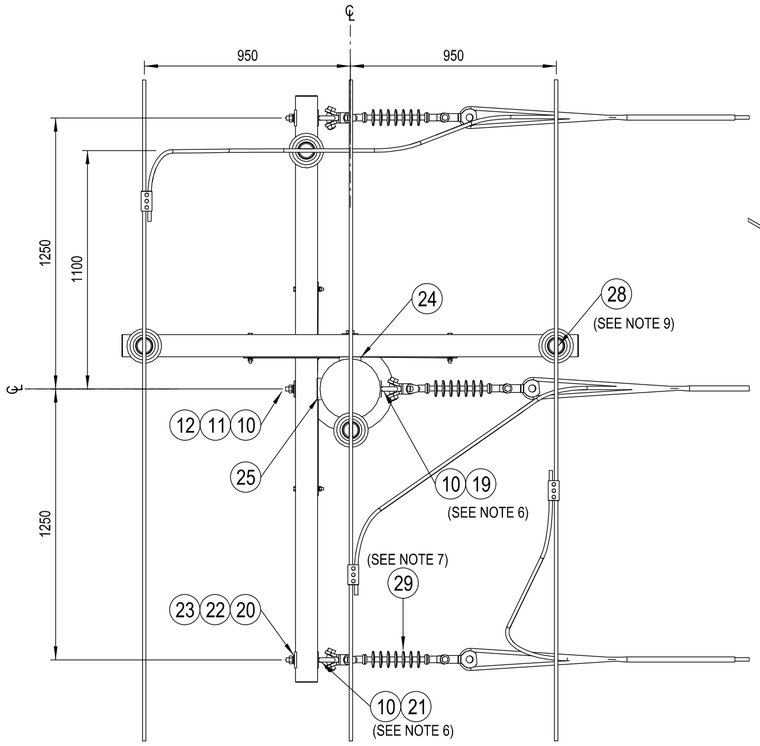

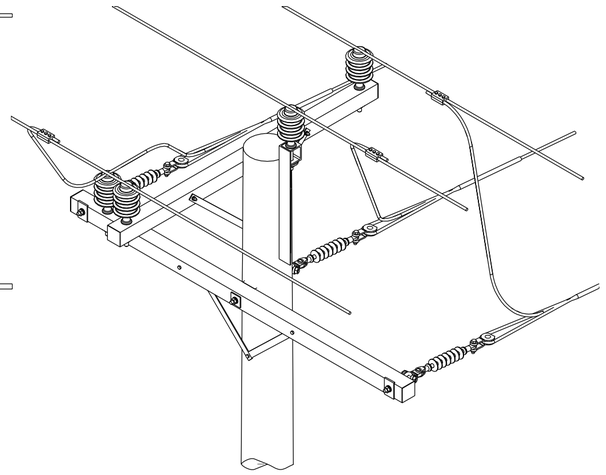

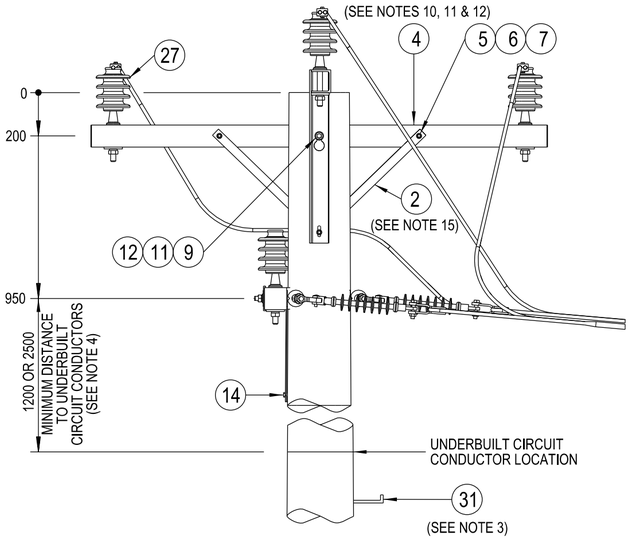

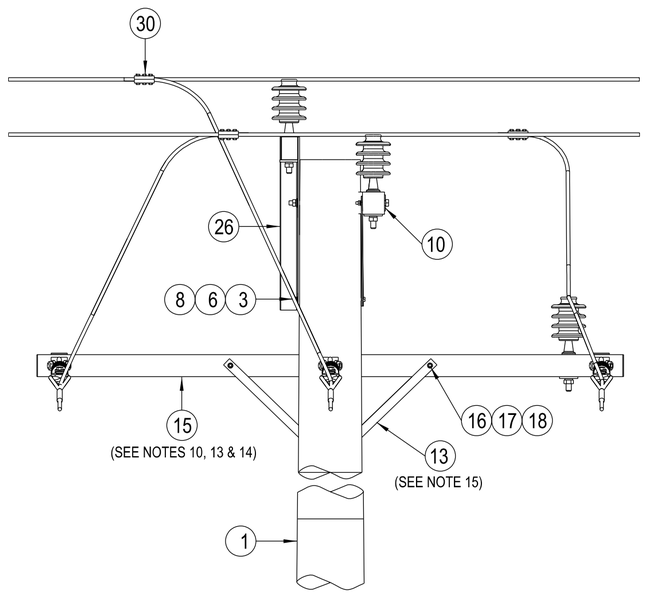

NOTES :

1. THE FOLLOWING INFORMATION IS OBTAINED FROM THE PROJECT DESIGN DRAWINGS:
   a. POLE LENGTH AND STRENGTH.
   b. SPECIAL FOUNDATION REQUIREMENTS.
   c. POLE EMBEDMENT DEPTH.
   d. CONDUCTOR SIZE.
   e. CROSSARM SIZE AND BRACE REQUIREMENTS.
   f. STAY REQUIREMENTS.
   g. DEVIATION ANGLE.
2. THE MAXIMUM LINE DEVIATION ANGLE TO BE CONSTRUCTED ON THIS ARRANGEMENT IS TO BE DETERMINED BY THE LINE DESIGNER.
3. POLE STEPS ARE TO BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF NS128.
4. IN AREAS WHERE THE 11kV NETWORK CANNOT BE WORKED ON USING LIVE LINE TECHNIQUES, UNDERBUILT CIRCUITS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 1200mm. IN AREAS WHERE THE 11kV NETWORK CAN BE WORKED ON USING LIVE LINE TECHNIQUES, UNDERBUILT CIRCUITS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 2500mm.
5. ALL BOLTS AND INSULATOR PINS PASSING THROUGH TIMBER ARE TO BE COATED WITH GRAPHITE GREASE.
6. THE LOAD AND DEVIATION ALLOWABLE ON THE EYEBOLT IS TO BE DETERMINED FROM DRG: 520324.
7. LONGROD INSULATORS ARE TO BE USED UNDER NORMAL CONDITIONS.
8. POLES SHALL BE DRILLED, SCARFED AND DRESSED ON SITE. DRILLING AND SCARFING TO BE TREATED WITH APPROVED PRESERVATIVES.
9. IF THE CONDUCTOR DEVIATES AT THE INSULATOR, USE THE ANGLE TYPE CONDUCTOR TIE ARRANGEMENT. OTHERWISE, USE THE INTERMEDIATE TYPE CONDUCTOR TIE ARRANGEMENT AS SHOWN ON DRG: 514038.
