## APPENDIX 1

# Pole by Pole Construction Details for New Overhead Distribution Line at Miller State Park Peterborough / Temple New Hampshire 

## Eversource Circuit 3155X9 single phase primary distribution line operating at $\mathbf{2 . 4} \mathbf{~ k V}$ Volts

Messenger Wire will be the top conductor on the pole
052 AWA Alumoweld - Aluminum Messenger Wire 7 Strand Conductor
This conductor has a Breaking Strength of 17120 lbs.

Primary covered wire will be located $24^{\prime \prime}$ below the Messenger Wire. 1/0 ACSR/AW 25kV Aerial Cable 6/1 Compact Round, Rated Conductor Strength 4250 lbs. Cable meets the requirements of ASTM B 549.

The listed Messenger wire and the Primary conductor will be installed through out the entire project area.

Pole 81/1: 40' Class 1 PENTA Wood Pole, 3-Rock anchors one set 15 feet S, one set 15 feet NE, and one set 15 'SW of this pole.

This will be a double dead ended pole with a fused cut out installed to protect the distribution line to the next fuse point which will be located at pole 81/13. Placement of two anchors will be within the licensed area. One anchor will be installed in-line towards pole 37/47, and the other will be installed inline towards pole 81/2. One anchor will be a side anchor and this anchor will be outside of the licensed area by approximately 7 feet. All required NESC grounding will be installed at this pole location.

## Pole 81/2: 40' Class 1 PENTA Wood Pole, 1-Rock anchor set 15 feet NW of this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
Anchor will be installed approximately 7 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/3: 40' Class 1 PENTA Wood Pole, Tangent Pole No Anchoring Required

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole. All required NESC grounding will be installed at this pole location.

## Pole 81/4: 40' Class 1 PENTA Wood Pole, 1-Rock anchor set 15 feet NW of this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
Anchor will be installed approximately 7 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

Pole 81/5: 55' Class 1 Weathering Steel Pole, 3-Rock anchors one to be set 15 feet NE from this pole, and one to be set 15 feet SW of the pole. Third anchor will be set 15 feet SE of the pole

This will be a double dead ended pole.
Utilize the Hendrix Type TC Thimble Clevis with the Pre shaped Hendrix Messenger Grip Cat. \# MG-4128 Color Code Blue to secure the 052 AWA Messenger to this pole due to the angle.
Install the Hendrix BA1-PP Pole Cornering Plate with 2- Polymer insulators and 2- Hendrix Cat. \# CG-0116 Conductor Dead End Grips to secure primary conductor to this pole. Allows for the primary conductor to be installed without terminating the conductor.
Placement of two anchors will be within the licensed area. One anchor will be installed in-line towards pole $81 / 4$, and the other will be installed in-line towards pole $81 / 6$. The third anchor will be a bisect anchor will be set approximately 7 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/6: 45' Class 1 Weathering Steel Pole, 3-Rock anchors one set 15 feet NE from this pole, and one set 15 feet SW of the pole, and the third one set 15 feet SE of the pole.

This will be a double dead ended pole.
Utilize the Hendrix Type TC Thimble Clevis with the Pre shaped Hendrix Messenger Grip Cat. \# MG-4128 Color Code Blue to secure the 052 AWA Messenger to this pole.
Pole hardware to secure Polymer Insulator and use the preformed conductor grip with a "Bubble" in the primary conductor. This will allow for the conductor to pass by this pole and eliminate the need to install a lightning arrester.
Placement of all three anchors will be within the licensed area. One anchor will be installed in-line towards pole 81/5, and the other two will be installed in-line towards pole 81/7.
All required NESC grounding will be installed at this pole location.

## Pole 81/7: 40’ Class 1 Weathering Steel Pole, 1- Rock anchor set 15 feet NW from this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
Anchor will be installed approximately 7 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/8: 40’ Class 1 Weathering Steel Pole, Tangent Pole No Anchoring Required

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
All required NESC grounding will be installed at this pole location.

Pole 81/9: 40' Class 1 PENTA Wood Pole, 1-Rock anchor set 15 feet SE from this pole
Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket, install the Hendrix Cat. \# 2IP Double Insulator Plate to the BM-14 Tangent Bracket. This will allow for the installation of two insulator pins and 2-Vise Top insulators to secure the primary conductor to this pole.
Anchor will be installed approximately 7 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/10: 40 ' Class 1 PENTA Wood Pole, Tangent Pole No Anchoring Required

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
All required NESC grounding will be installed at this pole location.

Pole 81/11: 40' Class 1 PENTA Wood Pole, 3-Rock anchors one set 15 Feet NE from this pole, and one set 15 Feet $S$ of the pole, and the third one set 15 feet SE of this pole

This will be a double dead ended pole.
Utilize the Hendrix Type TC Thimble Clevis with the Pre shaped Hendrix Messenger Grip Cat. \# MG-4128 Color Code Blue to secure the 052 AWA Messenger to this pole.
Install the Hendrix BA1-PP Pole Cornering Plate with 2- Polymer insulators and 2- Hendrix Cat. \# CG-0116 Conductor Dead End Grips to secure primary conductor to this pole. Allows for the primary conductor to be installed without terminating the conductor.
Placement of two anchors will be within the licensed area. One anchor will be installed in-line towards pole $81 / 10$, and the other will be installed in-line towards pole $81 / 12$. The third anchor will be a bisect anchor set SE of this pole. This anchor will be set approximately 7 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/12: $40^{\prime}$ Class 1 PENTA Wood Pole, Tangent Pole No Anchoring Required

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
All required NESC grounding will be installed at this pole location.

Pole 81/13: 45 ' Class 1 PENTA Wood Pole, 3- Rock anchors one set 15 feet SE of this pole, and one set 15 Feet $N$ of the pole, and the third one set 15 feet $S$ of the pole

This will be multi directional dead-ended pole.
The Messenger will be Dead Ended at this pole in three directions
This pole will be a three-way junction pole. The line will continue North to pole $81 / 13 \mathrm{X}$ and dead end at that pole. At Pole 81/13 a new tap will look NW to pole $81 / 14$. A fused cut out will be installed at this pole to protect the line from this location to pole 81/29. Install all appropriate messenger, and primary conductor components necessary to secure these items to the pole.
Placement of two anchors will be within the licensed area. One anchor will be installed in-line towards pole $81 / 13 X$, and the other will be installed in-line towards pole $81 / 12$. The third anchor will be a bisect anchor set SE of this pole. This anchor will be set approximately 7 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/13X: 45' Class 1 PENTA Wood Pole, 1 Rock anchor set 15 feet NE of this pole

This pole will be a primary Dead-End pole that will have one $50 \mathrm{kVa} 2.4 \mathrm{kV} / 120 / 240$-volt pole mounted transformer, a cut out and arrester mounting bracket will also be installed. A fused cut out to protect this conventional transformer will also be located on this pole. One run of $4 / 0$ secondary triplex conductor will be run from this pole back to pole 81/13 to supply power to the MIT building. Placement of this one anchor will be outside of the licensed area by approximately 15 feet All required NESC grounding will be installed at this pole location.

## Pole 81/14: 45' Class 1 PENTA Wood Pole, 3- Rock anchors one set 15 feet S of this pole, and one set 15 feet NW of the pole

This will be a double dead ended pole.
Utilize the Hendrix Type TC Thimble Clevis with the Pre shaped Hendrix Messenger Grip Cat. \# MG-4128 Color Code Blue to secure the 052 AWA Messenger to this pole.
Install the Hendrix BA1-PP Pole Cornering Plate with 2- Polymer insulators and 2- Hendrix Cat. \# CG-0116 Conductor Dead End Grips to secure primary conductor to this pole. Allows for the primary conductor to be installed without terminating the conductor.
One anchor will be installed in-line towards pole 81/13, and the other will be installed in-line towards pole 81/15.
A third bisect anchor will be installed at this pole location.
Placement of all anchors will be outside of the licensed area by approximately 5 feet.
All required NESC grounding will be installed at this pole location.

## Pole 81/15: 45' Class 1 PENTA Wood Pole, with 1 Rock anchor set 15 feet NW of this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
Anchor will be installed approximately 5 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/16: 40' Class 1 PENTA Wood Pole, with 1 Rock anchor set 15 feet SE of this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
Anchor will be installed approximately 5 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/17: 40' Class 1 PENTA Wood Pole, with 1 Rock anchor set 15 Feet NW of this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
Rock Anchor will be installed approximately 5 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/18: 40' Class 1 PENTA Wood Pole, with 1 Rock anchor set 15 Feet NW of this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
Rock Anchor will be installed approximately 5 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/19: $40^{\prime}$ Class 1 PENTA Wood Pole, 3-Rock anchors set 15 feet NW of this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
One anchor will be installed in-line towards pole 81/20, and the other will be installed in-line towards pole $81 / 18$. The third anchor will be a bisect anchor set NW of this pole.
All Rock Anchors will be installed approximately 5 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/20: 45' Class 1 PENTA Wood Pole, with 1 Rock anchor set 15 feet SE of this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
Anchor will be installed approximately 5 feet outside of the licensed area. All required NESC grounding will be installed at this pole location.

Pole 81/21: 40 ' Class 1 PENTA Wood Pole, 3-Rock anchors two set 15 feet S of this pole and the other set 15 feet SE of the pole

This will be a double dead ended pole.
Utilize the Hendrix Type TC Thimble Clevis with the Pre shaped Hendrix Messenger Grip Cat. \# MG-4128 Color Code Blue to secure the 052 AWA Messenger to this pole.
Install the Hendrix BA1-PP Pole Cornering Plate with 2- Polymer insulators and 2- Hendrix Cat. \# CG-0116 Conductor Dead End Grips to secure primary conductor to this pole. Allows for the primary conductor to be installed without terminating the conductor.
Placement of anchors will be outside of the licensed area by approximately 5 feet. One anchor will be installed in-line towards pole 81/20, and the other will be installed in-line towards pole 81/22. The third anchor will be a bisect anchor set SE of this pole.
All required NESC grounding will be installed at this pole location.

## Pole 81/22: $40^{\prime}$ Class 1 PENTA Wood Pole, with 1 Rock anchor set 15 feet NW of this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
Anchor will be installed approximately 5 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/23: 40' Class 1 PENTA Wood Pole, with 1 Rock anchor set 15 feet SE of this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
Anchor will be installed approximately 5 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/24: 40' Class 1 PENTA Wood Pole, with 1 Rock anchor set 15 Feet NW of this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
Anchor will be installed approximately 5 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/25: 40' Class 1 PENTA Wood Pole, with 1 Rock anchor set 15 Feet SE of this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
Anchor will be installed approximately 5 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/26: 40' Class 1 PENTA Wood Pole, with 1 Rock anchor set 15 Feet SE of this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
Anchor will be installed approximately 5 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

## Pole 81/27: 45' Class 1 PENTA Wood Pole, with 1 Rock anchor set 15 Feet NW of this pole

Utilize the Hendrix BM-14 Tangent Bracket with the Hendrix Permanent Stringing Angle Clamp to attach the 052 AWA messenger Cable to this pole.
Install the Hendrix BM-14 Tangent Bracket with one insulator pin and Vise Top insulator to secure the primary conductor to this pole.
Anchor will be installed approximately 5 feet outside of the licensed area.
All required NESC grounding will be installed at this pole location.

Pole 81/28: 40' Class 1 PENTA Wood Pole, 3-Rock anchors one set 15 feet $\mathbf{W}$ of the pole and the other set 15 feet $\mathbf{N}$ of the pole

This will be a double dead ended pole.
Utilize the Hendrix Type TC Thimble Clevis with the Pre shaped Hendrix Messenger Grip Cat. \# MG-4128 Color Code Blue to secure the 052 AWA Messenger to this pole.
Install the Hendrix BA1-PP Pole Cornering Plate with 2- Polymer insulators and 2- Hendrix Cat. \# CG-0116 Conductor Dead End Grips to secure primary conductor to this pole. Allows for the primary conductor to be installed without terminating the conductor.
Placement of anchors will be outside of the licensed area by approximately 5 feet. One anchor will be installed towards pole 81/29, and the other will be installed to hold the corner from pole 81/27. All required NESC grounding will be installed at this pole location.

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## Pole 81/29: 45' Class 1 PENTA Wood Pole, 1 Rock anchor set 15 feet E of this pole

This pole will be a primary Dead-End pole near the State of NH Forest \& Lands Building (aka FAA
Building). The messenger cable and the primary conductor will terminate at this pole using conventional dead ending components.
Anchor will be installed in-line within the licensed area.
All required NESC grounding will be installed at this pole location.

## Additional work beyond this pole will be part of the Summit Solution.




General notes

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## ASSUMPTIONS / CLARIFICATIONS






















