

# SWITCHING

## INTRODUCTION

1. All group-operated switches installed shall be load-break. The interrupters are now included with the plates and no longer need to be itemized as in the past. Arresters shall no longer be mounted on vertical group-operated switches, but on the side of the pole at each phase location due to arrester failures that have caused the switch itself to flashover.
2. Hook disconnect switches shall be identified using the identification plates GN and GNC.
3. All jumpers to switches shall be aluminum and not copper, unless the primary feeding the switch is copper. The jumpers shall be of equal size (AWG) as the primary conductors feeding the switch. Switch plates, both group-operated and hook disconnect, include bolted terminal connectors that are tin-plated and will accommodate all wire sizes, either CU or AL, used on the JEA distribution system. Also included with the switch plates, are a bag of stainless steel terminal bolts and a squeeze bottle of inhibitor. These connectors and bolts shall be used as the means of making terminations to switches even if a terminal connector supplied by the switch manufacturer is present. It is also very important that the inhibitor supplied with the switch plates be used liberally at all connections to minimize oxidation.
4. All group-operated switch handles shall be effectively grounded. The operating pipe shall be grounded using the grounding strap supplied with the switch. This strap shall be installed on the pipe near the system neutral and shall be bonded to it. The switch handle shall be effectively grounded using #4 CU and bonding it to the pole grounding loop found near the groundline.
5. Where #4 CU jumpers from arresters to aluminum switch jumpers are made, the appropriate high-strength aluminum alloy hot-line clamp (CLA AR 001, 002, or 003) shall be used. This is the only application for which these clamps are to be used.
6. As a normal practice, the switch operating handle for group-operated switches should always be installed on the side of the pole away from the flow of vehicular traffic. However, under certain circumstances this may not be practical or the best arrangement for the particular situation.
7. The plate DS1S is to be used for moving the operating pipe of older existing switches to the side of the pole. It is not necessary for new installations.
8. Included with the vertical group-operated switch are three jumper pin brackets. These brackets allow a 34.5kV post insulator to be mounted on the switch to be used as a primary conductor

support for large feeder risers. If no risers are present, these brackets are not necessary and should not be installed on the switch.

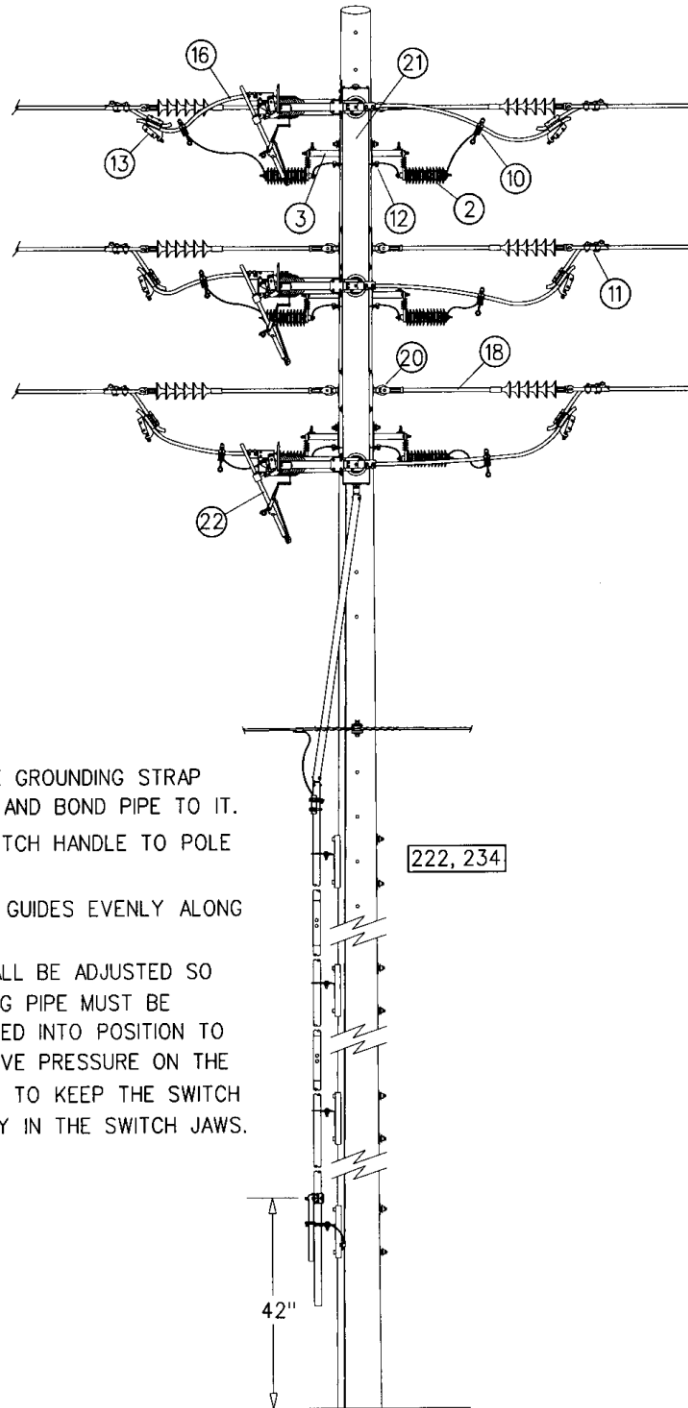
9. All switch plates are unshielded. If a shield is required, it must be itemized.
10. Guy breakers (INS GB 002 & 008) and fiberglass extension links (INS FE 001) should be installed on double deadends of different size conductors
11. Hook and group switches shall be installed on either a 50/2W or 50/HC pole. If this is not possible due to clearance requirements, a group switch may be installed on a maximum 60 ft pole.
12. All plates in this section include the pre-crimped aluminum jumper CNN JU 001, which includes 8 ft of 636 AAC crimped to a 2 hole pad. The pad-to-pad connection shall be torqued to 40 ft-lbs. This assembly replaces the old bolted pad connectors.
13. The ANTENNA plate has been added to the following plates: AS-TSE, AS-TSH

**DS1-5****VERTICAL GROUP-OPERATED SWITCH – 26.4KV – UNSHIELDED**

OPTIONS: 3/0, 336, 636

BOLT PLATE: NONE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADC MI 007	1	COMPOUND, INHIBITING, 4 OZ. SQUEEZE BOTTLE
2	ARR LI 003	6	ARRESTER, LIGHTNING, POLYMER, 21kV
3	BKT RP 001	6	BRACKET, RISER POLE ARRESTER
4	BOL DA 014	2	BOLT, DOUBLE ARMING, 3/4X12
5	BOL DA 015	4	BOLT, DOUBLE ARMING, 3/4X14
6	BOL DA 016	4	BOLT, DOUBLE ARMING, 3/4X16
7	BOL MS 036	4	BOLT, MACHINE, SQUARE HEAD, 3/4X14
8	BOL MS 037	2	BOLT, MACHINE, SQUARE HEAD, 3/4X16
9	BOL TE 001	12	BOLT, TERMINAL KIT, S.S. BOLT, WASHERS, S.B. NUT
10	CLA AR ***	6	GENERAL CODE FOR ARRESTER HOT-LINE CLAMP
11	CLA SS ***	6	GENERAL CODE FOR STRAIGHT STRAIN CLAMP
12	CLA TG 001	6	CLAMP, TRANSFORMER TANK GROUND, 6 SOL. - #1 STR.
13	CNN TA ***	6	GENERAL CODE FOR BOLTED TAP CONNECTOR
14	CNN TE 047	6	CONNECTOR, TERMINAL, BOLTED, 2/0-800 MCM CU OR AL
15	CNN VG 003	8	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
16	CNN JU 001	6	PRE-CRIMPED JUMPER, 636AAC, 8 FT, 2 HOLE PAD
17	COB CO 028	25	CONDUCTOR, BARE COPPER, #4 SOFT DRAWN
18	INS CO 001	6	34.5KV POLYMER DEADEND INSULATOR
19	INS FE 001	6	FIBERGLASS EXTENSION LINK, 24"
19	LOC PA 001	1	PADLOCK, ALL BRASS, 1-3/4 IN. SHANK OPENING
20	NUT EY 003	6	NUT, EYE, 3/4
21	SWE GR 002	1	SWITCH, GROUP-OPERATED, 34.5kv, VERTICAL MOUNT
23	WAS RD 005	35	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
24	WAS SF 003	13	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. BOLT
25	WAS SP 002	16	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT
26	BOL AN 003	6	BOLT, ANCHOR, ROTANIUM, 3/4 IN. X 5-1/2 IN. LONG

**DS1-5****VERTICAL GROUP-OPERATED SWITCH – 26.4KV – UNSHIELDED**

## NOTES:

- 1) INSTALL PIPE GROUNDING STRAP NEAR NEUTRAL AND BOND PIPE TO IT.
- 2) GROUND SWITCH HANDLE TO POLE GROUND WIRE.
- 3) SPACE PIPE GUIDES EVENLY ALONG POLE.
- 4) HANDLE SHALL BE ADJUSTED SO THAT THE SWING PIPE MUST BE SLIGHTLY FORCED INTO POSITION TO MAINTAIN POSITIVE PRESSURE ON THE OPERATING PIPE TO KEEP THE SWITCH BLADES TIGHTLY IN THE SWITCH JAWS.

