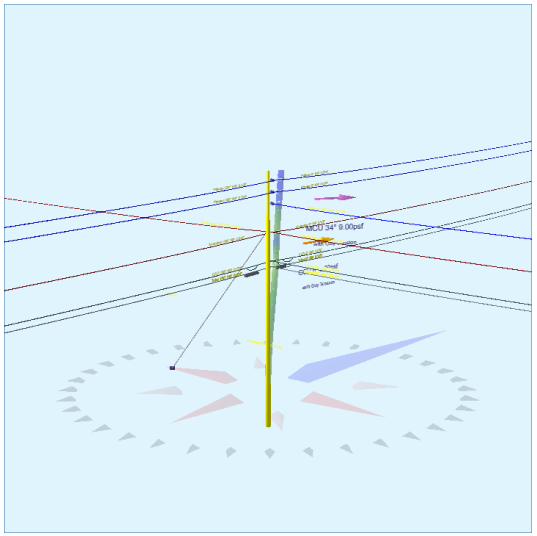
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Pole Num: | **91458483_P.F148** | Pole Length / Class: | **45 / 4** | Code: | **NESC** | Structure Type: | **Junction** |
| Aux Data 1 | **Unset** | Species: | **SOUTHERN PINE** | NESC Rule: | **Rule 250B** | Status | **Guy Wires Adequate** |
| Aux Data 2 | **Unset** | Setting Depth (ft): | **6.50** | Construction Grade: | **C** | Pole Strength Factor: | **0.85** |
| Aux Data 3 | **Unset** | G/L Circumference (in): | **34.82** | Loading District: | **Light** | Transverse Wind LF: | **1.75** |
| Aux Data 4 | **Unset** | G/L Fiber Stress (psi): | **8,000** | Ice Thickness (in): | **0.00** | Wire Tension LF: | **1.30** |
| Aux Data 5 | **Unset** | Allowable Stress (psi): | **6,800** | Wind Speed (mph): | **59.29** | Vertical LF: | **1.90** |
| Aux Data 6 | **Unset** | Fiber Stress Ht. Reduc: | **No** | Wind Pressure (psf): | **9.00** | | |
| Latitude: | **0.000000 Deg** | Longitude: | **0.000000 Deg** | | | Elevation: | **0 Feet** |



| Pole Capacity Utilization (%) | | Height (ft) | Wind Angle (deg) |
|---|---|---|---|
| Maximum | **39.5** | 22.0 | 34.4 |
| Groundline | **32.9** | 0.0 | 8.4 |
| Vertical | **9.2** | 26.5 | 90.0 |

| Pole Moments (ft-lb) | | Load Angle (deg) | Wind Angle (deg) |
|---|---|---|---|
| Max Cap Util | **12,808** | 280.0 | 34.4 |
| Groundline | **23,528** | 49.7 | 8.4 |
| GL Allowable | **75,750** | | |

| Guy System Component Summary | | | | Load From Worst Wind Angle on Pole | | Individual Maximum Load | |
|---|---|---|---|---|---|---|---|
| **Description** | **Lead Length (ft)** | **Lead Angle (deg)** | **Height (ft)** | **Nominal Capacity (%)** | **Wind Angle (deg)** | **Max Load Capacity (%)** | **Wind Angle (deg)** |
| Single Helix Anchor | 23.0 | 270.0 | | **39.6** | 34.4 | **44.4** | 87.2 |
| EHS 3/8 (Down) | | | 28.0 | **57.1** | 34.4 | **70.5** | 87.2 |
| | | | **System Capacity Summary:** | **Adequate** | | **Adequate** | |

**Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 49.7°**

| | 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 | 1,287 | 83.9 | **42,352** | 180.0 | **55.9** | **3,802** | 513 | 5 | **3,807** | **56.0** |
| Comms | 3,674 | 239.5 | **82,136** | 349.1 | **108.4** | **7,373** | 513 | 5 | **7,379** | **108.5** |
| GuyBraces | -3,796 | -247.4 | **-107,837** | -458.3 | **-142.4** | **-9,680** | 9,237 | 96 | **-9,585** | **-141.0** |
| Pole | 337 | 22.0 | **5,957** | 25.3 | **7.9** | **535** | 1,928 | 20 | **555** | **8.2** |
| Insulators | 32 | 2.1 | **921** | 3.9 | **1.2** | **83** | 63 | 1 | **83** | **1.2** |
| Pole Load | 1,534 | 100.0 | **23,528** | 100.0 | **31.1** | **2,112** | 12,253 | 127 | **2,239** | **32.9** |
| Pole Reserve Capacity | | | **52,222** | | **68.9** | **4,688** | | | **4,561** | **67.1** |

**Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 49.7°**

| | 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| FPL | 1,625 | 105.9 | **48,309** | 205.3 | **63.8** | **4,337** | 2,441 | 25 | **4,362** | **64.1** |
| CATV | 1,224 | 79.8 | **28,172** | 119.7 | **37.2** | **2,529** | 171 | 2 | **2,531** | **37.2** |
| AT&T | 2,451 | 159.7 | **53,964** | 229.4 | **71.2** | **4,844** | 342 | 4 | **4,848** | **71.3** |
| <Undefined> | -3,765 | -245.4 | **-106,917** | -454.4 | **-141.1** | **-9,598** | 9,299 | 96 | **-9,501** | **-139.7** |
| **Totals:** | 1,534 | 100.0 | **23,528** | 100.0 | **31.1** | **2,112** | 12,253 | 127 | **2,239** | **32.9** |

**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 | FPL | FPL | 36.97 | 16.18 | 0.5700 | 1.19 | 0.600 | 100.0 | 0.0 | 100.0 | 1,200 | 37,273 | 12 | 155 | 37,440 |
| Primary | FPL | FPL | 36.97 | 16.18 | 0.5700 | 1.19 | 0.600 | 100.0 | 180.0 | 100.0 | 1,200 | -37,273 | 12 | 155 | -37,105 |
| Primary | FPL | FPL | 34.97 | 16.29 | 0.5700 | 1.19 | 0.600 | 100.0 | 0.0 | 100.0 | 1,200 | 35,256 | 13 | 146 | 35,416 |
| Primary | FPL | FPL | 34.97 | 16.29 | 0.5700 | 1.19 | 0.600 | 100.0 | 180.0 | 100.0 | 1,200 | -35,256 | 13 | 146 | -35,097 |
| Primary | FPL | FPL | 32.97 | 16.41 | 0.5700 | 1.19 | 0.600 | 100.0 | 90.0 | 100.0 | 1,200 | 39,246 | 13 | 788 | 40,047 |
| Secondary | FPL | FPL | 27.97 | 5.94 | 0.5700 | 1.19 | 0.600 | 100.0 | 90.0 | 100.0 | 1,200 | 33,294 | 18 | 669 | 33,981 |
| Secondary | FPL | FPL | 27.97 | 5.94 | 0.5700 | 1.19 | 0.600 | 100.0 | 270.0 | 100.0 | 1,200 | -33,294 | 18 | 669 | -32,607 |
| Secondary | FPL | FPL | 27.97 | 5.94 | 0.5700 | 1.19 | 0.600 | 100.0 | 0.0 | 100.0 | 1,200 | 28,199 | 22 | 117 | 28,337 |
| Secondary | FPL | FPL | 27.97 | 5.94 | 0.5700 | 1.19 | 0.600 | 100.0 | 180.0 | 100.0 | 1,200 | -28,199 | 22 | 117 | -28,060 |
| | | | | | | | | | | | **Totals:** | **39,246** | **143** | **2,963** | **42,352** |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CATV | CATV | CATV | 22.97 | 6.23 | 0.5700 | 1.19 | 0.600 | 100.0 | 90.0 | 100.0 | 1,200 | 27,342 | 19 | 567 | 27,928 |
| CATV | CATV | CATV | 22.97 | 6.23 | 0.5700 | 1.19 | 0.600 | 100.0 | 0.0 | 100.0 | 1,200 | 23,157 | 23 | 99 | 23,279 |
| CATV | CATV | CATV | 22.97 | 6.23 | 0.5700 | 1.19 | 0.600 | 100.0 | 180.0 | 100.0 | 1,200 | -23,157 | 23 | 99 | -23,035 |
| Telco | AT&T | AT&T | 21.97 | 6.28 | 0.5700 | 1.19 | 0.600 | 100.0 | 90.0 | 100.0 | 1,200 | 26,151 | 19 | 525 | 26,696 |
| Telco | AT&T | AT&T | 21.97 | 6.28 | 0.5700 | 1.19 | 0.600 | 100.0 | 90.0 | 100.0 | 1,200 | 26,151 | 19 | 525 | 26,696 |
| Telco | AT&T | AT&T | 21.97 | 6.28 | 0.5700 | 1.19 | 0.600 | 100.0 | 0.0 | 100.0 | 1,200 | 22,149 | 23 | 140 | 22,312 |
| Telco | AT&T | AT&T | 21.97 | 6.28 | 0.5700 | 1.19 | 0.600 | 100.0 | 180.0 | 100.0 | 1,200 | -22,149 | 23 | 157 | -21,970 |
| Telco | AT&T | AT&T | 21.97 | 6.28 | 0.5700 | 1.19 | 0.600 | 100.0 | 0.0 | 100.0 | 1,200 | 22,149 | 23 | 92 | 22,264 |
| Telco | AT&T | AT&T | 21.97 | 6.28 | 0.5700 | 1.19 | 0.600 | 100.0 | 180.0 | 100.0 | 1,200 | -22,149 | 23 | 92 | -22,034 |
| | | | | | | | | | | | **Totals:** | **79,644** | **194** | **2,298** | **82,136** |

