

PACKAGE SUBSTATION		OIL IS PCB FREE	
S/No.			
MANUFACTURER LOGO		MANUFACTURER DETAILS	
THREE PHASE DISTRIBUTION TRANSFORMER TO AS 60076 (MEPS COMPLIANT)			
Rate kVA	500	Winding Temp Rise °C	65
HV Volts	11000	Top Oil Temp Rise °C	60
LV Volts	433	Impedance at 500VA 75°C	
HV Amps	26.2	Total Mass	kg 3865
LV Amps	667	Tank & Fittings	kg 730
Frequency	Hz 50	Kiosk & Base	kg 830
Insulation level	kV 95/28	Oil Vol.	Litres 545
Cooling type	ONAN	C&C MASS	kg 1380
Press. kPa (abs)	55/130	Switch Gear	kg 440
HV Winding	Al	Year	20XX
LV Winding	Al	Plate No.	50-2584A
TAP POS	TAP CONN	HV VOLTS	LV VOLTS
1	5-6	12100	
2	6-4	11825	
3	4-7	11550	
4	7-3	11275	
5	3-8	11000	433 / 250
6	8-2	10725	
7	2-9	10450	
Dyn 1			
HV Ring Main S/No: LV Switch Gear S/No: Transformer S/No: 500K4JN-			
PROPERTY OF POWER & WATER CORPORATION This is a Sealed Transformer			

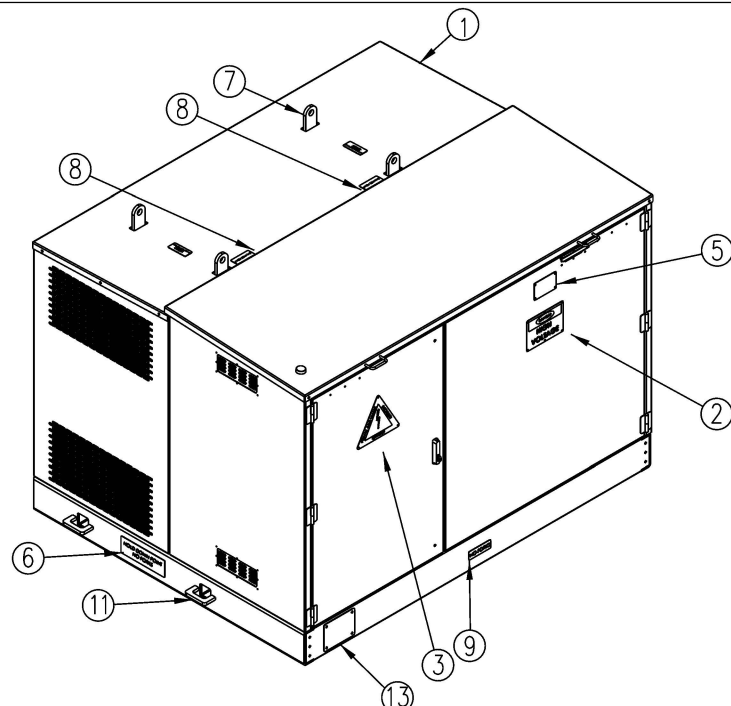
ITEM No.	DESCRIPTION	QTY
1	ENCLOSURE ASSEMBLY	1
2	DANGER LABEL	1
3	DANGER ELECTRICITY	1
4	SS LIFT-OFF HINGE L/H	6
5	PWC SUBSTATION NUMBER	1
6	HOLD DOWN POINT & NO FORKS LABEL	2
7	SUB STATION AND TRANSFORMER LIFTING POINT	2
8	BALANCE POINT	2
9	NO FORKS LABEL	1
10	LIFTING POINT	4
11	LASHING / TIE DOWN POINTS	4
12	FAULT INDICATOR VIEWING WINDOW	1
13	GENERATOR CONNECTION COVER (200x150)	1

