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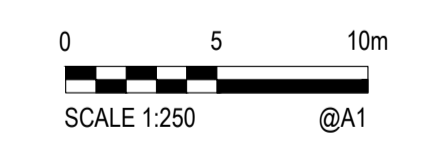
- INDICATIVE ALIGNMENT OF NEW BURIED ELECTRICAL CONDUITS INSTALLED WITH DRAW WIRE IN ACCORDANCE WITH TYPICAL CABLE TRENCH SECTION DETAIL AND AS/NZS3000.
 'n' DENOTES QUANTITY OF CONDUITS.
 'E' DENOTES ELECTRICAL ORANGE HD PVC CONDUIT
 'xx' DENOTES THE DIAMETER OF THE CONDUIT
 FOR EXAMPLE:
 1E50 - 1x 50 DIA ELECTRICAL HD PVC CONDUITS
- DENOTES IN-BUILDING CABLE INSTALLATION IN ACCORDANCE WITH AS/NZS3000. REFER TO DRAWING E201 FOR CABLE SIZE.
- 10m LIGHTING POLE STRUCTURE INCLUSIVE OF POLE, LUMINAIRES, FOOTING, AND CROSSARM. CONTRACTOR SHALL DESIGN, CONSTRUCT AND CERTIFY LIGHTING POLE STRUCTURE AND FOOTING. REFER TO DRAWINGS E101 FOR INFORMATION ON LUMINAIRES AND DRAWING E301 FOR POLE GENERAL ARRANGEMENT. REFER TO BELOW POLE SCHEDULE FOR LOCATION, ORIENTATION & HEIGHT.
- INDICATIVE LOCATION OF EXISTING MAIN SWITCHBOARD
- DISTRIBUTION SWITCHBOARD
- ELECTRICAL PIT WITH CLASS C STEEL LID. MINIMUM SIZE 450mm LENGTH x 450mm WIDE x 800 DEEP TYPE MASCOT OR APPROVED EQUAL
- INDICATIVE LOCATION OF LIGHTING SWITCH PANEL (LSP) LOCKABLE WITH CODE

NOTES

1. LOCATION OF EXISTING ELECTRICAL BURIED CABLING AND INFRASTRUCTURE IS INDICATIVE ONLY. CONTRACTOR SHALL COORDINATE FINAL LOCATIONS AND ALIGNMENTS ON-SITE TO THE APPROVAL OF THE SITE SUPERINTENDENT.
2. CONTRACTOR SHALL RE-INSTATE ALL DISTRIBUTED PAVED SURFACES TO ORIGINAL OR AS NEW CONDITION.
3. ELECTRICAL ITEMS ARE NOT ON SCALE. SHOWN FOR CLARITY.

DB-NETBALL TO BE LOCATED NEXT TO EXISTING MSB. COORDINATE LOCATION ON SITE.

IN BUILDING WIRING - COORDINATE ON SITE. CABLING TO PENETRATE EXTERNAL WALL AT HIGH LEVEL AND RETICULATE IN SURFACE MOUNT CONDUIT TO UNDERGROUND. REPAIR ALL EXISTING SURFACES TO ORIGINAL CONDITION.

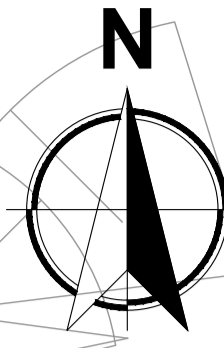


SITE LAYOUT PLAN
SCALE 1:250 AT ORIGINAL SIZE

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PRELIMINARY

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">B</td> <td style="width: 75%;">CONTRACT DOCUMENTATION</td> <td style="width: 10%;">18.11.24</td> <td style="width: 10%;">JT</td> <td style="width: 10%;">HKS</td> </tr> <tr> <td>A</td> <td>PRELIMINARY</td> <td>11.10.24</td> <td>JT</td> <td>HKS</td> </tr> <tr> <td>REV.</td> <td>DESCRIPTION</td> <td>DATE</td> <td>INIT.</td> <td>COMPANY</td> </tr> <tr> <td colspan="5" style="text-align: center;">REVISIONS</td> </tr> </table>	B	CONTRACT DOCUMENTATION	18.11.24	JT	HKS	A	PRELIMINARY	11.10.24	JT	HKS	REV.	DESCRIPTION	DATE	INIT.	COMPANY	REVISIONS					<p>ENGINEERING PROJECT MANAGEMENT DARWIN. GEELONG. CAIRNS. TOWNSVILLE. PERTH. BALLARAT admin@hksolutions.com.au www.hksolutions.com.au</p> <p>Conditions of use. This document may only be used by Harris Kmon Solutions clients for the purpose for which it was prepared and must not be used by any other person or for any other purpose.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>DRAWN</td> <td>SK</td> </tr> <tr> <td>CHECKED</td> <td>JT</td> </tr> <tr> <td>DESIGNED</td> <td>SK</td> </tr> <tr> <td>CHECKED</td> <td>JT</td> </tr> <tr> <td>APPROVED</td> <td>XX</td> </tr> <tr> <td>Date Approved</td> <td>MM.YY</td> </tr> <tr> <td colspan="2">THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED</td> </tr> </table>	DRAWN	SK	CHECKED	JT	DESIGNED	SK	CHECKED	JT	APPROVED	XX	Date Approved	MM.YY	THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED		<p>SHIRE OF QUAIRADING QUAIRADING NETBALL COURTS LIGHTING MCLENNAN STREET</p> <p>ELECTRICAL SERVICES ELECTRICAL SITE LAYOUT</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>PAGE No</td> <td>PROJECT No</td> <td>DRAWING No</td> <td>DISCIPLINE</td> <td>REV.</td> <td>SHEET SIZE</td> </tr> <tr> <td style="text-align: center;">02 OF 06</td> <td style="text-align: center;">24285 - E002</td> <td></td> <td style="text-align: center;">ELECTRICAL</td> <td style="text-align: center;">B</td> <td style="text-align: center;">A1</td> </tr> </table>	PAGE No	PROJECT No	DRAWING No	DISCIPLINE	REV.	SHEET SIZE	02 OF 06	24285 - E002		ELECTRICAL	B	A1
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FIELD OF PLAY HORIZONTAL ILLUMINANCE RESULTS. REFER TO NOTE 1.

COLOURED LINES REPRESENT HORIZONTAL ILLUMINANCE ISOLUX CONTOURS. REFER TO NOTE 2.

