

APPENDIX H

Electrical and Lighting Concept Design

ELECTRICAL SPEC ON DRAWINGS 1.0 GENERAL THIS SPECIFICATION DETALS THE CONTRACTOR'S RESPONSIBILITY FOR THE DESIGN, SUPPLY, INSTALLATION, TESTING, COMISSIONING AND PROVISION OF 12 MONTHS DEFECTS LIABLITY SERVICES AND MAINTENANCE FOR THE ELECTRICAL SERVICES INSTALLATION, THIS SHALL BE READ IN CONJUNCTION WITH THE OTHER TRADES DRAWINGS AND SPECIFICATIONS.	ALL INSTALLATION WORK SHALL BE CARRIED OUT AS SUCH TIMES THAT THERE IS NO INTERRUPTION TO PRINCPAL'S OPERATIONS DURING NORMAL WORKING HOURS, ALLOWANCE SHOULD BE MADE FOR OUT OF HOURS WORK AS RECOURED TO COMPLETE THE INSTALLATION. ACCESSORES ARE TO BE INSTALLED AS INJOICATED ON PLANS, WHERE NOT INDICATED ALL OUTLETS TO BE INSTALLED 300 AFFL, SWITCHES ARE TO BE INSTALLED 1350 AFFL OR AS DIRECTED BY THE SUPERINTENDENT. ELECTRICAL SERVICES, OUTLETS, SWITCHES, LUMINARES, ETC SHALL BE ABLE TO BE RELOCATED PRIOR TO ROUGH IN, UP TO AM RADURES HORIZONTALY ON THE PLAN AT NO COST.	DOORS RECUIREMENT PROVIDE DOORS TO ALL SWITCHBOARDS MAXIMUM DOOR SWING: THROUGH 135°. HANSING HANG DOORS ON HEAVY-DUTY CHROMIUM-PLATED STEEL HINGES WHICH ALLOW EASY REMOVAL OF THE DOOR	EXCEED 40% OF THE DUCT CROSS SECTIONAL AREA. IF WIRING IS NOT INSTALLED IN DUCTS, NEATLY BUNCH, SUPPORT AND LACE IT WITH PVC TIES OR STRIPS, PROVIDE PROTECTIVE INSULATION WHERE BUNCHED WIRING OR CABLES ARE IN CONTACT WITH METAL, OR PASS THROUGH CUT-OUTS IN SHEET METAL. EXTERNUL, CINCUIT CABLES: IN IN PROVISION IS MADE IN WIRING DUCTS OR EXTERNAL CONNECTION CABLES, INSTALL A GALVANISED PERFORATED CABLE TRAY BETWEEN TERMINAL BLOCKS AND CABLE ENTRIES, OF A SIZE, AND WITH AVAILABLE ACCESS SPACE. SUFFCIENT TO PERMIT READY INSTALLATION OF THIS EXTERNAL SEGREGATION: SECREGART ELECTRIC CIRCUITS SUBJECT TO POSIBLE INTERPRENCE, AND THE LIKE.
2.0 SCOPE OF WORK THE ELECTRICAL SERVICES INSTALLATION SHALL INCLUDE, BUT NOT BE LIMITED TO, THE PROVISION OF THE FOLLOWING SYSTEMS AND EQUIPMENT: "MAINS CABLES IN UNDERGOUND CONDUIT SYSTEM.	ROUGHING OF LOGISTIC MOLIFICATION ALL OWN HILE FUNK IN THE PUNK IN WORST. PROVIDE LOGISTIC NOTICITIES AND SUTTICES AND SHALL BE FITTED TO THE GRID BASE PLATE AND SHALL BE VISIBLE WITH THE FACEPLATE INSTALLED. OTHER LABELS FOR EQUIPMENT SHALL BE ENGRAVED TRAFFOLYTE OR APPROVED EQUAL.		TERMINATIONS EXERCISITE ELECTRIC UNCONSTRUCTION SOBJECT TO POSSIBLE INTERVENENCE, AND THE LIKE- TERMINALS FOR CONNECTIONS UP TO 15KW LOAD PROVIDE RAIL-MOUNTED, SPRING-LOADED, TUNNEL TYPE TERMINATION BLOCKS, FOR CONNECTIONS TO CIRCUITS ABOVE 15KW LOAD PROVIDE STUD TYPE TERMINALS OF A SIZE TO
UNDERGROUND CONDUIT AND PTIS SYSTEM FOR POWER. NEW STIE SWITCHBOARD MUDIFIX METERING. EXISTING DISTRIBUTION SWITCHBOARD MODIFICATIONS. SUBMAINS CABLES TO OTHER SERVICES DISTRBUTION BOARDS. CABLE SUPPORTS.	12.0 MATERNLS SUPPLY MATERNALS, FITTINGS, ACCESSORIES AND APPARATUS NEW AND OF FIRST GRADE DESIGN AND MANUFACTURE COMPLYING WITH THE LATEST AUSTRALIAN STANDARDS WHERE APPLICABLE. SUBMIT FOR APPROVAL, SAMPLES OF ALL FITTINGS, ACCESSORIES AND APPARATUS INTIMEDED TO BE USED. APPROVAL TO BE OBTIANED FRIOR TO PLACING OF ORDERS AND INSTALLATION.	LOCKING INCORPORATE A CYLINDER LOCK IN THE LATCHING SYSTEM. ALL THE LOCKS OF ONE INSTALLATION SHALL BE KEYED ALIKE. NUMBER OF KEYS REQUIRED: THREE. DUIST SEALS	CONTINUOUSLY CARRY THE LOAD AND NOT LESS THAN 5 MM DIAMETER, FIT WASHERS AND LOCK WASHERS TO EACH STUD, AND BARRIERS BETWEEN ADJACENT STUDS. CONNECTION FOR TUNNEL TYPE TERMINALS CONNECT ONE CONDUCTOR ONLY INTO EACH END OF THE TUNNEL AND INTERCONNECT TERMINAL GROUPS, WHERE NECESSARY, BY STANDARD CROSS CONNECTIONS.
* SUBMISSION OF SHOP DRAWINGS. * AS-BUILT DRAWINGS, DEFECTS LIABILITY SERVICE AND MAINTENANCE. 3.0 CODES, RULES, PERMITS AND FEES	PRESERVE UNFORMITY OF ACCESSORIES AND FITTINGS THROUGHOUT THE WORK, ACCESSORIES SHALL HAVE COLOUR TO THE SUPERINTENDENT'S SELECTION. 13.0 SWITCHBOARDS	PROVIDE A RESILENT STRIP SEAL, OF SPONGE NEOPRENE OR THE LIKE, AROUND EACH DOOR, OR REMOVABLE PANEL, HOUSED N A SUITABLE CHANNEL OF HOUSING AND FIXED WITH AN APPROVED INDUSTRIAL ADHESIVE. SEAL CONTACT: NDOOR LOCATIONS: POSITIVE CONTACT WITH A FLAT SURFACE OF THE ENCLOSURE AT LEAST AS WIDE AS THE	LUGS TERMINATE WIRING INTO TERMINAL BLOCKS USING COMPRESSION TYPE LUGS COMPATIBLE WITH THE TERMINALS, AND CRIMPED BY THE USE OF THE CORRECT TOOL, LUGS FOR CONNECTION TO TUNNEL TYPE BLOCKS SHALL BE OF PRE-INSULATED LIPPED BLADE TYPE.
ALL MATERIALS, SUPPLIES AND ALL WORK INSTALLED SHALL COMPLY WITH CODES, RULES AND REGULATIONS OF ALL STATUTORY AUTHORITIES HAVING JURISDICTION OVER THE WORKS. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING: * ASIN23 3000, ASIN2 3008, ASIN25 61439. * THE LOCAL AUTHORITY.	SCOPE OUTLINE DESCRIPTION SUPPLY, INSTALLATION, FACTORY TESTING AND SITE TESTING OF SITE MAIN SWITCHBOARD AS SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS. STANDARDS	SEAL STRIP WEATHER RESISTANT SWITCHBOARD. A CONTINUOUS POSITIVE LINE OF CONTACT ESCUTCHEON PLATES RECUIREMENT	ARRANCEMENT TERMINATE INTERNAL WIRING TO THE ONE SIDE OF THE TERMINAL BLOCK, LEAVING THE OTHER SIDE FOR OUTCOING CIRCUITS. GROUPING
THE SUPPLY AUTHORITY. THE SUPPLY AUTHORITY. THE BUILDING CODE OF AUSTRALIA. * QUEENSLAND ELECTRICAL SAFETY ACT. * WORKPLACE HALTH AND SAFETY.	REFERENCED DOCUMENTS THE FOLLOWING STANDARDS ARE REFERRED TO IN THIS SECTION: ASNZS 5112, AS 60044,1, AS 60529, ASINZS 60269,1, ASINZS 61439 ASINZS EC 60947, ASINZS 5000,1, ASINZS 3000	PROVIDE REMOVABLE ESCUTCHEON PLATES WITH NEAT CUT-OUTS FOR CIRCUIT BREAKER HANDLES AND THE LIKE. HT CHROMIUM PLATED LIFTING HANDLES OR KNOBS TO EACH ESCUTCHEON PLATE. ESCUTCHEON PLATES SHALL BE LOCKED CLOSED USING QUARTER TURN SLOTTED SQUARE DRIVE LOCKS. FRAME	SEGREGATE TERMINAL GROUPS AND INSTALL TOGETHER TERMINALS FOR EACH OUTGOING CIRCUIT, IN THE SAME ORDER THROUGHOUT, AS FOLLOWS: TERMINALS FOR POWER WIRING: 3 PHASES OR PHASE AND NEUTRAL CONTROL TERMINALS: IN NUMERICAL OR ALPHAGETICAL ORDER OF WIRE IDENTIFICATION, WITH THE LOWEST NUMBER OR LETTER NEXT TO THE POWER TERMINALS
4.0 WORKS BY OTHERS BUILDERS WORKS * PROVIDE MAIN SWITCHBOARD CUPBOARD * PROVIDE MAIN SWITCHBOARD SUPPORT FRAME MECHANICAL	AUTHORITIES APPROVALS REQUIRENENT: DOCUMENTS EVIDENCING APPROVAL OF REGULATORY AUTHORITIES, TO BE PROVIDED BEFORE PRACTICAL COMPLETION, INCLUDE THE FOLLOWING: SUPPLY AUTHORITY: APPROVAL OF MAIN SWITCHBOARD CONFIGURATION AND LABELLING INSPECTION	PROVIDE A CONTINUOUS 12MM WDE SUPPORT FRAME FOR THE FIXING OF EACH ESCUTCHEON PLATE, NCLUDING ADDITIONAL SUPPORT WHERE NECESSARY TO PREVENT PANEL DISTORTION. FIXING FIX EACH PLATE TO THE FRAME WITH METAL FIXINGS HELD CAPTIVE IN THE PLATE AND SPACED UNIFORMLY. MAXIPUID DIRINSIONING	SPARE TERMINAL SPACE PROVIDE SUFFICIENT SPACE ON MOUNTING RAILS FOR FUTURE OUTGOING CIRCUITS POSSIBLE IN ANY CABLING COMPARTMENT. WRING DENTIFICATION
