

6. EARTHING

THE BUILDER MUST GIVE FOURTEEN (14) DAYS NOTICE AS TO WHEN CLEAR ACCESS IS AVAILABLE TO INSTALL EARTH RODS. FOR LOCATIONS WHERE IT IS NECESSARY TO LIFT THE EARTHING EQUIPMENT IN AND OUT OF POSITION, SUCH LIFTING SHALL BE DONE BY THE BUILDER. IN THE EVENT OF THE EQUIPMENT BEING DAMAGED AS A RESULT OF LIFTING OPERATIONS, THE BUILDER SHALL BE LIABLE TO PWC FOR THE DAMAGE.

AFTER PWC HAS INSTALLED THE EARTH RODS AND PRIOR TO THE POURING OF THE FLOOR SLAB PWC WILL LAY AND CONNECT THE EARTH CABLES. THESE CABLES WILL BE BROUGHT UP AGAINST A WALL IN A POSITION NOMINATED BY PWC. TO ENABLE THIS TO BE ARRANGED THE BUILDER IS REQUIRED TO GIVE PWC FOURTEEN (14) DAYS NOTICE OF INTENTION TO POUR THE FLOOR SLAB.

IF THE CONCRETE FLOOR SLAB OF THE SUBSTATION IS OF SUSPENDED CONSTRUCTION, THE EARTH RODS WILL BE LOCATED IN THE LOWEST LEVEL OF THE EXCAVATED AREA DIRECTLY UNDER THE SUBSTATION. THE MOST SUITABLE POSITIONS FOR THE EARTH RODS WILL BE DETERMINED ON SITE BY PWC. THE EARTH RODS ARE TO BE INSTALLED BY THE BUILDER TESTED BY PWC.

FROM THE POSITION OF THE TERMINATED EARTH CABLES MENTIONED ABOVE, THE TWO (2) EARTH CABLES MUST BE CARRIED UP THROUGH THE STRUCTURE TO THE LEVEL OF THE SUBSTATION FLOOR. TO ACHIEVE THIS THE BUILDER MUST PROVIDE AND INSTALL TWO (2) 38mm GALVANIZED WATER PIPES. THESE PIPES MUST BE SURFACE RUN FOR THE FULL EXTENT OF THE RUN UP TO SUBSTATION FLOOR LEVEL. IF THESE PIPES CHANGE DIRECTION A SUITABLE GALVANIZED STEEL DRAW-IN BOX IS TO BE INSTALLED IN A POSITION WHICH IS ACCESSIBLE TO PWC STAFF AT ALL TIMES. THE BUILDER SHALL INSTALL ITS EARTH CABLES IN THESE PIPES AND ATTACH TO THE EARTH RODS.

AT ALL TIMES THE BUILDER MUST PROTECT THE EARTH RODS AND CONNECTING CABLES FROM DAMAGE BY OTHER ACTIVITIES ON SITE. IF THE EARTH RODS AND/OR CABLES ARE DAMAGED BY THE BUILDER THEN THE BUILDER IS RESPONSIBLE FOR THEIR SUBSEQUENT REPAIR OR REINSTATEMENT.

7. CONDUITS

THE BUILDER SHALL PROVIDE AND INSTALL ALL ELECTRICAL U.P.V.C. CONDUITS AS SHOWN ON THE CONSTRUCTION DETAIL DRAWINGS. THESE CONDUITS SHALL BE OF THE DIAMETERS NOMINATED ON THE CONDUIT SCHEDULE OF THE CONSTRUCTION DETAIL DRAWING AND BE HEAVY DUTY ORANGE COLOURED RIGID PIPE CONFORMING TO AS2053. JOINTS SHALL BE SPIGOT AND SOCKETED SUITABLE FOR SOLVENT WELDING. ALL CONDUITS ENTERING THE CABLE PITS AND WALLS SHALL FINISH FLUSH WITH THE INTERNAL WALL. ALL FLOOR CONDUITS TO TERMINATE 125mm ABOVE SUBSTATION FLOOR LEVEL AND BE PROTECTED FROM ACCIDENTAL DAMAGE BY A CEMENT COLLAR. COLLAR DETAILS ARE SHOWN ON DRC S02-2-7-48. ALL CONDUITS SHALL TERMINATE WITH A BELL MOUTH FITTING. CONDUITS IN RAISED FLOOR AREA ARE TO FINISH FLUSH WITH SOCKET END.

