUM	0.62500	0.48036	0.00000	0.09972	0.00000	-0.00752
Condition	**LC17=0.9D+W120**					
15	0.29535	0.23583	-0.19215	0.16388	0.00000	0.27059
16	0.30135	0.23583	-0.05634	-0.08461	0.00000	-0.27411
18	-0.02371	0.00869	-0.14749	0.00000	0.00000	0.00000
SUM	0.57298	0.48036	-0.39598	0.07927	0.00000	-0.00352
Condition	**LC18=0.9D+W150**					
15	0.29214	0.23583	-0.34910	0.29721	0.00000	0.29579
16	0.30971	0.23583	-0.22475	-0.22463	0.00000	-0.30607
18	-0.04960	0.00870	-0.18641	0.00000	0.00000	0.00000
SUM	0.55225	0.48036	-0.76025	0.07257	0.00000	-0.01028
Condition	**LC19=0.9D-Wo**					
15	0.01517	0.23584	-0.47713	0.41537	0.00000	0.00914
16	-0.01380	0.23584	-0.30536	-0.31512	0.00000	0.00777
18	-0.00137	0.00868	-0.00951	0.00000	0.00000	0.00000
SUM	0.00000	0.48036	-0.79200	0.10025	0.00000	0.01691
Condition	**LC20=0.9D-W30**					
15	-0.25054	0.23583	-0.50701	0.45130	0.00000	-0.26242
16	-0.30765	0.23583	-0.36432	-0.36803	0.00000	0.29577
18	0.06816	0.00870	0.24531	0.00000	0.00000	0.00000
SUM	-0.49002	0.48036	-0.62602	0.08327	0.00000	0.03336
Condition	**LC21=0.9D-W60**					
15	-0.27329	0.23583	-0.38497	0.35540	0.00000	-0.25931
16	-0.33105	0.23583	-0.24296	-0.27252	0.00000	0.29304
18	0.05257	0.00870	0.25316	0.00000	0.00000	0.00000
SUM	-0.55177	0.48036	-0.37477	0.08288	0.00000	0.03373

Condition	**LC22=0.9D-W90**					
15	-0.30024	0.23583	-0.20066	0.16512	0.00000	-0.28899
16	-0.37116	0.23583	-0.02990	-0.06545	0.00000	0.33041
18	0.04641	0.00870	0.23057	0.00000	0.00000	0.00000
SUM	-0.62500	0.48036	0.00000	0.09967	0.00000	0.04142
Condition	**LC23=0.9D-W120**					
15	-0.26631	0.23583	0.02145	-0.06430	0.00000	-0.25363
16	-0.33032	0.23583	0.22732	0.18448	0.00000	0.29101
18	0.02366	0.00869	0.14721	0.00000	0.00000	0.00000
SUM	-0.57298	0.48036	0.39598	0.12018	0.00000	0.03738
Condition	**LC24=0.9D-W150**					
15	-0.26303	0.23583	0.17854	-0.19779	0.00000	-0.27876
16	-0.33866	0.23583	0.39598	0.32474	0.00000	0.32293
18	0.04944	0.00870	0.18573	0.00000	0.00000	0.00000
SUM	-0.55225	0.48036	0.76025	0.12695	0.00000	0.04417
Condition	**LC25=1.2D+Di+WI0**					
15	0.04140	0.58508	-0.15979	0.06579	0.00000	0.02417
16	-0.04140	0.58508	0.29179	0.19782	0.00000	0.02417
18	0.00000	0.02582	-0.00001	0.00000	0.00000	0.00000
SUM	0.00000	1.19598	0.13200	0.26362	0.00000	0.04834
Condition	**LC26=1.2D+Di+WI30**					
15	0.09726	0.58508	-0.15102	0.05521	0.00000	0.08170
16	0.02252	0.58508	0.30929	0.21351	0.00000	-0.03808
18	-0.01443	0.02582	-0.05291	0.00000	0.00000	0.00000
SUM	0.10536	1.19598	0.10536	0.26872	0.00000	0.04362
Condition	**LC27=1.2D+Di+WI60**					
15	0.08635	0.58508	-0.16405	0.06873	0.00000	0.07029
16	0.00923	0.58508	0.29387	0.19859	0.00000	-0.02528
18	-0.01284	0.02582	-0.04710	0.00000	0.00000	0.00000
SUM	0.08273	1.19598	0.08273	0.26732	0.00000	0.04501
Condition	**LC28=1.2D+Di+WI90**					
15	0.09380	0.58508	-0.20436	0.11023	0.00000	0.07803
16	0.01806	0.58508	0.24787	0.15376	0.00000	-0.03383
18	-0.01187	0.02582	-0.04351	0.00000	0.00000	0.00000
SUM	0.10000	1.19598	0.00000	0.26399	0.00000	0.04421
Condition	**LC29=1.2D+Di+WI120**					
15	0.08426	0.58508	-0.25407	0.16138	0.00000	0.06847
16	0.00839	0.58508	0.19123	0.09856	0.00000	-0.02418
18	-0.00639	0.02582	-0.02342	0.00000	0.00000	0.00000
SUM	0.08627	1.19598	-0.08627	0.25993	0.00000	0.04428

