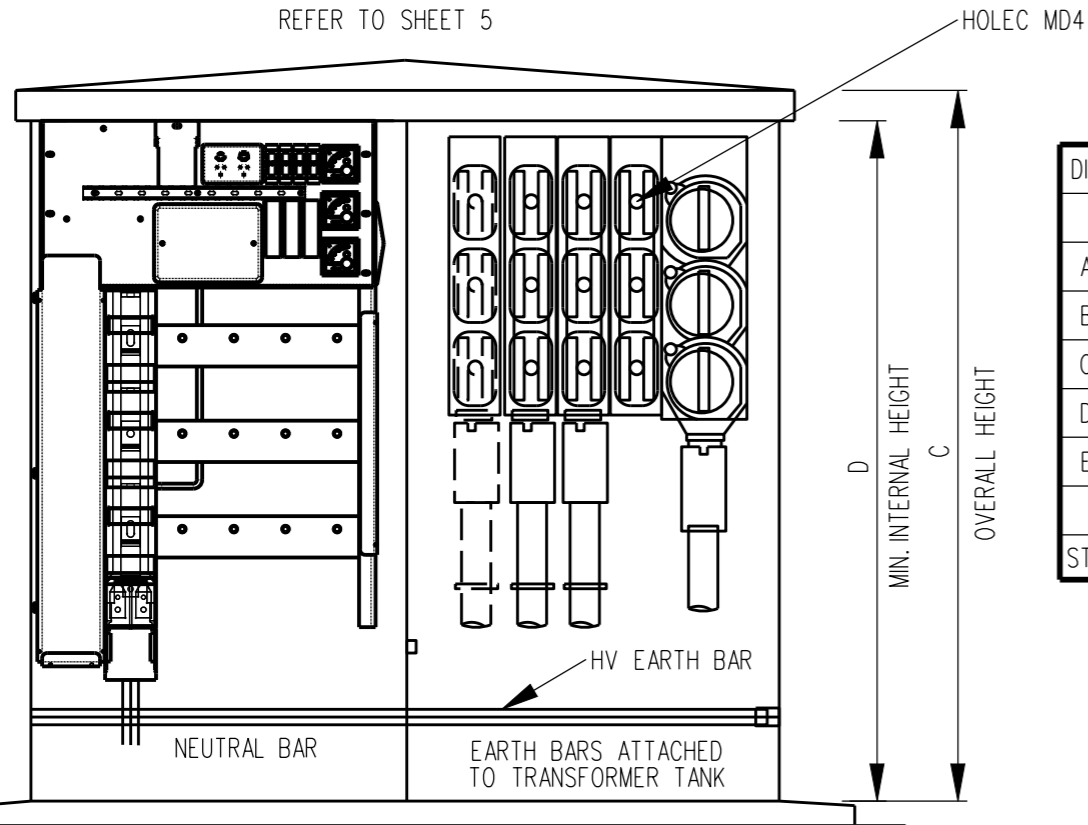
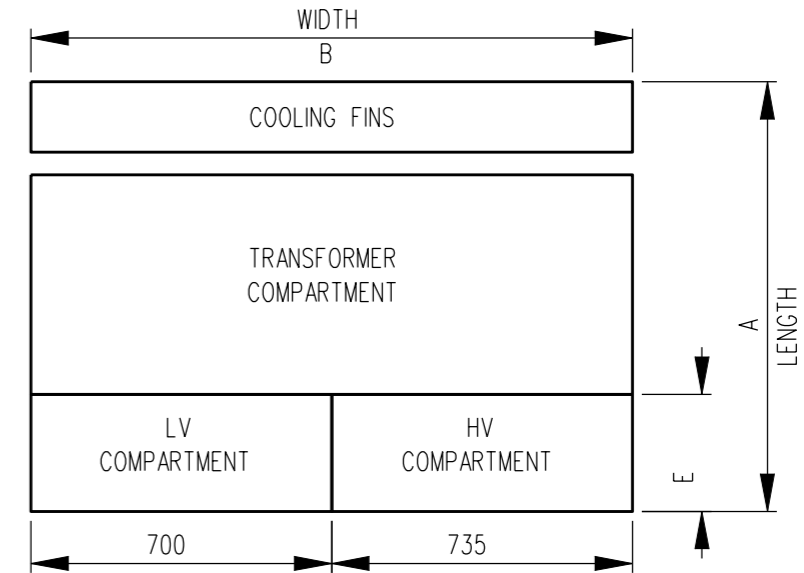


REFER TO SHEET 5



DIM	TRANSFORMER (kVA)			
	300	500	750	1000
A	1773	1773	1935	1935
B	1437	1437	1437	1437
C	1536	1536	1536	1536
D	1465	1465	1465	1465
E	851	851	851	851
Kg	695	955	1407	1710
STOCK CODE	172809	172817	172825	402107



DISCONNECTOR WITH COPPER LINKS  
 300kVA - 1000A  
 500kVA - 1000A  
 750kVA - 2000A (1000Ax2)

