



# NB+C Engineering Services

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## Existing Wood Pole Antenna Installation

*Prepared for Crown Castle Fiber, LLC*

### SITE INFORMATION

|                          |                        |
|--------------------------|------------------------|
| Address                  | 290 Eastern Avenue     |
|                          | Malden, MA 02148       |
|                          | Middlesex County       |
|                          | Latitude: 42.427091°   |
|                          | Longitude: -71.060592° |
| Crown Castle Node Number | ODAS_2F-22             |
| NB+C Project Number      | 100723                 |
| Date                     | November 9, 2023       |

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## 1.0 INTRODUCTION

The structure is an existing class 2-40 ft. wood pole located in Malden, MA. As per your request **NB+C ES** performed a structural analysis and design for the existing wood pole to verify that the structure can support the new loads and are in compliance with the applicable codes and standards. Information we have received and used for this analysis includes:

- Final Construction Drawings prepared by **NB+C ES**, dated November 07, 2023
- Field Notes and Photos by **NB+C ES** personnel dated October 02, 2023

## 2.0 APPURTENANCES LOADING

As per the information provided to us, the final antenna configuration is shown in Table 1 of below.

**Table 1 – Final Antenna and Cable Information**

| Center Line Elevation (ft) | Antenna Model                                                                                                 | Carrier  | Feed Lines          |
|----------------------------|---------------------------------------------------------------------------------------------------------------|----------|---------------------|
| 40.08                      | <b>(1) Amphenol 4U4VT360X06Fxys4 antenna</b>                                                                  | T-Mobile | (4) 1/2" Coax Cable |
| 14.92                      | <b>(1) Charles Industries Curved Shroud SH60-702322 w/ (1) Ericsson Radio 4455 B2/B25, (1) Radio 8863 B41</b> |          |                     |
| 11.0                       | <b>(1) PTS90526 AC Load Center</b>                                                                            |          |                     |
| 9.46                       | Existing Meter                                                                                                |          |                     |

Note: Proposed Equipment marked in bold

## 3.0 ASSUMPTIONS

This report is based on the theoretical capacity of the existing/proposed structural elements and is not an assessment of the overall suitability of the existing structure or its components for any particular use other than specified here in this report:

- This report makes no warranties, expressed and/or implied, and disclaims any liability arising from material, fabrication and erection of the existing structure and any other existing or proposed components or appurtenances.
- All proposed and existing antennas, mounts, coaxial cables, and appurtenances are assumed to be properly installed and configured according to manufacturer requirements.
- All existing structural elements are assumed to be in place and in good condition and were previously designed and constructed in accordance with applicable codes and standards.
- All antennas and equipment are conservatively assumed to be normal to the wind for all load combinations considered.
- Contractor to verify existing site condition including the existing soil type. In the event the existing site conditions are different than the assumptions made in this report, this has to

be brought to the structural engineer's attention before proceeding any further with bidding, fabrication and/or erection.

#### 4.0 ANALYSIS

Calculations for this analysis are provided in Appendix A of this report.

#### 5.0 CONCLUSIONS & RECOMMENDATIONS

Based on the performed analysis of this structure for applied gravity and lateral loads, the existing wood pole structure was calculated to have adequate structural capacity to support the proposed T-Mobile telecommunication equipment and is in compliance with building codes and standards listed here in this report. **The pole will be stressed to a maximum 91.6% of its design capacity.** Refer to the construction drawings prepared by NB+C ES for the proposed location of the appurtenances.

The results in Appendix A of the report show that the additional forces imparted to the existing wood pole due to the proposed telecommunications antenna and mount are within acceptable limits considering the overall configuration of the support structure.

The conclusions reached by NB+C ES in this report are only applicable for the previously mentioned existing and proposed structural members supporting the T-Mobile telecommunication antennas. Further, no structural qualification is made or implied by this report for existing structural members not supporting the T-Mobile equipment.

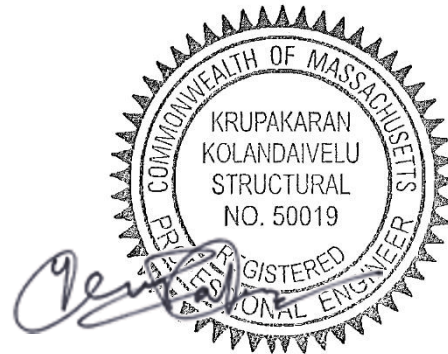
#### NB+C ENGINEERING SERVICES, LLC

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Vice President of Engineering  
MA PE License # 50019

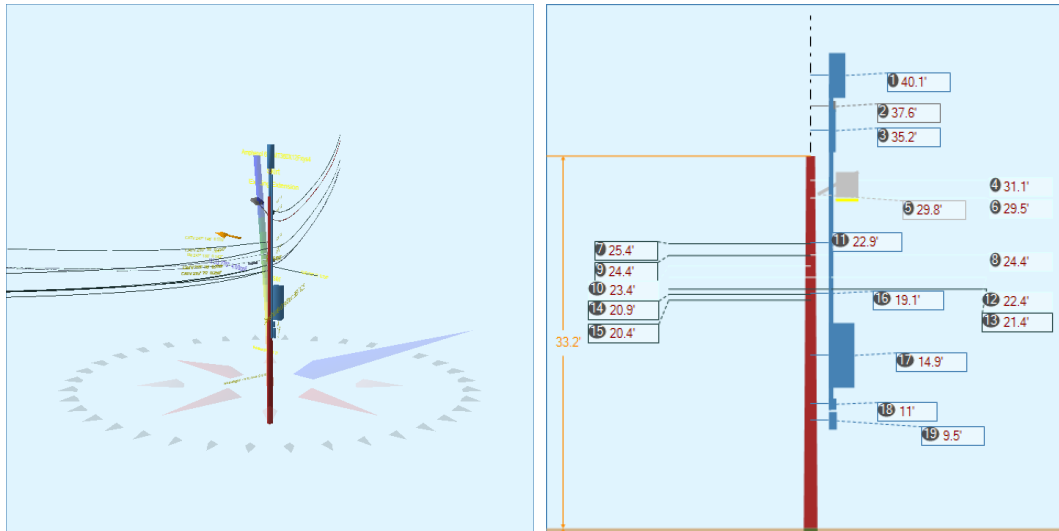


11/9/23

## APPENDIX A

## CALCULATIONS

|            |                     |                         |                      |                      |                  |                       |                        |
|------------|---------------------|-------------------------|----------------------|----------------------|------------------|-----------------------|------------------------|
| Pole Num:  | <b>ODAS-2F-22</b>   | Pole Length / Class:    | <b>40 / 2</b>        | Code:                | <b>NESC</b>      | Structure Type:       | <b>Unguyed Tangent</b> |
| Aux Data 1 | <b>Unset</b>        | Species:                | <b>SOUTHERN PINE</b> | NESC Rule:           | <b>Rule 250B</b> | Status                | <b>Unguyed</b>         |
| Aux Data 2 | <b>Unset</b>        | Setting Depth (ft):     | <b>6.75</b>          | Construction Grade:  | <b>C</b>         | Pole Strength Factor: | <b>0.85</b>            |
| Aux Data 3 | <b>Unset</b>        | G/L Circumference (in): | <b>38.20</b>         | Loading District:    | <b>Heavy</b>     | Transverse Wind LF:   | <b>1.75</b>            |
| Aux Data 4 | <b>Unset</b>        | G/L Fiber Stress (psi): | <b>8,000</b>         | Ice Thickness (in):  | <b>0.50</b>      | Wire Tension LF:      | <b>1.00</b>            |
| Aux Data 5 | <b>Unset</b>        | Allowable Stress (psi): | <b>6,800</b>         | Wind Speed (mph):    | <b>39.53</b>     | Vertical LF:          | <b>1.90</b>            |
| Aux Data 6 | <b>Unset</b>        | Fiber Stress Ht. Reduc: | <b>No</b>            | Wind Pressure (psf): | <b>4.00</b>      |                       |                        |
| Latitude:  | <b>0.000000 Deg</b> | Longitude:              | <b>0.000000 Deg</b>  | Elevation:           | <b>0 Feet</b>    |                       |                        |



| Pole Capacity Utilization (%) | Height (ft) | Wind Angle (deg) |
|-------------------------------|-------------|------------------|
| Maximum                       | 0.0         | 276.3            |
| Groundline                    | 0.0         | 276.3            |
| Vertical                      | 20.7        | 276.3            |

| Pole Moments (ft-lb) | Load Angle (deg) | Wind Angle (deg) |
|----------------------|------------------|------------------|
| Max Cap Util         | 279.0            | 276.3            |
| Groundline           | 279.0            | 276.3            |
| GL Allowable         |                  |                  |

**Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 279.0°**

|                       | 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                | 275               | 7.4              | 8,234                  | 9.1                | 8.2               | 554                      | 119                 | 1                     | 555                | 8.2               |
| Comms                 | 2,908             | 78.4             | 72,185                 | 79.3               | 72.2              | 4,857                    | 1,206               | 10                    | 4,867              | 71.6              |
| GenericEquipments     | 277               | 7.5              | 5,372                  | 5.9                | 5.4               | 362                      | 1,178               | 10                    | 372                | 5.5               |
| Pole                  | 195               | 5.3              | 3,345                  | 3.7                | 3.3               | 225                      | 2,122               | 18                    | 243                | 3.6               |
| Streetlights          | 55                | 1.5              | 1,850                  | 2.0                | 1.9               | 125                      | 86                  | 1                     | 125                | 1.8               |
| Insulators            | 0                 | 0.0              | 39                     | 0.0                | 0.0               | 3                        | 86                  | 1                     | 3                  | 0.0               |
| Pole Load             | 3,710             | 100.0            | 91,025                 | 100.0              | 91.0              | 6,125                    | 4,796               | 41                    | 6,166              | 90.7              |
| Pole Reserve Capacity |                   |                  | 9,008                  |                    | 9.0               | 676                      |                     |                       | 634                | 9.3               |

**Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 279.0°**

|                | 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 (%) |
|----------------|-------------------|------------------|------------------------|--------------------|-------------------|--------------------------|---------------------|-----------------------|--------------------|-------------------|
| <Undefined>    | 3,511             | 94.7             | 87,547                 | 96.2               | 87.5              | 5,891                    | 2,617               | 23                    | 5,913              | 87.0              |
| Crown Castle   | 4                 | 0.1              | 133                    | 0.2                | 0.1               | 9                        | 57                  | 0                     | 9                  | 0.1               |
| Pole           | 195               | 5.3              | 3,345                  | 3.7                | 3.3               | 225                      | 2,122               | 18                    | 243                | 3.6               |
| <b>Totals:</b> | 3,710             | 100.0            | 91,025                 | 100.0              | 91.0              | 6,125                    | 4,796               | 41                    | 6,166              | 90.7              |

**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         | TRIPLEX 1/0 | 29.49       | 6.76               | 0.2500              |                      | 0.097                 | 130.0                 | 323.0            | 130.7            |                |                         | 16                     | 107                  | 123                   |
| Secondary         | TRIPLEX 1/0 | 29.48       | 6.70               | 0.2500              |                      | 0.097                 | 130.0                 | 323.0            | 130.7            |                |                         | 16                     | 107                  | 122                   |
| Overlashed Bundle | 6M          | 29.50       | 6.72               | 0.2420              | 5.26                 | 0.104                 | 130.0                 | 323.0            | 130.7            | 340            | 7,217                   | 16                     | 671                  | 7,905                 |
|                   |             |             |                    |                     |                      |                       |                       |                  |                  | <b>Totals:</b> | <b>7,217</b>            | <b>48</b>              | <b>885</b>           | <b>8,150</b>          |

| 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       | 31.08       | 6.62               | 0.2420              | 5.26                 | 0.104                 | 130.0                 | 323.0            | 130.7            | 482           | 10,786                  | 16                     | 707                  | 11,509                |
| CATV              | CATV .25 | 31.07       | 6.66               | 0.2500              |                      | 0.263                 | 130.0                 | 323.0            | 130.7            |               |                         | 24                     | 234                  | 259                   |
| CATV              | CATV .25 | 31.06       | 6.60               | 0.2500              |                      | 0.263                 | 130.0                 | 323.0            | 130.7            |               |                         | 23                     | 112                  | 136                   |

|                   |           |       |       |        |      |       |       |       |       |                |               |            |              |               |
|-------------------|-----------|-------|-------|--------|------|-------|-------|-------|-------|----------------|---------------|------------|--------------|---------------|
| CATV              | CATV .25  | 25.42 | 6.97  | 0.5700 | 4.40 | 0.600 | 146.0 | 242.0 | 146.4 | 800            | 16,232        | 81         | 577          | 16,890        |
| Overlashed Bundle | 6M        | 24.42 | 7.04  | 0.2420 | 4.31 | 0.104 | 130.0 | 323.0 | 130.4 | 440            | 7,732         | 21         | 582          | 8,335         |
| CATV              | CATV .25  | 24.40 | 7.04  | 0.2500 |      | 0.263 | 130.0 | 323.0 | 130.4 |                |               | 30         | 114          | 144           |
| CATV              | CATV .25  | 24.37 | 7.04  | 0.2500 | 3.15 | 0.263 | 76.0  | 215.0 | 76.4  | 154            | 1,642         | 22         | 533          | 2,197         |
| Overlashed Bundle | 6M        | 23.42 | 7.10  | 0.2420 | 5.79 | 0.104 | 146.0 | 242.0 | 146.7 | 329            | 6,148         | 27         | 425          | 6,600         |
| Telco             | TELE 0.25 | 23.40 | 7.11  | 0.2500 |      | 0.100 | 146.0 | 242.0 | 146.7 |                |               | 27         | 86           | 113           |
| Overlashed Bundle | 6M        | 22.42 | 7.16  | 0.2420 | 4.79 | 0.104 | 130.0 | 242.0 | 130.6 | 318            | 5,683         | 24         | 360          | 6,068         |
| Telco             | TELE 0.25 | 22.40 | 7.16  | 0.2500 |      | 0.100 | 130.0 | 242.0 | 130.6 |                |               | 24         | 109          | 133           |
| Overlashed Bundle | 6M        | 22.42 | 7.16  | 0.2420 | 4.79 | 0.104 | 130.0 | 323.0 | 130.6 | 316            | 5,100         | 22         | 534          | 5,656         |
| Telco             | TELE 0.25 | 22.40 | 7.16  | 0.2500 |      | 0.100 | 130.0 | 323.0 | 130.6 |                |               | 22         | 187          | 209           |
| CATV              | CATV .25  | 21.37 | 7.23  | 0.2500 | 3.15 | 0.263 | 76.0  | 215.0 | 76.4  | 154            | 1,440         | 32         | 467          | 1,939         |
| CATV              | CATV .25  | 21.37 | 7.23  | 0.2500 | 3.34 | 0.263 | 76.0  | 215.0 | 76.5  | 144            | 1,345         | 32         | 467          | 1,844         |
| CATV              | CATV .25  | 21.37 | 7.23  | 0.2500 | 4.32 | 0.263 | 130.0 | 323.0 | 130.4 | 334            | 5,145         | 54         | 511          | 5,710         |
| Telco             | TELE 0.25 | 21.34 | 7.23  | 0.2500 | 4.44 | 0.100 | 130.0 | 323.0 | 130.4 | 241            | 3,708         | 42         | 511          | 4,261         |
| CATV              | CATV .25  | 20.89 | 29.70 | 0.2500 | 0.18 | 0.263 | 12.0  | 93.0  | 12.0  | 243            | -4,977        | 3          | 1            | -4,974        |
| CATV              | CATV .25  | 20.37 | 7.29  | 0.2500 | 3.15 | 0.263 | 76.0  | 215.0 | 76.4  | 154            | 1,372         | 23         | 445          | 1,841         |
| CATV              | CATV .25  | 20.37 | 7.29  | 0.2500 | 2.21 | 0.263 | 76.0  | 215.0 | 76.2  | 237            | 2,111         | 23         | 445          | 2,579         |
|                   |           |       |       |        |      |       |       |       |       | <b>Totals:</b> | <b>63,466</b> | <b>573</b> | <b>7,408</b> | <b>71,448</b> |

| 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) |
|-------------------|-----------------------------------------------|--------------|-------------|--------------------|--------------------|--------------------|-------------------|------------------|-----------------|--------------------|------------------|------------------------|----------------------|-----------------------|
| Cylinder          | Amphenol 6U4MT360X12Fxs4                      | Crown Castle | 40.08       | 1.85               | 0.0                | 0.0                | 42.00             | 48.20            | --              | 14.60              | --               | 2                      | 1,370                | 1,371                 |
| Cylinder          | Skirt                                         |              | 37.58       | 0.71               | 0.0                | 0.0                | 30.00             | 12.00            | --              | 6.00               | --               | 1                      | 131                  | 132                   |
| Cylinder          | Existing Extension                            |              | 35.17       | 0.86               | 0.0                | 0.0                | 80.00             | 46.00            | --              | 6.00               | --               | 2                      | 471                  | 473                   |
| Cylinder          | Riser                                         |              | 22.88       | 6.63               | 100.0              | 0.0                | 100.00            | 340.96           | --              | 4.00               | --               | -105                   | 1,515                | 1,410                 |
| Cylinder          | Riser                                         |              | 19.09       | 5.87               | 0.0                | 0.0                | 100.00            | 249.96           | --              | 2.00               | --               | 15                     | 463                  | 478                   |
| Box               | Charles Industries Curved Shroud: SH60-702322 |              | 14.92       | 15.86              | 59.0               | 0.0                | 250.00            | 69.50            | 21.45           | --                 | 22.73            | -481                   | 1,791                | 1,310                 |
| Box               | Load Center                                   |              | 11.00       | 8.05               | 48.0               | 0.0                | 9.00              | 12.00            | 5.33            | --                 | 6.70             | -7                     | 61                   | 53                    |
| Box               | Existing Meter                                |              | 9.46        | 8.98               | 48.0               | 0.0                | 9.00              | 18.96            | 7.00            | --                 | 7.00             | -8                     | 98                   | 89                    |
|                   |                                               |              |             |                    |                    |                    |                   |                  |                 | <b>Totals:</b>     |                  | <b>-582</b>            | <b>5,900</b>         | <b>5,317</b>          |

| Streetlight |                         | 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) |
|-------------|-------------------------|-------|-------------|--------------------|--------------------|--------------------|-------------------|------------------|-----------------|--------------------|------------------|------------------------|----------------------|-----------------------|
| Flood Light | Streetlight - 3 ft. Arm |       | 29.83       | 4.19               | 275.0              | 275.0              | 45.00             | 24.00            | 20.00           | 3.00               | 36.00            | 190                    | 1,641                | 1,831                 |
|             |                         |       |             |                    |                    |                    |                   |                  |                 | <b>Totals:</b>     |                  | <b>190</b>             | <b>1,641</b>         | <b>1,831</b>          |

