

NOTES

10. LIGHTING

THE LIGHTING COMPONENT OF THE ELECTRICAL SERVICES SUB-CONTRACT INCLUDES ALL OF THE INTERNAL AND EXTERNAL LIGHT FITTINGS, LAMPS AND ACCESSORIES. PROVIDE ALL NECESSARY ACCESSORIES TO FACILITATE THE COMPLETE LIGHTING INSTALLATION. THE LIGHTING COMPONENT OF THE ELECTRICAL SERVICES SUB-CONTRACT INCLUDES THOUGH IT IS NOT LIMITED TO THE FOLLOWING EXTENT OF WORK:

- INTERNAL AND EXTERNAL LIGHT FITTINGS.
- EMERGENCY AND EXIT LIGHTING.
- EARTHING OF THE LIGHTING INSTALLATION.
- LIGHTING CONTROL.
- LIGHTING SUBCIRCUITS.
- TESTING AND COMMISSIONING.
- CARPARK LIGHTING POLES AND FOOTINGS.
- CIRCUIT CONNECTION TO THE SHADE STRUCTURE LIGHTING PROVIDED AS PART OF THE SHADE STRUCTURES.

ALL LIGHT SOURCES ARE TO BE SOLID STATE WITH AN AVERAGE LIFE OF 50,000 HOURS AND A MANUFACTURERS WARRANTY OF 5 YEARS

PROVIDE DM-W AND DB-T A SINGLE POINT EMERGENCY LIGHTING SYSTEM THAT COMPLIES WITH THE LATEST ISSUE OF ALL PARTS AS2293 AND THE RELEVANT PARTS OF THE NCC BCA. INSTALL EMERGENCY LIGHT FITTINGS NOMINATED AS MAINTAINED WITH THE LAMP PERMANENTLY ON SUPPLIED VIA AN UNSWITCHED ACTIVE MAINS SUPPLY WHEN THE MAINS SUPPLY IS AVAILABLE. WHEN THE MAINS SUPPLY IS NOT AVAILABLE, THE LAMP IS TO REMAIN ON SUPPLIED BY THE EMERGENCY PACK. SINGLE LAMP MAINTAINED EMERGENCY LIGHTS ARE NOT SWITCHED WITH THE LOCAL GENERAL AREA LIGHTING. (THE LAMP IS ALWAYS ON.)

INSTALL EMERGENCY LIGHT FITTINGS NOMINATED AS NON-MAINTAINED AS FOLLOWS:

- IF THE FITTING IS NOT BEING SWITCHED, THE LAMP IS TO REMAIN OFF WHEN THE MAINS SUPPLY IS AVAILABLE. WHEN THE MAINS SUPPLY IS NOT AVAILABLE THE LAMP IS TO BE SWITCHED ON SUPPLIED BY THE EMERGENCY PACK. UNSWITCHED SINGLE LAMP NON-MAINTAINED EMERGENCY LIGHTS ARE NOT SWITCHED WITH THE LOCAL GENERAL AREA LIGHTING. (THE LAMP IS ON ONLY WHEN THE MAINS SUPPLY IS NOT AVAILABLE.)
- IF THE FITTING IS BEING SWITCHED, THE LAMP IS TO BE SUPPLIED AND CONTROLLED WITH THE LOCAL GENERAL AREA LIGHTING WHEN THE MAINS SUPPLY IS AVAILABLE. WHEN THE MAINS SUPPLY IS NOT AVAILABLE THE LAMP IS TO BE SWITCHED ON, SUPPLIED BY THE EMERGENCY PACK. (THE LAMP IS ON WHEN TURNED ON WITH THE LOCAL GENERAL LIGHTING OR THE MAIN SUPPLY IS NOT AVAILABLE.)

11.0 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 INSTITU 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. LUMINAIRE CROSSARMS SHALL BE DESIGNED TO ENSURE EASY ACCESS OF FITTINGS FOR RE-LAMPING AND AIMING. 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.

NOTES

12.0 COMMUNICATIONS CABLING

THE COMMUNICATIONS CABLING COMPONENT OF THIS CONTRACT INCLUDES A NEW COMMUNICATIONS RACK CR-T IN THE SUBTERRANEAN TANK ROOM CONNECTED TO THE CLUBHOUSES MAIN EXISTING COMMUNICATIONS RACK VIA A NEW GEL FILLED UNDERGROUND 12 CORE OM4 OPTICAL FIBRE CABLE WITH LC CONNECTORS. A NEW FIBOT IS TO BE PROVIDED IN THE CLUBHOUSES MAIN EXISTING COMMUNICATIONS RACK AND IN CR-T.

