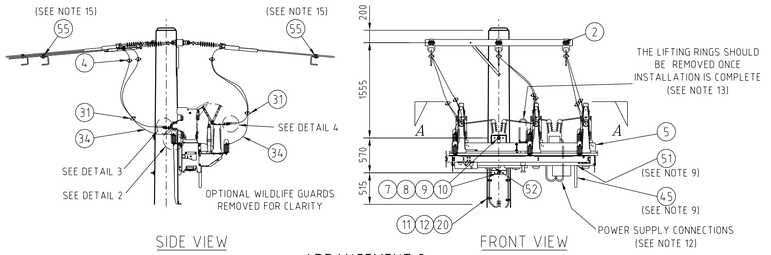
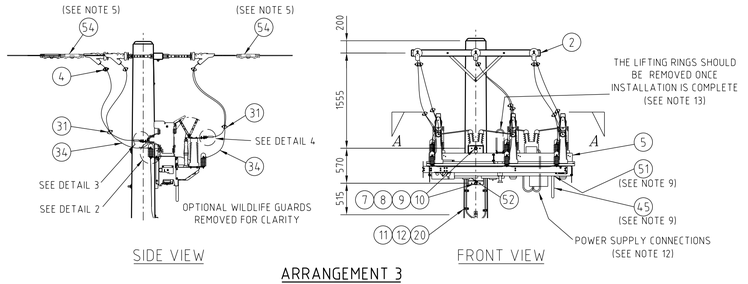
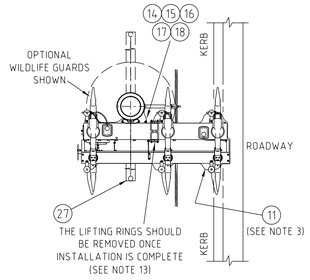


