

BELLAIR MER (BER)


BOOK A	O.P. RACK AND MISCELLANEOUS
B	OBJECT CONTROLLER CABINET 1
C	OBJECT CONTROLLER CABINET 2
Ⓟ	POWER

COVER SHEET

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<b>BOMBARDIER</b> AFRICA ALLIANCE ELP_BER_ERB_EN12_KE_0001	DRAWN	jb	Producer	Internal Checker	External Checker	Technical Adviser	PRASA REGION	PRASA HQ	DRAWN	SCALE	BELLAIR MER (BER)	CSE	6C	790
	DATE	11/14							DATE	TRACED				
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	AMENDED		DATE 09/16	DATE 09/16	DATE 09/16	DATE 20/09/16	DATE 22/09/16	DATE	FILE					

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PRASA  
PASSENGER RAIL AGENCY  
OF SOUTH AFRICA

SHEET	DESCRIPTION	SHEET	DATE OF REVISIONS			
P000	COVER SHEET	P000	A1 01/2016	A2 06/2016	A3 09/2016	
P001	INDEX & RECORD OF REVISIONS	P001	A1 01/2016	A2 06/2016	A3 09/2016	
P002						
P003	REVISION HISTORY	P003	A1 01/2016	A2 06/2016	A3 09/2016	
P004						
P005	POWER DISTRIBUTION CUBICLE LAYOUT	P005	A1 01/2016	A2 06/2016	A3 09/2016	
P006	POWER EQUIPMENT LIST	P006	A1 01/2016	A2 06/2016	A3 09/2016	
P007						
P008	SIGNALLING POWER SCHEMATIC	P008	A1 01/2016	A2 06/2016	A3 09/2016	
P009	INCOMING SUPPLY AND METER WIRING	P009	A1 01/2016	A2 06/2016	A3 09/2016	
P010	POWER CHANGEOVER AND UPS WIRING	P010	A1 01/2016	A2 06/2016	A3 09/2016	
P011	ISOLATING TRANSFORMER AND UPS POWER INDICATION WIRING	P011	A1 01/2016	A2 06/2016	A3 09/2016	
P012	POWER DISTRIBUTION	P012	A1 01/2016	A2 06/2016	A3 09/2016	

SHEET	DESCRIPTION	SHEET	DATE OF REVISIONS			

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BELLAIR MER  
(BER)

INTERLOCKING 1 (UMBILO - PINETOWN)

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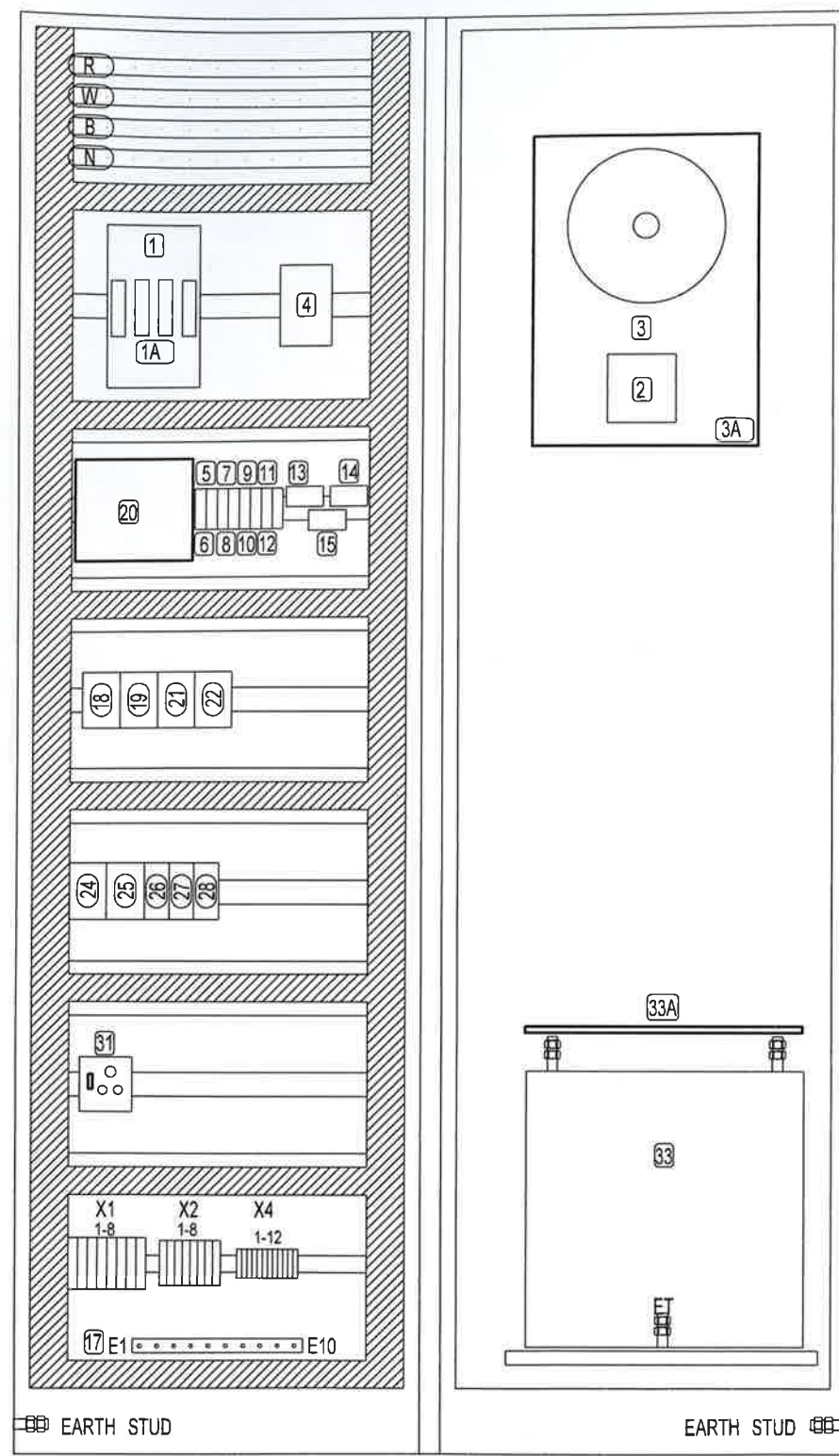
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INDEX & RECORD OF REVISIONS