NOTES

1. FIELD OF PLAY CALCULATED POINTS ARE HORIZONTAL ILLUMINANCE MADE AT GROUND LEVEL.
2. ISOLUX LINES ARE CALCULATED HORIZONTAL ILLUMINANCE VALUES SHOWN AT GROUND LEVEL.
3. LUMINAIRE ID NOTATION P-x-y, WHERE x-DENOTES POLE NUMBER I.E. P1 y-DENOTES LUMINAIRE CROSSARM POSITION. POSITIONS ARE RELATIVE TO FINAL CROSSARM SIZE AND POSITION.
4. TILT SHALL BE IN ACCORDANCE TO LUMINAIRE TILT DIAGRAM AND THE CONTRACTOR SHALL CALIBRATE LUMINAIRE TILT 0 DEGREE ANGLE AS LEVEL AND IN ACCORDANCE TO MANUFACTURERS REQUIREMENTS.
5. ORIENTATION MAY NOT ALIGN PRECISELY WITH TRUE NORTH. REFER TO DIRECTION DIAGRAM FOR ORIENTATION. THE CONTRACTOR SHALL PRECISELY ORIENTATE IN ACCORDANCE WITH THE DIRECTION DIAGRAM.

LUMINAIRE TYPE & AIMING SCHEDULE

POLE ID	POLE HEIGHT (m)	LUMINAIRE ID (NOTE 3)	MODEL	OPTICS	TILT (NOTE 4)	ORIENTATION (NOTE 5)
P1	10	P1-1	3PH 400V 600W SYLVANIA RAPTOR SR1A1G4	A1+APRON HOOD	10°	0°
		P1-2	3PH 400V 600W SYLVANIA RAPTOR SR1A1G4	A1+APRON HOOD	10°	50°
P2	10	P2-1	3PH 400V 600W SYLVANIA RAPTOR SR1A1G4	A1+APRON HOOD	10°	350°
		P2-2	3PH 400V 600W SYLVANIA RAPTOR SR1A1G4	A1+APRON HOOD	10°	40°
P3	10	P3-1	3PH 400V 600W SYLVANIA RAPTOR SR1A1G4	A1+APRON HOOD	10°	180°
		P3-2	3PH 400V 600W SYLVANIA RAPTOR SR1A1G4	A1+APRON HOOD	10°	230°
P4	10	P4-1	3PH 400V 600W SYLVANIA RAPTOR SR1A1G4	A1+APRON HOOD	10°	170°
		P4-2	3PH 400V 600W SYLVANIA RAPTOR SR1A1G4	A1+APRON HOOD	10°	220°

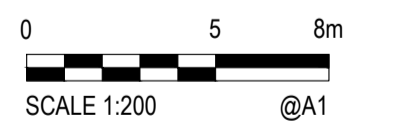
ELECTRICAL LOAD 4.8kW

FIELD OF PLAY CALCULATION SUMMARY

APPLICABLE STANDARD: AS2560.2
 LEVEL OF PLAY: COMPETITION 200 LUX
 LUMINAIRE LLF: 0.85


SEGMENT LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	U1 (MIN/AVG)	U2 (MIN/MAX)
COURT 1	HORIZONTAL ILLUMINANCE	LUX	275.1	338.2	203.3	0.74	0.60
COURT 2	HORIZONTAL ILLUMINANCE	LUX	274.6	337.3	203.6	0.74	0.60

FIELD OF PLAY LIGHTING SUMMARY 200 LUX
 1:200 AT ORIGINAL SIZE



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grading
description for your map.



NOTES

- SEE DRAWING E101 FOR LUMINAIRE TYPE AND AIMING SCHEDULE.
- OBTRUSIVE LIGHTING BOUNDARY SEGMENT WAS ASSESSED USING THE LIGHTING LEVEL OF 200LUX. THE CALCULATIONS WERE PERFORMED WITH AGI32 SOFTWARE USING A LIGHTING ZONE 'A3' & L1 CURFEW CONDITIONS AS PER AS4282-2023.

OBTRUSIVE LIGHTING CALCULATION SUMMARY

APPLICABLE STANDARD: AS/NZS 4282:2023
 ENVIRONMENTAL ZONE: A3
 CONDITIONS: NON-CURFEW L1
 LUMINAIRE LLF: 1.0

SEGMENT LABEL	CALC TYPE	UNITS	CALC MAX	AS4282 LIMIT	AS4282 COMPLIANT?
OBTRUSIVE LIGHT RES. BOUNDARY NORTH	LUMINOUS INTENSITY	Cd	443	12500	YES
	VERTICAL ILLUMINANCE	LUX	0	10	YES
OBTRUSIVE LIGHT RES. BOUNDARY WEST	LUMINOUS INTENSITY	Cd	110	12500	YES
	VERTICAL ILLUMINANCE	LUX	0	10	YES

Obtrusive Light - Compliance Report

AS/NZS 4282:2023, A3 - Medium District Brightness, Non-Curfew L1
 Filename: 24285
 14/11/2024 11:21:34 AM

Illuminance
 Maximum Allowable Value: 10 Lux

Calculations Tested (4):

Calculation Label	Test Results	Max. Illum.
ObtrusiveLight_North_Ill_Seg1	PASS	0.0
ObtrusiveLight_North_Ill_Seg2	PASS	0.0
ObtrusiveLight_North_Ill_Seg3	PASS	0.0
ObtrusiveLight_West_Ill_Seg1	PASS	0.0

Luminous Intensity (Cd) At Vertical Planes
 Maximum Allowable Value: 12500 Cd

Calculations Tested (4):

Calculation Label	Test Results
ObtrusiveLight_North_Cd_Seg1	PASS
ObtrusiveLight_North_Cd_Seg2	PASS
ObtrusiveLight_North_Cd_Seg3	PASS
ObtrusiveLight_West_Cd_Seg1	PASS

Threshold Increment (TI)
 Maximum Allowable Value: 20 %

Calculations Tested (6):

Calculation Label	Adaptation Luminance	Test Results
ObtrusiveLight_TL_WS_EB	1	PASS
ObtrusiveLight_TL_WS_WB	1	PASS
ObtrusiveLight_TL_WFS_EB	1	PASS
ObtrusiveLight_TL_WFS_WB	1	PASS
ObtrusiveLight_TL_MLS_SB	1	PASS
ObtrusiveLight_TL_MLS_NB	1	PASS

