

ELECTRICAL SERVICES FOR: COMMERCIAL DEVELOPMENT

LOT 69 (#23) ANTLIA WAY
AUSTRALIND, WA

DRAWING SCHEDULE

- 21013 - E00 LEGEND & NOTES (SHEET 1 OF 2)
- 21013 - E01 LEGEND & NOTES (SHEET 2 OF 2)
- 21013 - E02 SITE PLAN ELECTRICAL SERVICES
- 21013 - E03 GROUND FLOOR POWER AND COMMUNICATIONS LAYOUT PLAN
- 21013 - E04 GROUND FLOOR LIGHTING AND DRY FIRE LAYOUT PLAN
- 21013 - E05 POWER SERVICES SCHEMATICS AND DETAILS (SHEET 1 OF 2)
- 21013 - E06 POWER SERVICES SCHEMATICS AND DETAILS (SHEET 2 OF 2)



GENERAL NOTES

1. PERFORM A PRE-TENDER SITE INSPECTION TO DETERMINE THE EXACT EXTENT OF WORKS TO BE UNDERTAKEN. ALLOW FOR ALL COSTS.
2. ALLOW TO OBTAIN A FULL SET OF ARCHITECTURAL DRAWINGS AND THOROUGHLY REVIEW ALL CONSTRUCTION INFORMATION. REVIEW ALL CEILING DETAILS AS CEILING SPACE RESTRICTIONS.
3. FINAL LOCATIONS OF ALL EQUIPMENT SHALL BE CONFIRMED ON SITE WITH THE ARCHITECT PRIOR TO INSTALLATION.
4. CONTRACTOR TO UNDERTAKE ELECTRONIC SCANNING TO DETECT STRUCTURAL STEEL IN THE CONCRETE SLAB AND OBTAIN STRUCTURAL ENGINEERS CERTIFICATE BEFORE COMMENCING ANY PENETRATIONS FOR THE ELECTRICAL SERVICES. CONTRACTOR TO PROVIDE STRUCTURAL ENGINEER WITH MARKED UP PLANS SHOWING LOCATION AND SIZE OF PENETRATIONS AND PROVIDE COPY TO CONSULTANT.
5. LIAISE CLOSELY WITH THE BUILDER FOR CABLE ACCESS PROVISIONS. ALL WORKS AND MATERIALS NECESSARY FOR CABLE ACCESS TO LIGHTING, POWER, COMMUNICATIONS, NBN, MATV, FIRE AND SECURITY SERVICES SHALL BE ALLOWED FOR WITHIN THE TENDER SUBMISSION. SURFACE MOUNTED DUCTS AND CONDUITS WILL NOT BE ACCEPTED. ALLOW TO OBTAIN A FULL SET OF DRAWINGS TO ASCERTAIN CABLE ACCESS ROUTES / FACILITIES PRIOR TO TENDER AND PROVIDE ALL BLOCKOUT REQUIREMENTS THROUGH THE SLAB AS SOON AS POSSIBLE AFTER START OF CONSTRUCTION TO THE BUILDER, FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER.
6. LIAISE WITH MECHANICAL / HYDRAULIC CONTRACTOR PRIOR TO TENDER FOR EXACT LOCATION AND POWER REQUIREMENTS FOR THE MECHANICAL / HYDRAULIC EQUIPMENT. ALLOW FOR LOCAL ISOLATOR AND FINAL TERMINATIONS TO EQUIPMENT IN ACCORDANCE WITH EQUIPMENT SPECIFICATIONS.
7. ALL CONDUITS AND PENETRATIONS THROUGH FIRE WALLS AND FLOORS BY THE ELECTRICAL SERVICES ARE TO BE FIRE RATED ACCORDINGLY AND SHALL BE PROVIDED AT THE COST OF AND BY THE ELECTRICAL CONTRACTOR. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL FIRE RATED WALLS AND FLOORS.
8. TENDERS ARE TO BE BASED UPON THE LUMINAIRES AS SPECIFIED. SAMPLES ARE TO BE SUBMITTED FOR APPROVAL BEFORE PLACEMENT OF ORDER.
9. ALL CIRCUITS MAY NOT BE INDICATED. WHERE THIS OCCURS, CIRCUITS SHALL BE IN ACCORDANCE WITH AS3000.
10. ALL INTERNAL POWER OUTLETS, TELECOMMUNICATIONS OUTLETS, LIGHT SWITCHES AND ALIKE SHALL BE CLIPSAL (2000 SERIES C/W WHITE COVER UNLESS SPECIFICALLY INDICATED OTHERWISE. GPO'S HIDDEN FROM VIEW (E.G. IN CUPBOARDS) CAN BE CLIPSAL 2000 SERIES WHITE. IF IN DOUBT ASK.
11. PROVIDE DRAW WIRES IN ALL CONDUITS WITH DETAILED LABELLING.
12. INSTALL ALL SWITCHES AND CONTROLLERS INCLUDING LIGHT, A/C, SECURITY AND FANS TO COMPLY WITH AS1428.1.
13. ALLOW FOR THE PROVISION OF COMPREHENSIVE CAD "AS BUILT" DOCUMENTATION AND MAINTENANCE OPERATION MANUALS.

ELECTRICAL SERVICES PENETRATIONS INTO SERVICES DUCT RISERS, PLANT ROOM WALLS OR ANY OTHER ACOUSTICALLY RATED WALL TO ALLOW ELECTRICAL CABLE RETICULATION (INCLUDING CABLE TRAYS) MUST BE ACOUSTICALLY SEALED. MINIMUM SEALING DETAIL REQUIREMENTS ARE TO PACK ANY GAP/VOID AROUND CABLE/CABLE TRAY PENETRATION WITH FIBREGLASS INSULATION BATT OFF CUTS AND THEN SEAL WITH A 10MM DENSE MASTIC BEAD. WHERE LARGER SPACES ARE PRESENT, THE OPEN PENETRATION AREA CAN BE FILLED WITH 2 X 13MM PLASTERBOARD SECTIONS CUT TO FIT, AND THEN PACKED WITH FIBREGLASS INSULATION OFF-CUTS AND SEALED WITH A 10MM DENSE MASTIC BEAD. EXPANDING FOAM MUST NOT BE USED TO SEAL GAPS/VOIDS IN ACOUSTICALLY RATED WALLS, AS THIS CAN BE SEVERELY DETRIMENTAL TO THE SEPARATION PERFORMANCE (Rw) OF THE WALL.

GENERAL NOTES CONTINUED

14. WHERE RECESSED BOXES ARE IN INSTALLED IN FIRE RATED WALLS (REFER TO ARCHITECTURAL AND FIRE ENGINEERING BRIEF FOR LOCATIONS AND DETAILS FOR FIRE RATED WALLS), INSTALL FIRE-RATED WALL BOXES LOCATED IN COMPLIANCE WITH NCC SPECIFICATION C3.15-4-6. OFFSET BOXES ON EITHER SIDE OF THE WALL BY AT LEAST 300MM HORIZONTALLY AND 600MM VERTICALLY (EDGE OF BOX TO EDGE OF BOX). THE RECESSING BOX MUST NOT EXTEND BEYOND HALF THE THICKNESS OF THE WALL. ANY GAPS BETWEEN THE RECESSING BOX AND WALL MUST BE FIRE-STOPPED.
15. DRAWINGS TO BE READ IN CONJUNCTION WITH WITH ELECTRICAL SPECIFICATION, ARCHITECTS DOCUMENTATION AND OTHER CONSULTANTS DOCUMENTATION (E.G. MECHANICAL, HYDRAULIC ETC).
16. NOT ALL SYMBOLS OR VARIANTS ON THIS DRAWING MAY APPLY.
17. ALL NEW POWER AND LIGHTING CIRCUITS SHALL BE RCD PROTECTED UNLESS OTHERWISE REQUIRED BY CODE.
18. PRIOR TO COMMENCING WORKS WITHIN THE CEILING VOID ALL CONTRACTORS MUST DEVELOP A PROPOSED DRAWING DETAILING THE PROPOSED ROUTE AND LOCATION OF EQUIPMENT. THE DRAWINGS SHALL THEN BE CIRCULATED TO ALL OTHER CONTRACTORS WITH EQUIPMENT LOCATED WITHIN THE CEILING VOID AND A COORDINATION MEETING HELD TO REVISE DRAWINGS TO AVOID CLASHES. THE FINAL DRAWINGS DEVELOPED MUST BE ISSUED TO THE CONSULTANT FOR APPROVAL.
19. ALL WORKS SHALL BE UNDERTAKEN TO COMPLY WITH THE FOLLOWING:
 - BUILDING CODE OF AUSTRALIA
 - SUPPLY AUTHORITY REGULATIONS
 - AS3000
 - AS2293
 - AS2220
 - ALL RELEVANT AUSTRALIAN STANDARDS AND CODE
20. EMERGENCY LUMINAIRES TO BE CIRCUITED TO NEAREST NORMAL LIGHTING CIRCUIT. IF ROOM IS SERVED BY MORE THAN 1 NORMAL LIGHTING CIRCUIT DISTRIBUTE EMERGENCY LUMINAIRES EVENLY BETWEEN CIRCUITS.

IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO CO-ORDINATE THE CEILING MOUNTED AND IN-CEILING SERVICES WITH ALL OTHER TRADES INVOLVED IN THE PROJECT INCLUDING MECHANICAL, HYDRAULIC AND FIRE CONTRACTORS AS A MINIMUM. THIS CO-ORDINATION MUST BE UNDERTAKEN WITHIN THE FIRST WEEK OF THE CONSTRUCTION PERIOD AND ALL IDENTIFIED CLASHES PRESENTED TO THE CONSULTANT WITH POSSIBLE ALTERNATIVE LOCATIONS OR SOLUTIONS WITHIN THE SAME WEEK.

NOTES

The Electrical Services Sub-Contractor is to verify all dimensions on site before commencing work. Do not scale this drawing.

This drawing is to be read in conjunction with the contract specification in the interpretation of this drawing. The specification text has precedence over all of the illustrations on this drawing.

The following take precedence over the service requirements shown on this drawing and the contract specification:

- Legislative Federal, State and Local Authority Requirements.

Contractual Relationships

Responsibilities and duties of the principal contractor and the superintendent as defined in the Contract are not altered by this drawing.

ISSUE DATE	DESCRIPTION	APP
A 09.06.21	DRAFT	LS
B 07.07.21	CDC ISSUE	LS

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PROJECT

**Proposed commercial development -
Lot 69 (#23) Antlia Way, Australind**

TITLE










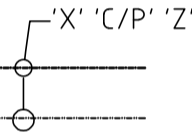





ELECTRICAL SERVICES
LEGEND & NOTES (SHEET 1 OF 2)

SCALE	DESIGN	CHECKED
NTS	LS	AB



PROJECT #	DRAWING #	REVISION
21013	E00	B

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






LEGEND OF SYMBOLS – POWER AND COMMUNICATIONS SERVICES

	NEW SINGLE GENERAL PURPOSE OUTLET
	NEW DOUBLE GENERAL PURPOSE OUTLET
15A 	NEW 15A POWER OUTLET CABLED ON A DEDICATED 16A POWER SUB-CIRCUIT
	NEW DOUBLE DATA OUTLET
	NEW CONNECTION TO A PERMANENTLY CONNECTED FIXED APPLIANCE ON DEDICATED CIRCUIT. ALLOW FOR LOCAL ISOLATOR AND CABLING AND TERMINATIONS BETWEEN APPLIANCE TERMINALS AND ISOLATOR. IP66. X - DENOTES NO OF PHASES Y - DENOTES NO OF AMPS
DB-C-'x' 	NEW COMMERCIAL TENANCY DISTRIBUTION BOARD. ENSURE TENANCY DISTRIBUTION BOARDS ARE LOCATED AND INSTALLED IN ACCORDANCE WITH AS3000.
WP 	NEW WESTERN POWER DISTRIBUTION BOARD. ENSURE DISTRIBUTION BOARDS ARE LOCATED AND INSTALLED IN ACCORDANCE WITH AS3000.
	NEW WALL MOUNTED NBN NETWORK TERMINATION DEVICE. SEE COMMUNICATIONS DETAILS SHEET FOR FURTHER INFORMATION. ENSURE ALL NBNCO EQUIPMENT IS LOCATED AND INSTALLED IN ACCORDANCE WITH NBNCO MDU GUIDELINES. ENSURE ALL WORKS ARE FULLY NBN COMPLIANT.
	NEW CABLE TRANSITION LOCATION FOR NBN
	NEW POWER AND/OR COMMUNICATIONS CONDUIT IN CEILING VOID OR IN CONCRETE SLAB UOS. 'X' - DENOTES THE QUANTITY OF CONDUITS 'C' - DENOTES COMMUNICATION CONDUIT 'P' - DENOTES ORANGE POWER CONDUIT 'Z' - DENOTES THE SIZE OF THE CONDUIT
	NEW CONDUIT RISE WITHIN WALL CAVITY FROM FLOOR SLAB TO CEILING VOID UOS.
SMSB 	NEW SITE MAIN SWITCHBOARD
	NEW COMMUNICATIONS CABLE TRAY. SIZE AS SHOWN AS LAYOUTS.
	NEW POWDERCOATED ALUMINIUM 3 CHANNEL SKIRTING DUCT.
	NEW FLOOR BOX. SUPPLY WITH 2 OF DOUBLE GPO'S. COORDINATE ALL REQUIREMENTS WITH OWNER ON SITE.

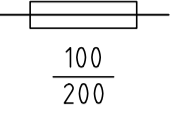
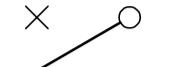
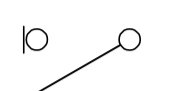
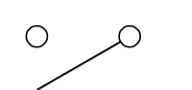

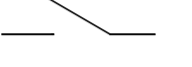
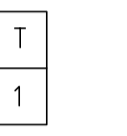
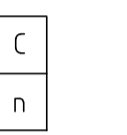
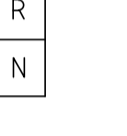


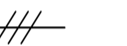


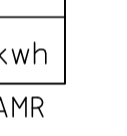
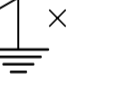



LEGEND OF SYMBOLS – FIRE DETECTION AND OCCUPANT WARNING

	NEW AS3786 MAINS POWERED SMOKE ALARM DETECTOR WITH INBUILT SOUNDER. ALARMS WITHIN INDIVIDUAL TENANCIES TO BE LINKED.
	NEW INTERFACE TO FIRE DOORS AND MECHANICAL SYSTEMS FOR SHUTDOWN OF EVAP/AIR CONDITIONING IF FIRE DETECTED. PROVIDE 2-PAIR CABLE TO DEVICES WITH 2M TAILS. SWITCH VIA NO-VOLT DRY CONTACT AT FIRE DETECTION PANEL. COORDINATE EXACT CONFIGURATION WITH MECHANICAL CONTRACTOR ON SITE. TERMINATE CABLING AT PANEL AS DIRECTED BY MECHANICAL CONTRACTOR ON SITE.






LEGEND OF SYMBOLS – LIGHTING

	ALL LIGHTING TO BE AS SPECIFIED OR EQUAL APPROVED BY OWNER.
	NEW EXTERNAL WEATHERPROOF SURFACE MOUNTED PHOTOCELL FOR CONTROL OF CARPARK ENTRANCE LIGHTING AND FACADE.
	NEW SURFACE MOUNTED MOTION SENSOR FOR CONTROL OF LIGHTING. GENERALLY BEG PD3 SERIES EXCEPT IN CARPARK WHERE PD4 SERIES.
	NEW 240V ABOVE CEILING POWER OUTLET AND LOCAL SWITCH FOR EXHAUST FAN. (FAN BY CONTRACTOR) CO-ORDINATE EXACT LOCATION AND CONNECTION REQUIREMENTS WITH MECHANICAL CONTRACTOR ON SITE.
	NEW 2.5W MAINTAINED UNIVERSAL MOUNTED LED EXIT SIGN (RUNNING MAN PICTORIAL TYPE) C/W DIRECTIONAL ARROWS AS SHOWN.
	NEW 10W 100-DEGREE-BEAM ROUND RECESSED MOUNTED LED DOWNLIGHT IN WHITE C/W REMOTE DRIVER. IP54. 4000K, IP54. AURA - ECOLED10
	NEW 100W LED LOW BAY C/W REMOTE DRIVER. IP54. 4000K, IP54. AURA - HIBAY100
	NEW 1.5W NON-MAINTAINED SURFACE MOUNTED LED EMERGENCY SPOTLIGHT LUMINAIRE C/W LITHIUM BATTERY, IN WHITE, AURA SOLO-SM
	NEW 4.5W SURFACE MOUNTED WEATHERPROOF LED BATTEN WITH INTEGRAL EMERGENCY CONTROL GEAR C/W OPAL DIFFUSED LENS. IP65. 4000K. AUL 890151 AVAILABLE FROM AURA LIGHTING.
	NEW 13W WALL MOUNTED LED IN BLACK C/W INTEGRAL DRIVER. IP54. 4000K, IP54. AURA - MINIEL6106
	NEW 30W FASCIA MOUNTED SPOT LED IN BLACK C/W INTEGRAL DRIVER. IP54. 4000K, IP54. AURA - FLOOD30W

LEGEND OF SYMBOLS – SCHEMATIC

	FUSE 100 DENOTES CARTRIDGE RATING 200 DENOTES BASE RATING
	CIRCUIT BREAKER
	ISOLATOR FOR ON-LOAD SWITCHING (RATED FOR FAULT LEVEL BUT NOT USED FOR CONTROL)
	SWITCH
	NORMALLY CLOSED CONTACT
	NORMALLY OPEN CONTACT
	TIME DELAY RELAY 0 TO 10 HOURS
	CONTACTOR
	RELAY
	TIMECLOCK
	PHOTOCELL
	DENOTES THREE PHASE
	DENOTES SINGLE PHASE
	SURGE PROTECTION DEVICE
	NEW KWH METER TO ENERGY SUPPLIER REQUIREMENTS. AMR - DENOTES AUTOMATIC METER READING SYSTEM TO WESTERN POWER REQUIREMENTS.
	RCD CIRCUIT BREAKER DEVICE
	EARTH ROD
	NEW DIGITAL POWER ANALYSER INCLUDING REQUIRED FUSING CT'S.
	SURGE FILTER.

