# (REVISED) <br> STRUCTURAL ANALYSIS REPORT 

For

## CRAN_RCTB_A1CT_152

39 North Gate Road
South Woodstock, CT 06267

## Equipment Mounted on Proposed Utility Pole



Prepared for:

## CENTERLINE

 at\&t

Dated: March 26, 2021(Rev. 1) February 3, 2021

Prepared by:

## SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT\&T to conduct a structural evaluation of the proposed wood pole supporting the proposed AT\&T equipment.

This report represents this office's findings, conclusions and recommendations pertaining to the support of the proposed AT\&T equipment listed below.

This office conducted an on-site visual survey of the above areas on June 24, 2020. Attendees included Patrick Barrett (HDG - Field Technician).

## CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the proposed pole is in conformance with the National Electric Safety Code 2017 (NESC). The wood pole structure is rated at 86.0\%.

## APPURTENANCES CONFIGURATION:

| Appurtenances | Elev. | Mount |
| :--- | :---: | :---: |
| (1) MBA3F-U3A Antenna | $32^{\prime}-0^{\prime \prime}$ | Pipe Mast |
| (3) 4455 RRH's | $32^{\prime}-0^{\prime \prime}$ | Pipe Mast |
| (1) Demark Box | $28^{\prime}-0^{\prime \prime}$ |  |
| (1) Disconnect Switch | $18^{\prime}-0 \prime \prime$ | Side of Wood Pole |
| (1) Electric Meter | $7^{\prime}-0^{\prime \prime}$ | Side of Wood Pole |

## ANALYSIS RESULTS SUMMARY:

| Component | Max. Stress Ratio | Elev. of Component (ft.) | Pass/Fail |
| :---: | :---: | :---: | :---: |
| SPY 2 (Proposed) | $86.0 \%$ | $0-34.0$ | PASS |

HUDSON
Design Group LLC

## DESIGN CRITERIA:

| National Electric Safety Code 2017 (NESC) and the 2018 Connecticut State Building Code Amendments |  |  |
| :---: | :---: | :---: |
| Wind |  |  |
| City/Town: | South Woodstock |  |
| County: | Windham |  |
| NESC Rule | Rule 250B | NESC Section 25 |
| Construction Grade | C | NESC Section 25 |
| Wind Load: | 39.53 mph | NESC Table 230-2 |
| Ice |  |  |
| Loading District | Heavy | NESC Figure 250-1 |
| Radial Ice Thickness: | 0.50 in | NESC Table 230-1 |

1. Approximate height above grade to center of the proposed CCl antenna: $32^{\prime \prime}-0^{\prime \prime}+/-$
*Calculations and referenced documents are attached.

## PROPOSED STRUCTURE:

The proposed $34^{\prime}-0^{\prime \prime}+/-$ wood pole is assumed to be Southern Yellow Pine Class 2 ( $\mathrm{fb}=8000 \mathrm{psi}$ ) with a 12.25 " diameter base. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.

## ANTENNA/RRH SUPPORT RECOMMENDATIONS:

The new antenna and RRH's are proposed to be installed on a proposed pipe mast secured to the wood pole using new chain mounts.

## EQUIPMENT SUPPORT RECOMMENDATIONS:

The new equipment is proposed to be installed on the wood pole using the approved manufacturer's mounts.

## Limitations and assumptions:

1. Reference the latest HDG construction drawings for all the equipment locations details.
2. Mount all equipment per manufacturer's specifications.
3. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities. Contractor to perform pre-inspection prior to construction.
4. All antennas and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.
5. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
6. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.
7. HDG did not perform any geotechnical analysis / or / investigation. Soil Information is unknown.

## HUDSON

Design Group LLC

FIELD PHOTOS:


Photo 1: Sample photo illustrating the location of the new pole.

Calculations

## POLE LOADING DATA

Pole: 40/2 (Wood-Cylindrical)
Pole Loading Horizontal: 53\% (250B) Vertical: $\quad 12 \% \quad(k=1.20)$

NESC Edition: 2017
Loading District: Heavy
Construction: Grade C (Crossing)

Soil: None
Rule 250B: Temp=0F, Wind=4 psf, Ice=0.5 in

## POLES

| Pole \# | Length $(\mathrm{ft})$ | Depth $(\mathrm{ft})$ | Elevation $(\mathrm{ft})$ |
| :---: | :---: | :---: | :---: |
| 0 | 40 | 6 | 0 |
| 1 | 40 | 6 | 0 |

POLE LINE TOPOLOGY


| INSULATORS |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Spool Tangent <br> 156" <br> 62\% $0^{\circ}$ |  |  |  |  |  |  |  |  |
| ARM / BRACKET DATA |  |  |  |  |  |  |  |  |
| Arm/Bracket | Attach | Vert | Loading | Horz Loading |  |  |  |  |
| SPANS |  |  |  |  |  |  |  |  |
| Span: 1 Span Length (ft): 88 |  | Direction: 332 ${ }^{\circ}$ |  |  |  |  |  |  |
| Secondary <br> 4 ACSR (7/1) | $100$ | 0 | $156$ | 156 |  | 700 |  |  |
| Joint Use |  |  |  |  |  |  |  |  |
| Joint Use Cable <br> 144CT Fiber ADSS DNA-31074 | $\begin{aligned} & \text { Ruling Span (ft) } \\ & 74 \quad 100 \end{aligned}$ | $\begin{aligned} & \text { Diameter (in) } \\ & 0.80 \end{aligned}$ | $\begin{aligned} & \text { Weight (lbs/ft) } \\ & 0.23 \end{aligned}$ | $\begin{aligned} & \text { Attach A (in) } \\ & 180 \end{aligned}$ | $\begin{aligned} & \text { Offset (in) } \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { Attach B (in) } \\ & 180 \end{aligned}$ | $\begin{aligned} & \text { Tension (lbs) } \\ & 902 \end{aligned}$ | Description |
| EQUIPMENT |  |  |  |  |  |  |  |  |
| Equipment User Defined Equipment | Weight (lbs) $67.0$ | Attach 24 | h (in) | Direction $90^{\circ}$ |  |  |  |  |
| User Defined Equipment | 3.0 | 192 |  | $90^{\circ}$ |  |  |  |  |
| User Defined Equipment | 17.0 | 324 |  | $90^{\circ}$ |  |  |  |  |
| User Defined Equipment | 15.0 | 348 |  | $90^{\circ}$ |  |  |  |  |
| User Defined Equipment | 22.0 | 48 |  | $270^{\circ}$ |  |  |  |  |
| User Defined Equipment | 22.0 | 48 |  | $90^{\circ}$ |  |  |  |  |
| User Defined Equipment | 41.6 | 24 |  | $270^{\circ}$ |  |  |  |  |
| User Defined Equipment | 67.0 | 72 |  | $270^{\circ}$ |  |  |  |  |
| User Defined Equipment | 67.0 | 72 |  | $90^{\circ}$ |  |  |  |  |
| RISERS |  |  |  |  |  |  |  |  |
| Riser <br> 2" Riser - Primary | $\begin{aligned} & \text { Length (ft) } \\ & 34 \end{aligned}$ | Direction $130^{\circ}$ |  |  |  |  |  |  |

Solid Model View


