

INSULATORS & SUPPORTS

06



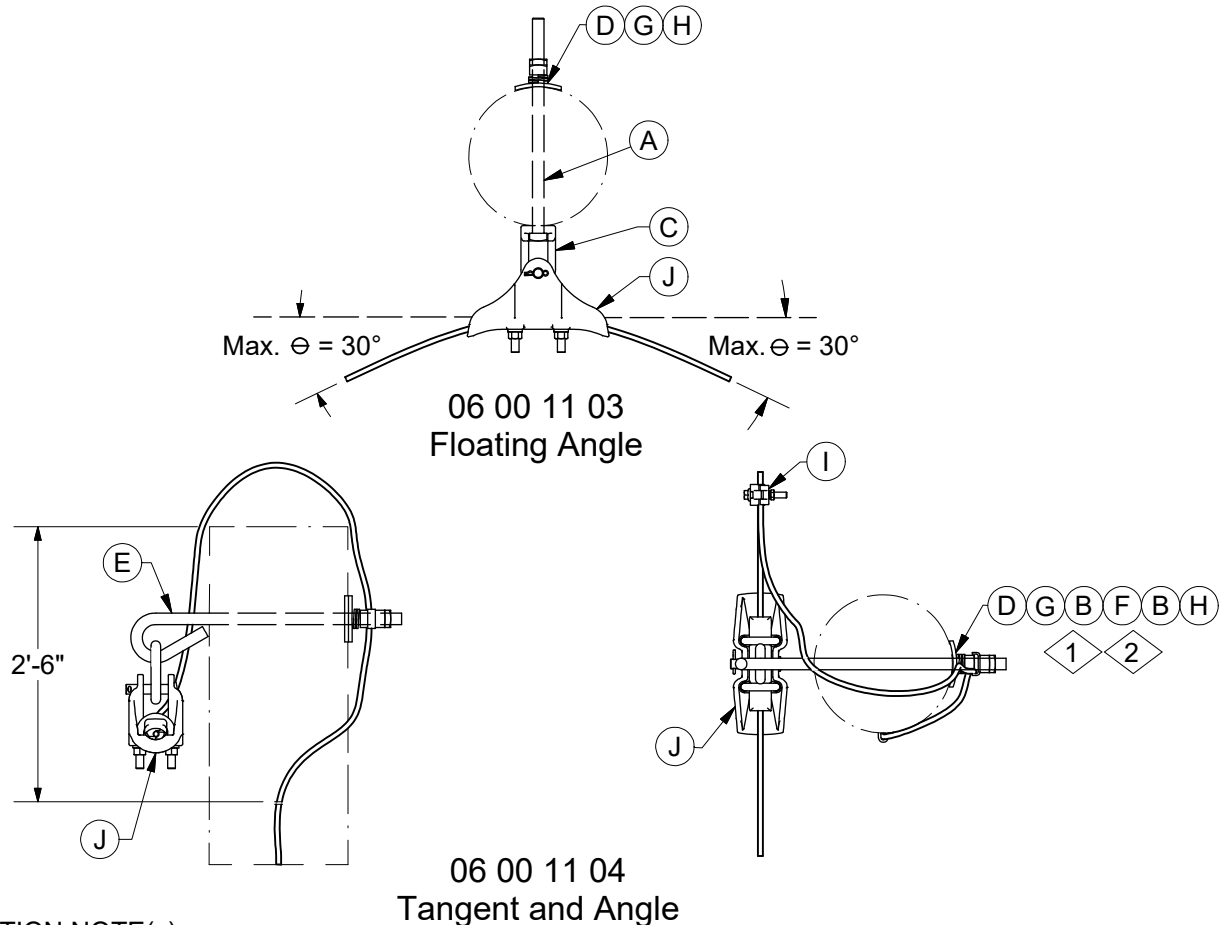
INSULATORS AND SUPPORTS

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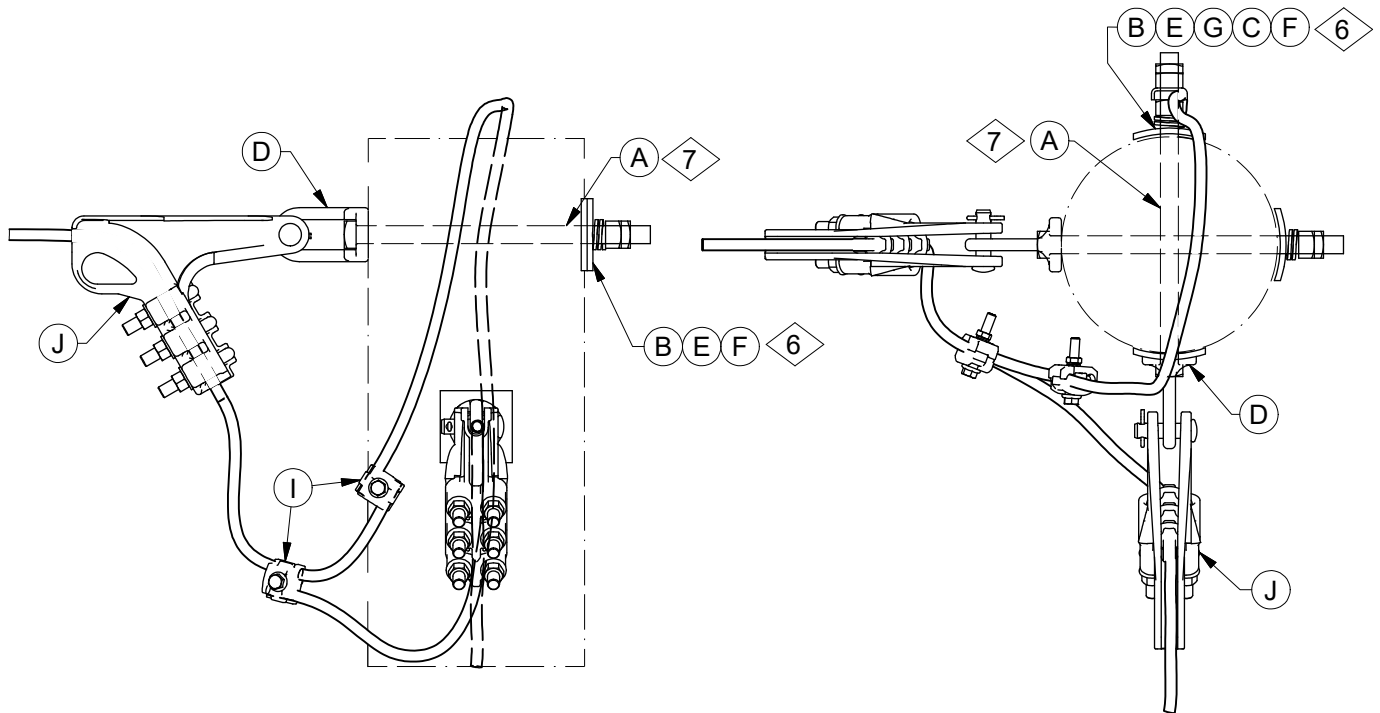
CONSTRUCTION NOTE(s):

1. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
2. For larger wood poles or composite poles 16" static support (Stock #23 68 459), 18" static support (Stock #23 68 460), or 20" static support (Stock #23 68 614) will be required.

	ITEM	STK / DCS #	DESCRIPTION	06 00 11 **	03	04
1,2	A	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		1	-
	B	23 15 001	Nut, Square, 3/4"		-	2
	C	23 59 095	Eyelet, 3/4"		1	-
	D	23 66 031	Washer, Curved, Square, 3/4"		1	1
	E	23 68 458	Static Support, 3/4" X 14"		-	1
	F	23 68 496	Clip, Bonding, 3/4" Bolt Dia.		-	1
	G	23 66 135	Lock Washer - 3/4" Double Coil		1	1
	H	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		1	1
@	I	23 68 234	Clamp, Guy Wire, 1/2", for 110.8 (12/7) ACSR Static		1	1
		17 51 032	Clamp, Parallel Groove, for 1/0 (7) AAAC Static		1	1
@	J	SC*W	Clamp, Suspension		1	1

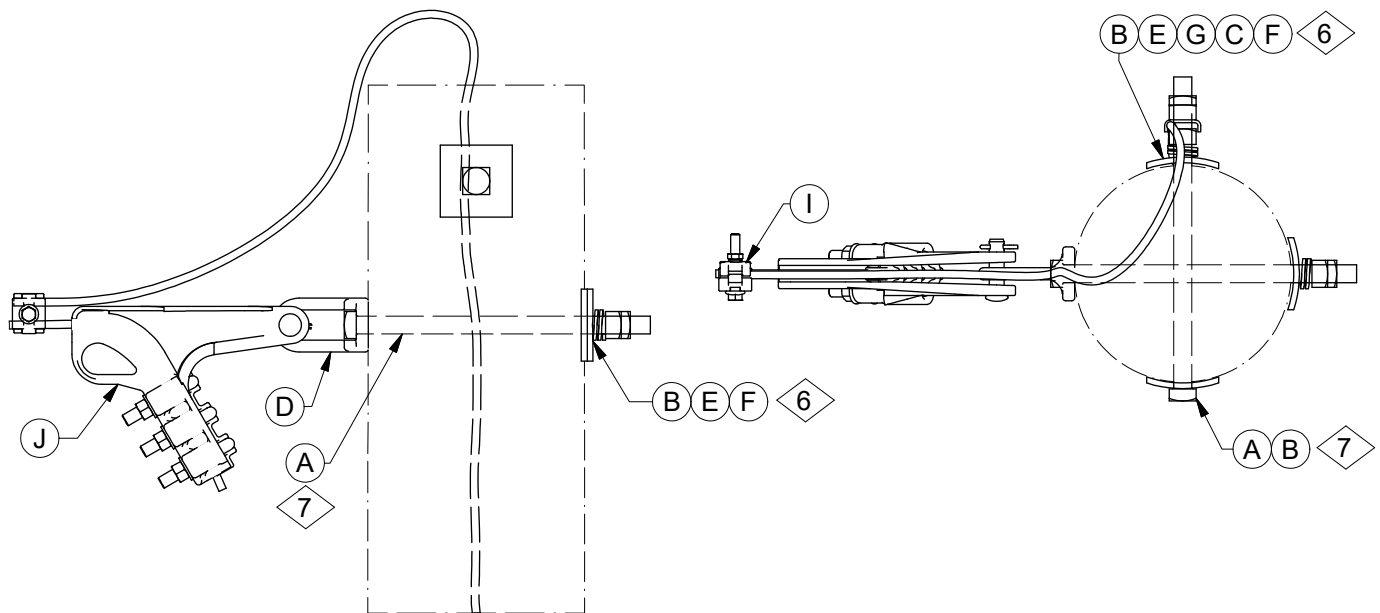
DESIGN NOTE(s):

3. For pole top static, see DCS **06 12 01 02**, **06 12 01 13**
4. For OPGW static attachment see DCS **Section 18**.
5. Use Stock #17 52 235 for OPGW to 110.8 ACSR and Stock #17 52 233 for OPGW to 1/0 AAAC connections.



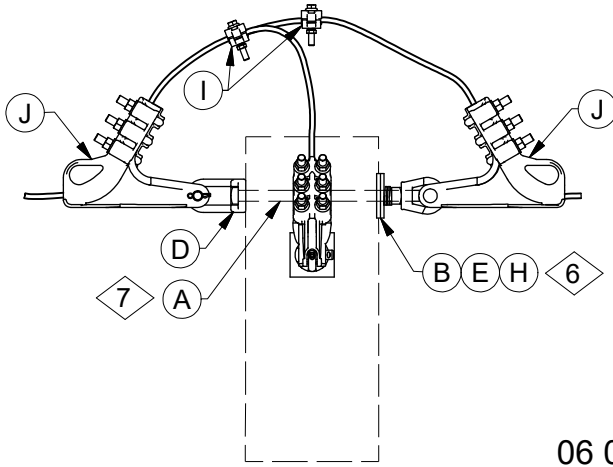
06 00 11 05

Corner Deadend w/ Pole Ground



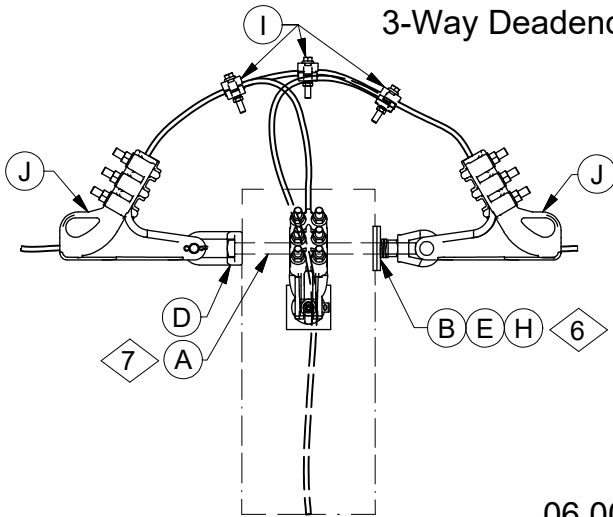
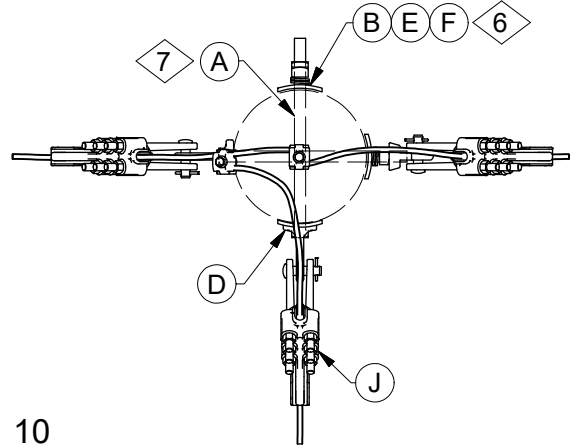
06 00 11 08