## DS1R-5

**VERTICAL GROUP-OPERATED SWITCH – FEEDER RISER – 26.4KV – UNSHIELDED**

**DEADEND**

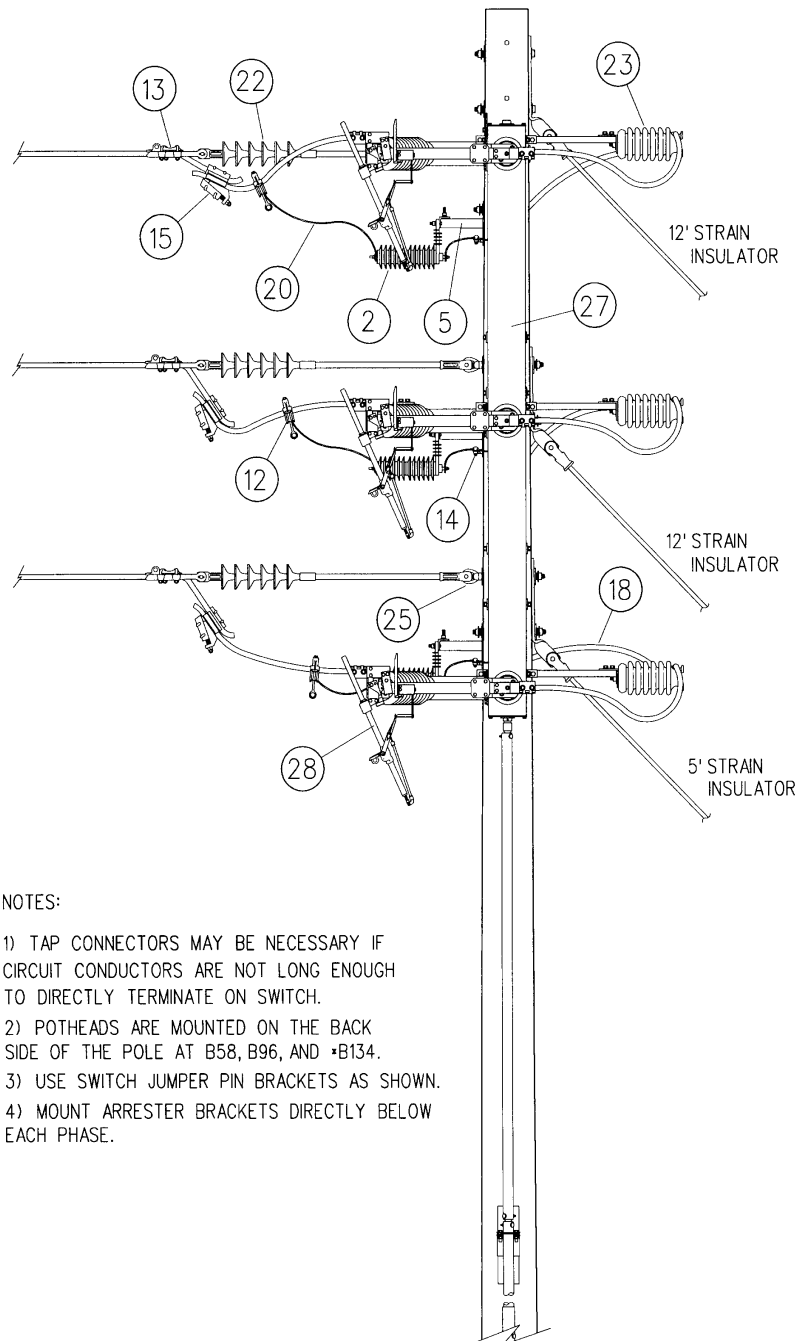
**OPTIONS: 3/0, 336, 636**

**BOLT PLATE: NONE**

NO.	ITEM ID	QTY	DESCRIPTION
1	ADC MI 007	1	COMPOUND, INHIBITING, 4 OZ. SQUEEZE BOTTLE
2	ARR LI 014	3	ARRESTER, LIGHTNING, POLYMER, 21KV, RISER POLE
3	BKT EM 001	3	BRACKET, EQUIPMENT MOUNTING, POTHEAD
4	BKT EM 002	3	BRACKET, EQUIPMENT MOUNTING, POTHEAD (SINGLE)
5	BKT RP 001	3	BRACKET, RISER POLE ARRESTER
6	BOL DA 015	2	BOLT, DOUBLE ARMING, 3/4X14
7	BOL DA 016	4	BOLT, DOUBLE ARMING, 3/4X16
8	BOL MS 020	3	BOLT, MACHINE, SQUARE HEAD, 5/8X14
9	BOL MS 036	4	BOLT, MACHINE, SQUARE HEAD, 3/4X14
10	BOL MS 037	4	BOLT, MACHINE, SQUARE HEAD, 3/4X16
11	BOL TE 001	12	BOLT, TERMINAL KIT, S.S. BOLT, WASHERS, S.B. NUT
12	CLA AR ***	3	GENERAL CODE FOR ARRESTER HOT-LINE CLAMP
13	CLA SS ***	3	GENERAL CODE FOR STRAIGHT STRAIN CLAMP
14	CLA TG 001	3	CLAMP, TRANSFORMER TANK GROUND, 6 SOL. - #1 STR.
15	CNN TA ***	3	GENERAL CODE FOR BOLTED TAP CONNECTOR
16	CNN TE 047	6	CONNECTOR, TERMINAL, BOLTED, 2/0-800 MCM CU OR AL
17	CNN VG 003	3	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
18	COB CO ***	36	GENERAL CODE FOR COPPER CONDUCTOR
19	CNN JU 001	6	PRE-CRIMPED JUMPER, 636AAC, 8 FT, 2 HOLE PAD
20	COB CO 028	16	CONDUCTOR, BARE COPPER, #4 SOFT DRAWN
21	GUY AT 004	3	GUY, ATTACHMENT, 20,000 LBS.
22	INS CO 001	3	34.5KV POLYMER DEADEND INSULATOR
23	INS FE 001	6	FIBERGLASS EXTENSION LINK, 24"
24	INS VP 001	3	INSULATOR, VERTICAL POST, 34.5kv
25	LOC PA 001	1	PADLOCK, ALL BRASS, 1-3/4 IN. SHANK OPENING
26	NUT EY 003	3	NUT, EYE, 3/4
27	STU LI 001	3	STUD, LINE POST, 3/4 IN. DIA. HEAD, 1-3/4 IN. SHANK
28	SWE GR 002	1	SWITCH, GROUP-OPERATED, 34.5kv, VERTICAL MOUNT
30	WAS RD 004	5	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
31	WAS RD 005	24	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
32	WAS SF 003	12	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. BOLT
33	WAS SP 002	12	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT
34	BOL AN 003	6	BOLT, ANCHOR, ROTANIUM, 3/4 IN. X 5-1/2 IN. LONG

## DS1R-5

VERTICAL GROUP-OPERATED SWITCH – FEEDER RISER – 26.4KV –  
UNSHIELDED  
DEADEND



### NOTES:

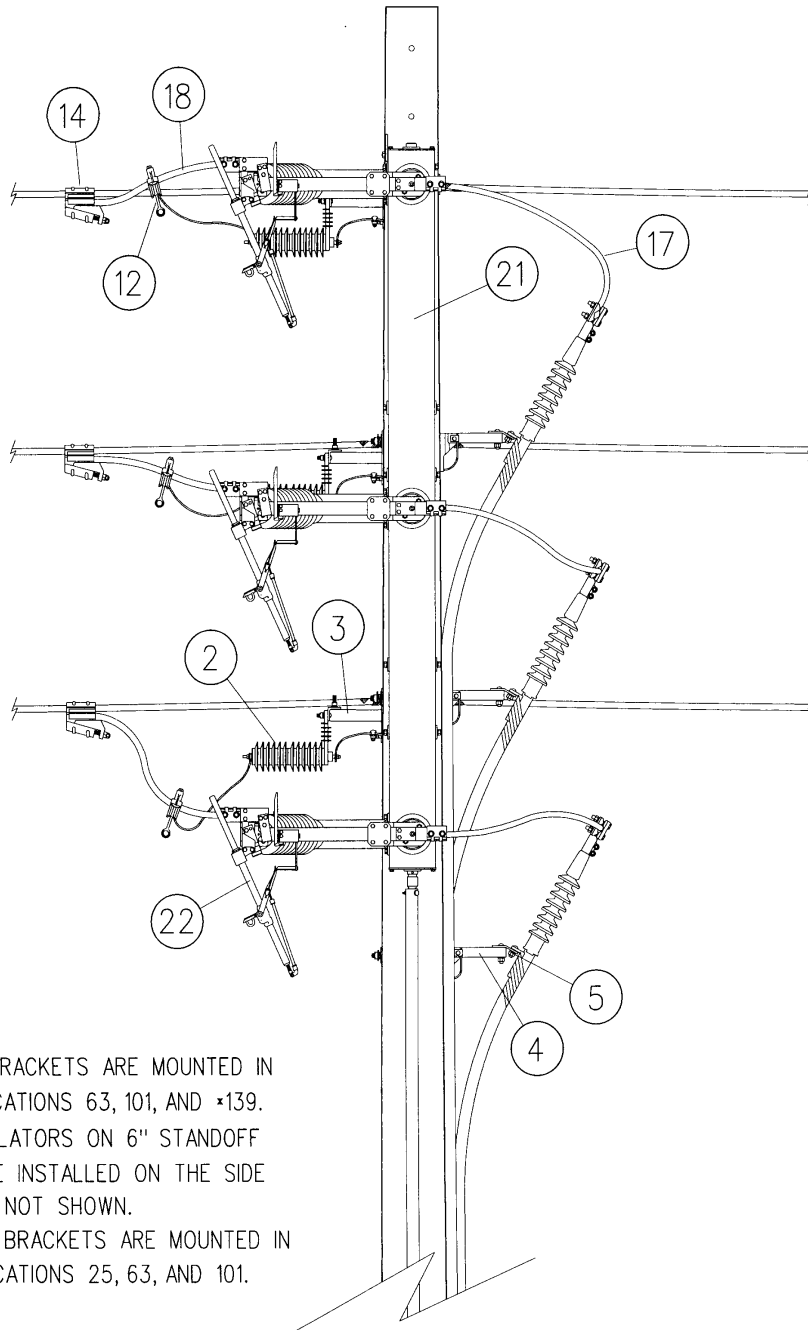
- 1) TAP CONNECTORS MAY BE NECESSARY IF CIRCUIT CONDUCTORS ARE NOT LONG ENOUGH TO DIRECTLY TERMINATE ON SWITCH.
- 2) POTHEADS ARE MOUNTED ON THE BACK SIDE OF THE POLE AT B58, B96, AND •B134.
- 3) USE SWITCH JUMPER PIN BRACKETS AS SHOWN.
- 4) MOUNT ARRESTER BRACKETS DIRECTLY BELOW EACH PHASE.

