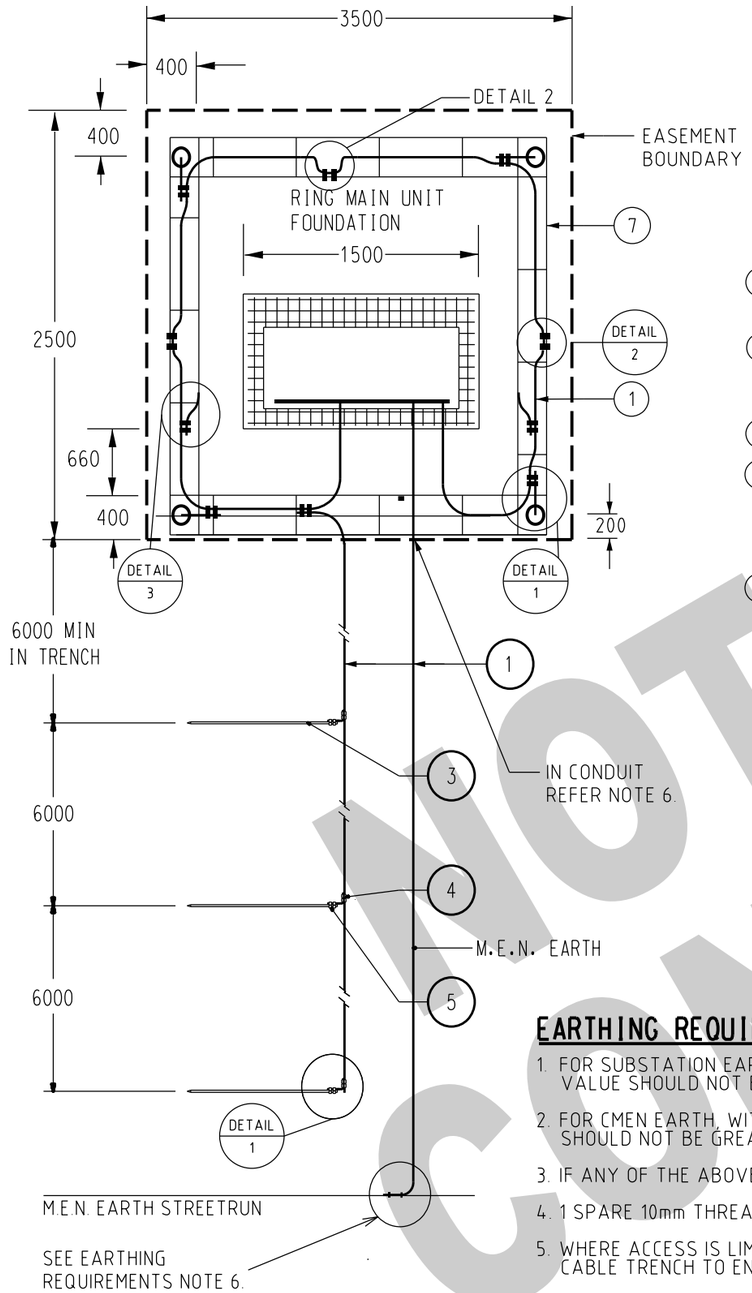

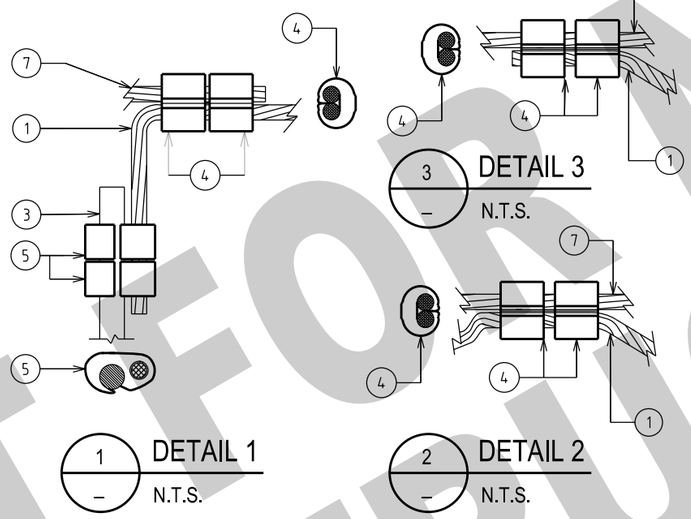

EARTHING REQUIREMENT

1. FOR SUBSTATION EARTH, WITH LINKS 1 AND 2 OPEN, THE RECORDED EARTH RESISTANCE VALUE SHOULD NOT BE GREATER THAN 30 OHMS.
2. FOR CMEN EARTH, WITH LINKS 1 AND 2 CLOSED, THE RECORDED EARTH RESISTANCE VALUE SHOULD NOT BE GREATER THAN 1 OHM.
3. IF ANY OF THE ABOVE VALUES CANNOT BE ACHIEVED, REFER TO THE PROJECT MANAGER.
4. 1 SPARE 10mm THREAD BOLT AND NUT FOR OPERATOR EARTHS ON THE HV AND LV EARTH BARS.
5. WHERE ACCESS IS LIMITED, EARTHING STAKES IN THE EASEMENT CAN BE RELOCTED TO THE CABLE TRENCH TO ENSURE THE SUBSTATION EARTH RESISTANCE IS LESS THAN 30 OHMS.
6. MEN TEE OFF SHALL BE CONNECTED VIA 2 x "C" COMPRESSION CONNECTOR 300mm APART OR CATWELD

NOTES:

1. MINIMUM EARTHING FOR RING MAIN UNIT CONSISTS OF FOUR EARTH ELECTRODES IN THE EASEMENT AND IF REQUIRED THREE EARTH ELECTRODES IN THE CABLE ENTRY TRENCH.
2. IN THE EASEMENT: FOUR BORE HOLES TO BE DRILLED AT CORNERS FOR EACH HOLE:
   - AUGER DIAMETER TO BE USED SHOULD NOT BE GREATER THAN 150mm.
   - BORE DEPTH IS 3m.
   - EARTH ELECTRODE SHALL BE MADE FROM EITHER BARE 70 sq.mm COPPER CONDUCTOR OR 70 sq.mm BARE COPPER CONDUCTOR WITH AN EARTH STAKE ATTACHED VIA TWO PROFILE "6" COMPRESSION CONNECTOR BEFORE LOWERING THE STAKE INTO THE BORE HOLE. ATTACH THE 70 sq.mm COPPER CONDUCTOR TO THE EARTH GRID AS SHOWN IN DETAIL 1.
   - BACKFILL BORE HOLE FIRST WITH WATERED SLURRY MIXTURE OF ONE BAG OF EARTHING COMPOUND (ITEM NUMBER 400915 REFER TO DWG S02-01-05-02) AND SOIL AT 1:1 RATIO, THEN TOP UP WITH EXISTING SOIL.