| Insulator |             | Owner | Height<br>(ft) | Horiz.<br>Offset<br>(in) | Offset<br>Angle<br>(deg) | Rotate<br>Angle<br>(deg) | Unit<br>Weight<br>(lbs) | Unit<br>Diameter<br>(in) | Unit<br>Length<br>(in) | Offset<br>Moment*<br>(ft-lb) | Wind<br>Moment*<br>(ft-lb) | Moment at<br>GL*<br>(ft-lb) |
|-----------|-------------|-------|----------------|--------------------------|--------------------------|--------------------------|-------------------------|--------------------------|------------------------|------------------------------|----------------------------|-----------------------------|
| Bolt      | Single Bolt |       | 31.08          | 0.00                     | 323.0                    | 323.0                    | 5.00                    | 3.00                     | 0.00                   | 4                            | 0                          | 4                           |
| Bolt      | Single Bolt |       | 29.50          | 0.00                     | 323.0                    | 323.0                    | 5.00                    | 3.00                     | 0.00                   | 4                            | 0                          | 4                           |
| Bolt      | Single Bolt |       | 25.42          | 0.00                     | 242.0                    | 242.0                    | 5.00                    | 3.00                     | 0.00                   | 4                            | 0                          | 4                           |
| Bolt      | Single Bolt |       | 24.42          | 0.00                     | 323.0                    | 323.0                    | 5.00                    | 3.00                     | 0.00                   | 4                            | 0                          | 4                           |
| Bolt      | Single Bolt |       | 23.42          | 0.00                     | 242.0                    | 242.0                    | 5.00                    | 3.00                     | 0.00                   | 4                            | 0                          | 4                           |
| Bolt      | Single Bolt |       | 22.42          | 0.00                     | 242.0                    | 242.0                    | 5.00                    | 3.00                     | 0.00                   | 5                            | 0                          | 5                           |
| Bolt      | Single Bolt |       | 22.42          | 0.00                     | 323.0                    | 323.0                    | 5.00                    | 3.00                     | 0.00                   | 4                            | 0                          | 4                           |
| Bolt      | Single Bolt |       | 21.42          | 0.00                     | 280.0                    | 280.0                    | 5.00                    | 3.00                     | 0.00                   | 6                            | 0                          | 6                           |
| Bolt      | Single Bolt |       | 20.42          | 0.00                     | 235.0                    | 235.0                    | 5.00                    | 3.00                     | 0.00                   | 4                            | 0                          | 4                           |
| Totals:   |             |       |                |                          |                          |                          |                         |                          |                        | 39                           | 0                          | 39                          |

| Pole Buckling        |                                       |                                                            |                                         |                                                  |                            |                           |                                   |                          |                      |                            |                                                    |                                                   |                                      |
|----------------------|---------------------------------------|------------------------------------------------------------|-----------------------------------------|--------------------------------------------------|----------------------------|---------------------------|-----------------------------------|--------------------------|----------------------|----------------------------|----------------------------------------------------|---------------------------------------------------|--------------------------------------|
| Buckling<br>Constant | Buckling<br>Column<br>Height*<br>(ft) | Buckling<br>Section<br>Height<br>(% Buckling<br>Col. Hgt.) | Buckling<br>Section<br>Diameter<br>(in) | Minimum<br>Buckling<br>Diameter at<br>GL<br>(in) | Diameter at<br>Tip<br>(in) | Diameter at<br>GL<br>(in) | Modulus of<br>Elasticity<br>(psi) | Pole<br>Density<br>(pcf) | Ice Density<br>(pcf) | Pole Tip<br>Height<br>(ft) | Buckling<br>Load<br>Capacity at<br>Height<br>(lbs) | Buckling<br>Load<br>Applied at<br>Height<br>(lbs) | Buckling<br>Load Factor<br>of Safety |
| 2.00                 | 20.66                                 | 33.22                                                      | 11.29                                   | 16.14                                            | 7.96                       | 12.17                     | 1.60e+6                           | 60.00                    | 57.00                | 33.25                      | 43,576                                             | 436.00                                            | 9.09                                 |

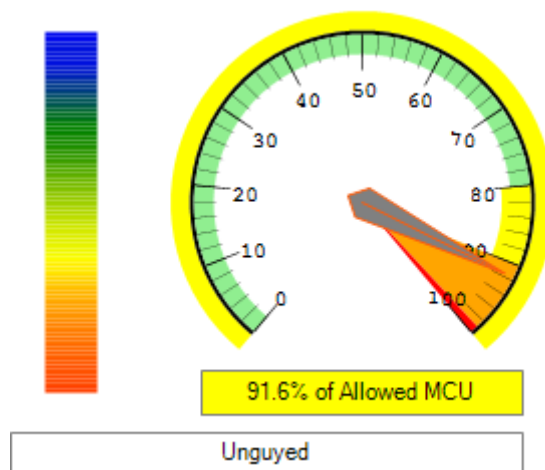
| Notes                                                                                                                                                                                                                                                                                        |         |             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Date                                                                                                                                                                                                                                                                                         | Author  | Description |
| 12/7/2015                                                                                                                                                                                                                                                                                    | bmesfin | Assumptions |
| ASSUMPTIONS :                                                                                                                                                                                                                                                                                |         |             |
| The analysis contained within this report is based on the pole capacity as prescriberd in the governing codes. The validity and accuracy of the analysis within is limited by the accuracy of the infromation it is based on. The structural analysis is based on the following assumptions. |         |             |
| 1. The pole was built and maintained in accordance with the manufacturer's specifications. The structure is assumed to be plumb, in good condition and essentially as erected.                                                                                                               |         |             |
| 2. The member size dimensions and sections are accurate as supplied.                                                                                                                                                                                                                         |         |             |
| 3. The wood pole evaluated is Southern pine with capacity of 8000psi.                                                                                                                                                                                                                        |         |             |
| 4. The soil at this locations have normal (average) soil properties.                                                                                                                                                                                                                         |         |             |
| 5. All wire types, sizes, heights and wind spans were determined from photos obtained during a site visit.                                                                                                                                                                                   |         |             |
| If any of these assumptions is not valid or has been made in error, this analysis may be affected, and NB+C ES could be allowed to review any new information to determine its effect on the structural integrity of the tower.                                                              |         |             |

# O-Calc® Pro Capacity Summary Info

Pole Identification: ODAS-2F-22

Report Created: 11/9/2023

File: ODAS\_2F-22.pplx



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# O-Calc® Pro Heat Map View

Report Created: 11/9/2023

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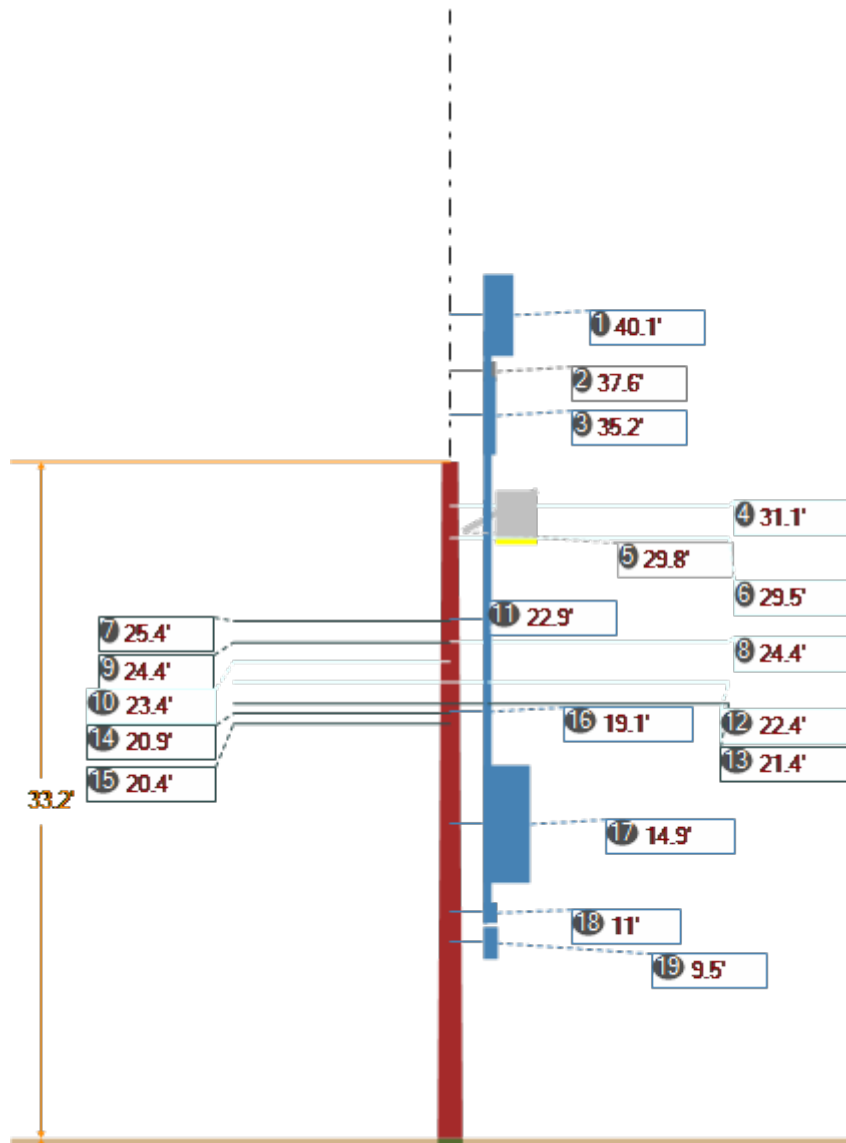


