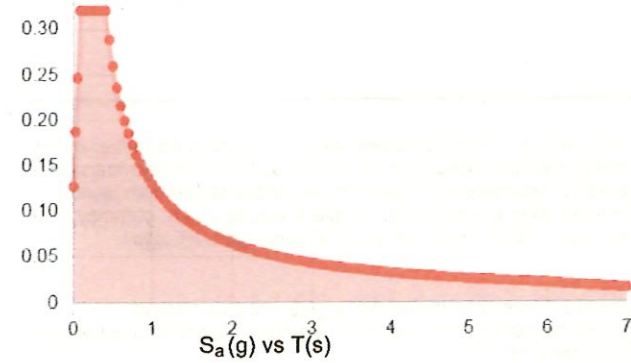


Site Soil Class: D - Stiff Soil

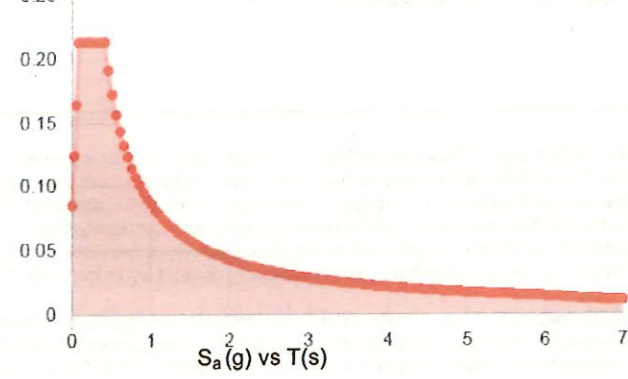
Results:

S_s :	0.2	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.111
F_v :	2.4	PGA _M :	0.175
S_{MS} :	0.321	F_{PGA} :	1.578
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.214	C_v :	0.701

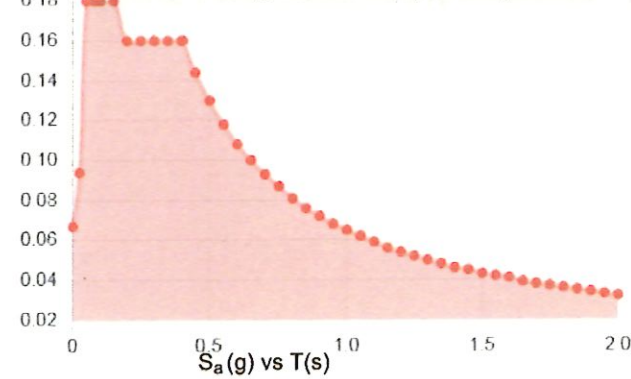
MCE_R Response Spectrum
Seismic Design Category: B



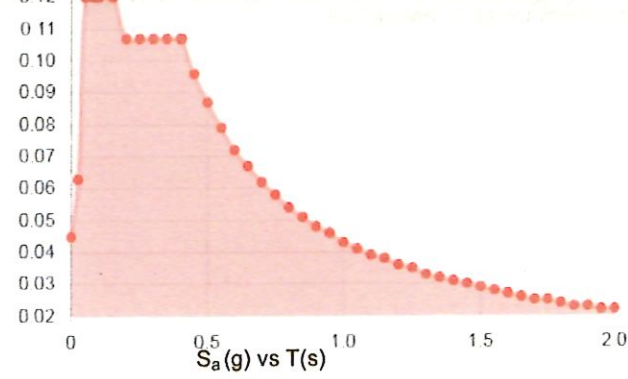
Design Response Spectrum



MCE_R Vertical Response Spectrum



Design Vertical Response Spectrum



Data Accessed: Fri Aug 29 2025

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: Fri Aug 29 2025

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

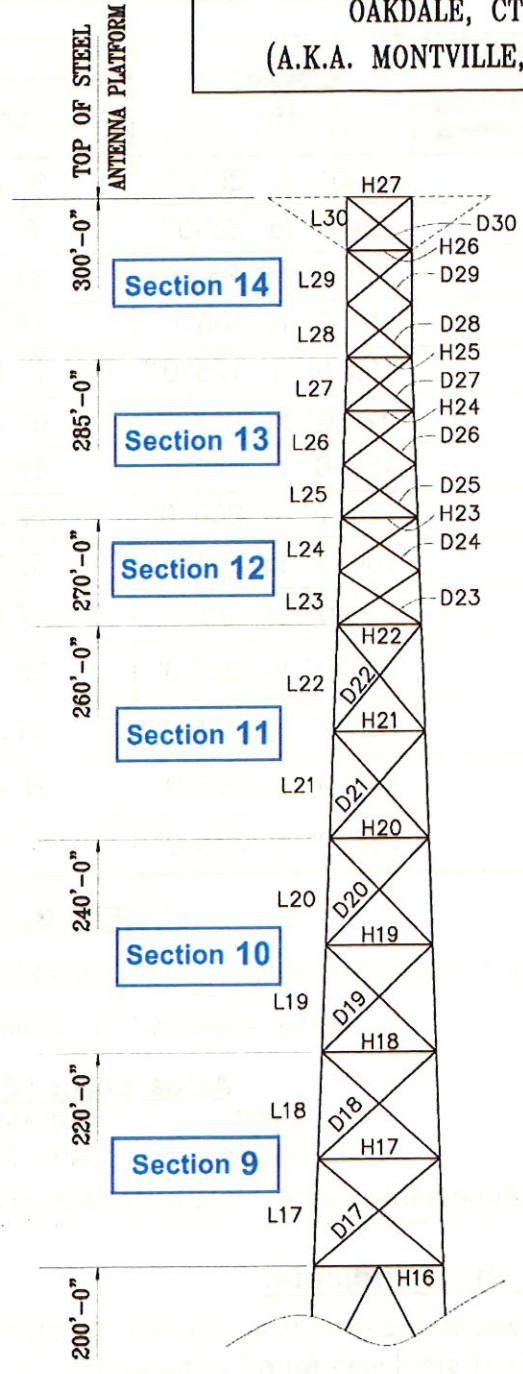
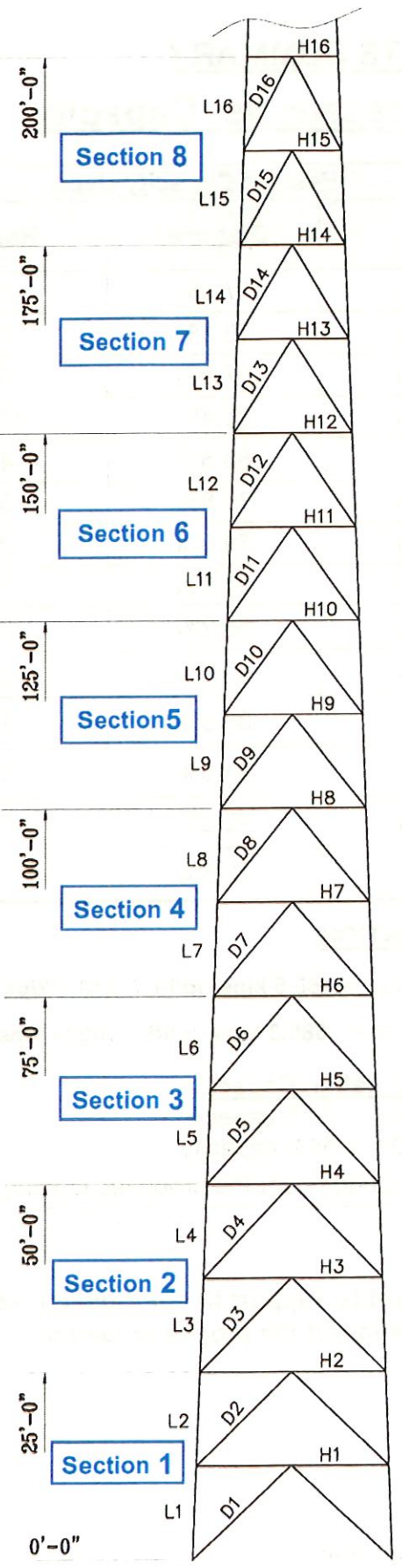
Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from 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.

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300'-0" SELF-SUPPORTED TOWER
ANALYSIS MODEL FOR
OAKDALE, CT
(A.K.A. MONTVILLE, CT)



TOP OF
TOWER
BASE PL.

ANALYSIS RESULTS SUMMARY
Tower Component Stresses vs. Capacity

Section No. <i>(see Analysis Model for section locations)</i>	Elevation (ft)	Percent Capacity Used		
		Leg	Diagonal	Horizontal
1	0'-0" to 25'-0"	68.7%	77.6%	84.2%
2	25'-0" to 50'-0"	71.3%	73.1%	75.9%
3	50'-0" to 75'-0"	63.3%	67.5%	63.5%
4	75'-0" to 100'-0"	75.3%	92.4%	51.9%
5	100'-0" to 125'-0"	71.8%	83.8%	40.3%
6	125'-0" to 150'-0"	67.7%	76.6%	31.5%
7	150'-0" to 175'-0"	62.5%	70.0%	24.3%
8	175'-0" to 200'-0"	62.9%	54.2%	15.3%
9	200'-0" to 220'-0"	52.9%	58.2%	39.5%
10	220'-0" to 240'-0"	47.1%	47.0%	29.2%
11	240'-0" to 260'-0"	35.4%	38.8%	19.5%
12	260'-0" to 270'-0"	34.3%	24.0%	10.0%
13	270'-0" to 285'-0"	26.4%	22.2%	10.0%
14	285'-0" to 300'-0"	15.6%	12.5%	10.0%

TOWER FOUNDATION

Foundation Loads (with Load factor) from Current Analysis = **460.5 kips uplift / 540.1 kips downward**
 Foundation Capacity (per calculations) = **585.3 kips uplift / 1000+ kips downward**

Actual Loads / Foundation Capacity

Uplift 460K/545K = 85% capacity
 Downward 540K/1000K = 54% capacity

Foundation was found to be theoretically adequate for the proposed loading

Results above indicate:

- The tower foundation was found to be sufficient to support the proposed loading.
- The tower steel was found to be sufficient to support the proposed loading.



Communication Structures Engineering, Inc.

5579-B Chamblee Dunwoody Rd. / Suite 517 / Dunwoody GA (770) 951-8080

 * TOWER - Analysis and Design - Copyright Power Line Systems, Inc. *

Project Name : Oakdale Site #4048 Verizon Install
 Project Notes: Existing 300 Feet Self Supported Tower
 Project File : c:\csel\analysis\analysis\2025\montville, ct 08312025\oakdale ct 08312025.tow
 Date run : 4:02:51 PM August 28, 2025
 Licensed to : Communication Structures Engineering Inc.

Successfully performed nonlinear analysis

The model has 0 warnings.

Maximum element usage is 92.43% for Angle "g155x" in load case "WIND 0 COMB 1"

ANSI/TIA 222-H Load Options:
 Structure Class (Risk) 2
 Importance Factor 1.00
 Topography Exposure Category B
 Topographic Category 1 (Kz1 always 1.0)
 Ground Elevation 600-ft AMSL
 Seismic Site Class D
 Spectral Response SDS 0.215
 Spectral Response SD1 0.090
 Seismic Ss: 0.200 / S1 0.054

Structure Height Summary (used for calculating wind/ice adjust with height):
 Structure height above ground 300.00 (ft)
 Elevation of structure bottom for wind height adjustment: 0.00 (ft)
 Structure height for structure gust response factor: 300.00 (ft)
 Structure gust response factor, Gf: 0.8500
 Wind direction probability factor, Kd, for structures: 0.85, for appurtenances: 0.85
 Guy installation temperature: 32.00 (deg F)
 Tower Type: Rectangular Latticed

Rev. H Load Cases:

Description	Load Case Dead Load Wind Load Strength Factor		Load Case Type	Wind Speed (mph)	Wind Dir. (Deg)	Start Elevation (ft)	Mean Wind Stop Elevation (ft)	Ice Thick. (in)	Ice Density (lbs/ft ³)	Ice Temperature (deg F)
	Factor	Factor								
WIND 0 COMB 1	1.2000	1.0000	Regular	125.000	0	0.00	0.00	0.0000	0.0000	60.0
WIND 45 COMB 1	1.2000	1.0000	Regular	125.000	45	0.00	0.00	0.0000	0.0000	60.0
WIND 0 COMB 2	0.9000	1.0000	Regular	125.000	0	0.00	0.00	0.0000	0.0000	60.0
WIND 45 COMB 2	0.9000	1.0000	Regular	125.000	45	0.00	0.00	0.0000	0.0000	60.0
WIND 0 ICE COMB 3	1.2000	1.0000	Regular	50.000	0	0.00	0.00	1.0000	56.0000	10.0
WIND 45 ICE COMB 3	1.2000	1.0000	Regular	50.000	45	0.00	0.00	1.0000	56.0000	10.0

Sections Information:

Section Label	Top Z (ft)	Bottom Z (ft)	Joint Count	Member Count	Top Width (ft)	Bottom Width (ft)	Gross Area (ft ²)	Face Adjust Factor	Area Adjust Factor	Dead Load Factor
1	300.000	285.000	16	52	6.00	6.00	90.00	1.0000	1.0000	2.940
2	285.000	260.000	24	75	6.00	7.72	171.50	1.0000	1.0000	1.610
3	260.000	240.000	12	34	7.72	9.18	168.98	1.1400	1.0000	1.360
4	240.000	220.000	12	34	9.18	10.64	198.14	1.1500	1.0000	1.360
5	220.000	200.000	16	41	10.64	12.09	227.30	1.1600	1.0000	1.300
6	200.000	175.000	24	50	12.09	13.92	325.12	1.2000	1.0000	1.280
7	175.000	150.000	24	50	13.92	15.74	370.70	1.1600	1.0000	1.190
8	150.000	125.000	24	50	15.74	17.56	416.27	1.1600	1.0000	1.310
9	125.000	100.000	24	50	17.56	19.39	461.85	1.1500	1.0000	1.360
10	100.000	75.000	24	50	19.39	21.21	507.43	1.1500	1.0000	1.320
11	75.000	50.000	24	50	21.21	23.03	553.00	1.1800	1.0000	1.170
12	50.000	25.000	24	50	23.03	24.85	598.58	1.1800	1.0000	1.340
13	25.000	0.000	20	37	24.85	26.68	644.15	1.1800	1.0000	1.330

Equipment Library:

Comment: equipment loading properties below are those applicable per joint, These are not the total for each equipment item

Equipment Property Label	Stock Weight (lbs)	Wind Area (ft ²)	Ice Area (ft ²)	Shape or Drag Diameter Height (ft)	Antenna Type Coef.
ANTENNA PLATFORM	990.0	22.00	0.00	1.00	0.00
ACCESS PLATFORM	533.0	13.00	0.00	1.00	0.00
LIGHT PLATFORM 1	150.0	4.00	0.00	1.00	0.00
LIGHT PLATFORM 2	200.0	5.00	0.00	1.00	0.00
USCG ADD090S ANT	100.0	10.00	0.00	1.00	0.00
USGS SRL235-2 ANT	75.0	5.00	0.00	1.00	0.00
USGS SRL335-2 ANT	75.0	5.00	0.00	1.00	0.00
OMNI ANT	10.0	2.00	0.00	1.00	0.00
1-MOBILE INSTALL 8 JVS	200.0	15.35	0.00	1.00	0.00
VERIZON WIRELESS	400.0	28.52	0.00	1.00	0.00

Equipment Connectivity:

Equipment Attach Label	Equipment Property Label	Antenna Orientation Set	Antenna Angle (deg)
AP-1	ANTENNA PLATFORM		0.00
AP-2	ANTENNA PLATFORM		0.00
AP-3	ANTENNA PLATFORM		0.00
AP-4	ANTENNA PLATFORM		0.00
ACL-1	ACCESS PLATFORM		0.00
ACL-2	ACCESS PLATFORM		0.00
ACL-3	ACCESS PLATFORM		0.00
ACL-4	ACCESS PLATFORM		0.00
LP1-1	LIGHT PLATFORM 1		0.00
LP1-2	LIGHT PLATFORM 1		0.00
LP1-3	LIGHT PLATFORM 1		0.00
LP1-4	LIGHT PLATFORM 1		0.00
LP2-1	LIGHT PLATFORM 2		0.00
LP2-2	LIGHT PLATFORM 2		0.00
LP2-3	LIGHT PLATFORM 2		0.00
LP2-4	LIGHT PLATFORM 2		0.00

USCG-1	59P	USCG AUL090S ANT	0.00
USCG-2	59X	USCG AUL090S ANT	0.00
USCG-3	59XX	USCG AUL090S ANT	0.00
USCG-4	59Y	USCG AUL090S ANT	0.00
USCG-5	55P	USGS SRL235-2 ANT	0.00
USCG-6	55X	USGS SRL235-2 ANT	0.00
USCG-7	55XX	USGS SRL235-2 ANT	0.00
USCG-8	55Y	USGS SRL235-2 ANT	0.00
USCG-9	54P	USGS SRL335-2 ANT	0.00
USCG-10	54X	USGS SRL335-2 ANT	0.00
USCG-11	54XX	USGS SRL335-2 ANT	0.00
USCG-12	54Y	USGS SRL335-2 ANT	0.00
USCG-13	51P	USGS SRL235-2 ANT	0.00
USCG-14	51X	USGS SRL235-2 ANT	0.00
USCG-15	51XX	USGS SRL235-2 ANT	0.00
USCG-16	51Y	USGS SRL235-2 ANT	0.00
OMNI-1	63P	OMNI ANT	0.00
OMNI-2	63X	OMNI ANT	0.00
OMNI-3	63XX	OMNI ANT	0.00
OMNI-4	63Y	OMNI ANT	0.00
OMNI-5	23P	OMNI ANT	0.00
OMNI-6	23X	OMNI ANT	0.00
OMNI-7	23XX	OMNI ANT	0.00
OMNI-8	23Y	OMNI ANT	0.00
OMNI-9	23P	OMNI ANT	0.00
OMNI-10	23X	OMNI ANT	0.00
OMNI-11	23XX	OMNI ANT	0.00
OMNI-12	23Y	OMNI ANT	0.00
TM-1	44P	T-MOBILE INSTALL 8 JTS	0.00
TM-2	44X	T-MOBILE INSTALL 8 JTS	0.00
TM-3	44XX	T-MOBILE INSTALL 8 JTS	0.00
TM-4	44Y	T-MOBILE INSTALL 8 JTS	0.00
TM-5	41P	T-MOBILE INSTALL 8 JTS	0.00
TM-6	41X	T-MOBILE INSTALL 8 JTS	0.00
TM-7	41XX	T-MOBILE INSTALL 8 JTS	0.00
TM-8	41Y	T-MOBILE INSTALL 8 JTS	0.00
V1	38P	VERIZON WIRELESS	0.00
V2	38X	VERIZON WIRELESS	0.00
V3	38XX	VERIZON WIRELESS	0.00
V4	38Y	VERIZON WIRELESS	0.00

Linear Appurtenances:

Description	From	To	Quantity	Shape	Width or Diameter	Perimeter	Unit Weight	Incl. in Face	Incl. in Zone	Incl. in Wind Load
					(in)	(in)	(lbs/ft)			
CLIMBING LADDER			0	300		6	20	10	Yes	Yes
USCC COAX 1			3	280		1.09	0	0.33	Yes	Yes
USCC COAX 2			3	255		1.09	0	0.33	Yes	Yes
USCC COAX 3			3	220		1.09	0	0.33	Yes	Yes
OMNI-1			3	300		0.63	0	0.15	Yes	Yes
OMNI-2			3	100		1.09	0	0.33	Yes	Yes
T-MOBILE LADDER			3	180		3.5	0	5	Yes	Yes
T-MOBILE COAX			3	180		1.54	0	1	Yes	Yes
VERIZON CABLE LADDER			3	160		4	0	5	Yes	Yes
VERIZON 1			3	160		1.55	0	1	Yes	Yes
VERIZON 2			3	160		1.2	0	1	Yes	Yes

*** Loads Data
Equipment Load Case Information for "WIND 0 COMB 1":

Equipment Label	Property Set	Elevation Above Ground (ft)	qzGh (psf)	Ice Thick. (in)	Total Wind Area (ft ²)	Wind Incidence Angle (deg)	222-H CA	222-H CS	222-H CM	Antenna Load FEM (lbs)	Antenna Side Load FEM (lbs)	Antenna Moment MM (ft-lbs)	Long. Load (lbs)	Trans. Load (lbs)	Vert. Load (lbs)
AP-1	ANTENNA PLATFORM	300.00	39.07	0.00	22.00	0.00				859.52			859.52	0.00	1188.00
AP-2	ANTENNA PLATFORM	300.00	39.07	0.00	22.00	0.00				859.52			859.52	0.00	1188.00
AP-3	ANTENNA PLATFORM	300.00	39.07	0.00	22.00	0.00				859.52			859.52	0.00	1188.00
AP-4	ANTENNA PLATFORM	300.00	39.07	0.00	22.00	0.00				859.52			859.52	0.00	1188.00
ACP-1	ACCESS PLATFORM	285.00	38.50	0.00	13.00	0.00				500.51			500.51	0.00	639.60
ACP-2	ACCESS PLATFORM	285.00	38.50	0.00	13.00	0.00				500.51			500.51	0.00	639.60
ACP-3	ACCESS PLATFORM	285.00	38.50	0.00	13.00	0.00				500.51			500.51	0.00	639.60
ACP-4	ACCESS PLATFORM	285.00	38.50	0.00	13.00	0.00				500.51			500.51	0.00	639.60
LPL-1	LIGHT PLATFORM 1	220.00	35.76	0.00	4.00	0.00				143.02			143.02	0.00	180.00
LPL-2	LIGHT PLATFORM 1	220.00	35.76	0.00	4.00	0.00				143.02			143.02	0.00	180.00
LPL-3	LIGHT PLATFORM 1	220.00	35.76	0.00	4.00	0.00				143.02			143.02	0.00	180.00
LPL-4	LIGHT PLATFORM 1	220.00	35.76	0.00	4.00	0.00				143.02			143.02	0.00	180.00
LP2-1	LIGHT PLATFORM 2	87.50	27.48	0.00	5.00	0.00				137.38			137.38	0.00	240.00
LP2-2	LIGHT PLATFORM 2	87.50	27.48	0.00	5.00	0.00				137.38			137.38	0.00	240.00
LP2-3	LIGHT PLATFORM 2	87.50	27.48	0.00	5.00	0.00				137.38			137.38	0.00	240.00
LP2-4	LIGHT PLATFORM 2	87.50	27.48	0.00	5.00	0.00				137.38			137.38	0.00	240.00
USCG-1	USCC ADD090S ANT	280.00	38.31	0.00	10.00	0.00				383.07			383.07	0.00	120.00
USCG-2	USCC ADD090S ANT	280.00	38.31	0.00	10.00	0.00				383.07			383.07	0.00	120.00
USCG-3	USCC ADD090S ANT	280.00	38.31	0.00	10.00	0.00				383.07			383.07	0.00	120.00
USCG-4	USCC ADD090S ANT	280.00	38.31	0.00	10.00	0.00				383.07			383.07	0.00	120.00
USCG-5	USCS SRL235-2 ANT	260.00	37.50	0.00	5.00	0.00				187.52			187.52	0.00	90.00
USCG-6	USCS SRL235-2 ANT	260.00	37.50	0.00	5.00	0.00				187.52			187.52	0.00	90.00
USCG-7	USCS SRL235-2 ANT	260.00	37.50	0.00	5.00	0.00				187.52			187.52	0.00	90.00
USCG-8	USCS SRL235-2 ANT	260.00	37.50	0.00	5.00	0.00				187.52			187.52	0.00	90.00
USCG-9	USCS SRL335-2 ANT	250.00	37.09	0.00	5.00	0.00				185.43			185.43	0.00	90.00
USCG-10	USCS SRL335-2 ANT	250.00	37.09	0.00	5.00	0.00				185.43			185.43	0.00	90.00
USCG-11	USCS SRL335-2 ANT	250.00	37.09	0.00	5.00	0.00				185.43			185.43	0.00	90.00
USCG-12	USCS SRL335-2 ANT	250.00	37.09	0.00	5.00	0.00				185.43			185.43	0.00	90.00
USCG-13	USCS SRL235-2 ANT	220.00	35.76	0.00	5.00	0.00				178.78			178.78	0.00	90.00
USCG-14	USCS SRL235-2 ANT	220.00	35.76	0.00	5.00	0.00				178.78			178.78	0.00	90.00
USCG-15	USCS SRL235-2 ANT	220.00	35.76	0.00	5.00	0.00				178.78			178.78	0.00	90.00
USCG-16	USCS SRL235-2 ANT	220.00	35.76	0.00	5.00	0.00				178.78			178.78	0.00	90.00
OMNI-1	OMNI ANT	300.00	39.07	0.00	2.00	0.00				78.14			78.14	0.00	12.00
OMNI-2	OMNI ANT	300.00	39.07	0.00	2.00	0.00				78.14			78.14	0.00	12.00
OMNI-3	OMNI ANT	300.00	39.07	0.00	2.00	0.00				78.14			78.14	0.00	12.00
OMNI-4	OMNI ANT	300.00	39.07	0.00	2.00	0.00				78.14			78.14	0.00	12.00
OMNI-5	OMNI ANT	100.00	28.54	0.00	2.00	0.00				57.09			57.09	0.00	12.00
OMNI-6	OMNI ANT	100.00	28.54	0.00	2.00	0.00				57.09			57.09	0.00	12.00
OMNI-7	OMNI ANT	100.00	28.54	0.00	2.00	0.00				57.09			57.09	0.00	12.00
OMNI-8	OMNI ANT	100.00	28.54	0.00	2.00	0.00				57.09			57.09	0.00	12.00
OMNI-9	OMNI ANT	100.00	28.54	0.00	2.00	0.00				57.09			57.09	0.00	12.00
OMNI-10	OMNI ANT	100.00	28.54	0.00	2.00	0.00				57.09			57.09	0.00	12.00
OMNI-11	OMNI ANT	100.00	28.54	0.00	2.00	0.00				57.09			57.09	0.00	12.00
OMNI-12	OMNI ANT	100.00	28.54	0.00	2.00	0.00				57.09			57.09	0.00	12.00
IM-1	IM-MOBILE INSTALL 8 JTS	187.50	34.16	0.00	15.35	0.00				524.35			524.35	0.00	240.00
IM-2	IM-MOBILE INSTALL 8 JTS	187.50	34.16	0.00	15.35	0.00				524.35			524.35	0.00	240.00
IM-3	IM-MOBILE INSTALL 8 JTS	187.50	34.16	0.00	15.35	0.00				524.35			524.35	0.00	240.00
IM-4	IM-MOBILE INSTALL 8 JTS	187.50	34.16	0.00	15.35	0.00				524.35			524.35	0.00	240.00
IM-5	IM-MOBILE INSTALL 8 JTS	175.00	33.49	0.00	15.35	0.00				514.12			514.12	0.00	240.00
IM-6	IM-MOBILE INSTALL 8 JTS	175.00	33.49	0.00	15.35	0.00				514.12			514.12	0.00	240.00
IM-7	IM-MOBILE INSTALL 8 JTS	175.00	33.49	0.00	15.35	0.00				514.12			514.12	0.00	240.00
IM-8	IM-MOBILE INSTALL 8 JTS	175.00	33.49	0.00	15.35	0.00				514.12			514.12	0.00	240.00
V1	VERIZON WIRELESS	162.50	32.79	0.00	28.52	0.00				935.20			935.20	0.00	480.00
V2	VERIZON WIRELESS	162.50	32.79	0.00	28.52	0.00				935.20			935.20	0.00	480.00
V3	VERIZON WIRELESS	162.50	32.79	0.00	28.52	0.00				935.20			935.20	0.00	480.00
V4	VERIZON WIRELESS	162.50	32.79	0.00	28.52	0.00				935.20			935.20	0.00	480.00

Equipment Label	Property Set	Equipment Elevation cpa	Ice Thick.	Ice Total Wind Incidence Area	Wind Angle	222-H CA	222-H CS	222-H CM	Antenna Load ESM (lbs)	Antenna Sides Load ESM (lbs)	Antenna Moment (ft-lbs)	Long. Trans. Load (lbs)	Vert. Load (lbs)	
AP-1	ANTENNA PLATFORM	300.00	39.07	0.00	22.00							859.52	0.00	891.00
AP-2	ANTENNA PLATFORM	300.00	39.07	0.00	22.00							859.52	0.00	891.00
AP-3	ANTENNA PLATFORM	300.00	39.07	0.00	22.00							859.52	0.00	891.00
AP-4	ANTENNA PLATFORM	300.00	39.07	0.00	22.00							859.52	0.00	891.00
ACP-1	ACCESS PLATFORM	285.00	38.50	0.00	13.00							500.51	0.00	479.70
ACP-2	ACCESS PLATFORM	285.00	38.50	0.00	13.00							500.51	0.00	479.70
ACP-3	ACCESS PLATFORM	285.00	38.50	0.00	13.00							500.51	0.00	479.70
ACP-4	ACCESS PLATFORM	285.00	38.50	0.00	13.00							500.51	0.00	479.70
LPI-1	LIGHT PLATFORM 1	220.00	35.76	0.00	4.00							143.02	0.00	135.00
LPI-2	LIGHT PLATFORM 1	220.00	35.76	0.00	4.00							143.02	0.00	135.00
LPI-3	LIGHT PLATFORM 1	220.00	35.76	0.00	4.00							143.02	0.00	135.00
LPI-4	LIGHT PLATFORM 1	220.00	35.76	0.00	4.00							143.02	0.00	135.00
LP2-1	LIGHT PLATFORM 2	87.50	27.48	0.00	5.00							137.38	0.00	180.00
LP2-2	LIGHT PLATFORM 2	87.50	27.48	0.00	5.00							137.38	0.00	180.00
LP2-3	LIGHT PLATFORM 2	87.50	27.48	0.00	5.00							137.38	0.00	180.00
LP2-4	LIGHT PLATFORM 2	87.50	27.48	0.00	5.00							137.38	0.00	180.00
USCG-1	USCG ADD090S ANT	280.00	38.31	0.00	10.00							383.07	0.00	90.00
USCG-2	USCG ADD090S ANT	280.00	38.31	0.00	10.00							383.07	0.00	90.00
USCG-3	USCG ADD090S ANT	280.00	38.31	0.00	10.00							383.07	0.00	90.00
USCG-4	USCG ADD090S ANT	280.00	38.31	0.00	10.00							383.07	0.00	90.00
USCG-5	USCG SRL235-2 ANT	260.00	37.50	0.00	5.00							187.52	0.00	67.50
USCG-6	USCG SRL235-2 ANT	260.00	37.50	0.00	5.00							187.52	0.00	67.50
USCG-7	USCG SRL235-2 ANT	260.00	37.50	0.00	5.00							187.52	0.00	67.50
USCG-8	USCG SRL235-2 ANT	260.00	37.50	0.00	5.00							187.52	0.00	67.50
USCG-9	USCG SRL335-2 ANT	250.00	37.09	0.00	5.00							185.43	0.00	67.50
USCG-10	USCG SRL335-2 ANT	250.00	37.09	0.00	5.00							185.43	0.00	67.50
USCG-11	USCG SRL335-2 ANT	250.00	37.09	0.00	5.00							185.43	0.00	67.50
USCG-12	USCG SRL335-2 ANT	250.00	37.09	0.00	5.00							185.43	0.00	67.50
USCG-13	USCG SRL235-2 ANT	220.00	35.76	0.00	5.00							178.78	0.00	67.50
USCG-14	USCG SRL235-2 ANT	220.00	35.76	0.00	5.00							178.78	0.00	67.50
USCG-15	USCG SRL235-2 ANT	220.00	35.76	0.00	5.00							178.78	0.00	67.50
USCG-16	USCG SRL235-2 ANT	220.00	35.76	0.00	5.00							178.78	0.00	67.50
CMNI-1	CMNI ANT	300.00	39.07	0.00	2.00							78.14	0.00	9.00
CMNI-2	CMNI ANT	300.00	39.07	0.00	2.00							78.14	0.00	9.00
CMNI-3	CMNI ANT	300.00	39.07	0.00	2.00							78.14	0.00	9.00
CMNI-4	CMNI ANT	300.00	39.07	0.00	2.00							78.14	0.00	9.00
CMNI-5	CMNI ANT	100.00	28.54	0.00	2.00							57.09	0.00	9.00
CMNI-6	CMNI ANT	100.00	28.54	0.00	2.00							57.09	0.00	9.00
CMNI-7	CMNI ANT	100.00	28.54	0.00	2.00							57.09	0.00	9.00
CMNI-8	CMNI ANT	100.00	28.54	0.00	2.00							57.09	0.00	9.00
CMNI-9	CMNI ANT	100.00	28.54	0.00	2.00							57.09	0.00	9.00
CMNI-10	CMNI ANT	100.00	28.54	0.00	2.00							57.09	0.00	9.00
CMNI-11	CMNI ANT	100.00	28.54	0.00	2.00							57.09	0.00	9.00
CMNI-12	CMNI ANT	100.00	28.54	0.00	2.00							57.09	0.00	9.00
TM-1	T-MOBILE INSTALL 8 JTS	187.50	34.16	0.00	15.35							524.35	0.00	180.00
TM-2	T-MOBILE INSTALL 8 JTS	187.50	34.16	0.00	15.35							524.35	0.00	180.00
TM-3	T-MOBILE INSTALL 8 JTS	187.50	34.16	0.00	15.35							524.35	0.00	180.00
TM-4	T-MOBILE INSTALL 8 JTS	187.50	34.16	0.00	15.35							524.35	0.00	180.00
TM-5	T-MOBILE INSTALL 8 JTS	175.00	33.49	0.00	15.35							514.12	0.00	180.00
TM-6	T-MOBILE INSTALL 8 JTS	175.00	33.49	0.00	15.35							514.12	0.00	180.00
TM-7	T-MOBILE INSTALL 8 JTS	175.00	33.49	0.00	15.35							514.12	0.00	180.00
TM-8	T-MOBILE INSTALL 8 JTS	175.00	33.49	0.00	15.35							514.12	0.00	180.00
V1	VERIZON WIRELESS	162.50	32.79	0.00	28.52							935.20	0.00	360.00
V2	VERIZON WIRELESS	162.50	32.79	0.00	28.52							935.20	0.00	360.00
V3	VERIZON WIRELESS	162.50	32.79	0.00	28.52							935.20	0.00	360.00
V4	VERIZON WIRELESS	162.50	32.79	0.00	28.52							935.20	0.00	360.00

Equipment Load Case Information for "WIND 0 ICE COMB 3":

