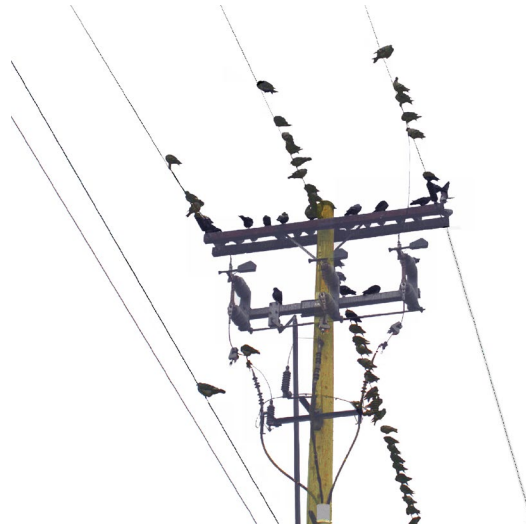


Avian Protection



1. Scope

This standard provides the requirements and details for the installation of avian protection devices on SCL structures and equipment.

2. Application

This standard provides direction to SCL crews about when, where and how to properly install avian protection devices on SCL structures and equipment.

Avian protection devices are intended to be used on new construction or at existing locations with avian caused outages. The devices may also be applied at the direction of engineering or management.

Avian protection devices are also used when structures are in avian sensitive areas as described on the SCL Environment, Land and Licensing Business Unit (ELLBU) avian protection map.

3. Requirements

Avian protection is required when specified by ELLBU or as described in section 3.

All jumper wire shall use covered wire when possible.

For three-phase pole tops:

- Devices used for line to ground protection shall be installed on all three phases.
- Devices used for line to line protection only need to be installed on the center phase.



3.1 New Construction or Maintenance

All new construction or maintenance projects shall be reviewed by ELLBU if the project location is located within an avian sensitive area depicted on the avian protection map. ELLBU will specify the required devices to be installed for the project.

3.2 Retrofit, Avian Electrocutation, All species

Anytime it is determined that a bird has been electrocuted, the existing pole top shall be retrofitted with the avian protection devices specified in Table 3.2.

Table 3.2 Retrofit Avian Protection Devices

Pole Top	Standard(s)	Figure	ID
Single and three-phase transformers	0125.01, 0125.03	3.2a	AVN-XFMR
Terminal poles	0126.01, 0127.01	3.2b	AVN-TP600, AVN-TP1200
Jumpers, unfused	0100.21, 0100.23	3.2c	013044 through 013047
Jumpers, fused cutout	0100.25	3.2d	AVN-CUTOUT
Overhead primary switch	0125.05, 0125.07	3.2e	013044 through 013047