DOCUMENT No.	DOCUMENT TITLE
S02-02-05-10	CABLE JOINTS AND TERMINATIONS 11kV AND 22kV CABLE KIT ITEM NUMBERS

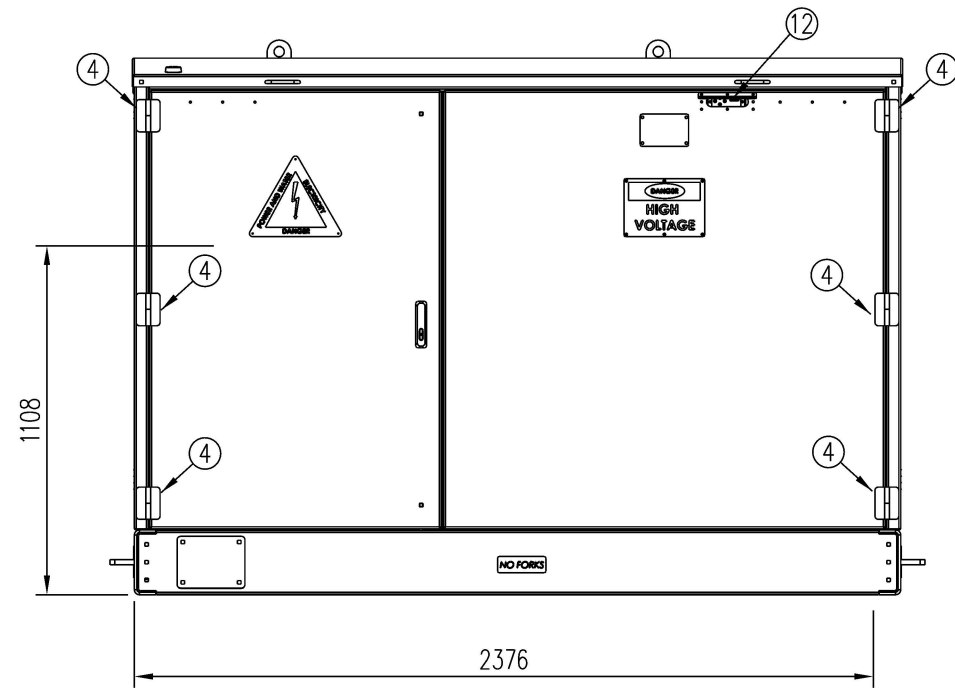
NO	DESCRIPTION	DRN	DATE	CKD	APPD
4	AMENDED LV CURRENT.	J.R.	OCT'24	B.B.	B.V.
3	LV LEVELS UPDATED	J.R.	OCT'24	J.R.	B.C.
2	UPDATED TABLE FORMATTING. UPDATED RATING PLAT VOLTAGES AND CURRENTS	A.N.	NOV'20	B.V.	B.C.
1	UPDATED NOTES 2 & 6. REMOVED NOTE 15.	K.T.	FEB'19	C.C.	C.C.
0	TITLEBLOCK & DRAWING NUMBER FORMATTED	P.H.	JAN'18	B.C.	B.C.
0	ISSUED FOR CONSTRUCTION				

NORTHERN TERRITORY

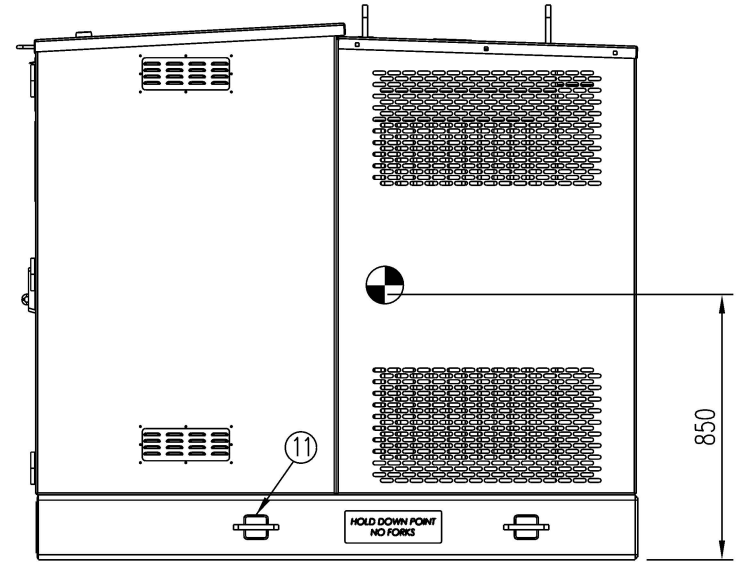
DES	PWC	POWER STANDARD DRAWING		
DRN	PH	SUBSTATION MK3 ALTERNATIVE PACKAGE SUBSTATION GENERAL ARRANGEMENT - SHEET 1 OF 3		
CKD	BC			
APPD	BC			
SCALE	AS SHOWN			
ISSUED	JAN'18	A3	DRAWING NUMBER	S02-01-07-20_1
ALL DIM. IN mm				
DRAFTING STANDARD TO A.S.1100		CAD PRODUCT - DO NOT AMEND MANUALLY		AMD T



