



NB+C Engineering Services

Existing Wood Pole Antenna Installation

Prepared for Crown Castle Fiber, LLC

SITE INFORMATION

Address	2 Concord Street
	Malden, MA 02148
	Middlesex County
	Latitude: 42.430236°
	Longitude: -71.067350°
Crown Castle Node Number	ODAS_2F-27
NB+C Project Number	100723
Date	November 9, 2023

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1.0 INTRODUCTION

The structure is an existing class 3-45 ft. wood pole located in Malden, MA. As per your request **NB+C ES** performed a structural analysis and design for the existing wood pole to verify that the structure can support the new loads and are in compliance with the applicable codes and standards. Information we have received and used for this analysis includes:

- Final Construction Drawings prepared by **NB+C ES**, dated November 7, 2023
- Field Notes and Photos by **NB+C ES** personnel dated October 2, 2023

2.0 APPURTENANCES LOADING

As per the information provided to us, the final antenna configuration is shown in Table 1 below.

Table 1 – Final Antenna and Cable Information

Center Line Elevation (ft)	Antenna Model	Carrier	Feed Lines
38.83	(1) Amphenol 6U4MT360X12Fxys4 antenna	T-Mobile	(4) 1/2" Coax Cable
14.42	(1) Charles Industries Curved Shroud SH60-702322 w/ (1) Ericsson Radio 4455 B2/B25, (1) Radio 8863 B41		
10.75	(1) PTS90526 AC Load Center		
9.50	(1) Existing Meter		

Note: Proposed Equipment marked in bold

3.0 ASSUMPTIONS

This report is based on the theoretical capacity of the existing/proposed structural elements and is not an assessment of the overall suitability of the existing structure or its components for any particular use other than specified here in this report:

- This report makes no warranties, expressed and/or implied, and disclaims any liability arising from material, fabrication and erection of the existing structure and any other existing or proposed components or appurtenances.
- All proposed and existing antennas, mounts, coaxial cables, and appurtenances are assumed to be properly installed and configured according to manufacturer requirements.
- All existing structural elements are assumed to be in place and in good condition and were previously designed and constructed in accordance with applicable codes and standards.
- All antennas and equipment are conservatively assumed to be normal to the wind for all load combinations considered.
- Contractor to verify existing site condition including the existing soil type. In the event the existing site conditions are different than the assumptions made in this report, this has to

be brought to the structural engineer's attention before proceeding any further with bidding, fabrication and/or erection.

- Based on the photos taken by **NB+C ES** personnel dated October 2, 2023, the existing pole was assumed to be a class 3-45 ft Southern Pine wood pole with an embedment of 8.92 ft into the ground.

4.0 ANALYSIS

Calculations for this analysis are provided in Appendix A of this report.

5.0 CONCLUSIONS & RECOMMENDATIONS

Based on the performed analysis of this structure for applied gravity and lateral loads, the existing wood pole structure was calculated to have adequate structural capacity to support the proposed T-Mobile telecommunication equipment and is in compliance with building codes and standards listed here in this report. **The wood pole was calculated to be stressed to a maximum of 71.7% of its theoretical design capacity. NB+C recommends that the pole owner perform a condition assessment and evaluate the need for a pole replacement due to condition, maintenance and serviceability.** Refer to the construction drawings prepared by **NB+C ES** for the proposed location of the appurtenances.

The results in Appendix A of the report show that the additional forces imparted to the existing wood pole due to the proposed telecommunications antenna and mount are within acceptable limits considering the overall configuration of the support structure.

The conclusions reached by **NB+C ES** in this report are only applicable for the previously mentioned existing and proposed structural members supporting the T-Mobile telecommunication antennas. Further, no structural qualification is made or implied by this report for existing structural members not supporting the T-Mobile equipment.

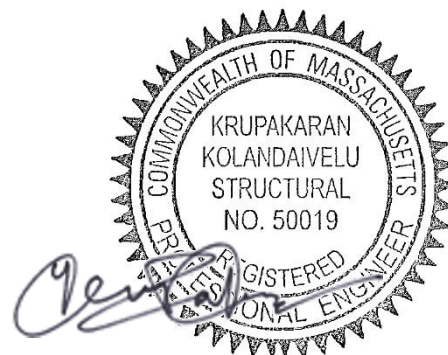
NB+C ENGINEERING SERVICES, LLC

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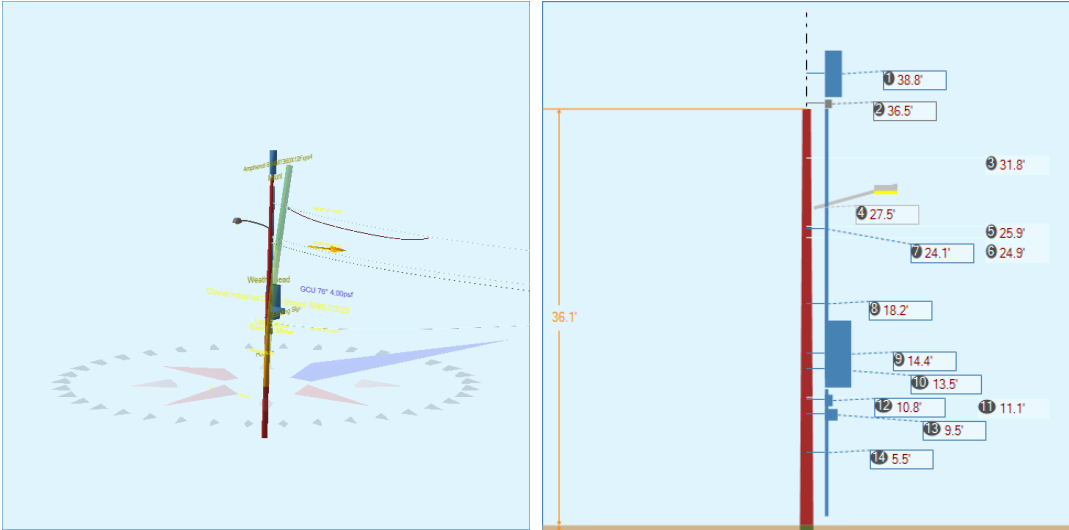


11/9/23

APPENDIX A

CALCULATIONS

Pole Num:	ODAS-2F-27	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.92	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.41	Loading District:	Heavy	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.50	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	0.000000 Deg	Longitude:	0.000000 Deg	Elevation:	0 Feet		



Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	71.7	0.0	76.3
Groundline	71.7	0.0	76.3
Vertical	8.4	18.7	76.3

