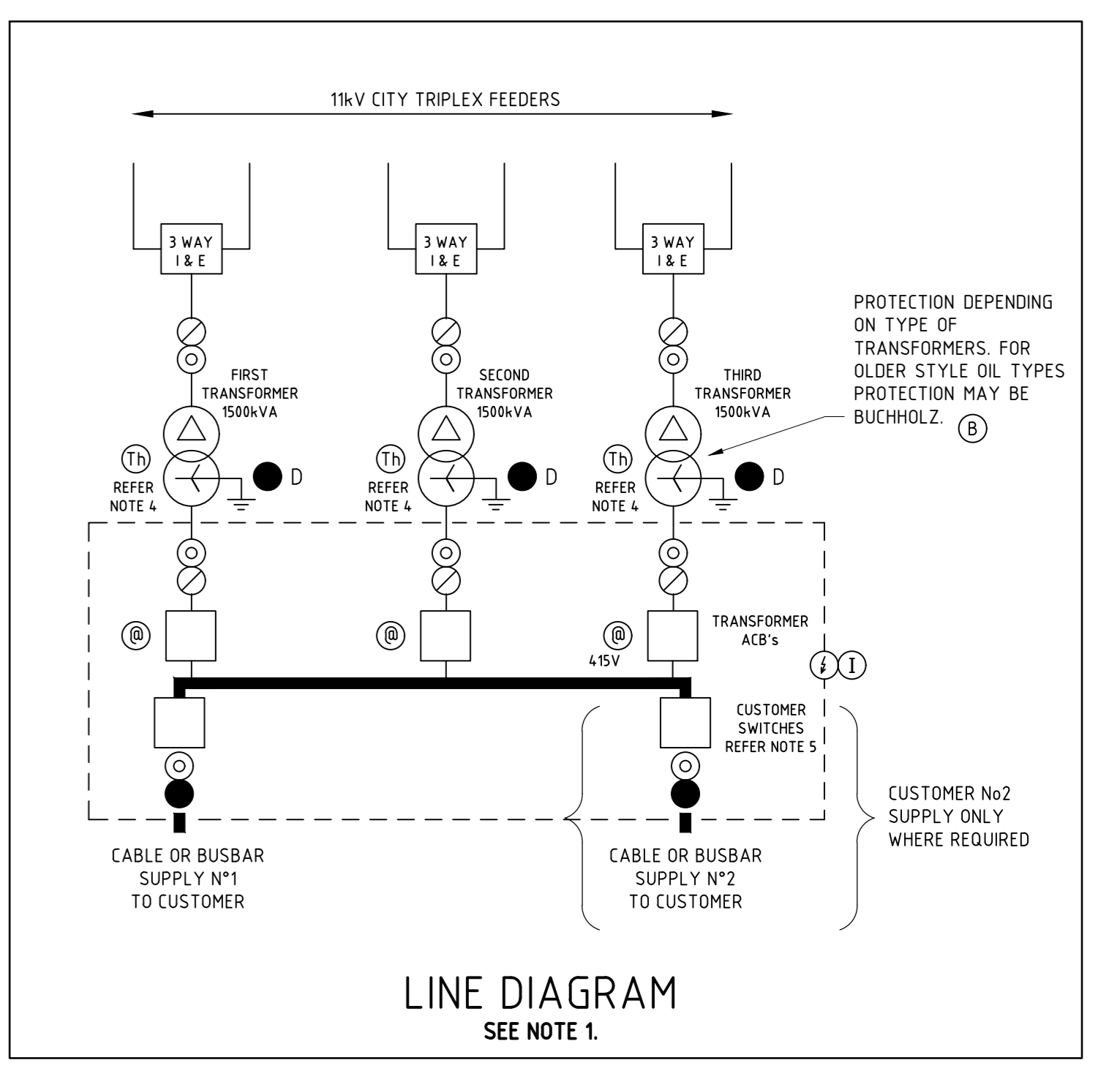


- NOTES:**
- THIS DRAWING SHOWS THE AC PROTECTION SCHEMATIC FOR CITY TYPE SUBSTATIONS WITH E TYPE LV BOARDS AND OPTICAL ARC FLASH DETECTION. IT SHOULD BE READ IN CONJUNCTION WITH NETWORK STANDARDS AND THE SUBSTATION DESIGN INFORMATION PACKAGE.
 - CITY SUBSTATIONS HAVE AN A - B CROSS IN THE LV PRIMARY CONNECTIONS. THE SECONDARY CIRCUITS HAVE BEEN AMENDED ACCORDINGLY.
 - THE 'B' END OF A LINK OR FUSE-OWN THUS $\left(\begin{array}{c} \text{---} \\ \text{---} \end{array} \right)$ INDICATES BOTTOM CONNECTION.
 - WHEN A DRY TYPE TRANSFORMER IS USED, THE THERMAL RELAY (TN) AND A TRIP INDICATOR ARE TO BE CONNECTED. THE THERMAL RELAY IS LOCATED & SUPPLIED ON THE TRANSFORMER BY THE TRANSFORMER MANUFACTURER. THE TRIP INDICATOR IS LOCATED ON THE TRANSFORMER PROTECTION PANEL & IS SUPPLIED BY AUSGRID.
 - CUSTOMER SUPPLY IS ALWAYS TO BE BY ACB. OVERCURRENT CT'S ARE TO BE INSTALLED AS-OWN ON THIS AC SCHEMATIC.
 - THIS AC SCHEMATIC SHOWS 1st TRANSFORMER, CUSTOMER OVERCURRENT No. 1, CUSTOMER OVERCURRENT No. 2 AND THEIR ASSOCIATED PROTECTION PANELS. 2nd AND 3rd TRANSFORMERS ARE IDENTICALLY WIRED AS 1st TRANSFORMER. DIFFERENCES EXIST WITH CABLE NAMING AND WIRE JUMPING. THIS WILL BE INSTALLED ON SITE RELEVANT TO THE ACTUAL SUBSTATION CONFIGURATION. THAT IS, LOW VOLTAGE BUSBAR CONFIGURATION AND HOW MANY CUSTOMER SUPPLY CONNECTIONS.
 - FOR CLARITY, TRANSFORMERS ARE REFERENCED AS 1st TRANSFORMER, 2nd TRANSFORMER & 3rd TRANSFORMER. ACTUAL DESIGNATION WILL DEPEND ON WHICH CITY TRIPLEX FEEDERS ARE SUPPLYING THE DISTRIBUTION SUBSTATION. TYPICAL DESIGNATION FOR 1st, 2nd, & 3rd TRANSFORMERS ARE: 'A', 'B' & 'C', 'D', 'E' & 'F', 'G', 'H' & 'J', or 'K', 'L', & 'M'. SEE DESIGN PACKAGE FOR PROJECT DETAIL.
 - CUSTOMER OC ACB'S &/OR CT'S MAY NOT BE PRESENT HOWEVER IN ALL CIRCUMSTANCES CUSTOMER OC No.1 PROTECTION RELAY IS ALWAYS REQUIRED TO BE INSTALLED FOR SCADA PURPOSES. REDUNDANT CT WIRING MAY BE OMITTED.