MK3 ALTERNATIVE PACKAGE SUBSTATION
GENERAL LAYOUT (DOORS CLOSED) - ISOMETRIC
VIEW
N.T.S



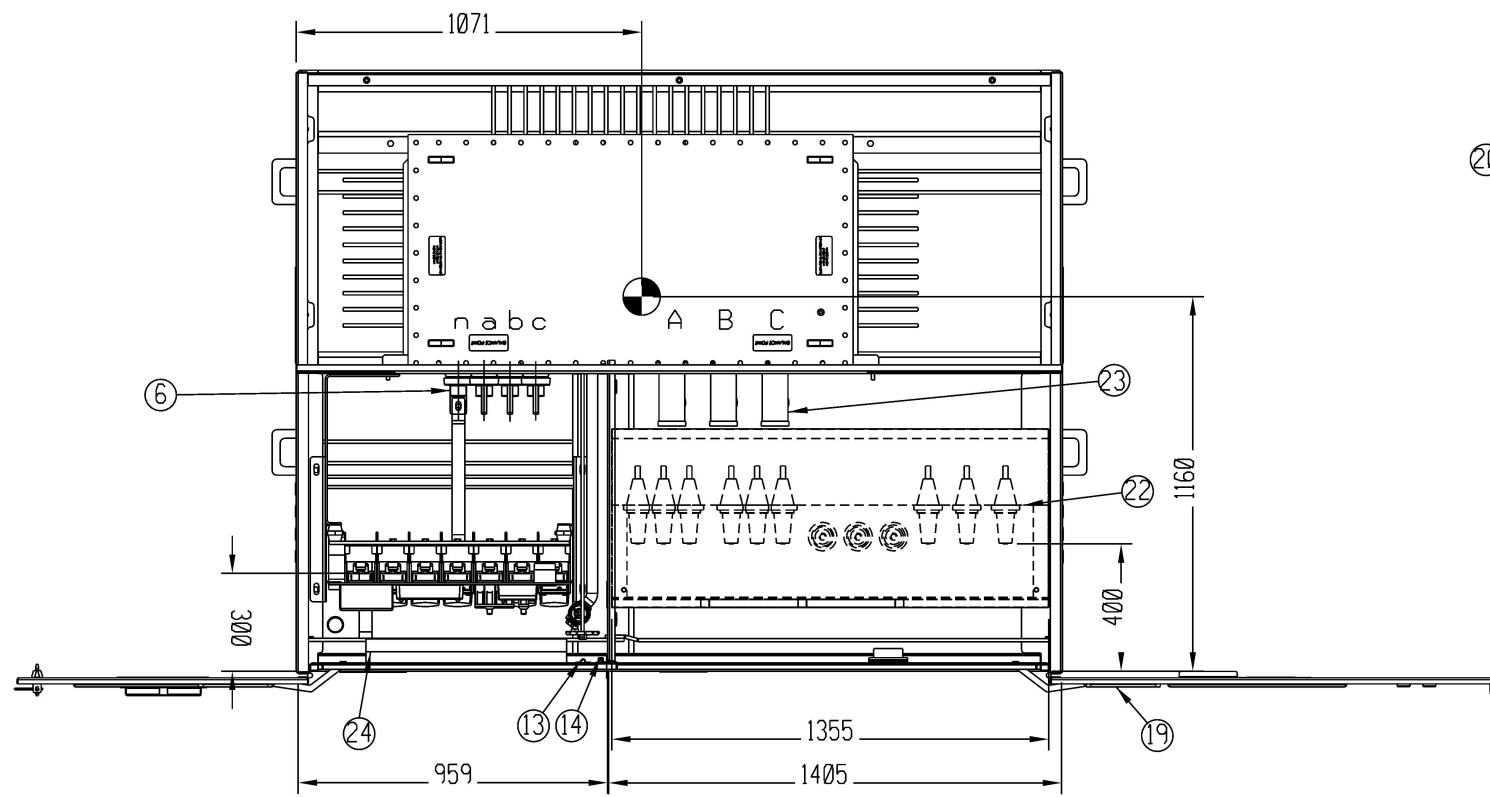
MK3 ALTERNATIVE PACKAGE SUBSTATION
GENERAL LAYOUT (DOORS CLOSED) - FRONT
ELEVATION