SUBMINIT TERMINATED OWNO OUT OWN NOME MICHIOARD BY MECHANICAL TRADE, ELECTRICAL TRADE TO PROVISION 3M TAILS. 5.0 ELECTRICITY SUPPLY	INCLOTION REQUIREMENT: GIVE NOTICE SO THAT INSPECTION MAY BE MADE AT THE FOLLOWING STAGES: WORKS ASSEMBLY COMPLETED PRIOR TO LEAVING FACTORY SWITCHBOARD INSTALLED AND CONNECTED TESTING	INCOMING UNLEDGENED 1200MIA MOLOSAM2. HANGENG HANG ESCUTCHEON PLATES ON PINTEL HINGES WHICH ALLOW OPENING THROUGH A MINIMUM OF 90° AND PERMIT THE REMOVAL OF THE ESCUTCHEON WHEN IN THE OPEN POSITION.	UDING DEATH SETTION DENTIFY, BY MARKERS, EACH CONTROL CORE ACTIVE, NEUTRAL AND EARTH WITH THE IDENTIFICATION SHOWN ON THE 'AS-INSTALLED' DRAWINGS, SCHEMATIC WIRING DIAGRAM ADJACENT TO THE MAIN SWITCHBOARD, SUPPLY AND INSTALL A SCHEMATIC WIRING DIAGRAM OF THE
GENERAL WORKS TO ASINZS 3000 SUPPLY AUTHORITY WIRING REGULATIONS, SERVICE AND INSTALLATIONS RULES – CODE OF PRACTICE FOR THE CONNECTION OF ELECTRICAL INSTALLATIONS TO SUPPLY MAINS. DISTRIBITION COMPANY: ENERGEX	TEST TYPES TO ASINZS 61439 SUPPLY COPIES OF A CERTIFICATE OF TYPE TEST, STATING THE TESTING AUTHORITY, MANUFACTURER, AND DETALS OF PARAMETERES AND RESULTS FOR EACH TEST, PROVIDE DOCUMENTATION TO VERIFY THAT THE TESTS WERE CARRIED OUT ON A SWITCHBOARD OF ESSENTIALLY DENTICAL DESIGN TO THAT SPECIFED.	FNISHES SURFACE PREPARATION WHERE METAL SURFACES ARE TO BE PAINTED, PREPARE THEM AS SPECIFIED IN "SUBSTRATE PREPARATION – PAINTING, METAL SURFACES GENERALLY – PAINTING", AND TRON AND STEEL SURFACES – PAINTING".	COMPLETE SWITCHBOARD INCLUDING ALL INCOMING AND OUTGOING CABLES SIZES AND TYPES AND ALL CB RATINGS. THE WIRING DIAGRAM SHALL BE FIXED INTO A FRAME WITH NON-REFLECTIVE GLASS COVER AND MOUNTED WITHIN THE MAIN SWITCHROOM. SWITCHGEAR AND CONTROL GEAR SWITCHGEAR REQUIREMENT
POINT OF SUPPLY LOCATION: TERMINALS WITHIN PADMOUNT TRANSFORMER (T.B.C.) ELECTRICITY SUPPLY THE ELECTRICITY SUPPLY IS 400/230 VOLT, THREE PHASE, FOUR WIRE 50HZ WITH A MULTIPLE EARTH NEUTRAL	ROUTINE TESTS TO ASM25 SH39 CARRIED OUT AT THE MANUFACTURER'S WORKS AND REPEATED AT THE SITE THE ELECTRICAL FUNCTION TEST SHALL USE EXTERNALLY CONNECTED SIMULATED CIRCUITS AND EQUIPMENT AT THE WORKS AND BE REPEATED AFTER CONNECCTON OF PERMANENT WIRING AND EQUIPMENT AT THE SITE.	TO AS 2700 EXTERNAL COLOUR: STAINLESS STEEL 316	PROVIDE MAINS SMITCHING, OUTGOING CIRCUIT SWITCHING, MOTOR CONTROLS AND STARTERS, PROTECTION AND ADMLARY FOLIPMENT, LOAD SHEDDING CONTACTORS AND CONTROLS, AS SHOWN ON THE DRAWINGS AND DESCRIEDE HEREN. MAIN SWITCHES MAIN SWITCHES SHALL COMPLY WITH ASINZS 60947 AND SHALL BE SUITABLE FOR FAULT MAKINGLOAD
EARTHING SYSTEM. CONSUMER MAINS LIASE WITH THE DISTRIBUTION COMPANY FOR THE INSTALLATION AND CONNECTION OF THE CONSUMERS MAINS BETWEEN THE POINT OF SUPPLY AND THE CONSUMERS SITE MAIN SWITCHBOARD. POWER SUPPLY BY THE ELECTRICITY AUTHORINY (T.B.C.)	NOTICE GVE NOTICE OF TESTING SO THAT THE SUPERINTENDENT MAY WITNESS THE TESTS CERTIFICATES PROVIDE CERTIFICATES STATING THE RESULT OF ROUTINE TESTING. OPERATIONAL MAINTENANCE	NTERNAL COLOUR: GLOSS WHTE UNRANTEM METAL FINISHES LINISHING, SANDING, SAND BLASTING, ETCHING AND THE LIKE SHALL BE WITHIN THE RANGE OF APPROVED SAMFLES. UNISHING: PROVIDE A LINISH FINISH TO AS 1100.201 ROUGHNESS GRADE N4	BREAKING DUTES, IE AUTO-CIPCUIT BREAKER, FUSED CFS OR FAULT MAKINGLOAD BREAKING SWITCH. NON-AUTO CIRCUIT BREAKERS ARE NOT ACCEPABLE UNLESS THEY HAVE BEEN TESTED FOR FAULT MAKINGLOAD BREAKING DUTES TO ASINZS 60947. MOULDED CASE AND MINATURE CIRCUIT BREAKERS STANDARDS
PAY FOR ALL DISTRIBUTION COMPANY COSTS AND CHARGES ASSOCIATED WITH THE INSTALLATION OF THE CONSUMERS MAINS, TARIFF METERS AND METERING GTS. AND HEADWORK COSTS WILL BE PAID BY THE PRINCIPAL IF THE DISTRIBUTION COMPANY ELECTS TO PERFORM OR SUPPLY PART OF THE WORKS, MAKE THE NECESSARY ARRANGEMENTS. INSTALL EQUIPMENT SUPPLIED, BUT NOT INSTALLED, BY THE DISTRIBUTION	OF LONGAGE MAINTAIN TO AND, A STATE AND A	SANDING: USE AN ORBITAL SANDER WITH NO £0 EMERY PAPER, WIPE OVER ON COMPLETION WITH A KEROSENE SOAKED CLOTH	TO ASINZS 60947.1 FOR FAULT CAPACITIES OF A 10 KA OR MORE. TO AS 3111 FOR MINIATURE OVERCURRENT CIRCUIT BREAKERS UP TO 1000 A CURRENT RATING AND LESS THAN 10 KA FAULT CAPACITY. MOUNTING MOUNT THE CIRCUIT BREAKERS SO THAT THE 'ON-OFF' AND CURRENT RATING INDICATIONS ARE CLEARLY
COMPANY. METERING PROVIDE CT METERING WITHIN NEW MAIN SWITCHBOARD. METER PANEL TO CONTAIN ALL METERING	FREQUENCY OF MAINTENANCE: NOT LESS THAN AT THREE MONTHLY INTERVALS AND AS RECOMMENDED BY MANUFACTURER, CERTIFICATION AT THE END OF THE MAINTENANCE PERIOD MAKE A FINAL INSPECTION OF THE INSTALLATION AND UPON	CONDUCTORS BUSBARS RECUREMENT PROVIDE BUSBAR CIRCUITS WITHIN THE SWITCHBOARD, EXTENDING FROM THE TERMINATION OF THE INCOMING	VISBLE WITH THE COVER OR ESCUTCHEON IN POSITION, AND SO THAT ARC DISCHARGES FROM THE CIRCUIT BREAKERS ARE DRECTED AWAY FROM LIVE METAL AND INSULATION, ALIGN OPERATING TOGGLES IN THE SAME PLANE. CLEARANCE
EQUIPMENT REQUIRED BY THE SUPPLY AUTHORITY, INCLUDING KWH METERS, TEST BLOCK, ETC. LIABE WITH THE SUPPLY AUTHORITY FOR THE MOST BENEFICIAL TARIFF FOR THIS INSTALLATION AND SUBMIT DETAILS TO THE SUPERINTENDENT FOR APPROVAL.	SATISFACTORY COMPLETEION CERTIFY IN WRITING THAT THE INSTALLATION IS OPERATING CORRECTLY. INSTALLATION: SITE ERECTION INSTALLATION TO ASINZS 3000.	UNIT TO THE LINE SIDE OF PROTECTIVE EQUIPMENT FOR OUTGOING CIRCUITS. CROSS-SECTION RADIUS EDGES AND CORNERS TO PREVENT DAMAGE TO INSULATION. SUPPORT	MAINTAIN SUFFICIENT SPACE AROUND THE CIRCUIT BREAKERS TO ALLOW ALL INCOMING AND OUTGOING CABLES, INCLUDING CABLES TO SPARE POLES, TO BE INSTALLED AND TERMINATED WITHOUT OVERCROWIDING. ACCESSORIES PROVIDE AUXILIERY CONTACTS AND OTHER REQUIRED ACCESSORIES.
6.0 DEMOLITIONITEMPORARY WORKS DISCONNECT, REMOVE AND MAKE SAFE ALL REDUNDANT ELECTRICAL SERVICES. RELOCATE AND MAINTAIN SUPPLY TO EQUIPMENT WHERE REQUIRED, PROVIDE TEMPORARY CONNECTIONS AND RELOCATIONS THAT MAY BE NEEDED TO ENSURE THE ELECTRICAL SERVICES ARE MAINTAINED AT ALL TIMES WHERE REQUIRED.	GENERAL DESIGN MANUFACTURED SWITCHGEAR ASSEMBLIES TO AS 3439. THE SITE MAIN SWITCHBOARD SHALL BE FRONT CONNECTED OF A STANDARDISED ENLOSED MODULAR CUBICLE TYPE DESIGNED IN ACCORDANCE WITH: ITEM. MAIN SWITCHBOARD FORM OF SERGEATION TO AS 3439. FORM 2A WITH FORM 1 SECTIONS AS NOMINDATED ON SLD.	PROVIDE SUPPORT SUFFICIENT TO WITHSTAND WITHOUT DAMAGE THE MAXIMUM PROSPECTIVE FAULT CURRENTS. JONTING MAKE BUSBAR JOINTS WITH HIGH TENSILE BOLTS AND NUTS, LOCKED IN POSITION WITH LOCK NUTS OR LOCKING TASS. TIGHTEN BOLTS TO THE MANUFACTURER'S RECOMMENDATION WITH A TENSION WRENCH. DO NOT USE	RATED THERMAL CURRENT AS APPLICABLE TO THE UNIT WHEN INSTALLED IN THE SPECIFIED ENCLOSURE. RATED SHORT-CIRCUIT MAKING CAPACITY NOT LESS THATIN THE SMITCHBOARD FAULT LEVEL OR AS OTHERWISE SPECIFIED. OPERATION
