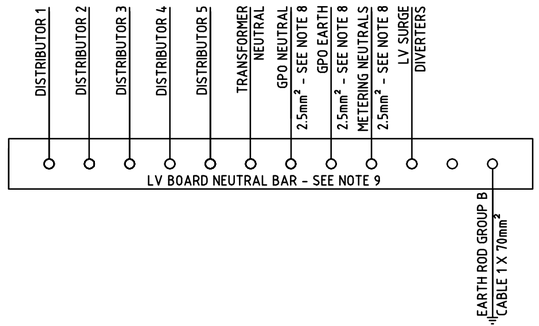
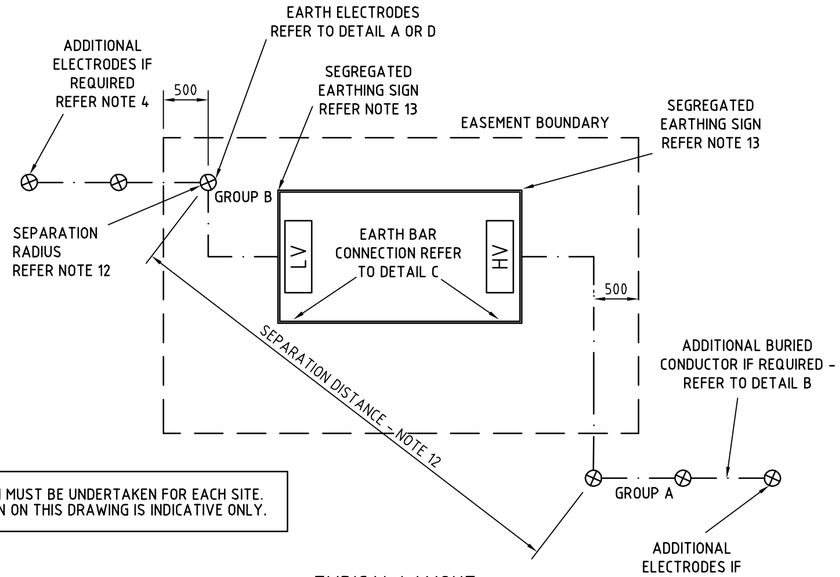
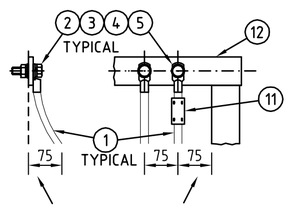


SCHEMATIC DIAGRAM

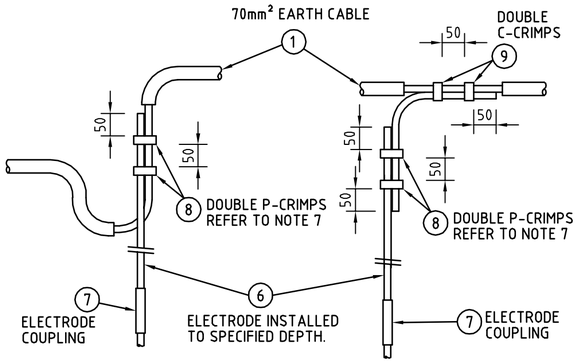


AN EARTHING DESIGN MUST BE UNDERTAKEN FOR EACH SITE. THE EARTHING SHOWN ON THIS DRAWING IS INDICATIVE ONLY.

