



**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.
  - h. ASSESSED EARTHING REQUIREMENTS.
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 NS126.
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 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. THE LOAD AND DEVIATION ALLOWABLE ON THE EYEBOLT AND EYENUT ASSEMBLY IS TO BE DETERMINED FROM DRG : 520331.
8. LONGROD INSULATORS TO BE USED UNDER NORMAL CONDITIONS.
9. POLES SHALL BE DRILLED, SCARFED AND DRESSED ON SITE. DRILLING AND SCARFING IS TO BE TREATED WITH APPROVED PRESERVATIVES.
10. NON-TENSION COMPRESSION SLEEVES TO BE USED WHEN REQUIRED TO JOIN CONDUCTORS.
11. USE THE ANGLE TYPE CONDUCTOR TIE ARRANGEMENT AS SHOWN ON DRG : 514038.
12. A 2700mm CROSSARM IS TO BE USED AS THE DEFAULT CROSSARM. FOR NARROW FEEDER ALIGNMENTS, A 2400mm CROSSARM MAY BE CONSIDERED TO OVERCOME DESIGN AND SITE CONSTRAINTS. A 3070mm COMPOSITE FIBRE OR 3000mm STEEL CROSSARM IS TO BE USED WHEN THE MAXIMUM LOAD OF A TIMBER CROSSARM IS EXCEEDED.
13. ONLY THE 2700mm CROSSARM OPTION IS SHOWN ON THIS CONSTRUCTION DRAWING. REFER TO DRGS : 15232, 514377 & 237491 FOR DRILLING PATTERN OF ALTERNATE CROSSARMS.
14. THE 690mm CROSSARM BRACES ARE TO BE USED ON A 2700mm, 3000mm & 3070mm CROSSARM. THE 740mm CROSSARM BRACE IS TO BE USED ON A 2400mm CROSSARM.