3. IF REQUIRED TO ACHIEVE EARTHING REQUIREMENT NOTE 1, THREE ADDITIONAL EARTH ELECTRODES ARE TO BE INSTALLED AT THE BOTTOM OF THE CABLE ENTRY TRENCH WITH A DISTANCE OF 6m BETWEEN ELECTRODES AND TO A DEPTH OF 3m. A HAMMER CAN BE USED TO DRIVE CONNECTED EARTH RODS INTO THE GROUND, OR ALTERNATIVELY THE EARTH ELECTRODES CAN BE AS PER NOTE 2. DO NOT LET ANY OTHER EARTHING SYSTEM MAKE CONTACT WITH THE LOCAL GRID EARTH.
4. EQUIPOTENTIAL EARTH MESH OF 400mm WIDTH MINIMUM TO BE LAID ACROSS USING CONCRETE MESH CHAIRS AND CONNECTED TO FOUR EARTH ELECTRODES IN THE EASEMENT AS SHOWN BEFORE FORMING THE CONCRETE APRON FROM THE EASEMENT BOUNDARY TO THE RING MAIN UNIT FOUNDATION.
5. CABLE EARTH SCREENS TO BE CONNECTED TO EARTH BUS BAR IN FRONT OF ENCLOSURE.
6. M.E.N. EARTH (FROM DISTRIBUTION SYSTEM) MUST NOT BE BROUGHT INTO ELECTRICAL CONTACT WITH FOUNDATION SO THAT TESTING CAN CAN BE CARRIED OUT. M.E.N SHALL BE IN CONDUIT WHERE PASSING THROUGH SUBSTATION FOUNDATIONS. M.E.N. CONDUCTOR SHALL BE LABELLED "MEN" WITH CRITCHLY LABEL WHERE IT IS ATTACHED TO THE EARTH BUS BAR.
7. TRAFFIC BOLLARDS, IF REQUIRED, SHALL BE CONNECTED TO PERIMETER EARTHING CONDUCTOR BY 70 sq.mm COPPER CONDUCTOR WHICH WILL BE SET INSIDE THE POST AND LUGGED OFF ONTO A BARRIER BOLT. BOLLARDS ONLY TO BE EARTHED IF LOCATED WITHIN EASEMENT.
8. EARTH BUS BAR TO BE LOCATED IN THE FRONT OF THE RMU ENCLOSURE. EARTH BUS BAR SHALL BE 50x6 COPPER BAR WITH 16 HOLES 14mm IN DIAMETER SPACED 75mm APART AT CENTERS. ALL BOLTS SHALL BE M12 CLASS 8.8 STAINLESS STEEL TIGHTENED TO 35-40Nm.
9. REFER TO S02-02-06-34 FOR RMU FOUNDATION DETAILS.
10. WHERE THE LOCAL GRID EARTH IS CONNECTED TO THE EARTH BUS BAR IT SHALL BE LABELLED "GRID" WITH CRITCHLEY TYPE LABELS.