DIRECT CONNECTION SCHEDULE

	CONFIRM EXACT LOCATIONS OF DIRECT CONNECTIONS ONSITE PRIOR TO INSTALLATION WITH ASSOCIATED WORKS CONTRACTOR, CLIENT AND SUPERINTENDENT.
	20A SINGLE PHASE POWER SUPPLY FOR EXHAUST FAN, VIA AN IP56 RATED ISOLATOR MOUNTED ADJACENT UNIT. LIAISE WITH MECHANICAL CONTRACTOR FOR THE EXACT LOCATION OF ISOLATOR ONSITE PRIOR TO INSTALLATION.
	10A SINGLE PHASE POWER SUPPLY FOR EVAP, VIA AN IP56 RATED ISOLATOR MOUNTED ADJACENT UNIT. LIAISE WITH MECHANICAL CONTRACTOR FOR THE EXACT LOCATION OF ISOLATOR ONSITE PRIOR TO INSTALLATION.
	20A SINGLE PHASE POWER SUPPLY FOR AIR CONDITIONING, VIA AN IP56 RATED ISOLATOR MOUNTED ADJACENT UNIT. LIAISE WITH MECHANICAL CONTRACTOR FOR THE EXACT LOCATION OF ISOLATOR ONSITE PRIOR TO INSTALLATION.
	32A THREE PHASE POWER SUPPLY FOR HWU, VIA AN IP56 RATED ISOLATOR MOUNTED ADJACENT UNIT. LIAISE WITH HYDRAULIC CONTRACTOR FOR THE EXACT LOCATION OF ISOLATOR ONSITE PRIOR TO INSTALLATION.
	27A THREE PHASE POWER SUPPLY FOR HWU, VIA AN IP56 RATED ISOLATOR MOUNTED ADJACENT UNIT. LIAISE WITH HYDRAULIC CONTRACTOR FOR THE EXACT LOCATION OF ISOLATOR ONSITE PRIOR TO INSTALLATION.

VARIANTS

AB	- DENOTES OUTLET MOUNTED ABOVE BENCH
AW	- DENOTES AUTO WINDOW
AD	- DENOTES AUTO DOOR
AC	- DENOTES AIR CONDITIONER
AFFL	- DENOTES ABOVE FIXED FLOOR LEVEL
CL	- DENOTES CLEANERS OUTLET
CT	- DENOTES COOK TOP
CH	- DENOTES CEILING HOIST
CU	- DENOTES AIR CONDITIONING CONDENSER UNIT
DW	- DENOTES DISHWASHER OUTLET
DR	- DENOTES DRYER OUTLET
FR	- DENOTES FRIDGE OUTLET
HL	- DENOTES HIGH LEVEL
HWU	- DENOTES HOT WATER UNIT
L	- DENOTES OUTLET TO BE LOCKABLE
LL	- DENOTES LOW LEVEL
MW	- DENOTES MICROWAVE OUTLET
OV	- DENOTES OVEN
RD	- DENOTES AUTO ROLLER DOOR
T	- DENOTES TIMER CIRCUIT
UB	- DENOTES OUTLET MOUNTED UNDER BENCH
UOS	- DENOTES UNLESS OTHERWISE STATED
WM	- DENOTES WASHING MACHINE OUTLET
WP	- DENOTES WEATHERPROOF (IP66)
FT	- DENOTES FOXTEL OUTLET
FTA	- DENOTES FREE-TO-AIR OUTLET

NOTES

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CLIENT

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RESIDENTIAL AND COMMERCIAL ARCHITECTURE
Unit 4 / 71 Kent Street, BUSSELLTON 6280
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PROJECT

**Proposed commercial development -
Lot 69 (#23) Antlia Way, Australind**

TITLE

ELECTRICAL SERVICES
LEGEND AND NOTES (SHEET 2 OF 2)

SCALE	DESIGN	CHECKED
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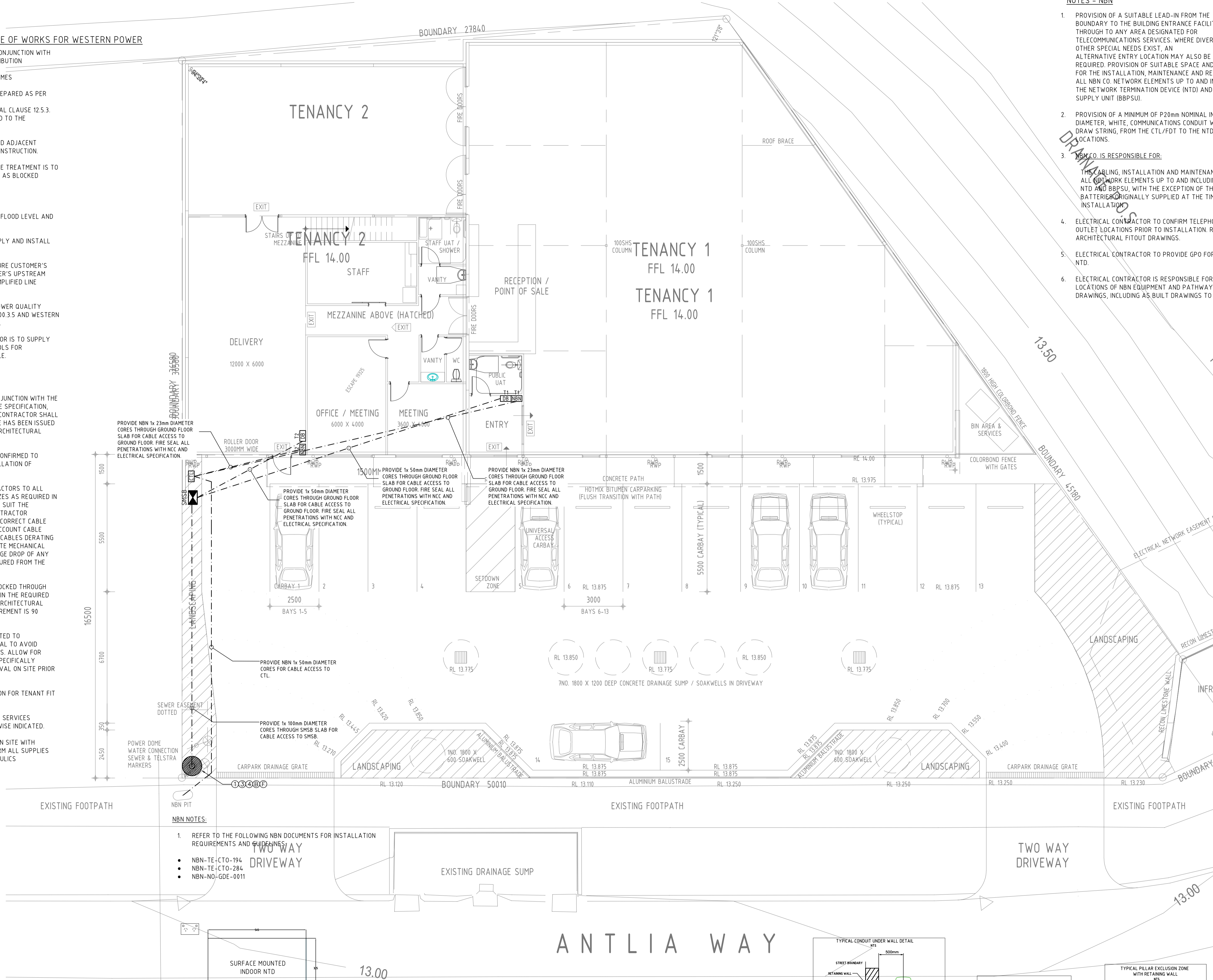
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NOTES - CONTRACTORS SCOPE OF WORKS FOR WESTERN POWER

- A THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE WESTERN AUSTRALIAN DISTRIBUTION CONNECTIONS MANUAL AND THE UNDERGROUND DISTRIBUTION SCHEMES
- B PILLAR EXCLUSION ZONE TO BE PREPARED AS PER THE WESTERN AUSTRALIAN DISTRIBUTION CONNECTIONS MANUAL CLAUSE 12.5.3. THIS INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:
 - 1. PEGGING THE PILLAR LOCATION AND ADJACENT BOUNDARY LOCATION PRIOR TO CONSTRUCTION.
 - 2. ONLY EASILY REMOVABLE SURFACE TREATMENT IS TO BE INSTALLED IN THIS AREA, SUCH AS BLOCKED PAVING.
 - 3. CLEAR OF ALL SERVICES.
 - 4. LOCATED 300mm ABOVE 100 YEAR FLOOD LEVEL AND NOT IN A PRECARIOUS POSITION.
- C ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL DIRECT METERING.
- D ELECTRICAL CONTRACTOR TO ENSURE CUSTOMER'S SPD GRADES WITH WESTERN POWER'S UPSTREAM PROTECTION AS NOTED ON THE SIMPLIFIED LINE DIAGRAM BY WESTERN POWER.
- E CUSTOMER MUST COMPLY WITH POWER QUALITY LIMITS AS PER AS/SNZ TS IEC 61000.3.5 AND WESTERN POWER TECHNICAL REQUIREMENTS.
- F CUSTOMER ELECTRICAL CONTRACTOR IS TO SUPPLY SUITABLE LUGS AND CRIMPING TOOLS FOR TERMINATION OF CUSTOMER'S CABLE.