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	61,662	86.5	76.3
Groundline	61,662	86.5	76.3
GL Allowable	86,636		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 86.5°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	658	25.8	21,277	34.5	24.6	1,649	146	1	1,650	24.3
Comms	1,330	52.0	29,850	48.4	34.5	2,313	205	2	2,315	34.0
GenericEquipments	278	10.9	5,161	8.4	6.0	400	1,295	12	412	6.1
Pole	267	10.4	4,821	7.8	5.6	374	2,039	19	393	5.8
Streetlights	22	0.9	501	0.8	0.6	39	114	1	40	0.6
Insulators	1	0.1	53	0.1	0.1	4	38	0	4	0.1
Pole Load	2,556	100.0	61,662	100.0	71.2	4,778	3,837	36	4,814	70.8
Pole Reserve Capacity			24,974		28.8	2,022			1,986	29.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 86.5°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
<Undefined>	2,285	89.4	56,670	91.9	65.4	4,391	1,741	17	4,407	64.8
Crown Castle	5	0.2	171	0.3	0.2	13	57	1	14	0.2
Pole	267	10.4	4,821	7.8	5.6	374	2,039	19	393	5.8
Totals:	2,556	100.0	61,662	100.0	71.2	4,778	3,837	36	4,814	70.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	TRIPLEX 1/0	31.81	6.60	0.3500		0.140	95.0	80.0	95.2			19	-2	57
Secondary	TRIPLEX 1/0	31.35	42.44	0.3500	1.47	0.140	28.0	14.0	28.3	38	436	7	283	740
Secondary	TRIPLEX 1/0	31.35	42.44	0.3500	1.47	0.140	28.0	14.0	28.3	38	436	7	283	740
Secondary	TRIPLEX 1/0	31.81	6.26	0.3500		0.140	95.0	80.0	95.2			18	-2	56
Overlashed Bundle	6M	31.83	6.41	0.2420	2.53	0.104	95.0	80.0	95.2	471	19,367	17	-8	19,411
										Totals:	20,239	69	554	21,004

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6M	25.92	6.76	0.2420	2.54	0.104	95.0	80.0	95.2	343	11,468	21	-7	11,517

CATV	CATV .25	25.90	6.73	0.2500		0.100	95.0	80.0	95.2			21	-1	53
Overlashed Bundle	6M	24.92	6.82	0.2420	2.53	0.104	95.0	80.0	95.2	445	14,320	26	-7	14,378
CATV	CATV .50	24.89	6.83	0.5000		0.200	95.0	80.0	95.2			31	-2	75
Overlashed Bundle	6M	11.08	7.64	0.2420	2.29	0.104	95.0	80.0	95.2	239	3,385	38	-3	3,443
										Totals:	29,173	136	-20	29,467

Generic Equipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Cylinder	Amphenol 6U4MT360X12Fxs4	Crown Castle	38.83	1.80	90.0	0.0	42.00	48.20	--	14.60	--	12	1,307	1,427
Cylinder	Mount		36.46	0.64	90.0	0.0	30.00	9.00	--	6.00	--	3	94	169
Cylinder	Riser		24.13	5.87	18.0	0.0	100.00	251.00	--	3.00	--	34	869	1,062
Cylinder	Weatherhead		18.25	5.97	311.0	0.0	100.00	156.00	--	2.50	--	-67	341	393
Box	Charles Industries Curved Shroud: SH60-702322		14.42	15.67	351.0	0.0	250.00	69.50	21.45	--	22.73	-60	1,645	1,822
Box	Existing Sign		13.50	23.00	80.0	0.0	10.00	12.00	36.00	--	0.50	36	3	48
Box	Load Center		10.75	7.82	351.0	0.0	40.00	12.00	5.33	--	6.70	-5	53	76
Box	Existing Meter		9.50	7.66	351.0	0.0	10.00	12.00	4.86	--	11.00	-1	42	47
Cylinder	Riser		5.50	6.97	301.0	0.0	100.00	132.00	--	3.00	--	-91	104	49
											Totals:	-139	4,457	5,094

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 6 ft. Arm		27.50	4.17	188.0	188.0	60.00	24.00	20.00	3.00	72.00	-108	495	495
										Totals:		-108	495	495

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Bolt	Single Bolt		31.83	0.00	80.0	80.0	5.00	3.00	0.00	5	0	16
Bolt	Single Bolt		25.92	0.00	80.0	80.0	5.00	3.00	0.00	5	0	14
Bolt	Single Bolt		24.92	0.00	80.0	80.0	5.00	3.00	0.00	5	0	14
Bolt	Single Bolt		11.08	0.00	80.0	80.0	5.00	3.00	0.00	6	0	10
									Totals:	22	0	53

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.70	32.86	10.86	14.00	7.32	11.60	1.60e+6	60.00	57.00	36.08	45,577	456.82	11.90

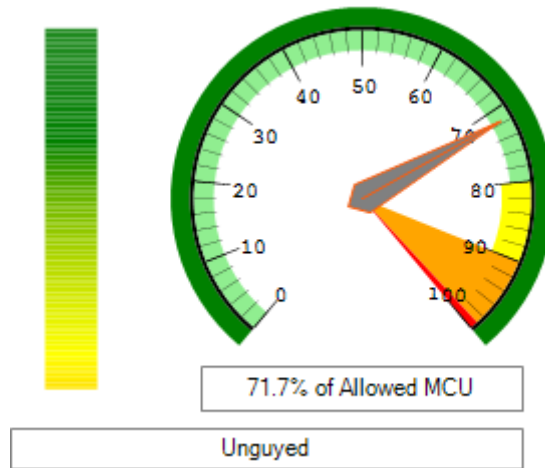
Notes		
Date	Author	Description
12/7/2015	bmesfin	Assumptions
ASSUMPTIONS :		
The analysis contained within this report is based on the pole capacity as prescriberd in the governing codes. The validity and accuracy of the analysis within is limited by the accuracy of the infromation it is based on. The structural analysis is based on the following assumptions.		
1. The pole was built and maintained in accordance with the manufacturer's specifications. The structure is assumed to be plumb, in good condition and essentially as erected.		
2. The member size dimensions and sections are accurate as supplied.		
3. The wood pole evaluated is Southern pine with capacity of 8000psi.		
4. The soil at this locations have normal (average) soil properties.		
5. All wire types, sizes, heights and wind spans were determined from photos obtained during a site visit.		
If any of these assumptions is not valid or has been made in error, this analysis may be affected, and NB+C ES could be allowed to review any new information to determine its effect on the structural integrity of the tower.		