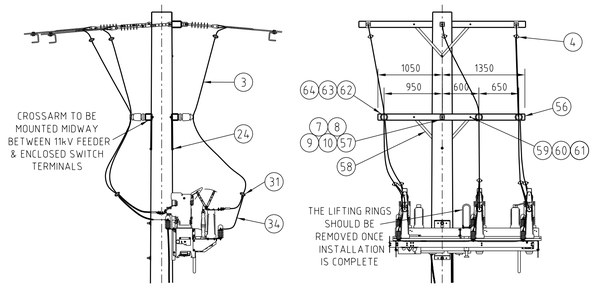

## ARRANGEMENT 2
## WITH CCSX OVERHEAD CONDUCTORS
**SCALE 1:50**



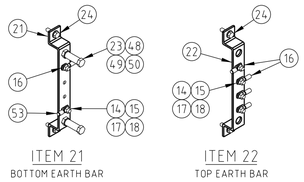

## ARRANGEMENT 3
## WITH CCT OVERHEAD CONDUCTORS
**SCALE 1:50**



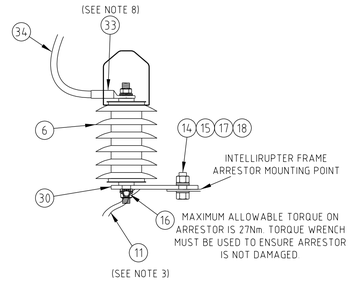

## SECTION A-A
**SCALE 1:50**



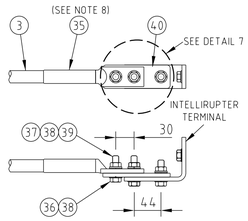

## INSTALLATION FOR POLES GREATER THAN 12.5 METRES
**(SEE NOTE 10)**
**SCALE 1:50**



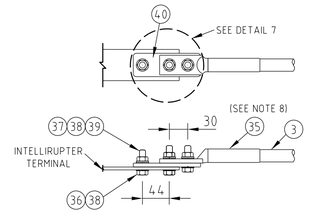

## DETAIL 1
**SCALE 1:10**



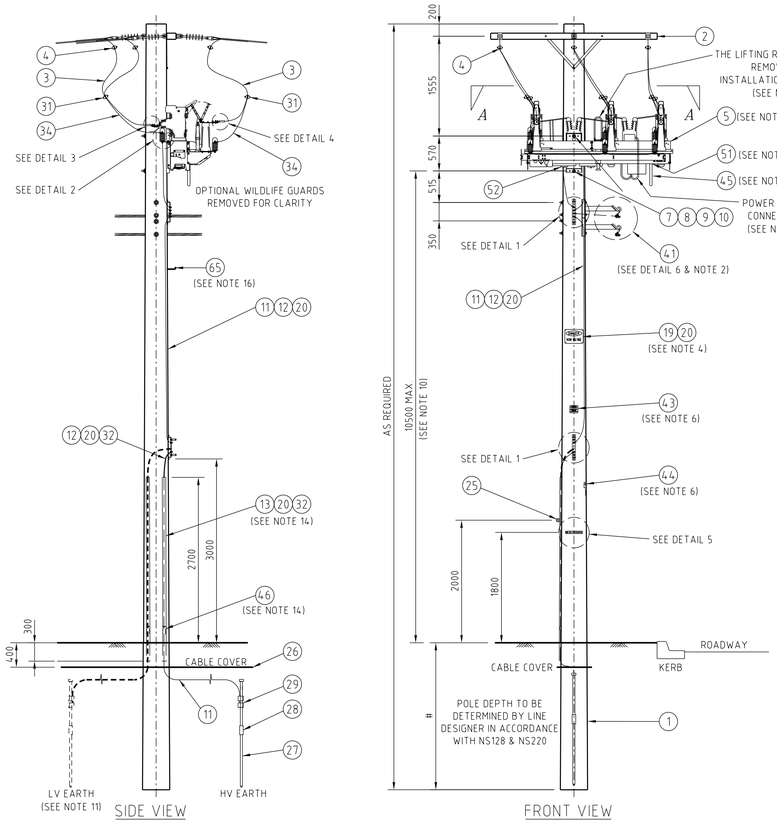

## DETAIL 2
## SURGE ARRESTER CONNECTIONS
**SCALE 1:5**



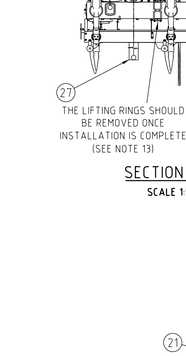

## DETAIL 3
**SCALE 1:5**




## DETAIL 4
**SCALE 1:5**



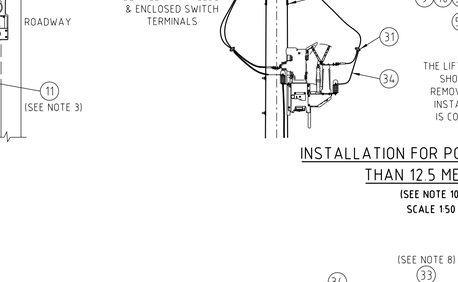

## ARRANGEMENT 1
## WITH BARE OVERHEAD CONDUCTORS
**SCALE 1:50**



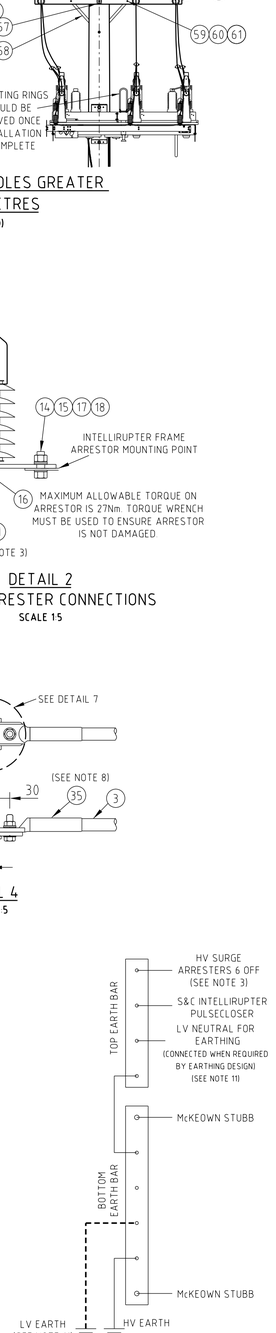

## DETAIL 5
## INTELLIRUPTER SIGN
**SCALE 1:5**




## DETAIL 7
**SCALE 1:5**




## DETAIL 6
## LV ABC NEUTRAL CONNECTION
**(SEE NOTE 11)**
**SCALE 1:10**




## EARTHING SCHEMATIC

AN EARTHING DESIGN MUST BE UNDERTAKEN FOR EACH SITE. THE EARTHING SHOWN ON THIS DRAWING IS INDICATIVE ONLY

| EQUIPMENT WEIGHTS | |
|---|---|
| INTELLIRUPTER | 460kg |

## NOTES :

1. THE MINIMUM 11kV PHASE TO EARTH CLEARANCE IS 200mm. THE MINIMUM 11kV PHASE TO PHASE CLEARANCE IS 280mm.
2. IF LV MAINS EXIST, THE LV MAINS ATTACHMENT POINT IS TO BE DETERMINED BASED ON THE GROUND CLEARANCE REQUIREMENTS WHILST GIVING CONSIDERATION TO AUSGRID'S ELECTRICAL SAFETY RULES MINIMUM SAFE WORKING DISTANCES. WHERE BARE LV MAINS EXIST, THEY SHALL BE CONVERTED TO ABC FOR AT LEAST ONE SPAN EITHER SIDE OF THE INTELLIRUPTER. IF LV MAINS ARE PRESENT ON THE POLE, A 1-80 LV ABC INTERMEDIATE CONSTRUCTION MUST BE USED.
3. HV SURGE ARRESTERS ARE TO BE EARTHED BY DAISY CHAINING AND ELECTRICALLY BONDING TO THE TOP EARTH BAR USING 70mm² PVC INSULATED CONDUCTOR (ITEM 11).
4. DANGER SIGNS (ITEM 19) ARE TO BE INSTALLED ON BOTH FRONT AND REAR OF THE POLE. SIGNS MUST BE BENT AROUND POLE BEFORE SECURING.
5. WHERE 11kV CCT MAINS EXIST, STANDARD EARTHING POINTS AND COVERS ARE TO BE INSTALLED AS DETAILED IN NS126.
6. THE INTELLIRUPTER SIGNS (ITEMS 42, 43 & 44) ARE TO BE BENT AROUND POLE BEFORE SECURING. THE SERIAL NUMBER SIGN (ITEM 42) IS TO BE MOUNTED ON THE SAME POLE FACE AS THE INTELLIRUPTER 1800mm ABOVE GROUND LEVEL AT ALL SITES. THE SIGN IS TO BE MADE FROM 25mm HIGH UV STABLE WEATHERPROOF LETTERING AND CAN UTILISE POLE NUMBERING METHODS OR SIMILAR. THE EARTH CABLE SIGN (ITEM 43) IS TO BE MOUNTED BELOW THE EARTH BAR AT ALL SITES. THE UNDERGROUND EARTH CABLE SIGN (ITEM 44) IS TO BE MOUNTED ADJACENT TO THE POLE NUMBER.
