



- NOTES :**
- THE FOLLOWING INFORMATION IS OBTAINED FROM THE PROJECT DESIGN DRAWINGS :
 - POLE LENGTH AND STRENGTH.
 - SPECIAL FOUNDATION REQUIREMENTS.
 - POLE EMBEDMENT DEPTH.
 - PHASE CONDUCTOR AND OVERHEAD EARTHWIRE SIZE.
 - VARIATIONS TO STANDARD CROSSARM REQUIREMENTS.
 - STAY REQUIREMENTS.
 - DEVIATION ANGLE.
 - ASSESSED EARTHING REQUIREMENTS.
 - THE OVERHEAD EARTHWIRE DOWN LEAD IS TO BE FIXED TO THE POLE SO AS TO GIVE THE MAXIMUM CLEARANCE TO THE NEAREST PHASE CONDUCTOR.
 - THE MAXIMUM LINE DEVIATION ANGLE TO BE CONSTRUCTED ON THIS ARRANGEMENT IS TO BE DETERMINED BY THE LINE DESIGNER.
 - THE LOAD AND DEVIATION ALLOWABLE ON THE EYEBOLT IS TO BE DETERMINED FROM DRG : 520324.
 - LONGROD INSULATORS TO BE USED UNDER NORMAL CONDITIONS.
 - POLES SHALL BE DRILLED, SCARFED AND DRESSED ON SITE. DRILLING AND SCARFING TO BE TREATED WITH APPROVED PRESERVATIVES.
 - ALL BOLTS PASSING THROUGH TIMBER ARE TO BE COATED WITH GRAPHITE GREASE.
 - THE EARTHING DOWN LEAD IS TO BE FIXED TO THE POLE WITH STAPLES AT INTERVALS OF NOT GREATER THAN 450mm. ONLY SUFFICIENT INSULATION IS TO BE REMOVED FROM THE DOWN LEAD TO MAKE AN EFFECTIVE CONNECTION TO THE POLE HARDWARE.
 - ARRANGEMENT 1 ON THIS STRUCTURE IS DESIGNED FOR A MAXIMUM INSULATOR RADIAL SWING ANGLE OF 40° WITH A SINGLE CONDUCTOR AND 49° WITH DUAL CONDUCTORS. ARRANGEMENT 2 ON THIS STRUCTURE IS DESIGNED FOR A MAXIMUM INSULATOR RADIAL SWING ANGLE OF 68° WITH A SINGLE CONDUCTOR AND 66° WITH DUAL CONDUCTORS.
 - ONLY THE SINGLE CONDUCTOR OPTION IS SHOWN ON THIS CONSTRUCTION DRAWING.
 - WHEN DESIGNING UNDERBUILT CIRCUITS ON A 33kV STRUCTURE, THE POSSIBLE USE OF LIVE LINE WORKING PROCEDURES MUST BE CONSIDERED WHEN NOMINATING THE CIRCUIT SEPARATION TO ALLOW A MINIMUM CLEARANCE OF 2500mm IF REQUIRED.
 - ONLY THE OPGW OVERHEAD EARTHWIRE OPTION IS SHOWN ON THIS CONSTRUCTION DRAWING.
 - USE THE OPGW SUSPENSION ARRANGEMENT WHEN ERECTING AN OPGW OVERHEAD EARTHWIRE. USE THE STANDARD EARTHWIRE SUSPENSION ARRANGEMENT WHEN ERECTING A NON OPGW OVERHEAD EARTHWIRE.
 - POLE STEPS SHOULD ONLY BE INSTALLED ON POLES WHERE ACCESS FOR NORMAL MAINTENANCE VEHICLES CANNOT BE MAINTAINED FOR THE LIFE OF THE POLE. IF POLE STEPS ARE INSTALLED, THEY ARE TO COMPLY WITH THE REQUIREMENTS OF NS135.

