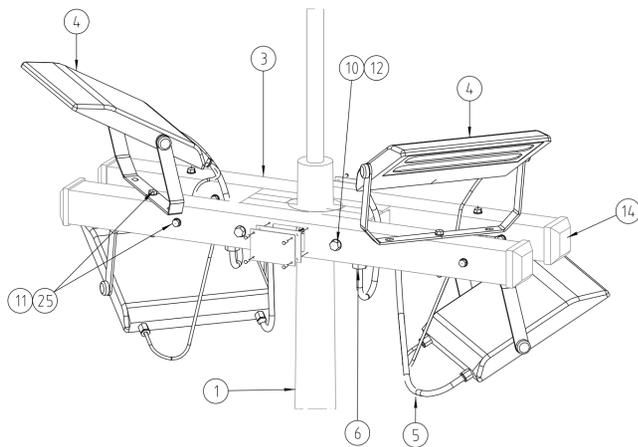
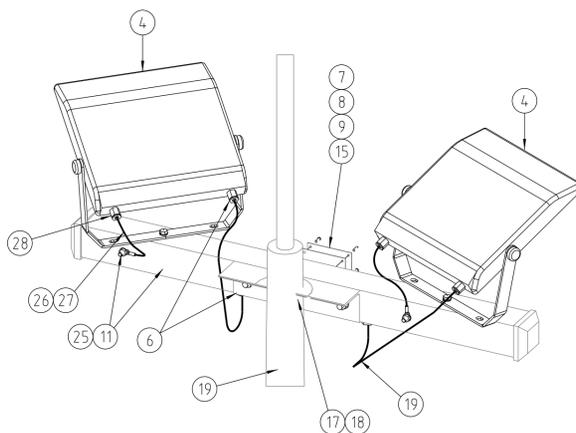


SUPPLY IN AND OUT

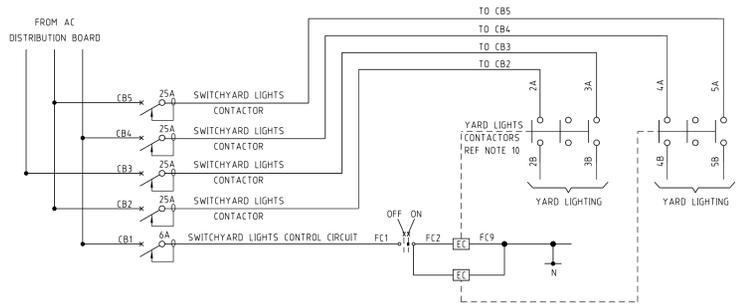


LIGHTING ASSEMBLY



TYPICAL CABLING ASSEMBLY

LOWER LIGHTS AND FITTINGS REMOVED FOR CLARITY



TYPICAL LIGHTING SINGLE LINE DIAGRAM

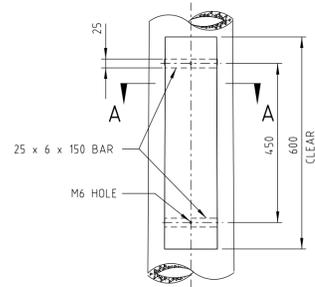
NOTE: GUIDANCE ONLY APPLICABLE TO GREENFIELD DESIGNS. REFER TO SITE SPECIFIC DESIGN FOR ACTUAL REQUIREMENTS.

NOTES:

