

About Marline Engineering Newcastle

At Marline, we take a comprehensive approach when designing your new development.

With in-house electrical, mechanical and hydraulic engineers, Marline Engineering makes your engineering design needs a breeze. We are able to adjust, implement and create designs on AutoCAD and REVIT which makes it easy for contractors and builders to build our designs.

We advise you on the most affordable, practical and effective solutions and systems based on the site and legal factors.

As consulting engineers, Marline has also expanded the range of services to provide a wide range of building services disciplines including Air-conditioning, Electrical, Hydraulics, Fire Protection and Lift Services.

Marline has seen a huge amount of growth in the Energy sector. We provide services that go above and beyond the standard regulatory requirements and offer unique solutions to your Section J or JV3 Alternative solution reports. We also offer a fast NABERS and BEEC certification that ensures advertising for commercial properties are fully compliant with the CBD advertising rules and regulations.

With engineering consulting experience that dates back as far as 1975, we're one of the best engineering companies in Australia, and have developed the kind of projects that residential and commercial property developers benefit from.

Our Newcastle engineering firm continues to grow, however our team prides itself on every customer receiving the kind of high quality workmanship and personalised service that our company is known for.

To accommodate the expansion and demand for engineering services within Newcastle and throughout New South Wales, Marline Engineering has almost doubled the number of highly trained employees in the last five years.

Our engineering firm currently employs ten engineers, eight technical assistants and an office administrator. As a result, we continue to be leaders amongst engineering companies in Australia, with a large portfolio and a positive attitude.

PROJECT No:
MN13203

CLIENT:
CENTRAL DARLING SHIRE COUNCIL

ARCHITECT:
BARNSON

MECHANICAL - ELECTRICAL - HYDRAULIC - FIRE - ENERGY - NABERS - STORMWATER - SECTION J - BEEC

Electrical Services

VICTORY PARK CARAVAN PARK

BARRIER HIGHWAY, WILCANNIA, NSW 2836

DRAWING SCHEDULE

EL-00-000	COVER SHEET
EL-00-001	LEGEND
EL-00-002	NOTES
EL-00-003	SITE RETICULATION
EL-10-001	POWER LAYOUT
EL-20-001	LIGHTING LAYOUT
EL-30-001	SINGLE LINE DIAGRAMS

