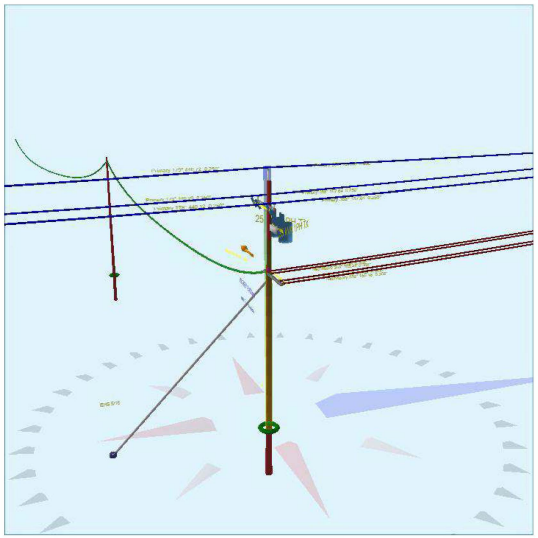
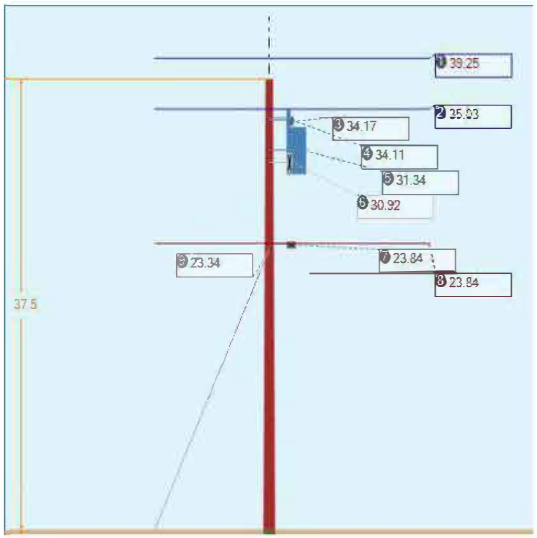
SAP Equip ID:	**TBA**	Pole Length / Class:	**45 / 3**	Code:	**GO 95**	Structure Type:	**Guyed Tangent**
PM Order Number	**35328944**	Species:	**DOUGLAS FIR**	GO 95 Rule:	**At Installation (New)**	Pole Strength Factor:	**0.33**
Estimator LAN ID	**N2CL**	Setting Depth (ft):	**7.5**	Construction Grade:	**B**	Transverse Wind LF:	**1.00**
Sketch Location	**LOC_1**	G/L Circumference (in):	**36.94**	Loading District:	**Light**	Wire Tension LF:	**1.00**
Joint Pole Number	**N/A**	G/L Fiber Stress (psi):	**7,600**	Ice Thickness (in):	**0.00**	Vertical LF:	**1.00**
Notification	**122085624**	Allowable Stress (psi):	**2,443**	Wind Speed (mph):	**55.90**	Pole Factor of Safety:	**4.98**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**8.00**	Vertical Factor of Safety:	**83.34**
Latitude:	**39.636205**	Longitude:	**-121.899372**	Elevation:	**125.36'**	Bending Factor of Safety:	**5.11**





Pole Capacity Utilization (%) Crossarm allowance 300 lbs		Height (ft)	Wind Angle (deg)
Maximum	**60.3**	0.0	269.3
Groundline	**60.3**	0.0	268.6
Vertical	**3.6**	24.8	358.0

Pole Moments (ft-lb) Crossarm allowance 300 lbs		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**19,073**	281.1	269.3
Groundline	**19,073**	281.1	268.6
GL Allowable	**32,497**		
Overturn	**67,000**		

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load With Overload Applied	
Description	**Lead Length (ft)**	**Lead Angle (deg)**	**Height (ft)**	**Nominal Capacity (%)**	**Wind Angle (deg)**	**Max* Load Capacity (%)**	**Wind Angle (deg)**
? Anchor - 15M	23.0	178.0		**15.7**	269.3	**19.6**	0.0
? EHS 5/16 (Down)			23.3	**42.0**	269.3	**52.6**	0.0
			System Capacity Summary:	**Adequate**		**Adequate**	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 281.1°