Figure 3.2a. Single and Three-Phase Transformers

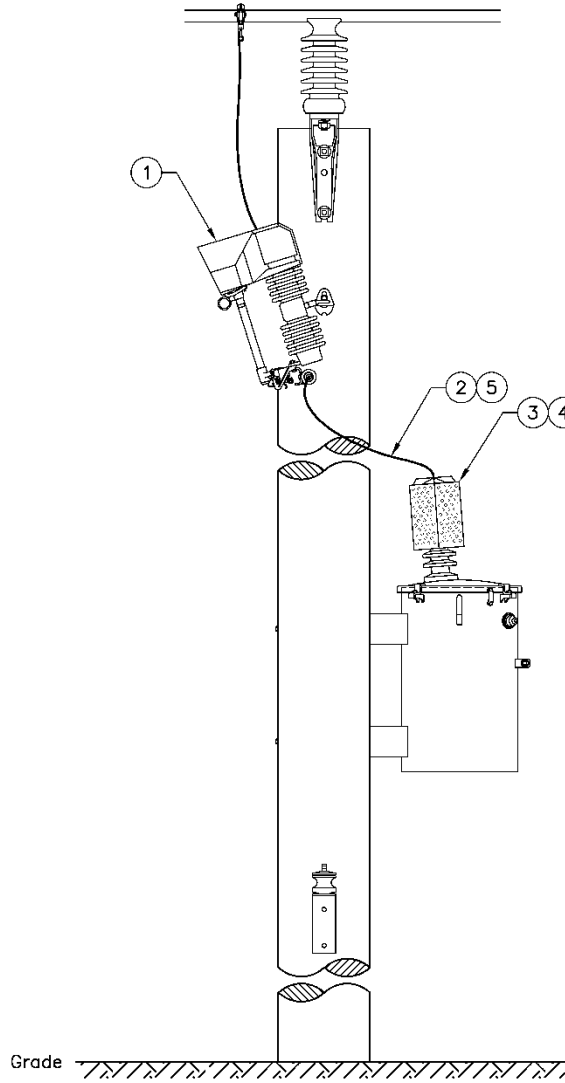


Figure 3.2b. Terminal Poles

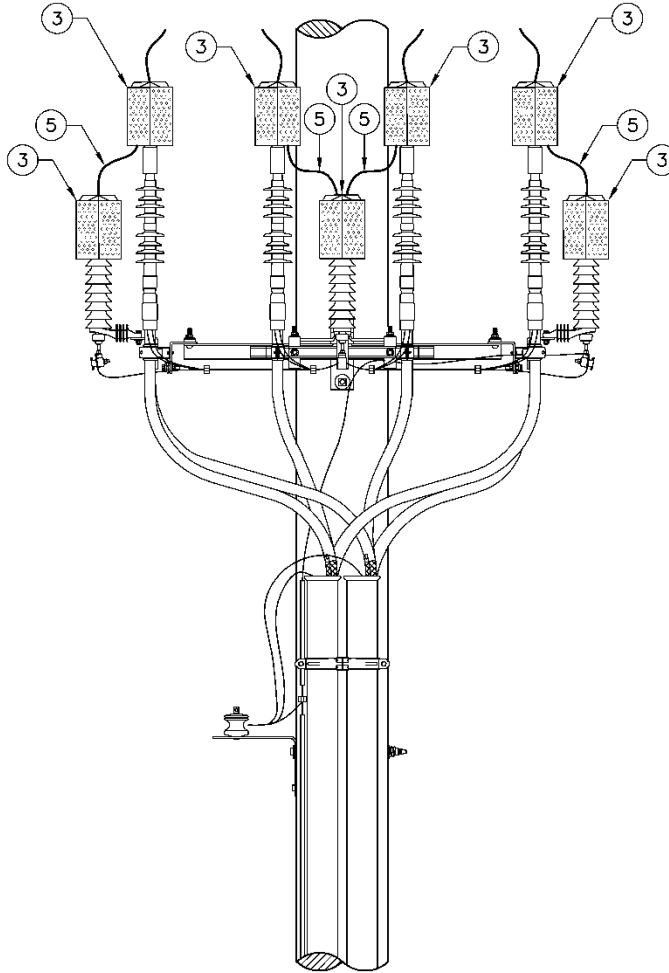


Figure 3.2c. Three-Phase Jumpers, Unfused

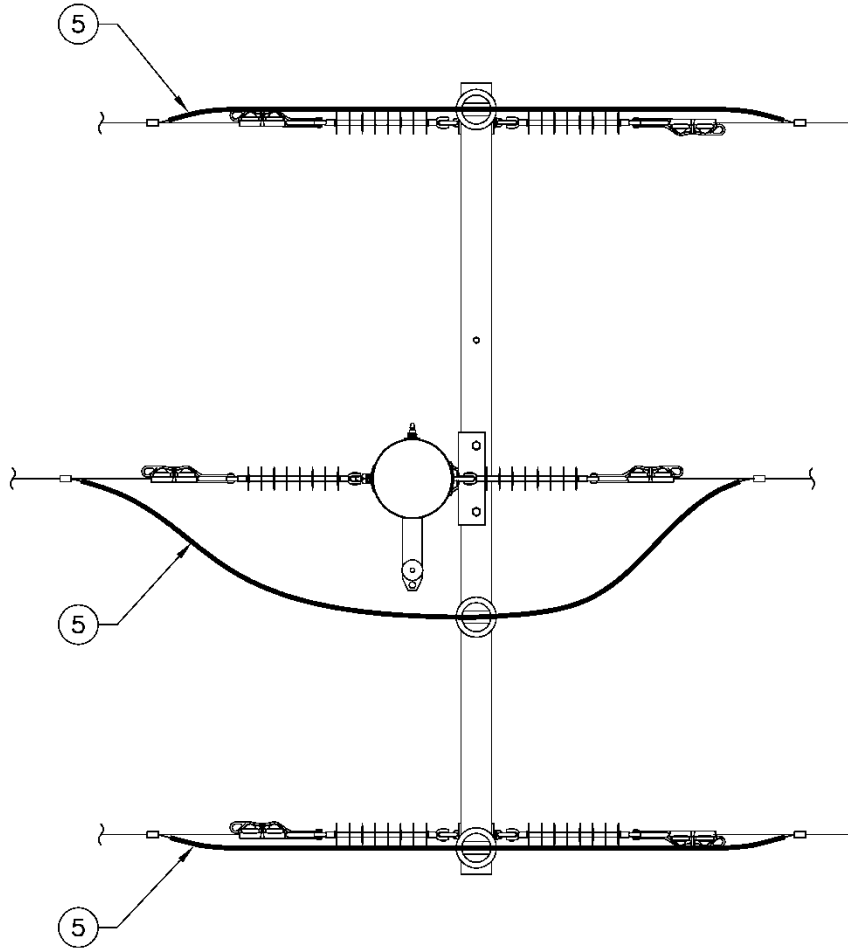


Figure 3.2d. Three-Phase Jumpers, Fused Cutout