7. THE INTELLIRUPTER IS TO BE LABELLED IN ACCORDANCE WITH NS158 TABLE 4.6 - "RECLOSERS & SECTIONALISERS". THE POLE NUMBER IS TO BE INSTALLED IN ACCORDANCE WITH NS148.
8. INSTALL MEDIUM WALLED MASTIC LINED BLACK HEATSHRINK OVER THE BARE LUG BARREL AND CABLE INSULATION.
9. THE ANTENNA USED MUST HAVE AN RF INDUSTRIES N-243 N ADAPTER M2M BARREL FITTED.
10. FOR POLES GREATER THAN 12.5m, THE ARRANGEMENT ABOVE THE ENCLOSED SWITCH SHOULD BE AS PER THE DETAIL SHOWN. THE INTELLIRUPTER SHOULD BE MOUNTED SO THAT THE BOTTOM OF THE DISCONNECTOR OPERATING MECHANISM IS NOT MORE THAN 10.5 METRES ABOVE THE GROUND TO ALLOW FOR MANUAL OPERATION. EXCEPTIONS TO THIS MAY BE ACCEPTABLE IF LONGER OPERATING STICKS HAVE BEEN APPROVED FOR USE.
11. MOST INTELLIRUPTER INSTALLATIONS WILL ONLY REQUIRE A HV EARTH ARRANGEMENT. IF LV CONDUCTORS ARE ATTACHED TO THE POLE AND THE SITE SPECIFIC EARTHING DESIGN REQUIRES THE LV NEUTRAL CONDUCTOR BE CONNECTED TO THE INTELLIRUPTER EARTHING SYSTEM, DETAIL 6 SHOULD BE USED FOR THE CONNECTION AND THE LV EARTH ARRANGEMENT INSTALLED TO CREATE A COMBINED HV/LV EARTHING SYSTEM. IF TWO LV MAINS CONDUCTORS ARE ON THE POLE, ONLY ONE LV NEUTRAL CONDUCTOR IS TO BE CONNECTED TO THE TOP EARTH BAR.
12. AFTER INSTALLATION OF THE POWER MODULE, CONNECTIONS TO THE POWER SOCKET ON THE INTELLIRUPTER BODY AND THE VOLTAGE TRANSFORMER TERMINAL BLOCK ARE TO BE MADE VIA THE FLEXIBLE CONDUIT, SOCKETS AND CABLE SUPPLIED. REFER TO THE MANUFACTURERS TECHNICAL DOCUMENTATION FOR FURTHER INFORMATION.
13. AFTER INSTALLATION ON THE POLE IS COMPLETED, THE LIFTING RINGS ARE TO BE REMOVED FROM THE INTELLIRUPTER.
14. MERCURY (7/4,5 AAC) ALUMINIUM CONDUCTOR SHALL BE USED FROM THE BOTTOM EARTH BAR TO 300mm ABOVE GROUND WHERE 70mm² COPPER PVC INSULATED EARTH CONDUCTOR WILL BE EXTENDED FROM BI-METALLIC LINKS TO THE EARTH ELECTRODES.
15. WHERE CCSX CONDUCTORS ARE USED, IPC EARTH PARKING DEVICES ARE TO BE INSTALLED AS DETAILED IN NS126.
16. 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 NETWORK STANDARD NS128.
17. REFER TO DESIGNER SAFETY REPORT D20/415742 FOR ATYPICAL HAZARDS ASSOCIATED WITH THIS STANDARD CONSTRUCTION.

