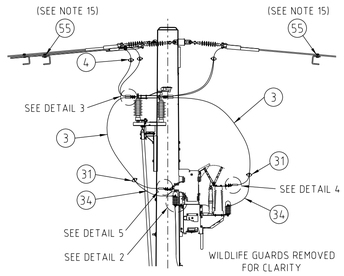
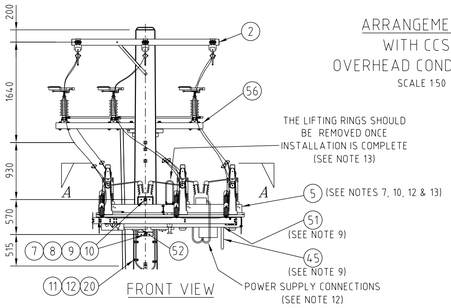
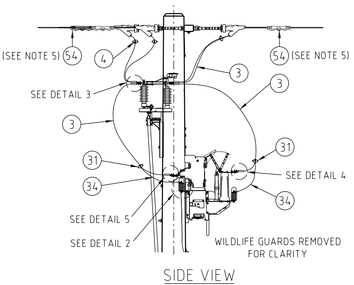


SIDE VIEW

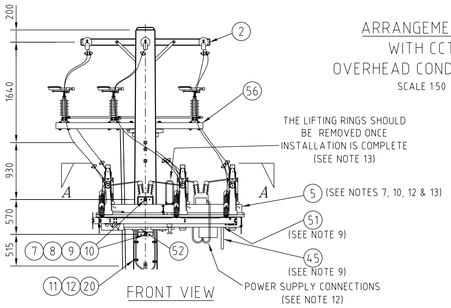


FRONT VIEW

ARRANGEMENT 2
WITH CCSX
OVERHEAD CONDUCTORS
SCALE 1:50

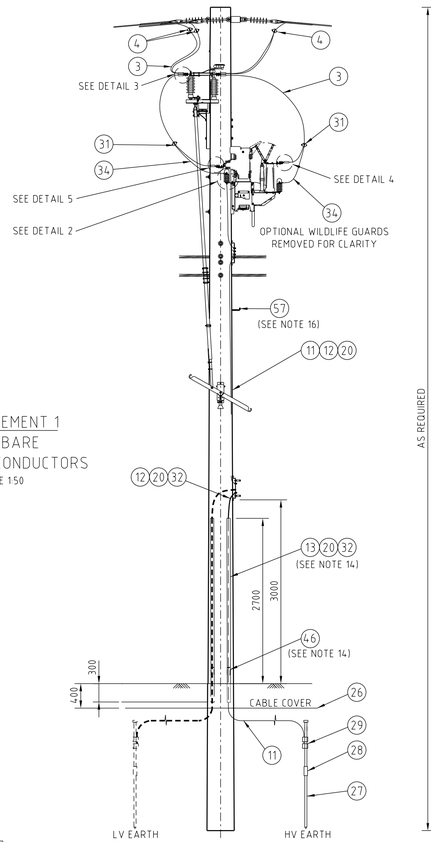


SIDE VIEW

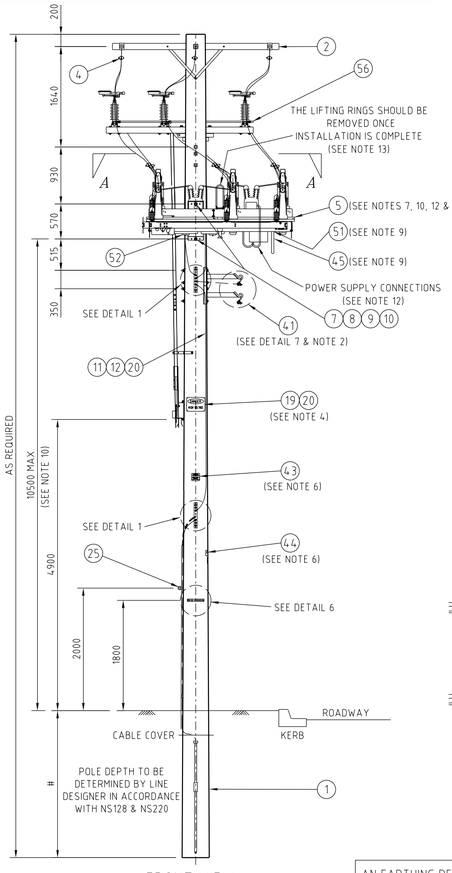


FRONT VIEW

ARRANGEMENT 3
WITH CCT
OVERHEAD CONDUCTORS
SCALE 1:50

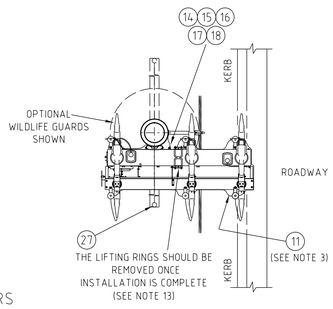


SIDE VIEW

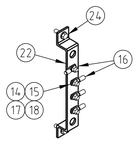


FRONT VIEW

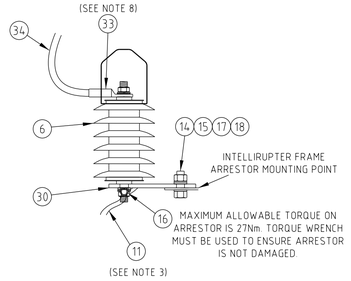
ARRANGEMENT 1
WITH BARE
OVERHEAD CONDUCTORS
SCALE 1:50



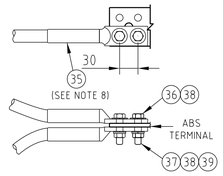
SECTION A-A
