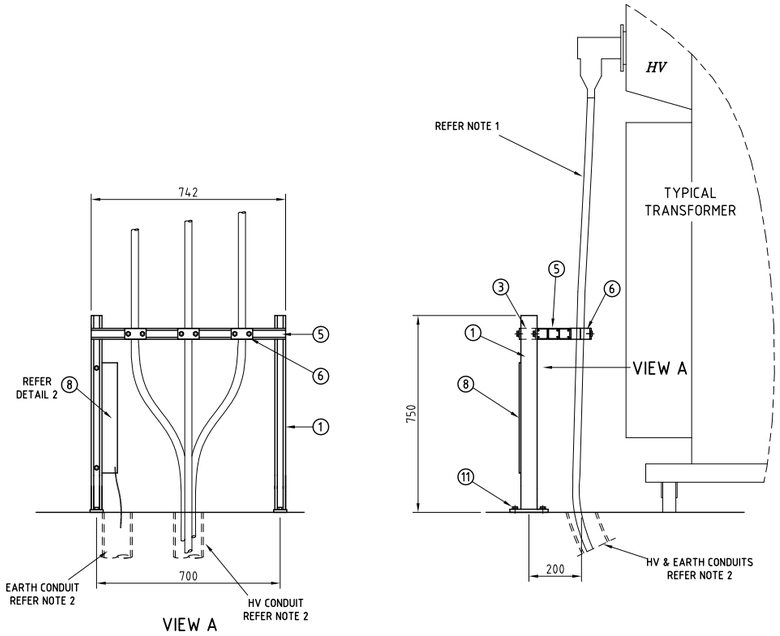
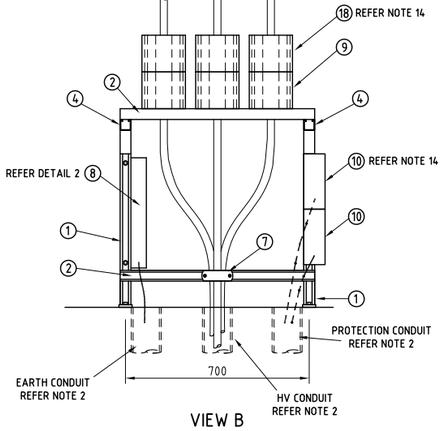