# O-Calc® Pro Schematic View

Pole Identification: ODAS-2F-22

Report Created: 11/9/2023

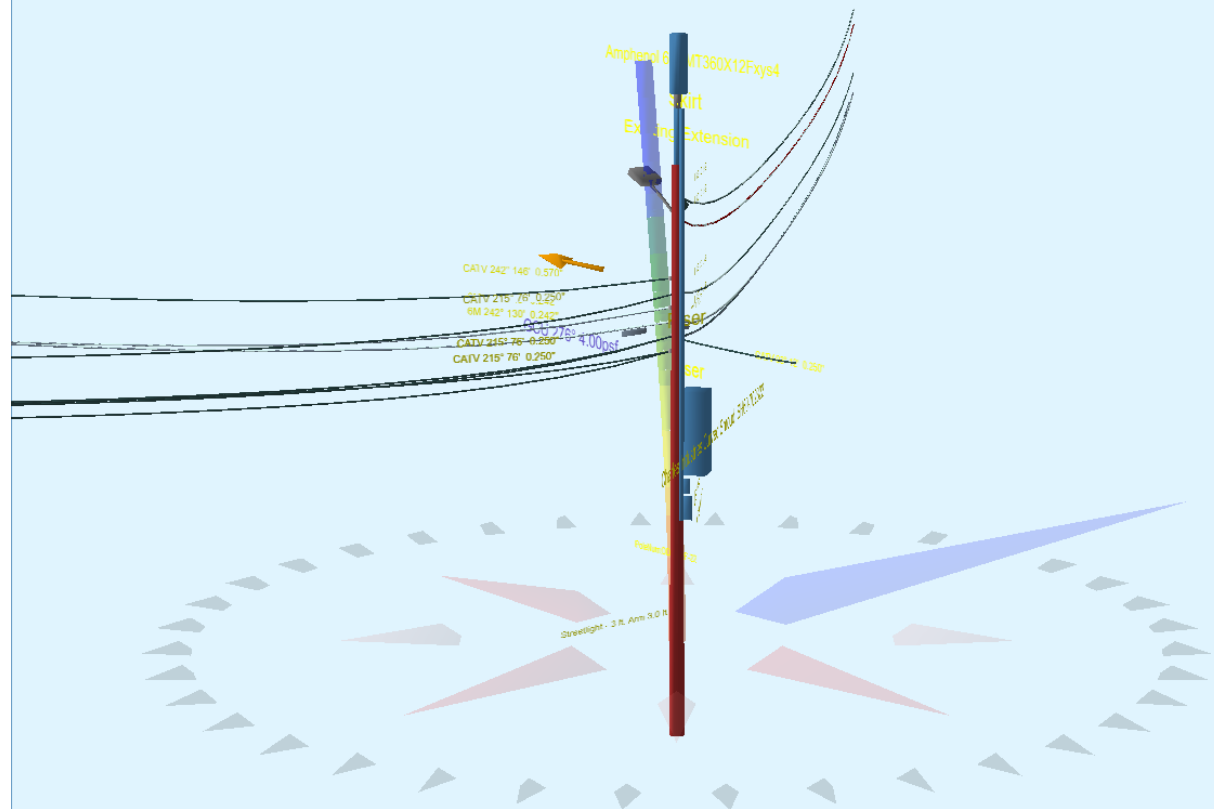
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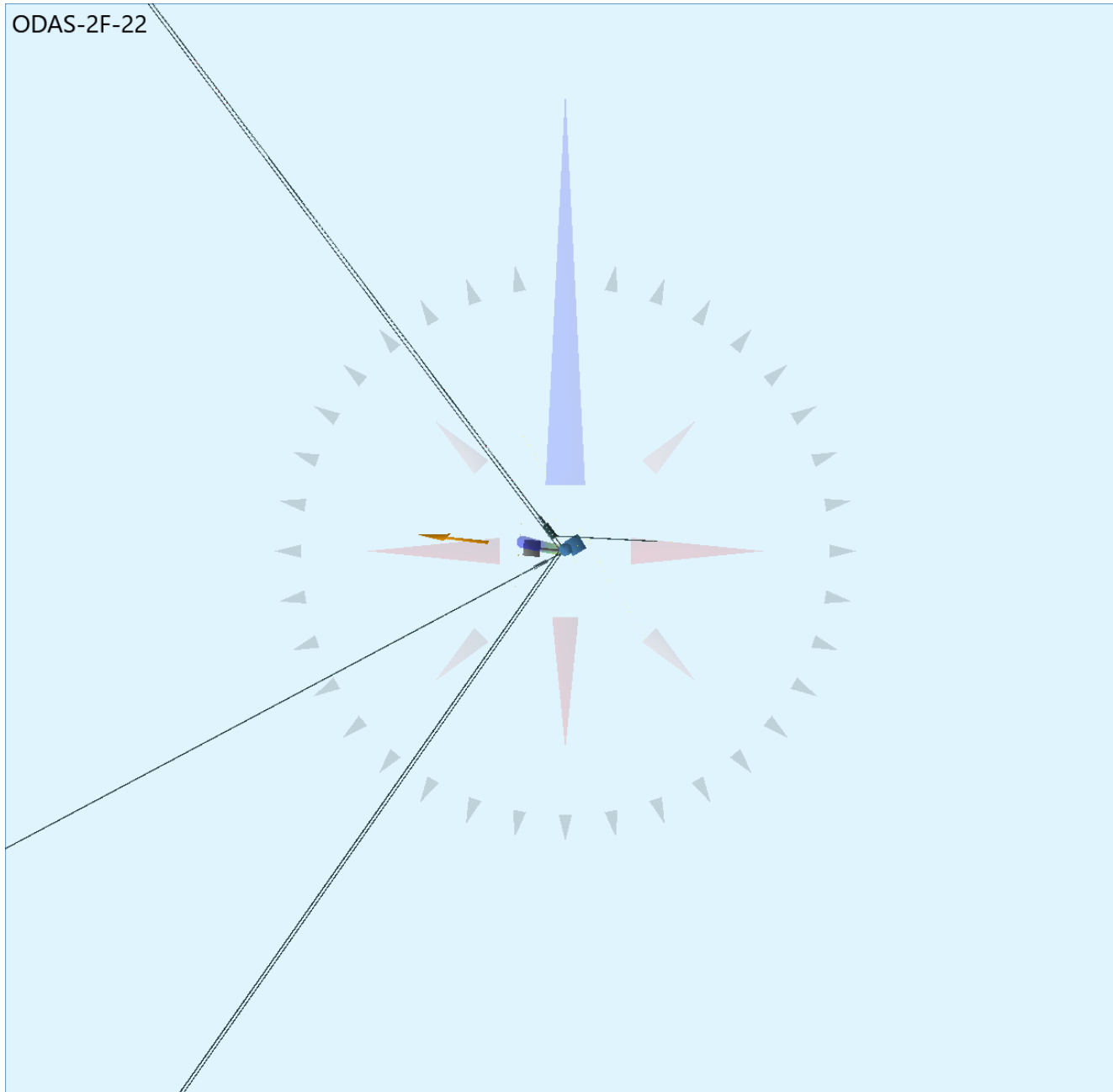


|                  |                                    |
|------------------|------------------------------------|
| 1 - 40.1' (481") | Amphenol 6U4MT360X12Fxys4          |
| 2 - 37.6' (451") | Skirt                              |
| 3 - 35.2' (422") | Existing Extension                 |
| 4 - 31.1' (373") | 6M 323° 130' Msgr:0.242"           |
| 5 - 29.8' (358") | Streetlight - 3 ft. Arm 3.0 ft arm |
| 6 - 29.5' (354") | 6M 323° 130' Msgr:0.242"           |
| 7 - 25.4' (305") | CATV 242° 146' 0.570" (CATV .25)   |

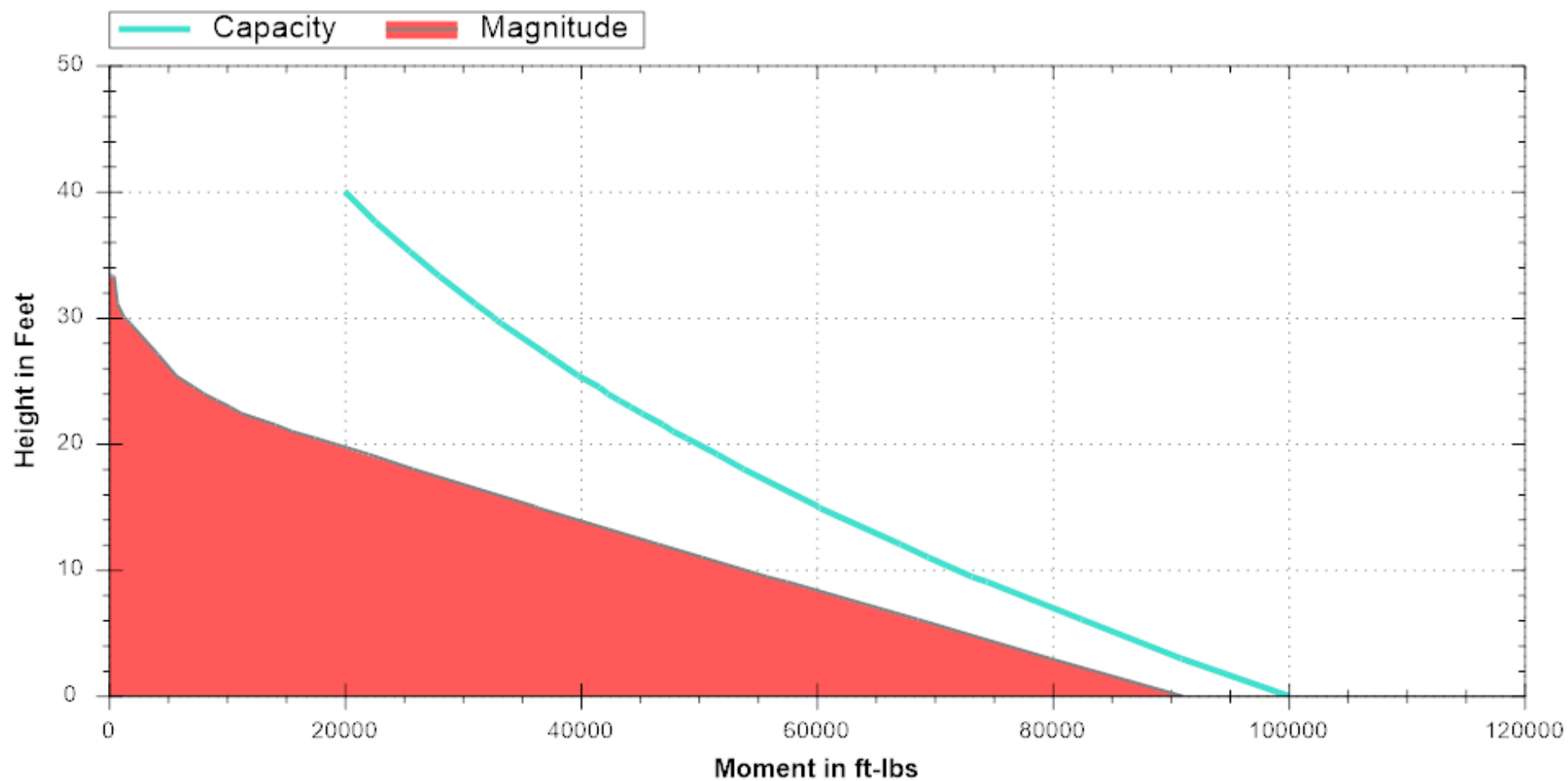
|                                              |
|----------------------------------------------|
| 8 - 24.4' (293")                             |
| 6M 323° 130' Msgr:0.242"                     |
| 9 - 24.4' (292.5")                           |
| CATV 215° 76' 0.250" Voff=-0.6 (CATV .25)    |
| 10 - 23.4' (281")                            |
| 6M 242° 146' Msgr:0.242"                     |
| 11 - 22.9' (274.6")                          |
| Riser                                        |
| 12 - 22.4' (269")                            |
| 6M 242° 130' Msgr:0.242"                     |
| 6M 323° 130' Msgr:0.242"                     |
| 13 - 21.4' (256.5")                          |
| CATV 215° 76' 0.250" Voff=-0.6 (CATV .25)    |
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| CATV 323° 130' 0.250" Voff=-0.6 (CATV .25)   |
| Telco 323° 130' 0.250" Voff=-1.0 (TELE 0.25) |
| 14 - 20.9' (250.6")                          |
| CATV 93° 12' 0.250" Voff=-0.6 (CATV .25)     |
| 15 - 20.4' (244.5")                          |
| CATV 215° 76' 0.250" Voff=-0.6 (CATV .25)    |
| CATV 215° 76' 0.250" Voff=-0.6 (CATV .25)    |
| 16 - 19.1' (229")                            |
| Riser                                        |
| 17 - 14.9' (179")                            |
| CHARLES SH60-702322 Shroud                   |
| 18 - 11' (132")                              |
| Load Center                                  |
| 19 - 9.5' (113.5")                           |
| Existing Meter                               |