HV CONDUITS AND LV CONDUITS RUNNING TO AND FROM THE SUBSTATION SHALL PROJECT 150mm PAST THE EXTERNAL FACE OF THE SUBSTATION AT THE BOUNDARY AND SHALL BE SOCKET ENDED. THEY SHALL BE SEALED AGAINST THE INGRESS OF MOISTURE BY MEANS OF A PWC APPROVED SEALING METHOD SIMILAR TO HAUFF-TECHNIK P-CABLE BASIC SG SYSTEM.

WHERE THE SUBSTATION IS SET BACK FROM THE BOUNDARY LINE, BOTH THE HV AND LV CONDUIT RUNS SHALL BE EXTENDED FROM THE SUBSTATION AND PROJECT 150mm PAST THE BOUNDARY AND SHALL BE SOCKET ENDED.

THE HV AND LV CONDUITS MUST BE AT THE DEPTHS BELOW FINISHED FOOTPATH LEVEL SHOWN ON THE CONSTRUCTION DETAIL DRAWING. HOWEVER IF THIS IS NOT ACHIEVABLE ACCEPTABLE DEPTHS WILL BE DETERMINED BY PWC.

THE BUILDER/ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SEALING ALL OF THE CONSUMER MAINS CONDUITS FROM WITHIN THE SUBSTATION UPON INSTALLATION OF THE CONSUMERS MAINS (INCLUDING SPARE CONDUITS NOT USED) WITH A SUITABLE FIRESTOP, eg EXPANDING FIRE FOAM OR FIRE PILLOWS, TO FORM AN APPROPRIATE FIRE BARRIER.

8. PERSONNEL DOORS

ALL PERSONNEL DOORS SHALL BE 2400mm HIGH X 1200mm WIDE SOLID CORE EXTERIOR DOORS WITH FRL (120/120/120).

ALL PERSONNEL DOORS SHALL BE VERIFIED AND TAGGED BY A CERTIFIED AUDITOR.

THRESHOLDS OF ALL DOORS AND EXTERNAL STEPS MUST BE FINISHED WITH A 40 X 6mm GALV EQUAL ANGLE WITH 100 X 25 X 3mm FISH TAIL LUG WELDED AT 300mm SPACING AND SET IN THE CONCRETE FOR ITS FULL LENGTH.

ALL DOORS ARE TO BE HUNG ON THEIR FRAMES USING THREE (3) 100mm STAINLESS STEEL HEAVY DUTY HINGES PER LEAF.

ALL DOORS ARE TO BE HUNG SO THAT THE CENTER LINE OF DOOR IS DIRECTLY OVER THE THRESHOLD. ALL DOORS SHALL HAVE A STORM WATER DOOR SEAL FITTED, SIMILAR TO RAVEN RP4.

8. PERSONNEL DOORS (CONT.)

HARDWARE

EACH PERSONNEL DOOR IS TO BE FITTED WITH A LOCKWOOD 3572Z SERIES ESCAPE LATCH BOLT WITH OVAL CYLINDER OPERATED BY KEY FROM THE OUTSIDE AND A LOCKWOOD 1006 LEVER HANDLE FROM THE INSIDE. THE LATCH SHALL BE SO FITTED THAT THERE IS NOT LESS THAN 10mm ENGAGEMENT OF THE LATCH BOLT INTO THE STRIKER PLATE WHEN THE DOOR IS IN THE CLOSED POSITION. THE LATCH SHALL HAVE A 127mm BACKSET. EACH DOOR IS TO BE FITTED WITH A 200mm 'D' HANDLE TO THE EXTERNAL FACE. ALL DOORS ARE TO BE FITTED WITH A HYDRAULIC DOOR CLOSER.