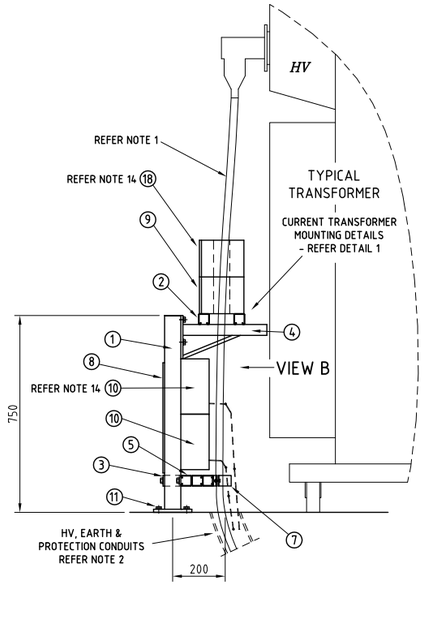
VIEW A

EARTH BAR AND CABLE SUPPORT MOUNTING DETAILS

SCALE 1:10



VIEW B

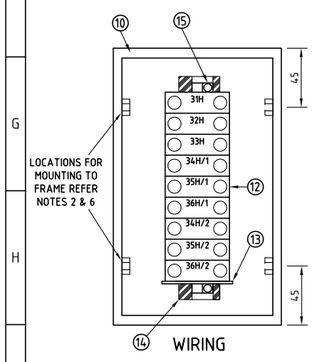


EARTH BAR AND HV CURRENT TRANSFORMER MOUNTING DETAILS

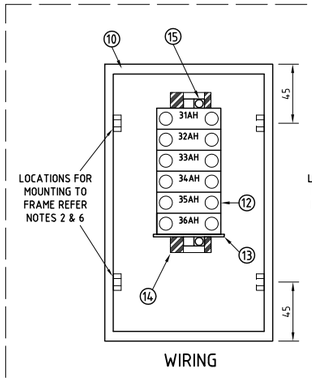
SCALE 1:10

NOTES

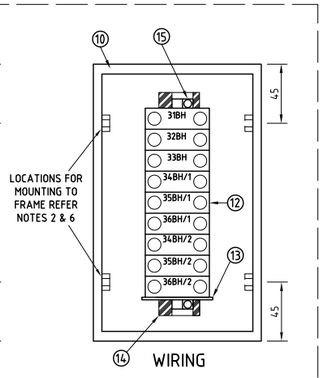
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH NETWORK STANDARDS NS114, NS116 AND NS177.
2. FOR HV, EARTH AND PROTECTION CONDUIT POSITIONS REFER TO SUBSTATION LAYOUT DRAWING. IF CONDUIT LAYOUT ALTERS TO THAT SHOWN HERE, THE POSITION OF JUNCTION BOX AND EARTH BAR MUST BE ALTERED ACCORDINGLY SUCH THAT THEY ARE LOCATED ABOVE THEIR RESPECTIVE CONDUITS.
3. CABLE EARTH DRAINAGE BONDS AND SCREENS ARE TO BE CONNECTED TO THE TRANSFORMER EARTH BAR (ITEM 8).
   2 x 70mm sq CABLES ARE TO CONNECT THE TRANSFORMER EARTH BAR TO THE SUBSTATION EARTH BAR.
   TRANSFORMER TANK EARTH CABLES ARE NOT TO BE CONNECTED.
4. EARTH CABLES ARE TO BE CONNECTED USING CABLE LUGS. REFER DETAIL 2.
5. THE HV CURRENT TRANSFORMER MOUNTING FRAME IS TO BE CONSTRUCTED USING UNISTRUT CHANNEL AS INDICATED, INCLUDING SUITABLE UNISTRUT BOLTS, NUTS & WASHERS.
6. THE HV CURRENT TRANSFORMER JUNCTION BOX AND EARTH BAR ARE TO BE ATTACHED TO THE MOUNTING FRAME USING SUITABLE UNISTRUT BOLTS, NUTS & WASHERS.
7. CABLE GLANDS ARE TO BE USED FOR CABLE ENTRY INTO JUNCTION BOXES. ALL CABLES ARE TO BE CONNECTED TO TERMINAL BLOCKS VIA SUITABLY SIZED CABLE LUGS.
8. HV CURRENT TRANSFORMER LEADS ARE TO BE SECURED INSIDE VERTICAL UNISTRUT (ITEM 1) AS NECESSARY. CABLE TIES ARE TO BE USED TO SECURE CT LEADS TO THE HV CT MOUNTING FRAME WHERE REQUIRED.
9. THE G-RAIL (ITEM 14) IS TO BE MOUNTED TO THE JUNCTION BOX BY SELF-TAPING SCREWS. ALL SHARP EDGES ARE TO BE REMOVED.
10. FOR FIXING INTO THE CONCRETE FLOOR USE HILTI HVU CHEMICAL CAPSULE WITH 12 HAS-E-F (GALVANISED) ROD, 110mm EMBEDMENT.
11. ALL MATERIALS SHOWN CAN BE SUBSTITUTED AS LONG AS THE SUBSTITUTE COMPONENT PROVIDES SIMILAR OR BETTER PERFORMANCE THAN THE ONE SHOWN. DETAILS PROVING THE PERFORMANCE OF OTHER PRODUCTS MUST BE SUBMITTED FOR ACCEPTANCE, IN ACCORDANCE WITH THE REQUIREMENTS OF NETWORK STANDARD NS181, BEFORE USE.
12. IF OAFD PROTECTION IS INSTALLED IN THE SUBSTATION A NEUTRAL/EARTH FAULT CURRENT TRANSFORMER IS REQUIRED TO BE INSTALLED ON EACH DISTRIBUTION TRANSFORMER. THE CABLES CONNECTING THE NEUTRAL/EARTH FAULT CURRENT TRANSFORMER TO THE PROTECTION PANEL ARE TO BE INSTALLED IN A SUITABLY SIZED FLEXIBLE CONDUIT. THESE CABLES ARE TO BE CONNECTED TO THE STUD ON THE CT WITH SUITABLE CABLE LUGS. THE FLEXIBLE CONDUIT IS TO RUN FROM THE CONNECTIONS AT THE CURRENT TRANSFORMER TO THE PROTECTION CONDUIT ASSOCIATED WITH THE DISTRIBUTION TRANSFORMER. ANY VERTICAL RUN OF THE FLEXIBLE CONDUIT MUST BE SUPPORTED BUT THE FLEXIBLE CONDUIT CAN BE LAID ON THE FLOOR UNDER THE DISTRIBUTION TRANSFORMER.
13. UNISTRUT TYPE TF TREFOIL CABLE CLAMP IS TO BE USED IN CONJUNCTION WITH THE RUBBER LINER SPECIFIED.
14. THIS PROTECTION CURRENT TRANSFORMER IS REQUIRED FOR USE ON 11KV CBD AND SUBURBAN RMICB SUBSTATIONS.
15. THIS PROTECTION CURRENT TRANSFORMER IS REQUIRED FOR USE ON 5KV SUBURBAN RMICB SUBSTATIONS.
16. A SECOND SET OF HV CURRENT TRANSFORMERS IS REQUIRED FOR OAFD IN CBD SUBSTATIONS. REFER TO DRAWING 227380 FOR FURTHER DETAILS.