10. COMPOSITE FIBRE CROSSARMS ARE TO BE USED AS THE PREFERED OPTION UNDER NORMAL CIRCUMSTANCES.
11. A 2106mm COMPOSITE FIBRE CROSSARM IS TO BE USED AS THE DEFAULT INTERMEDIATE CROSSARM. A LONGER INTERMEDIATE CROSSARM IS TO BE USED WHERE ADDITIONAL MID SPAN SEPARATION IS REQUIRED.
12. ONLY THE 2106mm COMPOSITE FIBRE INTERMEDIATE CROSSARM OPTION IS SHOWN ON THIS CONSTRUCTION DRAWING. REFER TO DRGS: 262732, 514373, 514374 & 237491 FOR DRILLING PATTERN OF ALTERNATE INTERMEDIATE CROSSARMS.
13. A 2706mm COMPOSITE FIBRE CROSSARM IS TO BE USED AS THE DEFAULT TERMINATION CROSSARM, FOR NARROW FEEDER ALIGNMENTS, A SHORTER TERMINATION CROSSARM MAY BE CONSIDERED TO OVERCOME DESIGN AND SITE CONSTRAINTS. A LONGER TERMINATION CROSSARM IS TO BE USED WHERE ADDITIONAL MID SPAN SEPARATION IS REQUIRED. A STEEL CROSSARM IS TO BE USED WHEN THE MAXIMUM LOAD OF THE ALTERNATE TERMINATION CROSSARMS IS EXCEEDED.
14. ONLY THE 2706mm COMPOSITE FIBRE TERMINATION CROSSARM OPTION IS SHOWN ON THIS CONSTRUCTION DRAWING. REFER TO DRGS: 262732, 514373, 15232, 514377 & 237491 FOR DRILLING PATTERN OF ALTERNATE TERMINATION CROSSARMS.
15. THE 690mm CROSSARM BRACES ARE TO BE USED ON A 2106mm, 2706mm, 2700mm, 3006mm, 3000mm, 3030mm, 2750mm & 3070mm CROSSARM. THE 740mm CROSSARM BRACE IS TO BE USED ON A 2406mm & 2400mm CROSSARM.
16. REFER TO DESIGNER SAFETY REPORT D23/216073 FOR ATYPICAL HAZARDS ASSOCIATED WITH THIS STANDARD CONSTRUCTION.

