

SECTION A-A
SCALE 1:50

SECTION B-B
SCALE 1:20

INSTALLATION FOR POLES GREATER THAN 12.5 METRES

(SEE NOTE
SCALE 1:50)

(SEE N)

~~DETAIL~~ 

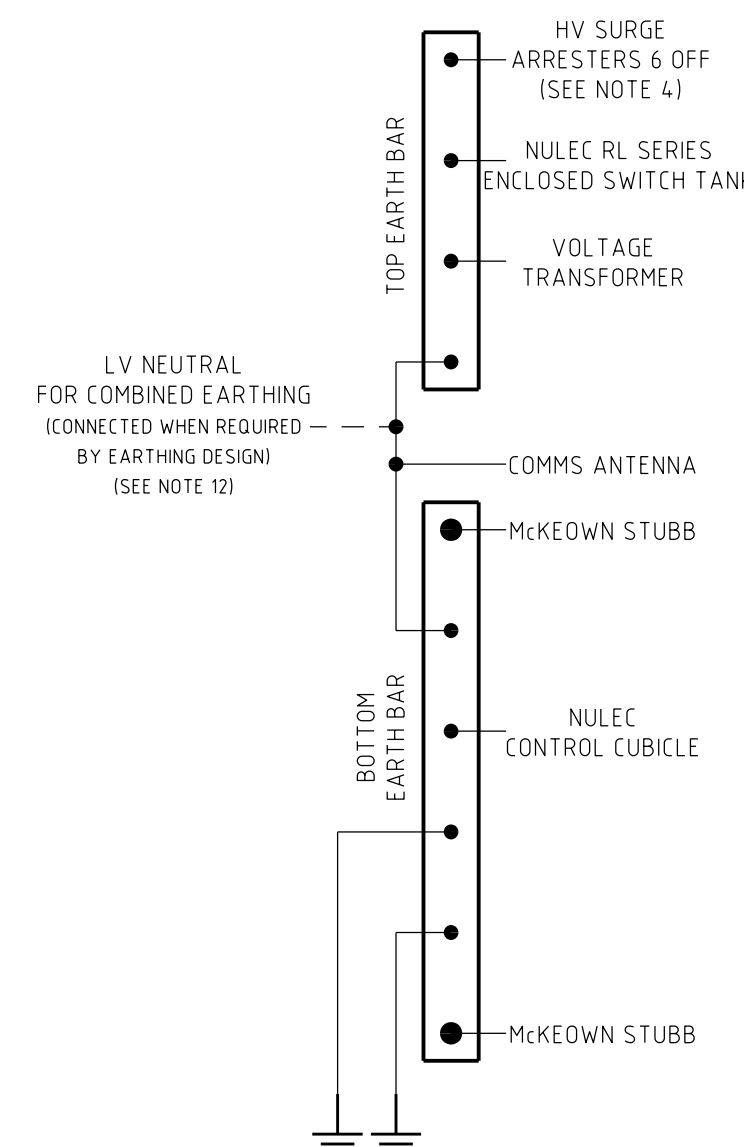
~~SCALE 1:10~~

DETAIL 
SCALE 1:5

DETAIL 
SCALE 1:5

DETAIL 
SCALE 1:50

LV NEUTRAL CONNECTION
(REFER NOTE 12)



EQUIPMENT WEIGHTS	
ENCLOSED SWITCH	100kg
ENCLOSED SWITCH MOUNTING BRACKET	20kg
ENCLOSED SWITCH CONTROL CABINET	45kg
VOLTAGE TRANSFORMER	43kg
VOLTAGE TRANSFORMER MOUNTING BRACKET	8kg

