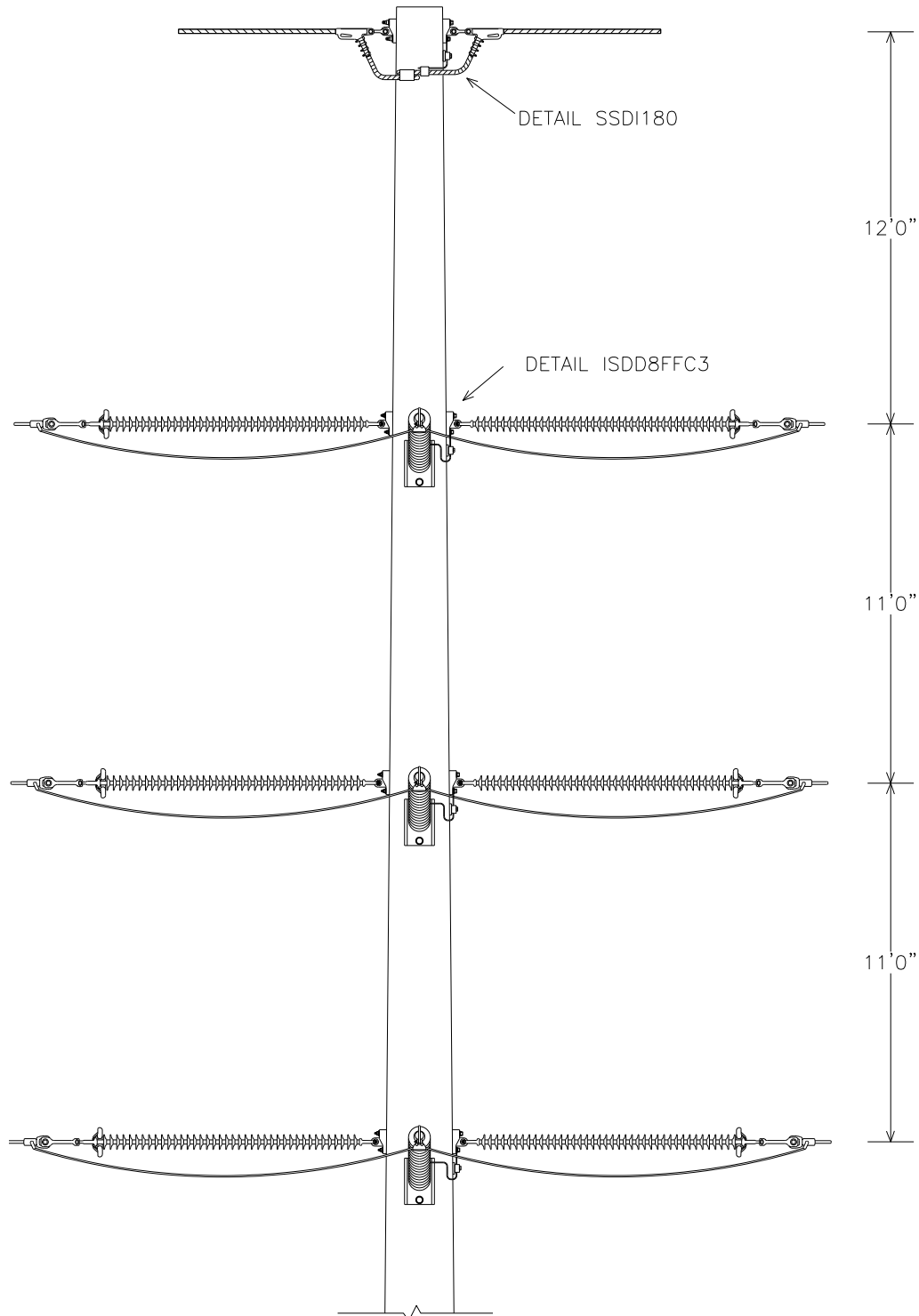


230KV SPUN CONCRETE STRUCTURES INDEX

ITEM	PAGE
1. C1241C: DOUBLE DEADEND 180°, FULL TENSION TO FULL TENSION, 3-PHASE	STS230-2
2. C1244C: DOUBLE DEADEND 90°, FULL TENSION TO FULL TENSION, 3-PHASE	STS230-8
3. C1244Q: DOUBLE DEADEND 90°, SLACK TENSION TO SLACK TENSION, 3-PHASE	STS230-14
4. C1245C: SINGLE DEADEND, FULL TENSION, 3-PHASE	STS230-20
5. C1245Q: SINGLE DEADEND, SLACK TENSION, 3-PHASE	STS230-26
6. C12462: DOUBLE DEADEND 135°, FULL TENSION TO SLACK TENSION, 3-PHASE	STS230-32
7. C1246C: DOUBLE DEADEND 90°, FULL TENSION TO SLACK TENSION, 3-PHASE	STS230-38
8. C1261: SINGLE BRACED LINE POST, UNGUYED, 3-PHASE	STS230-44
9. C1263A: SINGLE BRACED LINE POST, GUYED, 3-PHASE	STS230-50
10. C1286C: SINGLE DEADEND 180°, FULL TENSION TO POST, 3-PHASE	STS230-58
11. C2261: DOUBLE BRACED LINE POST, 3-PHASE	STS230-64
12. C2513A: DOUBLE SUSPENSION TANGENT, 3- PHASE	STS230-70
13. C2562A: DOUBLE BRACED LINE POST, H-FRAME, LIGHT GUY, 3-PHASE	STS230-80
14. C2562B: DOUBLE BRACED LINE POST, H-FRAME, HEAVY GUY, 3-PHASE	STS230-88
15. C3A45Q: SINGLE DEADEND, SLACK TENSION, SUBSTATION LATTICE STRUCTURE, 3-PHASE	STS230-98
16. C3B45C: SINGLE DEADEND, FULL TENSION, SUBSTATION A-FRAME, 3-PHASE	STS230-104
17. C3B45Q: SINGLE DEADEND, SLACK TENSION, SUBSTATION A-FRAME, 3-PHASE	STS230-110
18. C3B48C: SINGLE DEADEND, FULL TENSION WITH TEE, SUBSTATION A-FRAME, 3-PHASE	STS230-116
19. C6261: SINGLE BRACED LINE POST, DELTA CONFIGURATION, 3-PHASE	STS230-122
20. C7244C: DOUBLE DEADEND 90°, FULL TENSION TO FULL TENSION, NO SHIELD, 1-PHASE	STS230-128
21. C7246C: DOUBLE DEADEND 90°, FULL TENSION TO SLACK TENSION, NO SHIELD, 1-PHASE	STS230-134
22. C8244C : DOUBLE DEADEND 90°, FULL TENSION TO FULL TENSION, WITH SHIELD, 1-PHASE	STS230-140

C1241C

230KV, DOUBLE DEADEND 180°, FULL TENSION TO FULL TENSION, 3-PHASE
CONDUCTOR OPTIONS: 954S, 1590



C1241C PLATES

C1241C BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	6	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
7	BALFI 007	3	BALL Y-CLEVIS, CLASS 52-3/5
12	BOLMS 040	1	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	1	MACHINE BOLT, 3/4" X 24", 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
12	BOLMS 075	2	MACHINE BOLT, 7/8" X 36", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	4	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, HOT DIPPED GALV.
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G. 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
36	COBCO 028	15 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 002	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, CLASS 52-8/11
51	INSHP 025	3	HORIZONTAL POST SILICONE INSULATOR, 230KV, L = 86 INCHES, GAIN BASE, 17 DEGREE RISE
58	LUGGR 001	1	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	2	SQUARE LOCK NUT FOR 3/4 INCH BOLT, HOT DIPPED GALVANIZED
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8 INCH BOLT, HOT DIPPED GALVANIZED
69	SOCEY 003	3	SOCKET EYE, CLASS 52-3/5
72	TEEDE 003	8	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	4	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED
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

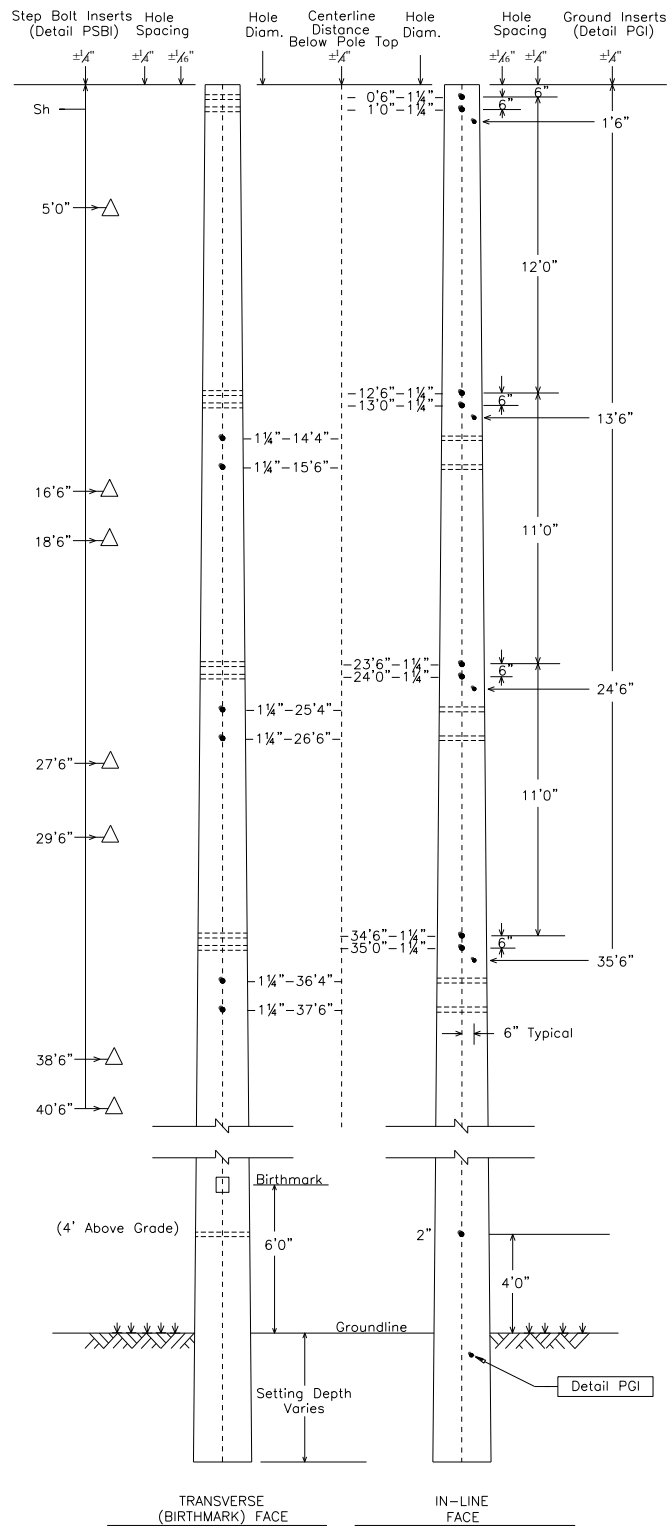
C1241C*954S

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	1	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
12	BOLMS 074	1	MACHINE BOLT, 7/8" X 32", 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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

C1241C*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	1	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
12	BOLMS 072	1	MACHINE BOLT, 1" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
20	CLAJU 008	3	CUSHION GRIP SUSPENSION CLAMP FOR 954 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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 007	12	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

C1241C DRILLING DETAIL



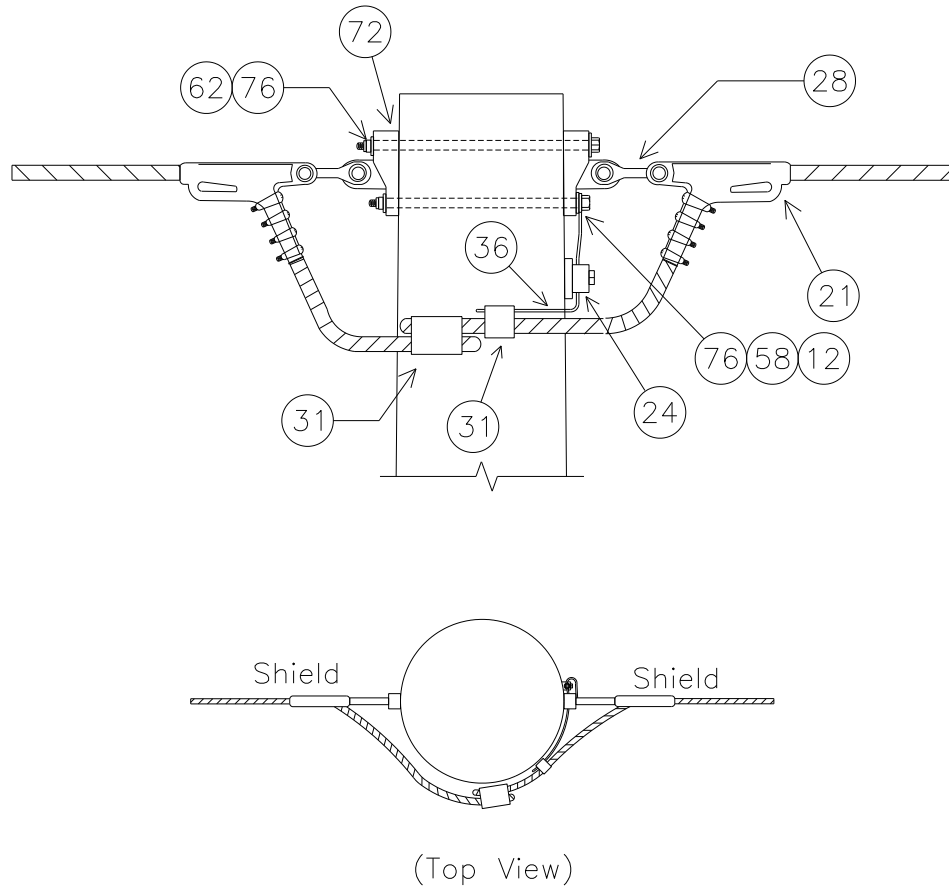
REVISÉ: OCTOBER 2013

REVIEW/REVISED BY: MLR

APPROVED BY: KKR

SSDI180

SHIELD FOR SPUN CONCRETE POLES
DOUBLE INLINE 180°



NOTE: SEE SUBSTRUCTURE DETAIL MBA1 FOR BOLT ASSEMBLY DETAILS

UPPER BOLT LENGTH (INCHES)	22.6
LOWER BOLT LENGTH (INCHES)	20.9

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

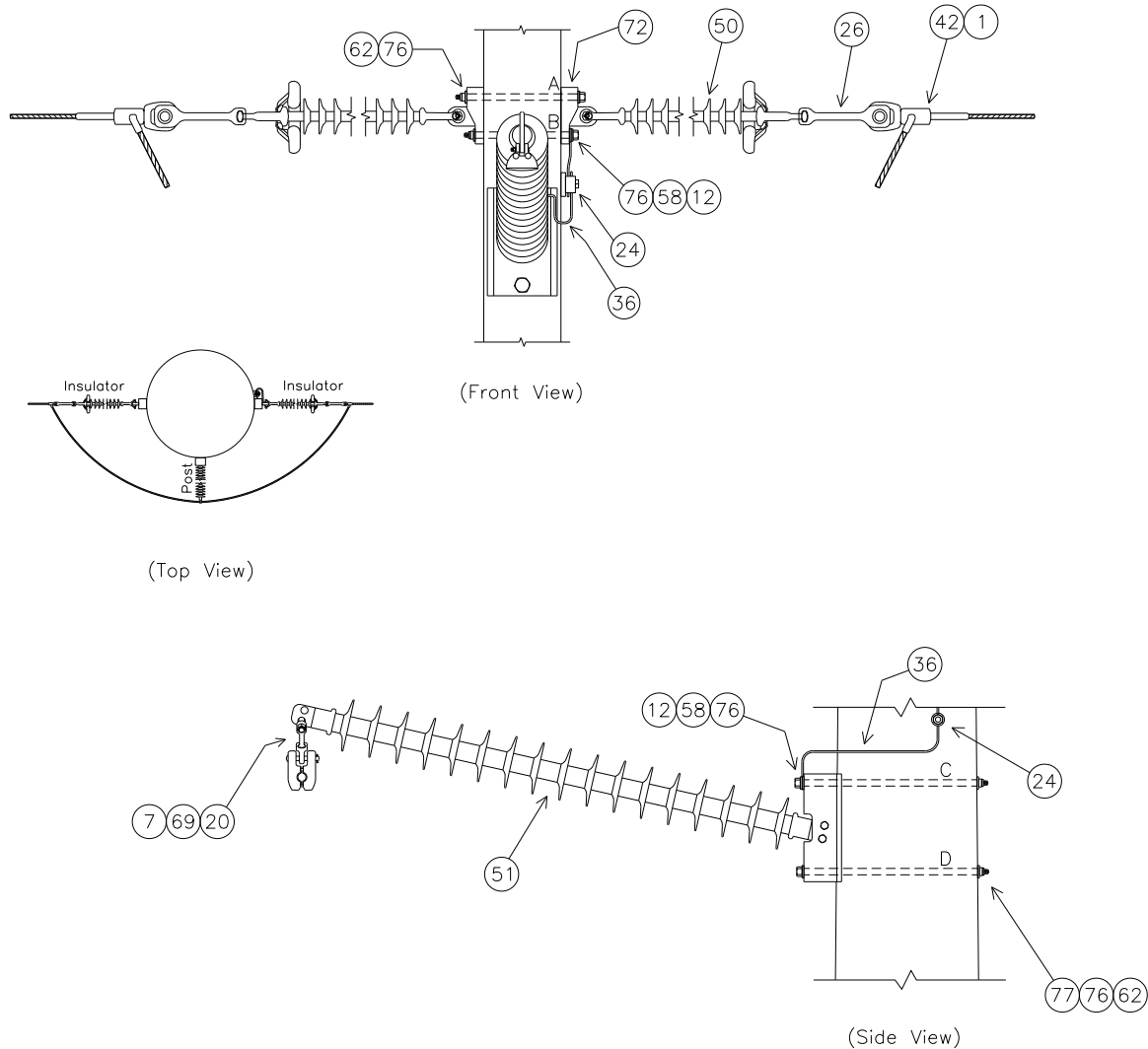
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 040	1	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	1	MACHINE BOLT, 3/4" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G., 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
36	COBCO 028	3 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
58	LUGGR 001	1	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	2	SQUARE LOCK NUT FOR 3/4" BOLT, H.D.G.
72	TEEDE 003	2	TEE, DUCTILE IRON, H.D.G. 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	4	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED

ISDD8FFC3

INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEAD-END 180°, FULL TENSION TO FULL TENSION, 230KV, 3-PHASE

CONDUCTOR OPTIONS: 954S, 1590



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

DEADEND INSULATOR	TOP	MIDDLE	BOTTOM
UPPER BOLT 'A' LENGTH (INCHES)	25.4	27.8	30.1
LOWER BOLT 'B' LENGTH (INCHES)	23.8	26.1	28.5

POST INSULATOR	TOP	MIDDLE	BOTTOM
UPPER BOLT 'C' LENGTH (INCHES)	28.5	30.8	33.2
LOWER BOLT 'D' LENGTH (INCHES)	29.0	31.3	33.7

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISDD8FFC3 PLATES

ISDD8FFC3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	6	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
7	BALFI 007	3	BALL Y-CLEVIS, CLASS 52-3/5
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
12	BOLMS 075	2	MACHINE BOLT, 7/8" X 36", 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	INSDE 002	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", CLASS 52-8/11
51	INSHP 025	3	HORIZONTAL POST INSULATOR, 230KV, L = 86", GAIN BASE, 17° 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	SOCEY 003	3	SOCKET EYE, CLASS 52-3/5
72	TEEDE 003	6	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 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

ISDD8FFC3*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	1	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
12	BOLMS 074	1	MACHINE BOLT, 7/8" X 32", 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

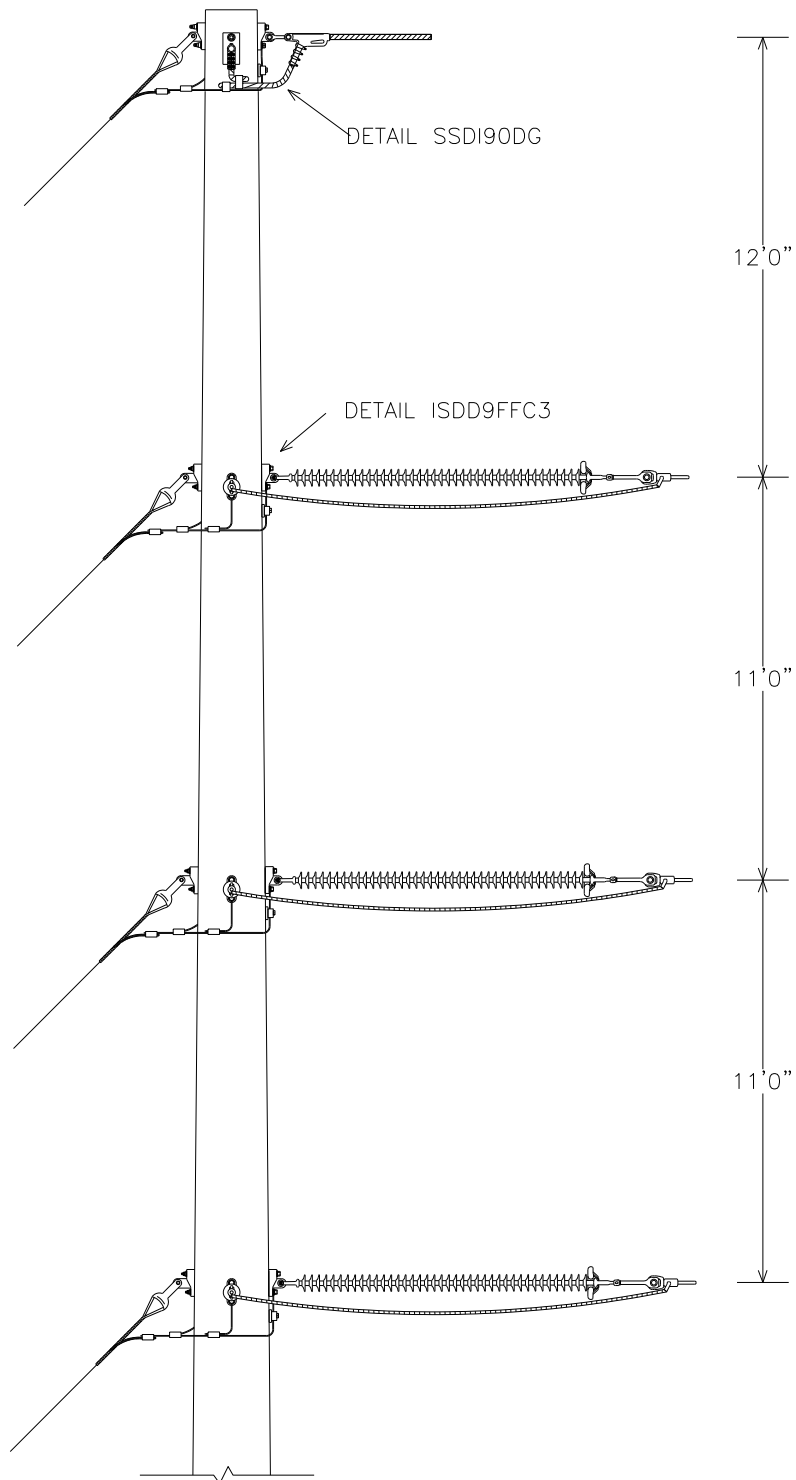
ISDD8FFC3*1590

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 063	1	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	1	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
12	BOLMS 072	1	MACHINE BOLT, 1" X 32", 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

C1244C

230KV, DOUBLE DEADEND 90°, FULL TENSION TO FULL TENSION, 3-PHASE

CONDUCTOR OPTIONS: 954S, 1590



C1244C PLATES

C1244C BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	6	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 040	2	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	2	MACHINE BOLT, 3/4" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	4	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, HOT DIPPED GALV.
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G. 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
31	CNNCP 016	7	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., COPPER
36	COBCO 028	24 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 002	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, CLASS 52-8/11
58	LUGGR 001	2	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	4	SQUARE LOCK NUT FOR 3/4 INCH BOLT, HOT DIPPED GALVANIZED
72	TEEDE 003	16	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	8	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED

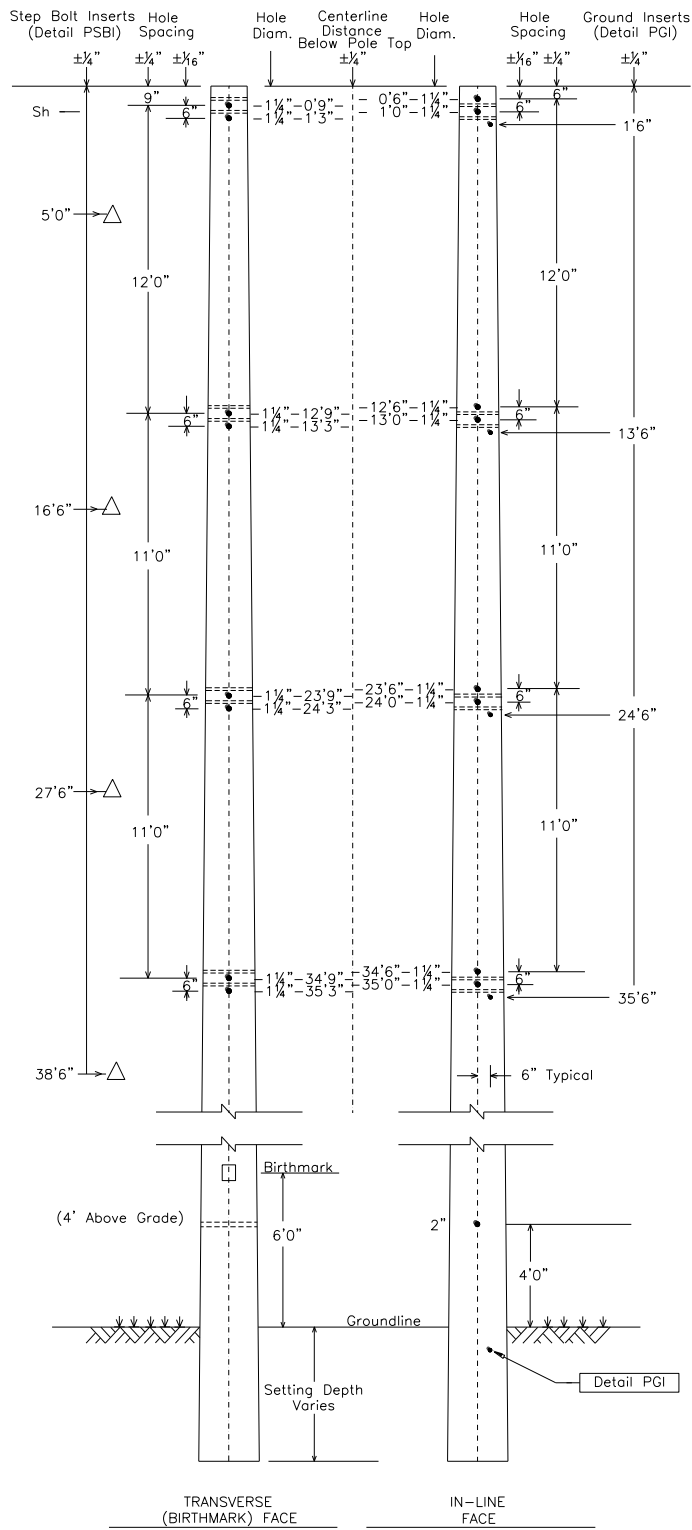
C1244C*954S

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	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
12	BOLMS 074	2	MACHINE BOLT, 7/8" X 32", 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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 006	24	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

C1244C*1590

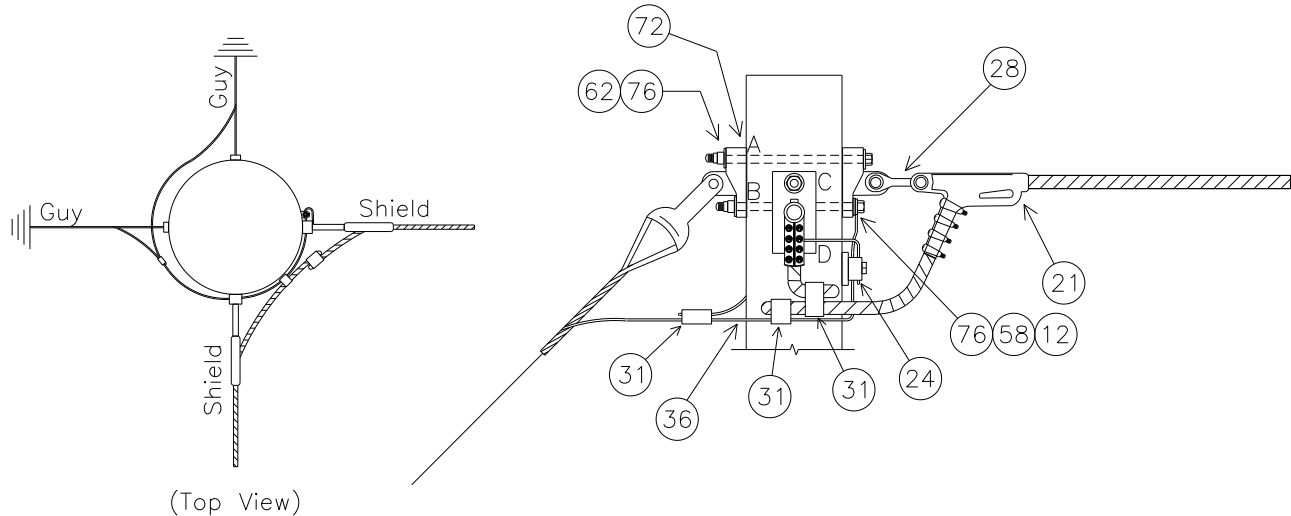
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 063	2	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	2	MACHINE BOLT, 1" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 070	4	MACHINE BOLT, 1" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 071	2	MACHINE BOLT, 1" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 072	2	MACHINE BOLT, 1" X 32", 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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 007	24	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

C1244C DRILLING DETAIL



SSDI90DG

SHIELD FOR SPUN CONCRETE POLES
DOUBLE IN-LINE 90°, DOUBLE GUY



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

MINIMUM REQUIRED BOLT LENGTH 'A' (INCHES)	22.6
MINIMUM REQUIRED BOLT LENGTH 'B' (INCHES)	20.9
MINIMUM REQUIRED BOLT LENGTH 'C' (INCHES)	22.6
MINIMUM REQUIRED BOLT LENGTH 'D' (INCHES)	21.0

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

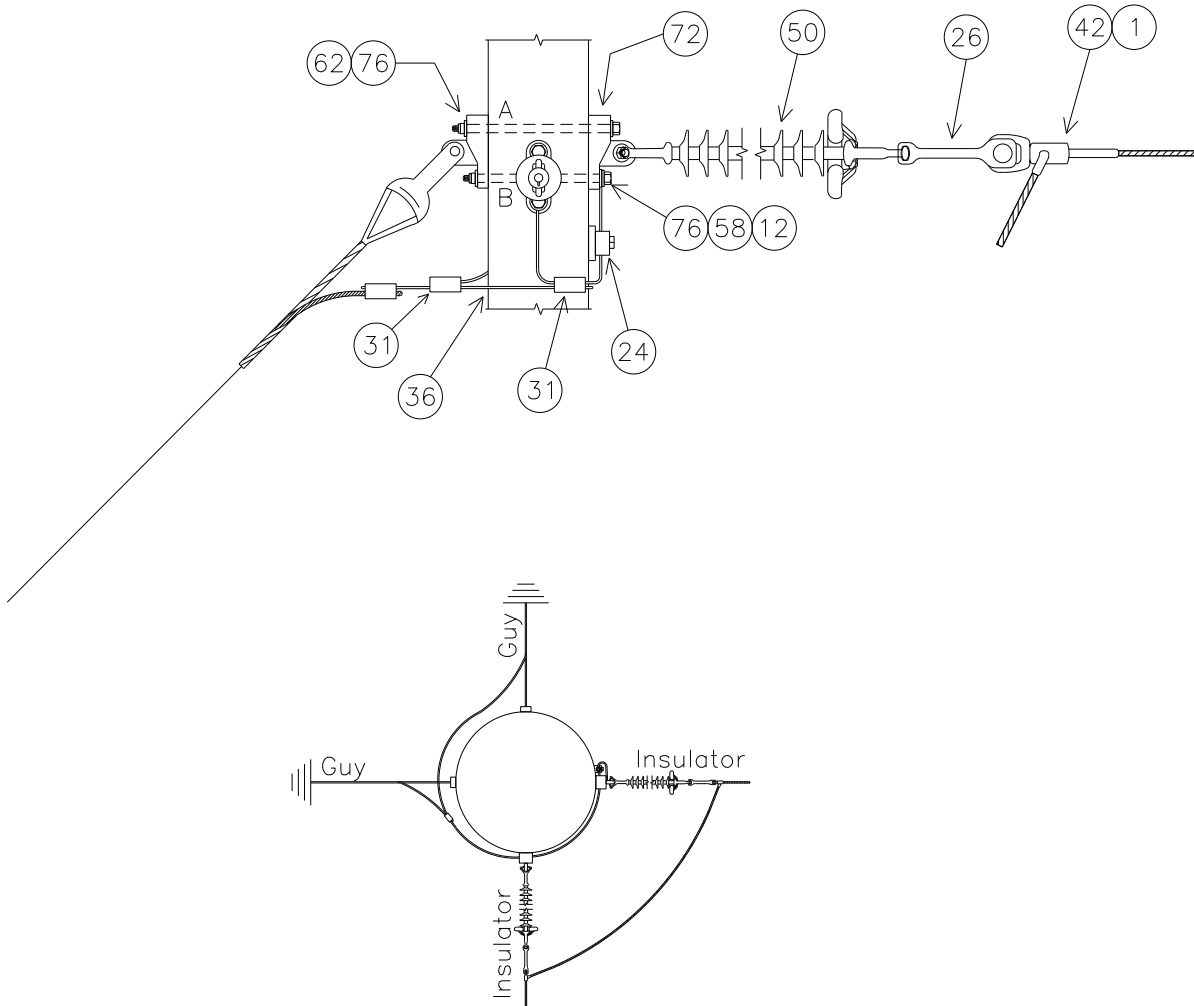
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 040	2	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	2	MACHINE BOLT, 3/4" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G., 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
31	CNNCP 016	1	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., COPPER, FOR CU CONNECTIONS ONLY
36	COBCO 028	6 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
58	LUGGR 001	2	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	4	SQUARE LOCK NUT FOR 3/4" BOLT, H.D.G.
72	TEEDE 003	4	TEE, DUCTILE IRON, H.D.G. 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	8	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED

ISDD9FFC3

INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEAD-END 90°, FULL TENSION TO FULL TENSION, 230KV, 3-PHASE

CONDUCTOR OPTIONS: 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)	25.4	27.8	30.1	25.4	27.8	30.2
LOWER BOLT 'B' LENGTH (INCHES)	23.8	26.1	28.5	23.8	26.2	28.6

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISDD9FFC3 PLATES

ISDD9FFC3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	6	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
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	INSDE 002	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", CLASS 52-8/11
72	TEEDE 003	12	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#

ISDD9FFC3*954S

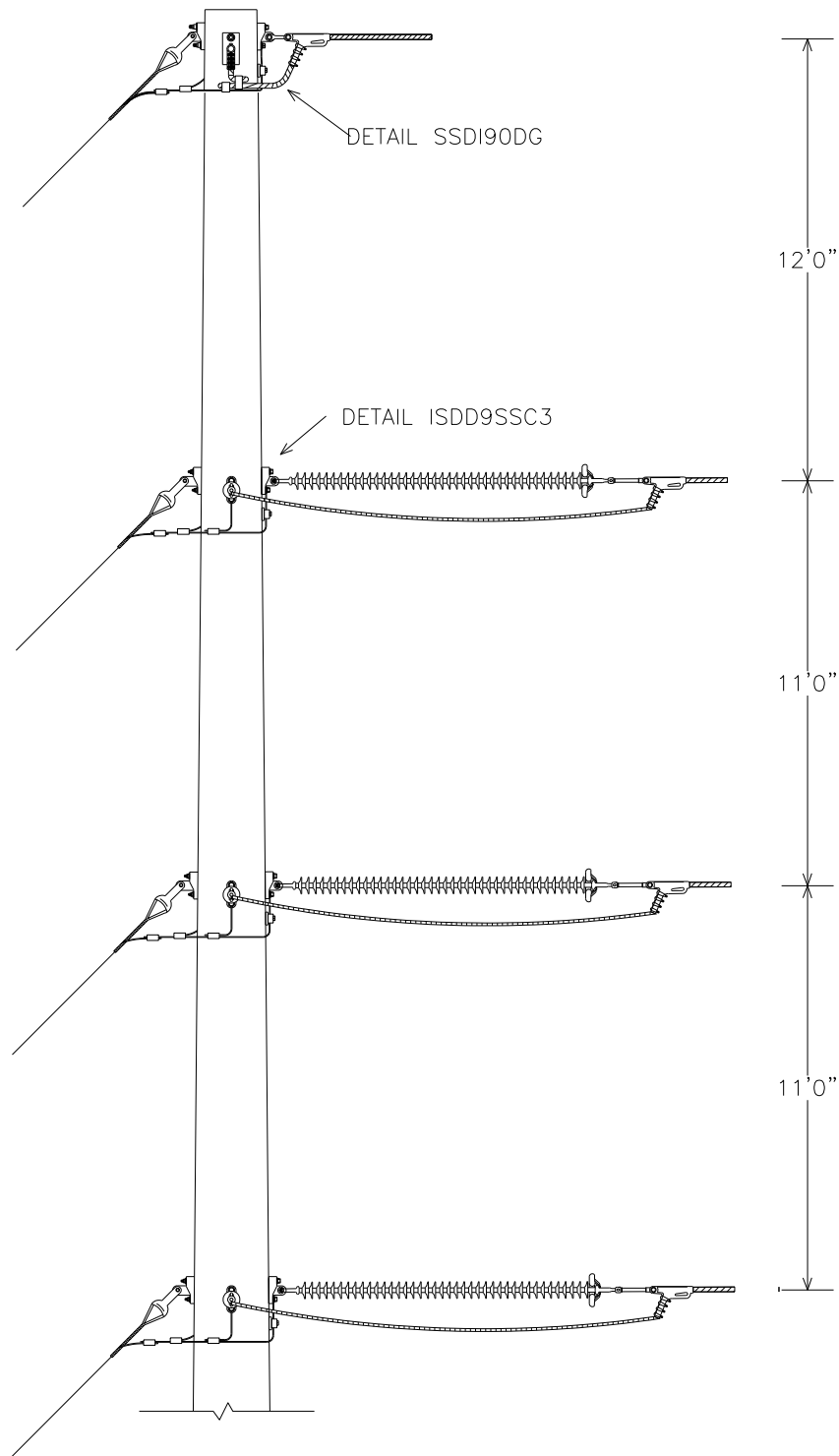
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 053	2	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	2	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	4	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	2	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 074	2	MACHINE BOLT, 7/8" X 32", 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

ISDD9FFC3*1590

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 063	2	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	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
12	BOLMS 072	2	MACHINE BOLT, 1" X 32", 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

C1244Q

230KV, DOUBLE DEADEND 90°, SLACK TENSION TO SLACK TENSION, 3-PHASE
CONDUCTOR OPTIONS: 954A, 954S, 1590



C1244Q PLATES

C1244Q BASE

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 040	2	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	2	MACHINE BOLT, 3/4" X 24", 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
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
12	BOLMS 074	2	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	4	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 W/ 13/16 OPENING, H. D. G.
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G. 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
31	CNNCP 016	7	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., COPPER
36	COBCO 028	24 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 002	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, CLASS 52-8/11
58	LUGGR 001	2	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
58	LUGGR 002	6	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	4	SQUARE LOCK NUT FOR 3/4 INCH BOLT, HOT DIPPED GALVANIZED
62	NUTSL 005	12	SQUARE LOCK NUT FOR 7/8 INCH BOLT, HOT DIPPED GALVANIZED
72	TEEDE 003	16	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	8	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED
76	WASRD 006	24	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

C1244Q*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

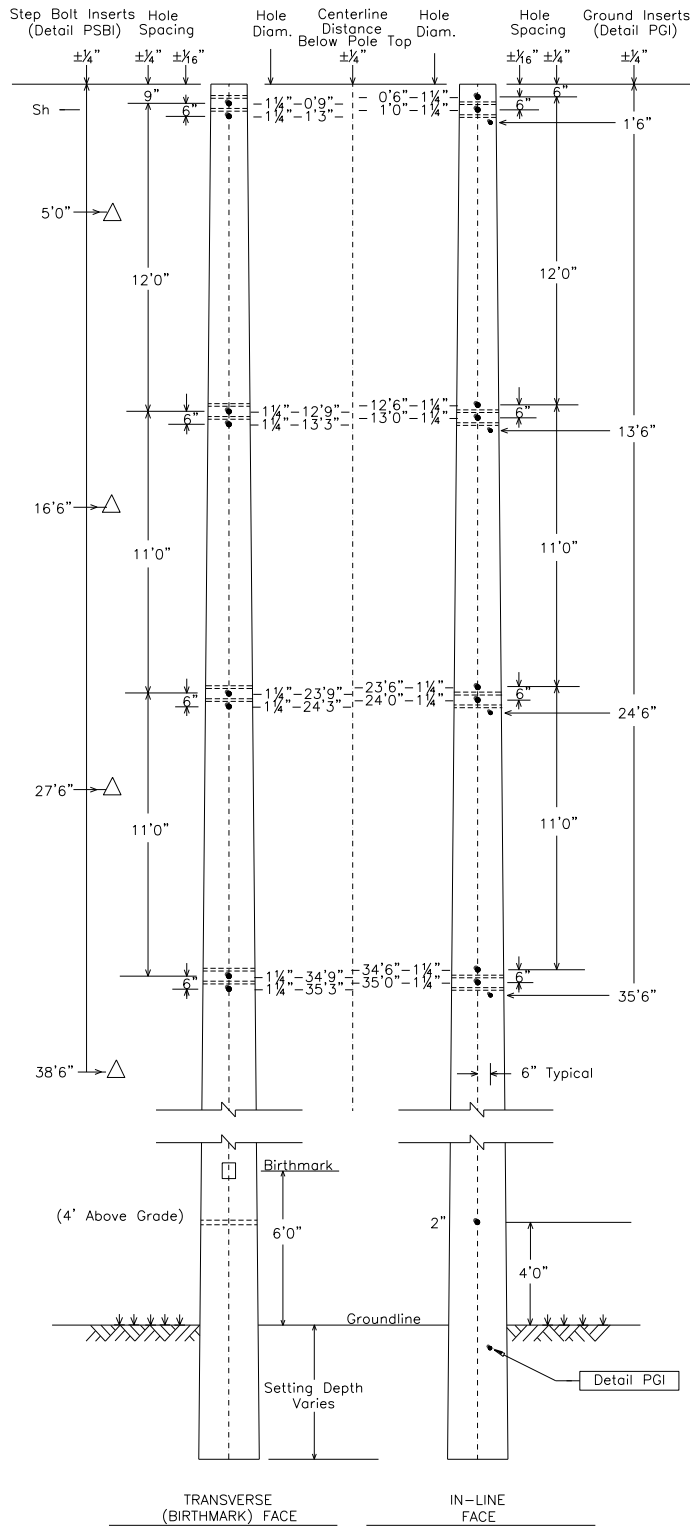
C1244Q*954S

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

C1244Q*1590

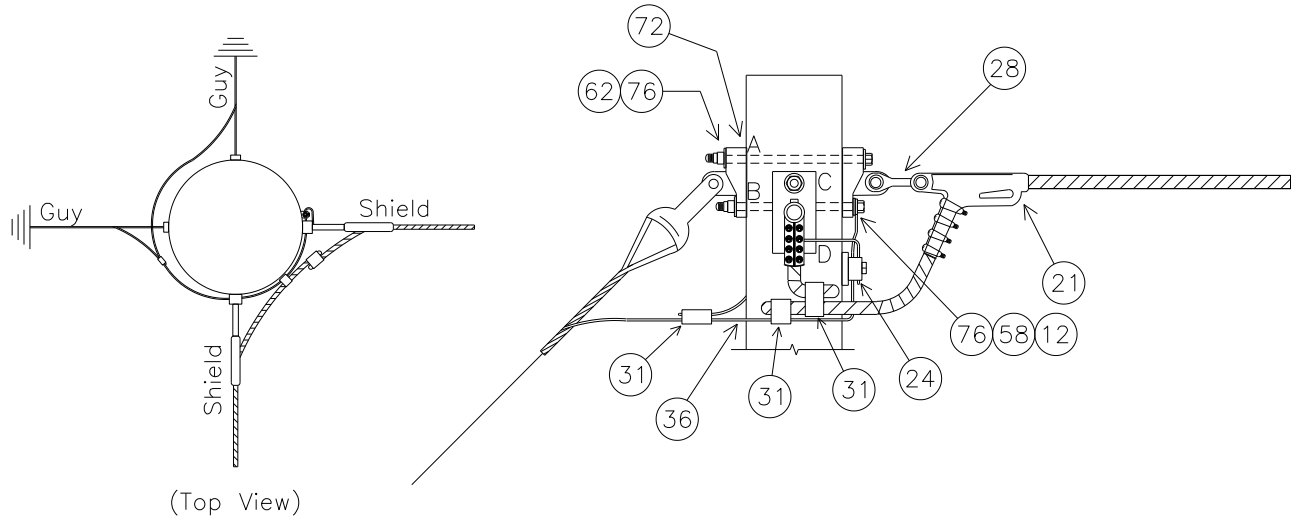
NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 006	6	DEADEND CLAMP (1.18 - 1.52") 35,000# STRENGTH, GAP = 2", PIN = 3/4"
68	SLEAJ 007	3	ALUM. SLEEVE JUMPER FOR 1590 ACSR 54/19, COMPRESSION SPLICE, NON-TENSION ONLY

C1244Q DRILLING DETAIL



SSDI90DG

SHIELD FOR SPUN CONCRETE POLES
DOUBLE IN-LINE 90°, DOUBLE GUY



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

MINIMUM REQUIRED BOLT LENGTH 'A' (INCHES)	22.6
MINIMUM REQUIRED BOLT LENGTH 'B' (INCHES)	20.9
MINIMUM REQUIRED BOLT LENGTH 'C' (INCHES)	22.6
MINIMUM REQUIRED BOLT LENGTH 'D' (INCHES)	21.0