SCALE 1:50



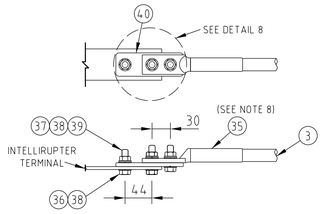
DETAIL 1
SCALE 1:10



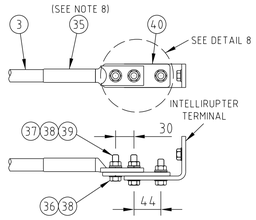
DETAIL 2
SURGE ARRESTER CONNECTIONS



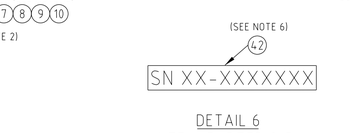
DETAIL 3
SCALE 1:5



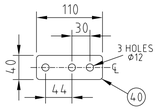
DETAIL 4
SCALE 1:5



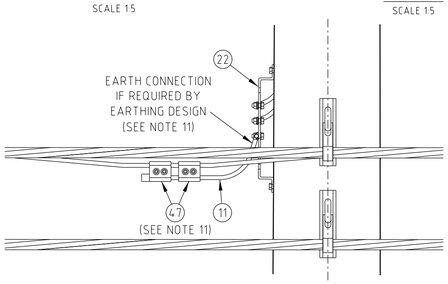
DETAIL 5
SCALE 1:5



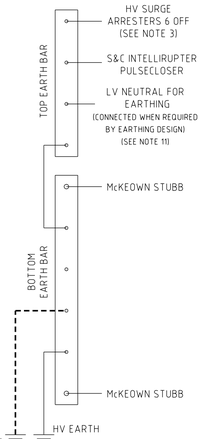
DETAIL 6
INTELLIRUPTER SIGN
SCALE 1:5



DETAIL 8
SCALE 1:5



DETAIL 7
LV ABC NEUTRAL CONNECTION
(SEE NOTE 11)
SCALE 1:10



EARTHING SCHEMATIC

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

EQUIPMENT WEIGHTS	
INTELLIRUPTER	460kg
AIR BREAK SWITCH	135kg

NOTES :