ODAS-2F-22

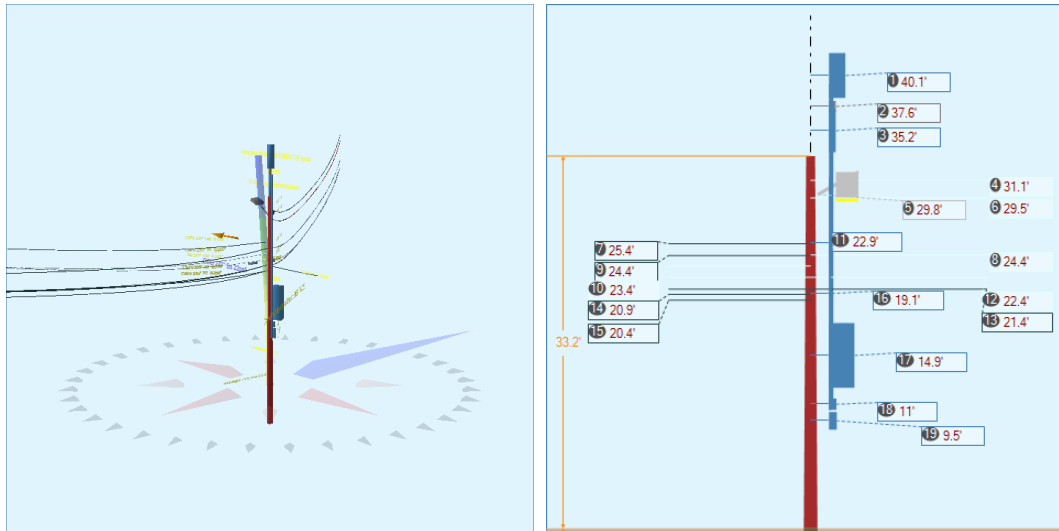




**Bending Moment vs Height**  
Wind 276° : Load 279.0°  
Pole: ODAS-2F-22 - 11/9/2023  
NESC 12 (250B) Grade C , Heavy (I:0.5in W:4psf)



|            |                     |                         |                      |                      |                  |                       |                        |
|------------|---------------------|-------------------------|----------------------|----------------------|------------------|-----------------------|------------------------|
| Pole Num:  | <b>ODAS-2F-22</b>   | Pole Length / Class:    | <b>40 / 2</b>        | Code:                | <b>NESC</b>      | Structure Type:       | <b>Unguyed Tangent</b> |
| Aux Data 1 | <b>Unset</b>        | Species:                | <b>SOUTHERN PINE</b> | NESC Rule:           | <b>Rule 250C</b> | Status                | <b>Unguyed</b>         |
| Aux Data 2 | <b>Unset</b>        | Setting Depth (ft):     | <b>6.75</b>          | Construction Grade:  | <b>C</b>         | Pole Strength Factor: | <b>0.75</b>            |
| Aux Data 3 | <b>Unset</b>        | G/L Circumference (in): | <b>38.20</b>         | Loading District:    | <b>Special</b>   | Transverse Wind LF:   | <b>0.75</b>            |
| Aux Data 4 | <b>Unset</b>        | G/L Fiber Stress (psi): | <b>8,000</b>         | Ice Thickness (in):  | <b>0.00</b>      | Wire Tension LF:      | <b>1.00</b>            |
| Aux Data 5 | <b>Unset</b>        | Allowable Stress (psi): | <b>6,000</b>         | Wind Speed (mph):    | <b>105.00</b>    | Vertical LF:          | <b>1.00</b>            |
| Aux Data 6 | <b>Unset</b>        | Fiber Stress Ht. Reduc: | <b>No</b>            | Wind Pressure (psf): | <b>28.22</b>     | Max 250C Wind (mph)   | <b>133.83</b>          |
| Latitude:  | <b>0.000000 Deg</b> | Longitude:              | <b>0.000000 Deg</b>  | Elevation:           | <b>0 Feet</b>    |                       |                        |



| Pole Capacity Utilization (%) |      | Height (ft) | Wind Angle (deg) |
|-------------------------------|------|-------------|------------------|
| Maximum                       | 79.1 | 0.0         | 272.7            |
| Groundline                    | 79.1 | 0.0         | 272.7            |
| Vertical                      | 4.8  | 19.7        | 272.7            |

| Pole Moments (ft-lb) |        | Load Angle (deg) | Wind Angle (deg) |
|----------------------|--------|------------------|------------------|
| Max Cap Util         | 69,519 | 275.2            | 272.7            |
| Groundline           | 69,519 | 275.2            | 272.7            |
| GL Allowable         | 88,264 |                  |                  |

**Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 275.2°**

|                       | 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                | 118               | 4.1              | 3,691                  | 5.3                | 4.2               | 238                      | 19                  | 0                     | 238                | 4.0               |
| Comms                 | 1,370             | 47.3             | 35,754                 | 51.4               | 40.5              | 2,306                    | 225                 | 2                     | 2,308              | 38.5              |
| GenericEquipments     | 729               | 25.2             | 16,477                 | 23.7               | 18.7              | 1,063                    | 620                 | 5                     | 1,068              | 17.8              |
| Pole                  | 522               | 18.0             | 8,504                  | 12.2               | 9.6               | 548                      | 1,117               | 10                    | 558                | 9.3               |
| Streetlights          | 158               | 5.5              | 5,073                  | 7.3                | 5.8               | 327                      | 45                  | 0                     | 328                | 5.5               |
| Insulators            | 0                 | 0.0              | 22                     | 0.0                | 0.0               | 1                        | 45                  | 0                     | 2                  | 0.0               |
| Pole Load             | 2,896             | 100.0            | 69,519                 | 100.0              | 78.8              | 4,483                    | 2,072               | 18                    | 4,501              | 75.0              |
| Pole Reserve Capacity |                   |                  | 18,745                 |                    | 21.2              | 1,517                    |                     |                       | 1,499              | 25.0              |

**Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 275.2°**

|                | 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 (%) |
|----------------|-------------------|------------------|------------------------|--------------------|-------------------|--------------------------|---------------------|-----------------------|--------------------|-------------------|
| <Undefined>    | 2,365             | 81.6             | 60,605                 | 87.2               | 68.7              | 3,908                    | 925                 | 8                     | 3,916              | 65.3              |
| Crown Castle   | 10                | 0.4              | 410                    | 0.6                | 0.5               | 26                       | 30                  | 0                     | 27                 | 0.4               |
| Pole           | 522               | 18.0             | 8,504                  | 12.2               | 9.6               | 548                      | 1,117               | 10                    | 558                | 9.3               |
| <b>Totals:</b> | 2,896             | 100.0            | 69,519                 | 100.0              | 78.8              | 4,483                    | 2,072               | 18                    | 4,501              | 75.0              |