- POLES AND CROSSARMS TO BE PURCHASED FROM INGAL EPS. POLES ARE TO BE DELIVERED IN SECTIONS (DEPENDING ON HEIGHT) AND ARE TO BE ASSEMBLED ON SITE.
- HEIGHT OF POLE INCLUDES POLE PLUS 1m LIGHTNING ROD, eg. 12M POLE + 1m ROD = 13m TOTAL.
- MAXIMUM OF 8 LIGHTS TO BE CONNECTED TO EACH 1PHASE CIRCUIT. CIRCUIT ALLOCATIONS TO BE ACCORDING TO SITE SPECIFIC DESIGN. RETROFIT APPLICATIONS, INCLUDING MIXED LUMINAIRE TYPES, TO BE REFERRED TO LAYOUT DESIGN.
- LIGHT FITTINGS & CONDUITS MUST BE ALL METAL TO SHIELD ELECTRICAL CABLES.
- 2 CORE INCOMING CABLE SIZE TO SUIT SITE REQUIREMENTS. MAINTAIN NEUTRAL SEPARATION BETWEEN INCOMING CIRCUITS. THERE CAN BE NO EARTH CONNECTION FROM SUPPLY CABLES TO LIGHTS. DOING SO CAN RESULT IN DANGEROUS VOLTAGES AT THE AC DISTRIBUTION BOARD DURING LIGHTNING STORMS.
- MINIMISE STRIPBACK OF CABLE SHEATH & ENSURE THAT SINGLE INSULATED CORES ARE KEPT AT LEAST 25mm (AIR GAP) FROM SPIRE METALWORK.
- SPIRE DRAWING IS SUBJECT TO MANUFACTURER COPYRIGHT. REFER TO CATALOGUE NUMBER (STOCKCODE) FOR DETAILS. CONFIRM ITEM CORRESPONDS TO THE DRAWING AND REVISION DESCRIBED PRIOR TO ORDERING.
- PHILLIPS BVP382150W s/c 186189 ARE FOR USE IN NON MARINE ENVIRONMENTS. ALTERNATE LUMINAIRES MAY BE SPECIFIED IN CORROSIVE ENVIRONMENTS & THE FOLLOWING MAY NOT APPLY:  
REMOVE STREET LIGHT PE CELL & CABLE TO PE CELL TERMINAL BLOCK.  
CONNECT BROWN WIRE AS "BRIDGE/JUMPER" ACROSS THE BALLAST TO PE CELL CONNECTION. REUSE PE CELL IP66 GLAND OR INSTALL NG16 & ROUTE 6mm<sup>2</sup> EARTH BOND FROM TERMINAL STUD TO CROSSARM TO ENSURE FLOOD LIGHT HOUSING IS EFFECTIVELY EARTHED. REMOVE A-N-E CABLE FROM LIGHT BALLAST BLOCK & INSTALL IP66 GLAND TO FACILITATE 2C-E 2.5mm<sup>2</sup> CABLE TERMINATION.  
TILT & AIMING TO BE AS SPECIFIED ON SITE SPECIFIC DESIGN. DEFAULT TILT IS 30 DEGREES.  
TO MANAGE LED FLOOD LIGHT INRUSH CURRENT & SWITCH OFF TRANSIENTS BROUGHT ABOUT BY SWITCH MODE BALLAST CAPACITOR SWITCHING. YARD FLOODLIGHT CONTROL CONTACTORS SHALL BE SCHNEIDER AC6B 32A TE SYS LC1DMK7 WITH INTEGRAL SWITCHED RESISTOR STEP.
- ADDITIONAL TERMINALS MAY BE REQUIRED WHERE TWO OR MORE CABLES ARE REQUIRED TO EXIT.