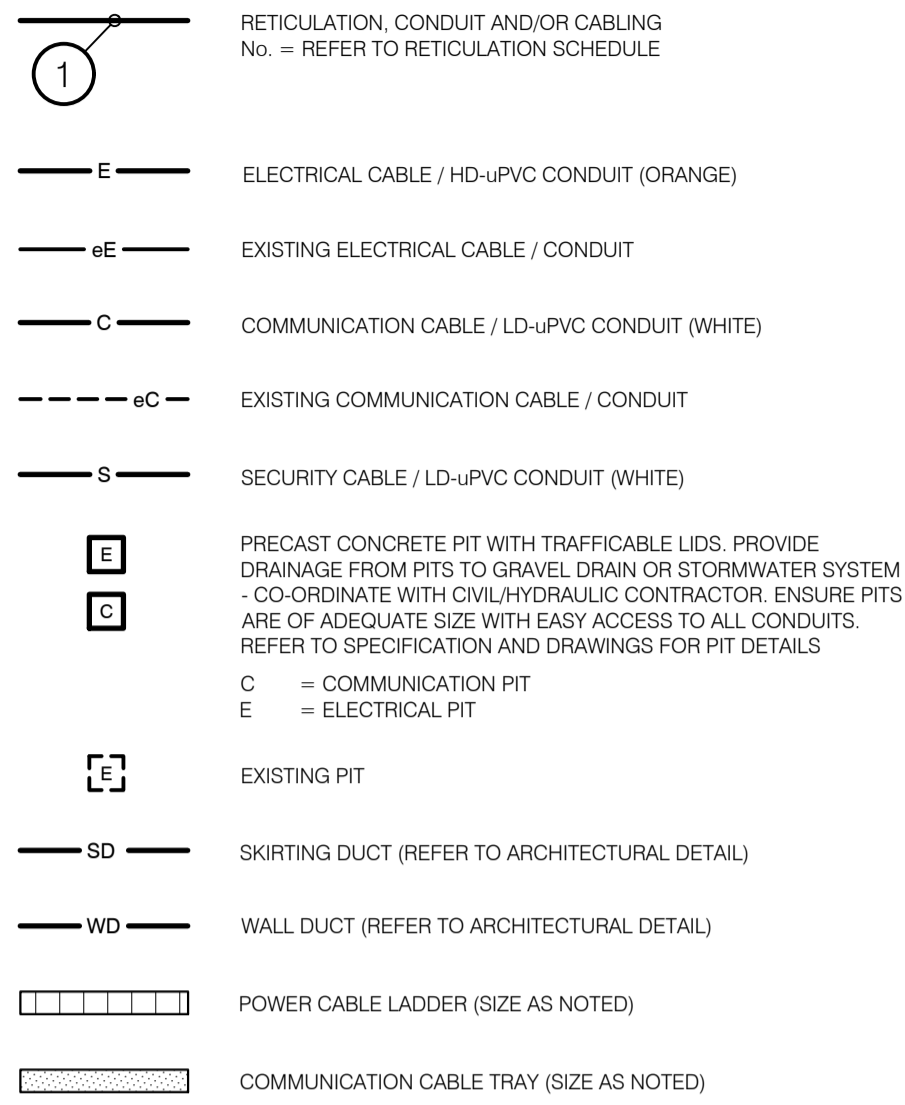
FOR CONSTRUCTION

ELECTRICAL SERVICES

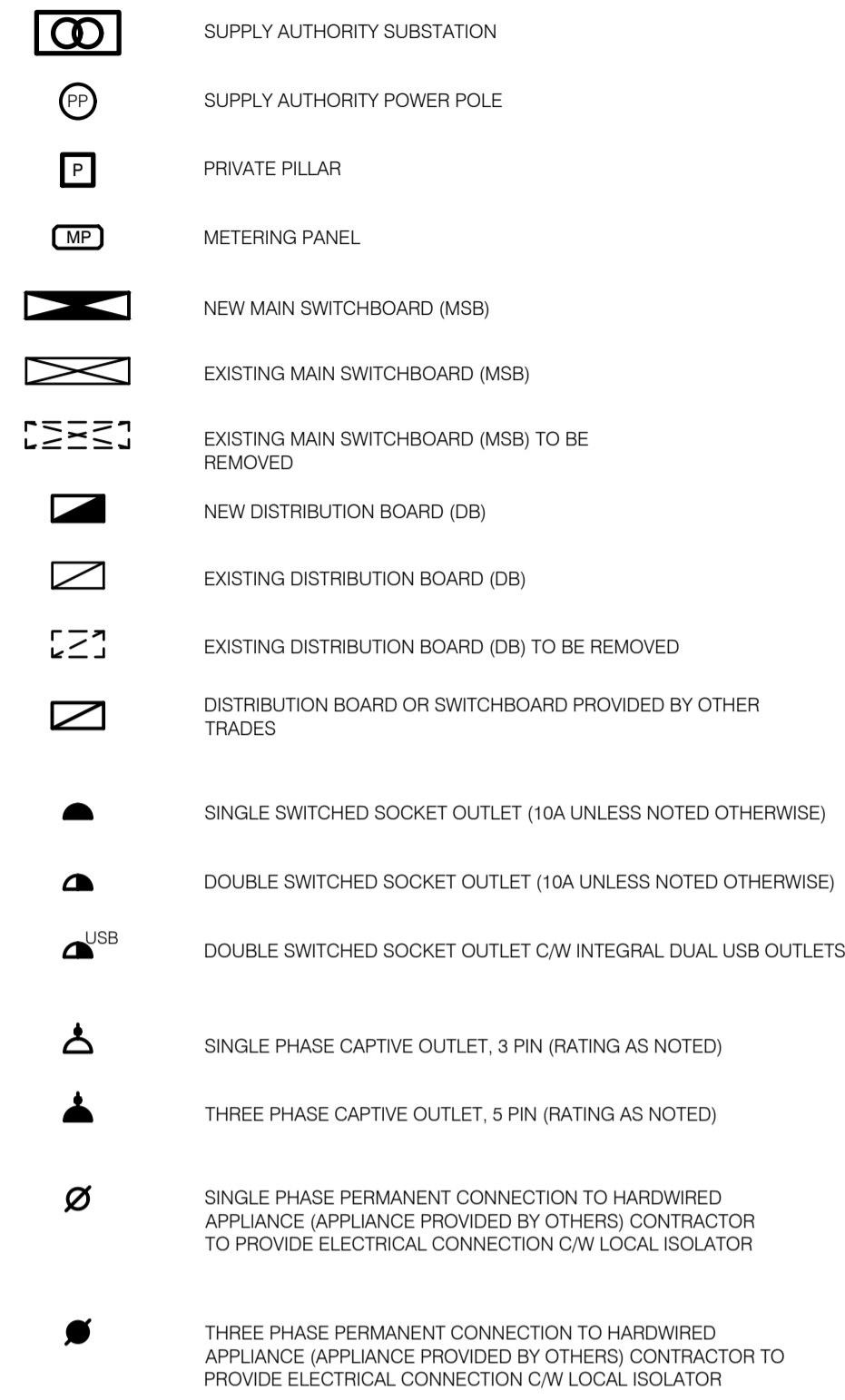
EL-00-000 **A**

NOTE: SOME ITEMS MAY NOT BE USED

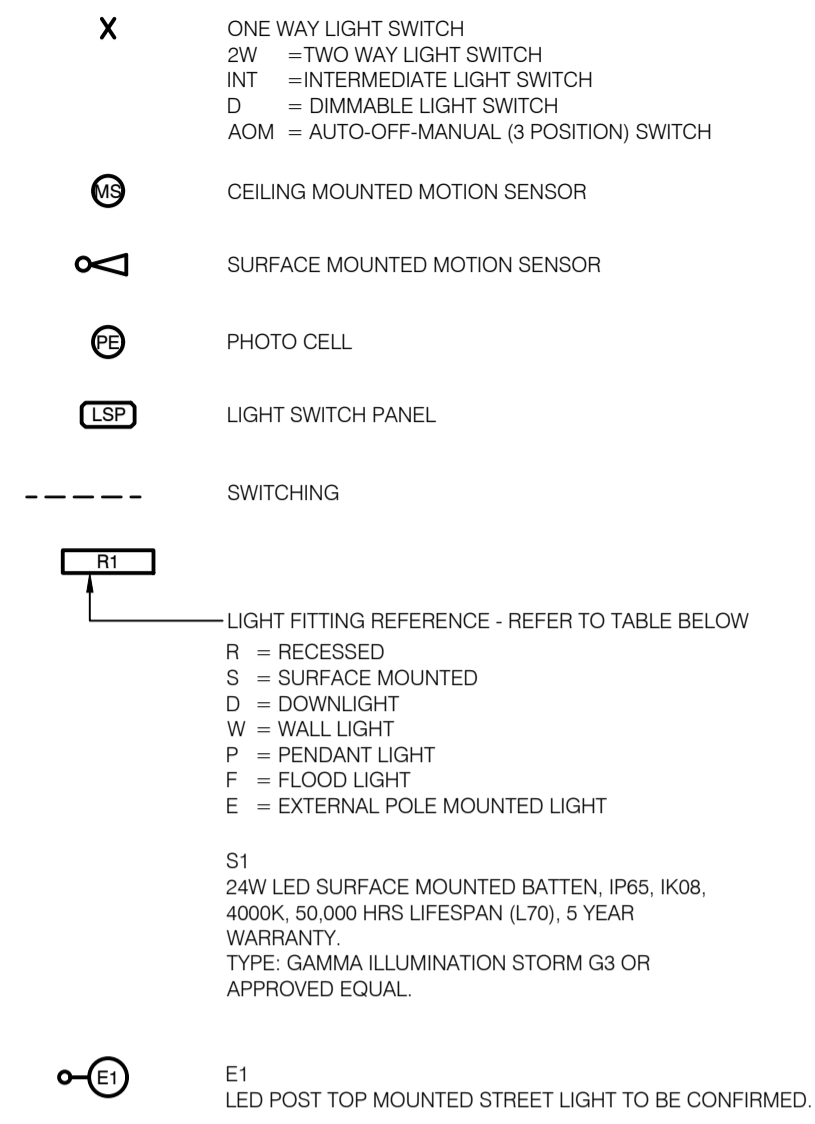
RETICULATION



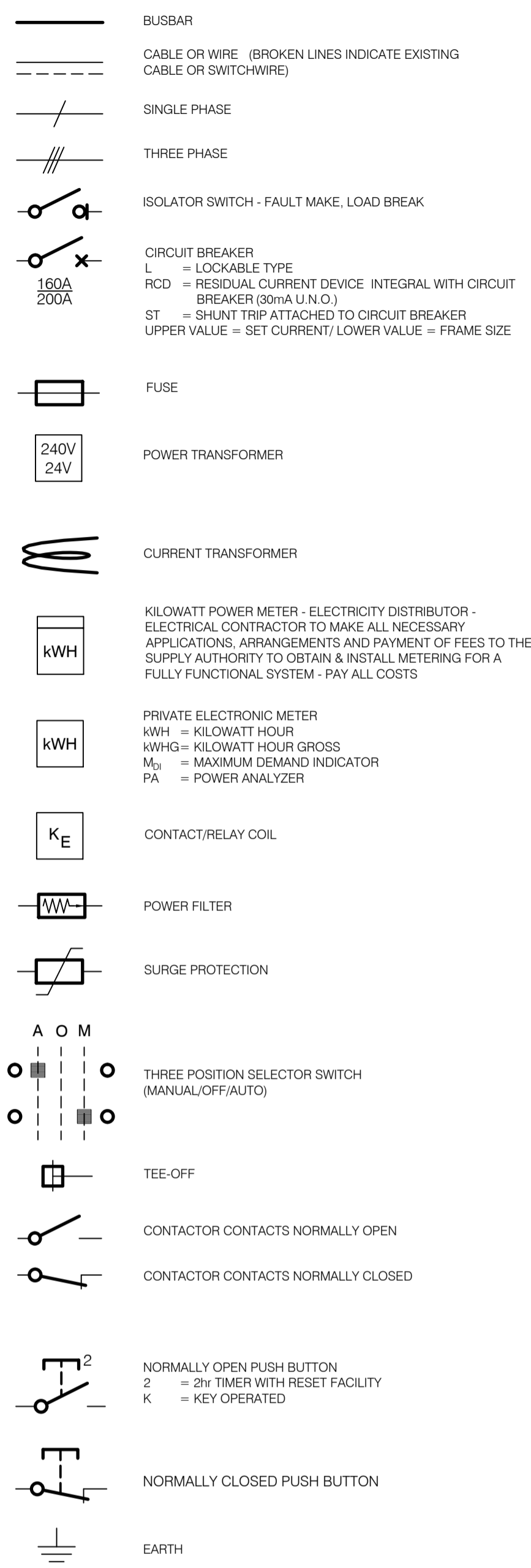
POWER



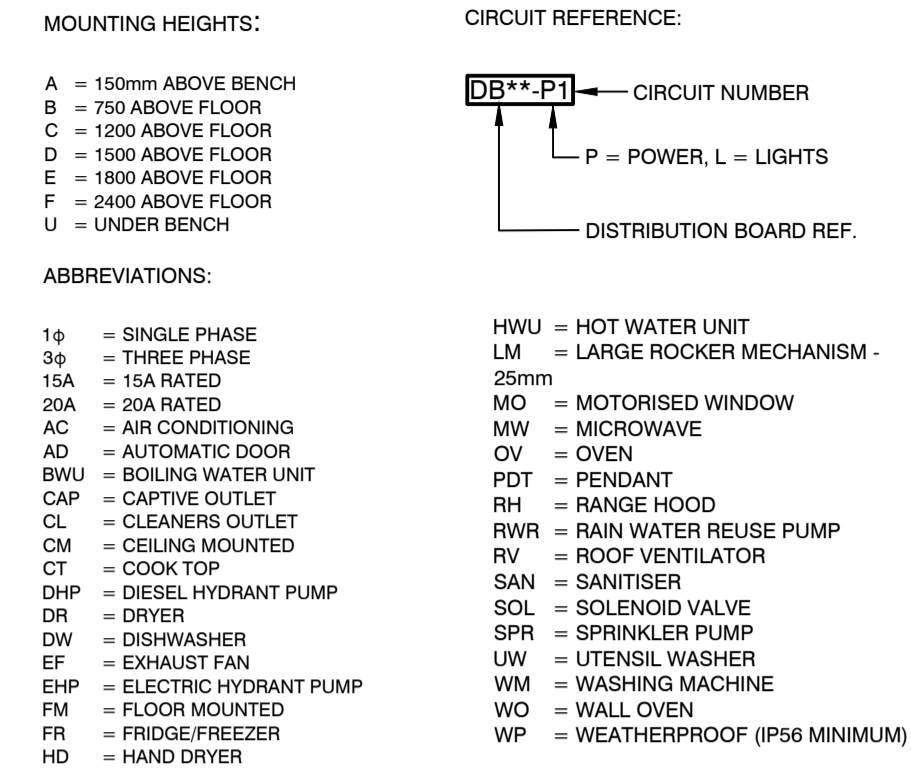
LIGHTING



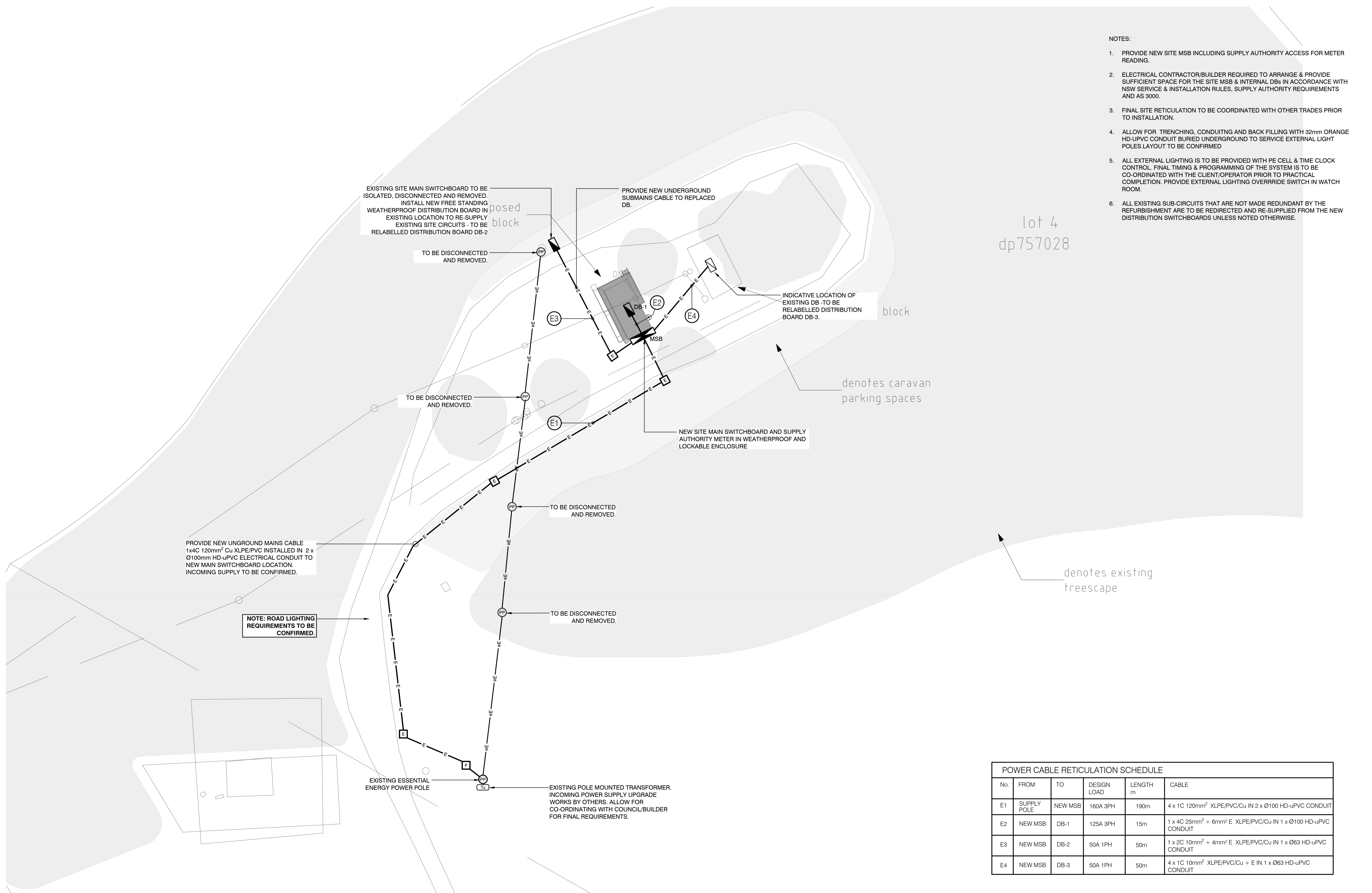
SINGLE LINE DIAGRAM



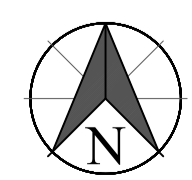
ABBREVIATIONS



- NOTES:
1. PROVIDE NEW SITE MSB INCLUDING SUPPLY AUTHORITY ACCESS FOR METER READING.