1. THE MINIMUM 11kV PHASE TO EARTH CLEARANCE IS 200mm. THE MINIMUM 11kV PHASE TO PHASE CLEARANCE IS 280mm.
2. IF LV MAINS EXIST, THE LV MAINS ATTACHMENT POINT IS TO BE DETERMINED BASED ON THE GROUND CLEARANCE REQUIREMENTS WHILST GIVING CONSIDERATION TO AUSGRID'S ELECTRICAL SAFETY RULES MINIMUM SAFE WORKING DISTANCES. WHERE BARE LV MAINS EXIST, THEY SHALL BE CONVERTED TO ABC FOR AT LEAST ONE SPAN EITHER SIDE OF THE INTELLIRUPTER. IF LV MAINS ARE PRESENT ON THE POLE, A 1-80 LV ABC INTERMEDIATE CONSTRUCTION MUST BE USED.
3. HV SURGE ARRESTERS ARE TO BE EARTHED BY DAISY CHAINING AND ELECTRICALLY BONDING TO THE TOP EARTH BAR USING 70mm² PVC INSULATED CONDUCTOR (ITEM 11).
4. DANGER SIGNS (ITEM 18) ARE TO BE INSTALLED ON BOTH FRONT AND REAR OF THE POLE. SIGNS MUST BE BENT AROUND POLE BEFORE SECURING.
5. WHERE 11kV CCT MAINS EXIST, STANDARD EARTHING POINTS AND COVERS ARE TO BE INSTALLED AS DETAILED IN NS126.
6. THE INTELLIRUPTER SIGNS (ITEMS 42, 43 & 44) ARE TO BE BENT AROUND POLE BEFORE SECURING. THE SERIAL NUMBER SIGN (ITEM 42) IS TO BE MOUNTED ON THE SAME POLE FACE AS THE INTELLIRUPTER 1800mm ABOVE GROUND LEVEL AT ALL SITES. THE SIGN IS TO BE MADE FROM 25mm HIGH UV STABLE WEATHERPROOF LETTERING AND CAN UTILISE POLE NUMBERING METHODS OR SIMILAR. THE EARTH CABLE SIGN (ITEM 43) IS TO BE MOUNTED BELOW THE EARTH BAR AT ALL SITES. THE UNDERGROUND EARTH CABLE SIGN (ITEM 44) IS TO BE MOUNTED ADJACENT TO THE POLE NUMBER.
7. THE INTELLIRUPTER IS TO BE LABELLED IN ACCORDANCE WITH NS158 TABLE 4.6 - "RECLOSERS & SECTIONALISERS". THE POLE NUMBER IS TO BE INSTALLED IN ACCORDANCE WITH NS148.
8. INSTALL MEDIUM WALLED MASTIC LINED BLACK HEATSHRINK OVER THE BARE LUG BARREL AND CABLE INSULATION.
9. THE ANTENNA USED MUST HAVE AN RF INDUSTRIES N-243 N ADAPTER M2M BARREL FITTED.
10. THE INTELLIRUPTER SHOULD BE MOUNTED SO THAT THE BOTTOM OF THE DISCONNECTOR OPERATING MECHANISM IS NOT MORE THAN 10.5 METRES ABOVE THE GROUND TO ALLOW FOR MANUAL OPERATION. EXCEPTIONS TO THIS MAY BE ACCEPTABLE IF LONGER OPERATING STICKS HAVE BEEN APPROVED FOR USE.
11. MOST INTELLIRUPTER 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 INTELLIRUPTER EARTHING SYSTEM, DETAIL 7 SHOULD BE USED FOR THE CONNECTION AND THE LV EARTH ARRANGEMENT INSTALLED 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.
12. AFTER INSTALLATION OF THE POWER MODULE, CONNECTIONS TO THE POWER SOCKET ON THE INTELLIRUPTER BODY AND THE VOLTAGE TRANSFORMER TERMINAL BLOCK ARE TO BE MADE VIA THE FLEXIBLE CONDUIT, SOCKETS AND CABLE SUPPLIED. REFER TO THE MANUFACTURERS TECHNICAL DOCUMENTATION FOR FURTHER INFORMATION.
13. AFTER INSTALLATION ON THE POLE IS COMPLETED, THE LIFTING RINGS ARE TO BE REMOVED FROM THE INTELLIRUPTER.
14. MERCURY (7/4.5 AAC) ALUMINIUM CONDUCTOR SHALL BE USED FROM THE BOTTOM EARTH BAR TO 300mm ABOVE GROUND WHERE 70mm² COPPER PVC INSULATED EARTH CONDUCTOR WILL BE EXTENDED FROM BI-METALLIC LINKS TO THE EARTH ELECTRODES.
15. WHERE CCSX CONDUCTORS ARE USED, IPC EARTH PARKING DEVICES ARE TO BE INSTALLED AS DETAILED IN NS126.
16. 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.
17. REFER TO DESIGNER SAFETY REPORT D20/415755 FOR ATYPICAL HAZARDS ASSOCIATED WITH THIS STANDARD CONSTRUCTION.