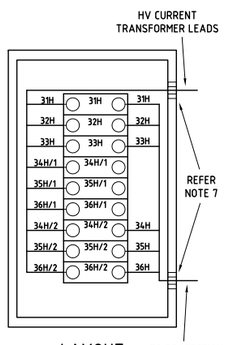
WIRING



WIRING

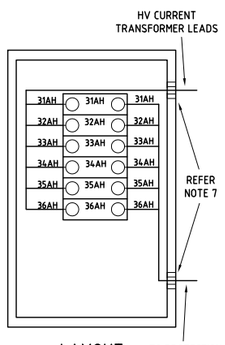


WIRING



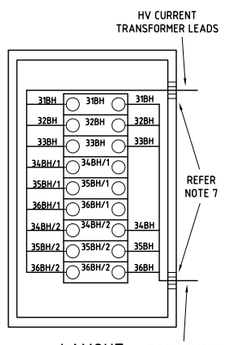
LAYOUT AND WIRING DIAGRAM OF HV CURRENT TRANSFORMER JUNCTION BOX (FOR ITEM 9a or 9b) - SUBURBAN RMICB SUBSTATIONS

NOT TO SCALE



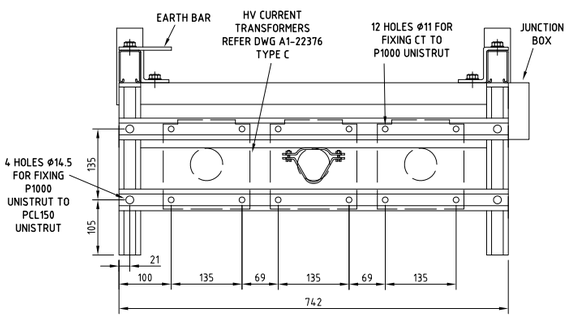
LAYOUT AND WIRING DIAGRAM OF HV CURRENT TRANSFORMER BOTTOM JUNCTION BOX (FOR ITEM 9a) - CBD SUBSTATIONS ONLY