NOTES - GENERAL

- 1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE ELECTRICAL SERVICES SECTION OF THE SPECIFICATION. THE ARCHITECTURAL DRAWINGS THE CONTRACTOR SHALL ENSURE THAT THE ELECTRICAL TRADE HAS BEEN ISSUED WITH AN UP TO DATE COPY OF THE ARCHITECTURAL DRAWINGS.
- 2. LOCATION OF ALL EQUIPMENT TO BE CONFIRMED TO CLIENT'S APPROVAL PRIOR TO INSTALLATION OF ASSOCIATED CONDUITS.
- 3. CONTRACTOR TO APPLY DERATING FACTORS TO ALL CABLES AND INCREASE THE CABLE SIZES AS REQUIRED IN ACCORDANCE WITH AS3008.1:1998 TO SUIT THE INSTALLATION METHOD. IT IS THE CONTRACTOR RESPONSIBILITIES TO DETERMINE THE CORRECT CABLE SIZE FOR ALL CABLES TAKING INTO ACCOUNT CABLE CURRENT CAPACITY, VOLTAGE DROP, CABLES DERATING FACTORS AND PROVIDING APPROPRIATE MECHANICAL PROTECTION. MAXIMUM TOTAL VOLTAGE DROP OF ANY CIRCUIT SHALL NOT EXCEED 5% MEASURED FROM THE POINT OF SUPPLY.
- 4. ANY SLAB PENETRATIONS, HOLES KNOCKED THROUGH SERVICE DUCTS ETC. NEED TO MAINTAIN THE REQUIRED FRL'S. PLEASE REFER TO ACOUSTIC/ARCHITECTURAL DOCUMENTATION THE GENERAL REQUIREMENT IS 90 MINUTE PROTECTION.
- 5. UNDERGROUND CONDUITS TO BE LOCATED TO STRUCTURAL CONSULTANTS APPROVAL TO AVOID CLASHES WITH STRUCTURAL FOOTINGS. ALLOW FOR CONDUITS WHERE REQUIRED, IF NOT SPECIFICALLY SHOWN CONFIRM LOCATION TO APPROVAL ON SITE PRIOR TO INSTALLATION.
- 6. REFER TO ARCHITECTS DOCUMENTATION FOR TENANT FIT OUT.
- 7. ALL COMMON AREAS FED FROM HOUSE SERVICES DISTRIBUTION BOARD UNLESS OTHERWISE INDICATED.
- 8. COORDINATE POSITION OF SUPPLIES ON SITE WITH HYDRAULICS CONTRACTOR. RE-CONFIRM ALL SUPPLIES PRIOR TO INSTALLATION WITH HYDRAULICS CONTRACTORS.

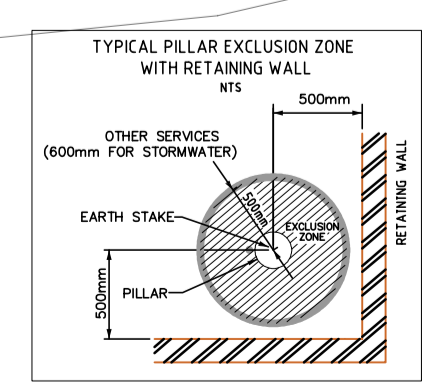
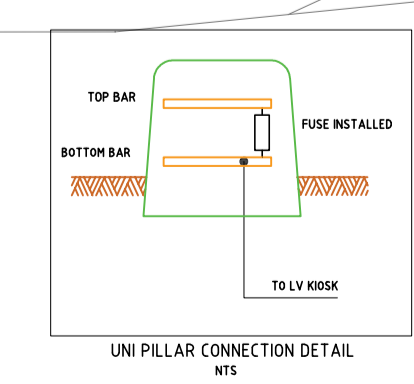
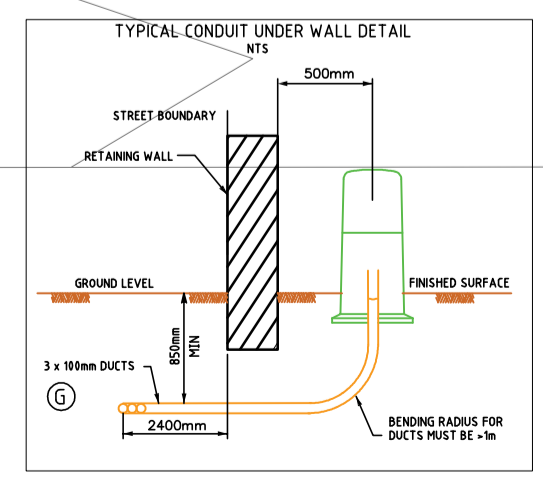


NBN NOTES:

- 1. REFER TO THE FOLLOWING NBN DOCUMENTS FOR INSTALLATION REQUIREMENTS AND GUIDELINES:
 - NBN-TE-CTO-194
 - NBN-TE-CTO-284
 - NBN-NO-GDE-0011

TYPICAL NTD MOUNTING

SITE PLAN SCALE 1:100



NOTES - NBN

- 1. PROVISION OF A SUITABLE LEAD-IN FROM THE BOUNDARY TO THE BUILDING ENTRANCE FACILITY THROUGH TO ANY AREA DESIGNATED FOR TELECOMMUNICATIONS SERVICES. WHERE DIVERSITY OR OTHER SPECIAL NEEDS EXIST, AN ALTERNATIVE ENTRY LOCATION MAY ALSO BE REQUIRED. PROVISION OF SUITABLE SPACE AND ACCESS FOR THE INSTALLATION, MAINTENANCE AND REPAIR OF ALL NBN CO. NETWORK ELEMENTS UP TO AND INCLUDING THE NETWORK TERMINATION DEVICE (NTD) AND POWER SUPPLY UNIT (BPPSU).
- 2. PROVISION OF A MINIMUM OF P20mm NOMINAL INSIDE DIAMETER, WHITE, COMMUNICATIONS CONDUIT WITH DRAW STRING, FROM THE CTL/FDT TO THE NTD LOCATIONS.
- 3. **NBN CO. IS RESPONSIBLE FOR:** THE CABLEING, INSTALLATION AND MAINTENANCE OF ALL NETWORK ELEMENTS UP TO AND INCLUDING THE NTD AND BPPSU, WITH THE EXCEPTION OF THE BPPSU BATTERIES ORIGINALLY SUPPLIED AT THE TIME OF INSTALLATION.
- 4. ELECTRICAL CONTRACTOR TO CONFIRM TELEPHONE OUTLET LOCATIONS PRIOR TO INSTALLATION. REFER TO ARCHITECTURAL FITOUT DRAWINGS.
- 5. ELECTRICAL CONTRACTOR TO PROVIDE GPO FOR EACH NTD.
- 6. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FINAL LOCATIONS OF NBN EQUIPMENT AND PATHWAY DESIGN DRAWINGS, INCLUDING AS BUILT DRAWINGS TO NBN.

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A 09.06.21	DRAFT	LS
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CONSULTANT



CLIENT

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 Unit 4 / 71 Kent Street, BUSSELLTON 6280
 ph: 97 523 146