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

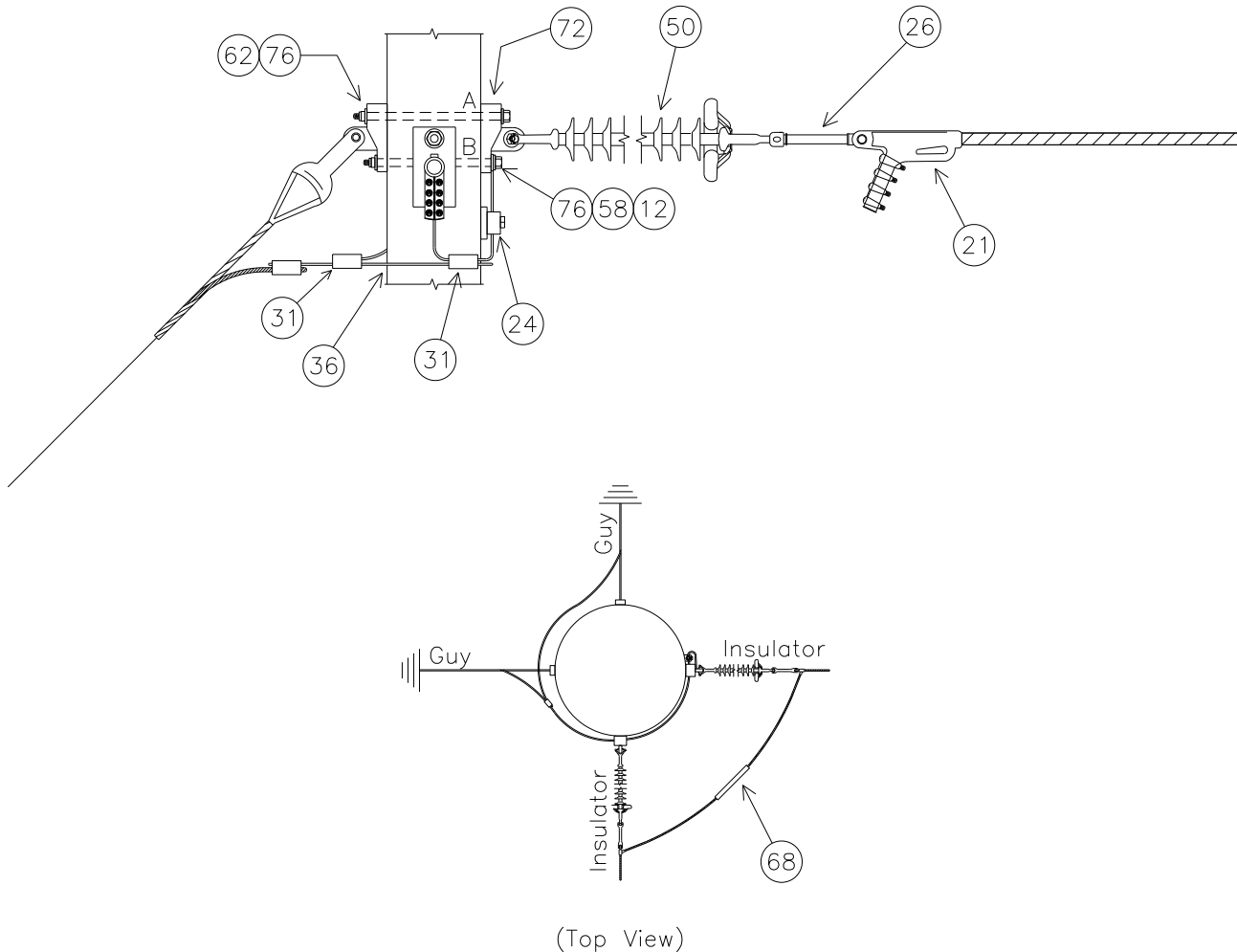
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 040	2	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	2	MACHINE BOLT, 3/4" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8"CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G., 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
31	CNNCP 016	1	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., COPPER, FOR CU CONNECTIONS ONLY
36	COBCO 028	6 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
58	LUGGR 001	2	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	4	SQUARE LOCK NUT FOR 3/4" BOLT, H.D.G.
72	TEEDE 003	4	TEE, DUCTILE IRON, H.D.G. 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	8	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED

ISDD9SSC3

INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEAD-END 90°, SLACK TENSION TO SLACK TENSION, 230KV, 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)	25.3	27.7	30.0	25.3	27.7	30.1
LOWER BOLT 'B' LENGTH (INCHES)	23.6	26.0	28.4	23.7	26.1	28.4

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISDD9SSC3 PLATES

ISDD9SSC3 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	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
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 008	6	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4" THICK W/ 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 002	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", 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, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	24	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISDD9SSC3*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

ISDD9SSC3*954S

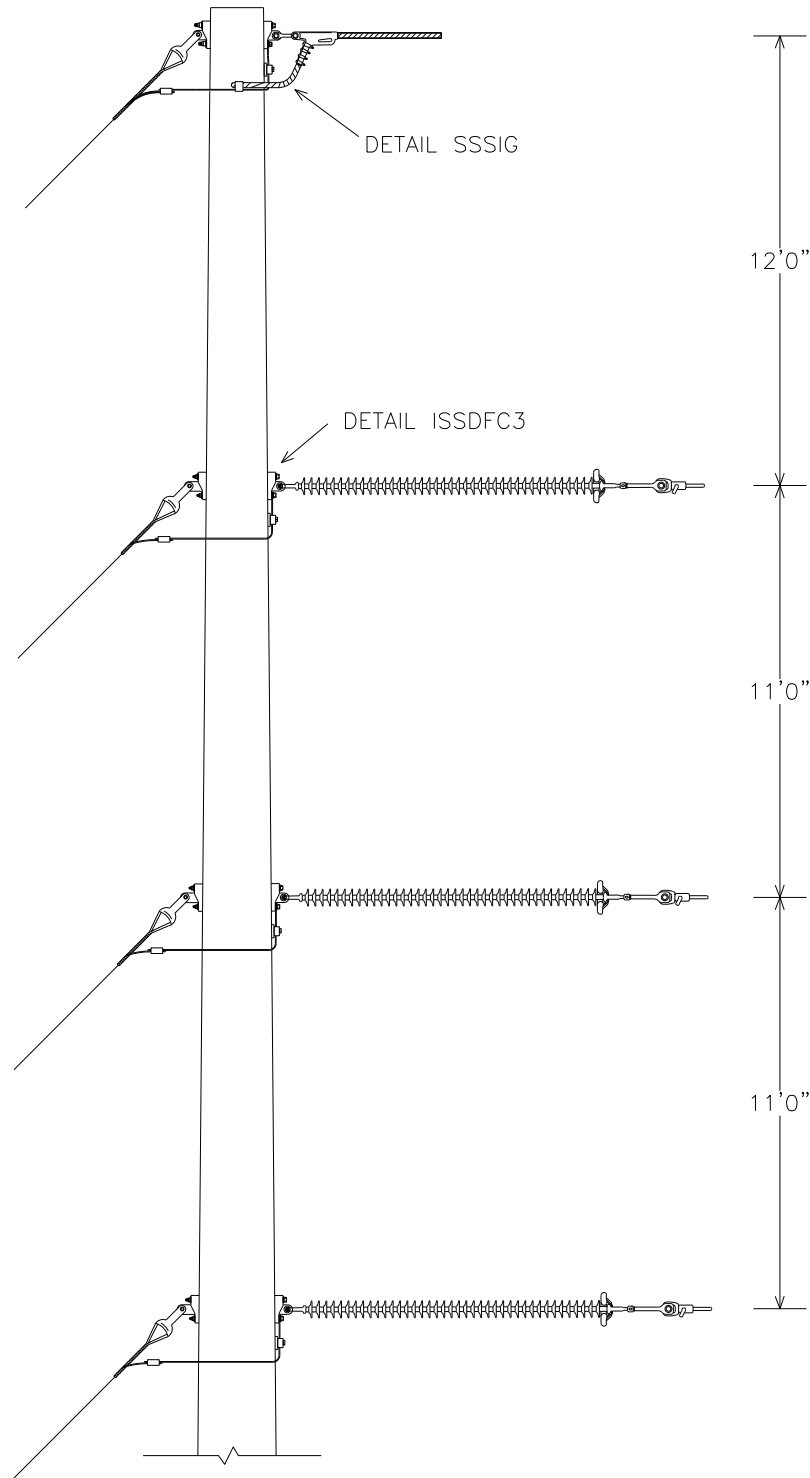
NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 005	6	DEADEND CLAMP (.7 – 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
68	SLEAJ 005	3	ALUM. SLEEVE JUMPER FOR 954 ACSR 54/7, COMPRESSION SPLICE, NON-TENSION ONLY

ISDD9SSC3*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

C1245C

230KV, SINGLE DEADEND, FULL TENSION, 3-PHASE
CONDUCTOR OPTIONS: 954S, 1590



C1245C PLATES

C1245C BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 040	1	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	1	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	1	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	4	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, HOT DIPPED GALV.
28	CLETE 001	1	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G. 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
36	COBCO 028	16 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 002	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, CLASS 52-8/11
58	LUGGR 001	1	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	2	SQUARE LOCK NUT FOR 3/4 INCH BOLT, HOT DIPPED GALVANIZED
72	TEEDE 003	8	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	4	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED

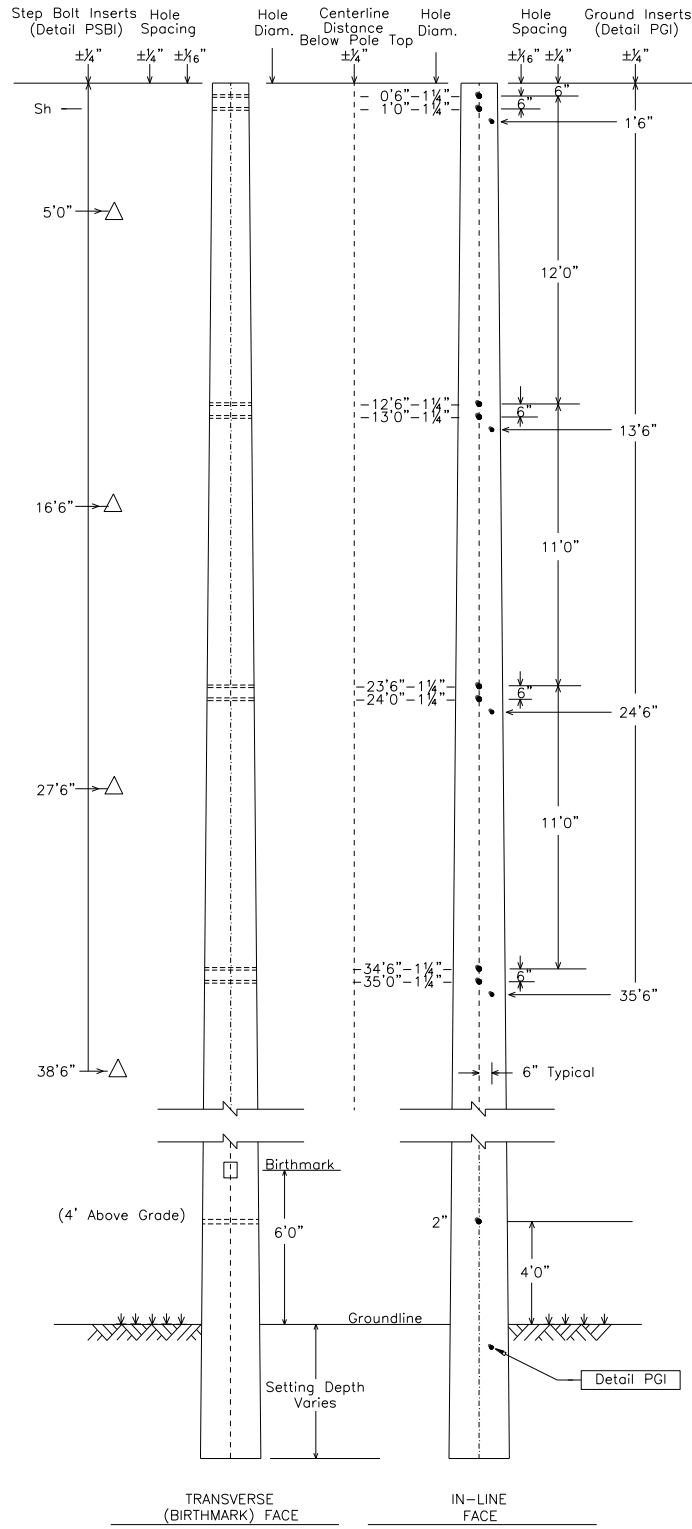
C1245C*954S

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	1	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
12	BOLMS 074	1	MACHINE BOLT, 7/8" X 32", 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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

C1245C*1590

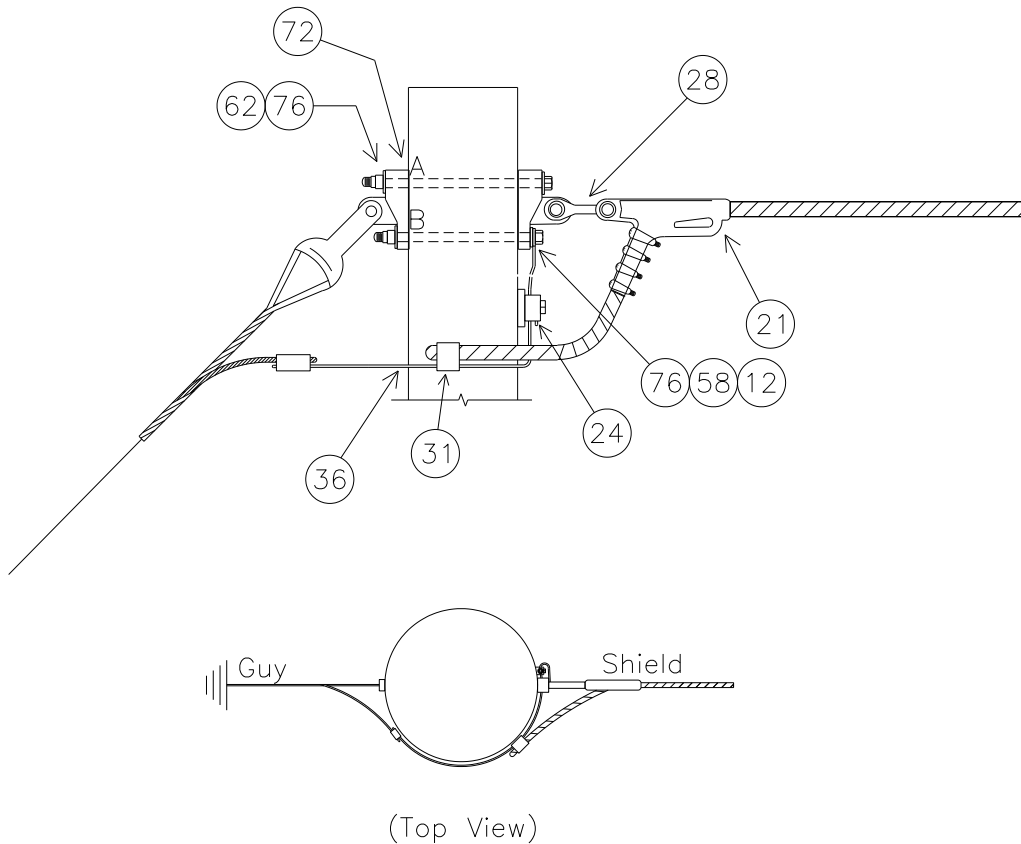
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 063	1	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	1	MACHINE BOLT, 1" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 070	2	MACHINE BOLT, 1" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 071	1	MACHINE BOLT, 1" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 072	1	MACHINE BOLT, 1" X 32", 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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 007	12	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

C1245C DRILLING DETAIL



SSSIG

SHIELD FOR SPUN CONCRETE POLES SINGLE IN-LINE, GUY



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

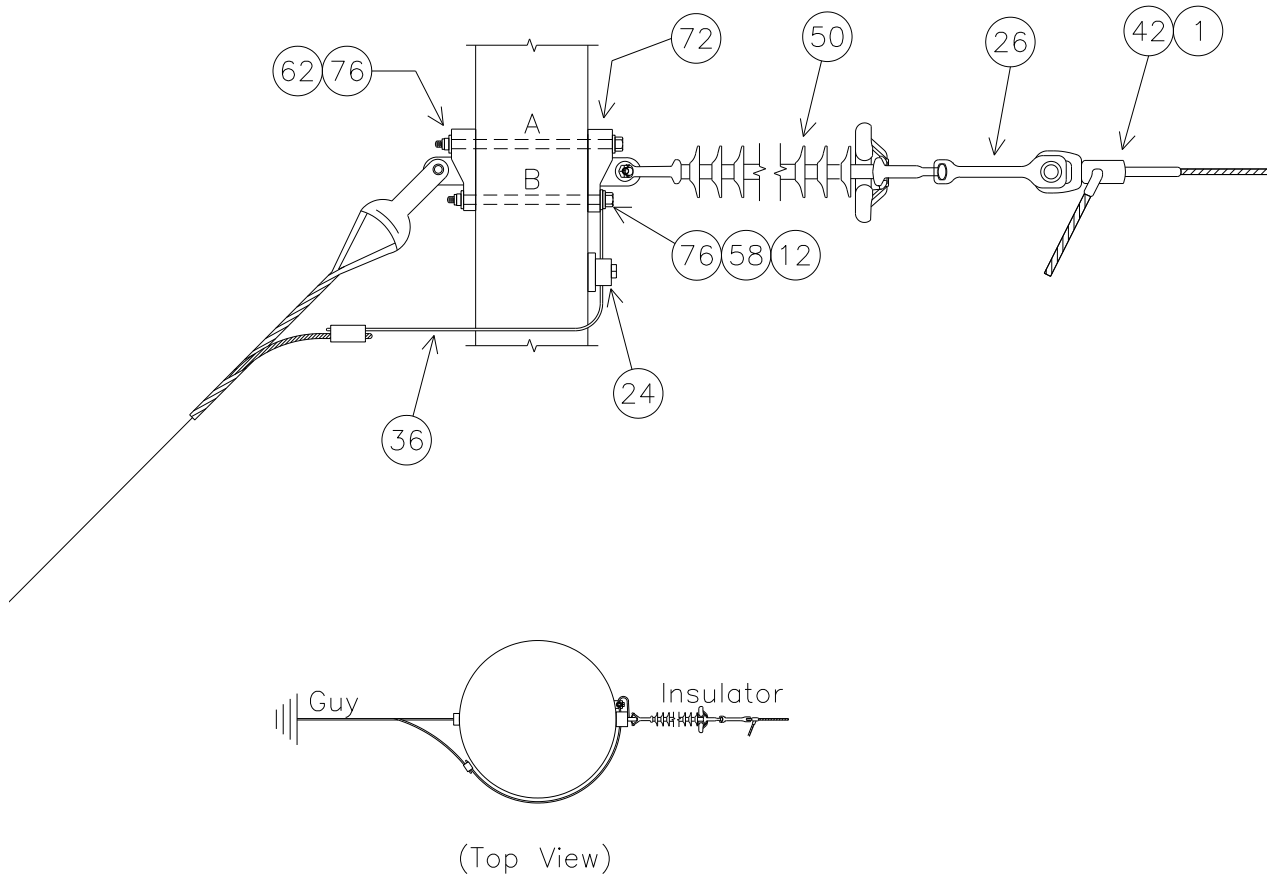
BOLT LENGTH 'A' (INCHES)	22.6
BOLT LENGTH 'B' (INCHES)	20.9

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 040	1	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	1	MACHINE BOLT, 3/4" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	1	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
28	CLETE 001	1	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G., 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
36	COBCO 028	4 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
58	LUGGR 001	1	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	2	SQUARE LOCK NUT FOR 3/4" BOLT, H.D.G.
72	TEEDE 003	2	TEE, DUCTILE IRON, H.D.G. 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	4	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED

ISSDFC3

INSULATOR FOR SPUN CONCRETE POLES
SINGLE DEAD-END FULL TENSION, 230KV, 3-PHASE
 CONDUCTOR OPTIONS: 954S, 1590



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

SUBSTRUCTURE	Top	Mid	Bottom
UPPER BOLT 'A' LENGTH (INCHES)	25.4	27.8	30.1
LOWER BOLT 'B' LENGTH (INCHES)	23.8	26.1	28.5

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISSDFC3 PLATES

ISSDFC3 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 002	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", CLASS 52-8/11
72	TEEDE 003	6	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#

ISSDFC3*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	1	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
12	BOLMS 074	1	MACHINE BOLT, 7/8" X 32", 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

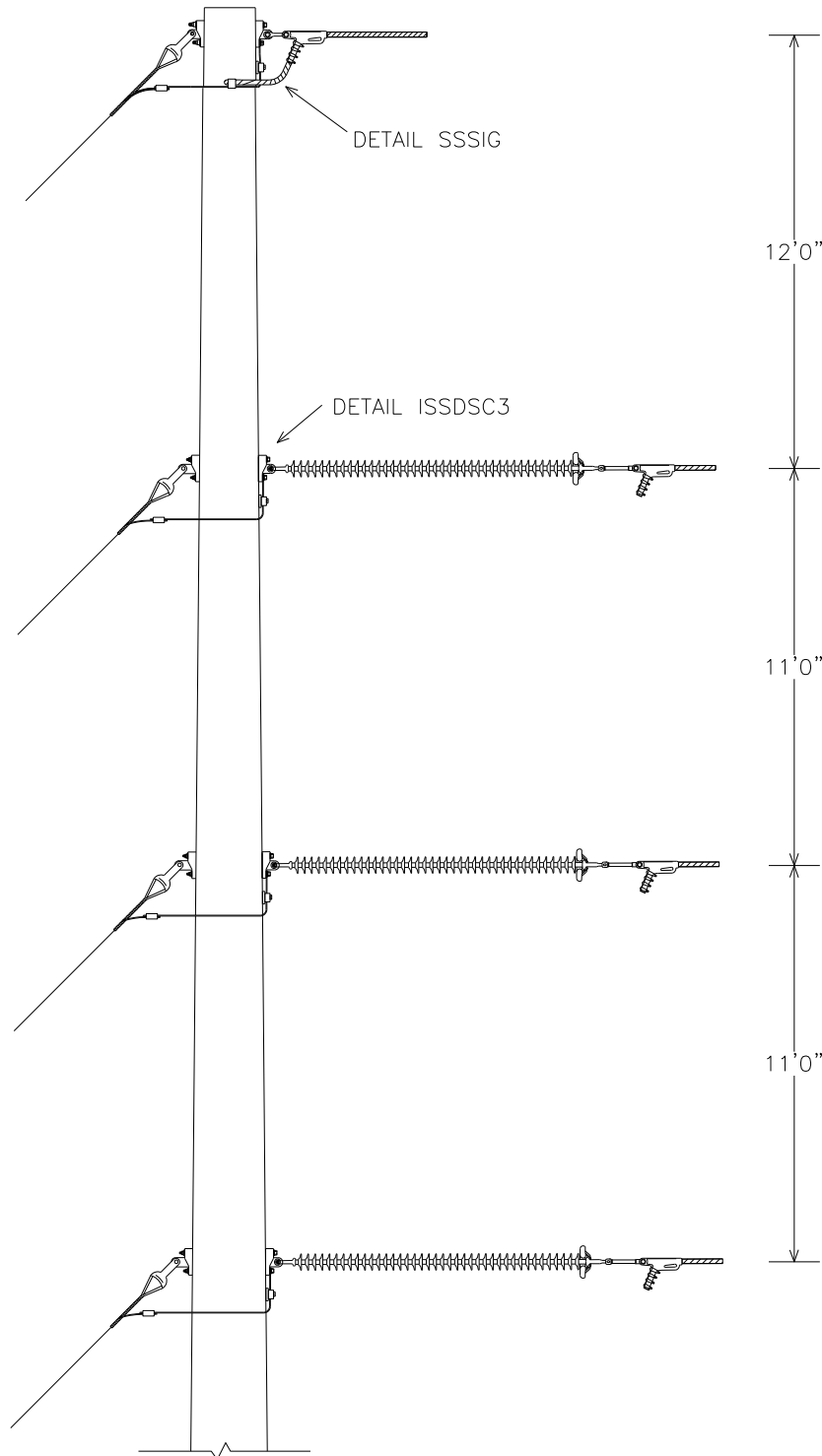
ISSDFC3*1590

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 063	1	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	1	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
12	BOLMS 072	1	MACHINE BOLT, 1" X 32", 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

C1245Q

230KV, SINGLE DEADEND, SLACK TENSION, 3-PHASE

CONDUCTOR OPTIONS: 954A, 954S, 1590



C1245Q PLATES

C1245Q BASE

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 040	1	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	1	MACHINE BOLT, 3/4" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
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	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
21	CLAQD 008	1	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	4	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 W/ 13/16 OPENING, H. D. G.
28	CLETE 001	1	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G. 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
36	COBCO 028	16 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 002	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, CLASS 52-8/11
58	LUGGR 001	1	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	2	SQUARE LOCK NUT FOR 3/4 INCH BOLT, HOT DIPPED GALVANIZED
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8 INCH BOLT, HOT DIPPED GALVANIZED
72	TEEDE 003	8	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	4	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

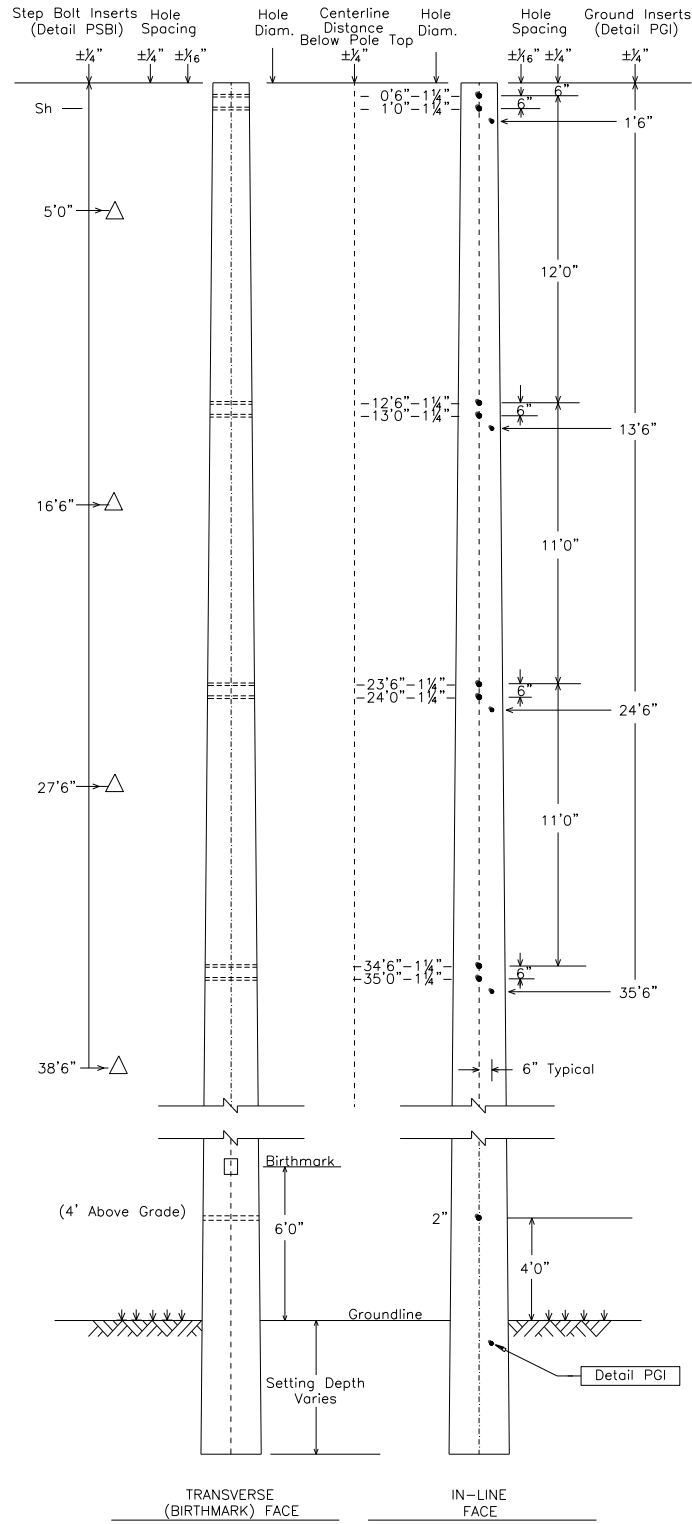
C1245Q*954A, 954S

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

C1245Q*1590

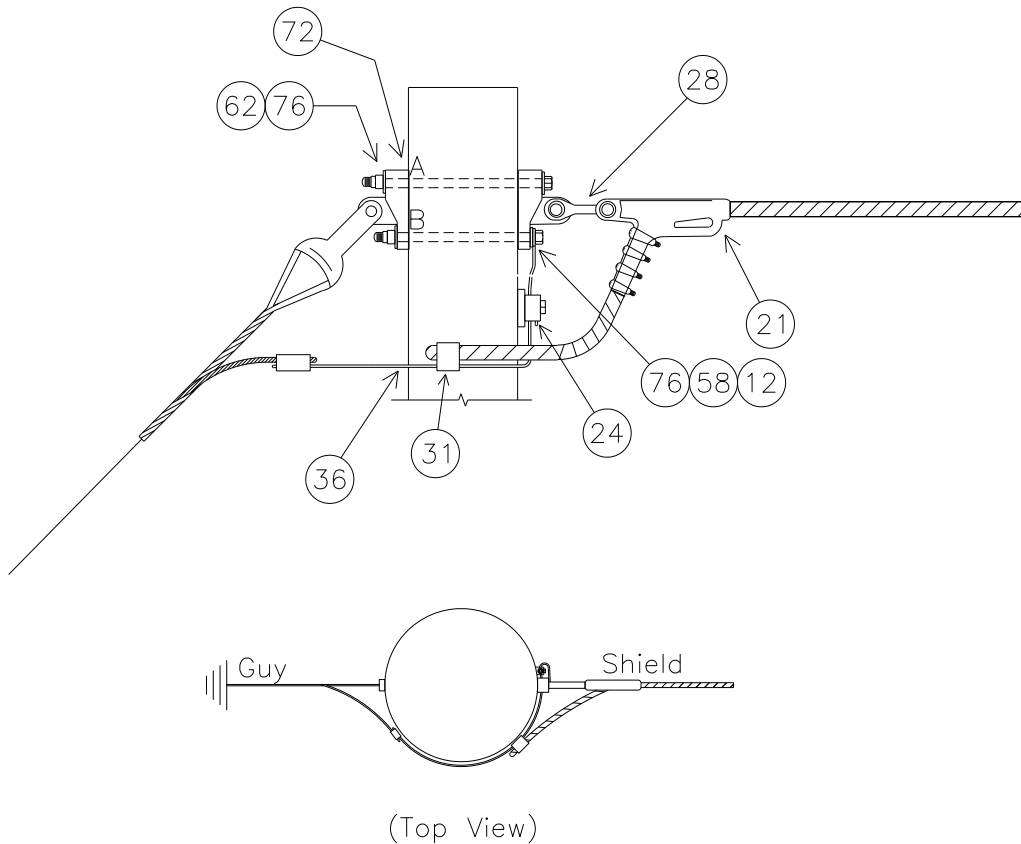
NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 006	3	DEADEND CLAMP (1.18 - 1.52") 35,000# STRENGTH, GAP = 2", PIN = 3/4"

C1245Q DRILLING DETAIL



SSSIG

SHIELD FOR SPUN CONCRETE POLES SINGLE IN-LINE, GUY



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

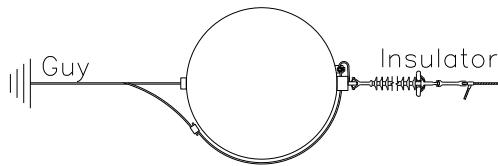
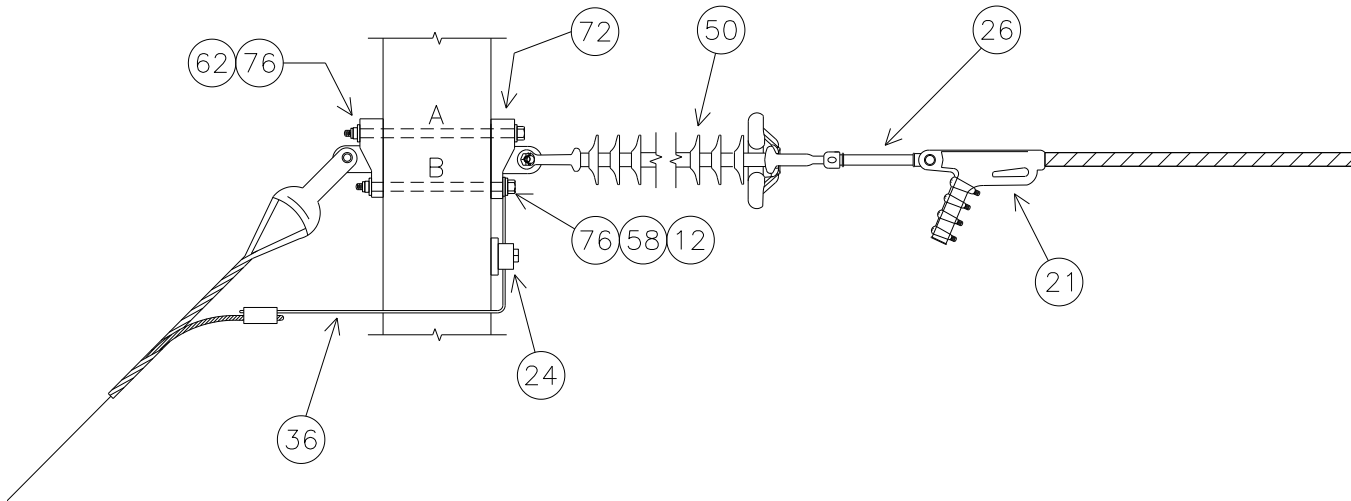
BOLT LENGTH 'A' (INCHES)	22.6
BOLT LENGTH 'B' (INCHES)	20.9

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 040	1	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	1	MACHINE BOLT, 3/4" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	1	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
28	CLETE 001	1	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G., 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
36	COBCO 028	4 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
58	LUGGR 001	1	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	2	SQUARE LOCK NUT FOR 3/4" BOLT, H.D.G.
72	TEEDE 003	2	TEE, DUCTILE IRON, H.D.G. 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	4	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED

ISSDSC3

INSULATOR FOR SPUN CONCRETE POLES
SINGLE DEAD-END SLACK TENSION, 230KV, 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)	25.3	27.7	30.0
LOWER BOLT 'B' LENGTH (INCHES)	23.7	26.0	28.4

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISSDSC3 PLATES

ISSDSC3 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	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
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 W/ 13/16" OPENING, H. D. G.
36	COBCO 028	12 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 002	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", 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, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISSDSC3*954A, 954S

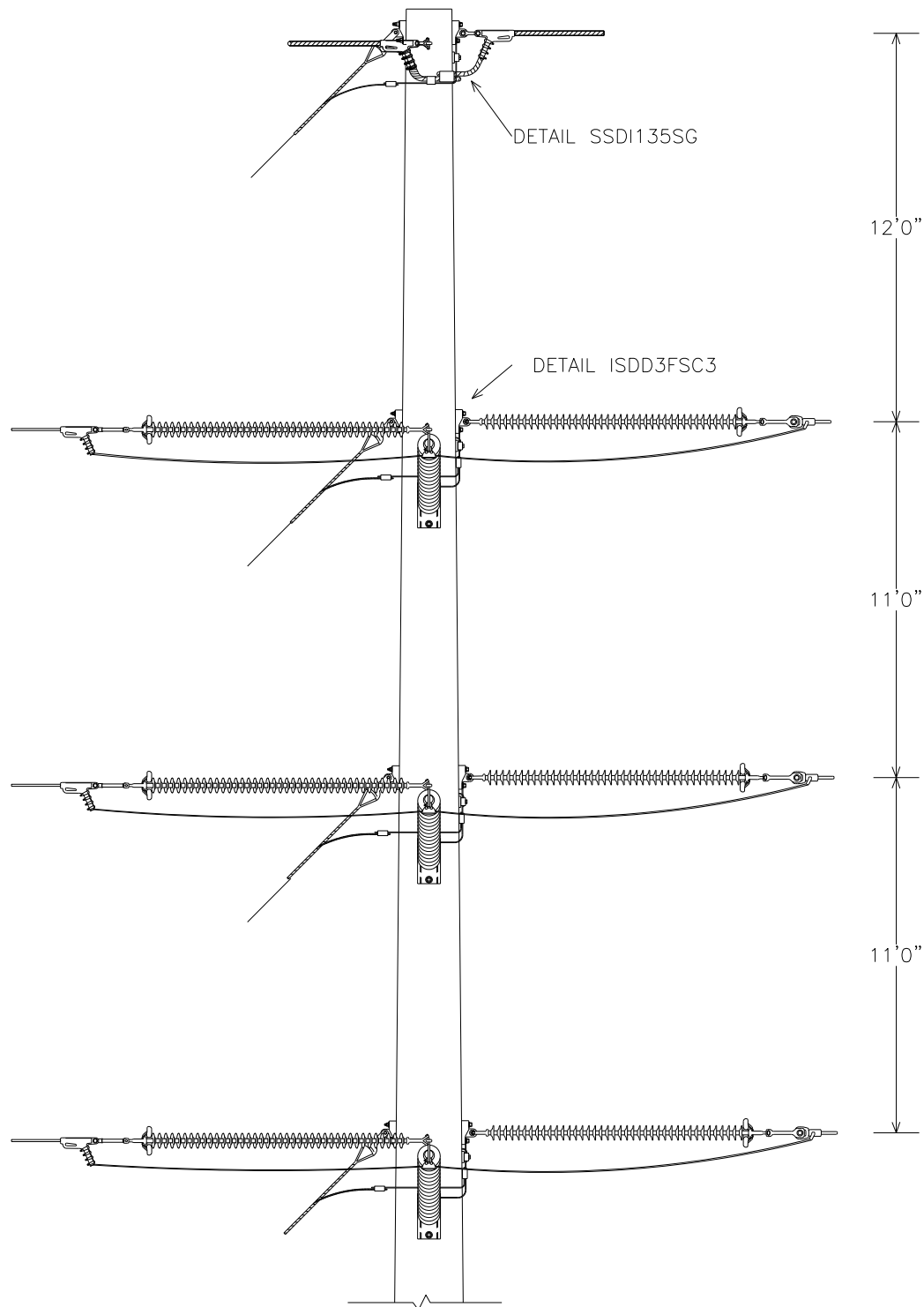
NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 005	3	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"

ISSDSC3*1590

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

C12462

230KV, DOUBLE DEADEND 135°, FULL TENSION TO SLACK TENSION, 3-PHASE
CONDUCTOR OPTIONS: 954S, 1590





Overhead Transmission Standards

NO.	ITEM ID	QTY	C12462 BASE DESCRIPTION
1	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
7	BALFI 007	3	BALL Y-CLEVIS, CLASS 52-3/5
12	BOLMS 040	1	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	1	MACHINE BOLT, 3/4" X 24", 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
12	BOLMS 075	2	MACHINE BOLT, 7/8" X 36", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
13	BOLSE 022	2	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
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	4	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, HOT DIPPED GALV.
26	CLEHL 008	3	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4 THICK W/ 13/16 OPENING, H. D. G.
28	CLETE 001	1	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G.
28	CLETE 004	1	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G., 90-DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (3#6 AW), ALUMINUM
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
31	CNNCP 016	3	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., COPPER
36	COBCO 028	24 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 002	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, CLASS 52-8/11
51	INSHP 025	3	HORIZONTAL POST SILICONE INSULATOR, 230KV, L = 86 INCHES, GAIN BASE, 17 DEGREE RISE
58	LUGGR 001	1	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
58	LUGGR 002	6	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	2	SQUARE LOCK NUT FOR 3/4 INCH BOLT, HOT DIPPED GALVANIZED
62	NUTSL 005	11	SQUARE LOCK NUT FOR 7/8 INCH BOLT, HOT DIPPED GALVANIZED
69	SOCEY 003	3	SOCKET EYE, CLASS 52-3/5
72	TEEDE 003	8	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	4	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED
76	WASRD 006	16	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	14	SQUARE CURVED WASHER FOR 7/8" BOLTS, GALVANIZED, 4" X 4"

NO.	ITEM ID	QTY	C12462*954S DESCRIPTION
12	BOLMS 053	1	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	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
12	BOLMS 074	1	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
20	CLAJU 007	3	CUSHION GRIP SUSPENSION CLAMP FOR 954 ACSR
21	CLAQD 005	3	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

NO.	ITEM ID	QTY	C12462*1590 DESCRIPTION
12	BOLMS 063	1	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	1	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
12	BOLMS 072	1	MACHINE BOLT, 1" X 32", 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"
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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 007	12	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

REVISED: OCTOBER 2013

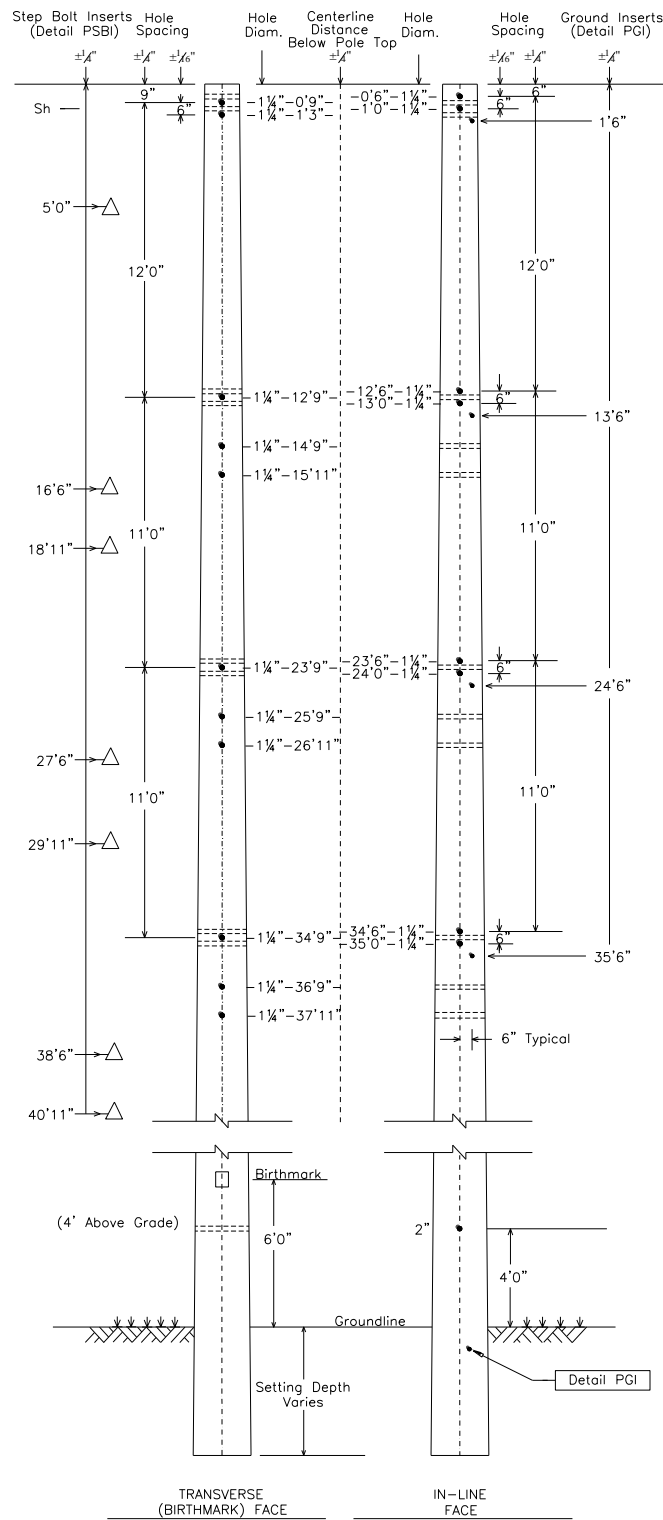
REVIEW/REVISED BY: MLR

APPROVED BY: KKR

230KV STRUCTURES-NEW CONSTRUCTION

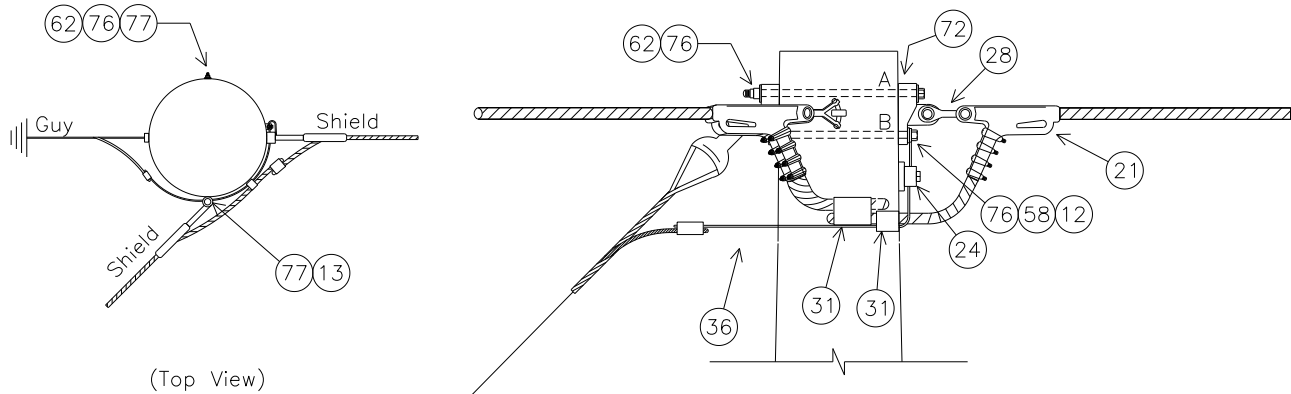
STS230-33

C12462 DRILLING DETAIL



SSDI135SG

SHIELD FOR SPUN CONCRETE POLES
DOUBLE IN-LINE 135°, SINGLE GUY



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

MINIMUM REQUIRED BOLT LENGTH 'A' (INCHES)	22.6
MINIMUM REQUIRED BOLT LENGTH 'B' (INCHES)	20.9
MINIMUM REQUIRED SHOULDER EYE BOLT LENGTH (INCHES)	20.1

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

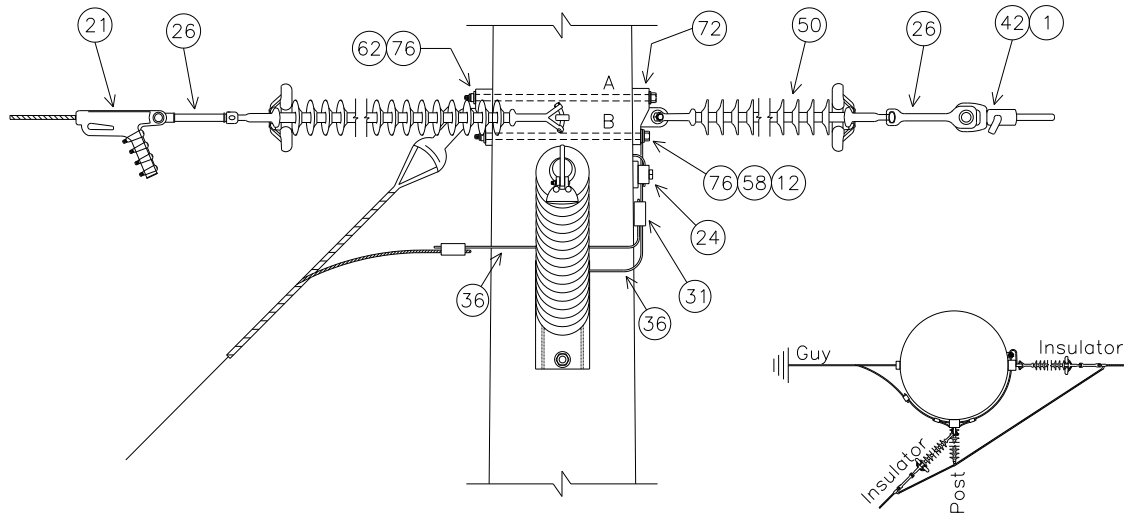
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 040	1	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	1	MACHINE BOLT, 3/4" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
13	BOLSE 022	1	SHOULDER BOLTEYE, GALVANIZED, 7/8" X 22" PROVIDED BY CONTRACTOR
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
28	CLETE 001	1	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G.
28	CLETE 004	1	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G., 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
36	COBCO 028	3 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
58	LUGGR 001	1	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	2	SQUARE LOCK NUT FOR 3/4" BOLT, H.D.G.
62	NUTSL 005	1	SQUARE LOCK NUT FOR 7/8" BOLT, H.D.G.
72	TEEDE 003	2	TEE, DUCTILE IRON, H.D.G. 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	4	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED
76	WASRD 006	1	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"

