



EQUIPMENT WEIGHTS				
ITEM	DESCRIPTION	DRG. No	STOCK CODE	QTY
107	EARTH - PARKING DEVICE, IPC CG TO EPI (ENSTO REF. SLV26 A2 (SEE NOTE 2))	108865	3	
108	KIT - HEATSHRINK TERMINAL FOR HV DROPPER LUGS (SEE NOTE 19)	152277	2	
109	ANTENNA - COMMUNICATIONS (SEE NOTE 17)		1	
104	CABLE - COAXIAL COMMUNICATIONS (WHERE REQUIRED FOR COMMUNICATIONS INSTALL)	518022	175669	2
103	WASHER - SPRING, M20, GALVANISED	518487	136921	30
102	NUT - M10, HEX, STAINLESS STEEL	518022	5720	30
101	WASHER - SPRING, M16, STAINLESS STEEL	518021	48411	40
99	WASHER - FLAT, M16, STAINLESS STEEL	518487	45088	30
98	WASHER - SET, M10x30mm, HEX, STAINLESS STEEL	518487	8987	18
97	WASHER - SPRING, M12, STAINLESS STEEL	518021	14359	18
96	WASHER - FLAT, M12, STAINLESS STEEL	518487	14629	36
95	SCREW - SET, M12x50mm, HEX, STAINLESS STEEL	518487	143638	18
94	NUT - M16, HEX, STAINLESS STEEL	518487	177122	3
93	NUT - M16, HEX, STAINLESS STEEL	518487	177976	2
92	WASHER - SPRING, M16, STAINLESS STEEL	518022	96149	4
91	WASHER - FLAT, M16, STAINLESS STEEL	518021	136921	12
90	SCREW - SET, M16x60mm, HEX, STAINLESS STEEL	518487	136913	7
89	WASHER - FLAT, M12, GALVANISED	518021	177982	24
88	WASHER - CONICAL, M12, GALVANISED	518022	136939	12
87	BOLT & NUT - M12x130mm, HEX, GALVANISED	518486	46826	10
86	BOLT & NUT - M12x180mm, HEX, GALVANISED	518486	46888	2
85	WASHER - FLAT, M16, GALVANISED	518021	177984	3
84	WASHER - CONICAL, M16, GALVANISED	518022	136967	11
83	WASHER - SQUARE, 80x80mm, GALVANISED (Ø19mm HOLE)	518021	143027	4
82	L F BOLT - M16, GALVANISED (TO SUIT POLE SIZE, (C/W NUTS & WASHERS)	518486	83725	2
81	BOLT & NUT - M16x200mm, HEX, GALVANISED	518021	136921	8
80	EYEBOLT - M20, GALVANISED (SEE NOTE 2)	518021	136921	2
79	WASHER - FLAT, M20, GALVANISED	518021	177986	9
78	WASHER - CONICAL, M20, GALVANISED	518022	136968	5
77	WASHER - SQUARE, 75x75mm, GALVANISED (Ø22mm HOLE)	518021	136921	8
76	EYEBOLT - M20x200mm, GALVANISED (SEE NOTES 21 & 22)	518021	136921	1
75	EYEBOLT - M20, GALVANISED (LENGTH TO SUIT POLE) (SEE NOTE 2)	518021	136921	1
74	BOLT & NUT - M20, HEX, GALVANISED (LENGTH TO SUIT POLE)	518486	46826	2
73	WASHER - SPRING, M20, GALVANISED (TO A. 111)	518021	177982	28
72	BOLT & NUT - M20, HEX, GALVANISED (LENGTH TO SUIT POLE)	518486	46826	2
71	WASHER - CONICAL, M24, GALVANISED	518022	136963	11
70	WASHER - SQUARE, 75x75mm, GALVANISED (Ø27mm HOLE)	518021	136921	11
69	WASHER - LP, M24, GALVANISED	518021	176912	2