O-Calc® Pro Capacity Summary Info

Pole Identification: ODAS-2F-27

Report Created: 11/9/2023

File: ODAS_2F-27.pplx



O-Calc® Pro Heat Map View

Report Created: 11/9/2023

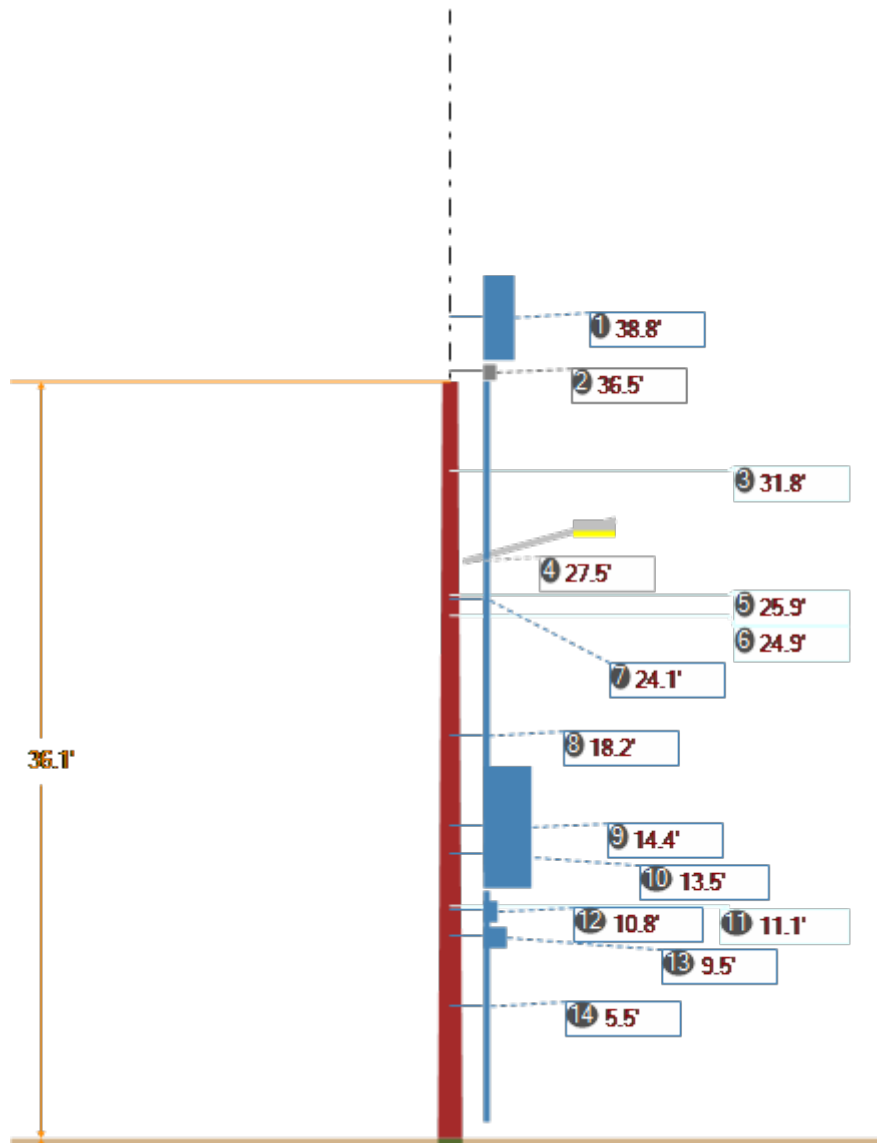


O-Calc® Pro Schematic View

Pole Identification: ODAS-2F-27

Report Created: 11/9/2023

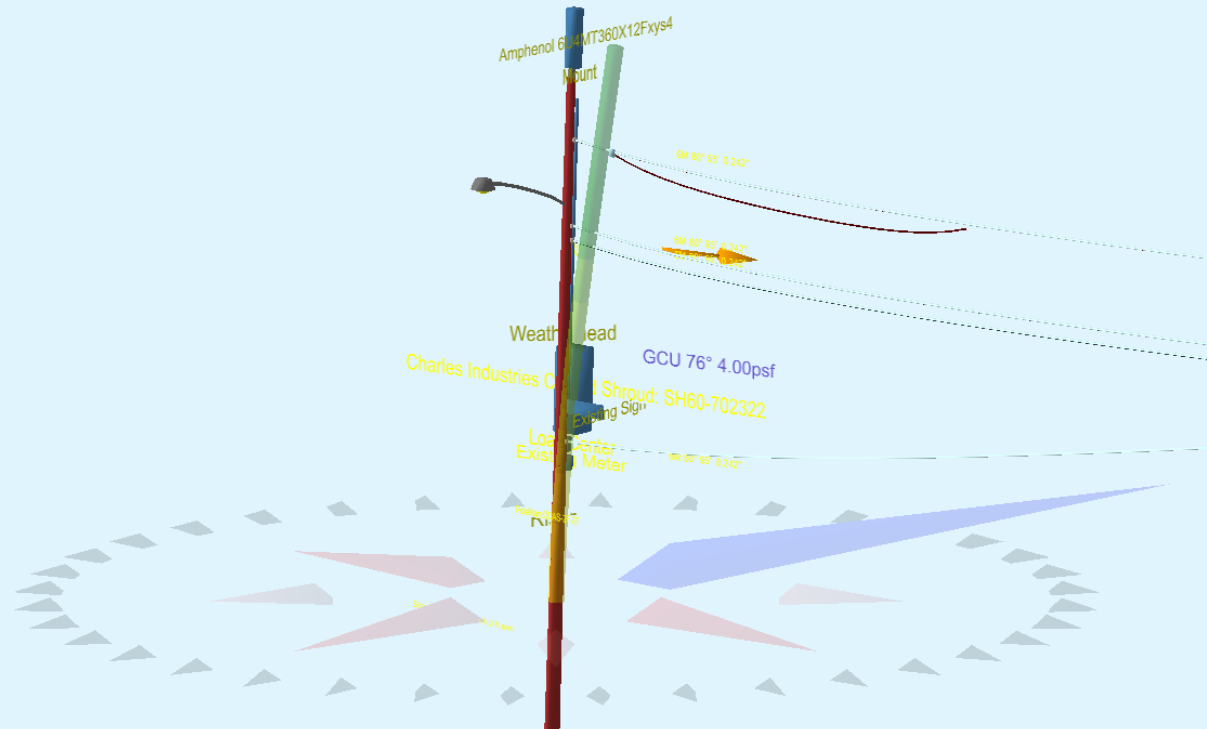
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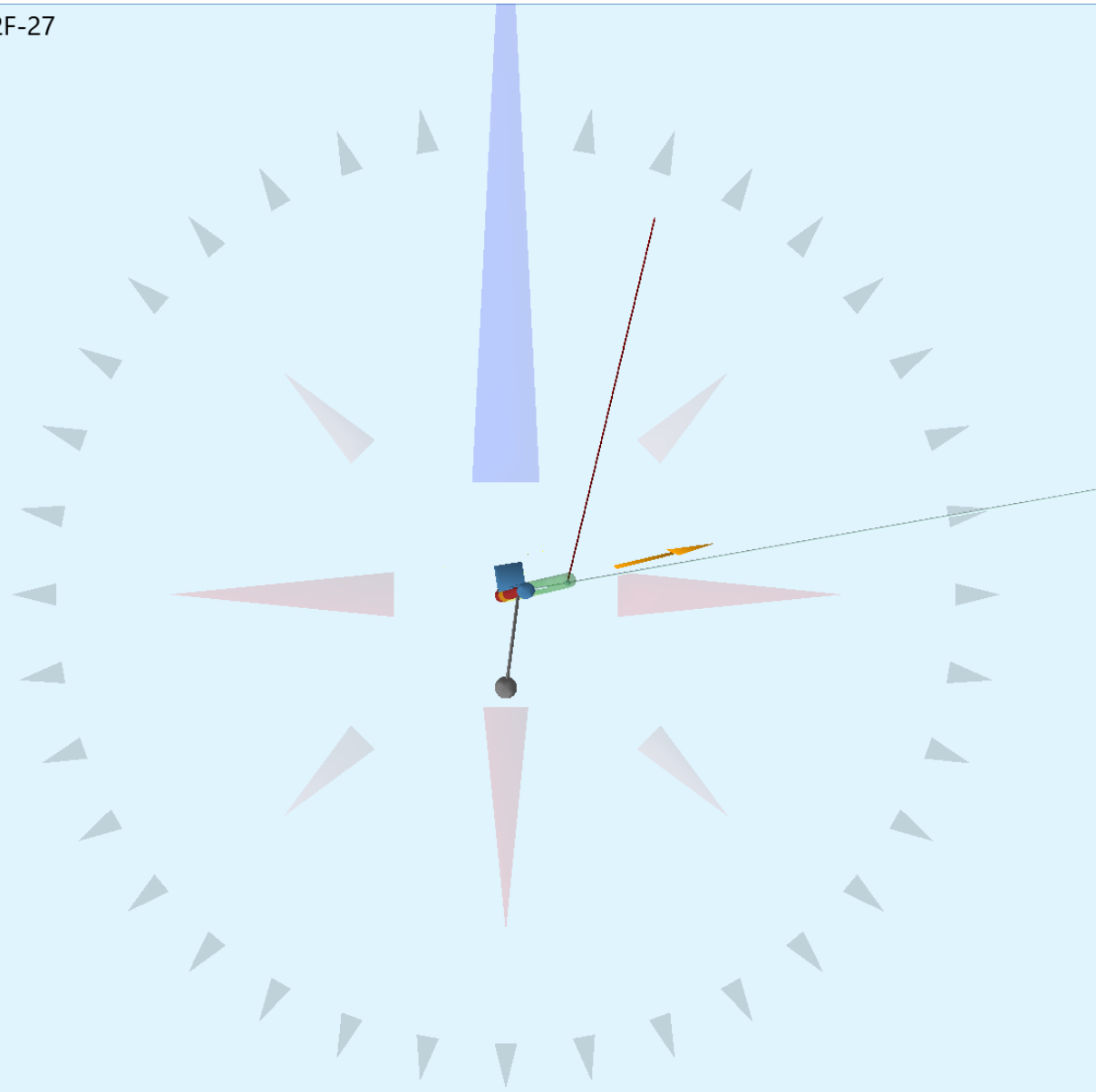
1 - 38.8' (466")
Amphenol 6U4MT360X12Fxys4
2 - 36.5' (437.5")
Mount
3 - 31.8' (382")
6M 80° 95' Msgr:0.242"
4 - 27.5' (330")
Streetlight - 6 ft. Arm 6.0 ft arm
5 - 25.9' (311")
6M 80° 95' Msgr:0.242"
6 - 24.9' (299")
6M 80° 95' Msgr:0.242"
7 - 24.1' (289.5")
Riser