| ITEM | DESCRIPTION | DRG.No | ARR-1 | ARR-2 |
|------|--|--------|-------|-------|
| 25 | STEP - POLE, SCREW-IN (S/C : 185198) (SEE NOTE 14) | | A/R | A/R |
| 24 | BOLT & NUT - M20x150mm, HEX., GALVANISED | 515466 | | 1 |
| 23 | BOLT & NUT - M20x200mm, HEX., GALVANISED | 515466 | | 1 |
| 22 | PLATE - DROPPER, GALVANISED | 513557 | | 1 |
| 21 | CROSSARM - 3300x150x100mm, TYPE Q, HARDWOOD | 514375 | | 1 |
| 20 | EARTHWIRE - SUSPENSION, OVERHEAD, MOUNTING, ARRANGEMENT -1b (SEE NOTES 12 & 13) | 514157 | 1 | 1 |
| 19 | CROSSARM - 3300x150x100mm, TYPE O, HARDWOOD | 514375 | 1 | |
| 18 | INSULATOR - LONGROD, 33kV, DUAL CONDUCTOR, STRING ARRANGEMENT -1A (SEE NOTES 9 & 10) | 250120 | 3 | 3 |
| 17 | WASHER - LIP, M24, GALVANISED | 518081 | 3 | 2 |
| 16 | EYEBOLT - M20x200mm, GALVANISED (SEE NOTE 4) | 513653 | 3 | 2 |
| 15 | EARTHWIRE - OVERHEAD, DOWN LEAD, POLE HARDWARE, MOUNTING & BONDING ARR -3 | 514145 | 2 | 2 |
| 14 | BLOCK - GAIN, ALUMINIUM, 150mm (S/C 146290) | | 2 | 2 |
| 13 | WASHER - FLAT, M20, GALVANISED | 518081 | 5 | 6 |
| 12 | WASHER - CONICAL, M20, GALVANISED | 518082 | 5 | 6 |
| 11 | WASHER - SQUARE, 75x75x6mm, GALVANISED (Ø22mm HOLE) | 518081 | 7 | 7 |
| 10 | BOLT & NUT - M20, HEX., GALVANISED (LENGTH TO SUIT POLE) | 515466 | 2 | 2 |
| 9 | WASHER - FLAT, M12, GALVANISED | 518081 | 4 | 4 |
| 8 | WASHER - CONICAL, M12, GALVANISED | 518082 | 4 | 4 |
| 7 | BOLT & NUT - M12x180mm, HEX., GALVANISED | 515466 | 4 | 4 |
| 6 | SCREW - COACH, M12x100mm (S/C H40484) | | 2 | 2 |
| 5 | BRACE - CROSSARM, ANGLE, 920mm, GALVANISED | 514381 | 4 | 4 |
| 4 | CROSSARM - 2700x150x100mm, TYPE P, HARDWOOD | 514375 | 1 | 1 |
| 3 | FOOTING - TIMBER POLE, ARRANGEMENT (SEE NOTE 1) | 508726 | 1 | 1 |
| 2 | EARTHING - ARRANGEMENT, TIMBER POLE STRUCTURE, TYPE SE-M5 | 508786 | 1 | 1 |
| 1 | POLE - TIMBER (AS REQUIRED) | 513988 | 1 | 1 |

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

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| CAD DRAWING DO NOT MANUALLY AMEND AMENDMENTS | DWN: PATRICIA RIOS CHKD: PHILIP JONES | DATE: 06/02/2006 STOCK CODES, NOTE 5 & HEIGHTS ABOVE GL REMOVED | AUTHD by: STEPHEN CONNOR DWN: GARY HUGHES CHKD: GARRY CRAIG | DATE: 23/10/2013 AUSGRID BORDER APPLIED. | APPD by: GLENN FORD DWN: PATRICIA RIOS CHKD: PHILIP JONES | DATE: 23/01/2019 NOTES & MATERIAL LIST AMENDED. DUAL OPTION ADDED. CHEW CHANGED TO OPGW. | APPD by: GLENN FORD |
|--|--|--|---|---|---|---|---------------------|

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|--|--------|
| 20mm EYEBOLT LOADING & DEVIATION GRAPH | 520324 |
| ASSOCIATED DRAWINGS | |

NETWORK STANDARD
Ausgrid
145 NEWCASTLE RD WALLSEND,
NSW 2287

| | | | | | |
|-----------------|-------------|------------------------------|------------|-------|-----|
| SCALE | 1:25 | STANDARD CONSTRUCTION | | | |
| DESIGNED | - | 33kV SUSPENSION CONSTRUCTION | | | |
| DRAWN | PAUL MCEWAN | 4-171E | | | |
| CHECKED | G.S | | | | |
| APPROVED | G SKINNER | | | | |
| DATE | 26/03/01 | | | | |
| PROJECT NUMBER | STD | | | | |
| PROJTRAK NUMBER | - | SIZE | DRAWING No | SHEET | AMD |
| | | A2 | 567078 | 01 | 3 |