NOT TO SCALE



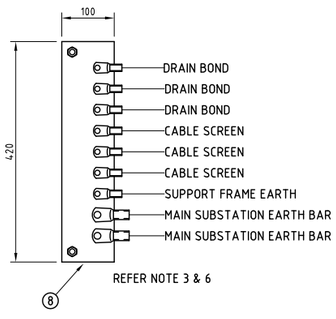
LAYOUT AND WIRING DIAGRAM OF HV CURRENT TRANSFORMER TOP JUNCTION BOX (FOR ITEM 18) - CBD SUBSTATIONS ONLY

NOT TO SCALE



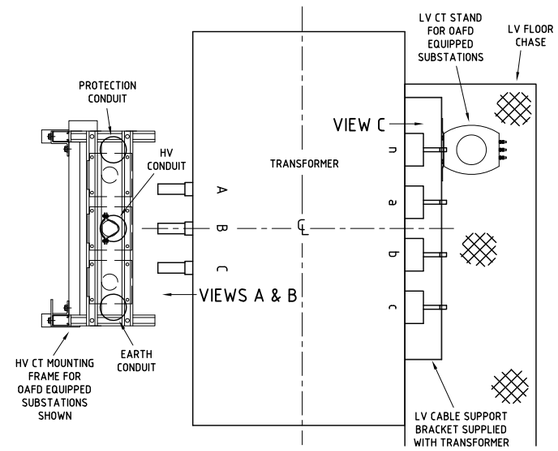
DETAIL 1
HV CURRENT TRANSFORMER MOUNTING FRAME FOR OAFD EQUIPPED SUBSTATIONS

SCALE 1:5



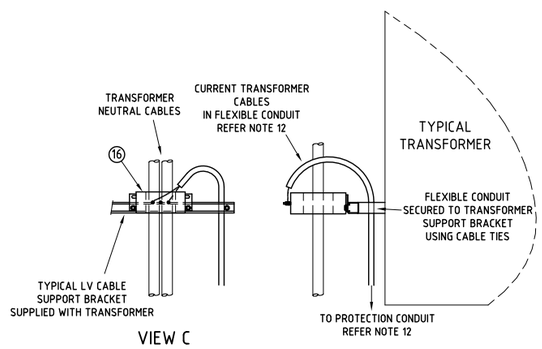
DETAIL 2
MINIMUM TRANSFORMER EARTH BAR REQUIREMENTS

SCALE 1:5



PLAN VIEW OF TRANSFORMER

SCALE 1:10



VIEW C

LV NEUTRAL/EARTH FAULT CURRENT TRANSFORMER FOR OAFD EQUIPPED SUBSTATIONS MOUNTING DETAILS

SCALE 1:10

MATERIAL LIST

ITEM	DESCRIPTION	MATERIAL	STOCKCODE	NUMBER OFF VIEW A	VIEW B	VIEW C	REMARKS
1	P5663-750 UNISTRUT	GALVABOND	-	2	2	-	REFER NOTE 5
2	P1000 UNISTRUT 742mm LENGTH	GALVABOND	-	-	2	-	REFER NOTE 5
3	P5545 UNISTRUT	GALVABOND	-	2	2	-	REFER NOTE 5
4	PCL150 UNISTRUT	GALVABOND	-	-	2	-	REFER NOTE 5
5	P1001 - 3 UNISTRUT 742mm LENGTH	GALVABOND	-	1	1	-	REFER NOTE 5
6	CABLE CLAMP & NITRILE RUBBER LINER		180291 & 179201	3	-	-	
7	UNISTRUT TYPE TF SERIES CABLE CLAMP & NITRILE RUBBER LINER	STAINLESS STEEL	- / 179201	-	1	-	REFER NOTE 13
8	420mm x 100mm x 6.3mm EARTH BAR	TINNED COPPER	-	1	1	-	REFER NOTES 3 & 4
9a	PROTECTION CURRENT TRANSFORMER		89722	-	3	-	REFER NOTES 7 & 14
9b	PROTECTION CURRENT TRANSFORMER		60327				REFER NOTES 7 & 15
10	CLIPSAL 265/S JUNCTION BOX	PLASTIC	-	-	1 (2)	-	REFER NOTES 6,7,14
11	12mm CHEMICAL ANCHOR		-	4	4	-	REFER NOTE 10
12	UTILUX H3820 LINK	STAINLESS STEEL	-	-	9 (15)	-	
13	UTILUX H3821 END PLATE		-	-	1 (2)	-	
14	UTILUX H2233 G-RAIL 170mm LENGTH		-	-	1 (2)	-	REFER NOTE 9
15	UTILUX H2232 END CLAMP		-	-	2 (4)	-	
16	LV NEUTRAL/EARTH FAULT CURRENT TRANSFORMER		67173	-	-	1	REFER NOTE 12
17	FLEXIBLE CONDUIT		-	-	-	1	
18	PROTECTION CURRENT TRANSFORMER		60327	-	3	-	REFER NOTES 7 & 16

