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
Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

October 23, 2020

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

RE: **TS-VER-131-201005**- Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 435 Mill Street, Southington, Connecticut.

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) is in receipt of your correspondence of October 22, 2020 submitted in response to the Council's October 16, 2020 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

s/Melanie A. Bachman

Melanie A. Bachman
Executive Director

MAB/IN/emr

From: Mayo, Rachel <rmayo@RC.com>
Sent: Thursday, October 22, 2020 10:00 AM
To: CSC-DL Siting Council <Siting.Council@ct.gov>
Cc: Baldwin, Kenneth <KBALDWIN@RC.com>; Mayo, Rachel <rmayo@RC.com>
Subject: Response- Council Incomplete Letter for TS-VER-131-201005 Mill St.

In response to your October 16, 2020 Incomplete Letter, please see the attached Mount Analysis.

Please let us know if you need additional information. Thank you

Rachel

Rachel A. Mayo
Land Use Analyst

Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103
Direct 860.275.8213 | Fax 860.275.8299
rmayo@rc.com | www.rc.com
Bio | Contact Card

PAUL J. FORD & COMPANY

Report Date:	September 2, 2020
Client:	On Air Engineering, LLC 88 Foundry Pond Road Cold Spring, NY 10516 Attn: David Weinpahl, P.E. (201) 456-4624 dweinpahl@onaireng.com
Structure:	Existing 120-ft Self Support Tower
Carrier:	Verizon Wireless
Carrier Site Name:	Southington 4 CT
Mount Type:	(3) 12.5 Foot Sector Frames
Site Address:	435 Mill St
City, County, State:	Southington, Hartford County, CT
Latitude, Longitude:	41.604592, -72.894336
PJF Project:	A42920-0007.001.8190

Paul J. Ford and Company is pleased to submit this "**Mount Structural Analysis Report**". The purpose of this analysis is to determine if the mount has sufficient capacity to support the equipment described herein. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point is not part of this document.

Analysis Criteria:

This analysis has been performed in accordance with the 2018 Connecticut State Building Code and 2015 IBC based upon an ultimate 3-second gust wind speed of 135 mph. In addition, this analysis is based on TIA-222-H standard in accordance with Verizon NSTD-446. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Summary of Analysis Results:

Mounting Frames:	**65.0%**	**SUFFICIENT**

We at Paul J. Ford and Company appreciate the opportunity of providing our continuing professional services to you and On Air Engineering, LLC. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully Submitted by:
Paul J. Ford and Company

John M. Fawcett

John Fawcett, E.I.
Structural Designer
jfawcett@pauljford.com

STATE OF CONNECTICUT
JOSEPH PACHICARAH JACOBS
No. PEN 22731
LICENSED
PROFESSIONAL ENGINEER

D.S.

09.04.2020

TABLE OF CONTENTS

1) INTRODUCTION

The proposed mounts under consideration are (3) 12.5 Sector Frames installed at the 88' elevation on a 120' Self Support Tower. The proposed mounts considered in this analysis are a SitePro1 VFA12-HD.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	III
Ultimate Wind Speed:	135 mph
Exposure Category:	B
Topographic Factor at Base:	1.00
Topographic Factor at Mount:	1.00
Ice Thickness:	1.0 in
Wind Speed with Ice:	50 mph
Maintenance Loading Wind Speed:	30 mph
Maintenance Load at Mid/End-Points, L_v:	250 lb
Maintenance Load at Mount Pipes, L_m:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
88	88	3	COMMSCOPE	NHH-65B-R2B	(3)-SECTOR MOUNT (12.5')
		3	COMMSCOPE	NHHSS-65B-R2B	
		3	COMMSCOPE	BSAMNT-SBS-1-2 Dual Mounting Bracket	
		3	SAMSUNG	B2/B66A RRH-BR049	
		3	SAMSUNG	B5/B13 RRH-BR04C	
		3	SAMSUNG	CBRS RRH	
		1	RAYCAP	RVZDC-6627-PF-48 OVP	

3) ANALYSIS PROCEDURE

Table 2 – Documents Provided

Document	Remarks	Reference	Source
Mount Manufacturer Drawings	SitePro1, 08/04/2017	VFA12-HD	SitePro1
Construction Drawings	On Air Engineering, 06/22/2020	-	On Air Engineering
Radio Frequency Data Sheet	Verizon, 06/23/2020	15170439	On Air Engineering

3.1) Analysis Method

RISA-3D (version 17.0.3), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix C. In addition, this analysis is in accordance with Verizon's NSTD-446 Antenna Mount Analysis and Modification Process (dated 03/29/19).

3.2) Assumptions

1) *The analysis of the existing self support tower or the effect of the mount attachment to the tower is not within the current scope of work.*
2) *The antenna mounting system was properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications and all bolts are tightened as specified by the manufacturer and AISC requirements.*
3) *The configuration of antennas, mounts, and other appurtenances are as specified in Table 1.*
4) *All member connections have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report. All U-Bolt connections have been properly tightened. This analysis will be required to be revised if the existing conditions in the field differ from those shown in the above referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.*
5) *Steel grades have been assumed as follows:*
   - *a) Channel, Solid Round, Angle, Unistrut* — *ASTM A53 (GR 35)*
   - *b) Pipe* — *ASTM A53 (GR 35)*
   - *c) HSS (Rectangular), Plate* — *Q235 Gr B (Fy = 34 ksi, Fu = 58 ksi)*
   - *d) HSS (Round)* — *ASTM A53 (GR 35)*
   - *e) Connection Bolts* — *ASTM A325*
   - *f) Threaded Rods* — *SAE J429 (GR2)*
   - *g) U-Bolts* — *SAE J429 (GR2)*
6) *Proposed equipment is to be installed in the locations specified in Appendix A. Any changes to the proposed equipment locations will render this report invalid.*

This analysis may be affected if any assumptions are not valid or have been made in error. Paul J Ford and Company should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 3 – Mount Component Capacity

Notes	Component	% Capacity	Pass / Fail
1, 2	Mount Pipes	40.4	Pass
1, 2	Face Horizontal	26.9	Pass
1, 2	Standoff Members	65.0	Pass
1, 2	Tie Back	11.2	Pass
1, 2	Mount to Tower Connection (bolts)	10.6	Pass

Mount Rating (max from all components) =	65.0%

Notes:
1. See additional documentation in “Appendix C – Software analysis Output” for calculations supporting the % capacity consumed.
2. All sectors are typical.

4.1) Recommendations

The proposed mount has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

STANDARD CONDITIONS FOR FURNISHING OF PROFESSIONAL ENGINEERING SERVICES ON EXISTING MOUNTS BY PAUL J. FORD AND COMPANY

1) It is the responsibility of the client to ensure that the information provided to Paul J. Ford and Company is accurate and complete. Paul J. Ford and Company will rely on the accuracy and completeness of such information in performing or furnishing services under this project.

2) If the existing conditions are not as represented on the referenced drawings and/or documents, Paul J. Ford and Company should be contacted immediately to evaluate the significance of the deviation.

3) The mount has been analyzed according to the minimum design loads recommended by the Reference Standard. If additional design loads are required, Paul J. Ford and Company should be made aware of this prior to the start of the project.

4) The standard of care for all Professional Engineering Services performed or furnished by Paul J. Ford and Company under this project will be the skill and care used by members of the Consultant's profession practicing under similar circumstances at the same time and in the same locality.

5) All Services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Paul J. Ford and Company is not responsible for the conclusions, opinions and/or recommendations made by others based on the information supplied herein.

****

APPENDIX A

SOFTWARE INPUT CALCULATIONS

PAUL J. FORD & COMPANY
250 E Broad St, Ste 600 • Columbus, OH 43215
Phone 614.221.6679 www.pauljford.com

Project Number:	42920-0007.001.8190
Date:	9/2/2020
Engineer:	JMF
Email:	jfawcett@pauljford.com

Mount Loading per TIA-222-H (Version v2.7 - Effective 8/27/2020)

Structure & Wind Speed

Structure Type =	Mount	Ultimate Wind Speed =	135	mph
Mount Type =	1 Sector	Ice Wind Speed =	50	mph
Mount Centerline (z) =	88.00	ft Service Wind Speed =	30	mph
Risa $^{C}/_{L}$ Y-Coordinate =	0.00	in Non-Op Wind Speed =	-	mph
		Op Wind Speed =	-	mph
		Ice Thickness =	1	in

Topography

Risk Category =	III	
Exposure Category =	B	
Topographic Category =	1	
Structure Base Height (Z_s) =	313	ft
Crest Height (H) =		ft

Velocity Pressure Coefficients

z_g =	1200 ft	(Table 2-4)
α' =	7.00	(Table 2-4)
K_z =	0.95	(Section 2.6.5.2)
K_{zmin} = 0.70		
K_{zcalc} = 0.95		
K_{zmax} = 2.01		

			Override
K_{zt} =	1.00	(Section 2.6.6.2.1)	
K_d =	0.95	(Section 16.6)	
K_e =	0.99	(Section 2.6.8)	
G_h =	1.00	(Section 16.6)	
K_{es} =	1.0	(Annex S - Wind Force)	
q_z=	41.75 psf	(Section 2.6.11.6)	