8 - 18.2' (219")	Weatherhead
9 - 14.4' (173")	CHARLES SH60-702322 Shroud
10 - 13.5' (162")	Existing Sign
11 - 11.1' (133")	6M 80° 95' Msgr:0.242"
12 - 10.8' (129")	Load Center PTS90526
13 - 9.5' (114")	Meter
14 - 5.5' (66")	Riser

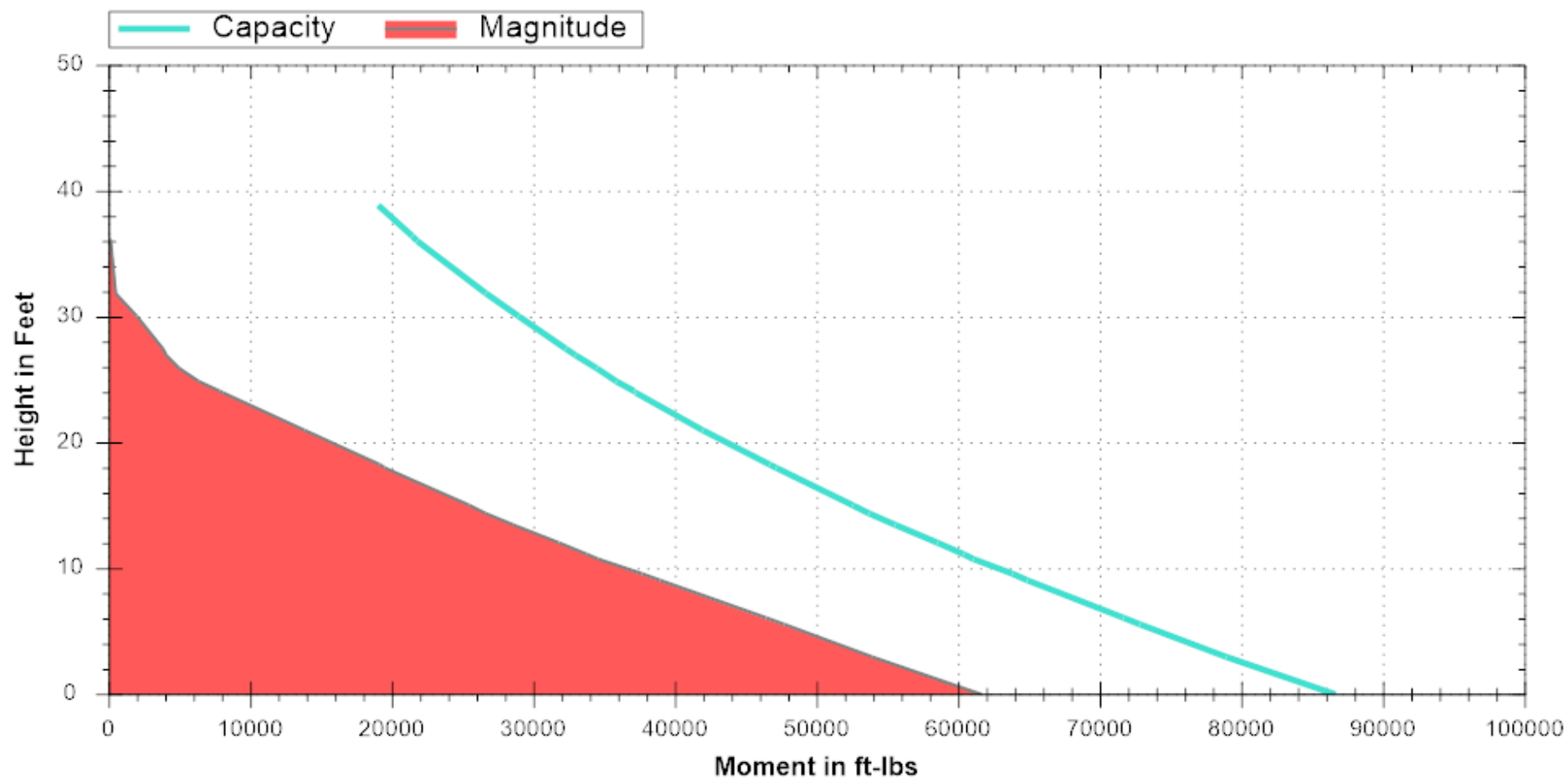
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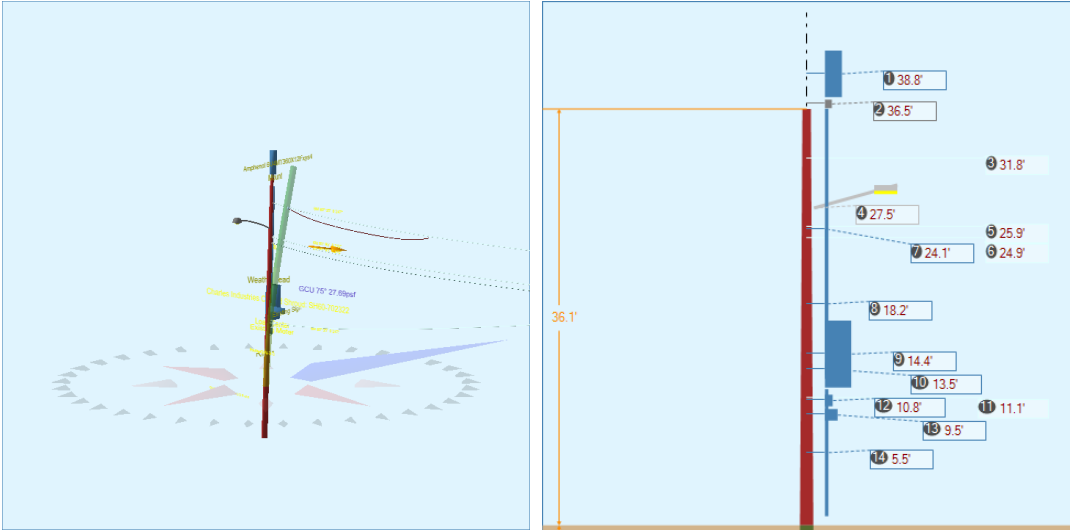
ODAS-2F-27