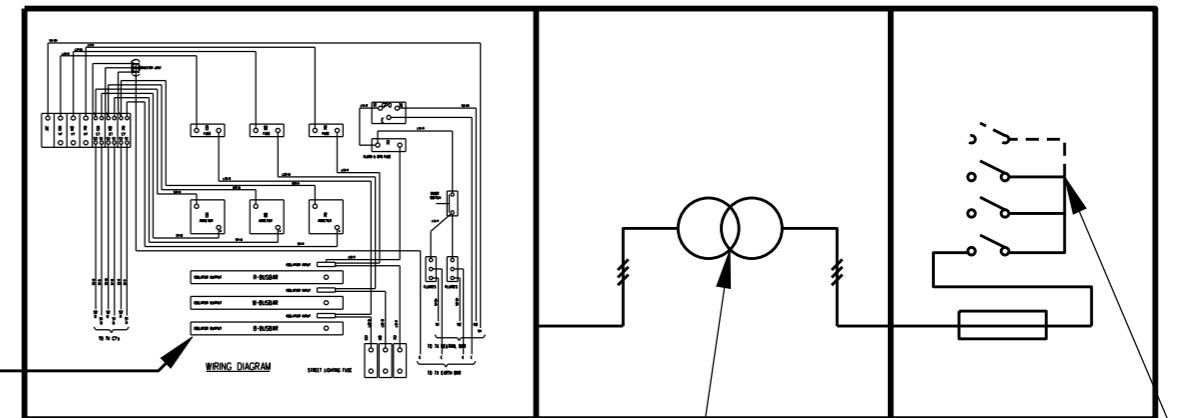
**STOCK CODE:** 402359

**NOTE:**

1. COMPRESSION LUGS ARE TO BE USED FOR ALL CABLE CONNECTIONS FOR XLPE AND OTHER ALUMINIUM CONDUCTORS. CABLE LUGS WITH FINAL COMPRESSION OVER INSULATION TO EXCLUDE MOISTURE ARE ESSENTIAL.
2. 22kV UNITS HAVE NO INTERNAL H.V. SWITCHGEAR. CABLE TERMINATION DIRECT ON TO BUSHING, VIA 630 AMP DEAD BREAK ELBOWS 22kV RMU WITH CIRCUIT BREAKER TEE OFF SHALL BE INSTALLED NEXT TO SUBSTATION.
3. LIFTING LUGS TO BE DETACHABLE.
4. THIS DWG. TO BE READ IN CONJUNCTION WITH THE PWC SPECIFICATIONS STS 001.
5. EACH CABLE ENTERING/LEAVING SUBSTATION IS TO HAVE A DESTINATION TAG (SEE S2-1-8-25).
6. CABLES IN HV AND LV COMPARTMENT TO BE HEAT SHRINK COLORED TO MATCH PHASE AND CONNECTED TO SWITCHGEAR WITH R.W.B. FROM REAR OF CABINET TO FRONT.
7. UNLESS SPECIFIED PACKAGE SUBSTATIONS SHALL BE SUPPLIED WITH LV PANEL EXCLUDING SERVICES STRIPPLE FUSE UNITS.
8. 11kV 1000kVA SUBSTATIONS SHALL HAVE NO INTERNAL HV SWITCHGEAR FITTED. CABLES SHALL BE TERMINATED DIRECT ON TO THE BUSHINGS VIA 630A DEAD BREAK ELBOWS. SUBSTATION HV PROTECTION TO BE OBTAINED FROM THE CIRCUIT BREAKER TEE-OFF OF AN RMU INSTALLED NEXT TO THE SUBSTATION.

WEBER OR JEAN MULLER STRIPPLE FUSE UNIT FOR: 1000 or 630A.

