



SCHERER DESIGN GROUP, LLC
Consulting Engineers • Construction Inspectors

Colleen Connolly, PE
Partner/CEO
Glenn J. Scherer, PE
Partner/CFO
Steven Krug, PE
Partner/COO

November 12, 2020

Re: Site Name: JS Seaside Park 06 SC
64 Island Ave
Seaside Park, NJ 08752

To Whom It May Concern,

Scherer Design Group, LLC (SDG) has performed a Structural Assessment for an existing wooden utility pole at the above-referenced site. The proposed equipment loading is depicted within the Construction Documents, by SDG, Revision A, dated 10/30/20.

This analysis was performed using O-Calc Pro Version 5.03 modeling software. The loads considered in this analysis are in accordance with the requirements of the National Electric Safety Code (NESC) 17 (250B), Grade C, Heavy Load. The existing pole embedment was checked using O-Calc Pro, by comparing the overturning moment with the groundline moment.

The existing wooden utility pole was designed based on the following specifications:

- Class 4 Southern Pine
- 45' wooden pole with 6.0' embedment depth
- Assumed Soil Class: Class 6 – Loose to medium dense fine to coarse sand, firm to stiff clays and silts

All existing pole specifications and existing loading are based upon information provided by Tilson and field verified measurements. Soil parameters were assumed based upon location. A site-specific geotechnical investigation was not performed. This analysis assumes the information provided is correct and the existing pole was installed plumb and free of unreasonable defects. SDG should be notified if any discrepancies are discovered between the actual conditions and the assumptions stated above.

Based upon this Structural Assessment, the existing utility pole was found to be structurally adequate to support the existing load and proposed antenna and equipment installations. However, if the actual conditions vary from the above-mentioned or if any deficiencies in the existing wooden utility pole are discovered at the time of construction, the contractor must immediately report these discrepancies or deficiencies to the Design Engineer for review.

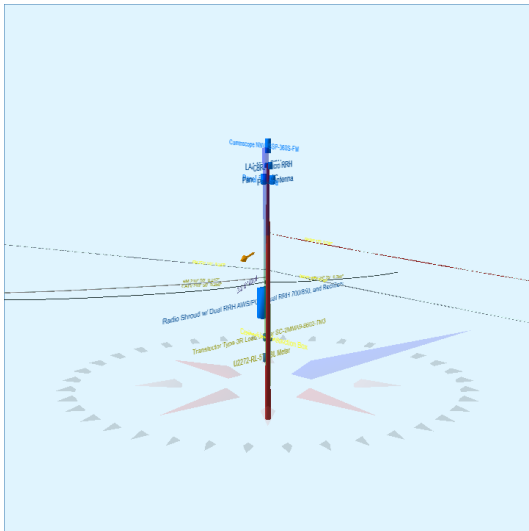
Should you have any questions regarding any of the above information, please call me at 908-323-2513.

Regards,



Colleen Connolly, P.E.
NJ PE#24GE04133700

Pole Num:	JS Seaside Park 06 SC	Pole Length / Class:	45 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.00	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.00	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:	1.00
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:	39.923909 Deg	Longitude:	-74.077940 Deg	Elevation:	0 Feet		



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.5	0.0
Groundline	27.5	0.0
Vertical	11.1	20.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,735	147.4
Groundline	20,735	147.4
GL Allowable	76,928	
Overturn	27,476	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 147.4°										
	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	236	25.7	6,539	31.5	8.5	566	114	1	568	8.3
Comms	312	33.9	6,650	32.1	8.6	576	419	4	580	8.5
GenericEquipments	168	18.3	3,534	17.0	4.6	306	996	10	316	4.7
Pole	202	22.0	4,002	19.3	5.2	347	1,966	20	367	5.4
Insulators	0	0.0	9	0.0	0.0	1	38	0	1	0.0
Pole Load	918	100.0	20,735	100.0	27.0	1,796	3,534	36	1,832	26.9
Pole Reserve Capacity			56,193		73.0	5,004			4,968	73.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 147.4°										
	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 (%)
Proposed	455	49.5	11,113	53.6	14.5	963	1,184	12	975	14.3
Existing	261	28.4	5,620	27.1	7.3	487	384	4	491	7.2
Pole	202	22.0	4,002	19.3	5.2	347	1,966	20	367	5.4
Totals:	918	100.0	20,735	100.0	27.0	1,796	3,534	36	1,832	26.9