Ice Loading

h =		in (Bar Grating Height)
I_i =	1.15	(Table 2-3)
K_{es} =	1.0	(Annex S - Ice)
q_z=	5.79 psf	(Section 2.6.11.6)
K_{iz} =	1.10	(Section 2.6.10)
t_{iz} =	1.27 in	(Section 2.6.10)
W_i =	5.92 psf	(Grating Ice Weight)

Wind Pressure

			Override
K_a =	0.9	(on all Appurt. / Member Forces)	
$(q_z)(G_h)(K_{es})$ =	41.75 psf		
$(q_{iz})(G_h)(K_{es})$ =	5.79 psf	(Ice)	

Analysis Settings

Analysis Scope =	Client	File Suffix =	_Client.r3d
Analysis Wind Direction Increment =	30°		
EPA Calculation Method =	TIA		
Construction Duration =			

Maintenance Point Loads

	Load	Label	Node #		Load	Label	Node #
L_{m1} =	500 lbs	N54	22	L_{v1} =	250 lbs	N31	9
L_{m2} =	500 lbs	N60	28	L_{v2} =	250 lbs	N32	10
L_{m3} =	500 lbs	N66	34	L_{v3} =	250 lbs		-
L_{m4} =	500 lbs	N72	40	L_{v4} =	250 lbs		-

Risa3D Source: G:\TOWER\429_On Air Engineering\2020\42920-0007_Southington 4 CT\42920-0007.001.8190_MA\RISA\42920-0007.001.8190.r3d (32 Total Populated Members)

Antennas

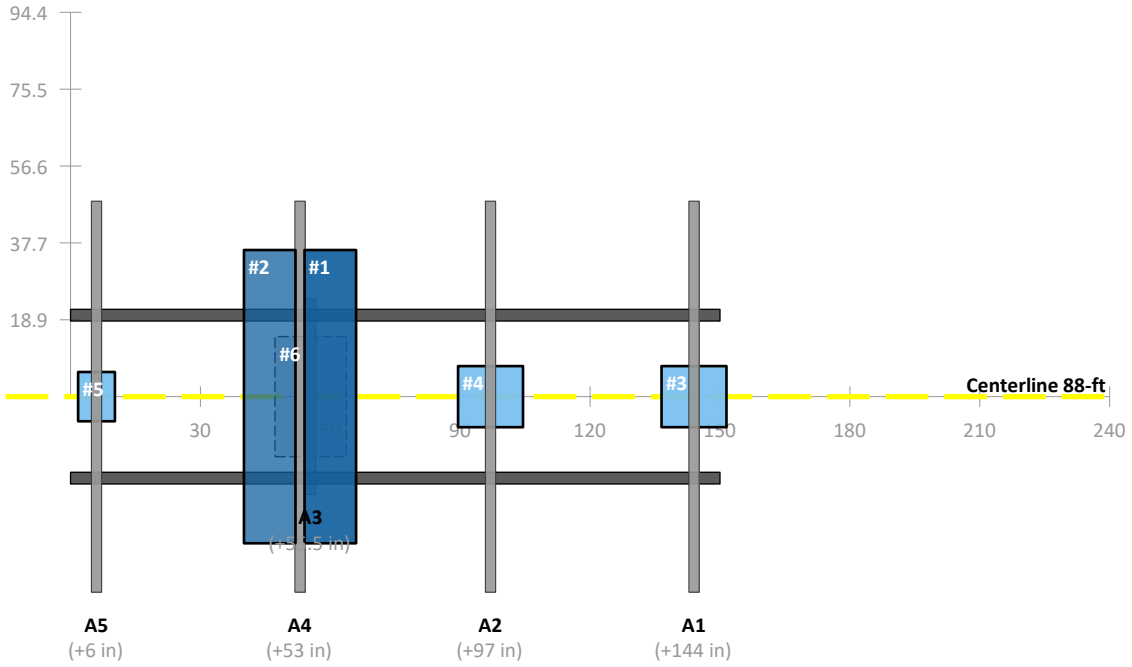
Item	Include Loading	Status	Mounting Location	Manufacturer	Antenna	Height (in)	Width (in)	Depth (in)	Flat or Round	Weight (lbs)	Sector / Face	Position	Quantity	Orientation	Use tnxTower C_AA_a (CFD)	Top/Bottom Mounting Point Spacing	Override Spacing (in)	Max Antenna C/L (ft)	Min Antenna C/L (ft)	Antenna C/L (ft)	Antenna Top Mount Location from Mount Pipe Bottom (in)	Antenna Bottom Mount Location from Mount Pipe Bottom (in)	Override Top Antenna Mounting Location (in)	Override Bottom Antenna Mounting Location (in)	Normal Wind Force per Antenna (lbs)	Transverse Wind Force per Antenna (lbs)
1	Yes	P	Mount	COMMSCOPE	NHH-65B-R2B	72	11.9	7.1	Flat	43.7	C	4	1	Normal	No	66.00		89.250	86.750	88	81.00	15.00			303.599	200.736
2	Yes	P	Mount	COMMSCOPE	NHHSS-65C-R2B	72	11.9	7.1	Flat	73.5	C	4	1	Normal	No	66.00		89.250	86.750	88	81.00	15.00			303.599	200.736
3	Yes	P	Mount	SAMSUNG TELECOMMUNICATIONS	B2/B66A RRH-BR049	15	15	10	Flat	97.5	C	1	1	Normal	No	9.00		91.625	84.375	88	52.50	43.50			70.461	46.974
4	Yes	P	Mount	SAMSUNG TELECOMMUNICATIONS	B5/B13 RRH-BR04C	15	15	8.1	Flat	82	C	2	1	Normal	No	9.00		91.625	84.375	88	52.50	43.50			70.461	38.049
5	Yes	P	Mount	SAMSUNG TELECOMMUNICATIONS	CBRS RRH	12.1	8.5	4.1	Flat	23.14	C	5	1	Normal	No	6.10		91.746	84.254	88	51.05	44.95			32.209	15.796
6	Yes	P	Mount	RAYCAP	RVZDC-6627-PF-48	29.5	16.5	12.6	Flat	32	C	3	1	Normal	No	23.50		89.021	86.979	88	35.75	12.25			152.431	116.402

Dishes

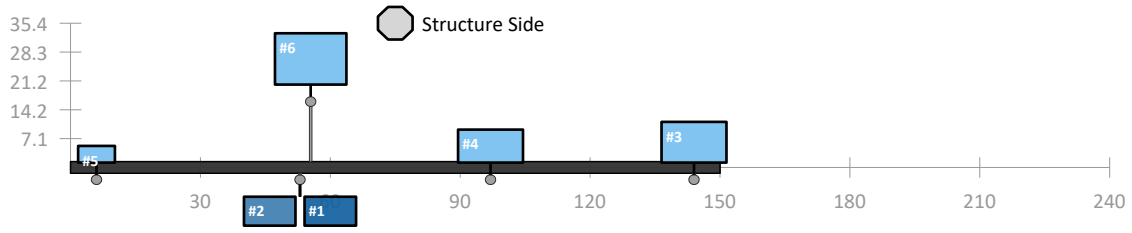
Item	Include Loading	Status	Mounting Location	Manufacturer	Microwave Dish	Dia (in)	Dish Type	Weight (lbs)	Sector / Face	Position	Top/Bottom Mounting Point Spacing	Override Spacing (in)	Max Dish C/L (ft)	Min Dish C/L (ft)	Dish C/L (ft)	Dish Top Mount Location from Mount Pipe Bottom	Dish Bottom Mount Location from Mount Pipe Bottom	Override Top Dish Mounting Location (in)	Override Bottom Dish Mounting Location (in)