 2. ELECTRICAL CONTRACTOR/BUILDER REQUIRED TO ARRANGE & PROVIDE SUFFICIENT SPACE FOR THE SITE MSB & INTERNAL DBs IN ACCORDANCE WITH NSW SERVICE & INSTALLATION RULES, SUPPLY AUTHORITY REQUIREMENTS AND AS 3000.
 3. FINAL SITE RETICULATION TO BE COORDINATED WITH OTHER TRADES PRIOR TO INSTALLATION.
 4. ALLOW FOR TRENCHING, CONDUITING AND BACK FILLING WITH 32mm ORANGE HD-UPVC CONDUIT BURIED UNDERGROUND TO SERVICE EXTERNAL LIGHT POLES. LAYOUT TO BE CONFIRMED
 5. ALL EXTERNAL LIGHTING IS TO BE PROVIDED WITH PE CELL & TIME CLOCK CONTROL. FINAL TIMING & PROGRAMMING OF THE SYSTEM IS TO BE CO-ORDINATED WITH THE CLIENT/OPERATOR PRIOR TO PRACTICAL COMPLETION. PROVIDE EXTERNAL LIGHTING OVERRIDE SWITCH IN WATCH ROOM.
 6. ALL EXISTING SUB-CIRCUITS THAT ARE NOT MADE REDUNDANT BY THE REFURBISHMENT ARE TO BE REDIRECTED AND RE-SUPPLIED FROM THE NEW DISTRIBUTION SWITCHBOARDS UNLESS NOTED OTHERWISE.



POWER CABLE RETICULATION SCHEDULE					
No.	FROM	TO	DESIGN LOAD	LENGTH m	CABLE
E1	SUPPLY POLE	NEW MSB	160A 3PH	190m	4 x 1C 120mm ² XLPE/PVC/Cu IN 2 x Ø100 HD-uPVC CONDUIT
E2	NEW MSB	DB-1	125A 3PH	15m	1 x 4C 25mm ² + 6mm ² E XLPE/PVC/Cu IN 1 x Ø100 HD-uPVC CONDUIT
E3	NEW MSB	DB-2	50A 1PH	50m	1 x 2C 10mm ² + 4mm ² E XLPE/PVC/Cu IN 1 x Ø63 HD-uPVC CONDUIT
E4	NEW MSB	DB-3	50A 1PH	50m	4 x 1C 10mm ² XLPE/PVC/Cu + E IN 1 x Ø63 HD-uPVC CONDUIT

