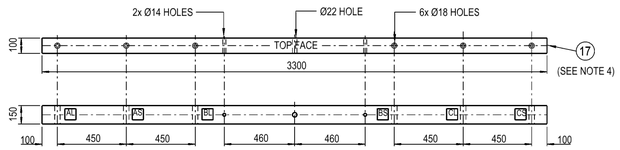
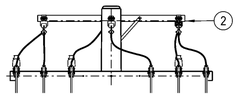
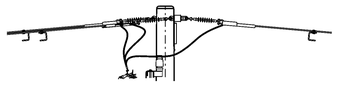
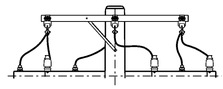


DETAIL 4
CROSSARM ITEM 17
TIMBER CROSSARM 3300 x 150 x 100mm
SCALE 1:20

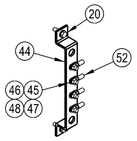




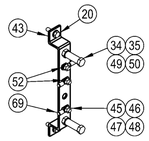
ARRANGEMENT 2
WITH CCSX OVERHEAD CONDUCTORS



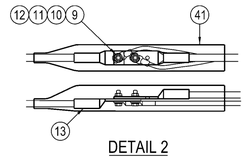
DETAIL 1
NOT TO SCALE



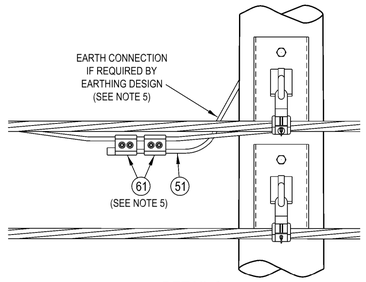
ITEM 44
TOP EARTH BAR



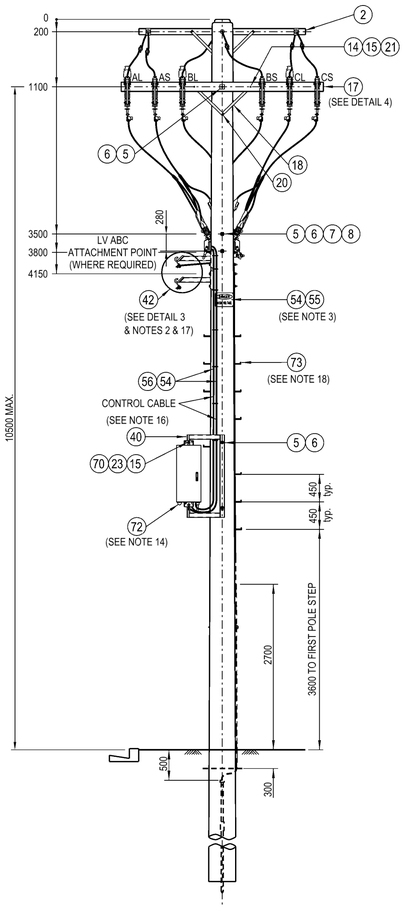
ITEM 43
BOTTOM EARTH BAR



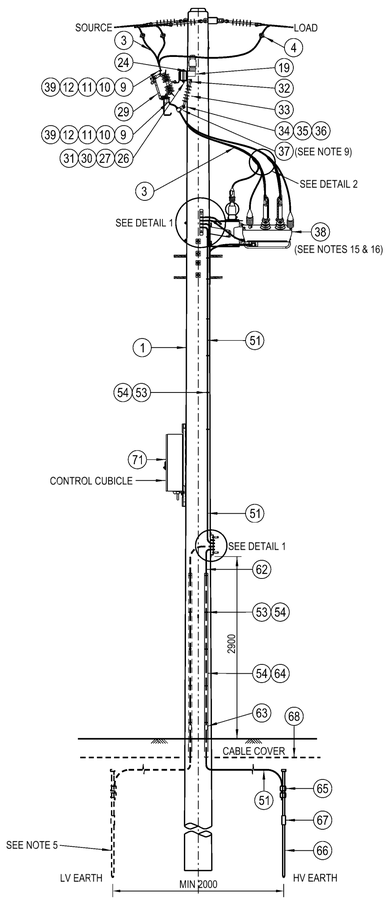
DETAIL 2
SCALE 1:5



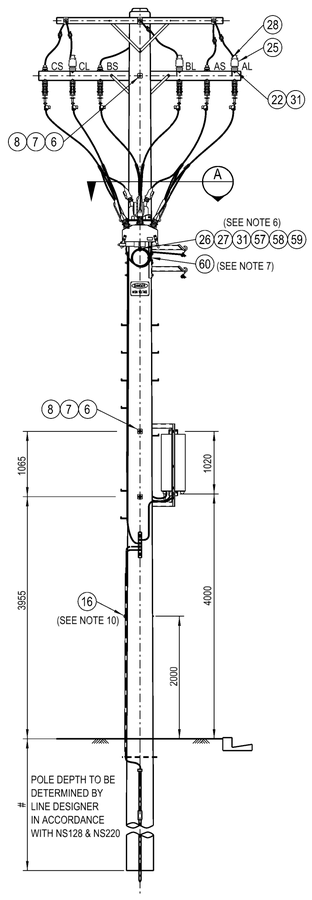
DETAIL 3
LV ABC NEUTRAL CONNECTION
(SEE NOTE 5)
SCALE 1:10



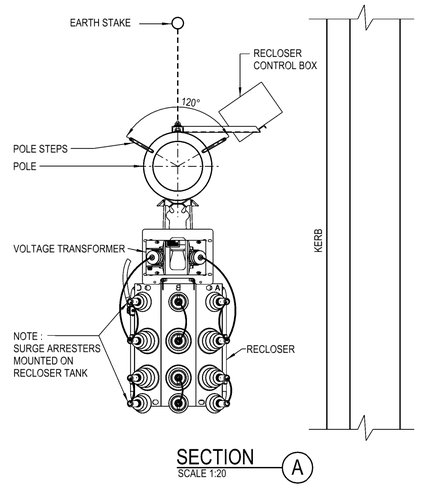
REAR VIEW
SCALE 1:50



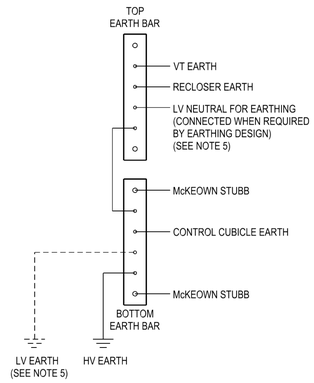
SIDE VIEW
SCALE 1:50



FRONT VIEW
SCALE 1:50



SECTION A
SCALE 1:20



EARTHING SCHEMATIC

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 RECLOSER. IF LV MAINS ARE PRESENT ON THE POLE, A 1-80 LV ABC INTERMEDIATE CONSTRUCTION MUST BE USED.
3. DANGER SIGNS (ITEM 55) ARE TO BE INSTALLED ON BOTH FRONT AND REAR OF THE POLE. SIGNS MUST BE BENT AROUND POLE BEFORE SECURING.
4. THE DROPOUT FUSE CROSSARM SHOULD NOT BE MOUNTED MORE THAN 10.5m ABOVE GROUND LEVEL TO ENABLE THE FUSES TO BE OPERATED FROM GROUND LEVEL WITH A LINK STICK. IF A GREATER MOUNTING HEIGHT IS REQUIRED TO MAINTAIN CLEARANCES, THE REGIONAL FIELD OPERATING GROUP NEED TO BE CONSULTED.
5. MOST NOJA RECLOSER INSTALLATIONS WILL ONLY REQUIRE A HV EARTH ARRANGEMENT. IF LV CONDUCTORS ARE ATTACHED TO THE POLE AND THE SITE SPECIFIC EARTHING DESIGN REQUIRES THE LV NEUTRAL CONDUCTOR BE CONNECTED TO THE RECLOSER EARTHING SYSTEM, DETAIL 3 SHOULD BE USED FOR THE CONNECTION AND THE LV EARTH ARRANGEMENT INSTALLAED TO CREATE A COMBINED HV/LV EARTHING SYSTEM. IF TWO LV MAINS CONDUCTORS ARE ON THE POLE, ONLY ONE LV NEUTRAL CONDUCTOR IS TO BE CONNECTED TO THE TOP EARTH BAR.
6. AFTER INSTALLATION OF THE RECLOSER AND CONTROL CUBICLE, THE OSM CONTROL CABLE AND VT OUTPUT CABLE THAT ARE SUPPLIED WITH THE RECLOSER ARE TO BE CONNECTED TO THE CONTROL CUBICLE VIA THE GLANDS AT THE BOTTOM OF THE CONTROL CUBICLE. ENSURE CABLE ROUTE DOES NOT HINDER PLACEMENT OF A LADDER ON THE POLE TO ACCESS CUBICLE. TYPICALLY CABLES TO ENTER BEHIND CUBICLE MOUNTING BRACKET. EXCESS CABLE IS TO BE COILED ON A CABLE STORAGE BRACKET BELOW THE RECLOSER. REFER TO THE MANUFACTURERS TECHNICAL DOCUMENTATION FOR FURTHER INFORMATION.