TYPICAL LAYOUT

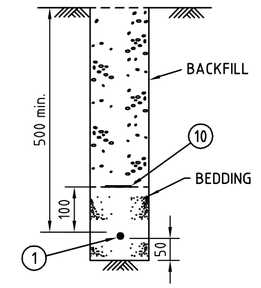


DETAIL C

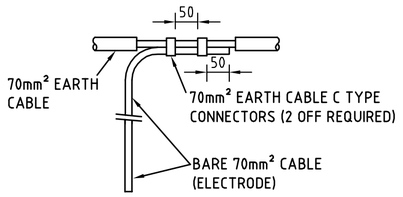


CONNECTION FOR DRIVEN ROD TYPE ELECTRODES

DETAIL A



DETAIL B



DETAIL D

NOTES

1. THIS DRAWING DETAILS TYPICAL SINGLE KIOSK SUBSTATION SEGREGATED EARTHING LAYOUT. REFER TO INDIVIDUAL SUBSTATION EARTHING DESIGN FOR DETAILS REGARDING NUMBER, DEPTH AND SPACING OF ELECTRODES. REFER TO NS116, NS117 AND NS141 FOR ADDITIONAL INFORMATION. THERE IS NO TYPICAL SEGREGATED EARTHING DRAWING FOR DOUBLE KIOSK SUBSTATIONS AS THIS TYPE OF INSTALLATION IS NOT COMMON BUT WILL BE ACCOMMODATED IN THE SITE SPECIFIC EARTHING DESIGN IF REQUIRED.
2. WHERE KIOSKS ARE INSTALLED ON SUPPORTING STRUCTURES REFER TO DRAWINGS 151573 (FOR J KIOSK), 151572 (FOR L KIOSK), 151190 (FOR K KIOSK) FOR EARTHING CONDUIT INSTALLATION REQUIREMENTS.
3. WHERE KIOSKS ARE INSTALLED ON SUPPORTING STRUCTURES AND EARTHING CABLES ARE TO BE INSTALLED THROUGH FLOORS OF BUILDINGS BELOW SUPPORTING STRUCTURES, THEN THE ARRANGEMENT FOR CABLING TO ELECTRODES SHOULD FOLLOW THE SIMILAR REQUIREMENTS FOR CHAMBER SUBSTATIONS AS PER NS113 AND DRAWING 25121.
4. RECOMMENDED MINIMUM SPACING BETWEEN ADDITIONAL ELECTRODES SHALL BE 3m. WHERE THE SITE EARTHING DESIGN CALLS FOR MORE THAN 2 ELECTRODES PER GROUP THEN ADDITIONAL ELECTRODES MUST BE INSTALLED IN A CABLE EASEMENT OR THE CABLE ALLOCATION IN THE FOOTPATH AREA.
5. WHERE A KIOSK IS INSTALLED IN THE FOOTPATH AREA, ELECTRODES TO BE INSTALLED IN THE CABLE ALLOCATION OR IN THE POLE LINE ALLOCATION.
6. WHERE CABLES AND / OR CONDUITS ALREADY EXIST IN A FOOTPATH CABLE ALLOCATION, IT MAY NOT BE FEASIBLE FOR THE EARTHING CONDUCTORS TO BE INSTALLED AT THE DEPTH INDICATED IN DETAIL B. IN THESE CASES, THE PREFERRED ALTERNATIVE IS FOR THE EARTHING CONDUCTORS TO BE INSTALLED IN THE POLE LINE ALLOCATION, IN ACCORDANCE WITH NS 116. IF INSTALLATION IN THE POLE LINE ALLOCATION IS NOT FEASIBLE, THEN THE EARTHING CONDUCTORS MAY BE INSTALLED IN THE CABLE ALLOCATION AT A DEPTH OF NOT LESS THAN 500mm AND A CLEARANCE OF NOT LESS THAN 100mm FROM DIRECT BURIED CABLES.
7. 'P' CRIMPS ARE TO BE INSTALLED WITH THE CLOSED SECTION AROUND THE 70mm² CONDUCTOR AND THE OPEN SECTION AROUND THE EARTH ROD.
8. ALL 70mm² EARTH CABLING TO BE BLACK INSULATED STRANDED COPPER CONDUCTOR. 2.5mm² CABLING TO BE PVC INSULATED 7/0.67 STRANDED COPPER CONDUCTOR
9. FOR KIOSKS WITH A METAL ENCLOSURE THE NEUTRAL BAR IS TO BE INSTALLED ON STAND OFF INSULATORS. ENSURE ALL DOORS AND ACCESS HATCHES ARE CONNECTED TO KIOSK ENCLOSURE WITH A 70mm² BRAID. A SEPARATE BRAID IS TO BE PROVIDED FOR EACH DOOR LEAF AND HATCH. KIOSK ENCLOSURE TO BE CONNECTED TO KIOSK FRAME WITH 70mm² BRAID AT A MINIMUM OF TWO SEPARATE ACCESSIBLE LOCATIONS.
10. THE HV SWITCH EARTH BAR MAY BE ONE CONTINUOUS BAR OR A SEPARATE BAR FOR EACH END BOX. IF SEPARATE BARS ARE USED THEY ARE TO BE RING CONNECTED WITH A MINIMUM OF 70mm² CABLE TO THE KIOSK EARTH BAR.
11. SPARE HOLES ARE REQUIRED FOR ADDITIONAL FUTURE CONNECTIONS.
12. FOR DETAILS ON MINIMUM SEPARATION DISTANCE BETWEEN GROUP A AND GROUP B ELECTRODES AND OTHER CONDUCTIVE STRUCTURES (eg METALLIC FENCES) REFER TO NS116 AND SITE SPECIFIC EARTHING DESIGN.
13. SEGREGATED EARTHING DANGER SIGN (REFER DWG.224403 - STOCKCODE 182387) TO BE INSTALLED INSIDE BOTH HV AND LV KIOSK DOORS ADJACENT TO EARTH BAR
14. WHERE GROUND CONDITIONS PERMIT, ELECTRODES ARE TO BE DRIVEN USING APPROPRIATE ROD DRIVERS AND DRIVING HEADS. WHERE GROUND CONDITIONS REQUIRE BORE HOLES, A 35mm DIAMETER HOLE FOR ROCK OR A 50mm DIAMETER HOLE FOR CLAY IS TO BE BORED FOR EACH EARTH CABLE. AN APPROVED EARTHING COMPOUND IS TO BE PUMPED INTO THE BORE HOLE AFTER BARE EARTH CABLE HAS BEEN INSTALLED. ALL ELECTRODE AND EARTH CABLE INSTALLATIONS ARE TO BE AT THE DEPTH SPECIFIED IN THE EARTHING DESIGN.