Deadend Endline w/ Pole Ground



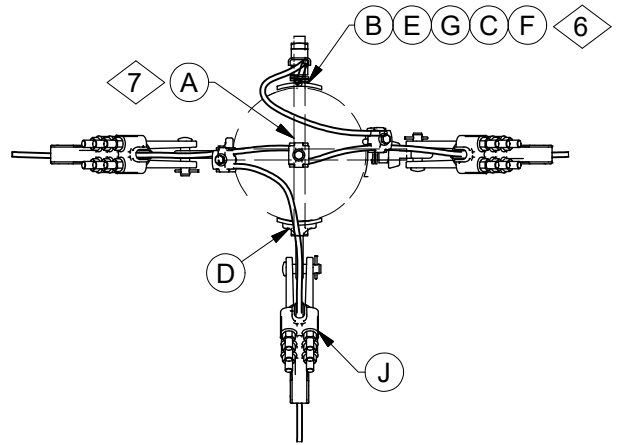
06 00 11 10

3-Way Deadend w/o Pole Ground



06 00 11 11

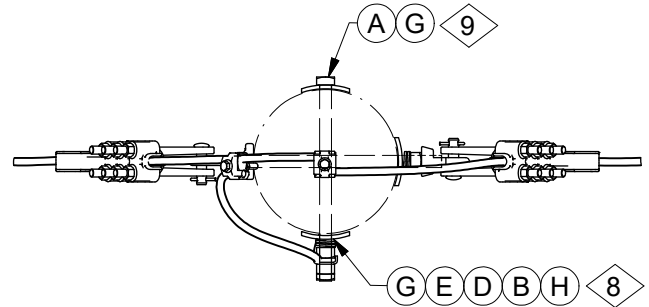
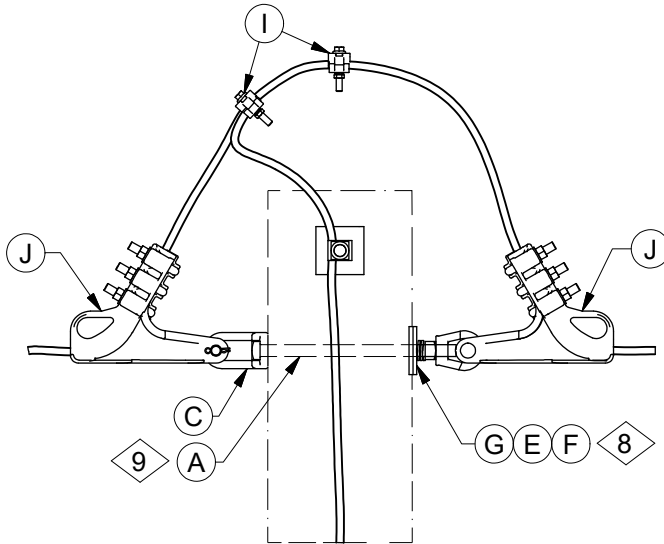
3-Way Deadend w/ Pole Ground



CONSTRUCTION NOTE(s):

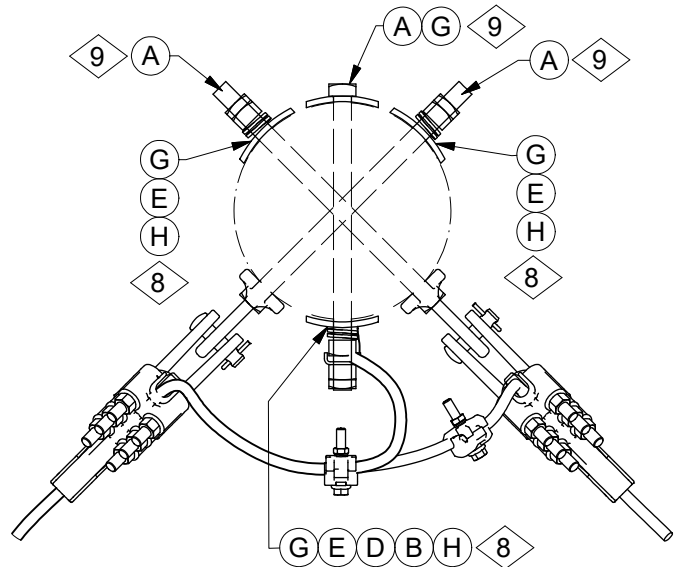
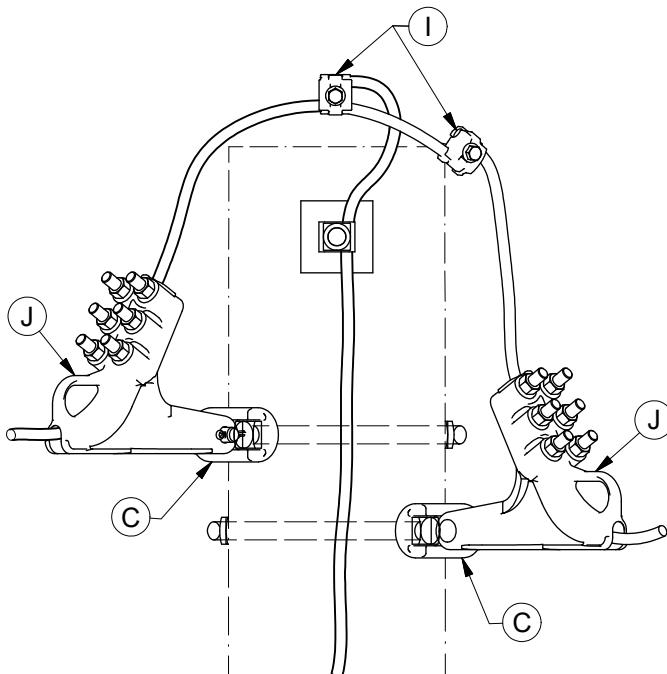
6. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
7. Use longer machine bolts for larger wood or composite poles if required.

	ITEM	STK / DCS #	DESCRIPTION	06 00 11 **	05	08	10	11
6,7	A	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		2	2	2	2
	B	23 66 031	Washer, Curved, Square, 3/4"		3	3	3	3
	C	23 15 001	Nut, Square, 3/4"		1	1	-	1
	D	23 59 095	Eyelet, 3/4"		2	1	2	2
	E	23 66 135	Lock Washer - 3/4" Double Coil		2	2	2	2
	F	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		2	2	1	1
	G	23 68 496	Clip, Bonding, 3/4" Bolt Dia.		1	1	-	1
	H	23 65 018	Eyenuit, 3/4"		-	-	1	1
@	I	23 68 234	Clamp, Guy Wire, 1/2", for 110.8 (12/7) ACSR Static		2	1	2	3
		17 51 032	Clamp, Parallel Groove, for 1/0 (7) AAAC Static		2	1	2	3
@	J	DEC*W	Clamp, Deadend		2	1	3	3



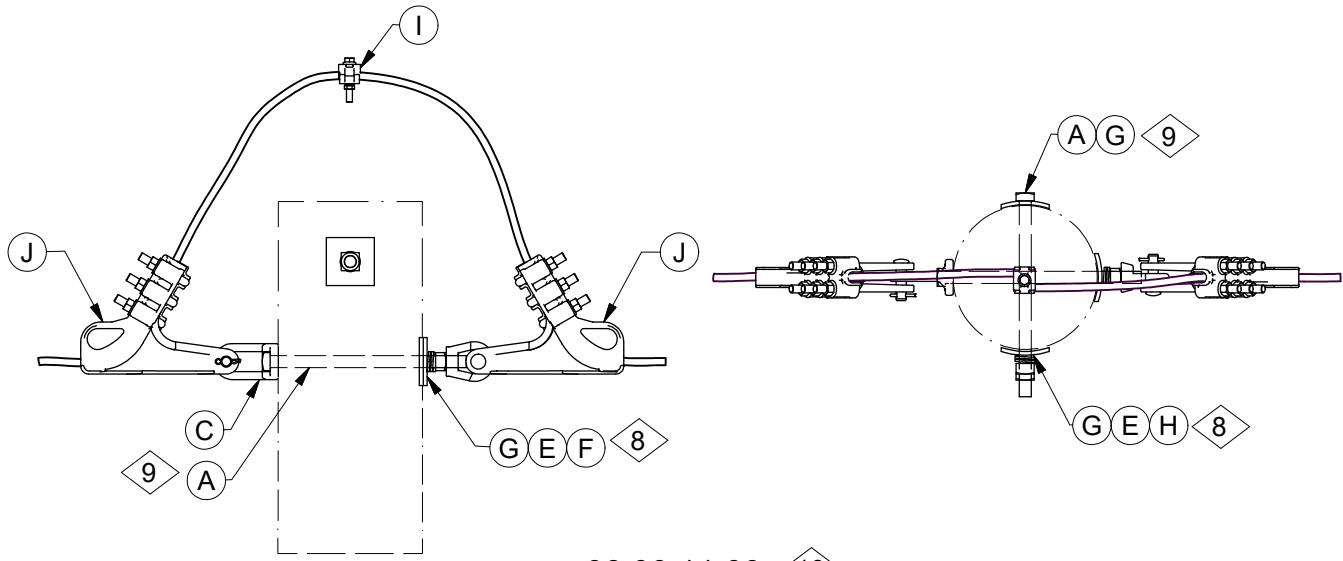
06 00 11 06

Deadend Tangent w/ Pole Ground



06 00 11 07

Deadend Angle w/ Pole Ground



06 00 11 09 10

Deadend Tangent w/o Pole Ground

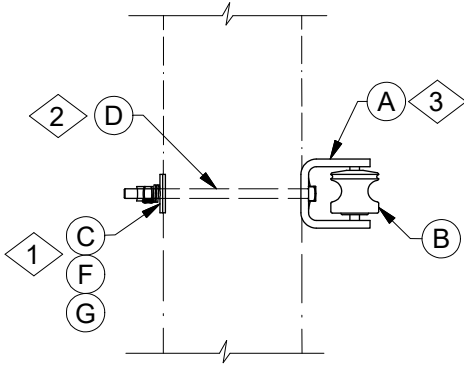
CONSTRUCTION NOTE(s):

8. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
9. Use longer machine bolts for larger wood or composite poles if required.

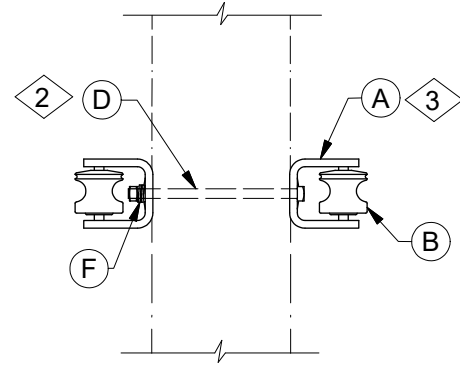
	ITEM	STK / DCS #	DESCRIPTION	06 00 11 **	06	07	09
8,9	A	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		2	3	2
	B	23 15 001	Nut, Square, 3/4"		1	1	-
	C	23 59 095	Eyelet, 3/4"		1	2	1
	D	23 68 496	Clip, Bonding, 3/4" Bolt Dia.		1	1	-
	E	23 66 135	Lock Washer - 3/4" Double Coil		2	3	2
	F	23 65 018	Eyenuit, 3/4"		1	-	1
	G	23 66 031	Washer, Curved, Square, 3/4"		3	4	3
	H	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		1	3	1
@	I	23 68 234	Clamp, Guy Wire, 1/2", for 110.8 (12/7) ACSR Static		2	2	1
@	J	17 51 032	Clamp, Parallel Groove, for 1/0 (7) AAAC Static		2	2	1
	J	DEC*W	Clamp, Deadend		2	2	2

DESIGN NOTE(s):

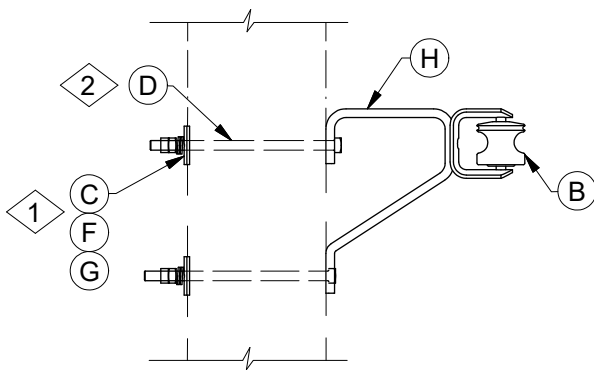
10. DCS 06 00 11 09 used on switch and recloser poles if ground wire is not bonded to the static.



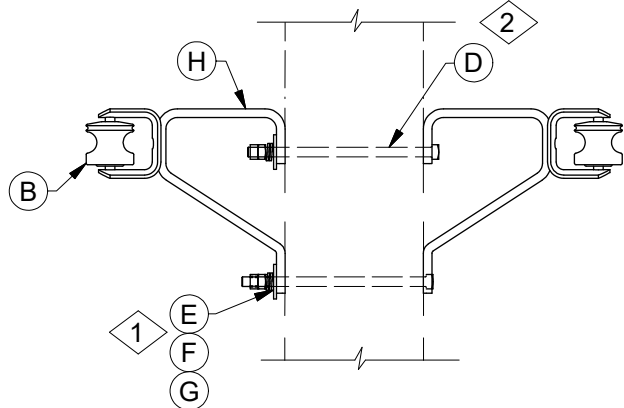
06 01 01 01
Single Clevis



06 01 01 02
Double Clevis



06 01 01 03
Single Clevis w/ Extension Bracket



06 01 01 04
Double Clevis w/ Extension Bracket

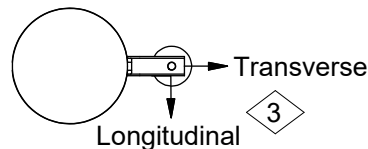
CONSTRUCTION NOTE(s):

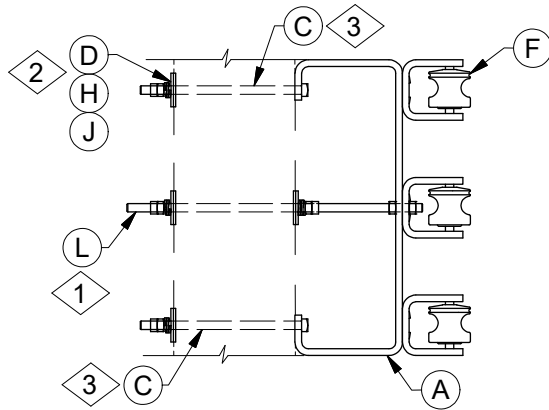
1. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
2. Use longer machine bolts for larger wood or composite poles if required.