PROJECT

Proposed commercial development - Lot 69 (#23) Antlia Way, Australind

TITLE

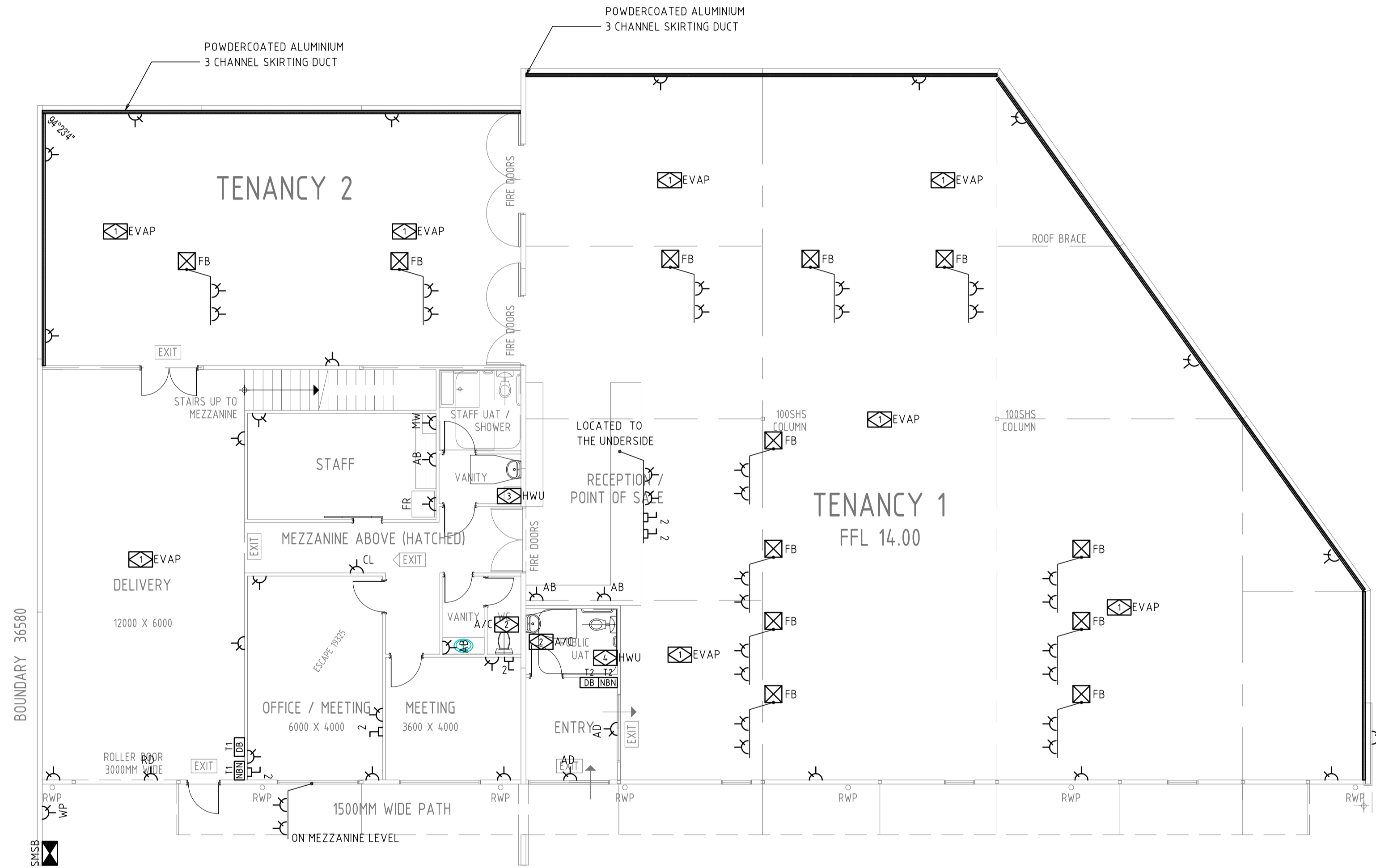
ELECTRICAL SERVICES SITE PLAN ELECTRICAL SERVICES

SCALE	DESIGN	CHECKED
1:100 @ A1	LS	AB

PROJECT #	DRAWING #	REVISION
21013	E02	B

NOTES - POWER & MISC.

- DOUBLE CHECK SETOUT FOR FOLLOWING PRIOR TO PRE-WIRE AND FINAL FIT-OFF:
 - ALL GPO'S MOUNTED AT 300mm AFFL UNLESS OTHERWISE NOTED.
 - REFER MECHANICAL AND HYDRAULIC DRAWINGS/SPECIFICATIONS AND SHOP DRAWINGS FOR LOCATIONS OF THEIR SERVICES - LIAISE WITH INSTALLER(S) ON SITE.
 - ENSURE OUTLETS ADJACENT EACH OTHER (eg TV, GPO, etc) ARE SAME HEIGHT AND SAME MANUFACTURER/STYLE.
 - ENSURE ALL POWER OUTLETS ARE INSTALLED IN ACCORDANCE WITH AS/NZS3000:2007 SECTIONS 6 - DAMP SITUATIONS.
 - ENSURE 1,000mm CLEAR IN FRONT OF DOOR SWING/ARC FOR SWITCHBOARDS.
- TYPICAL GENERAL POWER CIRCUITS SHALL BE 16A/30mA PROTECTION AND 2.5mm² / 90DEG PVC TPS. PROVIDE LARGER CIRCUIT SIZE IF NECESSARY FOR VOLT DROP, EARTH LOOP IMPEDANCE, DERATING, ETC. AS REQUIRED.
- CIRCUIT REFERENCES EXAMPLES AS FOLLOWS:
 - R19 REFERS TO CIRCUIT 19, SINGLE RED PHASE
 - RWB8 REFERS TO CIRCUIT 8, 3 PHASE RED WHITE & BLUE
 - PROVIDE IPA CIRCUIT IDENTIFICATION ON ALL POWER OUTLETS, ISOLATORS, LIGHT SWITCHES, ETC.
 - PROVIDE BLACK IPA STUD ON ALL ELECTRICAL ACCESSORIES FED FROM MECHANICAL CHASSIS TO DIFFERENTIATE FROM SMALL POWER.
- PRIOR TO FIT-OUT CONFIRM WITH CLIENT FOR LOCATIONS FOR FITTINGS ON INTERNAL WALLS AS THESE MAY BE REMOVED.
- FLOOR BOXES TO BE CAST INTO CONCRETE FLOOR. FINAL LOCATION TO BE CONFIRMED BY OWNER PRIOR TO CONSTRUCTION.



POWER, COMMUNICATIONS AND SECURITY
SCALE 1:100

NOTES - ELECTRICAL

- FINAL POSITION OF ALL EQUIPMENT SHALL BE DETERMINED ON SITE PRIOR TO INSTALLATION. REFER TO ARCHITECTURAL FITOUT DRAWINGS
- ALL MOUNTING HEIGHT POSITIONS OF POWER OUTLETS, SWITCHES, ETC SHALL SERVE ONLY AS A GUIDE. ALL MOUNTING HEIGHTS ARE WITH REFERENCE TO FINISHED FLOOR LEVEL. FINAL POSITION OF ALL POWER OUTLETS AND SWITCHES SHALL BE DETERMINED WITH REFERENCE TO ARCHITECTURAL DETAIL DRAWINGS AND MUST BE FURTHER VERIFIED ON SITE PRIOR TO PHYSICAL INSTALLATION.
- RATINGS AND TERMINATIONS OF ALL EQUIPMENT TO BE CONFIRMED WITH SUPPLIER/MANUFACTURER'S RECOMMENDATIONS PRIOR TO INSTALLATION.
- FINAL POSITION OF ALL EQUIPMENT SHALL BE DETERMINED ON SITE PRIOR TO INSTALLATION. REFER TO ARCHITECTURAL FITOUT DRAWINGS
- OUTLETS IN BATHROOMS WITHIN 0.15m OF A SINK SHALL BE INSTALLED AT LEAST 0.4m ABOVE SINK LEVEL, OR AN APPROPRIATE LOCATION SATISFYING AS3000 AND APPROVED BY THE ARCHITECT.
- DISTRIBUTION BOARDS, COMMUNICATIONS DISTRIBUTION FRAMES AND SECURITY ACCESS PANELS TO BE RECESSED WHERE POSSIBLE.
- MECHANICAL CONTRACTOR TO CONNECT CONDENSER UNITS AND FAN COILS FROM 'AC' ISOLATORS. CONFIRM EXACT LOCATION PRIOR TO INSTALLING.
- ELECTRICAL CONTRACTOR TO LIAISE WITH MECHANICAL CONTRACTOR FOR PRECISE POSITION OF ISOLATORS FOR MECHANICAL LOADS.
- REFER TO ACOUSTIC SPECIFICATION FOR SEPARATION REQUIREMENTS OF OUTLETS INSTALLED ON OPPOSITE SIDES OF ADJOINING WALLS.
- PROVIDE CAVITY WALL OR SURFACE MOUNTED DUCT FOR CABLE ENTRY.
- DISTRIBUTION BOARDS SHALL NOT BE INSTALLED AT A HEIGHT GREATER THAN 2m AFFL.

NOTES

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 Contractual Relationships
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ISSUE DATE	DESCRIPTION	APP
A	09.06.21 DRAFT	LS
B	07.07.21 CDC ISSUE	LS

