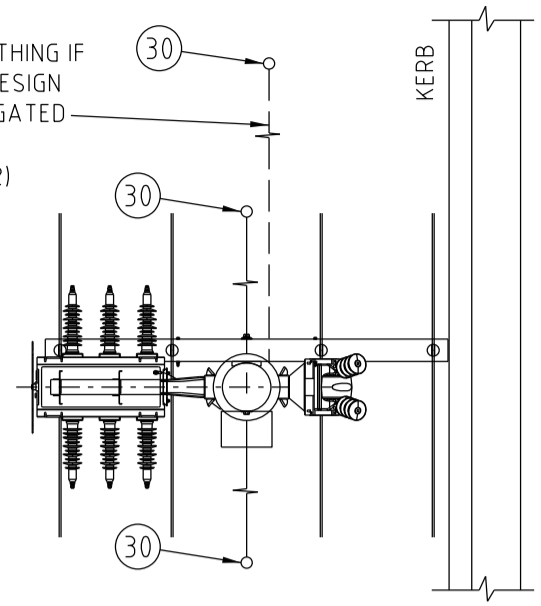


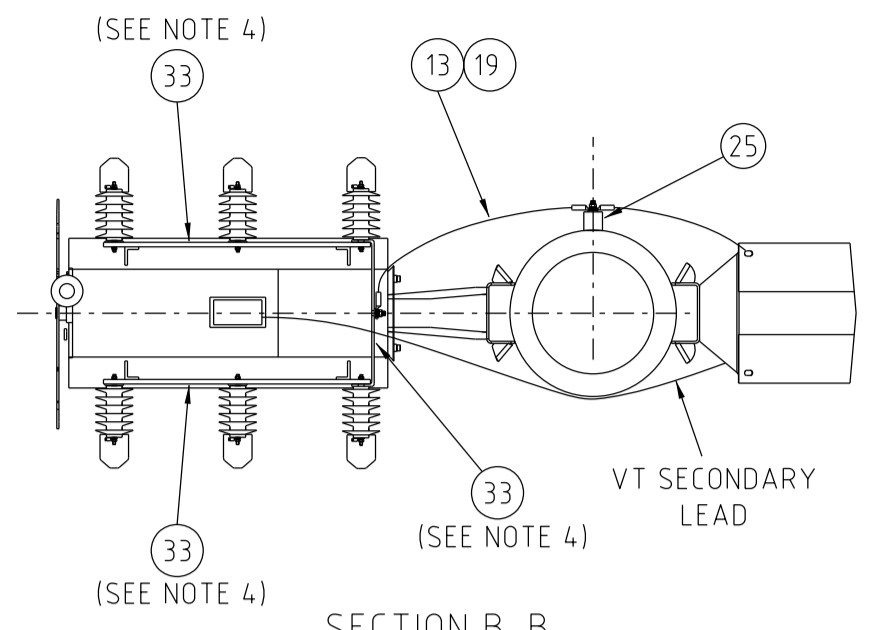
ITEM	DESCRIPTION	DRG. No	STOCK CODE	QTY
60	COVER - ANIMAL PROTECTION (3 PHASE SET) (NKT PART NO.: CE-APC-T1)		186486	2
59	CLAMP - PARALLEL GROOVE, 2-BOLT	514099	176946	A/R
58	LINK - COMPRESSION, BI-METALLIC (MERCURY 7/4.5 AAC) TO 19/2.14 (70mm ²) Cu CABLE)	514053	187132	A/R
57	LUG - COMPRESSION, BI-METALLIC, M12 HOLE (TO SUIT MERCURY CONDUCTOR)		H19675	2
56	WIRE - TIE, PREFORMED, INSULATED, FOR CCSX159 (SET OF 6) (ENSTO REF. SO216 157)		186874	2
55	INSULATOR - 11kV, PIN POST, LONG STUD		145052	6
54	WASHER - CONICAL, M16, GALVANISED	518082	H39647	6
53	WASHER - CONICAL, M12, GALVANISED	518082	H39639	4
52	WASHER - FLAT, M12, GALVANISED	518081	177982	8
51	BOLT & NUT - M12x130mm, HEX, GALVANISED	515466	46805	4
50	BRACE - CROSSARM, FLAT, 690mm, GALVANISED	514385	H17738	4
49	BLOCK - GAN, ALUMINIUM, 100mm		146274	2
48	CROSSARM - 2400x100x100mm, HARDWOOD		71589	2
47	CONDUCTOR - 11kV CCT80 (SUPPLIED WITH SWITCH)			A/R
46	JOINT - NON TENSION, IPC TO IPC (ENSTO REF. SLW26 A)		186863	2
45	JOINT - NON TENSION, IPC TO BARE (ENSTO REF. SLW34 A)		186863	6
44	ANTENNA - COMMUNICATIONS (SEE NOTE 11)			1
43	CABLE - CONTROL (SUPPLIED WITH SWITCH)			1
42	CUBICLE - CONTROL (SUPPLIED WITH SWITCH)			1
41	WASHER - SPRING, M10, STAINLESS STEEL	518082	50120	16
40	WASHER - FLAT, M10, STAINLESS STEEL	518081	49411	32
39	NUT - M10, HEX, STAINLESS STEEL	515467	H39401	16
38	BOLT - M10x30mm, HEX, STAINLESS STEEL	515467	45088	16
37	LUG - COMPRESSION, BI-METALLIC, 2 x M10 HOLES (TO SUIT CCSX159 CONDUCTOR) (CABAC PART NO. BL180.PF1030) (SEE NOTE 10)	514053		8
36	LUG - COMPRESSION, BI-METALLIC, 2 x M10 HOLES (TO SUIT CCT CONDUCTOR) (SEE NOTE 10)	514053		6
35	CONDUCTOR - 25mm ² , HENDRIX TAP CABLE			6m
34	LUG - COMPRESSION, COPPER, M12 HOLE (TO SUIT 25mm ² HENDRIX TAP CABLE) (SEE NOTE 10)			12
33	EARTH - BAR, SURGE ARRESTER, KIT (INCLUDES 2 x 50x3mm & 1 x 50x6.3mm TINNED COPPER EARTH BARS) (SEE NOTE 4)	224405	182462	1
32	CONNECTOR - COMPRESSION, PROFILE 6, COPPER (70mm ² CONDUCTOR TO Ø15mm ROD)		H31699	A/R