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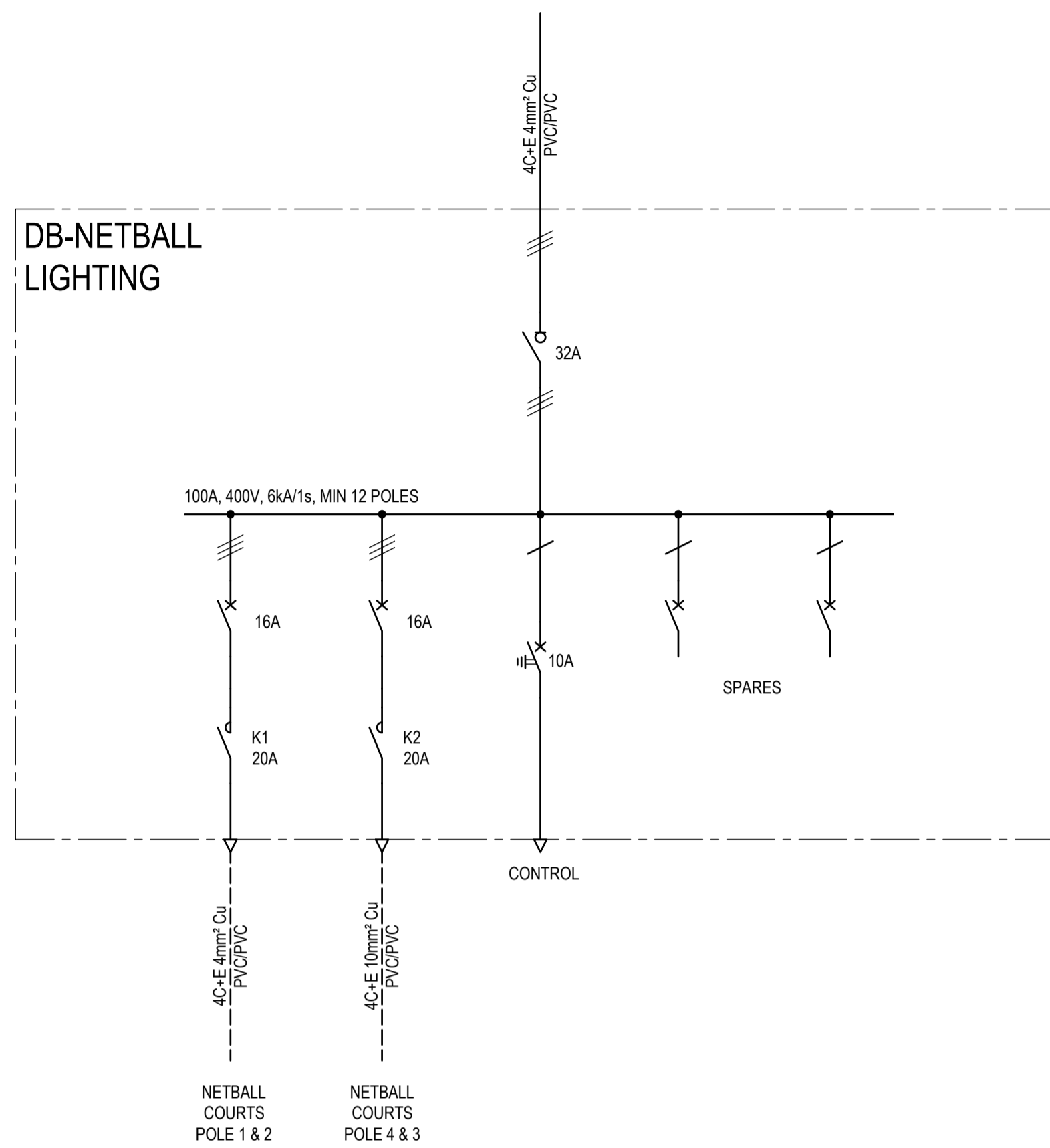
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SHIRE OF QUAIRADING
 QUAIRADING NETBALL COURTS LIGHTING
 MCLENNAN STREET
ELECTRICAL SERVICES
OBTRUSIVE LIGHTING DESIGN SUMMARY

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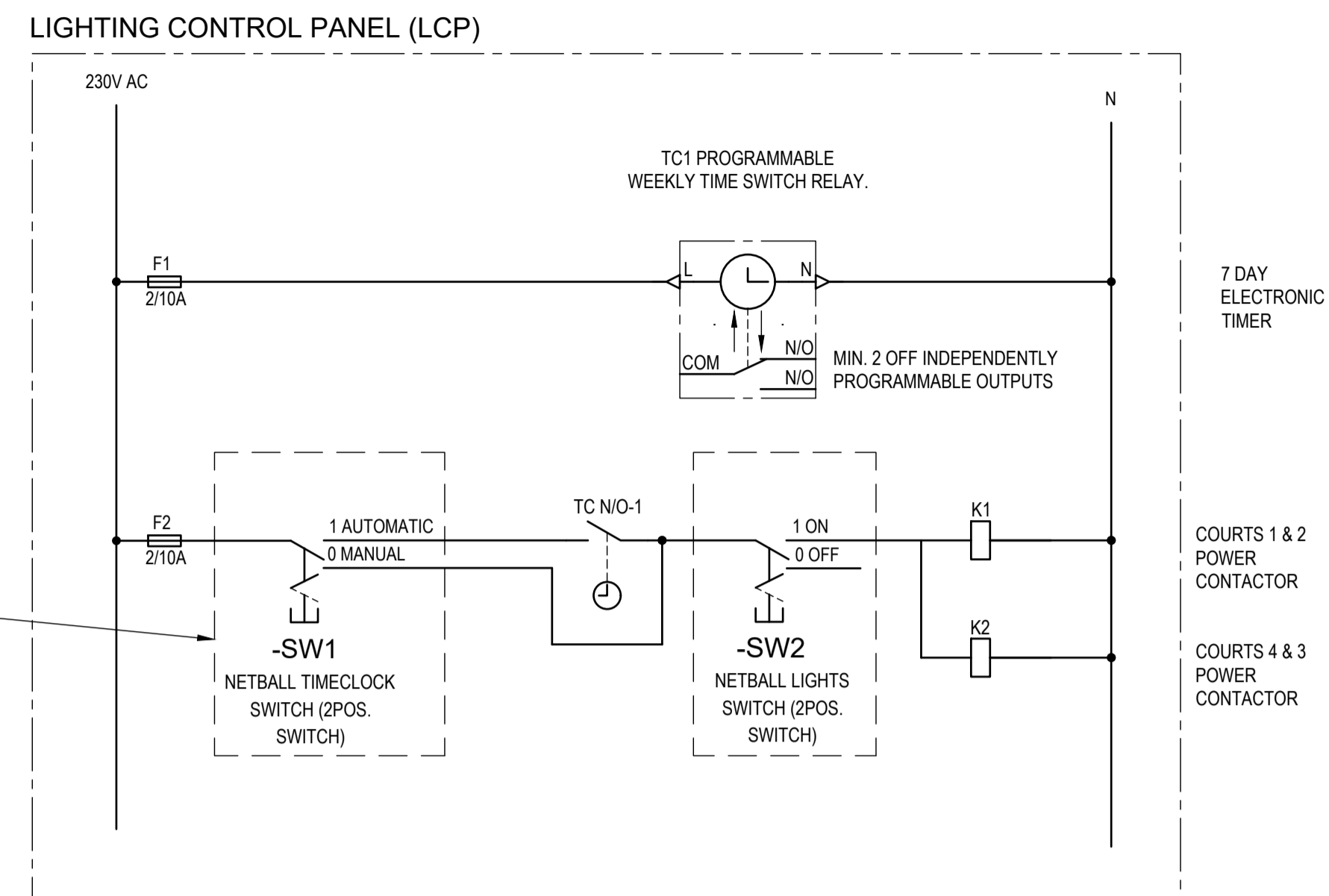
PRELIMINARY

