

## NOTES

### 1. EXTENT OF WORKS

THE ELECTRICAL SERVICES SUB-CONTRACT INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

- SUPPLY AND INSTALLATION OF ALL COMPONENTS FORMING PART OF THE ELECTRICAL SERVICES.
- CO-ORDINATION.
- INSPECTIONS.
- TESTING AND COMMISSIONING.
- MAINTENANCE.
- CABLING, CABLE SUPPORT SYSTEMS AND ACCESS.
- POWER DISTRIBUTION.
- LIGHTING.
- CABLE ACCESS.
- ALL MINOR COMPONENTS AND INCIDENTAL WORKS NOT SPECIFICALLY REFERRED TO, HOWEVER NECESSARY TO COMPLETE THE ELECTRICAL SERVICES INSTALLATION SUCH THAT IT IS HANDED OVER COMPLETE, OPERATIONAL AND FIT FOR THE INTENDED USE.

PRIOR TO COMMENCING WORK CONSULT SITE MANAGEMENT FOR ANY HAZARDOUS MATERIAL AND OR ASBESTOS REGISTERS AS WELL AS UNDERTAKE A THOROUGH INSPECTION OF THE SITE TO IDENTIFY ANY POTENTIAL HAZARDOUS MATERIALS, ASBESTOS AND HEALTH OR SAFETY RISKS. ADVISE THE CONTRACTOR OF ANY POTENTIAL HAZARDOUS MATERIALS, ASBESTOS AND HEALTH OR SAFETY RISKS IF IDENTIFIED AND DO NOT COMMENCE WORK UNTIL AN APPROPRIATE MANAGEMENT PLAN HAS BEEN DEVELOPED AND AGREED TO BY ALL PARTIES.

SUPPLY ALL LABOUR, MATERIALS, EQUIPMENT, AND ALL OTHER ITEMS, WHETHER MENTIONED IN DETAIL OR NOT, REQUIRED FOR THE SATISFACTORY COMPLETION OF THE ELECTRICAL SERVICES INSTALLATION, LEAVING IN FULL WORKING ORDER TO THE SATISFACTION OF THE PROJECT MANAGER.

ACCEPT FULL RESPONSIBILITY FOR LIASING, ARRANGING AND CO-ORDINATION ALL WORKS THAT HAVE AN EFFECT ON OR WILL BE AFFECTED BY THE ELECTRICAL SERVICES.

REMOVE ALL OF THE EXISTING ELECTRICAL SERVICES THAT BECOME REDUNDANT DUE TO THE WORKS.

### 2. WORKMANSHIP

ENSURE THAT THE WORK IS PERFORMED BY THE HOLDER OF A CURRENT ELECTRICAL SUB CONTRACTOR LICENSE. ENSURE THE INSTALLATION AND ALL COMPONENTS, FIXTURES, FITTINGS, OUTLETS AND CABLES ARE SUPPLIED AND INSTALLED TO A HIGH STANDARD THROUGHOUT, AND INSTALLED IN A NEAT AND TRADESMAN LIKE MANNER, TO THE CURRENT INDUSTRY STANDARDS. ENSURE ALL MATERIALS AND COMPONENTS OF A SIMILAR TYPE ARE OF THE SAME MANUFACTURER AND INSTALLED IN A UNIFORM MANNER.

IT IS THE ELECTRICAL SUB CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE INSTALLATION IS FIT FOR PURPOSE AND IS PROVIDED AS A COMPLETE WORKING INSTALLATION. IT IS THE ELECTRICAL SUB CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL COMPONENTS, FITTINGS, FIXTURES, SYSTEMS, PROGRAMMING ETC IRRESPECTIVE OF THE LEVEL DETAILED IN THE DOCUMENTS SUCH THAT THE INSTALLATION IS PROVIDED AS A COMPLETE WORKING INSTALLATION.

