# MONA VALE GOLF CLUB 3 GOLF AVE, MONA VALE NSW 2102



# CCTV SYMBOLS



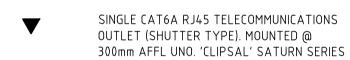
COLOUR DOME NETWORK CAMERA WITH IR LEDs & MOTORISED 3.3-10mm LENS. SET HIGHEST IMAGE QUALITY, RESOLUTION TO 1920×1080 & VIDEO COMPRESSION TO H.264. CABLE TO THE COMMUNICATIONS RACK USING CAT 6 CABLE & PATCH TO NVR. PROVIDE SINGLE CAT 6 DATA OUTLET CEILING ADJACENT EACH CAMERA).

NEW 4MP IK10/IP66 FIXED DAY/NIGHT

### MATV LEGEND

PAY TV &FREE-TO-AIR TELEVISION OUTLET WITH TWO F-TYPE FEMALE SOCKETS. 'CLIPSAL' SATURN SERIES.

# COMMUNICATIONS LEGEND



DOUBLE CAT6A RJ45 TELECOMMUNICATIONS OUTLET (SHUTTER TYPE). MOUNTED @ 300mm AFFL UNO. 'CLIPSAL' SATURN SERIES

DOUBLE CAT6 RJ45 TELECOMMUNICATIONS OUTLET (SHUTTER TYPE), MOUNTED WITHIN CEILING SPACE FOR WAP POINTS. 'CLIPSAL' SATURN SERIES

MINIMUM WIDTH AS INDICATED

COMMUNICATION CABLE TRAY.

# **ABBREVIATIONS**

NOMINALLY 1000mm AFFL NOMINALLY 150mm ABOVE BENCH UNO AUTOMATIC DOOR (SINGLE GPO @ H/L) ABOVE FINISHED FLOOR LEVEL CLEANER OUTLET

CONDENSER UNIT OUTLET - LOADS TO BE CONFIRMED DURING DETAILED DESIGN DISHWASHER (CO-ORDINATE FINAL

LOCATION OF OUTLET WITH JOINERY) OUTLET FOR FIRE SERVICES EQUIPMENT. CONFIRM FINAL

LOCATION WITH FIRE SERVICES. REFRIGERATOR (OUTLET @ 1800mm AFFL) FREEZER (OUTLET @ 1800MM AFFL)

HAND DRYER POWER PROVISION FOR HYDRAULIC EQUIPMENT

HIGH LEVEL JOINERY KITCHEN SUPPLY FAN

LOW LEVEL MECHANICAL SERVICES SWITCHBOARD

OVEN (32A SWITCH MOUNTED 150mm AB) POINT OF SALES TELEPHONE OUTLET TOILET EXHAUST FAN

TELEVISION OUTLET (CO-ORDINATE MOUNTING HEIGHTS WITH BUILDER)

UNLESS NOTED OTHERWISE WIRELESS ACCESS POINT OUTLET (CM) WATER METER

WEATHER PROTECTED (MINIMUM IP53 UNO)



# ELECTRICAL SERVICES DRAWING SCHEDULE DRAWING TITLE DWG No. 22731-001-E-000 | COVERSHEET & LEGEND 22731-001-E-002 | SITE PLAN 22731-001-E-003 | SPECIFICATION 22731-001-E-100 LOWER GROUND - LIGHTING LAYOUT 22731-001-E-200 LOWER GROUND - POWER LAYOUT 22731-001-E-300 FIRE HYDRANT TANKS & PUMPROOM - LIGHTING & POWER

# POWER SYMBOLS

SINGLE SWITCHED SOCKET OUTLET (10A UNO). 'CLIPSAL' SATURN SERIES

X = No. OF PHASES

DOUBLE SWITCHED SOCKET OUTLET (10A UNO), MOUNT AT 300mm AFFL UNO. 'CLIPSAL' SATURN SERIES.

SINGLE PHASE PERMANENT CONNECTION VIA IP66 RATED LOCAL ISOLATOR (20A UNO). 'CLIPSAL' 56 SERIES.

PERMANENT CONNECTION, (20A UNO).

ELECTRICAL CABLE TRAY. MINIMUM WIDTH AS INDICATED.

# UNDERGROUND SERVICES LEGEND



ELECTRICAL PILLAR BOX

# POWER SCHEMATIC

SINGLE PHASE THREE PHASE CURRENT TRANSFORMER

RESIDUAL CURRENT DEVICES (RCBO) 'SCHNEIDER ELECTRIC' OR 'NHP'

SCHNEIDER ELECTRIC OR NHP MOULDED CASE OR MINIATURE CIRCUIT BREAKER 'SCHNEIDER ELECTRIC' OR NHP

EMERGENCY LIGHTING KIT 'SCHNEIDER ELECTRIC' OR 'NHP'

50kA SURGE DIVERTER

'SCHNEIDER ELECTRIC' PM3250

EARTH CONNECTION SUPPLY AUTHORITY METER POWER METER WITH R5485 MODBUS M1

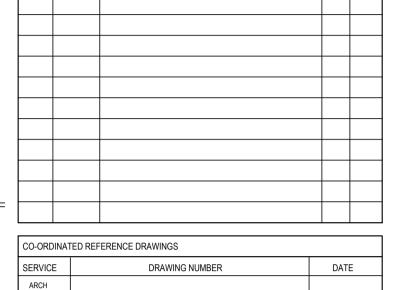
# SWITCHGEAR LEGEND

MAIN SWITHBOARD

DISTRIBUTION BOARD

SWITCHBOARD (BY OTHER SERVICES).

MECHANICAL SERVICES SWITCHBOARD



NK JM

NK JM

SA JM

STRUCT

DRAWING SHALL BE PRINTED IN COLOUR. SYMBOLS ARE DRAWN IN CORRECT LOCATION.