FROM MSB (EX) → ALLOW TO INSTALL NEW 40A 3 POLE MCB FOR TERMINATION OF NEW SUBMAIN CABLING.



NEW SURFACE MOUNT, LOAD CENTRE ENCLOSURE TYPE CLIPSAL OR APPROVED EQUIVALENT.

TYPICAL LIGHT SWITCHES TO BE LOCATED ON LOCKABLE ENCLOSURE AT WALL NEXT TO COURTS.



TYPICAL LIGHTING CONTROL SCHEMATIC

LEGEND

- CIRCUIT BREAKER
- LOAD ISOLATOR
- RESIDUAL CURRENT CIRCUIT BREAKER
- NO CONTACT
- FUSE
- SURGE ARRESTOR
- MOMENTARY PUSHBUTTON
- SPORTS LIGHTING LED DRIVER
- SINGLE PHASE CABLE
- THREE PHASE CABLE
- COIL

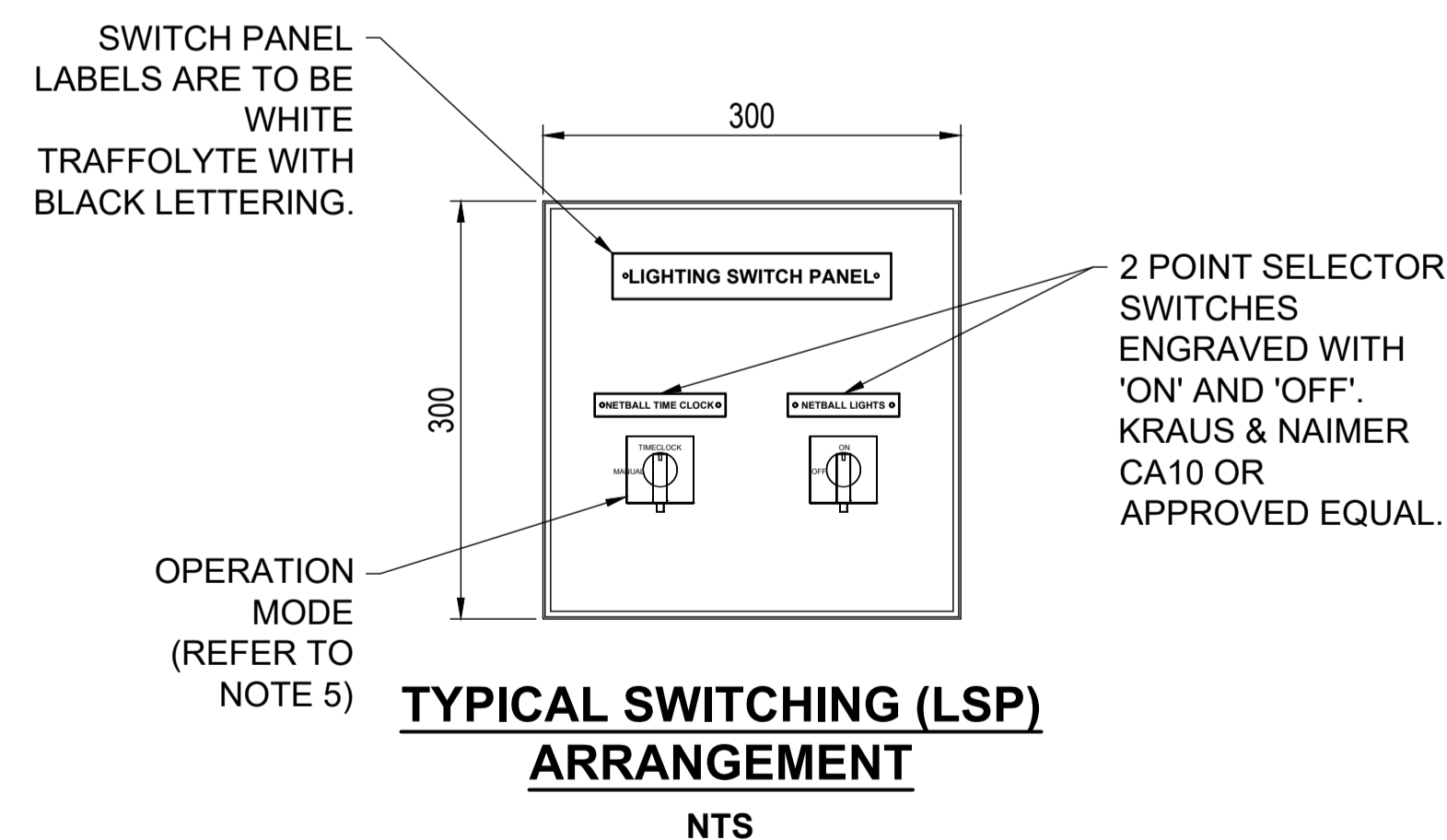
NOTES

1. SPD FUSE TO BE gG TYPE AND SIZED TO MANUFACTURERS REQUIREMENTS.
2. ALL LUMINARIES SHALL BE FITTED WITH PROPRIETARY THERMAL PROTECTION AND WIRED TO REMOTE DRIVER.
3. REFER TO LUMINAIRE SCHEDULE ON DRAWING E101 FOR LUMINAIRE QUANTITIES FOR EACH POLE.
4. INSTALL CODE/KEY LOCKABLE LSP AT LOCATION NOMINATED BY CLUB/COUNCIL.
5. THE LIGHT OPERATION CONTROL SHALL ADHERE TO THE FOLLOWING FUNCTIONAL DESCRIPTION FOR EACH MODE. THE CONTRACTOR SHALL ALLOW TO PROVIDE ALL NECESSARY LABELING OF FUNCTIONALITY AND TRAINING OF PERSONNEL ON THE OPERATION AND MAINTENANCE OF THE LIGHTING CONTROL SYSTEM.