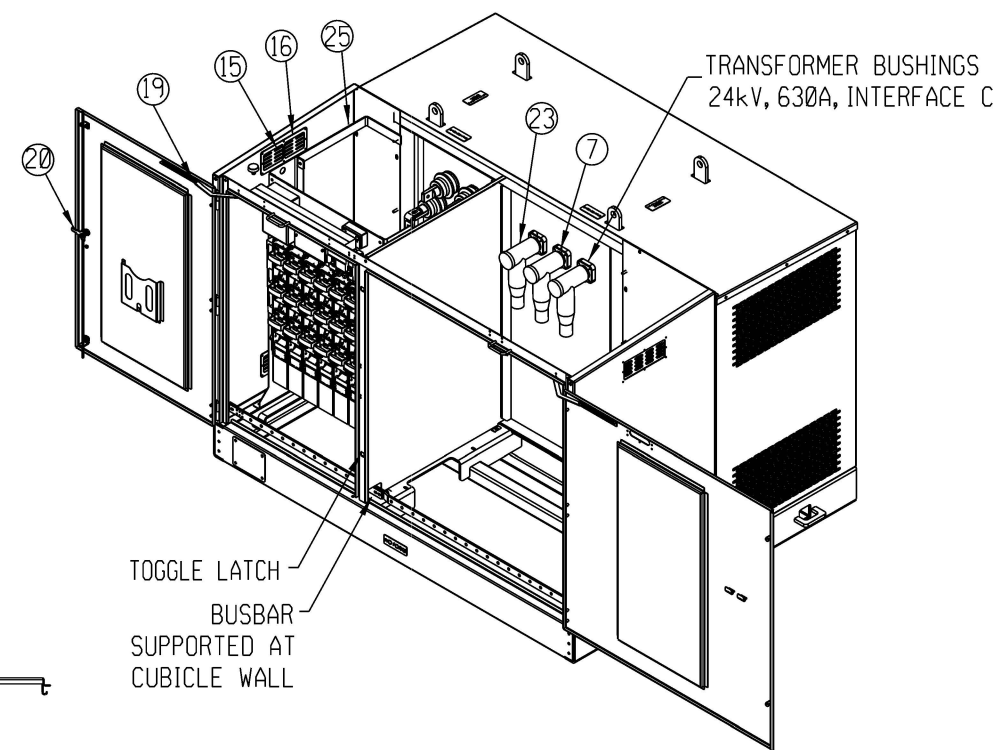
MK3 ALTERNATIVE PACKAGE SUBSTATION
GENERAL LAYOUT (DOORS CLOSED) - SIDE
ELEVATION

NOTES: -

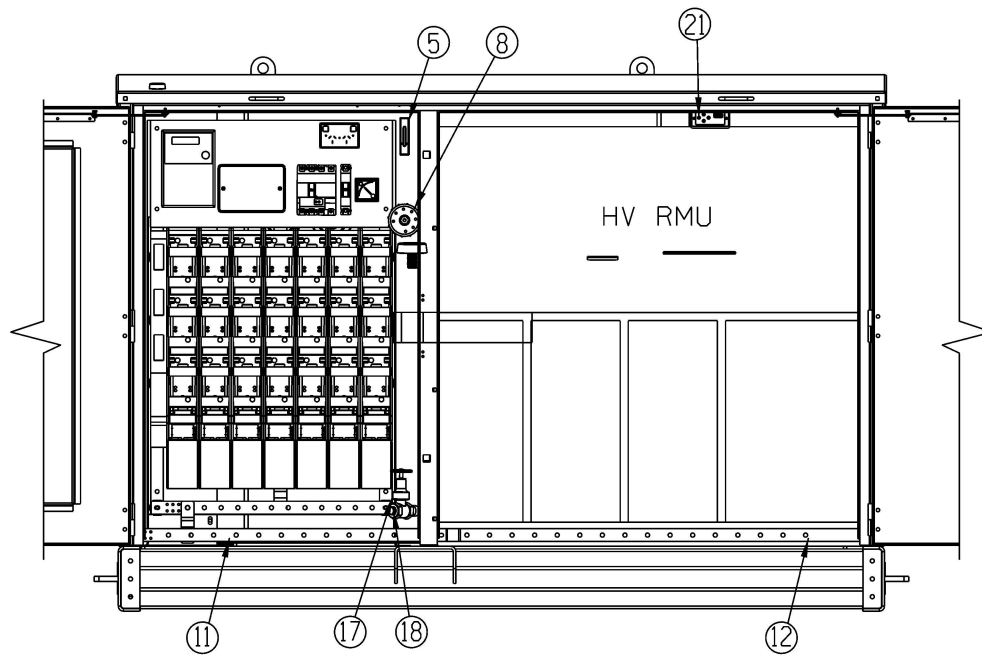
1. COMPRESSION LUGS ARE TO BE USED ON ALL LV CABLE CONNECTIONS FOR XLPE AND OTHER ALUMINIUM CONDUCTORS. CABLE LUGS WITH FINAL COMPRESSION OVER INSULATION TO EXCLUDE MOISTURE ARE ESSENTIAL. REFER TO DRAWING S02-02-02-10.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH PWC SPECIFICATION STSP 02-006..
3. EACH CABLE ENTERING / LEAVING SUBSTATION IS TO HAVE A DESTINATION, TAG REFER TO DRAWING S02-01-08-25.
4. CABLES IN THE HV AND LV COMPARTMENTS SHALL HAVE HEAT SHRINK COLOURED SLEEVES TO MATCH PHASE AND CONNECTED TO SWITCHGEAR WITH R.W.B. FROM REAR OF CABINET TO FRONT. ALL COLOUR CODING SHALL BE ON UN-STRIPPED CABLE.
5. UNLESS SPECIFIED OTHERWISE, PACKAGE SUBSTATIONS SHALL BE SUPPLIED WITH LV PANEL INCLUDING STRIPPLE SWITCH FUSE UNITS.
6. THE CABLE TERMINATION FRAME CAN BE USED TO ASSIST IN CABLE ENTRY AND TERMINATION OF HV CABLES TO THE DRIESCHER MINEX SWITCHGEAR. REFER TO DRAWING S02-1-9-03.
7. ALL HV CABLE TERMINATIONS SHALL BE VIA 630A TYPE C SCREENED DEADBREAK CONNECTIONS.
8. LARGEST CABLE TO BE TERMINATED TO HV SWITCHGEAR IS 400sqmm ALUMINIUM.
9. ALL HV CABLE EARTH SCREENS SHALL BE CONNECTED TO THE HV EARTH BAR.
10. ALL HV CABLES SHALL BE SECURELY CLAMPED BELOW THEIR RESPECTIVE HV BUSHING USING PWC APPROVED CLAMPS. REFER TO DRAWING S02-01-09-03.
11. REFER TO DRAWING S02-02-06-37 FOR FOUNDATION DETAILS, S02-02-06-17 FOR EASEMENT DETAILS AND S02-02-05-09 FOR EARTHING ARRANGEMENTS.
12. HV CABLES CONNECTING THE TRANSFORMER BUSHINGS TO THE SWITCHGEAR FUSED TEE-OFF SHALL BE TERMINATED USING DEAD BREAK ELBOWS AND INSTALLED BY THE SUBSTATION MANUFACTURER.
13. SWITCH NUMBERS SHALL BE RIVETED TO A 40 x 40 ALUMINIUM ANGLE CHANNEL. ANGLE CHANNEL SHALL BE BOLTED TO THE SWITCHGEAR MOUNTING FRAME.
14. NOMINAL TAP POSITION IS TAP 5 (100%).