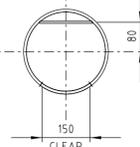
CONSTRUCTION ISSUE

ITEM	DESCRIPTION	DRAWING	STOCK CODE	QTY
28	CABLE GLAND - SUREFIT NG-16			4
27	XLP HEATSHRINK - CABAC XLPS			AS REQ.
26	6mm <sup>2</sup> Cu EARTH CONDUCTOR (LENGTH TO SUIT) c/w RT5.5-12DG & RT5.5-4DG RING TERMINALS			4
25	WASHER, FLAT M12 GALV	518081	177982	AS REQ.
24	END BRACKET - WEIDMULLER KLIPPON WEP 35/2			2
23	TERMINAL TS35 DIN RAIL MOUNTED WEIDMULLER KLIPPON WDU10			10
22	TS35 DIN RAIL EARTH TERMINAL - WEIDMULLER KLIPPON WPE 2.5			4
21	32A F/HOLDER, WHITE WITH LINK SAFECLIP SC32HWH			4
20	TERMINAL LINK WEIDMULLER KLIPPON WQV10			AS REQ.
19	2.5mm <sup>2</sup> 2 CORE & E ORANGE CIRCULAR PVC/PVC 0.6/1kV (LENGTH TO SUIT)			AS REQ.
18	32mm THREADED BUSH GREY (FEMALE) - CLIPSALE 281F32			2
17	32mm CONDUIT BUSH GREY (MALE) - CLIPSALE 281/32			2
16	TERMINAL PARTITION - WEIDMULLER KLIPPON WTW EN			5
15	WASHER, FLAT M6 GALV			AS REQ.
14	END CAP. TO SUIT 100mm <sup>2</sup> SHS GAL. STEEL CROSSARM			4
13	TS35 X 7.5 DEEP SLOTTED STEEL DIN RAIL, 500mm LONG			1
12	WASHER, FLAT M16 GALV	518081	177984	AS REQ.
11	BOLT, M12 x 130LG c/w HEX NUT, GALV	515466	46805	8
10	BOLT, M16 x 130LG c/w HEX NUT, GALV	515466	46979	4
9	SET SCREW, M6 x 16LG c/w HEX NUT GALV			8
8	COVER PLATE, STEEL 140 x 92 x 4mm	163028		2
7	GASKET, CORK 140 x 92	163028		2
6	GLAND, M20 S/S TO SUIT STEEL FLEXIBLE CONDUIT			8
5	CONDUIT, PVC SHEATHED STEEL FLEXIBLE Ø20 TO AS2053.1 & AS2053.8			AS REQ.
4	FLOODLIGHTS, PHILLIPS BVP382 150W ASYMMETRIC 165LED140	8241 101 39201	186189	4
3	CROSSARM, 100 x 4 SHS x 1400mm LONG	163028-2		2
	CONCRETE FOOTING DETAIL, 7m & 12m LIGHTNING MAST	162812		1
2	CONCRETE FOOTING DETAIL, 15m 18m & 20m LIGHTNING MAST	162293		1
	ALTERNATE PAD CONCRETE FOOTING, 7-20m LIGHTNING MAST (SUBS LIVE YARD)	215497		1
	POLE, 20m STEEL FLANGE MOUNTED, TAPERED ROUND LIGHTNING MAST INGAL EPS DWG No GA2939 REV C REFER NOTE 7	232267-2	YEA20FCA14/2	1
	POLE, 18m STEEL FLANGE MOUNTED, TAPERED ROUND LIGHTNING MAST INGAL EPS DWG No GA2331 REV A REFER NOTE 7	232266-2	YEA18FCA14/2	1
1	POLE, 15m STEEL FLANGE MOUNTED, TAPERED ROUND LIGHTNING MAST INGAL EPS DWG No GA2123 REV C REFER NOTE 7	232265-2	YEA15FCA14/2	1
	POLE, 12m STEEL FLANGE MOUNTED, TAPERED ROUND LIGHTNING MAST INGAL EPS DWG No GA18155 REV A REFER NOTE 7	232263-2	YEA12FCA14/2-86	1
	POLE, 7m STEEL FLANGE MOUNTED, TAPERED ROUND LIGHTNING MAST INGAL EPS DWG No GA10096 REV B REFER NOTE 7	232262-2	YEA7FCA14/2-86	1



DETAIL 'B'