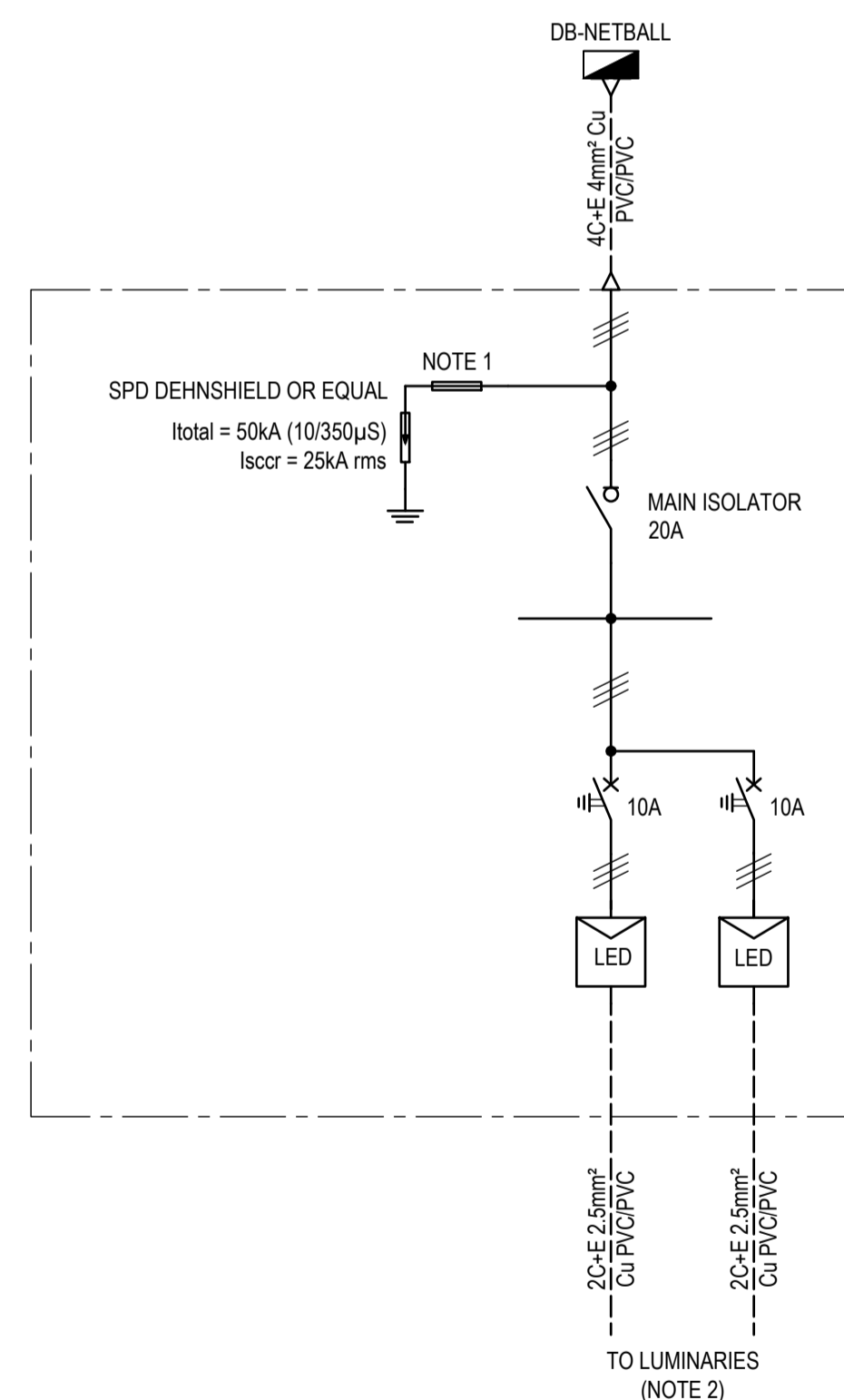
TIME CLOCK MODE (DEFAULT MODE): THE TIME CLOCK IS TO BE CONFIGURED TO CONTROL ALL OF THE DOWNSTREAM LIGHT SWITCHES DURING PRINCIPAL AGREED NON-CURFEW LIGHTING PERIODS/SCHEMES (EG 6PM - 10:30PM). THE TIME CLOCK SHALL BE PROGRAMMABLE TO ALLOW MULTIPLE NON-CURFEW LIGHTING SCHEMES FOR DIFFERENT SEASONS AND USAGES THROUGHOUT THE YEAR.

MANUAL MODE: THE MANUAL MODE SHALL BYPASS THE TIME CLOCK CONTROL AND ALLOW THE USER TO MANUALLY OPERATE DOWNSTREAM SWITCHES AT ANY TIME.

