

Single-Phase Dead End Pole Top Assemblies

1. Scope

This standard covers the information necessary to construct the pole top assemblies for single-phase dead end poles supporting #4 AWG copper primary conductors on the 26 kV primary distribution system. Requirements for vertical spacing and hardware, and installation instructions to connect the primary conductor to the pole are included.

Criteria for pole top assemblies covered under this standard include the following:

Grade of construction	B or C
Pole class	1 or stronger
Pole length	50 ft
Soil condition	Average
Allowable line angle	0°–150°

If a dead end is not required, refer to SCL 0121.01 and SCL 0121.03.

For line angles greater than the allowable line angle described above, contact the SCL Engineer.

Composite, steel, laminated and other non-wood poles are outside the scope of this standard.

2. Application

This standard provides direction to Seattle City Light (SCL) engineers, crews and contractors for the installation of single-phase dead end assemblies on 26 kV distribution poles with #4 AWG copper primary conductors.

3. General Requirements

Single-phase dead end poles shall be constructed as shown in Table 3.

Table 3. Single-Phase Dead End Pole Top Assemblies

Dead End Type	Allowable Angle	Figure
Single	N/A	3a
Double (1 bolt)	0°–60°	3b, 3c
Double (2 bolts)	0°–80°	3d, 3e
Double (2 bolts)	80°–150°	3f, 3g

When installing a single dead end, the through bolt shall be installed in line with the conductor.

When a headpin is required, the headpin shall be installed on the pole centered between the incoming and outgoing conductor to provide the jumper the shortest path as shown in Figures 3b and 3d. The LR bracket shall be in line with the headpin.

The dead end pole shall be guyed according to the requirements of SCL 0199.01.





Figure 3b. Allowable Line Angle Range for 0°–60° Double Dead End (1 Bolt)

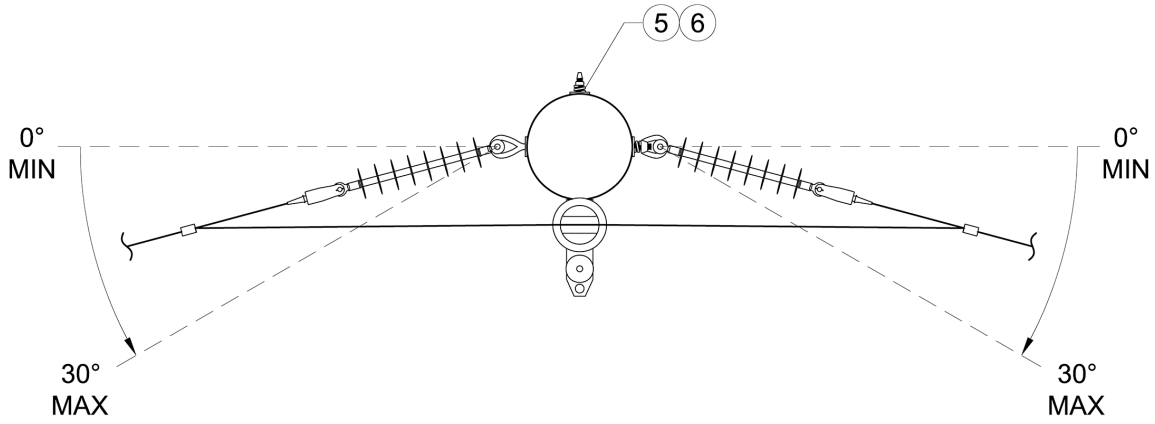


Figure 3d. Allowable Line Angle Range for 0°–80° Double Dead End (2 Bolts)