01 02.02.2022 PRELIMINARY ISSUE

02 25.02.2022 ISSUE FOR DA

03 31.03.2022 REISSUE FOR DA

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Client/Architect: **HGW PROJECTS** Suite 202, 308 Pacific Highway Crows Nest, NSW 2065 t: 0457 919 402 e: maddy.ryan@hgwprojects.com.au



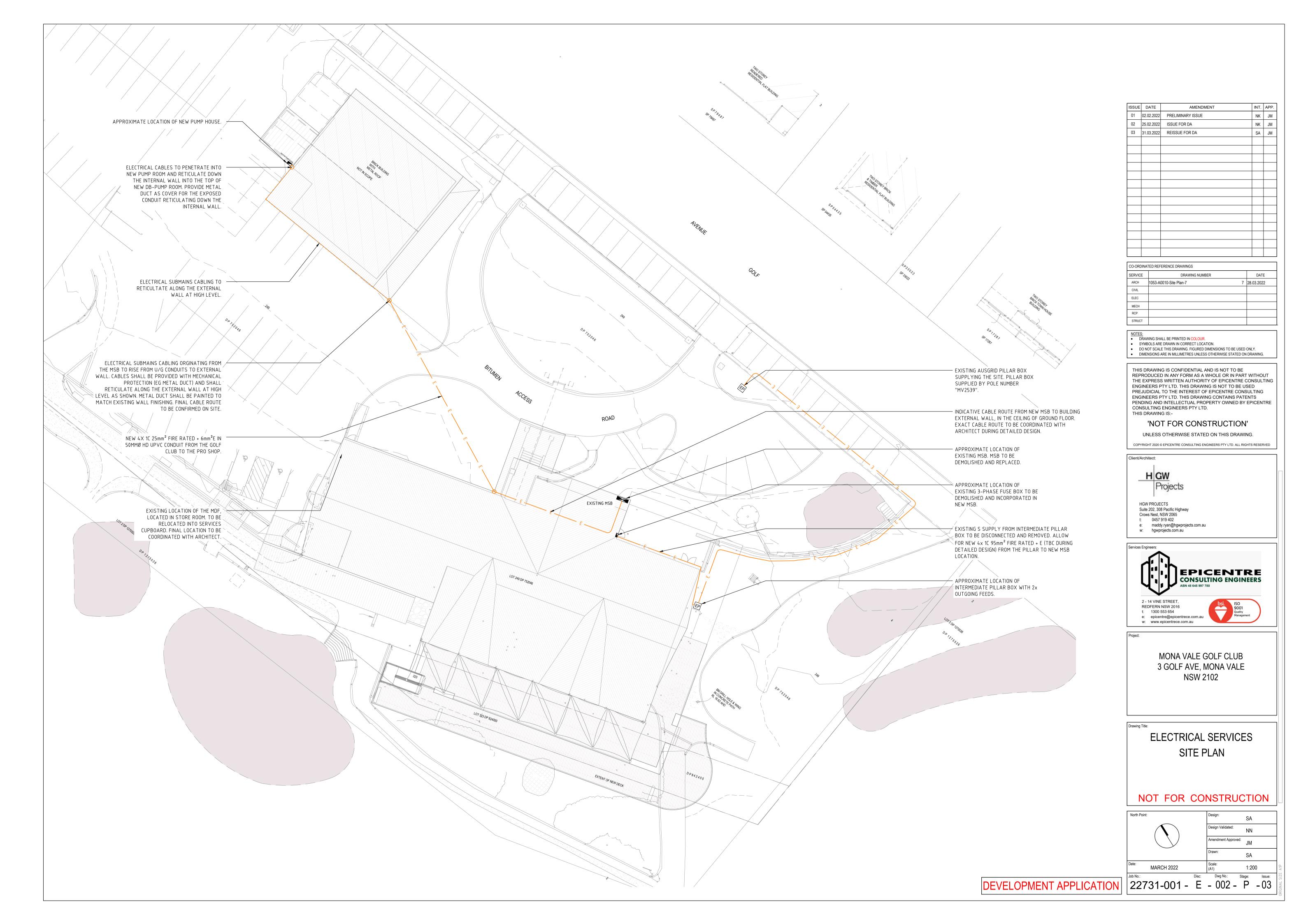
w: hgwprojects.com.au

MONA VALE GOLF CLUB 3 GOLF AVE, MONA VALE NSW 2102

**ELECTRICAL SERVICES COVER SHEET & LEGEND** 

# NOT FOR CONSTRUCTION

North Point		Design:	SA
		Design Validated:	NN
		Amendment Approved	JM
		Drawn:	SA
Date:	MARCH 2022	Scale: (A1)	NTS



### 1.1 CONDITIONS OF TENDERING

ONLY FULLY CONFORMING TENDERS WILL BE ACCEPTED. ANY ALTERNATIVE PROPOSALS MUST BE DESCRIBED AND PRICED SEPARATELY AND SUBMITTED CONCURRENT WITH THE CONFORMING TENDER.

TENDERERS SHALL, BEFORE SUBMITTING TENDERS, FULLY INFORM THEMSELVES OF THE NATURE OF THE WORK BY PERSONAL EXAMINATION OF THE ARCHITECT'S AND/OR CONTRACTOR'S GENERAL WORKING DETAILS & DEMOLITION DRAWINGS.

TENDERERS WILL UNDERTAKE A FULL AND COMPREHENSIVE INSPECTION OF THE BUILDING SITE AND ALL RELEVANT PARTICULARS IN ORDER TO ASCERTAIN THE EXTENT OF THE WORK AND SITE/BUILDING PARTICULARS THAT WILL AFFECT THE PROPOSED WORKS. TENDERERS SHALL VERIFY FROM SITE INSPECTIONS, ANY FACTS OR PARTICULARS ON WHICH THE TENDERER'S OFFER ASSUMES OR IS RELIANT UPON. TENDERERS SHALL ACCEPT FULL RESPONSIBILITY IN THIS RESPECT.

VARIATION SUBMISSIONS RESULTING FROM THE CONTRACTOR'S FAILURE TO ADEQUATELY ASSESS THE EXISTING INSTALLATION DURING THE TIME OF TENDER SHALL BE REJECTED.

### 1.3 PURPOSE OF THE TENDER DOCUMENTS

THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE MUTUALLY EXPLANATORY - ALL WORK CALLED FOR BY ONE, EVEN IF NOT BY THE OTHER, SHALL BE FULLY EXECUTED. SHOULD THE DOCUMENTS CONFLICT, THE CONTRACTOR WILL BE DEEMED TO HAVE INCLUDED FOR THE MORE ONEROUS / LARGER QUANTITY / MORE EXPENSIVE COMPONENTS AS APPLICABLE.