CONCEAL ALL WIRING AND CONDUITS. EXPOSED CABLING OR CONDUITS ARE GENERALLY NOT ACCEPTABLE. IT IS NOTED THAT CHASING AND REINSTATEMENT WILL BE REQUIRED. ENSURE ALL COMPONENTS, EQUIPMENT AND MATERIALS SUPPLIED ARE NEW, UNUSED, DESIGNED AND SELECTED TO ENSURE SATISFACTORY OPERATION UNDER VARYING ATMOSPHERIC, CLIMATIC, HUMID TROPICAL CONDITIONS WITHOUT DISTORTION AND DETERIORATION IN ANY PART AFFECTING EFFICIENCY AND RELIABILITY OF THE SYSTEMS. DESIGN AND SELECT ALL EQUIPMENT TO PROVIDE THE NECESSARY SAFETY TO HUMAN LIFE AND PROPERTY DURING OPERATION AND MAINTENANCE WITH PARTICULAR ATTENTION GIVEN TO ELECTRICAL SAFETY AND SEGREGATION PRECAUTIONS.

CHECK THE FINISHED PAINTWORK AROUND THE AREA OF EACH INSTALLATION AND TOUCH UP ALL DAMAGED PARTS AND FINISHES AFTER THE INSTALLATION OF THE ELECTRICAL SERVICES.

ALL WORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE BUILDER'S PROGRAM. ENSURE ALL FINAL LOCATIONS OF OUTLETS AND FITTINGS ARE CO-ORDINATED ONSITE WITH THE ARCHITECT AND ALL OTHER SERVICES, TO THE APPROVAL OF THE PROJECT MANAGER. ALLOW TO CO-ORDINATE THE FINAL LOCATION OF ALL EQUIPMENT, FITTINGS, & OUTLETS, SUCH THAT THEY ARE INSTALLED IN ACCORDANCE WITH THE AS3000 RESTRICTED ZONES, AND ARE NOT COVERED INAPPROPRIATELY.

ENSURE THAT ALL METAL SURFACES ARE SUITABLY PROTECTED AGAINST CORROSION, AND THAT ALL PLASTIC MATERIALS ARE UV STABILISED.

PROVIDE ALL MATERIALS AS NEW, AND OF THE HIGHEST CLASS AVAILABLE FOR THEIR RESPECTIVE TYPES. ENSURE ALL ASPECTS OF THE WORK ARE OF A HIGH STANDARD THROUGHOUT, AND INSTALLED IN A NEAT AND TRADESMAN LIKE MANNER, TO THE CURRENT INDUSTRY STANDARDS.

### 3. STANDARDS

IRRESPECTIVE OF INFORMATION CONTAINED IN THE ELECTRICAL SERVICES DOCUMENTS OR IN INSTRUCTIONS, IT IS THE ELECTRICAL SUB CONTRACTOR'S RESPONSIBILITY TO ENSURE ALL ELECTRICAL SERVICES WORKS ARE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FOLLOWING. REFER ANY DISCREPANCIES BETWEEN THE REQUIREMENTS OF THE FOLLOWING AND/OR THE ELECTRICAL SERVICES DOCUMENTS AND INSTRUCTIONS TO THE ARCHITECT FOR CLARIFICATION PRIOR TO THE PLACING OF ORDERS, FABRICATION OR INSTALLATION OF THE ITEMS/METHODS IN DISCREPANCY.

- NCC BUILDING CODE OF AUSTRALIA.
- ELECTRICITY ACT.
- ELECTRICAL SAFETY ACT.
- AS/NZS3000.
- AS3008.
- WORKPLACE HEALTH AND SAFETY ACT.
- TELECOMMUNICATIONS ACT.
- ACMA REQUIREMENTS.

### 4. AUTHORITIES

ENSURE ALL OF THE ELECTRICAL SERVICES COMPLY WITH THE REQUIREMENTS OF ALL REGULATORY AUTHORITIES HAVING JURISDICTION OVER THE SITE INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- ACMA.
- LOCAL COUNCIL.
- LOCAL SUPPLY AUTHORITY.
- STATE GOVERNMENT DEPARTMENT OF ENVIRONMENT AND HERITAGE.
- QLD GOVERNMENT, DIVISION OF WORKPLACE, HEALTH AND SAFETY.
- QLD FIRE AND RESCUE AUTHORITY.