| ITEM | DESCRIPTION | DRG. No | STOCK CODE | ARR-1 QTY | ARR-2 QTY | ARR-3 QTY |
|---|---|---|---|---|---|---|
| 65 | STEP - POLE SCREW-IN (SEE NOTE 16) | 250144 | 185198 | A/R | A/R | A/R |
| 64 | WIRE - TIE, PREFORMED, INSULATED, FOR CCSX159 (SET OF 6) (ENSTO REF. SO216.157) | | 186874 | 2 | 2 | 2 |
| 63 | INSULATOR - 11kV, PIN POST, LONG STUD | | 145052 | 6 | 6 | 6 |
| 62 | WASHER - CONICAL, M16, GALVANISED | 518082 | H39647 | 6 | 6 | 6 |
| 61 | WASHER - CONICAL, M12, GALVANISED | 518082 | H39639 | 4 | 4 | 4 |
| 60 | WASHER - FLAT, M12, GALVANISED | 518081 | 177982 | 8 | 8 | 8 |
| 59 | BOLT & NUT - M12x130mm, HEX., GALVANISED | 515466 | 46805 | 4 | 4 | |
| 58 | BRACE - CROSSARM, FLAT, 690mm, GALVANISED | 514385 | H17738 | 4 | 4 | 4 |
| 57 | BLOCK - GAIN, ALUMINIUM, 100mm | | 144274 | 2 | 2 | 2 |
| 56 | CROSSARM - 2400x100x100mm, HARDWOOD | | 71589 | 2 | 2 | 2 |
| 55 | EARTH - PARKING DEVICE, IPC CC TO EPD (ENSTO REF. SLW26.A2) (SEE NOTE 15) | | 186865 | | 6 | |
| 54 | COVER - CCT, EARTHING POINT (SEE NOTE 5) | | 144741 | | | 6 |
| 53 | LUG - COMPRESSION, BI-METALLIC, M12 HOLE (TO SUIT MERCURY CONDUCTOR) | 514053 | H19675 | 1 | 1 | 1 |
| 52 | MODEM - SIERRA WIRELESS RV50X | | 185100 | 1 | 1 | 1 |
| 51 | ADAPTER - RF, RF INDUSTRIES N-243 (SEE NOTE 9) | | PURCHASE | 1 | 1 | 1 |
| 50 | WASHER - SPRING, M16, STAINLESS STEEL | 518082 | 96149 | 2 | 2 | 2 |
| 49 | WASHER - FLAT, M16, STAINLESS STEEL | 518081 | H39621 | 2 | 2 | 2 |
| 48 | SCREW - SET, M16x40mm, HEX., STAINLESS STEEL | 515467 | H38413 | 2 | 2 | 2 |
| 47 | CONNECTOR - INSULATION PIERCING, 95-150 LV ABC/95-150 (SEE NOTE 11) | | 176591 | 2 | 2 | 2 |
| 46 | LINK - COMPRESSION, BI-METALLIC (MERCURY (7/4.5AAC) TO 19/2.14 (70mm²) Cu CABLE) (SEE NOTE 14) | | 187132 | 1 | 1 | 1 |
| 45 | ANTENNA - CELLULAR, BENELEC G2461 (SEE NOTE 9) | | PURCHASE | 1 | 1 | 1 |
| | ANTENNA - CELLULAR, PANORAMA LPB-7-27-NJ (SEE NOTE 9) | | 185408 | | | |
| 44 | SIGN - INTELLIRUPTER, UNDERGROUND EARTH CABLES (SEE NOTE 6) | 222408 | 182141 | 1 | 1 | 1 |
| 43 | SIGN - INTELLIRUPTER, EARTH CABLES (SEE NOTE 6) | 222408 | 182142 | 1 | 1 | 1 |
| 42 | SIGN - INTELLIRUPTER, SERIAL NUMBER (SEE NOTE 6) | | | 1 | 1 | 1 |
| 41 | CONSTRUCTION - LV, OVERHEAD, ABC, INTERMEDIATE, 500mm STANDOFF BRACKET, 1-80 (SEE NOTE 2) | 206544 | | 1 | 1 | 1 |
| 40 | FLAG - CONVERSION, 38x6.35mm, TINNED COPPER (SEE DETAIL 7) | | | 6 | 6 | 6 |
| 39 | WASHER - SPRING, M10, STAINLESS STEEL | 518082 | 50120 | 18 | 18 | 18 |
| 38 | WASHER - FLAT, M10, STAINLESS STEEL | 518081 | 49411 | 36 | 36 | 36 |
| 37 | NUT - M10, HEX., STAINLESS STEEL | 515467 | H39401 | 18 | 18 | 18 |
| 36 | SCREW - SET, M10x30mm, HEX., STAINLESS STEEL | 515467 | 45088 | 18 | 18 | 18 |
| 35 | LUG - COMPRESSION, BI-METALLIC, 2 x M10 HOLES (TO SUIT CCSX159 CONDUCTOR) (SEE NOTE 8) | 514053 | 187563 | 6 | 6 | 6 |
| 34 | CONDUCTOR - 11kV CCSX/62, 62mm², 6/1/3.37 ACSR | | 186861 | A/R | A/R | A/R |
| 33 | LUG - COMPRESSION, BI-METALLIC, M12 HOLE (TO SUIT CCSX62 CONDUCTOR) (SEE NOTE 8) | 514053 | 187542 | 6 | 6 | 6 |
