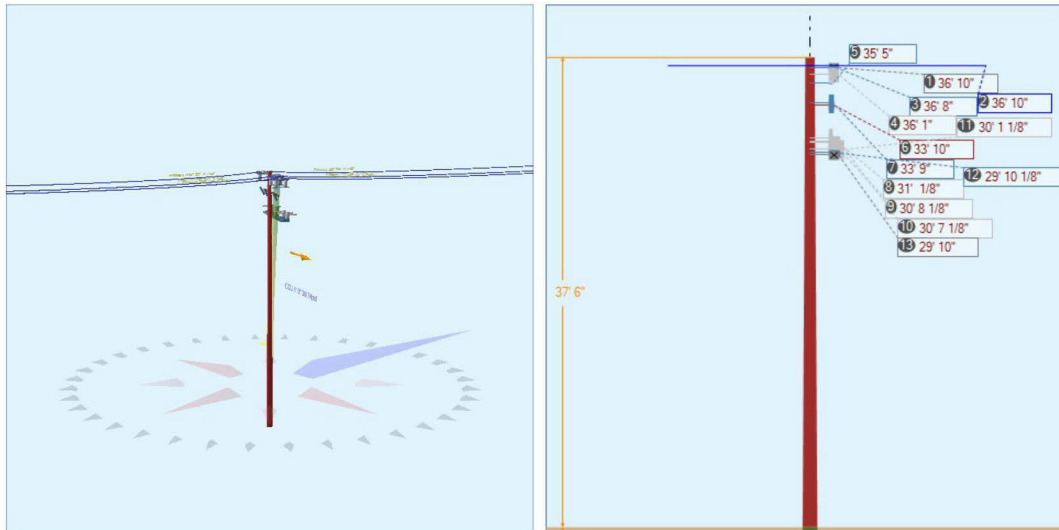




| | | | | | | | |
|-------------------|---------------|-------------------------|-----------------|----------------------|-----------------------|----------------------------|-----------------|
| Pole Num: | 0 | Pole Length / Class: | 45 / 3 | Code: | NESC | Structure Type: | Unguyed Tangent |
| PM Order Number | | Species: | DOUGLAS FIR | GO 95 Rule: | At Installation (New) | Pole Strength Factor: | 0.50 |
| Estimator LAN ID | | Setting Depth (ft): | 7.50 | Construction Grade: | B | Transverse Wind LF: | 1.00 |
| Sketch Location | LOC_102 | G/L Circumference (in): | 36.94 | Loading District: | Heavy | Wire Tension LF: | 1.00 |
| Joint Pole Number | Unset | G/L Fiber Stress (psi): | 7,600 | Ice Thickness (in): | 0.00 | Vertical LF: | 1.00 |
| Notification | | Allowable Stress (psi): | 3,800 | Wind Speed (mph): | 90.00 | Pole Factor of Safety: | 2.62 |
| Aux Data 6 | Unset | Fiber Stress Ht. Reduc: | No | Wind Pressure (psf): | 20.74 | Vertical Factor of Safety: | 13.16 |
| Latitude: | 39.910817 Deg | Longitude: | -121.327387 Deg | Elevation: | 1795.999942528 Feet | Bending Factor of Safety: | 2.64 |



| Pole Capacity Utilization (%) | Height (ft) | Wind Angle (deg) |
|-------------------------------|-------------|------------------|
| Maximum | 76.5 | 0.0 |
| Groundline | 76.5 | 0.0 |
| Vertical | 15.2 | 27.5 |

| Pole Moments (ft-lb) | Load Angle (deg) | Wind Angle (deg) |
|----------------------|------------------|------------------|
| Max Cap Util | 38,338 | 109.4 |
| Groundline | 38,338 | 109.4 |
| GL Allowable | 50,550 | |
| Overturn | 67,000 | |

| Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 109.4° | | | | | | | | | | |
|--|-------------------|------------------|------------------------|--------------------|-------------------|--------------------------|---------------------|-----------------------|--------------------|-------------------|
| | 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 | 253 | 18.4 | 9,388 | 24.5 | 18.6 | 700 | 57 | 1 | 700 | 18.4 |
| GenericEquipments | 419 | 30.6 | 14,202 | 37.0 | 28.1 | 1,058 | 565 | 5 | 1,063 | 28.0 |
| Pole | 618 | 45.2 | 11,768 | 30.7 | 23.3 | 877 | 1,137 | 10 | 887 | 23.3 |
| Crossarms | 16 | 1.2 | 603 | 1.6 | 1.2 | 45 | 751 | 7 | 52 | 1.4 |
| Insulators | 63 | 4.6 | 2,378 | 6.2 | 4.7 | 177 | 73 | 1 | 178 | 4.7 |
| Pole Load | 1,369 | 100.0 | 38,338 | 100.0 | 75.8 | 2,857 | 2,583 | 24 | 2,880 | 75.8 |
| Pole Reserve Capacity | | | 12,212 | | 24.2 | 943 | | | 920 | 24.2 |

| Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 109.4° | | | | | | | | | | |
|--|-------------------|------------------|------------------------|--------------------|-------------------|--------------------------|---------------------|-----------------------|--------------------|-------------------|
| | 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 | 751 | 54.8 | 26,570 | 69.3 | 52.6 | 1,980 | 1,446 | 13 | 1,993 | 52.4 |
| Pole | 618 | 45.2 | 11,768 | 30.7 | 23.3 | 877 | 1,137 | 10 | 887 | 23.3 |
| Totals: | 1,369 | 100.0 | 38,338 | 100.0 | 75.8 | 2,857 | 2,583 | 24 | 2,880 | 75.8 |

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 | 1/0 (6/1) ACSR XLPE TW | PG&E | 36.83 | 62.02 | 0.7480 | 0.78 | 0.284 | 74.0 | 28.0 | 74.0 | 1,872 | 10,283 | 3 | 1,725 | 12,011 |
| Primary | 1/0 (6/1) ACSR XLPE TW | PG&E | 36.83 | 32.89 | 0.7480 | 0.78 | 0.284 | 74.0 | 28.0 | 74.0 | 1,872 | 10,283 | 3 | 1,725 | 12,010 |
| Primary | 1/0 (6/1) ACSR XLPE TW | PG&E | 36.83 | 62.02 | 0.7480 | 0.78 | 0.284 | 74.0 | 28.0 | 74.0 | 1,872 | 10,283 | -3 | 1,725 | 12,005 |
| Primary | 1/0 (6/1) ACSR XLPE TW | PG&E | 36.83 | 58.47 | 0.7480 | 0.53 | 0.284 | 59.0 | 208.0 | 59.0 | 1,872 | -10,283 | 2 | 1,375 | -8,905 |
| Primary | 1/0 (6/1) ACSR XLPE TW | PG&E | 36.83 | 25.58 | 0.7480 | 0.53 | 0.284 | 59.0 | 208.0 | 59.0 | 1,872 | -10,283 | 2 | 1,375 | -8,905 |
| Primary | 1/0 (6/1) ACSR XLPE TW | PG&E | 36.83 | 58.47 | 0.7480 | 0.53 | 0.284 | 59.0 | 208.0 | 59.0 | 1,872 | -10,283 | -3 | 1,375 | -8,910 |
| | | | | | | | | | | Totals: | 0 | 5 | 9,300 | 9,305 | |

| 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 | Insulator Bracket | PG&E | 36.66 | 57.28 | 28.0 | 0.0 | 10.00 | 3.00 | 30.00 | -- | 6.00 | 48 | 751 | 799 |