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 SAAC) TO 19/2 1/4 (70mm) CU CABLE)			187132	A/R
57	WLG - COMPRESSION, BI-METALLIC, M12 HOLE (TO SUIT MERCURY CONDUCTOR)	514053		119675	2
56	WIRE - TIE, PRE-FORMED, 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		117738	4
49	BLOCK - GAIN, ALUMINIUM, 100mm			146274	
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 IPC (ENSTO REF. SLW26 A)			186863	6
	JOINT - NON TENSION, IPC TO BARE (ENSTO REF. SLW34 A)			186864	
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	WLG - COMPRESSION, BI-METALLIC, 2 x M10 HOLES (TO SUIT CCSX159 CONDUCTOR) (CABAC PART NO. BL180LPB1030) (SEE NOTE 10)	514053			8
36	WLG - COMPRESSION, BI-METALLIC, 2 x M10 HOLES (TO SUIT CCT CONDUCTOR) (SEE NOTE 10)	514053			6m
35	CONDUCTOR - 25mm ² , HENDRIX TAP CABLE				12
34	WLG - COMPRESSION, COPPER, M12 HOLE (TO SUIT 25mm ² HENDRIX TAP CABLE) (SEE NOTE 10)				1
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		182589		1
27	SCREW - COACH, M12x100mm, GALVANISED		H40044		4
26	STUBB - EARTH, McKEOWN	520088	110845		2
25	BAR - EARTH, TOP, FLAT, TINNED COPPER, 50.8x6.3mm (SEE DETAIL 1)	222406	182210		1
24	BAR - EARTH, BOTTOM, FLAT, TINNED COPPER, 50.8x6.3mm (SEE DETAIL 1)	222406	182210		1
23	SCREW - 1/2x24mm, 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	WLG - COMPRESSION, COPPER, Ø14mm HOLE (TO SUIT 70mm ² CABLE)		74631		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 SAAC (SEE NOTE 5)		113433		A/R
13	CONDUCTOR - 19/2 1/4 (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 1 & 8, 9)		181887		1
6	EARTH - PARKING DEVICE, IPC CO 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, 79kN (PLP PART NO. CTSLEW-70-1)				PURCHASE
2	CONSTRUCTION - 11kV, OVERHEAD, 2-11CCSX (EXCLUDING BRIDGES)	265890			1
1	CONSTRUCTION - 11kV, OVERHEAD, 2-11 (EXCLUDING BRIDGES)	513915			3
1	POLE - TIMBER (MINIMUM 8x8) (POLE LENGTH AS REQUIRED)	513988			1
ITEM	DESCRIPTION	DRG. No	STOCK CODE	QTY	

- NOTES :**
1. THE MINIMUM 11KV PHASE TO EARTH CLEARANCE IS 200mm. THE MINIMUM 11KV PHASE TO PHASE CLEARANCE IS 280mm.
 2. 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.
 3. 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.
 4. 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).
 5. 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.
 6. DANGER SIGNS ARE TO BE INSTALLED ON BOTH FRONT AND REAR OF THE POLE. SIGNS MUST BE BENT AROUND POLE BEFORE SURVEY.
 7. WHERE CCS CONDUCTORS ARE USED, IPE EARTH PARKING DEVICES ARE TO BE INSTALLED AS DETAILED IN NS126.
 8. 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.
 9. THE ENCLOSED SWITCH IS TO BE LABELED IN ACCORDANCE WITH NS158 TABLE 4.6 - RECLOSERS & SECTIONALISERS'. THE POLE NUMBER IS TO BE INSTALLED IN ACCORDANCE WITH NS148.
 10. INSTALL MEDIUM WALL MOUNTED MASTIC LINED BLACK HEATSHRINK OVER THE BARE LUG BARREL AND CABLE INSULATION.
 11. 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.
 12. THE EARTH POLE IS TO BE EARTHED USING A 70mm² COPPER PVC INSULATED EARTH CONDUCTOR 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.
 13. REFER TO DESIGNER SAFETY REPORT D25/20002 FOR ATYPICAL HAZARDS ASSOCIATED WITH THIS STANDARD CONSTRUCTION.