ITEM	DESCRIPTION	DRG. No	STOCK CODE	QTY
31	STEP - POLE, SCREW-IN (SEE NOTE 3)	250144	185198	A/R
30	CLAMP - PARALLEL GROOVE, 3-BOLT (TO SUIT CONDUCTOR)	514099		3
29	INSULATOR - 11/22kV LONGROD, STRING ARRANGEMENT AR-2 (SEE NOTE 7)	565715		3
28	TIE - CONDUCTOR, HIGH VOLTAGE, SUPPORT ARRANGEMENT (SEE NOTE 9)	514038		5m
27	INSULATOR - 11/22kV AERODYNAMIC, (22/450) & PIN ARRANGEMENT	513997		4
26	BRACKET - POLE TOP, GALVANISED	514380	H17314	1
25	BLOCK - GAIN, ALUMINIUM, 125mm (USE WITH 2750mm & 3070mm TERMINATION CROSSARMS)		146282	1
	BLOCK - GAIN, ALUMINIUM, 100mm (USE WITH 2706mm, 2406mm, 3006mm, 2700mm, 2400mm & 3000mm TERMINATION CROSSARMS)		146274	
24	BLOCK - GAIN, ALUMINIUM, 100mm (USE WITH 2106mm, 2706mm, 3006mm, 2100mm, 2700mm & 3030mm INTERMEDIATE CROSSARMS)		146274	1
23	WASHER - FLAT, M20, GALVANISED (USE WITH 2700mm & 2400mm TERMINATION CROSSARMS)	518081	177986	2
22	WASHER - SQUARE, 75x75x6mm, GALVANISED (Ø22mm HOLE) (USE WITH 2750mm & 3070mm TERMINATION CROSSARMS)	518081	H39231	2
	WASHER - LIP, M24, GALVANISED (USE WITH 2706mm, 2406mm, 3006mm, 2700mm, 2400mm & 3000mm TERMINATION CROSSARMS)	518081	176912	
21	EYEBOLT - M20x200mm, GALVANISED (SEE NOTE 6)	513653	H37881	2
20	WASHER - CONICAL, M20, GALVANISED (USE WITH 2700mm & 2400mm TERMINATION CROSSARMS)	518082	H39655	2
	WASHER - SPRING, M20, GALVANISED (USE WITH 2706mm, 2406mm, 3006mm, 3000mm, 2750mm & 3070mm TERMINATION CROSSARMS)	518082	175569	
19	EYEBOLT - M20, GALVANISED (LENGTH TO SUIT POLE) (SEE NOTE 6)	513653		1
18	WASHER - CONICAL, M12, GALVANISED (USE WITH 2400mm TERMINATION CROSSARM)	518082	H39639	1
	WASHER - CONICAL, M12, GALVANISED (USE WITH 2700mm TERMINATION CROSSARM)	518082	H39639	2
	WASHER - SPRING, M12, GALVANISED (USE WITH 2406mm TERMINATION CROSSARM)	51082	H12047	1
	WASHER - SPRING, M12, GALVANISED (USE WITH 2706mm, 3006mm, 3000mm, 2750mm & 3070mm TERMINATION CROSSARMS)	518082	H12047	2
17	WASHER - FLAT, M12, GALVANISED (USE WITH 2406mm & 2400mm TERMINATION CROSSARMS)	518081	177982	2
	WASHER - FLAT, M12, GALVANISED (USE WITH 2706mm, 2700mm, 3006mm, 3000mm, 2750mm & 3070mm TERMINATION CROSSARMS)	518081	177982	4
16	BOLT & NUT - M12x150mm, HEX., GALVANISED (USE WITH 2750mm & 3070mm TERMINATION CROSSARMS)	515466	46847	2
	BOLT & NUT - M12x150mm, HEX., GALVANISED (USE WITH 2400mm TERMINATION CROSSARM)	515466	46847	1
	BOLT & NUT - M12x180mm, HEX., GALVANISED (USE WITH 2700mm & 3000mm TERMINATION CROSSARMS)	515466	46888	2