Bending Moment vs Height
Wind 76° : Load 86.5°
Pole: ODAS-2F-27 - 11/9/2023
NESC 12 (250B) Grade C , Heavy (I:0.5in W:4psf)



Pole Num:	ODAS-2F-27	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250C	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.92	Construction Grade:	C	Pole Strength Factor:	0.75
Aux Data 3	Unset	G/L Circumference (in):	36.41	Loading District:	Special	Transverse Wind LF:	0.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.00	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,000	Wind Speed (mph):	104.00	Vertical LF:	1.00
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	27.69	Max 250C Wind (mph)	175.64
Latitude:	0.000000 Deg	Longitude:	0.000000 Deg	Elevation:	0 Feet		



Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	51.2	0.0	75.5
Groundline	51.2	0.0	75.5
Vertical	4.3	18.0	75.5

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	38,892	85.7	75.5
Groundline	38,892	85.7	75.5
GL Allowable	76,443		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 85.7°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	211	12.1	7,188	18.5	9.4	528	25	0	529	8.8
Comms	307	17.6	7,509	19.3	9.8	552	25	0	552	9.2
GenericEquipments	614	35.2	12,829	33.0	16.8	943	682	6	949	15.8
Pole	557	32.0	9,868	25.4	12.9	725	1,073	10	736	12.3
Streetlights	52	3.0	1,468	3.8	1.9	108	60	1	108	1.8
Insulators	1	0.0	30	0.1	0.0	2	20	0	2	0.0
Pole Load	1,742	100.0	38,892	100.0	50.9	2,859	1,885	18	2,877	47.9
Pole Reserve Capacity			37,551		49.1	3,141			3,123	52.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 85.7°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
<Undefined>	1,176	67.5	28,691	73.8	37.5	2,109	782	7	2,116	35.3
Crown Castle	9	0.5	333	0.9	0.4	25	30	0	25	0.4
Pole	557	32.0	9,868	25.4	12.9	725	1,073	10	736	12.3
Totals:	1,742	100.0	38,892	100.0	50.9	2,859	1,885	18	2,877	47.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	TRIPLEX 1/0	31.81	6.60	0.3500		0.140	95.0	80.0	95.2			4	-4	7
Secondary	TRIPLEX 1/0	31.35	42.44	0.3500	1.51	0.140	28.0	14.0	28.3	11	100	1	198	301
Secondary	TRIPLEX 1/0	31.35	42.44	0.3500	1.51	0.140	28.0	14.0	28.3	11	100	1	198	301
Secondary	TRIPLEX 1/0	31.81	6.26	0.3500		0.140	95.0	80.0	95.2			3	-4	7
Overlashed Bundle	6M	31.83	6.41	0.2420	2.53	0.104	95.0	80.0	95.2	193	6,112	3	-4	6,116
										Totals:	6,313	13	383	6,732

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6M	25.92	6.76	0.2420	2.54	0.104	95.0	80.0	95.2	102	2,640	3	-4	2,643

CATV	CATV .25	25.90	6.73	0.2500		0.100	95.0	80.0	95.2			3	-4	3
Overlashed Bundle	6M	24.92	6.82	0.2420	2.53	0.104	95.0	80.0	95.2	153	3,788	3	-5	3,789
CATV	CATV .50	24.89	6.83	0.5000		0.200	95.0	80.0	95.2			5	-5	8
Overlashed Bundle	6M	11.08	7.64	0.2420	2.29	0.104	95.0	80.0	95.2	54	584	4	-2	588
										Totals:	7,011	17	-19	7,032

GenericEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Cylinder	Amphenol 6U4MT360X12Fxs4	Crown Castle	38.83	1.80	90.0	0.0	42.00	48.20	--	14.60	--	6	3,808	3,871
Cylinder	Mount		36.46	0.64	90.0	0.0	30.00	9.00	--	6.00	--	2	272	312
Cylinder	Riser		24.13	5.87	18.0	0.0	100.00	251.00	--	3.00	--	19	2,304	2,407
Cylinder	Weatherhead		18.25	5.97	311.0	0.0	100.00	156.00	--	2.50	--	-35	851	880
Box	Charles Industries Curved Shroud: SH60-702322		14.42	15.67	351.0	0.0	250.00	69.50	21.45	--	22.73	-26	3,951	4,050
Box	Existing Sign		13.50	23.00	80.0	0.0	10.00	12.00	36.00	--	0.50	19	7	30
Box	Load Center		10.75	7.82	351.0	0.0	40.00	12.00	5.33	--	6.70	-2	126	139
Box	Existing Meter		9.50	7.66	351.0	0.0	10.00	12.00	4.86	--	11.00	-1	101	104
Cylinder	Riser		5.50	6.97	301.0	0.0	100.00	132.00	--	3.00	--	-47	250	222
											Totals:	-66	11,671	12,014