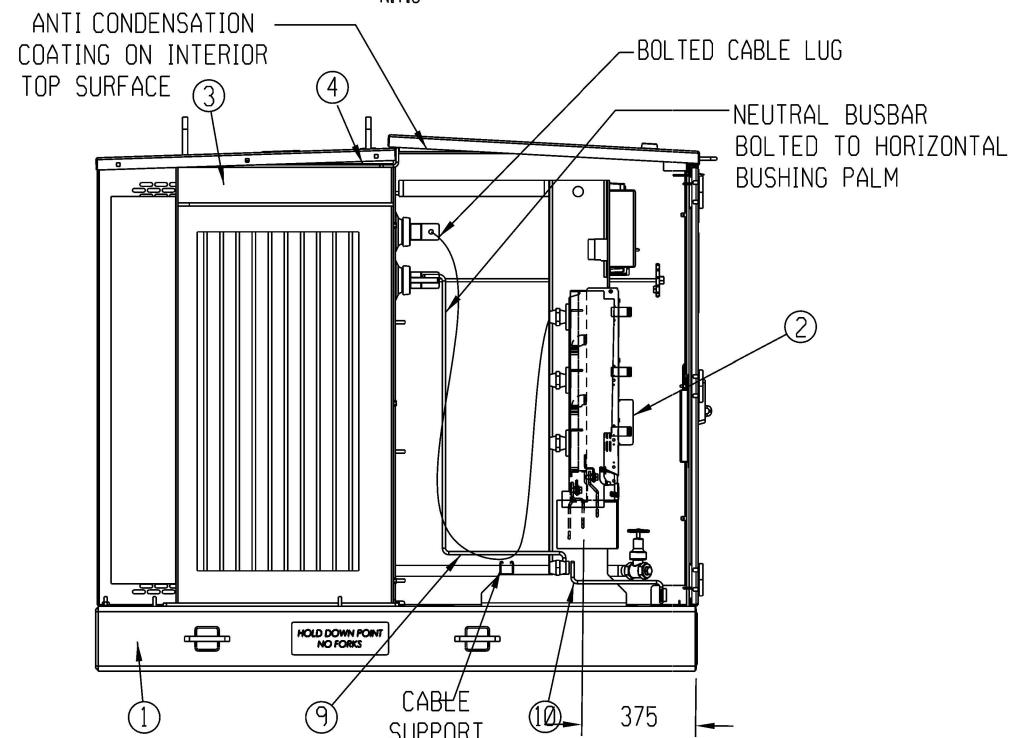
MK3 ALTERNATIVE PACKAGE SUBSTATION
GENERAL LAYOUT (CUBICLE COVER REMOVED /
DOORS OPEN) - PLAN VIEW
N.T.S



MK3 ALTERNATIVE PACKAGE SUBSTATION
GENERAL LAYOUT (RMU REMOVED / DOORS
OPEN) - ISOMETRIC VIEW
N.T.S



MK3 ALTERNATIVE PACKAGE SUBSTATION GENERAL LAYOUT
(FRONT PLINTH, MULLION AND DOORS PARTIALLY REMOVED)