3	ITEM	STK / DCS #	DESCRIPTION	06 01 01 **	01	02	03	04
	A	23 06 040	Clevis - Secondary		1	2	-	-
	B	25 59 044	Insulator, Spool		1	2	1	2
	C	23 66 207	Washer, Curved, Square, 5/8"		1	-	2	-
	D	23 52 065	Bolt, Mach., 5/8" x 12" w/ square nut		1	1	2	2
	E	23 66 027	Washer, Flat, Square 5/8"		-	-	-	2
	F	23 66 134	Lock Washer - 5/8" Double Coil		1	1	2	2
	G	23 65 043	Lock Nut - 5/8" Square		1	-	2	2
	H	23 06 067	Bracket, Ext. 1 Clevis		-	-	1	2

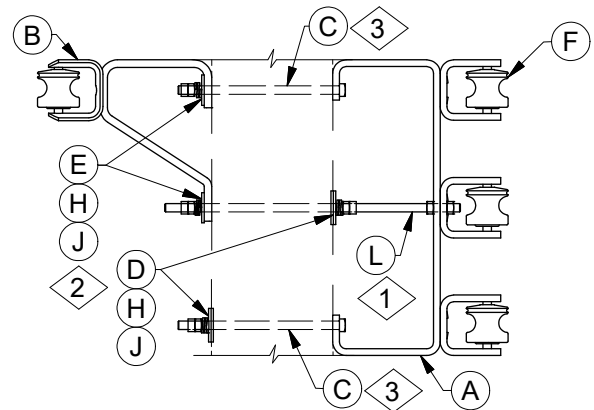
DESIGN NOTE(s):

3. Working loads for secondary clevis:
 - Transverse = 2000 lbs
 - Longitudinal = 650 lbs

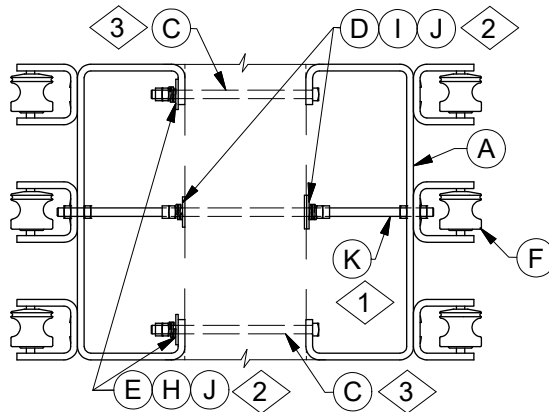




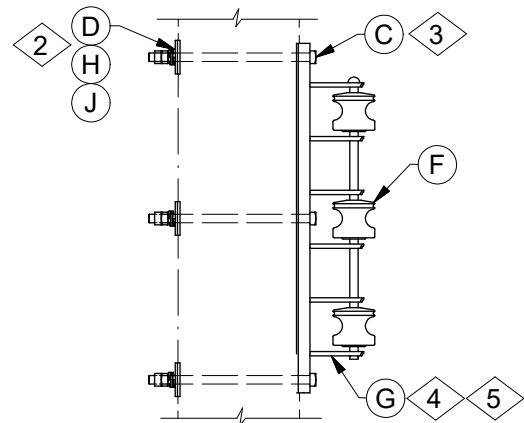
06 01 03 01



06 01 03 02



06 01 03 03



06 01 03 04

DCS #	DESCRIPTION
06 01 03 01	Single 3-Wire Rack w/ Extension Bracket
06 01 03 02	3-Wire Rack w/ Single Clevis & Extension Bracket
06 01 03 03	Double 3-Wire Rack w/ Extension Bracket
06 01 03 04	Single 3-Wire Rack

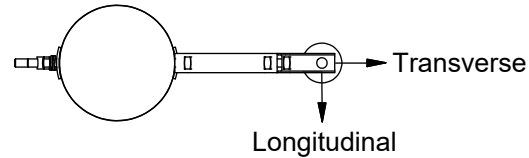
CONSTRUCTION NOTE(s):

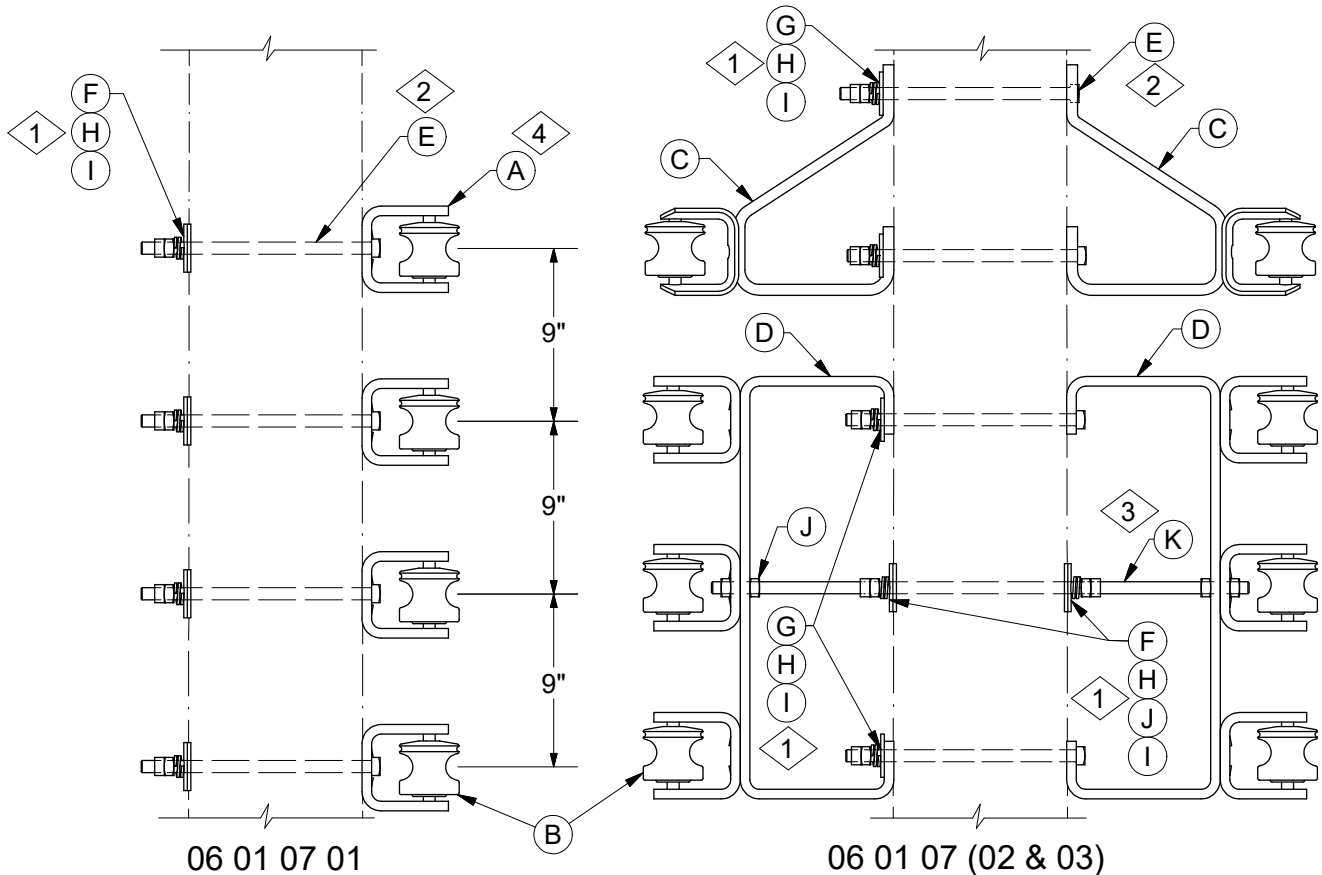
1. Reinforce with DA bolt for deadends, span guys, side strain, or line angles in excess of 5°.
2. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
3. Use longer machine bolts for larger wood or composite poles if required.

	ITEM	STOCK #	DESCRIPTION	06 01 03 **	01	02	03	04
5	A	23 06 054	Bracket, Ext. 3 Clevis		1	1	2	-
	B	23 06 067	Bracket, Ext. 1 Clevis		-	1	-	-
	C	23 52 065	Bolt, Mach., 5/8" x 12" w/ square nut		2	2	2	3
	D	23 66 207	Washer, Curved, Square, 5/8"		4	2	1	3
	E	23 66 027	Washer, Flat, Square 5/8"		-	2	3	-
	F	25 59 044	Insulator, Spool		3	4	6	3
	G	23 11 001	Rack, Secondary, 3 Spool		-	-	-	1
	H	23 66 134	Lock Washer - 5/8" Double Coil		4	4	4	3
	I	23 65 011	Nut, Square, 5/8"		-	-	2	-
	J	23 65 043	Lock Nut - 5/8" Square		4	4	4	3
1@	K	23 53 047	Bolt, DA, 5/8" Dia x 28" w/ 4 square nuts		-	-	1	-
1@	L	23 53 006	Bolt, DA, 5/8" Dia x 22" w/ 4 square nuts		1	1	-	-

DESIGN NOTE(s):

4. Rack mounted directly on pole should be used in all cases unless climbing space requires use of the extension.
5. Working loads for 3-wire secondary rack:
 - Transverse = 1000 lbs (per position)
 - Longitudinal = 650 lbs (per position)





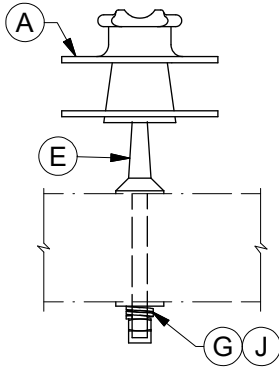
CONSTRUCTION NOTE(s):

1. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
2. Use longer machine bolts for larger wood or composite poles if required.
3. Reinforce with DA bolt for deadends, span guys, side strain, or line angles in excess of 5°.

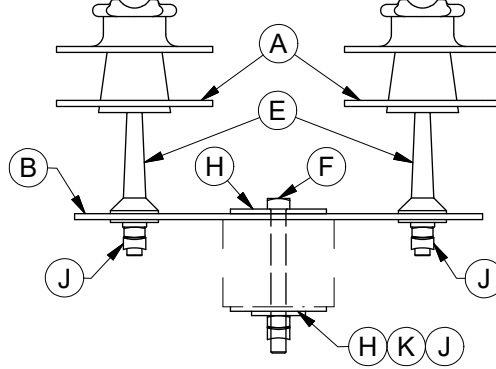
	ITEM	STK / DCS #	DESCRIPTION	06 01 07 **	01	02	03
1,2	A	23 06 040	Clevis - Secondary		4	-	-
	B	25 59 044	Insulator, Spool		4	4	8
	C	23 06 067	Bracket, Ext. 1 Clevis		-	1	2
	D	23 06 054	Bracket, Ext. 3 Clevis		-	1	2
	E	23 52 065	Bolt, Mach., 5/8" x 12" w/ square nut		4	4	4
	F	23 66 207	Washer, Curved, Square, 5/8"		4	6	2
	G	23 66 027	Washer, Flat, Square 5/8"		-	-	4
	H	23 66 134	Lock Washer - 5/8" Double Coil		4	6	6
	I	23 65 043	Lock Nut - 5/8" Square		4	6	6
	J	23 65 011	Nut, Square, 5/8"		-	-	2
1,3 @	K	23 53 047	Bolt, DA, 5/8" Dia x 28" w/ 4 square nuts		-	-	1
		23 53 006	Bolt, DA, 5/8" Dia x 22" w/ 4 square nuts		-	1	-

DESIGN NOTE(s):

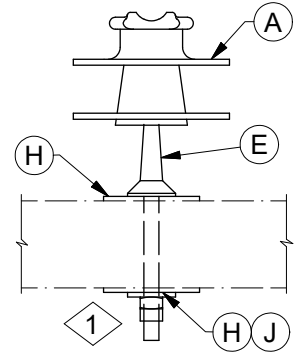
4. Working loads for secondary clevis:
 - Transverse = 2000 lbs
 - Longitudinal = 650 lbs



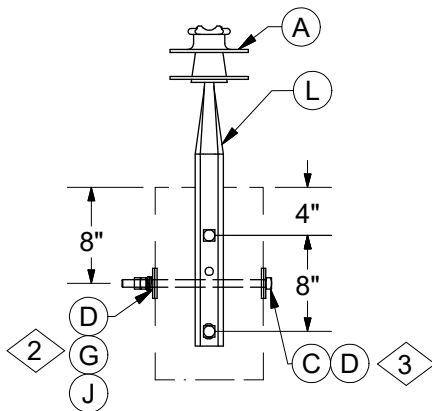
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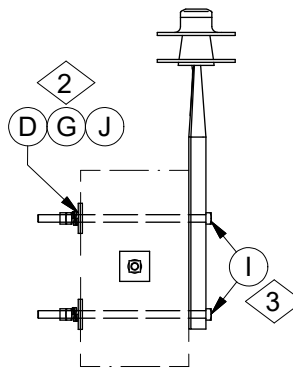
06 12 01 11



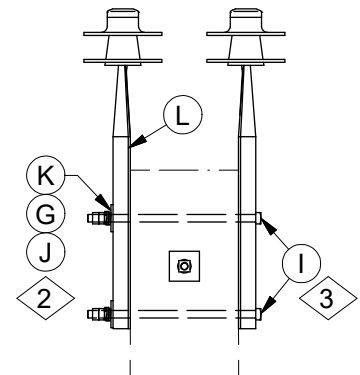
06 12 01 12



06 12 01 (02 & 13)



06 12 01 02
(Front View)



06 12 01 13
(Front View)

DCS#	DESCRIPTION
06 12 01 01	Single Pin & Insulator - Wood Crossarm
06 12 01 11	Double Pin & Insulator - FG Crossarm
06 12 01 12	Single Pin & Insulator - FG Crossarm
06 12 01 02	Single Pole Top Pin & Insulator - 24" and 30"
06 12 01 13	Double Pole Top Pin & Insulator - 24" and 30"

CONSTRUCTION NOTE(s):

1. The 2" washer received with the pin should be used after the 4" washer.
2. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
3. Use longer machine bolts for larger wood or composite poles if required.