ISDD3FSC3

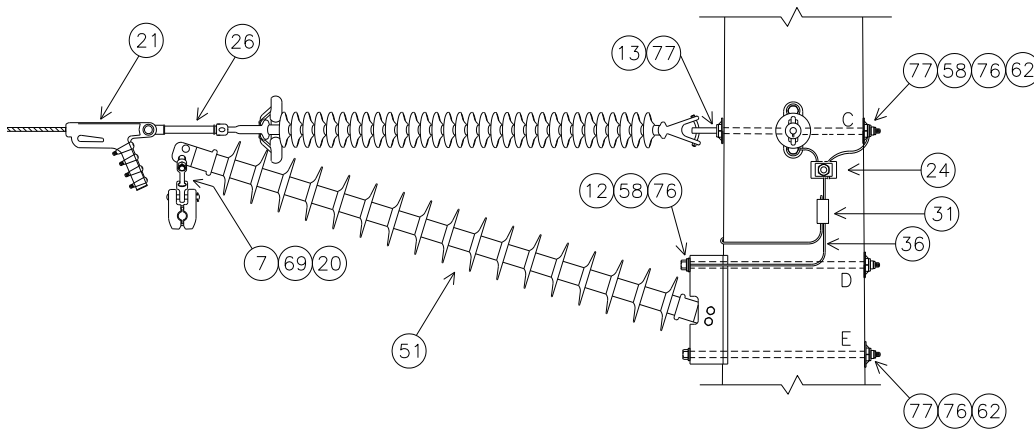
INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEADEND 135°, FULL TENSION TO SLACK TENSION, 230KV, 3-PHASE

CONDUCTOR OPTIONS: 954S, 1590



(Top View)



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

	TOP	MIDDLE	BOTTOM
BOLT 'A' LENGTH (INCHES)	25.4	27.8	30.1
BOLT 'B' LENGTH (INCHES)	23.8	26.1	28.5
EYEBOLT 'C' LENGTH (INCHES)	22.7	25.1	27.4
BOLT 'D' LENGTH (INCHES)	28.5	30.9	33.3
BOLT 'E' LENGTH (INCHES)	29.1	31.4	33.8

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISDD3FSC3 PLATES

ISDD3FSC3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
7	BALFI 007	3	BALL Y-CLEVIS, CLASS 52-3/5
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
12	BOLMS 075	2	MACHINE BOLT, 7/8" X 36", 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.
26	CLEHL 008	3	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4" THICK W/ 13/16" OPENING, 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 002	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", CLASS 52-8/11
51	INSHP 025	3	HORIZONTAL POST SILICONE INSULATOR, 230KV, L = 86", GAIN BASE, 17° 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	SOCEY 003	3	SOCKET EYE, CLASS 52-3/5
72	TEEDE 003	6	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 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

ISDD3FSC3*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	1	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
12	BOLMS 074	1	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
20	CLAJU 007	3	CUSHION GRIP SUSPENSION CLAMP FOR 954 ACSR
21	CLAQD 005	3	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
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

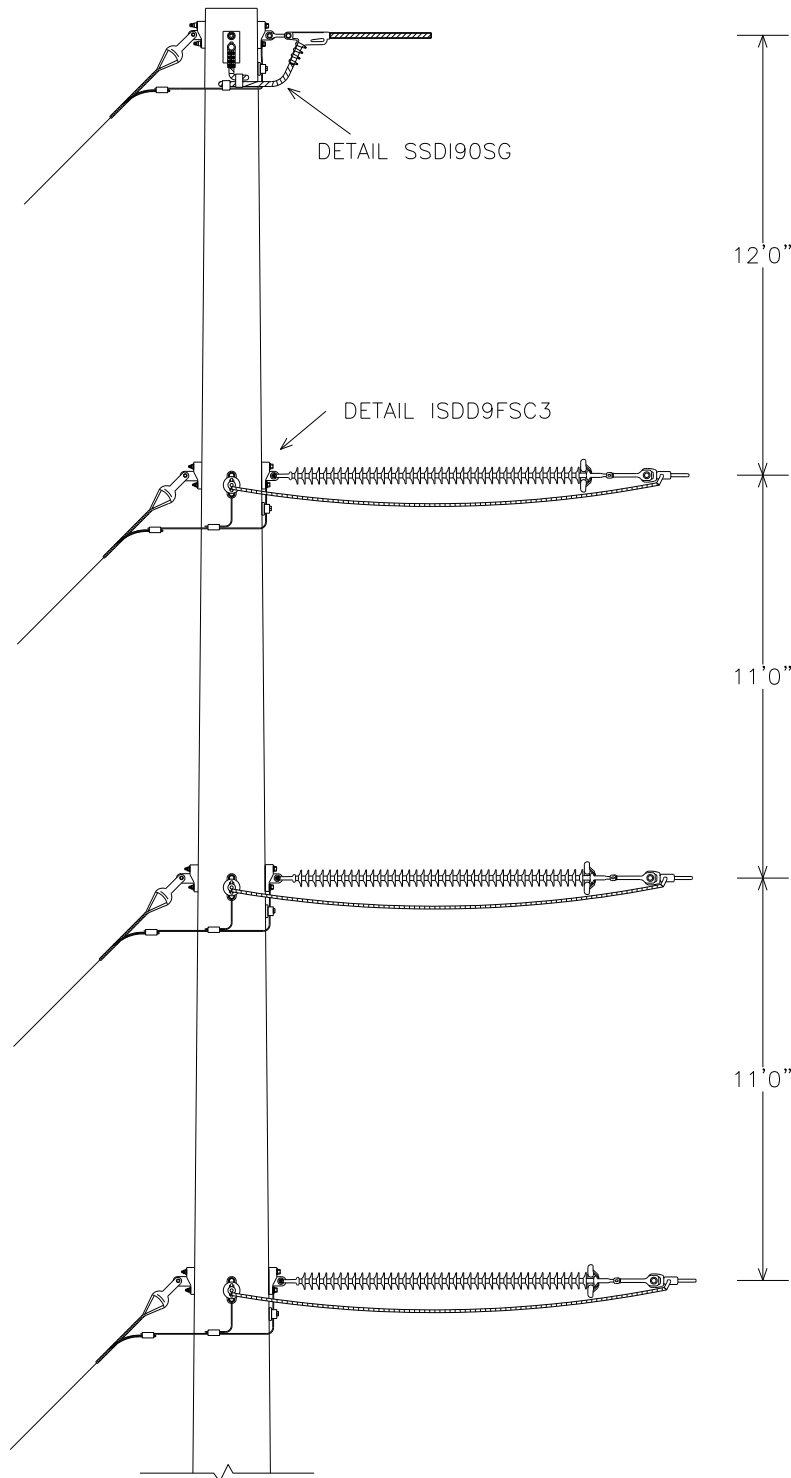
ISDD3FSC3*1590

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 063	1	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	1	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
12	BOLMS 072	1	MACHINE BOLT, 1" X 32", 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"
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

Note: use 7/8" bolts for Post Insulator and Slack Tension Insulator.

C1246C

230KV, DOUBLE DEADEND 90, FULL TENSION TO SLACK TENSION, 3-PHASE
CONDUCTOR OPTIONS: 954S, 1590



C1246C PLATES

C1246C BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 040	3	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	1	MACHINE BOLT, 3/4" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
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	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
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	4	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, HOT DIPPED GALV.
26	CLEHL 008	3	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4 THICK W/ 13/16 OPENING, H. D. G.
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G. 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
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 002	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, CLASS 52-8/11
58	LUGGR 001	2	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	4	SQUARE LOCK NUT FOR 3/4 INCH BOLT, HOT DIPPED GALVANIZED
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8 INCH BOLT, HOT DIPPED GALVANIZED
72	TEEDE 003	12	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	8	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 001	2	SQUARE CURVED WASHER FOR 3/4" BOLTS, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"
77	WASSC 002	6	SQUARE CURVED WASHER FOR 7/8" BOLTS, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

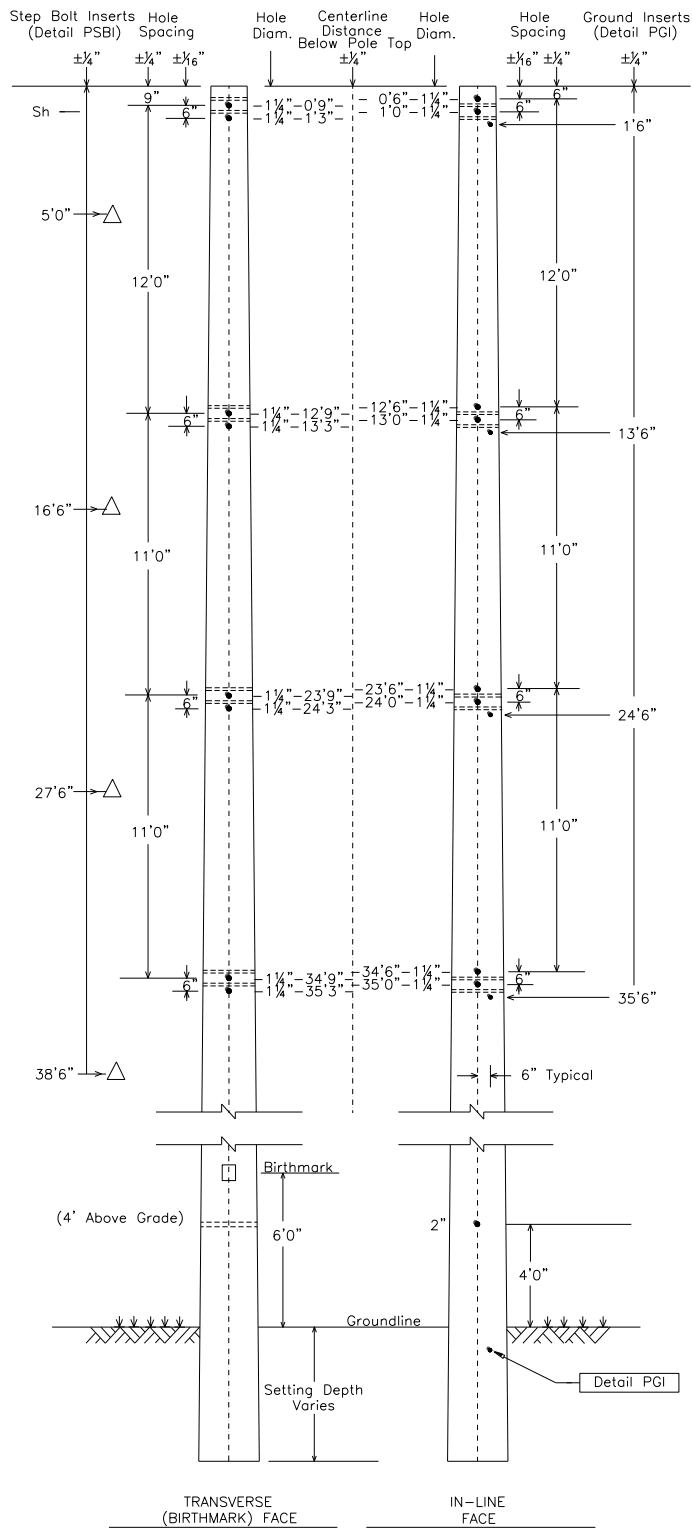
C1246C*954S

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	1	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
12	BOLMS 074	1	MACHINE BOLT, 7/8" X 32", 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"
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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

C1246C*1590

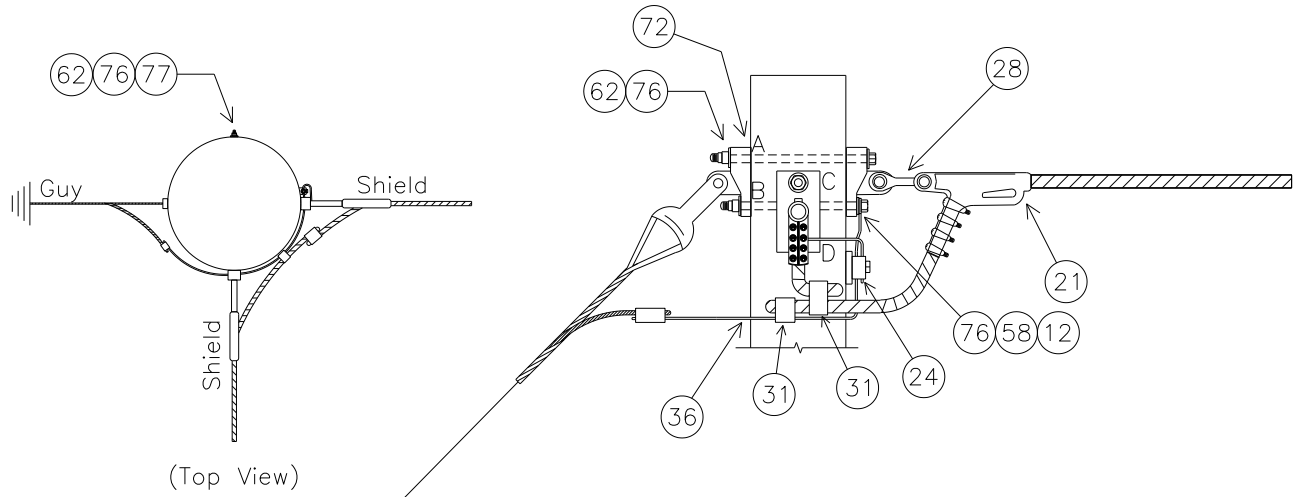
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 063	1	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	1	MACHINE BOLT, 1" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 070	2	MACHINE BOLT, 1" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 071	1	MACHINE BOLT, 1" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 072	1	MACHINE BOLT, 1" X 32", 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"
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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 007	12	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

C1246C DRILLING DETAIL



SSDI90SG

SHIELD FOR SPUN CONCRETE POLES
DOUBLE IN-LINE 90°, SINGLE GUY



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

SUBSTRUCTURE	DOUBLE TEE SIDE	SINGLE TEE SIDE
UPPER BOLT LENGTH (INCHES)	22.6	21.3
LOWER BOLT LENGTH (INCHES)	20.9	20.6

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

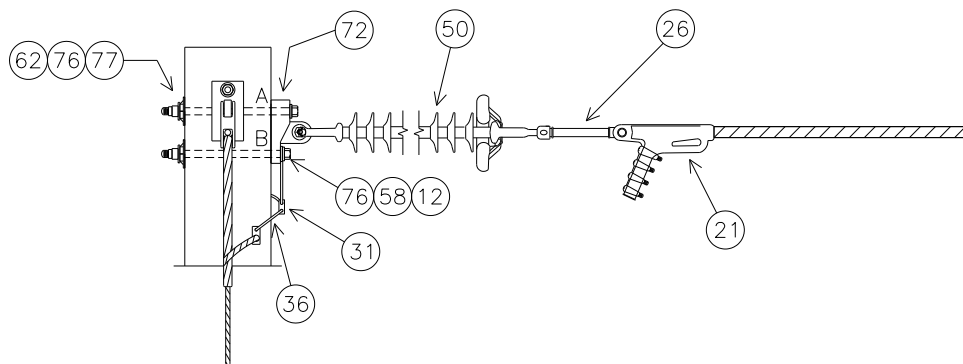
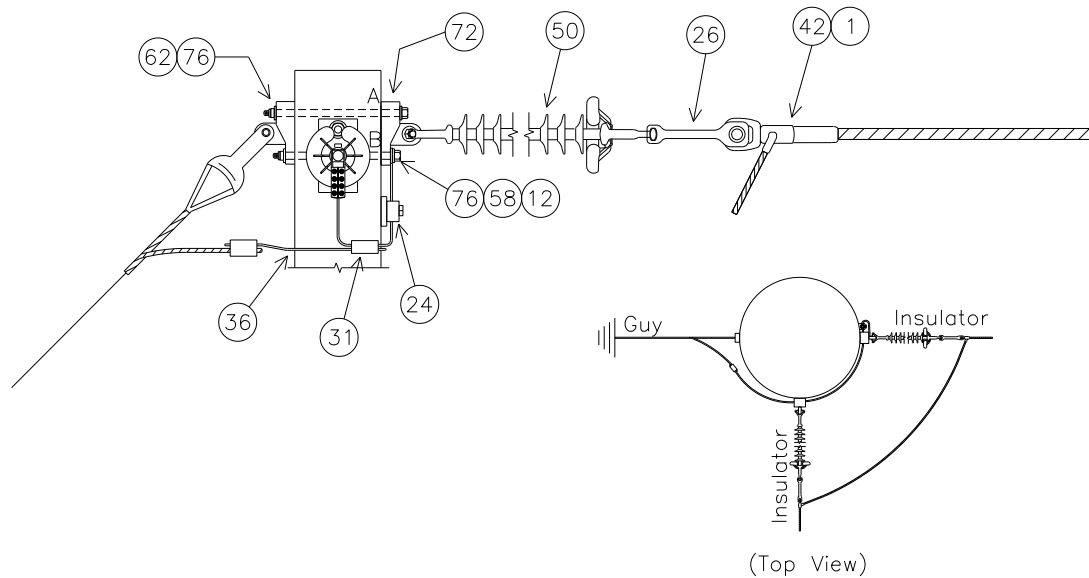
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 040	3	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	1	MACHINE BOLT, 3/4" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G. 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
36	COBCO 028	3 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
58	LUGGR 001	2	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	4	SQUARE LOCK NUT FOR 3/4" BOLT, H.D.G.
72	TEEDE 003	3	TEE, DUCTILE IRON, H.D.G. 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	8	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED
77	WASSC 001	2	SQUARE CURVED WASHER FOR 3/4" BOLTS, GALVANIZED, 4" X 4"

ISDD9FSC3

INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEAD-END 90°, FULL TENSION TO SLACK TENSION, 230KV, 3-PHASE

CONDUCTOR OPTIONS: 954S, 1590



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

FULL TENSION SIDES

SUBSTRUCTURE	Top	Mid	Bottom
UPPER BOLT 'A' LENGTH (INCHES)	25.4	27.8	30.1
LOWER BOLT 'B' LENGTH (INCHES)	23.8	26.1	28.5

SLACK TENSION SIDES

SUBSTRUCTURE	Top	Mid	Bottom
UPPER BOLT 'A' LENGTH (INCHES)	24.1	26.5	28.9
LOWER BOLT 'B' LENGTH (INCHES)	23.4	25.8	28.1

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISDD9FSC3 PLATES

ISDD9FSC3 BASE

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	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
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.
26	CLEHL 008	3	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4" THICK W/ 13/16" OPENING, 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 002	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", 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, HOT-DIP GALVANIZED, 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"

ISDD9FSC3*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	1	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
12	BOLMS 074	1	MACHINE BOLT, 7/8" X 32", 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"
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

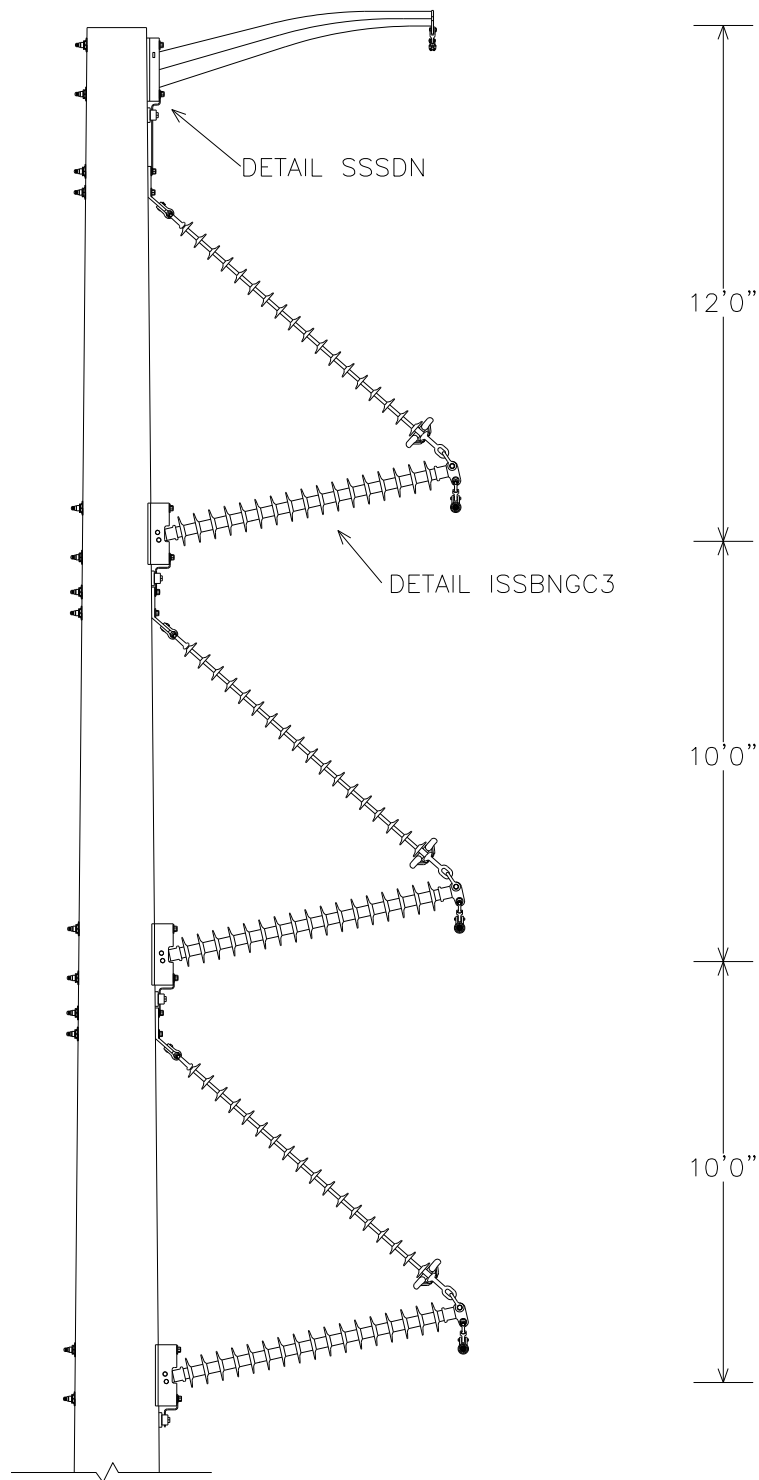
ISDD9FSC3*1590

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 063	1	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	1	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
12	BOLMS 072	1	MACHINE BOLT, 1" X 32", 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"
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

C1261

230KV SINGLE BRACED LINE POST, UNGUYED, 3-PHASE

CONDUCTOR OPTIONS: 954A, 954S, 1590



C1261 PLATES

C1261 BASE

NO.	ITEM ID	QTY	DESCRIPTION
6	ARMST 012	1	6.5 FT SHEILD ARM, 14" HOLE SPACING SUPPLIED WITH 5/8 HOLE FOR GROUNDING
10	BKTLP 002	3	BRACKET, 53-DEGREE ANGLE, 6" HOLE SPACING, 1 1/16" HOLE DIAMETER, 5/8" THICK
12	BOLMS 052	4	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
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	2	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 075	2	MACHINE BOLT, 7/8" X 36", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 001	1	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
23	CLASW 001	1	SHIELD WIRE CLAMP FOR 3#6AW / 3#7CU, GALV.
24	CLATG 001	4	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
25	CLECY 001	1	90 DEGREE EYE CLEVIS, 30,000#, H.D.G., 5/8" PIN DIA.
26	CLEHL 001	3	BALL-Y CLEVIS, CLASS 52-3/5, STRENGTH = 30,000#, L > 9", PIN = 3/4", HOT DIPPED GALV.
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
35	COBAS 005	4 ft	CONDUCTOR, 3#6 AW
36	COBCO 028	12 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
47	GUALI 001	1	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
53	INSLP 014	3	230KV SILICONE BRACED LINE POST INSULATOR, 17° RISE, GAIN BASE, L = 108", H = 94", 14" B.H.S.
58	LUGGR 002	7	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	14	SQUARE LOCK NUT FOR 7/8 INCH BOLT, HOT DIPPED GALVANIZED
69	SOCEY 003	3	SOCKET - EYE, STENGTH = 25,000#, L = 2 5/16", EYE = 13/16", FORGED STEEL, GALV.
76	WASRD 006	28	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	14	SQUARE CURVED WASHER FOR 7/8" BOLT, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

C1261*954A

NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 003	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82 INCHES, 1 3/16" GAP, 5/8" PIN

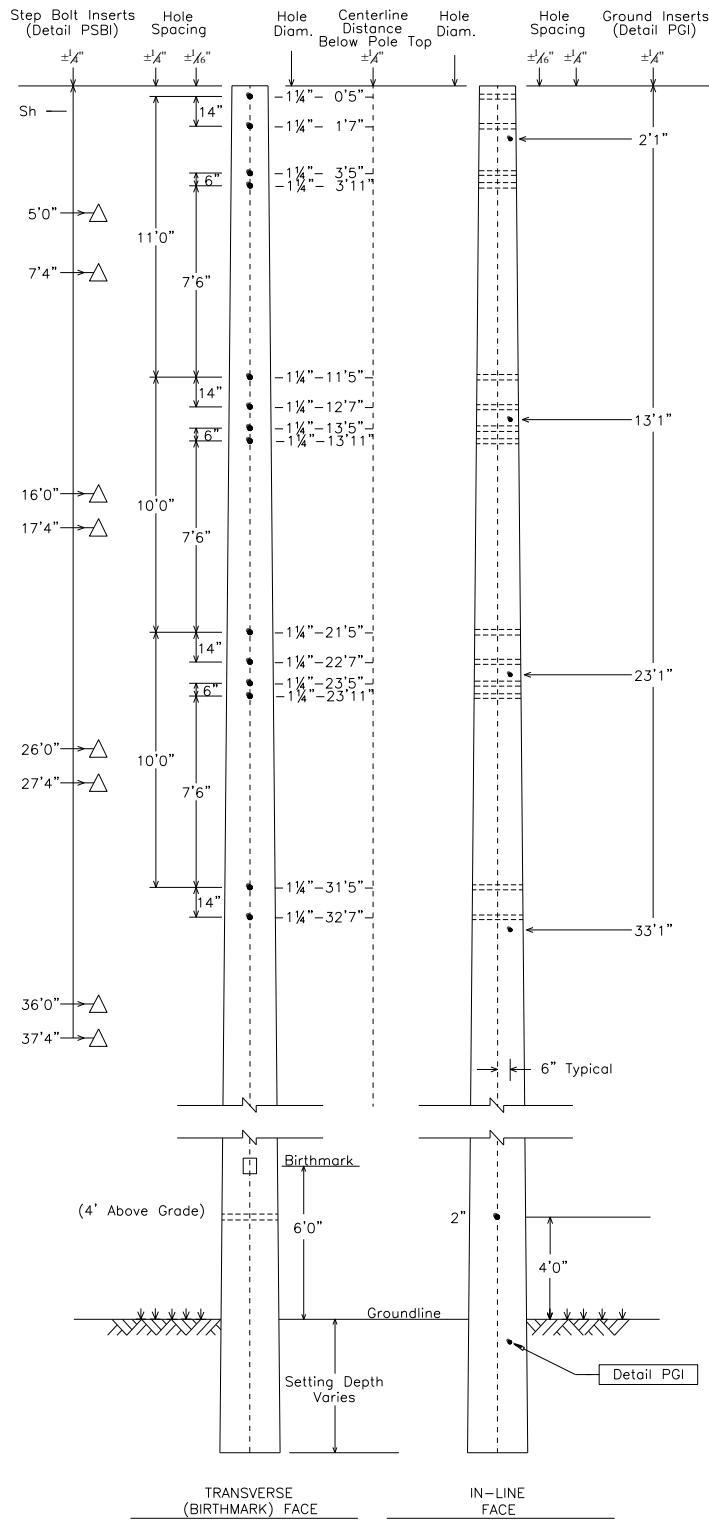
C1261*954S

NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 004	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82 INCHES, 1 3/16" GAP, 5/8" PIN

C1261*1590

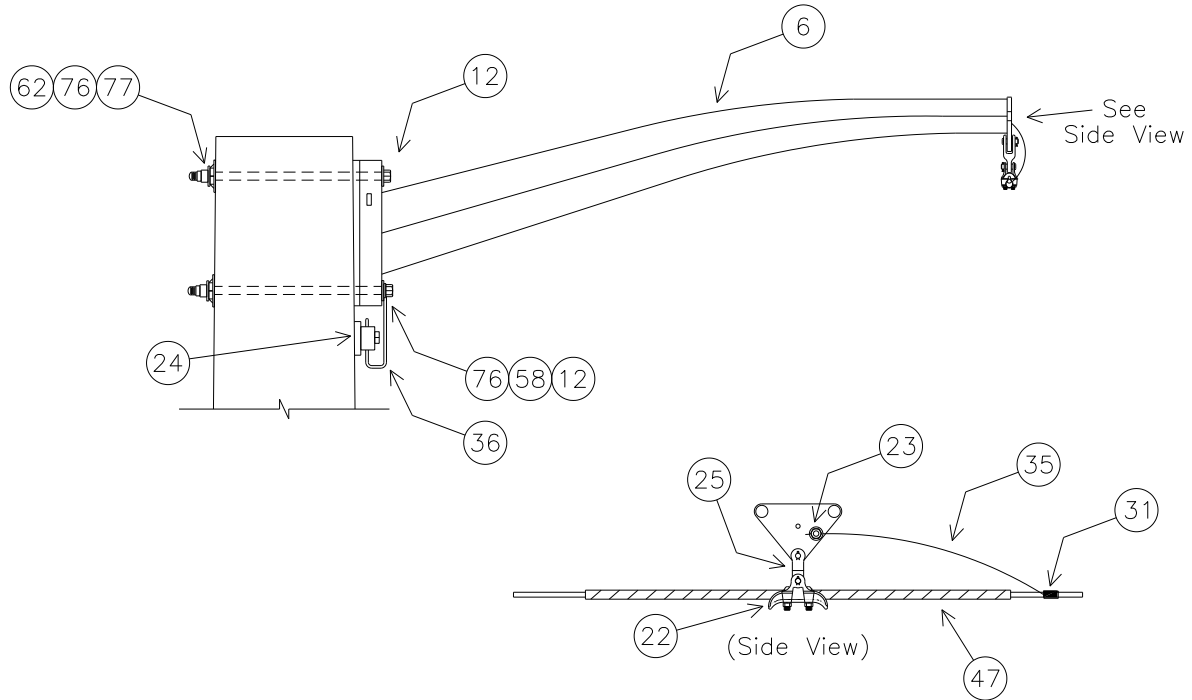
NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 005	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88 INCHES, 1 3/8" GAP, 3/4" PIN

C1261 DRILLING DETIAL



SSSDN

SHIELD FOR SPUN CONCRETE POLES
SINGLE DAVIT ARM, NO GUY



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

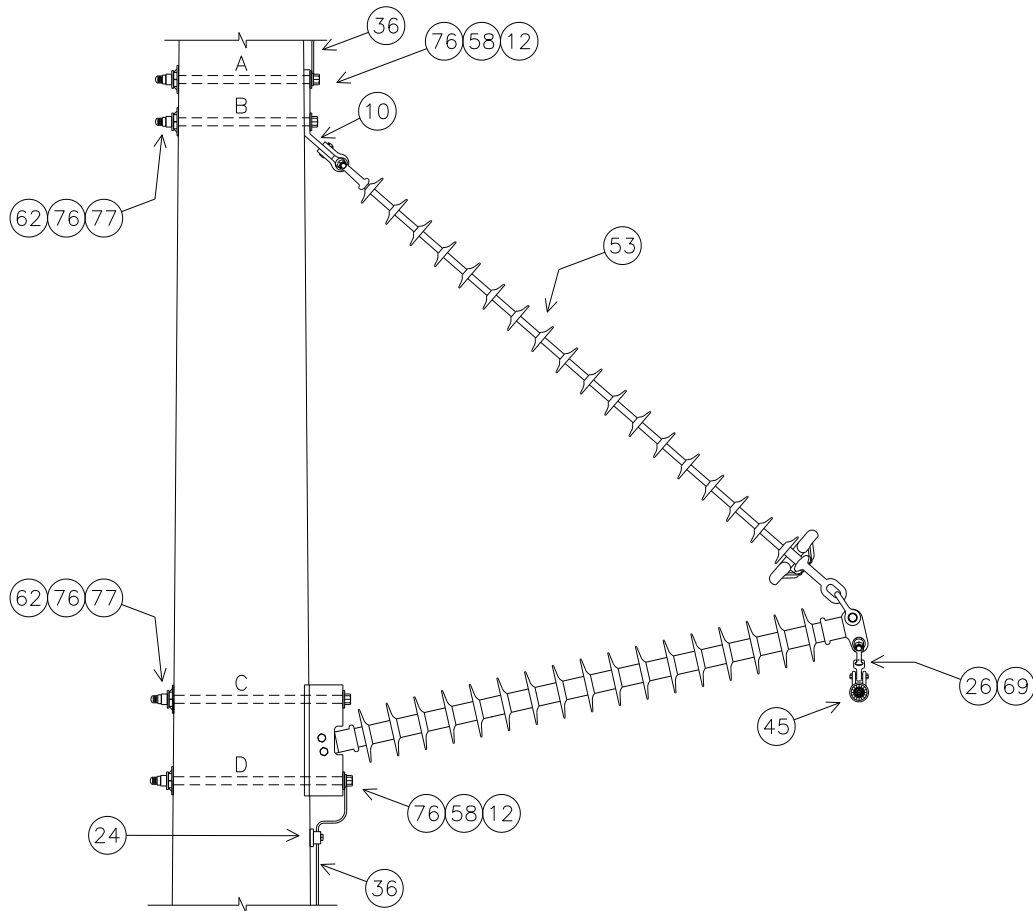
UPPER BOLT LENGTH (INCHES)	20.1
LOWER BOLT LENGTH (INCHES)	20.5

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

NO.	ITEM ID	QTY	DESCRIPTION
6	ARMST 012	1	6.5 FT SHEILD ARM, 14" HOLE SPACING SUPPLIED WITH 5/8 HOLE FOR GROUNDING
12	BOLMS 052	2	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 001	1	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
23	CLASW 001	1	SHIELD WIRE CLAMP FOR 3#6AW / 3#7CU, GALV.
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
25	CLECY 001	1	90 DEGREE EYE CLEVIS, 30,000#, H.D.G.,
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
35	COBAS 005	4 ft	CONDUCTOR, 3#6 AW
36	COBCO 028	3 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
47	GUALI 001	1	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
58	LUGGR 002	1	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	2	LOCKNUT FOR 7/8" BOLT
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, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

ISSBNGC3

INSULATOR FOR SPUN CONCRETE POLES
SINGLE BRACED LINE POST, NO GUY, 230KV
 CONDUCTOR OPTIONS: 954A, 954S, 1590



SEE MBA1 FOR BOLT ASSEMBLY DETAILS

STRUCTURE	MINIMUM REQUIRED BOLT LENGTH (INCHES)			
	'A'	'B'	'C'	'D'
TOP	21.0	20.9	27.8	28.3
MIDDLE	23.2	23.0	30.0	30.5
BOTTOM	25.3	25.2	32.2	32.7

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISSBNGC3 PLATES

ISSBNGC3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
10	BKTLP 002	3	BRACKET, 53° 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	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	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	2	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 075	2	MACHINE BOLT, 7/8" X 36", 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 014	3	230KV SILICONE BRACED LINE POST INSULATOR, 17° RISE, GAIN BASE, L = 108", H = 94", 14" 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"

ISSBNGC3*954A

45	GRISA 003	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82", 1 3/16" GAP, 5/8" PIN
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ISSBNGC3*954S

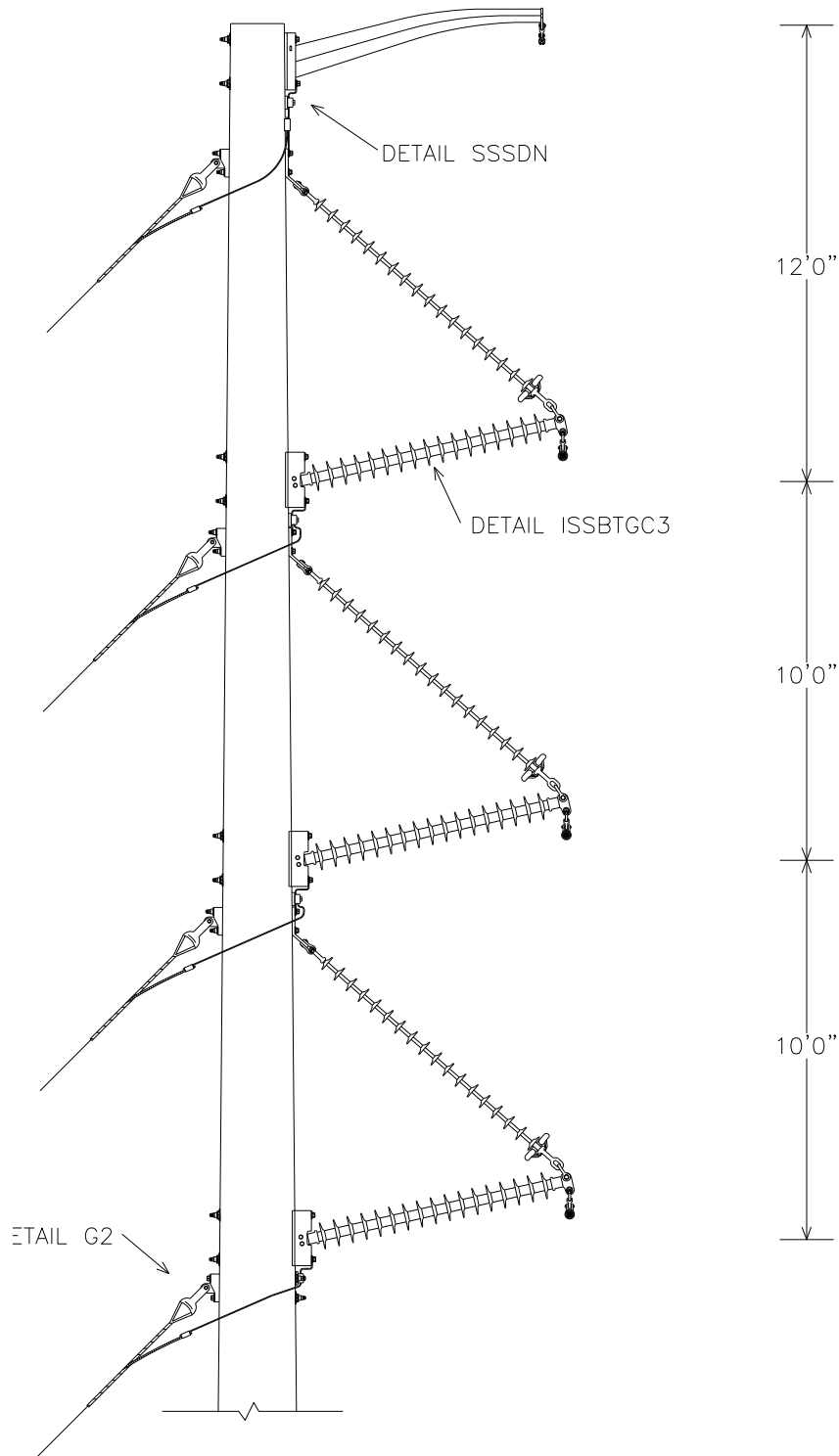
45	GRISA 004	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82", 1 3/16" GAP, 5/8" PIN
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ISSBNGC3*1590

45	GRISA 005	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88", 1 3/8" GAP, 3/4" PIN
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C1263A

230KV, SINGLE BRACED LINE POST, GUYED, 3-PHASE
CONDUCTOR OPTIONS: 954A, 954S, 1590



C1263A PLATES

C1263A BASE

NO.	ITEM ID	QTY	DESCRIPTION
6	ARMST 012	1	6.5 FT SHEILD ARM, 14" HOLE SPACING SUPPLIED WITH 5/8 HOLE FOR GROUNDING
10	BKTLP 002	3	BRACKET, 53-DEGREE 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	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	3	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
12	BOLMS 075	2	MACHINE BOLT, 7/8" X 36", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 001	1	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
23	CLASW 001	1	SHIELD WIRE CLAMP FOR 3#6AW / 3#7CU, GALV.
24	CLATG 001	4	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
25	CLECY 001	1	90 DEGREE EYE CLEVIS, 30,000#, H.D.G.,
26	CLEHL 001	3	BALL-Y CLEVIS, CLASS 52-3/5, STRENGTH = 30,000#, L > 9", PIN = 3/4", HOT DIPPED GALV.
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
35	COBAS 005	4 ft	CONDUCTOR, 3#6 AW
36	COBCO 028	18 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
47	GUALI 001	1	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
53	INSLP 014	3	230KV SILICONE BRACED LINE POST INSULATOR, 17° RISE, GAIN BASE, L = 108", H = 94", 14" B.H.S.
58	LUGGR 002	7	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	14	SQUARE LOCK NUT FOR 7/8 INCH BOLT, HOT DIPPED GALVANIZED
69	SOCEY 003	3	SOCKET - EYE, STENGTH = 25,000#, L = 2 5/16", EYE = 13/16", FORGED STEEL, GALV.
72	TEEDE 003	4	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	28	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	8	SQUARE FLAT WASHER FOR 7/8" BOLT, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

C1263A*954A

NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 003	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82 INCHES, 1 3/16" GAP, 5/8" PIN

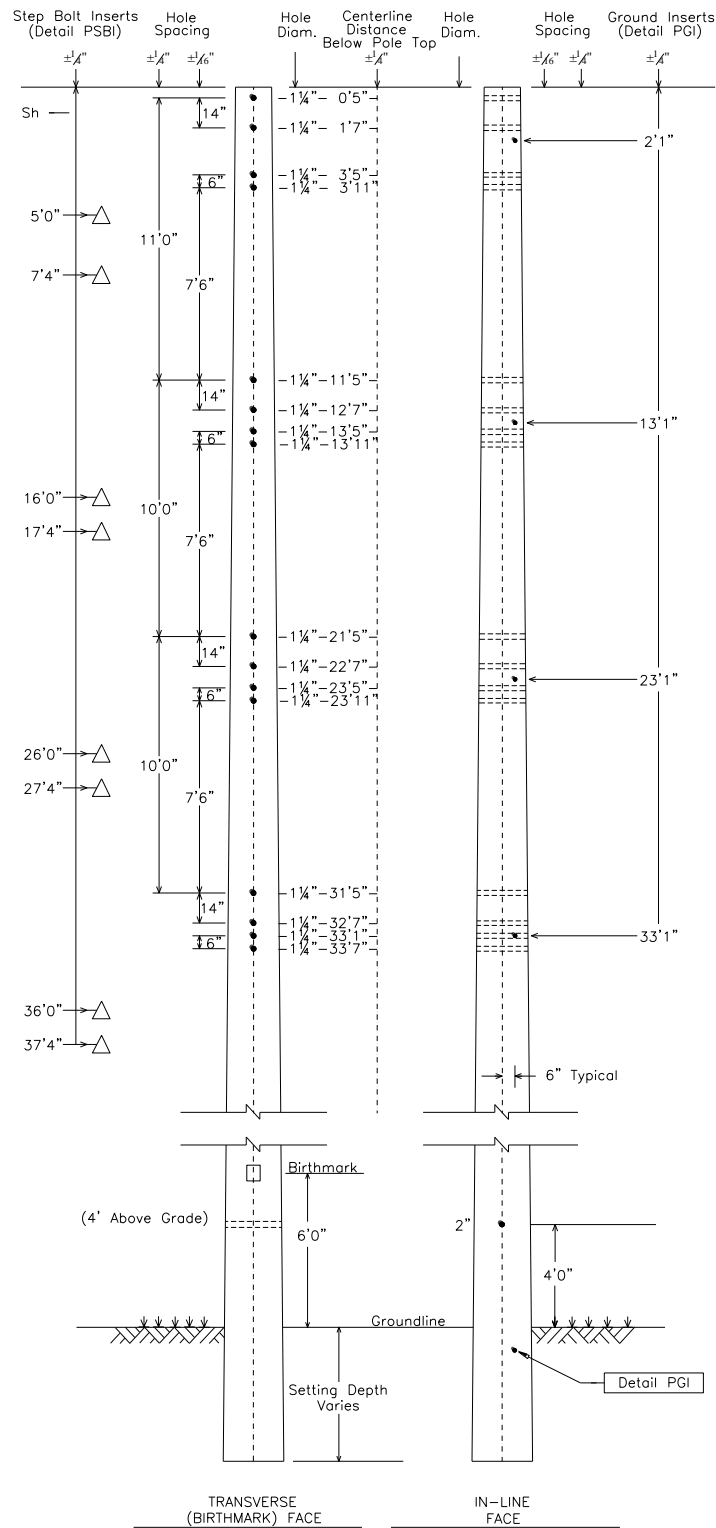
C1263A*954S

NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 004	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82 INCHES, 1 3/16" GAP, 5/8" PIN

C1263A*1590

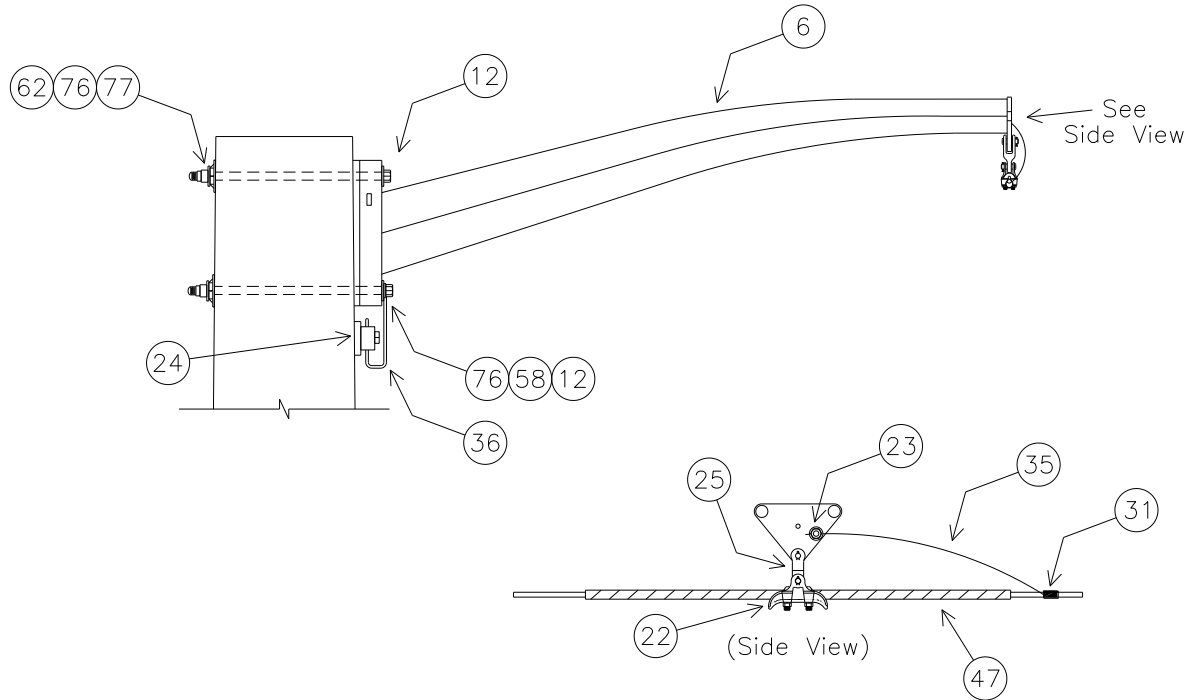
NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 005	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88 INCHES, 1 3/8" GAP, 3/4" PIN