31	COUPLER - EARTH ELECTRODE (TO SUIT Ø15mm ROD)		H31649	A/R
30	ELECTRODE - DRIVEN EARTH, Ø15x1800mm		H31631	A/R
29	COVER - CABLE PROTECTOR, 150mm WIDE		151084	A/R
28	BOLT - EYED LAG, M8x110mm, STAINLESS STEEL		182589	1
27	SCREW - COACH, M12x100mm, GALVANISED		H40484	4
26	STUBB - EARTH, McKEOWN	520088	H108415	2
25	BAR - EARTH, TOP, FLAT, TINNED COPPER, 50 & 6.3mm (SEE DETAIL 1)	222406	182110	1
24	BAR - EARTH, BOTTOM, FLAT, TINNED COPPER, 50 & 6.3mm (SEE DETAIL 1)	222406	182110	1
23	SCREW - #12x45mm, SELF DRILLING		175567	A/R
22	SIGN - DANGER HIGH VOLTAGE (SEE NOTE 6)		H47012	2
21	NUT - M12, HEX, STAINLESS STEEL	515467	8987	A/R
20	WASHER - SPRING, M16, STAINLESS STEEL	518082	96149	A/R
19	LUG - COMPRESSION, COPPER, Ø14mm HOLE (TO SUIT 70mm ² CABLE)		74831	A/R
18	WASHER - FLAT, M12, STAINLESS STEEL	518081	49429	A/R
17	SCREW - SET, M12x30mm, HEX, STAINLESS STEEL	515467	H38528	A/R
16	GUARD - EARTH COVER, 3m, BLACK, PVC		157552	A/R
15	SADDLE - CABLE, 12.7mm, HEAVY DUTY, DOUBLE SIDED, GALVANISED		176494	A/R
14	CONDUCTOR - MERCURY, 7/4.5 AAC (SEE NOTE 5)		H13433	A/R
13	CONDUCTOR - 19/2.14 (70mm ²) COPPER, PVC COVERED, BLACK		60111	A/R
12	WASHER - FLAT, M20, GALVANISED	518081	177986	A/R
11	WASHER - CONICAL, M20, GALVANISED	518082	H39655	A/R
10	WASHER - SQUARE, 75x75x6mm, GALVANISED (Ø22mm HOLE)	518081	H39231	A/R
9	BOLT & NUT - M20, HEX, GALVANISED (LENGTH TO SUIT POLE)	515466		A/R
8	ARRESTER - 11kV, 10kA, POLYMERIC, SURGE, WITH CAP (SEE NOTE 4)		111948	6
7	SWITCH - 12kV, SCHNEIDER, RL SERIES, ENCLOSED, WITH VOLTAGE TRANSFORMER (SEE NOTES 2, 8 & 9)		181887	1
6	EARTH - PARKING DEVICE, IPC CC TO EPD (ENSTO REF. SLW26 A2) (SEE NOTE 7)		186865	6
5	CONDUCTOR - 11kV CCSX159, 159mm ² , 19/3.26 AAC		186858	A/R
4	CONDUCTOR - 11kV CCT (TO SUIT PHASE CONDUCTORS) (MINIMUM CCT 120) (SUPPLIED WITH SWITCH)			A/R
3	LINK - SAG, 70kN (PLP PART NO. CTSLEW70-1)			PURCHASE 3
2	CONSTRUCTION - 11kV, OVERHEAD, 2-11 CCSX (EXCLUDING BRIDGES)	265890		1
1	CONSTRUCTION - 11kV, OVERHEAD, 2-11 (EXCLUDING BRIDGES)	513915		1
1	POLE - TIMBER (MINIMUM 8kN) (POLE LENGTH AS REQUIRED)	513988		1