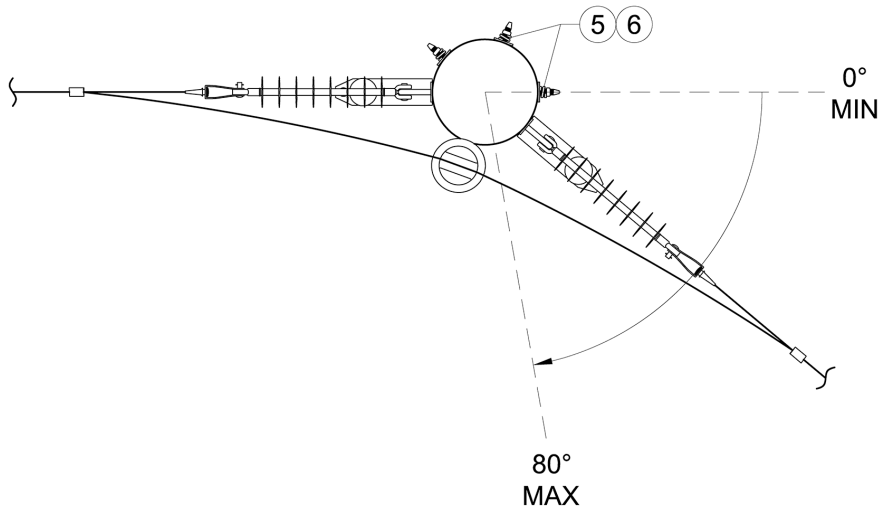


Figure 3e. Single-Phase Dead End Pole Top Assembly (0°–80°, 2 Bolts)

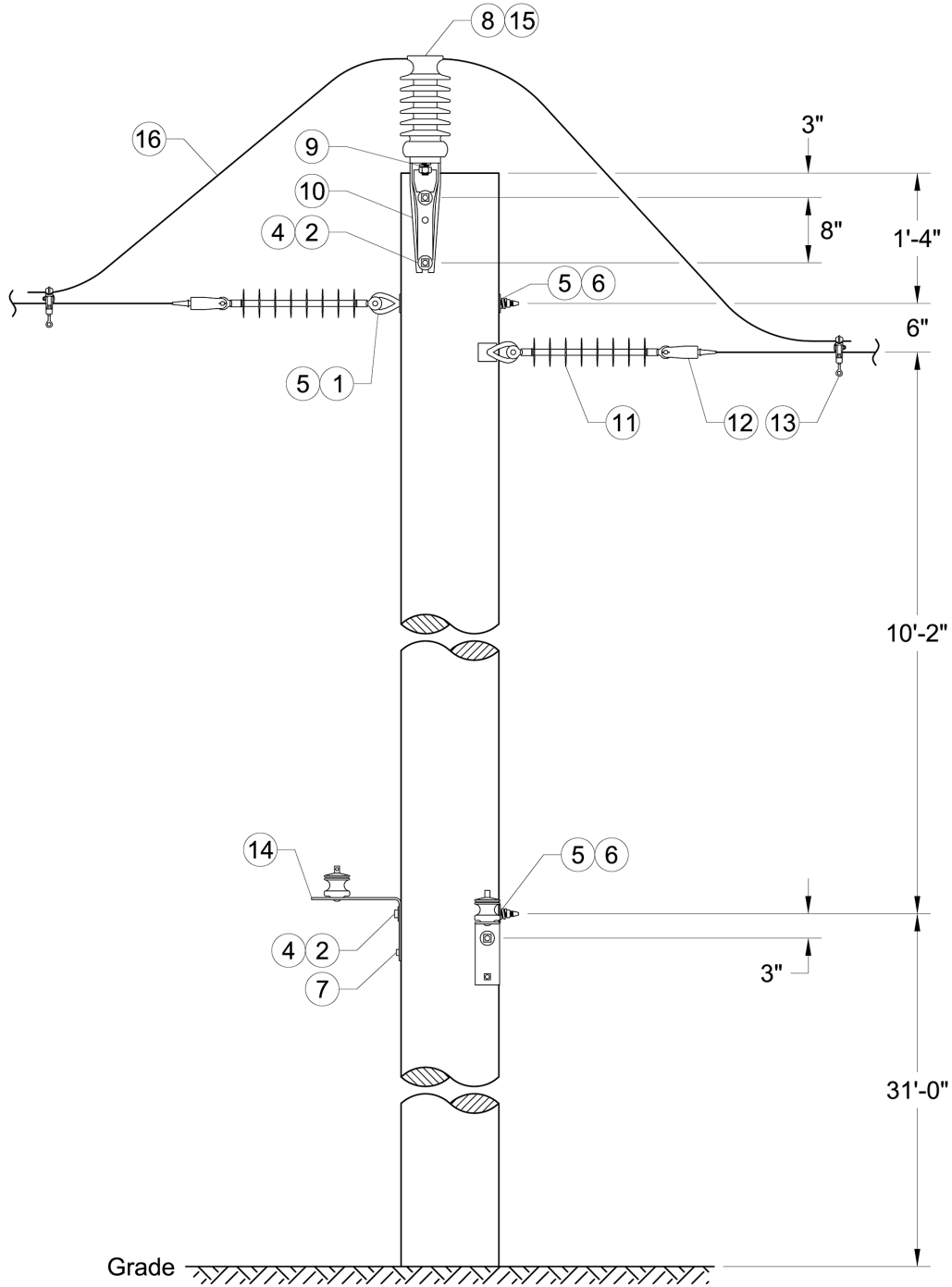


Figure 3f. Allowable Line Angle Range for 80°–150° Double Dead End (2 Bolts)