**DS1RT-5****VERTICAL GROUP-OPERATED SWITCH – FEEDER RISER – 26.4KV – UNSHIELDED****TANGENT****OPTIONS: 3/0, 336, 636****BOLT PLATE: NONE**

NO.	ITEM ID	QTY	DESCRIPTION
1	ADC MI 007	1	COMPOUND, INHIBITING, 4 OZ. SQUEEZE BOTTLE
2	ARR LI 014	3	ARRESTER, LIGHTNING, POLYMER, 21KV, RISER POLE
3	BKT RP 001	3	BRACKET, RISER POLE ARRESTER
4	BKT EM 001	3	BRACKET, EQUIPMENT MOUNTING, POTHEAD
5	BKT EM 002	3	BRACKET, EQUIPMENT MOUNTING, POTHEAD (SINGLE)
6	BOL DA 015	4	BOLT, DOUBLE ARMING, 3/4X14
7	BOL MS 020	3	BOLT, MACHINE, SQUARE HEAD, 5/8X14
8	BOL MS 035	1	BOLT, MACHINE, SQUARE HEAD, 3/4X12
9	BOL MS 036	4	BOLT, MACHINE, SQUARE HEAD, 3/4X14
10	BOL MS 037	2	BOLT, MACHINE, SQUARE HEAD, 3/4X16
11	BOL TE 001	12	BOLT, TERMINAL KIT, S.S. BOLT, WASHERS, S.B. NUT
12	CLA AR ***	3	GENERAL CODE FOR ARRESTER HOT-LINE CLAMP
13	CLA TG 001	3	CLAMP, TRANSFORMER TANK GROUND, 6 SOL. - #1 STR.
14	CNN TA ***	3	GENERAL CODE FOR BOLTED TAP CONNECTOR
15	CNN TE 047	6	CONNECTOR, TERMINAL, BOLTED, 2/0-800 MCM CU OR AL
16	CNN VG 003	6	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
17	COB CO ***	24	GENERAL CODE FOR COPPER CONDUCTOR
18	CNN JU 001	6	PRE-CRIMPED JUMPER, 636AAC, 8 FT, 2 HOLE PAD
19	COB CO 028	16	CONDUCTOR, BARE COPPER, #4 SOFT DRAWN
20	INS FE 001	6	FIBERGLASS EXTENSION LINK, 24"
21	LOC PA 001	1	PADLOCK, ALL BRASS, 1-3/4 IN. SHANK OPENING
22	SWE GR 002	1	SWITCH, GROUP-OPERATED, 34.5kv, VERTICAL MOUNT
23	SWE IN 002	3	INTERUPTER, LOADBREAK (BRIDGES SWITCH)
24	WAS RD 004	5	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
25	WAS RD 005	14	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
26	WAS SF 003	5	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. BOLT
27	WAS SP 002	7	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT
28	BOL AN 003	6	BOLT, ANCHOR, ROTANIUM, 3/4 IN. X 5-1/2 IN. LONG

# DS1RT-5

VERTICAL GROUP-OPERATED SWITCH – FEEDER RISER – 26.4KV –  
UNSHIELDED  
TANGENT



NOTES:

- 1) POTHEAD BRACKETS ARE MOUNTED IN THE HOLE LOCATIONS 63, 101, AND \*139.
- 2) POST INSULATORS ON 6" STANDOFF BRACKETS ARE INSTALLED ON THE SIDE OF THE POLE NOT SHOWN.
- 3) ARRESTER BRACKETS ARE MOUNTED IN THE HOLE LOCATIONS 25, 63, AND 101.



**DS2-5****HORIZONTAL GROUP-OPERATED SWITCH – 26.4KV – UNSHIELDED**

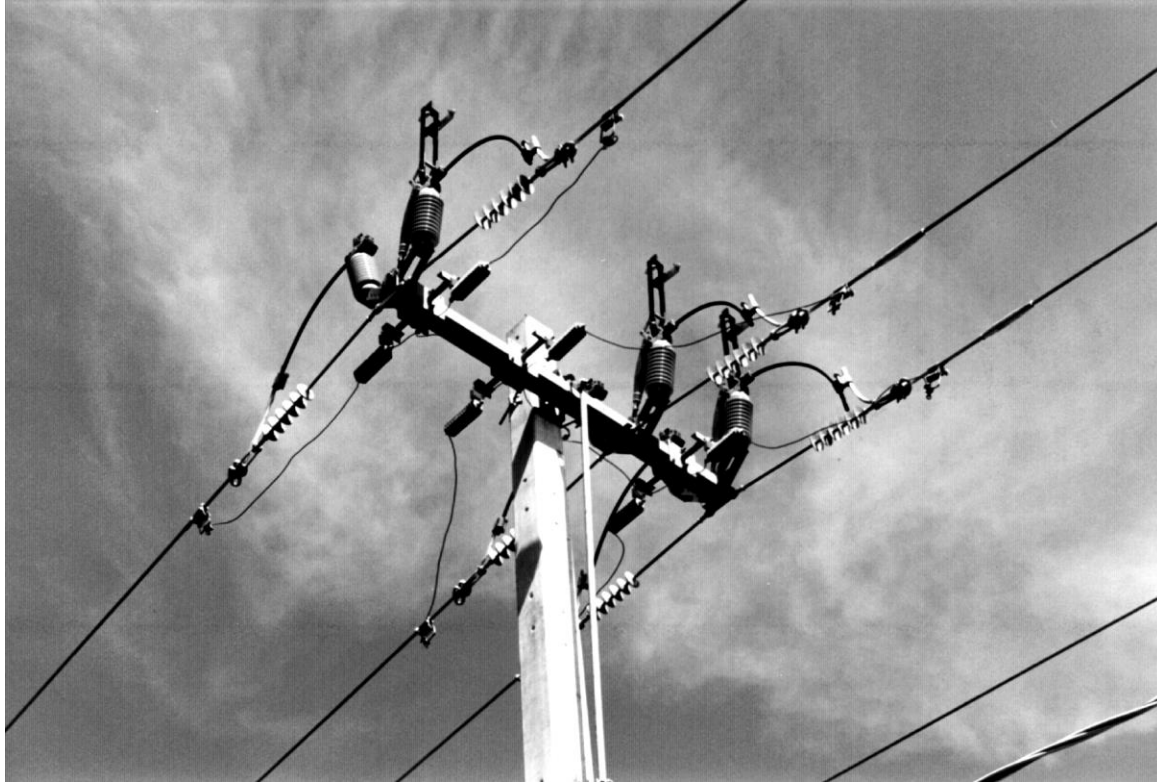
OPTIONS: 3/0, 336, 636

BOLT PLATE: NONE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADC MI 007	1	COMPOUND, INHIBITING, 4 OZ. SQUEEZE BOTTLE
2	ARR LI 003	6	ARRESTER, LIGHTNING, POLYMER, 21kV
3	BKT AC 003	6	ARRESTER, CUTOUT AND ARRESTER, CROSSARM MOUNT
4	BOL MS 020	4	BOLT, MACHINE, SQUARE HEAD, 5/8X14
5	BOL MS 021	2	BOLT, MACHINE, SQUARE HEAD, 5/8X16
6	BOL MS 022	2	BOLT, MACHINE, SQUARE HEAD, 5/8X18
7	BOL TE 001	12	BOLT, TERMINAL KIT, S.S. BOLT, WASHERS, S.B. NUT
8	CLA AR ***	6	GENERAL CODE FOR ARRESTER HOT-LINE CLAMP
9	CLA SS ***	6	GENERAL CODE FOR STRAIGHT STRAIN CLAMP
10	CNN TA ***	6	GENERAL CODE FOR BOLTED TAP CONNECTOR
11	CNN TE 047	6	CONNECTOR, TERMINAL, BOLTED, 2/0-800 MCM CU OR AL
12	CNN VG 003	8	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
13	CNN JU 001	6	PRE-CRIMPED JUMPER, 636AAC, 8 FT, 2 HOLE PAD
14	COB CO 028	25	CONDUCTOR, BARE COPPER, #4 SOFT DRAWN
15	INS CO 001	6	34.5KV POLYMER DEADEND INSULATOR
16	INS FE 001	6	FIBERGLASS EXTENSION LINK, 24"
17	LOC PA 001	1	PADLOCK, ALL BRASS, 1-3/4 IN. SHANK OPENING
18	SCW LA 002	1	SCREW, LAG, 1/2X4
19	SWE GR 001	1	SWITCH, GROUP-OPERATED, 34.5kV, HORIZONTAL
21	WAS RD 004	14	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
22	WAS SF 003	8	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. BOLT
23	WAS SP 002	8	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