REFER TO SHEET 6



430V CABLE TERMINATIONS  
 XLPE UP TO 2x240sq. mm PER PHASE

300kVA, 500kVA  
 750kVA & 1000kVA

ADDITIONAL SWITCH/CABLE TERMINATION MODULE TO BE INSTALLED AS REQUIRED

LV CUBICLE

TRANSFORMER COMPARTMENT

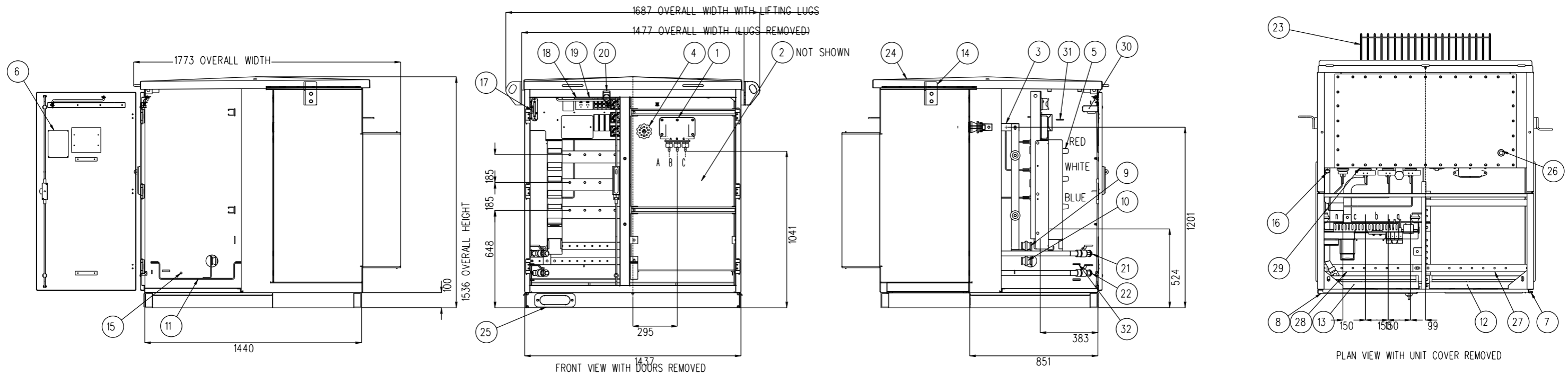
HV CUBICLE

NO	DESCRIPTION	DRN	DATE	CKD	APPD
25	SUPERSEDED BY S02-1-7-17	A.T.	DEC'12	B.C.	S.C.
24	NOTE 8 CHANGED, NOTE 9 REMOVED	C.W.M.	MAR'10	B.C.	S.C.
23	FIXED TEXT ALIGNMENT	C.W.M.	MAR'10	B.C.	S.C.
22	NOTE 9 ADDED	C.W.M.	DEC'09	B.C.	S.C.
21	NOTE 2 CHANGED	J.C.	NOV'08	B.C.	S.C.
20	TABLE DIMENSIONS ADDED	J.C.	MAY'08	B.C.	S.C.
19	NOTE 8 ADDED	J.C.	APR'08	B.C.	S.C.
18	WEIGHT ADDED	J.C.	MAR'08	B.C.	S.C.
17	SHEETS 2-5 ADDED	J.C.	SEP '07	B.C.	S.C.
16	NOTE 7 AMENDED	K.I.	SEP '06	R.S.	S.C.



DES	R.C.	POWER STANDARD DRAWING	
DRN	K.I.	SUBSTATIONS PACKAGE	
CKD	C.C.	GENERAL ARRANGEMENT 1 OF 5	
APPD	...	A3	DRAWING NUMBER S02-1-7-01_1
SCALE	N.T.S.		
ISSUED	DEC 04	DRAFTING STANDARD TO A.S.1100 CAD PRODUCT - DO NOT AMEND MANUALLY	
ALL DIM.	IN mm		





<b>WILSON TRANSFORMER</b>		TO AS 2374.1.2	
OFF CIRCUIT TAPSELECTOR DE-ENERGISE BEFORE CHANGING TAPS		WTC SERIAL NUMBER	
		7007	
kVA	300	Insul. liquid Oil	MINERAL
Phase	3	Temp. rise Oil/Wdg	55/60
Frequency	50	Total mass	2460
Volts (no load)	HV 11000	Untanking mass	695
Amps	LV 4.53	Liquid volume	830
Amps	HV 15.7	Pressure min/max (kPa abs)	50/130
Vector group	Dyn11	Year of manufacture	
Insulation level	L195AC28/AC10	Impedance	Z
Cooling type	ONAN		
Plan of tank			
ACROSS	HV	POS	Z
AB BB CB	11275	1	102.5
AB	11000	2	100.0
A B	10725	3	97.5
Z	10450	4	95.0
CB C BB	10175	5	92.5
		CONN	LV
		5-4	433
		4-6	
		6-3	
		3-7	
		7-2	
PROPERTY OF			
POWER & WATER CORPORATION			
This is a Sealed Transformer			
721-7007-01			