Sector A

Profile View



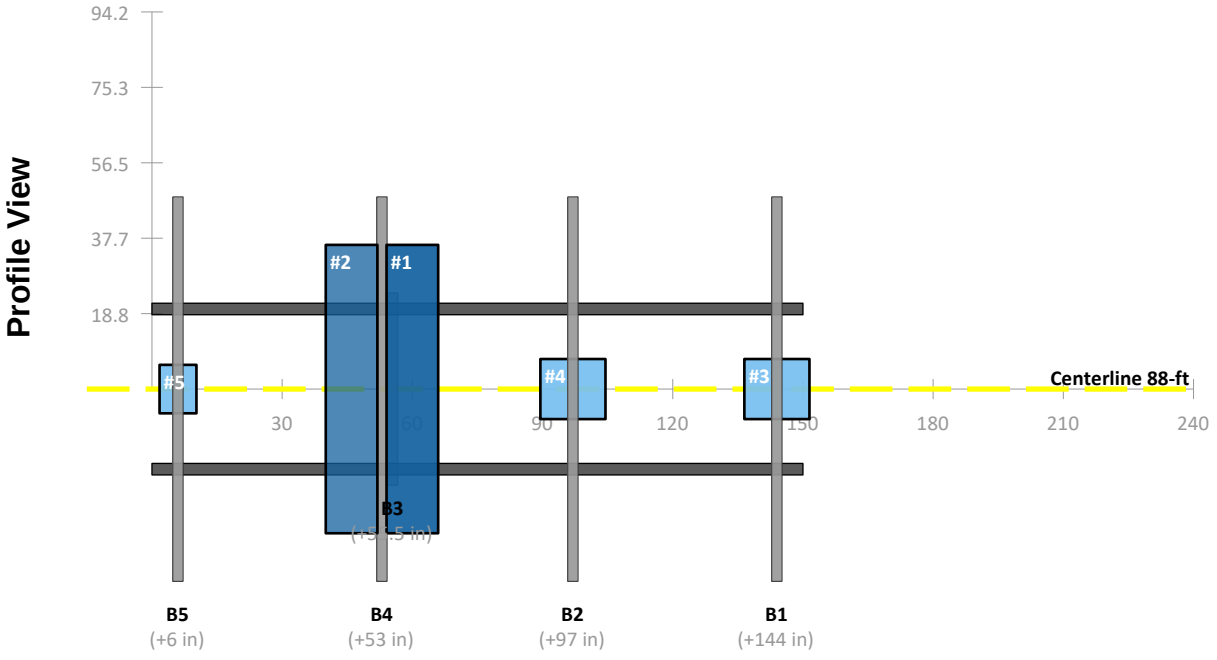
Plan View

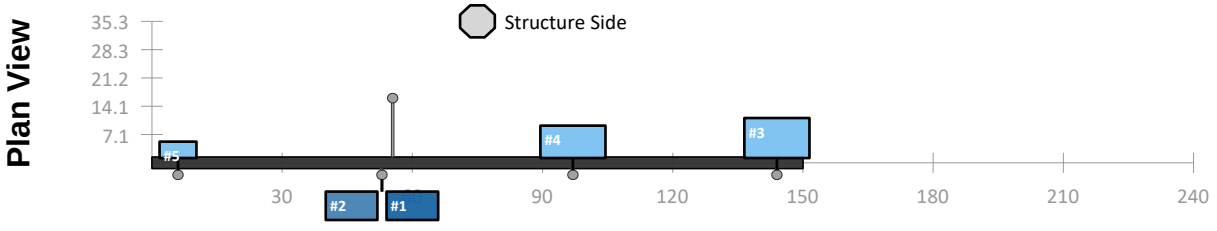


Ref ID	Type	Manufacturer	Model	Height (in)	Width (in)	Depth (in)	Center Line (ft)	Mount Pipe	Tangential Offset (in)	Normal Offset (in)
#1	Antenna	COMMSCOPE	NHH-65B-R2B	72.00	11.90	7.10	88.00	A4	7.00	3.00
#2	Antenna	COMMSCOPE	NHHSS-65C-R2B	72.00	11.90	7.10	88.00	A4	-7.00	3.00
#3	RRH	SAMSUNG TELECOMMUNICATIONS	B2/B66A RRH-BR049	15.00	15.00	10.00	88.00	A1	0.00	-3.00
#4	RRH	SAMSUNG TELECOMMUNICATIONS	B5/B13 RRH-BR04C	15.00	15.00	8.10	88.00	A2	0.00	-3.00
#5	RRH	SAMSUNG TELECOMMUNICATIONS	CBRS RRH	12.10	8.50	4.10	88.00	A5	0.00	-3.00
#6	OVP	RAYCAP	RVZDC-6627-PF-48	29.50	16.50	12.60	88.00	A3	0.00	-3.00

1. A 6" tolerance for proposed equipment is acceptable.
2. Contractor to verify location of existing equipment prior to installation of proposed equipment. Notify for any deviations.
3. Install shall not cause harm to the structure, climbing facility, safety climb, or any system installed on the structure

Sector B

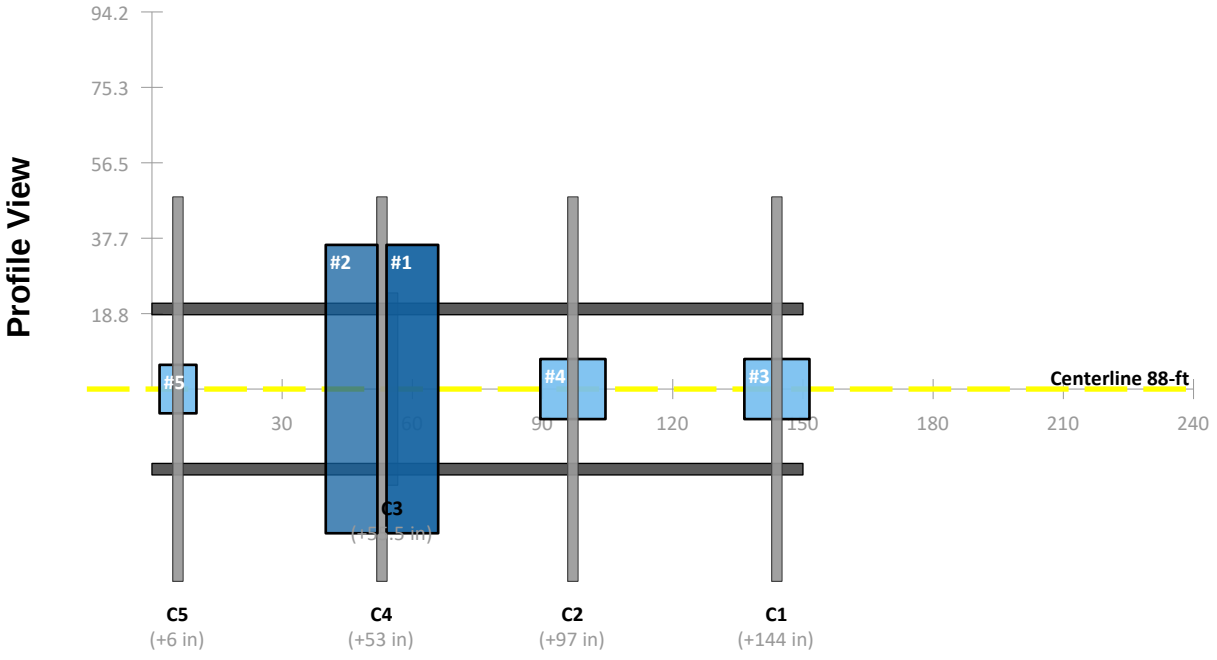


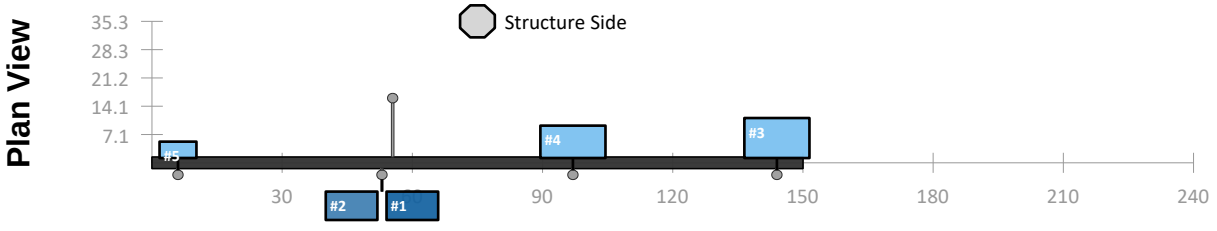


Ref ID	Type	Manufacturer	Model	Height (in)	Width (in)	Depth (in)	Center Line (ft)	Mount Pipe	Horizontal Offset (in)	Lateral Offset (in)
#1	Antenna	COMMSCOPE	NHH-65B-R2B	72.00	11.90	7.10	88.00	B4	7.00	3.00
#2	Antenna	COMMSCOPE	NHHSS-65C-R2B	72.00	11.90	7.10	88.00	B4	-7.00	3.00
#3	RRH	SAMSUNG TELECOMMUNICATIONS	B2/B66A RRH-BR049	15.00	15.00	10.00	88.00	B1	0.00	-3.00
#4	RRH	SAMSUNG TELECOMMUNICATIONS	B5/B13 RRH-BR04C	15.00	15.00	8.10	88.00	B2	0.00	-3.00
#5	RRH	SAMSUNG TELECOMMUNICATIONS	CBRS RRH	12.10	8.50	4.10	88.00	B5	0.00	-3.00

1. A 6" tolerance for proposed equipment is acceptable.
2. Contractor to verify location of existing equipment prior to installation of proposed equipment. Notify for any deviations.
3. Install shall not cause harm to the structure, climbing facility, safety climb, or any system installed on the structure

