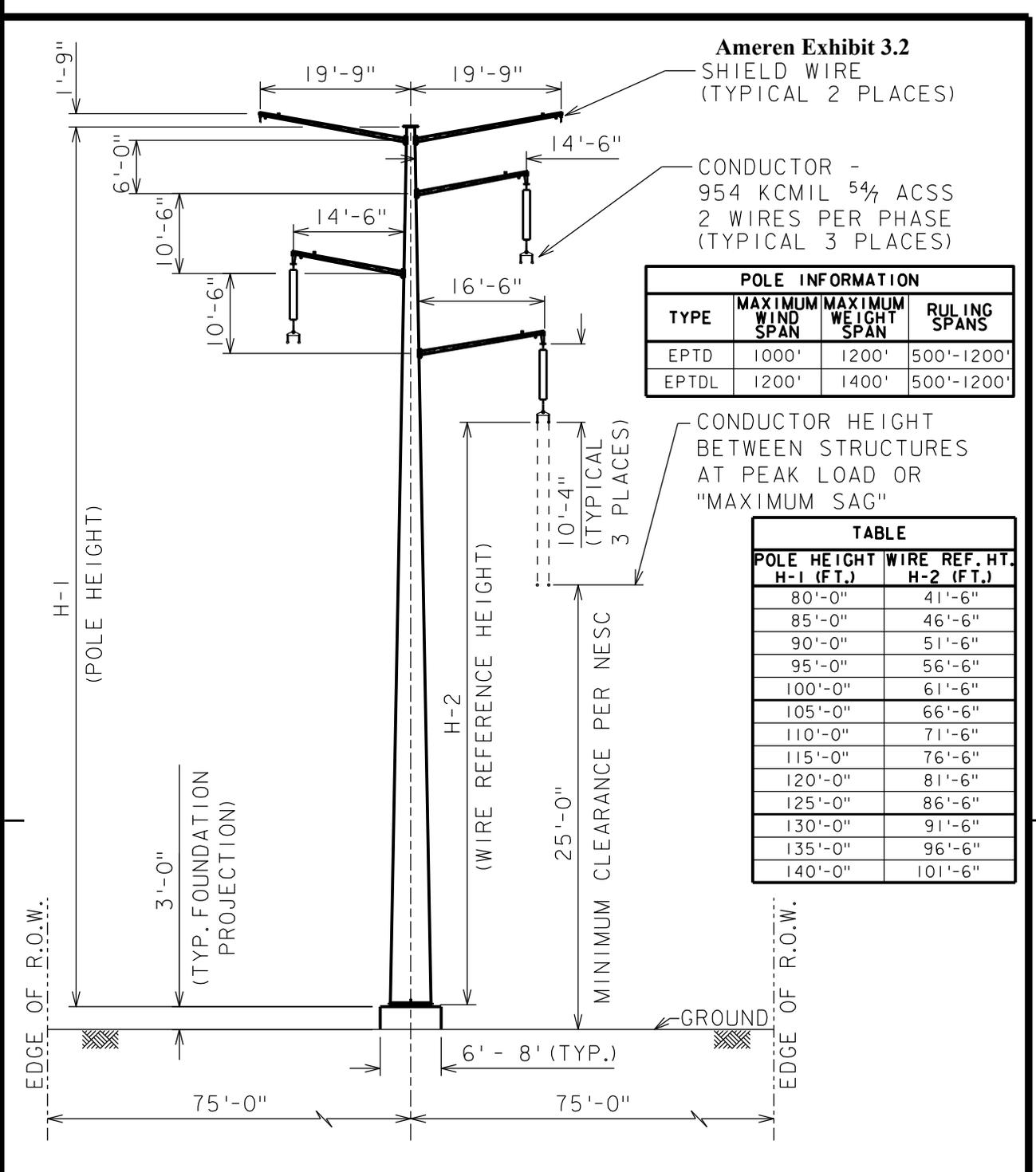


REVISIONS	
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POLE INFORMATION			
TYPE	MAXIMUM WIND SPAN	MAXIMUM WEIGHT SPAN	RULING SPANS
EPTD	1000'	1200'	500'-1200'
EPTDL	1200'	1400'	500'-1200'

