



SCHERER DESIGN GROUP, LLC
Consulting Engineers • Construction Inspectors

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November 16, 2020

Re: Site Name: JS Seaside Park 11 SC
1801 N Ocean 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
- 35' wooden pole with 5.75' 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.

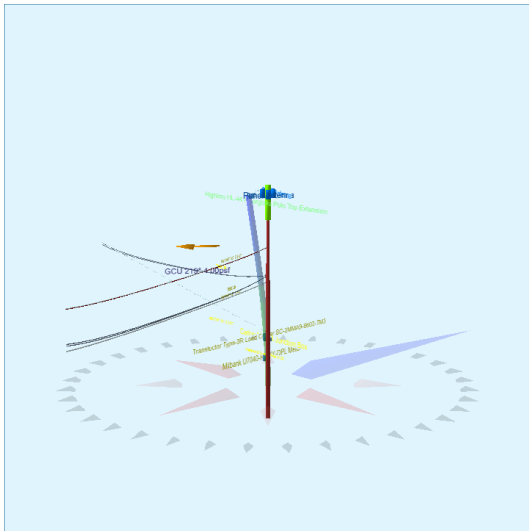
Should you have any questions regarding any of the above information, please call me at 908-323-2513.

Regards,



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

Pole Num:	JS Seaside Park 11 SC	Pole Length / Class:	35 / 4	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):	5.75	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.59	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:	39.935802 Deg	Longitude:	-74.072562 Deg	Elevation:	0 Feet		



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	22.0	0.0
Groundline	22.0	0.0
Vertical	8.5	19.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	12,208	213.2
Groundline	12,208	213.2
GL Allowable	56,565	
Overturn	23,062	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 213.2°										
	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	61	9.5	1,575	12.9	2.8	182	52	1	182	2.7
Comms	339	53.2	5,520	45.2	9.8	636	161	2	638	9.4
GenericEquipments	95	15.0	2,828	23.2	5.0	326	472	6	332	4.9
Pole	142	22.3	2,266	18.6	4.0	261	1,291	16	277	4.1
Insulators	0	0.0	19	0.2	0.0	2	48	1	3	0.0
Pole Load	637	100.0	12,208	100.0	21.6	1,407	2,023	25	1,432	21.1
Pole Reserve Capacity			44,357		78.4	5,393			5,368	78.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 213.2°										
	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	244	38.2	6,126	50.2	10.8	706	603	8	714	10.5
Existing	251	39.4	3,815	31.3	6.8	440	129	2	441	6.5
Pole	142	22.3	2,266	18.6	4.0	261	1,291	16	277	4.1
Totals:	637	100.0	12,208	100.0	21.6	1,407	2,023	25	1,432	21.1

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	24.47	6.12	0.5370	0.071	55.0	165.0	55.0			11	95	106
Overlashed Bundle	6M	Proposed	24.50	6.12	0.2420	1.49	0.104	55.0	55.0	50	1,062	11	331	1,404
										Totals:	1,062	22	426	1,510

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)
Telco	TELE .25	Existing	19.50	6.40	0.2500	1.40	0.091	55.0	165.0	55.1	30	507	13	234
Telco	TELE .25	Existing	19.50	6.40	0.2500	1.40	0.091	55.0	165.0	55.1	30	507	13	234
Telco	TELE .25	Existing	19.50	6.40	0.2500	1.69	0.091	45.0	270.0	45.2	15	208	7	209
Telco	TELE .25	Existing	19.50	6.40	0.2500	1.69	0.091	45.0	270.0	45.2	15	208	7	209
Overlashed Bundle	6M	Proposed	18.50	6.46	0.2420	1.55	0.104	55.0	165.0	55.0	80	1,283	13	256
Fiber	Fiber	Proposed	18.46	6.46	0.6250	0.190	55.0	165.0	55.0			15	78	92

Overlashed Bundle	6M	Existing	9.67	6.97	0.2420	0.16	0.104	45.0	270.0	45.0	175	1,175	10	106	1,290
											Totals:	3,888	77	1,327	5,292

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	33.75	12.13	10.0	0.0	35.00	18.50	6.90	--	9.60	-62	439	378
Box	Panel Antenna	Proposed	33.75	12.13	130.0	0.0	35.00	18.50	6.90	--	9.60	8	334	342
Box	Panel Antenna	Proposed	33.75	12.13	250.0	0.0	35.00	18.50	6.90	--	9.60	54	423	477
Cylinder	Highline HL-44 Fiberglass Pole Top Extension	Proposed	32.25	0.83	0.0	0.0	96.00	72.00	--	12.00	--	11	1,348	1,359
Box	Transtector Type-3R Load Center SC-2MMA9-8602-TM3	Proposed	8.62	7.69	270.0	0.0	20.00	14.85	6.32	--	9.20	13	72	86
Box	Carlou NS664 Junction Box	Proposed	8.25	6.55	0.0	0.0	2.38	6.00	4.00	--	6.00	-2	20	18
Box	Milbank U7040-RL-KK-DPL Meter	Proposed	5.00	6.80	270.0	0.0	25.00	14.56	4.13	--	11.00	15	37	51
											Totals:	37	2,674	2,711

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	24.50	0.00	180.0	180.0	5.00	3.00	0.00	4	0	4	
J-Hook	J-Hook	Existing	19.50	0.00	180.0	180.0	5.00	3.00	0.00	4	0	4	
J-Hook	J-Hook	Existing	19.50	0.00	270.0	270.0	5.00	3.00	0.00	3	0	3	
Bolt	Single Bolt	Proposed	18.50	0.00	180.0	180.0	5.00	3.00	0.00	4	0	4	
Bolt	Single Bolt	Existing	9.67	0.00	270.0	270.0	5.00	3.00	0.00	3	0	3	
										Totals:	18	0	18

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	19.09	33.28	9.32	10.20	6.69	10.06	1.60e+6	60.00	57.00	29.25	23,709	237.99	11.76