- NOTES:**
- THE MINIMUM 11kV PHASE TO EARTH CLEARANCE IS 200mm. THE MINIMUM 11kV PHASE TO PHASE CLEARANCE IS 280mm.
 - THE SWITCH CAN BE MOUNTED UP TO 8.5m ABOVE THE GROUND. HOWEVER, IF THE HEIGHT OF THE EXISTING LV MAINS IS SUCH THAT THE SWITCH NEEDS TO BE MOUNTED HIGHER TO MAINTAIN SPECIFIED CLEARANCES, THE REGIONAL FIELD OPERATING GROUP WILL NEED TO BE CONSULTED.
 - WHERE THE 1200mm CLEARANCE BETWEEN THE BARE LV MAINS AND THE BOTTOM OF THE SURGE ARRESTERS CANNOT BE MAINTAINED, CONSIDERATION SHOULD BE GIVEN TO MOVING THE INSTALLATION TO A MORE SUITABLE POLE BEFORE EITHER CONVERSION TO LV ABC FOR ONE SPAN EITHER SIDE OF THE ENCLOSED SWITCH, AS SHOWN ON DRG. 170234, OR REPLACING WITH A TALLER POLE.
 - HV SURGE ARRESTERS ARE TO BE EARTHED VIA THE EARTH BAR ARRANGEMENT (ITEM 33). THE EARTH BAR IS TO BE ELECTRICALLY BONDED TO THE MAIN EARTH CONDUCTOR USING 70mm² PVC INSULATED CONDUCTOR (ITEM 13).
 - 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. THE BI-METALLIC LINKS ARE TO BE STAGGERED UNDER THE CABLE COVER.
 - DANGER SIGNS ARE TO BE INSTALLED ON BOTH FRONT AND REAR OF THE POLE. SIGNS MUST BE BENT AROUND POLE BEFORE SECURING.
 - WHERE CCSX CONDUCTORS ARE USED, IPC EARTH PARKING DEVICES ARE TO BE INSTALLED AS DETAILED IN NS126.
 - THE VOLTAGE TRANSFORMER IS TO BE CONNECTED TO THE LINE SIDE OF THE ENCLOSED SWITCH WHEN THE SYSTEM IS CONFIGURED NORMALLY. ALTHOUGH THIS IS NOT MANDATORY.
 - THE ENCLOSED SWITCH IS TO BE LABELLED IN ACCORDANCE WITH NS158 TABLE 4.6 - 'RECLOSERS & SECTIONALISERS'. THE POLE NUMBER IS TO BE INSTALLED IN ACCORDANCE WITH NS148.
 - INSTALL MEDIUM WALLED MASTIC LINED BLACK HEATSHRINK OVER THE BARE LUG BARREL AND CABLE INSULATION.
 - AN EXTERNAL ANTENNA CAN BE INSTALLED WHERE REQUIRED. THE ACTUAL LOCATION OF THE ANTENNA ON THE POLE 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.
 - IF THE SITE SPECIFIC EARTHING DESIGN REQUIRES THE LV MAINS NEUTRAL TO BE CONNECTED TO THE ENCLOSED SWITCH EARTHING SYSTEM, DETAIL 3 SHOULD BE USED FOR THE CONNECTION. FOR A COMBINED EARTHING SYSTEM A CONNECTION IS TO BE MADE USING ITEM 59 AS SHOWN. FOR A SEGREGATED EARTHING SYSTEM, THE CABLE SHOWN IN DETAIL 3 AS ITEM 13 IS TO BE RUN DOWN THE POLE USING COPPER AND ALUMINIUM CABLES AS PER NOTE 5 TO A SEPARATE LV EARTH ROD SYSTEM.
 - REFER TO DESIGNER SAFETY REPORT D25/20002 FOR ATYPICAL HAZARDS ASSOCIATED WITH THIS STANDARD CONSTRUCTION.

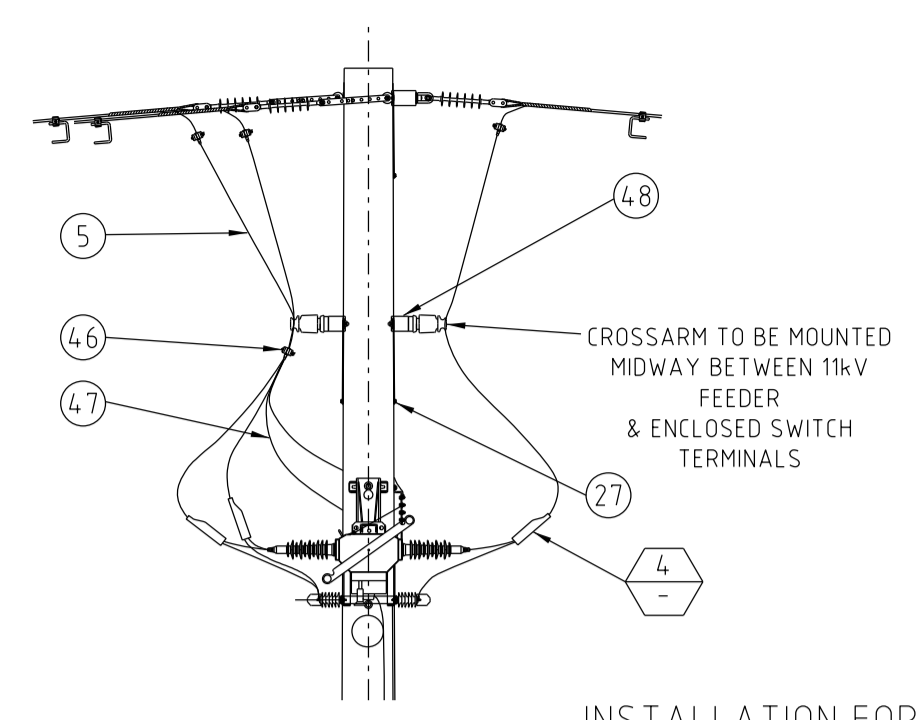
SEPARATE LV EARTHING IF SITE EARTHING DESIGN REQUIRES SEGREGATED EARTHING (SEE NOTE 12)