**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         | TRIPLEX 1/0 | 29.49       | 6.76               | 0.2500              |                      | 0.097                 | 130.0                 | 323.0            | 130.7            |                |                         | 2                      | 311                  | 313                   |
| Secondary         | TRIPLEX 1/0 | 29.48       | 6.70               | 0.2500              |                      | 0.097                 | 130.0                 | 323.0            | 130.7            |                |                         | 2                      | 311                  | 313                   |
| Overlashed Bundle | 6M          | 29.50       | 6.72               | 0.2420              | 5.26                 | 0.104                 | 130.0                 | 323.0            | 130.7            | 129            | 2,562                   | 3                      | 311                  | 2,875                 |
|                   |             |             |                    |                     |                      |                       |                       |                  |                  | <b>Totals:</b> | <b>2,562</b>            | <b>7</b>               | <b>932</b>           | <b>3,501</b>          |

| 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       | 31.08       | 6.62               | 0.2420              | 5.25                 | 0.104                 | 130.0                 | 323.0            | 130.7            | 268           | 5,602                   | 3                      | 330                  | 5,935                 |
| CATV              | CATV .25 | 31.07       | 6.66               | 0.2500              |                      | 0.263                 | 130.0                 | 323.0            | 130.7            |               |                         | 7                      | 688                  | 695                   |
| CATV              | CATV .25 | 31.06       | 6.60               | 0.2500              |                      | 0.263                 | 130.0                 | 323.0            | 130.7            |               |                         | 6                      | 330                  | 336                   |

|                   |           |       |       |        |      |       |       |       |       |                |               |            |              |               |
|-------------------|-----------|-------|-------|--------|------|-------|-------|-------|-------|----------------|---------------|------------|--------------|---------------|
| CATV              | CATV .25  | 25.42 | 6.97  | 0.5700 | 4.40 | 0.600 | 146.0 | 242.0 | 146.4 | 401            | 8,525         | 21         | 431          | 8,978         |
| Overlashed Bundle | 6M        | 24.42 | 7.04  | 0.2420 | 4.31 | 0.104 | 130.0 | 323.0 | 130.4 | 196            | 3,223         | 3          | 324          | 3,549         |
| CATV              | CATV .25  | 24.40 | 7.04  | 0.2500 |      | 0.263 | 130.0 | 323.0 | 130.4 |                |               | 7          | 323          | 330           |
| CATV              | CATV .25  | 24.37 | 7.04  | 0.2500 | 3.15 | 0.263 | 76.0  | 215.0 | 76.4  | 64             | 776           | 4          | 257          | 1,037         |
| Overlashed Bundle | 6M        | 23.42 | 7.10  | 0.2420 | 5.78 | 0.104 | 146.0 | 242.0 | 146.7 | 100            | 1,960         | 4          | 174          | 2,138         |
| Telco             | TELE 0.25 | 23.40 | 7.11  | 0.2500 |      | 0.100 | 146.0 | 242.0 | 146.7 |                |               | 4          | 174          | 178           |
| Overlashed Bundle | 6M        | 22.42 | 7.16  | 0.2420 | 4.78 | 0.104 | 130.0 | 242.0 | 130.6 | 97             | 1,818         | 3          | 146          | 1,967         |
| Telco             | TELE 0.25 | 22.40 | 7.16  | 0.2500 |      | 0.100 | 130.0 | 242.0 | 130.6 |                |               | 3          | 221          | 224           |
| Overlashed Bundle | 6M        | 22.42 | 7.16  | 0.2420 | 4.78 | 0.104 | 130.0 | 323.0 | 130.6 | 100            | 1,500         | 3          | 294          | 1,796         |
| Telco             | TELE 0.25 | 22.40 | 7.16  | 0.2500 |      | 0.100 | 130.0 | 323.0 | 130.6 |                |               | 3          | 524          | 527           |
| CATV              | CATV .25  | 21.37 | 7.23  | 0.2500 | 3.15 | 0.263 | 76.0  | 215.0 | 76.4  | 64             | 681           | 6          | 221          | 907           |
| CATV              | CATV .25  | 21.37 | 7.23  | 0.2500 | 3.32 | 0.263 | 76.0  | 215.0 | 76.5  | 60             | 639           | 6          | 221          | 866           |
| CATV              | CATV .25  | 21.37 | 7.23  | 0.2500 | 4.32 | 0.263 | 130.0 | 323.0 | 130.4 | 140            | 2,013         | 10         | 284          | 2,308         |
| Telco             | TELE 0.25 | 21.34 | 7.23  | 0.2500 | 4.44 | 0.100 | 130.0 | 323.0 | 130.4 | 55             | 789           | 4          | 284          | 1,077         |
| CATV              | CATV .25  | 20.89 | 29.70 | 0.2500 | 0.18 | 0.263 | 12.0  | 93.0  | 12.0  | 48             | -979          | 0          | 0            | -979          |
| CATV              | CATV .25  | 20.37 | 7.29  | 0.2500 | 3.15 | 0.263 | 76.0  | 215.0 | 76.4  | 64             | 649           | 5          | 209          | 862           |
| CATV              | CATV .25  | 20.37 | 7.29  | 0.2500 | 2.21 | 0.263 | 76.0  | 215.0 | 76.2  | 96             | 973           | 5          | 209          | 1,187         |
|                   |           |       |       |        |      |       |       |       |       | <b>Totals:</b> | <b>28,168</b> | <b>105</b> | <b>5,644</b> | <b>33,917</b> |

| 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) |
|-------------------|-----------------------------------------------|--------------|-------------|--------------------|--------------------|--------------------|-------------------|------------------|-----------------|--------------------|------------------|------------------------|----------------------|-----------------------|
| Cylinder          | Amphenol 6U4MT360X12Fxs4                      | Crown Castle | 40.08       | 1.85               | 0.0                | 0.0                | 42.00             | 48.20            | --              | 14.60              | --               | 1                      | 4,083                | 4,084                 |
| Cylinder          | Skirt                                         |              | 37.58       | 0.71               | 0.0                | 0.0                | 30.00             | 12.00            | --              | 6.00               | --               | 0                      | 389                  | 389                   |
| Cylinder          | Existing Extension                            |              | 35.17       | 0.86               | 0.0                | 0.0                | 80.00             | 46.00            | --              | 6.00               | --               | 1                      | 1,382                | 1,382                 |
| Cylinder          | Riser                                         |              | 22.88       | 6.63               | 100.0              | 0.0                | 100.00            | 340.96           | --              | 4.00               | --               | -55                    | 4,078                | 4,023                 |
| Cylinder          | Riser                                         |              | 19.09       | 5.87               | 0.0                | 0.0                | 100.00            | 249.96           | --              | 2.00               | --               | 4                      | 1,200                | 1,205                 |
| Box               | Charles Industries Curved Shroud: SH60-702322 |              | 14.92       | 15.86              | 59.0               | 0.0                | 250.00            | 69.50            | 21.45           | --                 | 22.73            | -267                   | 4,432                | 4,165                 |
| Box               | Load Center                                   |              | 11.00       | 8.05               | 48.0               | 0.0                | 9.00              | 12.00            | 5.33            | --                 | 6.70             | -4                     | 152                  | 147                   |
| Box               | Existing Meter                                |              | 9.46        | 8.98               | 48.0               | 0.0                | 9.00              | 18.96            | 7.00            | --                 | 7.00             | -5                     | 241                  | 236                   |
|                   |                                               |              |             |                    |                    |                    |                   |                  |                 | <b>Totals:</b>     |                  | <b>-325</b>            | <b>15,955</b>        | <b>15,630</b>         |

| Streetlight |                         | 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) |
|-------------|-------------------------|-------|-------------|--------------------|--------------------|--------------------|-------------------|------------------|-----------------|--------------------|------------------|------------------------|----------------------|-----------------------|
| Flood Light | Streetlight - 3 ft. Arm |       | 29.83       | 4.19               | 275.0              | 275.0              | 45.00             | 24.00            | 20.00           | 3.00               | 36.00            | 100                    | 4,712                | 4,812                 |
|             |                         |       |             |                    |                    |                    |                   |                  |                 | <b>Totals:</b>     |                  | <b>100</b>             | <b>4,712</b>         | <b>4,812</b>          |

| 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 | 31.08       | 0.00               | 323.0              | 323.0              | 5.00              | 3.00               | 0.00             | 2                      | 0                    | 2                     |
| Bolt      | Single Bolt | 29.50       | 0.00               | 323.0              | 323.0              | 5.00              | 3.00               | 0.00             | 2                      | 0                    | 2                     |
| Bolt      | Single Bolt | 25.42       | 0.00               | 242.0              | 242.0              | 5.00              | 3.00               | 0.00             | 2                      | 0                    | 2                     |
| Bolt      | Single Bolt | 24.42       | 0.00               | 323.0              | 323.0              | 5.00              | 3.00               | 0.00             | 2                      | 0                    | 2                     |
| Bolt      | Single Bolt | 23.42       | 0.00               | 242.0              | 242.0              | 5.00              | 3.00               | 0.00             | 2                      | 0                    | 2                     |
| Bolt      | Single Bolt | 22.42       | 0.00               | 242.0              | 242.0              | 5.00              | 3.00               | 0.00             | 2                      | 0                    | 2                     |
| Bolt      | Single Bolt | 22.42       | 0.00               | 323.0              | 323.0              | 5.00              | 3.00               | 0.00             | 2                      | 0                    | 2                     |
| Bolt      | Single Bolt | 21.42       | 0.00               | 280.0              | 280.0              | 5.00              | 3.00               | 0.00             | 3                      | 0                    | 3                     |
| Bolt      | Single Bolt | 20.42       | 0.00               | 235.0              | 235.0              | 5.00              | 3.00               | 0.00             | 2                      | 0                    | 2                     |
| Totals:   |             |             |                    |                    |                    |                   |                    |                  | 20                     | 0                    | 20                    |

| 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              | 19.75                        | 33.08                                          | 11.33                          | 10.66                                | 7.96                 | 12.17               | 1.60e+6                     | 60.00              | 57.00             | 33.25                | 42,728                                 | 431.58                                | 20.83                          |

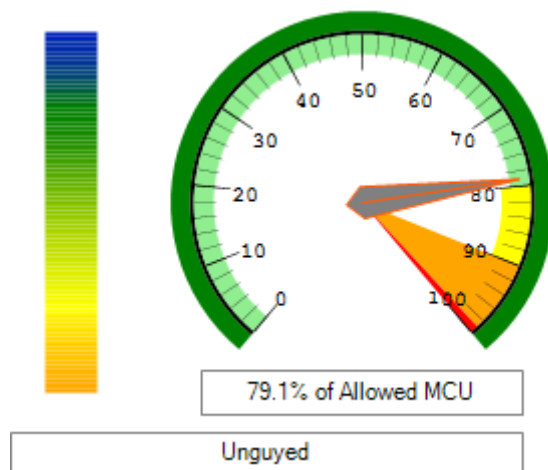
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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------|
| Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Author  | Description |
| 12/7/2015                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | bmesfin | Assumptions |
| <p>ASSUMPTIONS :</p> <p>The analysis contained within this report is based on the pole capacity as prescribed in the governing codes. The validity and accuracy of the analysis within is limited by the accuracy of the information it is based on. The structural analysis is based on the following assumptions.</p> <ol style="list-style-type: none"> <li>1. The pole was built and maintained in accordance with the manufacturer's specifications. The structure is assumed to be plumb, in good condition and essentially as erected.</li> <li>2. The member size dimensions and sections are accurate as supplied.</li> <li>3. The wood pole evaluated is Southern pine with capacity of 8000psi.</li> <li>4. The soil at this locations have normal (average) soil properties.</li> <li>5. All wire types, sizes, heights and wind spans were determined from photos obtained during a site visit.</li> </ol> <p>If any of these assumptions is not valid or has been made in error, this analysis may be affected, and NB+C ES could be allowed to review any new information to determine its effect on the structural integrity of the tower.</p> |         |             |

# O-Calc® Pro Capacity Summary Info

Pole Identification: ODAS-2F-22

Report Created: 11/9/2023

File: ODAS\_2F-22.pplx



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# O-Calc® Pro Heat Map View

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Report Created: 11/9/2023

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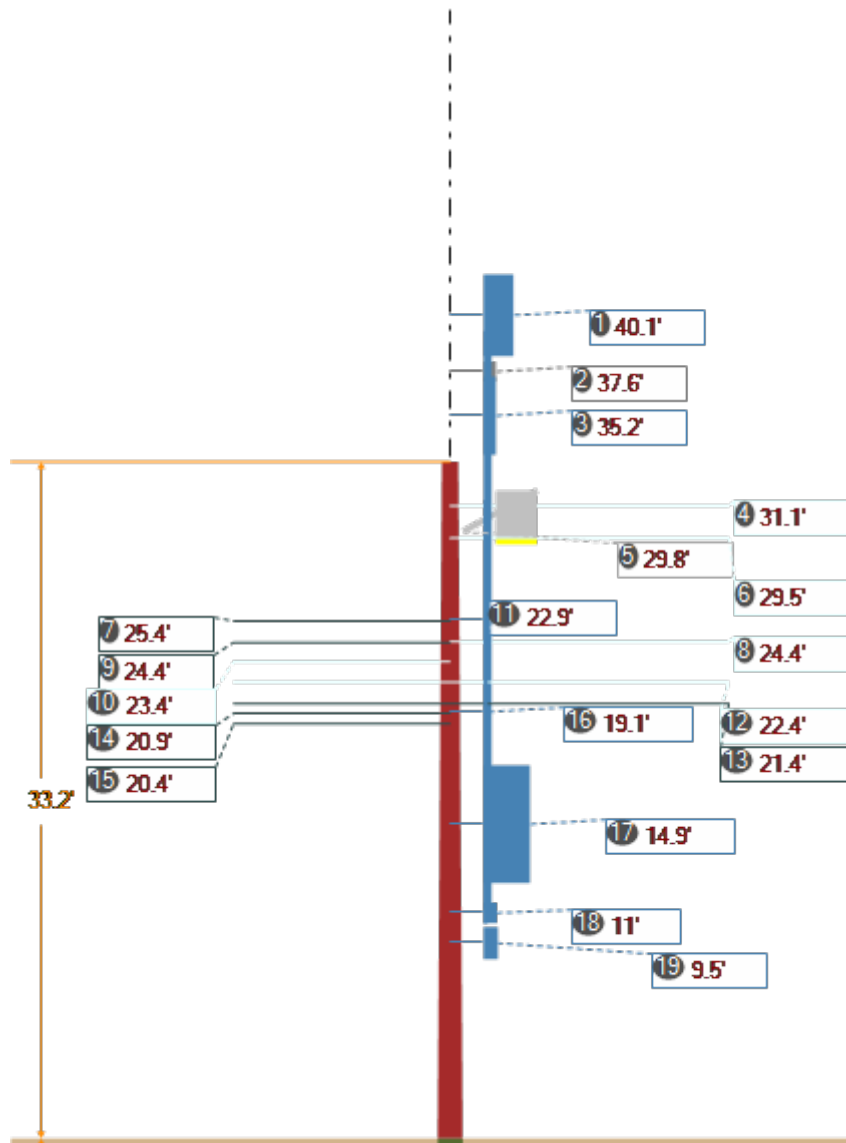


# O-Calc® Pro Schematic View

Pole Identification: ODAS-2F-22

Report Created: 11/9/2023

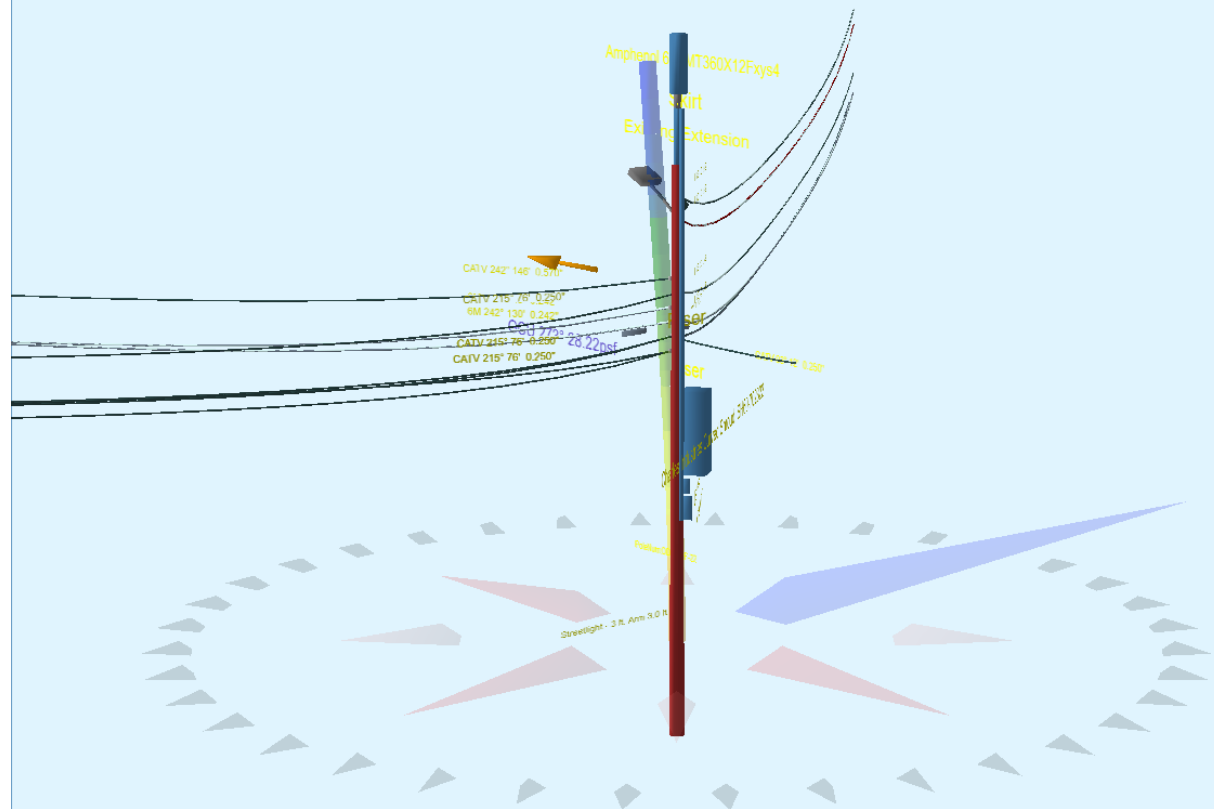
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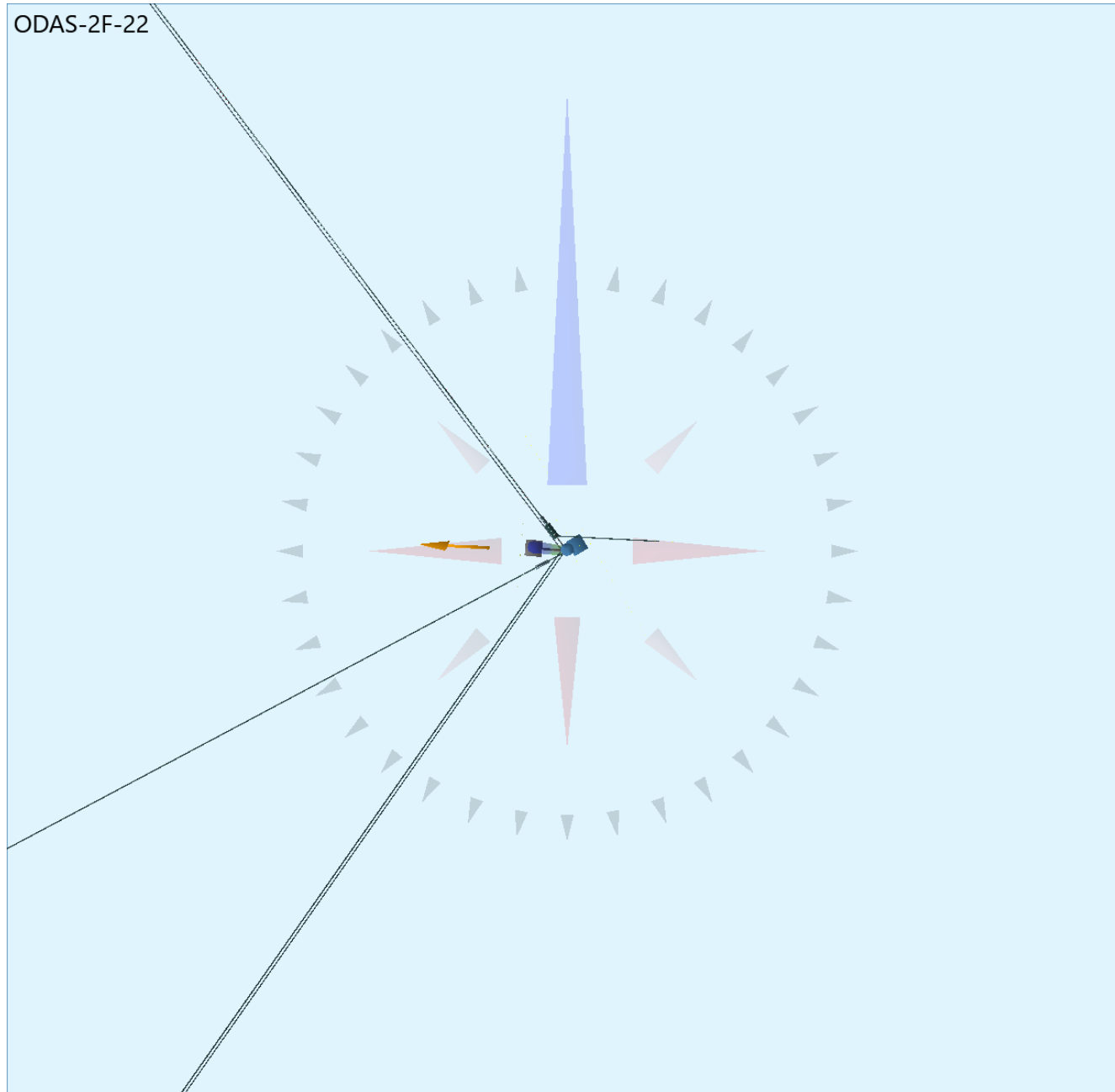