SCALE 1:10



SECTION A

SCALE 1:10

LIGHTNING/LIGHTING POLE ARRANGEMENT

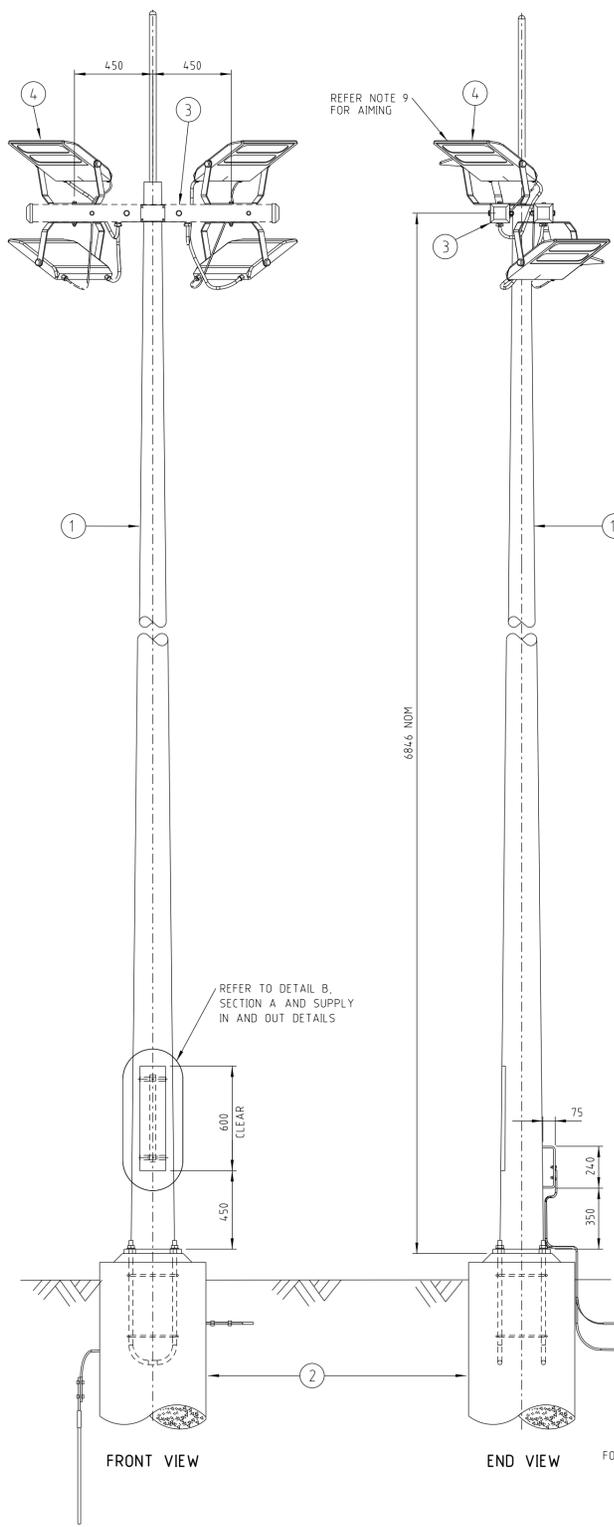
7m POLE SHOWN  
SCALE 1:20

1	CAD DRAWING DO NOT MANUALLY AMEND A. M. E. N. D. E. N. T. S. DWN RAY DEAL
2	CHKD BRETT ROBERTS APP'D BRETT ROBERTS DATE: 19/12/2018 B 'SUPPLY IN DETAIL REDRAWN. NOTES 4 & 6 ALTERED. BOM REVISED.
3	DWN PATRICIA RIDOS CHKD THOMAS PHILLIPS APP'D THOMAS PHILLIPS DATE: 10/01/2019 9 GENERAL UPDATE
4	DWN PATRICIA RIDOS CHKD THOMAS PHILLIPS APP'D THOMAS PHILLIPS DATE: 04/06/2019 10 GENERAL UPDATE
5	DWN R.D. CHKD T.P. APP'D R.H. DATE: 23/01/2024 11 DRAWING UPDATED TO SHOW LED TYPE LIGHTS NOTES 8 TO 11 ADDED