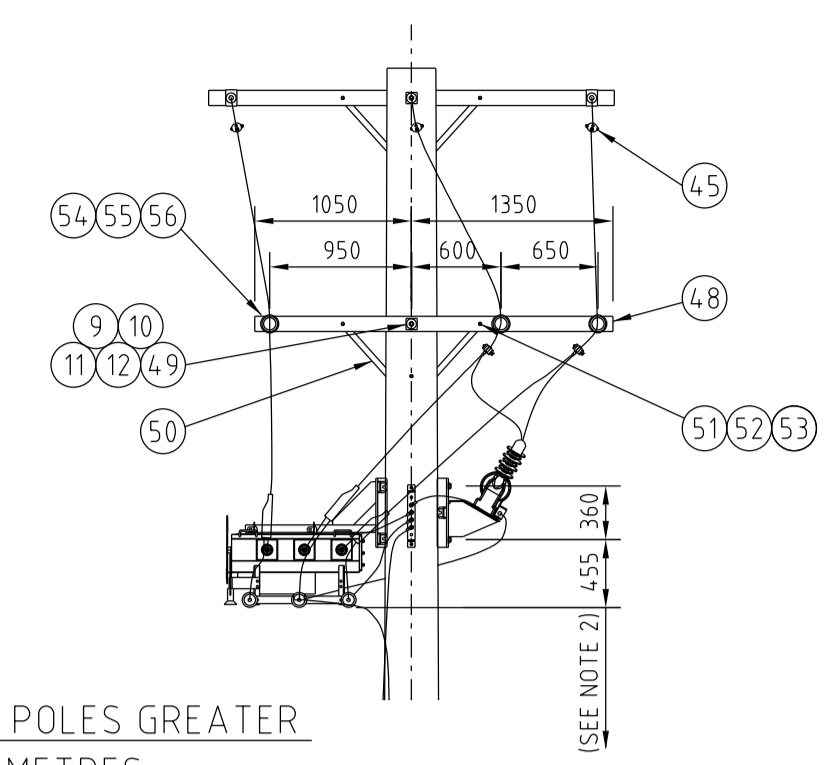
SECTION A-A
SCALE 150



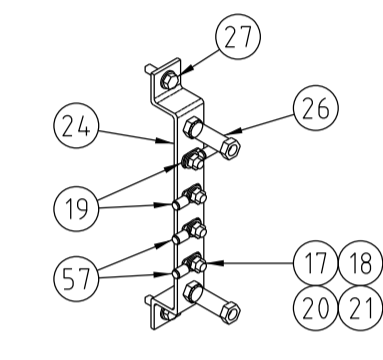
SECTION B-B
SCALE 120



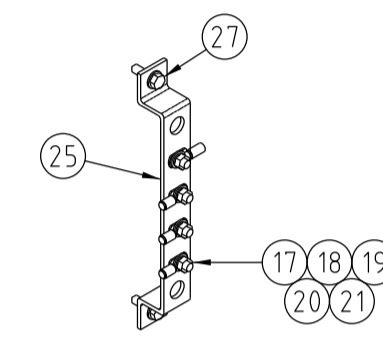
INSTALLATION FOR POLES GREATER THAN 12.5 METRES
SCALE 150



EQUIPMENT WEIGHTS	
ENCLOSED SWITCH	100kg
ENCLOSED SWITCH MOUNTING BRACKET	20kg
ENCLOSED SWITCH CONTROL CABINET	4.5kg
VOLTAGE TRANSFORMER	4.3kg
VOLTAGE TRANSFORMER MOUNTING BRACKET	8kg