MK3 ALTERNATIVE PACKAGE SUBSTATION
GENERAL LAYOUT (ENCLOSURE PANELS)

ITEM No.	DESCRIPTION	QTY
1	STEEL BASE	1
2	RATING PLATE	1
3	TANK ASSEMBLY	1
4	COVER ASSEMBLY	1
5	OIL SIGHT GAUGE	1
6	#73 BUSHING ASSEMBLY 3.3KV 1050A 1 x DIA 14 P/HOLE	4
7	INTERFACE 'C' BOLTED TYPE, 630A BUSHING	3
8	7 POSITION TAPSWITCH	1
9	NEUTRAL/EARTH BAR - 40x10	1
10	NEUTRAL/EARTH BAR - 40x10	1
11	NEUTRAL/EARTH BAR - 40x10	1
12	NEUTRAL/EARTH BAR - 40x10	1
13	3 POINT LOCKING ROD CATCH	1
14	3 POINT LOCKING CAM CATCH	1
15	LOUVRE MESH	4
16	LOUVRE MESH BACKING PANEL	4
17	VALVE GATE 25NB F/F BSPP	1
18	PLUG 25NB FLANGED BRASS	1
19	WIND STAY	2
20	SWING HANDLE - PADLOCKABLE	1
21	VOLTAGE PRESENCE INDICATOR, EMG TYPE WM	1
22	RMU - 4 WAY	1
23	630A INTERFACE C 'SHORTY' 'T' CONNECTOR	3
24	9W BATTEN LED LIGHT WITH DIFFUSER	1
25	LV BOARD SUPPORT	TBC

