
SECTION 6 – POLE MOUNTED SUBSTATIONS / TRANSFORMERS

VERSION 3.2

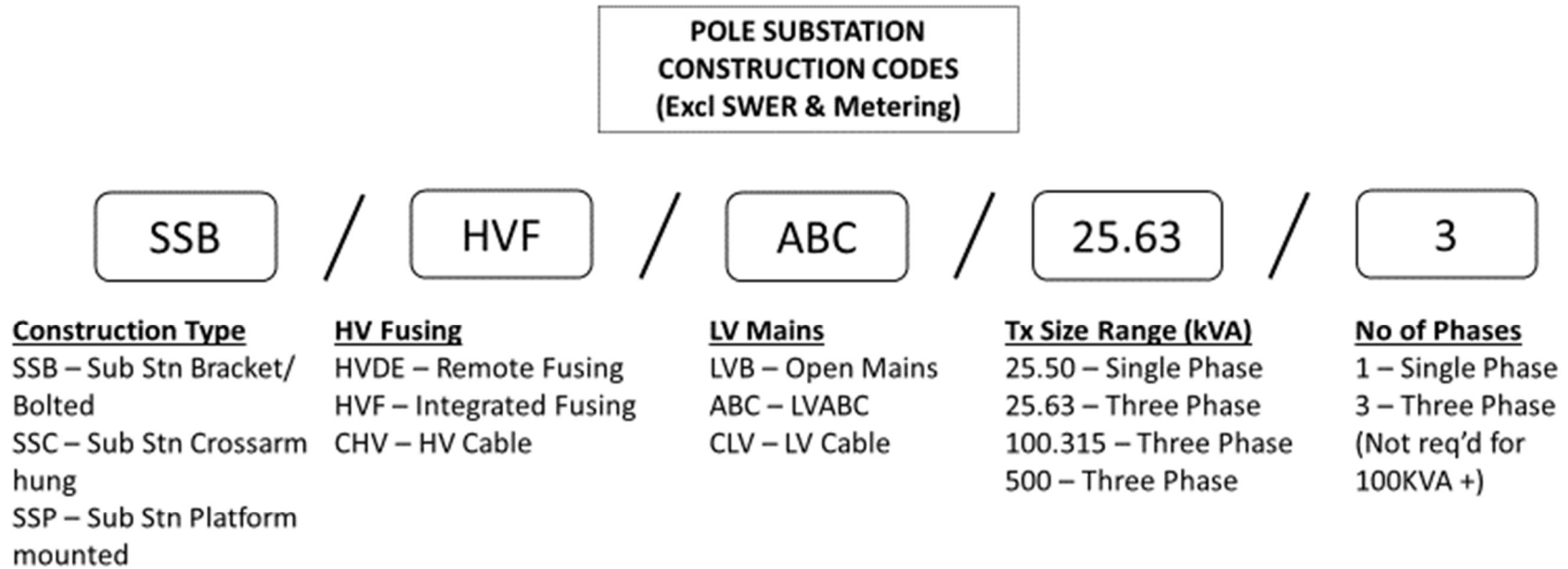
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For installation of Transformers on Titan Poles refer to Section 10.4.

6.1 Pole Substations – General

6.1.1 Pole Substations Construction Codes



6.1.2 Pole Substations – Installation notes

1. When the substation is at the end of an HV spur line, the transformer should be mounted on the side of the pole opposite the HV spur line – Singel customer transformers on private property excepted.
2. Fit insulator bracket (item 6A) from centre phase on 63kVA and below at 45 degrees to dropper crossarm or HV fuse arm when required.
3. At LV angle position the side clearance between LV main and any part of the transformer should not be less than 150mm.
4. Ensure minimum of 310mm clearance between HV and LV conductors and between HV conductor and transformer tank.
5. Poles supporting 100kVA and above are to be installed on poles with breast block and dry concrete mix.
6. Poles supporting transformers up to 50kVA may be installed with earth backfill and without a breast log (Item 105C) and a concrete foundation.
7. In a rural area a single take-off from a wooden crossarm (item 1A) of an open wire LV service maybe fixed to the other end of a double strain LV crossarm assembly.
8. A drop out fuse crossarm maybe fixed with a single crossarm strap & coach bot (items 2B and 85B).
9. Where transformer HV leads are to be transposed between the feeder and the HV bushings, a transposition bracket (item 20) fitted 920mm below HV arm in place of an insulator bracket.
10. Sleeve the transformer leads from the fuse to the HV bushing with polythene tubing or use 0.6kV/1kV insulated copper. HV busing covers must be fitted.
11. For mounting transformers which are too wide to fit between LV conductors, mount the transformer 4575mm above ground level, the LV cross arm 6850mm above ground and the HV fuse arms and lead arm as per SSB/11/3 on drawing D-OHC-F005-SD-001. Use HV transposition bracket to bring HV leads up through the LV conductors. Wood pole size to be 1140mm girth at ground level for transformers weighing up to 2700kg mounted at 4750mm above ground level.
12. The size of LV transformer leads are to be in accordance with the LV fuse selected.
13. Ensure that LVABC conductors are connected to LV terminals as follows:

Cables cores	Transformer LV Terminals	OR	Cable cores	Transformer LV terminals
Neutral	Neutral		Neutral	Neutral
CORE 1	A-RED		CORE 1	C-RED
CORE 2	B – WHITE		CORE 2	B – WHITE
CORE 3	C - BLUE		CORE 3	A - BLUE

14. The clearance between LVABC and the transformer tanks shall be no less than 100mm.
15. LVABC cable fuse switch should be mounted on the footpath side of pole at a minimum height of 4000mm. Where the fuse switch is less than 500mm from the road curb the mounting height should be 4900mm.
16. Where a pole stay is required the LVABC is to be mounted on a crossarm.
17. The **minimum** pole rating for Transformers is identified in the following table:

Scenario	Minimum pole type and rating
25kVA transformers on existing Wooden poles	11m Wooden Pole 3kN WS
	12.5m Wooden Pole 4kN WS
<100kVA transformers	Wooden Poles 4kN WS* / 25kN NBL
≥100kVA transformers	Wood Poles 8kN WS / 33kN NBL
200kVA transformers	16kN Titan Poles
350kVA & 500kVA transformers	24kN Titan Poles

*Example. If there is already a 4kN pole 63kVA transformer can be added. If the pole is new or needs to be replaced it is best practice to go to a 6kN pole (Distribution Overhead Design Standard, 6.1.3 Strength Rating).

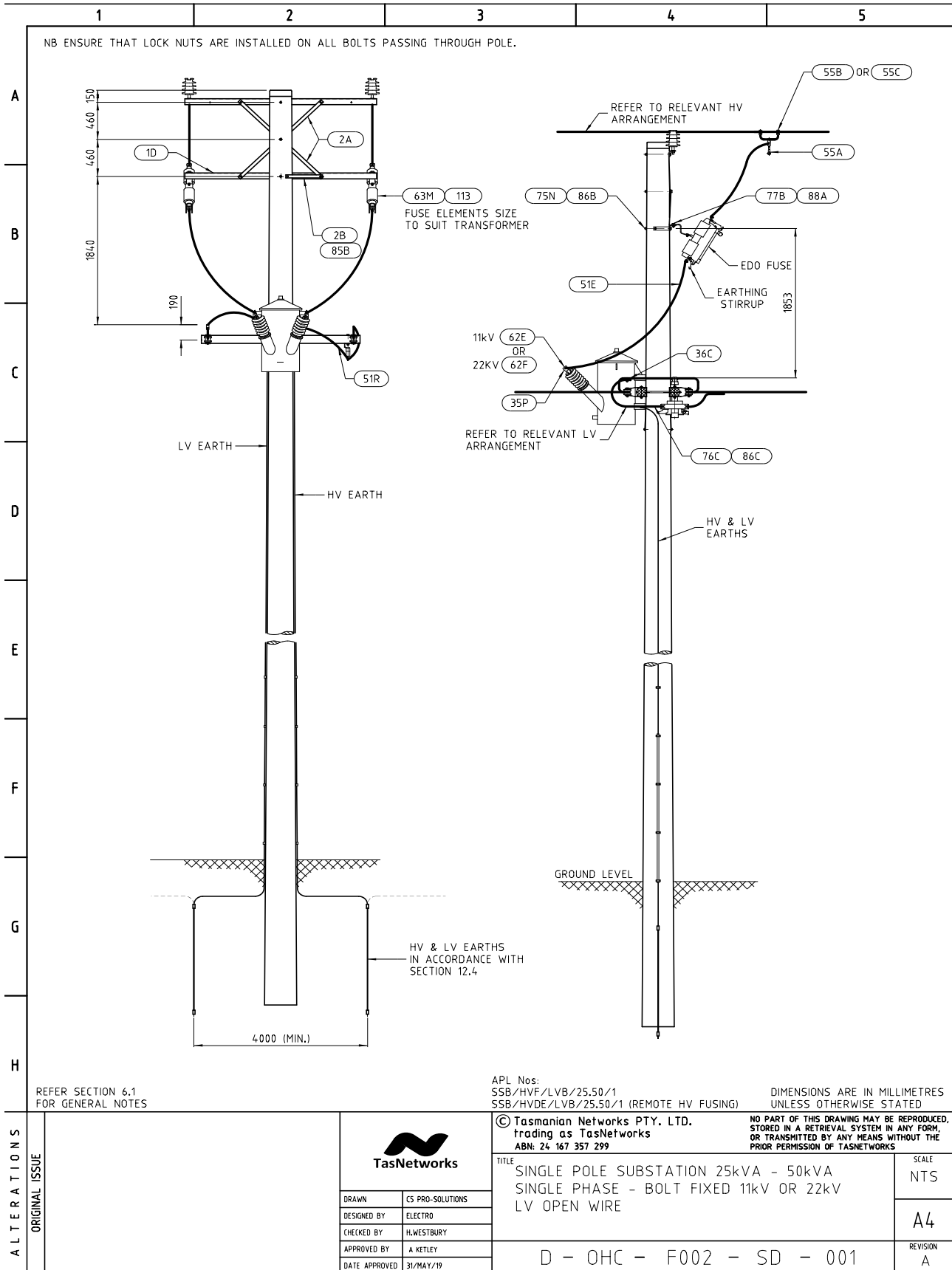
18. The weight of the transformer must not exceed the capacity of the pole, bracket and if applicable platform. Transformer weights vary from manufacturer to manufacturer and change over time, the following table provides approximate transformer weights based on the current stores holdings as of March 2022. These can be used as a guide when selecting the correct pole and/or platform arrangement. The weight of the actual transformer being installed must be checked prior to finalising the design to ensure that the pole and mounting arrangement are fit for purpose.

Transformer Weight in KG by Manufacturer and size as at October 2022

Material	Description	Wilson Transformers	Tyree Transformers
420914	Transformer 11kV 25kVA x 1P	195	185
421111	Transformer 11kV 50kVA x 1P	420	340
421414	Transformer 11kV 25kVA x 3P	290	350
421609	Transformer 11kV 63kVA x 3P	455	470
421710	Transformer 11kV 100kVA x 3P	630	898
421810	Transformer 11kV 200kVA x 3P	1115	1130
421906	Transformer 11kV 315kVA x 3P	1380	1660
422512	Transformer 12.7kV 25kVA x 1P	240	170
422607	Transformer 12.7kV 50kVA x 1P	420	310
423513	Transformer 22kV 25kVA x 1P	195	218
423605	Transformer 22kV 50kVA x 1P	420	310
424013	Transformer 22kV 25kVA x 3P	400	397
424202	Transformer 22kV 63kVA x 3P	430	505
424317	Transformer 22kV 100kVA x 3P	870	956
424411	Transformer 22kV 200kVA x 3P	1130	1296
424509	Transformer 22kV 315kVA x 3P	1375	1711
424708	Transformer 12.7kV/500-200V 100kVA x 1P	850	920
425003	Transformer 11kV 500kVA x 3P	1805	1991
426205	Transformer 22kV 500kVA x 3P	1826	2062

6.2 50 kVA Single Phase Pole Substations


6.2.1 Single Phase Substation 25-50 kVA – Open Wire LV



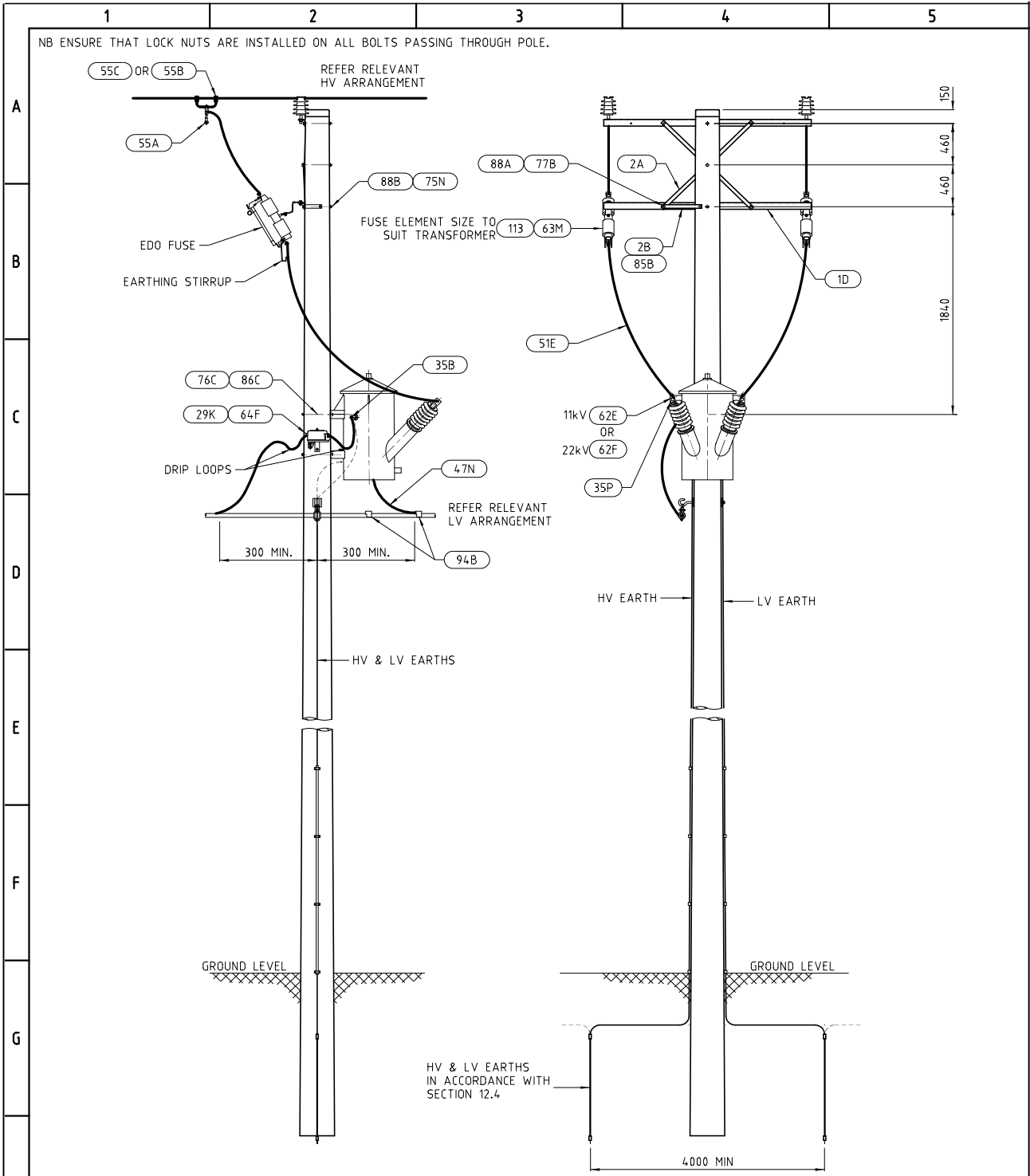
Single Phase Substation 25-50 kVA Open Wire Materials List

		1	2	3	4	5			
A	SSB/HV/LVB/25.50/1 with EDOS <small>(excl transformer, earthing, HV fuse elements, top HV const., LV const.)</small>	S	1D	323304	CROSSARM,STEEL 75 X 75 X 2210MM MK4 GAL	1			
			2B	323317	BRACE,CROSSARM 40 X 5 X 500MM FLAT GAL	1			
			35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	6			
			36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	4			
			51P	94184	WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV BLK	2			
			63M	236323	FUSE,CUTOUT 100A/25KV 1P PRIMARY EXPULSN	2			
			64A	236243	SWITCHING GROUP,630A/660V X 1P CA MOUNT	1			
			75B	32274	BOLT,HEX HEAD M16 X 130MM GAL. C/W NUT	1			
			75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	3			
			75Z	32261	BOLT,HEX HEAD M16 X 45MM GAL. C/W NUT	2			
			76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2			
			77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	3			
			82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	9			
			82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	6			
			85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	3			
			86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	3			
			86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	2			
			88A	66412	WASHER,FLAT ROUND M12 X 24MM GAL	4			
			51E	103217	CABLE,1CORE X 16MM2 X 7/1.70 X 0.6/1 V75	4			
			2A	323314	BRACE,CROSSARM 40 X 700 X 5MM THICK GAL	2			
			51R	94185	WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV RED	4			
			62E	144617	COVER,INSULATOR PROTECT 11KV X112MM POLY	2 (or AR)			
			62F	144620	COVER,INSULATOR PROTECT 22KV X133MM POLY	AR			
			55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	2			
			55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	2 (or AR)			
			55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR			
			B	SSB/HVDE/LVB/25.50/1 with remote fusing <small>(excl transformer, earthing, top HV const., LV const.)</small>	S	20	323363	BRACKET,ANGLE TRANSPOSITION MK63 GAL	1
						35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	6
						36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	4
						51P	94184	WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV BLK	2
						59A	322721	PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	2
						60E	320531	INSULATOR,PIN 22KV AERO PORCELAIN	2
						64A	236243	SWITCHING GROUP,630A/660V X 1P CA MOUNT	1
						75B	32274	BOLT,HEX HEAD M16 X 130MM GAL. C/W NUT	1
						75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	2
						76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2
						77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	4
						82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	5
						82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	4
						85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	2
						86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	6
						86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	2
						88A	66412	WASHER,FLAT ROUND M12 X 24MM GAL	4
						51E	103217	CABLE,1CORE X 16MM2 X 7/1.70 X 0.6/1 V75	6
						51R	94185	WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV RED	4
						62E	144617	COVER,INSULATOR PROTECT 11KV X112MM POLY	2 (or AR)
						62F	144620	COVER,INSULATOR PROTECT 22KV X133MM POLY	2 (or AR)
55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	2						
55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	2 (or AR)						
55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR						
C									
D									
E									
F									
G									
H									

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						TITLE SINGLE POLE SUBSTATION 25kVA - 50kVA SINGLE PHASE - BOLT FIXED 11kV OR 22kV LV OPEN WIRE MATERIALS LIST		SCALE NTS
		DRAWN CS PRO-SOLUTIONS		DESIGNED BY ELECTRO		CHECKED BY H.WESTBURY		A4
		APPROVED BY A KETLEY		DATE APPROVED 31/MAY/19		D - OHC - F002 - SD - 002		
								REVISION A

6.2.2 Single Pole Sub 25 – 50 kVA – 11 or 22 kV Bolt fixed




NOTES:
REFER SECTION 6.1 FOR GENERAL NOTES.

