



GENERAL NOTES:

1. THE CMEN LINK MUST BE A MINIMUM 70mm² COVERED COPPER CONDUCTOR.
2. CONSTRUCTION TEAM/ COMMISSIONING OFFICER MUST ENSURE SUBSTATION IS IN CMEN CONFIGURATION - SEPARATE EARTHING CONSTRUCTIONS ARE IDENTIFIED ON OTHER ASSEMBLIES.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
4. ALL EARTHING CONDUCTORS AND CONNECTIONS SHALL BE THOROUGHLY CLEANED AND DEBURRED AT CONNECTION POINTS PRIOR TO CONNECTION.
5. TRANSFORMER TANK, LV SWITCHBOARD FRAME, PADMOUNT ENCLOSURE, HV SWITCHGEAR AND HV CABLE SCREENS SHALL BE CONNECTED TO HV EARTH.
6. NEUTRALS OF LV CABLES AND THE TRANSFORMER NEUTRAL SHALL BE CONNECTED TO THE NEUTRAL BAR ON THE LV SWITCHBOARD.
7. THE BONDS BETWEEN THE HV & LV ELECTRODE AND THE SUBSTATION EARTH BARS SHALL BE COVERED 70mm² COPPER CONDUCTOR.
8. EACH EARTHING CONNECTION MADE TO AN EARTHING BAR MUST BE FIXED WITH A SEPARATE M12 STAINLESS STEEL BOLT. AS REQUIRED THE EARTH BAR MAYBE EXTENDED WITH ADDITIONAL COPPER BAR OF AT LEAST THE SAME SIZE, FIXED WITH TWO M12 BOLTS.
9. EARTHING CONDUCTORS CONNECTING THE ELECTRODES TO THE SUBSTATION MUST MAINTAIN A MINIMUM 150mm CLEARANCE BELOW THE INSTALLED GRADING RING.
10. ALL EARTHING FASTENERS MUST BE STAINLESS STEEL.
11. EARTHING CONDUCTORS ENTERING THE SUBSTATION MUST BE A MINIMUM 70MM² COPPER CABLE. COPPER BAR OR STRAP MUST NOT BE USED.
12. EARTHING MUST BE ASSESSED, DESIGNED AND VALIDATED IN ACCORDANCE WITH THE EVOENERGY EARTHING DESIGN AND CONSTRUCTION MANUAL- PO07127.
13. EARTHING CONDUCTORS MUST BE LABELLED IN ACCORDANCE WITH THE EVOENERGY EARTHING DESIGN AND CONSTRUCTION MANUAL (PO07127).
14. SEPARATION BETWEEN BURIED EARTHING AND NON-BONDED EQUIPMENT IS REQUIRED, SEPARATION DISTANCES TO BE SPECIFIED IN THE PARTICULAR DESIGN FOR THE PADMOUNT SUBSTATION.
15. TYPICAL CONNECTION SHOWN- REFERENCE INTERFACE TABLE FOR ACTUAL PART.
16. EXCESS JOINTING COMPOUND APPLIED TO EARTHING CONNECTIONS MUST BE REMOVED AFTER INSTALLATION.
17. PRE APPLIED JOINTING COMPOUND IN EARTHING CONNECTIONS MUST BE REMOVED PRIOR TO INSTALLATION WHEN INSTALLING INTO AN AQUATIC ENVIRONMENT.
18. PADMOUNT SUBSTATION EARTHING TYPE LABELS ARE TO BE INSTALLED TO THE INSIDE OF THE END HV AND LV PADMOUNT DOORS.

GRADING RING NOTES:

1. SITE EXCAVATION DETAILS PROVIDED IN DRAWING D303-0010.
2. TWO CONNECTION POINTS ARE REQUIRED BETWEEN THE EARTH GRADING RING AND THE HV EARTH BAR IN CASE ONE CONNECTION FAILS.
3. GRADING RING IS TO BE INSTALLED 1000mm FROM EACH FACE OF THE SUBSTATION ENCLOSURE AT A DEPTH OF 300mm.
4. ADDITIONAL EARTH RODS MAYBE INSTALLED AS REQUIRED TO ENSURE GRADING RING IS AT CORRECT DEPTH.

ITEM	UA TYPE	DESCRIPTION	STOCK CODE	QTY	DRAWING NO
1	P	EARTHING ROD, dia 13 x 1440mm, COPPER CLAD STEEL, EXTENDABLE, NO CLIP	1161222	4	D110-0001
2	P	CONDUCTOR, AERIAL, HD8C, 70mm ² , 19/2.14 (19/083)	1068830	20m	D102-0005
3	P	LUG, SHEAR-BOLT, 25-95mm ² , M13 BOLT HOLE, TINNED ALUMINIUM	1193219	8	D103-0022
4	P	CABLE, BUILDING, 70mm ² , 1C, 19/2.14, 0.6/1kV, V-75, BLACK, PVC INSULATED	1069603	6m	D102-0012
5	P	LABEL, EARTHING, GRADING RING FOR EARTHING CONDUCTORS, 90 x 10.5mm, S/STEEL	1202086	2	D107-0017
6	P	LABEL, EARTHING, HV DEEP ELECTRODE, FOR EARTHING CONDUCTORS, 90 x 10.5mm, S/STEEL	1202064	1	D107-0015
7	P	LABEL, EARTHING, LV DEEP ELECTRODE, FOR EARTHING CONDUCTORS, 90 x 10.5mm, S/STEEL	1202075	1	D107-0016
8	P	LABEL, EARTHING, CMEN BOND FOR EARTHING CONDUCTORS, 90 x 10.5mm, S/STEEL	1202108	1	D107-0019
9	P	CABLE TIE FOR EARTHING CONDUCTOR LABELS 4.6 x 200mm S/STEEL GR316	1202042	10	D107-0027
10	P	LABEL, EARTHING, PADMOUNT, SUBSTATION EARTHING TYPE, CMEN EARTHED	1202207	2	D107-0029
11	S	SA, EARTHING, DEEP EARTH ELECTRODE FOR STATIONS	-	2	D303-0006
12	S	SA, EARTHING, ADDITIONAL DEEP EARTH ELECTRODE FOR STATIONS	-	AR	D303-0013
13	I	INTERFACE, EARTHING PARTS, CONNECTIONS, CONNECTORS AND ACCESSORIES	SELECT	10	D199-0001

B	IMAGE UPDATED	JJP	WNI	
C	C CRIMP, IMAGE & NOTES UPDATED	BAN	WNI	26/11/2019
D	SM1138 REPLACED WITH PO07127 IN NOTES 12 & 13 - KV	NAA	WJC	29/07/2022
E	EARTH STOCK CODE UPDATE	JJP	WJC	17/11/2023

evoenergy

Drawn: M. Barrett
 Designed: J. Primmer
 Checked: S. Piyatilake 15/10/2019
 Branch Engineer: W. Cleland 15/12/2014
 Branch Manager:
 Old Drawing No. and Revision: Rev

STANDARD CONSTRUCTION, DISTRIBUTION
 UNDERGROUND, STATIONS,
 SA, EARTHING,
 CMEN EARTHING WITH ELECTRODES HV & LV
 PADMOUNT SUBSTATION

Scale: 1:25	Date: 25/11/2014	Sheet No.: 1/1
Project No.:	Stock Code:	
Status: Current		
A1	D303-0011	Rev