7. THE EXCESS CONTROL CABLING MUST BE SUITABLY SECURED TO THE CABLE STORAGE BRACKET WITH STAINLESS STEEL CABLE TIES. THE BOTTOM OF THE COIL MUST BE SECURED TO AVOID SWINGING IN THE WIND.
8. THE RECLOSER CONTROL CABLING MUST BE ATTACHED TO THE POLE A MINIMUM OF 200mm FROM ANY EARTHING DOWNLEAD CABLE.
9. THE SUSPENSION CLAMP (ITEM 37) MUST PROVIDE A FIRM CONNECTION TO THE HV DROPPER CABLE. IF REQUIRED, CONDUIT INSERTS MAY BE USED TO ACHIEVE AN EFFECTIVE CONNECTION.
10. EYE LAG BOLT TO BE INSTALLED 2m ABOVE GROUND LEVEL ON FOOTPATH SIDE OF POLE FOR ATTACHMENT OF OPERATORS "DANGER DO NOT OPERATE" TAG.
11. A SITE SPECIFIC EARTHING DESIGN IS REQUIRED FOR EACH RECLOSER INSTALLATION.
12. THE EARTHING SHOWN ON THIS DRAWING IS INDICATIVE ONLY. ADDITIONAL EARTHING MAY BE REQUIRED TO MEET THE EARTHING DESIGN REQUIRMENTS.
13. ENSURE BURIED EARTH CONDUCTORS ARE CENTRED UNDER CABLE PROTECTION COVER.
14. AN 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. THE NOJA RECLOSER TERMINALS ARE LABELLED A, B, C ON THE SOURCE SIDE OF THE RECLOSER AND R, S, T ON THE LOAD SIDE OF THE RECLOSER.
16. THE NOJA CONTROL CUBICLE CAN BE MOUNTED IN ANY ORIENTATION ON THE POLE THAT SUITS THE INSTALLATION LOCATION. THE DESIGNER MUST CONSIDER OPERATOR SAFETY AND CONTROL CUBICLE SECURITY BEFORE SPECIFYING THE CONTROL CUBICLE ORIENTATION. THE REGIONAL FIELD OPERATING GROUP SHOULD BE CONSULTED WHEN CONSIDERING OPTIONS FOR THE RECLOSER LOCATION AND CONTROL CUBICLE ORIENTATION.
17. THE LV ABC CONSTRUCTION CAN BE ATTACHED HIGHER ON THE POLE AS LONG AS A MINIMUM CLEARANCE OF 700mm CAN BE MAINTAINED BETWEEN THE LV CONDUCTOR AND THE 11kV NOJA CONNECTIONS.
18. POLE STEPS SHOULD ONLY BE INSTALLED ON POLES WHERE ACCESS FOR NORMAL MAINTENANCE VEHICLES CANNOT BE MAINTAINED FOR THE LIFE OF THE POLE. IF POLE STEPS ARE INSTALLED, THEY ARE TO COMPLY WITH THE REQUIREMENTS OF NETWORK STANDARD NS128.
19. REFER TO DESIGNER SAFETY REPORT D22/301144 FOR ATYPICAL HAZARDS ASSOCIATED WITH THIS STANDARD CONSTRUCTION.