COORDINATE DEMOLITION/DISCONNECTION/RELOCATION OF SERVICES TO ENSURE MINIMAL DISRUPTION OCCURS.	DEGREE OF PROTECTION TO AS 1939: IP 66 STAINLESS STEEL 316 EQUIPMENT CONNECTION: FRONT CONNECTED TOP AND BOTTOM ENTRY ARRANGEMENT OF CUBICLES: MODULAR METALINORK THICKNESS: 2.0MM NN	TAPPED HOLES AND STUDS OR THE LKE FOR JOINING CURRENT-CARRYING SECTIONS. INSULATION ACTIVE AND NEUTRAL BUSBARS: A FULLY-INSULATED SYSTEM USING THE SPECIFIED INSULATION MATERIAL JOINTS: INSULATE EITHER BY TAPING OR PLASTIC COATING, AS FOLLOWS	NOPERINDENT MANUAL OPERATION WITH A POSITIVE MANUALY OPERATED 'ON-OFF' INDICATOR, PROVIDE A FACILITY TO LOCK THE UNIT IN THE 'OFF' POSITION. DESIGN TOTALLY ENCLOSED UNIT INCORPORATING ARC CONTROL DEVICES AND SHROUDED STATIONARY CONTACTS.
THE ELECTRICAL TRADE FULLY LAISE AND COORDINATE WITH OTHER TRADES, IN A TIMELY MANNER, TO ENSURE PROPER COORDINATION OF AND BUILDING OF THE SERVICES. MAJOR ITEMS REQUIRING COORDINATION ARE LISTED AS FOLLOWS: * ALL BUILDING PENETRATIONS AS REQUIRED.	SPARE SPACE/CAPACITY – NEW BOARD AS SHOWN ON SINGLE LINE DIAGRAM SPARE SPACE/CAPACITY – FUTURE (TO BE CONFERNED BY SEALINK) PROSPECTIVE FAULT LEVEL 1 SECOND T.B.C. KA SURGE DIVERTER RATING: 15UKA 255V (CLAMP	TAPED JOINTS: APPLY A NON-ADHESIVE STOP-OFF TYPE TAPE, COLOURED TO MATCH THE SPECIFIED COLOUR COOING, HALE LAPPED TO ACHEVE A THICKNESS OF NOT LESS THAN THAT OF THE SOLD INSULATION PLASTIC-COATED JOINTS: APPLY, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AND TO A MINIMUM THICKNESS EQUAL TO THAT OF THE SOLD INSULATION	CONTROL AND TEST SWITCHES STANDARD TO ASINZS IEC 60947. RATED OPERATIONAL CURRENT
* COORDINATE THE LOCATION OF SWITCHBOARDS AND CONTROL PANELS, TERMINATION POINT FOR CABLING AND LENGTHS OF TAILS, CONFIRM THE DESIGN RATING MATCHES THE EQUIPMENT PROPOSED BY OTHER TRADES. * ENSURE THAT PERMANENT POWER IS AVAILABLE WHEN REQUIRED TO MEET CONSTRUCTION PROGRAM.	SAFETY MEASURE: 1 TRANSIENT PROTECTION AT THE MAIN SWITCHBOARD SURGE ARRESTOR DEVICES COMPOSING OF HIGH ENERGY METAL OXIDE VARISTOR ARE TO BE FITTED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. PROVIDE FAULT CURRENT LIMITING	COLOUR CODING	NOT LESS THAN 6 A AT 240 V AC AT UTILISATION CATEGORY AC-11. FUSES WITH ENCLOSED FUSE LINKS MANUFACTURE PROVIDE FUSE-HOLDERS AND FUSE-LINKS OF THE SAME MANUFACTURE THROUGHOUT THE INSTALLATION.
* ENSURE STAGING OF WORKS IS TO THE REQUIREMENTS OF CONSTRUCTION PROGRAM. 8.0 FINAL TESTS AND COMMISSIONING THE CONTRACTOR SHALL UNDERTAKE ALL NECESSARY TESTING REQUIRED AND RECORD ALL RESULTS, COPIES THE CONTRACTOR SHALL UNDERTAKE ALL NECESSARY TESTING REQUIRED AND RECORD ALL RESULTS, COPIES THE CONTRACTOR SHALL UNDERTAKE ALL NECESSARY TESTING REQUIRED AND RECORD ALL RESULTS, COPIES	PROTECTIVE DEVICES AS PER MANUFACTURER REQUIREMENT, AS SHOWN ON DRAWINGS. LOCATE SURGE DIVERTORS IN SEPARATE CUBICLE WITHIN SWITCHBOARDS.LOCATE FAULT CURRENT LIMITERS IN A POSITION WHICH IS SAFELY ACCESSIBLE WHILE SWITCHBOARD IS LIVE. PROVIDE VIEWING PANEL FOR SURGE DIVERTER INDICATORS.	ACTIVE BUSBARS: RED, WHITE OR BLUE NEUTRAL BUSBARS: BLACK EARTH BUSBAR: GREEN AND YELLOW DENTIFICATION: CLEARLY MARK AND NUMBER TERMINAL CONNECTIONS.	FUSE-HOLDER MOUNT THE FUSE-HOLDERS SO THAT THE FUSE CARRIER MAY BE WITHDRAWN DIRECTLY TOWARDS THE OPERATOR AND AWAY FROM LIVE PARTS, AND PROVIDE FIXED INSULATION WHICH SHROUDS ALL LIVE METAL WHEN THE FUSE CARRER IS WITHDRAWN.
OF ALL TEST RESULTS ARE TO BE PROVIDED TO THE SUPERINTENDENT. IF IN THE COURSE OF TESTING, ANY EQUIPMENT, PAPARATUS OR CALING IS FOUND TO BE DEFECTIVE, IT SHALL BE REPLACED. THE SUPERINTENDENT PRIOR TO AND AFTER COMPLETION WILL INSPECT THE WORK. THE CONTRACTOR SHALL NOTIF'THE SUPERINTENDENT OF SUITABLE TIMES AND ALL DEFECTS SHALL BE REPARED PRIOR TO PRACTICAL COMPLETION.	DESIGN ALL BOARDS SHALL BE FULLY CIRCUIT BREAKER DESIGN, USING BREAKERS FROM ONE SUPPLIER TO ENSURE COORDINATION OF PROTECTION ACROSS THE RANGE. THIS SECTION COVERS THE SITE MSB. EXTERNAL DESIGN	MEN LINK PROVIDE A BOLTED REMOVABLE LINK IN THE INCOMING COMPARTMENT, BETWEEN THE NEUTRAL AND EARTH BUSBARS. MINIMUM CLEARANCES MINIMUM CLEARANCES SHALL BE PROVIDED IN DISTRIBUTION SWITCHBOARDS BETWEEN CIRCUIT BREAKERS	FUSE_LINKS ENCLOSED, HIGH RUPTURING CAPACITY (HRC) TYPE MOUNTED IN A FUSE CARRIED, PROVIDE A "FUSE BLOWN" INDICATION WHICH IS VISIBLE WHEN THE LINK IS FITTED TO ITS CARRIER, WHERE NECESSARY FOR SAFE REMOVAL AND INSERTION OF THE FUSE CARRIER, PROVIDE EXTRACTION HANDLES AND MOUNT THEM ON CLIPS WITHIN THE SPARES CABINET.
THE CONTRACTOR SHALL ORGANISE AND PAY COSTS FOR INDEPENDENT TESTING OF THE ELECTRICAL INSTALLATION. SUBMIT A TESTING AND COMMISSIONING PROGRAM WHICH IS CONSISTENT WITH THE CONSTRUCTION PROGRAM. INCLUDE PARTICULARS OF TEST STAGES AND PROCEDURES. FOR DESIGNATE DESTS. INCLUDING PRE-DELIVERY TESTS, RECORD RESULTS AND SUBMIT REPORTS OR	EXTURNED ELSON REQUIREMENT PROVIDE AN ENCLOSURE COMPRISING PANELS, DOORS AND THE LIKE, GMING THE SPECIFIED ENCLOSURE, SEGREGATION AND DEGREE OF PROTECTION. DESIGN AND CONSTRUCTION: TO ASNE2S 61439 WHERE APPLICABLE DEGREE OF PROTECTION: TO AS 60529	AND SIDES OF CASE TO ENSURE ADEQUATE WHITING CHANNELS FOR OUTGOING CALLES, AS POLLOWS: CIRCUIT BREAKERS TO SOLS OF ADA ENSURE ADEQUATE WHITING CHANNELS FOR OUTGOING CABLES, AS POLLOWS: CIRCUIT BREAKERS TO TO PAID ADD TOTOM: 115MM MINIMUM DEPTH OF EACH CASE: 125MM – SMOOTH BACKING TO SIB WITH NO SCREWS PROTRUDING NEUTRAL AND EARTH LUNKS.	SPARES SPARES PROVIDE SPARE FUSE-LINKS FOR EACH SIZE OF FUSE-LINK ON EACH SWITCHBOARD, MOUNT THE SPARES ON CLIPS WITHIN THE SWITCHBOARD CABINET. ACCESSORIES. INSTRUMENTS AND METERS METERING TRANSFORMERS
CERTIFICATES IN A FORM SUITABLE FOR INCLUSION IN OPERATION AND MAINTENANCE MANUALS. 9.0 DEFECTS LIABILITY ALL WORK AND MATERIALS SHALL BE GUARENTEED AGAINST ALL DEFECTS FOR A PERIOD OF TWELVE MONTHS	SUPPORTING STRUCTURE FABRICATE SUPPORTING FRAMES FROM ROLLED, COLD FORMED OR EXTRUDED METAL SECTIONS, WITH JOINTS FULLY WELDED AND GROUND SMOOTH- PROVIDE CONCEALED FIXING OR BRACKETS LOCATED TO ALLOW THE ASSEMBLY TO BE MOUNTED AND FIXED IN THE SPECIFIED LOCATION WITHOUT REMOVAL OF EQUIPMENT.	CONNECTIONS PROVIDE STUD CONNECTIONS FOR CABLES OF CROSS SECTION 16mm2 OR LARGER.	STANDARDS CURRENT TRANSFORMERS: TO AS 60044.1 VOLTAGE TRANSFORMERS: TO AS 60044.2 AND AS 60044.5 TEST LINKS
