

138kV INSULATOR PLATE INDEX

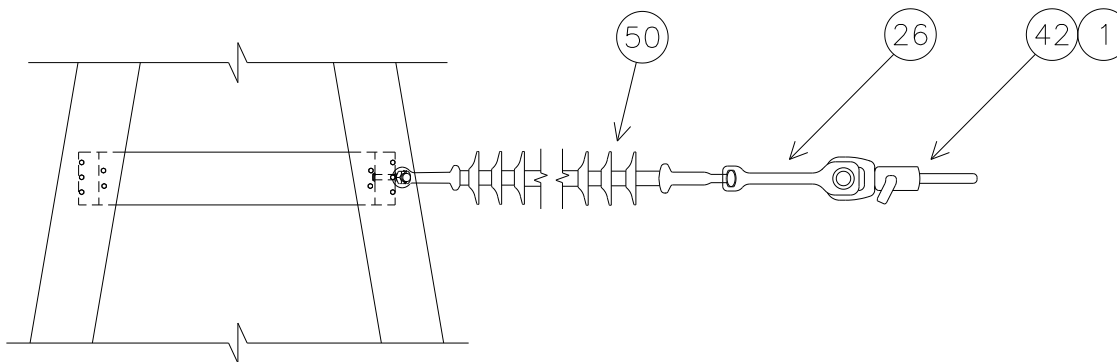
A-FRAME AND LATTICE STRUCTURES FOR SUBSTATIONS	PAGE
1. IASDFB3: SINGLE DEAD-END, FULL TENSION, 3-PHASE	BIN-2
2. IASDSB3: SINGLE DEAD-END, SLACK TENSION, 3-PHASE	BIN-3
 SPUN CONCRETE POLES	
3. ISDBB3: DOUBLE BRACED LINE POST, 3-PHASE	BIN-4
4. ISDD3FSB3: DOUBLE DEAD-END 135°, FULL TENSION TO SLACK TENSION, 3-PHASE	BIN-6
5. ISDD8FFB3: DOUBLE DEAD-END 180°, FULL TENSION TO FULL TENSION, 3-PHASE	BIN-8
6. ISDD8SSB3: DOUBLE DEAD-END 180°, SLACK TENSION TO SLACK TENSION, 3-PHASE	BIN-10
7. ISDD9FFB1: DOUBLE DEAD-END 90°, FULL TENSION TO FULL TENSION, 1-PHASE	BIN-12
8. ISDD9FFB3: DOUBLE DEAD-END 90°, FULL TENSION TO FULL TENSION, 3-PHASE	BIN-14
9. ISDD9FSB1: DOUBLE DEAD-END 90°, FULL TENSION TO SLACK TENSION, 1-PHASE	BIN-16
10. ISDD9FSB3: DOUBLE DEAD-END 90°, FULL TENSION TO SLACK TENSION, 3-PHASE	BIN-18
11. ISSDD9SSB3: DOUBLE DEAD-END 90°, SLACK TENSION TO SLACK TENSION, 3-PHASE	BIN-20
12. ISSBDB3: SINGLE BRACED LINE POST, DELTA CONFIGURATION, 3-PHASE	BIN-22
13. ISSBNGB3: SINGLE BRACED LINE POST, NO GUY, 3-PHASE	BIN-24
14. ISSDFB3: SINGLE DEAD-END, FULL TENSION, 3-PHASE	BIN-26
15. ISSDFP1B3: SINGLE DEAD-END, FULL TENSION TO POST, TYPE 1, 3-PHASE	BIN-28
16. ISSDSB3: SINGLE DEAD-END, SLACK TENSION, 3-PHASE	BIN-30
17. ISSPBGB3: SINGLE POST BOTTOM GUYED, 3-PHASE	BIN-32
18. ISSPNB3: SINGLE POST, NO GUY, 3-PHASE	BIN-34
19. ISSSSGB3: SINGLE SUSPENSION, GUYED, 3-PHASE	BIN-36

IASDFB3

INSULATOR FOR SUBSTATION A-FRAME/LATTICE STRUCTURES

SINGLE DEAD-END, FULL TENSION FOR SUBSTATION STRUCTURES, 138KV, 3-PHASE

CONDUCTOR OPTIONS: 954H, 954S, 1590



IASDFB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
26	CLEHL 005	3	SOCKET-Y CLEVIS, CLASS 52-8/11, L = 11", PIN=7/8", H.D.G..
50	INSDE 003	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 138KV, L = 89", CLASS 52-8/11

IASDFB3*954H

NO.	ITEM ID	QTY	DESCRIPTION
42	DEACB 016	3	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSR, OVAL EYE

IASDFB3*954S

NO.	ITEM ID	QTY	DESCRIPTION
42	DEACB 005	3	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSR, OVAL EYE

IASDFB3*1590

NO.	ITEM ID	QTY	DESCRIPTION
42	DEACB 007	3	DEADEND COMPRESSION ASSEMBLY FOR 1590 ACSR, OVAL EYE

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

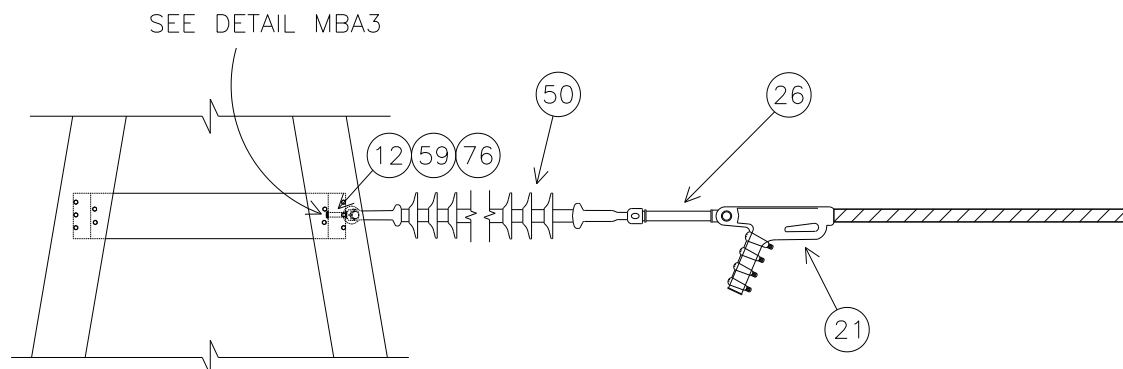
BIN-2

IASDSB3

INSULATOR FOR SUBSTATION A-FRAME/LATTICE STRUCTURES

SINGLE DEAD-END, SLACK TENSION FOR SUBSTATION STRUCTURES, 138KV, 3-PHASE

CONDUCTOR OPTIONS: 556S, 954A, 954S, 1590



IASDSB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 016	3	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
26	CLEHL 008	3	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4" THICK WITH 13/16" OPENING, H. D. G.
50	INSDE 003	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 138KV, L = 89", CLASS 52-8/11
59	NUTEY 002	3	EYE NUT FOR 5/8" BOLT, 1 1/2" OPENING, H.D.G.
76	WASRD 004	6	ROUND WASHER FOR 5/8" BOLT, 1 3/4" DIAMETER, GALVANIZED

IASDSB3*556S, 954A, 954S

NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 005	3	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"

IASDSB3*1590

NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 006	3	DEADEND CLAMP (1.18 - 1.52") 35,000# STRENGTH, GAP = 2", PIN = 3/4"

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

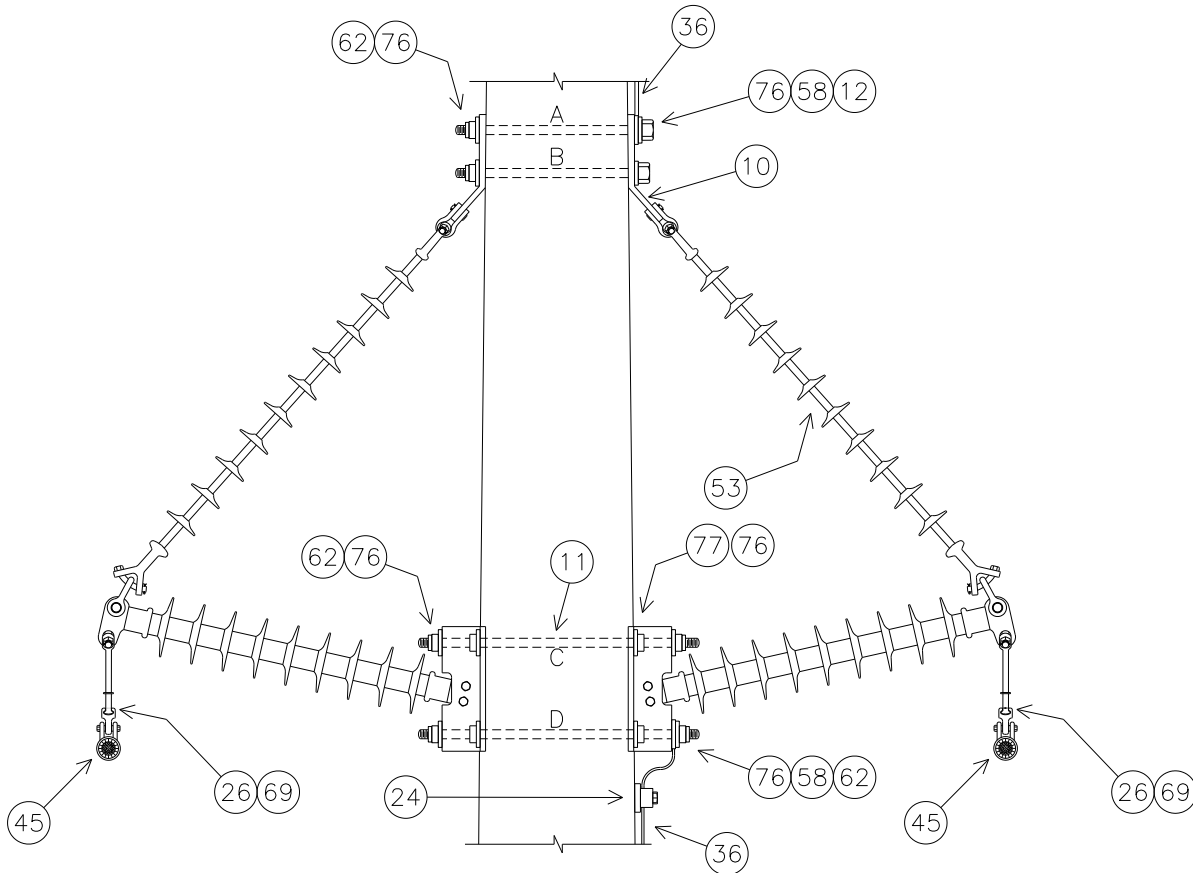
APPROVED BY: RHS

138KV INSULATORS

BIN-3

ISDBB3

INSULATOR FOR SPUN CONCRETE POLES
DOUBLE BRACED LINE POST, 138KV, 3-PHASE
CONDUCTOR OPTIONS: 954A, 954S, 1590



SEE MBA1 FOR BOLT ASSEMBLY DETAILS

MBA2 FOR DOUBLE ARMING BOLT ASSEMBLY DETAILS

STRUCTURE	MINIMUM REQUIRED BOLT LENGTHS (INCHES)			
	A	B	C	D
TOP	20.6	20.5	33.6	34.1
MIDDLE	22.4	22.2	35.3	35.8
BOTTOM	24.1	24.0	37.1	37.5

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

BIN-4

ISDBB3 PLATES

ISDBB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
10	BKTLP 001	6	BRACKET, 46° ANGLE, 6" HOLE SPACING, 1 1/16" HOLE DIAMETER, 5/8" THICK
11	BOLDA 038	2	DOUBLE ARMING BOLT, 7/8" X 34", WITH 4 SQUARE NUTS ATTACHED
11	BOLDA 039	2	DOUBLE ARMING BOLT, 7/8" X 36", WITH 4 SQUARE NUTS ATTACHED
11	BOLDA 040	2	DOUBLE ARMING BOLT, 7/8" X 38", WITH 4 SQUARE NUTS ATTACHED
12	BOLMS 052	2	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 053	2	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	2	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 001	6	BALL-Y CLEVIS, CLASS 52-3/5, STRENGTH = 30,000#, L > 9", PIN = 3/4", H.D.G.
36	COBCO 028	9 FT	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
53	INSLP 012	6	138KV SILICONE BRACED LINE POST INSULATOR, 12° RISE, GAIN BASE, L = 52", H = 66", 12" B.H.S.
58	LUGGR 002	6	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATTED COPPER COMPRESSION
62	NUTSL 005	18	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
69	SOCEY 003	6	SOCKET - EYE, STENGTH = 25,000#, L = 2 5/16", EYE = 13/16", FORGED STEEL, GALV.
76	WASRD 006	36	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	12	SQUARE CURVED WASHER FOR 7/8" BOLTS, GALVANIZED, 4" X 4"