Equipment Label	Equipment Property Set	Elevation Above Ground (ft)	qzch (psf)	Ice Thck. (in)	Total Wind Area (ft ²)	Wind Incidence Angle (deg)	222-H CA	222-H CS	222-H CM	Antenna Axial Load (lbs)	Antenna Side Load (lbs)	Antenna Moment (ft-lbs)	Long. Trans. Load (lbs)	Vert. Load (lbs)
AP-1	ANTENNA PLATFORM	300.00	6.25	1.87	22.00	0.00				137.52	0.00	1188.00	0.00	1188.00
AP-2	ANTENNA PLATFORM	300.00	6.25	1.87	22.00	0.00				137.52	0.00	1188.00	0.00	1188.00
AP-3	ANTENNA PLATFORM	300.00	6.25	1.87	22.00	0.00				137.52	0.00	1188.00	0.00	1188.00
AP-4	ANTENNA PLATFORM	300.00	6.25	1.87	22.00	0.00				137.52	0.00	1188.00	0.00	1188.00
ACP-1	ACCESS PLATFORM	285.00	6.16	1.86	13.00	0.00				80.08	0.00	639.60	0.00	639.60
ACP-2	ACCESS PLATFORM	285.00	6.16	1.86	13.00	0.00				80.08	0.00	639.60	0.00	639.60
ACP-3	ACCESS PLATFORM	285.00	6.16	1.86	13.00	0.00				80.08	0.00	639.60	0.00	639.60
ACP-4	ACCESS PLATFORM	285.00	6.16	1.86	13.00	0.00				80.08	0.00	639.60	0.00	639.60
LP1-1	LIGHT PLATFORM 1	220.00	5.72	1.81	4.00	0.00				22.88	0.00	180.00	0.00	180.00
LP1-2	LIGHT PLATFORM 1	220.00	5.72	1.81	4.00	0.00				22.88	0.00	180.00	0.00	180.00
LP1-3	LIGHT PLATFORM 1	220.00	5.72	1.81	4.00	0.00				22.88	0.00	180.00	0.00	180.00
LP1-4	LIGHT PLATFORM 1	220.00	5.72	1.81	4.00	0.00				22.88	0.00	180.00	0.00	180.00
LP2-1	LIGHT PLATFORM 2	87.50	4.40	1.65	5.00	0.00				21.98	0.00	240.00	0.00	240.00
LP2-2	LIGHT PLATFORM 2	87.50	4.40	1.65	5.00	0.00				21.98	0.00	240.00	0.00	240.00
LP2-3	LIGHT PLATFORM 2	87.50	4.40	1.65	5.00	0.00				21.98	0.00	240.00	0.00	240.00
LP2-4	LIGHT PLATFORM 2	87.50	4.40	1.65	5.00	0.00				21.98	0.00	240.00	0.00	240.00
USCG-1	USCG ADD090S ANT	280.00	6.13	1.86	10.00	0.00				61.29	0.00	120.00	0.00	120.00
USCG-2	USCG ADD090S ANT	280.00	6.13	1.86	10.00	0.00				61.29	0.00	120.00	0.00	120.00
USCG-3	USCG ADD090S ANT	280.00	6.13	1.86	10.00	0.00				61.29	0.00	120.00	0.00	120.00
USCG-4	USCG ADD090S ANT	280.00	6.13	1.86	10.00	0.00				61.29	0.00	120.00	0.00	120.00
USCG-5	USCG SRL235-2 ANT	260.00	6.00	1.84	5.00	0.00				30.00	0.00	90.00	0.00	90.00
USCG-6	USCG SRL235-2 ANT	260.00	6.00	1.84	5.00	0.00				30.00	0.00	90.00	0.00	90.00
USCG-7	USCG SRL235-2 ANT	260.00	6.00	1.84	5.00	0.00				30.00	0.00	90.00	0.00	90.00
USCG-8	USCG SRL235-2 ANT	260.00	6.00	1.84	5.00	0.00				30.00	0.00	90.00	0.00	90.00
USCG-9	USCG SRL335-2 ANT	250.00	5.93	1.84	5.00	0.00				29.67	0.00	90.00	0.00	90.00
USCG-10	USCG SRL335-2 ANT	250.00	5.93	1.84	5.00	0.00				29.67	0.00	90.00	0.00	90.00
USCG-11	USCG SRL335-2 ANT	250.00	5.93	1.84	5.00	0.00				29.67	0.00	90.00	0.00	90.00
USCG-12	USCG SRL335-2 ANT	250.00	5.93	1.84	5.00	0.00				29.67	0.00	90.00	0.00	90.00
USCG-13	USCG SRL235-2 ANT	220.00	5.72	1.81	5.00	0.00				28.60	0.00	90.00	0.00	90.00
USCG-14	USCG SRL235-2 ANT	220.00	5.72	1.81	5.00	0.00				28.60	0.00	90.00	0.00	90.00
USCG-15	USCG SRL235-2 ANT	220.00	5.72	1.81	5.00	0.00				28.60	0.00	90.00	0.00	90.00
USCG-16	USCG SRL235-2 ANT	220.00	5.72	1.81	5.00	0.00				28.60	0.00	90.00	0.00	90.00
OMNI-1	OMNI ANT	300.00	6.25	1.87	2.00	0.00				12.50	0.00	12.00	0.00	12.00
OMNI-2	OMNI ANT	300.00	6.25	1.87	2.00	0.00				12.50	0.00	12.00	0.00	12.00
OMNI-3	OMNI ANT	300.00	6.25	1.87	2.00	0.00				12.50	0.00	12.00	0.00	12.00
OMNI-4	OMNI ANT	300.00	6.25	1.87	2.00	0.00				12.50	0.00	12.00	0.00	12.00
OMNI-5	OMNI ANT	100.00	4.57	1.68	2.00	0.00				9.13	0.00	12.00	0.00	12.00
OMNI-6	OMNI ANT	100.00	4.57	1.68	2.00	0.00				9.13	0.00	12.00	0.00	12.00
OMNI-7	OMNI ANT	100.00	4.57	1.68	2.00	0.00				9.13	0.00	12.00	0.00	12.00
OMNI-8	OMNI ANT	100.00	4.57	1.68	2.00	0.00				9.13	0.00	12.00	0.00	12.00
OMNI-9	OMNI ANT	100.00	4.57	1.68	2.00	0.00				9.13	0.00	12.00	0.00	12.00
OMNI-10	OMNI ANT	100.00	4.57	1.68	2.00	0.00				9.13	0.00	12.00	0.00	12.00
OMNI-11	OMNI ANT	100.00	4.57	1.68	2.00	0.00				9.13	0.00	12.00	0.00	12.00
OMNI-12	OMNI ANT	100.00	4.57	1.68	2.00	0.00				9.13	0.00	12.00	0.00	12.00
TM-1	T-MOBILE INSTALL 8 JTS	187.50	5.47	1.78	15.35	0.00				83.90	0.00	240.00	0.00	240.00
TM-2	T-MOBILE INSTALL 8 JTS	187.50	5.47	1.78	15.35	0.00				83.90	0.00	240.00	0.00	240.00
TM-3	T-MOBILE INSTALL 8 JTS	187.50	5.47	1.78	15.35	0.00				83.90	0.00	240.00	0.00	240.00
TM-4	T-MOBILE INSTALL 8 JTS	187.50	5.47	1.78	15.35	0.00				83.90	0.00	240.00	0.00	240.00
TM-5	T-MOBILE INSTALL 8 JTS	175.00	5.36	1.77	15.35	0.00				82.26	0.00	240.00	0.00	240.00
TM-6	T-MOBILE INSTALL 8 JTS	175.00	5.36	1.77	15.35	0.00				82.26	0.00	240.00	0.00	240.00
TM-7	T-MOBILE INSTALL 8 JTS	175.00	5.36	1.77	15.35	0.00				82.26	0.00	240.00	0.00	240.00
TM-8	T-MOBILE INSTALL 8 JTS	175.00	5.36	1.77	15.35	0.00				82.26	0.00	240.00	0.00	240.00
V1	VERIZON WIRELESS	162.50	5.25	1.76	28.52	0.00				149.63	0.00	480.00	0.00	480.00
V2	VERIZON WIRELESS	162.50	5.25	1.76	28.52	0.00				149.63	0.00	480.00	0.00	480.00
V3	VERIZON WIRELESS	162.50	5.25	1.76	28.52	0.00				149.63	0.00	480.00	0.00	480.00
V4	VERIZON WIRELESS	162.50	5.25	1.76	28.52	0.00				149.63	0.00	480.00	0.00	480.00

Section Label	Z of Top (ft)	Z of Bottom (ft)	Ave. Elev. (ft)	q _{ref} (psf)	Ice Thick. (in)	AF (ft ²)	Face AR (ft ²)	Face RR (ft ²)	Face DR (ft ²)	Face DF (ft ²)	Face e	Face AG	Face e	Face CF	Face AE (ft ²)	Face WE (ft ²)	Face WEF (ft ²)	Face ANR (ft ²)	Face CNR (ft ²)	Face ANR*CAR (ft ²)	Face CNR*CAR (ft ²)	NotF ANR (ft ²)	NotF CNR (ft ²)	NotF ANR*CAR (ft ²)	NotF CNR*CAR (ft ²)	NotF WA (lbs)	NotF Total (lbs)	Total Wind Weight (lbs)	
USCG-9																													
USCG-10																													
USCG-11																													
USCG-12																													
USCG-13																													
USCG-14																													
USCG-15																													
USCG-16																													
OWNI-1																													
OWNI-2																													
OWNI-3																													
OWNI-4																													
OWNI-5																													
OWNI-6																													
OWNI-7																													
OWNI-8																													
OWNI-9																													
OWNI-10																													
OWNI-11																													
OWNI-12																													
IM-1																													
IM-2																													
IM-3																													
IM-4																													
IM-5																													
IM-6																													
IM-7																													
IM-8																													
V1																													
V2																													
V3																													
V4																													

Section Load Case Information for "WIND 45 ICE OOMB 3":
 Note: q_{ref} (adjusted wind pressure) includes: Velocity Pressure Coefficient (K_z), Topographic Factor (K_{st}), Gust Effect Factor (G_f),
 Wind Direction Probability Factor (K_d), Wind Importance Factor (Table 2-3), Wind Load Factor

Face RR is the minimum round reduction factor for all round angles and appurtenances in the section

Section Label	Z of Top (ft)	Z of Bottom (ft)	Ave. Elev. (ft)	q _{ref} (psf)	Ice Thick. (in)	AF (ft ²)	Face AR (ft ²)	Face RR (ft ²)	Face DR (ft ²)	Face DF (ft ²)	Face e	Face AG	Face e	Face CF	Face AE (ft ²)	Face WE (ft ²)	Face WEF (ft ²)	Face ANR (ft ²)	Face CNR (ft ²)	Face ANR*CAR (ft ²)	Face CNR*CAR (ft ²)	NotF ANR (ft ²)	NotF CNR (ft ²)	NotF ANR*CAR (ft ²)	NotF CNR*CAR (ft ²)	NotF WA (lbs)	NotF Total (lbs)	Total Wind Weight (lbs)
1	300.00	285.00	292.50	6.21	1.87	28.51	29.50	22.80	90.0	0.64	1.20	1.20	0.77	1.86	61.6	710	2.67	2.00	3.60	1.20	4.31	60	770	12776				
2	285.00	260.00	272.50	6.08	1.85	42.90	48.13	33.79	171.5	0.53	1.20	1.20	0.70	2.00	92.0	1117	5.86	2.00	15.36	1.20	18.43	183	1300	15420				
3	260.00	240.00	250.00	5.93	1.84	41.95	33.70	22.18	169.0	0.45	1.20	1.20	0.66	2.16	77.0	986	5.52	2.00	22.69	1.20	27.23	227	1214	12424				
4	240.00	220.00	230.00	5.79	1.82	44.15	35.50	22.61	198.1	0.40	1.20	1.20	0.64	2.27	80.1	1056	5.98	2.00	26.76	1.20	32.11	255	1311	13287				
5	220.00	200.00	210.00	5.65	1.80	46.47	37.33	23.26	227.3	0.37	1.20	1.20	0.62	2.37	83.7	1119	6.00	2.00	36.05	1.20	43.26	312	1431	14888				
6	200.00	175.00	187.50	5.47	1.78	50.98	39.80	23.59	325.1	0.28	1.20	1.20	0.59	2.66	89.5	1303	8.37	2.00	53.21	1.20	63.85	441	1744	18994				
7	175.00	150.00	162.50	5.25	1.76	60.28	40.84	24.13	370.7	0.27	1.20	1.20	0.59	2.69	101.3	1429	13.88	2.00	102.92	1.20	123.51	794	2222	22059				
8	150.00	125.00	137.50	5.00	1.73	61.64	41.78	24.43	416.3	0.25	1.19	1.19	0.58	2.78	102.1	1420	16.87	2.00	125.98	1.20	151.18	925	2345	23463				
9	125.00	100.00	112.50	4.72	1.70	62.49	42.58	24.69	461.9	0.23	1.17	1.17	0.58	2.86	102.1	1381	16.88	2.00	124.09	1.20	148.91	863	2244	27422				
10	100.00	75.00	87.50	4.40	1.65	63.90	43.15	24.88	507.4	0.21	1.16	1.16	0.58	2.93	102.8	1326	16.88	2.00	132.77	1.20	159.32	849	2175	28609				
11	75.00	50.00	62.50	3.99	1.60	67.05	43.34	24.89	553.0	0.20	1.15	1.15	0.57	2.98	105.7	1259	16.88	2.00	129.49	1.20	155.38	755	2014	31273				
12	50.00	25.00	37.50	3.45	1.52	68.56	42.73	24.45	598.6	0.19	1.14	1.14	0.57	3.04	106.0	1112	16.88	2.00	124.71	1.20	149.65	633	1745	34030				
13	25.00	0.00	12.50	3.23	1.36	68.37	33.65	19.13	644.2	0.16	1.12	1.12	0.57	3.17	97.9	1003	15.75	2.00	101.81	1.20	122.17	497	1500	29971				

Label	Case	Joint	Long. Force (kips)	Trans. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Trans. Moment (ft-k)	Long. Moment (ft-k)	Vert. Moment (ft-k)	Bending Moment (ft-k)	Found. Usage %
WIND 0	CCMB 1	1P	-28.93	-13.87	367.96	32.08	-0.00	-0.00	-0.00	0.00	0.00
WIND 0	CCMB 1	1X	-28.93	13.87	367.96	32.08	-0.00	-0.00	-0.00	0.00	0.00
WIND 0	CCMB 1	1XY	-25.09	-9.55	-277.77	26.85	-0.00	-0.00	-0.00	0.00	0.00
WIND 0	CCMB 1	1Y	-25.09	9.55	-277.77	26.85	-0.00	-0.00	-0.00	0.00	0.00
WIND 45	CCMB 1	1P	-31.40	-31.40	540.07	44.41	-0.00	-0.00	-0.00	0.00	0.00
WIND 45	CCMB 1	1X	-13.77	-9.40	45.06	16.68	-0.00	-0.00	-0.00	0.00	0.00
WIND 45	CCMB 1	1XY	-27.69	-27.69	-449.82	39.16	-0.00	-0.00	-0.00	0.00	0.00
WIND 45	CCMB 1	1Y	-9.40	-13.77	45.06	16.68	-0.00	-0.00	-0.00	0.00	0.00
WIND 0	CCMB 2	1P	-28.39	-13.32	356.27	31.36	-0.00	-0.00	-0.00	0.00	0.00
WIND 0	CCMB 2	1X	-28.39	13.32	356.27	31.36	-0.00	-0.00	-0.00	0.00	0.00
WIND 0	CCMB 2	1XY	-25.63	-10.08	-288.63	27.54	-0.00	-0.00	-0.00	0.00	0.00
WIND 0	CCMB 2	1Y	-25.63	10.08	-288.63	27.54	-0.00	-0.00	-0.00	0.00	0.00
WIND 45	CCMB 2	1P	-30.85	-30.85	528.15	43.63	-0.00	-0.00	-0.00	0.00	0.00
WIND 45	CCMB 2	1X	-13.25	-9.95	33.78	16.57	-0.00	-0.00	-0.00	0.00	0.00
WIND 45	CCMB 2	1XY	-28.22	-28.22	-460.44	39.90	-0.00	-0.00	-0.00	0.00	0.00
WIND 45	CCMB 2	1Y	-9.95	-13.25	33.78	16.57	-0.00	-0.00	-0.00	0.00	0.00
WIND 0	ICE CCMB 3	1P	-9.15	-5.87	140.63	10.87	-0.00	-0.00	-0.00	0.00	0.00
WIND 0	ICE CCMB 3	1X	-9.15	5.87	140.63	10.87	-0.00	-0.00	-0.00	0.00	0.00
WIND 0	ICE CCMB 3	1XY	-2.22	1.08	9.94	2.47	-0.00	-0.00	-0.00	0.00	0.00
WIND 0	ICE CCMB 3	1Y	-2.22	-1.08	9.94	2.47	-0.00	-0.00	-0.00	0.00	0.00
WIND 45	ICE CCMB 3	1P	-9.76	-9.76	177.62	13.81	-0.00	-0.00	-0.00	0.00	0.00
WIND 45	ICE CCMB 3	1X	-6.03	0.92	75.29	6.10	-0.00	-0.00	-0.00	0.00	0.00
WIND 45	ICE CCMB 3	1XY	-2.84	-2.84	-27.04	4.02	-0.00	-0.00	-0.00	0.00	0.00
WIND 45	ICE CCMB 3	1Y	0.92	-6.03	75.29	6.10	-0.00	-0.00	-0.00	0.00	0.00

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Max Use %	Comp. Force (kips)	Comp. Load Case	L/R Comp. Shear Capacity (kips)	Comp. Bearing Capacity (kips)	RLX Capacity (kips)	RLZ Capacity (kips)	L/R Length (ft)	Curve No.	No. Bolts	Of Bolts Comp.
L1	LEG	BUS	8X8X1	36.0	68.74	68.74	91X -516.53	WIND 45 CC	751.379	0.000	0.500	0.500	48.14	12.517	1	0
L2	LEG	BUS	8X8X1	36.0	65.31	65.31	926X -490.72	WIND 45 CC	751.379	0.000	0.500	0.500	48.14	12.517	1	0
L3	LEG	BUS	8X8X1	36.0	71.27	71.27	951X -465.22	WIND 45 CC	652.725	0.000	0.500	0.500	48.14	12.517	1	0
L4	LEG	BUS	8X8X1	36.0	67.27	67.27	976X -439.07	WIND 45 CC	652.725	0.000	0.500	0.500	48.14	12.517	1	0
L5	LEG	BUS	8X8X1	36.0	63.32	63.32	9101X -413.27	WIND 45 CC	652.725	0.000	0.500	0.500	48.14	12.517	1	0
L6	LEG	BUS	8X8X1	36.0	59.28	59.28	9126X -386.91	WIND 45 CC	652.725	0.000	0.500	0.500	48.14	12.517	1	0
L7	LEG	SAE	8X8X1.125	36.0	75.25	75.25	9151X -361.03	WIND 45 CC	479.793	0.000	0.500	0.500	48.14	12.517	1	0
L8	LEG	SAE	8X8X1.125	36.0	69.70	69.70	9176X -334.43	WIND 45 CC	479.793	0.000	0.500	0.500	48.14	12.517	1	0
L9	LEG	SAE	8X8X1	36.0	71.81	71.81	9201X -308.90	WIND 45 CC	430.179	0.000	0.500	0.500	48.14	12.517	1	0
L10	LEG	SAE	8X8X1	36.0	65.70	65.70	9226X -282.64	WIND 45 CC	430.179	0.000	0.500	0.500	48.14	12.517	1	0
L11	LEG	SAE	8X8X0.875	36.0	67.68	67.68	9251X -257.18	WIND 45 CC	380.007	0.000	0.500	0.500	47.83	12.517	1	0
L12	LEG	SAE	8X8X0.875	36.0	60.79	60.79	9276X -231.02	WIND 45 CC	380.007	0.000	0.500	0.500	47.83	12.517	1	0
L13	LEG	SAE	8X8X0.75	36.0	62.54	62.54	9301X -205.80	WIND 45 CC	329.092	0.000	0.500	0.500	47.53	12.517	1	0
L14	LEG	SAE	8X8X0.75	36.0	55.17	55.17	9326X -181.54	WIND 45 CC	329.092	0.000	0.500	0.500	47.53	12.517	1	0
L15	LEG	SAE	6X6X0.875	36.0	62.92	62.92	9351X -159.68	WIND 45 CC	253.782	0.000	0.500	0.500	64.19	12.517	1	0
L16	LEG	SAE	6X6X0.875	36.0	54.47	54.47	9376X -136.23	WIND 45 CC	253.782	0.000	0.500	0.500	64.19	12.517	1	0
L17	LEG	SAE	6X6X0.75	36.0	62.97	62.97	9401X -126.07	WIND 45 CC	238.013	0.000	0.500	0.500	51.35	10.013	1	0
L18	LEG	SAE	6X6X0.75	36.0	46.89	46.89	9417X -111.61	WIND 45 CC	238.013	0.000	0.500	0.500	51.35	10.013	1	0
L19	LEG	SAE	6X6X0.625	36.0	47.10	47.10	9435X -94.65	WIND 45 CC	200.976	0.000	0.500	0.500	50.92	10.013	1	0
L20	LEG	SAE	6X6X0.625	36.0	39.77	39.77	9451X -79.92	WIND 45 CC	200.976	0.000	0.500	0.500	50.92	10.013	1	0
L21	LEG	SAE	6X6X0.5625	36.0	35.43	35.43	9469X -64.39	WIND 45 CC	181.755	0.000	0.500	0.500	50.92	10.013	1	0
L22	LEG	SAE	6X6X0.5625	36.0	27.50	27.50	9485X -49.98	WIND 45 CC	181.755	0.000	0.500	0.500	50.92	10.013	1	0
L23	LEG	SAE	5X5X0.5	36.0	34.31	34.31	9503X -43.37	WIND 45 CC	126.424	0.000	1.000	1.000	61.12	5.007	1	0
L24	LEG	SAE	5X5X0.5	36.0	28.98	28.98	9515X -36.64	WIND 45 CC	126.424	0.000	1.000	1.000	61.12	5.007	1	0
L25	LEG	SAE	5X5X0.5	36.0	23.80	23.80	9532X -30.09	WIND 45 CC	126.437	0.000	1.000	1.000	61.10	5.005	1	0