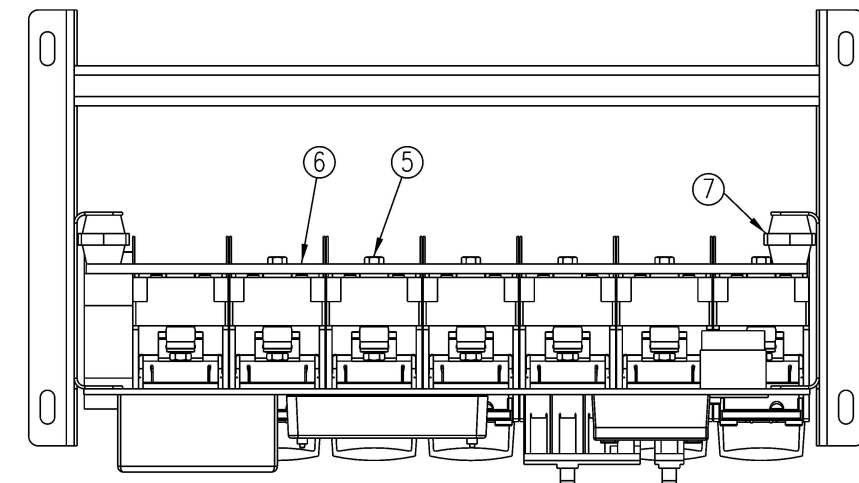
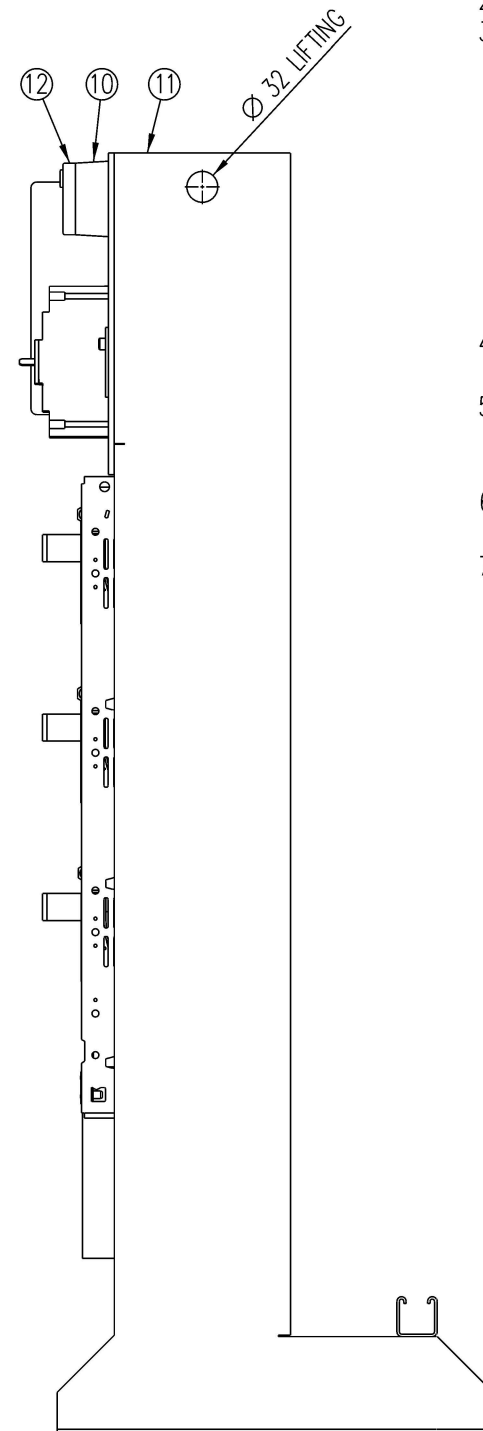
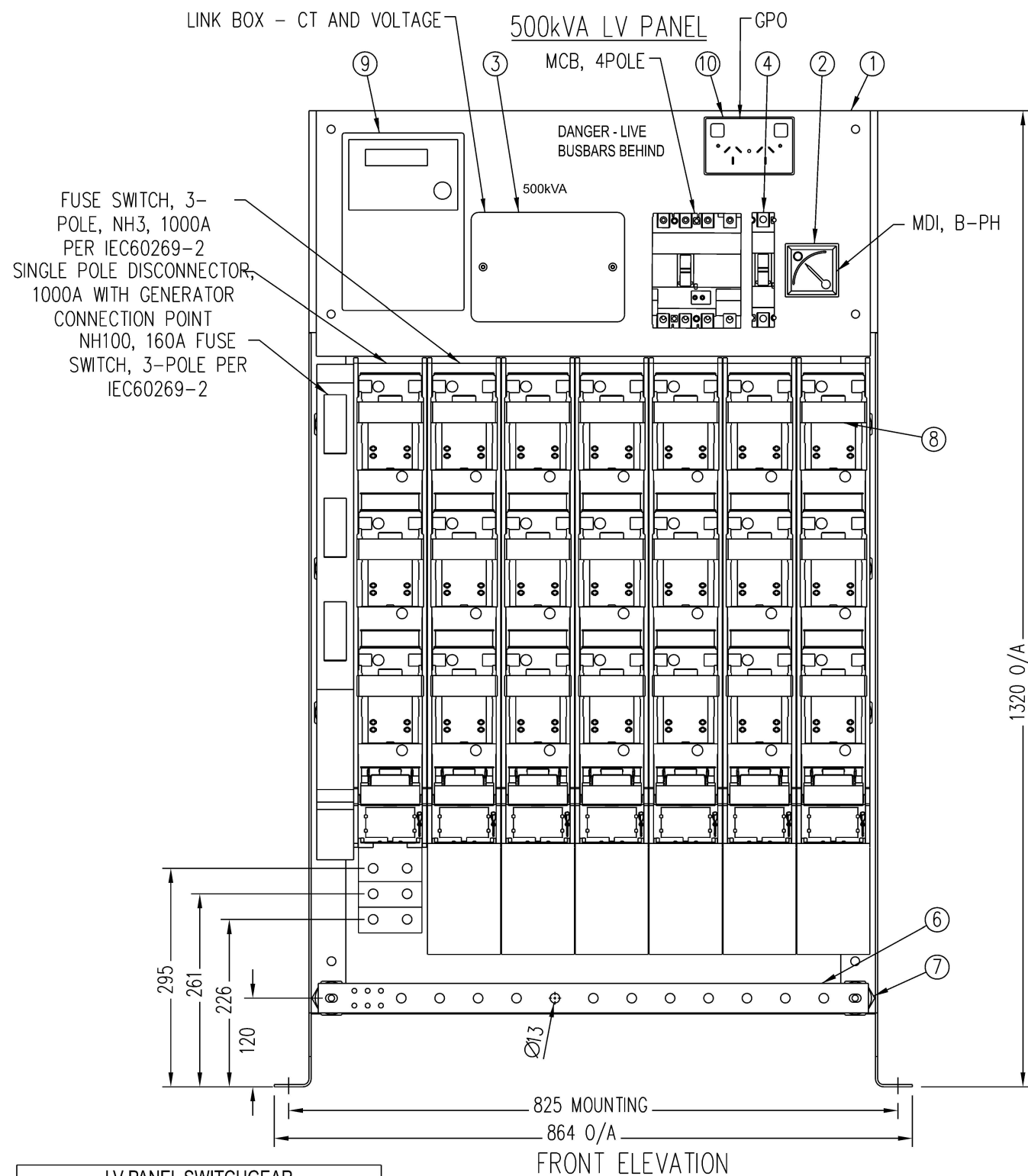
REFERENCE DRAWINGS AND DOCUMENTS	
DOCUMENT No	DOCUMENT TITLE
S02-02-05-10	CABLE JOINTS AND TERMINATIONS 11kV AND 22kV CABLE KIT ITEM NUMBERS