## **DS2-5**

**HORIZONTAL GROUP-OPERATED SWITCH – 26.4KV – UNSHIELDED**

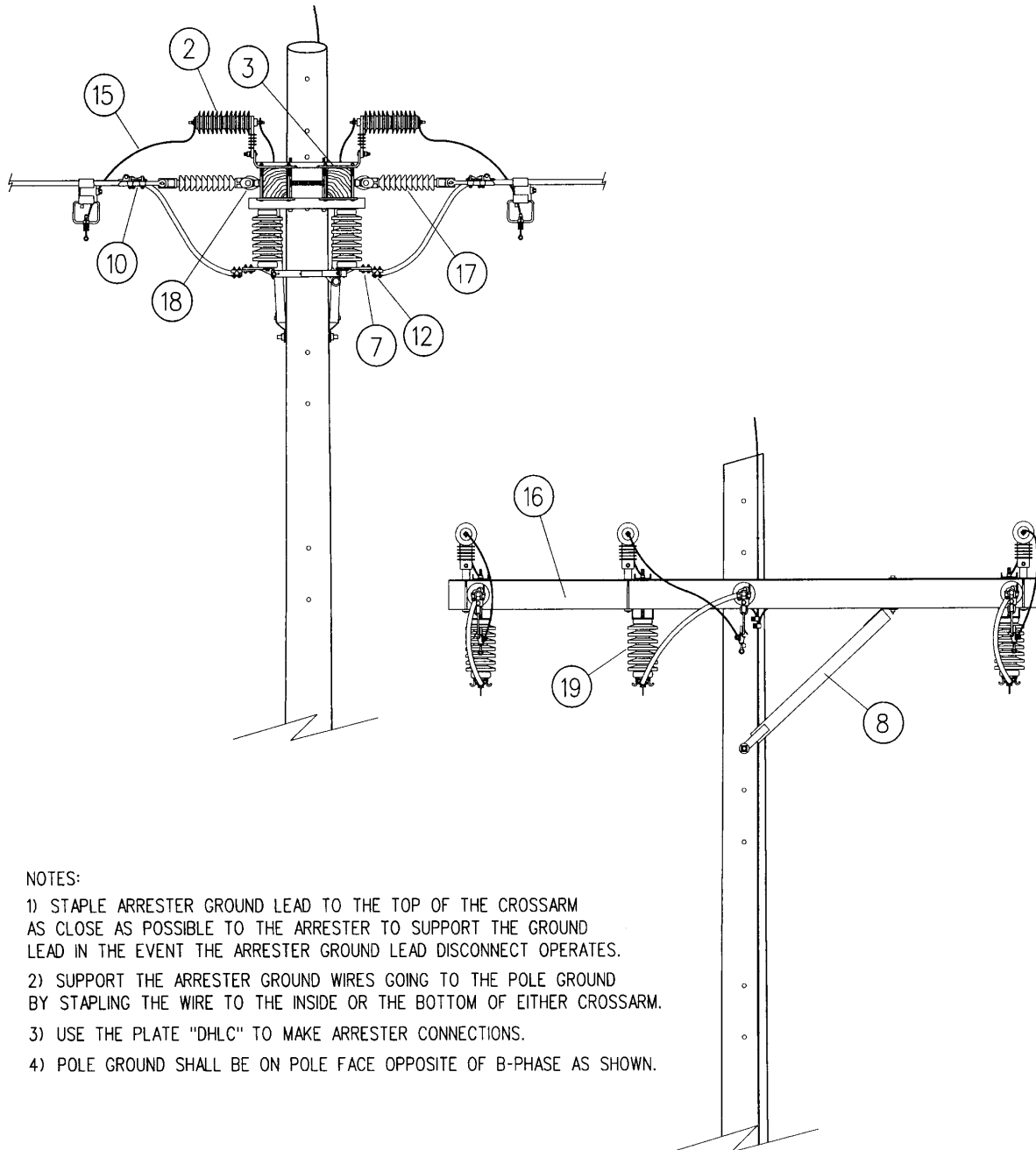


**DS3-5****HOOK DISCONNECT SWITCH – 26.4KV – UNSHIELDED**

OPTIONS: 6CU, 4CU, 2CU, 1/0CU, 2/0CU, 4/0CU, 2, 1/0, 3/0, 336, 636

BOLT PLATE: NONE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADC MI 007	1	COMPOUND, INHIBITING, 4 OZ. SQUEEZE BOTTLE
2	ARR LI 003	6	ARRESTER, LIGHTNING, POLYMER, 21kV
3	BKT AC 003	6	ARRESTER, CUTOUT AND ARRESTER, CROSSARM MOUNT
4	BOL DA 021	3	BOLT, DOUBLE ARMING, 3/4X26
5	BOL MS 002	4	BOLT, MACHINE, SQUARE HEAD, 1/2X7
6	BOL MS 020	4	BOLT, MACHINE, SQUARE HEAD, 5/8X14
7	BOL TE 001	12	BOLT, TERMINAL KIT, S.S. BOLT, WASHERS, S.B. NUT
8	BRC CR 002	1	BRACE, CROSSARM, WOOD, 60 IN. SPAN, 30 IN. DROP (PAIR)
9	CLA AR ***	6	GENERAL CODE FOR ARRESTER HOT-LINE CLAMP
10	CLA SS ***	6	GENERAL CODE FOR STRAIGHT STRAIN CLAMP
11	CNN TA ***	6	GENERAL CODE FOR BOLTED TAP CONNECTOR
12	CNN TE ***	6	GENERAL CODE FOR BOLTED TERMINAL CONNECTOR
13	CNN VG 003	8	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
14	CNN JU 001	6	PRE-CRIMPED JUMPER, 636AAC, 8 FT, 2 HOLE PAD
15	COB CO 028	24	CONDUCTOR, BARE COPPER, #4 SOFT DRAWN
16	CXA FG ***	2	GENERAL CODE FOR FIBERGLASS CROSSARM
17	INS CO 001	6	INSULATOR, COMPOSITE, POLYMER DEADEND
18	INS FE 001	6	FIBERGLASS EXTENSION LINK, 24"
19	NUT EY 003	6	NUT, EYE, 3/4
20	SWE UN 002	3	SWITCH, HOOK DISCONNECT, 26.4kV
21	WAS RD 003	8	WASHER, ROUND, 1-3/8 IN. DIA., FOR 1/2 IN. BOLT
22	WAS RD 004	3	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
23	WAS RD 005	1	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
24	WAS SF 001	4	WASHER, SQUARE, FLAT, 2 IN., FOR 1/2 IN. BOLT
25	WAS SF 003	16	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. BOLT
26	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT
27	WAS SP 003	4	WASHER, SPRING, LEAF, FOR 1/2 IN. BOLT

**DS3-5****HOOK DISCONNECT SWITCH – 26.4KV – UNSHIELDED**

## NOTES:

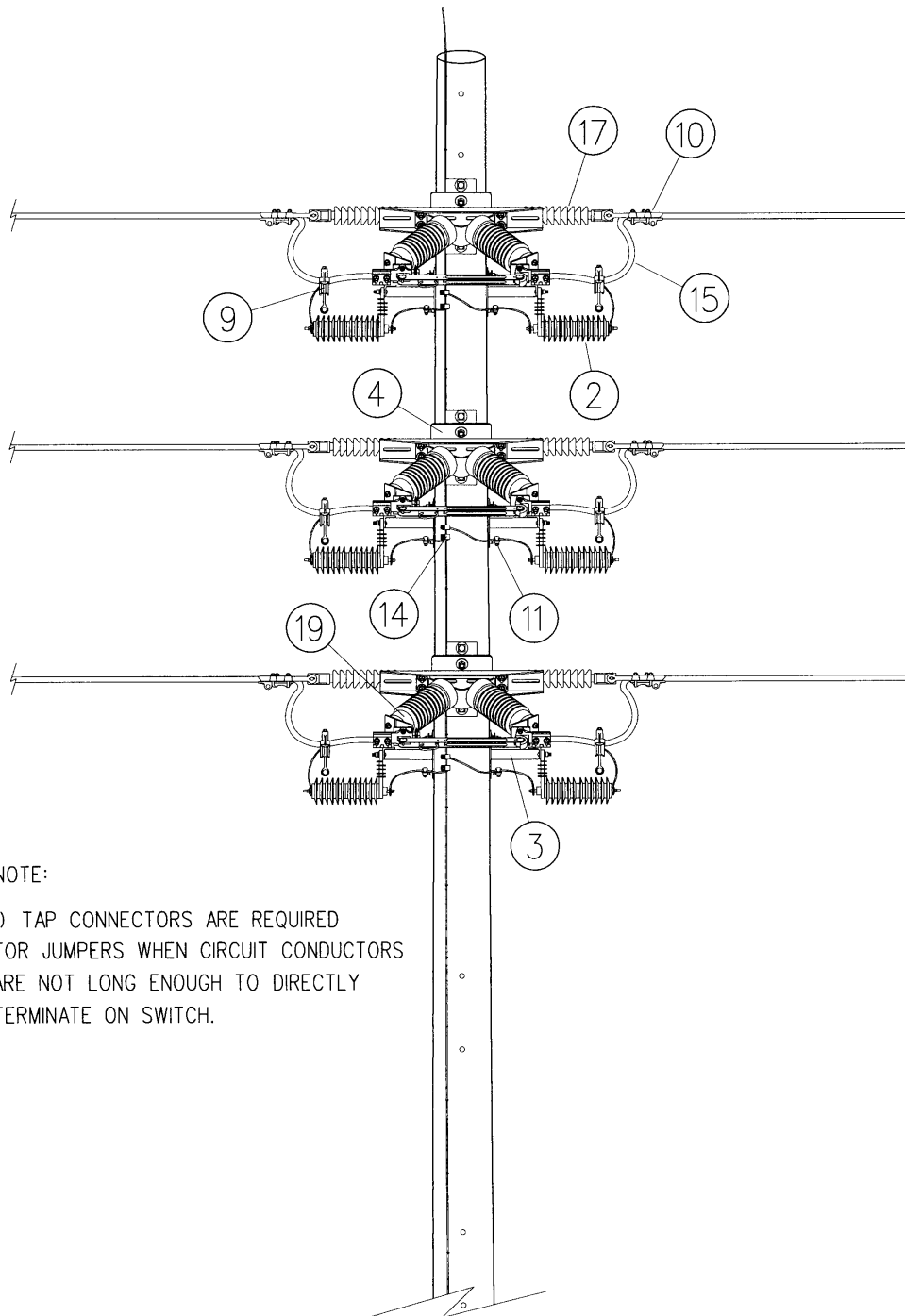
- 1) STAPLE ARRESTER GROUND LEAD TO THE TOP OF THE CROSSARM AS CLOSE AS POSSIBLE TO THE ARRESTER TO SUPPORT THE GROUND LEAD IN THE EVENT THE ARRESTER GROUND LEAD DISCONNECT OPERATES.
- 2) SUPPORT THE ARRESTER GROUND WIRES GOING TO THE POLE GROUND BY STAPLING THE WIRE TO THE INSIDE OR THE BOTTOM OF EITHER CROSSARM.
- 3) USE THE PLATE "DHLC" TO MAKE ARRESTER CONNECTIONS.
- 4) POLE GROUND SHALL BE ON POLE FACE OPPOSITE OF B-PHASE AS SHOWN.

**DS5-5****VERTICAL MOUNT HOOK DISCONNECT SWITCH – 26.4KV – UNSHIELDED**

OPTIONS: 3/0, 336, 636

BOLT PLATE: NONE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADC MI 007	1	COMPOUND, INHIBITING, 4 OZ. SQUEEZE BOTTLE
2	ARR LI 003	6	ARRESTER, LIGHTNING, POLYMER, 21kV
3	BKT RP 001	6	BRACKET, RISER POLE ARRESTER
4	BKT SM 004	3	BRACKET, SWITCH MOUNTING
5	BOL CA 002	6	BOLT, CARRIAGE, 3/8X5
6	BOL DA 016	6	BOLT, DOUBLE ARMING, 3/4X16
7	BOL MS 036	6	BOLT, MACHINE, SQUARE HEAD, 3/4X14
8	BOL TE 001	12	BOLT, TERMINAL KIT, S.S. BOLT, WASHERS, S.B. NUT
9	CLA AR ***	6	GENERAL CODE FOR ARRESTER HOT-LINE CLAMP
10	CLA SS ***	6	GENERAL CODE FOR STRAIGHT STRAIN CLAMP
11	CLA TG 001	6	CLAMP, TRANSFORMER TANK GROUND, 6 SOL. - #1 STR.
12	CNN TA ***	6	GENERAL CODE FOR BOLTED TAP CONNECTOR
13	CNN TE 047	6	CONNECTOR, TERMINAL, BOLTED, 2/0-800 MCM CU OR AL
14	CNN VG 003	8	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
15	CNN JU 001	6	PRE-CRIMPED JUMPER, 636AAC, 8 FT, 2 HOLE PAD
16	COB CO 028	24	CONDUCTOR, BARE COPPER, #4 SOFT DRAWN
17	INS CO 001	6	INSULATOR, COMPOSITE, POLYMER DEADEND
18	INS FE 001	6	FIBERGLASS EXTENSION LINK, 24"
19	NUT EY 003	6	NUT, EYE, 3/4
20	SWE UN 002	3	SWITCH, HOOK DISCONNECT, 26.4kV
21	WAS RD 002	6	WASHER, ROUND, 1 IN. DIA., FOR 3/8 IN. BOLT
22	WAS RD 005	24	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
23	WAS SF 003	12	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. BOLT
24	WAS SP 002	12	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