ITEM	DESCRIPTION	DRG. No	STOCK CODE	QTY ARR-1	QTY ARR-2
73	STEP - POLE, SCREW-IN (SEE NOTE 18)	250144	185198	A/R	A/R
72	ANTENNA - LTE MIMO, GPS COMBO (SEE NOTE 14)		185409	1	1
71	MODEM - SIERRA, WIRELESS, RV50X		185100	1	1
70	WASHER - SPRING, M12, GALVANISED	518082	H12047	2	2
69	LUG - COMPRESSION, BI-METALLIC, M12 HOLE (TO SUIT MERCURY CONDUCTOR)	514053	H19675	1	1
68	COVER - CABLE, PROTECTOR, 150mm WIDE (SEE NOTE 13)		151084	A/R	A/R
67	COUPLER - EARTH ELECTRODE (TO SUIT Ø15mm ROD)		H31649	A/R	A/R
66	ELECTRODE - DRIVEN EARTH, Ø15x1800mm		H31631	A/R	A/R
65	CONNECTOR - COMPRESSION, PROFILE 6, COPPER (70mm² CONDUCTOR TO Ø15mm ROD)		H31699	2	2
64	GUARD - EARTH, COVER, 3m, BLACK, PVC		157552	1	1
63	LINK - COMPRESSION, BI-METALLIC (MERCURY (7/4.5AAC) TO 19/2.14 (70mm²) Cu CABLE)		187132	1	1
62	CONDUCTOR - MERCURY, 7/4.5AAC		H13433	A/R	A/R
61	CONNECTOR - INSULATION PIERCING, 95-150 LV ABC/95-150 LV ABC (SEE NOTE 5)		176591	2	2
60	STRAP - TIEDOWN, CABLE, 520x4.6mm, STAINLESS STEEL (SEE NOTE 7)		182644	A/R	A/R
59	SCREW - COACH, M16x100mm, GALVANISED		H40662	1	1
58	BOLT & NUT - M16, HEX, GALVANISED (LENGTH TO SUIT POLE)	515466		1	1
57	BRACKET - CABLE STORAGE, ADSS, FIBERLIGN (PLP PART No.: OFSCCM-02-400) (SEE NOTE 6)			1	1
56	SADDLE - CABLE, DOUBLE SIDED, GALVANISED (TO SUIT NOJA CONTROL CABLE)			A/R	A/R
55	SIGN - DANGER HIGH VOLTAGE (SEE NOTE 3)		H47012	2	2
54	SCREW - #12x45mm, SELF DRILLING		175567	A/R	A/R
53	SADDLE - CABLE, 127mm, HEAVY DUTY, DOUBLE SIDED, GALVANISED		176494	A/R	A/R
52	LUG - COMPRESSION, COPPER, Ø14mm HOLE (TO SUIT 70mm² CABLE)		74831	9	9
51	CONDUCTOR - 19/2.14(70mm²) COPPER, PVC COVERED, BLACK		60111	A/R	A/R
50	WASHER - SPRING, M16, STAINLESS STEEL	518082	96149	2	2
49	STUBB - EARTH, McKEOWN	520088	H108415	2	2
48	NUT - M12, HEX., STAINLESS STEEL	515467	8987	7	7
47	WASHER - SPRING, M12, STAINLESS STEEL	518082	143859	7	7
46	WASHER - FLAT, M12, STAINLESS STEEL	518081	49429	14	14
45	SCREW - SET, M12x30mm, HEX., STAINLESS STEEL	515467	H38528	7	7
44	BAR - EARTH, TOP, FLAT, TINNED COPPER, 50.8x6.3mm (SEE DETAIL 1)	222406	182110	1	1
43	BAR - EARTH, BOTTOM, FLAT, TINNED COPPER, 50.8x6.3mm (SEE DETAIL 1)	222406	182110	1	1
42	CONSTRUCTION - LV, OVERHEAD, ABC, INTERMEDIATE, 1-80 (SEE NOTES 2 & 17)	206544		1	1
41	COVER - ANIMAL PROTECTION (3 PHASE SET) (NKT PART NO.: CE-APC-T1)		186486	2	2
40	BRACKET - CONTROL BOX, OFFSET MOUNTING (AS PER ESSENTIAL ENERGY DRG: CEOM7111.83) (SEE NOTE 16)		186487	1	1
39	LUG - COMPRESSION, BI-METALLIC, M10 HOLE (TO SUIT CCSX159 CONDUCTOR) (CABAC PART NO. BL180-10)			12	12