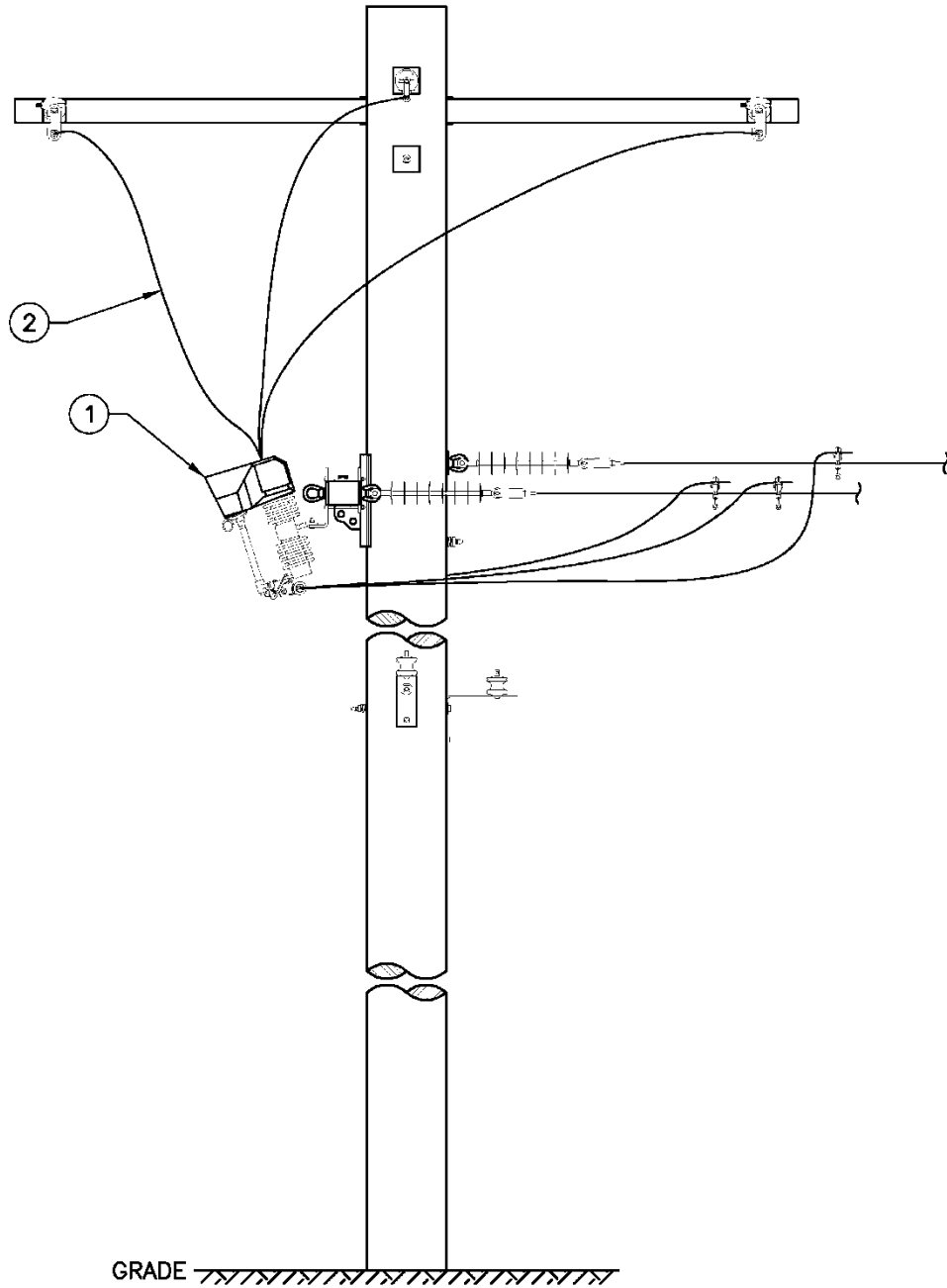
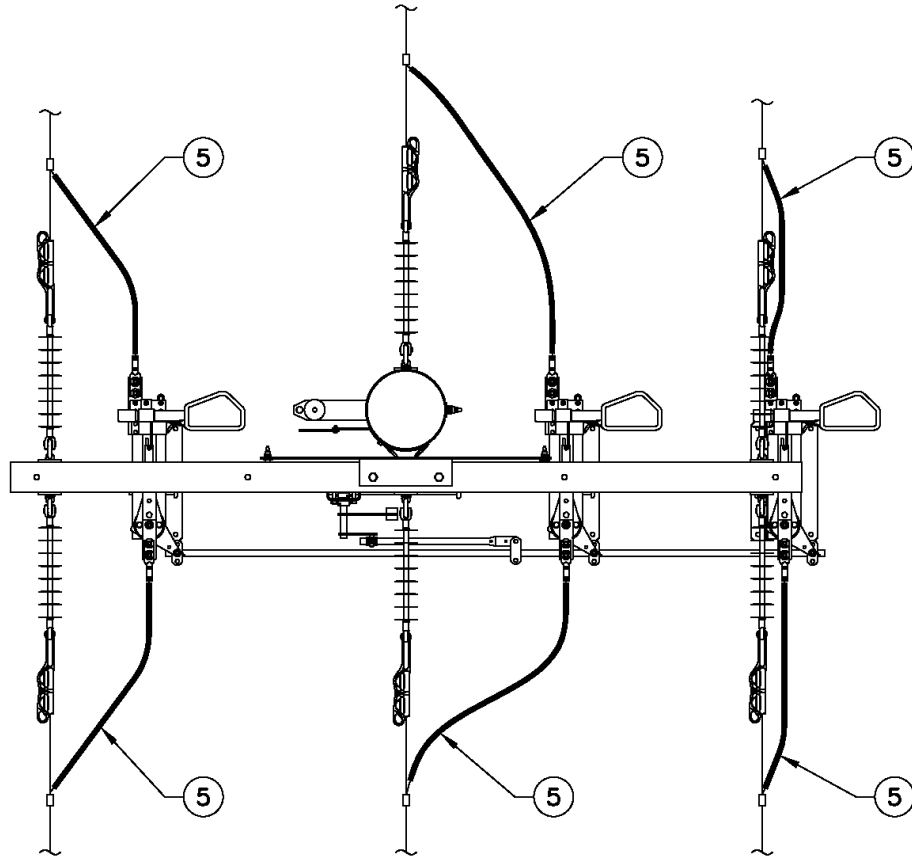


Figure 3.2e. Overhead Primary Switch



3.3 Retrofit, Avian Electrocutation, Select Species

If the bird electrocuted was an eagle, hawk, heron or owl, additional avian protection devices are required as specified in Table 3.3.

Table 3.3 Additional Retrofit Avian Protection Devices, Select Species

Pole Top	Standard(s)	Figure	ID
Three-Phase Tangent	0123.01	3.3a	AVN-1ARM
	0123.03		AVN-2ARM
	0123.05		
	0123.13		
	0123.21		
Three-Phase Single Deadend	0123.15	3.3b	AVN-DE
	0123.25		
Three-Phase Double Deadend	0123.25	3.3c	AVN-DDE#4 AVN-DDE397 AVN-DDE954