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 6 ft. Arm		27.50	4.17	188.0	188.0	60.00	24.00	20.00	3.00	72.00	-61	1,379	1,375
										Totals:		-61	1,379	1,375

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Bolt	Single Bolt		31.83	0.00	80.0	80.0	5.00	3.00	0.00	3	0	8
Bolt	Single Bolt		25.92	0.00	80.0	80.0	5.00	3.00	0.00	3	0	7
Bolt	Single Bolt		24.92	0.00	80.0	80.0	5.00	3.00	0.00	3	0	7
Bolt	Single Bolt		11.08	0.00	80.0	80.0	5.00	3.00	0.00	3	0	5
									Totals:	11	0	28

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.97	32.75	10.89	9.82	7.32	11.60	1.60e+6	60.00	57.00	36.08	44,055	438.26	23.26

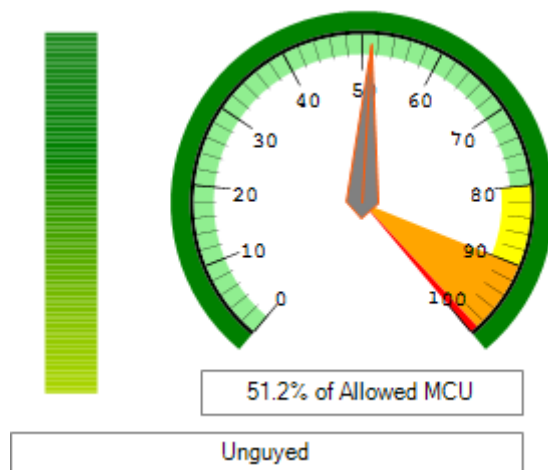
Notes		
Date	Author	Description
12/7/2015	bmesfin	Assumptions
ASSUMPTIONS :		
The analysis contained within this report is based on the pole capacity as prescriberd in the governing codes. The validity and accuracy of the analysis within is limited by the accuracy of the infromation it is based on. The structural analysis is based on the following assumptions.		
1. The pole was built and maintained in accordance with the manufacturer's specifications. The structure is assumed to be plumb, in good condition and essentially as erected.		
2. The member size dimensions and sections are accurate as supplied.		
3. The wood pole evaluated is Southern pine with capacity of 8000psi.		
4. The soil at this locations have normal (average) soil properties.		
5. All wire types, sizes, heights and wind spans were determined from photos obtained during a site visit.		
If any of these assumptions is not valid or has been made in error, this analysis may be affected, and NB+C ES could be allowed to review any new information to determine its effect on the structural integrity of the tower.		