Sector C



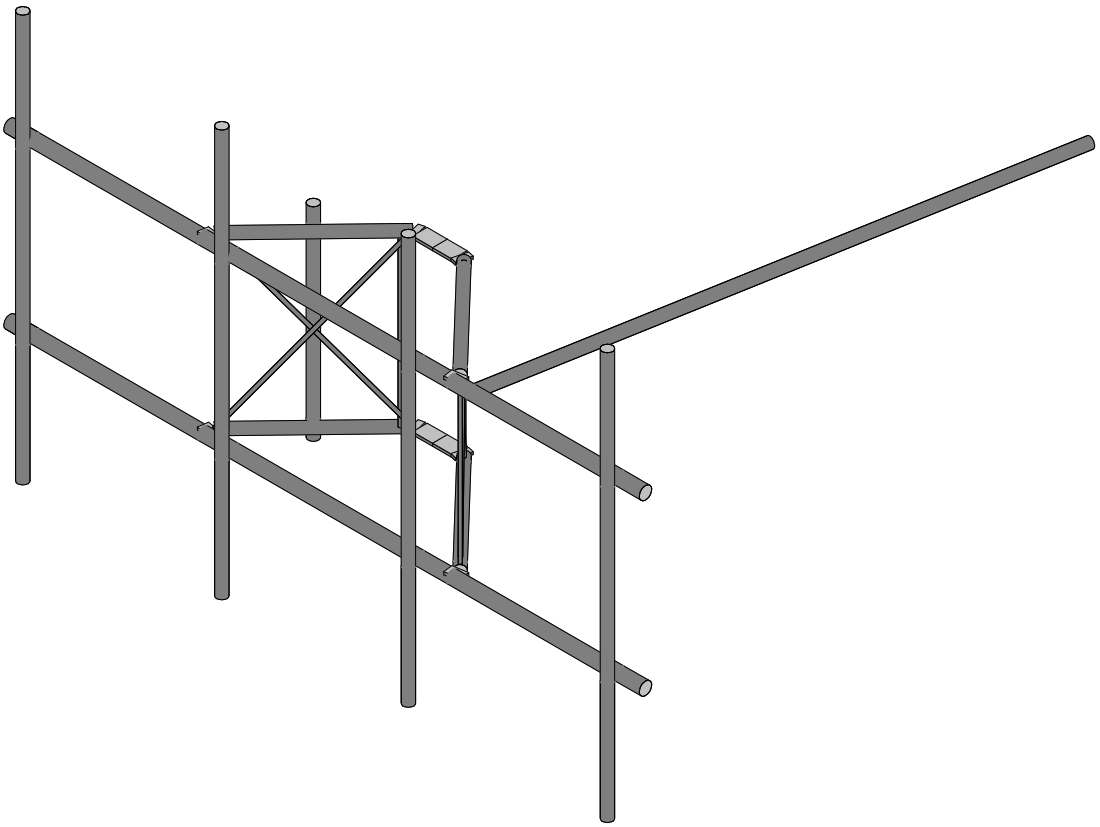


Ref ID	Type	Manufacturer	Model	Height (in)	Width (in)	Depth (in)	Center Line (ft)	Mount Pipe	Horizontal Offset (in)	Lateral Offset (in)
#1	Antenna	COMMSCOPE	NHH-65B-R2B	72.00	11.90	7.10	88.00	C4	7.00	3.00
#2	Antenna	COMMSCOPE	NHHSS-65C-R2B	72.00	11.90	7.10	88.00	C4	-7.00	3.00
#3	RRH	SAMSUNG TELECOMMUNICATIONS	B2/B66A RRH-BR049	15.00	15.00	10.00	88.00	C1	0.00	-3.00
#4	RRH	SAMSUNG TELECOMMUNICATIONS	B5/B13 RRH-BR04C	15.00	15.00	8.10	88.00	C2	0.00	-3.00
#5	RRH	SAMSUNG TELECOMMUNICATIONS	CBRS RRH	12.10	8.50	4.10	88.00	C5	0.00	-3.00

1. A 6" tolerance for proposed equipment is acceptable.
2. Contractor to verify location of existing equipment prior to installation of proposed equipment. Notify for any deviations.
3. Install shall not cause harm to the structure, climbing facility, safety climb, or any system installed on the structure