**DESCRIPTION LIST**

- HV EPOXY TERMINAL BLOCK SIMILAR TO REYROLLE TYPE CRP13B/CUS
- HAZEMEYER TYPE MD4 OR KRONE TYPE 10 SWITCHGEAR SUPPLIED & FITTED BY CUSTOMER (2 x UNISTRUT SUPPORTS FITTED)
- LV BUSHING ZEP 2/3/3m HOLE IN PALM \*14
- OFF CIRCUIT TAPSELECTOR 5 POSITION WITH LOCKING FACILITIES
- LV SWITCHGEAR 1000A GENERATOR STRIP, 3 x MDI'S, TEST BLOCK, DOUBLE GPO, 3 x 63A FUSE BASE'S FOR FUTURE STREET LIGHTING, PROVISION FOR FITTING 4 x 630A FUSE STRIPS, (REFER 816-7349-01 FOR FLUORECENT LIGHTING AND SWITCHGEAR CIRCUIT & WIRING DETAILS) CONNECTING SWITCHGEAR BUS WORK TO HAVE BOTH ENDS FITTED WITH COLOURED HEATSHRINK TO ID. PHASE
- RATING AND DIAGRAM PLATE, OWNERSHIP PLATE AND PROVIION FOR MOUNTING PAWA NUMBER PLATE STREET LIGHTING PANEL ON INSIDE OF LV DOOR OR ON LV SWITCHGEAR
- HV DOOR INTER-LOCKED WITH LV DOOR WITH OVERCENTRE LATCH, PROVISION FOR PAD LOCKING SEALING RUBBER 3 x CONSEALED HINGES AND DOOR STAY
- LV DOOR WITH SWING HANDLE (3 POINT LOCKING) WITH PROVISION FOR PAD LOCKING, SEALING RUBBER, 3 x CONSEALED HINGES AND DOOR STAY
- INSULATED NEUTRAL BAR 50 x 6.3 TINNED COPPER COMPLETE WITH TEN (10) TAPPED HOLES M10 & REMOVABLE LINK TO EARTH BAR
- INSULATED LV EARTH BAR 50 x 6.3 TINNED COPPER
- HV EARTH BAR 50 x 6.3 TINNED COPPER COMPLETE WITH NINE (9) HOLES \*11 & REMOVABLE LINK TO LV EARTH BAR
- HV COMPARTMENT FLUORECENT LIGHT 20W
- LV COMPARTMENT FLUORECENT LIGHT 20W
- REMOVABLE LIFTING LUGS SLOT 40x60
- LIFTING LUGS STORAGE HOLE \*14 IN DIVIDING PANEL
- THERMOMETER POCKET
- FLUSH TYPE OIL GAUGE MARKED AT 15°C (BACKGROUND ON WALL OF TANK PAINTED WHITE BEHIND PERPEX)
- PRESSURE RELIEF VALVE
- SEALING PLUG
- FILLER CAP \*40 NOM.
- FILTER BALL VALVE \*25 NOM.
- DRAIN BALL VALVE \*25 NOM.
- COOLING FINS
- CUBICLE COVER WITH M10 TAPPED BOSSES FOR LIFTING AND HANDLES TO AID REMOVAL OF COVER
- BASE FRAME 100 x 50 CHANNEL GALVANISED WITH GENERATOR CABLE ACCESS POINT (COVER PLATE BOLT ON)
- SOCKET \*25 NOM. (WTC USE ONLY)
- HV EARTH BAR
- LV EARTH BAR
- CT,s 500/5A FOR MDI'S (MOUNTED ON LV BUSHING)
- LIGHT SWITCH BRACKET
- E-MAIL ANTENNA MOUNTING LUG (CENTRE PANEL)
- 2 x LUGS (FOR MOUNTING AUX. NEUTRAL BAR IF REQUIRED)

\*SERIAL NUMBER, YEAR OF MANUFACTURE AND IMPENANCE (4.00% NOM.) STAMPED AFTER TEST

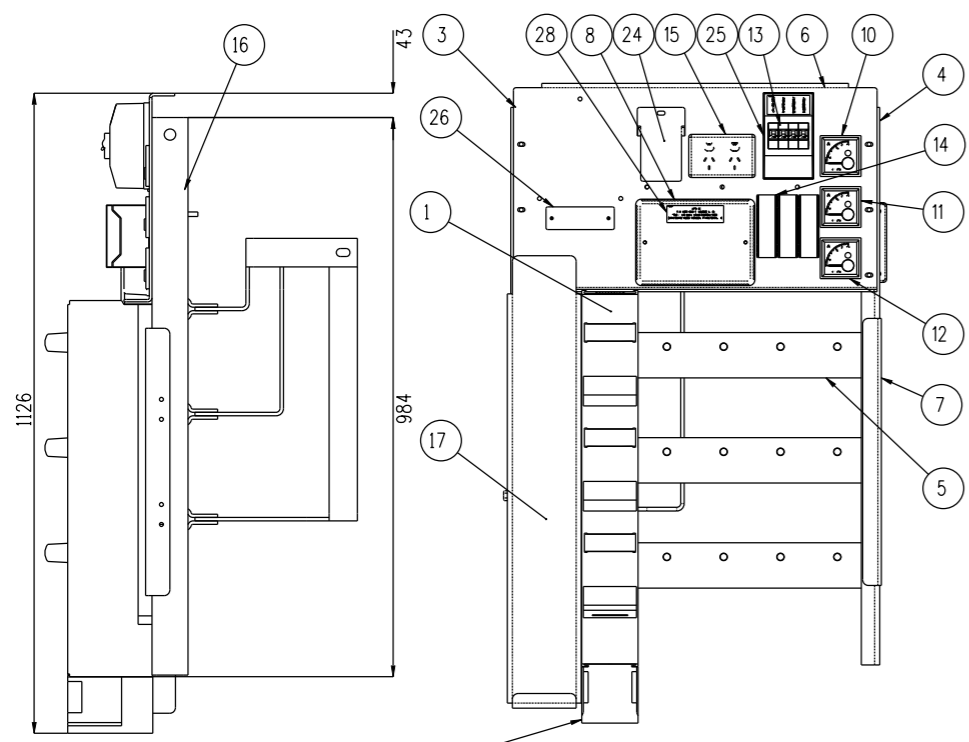
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18	NOTE 7 AMENDED	C.M.	AUG '10	B.C.	S.C.
17	SHEETS 2-5 ADDED	J.C.	SEP '07	B.C.	B.C.
<b>AMENDMENTS</b>					