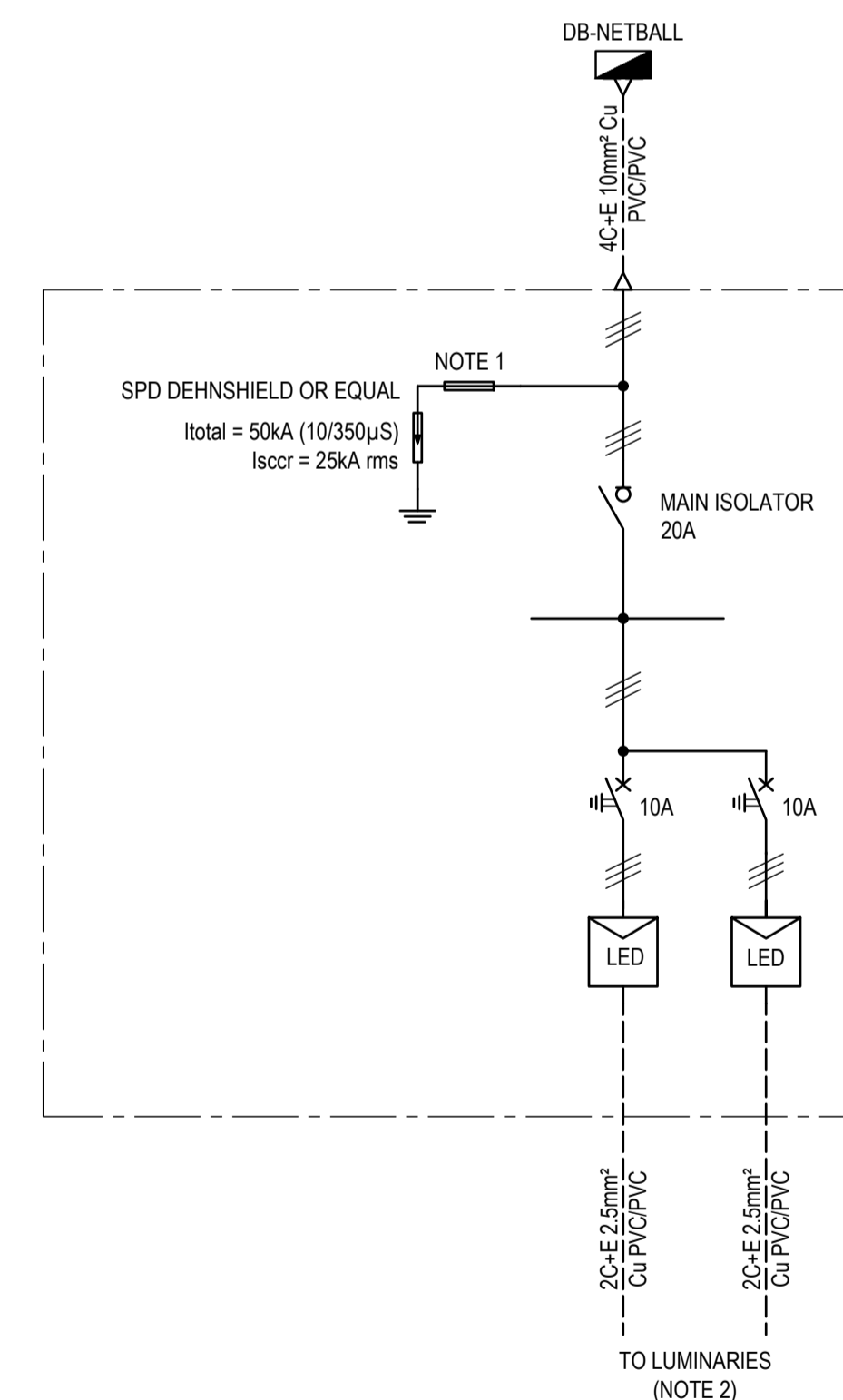
PAVILION SWITCHBOARD SINGLE LINE DIAGRAM (SLD) NTS



TYPICAL SWITCHING (LSP) ARRANGEMENT NTS



POLE P1 & P2 SINGLE LINE DIAGRAM (SLD)



POLE P3 & P4 SINGLE LINE DIAGRAM (SLD)