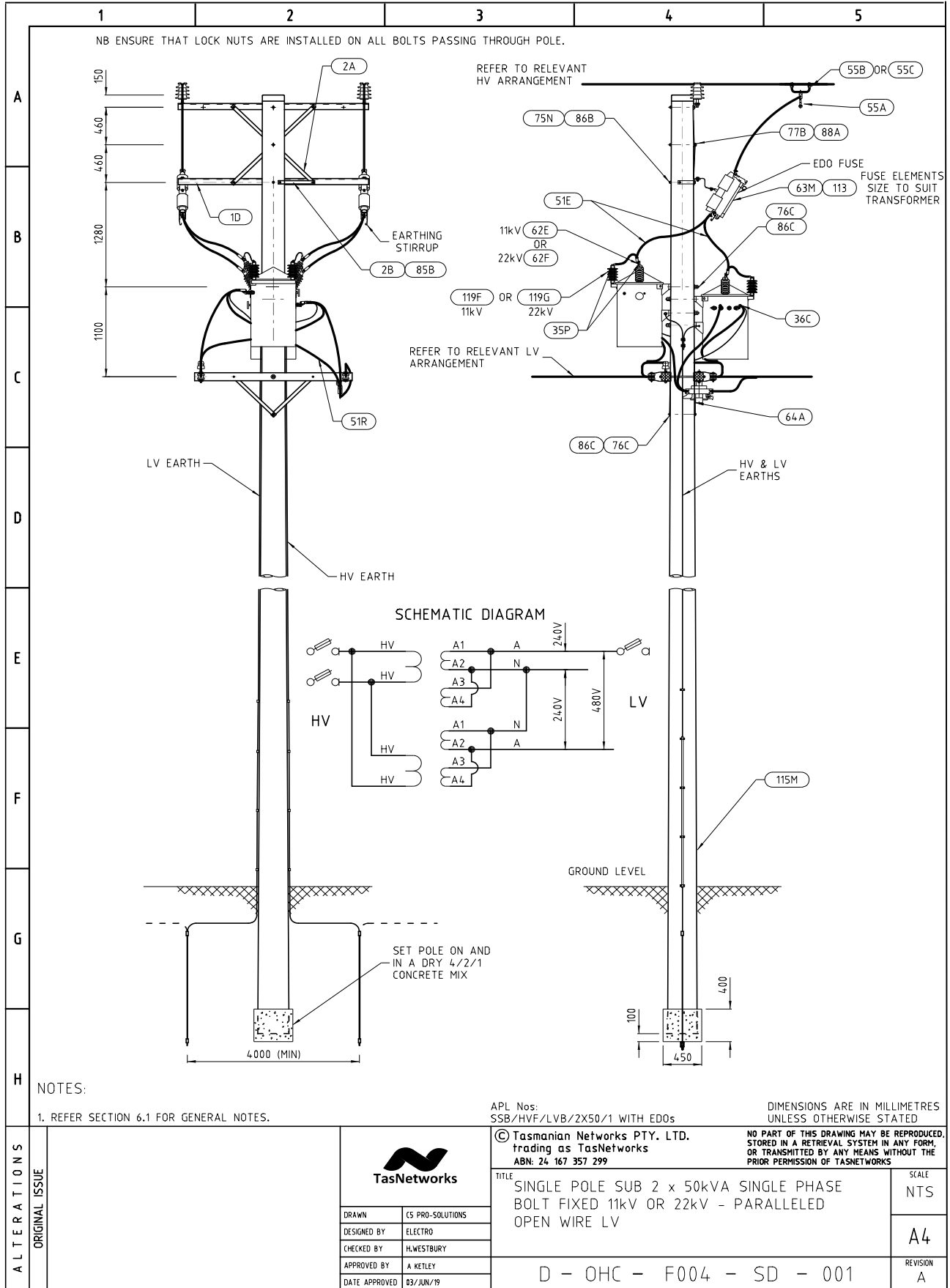
APL Nos:
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SSB/HVDE/ABC/25.50/1 WITH REMOTE FUSING
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		DRAWN	CS PRO-SOLUTIONS		A4
		DESIGNED BY	ELECTRO		
		CHECKED BY	H.WESTBURY		
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	DATE APPROVED	03/JUN/19	D - OHC - F003 - SD - 001		
				REVISION A	


Single Pole Sub 10 – 50 kVA – 11 or 22 kV Bolt fixed Materials List

		1	2	3	4	5		
A	SSB/HVF/ABC/25.50/1 with EDOs (excl transformer, earthing, HV fuse elements, top HV const., LV const.)	S	1D	323304	CROSSARM,STEEL 75 X 75 X 2210MM MK4 GAL	1		
			29K	323401	BRACKET,HOUSE SERVICE FUSE 32X8MM M-PH	1		
			2B	323317	BRACE,CROSSARM 40 X 5 X 500MM FLAT GAL	1		
			35B	145653	TERMINAL,LUG COMPRESSION M13 X 95MM2	2		
			35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	6		
			36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	2		
			B	63M	236323	FUSE,CUTOOUT 100A/25KV 1P PRIMARY EXPULSN	2	
				64F	236247	SWITCH,ISOLATING POLE FUSE 6-95MM2 SZ-00	1	
				75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	3	
				75Z	32261	BOLT,HEX HEAD M16 X 45MM GAL. C/W NUT	2	
				76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2	
				77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	3	
				82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	6	
				82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	6	
				85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	3	
				86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	1	
			C	86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	2	
				88A	66412	WASHER,FLAT ROUND M12 X 24MM GAL	4	
				51E	103217	CABLE,1CORE X 16MM2 X 7/1.70 X 0.6/1 V75	4	
				2A	323314	BRACE,CROSSARM 40 X 700 X 5MM THICK GAL	2	
				47N	103003	CABLE,2CORE X 95MM2X 19/2.63X 0.6/1 XLPE	3	
				D	62E	144617	COVER,INSULATOR PROTECT 11KV X 112MM POLY	2 (or AR)
					62F	144620	COVER,INSULATOR PROTECT 22KV X 133MM POLY	2 (or AR)
					55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	2
					55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	2 (or AR)
					55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR
			94B		145630	CONNECTOR,IPC LV ABC	2	
E	SSB/HVDE/ABC/25.50/1 with remote fusing (excl transformer, earthing, top HV const., LV const.)	S	20		323363	BRACKET,ANGLE TRANSPOSITION MK63 GAL	1	
			29K		323401	BRACKET,HOUSE SERVICE FUSE 32X8MM M-PH	1	
			35B		145653	TERMINAL,LUG COMPRESSION M13 X 95MM2	2	
			35P		141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	6	
			36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	2		
			59A	322721	PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	2		
			60E	320531	INSULATOR,PIN 22KV AERO PORCELAIN	2		
			64F	236247	SWITCH,ISOLATING POLE FUSE 6-95MM2 SZ-00	1		
			75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	2		
			76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2		
F	77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	4				
	82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	4				
	82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	4				
	85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	2				
	86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	4				
	86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	2				
	88A	66412	WASHER,FLAT ROUND M12 X 24MM GAL	4				
	51E	103217	CABLE,1CORE X 16MM2 X 7/1.70 X 0.6/1 V75	6				
	47N	103003	CABLE,2CORE X 95MM2X 19/2.63X 0.6/1 XLPE	3				
	G	62E	144617	COVER,INSULATOR PROTECT 11KV X 112MM POLY	2 (or AR)			
62F		144620	COVER,INSULATOR PROTECT 22KV X 133MM POLY	2 (or AR)				
55A		146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	2				
55B		146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	2 (or AR)				
55C		146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR				
94B		145630	CONNECTOR,IPC LV ABC	2				
H		62E	144617	COVER,INSULATOR PROTECT 11KV X 112MM POLY	2 (or AR)			
		62F	144620	COVER,INSULATOR PROTECT 22KV X 133MM POLY	2 (or AR)			
		55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	2			
		55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	2 (or AR)			
	55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR				
	94B	145630	CONNECTOR,IPC LV ABC	2				
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			DESIGNED BY	ELECTRO	D - OHC - F003 - SD - 002		A4	
CHECKED BY			H.WESTBURY	REVISION A				
APPROVED BY	A KETLEY	DATE APPROVED	03/JUN/19					

6.2.3 Single Pole Sub 2 x 50 kVA Single Phase Parallel Bolt fixed Open Wire LV

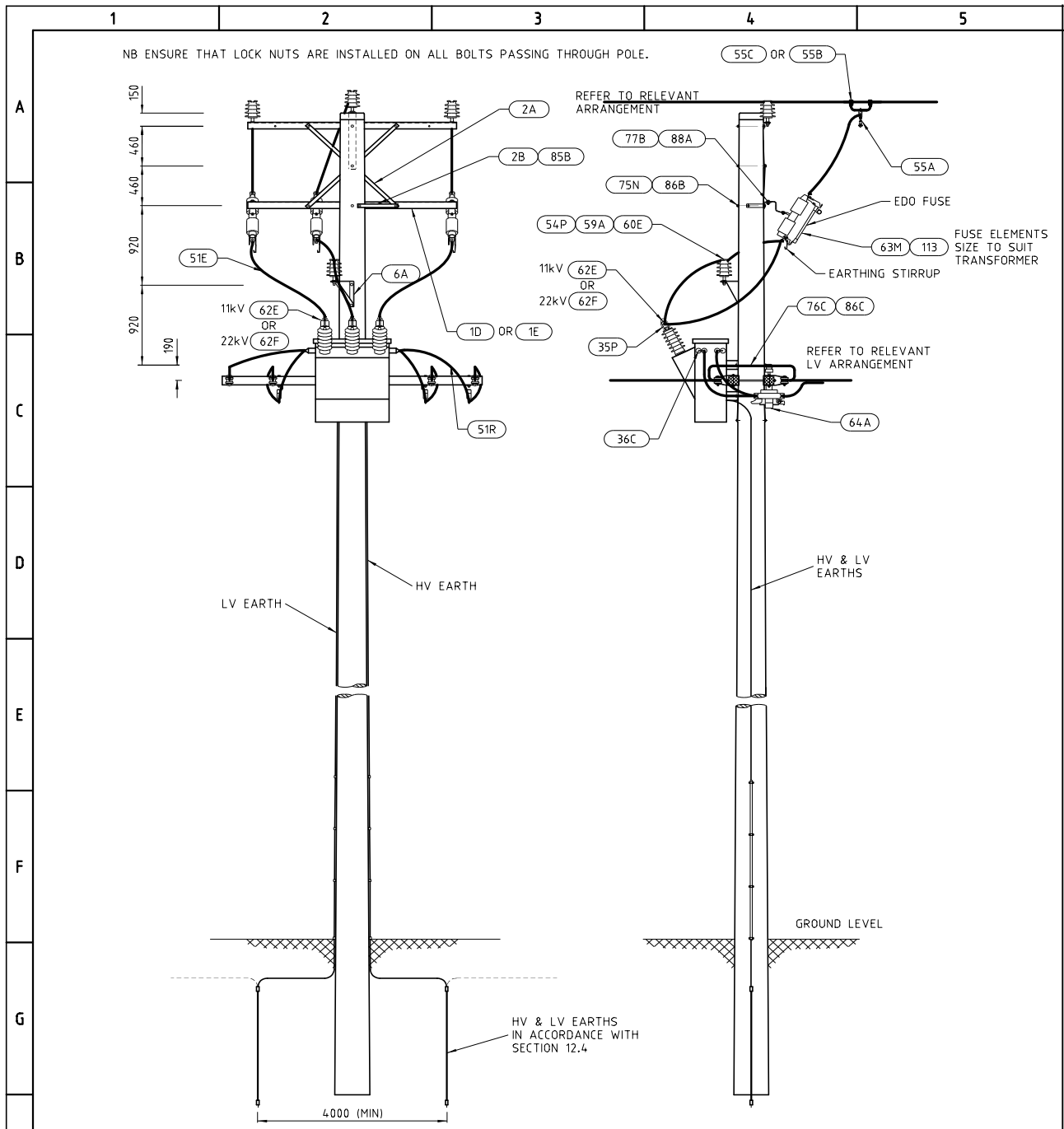


Single Pole Sub 2 x 50 kVA Single Phase Parallel 11 or 22 kV Materials List

		1	2	3	4	5	
A							
B	Unit Assembly SSB/HVF/LVB/2x50/1 with EDOs (excl transformer, earthing, HV fuse elements, top HV const., LV const.)	S	1D	323304	CROSSARM,STEEL 75 X 75 X 2210MM MK4 GAL	1	
			2B	323317	BRACE,CROSSARM 40 X 5 X 500MM FLAT GAL	1	
			35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	10	
C			36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	8	
			51P	94184	WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV BLK	4	
			63M	236323	FUSE,CUTOUT 100A/25KV 1P PRIMARY EXPULSN	2	
			64A	236243	SWITCHING GROUP,630A/660V X 1P CA MOUNT	1	
			75B	32274	BOLT,HEX HEAD M16 X 130MM GAL. C/W NUT	2	
			75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	6	
			75Z	32261	BOLT,HEX HEAD M16 X 45MM GAL. C/W NUT	4	
			76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	4	
			77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	6	
			82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	18	
D			82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	12	
			85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	3	
			86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	6	
			86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	4	
			88A	66412	WASHER,FLAT ROUND M12 X 24MM GAL	8	
			51E	103217	CABLE,1CORE X 16MM2 X 7/1.70 X 0.6/1 V75	8	
			2A	323314	BRACE,CROSSARM 40 X 700 X 5MM THICK GAL	2	
			51R	94185	WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV RED	8	
E			62E	144617	COVER,INSULATOR PROTECT 11KV X112MM POLY	4 (or AR)	
			62F	144620	COVER,INSULATOR PROTECT 22KV X133MM POLY	AR	
			119F	225772	SURGE DIVERTER,OD 10KA X 11KV	4 (or AR)	
			119G	225773	SURGE DIVERTER,OD 10KA X 22KV	AR	
			55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	2	
F			55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	2 (or AR)	
			55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR	
G							
H							
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		DRAWN		CS PRO-SOLUTIONS		TITLE SINGLE POLE SUB 2 X 50kVA SINGLE PHASE BOLT FIXED 11kV OR 22kV - PARALLELED OPEN WIRE LV MATERIALS LIST	
		DESIGNED BY		ELECTRO			
		CHECKED BY		H.WESTBURY		SCALE A4	
APPROVED BY		A.KETLEY		REVISION A			
DATE APPROVED		03/JUN/19		D - OHC - F004 - SD - 002			

6.3 25-63kVA Pole Substations

6.3.1 Single Pole Sub 25 – 63 kVA 3 Phase 11 or 22 kV Bolt Fixed Open Wire LV




NOTES:

1. REFER SECTION 6.1 FOR GENERAL NOTES.

APL Nos:
 SSB/HVF/LVB/25.63/3 WITH EDOs
 SSB/HVDE/LVB/25.63/3 WITH REMOTE FUSING

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		TITLE SINGLE POLE SUB 25kVA - 63kVA THREE PHASE BOLT FIXED 11kV OR 22kV OPEN WIRE LV			SCALE NTS	
		DRAWN CS PRO-SOLUTIONS	DESIGNED BY ELECTRO	CHECKED BY HLWESTBURY	APPROVED BY A KETLEY	REVISION A
		DATE APPROVED 03/JUN/19	D - OHC - F005 - SD - 001			

Single Pole Sub 25 – 63 kVA 3 Phase 11 or 22 kV Open Wire LV Materials List

1		2		3		4		5			
Unit Assembly	Store Type	Item Ref	Stock Item	Stock Item Description	Quantity						
A SSB/HVF/LVB/25.63/3 with EDOs <small>(excl transformer, earthing, HV fuse elements, top HV const., LV const.)</small>	S	1D	323304	CROSSARM,STEEL 75 X 75 X 2210MM MK4 GAL	1						
		2B	323317	BRACE,CROSSARM 40 X 5 X 500MM FLAT GAL	1						
		35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	9						
		36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	6						
		51P	94184	WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV BLK	2						
		59A	322721	PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	1						
		60E	320531	INSULATOR,PIN 22KV AERO PORCELAIN	1						
		63M	236323	FUSE,CUTOUT 100A/25KV 1P PRIMARY EXPULSN	3						
		64A	236243	SWITCHING GROUP,630A/660V X 1P CA MOUNT	3						
		6A	323315	BRACKET,INSULATOR 50 X 6MM C/W BRACE	1						
		75B	32274	BOLT,HEX HEAD M16 X 130MM GAL. C/W NUT	3						
		75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	3						
		75Z	32261	BOLT,HEX HEAD M16 X 45MM GAL. C/W NUT	3						
		76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2						
		77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	3						
		82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	9						
		82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	6						
		B SSB/HVDE/LVB/25.63/3 with remote fusing <small>(excl transformer, earthing, top HV const., LV const.)</small>	S	85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	3				
				86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	4				
				86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	2				
88A	66412			WASHER,FLAT ROUND M12 X 24MM GAL	4						
51E	103217			CABLE,1CORE X 16MM2 X 7/1.70 X 0.6/1 V75	6						
2A	323314			BRACE,CROSSARM 40 X 700 X 5MM THICK GAL	2						
51R	94185			WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV RED	4						
62E	144617			COVER,INSULATOR PROTECT 11KV X 112MM POLY	3 (or AR)						
62F	144620			COVER,INSULATOR PROTECT 22KV X 133MM POLY	AR						
55A	146809			CLAMP,LIVE LINE RING FITTING M12 - B24T	3						
C SSB/HVDE/LVB/25.63/3 with remote fusing <small>(excl transformer, earthing, top HV const., LV const.)</small>	S	55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	3 (or AR)						
		55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR						
		20	323363	BRACKET,ANGLE TRANSPOSITION MK63 GAL	1						
		35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	9						
		36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	6						
		51P	94184	WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV BLK	2						
		59A	322721	PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	3						
		60E	320531	INSULATOR,PIN 22KV AERO PORCELAIN	3						
		64A	236243	SWITCHING GROUP,630A/660V X 1P CA MOUNT	3						
		75B	32274	BOLT,HEX HEAD M16 X 130MM GAL. C/W NUT	3						
D SSB/HVDE/LVB/25.63/3 with remote fusing <small>(excl transformer, earthing, top HV const., LV const.)</small>	S	75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	2						
		76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2						
		77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	4						
		82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	7						
		82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	4						
		85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	2						
		86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	10						
		86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	2						
		88A	66412	WASHER,FLAT ROUND M12 X 24MM GAL	4						
		51E	103217	CABLE,1CORE X 16MM2 X 7/1.70 X 0.6/1 V75	8						
E SSB/HVDE/LVB/25.63/3 with remote fusing <small>(excl transformer, earthing, top HV const., LV const.)</small>	S	51R	94185	WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV RED	6						
		62E	144617	COVER,INSULATOR PROTECT 11KV X 112MM POLY	3 (or AR)						
		62F	144620	COVER,INSULATOR PROTECT 22KV X 133MM POLY	AR						
		55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	3						
		55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	3 (or AR)						
		55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR						
		F SSB/HVDE/LVB/25.63/3 with remote fusing <small>(excl transformer, earthing, top HV const., LV const.)</small>	S								
G SSB/HVDE/LVB/25.63/3 with remote fusing <small>(excl transformer, earthing, top HV const., LV const.)</small>	S										
H SSB/HVDE/LVB/25.63/3 with remote fusing <small>(excl transformer, earthing, top HV const., LV const.)</small>	S										

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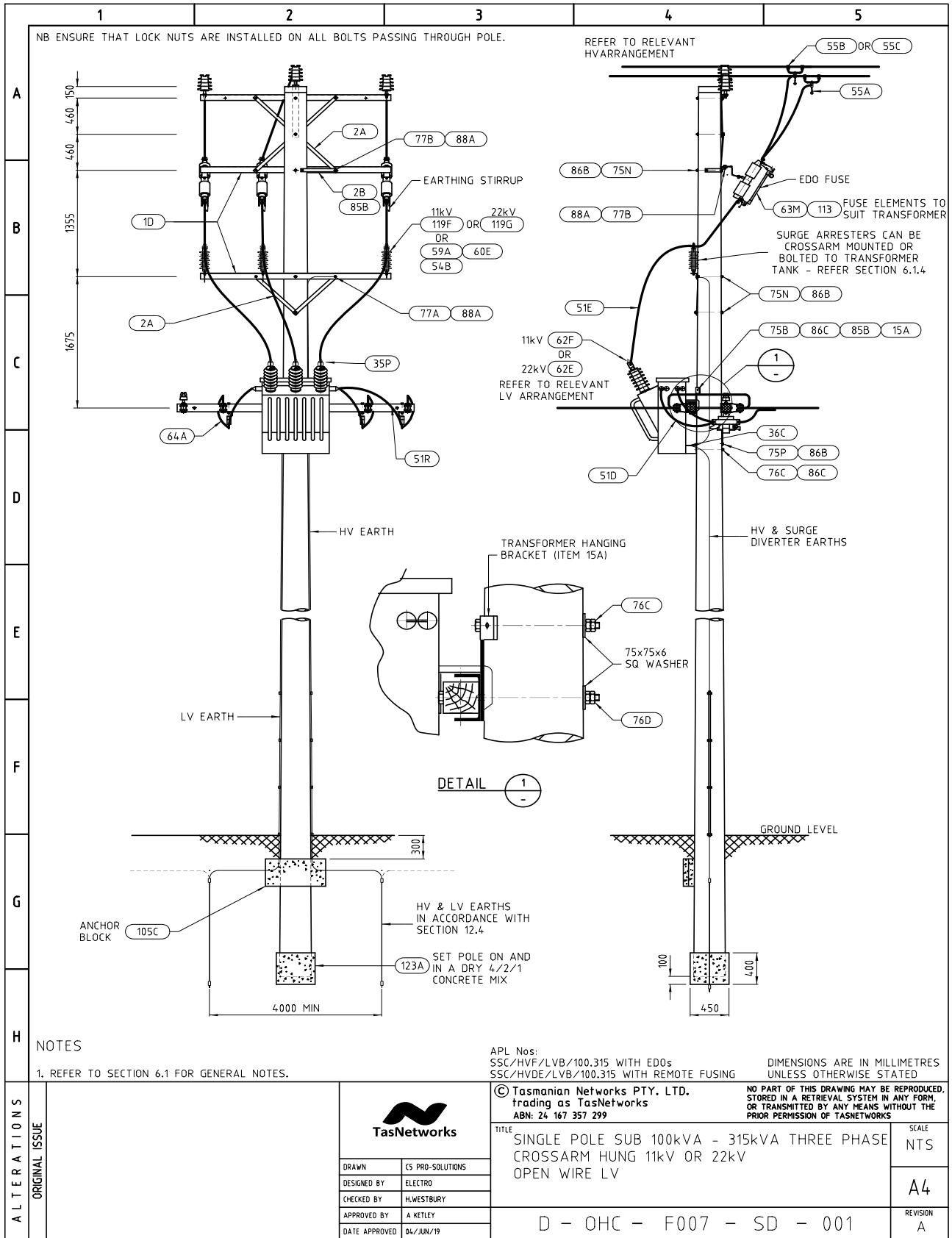
ALTERNATIONS	ORIGINAL ISSUE			© Tasmanian Networks PTY. LTD. trading as TasNetworks ABN: 24 167 357 299		NO PART OF THIS DRAWING MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM IN ANY FORM, OR TRANSMITTED BY ANY MEANS WITHOUT THE PRIOR PERMISSION OF TASNETWORKS	
				TITLE SINGLE POLE SUB 25kVA - 63kVA THREE PHASE BOLT FIXED 11kV OR 22kV OPEN WIRE LV MATERIALS LIST		SCALE NTS	
		DRAWN	E5 PRO-SOLUTIONS			A4	
		DESIGNED BY	ELECTRO				
		CHECKED BY	H.WESTBURY				
APPROVED BY	A KETLEY						
DATE APPROVED	03/JUN/19			D - OHC - F005 - SD - 002		REVISION A	