INSULATORS AND SUPPORTS

Pin Insulators
Crossarms and Pole Top

06 12 01 **

15kV

2 of 2

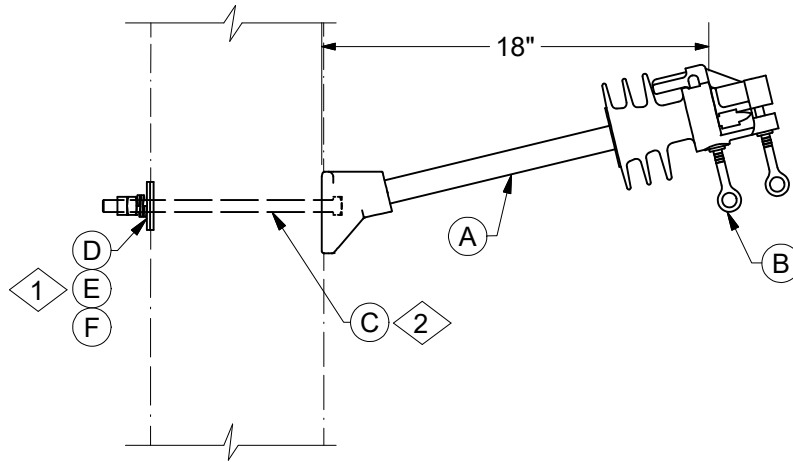
	ITEM	STK / DCS #	DESCRIPTION	06 12 01 **	01	11	12	02	13
2,3	A	25 05 069	Insulator, Pin Type, 12kV		1	2	1	1	2
	B	23 77 212	Plate Heel Brace - 8-3/4" to 13-3/8"		-	1	-	-	-
	C	23 52 065	Bolt, Mach., 5/8" x 12" w/ square nut		-	-	-	1	1
	D	23 66 207	Washer, Curved, Square, 5/8"		-	-	-	4	2
	E	23 62 136	Pin, Insulator, Short Shank		-	2	-	-	-
		23 62 028	Pin, Insulator, Long Shank		1	-	1	-	-
	F	23 52 318	Bolt, Mach., 5/8" x 6" w/ square nut		-	1	-	-	-
2,3	G	23 66 134	Lock Washer - 5/8" Double Coil		1	-	-	3	3
	H	23 66 132	Washer, Flat, Sq., 4" x 4", w/ 13/16" Hole		-	2	2	-	-
	I	23 52 066	Bolt, Mach., 5/8" x 14" w/ square nut		-	-	-	2	2
4	J	23 65 043	Lock Nut - 5/8" Square		1	3	1	3	3
	K	23 66 027	Washer, Flat, Square 5/8"		-	1	-	-	2
	L	23 62 156	Pin - Insulator, Pole Top, 24"		-	-	-	1	2

DESIGN NOTE(s):

4. Use the 30" pole top pin (Stock #23 62 115) when additional clearance is required.

**DISTRIBUTION
CONSTRUCTION STANDARDS**

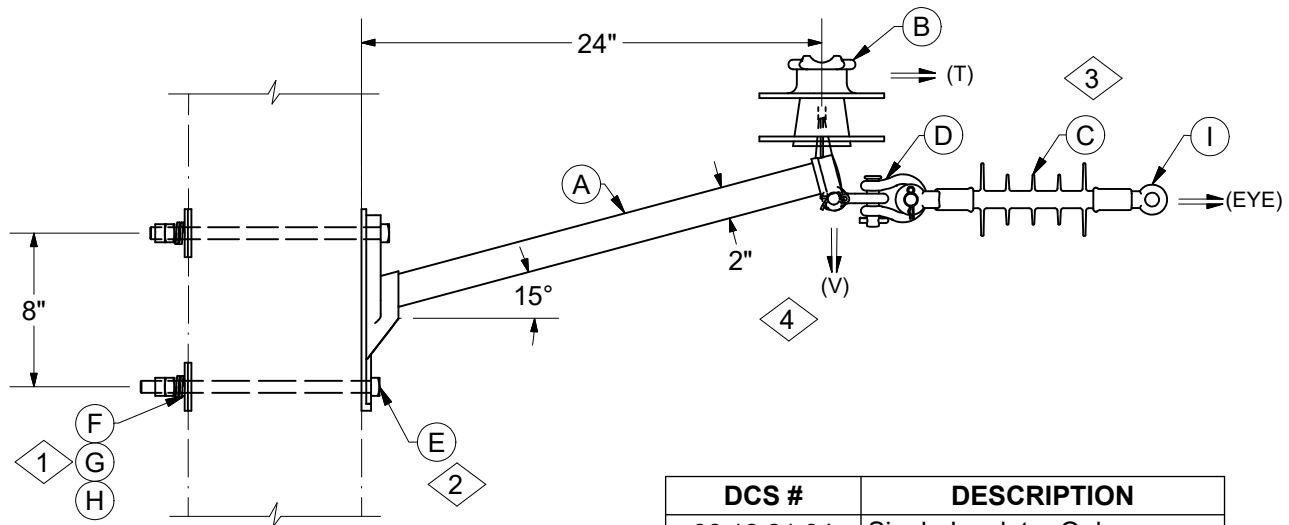
REV	DATE	ENGR	DESCRIPTION
13	07/01/21	NH	Title change; Added description table & notes 2,3 & 4
12	9/11/17	KP	



CONSTRUCTION NOTE(s):

1. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
2. Use longer machine bolts for larger wood or composite poles if required.

	ITEM	STK / DCS #	DESCRIPTION	06 12 20 **	04
1,2	A	23 12 123	Bracket, FG, Standoff, LD, 18"		1
	B	25 05 143	Insulator, Vice Top, 12kV		1
	C	23 52 065	Bolt, Mach., 5/8" x 12" w/ square nut		1
	D	23 66 207	Washer, Curved, Square, 5/8"		1
	E	23 66 134	Lock Washer - 5/8" Double Coil		1
	F	23 65 043	Lock Nut - 5/8" Square		1



DCS #	DESCRIPTION
06 12 21 04	Single Insulator Only
06 12 21 05	Single Insulator & Deadend
06 12 21 06	Single Deadend Only

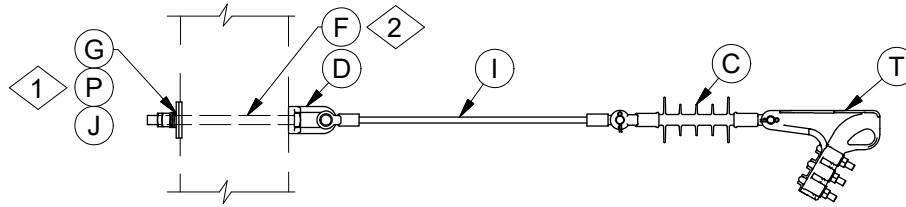
CONSTRUCTION NOTE(s):

1. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
2. Use longer machine bolts for larger wood or composite poles if required.

ITEM	STK / DCS #	DESCRIPTION	06 12 21 **	04	05	06
A	23 06 085	Bracket, Standoff, 24" Fiberglass	1	1	1	1
B	25 05 069	Insulator, Pin Type, 12kV	1	1	-	-
C	25 06 052	Insulator, Deadend, 12kV	-	1	1	1
D	23 68 181	Shackle - Deadend	-	2	2	2
E	23 52 065	Bolt, Mach., 5/8" x 12" w/ square nut	2	2	2	2
F	23 66 207	Washer, Curved, Square, 5/8"	2	2	2	2
G	23 66 134	Lock Washer - 5/8" Double Coil	2	2	2	2
H	23 65 043	Lock Nut - 5/8" Square	2	2	2	2
I	DEC*W	Clamp, Deadend	-	1	1	1

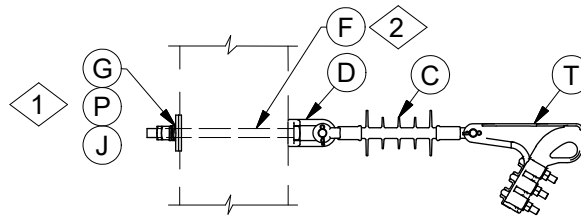
DESIGN NOTE(s):

3. Working load for deadend insulator = 7500 lb.
4. Working loads for standoff bracket:
 - a) Vertical (V) = 1000 lb
 - b) Transverse (T) = 1000 lb
 - c) Take-off (EYE) = 5000 lb



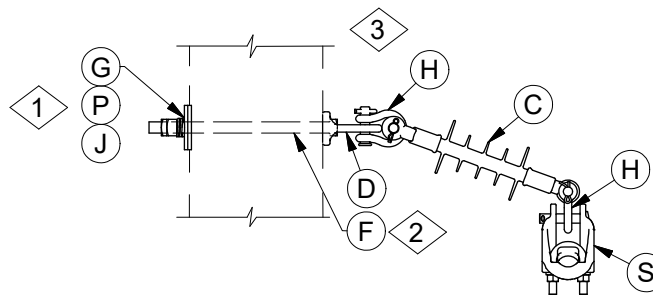
06 12 30 01

Straight Deadend w/ FG Extension



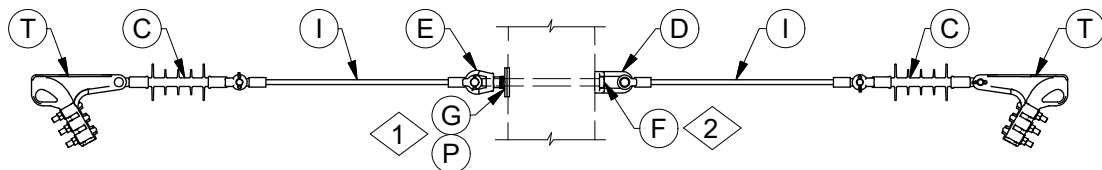
06 12 30 11

Straight Deadend w/o FG Extension



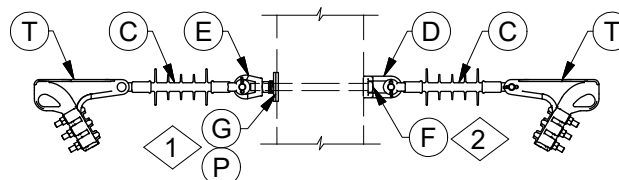
06 12 30 02

Floating Angle



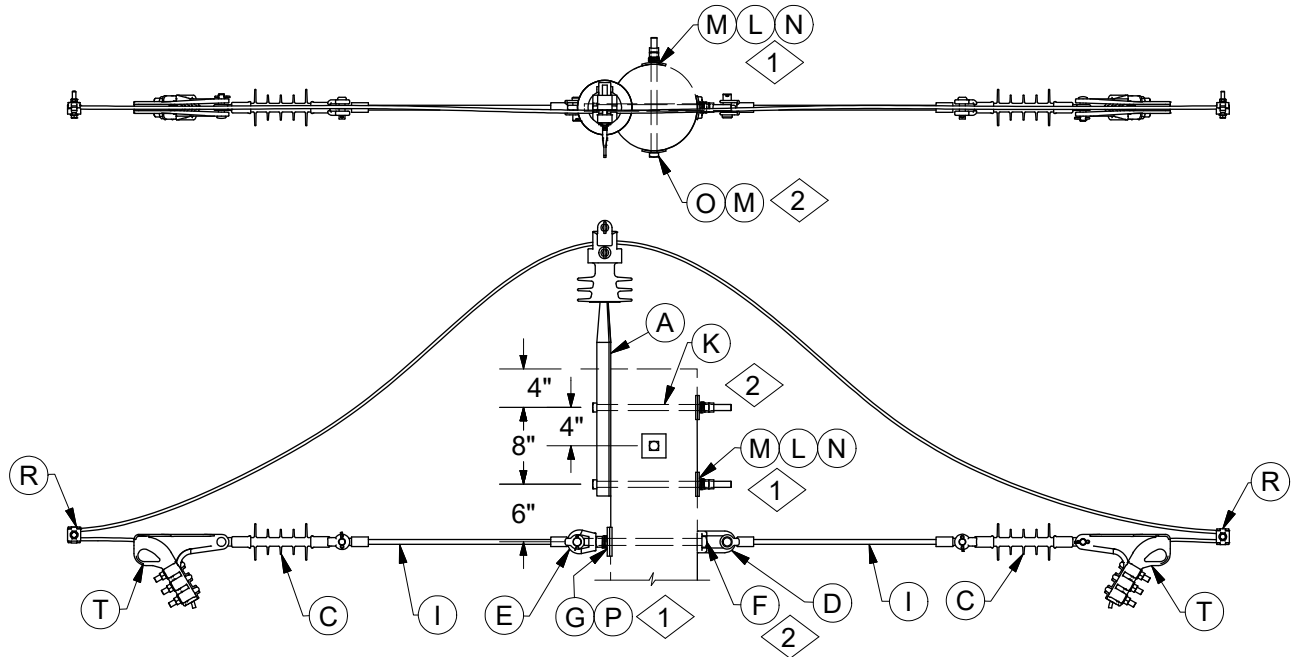
06 12 30 03

Double Deadend w/ FG Extensions



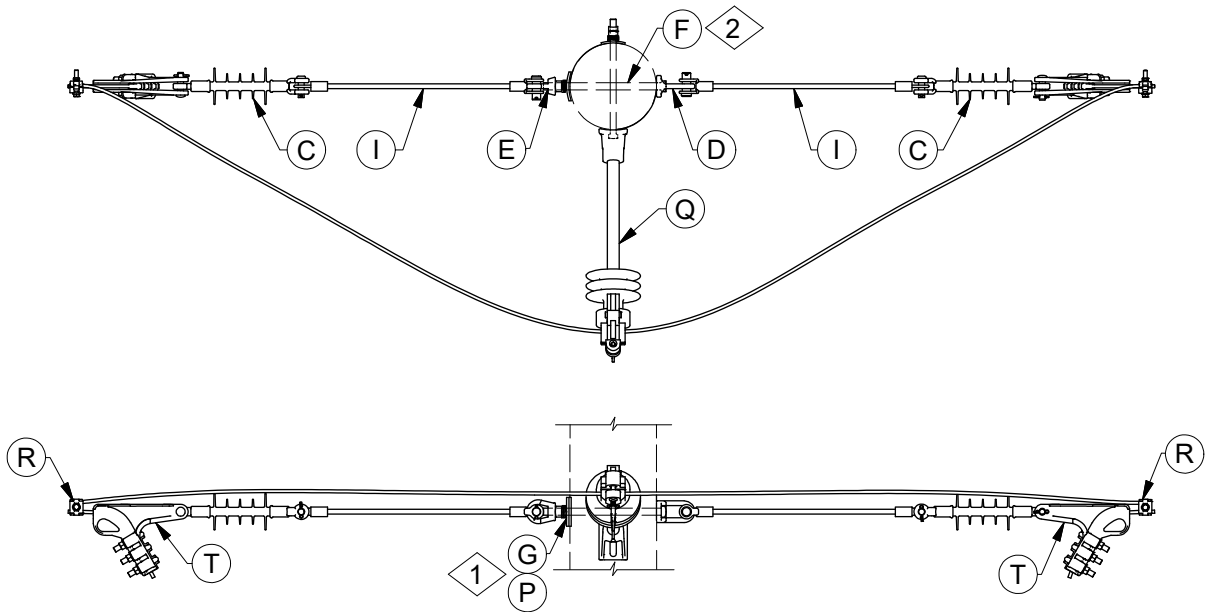
06 12 30 13

Double Deadend w/o FG Extensions



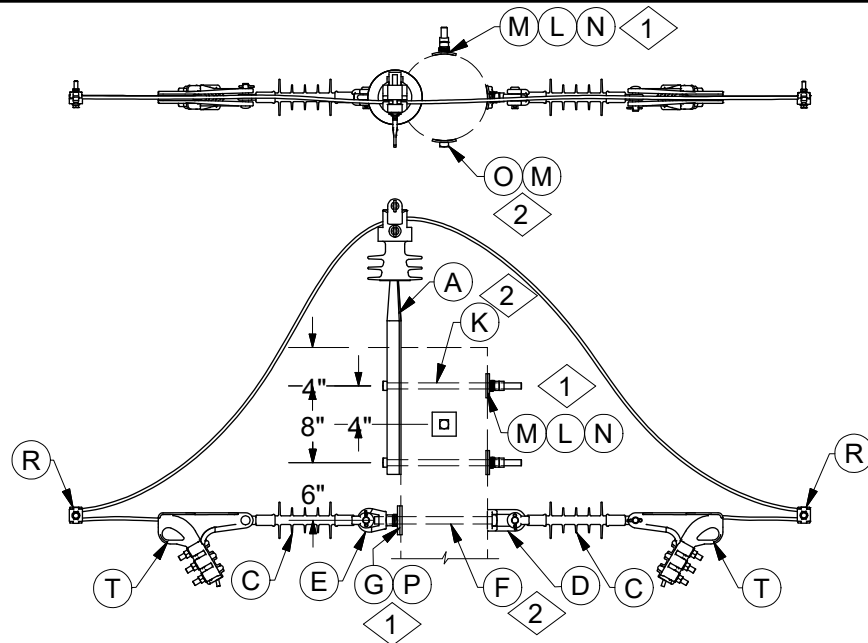
06 12 30 04

Pole Top Loopover w/ FG Extensions



06 12 30 05

Looparound w/ FG Extensions



06 12 30 14

Pole Top Loopover w/o FG Extensions

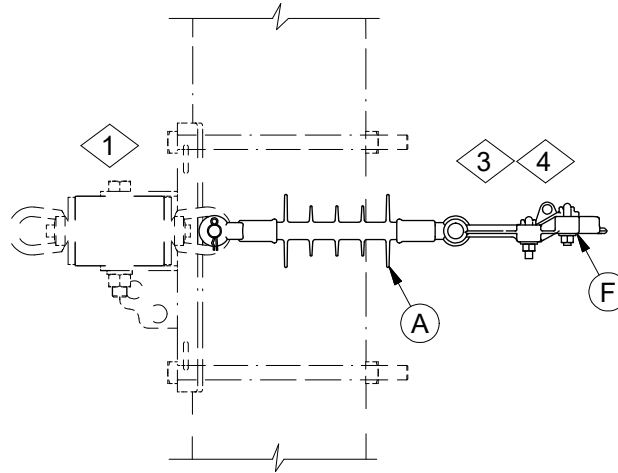
CONSTRUCTION NOTE(s):

1. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
2. Use longer machine bolts for larger wood or composite poles if required.
3. For AIC only, add strain insulator (Stock # 25 56 076) to all floating angle and deadend applications.