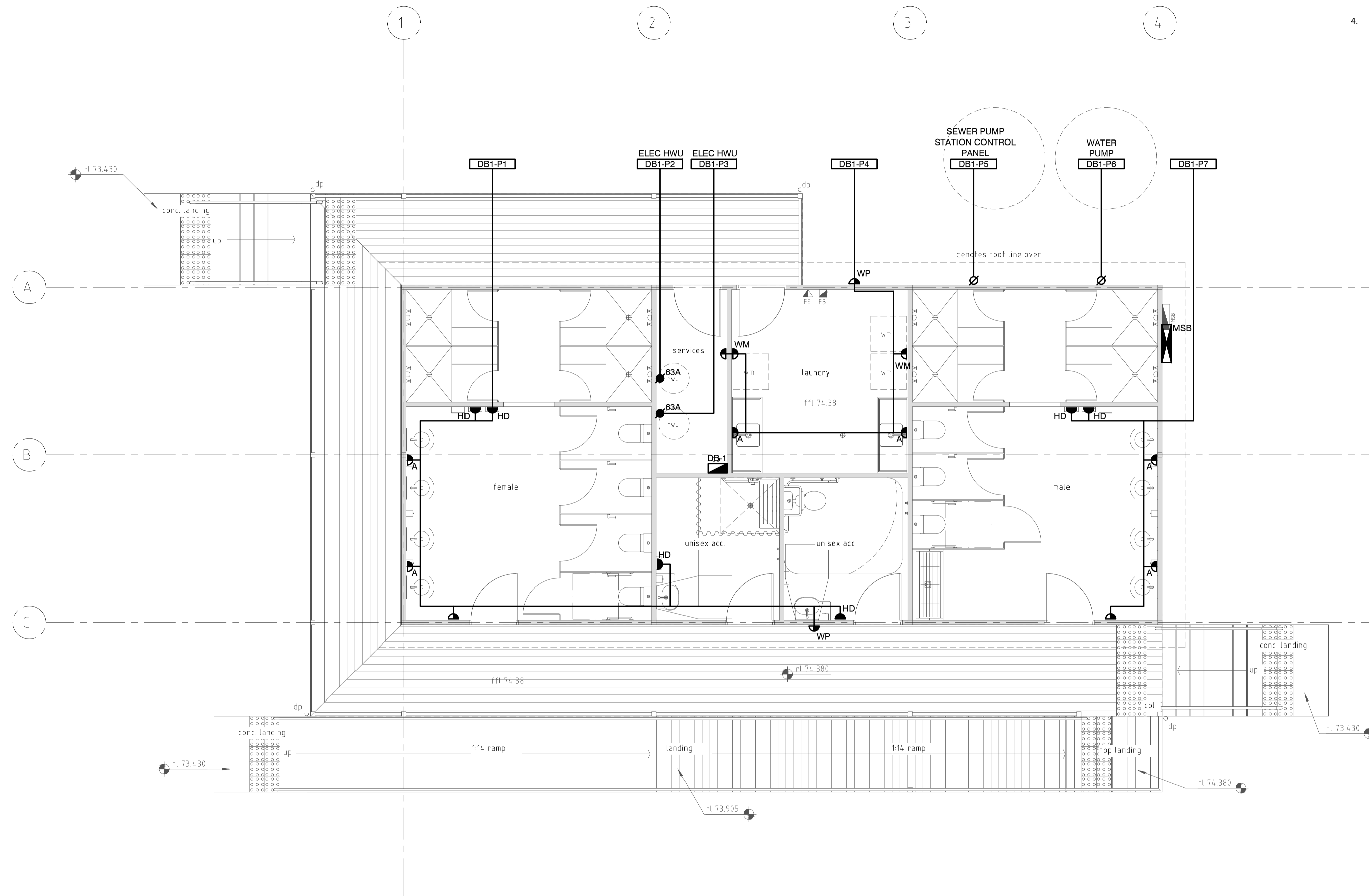


Rev	Date	Reason for Issue
1	06.07.22	FOR REVIEW
2	29.07.22	FOR REVIEW
3	29.09.22	100% ISSUE FOR REVIEW
A	14.10.22	FOR CONSTRUCTION

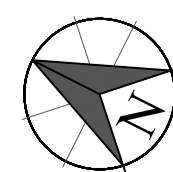
Drawn	Design	Verify
TN	LR	LR
TN	LR	LR
TN	LR	LR
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NOTES:

1. ELECTRICAL DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS. CONFIRM MOUNTING HEIGHTS AND LOCATIONS OF OUTLETS PRIOR TO INSTALLATION.
2. ALLOW FOR ALL NECESSARY CABLE LADDER, TRAY AND CANTENARY WIRE - CO-ORDINATE FINAL LOCATIONS WITH OTHER TRADES.
3. PROVIDE POWER TO MECHANICAL AND HYDRAULIC SERVICES - CO-ORDINATE WITH OTHER TRADES PRIOR TO INSTALLATION.
4. ALL FINAL CIRCUITS TO BE RCD PROTECTED IN ACCORDANCE WITH ASS3000.



MECHANICAL — ELECTRICAL — HYDRAULIC — FIRE — ENERGY — NABERS — STORMWATER — SECTION J — BEEC



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TN	LR	LR
TN	LR	LR
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Project
**VICTORY PARK CARAVAN PARK
TOILET AMENITIES BLOCK
WILCANNIA**