CONSULTANT



CLIENT



PROJECT

Proposed commercial development - Lot 69 (#23) Antlia Way, Australind

TITLE

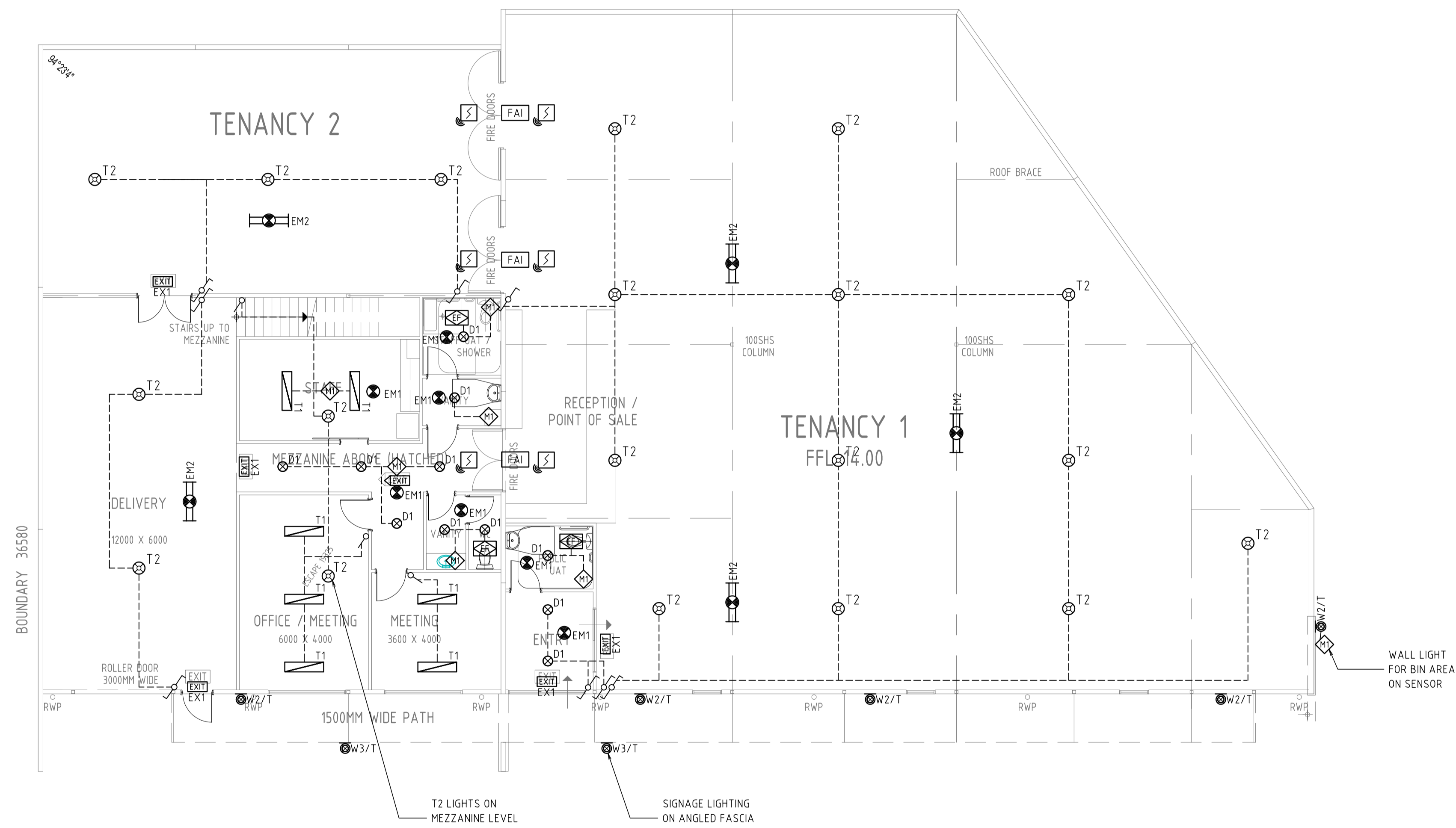
ELECTRICAL SERVICES
POWER, COMMUNICATIONS AND SECURITY LAYOUT

SCALE	DESIGN	CHECKED
1:100 @ A1	LS	AB

PROJECT #	DRAWING #	REVISION
21013	E03	B

NOTES - LIGHTING

- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE ELECTRICAL SERVICES SECTION OF THE SPECIFICATION, THE ARCHITECTURAL DRAWINGS (PARTICULARLY THE REFLECTED CEILING PLAN AND THE ROOM LAYOUTS AND ELEVATIONS) AND ALL OTHER RELEVANT SERVICES DRAWINGS. THE CONTRACTOR SHALL ENSURE THAT THE ELECTRICAL TRADE HAS BEEN ISSUED WITH AN UP TO DATE COPY OF THE ARCHITECTURAL DRAWINGS.
- FINAL POSITION OF ALL LIGHTS TO BE DETERMINED ON SITE PRIOR TO INSTALLATION. REFER ARCHITECTURAL CEILING LAYOUT AND DETAILS PRIOR TO PURCHASE AND INSTALLATION.
- ALL EMERGENCY LIGHT OR EXIT SIGNS SHALL BE CONNECTED TO LOCAL DB TEST CONTROL CIRCUITS. PROVIDE AN UNSWITCHED ACTIVE TO THE EMERGENCY LIGHT FITTING FROM AN ADJACENT LIGHTING CIRCUIT. ALL EXIT SIGNS SHALL COMPLY AS EMERGENCY LIGHT FITTINGS TO AS 2293.1.
- LIGHTING CIRCUITS SHALL BE NUMBERED FOR REFERENCE PURPOSES AND INDICATION AS BUILT DRAWINGS
- EXHAUST FAN TO RUN AND CIRCUITED TO ADJACENT LIGHTING CIRCUIT.
- PROVIDE SIGNAL FROM LOCAL MOTION DETECTION TO EXHAUST FAN TO RUN VIA MOTION DETECTOR RUN ON TIMER, AND CIRCUITED TO ADJACENT LIGHTING CIRCUIT
- ALTERNATIVE FITTINGS AND CONTROL GEAR MUST COMPLY WITH AS/NZ3820(ELECTRICAL SAFETY) AND EMC (ISPAR152006(-tick) AND SHALL BE PROVIDED WITH PHOTOMETRIC FILES BY A NATA APPROVED TESTING LAB. SUBMIT ALTERNATIVE SAMPLES AND SUPPORTING DOCUMENTATION, INCLUDING LIGHTING LEVEL CALCULATIONS, PRIOR TO TENDER CLOSING FOR CONSIDERATION.



POWER, COMMUNICATIONS AND SECURITY
SCALE 1:100

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PROJECT

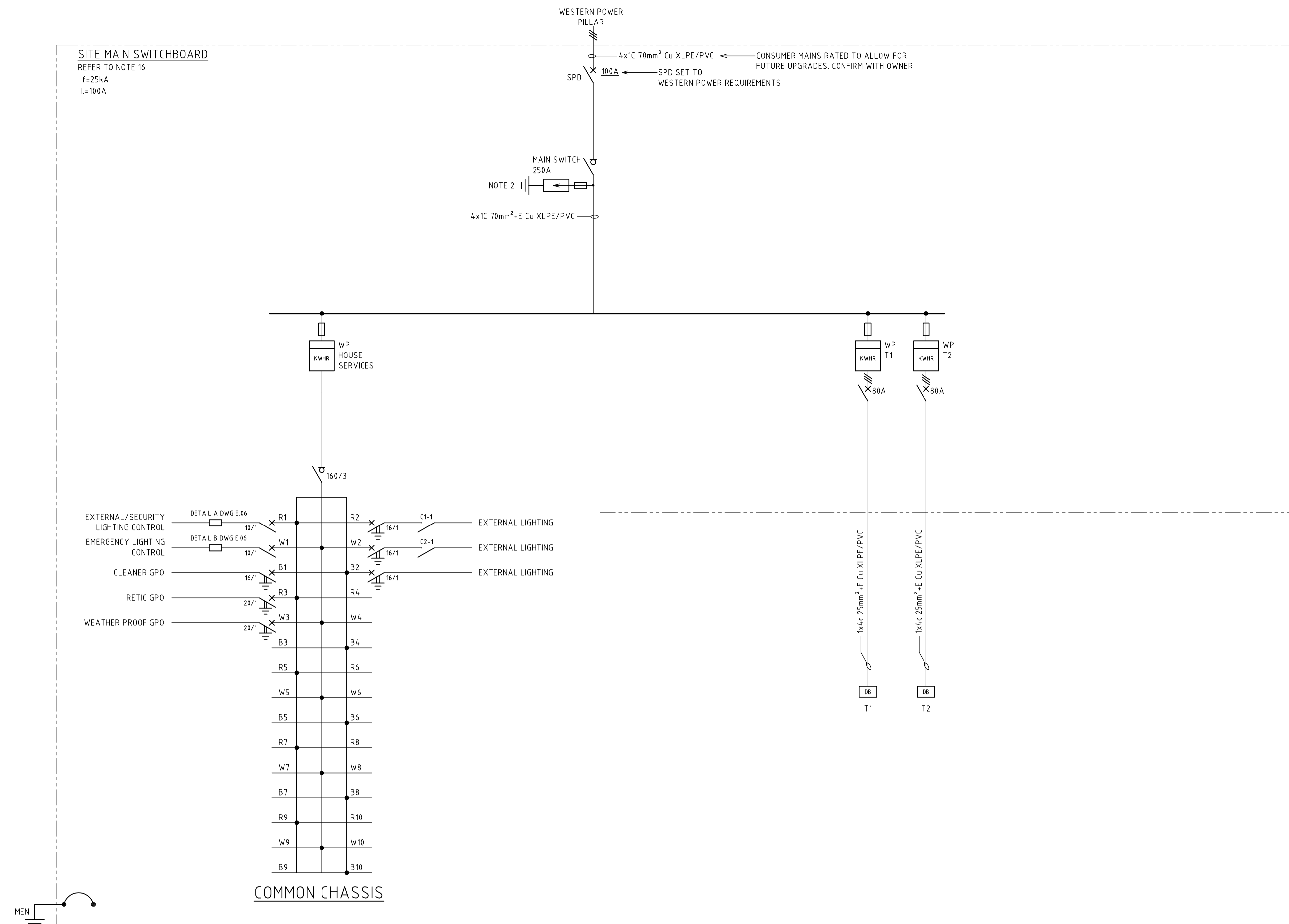
Proposed commercial development - Lot 69 (#23) Antlia Way, Australind

TITLE

ELECTRICAL SERVICES
TENANT LIGHTING EMERGENCY AND EXIT LIGHTING LAYOUT.