Condition	**LC30=1.2D+Di+WI150**					
15	0.09969	0.58508	-0.26127	0.16907	0.00000	0.08438
16	0.02619	0.58508	0.18165	0.08948	0.00000	-0.04149
18	-0.00991	0.02582	-0.03635	0.00000	0.00000	0.00000
SUM	0.11597	1.19598	-0.11597	0.25855	0.00000	0.04289
Condition	**LC31=1.2D+Di-WI0**					
15	0.04140	0.58508	-0.29242	0.19815	0.00000	0.02417
16	-0.04140	0.58508	0.16043	0.06619	0.00000	0.02417
18	0.00000	0.02582	-0.00001	0.00000	0.00000	0.00000
SUM	0.00000	1.19598	-0.13200	0.26434	0.00000	0.04834
Condition	**LC32=1.2D+Di-WI30**					
15	-0.01446	0.58508	-0.30120	0.20874	0.00000	-0.03337
16	-0.10533	0.58508	0.14293	0.05050	0.00000	0.08643
18	0.01443	0.02582	0.05291	0.00000	0.00000	0.00000
SUM	-0.10536	1.19598	-0.10536	0.25924	0.00000	0.05306
Condition	**LC33=1.2D+Di-WI60**					
15	-0.00354	0.58508	-0.28817	0.19522	0.00000	-0.02196
16	-0.09203	0.58508	0.15834	0.06542	0.00000	0.07362
18	0.01285	0.02582	0.04710	0.00000	0.00000	0.00000
SUM	-0.08273	1.19598	-0.08273	0.26064	0.00000	0.05166
Condition	**LC34=1.2D+Di-WI90**					
15	-0.01100	0.58508	-0.24786	0.15373	0.00000	-0.02970
16	-0.10087	0.58508	0.20434	0.11024	0.00000	0.08217
18	0.01187	0.02582	0.04352	0.00000	0.00000	0.00000
SUM	-0.10000	1.19598	0.00000	0.26397	0.00000	0.05247
Condition	**LC35=1.2D+Di-WI120**					
15	-0.00145	0.58508	-0.19814	0.10257	0.00000	-0.02013
16	-0.09120	0.58508	0.26100	0.16546	0.00000	0.07253
18	0.00638	0.02582	0.02341	0.00000	0.00000	0.00000
SUM	-0.08627	1.19598	0.08627	0.26803	0.00000	0.05240
Condition	**LC36=1.2D+Di-WI150**					
15	-0.01687	0.58508	-0.19094	0.09488	0.00000	-0.03605
16	-0.10900	0.58508	0.27058	0.17454	0.00000	0.08983
18	0.00991	0.02582	0.03633	0.00000	0.00000	0.00000
SUM	-0.11597	1.19598	0.11597	0.26942	0.00000	0.05379

Envelope for nodal reactions

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



Direction of positive forces and moments

Envelope of nodal reactions for :

LC1=1.2D+Wo
LC2=1.2D+W30
LC3=1.2D+W60
LC4=1.2D+W90
LC5=1.2D+W120
LC6=1.2D+W150
LC7=1.2D-Wo
LC8=1.2D-W30
LC9=1.2D-W60
LC10=1.2D-W90
LC11=1.2D-W120
LC12=1.2D-W150
LC13=0.9D+Wo
LC14=0.9D+W30
LC15=0.9D+W60
LC16=0.9D+W90
LC17=0.9D+W120
LC18=0.9D+W150
LC19=0.9D-Wo
LC20=0.9D-W30
LC21=0.9D-W60
LC22=0.9D-W90
LC23=0.9D-W120
LC24=0.9D-W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120
LC36=1.2D+Di-WI150