C1263A DRILLING DETAIL



SSSDN

SHIELD FOR SPUN CONCRETE POLES
SINGLE DAVIT ARM, NO GUY



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

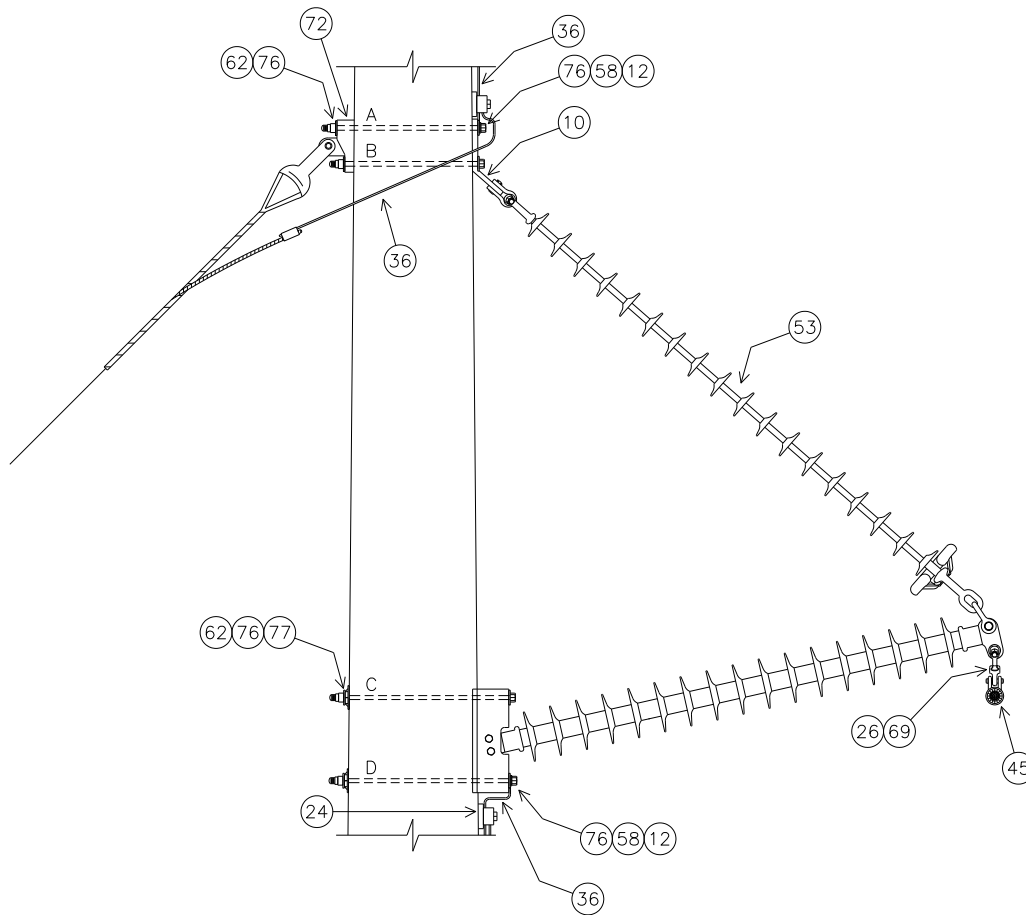
UPPER BOLT LENGTH (INCHES)	20.1
LOWER BOLT LENGTH (INCHES)	20.5

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

NO.	ITEM ID	QTY	DESCRIPTION
6	ARMST 012	1	6.5 FT SHEILD ARM, 14" HOLE SPACING SUPPLIED WITH 5/8 HOLE FOR GROUNDING
12	BOLMS 052	2	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 001	1	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
23	CLASW 001	1	SHIELD WIRE CLAMP FOR 3#6AW / 3#7CU, GALV.
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
25	CLECY 001	1	90 DEGREE EYE CLEVIS, 30,000#, H.D.G.,
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
35	COBAS 005	4 ft	CONDUCTOR, 3#6 AW
36	COBCO 028	3 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
47	GUALI 001	1	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
58	LUGGR 002	1	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	2	LOCKNUT FOR 7/8" BOLT
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, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

ISSBTGC3

INSULATOR FOR SPUN CONCRETE POLES
SINGLE BRACED LINE POST, TOP GUY, 230KV, 3-PHASE
CONDUCTOR OPTIONS: 954A, 954S, 1590



SEE MBA1 FOR BOLT ASSEMBLY DETAILS

STRUCTURE	MINIMUM REQUIRED BOLT LENGTH (INCHES)			
	'A'	'B'	'C'	'D'
TOP	22.3	21.2	27.8	28.3
MIDDLE	24.5	23.3	30.0	30.5
BOTTOM	26.6	25.5	32.2	32.7

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISSBTGC3 PLATES

ISSBTGC3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
10	BKTLP 002	3	BRACKET, 53° ANGLE, 6" HOLE SPACING, 1 1/16" HOLE DIAMETER, 5/8" THICK
12	BOLMS 052	1	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	1	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	2	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 075	2	MACHINE BOLT, 7/8" X 36", 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	15 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
53	INSLP 014	3	230KV SILICONE BRACED LINE POST INSULATOR, 17° RISE, GAIN BASE, L = 108", H = 94", 14" 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.
72	TEEDE 003	4	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 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, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

ISSBTGC3*954A

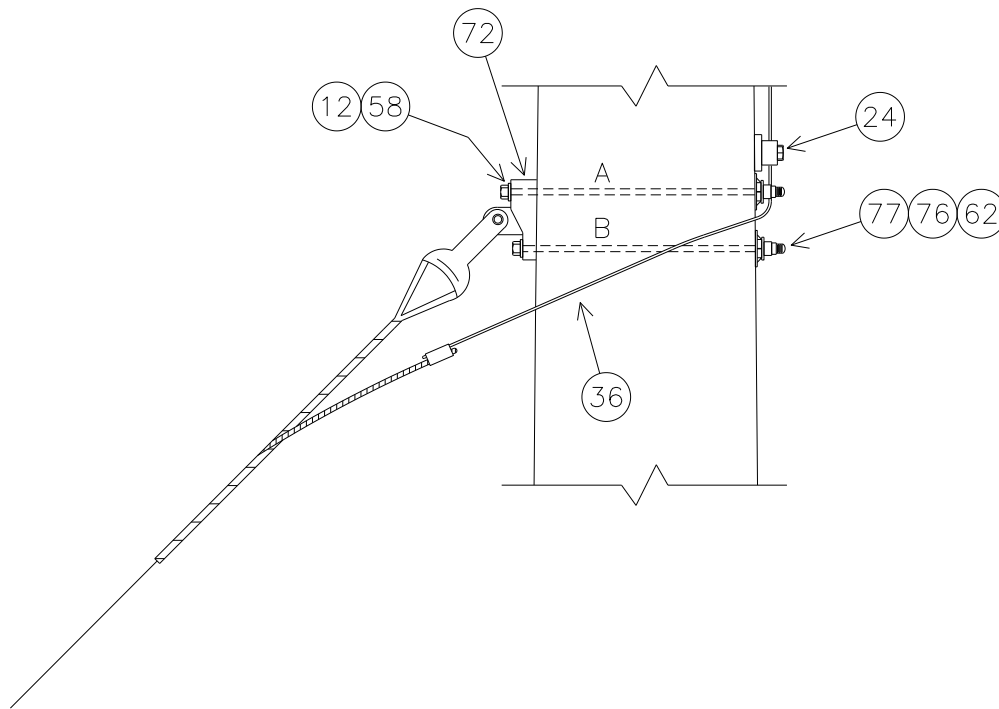
45	GRISA 003	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82", 1 3/16" GAP, 5/8" PIN
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ISSBTGC3*954S

45	GRISA 004	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82", 1 3/16" GAP, 5/8" PIN
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ISSBTGC3*1590

45	GRISA 005	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88", 1 3/8" GAP, 3/4" PIN
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G2**HEAVY GUY**

MINIMUM REQUIRED BOLT LENGTH
(INCHES)

'A'	28.4
'B'	27.8

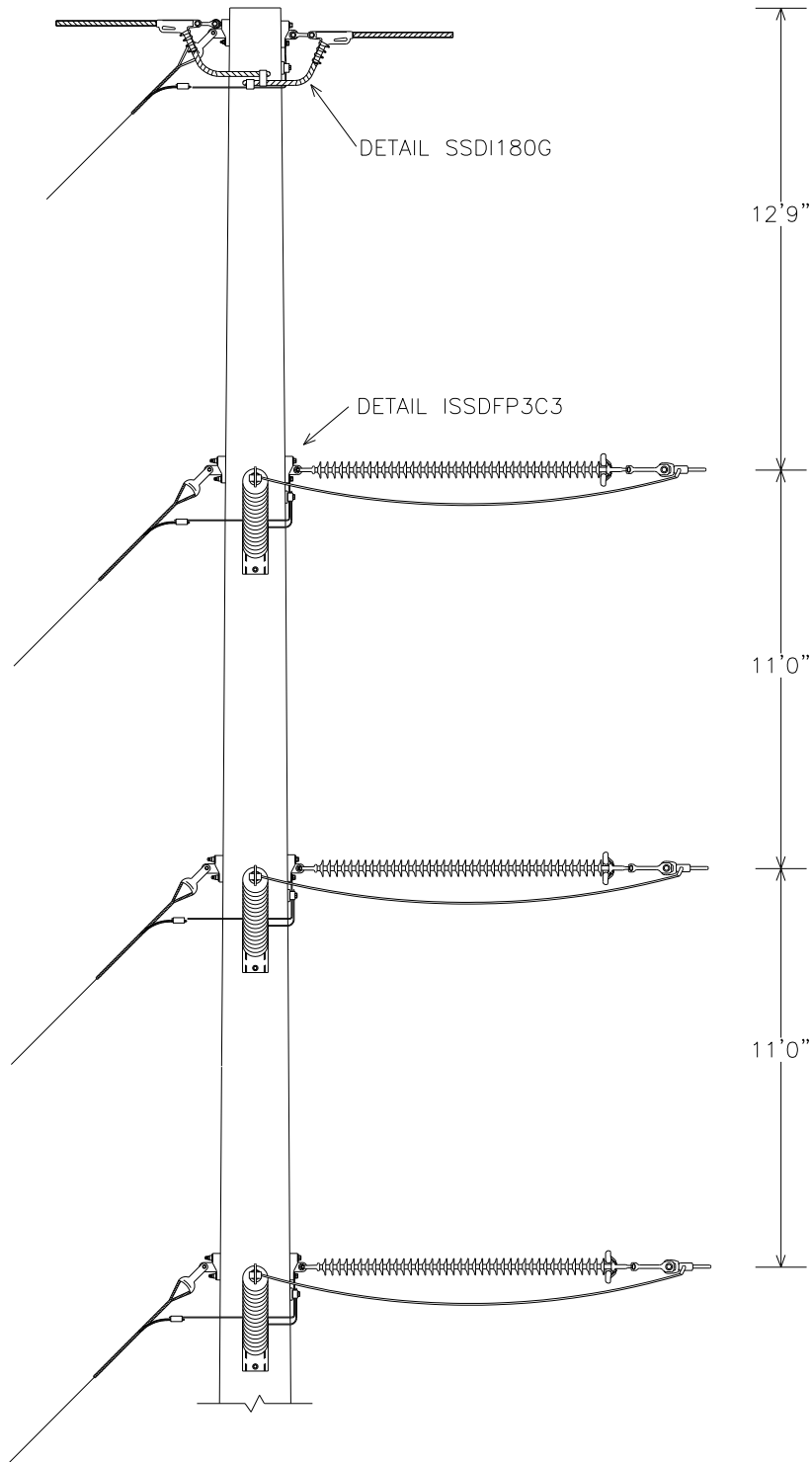
G2

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	1	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	0	GROUND CLAMP, USE CLAMP PROVIDED WITH INSULATORS FOR TOP BRACE GROUNDING
36	COBCO 028	6 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
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 INCH BOLT, HOT DIPPED GALVANIZED
72	TEEDE 003	1	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 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, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

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C1286C

230KV, SINGLE DEADEND 180°, FULL TENSION TO POST, 3-PHASE
CONDUCTOR OPTIONS: 954S, 1590



C1286C PLATES

C1286C BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 040	1	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	1	MACHINE BOLT, 3/4" X 24", 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
12	BOLMS 075	2	MACHINE BOLT, 7/8" X 36", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	4	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, HOT DIPPED GALV.
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G. 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
36	COBCO 028	15 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSD0 002	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, CLASS 52-8/11
51	INSHP 025	3	HORIZONTAL POST INSULATOR, 230KV, L = 86 INCHES, GAIN BASE, 17 DEGREE RISE
58	LUGGR 001	1	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
58	LUGGR 002	3	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
59	NUTEY 003	1	NUTEYE FOR 3/4" BOLT
62	NUTSL 004	3	SQUARE LOCK NUT FOR 3/4 INCH BOLT, HOT DIPPED GALVANIZED
62	NUTSL 005	6	SQUARE LOCK NUT FOR 7/8 INCH BOLT, HOT DIPPED GALVANIZED
72	TEEDE 003	8	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	4	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED
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"

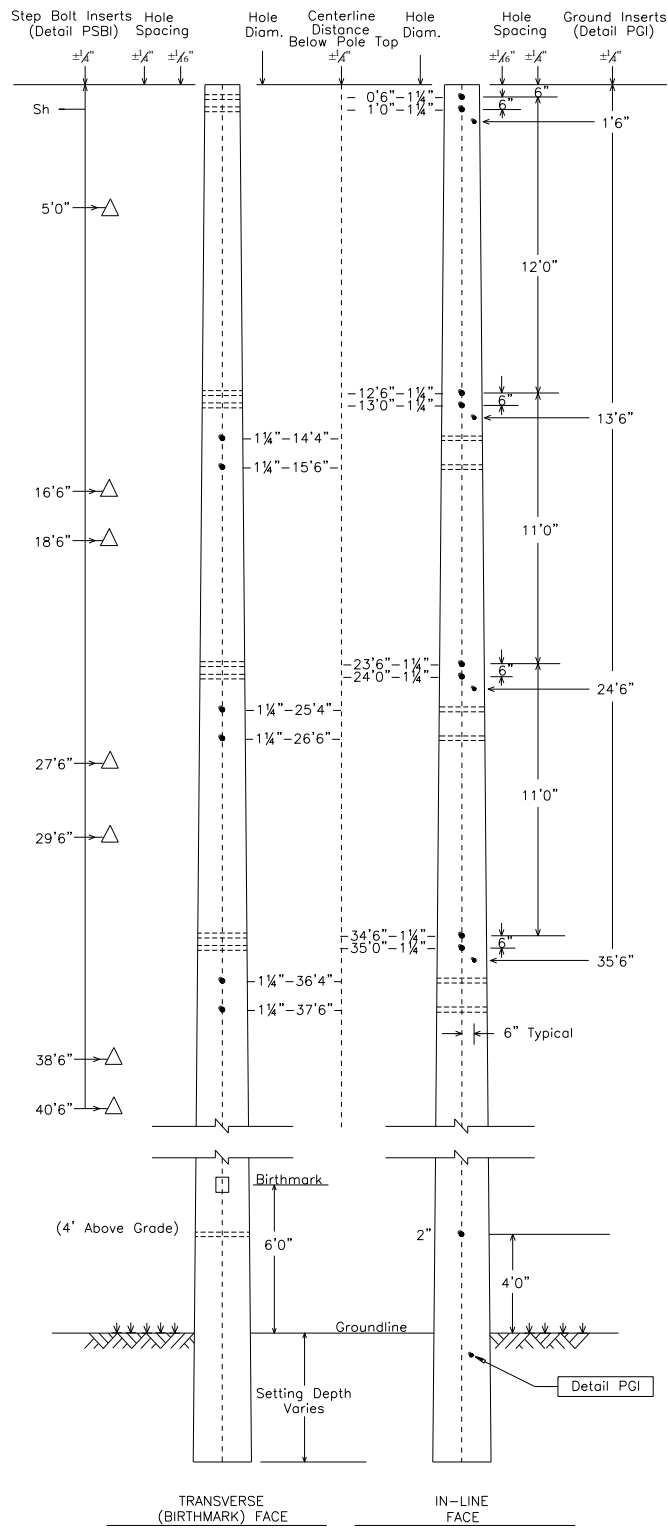
C1286C*954S

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	1	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
12	BOLMS 074	1	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 006	3	CLAMP, SUSPENSION, ALUMINUM, FOR 954 ASCR
28	CLETE 005	3	Y-EYE CLEVIS
42	DEACB 005	3	DEADEND COMPRESSION ASSEMBLY FOR 954 ASCR, 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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 006	12	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
83	RODAR 007	3	ARMOR ROD FOR 954 ASCR, 100 INCHES

C1286C*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	1	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
12	BOLMS 072	1	MACHINE BOLT, 1" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 007	3	CLAMP, SUSPENSION, ALUMINUM, FOR 1590 ASCR
28	CLETE 006	3	Y-EYE CLEVIS
42	DEACB 007	3	DEADEND COMPRESSION ASSEMBLY FOR 1590 ASCR, 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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 007	12	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED
83	RODAR 008	3	ARMOR ROD FOR 1590 ASCR, 100 INCHES

C1286C DRILLING DETAIL



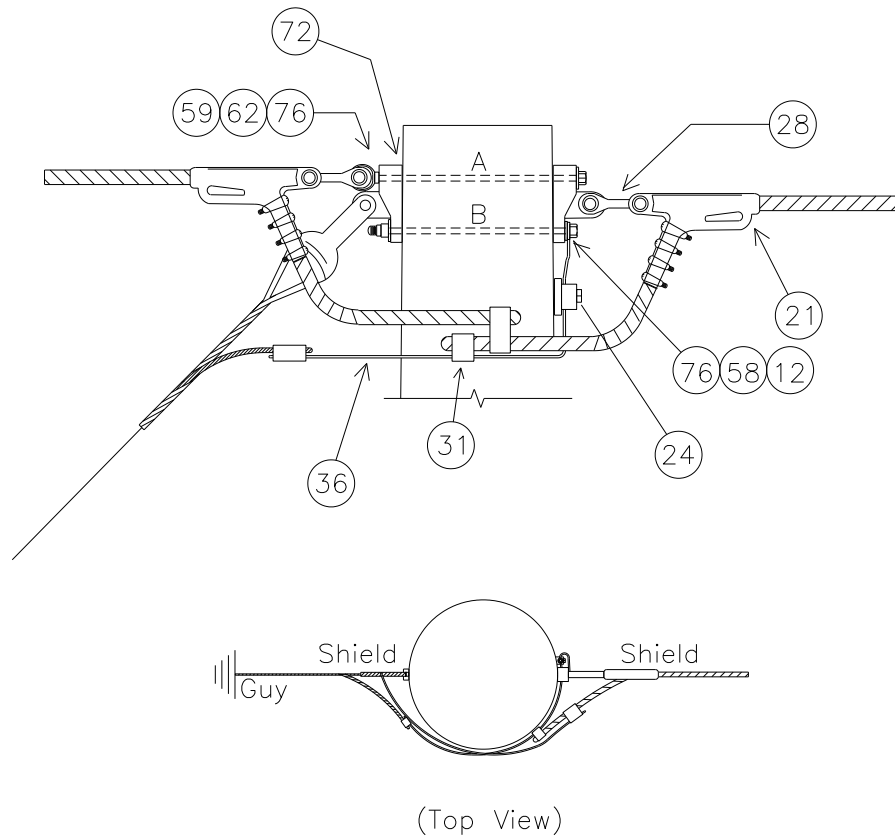
REVISÉ: OCTOBER 2013

REVIEW/REVISED BY: MLR

APPROVED BY: KKR

SSDI180G

SHIELD FOR SPUN CONCRETE POLES
DOUBLE INLINE 180°, GUY



NOTE: SEE SUBSTRUCTURE DETAIL MBA1 FOR BOLT ASSEMBLY DETAILS

UPPER BOLT LENGTH (INCHES)	23.6
LOWER BOLT LENGTH (INCHES)	20.9

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

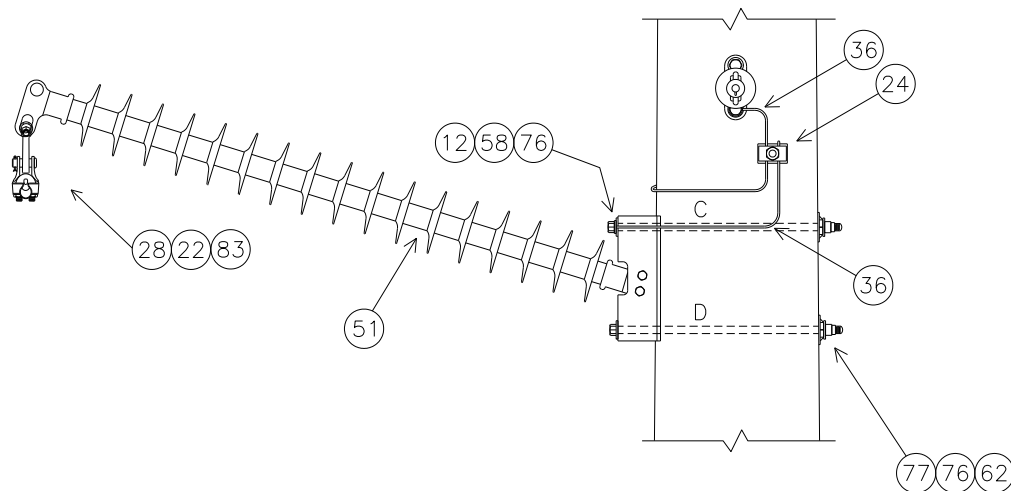
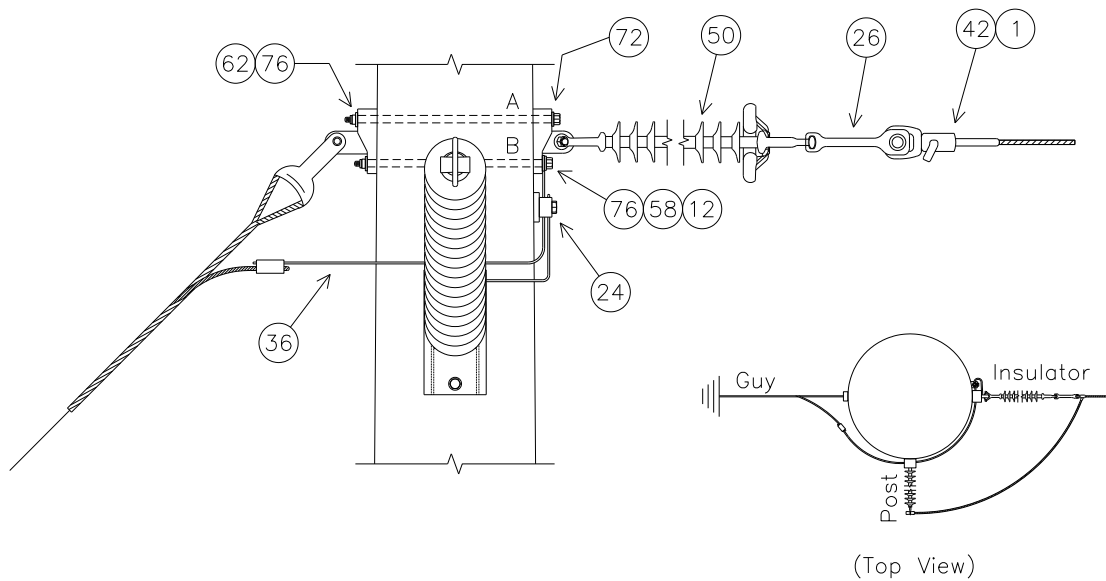
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 040	1	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	1	MACHINE BOLT, 3/4" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G., 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (3#6 AW), ALUMINUM
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
36	COBCO 028	3 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
58	LUGGR 001	1	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
59	NUTEY 003	1	NUTEYE FOR 3/4" BOLT
62	NUTSL 004	3	SQUARE LOCK NUT FOR 3/4" BOLT, H.D.G.
72	TEEDE 003	2	TEE, DUCTILE IRON, H.D.G. 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	4	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED

ISSDFP3C3

INSULATOR FOR SPUN CONCRETE POLES

SINGLE DEAD-END, FULL TENSION TO POST, TYPE 3, 230KV, 3-PHASE

CONDUCTOR OPTIONS: 954S, 1590



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

SUBSTRUCTURE	Top	Mid	Bottom
BOLT 'A' LENGTH (INCHES)	25.4	27.8	30.1
BOLT 'B' LENGTH (INCHES)	23.8	26.1	28.5
BOLT 'C' LENGTH (INCHES)	28.5	30.8	33.2
BOLT 'D' LENGTH (INCHES)	29.0	31.3	33.7

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISSDFP3C3 PLATES

ISSDFP3C3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
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
12	BOLMS 075	2	MACHINE BOLT, 7/8" X 36", 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 002	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", CLASS 52-8/11
51	INSHP 025	3	HORIZONTAL POST INSULATOR, 230KV, L = 86", GAIN BASE, 17° 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, HOT-DIP GALVANIZED, 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"

ISSDFP3C3*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	1	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
12	BOLMS 074	1	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 006	3	CLAMP, SUSPENSION, ALUMINUM, FOR 954 ASCR
28	CLETE 005	3	Y-EYE CLEVIS
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
83	RODAR 007	3	ARMOR ROD FOR 954 ASCR, 100"

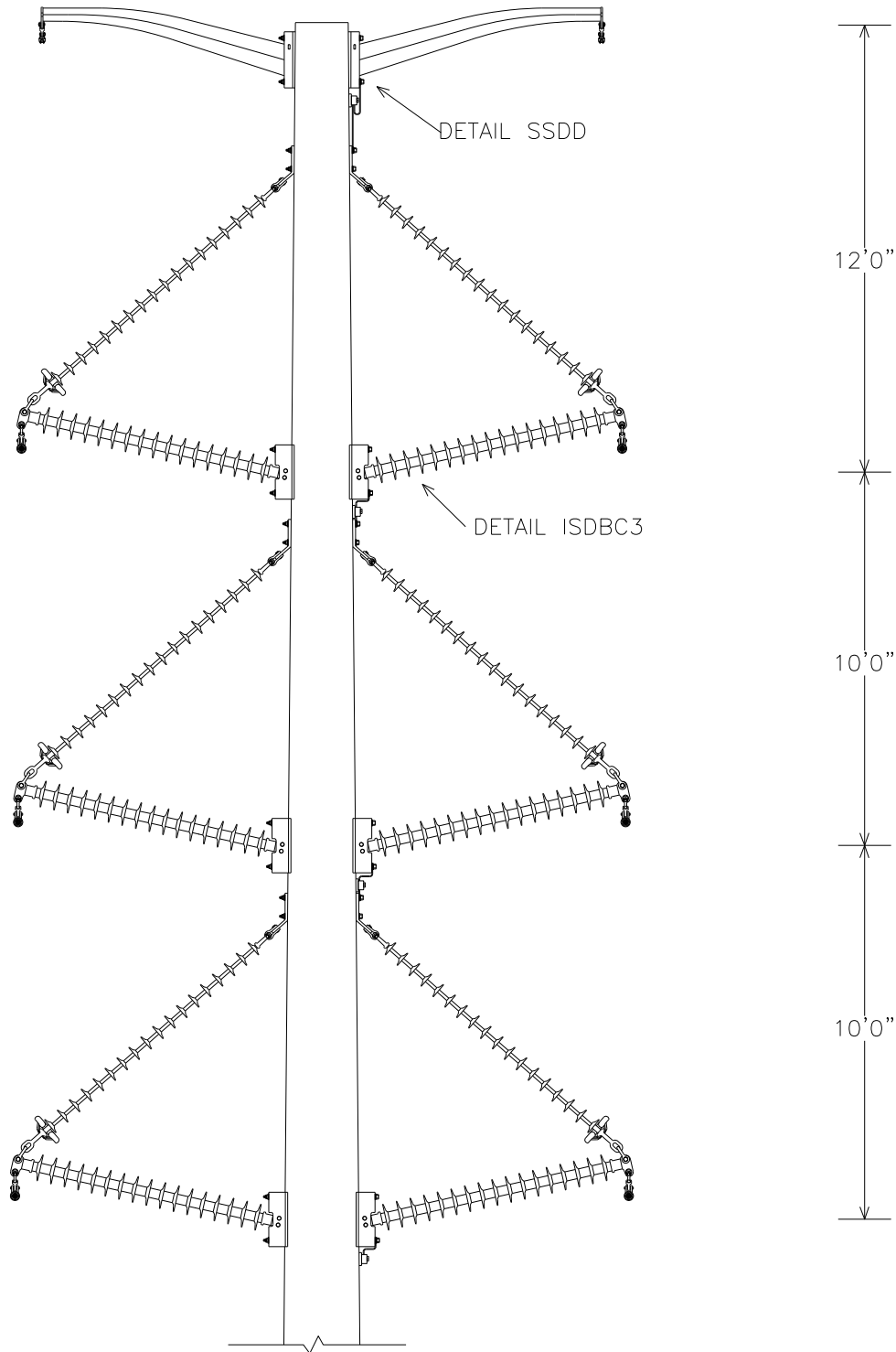
ISSDFP3C3*1590

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 063	1	MACHINE BOLT, 1" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 064	1	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
12	BOLMS 072	1	MACHINE BOLT, 1" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 007	3	CLAMP, SUSPENSION, ALUMINUM, FOR 1590 ASCR
28	CLETE 006	3	Y-EYE CLEVIS
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 ASCR, 100"

C2261

230KV, DOUBLE BRACED LINE POST, 3-PHASE

CONDUCTOR OPTIONS: 954A, 954S, 1590



C2261 PLATES

C2261 BASE

NO.	ITEM ID	QTY	DESCRIPTION
6	ARMST 012	2	6.5 FT SHEILD ARM, 14" HOLE SPACING SUPPLIED WITH 5/8 HOLE FOR GROUNDING
10	BKTLP 002	6	BRACKET, 53-DEGREE ANGLE, 6" HOLE SPACING, 1 1/16" HOLE DIAMETER, 5/8" THICK
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
11	BOLDA 043	2	DOUBLE ARMING BOLT, 7/8" X 40", WITH 4 SQUARE NUTS ATTACHED
12	BOLMS 052	4	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
22	CLASU 001	2	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
23	CLASW 001	2	SHIELD WIRE CLAMP FOR 3#6AW / 3#7CU, GALV.
24	CLATG 001	4	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
25	CLECY 001	2	90 DEGREE EYE CLEVIS, 30,000#, H.D.G.,
26	CLEHL 001	6	BALL-Y CLEVIS, CLASS 52-3/5, STRENGTH = 30,000#, L > 9", PIN = 3/4", HOT DIPPED GALV.
31	CNNCP 003	2	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
35	COBAS 005	8 ft	CONDUCTOR, 3#6 AW
36	COBCO 028	12 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
47	GUALI 001	2	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
53	INSLP 014	6	230KV SILICONE BRACED LINE POST INSULATOR, 17° RISE, GAIN BASE, L = 108", H = 94", 14" B.H.S.
58	LUGGR 002	7	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	20	SQUARE LOCK NUT FOR 7/8 INCH BOLT, HOT DIPPED GALVANIZED
69	SOCEY 003	6	SOCKET - EYE, STENGTH = 25,000#, L = 2 5/16", EYE = 13/16", FORGED STEEL, GALV.
76	WASRD 006	40	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"

C2261*954A

NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 003	6	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82 INCHES, 1 3/16" GAP, 5/8" PIN

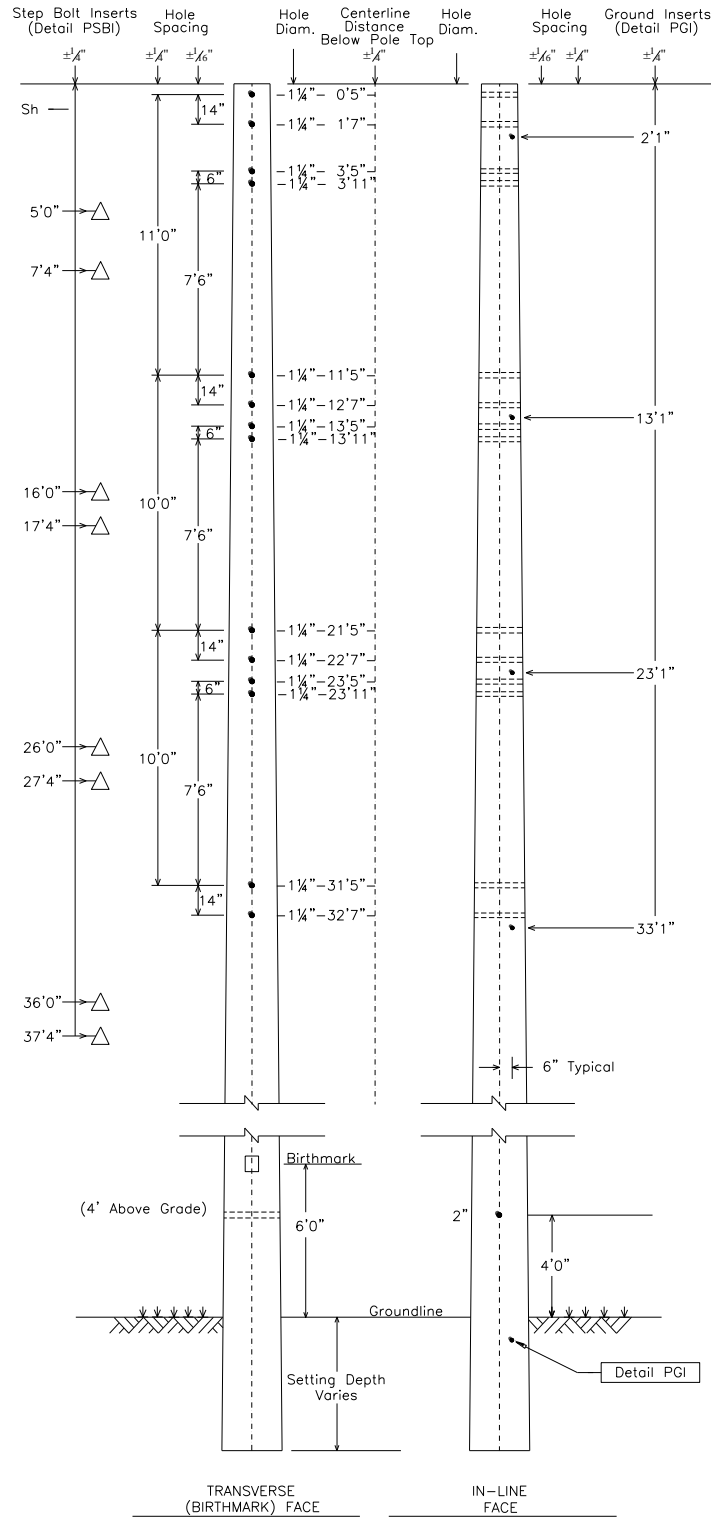
C2261*954S

NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 004	6	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82 INCHES, 1 3/16" GAP, 5/8" PIN

C2261*1590

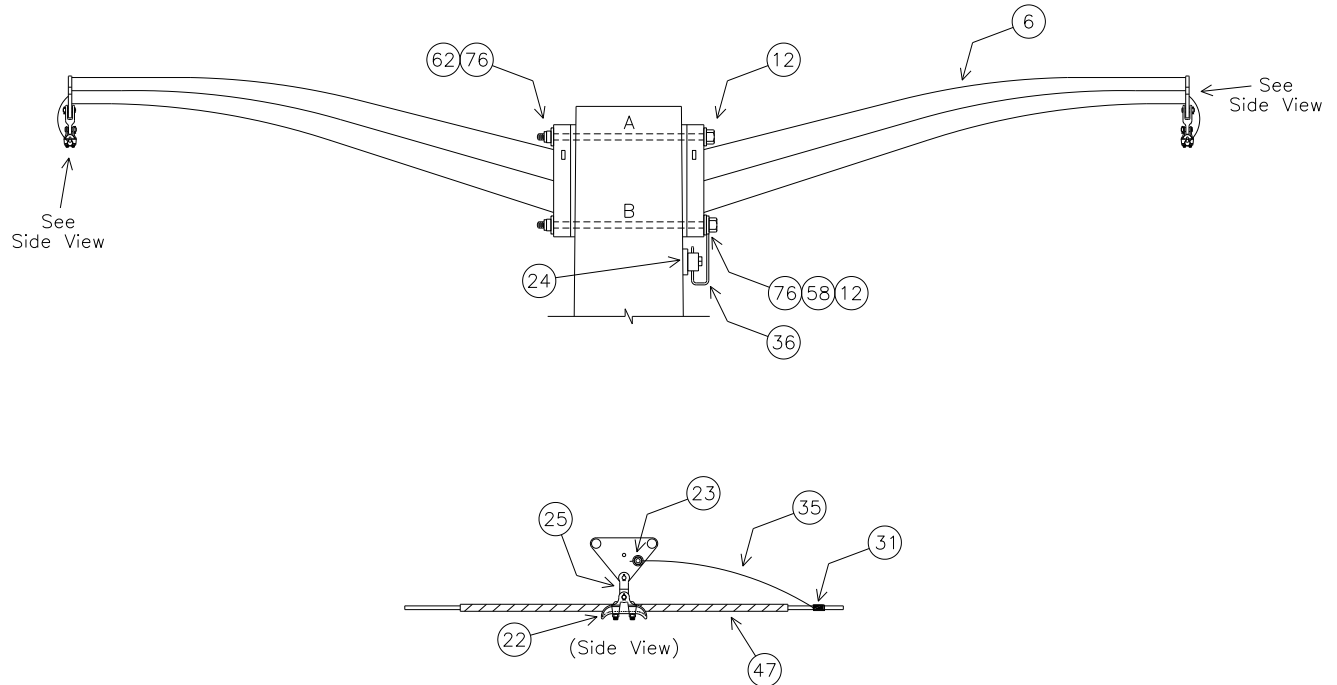
NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 005	6	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88 INCHES, 1 3/8" GAP, 3/4" PIN

C2261 DRILLING DETAIL



SSDD

SHIELD FOR SPUN CONCRETE POLES DOUBLE DAVIT ARM



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

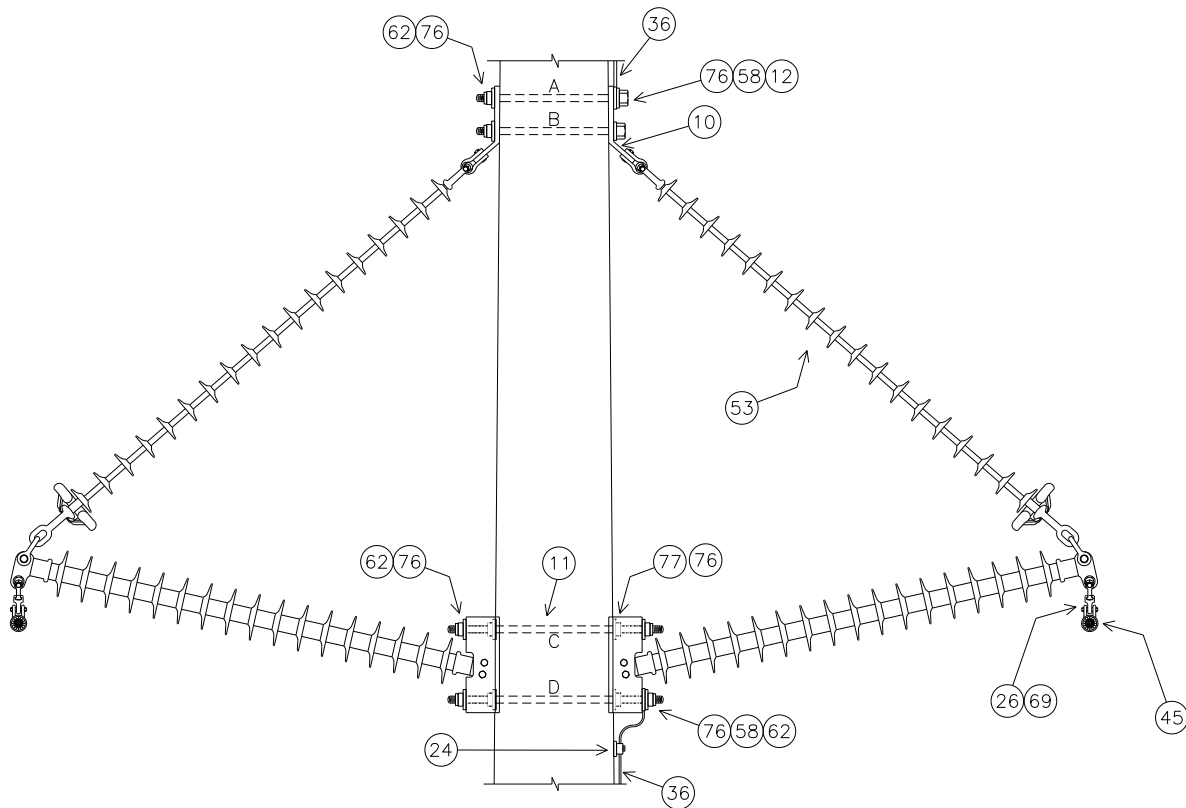
MINIMUM REQUIRED BOLT LENGTH 'A' (INCHES)	20.2
MINIMUM REQUIRED BOLT LENGTH 'B' (INCHES)	20.7

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

NO.	ITEM ID	QTY	DESCRIPTION
6	ARMST 012	2	6.5 FT SHIELD ARM, 14" HOLE SPACING SUPPLIED WITH 5/8" HOLE FOR GROUNDING
12	BOLMS 052	2	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 001	2	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
23	CLASW 001	2	SHIELD WIRE CLAMP FOR 3#6AW / 3#7CU, GALV.
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
25	CLECY 001	2	90 DEGREE EYE CLEVIS, 30,000#, 1/2" EYE THICKNESS, 11/16" HOLE DIAM. H.D.G., 5/8" PIN DIA.,
31	CNNCP 003	2	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
35	COBAS 005	8 ft	CONDUCTOR, 3#6 AW
36	COBCO 028	3 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
47	GUALI 001	2	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
58	LUGGR 002	1	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	2	LOCKNUT FOR 7/8" BOLT
76	WASRD 006	4	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

ISDBC3

INSULATOR FOR SPUN CONCRETE POLES
DOUBLE BRACED LINE POST, 230KV, 3-PHASE
 CONDUCTOR OPTIONS: 954A, 954S, 1590



SEE MBA1 FOR BOLT ASSEMBLY DETAILS AND MBA2 FOR DOUBLE ARMING BOLT ASSEMBLY DETAILS

STRUCTURE	MINIMUM REQUIRED BOLT LENGTHS (INCHES)			
	'A'	'B'	'C'	'D'
TOP	21.1	20.9	34.5	35.0
MIDDLE	23.2	23.1	36.7	37.2
BOTTOM	25.4	25.2	38.8	39.3

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISDBC3 PLATES

ISDBC3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
10	BKTLP 002	6	BRACKET, 53° ANGLE, 6" HOLE SPACING, 1 1/16" HOLE DIAMETER, 5/8" THICK
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
11	BOLDA 043	2	DOUBLE ARMING BOLT, 7/8" X 40", 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 014	6	230KV SILICONE BRACED LINE POST INSULATOR, 17° RISE, GAIN BASE, L = 108", H = 94", 14" 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"

ISDBC3*954A

45	GRISA 003	6	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82", 1 3/16" GAP, 5/8" PIN
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ISDBC3*954S

45	GRISA 004	6	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82", 1 3/16" GAP, 5/8" PIN
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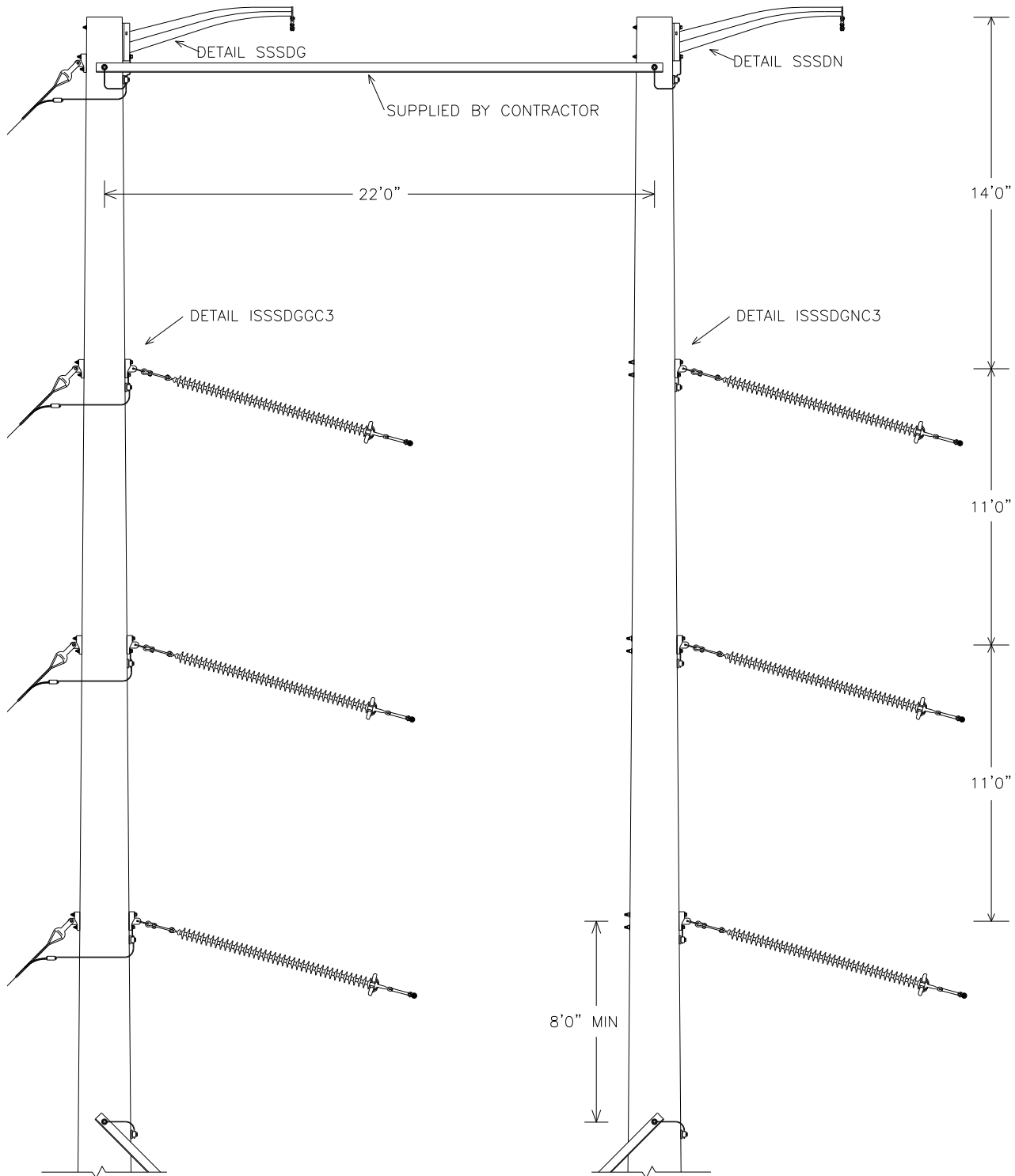
ISDBC3*1590

45	GRISA 005	6	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88", 1 3/8" GAP, 3/4" PIN
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C2513A

230KV, DOUBLE SUSPENSION TANGENT, 3-PHASE

CONDUCTOR OPTIONS: 954A, 954S, 1590



REVISED: OCTOBER 2013

REVIEW/REVISED BY: MLR

APPROVED BY: KKR

C2513A PLATES

C2513A BASE

NO.	ITEM ID	QTY	DESCRIPTION
6	ARMST 012	2	6.5 FT SHEILD ARM, 14" HOLE SPACING SUPPLIED WITH 5/8 HOLE FOR GROUNDING
12	BOLMS 052	5	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 001	2	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
23	CLASW 001	2	SHIELD WIRE CLAMP FOR 3#6AW / 3#7CU, GALV.
24	CLATG 001	10	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
25	CLECY 001	2	90 DEGREE EYE CLEVIS, 30,000#, H.D.G.,
26	CLEHL 007	12	SOCKET-EYE CLEVIS, CLASS 52-3/5, L = 10", EYE = 3/4 THICK W/ 13/16 OPENING, H. D. G.
31	CNNCP 003	2	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
35	COBAS 005	8 ft	CONDUCTOR, 3#6 AW
36	COBCO 028	24 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
47	GUALI 001	2	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
56	INSSU 009	12	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 89 INCHES, CLASS 52-3/5
58	LUGGR 002	2	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	5	LOCKNUT FOR 7/8 INCH BOLT
67	SHAAN 003	12	SHACKLE, 3/4", 50,000#, GALVANIZED
72	TEEDE 003	10	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	10	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	4	SQUARE CURVED WASHER FOR 7/8" BOLTS, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"
80	YOKPL 003	6	TRIANGULAR SUSPENSION YOKE PLATE, 16" SPACING, GALVANIZED, 15/16 HOLE DIA.