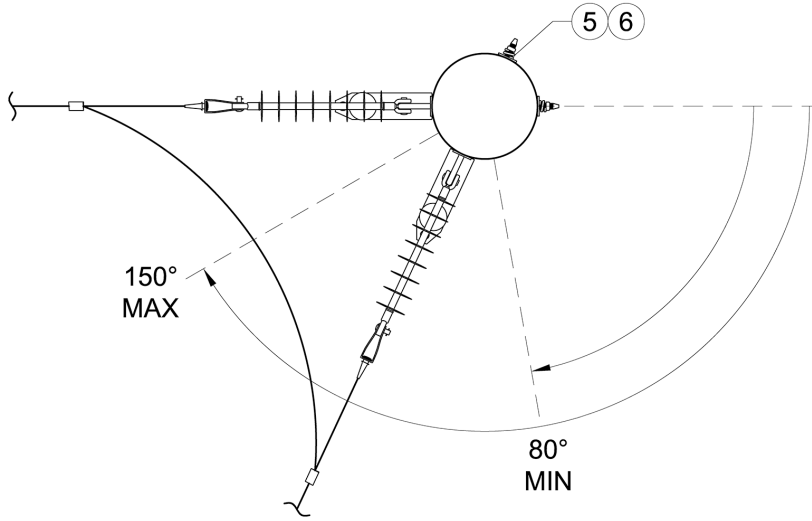
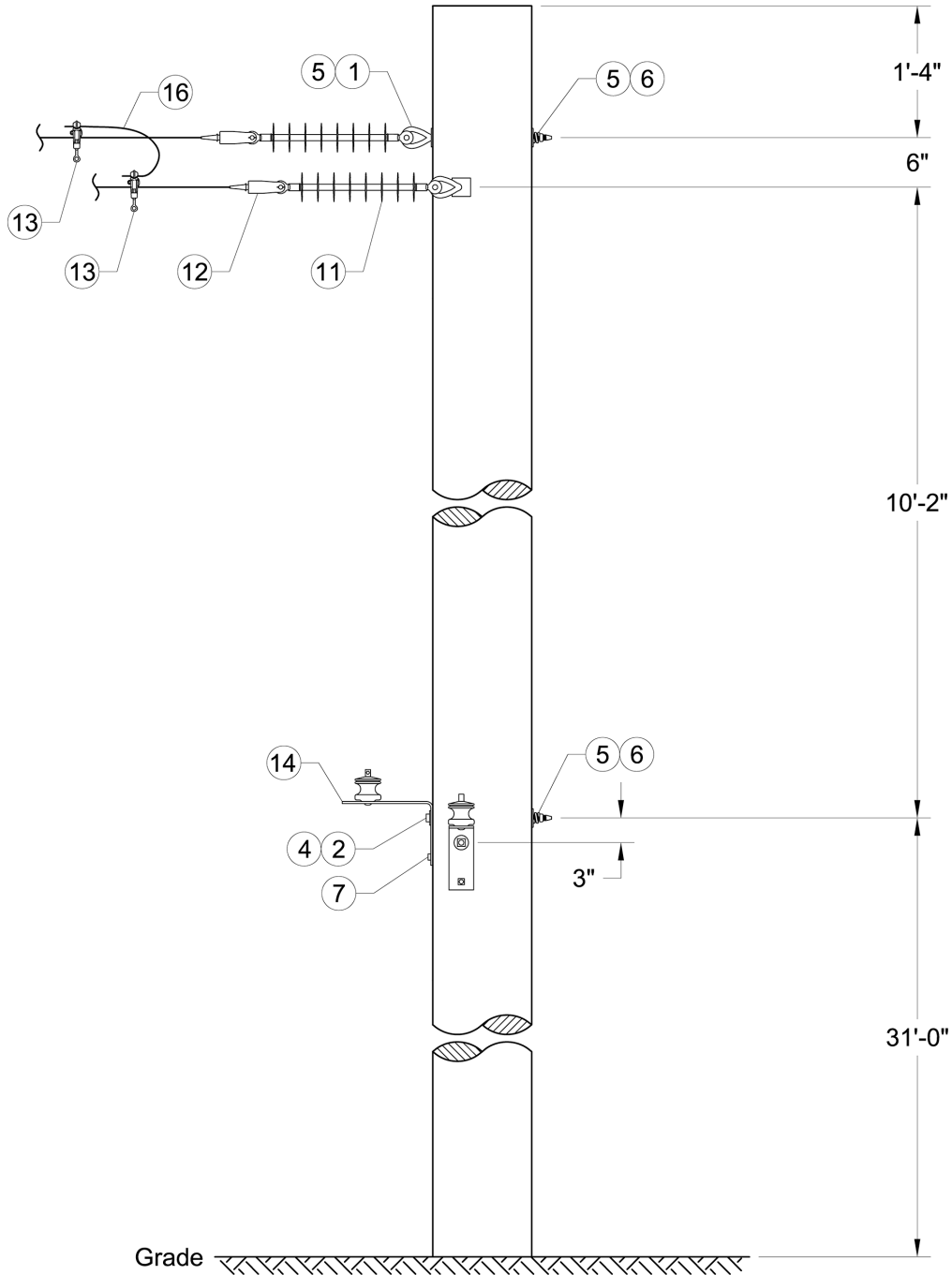


