

NOTES

1. EXTENT OF WORKS

THE POWER SUPPLY UPGRADE ELECTRICAL WORKS INCLUDES ESTABLISHING AN ENERGEX PADMOUNT SUBSTATION, A NEW MAIN SWITCHBOARD, NEW SUBMAINS ASSOCIATED UNDERGROUND CABLE ACCESS WAYS AND ASSOCIATED WORKS.

ENERGEX HAVE PROVIDED A CONTRACT WR8122819 - CX24CHE1160333A FOR THE NEW SUBSTATION WHICH HAS BEEN ACCEPTED BY THE COLLEGE.

THE WORKS IS TO INCLUDE THOUGH ARE NOT LIMITED TO THE FOLLOWING:

- SUPPLY AND INSTALLATION OF ALL COMPONENTS FORMING PART OF THE ELECTRICAL SERVICES.
- INSPECTIONS.
- TESTING AND COMMISSIONING.
- MAINTENANCE.
- CABLING, CABLE SUPPORT SYSTEMS AND ACCESS.
- POWER DISTRIBUTION.
- SHOP DRAWINGS.
- AS CONSTRUCTED DOCUMENTS.
- ENERGEX CIVIL WORKS AS DETAILED ON THE ENERGEX APPROVED PADMOUNT SUBSTATION DOCUMENTS.
- ENERGEX FOOTPATH CONDUITS BY AN ENERGEX APPROVED CIVIL CONTRACTOR.
- ARRANGING WITH ENERGEX TO INSTALL PADMOUNT SUBSTATION.
- NEW MAIN SWITCHBOARD / METER PANEL.
- UNDERGROUND CONSUMERS MAINS.
- UNDERGROUND SUBMAINS.
- PENETRATIONS AS REQUIRED. ALL NEW PENETRATIONS INTO A BUILDING AND EXISTING PENETRATIONS INTO BUILDINGS THAT BECOME EXPOSED OR INTERFERED WITH DURING THE WORKS ARE TO BE MADE WATERPROOF.
- UNDERGROUND PITS AND CONDUITS.
- CABLE ACCESS AND SUPPORT SYSTEMS AS NECESSARY.
- CIVIL, STRUCTURAL AND BUILDING WORKS ASSOCIATED WITH THE ELECTRICAL SERVICES INSTALLATION.
- CONCRETE / BITUMEN CUTTING.
- TRAFFIC MANAGEMENT.
- FENCING REPLACING / RECONFIGURATION.
- REPAIR OF ANY SERVICES HIT BY THE TRENCH DIGGING (INCLUSIVE OF BUT NOT LIMITED TO ELECTRICAL, PLUMBING, COMMUNICATIONS, ETC)
- BORED CONDUITS AND VACUUM EXCAVATION AS REQUIRED.
- ARRANGE THE COLLEGES ELECTRICITY RETAILER AND ENERGEX TO HAVE THE 800 AMP FUSES INSTALLED AND THE NEW PADMOUNT SUBSTATION CONNECTED TO SUPPLY THE COLLEGE.
- REMOVAL OF THE EXISTING OVERHEAD ENERGEX SUPPLY, CONSUMERS MAINS, MSB, RETAIL METERING, MEN LINK, EARTH STAKE AND ASSOCIATED CABLING.
- REMOVAL OF THE EXISTING ELECTRICAL SERVICES THAT BECOME REDUNDANT.
- NEGOTIATION AND COORDINATION WITH ENERGEX AND THE SCHOOLS ELECTRICITY RETAILER FOR THE UPGRADED SUPPLY AND METERING.
- TEMPORARY WORKS.
- SWITCHBOARDS.
- CIRCUITS AND OUTLETS.
- 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.

AS PART OF THE TENDER PROVIDE A PROGRAM FOR EACH OPTION INCLUDING ANY INTERRUPTIONS TO THE POWER SUPPLY AND THE DURATION OF ANY SUCH INTERRUPTION.

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.

IDENTIFY ALL EXISTING UNDERGROUND SERVICES WITHIN THE SCOPE OF THE WORKS PRIOR TO UNDERTAKING ANY EXCAVATION. 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 OF ALL WORKS THAT HAVE AN EFFECT ON OR WILL BE AFFECTED BY THE ELECTRICAL SERVICES.