ISDBB3*954A

45	GRISA 003	6	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82", 1 3/16" GAP, 5/8" PIN
----	-----------	---	--

ISDBB3*954S

45	GRISA 004	6	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82", 1 3/16" GAP, 5/8" PIN
----	-----------	---	---

ISDBB3*1590

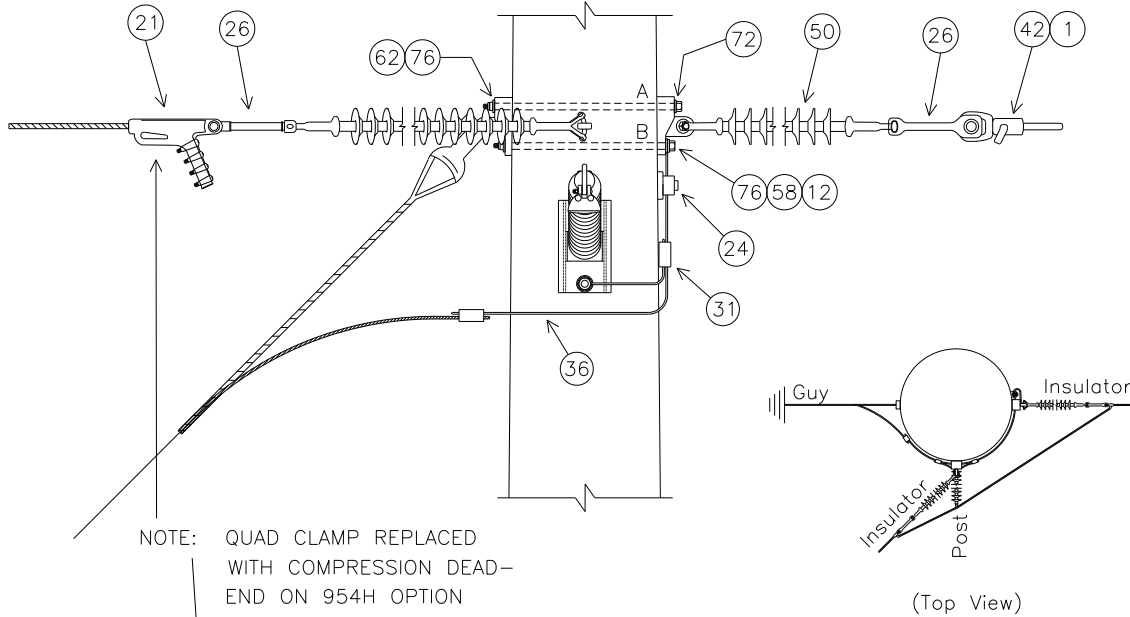
45	GRISA 005	6	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88", 1 3/8" GAP, 3/4" PIN
----	-----------	---	---

ISDD3FSB3

INSULATOR FOR SPUN CONCRETE POLES

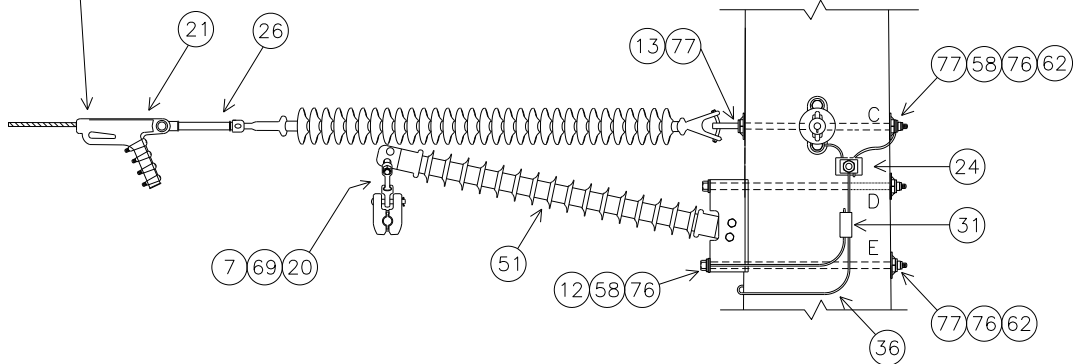
DOUBLE DEADEND 135°, FULL TENSION TO SLACK TENSION, 138KV, 3-PHASE

CONDUCTOR OPTIONS: 954H, 954S, 1590



NOTE: QUAD CLAMP REPLACED
WITH COMPRESSION DEAD-
END ON 954H OPTION

(Top View)



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

	FULL TENSION SIDES		
	TOP	MIDDLE	BOTTOM
BOLT 'A' LENGTH (INCHES)	25.0	26.9	28.9
BOLT 'B' LENGTH (INCHES)	23.3	25.3	27.2
SHOULDER EYEBOLT 'C' LENGTH (INCHES)	22.2	24.2	26.1
BOLT 'D' LENGTH (INCHES)	27.9	29.8	31.8
BOLT 'E' LENGTH (INCHES)	28.4	30.3	32.2

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

BIN-6



BUILDING COMMUNITY

ISDD3FSB3 PLATES

ISDD3FSB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
7	BALFI007	3	BALL Y-CLEVIS, CLASS 52-3/5
12	BOLMS 055	1	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	2	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 074	2	MACHINE BOLT, 7/8" X 34", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 075	1	MACHINE BOLT, 7/8" X 38", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
13	BOLSE 022	1	BOLT, SHOULDER EYE, 7/8" X 24", GALVANIZED, WITH SQUARE NUT ATTACHED
13	BOLSE 023	1	BOLT, SHOULDER EYE, 7/8" X 26", GALVANIZED, WITH SQUARE NUT ATTACHED
13	BOLSE 024	1	BOLT, SHOULDER EYE, 7/8" X 28", GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 005	3	SOCKET-Y CLEVIS, CLASS 52-8/11, L = 11", PIN = 7/8", H.D.G.
31	CNNCP 016	3	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., COPPER
36	COBCO 028	21 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 003	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 138KV, L = 89", CLASS 52-8/11
51	INSHP 023	3	HORIZONTAL POST SILICONE INSULATOR, 138KV, L = 54", GAIN BASE, 12° RISE
58	LUGGR 002	6	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATTED COPPER COMPRESSION
62	NUTSL 005	9	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
69	SOCEY003	3	SOCKET EYE, CLASS 52-3/5
72	TEEDE 003	6	TEE, DUCTILE IRON, H.D.G., 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	15	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	12	SQUARE FLAT WASHER FOR 3/4" & 7/8" BOLT, 4" SQ X 1/4", GALVANIZED

ISDD3FSB3*954H&S

NO.	ITEM ID	QTY	DESCRIPTION
1 (954H)	ADCVF 002	6	HIGH TEMPERATURE VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
1 (954S)	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 053	1	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	2	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	2	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	1	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
20 (954H)	CLAJU 010	3	CUSHION GRIP SUSPENSION CLAMP FOR 954 ACSS
20 (954S)	CLAJU 007	3	CUSHION GRIP SUSPENSION CLAMP FOR 954 ACSR
21 (954S)	CLAQD 005	3	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
26 (954H)	CLEHL 005	3	SOCKET-Y CLEVIS, CLASS 52-8/11, L = 11", PIN = 7/8", H.D.G.
26 (954S)	CLEHL 008	3	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4" THICK WITH 13/16" OPENING, H. D. G.
42 (954H)	DEACB 016	6	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSS, OVAL EYE
42 (954S)	DEACB 005	3	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSR, OVAL EYE
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISDD3FSB3*1590

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 063	1	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	2	MACHINE BOLT, 1" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 070	2	MACHINE BOLT, 1" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 071	1	MACHINE BOLT, 1" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
20	CLAJU 008	3	CUSHION GRIP SUSPENSION CLAMP FOR 1590 ACSR
21	CLAQD 006	3	DEADEND CLAMP (1.18 - 1.52") 35,000# STRENGTH, GAP = 2", PIN = 3/4"
26	CLEHL 008	3	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4" THICK WITH 13/16" OPENING, H. D. G.
42	DEACB 007	3	DEADEND COMPRESSION ASSEMBLY FOR 1590 ACSR, OVAL EYE
58	LUGGR 003	3	LUG FOR 1" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 006	6	SQUARE LOCK NUT FOR 1" BOLT, H.D.G.
76	WASRD 007	12	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

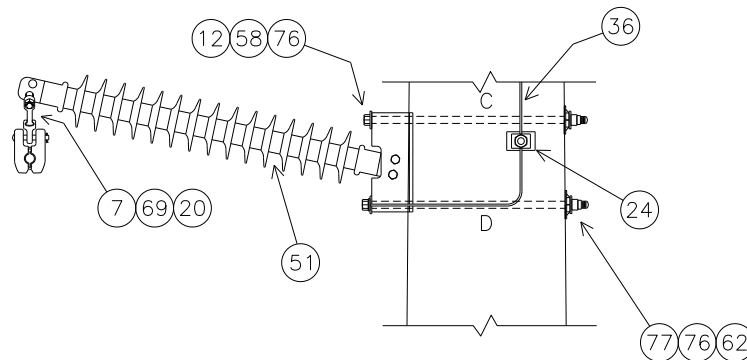
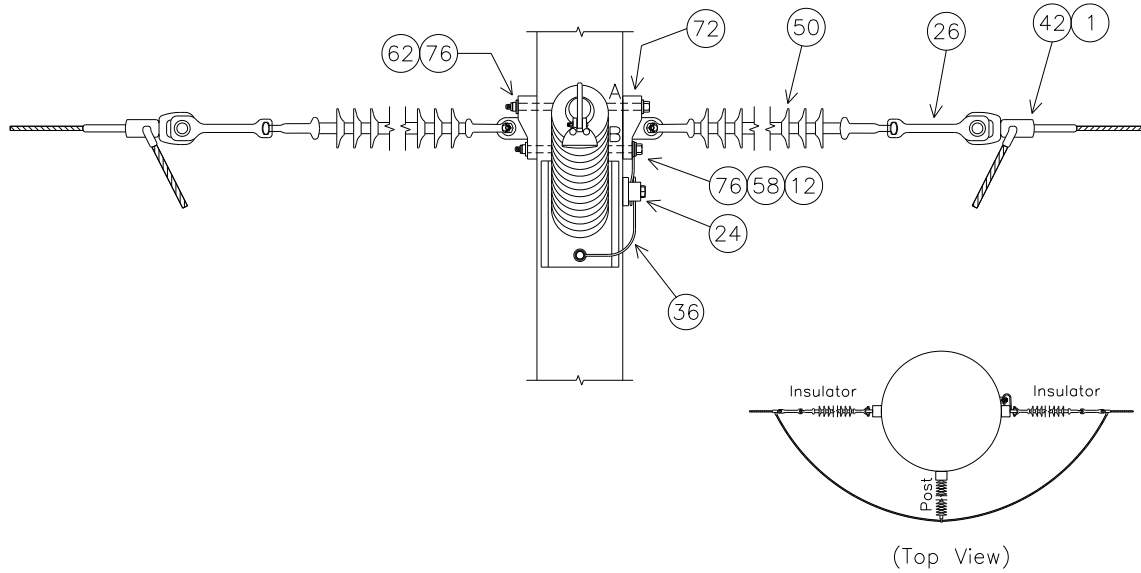
BIN-7

ISDD8FFB3

INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEAD-END 180°, FULL TENSION TO FULL TENSION, 138KV, 3-PHASE

CONDUCTOR OPTIONS: 954S, 1590



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

DEADEND INSULATOR	TOP	MIDDLE	BOTTOM
UPPER BOLT 'A' LENGTH (INCHES)	25.0	26.9	28.9
LOWER BOLT 'B' LENGTH (INCHES)	23.3	25.3	27.2

POST INSULATOR	TOP	MIDDLE	BOTTOM
UPPER BOLT 'C' LENGTH (INCHES)	27.8	29.7	31.7
LOWER BOLT 'D' LENGTH (INCHES)	28.3	30.2	32.1