|                  |                                    |
|------------------|------------------------------------|
| 1 - 40.1' (481") | Amphenol 6U4MT360X12Fxys4          |
| 2 - 37.6' (451") | Skirt                              |
| 3 - 35.2' (422") | Existing Extension                 |
| 4 - 31.1' (373") | 6M 323° 130' Msgr:0.242"           |
| 5 - 29.8' (358") | Streetlight - 3 ft. Arm 3.0 ft arm |
| 6 - 29.5' (354") | 6M 323° 130' Msgr:0.242"           |
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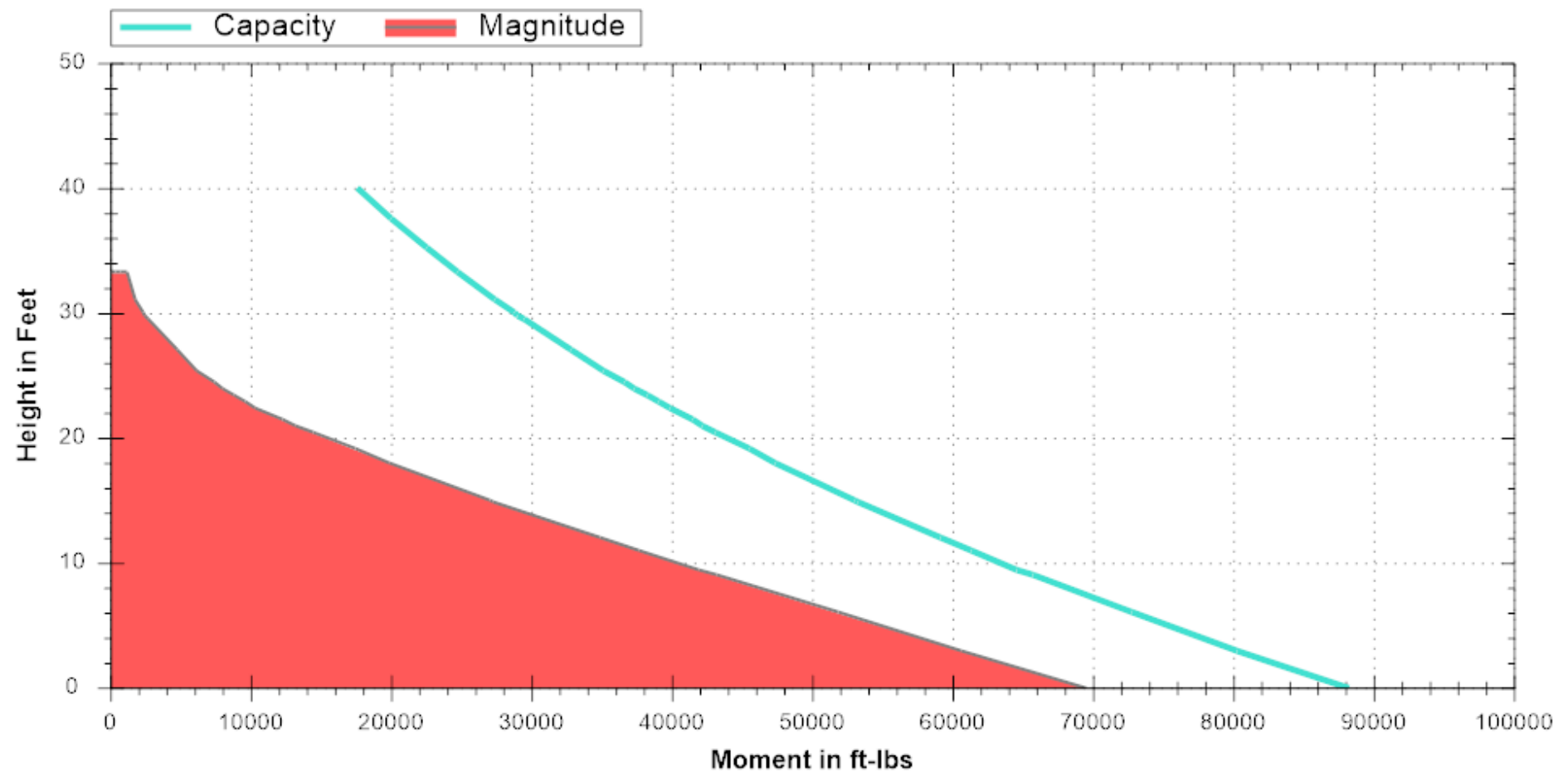
|                                              |
|----------------------------------------------|
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| Telco 323° 130' 0.250" Voff=-1.0 (TELE 0.25) |
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| CATV 93° 12' 0.250" Voff=-0.6 (CATV .25)     |
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| CHARLES SH60-702322 Shroud                   |
| 18 - 11' (132")                              |
| Load Center                                  |
| 19 - 9.5' (113.5")                           |
| Existing Meter                               |

ODAS-2F-22





**Bending Moment vs Height**  
Wind 273° : Load 275.2°  
Pole: ODAS-2F-22 - 11/9/2023  
NESC Ext Wind (250C) Grade C (> 100 mph)



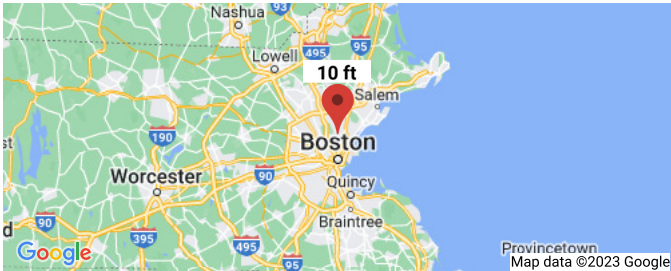
⚠ This is a beta release of the new ATC Hazards by Location website. Please [contact us](#) with feedback.

ℹ The ATC Hazards by Location website will not be updated to support ASCE 7-22. [Find out why.](#)

**ATC** Hazards by Location

**Search Information**

**Coordinates:** 42.427091, -71.060592  
**Elevation:** 10 ft  
**Timestamp:** 2023-11-07T10:29:48.396Z  
**Hazard Type:** Wind



**ASCE 7-16**

MRI 10-Year ..... 75 mph  
MRI 25-Year ..... 84 mph  
MRI 50-Year ..... 91 mph  
MRI 100-Year ..... 98 mph  
Risk Category I ..... 109 mph  
Risk Category II ..... 119 mph  
Risk Category III ..... 128 mph  
Risk Category IV ..... ⚠ 132 mph

You are in a wind-borne debris region if you are also within 1 mile of the coastal mean high water line.

**ASCE 7-10**

MRI 10-Year ..... 78 mph  
MRI 25-Year ..... 88 mph  
MRI 50-Year ..... 96 mph  
MRI 100-Year ..... 103 mph  
Risk Category I ..... 117 mph  
Risk Category II ..... 127 mph  
Risk Category III-IV ..... ⚠ 138 mph

If the structure under consideration is a healthcare facility and you are also within 1 mile of the coastal mean high water line, you are in a wind-borne debris region. If other occupancy, use the Risk Category II basic wind speed contours to determine if you are in a wind-borne debris region.

**ASCE 7-05**

ASCE 7-05 Wind Speed ..... 105 mph

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Please note that the ATC Hazards by Location website will not be updated to support ASCE 7-22. [Find out why.](#)

**Disclaimer**

Hazard loads are interpolated from data provided in ASCE 7 and rounded up to the nearest whole integer. Per ASCE 7, islands and coastal areas outside the last contour should use the last wind speed contour of the coastal area – in some cases, this website will extrapolate past the last wind speed contour and therefore, provide a wind speed that is slightly higher. NOTE: For queries near wind-borne debris region boundaries, the resulting determination is sensitive to rounding which may affect whether or not it is considered to be within a wind-borne debris region.

Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.

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