FROM DATE OF ISSUE OF PRACTICAL COMPLETION. DURING THIS PERIOD, CARRY OUT PROMPTLY, REPLACEMENT OF ALL DEFECTIVE EQUIPMENT, FIXTURES AND MATERIALS AN OR ADDITIONAL COST. INSPECT AND TEST THE WORKS AT SIX MONTHS INTO THE DEFECTS LIABILITY PERIOD AND AT COMPLETETION	SWITCHBOARDS SHALL NOT HAVE DOORS OR ESCUTCHEONS FIXED IN PLACE BY READILY ACCESSIBLE SCREWS, EXTERNAL TO THE CABINET. PANELS MACHINE FOLD SHEET METAL ANGLES, CORNERS AND EDGES WITH A MINIMUM RETURN OF 25MM AROUND THE	TERVINALS PROVIDE TERMINALS FOR INCOMING AND OUTGOING NEUTRAL AND EARTH CONDUCTORS, INCLUDING THE NEW LINK, BOTH NEUTRAL AND EARTH BARS SHALL HAVE THE SAME NUMBER OF TERMINALS AS THERE ARE CIRCUIT	PROVIDE TEST LINKS FOR THE CONNECTION OF CALEBRATION INSTRUMENTS AND METERS AND FOR THE SHORTING OF CURRENT TRANSFORMER SECONDARES, ENERGY METERS, MAXIMUM DEMAND METERS AND ANMETERS, WHERE SPECIFED, SHALL EACH BE PROVIDED WITH A SET OF LINKS COMPRISING SCREW-CLAMPED SLIDE LINKS AND AN EARTH LINK.
OF THE DEFECTS LIABILITY PERIOD, PROVIDE SCHEDULED TESTS AS REQUIRED BY APPLICABLE AUSTRALIAN STANDARDS AND MANUFACTURER'S RECOMMENDATIONS. 10.0 ASBUILT DRAWINGS	EDGES OF FRONT AND REAR PANELS, AND 13MM MINIMUM RETURN EDGE AROUND DOORS, PROVIDE STIFFENING TO PANELS AND DOORS WHERE NECESSARY TO PREVENT DISTORTION OR DRUMMING. EQUIPMENT FRING PROVIDE EQUIPMENT MOUNTING PANELS FIXED TO THREADED METAL INSERTS LOCATED INSIDE THE	BREAKER POSITIONS. IDENTIFICATION: CLEARLY MARK AND NUMBER TERMINALS. WRING CABLE TYPE	TEST STUDS FOR ENERGY AND DEMAND METERS PROVIDE POTENTIAL TEST STUDS OR PLUG CONNECTIONS ADJACENT TO ASSOCIATED CURRENT TRANSFORMER LINKS. CURRENT TRANSFORMERS
AFTER CONSULTATION WITH THE SUPERINTENDENT FOR CORRECT PRESENTATION AND CONTENT, SUPPLY ONE FULL SET OF ASBULT DRAWINGS FOR APPROVAL, WITHIN THINTY DAYS OF PRACTICAL COMPLETION, THESE DRAWINGS SHALL BE A TRUE RECORD OF THE INSTALLATION AS IT WAS INSTALLED. FOLLOWING APPROVAL OF THE INITIAL SUBMISSION, PROVIDE ONE SET OF PRINTS, INEATLY BOUND AND HAND TO THE SUPERINTENDENT. DRAWINGS IN POF FORMAT, WITH APPORTATE SYMBOLS, LINE TYPES AND LAYERING OF	EXCLOSURE AT THE REAR OF THE MOUNTING PANELS, BOLTS AND MACHINE SCREWS SHALL BE OF NON-CORRONE TYPES COMPLETE WITH HEXAGON NUTS AND WASHERS WITH EXCESS THREADED SECTIONS CUT AND FILLED. WHERE EXPOSED TO VIEW CHROME PLATE ALL NUTES, BOLTS AND MACHINE SCREWS. USE CAPTIVE BOLTS AND NUTS WHEREVER POSSIBLE.LOCK NUTS SHALL BE USED ON BOLTS SECURING SUB-MAINS CABLE LUGS.	UNLESS OTHERWISE SPECIFIED, PROVIDE 0.5 KV V90'PVC INSULATED CABLES TO ASINZS 500.1, FOR GENERAL INTERNAL WING AND HEAT RESISTION INSULATED CABLES FOR CONNECTION TO EQUIPMENT CAPABLE OF RAISING THE ISULATION TEMPERATURES ABOVE 75'C. POWDE CARLES SZED TO SUIT A CURRENT CARRYING CAPACITY OF NOT LESS THAN THE MAXIMUM	ACCURACY CLASSIFICATIONS AND CLASS: ENERGY IMEAURENETS: GOM INDICATING AND RECORDING INSTRUMENTS: 2M RATED SHORT-TIME CURRENT: NOT LESS THAN THE SHORT-TIME CURRENT EQUIVALENT OF THE ROTENTIAL FAULT CLAPACITY OF THE GIRCUIT IN WHICH THE CURRENT TRANSFORMER IS INSTALLED.
SERVICES, PROVIDE ONE ELECTRONIC FORMAT FLE OF THE COMPLETED AS BUILT DRAWINGS TO THE SUPERIMTENDENT. THE DRAWINGS SHALL INCLUDE ACCURATE SPATIAL LAYOUTS OF ALL INSTALLED EQUIPMENT INCLUDING CABLE TRAY, IN SLAB AND IN GROUND CONDUIT AND EQUIPMENT. THE DRAWINGS SHALL BE CERTIFIED BY A LICENSED	UETING PROVISIONS UETING PROVISIONS PROVIDE FRANCISION THE SUPPORTING STRUCTURE, AND REMOVABLE ATTACHMENTS, FOR LIFTING SWITCHBOARD ASSEMBLIES WHOSE SHIPPING DIMENSIONS EXCEED 1.0M HIGH X 0.6M WIDE. VERNIN PREVENTION	CONTINUOUS RATING OF THE COMMENT OWNERD WHAT TO THE SWITCHBOARD, OR SEED TO WITHSTAND THE CONTINUOUS RATING OF THE CIRCUIT PROTECTIVE DEVICE, WHICHEVER IS THE GREATER, IF THE CONDUCTORS ARE TO BE BUNCHED OR INSTALLED WITHIN WIRING DUCTS, APPLY APPROPRIATE DE-RATING FACTORS TO ASINZS 3008 PART 1 WHEN DETERNINING CONDUCTOR SIZE. THE INNIMUM SIZE POWER	PAGE OR PAGE TO CONTREMENTATION OF THE CONTREMENT OF THE CONTREMENT. THE CONTREMENT OF THE CONTREMENT OF THE CONTREMENT OF THE CONTREMENT OF THE CONTREMENT. THE CONTREMENT OF THE CONTREMENT OF THE CONTREMENT OF THE CONTREMENT OF THE CONTREMENT. THE CONTREMENT OF THE CONTREMENT OF THE CONTREMENT OF THE CONTREMENT. THE CONTREMENT OF THE CONTREMENT OF THE CONTREMENT OF THE CONTREMENT. THE CONTREMENT OF THE CONTRE
SURVEYOR.	ALL SWITCHEDARDS INCLUDING THE BOTTOM SECTIONS SHALL BE DESIGNED TO PREVENT THE ENTRY OF VERMIN, USE BRASS FLY WIRE ON OTHER VENTILATION OPENINGS. CABLE ENTRIES REQUIRENENT	CONDUCTOR SHALL BE MULTI-STRAND 25MKZ. CONTOL AND INDICATION CRCUITS PROVIDE CONDUCTORS OF NOT LESS THAN 1.5 MKZ WITH 30/0.25 STRANDING AND OTHERWISE SIZED TO SUIT THE CURRENT CARRYING CAPACITY OF THE PARTICULAR CIRCUIT.	IN EACH PHASE CONNECTION, AND PROVIDE A REMOVABLE LINK IN THE NEUTRAL CONNECTION. IN EACH PHASE CONNECTION, AND PROVIDE A REMOVABLE LINK IN THE NEUTRAL CONNECTION. INSTRUMENT AND METERS STANDARDS RECORDING INSTRUMENTS; TO IEC 60051-8
THE COMPLETE INSTALLATION SHALL BE OF FIRST QUALITY WORKMANSHIP AND TO THE APPROVAL OF THE SUPERINTENDENT. ALL CABLING IS TO BE CONCEALED WHERE POSSIBLE AND BE SUPPORTED FROM BULDING STRUCTURE, ALL CABLING TO RUN PARALLEL AND SQUARE TO BUILDING ELEMENTS. WHERE CABLING PENETRATES STEEL STUD WALLS THEY SHALL BE PROVIDED WITH BUSHES AND GROMMETS.	PROVIDE SUFFICIENT CLEAR SPACE WITHIN EACH ENCLOSURE, ADJACENT TO THE CABLE ENTIRES, TO ALLOW THE INCOMING CABLES AND WIRING TO BE NEATLY RUN AND TERMINATED, WITHOUT OVERCROWDING. SIZE OF ENTRY FOR CABLE ENTRY AND INTERNAL DISTRIBUTION, PROVIDE CABLE ENTRIES OF NOT LESS THAN 100MM DEPTH BY	CABLE COLOURS A PHASE: RED B PHASE: WHTE	NDICATING INSTRUMENTS: TO Relevant Australian Standards ELECTRICITY METERS: TO Relevant Australian Standards TRANSDUCERS: TO Relevant Australian Standards ELECTRICITY METERS: CLASS U.5
SUPPLY ALL CABLES SIZED TO THE RECUREMENTS OF ASINZ\$ 3000 AND AS 3008.1 AS A MINIMUM, THE MINIMUM SUB CIRCUIT CABLING SHALL BE 2.5 MM/2CU FOR LIGHTING AND POWER. ALL CABLES ARET O BE NEW MULTI-STRANDED COPPER CONDUCTORS. THE LOAD SHALL BE BALANCED ACROSS ALL PHASES TO ACHIEVE A LOAD BALANCE OF +/- 5%.	THE FULL WIDTH OF CUBICLE SPACE WHICH IS UNRESTRICTED BY EQUIPMENT OR INTERNAL WIRING. GLAND PLATES PROVIDE TO EACH ENTRY A REMOVABLE GLAND PLATE FITTED WITH A GASKET TO MAINTAIN THE SPECIFIED DEGREE OF PROTECTION. NON-MAGNETIC CLAMP PLATES SHALL BE USED WHEN THE CABLE RATING EXCEEDS	NEUTRAL: ELACK EARTHING: GREENVELLOW WINING SUPPORT UNLESS OTHERWISE SPECIFIED INSTALL WIRING WITHIN PVC WIRING DUCTS. THE TOTAL CROSS SECTION OF	ACCESSORIES PROVIDE ACCESSORIES ASSOCIATED WITH MEASUREMENT AND, WHERE PRACTICABLE, MOUNT THESE ADJACENT TO ASSOCIATED INSTRUMENTS, INSIDE THE CUBICLES.
OBTAIN APPROVAL FROM THE SUPERINTENDENT FOR ALL CORE HOLES AND PENETRATIONS PRIOR TO INSTALLATION.	100 AMPS, VENTILATION PROVIDE VENTILATION ENSURE IP66 RATING IS MAINTAINED.	DDOCUMENTS	LABELS MARKING TO ASINZS 61439.4 AND ASINZS 3000.
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purpose for which it was C 18.08.21 PRELIMINARY ISSUE - ISOLUX CONTOURS SHOWN commissioned. B 06.04.21 PRELIMINARY ISSUE		24 June 2022	Electrical and Telecommu Iso 9 0 0 1 Phone : (07) 3372 928