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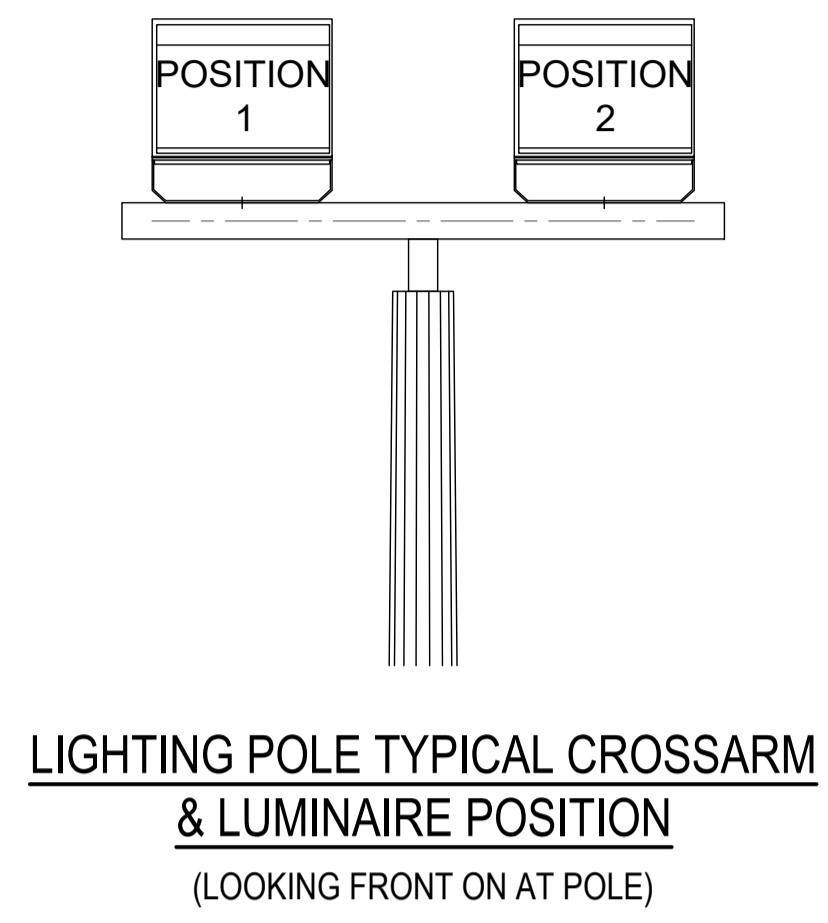
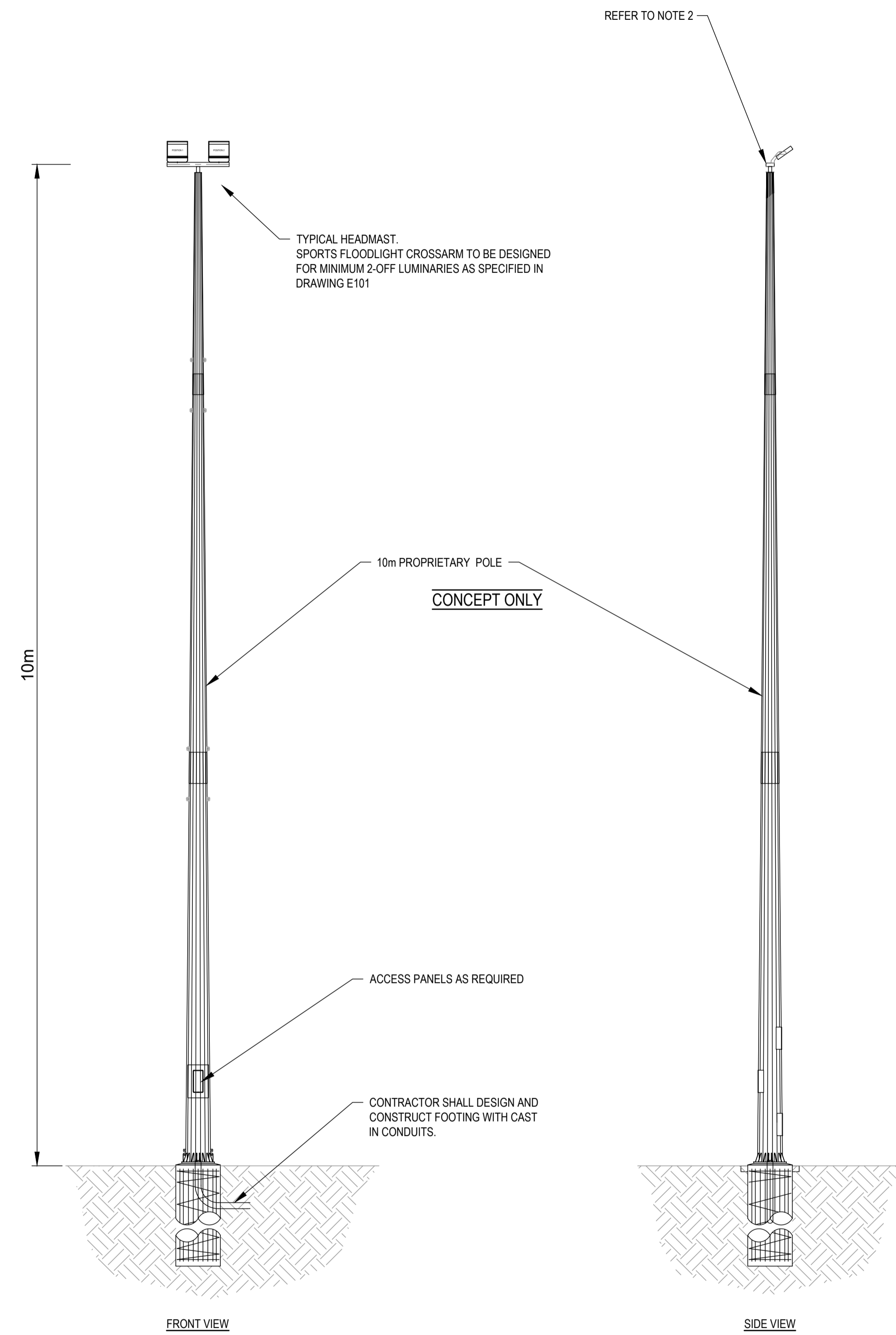
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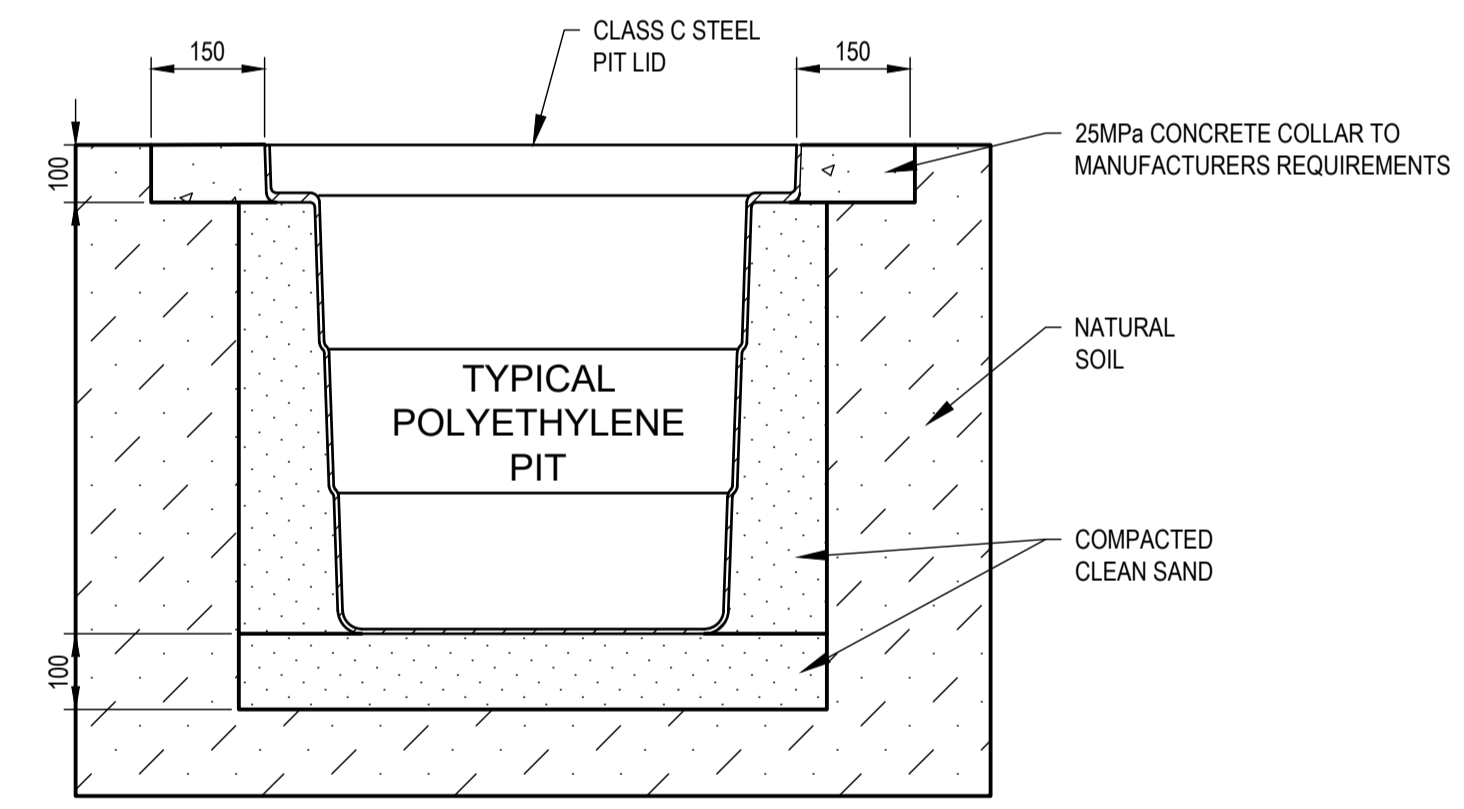
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ELECTRICAL AND CONTROL SCHEMATICS					
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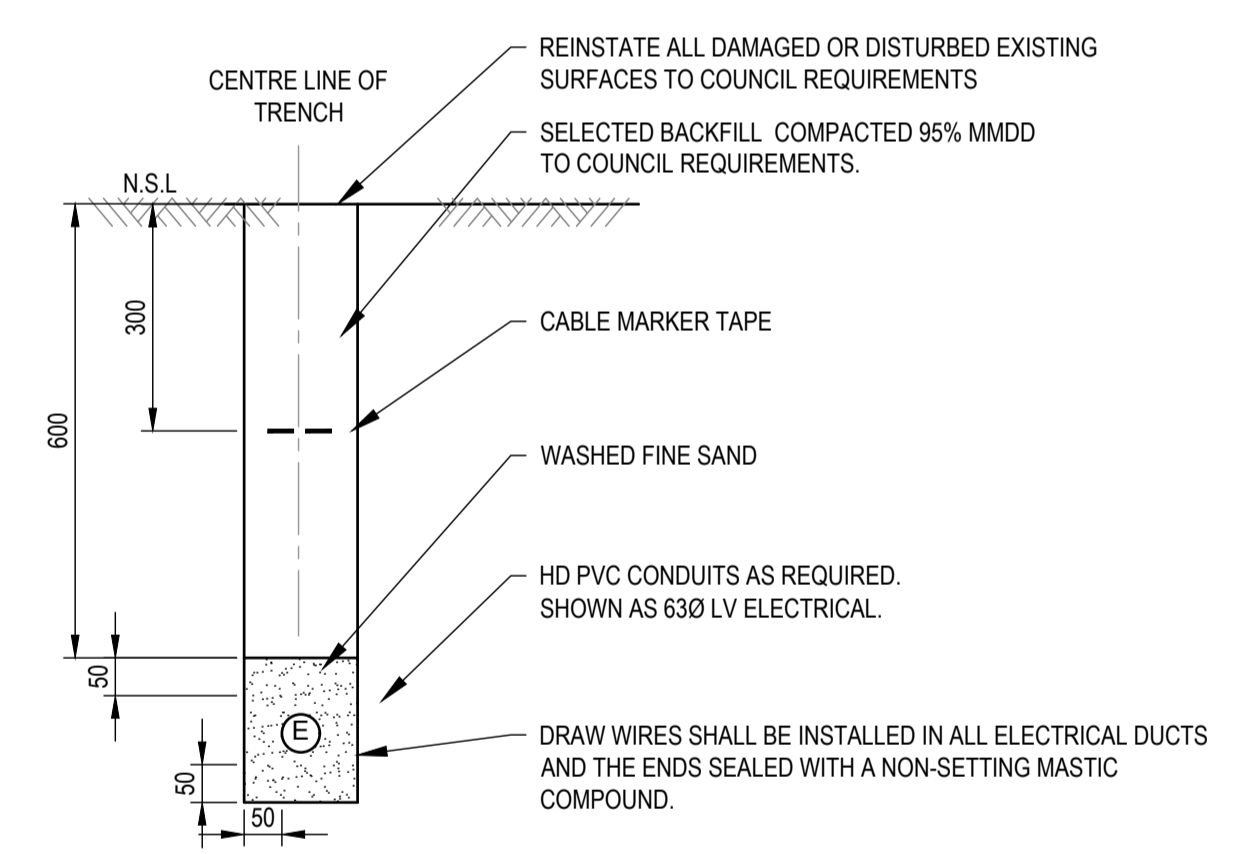