38	RECLOSER - 11kV, NOJA, TYPE OSM15 (COMPLETE WITH CONTROL CUBICLE AND CONTROL CABLING) (SEE NOTES 15 & 16)			1	1
37	CLAMP - LV, SUSPENSION (SEE NOTE 9)		H113472	6	6
36	NUT - M16, NYLOC, HEX., STAINLESS STEEL		177122	6	6
35	WASHER - FLAT, M16, STAINLESS STEEL	518081	H39621	14	14
34	SCREW - SET, M16x40mm, HEX., STAINLESS STEEL	515457	H38413	8	8
33	INSULATOR - 11/22kV, LONGROD, 70kN (CLEVIS/TONGUE)		150375	6	6
32	PLATE - TWISTED, 170x50x6mm, GALVANISED	151086	176901	6	6
31	WASHER - FLAT, M16, GALVANISED	518081	177984	17	17
30	BOLT & NUT - M16x200mm, HEX., GALVANISED	515466	83725	6	6
29	LINK - 12/24kV, 630 AMP, OUTDOOR		58750	6	6
28	WIRE - TIE, PREFORMED, INSULATED, FOR CCSX159 (SET OF 6) (ENSTO REF. SO216.157)		186874	3	3
27	WASHER - CONICAL, M16, GALVANISED	518082	H39647	7	7
26	WASHER - SQUARE, 50x50x6mm, GALVANISED (Ø18mm HOLE)	518081	H39257	7	7
25	INSULATOR - 11kV, PIN POST, SHORT STUD		144584	3	3
24	BLOCK - GAIN, ALUMINIUM, 150mm		140290	1	1
23	BOLT & NUT - M12x30mm, HEX., GALVANISED	515466	46367	2	2
22	WASHER - SPRING, M16, GALVANISED			3	3
21	BOLT & NUT - M12x130mm, HEX., GALVANISED	515466	46805	2	2
20	SCREW - COACH, M12x100mm, GALVANISED		H40484	5	5
19	BRACKET - INSULATOR MOUNTING	256243		3	3
18	BRACE - CROSSARM, ANGLE, TYPE H, 740mm, GALVANISED	46	99119	2	2
17	CROSSARM - 3300x150x100mm, HARDWOOD (SEE DETAIL 4 & NOTE 4)		H23020	1	1
16	BOLT - EYED LAG, M8x110mm, STAINLESS STEEL (SEE NOTE 10)		182588	1	1
15	WASHER - FLAT, M12, GALVANISED	518081	177982	6	6
14	WASHER - CONICAL, M12, GALVANISED	518082	H39639	2	2
13	LUG - COMPRESSION, BI-METALLIC, 2 x M10 HOLES (TO SUIT CCSX159 CONDUCTOR) (CABAC PART NO. BL180LPB1030)	514053		6	6
12	NUT - M10, HEX., STAINLESS STEEL	515457	H39401	24	24
11	WASHER - SPRING, M10, STAINLESS STEEL	518082	50120	24	24
10	WASHER - FLAT, M10, STAINLESS STEEL	518081	49411	48	48
9	BOLT - M10x40mm, HEX., STAINLESS STEEL	515457	45096	24	24
8	WASHER - FLAT, M20, GALVANISED	518081	177986	5	5
7	WASHER - CONICAL, M20, GALVANISED	518082	H39655	5	5
6	WASHER - SQUARE, 75x75x6mm, GALVANISED (Ø22mm HOLE)	518081	H39231	6	6
5	BOLT & NUT - M20, HEX., GALVANISED (LENGTH TO SUIT POLE)	515466		5	5
4	JOINT - NON TENSION, IPC TO BARE (ENSTO REF. SLW34.A)		186864	6	
3	CONDUCTOR - 11kV CCSX159, 159mm², 19/3.26 AAAC		186858	A/R	A/R
2	CONSTRUCTION - 11kV, OVERHEAD, 2-11CCSX (EXCLUDING BRIDGES)	265890			1
	CONSTRUCTION - 11kV, OVERHEAD, 2-11 (EXCLUDING BRIDGES)	513915		1	
1	POLE - TIMBER (MINIMUM 12kN) (POLE LENGTH AS REQUIRED)	513988		1	1