68	BOLT & NUT - M24x65mm, HEX, GALVANISED (TO A. 111)	518486	46826	6
67	BOLT & NUT - M24x90mm, HEX, GALVANISED (TO A. 111)	518486	46826	2
66	BOLT & NUT - M24, HEX, GALVANISED (LENGTH TO SUIT POLE)	518486	46826	2
65	SCREW - COACH, M12x150mm, GALVANISED	518021	143034	7
64	SCREW - #12x45mm, SELF DRILLING	175987	47	
63	TAGS - CHARACTER, 50mm ALUMINIUM, BLACK ON YELLOW (SEE NOTE 12)	175987	47	
62	SIGN - DANGER HIGH VOLTAGE (SEE NOTE 13)	147912	2	
61	BEND - 45mm, 90°, HEAVY DUTY, DOUBLE SIDED, GALVANISED	175987	4	
60	BEND - 100mm, 90°, HEAVY DUTY, ORANGE	175987	1	
59	BEND - 100mm, 90°, HIGH IMPACT, ABS (ABS80)	175987	1	
58	SADDLE - CABLE, 12.7mm, HEAVY DUTY, DOUBLE SIDED, GALVANISED	176484	47	
57	SADDLE - CONDUIT, 40mm, HEAVY DUTY, DOUBLE SIDED, GALVANISED	176484	47	
56	SADDLE - CONDUIT, 100mm, HEAVY DUTY, DOUBLE SIDED, GALVANISED	176484	47	
55	CONDUIT - 40mm, HIGH IMPACT, ABS (ABS80) (SEE NOTE 18)	175987	47	
54	CONDUIT - 40mm, HEAVY DUTY, ORANGE (BELOW GROUND ONLY) (SEE NOTE 18)	175987	47	
53	CONDUIT - 100mm, HIGH IMPACT, ABS (ABS80)	175987	47	
52	CONDUIT - 100mm, HEAVY DUTY, ORANGE (BELOW GROUND ONLY)	175987	47	
51	COVER - CABLE, PROTECTOR, 150mm WIDE (SEE NOTE 16)	515084	47	
50	GUARD - EARTH, COVER, 3m, BLACK, PVC	175987	3	
49	CABLE - CONTROL, 12.7mm, HEAVY DUTY, DOUBLE SIDED, GALVANISED	175987	3	
48	CONDUCTOR - 11kV CCSX2, 62mm <sup>2</sup> , Ø113.37 ACSR (SEE NOTE 6)	188861	47	
47	CONDUCTOR - 11kV CCSX19, 199mm <sup>2</sup> , Ø13.28 AAC (SEE NOTE 6)	188868	47	
46	CONDUCTOR - MERCURY, 7/4 SAAC (SEE NOTE 9)	188861	47	
45	CONDUCTOR - 192.147mm <sup>2</sup> COPPER, PVC COVERED, BLACK (SEE NOTE 8)	80111	47	
44	BRACKET - T MOUNTING, 11kV POLYMER SURGE ARRESTER	177944	1	
43	CAP - CONDUCTOR (ENSTO REF. CS21) (TO BE USED FOR CCSX2)	188868	3	
42	CAP - CONDUCTOR (ENSTO REF. CS21) (TO BE USED FOR CCSX19)	188867	6	
41	JOINT - NON TENSION, PC TO IPC (ENSTO REF. SLV26 A)	188863	6	
40	JOINT - NON TENSION, PC TO IPC (ENSTO REF. SLV26 A)	188863	3	
39	JOINT - NON TENSION, PC TO BARE (ENSTO REF. SLV34 A)	188864	2	
38	CLAMP - CHANNEL, GROOVE, 28G COPPER	176988	2	
37	LUG - COMPRESSION, BIMETALLIC, M10 HOLE (TO SUIT CCSX2 CONDUCTOR) (SEE NOTE 18)	514053	187542	6
36	LUG - COMPRESSION, BIMETALLIC, M10 HOLE (TO SUIT CCSX19 CONDUCTOR) (SEE NOTE 18)	514053	187541	6
35	LUG - COMPRESSION, TINED COPPER, M16 HOLE (TO SUIT 70mm <sup>2</sup> CABLE)	518727	2	
34	LUG - COMPRESSION, BIMETALLIC, M12 HOLE (TO SUIT MERCURY CONDUCTOR)	514053	119975	3