O-Calc® Pro Capacity Summary Info

Pole Identification: ODAS-2F-27

Report Created: 11/9/2023

File: ODAS_2F-27.pplx



O-Calc® Pro Heat Map View

Report Created: 11/9/2023

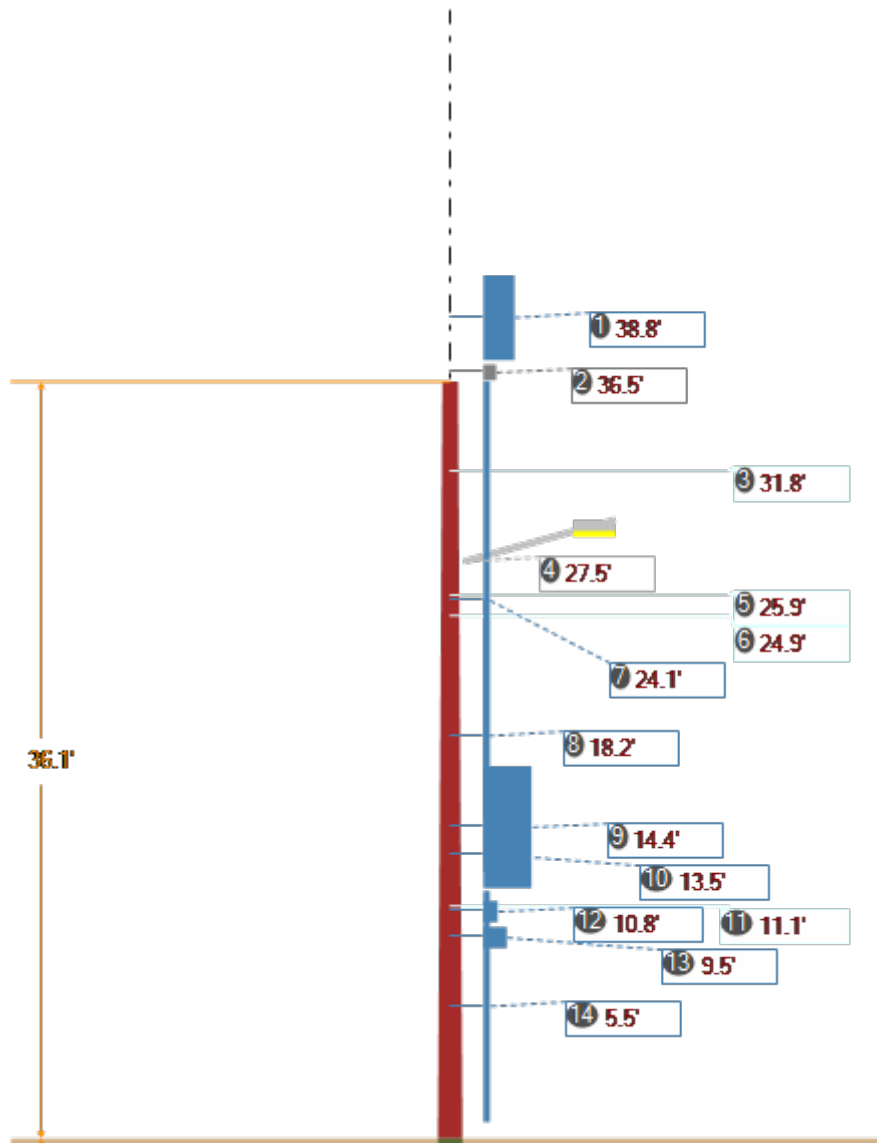


O-Calc® Pro Schematic View

Pole Identification: ODAS-2F-27

Report Created: 11/9/2023

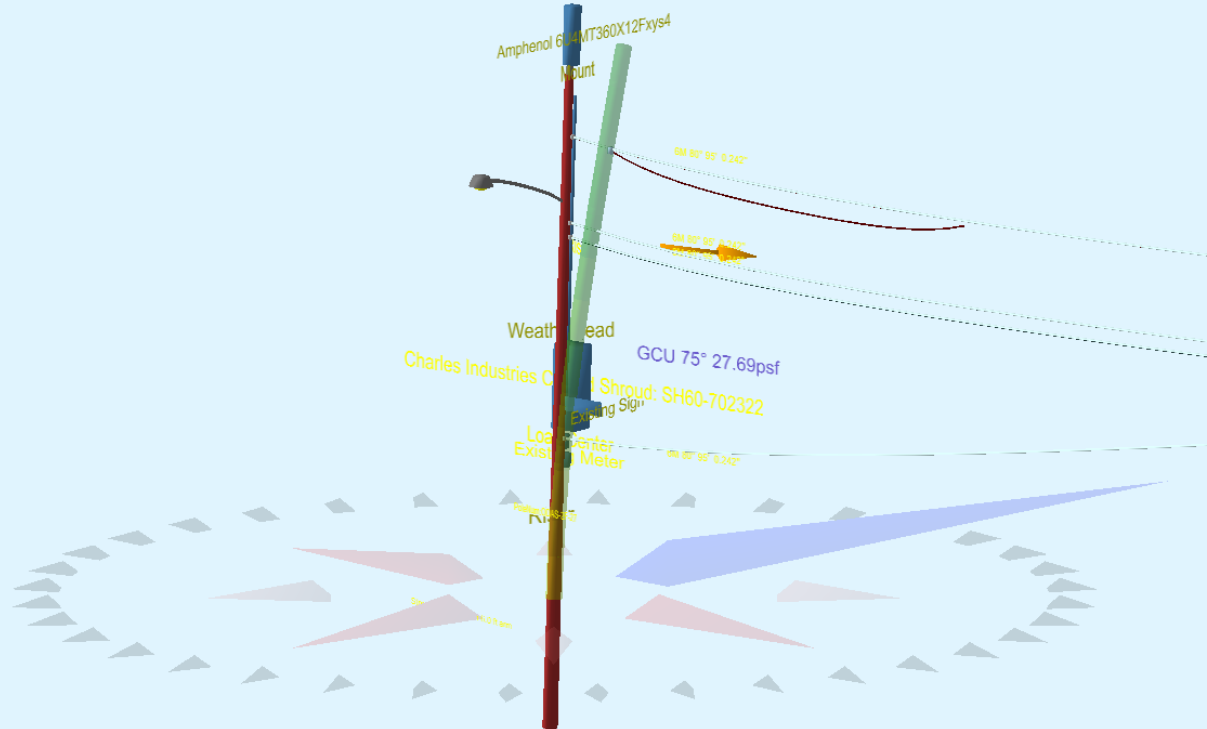
File: ODAS_2F-27.pplx



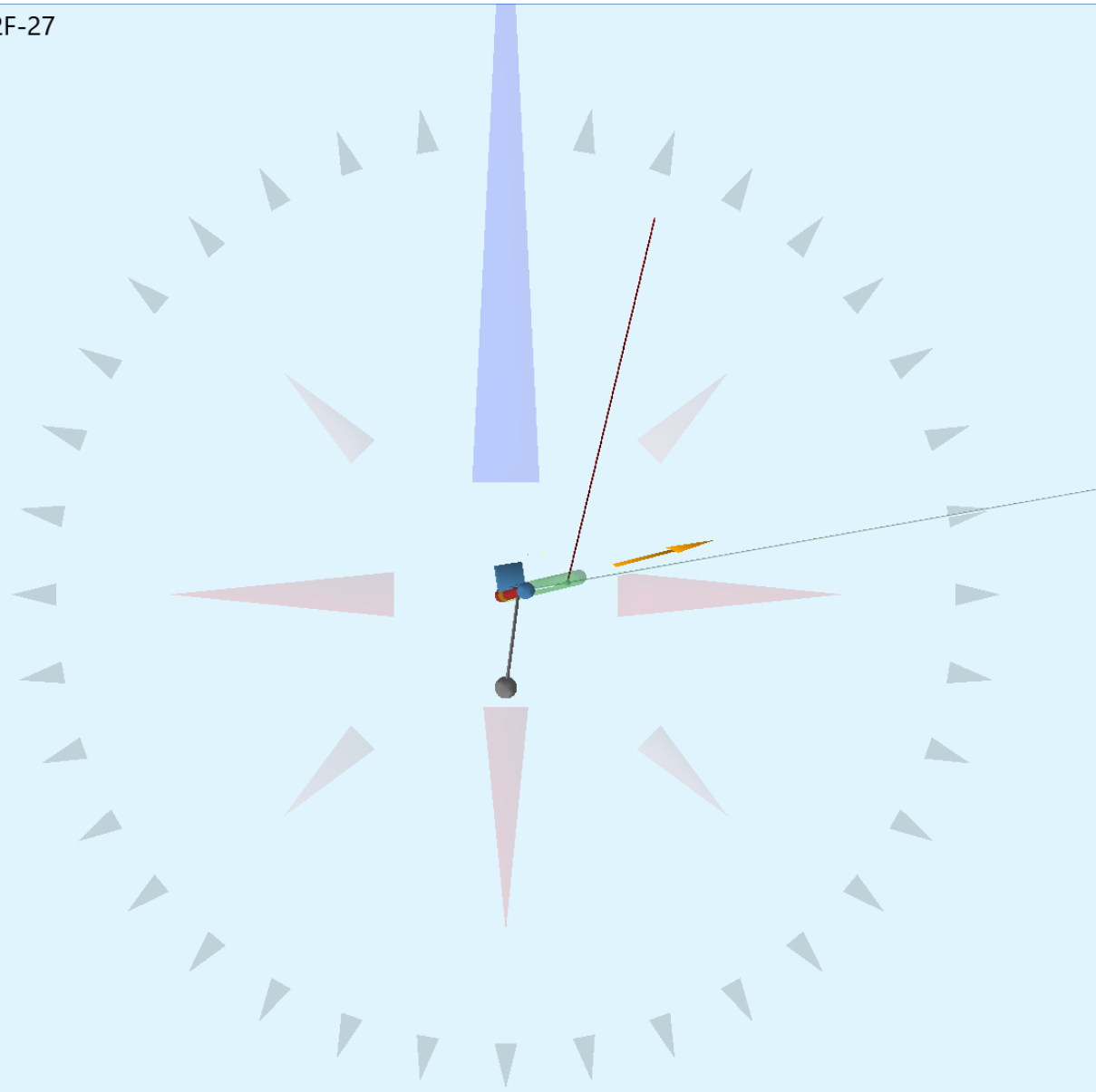
1 - 38.8' (466")
Amphenol 6U4MT360X12Fxys4
2 - 36.5' (437.5")
Mount
3 - 31.8' (382")
6M 80° 95' Msgr:0.242"
4 - 27.5' (330")
Streetlight - 6 ft. Arm 6.0 ft arm
5 - 25.9' (311")
6M 80° 95' Msgr:0.242"
6 - 24.9' (299")
6M 80° 95' Msgr:0.242"
7 - 24.1' (289.5")
Riser