CAD DRAWING
DO NOT MANUALLY AMEND

AMENDMENTS

1	DWN: P.R. CHK'D: P.J. APP'D: G.F.	DATE: 02/11/2022	REFERENCES TO ABS REMOVED FROM SECTION A DETAIL.
2	DWN: P.R. CHK'D: P.J. APP'D: G.F.	DATE: 09/02/2023	ITEM 41 DESCRIPTION AMENDED. SECTION A UPDATED.
3	DWN: P.R. CHK'D: P.J. APP'D: G.F.	DATE: 20/02/2025	CCT CHANGED TO CCSX. EARTHING CHANGED TO ALUMINIUM ABOVE GROUND

ASSOCIATED DRAWINGS

NETWORK STANDARD
Ausgrid
42 HONEYSUCKLE DRIVE,
NEWCASTLE WEST NSW 2300

SCALE	AS SHOWN
DESIGNED	P.JONES
DRAWN	P.RIOS
CHECKED	J.BROOKS
APPROVED	G.FORD
DATE	27/09/2022
PROJECT NUMBER	STD
TRIM REF NUMBER	-

STANDARD CONSTRUCTION
11kV NOJA TYPE OSM15 RECLOSER
MOUNTED ON A TIMBER POLE
GENERAL ARRANGEMENT

SIZE A1 | DRAWING No 258068 | SHEET 1 | REV 3

2024.1022

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258068-1.dgn 20/02/2025 10:04:10 AM