Node		Forces						Moments					
		Fx [Kip]	**Ic**	**Fy** [Kip]	**Ic**	**Fz** [Kip]	**Ic**	**Mx** [Kip*ft]	**Ic**	**My** [Kip*ft]	**Ic**	**Mz** [Kip*ft]	**Ic**
15	Max	0.334	LC4	0.585	LC33	0.336	LC14	0.46798	LC8	0.00000	LC1	0.30877	LC4
	Min	-0.300	LC22	0.236	LC16	-0.536	LC8	-0.35154	LC14	0.00000	LC1	-0.28899	LC22
16	Max	0.342	LC16	0.585	LC33	0.564	LC2	0.48433	LC2	0.00000	LC1	0.33319	LC10
	Min	-0.376	LC10	0.236	LC16	-0.364	LC20	-0.36803	LC20	0.00000	LC1	-0.31343	LC16
18	Max	0.068	LC8	0.026	LC26	0.253	LC9	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.068	LC2	0.009	LC13	-0.253	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1

TEP NORTHEAST

Connection Check

Date: 7/14/2023
Project Name: Wolcott NW CT
Designed By: RL **Checked By:** MSC

CHECK THRU BOLT CONNECTION CAPACITY → EXISTING ANCHORS

Reference: AISC Steel Construction Manual 14th Edition (ASD)

Bolt Type = A36 1/2" Threaded Rod

Allowable Tensile Load =
F_{Tall} = 4271 lbs.

Allowable Shear Load =
F_{vall} = 2562 lbs.

CONNECTION PLATE CONFIGURATION (4-BOLTS)

$N_{BOLT\ ROWS}$	=	2	rows	d_Y	=	5 in	(Min.)
N_{BOLTS}	=	2	bolts/row	d_X	=	14 in	(Min.)

TENSILE FORCES

Moment in X axis:	485 lb-ft.	(See Bentley Output)
Couple Reaction from M_X:	2328 lbs.	
Moment in Y axis:	0 lb-ft.	(See Bentley Output)
Couple Reaction from M_Y:	0 lbs.	
Reaction in Z direction:	564 lbs.	(See Bentley Output)
Resultant per bolt:	1305 lbs.	

SHEAR FORCES

Moment in Z axis:	334 lb-ft.	(See Bentley Output)
Couple Reaction from M_Z:	1604 lbs.	
Reaction in X direction:	376 lbs.	(See Bentley Output)
Reaction in Y direction:	585 lbs.	(See Bentley Output)
Resultant per bolt:	976 lbs.	