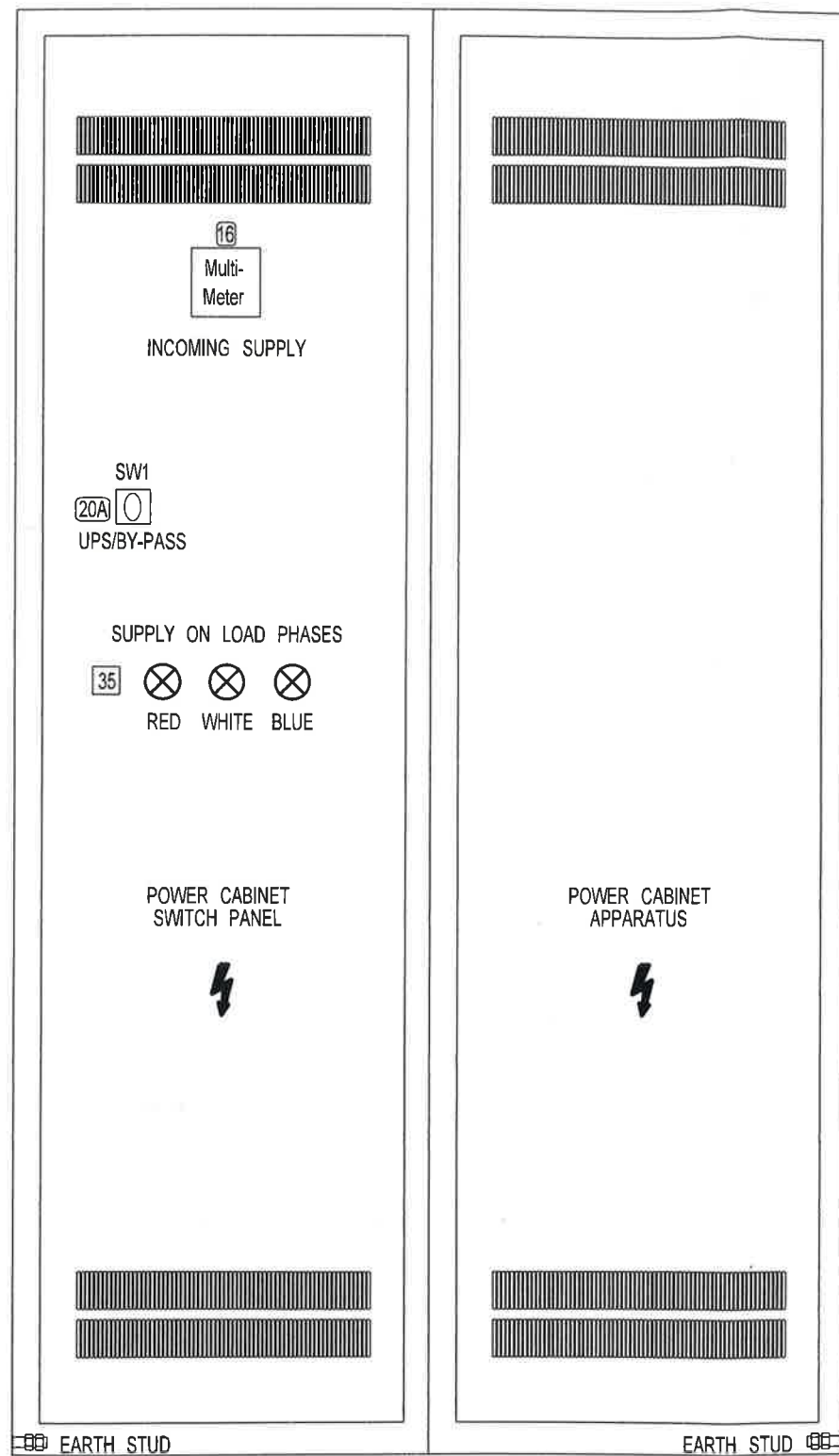
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	A3	P001







EQUIPMENT LAYOUT - INSIDE



DOOR LAYOUT

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POWER DISTRIBUTION CUBICLE LAYOUT