Figure 3.3a Three-Phase Tangent

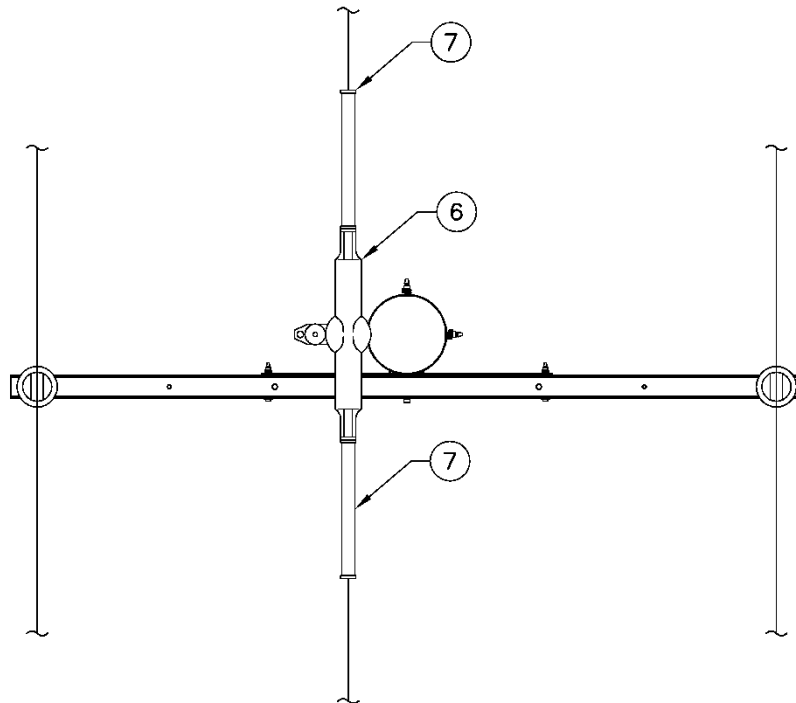


Figure 3.3b Three-Phase Single Deadend

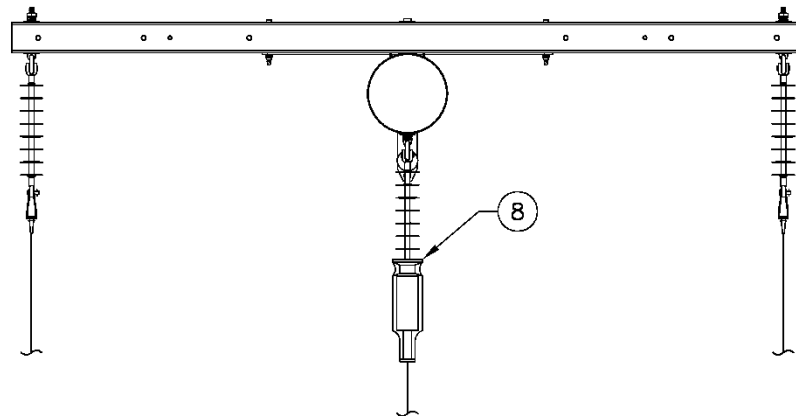
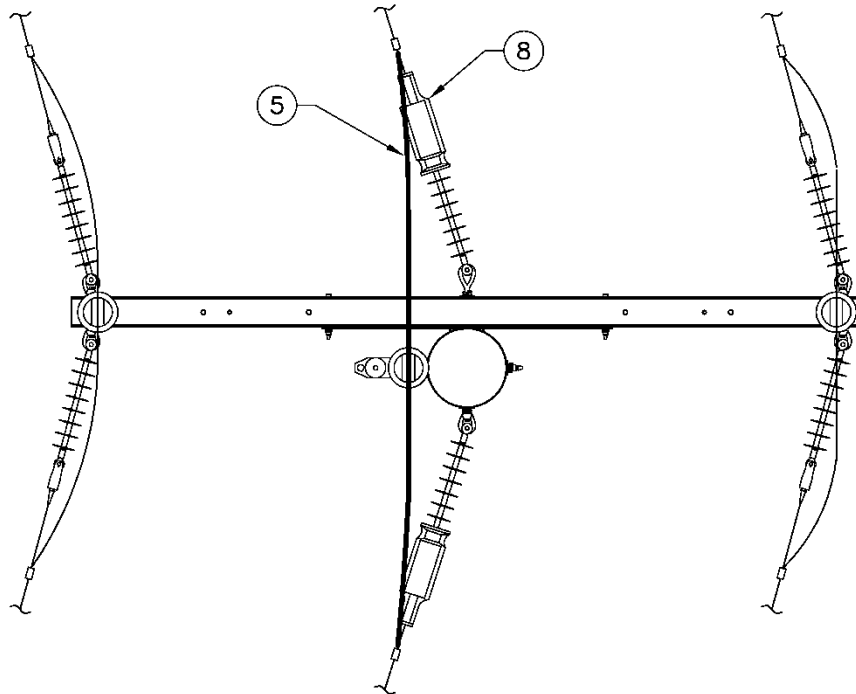