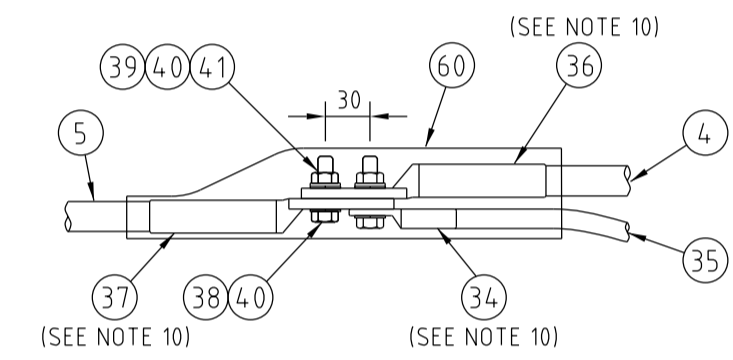


ITEM 24
BOTTOM EARTH BAR

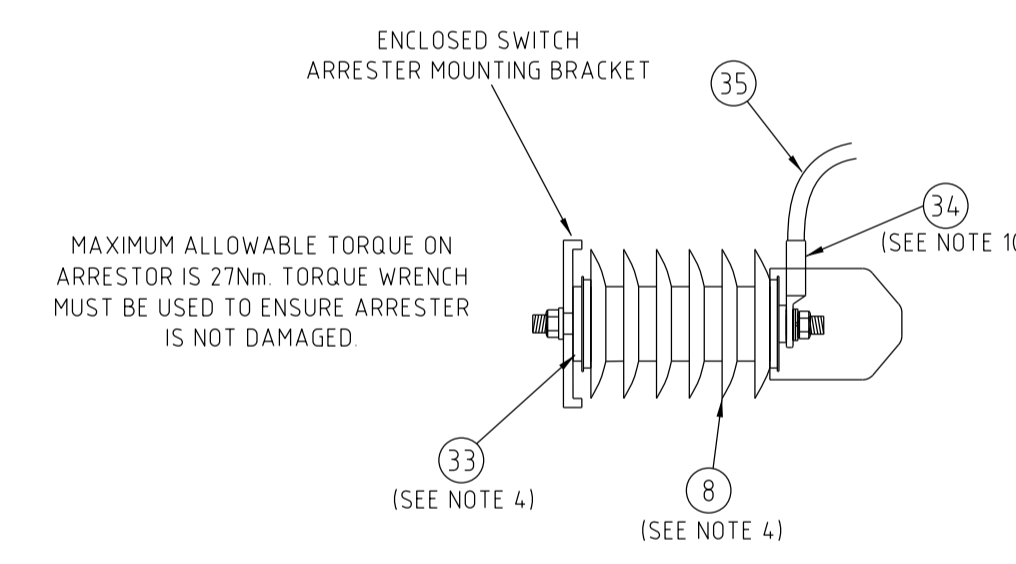


ITEM 25
TOP EARTH BAR

DETAIL 1
SCALE 110

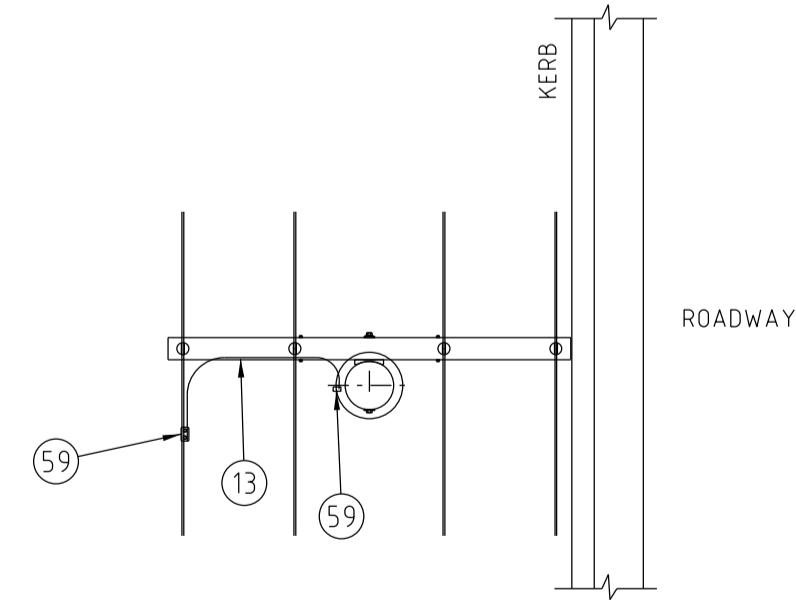


DETAIL 4
SCALE 15

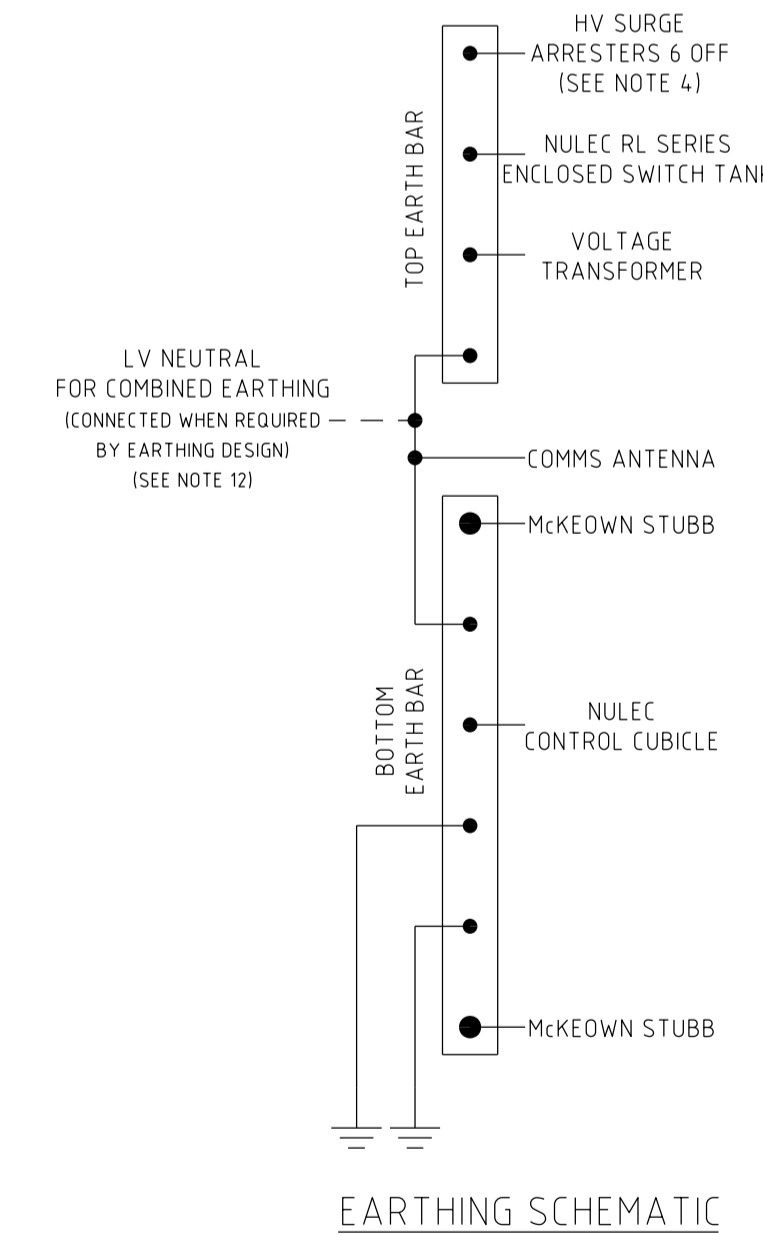


MAXIMUM ALLOWABLE TORQUE ON ARRESTER IS 27Nm. TORQUE WRENCH MUST BE USED TO ENSURE ARRESTER IS NOT DAMAGED.