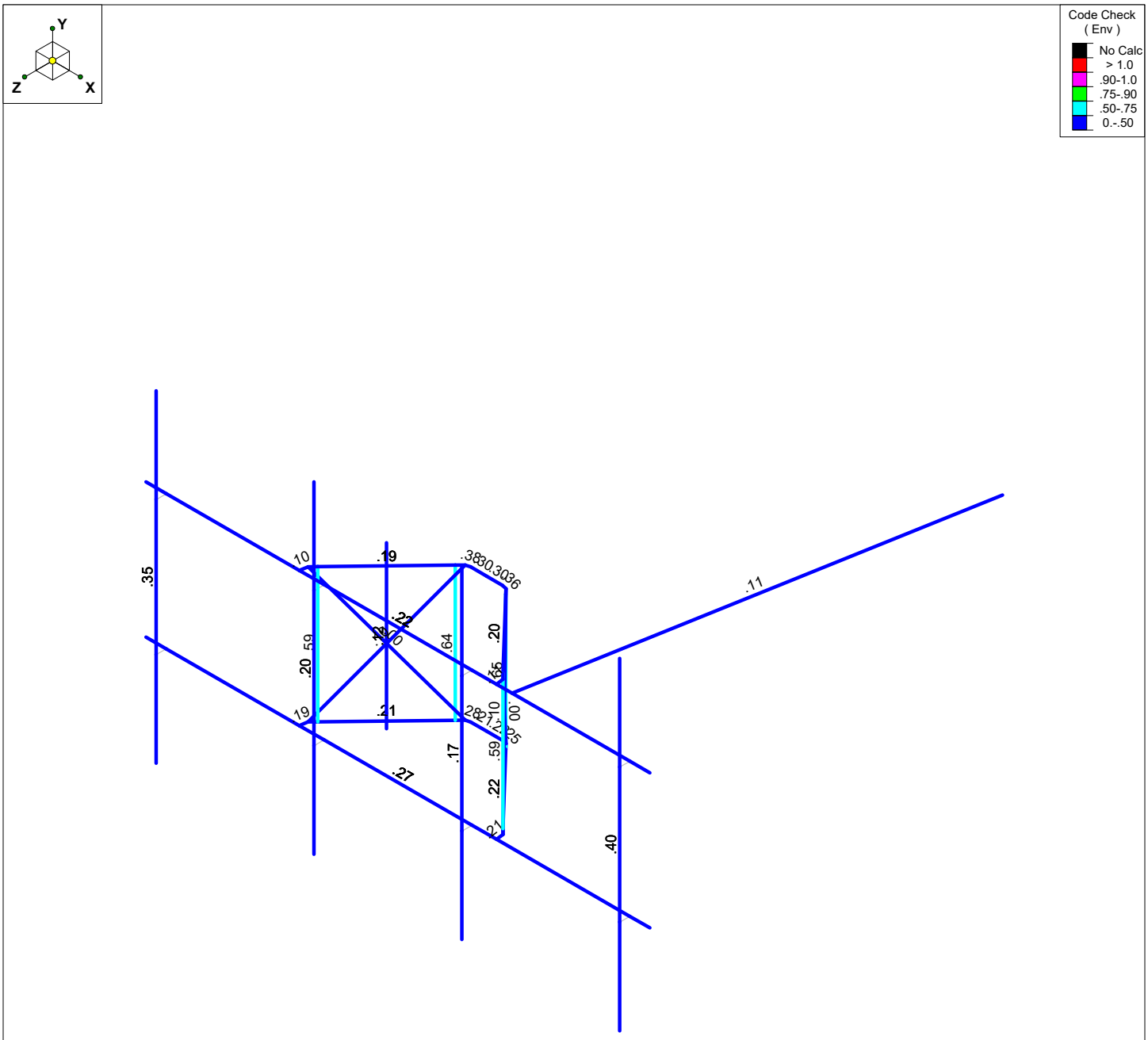
APPENDIX B

SOFTWARE ANALYSIS OUTPUT



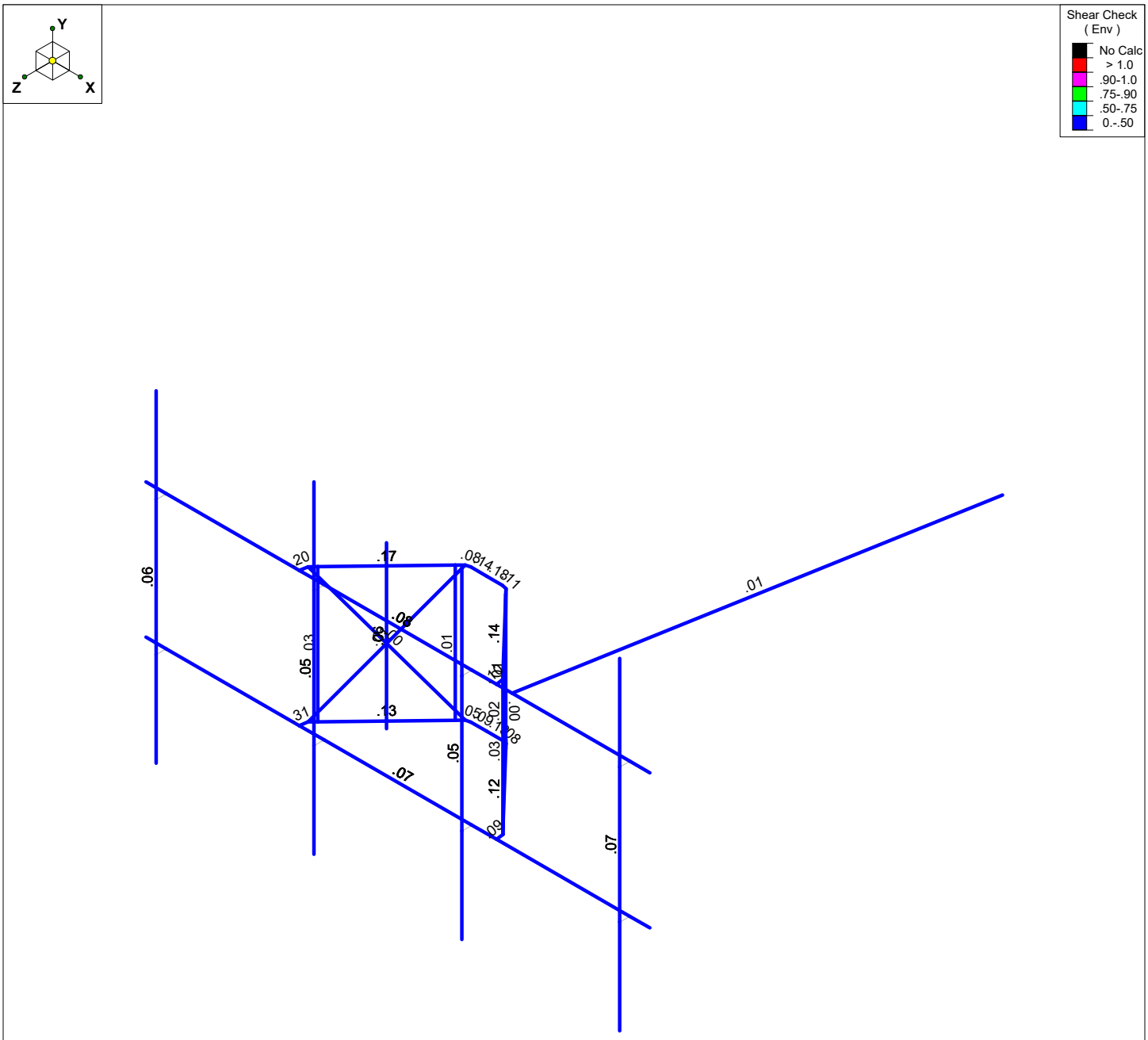
Envelope Only Solution

Paul J. Ford and Company	Southington 4 CT	SK - 1
JMF		Sept 2, 2020 at 2:06 PM
42920-0007.001.8190		42920-0007.001.8190_Client.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Paul J. Ford and Company	Southington 4 CT	SK - 2
JMF		Sept 2, 2020 at 2:06 PM
42920-0007.001.8190		42920-0007.001.8190_Client.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Paul J. Ford and Company	Southington 4 CT	SK - 3
JMF		Sept 2, 2020 at 2:06 PM
42920-0007.001.8190		42920-0007.001.8190_Client.r3d

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	None
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	None

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	58	1.2
3	A992	29000	11154	.3	.65	.49	50	1.1	58	1.2
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
6	A53 Gr. B	29000	11154	.3	.65	.49	35	1.5	60	1.2

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
1	P8	N29	N48		90	.625 x 3.5"	Beam	None	A53 Gr. B	Typical
2	P6	N25	N49		90	.625 x 3.5"	Beam	None	A53 Gr. B	Typical
3	P4	N27	N47		90	.625 x 3.5"	Beam	None	A53 Gr. B	Typical
4	P1	N23	N46		90	.625 x 3.5"	Beam	None	A53 Gr. B	Typical
5	N8	N13	N53		90	.625 x 3.5"	Beam	None	A53 Gr. B	Typical
6	N6	N12	N52		90	.625 x 3.5"	Beam	None	A53 Gr. B	Typical
7	N3	N18	N50		90	.625 x 3.5"	Beam	None	A53 Gr. B	Typical
8	N2	N17	N51		90	.625 x 3.5"	Beam	None	A53 Gr. B	Typical
9	M72	N72	N74			RIGID	None	None	RIGID	Typical
10	M71	N73	N75			RIGID	None	None	RIGID	Typical
11	M69	N66	N68			RIGID	None	None	RIGID	Typical
12	M68	N67	N69			RIGID	None	None	RIGID	Typical
13	M66	N60	N62			RIGID	None	None	RIGID	Typical
14	M65	N61	N63			RIGID	None	None	RIGID	Typical
15	M63A	N36	N72A			PIPE_2.0_HRA_H...	None	None	A53 Gr. B	Typical
16	M63	N54	N56			RIGID	None	None	RIGID	Typical
17	M62	N55	N57			RIGID	None	None	RIGID	Typical
18	M46	N62A	N17		90	.625 x 3.5"	Beam	None	A53 Gr. B	Typical
19	M45	N61A	N12		90	.625 x 3.5"	Beam	None	A53 Gr. B	Typical
20	M42	N61B	N59A			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
21	M41	N62B	N60A			RIGID	None	None	RIGID	Typical
22	J4	N18	N62A		90	.625 x 3.5"	Beam	None	A53 Gr. B	Typical
23	J2	N13	N61A		90	.625 x 3.5"	Beam	None	A53 Gr. B	Typical
24	F4	N66B	N63C			.625 Dia.	Beam	None	A53 Gr. B	Typical
25	F3	N70A	N67A			.625 Dia.	Beam	None	A53 Gr. B	Typical
26	F2	N69A	N68A			.625 Dia.	Beam	None	A53 Gr. B	Typical
27	F1	N65B	N64C			.625 Dia.	Beam	None	A53 Gr. B	Typical
28	E4	N48	N50			.75 Dia.	Beam	None	A53 Gr. B	Typical
29	E3	N53	N49			.75 Dia.	Beam	None	A53 Gr. B	Typical
30	E2	N52	N46			.75 Dia.	Beam	None	A53 Gr. B	Typical
31	E1	N51	N47			.75 Dia.	Beam	None	A53 Gr. B	Typical
32	D4	N53	N48			PIPE_2.0_HRA_H...	Beam	Pipe	A53 Gr. B	Typical
33	D3	N52	N47			PIPE_2.0_HRA_H...	Beam	Pipe	A53 Gr. B	Typical
34	D2	N50	N49			PIPE_2.0_HRA_H...	Beam	Pipe	A53 Gr. B	Typical
35	D1	N51	N46			PIPE_2.0_HRA_H...	Beam	Pipe	A53 Gr. B	Typical
36	CROSSC2	N33	N34			PIPE_2.5	Beam	Pipe	A53 Gr. B	Typical
37	CROSSC1	N31	N32			PIPE_2.5	Beam	Pipe	A53 Gr. B	Typical
38	C5	N59	N58			PIPE_2.0_HRA_H...	None	None	A53 Gr. B	Typical
39	C4	N65	N64			PIPE_2.0_HRA_H...	None	None	A53 Gr. B	Typical
40	C3	N64A	N63A			PIPE_2.0	None	None	A53 Gr. B	Typical
41	C2	N71	N70			PIPE_2.0_HRA_H...	None	None	A53 Gr. B	Typical
42	C1	N77	N76			PIPE_2.0_HRA_H...	None	None	A53 Gr. B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	P8	BenPIN					Yes				None
2	P6	BenPIN					Yes				None
3	P4	BenPIN					Yes				None
4	P1	BenPIN					Yes				None
5	N8						Yes				None
6	N6						Yes				None
7	N3						Yes				None
8	N2						Yes				None
9	M72						Yes	** NA **			None
10	M71						Yes	** NA **			None
11	M69						Yes	** NA **			None
12	M68						Yes	** NA **			None
13	M66						Yes	** NA **			None
14	M65						Yes	** NA **			None
15	M63A	BenPIN					Yes	** NA **			None
16	M63						Yes	** NA **			None
17	M62						Yes	** NA **			None
18	M46						Yes				None
19	M45						Yes				None
20	M42						Yes	** NA **			None
21	M41						Yes	** NA **			None
22	J4						Yes				None
23	J2						Yes				None
24	F4	BenPIN	BenPIN				Yes				None
25	F3	BenPIN	BenPIN				Yes				None
26	F2	BenPIN	BenPIN				Yes				None
27	F1	BenPIN	BenPIN				Yes				None
28	E4	BenPIN	BenPIN				Yes				None
29	E3	BenPIN	BenPIN			Tension ...	Yes				None
30	E2	BenPIN	BenPIN			Tension ...	Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
31	E1	BenPIN	BenPIN				Yes				None
32	D4						Yes				None
33	D3						Yes				None
34	D2						Yes				None
35	D1						Yes				None
36	CROSSC2						Yes				None
37	CROSSC1						Yes				None
38	C5						Yes	** NA **			None
39	C4						Yes	** NA **			None
40	C3						Yes	** NA **			None
41	C2						Yes	** NA **			None
42	C1						Yes	** NA **			None