2. WORKMANSHIP

ENSURE THAT THE ELECTRICAL WORK IS PERFORMED BY THE HOLDER OF A CURRENT ELECTRICAL SUB CONTRACTOR LICENSE AND THE SERVICES COVERED BY THE ACMA IS PERFORMED BY THE HOLDER OF THE APPROPRIATE CURRENT ACMA 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 CARLING 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 CONTRACT PROGRAM. ENSURE ALL FINAL LOCATIONS OF OUTLETS AND FITTINGS ARE CO-ORDINATED ON SITE 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.

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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.
- ENERGEX REQUIREMENTS.
- THE QUEENSLAND ELECTRICITY CONNECTION MANUAL V4 (QECM).
- NATIONAL METERING INSTALLATION REGULATIONS (NMIR).
- 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 DEPARTMENT.

ARRANGE WITH ENERGEX TO INSPECT AND APPROVE THE ENERGEX FOOTPATH CONDUITS AND THE SUBSTATION SITE AT LEAST SIX WEEKS PRIOR TO THE SUPPLY HAVING TO BE ENERGISED.

5. POWER DISTRIBUTION

THE POWER DISTRIBUTION WORKS ARE TO INCLUDE THOUGH NOT BE LIMITED TO THE FOLLOWING:

- ALL SWITCHGEAR TO BE OF THE SAME MANUFACTURER FROM NHP / TERASAKI OR SCHNEIDER.
- PROVIDE A NEW MSB WITH A NEW UNDERGROUND POWER SUPPLY FUSED AT 800AMPS BY ENERGEX FROM THE NEW ENERGEX PADMOUNT SUBSTATION.
- DISCONNECT THE EXISTING DB-R SUBMAIN FROM THE EXISTING MSB AND RESUPPLY IT FROM THE NEW MSB VIA THE EXISTING AND NEW UNDERGROUND PIT AND CONDUIT SYSTEMS.
- DISCONNECT AND REMOVE THE EXISTING DB-D SUBMAINS FROM DB-H. PROVIDE DB-D WITH NEW SUBMAINS SUPPLIED FROM THE NEW MSB VIA THE EXISTING AND NEW UNDERGROUND PIT AND CONDUIT SYSTEMS.
- DISCONNECT AND REMOVE THE EXISTING DB-L SUBMAINS FROM DB-G. PROVIDE DB-L WITH NEW SUBMAINS SUPPLIED FROM THE NEW MSB VIA THE EXISTING AND NEW UNDERGROUND PIT AND CONDUIT SYSTEMS.
- REMOVE THE EXISTING CIRCUITS FROM THE EXISTING DB-M (INTEGRAL TO THE EXISTING MSB) AND RESUPPLY THEM FROM THE EXISTING MDB. PROVIDE NEW SWITCHGEAR AND CONTROLS AS NECESSARY TO FACILITATE THE CONNECTION OF THE RELOCATED CIRCUITS TO THE MDB. THE SWITCHGEAR AND CONTROLS ARE TO MATCH THE EXISTING IN CAPACITY AND FUNCTION.
- DISCONNECT AND REMOVE THE EXISTING MDB SUBMAIN FROM THE EXISTING MSB. PROVIDE THE MDB WITH A NEW SUBMAIN SUPPLIED FROM THE NEW MSB VIA THE NEW UNDERGROUND PIT AND CONDUIT SYSTEM.
- REMOVE THE EXISTING MSB AND ALL ASSOCIATED CABLING.
- REPLACE ALL OF THE EXISTING SWITCHBOARD NAME LABELS WITH NEW SCREW FIXED ENGRAVED TRAFFOLYTE LABELS WITH 10MM HIGH TEXT USING THE DESIGNATIONS CONTAINED WITHIN THE CONTRACT DOCUMENTATION.
- REPLACE THE EXISTING DB-B SUPPLY WITH A NEW 100A MCB IN THE MDB AND NEW SUBMAIN RUN THROUGH THE EXISTING CABLE ACCESS WAYS.