ITEM	QTY	DESCRIPTION	ITEM NUMBER	DRG REF
7	4	EQUIPOTENTIAL EARTHING MASONRY WIRE MESH, GALVANISED, 400MM X 7.2MM DIA	288415	-
6	4	EARTHING COMPOUND.(BAG)	10876	-
5	AR	COMPRESSION CONNECTOR, "6" PROFILE, 70 sq.mm	257394	S01-01-05-08
4	AR	COMPRESSION CONNECTOR, "C" PROFILE , 70-70 sq.mm	255786	S01-01-05-08
3	AR	EARTH ROD, SS316, 14mm DIA	414060	S01-01-05-01
1	AR	70sq.mm BARE COPPER CONDUCTOR.	9803	S01-01-05-05

MATERIAL SCHEDULE

NO	DESCRIPTION	DRN	DATE	CKD	APPD
4	UPDATED NOTES. TWO CRIMPS REQUIRED PER CONNECTION OR CADWELD. UPDATE EARTHING DESIGN. REMOVE ITEM 2. ADD NOTES 4, 5, 6 TO EARTHING REQUIREMENTS	CWM	OCT'21	B.V.	A.N.
3	UPDATE EARTHING MESH DETAILS	H.E.	SEP'20	B.C.	B.V.
2	TITLEBLOCK & DRAWING NUMBER FORMATTED	K.T.	FEB'19	C.C.	C.C.
1	NOTE 4 AMENDED	K.T.	MAY'16	I.B.	B.C.
0	ISSUED FOR CONSTRUCTION.	A.T.	JUN'14	B.C.	B.C.

AMENDMENTS

PowerWater
NORTHERN TERRITORY

DES	C. FOO
DRN	A.TAYLOR
CKD	B.CHEUNG
APPD	B.CHEUNG
SCALE	N.T.S.
ISSUED	MAR'14
ALL DIM. IN mm	
DRAFTING STANDARD TO A.S.1100	

POWER STANDARD DRAWING

EARTHING (GREENFIELD) RING MAIN UNIT (RMU). DRIESCHER MINEX CONSTRUCTION DETAILS

A3

DRAWING NUMBER S02-02-05-12

4 AMDT

CAD PRODUCT - DO NOT AMEND MANUALLY