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

BIN-8



BUILDING COMMUNITY

ISDD8FFB3 PLATES

ISDD8FFB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	6	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
7	BALFI007	3	BALL Y-CLEVIS, CLASS 52-3/5
12	BOLMS 055	1	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	2	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 074	3	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 005	6	SOCKET-Y CLEVIS, CLASS 52-8/11, L = 11", PIN = 7/8", H.D.G.
36	COBCO 028	12 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSD 003	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 138KV, L = 89", CLASS 52-8/11
51	INSHP 023	3	HORIZONTAL POST INSULATOR, 138KV, L = 54", GAIN BASE, 12° RISE
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATTED COPPER COMPRESSION
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
69	SOCEY003	3	SOCKET EYE, CLASS 52-3/5
72	TEEDE 003	6	TEE, DUCTILE IRON, H.D.G., 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	6	SQUARE CURVED WASHER FOR 7/8" BOLTS, GALVANIZED, 4" X 4" SIZE

ISDD8FFB3*954S

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 053	1	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	2	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	2	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	1	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
20	CLAJU 007	3	CUSHION GRIP SUSPENSION CLAMP FOR 954 ACSR
42	DEACB 005	6	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSR, OVAL EYE
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISDD8FFB3*1590

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 063	1	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	2	MACHINE BOLT, 1" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 070	2	MACHINE BOLT, 1" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 071	1	MACHINE BOLT, 1" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
20	CLAJU 008	3	CUSHION GRIP SUSPENSION CLAMP FOR 1590 ACSR
42	DEACB 007	6	DEADEND COMPRESSION ASSEMBLY FOR 1590 ACSR, OVAL EYE
58	LUGGR 003	3	LUG FOR 1" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 006	6	SQUARE LOCK NUT FOR 1" BOLT, H.D.G.
76	WASRD 007	12	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

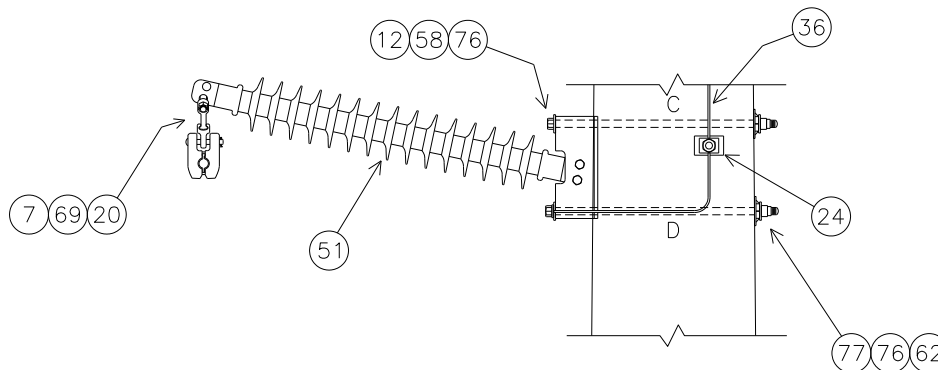
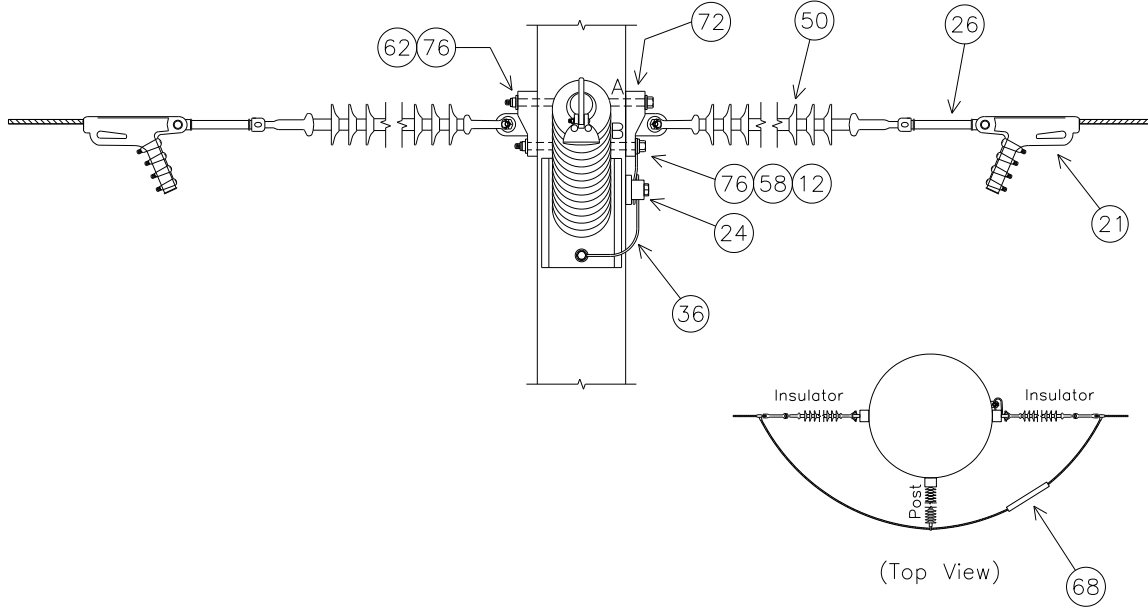
BIN-9

ISDD8SSB3

INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEAD-END 180°, SLACK TENSION TO SLACK TENSION, 138KV, 3-PHASE

CONDUCTOR OPTIONS: 954A, 954S, 1590



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

DEADEND INSULATOR	TOP	MIDDLE	BOTTOM
UPPER BOLT (A) LENGTH (INCHES)	24.9	26.8	28.7
LOWER BOLT (B) LENGTH (INCHES)	23.2	25.2	27.1

POST INSULATOR	TOP	MIDDLE	BOTTOM
UPPER BOLT (C) LENGTH (INCHES)	27.8	29.7	31.7
LOWER BOLT (D) LENGTH (INCHES)	28.3	30.2	32.1

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

BIN-10



ISDD8SSB3 PLATES

ISDD8SSB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
7	BALFI 007	3	BALL Y-CLEVIS, CLASS 52-3/5
12	BOLMS 053	1	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	2	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	3	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	3	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 074	3	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 008	6	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4" THICK WITH 13/16" OPENING, H. D. G.
36	COBCO 028	12 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSD 003	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 138KV, L = 89", CLASS 52-8/11
51	INSH 023	3	HORIZONTAL POST INSULATOR, 138KV, L = 54", GAIN BASE, 12° RISE
58	LUGGR 002	6	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATTED COPPER COMPRESSION
62	NUTSL 005	12	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
69	SOCEY 003	3	SOCKET EYE, CLASS 52-3/5
72	TEEDE 003	6	TEE, DUCTILE IRON, H.D.G., 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	24	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	6	SQUARE CURVED WASHER FOR 7/8" BOLTS, GALVANIZED, 4" X 4" SIZE

ISDD8SSB3*954A

NO.	ITEM ID	QTY	DESCRIPTION
20	CLAJU 006	3	CUSHION GRIP SUSPENSION CLAMP FOR 954 AAC
21	CLAQD 005	6	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
68	SLEAJ 006	3	ALUM. SLEEVE JUMPER FOR 954 AAC 61, COMPRESSION SPLICE, NON-TENSION ONLY

ISDD8SSB3*954S

NO.	ITEM ID	QTY	DESCRIPTION
20	CLAJU 007	3	CUSHION GRIP SUSPENSION CLAMP FOR 954 ACSR
21	CLAQD 005	6	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
68	SLEAJ 005	3	ALUM. SLEEVE JUMPER FOR 954 ACSR 54/7, COMPRESSION SPLICE, NON-TENSION ONLY

ISDD8SSB3*1590

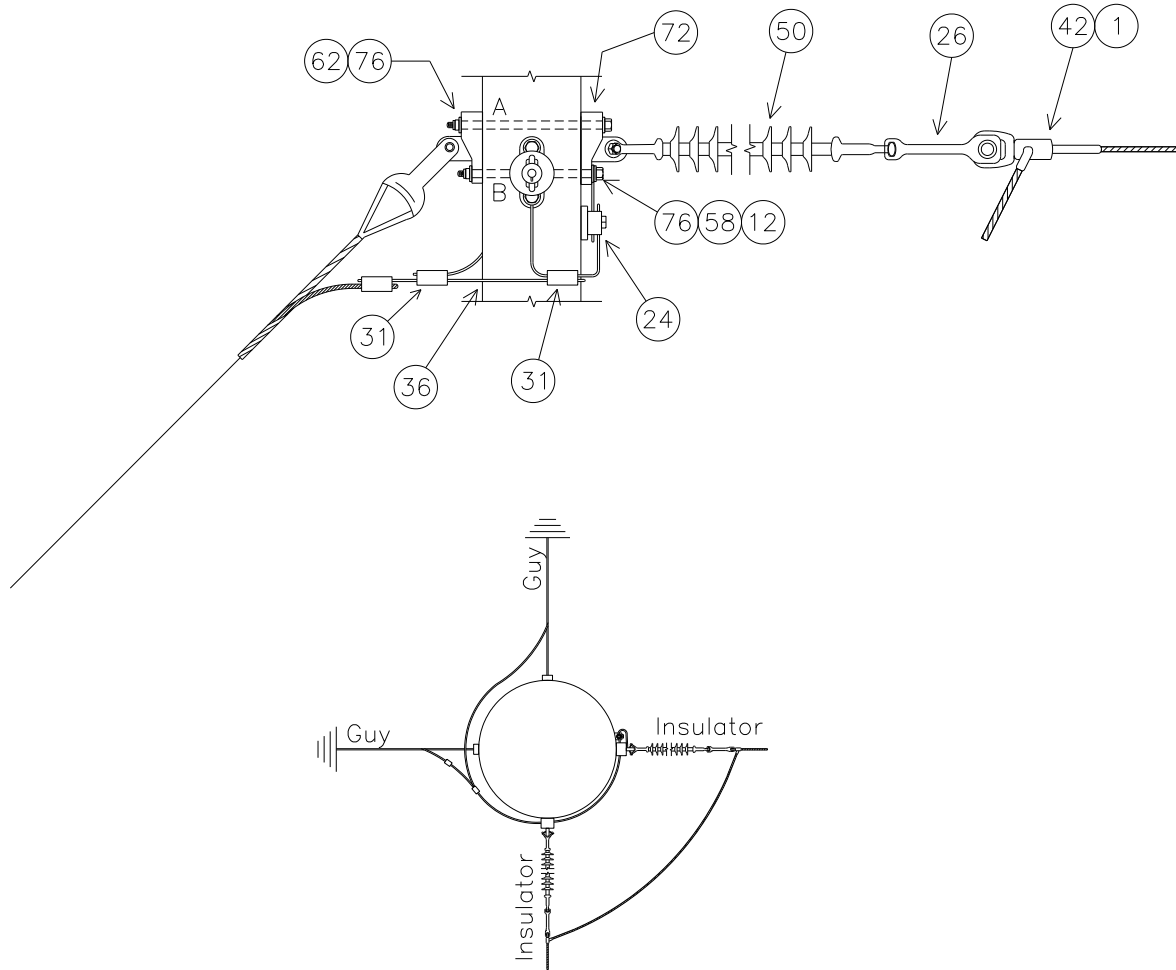
NO.	ITEM ID	QTY	DESCRIPTION
20	CLAJU 008	3	CUSHION GRIP SUSPENSION CLAMP FOR 1590 ACSR
21	CLAQD 006	6	DEADEND CLAMP (1.18 - 1.52") 35,000# STRENGTH, GAP = 2", PIN = 3/4"
68	SLEAJ 007	3	ALUM. SLEEVE JUMPER FOR 1590 ACSR 54/19, COMPRESSION SPLICE, NON-TENSION ONLY

ISDD9FFB1

INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEAD-END 90°, FULL TENSION TO FULL TENSION, 138KV, 1-PHASE

CONDUCTOR OPTIONS: 954S, 1590



(Top View)

NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

WITHOUT SHIELD	A	B
UPPER TEE MINIMUM BOLT LENGTH (INCHES)	22.9	21.2
LOWER TEE MINIMUM BOLT LENGTH (INCHES)	22.9	21.3

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER.