L26	LEG	SAE	5X5X0.5	36.0	18.72	18.72	9544X	-23.666WIND 45 CO	126.437	0.000	0.000	1.000	1.000	61.10	5.005	1	0
L27	LEG	SAE	5X5X0.5	36.0	12.81	12.81	9560X	-16.193WIND 45 CO	126.437	0.000	0.000	1.000	1.000	61.10	5.005	1	0
L28	LEG	SAE	4X4X0.375	36.0	15.63	15.63	9578X	-10.673WIND 45 CO	68.290	0.000	0.000	1.000	1.000	76.14	5.000	1	0
L29	LEG	SAE	4X4X0.375	36.0	10.05	10.05	9579X	-6.863WIND 45 CO	68.290	0.000	0.000	1.000	1.000	76.14	5.000	1	0
L30	LEG	SAE	4X4X0.375	36.0	3.98	3.98	9582X	-2.718WIND 45 CO	68.290	0.000	0.000	1.000	1.000	76.14	5.000	1	0
D1	DIA	DAS	3X2.5X0.25	36.0	77.05	77.05	95P	-22.101WIND 0 CO	28.686	0.000	0.000	0.500	0.500	151.33	18.286	5	0
D2	DIA	DAS	3X2.5X0.25	36.0	77.60	77.60	930P	-22.918WIND 0 CO	29.534	0.000	0.000	0.500	0.500	148.60	17.956	5	0
D3	DIA	DAS	2.5X2.5X0.375	36.0	72.05	72.05	955P	-21.563WIND 0 CO	30.837	0.000	0.000	0.500	0.500	174.86	17.632	5	0
D4	DIA	DAS	2.5X2.5X0.375	36.0	73.09	73.09	980X	-22.539WIND 0 CO	29.927	0.000	0.000	0.500	0.500	171.71	17.314	5	0
D5	DIA	DAS	2.5X2.5X0.375	36.0	66.97	66.97	9105X	-21.276WIND 0 CO	31.768	0.000	0.000	0.500	0.500	168.62	17.002	5	0
D6	DIA	DAS	2.5X2.5X0.375	36.0	67.45	67.45	9131X	-22.070WIND 0 CO	32.723	0.000	0.000	0.500	0.500	165.59	16.697	5	0
D7	DIA	DAS	2.5X2.5X0.25	36.0	92.43	92.43	9155X	-20.752WIND 0 CO	22.494	0.000	0.000	0.500	0.500	165.36	16.398	5	0
D8	DIA	DAS	2.5X2.5X0.25	36.0	92.24	92.24	9180X	-21.363WIND 0 CO	23.160	0.000	0.000	0.500	0.500	162.42	16.107	5	0
D9	DIA	DAS	2.5X2.5X0.25	36.0	83.26	83.26	9205X	-19.844WIND 0 CO	23.834	0.000	0.000	0.500	0.500	159.57	15.824	5	0
D10	DIA	DAS	2.5X2.5X0.25	36.0	83.83	83.83	9230X	-20.554WIND 0 CO	24.520	0.000	0.000	0.500	0.500	156.80	15.549	5	0
D11	DIA	DAS	2.5X2.5X0.25	36.0	76.19	76.19	9255X	-19.210WIND 0 CO	25.212	0.000	0.000	0.500	0.500	151.52	15.026	5	0
D12	DIA	DAS	2.5X2.5X0.25	36.0	76.62	76.62	9280X	-19.851WIND 0 CO	25.908	0.000	0.000	0.500	0.500	154.11	15.283	5	0
D13	DIA	DAS	2.5X2.5X0.25	36.0	69.68	69.68	9305X	-18.540WIND 0 CO	26.606	0.000	0.000	0.500	0.500	149.02	14.778	5	0
D14	DIA	DAS	2.5X2.5X0.25	36.0	63.64	63.64	9330X	-17.376WIND 0 CO	27.303	0.000	0.000	0.500	0.500	146.63	14.540	5	0
D15	DIA	DAS	2.5X2.5X0.25	36.0	54.15	54.15	9355P	-15.160WIND 0 CO	27.996	0.000	0.000	0.500	0.500	144.34	14.313	5	0
D16	DIA	DAS	2.5X2.5X0.25	36.0	51.60	51.60	9380P	-14.796WIND 0 CO	28.677	0.000	0.000	0.500	0.500	142.16	14.098	5	0
D17	DIA	SAE	3X3X0.25	36.0	58.22	58.22	9405P	-8.665WIND 45 CO	14.918	0.000	0.000	0.500	0.500	156.26	15.418	5	0
D18	DIA	SAE	3X3X0.25	36.0	50.57	50.57	9418X	-7.956WIND 45 CO	15.810	0.000	0.000	0.500	0.500	150.71	14.871	5	0
D19	DIA	SAE	3X3X0.25	36.0	47.00	47.00	9439P	-7.874WIND 45 CO	16.754	0.000	0.000	0.500	0.500	145.33	14.340	5	0
D20	DIA	SAE	3X3X0.25	36.0	43.35	43.35	9452X	-7.693WIND 45 CO	17.749	0.000	0.000	0.500	0.500	143.82	14.133	5	0
D21	DIA	SAE	3X3X0.25	36.0	38.80	38.80	9473P	-7.071WIND 45 CO	18.753	0.000	0.000	0.500	0.500	140.14	13.827	5	0
D22	DIA	SAE	3X3X0.25	36.0	35.88	35.88	9489P	-7.071WIND 45 CO	19.707	0.000	0.000	0.500	0.500	130.38	12.864	5	0
D23	DIA	SAU	2.5X2X0.25	36.0	24.02	24.02	9507X	-3.569WIND 0 CO	14.860	0.000	0.000	0.500	0.500	128.02	9.047	5	0
D24	DIA	SAU	2.5X2X0.25	36.0	22.85	22.85	9519X	-3.558WIND 0 CO	15.508	0.000	0.000	0.500	0.500	123.75	8.745	5	0
D25	DIA	SAU	2.5X2X0.25	36.0	22.20	22.20	9536P	-3.578WIND 0 CO	16.118	0.000	0.000	0.500	0.500	119.75	8.462	3	0
D26	DIA	SAU	2.5X2X0.25	36.0	21.11	21.11	9548P	-3.484WIND 0 CO	16.499	0.000	0.000	0.500	0.500	116.01	8.198	3	0
D27	DIA	SAU	2.5X2X0.25	36.0	18.94	18.94	9564P	-3.196WIND 0 CO	16.876	0.000	0.000	0.500	0.500	112.35	7.939	3	0
D28	DIA	SAU	2.5X2X0.25	36.0	12.47	12.47	9590X	-2.128WIND 0 CO	17.065	0.000	0.000	0.500	0.500	110.52	7.810	3	0
D29	DIA	SAU	2.5X2X0.25	36.0	10.37	10.37	9598X	-1.770WIND 0 CO	17.065	0.000	0.000	0.500	0.500	110.52	7.810	3	0
D30	DIA	SAU	2.5X2X0.25	36.0	9.97	9.97	9606X	-1.701WIND 0 CO	17.065	0.000	0.000	0.500	0.500	103.08	7.483	5	0
H1	HOK	DAL	3X2.5X0.25	36.0	57.71	57.71	913Y	-14.599WIND 0 CO	25.296	0.000	0.000	1.000	1.000	163.59	12.883	5	0
H2	HOK	DAE	2.5X2.5X0.25	36.0	84.18	84.18	938Y	-14.551WIND 0 CO	17.286	0.000	0.000	1.000	1.000	193.92	12.427	5	0
H3	HOK	DAE	2.5X2.5X0.25	36.0	75.86	75.86	963X	-13.957WIND 0 CO	18.400	0.000	0.000	1.000	1.000	186.80	11.971	5	0
H4	HOK	DAE	2.5X2.5X0.25	36.0	71.24	71.24	988X	-13.978WIND 0 CO	19.622	0.000	0.000	1.000	1.000	179.70	11.516	5	0
H5	HOK	DAE	2.5X2.5X0.25	36.0	63.54	63.54	9113X	-13.326WIND 0 CO	20.973	0.000	0.000	1.000	1.000	172.59	11.060	5	0
H6	HOK	DAE	2.5X2.5X0.25	36.0	58.75	58.75	9138X	-13.201WIND 0 CO	22.469	0.000	0.000	1.000	1.000	165.47	10.604	5	0
H7	HOK	DAE	2.5X2.5X0.25	36.0	51.89	51.89	9163X	-12.522WIND 0 CO	24.132	0.000	0.000	1.000	1.000	158.36	10.148	5	0
H8	HOK	DAE	2.5X2.5X0.25	36.0	46.62	46.62	9188X	-12.113WIND 0 CO	25.981	0.000	0.000	1.000	1.000	151.26	9.693	5	0
H9	HOK	DAE	2.5X2.5X0.25	36.0	40.30	40.30	9213X	-11.307WIND 0 CO	28.056	0.000	0.000	1.000	1.000	144.14	9.237	5	0
H10	HOK	DAE	2.5X2.5X0.25	36.0	36.06	36.06	9238X	-10.957WIND 0 CO	30.382	0.000	0.000	1.000	1.000	137.02	8.781	5	0
H11	HOK	DAE	2.5X2.5X0.25	36.0	31.45	31.45	9263X	-10.290WIND 0 CO	32.723	0.000	0.000	1.000	1.000	129.92	8.326	5	0
H12	HOK	DAE	2.5X2.5X0.25	36.0	28.11	28.11	9288X	-9.878WIND 0 CO	35.141	0.000	0.000	1.000	1.000	122.81	7.870	5	0
H13	HOK	DAE	2.5X2.5X0.25	36.0	24.25	24.25	9313X	-9.245WIND 0 CO	38.115	0.000	0.000	1.000	1.000	115.69	7.414	1	0
H14	HOK	DAE	2.5X2.5X0.25	36.0	19.10	19.10	9338Y	-7.171WIND 0 CO	41.456	0.000	0.000	1.000	1.000	108.58	6.958	1	0
H15	HOK	DAE	2.5X2.5X0.25	36.0	15.29	15.29	9363Y	-6.858WIND 0 CO	44.842	0.000	0.000	1.000	1.000	101.48	6.503	1	0
H16	HOK	DAE	2.5X2.5X0.25	36.0	13.40	13.40	9384Y	-6.466WIND 45 CO	48.255	0.000	0.000	0.500	0.500	177.33	11.364	5	0
H17	HOK	DAE	2.5X2.5X0.25	36.0	39.53	39.53	9409Y	-3.964WIND 0 CO	10.029	0.000	0.000	0.500	0.500	129.97	10.636	5	0
H18	HOK	SAE	2.5X2.5X0.25	36.0	22.80	22.80	9425Y	-3.729WIND 0 CO	16.354	0.000	0.000	0.500	0.500	154.58	9.906	5	0
H19	HOK	SAE	2.5X2.5X0.25	36.0	29.13	29.13	9443Y	-3.654WIND 0 CO	12.545	0.000	0.000	0.500	0.500	154.58	9.906	5	0
H20	HOK	SAE	2.5X2.5X0.25	36.0	17.90	17.90	9459Y	-3.560WIND 0 CO	19.884	0.000	0.000	0.500	0.500	112.15	9.178	1	0
H21	HOK	SAE	2.5X2.5X0.25	36.0	19.52	19.52	9477Y	-3.132WIND 0 CO	16.044	0.000	0.000	0.500	0.500	131.83	8.448	5	0
H22	HOK	SAE	2.5X2.5X0.25	36.0	6.75	6.75	9493Y	-1.595WIND 0 CO	23.645	0.000	0.000	0.500	0.500	96.37	7.720	1	0
H23	HOK	SAE	2.5X2.5X0.25	36.0	0.00	0.00		0.000	0.000	0.000	0.000	0.000	0.00	0.000	0	0	
H24	HOK	SAU	2.5X2X0.25	36.0	2.19	2.19	9552Y	-0.214WIND 0 CO	9.793	0.000	0.000	1.000	1.000	179.15	6.330	6	0
H25	HOK	CHN	C7 X 9.8	36.0	0.48	0.43	9568Y	-0.308WIND 0 CO	72.251	0.000	0.000	1.000	1.000	69.23	6.000	1	0
H26	HOK	SAE	2.5X2.5X0.25	36.0	0.32	0.00	9615X	0.000	14.453	0.000	0.000	1.000	1.000	146.64	6.000	6	0
H27	HOK	CHN	C8 x 11.5	36.0	0.45	0.04	9616Y	-0.021WIND 0 CO	54.456	0.000	0.000	1.000	1.000	115.20	6.000	1	0
FL	RUD	SAE	3X3X0.25	36.0	2.08	2.08	942Y	-0.638WIND 45 CO	30.730	0.000	0.000	0.250	0.250	89.06	17.574	1	0

Group Label	Group Desc.	Angle Type	Steel Strength (ksi)	Max Usage (%)	Max Tension Force (kips)	Control Case	Section Capacity (kips)	Net Tens. Shear Capacity (kips)	Conn. Tens. Bearing Capacity (kips)	Conn. Tens. Rupture Capacity (kips)	Length (ft)	No. of Bolts	Hole Diameter (in)
L1	LEB	BUS 8X8X1 1/8+2L6X4X1/2	36.0	68.74	51.90	g1Y 440.526WIND 45 CO	848.879	0.000	0.000	0.000	12.517	0	0.000
L2	LEB	BUS 8X8X1 1/8+2L6X4X1/2	36.0	65.31	49.50	g26Y 420.219WIND 45 CO	848.879	0.000	0.000	0.000	12.517	0	0.000
L3	LEB	BUS 8X8X1 1/8+2L6X4X5/16	36.0	71.27	54.24	g51Y 399.956WIND 45 CO	737.423	0.000	0.000	0.000	12.517	0	0.000
L4	LEB	BUS 8X8X1 1/8+2L6X4X5/16	36.0	67.27	51.35	g76Y 378.640WIND 45 CO	737.423	0.000	0.000	0.000	12.517	0	0.000
L5	LEB	BUS 8X8X1 1/8+2L6X4X5/16	36.0	63.32	48.47	g101Y 357.438WIND 45 CO	737.423	0.000	0.000	0.000	12.517	0	0.000
L6	LEB	BUS 8X8X1 1/8+2L6X4X5/16	36.0	59.28	45.46	g126Y 335.216WIND 45 CO	737.423	0.000	0.000	0.000	12.517	0	0.000
L7	LEB	SAE 8X8X1.125	36.0	75.25	57.80	g151Y 313.299WIND 45 CO	542.051	0.000	0.000	0.000	12.517	0	0.000
L8	LEB	SAE 8X8X1.125	36.0	69.70	53.65	g176Y 290.800WIND 45 CO	542.051	0.000	0.000	0.000	12.517	0	0.000
L9	LEB	SAE 8X8X1	36.0	71.81	55.33	g201Y 268.898WIND 45 CO	485.999	0.000	0.000	0.000	12.517	0	0.000
L10	LEB	SAE 8X8X1	36.0	65.70	50.62	g226Y 246.030WIND 45 CO	485.999	0.000	0.000	0.000	12.517	0	0.000
L11	LEB	SAE 8X8X0.875	36.0	67.68	52.21	g251Y 223.802WIND 45 CO	428.651	0.000	0.000	0.000	12.517	0	0.000
L12	LEB	SAE 8X8X0.875	36.0	60.79	46.79	g276Y 200.567WIND 45 CO	428.651	0.000	0.000	0.000	12.517	0	0.000
L13	LEB	SAE 8X8X0.75	36.0	62.54	48.04	g301Y 178.069WIND 45 CO	370.655	0.000	0.000	0.000	12.517	0	0.000
L14	LEB	SAE 8X8X0.75	36.0	55.17	42.39	g326Y 157.104WIND 45 CO	370.655	0.000	0.000	0.000	12.517	0	0.000
L15	LEB	SAE 6X6X0.875	36.0	62.92	43.79	g351Y 138.052WIND 45 CO	315.252	0.000	0.000	0.000	12.517	0	0.000
L16	LEB	SAE 6X6X0.875	36.0	54.47	37.86	g376Y 119.341WIND 45 CO	315.252	0.000	0.000	0.000	12.517	0	0.000
L17	LEB	SAE 6X6X0.75	36.0	52.97	40.10	g401Y 109.659WIND 45 CO	273.456	0.000	0.000	0.000	10.013	0	0.000
L18	LEB	SAE 6X6X0.75	36.0	46.89	35.09	g417Y 95.963WIND 45 CO	273.456	0.000	0.000	0.000	10.013	0	0.000
L19	LEB	SAE 6X6X0.625	36.0	47.10	35.31	g435Y 81.340WIND 45 CO	230.364	0.000	0.000	0.000	10.013	0	0.000
L20	LEB	SAE 6X6X0.625	36.0	39.77	29.34	g451Y 67.583WIND 45 CO	230.364	0.000	0.000	0.000	10.013	0	0.000
L21	LEB	SAE 6X6X0.5625	36.0	35.43	25.87	g469Y 53.899WIND 45 CO	208.332	0.000	0.000	0.000	10.013	0	0.000
L22	LEB	SAE 6X6X0.5625	36.0	27.31	19.52	g485Y 40.663WIND 45 CO	208.332	0.000	0.000	0.000	10.013	0	0.000
L23	LEB	SAE 5X5X0.5	36.0	34.31	22.13	g503Y 34.065WIND 45 CO	153.900	0.000	0.000	0.000	5.007	0	0.000
L24	LEB	SAE 5X5X0.5	36.0	28.98	18.15	g515Y 27.932WIND 45 CO	153.900	0.000	0.000	0.000	5.007	0	0.000
L25	LEB	SAE 5X5X0.5	36.0	23.80	14.23	g532Y 21.907WIND 45 CO	153.900	0.000	0.000	0.000	5.005	0	0.000
L26	LEB	SAE 5X5X0.5	36.0	18.72	10.36	g544Y 15.937WIND 45 CO	153.900	0.000	0.000	0.000	5.005	0	0.000
L27	LEB	SAE 5X5X0.5	36.0	12.81	6.37	g560Y 9.805WIND 45 CO	153.900	0.000	0.000	0.000	5.005	0	0.000
L28	LEB	SAE 4X4X0.375	36.0	15.63	6.73	g578Y 6.240WIND 45 CO	92.664	0.000	0.000	0.000	5.000	0	0.000
L29	LEB	SAE 4X4X0.375	36.0	10.05	3.32	g579Y 3.079WIND 45 CO	92.664	0.000	0.000	0.000	5.000	0	0.000
L30	LEB	SAE 4X4X0.375	36.0	3.98	0.25	g582Y 0.233WIND 45 CO	92.664	0.000	0.000	0.000	5.000	0	0.000
D1	DIA	DA5 3X2.5X0.25	36.0	77.05	24.32	g5Y 20.720WIND 0 CCM	85.212	0.000	0.000	0.000	18.286	0	0.000
D2	DIA	DA5 3X2.5X0.25	36.0	77.60	23.90	g30Y 20.363WIND 0 CCM	85.212	0.000	0.000	0.000	17.956	0	0.000
D3	DIA	DAE 2.5X2.5X0.375	36.0	72.05	18.13	g55Y 20.383WIND 0 CCM	112.428	0.000	0.000	0.000	17.632	0	0.000
D4	DIA	DAE 2.5X2.5X0.375	36.0	73.09	18.13	g80XY 20.386WIND 0 CCM	112.428	0.000	0.000	0.000	17.314	0	0.000
D5	DIA	DAE 2.5X2.5X0.375	36.0	66.97	18.05	g105XY 20.292WIND 0 CCM	112.428	0.000	0.000	0.000	17.002	0	0.000
D6	DIA	DAE 2.5X2.5X0.375	36.0	67.45	18.04	g131XY 20.284WIND 0 CCM	112.428	0.000	0.000	0.000	16.697	0	0.000
D7	DIA	DAE 2.5X2.5X0.25	36.0	92.43	25.90	g155XY 19.974WIND 0 CCM	77.112	0.000	0.000	0.000	16.398	0	0.000
D8	DIA	DAE 2.5X2.5X0.25	36.0	92.24	25.69	g180XY 19.811WIND 0 CCM	77.112	0.000	0.000	0.000	16.107	0	0.000
D9	DIA	DAE 2.5X2.5X0.25	36.0	83.26	24.76	g205XY 19.092WIND 0 CCM	77.112	0.000	0.000	0.000	15.924	0	0.000
D10	DIA	DAE 2.5X2.5X0.25	36.0	83.83	24.87	g230XY 19.180WIND 0 CCM	77.112	0.000	0.000	0.000	15.549	0	0.000
D11	DIA	DAE 2.5X2.5X0.25	36.0	76.19	24.07	g255XY 18.564WIND 0 CCM	77.112	0.000	0.000	0.000	15.283	0	0.000
D12	DIA	DAE 2.5X2.5X0.25	36.0	76.62	24.27	g280XY 18.717WIND 0 CCM	77.112	0.000	0.000	0.000	15.026	0	0.000
D13	DIA	DAE 2.5X2.5X0.25	36.0	69.68	23.37	g305XY 18.023WIND 0 CCM	77.112	0.000	0.000	0.000	14.778	0	0.000
D14	DIA	DAE 2.5X2.5X0.25	36.0	63.64	21.30	g330XY 16.424WIND 0 CCM	77.112	0.000	0.000	0.000	14.540	0	0.000
D15	DIA	DAE 2.5X2.5X0.25	36.0	54.15	19.06	g355Y 14.694WIND 0 CCM	77.112	0.000	0.000	0.000	14.313	0	0.000
D16	DIA	DAE 2.5X2.5X0.25	36.0	51.60	18.04	g380Y 13.907WIND 0 CCM	77.112	0.000	0.000	0.000	14.098	0	0.000
D17	DIA	SAE 3X3X0.25	36.0	58.22	17.05	g405XY 7.955WIND 45 CO	46.656	0.000	0.000	0.000	15.418	0	0.000
D18	DIA	SAE 3X3X0.25	36.0	50.57	15.58	g418Y 7.267WIND 45 CO	46.656	0.000	0.000	0.000	14.871	0	0.000
D19	DIA	SAE 3X3X0.25	36.0	47.00	15.18	g439XY 7.084WIND 45 CO	46.656	0.000	0.000	0.000	14.340	0	0.000
D20	DIA	SAE 3X3X0.25	36.0	43.35	14.66	g452Y 6.839WIND 45 CO	46.656	0.000	0.000	0.000	13.827	0	0.000
D21	DIA	SAE 3X3X0.25	36.0	38.80	13.73	g473XY 6.408WIND 45 CO	46.656	0.000	0.000	0.000	13.334	0	0.000
D22	DIA	SAE 3X3X0.25	36.0	35.88	13.07	g489XY 6.099WIND 45 CO	46.656	0.000	0.000	0.000	12.864	0	0.000