### 5. CABLES

UNLESS OTHERWISE SPECIFIED, INSTALL AND TERMINATE CABLES IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS. DETERMINE THE FINAL ROUTES TO SUIT THE BUILDING STRUCTURE AND SITE CONDITIONS. UNLESS NOTED OTHERWISE, PROVIDE ALL 240 VOLT POWER AND LIGHTING WIRING AS 2.5mm<sup>2</sup> TWIN & EARTH STRANDED COPPER CONDUCTORS, PVC INSULATED 0.6/1kV V75 GRADE TO AS3174, PROTECTED BY A 20 AMP CIRCUIT BREAKER. ALL CONDUIT AND FITTINGS TO BE RIGID UPVC TO AS2053, UNLESS NOTED OTHERWISE.

## NOTES

### 6. POWER DISTRIBUTION

THE POWER DISTRIBUTION COMPONENT OF THIS CONTRACT INCLUDES PROVIDING A NEW DISTRIBUTION BOARD DB-C TO ACCOMMODATE THE NEW CARPARK CIRCUITS. PROVIDE A NEW 160 AMP MCCB IN THE MSB TO SUPPLY DB-C VIA A NEW 4c+E 70MM CU XLPE/PVC SUBMAIN. THE POWER DISTRIBUTION COMPONENT OF THIS CONTRACT INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING EXTENT OF WORK:

- POWER DISTRIBUTION.
- MSB MCCB AND UPDATED LABELLING.
- DISTRIBUTION BOARD DB-C AND A WEATHERPROOF HAT SECTION.
- DB-C SUBMAIN.
- MODIFICATION OF THE EXISTING SHELVING TO ACCOMMODATE THE NEW DISTRIBUTION BOARD.
- EARTHING.
- REMOVAL OF EXISTING REDUNDANT CIRCUITS.
- CIRCUITS.
- ISOLATORS AND OUTLETS.
- TESTING AND COMMISSIONING.

PROVIDE THE DISTRIBUTION BOARD AS FOLLOWS:

- WALL MOUNTED.
- IP66 FORM 1.
- LIGHT GREY ENCLOSURE WHITE ESCUTCHEON.
- 3 POINT 92268 KEY LOCKABLE FLUSH HANDLES ON ALL DOORS.
- LIFT OFF HINGES ON ALL DOORS AND ESCUTCHEONS.
- 1/4 TURN LATCHES AND D HANDLES ON ALL ESCUTCHEONS.
- ALL SWITCHGEAR TO BE SCHNEIDER OR NHP/ TERASAKI.
- PROVIDE SHOP DRAWINGS FOR APPROVAL.
- ALL COMPONENTS ARE TO BE LABELLED WITH NON-STICK LABELS.

ENSURE THAT POWER IS MAINTAINED TO THE REMAINING PARTS OF THE SITE THAT ARE NOT PART OF THE WORKS BETWEEN 8.00AM AND 2.00AM. ANY INTERRUPTIONS TO THE POWER SUPPLY MUST BE LIMITED TO LESS THAN FOUR HOURS AND THE CLUB MUST BE PROVIDED WITH TWO WEEKS NOTICE PRIOR TO THE INTERRUPTION.

### 7. LIGHTING

ALL OF THE LIGHT FITTINGS, LAMPS AND ACCESSORIES ARE TO BE PROVIDED AS PART OF THIS CONTRACT. THE LIGHTING COMPONENT OF THIS CONTRACT INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING EXTENT OF WORK:

- LIGHTING.
- LIGHT FITTINGS AND ACCESSORIES.
- LAMPS.
- EARTHING OF THE LIGHTING INSTALLATION.
- LIGHTING CONTROL.
- LIGHTING SUBCIRCUITS.
- TESTING AND COMMISSIONING.