**DS5-5****VERTICAL MOUNT HOOK DISCONNECT SWITCH – 26.4KV – UNSHIELDED**

NOTE:

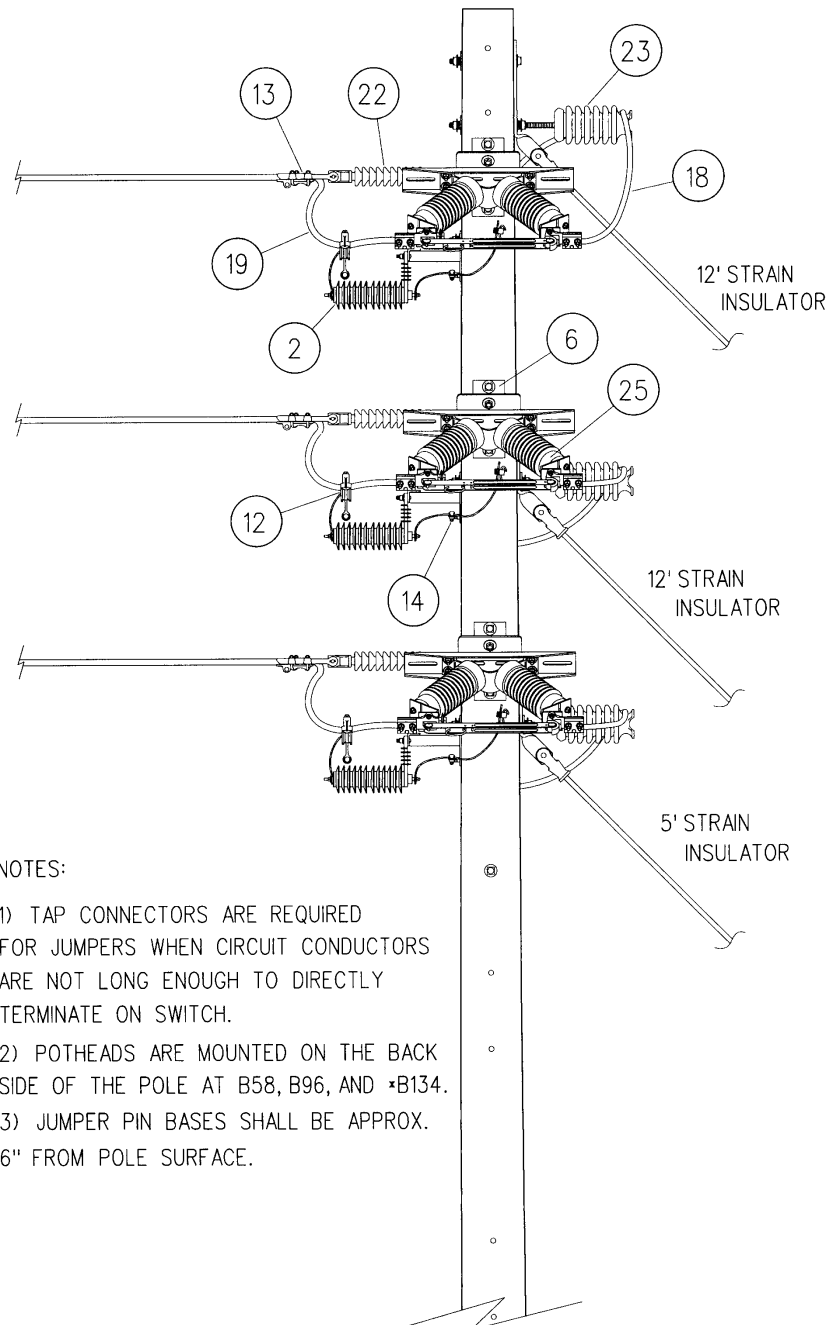
1) TAP CONNECTORS ARE REQUIRED  
FOR JUMPERS WHEN CIRCUIT CONDUCTORS  
ARE NOT LONG ENOUGH TO DIRECTLY  
TERMINATE ON SWITCH.

**DS5R-5****VERTICAL MOUNT HOOK DISCONNECT SWITCH – FEEDER RISER – 26.4KV – UNSHIELDED****DEADEND****OPTIONS: 3/0, 336, 636****BOLT PLATE: NONE**

NO.	ITEM ID	QTY	DESCRIPTION
1	ADC MI 007	1	COMPOUND, INHIBITING, 4 OZ. SQUEEZE BOTTLE
2	ARR LI 014	3	ARRESTER, LIGHTNING, POLYMER, 21kV, RISER POLE
3	BKT EM 001	3	BRACKET, EQUIPMENT MOUNTING, POTHEAD
4	BKT EM 002	3	BRACKET, EQUIPMENT MOUNTING, POTHEAD (SINGLE)
5	BKT RP 001	3	BRACKET, RISER POLE ARRESTER
6	BKT SM 004	3	BRACKET, SWITCH MOUNTING
7	BOL CA 002	6	BOLT, CARRIAGE, 3/8X5
8	BOL DA 016	3	BOLT, DOUBLE ARMING, 3/4X16
9	BOL DA 018	3	BOLT, DOUBLE ARMING, 3/4X20
10	BOL MS 036	6	BOLT, MACHINE, SQUARE HEAD, 3/4X14
11	BOL TE 001	12	BOLT, TERMINAL KIT, S.S. BOLT, WASHERS, S.B. NUT
12	CLA AR ***	3	GENERAL CODE FOR ARRESTER HOT-LINE CLAMP
13	CLA SS ***	3	GENERAL CODE FOR STRAIGHT STRAIN CLAMP
14	CLA TG 001	3	CLAMP, TRANSFORMER TANK GROUND, 6 SOL. - #1 STR.
15	CNN TA ***	3	GENERAL CODE FOR BOLTED TAP CONNECTOR
16	CNN TE 047	6	CONNECTOR, TERMINAL, BOLTED, 2/0-800 MCM CU OR AL
17	CNN VG 003	3	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
18	COB CO ***	36	GENERAL CODE FOR COPPER CONDUCTOR
19	CNN JU 001	6	PRE-CRIMPED JUMPER, 636AAC, 8 FT, 2 HOLE PAD
20	COB CO 028	16	CONDUCTOR, BARE COPPER, #4 SOFT DRAWN
21	GUY AT 004	3	GUY, ATTACHMENT, 20,000 LBS.
22	INS CO 002	3	INSULATOR, COMPOSITE
23	INS FE 001	6	FIBERGLASS EXTENSION LINK, 24"
24	INS VP 001	3	INSULATOR, VERTICAL POST, 34.5kV
25	NUT EY 003	3	NUT, EYE, 3/4
26	SWE UN 002	3	SWITCH, HOOK DISCONNECT, 26.4kV
27	WAS RD 002	6	WASHER, ROUND, 1 IN. DIA., FOR 3/8 IN. BOLT
28	WAS RD 004	5	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
29	WAS RD 005	24	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
30	WAS SF 003	12	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. BOLT
31	WAS SP 002	12	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

**DS5R-5**

**VERTICAL MOUNT HOOK DISCONNECT SWITCH – FEEDER RISER – 26.4KV –  
UNSHIELDED  
DEADEND**



## NOTES:

- 1) TAP CONNECTORS ARE REQUIRED FOR JUMPERS WHEN CIRCUIT CONDUCTORS ARE NOT LONG ENOUGH TO DIRECTLY TERMINATE ON SWITCH.
- 2) POTHEADS ARE MOUNTED ON THE BACK SIDE OF THE POLE AT B58, B96, AND \*B134.
- 3) JUMPER PIN BASES SHALL BE APPROX. 6" FROM POLE SURFACE.

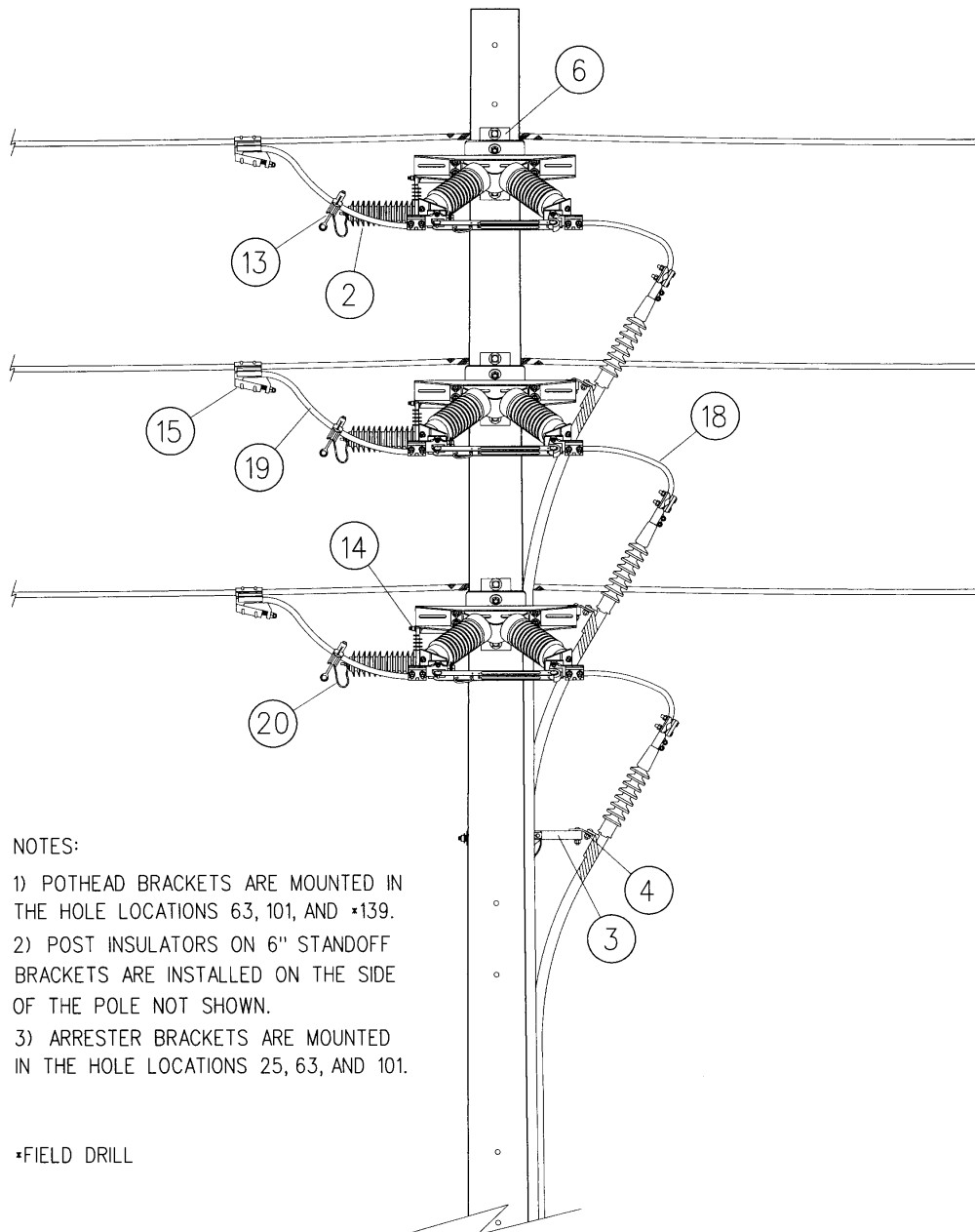


**DS5RT-5****VERTICAL MOUNT HOOK DISCONNECT SWITCH – FEEDER RISER – 2 6.4KV – UNSHIELDED****TANGENT****OPTIONS: 3/0, 336, 636****BOLT PLATE: NONE**