Drawing Title
POWER LAYOUT

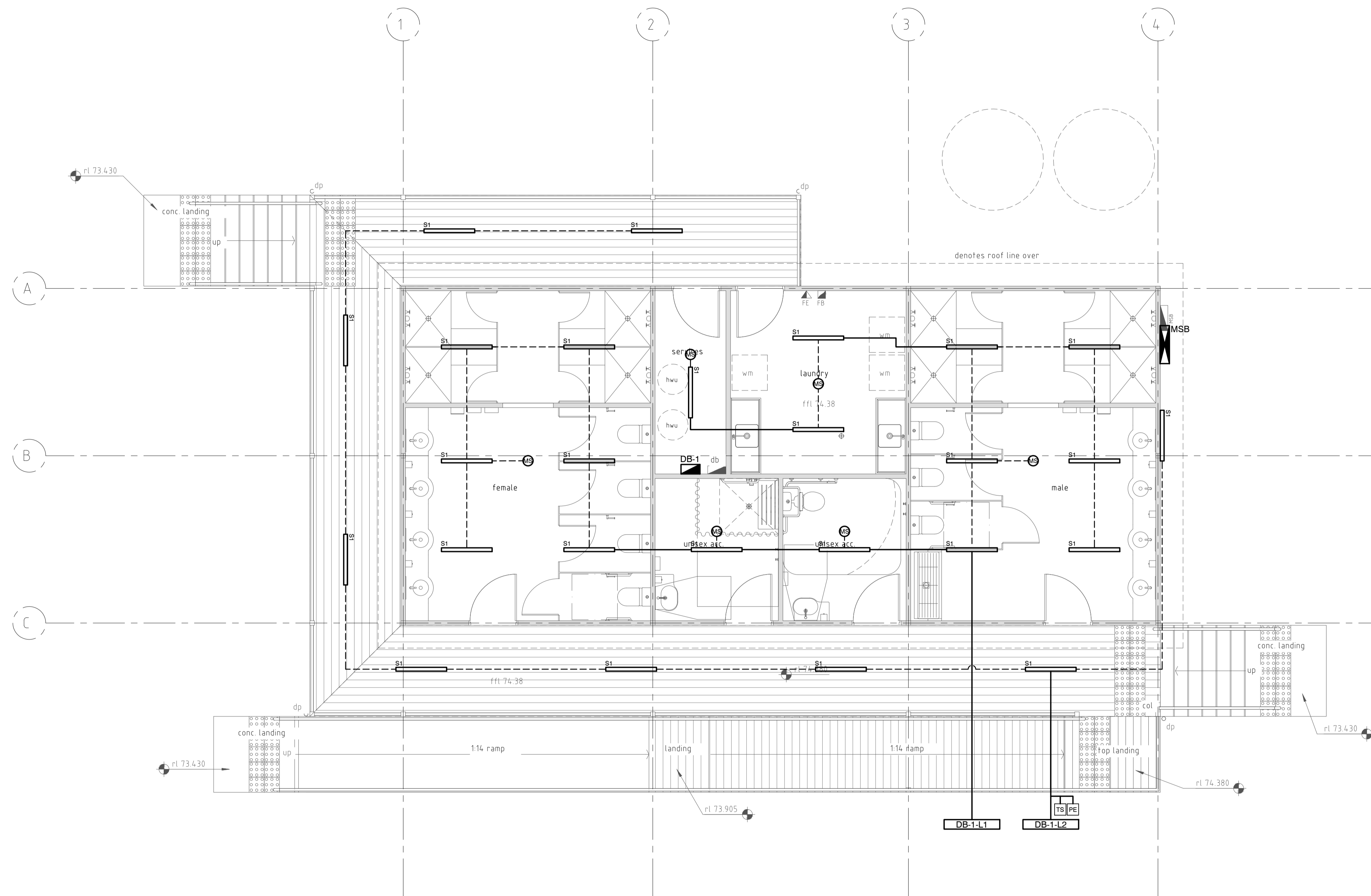
Discipline
ELECTRICAL SERVICES

Job No. 13203 | Drawing No. EL-10-001 | Rev A

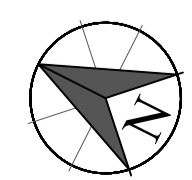
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NOTES:

1. FINAL LOCATIONS OF FITTINGS, SWITCHES & APPLIANCES TO BE CONFIRMED ON SITE PRIOR TO INSTALLATION.
2. ALL FINAL CIRCUITS SHALL BE RCD PROTECTED IN ACCORDANCE WITH AS 3000.
3. ALL EXTERNAL LIGHTING IS TO BE PROVIDED WITH PE CELL & TIME CLOCK CONTROL. FINAL TIMING & PROGRAMMING OF THE SYSTEM IS TO BE CO-ORDINATED WITH THE CLIENT/OPERATOR PRIOR TO PRACTICAL COMPLETION.