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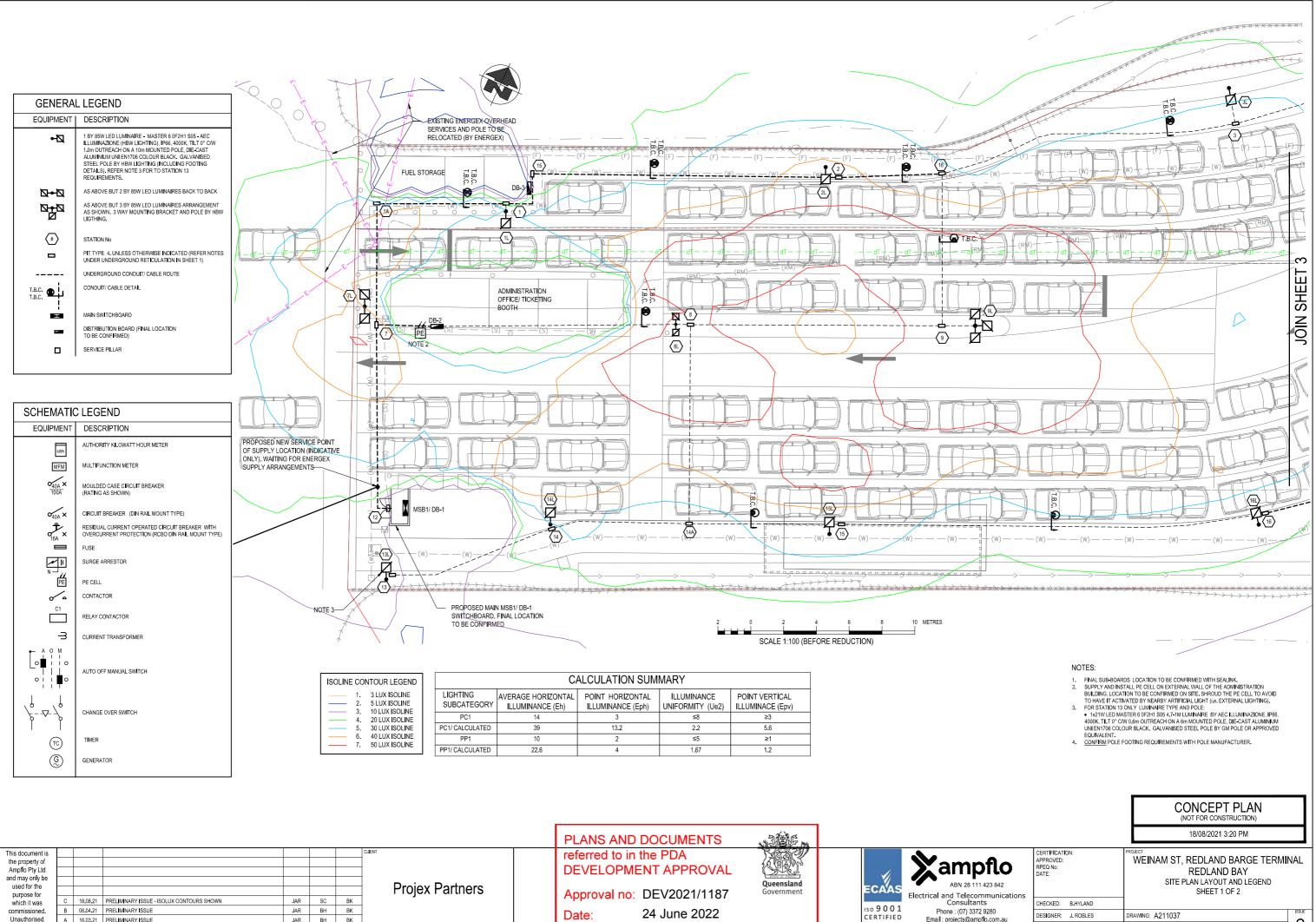