### 1.4 SUPPLEMENTARY INFORMATION SOURCES

THE ELECTRICAL SERVICES TENDER DOCUMENTS ARE TO BE READ IN CONJUNCTION WITH THE FOLLOWING:

- PRINCIPAL PROJECT REQUIREMENTS
- ARCHITECTURAL DOCUMENTS
- STRUCTURAL DOCUMENTS
- FIRE PROTECTION DOCUMENTS
- HYDRAULIC DOCUMENTS
- MECHANICAL DOCUMENTS

### 1.5 VARIATIONS TO THE TENDER SCOPE

THE DRAWINGS ACCOMPANYING THIS SPECIFICATION ARE INTENDED TO SHOW THE GENERAL ARRANGEMENT AND THE INTENT OF THE WORK TO BE INSTALLED UNDER THIS CONTRACT. REARRANGEMENTS TO THE LAYOUTS SHOWN IN THE TENDER DOCUMENTS, WHICH DO NOT SIGNIFICANTLY AFFECT SERVICE INSTALLATION QUANTITIES AND LENGTHS WILL NOT BE REGARDED AS AN EXTRA TO THE

PRIOR TO TENDERING THE CONTRACTOR SHALL ASK ANY AND ALL REQUESTS FOR INFORMATION AND CLARIFICATIONS REQUIRED. NO VARIATIONS WILL BE CONSIDERED FOR FAILURE TO CLARIFY QUERIES OR DISCREPANCIES PRIOR TO TENDERING.

CLAIMS FOR VARIATIONS, EXTENSIONS OF TIME, DELAY, DISTRIBUTION OR OTHER ITEMS, WILL NOT BE ALLOWED FOR FAILURE TO

### 1.6 DESIGN AND CONSTRUCT CONTRACT

THE ELECTRICAL SERVICES DOCUMENTS SHOW LAYOUTS DETAILING DESIGN INTENT. CONTRACTOR TO COMPLETE THE DESIGN AND FULLY DOCUMENT THE PROJECT IN ACCORDANCE WITH THIS SPECIFICATION AND DRAWINGS. CONTRACTOR TO PROVIDE THE FOLLOWING (REFER ALSO TO WORKING DETAILS SECTION):

MAXIMUM DEMAND CALCULATIONS FOR THE PROPOSED DISTRIBUTION BOARDS.

ADHERE TO THIS AND OTHER REFERENCE SPECIFICATIONS, CODES AND REGULATIONS.

- CALCULATIONS FOR SUBMAINS AND SUB-CIRCUITS
- SWITCHBOARD SHOP DRAWINGS INCLUDING CONTROL DETAILS/SCHEMATICS

### 1.7 EXTENT OF WORK

THE WORK SHALL BE CARRIED OUT BY THE ELECTRICAL SERVICES CONTRACTOR. THE CONTRACTOR SHALL PROVIDE DESIGN, DOCUMENTATION, CO-ORDINATION, SUPPLY, DELIVERY, INSTALLATION, TESTING, COMMISSIONING, WARRANTY AND MAINTENANCE OF INSTALLED SYSTEMS. PROVIDE FULLY DESIGNED AND DOCUMENTED SYSTEMS, CO-ORDINATED WITH ALL OTHER SERVICES WHICH WILL MEET THE REQUIREMENTS OF THE TENDER DOCUMENTATION. REFER ALSO TO ALL OTHER TENDER DOCUMENTS FOR GENERAL SCOPE INCLUSIONS AND REQUIREMENTS THAT ARE APPLICABLE TO THIS PROJECT.

# 1.8 COORDINATION

ALL DRAWINGS ARE ONLY DIAGRAMMATIC IN RELATION TO POSITION OF EQUIPMENT AND THEREFORE IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH ALL OTHER CONTRACTORS AND SUB- CONTRACTORS.

# 1.9 OBVIOUS WORKS

THE CONTRACT DOCUMENTS ARE INTENDED TO CALL FOR COMPLETE AND OPERATIONAL SYSTEMS. PROVIDE MINOR ITEMS, EQUIPMENT, ACCESSORIES AND INCIDENTAL WORK REQUIRED FOR THE COMPLETION OF THE INSTALLATION AND TO ENSURE FULL INTEGRATION OF EQUIPMENT AND SYSTEMS.

# 1.10 SCOPE

THE WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

- NEW MAIN SWITCH BOARD;
- NEW DOWNSTAIRS KITCHEN DB. CHECK METERING TO BE PROVIDED IN NEW MSB;

- -- SEPERATE METERING FOR PRO SHOP, MECHANICAL SUPPLY & UPSTAIRS COMMERCIAL KITCHEN AS PER CURRENT
- -- PROVIDE CHECK METERING FOR DOWNSTAIRS KITCHEN;

ROOM. SAFELY REMOVE EXISTING MAINS CABLE CURRENTLY SUPPLYING 3-PHASE FUSE BOX EXTENDING TO THE EXISTING MSB AND UTILISE THE EXISTING WALL MOUNTED CONDUIT IF POSSIBLE

NEW FIRE-RATED MAINS CABLE FROM THE EXISTING INTERMEDIATE PILLAR BOX LOCATED ADJACENT THE MECHANICAL PLANT

- REPLACEMENT OR MODIFICATION TO THE EXISTING CONSUMER MAINS SUPPLYING THE INTERMEDIATE PILLAR BOX HAS NOT BEEN ALLOWED FOR;
- -- REMOVAL OR RELOCATION OF THE INTERMEDIATE PILLAR BOX SUPPLYING THE MSB HAS NOT BEEN ALLOWED FOR; RELOCATE THE EXISTING MDF, WHICH IS CURRENTLY LOCATED IN THE STORE ROOM. TO BE RELOCATED TO A SERVICES
- CUPBOARD. CONFIRM FINAL LOCATION WITH ARCHITECT;
- RELOCATE EXISTING SOLAR INVERTERS AND ASSOCIATED DB-PV INTO THE NEW MAIN SWITCHROOM;
- PROVIDE SUBMAINS CABLING TO NEW MECHANICAL BOARD MCC-1, LOCATED IN THE NEW MAIN SWITCHROOM;
- GENERAL LIGHTING AND POWER FOR THE LOWER GROUND FLOOR ONLY. MODIFICATIONS TO THE GROUND FLOOR HAS NOT BEEN ALLOWED FOR DURING THIS STAGE;

NEW DB-PUMP HOUSE, FED FROM THE ESSENTIAL SERVICES SECTION OF THE NEW MAIN SWITCHBOARD;

NEW SUBMAINS CABLING FROM NEW MSB TO NEW DB-PUMP HOUSE. CABLE RETICULATION AS SHOWN ON THE DRAWINGS: GENERAL LIGHTING AND POWER IN NEW PUMPHOUSE:

SUBMAINS CABLING AS INDICATED ON DRAWINGS;

EARTHING; WIRING, CABLES, ENCLOSURES AND SUPPORTS;

CABLE LADDER, CABLE TRAY & CABLE BASKET;

GENERAL LIGHTING AND POWER AS SHOWN ON THE DRAWINGS.

OF THE PROPRIETOR DURING THE COURSE OF THESE WORKS.