### 8. LIGHT POLES

PROVIDE POLES WITH A TAMPER RESISTANT ACCESS PANEL WITHIN THE POLE BASE AND BASE PLATE THAT INCORPORATE A MINIMUM OF FOUR HOLD DOWN BOLTS. PROVIDE POLES AND INSITU CONCRETE FOOTINGS DESIGNED SPECIFICALLY TO SUIT THE LOCAL CONDITIONS AND BE ABLE TO WITHSTAND WIND GUSTS OF 150KM/H. THE DESIGN OF THE POLE AND THE FOOTING IS TO BE UNDERTAKEN BY A RESISTED STRUCTURAL ENGINEER. PROVIDE A CERTIFICATE FROM THE STRUCTURAL ENGINEER INDICATING THE POLES AND FOOTINGS MEET THE SPECIFIED DESIGN CRITERIA. PROVIDE DETAILED DRAWINGS OF ALL POLES AND FOOTINGS FOR APPROVAL. PROVIDE A FUSED CONNECTION WITHIN EACH POLE LOCATED BEHIND THE POLE BASE ACCESS PANEL. CONNECT THE POLE TO THE ELECTRICAL EARTH VIA A LUG FIXED TO A STUD WELDED TO THE POLE LOCATED WITHIN THE POLE LOCATED BEHIND THE POLE BASE ACCESS PANEL. TRIM THE HOLD DOWN BOLTS SUCH THAT THEY DO NOT PROTRUDE MORE THAN 15MM ABOVE THE NUT. TREAT THE TRIMMED HOLD DOWN BOLT AGAINST CORROSION AND ENSURE IT DOES NOT CONTAIN SHARP EDGES THAT REPRESENT A HAZARD. ENSURE THE BASE PLATE IS BETWEEN 50 AND 100MM ABOVE THE FINISHED LANDSCAPE LEVEL. PROVIDE A NEAT SMOOTH FINISHED CONCRETE GROUT FILL UNDER THE BASE PLATE ENSURING ANY SPLATTER IS IMMEDIATELY WASHED OFF THE BASE PLATE AND POLE. EXTEND THE CONDUIT INTO THE POLE 50MM ABOVE THE BASE PLATE.

PROVIDE POLES THAT COMPLY WITH AS/NZS 1170.0 STRUCTURAL DESIGN ACTIONS PART 0: GENERAL PRINCIPLES - IMPORTANCE LEVEL 1 WITH A DESIGN WORKING LIFE OF 50 YEARS.

DESIGN THE POLES TO A WIND LOADING AS PER AS/NZS 1170.0 STRUCTURAL DESIGN ACTIONS PART 0: GENERAL PRINCIPLES. THE FRACTION OF CRITICAL DAMPING IS TO BE TAKEN AS 0.05 (ULTIMATE) AND 0.01 (SERVICEABILITY) FOR POLES WITH MORE THAN TWO- (2) OVERLAPS AND 0.02 (ULTIMATE) AND 0.005 (SERVICEABILITY) FOR ALL OTHERS. THE NATURAL FREQUENCY OF THE POLE IS TO BE CALCULATED CONSIDERING VARYING DIAMETERS AND THICKNESS OVER THE HEIGHT OF THE POLE AND USING A 1.1 SAFETY FACTOR FOR THE MASS AT THE TOP OF THE POLE. ENSURE POLE DEFLECTION AT SERVICEABILITY WIND SPEEDS HAVE A DEFLECTION LESS THAN 6.7%.

ENSURE ALL WELDS ARE BY A CONTINUOUS AUTOMATIC GAS SHIELDED ELECTRIC ARC PROCESS COMPLYING WITH THE RELEVANT PARTS OF AS/NZS 1554 STRUCTURAL STEEL WELDING. ENSURE THE LONGITUDINAL SEAM WELDS ON POLE SECTIONS CONFORMS TO GP STANDARDS WHILE BASEPLATE AND SPIGOT WELDS MUST CONFORM TO SP STANDARDS AS MENTIONED IN AS/NZS 1554. WELD SIZES ARE TO BE VERIFIED BY A QUALIFIED STRUCTURAL ENGINEER AND SPECIFIED IN THE ENGINEERING REPORT AND ON WORKSHOP DRAWINGS.

PROVIDE ALL POLES WITH A GALVANISED FOUNDATION BOLT ASSEMBLY COMPLETE WITH POSITIONING TEMPLATE AND TWO- (2) NUTS AND WASHERS PER BOLT PROVIDED TO SUIT THE POLE BASEPLATE. FOUNDATION BOLTS MUST BE MANUFACTURED FROM DEFORMED REINFORCING BARS WITH A NOMINAL YIELD STRESS OF 500 MPA. PROVIDE BOLTS THREADED IN ACCORDANCE WITH AS1275-1985 METRIC SCREW THREADS FOR FASTENERS AND FITTED WITH CLASS 5 NUTS IN ACCORDANCE WITH AS/NZS 1112 ISO METRIC HEXAGON NUTS. FOUNDATION BOLTS MUST BE TIED TO A SUITABLE REINFORCING CAGE. THE LENGTH OF EACH FOUNDATION BOLT MUST ALLOW FOR THE LENGTH OF THE THREAD ABOVE GROUND, A MINIMUM OF 100MM COVER AND A DEVELOPMENT LENGTH IN ACCORDANCE WITH AS3600-1994 CONCRETE STRUCTURES, TABLE 13.1.2.2(A). THE UNDERSIDE OF THE BASEPLATE IS TO BE GROUTED.