ITEM	DESCRIPTION	DRG. No	STOCK CODE	ARR-1 QTY	ARR-2 QTY	ARR-3 QTY
57	STEP - POLE SCREW-IN (SEE NOTE 16)	250144	185198	A/R	A/R	A/R
56	CONSTRUCTION - AIR BREAK SWITCH, 12/24kV, MID POLE OPERATED, 2-455	175902		1	1	1
55	EARTH - PARKING DEVICE, IPC CC TO EPD (ENSTO REF. SLW26 A2) (SEE NOTE 15)		186865		6	
54	COVER - CCT, EARTHING POINT (SEE NOTE 5)		144741			6
53	LUG - COMPRESSION, BI-METALLIC, M12 HOLE (TO SUIT MERCURY CONDUCTOR)	514053	H19675	1	1	1
52	MODEM - SIERRA WIRELESS RV50X		185100	1	1	1
51	ADAPTER - RF, RF INDUSTRIES N-243 (SEE NOTE 9)		PURCHASE	1	1	1
50	WASHER - SPRING, M16, STAINLESS STEEL	518082	96149	2	2	2
49	WASHER - FLAT, M16, STAINLESS STEEL	518081	H39621	2	2	2
48	SCREW - SET, M16x40mm, HEX., STAINLESS STEEL	515467	H38413	2	2	2
47	CONNECTOR - INSULATION PIERCING, 95-150 LV ABC/95-150 (SEE NOTE 11)		176591	2	2	2
46	LINK - COMPRESSION, BI-METALLIC (MERCURY (7/4.5AAC) TO 19/2.14 (70mm²) Cu CABLE) (SEE NOTE 14)		187132	1	1	1
45	ANTENNA - CELLULAR, BENELEC 02461 (SEE NOTE 9)		PURCHASE	1	1	1
	ANTENNA - CELLULAR, PANORAMA LPB-7-27-NJ (SEE NOTE 9)		185408			
44	SIGN - INTELLIRUPTER, UNDERGROUND EARTH CABLES (SEE NOTE 6)	222408	182141	1	1	1
43	SIGN - INTELLIRUPTER, EARTH CABLES (SEE NOTE 6)	222408	182142	1	1	1
42	SIGN - INTELLIRUPTER, SERIAL NUMBER (SEE NOTE 6)			1	1	1
41	CONSTRUCTION - LV, OVERHEAD, ABC, INTERMEDIATE, 500mm STANDOFF BRACKET, 1-80 (SEE NOTE 2)	206544		1	1	1
40	FLAG - CONVERSION, 38x6.35mm, TINNED COPPER (SEE DETAIL 8)			6	6	6
39	WASHER - SPRING, M10, STAINLESS STEEL	518082	50120	24	24	24
38	WASHER - FLAT, M10, STAINLESS STEEL	518081	49411	48	48	48
37	NUT - M10, HEX., STAINLESS STEEL	515467	H39401	24	24	24
36	SCREW - SET, M10x30mm, HEX., STAINLESS STEEL	515467	45088	24	24	24
35	LUG - COMPRESSION, BI-METALLIC, 2 x M10 HOLES (TO SUIT CCSX159 CONDUCTOR) (SEE NOTE 8)	514053	187563	18	18	18
34	CONDUCTOR - 11kV CCSX62, 62mm², 6/1/3.37 ACSR		186861	A/R	A/R	A/R
33	LUG - COMPRESSION, BI-METALLIC, M12 HOLE (TO SUIT CCSX62 CONDUCTOR) (SEE NOTE 8)	514053	187542	6	6	6
32	CONDUCTOR - MERCURY, 7/4.5AAC (SEE NOTE 14)		H13433	A/R	A/R	A/R
31	JOINT - NON TENSION, IPC TO IPC (ENSTO REF. SLW26 A)		186863	6	6	6
30	PLATE - TINNED COPPER (33kV UGOH TERMINATION PLATE)	116989	91132	6	6	6
29	CONNECTOR - COMPRESSION, PROFILE 6, COPPER (70mm² CONDUCTOR TO Ø15mm ROD)		H31699	A/R	A/R	A/R
28	COUPLER - EARTH ELECTRODE (TO SUIT Ø15mm ROD)		H31649	A/R	A/R	A/R
27	ELECTRODE - DRIVEN EARTH, Ø15mmx1800mm		H31631	A/R	A/R	A/R
26	COVER - CABLE, PROTECTOR, 150mm WIDE		151084	A/R	A/R	A/R
25	BOLT - EYED LAG, M8x110mm, STAINLESS STEEL		182589	1	1	1
24	SCREW - COACH, M12x100mm, GALVANISED		H40484	4	4	4
23	STUBB - EARTH, McKEOWN	520088	H108415	2	2	2
22	BAR - EARTH, TOP, FLAT, TINNED COPPER, 50.8x6.3mm (SEE DETAIL 1)	222406	182110	1	1	1
21	BAR - EARTH, BOTTOM, FLAT, TINNED COPPER, 50.8x6.3mm (SEE DETAIL 1)	222406	182110	1	1	1
20	SCREW - #12x45mm, SELF DRILLING		175567	A/R	A/R	A/R
19	SIGN - DANGER, HIGH VOLTAGE (SEE NOTE 4)		H47012	2	2	2
18	NUT - M12, HEX., STAINLESS STEEL	515467	8587	7	7	7
17	WASHER - SPRING, M12, STAINLESS STEEL	518082	143859	7	7	7
16	LUG - COMPRESSION, COPPER, Ø14mm HOLE (TO SUIT 70mm² CABLE)		74831	7	7	7
15	WASHER - FLAT, M12, STAINLESS STEEL	518081	49429	14	14	14
14	SCREW - SET, M12x30mm, HEX., STAINLESS STEEL	515467	H38528	7	7	7
13	GUARD - EARTH, COVER, 3m, BLACK, PVC	205775	157552	1	1	1
12	SADDLE - CABLE, 12.7mm, HEAVY DUTY, DOUBLE SIDED, GALVANISED		176494	A/R	A/R	A/R
11	CONDUCTOR - 19/2.14(70mm²) COPPER, PVC COVERED, BLACK (SEE NOTE 3)		60111	A/R	A/R	A/R
10	WASHER - FLAT, M20, GALVANISED	518081	177986	2	2	2
9	WASHER - CONICAL, M20, GALVANISED	518082	H39655	2	2	2
8	WASHER - SQUARE, 75x75x6mm (Ø22mm HOLE)	518081	H39231	4	4	4
7	BOLT & NUT - M20, HEX., GALVANISED (LENGTH TO SUIT POLE)	515466		2	2	2
6	ARRESTER - SURGE, 9kV, 10kA, POLYMERIC DISTRIBUTION TYPE, 12mm TOP & BOTTOM STUD (COMPLETE WITH BIRDCAP)		111948	6	6	6
5	INTELLIRUPTER - S&C, PULSECLOSER (WITH POWER MODULE) (SEE NOTES 7, 10, 12 & 13)		183071	1	1	1
4	JOINT - NON TENSION, IPC TO IPC (ENSTO REF. SLW26 A)		186863		6	6
	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	A/R
2	CONSTRUCTION - 11kV, OVERHEAD, 2-11CCT (EXCLUDING BRIDGES)	174962				1
	CONSTRUCTION - 11kV, OVERHEAD, 2-11CCSX (EXCLUDING BRIDGES)	265890			1	
	CONSTRUCTION - 11kV, OVERHEAD, 2-11 (EXCLUDING BRIDGES)	513915		1		
1	POLE - TIMBER (MINIMUM 8kN) (POLE LENGTH AS REQUIRED)	513988		1	1	1