# 1.11 WORKMANSHIP

THE CONTRACTOR SHALL PROVIDE ALL MANUFACTURED ITEMS, MATERIALS AND LABOUR DESCRIBED HEREIN AS DETERMINED ON-SITE FOR PROPER EXECUTION OF WORKS. ALL MATERIALS LOCATED ON SITE MUST BE SECURELY STORED. THE PRINCIPAL, ARCHITECT AND ENGINEER TAKE NO RESPONSIBILITY FOR MISPLACED OR STOLEN MATERIALS OR CONTRACTOR'S PROPERTY.

THE WORKMANSHIP SHALL BE NEAT AND TIDY AND TO THE APPROVAL OF THE ENGINEER OR AUTHORISED PERSON IN CHARGE OF FINAL INSPECTION.

THE CONTRACTOR SHALL LEAVE THE SITE IN A CLEAN AND TIDY CONDITION AND REMOVE ALL EXCESS PACKAGING AND DEBRIS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING GOOD OF ANY DAMAGE CAUSED TO THE PROPERTY

1.12 APPLICATION AND FEES THE CONTRACTOR SHALL OBTAIN AND LODGE ALL NOTICES, OBTAIN ALL PERMITS, ARRANGE ALL INSPECTIONS, ADAPT AND PROVIDE ALL SAFETY MEASURES, MAKE ALL APPLICATIONS AND PAY ANY FEES AS REQUIRED BY ANY AUTHORITY HAVING JURISDICTION OVER THE WORK TO BE PERFORMED BY THEM. ANY APPLICATION WHICH REQUIRES THE SIGNATURE OF THE PRINCIPAL SHALL BE PREPARED BY THE CONTRACTOR AND DELIVERED TO THE PROPRIETOR FOR THEIR SIGNATURE.

# 1.13 RELOCATION AND REUSE OF EXISTING EQUIPMENT

WHERE EQUIPMENT IS TO BE RELOCATED OR REUSED, COMPLETELY TEST ALL EQUIPMENT PRIOR TO RELOCATION OR REUSE, TO ENSURE THAT THE EQUIPMENT WILL SATISFACTORILY PERFORM THE FINAL DUTY AS SPECIFIED. ADVISE THE ENGINEER IMMEDIATELY AFTER TESTING OF SUCH ITEMS THAT CANNOT PERFORM AS SPECIFIED, BEFORE ANY FURTHER WORK BEYOND THE TESTING IS UNDERTAKEN AND AWAIT INSTRUCTIONS FROM THE PRINCIPAL.

### 1.14 ASSOCIATED WORK

### **BUILDING WORK**

THE FOLLOWING BUILDING WORK ASSOCIATED WITH THE ELECTRICAL SERVICES IS SPECIFIED ELSEWHERE.

CUTTING OF PENETRATIONS IN CEILINGS FOR LUMINAIRES AND OTHER CEILING MOUNTED EQUIPMENT.

PROVISION OF PENETRATIONS THROUGH BEAMS, WALLS, FLOORS, CEILINGS, ROOFS AND CUPBOARDS FOR INSTALLATION OF CABLES AND CABLE LADDER/TRAYS, LIGHT AND OTHER CEILING MOUNTED EQUIPMENT IN ACCORDANCE WITH DIMENSIONAL DETAILS PROVIDED ON WORKING DRAWINGS INCLUDING CUTTING, TRIMMING AND FRAMING OPENINGS IN GRANITE, MARBLE, TERRAZZO AND SIMILAR SURFACING MATERIALS TO ACCOMMODATE ACCESSORIES.

WALLS, FLOORS AND CEILINGS SHALL BE SEALED AND PAINTED.

EXCAVATION AND BACKFILL FOR UNDERGROUND CONDUIT RUNS

### 1.15 WORKING DETAILS

PREPARE ALL DRAWINGS ON AUTOCAD TO AUSTRALIAN STANDARD AS 1100 USING COMPETENT AND EXPERIENCED DRAFTERS. WORKING DRAWINGS, SUITABLY MODIFIED TO SHOW THE ACTUAL WORK INSTALLED AND COMPLYING WITH THE REQUIREMENTS OF SECTION "AS INSTALLED DRAWING", MAY BE SUITABLE FOR SUBMISSION AS DRAWINGS OF WORK AS-INSTALLED.

### DRAWINGS OF THE FOLLOWING ARE REQUIRED:

- DETAILS OF SWITCHBOARDS INCLUDING SINGLE LINE DIAGRAMS AND CIRCUIT DETAILS:
- SUBMAINS CABLE ROUTES, SIZE/TYPE OF CABLE & PENETRATIONS PROVIDED;
- CONTROL CABLE ROUTES AND SIZE/TYPE OF CABLE AND WIRE IDENTIFICATION;
- CONCEALED CONDUIT ROUTES · PLANS SHOWING ALL LIGHT AND POWER OUTLETS, CIRCUIT DETAILS AND SWITCHBOARD LOCATIONS;

COMPLETE SCHEMATIC DIAGRAMS OF ALL SYSTEMS INCORPORATED IN THE INSTALLATION;

COMPLETE CONTROL WIRING DIAGRAMS SHOWING ALL ELECTRICAL CONTROLS, RELAYS, CUT-OUTS, TIMING DEVICES, INTER-LOCKS, FUSES, OVER-LOADS, CONTACTORS, SOLENOIDS, STARTERS, ETC. WITH ALL ITEMS CLEARLY IDENTIFIED AS TO TYPE AND FUNCTION, AND 'AS-INSTALLED' SWITCHBOARD LAYOUT DRAWINGS.

ALL INFORMATION SHOWN ON THE WORKING DRAWINGS.

SUBMIT LABELLED SAMPLES OF EACH OF THE FOLLOWING FOR EXAMINATION PRIOR TO ORDER OR MANUFACTURE:

- POWER OUTLETS AND SWITCHES;

### 1.17 STANDARDS AND REGULATIONS

COMPLY WITH THE RELEVANT RULES AND REQUIREMENTS OF THE FOLLOWING STANDARDS AND REGULATIONS:

AS/NZS 3000: WIRING RULES

AS/NZS 3008.1.1: SELECTION OF CABLES

LOW-VOLTAGE SWITCHGEAR AND CONTROL GEAR ASSEMBLIES

ELECTRICAL INSTALLATIONS - CLASSIFICATION OF THE FIRE AND MECHANICAL PERFORMANCE OF WIRING SYSTEM AS 3013: ELEMENTS

ELECTRICAL INSTALLATIONS - VERIFICATION GUIDELINES

AS/NZS 2293: EMERGENCY LIGHTING AND EXIT SIGNS FOR BUILDINGS

CONTROL OF THE OBTRUSIVE EFFECTS OF OUTDOOR LIGHTING

# 1.18 AUTHORITIES

COMPLY WITH THE RULES AND REGULATIONS OF THE FOLLOWING AUTHORITIES:

- RELEVANT STATE OR TERRITORY ELECTRICITY SERVICE AND INSTALLATION RULES
- RELEVANT LOCAL ELECTRICITY DISTRIBUTOR RULES;
- RELEVANT LOCAL FIRE BRIGADE RULES;
- BUILDING CODE OF AUSTRALIA (BCA) REQUIREMENTS; LOCAL COUNCIL
- SUBMIT SUPPLY AUTHORITY APPLICATION
- LIAISE AND PAY ALL REQUIRED FEES

# 1.19 COORDINATION

THE LOCATION OF OUTLETS AND EQUIPMENT SHOWN ON THE DRAWINGS IS INDICATIVE ONLY. LIAISE WITH ALL OTHER CONTRACTORS AND SUBCONTRACTORS RESPONSIBLE FOR WORKS IN THE VARIOUS AREAS, AND COORDINATE THE LOCATIONS OF ALL OUTLETS AND SERVICES TO ENSURE THAT THE BUILDING STRUCTURE AND OTHER ELEMENTS AND THE VARIOUS SERVICES WHEN INSTALLED DO NOT INTERFERE AND OBSTRUCT EACH OTHER AND THAT ACCESS FOR MAINTENANCE AND SERVICING IS PROVIDED AS NEEDED.

# 1.20 WIRING REQURIEMENTS

UNLESS OTHERWISE INDICATED ALL SUB-CIRCUIT WIRING SHALL BE MINIMUM 2.5MM2 MULTI-STRAND COPPER TWIN AND EARTH, PVC INSULATED AND SHEATHED. ALL CABLING SHALL BE CONCEALED. OTHERWISE TO AS3008.1.1

WHERE SUBMAINS OR SUB-CIRCUITS ARE INSTALLED IN BUNCHES ENSURE THAT DE-RATING IS APPLIED TO AS3008.1.1 REQUIREMENTS IN REGARD TO CONDUCTOR SIZING.

PROVIDE INDIVIDUAL CIRCUIT FOR EACH ITEM OF PERMANENTLY CONNECTED EQUIPMENT. PROVIDE INDIVIDUAL CIRCUIT FOR EACH 15A OR HIGHER RATED SOCKET OUTLET.

# 1.21 CABLE CONTAINMENT & SUPPORT

PROVIDE A SYSTEM OF DEDICATED CABLE TRAYS, CABLE BASKETS, DUCTS, CONDUITS AND CATENARY WIRES TO HOLD AND SUPPORT ALL INSTALLED CABLING. ALL POWER & COMMUNICATIONS CABLING TO BE RUN SEPARATELY. EXISTING CABLE TRAYS SUITABLE FOR RE-USE CAN BE UTILISED.

WIRING MUST BE CONCEALED WHEREVER PRACTICAL. PRINCIPAL'S APPROVAL MUST BE OBTAINED FOR ANY SURFACE WIRING PRIOR TO INSTALLATION.

# FOLLOWING FORMS OF WIRING MAY BE USED:

- TPS CABLES FIXED TO CATENARY WIRES WITHIN THE CEILING SPACE FOR LIGHTING AND POWER SUBCIRCUITS.
- TPS CABLE SHALL BE FIXED TO CABLE TRAY WHERE A BUNDLE CONSISTS OF MORE THAN TEN (10).

 TPS CABLE RUN IN STEEL CONDUIT FOR ALL WIRING WHERE MECHANICAL PROTECTION IS REQUIRED. WIRING DUCTS SHALL HAVE ALL BUTT, CORNER AND ANGLED JOINTS NEATLY MADE AND ACCURATELY ALIGNED WITH ADJACENT SECTIONS OF THE DUCT TO SUIT THE LOCATION IN WHICH THEY ARE INSTALLED.

# 1.22 MOUNTING AND LOCATIONS OF OUTLETS

# LOCATIONS

LOCATIONS SHOWN ON ELECTRICAL DRAWINGS ARE INDICATIVE ONLY. INSTALL OUTLETS TO ARCHITECT'S DETAIL DRAWINGS OR FUTURE INSTRUCTIONS. ALLOW FOR MOVEMENT BY UP TO 2 METRES WITHOUT ADDITIONAL COST PRIOR TO SECOND FIX.

# **MOUNTING HEIGHTS**

GENERALLY: HEIGHTS STATED ARE TO CENTRE OF SWITCH-PLATE ON WALLS, OR TO BOTTOM OF SUSPENDED OUTLETS UNLESS INDICATED OTHERWISE.

SWITCHED SOCKET OUTLETS: GENERALLY MOUNT 300MM ABOVE FINISHED FLOOR LEVEL UNLESS OTHERWISE SPECIFIED. FOR BRICK,

1.23 LABELLING AND IDENTIFICATION

MASONRY OR TILES WALLS, LOCATE IN THE CENTRE OF THE NEAREST COURSE.

**GENERAL** 

### LABEL EQUIPMENT TO FACILITATE OPERATION AND MAINTENANCE.

PROVIDE LABELS ON EVERY SWITCHBOARD, SWITCHGEAR CUBICLE, CABLE TERMINATION, EQUIPMENT CABINET, POWER OUTLET AND SIMILAR EQUIPMENT.

THE LABEL SHALL BE A NON-TARNISHABLE CAST OR ENGRAVED LABEL OF APPROVED SIZE, WORDING AND DESIGN, CLEARLY INDICATING FUNCTION AND/OR CIRCUIT DESIGNATION OF THE COMPONENT CONCERNED AND SECURELY FIXED.

LABELS SHALL CORRESPOND TO THE RELEVANT WIRING DIAGRAMS. CIRCUIT SCHEDULES SHOWING THE PURPOSE AND LOCATION OF THE CIRCUIT PROTECTED SHALL BE SECURELY FIXED INSIDE THE COVER OF EACH DISTRIBUTION SWITCHBOARD.

### **ACCESSORIES**

PROVIDE SWITCHBOARD AND CIRCUIT IDENTIFICATION LABELS ON ALL GPO'S &ISOLATING SWITCHES.

### 1.24 PROTECTION AND DISCRIMINATION

THE ENTIRE MAINS DISTRIBUTION SYSTEM SHALL INCORPORATE CIRCUIT BREAKERS SELECTED TO ACHIEVE REQUIRED PROSPECTIVE FAULT LEVELS BOTH BY INHERENT FAULT CAPACITY AND IN THE CASE OF DOWNSTREAM EQUIPMENT BY APPLYING THE PRINCIPLES OF DISCRIMINATION. IN ADDITION, DISCRIMINATION UNDER OVERLOAD AND SHORT CIRCUIT FAULT CONDITIONS SHALL BE ACHIEVED THROUGHOUT. PROVIDE FULLY ADJUSTABLE MOULDED CASE CIRCUIT BREAKERS TO ACHIEVE THIS ON MSB.