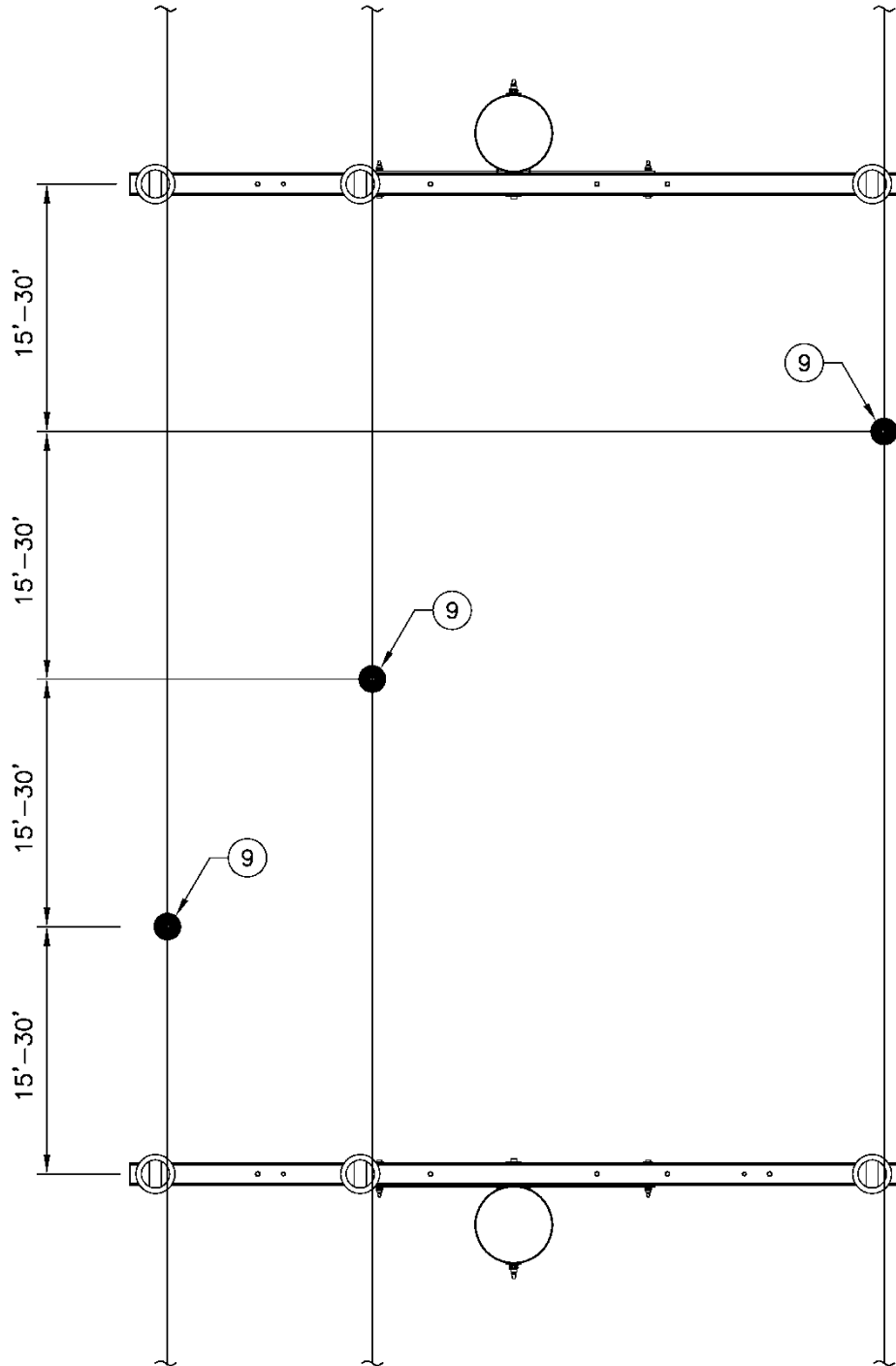
Figure 3.3c Three-Phase Double Deadend



3.4 Retrofit, Collisions

In the case of a documented bird collision with a conductor, install bird-flight diverters. Diverters shall be located every 15 to 30 ft and staggered along the top-level conductors along the span(s) identified by ELLBU as shown in Figure 3.4.