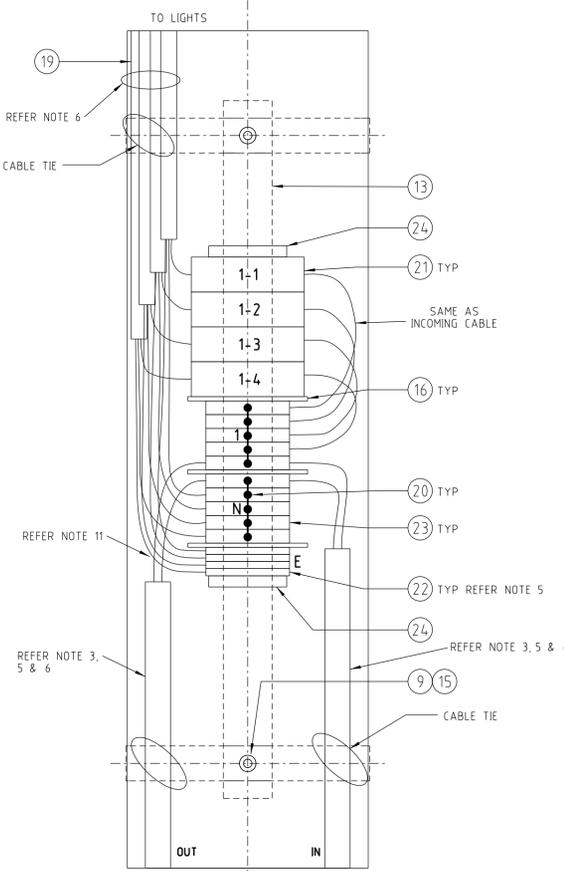
215497-1	ALTERNATE PAD CONCRETE FOOTING DETAILS
162812-1	CONCRETE FOOTING, 7m & 12m LIGHTNING MAST
162293-1	CONCRETE FOOTING, 15m, 18m & 20m LIGHTNING MAST
162611-1	EARTHING DETAILS, STEEL FLANGE MOUNTED LIGHTNING MAST
163028-2	CROSSARM DETAILS
162013-1	FLOODLIGHTING - 2 LIGHT ASSEMBLY

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

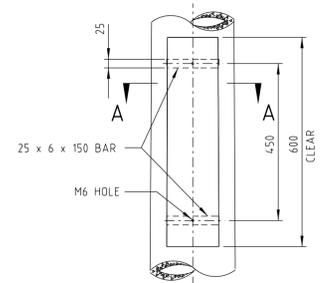
SCALE	AS SHOWN	STANDARD CONSTRUCTION LIGHTNING SPIRE AND FLOODLIGHTING 4 LIGHT ASSEMBLY GENERAL ARRANGEMENT
DESIGNED	PETER STOREY	
DRAWN	RAY DEAL	
CHECKED	PETER STOREY	
APPROVED	ROSS HUGHES	PROJECT NUMBER STD
DATE	24/05/2005	
PROJ/TRAK NUMBER		SIZE A1
		DRAWING No 169818
		SHEET 1
		AMD 11