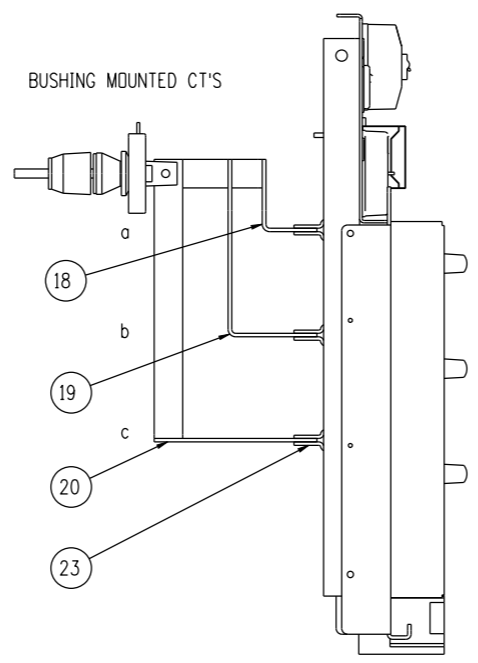
DES	R.C.	POWER STANDARD DRAWING	
DRN	K.I.	<b>SUBSTATIONS PACKAGE</b>	
CKD	C.C.	<b>GENERAL ARRANGEMENT 2 OF 5</b>	
APPD	...	A3	DRAWING NUMBER
SCALE	N.T.S.		
ISSUED	DEC 04	DRAWING NUMBER	
ALL DIM.	IN mm	S02-1-7-01_2	
DRAFTING STANDARD TO A.S.1100		CAD PRODUCT - DO NOT AMEND MANUALLY	







BUSHING MOUNTED CT'S



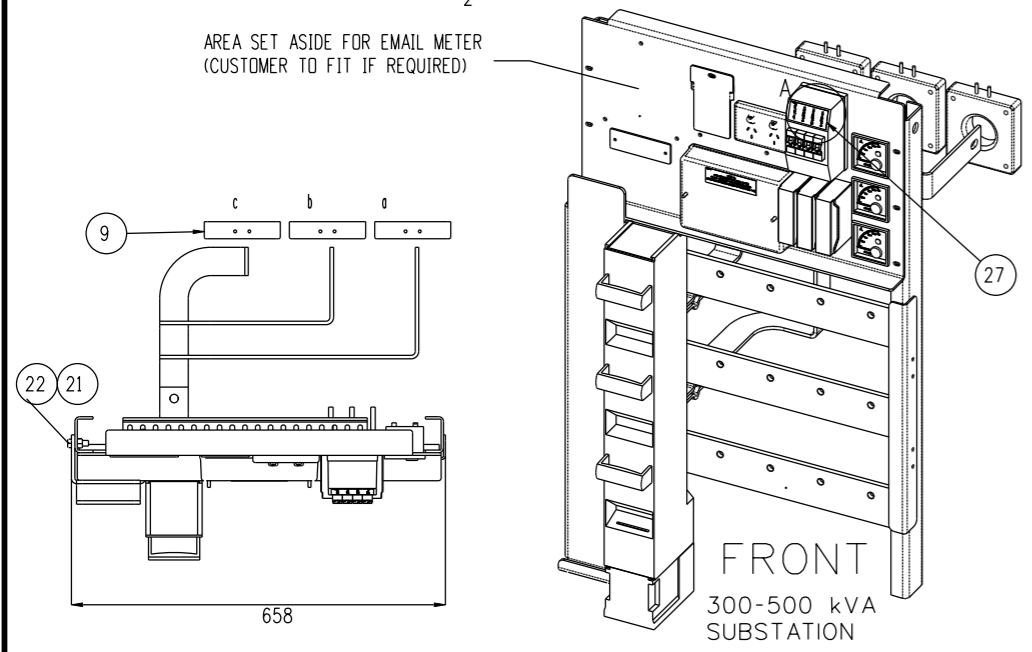
**NOTES**

1. ALL CONNECTING BUS WORK TO BE MARKED BOTH ENDS WITH COLOURED HEAT SHRINK TO IDENTIFY PHASES
2. THE GENERATOR LUGS TO BE MARKED WITH COLOURED DOTS TO IDENTIFY PHASES
3. FOR SUBSTATIONS 750kVA AND ABOVE, STREELIGHT CONTROL PANEL SHALL BE MOUNTED ON THE LV COMPARTMENT DOOR.  
25 sq mm FLEXIBLE CABLE SHALL BE USED TO CONNECT THE STREET LIGHT CONTROL PANEL TO THE STREET LIGHT FUSES (ITEM 14) FLEXIBLE CABLE SHALL BE PROTECTED BY FLEXIBLE CONDUIT WHEN IT IS NEAR THE DOOR JOINT.
4. ALL CURRENT CARRYING BOLTED CONNECTIONS SHALL BE VIA CLASS 8.8 STAINLESS STEEL BOLTS TO THE FOLLOWING TORQUE SPECIFICATIONS:  
M8: 10-15NM  
M10: 30-35NM  
M12: 35-40NM  
ALL CONNECTIONS SHALL USE A SPRING WASHER BETWEEN A FLAT WASHER AND THE NUT. WHERE CAPTIVE NUTS ARE USED THE SPRING WASHER SHALL BE ON THE BOLT SIDE OF THE CONNECTION.  
ALL STAINLESS STEEL BOLTS REQUIRE A COATING OF ANTI-SIEZE BEFORE INSTALLATION. WHERE MULTIPLE BOLTS ARE USED TO MAKE A CONNECTION, DO NOT APPLY FULL TORQUE TO THE BOLTS ON THE FIRST PASS.