D23	DIA	SAU	2.5X2X0.25	36.0	24.02	10.44	9507XY	3.587WIND 0 CCM	34.344	0.000	0.000	0.000	9.047	0
D24	DIA	SAU	2.5X2X0.25	36.0	22.95	10.19	9519XY	3.500WIND 0 CCM	34.344	0.000	0.000	0.000	8.745	0
D25	DIA	SAU	2.5X2X0.25	36.0	22.20	10.28	9536Y	3.530WIND 0 CCM	34.344	0.000	0.000	0.000	8.462	0
D26	DIA	SAU	2.5X2X0.25	36.0	21.11	10.21	9548Y	3.507WIND 0 CCM	34.344	0.000	0.000	0.000	8.198	0
D28	DIA	SAU	2.5X2X0.25	36.0	18.94	7.94	9564Y	2.727WIND 0 CCM	34.344	0.000	0.000	0.000	7.939	0
D29	DIA	SAU	2.5X2X0.25	36.0	12.47	5.98	9590XY	2.053WIND 0 CCM	34.344	0.000	0.000	0.000	7.810	0
D30	DIA	SAU	2.5X2X0.25	36.0	10.37	5.37	9598XY	1.844WIND 0 CCM	34.344	0.000	0.000	0.000	7.810	0
H1	HOR	DAL	3X2.5X0.25	36.0	9.97	4.03	9606XY	1.363WIND 0 CCM	34.344	0.000	0.000	0.000	7.810	0
H2	HOR	DAE	2.5X2.5X0.25	36.0	57.71	18.88	913P	16.092WIND 0 CCM	85.212	0.000	0.000	0.000	12.863	0
H3	HOR	DAE	2.5X2.5X0.25	36.0	84.18	19.60	938P	15.113WIND 0 CCM	77.112	0.000	0.000	0.000	12.427	0
H4	HOR	DAE	2.5X2.5X0.25	36.0	75.86	19.58	963X	15.101WIND 0 CCM	77.112	0.000	0.000	0.000	11.971	0
H5	HOR	DAE	2.5X2.5X0.25	36.0	71.24	18.56	968X	14.313WIND 0 CCM	77.112	0.000	0.000	0.000	11.516	0
H6	HOR	DAE	2.5X2.5X0.25	36.0	63.54	18.44	9113X	14.219WIND 0 CCM	77.112	0.000	0.000	0.000	11.060	0
H7	HOR	DAE	2.5X2.5X0.25	36.0	58.75	17.33	9138X	13.363WIND 0 CCM	77.112	0.000	0.000	0.000	10.604	0
H8	HOR	DAE	2.5X2.5X0.25	36.0	51.89	17.09	9163X	13.178WIND 0 CCM	77.112	0.000	0.000	0.000	10.148	0
H9	HOR	DAE	2.5X2.5X0.25	36.0	46.62	15.94	9188X	12.290WIND 0 CCM	77.112	0.000	0.000	0.000	9.693	0
H10	HOR	DAE	2.5X2.5X0.25	36.0	40.30	15.36	9213X	11.844WIND 0 CCM	77.112	0.000	0.000	0.000	9.237	0
H11	HOR	DAE	2.5X2.5X0.25	36.0	36.06	14.35	9238X	11.068WIND 0 CCM	77.112	0.000	0.000	0.000	8.781	0
H12	HOR	DAE	2.5X2.5X0.25	36.0	31.45	13.85	9263X	10.677WIND 0 CCM	77.112	0.000	0.000	0.000	8.326	0
H13	HOR	DAE	2.5X2.5X0.25	36.0	28.11	12.88	9288X	9.936WIND 0 CCM	77.112	0.000	0.000	0.000	7.870	0
H14	HOR	DAE	2.5X2.5X0.25	36.0	24.25	12.34	9313X	9.513WIND 0 CCM	77.112	0.000	0.000	0.000	7.414	0
H15	HOR	DAE	2.5X2.5X0.25	36.0	19.10	10.31	9338P	7.953WIND 0 CCM	77.112	0.000	0.000	0.000	6.958	0
H16	HOR	DAE	2.5X2.5X0.25	36.0	15.29	9.19	9363P	7.087WIND 0 CCM	77.112	0.000	0.000	0.000	6.503	0
H17	HOR	SAE	2.5X2.5X0.25	36.0	13.40	8.85	9384X	6.827WIND 45 CO	77.112	0.000	0.000	0.000	6.047	0
H18	HOR	SAE	2.5X2.5X0.25	36.0	39.53	12.97	9409P	5.002WIND 0 CCM	38.556	0.000	0.000	0.000	11.364	0
H19	HOR	SAE	2.5X2.5X0.25	36.0	22.80	11.09	9425P	4.274WIND 0 CCM	38.556	0.000	0.000	0.000	10.636	0
H20	HOR	SAE	2.5X2.5X0.25	36.0	29.13	12.33	9443P	4.753WIND 0 CCM	38.556	0.000	0.000	0.000	9.906	0
H21	HOR	SAE	2.5X2.5X0.25	36.0	17.90	10.76	9459P	4.148WIND 0 CCM	38.556	0.000	0.000	0.000	9.178	0
H22	HOR	SAE	2.5X2.5X0.25	36.0	19.52	11.05	9477P	4.259WIND 0 CCM	38.556	0.000	0.000	0.000	8.448	0
H23	HOR	SAE	2.5X2.5X0.25	36.0	6.75	4.61	9493P	1.779WIND 0 CCM	38.556	0.000	0.000	0.000	7.720	0
H24	HOR	SAU	2.5X2X0.25	36.0	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
H25	HOR	CHN	C7 X 9.8	36.0	2.19	1.50	9552P	0.515WIND 0 CCM	34.344	0.000	0.000	0.000	0.000	0
H26	HOR	SAE	2.5X2.5X0.25	36.0	0.48	0.48	9568P	0.446WIND 0 CCM	92.988	0.000	0.000	0.000	6.330	0
H27	HOR	CHN	CB x 11.5	36.0	0.32	0.32	9614Y	0.125WIND 0 LCL	38.556	0.000	0.000	0.000	6.000	0
R1	RUD	SAE	3X3X0.25	36.0	0.45	0.45	9498X	0.489WIND 45 IC	189.512	0.000	0.000	0.000	6.000	0
					2.08	1.83	9642X	0.856WIND 45 CO	46.656	0.000	0.000	0.000	12.418	0



Foundation Loads from Analysis Run

MAXIMUM DOWNWARD LOAD = 540.0 K
MAXIMUM UPWARD LOAD = 460.4 K

ANCHOR BOLT CHECK

$23.86 \text{ in}^2 \times .75 \times .75 \times 58 \text{ KSI} = 778 \text{ K} > 460.4 \text{ K}$ O.K.

REBAR CHECK (Piers)

$20.0 \text{ in}^2 \times (.85) 40 = 680 \text{ K} > 460.4 \text{ K}$ O.K.

UPLIFT CHECK

Concrete

$18.6 \times 27.0 \times 3.00 \times .15 = 140.9 \text{ K} \dots\dots\dots 224.7 \text{ K}$

$20.0^2 \times 1.42 \times .15 = 85.2 \text{ K} \dots\dots\dots 85.2 \text{ K}$

$[4.5^2 + (4.5' \times 9.0') + 9.0^2] 4.5/3 = 212.6 \text{ ft}^3$

$212.6 \text{ ft}^3 \times .15 = 31.9 \text{ K} \dots\dots\dots 31.9 \text{ K}$

341.8 K

Wt of SOIL

$[(31.62 \times 23.12) + (27' \times 18.5)] 4.0/2 = 2461 \text{ ft}^3$

$(2461 \text{ ft}^3 - 212.6 \text{ ft}^3) \times .11 = 247.3 \text{ K}$

Soil Shear

$91 \text{ ft} \times 3.0\text{-ft} \times .25 \text{ KSF} = 68.3 \text{ K}$

TOTAL UPLIFT CHECK

$(68.3 \text{ K} + 247.3) (.75) + 341.8 (.9) = 544.3 \text{ K} > 460.4 \text{ K}$ O.K. (84.5%)

DOWNWARD LOAD CHECK

$540 + 341.8 \text{ K} + 247.3 \text{ K} = 1131 \text{ K}$

$1131 / (27' \times 18.5) = 2.28 \text{ KSF} < 6.0 \text{ KSF Allowable}$ O.K.



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New Antenna Mount Analysis Report and PII Requirements

Mount Analysis-N
SMART Tool Project #: 10315638
Colliers Engineering & Design Project #: 25777683

August 14, 2025

Site Information

Site ID: 5000977596-VZW / Montville West CT
Site Name: Montville West CT
Carrier Name: Verizon Wireless
Address: 401 Chapel Hill Road
Montville, Connecticut 06370
New London County
Latitude: 41.468799°
Longitude: -72.203212°

Structure Information

Tower Type: 300-Ft Self Support
Mount Type: 13.00-Ft Sector Frames

FUZE ID # 17454688

Analysis Results

Sector Frames: **74.3% Pass w/ New Mount Install***
(3) Site Pro 1, VFA12-XDS)

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

***Contractor PII Requirements:

Included at the end of this MA report

Available & Submitted via portal at <https://pmi.vzwsmart.com>

For additional questions and support, please reach out to:

pmisupport@colliersengineering.com

Report Prepared By: Ana Mora

Digitally signed by Grant Walters
Date: 2025.08.14 11:40:18-05'00'

Executive Summary:

The objective of this report is to determine the capacity of the proposed antenna support mount at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards. The proposed mount was assumed to be installed properly to the existing tower per the manufacturer's instructions. Colliers Engineering & Design cannot verify that the proposed mount will fit properly and is not liable for any fit-up issues during installation.

This analysis is inclusive of the mount structure only and does not address the structural capacity of the supporting structure. This mounting frame was not analyzed as an anchor attachment point for fall protection. All climbing activities are required to have a fall protection plan completed by a competent person.

Sources of Information:

Document Type	Remarks
Radio Frequency Data Sheet (RFDS)	Verizon RFDS, Site ID: 617492994, dated July 21, 2025
Mount Specifications	Site Pro 1, Part No. VFA12-XDS Site Pro 1, Part No. SPTB-278

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H 2022 Connecticut State Building Code (CSBC), Effective October 1, 2022
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT} : 125 mph Ice Wind Speed (3-sec. Gust): 50 mph Design Ice Thickness: 1.00 in Risk Category: II Exposure Category: B Topographic Category: 1 Topographic Feature Considered: N/A Topographic Method: N/A Ground Elevation Factor, K_e : 0.978
Seismic Parameters:	S_s : 0.198 g S_i : 0.054 g
Maintenance Parameters:	Wind Speed (3-sec. Gust): 30 mph Maintenance Load, L_v : 250 lbs. Maintenance Load, L_m : 500 lbs.
Analysis Software:	RISA-3D (V22)

Final Loading Configuration:

The following equipment has been considered for the analysis of the mounts:

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
160.00	160.00	6	JMA Wireless	MX06FHG665-HG	Added
		3	Samsung	MT6413-77A	
		3	Samsung	RF4801d-25A	
		3	Samsung	RF4461d-13A	
		3	Raycap	6 OVP	
		3	Raycap	3x6 NGOVP	

Any proposed antennas not currently installed should be mounted such that the centerline of the antennas does not exceed 6 inches vertically from the center of the antenna mount(s).

It is acceptable to install up to three (3) OVPs with dimensions not to exceed 30" x 17" x 13" and 40 lbs. at any location, other than the mount face, without affecting the structural capacity of the mount. If OVP units are installed on the mount face, a mount re-analysis may be required unless replacing an existing OVP.

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Colliers Engineering & Design and used in this analysis is current and correct. Any deviation from the loading locations specified in this report shall be communicated to Colliers Engineering & Design to verify deviation will not adversely impact the analysis.
2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.
3. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.
5. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Colliers Engineering & Design is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.
6. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
 - o Channel, Solid Round, Angle, Plate ASTM A36 (Gr. 36)
 - o HSS (Rectangular) ASTM 500 (Gr. B-46)
 - o Pipe ASTM A53 (Gr. B-35)
 - o Threaded Rod F1554 (Gr. 36)
 - o Bolts ASTM A325

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

Analysis Results:

Component	Utilization %	Pass/Fail
Connection Plate	74.3 %	Pass
Standoff Horizontal	20.7 %	Pass
Vertical Standoff Bracing	5.8 %	Pass
Diagonal Standoff Bracing	69.0 %	Pass
Face Horizontal	32.1 %	Pass
Mount Pipes	30.5 %	Pass
Tiebacks	10.5 %	Pass
Connection Check	13.8 %	Pass

Structure Rating – (Controlling Utilization of all Components)	74.3%
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Mount Connection Envelope Reactions:

Connection Description	Elev. AGL (Ft)	Node Label	Envelope Wind Reactions				Envelope Wind + Ice Reactions			
			Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)	Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)
Sector A Top Standoff	161.9	N6	520	2037	0.754	0.000	1067	2132	1.453	0.000
Sector A Bottom Standoff	158.1	N5	532	1691	0.771	0.000	1089	2063	1.502	0.000

Notes:

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

Mount Steel (EPA)a per ANSI/TIA-222-H Section 2.6.11.2:

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	18.1	10.0	27.2	19.1
0.5	28.0	17.1	41.0	30.0
1	37.7	23.9	54.5	40.7

Notes:

- (EPA)a values listed above may be used in the absence of more precise information
- (EPA)a values in the table above include 1 sector(s).
- Ka factors included in (EPA)a calculations

Requirements:

The proposed antenna mounts are **SUFFICIENT** for the final loading configuration (attachment 2) upon completion of the mount installation (attachment 3) and requirements below.

Refer to document at the end of this form for special instructions. Contact EOR if special instructions are not available.

ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

Attachments:

1. Contractor Required Post Installation Inspection (PII) Report Deliverables
2. Antenna Placement Diagrams
3. Mount Manufacturer Drawings
4. Analysis Calculations

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – **New Mount Passing MA**

Electronic pdf version of this can be downloaded at <https://pmi.vzwsmart.com>

For additional questions and support, please reach out to pmisupport@colliersengineering.com

MDG #: 5000977596

SMART Project #: 10315638

Fuze Project ID: 17454688

Purpose – to provide SMART Tool structural vendor 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 installation was completed in accordance with this Passing Mount Analysis.
- Contractor shall relay any data that can impact the performance of the mount, this includes safety issues.

Base Requirements:

- If installation will cause damage to the structure, the climbing facility, or safety climb if present or any installed system, SMART Tool vendor to be notified prior to install. Any special photos outside of the standard requirements will be indicated on the drawings.
- Provide “as built mount drawings” showing contractor’s name, contact information, preparer’s signature, and date. Any deviations from the drawings (Proposed modification) shall be shown. NOTE: If loading is different than what is conveyed in the passing mount analysis (MA) contact the SMART Tool vendor immediately.
- Each photo should be time and date stamped.
- Photos should be high resolution.
- 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. If there is conflict, contact the SMART Tool engineer for recommendations.
- The PMI can be accessed at the following portal: <https://pmi.vzwsmart.com>

Photo Requirements:

- **Photos taken at ground level**
 - Photo of Gate Signs showing the tower owner, site name, and number.
 - Overall tower structure after installation.
 - Photos of the mount after installation; if the mounts are at different rad elevations, pictures must be provided for all elevations that equipment was installed.
- **Photos taken at Mount Elevation**
 - Photos showing the safety climb wire rope above and below the mount prior to installation.
 - Photos showing the climbing facility and safety climb if present.
 - Photos showing each individual sector after installation of mounts. Each entire sector shall be in one photo to show the interconnection of members.

- These photos shall also certify that the placement and geometry of the equipment on the mount is as depicted in the antenna placement diagram in this form.
- Photos that show the model number of each antenna and piece of equipment installed per sector.
- Photos of each installed mount; pictures shall also include connection hardware (U-bolts, bolts, nuts, all-threaded rods, etc.)
- Photos showing the installed mount elevation.

Antenna & Equipment Placement and Geometry Confirmation:

- The contractor shall certify that the antenna & equipment placement and geometry is in accordance with the sketch and table as included in the mount analysis and noted below.
- The contractor certifies that the photos support and the equipment on the mount is as depicted on the sketch and table included in this form and with the mount analysis provided.