33	LUG - COMPRESSION, BIMETALLIC, M12 HOLE (TO SUIT COPPER M12 HOLE) (TO SUIT 70mm <sup>2</sup> CABLE)	7481	19	
32	LUG - COMPRESSION, BIMETALLIC, M12 HOLE (TO SUIT 14 (70mm <sup>2</sup> ) CABLE) (SEE NOTE 9)	187132	3	
31	CONNECTOR - COMPRESSION, PROFILE 6, COPPER (70mm <sup>2</sup> CONDUCTOR TO Ø18mm ROD)	181699	4	
30	COUPLER - EARTH ELECTRODE (TO SUIT Ø18mm ROD)	181699	4	
29	ELECTRODE - GROUNDED EARTH, Ø18x180mm (SEE NOTE 5)	181699	4	
28	STUB - EARTH, MCKEOWN	50008	110615	2
27	BAR - EARTH, TOP LAMP, TINED COPPER, 30x6x3mm (SEE DETAIL 2)	224206	1	
26	BAR - EARTH, BOTTOM LAMP, TINED COPPER, 30x6x3mm (SEE DETAIL 3)	224206	1	
25	ARRESTER - SURGE, 5kV, 50kA POLYMERIC DISTRIBUTION TYPE, 12mm TOP & BOTTOM STUD (COMPLETE WITH BRIDGE) (SEE NOTES 7 & 8)	188712	1	
24	LINK - 12.7mm, 80 AMP, OUTDOOR	58750	3	
23	CLAMP - LV, SUSPENSION (SEE NOTE 10)	1811472	3	
22	PLATE - TWISTED, 170x50mm, GALVANISED	151086	176901	3
21	WIRE - TE, PREFORMED, INSULATED (ENSTO REF. S0218 157) (TO BE USED FOR CCSX19) (SET OF 6)	188674	3	
20	SHOCKLE - BOW, 70AN, REF. 70S, A.S. 11942	30880	3	
19	COVER - TERMINATION (ENSTO REF. 9913) (TO BE USED FOR CCSX19) (SET OF 3)	188871	1	
18	CLAMP - TERMINATION, WEDGE (ENSTO REF. S026 294) (TO BE USED FOR CCSX19)	188873	3	
17	TONGUE - "Y" CLEVIS, 70AN, A.S. 11942	187430	3	
16	INSULATOR - 112kV AERODYNAMIC, (2/450) & PN ARRANGEMENT	513997	8	
15	INSULATOR - LONGROD, 1122kV, POLYMER, 70AN (CLEVITONGUE)	150575	6	
14	CONTROLLER - REGULATOR, MULTIPHASE, GL7 (RIPPLED WITH REGULATOR)		1	
13	CABLE - FIBREGLASS OPTICAL FIBRE (FOR COMMUNICATIONS) (SEE NOTE 17)	191227	176913	1
12	FOOTING - FIBREGLASS CABINET, CONCRETE (SEE NOTE 3)	176913	1	
11	REGULATOR - VOLTAGE, VR32, 200A, EATON COOPER POWER SERIES	514835	177738	6
10	FRAME - REGULATOR, MOUNTING (SEE NOTE 2)	181618	148590	1
9	BRACE - CROSSARM, FLAT, 600mm, GALVANISED	514835	177738	6
8	BLOCK - GAN, ALUMINIUM, 150mm	148590	1	
7	BLOCK - GAN, ALUMINIUM, 100mm	148590	1	
6	CROSSARM - 2700x100x100mm, CROSSARM 3, HARDWOOD	224230	102656	1
5	CROSSARM - 3000x150x100mm, CROSSARM 4, HARDWOOD (SEE NOTE 4)	224230	102630	1
4	CROSSARM - 2700x150x100mm, CROSSARM 1, HARDWOOD	224230	102731	1
3	CONSTRUCTION - 11kV, OVERHEAD 2-11CCT	174982		
2	CONSTRUCTION - 11kV, OVERHEAD 2-11CCTX	26596		
1	CONSTRUCTION - 11kV, OVERHEAD 3-1	513915		
2	FOOTING - TIMBER POLE, ARRANGEMENT 3, CEMENT STABILISED BACKFILL	588726	1	
1	POLE - TIMBER (MINIMUM 15.5m <sup>2</sup> DN), MINIMUM 2.8m EMBEDED	513988	1	