Single Pole Sub 25 – 63 kVA 3 Phase Bolt Fixed - LVABC Materials List

		1	2	3	4	5						
A	SSB/HVF/ABC/25.63/3 with EDOs <small>(excl transformer, earthing, HV fuse elements, top HV const., LV const.)</small>	S	1D	323304	CROSSARM,STEEL 75 X 75 X 2210MM MK4 GAL	1						
			29K	323401	BRACKET,HOUSE SERVICE FUSE 32X8MM M-PH	1						
			2B	323317	BRACE,CROSSARM 40 X 5 X 500MM FLAT GAL	1						
			35B	145653	TERMINAL,LUG COMPRESSION M13 X 95MM2	4						
			35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	9						
			36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	2						
			47D	103001	CABLE,4CORE X 95MM2X 19/2.63X 0.6/1 XLPE	3						
			59A	322721	PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	1						
			B			60E	320531	INSULATOR,PIN 22KV AERO PORCELAIN	1			
						63M	236323	FUSE,CUTOOUT 100A/25KV 1P PRIMARY EXPULSN	3			
						64F	236247	SWITCH,ISOLATING POLE FUSE 6-95MM2 SZ-00	3			
						6A	323315	BRACKET,INSULATOR 50 X 6MM C/W BRACE	1			
						75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	3			
						75Z	32261	BOLT,HEX HEAD M16 X 45MM GAL. C/W NUT	3			
						76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2			
						77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	3			
						82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	6			
						82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	6			
			C			85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	3			
						86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	1			
						86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	2			
						88A	66412	WASHER,FLAT ROUND M12 X 24MM GAL	4			
						51E	103217	CABLE,1CORE X 16MM2 X 7/1.70 X 0.6/1 V75	6			
						2A	323314	BRACE,CROSSARM 40 X 700 X 5MM THICK GAL	2			
						62E	144617	COVER,INSULATOR PROTECT 11KV X112MM POLY	3 (or AR)			
						62F	144620	COVER,INSULATOR PROTECT 22KV X133MM POLY	AR			
						55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	3			
						55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	3 (or AR)			
			D			55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR			
						94B	145630	CONNECTOR,IPC LV ABC	2			
						E	SSB/HVDE/ABC/25.63/3 with remote fusing <small>(excl transformer, earthing, top HV const., LV const.)</small>	S	20	323363	BRACKET,ANGLE TRANSPOSITION MK63 GAL	1
									29K	323401	BRACKET,HOUSE SERVICE FUSE 32X8MM M-PH	1
									35B	145653	TERMINAL,LUG COMPRESSION M13 X 95MM2	4
									35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	9
									36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	2
									47D	103001	CABLE,4CORE X 95MM2X 19/2.63X 0.6/1 XLPE	3
									59A	322721	PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	3
									60E	320531	INSULATOR,PIN 22KV AERO PORCELAIN	3
			64F	236247	SWITCH,ISOLATING POLE FUSE 6-95MM2 SZ-00				3			
			75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT				2			
			F			76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2			
						77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	4			
						82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	4			
						82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	4			
						85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	2			
						86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	4			
						86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	2			
88A	66412	WASHER,FLAT ROUND M12 X 24MM GAL				4						
51E	103217	CABLE,1CORE X 16MM2 X 7/1.70 X 0.6/1 V75				8						
62E	144617	COVER,INSULATOR PROTECT 11KV X112MM POLY				3 (or AR)						
G			62F	144620	COVER,INSULATOR PROTECT 22KV X133MM POLY	AR						
			55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	3						
			55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	3 (or AR)						
			55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR						
			94B	145630	CONNECTOR,IPC LV ABC	2						
			H						DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED			
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									TITLE SINGLE POLE SUB 25kVA - 63kVA THREE PHASE BOLT FIXED 11kV OR 22kV SINGLE LV ABC CONNECTION MATERIALS LIST	SCALE NTS		
									DRAWN ES PRO-SOLUTIONS	A4		
									DESIGNED BY ELECTRO			
						CHECKED BY H.WESTBURY						
						APPROVED BY A.KETLEY						
						DATE APPROVED 04/JUN/19	REVISION A					
						D - OHC - F006 - SD - 002						

6.4 100 – 315 kVA Pole Substations


6.4.1 100 – 315 kVA – Cross Arm Hung Open Wire LV



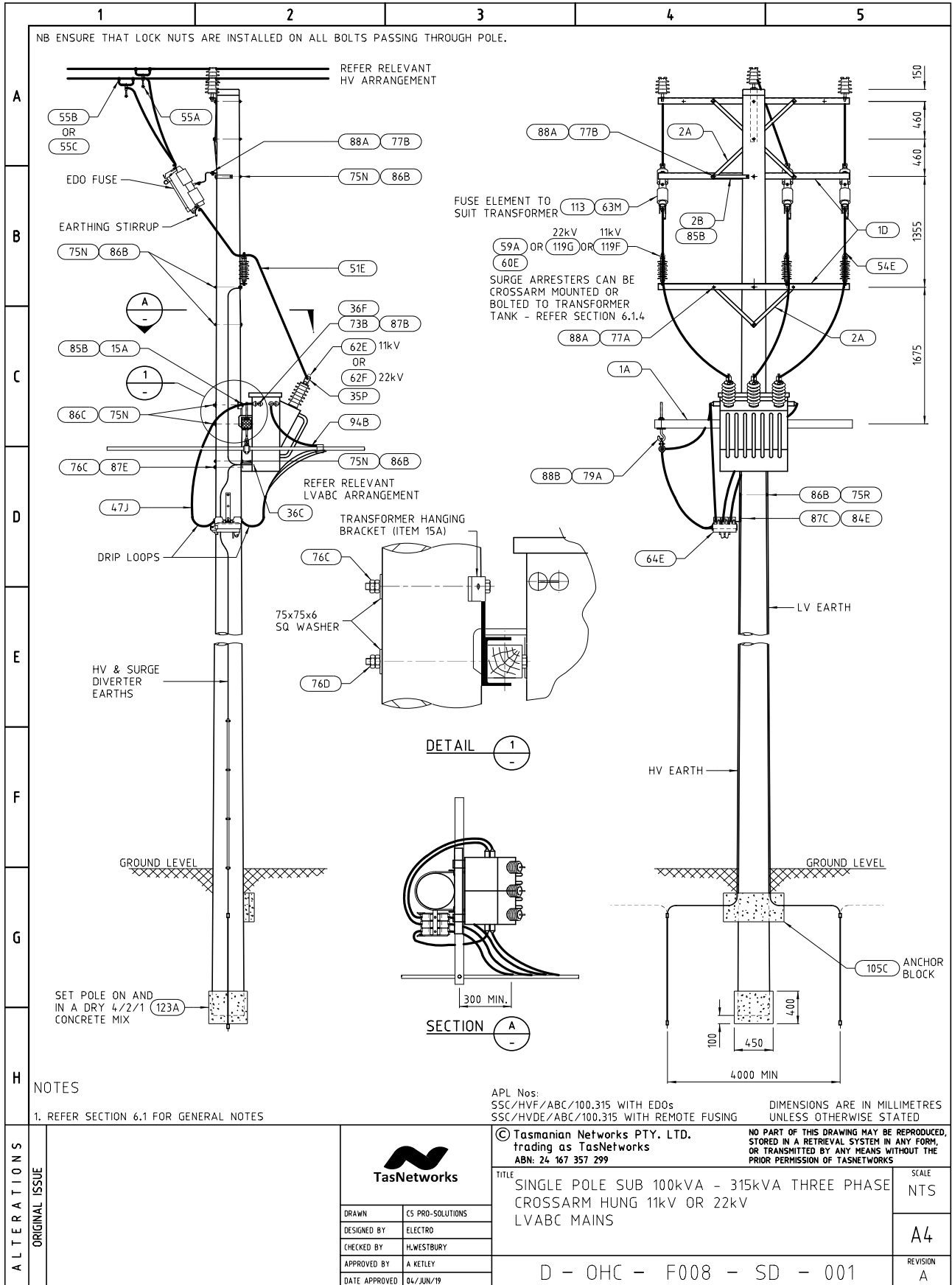
100 – 315 kVA Cross Arm Hung Open Wire LV Materials List

1		2		3		4		5			
Unit Assembly	Store Type	Item Ref	Stock Item	Stock Item Description	Quantity						
SSC/HV/LVB/100.315 with EDOs <small>(exc'd transformer, earthing, HV fuse elements, top HV const., LV const.)</small>	S	105C	77506	BLOCK,PRECAST CONCRETE D-0H1-1.2/1 REV.2	1						
		122A	33744	BOLT,HEX HEAD M20 X 45MM GAL. C/W NUT	2						
		14E	323347	BLOCK,TRANS.STAND-OFF 50X50X5X80MM GAL	1						
		15A	323348	GAL	1						
		1D	323304	CROSSARM,STEEL 75 X 75 X 2210MM MK4 GAL	1						
		2B	323317	BRACE,CROSSARM 40 X 5 X 500MM FLAT GAL	1						
		35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	12						
		36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	10						
		51P	94184	WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV BLK	2						
		59A	322721	PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	1						
		60E	320531	INSULATOR,PIN 22KV AERO PORCELAIN	1						
		63M	236323	FUSE,CUTOUT 100A25KV 1P PRIMARY EXPULSN	3						
		64A	236243	SWITCHING GROUP,630A/660V X 1P CA MOUNT	3						
		6A	323315	BRACKET,INSULATOR 50 X 6MM C/W BRACE	1						
		75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	3						
		75P	32289	BOLT,HEX HEAD M16 X 375MM GAL. C/W NUT	2						
		75Z	32261	BOLT,HEX HEAD M16 X 45MM GAL. C/W NUT	3						
		76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2						
		76D	32342	BOLT,HEX HEAD M20 X 450MM GAL. C/W NUT	1						
		77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	4						
		77C	33772	BOLT,HEX HEAD M12 X 40MM GAL. C/W NUT	1						
		82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	8						
		82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	6						
		82C	40440	NUT,HEX M12 THREAD GALANISED STEEL	5						
		85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	3						
		86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	4						
		86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	4						
		87C	65615	WASHER,FLAT ROUND M12 X 28MM GAL	5						
		87E	65617	WASHER,FLAT ROUND M20 X 37MM GAL	2						
		88B	66413	WASHER,FLAT ROUND M16 X 30 X 5MM GAL	2						
		51E	103217	CABLE,1 CORE X 16MM2 X 7/1.70 X 0.6/1 V75	12						
		2A	323314	BRACE,CROSSARM 40 X 700 X 5MM THICK GAL	2						
		51R	94185	WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV RED	12						
		123A	72222	CONCRETE MIX,RAPID SET 20KG BAG	1						
		35Q	141346	LUG,CRIMP TERMINAL M10 X 10MM2 COPPER	3						
		62E	144617	COVER,INSULATOR PROTECT 11KV X112MM POLY	3 (or AR)						
		62F	144620	COVER,INSULATOR PROTECT 22KV X133MM POLY	AR						
		55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	3						
		55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	3 (or AR)						
		55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR						
		119F	225772	SURGE DIVERTER,OD 10KA X 11KV	3 (or AR)						
		119G	225773	SURGE DIVERTER,OD 10KA X 22KV	AR						
		SSC/HVDE/LVB/100.315 with remote fusing <small>(exc'd transformer, earthing, top HV const., LV const.)</small>	S	105C	77506	BLOCK,PRECAST CONCRETE D-0H1-1.2/1 REV.2	1				
				122A	33744	BOLT,HEX HEAD M20 X 45MM GAL. C/W NUT	2				
				14E	323347	BLOCK,TRANS.STAND-OFF 50X50X5X80MM GAL	1				
15A	323348			GAL	1						
35P	141299			LUG,BOLTED TERMINAL M12 X 16MM2 CU	12						
36C	141304			LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	10						
51P	94184			WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV BLK	2						
59A	322721			PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	1						
60E	320531			INSULATOR,PIN 22KV AERO PORCELAIN	1						
64A	236243			SWITCHING GROUP,630A/660V X 1P CA MOUNT	3						
6A	323315			BRACKET,INSULATOR 50 X 6MM C/W BRACE	1						
75B	32274			BOLT,HEX HEAD M16 X 130MM GAL. C/W NUT	3						
75N	32288			BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	4						
76C	32340			BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2						
76D	32342			BOLT,HEX HEAD M20 X 450MM GAL. C/W NUT	2						
77B	33771			BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	4						
82A	40441			NUT,HEX M16 THREAD GALANISED STEEL	7						
82B	40442			NUT,HEX M20 THREAD GALANISED STEEL	6						
82C	40440			NUT,HEX M12 THREAD GALANISED STEEL	4						
85B	50250			COACH SCREW,HEX HEAD 12MM X 100MM GAL	2						
86B	65158			WASHER,FLAT ROUND M16 X 50MM GAL	11						
86C	65159			WASHER,FLAT ROUND M20 X 60MM GAL	7						
87E	65617			WASHER,FLAT ROUND M20 X 37MM GAL	2						
88A	66412			WASHER,FLAT ROUND M12 X 24MM GAL	5						
88B	66413			WASHER,FLAT ROUND M16 X 30 X 5MM GAL	3						
51E	103217			CABLE,1 CORE X 16MM2 X 7/1.70 X 0.6/1 V75	12						
51R	94185			WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV RED	12						
123A	72222			CONCRETE MIX,RAPID SET 20KG BAG	1						
35Q	141346			LUG,CRIMP TERMINAL M10 X 10MM2 COPPER	3						
62E	144617			COVER,INSULATOR PROTECT 11KV X112MM POLY	3 (or AR)						
62F	144620			COVER,INSULATOR PROTECT 22KV X133MM POLY	AR						
55A	146809			CLAMP,LIVE LINE RING FITTING M12 - B24T	3						
55B	146601			CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	3 (or AR)						
55C	146618			CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR						
119F	225772			SURGE DIVERTER,OD 10KA X 11KV	3 (or AR)						
119G	225773			SURGE DIVERTER,OD 10KA X 22KV	AR						

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				TITLE SINGLE POLE SUB 100kVA - 315kVA THREE PHASE CROSSARM HUNG 11KV OR 22KV OPEN WIRE LV MATERIALS LIST		SCALE NTS	
		DRAWN CS PRO-SOLUTIONS DESIGNED BY ELECTRO CHECKED BY H.WESTBURY				A4	
		APPROVED BY A KETLEY DATE APPROVED 04/JUN/19		D - OHC - F007 - SD - 002		REVISION A	

6.4.2 100 – 315 kVA – Cross Arm Hung – LVABC Mains



100 – 315 kVA Cross Arm Hung – LVABC Materials List

1		2		3		4		5	
Unit Assembly	Store Type	Item Ref	Stock Item	Stock Item Description	Quantity				
SSC/HVF/ABC/100.315 with ED Os <small>(lead transformer, earthing, HV fuse elements, top HV const., LV const.)</small>	S	105C	77506	BLOCK,PRECAST CONCRETE D-OH1-1.2/1 REV.2	1				
		122A	33744	BOLT,HEX HEAD M20 X 45MM GAL. C/W NUT	2				
		14E	323347	BLOCK,TRANS.STAND-OFF 50X50X580MM GAL	1				
		15A	323348	BRACKET,MOUNTING TRANSFORMER HANGING GAL	1				
		1A	323210	CROSSARM,WOOD 100 X 100 X 1830MM LONG	1				
		1D	323304	CROSSARM,STEEL 75 X 75 X 2210MM MK4 GAL	1				
		2B	323317	BRACE,CROSSARM 40 X 5 X 500MM FLAT GAL	1				
		35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	12				
		36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	2				
		47J	103008	CABLE,4CORE X 150MM2 X 0.6/1 XLPE	6				
		59A	322721	PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	1				
		60E	320531	INSULATOR,PIN 22KV AERO PORCELAIN	1				
		63M	236323	FUSE,CUTOUT 100A25KV 1P PRIMARY EXPULSN	3				
		6A	323315	BRACKET,INSULATOR 50 X 6MM C/W BRACE	1				
		74F	32224	BOLT,HEX HEAD M12 X 130MM GAL. C/W NUT	2				
		75K	32285	BOLT,HEX HEAD M16 X 280MM GAL. C/W NUT	1				
		75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	3				
		75P	32289	BOLT,HEX HEAD M16 X 375MM GAL. C/W NUT	2				
		75R	32291	BOLT,HEX HEAD M16 X 425MM GAL. C/W NUT	1				
		75Z	32261	BOLT,HEX HEAD M16 X 45MM GAL. C/W NUT	3				
		76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2				
		76D	32342	BOLT,HEX HEAD M20 X 450MM GAL. C/W NUT	1				
		77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	4				
		77C	33772	BOLT,HEX HEAD M12 X 40MM GAL. C/W NUT	1				
		82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	12				
		82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	6				
		82C	40440	NUT,HEX M12 THREAD GALANISED STEEL	7				
		85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	3				
		86A	65157	WASHER,FLAT ROUND M12 X 37MM GAL	2				
		86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	4				
		86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	4				
		87C	65615	WASHER,FLAT ROUND M12 X 28MM GAL	5				
		87E	65617	WASHER,FLAT ROUND M20 X 37MM GAL	2				
		88B	66413	WASHER,FLAT ROUND M16 X 30 X 5MM GAL	2				
		36F	145661	LUG,CRIMP 150MM2 X M13 HOLE INS. BI-METL	8				
		51E	103217	CABLE,1CORE X 16MM2 X 7/1.70 X 0.6/1 V75	12				
		2A	323314	BRACE,CROSSARM 40 X 700 X 5MM THICK GAL	2				
		123A	72222	CONCRETE MIX,RAPID SET 20KG BAG	1				
		35Q	141346	LUG,CRIMP TERMINAL M10 X 10MM2 COPPER	3				
		62E	144617	COVER,INSULATOR PROTECT 11KV X112MM POLY	3 (or AR)				
		62F	144620	COVER,INSULATOR PROTECT 22KV X133MM POLY	AR				
		55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	3				
		55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	3 (or AR)				
		55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR				
		94B	145630	CONNECTOR,IPC LV ABC	2				
119F	225772	SURGE DIVERTER,OD 10KA X 11KV	3 (or AR)						
119G	225773	SURGE DIVERTER,OD 10KA X 22KV	AR						
SSC/HVDE/ABC/100.315 with remote fusing <small>(lead transformer, earthing, top HV const., LV const.)</small>	S	105C	77506	BLOCK,PRECAST CONCRETE D-OH1-1.2/1 REV.2	1				
		122A	33744	BOLT,HEX HEAD M20 X 45MM GAL. C/W NUT	2				
		14E	323347	BLOCK,TRANS.STAND-OFF 50X50X580MM GAL	1				
		15A	323348	BRACKET,MOUNTING TRANSFORMER HANGING GAL	1				
		1A	323210	CROSSARM,WOOD 100 X 100 X 1830MM LONG	1				
		35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	12				
		36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	2				
		47J	103008	CABLE,4CORE X 150MM2 X 0.6/1 XLPE	6				
		59A	322721	PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	1				
		60E	320531	INSULATOR,PIN 22KV AERO PORCELAIN	1				
		64E	236326	SWITCHING GROUP,400ALV3P POLE MOUNT	1				
		6A	323315	BRACKET,INSULATOR 50 X 6MM C/W BRACE	1				
		74F	32224	BOLT,HEX HEAD M12 X 130MM GAL. C/W NUT	2				
		75B	32274	BOLT,HEX HEAD M16 X 130MM GAL. C/W NUT	3				
		75K	32285	BOLT,HEX HEAD M16 X 280MM GAL. C/W NUT	1				
		75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	4				
		75R	32291	BOLT,HEX HEAD M16 X 425MM GAL. C/W NUT	1				
		76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2				
		76D	32342	BOLT,HEX HEAD M20 X 450MM GAL. C/W NUT	2				
		77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	4				
		82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	12				
		82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	6				
		82C	40440	NUT,HEX M12 THREAD GALANISED STEEL	7				
		85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	2				
		86A	65157	WASHER,FLAT ROUND M12 X 37MM GAL	2				
		86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	12				
		86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	7				
		87E	65617	WASHER,FLAT ROUND M20 X 37MM GAL	2				
		88A	66412	WASHER,FLAT ROUND M12 X 24MM GAL	5				
		88B	66413	WASHER,FLAT ROUND M16 X 30 X 5MM GAL	3				
		36F	145661	LUG,CRIMP 150MM2 X M13 HOLE INS. BI-METL	8				
		51E	103217	CABLE,1CORE X 16MM2 X 7/1.70 X 0.6/1 V75	12				
		2A	323314	BRACE,CROSSARM 40 X 700 X 5MM THICK GAL	2				
		123A	72222	CONCRETE MIX,RAPID SET 20KG BAG	1				
		35Q	141346	LUG,CRIMP TERMINAL M10 X 10MM2 COPPER	3				
		62E	144617	COVER,INSULATOR PROTECT 11KV X112MM POLY	3 (or AR)				
		62F	144620	COVER,INSULATOR PROTECT 22KV X133MM POLY	AR				
		55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	3				
		55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	3 (or AR)				
		55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR				
		94B	145630	CONNECTOR,IPC LV ABC	2				
		119F	225772	SURGE DIVERTER,OD 10KA X 11KV	3 (or AR)				
		119G	225773	SURGE DIVERTER,OD 10KA X 22KV	AR				

DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

ALTERATIONS ORIGINAL ISSUE



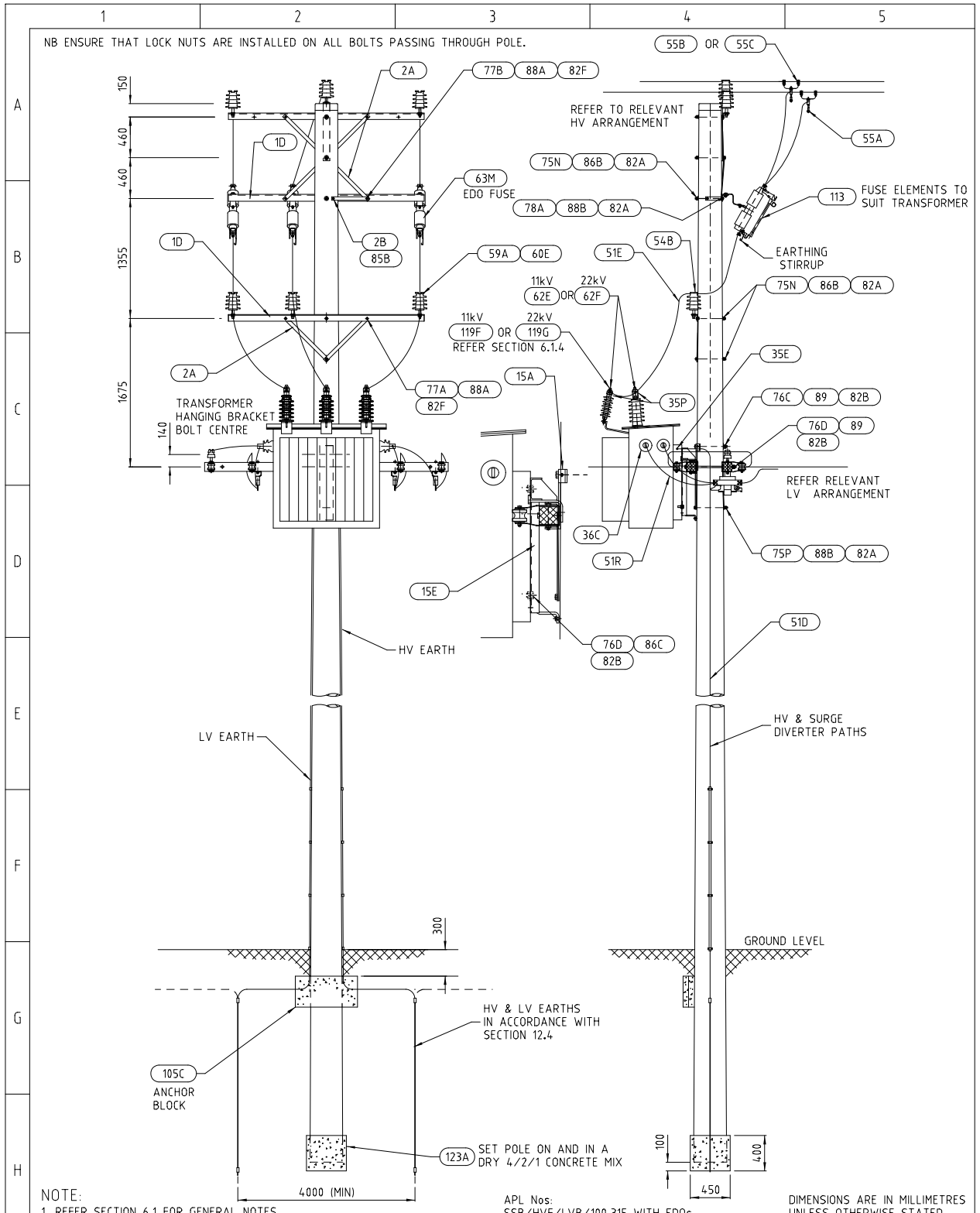
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TITLE	SINGLE POLE SUB 100kVA - 315kVA THREE PHASE CROSSARM HUNG 11KV OR 22KV LVABC MAINS MATERIALS LIST	SCALE	NTS
DRAWN	CS PRO-SOLUTIONS		
DESIGNED BY	ELECTRO		
CHECKED BY	H.WESTBURY		A4
APPROVED BY	A KETLEY		
DATE APPROVED	04/JUN/19		REVISION A

D - OHC - F008 - SD - 002


6.4.3 Single Pole Sub 100 – 315 kVA Crossarm Hung Open Wire LV



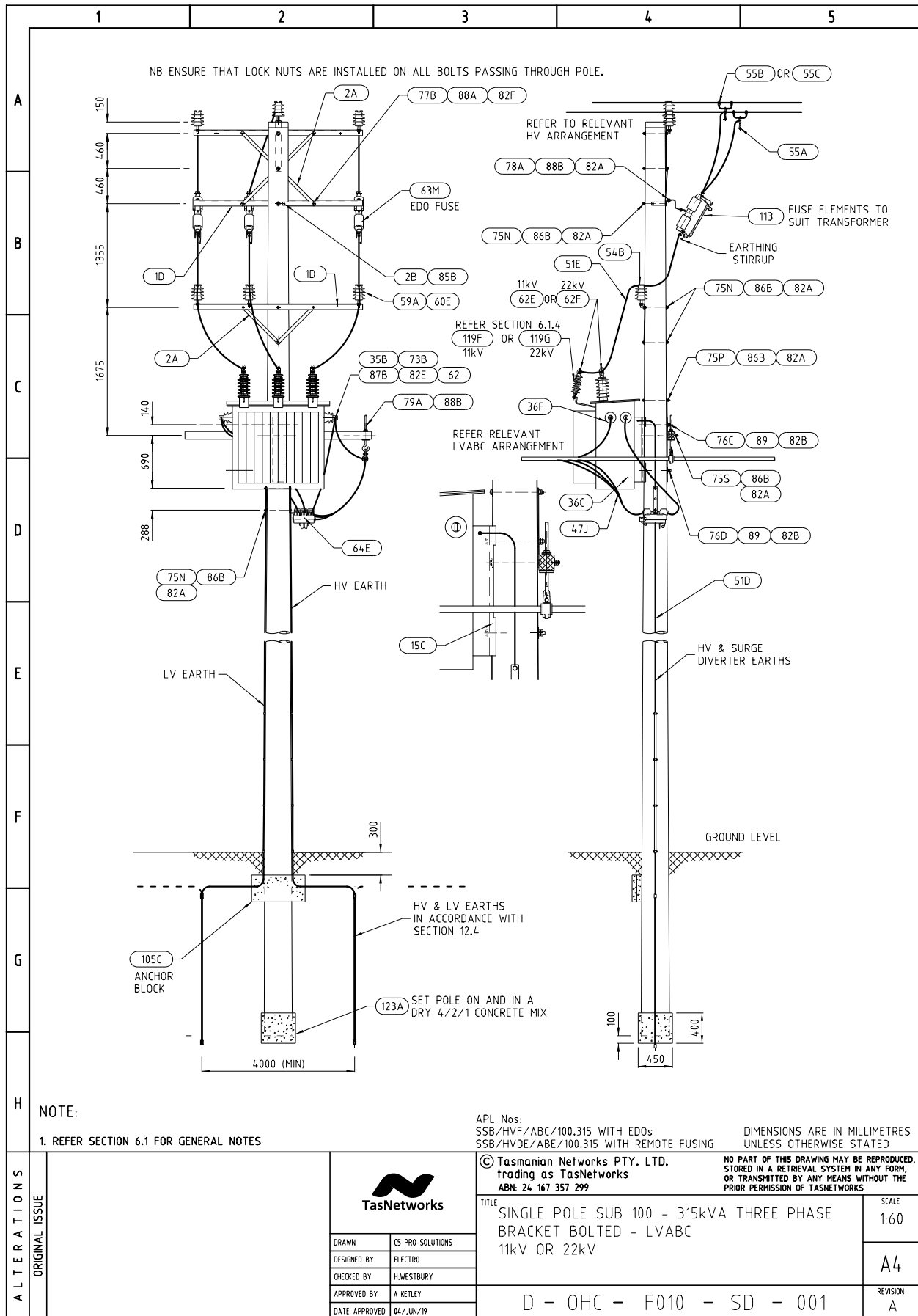
BM DWG NO

ALTERNATIONS	ORIGINAL ISSUE			© Tasmanian Networks PTY. LTD. trading as TasNetworks ABN: 24 167 357 299		NO PART OF THIS DRAWING MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM IN ANY FORM, OR TRANSMITTED BY ANY MEANS WITHOUT THE PRIOR PERMISSION OF TASNETWORKS		
		DRAWN CS PRO-SOLUTIONS DESIGNED BY ELECTRO CHECKED BY H.WESTBURY APPROVED BY A.KETLEY DATE APPROVED 04/JUN/19	TITLE SINGLE POLE SUB - 100-315kVA THREE PHASE CROSSARM HUNG 11kV OR 22kV OPEN WIRE LV			SCALE 1:55	A4	
	D - OHC - F009 - SD - 001							REVISION A
	NOTE: 1. REFER SECTION 6.1 FOR GENERAL NOTES		APL Nos: SSB/HVF/LVB/100.315 WITH EDOS				DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED	
	HV & LV EARTHS IN ACCORDANCE WITH SECTION 12.4 SET POLE ON AND IN A DRY 4/2/1 CONCRETE MIX							

Single Pole Sub 100 – 315 kVA Crossarm Hung Open Wire LV – Material List

		1	2	3	4	5		
A	SSB/HVF/LVB/100.315 with EDOs <small>(excl transformer, earthing, HV fuse elements, top HV const., LV const.)</small>	S	89	66803	WASHER,FLAT SQUARE M20 X75MM GAL.STEEL	2		
			105C	77506	BLOCK,PRECAST CONCRETE D-OH1-1.2/1 REV.2	1		
			1D	323304	CROSSARM,STEEL 75 X 75 X 2210MM MK4 GAL	2		
			2B	323317	BRACE,CROSSARM 40 X 5 X 500MM FLAT GAL	1		
			B	35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	12	
				36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	10	
				51P	94184	WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV BLK	2	
				59A	322721	PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	1	
				60E	320531	INSULATOR,PIN 22KV AERO PORCELAIN	1	
				63M	236323	FUSE,CUTOUT 100A/25KV 1P PRIMARY EXPULSN	3	
				64A	236243	SWITCHING GROUP,630A/660V X 1P CA MOUNT	3	
				6A	323315	BRACKET,INSULATOR 50 X 6MM C/W BRACE	1	
				C	75B	32274	BOLT,HEX HEAD M16 X 130MM GAL. C/W NUT	3
					75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	3
			75P		32289	BOLT,HEX HEAD M16 X 375MM GAL. C/W NUT	2	
			75Z		32261	BOLT,HEX HEAD M16 X 45MM GAL. C/W NUT	3	
			76C		32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2	
			76D		32342	BOLT,HEX HEAD M20 X 450MM GAL. C/W NUT	1	
			77B		33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	4	
			77C		33772	BOLT,HEX HEAD M12 X 40MM GAL. C/W NUT	1	
			D		82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	11
					82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	4
				82C	40440	NUT,HEX M12 THREAD GALANISED STEEL	5	
				85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	3	
				86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	7	
				86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	2	
				87C	65615	WASHER,FLAT ROUND M12 X 28MM GAL	5	
				88B	66413	WASHER,FLAT ROUND M16 X 30 X 5MM GAL	2	
				E	51E	103217	CABLE,1CORE X 16MM2 X 7/1.70 X 0.6/1 V75	12
					2A	323314	BRACE,CROSSARM 40 X 700 X 5MM THICK GAL	2
			51R		94185	WIRE,BLDNG 70MM2 X 19/2.14 X 0.6/1KV RED	12	
			123A		72222	CONCRETE MIX,RAPID SET 20KG BAG	1	
			35Q		141346	LUG,CRIMP TERMINAL M10 X 10MM2 COPPER	3	
			15F		323449	BRACKET,MOUNTING 100-300KVA TRANSFORMERS	1	
			62E		144617	COVER,INSULATOR PROTECT 11KV X112MM POLY	3 (or AR)	
			62F		144620	COVER,INSULATOR PROTECT 22KV X133MM POLY	AR	
			F		55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	3
					55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	3 (or AR)
				55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR	
				119F	225772	SURGE DIVERTER,OD 10KA X 11KV	3 (or AR)	
15E	323453	BRACKET, Conversion 100-500KVA TX WILSON		1				
119G	225773	SURGE DIVERTER,OD 10KA X 22KV		AR				
G	DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED							
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	TITLE SINGLE POLE SUB 100 - 315kVA THREE PHASE CROSSARM HUNG 11kV OR 22kV OPEN WIRE LV MATERIALS LIST				SCALE NTS			
	D - OHC - F009 - SD - 002				REVISION A			
	H	AL T E R A T I O N S ORIGINAL ISSUE						
			DRAWN	C5 PRO-SOLUTIONS				
			DESIGNED BY	ELECTRO				
			CHECKED BY	HLWESTBURY				
			APPROVED BY	A KETLEY				
DATE APPROVED	04/JUN/19							

6.4.4 100 – 315 kVA Bolt Fixed - LVABC



100 – 315 kVA Bolt Fixed – LVABC Materials List


		1	2	3	4	5						
A	SSB/HVF/ABC/100.315 with EDOS (excl transformer, earthing, HV fuse elements, top HV const., LV const.)	S	89	68803	WASHER,FLAT SQUARE M20 X75MM GAL STEEL	2						
			105C	77506	BLOCK,PRECAST CONCRETE D-OH1-1.2/1 REV.2	1						
			1D	323304	CROSSARM,STEEL 75 X 75 X2210MM MK4 GAL	1						
			2B	323317	BRACE,CROSSARM 40 X 5 X 500MM FLAT GAL	1						
			36F	145661	LUG,CRIMP 150MM2 X M13 HOLE INS. BI-METL	8						
			35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	12						
			36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	2						
			47J	103008	CABLE,4 CORE X 150MM2 X 0.6/1 XLPE	6						
			59A	322721	PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	1						
			60E	320531	INSULATOR,PIN 22KV AERO PORCELAIN	1						
			63M	236323	FUSE,CUTOUT 100A/25KV 1P PRIMARY EXPULSN	3						
			B			6A	323315	BRACKET,INSULATOR 50 X 6MM C/W BRACE	1			
						75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	3			
						75P	32289	BOLT,HEX HEAD M16 X 375MM GAL. C/W NUT	2			
						75Z	32261	BOLT,HEX HEAD M16 X 45MM GAL. C/W NUT	3			
						76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2			
						76D	32342	BOLT,HEX HEAD M20 X 450MM GAL. C/W NUT	1			
						77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	4			
						77C	33772	BOLT,HEX HEAD M12 X 40MM GAL. C/W NUT	1			
						82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	8			
						82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	4			
			C			82C	40440	NUT,HEX M12 THREAD GALANISED STEEL	5			
						85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	3			
						86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	4			
						86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	2			
						87C	65615	WASHER,FLAT ROUND M12 X 28MM GAL	5			
						88B	66413	WASHER,FLAT ROUND M16 X 30 X 5MM GAL	2			
						D			51E	103217	CABLE,1CORE X 16MM2 X 7/1.70 X 0.6/1 V75	12
									2A	323314	BRACE,CROSSARM 40 X 700 X 5MM THICK GAL	2
									123A	72222	CONCRETE MIX,RAPID SET 20KG BAG	1
									35Q	141346	LUG,CRIMP TERMINAL M10 X 10MM2 COPPER	3
			15F	323449	BRACKET,MOUNTING 100-300KVA TRANSFORMERS				1			
			62E	144617	COVER,INSULATOR PROTECT 11KV X1 12MM POLY				3 (or AR)			
			62F	144620	COVER,INSULATOR PROTECT 22KV X1 33MM POLY				AR			
			55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T				3			
			55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT				3 (or AR)			
			55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT				AR			
			E	SSB/HVDE/ABC/100.315 with remote fusing (excl transformer, earthing, top HV const., LV const.)	S	20	323363	BRACKET,ANGLE TRANSPOSITION MK63 GAL	1			
						89	68803	WASHER,FLAT SQUARE M20 X75MM GAL STEEL	2			
						105C	77506	BLOCK,PRECAST CONCRETE D-OH1-1.2/1 REV.2	1			
						35B	145653	TERMINAL,LUG COMPRESSION M13 X 95MM2	8			
						35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	12			
						36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	2			
						47D	103001	CABLE,4 CORE X 95MM2 X 19/2.63X 0.6/1 XLPE	6			
						59A	322721	PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	3			
						60E	320531	INSULATOR,PIN 22KV AERO PORCELAIN	3			
						75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	4			
F			76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2						
			76D	32342	BOLT,HEX HEAD M20 X 450MM GAL. C/W NUT	2						
			77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	4						
			82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	4						
			82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	4						
			82C	40440	NUT,HEX M12 THREAD GALANISED STEEL	4						
			85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	2						
			86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	5						
			86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	5						
			88A	66412	WASHER,FLAT ROUND M12 X 24MM GAL	5						
G			88B	66413	WASHER,FLAT ROUND M16 X 30 X 5MM GAL	3						
			51E	103217	CABLE,1CORE X 16MM2 X 7/1.70 X 0.6/1 V75	12						
			123A	72222	CONCRETE MIX,RAPID SET 20KG BAG	1						
			35Q	141346	LUG,CRIMP TERMINAL M10 X 10MM2 COPPER	3						
			15F	323449	BRACKET,MOUNTING 100-300KVA TRANSFORMERS	1						
			62E	144617	COVER,INSULATOR PROTECT 11KV X1 12MM POLY	3 (or AR)						
			62F	144620	COVER,INSULATOR PROTECT 22KV X1 33MM POLY	AR						
			55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	3						
			55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	3 (or AR)						
			55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR						
H			119F	225772	SURGE DIVERTER,OD 10KA X 11KV	3 (or AR)						
			119G	225773	SURGE DIVERTER,OD 10KA X 22KV	AR						
			94B	145630	CONNECTOR,IPC LV ABC	2						

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TITLE	SINGLE POLE SUB 100 - 315kVA THREE PHASE BRACKET BOLTED - LVABC 11kV OR 22kV MATERIALS LIST	SCALE	NTS
			A4
	D - OHC - F010 - SD - 002	REVISION	A