LINK No.	LINK FUNCTION
TL1	CUSTOMER OVERCURRENT No.1 CT TEST LINKS
TL1	CUSTOMER OVERCURRENT No.2 CT TEST LINKS
AC TEST LINK FUNCTION TABLE FOR CUSTOMER OVERCURRENT & EARTH FAULT PANELS	
LINK No.	LINK FUNCTION
TL2	OVERCURRENT & EARTH FAULT RELAY CT TEST LINKS
TL3	OVERCURRENT & EARTH FAULT RELAY DELTA TEST LINKS
TL5	TRANSFORMER DIFFERENTIAL RELAY TEST LINKS
TL6	TRANSFORMER PROTECTION HV CT TEST LINKS
TL7	EARTH FAULT CT TEST LINKS
AC TEST LINK FUNCTION TABLE FOR TRANSFORMER PROTECTION PANELS	
LINK No.	LINK FUNCTION
C-DC1	OVERCURRENT & EARTH FAULT RELAY
DIFF	3 ELEMENT FUSE RELAY
EB	EARTH BAR
LV OC REF-A	OVERCURRENT & EARTH FAULT RELAY
TXP-B	TRANSFORMER PROTECTION RELAY
TL	BATTERY TEST LINK
VTT	INSULATED TEST PANEL SOCKETS
X3, X4, X6, X7	UTLUX
X2	RAIL MOUNTED TERMINAL - ORANGE

TAGNAME	MFG	CATNO	DESC	REF	DWG
C-DC1, C-DC2	SCHNEIDER ELECT.	TRCOM P142	OVERCURRENT & EARTH FAULT RELAY	221409	113243
DIFF	-	3M	3 ELEMENT FUSE RELAY	-	-
EB	-	-	EARTH BAR	-	-
LV OC REF-A	SIEMENS	7SR450L-2HE20-1A40	OVERCURRENT & EARTH FAULT RELAY	-	-
TXP-B	SCHWEITZER	SEL-751A	TRANSFORMER PROTECTION RELAY	221264	150711
TL	EUGENIP	MOULDED TYPE MS	BATTERY TEST LINK	150711	231226
VTT	MULTI CONNECT (MS COMPONENTS)	SLB-G	INSULATED TEST PANEL SOCKETS	1x RED 23 3020 22 (104-244) 1x WHITE 23 3020 21 (104-250) 1x BLUE 23 3020 23 (104-276) 1x BLACK 23 3020 21 (104-290)	231226
X3, X4, X6, X7	UTLUX	3820	UTLUX	3820	118547
X2	UTLUX	H2238	RAIL MOUNTED TERMINAL - ORANGE	-	-

AMENDMENTS

AMD	DATE	DESCRIPTION	DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY
2	10/05/2019	AMENDED CUSTOMER SUPPLY ACB CT TERMINALS NUMBERING	L.MARTINUZZI	L.MARTINUZZI	M.BENNETT	M.BENNETT
3	03/09/2020	AMENDED NOTES	L.MARTINUZZI	L.MARTINUZZI	M.BENNETT	M.BENNETT
4	19/09/2024	REPLACED SCHNEIDER P115 WITH SIEMENS 7SR450L IN LEGEND & SCHEMATIC CONNECTIONS.	L.M.	L.M.	M.B.	M.B.

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REFERENCE DRAWINGS

SCALE	NTS
DESIGNED	-
DRAWN	E.KAIROUZZI/L.MARTINUZZI
CHECKED	C.MURPHY
APPROVED	C.MURPHY
DATE	27/08/2015
TRIM REF	-
PROJECT NUMBER	OPEX-6923-1

CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD & OPTICAL ARC FLASH DETECTION AC SCHEMATIC

ISSUED FOR CONSTRUCTION

DRAWING No **227380** SHEET 1 AMD 4 SIZE A0

ISSUED FOR CONSTRUCTION

PROJECT NUMBER OPEX-6923-1 DRAWING No 227380 SHEET 1 AMD 4 SIZE A0

C&P - DISTRIBUTION SUBS