AN EARTHING DESIGN MUST BE UNDERTAKEN FOR EACH SITE. THE EARTHING SHOWN ON THIS DRAWING IS INDICATIVE ONLY.

REAR VIEW SCALE 120

END VIEW SCALE 120

FRONT VIEW SCALE 120

SECTION A-A SCALE 120

SECTION B-B SCALE 120

GROUND MOUNTED CONTROL UNITS SHALL BE USED WHERE THE CONTROL UNIT HOUSING IS NOT LIKELY TO BE ADVERSELY AFFECTED. ADVERSE AFFECTS INCLUDE POTENTIAL INTERFERENCE BY LIVESTOCK OR INSTALLATION IN FLOOD PRONE SITES. POLE MOUNTED CONTROL UNITS MAY BE USED.

NOTES:

1. THE MINIMUM 11kV PHASE TO EARTH CLEARANCE IS 200mm. THE MINIMUM 11kV PHASE TO PHASE CLEARANCE IS 280mm.
2. WHERE BARE LV MAINS EXIST, THEY SHALL BE CONVERTED TO ABC FOR AT LEAST ONE SPAN EITHER SIDE OF THE REGULATOR IF LV MAINS ARE PRESENT ON THE POLE. THE ABC IS TO BE CONNECTED TO THE REGULATOR MOUNTING FRAME AS PER THE LV ABC TERMINATION POINT DETAILS SHOWN ON THE DRAWING.
3. THE REGULATOR CONTROL CABINET IS TO BE POSITIONED EITHER IN THE FOOTPATH ALLOCATED AREA OR IN THE LINE EASEMENT NO CLOSER THAN 250mm FROM THE POLE. A 1550 x 190mm CONCRETE FOOTING IS REQUIRED FOR THE CONTROL CABINET AS PER DRG. 19277. THE CONTROL BOX MOUNTING FRAME AND LUGS ARE SUPPLIED WITH THE FIBREGLASS CABINET (ITEM 13) PURCHASED FROM FULFON INDUSTRIES AUSTRALIA PTY. LTD 4233-4242.
4. THE DROPTOP FUSE CROSSARM SHOULD NOT BE MOUNTED MORE THAN 10m ABOVE GROUND LEVEL TO ENABLE THE FUSES TO BE OPERATED FROM GROUND LEVEL WITH A LUG STICK. IF A GREATER MOUNTING HEIGHT IS REQUIRED TO MAINTAIN CLEARANCES, THE REGIONAL FIELD OPERATING GROUP NEED TO BE CONSULTED.
5. THE EARTH RODS ARE NOT TO BE POSITIONED UNDER THE CONTROL CABINET CONCRETE PLINTH & ALL HV CONNECTIONS ARE TO BE MADE USING THE CCSX CONDUCTOR SPECIFIED WHERE THE CONDUCTOR IS REQUIRED TO BE STRIPPED PRIOR TO TERMINATION. THE ENTIRE STRIPPED LENGTH MUST BE CLEANED & VIGOROUSLY WIRE BRUSHED AND SUITABLE JOINTING COMPOUND USED TO MEET THE EARTHING DESIGN REQUIREMENTS.
6. THE HV CONNECTIONS TO THE ARRESTERS ARE TO BE MADE USING CCSX ITEM 48 AND SHALL HAVE UV STABILISED MASTIC LINED LV HEATSHRINK TUBING SHROUK OVER THE BARREL OF THE LUGS AND THE CABLE ENDS.
7. HV SURGE ARRESTERS ARE TO BE EARTHED BY DAVIS CHAINING AND ELECTRICAL BONDING TO THE TOP EARTH BAR USING 70mm<sup>2</sup> PVC INSULATED COPPER CONDUCTOR (ITEM 43).
8. MERCURY (17.5 AAC) ALUMINIUM CONDUCTOR SHALL BE USED FROM THE BOTTOM EARTH BAR TO 300mm ABOVE GROUND WHERE 70mm<sup>2</sup> COPPER PVC INSULATED EARTH CONDUCTOR WILL BE EXTENDED FROM METALLIC LINKS TO THE EARTH ELECTRODES.
9. THE SUSPENSION (LAMP ITEM 23) MUST PROVIDE A FIRM CONNECTION TO THE HV DROPPER CABLE. IF REQUIRED, CONDUIT INSERTS MAY BE USED TO ACHIEVE AN EFFECTIVE CONNECTION.
10. REGULATOR ASSEMBLY NUMBER IS TO BE INSTALLED ON BOTH FRONT & REAR OF THE POLE. SIGNS MUST BE INSTALLED ON BOTH FRONT & REAR OF THE POLE. SIGNS MUST BE:
11. A SITE SPECIFIC EARTHING DESIGN IS REQUIRED FOR EACH REGULATOR INSTALLATION.
12. THE EARTHING SHOWN ON THIS DRAWING IS INDICATIVE ONLY. ADDITIONAL EARTHING MAY BE REQUIRED TO MEET THE EARTHING DESIGN REQUIREMENTS.
13. ENSURE BURIED EARTH CONDUCTORS ARE CENTRED UNDER CABLE PROTECTION COVER.
14. A POLE MOUNTED EXTERNAL ANTENNA CAN BE INSTALLED WHERE REQUIRED. THE ACTUAL LOCATION OF THE ANTENNA IS TO BE DETERMINED DURING INSTALLATION OF COMMUNICATION EQUIPMENT. THE LOCATION IS ALWAYS TO COMPLY WITH THE MINIMUM SAFE WORKING DISTANCES SPECIFIED IN AUSGRID'S ELECTRICAL SAFETY RULES.
15. DRAW WIRE IS TO BE INSTALLED INSIDE Ø40mm CONDUIT FOR FUTURE COMMUNICATIONS (COAXIAL CABLE). SECURE DRAW WIRE AND SEAL END OF CONDUIT WITH SUITABLE PVC TAPE.
16. INSTALL MEDIUM WALL MASTIC LINED BLACK HEATSHRINK OVER THE BARE LUG BARREL AND CABLE INSULATION.
17. EARTH PARKING DEVICES ARE TO BE INSTALLED ON THE CCSX CONDUCTOR USED FOR THE REGULATOR SUPPLY (ITEM 47). THESE ARE NORMALLY LOCATED AT THE NO.1 POLE HOWEVER, IF THE NO.1 POLE IS NOT LOCATED WITHIN LINE OF SIGHT OF THE REGULATOR POLE, IPC EARTH PARKING DEVICES ARE TO BE INSTALLED ON BOTH ENDS OF THE CCSX CONDUCTOR.
18. THE LOAD AND DEVIATION ALLOWABLE ON THE EYEBOLT IS TO BE DETERMINED FROM DRG. 520324.
19. THE LOAD AND DEVIATION ALLOWABLE ON THE EYEBOLT AND EYENUT ASSEMBLY IS TO BE DETERMINED FROM DRG. 520331.
20. REFER TO DESIGNER SAFETY REPORT D25/352750 FOR ATYPICAL HAZARDS ASSOCIATED WITH THIS STANDARD CONSTRUCTION.