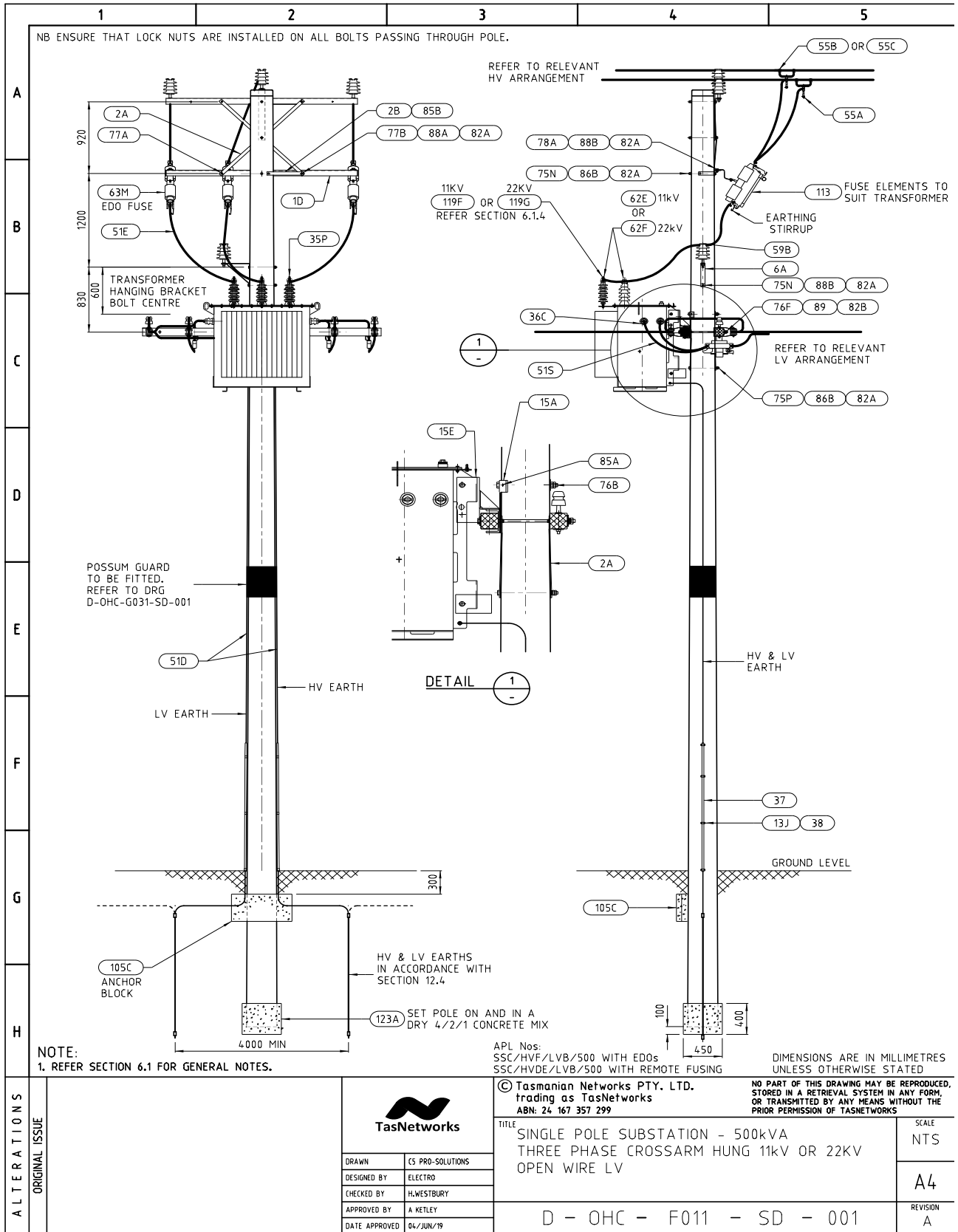


DRAWN	CS PRO-SOLUTIONS
DESIGNED BY	ELECTRO
CHECKED BY	H.WESTBURY
APPROVED BY	A.KETLEY
DATE APPROVED	04/JUN/19

ALTERATIONS ORIGINAL ISSUE

6.5 500 kVA Substation


6.5.1 500 kVA Bolt Fixed – Open Wire LV



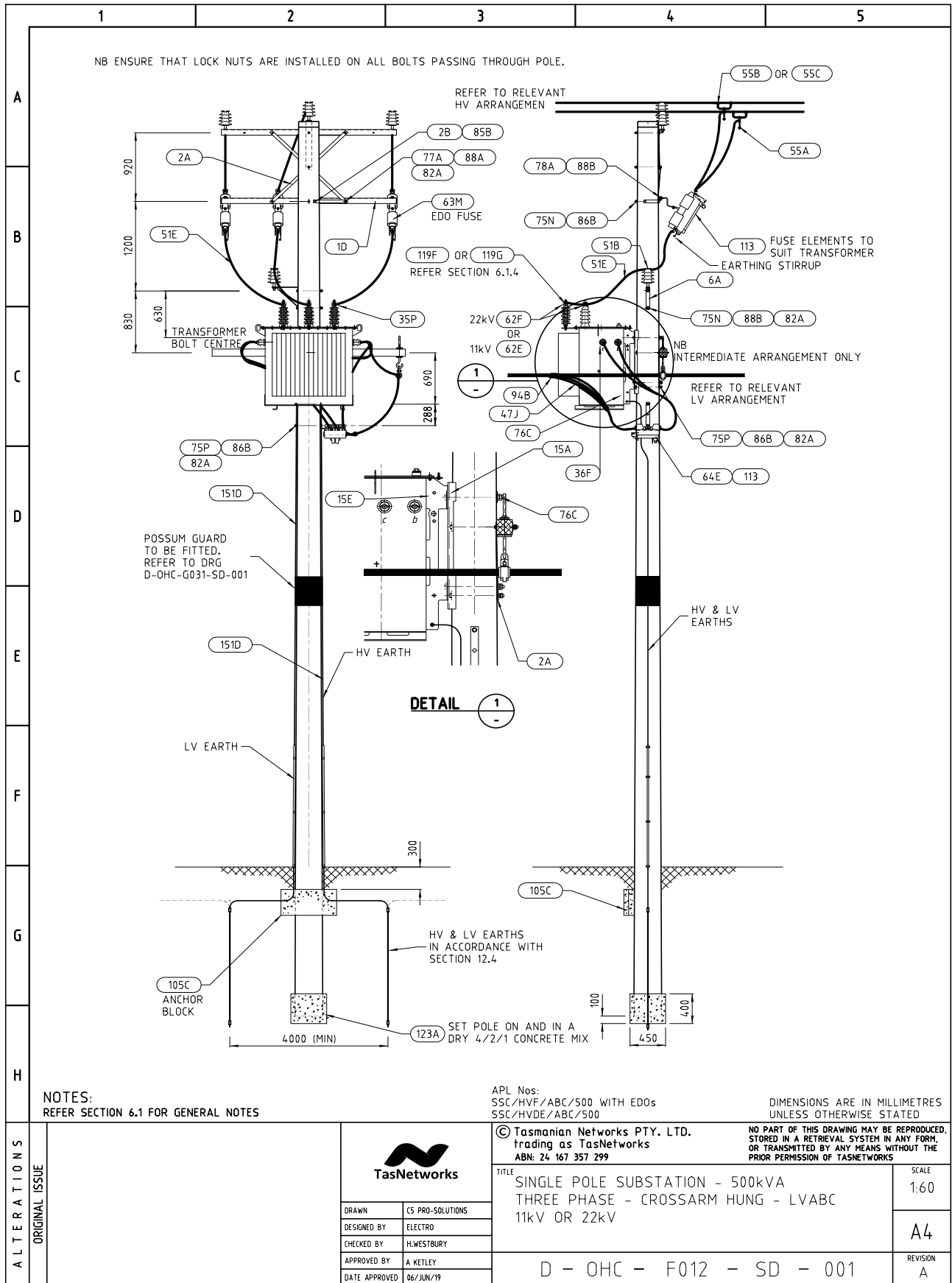
500 kVA Cross Arm Hung – Open Wire LV Materials List

1		2		3		4		5	
Unit Assembly	Store Type	Item Ref	Stock Item	Stock Item Description	Quantity				
SSC/HV/LVB/500 with EDOs (sect transformer, earthing, HV fuse elements, top HV const., LV const.)	S	105C	77506	BLOCK.PRECAST CONCRETE D-OH1-1.2/1 REV.2	1				
		122A	33744	BOLT.HEX HEAD M20 X 45MM GAL. C/W NUT	2				
		14E	323347	BLOCK.TRANS.STAND-OFF 50X50X80MM GAL	1				
		15A	323348	BRACKET.MOUNTING TRANSFORMER HANGING GAL	1				
		1D	323304	CROSSARM.STEEL 75 X 75 X 2210MM MK4 GAL	1				
		2B	323317	BRACE.CROSSARM 40 X 5 X 500MM FLAT GAL	1				
		35P	141299	LUG.BOLTED TERMINAL M12 X 16MM2 CU	12				
		36C	141304	LUG.BOLTED TERMINAL M12 X 50-70MM2 CU	2				
		36E	141306	LUG.BOLTED TERMINAL M16 X 150-185MM2 CU	8				
		59A	322721	PIN.INSULATOR 20MM DIA X 22KV GAL STEEL	1				
		60E	320531	INSULATOR.PIN 22KV AERO PORCELAIN	1				
		63M	236323	FUSE.CUTOUT 100A25KV 1P PRIMARY EXPULSN	3				
		64A	236243	SWITCHING GROUP.630A660V X 1P CA MOUNT	6				
		6A	323315	BRACKET.INSULATOR 50 X 6MM C/W BRACE	1				
		75N	32288	BOLT.HEX HEAD M16 X 350MM GAL. C/W NUT	3				
		75P	32289	BOLT.HEX HEAD M16 X 375MM GAL. C/W NUT	2				
		75Z	32261	BOLT.HEX HEAD M16 X 45MM GAL. C/W NUT	3				
		76C	32340	BOLT.HEX HEAD M20 X 400MM GAL. C/W NUT	2				
		76F	32342	BOLT.HEX HEAD M20 X 450MM GAL. C/W NUT	1				
		77B	33771	BOLT.HEX HEAD M12 X 35MM GAL. C/W NUT	4				
		77C	33772	BOLT.HEX HEAD M12 X 40MM GAL. C/W NUT	1				
		82A	40441	NUT.HEX M16 THREAD GALANISED STEEL	8				
		82B	40442	NUT.HEX M20 THREAD GALANISED STEEL	6				
		82C	40440	NUT.HEX M12 THREAD GALANISED STEEL	5				
		85B	50250	COACH SCREW.HEX HEAD 12MM X 100MM GAL	3				
		86B	65158	WASHER.FLAT ROUND M16 X 50MM GAL	4				
		86C	65159	WASHER.FLAT ROUND M20 X 60MM GAL	4				
		87C	65615	WASHER.FLAT ROUND M12 X 28MM GAL	5				
		87E	65617	WASHER.FLAT ROUND M20 X 37MM GAL	2				
		88B	66413	WASHER.FLAT ROUND M16 X 30 X 5MM GAL	2				
		51E	103217	CABLE.1CORE X 16MM2 X 7/1.70 X 0.6/1 V75	12				
		2A	323314	BRACE.CROSSARM 40 X 700 X 5MM THICK GAL	2				
		123A	72222	CONCRETE MIX.RAPID SET 20KG BAG	1				
		35Q	141346	LUG.CRIMP TERMINAL M10 X 10MM2 COPPER	3				
		117K	222820	FUSE LINK.CT-4HF 450A/415V/6.1 X 209MM	6				
		51S	94195	WIRE.BLDNG 150MM2 X 37/2.25 XLPE BLACK	16				
		62E	144617	COVER.INSULATOR PROTECT 11KV X 112MM POLY	3 (or AR)				
		62F	144620	COVER.INSULATOR PROTECT 22KV X 133MM POLY	AR				
		55A	146809	CLAMP.LIVE LINE RING FITTING M12 - B24T	3				
		55B	146601	CONNECTOR.TEE STC 6.0-19.00MM C.CONDUCT	3 (or AR)				
		55C	146618	CONNECTOR.TEE STC 7.5-16.25MM C.CONDUCT	AR				
		15E	323453	BRACKET, Conversion 100-500kVA TX WILSON	1				
		119F	225772	SURGE DIVERTER, OD 10KA X 11KV	3 (or AR)				
		119G	225773	SURGE DIVERTER, OD 10KA X 22KV	AR				
		SSC/HVDELVB/500 with remote fusing (sect transformer, earthing, top HV const., LV const.)	S	105C	77506	Anchor Block Concrete	1		
122A	33744			Bolt Tower M20 X 45	2				
14E	323347			Transformer Stand Off Block	1				
15A	323348			T/F Hanging Bracket - Mk48 LV Crossarm Bracket	1				
35P	141299			Lug Bolted 16mm2 12 hole	12				
36C	141304			QLUG bolted 50 70mm2 tinned copper	2				
36E	141306			QLUG bolted 120 150mm2 tinned copper	8				
51P	94184			Wire Electrical Cu 70mm2 1c Black	2				
59A	322721			Pin, Insulator 22kV	1				
60E	320531			Insulator Pin 22/450	1				
64A	236243			Switch Fuse 660V 630A	6				
6A	323315			Insulator Bracket Mk15	1				
75B	32274			Bolt Hex M16 X 130	3				
75N	32288			Bolt Hex M16 X 350	4				
76C	32340			Bolt Hex M20 X 400	2				
76D	32342			Bolt Hex M20 X 450	2				
77B	33771			Bolt Tower M12 X 35	4				
82A	40441			Nut M16	7				
82B	40442			Nut M20	6				
82C	40440			Nut M12	4				
85B	50250			Coach Screw M12 X 100	2				
86B	65158			Washer Els 16	11				
86C	65159			Washer Els 20	7				
87E	65617			Washer Ns 20	2				
88A	66412			Washer Tower 12	5				
88B	66413			Washer Tower 16	3				
51E	103217			Wire Electrical Cu 16mm2 1c Black (UV Resistant)	12				
51R	94185			Wire Electrical Cu 70mm2 1c Red	12				
123A	72222			Concrete Quick Mx 20kg	1				
35Q	141346			Lug Crimp 10mm2 Copper M10	3				
117K	222820			450A Exp Fuse Cartridge 415V OTTM450	6				
51S	94195			Cable LV Cu 1c 150mm2 c x pvc (Black)	16				
62E	144617			Bushing Cover 11kV	3 (or AR)				
62F	144620			Bushing Cover 22kV	AR				
55A	146809			Live Line Clamp	3				
55B	146601			Dee Clamp 7/2.75	3 (or AR)				
55C	146618			Dee Clamp 19/2.00	AR				
15E	323453			BRACKET, Conversion 100-500kVA TX WILSON	1				
119F	225772			Surge Diverter 10kA 11kV	3 (or AR)				
119G	225773			Surge Diverter 10kA 22kV	AR				

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		DRAWN		CS PRO-SOLUTIONS		TITLE		SCALE
		DESIGNED BY		ELECTRO		SINGLE POLE SUBSTATION - 500kVA THREE PHASE CROSSARM HUNG 11kV OR 22KV OPEN WIRE LV MATERIALS LIST		NTS
		CHECKED BY		H.WESTBURY		DATE APPROVED		A4
		APPROVED BY		A KETLEY		REVISION		
		DATE APPROVED		04/JUN/19		A		
				D - OHC - F011 - SD - 002				


6.5.2 500 kVA Cross Arm Hung – LVABC



500 kVA Cross Arm Hung – LVABC Materials List

1		2		3		4		5	
Unit Assembly	Store Type	Item Ref	Stock Item	Stock Item Description	Quantity				
SSC/HVF/ABC/500 with EDOs <small>(see Transformer setting, HV Fuse Materials, top HV cone, LV cone)</small>	S	105C	77506	BLOCK,PRECAST CONCRETE D-0H1-1.2/1 REV.2	1				
		117J	222224	FUSE LINK,NH 400A X415V OCB DIN-2	6				
		122A	33744	BOLT,HEX HEAD M20 X 45MM GAL. C/W NUT	2				
		14E	323347	BLOCK,TRANS STAND-OFF 50X50X80MM GAL	1				
		15A	323348	BRACKET,MOUNTING TRANSFORMER HANGING GAL	1				
		1A	323210	CROSSARM,WOOD 100 X 100 X 1830MM LONG	1				
		1D	323304	CROSSARM,STEEL 75 X 75 X 2210MM MK4 GAL	1				
		2B	323317	BRACE,CROSSARM 40 X 5 X 500MM FLAT GAL	1				
		35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	12				
		36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	2				
47J	103008	CABLE,4 CORE X 150MM2 X 0.6/1 XLPE	12						
59A	322721	PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	1						
60E	320531	INSULATOR,PIN 22KV AERO PORCELAIN	1						
63M	236323	FUSE,CUTOUT 100A/25KV 1P PRIMARY EXPULSN	3						
64E	236326	SWITCHING GROUP,400A LV 3P POLE MOUNT	2						
6A	323315	BRACKET,INSULATOR 50 X 6MM C/W BRACE	1						
74F	32224	BOLT,HEX HEAD M12 X 130MM GAL. C/W NUT	2						
75K	32285	BOLT,HEX HEAD M16 X 280MM GAL. C/W NUT	1						
75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	3						
75P	32289	BOLT,HEX HEAD M16 X 375MM GAL. C/W NUT	2						
75R	32291	BOLT,HEX HEAD M16 X 425MM GAL. C/W NUT	1						
75Z	32261	BOLT,HEX HEAD M16 X 45MM GAL. C/W NUT	3						
76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2						
76D	32342	BOLT,HEX HEAD M20 X 450MM GAL. C/W NUT	1						
77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	4						
77C	33772	BOLT,HEX HEAD M12 X 40MM GAL. C/W NUT	1						
82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	12						
82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	6						
82C	40440	NUT,HEX M12 THREAD GALANISED STEEL	7						
85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	3						
86A	65157	WASHER,FLAT ROUND M12 X 37MM GAL	2						
86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	4						
86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	4						
87C	65615	WASHER,FLAT ROUND M12 X 28MM GAL	5						
87E	65617	WASHER,FLAT ROUND M20 X 37MM GAL	2						
88B	66413	WASHER,FLAT ROUND M16 X 30 X 5MM GAL	2						
51E	103217	CABLE,1 CORE X 16MM2 X 7/1.70 X 0.6/1 V75	12						
2A	323314	BRACE,CROSSARM 40 X 700 X 5MM THICK GAL	2						
123A	72222	CONCRETE MIX,RAPID SET 20KG BAG	1						
35Q	141346	LUG,CRIMP TERMINAL M10 X 10MM2 COPPER	3						
36F	145661	LUG,CRIMP 150MM2 X M13 HOLE INS. BI-METL	16						
62E	144617	COVER,INSULATOR PROTECT 11KV X112MM POLY	3 (or AR)						
62F	144620	COVER,INSULATOR PROTECT 22KV X133MM POLY	AR						
55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	3						
55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	3 (or AR)						
55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR						
119F	225772	SURGE DIVERTER,OD 10KA X 11KV	3 (or AR)						
119G	225773	SURGE DIVERTER,OD 10KA X 22KV	AR						
15E	323453	BRACKET, Conversion 100-500kVA TX WILSON	1						
94B	145630	CONNECTOR,IPC LV ABC	2						
SSC/HVDE/ABC/500	S	105C	77506	BLOCK,PRECAST CONCRETE D-0H1-1.2/1 REV.2	1				
		117J	222224	FUSE LINK,NH 400A X415V OCB DIN-2	6				
		122A	33744	BOLT,HEX HEAD M20 X 45MM GAL. C/W NUT	2				
		14E	323347	BLOCK,TRANS STAND-OFF 50X50X80MM GAL	1				
		15A	323348	BRACKET,MOUNTING TRANSFORMER HANGING GAL	1				
		1A	323210	CROSSARM,WOOD 100 X 100 X 1830MM LONG	1				
		35P	141299	LUG,BOLTED TERMINAL M12 X 16MM2 CU	12				
		36C	141304	LUG,BOLTED TERMINAL M12 X 50-70MM2 CU	2				
		47J	103008	CABLE,4 CORE X 150MM2 X 0.6/1 XLPE	12				
		59A	322721	PIN,INSULATOR 20MM DIA X 22KV GAL STEEL	1				
60E	320531	INSULATOR,PIN 22KV AERO PORCELAIN	1						
64E	236326	SWITCHING GROUP,400A LV 3P POLE MOUNT	2						
6A	323315	BRACKET,INSULATOR 50 X 6MM C/W BRACE	1						
74F	32224	BOLT,HEX HEAD M12 X 130MM GAL. C/W NUT	2						
75K	32274	BOLT,HEX HEAD M16 X 130MM GAL. C/W NUT	3						
75N	32285	BOLT,HEX HEAD M16 X 280MM GAL. C/W NUT	1						
75P	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	4						
75R	32291	BOLT,HEX HEAD M16 X 425MM GAL. C/W NUT	1						
76C	32340	BOLT,HEX HEAD M20 X 400MM GAL. C/W NUT	2						
76D	32342	BOLT,HEX HEAD M20 X 450MM GAL. C/W NUT	2						
77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	4						
82A	40441	NUT,HEX M16 THREAD GALANISED STEEL	12						
82B	40442	NUT,HEX M20 THREAD GALANISED STEEL	6						
82C	40440	NUT,HEX M12 THREAD GALANISED STEEL	7						
85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	2						
86A	65157	WASHER,FLAT ROUND M12 X 37MM GAL	2						
86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	12						
86C	65159	WASHER,FLAT ROUND M20 X 60MM GAL	7						
87E	65617	WASHER,FLAT ROUND M20 X 37MM GAL	2						
88A	66412	WASHER,FLAT ROUND M12 X 24MM GAL	5						
88B	66413	WASHER,FLAT ROUND M16 X 30 X 5MM GAL	3						
51E	103217	CABLE,1 CORE X 16MM2 X 7/1.70 X 0.6/1 V75	12						
2A	323314	BRACE,CROSSARM 40 X 700 X 5MM THICK GAL	2						
123A	72222	CONCRETE MIX,RAPID SET 20KG BAG	1						
35Q	141346	LUG,CRIMP TERMINAL M10 X 10MM2 COPPER	3						
36F	145661	LUG,CRIMP 150MM2 X M13 HOLE INS. BI-METL	16						
62E	144617	COVER,INSULATOR PROTECT 11KV X112MM POLY	3 (or AR)						
62F	144620	COVER,INSULATOR PROTECT 22KV X133MM POLY	AR						
55A	146809	CLAMP,LIVE LINE RING FITTING M12 - B24T	3						
55B	146601	CONNECTOR,TEE STC 6.0-19.00MM CONDUCT	3 (or AR)						
55C	146618	CONNECTOR,TEE STC 7.5-16.25MM CONDUCT	AR						
119F	225772	SURGE DIVERTER,OD 10KA X 11KV	3 (or AR)						
119G	225773	SURGE DIVERTER,OD 10KA X 22KV	AR						
15E	323453	BRACKET, Conversion 100-500kVA TX WILSON	1						
94B	145630	CONNECTOR,IPC LV ABC	2						