WHERE NEW CIRCUITS ARE BEING ADDED TO EXISTING MSB & DBS, USE CIRCUIT BREAKERS MATCHING EXISTING MAKE & FAULT LEVEL

THE ELECTRICAL SYSTEM EARTHING SHALL COMPLY WITH AS/NZS 3000:2018 & BE IN ACCORDANCE WITH THE SUPPLY AUTHORITY'S REQUIREMENTS.

### PROVIDE EARTHING TO:

- ALL EXPOSED METAL PARTS FORMING PART OF THIS INSTALLATION. EARTH CONNECTIONS TO EQUIPMENT WITH PAINTED OR COATED SURFACED SHALL BE CLEANED TO BARE METAL.

METAL MULLIONS OF OFFICE PARTITIONS WHICH CONTAIN SWITCHES OR OUTLETS.

- CABLE TRAY, LADDER, BASKET

### 1.26 SITE TESTS

TESTS SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

- INSULATION RESISTANCE USING MEGGER BETWEEN EACH CONDUCTOR AND ALL OTHERS IN CABLE, CONDUIT OR SWITCHGEAR AND BETWEEN CONDUCTORS AND EARTH;
- EARTH RESISTANCE TESTS IN ACCORDANCE WITH AS/NZS 3000;
- VERIFICATION OF POLARITY AND PHASE ROTATION;
- FUNCTIONAL TESTS OF CONTROLS AND SYSTEMS;

 TESTING AS SPECIFIED IN AS 3017. CORRECT TORQUE OF BOLTED CONNECTIONS;

TRIP TESTS OF PROTECTIVE CIRCUIT BREAKERS; VERIFICATION OF OPERATION OF ALL POWER OUTLETS AND ISOLATORS;

- TESTING OF ALL RCD DEVICES;
- LOAD BALANCING ACROSS ALL THREE PHASES.

SUBMIT "AS-INSTALLED" DRAWINGS WITH THE OPERATING AND MAINTENANCE MANUALS PRIOR TO THE DATE OF PRACTICAL COMPLETION. THE DRAWINGS SHALL COMPRISE THOSE REQUIRED AS WORKING DRAWINGS AND BROUGHT UP TO DATE.

FORMAT: PREPARE "AS-INSTALLED" DRAWINGS ON "AUTOCAD".

SUBMISSION: SUBMIT THE FOLLOWING WITH THE OPERATING AND MAINTENANCE MANUALS:

- ONE (1) SET OF FULL SIZE PRINTS (A1/B1).

- THREE (3) SETS OF A3 REDUCED PRINTS BOUND SEPARATELY AS PART OF THE OPERATING AND MAINTENANCE MANUALS. TWO (2) SETS OF CAD & PDF FILE DISKS.
- 1.28 OPERATION AND MAINTENANCE MANUALS
- THE MANUALS SHALL GENERALLY INCLUDE THE FOLLOWING: TABLE OF CONTENTS;
- DESCRIPTION OF SYSTEMS;
- LIST OF SWITCHBOARDS STATING EXACT LOCATIONS AND WITH COPIES OF CIRCUIT SCHEDULES;
- INSTRUCTIONS FOR OPERATING THE SYSTEMS AND EQUIPMENT;

SESSION FOR A FULL PERIOD OF 1 DAY WITHIN 1 MONTH OF PRACTICAL COMPLETION.

- MANUFACTURER'S MAINTENANCE INSTRUCTIONS FOR EACH ITEM OF EQUIPMENT; - LIST OF SPARE PARTS WITH MANUFACTURER AND CATALOGUE NO.;
- LIST OF SPARE PARTS SUPPLIED UNDER THIS CONTRACT;
- INSTRUCTIONS FOR ADJUSTING CONTROLS AND CUT-OUTS;
- COPIES OF AS-INSTALLED DRAWINGS.

RCD TESTING;

1.29 TRAINING PROVIDE TRAINING ON SITE AT TIMES AND DATES TO BE AGREED DURING THE CONTRACT. ALLOW TO PROVIDE AN INITIAL TRAINING

BINDER: MANUALS SHALL BE IN A BINDER WITH THE SITE, PROJECT AND CONTRACTOR IDENTIFIED ON SPINE AND FRONT COVER

# 1.30 CERTIFICATE OF COMPLIANCE

# REQUIREMENT

CERTIFY ON COMPLETION OF EACH COMPONENT OR STAGE THAT THE WORKS COMPLY WITH THE REQUIREMENTS OF THE WIRING RULES, THE ELECTRICITY DISTRIBUTOR REGULATIONS AND ANY OTHER APPLICABLE RULES OR REGULATIONS.

PROVIDE A SEPARATE CERTIFICATE OF COMPLIANCE FOR EACH STAGE OF THE WORK INCLUDING TEMPORARY SUPPLIES ETC.

### THE CERTIFICATE SHALL BE IN A FORM ACCEPTABLE TO LOCAL STATE LEGISLATION AND COMPLETED IN ACCORDANCE WITH THEIR REQUIREMENTS. ISSUE COPIES TO THE SUPERINTENDENT'S PROPRIETOR AND THE ELECTRICITY DISTRIBUTOR.

### 1.31 MAINTENANCE PERIOD

CERTIFICATE

PROVIDE MAINTENANCE OF THE WORKS FROM THE COMMENCEMENT OF, AND FOR A PERIOD EQUAL TO. THE 12 MONTH DEFECTS LIABILITY PERIOD.

### REQUIREMENT MAINTENANCE SHALL CONSIST OF REQUIRED SERVICING OF THE INSTALLED PLANT, INCLUDING ATTENTION TO EMERGENCY CALLS,

OUT IN THE MAINTENANCE MANUAL. FINAL CHECKING CHECK SYSTEMS AND EQUIPMENT AT THE CONCLUSION OF THE DEFECTS LIABILITY PERIOD IN THE PRESENCE OF THE

AND RECTIFICATION OF DEFECTS AND SHALL BE STRICTLY IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS AND AS SET

### SUPERINTENDENT AND READJUST IF NECESSARY. **OUTSTANDING ITEMS**

IN THE EVENT THAT ANY INSTALLATION OR MAINTENANCE WORK IS OUTSTANDING AT THE END OF THE SPECIFIED PERIOD, CONTINUE THE MAINTENANCE OBLIGATIONS UNTIL SUCH WORK IS COMPLETED AND THE SUPERINTENDENT HAS ADVISED IN WRITING THAT IT IS ACCEPTABLE.