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

BIN-12



BUILDING COMMUNITY

ISDD9FFB1 PLATES

ISDD9FFB1 BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	2	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 005	2	SOCKET-Y CLEVIS, CLASS 52-8/11, L = 11", PIN = 7/8", H.D.G.
31	CNNCP 016	2	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., COPPER
36	COBCO 028	6 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 003	2	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 138KV, L = 89", CLASS 52-8/11
72	TEEDE 003	4	TEE, DUCTILE IRON, H.D.G., 6" HOLE SPACING, STRENGTH = 60,000#

ISDD9FFB1*954S

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 052	2	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 053	2	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
42	DEACB 005	2	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSR, OVAL EYE
58	LUGGR 002	2	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	4	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
76	WASRD 006	8	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISDD9FFB1*1590

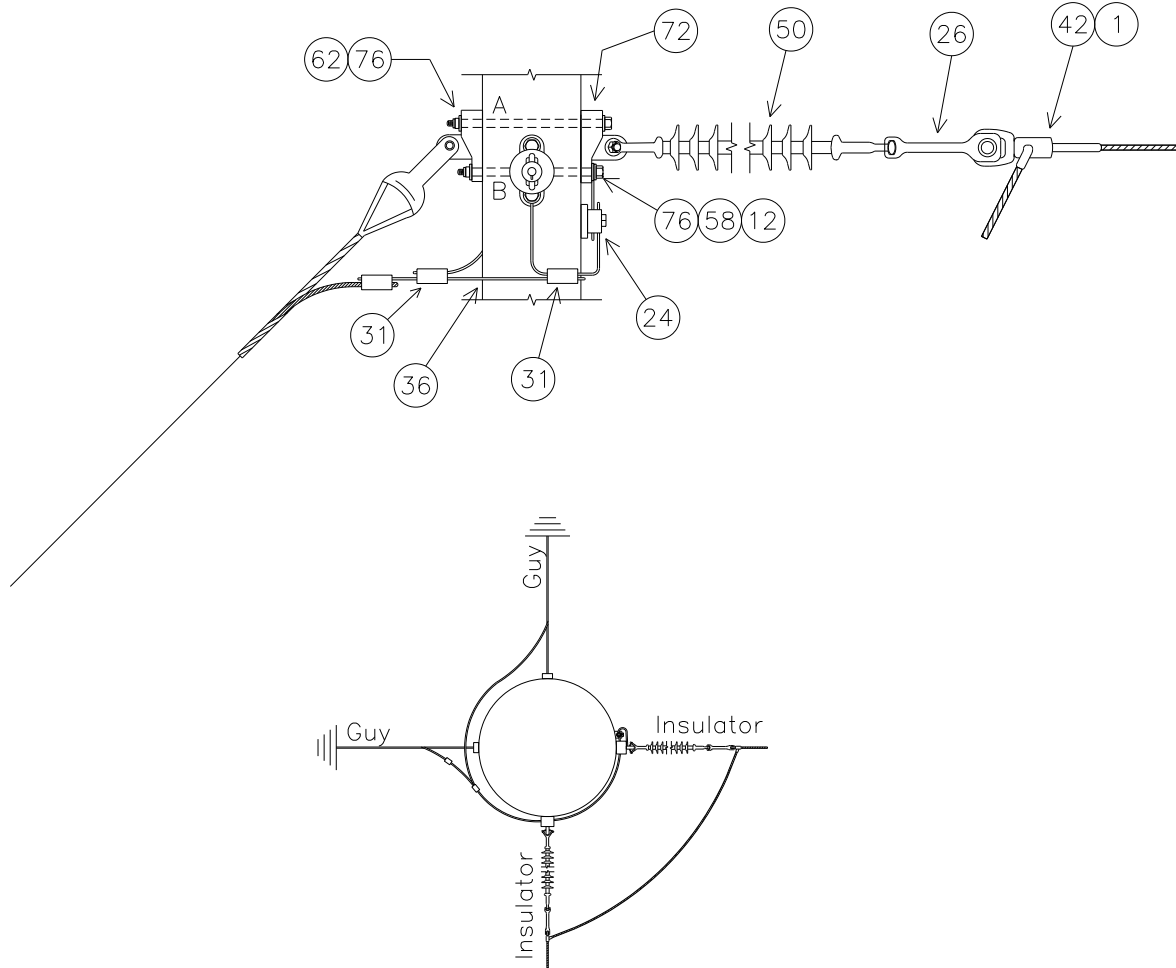
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 062	2	MACHINE BOLT, 1" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 063	2	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
42	DEACB 007	2	DEADEND COMPRESSION ASSEMBLY FOR 1590 ACSR, OVAL EYE
58	LUGGR 003	2	LUG FOR 1" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 006	4	SQUARE LOCK NUT FOR 1" BOLT, H.D.G.
76	WASRD 007	8	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISDD9FFB3

INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEAD-END 90°, FULL TENSION TO FULL TENSION, 138KV, 3-PHASE

CONDUCTOR OPTIONS: 954H, 954S, 1590



(Top View)

NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

SUBSTRUCTURE	UPPER TEE			LOWER TEE		
	Top	Mid	Bottom	Top	Mid	Bottom
UPPER BOLT 'A' LENGTH (INCHES)	25.0	26.9	28.9	25.0	27.0	28.9
LOWER BOLT 'B' LENGTH (INCHES)	23.3	25.3	27.2	23.4	25.3	27.3

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

BIN-14

ISDD9FFB3 PLATES

ISDD9FFB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 005	6	SOCKET-Y CLEVIS, CLASS 52-8/11, L = 11", PIN = 7/8", H.D.G.
31	CNNCP 016	6	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., COPPER
36	COBCO 028	18 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSD 003	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 138KV, L = 89", CLASS 52-8/11
72	TEEDE 003	12	TEE, DUCTILE IRON, H.D.G., 6" HOLE SPACING, STRENGTH = 60,000#

ISDD9FFB3*954H

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 002	6	VOID FILLER COMPOUND FOR HIGH TEMPERATURE DEADEND ASSEMBLY
12	BOLMS 053	2	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	4	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	4	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	2	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
42	DEACB 016	6	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSS, OVAL EYE
58	LUGGR 002	6	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	12	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
76	WASRD 006	24	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISDD9FFB3*954S

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	6	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 053	2	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	4	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	4	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	2	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
42	DEACB 005	6	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSR, OVAL EYE
58	LUGGR 002	6	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	12	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
76	WASRD 006	24	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISDD9FFB3*1590

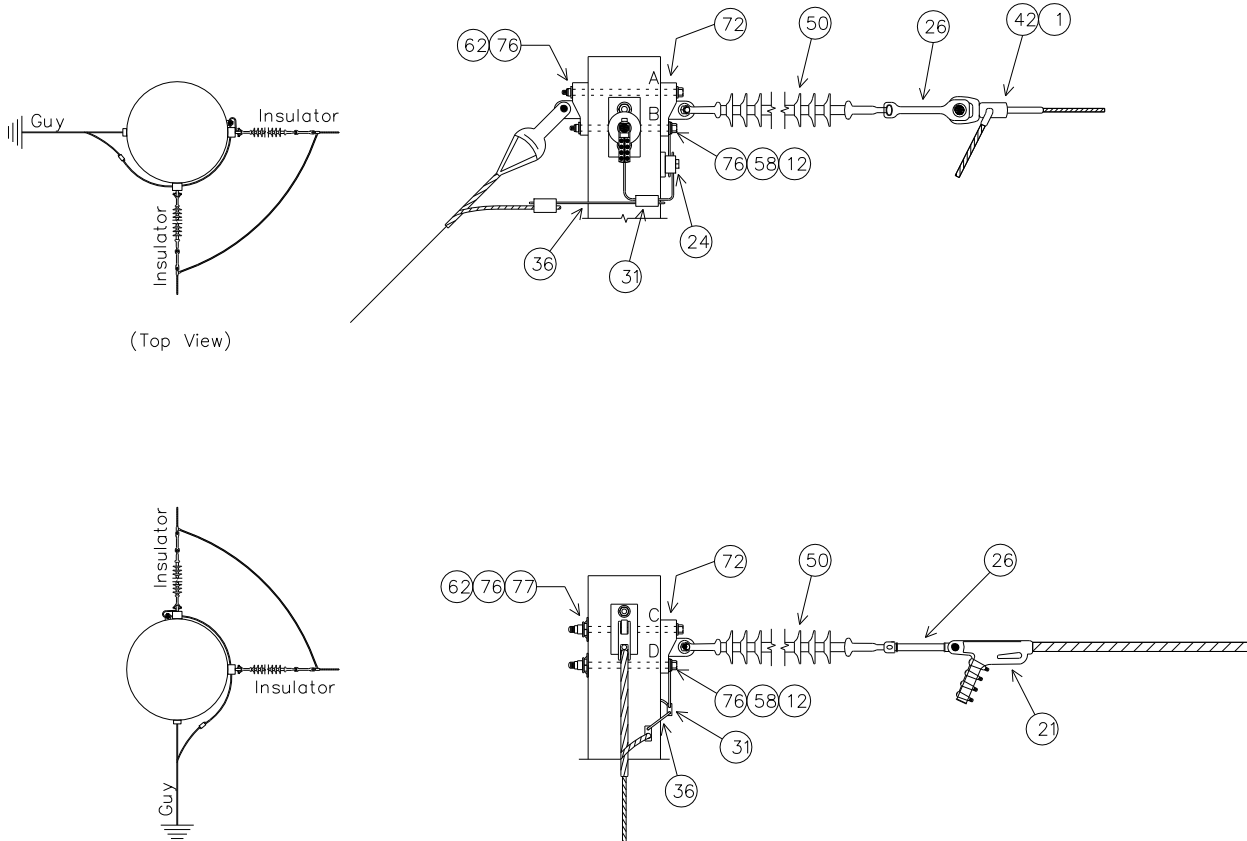
NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	6	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 063	2	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	4	MACHINE BOLT, 1" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 070	4	MACHINE BOLT, 1" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 071	2	MACHINE BOLT, 1" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
42	DEACB 007	6	DEADEND COMPRESSION ASSEMBLY FOR 1590 ACSR, OVAL EYE
58	LUGGR 003	6	LUG FOR 1" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 006	12	SQUARE LOCK NUT FOR 1" BOLT, H.D.G.
76	WASRD 007	24	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISDD9FSB1

INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEAD-END 90°, FULL TENSION TO SLACK TENSION, 138KV, 1-PHASE

CONDUCTOR OPTIONS: 954S, 1590



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

FULL TENSION SIDES

SUBSTRUCTURE	Top
UPPER BOLT 'A' LENGTH (INCHES)	22.9
LOWER BOLT 'B' LENGTH (INCHES)	21.2

SLACK TENSION SIDES

SUBSTRUCTURE	Top
UPPER BOLT 'A' LENGTH (INCHES)	21.5
LOWER BOLT 'B' LENGTH (INCHES)	20.8

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER.