8 - 18.2' (219")	Weatherhead
9 - 14.4' (173")	CHARLES SH60-702322 Shroud
10 - 13.5' (162")	Existing Sign
11 - 11.1' (133")	6M 80° 95' Msgr:0.242"
12 - 10.8' (129")	Load Center PTS90526
13 - 9.5' (114")	Meter
14 - 5.5' (66")	Riser

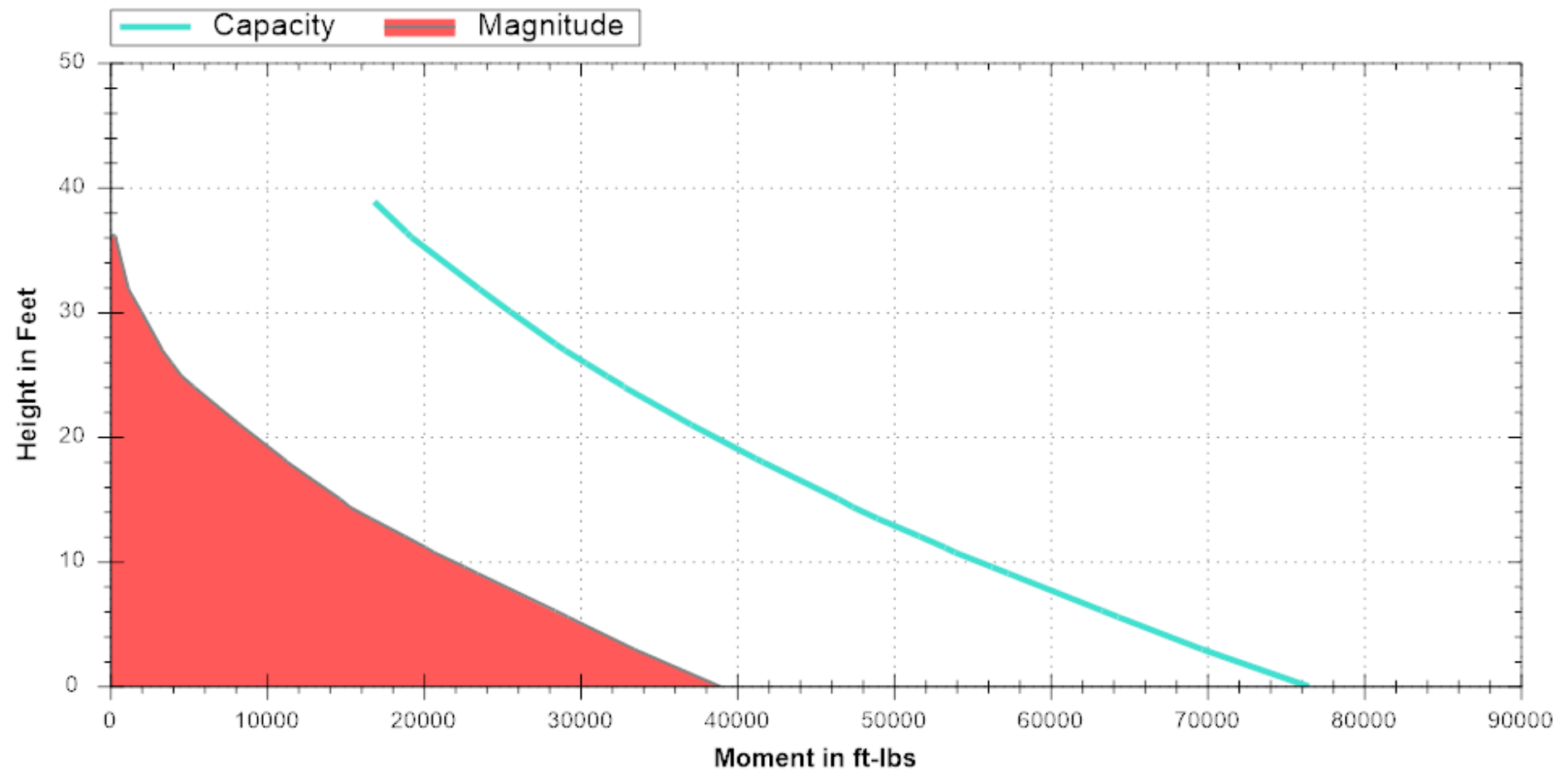
ODAS-2F-27



ODAS-2F-27



Bending Moment vs Height
Wind 75° : Load 85.7°
Pole: ODAS-2F-27 - 11/9/2023
NESC Ext Wind (250C) Grade C (> 100 mph)



⚠ This is a beta release of the new ATC Hazards by Location website. Please [contact us](#) with feedback.

ℹ The ATC Hazards by Location website will not be updated to support ASCE 7-22. [Find out why.](#)

ATC Hazards by Location

Search Information

Coordinates: 42.430236, -71.06735
Elevation: 41 ft
Timestamp: 2023-11-07T08:08:36.454Z
Hazard Type: Wind



ASCE 7-16

MRI 10-Year ----- 74 mph
MRI 25-Year ----- 84 mph
MRI 50-Year ----- 91 mph
MRI 100-Year ----- 98 mph
Risk Category I ----- 109 mph
Risk Category II ----- 119 mph
Risk Category III ----- 127 mph
Risk Category IV ----- ⚠ 132 mph

You are in a wind-borne debris region if you are also within 1 mile of the coastal mean high water line.

ASCE 7-10

MRI 10-Year ----- 78 mph
MRI 25-Year ----- 88 mph
MRI 50-Year ----- 96 mph
MRI 100-Year ----- 103 mph
Risk Category I ----- 117 mph
Risk Category II ----- 127 mph
Risk Category III-IV ----- ⚠ 138 mph

If the structure under consideration is a healthcare facility and you are also within 1 mile of the coastal mean high water line, you are in a wind-borne debris region. If other occupancy, use the Risk Category II basic wind speed contours to determine if you are in a wind-borne debris region.

ASCE 7-05

ASCE 7-05 Wind Speed ----- 104 mph

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Please note that the ATC Hazards by Location website will not be updated to support ASCE 7-22. [Find out why.](#)

Disclaimer

Hazard loads are interpolated from data provided in ASCE 7 and rounded up to the nearest whole integer. Per ASCE 7, islands and coastal areas outside the last contour should use the last wind speed contour of the coastal area – in some cases, this website will extrapolate past the last wind speed contour and therefore, provide a wind speed that is slightly higher. NOTE: For queries near wind-borne debris region boundaries, the resulting determination is sensitive to rounding which may affect whether or not it is considered to be within a wind-borne debris region.

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

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