ISSUE DATE AMENDMENT INT. APP. 01 |02.02.2022| PRELIMINARY ISSUE NK JM 02 | 25.02.2022 | ISSUE FOR DA 03 | 31.03.2022 | REISSUE FOR DA

CO-ORDINATED REFERENCE DRAWINGS					
SERVICE	DRAWING NUMBER	DATE			
ARCH					
CIVIL					
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MECH					
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STRUCT					

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**HGW PROJECTS** Suite 202, 308 Pacific Highway

Crows Nest, NSW 2065

0457 919 402

REDFERN NSW 2016

e: epicentre@epicentrece.com.au

w: www.epicentrece.com.au

t: 1300 553 654

e: maddy.ryan@hgwprojects.com.au

w: hgwprojects.com.au Services Engineer CONSULTING ENGINEERS 2 - 14 VINE STREET

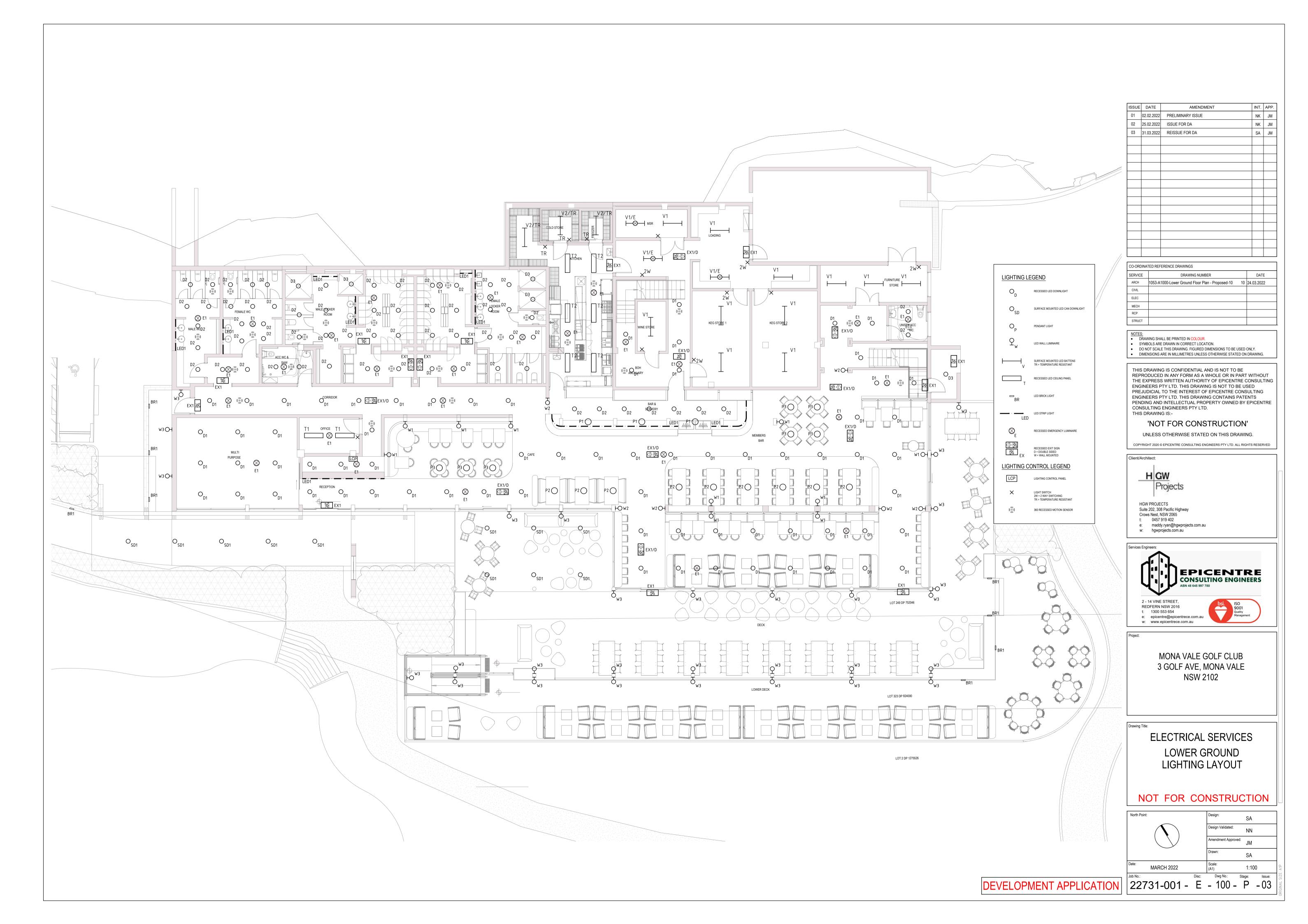
> MONA VALE GOLF CLUB 3 GOLF AVE, MONA VALE NSW 2102