	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	784	108.5	**20,437**	107.2	**62.9**	**1,588**	-111	-1	**1,587**	**65.0**
GuyBraces	-368	-50.9	**-8,317**	-43.6	**-25.6**	**-646**	1,694	16	**-631**	**-25.8**
GenericEquipments	61	8.4	**2,280**	12.0	**7.0**	**177**	1,280	12	**189**	**7.7**
Pole	233	32.3	**4,261**	22.3	**13.1**	**331**	1,137	10	**342**	**14.0**
Crossarms	6	0.8	**176**	0.9	**0.5**	**14**	188	2	**15**	**0.6**
Insulators	7	1.0	**235**	1.2	**0.7**	**18**	61	1	**19**	**0.8**
Pole Load	723	100.0	**19,073**	100.0	**58.7**	**1,482**	4,249	39	**1,521**	**62.3**
Pole Reserve Capacity			**13,424**		**41.3**	**961**			**922**	**37.7**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 281.1°

	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 (%)
PG&E	490	67.7	**14,812**	77.7	**45.6**	**1,151**	3,112	29	**1,180**	**48.3**
Pole	233	32.3	**4,261**	22.3	**13.1**	**331**	1,137	10	**342**	**14.0**
Totals:	723	100.0	**19,073**	100.0	**58.7**	**1,482**	4,249	39	**1,521**	**62.3**

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)
Primary	4 (6/1) ACSR SWAN LT	PG&E	39.25	3.66	0.2500	6.64	0.057	440.7	178.7	440.7	708	-4,022	4	949	-3,069
Primary	4 (6/1) ACSR SWAN LT	PG&E	39.25	3.66	0.2500	1.09	0.057	157.2	357.2	157.2	708	4,519	-2	336	4,853
Primary	4 (6/1) ACSR SWAN LT	PG&E	35.03	44.36	0.2500	6.62	0.057	440.3	178.6	440.3	708	-3,634	34	845	-2,754
Primary	4 (6/1) ACSR SWAN LT	PG&E	35.03	44.36	0.2500	1.10	0.057	157.6	357.6	157.6	708	3,906	-71	301	4,136
Primary	4 (6/1) ACSR SWAN LT	PG&E	35.03	44.36	0.2500	6.62	0.057	440.1	178.6	440.2	708	-3,633	-36	845	-2,824
Primary	4 (6/1) ACSR SWAN LT	PG&E	35.03	44.36	0.2500	1.10	0.057	157.6	357.6	157.6	708	3,906	75	301	4,282
Secondary	1/0 AAC (POPPY)	PG&E	23.84	42.13	0.3680	2.52	0.099	155.5	357.6	155.5	473	1,774	56	298	2,128
Service	1/0 AAC N-SD QPX	PG&E	23.84	42.13	1.1510	1.89	0.480	92.8	258.4	94.2	85	1,254	40	42	1,336
Secondary	1/0 AAC (POPPY)	PG&E	23.84	42.13	0.3680	2.52	0.099	155.5	357.6	155.5	473	1,774	-64	298	2,008

Secondary	1/0 AAC (POPPY)	PG&E	23.84	27.10	0.3680	2.52	0.099	155.5	357.6	155.5	473	1,774	33	298	2,104
Secondary	1/0 AAC (POPPY)	PG&E	23.84	27.10	0.3680	2.52	0.099	155.5	357.6	155.5	473	1,774	-40	298	2,032
											Totals:	**9,393**	**28**	**4,810**	**14,231**