M

CAD DRAWING DO NOT MANUALLY UPDATE

AMENDMENTS

1. NOTES REVISED. PN ES103/59/1/2 I. ROBSON 9.12.04 CHECKED: P. JARVIS APPROVED: P. JARVIS
2. EARTH BAR AND CABLE SUPPORT STAND MOUNTING DETAILS ALTERED. MATERIALS LIST ADDED. PN ES208/6/9/2 DBC 10.8.07 CHECKED: P. JARVIS APPROVED: P. JARVIS
3. ITEM 9 WELDMESH SCREEN REMOVED. ITEM NUMBERS REARRANGED. NOTE 10 ADDED. PN ES208/6/9/2 C.PETROWSKI 30.4.08 CHECKED: P. JARVIS APPROVED: P. JARVIS
4. MATERIAL WAS STAINLESS STEEL. NOTE 11 ADDED. PN ES208/6/9/2 P. JARVIS 30.6.08 CHECKED: I.ROBSON APPROVED: I.ROBSON
5. NEW SUBURBAN BORDER AND LOGO ADDED. R.LAALAA 24.9.13 APPROVED: T.LAMPARD
6. NEW B1 SIZED DRAWING MADE. ITEM 9 DIVIDED INTO 9a AND 9b. STOCKCODES ADDED TO MATERIALS LIST. OAFD NEUTRAL/EARTH CURRENT TRANSFORMER MOUNTING ADDED. NOTE 12 ADDED. PN 02-2013-01-21011 P. JARVIS 15.11.13. CHECKED: C.HABBUTT APPROVED: P.TURRIN
7. ADDITIONAL HV CT, JUNCTION BOX AND LAYOUT & WIRING DIAGRAM ADDED FOR CBD SUBSTATIONS ONLY. HV CT MOUNTING UPGRADED FOR OAFD EQUIPPED SUBSTATIONS. NOTE 7 UPDATED. NOTES 13 TO 16 ADDED. ITEM 18 ADDED TO MATERIAL LIST. ITEM 1 WAS SD600 UNISTRUT. ITEMS 1, 6 & 7 DESCRIPTIONS CORRECTED. CABLE CLAMP DETAILS UPDATED TO NS177. PN OPEX-6568-1-1-6 M.CHARAN 4/4/16 CHECKED: P. JARVIS APPROVED: P. JARVIS

20110714

CONSTRUCTION

NETWORK STANDARD

Ausgrid

ENGINEERING BRANCH
PRIMARY SYSTEMS
TRANSMISSION & DISTRIBUTION SUBSTATION ENGINEERING
570 GEORGE STREET, SYDNEY

SCALE	AS SHOWN
DESIGNED	P.JARVIS/I.ROBSON
DRAWN	I.ROBSON
CHECKED	P.JARVIS
APPROVED	M.PEACOCK
DATE	19/5/04
PROJECT NUMBER	ES 103-59-1-2
PROJTRAK NUMBER	

INDOOR OIL FILLED DISTRIBUTION TRANSFORMERS
MOUNTING OF CURRENT TRANSFORMERS AND EARTH BAR

SIZE B1 | DRAWING No 162655 | SHEET 1 | AMD 7