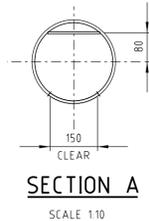
**LIGHTNING/LIGHTING POLE ARRANGEMENT**  
7m POLE SHOWN  
SCALE 1:20



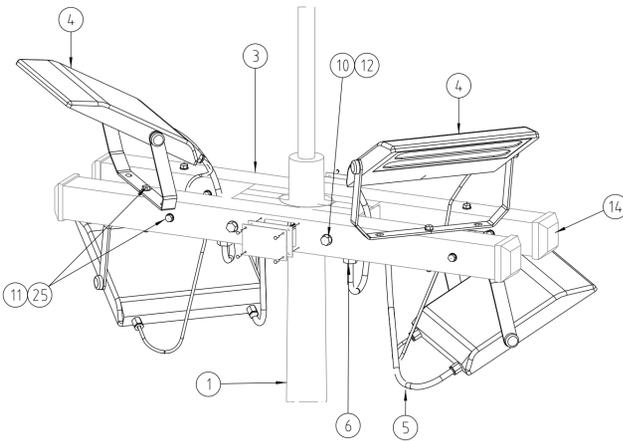
**SUPPLY IN AND OUT**



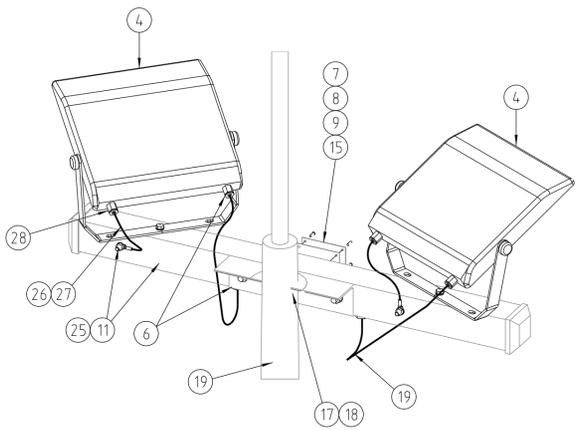
**DETAIL 'B'**  
SCALE 1:10



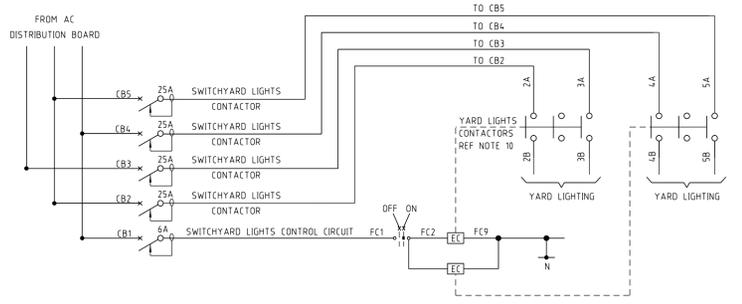
**SECTION A**  
SCALE 1:10



**LIGHTING ASSEMBLY**



**TYPICAL CABLING ASSEMBLY**  
LOWER LIGHTS AND FITTINGS REMOVED FOR CLARITY



**TYPICAL LIGHTING SINGLE LINE DIAGRAM**  
NOTE: GUIDANCE ONLY, APPLICABLE TO GREENFIELD DESIGNS. REFER TO SITE SPECIFIC DESIGN FOR ACTUAL REQUIREMENTS.

**NOTES:**

- POLES AND CROSSARMS TO BE PURCHASED FROM INGAL EPS. POLES ARE TO BE DELIVERED IN SECTIONS (DEPENDING ON HEIGHT) AND ARE TO BE ASSEMBLED ON SITE.
- HEIGHT OF POLE INCLUDES POLE PLUS 1m LIGHTNING ROD, eg. 12M POLE + 1m ROD = 13m TOTAL.
- MAXIMUM OF 8 LIGHTS TO BE CONNECTED TO EACH 1PHASE CIRCUIT. CIRCUIT ALLOCATIONS TO BE ACCORDING TO SITE SPECIFIC DESIGN, RETROFIT APPLICATIONS, INCLUDING MIXED LUMINAIRE TYPES, TO BE REFERRED TO LAYOUT DESIGN.
- LIGHT FITTINGS & CONDUITS MUST BE ALL METAL TO SHIELD ELECTRICAL CABLES.
- 2 CORE INCOMING CABLE SIZE TO SUIT SITE REQUIREMENTS. MAINTAIN NEUTRAL SEPARATION BETWEEN INCOMING CIRCUITS. THERE CAN BE NO EARTH CONNECTION FROM SUPPLY CABLES TO LIGHTS, DOING SO CAN RESULT IN DANGEROUS VOLTAGES AT THE AC DISTRIBUTION BOARD DURING LIGHTNING STORMS.
- MINIMISE STRIPBACK OF CABLE SHEATH & ENSURE THAT SINGLE INSULATED CORES ARE KEPT AT LEAST 25mm (AIRGAP) FROM SPIRE METALWORK.
- SPIRE DRAWING IS SUBJECT TO MANUFACTURER COPYRIGHT. REFER TO CATALOGUE NUMBER (ISTOCKCODE) FOR DETAILS. CONFIRM ITEM CORRESPONDS TO THE DRAWING AND REVISION DESCRIBED PRIOR TO ORDERING.
- PHILLIPS BVP382150W s/c 186189 ARE FOR USE IN NON MARINE ENVIRONMENTS, ALTERNATE LUMINAIRES MAY BE SPECIFIED IN CORROSIVE ENVIRONMENTS & THE FOLLOWING MAY NOT APPLY. REMOVE STREET LIGHT PE CELL & CABLE TO PE CELL TERMINAL BLOCK. CONNECT BROWN WIRE AS "BRIDGE/JUMPER" ACROSS THE BALLAST TO PE CELL CONNECTION. REUSE PE CELL IP66 GLAND OR INSTALL NG16 & ROUTE 6mm<sup>2</sup> EARTH BOND FROM TERMINAL STUD TO CROSSARM TO ENSURE FLOOD LIGHT HOUSING IS EFFECTIVELY EARTHED. REMOVE A-N-E CABLE FROM LIGHT BALLAST BLOCK & INSTALL IP66 GLAND TO FACILITATE 2C+E 2.5mm<sup>2</sup> CABLE TERMINATION.
- TILT & AIMING TO BE AS SPECIFIED ON SITE SPECIFIC DESIGN. DEFAULT TILT IS 30 DEGREES.
- TO MANAGE LED FLOOD LIGHT INRUSH CURRENT & SWITCH OFF TRANSIENTS BROUGHT ABOUT BY SWITCH MODE BALLAST CAPACITOR SWITCHING, YARD FLOODLIGHT CONTROL CONTACTORS SHALL BE SCHNEIDER AC6B 32A TE SYS L1D1MKUT WITH INTEGRAL SWITCHED RESISTOR STEP.
- ADDITIONAL TERMINALS MAY BE REQUIRED WHERE TWO OR MORE CABLES ARE REQUIRED TO EXIT.