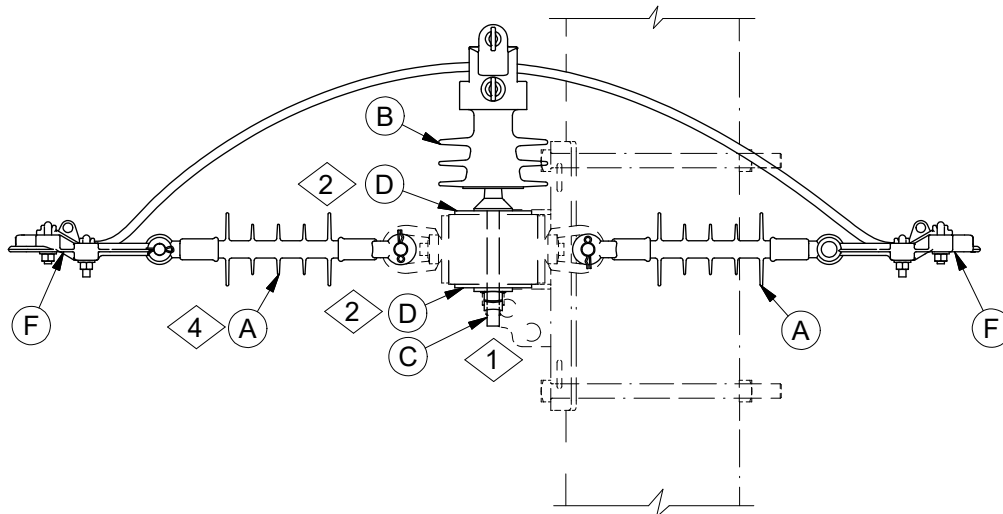
	ITEM	STK / DCS #	DESCRIPTION	06 12 30 **	01	02	03	04	05	11	13	14
1,2	A	23 62 156	Pin - Insulator, Pole Top, 24"		-	-	-	1	-	-	-	1
	B	25 05 143	Insulator, Vice Top, 12kV		-	-	-	1	-	-	-	1
	C	25 06 052	Insulator, Deadend, 12kV		1	1	2	2	2	1	2	2
	D	23 59 095	Eyelet, 3/4"		1	1	1	1	1	1	1	1
	E	23 65 018	Eyenuit, 3/4"		-	-	1	1	1	-	1	1
	F	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		1	1	1	1	1	1	1	1
	G	23 66 031	Washer, Curved, Square, 3/4"		1	1	1	1	1	1	1	1
	H	23 68 181	Shackle - Deadend		-	2	-	-	-	-	-	-
	I	25 56 076	Insulator, Guy Strain, 26"		1	-	2	2	2	-	-	-
1,2	J	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		1	1	-	-	-	1	-	-
	K	23 52 066	Bolt, Mach., 5/8" x 14" w/ square nut		-	-	-	2	-	-	-	2
	L	23 66 134	Lock Washer - 5/8" Double Coil		-	-	-	3	-	-	-	3
	M	23 66 207	Washer, Curved, Square, 5/8"		-	-	-	4	-	-	-	4
1,2	N	23 65 043	Lock Nut - 5/8" Square		-	-	-	3	-	-	-	3
	O	23 52 065	Bolt, Mach., 5/8" x 12" w/ square nut		-	-	-	1	-	-	-	1
	P	23 66 135	Lock Washer - 3/4" Double Coil		1	1	1	1	1	1	1	1
@	Q	06 12 20 04	Wire Training Assembly		-	-	-	-	1	-	-	-
@	R	PG*W	Clamp, PG		-	-	-	2	2	-	-	2
@	S	SC*W	Suspension Clamp		-	1	-	-	-	-	-	-
@	T	DEC*W	Clamp, Deadend		1	-	2	2	2	1	2	2

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
9	07/01/21	NH	Title change: Added 06 12 30 05, notes 1 & 2
8	05/25/18	KR	



06 12 35 (01 & 03)



06 12 35 (02, 04, & 05)

DCS #	DESCRIPTION
06 12 35 01	Single Deadend
06 12 35 02	Double Deadend
06 12 35 03	Single Deadend w/ FG Extension
06 12 35 04	Double Deadend w/ FG Extension
06 12 35 05	Double Deadend w/ Loopover

CONSTRUCTION NOTE(s):

1. FG crossarms come with eyenuts for deadend applications on the two outside positions. When deadending on the inside two positions on the FG crossarm, use Stock #23 65 012 (5/8" eyenut), Stock #23 52 318 (5/8" x 6" machine bolt), and Stock #23 59 005 (5/8" eyelet).
2. The 2" square washer received with the pin should be used after the 4" square washer.



INSULATORS AND SUPPORTS

Deadends & Loops on Fiberglass Crossarms

06 12 35 **

15kV

2 of 2

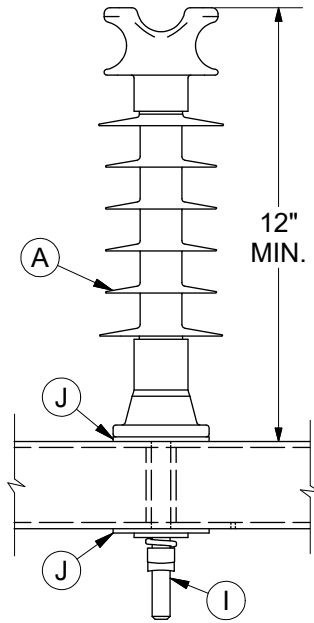
3 @	ITEM	STOCK #	DESCRIPTION	01	02	03	04	05
	A	25 06 052	Insulator, Deadend, 12kV	1	2	1	2	2
	B	25 05 143	Insulator, Vice Top, 12kV	-	-	-	-	1
	C	23 62 028	Pin, Insulator, Long Shank	-	-	-	-	1
	D	23 66 132	Washer, Flat, Sq., 4" x 4", w/ 13/16" Hole	-	-	-	-	2
	E	25 56 076	Insulator, Guy Strain, 26"	-	-	1	2	-
	F	DEC*W	Clamp, Deadend	1	2	1	2	2

DESIGN NOTE(s):

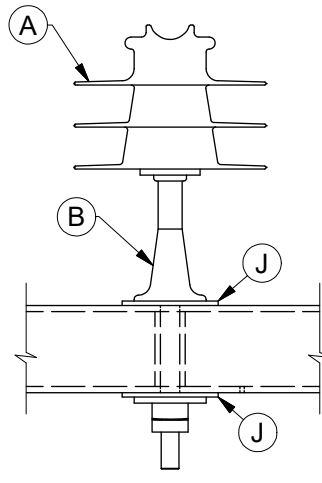
3. If extension is needed for clearance purposes, insert strain insulator (Stock #25 56 076) between eyelet and deadend insulator.
4. Working load of deadend insulator = 7500 lb.

DISTRIBUTION CONSTRUCTION STANDARDS

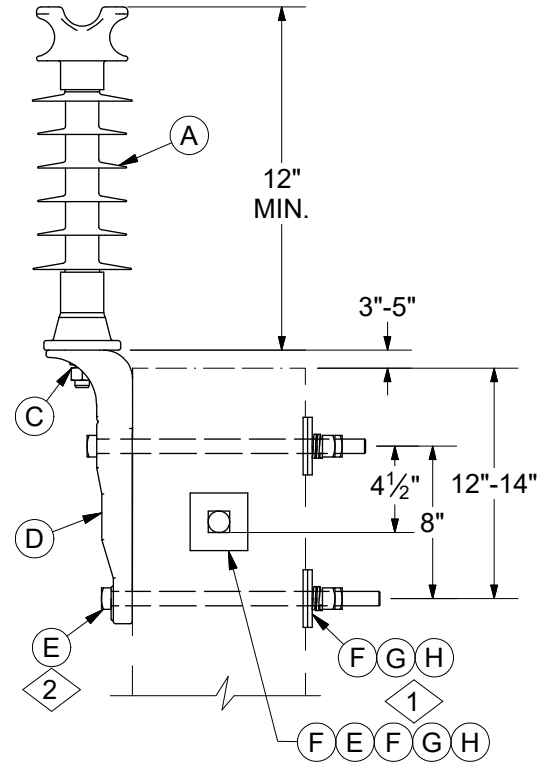
REV	DATE	ENG	DESCRIPTION
2	07/01/21	NH	Title change; Added 06 12 35 (03, 04, & 05) & notes 1-4
1	03/11/16	WYW	



06 34 01 (02 & 06)
Cross Arm Mounting



06 34 01 03
Pin Cross Arm Mounting



06 34 01 (05 & 08)
Pole Top Mounting

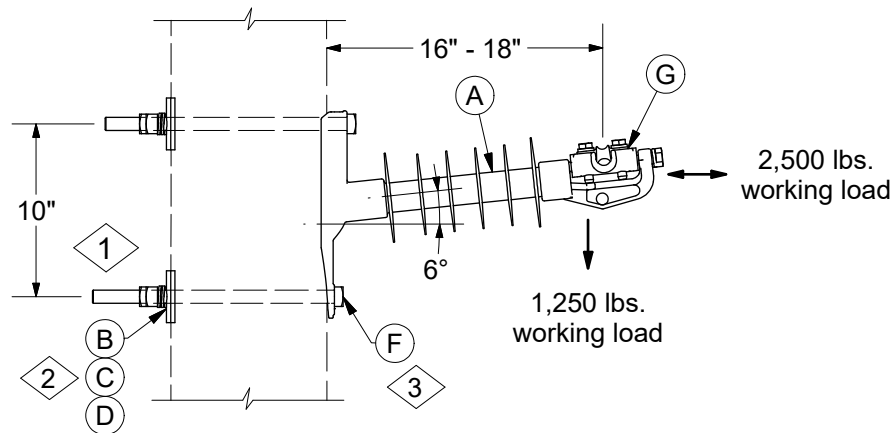
CONSTRUCTION NOTE(s):

1. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
2. Use longer machine bolts for larger wood or composite poles if required.

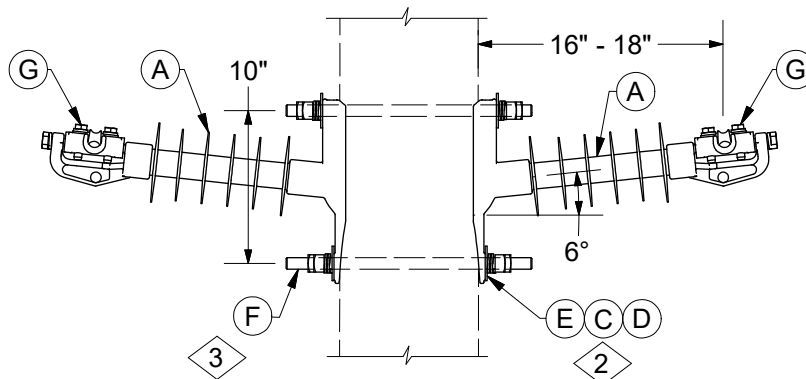
	ITEM	STK / DCS #	DESCRIPTION	06 34 01 **	02	03	05	06	08
1,2	A	25 05 144	Insulator, Vertical L.P., 34kV, Clamptop	-	-	-	-	1	1
		25 05 080	Insulator, Pin Type, 34kV, F-Neck	-	1	-	-	-	-
		25 05 203	Insulator, Vertical L.P., 34kV, F-Neck	1	-	1	-	-	-
	B	23 12 126	Pin, 3/4" x 7"	-	1	-	-	-	-
	C	23 64 008	Stud, 3/4" x 1-3/4"	-	-	1	-	-	1
	D	23 06 021	Bracket, Pole Top	-	-	1	-	-	1
	E	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut	-	-	3	-	-	3
	F	23 66 031	Washer, Curved, Square, 3/4"	-	-	4	-	-	4
	G	23 66 135	Lock Washer - 3/4" Double Coil	-	-	3	-	-	3
	H	23 65 042	Nut, Locking, Square, Galvanized, 3/4"	-	-	3	-	-	3
	I	23 64 023	Stud, 3/4" x 7" w/ hardware	1	-	-	-	1	-
	J	23 66 132	Washer, Flat, Sq., 4" x 4", w/ 13/16" Hole	2	2	-	-	2	-
@	K	TC*W	Clamp, Trunnion	-	-	-	-	1	1

DESIGN NOTE(s):

3. In 34kV industrial atmosphere where experience shows possible problems, use 69kV installation.
4. On angle poles, install insulator on side of pole that pulls bracket against pole.