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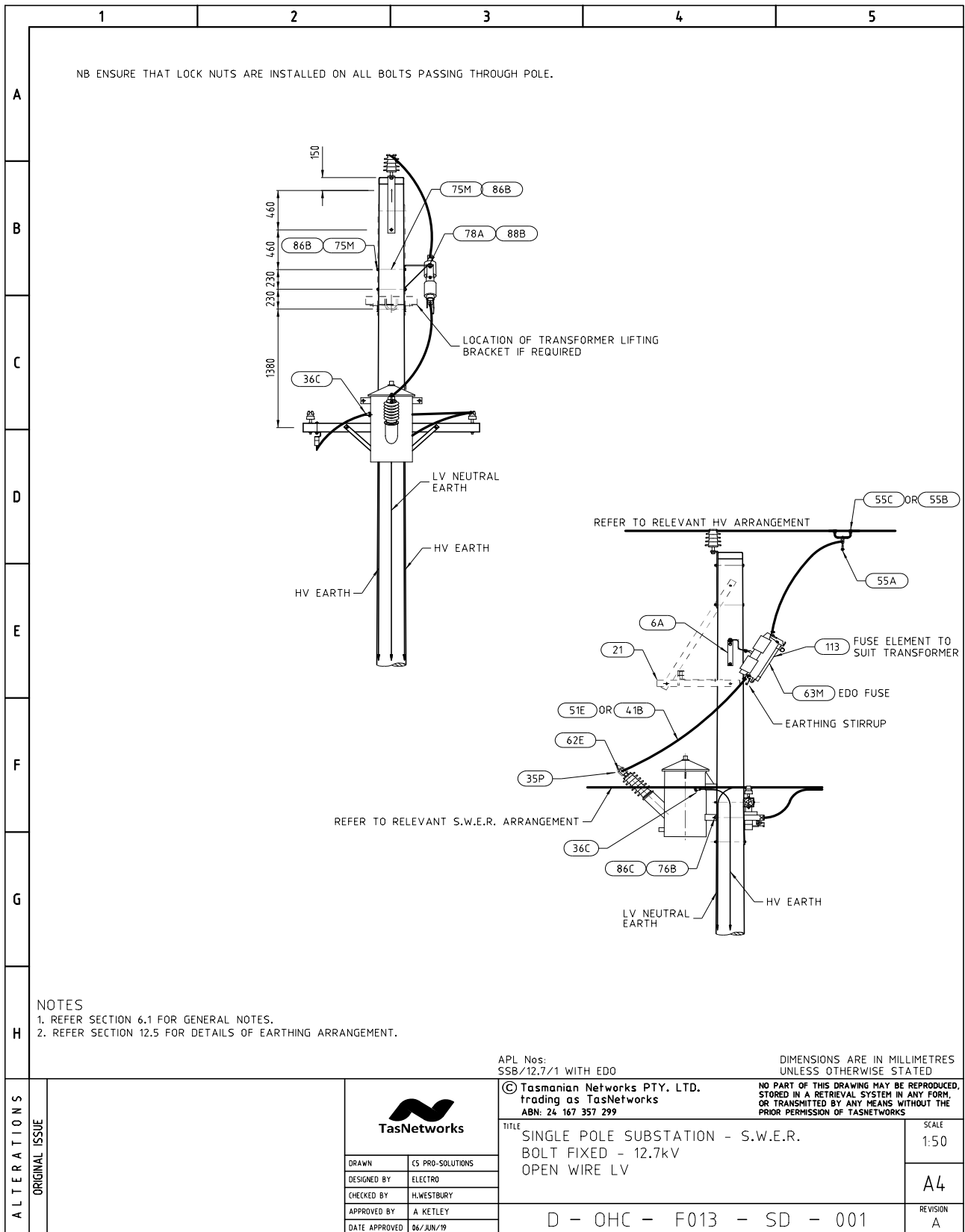
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	TITLE SINGLE POLE SUBSTATION - 500kVA THREE PHASE - CROSSARM HUNG - LVABC 11kV OR 22kV MATERIALS LIST				SCALE NTS	
	DRAWN C5 PRO-SOLUTIONS		DESIGNED BY ELECTRO		A4	
	CHECKED BY H.WESTBURY		APPROVED BY A KETLEY		REVISION A	
DATE APPROVED 06/JUN/19		D - OHC - F012 - SD - 002				

315-500 kVA Platform Mounted – Open Wire – 11kV or 22kV


Unit Assembly	Store Type	Item Ref	Stock Item	Stock Item Description	Quantity		
SSP/11/3	S	1D	323304	CROSSARM,STEEL 75 X 75 X 2210MM MK4 GAL	2		
		2A	323314	BRACE,CROSSARM 40 X 700 X 5MM THICK GAL	4		
		2B	323317	BRACE,CROSSARM 40 X 5 X 500MM FLAT GAL	1		
		59A	322721	PIN INSULATOR 22/450	3		
		60E	320531	INSULATOR PIN 22/450	3		
		62E	144617	COVER,INSULATOR PROTECT 11KV X112MM POLY	3		
		63M	236323	SWITCH FUSE 24KV SINGLE PHASE EDO	3		
		75M	32287	BOLT,HEX HEAD M16 X 325MM GAL. C/W NUT	3		
		75N	32288	BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	3		
		75P	32289	BOLT,HEX HEAD M16 X 375MM GAL. C/W NUT	3		
		77A	33770	BOLT,HEX HEAD M12 X 30MM GAL. C/W NUT	4		
		77B	33771	BOLT,HEX HEAD M12 X 35MM GAL. C/W NUT	6		
		78A	33780	BOLT,HEX HEAD M16 X 35MM GAL. C/W NUT	6		
		78B	33771	BOLT,HEX HEAD M16 X 40MM GAL. C/W NUT	15		
		85A	50248	COACH SCREW,HEX HEAD 12MM X 75MM GAL	3		
		85B	50250	COACH SCREW,HEX HEAD 12MM X 100MM GAL	9		
		88A	66412	WASHER,FLAT ROUND M12 X 24MM GAL	10		
		86B	65158	WASHER,FLAT ROUND M16 X 50MM GAL	19		
		90B	66771	WASHER SPRING SPIRAL M16	16		
		16A	323349	V BRACKET	1		
		16B	323350	TRANS BEAM SUPPORT	2		
		16C	323351	CROSS MEMBER	7		
		16D	323352	TRANS BEAM PROPS RH	1		
		16E	323353	TRANS BEAM PROPS LH	1		
		16F	323377	TRANS BEAM GUIDE	4		
		16G	323354	CLAMPING PLATE	4		
		SSP/22/3	S	1D	323304	CROSSARM,STEEL 75 X 75 X 2210MM MK4 GAL	2
				2A	323314	BRACE,CROSSARM 40 X 700 X 5MM THICK GAL	4
2B	323317			BRACE,CROSSARM 40 X 5 X 500MM FLAT GAL	1		
59A	322721			PIN INSULATOR 22/450	3		
60E	320531			INSULATOR PIN 22/450	3		
62F	144617			COVER,INSULATOR PROTECT 22KV X112MM POLY	3		
63M	236323			SWITCH FUSE 24KV SINGLE PHASE EDO	3		
75M	32287			BOLT,HEX HEAD M16 X 325MM GAL. C/W NUT	3		
75N	32288			BOLT,HEX HEAD M16 X 350MM GAL. C/W NUT	3		
75P	32289			BOLT,HEX HEAD M16 X 375MM GAL. C/W NUT			
78A	33780			BOLT,HEX HEAD M16 X 35MM GAL. C/W NUT	6		
78B	33771			BOLT,HEX HEAD M16 X 40MM GAL. C/W NUT	15		
85A	50248			COACH SCREW,HEX HEAD 12MM X 75MM GAL	3		
85B	50250			COACH SCREW,HEX HEAD 12MM X 100MM GAL	9		
88A	66412			WASHER,FLAT ROUND M12 X 24MM GAL	10		
86B	65158			WASHER,FLAT ROUND M16 X 50MM GAL	19		
90B	66771			WASHER SPRING SPIRAL M16	16		
16A	323349			V BRACKET	1		
16B	323350			TRANS BEAM SUPPORT	2		
16C	323351			CROSS MEMBER	7		
16D	323352			TRANS BEAM PROPS RH	1		
16E	323353			TRANS BEAM PROPS LH	1		
16F	323377			TRANS BEAM GUIDE	4		
16G	323354			CLAMPING PLATE	4		

6.6 SWER Transformers

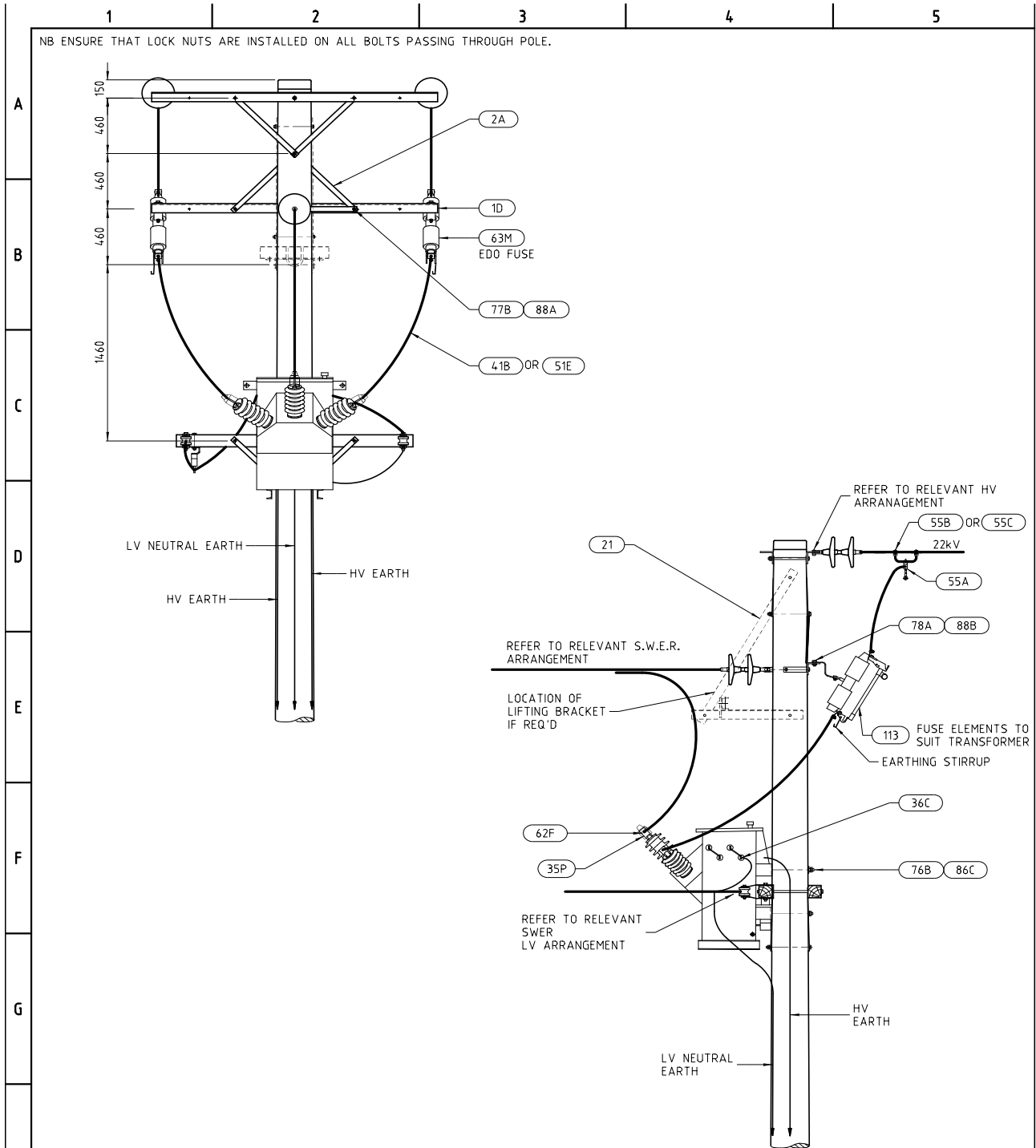
6.6.1 SWER Bolted Open Wire LV



SWER Bolted Open Wire LV - Materials List

	1	2	3	4	5																																																																																
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6.6.2 SWER Isolation Transformer




NOTES:
 1. REFER SECTION 6.1 FOR GENERAL NOTES.
 2. REFER SECTION 12.5 FOR DETAILS OF EARTHING ARRANGEMENT.

APL Nos: 55B/12.7/1/ISOL

DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

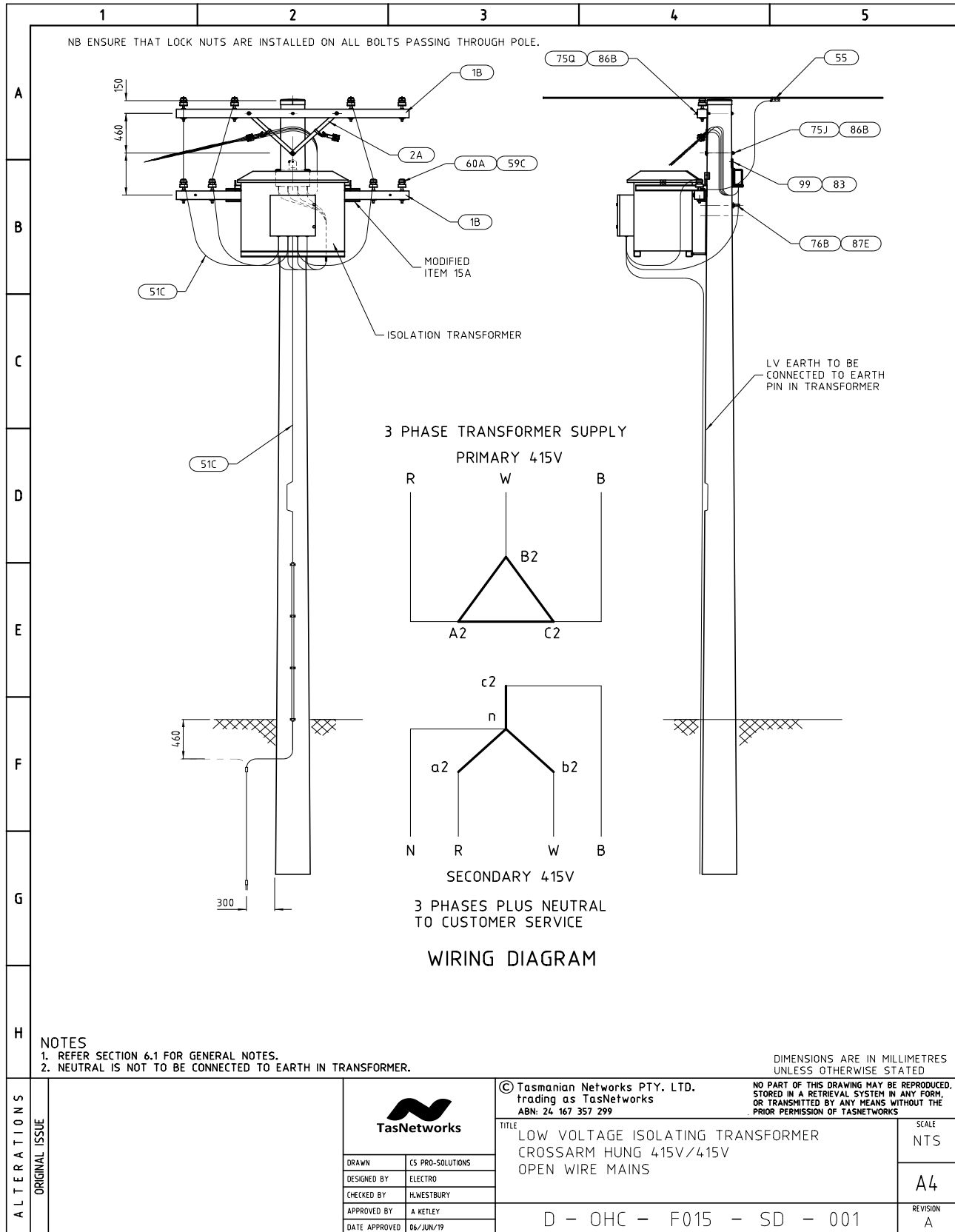
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				TITLE SINGLE POLE SUBSTATION - S.W.E.R. ISOLATING BOLT FIXED - 12.7kV		SCALE 1:4.0			
		DRAWN		CS PRO-SOLUTIONS					
		DESIGNED BY		ELECTRO					
		CHECKED BY		H.WESTBURY					
APPROVED BY		A. KETLEY							
DATE APPROVED		06/JUN/19		D - OHC - F014 - SD - 001		REVISION A			

SWER Isolation Transformer - Materials List

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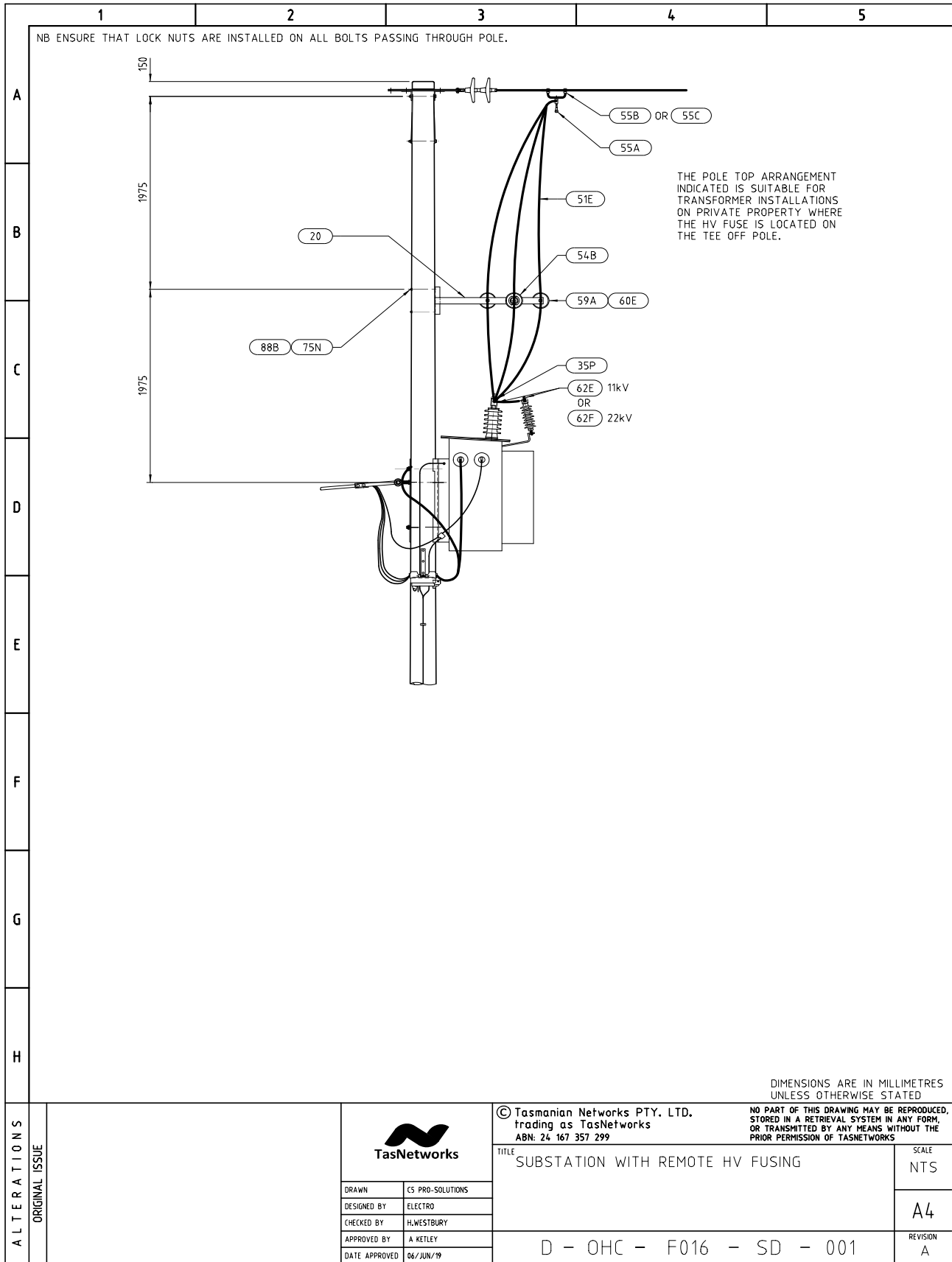
6.7 LV / LV Isolating Transformer