ITEM No	DESCRIPTION	STOCK CODE	QTY.
	MATERIALS LIST		
12	EARTH BAR, TINNED COPPER (AS PER SCHEMATIC)		
11	PERMANENT LABEL WORDING "EARTH ELECTRODES GROUP A" OR "B"		AS REQD
10	PVC/POLYMERIC CABLE COVER - 150mm WIDE MARKED "ELECTRICAL CABLE"	151084	AS REQD
9	'C' CRIMP CONNECTOR TO SUIT 70mm² CONDUCTOR	177942	AS REQD
8	'P' CRIMP CONNECTOR TO SUIT 70mm² CONDUCTOR	H31699	AS REQD
7	ø15mm EARTH ROD COUPLERS	H31649	AS REQD
6	EARTH ROD - ø15mm - 1800 LONG COPPER COATED PER NS 116 - MIN. OF 3 PER 5m ELECTRODE	H31631	AS REQD
5	BELLEVILLE WASHER M12 STAINLESS STEEL	175903	1 PER BOLT
4	FLAT WASHER M12 STAINLESS STEEL	49429	2 PER BOLT
3	HEX BOLT & NUT M12 S.S TO A.S. 316 - LENGTH TO SUIT		AS REQD
2	LUG HEX. COMPRESSION M12 TO SUIT 70mm²	74831	AS REQD
1	BLACK INSULATED STRANDED COPPER CONDUCTOR - 70mm²	60111	AS REQD

CAD DRAWING
DO NOT MANUALLY AMEND

AMENDMENTS

2. CONVERTED TO AUTOCAD. NEW DRAWING BORDER ADDED 70mm² EARTH CONDUCTOR WAS PVC. C.MABBUTT 08.08.11 CHECKED: N.O'KELLY APPROVED: P.JARVIS
3. SHEET 2 AND 3 INCORPORATED INTO SHEET 1 SCHEMATIC DIAGRAM REDRAWN LAYOUT DIAGRAM REDRAWN SEGREGATED EARTHING SIGN AMENDED. ALL NOTES AMENDED. PN: PM02-02010-1-4-1 C.MABBUTT 12.1211 CHECKED: N.O'KELLY APPROVED: P.JARVIS
4. DETAIL 'D' BORE HOLE EARTHING CABLE DETAIL ADDED. NOTE 14. ADDED. DETAIL 'A' AMENDED PN: PM02-02010-1-4-1 C.MABBUTT 13-03-2012 CHECKED: P.JARVIS APPROVED: N.O'KELLY
5. TYPICAL LAYOUT AMENDED. REFERENCES TO DETAIL A, C & D AMENDED WATER MAIN CONNECTED REMOVED ON SCHEMATIC DETAIL B AMENDED. NOTE 1 & 11 AMENDED. PN: PM02-02010-1-4-1 C. MABBUTT 12.612 CHECKED: P.JARVIS APPROVED: N.O'KELLY
6. GROUP A (HV) & GROUP B (LV) AMENDED ON TYPICAL LAYOUT. PN: PM02-02013-0-21012 C.MABBUTT 27.2.14 CHECKED: P.JARVIS APPROVED: N.O'KELLY
7. DRAWING TITLE ALTERED. NOTE 1 AMENDED. PN: PM02-02012-0-21012 P.JARVIS 24.4.14 CHECKED: P.TURRIN APPROVED: P.TURRIN

CONSTRUCTION

NETWORK STANDARD

Ausgrid

ENGINEERING DIVISION
PRIMARY SYSTEMS
TRANSMISSION & DISTRIBUTION SUBSTATION ENGINEERING
25-27 POMEROY STREET, HOMEBUSH

SCALE	AS SHOWN
DESIGNED	
DRAWN	
CHECKED	
APPROVED	
DATE	04/12/2006
PROJECT NUMBER	
PROJTRAK NUMBER	

SIGNED ON ORIGINAL

STANDARD CONSTRUCTION SINGLE KIOSK SUBSTATONS TYPICAL SEGREGATED HV/LV EARTHING DETAILS

SIZE A2 | DRAWING No 173990 | SHEET 1 | AMD 7

20110714