06 34 03 03
Single Insulator

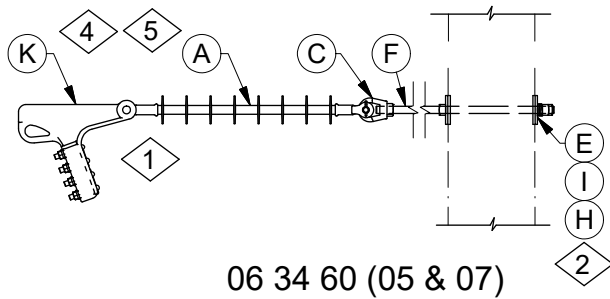
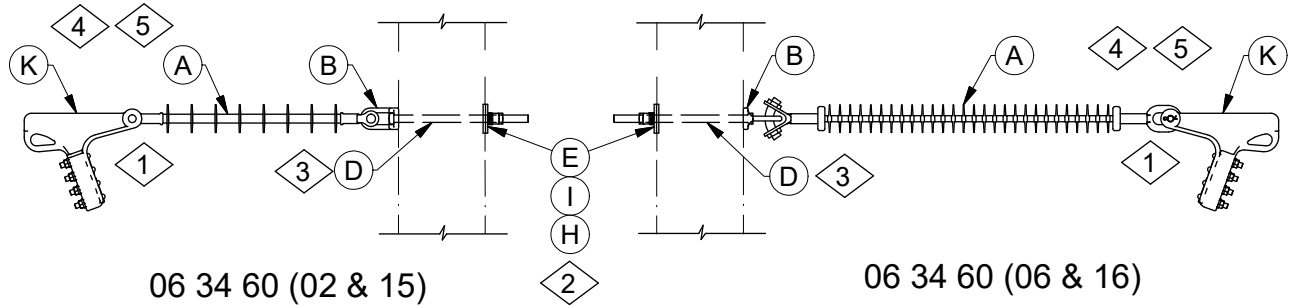


06 34 03 06
Double Insulator

CONSTRUCTION NOTE(s):

1. Reverse bolt position if guy wire is attached to bottom bolt.
2. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
3. Use longer machine bolts for larger wood or composite poles if required.

2,3 @	ITEM	STK / DCS #	DESCRIPTION	06 34 03 **	03	06
	A	25 05 145	Insulator, Horizontal L.P., 34kV, Clamptop		1	2
	B	23 66 031	Washer, Curved, Square, 3/4"		2	-
	C	23 66 135	Lock Washer - 3/4" Double Coil		2	4
	D	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		2	4
	E	23 66 131	Washer, Square, 3/4"		-	4
	F	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		2	-
		23 53 058	Bolt, DA, 3/4" Dia x 16" w/ 4 square nuts		-	2
	G	TC*W	Clamp, Trunnion		1	2



DCS#	DESCRIPTION
06 34 60 02	34kV Single Deadend
06 34 60 06	69kV Single Deadend
06 34 60 15	34kV Single Deadend w/ FG Extension
06 34 60 16	69kV Single Deadend w/ FG Extension
06 34 60 05	34kV Single Deadend w/ DA Bolt Extension - Slack Span Only
06 34 60 07	69kV Single Deadend w/ DA Bolt Extension - Slack Span Only

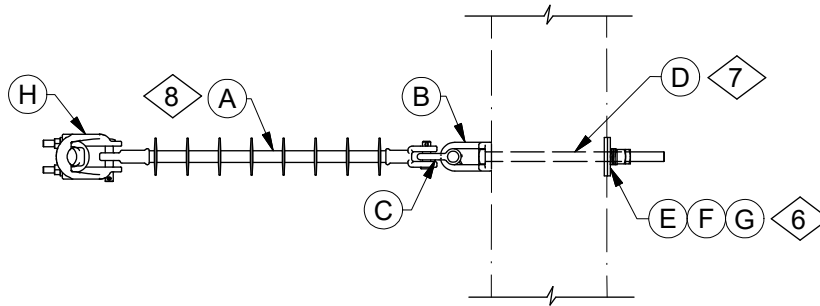
CONSTRUCTION NOTE(s):

1. Use shackle (Stock #23 68 181) to position deadend clamp properly, if required.
2. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
3. Use longer machine bolts for larger wood or composite poles if required.

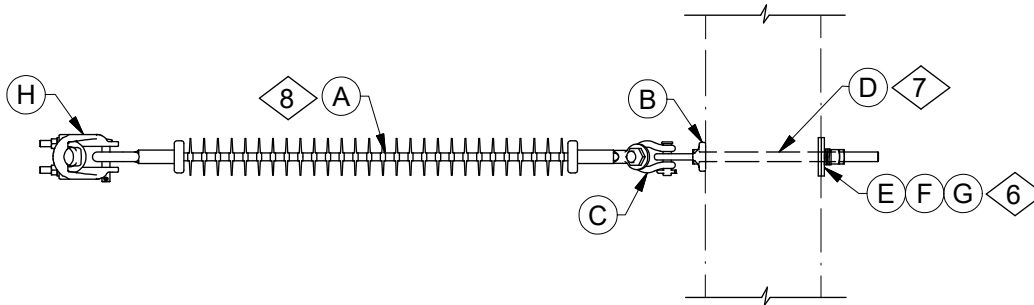
	ITEM	STK / DCS #	DESCRIPTION	06 34 60 **	02	06	15	16	05	07
5	A	25 06 113	Insulator, Suspension, 69kV		-	1	-	1	-	1
		25 06 053	Insulator, Suspension, 34kV		1	-	1	-	1	-
2,3	B	23 59 095	Eyelet, 3/4"		1	1	1	1	-	-
	C	23 65 018	Eyenuit, 3/4"		-	-	-	-	1	1
	D	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		1	1	1	1	-	-
1	E	23 66 031	Washer, Curved, Square, 3/4"		1	1	1	1	2	2
	F	23 53 072	Bolt, DA, 3/4" Dia x 32" w/ 4 square nuts		-	-	-	-	1	1
	G	23 68 181	Shackle - Deadend		-	-	-	1	-	1
4, @	H	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		1	1	1	1	1	1
	I	23 66 135	Lock Washer - 3/4" Double Coil		1	1	1	1	1	1
	J	25 56 076	Insulator, Guy Strain, 26"		-	-	1	1	-	-
@	K	DEC*W	Clamp, Deadend		1	1	1	1	1	1

DESIGN NOTE(s):

4. If extension is needed for clearance purposes, insert strain insulator (Stock #25 56 076) between eyelet and deadend insulator, except on slack span applications use DA bolt (Stock #23 53 072).
5. Working load of deadend insulators = 7500 lb.



06 34 60 08
34kV Floating Angle



06 34 60 28
69kV Floating Angle

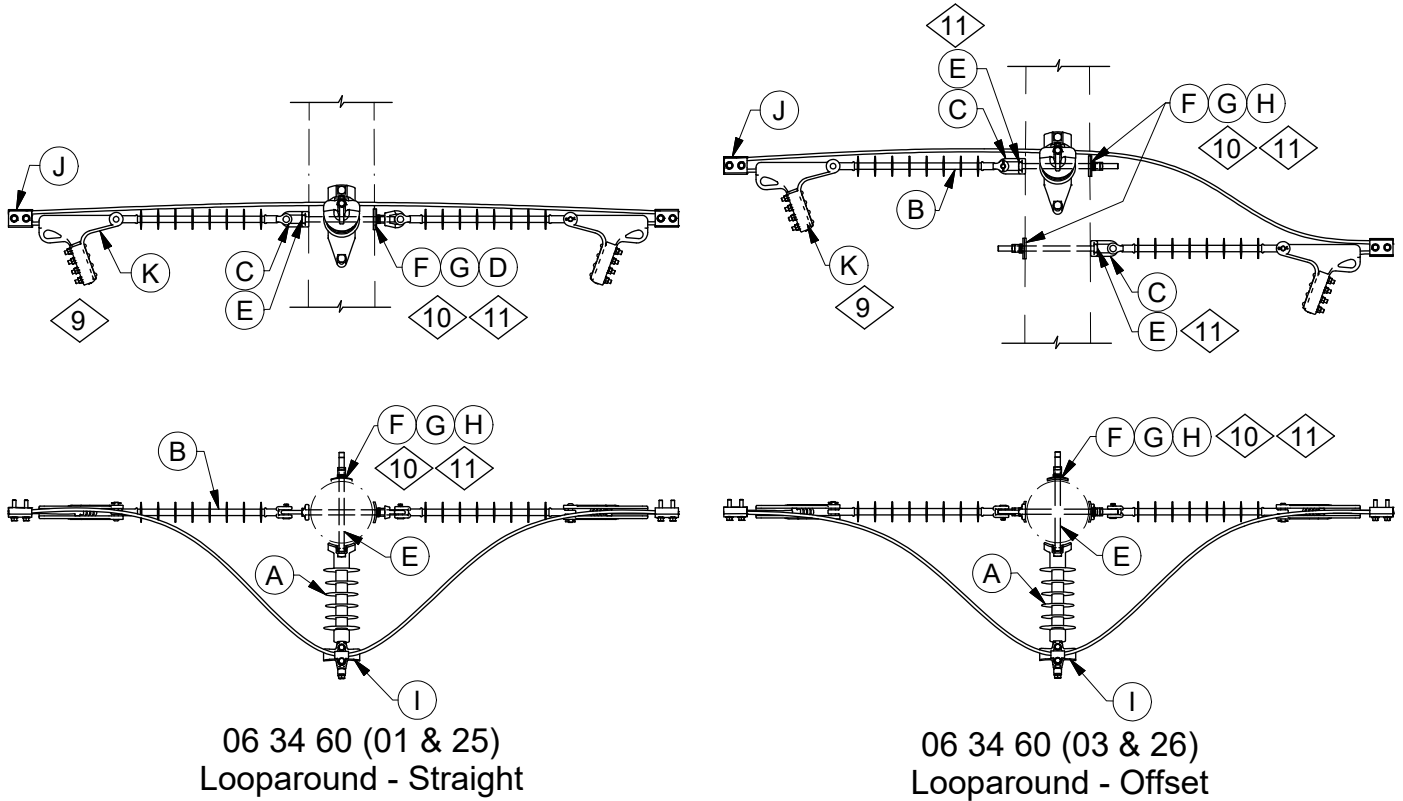
CONSTRUCTION NOTE(s):

- 6. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
- 7. Use longer machine bolts for larger wood or composite poles if required.

	ITEM	STK / DCS #	DESCRIPTION	06 34 60 **	08	28
8	A	25 06 053	Insulator, Suspension, 34kV		1	-
		25 06 113	Insulator, Suspension, 69kV		-	1
	B	23 59 095	Eyelet, 3/4"		1	1
	C	23 68 181	Shackle - Deadend		1	1
6,7	D	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		1	1
	E	23 66 031	Washer, Curved, Square, 3/4"		1	1
	F	23 66 135	Lock Washer - 3/4" Double Coil		1	1
	G	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		1	1
@	H	SC*W	Clamp, Suspension		1	1

DESIGN NOTE(s):

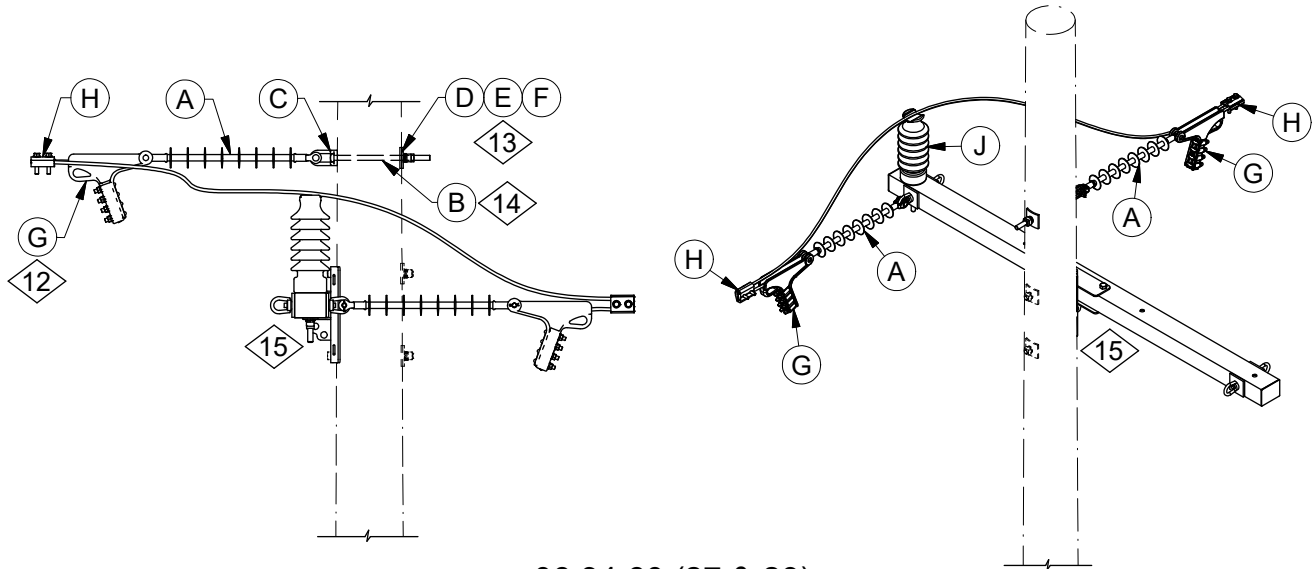
- 8. Working load of deadend insulators = 7500 lb.



CONSTRUCTION NOTE(s):

- 9. Use shackle (Stock #23 68 181) to position deadend clamp properly if required.
- 10. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
- 11. Use longer machine bolts for larger wood or composite poles if required.