	BOLT & NUT - M12x130mm, HEX., GALVANISED (USE WITH 2406mm TERMINATION CROSSARM)	515466	46805	1
	BOLT & NUT - M12x130mm, HEX., GALVANISED (USE WITH 2706mm & 3006mm TERMINATION CROSSARMS)	515466	46805	2
15	CROSSARM - 3070x125x125mm, ITEM 3, COMPOSITE FIBRE (SEE NOTES 10, 13 & 14)	237491	183935	1
	CROSSARM - 2750x125x125mm, ITEM 1, COMPOSITE FIBRE (SEE NOTES 10, 13 & 14)	237491	183933	
	CROSSARM - 3000x150x100x5mm, RHS, GALVANISED (SEE NOTES 10, 13 & 14)	514377	H23787	
	CROSSARM - 2400x125x100mm, TYPE H2, HARDWOOD (SEE NOTES 10, 13 & 14)	15232	71910	
	CROSSARM - 2700x150x100mm, TYPE C, HARDWOOD (SEE NOTES 10, 13 & 14)	514373	H23907	
	CROSSARM - 3006x102x102mm, TYPE 13, COMPOSITE FIBRE (SEE NOTES 10, 13 & 14)	262732	186783	
	CROSSARM - 2406x102x102mm, TYPE 11, COMPOSITE FIBRE (SEE NOTES 10, 13 & 14)	262732	186781	
	CROSSARM - 2706x102x102mm, TYPE 12, COMPOSITE FIBRE (SEE NOTES 10, 13 & 14)	262732	186782	
14	SCREW - COACH, M12 x 100mm, GALVANISED		H40484	1
13	BRACE - CROSSARM, ANGLE, TYPE H, 740mm, GALVANISED (SEE NOTE 15)	46	99119	1
	BRACE - CROSSARM, FLAT, 690mm, GALVANISED (SEE NOTE 15)	514385	H17738	2
12	WASHER - FLAT, M20, GALVANISED	518081	177986	2
11	WASHER - CONICAL, M20, GALVANISED	518082	H39655	2
10	WASHER - SQUARE, 75x75x6mm, GALVANISED (Ø22mm HOLE)	518081	H39231	5
9	BOLT & NUT - M20, HEX., GALVANISED (LENGTH TO SUIT POLE)	515466		1
8	WASHER - CONICAL, M12, GALVANISED	518082	H39639	1
7	WASHER - CONICAL, M12, GALVANISED (USE WITH 2100mm & 2700mm INTERMEDIATE CROSSARMS)	518082	H39639	2
	WASHER - SPRING, M12, GALVANISED (USE WITH 2106mm, 2706mm, 3006mm, 3030mm INTERMEDIATE CROSSARMS)	518082	H12047	2
6	WASHER - FLAT, M12, GALVANISED	518081	177982	5
5	BOLT & NUT - M12x130mm, HEX., GALVANISED	515466	46805	2
4	CROSSARM - 3030x100x100mm, ITEM 2, COMPOSITE FIBRE (SEE NOTES 10, 11 & 12)	237491	183934	1
	CROSSARM - 2700x100x100mm, TYPE B, HARDWOOD (SEE NOTES 10, 11 & 12)	514373	H23884	
	CROSSARM - 2100x100x100mm, TYPE C, HARDWOOD (SEE NOTES 10, 11 & 12)	514374	H23834	
	CROSSARM - 3006x102x102mm, TYPE 10, COMPOSITE FIBRE (SEE NOTES 10, 11 & 12)	262732	186780	
	CROSSARM - 2706x102x102mm, TYPE 9, COMPOSITE FIBRE (SEE NOTES 10, 11 & 12)	262732	186779	
	CROSSARM - 2106x102x102mm, TYPE 7, COMPOSITE FIBRE (SEE NOTES 10, 11 & 12)	262732	186777	
3	BOLT & NUT - M12, HEX., GALVANISED (LENGTH TO SUIT POLE)	515466		1
2	BRACE - CROSSARM, FLAT, 690mm, GALVANISED (SEE NOTE 15)	514385	H17738	2
1	POLE - TIMBER (AS REQUIRED)	513988		1

ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE. DO NOT SCALE.

CAD DRAWING
DO NOT MANUALLY AMEND

AMENDMENTS

DWN: P.R.
CHKD: P.J.
APP'D: G.F.

DATE: 08/12/2023
NOTES & MATERIAL LIST AMENDED, ASSOCIATED DRAWING ADDED.
15

ASSOCIATED DRAWINGS	
COMPOSITE FIBRE CROSSARM MECHANICAL LOAD REQUIREMENTS	237491
2100mm CROSSARMS FOR LV, 11kV & 33kV CONSTRUCTION DETAILS	514374
2700mm CROSSARMS FOR LV, 11kV, 22kV & 33kV CONSTRUCTION DETAILS	514373
COMPOSITE FIBRE CROSSARMS SPECIFICATION	262732
HV TERMINATION STEEL CROSSARM CONSTRUCTION DETAILS	514377
WOODEN CROSSARMS FOR 11kV LINES	15232
HV CONDUCTOR TIE SUPPORT ARRANGEMENTS	514038
20mm EYEBOLT LOADING & DEVIATION GRAPH	520324

NETWORK STANDARD
Ausgrid

145 NEWCASTLE RD WALLSEND,
NSW 2287

SCALE	1:20
DESIGNED	-
DRAWN	PATRICIA RIOS
CHECKED	W.G
APPROVED	I.NICHOLS
DATE	07/11/94
PROJECT NUMBER	STD
PROJTRAK NUMBER	-

STANDARD CONSTRUCTION
11kV TEE-OFF CONSTRUCTION
2-14

SIZE	DRAWING No	SHEET	AMD
A2	513917	1	15

20110901

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