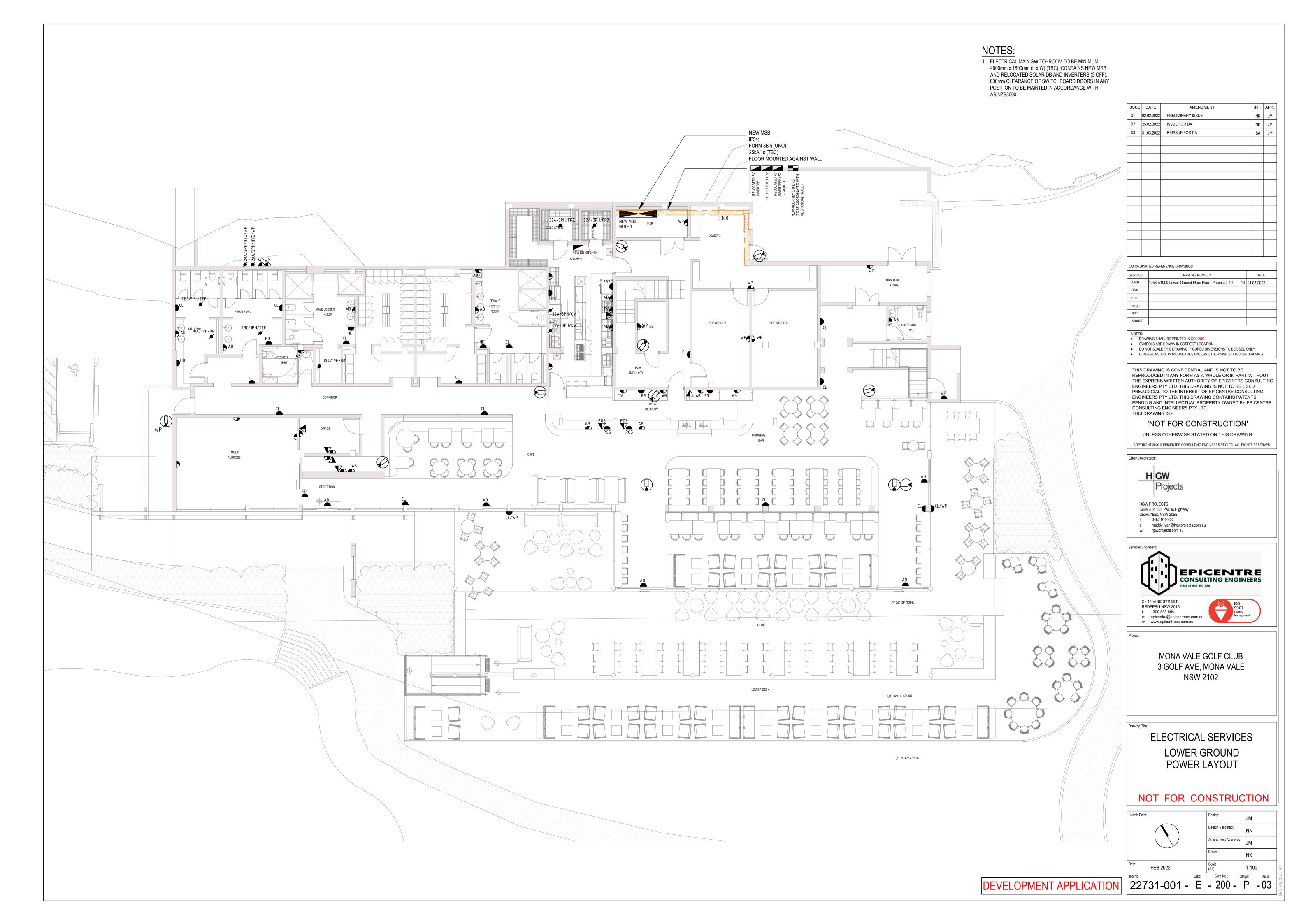
**ELECTRICAL SERVICES SPECIFICATION** 

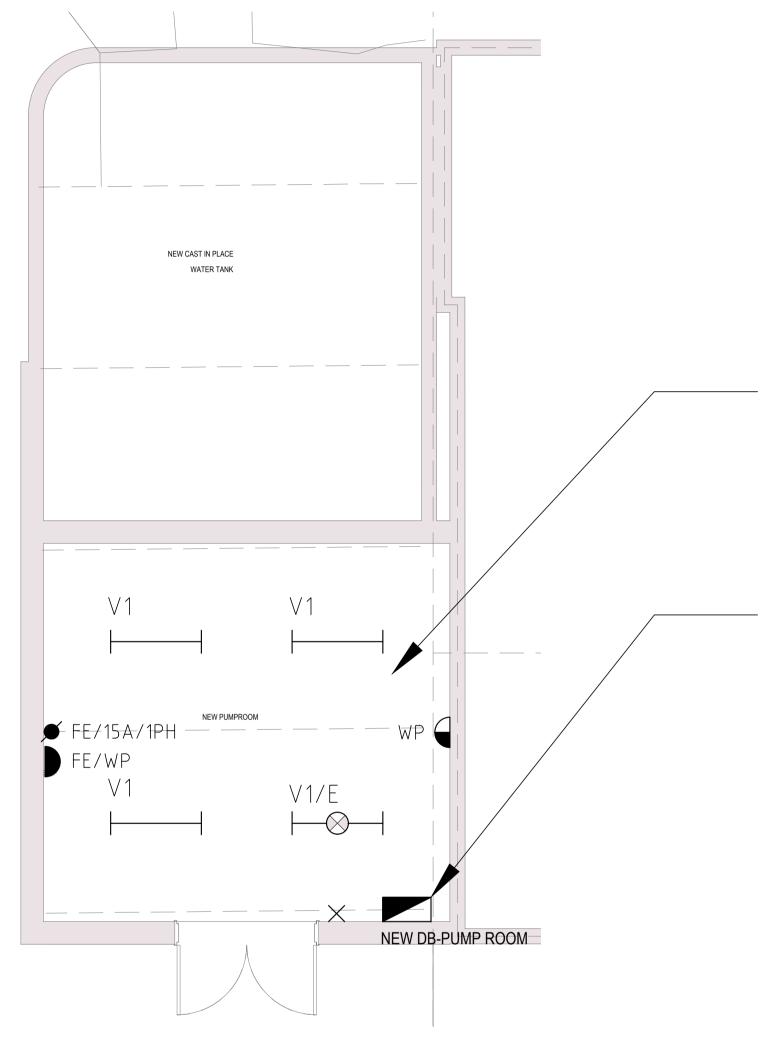
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SA Amendment Approved: SA MARCH 2022 NTS

|DEVELOPMENT APPLICATION| | 22731-001 - E - 003 - P - 03







FIRE HYDRANT TANKS AND PUMPROOM

NEW PUMP HOUSE TO BE SUPPLIED BY PRO SHOP DB. TO BE COORDINATED DURING DETAILED DESIGN.

GENERAL LIGHTING AND POWER FOR

NEW DB-PUMP ROOM. FED FROM ESSENTIAL SERVICES SECTION OF THE NEW MSB. 18 POLE; FORM 1 (UNO); FAULT RATING TBC; WALL MOUNTED.

e: maddy.ryan@hgwprojects.com.au w: hgwprojects.com.au EPICENTRE CONSULTING ENGINEERS ABN 48 645 997 780 2 - 14 VINE STREET, REDFERN NSW 2016 t: 1300 553 654 e: epicentre@epicentrece.com.au w: www.epicentrece.com.au

01 31.03.2022 ISSUE FOR DA

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HGW PROJECTS Suite 202, 308 Pacific Highway Crows Nest, NSW 2065

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1053-A1020-Pumproom and Tank-1 01

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SA JM

DATE

28.03.2022

MONA VALE GOLF CLUB 3 GOLF AVE, MONA VALE NSW 2102

**ELECTRICAL SERVICES** FIRE HYDRANT TANKS & PUMPROOM

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North Point			Design:	SA		
			Design Validated:	NN		
			Amendment Appro	oved: JM		
			Drawn:	SA		
Date:	MARCH 2022		Scale: (A1)	1:50		: A1P
 Job No.:		Disc:	Dwg No.:	Stage:	Issue:	1ZE: