

**Article VII Application**  
**Canisteo Wind Transmission Facility**  
**Case No. 19-T-\_\_**

**Exhibit E-1**  
**Description of Transmission Facilities**

**Invenergy**

## EXHIBIT E-1 DESCRIPTION OF TRANSMISSION FACILITIES

This Exhibit addresses the requirements of 16 NYCRR § 88.1.

### E-1.1 General Description of the Transmission Line

The proposed transmission line will run from the proposed Collection Substation in the Town of Jasper, Steuben County, New York, to the proposed POI Switchyard at NYSEG's Bennett Substation in the Town of Hornellsville, Steuben County, New York. More specifically, the Collection Substation is planned for a parcel on Jackson Hill Road (County Route 63) approximately 0.5 miles west of North Road on land that has been secured with a purchase option. From there, the transmission line heads generally north for approximately ten miles until crossing over State Route 36 near Dunning Road in the Town of Canisteo. At that point, the proposed transmission line route heads northwest through the Village of Canisteo and Town of Hornellsville for roughly 4.5 miles until dead-ending at the proposed POI Switchyard. The proposed transmission line route utilizes privately owned land secured under easement agreements with participating landowners. The total length of the proposed 115 kV transmission line route is approximately 14.6 miles as described in Exhibit 2.

A combination of galvanized steel monopole, treated wood H-frame, and treated wood 3-pole structures are planned along the proposed route. H-frame and 3-pole structures are preferred over steeper grades, when greater spans are required, and as a method to limit structure height while attaining required clearances from grade. The proposed transmission line uses bundled parallel 1272 kcmil aluminum conductors. Conductor sizing was based on the full load current (1533 Amps) at 290 MVA and Unity power factor.

### E-1.2 Detailed Description of the 138 kV Transmission Line

1. Operating and Design Voltage:  
115 kV
2. Configuration:  
Wye, dual circuit
3. Total Length of Transmission Line  
14.6 miles
4. Power Conductors  
1272 kcmil 45/7 Aluminum Conductor Steel Reinforced (ACSR) "Bittern"
5. Overhead Ground Wire  
3/8" 7 Strand Extra High Strength (EHS) Steel
6. Optical Ground Wire  
48 Fiber AlumaCore AC-34/52/646
7. Insulators  
115 kV hydrophobic silicone polymer (see structural details in Appendix 5a for details)

8. Structure Material

Galvanized steel and treated wood (see structural details in Appendix 5a)

9. Foundation Material

Embedded steel, embedded wood, drilled caisson, or guyed (see structural details in Appendix 5a)

10. Design Standards

Proposed towers and tower foundations are designed to NESC standards and loading conditions based on the project location. Final foundation designs will be based on site specific geotechnical test data. Specific reference documents include, but are not limited to, the following:

National Electrical Safety Code C2-2017 (NESC 2017)

RUS Bulletin 1724E-200, Design Manual for High Voltage Transmission Lines

PLS-CADD Manual, Copyright Power Line Systems, Inc.

LPILE 2018 Manual, Copyright ENSOFT, Inc.

SHAFT 2012 Manual, Copyright ENSOFT Inc.

MFAD v5.1 Manual, FAD Tools International, LLC

HFAD v5.1 Manual, FAD Tools International, LLC

11. Right-of-Way Width

The new right-of-way width will be 100 feet for the H-frame and 3-pole sections, and 80 feet for the monopole section.