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	Disconnect Switch 1	PG&E	34.11	44.03	178.3	0.0	20.00	18.00	--	4.00	--	43	90	133
Cylinder	Disconnect Switch 1	PG&E	34.11	23.96	178.3	0.0	20.00	18.00	--	4.00	--	19	90	109
Cylinder	Disconnect Switch 1	PG&E	34.11	44.00	178.3	0.0	20.00	18.00	--	4.00	--	-49	90	41
Imported	25 kVA 1PH TX	PG&E	31.34	31.69	0.0	0.0	610.00	--	--	--	--	-629	509	-120
Imported	25 kVA 1PH TX	PG&E	31.34	31.69	0.0	0.0	610.00	--	--	--	--	917	509	1,426
											Totals:	**300**	**1,288**	**1,588**

Crossarm		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Normal	8 Composite Tangent Arm	PG&E	34.17	5.67	178.1	178.1	34.00	4.63	3.63	96.00	-2	38	35
Normal	3-Phase Open Delta	PG&E	30.92	5.55	0.0	0.0	100.00	10.00	3.00	50.00	6	52	58
Normal	8L Composite Dead-End Arm	PG&E	23.84	6.78	358.6	358.6	54.00	3.63	4.63	96.00	4	25	29
										Totals:	**8**	**115**	**123**

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)**
Pin	Kingpin w/ Insulator	PG&E	37.50	0.00	267.9	267.9	10.00	2.30	21.00	0	68	68
Pin	Insulator	PG&E	34.36	44.00	260.7	0.0	8.99	3.00	8.00	0	30	30
Pin	Insulator	PG&E	34.36	-44.00	95.4	0.0	8.99	3.00	8.00	0	30	30
Bolt	Cutout	PG&E	34.36	42.00	260.4	0.0	5.00	3.00	0.10	0	0	0
Bolt	Cutout	PG&E	34.36	20.00	252.3	0.0	5.00	3.00	0.10	0	0	0
Bolt	Cutout	PG&E	34.36	-42.00	95.8	0.0	5.00	3.00	0.10	0	0	0
Bolt	1PH TX	PG&E	31.34	23.00	76.4	0.0	5.00	3.00	0.10	0	0	0
Bolt	1PH TX	PG&E	31.34	-23.00	283.6	0.0	5.00	3.00	0.10	0	0	0
Spool	Spool	PG&E	23.84	40.50	79.1	0.0	2.00	3.00	3.19	0	8	8
Spool	Spool	PG&E	23.84	-40.50	278.1	0.0	2.00	3.00	3.19	0	8	8
Spool	Spool	PG&E	23.84	24.50	73.1	0.0	2.00	3.00	3.19	0	8	8
Spool	Spool	PG&E	23.84	-24.50	284.1	0.0	2.00	3.00	3.19	0	8	8
									Totals:	**0**	**164**	**164**

Guy Wire and Brace		**Owner**	**Attach Height (ft)**	**End Height (ft)**	**Lead/Span Length (ft)**	**Wire Diameter (in)**	**Percent Solid (%)**	**Lead Angle (deg)**	**Incline Angle (deg)**	**Wire Weight (lbs/ft)**	**Rest Length (ft)**	**Stretch Length (in)**
EHS 5/16	Down	PG&E	23.34	0.00	23.00	0.312	75.00	178.0	45.3	0.205	35.75	0.76

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*[2] (lbs)	Maximum Tension[2] (lbs)	Applied Tension[3] (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL[3] (ft-lb)
EHS 5/16	Down	2.30e+7	11,200	0.50	5,600	700	2,945	2,945	2,352	1,671	1,655	-376	-8,597
									Totals:	**1,671**	**1,655**	**-376**	**-8,597**

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load[2] (lbs)	Load at Pole MCU[3] (lbs)	Max Required Capacity[2] (%)
Anchor - 15M	PG&E	30.00	23.00	178.0	30,000	0.50	15,000	2,945	2,352	19.6

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
0.71	24.76	33.74	10.77	5.14	7.32	11.77	2.38e+6	60.00	57.00	37.50	116,733	**1180.40**	**27.78**

Notes

Date	Author	Description
9/30/2015		Scott Transformer Bracket dimensions

Scott Transformer Bracket - Material Code 180133
Center of transformers are 23 inches from center of bracket
Transformers tilted back at 37 degrees
Top and bottom mounts are 17.5 inches apart