OR

- The contractor notes that the equipment on the mount is not in accordance with the sketch and has noted the differences below and provided photo documentation of any alterations.

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

Issue:

Refer to document at the end of this form for special instructions. Contact EOR if special instructions are not available.

Response:

Special Instruction Confirmation:

- The contractor has read and acknowledges the above special instructions.

Contractor certifies that the climbing facility / safety climb was not damaged prior to starting work:

- Yes No

Contractor certifies no new damage created during the current installation:

- Yes No

Contractor to certify the condition of the safety climb and verify no damage when leaving the site:

Safety Climb in Good Condition

Safety Climb Damaged

Comments:

New Mount Certification:

- The contractor certifies that the New Mount installed is as specified in the Passing Mount Analysis.
- The contractor notes that the New Mount installed is not as specified and engineering approval was received for the New Mount installed.

Contractor to provide measurement from top of the highest equipment/steel to the bottom of the lowest equipment/steel by documenting it using the most appropriate illustration below along with supporting photos (highest and lowest measurement across all sectors):

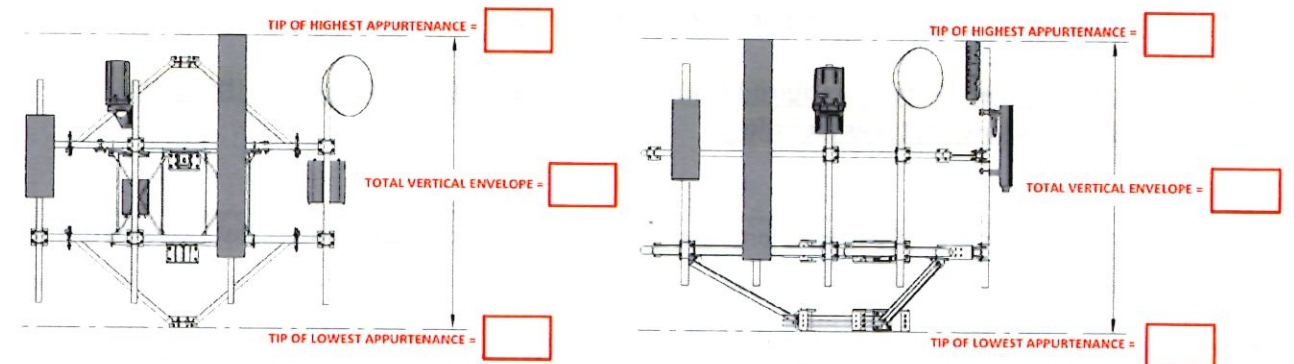


Illustration #1

Illustration #2

Certifying Individual:

Company:	
Employee Name:	
Contact Phone:	
Email:	
Date:	



MDG #: 5000977596

Site Name: Montville West CT

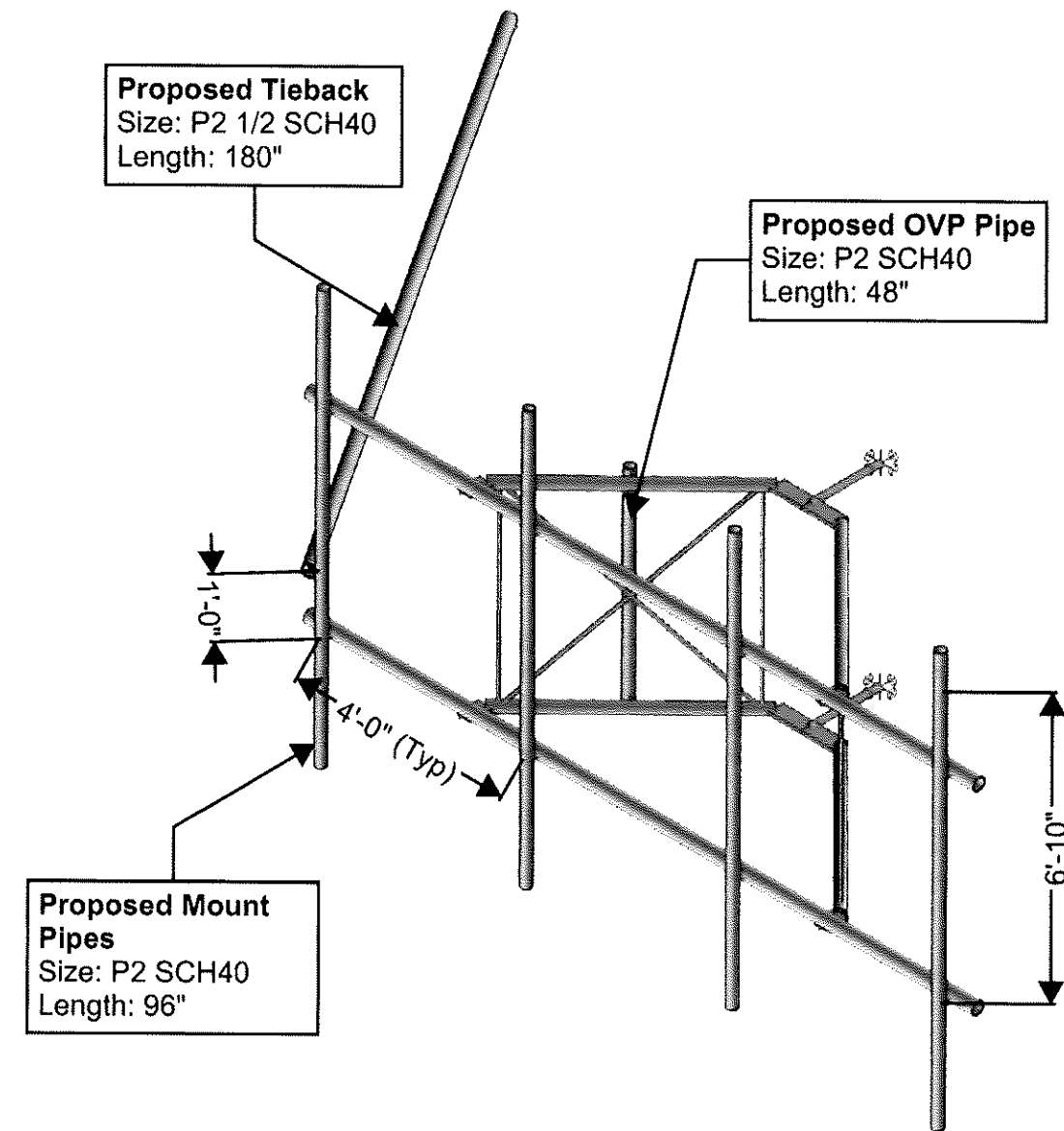
Fuze ID #: 17454688

Colliers Engineering & Design Project #: 25777683

PMI INSTRUCTIONS:

1. Contractor shall verify mount tower face width to be 180" and tower leg to be 1.5"-9.5" in diameter. **Escalate any discrepancies to EOR immediately as it may render the results of this analysis invalid and require additional modifications.**
2. Contractor shall install the proposed mount model Site Pro 1, Part No. VFA12-XDS mounts in accordance with manufacturer specifications and the Mount Installation Sketch. Contact EOR if these documents are not available.
3. Contractor shall install (4) 96" long PIPE 2 SCH40 mount pipes per mount. Refer to placement diagrams and Mount Installation Sketch. Contact EOR if these documents are not available.
4. Contractor shall replace the tiebacks that comes with the mount kit with 180" long P2 1/2 STD (1 per sector) and attach to adjacent tower legs with Site Pro 1 P/N: SPTB278-NP. Proposed tieback shall extend no more than 12" beyond the plane of the tower face. Contractor shall trim as required and protect cut end with two (2) coats of Zinga or Zinc Kote. Refer to Mount Installation Sketch
5. Contractor shall install OVP on (3) new 48" long PIPE 2 SCH 40 pipes connected to the welded tabs of all sectors standoffs.
6. Contractor shall inspect climbing facilities and safety climb and ensure they are in good condition. Contractor shall install safety climb wire rope guides in locations where wire rope is contacting the mount or mount-to-tower connection steel. Wire brush clean any observed corrosion and protect with two (2) coats of Zinga or Zinc Kote. Contractor shall provide photos of wire rope guide installation as part of PMI documents. Contact EOR if additional guidance is required.
7. Threaded rod from proposed kits shall be trimmed to extend no more than 3" beyond the lock nut. Treat all cut ends with (2) coats of Zinga or Zinc Kote.

MOUNT INSTALLATION SKETCH



MOUNT ISOMETRIC VIEW
N.T.S

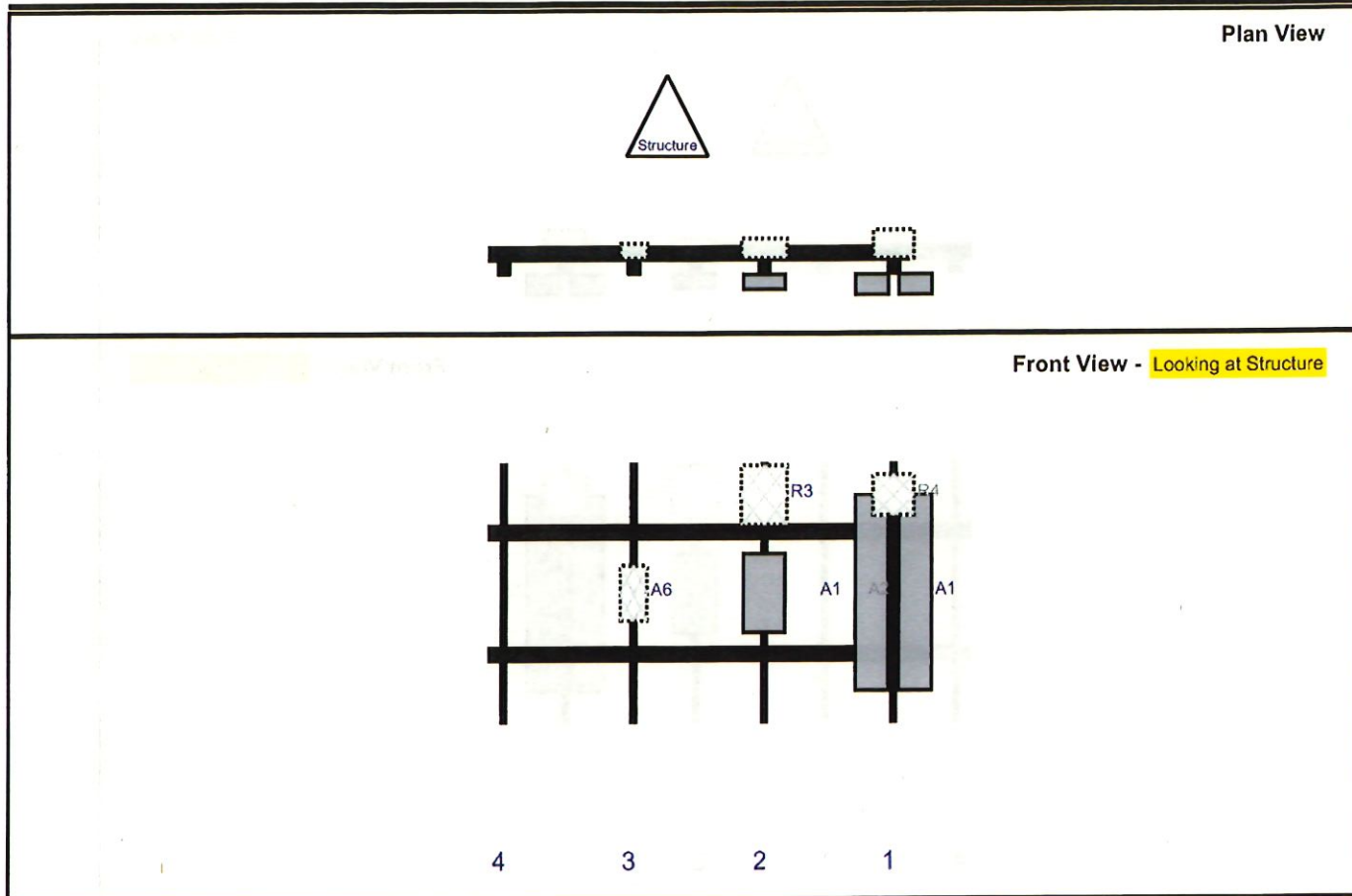
CONTRACTOR SHALL MEASURE ALL DIMENSIONS AND MEMBER SIZES REQUESTED ON THIS SKETCH. RECORD VIA PHOTOS AND MARKUPS ON THIS PAGE. PROVIDE PHOTOS AND MARKED-UP SKETCH TO THE EOR FOR EVALUATION.

Sector: A
 Structure Type: Self Support
 Mount Elev: 160.00

8/13/2025



Page: 1

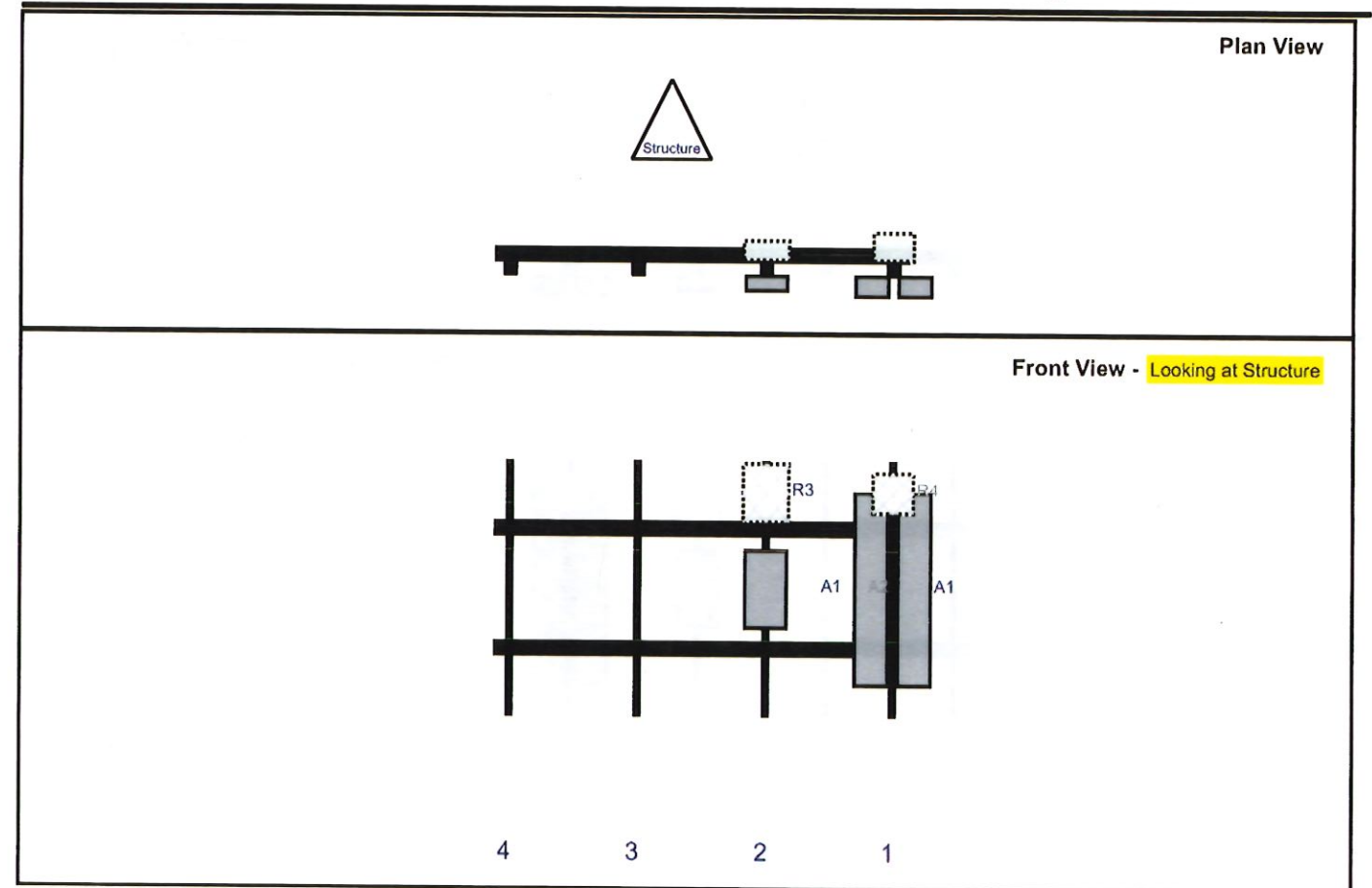


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
OVP	6 OVP	29.5	16.5		Member					Added	
A1	MX06FHG665-HG	72	12.2	150	1	a	Front	48	-8	Added	
A1	MX06FHG665-HG	72	12.2	150	1	b	Front	48	8	Added	
R4	RF4461d-13A	15	15	150	1	a	Behind	12	0	Added	
A2	MT6413-77A	28.9	15.8	102	2	a	Front	48	0	Added	
R3	RF4801d-25A	21.8	17.3	102	2	a	Behind	12	0	Added	
A6	3x6 NGOVP	20.4	9.7	54	3	a	Behind	48	0	Added	

Sector: B
 Structure Type: Self Support
 Mount Elev: 160.00

8/13/2025

Page: 2



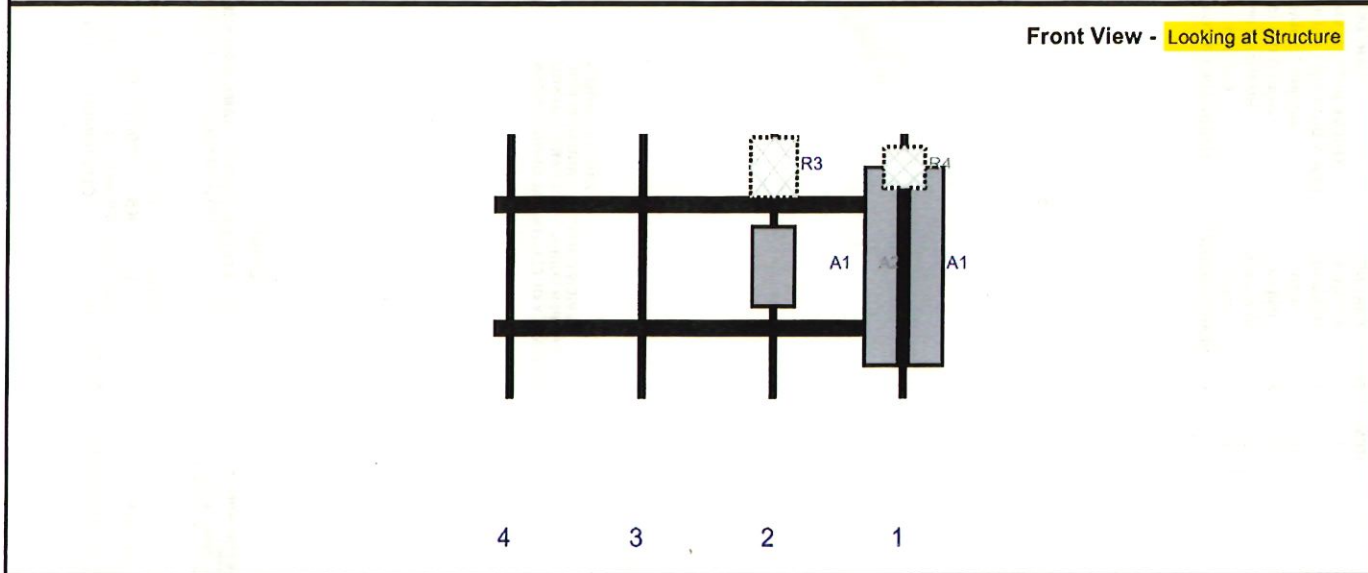
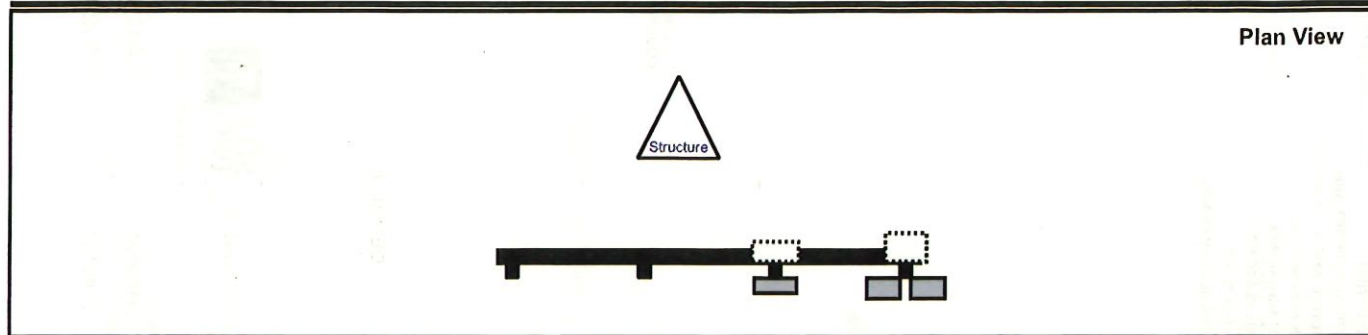
Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A1	MX06FHG665-HG	72	12.2	150	1	a	Front	48	-8	Added	
A1	MX06FHG665-HG	72	12.2	150	1	b	Front	48	8	Added	
R4	RF4461d-13A	15	15	150	1	a	Behind	12	0	Added	
A2	MT6413-77A	28.9	15.8	102	2	a	Front	48	0	Added	
R3	RF4801d-25A	21.8	17.3	102	2	a	Behind	12	0	Added	

Sector: C
 Structure Type: Self Support
 Mount Elev: 160.00

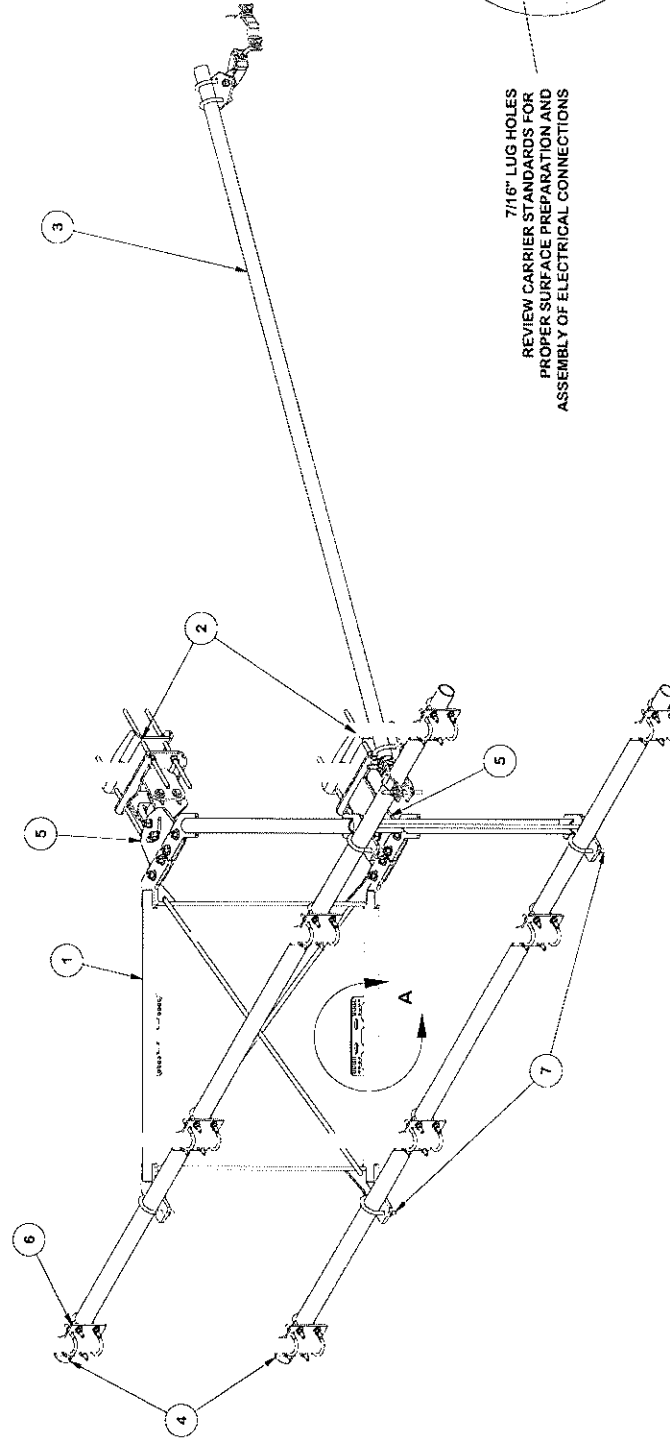
8/13/2025



Page: 3



Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A1	MX06FHG665-HG	72	12.2	150	1	a	Front	48	-8	Added	
A1	MX06FHG665-HG	72	12.2	150	1	b	Front	48	8	Added	
R4	RF4461d-13A	15	15	150	1	a	Behind	12	0	Added	
A2	MT6413-77A	28.9	15.8	102	2	a	Front	48	0	Added	
R3	RF4801d-25A	21.8	17.3	102	2	a	Behind	12	0	Added	



DETAIL A

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	X-VXDW45	XTREME DUTY 45° VERTICAL SUPPORT ARM		100.07	200.13
2	1	BCAM-HD	HEAVY DUTY BOLT CALIBRATED ANGLE MAINSTAY		147.01	147.01
3	1	SPTB	SLIDING TIE-BACK ASSEMBLY KIT		93.55	93.55
4	2	P30156	2-7/8" O.D. x 1.56" SCH. 40 PIPE	156 in	80.01	160.03
5	1	VFAPL4-K	HD FRAME PIVOT PLATE KIT		39.25	39.25
6	8	SCX2-K	CROSSOVER PLATE KIT		8.84	70.73
7	1	VF4HD-FACEHW	HARDWARE KIT FOR VFA SECTOR FRAME		17.93	17.93
					TOTAL WT. #	728.64

TOLERANCE NOTES
 TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
 SAWED, SHEARED AND GAS CUT EDGES ± 0.007"
 DRILLED HOLES ± 0.007"
 MACHINED HOLES ± 0.007"
 BEVELS AND ANGLES ARE ± 1.0° BEFORE
 ALL OTHER MACHINING ± 0.007"
 PATENT INFORMATION: WWW.BITEPROT.COM/PATENTS

DISCLAIMER NOTE:
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE, DISCLOSURE OR REPRODUCTION WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION
 12" XTREME DUTY V-FRAME ASSEMBLY WITH ONE STIFF ARMS 5' STAND-OFF

CPD NO. SP1
 DRAWN BY KS
 10/7/2024

ENCL. APPROVAL
 2/18/2025

CHECKED BY JET
 2/18/2025

CLASS 87
 SUB 02

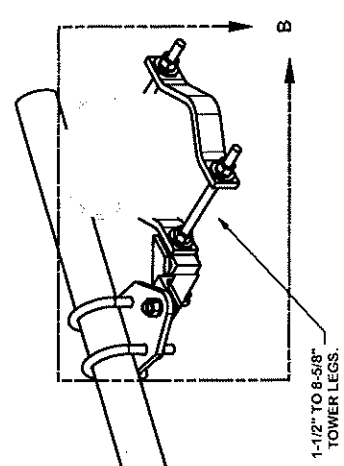
Engineering Support Team:
 ep1engineering@valmont.com

SITE PRO 1
 A VALMONT COMPANY

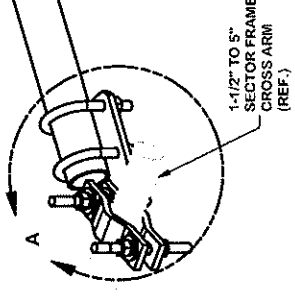
PART NO. VFA12-XDS
 DWG. NO. VFA12-XDS

PAGE 1 OF 16

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	X-SPTB278	SLIDING PIPE TIE BACK PLATE	5 1/2 in	5.70	11.40
2	2	X-TBCA	TIE BACK CLIP ANGLE		2.01	4.01
3	1	P30126	2-7/8" O.D. X 126" SCH. 40 PIPE	126 in	64.63	64.63
4	2	MCP	CLAMP HALF 1/2" THICK, 11-5/8" LONG	12 1/16 in	3.59	7.19
5	4	DCP	1/2" THICK, 5-3/4" CENTER TO CENTER CLAMP HALF	8 1/8 in	2.36	9.45
6	2	G58R-12	5/8" X 12" THREADED ROD (HDG.)		1.05	2.09
7	4	G58R-8	5/8" X 8" THREADED ROD (HDG.)		0.70	2.79
8	4	X-UBS300	5/8" X 3" X 5-1/4" X 2-1/2" U-BOLT (HDG.)		1.15	4.60
9	4	G5804	5/8" X 4" HDG HEX BOLT GR5		0.44	1.78
10	2	G5802	5/8" X 2" HDG HEX BOLT GR5		0.27	0.54
11	10	G58PW	5/8" HDG USS FLATWASHER	1/8 in	0.07	0.70
12	18	G58LW	5/8" HDG LOCKWASHER		0.03	0.47
13	20	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	2.60
TOTAL WT. #						112.58



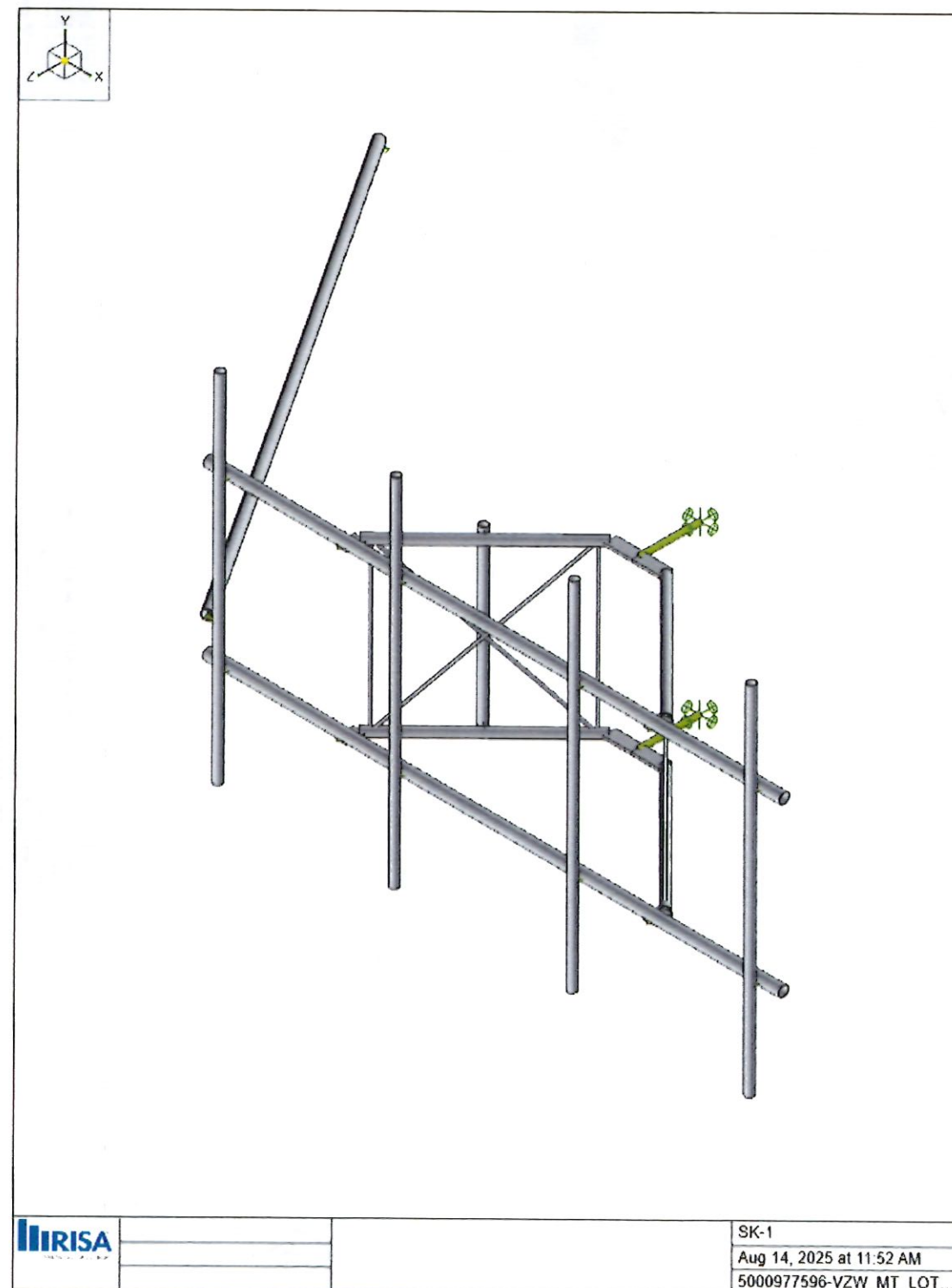
3

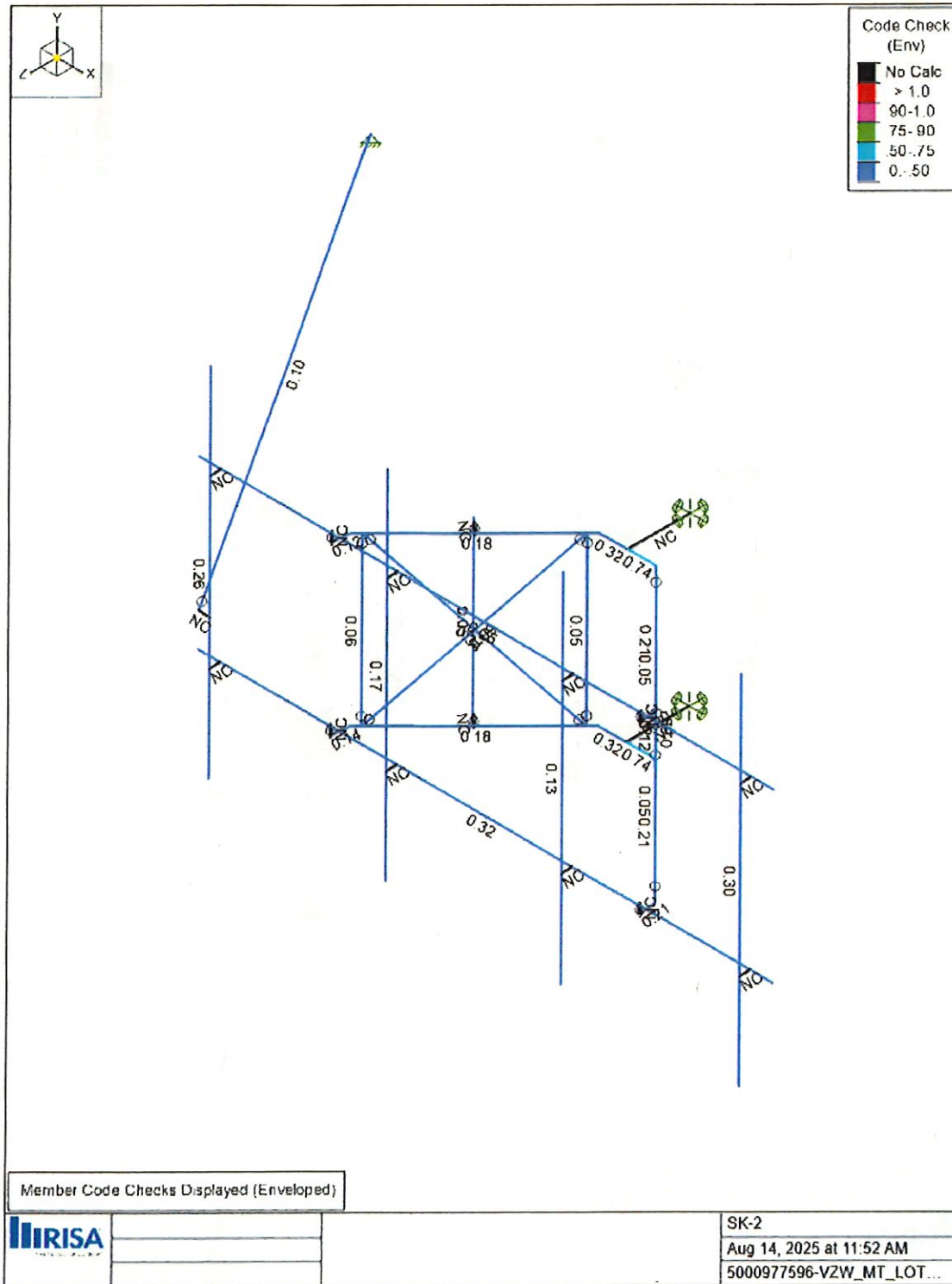


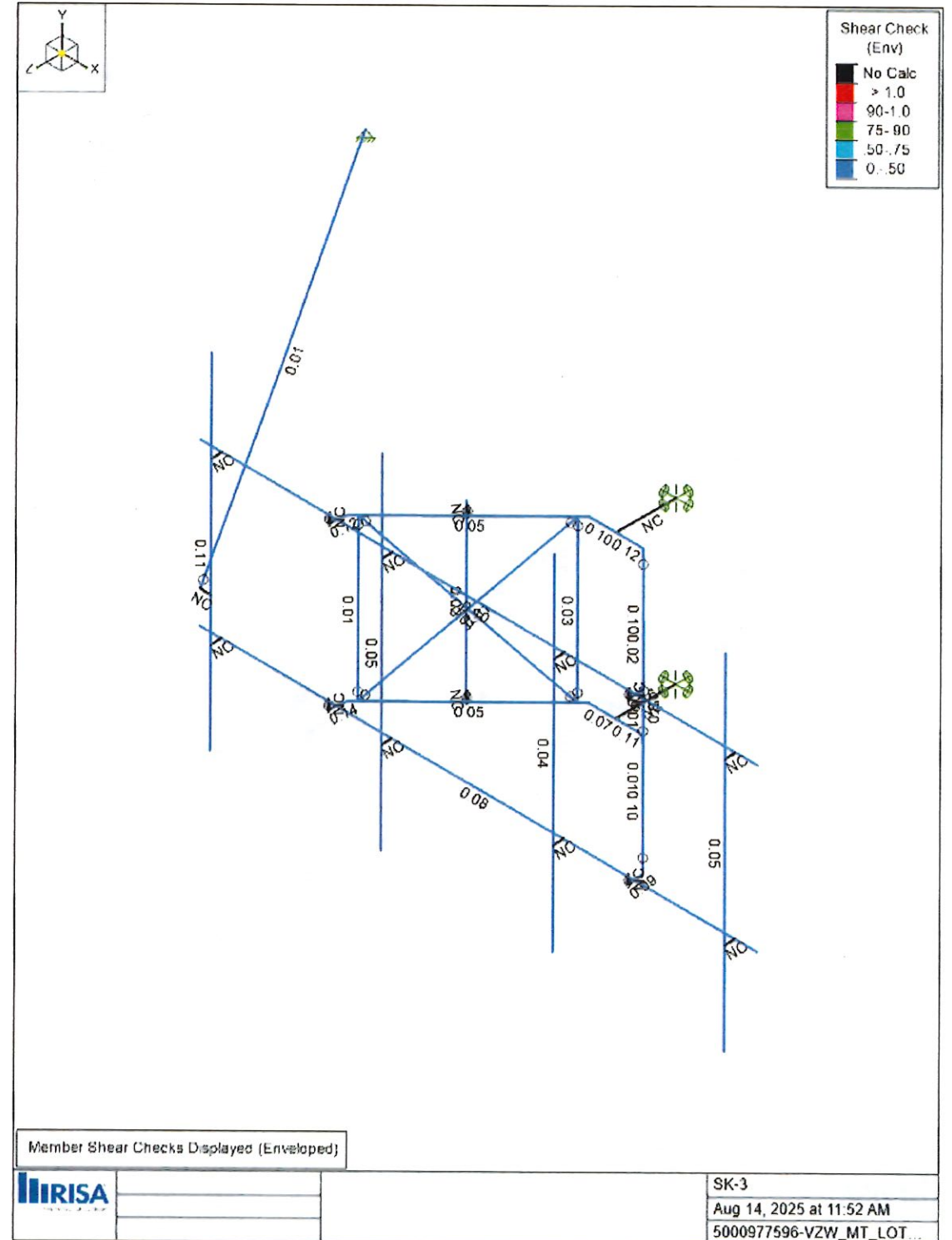
1-1/2" TO 5"
SECTOR FRAME
CROSS ARM
(REF.)