CERTIFIED Q U A L I T Y MANAGEMENT

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FUSES FITTED MAINTENANCE WHERE A SWIT OBVIOUS FROM	TO FUSE HOLDERS, CURRENT-LIMITING FU PERSONNEL, AND THE LIKE. CHBOARD CONTAINS CONTROL EQUIPMEI	ARD CONTROL, CIRCUIT DESIGNATIONS AND RATINGS, ISES, WARNING NOTICES FOR OPERATIONAL AND NT WITHIN THE SWITCHBOARD AND THIS IS NOT IMALL BE USED ON THE FACE OF THE SWITCHBOARD TOBBOARD.
LOCATION SCREW-FIX EA MATERIAL TWO-COLOUR		EM OF EQUIPMENT, BUT NOT ON THE EQUIPMENT.
WARNING NOT OTHER LABELS LETTERING HE GENERALLY NO	ICES: WHITE LETTERING ON RED BACKGRI S: BLACK LETTERING ON WHITE BACKGROU IGHT JT LESS THAN THE FOLLOWING: OARD DESIGNATION: 25mm	
FEEDER CONTI IDENTIFYING LI EQUIPMENT LA WARNING NOTI PROVIDE LABE	ROL SWITCHES: 10mm ABELS: [ON OUTSIDE OF CUBICLE REAR CO BELS WITH CUBICLES: 3mm ICES: 4mm	DVERS, ETC]: 4mm S ON MAIN SWITCHBOARDS IDENTIFYING DISTRIBUTION
SCHEDULE CARDS FOR LIGHT AND WITH TEXT TYP) GENERAL POWER DISTRIBUTION PROVID YEWRITTEN TO SHOW: SUB-MAIN DESIGNA YPLY AND LENGTH OF AS-INSTALLED SUBM	E SCHEDULE CARDS OF MINIMUM SIZE 200mm X 150mm TION AND RATING IN AMPS IAINS CABLES LIGHT AND POWER CIRCUIT NUMBER,
MOUNTING: MO ADJACENT TO COVER.	THE DISTRIBUTION CIRCUIT SWITCHES, AN	ROVAL. ED TO THE INSIDE OF THE ENCLOSED DOOR, ID PROTECT THE SCHEDULE WITH A HARD PLASTIC
* SELECTION O	S TO AS/NZS 1125 F CABLES TO AS/NZS 3008.1 TO AS/NZS 5000.1	
UNLESS OTHER	RWISE SPECIFIED IINSTALL, TERMINATE, A ERS RECOMMENDATIONS.	ND JOINT CABLES IN ACCORDANCE WITH
UNLESS UNAVO	DIDABLE DUE TO LENGTH OR DIFFICULT IN	STALLATION CONDITIONS, RUN CABLES FOR THEIR THROUGH JOINTS, LOCATE APPROVED JOINTS AS
UNDERGROUN SUPERINTEND CONDUITS FOR 3000. THE CON	RELECTRICAL CABLES SHALL BE HEAVY D	ATIONS AND AT TIMES APPROVED BY THE RECTIONAL DRILLING THRUST OPERATION. ITY SUITABLE FOR CATEGORY A SYSTEMS TO ASINZS E FINAL SIZE SELECTION IS THE RESPONSIBILITY OF THE
LEVELS MAY BI CONDUITS MAY ACCURATELY S SURVEY PLAN,	E ALTERED TO ACCOMMODATE OTHER DE (NOT BE LESS THAN THAT STATED IN AS/IN SURVEY THE ROUTES OF CONDUITS PRIOF ENDORSED BY A REGISTERED SURVEYOF	R TO BACKFILLING AND PROVIDE AN AS-INSTALLED R, WHO IDENTIFIES THE CONDUIT LOCATIONS IN
OF ALL CONDU ACCURATELY I THAN 50m FOR TERMINATIONS	ITS. LOCATE UNDERGROUND CONDUITS USING STRAIGHT DISTANCES, AND AT JOINTS, R AND ENTRY POINTS TO BUILDINGS.	INDERGROUND SERVICES. PLANS SHALL SHOW DEPTH ROUTE MARKERS PLACED AT INTERVALS OF NOT MORE DUTE JUNCTIONS, CHANGES OF DIRECTION,
TAPE SHALL BE ELECTRIC CAB EXCAVATE TRE PLANS OR SPE	E 150mm WIDE WITH APPROPRIATE WARNI LE" PROMINENTLY DISPLAYED ALONG THE ENCHES FOR THE INSTALLATION OF ALL UP CIFIED.	NDERGROUND CONDUITS SPECIFICALLY INDICATED ON
AS DIRECTED (PERIOD. ENSURE THAT	ON SITE. ALL TRENCHES SHALL BE EFFECT ALL REASONABLE STEPS ARE TAKEN TO L	ID AT UNIFORM GRADES, PLACE EXCAVATED MATERIAL IVELY DE-WATERED DURING THE CONSTRUCTION OCATE AND IDENTIFY ANY OTHER EXISTING SERVICES
INTERFERENCE ALL EXCAVATIO SIGNS AND WA BACKFILLING S	E WITH OTHER SERVICES, BY APPROVED C DNS SHALL BE ADEQUATELY GUARDED AN RNING LIGHTS, TO THE APPROVAL OF THE HALL NOT COMMENCE UNTIL INSPECTED I	BY THE SUPERINTENDENT.
STANDARD CO CONDUITS SHA ROCKS, ASH O THE SURFACE	MPACTION METHOD AS 1289-5.1.1. ALL BE LAID IN A BEDDING OF SAND PRIOR R HIGH ORGANIC MATERIALS SHALL NOT E OF ALL BACKFILLED TRENCHES SHALL MA	PERCENT MAXIMUM DRY DENSITY AS DETERMINED BY TO THE INSTALLATION OF GENERAL BACKFILLING, IE USED FOR BACKFILLING, TCH THE SURROUNDING AREAS, IE TURFED AREAS CHERS SHALL BE MADE GOOD, WHERE TRENCHING
ACROSS PAVE COMPACTED IN REMOVE AND I PROVIDE DRAV	D AREAS OR SEALS AREAS, REINSTATE AN N LAYERS NO GREATER THAN 200MM. ALL DISPOSE OF ALL SURPLUS EXCAVATED MA V-IN PITS COMPLETE WITH DRAINAGE FAC	ID MAKE GOOD. TRENCHES WITH SELECT FILL TO THE APPROVAL OF THE SUPERINTENDENT.
OTHERWISE SF TO COMMUNIC ELECTRICAL PI RUBBLE, GRAD ENCASE THE R	PECIFIED. PITS FOR USE OTHER THAN FOR ATIONS ON THEM. MOULD THE WORD "ELE DWER CABLES WHERE NOT LOCATED IN N ED AWAY FROM EACH CABLE PIT FOR 200 UBBLE PRIOR TO INSTALLATION. MINIMUM	COMMUNICATIONS SHALL NOT HAVE ANY REFERENCE CIPICI INTO ALL FOR USE ON ANY FITS CONTAINING EW PAVING, PROVIDE A DRAINAGE PUT FILLED WITH MM, PROVIDE AN APPROVED FIBRE FILTER MEDIA TO SEE SJOIMM WIDE OVERALL AND SJOIMM DEEPER THAN
WHERE NEW E RECESSED AC ORIENTATE TH	CESS COVER WITH MATCHING PAVERS CU E PIT TO MATCH INTO THE SURROUNDING FING IN AREAS REQUIRING NEW PAVING, F	KEAS, THE PIT LID SHALL BE A GALVANISED STEEL TO SUIT THE PAVING LAVOUT SET INTO THE LID. PAVING LAVOUT AND CUT PAVERED TO SUIT. WHERE AISE THE PIT AND REPLACE THE LID TO SUIT THE NEW
INSTALLATION SERVICES_CO TOLERANCES	SUBMIT DIMENSIONED DRAWINGS SHOWI OF ALL PLANT AND EQUIPMENT, INCLUDIN	NG DETAILS OF THE FABRICATION, LAYOUT AND G RELATIONSHIP TO BUILDING STRUCTURE AND OTHER SSPECTS OF PLANT, INCLUDING CONSTRUCTIONS
FORMAT		ONED SCALE LINE FOR DRAWING REDUCTION.
* EQUIPMENT L * LOCATION DI * TERMINAL ST	ON DETAILS, GENERAL ARRANGEMENT, EL AYOUT, EQUIPMENT DETAILS, CABLING AN AGRAM INDICATING LAYOUT WITH CLEARA	ID BUSBAR SIZES
* SWITCHBOAR * LAYOUT DRAI SERVICES AND	ID SCHEMATICS WINGS OF CABLE TRAY, CONDUITS, ELECT UTILITIES. RELAY AND CIRCUIT BREAKER SETTINGS	RICAL CABLES, DETAIL OF ALL INTERFACES WITH OTHER
REQUIREMENT EXAMINATION RESPONSIBILIT	S OF THE CONTRACT. OF DRAWINGS BY THE SUPERINTENDENT : 'Y FOR PREPARING, COORDINATING AND A	NISIBLE PERSON TO VERIFY CONFORMITY WITH THE SHALL IN NO WAY DIMINISH THE CONTRACTOR'S PPROVING SHOP DRAWINGS OR ENSURING THAT THEY ID CORRECT AS TO ALL RELEVANT INFORMATION.
10	APPROVED: RPEQ No: DATE:	WEINAM ST, REDLAND BARGE TERMINAL REDLAND BAY SCOPE WORK, AND GENERAL NOTES
nications	CHECKED: B.HYLAND	1