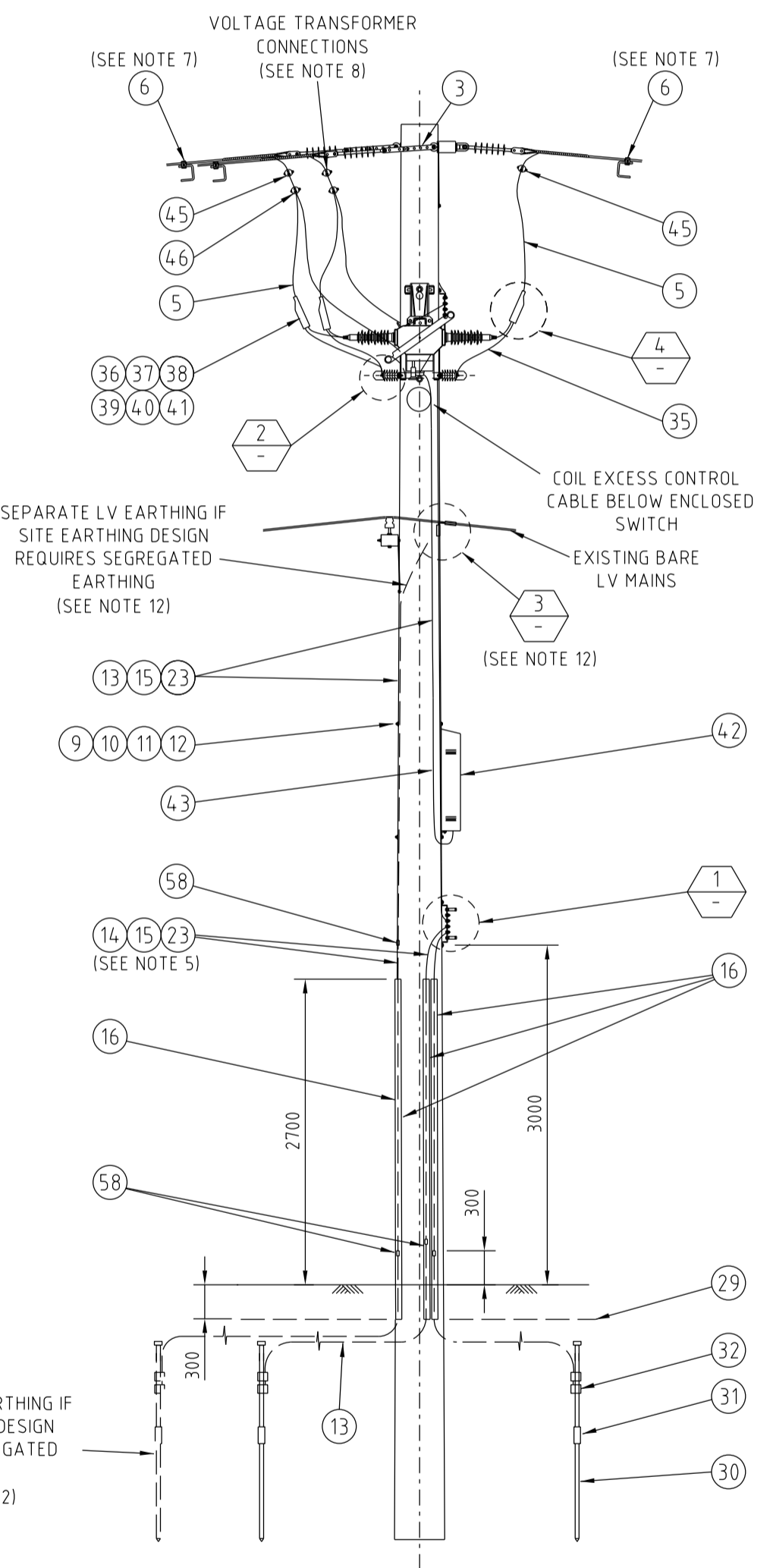
DETAIL 2
SCALE 15



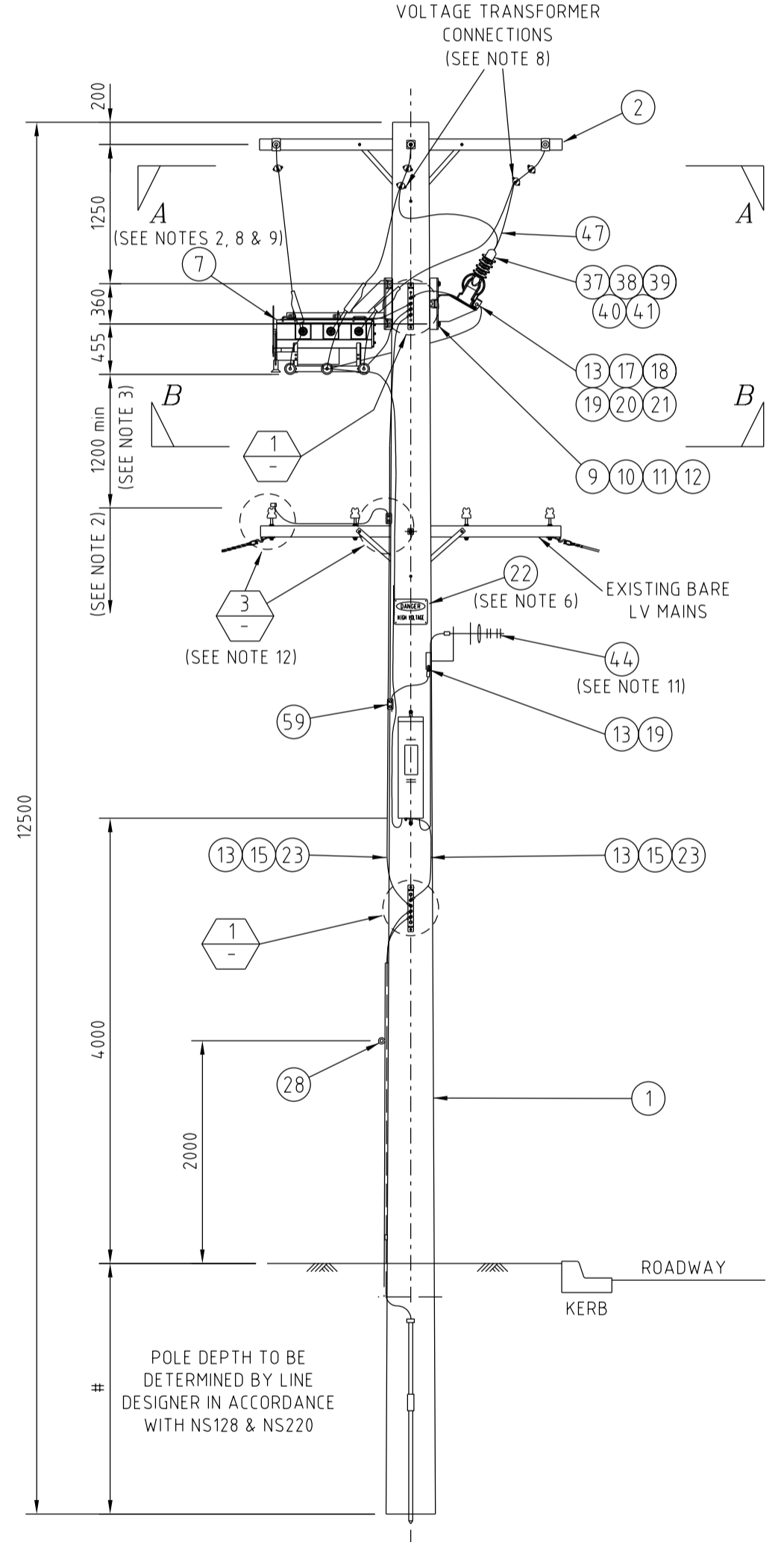
DETAIL 3
SCALE 150
LV NEUTRAL CONNECTION
(REFER NOTE 12)