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	A3	P005

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(BER)  
INTERLOCKING 1 (UMBILO - PINETOWN)

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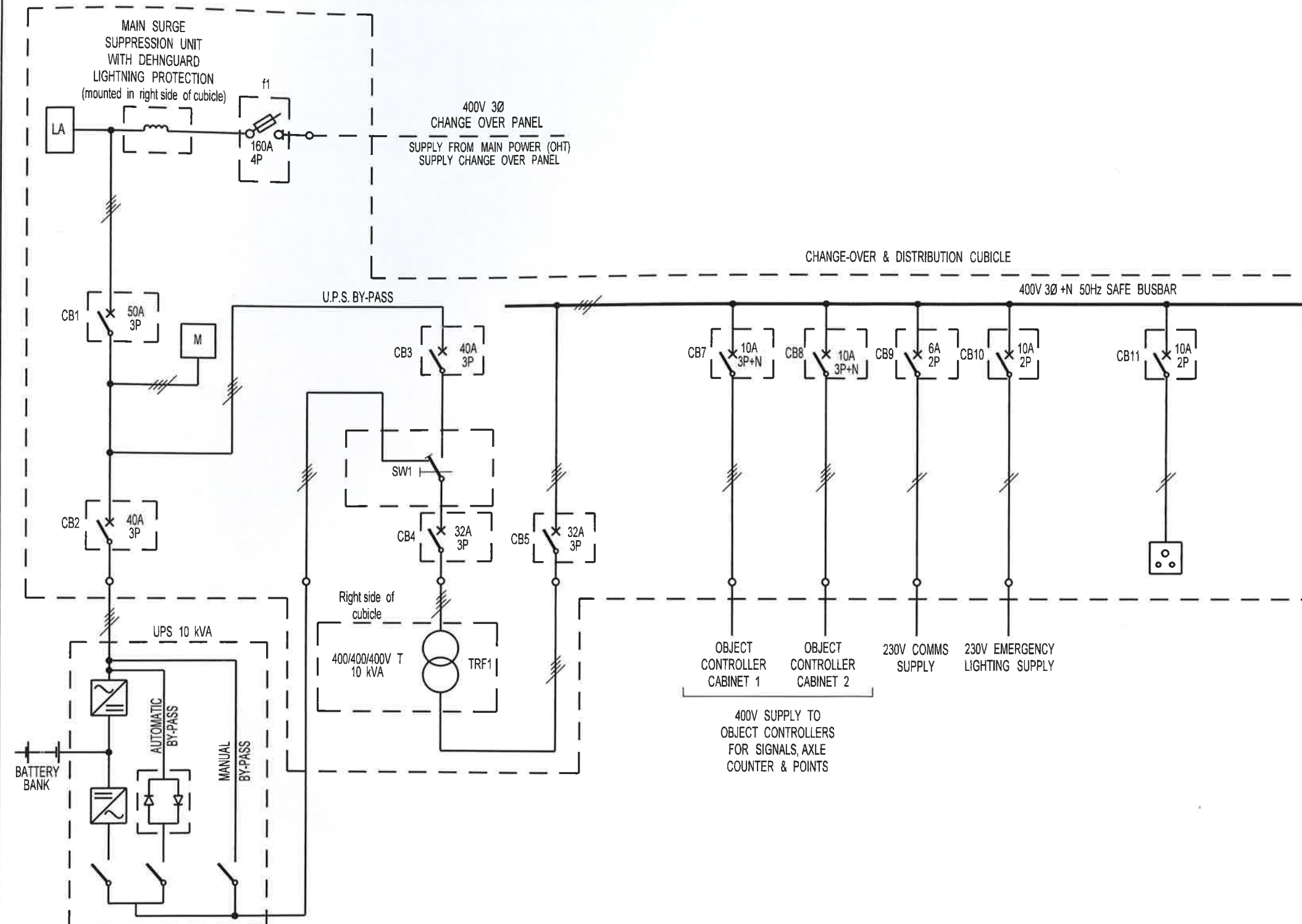
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POWER EQUIPMENT LIST