	CHECKED:	B.HYLAND					
au	DESIGNER:	J. ROBLES	DRAWING: A211037				ISSUE
	ISSUE DATE:	18.08.21	PROJECT: 211037	SHEET	1 (DF 5	C



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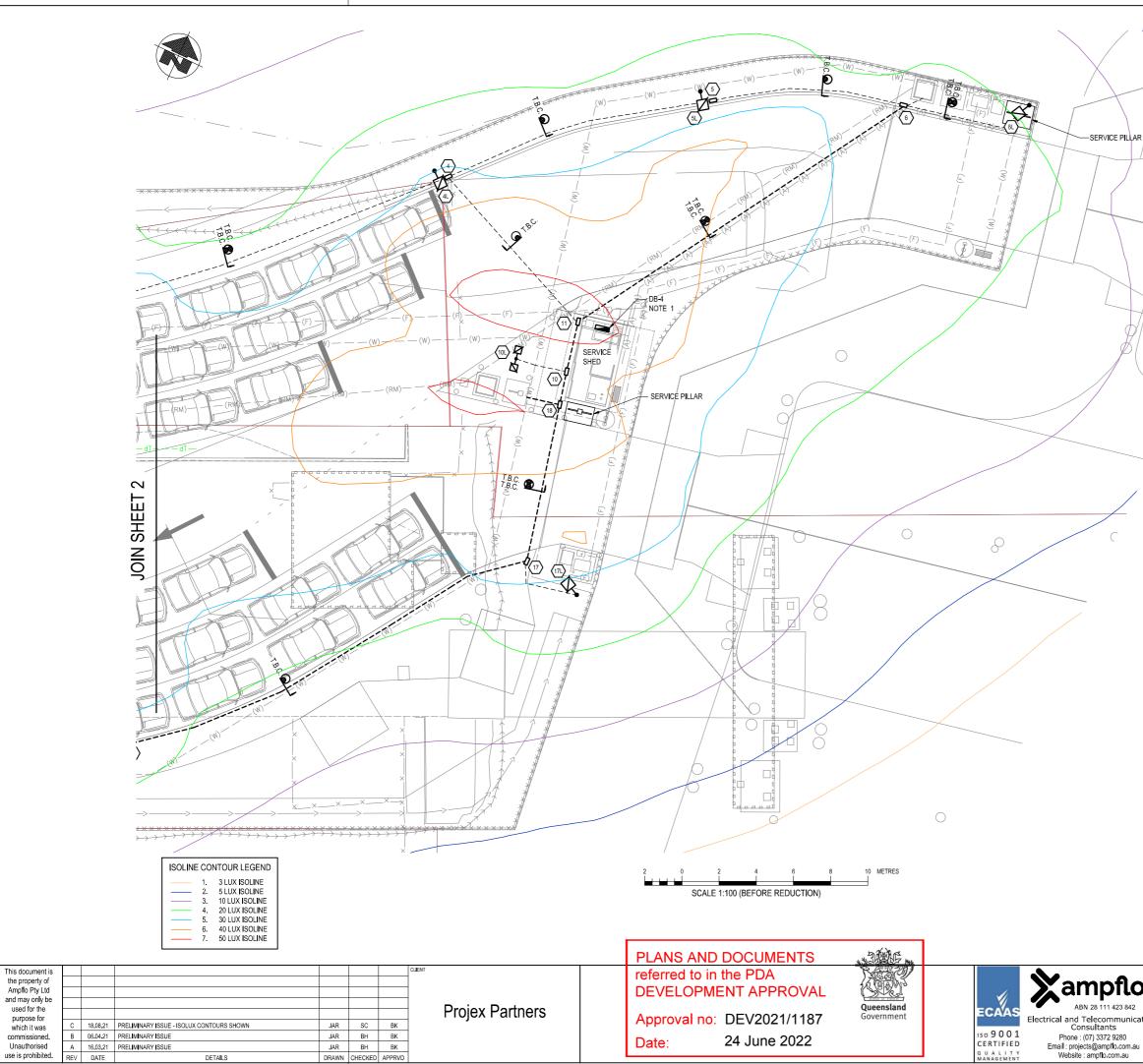
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ISSUE DATE:	18.08.21	PROJECT: 211037	SHEET 2 OF 5	C

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STREETLIGHTING CERTIFICATION

This lighting design is certified to comply generally with the nominated categories of AS/NZS 1158.1.1:2005 (V Category) and / or AS/NZS 1158.3.1:2020 for (P Category) for luminaires supplied on the following road within this design: FERRY TERMINAL F

PC1

With the following exceptions: NIL

Maintenance Factor: This lighting design uses the following maintenance factor(s): Maintenance Factor Calculated : 0.75

These maintenance factor(s) are based on the following nominal maintenance regime:

Lamp replacement (for non-LED luminaires) at 36 month intervals.

- Cleaning, inspection and maintenance of all luminaires at 36 month intervals

Service availability maintained at not less than 95%.

Vegetation kept clear of luminaires.

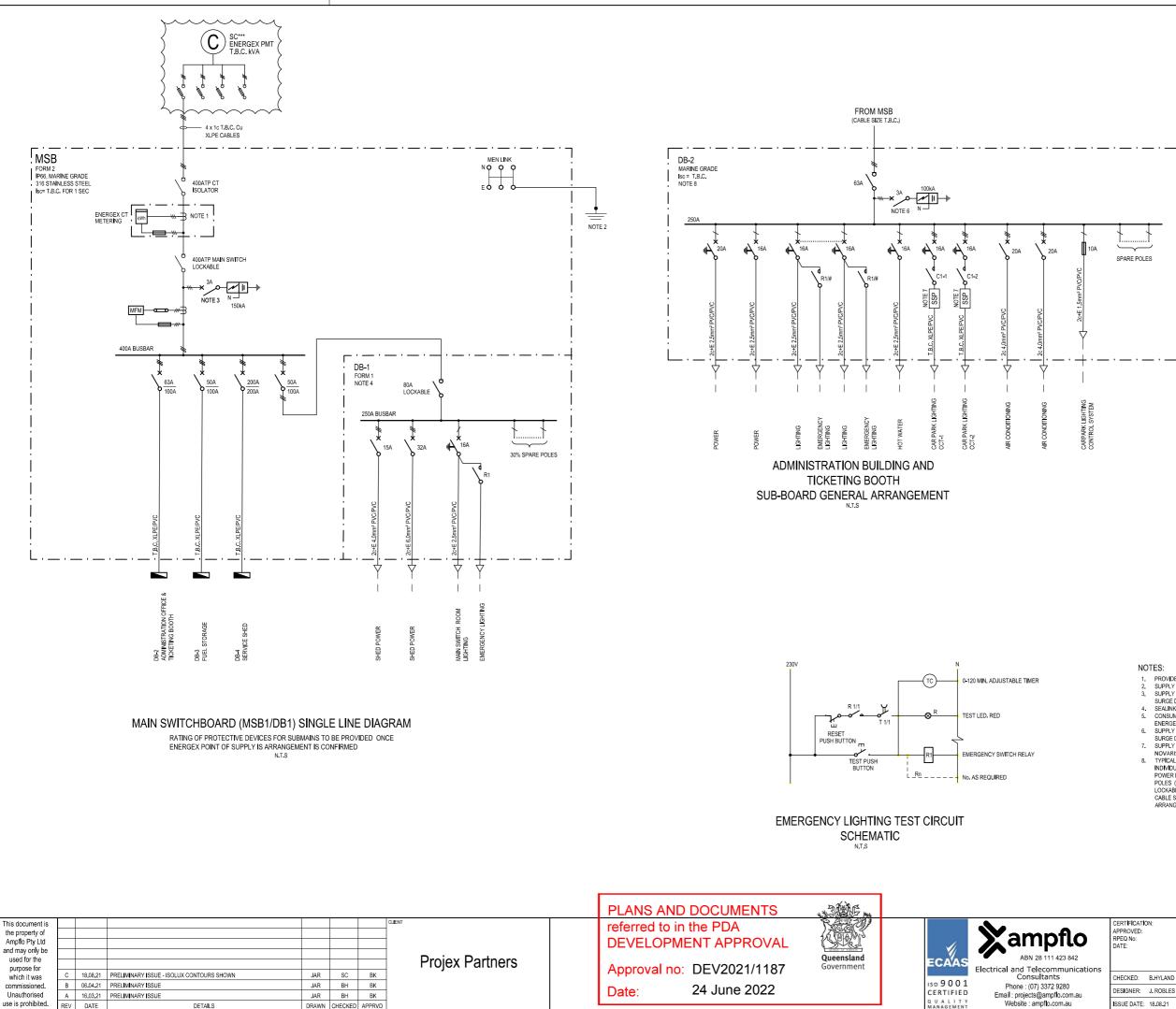
If the asset owner elects not to adopt this maintenance regime, they shall develop an inspection and maintenance regime such that the overall lighting installation operates in accordance with this design.