ASSOCIATED DRAWINGS	
11kV S&C INTELLIRUPTER PULSECLOSER FOR CONTROLLING VOLTAGE REGULATOR	244228
11kV S&C INTELLIRUPTER PULSECLOSER	220041

AMENDMENTS			
CAD DRAWING DO NOT MANUALLY AMEND			
DWN: PATRICIA RIOS	APPD by: DOMINIC SHIELDS		
CHKD: PHILLIP JONES	DWN: P.R.		
6 DATE: 28/09/2020 CCT OPTION ADDED, MATERIAL LIST & NOTES AMENDED.	CHKD: P.J.		
7 DATE: 15/05/2025 CCT CHANGED TO CCSX, EARTHING CHANGED TO ALUMINIUM ABOVE GROUND.	APPD: G.F.		

NETWORK STANDARD
Ausgrid
42 HONEYSUCKLE DRIVE, NEWCASTLE WEST NSW 2300

SCALE	AS SHOWN
DESIGNED	D.DAFO
DRAWN	D.DAFO/P.JARVIS
CHECKED	M.ANDREWS
APPROVED	R.HUGHES
DATE	11/03/2011
PROJECT NUMBER	STD
TRIM REF NUMBER	-

STANDARD CONSTRUCTION
11kV S&C INTELLIRUPTER PULSECLOSER WITH BY-PASS AIR BREAK SWITCH MOUNTED ON A TIMBER POLE
GENERAL ARRANGEMENT

SIZE A1 | DRAWING No 220251 | SHEET 1 | REV 7

2024.1022

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