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

BIN-16



BUILDING COMMUNITY

ISDD9FSB1 PLATES

ISDD9FSB1 BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	1	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 052	2	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 005	1	SOCKET-Y CLEVIS, CLASS 52-8/11, L = 11", PIN = 7/8", H.D.G.
26	CLEHL 008	1	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4" THICK WITH 13/16" OPENING, H.D.G.
31	CNNCP 016	1	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., COPPER
36	COBCO 028	6 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 003	2	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 138KV, L = 89", CLASS 52-8/11
58	LUGGR 002	1	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	2	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
72	TEEDE 003	3	TEE, DUCTILE IRON, H.D.G., 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	4	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	2	SQUARE CURVED WASHER FOR 7/8" BOLTS, GALVANIZED, 4" x 4"

ISDD9FSB1*954S

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 052	1	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 053	1	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 005	1	DEADEND CLAMP (0.7" -1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
42	DEACB 005	1	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSR, OVAL EYE
58	LUGGR 002	1	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	2	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
76	WASRD 006	4	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISDD9FSB1*1590

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 062	1	MACHINE BOLT, 1" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	1	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 006	1	DEADEND CLAMP (1.18" - 1.52") 35,000# STRENGTH, GAP = 2", PIN = 3/4"
42	DEACB 007	1	DEADEND COMPRESSION ASSEMBLY FOR 1590 ACSR, OVAL EYE
58	LUGGR 003	1	LUG FOR 1" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 006	2	SQUARE LOCK NUT FOR 1" BOLT, H.D.G.
76	WASRD 007	4	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

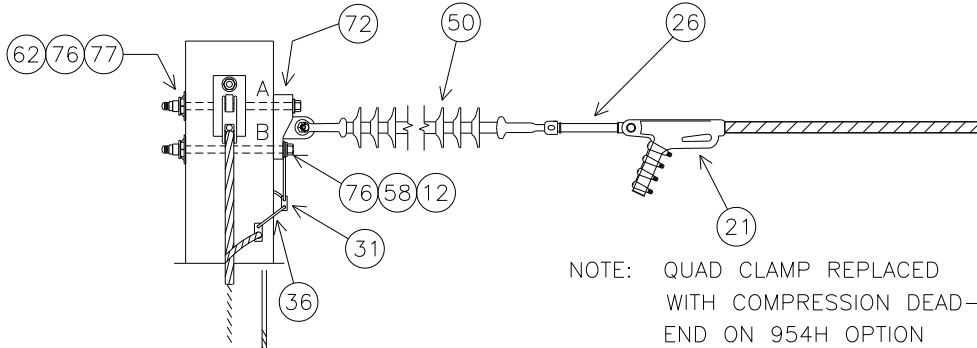
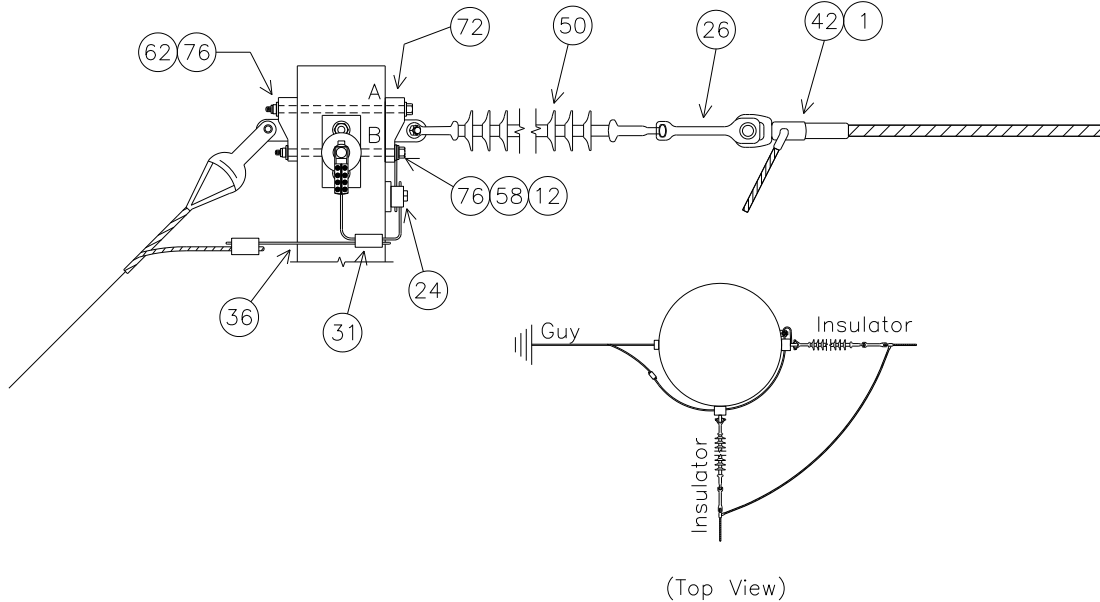
APPROVED BY: RHS

ISDD9FSB3

INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEAD-END 90°, FULL TENSION TO SLACK TENSION, 138KV, 3-PHASE

CONDUCTOR OPTIONS: 954H, 954S, 1590



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

FULL TENSION SIDES

SUBSTRUCTURE	Top	Mid	Bottom
UPPER BOLT 'A' LENGTH (INCHES)	25.0	26.9	28.9
LOWER BOLT 'B' LENGTH (INCHES)	23.3	25.3	27.2

SLACK TENSION SIDES

SUBSTRUCTURE	Top	Mid	Bottom
UPPER BOLT 'A' LENGTH (INCHES)	23.7	25.6	27.6
LOWER BOLT 'B' LENGTH (INCHES)	22.9	24.9	26.8

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

BIN-18

ISDD9FSB3 PLATES

ISDD9FSB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 053	2	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	2	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	2	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 005	3	SOCKET-Y CLEVIS, CLASS 52-8/11, L = 11", PIN = 7/8", H.D.G.
31	CNNCP 016	3	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., COPPER
36	COBCO 028	18 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 003	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 138KV, L = 89", CLASS 52-8/11
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
72	TEEDE 003	9	TEE, DUCTILE IRON, H.D.G., 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	6	SQUARE CURVED WASHER FOR 7/8" BOLTS, GALVANIZED, 4" X 4"

ISDD9FSB3*954H

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 002	6	HIGH TEMPERATURE VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 053	1	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	2	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	2	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	1	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
26	CLEHL 005	3	SOCKET-Y CLEVIS, CLASS 52-8/11, L = 11", PIN = 7/8", H.D.G.
42	DEACB 016	6	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSS, OVAL EYE
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISDD9FSB3*954S

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 053	1	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	2	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	2	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	1	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 005	3	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
26	CLEHL 008	3	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4" THICK WITH 13/16" OPENING, H. D. G.
42	DEACB 005	3	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSR, OVAL EYE
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISDD9FSB3*1590

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 063	1	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	2	MACHINE BOLT, 1" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 070	2	MACHINE BOLT, 1" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 071	1	MACHINE BOLT, 1" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 006	3	DEADEND CLAMP (1.18 - 1.52") 35,000# STRENGTH, GAP = 2", PIN = 3/4"
26	CLEHL 008	3	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4" THICK WITH 13/16" OPENING, H. D. G.
42	DEACB 007	3	DEADEND COMPRESSION ASSEMBLY FOR 1590 ACSR, OVAL EYE
58	LUGGR 003	3	LUG FOR 1" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 006	6	SQUARE LOCK NUT FOR 1" BOLT, H.D.G.
76	WASRD 007	12	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

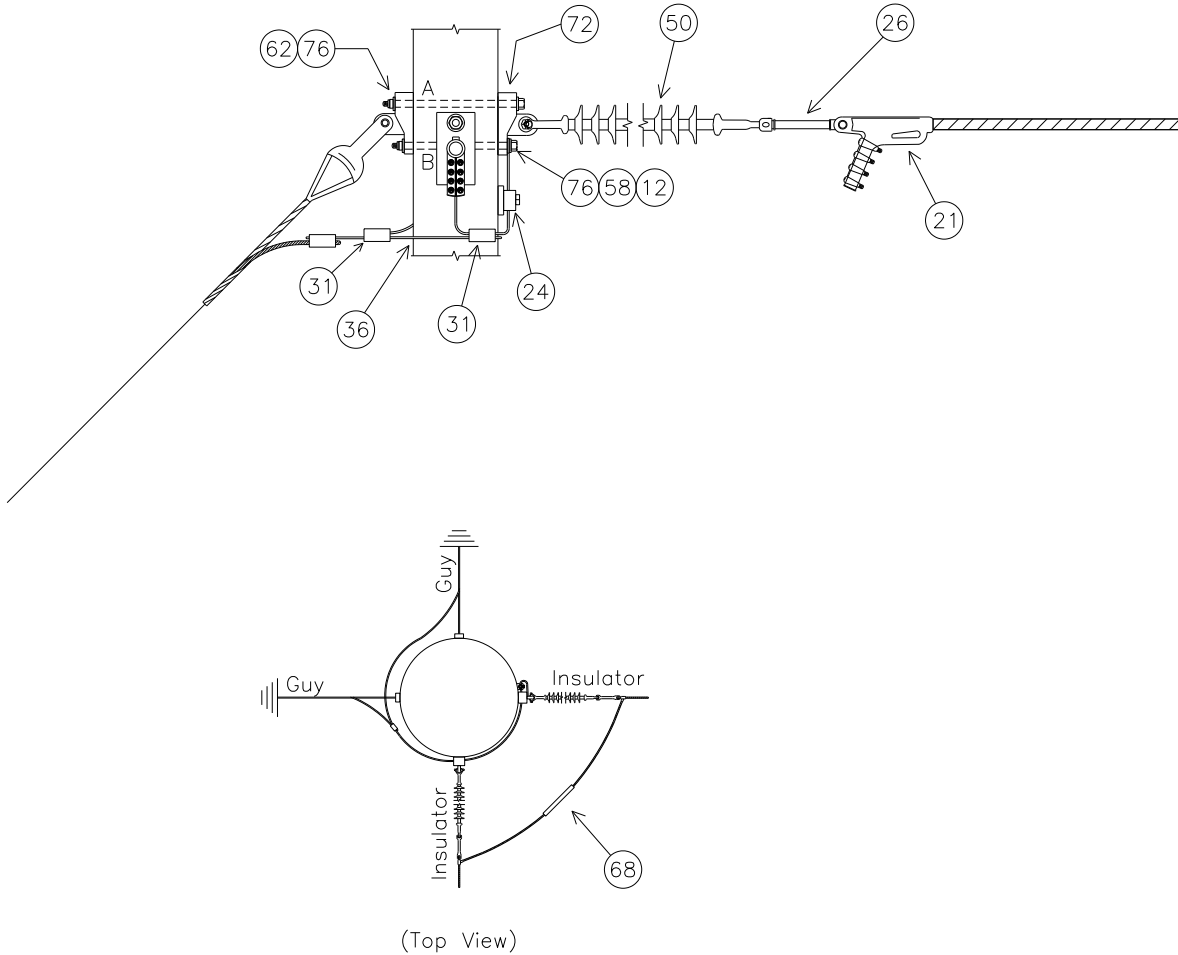
BIN-19

ISDD9SSB3

INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEAD-END 90°, SLACK TENSION TO SLACK TENSION, 138KV, 3-PHASE

CONDUCTOR OPTIONS: 954A, 954S, 1590



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

SUBSTRUCTURE	UPPER TEE			LOWER TEE		
	Top	Mid	Bottom	Top	Mid	Bottom
UPPER BOLT 'A' LENGTH (INCHES)	24.9	26.8	28.7	24.9	26.9	28.8
LOWER BOLT 'B' LENGTH (INCHES)	23.2	25.2	27.1	23.3	25.2	27.2

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

BIN-20

ISDD9SSB3 PLATES

ISDD9SSB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 053	2	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	4	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	4	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	2	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 008	6	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4" THICK WITH 13/16" OPENING, H. D. G.
31	CNNCP 016	6	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., COPPER
36	COBCO 028	18 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 003	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 138KV, L = 89", CLASS 52-8/11
58	LUGGR 002	6	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	12	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
72	TEEDE 003	12	TEE, DUCTILE IRON, H.D.G., 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	24	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISDD9SSB3*954A

NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 005	6	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
68	SLEAJ 006	3	ALUM. SLEEVE JUMPER FOR 954 AAC 61, COMPRESSION SPLICE, NON-TENSION ONLY

ISDD9SSB3*954S

NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 005	6	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
68	SLEAJ 005	3	ALUM. SLEEVE JUMPER FOR 954 ACSR 54/7, COMPRESSION SPLICE, NON-TENSION ONLY