TABLE	
POLE HEIGHT H-1 (FT.)	WIRE REF. HT. H-2 (FT.)
80'-0"	41'-6"
85'-0"	46'-6"
90'-0"	51'-6"
95'-0"	56'-6"
100'-0"	61'-6"
105'-0"	66'-6"
110'-0"	71'-6"
115'-0"	76'-6"
120'-0"	81'-6"
125'-0"	86'-6"
130'-0"	91'-6"
135'-0"	96'-6"
140'-0"	101'-6"

STRUCTURE DESIGNED IN ACCORDANCE WITH THE NESC TO MEET OR EXCEED RULES:  
 250B-NESC HEAVY CONDITION  
 250C-EXTREME WIND  
 250D-EXTREME ICE

PREPARED FOR Ameren

DRAWN	LINE CONSTRUCTION - 345 KV, 60HZ		
	STEEL POLE OUTLINE		
	POLE TYPE EPTD & EPTDL (0°-1°)		
CHK/RVW	SINGLE CIRCUIT TANGENT STRUCTURES		
SUPV.			
APPD. 01/20/12 P A FIFE	LOCATION	BROKAW-S.BLOOMINGTON	CLASS 12034
Ameren		ST. LOUIS, MISSOURI	EXHIBIT 3.2
			REV. 0

FORM 7433-A-EPTD REV.0 01/19/12

B

A

37-13-067 Rev.9-85

**Engineering Data Appendix**

**8-406.1(a)(1)(B)(ii) *Description of conductors, structures, substations***

- (I) ***Conductor size and type:*** Bundled 954 54/7 ACSS (Cardinal)
- (II) ***Type of structure:*** Steel Monopole, Single Circuit, Vertical Configuration
- (III) ***Height of typical structure:*** range of 85 feet to 130 feet
- (IV) ***Explanation of why these structures were selected:*** Minimize footprint of the structure
- (V) ***Dimensional drawing of typical structures:*** The shield wires are at the top of the pole on steel arms; the top phase is 17 feet from the top; the vertical phase spacing is 10 feet and the horizontal phase spacing is 30 feet; see Ameren Exhibit 3.2
- (VI) ***Names of all substations (new and existing) associated with new line:*** Brokaw Substation; S. Bloomington Substation

**8-406.1(a)(1)(B) (iii) *Location of the right-of-way:***

- (II) ***Miles of circuit:*** Primary Route: 5.6 miles; Alternative Route: 6.4 miles
- (III) ***Width of right-of-way:*** 150 feet typical

**8-406.1(a)(1)(B) (iv) *A technical description providing the following information:***

- (I) ***Number of circuits:*** Overhead, one circuit
- (II) ***Operating voltage and frequency:*** 345 kV, 60 Hz
- (III) ***Conductor size and type and number of conductors per phase:*** Bundled 954 54/7 ACSS (Cardinal)

**8-406.1(a)(1)(B) (v) *The following overhead line data:***

- (I) ***Wind and ice loading design parameters:***
  - National Electric Safety Code (NESC):
  - Rule 250B: Heavy Condition: 4 psf wind, ½ inch ice, 0°F Initial
  - Rule 250C: Extreme Wind Condition: 21 psf wind, no ice, 60°F Initial
  - Rule 250D: Extreme Ice Condition: 4 psf wind, 1 inch ice, 15°F Initial

**(II) Full description and drawing of typical structure, including strength specifications:** Single circuit tangent vertical configuration. Structure design will meet or exceed stated loadings in the National Electric Safety Code (NESC). See Ameren Exhibit 3.2.

**(III) Structure spacing with typical ruling and maximum spans:** The typical ruling span will be approximately 700 feet; maximum ruling span will not exceed 1200 feet.

**(IV) Conductor spacing:** Typical vertical phase spacing is 10 feet and the typical horizontal phase spacing is 30 feet.

**(V) Designed line-to-ground and conductor-side clearances:**  
Line to Ground: NESC criteria with 8% voltage adder plus 3 feet  
Conductor-side: NESC criteria of 6 psf, 60°F Final with 8% voltage adder plus 2 feet.

**8-406.1(a)(1)(B) (vi) Underground/underwater data:** Not Applicable.

**8-406.1(a)(1)(B) (vii) Technical diagrams that provide clarification of any item:** Not applicable.



# Brokaw to South Bloomington Transmission Line Project

## Alternatives to Approaching South Bloomington Substation

### Legend

 Potential Alignment

Ameren Exhibit 3.4