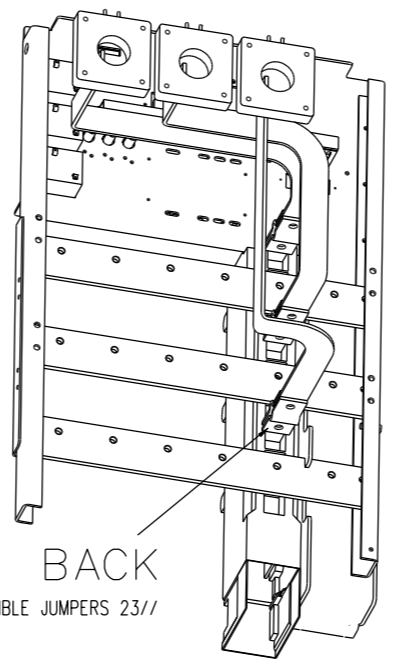
ITEM NO.	DESCRIPTION	Default /QTY
1	JEAN MULLER 1250A REAR CONNECT GENERATOR	1
2	BARRIER JEAN MULLER 630A FUSE STRIP	1
3	SUPPPORT BUSBARS	1
4	SUPPORT BUSBARS	1
5	BUSBAR	3
6	BARRIER CLEAR	1
7	BARRIER - STREET LIGHTING SUPPORT	1
8	BOX TEST CLIPSAL CLI 1008	1
9	CT 800/5A EPOXY	3
10	METER MAX DEMAND 0-800/5A RED	1
11	METER MAX DEMAND 0-800/5A WHITE	1
12	METER MAX DEMAND 0-800/5A BLUE	1
13	CIRCUIT BREAKER 10A 4.5ka 1 PHASE MCB	4
14	FUSE HOLDER 63 Amp	3
15	SOCKET GPD 10A CLIPSAL 25	1
16	TRUNK SLOTTED DUCT DSD 25x50x4.30LG	1
17	BARRIER - STREET LIGHTING SUPPORT	1
18	BUSBAR 40x10 'a' phase	1
19	BUSBAR 40x10 'b' phase	1
20	BUSBAR 40x10 'c' phase	1
21	SETScrew M10 x 30 NYLON 6/6	3
22	NUT M10 NYLON	3
23	50 x 0.3 COPPER STRIP (38// PER PHASE)	15M
24	BARRIER COVER PLATE	1
25	NUT DDDGE M12	18

REFER PAGES 2 AND 3 FOR FASTENERS AND WIRING DETAILS

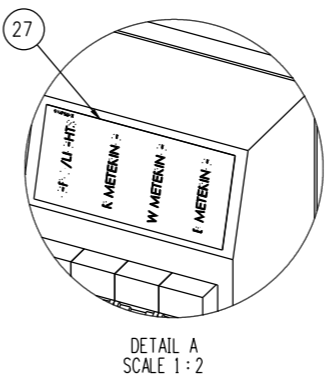
AREA SET ASIDE FOR EMAIL METER (CUSTOMER TO FIT IF REQUIRED)



