



**SCHERER DESIGN GROUP, LLC**  
Consulting Engineers • Construction Inspectors

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November 17, 2020

Re: Site Name: JS Seaside Park 10 SC  
111 I St  
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 11/02/20.

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 3 Southern Pine
- 40' wooden pole with 6.33' 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.

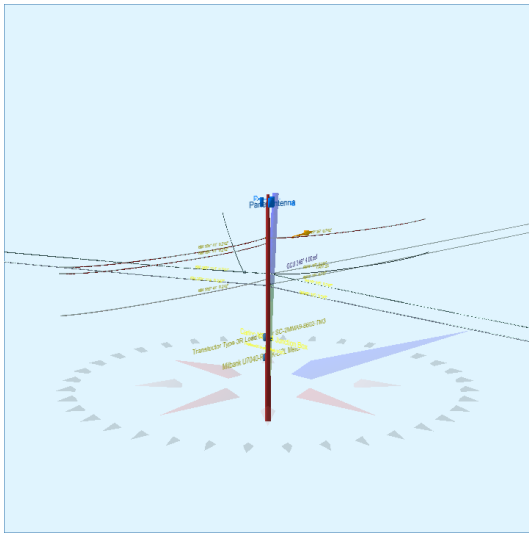
Regards,



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

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Pole Num:	<b>JS Seaside Park 10 SC</b>	Pole Length / Class:	<b>40 / 3</b>	Code:	<b>NESC</b>	Structure Type:	<b>Unguyed Tangent</b>
Aux Data 1	<b>Unset</b>	Species:	<b>SOUTHERN PINE</b>	NESC Rule:	<b>Rule 250B</b>	Status	<b>Unguyed</b>
Aux Data 2	<b>Unset</b>	Setting Depth (ft):	<b>6.33</b>	Construction Grade:	<b>C</b>	Pole Strength Factor:	<b>0.85</b>
Aux Data 3	<b>Unset</b>	G/L Circumference (in):	<b>35.87</b>	Loading District:	<b>Heavy</b>	Transverse Wind LF:	<b>1.75</b>
Aux Data 4	<b>Unset</b>	G/L Fiber Stress (psi):	<b>8,000</b>	Ice Thickness (in):	<b>0.50</b>	Wire Tension LF:	<b>1.00</b>
Aux Data 5	<b>Unset</b>	Allowable Stress (psi):	<b>6,800</b>	Wind Speed (mph):	<b>39.53</b>	Vertical LF:	<b>1.90</b>
Aux Data 6	<b>Unset</b>	Fiber Stress Ht. Reduc:	<b>No</b>	Wind Pressure (psf):	<b>4.00</b>		
Latitude:	<b>39.929474 Deg</b>	Longitude:	<b>-74.077975 Deg</b>	Elevation:	<b>0 Feet</b>		



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	<b>38.4</b>	0.0
Groundline	<b>38.4</b>	0.0
Vertical	<b>6.5</b>	17.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	<b>31,468</b>	349.8
Groundline	<b>31,468</b>	349.8
GL Allowable	<b>82,834</b>	
Overturn	<b>33,185</b>	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 349.8°										
	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	-18	-1.1	-517	-1.6	-0.6	-43	111	1	-41	-0.6
Comms	1,456	87.1	27,572	87.6	33.3	2,268	788	8	2,275	33.5
GenericEquipments	51	3.0	1,270	4.0	1.5	105	290	3	107	1.6
Pole	184	11.0	3,142	10.0	3.8	258	1,867	18	277	4.1
Insulators	0	0.0	1	0.0	0.0	0	49	0	1	0.0
Pole Load	1,672	100.0	31,468	100.0	38.0	2,588	3,105	30	2,618	38.5
Pole Reserve Capacity			51,366		62.0	4,212			4,182	61.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 349.8°										
	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 (%)
Existing	1,502	89.8	28,461	90.4	34.4	2,341	846	8	2,349	34.5
Proposed	-13	-0.8	-134	-0.4	-0.2	-11	392	4	-7	-0.1
Pole	184	11.0	3,142	10.0	3.8	258	1,867	18	277	4.1
<b>Totals:</b>	1,672	100.0	31,468	100.0	38.0	2,588	3,105	30	2,618	38.5

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	Existing	26.22	6.36	0.5370	0.071	36.0	10.0	36.0			-9	16	7	
Secondary	DUPLEX 6 AWG	Existing	26.22	6.36	0.5370	0.071	41.0	185.0	41.1			-10	11	1	
Secondary	DUPLEX 6 AWG	Proposed	25.22	6.67	0.5370	0.071	41.0	185.0	41.1			-10	11	0	
Overlashed Bundle	6M	Existing	26.25	6.36	0.2420	1.21	0.104	36.0	10.0	36.0	25	616	-9	55	662
Overlashed Bundle	6M	Existing	26.25	6.36	0.2420	1.55	0.104	41.0	185.0	41.1	25	-633	-10	38	-605
Overlashed Bundle	6M	Proposed	25.25	6.67	0.2420	1.55	0.104	41.0	185.0	41.1	25	-609	-11	37	-583
<b>Totals:</b>											<b>-627</b>	<b>-59</b>	<b>168</b>	<b>-518</b>	