| 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 | Deadend 12.75" | | 37.00 | 0.00 | 90.0 | 90.0 | 3.00 | 3.80 | 12.75 | 6 | 147 | 153 |
| Deadend | Deadend 12.75" | | 35.00 | 0.00 | 90.0 | 90.0 | 3.00 | 3.80 | 12.75 | 6 | 139 | 145 |
| Deadend | Deadend 12.75" | | 33.00 | 0.00 | 90.0 | 90.0 | 3.00 | 3.80 | 12.75 | 6 | 131 | 137 |
| Bolt | Deadend 12.75" | | 28.00 | 0.00 | 0.0 | 0.0 | 3.00 | 2.00 | 15.00 | 2 | 69 | 71 |
| Bolt | Deadend 12.75" | | 28.00 | 0.00 | 90.0 | 90.0 | 3.00 | 2.00 | 15.00 | 2 | 69 | 71 |
| Bolt | Deadend 12.75" | | 23.00 | 0.00 | 0.0 | 0.0 | 3.00 | 2.00 | 15.00 | 2 | 57 | 59 |
| Bolt | Deadend 12.75" | | 23.00 | 0.00 | 90.0 | 90.0 | 3.00 | 2.00 | 15.00 | 2 | 57 | 59 |
| Bolt | Deadend 12.75" | | 22.00 | 0.00 | 0.0 | 0.0 | 3.00 | 2.00 | 15.00 | 2 | 54 | 56 |
| Bolt | Deadend 12.75" | | 22.00 | 0.00 | 0.0 | 0.0 | 3.00 | 2.00 | 15.00 | 2 | 54 | 56 |
| Bolt | Deadend 12.75" | | 22.00 | 0.00 | 90.0 | 90.0 | 3.00 | 2.00 | 15.00 | 2 | 54 | 57 |
| Bolt | Deadend 12.75" | | 22.00 | 0.00 | 90.0 | 90.0 | 3.00 | 2.00 | 15.00 | 2 | 54 | 57 |
| | | | | | | | | | **Totals:** | **34** | **886** | **921** |

| 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 3/8 | Down | | 28.00 | 0.00 | 23.00 | 0.375 | 75.00 | 270.0 | 50.4 | 0.273 | 34.53 | 1.72 |

| 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 3/8 | Down | 2.30e+7 | 15,400 | 0.90 | 13,860 | 700 | 9,774 | 8,885 | 7,918 | 6,104 | 5,043 | -3,848 | -107,837 |
| | | | | | | | | | **Totals:** | **6,104** | **5,043** | **-3,848** | **-107,837** |

| 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] (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Single Helix Anchor | | 18.00 | 23.00 | 270.0 | 20,000 | 1.00 | 20,000 | 8,885 | 7,918 | 44.4 |

**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 | 26.46 | 34.09 | 10.05 | 16.92 | 6.69 | 11.09 | 1.60e+6 | 60.00 | 57.00 | 38.50 | 133,453 | **1331.87** | **10.87** |

**Notes**

| Date | Author | Description |
|---|---|---|
| 1/27/2021 | | Power Company Request |
| Power company load data has been requested. Email sent to Elmer Pole | | |
| 1/27/2021 | | General Description |
| General Statement: Non-AT&T facilities may not be accurately identified pending attachment information from attaching party. | | |