NOTES:

1. PROPOSED LOCATION OF SUB-BOARD IN THE SERVICE SHED. BOARD TO BE CONFINED IN A SEPARATE ROOM OR SPACE TO THE SHED SERVICE ROOM.

CONCEPT PLAN

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Cations	CERTIFICATION: APPROVED: RPEQ No: DATE:	WEINAM ST, REDLAND BARGE TERMINA REDLAND BAY SITE PLAN LAYOUT AND LEGEND SHEET 2 OF 2		MINAL
adions	CHECKED: B.HYLAND			
u	DESIGNER: J. ROBLES	DRAWING: A211037		ISSUE
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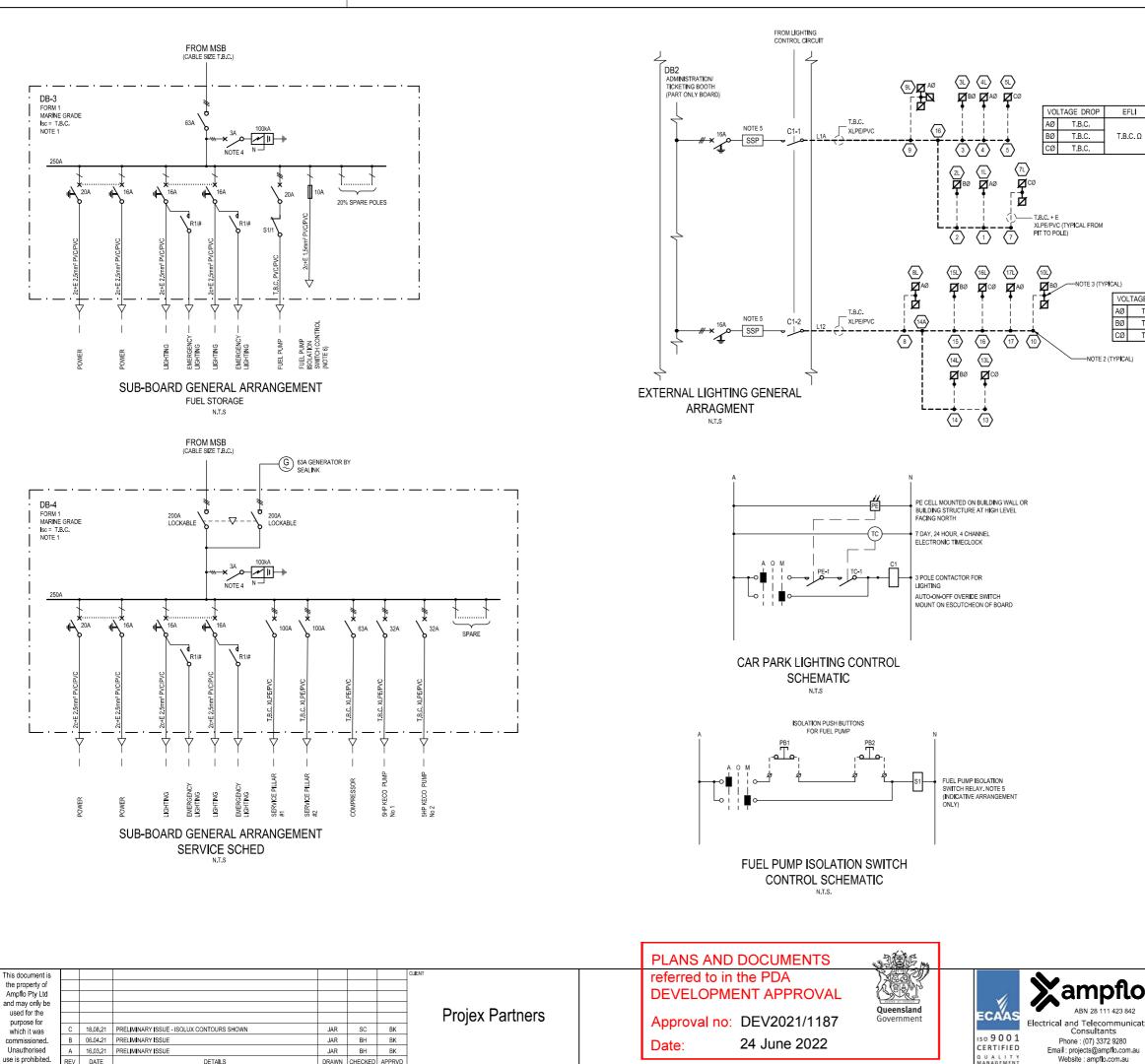
- PROVIDE REMOVABLE LINKS FOR CURRENT TRANSFORMER. SUPPLY AND INSTALL STAINLESS STEEL EARTH ROD FOR THE M.E.N. SUPPLY AND INSTALL SURGE PROTECTION CIRCUIT BREAKER SCB1-3-25 AND SURGE DIVERTER SDN3-150-275 (BY NOVARIS). SEALINK TO CONFIRM POWER REQUIREMENT FOR DB-1.
- CONSUMERS MAINS AND SUBMAINS CABLE SIZE TO BE CALCULATED ONCE

- CONSUMERS MAINS AND SUBMAINS CABLE SIZE TO BE CALCULATED ONCE ENERGEX CONFIRM POWER TO SITE ARRANCEMENT.
 SUPPLY AND INSTALL SURGE PROTECTION CIRCUIT BREAKER SCB1-3-25 AND SURGE DIVERTER SDD3-100-275 (BY NOVARIS).
 SUPPLY AND INSTALL SERIES SURGE PROTECTORS SSP3-20-60-275-A (BY NOVARIS) TO EACH OUTDOOR LIGHTING CIRCUIT.
 TYPICAL SUB-BOARD LAYOUT. LOCATION TO BE CONFIRMED. LOAD FOR EACH INDIVIDUAL SUB-BOARD IS INDICATIVE OUTLY. SEALINKE TO CONFIRM SUB-BOARD POWER LAYOUT REQUIREMENTS. BOARD SHALL HAVE A MINIMUM NUMBER OF 24 POLES (TO BE CONFIRMED). BOARD SHOLLD BE IP66, STAINLESS STELIORANCE, LOCKABLE WALL MOUNTED BOARD (NHE LEGRAND OR APPROVED EQUIVALENT). CABLE SIZE TO BE ESTIMATED ONCE ENERGEX CONFIRM POWER TO THE SITE ARRANGEMENT.

CONCEPT PLAN (NOT FOR CONSTRUCTION)

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DESIGNER:	J. ROBLES	DRAWING: A211037			ISSUE
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NOTES:

- NOTES: 1. TYPICAL SUB-BOARD LAYOUT, LOCATION TO BE CONFIRMED, LOAD FOR EACH NIDIMULAU SUB-BOARD IS INDICATIVE ONLY, SEALINK TO CONFIRM SUB-BOARD POWER LAYOUT REQUIREMENTS, BOARD SHALL HAVE A MINIMUM NUMBER OF 24 POLES (TO BE CONFIRMED), BOARD SHOULD BE IP66, STAILESS STEEL ORANGE, LOCKABLE WALL MOUNTED BOARD ONLD LEGRAND OR APPROVED EQUIVALENT, CABLE SIZE TO BE ESTIMATED ONCE ENERGEX CONFIRM POWER TO THE SITE ARRANGEMENT. 2. TYPE 4 PIT. SUPPLY AND INSTALL UNDERGROUND WATERPROOF JUNCTION BOX (BY FULTON INDUSTRIES AUSTRALIA, IP86 DOME TYPE, SMILAR TO THE ONES USE BY TIME OR ENERGEY FOR THE SITE FLIGHTING), PIT AS PER NOTES IN SHEET No 1, FOR UNDERGROUND RETICULATION. 3. SUPPLY AND INSTALL THE FOLLOWING TIEMS AT THE BASE OF EACH POLE: 10A CIRCUIT BREAKER (DIN RALL TYPE)
- SUPPLY AND INSTALL THE FOLLOWING ITEMS AT THE BASE OF EACH POLE:

 10A CRCUIT BREAKER (DIN RAIL TYPE)
 10A SWITCH (DIN RAIL TYPE)
 SINGLE PHASE SERIES SURGE PROTECTION CIRCUIT BREAKER SCB1-3-25 AND SURGE DIVERTER SDD3-100-275 (BY NOVARIS).

 FUEL PUMP ISOLATION PUSH BUTTONS, INSTALLATION AND WIRING ARRANGEMENT BY ELECTRICAL CONTRACTOR, LOCATIONS TO BE CONFIRMED ON SITE.
 SUB-BOARD FEEDING THE FUEL PUMP TO BE CONFIRMED. CURRENTLY SHOWN BEING FED FROM FUEL STORAGE BOARD. SEALINK/ PENSAR TO CONFIRM.

CONCEPT PLAN (NOT FOR CONSTRUCTION)

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ations	CERTIFICATIO APPROVED: RPEQ No: DATE:	N:	WEINAM ST, REDLAND BARGE TERMINA REDLAND BAY DBs SCHEMATIC AND EXTERNAL LIGHTING ARRANGEMENT		NAL
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u l	DESIGNER:	J. ROBLES	drawing: A211037		ISSUE
-	ISSUE DATE:	18.08.21	PROJECT: 211037	SHEET 5 OF 5	C
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