ALL PERSONNEL DOORS ARE TO BE PRIME COATED, UNDERCOATED AND THEN FINISHED WITH TWO (2) COATS OF ENAMEL PAINT. THE FINAL COLOUR IS TO SUIT THE CONSUMERS' REQUIREMENTS.

THE EXTERIOR OF ALL PERSONNEL DOORWAYS SHALL BE FITTED WITH A 75mm WEATHER SHEILD FITTED ABOVE THE DOORWAY.

9. LOUVRED TRANSFORMER DOORS

THE CLEAR OPENING IN THE SUBSTATION CHAMBER WALL FOR THE TRANSFORMER LOUVRE DOORS SHOULD BE AS SHOWN ON THE APPROPRIATE SUBSTATION CHAMBER CONSTRUCTION DRAWING. THE TRANSFORMER LOUVRE PANEL DOOR OPENING HEIGHT SHOULD PREFERABLY BE TO THE SUBSTATION CEILING. HOWEVER, IF THIS IS NOT POSSIBLE DUE TO STRUCTURAL DIFFICULTIES, A MINIMUM OPENING HEIGHT TO SUIT THE TRANSFORMER AND REQUIRED LIFTING EQUIPMENT IS ACCEPTABLE.

THE CONSTRUCTION OF LOUVRED TRANSFORMER DOORS SHALL COMPLY IN ALL RESPECTS WITH THE DETAILS SHOWN ON DRAWINGS S02-2-7-02 & S02-2-7-03.

THRESHOLDS OF ALL DOORS MUST BE FINISHED WITH A 40 X 6mm EQUAL ANGLE WITH 100 X 25X3mm FISH TAIL LUG WELDED AT 300mm SPACING AND SET IN THE CONCRETE FOR ITS FULL LENGTH.

10. PAINTING

THE INTERNAL SUBSTATION CEILING AND WALLS NEED NOT BE PAINTED. EXTERNAL WALLS MAY BE PAINTED TO CONSUMER DETAIL AS REQUIRED.

11. SUBSTATION LIGHTING AND POWER

THE SUBSTATION CHAMBER WILL HAVE LIGHTING AND A GENERAL PURPOSE OUTLET INSTALLED, AS SHOWN ON THE APPROPRIATE SUBSTATION CHAMBER OPTIONS MISCELLANEOUS DETAILS DRAWING. CONNECTION TO SUPPLY IS BY PWC.

12. SUBSTATION CHAMBER INTERNAL DIMENSIONS

THE SUBSTATION CHAMBER DIMENSIONS WILL VARY DEPENDING ON THE LOCATION IN WHICH EQUIPMENT IS INSTALLED. THROUGHOUT THE SUBSTATION CHAMBER A MINIMUM OF 1000mm CLEAR OPENING SHALL BE PROVIDED FROM ANY STRUCTURE TO EQUIPMENT AND A MINIMUM OF 900mm BETWEEN EQUIPMENT.

NO	DESCRIPTION	DRN	DATE	CKD	APPD
4	SUPERSEDED TO S02-02-07-00	I.B.	JUL '17	B.C.	B.C.
3	NOTES AMENDED, NOTE 12 ADDED	A.T.	NOV '13	B.C.	B.C.
2	NOTE 6 AMENDED	J.C.	MAY '08	B.C.	S.C.
1	NOTE 6 AMENDED	J.C.	SEP '07	B.C.	B.C.

PowerWater

DES	I.PURVES
DRN	G.R./A.D.
CKD	S.LEACH
APPD	F.ROBSON
SCALE	N.T.S.
ISSUED	MARCH '98
ALL DIM. IN	mm
DRAFTING STANDARD TO A.S.1100	

INDOOR SUBSTATION SURFACE CHAMBER CONSTRUCTION NOTES SHEET 2 OF 2		A3	DRAWING NUMBER S02-02-07-23	4
AMENDMENTS		AMDT		