6.7.1 LV / LV Open Mains Cross Arm Hung Isolation Transformer

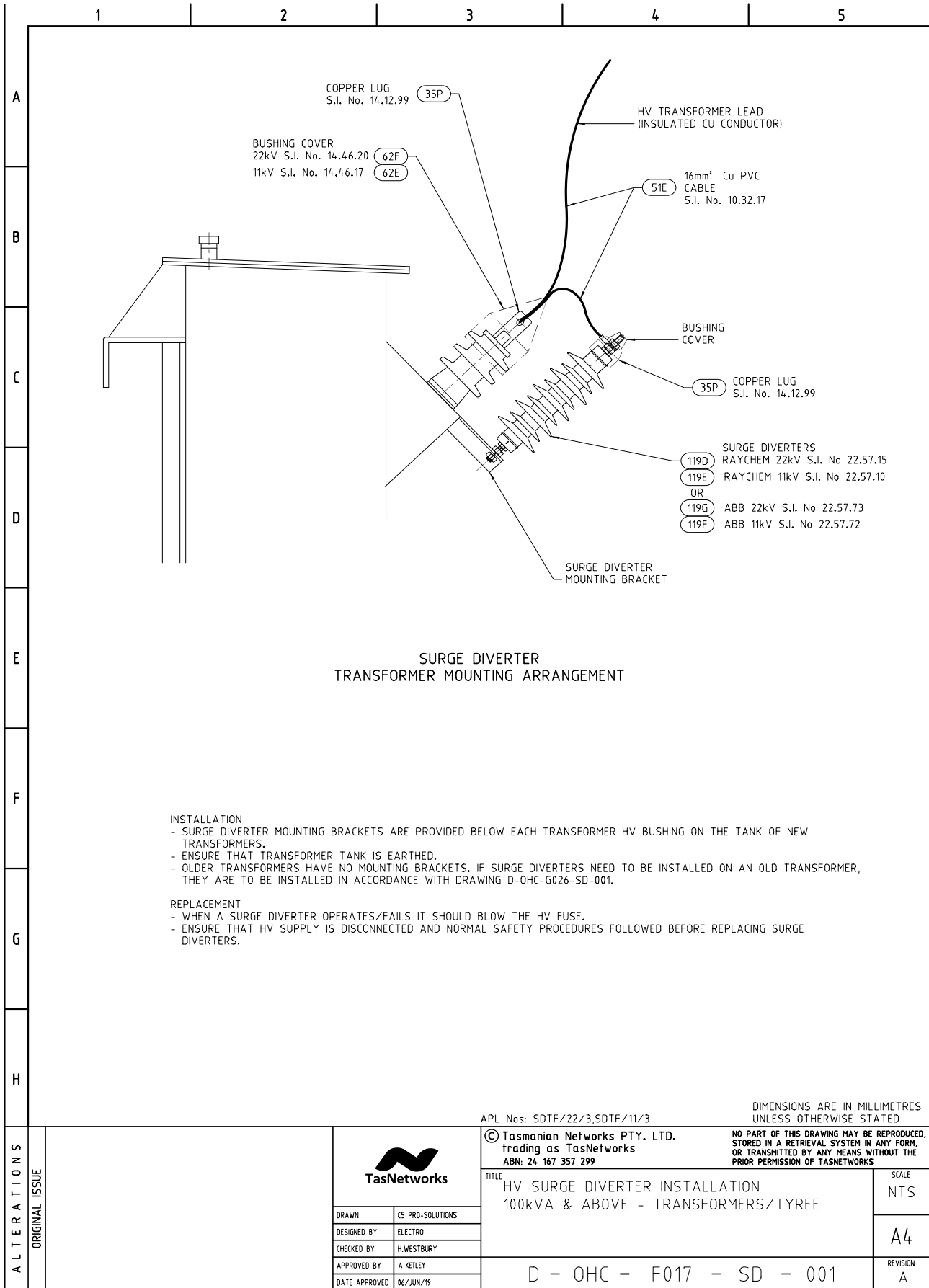


6.8 Pole Transformer HV & LV Bridging & Fixing Arrangements

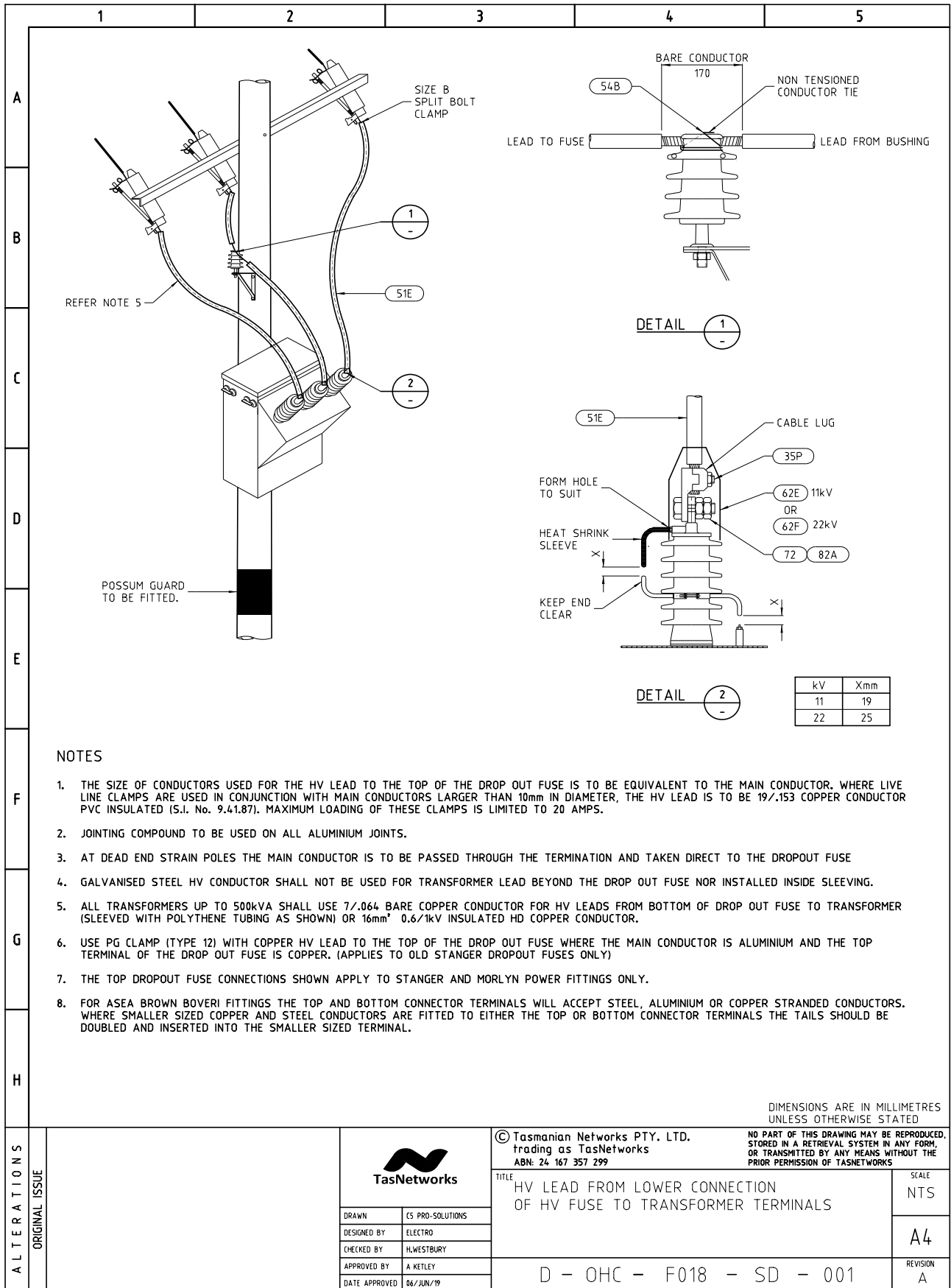
6.8.1 HV Bridging for Substation with Remote HV Fusing



6.8.2 HV Surge Diverters Mounted on Transformers 100 kVA & Above



6.8.3 Bridging from DO to TX Terminals



6.8.4 LV Open Wire Bridging Arrangements

INLINE STRAIN

DEAD END

INTERMEDIATE

TYPICAL CONNECTIONS LV BUSHING

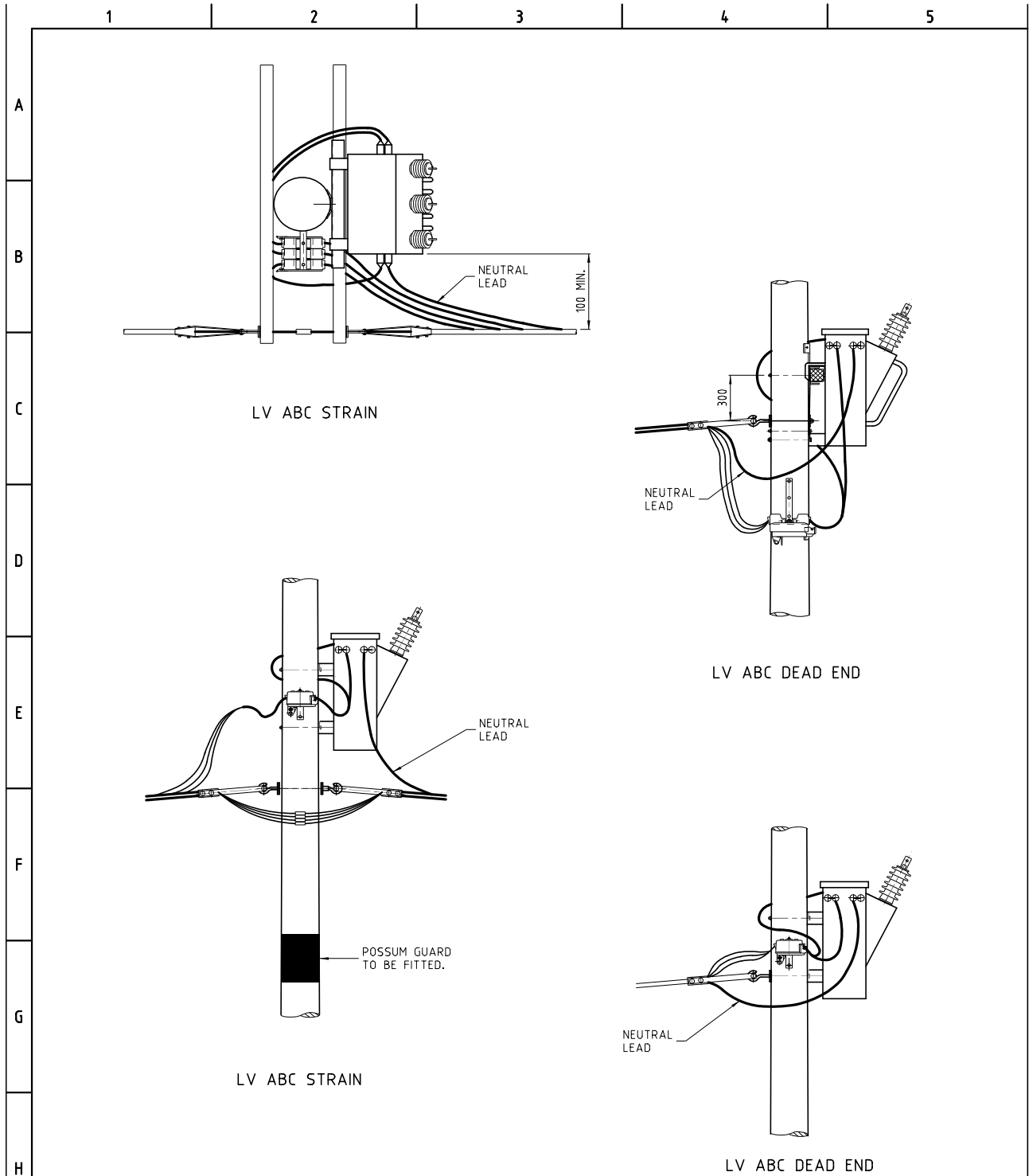
AREA - LV TRANSFORMER LEADS			ALUMINIUM AREA - LV	TRANSFORMER LEADS
TRANSFORMER kVA	TRANSFORMER LV NEUTRAL LEAD mm ²	TRANSFORMER LV ACTIVE LEAD mm ²	TRANSFORMER LV NEUTRAL LEAD mm ²	TRANSFORMER LV ACTIVE LEAD mm ²
25 (1ph)	1x70	1x70	1x95	1x95
50 (1PH)	1x70	2x70	1x95	2x95
200 (3PH)	1x70	2x70	1x95	2x95
300 (3PH)	1x70	2x70	2x95	2x95
500 (3PH)	1x150	2x150	NOT SUITABLE	NOT SUITABLE

NOTES
 1. USE LV FUSE ISOLATOR S.I. No. 23.62.43 WHERE SINGLE OR DOUBLE TRANSFORMER LV ACTIVE LEADS ARE REQUIRED.

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			DRAWN: CS PRO-SOLUTIONS DESIGNED BY: ELECTRO CHECKED BY: HLWESTBURY APPROVED BY: A KETLEY DATE APPROVED: 06/JUN/19		A4
			D - OHC - F019 - SD - 001		REVISION A

6.8.5 LVABC Bridging Arrangements






NOTES
1. TRANSFORMER NEUTRAL TO BE CONNECTED TO LVABC BY TWO IPC'S.

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				TITLE		SCALE	
				LV LEADS FOR LVABC CONNECTIONS		NTS	
		DRAWN		C5 PRO-SOLUTIONS		A4	
		DESIGNED BY		ELECTRO			
CHECKED BY		H.WESTBURY					
APPROVED BY		A KETLEY		REVISION			
DATE APPROVED		06/JUN/19				A	
		D - OHC - F020 - SD - 001					

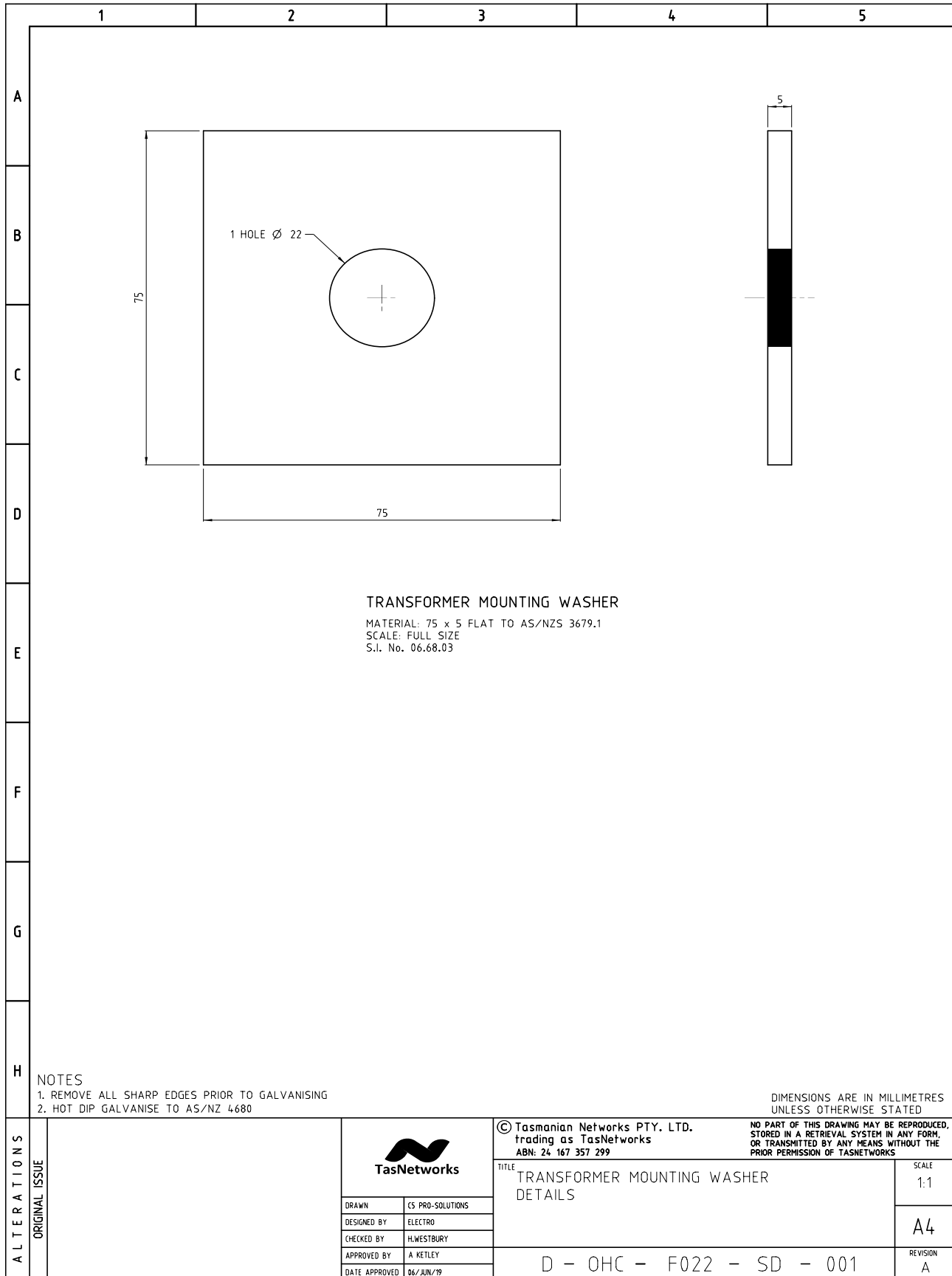
6.8.6 Pole Transformer LV Fuse Selection