MECHANICAL — ELECTRICAL — HYDRAULIC — FIRE — ENERGY — NABERS — STORMWATER — SECTION J — BEEC

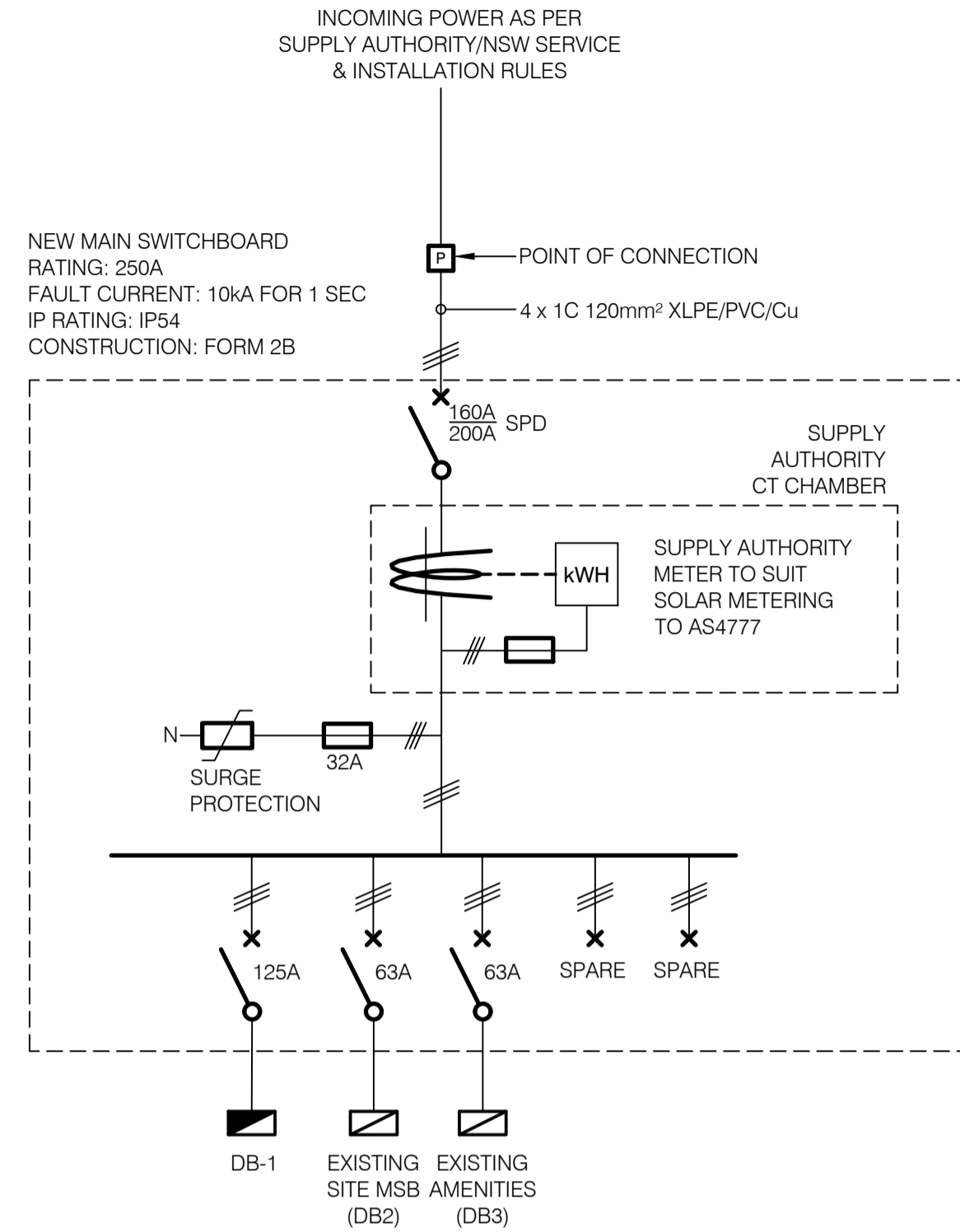


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TN	LR	LR
TN	LR	LR
TN	LR	LR

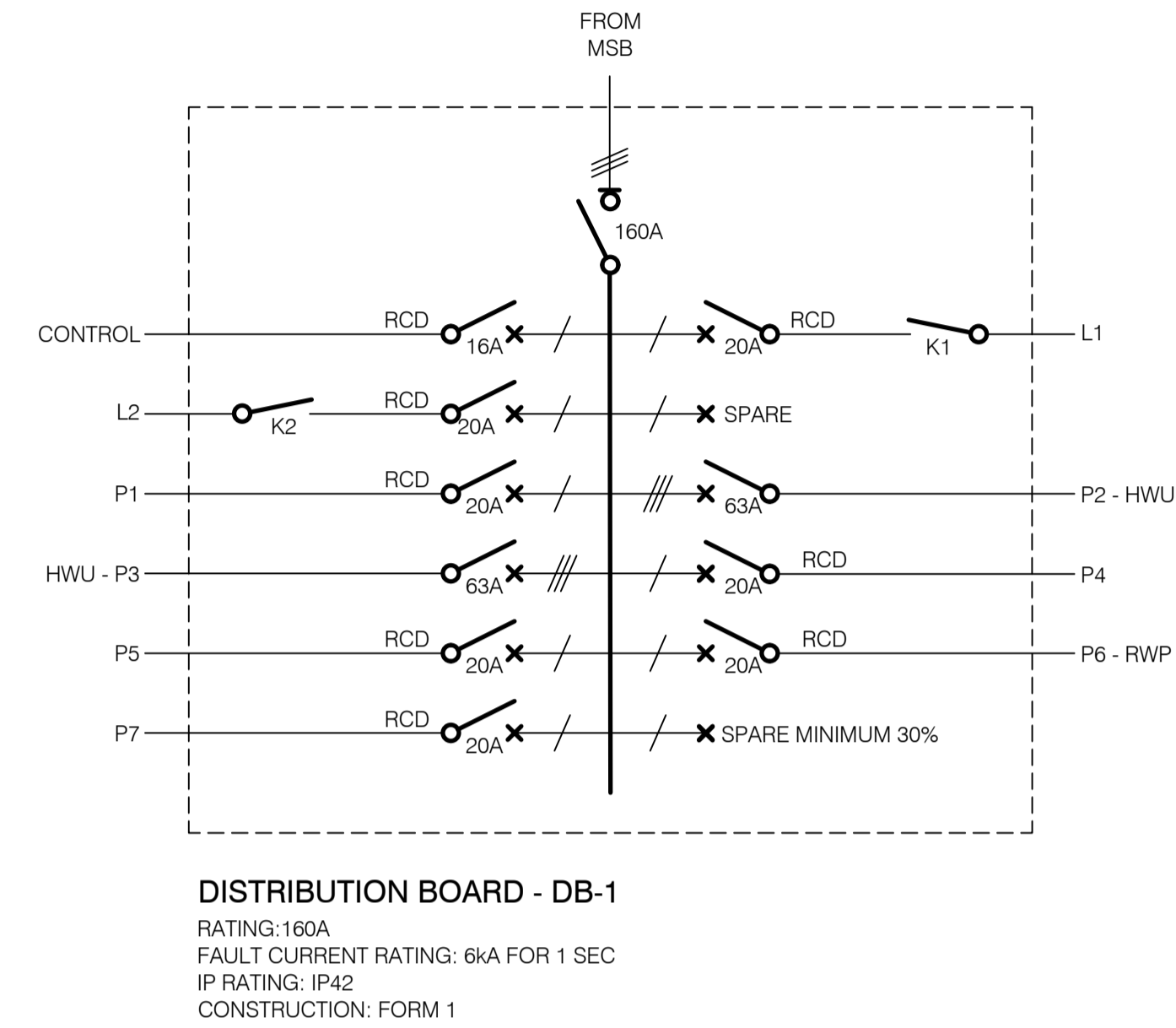
Project
**VICTORY PARK CARAVAN PARK
TOILET AMENITIES BLOCK
WILCANNIA**

