

**C3227a - TOOWONG KIA & MITSUBISHI**

**C3227a-0001(C).xls**

## ELECTRICAL SERVICES CONTRACT DOCUMENT SCHEDULE

**REVISION C - 16 SEPTEMBER 2024**

ISSUING INFORMATION				DATE OF ISSUE									
				DAY	02	02	16						
				MONTH	08	09	09						
				YEAR	24	24	24						
REASON FOR ISSUE				P	T	T							
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# ELECTRICAL DESIGN GROUP

ELECTRICAL BUILDING SERVICES CONSULTANTS

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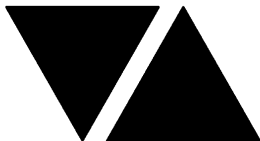
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C3227a-0002(B).xls

## ELECTRICAL EQUIPMENT SCHEDULE

REVISION B - 16 SEPTEMBER 2024

THE EQUIPMENT SUPPLIER CONTACT DETAILS MAY BE AVAILABLE ON THE EDG WEBSITE VIA THE FOLLOWING LINK <a href="http://www.edg.net.au/links.html">www.edg.net.au/links.html</a>					
TYPE	LAMPS	DESCRIPTION	COLOUR / ACCESSORY	CATALOGUE No	REV
L1	RED LED	FLUSH RECESSED LED FLEX AS PER THE L1 LIGHTING ELEVATION C/W REMOTE DRIVER / POWER SUPPLY MOUNTING AS PER THE ARCHITECTURAL DETAIL	RED	HAWKO PH VB 1617C/W SURRATED MOUNTS AS REQUIRED	B
L2	4000K LED 25W / M	FLUSH CEILING RECESSED EXTRUSION C/W OPAL DIFFUSER REMOTE DRIVERS	POWDER COATED	HAWKO 3H3535RC	B
L3	4000K LED 25W / M	FLUSH RECESSED EXTRUSION C/W OPAL DIFFUSER RUNNING VERTICALLY AS PER THE ELEVATIONS. ALLOW THE L3 TO BE CURVED AND RUN INTO THE L2 ABOVE REMOTE DRIVERS	POWDER COATED	HAWKO 3H3535RC	B
L4	2 X 22W 4000K LED EACH	TWO HEAD RECTANGULAR DOWNLIGHT FITTING C/W REMOTE DRIVER MOUNT THE FITTING IN THE CEILING RECESS	BLACK	GAMMA ILLUMINATION SNOVO 1607-2L*4K*22W	A
L5	45W 4000K LED	RECESSED DOWNLIGHT C/W REMOTE DRIVER	WHITE	GAMMA ILLUMINATION MERCURY 1288-4K-45W	A
L6	13W 4000K LED	RECESSED 55 DEG BEAM DOWNLIGHT C/W REMOTE DRIVER	WHITE TRIM	GAMMA ILLUMINATION MYLO 1004-VWFL-4K-13W	A
L7	22W LED 4000K	RECESSED DOWNLIGHT C/W REMOTE DRIVER	WHITE	GAMMA ILLUMINATION COBALT 1402-4K-22W	A
L8	28W LED 4000K	RECESSED DOWNLIGHT C/W REMOTE DRIVER	WHITE	GAMMA ILLUMINATION COBALT 1403-4K-28W	A
L9	36W LED 4000K	1200 LONG IP65 DIFFUSED BATTEN C/W INTEGRAL ELECTRONIC CONTROL GEAR AND A NON MAINTAINED AS2293 EMERGENCY PACK SUSPENDED / SURFACE MOUNTED AS REQUIRED. THE L14 FITTINGS ARE NOT SWITCHED AND ARE TO ONLY OPERATE UPON POWER SUPPLY FAILURE IN ACCORDANCE WITH AS2293	NA	GAMMA STORM 1558-CCT-36	A
L10	34W 4000K LED	300 X 1200 LAY IN FLAT PLATE LED FITTING C/W REMOTE DRIVER AND RECESSED PB KIT	WHITE TRIM	GAMMA ILLUMINATION AXIS 1549-4K-34W C/W FLUSH RECESS PB KIT	A
L11	16W / M 4000K LED CRI 90	ROD SUSPENDED RECTANGULAR EXTRUSION WITH CURVED CORNERS INTEGRAL DRIVER AND OPAL DIFFUSER	SILVER	HAWKO H5075C	B