**CONSTRUCTION ISSUE**

ITEM	DESCRIPTION	DRAWING	STOCK CODE	QTY
28	CABLE GLAND - SUREFIT NG-16			4
27	XLP HEATSHRINK - CABAC XLP5			AS REQ.
26	6mm <sup>2</sup> Cu EARTH CONDUCTOR (LENGTH TO SUIT) c/w RT5.5-12DG & RT5.5-4DG RING TERMINALS			4
25	WASHER, FLAT M12 GALV	518081	177982	AS REQ.
24	END BRACKET - WEIDMULLER KLIPPON WEP 35/2			2
23	TERMINAL T535 DIN RAIL MOUNTED WEIDMULLER KLIPPON WDU10			10
22	T535 DIN RAIL EARTH TERMINAL - WEIDMULLER KLIPPON WPE 2.5			4
21	32A F/HOLDER, WHITE WITH LINK SAFECLIP SC32HWH			4
20	TERMINAL LINK WEIDMULLER KLIPPON WQV10			AS REQ.
19	2.5mm <sup>2</sup> 2 CORE & E ORANGE CIRCULAR PVC/PVC 0.6/1kV (LENGTH TO SUIT)			AS REQ.
18	32mm THREADED BUSH GREY (FEMALE) - CLIPAL 281F32			2
17	32mm CONDUIT BUSH GREY (MALE) - CLIPAL 281/32			2
16	TERMINAL PARTITION - WEIDMULLER KLIPPON WTW EN			5
15	WASHER, FLAT M6 GALV			AS REQ.
14	END CAP, TO SUIT 100mm <sup>2</sup> SHS GAL. STEEL CROSSARM			4
13	T535 X 7.5 DEEP SLOTTED STEEL DIN RAIL, 500mm LONG			1
12	WASHER, FLAT M16 GALV	518081	177984	AS REQ.
11	BOLT, M12 x 130LG c/w HEX NUT, GALV	515466	46805	8
10	BOLT, M16 x 130LG c/w HEX NUT, GALV	515466	46979	4
9	SET SCREW, M6 x 16LG c/w HEX NUT GALV			8
8	COVER PLATE, STEEL 140 x 92 x 4mm	163028		2
7	GASKET, CORK 140 x 92	163028		2
6	GLAND, M20 S/S TO SUIT STEEL FLEXIBLE CONDUIT			8
5	CONDUIT, PVC SHEATHED STEEL FLEXIBLE Ø20 TO AS2053.1 & AS2053.8			AS REQ.
4	FLOODLIGHTS, PHILLIPS BVP382 150W ASYMMETRIC 165LED140	8241 101 39201	186189	4
3	CROSSARM, 100 x 4 SHS x 1400mm LONG	163028-2		2
	CONCRETE FOOTING DETAIL, 7m & 12m LIGHTNING MAST	162812		1
2	CONCRETE FOOTING DETAIL, 15m 18m & 20m LIGHTNING MAST	162293-1		1
	ALTERNATE PAD CONCRETE FOOTING, 7-20m LIGHTNING MAST (SUBS LIVE YARD)	215497		1
	POLE, 20m STEEL FLANGE MOUNTED, TAPERED ROUND LIGHTNING MAST INGAL EPS DWG No GA2939 REV C REFER NOTE 7	232267-2	YEA20FCA14/2	1
	POLE, 18m STEEL FLANGE MOUNTED, TAPERED ROUND LIGHTNING MAST INGAL EPS DWG No GA2331 REV A REFER NOTE 7	232266-2	YEA18FCA14/2	1
1	POLE, 15m STEEL FLANGE MOUNTED, TAPERED ROUND LIGHTNING MAST INGAL EPS DWG No GA2123 REV C REFER NOTE 7	232265-2	YEA15FCA14/2	1
	POLE, 12m STEEL FLANGE MOUNTED, TAPERED ROUND LIGHTNING MAST INGAL EPS DWG No GA18155 REV A REFER NOTE 7	232263-2	YEA12FCA14/2-86	1
	POLE, 7m STEEL FLANGE MOUNTED, TAPERED ROUND LIGHTNING MAST INGAL EPS DWG No GA10096 REV B REFER NOTE 7	232262-2	YEA7FCA14/2-86	1