Drawing Title
LIGHTING LAYOUT



PROPOSED MAIN SWITCHBOARD

- PROVIDE ALL NEW MAIN AND DISTRIBUTION SWITCHBOARDS IN ACCORDANCE WITH THE CONTRACT DOCUMENTATION, ELECTRICAL SPECIFICATION, AND AS/NZS 61439.
- SUBMIT MAIN SWITCHBOARD WORKSHOP DRAWINGS TO SUPPLY AUTHORITY FOR APPROVAL PRIOR TO MANUFACTURING.
- SWITCHBOARD TO BE SIZED & COORDINATED TO ENSURE CLEARANCES ARE IN ACCORDANCE WITH AS/NZS 3000.
- UNLESS NOTED OTHERWISE, DISTRIBUTION SWITCHBOARDS SHALL BE CUSTOM MADE OF FOLDED AND WELDED CONSTRUCTION, AND CONSTRUCTED OF 1.6mm ZINC-ANNEALED STEEL WITH IP RATING AS SHOWN AND ELECTRIC ORANGE FINISH. ESCUTCHEONS SHALL BE HINGED VIA LIFT-OFF PINTLE HINGES AND FITTED WITH SLOTTED QUARTER-TURN LOCKS. ESCUTCHEONS ARE TO BE OPENED WITHOUT THE NECESSITY TO TURN OFF THE ASSOCIATED MAIN SWITCH, CIRCUIT BREAKERS, OR CONTROLS. SWITCHBOARDS ARE TO BE FRONT-CONNECTED, TOP AND BOTTOM ENTRY, WALL MOUNTED TYPES WITH FULL WIDTH/DEPTH DUCTS (FROM FLOOR TO CEILING) AND BE CONSTRUCTED WITH HDHC COPPER BUSBARS. PROVIDE A LOCKABLE HANDLE KEYED TO SUIT THE CLIENT'S PREFERRED SYSTEM ('E' KEY TYPE UNLESS DIRECTED OTHERWISE).
- PROVIDE MINIMUM 50% SPARE POLE CAPACITY AT PRACTICAL COMPLETION. PROVIDE ALL CONTACTORS, CONTROLS, RELAYS, AND ACCESSORIES REQUIRED TO SERVICE THE INSTALLATION.
- PROVIDE TYPED CIRCUIT SCHEDULES AND SCHEDULE CARD HOLDERS, WELDED TO THE REAR OF EACH SWITCHBOARD DOOR. PROVIDE THE FOLLOWING INFORMATION AS A MINIMUM: FAULT RATING, PROSPECTIVE FAULT LEVEL, SUBMAINS SIZE, LENGTH, AND ORIGIN; AND FINAL SUB-CIRCUIT DESIGNATION, CIRCUIT PROTECTION, CABLE SIZE, NEUTRAL NUMBER, AND EARTH NUMBER. CIRCUIT NUMBERS AND DESIGNATIONS SHOWN ARE INDICATIVE ONLY AND MUST BE AMENDED TO CLEARLY REFERENCE THE FINAL INSTALLATION.
- PROVIDE TRAFFOLYTE WARNING LABELS TO EXTERNAL DOORS OF ALL SWITCHBOARDS TO AS 1319. LABELS TO INCLUDE AS A MINIMUM: SWITCHBOARD NAME, MANUFACTURER, MANUFACTURE DATE, IP RATING, AND CURRENT RATING.
- PROVIDE SURGE PROTECTION EQUIPMENT ON EACH PHASE AND NEUTRAL AS SPECIFIED. SURGE DIVERTER AND ALL ASSOCIATED PROTECTION AND CABLING IS TO BE PROVIDED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE RCD/RCBO PROTECTION TO ALL FINAL CIRCUITS AS SHOWN AND IN ACCORDANCE WITH AS/NZS 3000. PROVIDE THE FOLLOWING RCD PROTECTION TYPES (RCD DEFINITIONS AS PER AS/NZS 3000) UNLESS DETAILED OTHERWISE:
 - SINGLE/TWO PHASE SUPPLIES FOR NON INVERTER CONTROLLED LOADS = TYPE AC OR TYPE A
 - SINGLE PHASE SUPPLIES FOR INVERTER CONTROLLED LOADS = TYPE A (HIGH IMMUNITY)
 - THREE-PHASE SUPPLIES FOR NON INVERTER/VARIABLE SPEED CONTROLLED LOADS = TYPE A (HIGH IMMUNITY) OR TYPE B
 - THREE-PHASE SUPPLIES FOR INVERTER/VARIABLE SPEED CONTROLLED LOADS = TYPE B
 WHERE SELECTION OF TYPE A OVER TYPE AC RCD/RCBOs WILL NOT AFFECT THE CONTRACT PRICE, PROVIDE TYPE A RCD/RCBOs
- ALL CIRCUIT BREAKERS ARE TO BE OF A CONSISTENT MANUFACTURER/TYPE ACROSS THE SITE (NHP OR SCHNEIDER OR EQUAL). PROVIDE A FULL DISCRIMINATION/SELECTIVITY STUDY FOR THE PROPOSED CIRCUIT BREAKER SOLUTION. MAIN SERVICE PROTECTION DEVICE TO BE GRADED TO SUIT SUPPLY AUTHORITY PROTECTION.
- WHERE DENOTED, ENSURE SWITCHBOARDS ARE OF A SUFFICIENT SIZE AND CONSTRUCTION TO BE HOUSED WITHIN DEDICATED SWITCH ROOMS, CUPBOARDS, AND ENCLOSURES. WHERE THE SWITCHBOARD CAN NOT BE CONTAINED WITHIN THE NOMINATED AREA, CO-ORDINATE WITH THE BUILDING TRADE AND ARCHITECT AS REQUIRED TO MODIFY THE SPATIAL ALLOWANCES FOR EACH SWITCHBOARD PRIOR TO ANY INSTALLATION WORKS.
- ENSURE THE ENTIRE BUILDING LOAD IS EVENLY BALANCED OVER THE THREE PHASES. CIRCUIT SCHEDULES INCLUDED ARE INDICATIVE ONLY AND DO NOT ACCOUNT FOR BALANCING OF THE SITE/BUILDING LOAD.



ALL DISTRIBUTION BOARDS - NOTES

- PROVIDE DB C/W CONTROLS. PROVIDE DETAILS OF PROPOSED DB FOR APPROVAL
- DISTRIBUTION BOARD TO BE WALL MOUNTED AND TO BE SIZED & CO-ORDINATED TO ENSURE CLEARANCES ARE MAINTAINED IN ACCORDANCE WITH AS/NZS 3000-2018.
- PROVIDE ISOLATORS FOR EQUIPMENT PROVIDED BY OTHER TRADES. CO-ORDINATE FINAL LOCATION WITH OTHER TRADES.
- PROVIDE TYPED DB SCHEDULE.
- PROVIDE 30% SPARE CAPACITY.
- ALL CABLING TO BE 2.5mm² UNLESS STATED OTHERWISE.
- PROVIDE EMERGENCY LIGHT TEST FACILITY COMPLETE WITH STOP/RESET, 2hr TIMER & RECORD BOOK
- CIRCUITS INDICATIVE ONLY - FINAL CIRCUIT ARRANGEMENT TO BE CONFIRMED FOLLOWING FINAL REVIEW.