EARTHING SCHEMATIC



SIDE VIEW
SCALE 150



FRONT VIEW
SCALE 150

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

ITEM	DESCRIPTION	DRG. No	STOCK CODE	QTY
60	COVER - ANIMAL PROTECTION (3 PHASE SET) (NKT PART NO. CE-APC-T1)		186486	2
59	CLAMP - PARALLEL GROOVE, 2-BOLT	514099	178946	A/R
58	LINK - COMPRESSION, BI-METALLIC (MERCURY 7/4.5AAC) TO 19/2.14 (70mm ² Cu CABLE)		187132	A/R
57	LUG - COMPRESSION, BI-METALLIC, M12 HOLE (TO SUIT MERCURY CONDUCTOR)	514053	H19675	2
56	WIRE - TIE, PREFORMED, INSULATED, FOR CCSX159 (SET OF 6) (ENSTO REF. S0216.157)		186874	2
55	INSULATOR - 11kV, PIN POST, LONG STUD		145052	6
54	WASHER - CONICAL, M16, GALVANISED	518082	H39647	6
53	WASHER - CONICAL, M12, GALVANISED	518082	H39639	4
52	WASHER - FLAT, M12, GALVANISED	518081	H17982	8
51	BOLT & NUT - M12x130mm, HEX, GALVANISED	515466	48905	4
50	BRACE - CROSSARM, FLAT, 60mm, GALVANISED	514385	H17738	4
49	BLOCK - GAIN, ALUMINIUM, 100mm		146274	2
48	CROSSARM - 240x100x100mm, HARDWOOD		71589	2
47	CONDUCTOR - 11kV CCT80 (SUPPLIED WITH SWITCH)			A/R
46	JOINT - NON TENSION, IPC TO IPC (ENSTO REF. SLW26 A)		186863	2
45	JOINT - NON TENSION, IPC TO IPC (ENSTO REF. SLW26 A)		186863	6
44	JOINT - NON TENSION, IPC TO BARE (ENSTO REF. SLW34 A)		186864	1
44	ANTENNA - COMMUNICATIONS (SEE NOTE 11)			1
43	CABLE - CONTROL (SUPPLIED WITH SWITCH)			1
42	CUBICLE - CONTROL (SUPPLIED WITH SWITCH)			1
41	WASHER - SPRING, M10, STAINLESS STEEL	518082	50120	16
40	WASHER - FLAT, M10, STAINLESS STEEL	518081	49411	32
39	NUT - M10, HEX, STAINLESS STEEL	515467	H39401	16
38	BOLT - M10x30mm, HEX, STAINLESS STEEL	515467	45088	16
37	LUG - COMPRESSION, BI-METALLIC, 2 x M10 HOLES (TO SUIT CCSX159 CONDUCTOR)	514053		8
36	LUG - COMPRESSION, BI-METALLIC, 2 x M10 HOLES (TO SUIT CCT CONDUCTOR) (SEE NOTE 10)	514053		6
35	CONDUCTOR - 25mm ² HENDRIX TAP CABLE			6m
34	LUG - COMPRESSION, COPPER, M12 HOLE (TO SUIT 25mm ² HENDRIX TAP CABLE) (SEE NOTE 10)			12
33	EARTH BAR SURGE ARRESTER KIT (INCLUDES 2 x 50x3mm & 1 x 50x6.3mm TINNED COPPER EARTH BARS) (SEE NOTE 4)	224405	182462	1
32	CONNECTOR - COMPRESSION, PROFILE 6, COPPER (70mm ² CONDUCTOR TO Ø15mm ROD)		H31699	A/R
31	COUPLER - EARTH ELECTRODE (TO SUIT Ø15mm ROD)		H31649	A/R
30	ELECTRODE - DRIVEN EARTH, Ø15x180mm		H31631	A/R
29	COVER - CABLE, PROTECTOR, 150mm WIDE		151084	A/R
28	BOLT - EYED LAG, M8x110mm, STAINLESS STEEL		182989	1
27	SCREW - COACH, M12x100mm, GALVANISED		H40484	4
26	STUBB - EARTH, McKEOWN	520088	H108415	2