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Dead	None		-1.1			10			
2	Wind 0	None					20	64		
3	Wind 30	None					20	64		
4	Wind 60	None					20	64		
5	Wind 90	None					20	64		
6	Wind 120	None					20	64		
7	Wind 150	None					20	64		
8	Ice Load	None					10	32		
9	Ice 0	None					20	64		
10	Ice 30	None					20	64		
11	Ice 60	None					20	64		
12	Ice 90	None					20	64		
13	Ice 120	None					20	64		
14	Ice 150	None					20	64		
15	Lm1	None				1				
16	Lm2	None				1				
17	Lm3	None				1				
18	Lm4	None				1				
19	Lv1	None				1				
20	Lv2	None				1				
21	Lv3	None				1				
22	Lv4	None				1				

Load Combinations

	Description	So...	P...	S...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...
1	1.4 D	Yes	Y		1	1.4																		
2	1.2 D + 1.0 Wo @ 0	Yes	Y		1	1.2	2	1																
3	1.2 D + 1.0 Wo @ 30	Yes	Y		1	1.2	3	1																
4	1.2 D + 1.0 Wo @ 60	Yes	Y		1	1.2	4	1																
5	1.2 D + 1.0 Wo @ 90	Yes	Y		1	1.2	5	1																
6	1.2 D + 1.0 Wo @ 120	Yes	Y		1	1.2	6	1																
7	1.2 D + 1.0 Wo @ 150	Yes	Y		1	1.2	7	1																
8	1.2 D + 1.0 Wo @ 180	Yes	Y		1	1.2	2	-1																
9	1.2 D + 1.0 Wo @ 210	Yes	Y		1	1.2	3	-1																
10	1.2 D + 1.0 Wo @ 240	Yes	Y		1	1.2	4	-1																
11	1.2 D + 1.0 Wo @ 270	Yes	Y		1	1.2	5	-1																
12	1.2 D + 1.0 Wo @ 300	Yes	Y		1	1.2	6	-1																
13	1.2 D + 1.0 Wo @ 330	Yes	Y		1	1.2	7	-1																
14	1.2 D + 1.0 Di + 1.0 Wi @ 0	Yes	Y		1	1.2	8	1	9	1														

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...
15	1.2 D + 1.0 Di + 1.0 Wi @...	Yes	Y		1	1.2	8	1	10	1																
16	1.2 D + 1.0 Di + 1.0 Wi @...	Yes	Y		1	1.2	8	1	11	1																
17	1.2 D + 1.0 Di + 1.0 Wi @...	Yes	Y		1	1.2	8	1	12	1																
18	1.2 D + 1.0 Di + 1.0 Wi @...	Yes	Y		1	1.2	8	1	13	1																
19	1.2 D + 1.0 Di + 1.0 Wi @...	Yes	Y		1	1.2	8	1	14	1																
20	1.2 D + 1.0 Di + 1.0 Wi @...	Yes	Y		1	1.2	8	1	9	-1																
21	1.2 D + 1.0 Di + 1.0 Wi @...	Yes	Y		1	1.2	8	1	10	-1																
22	1.2 D + 1.0 Di + 1.0 Wi @...	Yes	Y		1	1.2	8	1	11	-1																
23	1.2 D + 1.0 Di + 1.0 Wi @...	Yes	Y		1	1.2	8	1	12	-1																
24	1.2 D + 1.0 Di + 1.0 Wi @...	Yes	Y		1	1.2	8	1	13	-1																
25	1.2 D + 1.0 Di + 1.0 Wi @...	Yes	Y		1	1.2	8	1	14	-1																
26	1.2 D + 1.5 Lm1 + 1.0 W...	Yes	Y		1	1.2	15	1.5	2	.049																
27	1.2 D + 1.5 Lm1 + 1.0 W...	Yes	Y		1	1.2	15	1.5	3	.049																
28	1.2 D + 1.5 Lm1 + 1.0 W...	Yes	Y		1	1.2	15	1.5	4	.049																
29	1.2 D + 1.5 Lm1 + 1.0 W...	Yes	Y		1	1.2	15	1.5	5	.049																
30	1.2 D + 1.5 Lm1 + 1.0 W...	Yes	Y		1	1.2	15	1.5	6	.049																
31	1.2 D + 1.5 Lm1 + 1.0 W...	Yes	Y		1	1.2	15	1.5	7	.049																
32	1.2 D + 1.5 Lm1 + 1.0 W...	Yes	Y		1	1.2	15	1.5	2	.049																
33	1.2 D + 1.5 Lm1 + 1.0 W...	Yes	Y		1	1.2	15	1.5	3	.049																
34	1.2 D + 1.5 Lm1 + 1.0 W...	Yes	Y		1	1.2	15	1.5	4	.049																
35	1.2 D + 1.5 Lm1 + 1.0 W...	Yes	Y		1	1.2	15	1.5	5	.049																
36	1.2 D + 1.5 Lm1 + 1.0 W...	Yes	Y		1	1.2	15	1.5	6	.049																
37	1.2 D + 1.5 Lm1 + 1.0 W...	Yes	Y		1	1.2	15	1.5	7	.049																
38	1.2 D + 1.5 Lm2 + 1.0 W...	Yes	Y		1	1.2	16	1.5	2	.049																
39	1.2 D + 1.5 Lm2 + 1.0 W...	Yes	Y		1	1.2	16	1.5	3	.049																
40	1.2 D + 1.5 Lm2 + 1.0 W...	Yes	Y		1	1.2	16	1.5	4	.049																
41	1.2 D + 1.5 Lm2 + 1.0 W...	Yes	Y		1	1.2	16	1.5	5	.049																
42	1.2 D + 1.5 Lm2 + 1.0 W...	Yes	Y		1	1.2	16	1.5	6	.049																
43	1.2 D + 1.5 Lm2 + 1.0 W...	Yes	Y		1	1.2	16	1.5	7	.049																
44	1.2 D + 1.5 Lm2 + 1.0 W...	Yes	Y		1	1.2	16	1.5	2	.049																
45	1.2 D + 1.5 Lm2 + 1.0 W...	Yes	Y		1	1.2	16	1.5	3	.049																
46	1.2 D + 1.5 Lm2 + 1.0 W...	Yes	Y		1	1.2	16	1.5	4	.049																
47	1.2 D + 1.5 Lm2 + 1.0 W...	Yes	Y		1	1.2	16	1.5	5	.049																
48	1.2 D + 1.5 Lm2 + 1.0 W...	Yes	Y		1	1.2	16	1.5	6	.049																
49	1.2 D + 1.5 Lm2 + 1.0 W...	Yes	Y		1	1.2	16	1.5	7	.049																
50	1.2 D + 1.5 Lm3 + 1.0 W...	Yes	Y		1	1.2	17	1.5	2	.049																
51	1.2 D + 1.5 Lm3 + 1.0 W...	Yes	Y		1	1.2	17	1.5	3	.049																
52	1.2 D + 1.5 Lm3 + 1.0 W...	Yes	Y		1	1.2	17	1.5	4	.049																
53	1.2 D + 1.5 Lm3 + 1.0 W...	Yes	Y		1	1.2	17	1.5	5	.049																
54	1.2 D + 1.5 Lm3 + 1.0 W...	Yes	Y		1	1.2	17	1.5	6	.049																
55	1.2 D + 1.5 Lm3 + 1.0 W...	Yes	Y		1	1.2	17	1.5	7	.049																
56	1.2 D + 1.5 Lm3 + 1.0 W...	Yes	Y		1	1.2	17	1.5	2	.049																
57	1.2 D + 1.5 Lm3 + 1.0 W...	Yes	Y		1	1.2	17	1.5	3	.049																
58	1.2 D + 1.5 Lm3 + 1.0 W...	Yes	Y		1	1.2	17	1.5	4	.049																
59	1.2 D + 1.5 Lm3 + 1.0 W...	Yes	Y		1	1.2	17	1.5	5	.049																
60	1.2 D + 1.5 Lm3 + 1.0 W...	Yes	Y		1	1.2	17	1.5	6	.049																
61	1.2 D + 1.5 Lm3 + 1.0 W...	Yes	Y		1	1.2	17	1.5	7	.049																
62	1.2 D + 1.5 Lm4 + 1.0 W...	Yes	Y		1	1.2	18	1.5	2	.049																
63	1.2 D + 1.5 Lm4 + 1.0 W...	Yes	Y		1	1.2	18	1.5	3	.049																
64	1.2 D + 1.5 Lm4 + 1.0 W...	Yes	Y		1	1.2	18	1.5	4	.049																
65	1.2 D + 1.5 Lm4 + 1.0 W...	Yes	Y		1	1.2	18	1.5	5	.049																
66	1.2 D + 1.5 Lm4 + 1.0 W...	Yes	Y		1	1.2	18	1.5	6	.049																
67	1.2 D + 1.5 Lm4 + 1.0 W...	Yes	Y		1	1.2	18	1.5	7	.049																
68	1.2 D + 1.5 Lm4 + 1.0 W...	Yes	Y		1	1.2	18	1.5	2	-.049																
69	1.2 D + 1.5 Lm4 + 1.0 W...	Yes	Y		1	1.2	18	1.5	3	-.049																
70	1.2 D + 1.5 Lm4 + 1.0 W...	Yes	Y		1	1.2	18	1.5	4	-.049																
71	1.2 D + 1.5 Lm4 + 1.0 W...	Yes	Y		1	1.2	18	1.5	5	-.049																