SCALE	DESIGN	CHECKED
1:100 @ A1	LS	AB

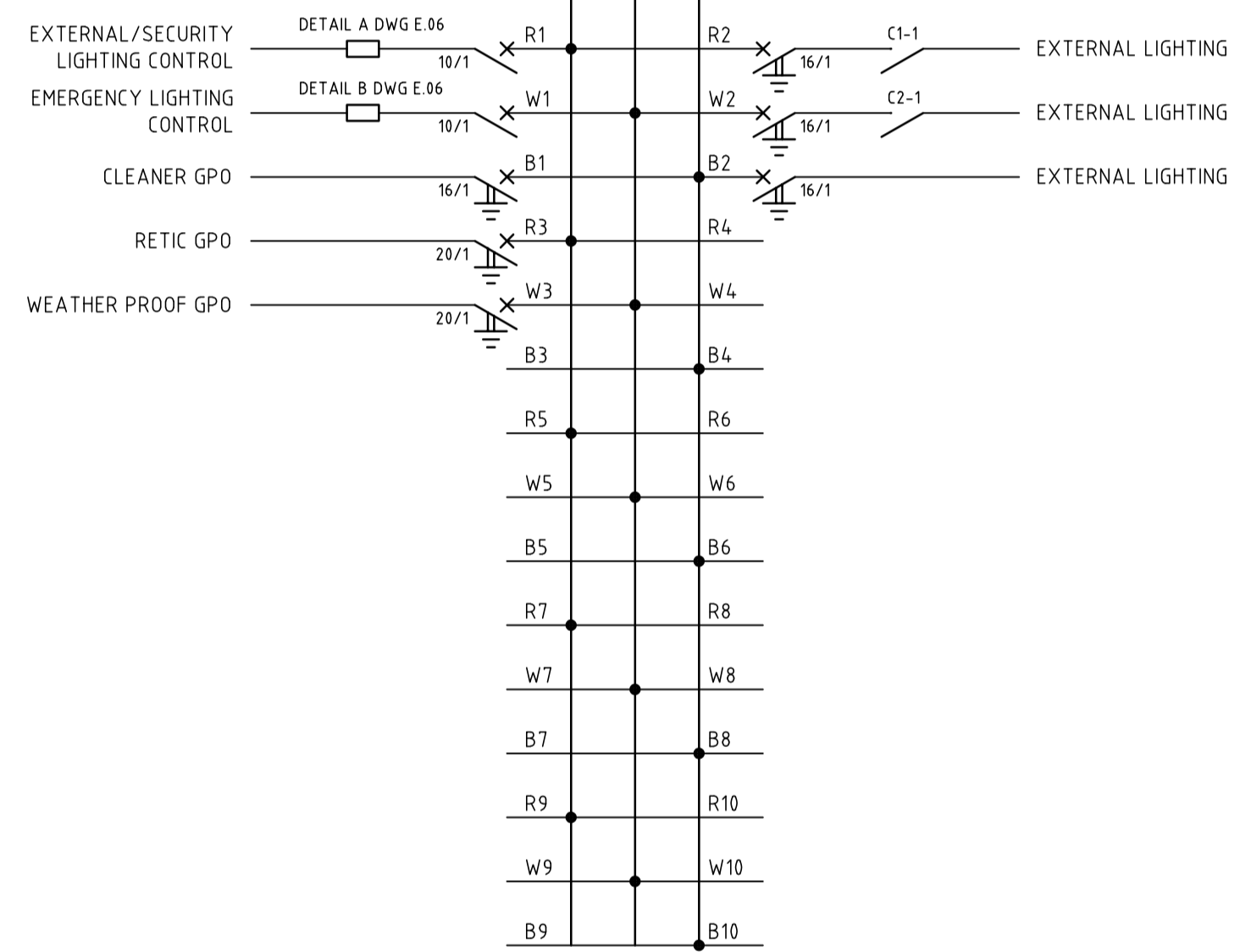
PROJECT #	DRAWING #	REVISION
21013	E04	B



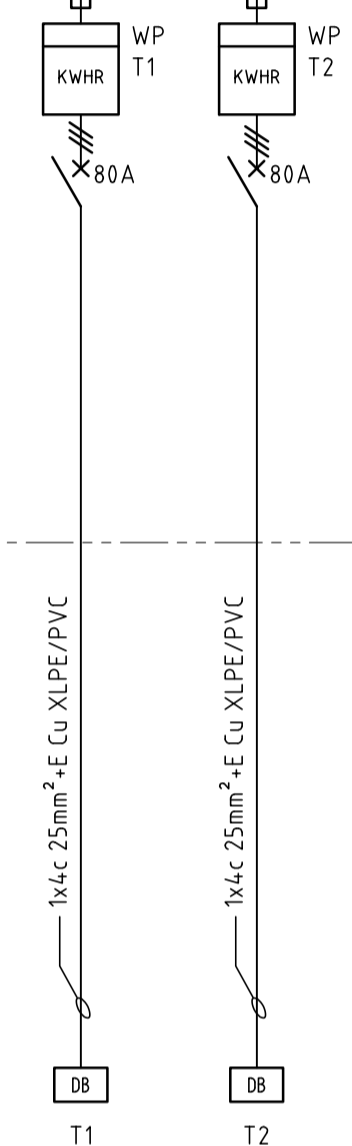
SITE MAIN SWITCHBOARD
 REFER TO NOTE 16
 If=25kA
 Il=100A

WESTERN POWER PILLAR
 4x1C 70mm² Cu XLPE/PVC ← CONSUMER MAINS RATED TO ALLOW FOR FUTURE UPGRADES. CONFIRM WITH OWNER
 SPD 100A ← SPD SET TO WESTERN POWER REQUIREMENTS

NOTE 2
 MAIN SWITCH 250A
 4x1C 70mm²+E Cu XLPE/PVC



COMMON CHASSIS



NOTES:

- | | | |
|---|---|---|
| <p>1. SERVICE PROTECTION DEVICE (SPD) TO BE SET TO WESTERN POWER APPROVAL.</p> <p>2. PROVIDE SHUNT SURGE DIVERSION UNITS TO PROTECT SWITCHBOARD AS SHOWN. SHUNT SURGE DIVERTORS SHALL BE CONNECTED VIA SUITABILITY RATED PROTECTION DEVICE TO ALL PHASES.</p> <p>3. REFER TO ARCHITECTURAL DETAIL DRAWINGS WHEN DESIGNING SWITCHBOARD EQUIPMENT LAYOUT ENSURE DOOR MULLIONS, WALLS AND THE LIKE DO NOT ENCRONCH ON MINIMUM ACCESS CLEARANCE REQUIREMENTS TO EQUIPMENT.</p> <p>4. UNLESS OTHERWISE INDICATED, SUBMAIN CABLES INSTALLED ON CABLE LADDERS SHALL BE SPACED IN ACCORDANCE WITH AS3008 TO ACHIEVE A DERATING FACTOR OF NO LESS THAN 1.0</p> <p>5. FIRE RATED CABLES APART FROM MIMS SHALL BE INSTALLED IN GALVANISED STEEL CONDUIT FOR THE ENTIRE LENGTH OF THE CABLE OR BE SUITABLE MECHANICALLY PROTECTED IN ACCORDANCE WITH AS/NZS 3013.</p> <p>6. REFER TO SPECIFICATION FOR SWITCHBOARD AND DISCRIMINATION DETAILS.</p> <p>7. BOARD SHALL BE MANUFACTURED BY BY A COMPANY IN WA WHO IS ACCREDITED TO ISO 9001 FOR QUALITY ASSURANCE.</p> <p>8. BOARD SHALL COMPLY WITH AS61439 & BE TYPE TESTED FOR ARC FAULT CONTAINMENT TO APPENDIX ZD, AND OFF RITTAL MANUFACTURE OR APPROVED EQUIVALENT.</p> | <p>9. METERING SHALL BE WESTERN POWER MASTER METERING. CONTRACTOR TO SUPPLY AND INSTALL METERING.</p> <p>10. PROVIDE SEPARATE ENCLOSURE FOR SAFETY (EMERGENCY) SERVICES WITH METALLIC PARTITION IN ACCORDANCE WITH C2.13 (D) OF NCC BUILDING CODE OF AUSTRALIA.</p> <p>11. PROVIDE EMERGENCY TEST SWITCH AND CONTROL CIRCUITRY IN ACCORDANCE WITH AS/NZS 2293, eg CLIPSAI PBELSAKIT. PROVIDE RELAYS AS REQUIRED SO THAT IF CIRCUIT FAILS IN ANY ROOM ADJACENT EMERGENCY LIGHT IS ACTIVATED.</p> <p>12. PROVIDE PE ON/OFF AND PE ON TIME CLOCK OFF CONTROL CIRCUITRY, eg LEGRANDE ASTRO REX 2 CANNEL CAT No 04764. PROVIDE CONTRACTORS AS REQUIRED.</p> <p>13. PROVIDE TYPE 1 SURGE PROTECTION AS FURTHER SPECIFIED & SURGE FILTRATION ON CIRCUITS FOR SECURITY, SMATV AND COMMUNICATIONS SERVICE OUTLETS.</p> <p>14. REFER TO DRAWING E 06 FOR SINGLE LINE CONTROL DETAILS, TO BE INSTALLED WITHIN SWITCHBOARD, AS DOCUMENTED ON THIS SWITCHBOARD SINGLE LINE DIAGRAM.</p> <p>15. SUPPLY AND INSTALL ENGRAVED RED WARNING LABELS AS REQUIRED AND IN ACCORDANCE WITH ALL RELEVANT AUSTRALIAN STANDARDS INCLUDING THE FOLLOWING:
 -"WARNING-DANGER"
 -"415 VOLTS BEHIND"
 -"LIVE BUSBARS"</p> | <p>16. <u>SITE MAIN SWITCHBOARD DETAILS</u>
 - DEGREE OF PROTECTION IP56
 - STAINLESS STEEL
 - BLANK OFF ALL UNUSED SECTIONS
 - FORM 1 CONSTRUCTION
 - DOORS
 - CONCRETE PLINTH
 - MAXIMUM DIMENSION = 2000H x 1600W x 350D</p> |
|---|---|---|