ISDD9SSB3*1590

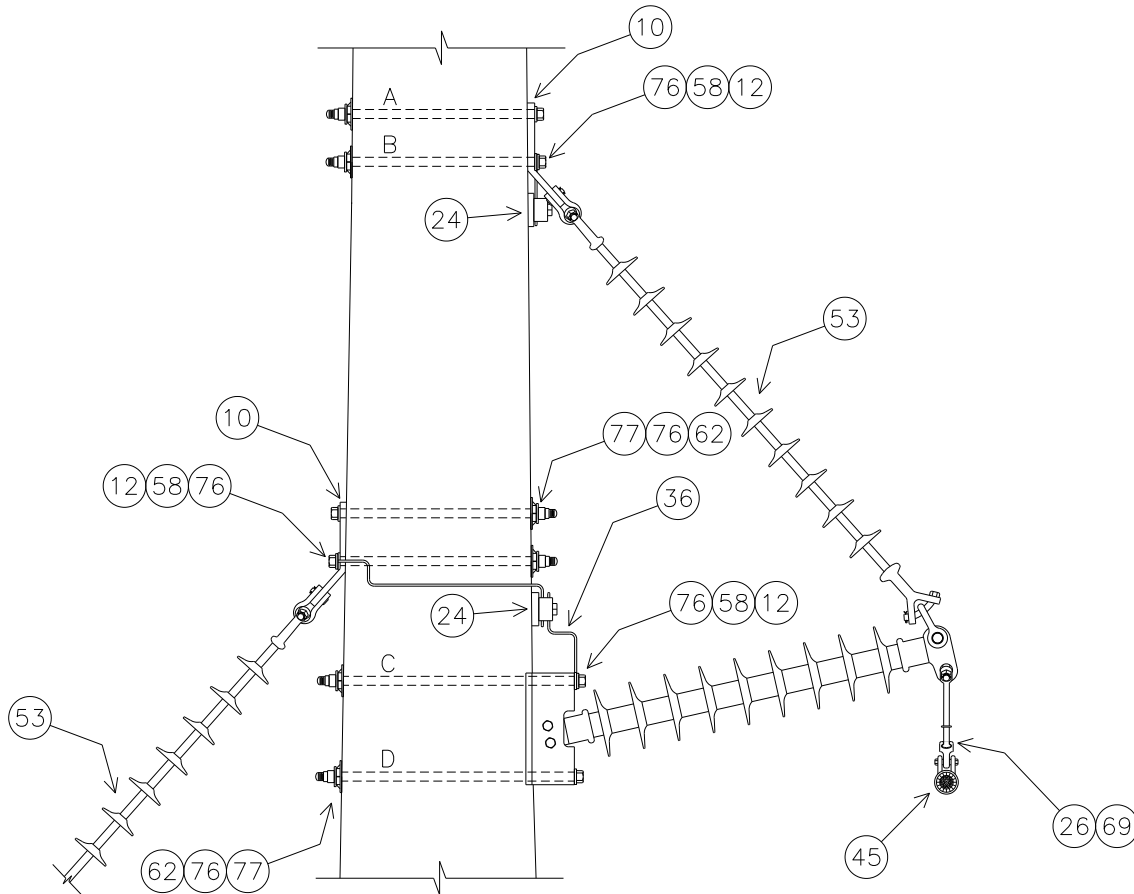
NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 006	6	DEADEND CLAMP (1.18 - 1.52") 35,000# STRENGTH, GAP = 2", PIN = 3/4"
68	SLEAJ 007	3	ALUM. SLEEVE JUMPER FOR 1590 ACSR 54/19, COMPRESSION SPLICE, NON-TENSION ONLY

ISSBDB3

INSULATOR FOR SPUN CONCRETE POLES

SINGLE BRACED LINE POST, DELTA CONFIGURATION, 138KV, 3-PHASE

CONDUCTOR OPTIONS: 954A, 954S, 1590



SEE MBA1 FOR BOLT ASSEMBLY DETAILS

VERTICLE CONFIGURATION

	MINIMUM REQUIRED BOLT LENGTH (INCHES)			
STRUCTURE	'A'	'B'	'C'	'D'
TOP	21.0	21.4	27.9	27.9
MIDDLE	21.9	22.3	28.8	28.7
BOTTOM	22.8	23.1	29.6	29.6

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER.

REVISÉ: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

BIN-22



ISSBDB3 PLATES

ISSBDB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
10	BKTLP001	3	BRACKET, 46° ANGLE, 6" HOLE SPACING, 1 1/16" HOLE DIAMETER, 5/8" THICK
12	BOLMS 052	3	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 053	3	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	2	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	4	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 001	3	BALL-Y CLEVIS, CLASS 52-3/5, STRENGTH = 30,000#, L > 9", PIN = 3/4", H.D.G.
36	COBCO 028	9 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
53	INSLP 012	3	138KV SILICONE BRACED LINE POST INSULATOR, 12° RISE, GAIN BASE, L = 52", H = 66", 12" B.H.S.
58	LUGGR 002	6	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATTED COPPER COMPRESSION
62	NUTSL 005	12	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
69	SOCEY 003	3	SOCKET - EYE, STENGTH = 25,000#, L = 2 5/16", EYE = 13/16", FORGED STEEL, GALV.
76	WASRD 006	24	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	18	SQUARE CURVED WASHER FOR 7/8" BOLTS, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

ISSBDB3*954A

45	GRISA 003	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82", 1 3/16" GAP, 5/8" PIN
----	-----------	---	--

ISSBDB3*954S

45	GRISA 004	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82", 1 3/16" GAP, 5/8" PIN
----	-----------	---	---

ISSBDB3*1590

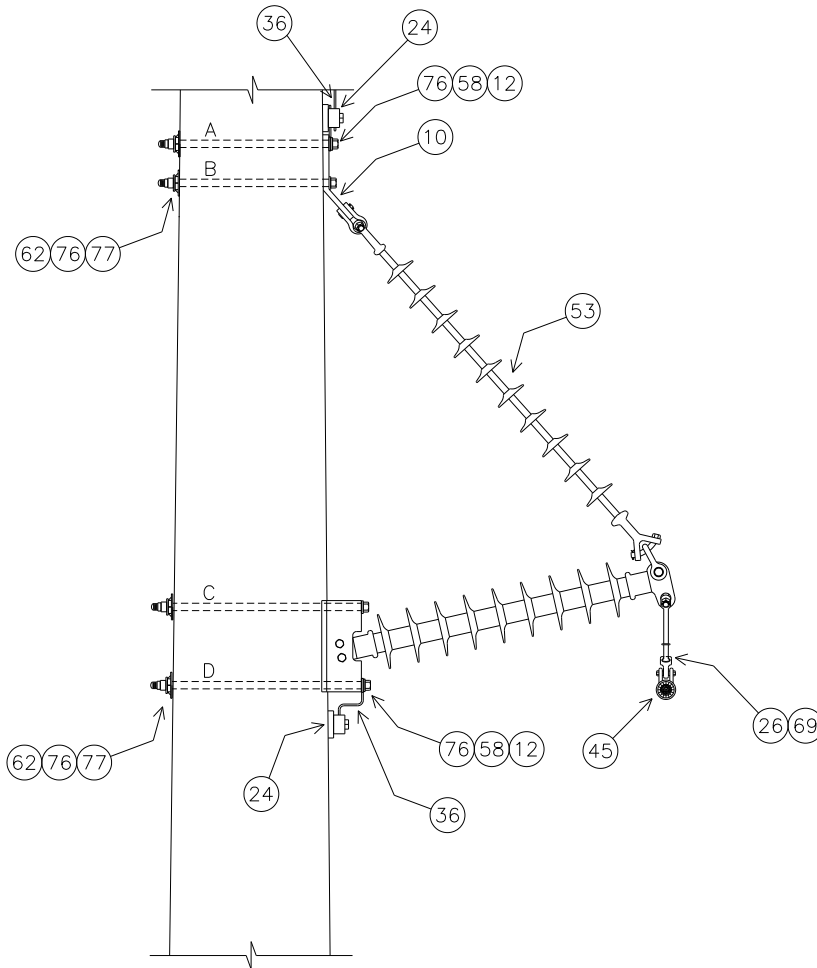
45	GRISA 005	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88", 1 3/8" GAP, 3/4" PIN
----	-----------	---	---

ISSBNGB3

INSULATOR FOR SPUN CONCRETE POLES

SINGLE BRACED LINE POST, NO GUY, 138KV, 3-PHASE

CONDUCTOR OPTIONS: 954A, 954S, 1590



SEE MBA1 FOR BOLT ASSEMBLY DETAILS

VERTICLE CONFIGURATION

STRUCTURE	MINIMUM REQUIRED BOLT LENGTH (INCHES)			
	'A'	'B'	'C'	'D'
TOP	20.6	20.4	26.9	27.4
MIDDLE	22.3	22.2	28.7	29.1
BOTTOM	24.0	23.9	30.4	30.9

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

BIN-24



ISSBNGB3 PLATES

ISSBNGB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
10	BKTL001	3	BRACKET, 46° ANGLE, 6" HOLE SPACING, 1 1/16" HOLE DIAMETER, 5/8" THICK
12	BOLMS 052	2	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 053	4	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	2	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	2	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 074	2	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 001	3	BALL-Y CLEVIS, CLASS 52-3/5, STRENGTH = 30,000#, L > 9", PIN = 3/4", H.D.G.
36	COBCO 028	9 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
53	INSLP 012	3	138KV SILICONE BRACED LINE POST INSULATOR, 12° RISE, GAIN BASE, L = 52", H = 66", 12" B.H.S.
58	LUGGR 002	6	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATTED COPPER COMPRESSION
62	NUTSL 005	12	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
69	SOCEY 003	3	SOCKET - EYE, STENGTH = 25,000#, L = 2 5/16", EYE = 13/16", FORGED STEEL, GALV.
76	WASRD 006	24	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	12	SQUARE CURVED WASHER FOR 7/8" BOLTS, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

ISSBNGB3*954A

45	GRISA 003	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82", 1 3/16" GAP, 5/8" PIN
----	-----------	---	--

ISSBNGB3*954S

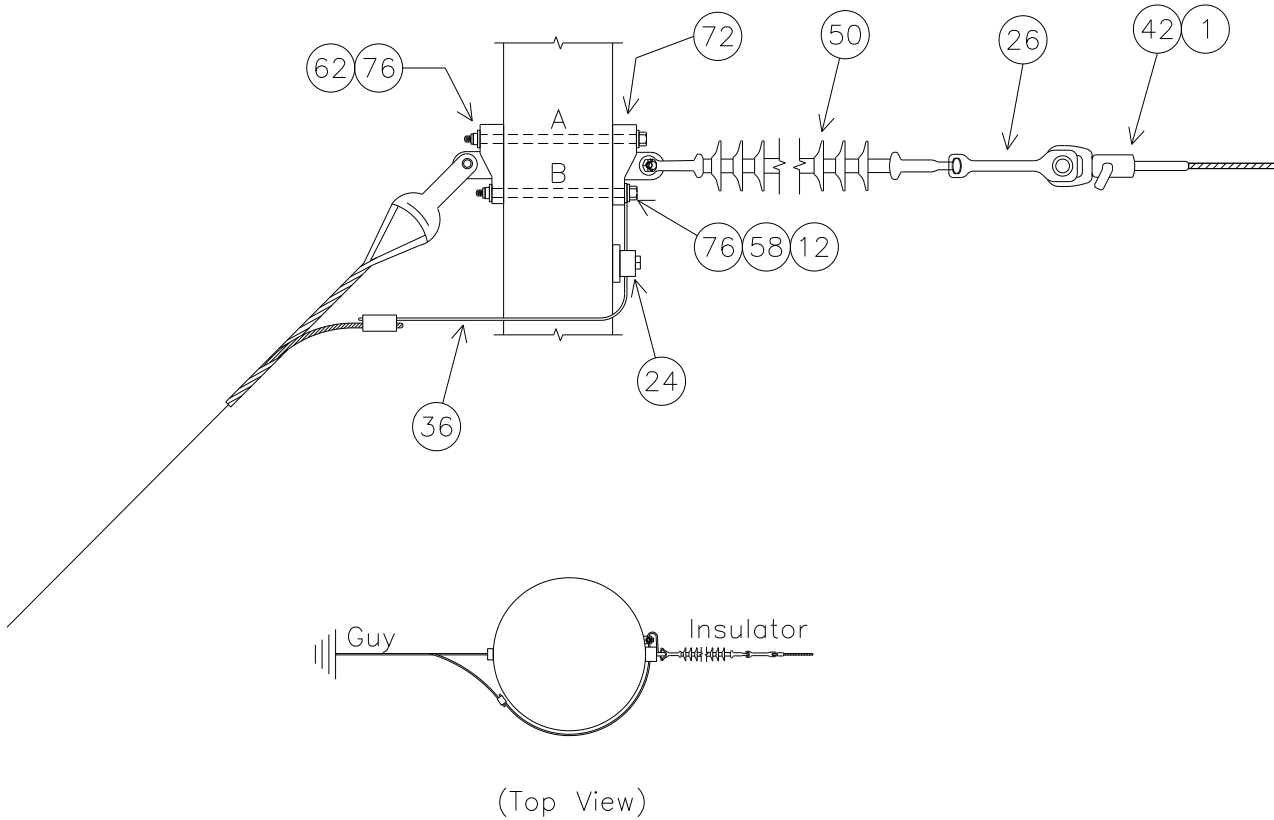
45	GRISA 004	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82", 1 3/16" GAP, 5/8" PIN
----	-----------	---	---