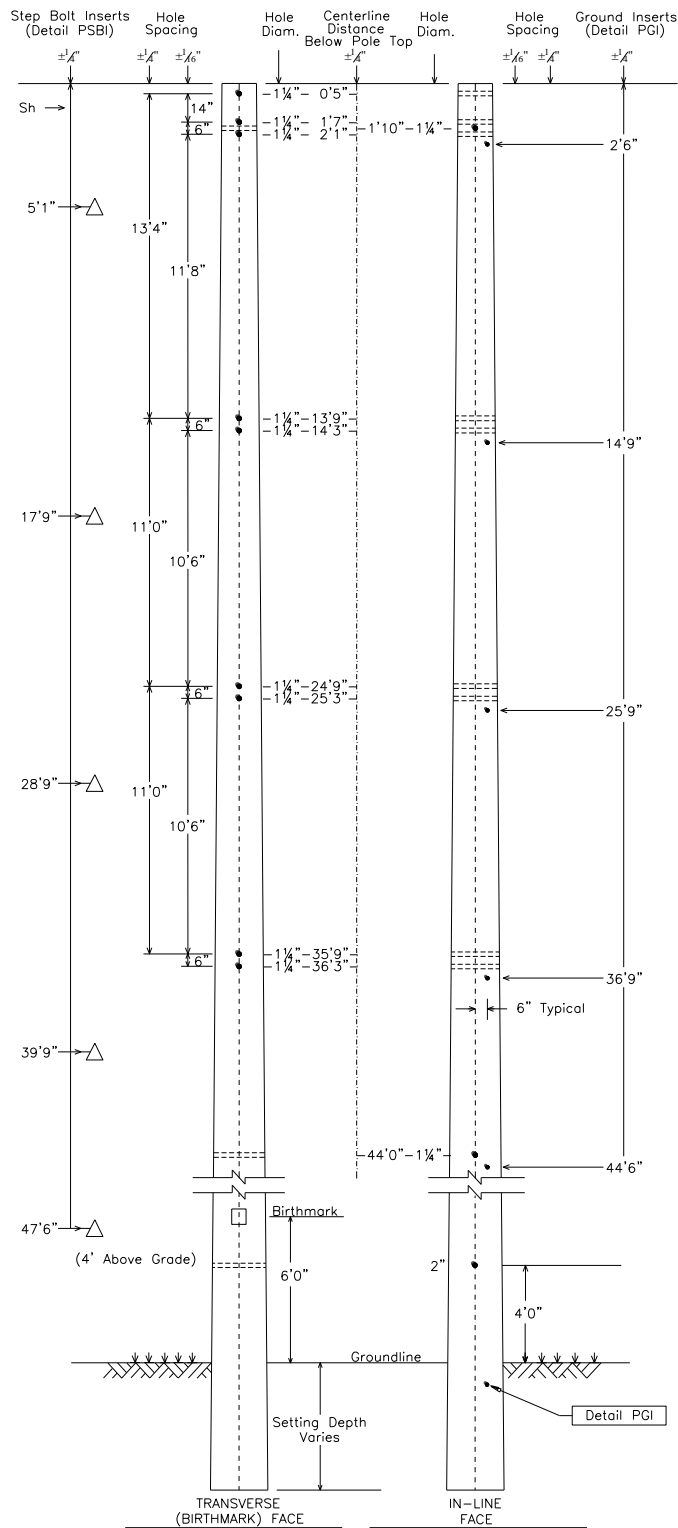
C2513A*954A&S

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	3	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	3	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
45 (954A)	GRISA 006	6	DOUBLE AGS UNIT FOR 954A CONDUCTOR
45 (954S)	GRISA 007	6	DOUBLE AGS UNIT FOR 954S CONDUCTOR
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 INCH BOLT, HOT DIPPED GALVANIZED
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

C2513A*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	3	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	3	MACHINE BOLT, 1" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 072	1	MACHINE BOLT, 1" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
45	GRISA 008	6	DOUBLE AGS UNIT FOR 1590 CONDUCTOR
58	LUGGR 003	6	LUG FOR 1" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 006	12	SQUARE LOCK NUT FOR 1 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 007	24	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 003	6	SQUARE CURVED WASHER FOR 1" BOLTS, GALVANIZED, 4" X 4" SIZE

C2513A DRILLING DETAIL



REVISÉ: OCTOBRE 2013

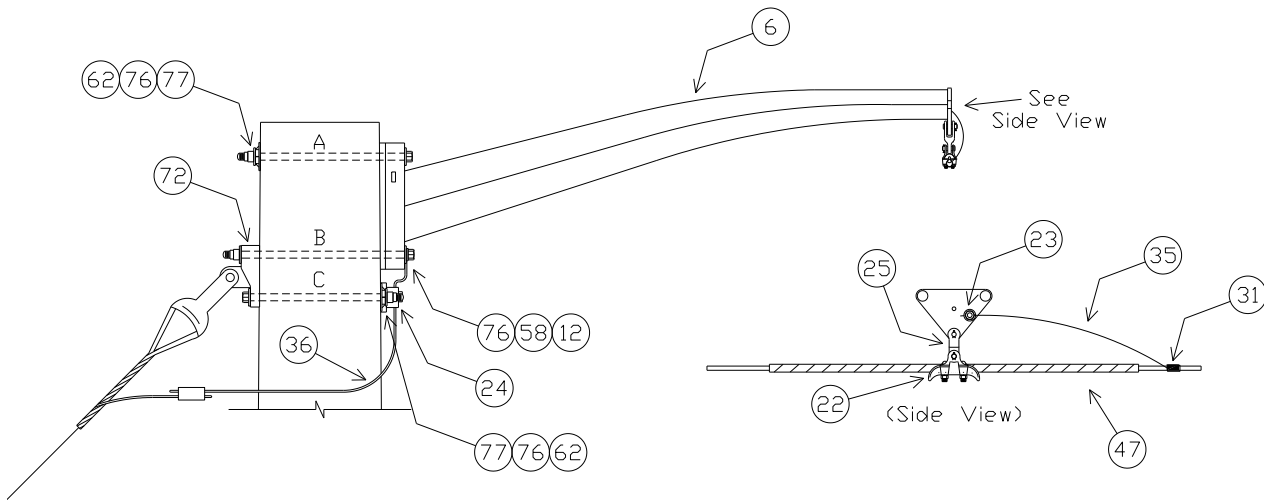
REVIEW/REVISED BY: MLR

APPROVED BY: KKR

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SSSDG

SHIELD FOR SPUN CONCRETE POLES SINGLE DAVIT ARM, GUYED



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

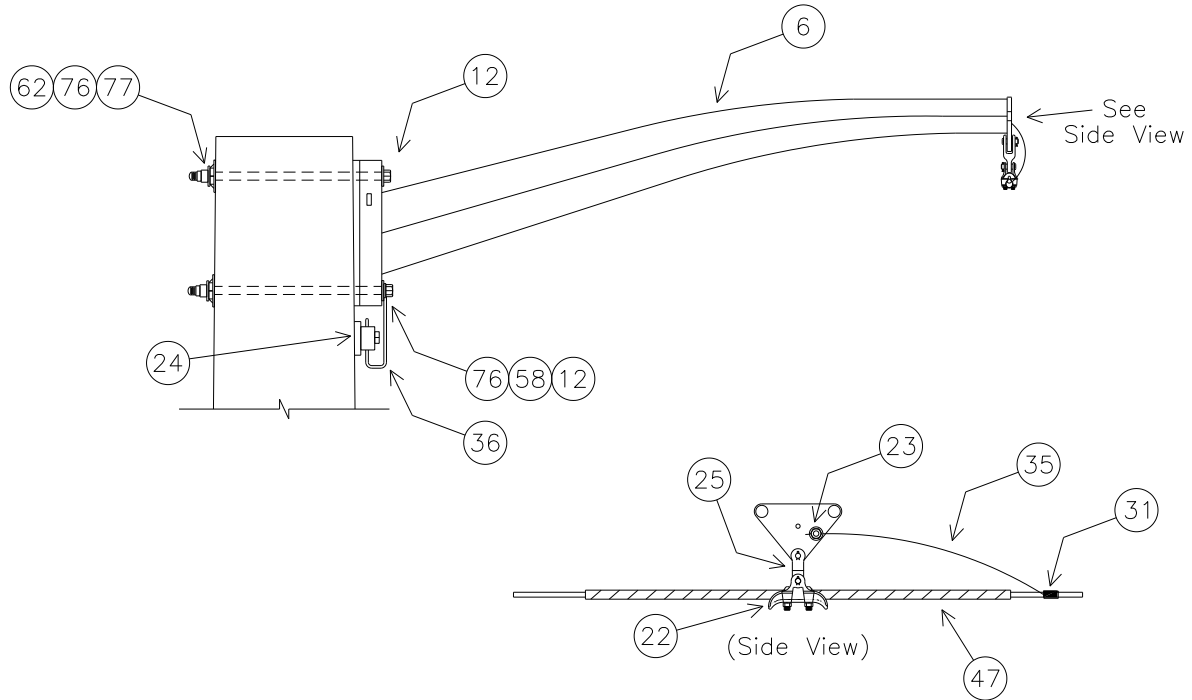
BOLT LENGTH 'A' (INCHES)	20.1
BOLT LENGTH 'B' (INCHES)	21.9
BOLT LENGTH 'C' (INCHES)	20.7

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

NO.	ITEM ID	QTY	DESCRIPTION
6	ARMST 012	1	6.5 FT SHEILD ARM, 14" HOLE SPACING SUPPLIED WITH 5/8 HOLE FOR GROUNDING
12	BOLMS 052	3	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 001	1	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
23	CLASW 001	1	SHIELD WIRE CLAMP FOR 3#6AW / 3#7CU, GALV.
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
25	CLECY 001	1	90 DEGREE EYE CLEVIS, 30,000#, H.D.G.,
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
35	COBAS 005	4 ft	CONDUCTOR, 3#6 AW
36	COBCO 028	3 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
47	GUALI 001	1	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
58	LUGGR 002	1	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	3	LOCKNUT FOR 7/8" BOLT
72	TEEDE 003	1	TEE, A36 STEEL, H.D.G. 6" HOLE SPACING, 13/16" BOLT HOLE DIA., 1 1/4" HOLE ATTACHMENT
76	WASRD 006	6	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	2	SQUARE CURVED WASHER FOR 7/8" BOLTS, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

SSSDN

SHIELD FOR SPUN CONCRETE POLES
SINGLE DAVIT ARM, NO GUY



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

UPPER BOLT LENGTH (INCHES)	20.1
LOWER BOLT LENGTH (INCHES)	20.5

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

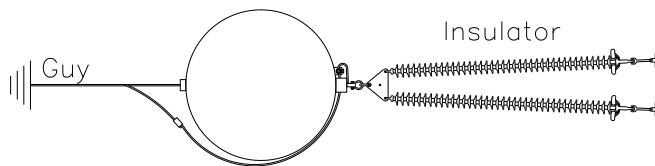
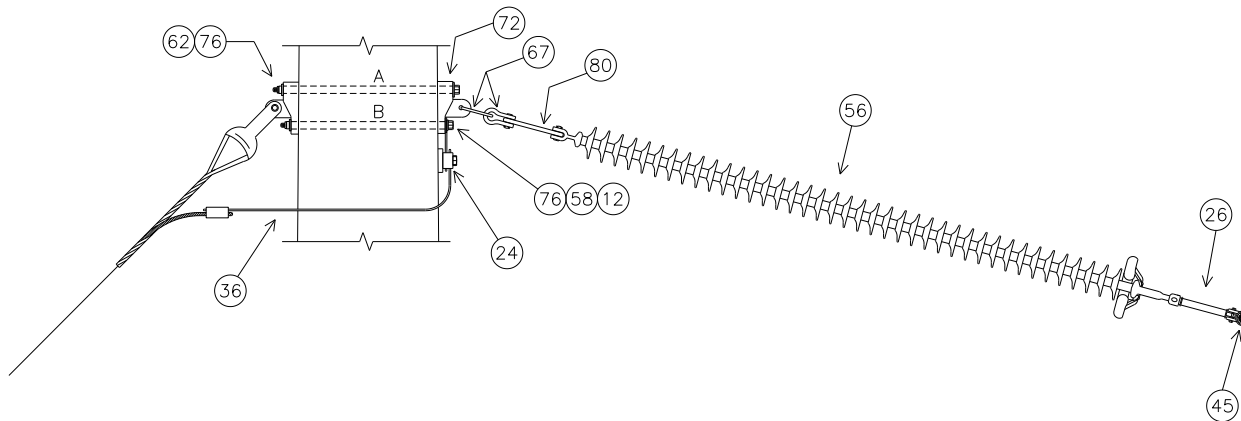
NO.	ITEM ID	QTY	DESCRIPTION
6	ARMST 012	1	6.5 FT SHEILD ARM, 14" HOLE SPACING SUPPLIED WITH 5/8 HOLE FOR GROUNDING
12	BOLMS 052	2	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 001	1	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
23	CLASW 001	1	SHIELD WIRE CLAMP FOR 3#6AW / 3#7CU, GALV.
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
25	CLECY 001	1	90 DEGREE EYE CLEVIS, 30,000#, H.D.G.,
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
35	COBAS 005	4 ft	CONDUCTOR, 3#6 AW
36	COBCO 028	3 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
47	GUALI 001	1	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
58	LUGGR 002	1	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	2	LOCKNUT FOR 7/8" BOLT
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, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

ISSSDGGC3

INSULATOR FOR SPUN CONCRETE POLES

SINGLE SUSPENSION, DOUBLE GRIP, GUYED, 230KV, 3-PHASE

CONDUCTOR OPTIONS: 954A, 954S, 1590



(Top View)

NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

DEADEND INSULATOR	TOP	MIDDLE	BOTTOM
UPPER BOLT 'A' LENGTH (INCHES)	25.7	28.0	30.4
LOWER BOLT 'B' LENGTH (INCHES)	24.0	26.4	28.8

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISSSDGGC3 PLATES

ISSSDGGC3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 007	6	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 009	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 89", CLASS 52-3/5
67	SHAAN 003	6	SHACKLE, 3/4", 50,000#, GALVANIZED
72	TEEDE 003	6	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
80	YOKPL 003	3	TRIANGULAR SUSPENSION YOKE PLATE, 16" SPACING, GALVANIZED, 15/16" HOLE DIA.

ISSSDGGC3*954A

NO.	ITEM ID	QTY	DESCRIPTION
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
12	BOLMS 074	1	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
45	GRISA 006	3	DOUBLE AGS UNIT FOR 954A CONDUCTOR
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

ISSSDGGC3*954S

NO.	ITEM ID	QTY	DESCRIPTION
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
12	BOLMS 074	1	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
45	GRISA 007	3	DOUBLE AGS UNIT FOR 954S CONDUCTOR
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

ISSSDGGC3*1590

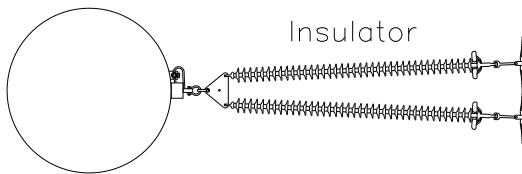
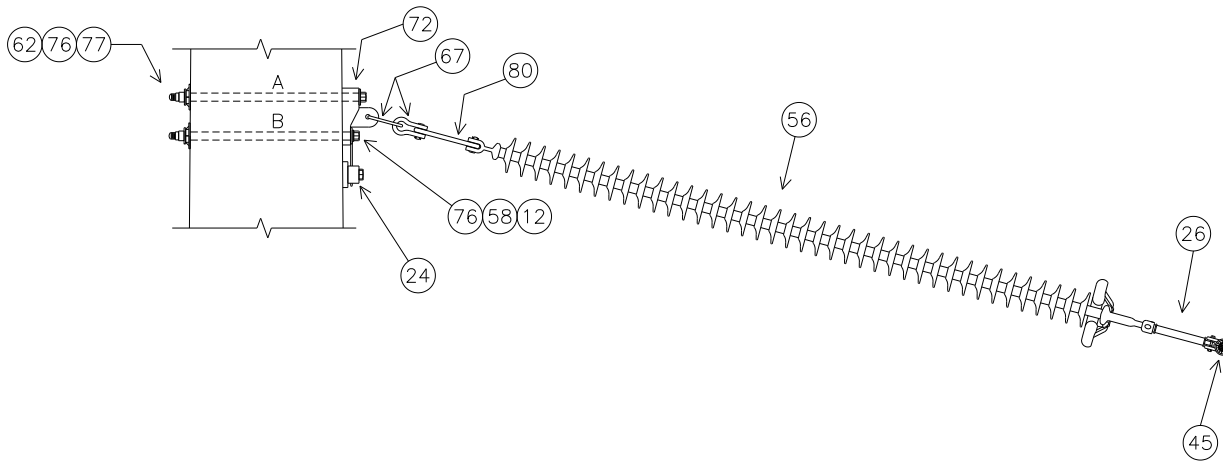
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 064	2	MACHINE BOLT, 1" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 070	2	MACHINE BOLT, 1" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 071	1	MACHINE BOLT, 1" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 072	1	MACHINE BOLT, 1" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
45	GRISA 008	3	DOUBLE AGS UNIT FOR 1590 CONDUCTOR
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

ISSSDGNC3

INSULATOR FOR CONCRETE POLES

SINGLE SUSPENSION, DOUBLE GRIP, NO GUY, 230KV, 3-PHASE

CONDUCTOR OPTIONS: 954A, 954S, 1590



(Top View)

NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

DEADEND INSULATOR	TOP	MIDDLE	BOTTOM
UPPER BOLT 'A' LENGTH (INCHES)	24.6	27.0	29.3
LOWER BOLT 'B' LENGTH (INCHES)	23.9	26.3	28.7

NOTE: BOLT CALCULATIONS ASSUME A 17 INCH POLE TOP DIAMETER

ISSSDGNC3 PLATES

ISSSDGNC3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
24	CLATG 001	3	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
26	CLEHL 007	6	SOCKET-EYE CLEVIS, CLASS 52-3/5, L = 10", EYE = 3/4 THICK W/ 13/16 OPENING, H. D. G.
36	COBCO 028	9 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
56	INSSU 009	6	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 89 INCHES, CLASS 52-3/5
67	SHAAN 003	6	SHACKLE, 3/4", 50,000#, GALVANIZED
72	TEEDE 003	3	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
80	YOKPL 003	3	TRIANGULAR SUSPENSION YOKE PLATE, 16" SPACING, GALVANIZED, 15/16 HOLE DIA.

ISSSDGNC3*954A

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	1	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	2	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
45	GRISA 006	3	DOUBLE AGS UNIT FOR 954A CONDUCTOR
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 INCH BOLT, HOT DIPPED GALVANIZED
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

ISSSDGNC3*954S

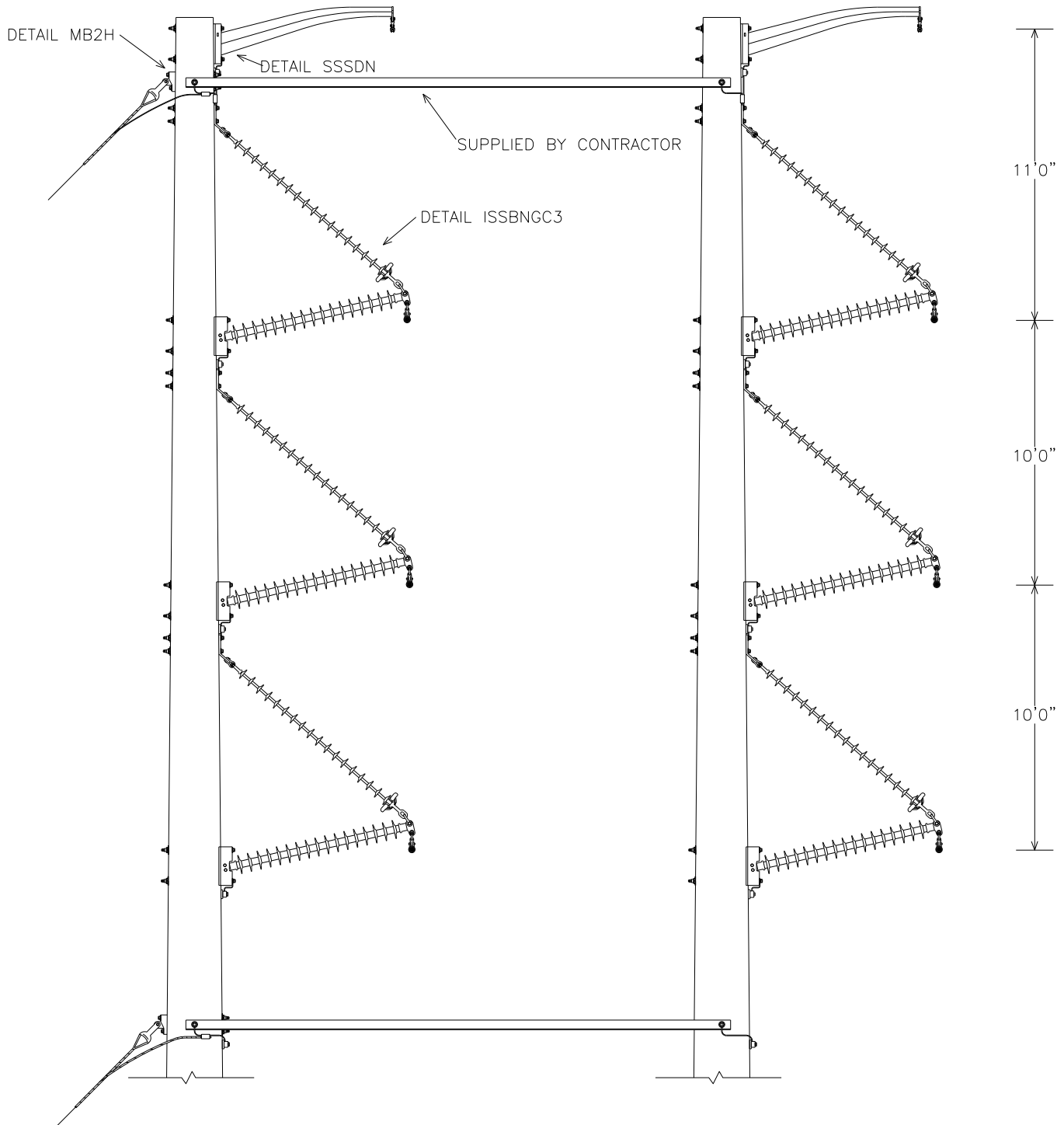
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 053	1	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	1	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	2	MACHINE BOLT, 7/8" X 28", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 073	2	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
45	GRISA 007	3	DOUBLE AGS UNIT FOR 954S CONDUCTOR
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 INCH BOLT, HOT DIPPED GALVANIZED
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

ISSSDGNC3*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	1	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	2	MACHINE BOLT, 1" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
45	GRISA 008	3	DOUBLE AGS UNIT FOR 1590 CONDUCTOR
58	LUGGR 003	3	LUG FOR 1" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 006	6	SQUARE LOCK NUT FOR 1 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 007	12	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 003	6	SQUARE CURVED WASHER FOR 1" BOLTS, GALVANIZED, 4" X 4" SIZE

C2562A

230KV, DOUBLE BRACED LINE POST, H STRUCTURE, LIGHT GUY, 3-PHASE
CONDUCTOR OPTIONS: 954S, 1590



REVISED: OCTOBER 2013

REVIEW/REVISED BY: MLR

APPROVED BY: KKR

230KV STRUCTURES-NEW CONSTRUCTION

STS230-80

C2562A PLATES

C2562A BASE

NO.	ITEM ID	QTY	DESCRIPTION
6	ARMST 012	2	6.5 FT SHEILD ARM, 14" HOLE SPACING SUPPLIED WITH 5/8 HOLE FOR GROUNDING
10	BKTLP 002	6	BRACKET, 53-DEGREE ANGLE, 6" HOLE SPACING, 1 1/16" HOLE DIAMETER, 5/8" THICK
12	BOLMS 052	12	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 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	4	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 074	4	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 075	4	MACHINE BOLT, 7/8" X 36", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 001	2	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
23	CLASW 001	2	SHIELD WIRE CLAMP FOR 3#6AW / 3#7CU, GALV.
24	CLATG 001	10	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
25	CLECY 001	2	90 DEGREE EYE CLEVIS, 30,000#, H.D.G.,
26	CLEHL 001	6	BALL-Y CLEVIS, CLASS 52-3/5, STRENGTH = 30,000#, L > 9", PIN = 3/4", HOT DIPPED GALV.
31	CNNCP 003	2	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
31	CNNCP 016	2	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., (.204"-.258") - (.128"-.204")
35	COBAS 005	8 ft	CONDUCTOR, 3#6 AW
36	COBCO 028	33 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
47	GUALI 001	2	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
53	INSLP 014	6	230KV SILICONE BRACED LINE POST INSULATOR, 17° RISE, GAIN BASE, L = 108", H = 94", 14" B.H.S.
58	LUGGR 002	20	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	36	SQUARE LOCK NUT FOR 7/8 INCH BOLT, HOT DIPPED GALVANIZED
69	SOCEY 003	6	SOCKET - EYE, STENGTH = 25,000#, L = 2 5/16", EYE = 13/16", FORGED STEEL, GALV.
72	TEEDE 003	2	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	72	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	32	SQUARE FLAT WASHER FOR 7/8" BOLT, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

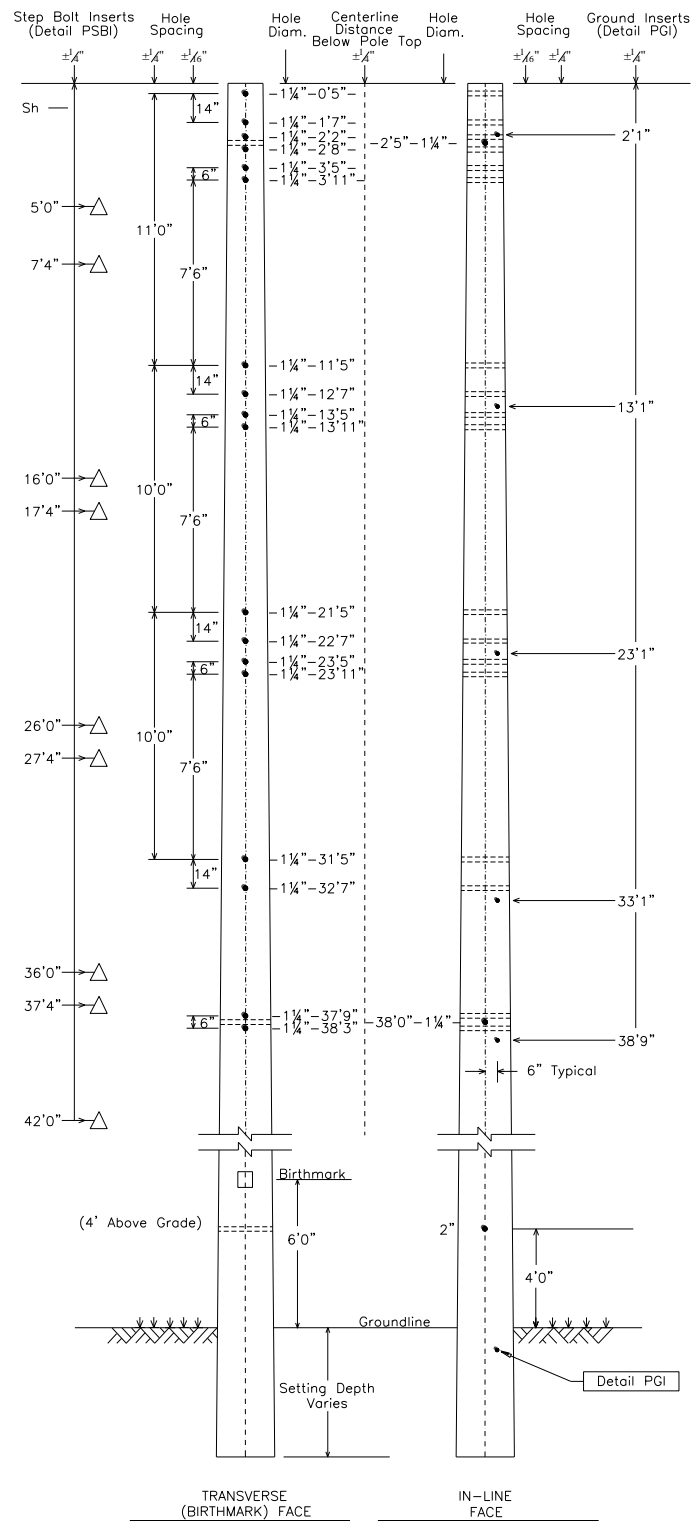
C2562A*954S

NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 004	6	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82 INCHES, 1 3/16" GAP, 5/8" PIN

C2562A*1590

NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 005	6	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88 INCHES, 1 3/8" GAP, 3/4" PIN

C2562A DRILLING DETAIL



REVISÉ: OCTOBER 2013

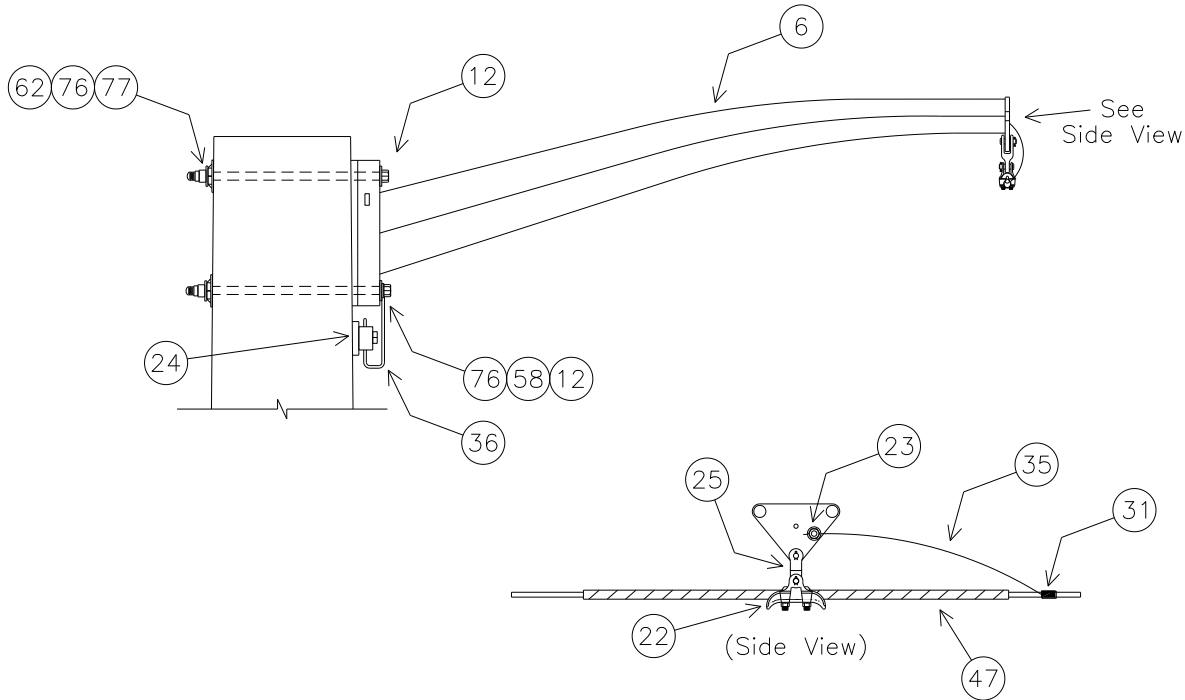
REVIEW/REVISED BY: MLR

APPROVED BY: KKR

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SSSDN

SHIELD FOR SPUN CONCRETE POLES
SINGLE DAVIT ARM, NO GUY
(2X)



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

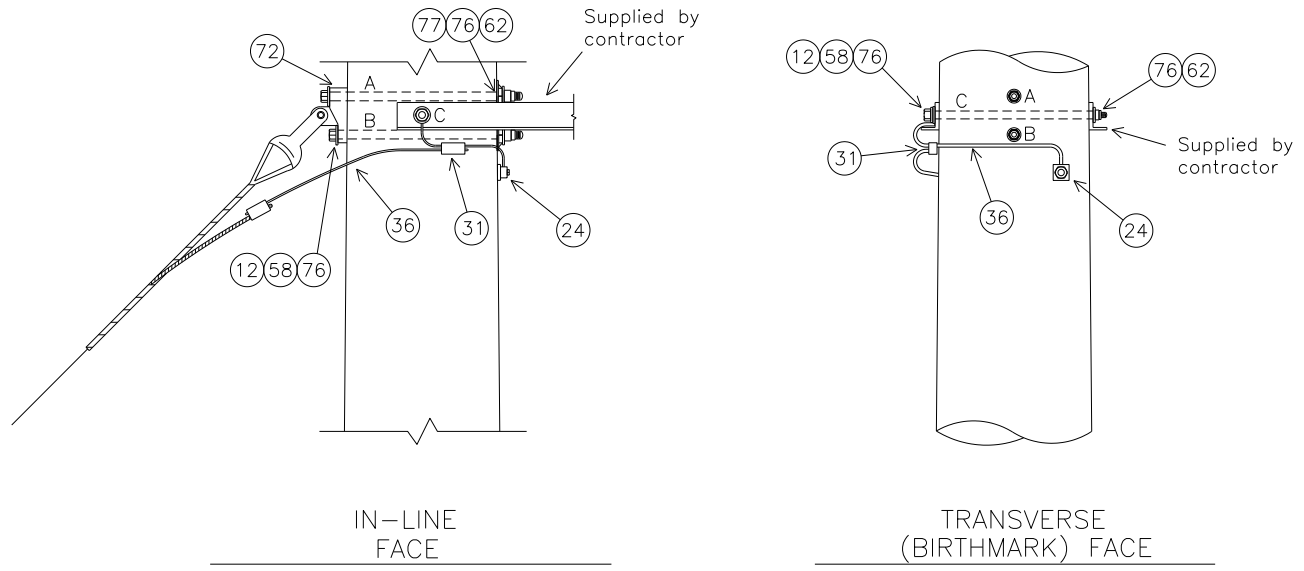
UPPER BOLT LENGTH (INCHES)	20.1
LOWER BOLT LENGTH (INCHES)	20.5

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

NO.	ITEM ID	QTY	DESCRIPTION
6	ARMST 012	1	6.5 FT SHEILD ARM, 14" HOLE SPACING SUPPLIED WITH 5/8 HOLE FOR GROUNDING
12	BOLMS 052	2	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 001	1	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
23	CLASW 001	1	SHIELD WIRE CLAMP FOR 3#6AW / 3#7CU, GALV.
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
25	CLECY 001	1	90 DEGREE EYE CLEVIS, 30,000#, H.D.G.,
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
35	COBAS 005	4 ft	CONDUCTOR, 3#6 AW
36	COBCO 028	3 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
47	GUALI 001	1	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
58	LUGGR 002	1	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	2	LOCKNUT FOR 7/8" BOLT
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, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

MB2H

BRACING WITH 2 HORIZONTAL SUPPORTS, GUYED, 230KV



STRUCTURE	MINIMUM REQUIRED BOLT LENGTH (INCHES)		
	'A'	'B'	'C'
TOP	21.7	21.1	20.4
BOTTOM	29.4	28.8	28.0

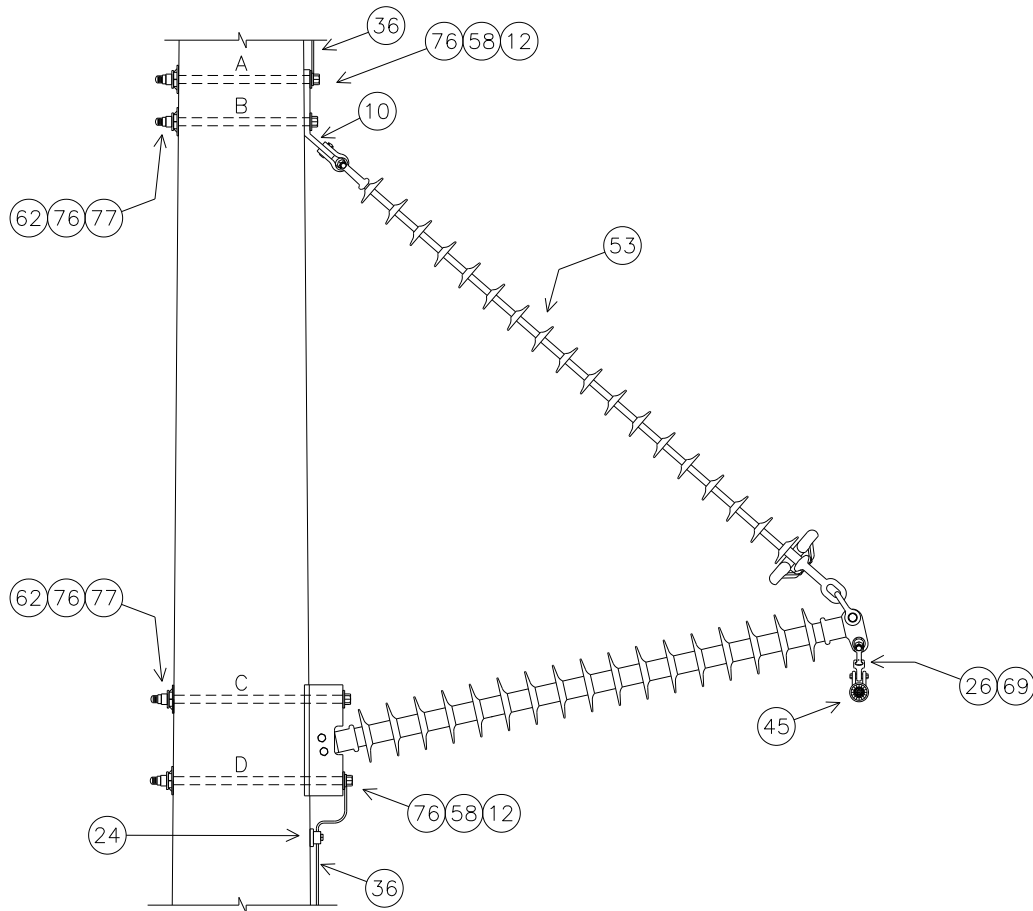
NOTE: BOLT CALCULATIONS ASSUMES A 17 INCH POLE TOP DIAMETER AND MOUNTING HEIGHTS OF 2.5 FT FOR TOP STRUCTURE AND 38 FT FOR BOTTOM STRUCTURE

MB2H

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 052	4	MACHINE BOLT, 7/8" X 22", 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
24	CLATG 001	2	GROUND CLAMP, USE CLAMP PROVIDED WITH INSULATORS FOR TOP BRACE GROUNDING
31	CNNCP 016	2	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., (.204"-.258") - (.128"-.204")
36	COBCO 028	10 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
58	LUGGR 002	6	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	8	SQUARE LOCK NUT FOR 7/8 INCH BOLT, HOT DIPPED GALVANIZED
72	TEEDE 003	2	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	16	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	4	SQUARE CURVED WASHER FOR 7/8" BOLTS, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

ISSBNGC3

INSULATOR FOR SPUN CONCRETE POLES
SINGLE BRACED LINE POST, NO GUY, 230KV
 CONDUCTOR OPTIONS: 954S, 1590
 (2X)



SEE MBA1 FOR BOLT ASSEMBLY DETAILS

STRUCTURE	MINIMUM REQUIRED BOLT LENGTH (INCHES)			
	'A'	'B'	'C'	'D'
TOP	21.0	20.9	27.8	28.3
MIDDLE	23.2	23.0	30.0	30.5
BOTTOM	25.3	25.2	32.2	32.7

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISSBNGC3 PLATES

ISSBNGC3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
10	BKTLP 002	3	BRACKET, 53° 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	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	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	2	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 075	2	MACHINE BOLT, 7/8" X 36", 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 014	3	230KV SILICONE BRACED LINE POST INSULATOR, 17° RISE, GAIN BASE, L = 108", H = 94", 14" 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"

ISSBNGC3*954S

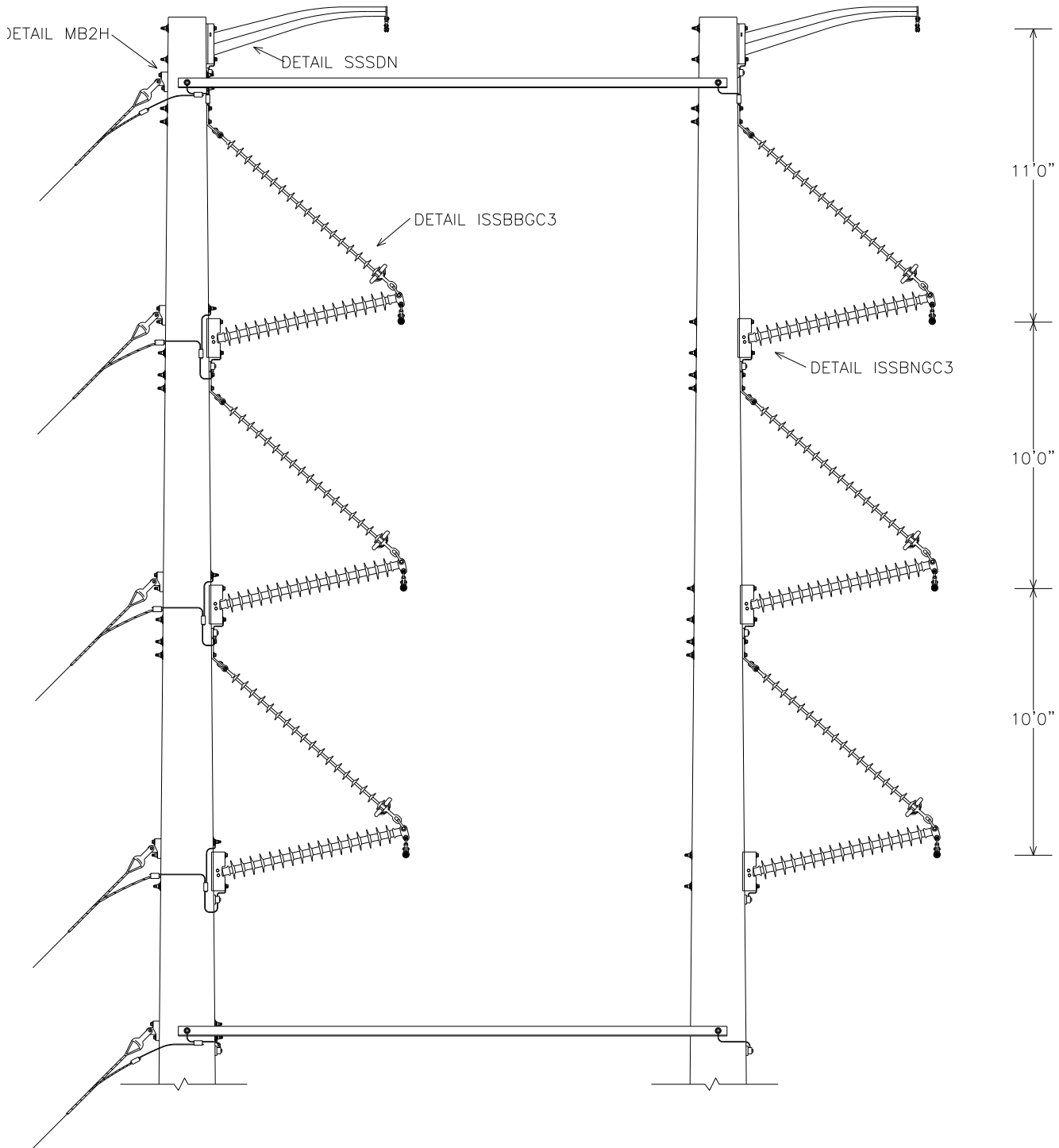
45	GRISA 004	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82", 1 3/16" GAP, 5/8" PIN
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ISSBNGC3*1590

45	GRISA 005	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88", 1 3/8" GAP, 3/4" PIN
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C2562B