CSE	6C	790
	Revision No. A3	Sheet P006

COMPONENT LIST			
COMP. CODE DATA	DESCRIPTION TYPE	SUPPLIER ORDER No.	QUANTITY
R, W, B, N	430x25x5mm COPPER BUSBAR WITH 13MM5 TAPPED HOLES AT 30mm CENTRES	VOLTEX	4
1	160A FUSE ISOLATOR SLP 00	ABB	1
1A	160A DIN FUSE 500V 120KA	ABB 160NHG00B	4
2	LIGHTNING PROTECTION CLASS 1 - 100KA SALTEK FLP-B+C MAX1.VS/3+1	SURGETEK 8595090535720	1
3	AIR CORE CHOKE 60A 4P 22uH (TAF50828)	PENBRO	1
3A	PLEXIGLASS COVER FOR TOUCH PROTECTION	PENBRO	1
4	CIRCUIT BREAKER 50A 3P 25KA	ABB 1SDA050897R1	1
5-12	INDUSTRIAL FUSE BASE 32A 10x38 1P	ABB 2CSM151510R1801	8
5-7	CYLINDRICAL FUSE 4A 10x38 500V 120KA	VOLTEX Z1B080822064036K93	3
9-11	CYLINDRICAL FUSE 1A 10x38 500V 120KA	VOLTEX Z1B080822064036K93	3
8, 12	CYLINDRICAL NEUTRAL LINK 32A 10x38	VOLTEX Z1B080822064037K95	2
13-15	CURRENT TRANSFORMER (RING TYPE) CM - CT 100/5	ABB 1SVR450116R5200	3
16	MULTI-METER M2M	ABB 2CSG9883R4052	1
17	EARTH TERMINAL STRIPS	VOLTEX Z1B080821130136K91	1
18, 19	CIRCUIT BREAKER - S203 M-K40 40A 3P 10KA (K CURVE)	ABB 2CDS273001R0557	2
20	CHANGE-OVER SWITCH OT160E03CLP	ABB 1SCA108468R1001	1
20A	SWITCH HANDLE & SHAFT 0HB65J6E65 & 0XP6x161	ABB	1
21, 22	CIRCUIT BREAKER - S203 M-K32 32A 3P 10KA (K CURVE)	ABB 2CDS273001R0537	2
24, 25	CIRCUIT BREAKER - S204 M-K10 10A 4P 10KA (K CURVE)	ABB 2CDS274001R0427	2
26	CIRCUIT BREAKER - S202 M-K6 6A 2P 10KA (K CURVE)	ABB 2CDS272001R0377	1
27, 28	CIRCUIT BREAKER - S201 - C10 NA 10A 1P+N 6KA (C CURVE)	ABB 2CDS251103R0104	2
31	POWER PLUG SOCKET 15A		1
33	ISOLATING TRANSFORMER 3 PHASE 400/400/400V 10KVA	PENBRO	1
33A	PLEXIGLASS COVER FOR TOUCH PROTECTION	PENBRO	1
35	PILOT LIGHTS (RED)	TO BE CONFIRMED	3
X1	TERMINALS ZS70	ABB 1SNK522010R0000	8
X2	TERMINALS ZS35	ABB 1SNK516010R0000	8
X4	TERMINALS ZS6	ABB 1SNK506010R0000	12
36	PENBRO DOUBLE CONVERSION UPS SYSTEM 10KVA TOWER 3300 SERIES	PENBRO	1
37	ROYAL DEEP CYCLE CALCIUM LEAD ACID BATTERIES 100 Amp/Hr	PENBRO	33
39	BATTERY LINKS 125A	TO BE CONFIRMED	2
23, 29, 30, 32, 34 AND 38	SPARE		





LEGEND	
SYMBOL	DESCRIPTION
M	MULTIMETER
	ISOLATING TRANSFORMER
	SOCKET OUTLET
	MANUAL OPERATED CHANGE OVER SWITCH MAKE BEFORE BREAK
	CIRCUIT BREAKER
	FUSE SWITCH DISCONNECTOR
	THREE PHASE +N
	SINGLE PHASE +N
LA	LIGHTNING ARRESTER

Note:

1. All contacts drawn in de-energised state.
2. SW1 is a lockable isolating switch with short circuiting contacts.

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SIGNALLING POWER SCHEMATIC

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BELLAIR MER (BER)  
INTERLOCKING 1 (UMBILO - PINETOWN)