NO.	ITEM ID	QTY	DESCRIPTION
1	ADC MI 007	1	COMPOUND, INHIBITING, 4 OZ. SQUEEZE BOTTLE
2	ARR LI 014	3	ARRESTER, LIGHTNING, POLYMER, 21KV, RISER POLE
3	BKT EM 001	3	BRACKET, EQUIPMENT MOUNTING, POTHEAD
4	BKT EM 002	3	BRACKET, EQUIPMENT MOUNTING, POTHEAD (SINGLE)
5	BKT RP 001	3	BRACKET, RISER POLE ARRESTER
6	BKT SM 004	3	BRACKET, SWITCH MOUNTING
7	BOL CA 002	6	BOLT, CARRIAGE, 3/8X5
8	BOL DA 015	2	BOLT, DOUBLE ARMING, 3/4X14
9	BOL DA 016	1	BOLT, DOUBLE ARMING, 3/4X16
10	BOL MS 020	3	BOLT, MACHINE, SQUARE HEAD, 5/8X14
11	BOL MS 036	4	BOLT, MACHINE, SQUARE HEAD, 3/4X14
12	BOL TE 001	12	BOLT, TERMINAL KIT, S.S. BOLT, WASHERS, S.B. NUT
13	CLA AR ***	3	GENERAL CODE FOR ARRESTER HOT-LINE CLAMP
14	CLA TG 001	3	CLAMP, TRANSFORMER TANK GROUND, 6 SOL. - #1 STR.
15	CNN TA ***	3	GENERAL CODE FOR BOLTED TAP CONNECTOR
16	CNN TE 047	6	CONNECTOR, TERMINAL, BOLTED, 2/0-800 MCM CU OR AL
17	CNN VG 003	6	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
18	COB CO ***	24	GENERAL CODE FOR COPPER CONDUCTOR
19	CNN JU 001	6	PRE-CRIMPED JUMPER, 636AAC, 8 FT, 2 HOLE PAD
20	COB CO 028	16	CONDUCTOR, BARE COPPER, #4 SOFT DRAWN
21	INS FE 001	6	FIBERGLASS EXTENSION LINK, 24"
22	SWE UN 002	3	SWITCH, HOOK DISCONNECT, 26.4kv
23	WAS RD 002	6	WASHER, ROUND, 1 IN. DIA., FOR 3/8 IN. BOLT
24	WAS RD 004	5	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
25	WAS RD 005	14	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
26	WAS SF 003	5	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. BOLT
27	WAS SP 002	7	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

## DS5RT-5

VERTICAL MOUNT HOOK DISCONNECT SWITCH – FEEDER RISER – 26.4KV –  
UNSHIELDED  
TANGENT

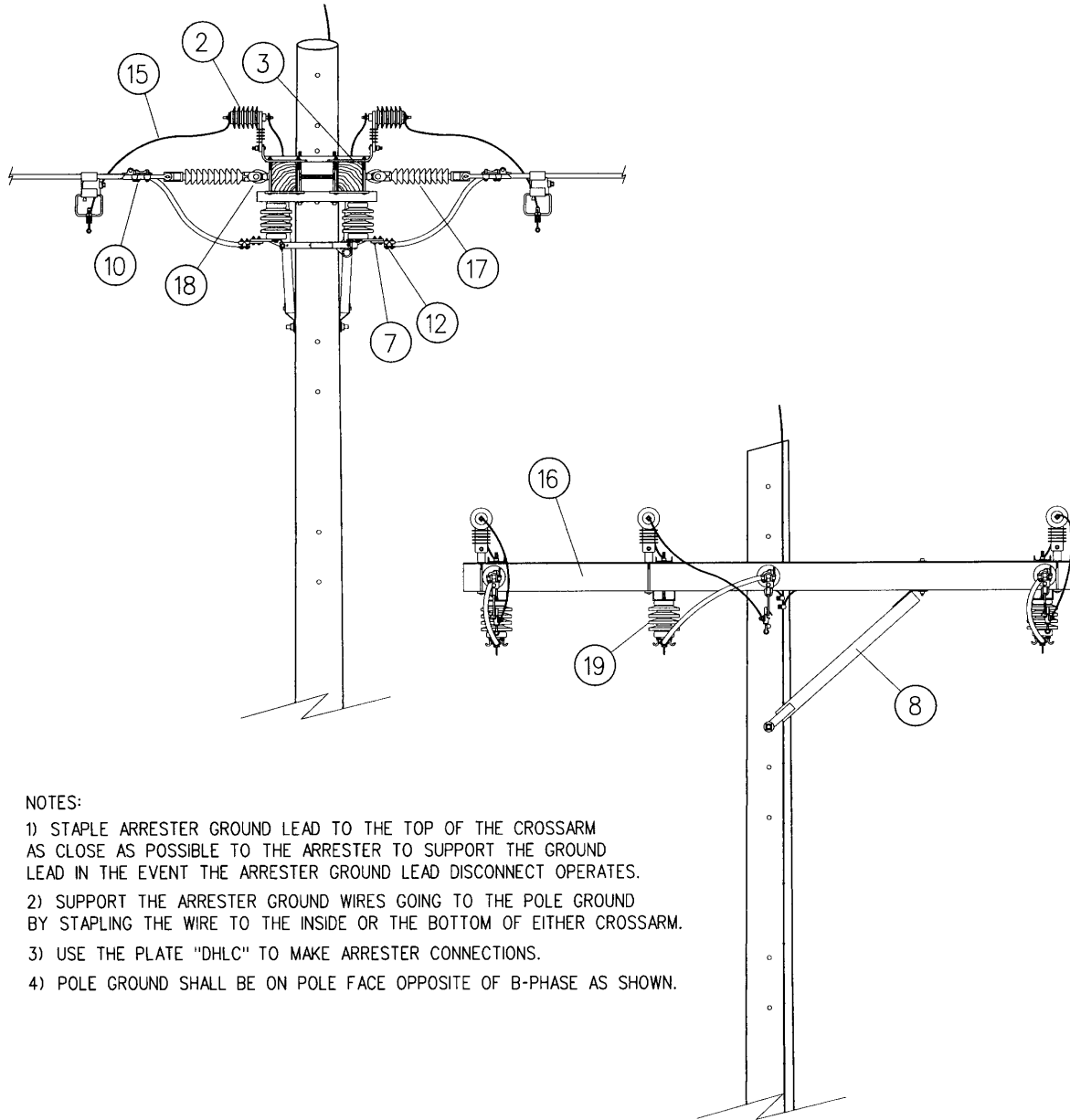


**RS3-5****HOOK DISCONNECT SWITCH – 4KV – UNSHIELDED**

OPTIONS: 6CU, 4CU, 2CU, 1/0CU, 2/0CU, 4/0CU, 2, 1/0, 3/0, 336

BOLT PLATE: NONE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADC MI 007	1	COMPOUND, INHIBITING, 4 OZ. SQUEEZE BOTTLE
2	ARR LI 001	6	ARRESTER, LIGHTNING, POLYMER, 3kV
3	BKT AC 003	6	ARRESTER, CUTOUT AND ARRESTER, CROSSARM MOUNT
4	BOL DA 021	3	BOLT, DOUBLE ARMING, 3/4X26
5	BOL MS 002	4	BOLT, MACHINE, SQUARE HEAD, 1/2X7
6	BOL MS 020	4	BOLT, MACHINE, SQUARE HEAD, 5/8X14
7	BOL TE 001	12	BOLT, TERMINAL KIT, S.S. BOLT, WASHERS, S.B. NUT
8	BRC CR 002	1	BRACE, CROSSARM, WOOD, 60 IN. SPAN, 30 IN. DROP (PAIR)
9	CLA AR ***	6	GENERAL CODE FOR ARRESTER HOT-LINE CLAMP
10	CLA SS ***	6	GENERAL CODE FOR STRAIGHT STRAIN CLAMP
11	CNN ** ***	6	GENERAL CODE FOR TAP CONNECTOR
12	CNN TE ***	6	GENERAL CODE FOR BOLTED TERMINAL CONNECTOR
13	CNN VG 003	8	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
14	CNN JU 001	6	PRE-CRIMPED JUMPER, 636AAC, 8 FT, 2 HOLE PAD
15	COB CO 028	24	CONDUCTOR, BARE COPPER, #4 SOFT DRAWN
16	CXA FG ***	2	GENERAL CODE FOR FIBERGLASS CROSSARM
17	INS CO 001	6	INSULATOR, COMPOSITE, POLYMER DEADEND
18	INS FE 001	6	FIBERGLASS EXTENSION LINK, 24"
19	NUT EY 003	6	NUT, EYE, 3/4
20	SWE UN 001	3	SWITCH, HOOK DISCONNECT, 15kV
21	WAS RD 005	8	WASHER, ROUND, 1-3/8 IN. DIA., FOR 1/2 IN. BOLT
22	WAS RD 005	3	WASHER, ROUND, 1-3/4 IN. DIA., FOR 5/8 IN. BOLT
23	WAS RD 005	1	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
24	WAS SF 001	4	WASHER, SQUARE, FLAT, 2 IN., FOR 1/2 IN. BOLT
25	WAS SF 003	16	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. BOLT
26	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT
27	WAS SP 003	4	WASHER, SPRING, LEAF, FOR 1/2 IN. BOLT