CAD DRAWING DO NOT MANUALLY AMEND AMENDMENTS DWM RAY DEAL CHKD BRETT ROBERTS APP'D BRETT ROBERTS DATE: 19/12/2018 *SUPPLY IN DETAIL 8 REDRAWN NOTES 4 & 6 ALtered, BOM REVISED.	DWM PATRICIA RIOS CHKD THOMAS PHILLIPS APP'D THOMAS PHILLIPS DATE: 10/01/2019 GENERAL UPDATE	DWM RAY DEAL CHKD THOMAS PHILLIPS APP'D THOMAS PHILLIPS DATE: 06/04/2019 GENERAL UPDATE	DWM R.D. CHKD.T.P. APP'D.R.H. DATE: 23/01/2024 DRAWING UPDATED TO 11 SHOW LED TYPE LIGHTS NOTES 8 TO 11 ADDED
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ALTERNATE PAD CONCRETE FOOTING DETAILS	215497-1
CONCRETE FOOTING, 7m & 12m LIGHTNING MAST	162812-1
CONCRETE FOOTING, 15m, 18m & 20m LIGHTNING MAST	162293-1
EARTHING DETAILS, STEEL FLANGE MOUNTED LIGHTNING MAST	162811-1
CROSSARM DETAILS	163028-2
FLOODLIGHTING - 2 LIGHT ASSEMBLY	162013-1
ASSOCIATED DRAWINGS	

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

SCALE	AS SHOWN
DESIGNED	PETER STOREY
DRAWN	RAY DEAL
CHECKED	PETER STOREY
APPROVED	ROSS HUGHES
DATE	24/05/2005
PROJECT NUMBER	STD
PROJTRAK NUMBER	

STANDARD CONSTRUCTION LIGHTNING SPIRE AND FLOODLIGHTING 4 LIGHT ASSEMBLY GENERAL ARRANGEMENT	
SIZE A1	DRAWING No 169818
SHEET 1	AMD 11