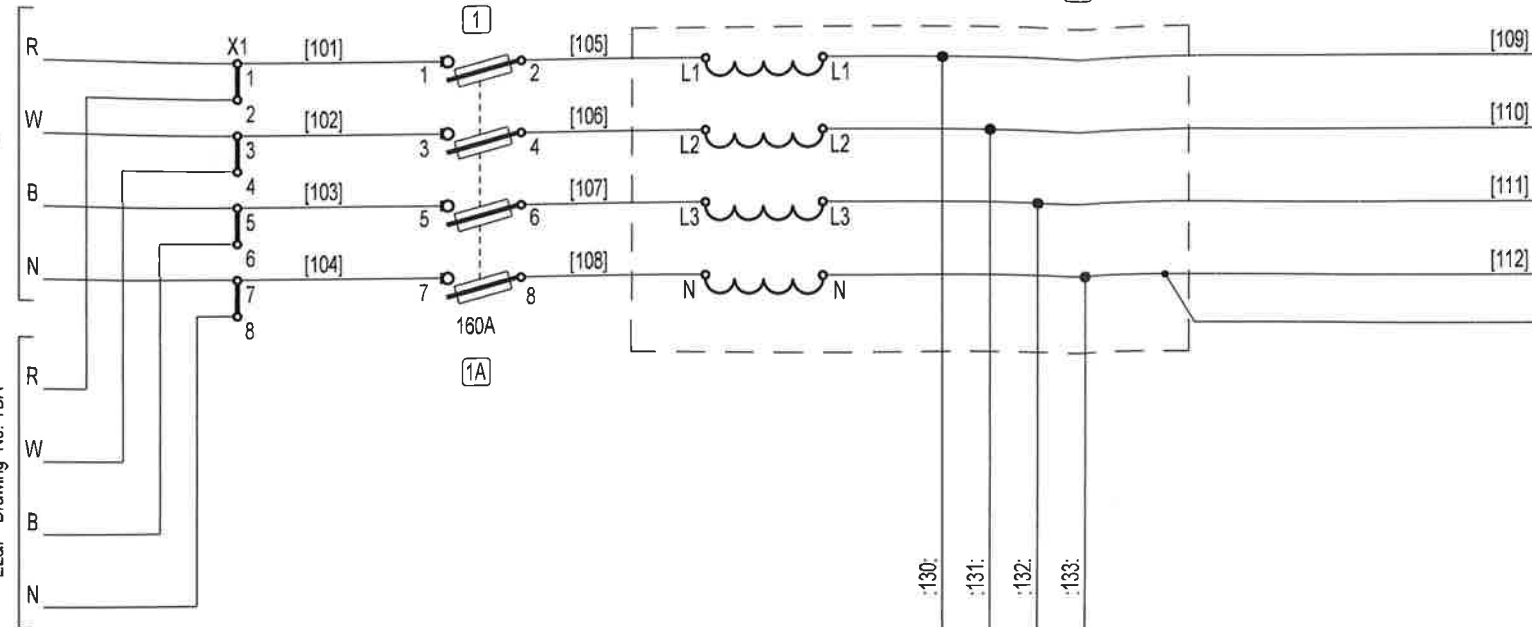


CSE	6C	790
	Revision No.	Sheet
	A3	P008

400V 3Ø + N  
MAINS SUPPLY  
4c - 25mm<sup>2</sup>  
FROM CHANGE OVER PANEL  
OHT Drawing No. TBA

400V 3Ø + N  
TO MAINS D.B.  
4c - 10mm<sup>2</sup>  
EL&P Drawing No. TBA

SURGE SUPPRESSION UNIT (3)



EARTHING BAR (17)

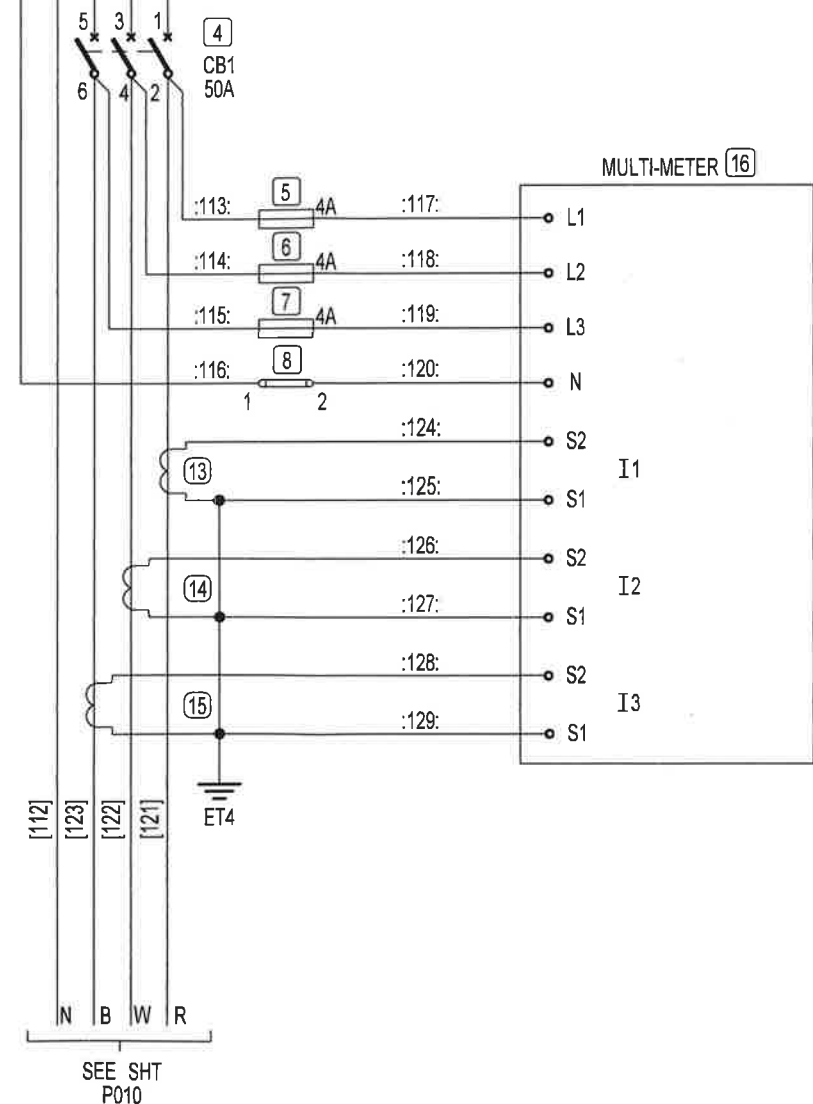
EQUIPMENT	SHEET	TERM
EARTH STUD	P009	ET1
		ET2
SURGE ARRESTOR	P009	ET3
CURRENT TRANSFORMER	P009	ET4
U.P.S. CUBICLE	P010	ET5
TFR 1	P011	ET6
		ET7
15A PLUG	P012	ET8
EMERGENCY LIGHTING	P012	ET9
U.P.S. CUBICLE	P010	ET10

