



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

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November 16, 2020

Re: Site Name: JS Seaside Park 13 SC  
1315 Southwest Central 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 11/03/20.

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 7.0' 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.

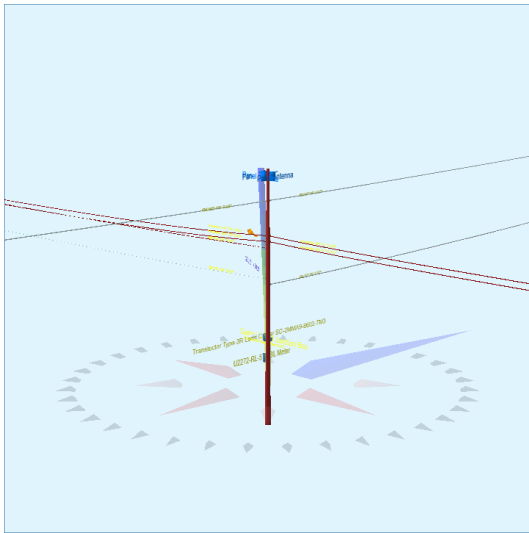
Regards,



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

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Pole Num:	<b>JS Seaside Park 13 SC</b>	Pole Length / Class:	<b>45 / 4</b>	Code:	<b>NESC</b>	Structure Type:	<b>Junction</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>7.00</b>	Construction Grade:	<b>C</b>	Pole Strength Factor:	<b>0.85</b>
Aux Data 3	<b>Unset</b>	G/L Circumference (in):	<b>34.64</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>1.30</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>39.922590 Deg</b>	Longitude:	<b>-74.078651 Deg</b>	Elevation:	<b>0 Feet</b>		



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	<b>63.2</b>	0.0
Groundline	<b>63.2</b>	0.0
Vertical	<b>10.6</b>	20.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	<b>46,794</b>	289.8
Groundline	<b>46,794</b>	289.8
GL Allowable	<b>74,585</b>	
Overturn	<b>48,478</b>	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 289.8°										
	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	855	40.7	21,060	45.0	28.2	1,923	541	6	1,928	28.4
Comms	991	47.2	20,526	43.9	27.5	1,874	321	3	1,877	27.6
GenericEquipments	61	2.9	1,524	3.3	2.0	139	290	3	142	2.1
Pole	192	9.2	3,658	7.8	4.9	334	1,890	20	354	5.2
Insulators	1	0.0	26	0.1	0.0	2	51	1	3	0.0
Pole Load	2,100	100.0	46,794	100.0	62.7	4,272	3,093	32	4,305	63.3
Pole Reserve Capacity			27,791		37.3	2,528			2,495	36.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 289.8°										
	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	805	38.3	17,572	37.6	23.6	1,604	620	6	1,611	23.7
Proposed	1,102	52.5	25,564	54.6	34.3	2,334	583	6	2,340	34.4
Pole	192	9.2	3,658	7.8	4.9	334	1,890	20	354	5.2
<b>Totals:</b>	2,100	100.0	46,794	100.0	62.7	4,272	3,093	32	4,305	63.3

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	26.42	5.85	0.5370	1.26	0.071	97.0	90.0	97.0	150	-4,847	11	202	-4,635
Secondary	DUPLEX 6 AWG	Existing	26.42	5.85	0.5370	2.81	0.071	178.0	270.0	178.1	150	4,847	20	370	5,238
Secondary	DUPLEX 6 AWG	Proposed	24.39	6.62	0.5370		0.071	178.0	270.0	178.0			42	90	132
Secondary	DUPLEX 6 AWG	Existing	25.42	5.91	0.5370	1.26	0.071	97.0	90.0	97.0	150	-4,664	11	194	-4,459
Secondary	DUPLEX 6 AWG	Existing	25.42	5.91	0.5370	2.81	0.071	178.0	270.0	178.1	150	4,664	20	356	5,040
Overlashed Bundle	6M	Proposed	24.42	6.62	0.2420	1.53	0.104	178.0	270.0	178.0	650	19,416	45	313	19,774
<b>Totals:</b>											<b>19,416</b>	<b>149</b>	<b>1,525</b>	<b>21,090</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	Proposed	18.00	6.98	0.2420	1.41	0.104	98.0	355.0	98.0	350	3,434	10	542	3,985
Fiber	Fiber	Proposed	17.96	6.98	0.6250		0.190	98.0	355.0	98.0			11	165	176
Overlashed Bundle	6M	Existing	32.58	6.15	0.2420	0.31	0.104	110.0	180.0	110.0	750	-10,754	-11	1,069	-9,696

Overlashed Bundle	6M	Existing	32.58	6.15	0.2420	0.25	0.104	98.0	355.0	98.0	750	13,318	9	867	14,194
Overlashed Bundle	6M	Existing	19.00	6.93	0.2420	1.36	0.104	178.0	270.0	178.0	500	11,621	54	220	11,895
<b>Totals:</b>												<b>17,619</b>	<b>74</b>	<b>2,863</b>	<b>20,555</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	36.83	12.46	90.0	0.0	35.00	18.50	6.90	--	9.60	-65	473	409
Box	Panel Antenna	Proposed	36.83	12.46	180.0	0.0	35.00	18.50	6.90	--	9.60	-23	383	360
Box	Panel Antenna	Proposed	36.83	12.46	270.0	0.0	35.00	18.50	6.90	--	9.60	65	473	538
Box	Transtector Type-3R Load Center SC-2MMA9-8602-TM3	Proposed	8.62	8.18	270.0	0.0	20.00	14.85	6.32	--	9.20	24	85	109
Box	Carlou NS664 Junction Box	Proposed	8.25	7.04	0.0	0.0	2.38	6.00	4.00	--	6.00	1	16	17
Box	U2272-RL-5T9-BL Meter	Proposed	5.00	7.65	270.0	0.0	25.00	18.50	4.84	--	10.00	28	64	92
<b>Totals:</b>												<b>30</b>	<b>1,496</b>	<b>1,526</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	26.42	0.00	0.0	0.0	1.00	2.50	2.12	0	7	7	
Bolt	Single Bolt	Proposed	24.42	0.00	270.0	270.0	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt	Proposed	18.00	0.00	0.0	0.0	5.00	3.00	0.00	2	0	2	
Bolt	Single Bolt	Existing	32.58	0.00	180.0	180.0	5.00	3.00	0.00	-2	0	-2	
Bolt	Single Bolt	Existing	32.58	0.00	0.0	0.0	5.00	3.00	0.00	2	0	2	
Bolt	Single Bolt	Existing	19.00	0.00	270.0	270.0	5.00	3.00	0.00	5	0	5	
Spool	Spool 2.5"	Existing	25.42	0.00	0.0	0.0	1.00	2.50	2.12	0	6	7	
<b>Totals:</b>											<b>13</b>	<b>13</b>	<b>26</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	20.77	33.23	10.24	13.26	6.69	11.03	1.60e+6	60.00	57.00	38.00	29,127	<b>291.79</b>	<b>9.43</b>