| 32 | CONDUCTOR - MERCURY, 7/4 5AAC (SEE NOTE 14) | | H13433 | A/R | A/R | A/R |
| 31 | JOINT - NON TENSION, IPC TO IPC (ENSTO REF. SLW26 A) | | 186863 | 6 | 6 | 6 |
| 30 | PLATE - TINNED COPPER (33kV UGCH TERMINATION PLATE) | 116989 | 91132 | 6 | 6 | 6 |
| 29 | CONNECTOR - COMPRESSION, PROFILE 6, COPPER (70mm² CONDUCTOR TO Ø15mm ROD) | | H31699 | A/R | A/R | A/R |
| 28 | COUPLER - EARTH ELECTRODE (TO SUIT Ø15mm ROD) | | H31649 | A/R | A/R | A/R |
| 27 | ELECTRODE - DRIVEN EARTH, Ø15mmx1800mm | | H31631 | A/R | A/R | A/R |
| 26 | COVER - CABLE, PROTECTOR, 150mm WIDE | | 151084 | A/R | A/R | A/R |
| 25 | BOLT - EYED LAG, M8x110mm, STAINLESS STEEL | | 182589 | 1 | 1 | 1 |
| 24 | SCREW - COACH, M12x100mm, GALVANISED | | H40484 | 6 | 6 | 6 |
| 23 | STUBB - EARTH, McKEOWN | 520088 | H108415 | 2 | 2 | 2 |
| 22 | BAR - EARTH, TOP, FLAT, TINNED COPPER, 50.8x6.3mm (SEE DETAIL 1) | 222406 | 182110 | 1 | 1 | 1 |
| 21 | BAR - EARTH, BOTTOM, FLAT, TINNED COPPER, 50.8x6.3mm (SEE DETAIL 1) | 222406 | 182110 | 1 | 1 | 1 |
| 20 | SCREW - #12x45mm, SELF DRILLING | | 175567 | A/R | A/R | A/R |
| 19 | SIGN - DANGER, HIGH VOLTAGE (SEE NOTE 4) | | H47012 | 2 | 2 | 2 |
| 18 | NUT - M12, HEX., STAINLESS STEEL | 515467 | 8987 | 7 | 7 | 7 |
| 17 | WASHER - SPRING, M12, STAINLESS STEEL | 518082 | 143859 | 7 | 7 | 7 |
| 16 | LUG - COMPRESSION, COPPER, Ø14mm HOLE (TO SUIT 70mm² CABLE) | | 74831 | 7 | 7 | 7 |
| 15 | WASHER - FLAT, M12, STAINLESS STEEL | 518081 | 49429 | 14 | 14 | 14 |
| 14 | SCREW - SET, M12x30mm, HEX., STAINLESS STEEL | 515467 | H38528 | 7 | 7 | 7 |
| 13 | GUARD - EARTH, COVER, 3m, BLACK, PVC | 205775 | 157552 | 1 | 1 | 1 |
| 12 | SADDLE - CABLE, 12.7mm, HEAVY DUTY, DOUBLE SIDED, GALVANISED | | 176494 | A/R | A/R | A/R |
| 11 | CONDUCTOR - 19/2.14(70mm²) COPPER, PVC COVERED, BLACK (SEE NOTE 3) | | 60111 | A/R | A/R | A/R |
| 10 | WASHER - FLAT, M20, GALVANISED | 518081 | 177986 | 3 | 3 | 3 |
| 9 | WASHER - CONICAL, M20, GALVANISED | 518082 | H39655 | 3 | 3 | 3 |
| 8 | WASHER - SQUARE, 75x75x6mm (Ø22mm HOLE) | 518081 | H39231 | 6 | 6 | 6 |
| 7 | BOLT & NUT - M20, HEX., GALVANISED (LENGTH TO SUIT POLE) | 515466 | | 3 | 3 | 3 |
| 6 | ARRESTER - SURGE, 9kV, 10kA, POLYMERIC DISTRIBUTION TYPE, 12mm TOP & BOTTOM STUD (COMPLETE WITH BIRDCAP) | | 111948 | 6 | 6 | 6 |
| 5 | INTELLIRUPTER - S&C, PULSECLOSER (WITH POWER MODULE) (SEE NOTES 7, 10, 12 & 13) | | 183071 | 1 | 1 | 1 |
| 4 | JOINT - NON TENSION, IPC TO IPC (ENSTO REF. SLW26 A) | | 186863 | | 6 | 6 |
| | JOINT - NON TENSION, IPC TO BARE (ENSTO REF. SLW34 A) | | 186864 | 6 | | |
| 3 | CONDUCTOR - 11kV CCSX159, 159mm², 19/3.26 AAAC | | 186858 | A/R | A/R | A/R |
| 2 | CONSTRUCTION - 11kV, OVERHEAD, 2-11CCT (EXCLUDING BRIDGES) | 174962 | | | | 1 |
| | CONSTRUCTION - 11kV, OVERHEAD, 2-11CCSX (EXCLUDING BRIDGES) | 265890 | | | 1 | |
| | CONSTRUCTION - 11kV, OVERHEAD, 2-11 (EXCLUDING BRIDGES) | 513915 | | 1 | | |
| 1 | POLE - TIMBER (MINIMUM 8kN) (POLE LENGTH AS REQUIRED) | 513988 | | 1 | 1 | 1 |