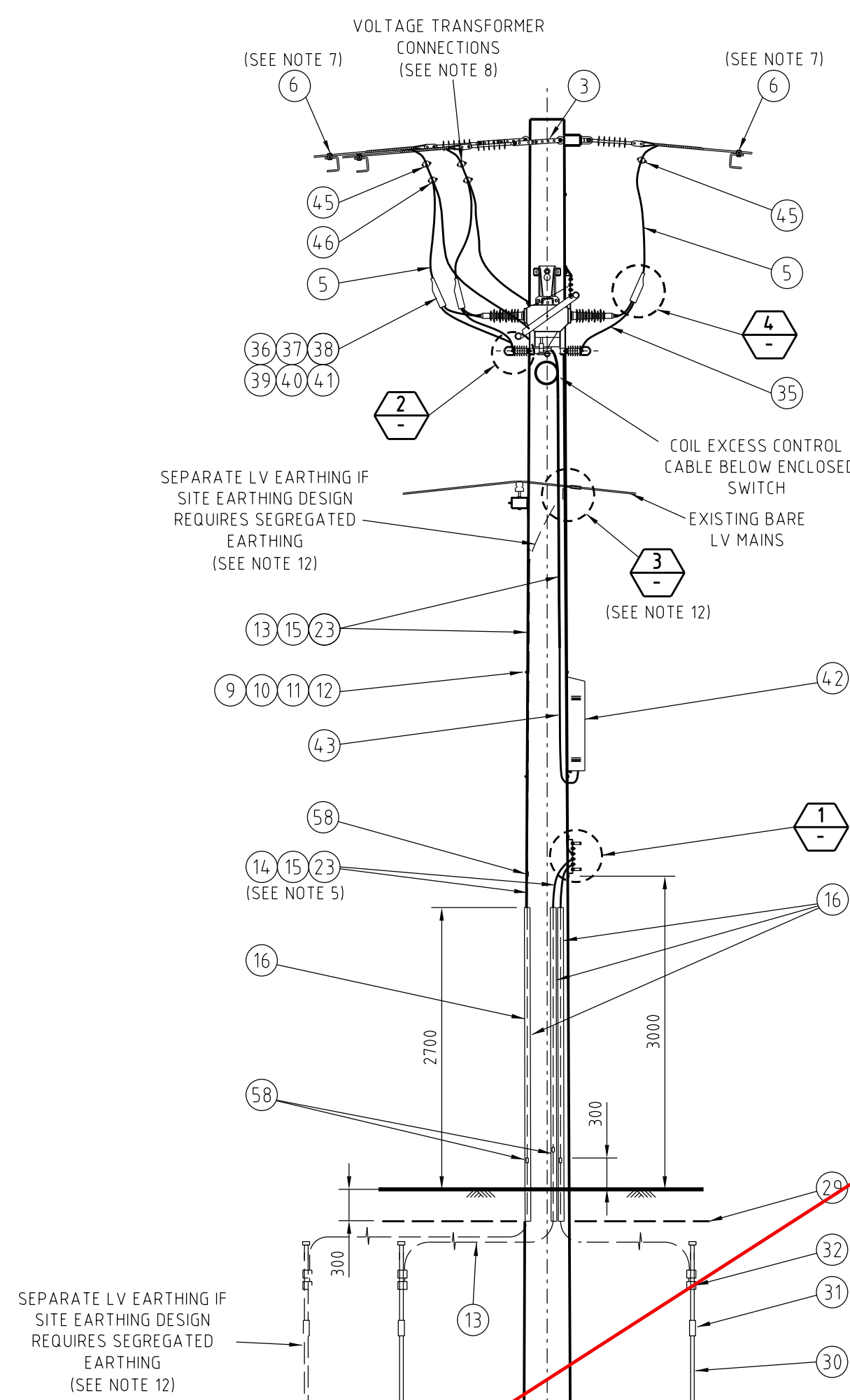
Technical drawing of a 10kV distribution line tower. The main drawing shows the tower structure with various components labeled with numbers and letters. A large red diagonal stamp reads "SUPERCEDED BY DRG-170234".

Labels and Notes:

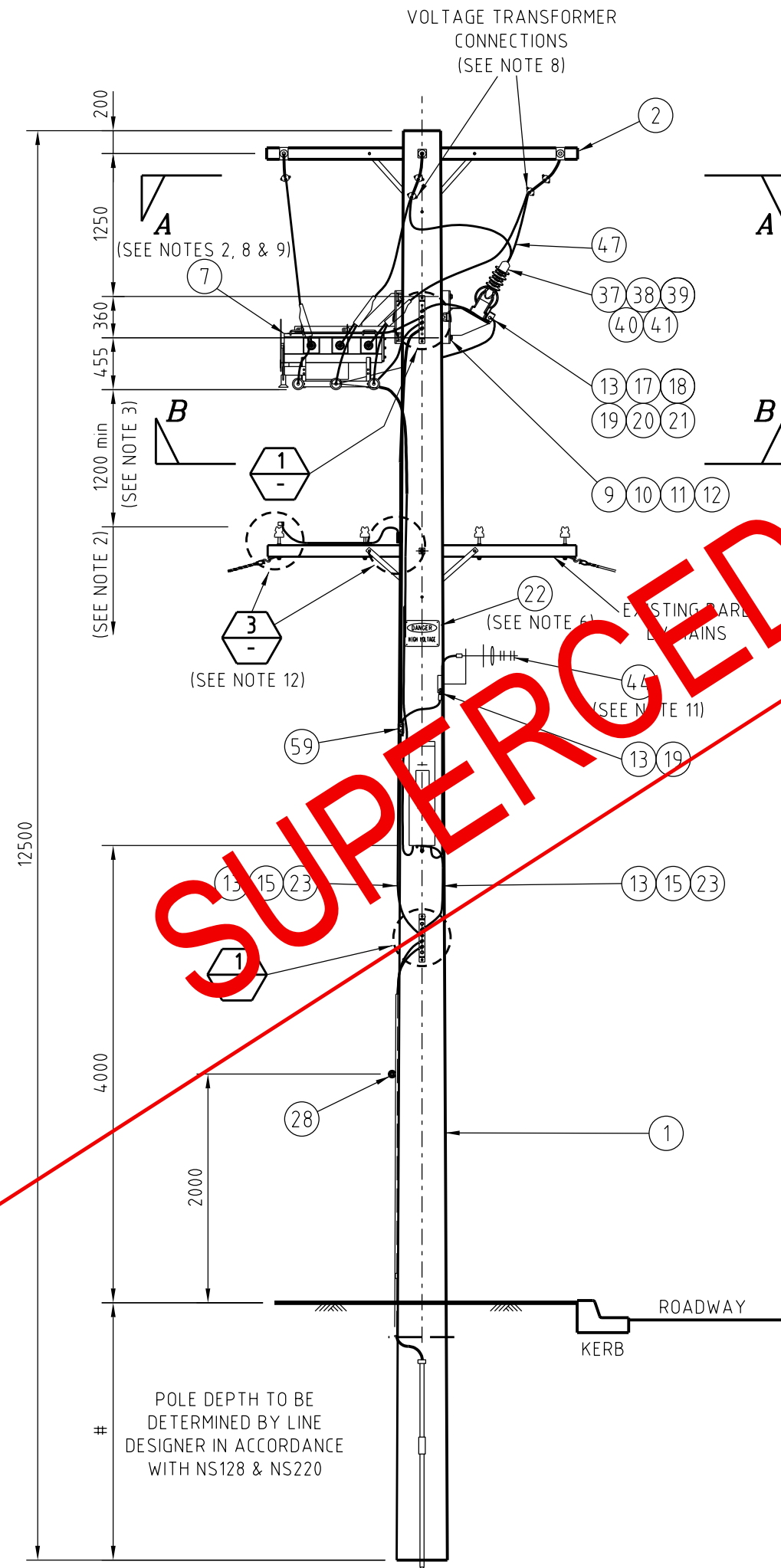
- VOLTAGE TRANSFORMER CONNECTIONS (SEE NOTE 8)
- ENCLOSED SWITCH ARRESTER MOUNTING BRACKET
- MAXIMUM ALLOWABLE TORQUE ON ARRESTOR IS 27Nm. TORQUE WRENCH MUST BE USED TO ENSURE ARRESTER IS NOT DAMAGED
- ITEM 24 BOTTOM EARTH BAR
- ITEM 25 TOP EARTH BAR
- DETAIL SCALE 1:10
- DETAIL SCALE 1:5
- TOP EARTH BAR

Table of Components:

ITEM	DESCRIPTION
1	ENCLOSED SWITCH
2	ENCLOSED SWITCH MOUNTING BRACKET
3	ENCLOSED SWITCH CONTROL CABLE
4	VOLTAGE TRANSFORMER
5	VOLTAGE TRANSFORMER MOUNTING BRACKET



SIDE VIEW
SCALE 1:50



FRONT VIEW
SCALE 1:50

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

	CAD DRAWING DO NOT HANDWRITE HERE	
A M E N D M E N T S		
DWN. PRIOS	CHKD. P.JONES	
APPD. G.FORD		
DATE: 13/04/2020		
MATERIAL LIST AMENDED		
1		
DWN. P.R.		
CHKD. P.J.		
APPD. G.F.		
DATE: 20/02/2025		
CCT CONNECTION CHANGED		
2		
TO C5SX.		
EARTHING CHANGED.		
DWN. P.R.		
CHKD. P.J.		
APPD. G.F.		
DATE: 27/03/2025		
SUPERCEDED BY		
3		
C5X-17/0224		

[illegible]

42 HONEYSUCKLE DRIVE,
NEWCASTLE WEST NSW 2300

SCALE	A5 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.GREEV	GENERAL ARRANGEMENT		
DATE	21/09/2012			
PROJECT NUMBER	STD			
TRIM REF NUMBER	-	SIZE A1	DRAWING No 228901	SHEET 1
				REV 3