ISSBNGB3*1590

45	GRISA 005	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88", 1 3/8" GAP, 3/4" PIN
----	-----------	---	---

ISSDFB3

INSULATOR FOR SPUN CONCRETE POLES
SINGLE DEAD-END FULL TENSION, 138KV, 3-PHASE
CONDUCTOR OPTIONS: 954S, 1590



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

SUBSTRUCTURE	Top	Mid	Bottom
UPPER BOLT 'A' LENGTH (INCHES)	25.0	26.9	28.9
LOWER BOLT 'B' LENGTH (INCHES)	23.3	25.3	27.2

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISSDFB3 PLATES

ISSDFB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 005	3	SOCKET-Y CLEVIS, CLASS 52-8/11, L = 11", PIN = 7/8", H.D.G.
36	COBCO 028	12 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 003	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 138KV, L = 89", CLASS 52-8/11
72	TEEDE 003	6	TEE, DUCTILE IRON, H.D.G., 6" HOLE SPACING, STRENGTH = 60,000#

ISSDFB3*954S

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 053	1	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	2	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	2	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	1	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
42	DEACB 005	3	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSR, OVAL EYE
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISSDFB3*1590

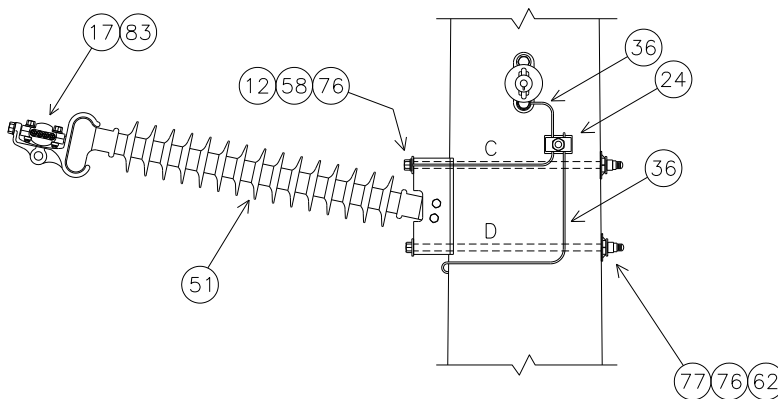
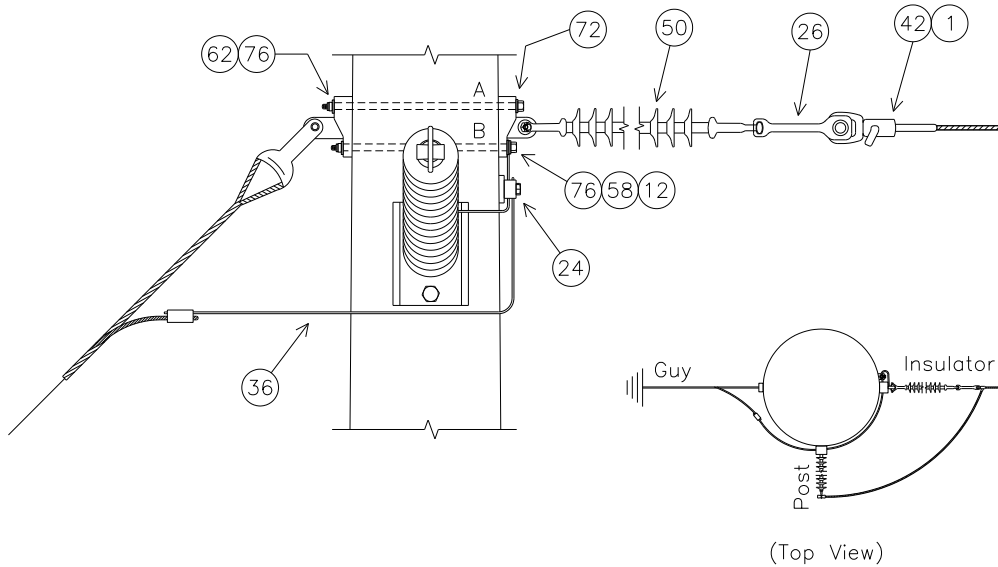
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 063	1	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	2	MACHINE BOLT, 1" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 070	2	MACHINE BOLT, 1" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 071	1	MACHINE BOLT, 1" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
42	DEACB 007	3	DEADEND COMPRESSION ASSEMBLY FOR 1590 ACSR, OVAL EYE
58	LUGGR 003	3	LUG FOR 1" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 006	6	SQUARE LOCK NUT FOR 1" BOLT, H.D.G.
76	WASRD 007	12	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISSDFP1B3

INSULATOR FOR SPUN CONCRETE POLES

SINGLE DEAD-END, FULL TENSION TO POST, TYPE 1, 138KV, 3-PHASE

CONDUCTOR OPTIONS: 954S, 1590



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

SUBSTRUCTURE	Top	Mid	Bottom
BOLT 'A' LENGTH (INCHES)	25.0	26.9	28.9
BOLT 'B' LENGTH (INCHES)	23.3	25.3	27.2
BOLT 'C' LENGTH (INCHES)	27.8	29.7	31.7
BOLT 'D' LENGTH (INCHES)	28.3	30.2	32.1

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

REVISED: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

BIN-28

ISSDFP1B3 PLATES

ISSDFP1B3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 055	1	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	2	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 074	3	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 005	3	SOCKET-Y CLEVIS, CLASS 52-8/11, L = 11", PIN = 7/8", H.D.G.
36	COBCO 028	12 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 003	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 138KV, L = 89", CLASS 52-8/11
51	INSHP 030	3	HORIZONTAL POST INSULATOR, 138KV, L = 54", GAIN BASE, 12° RISE
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
72	TEEDE 003	6	TEE, DUCTILE IRON, H.D.G., 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	6	SQUARE CURVED WASHER FOR 7/8" BOLTS, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

ISSDFP1B3*954S & H

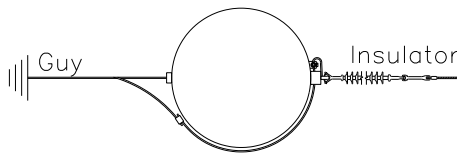
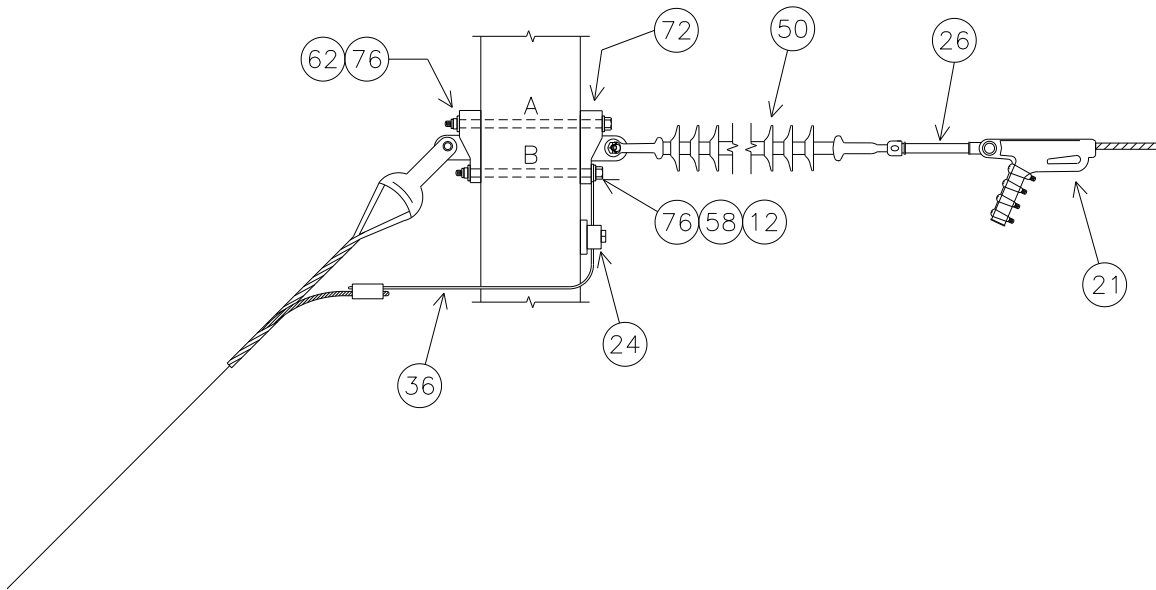
NO.	ITEM ID	QTY	DESCRIPTION
1 (954S)	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
1 (954H)	ADCVF 002	3	VOID FILLER COMPOUND FOR HIGH TEMPERATURE DEADEND ASSEMBLY
12	BOLMS 053	1	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	2	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	2	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	1	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
17	CLACT 005	3	CLAMP, ALUMINUM, FOR 954ASCR
42 (954S)	DEACB 005	3	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSR, OVAL EYE
42 (954H)	DEACB 016	3	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSS, OVAL EYE
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
83	RODAR 007	3	ARMOR ROD FOR 954 ACSR, 100"

ISSDFP1B3*1590

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 063	1	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	2	MACHINE BOLT, 1" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 070	2	MACHINE BOLT, 1" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 071	1	MACHINE BOLT, 1" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
17	CLACT 006	3	CLAMP, ALUMINUM, FOR 1590ASCR
42	DEACB 007	3	DEADEND COMPRESSION ASSEMBLY FOR 1590 ACSR, OVAL EYE
58	LUGGR 003	3	LUG FOR 1" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 006	6	SQUARE LOCK NUT FOR 1" BOLT, H.D.G.
76	WASRD 007	12	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED
83	RODAR 008	3	ARMOR ROD FOR 1590 ACSR, 100"

ISSDSB3

INSULATOR FOR SPUN CONCRETE POLES
SINGLE DEAD-END, SLACK TENSION, 138KV, 3-PHASE
 CONDUCTOR OPTIONS: 954A, 954S, 1590



(Top View)

NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

SUBSTRUCTURE	Top	Mid	Bottom
UPPER BOLT 'A' LENGTH (INCHES)	24.9	26.8	28.7
LOWER BOLT 'B' LENGTH (INCHES)	23.2	25.2	27.1

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISSDSB3 PLATES

ISSDSB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 053	1	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	2	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	2	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	1	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 008	3	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4" THICK WITH 13/16" OPENING, H. D. G.
36	COBCO 028	12 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 003	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 138KV, L = 89", CLASS 52-8/11
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
72	TEEDE 003	6	TEE, DUCTILE IRON, H.D.G., 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISSDSB3*954A, 954S