CAD DRAWING
DO NOT MANUALLY AMEND

AMENDMENTS

DWN: P.R.
CHKD: P.J.
APPD: G.F.

8 DATE: 15/05/2025. CCT CHANGED TO CCSX. EARTHING CHANGED TO ALUMINIUM ABOVE GROUND

| ASSOCIATED DRAWINGS | |
|---|---|
| 11kV S&C INTELLIRUPTER PULSECLOSER FOR CONTROLLING VOLTAGE REGULATOR | 224228 |
| 11kV S&C INTELLIRUPTER PULSECLOSER WITH BY-PASS AIR BREAK SWITCH | 220251 |

NETWORK STANDARD
Ausgrid
42 HONEYSUCKLE DRIVE, NEWCASTLE WEST NSW 2300

| | |
|---|---|
| SCALE | AS SHOWN |
| DESIGNED | D.DAFO |
| DRAWN | D.DAFO |
| CHECKED | P.JARVIS |
| APPROVED | R.HUGHES |
| DATE | 12/01/2011 |
| PROJECT NUMBER | STD |
| TRIM REF NUMBER | - |

# STANDARD CONSTRUCTION
# 11kV S&C INTELLIRUPTER PULKSECLOSER MOUNTED ON A TIMBER POLE
# GENERAL ARRANGEMENT

SIZE A1 | DRAWING No 220041 | SHEET 1 | REV 8

2024.1022

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