Tension Design Load /Bolts =

f_t= 1305.00 lbs. < 4270.6 lbs. **Therefore, OK !**

Shear Design Load / Bolts=

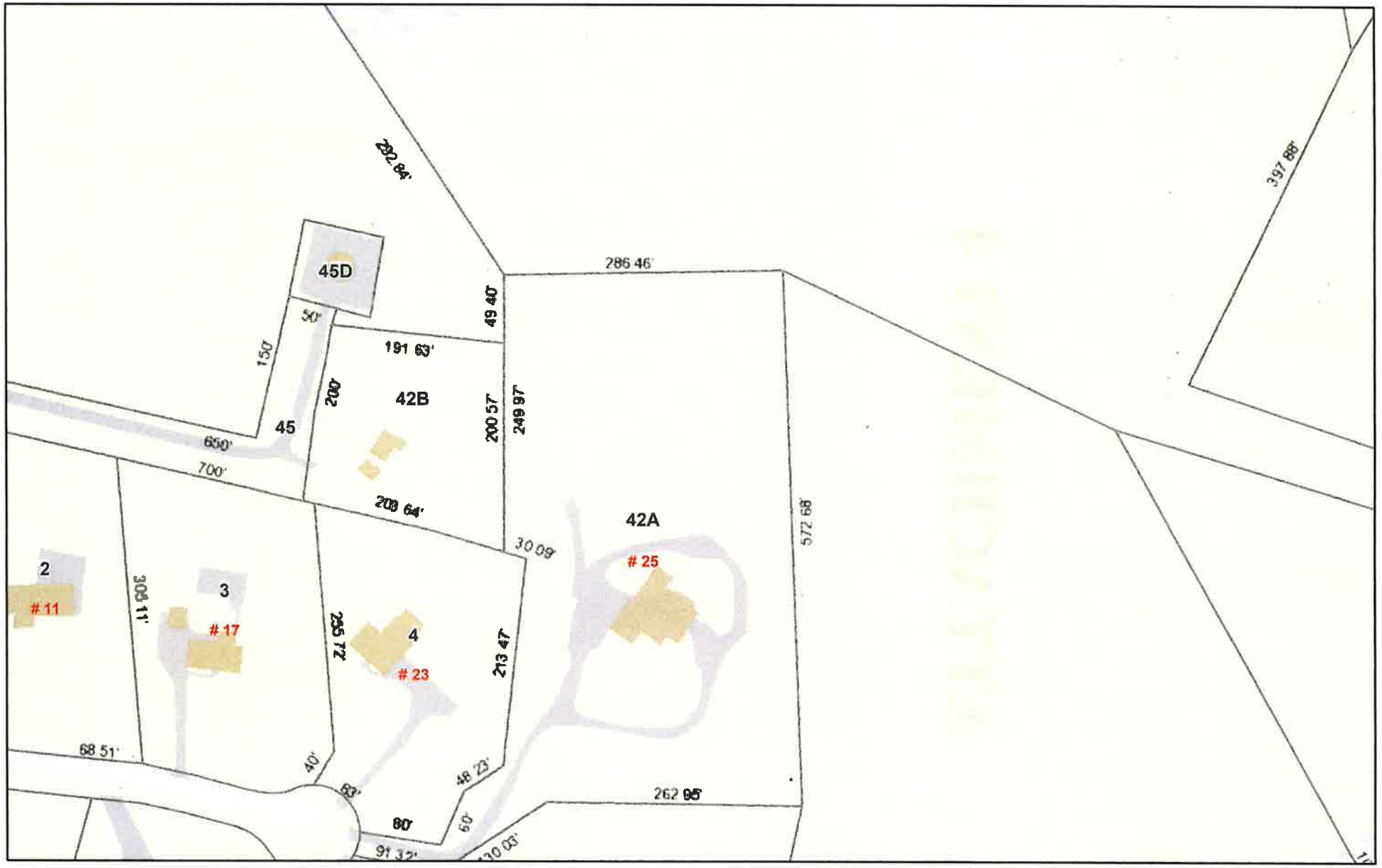
f_v= 975.85 lbs. < 2562.4 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0			
0.306	+	0.381	=	0.686	<	1.0	**Therefore, OK !**

ATTACHMENT 4

Town of Wolcott



10/16/2023, 7:33:54 AM

Parcels

Buildings

Other Impervious

1:2,257

0 0.01 0.03 0.05 mi

0 0.02 0.04 0.09 km

UConn/CTDEEP, Esri, HERE, Garmin, INCREMENT P, NGA, USGS

ANDREWS RD

Location	ANDREWS RD	**Mblu**	106/ 1/ 42B/ /
Acct#	S0522200	**Owner**	SOUTHERN NEW ENG TEL CO
Assessment	$210,410	**Appraisal**	$300,590
PID	5792	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$70,090	$230,500	$300,590
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$49,060	$161,350	$210,410

Owner of Record

Owner	SOUTHERN NEW ENG TEL CO	**Sale Price**	$0
Co-Owner	C/O FRONTIER COMMUNICATIONS	**Certificate**	
Address	401 MERRITT 7 TAX DEPT NORWALK , CT 06851	**Book & Page**	0059/0443
		Sale Date	10/17/1957
		Instrument	25

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**

ATTACHMENT 5

Verizon/Wolcott NW

UNITED STATES POSTAL SERVICE®

Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here *Postmark with Date of Receipt.*
Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	3	3	neopost 10/18/2023 US POSTAGE $003.19 ZIP 06103 041L12203937 OLD STATE HOUSE STATION 06103 OCT 18 2023 USPS
	Postmaster, per *(name of receiving employee)*		

USPS® Tracking Number / Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Thomas G. Dunn, Mayor Town of Wolcott 10 Kenea Avenue Wolcott, CT 06716				
2.	David Kalinowski, Zoning Enforcement Officer Town of Wolcott 10 Kenea Avenue Wolcott, CT 06716				
3.	Southern New England Telephone Company c/o Frontier Communications attn: Tax Department 401 Merritt 7 Norwalk, CT 06851				
4.					
5.					
6.					