25	BAR - EARTH, TOP, FLAT, TINNED COPPER, 50.8x6.3mm (SEE DETAIL 1)	222406	182110	1
24	BAR - EARTH, BOTTOM, FLAT, TINNED COPPER, 50.8x6.3mm (SEE DETAIL 1)	222406	182110	1
23	SCREW - #12x45mm, SELF DRILLING		175567	A/R
22	SIGN - DANGER HIGH VOLTAGE (SEE NOTE 6)		H47012	2
21	NUT - M12, HEX, STAINLESS STEEL	515467	8987	2
20	WASHER - SPRING, M16, STAINLESS STEEL	518082	96149	A/R
19	LUG - COMPRESSION, COPPER, Ø14mm HOLE (TO SUIT 70mm ² CABLE)		74831	A/R
18	WASHER - FLAT, M12, STAINLESS STEEL	518081	49429	A/R
17	SCREW - SET, M12x30mm, HEX, STAINLESS STEEL	515467	H38528	A/R
16	GUARD - EARTH COVER, 3m, BLACK, PVC		157552	A/R
15	SADDLE - CABLE, 12.7mm, HEAVY DUTY, DOUBLE SIDED, GALVANISED		176494	A/R
14	CONDUCTOR - MERCURY, 7/4.5AAC (SEE NOTE 5)		H13433	A/R
13	CONDUCTOR - 19/2.14(70mm ²) COPPER, PVC COVERED, BLACK		60111	A/R
12	WASHER - FLAT, M20, GALVANISED	518081	H177986	A/R
11	WASHER - CONICAL, M20, GALVANISED	518082	H39655	A/R
10	WASHER - SQUARE, 75x75x6mm, GALVANISED (Ø22mm HOLE)	518081	H39231	A/R
9	BOLT & NUT - M20, HEX, GALVANISED (LENGTH TO SUIT POLE)	515466		A/R
8	ARRESTER - 11kV, 10kA, POLYMERIC, SURGE, WITH CAP (SEE NOTE 4)		111948	6
7	SWITCH - 12kV SCHNEIDER, RL SERIES, ENCLOSED, WITH VOLTAGE TRANSFORMER (SEE NOTES 2, 8 & 9)		181887	1
6	EARTH - PARKING DEVICE, IPC CC TO EPD (ENSTO REF. SLW26 A2) (SEE NOTE 7)		186865	6
5	CONDUCTOR - 11kV CCSX159, 159mm ² , 19/3.28 AAC		186858	A/R
4	CONDUCTOR - 11kV CCT (TO SUIT PHASE CONDUCTORS) (MINIMUM CCT 120) (SUPPLIED WITH SWITCH)			A/R
3	LINK - SAG, 70kN (PLP PART NO. CTSLEW-70-1)			PURCHASE 3
2	CONSTRUCTION - 11kV, OVERHEAD, 2-11CCSX (EXCLUDING BRDGES)	265890		1
1	CONSTRUCTION - 11kV, OVERHEAD, 2-11 (EXCLUDING BRDGES)	513915		3
1	POLE - TIMBER (MINIMUM 8kN) (POLE LENGTH AS REQUIRED)	513988		1

SCALE	AS SHOWN	STANDARD CONSTRUCTION
DESIGNED	P.JARVIS	11kV SCHNEIDER RL SERIES
DRAWN	P.JARVIS	POLE MOUNTED ENCLOSED SWITCH
CHECKED	M.ANDREWS	MOUNTED OVER BARE LV MAINS
APPROVED	D.GRCEV	GENERAL ARRANGEMENT
DATE	21/09/2012	
PROJECT NUMBER	STD	
TRIM REF NUMBER	-	

2024-1022

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2024-1022

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SCALE	AS SHOWN	STANDARD CONSTRUCTION
DESIGNED	P.JARVIS	11kV SCHNEIDER RL SERIES
DRAWN	P.JARVIS	POLE MOUNTED ENCLOSED SWITCH
CHECKED	M.ANDREWS	MOUNTED OVER BARE LV MAINS
APPROVED	D.GRCEV	GENERAL ARRANGEMENT
DATE	21/09/2012	
PROJECT NUMBER	STD	
TRIM REF NUMBER	-	

228901

1

2