EARTHING DETAIL



\*ALL LOOSE PANELS / DOORS  
TO BE CONNECTED TO EARTH

WIRING NOTES  
POWER CIRCUITS (###) - 25mm<sup>2</sup> STRANDED COPPER WIRE, PVC INSULATED  
SECONDARY CIRCUITS (###) - 4mm<sup>2</sup> STRANDED COPPER WIRE, PVC INSULATED  
AUXILIARY CIRCUITS (###) - 2.5mm<sup>2</sup> STRANDED COPPER WIRE, PVC INSULATED  
ALL EARTH CIRCUITS - GREEN & YELLOW - 2.5mm<sup>2</sup> STRANDED COPPER WIRE, PVC INSULATED  
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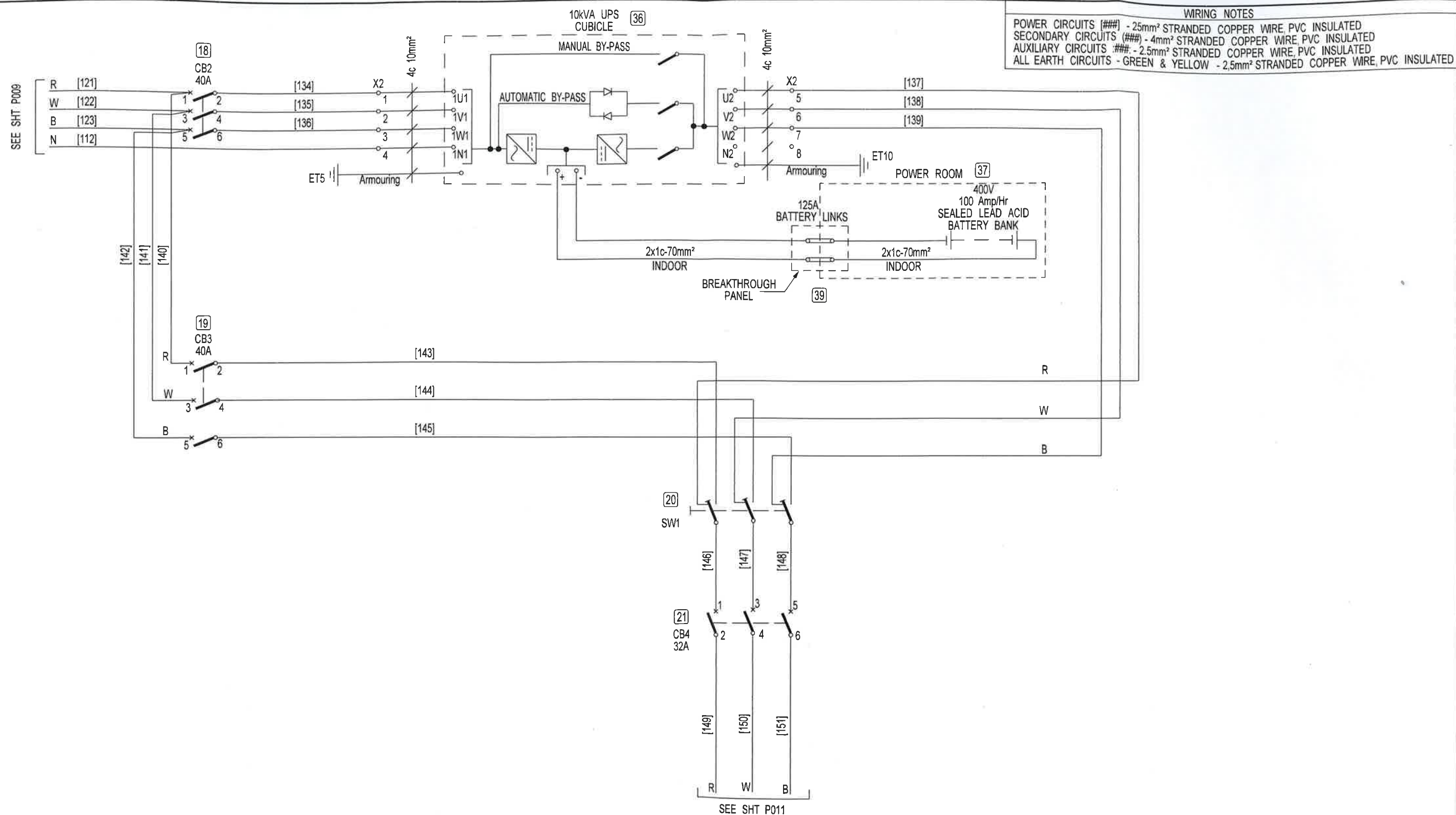
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(BER)  
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INCOMING SUPPLY AND METER WIRING

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	Revision No.	Sheet
	A3	P009