THE COMMUNICATIONS CABLING COMPONENT OF THIS CONTRACT INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING EXTENT OF WORK:

- COMMUNICATIONS RACK CR-T.
- FIBOTS.
- OM4 OPTICAL FIBRE CABLE.
- LABELLING.
- TESTING AND COMMISSIONING.

13. FIRE ALARM SYSTEM

THE EXISTING AS1670.1 FIRE ALARM SYSTEM IS TO BE EXPANDED TO INCLUDE THE NEW MDB-1 ROOM AND THE NEW SUBTERRANEAN TANK ROOM. THE FIRE ALARM SERVICES INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

- SUPPLY AND INSTALLATION OF ALL COMPONENTS FORMING PART OF THE FIRE ALARM SERVICES.
- CO-ORDINATION.
- INSPECTIONS.
- TESTING AND COMMISSIONING.
- MAINTENANCE.
- DETECTORS.
- SPEAKERS AND HORNS.
- UPGRADING THE EXISTING FIP AS NECESSARY.
- UPDATING THE ZONE PLAN.
- CABLING, CABLE SUPPORT SYSTEMS AND ACCESS.
- EXPANDING THE CLUBS EXISTING BRIGADE MONITORED AS1670.1 ADDRESSABLE FIRE ALARM SYSTEM INTO THE MDB-1 ROOM AND THE NEW SUBTERRANEAN TANK ROOM.
- ALL MINOR COMPONENTS AND INCIDENTAL WORKS NOT SPECIFICALLY REFERRED TO, HOWEVER NECESSARY TO COMPLETE THE FIRE ALARM SERVICES INSTALLATION SUCH THAT IT IS HANDED OVER COMPLETE, OPERATIONAL AND FIT FOR THE INTENDED USE.

PRIOR TO PRACTICAL COMPLETION CERTIFY THE INSTALLATION ON A FORM 16 AS COMPLYING WITH THE RELEVANT CODES AND STANDARDS AND INCLUDE A COPY OF THE CERTIFICATION IN THE MANUAL.

PROVIDE THE AS CONSTRUCTED AND COMMISSIONING INFORMATION TO ALLOW THE AS1670.1 DESIGNERS STATEMENT TO BE COMPLETED.

THE TANK ROOM SERVICES ARE TO BE ON DEDICATED LOOPS / ZONES FROM THE CLUB HOUSE SERVICES.

IRRESPECTIVE OF THE SERVICES DETAILED ON THE DRAWING, THE SYSTEM MUST BE COMPLIANT WITH AS1670.1:2024 AND THE REQUIREMENTS OF THE QUEENSLAND FIRE AND EMERGENCY SERVICES.

THE CONTRACTOR IS RESPONSIBLE FOR PAYING ANY CALL OUT FEES ISSUED BY QUEENSLAND FIRE DEPARTMENT THAT ARE THE RESULT OF DEFECTIVE WORKS, CABLING, OR SYSTEM COMPONENTS

ENSURE ALL AS1670.1:2024 WORKS ARE UNDERTAKEN BY, OR UNDER THE DIRECTION OF A SUITABLY QUALIFIED AND EXPERIENCED FIRE ALARM SYSTEM INSTALLER WHO HOLD THE REQUIRED QBCC AND FIRE PROTECTION CONTRACTORS REGISTRATION BOARD OF QUEENSLAND INC REGISTRATIONS. ENSURE ALL 240-VOLT WORKS ARE UNDERTAKEN BY AN ELECTRICIAN WITH AN ELECTRICAL SUB CONTRACTORS LICENCE. 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 CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE FIRE ALARM INSTALLATION IS FIT FOR PURPOSE AND IS PROVIDED AS A COMPLETE WORKING INSTALLATION. IT IS THE FIRE ALARM 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.

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ALL DIMENSIONS TO BE VERIFIED ONSITE.						SCALE: NTS		PROJECT NO: C3379a	
						DRAWING NO: E08		REVISION: D	
						133 PINE ROAD, RICHLANDS		AT A1	