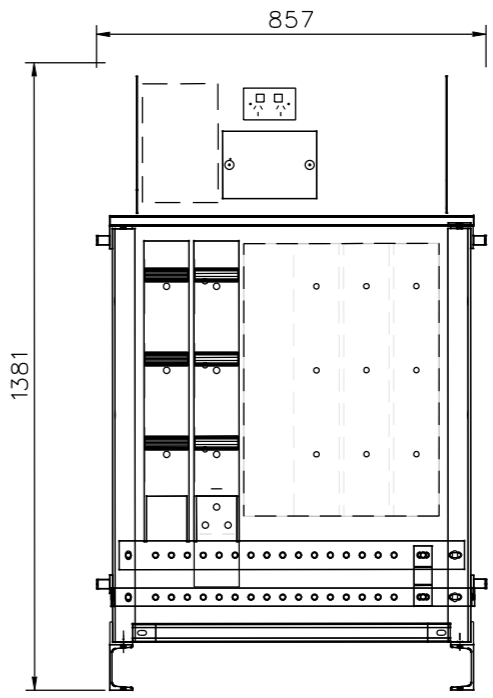
FRONT  
300-500 kVA  
SUBSTATION



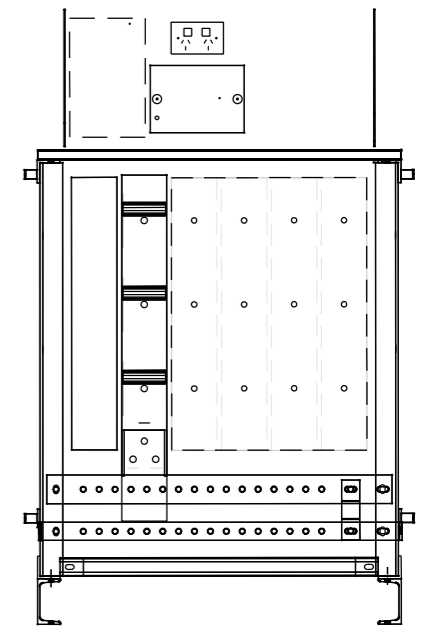
BACK  
FLEXIBLE JUMPERS 23//



DETAIL A  
SCALE 1:2



750-1000 kVA  
LV BOARD

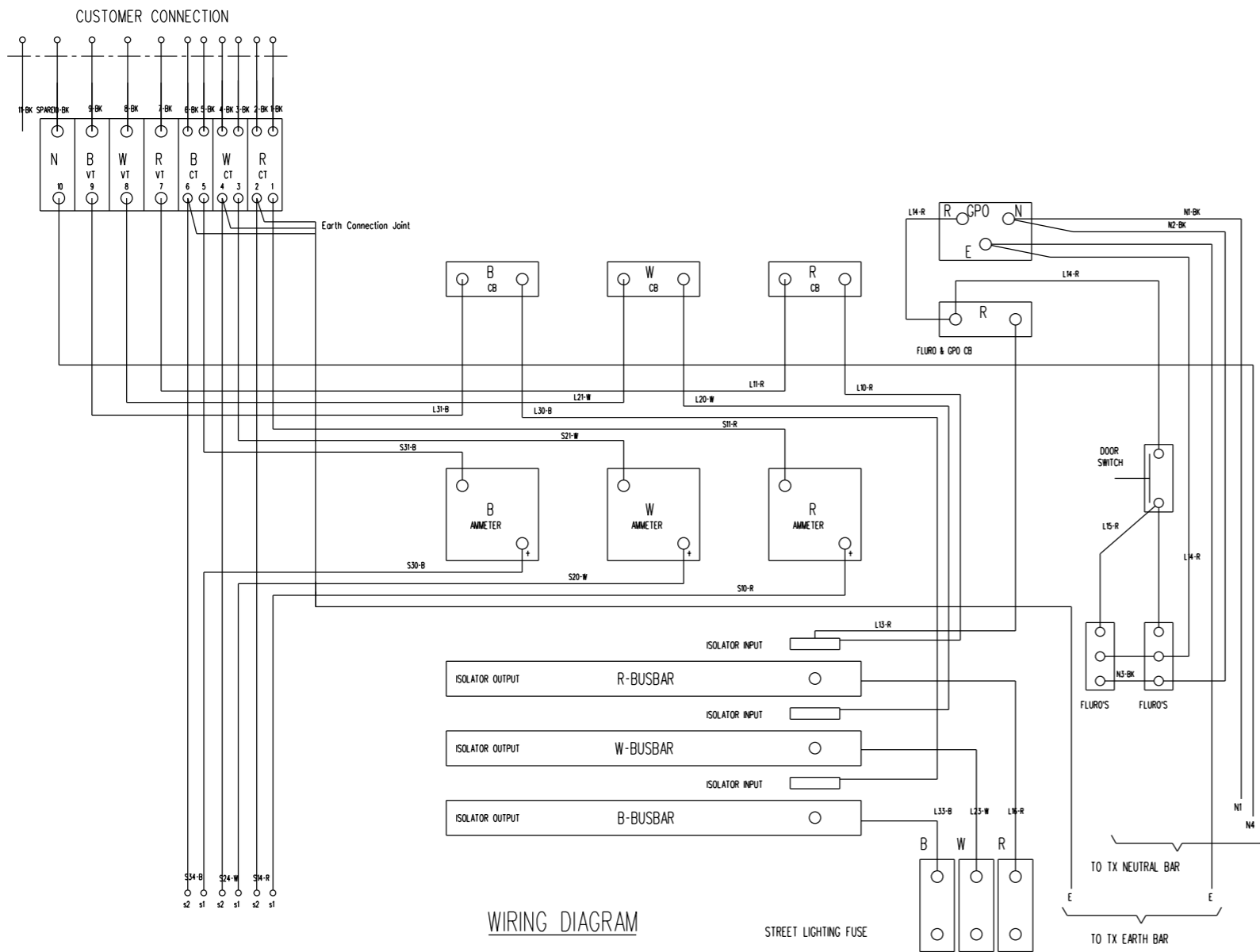


300-500 kVA  
LV BOARD

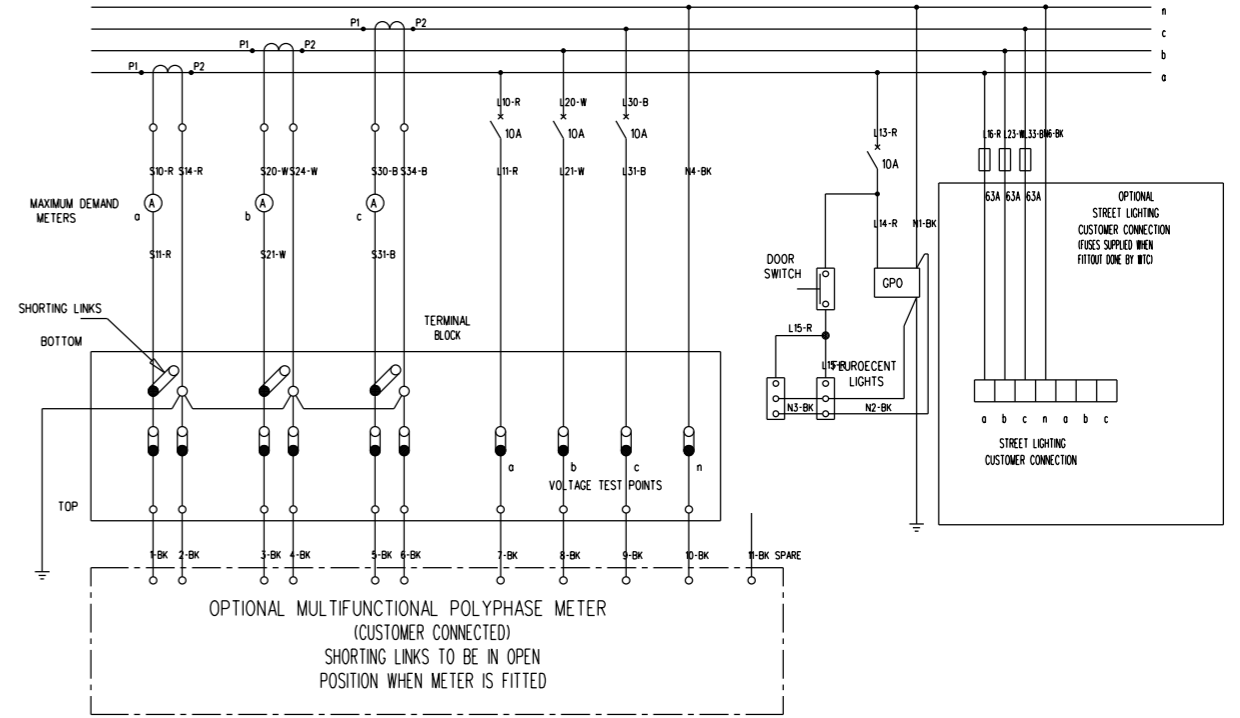
NO	DESCRIPTION	DRN	DATE	CKD	APPD
21	SUPERSEDED BY S02-1-7-17	A.T.	DEC'12	B.C.	B.C.
20	NOTE 4 ADDED	C.C.	NOV'11	A.T.	S.C.
19	CAPTIVE NUTS ADDED	C.M.	AUG'10	A.T.	S.C.
18	750kVA LV PANNEL ADDED, NOTE 3 ADDED	J.C./C.M	DEC '09	A.T.	S.C.
AMENDMENTS					



DES	R.C.	POWER STANDARD DRAWING	
DRN	K.I.	SUBSTATIONS PACKAGE	
CKD	C.C.	GENERAL ARRANGEMENT 4 OF 5	
APPD	...	A3	DRAWING NUMBER S02-1-7-01_4
SCALE	N.T.S.		
ISSUED	DEC 04	CAD PRODUCT - DO NOT AMEND MANUALLY	
ALL DIM. IN	mm	AMDT	
DRAFTING STANDARD TO AS.1100			



WIRING DIAGRAM



CIRCUIT DIAGRAM

NOTES:

CT1-CT3 TRANSFORMERS CURRENT METERING

- WIRE NUMBER
- H70-R R - RED BK - BLACK
- W - WHITE BN - BROWN
- B - BLUE GY - GREY



NOTE  