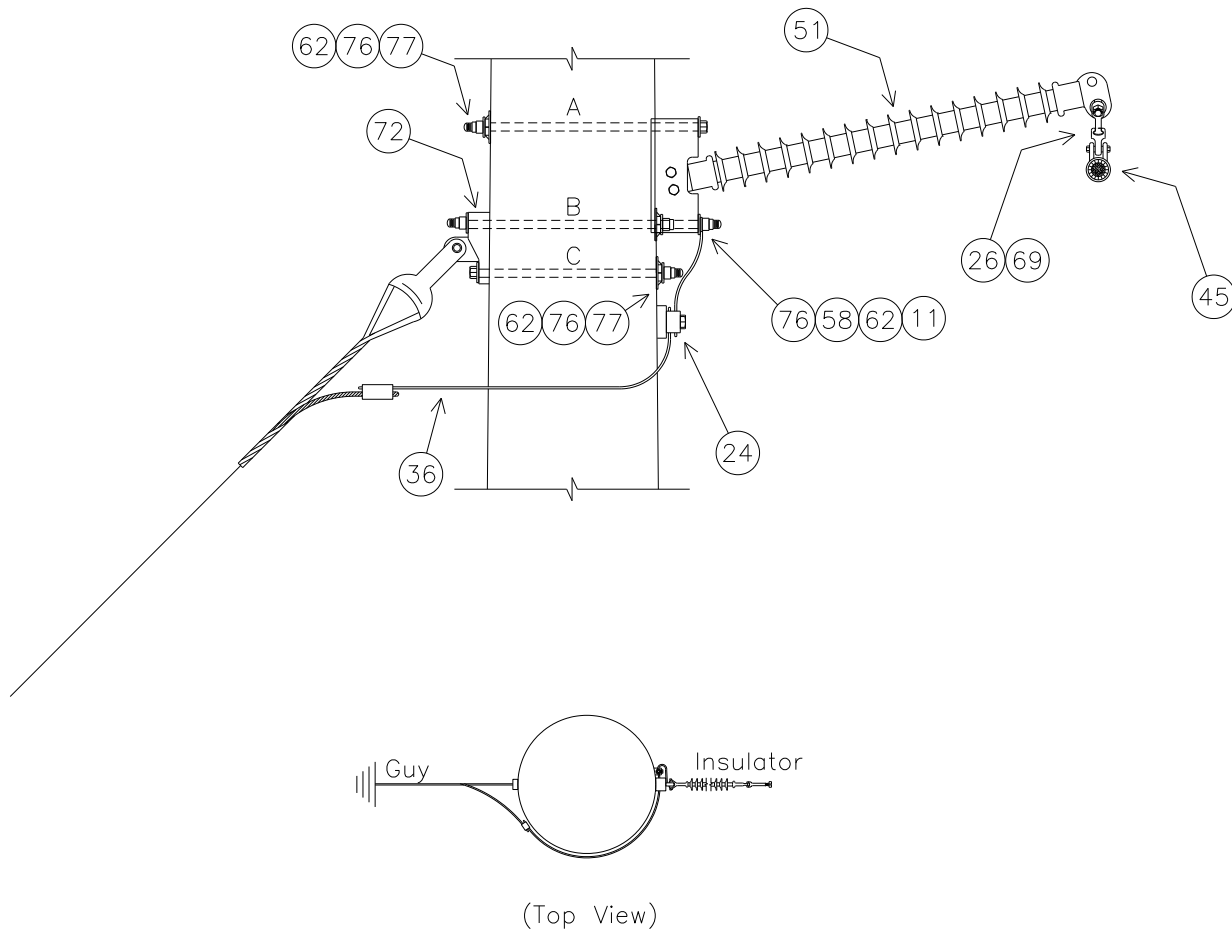
NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 005	3	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"

ISSDSB3*1590

NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 006	3	DEADEND CLAMP (1.18 - 1.52") 35,000# STRENGTH, GAP = 2", PIN = 3/4"

ISSPBGB3

**INSULATOR FOR SPUN CONCRETE POLES
SINGLE POST, BOTTOM GUYED, 138KV, 3-PHASE
CONDUCTOR OPTIONS: 954S, 1590**



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

SUBSTRUCTURE	Top	Mid	Bottom
BOLT 'A' LENGTH (INCHES)	27.0	28.7	30.4
DA BOLT 'B' LENGTH (INCHES)	28.8	30.5	32.2
BOLT 'C' LENGTH (INCHES)	22.2	23.9	25.7

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

REVISÉ: JUNE 2011

REVIEW/REVISED BY: MLR

APPROVED BY: RHS

138KV INSULATORS

BIN-32



ISSPBGB3 PLATES

ISSPBGB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
11	BOLDA 036	1	DOUBLE ARMING BOLT, 7/8" X 30", WITH 4 SQUARE NUTS ATTACHED
11	BOLDA 037	1	DOUBLE ARMING BOLT, 7/8" X 32", WITH 4 SQUARE NUTS ATTACHED
11	BOLDA 038	1	DOUBLE ARMING BOLT, 7/8" X 34", WITH 4 SQUARE NUTS ATTACHED
12	BOLMS 053	2	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	1	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	1	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	1	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 074	1	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 001	3	BALL-Y CLEVIS, CLASS 52-3/5, STRENGTH = 30,000#, L > 9", PIN = 3/4", H.D.G.
36	COBCO 028	9ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
51	INSHP 023	3	HORIZONTAL POST INSULATOR, 138KV, L = 54", GAIN BASE, 12° RISE
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	12	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
69	SOCEY 003	3	SOCKET - EYE, STENGTH = 25,000#, L = 2 5/16", EYE = 13/16", FORGED STEEL, GALV.
72	TEEDE 003	3	TEE, DUCTILE IRON, H.D.G., 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	21	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	9	SQUARE CURVED WASHER FOR 7/8" BOLTS, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

ISSPBGB3*954S

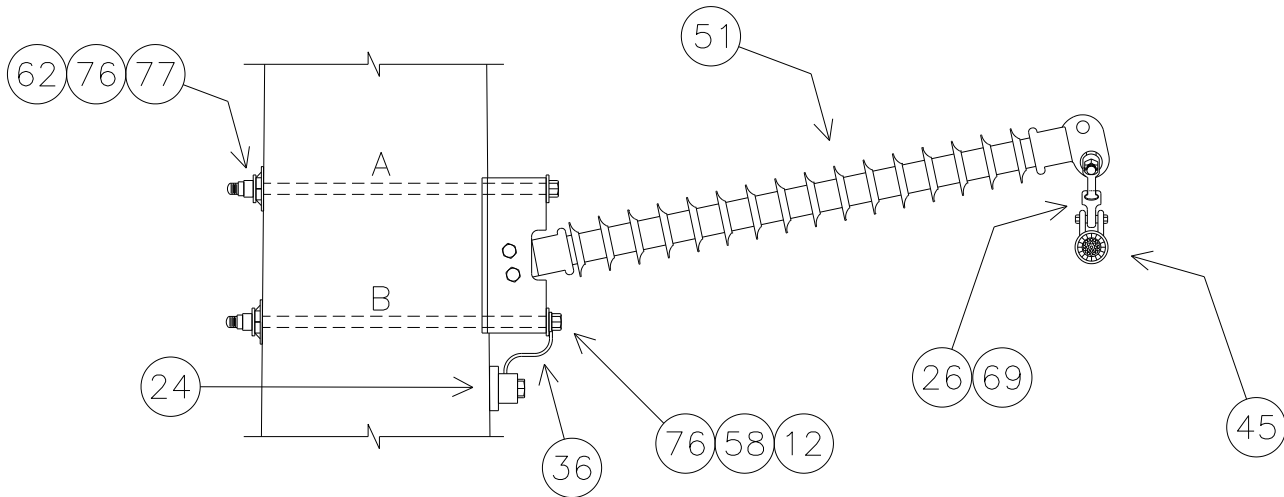
45	GRISA 004	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82", 1 3/16" GAP, 5/8" PIN
----	-----------	---	---

ISSPBGB3*1590

45	GRISA 005	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88", 1 3/8" GAP, 3/4" PIN
----	-----------	---	---

ISSPNB3

INSULATOR FOR SPUN CONCRETE POLES
SINGLE POST, NO GUY, 138KV, 3-PHASE
CONDUCTOR OPTIONS: 954A, 954S



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

SUBSTRUCTURE	Top	Mid	Bottom
BOLT 'A' LENGTH (INCHES)	27.0	28.7	30.4
BOLT 'B' LENGTH (INCHES)	27.4	29.2	30.9

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER.



ISSPNB3 PLATES

ISSPNB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 055	2	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	2	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 074	2	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 001	3	BALL-Y CLEVIS, CLASS 52-3/5, STRENGTH = 30,000#, L > 9", PIN = 3/4", H.D.G.
36	COBCO 028	6 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
51	INSHP 023	3	HORIZONTAL POST INSULATOR, 138KV, L = 54", GAIN BASE, 12° RISE
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	6	SQUARE CURVED WASHER FOR 7/8" BOLTS, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

ISSPNB3*954A

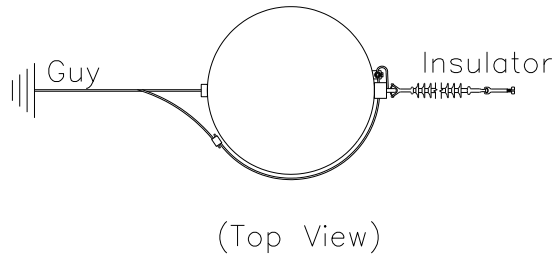
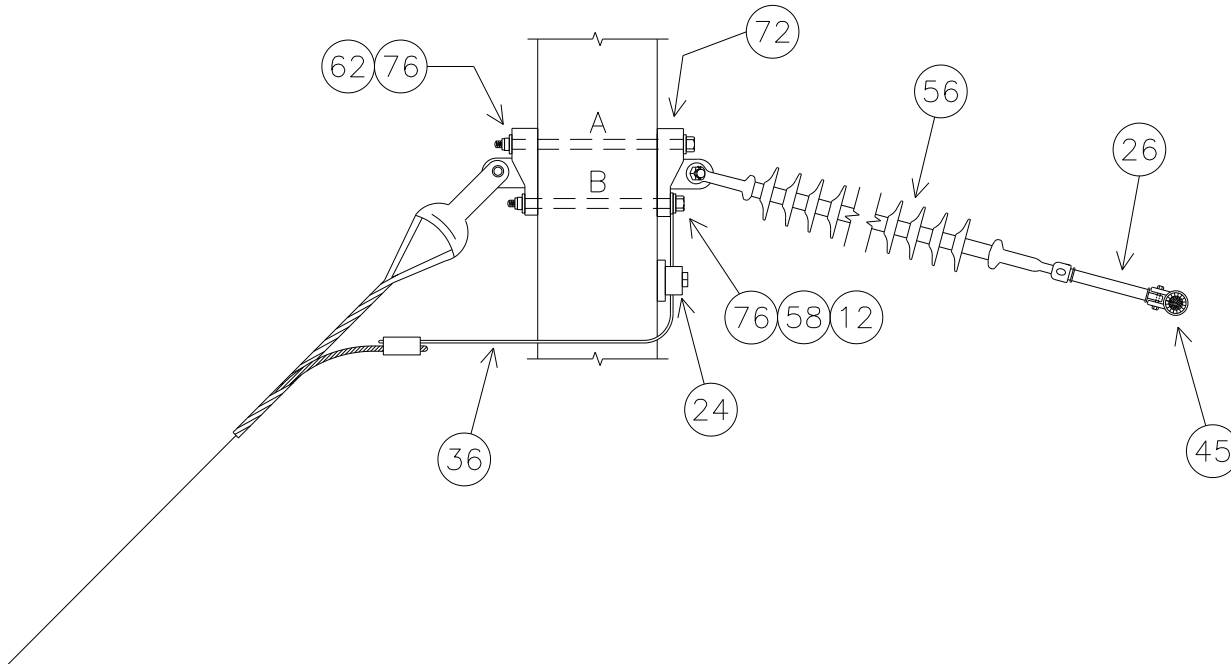
45	GRISA 003	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82", 1 3/16" GAP, 5/8" PIN
69	SOCEY 003	3	SOCKET - EYE, STENGTH = 25,000#, L = 2 5/16", EYE = 13/16", FORGED STEEL, GALV.

ISSPNB3*954S

45	GRISA 004	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82", 1 3/16" GAP, 5/8" PIN
69	SOCEY 003	3	SOCKET - EYE, STENGTH = 25,000#, L = 2 5/16", EYE = 13/16", FORGED STEEL, GALV.

ISSSSGB3

INSULATOR FOR SPUN CONCRETE POLES
SINGLE SUSPENSION, SINGLE GRIP, GUYED, 138KV, 3-PHASE
CONDUCTOR OPTIONS: 954A, 954S, 1590



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

SUBSTRUCTURE	Top	Mid	Bottom
UPPER BOLT 'A' LENGTH (INCHES)	24.7	26.6	28.5
LOWER BOLT 'B' LENGTH (INCHES)	23.0	24.9	26.9

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER



ISSSSGB3 PLATES

ISSSSGGB3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 053	1	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	2	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	2	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	1	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 007	3	SOCKET-EYE CLEVIS, CLASS 52-3/5, L = 10", EYE = 3/4" THICK WITH 13/16" OPENING, H. D. G.
36	COBCO 028	9 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
56	INSSU 008	3	SUSPENSION SILICON INSULATOR, Y-BALL COUPLING, 138KV, L = 66", CLASS 52-3/5
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
72	TEEDE 003	6	TEE, DUCTILE IRON, H.D.G., 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISSSSGGB3*954A

45	GRISA 003	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82", 1 3/16" GAP, 5/8" PIN
----	-----------	---	--

ISSSSGGB3*954S

45	GRISA 004	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82", 1 3/16" GAP, 5/8" PIN
----	-----------	---	---

ISSSSGGB3*1590

45	GRISA 005	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88", 1 3/8" GAP, 3/4" PIN
----	-----------	---	---