230KV, SINGLE BRACED LINE POST, H-FRAME, HEAVY GUY, 3-PHASE
CONDUCTOR OPTIONS: 954S, 1590



REVISED: OCTOBER 2013

REVIEW/REVISED BY: MLR

APPROVED BY: KKR

230KV STRUCTURES-NEW CONSTRUCTION

STS230-88

C2562B PLATES

C2562B BASE

NO.	ITEM ID	QTY	DESCRIPTION
6	ARMST 012	2	6.5 FT SHEILD ARM, 14" HOLE SPACING SUPPLIED WITH 5/8 HOLE FOR GROUNDING
10	BKTLP 002	6	BRACKET, 53-DEGREE ANGLE, 6" HOLE SPACING, 1 1/16" HOLE DIAMETER, 5/8" THICK
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 052	12	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 053	5	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 054	5	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	4	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
12	BOLMS 075	3	MACHINE BOLT, 7/8" X 36", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 001	2	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
23	CLASW 001	2	SHIELD WIRE CLAMP FOR 3#6AW / 3#7CU, GALV.
24	CLATG 001	10	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
25	CLECY 001	2	90 DEGREE EYE CLEVIS, 30,000#, H.D.G.,
26	CLEHL 001	6	BALL-Y CLEVIS, CLASS 52-3/5, STRENGTH = 30,000#, L > 9", PIN = 3/4", HOT DIPPED GALV.
31	CNNCP 003	2	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
31	CNNCP 016	2	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., COPPER
35	COBAS 005	8 ft	CONDUCTOR, 3#6 AW
36	COBCO 028	36 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
47	GUALI 001	2	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
53	INSLP 014	6	230KV SILICONE BRACED LINE POST INSULATOR, 17° RISE, GAIN BASE, L = 108", H = 94", 14" B.H.S.
58	LUGGR 002	20	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	42	SQUARE LOCK NUT FOR 7/8 INCH BOLT, HOT DIPPED GALVANIZED
69	SOCEY 003	6	SOCKET - EYE, STENGTH = 25,000#, L = 2 5/16", EYE = 13/16", FORGED STEEL, GALV.
72	TEEDE 003	5	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	81	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	35	SQUARE FLAT WASHER FOR 7/8" BOLT, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

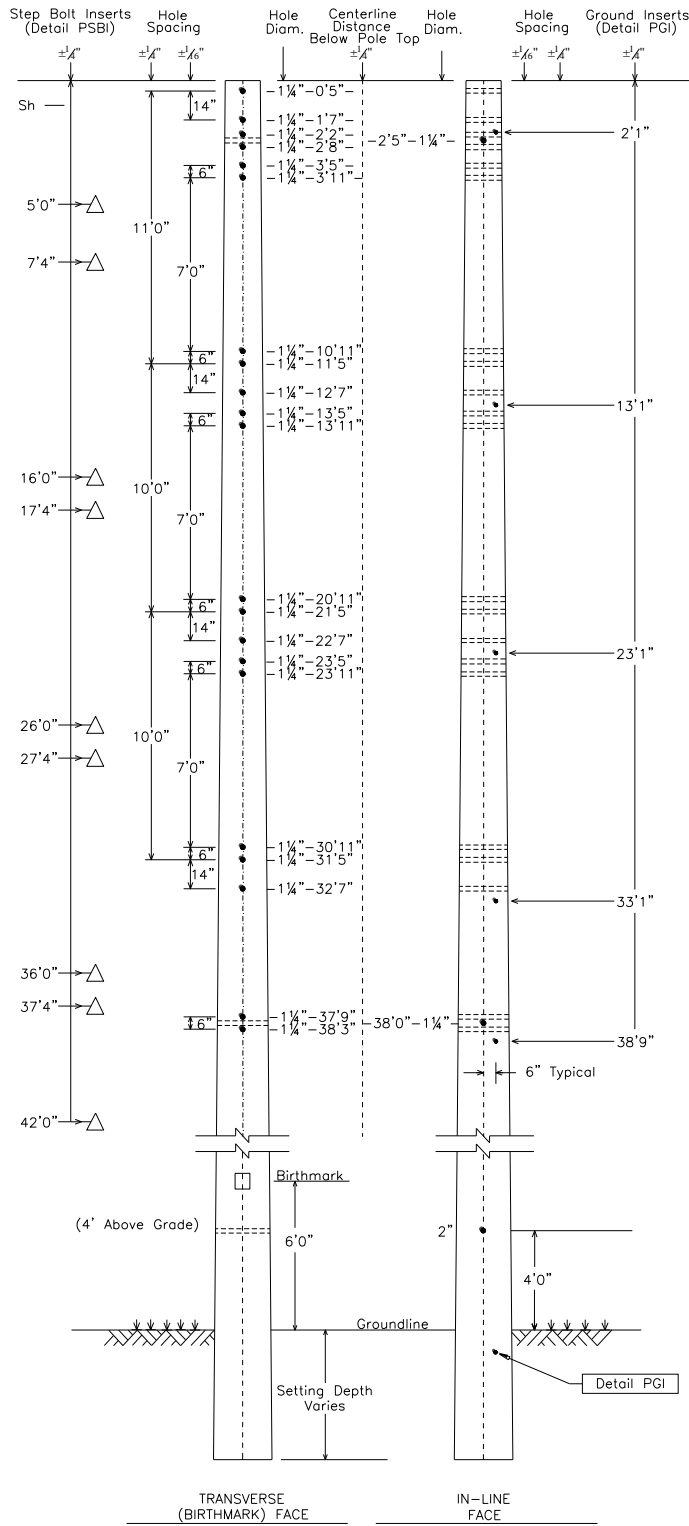
C2562B*954S

NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 004	6	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82 INCHES, 1 3/16" GAP, 5/8" PIN

C2562B*1590

NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 005	6	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88 INCHES, 1 3/8" GAP, 3/4" PIN

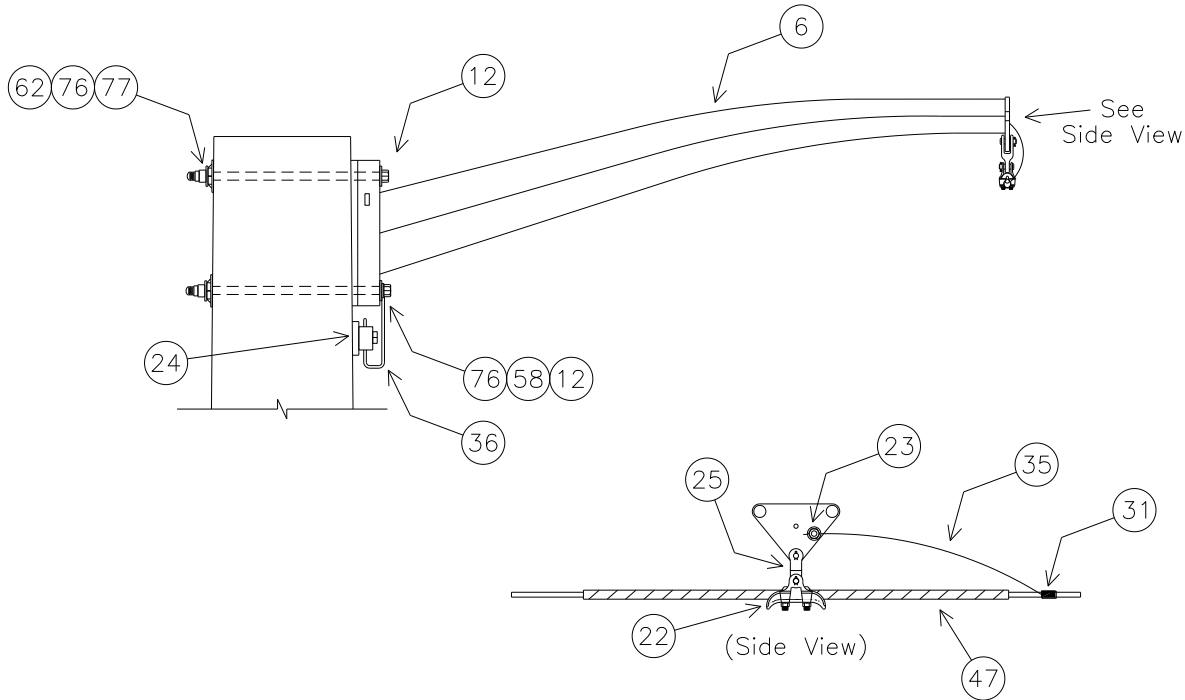
C2562B DRILLING DETAIL



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SSSDN

**SHIELD FOR SPUN CONCRETE POLES
SINGLE DAVIT ARM, NO GUY
(2X)**



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

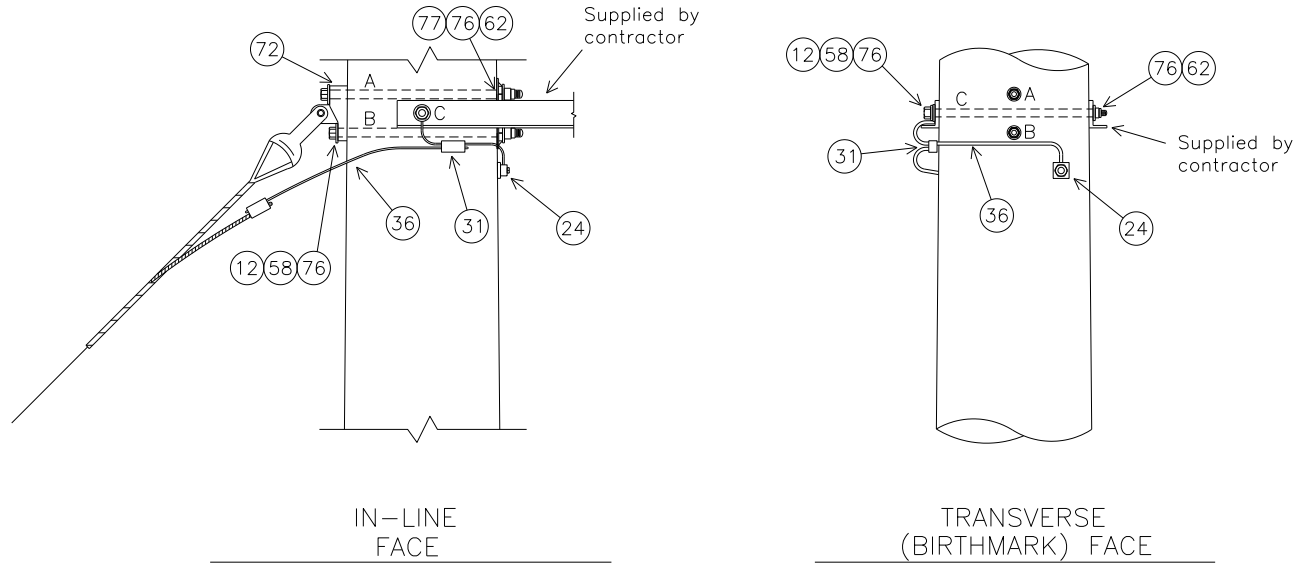
UPPER BOLT LENGTH (INCHES)	20.1
LOWER BOLT LENGTH (INCHES)	20.5

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

NO.	ITEM ID	QTY	DESCRIPTION
6	ARMST 012	1	6.5 FT SHEILD ARM, 14" HOLE SPACING SUPPLIED WITH 5/8 HOLE FOR GROUNDING
12	BOLMS 052	2	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 001	1	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
23	CLASW 001	1	SHIELD WIRE CLAMP FOR 3#6AW / 3#7CU, GALV.
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
25	CLECY 001	1	90 DEGREE EYE CLEVIS, 30,000#, H.D.G.,
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
35	COBAS 005	4 ft	CONDUCTOR, 3#6 AW
36	COBCO 028	3 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
47	GUALI 001	1	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
58	LUGGR 002	1	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	2	LOCKNUT FOR 7/8" BOLT
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, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

MB2H

BRACING WITH 2 HORIZONTAL SUPPORTS, GUYED, 230KV



STRUCTURE	MINIMUM REQUIRED BOLT LENGTH (INCHES)		
	'A'	'B'	'C'
TOP	21.7	21.1	20.4
BOTTOM	29.4	28.8	28.0

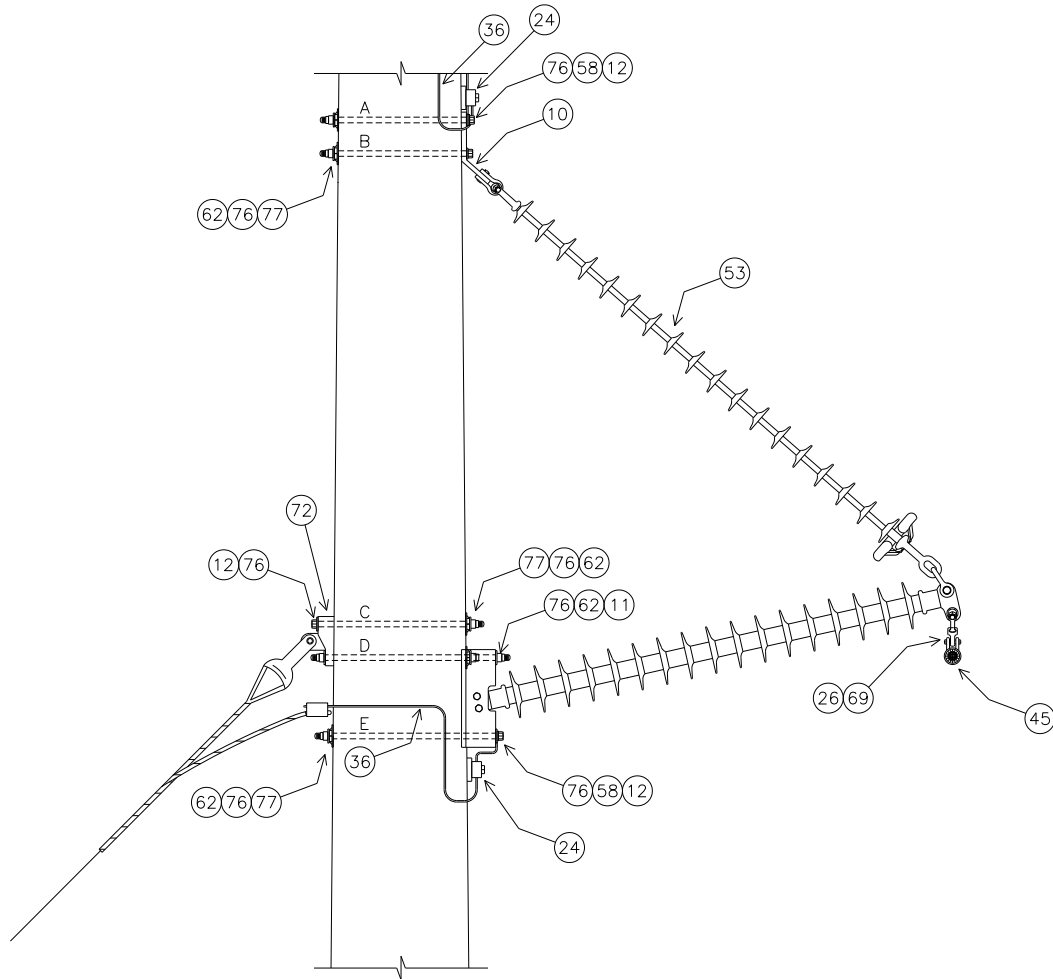
NOTE: BOLT CALCULATIONS ASSUMES A 17 INCH POLE TOP DIAMETER AND MOUNTING HEIGHTS OF 2.5 FT FOR TOP STRUCTURE AND 38 FT FOR BOTTOM STRUCTURE

MB2H

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 052	4	MACHINE BOLT, 7/8" X 22", 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
24	CLATG 001	2	GROUND CLAMP, USE CLAMP PROVIDED WITH INSULATORS FOR TOP BRACE GROUNDING
31	CNNCP 016	2	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., (.204"-.258") - (.128"-.204")
36	COBCO 028	10 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
58	LUGGR 002	6	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 005	8	SQUARE LOCK NUT FOR 7/8 INCH BOLT, HOT DIPPED GALVANIZED
72	TEEDE 003	2	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	16	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	4	SQUARE CURVED WASHER FOR 7/8" BOLTS, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

ISSBBGC3

INSULATOR FOR SPUN CONCRETE POLES
SINGLE BRACED LINE POST BOTTOM GUY, 230KV, 3-PHASE
 CONDUCTOR OPTIONS: 954A, 954S, 1590



SEE MBA1 FOR BOLT ASSEMBLY DETAILS

STRUCTURE	MINIMUM REQUIRED BOLT LENGTH (INCHES)				
	'A'	'B'	'C'	'D'	'E'
TOP	21.0	20.9	23.6	28.2	28.3
MIDDLE	23.2	23.0	25.8	30.3	30.5
BOTTOM	25.3	25.2	28.0	32.5	32.7

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISSBBGC3 PLATES

ISSBBGC3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
10	BKTLP 002	3	BRACKET, 53° ANGLE, 6" HOLE SPACING, 1 1/16" HOLE DIAMETER, 5/8" THICK
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 052	2	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 054	3	MACHINE BOLT, 7/8" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 055	1	MACHINE BOLT, 7/8" X 26", 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
12	BOLMS 075	1	MACHINE BOLT, 7/8" X 36", 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	15 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
53	INSLP 014	3	230KV SILICONE BRACED LINE POST INSULATOR, 17° RISE, GAIN BASE, L = 108", H = 94", 14" 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	3	SOCKET - EYE, STENGTH = 25,000#, L = 2 5/16", EYE = 13/16", FORGED STEEL, GALV.
72	TEEDE 003	3	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 006	33	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 002	15	SQUARE CURVED WASHER FOR 7/8" BOLTS, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

ISSBBGC3*954A

45	GRISA 003	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82", 1 3/16" GAP, 5/8" PIN
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ISSBBGC3*954S

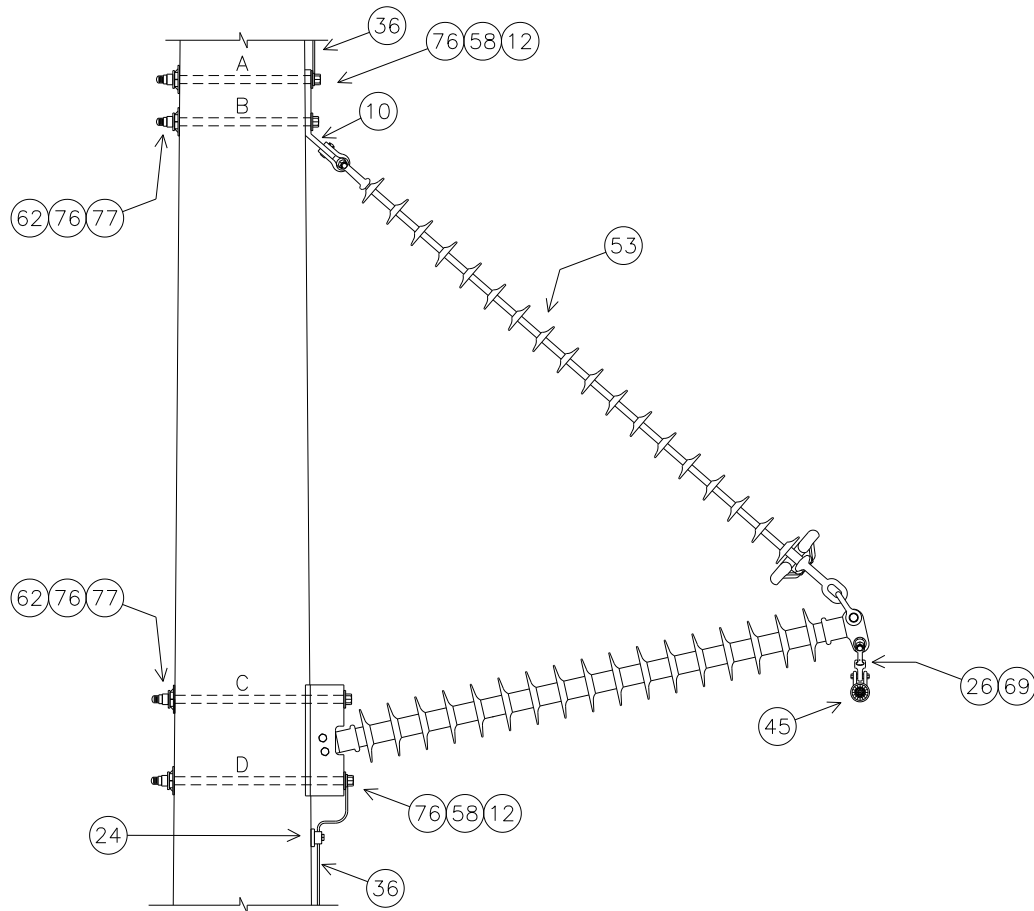
45	GRISA 004	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82", 1 3/16" GAP, 5/8" PIN
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ISSBBGC3*1590

45	GRISA 005	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88", 1 3/8" GAP, 3/4" PIN
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ISSBNGC3

INSULATOR FOR SPUN CONCRETE POLES
SINGLE BRACED LINE POST, NO GUY, 230KV
 CONDUCTOR OPTIONS: 954A, 954S, 1590



SEE MBA1 FOR BOLT ASSEMBLY DETAILS

STRUCTURE	MINIMUM REQUIRED BOLT LENGTH (INCHES)			
	'A'	'B'	'C'	'D'
TOP	21.0	20.9	27.8	28.3
MIDDLE	23.2	23.0	30.0	30.5
BOTTOM	25.3	25.2	32.2	32.7

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISSBNGC3 PLATES

ISSBNGC3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
10	BKTLP 002	3	BRACKET, 53° 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	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	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	2	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 075	2	MACHINE BOLT, 7/8" X 36", 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 014	3	230KV SILICONE BRACED LINE POST INSULATOR, 17° RISE, GAIN BASE, L = 108", H = 94", 14" 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"

ISSBNGC3*954A

45	GRISA 003	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82", 1 3/16" GAP, 5/8" PIN
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ISSBNGC3*954S

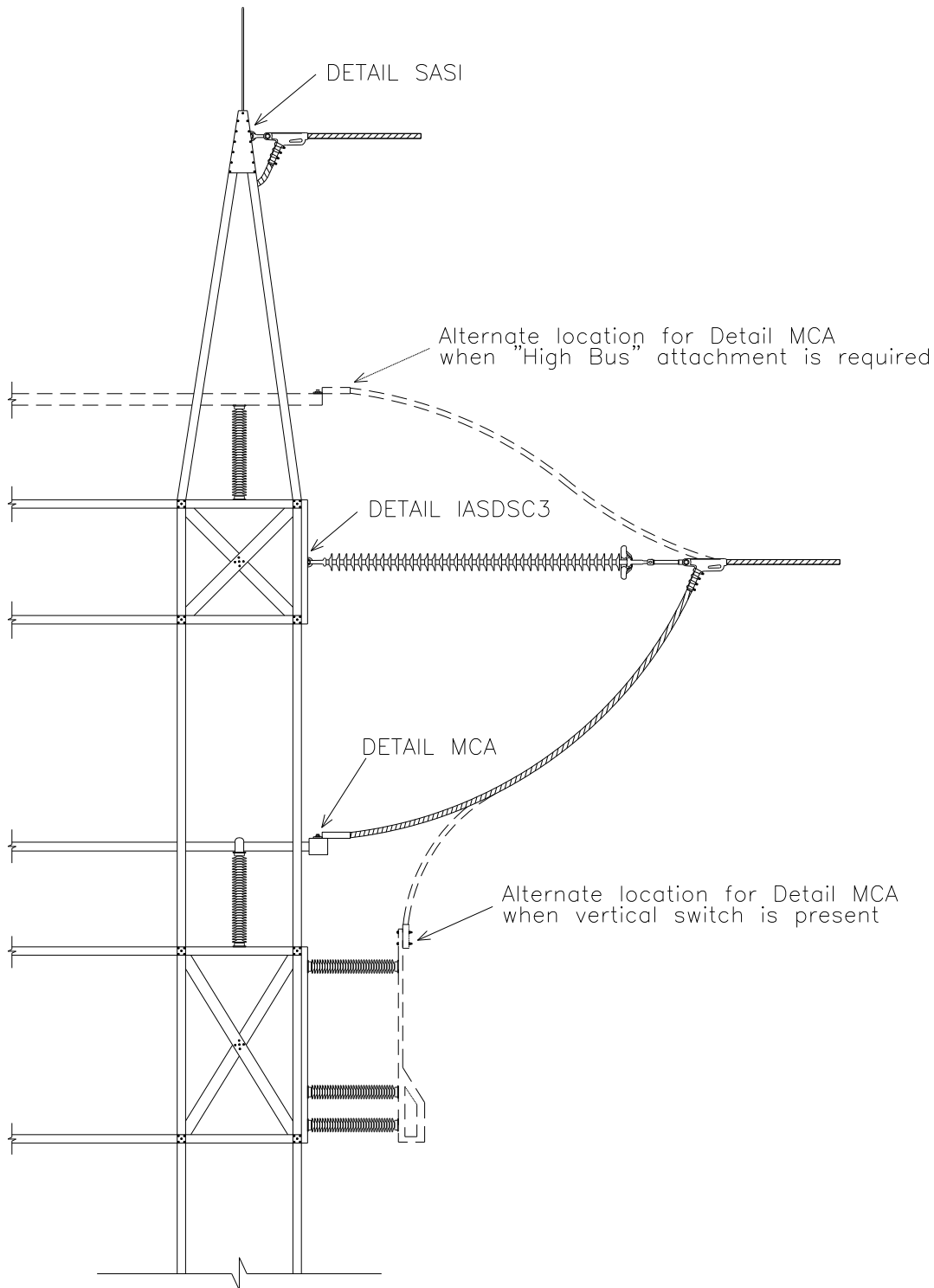
45	GRISA 004	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82", 1 3/16" GAP, 5/8" PIN
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ISSBNGC3*1590

45	GRISA 005	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88", 1 3/8" GAP, 3/4" PIN
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C3A45Q

230KV, SINGLE DEADEND, SLACK TENSION, SUBSTATION LATTICE STRUCTURE, 3-PHASE
CONDUCTOR OPTIONS: 556S, 954A, 954S, 1590



C3A45Q PLATES

C3A45Q BASE

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 016	5	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
26	CLEHL 008	3	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4 THICK W/ 13/16 OPENING, H. D. G.
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G.
33	CNNPA 590	2	TWO BOLT PARALLEL CONNECTOR
50	INSDE 002	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, CLASS 52-8/11
59	NUTEY 002	5	EYE NUT FOR 5/8" BOLT, 1 1/2" OPENING, HOT DIPPED GALVANIZED
60	NUTBC 500	12	SILICONE BRONZE NUT FOR 1/2" BOLT - ITEM LOCATED IN MAXIMO
66	SCWHI 519	12	STAINLESS STEEL BOLT, 2 1/2" X 1/2"
74	WASBA 500	12	BELLEVILLE SPRING WASHER FOR 1/2" BOLT, 301 SS
75	WASFG 500	24	FLAT ROUND WASHER FOR 1/2" BOLT, 316 SS
76	WASRD 004	10	ROUND WASHER FOR 5/8" BOLT, 1 3/4" DIAMETER, GALVANIZED

C3A45Q*556S

NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 005	3	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
30	CNNAJ 002	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE .889" - .964" (556-ACSR), 15-DEGREE ANGLE

C3A45Q*954A

NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 005	3	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
30	CNNAJ 006	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE 1.092" - 1.172" (954 AAC), 0-DEGREE ANGLE

C3A45Q*954S

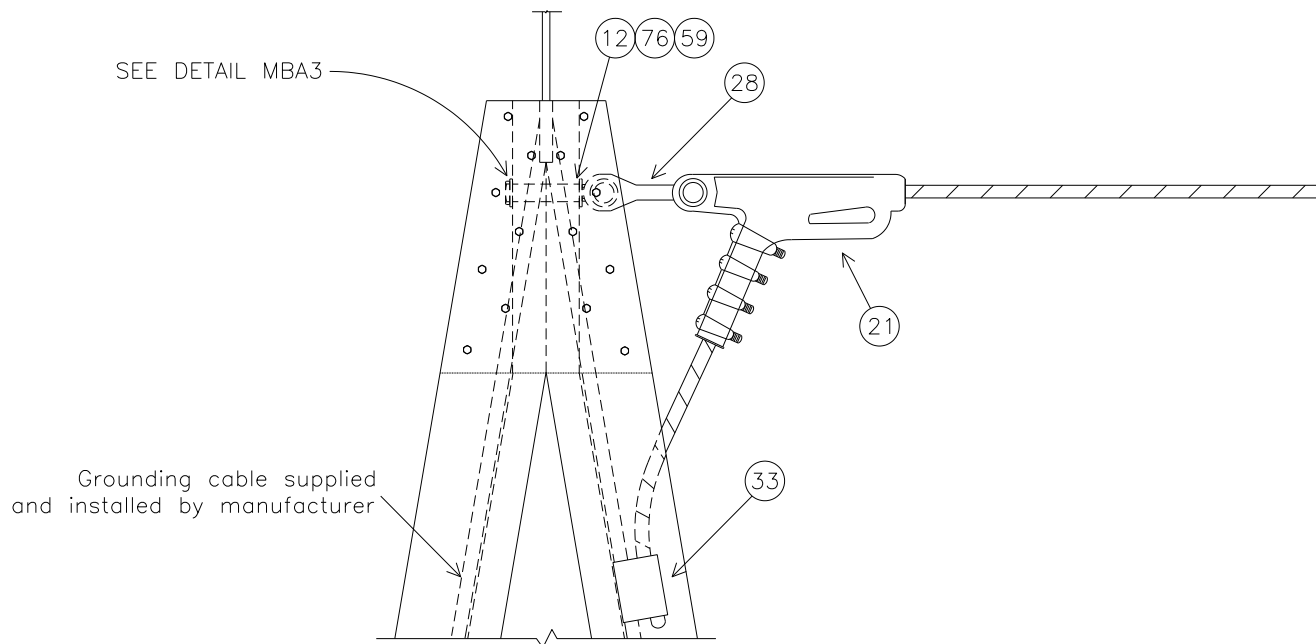
NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 005	3	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
30	CNNAJ 007	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE 1.124" - 1.196" (954-ACSR), 0-DEGREE ANGLE

C3A45Q*1590

NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 006	3	DEADEND CLAMP (1.18 - 1.52") 35,000# STRENGTH, GAP = 2", PIN = 3/4"
30	CNNAJ 008	3	ALUM. JUMPER TERM. FOR CONDUCTOR RANGE 1.475" - 1.560" (1590-ACSR), 0-DEGREE ANGLE

SASI

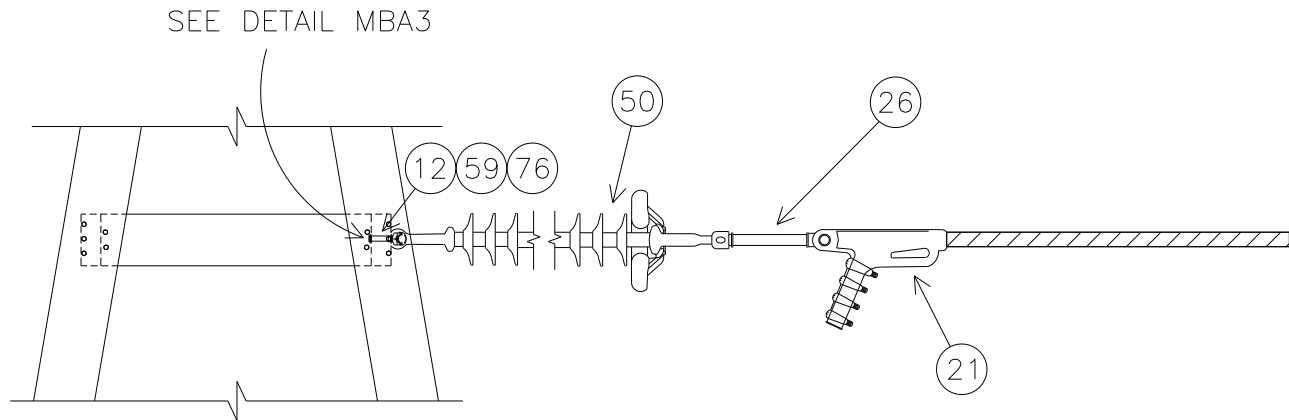
SHIELD FOR A-FRAME/LATTICE STRUCTURES SINGLE IN-LINE



NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 016	2	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G.
33	CNNPA 590	2	TWO BOLT PARALLEL CONNECTOR
59	NUTEY 002	2	EYE NUT FOR 5/8" BOLT, 1 1/2" OPENING, H.D.G.
76	WASRD 004	4	ROUND WASHER FOR 5/8" BOLT, 1 3/4" DIAMETER, GALVANIZED

IASDSC3

INSULATOR FOR SUBSTATION A-FRAME/LATTICE STRUCTURES
SINGLE DEAD-END, SLACK TENSION, 230KV, 3-PHASE
 CONDUCTOR OPTIONS: 556S, 954A, 954S, 1590



IASDSC3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 016	3	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, W/SQUARE NUT ATTACHED
26	CLEHL 008	3	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4" THICK W/ 13/16" OPENING, H. D. G.
50	INSDE 002	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", 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

IASDSC3*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"

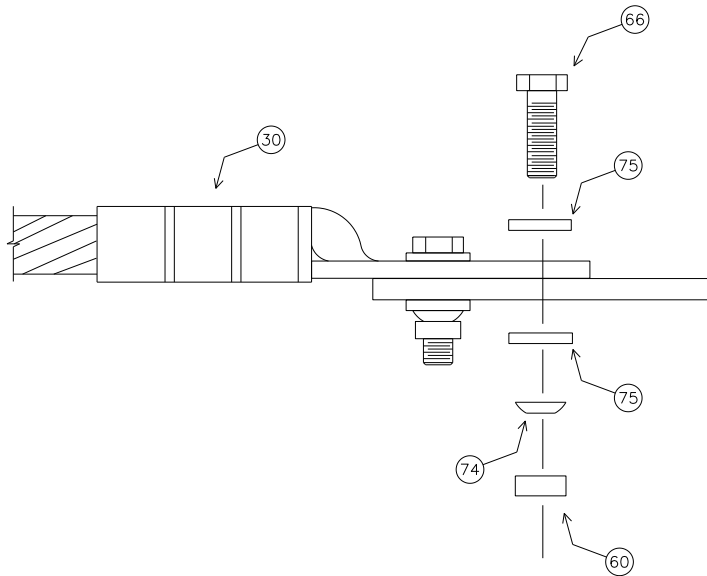
IASDSC3*1590

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

MCA

CONDUCTOR ATTACHMENT FOR SUBSTATION STRUCTURES

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



MCA BASE

NO.	ITEM ID	QTY	DESCRIPTION
60	NUTBC 500	12	SILICONE BRONZE NUT FOR 1/2" BOLT - ITEM LOCATED IN MAXIMO
66	SCWHI 519	12	STAINLESS STEEL BOLT, 2 1/2" X 1/2"
74	WASBA 500	12	BELLEVILLE SPRING WASHER FOR 1/2" BOLT, 301 SS
75	WASFG 500	24	FLAT ROUND WASHER FOR 1/2" BOLT, 316 SS

MCA*556S

NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 002	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE .889" - .964" (556-ACSR), 15-DEGREE ANGLE

MCA*954A

NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 006	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE 1.092" - 1.172" (954 AAC), 0-DEGREE ANGLE

MCA*954S

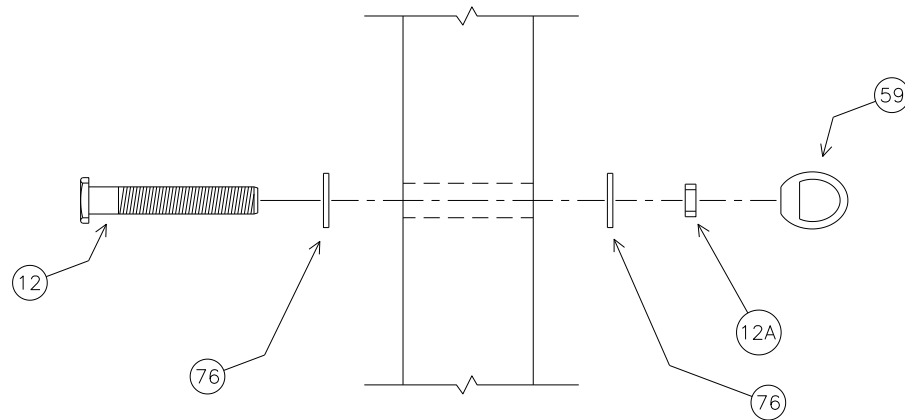
NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 007	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE 1.124" - 1.196" (954-ACSR), 0-DEGREE ANGLE

MCA*1590

NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 008	3	ALUM. JUMPER TERM. FOR CONDUCTOR RANGE 1.475" - 1.560" (1590-ACSR), 0-DEGREE ANGLE, 4-HOLE PAD COMPRESSION CONNECTION

MBA3

TYPICAL BOLT ASSEMBLY FOR SUBSTATION STRUCTURES

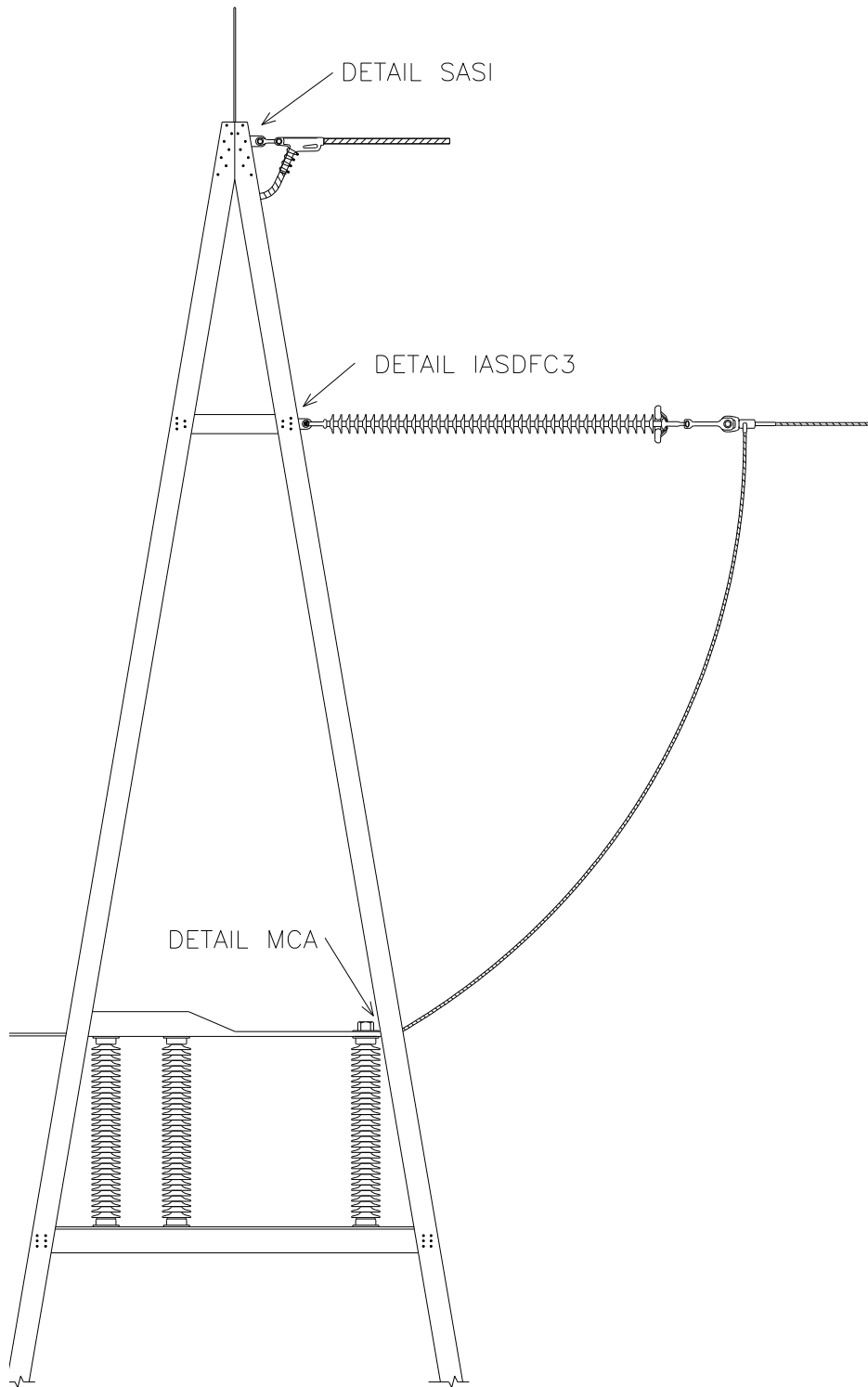


MBA3 PLATE

NO.	ITEM ID	QTY	DESCRIPTION
12,12A	BOLMS 016	5	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
59	NUTEY 002	5	EYE NUT FOR 5/8" BOLT, 1 1/2" OPENING, HOT DIPPED GALVANIZED
76	WASRD 004	10	ROUND WASHER FOR 5/8" BOLT, 1 3/4" DIAMETER, GALVANIZED

C3B45C

230KV, SINGLE DEADEND, FULL TENSION, SUBSTATION A-FRAME STRUCTURES, 3-PHASE
CONDUCTOR OPTIONS: 954S, 1590



C3B45C PLATES

C3B45C BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 016	2	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8"CLAMP, DUCT. IRON, 3#6 AW
26	CLEHL 005	3	SOCKET-Y CLEVIS, CLASS 52-8/11, L = 11", PIN=7/8", HOT DIPPED GALV..
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G.
33	CNNPA 590	2	TWO BOLT PARALLEL CONNECTOR
50	INSDE 002	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, CLASS 52-8/11
59	NUTEY 002	2	EYE NUT FOR 5/8" BOLT, 1 1/2" OPENING, HOT DIPPED GALVANIZED
60	NUTBC 500	12	SILICONE BRONZE NUT FOR 1/2" BOLT - ITEM LOCATED IN MAXIMO
66	SCWHI 519	12	STAINLESS STEEL BOLT, 1/2" X 2"
74	WASBA 500	12	BELLEVILLE SPRING WASHER FOR 1/2"BOLT, 301 SS
75	WASFG 500	24	FLAT ROUND WASHER FOR 1/2" BOLT, 316 SS
76	WASRD 004	4	ROUND WASHER FOR 5/8" BOLT, 1 3/4" DIAMETER, GALVANIZED

C3B45C*954S

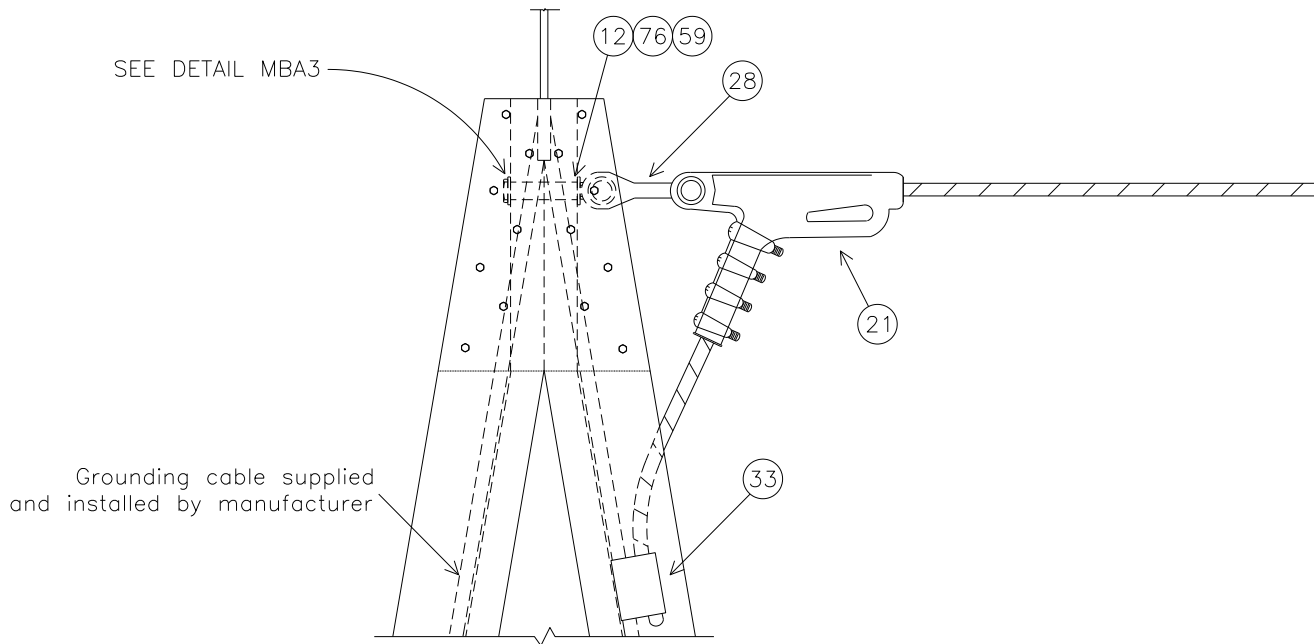
NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 007	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE 1.124" - 1.196" (954-ACSR), 0-DEGREE ANGLE
42	DEACB 005	3	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSR, OVAL EYE

C3B45C*1590

NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 008	3	ALUM. JUMPER TERM. FOR CONDUCTOR RANGE 1.475" - 1.560" (1590-ACSR), 0-DEGREE ANGLE
42	DEACB 007	3	DEADEND COMPRESSION ASSEMBLY FOR 1590 ACSR, OVAL EYE

SASI

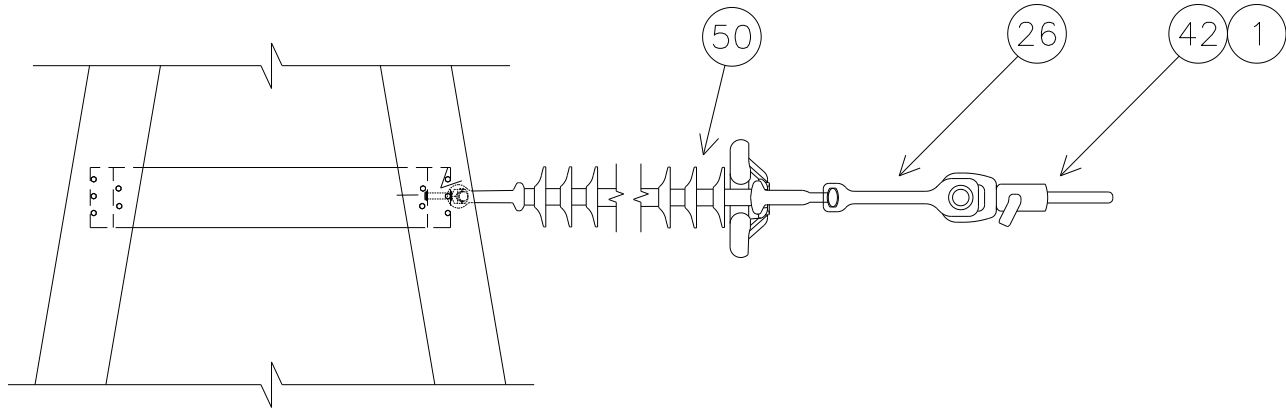
SHIELD FOR A-FRAME/LATTICE STRUCTURES SINGLE IN-LINE



NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 016	2	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G.
33	CNNPA 590	2	TWO BOLT PARALLEL CONNECTOR
59	NUTEY 002	2	EYE NUT FOR 5/8" BOLT, 1 1/2" OPENING, H.D.G.
76	WASRD 004	4	ROUND WASHER FOR 5/8" BOLT, 1 3/4" DIAMETER, GALVANIZED

IASDFC3

INSULATOR FOR SUBSTATION A-FRAME/LATTICE STRUCTURES
SINGLE DEAD-END, FULL TENSION, 230KV, 3-PHASE
 CONDUCTOR OPTIONS: 954S, 1590



IASDFC3 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 002	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", CLASS 52-8/11