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...
72	1.2 D + 1.5 Lm4 + 1.0 W...	Yes	Y		1	1.2	18	1.5	6	-.049														
73	1.2 D + 1.5 Lm4 + 1.0 W...	Yes	Y		1	1.2	18	1.5	7	-.049														
74	1.2 D + 1.5 Lv1	Yes	Y		1	1.2	19	1.5																
75	1.2 D + 1.5 Lv2	Yes	Y		1	1.2	20	1.5																
76	1.2 D + 1.5 Lv3	Yes	Y		1	1.2	21	1.5																
77	1.2 D + 1.5 Lv4	Yes	Y		1	1.2	22	1.5																
78	1.0 D	Yes	Y		1	1																		

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N72A	max	180.221	12	53.79	24	796.46	6	0	78	0	78	0	78
2		min	-179.917	6	20.044	78	-796.885	12	0	1	0	1	0	1
3	N62A	max	1183.082	32	1256.015	14	829.529	13	0	78	0	78	0	78
4		min	-1421.164	65	504.902	78	-2026.096	7	0	1	0	1	0	1
5	N61A	max	1424.689	71	729.367	19	1421.065	2	0	78	0	78	0	78
6		min	-1211.978	29	289.4	78	-223.005	8	0	1	0	1	0	1
7	Totals:	max	1155.857	11	2031.947	22	1647.596	2						
8		min	-1155.858	5	814.346	78	-1647.596	8						

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

	Member	Shape	Code ...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc [...	phi*Pnt [lb]	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	F3	.625 Dia.	.650	35.417	72	.012	0		6	1057.552	9664.074	.101	.101	1...	H1-1a
2	F2	.625 Dia.	.639	35.417	37	.009	0		6	1057.552	9664.074	.101	.101	1...	H1-1a
3	F1	.625 Dia.	.585	35.417	32	.026	0		72	1057.552	9664.074	.101	.101	1	H1-1a
4	F4	.625 Dia.	.585	35.417	73	.027	0		72	1057.552	9664.074	.101	.101	1...	H1-1a
5	C1	PIPE_2.0_HRA...	.404	28	67	.067	28		72	14916.096	32130	1.872	1.872	4...	H1-1b
6	N2	.625 x 3.5"	.380	1.396	37	.082	1.396	y	71	68695.433	68906.25	.897	5.024	1...	H1-1b
7	N3	.625 x 3.5"	.363	1.393	73	.108	0	y	70	68696.261	68906.25	.897	5.024	1...	H1-1b
8	C5	PIPE_2.0_HRA...	.347	28	32	.057	28		32	14916.096	32130	1.872	1.872	4...	H1-1b
9	J4	.625 x 3.5"	.300	4.725	67	.181	0	y	72	66529.788	68906.25	.897	5.024	2.2	H1-1b
10	M46	.625 x 3.5"	.299	0	19	.144	0	y	73	66529.788	68906.25	.897	5.024	1...	H1-1b
11	N6	.625 x 3.5"	.276	1.396	36	.045	0	y	32	68695.433	68906.25	.897	5.024	1...	H1-1b
12	CROSSC1	PIPE_2.5	.269	104.6...	72	.069	104.6...		73	14558.792	50715	3.596	3.596	2...	H1-1b
13	N8	.625 x 3.5"	.251	1.393	72	.076	0	y	73	68696.261	68906.25	.897	5.024	1...	H1-1b
14	D4	PIPE_2.0_HRA...	.222	2.066	70	.115	33.054		73	29336.067	32130	1.872	1.872	1...	H1-1b
15	J2	.625 x 3.5"	.222	4.725	62	.126	4.725	y	73	66529.788	68906.25	.897	5.024	2.2	H1-1b
16	CROSSC2	PIPE_2.5	.218	103.1...	73	.076	104.6...		6	14558.792	50715	3.596	3.596	2...	H1-1b
17	M45	.625 x 3.5"	.214	0	62	.086	0	y	70	66529.788	68906.25	.897	5.024	1	H1-1b
18	D3	PIPE_2.0_HRA...	.208	2.066	36	.125	0		37	29335.75	32130	1.872	1.872	1...	H1-1b
19	P8	.625 x 3.5"	.208	2.284	72	.090	2.284	y	37	68343.293	68906.25	.897	5.024	1...	H1-1b
20	D2	PIPE_2.0_HRA...	.203	0	63	.139	1.722		72	29336.067	32130	1.872	1.872	2...	H1-1b
21	C4	PIPE_2.0_HRA...	.201	28	8	.053	68		13	14916.096	32130	1.872	1.872	3...	H1-1b
22	P4	.625 x 3.5"	.194	2.284	37	.310	2.284	y	36	68343.293	68906.25	.897	5.024	1...	H1-1b
23	D1	PIPE_2.0_HRA...	.191	0	37	.171	1.722		36	29335.75	32130	1.872	1.872	2...	H1-1b
24	C2	PIPE_2.0_HRA...	.167	68	66	.049	68		6	14916.096	32130	1.872	1.872	4...	H1-1b
25	C3	PIPE_2.0	.125	44	32	.057	4		72	26521.424	32130	1.872	1.872	2...	H1-1b
26	P6	.625 x 3.5"	.114	2.284	66	.102	2.284	y	61	68343.293	68906.25	.897	5.024	1...	H1-1b
27	M63A	PIPE_2.0_HRA...	.112	63	5	.006	126		23	8922.084	32130	1.872	1.872	1...	H1-1b
28	E1	.75 Dia.	.102	25.946	16	.013	51.891		6	1303.092	13916.259	.174	.174	1...	H1-1b
29	E4	.75 Dia.	.101	25.945	24	.017	51.89		72	1303.155	13916.259	.174	.174	1...	H1-1b
30	P1	.625 x 3.5"	.100	2.284	32	.200	2.284	y	32	68343.293	68906.25	.897	5.024	1...	H1-1b
31	E3	.75 Dia.	.000	0	78	.000	0		78	1303.155	13916.259	.174	.174	1	H1-1a
32	E2	.75 Dia.	.000	0	78	.000	0		78	1303.092	13916.259	.174	.174	1	H1-1a

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
No Data to Print ...						

PAUL J. FORD & COMPANY
250 E Broad St, Ste 600 • Columbus, OH 43215
Phone 614.221.6679 www.pauljford.com

Project #
By
Date: 09/02/20
v3.6, Effective 08/10/2020

MOUNT TO TOWER CONNECTION CHECKS-LRFD

TIA Rev.	**H**	**AISC**	**15th**
Mount Type	**1-Sector**	**Checks**	**Bolts**

REACTIONS FROM RISA-3D

NODE	LC	Horizontal Shear (k)	Vertical Shear (k)	Axial along member(k)	Moment about horizontal axis (ft-k)	Moment about Vertical axis (ft-k)	Torque (ft-k)
N62A	**Envelope**	**1.42**	**1.26**	**2.03**	**0.00**	**0.00**	**0.00**

Pinned condition-no moment and torque to be considered

Bolt Information	Type	Dia (in)	Quantity	Vertical Bolt spacing (D) (in)	Horizontal Bolt spacing (B) (in)
	A325N	**0.75**	**1**	**2**	**2**

CHECKS	Forces	Strength	**Rating**
TENSION (K)	2.03	29.8	**6.8%**
		Reduced Tensile Rating	**-**
SHEAR (k)	1.90	17.9	**10.6%**

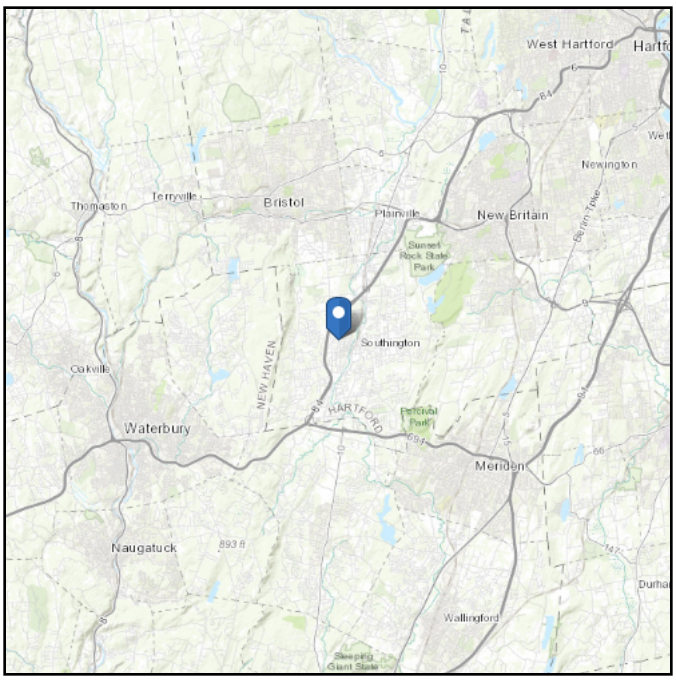
Note: Tension reduction not required if tension or shear capacity < 30%

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 312.85 ft (NAVD 88)
Latitude: 41.604706
Longitude: -72.893897



Wind

Results:

Wind Speed:	127 Vmph	← 135 Vmph REQUIRED BY JURISDICTION
10-year MRI	75 Vmph	
25-year MRI	84 Vmph	
50-year MRI	90 Vmph	
100-year MRI	97 Vmph	

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

Date Accessed: Mon Aug 31 2020

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 3% probability of exceedance in 50 years (annual exceedance probability = 0.000588, MRI = 1,700 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.