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B 07.07.21	CDC ISSUE	LS

CONSULTANT



CLIENT



PROJECT

Proposed commercial development - Lot 69 (#23) Antlia Way, Australind

TITLE

ELECTRICAL SERVICES
 POWER SERVICES SCHEMATICS AND DETAILS (SHEET 1 OF 2)

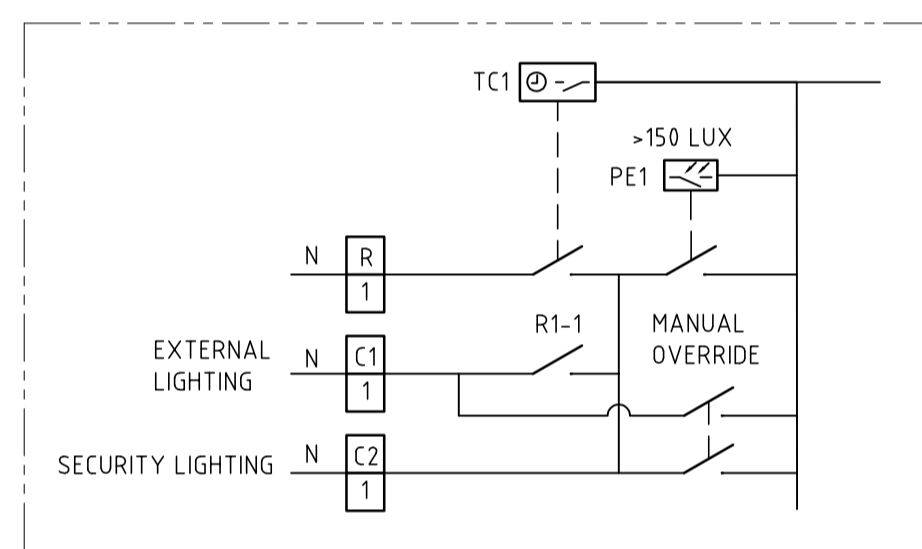
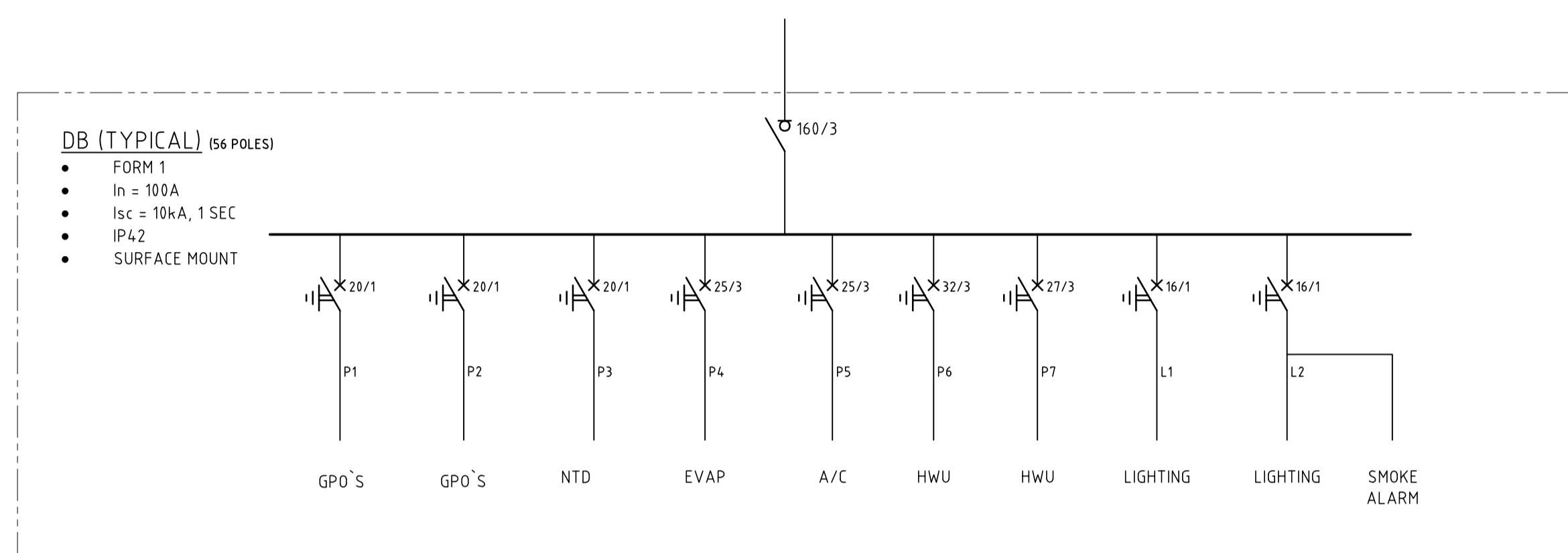
SCALE	DESIGN	CHECKED
NTS	LS	AB

PROJECT #	DRAWING #	REVISION
21013	E05	B

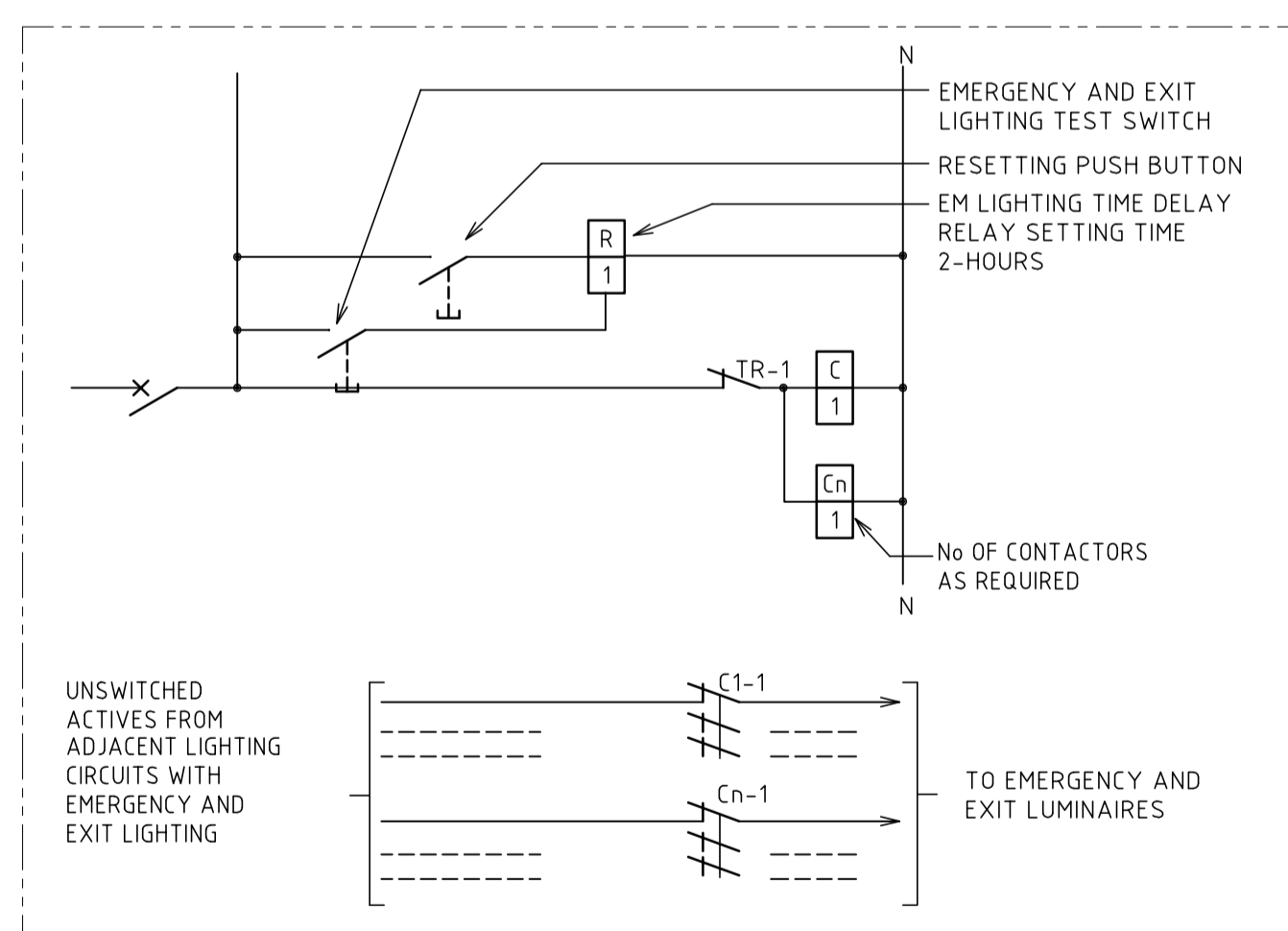
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DETAIL A: EXTERNAL LIGHTING CONTROL



DETAIL B: TYPICAL CONTROL DIAGRAM FOR EMERGENCY AND EXIT LIGHTING TESTING FACILITIES

CONSULTANT



CLIENT

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 ARCHITECTS
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 ph: 97 523 146

PROJECT

Proposed commercial development - Lot 69 (#23) Antlia Way, Australind

TITLE

ELECTRICAL SERVICES
 POWER SERVICES SCHEMATICS AND DETAILS (SHEET 2 OF 2)

SCALE	DESIGN	CHECKED
NTS	LS	AB

PROJECT #	DRAWING #	REVISION
21013	E06	B