	ITEM	STK / DCS #	DESCRIPTION	06 34 60 **	01	03	25	26
10,11	A	25 05 095	Insulator, Horizontal L.P., 69kV, Clamptop		1	1	-	-
		25 05 145	Insulator, Horizontal L.P., 34kV, Clamptop		-	-	1	1
	B	25 06 113	Insulator, Suspension, 69kV		2	2	-	-
		25 06 053	Insulator, Suspension, 34kV		-	-	2	2
	C	23 59 095	Eyelet, 3/4"		1	2	1	2
	D	23 65 018	Eyenuit, 3/4"		1	-	1	-
	E	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		3	4	3	4
	F	23 66 031	Washer, Curved, Square, 3/4"		3	4	3	4
	G	23 66 135	Lock Washer - 3/4" Double Coil		3	4	3	4
	H	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		2	4	2	4
@	I	TCA*W	Clamp, Trunnion		1	1	1	1
@	J	PG*W	Clamp, Parallel Groove		2	2	2	2
@	K	DEC*W	Clamp, Deadend		2	2	2	2

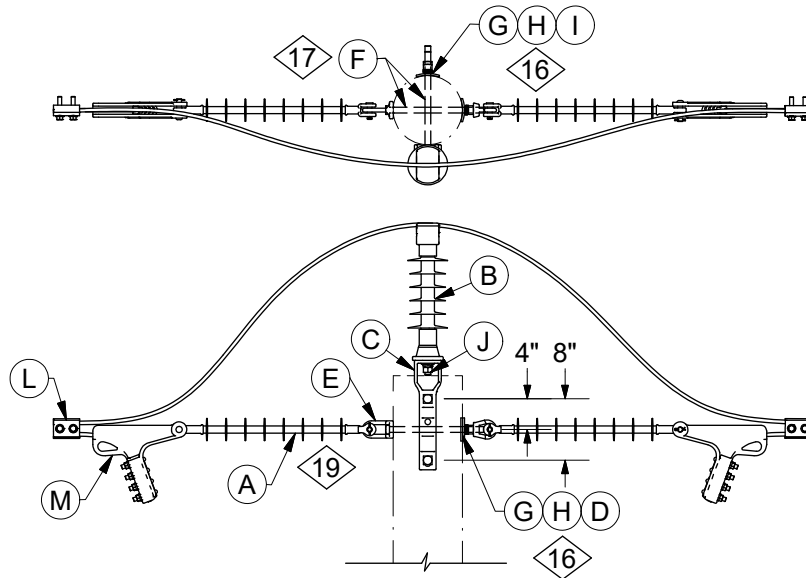


06 34 60 (27 & 29)
Loopover - Offset

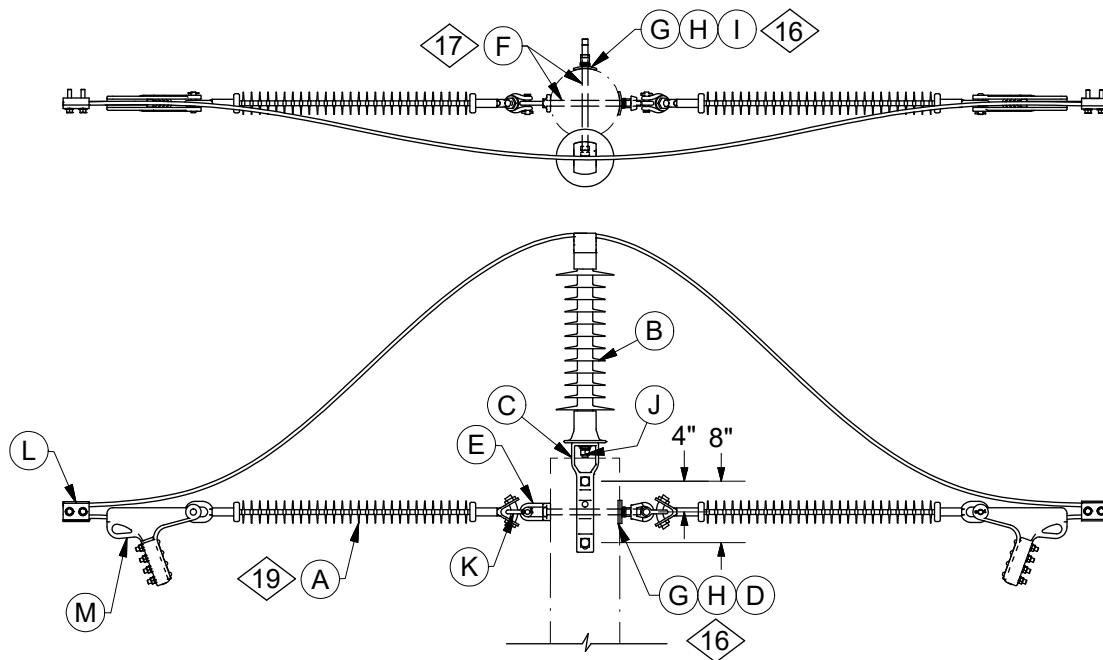
CONSTRUCTION NOTE(s):

- 12 Use shackle (Stock #23 68 181) to position deadend clamp properly if required.
- 13 Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
- 14 Use longer machine bolts for larger wood or composite poles if required.
- 15 FG crossarms come with eyenuts for deadend applications on the two outside positions. When deadending on the inside two positions on the FG crossarm, use Stock #23 65 012 (5/8" eyenut), Stock #23 52 318 (5/8" x 6" machine bolt), and Stock #23 59 005 (5/8" eyelet).

	ITEM	STK / DCS #	DESCRIPTION	06 34 60 **	27	29
13, 14	A	25 06 113	Insulator, Suspension, 69kV		2	-
		25 06 053	Insulator, Suspension, 34kV		-	2
	B	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		1	1
	C	23 59 095	Eyelet, 3/4"		1	1
	D	23 66 031	Washer, Curved, Square, 3/4"		3	3
	E	23 66 135	Lock Washer - 3/4" Double Coil		3	3
	F	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		1	1
@	G	DEC*W	Clamp, Deadend		2	4
@	H	PG*W	Clamp, Parallel Groove		2	4
@	I	TT*W	Tie, Top - Preformed		1	-
		Hand Tie	Tie, Conductor		-	1
@	J	06 69 01 01	Insulator, Vertical L.P., 69kV, F-Neck		1	-
		06 69 01 02	Insulator, Vertical L.P., 69kV, Clamptop		1	-
		06 69 01 03	Insulator, Vertical L.P., 69kV, Universal Clamptop		1	-
		06 34 01 02	Insulator, Vertical L.P., 34kV, F-Neck		-	1
		06 34 01 03	Insulator, 34kV, Pin Type, F-Neck		-	1
		06 34 01 06	Insulator, Vertical L.P., 34kV, Clamptop		-	1



06 34 60 (21 & 22)



06 34 60 (23 & 24)

DCS #	DESCRIPTION
06 34 60 21	34kV Double Deadend
06 34 60 22	34kV Double Deadend w/ Loopover
06 34 60 23	69kV Double Deadend w/ Loopover
06 34 60 24	69kV Double Deadend



INSULATORS AND SUPPORTS

Deadends, Floating Angles, & Loops on Poles

06 34 60 **
35kV, 69kV
6 of 6

CONSTRUCTION NOTE(s):

- 16 Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
- 17 Use longer machine bolts for larger wood or composite poles if required.

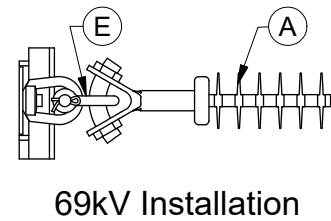
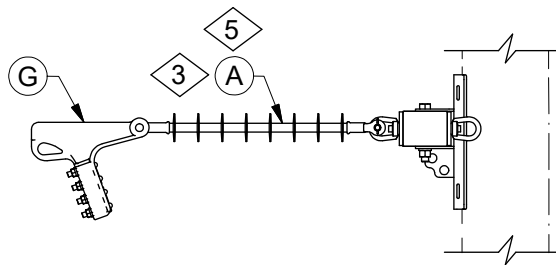
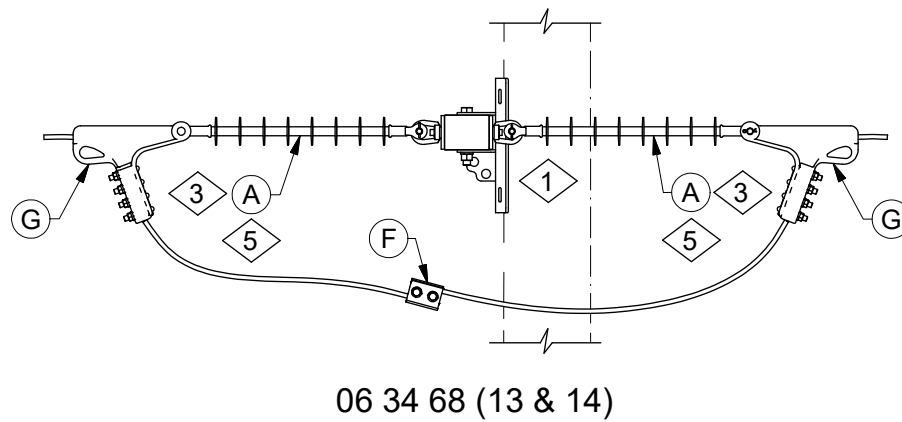
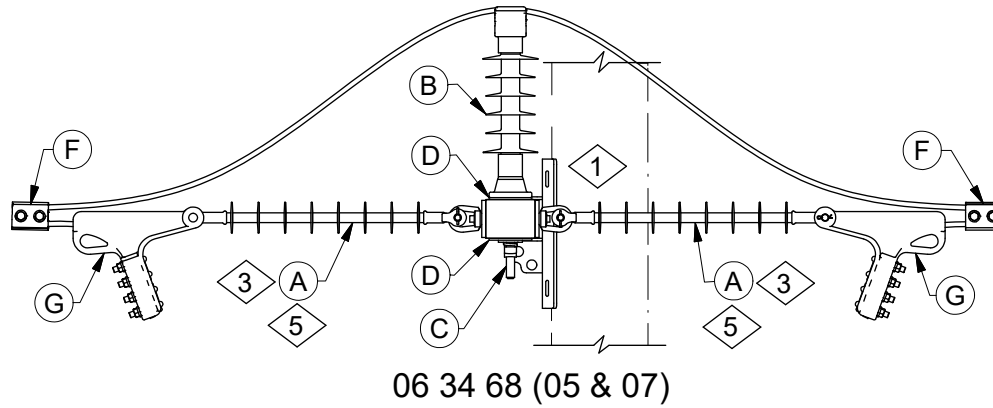
16, 17 @ @	ITEM	STK / DCS #	DESCRIPTION	06 34 60 **	21	22	23	24
	A	25 06 053	Insulator, Suspension, 34kV		2	2	-	-
		25 06 113	Insulator, Suspension, 69kV		-	-	2	2
	B	25 05 203	Insulator, Vertical L.P., 34kV, F-Neck		-	1	-	-
		25 05 098	Insulator, Vertical L.P., 69kV, F-Neck		-	-	1	-
	C	23 06 021	Bracket, Pole Top		-	1	1	-
	D	23 65 018	Eyenuit, 3/4"		1	1	1	1
	E	23 59 095	Eyelet, 3/4"		1	1	1	1
	F	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		-	3	3	-
	G	23 66 031	Washer, Curved, Square, 3/4"		1	3	3	1
	H	23 66 135	Lock Washer - 3/4" Double Coil		1	3	3	1
	I	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		-	2	2	-
	J	23 64 008	Stud, 3/4" x 1-3/4"		-	1	1	-
	K	23 68 181	Shackle - Deadend		-	-	2	2
	L	PG*W	Clamp, Parallel Groove		2	2	2	2
	M	DEC*W	Clamp, Deadend		2	2	2	2

DESIGN NOTE(s):

18. In 34kV industrial atmosphere where experience shows possible problems, use 69kV installation.

19. If extension is needed for clearance purposes, insert strain insulator (Stock #25 56 076) between eyelet and deadend insulator, except on slack span applications use DA bolt (Stock #23 53 072).

20. Working load of suspension insulator = 7500 lb.



DCS #	DESCRIPTION
06 34 68 05	34kV Double Deadend Loopover
06 34 68 07	69kV Double Deadend Loopover
06 34 68 08	34kV Double Deadend on Arm
06 34 68 10	69kV Double Deadend on Arm
06 34 68 11	34kV Single Deadend on Arm
06 34 68 12	69kV Single Deadend on Arm
06 34 68 13	34kV Double Deadend Loopunder
06 34 68 14	69kV Double Deadend Loopunder



INSULATORS AND SUPPORTS

Deadends & Loops on Fiberglass Crossarms

06 34 68 **
35kV, 69kV
2 of 2

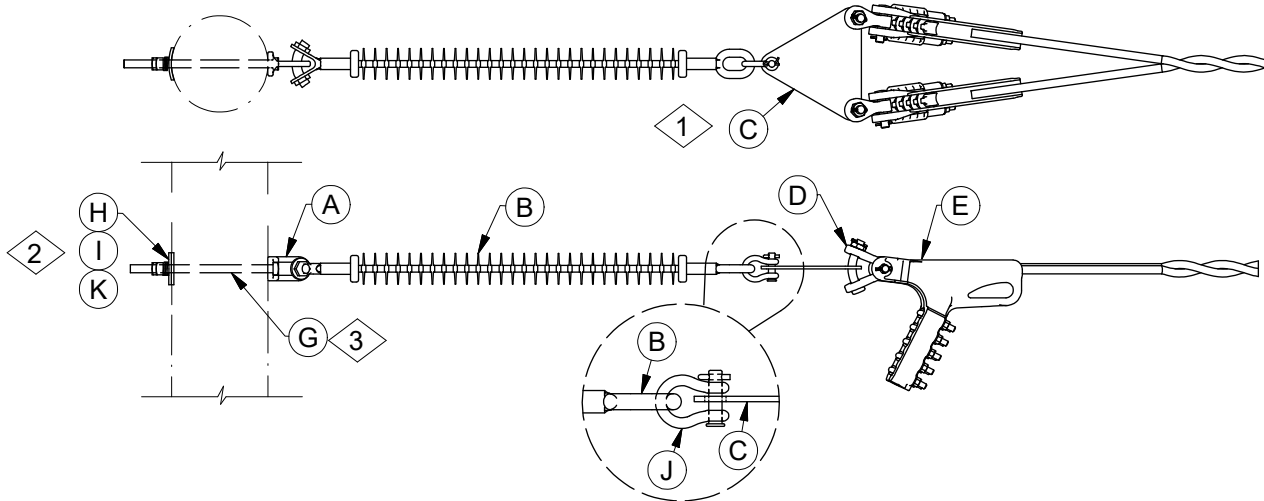
CONSTRUCTION NOTE(s):

1. FG crossarms come with eyenuts for deadend applications on the two outside positions. When deadending on the inside two positions on the FG crossarm, use Stock #23 65 012 (5/8" eyenut), Stock #23 52 318 (5/8" x 6" machine bolt), and Stock #23 59 005 (5/8" eyelet).

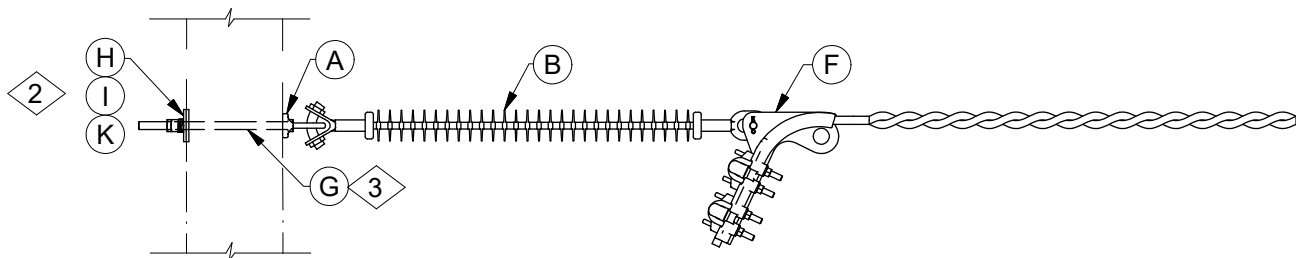
	ITEM	STK / DCS #	DESCRIPTION	06 34 68 **	05	07	08	10	11	12	13	14
@ @	A	25 06 113	Insulator, Suspension, 69kV	-	2	-	2	-	1	-	2	
		25 06 053	Insulator, Suspension, 34kV	2	-	2	-	1	-	2	-	
	B	25 05 098	Insulator, Vertical L.P., 69kV, F-Neck	-	1	-	-	-	-	-	-	
		25 05 203	Insulator, Vertical L.P., 34kV, F-Neck	1	-	-	-	-	-	-	-	
	C	23 64 023	Stud, 3/4" x 7" w/ hardware	1	1	-	-	-	-	-	-	
	D	23 66 132	Washer, Flat, Sq., 4" x 4", w/ 13/16" Hole	2	2	-	-	-	-	-	-	
	E	23 68 181	Shackle - Deadend	-	2	-	2	-	1	-	2	
	F	PG*W	Clamp, Parallel Groove	2	2	-	-	-	-	1	1	
	G	DEC*W	Clamp, Deadend	2	2	2	2	1	1	2	2	

DESIGN NOTE(s):

2. In 34kV industrial atmosphere where experience shows possible problems, use 69kV installation.
3. If extension is needed for clearance purposes, insert strain insulator (Stock #25 56 076) between eyelet and deadend insulator.
4. Only to be used for recloser bypass to mount disconnect switches.
5. Working load of 34kV deadend insulator = 7,500 lbs.
Working load of 69kV deadend insulator = 12,500 lbs.
6. Slack span Maximum = 1,000 lbs Tension.