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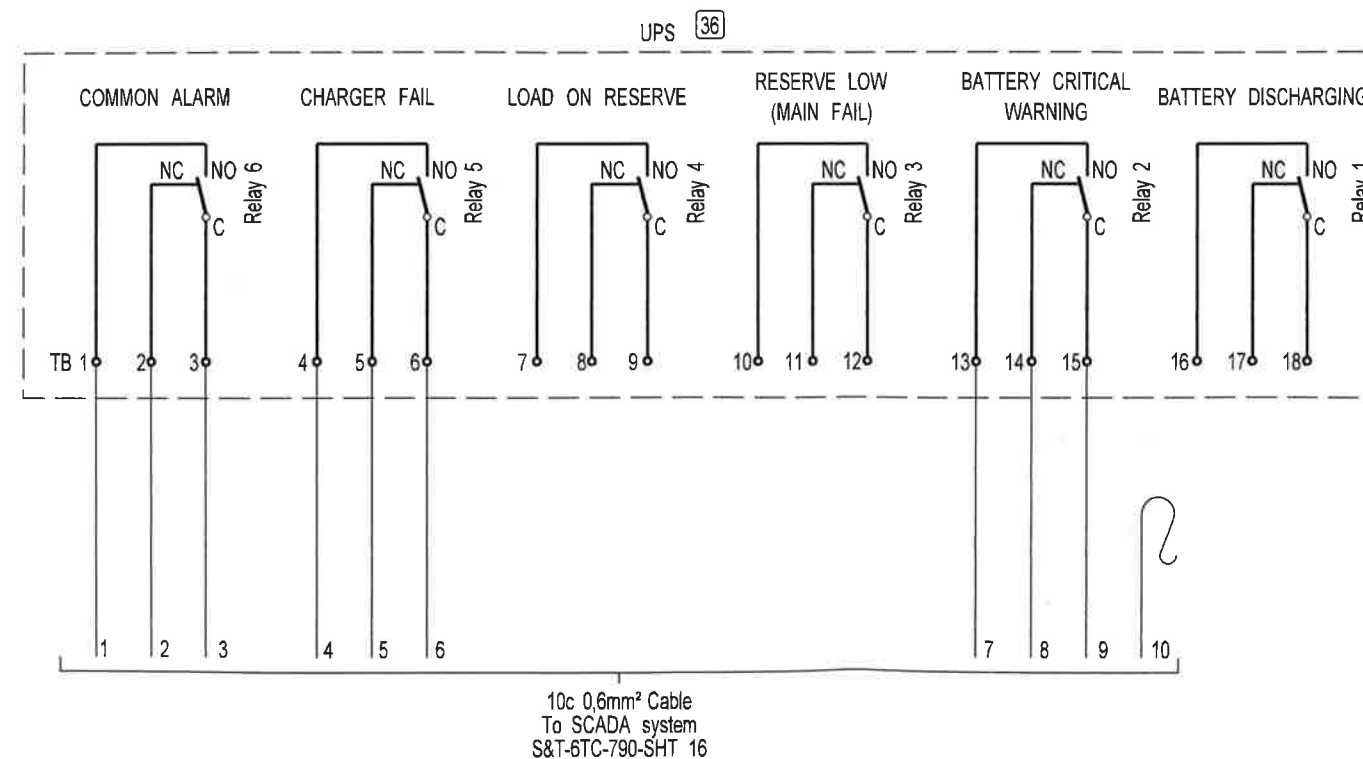
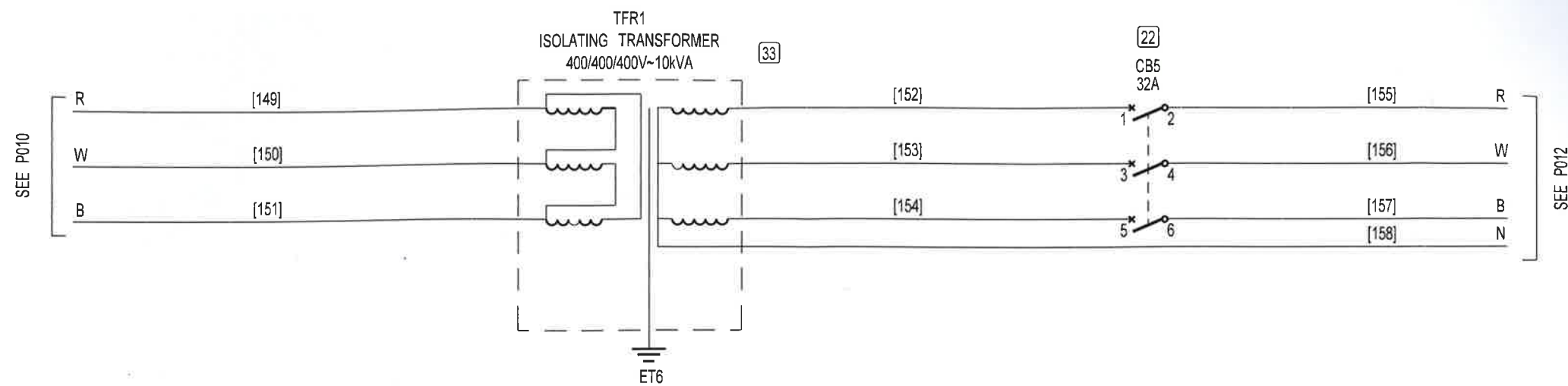
INTERLOCKING 1 (UMBILO - PINETOWN)



Revision No. A3 Sheet P010



WIRING NOTES  
 POWER CIRCUITS (###) - 25mm<sup>2</sup> STRANDED COPPER WIRE, PVC INSULATED  
 SECONDARY CIRCUITS (###) - 4mm<sup>2</sup> STRANDED COPPER WIRE, PVC INSULATED  
 AUXILIARY CIRCUITS (###) - 2.5mm<sup>2</sup> STRANDED COPPER WIRE, PVC INSULATED  
 ALL EARTH CIRCUITS - GREEN & YELLOW - 2.5mm<sup>2</sup> STRANDED COPPER WIRE, PVC INSULATED