THE SECTION CAPACITY OF THE POLE IS TO BE ANALYSED OVER A MINIMUM OF 100 INCREMENTS ACCORDING TO AS4100 STEEL STRUCTURES AND AS/NZS 4600 COLD-FORMED STEEL STRUCTURES. LUMINARIES ARE TO BE ACCESSED BY EXTERNAL MACHINERY E.G. CHERRY PICKERS. . CLIMBING RUNGS AND MAINTENANCE PLATFORMS ARE NOT REQUIRED.

THE POLE AND ALL STEEL ACCESSORIES ARE TO BE POWDER COATED BLACK HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AS/NZS 4680 HOT-DIP GALVANIZED (ZINC) COATINGS ON FABRICATED FERROUS ARTICLES.

THE POLES ARE TO BE SANDED AFTER GALVANIZING AND PREHEATED TO 220°C TO DRIVE OFF ANY TRAPPED GAS UNDER THE GALVANIZED SURFACE. A ZINC RICH PRIME COAT INTERPON POLYZINC 660 OR EQUIVALENT SHALL BE APPLIED TO WITHIN 60mm AND 80mm WITHIN FOUR HOURS OF PREHEATING AND GREEN CURED TO 200°C FOR 3 MINUTES. PRIME COAT SHALL BE LIGHTLY SANDED BEFORE APPLICATION OF TOP COAT. COLOUR TOPCOAT SHALL BE A RIPPLE, HIGH BUILD FINISH TO WITHIN 50µm AND 70µm. ENSURE ALL MANUFACTURING TOLERANCES ARE IN ACCORDANCE WITH AS 1798 LIGHTING POLES AND BRACKET ARMS PREFERRED DIMENSIONS. IN PARTICULAR THE POLES SHALL BE CHECKED FOR COMPLIANCE WITH THE STRAIGHTNESS REQUIREMENTS OF THIS STANDARD: 0.3% OF HEIGHT.

ASSEMBLY AND ERECTION ARE TO BE CARRIED OUT ONLY BY QUALIFIED RIGGING PERSONNEL. GROUT THE UNDERSIDE OF ALL POLE BASEPLATES WITHIN SEVEN- (7) DAYS OF INSTALLING THE POLE.

### 9. ABBREVIATIONS

A - AMP CURRENT RATING  
AB - MOUNT ABOVE BENCH.  
AFFL - ABOVE FINISHED FLOOR LEVEL.  
BB - MOUNT BELOW BENCH.  
BH - MOUNT ON BULKHEAD.  
CEIL - MOUNT ON CEILING.  
CS - MOUNT WITHIN CEILING SPACE.  
C/W - COMPLETE WITH.  
RCBO - CIRCUIT PROTECTED VIA A 30mA RESIDUAL CURRENT DEVICE INTEGRAL TO THE CIRCUIT BREAKER. 3-PHASE RCBO TO BE 4-POLE.  
REF - REFRIGERATOR.  
SUS - MOUNT SUSPENDED FROM CEILING.  
UNO - UNLESS NOTED OTHERWISE.  
WP - WEATHERPROOF TO IP56 UNO.  
500 - NUMBER DENOTES MOUNTING HEIGHT AFFL.

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USE FIGURED DIMENSIONS IN PREFERENCE TO SCALE.

ALL DIMENSIONS TO BE VERIFIED ONSITE.

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TRADING AS:  
ELECTRICAL DESIGN  
GROUP

PROJECT:

**CAPALABA SPORTS CLUB  
MULTI-STOREY CARPARK**

SITE ADDRESS:

113 NEY ROAD, CAPALABA

SCALE: SHEET SIZE:

NOT TO SCALE AT A1

DRAWING TITLE:

**ELECTRICAL SERVICES  
NOTES**

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