Figure 3.4. Bird Flight Diverters



4. Construction Notes

Silicon hose can be installed energized with a hotstick tool (Stock Nos. 014430–014432) available from the warehouse.

5. Materials

Table 5a. Materials for Avian Protection

Fig	Compatible Unit	ID	Quantity					
3.3a	Special Species Avian Protection for Double Arm Pole Tops	AVN-2ARM						
3.3a	Special Species Avian Protection for Single Arm Pole Tops	AVN-1ARM						
3.2d	Avian Protection Cutouts	AVN-CUTOUT						
3.2a	Avian Protection for Pole Top Transformers	AVN-XFMR						
3.2b	Avian Protection for 600 A Terminal Pole	AVN-TP600						
3.2b	Avian Protection for 1200 A Terminal Pole	AVN-TP1200						
#	Material Description	ID						
1	Cutout cover	013042	-	-	1	1	-	-
2	Wire, #4 AWG Cu, soft drawn, poly	611442	-	-	10	10	-	-
3	Wildlife cover	580776	9	6	1	-	-	-
4	Wildlife connector cap	013043	-	-	-	-	-	-
5	Split silicone rubber insulating hose, #4 AWG-2/0	013044	18	9	10	-	-	-
5	Split silicone rubber insulating hose, 3/0-336.4	013045	-	-	-	-	-	-
5	Split silicone rubber insulating hose, 397.5-636	013046	-	-	-	-	-	-
5	Split silicone rubber insulating hose, 666.6-954	013047	-	-	-	-	-	-
6	Raptor protection cover, single arm	013038	-	-	-	-	1	-
6	Raptor protection cover, double arm	013039	-	-	-	-	-	1
7	Raptor cover extension	014427	-	-	-	-	2	2
8	DE cover	014426	-	-	-	-	-	-
9	Bird-flight diverters	013360	-	-	-	-	-	-
10	Bushing cover	013582	-	-	-	-	-	-

Table 5b. Materials for Avian Protection, Deadends

Fig	Compatible Unit	ID	Quantity			
3.3b	Avian Protection for a Single Deadend	AVN-DE				
3.3c	Avian Protection for 954 kcmil Double Deadends	AVN-DDE954				
3.3c	Avian Protection for 397 kcmil Double Deadends	AVN-DDE397				
3.3c	Avian Protection for #4 AWG Double Deadends	AVN-DDE#4				
#	Material Description	ID				
1	Cutout cover	013042	-	-	-	-
2	Wire, #4 AWG Cu, soft drawn, poly	611442	-	-	-	-
3	Wildlife cover	580776	-	-	-	-
4	Wildlife connector cap	013043	-	-	-	-
5	Split silicone rubber insulating hose, #4 AWG-2/0	013044	10	-	-	-
5	Split silicone rubber insulating hose, 3/0-336.4	013045	-	-	-	-
5	Split silicone rubber insulating hose, 397.5-636	013046	-	10	-	-
5	Split silicone rubber insulating hose, 666.6-954	013047	-	-	10	-
6	Raptor protection cover, single arm	013038	-	-	-	-
6	Raptor protection cover, double arm	013039	-	-	-	-
7	Raptor cover extension	014427	-	-	-	-
8	DE cover	014426	2	2	2	1
9	Bird-flight diverters	013360	-	-	-	-
10	Bushing cover	013582	-	-	-	-

6. References

SCL Material Standard 6910.10; “Avian Protection Products, Assorted”

7. Sources

Lu, Curtis; SCL Standards Engineer and originator of 0072.01

SCL Construction Standard D15-1 (canceled); “Bird Guard Installation”

Tressler, Ron; SCL DEA and subject matter expert for 0072.01