IASDFC3*954S

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

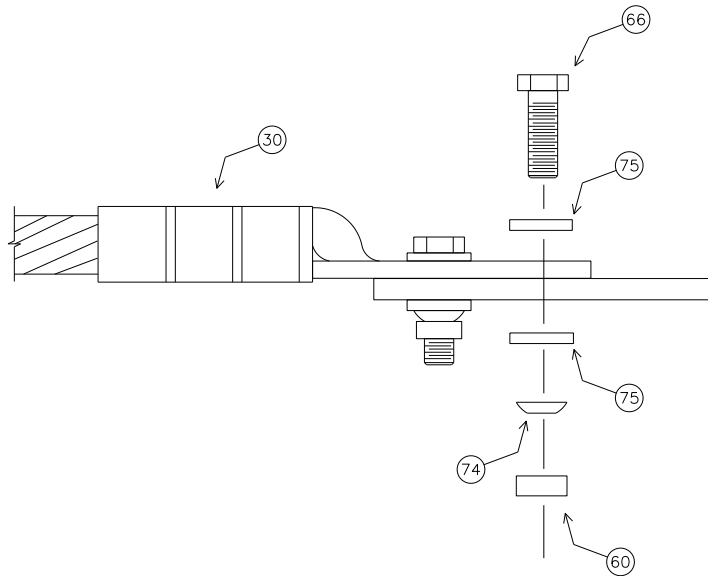
IASDFC3*1590

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

MCA

CONDUCTOR ATTACHMENT FOR SUBSTATION STRUCTURES

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



MCA BASE

NO.	ITEM ID	QTY	DESCRIPTION
60	NUTBC 500	12	SILICONE BRONZE NUT FOR 1/2" BOLT - ITEM LOCATED IN MAXIMO
66	SCWHI 519	12	STAINLESS STEEL BOLT, 2 1/2" X 1/2"
74	WASBA 500	12	BELLEVILLE SPRING WASHER FOR 1/2" BOLT, 301 SS
75	WASFG 500	24	FLAT ROUND WASHER FOR 1/2" BOLT, 316 SS

MCA*556S

NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 002	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE .889" - .964" (556-ACSR), 15-DEGREE ANGLE

MCA*954A

NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 006	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE 1.092" - 1.172" (954 AAC), 0-DEGREE ANGLE

MCA*954S

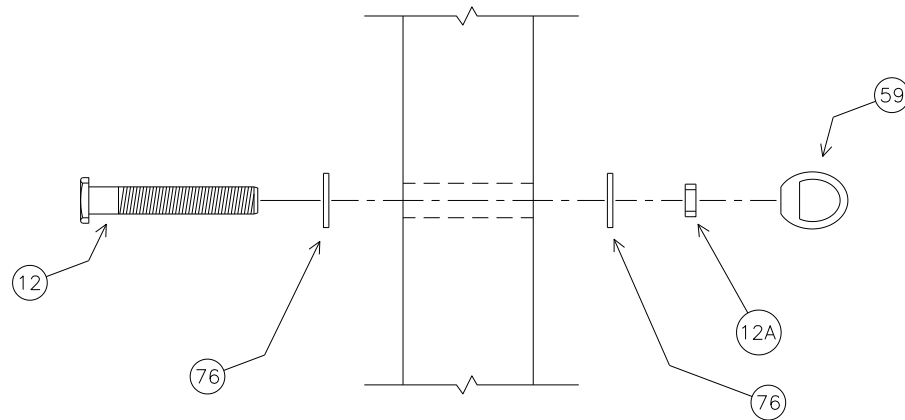
NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 007	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE 1.124" - 1.196" (954-ACSR), 0-DEGREE ANGLE

MCA*1590

NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 008	3	ALUM. JUMPER TERM. FOR CONDUCTOR RANGE 1.475" - 1.560" (1590-ACSR), 0-DEGREE ANGLE, 4-HOLE PAD COMPRESSION CONNECTION

MBA3

TYPICAL BOLT ASSEMBLY FOR SUBSTATION STRUCTURES

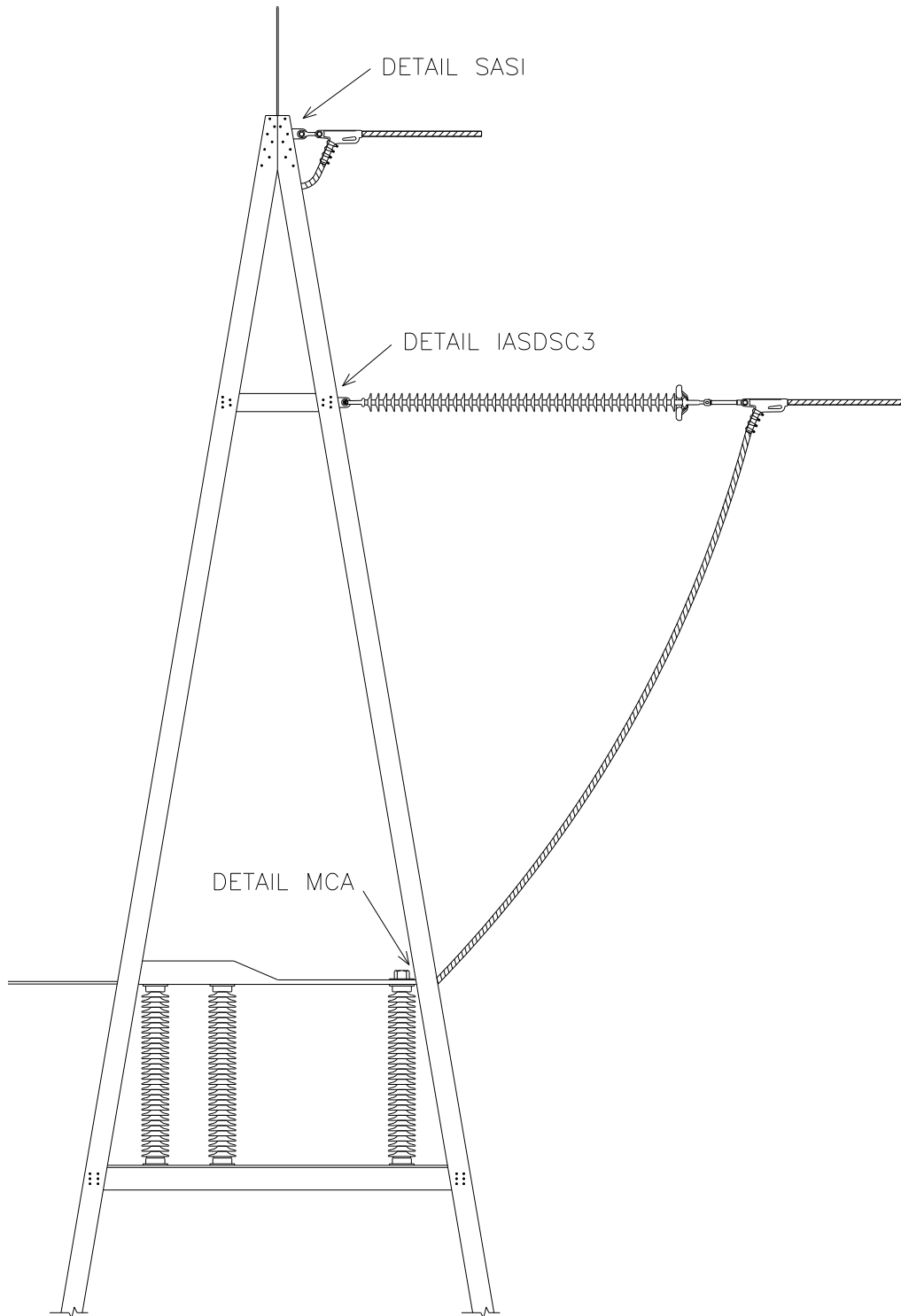


MBA3 PLATE

NO.	ITEM ID	QTY	DESCRIPTION
12,12A	BOLMS 016	5	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
59	NUTEY 002	5	EYE NUT FOR 5/8" BOLT, 1 1/2" OPENING, HOT DIPPED GALVANIZED
76	WASRD 004	10	ROUND WASHER FOR 5/8" BOLT, 1 3/4" DIAMETER, GALVANIZED

C3B45Q

230KV, SINGLE DEADEND, SLACK TENSION, SUBSTATION A-FRAME, 3-PHASE
CONDUCTOR OPTIONS: 556S, 954A, 954S, 1590



C3B45Q PLATES

C3B45Q BASE

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 016	5	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
26	CLEHL 008	3	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4 THICK W/ 13/16 OPENING, H. D. G.
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G.
33	CNNPA 590	2	TWO BOLT PARALLEL CONNECTOR
50	INSDE 002	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, CLASS 52-8/11
59	NUTEY 002	5	EYE NUT FOR 5/8" BOLT, 1 1/2" OPENING, HOT DIPPED GALVANIZED
60	NUTBC 500	12	SILICONE BRONZE NUT FOR 1/2" BOLT - ITEM LOCATED IN MAXIMO
66	SCWHI 519	12	STAINLESS STEEL BOLT, 2 1/2" X 1/2"
74	WASBA 500	12	BELLEVILLE SPRING WASHER FOR 1/2" BOLT, 301 SS
75	WASFG 500	24	FLAT ROUND WASHER FOR 1/2" BOLT, 316 SS
76	WASRD 004	10	ROUND WASHER FOR 5/8" BOLT, 1 3/4" DIAMETER, GALVANIZED

C3B45Q*556S

NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 005	3	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
30	CNNAJ 002	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE .889" - .964" (556-ACSR), 15-DEGREE ANGLE

C3B45Q*954A

NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 005	3	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
30	CNNAJ 006	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE 1.092" - 1.172" (954 AAC), 0-DEGREE ANGLE

C3B45Q*954S

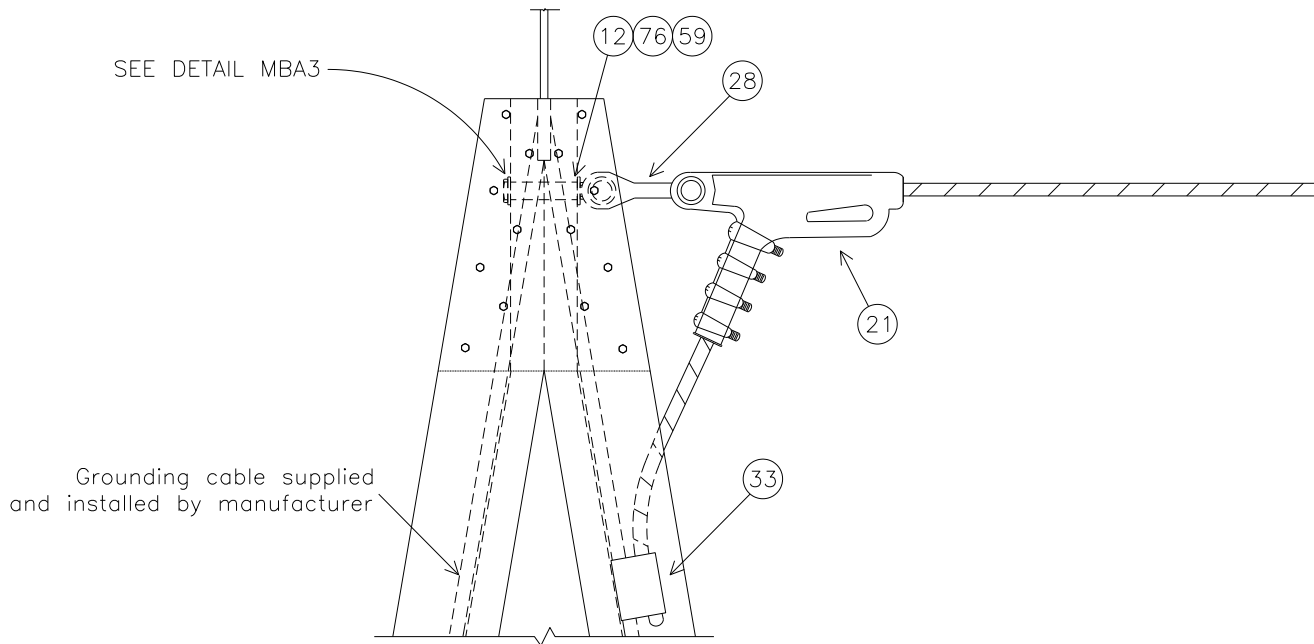
NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 005	3	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
30	CNNAJ 007	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE 1.124" - 1.196" (954-ACSR), 0-DEGREE ANGLE

C3B45Q*1590

NO.	ITEM ID	QTY	DESCRIPTION
21	CLAQD 006	3	DEADEND CLAMP (1.18 - 1.52") 35,000# STRENGTH, GAP = 2", PIN = 3/4"
30	CNNAJ 008	3	ALUM. JUMPER TERM. FOR CONDUCTOR RANGE 1.475" - 1.560" (1590-ACSR), 0-DEGREE ANGLE

SASI

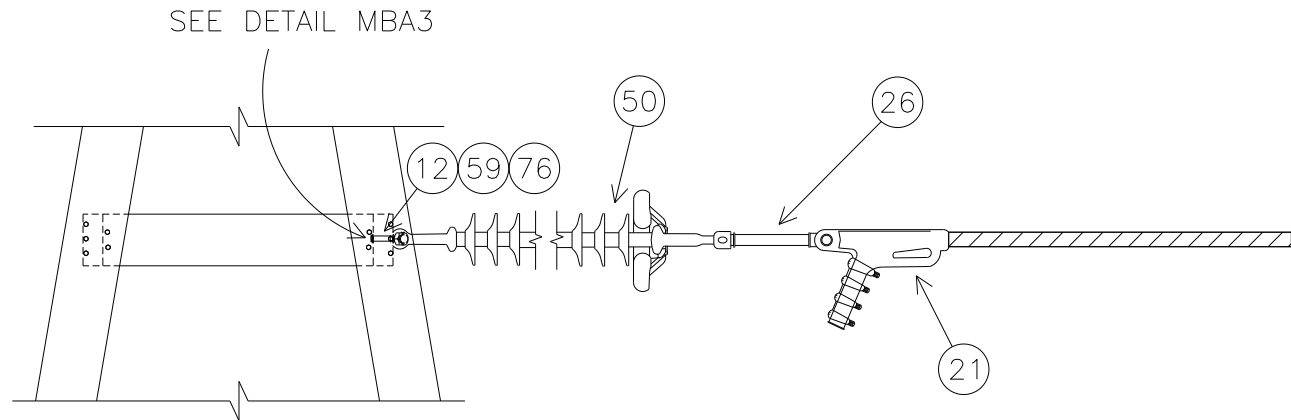
SHIELD FOR A-FRAME/LATTICE STRUCTURES SINGLE IN-LINE



NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 016	2	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G.
33	CNNPA 590	2	TWO BOLT PARALLEL CONNECTOR
59	NUTEY 002	2	EYE NUT FOR 5/8" BOLT, 1 1/2" OPENING, H.D.G.
76	WASRD 004	4	ROUND WASHER FOR 5/8" BOLT, 1 3/4" DIAMETER, GALVANIZED

IASDSC3

INSULATOR FOR SUBSTATION A-FRAME/LATTICE STRUCTURES
SINGLE DEAD-END, SLACK TENSION, 230KV, 3-PHASE
 CONDUCTOR OPTIONS: 556S, 954A, 954S, 1590



IASDSC3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 016	3	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, W/SQUARE NUT ATTACHED
26	CLEHL 008	3	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4" THICK W/ 13/16" OPENING, H. D. G.
50	INSDE 002	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", 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

IASDSC3*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"

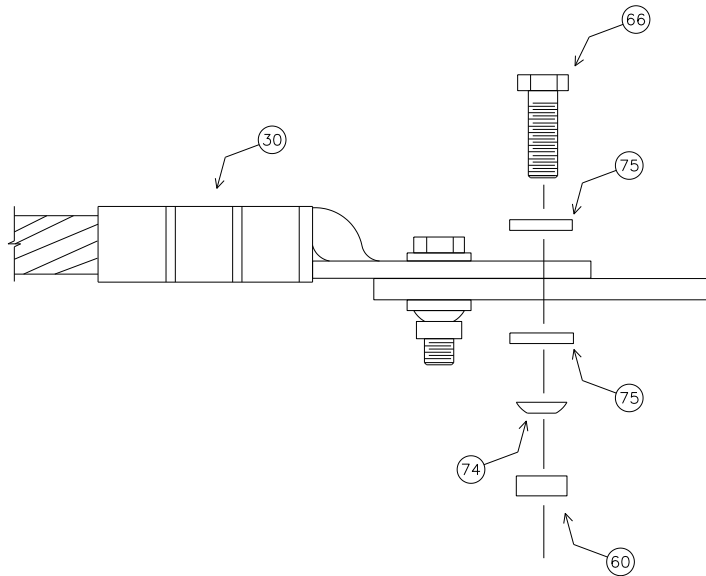
IASDSC3*1590

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

MCA

CONDUCTOR ATTACHMENT FOR SUBSTATION STRUCTURES

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



MCA BASE

NO.	ITEM ID	QTY	DESCRIPTION
60	NUTBC 500	12	SILICONE BRONZE NUT FOR 1/2" BOLT - ITEM LOCATED IN MAXIMO
66	SCWHI 519	12	STAINLESS STEEL BOLT, 2 1/2" X 1/2"
74	WASBA 500	12	BELLEVILLE SPRING WASHER FOR 1/2" BOLT, 301 SS
75	WASFG 500	24	FLAT ROUND WASHER FOR 1/2" BOLT, 316 SS

MCA*556S

NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 002	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE .889" - .964" (556-ACSR), 15-DEGREE ANGLE

MCA*954A

NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 006	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE 1.092" - 1.172" (954 AAC), 0-DEGREE ANGLE

MCA*954S

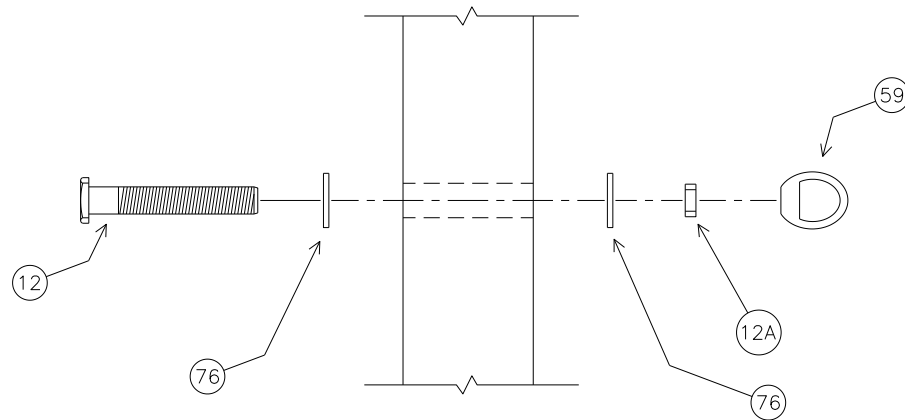
NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 007	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE 1.124" - 1.196" (954-ACSR), 0-DEGREE ANGLE

MCA*1590

NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 008	3	ALUM. JUMPER TERM. FOR CONDUCTOR RANGE 1.475" - 1.560" (1590-ACSR), 0-DEGREE ANGLE, 4-HOLE PAD COMPRESSION CONNECTION

MBA3

TYPICAL BOLT ASSEMBLY FOR SUBSTATION STRUCTURES

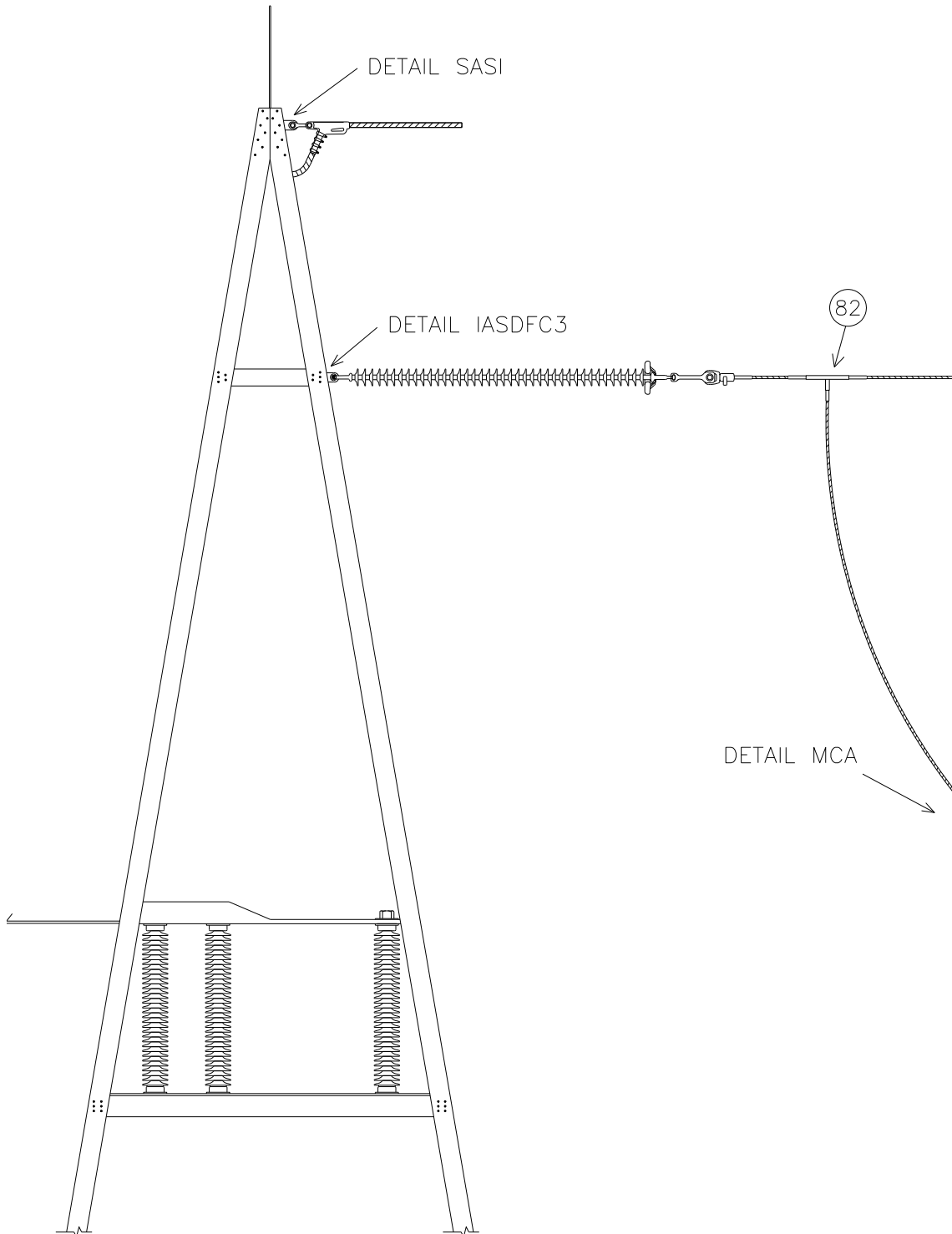


MBA3 PLATE

NO.	ITEM ID	QTY	DESCRIPTION
12,12A	BOLMS 016	5	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
59	NUTEY 002	5	EYE NUT FOR 5/8" BOLT, 1 1/2" OPENING, HOT DIPPED GALVANIZED
76	WASRD 004	10	ROUND WASHER FOR 5/8" BOLT, 1 3/4" DIAMETER, GALVANIZED

C3B48C

230KV, SINGLE DEADEND, FULL TENSION WITH TEE FOR SUBSTATION A-FRAME, 3-PHASE
CONDUCTOR OPTIONS: 954S, 1590



C3B48C PLATES

C3B48C BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	3	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 016	2	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
26	CLEHL 005	3	SOCKET-Y CLEVIS, CLASS 52-8/11, L = 11", PIN=7/8", HOT DIPPED GALV..
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G.
33	CNNPA 590	2	TWO BOLT PARALLEL CONNECTOR
50	INSDE 002	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, CLASS 52-8/11
59	NUTEY 002	2	EYE NUT FOR 5/8" BOLT, 1 1/2" OPENING, HOT DIPPED GALVANIZED
60	NUTBC 500	12	SILICONE BRONZE NUT FOR 1/2" BOLT - ITEM LOCATED IN MAXIMO
66	SCWHI 519	12	STAINLESS STEEL BOLT, 2 1/2" X 1/2"
74	WASBA 500	12	BELLEVILLE SPRING WASHER FOR 1/2" BOLT, 301 SS
75	WASFG 500	24	FLAT ROUND WASHER FOR 1/2" BOLT, 316 SS
76	WASRD 004	4	ROUND WASHER FOR 5/8" BOLT, 1 3/4" DIAMETER, GALVANIZED

C3B48C*954S

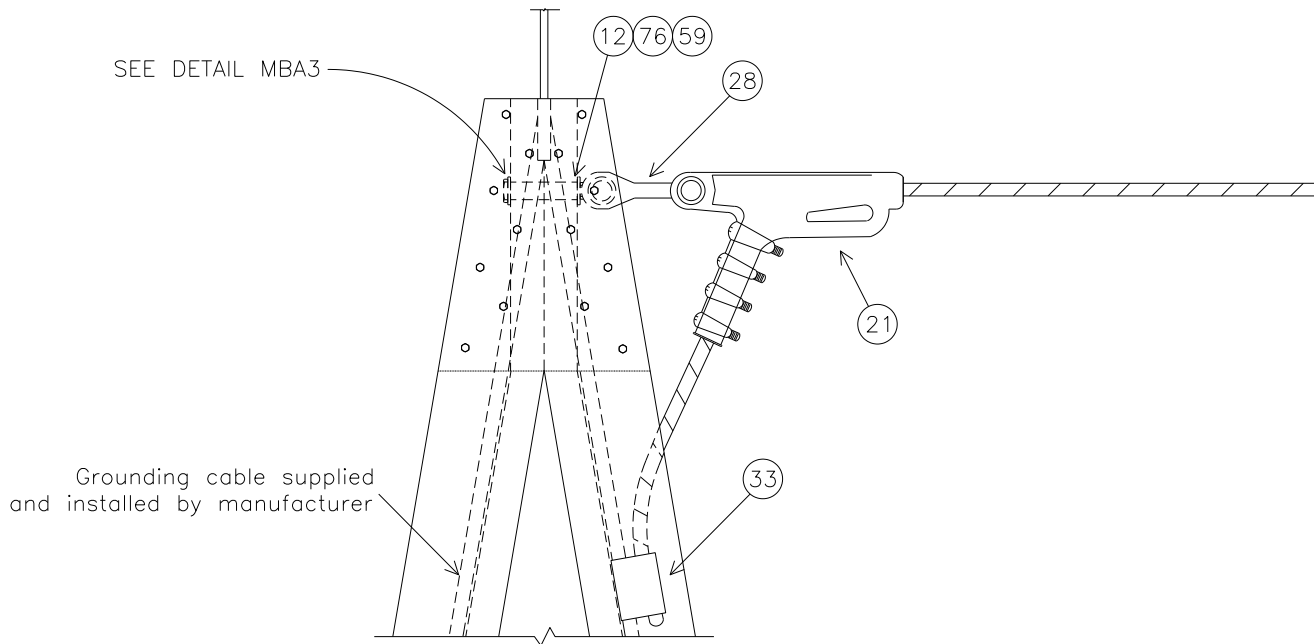
NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 007	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE 1.124" - 1.196" (954-ACSR), 0-DEGREE ANGLE
42	DEACB 005	3	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSR, OVAL EYE
82	TEECO 001	3	COMPRESSION TEE FOR 954S CONDUCTOR

C3B48C*1590

NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 008	3	ALUM. JUMPER TERM. FOR CONDUCTOR RANGE 1.475" - 1.560" (1590-ACSR), 0-DEGREE ANGLE
42	DEACB 007	3	DEADEND COMPRESSION ASSEMBLY FOR 1590 ACSR, OVAL EYE
82	TEECO 002	3	COMPRESSION TEE FOR 1590 CONDUCTOR

SASI

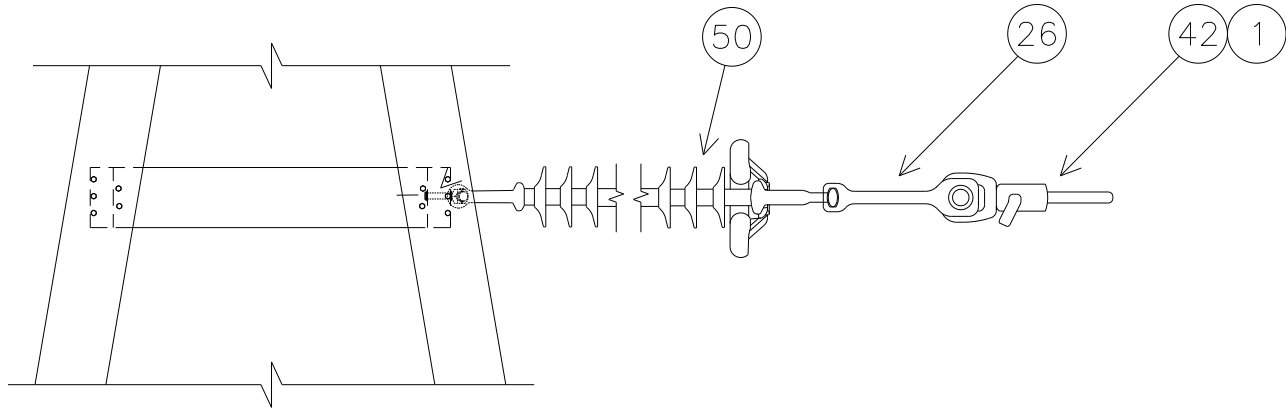
SHIELD FOR A-FRAME/LATTICE STRUCTURES SINGLE IN-LINE



NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 016	2	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G.
33	CNNPA 590	2	TWO BOLT PARALLEL CONNECTOR
59	NUTEY 002	2	EYE NUT FOR 5/8" BOLT, 1 1/2" OPENING, H.D.G.
76	WASRD 004	4	ROUND WASHER FOR 5/8" BOLT, 1 3/4" DIAMETER, GALVANIZED

IASDFC3

INSULATOR FOR SUBSTATION A-FRAME/LATTICE STRUCTURES
SINGLE DEAD-END, FULL TENSION, 230KV, 3-PHASE
 CONDUCTOR OPTIONS: 954S, 1590



IASDFC3 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	INSD 002	3	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", CLASS 52-8/11

IASDFC3*954S

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

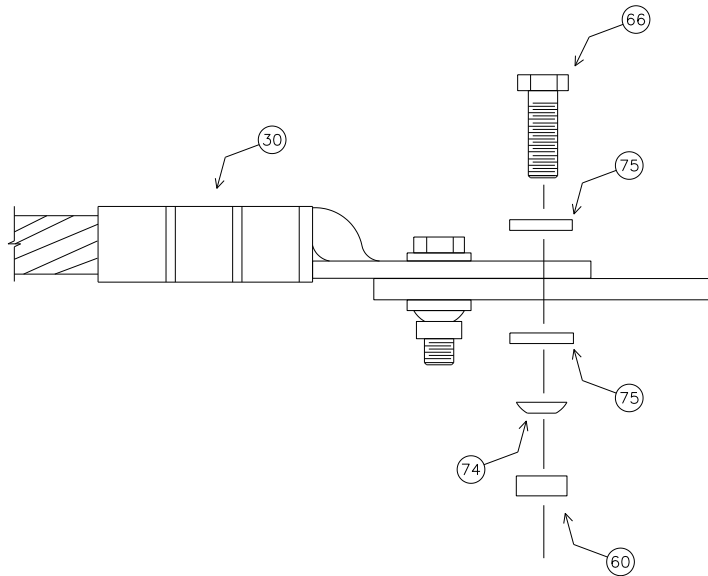
IASDFC3*1590

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

MCA

CONDUCTOR ATTACHMENT FOR SUBSTATION STRUCTURES

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



MCA BASE

NO.	ITEM ID	QTY	DESCRIPTION
60	NUTBC 500	12	SILICONE BRONZE NUT FOR 1/2" BOLT - ITEM LOCATED IN MAXIMO
66	SCWHI 519	12	STAINLESS STEEL BOLT, 2 1/2" X 1/2"
74	WASBA 500	12	BELLEVILLE SPRING WASHER FOR 1/2" BOLT, 301 SS
75	WASFG 500	24	FLAT ROUND WASHER FOR 1/2" BOLT, 316 SS

MCA*556S

NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 002	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE .889" - .964" (556-ACSR), 15-DEGREE ANGLE

MCA*954A

NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 006	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE 1.092" - 1.172" (954 AAC), 0-DEGREE ANGLE

MCA*954S

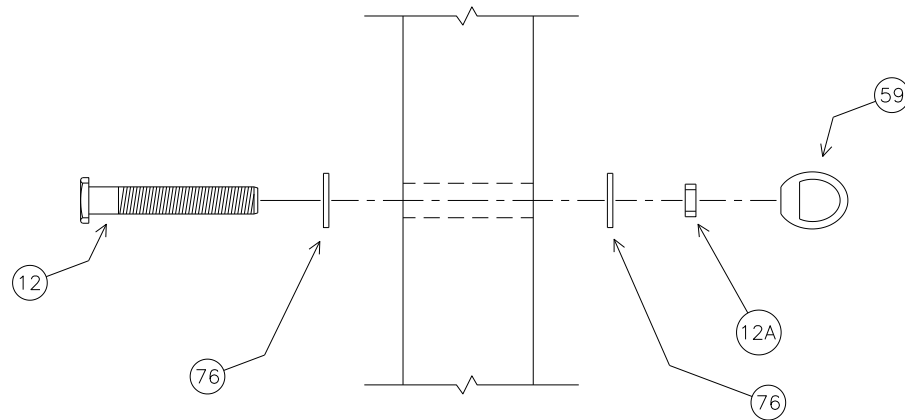
NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 007	3	ALUM. JUMPER TERMINAL FOR CONDUCTOR RANGE 1.124" - 1.196" (954-ACSR), 0-DEGREE ANGLE

MCA*1590

NO.	ITEM ID	QTY	DESCRIPTION
30	CNNAJ 008	3	ALUM. JUMPER TERM. FOR CONDUCTOR RANGE 1.475" - 1.560" (1590-ACSR), 0-DEGREE ANGLE, 4-HOLE PAD COMPRESSION CONNECTION

MBA3

TYPICAL BOLT ASSEMBLY FOR SUBSTATION STRUCTURES



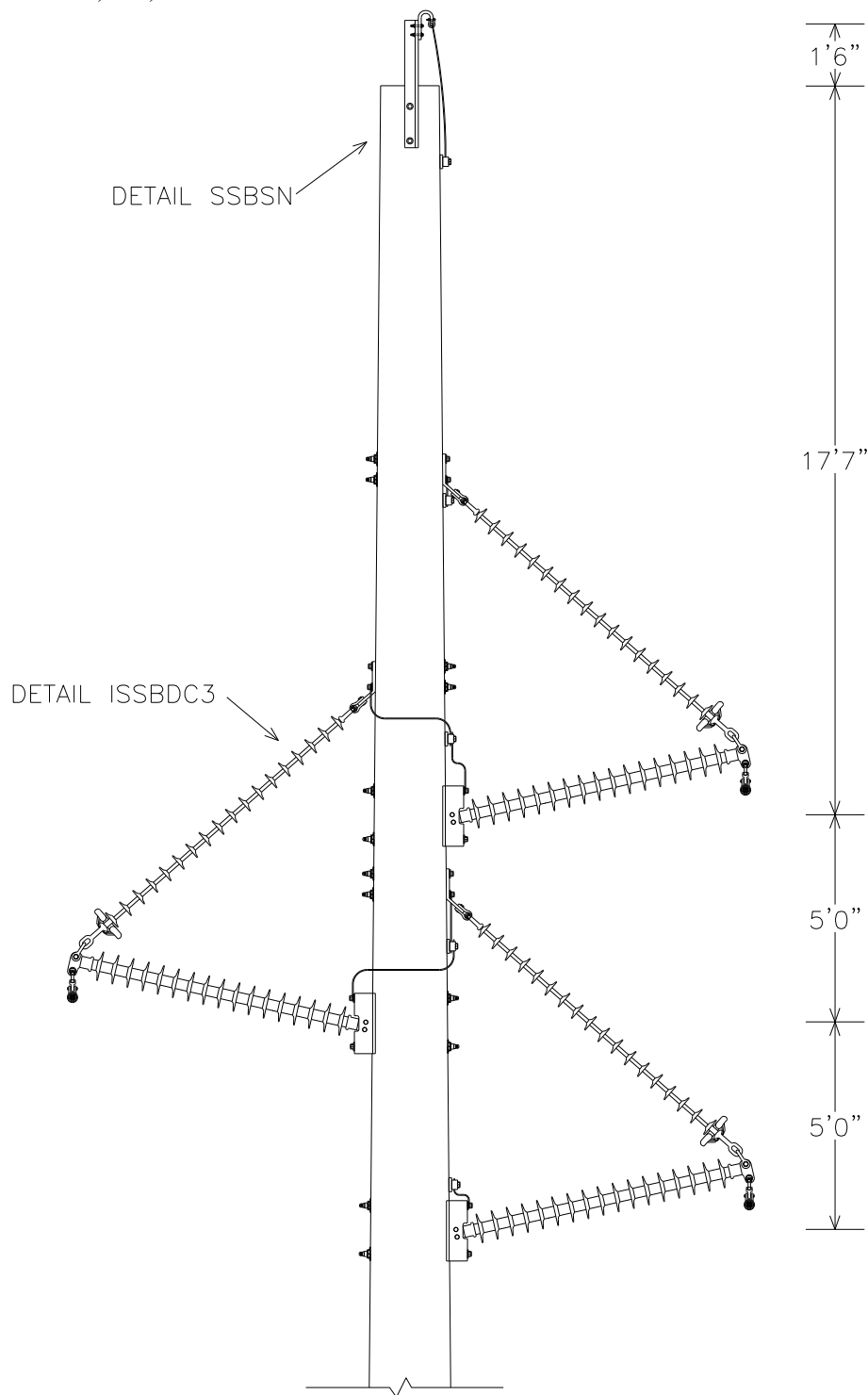
MBA3 PLATE

NO.	ITEM ID	QTY	DESCRIPTION
12,12A	BOLMS 016	5	MACHINE BOLT, 5/8" X 3", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
59	NUTEY 002	5	EYE NUT FOR 5/8" BOLT, 1 1/2" OPENING, HOT DIPPED GALVANIZED
76	WASRD 004	10	ROUND WASHER FOR 5/8" BOLT, 1 3/4" DIAMETER, GALVANIZED

C6261

230KV, SINGLE BRACED LINE POST, DELTA CONFIGURATION, 3-PHASE

CONDUCTOR OPTIONS: 954A, 954S, 1590



C6261 PLATES

C6261 BASE

NO.	ITEM ID	QTY	DESCRIPTION
9	BAYSW 004	1	BAYONET FOR SHIELD WIRE, STRAIGHT 40"
10	BKTLP 002	3	BRACKET, 53-DEGREE ANGLE, 6" HOLE SPACING, 1 1/16" HOLE DIAMETER, 5/8" THICK
12	BOLMS 001	0	MACHINE BOLT, 1/2" X 2 1/2", PROVIDED WITH SUPSH001
12	BOLMS 039	2	MACHINE BOLT, 3/4" X 20", 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 054	2	MACHINE BOLT, 7/8" X 26", 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	4	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 001	1	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
24	CLATG 001	5	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", HOT DIPPED GALV.
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (#4 CU); (.258 - .420) TO (.162 - .332), ALUMINUM
36	COBCO 028	16 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
47	GUALI 001	1	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
53	INSLP 014	3	230KV SILICONE BRACED LINE POST INSULATOR, 17° RISE, GAIN BASE, L = 108", H = 94", 14" B.H.S.
58	LUGGR 002	6	LUG FOR 7/8" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 002	0	SQUARE LOCK NUT FOR 1/2" BOLT, PROVIDED WITH SUPSH001
62	NUTSL 004	2	SQUARE LOCK NUT FOR 3/4" BOLT, HOT DIPPED GALVANIZED
62	NUTSL 005	12	SQUARE LOCK NUT FOR 7/8 INCH BOLT, HOT DIPPED GALVANIZED
69	SOCEY 003	3	SOCKET - EYE, STENGTH = 25,000#, L = 2 5/16", EYE = 13/16", FORGED STEEL, GALV.
71	SUPSH 001	1	SUPPORT, SHIELD WIRE, GALVANIZED, WITH TWO 2 1/2 INCH MACHINE BOLTS AND LOCK NUTS
76	WASRD 003	4	ROUND WASHER FOR 1/2" BOLT, 1 3/8" DIAMETER, GALVANIZED
76	WASRD 005	4	ROUND WASHER FOR 3/4" BOLT, 1 3/4" DIAMETER, GALVANIZED
76	WASRD 006	24	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED
77	WASSC 001	2	SQUARE FLAT WASHER FOR 3/4" BOLT, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"
77	WASSC 002	12	SQUARE FLAT WASHER FOR 7/8" BOLT, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

C6261*954A

NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 003	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82 INCHES, 1 3/16" GAP, 5/8" PIN

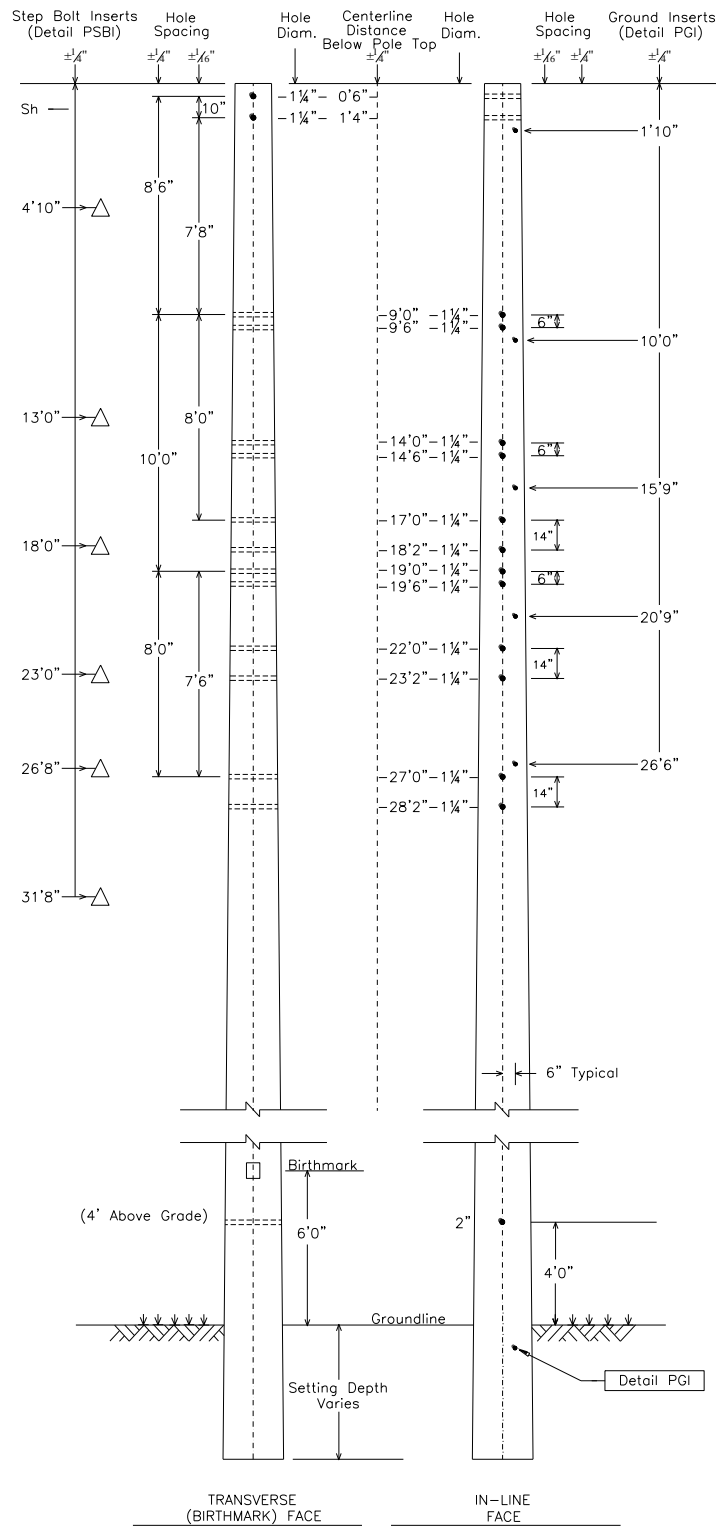
C6261*954S

NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 004	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82 INCHES, 1 3/16" GAP, 5/8" PIN

C6261*1590

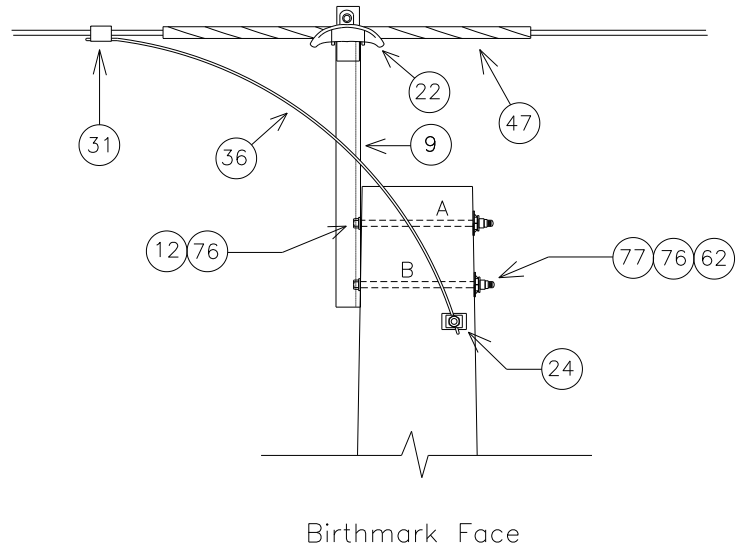
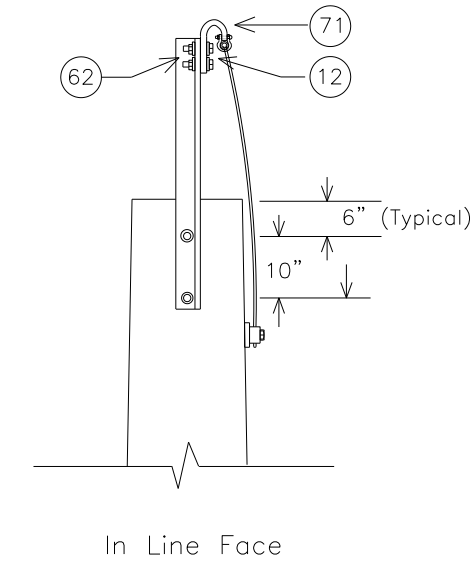
NO.	ITEM ID	QTY	DESCRIPTION
45	GRISA 005	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88 INCHES, 1 3/8" GAP, 3/4" PIN