	1	2	3	4	5																																						
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B	<p>TABLE 1</p> <p>FURTHER GUIDANCE</p> <ol style="list-style-type: none"> TABLE 1 PROVIDES RECOMMENDED LOW VOLTAGE FUSE SIZES FOR ALL STANDARD TRANSFORMER INSTALLATIONS. IT SHOULD BE NOTED THAT INSTALLING A LOW VOLTAGE FUSE LARGER THAN THE RECOMMENDED VALUE MAY RESULT IN THE HIGH VOLTAGE FUSE OPERATING OR THE LOW VOLTAGE FUSE NOT OPERATING FOR LOW VOLTAGE FAULTS. AN INCREASE IN FUSE SIZE(S) MAY BE NECESSARY ON A TRANSFORMER SUPPLYING MOTORS WHEN THE RECOMMENDED SIZE OF TRANSFORMER FUSE BLOWS AS A RESULT OF MOTOR STARTING. ANY PROPOSED DEPARTURE FROM THE RECOMMENDED SIZE SHOULD BE REFERRED TO THE ENGINEER IN CHARGE. AVOID LONG LENGTHS OF LOW VOLTAGE CIRCUITS OTHERWISE LV FUSES MAY NOT OPERATE FOR LOW VOLTAGE FAULTS. VOLTAGE DROP USUALLY DETERMINES THE MAXIMUM CABLE RUN. 																																										
C	<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">FUZE TYPE & SIZE</th> <th style="width: 20%;">LV FUSE RATING (AMPS)</th> <th style="width: 20%;">S.I. No.</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">NH-00</td><td style="text-align: center;">63</td><td style="text-align: center;">22.22.07</td></tr> <tr><td style="text-align: center;">NH-00</td><td style="text-align: center;">80</td><td style="text-align: center;">22.22.08</td></tr> <tr><td style="text-align: center;">NH-00</td><td style="text-align: center;">100</td><td style="text-align: center;">22.22.09</td></tr> <tr><td style="text-align: center;">NH-00</td><td style="text-align: center;">125</td><td style="text-align: center;">22.22.10</td></tr> <tr><td style="text-align: center;">NH-00</td><td style="text-align: center;">160</td><td style="text-align: center;">22.22.11</td></tr> <tr><td style="text-align: center;">NH-2</td><td style="text-align: center;">160</td><td style="text-align: center;">22.22.21</td></tr> <tr><td style="text-align: center;">NH-2</td><td style="text-align: center;">250</td><td style="text-align: center;">22.22.22</td></tr> <tr><td style="text-align: center;">NH-2</td><td style="text-align: center;">315</td><td style="text-align: center;">22.22.23</td></tr> <tr><td style="text-align: center;">NH-2</td><td style="text-align: center;">400</td><td style="text-align: center;">22.22.24</td></tr> <tr><td style="text-align: center;">OTKF</td><td style="text-align: center;">250</td><td style="text-align: center;">22.26.89</td></tr> <tr><td style="text-align: center;">OTKF</td><td style="text-align: center;">450</td><td style="text-align: center;">22.28.20</td></tr> </tbody> </table>					FUZE TYPE & SIZE	LV FUSE RATING (AMPS)	S.I. No.	NH-00	63	22.22.07	NH-00	80	22.22.08	NH-00	100	22.22.09	NH-00	125	22.22.10	NH-00	160	22.22.11	NH-2	160	22.22.21	NH-2	250	22.22.22	NH-2	315	22.22.23	NH-2	400	22.22.24	OTKF	250	22.26.89	OTKF	450	22.28.20		
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D	<p>TABLE 2</p> <p>NOTES:</p> <ol style="list-style-type: none"> * USE OF OTKF FUSES OR EQUIVALENT WITH LV FUSE ISOLATOR S.I. No. 23.62.40 NH TYPE SIZE 00 FUSES ARE REQUIRED FOR LV ABC FUSE SWITCHES S.I. No. 23.62.41 NH TYPE SIZE 2 FUSES ARE REQUIRED FOR LV ABC FUSE SWITCHES S.I. No. 23.63.26 																																										
E	<p>DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED</p>																																										
F	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td rowspan="5" style="width: 10%; text-align: center; vertical-align: middle;">ALTERATIONS</td> <td rowspan="5" style="width: 10%; text-align: center; vertical-align: middle;">ORIGINAL ISSUE</td> <td colspan="2" style="text-align: center;">  </td> <td style="font-size: small;">© Tasmanian Networks PTY. LTD. trading as TasNetworks ABN: 24 167 357 299</td> <td style="font-size: x-small;">NO PART OF THIS DRAWING MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM IN ANY FORM, OR TRANSMITTED BY ANY MEANS WITHOUT THE PRIOR PERMISSION OF TASNETWORKS</td> </tr> <tr> <td colspan="3" style="text-align: center;"> TITLE POLE TRANSFORMERS LV FUSE SELECTION </td> <td style="text-align: center;">SCALE NTS</td> </tr> <tr> <td style="font-size: x-small;">DRAWN</td> <td style="font-size: x-small;">CS PRO-SOLUTIONS</td> <td colspan="2"></td> <td style="text-align: center;">A4</td> </tr> <tr> <td style="font-size: x-small;">DESIGNED BY</td> <td style="font-size: x-small;">ELECTRO</td> <td colspan="2"></td> <td></td> </tr> <tr> <td style="font-size: x-small;">CHECKED BY</td> <td style="font-size: x-small;">H.WESTBURY</td> <td colspan="2"></td> <td></td> </tr> <tr> <td style="font-size: x-small;">APPROVED BY</td> <td style="font-size: x-small;">A.KETLEY</td> <td colspan="2"></td> <td style="text-align: center;">REVISION A</td> </tr> <tr> <td style="font-size: x-small;">DATE APPROVED</td> <td style="font-size: x-small;">06/JUN/19</td> <td colspan="3" style="text-align: center; font-size: large;">D - OHC - F021 - SD - 001</td> <td></td> </tr> </table>					ALTERATIONS	ORIGINAL ISSUE			© Tasmanian Networks PTY. LTD. trading as TasNetworks ABN: 24 167 357 299	NO PART OF THIS DRAWING MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM IN ANY FORM, OR TRANSMITTED BY ANY MEANS WITHOUT THE PRIOR PERMISSION OF TASNETWORKS	TITLE POLE TRANSFORMERS LV FUSE SELECTION			SCALE NTS	DRAWN	CS PRO-SOLUTIONS			A4	DESIGNED BY	ELECTRO				CHECKED BY	H.WESTBURY				APPROVED BY	A.KETLEY			REVISION A	DATE APPROVED	06/JUN/19	D - OHC - F021 - SD - 001					
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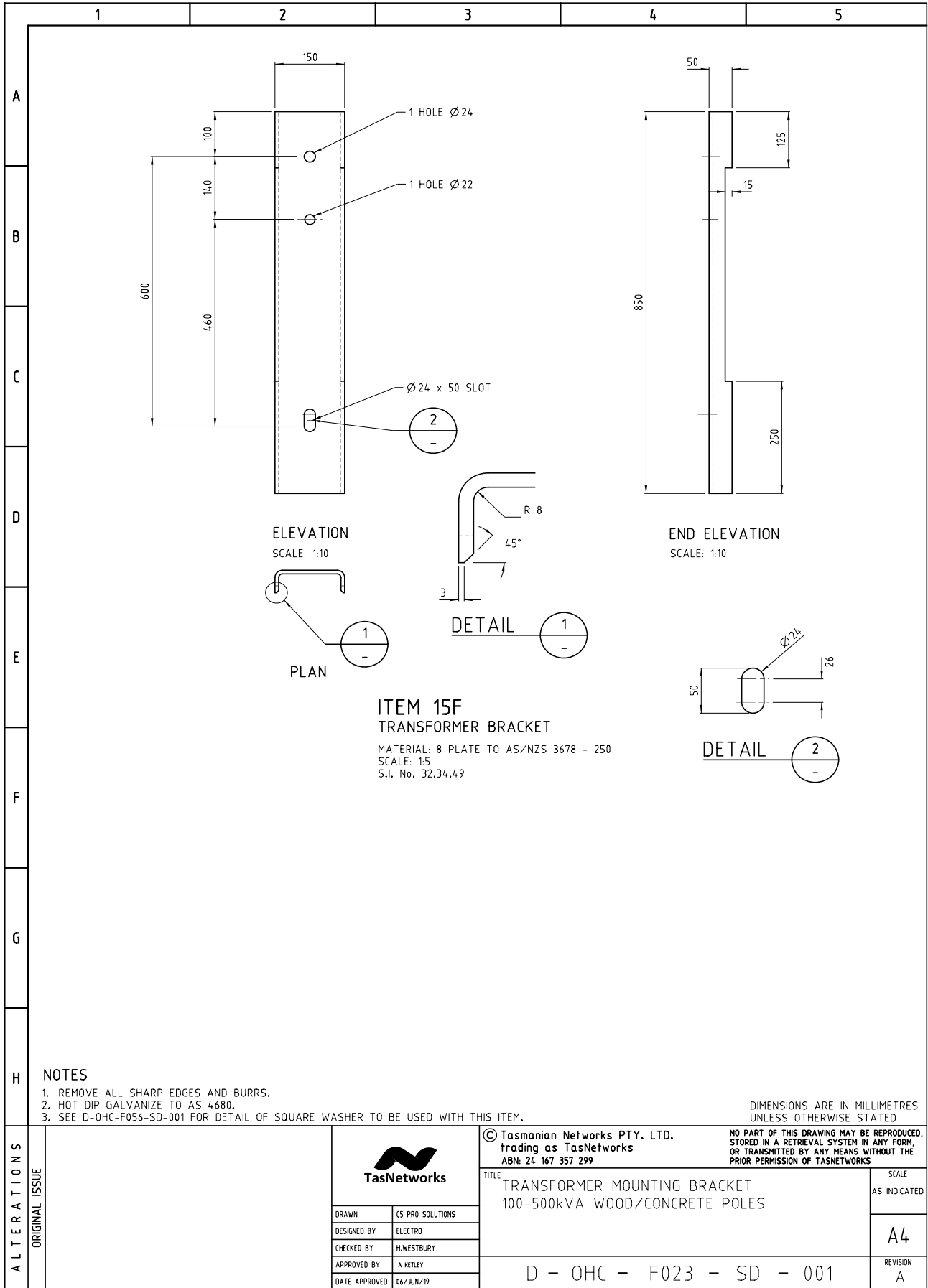
Unit Assembly	Store Type	Item Ref	Stock Item	Stock Item Description	Quantity
	S	16A	323349	V BRACKET	1
		16B	323350	TRANS BEAM SUPPORT	2
		16C	323351	CROSS MEMBER	7
		16D	323352	TRANS BEAM PROPS RH	1
		16E	323353	TRANS BEAM PROPS LH	1
		16F	323377	TRANS BEAM GUIDE	4
		16G	323354	CLAMPING PLATE	4
		75R	32291	BOLT HEX. HD M16 x 425	
		76A	32336	BOLT HEX. HD M20 x 300	1
		77B	33771	BOLT TOWER M12 X 35	
		78B		BOLT	1
		78C	33782	BOLT TOWER M16 x 45	2
		87B	65614	M10 WASHER N.S.	
		87E	65617	M20 WASHER N.S.	
		88B	66413	M16 WASHER TOWER	2

6.9 Transformer Steelwork Components

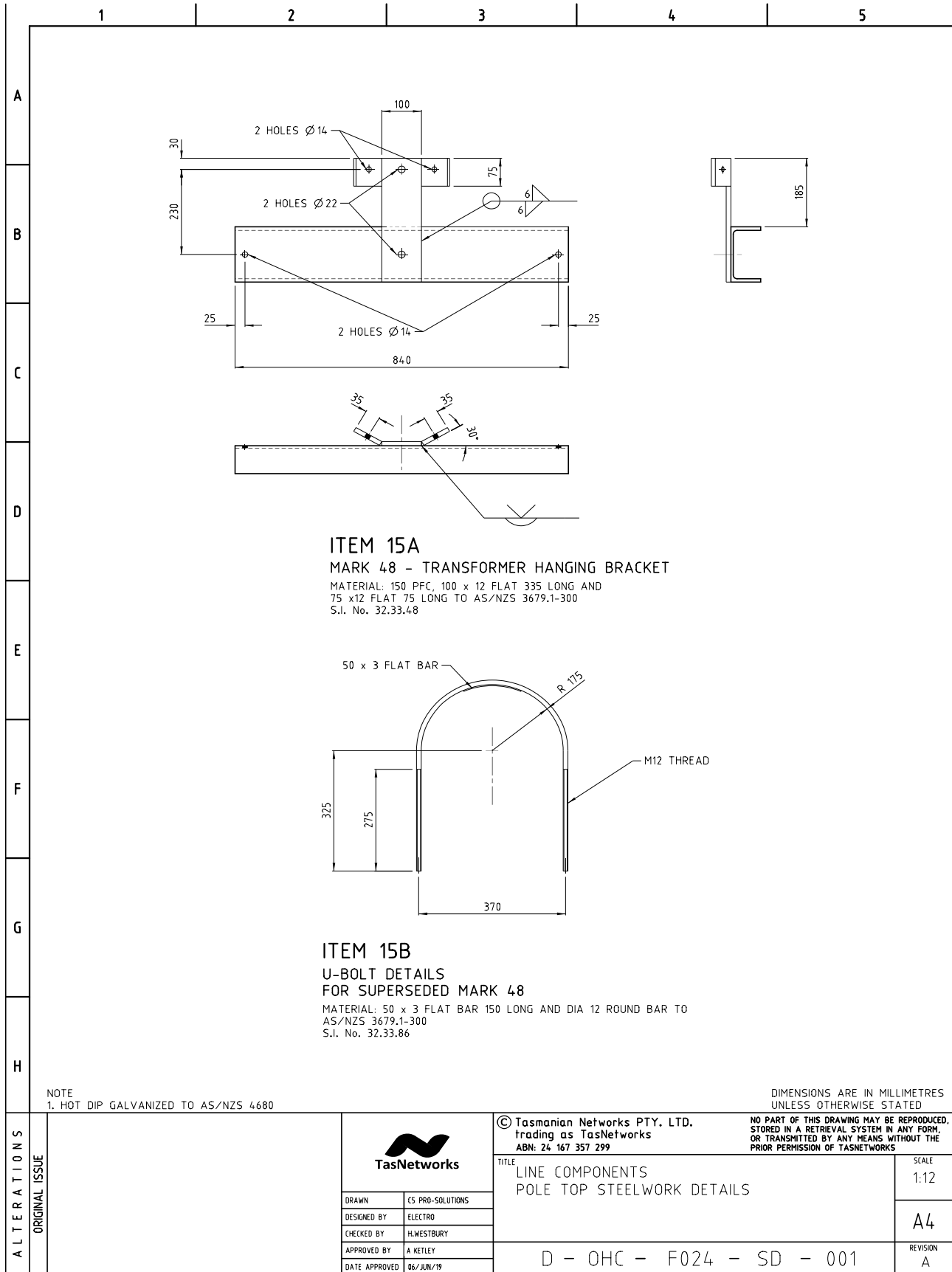
6.9.1 Transformer Mounting Washer Details



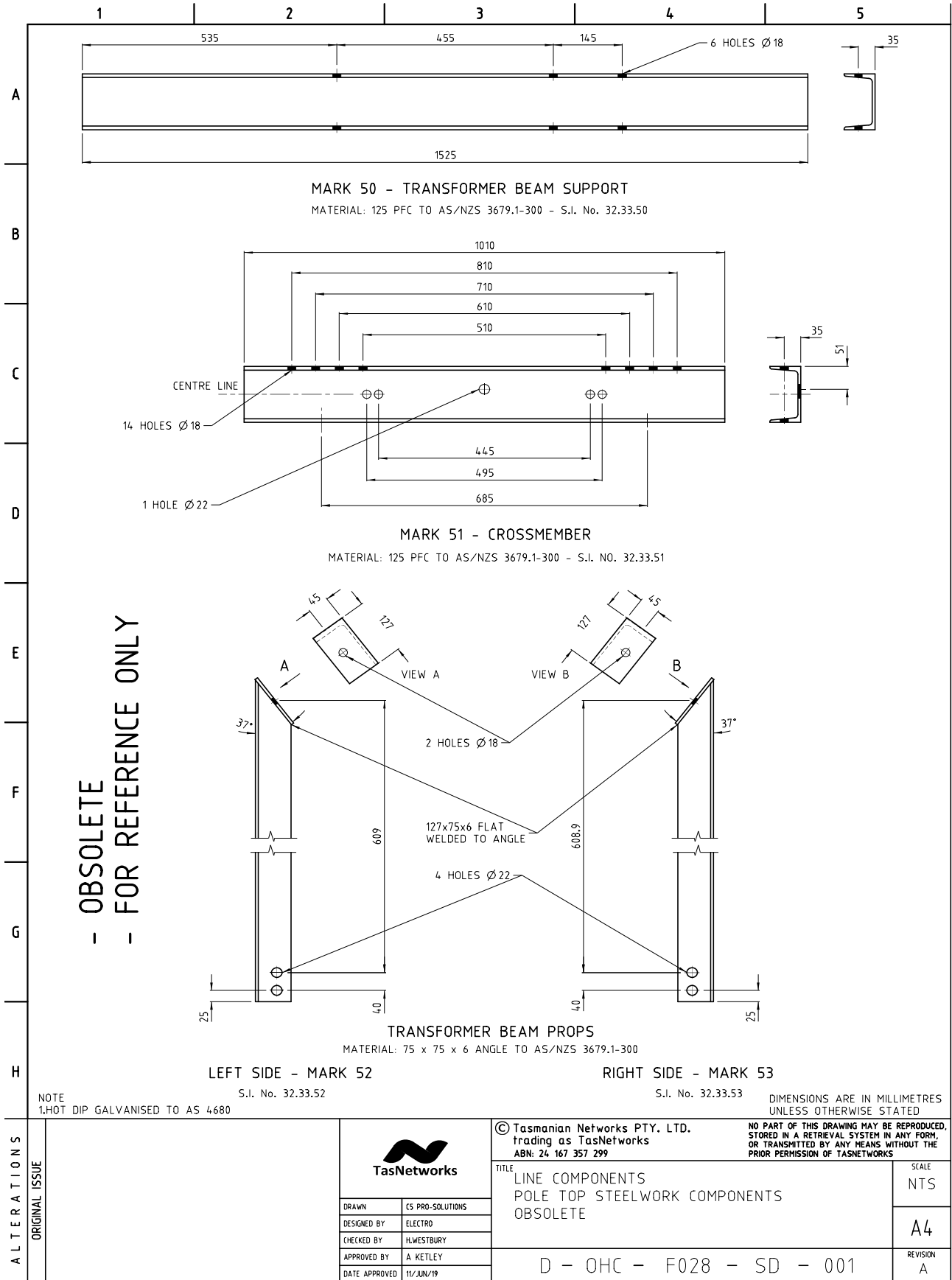
6.9.2 Mounting Bracket for 100 – 500 kVA Transformers on Wood / Concrete poles



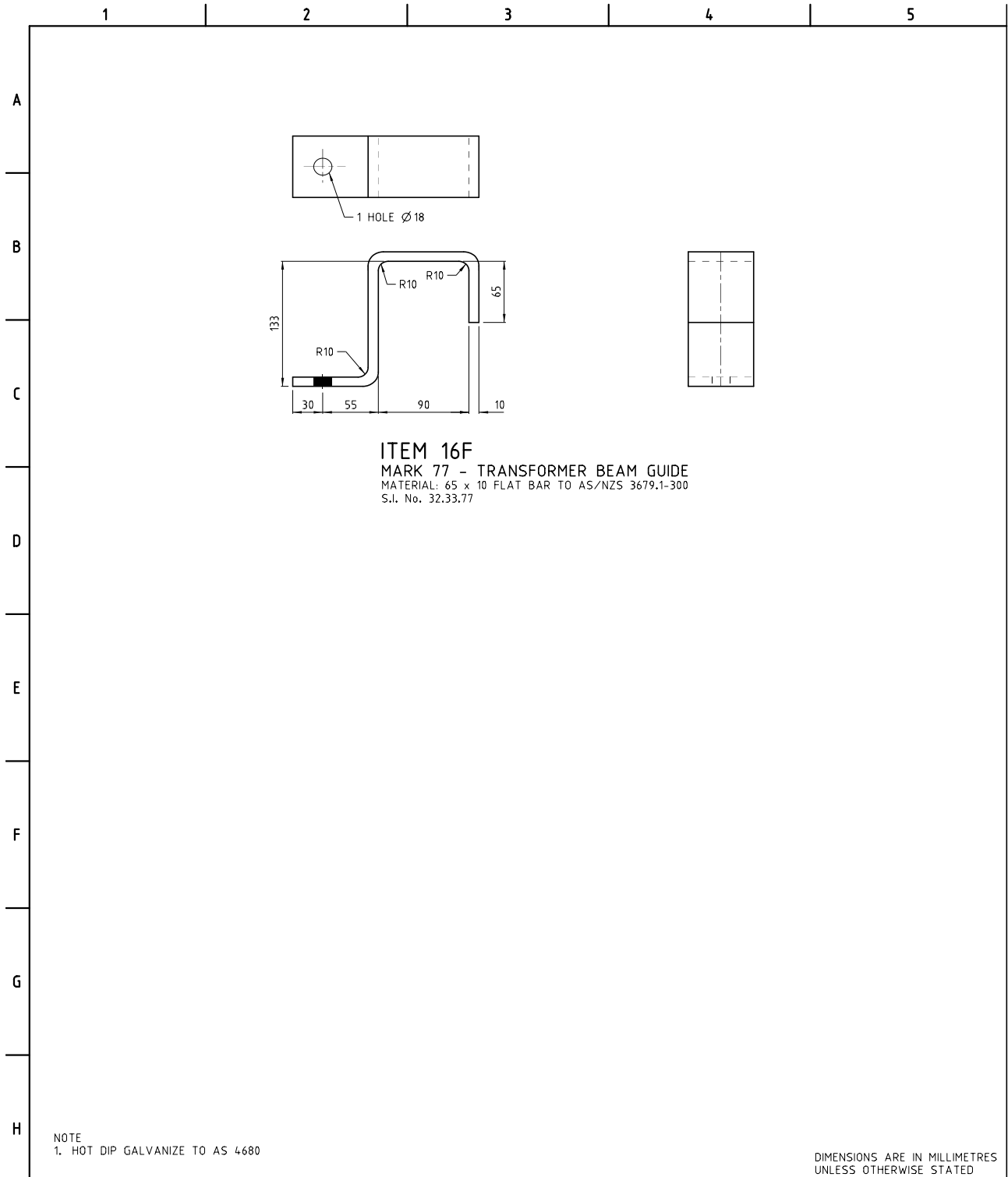
6.9.3 Poletop Steelwork Details



6.9.4 Poletop Steelwork Details (Change)




6.9.5 Poletop Steelwork Details (to merge)



ITEM 16F
 MARK 77 - TRANSFORMER BEAM GUIDE
 MATERIAL: 65 x 10 FLAT BAR TO AS/NZS 3679.1-300
 S.I. No. 32.33.77

NOTE
 1. HOT DIP GALVANIZE TO AS 4680

DIMENSIONS ARE IN MILLIMETRES
 UNLESS OTHERWISE STATED

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	TITLE LINE COMPONENTS POLE TOP STEELWORK DETAILS			SCALE 1:5 UON		
	DRAWN CS PRO-SOLUTIONS					
	DESIGNED BY ELECTRO					
	CHECKED BY H.WESTBURY					
APPROVED BY A.KETLEY						
DATE APPROVED 11/JUN/19			D - OHC - F029 - SD - 001			
					REVISION A	

6.9.1 Bolt on Crossarm Bracket for 100 kVA and above Wilson Transformers

CAUTION : Printed document is uncontrolled.

NB ENSURE THAT LOCK NUTS ARE INSTALLED ON ALL BOLTS PASSING THROUGH POLE.

HANGER BRACKET
PLAN VIEW
SCALE 1:10

HANGER BRACKET
ISOMETRIC VIEW
SCALE 1:10

HANGER BRACKET
FRONT VIEW
SCALE 1:10

HANGER BRACKET
SIDE VIEW
SCALE 1:10

NOTE
1. REMOVE ALL SHARP EDGES AND BURRS.
2. HOT DIP GALVANISE TO AS 4680.
3. ALL WELDS 6mm CONTINUOUS FILLETS TO AS 1554.
4. GENERAL TOLERANCE = +/- 2mm.

DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED

NO PART OF THIS DRAWING MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM IN ANY FORM, OR TRANSMITTED BY ANY MEANS WITHOUT THE PRIOR PERMISSION OF TASNETWORKS

EMF/PDF CREATION DATE 03/APR/17	ALTERATIONS	ORIGINAL ISSUE		© Tasmanian Networks PTY. LTD. trading as TasNetworks ABN: 24 167 357 299	TITLE BOLT ON HANGER BRACKET 100kVA AND ABOVE TRANSFORMERS (WILSON TRANSFORMER'S DESIGN)	SCALE
		REPRODUCED FROM DRG No. D-DH1-2.1/20		DRAWN H.WESTBURY DESIGNED BY WILSON CHECKED BY D.KING APPROVED BY TASNETWORKS DATE APPROVED DD/MON/YR		NTS
						A4
						REVISION
						A

D - OHC - F033 - SD - 001

BM DWG NO D - OHC - F030 - SD - 001 BM REV A

DWG STATUS CONSTRUCTION