ITEM	DESCRIPTION	DRG. No	STOCK CODE	QTY
28	STEP - POLE, SCREW-IN (SEE NOTE 3)	250144	185198	A/R
27	CLAMP - PARALLEL GROOVE, 3-BOLT (TO SUIT CONDUCTOR)	514099		3
26	JOINT - NON TENSION, COMPRESSION (TO SUIT CONDUCTOR)	514053		3
25	TIE - CONDUCTOR, HIGH VOLTAGE, SUPPORT ARRANGEMENT (SEE NOTE 11)	514038		5m
24	INSULATOR - 11/22kV AERODYNAMIC, (22/450) AND PIN ARRANGEMENT	513997		2
23	INSULATOR - 11/22kV LONGROD, STRING ARRANGEMENT AR -2	565715		6
22	WASHER - CONICAL, M12, GALVANISED	518082	H39639	1
21	WASHER - FLAT, M12, GALVANISED	518081	177982	2
20	BRACKET - POLE TOP, GALVANISED	514380	H17314	1
19	BLOCK - GAIN, ALUMINIUM, 125mm (USE WITH 3070mm CROSSARM)		146282	2
19	BLOCK - GAIN, ALUMINIUM, 100mm (USE WITH 2400mm, 2700mm & 3000mm CROSSARMS)		146274	2
18	WASHER - FLAT, M20, GALVANISED (USE WITH 2400mm & 2700mm CROSSARMS)	518081	177986	4
17	WASHER - FLAT, M20, GALVANISED	518081	177986	4
16	EYEBOLT - M20, GALVANISED (LENGTH TO SUIT POLE) (SEE NOTES 6 & 7)	513653		2
15	BOLT & NUT - M12, HEX., GALVANISED (LENGTH TO SUIT POLE)	515466		1
14	EYENUT - M20, GALVANISED (SEE NOTE 7)	513653	H38853	3
13	WASHER - SQUARE, 75x75x6mm, GALVANISED (Ø22mm HOLE) (USE WITH 3070mm CROSSARM)	518081	H39231	6
13	WASHER - LIP, M24, GALVANISED (USE WITH 2400mm, 2700mm & 3000mm CROSSARMS)	518081	176912	4
12	EYEBOLT - M20x200mm, GALVANISED (SEE NOTE 6)	513653	H37881	4
11	WASHER - SPRING, M20, GALVANISED (USE WITH 3000mm & 3070mm CROSSARMS)	518082	175569	4
10	WASHER - CONICAL, M20, GALVANISED (USE WITH 2400mm & 2700mm CROSSARMS)	518082	H39655	4
9	WASHER - CONICAL, M20, GALVANISED	518082	H39655	4
9	WASHER - SQUARE, 75x75x6mm, GALVANISED (Ø22mm HOLE)	518081	H39231	9
8	BOLT & NUT - M20, GALVANISED (LENGTH TO SUIT POLE)	515466		2
7	WASHER - SPRING, M12, GALVANISED (USE WITH 3000mm & 3070mm CROSSARMS)	518082	H12047	4
7	WASHER - CONICAL, M12, GALVANISED (USE WITH 2400mm CROSSARM)	518082	H39639	2
7	WASHER - CONICAL, M12, GALVANISED (USE WITH 2700mm CROSSARM)	518082	H39639	4
6	WASHER - FLAT, M12, GALVANISED (USE WITH 2400mm CROSSARM)	518081	177982	4
6	WASHER - FLAT, M12, GALVANISED (USE WITH 2700mm, 3000mm & 3070mm CROSSARMS)	518081	177982	8
5	BOLT & NUT - M12x150mm, HEX., GALVANISED (USE WITH 3070mm CROSSARM)	515466	46847	4
5	BOLT & NUT - M12x150mm, HEX., GALVANISED (USE WITH 2400mm CROSSARM)	515466	46847	2
5	BOLT & NUT - M12x180mm, HEX., GALVANISED (USE WITH 2700mm & 3000mm CROSSARMS)	515466	46888	4
4	CROSSARM - 3070x125x125mm, ITEM 3, COMPOSITE FIBRE (SEE NOTES 12 & 13)	237491	183935	2
4	CROSSARM - 3000x150x100x5mm, RHS, GALVANISED (SEE NOTES 12 & 13)	514377	H23787	2
4	CROSSARM - 2400x125x100mm, TYPE H2, HARDWOOD (SEE NOTES 12 & 13)	15232	71910	2
4	CROSSARM - 2700x150x100mm, TYPE C, HARDWOOD (SEE NOTES 12 & 13)	514373	H23907	2
3	SCREW - COACH, M12x100mm, GALVANISED		H40484	2
2	BRACE - CROSSARM, ANGLE, TYPE H, 740mm, GALVANISED (SEE NOTE 14)	46	99119	2
2	BRACE - CROSSARM, FLAT, 690mm, GALVANISED (SEE NOTE 14)	514385	H17738	4
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: PATRICIA RIOS  
CHKD: PHILLIP JONES  
DATE: 16/08/2019  
M20 FLAT WASHER ADDED.  
NOTES & MATERIAL LIST AMENDED.  
SHEET SIZE CHANGED.

APPD by:	GLENN FORD
COMPOSITE FIBRE CROSSARM MECHANICAL LOAD REQUIREMENTS	237491
HV TERMINATION STEEL CROSSARM CONSTRUCTION DETAILS	514377
WOODEN CROSSARMS FOR 11kV LINES	15232
HV CONDUCTOR TIE SUPPORT ARRANGEMENTS	514038
20mm EYEBOLT & EYENUT ASSEMBLY LOADING & DEVIATION GRAPH	520331
20mm EYEBOLT LOADING & DEVIATION GRAPH	520324

ASSOCIATED DRAWINGS	
COMPOSITE FIBRE CROSSARM MECHANICAL LOAD REQUIREMENTS	237491
HV TERMINATION STEEL CROSSARM CONSTRUCTION DETAILS	514377
WOODEN CROSSARMS FOR 11kV LINES	15232
HV CONDUCTOR TIE SUPPORT ARRANGEMENTS	514038
20mm EYEBOLT & EYENUT ASSEMBLY LOADING & DEVIATION GRAPH	520331
20mm EYEBOLT LOADING & DEVIATION GRAPH	520324

NETWORK STANDARD  
**Ausgrid**  
145 NEWCASTLE RD WALLSEND,  
NSW 2287

SCALE	1:20	STANDARD CONSTRUCTION
DESIGNED	-	11kV LARGE THROUGH DELTA
DRAWN	PETER SAUNDERS	TERMINATION WITH TEE-OFF
CHECKED	-	CONSTRUCTION
APPROVED	G.SKINNER	2-37
DATE	02/10/97	
PROJECT NUMBER	STD	
PROJ/TRAK NUMBER	-	
SIZE	A2	DRAWING No
		514180
		SHEET
		01
		AMD
		4