THE SUPPLY TO THE COLLEGE MUST BE MAINTAINED AT ALL TIMES FROM 6.00AM UNTIL 10.00PM. ANY INTERRUPTION TO ANY POWER SUPPLY MUST BE LIMITED BETWEEN 10.00PM AND 6.00AM WITH THE COLLEGE NOTIFIED IN WRITING 2 WEEK PRIOR. THE ENERGEX COSTS ASSOCIATED WITH MEETING THIS TIME FRAME CAN BE PASSED ONTO THE COLLEGE FOR PAYMENT BY THE COLLEGE.

ENSURE ALL THREE PHASE CIRCUITS ARE PROVIDED WITH CORRECT PHASE ROTATION.

6. SWITCHBOARD

PROVIDE THE NEW MSB AS / WITH:

- RATED AT 800 AMPS.
- A FRONT SECTION FACING THE ROAD AS PER THE QECM V4 REQUIREMENTS.
- A REAR SECTION FACING THE COLLEGE CONTAINING THE DISTRIBUTION CHASSIS.
- SHOP DRAWINGS FOR APPROVAL.
- PLINTH MOUNTED.
- 316 STAINLESS STEEL.
- LIGHT GREY ENCLOSURE.
- WHITE ESCUTCHEONS WITH LIFT OFF HINGES AND 1/4 TURN LATCHES TO SECURE THE ESCUTCHEON THAT REMAIN PART OF THE ESCUTCHEON.
- DOORS ON ALL CUBICLES.
- IP66.
- BOTTOM ENTRY ONLY. THE TOP OF THE SWITCHBOARD IS TO BE WELDED SEALED WITHOUT ANY PENETRATIONS.
- DESIGN THE SWITCHBOARD TO OPERATE IN 40 DEG AMBIENT.
- ENERGEX PADLOCK ON THE METER CUBICAL.
- 3 POINT LOCKABLE HANDLES ON ALL NON-METER CUBICAL DOORS WITH 92268 KEYING.
- TWO ENERGEX PADLOCK KEYS AND TWO 92268 KEYS.
- FORM 2B
- ENSURE ALL CABLE CONNECTIONS CAN BE THERMALLY SCANNED WITHOUT ISOLATING THE POWER.
- EACH CUBICAL CONTAINING SWITCHGEAR IS TO CONTAIN AN AUTOMATIC TEMPERATURE CONTROLLED ANTI CONDENSATION HEATER.
- RETAIL METERING.
- PRIVATE MAXIMUM DEMAND INDICATORS (MDI) AND FACILITY TO ACCOMMODATE SOLAR GRID PROTECTION METERING.
- 600 WIDE X 600 HIGH EMPTY COMPARTMENT WITH A REMOVABLE WHITE MOUNTING PAN FOR USE BY THE SOLAR INSTALLER.

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7. CABLE ACCESS

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PROVIDE ALL CABLE ACCESS NECESSARY TO COMPLETE THE ELECTRICAL INSTALLATION INCLUDING THOUGH NOT LIMITED TO:

- UNDERGROUND PITS AND CONDUITS.
- CABLE TRAYS AND CABLE LADDERS.
- BUILDING PENETRATIONS AND ASSOCIATED WATERPROOFING.
- REMOVAL OF HARD STAND VIA SAW CUTTING SQUARE TO THE EXISTING JOINS.
- TRENCHING AND EXCAVATION INCLUDING BEDDING SAND.
- BORING.
- REMOVAL OF SPILL.
- CLEAN-UP OF ALL AREAS IMPACTED BY THE WORKS BACK TO THE ORIGINAL CONDITION.
- BACKFILLING, COMPACTION AND REINSTATEMENT ALL EXCAVATIONS TO THE ORIGINAL FINISH.
- SOFTSCAPE WILL BE UNDERTAKEN BY THE COLLEGE.