06 34 73 02



06 34 73 (03 & 04)

DCS #	DESCRIPTION
06 34 73 02	T2-954 (45/7) ACSR (Rail)
06 34 73 03	T2-4/0 (6/1) ACSR (Penguin) - 69kV
	T2-336.4 (6/1) ACSR (Merlin) - 69kV
	T2-556 (19) AAC (Dahlia) - 69kV
06 34 73 04	T2-4/0 (6/1) ACSR (Penguin) - 34kV
	T2-336.4 (6/1) ACSR (Merlin) - 34kV
	T2-556 (19) AAC (Dahlia) - 34kV

CONSTRUCTION NOTE(s):

1. Yoke plate not required for sizes other than 954 (45/7) ACSR (Rail).
2. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
3. Use longer machine bolts for larger wood or composite poles if required.



INSULATORS AND SUPPORTS

T2 Standard Conductors - Deadends

06 34 73 **

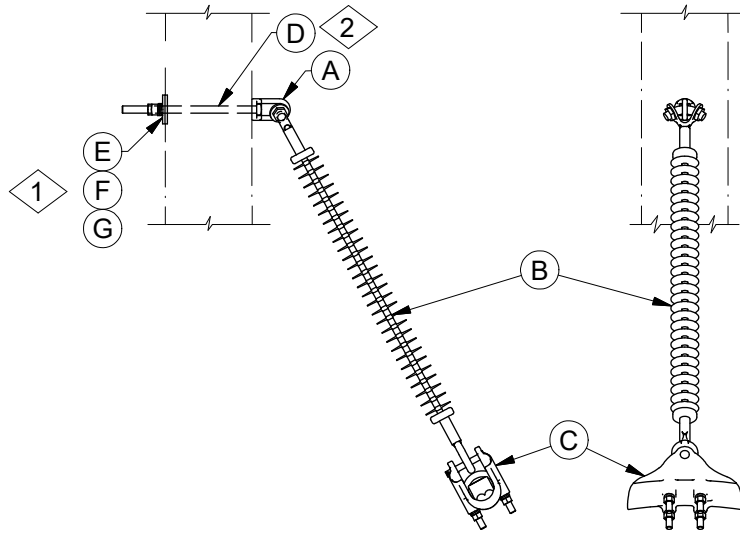
35kV, 69kV

2 of 2

1 2,3	ITEM	STK / DCS #	DESCRIPTION	06 34 73 **	02	03	04
	A	23 59 095	Eyelet, 3/4"		1	1	1
	B	25 06 113	Insulator, Suspension, 69kV		1	1	-
		25 06 053	Insulator, Suspension, 34kV		-	-	1
	C	23 67 388	Plate, Yoke, Triangular		1	-	-
	D	23 58 134	Wye-Clevis - Eye		2	-	-
	E	23 18 436	Clamp, Deadend, Quadrant Style		2	-	-
	F	23 18 406	Clamp, Deadend, T2, Double Groove		-	1	1
	G	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		1	1	1
	H	23 66 031	Washer, Curved, Square, 3/4"		1	1	1
	I	23 66 135	Lock Washer - 3/4" Double Coil		1	1	1
	J	23 68 181	Shackle - Deadend		1	-	1
	K	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		1	1	1

DISTRIBUTION CONSTRUCTION STANDARDS

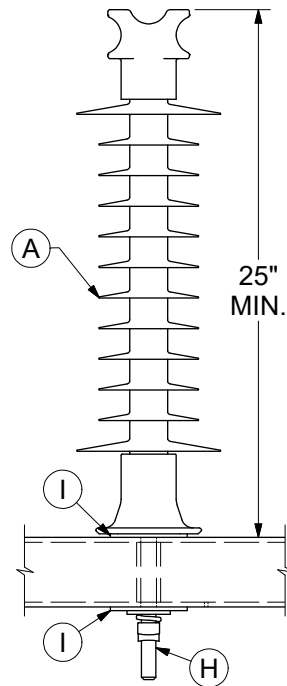
REV	DATE	ENG	DESCRIPTION
1	07/01/21	NH	Title change; Added 06 34 72 04, notes 2 & 3, description table
0	03/28/16	KSP	



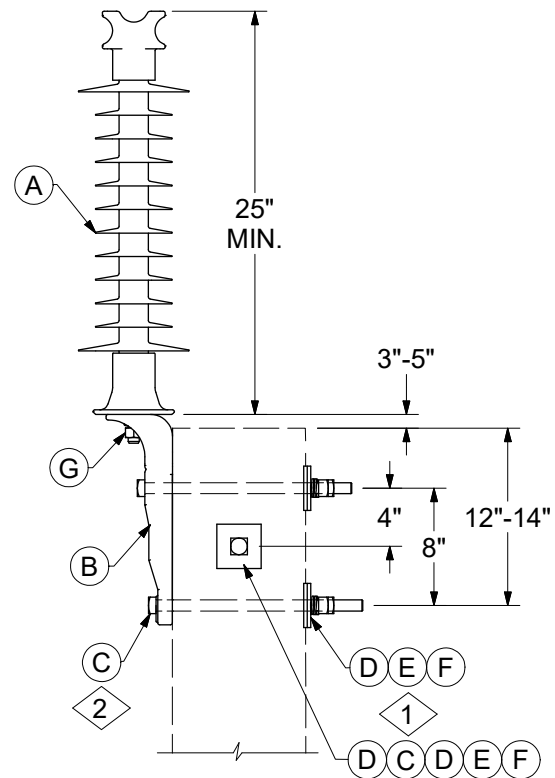
CONSTRUCTION NOTE(s):

1. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Machine bolts are furnished with 1 square nut and DA bolts are furnished with 4 square nuts.
2. Use longer machine bolts for larger wood or composite poles if required.

	ITEM	STK / DCS #	DESCRIPTION	06 34 74 **	01	02	03	04
3 1,2	A	23 59 095	Eyelet, 3/4"		1	1	1	1
	B	25 06 113	Insulator, Suspension, 69kV		1	1	1	1
	C	23 78 455	Clamp, Suspension, T2, 4/0 ACSR		1	-	-	-
		23 78 456	Clamp, Suspension, T2, 336 ACSR		-	1	-	-
		17 02 176	Clamp, Suspension, T2, 556 AAC		-	-	1	-
		23 78 451	Clamp, Suspension, T2, 954 (45/7 ACSR (Rail)		-	-	-	1
	D	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		1	1	1	1
	E	23 66 031	Washer, Curved, Square, 3/4"		1	1	1	1
	F	23 66 135	Lock Washer - 3/4" Double Coil		1	1	1	1
	G	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		1	1	1	1



06 69 01 (01, 02 & 03)
Cross Arm Mounting



06 69 01 (04, 05 & 06)
Pole Top Mounting

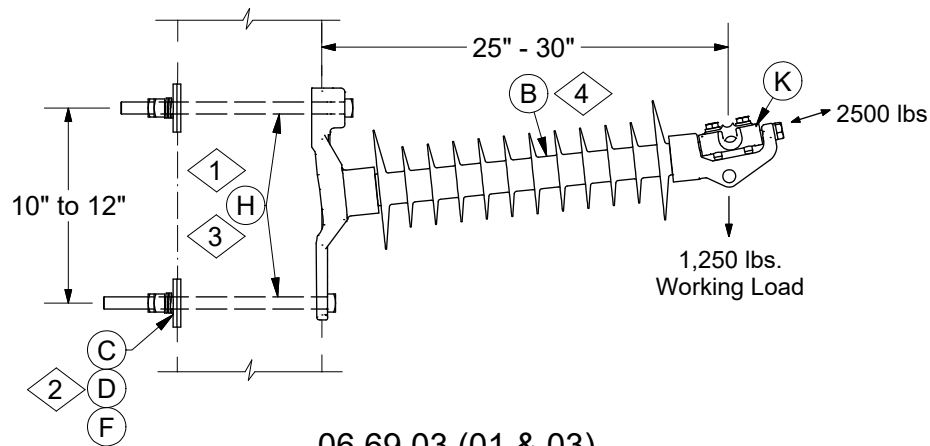
CONSTRUCTION NOTE(s):

1. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
2. Use longer machine bolts for larger wood or composite poles if required.

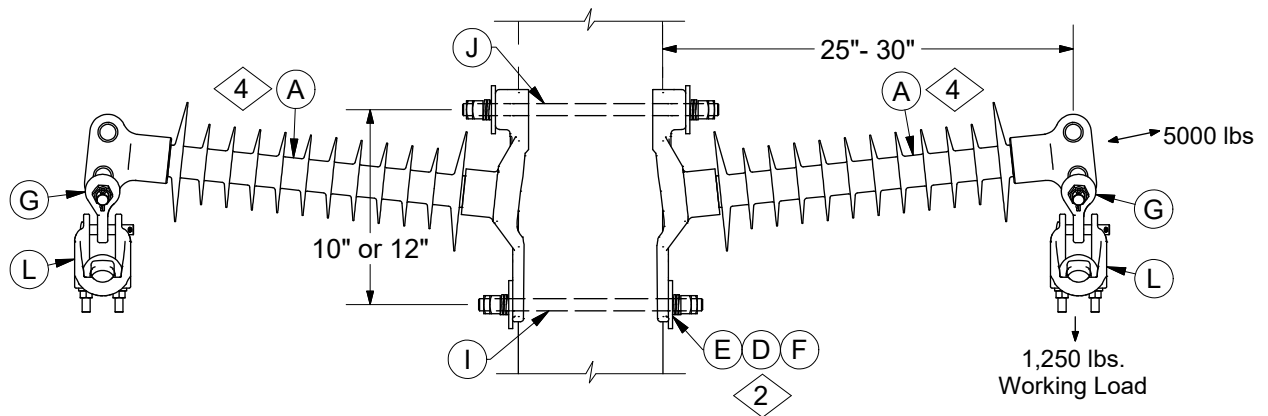
	ITEM	STK / DCS #	DESCRIPTION	06 69 01 **					
				01	02	03	04	05	06
1,2	A	25 05 219	Insulator, Vertical L.P., 69kV, Universal Clamptop	-	-	1	-	-	1
		25 05 227	Insulator, Vertical L.P., 69kV, Clamptop	-	1	-	-	1	-
		25 05 098	Insulator, Vertical L.P., 69kV, F-Neck	1	-	-	1	-	-
	B	23 06 021	Bracket, Pole Top	-	-	-	1	1	1
	C	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut	-	-	-	3	3	3
	D	23 66 031	Washer, Curved, Square, 3/4"	-	-	-	4	4	4
	E	23 66 135	Lock Washer - 3/4" Double Coil	-	-	-	3	3	3
	F	23 65 042	Nut, Locking, Square, Galvanized, 3/4"	-	-	-	3	3	3
	G	23 64 008	Stud, 3/4" x 1-3/4"	-	-	-	1	1	1
	H	23 64 023	Stud, 3/4" x 7" w/ hardware	1	1	1	-	-	-
@	I	23 66 132	Washer, Flat, Sq., 4" x 4", w/ 13/16" Hole	2	2	2	-	-	-
	J	TC*W	Clamp, Trunnion	-	1	-	-	1	-

DESIGN NOTE(s):

3. On angle poles, install insulator on side of pole that pulls bracket against pole.



06 69 03 (01 & 03)



06 69 03 (02 & 04)

DCS #	DESCRIPTION
06 69 03 01	Polymer Insulators for use w/ Suspension Clamp (SINGLE)
06 69 03 02	Polymer Insulators for use w/ Suspension Clamp (DOUBLE)
06 69 03 03	Polymer Insulators for use w/ Trunnion Clamp (SINGLE)
06 69 03 04	Polymer Insulators for use w/ Trunnion Clamp (DOUBLE)

CONSTRUCTION NOTE(s):

1. Reverse bolt position if guy wire is attached to bottom bolt.
2. Assemble items in order listed. Square nut provided with bolt is used after double coil washer. Double coil washer not needed on composite poles. Lock nuts must be placed after nut included with bolt stock number.
3. Use longer machine bolts for larger wood or composite poles if required.

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
5	07/01/21	NH	Title change; Added notes 2-4, description table
4	09/10/13	MJ	



INSULATORS AND SUPPORTS

Horizontal Line Post Insulators

06 69 03 **

69kV

2 of 2

	ITEM	STK / DCS #	DESCRIPTION	06 69 03 **	01	02	03	04
4	A	25 05 184	Insulator, Horizontal L.P., 69kV, Suspension		1	2	-	-
4	B	25 05 095	Insulator, Horizontal L.P., 69kV, Clamptop		-	-	1	2
	C	23 66 031	Washer, Curved, Square, 3/4"		2	-	2	-
	D	23 66 135	Lock Washer - 3/4" Double Coil		2	4	2	4
	E	23 66 030	Washer, 3/4" Square		-	4	-	4
	F	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		2	4	2	4
	G	23 58 088	Wye Clevis-Eye, 3/4" Pin Dia.		1	2	-	-
2,3	H	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		2	-	2	-
	I	23 53 070	Bolt, DA, 3/4" Dia x 14" w/ 4 square nuts		-	1	-	1
	J	23 53 058	Bolt, DA, 3/4" Dia x 16" w/ 4 square nuts		-	1	-	1
@	K	TC*W	Clamp, Trunnion		-	-	1	2
@	L	SC*W	Clamp, Suspension		1	2	-	-

DESIGN NOTE(s):

4. Clamptop style insulators may be used in both compression and tension applications, and the suspension style insulators should be used in tension applications within allowable line angles.

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
5	07/01/21	NH	Title change; Added notes 2-4, description table
4	09/10/13	MJ	