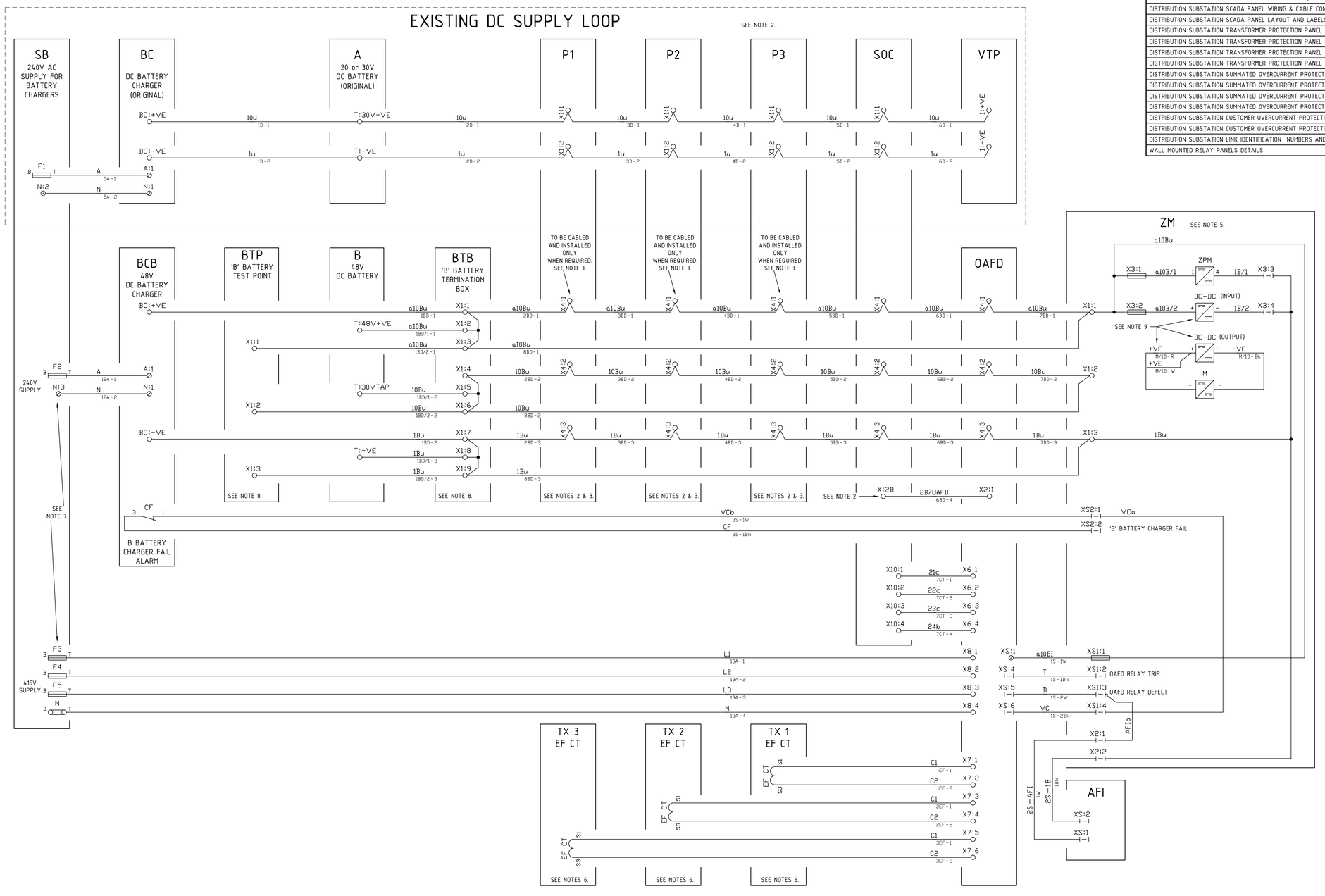

REFERENCES

DISTRIBUTION SUBSTATION SCHEMATIC WITH RMICBS WITH EXPOSED LV BOARDS WITH LV TRANSFORMER ACBS WITH CUSTOMER SUPPLY PANELS WITH SUMMATED OAFD	227360Sh01
DISTRIBUTION SUBSTATION SCHEMATIC WITH RMICBS WITH H2 LV BOARDS WITH LV TRANSFORMER LINKS WITH CUSTOMER SUPPLY PANELS WITH OAFD	242878Sh01
DISTRIBUTION SUBSTATION SUPPLY CABLING AND SCADA SCHEMATIC WITH EXPOSED LV BOARDS WITH OAFD	227360Sh02
DISTRIBUTION SUBSTATION FIBRE LOOPING AND GENERAL MOUNTING DETAILS WITH EXPOSED BUSBAR LV BOARDS WITH OAFD	227360Sh03
DISTRIBUTION SUBSTATION BUSBAR PROTECTION PANEL LAYOUT AND LABELS WITH OAFD	227361Sh01
DISTRIBUTION SUBSTATION BUSBAR PROTECTION PANEL WIRING WITH OAFD	227361Sh02
DISTRIBUTION SUBSTATION INDICATOR PANEL SCHEMATIC, DRILLING & WIRING WITH OAFD	227362Sh01
DISTRIBUTION SUBSTATION SCADA PANEL WIRING & CABLE CONNECTIONS WITH BUSBAR PROTECTION WITH OAFD	227363Sh01
DISTRIBUTION SUBSTATION SCADA PANEL LAYOUT AND LABELS WITH BUSBAR PROTECTION WITH OAFD	227363Sh02
DISTRIBUTION SUBSTATION TRANSFORMER PROTECTION PANEL WIRING & CABLE CONNECTIONS, WITH RMICBS WITH TX LV ACBS WITH OAFD	227364Sh01
DISTRIBUTION SUBSTATION TRANSFORMER PROTECTION PANEL DRILLING WIRING AND CABLING WITH RMICBS WITH TX LV ACBS WITH OAFD WITH WALL MOUNTING	227364Sh02
DISTRIBUTION SUBSTATION TRANSFORMER PROTECTION PANEL WIRING AND CABLE CONNECTIONS WITH RMICBS WITH TX LV LINKS WITH OAFD	242879Sh01
DISTRIBUTION SUBSTATION TRANSFORMER PROTECTION PANEL DRILLING WIRING AND CABLING WITH RMICBS WITH TX LV LINKS WITH OAFD WITH WALL MOUNTING	242879Sh02
DISTRIBUTION SUBSTATION SUMMATED OVERCURRENT PROTECTION PANEL WIRING & CABLING WITH RMICBS WITH TX LV ACBS WITH OAFD	227365Sh01
DISTRIBUTION SUBSTATION SUMMATED OVERCURRENT PROTECTION PANEL DRILLING WIRING AND CABLING WITH RMICBS WITH TX LV ACBS WITH OAFD WITH WALL MOUNTING	227365Sh02
DISTRIBUTION SUBSTATION SUMMATED OVERCURRENT PROTECTION PANEL WIRING AND CABLING WITH RMICBS WITH TX LV LINKS WITH OAFD	242880Sh01