1-1/2" TO 8-5/8"
TOWER LEGS.

<p>TOLERANCE NOTES</p> <p>TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE: SAWED, SHEARED AND GAS CUT EDGES (± 0.007) DRILLED AND GAS CUT HOLES (± 0.007) - NO CONING OF HOLES LASER CUT EDGES AND HOLES (± 0.010) - NO CONING OF HOLES BENDS ARE $\pm 1/2$ DEGREE ALL OTHER MACHINING (± 0.007) ALL OTHER ASSEMBLY (± 0.007)</p>		<p>DESCRIPTION</p> <p>SLIDING PIPE TIE BACK ASSEMBLY</p>	<p>LOGOBOOK: New York, NY Los Angeles, CA Plymouth, IN Shenn, OR Dallas, TX</p> <p>Engineering Support Team 1-888-753-7440</p> <p>A Valmont COMPANY</p>
<p>CPD NO.</p> <p>DRAWN BY CEK</p> <p>ENG. APPROVAL</p>	<p>12/18/2017</p>	<p>PART NO.</p> <p>SPTB-278</p>	<p>PAGE</p> <p>1 OF 3</p>
<p>CLASS</p> <p>81</p> <p>SUB</p> <p>02</p>	<p>CHECKED BY</p> <p>BMC</p> <p>CUSTOMER</p>	<p>DWG. NO.</p> <p>SPTB-278</p>	<p>DATE</p> <p>2/19/2019</p>









Company :
 Designer :
 Job Number :
 Model Name :

8/14/2025
 11:53:40 AM
 Checked By :

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Point	Distributed
1	Antenna D	None				30	
2	Antenna Di	None				30	
3	Antenna Wo (0 Deg)	None				30	
4	Antenna Wo (30 Deg)	None				30	
5	Antenna Wo (60 Deg)	None				30	
6	Antenna Wo (90 Deg)	None				30	
7	Antenna Wo (120 Deg)	None				30	
8	Antenna Wo (150 Deg)	None				30	
9	Antenna Wo (180 Deg)	None				30	
10	Antenna Wo (210 Deg)	None				30	
11	Antenna Wo (240 Deg)	None				30	
12	Antenna Wo (270 Deg)	None				30	
13	Antenna Wo (300 Deg)	None				30	
14	Antenna Wo (330 Deg)	None				30	
15	Antenna Wi (0 Deg)	None				30	
16	Antenna Wi (30 Deg)	None				30	
17	Antenna Wi (60 Deg)	None				30	
18	Antenna Wi (90 Deg)	None				30	
19	Antenna Wi (120 Deg)	None				30	
20	Antenna Wi (150 Deg)	None				30	
21	Antenna Wi (180 Deg)	None				30	
22	Antenna Wi (210 Deg)	None				30	
23	Antenna Wi (240 Deg)	None				30	
24	Antenna Wi (270 Deg)	None				30	
25	Antenna Wi (300 Deg)	None				30	
26	Antenna Wi (330 Deg)	None				30	
27	Antenna Wm (0 Deg)	None				30	
28	Antenna Wm (30 Deg)	None				30	
29	Antenna Wm (60 Deg)	None				30	
30	Antenna Wm (90 Deg)	None				30	
31	Antenna Wm (120 Deg)	None				30	
32	Antenna Wm (150 Deg)	None				30	
33	Antenna Wm (180 Deg)	None				30	
34	Antenna Wm (210 Deg)	None				30	
35	Antenna Wm (240 Deg)	None				30	
36	Antenna Wm (270 Deg)	None				30	
37	Antenna Wm (300 Deg)	None				30	
38	Antenna Wm (330 Deg)	None				30	
39	Structure D	None		-1			
40	Structure Di	None					28
41	Structure Wo (0 Deg)	None					56
42	Structure Wo (30 Deg)	None					56
43	Structure Wo (60 Deg)	None					56
44	Structure Wo (90 Deg)	None					56
45	Structure Wo (120 Deg)	None					56
46	Structure Wo (150 Deg)	None					56
47	Structure Wo (180 Deg)	None					56
48	Structure Wo (210 Deg)	None					56
49	Structure Wo (240 Deg)	None					56
50	Structure Wo (270 Deg)	None					56
51	Structure Wo (300 Deg)	None					56
52	Structure Wo (330 Deg)	None					56
53	Structure Wi (0 Deg)	None					56
54	Structure Wi (30 Deg)	None					56
55	Structure Wi (60 Deg)	None					56

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Point	Distributed
56	Structure Wi (90 Deg)	None					56
57	Structure Wi (120 Deg)	None					56
58	Structure Wi (150 Deg)	None					56
59	Structure Wi (180 Deg)	None					56
60	Structure Wi (210 Deg)	None					56
61	Structure Wi (240 Deg)	None					56
62	Structure Wi (270 Deg)	None					56
63	Structure Wi (300 Deg)	None					56
64	Structure Wi (330 Deg)	None					56
65	Structure Wm (0 Deg)	None					56
66	Structure Wm (30 Deg)	None					56
67	Structure Wm (60 Deg)	None					56
68	Structure Wm (90 Deg)	None					56
69	Structure Wm (120 Deg)	None					56
70	Structure Wm (150 Deg)	None					56
71	Structure Wm (180 Deg)	None					56
72	Structure Wm (210 Deg)	None					56
73	Structure Wm (240 Deg)	None					56
74	Structure Wm (270 Deg)	None					56
75	Structure Wm (300 Deg)	None					56
76	Structure Wm (330 Deg)	None					56
77	Lm1	None				1	
78	Lm2	None				1	
79	Lv1	None				1	
80	Lv2	None				1	
81	Antenna Ev	None				30	
82	Antenna Eh (0 Deg)	None				20	
83	Antenna Eh (90 Deg)	None				20	
84	Structure Ev	ELY		-0.042			
85	Structure Eh (0 Deg)	ELZ			-0.106		
86	Structure Eh (90 Deg)	ELX	0.106				

Load Combinations

	Description	Solve	P-Delta	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
1	1.2D+1.0Wo (0 Deg)	Yes	Y	1	1.2	39	1.2	3	1	41	1						
2	1.2D+1.0Wo (30 Deg)	Yes	Y	1	1.2	39	1.2	4	1	42	1						
3	1.2D+1.0Wo (60 Deg)	Yes	Y	1	1.2	39	1.2	5	1	43	1						
4	1.2D+1.0Wo (90 Deg)	Yes	Y	1	1.2	39	1.2	6	1	44	1						
5	1.2D+1.0Wo (120 Deg)	Yes	Y	1	1.2	39	1.2	7	1	45	1						
6	1.2D+1.0Wo (150 Deg)	Yes	Y	1	1.2	39	1.2	8	1	46	1						
7	1.2D+1.0Wo (180 Deg)	Yes	Y	1	1.2	39	1.2	9	1	47	1						
8	1.2D+1.0Wo (210 Deg)	Yes	Y	1	1.2	39	1.2	10	1	48	1						
9	1.2D+1.0Wo (240 Deg)	Yes	Y	1	1.2	39	1.2	11	1	49	1						
10	1.2D+1.0Wo (270 Deg)	Yes	Y	1	1.2	39	1.2	12	1	50	1						
11	1.2D+1.0Wo (300 Deg)	Yes	Y	1	1.2	39	1.2	13	1	51	1						
12	1.2D+1.0Wo (330 Deg)	Yes	Y	1	1.2	39	1.2	14	1	52	1						
13	1.2D + 1.0Di + 1.0Wi (0 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	15	1	53	1		
14	1.2D + 1.0Di + 1.0Wi (30 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	16	1	54	1		
15	1.2D + 1.0Di + 1.0Wi (60 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	17	1	55	1		
16	1.2D + 1.0Di + 1.0Wi (90 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	18	1	56	1		
17	1.2D + 1.0Di + 1.0Wi (120 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	19	1	57	1		
18	1.2D + 1.0Di + 1.0Wi (150 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	20	1	58	1		
19	1.2D + 1.0Di + 1.0Wi (180 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	21	1	59	1		
20	1.2D + 1.0Di + 1.0Wi (210 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	22	1	60	1		
21	1.2D + 1.0Di + 1.0Wi (240 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	23	1	61	1		



Company :
 Designer :
 Job Number :
 Model Name :

8/14/2025
 11:53:40 AM
 Checked By : _____

Load Combinations (Continued)

Description	Solve	P-Delta	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor			
22 1.2D + 1.0Di + 1.0Wi (270 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	24	1	62	1				
23 1.2D + 1.0Di + 1.0Wi (300 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	25	1	63	1				
24 1.2D + 1.0Di + 1.0Wi (330 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	26	1	64	1				
25 1.2D + 1.5Lm1 + 1.0Wm (0 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	27	1	65	1						
26 1.2D + 1.5Lm1 + 1.0Wm (30 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	28	1	66	1						
27 1.2D + 1.5Lm1 + 1.0Wm (60 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	29	1	67	1						
28 1.2D + 1.5Lm1 + 1.0Wm (90 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	30	1	68	1						
29 1.2D + 1.5Lm1 + 1.0Wm (120 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	31	1	69	1						
30 1.2D + 1.5Lm1 + 1.0Wm (150 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	32	1	70	1						
31 1.2D + 1.5Lm1 + 1.0Wm (180 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	33	1	71	1						
32 1.2D + 1.5Lm1 + 1.0Wm (210 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	34	1	72	1						
33 1.2D + 1.5Lm1 + 1.0Wm (240 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	35	1	73	1						
34 1.2D + 1.5Lm1 + 1.0Wm (270 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	36	1	74	1						
35 1.2D + 1.5Lm1 + 1.0Wm (300 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	37	1	75	1						
36 1.2D + 1.5Lm1 + 1.0Wm (330 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	38	1	76	1						
37 1.2D + 1.5Lm2 + 1.0Wm (0 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	27	1	65	1						
38 1.2D + 1.5Lm2 + 1.0Wm (30 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	28	1	66	1						
39 1.2D + 1.5Lm2 + 1.0Wm (60 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	29	1	67	1						
40 1.2D + 1.5Lm2 + 1.0Wm (90 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	30	1	68	1						
41 1.2D + 1.5Lm2 + 1.0Wm (120 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	31	1	69	1						
42 1.2D + 1.5Lm2 + 1.0Wm (150 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	32	1	70	1						
43 1.2D + 1.5Lm2 + 1.0Wm (180 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	33	1	71	1						
44 1.2D + 1.5Lm2 + 1.0Wm (210 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	34	1	72	1						
45 1.2D + 1.5Lm2 + 1.0Wm (240 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	35	1	73	1						
46 1.2D + 1.5Lm2 + 1.0Wm (270 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	36	1	74	1						
47 1.2D + 1.5Lm2 + 1.0Wm (300 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	37	1	75	1						
48 1.2D + 1.5Lm2 + 1.0Wm (330 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	38	1	76	1						
49 1.2D + 1.5Lv1	Yes	Y	1	1.2	39	1.2	79	1.5										
50 1.2D + 1.5Lv2	Yes	Y	1	1.2	39	1.2	80	1.5										
51 1.4D	Yes	Y	1	1.4	39	1.4												
52 1.2D + 1.0Ev + 1.0Eh (0 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	1	83	ELZ	1	ELX		
53 1.2D + 1.0Ev + 1.0Eh (30 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.866	83	0.5	ELZ	0.866	ELX	0.5
54 1.2D + 1.0Ev + 1.0Eh (60 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.5	83	0.866	ELZ	0.5	ELX	0.866
55 1.2D + 1.0Ev + 1.0Eh (90 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82		83	1	ELZ		ELX	1
56 1.2D + 1.0Ev + 1.0Eh (120 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.5	83	0.866	ELZ	-0.5	ELX	0.866
57 1.2D + 1.0Ev + 1.0Eh (150 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.866	83	0.5	ELZ	-0.866	ELX	0.5
58 1.2D + 1.0Ev + 1.0Eh (180 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-1	83		ELZ	-1	ELX	
59 1.2D + 1.0Ev + 1.0Eh (210 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.866	83	-0.5	ELZ	-0.866	ELX	-0.5
60 1.2D + 1.0Ev + 1.0Eh (240 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.5	83	-0.866	ELZ	-0.5	ELX	-0.866
61 1.2D + 1.0Ev + 1.0Eh (270 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82		83	-1	ELZ		ELX	-1
62 1.2D + 1.0Ev + 1.0Eh (300 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.5	83	-0.866	ELZ	0.5	ELX	-0.866
63 1.2D + 1.0Ev + 1.0Eh (330 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.866	83	-0.5	ELZ	0.866	ELX	-0.5
64 0.9D - 1.0Ev + 1.0Eh (0 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	1	83		ELZ	1	ELX	
65 0.9D - 1.0Ev + 1.0Eh (30 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	0.866	83	0.5	ELZ	0.866	ELX	0.5
66 0.9D - 1.0Ev + 1.0Eh (60 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	0.5	83	0.866	ELZ	0.5	ELX	0.866
67 0.9D - 1.0Ev + 1.0Eh (90 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82		83	1	ELZ		ELX	1
68 0.9D - 1.0Ev + 1.0Eh (120 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.5	83	0.866	ELZ	-0.5	ELX	0.866
69 0.9D - 1.0Ev + 1.0Eh (150 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.866	83	0.5	ELZ	-0.866	ELX	0.5
70 0.9D - 1.0Ev + 1.0Eh (180 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-1	83		ELZ	-1	ELX	
71 0.9D - 1.0Ev + 1.0Eh (210 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.866	83	-0.5	ELZ	-0.866	ELX	-0.5
72 0.9D - 1.0Ev + 1.0Eh (240 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.5	83	-0.866	ELZ	-0.5	ELX	-0.866
73 0.9D - 1.0Ev + 1.0Eh (270 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82		83	-1	ELZ		ELX	-1
74 0.9D - 1.0Ev + 1.0Eh (300 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	0.5	83	-0.866	ELZ	0.5	ELX	-0.866
75 0.9D - 1.0Ev + 1.0Eh (330 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	0.866	83	-0.5	ELZ	0.866	ELX	-0.5

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	Face Horizontal	PIPE 2.5	Beam	Pipe	A53-b	Typical	1.61	1.45	1.45	2.89
2	Standoff Horizontal	PIPE 2.0X	Beam	Pipe	A53-b	Typical	1.4	0.827	0.827	1.65
3	Vertical Standoff Bracing	SR 0.625	Beam	BAR	Q235	Typical	0.307	0.007	0.007	0.015
4	Diagonal Standoff Bracing	SR 0.75	Beam	BAR	Q235	Typical	0.442	0.016	0.016	0.031
5	Tiebacks	PIPE 2.5	Beam	Pipe	A53-b	Typical	1.61	1.45	1.45	2.89
6	Mount Pipes	PIPE 2.0	Beam	HSS Pipe	A53-b	Typical	1.02	0.627	0.627	1.25
7	Connection Plate	PL5/8X3.5	Beam	RECT	Q235	Typical	2.188	0.071	2.233	0.253

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	N1	-3.45425	0.083333	3.279083	
2	N2	-0.636167	0.083333	0.478333	
3	N3	-0.636167	-3.666667	0.478333	
4	N4	-3.45425	-3.666667	3.279083	
5	N5	0	-3.666667	-0.916667	
6	N6	0	0.083333	-0.916667	
7	N7	3.45425	-3.666667	3.279083	
8	N8	0.636167	-3.666667	0.478333	
9	N9	0.636167	0.083333	0.478333	
10	N10	3.45425	0.083333	3.279083	
11	FP2-3	-3.5	-3.666667	3.666667	
12	FP1-3	-3.5	0.083333	3.666667	
13	FP2-2	3.5	-3.666667	3.666667	
14	FP1-2	3.5	0.083333	3.666667	
15	N50	-3.325164	0.083333	3.151257	
16	N51	-3.325164	-3.666667	3.151257	
17	N52	3.325164	-3.666667	3.151257	
18	N53	3.325164	0.083333	3.151257	
19	N54A	-0.765257	0.083333	0.606164	
20	N55A	-0.765257	-3.666667	0.606164	
21	N56A	0.765257	-3.666667	0.606164	
22	N57A	0.765257	0.083333	0.606164	
23	N59	0	0.083333	0.478333	
24	N60	0	-3.666667	0.478333	
25	N61	-6.5	0.25	3.666667	
26	N62	-6.5	-3.5	3.666667	
27	N65	6	2.375	3.919792	
28	N66	6	-5.625	3.919792	
29	N67	6	0.25	3.666667	
30	N68	6	0.25	3.919792	
31	N69	6	-3.5	3.666667	
32	N70	6	-3.5	3.919792	
33	N72	2	2.375	3.919792	
34	N73	2	-5.625	3.919792	
35	N74	2	0.25	3.666667	
36	N75	2	0.25	3.919792	
37	N76	2	-3.5	3.666667	
38	N77	2	-3.5	3.919792	
39	N78	-2	2.375	3.919792	
40	N79	-2	-5.625	3.919792	
41	N81	-2	0.25	3.666667	
42	N82	-2	0.25	3.919792	
43	N83	-2	-3.5	3.666667	
44	N84	-2	-3.5	3.919792	