



SCHERER DESIGN GROUP, LLC
Consulting Engineers • Construction Inspectors

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November 13, 2020

Re: Site Name: JS Seaside Park 09 SC
125 Farragut 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 11/02/20.

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 4 Southern Pine
- 40' wooden pole with 5.67' 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.

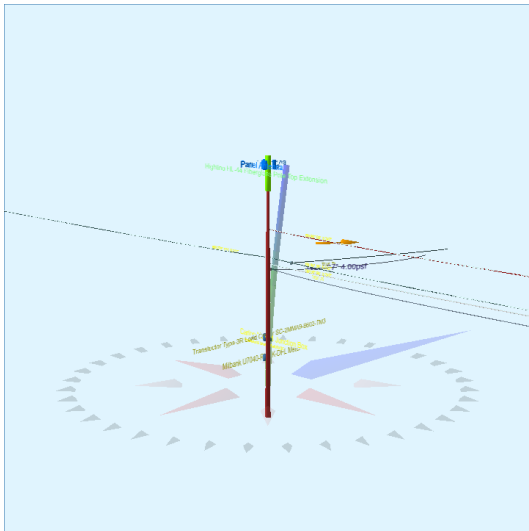
Regards,



Colleen Connolly, P.E.
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Pole Num:	JS Seaside Park 09 SC	Pole Length / Class:	40 / 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):	5.67	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.62	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:	39.936735 Deg	Longitude:	-74.077877 Deg	Elevation:	0 Feet		



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.0	0.0
Groundline	31.0	0.0
Vertical	11.0	21.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,824	53.1
Groundline	20,824	53.1
GL Allowable	68,190	
Overturn	22,131	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 53.1°										
	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	185	21.2	5,303	25.5	7.8	514	93	1	515	7.6
Comms	426	48.8	9,513	45.7	14.0	922	401	4	927	13.6
GenericEquipments	94	10.7	2,997	14.4	4.4	291	472	5	296	4.4
Pole	167	19.2	2,996	14.4	4.4	291	1,642	18	309	4.5
Insulators	0	0.0	15	0.1	0.0	1	38	0	2	0.0
Pole Load	872	100.0	20,824	100.0	30.5	2,019	2,645	29	2,049	30.1
Pole Reserve Capacity			47,366		69.5	4,781			4,751	69.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 53.1°										
	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	577	66.2	14,997	72.0	22.0	1,454	692	8	1,462	21.5
Existing	128	14.7	2,831	13.6	4.2	275	312	3	278	4.1
Pole	167	19.2	2,996	14.4	4.4	291	1,642	18	309	4.5
Totals:	872	100.0	20,824	100.0	30.5	2,019	2,645	29	2,049	30.1

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	27.63	6.23	0.5370	0.071	99.0	90.0	99.0			19	154	173
Overlashed Bundle	6M	Proposed	27.67	6.23	0.2420	1.54	0.104	99.0	99.0	200	4,427	20	537	4,984
										Totals:	4,427	39	691	5,157

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	22.67	6.52	0.2420	1.64	0.104	99.0	99.0	200	3,627	15	433	4,074
CATV	CATV .5	Existing	22.64	6.53	0.5000	0.091	99.0	90.0	99.0			15	119	134
CATV	CATV .25	Existing	22.43	60.36	0.2500	0.40	0.091	31.0	20.0	100	1,783	5	39	1,826
Overlashed Bundle	6M	Existing	22.67	6.52	0.2420	1.59	0.104	124.0	270.0	350	-6,347	19	542	-5,786
CATV	CATV .5	Existing	22.64	6.53	0.5000	0.091	124.0	270.0	124.0			19	149	168
Overlashed Bundle	6M	Proposed	21.67	6.58	0.2420	1.46	0.104	99.0	99.0	340	5,893	22	431	6,346

Fiber	Fiber	Proposed	21.63	6.58	0.6250		0.190	99.0	90.0	99.0			26	131	157
Telco	TELE .25	Existing	20.67	6.64	0.2500	0.85	0.091	31.0	20.0	31.1	15	260	5	37	302
Telco	TELE .25	Existing	20.67	6.64	0.2500	1.77	0.091	99.0	90.0	99.0	100	1,653	17	357	2,028
Totals:											6,870	143	2,238	9,250	

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)
Box	Panel Antenna	Proposed	38.75	12.13	50.0	0.0	35.00	18.50	6.90	--	9.60	67	516	583
Box	Panel Antenna	Proposed	38.75	12.13	170.0	0.0	35.00	18.50	6.90	--	9.60	-30	416	386
Box	Panel Antenna	Proposed	38.75	12.13	290.0	0.0	35.00	18.50	6.90	--	9.60	-37	394	357
Cylinder	Highline HL-44 Fiberglass Pole Top Extension	Proposed	37.25	0.83	0.0	0.0	96.00	72.00	--	12.00	--	-8	1,503	1,496
Box	Transtector Type-3R Load Center SC-2MMA9-8602-TM3	Proposed	8.62	8.01	270.0	0.0	20.00	14.85	6.32	--	9.20	-20	74	54
Box	Carlou NS664 Junction Box	Proposed	8.25	6.87	0.0	0.0	2.38	6.00	4.00	--	6.00	2	18	20
Box	Milbank U7040-RL-KK-DPL Meter	Proposed	5.00	7.12	270.0	0.0	25.00	14.56	4.13	--	11.00	-23	41	19
Totals:											-49	2,963	2,914	

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	27.67	0.00	90.0	90.0	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Existing	22.67	0.00	0.0	0.0	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Proposed	21.67	0.00	90.0	90.0	5.00	3.00	0.00	4	0	4
J-Hook	J-Hook	Existing	20.67	0.00	0.0	0.0	5.00	3.00	0.00	3	0	3
Totals:										14	0	14

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	21.23	33.48	9.87	12.29	6.69	10.71	1.60e+6	60.00	57.00	34.33	24,100	240.49	9.09