DISTRIBUTION SUBSTATION SUMMATED OVERCURRENT PROTECTION PANEL DRILLING WIRING AND CABLING WITH RMICBS WITH TX LV LINKS WITH OAFD WITH WALL MOUNTING	242880Sh02
DISTRIBUTION SUBSTATION CUSTOMER OVERCURRENT PROTECTION PANEL WIRING AND CABLING WITH RMICBS WITH OAFD	227366Sh01
DISTRIBUTION SUBSTATION CUSTOMER OVERCURRENT PROTECTION PANEL DRILLING WIRING AND CABLING WITH RMICBS WITH OAFD WITH WALL MOUNTING	227366Sh02
DISTRIBUTION SUBSTATION LINK IDENTIFICATION NUMBERS AND LABEL DETAILS WITH RMICBS WITH OAFD	227367Sh01
WALL MOUNTED RELAY PANELS DETAILS	28632

A	20 - 30V DC BATTERY (ORIGINAL)
AFI	ARC FLASH DETECTION INDICATION PANEL
B	48V-30V(TAPPED) DC 'B' BATTERY
BC	BATTERY CHARGER (ORIGINAL)
BCB	BATTERY CHARGER B
BTB	B BATTERY TERMINATION BOX (LOCATED NEAR 'B' BATTERY)
BTP	B BATTERY TEST POINT (LOCATED NEAR AFI PANEL)
OAFD	OPTICAL ARC FLASH DETECTION PANEL
SOC	SUMMATED OVERCURRENT PROTECTION PANEL
P1	TRANSFORMER No.1 PROTECTION PANEL
P2	TRANSFORMER No.2 PROTECTION PANEL
P3	TRANSFORMER No.3 PROTECTION PANEL
SB	415V LV SERVICE BOARD
VTP	VOLTMETER / TEST POINT FOR 30V DC 'A' BATTERY
ZM	SCADA PANEL
PANEL ABBREVIATION TABLE	

NOTES:

1. THIS DRAWING SHOWS THE AC & DC SUPPLY AND SCADA CABLING WHICH IS TO BE USED IN CONJUNCTION WITH RMICB CHAMBER TYPE SUBSTATIONS WHEN INSTALLING THE OPTICAL ARC FLASH DETECTION UPGRADE.

2. THE EXISTING CABLING AND TERMINALS SHOWN ARE NOMINAL ONLY. THE CONFIGURATION IS SHOWN AS A GUIDE. ASSOCIATED CABLE NAMING AND TERMINAL NUMBERING ARE NOT REQUIRED TO BE UPDATED.

3. CABLES 2BD, 3BD, 4BD, & 5BD ARE ONLY REQUIRED TO BE CABLED TO THE TRANSFORMER PROTECTION PANELS WHERE THE TRANSFORMER LV AIR CIRCUIT BREAKERS HAVE TWO DC TRIP COILS. WHERE THIS IS NOT REQUIRED CABLE 2BD IS TO BE CABLED DIRECTLY TO THE SUMMATED OC PANEL AND CABLES 3BD, 4BD, & 5BD NOT INSTALLED. FOR CONSISTENCY CABLE BETWEEN SUMMATED OC PANEL AND OAFD PANEL SHALL ALWAYS BE NAME 6BD.