**RS3-5****HOOK DISCONNECT SWITCH – 4KV – UNSHIELDED**

## NOTES:

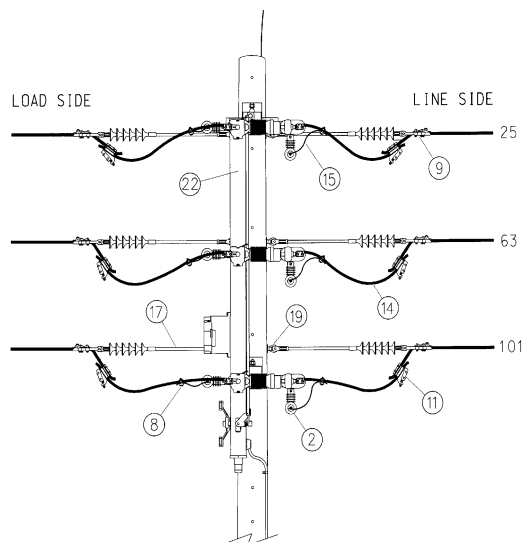
- 1) STAPLE ARRESTER GROUND LEAD TO THE TOP OF THE CROSSARM AS CLOSE AS POSSIBLE TO THE ARRESTER TO SUPPORT THE GROUND LEAD IN THE EVENT THE ARRESTER GROUND LEAD DISCONNECT OPERATES.
- 2) SUPPORT THE ARRESTER GROUND WIRES GOING TO THE POLE GROUND BY STAPLING THE WIRE TO THE INSIDE OR THE BOTTOM OF EITHER CROSSARM.
- 3) USE THE PLATE "DHLC" TO MAKE ARRESTER CONNECTIONS.
- 4) POLE GROUND SHALL BE ON POLE FACE OPPOSITE OF B-PHASE AS SHOWN.

## SCADA

### S&C SCADA-MATE SWITCH – 26.4KV – UNSHIELDED

OPTIONS: 636

BOLT PLATE: NONE



NO.	ITEM ID	QTY	DESCRIPTION
1	ADC MI 007	1	COMPOUND, INHIBITING, 4 OZ. SQUEEZE BOTTLE
2	ARR LI 003	6	ARRESTER, LIGHTNING, POLYMER, 21kV
3	BOL DA 003	1	BOLT, DOUBLE ARMING, 5/8X16
4	BOL DA 016	3	BOLT, DOUBLE ARMING, 3/4X16
5	BOL MS 020	1	BOLT, MACHINE, SQUARE HEAD, 5/8X14
6	BOL MS 022	2	BOLT, MACHINE, SQUARE HEAD, 5/8X18
7	BOL TE 001	12	BOLT, TERMINAL KIT, S.S. BOLT, WASHERS, S.B. NUT
8	CLA AR 003	6	CLAMP, ARRESTER HOT-LINE, 336-636 MCM AL.
9	CLA SS 007	6	CLAMP, STRAIGHT STRAIN, 397-1000 MCM AL.
10	CLA TG 001	6	CLAMP, TRANSFORMER TANK GROUND, 6 SOL. - #1 STR.
11	CNN TA 010	6	CONNECTOR, TAP, BOLTED, 336-636 MCM AL.
12	CNN TE 047	6	CONNECTOR, TERMINAL, BOLTED, 2/0-800 MCM CU OR AL
13	CNN VG 003	8	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
14	CNN JU 001	6	PRE-CRIMPED JUMPER, 636AAC, 8 FT, 2 HOLE PAD
15	COB CO 028	25	CONDUCTOR, BARE COPPER, #4 SOFT DRAWN
16	FIB CU 001	8	FIBER OPTIC CABLE DOWNLEAD CUSHION
17	INS CO 002	6	INSULATOR, COMPOSITE, 50 IN. EXTENSION
18	INS FE 001	6	FIBERGLASS EXTENSION LINK, 24"
19	LOC PA 001	1	PADLOCK, ALL BRASS, 1-3/4 IN. SHANK OPENING
20	NUT EY 003	6	NUT, EYE, 3/4
21	SCW LA 005	20	SCREW, LAG, 1/2X4
22	STP ST 002	12	STRAP, STEEL, CONDUIT, 3/4 IN.
23	SWE SM 001	1	SCADA-MATE SWITCH
24	SWE SM 002	1	SCADA-MATE CONTROL AND ACCESSORIES
25	WAS RD 005	35	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
26	WAS SF 003	13	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. BOLT
27	WAS SP 002	16	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

Revised: January 1, 2018

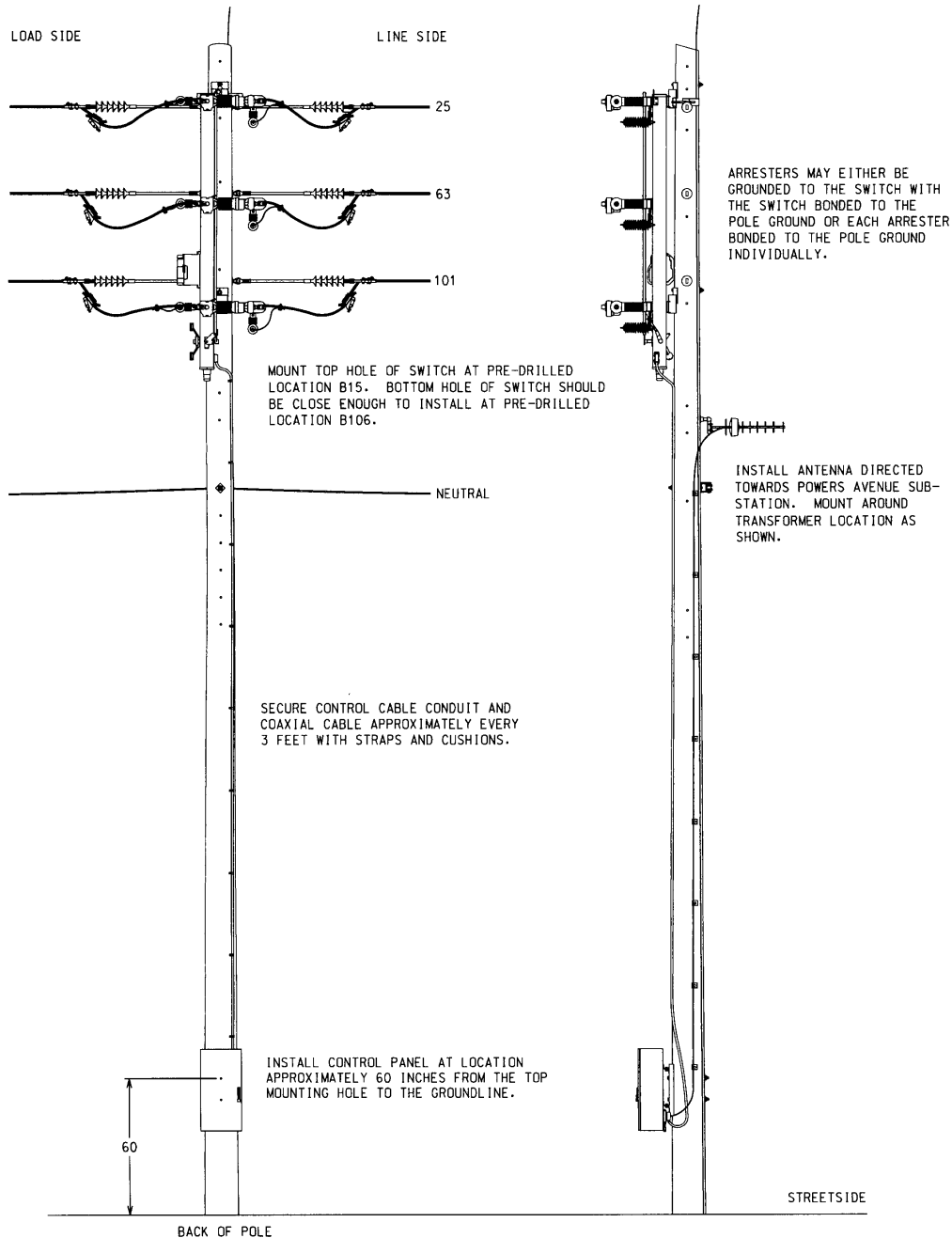
Revised By: HTH

Approved By: BTM

## SWITCHING

# SCADA

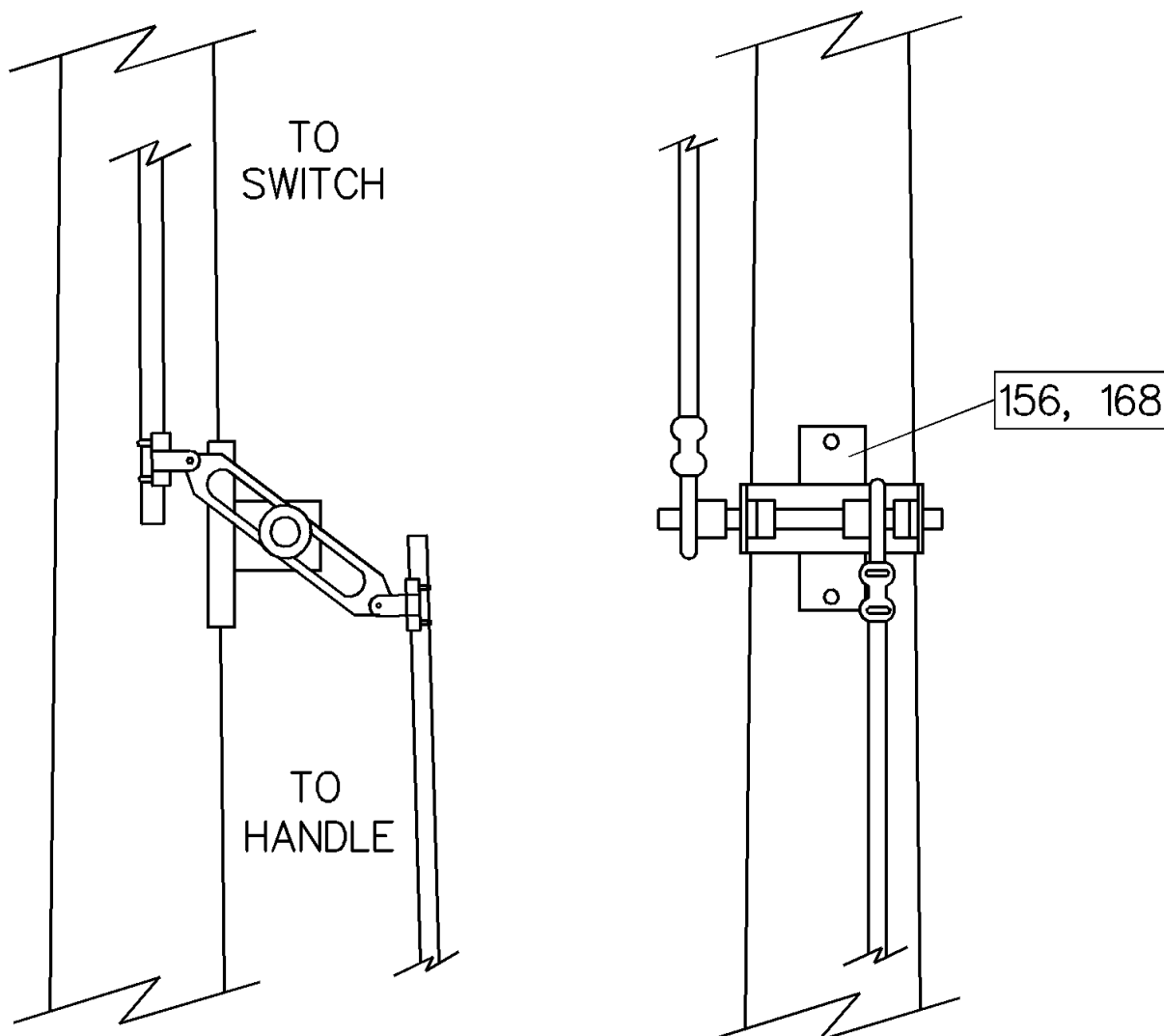
## S&C SCADA-MATE SWITCH – 26.4KV – UNSHIELDED