NO	DESCRIPTION	DRN	DATE	CKD	APPD
3	AMENDED SHEET 1.	J.R.	OCT'24	B.B.	B.V.
2	AMENDED SHEET 1.	J.R.	OCT'24	J.R.	B.C.
1	TITLEBLOCK & DRAWING NUMBER FORMATTED.	K.T.	FEB'19	C.C.	C.C.
0	ISSUED FOR CONSTRUCTION.	P.H.	JAN'18	B.C.	B.C.
AMENDMENTS					



DES	PWC
DRN	PH
CKD	BC
APPD	BC
SCALE	AS SHOWN
ISSUED	JAN'18
ALL DIM.	IN mm
DRAFTING STANDARD TO A.S.1100	

POWER STANDARD DRAWING	
SUBSTATION MK3 ALTERNATIVE PACKAGE SUBSTATION GENERAL ARRANGEMENT - SHEET 2 OF 3	
A3	DRAWING NUMBER S02-01-07-20_2
CAD PRODUCT - DO NOT AMEND MANUALLY	
AMDT	



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. 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.
MULTIPLE BOLTS ARE USED TO MAKE A CONNECTION, DO NOT APPLY FULL TORQUE TO THE BOLTS ON THE FIRST PASS.
4. TO AVOID POSSIBLE CONTACT BY EXTERNAL SOURCES ALL LV BUSHING TO SWITCHBOARD BUSBARS SHALL BE COVERED BY COLOURED HEATSHRINK.
5. 1000A GENERATOR / ISOLATOR STRIP (PWC ITEM NUMBER 406808) SHALL BE USED FOR 500kVA. 2000A GENERATOR / ISOLATOR STRIP (PWC ITEM NUMBER 406811) SHALL BE USED FOR 750-1000kVA.
6. THE NUMBER OF 630A FUSE STRIPS (PWC ITEM NUMBER 11866) AVAILABLE ON A MCCB LV PANEL DEPENDS ON THE SIZE OF THE MCCB AND THE PACKAGE
7. ALL MCCB KITS ARE INSTALLED BY MANUFACTURER ON REQUEST AT THE TIME OF ORDERING THE PACKAGE SUBSTATION AND MCCB KIT.

ITEM No.	DESCRIPTION	QTY
1	FRONT PANEL	1
2	VOLTMETER + SELECTOR, 72SQ, 90deg SCALE, 500V AC	1
3	METERING TEST BLOCK	1
4	TERASAKI 'TEMBREAK 2' 16A 1P MCCB, 25kA, S125-NF	1
5	BUSBAR	3
6	NEUTRAL/EARTH BAR - 40x10	1
7	STANDOFF INSULATOR	8
8	NH3 FUSE-SWITCH DISCONNECTOR, 630A	7
9	EDMI MK10 KWH METER S/C22453	1
10	GPO MOUNTING BLOCK, CLIPSAL TYPE 449A	1
11	FRAME ASSEMBLY	1
12	GPO, 10A 250VAC, CLIPSAL TYPE C2025WE	1

LV PANEL SWITCHGEAR WITHOUT MCCB FITTED (L TO R)	
500kVA	1x 160A DIN FUSE STRIP (407050) 1x 1000A GENERATOR DISCONNECTOR (406808) 6x 630A SWITCH-FUSE DISCONNECTOR (11866)
750 & 1000kVA	1x 160A DIN FUSE STRIP (407050) 1x 2000A GENERATOR DISCONNECTOR (406811) 5x 630A SWITCH-FUSE DISCONNECTOR (11866)

MK3 ALTERNATIVE PACKAGE 500kVA LV PANEL

REFERENCE DRAWINGS AND DOCUMENTS

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4	AMENDED SHEET 1.	J.R.	OCT'24	B.B.	B.V.
3	AMENDED SHEET 1.	J.R.	OCT'24	J.R.	B.C.
2	EDITED NOTES 5 & 6. REFORMATTED LV SWITCHGEAR INTO TABLE.	A.N.	NOV'20	B.V.	B.C.
1	TITLEBLOCK & DRAWING NUMBER FORMATTED	K.T.	FEB'19	C.C.	C.C.
0	ISSUED FOR CONSTRUCTION	P.H.	JAN'18	B.C.	B.C.



NORTHERN TERRITORY

DES	PWC	POWER STANDARD DRAWING	
DRN	PH	SUBSTATION	
CKD	BC	MK3 ALTERNATIVE PACKAGE SUBSTATION	
APPD	BC	GENERAL ARRANGEMENT - SHEET 2 OF 3	
SCALE	AS SHOWN	A3	DRAWING NUMBER S02-01-07-20_3
ISSUED	JAN'18		
ALL DIM.	IN mm	DRAFTING STANDARD TO A.S.1100	
CAD PRODUCT - DO NOT AMEND MANUALLY		AMDT	