 ALL FUSES CONNECTED FROM LV SWITCHBOARD AND WIRED USING 7/1.04mm 0.6/1kV  
 ALL OTHER WIRING 7/0.67mm 0.6/1kV  
 NEUTRAL & EARTH CONNECTIONS MADE TO FRONT NEUTRAL BAR

NO	DESCRIPTION	DRN	DATE	CKD	APPD
19	SUPERSEDED BY S02-1-7-17	A.T.	DEC'12	B.C.	B.C.
18	STREET LIGHT WIRING ADDED	C.M.	NOV2010	A.T.	B.C.
17	SHEETS 2-5 ADDED	J.C.	SEP '07	B.C.	B.C.
16	NOTE 7 AMENDED	K.I.	SEP '06	R.S.	S.C.
15	UPDATE INDICATOR PANEL	K.I.	SEP '06	R.S.	S.C.
14	UPDATE TRANSFORMER GA	K.I.	JUL '06	B.C.	B.C.
13	ADD NOTES 6 & 7, STOCK CODE ADDED.	K.I.	MAR '05	C.C.	C.C.
12	INSERT NEW TRANSFORMER TABLE ADDED NEW DISCONNECTOR NOTES	K.I.	DEC 04	R.C.	...
11	750kVA & 1000kVA TRANSFORMER DATA ADDED	R.C.	SEPT 04	A.S.	C.F.



DES	R.C.	POWER STANDARD DRAWING	
DRN	K.I.	<b>SUBSTATIONS</b>	
CKD	C.C.	<b>PACKAGE</b>	
APPD	...	<b>GENERAL ARRANGEMENT 5 OF 5</b>	
SCALE	N.T.S.	A3	DRAWING NUMBER S02-1-7-01
ISSUED	DEC 04		
ALL DIM.	IN mm	DRAWING NUMBER S02-1-7-01	
DRAFTING STANDARD TO A.S.1100		CAD PRODUCT - DO NOT AMEND MANUALLY	