C6261 DRILLING DETAIL



SSBSN

**SHIELD FOR SPUN CONCRETE POLES
BAYONET WITH SUSPENSION CLAMP, NO GUY**



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

MINIMUM REQUIRED BOLT LENGTH 'A' (INCHES)	19.6
MINIMUM REQUIRED BOLT LENGTH 'B' (INCHES)	19.8

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

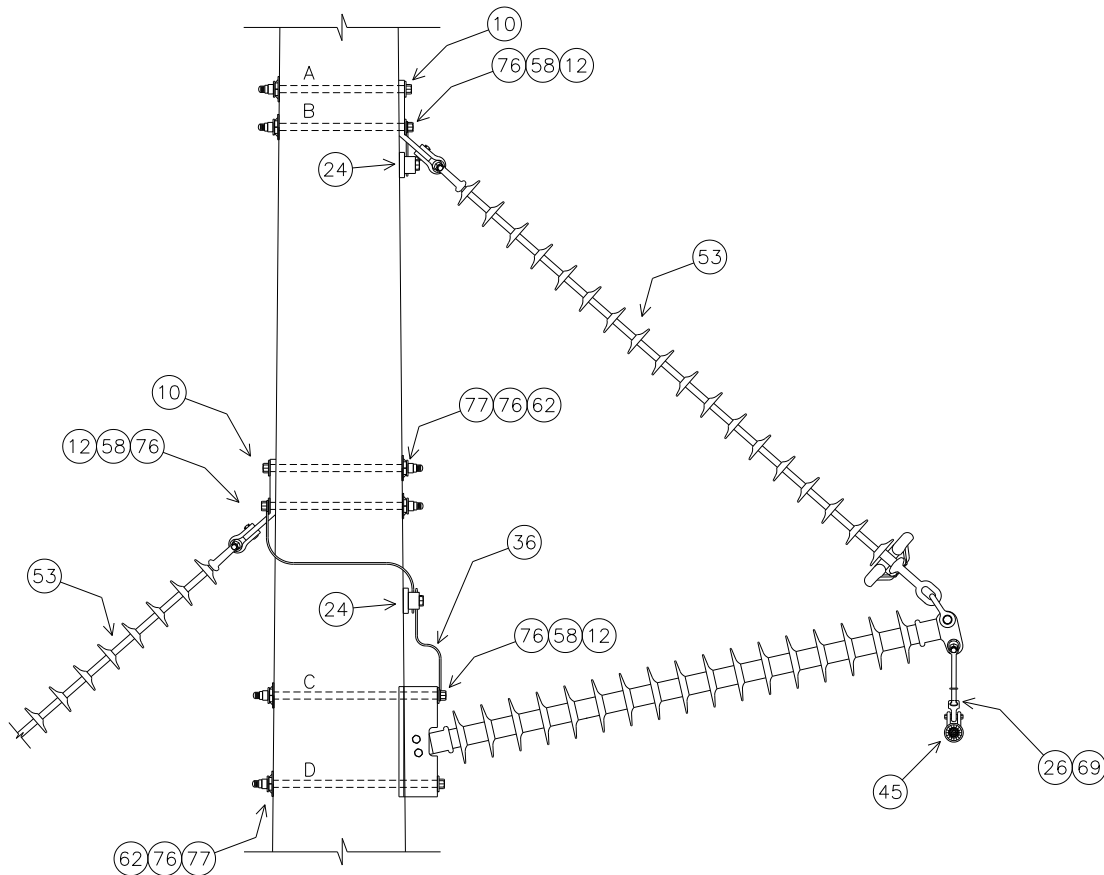
NO.	ITEM ID	QTY	DESCRIPTION
9	BAYSW 004	1	BAYONET FOR SHIELD WIRE, STRAIGHT 40"
12	BOLMS 001	0	MACHINE BOLT, 1/2" X 2 1/2", PROVIDED WITH SUPSH001
12	BOLMS 039	2	MACHINE BOLT, 3/4" X 20", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
22	CLASU 001	1	ALUMINUM SUSPENSION CLAMP FOR 3#6AW / 7#10AW, 15000#
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, "BRONZE" #6 SOL - #1 STR.
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (#4 CU); (.258 - .420) TO (.162 - .332), ALUMINUM
36	COBCO 028	6 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN (50# COIL)
47	GUALI 001	1	ALUMINUM LINE GUARD FOR 3#6AW, 23" LG, RANGE .347" - 366"
62	NUTSL 002	0	SQUARE LOCK NUT FOR 1/2" BOLT, PROVIDED WITH SUPSH001
62	NUTSL 004	2	SQUARE LOCK NUT FOR 3/4" BOLT, H.D.G.
71	SUPSH 001	1	SUPPORT, SHIELD WIRE, GALVANIZED, WITH TWO 2 1/2" MACHINE BOLTS AND LOCK NUTS
76	WASRD 005	4	ROUND WASHER FOR 3/4" BOLT, 1 3/4" DIAMETER, GALVANIZED
77	WASSC 001	2	SQUARE CURVED WASHER FOR 3/4" BOLTS, RIBBED MALLEABLE IRON-GALVANIZED, 4" X 4"

ISSBDC3

INSULATOR FOR SPUN CONCRETE POLES

SINGLE BRACED LINE POST, DELTA CONFIGURATION, 230KV, 3-PHASE

CONDUCTOR OPTIONS: 954A, 954S, 1590



SEE MBA1 FOR BOLT ASSEMBLY DETAILS

STRUCTURE	MINIMUM REQUIRED BOLT LENGTH (INCHES)			
	'A'	'B'	'C'	'D'
TOP	21.9	22.3	29.3	29.3
MIDDLE	23.0	23.4	30.4	30.4
BOTTOM	24.1	24.4	31.4	31.5

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

ISSBDC3 PLATES

ISSBDC3 BASE

NO.	ITEM ID	QTY	DESCRIPTION
10	BKTLP 002	3	BRACKET, 53° ANGLE, 6" HOLE SPACING, 1 1/16" HOLE DIAMETER, 5/8" THICK
12	BOLMS 053	4	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 073	2	MACHINE BOLT, 7/8" X 30", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 074	4	MACHINE BOLT, 7/8" X 32", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
24	CLATG 001	4	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 014	3	230KV SILICONE BRACED LINE POST INSULATOR, 17° RISE, GAIN BASE, L = 108", H = 94", 14" 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"

ISSBDC3*954A

45	GRISA 003	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 AAC, 82", 1 3/16" GAP, 5/8" PIN
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ISSBDC3*954S

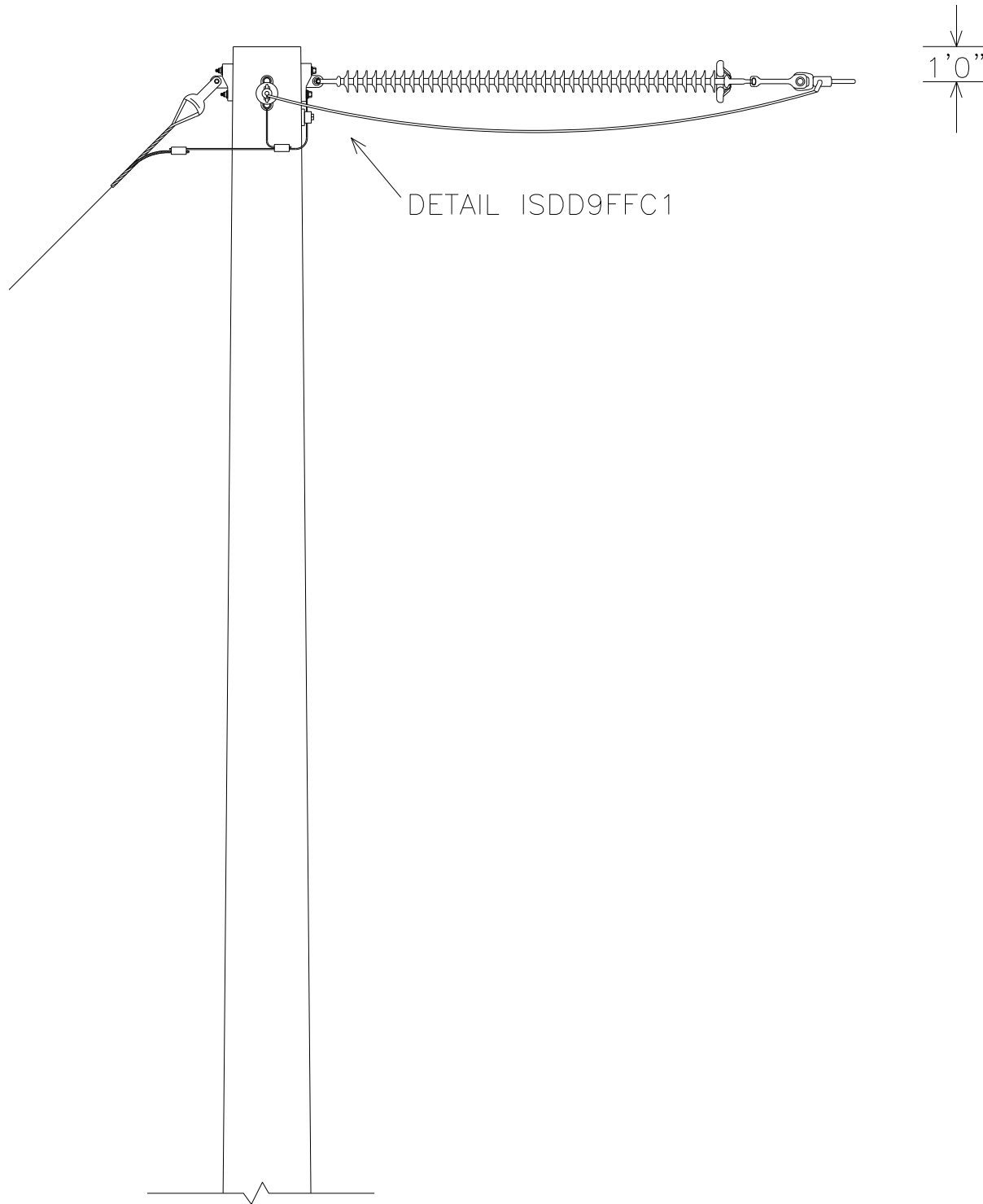
45	GRISA 004	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 954 ACSR, 82", 1 3/16" GAP, 5/8" PIN
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ISSBDC3*1590

45	GRISA 005	3	ARMOR GRIP SUSPENSION ASSEMBLY FOR 1590 ACSR, 88", 1 3/8" GAP, 3/4" PIN
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C7244C

230KV, DOUBLE DEADEND 90°, FULL TENSION TO FULL TENSION, NO SHIELD, 1-PHASE
CONDUCTOR OPTIONS: 954S, 1590



C7244C PLATES

C7244C 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, HOT DIPPED GALV.
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 002	2	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, CLASS 52-8/11
72	TEEDE 003	4	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#

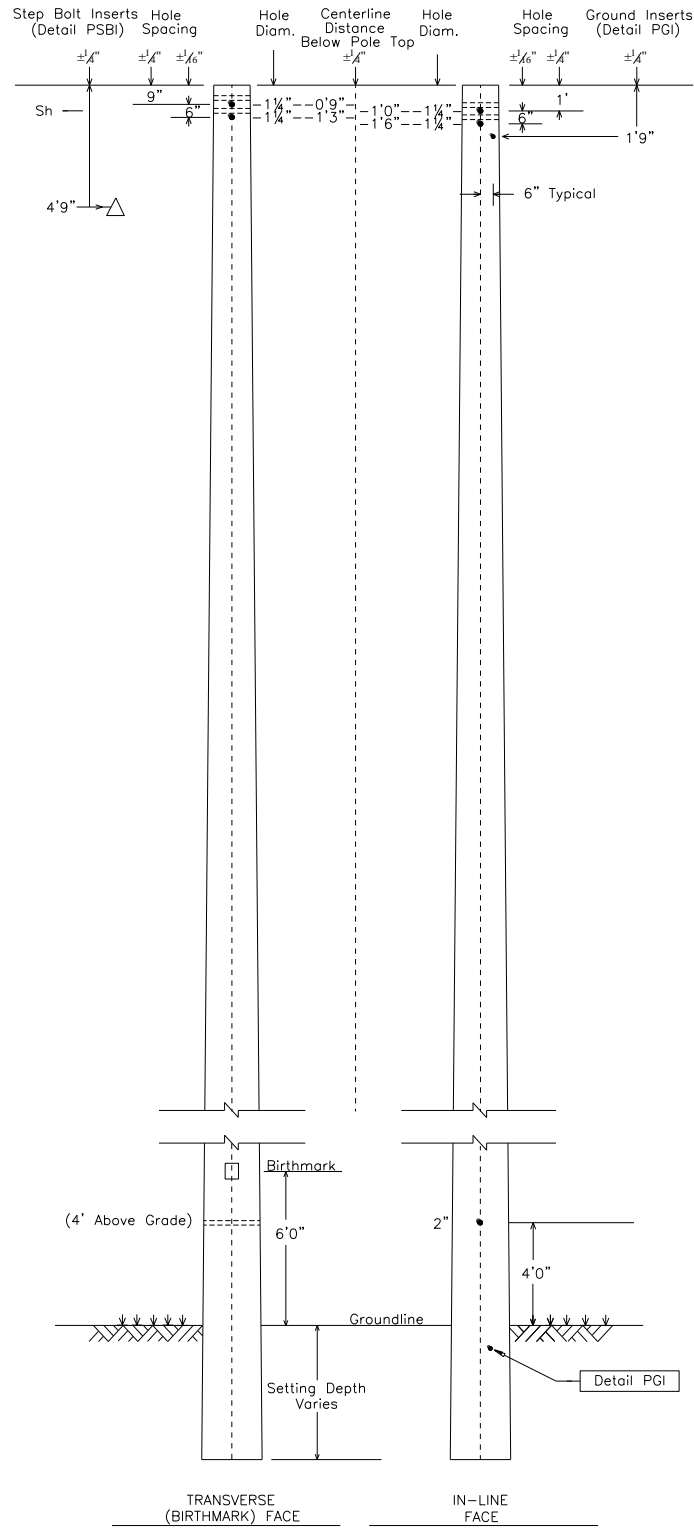
C7244C*954S

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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 006	8	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

C7244C*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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 007	8	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

C7244C DRILLING DETAIL



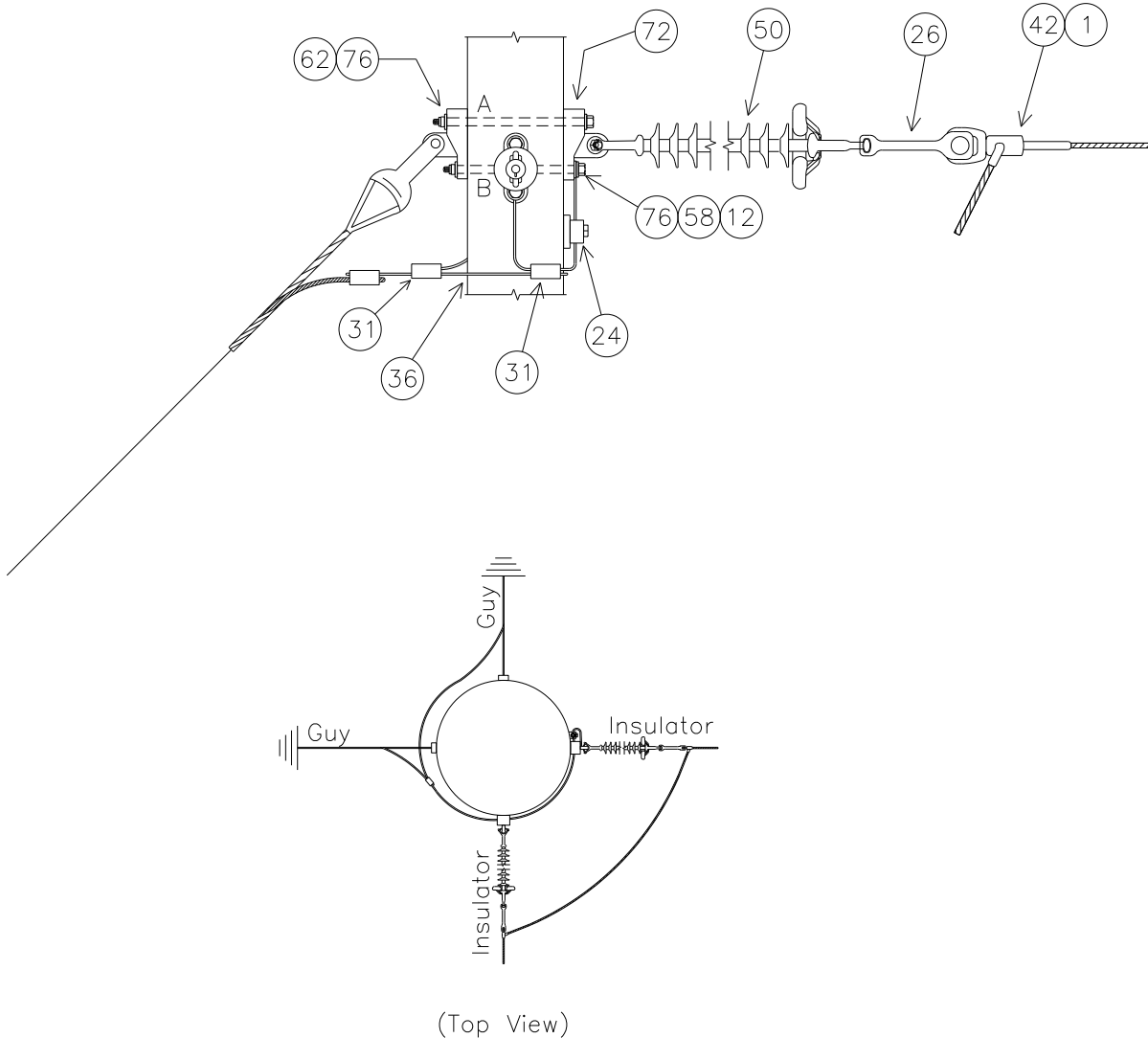
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ISDD9FFC1

INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEAD-END 90°, FULL TENSION TO FULL TENSION, 230KV, 1-PHASE

CONDUCTOR OPTIONS: 954S, 1590



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

	'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.

ISDD9FFC1 PLATES

ISDD9FFC1 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 002	2	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", CLASS 52-8/11
72	TEEDE 003	4	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#

ISDD9FFC1*954S

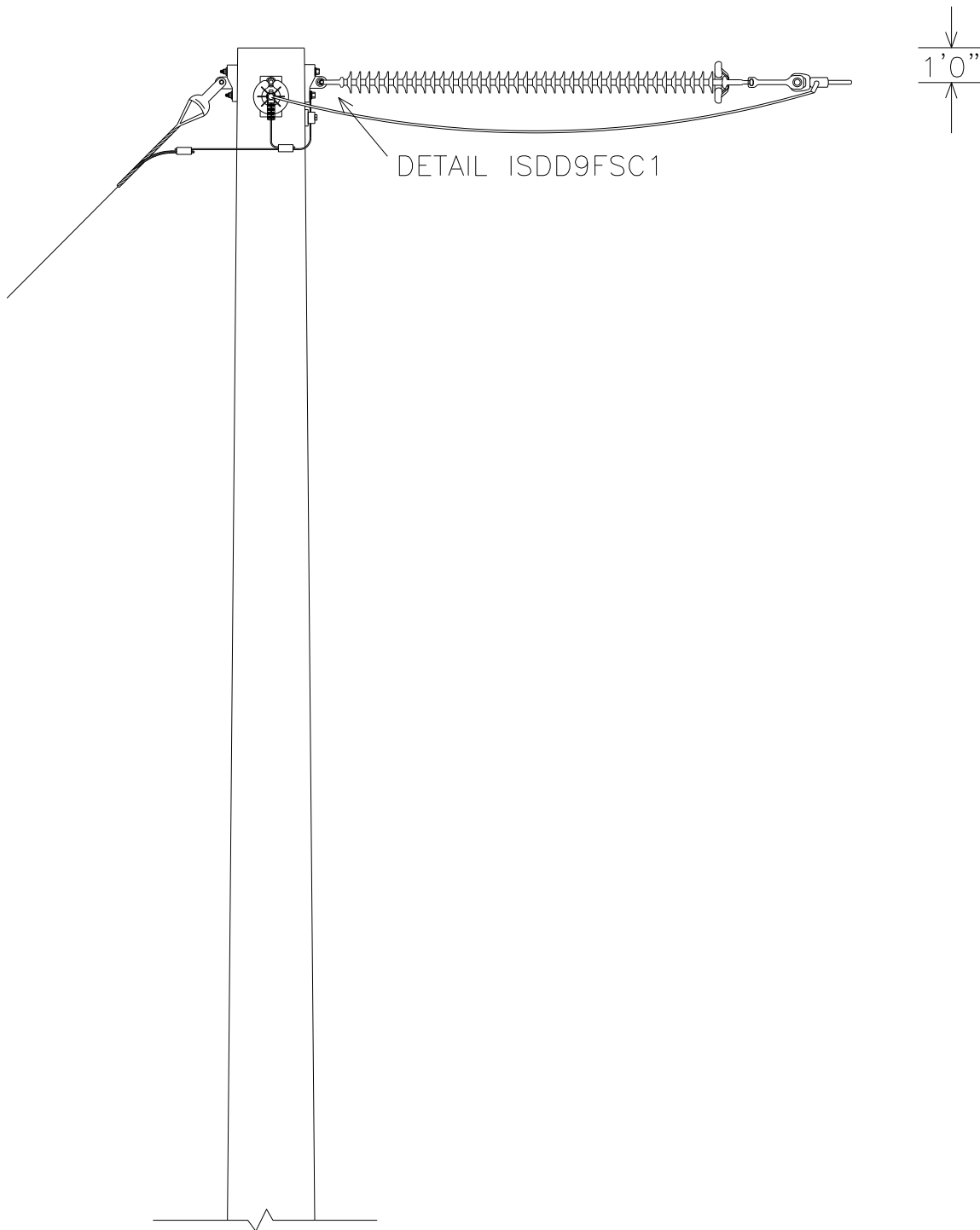
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 052	2	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 053	2	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
42	DEACB 005	2	DEADEND COMPRESSION ASSEMBLY FOR 954 ACSR, OVAL EYE
58	LUGGR 002	2	LUG FOR 7/8" 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

ISDD9FFC1*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

C7246C

230KV, DOUBLE DEADEND 90°, FULL TENSION TO SLACK TENSION, NO SHIELD, 1-PHASE
CONDUCTOR OPTIONS: 954S, 1590



C7246C PLATES

C7246C 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, HOT DIPPED GALV.
26	CLEHL 008	1	SOCKET-EYE CLEVIS, CLASS 52-8/11, L = 10", EYE = 3/4 THICK W/ 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 002	2	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, 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 INCH BOLT, HOT DIPPED GALVANIZED
72	TEEDE 003	3	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 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"

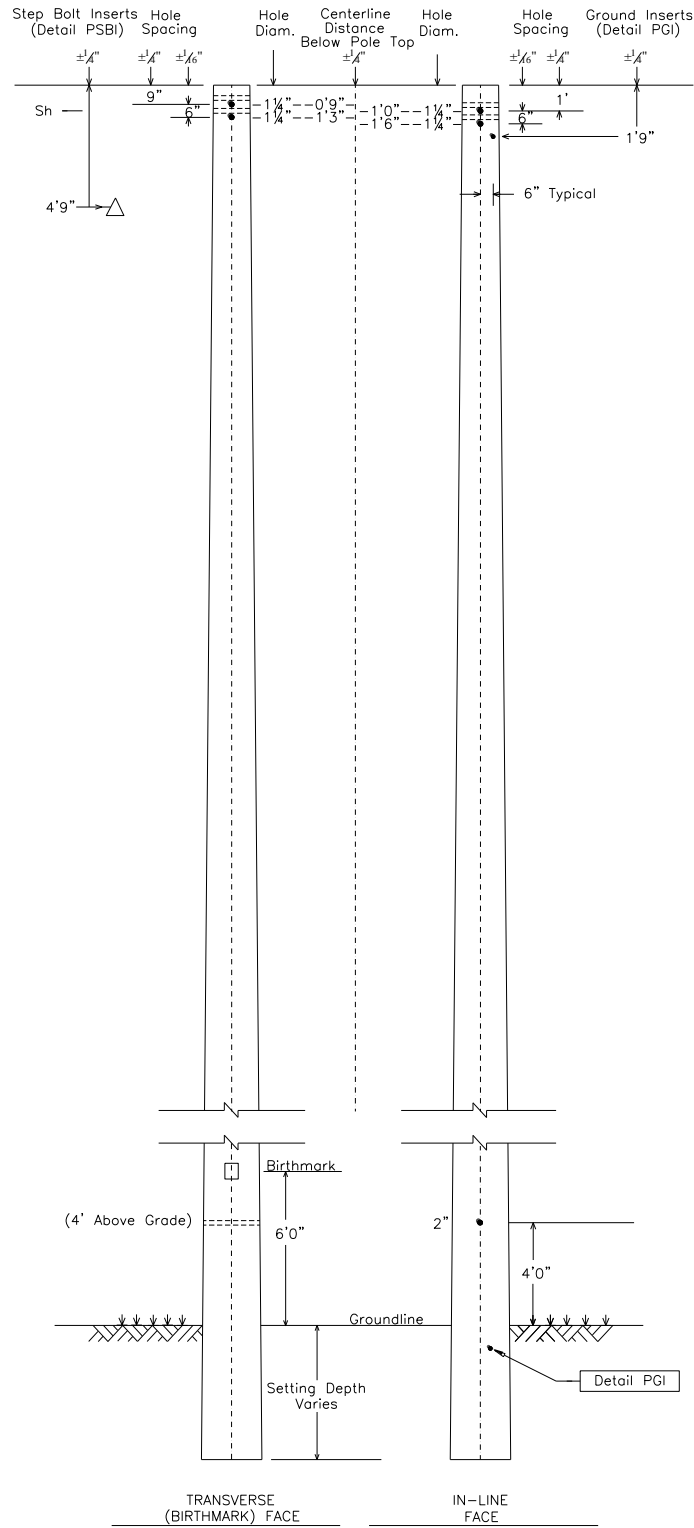
C7246C*954S

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 (.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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 006	4	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

C7246C*1590

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 062	1	MACHINE BOLT, 1" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 063	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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 007	4	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

C7246C DRILLING DETAIL



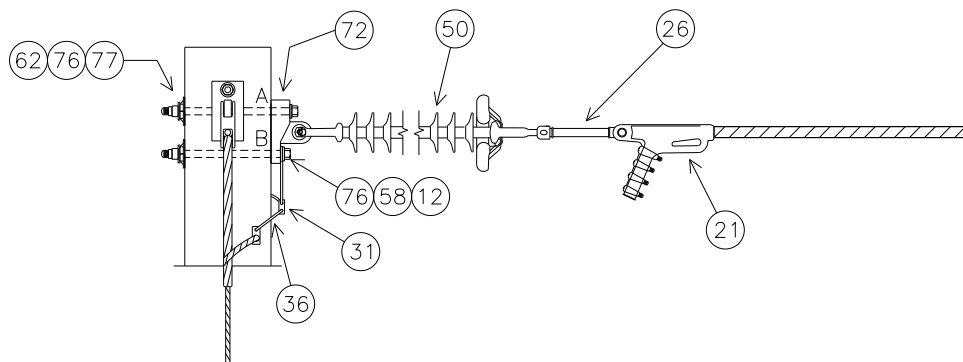
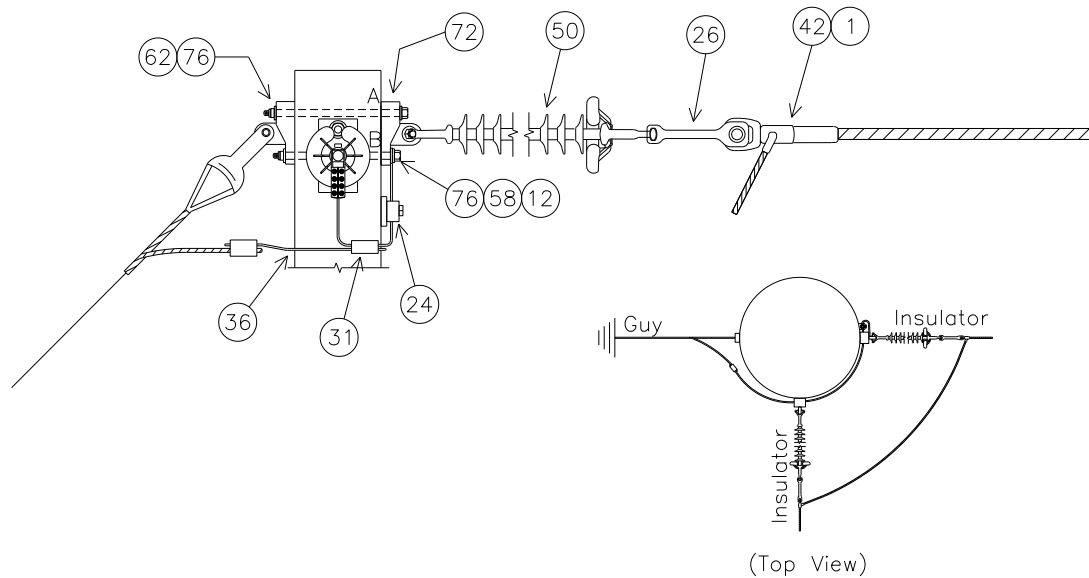
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ISDD9FSC1

INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEAD-END 90°, FULL TENSION TO SLACK TENSION, 230KV, 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

ISDD9FSC1 PLATES

ISDD9FSC1 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 W/ 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 002	2	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", 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, HOT-DIP GALVANIZED, 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"

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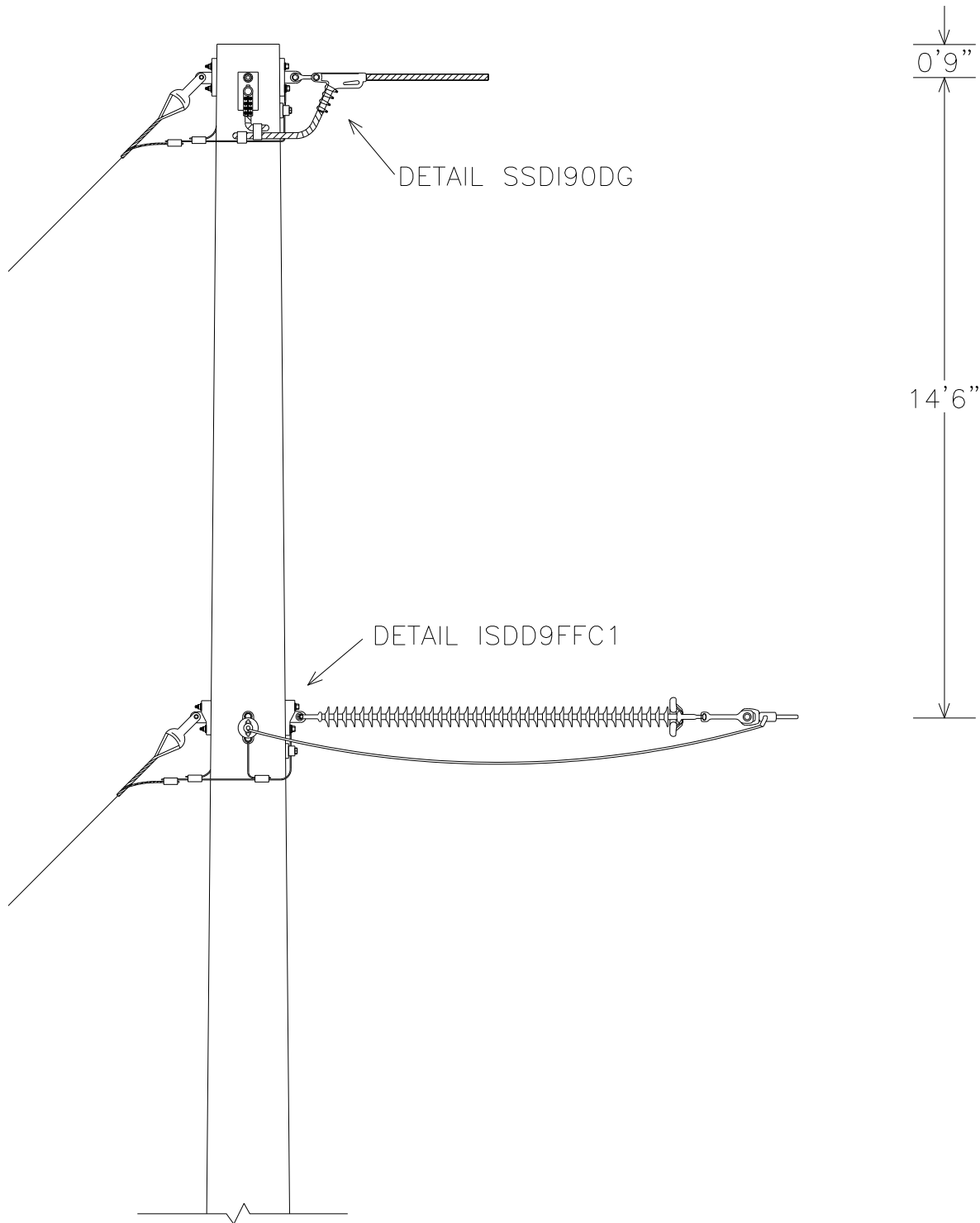
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 052	1	MACHINE BOLT, 7/8" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 053	1	MACHINE BOLT, 7/8" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 005	1	DEADEND CLAMP (.7 - 1.39") 35,000# STRENGTH, GAP = 1 7/16", PIN = 3/4"
42	DEACB 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

ISDD9FSC1*1590

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 062	1	MACHINE BOLT, 1" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 063	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

C8244C

230KV, DOUBLE DEADEND 90°, FULL TENSION TO FULL TENSION, WITH SHIELD, 1-PHASE
CONDUCTOR OPTIONS: 954S, 1590



C8244C PLATES

C8244C BASE

NO.	ITEM ID	QTY	DESCRIPTION
1	ADCVF 001	2	VOID FILLER COMPOUND FOR DEADEND ASSEMBLY
12	BOLMS 040	2	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	2	MACHINE BOLT, 3/4" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	2	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, HOT DIPPED GALV.
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G. 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
31	CNNCP 016	3	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., COPPER
36	COBCO 028	12 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
50	INSDE 002	2	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111 INCHES, CLASS 52-8/11
58	LUGGR 001	2	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	4	SQUARE LOCK NUT FOR 3/4 INCH BOLT, HOT DIPPED GALVANIZED
72	TEEDE 003	8	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	8	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED

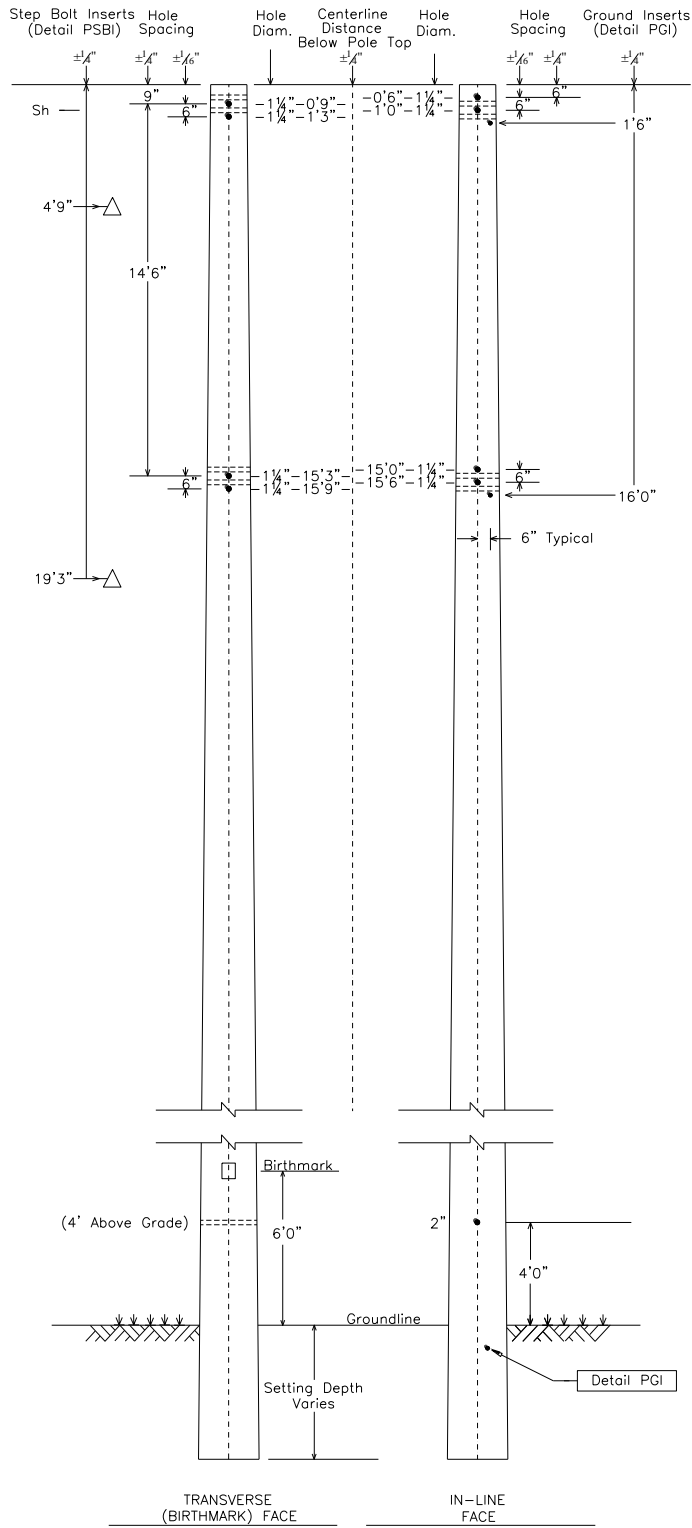
C8244C*954S

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 054	4	MACHINE BOLT, 7/8" X 26", 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 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 006	8	ROUND WASHER FOR 7/8" BOLT, 2 1/2" DIAMETER, GALVANIZED

C8244C*1590

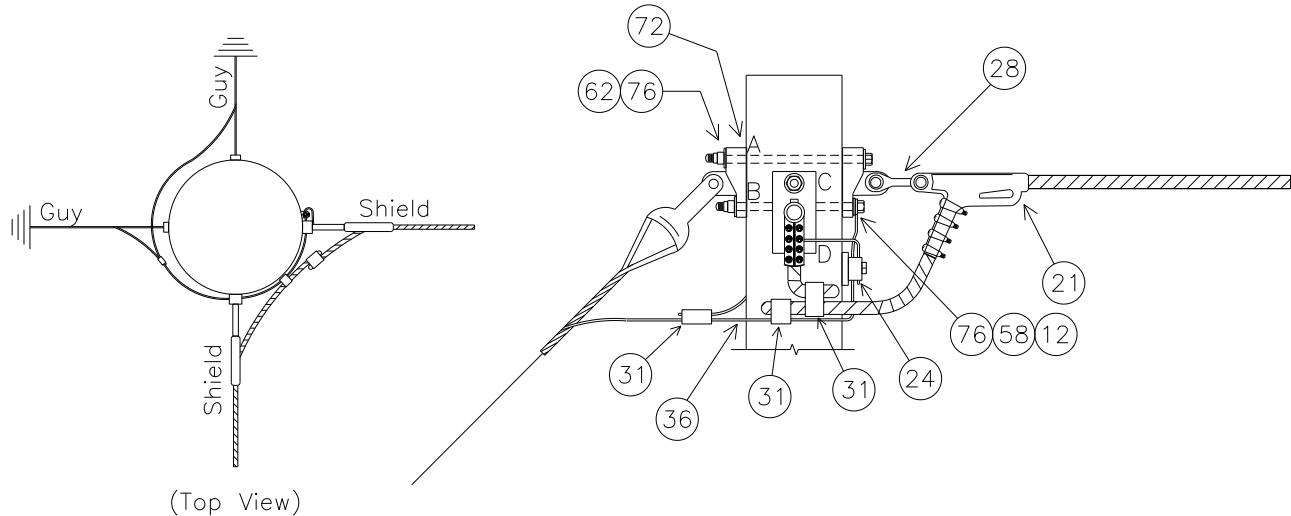
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 064	4	MACHINE BOLT, 1" X 26", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
42	DEACB 007	2	DEADEND COMPRESSION ASSEMBLY FOR 1590 ACSR, OVAL EYE
58	LUGGR 003	2	LUG FOR 1" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 006	4	SQUARE LOCK NUT FOR 1 INCH BOLT, HOT DIPPED GALVANIZED
76	WASRD 007	8	ROUND WASHER FOR 1" BOLT, 2 1/2" DIAMETER, GALVANIZED

C8244C DRILLING DETAIL



SSDI90DG

SHIELD FOR SPUN CONCRETE POLES
DOUBLE IN-LINE 90°, DOUBLE GUY



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

MINIMUM REQUIRED BOLT LENGTH 'A' (INCHES)	22.6
MINIMUM REQUIRED BOLT LENGTH 'B' (INCHES)	20.9
MINIMUM REQUIRED BOLT LENGTH 'C' (INCHES)	22.6
MINIMUM REQUIRED BOLT LENGTH 'D' (INCHES)	21.0

NOTE: BOLT CALCULATIONS ASSUME A 17" POLE TOP DIAMETER

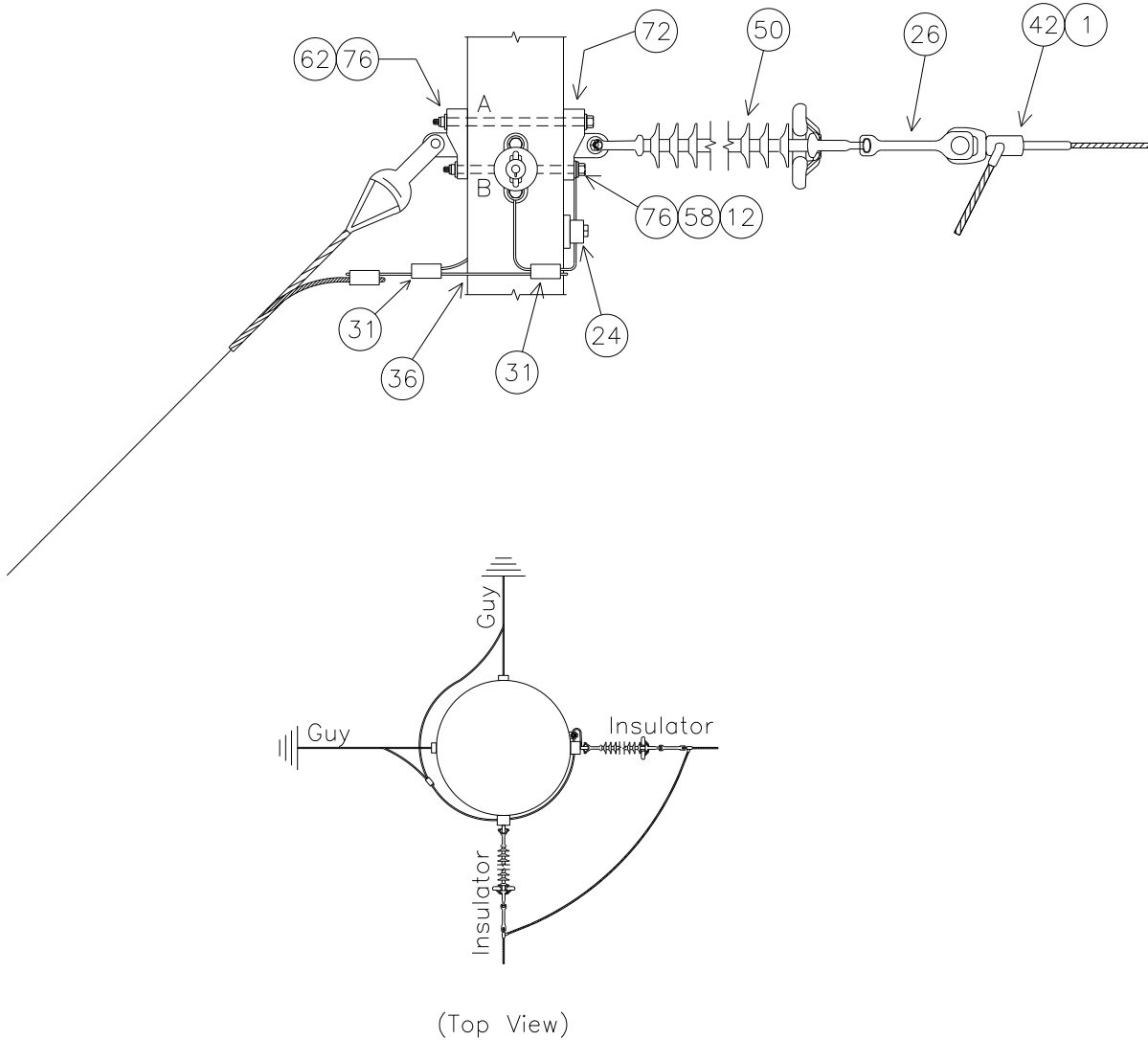
NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 040	2	MACHINE BOLT, 3/4" X 22", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
12	BOLMS 041	2	MACHINE BOLT, 3/4" X 24", SQUARE HEAD, GALVANIZED, WITH SQUARE NUT ATTACHED
21	CLAQD 008	2	DEADEND CLAMP (.2 - .55") 19,000# STRENGTH, GAP = 7/8", PIN = 5/8" CLAMP, DUCT. IRON, 3#6 AW
24	CLATG 001	1	CLAMP, TRANSFORMER TANK GROUND, BRONZE, #6 SOL - #1 STR
28	CLETE 001	2	TOWER Y-EYE CLEVIS, 3/4" PIN, 5/8" EYE THICKNESS, 11/16" EYE DIAMETER H.D.G., 90 DEG
31	CNNCP 002	1	COMPRESSION CONNECTOR, TYPE H (3#6 AW) TO (#4 CU), ALUMINUM
31	CNNCP 003	1	COMPRESSION CONNECTOR, TYPE H, (3#6 AW) TO (3#6 AW), ALUMINUM
31	CNNCP 016	1	COMPRESSION CONNECTOR, #4 SOL. CU. TO #4 SOL. CU., COPPER, FOR CU CONNECTIONS ONLY
36	COBCO 028	6 ft	#4 SOLID BARE COPPER CONDUCTOR, SOFT DRAWN
58	LUGGR 001	2	LUG FOR 3/4" BOLT, #4 SOLID WIRE, TIN PLATED COPPER COMPRESSION
62	NUTSL 004	4	SQUARE LOCK NUT FOR 3/4" BOLT, H.D.G.
72	TEEDE 003	4	TEE, DUCTILE IRON, H.D.G. 6" HOLE SPACING, STRENGTH = 60,000#
76	WASRD 005	8	ROUND WASHER FOR 3/4" BOLT, 2" DIAMETER, GALVANIZED

ISDD9FFC1

INSULATOR FOR SPUN CONCRETE POLES

DOUBLE DEAD-END 90°, FULL TENSION TO FULL TENSION, 230KV, 1-PHASE

CONDUCTOR OPTIONS: 954S, 1590



NOTE: SEE MBA1 FOR BOLT ASSEMBLY DETAILS

	'A'	'B'
UPPER TEE MINIMUM BOLT LENGTH (INCHES)	25.9	24.3
LOWER TEE MINIMUM BOLT LENGTH (INCHES)	26.0	24.3

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

ISDD9FFC1 PLATES

ISDD9FFC1 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 002	2	DEADEND SILICON INSULATOR, Y-BALL COUPLING, 230KV, L = 111", CLASS 52-8/11
72	TEEDE 003	4	TEE, DUCTILE IRON, HOT-DIP GALVANIZED, 6" HOLE SPACING, STRENGTH = 60,000#

ISDD9FFC1*954S

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 054	4	MACHINE BOLT, 7/8" X 26", 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

ISDD9FFC1*1590

NO.	ITEM ID	QTY	DESCRIPTION
12	BOLMS 064	4	MACHINE BOLT, 1" X 26", 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

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