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	Existing	19.83	7.00	0.2420	0.30	0.104	107.0	0.0	107.0	750	14,641	34	35	14,709
CATV	CATV .25	Existing	19.83	7.00	0.2500	1.11	0.091	36.0	10.0	36.1	15	279	11	37	327
Overlashed Bundle	6M	Existing	19.83	7.00	0.2420	1.37	0.104	105.0	90.0	105.0	300	-1,051	29	807	-215

CATV	CATV .5	Existing	19.80	7.01	0.5000		0.091	105.0	90.0	105.0		28	228	256	
Overlashed Bundle	6M	Existing	19.83	7.00	0.2420	1.78	0.104	114.0	250.0	114.0	350	-1,184	26	864	-295
CATV	CATV .5	Existing	19.80	7.00	0.5000		0.091	114.0	250.0	114.0			25	217	242
CATV	CATV .25	Existing	19.67	57.98	0.2500	1.52	0.091	70.0	310.0	70.1	50	722	-1	179	901
CATV	CATV .5	Existing	19.83	6.87	0.5000		0.091	114.0	250.0	114.0			25	217	242
Overlashed Bundle	6M	Proposed	19.00	7.05	0.2420	1.47	0.104	41.0	185.0	41.0	45	-825	-12	28	-809
Fiber	Fiber	Proposed	18.96	7.05	0.6250		0.190	41.0	185.0	41.0			-14	9	-5
Overlashed Bundle	6M	Existing	18.00	7.11	0.2420	0.30	0.104	107.0	0.0	107.0	750	13,288	35	31	13,353
Overlashed Bundle	6M	Existing	18.00	7.11	0.2420	1.74	0.104	105.0	90.0	105.0	500	-1,590	-38	865	-764
Telco	TELE 1.0	Existing	17.95	7.11	1.0000		0.400	105.0	90.0	105.0			-56	338	282
Overlashed Bundle	6M	Existing	18.00	7.11	0.2420	1.72	0.104	114.0	250.0	114.0	600	-1,842	-42	965	-919
Telco	TELE 1.0	Existing	17.95	7.11	1.0000		0.400	114.0	250.0	114.0			-60	377	317
<b>Totals:</b>												<b>22,437</b>	<b>-10</b>	<b>5,196</b>	<b>27,623</b>

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)
Box	Panel Antenna	Proposed	32.33	12.79	110.0	0.0	35.00	18.50	6.90	--	9.60	-36	356	320
Box	Panel Antenna	Proposed	32.33	12.79	230.0	0.0	35.00	18.50	6.90	--	9.60	-35	347	312
Box	Panel Antenna	Proposed	32.33	12.79	350.0	0.0	35.00	18.50	6.90	--	9.60	71	445	516
Box	Transtector Type-3R Load Center SC-2MMA9-8602-TM3	Proposed	8.62	8.34	270.0	0.0	20.00	14.85	6.32	--	9.20	5	64	69
Box	Carlson NS664 Junction Box	Proposed	8.25	7.21	0.0	0.0	2.38	6.00	4.00	--	6.00	3	23	25
Box	Milbank U7040-RL-KK-DPL Meter	Proposed	5.00	7.47	270.0	0.0	25.00	14.56	4.13	--	11.00	5	25	30
<b>Totals:</b>												<b>13</b>	<b>1,260</b>	<b>1,273</b>

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)	
Spool	Spool 2.5"	Existing	26.25	0.00	180.0	180.0	1.00	2.50	2.12	-1	7	6	
Bolt	Single Bolt	Proposed	25.25	0.00	180.0	180.0	5.00	3.00	0.00	-5	0	-5	
Bolt	Single Bolt	Existing	19.83	0.00	0.0	0.0	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt	Proposed	19.00	0.00	180.0	180.0	5.00	3.00	0.00	-5	0	-5	
Bolt	Single Bolt	Existing	18.00	0.00	0.0	0.0	5.00	3.00	0.00	6	0	6	
Bolt	Single Bolt	Existing	18.00	0.00	180.0	180.0	5.00	3.00	0.00	-6	0	-6	
<b>Totals:</b>											<b>-6</b>	<b>7</b>	<b>1</b>

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	17.73	32.83	10.71	12.34	7.32	11.42	1.60e+6	60.00	57.00	33.67	47,869	<b>477.69</b>	<b>15.38</b>