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

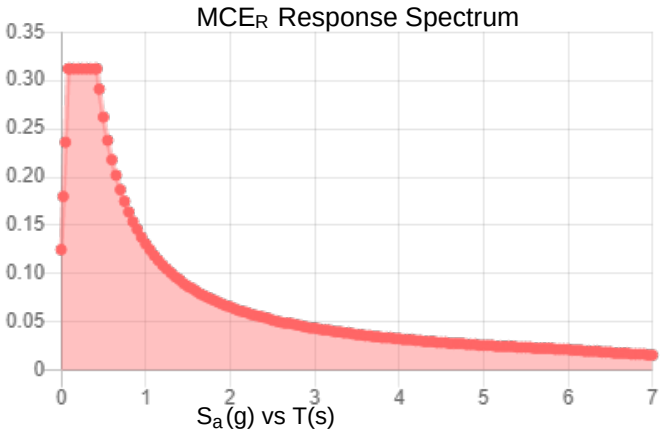
Seismic

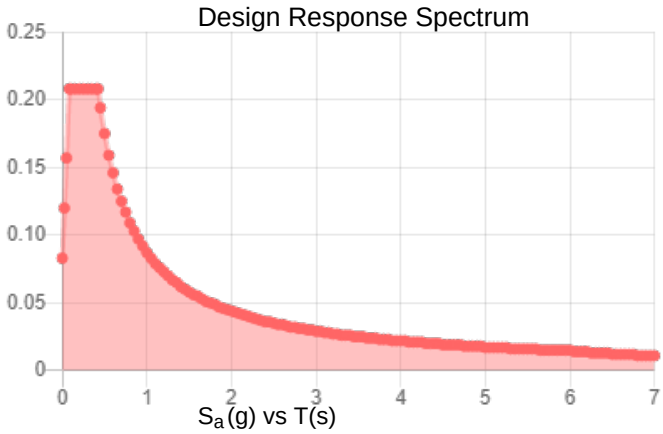
Site Soil Class: D - Default (see Section 11.4.3)

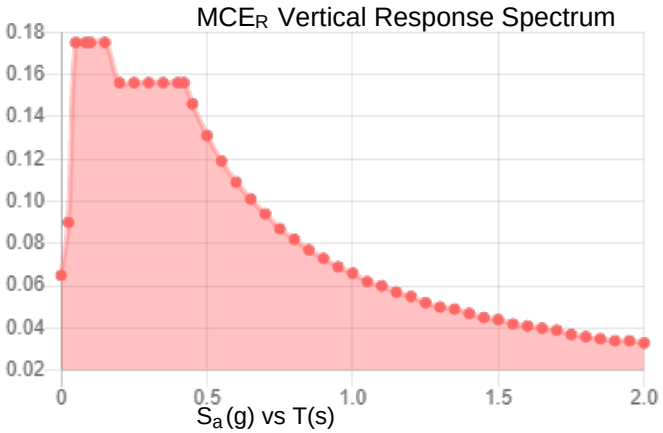
Results:

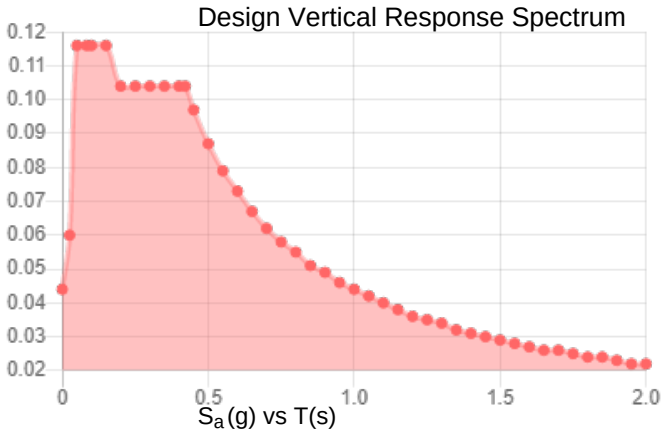
S_S :	0.195	S_{D1} :	0.087
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.107
F_v :	2.4	PGA_M :	0.17
S_{MS} :	0.312	F_{PGA} :	1.586
S_{M1} :	0.131	I_e :	1.25
S_{DS} :	0.208	C_v :	0.7

Seismic Design Category B









Data Accessed: Mon Aug 31 2020

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Mon Aug 31 2020

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.

APPENDIX C

POST MODIFICATION INSPECTION (PMI) REQUIREMENTS FOR DESKTOP REVIEW

Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor

Purpose – to provide PJF the proper documentation in order to complete the required Mount Desktop review of the Post Modification Inspection Report.

- Contractor is responsible for making certain the photos provided as noted below provide confirmation that the modification was completed in accordance with the modification drawings.
- Contractor shall relay any data that can impact the performance of the mount or the mount modification, this includes safety issues.

Base Requirements:

- Provide "as built drawings" showing contractor's name, preparer's signature, and date. Any deviations from the drawing (proposed modification) must be shown.
- Notation that all hardware was properly installed, and the existing hardware was inspected for any issues.
- Verification that loading is as communicated in the modification drawings. NOTE if loading is different than what is conveyed in the modification drawing contact PJF immediately.
- Each photo should be time and date stamped.
- Photos should be high resolution and submitted in a Zip File and should be organized in the file structure as depicted in Schedule A attached.
- Any special photos outside of the standard requirements will be indicated on the drawings.
- Contractor shall ensure that the safety climb wire rope is supported and not adversely impacted by the install of the modification components. This may involve the install of wire rope guides, or other items to protect the wire rope.
- The photos in the file structure should be uploaded to https://vzwsmart.com as depicted on the drawings.

Photo Requirements:

- *Base and "During Installation Photos"*
  - Base pictures include
    - Photo of Gate Signs showing the tower owner, site name, and number.
    - Photo of carrier shelter showing the carrier site name and number if available.
    - Photos of the galvanizing compound and/or paint used (if applicable), clearly showing the label and name.
  - "During Installation" Photos if provided – must be placed only in this folder
- *Photos taken at ground level*
  - Overall tower structure before and after installation of the modifications
  - Photos of the appropriate mount before and after installation of the modifications; if the mounts are at different rad elevations, pictures must be provided for all elevations that the modifications were installed.
- *Photos taken at Mount Elevation*
  - Photos showing each individual sector before and after installation of modifications. Each entire sector must be in one photo to show in the inter-connection of members.
  - Close-up photos of each installed modification per the modification drawings; pictures should also include connection hardware (U-bolts, bolts, nuts, all-threaded rods, etc.)

- Photos showing the measurements of the installed modification member sizes (i.e. lengths, widths, depths, diameters, thicknesses).
- Photos showing the elevation or distances of the installed modifications from the appropriate reference locations shown in the modification drawings.
- Photos showing the installed modifications onto the tower with tape drop measurements (if applicable) (i.e. ring/collar mounts, tie-backs, V-bracing kits, etc.); if the existing mount elevations needs to be changed according to the modification drawings, a tape drop measurement shall be provided before the elevation change.
- Photos showing the safety climb wire rope above and below the mount prior to modification.
- Photos showing the safety climb wire rope above and below the mount post modification.

Antenna and equipment placement and Geometry Certification:

- The contractor must certify that the antenna and equipment placement and geometry is in accordance with the antenna placement diagrams as included in this mount analysis.

☐ The contractor certifies per photos that the equipment on the mount is as depicted on the antenna placement diagrams as included in this mount analysis.

☐ The contractor notes that the equipment on the mount is not in accordance with the antenna placement diagrams and has accordingly marked up the diagrams or provided a diagram outlining the differences.

Certifying Individual: Company _____

Name _____

Signature _____

Schedule A – Photo & Document File Structure

- VzW Site Number / Name
  - Base & "During Installation" Photos
  - Pre-Installation Photos
    - Alpha
    - Beta
    - Gamma
    - Ground Level
    - Tape Drop
  - Post-Installation Photos
    - Alpha
    - Beta
    - Gamma
    - Ground Level
    - Tape Drop
  - Material Certification – Submission of this document including executed certification on Page 2
  - Specific Required Additional Photos
  - Required Additional Photos

Special Instructions / Validation as required from the MA or any other information the contractor deems necessary to share that was identified:

Issue: _____

_____

_____

Response: _____

_____

_____