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	DUPLEX 6 AWG	Proposed	26.97	6.53	0.5370	0.071	122.0	90.0	122.0			16	286	302
Overlashed Bundle	6M	Proposed	27.00	6.53	0.2420	1.45	0.104	122.0	90.0	350	5,092	17	996	6,105
										Totals:	5,092	34	1,282	6,407

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)	
CATV	CATV .25	Existing	18.42	7.02	0.2500	0.61	0.091	25.0	25.0	15	-148	-4	114	-38	
CATV	CATV .25	Existing	18.42	7.02	0.2500	1.35	0.091	50.0	210.0	50.1	212	-8	255	458	
Overlashed Bundle	6M	Proposed	19.42	6.96	0.2420	1.54	0.104	50.0	210.0	50.0	581	12	309	902	
Fiber	Fiber	Proposed	19.38	6.96	0.6250	0.190	50.0	210.0	50.0			14	94	108	
Overlashed Bundle	6M	Existing	20.75	6.88	0.2420	1.94	0.104	122.0	90.0	600	6,708	28	756	7,492	
Telco	TELE 0.5	Existing	20.72	6.88	0.5000	0.400	122.0	90.0	122.0			45	211	255	
Overlashed Bundle	6M	Existing	20.75	6.88	0.2420	2.06	0.104	141.0	253.0	141.0	750	-4,186	33	1,122	-3,031

Telco	TELE 0.5	Existing	20.72	6.88	0.5000		0.400	141.0	253.0	141.0		52	316	368
Totals:											3,167	171	3,177	6,516

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	Commscope NNVVSSP-360S-FM	Proposed	41.92	0.82	0.0	0.0	26.70	28.70	--	12.00	--	3	700	703
Box	CBRS Micro RRH	Proposed	38.58	5.44	90.0	0.0	35.00	13.91	4.15	--	8.55	16	220	237
Box	LAA Micro RRH	Proposed	38.58	4.87	270.0	0.0	35.00	8.90	3.00	--	9.10	-15	122	108
Box	Panel Antenna	Proposed	36.25	12.55	90.0	0.0	35.00	18.50	6.90	--	9.60	37	396	433
Box	Panel Antenna	Proposed	36.25	12.55	180.0	0.0	35.00	18.50	6.90	--	9.60	59	463	522
Box	Panel Antenna	Proposed	36.25	12.55	270.0	0.0	35.00	18.50	6.90	--	9.60	-37	396	358
Box	Transector Type-3R Load Center SC-2MMA9-8602-TM3	Proposed	8.62	8.24	270.0	0.0	20.00	14.85	6.32	--	9.20	-14	70	56
Box	U2272-RL-5T9-BL Meter	Proposed	5.00	7.70	270.0	0.0	25.00	18.50	4.84	--	10.00	-16	44	28
Box	Carlson NS664 Junction Box	Proposed	8.25	7.10	0.0	0.0	2.38	6.00	4.00	--	6.00	-2	21	19
Box	Radio Shroud w/ Dual RRH AWS/PCS, Dual RRH 700/850, and Rectifiers	Proposed	14.67	12.73	270.0	0.0	275.00	64.00	16.00	--	23.00	-299	1,298	1,000
Totals:											-268	3,731	3,463	

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	Proposed	27.00	0.00	90.0	90.0	5.00	3.00	0.00	3	0	3
J-Hook	J-Hook	Existing	18.42	0.00	270.0	270.0	5.00	3.00	0.00	-3	0	-3
Bolt	Single Bolt	Proposed	19.42	0.00	180.0	180.0	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Existing	20.75	0.00	180.0	180.0	5.00	3.00	0.00	5	0	5
Totals:										9	0	9

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	20.36	33.13	10.37	14.02	6.69	11.15	1.60e+6	60.00	57.00	39.00	31,925	318.37	9.01