NOTE: ALL CONTACTS DRAWN IN THE DE-ENERGISED STATE

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(BER)  
INTERLOCKING 1 (UMBILO - PINETOWN)

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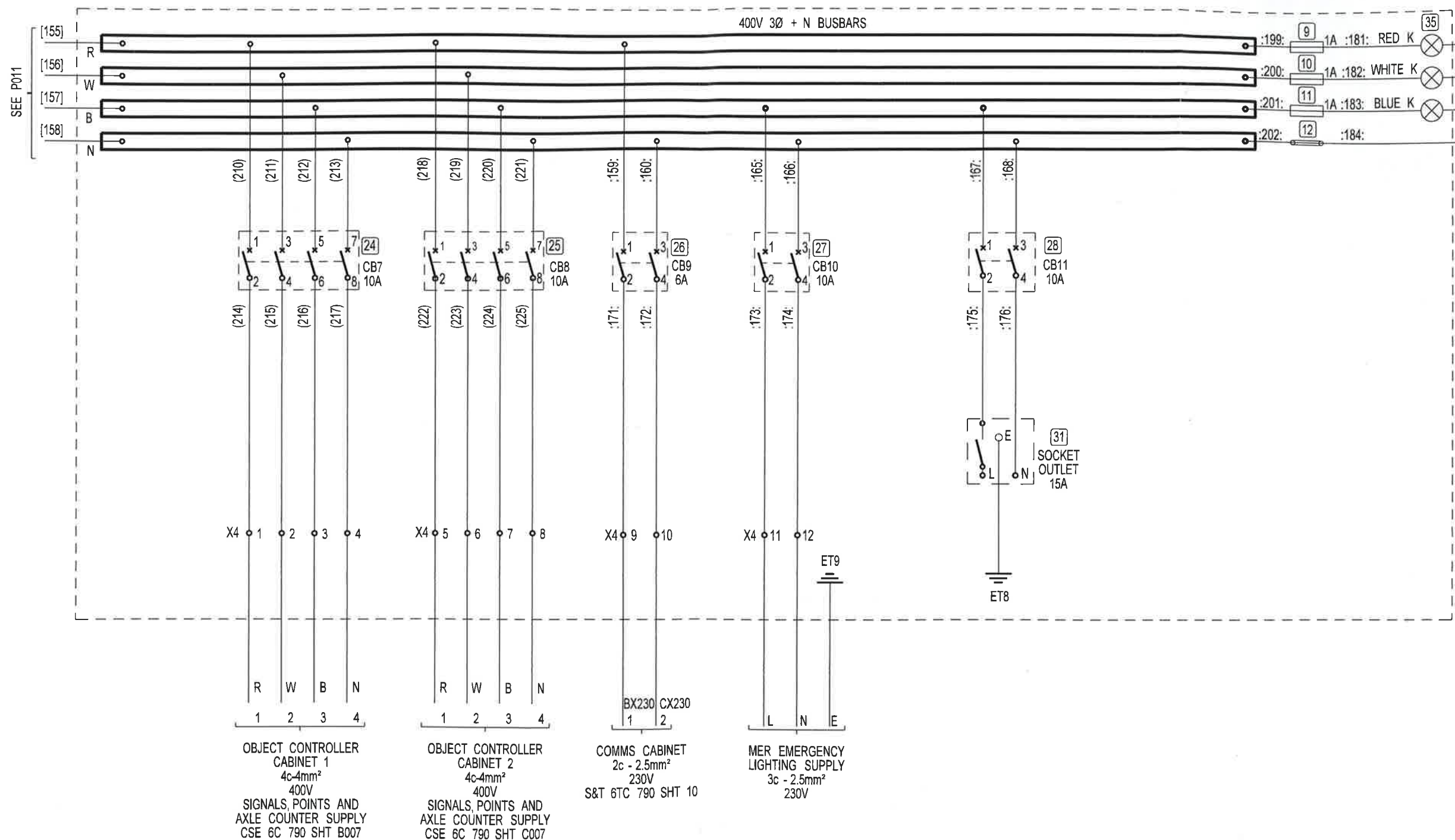
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OF SOUTH AFRICA

ISOLATING TRANSFORMER & UPS POWER  
INDICATION WIRING

CSE	6C	790
	Revision No.	Sheet
	A3	P011

# WIRING NOTES

POWER CIRCUITS (###) - 25mm² STRANDED COPPER WIRE, PVC INSULATED  
 SECONDARY CIRCUITS (###) - 4mm² STRANDED COPPER WIRE, PVC INSULATED  
 AUXILIARY CIRCUITS (###) - 2.5mm² STRANDED COPPER WIRE, PVC INSULATED  
 ALL EARTH CIRCUITS - GREEN & YELLOW - 2.5mm² STRANDED COPPER WIRE, PVC INSULATED,  
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 INTERLOCKING 1 (UMBILLO - PINETOWN)

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POWER DISTRIBUTION

CSE	6C	790
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	A3	P012