Figure 3g. Single-Phase Double Dead End Pole Top Assembly (80°–150°, 2 Bolts)



4. Construction Notes

If two neutrals are required, mount the second neutral on the street side 1 ft below the top bolt hole of the original neutral.

If poor soil is found in the field, contact the SCL Design Engineer.

If there are avian and wildlife concerns, contact the SCL Design Engineer.

If there are salt spray concerns, contact the SCL Design Engineer.

5. Material List

Table 5. Materials for Single-Phase Dead End Pole Top Assemblies

Fig	Compatible Unit	ID	Quantity			
3a	Single-phase #4 AWG dead end	PLT#4-1DE				
3c	Single-phase #4 AWG double dead end, 0°-60°, 1 bolt	PLT#4-1DDE60				
3e	Single-phase #4 AWG double dead end, 0°-80°, 2 bolts	PLT#4-1DDE80				
3g	Single-phase #4 AWG double dead end, 80°-150°, 2 bolts	PLT#4-1DDE150				
#	Material Description	ID				
1	Bolt, oval eye, galvanized, 5/8" x 14"	561114	2	2	1	1
2	Bolt, machine, galvanized, 5/8" x 14"	780846	2	4	3	1
3	Nut, eye, 5/8"	565252	-	-	1	-
4	Washer, round, flat, 5/8"	585030	2	4	3	1
5	Washer, square, flat, 2-1/4" x 2-1/4"	585135	6	8	5	3
6	Washer, coil, spring, 5/8"	584261	4	6	4	2
7	Screw lag, 1/2" x 4"	785261	2	2	1	1
8	Insulator, post top, 34.5 kV	014304	-	1	1	-
9	Stud, short, 3/4" x 1-3/4"	696826	-	1	1	-
10	Bracket, pole top	563253	-	1	1	-
11	Insulator, deadend, polymer, 20"	690233	2	2	2	1
12	Deadend, automatic, #4 AWG Cu	581332	2	2	2	1
13	Clamp, hot line tap, 2/0, #8 AWG	580725	2	2	2	-
14	LR bracket	690404	2	2	1	1
15	Wire, tie, insulator, #6 AWG solid Cu SD (ft)	610210	-	3	3	-
16	Wire, jumper, #4 AWG solid bare Cu SD (ft)	610208	14	20	12	-

6. References

SCL Construction Standard 0199.01; “Requirements for Guying and Anchoring”

SCL Construction Standard 0121.01; “Single-Phase Tangent Pole Top Assembly”

SCL Construction Standard 0121.03; “Single-Phase Angle Pole Top Assemblies”

7. Sources

National Electrical Safety Code (NESC); C2-2012 Edition; Institute of Electrical and Electronics Engineers (IEEE) Inc., New York, NY, 2011

Hall, Alan; SCL Senior Electrical Engineer and subject matter expert for 0121.05 (alan.hall@seattle.gov)

Lu, Curtis; SCL Standards Engineer and originator of 0121.05 (curtis.lu@seattle.gov)

SCL Construction Standard D9-11.4 (canceled); “26 kV Deadends”