4. NEW CABLES TO BE NAMED ACCORDING TO THIS DRAWING.

5. SCADA PANEL (ZM) REQUIRES SOME EXTRA EQUIPMENT NOT SHOWN;
   a. NETWORK CONNECTION BETWEEN MODEM & SCADA CPU SLOT 1.
   b. ANTENNA FOR MODEM.
   c. TERMINATIONS TO SCADA DI SLOTS 3 & 4.
   REFER TO WIRING DIAGRAM 227363-1 & CURRENT CONTRACT MANUFACTURER'S DRAWINGS.

6. LOCATION OF THE EARTH FAULT CT'S TO BE DETERMINED BY THE INDIVIDUAL SUBSTATION INSTALLATION.

7. THESE FUSES AND LINK NAMING ON THIS SCHEMATIC ARE NOMINAL, FINAL NAMING WILL DEPEND ON THE SERVICES LOCATED AT THE SUBSTATION. NEW FUSES AND LINK FOR AC SUPPLIES MAY BE ADDED TO EXISTING SERVICE BOARD IF POSSIBLE. A REPLACEMENT SERVICE BOARD MAY BE REQUIRED. FUSES AND LINK TO BE CLEARLY LABELLED AND NUMBERED.

8. 'B' BATTERY TEST POINT BOX (BTP) ONLY REQUIRED WHERE THE 'A' BATTERY VOLTMETER/TEST POINT OR THE ARC FLASH DETECTION INDICATION PANEL HAVE BEEN MOUNTED EXTERNALLY TO THE SUBSTATION CHAMBER. 'B' BATTERY TERMINATION BOX (BTB) ADDED TO ENABLE SIMPLIFIED BATTERY REPLACEMENT. 'BTB' ENCLOSURE TO BE PVC, IP65 RATED WITH MINIMUM DIMENSIONS OF 180mm(L)x175mm(W)x75mm(D) WITH G TYPE TERMINAL RAIL AND UTILUX 3820 TERMINALS.

9. THE MODEM REQUIRES A DC-DC CONVERTER. THE MODEM COMES WITH A CABLE TO BE CONNECTED TO THE DC-DC CONVERTER AS SHOWN.

TAGNAME	MFG	CATNO	DESC	REF_DWG
DC-DC	SNAPTECH	GB30-4812	DC/DC CONVERTER 48VDC TO 12VDC 30W	-
M	SIERRA WIRELESS	RV50X	4G MODEM	-
ZPM	SIEMENS	PS-8620	POWER MODULE FOR SICAM A8000 UNIT	-
X1, 2, 4, 6 ○ X7, 10	UTILUX	3820	RAIL MOUNTED TERMINAL	118547
X8 ○	PHOENIX	UT 10 OG 3046281	FEED-THROUGH TERMINAL BLOCK	-
X1 ○	UTILUX	3820	RAIL MOUNTED TERMINAL	118547
X2, X3 |—|	WEIDMULLER	SAKR	RAIL MOUNTED ISOLATING TERM CAT No.41226	-
XS1, X3 ▭	WEIDMULLER	ASK1	RAIL MOUNTED FUSE CAT No. 37676	-
XS1 - 2 |—|	WEIDMULLER	SAKR	RAIL MOUNTED ISOLATING TERM CAT No.41226	-
LEGEND				

AMD	DATE	DESCRIPTION	DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY
5	08/06/2023	ADDED DC-DC CONVERTER, X3 ISOLATING FUSES & LINKS. AMENDED MODEM & SCADA UNIT TYPE IN SCHEMATIC. AMENDED LEGEND FOR CHANGES. AMENDED NOTE 5 & ADDED NOTE 9.	L.M.	L.M.	M.B.	M.B.
6	24/10/2024	NEW UPDATED BOARDER ADDED	S.M.	S.M.	M.B.	M.B.
7	10/09/2025	DRAWING BORDER UPDATED. UTLILUX H2238 ORANGE RAIL MOUNTED TERMINALS REPLACED BY PHOENIX 'UT 10 OG 3046281' FEED-THROUGH TERMINAL BLOCK. LEGENDS TABLE UPDATED.	H.O.	H.O.	M.B.	M.B.

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SCALE	AS SHOWN
DESIGNED	-
DRAWN	L.MARTINUZZI
CHECKED	B.HAINES
APPROVED	A.TURNER
DATE	12/07/2012
TRIM REF	-
ISSUED FOR	CONSTRUCTION ISSUE
PROJECT NUMBER	SM 6717-1-2

DISTRIBUTION SUBSTATION SUPPLY CABLING AND SCADA SCHEMATIC WITH EXPOSED LV BOARDS WITH OAFD

DRAWING No 227360 | SHEET 2 | AMD 7 | SIZE B1

C&P - DISTRIBUTION SUBSTATIONS

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