DATE: 01/04/2026  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 APPROVED BY: [Name]

11kV POLE MOUNTED VOLTAGE REGULATOR WITH CONTROLLING NO.1A TYPE OSMIS RECLOSER 273250  
 11kV POLE MOUNTED VOLTAGE REGULATOR WITH CONTROLLING NO.1A TYPE OSMIS RECLOSER 273251  
 EATON COOPER POWER SYSTEMS 100A & 200A POLE MOUNTED REGULATOR MOUNTING FRAME 191618  
 11kV POLE MOUNTED VOLTAGE REGULATOR GROUND MOUNTED FIBREGLASS CABINET CONCRETE FOOTING DETAILS 191227

42 HONEYBUCKLE DRIVE,  
 NEWCASTLE WEST NSW 2300

STANDARD CONSTRUCTION  
 3 UNIT 11kV POLE MOUNTED REGULATOR  
 WITH GROUND MOUNTED CONTROL PANEL  
 CONSTRUCTION DETAIL

SCALE AS SHOWN  
 DESIGNED AS SHOWN  
 DRAWN BY [Name]  
 CHECKED BY [Name]  
 APPROVED BY [Name]  
 DATE 17/05/2021  
 PROJECT NUMBER STD  
 DRAWING No 224229  
 SHEET 1  
 REV 6