**DS1S****SWITCH HANDLE CONVERSION KIT**

OPTIONS: NONE

BOLT PLATE: NONE



NO.	ITEM ID	QTY	DESCRIPTION
1	BOL MS 036	2	BOLT, MACHINE, SQUARE HEAD, 3/4X14
2	SWE KT 001	1	SWITCH HANDLE CONVERSION KIT
3	WAS RD 005	4	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
4	WAS SF 003	2	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. BOLT
5	WAS SP 002	2	WASHER, SPRING, DOUBLE HELIX, FOR 3/4 IN. BOLT

**AS-TSE****OVR-3SP THREE-PHASE SWITCH – VERTICAL CONSTRUCTION**

OPTIONS: TIE

BOLT PLATE: NONE

NO.	ITEM ID	QTY	DESCRIPTION
1	ANC ST 001	30	ANCHOR, STUD BOLT, 1/4 X 3/4 IN.
2	ADC MI 002	1	CEMENT; PVC PIPE
3	BKT RE 001	1	BRACKET, RECLOSER JUMPER PIN
4	BOL DA 015	2	BOLT, DOUBLE ARMING, 3/4 X 14
5	BOL DA 016	5	BOLT, DOUBLE ARMING, 3/4 X 16
6	BOL MS 037	2	BOLT, MACHINE, SQUARE HEAD, 3/4X16
7	BOL MS 038	2	BOLT, MACHINE, SQUARE HEAD, 3/4X18
8	BOL TE 001	24	BOLT, TERMINAL KIT
9	CAI RH 010	30	#4 COVERED COPPER
10	CAI UF 001	40	CABLE, STREETLIGHT UF 12 CU 2/C
11	CLA AR 003	6	CLAMP, ARRESTER HOT-LINE, 336-636
12	CLA TG 001	6	CLAMP, TRANS. TANK GROUND
13	COB AA 026	90	GENERAL CODE FOR 636MCM ALUMINUM CONDUCTOR
14	COB CO 028	40	CONDUCTOR, COPPER, #4 SOFT DRAWN
15	COB TW 004	20	TIE WIRE, ALUMINUM INSULATED
16	CNN TA 004	6	CONNECTOR, TAP, 636-636
17	CNN TL 029	6	TERMINAL; COMPRESSION, 4 HOLE, 636AAC
18	CNN VG 003	8	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
19	COD AF 010	1	1" SCHEDULE 40 PVC LB
20	FUS OH 005	1	FUSE, OVERHEAD DISTRIBUTION, 23" MINIMUM LENGTH, 25T.
21	COD EF 002	2	CONNECTOR, FLEXIBLE PVC, 90 DEGREE; 1 IN
22	COD PC 016	40	CONDUIT; PVC; 1 IN DIA; SCHEDULE 40
23	COD PC 017	10	CONDUIT; FLEXIBLE PVC; 1 IN DIA
24	COD WH 002	1	WEATHERHEAD; PVC; FOR 1 IN DIA PIPE
25	GUA AN 007	6	GUARD, ANIMAL, FOR ARRESTERS
26	INS VP 001	2	INSULATOR, POST, 34.5kV
27	LOC PA 002	2	PADLOCK, BRASS
28	NUT PG 300	30	NUT, 1/4 - 20
29	SWE RC 002	1	RECLOSER, CONTROL, FOR USE WITH SWE RC 001
30	REC GU 001	6	GUARD, ANIMAL, RECLOSER TERMINAL COVER
31	REC GU 002	100	GUARD, ANIMAL, RECLOSER LINE INSULATION
32	SWE RC 001	1	RECLOSER, THREE-PHASE, WITH 3 INTERNAL VOLTAGE SENSORS
33	STP ST 001	25	STRAP, STEEL, 1 IN.
34	FUS UG 046	1	FUSE, 1-TIME, 20-AMP, 125-VOLT, FERRULE TYPE-B
35	TIE CA 002	25	TIE, CABLE, 24" LENGTH
36	WAS RD 002	30	WASHER, ROUND 1 IN. FOR 3/8 BOLT
37	WAS RD 005	17	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
38	WAS SF 003	4	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. BOLT



# **AS-TSE**

## **OVR-3SP THREE-PHASE SWITCH – VERTICAL CONSTRUCTION**

### NOTES:

- 1) Pre-crimped jumper CNN JU 001 includes the jumper and pad connector.
- 2) The pad-to-pad connection shall be torqued to 40 ft-lbs.
- 3) The control box is powered with 120V. Streetlight 12/2 is to be run from the secondary, into the weatherhead, through the 1" PVC pipe, into the PVC LB, to the AC disconnect, then to the control box via 1" flexible PVC and 90 degree connectors. Inside, the hot leg is connected to L1 and the neutral to L2.
- 4) The control cables are run from each recloser to the junction box at the appropriate phase and a single control cable is run down the pole via 1" steel straps and connected to the bottom of the control box. Any slack should be coiled and tied with cable ties.
- 5) Each individual recloser and each side frame shall be grounded.
- 6) The recloser line insulation shall cover the 636AAC jumper from the 4 hole terminal connector to the wedge tap connector. It should only be cut to install the arrester clamp.
- 7) The recloser channel should be installed in the transformer positions. The top two holes are 12" apart and the third hole is 50.75" from the top hole.

# AS-TSE

## OVR-3SP THREE-PHASE SWITCH – VERTICAL CONSTRUCTION



**AS-TSH****OVR-3SP THREE-PHASE RECLOSER – HORIZONTAL CONSTRUCTION**

OPTIONS: TIE

BOLT PLATE: NONE

NO.	ITEM ID	QTY	DESCRIPTION
1	ANC ST 001	30	ANCHOR, STUD BOLT, 1/4 X 3/4 IN.
2	ADC MI 002	1	CEMENT; PVC PIPE
3	BOL DA 015	2	BOLT, DOUBLE ARMING, 3/4 X 14
4	BOL DA 016	5	BOLT, DOUBLE ARMING, 3/4 X 16
5	BOL MS 037	2	BOLT, MACHINE, SQUARE HEAD, 3/4X16
6	BOL MS 038	2	BOLT, MACHINE, SQUARE HEAD, 3/4X18
7	BOL TE 001	24	BOLT, TERMINAL KIT
8	CAI RH 010	30	#4 COVERED COPPER
9	CAI UF 001	40	CABLE, STREETLIGHT UF 12 CU 2/C
10	CLA AR 003	6	CLAMP, ARRESTER HOT-LINE, 336-636
11	CLA TG 001	6	CLAMP, TRANS. TANK GROUND
12	COB AA 026	90	GENERAL CODE FOR 636MCM ALUMINUM CONDUCTOR
13	COB CO 028	40	CONDUCTOR, COPPER, #4 SOFT DRAWN
14	COB TW 004	20	TIE WIRE, ALUMINUM INSULATED
15	CNN TA 004	6	CONNECTOR, TAP, 636-636
16	CNN TL 029	6	TERMINAL; COMPRESSION, 4 HOLE, 636AAC
17	CNN VG 003	8	CONNECTOR, VISE TYPE, 6-2 SOL. 10-2 SOL.
18	COD AF 010	1	1" SCHEDULE 40 PVC LB
19	FUS OH 005	1	FUSE, OVERHEAD DISTRIBUTION, 23" MINIMUM LENGTH, 25T.
20	COD EF 002	2	CONNECTOR, FLEXIBLE PVC, 90 DEGREE; 1 IN
21	COD PC 016	40	CONDUIT; PVC; 1 IN DIA; SCHEDULE 40
22	COD PC 017	10	CONDUIT; FLEXIBLE PVC; 1 IN DIA
23	COD WH 002	1	WEATHERHEAD; PVC; FOR 1 IN DIA PIPE
24	GUA AN 007	6	GUARD, ANIMAL, FOR ARRESTERS
25	INS VP 001	2	INSULATOR, POST, 34.5kV
26	LOC PA 002	2	PADLOCK, BRASS
27	NUT PG 300	30	NUT, 1/4 - 20
28	SWE RC 002	1	RECLOSER, CONTROL, FOR USE WITH SWE RC 001
29	REC GU 001	6	GUARD, ANIMAL, RECLOSER TERMINAL COVER
30	REC GU 002	100	GUARD, ANIMAL, RECLOSER LINE INSULATION
31	SWE RC 001	1	RECLOSER, THREE-PHASE, WITH 3 INTERNAL VOLTAGE SENSORS
32	STP ST 001	25	STRAP, STEEL, 1 IN.
33	FUS UG 046	1	FUSE, 1-TIME, 20-AMP, 125-VOLT, FERRULE TYPE-B
34	TIE CA 002	25	TIE, CABLE, 24" LENGTH
35	WAS RD 002	30	WASHER, ROUND 1 IN. FOR 3/8 BOLT
36	WAS RD 005	17	WASHER, ROUND, 2 IN. DIA., FOR 3/4 IN. BOLT
37	WAS SF 003	4	WASHER, SQUARE, FLAT, 3 IN., FOR 3/4 IN. BOLT

## AS-TSH

### OVR-3SP THREE-PHASE RECLOSER – HORIZONTAL CONSTRUCTION