**LIGHTING POLE TYPICAL CROSSARM
& LUMINAIRE POSITION**
(LOOKING FRONT ON AT POLE)

- LIGHTING POLE NOTES:**
- CROSSARM TO BE DESIGNED TO CAUSE NO LIGHTING INTERFERENCE OR SHADOWING FROM ANOTHER LUMINAIRE AND LIGHTING POLE. COORDINATE LUMINAIRE CROSSARM MOUNTING RECOMMENDATIONS WITH LUMINAIRE SUPPLIER.
 - SUPPLY AND INSTALL BIRD RESISTANT FLEXIBLE CONDUIT AND FITTINGS (ATKORE FLEXICON OR APPROVED EQUAL) ON ALL EXPOSED SECTIONS OF LIGHTING CABLE FROM LIGHTING POLE STRUCTURE TO LUMINAIRES. THE CONTRACTOR SHALL PROVIDE SUPPORTS TO ALL EXPOSED FLEXIBLE CONDUITS AT MAXIMUM 600mm CENTRES (PLASTIC STRAPS/TIES WILL NOT BE ACCEPTED). ALL FLEXIBLE CONDUIT SHALL ENTER THE POLE STRUCTURE AND CONTINUE MINIMUM 100mm INTO THE STRUCTURE. ALL CONDUIT OPENINGS AND CONDUIT ENTRIES INTO POLE STRUCTURE SHALL BE WEATHERPROOF SEALED.
 - CONCEPT GENERAL ARRANGEMENTS SHOWN ONLY, THE CONTRACTOR SHALL ENSURE SHOP DRAWINGS TO BE SUBMITTED FOR ACCEPTANCE PRIOR TO MANUFACTURE.
 - FINAL EQUIPMENT SELECTION TO BE SUITABLE FOR APPLICATION



TYPICAL CABLE PIT DETAIL
NOT TO SCALE



TYPICAL CABLE TRENCH SECTION
NOT TO SCALE

**INDICATIVE LIGHTING POLE
GENERAL ARRANGEMENT**
NOT TO SCALE

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ELECTRICAL SERVICES GENERAL ARRANGEMENTS AND POLE DETAILS				
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