PIT1. PROVIDE PIT 1 AS A REINFORCED CONCRETE CAST INSITU PIT / TRENCH BELOW MSB AS PER THE MSB SECTION DETAIL. AS PART OF THE ELECTRICAL WORKS PROVIDE THE PIT, THE LID SUPPORT SYSTEM AND THE TRENCH LIDS. PROVIDE THE PIT LIDS AND STRUCTURAL SUPPORT SYSTEM AS HOT DIPPED GALVANISED STEEL. PROVIDE THE TRENCH LIDS WITH LIFTING HOLES CHECKER PLATE R10 ANTI SLIP PATTERNING WITH EACH PART NO HEAVIER THAN 20 kg. FIX THE LIDS IN PLACE SUCH THAT A TOOL IS REQUIRED TO REMOVE THEM. PROVIDE THE PIT WITH A 90DIA GRAVITY DRAIN TO THE STORMWATER SYSTEM. PROVIDE FIBRE GLASS CABLE SUPPORTS WITHIN THE PIT TO ENSURE THAT THERE ARE NO CABLES WITHIN 50MM OF THE PIT FLOOR. THE PIT AND THE LID SUPPORT SYSTEM ARE TO BE DESIGNED AND CERTIFIED BY A RPEQ STRUCTURAL ENGINEER AND DRAWINGS OF SUCH ARE TO BE SUBMITTED FOR APPROVAL.

PIT 2. PROVIDE PIT 2 WITH INTERNAL DIMENSIONS AT LEAST 900 X 900 X 900. PIT 2 IS TO BE REINFORCED CONCRETE CAST INSITU OR PLASTIC WITH A REINFORCED CONCRETE 200 WIDE X 200 DEEP COLLAR. AS PART OF THE ELECTRICAL WORKS PROVIDE THE PIT, THE LID SUPPORT SYSTEM AND THE TRENCH LIDS. PROVIDE THE PIT LID AND LID SUPPORT SYSTEM AS HOT DIPPED GALVANISED STEEL. PROVIDE THE LID IN SECTIONS WITH LIFTING HOLES FABRICATED FROM CHECKER PLATE R10 ANTI SLIP PATTERNING WITH EACH SECTION NO HEAVIER THAN 20 kg. FIX THE LIDS IN PLACE SUCH THAT A TOOL IS REQUIRED TO REMOVE THEM. PROVIDE DRAWINGS OF THE PIT AND LID FOR APPROVAL.

PIT 3. PROVIDE PIT 3 AS A PLASTIC PIT WITH INTERNAL DIMENSIONS AT LEAST 710 X 710 X 900 WITH A REINFORCED CONCRETE 200 WIDE X 200 DEEP COLLAR. PROVIDE THE PIT LID AND LID SUPPORT SYSTEM AS HOT DIPPED GALVANISED STEEL WITH AN R10 ANTI SLIP PATTERNING.

PIT 4. PROVIDE PIT 3 AS A PLASTIC PIT WITH INTERNAL DIMENSIONS AT LEAST 710 X 710 X 900 WITH A REINFORCED CONCRETE 200 WIDE X 200 DEEP COLLAR. PROVIDE THE PIT LID AND LID SUPPORT SYSTEM AS HOT DIPPED GALVANISED STEEL WITH AN R10 ANTI SLIP PATTERNING.

PROVIDE UNDERGROUND CONDUIT ACCESS FROM PIT 3 TO THE EXTERNAL WALL OF BUILDING D THEN A COLOURBOND CABLE HAT SECTION UP THE EXTERNAL WALL TO PROVIDE CABLE ACCESS TO THE CEILING SPACE WITHIN BUILDING D.

PROVIDE UNDERGROUND CONDUIT ACCESS FROM PIT 4 TO THE DB-L BUILDING D THEN SURFACE MOUNTED CONDUIT TO DB-L.

SEAL ALL CONDUITS TO THE PIT WALLS TO PREVENT EARTH AND MOISTURE FROM ENTERING THE PITS AROUND THE OUTSIDE OF THE CONDUITS.

PROVIDE ALL CONDUITS ENTERING A PIT WITH BELL MOUTHS OR CUT THE CONDUITS OFF FLUSH WITH THE PIT WALL AND FILE THE CONDUIT EDGES SUCH THAT THEY ARE ROUNDED WITH NO SHARP EDGES OR BURRS.