| | | | | | | | | | | | | | | |
|----------------|-----------------------|------|-------|-------|-------|------|-------|-------|-------|-------|------|------------|---------------|---------------|
| Cylinder | Switch Insulator | PG&E | 36.07 | 59.12 | 102.6 | 0.0 | 10.00 | 14.00 | -- | 8.00 | -- | 49 | 594 | 643 |
| Cylinder | Switch Insulator | PG&E | 36.07 | 57.16 | 122.3 | 0.0 | 10.00 | 14.00 | -- | 8.00 | -- | 46 | 594 | 640 |
| Box | Insulator Bracket | PG&E | 36.66 | 22.73 | 28.0 | 0.0 | 10.00 | 3.00 | 30.00 | -- | 6.00 | 19 | 751 | 770 |
| Cylinder | Switch Insulator | PG&E | 36.07 | 27.03 | 82.5 | 0.0 | 10.00 | 14.00 | -- | 8.00 | -- | 20 | 594 | 614 |
| Cylinder | Switch Insulator | PG&E | 36.07 | 22.42 | 129.1 | 0.0 | 10.00 | 14.00 | -- | 8.00 | -- | 18 | 594 | 612 |
| Box | Insulator Bracket | PG&E | 36.66 | 57.28 | 28.0 | 0.0 | 10.00 | 3.00 | 30.00 | -- | 6.00 | -46 | 751 | 705 |
| Cylinder | Switch Insulator | PG&E | 36.07 | 59.12 | 313.4 | 0.0 | 10.00 | 14.00 | -- | 8.00 | -- | -45 | 594 | 549 |
| Cylinder | Switch Insulator | PG&E | 36.07 | 57.16 | 293.7 | 0.0 | 10.00 | 14.00 | -- | 8.00 | -- | -48 | 594 | 547 |
| Box | Switch SB | PG&E | 35.41 | 57.28 | 28.0 | 0.0 | 10.00 | 1.00 | 36.00 | -- | 3.00 | -46 | 300 | 253 |
| Box | Switch SB | PG&E | 35.41 | 57.28 | 28.0 | 0.0 | 10.00 | 1.00 | 36.00 | -- | 3.00 | 48 | 300 | 347 |
| Box | Switch SB | PG&E | 35.41 | 22.73 | 28.0 | 0.0 | 10.00 | 1.00 | 36.00 | -- | 3.00 | 19 | 300 | 319 |
| Cylinder | Disconnect Switch 1 | PG&E | 33.75 | 44.08 | 208.0 | 0.0 | 20.00 | 18.00 | -- | 4.00 | -- | 72 | 351 | 423 |
| Cylinder | Disconnect Switch 2 | PG&E | 33.75 | 44.08 | 208.0 | 0.0 | 20.00 | 18.00 | -- | 4.00 | -- | -73 | 351 | 278 |
| Cylinder | Disconnect Switch 3 | PG&E | 33.75 | 18.19 | 208.0 | 0.0 | 20.00 | 18.00 | -- | 4.00 | -- | -30 | 351 | 320 |
| Box | Interrupter Bracket | PG&E | 29.84 | 56.82 | 28.0 | 0.0 | 10.00 | 6.00 | 16.00 | -- | 9.00 | 47 | 654 | 701 |
| Cylinder | Bushing | PG&E | 31.01 | 55.56 | 107.5 | 90.0 | 10.00 | 18.00 | -- | 3.00 | -- | 46 | 232 | 278 |
| Cylinder | Bushing | PG&E | 30.68 | 62.87 | 88.3 | 90.0 | 10.00 | 18.00 | -- | 3.00 | -- | 49 | 232 | 281 |
| Cylinder | Interrupter Module | PG&E | 30.59 | 58.39 | 97.3 | 0.0 | 70.00 | 14.00 | -- | 9.00 | -- | 333 | 541 | 874 |
| Box | Interrupter Bracket | PG&E | 29.84 | 34.38 | 28.0 | 0.0 | 10.00 | 6.00 | 16.00 | -- | 9.00 | 27 | 654 | 681 |
| Cylinder | Bushing | PG&E | 31.01 | 32.26 | 99.7 | 90.0 | 10.00 | 18.00 | -- | 3.00 | -- | 26 | 232 | 258 |
| Cylinder | Bushing | PG&E | 30.68 | 43.66 | 72.6 | 90.0 | 10.00 | 18.00 | -- | 3.00 | -- | 29 | 232 | 261 |
| Cylinder | Interrupter Module | PG&E | 30.59 | 36.92 | 84.1 | 0.0 | 70.00 | 14.00 | -- | 9.00 | -- | 195 | 541 | 736 |
| Box | Interrupter Bracket | PG&E | 29.84 | 56.81 | 28.0 | 0.0 | 10.00 | 6.00 | 16.00 | -- | 9.00 | -43 | 654 | 611 |
| Cylinder | Bushing | PG&E | 31.01 | 55.55 | 308.5 | 90.0 | 10.00 | 18.00 | -- | 3.00 | -- | -44 | 232 | 188 |
| Cylinder | Bushing | PG&E | 30.68 | 62.86 | 327.7 | 90.0 | 10.00 | 18.00 | -- | 3.00 | -- | -41 | 232 | 191 |
| Cylinder | Interrupter Module | PG&E | 30.59 | 58.38 | 318.7 | 0.0 | 70.00 | 14.00 | -- | 9.00 | -- | -297 | 541 | 244 |
| Box | Bracket | PG&E | 29.84 | 33.86 | 28.0 | 0.0 | 5.00 | 4.00 | 8.00 | -- | 6.00 | -12 | 219 | 207 |
| Cylinder | Potential Transformer | PG&E | 30.09 | 38.97 | 335.3 | 0.0 | 80.00 | 18.00 | -- | 12.00 | -- | -181 | 928 | 747 |
| Totals: | | | | | | | | | | | | 184 | 13,892 | 14,077 |

| 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 | Bypass US Switch | PG&E | 36.83 | 5.70 | 28.0 | 28.0 | 515.00 | 4.25 | 4.00 | 126.00 | 36 | 236 | 272 | |
| Normal | Cutout Arm- 3 Wire | PG&E | 33.83 | 4.88 | 28.0 | 28.0 | 36.00 | 4.00 | 2.00 | 92.00 | 2 | 121 | 123 | |
| Normal | GW Viper - ST Reclosure | PG&E | 29.83 | 6.11 | 28.0 | 28.0 | 200.00 | 4.25 | 4.00 | 120.50 | 15 | 187 | 203 | |
| Totals: | | | | | | | | | | | | 54 | 544 | 598 |

| 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) |
|-----------|------------------------|-------|-------------|--------------------|--------------------|--------------------|-------------------|--------------------|------------------|------------------------|----------------------|-----------------------|
| Deadend | Dead-End 18.75 (P/N 2) | PG&E | 36.83 | 57.00 | 112.3 | 0.0 | 4.00 | 3.90 | 18.75 | 20 | 388 | 408 |
| Deadend | Dead-End 18.75 (P/N 2) | PG&E | 36.83 | 22.00 | 103.5 | 0.0 | 4.00 | 3.90 | 18.75 | 8 | 388 | 396 |
| Deadend | Dead-End 18.75 (P/N 2) | PG&E | 36.83 | -57.00 | 303.7 | 0.0 | 4.00 | 3.90 | 18.75 | -18 | 388 | 370 |
| Deadend | Dead-End 18.75 (P/N 2) | PG&E | 36.83 | 57.00 | 112.3 | 180.0 | 4.00 | 3.90 | 18.75 | 18 | 388 | 406 |
| Deadend | Dead-End 18.75 (P/N 2) | PG&E | 36.83 | 22.00 | 103.5 | 180.0 | 4.00 | 3.90 | 18.75 | 7 | 388 | 394 |
| Deadend | Dead-End 18.75 (P/N 2) | PG&E | 36.83 | -57.00 | 303.7 | 180.0 | 4.00 | 3.90 | 18.75 | -19 | 388 | 368 |
| Underhung | Single Bolt | PG&E | 36.66 | 57.00 | 112.3 | 0.0 | 5.00 | 3.00 | 0.00 | 24 | 0 | 24 |

| | | | | | | | | | | | | |
|----------------|-------------|------|-------|--------|-------|-------|------|------|------|-----------|--------------|--------------|
| Underhung | Single Bolt | PG&E | 36.66 | 22.00 | 103.5 | 0.0 | 5.00 | 3.00 | 0.00 | 9 | 0 | 9 |
| Underhung | Single Bolt | PG&E | 36.66 | -57.00 | 303.7 | 0.0 | 5.00 | 3.00 | 0.00 | -23 | 0 | -23 |
| Underhung | Single Bolt | PG&E | 36.66 | -57.00 | 303.7 | 0.0 | 5.00 | 3.00 | 0.00 | -23 | 0 | -23 |
| Underhung | Single Bolt | PG&E | 36.66 | 57.00 | 112.3 | 0.0 | 5.00 | 3.00 | 0.00 | 24 | 0 | 24 |
| Underhung | Single Bolt | PG&E | 36.66 | 22.00 | 103.5 | 0.0 | 5.00 | 3.00 | 0.00 | 9 | 0 | 9 |
| Bolt | Cutout | PG&E | 34.00 | 44.00 | 111.7 | 180.0 | 5.00 | 3.00 | 0.00 | 18 | 0 | 18 |
| Bolt | Cutout | PG&E | 34.00 | -44.00 | 304.3 | 180.0 | 5.00 | 3.00 | 0.00 | -18 | 0 | -18 |
| Bolt | Cutout | PG&E | 34.00 | -18.00 | 313.2 | 180.0 | 5.00 | 3.00 | 0.00 | -7 | 0 | -7 |
| Bolt | Single Bolt | PG&E | 30.01 | 54.63 | 111.6 | 0.0 | 1.00 | 1.00 | 0.00 | 5 | 0 | 5 |
| Bolt | Single Bolt | PG&E | 30.01 | 30.63 | 106.7 | 0.0 | 1.00 | 1.00 | 0.00 | 3 | 0 | 3 |
| Bolt | Single Bolt | PG&E | 30.01 | -54.62 | 304.4 | 0.0 | 1.00 | 1.00 | 0.00 | -4 | 0 | -4 |
| Bolt | Bolts | PG&E | 30.01 | -31.00 | 309.2 | 0.0 | 1.00 | 1.00 | 0.00 | -2 | 0 | -2 |
| Totals: | | | | | | | | | | 30 | 2,327 | 2,357 |

| 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 | 27.48 | 34.15 | 10.65 | 7.34 | 7.32 | 11.77 | 2.38e+6 | 60.00 | 57.00 | 37.50 | 17,044 | 169.91 | 6.58 |

| Notes | | |
|--|--------|--|
| Date | Author | Description |
| 8/3/2015 | | Install C/O Arm min 2.5 ft below Primary Conductor |
| Install C/O Arm min 2.5 ft below Primary Conductor | | |