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TYPE	LAMPS	DESCRIPTION	COLOUR / ACCESSORY	CATALOGUE No	REV
L12	NOT USED				B
L13	22W LED 4000K	WALL MOUNTED RECTANGULAR DOWN LIGHT C/W INTEGRAL DRIVER MOUNT 300 ABOVE THE DOOR HEAD	BLACK	GAMMA ILLUMINATION TOMMASO 1276-4K-22W 1403-4K-28W	A
L14	100W 4000K LED	LOWER OUTPUT SUSPENDED HIGH BAY C/W INTEGRAL DRIVER SUSPEND AS HIGH AS PRACTICAL	BLACK	GAMMA ILLUMINATION ORBIT 881538-4K-WFL	A
L15	150W 4000K LED	HIGHER OUTPUT SUSPENDED HIGH BAY C/W INTEGRAL DRIVER SUSPEND AS HIGH AS PRACTICAL	BLACK	GAMMA ILLUMINATION ORBIT 881483-4K-WFL	A
L16	A SINGLE HORIZONTAL RUN UNDER THE OVERHEAD CUPBOARDS HARD AGAINST THE SPLASHBACK LED STRIP LIGHT 4000K WHITE LEDS AT 12MM SPACING WITH REMOTE CONTROL GEAR. THE SUPPLIER IS TO CUT / JOIN THE LED STRIPS TO SUIT THE SITE DIMENSIONS. DO NOT CUT THE LED STRIPS ON SITE SCREW FIX THE ALUMINIUM SUPPORT IN PLACE.			NEON PRODUCTS AUSTRALIA LF-DFB-NW-300-12 + PR-LIN172153-F	A
L17	41W 2700K	1800 LONG KIA RECEPTION PENDANT CONFIRM THE SUSPENSION ON SITE WITH THE ARCHITECT	GREY NICKEL	VIBIA PALMA HORIZONTAL PENDANT LAMP 3736	B
E1	LED	EMERGENCY LIGHT: RECESSED NON-MAINTAINED EMERGENCY LIGHT. AS2293 CLASSIFICATION C0-D40 - C90-D40.	WHITE	STANILITE SF1LEDP LITHIUM BATTERY	A
EX	LED	EXIT LIGHT: MAINTAINED 24M VIEWING DISTANCE EXIT LIGHT C/W DIFFUSERS & DIRECTIONAL ARROWS AS SHOWN AND A IP56 HOUSING CEILING OR WALL MOUNT BETWEEN 2100mm & 2700mm AFFL IF THERE IS NO VERTICAL SURFACE TO MOUNT THE FITTING ON WITHIN THIS RANGE CONFIRM THE MOUNTING HEIGHT WITH THE ENGINEER. AS2293 CLASSIFICATION C0-D3.2 - C90-E2.	WHITE LOGO GREEN BACKGROUND WHITE BODY	STANILITE PLQLEDP LITHIUM BATTERY	A
PROXIMITY DETECTOR SWITCH (PD)		ADJUSTABLE FLUSH RECESSED 360 DEGREE PIR PRESENCE DETECTOR TO OPERATE THE ASSOCIATED LIGHTS FOR A PRE-SET AMOUNT OF TIME. ADJUST THE TIME AND SENSITIVITY ON SITE AS DIRECTED BY THE ENGINEER. SUBMIT DETAILS OF THE MOVEMENT DETECTOR SWITCH FOR APPROVAL PRIOR TO ORDERING	WHITE	CLIPSAL	A



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TYPE	LAMPS	DESCRIPTION	COLOUR / ACCESSORY	CATALOGUE No	REV
LIGHTING CONTROL SWITCH PANEL (SP1)		WALL MOUNTED MULTI GANG SWITCH PANEL TO CONTAIN LABELLED SWITCHES AS PER THE SP1 DETAIL. PROVIDE BLACK ENGRAVING ON THE FACEPLATE TO INDICATE THE SWITCH USE. PROVIDE A SHOP DRAWING OF SP1 FOR APPROVAL.	WHITE	CLIPSAL C2000 SERIES	B
LIGHTING CONTROL SWITCH PANEL (SP2)		WALL MOUNTED MULTI GANG SWITCH PANEL TO CONTAIN LABELLED SWITCHES AS PER THE SP2 DETAIL. PROVIDE BLACK ENGRAVING ON THE FACEPLATE TO INDICATE THE SWITCH USE. PROVIDE A SHOP DRAWING OF SP2 FOR APPROVAL.	WHITE	CLIPSAL C2000 SERIES	B
LIGHTING CONTROL SWITCH PANEL (SP3)		WALL MOUNTED MULTI GANG SWITCH PANEL TO CONTAIN LABELLED SWITCHES AS PER THE SP3 DETAIL. PROVIDE BLACK ENGRAVING ON THE FACEPLATE TO INDICATE THE SWITCH USE. PROVIDE A SHOP DRAWING OF SP3 FOR APPROVAL.	WHITE	CLIPSAL C2000 SERIES	B
LIGHTING CONTROL SWITCH PANEL (SPK)		WALL MOUNTED MULTI GANG SWITCH PANEL TO CONTAIN LABELLED SWITCHES AS PER THE SPK DETAIL. PROVIDE BLACK ENGRAVING ON THE FACEPLATE TO INDICATE THE SWITCH USE. PROVIDE A SHOP DRAWING OF SPK FOR APPROVAL.	WHITE	CLIPSAL C2000 SERIES	B
CHANNEL x		CONTROL CHANNEL WITH A NUMERICAL REFERENCE. REFER TO THE POWER AND LIGHTING CONTROL SCHEMATIC / SCHEDULE			B
SINGLE POWER OUTLET		SINGLE POWER OUTLET C/W CIRCUIT IDENTIFICATION ON THE FACEPLATE BEHIND THE SURROUND MOUNT AT 300 AFFL U.N.O.	WHITE GENERAL WORKSHOP BLACK	CLIPSAL C2000 SERIES	A
DOUBLE POWER OUTLET		DOUBLE POWER OUTLET C/W CIRCUIT IDENTIFICATION ON THE FACEPLATE BEHIND THE SURROUND MOUNT AT 300 AFFL U.N.O	WHITE GENERAL WORKSHOP BLACK	CLIPSAL C2000 SERIES	A
SPECIAL PURPOSE OUTLET		SPECIAL PURPOSE OUTLET TYPE AS NOTED. MOUNT AT 1350mm AFFL U.N.O. RATING 20A U.N.O. CONNECT TO EQUIPMENT VIA FLEXIBLE CONDUIT.			A
WEATHERPROOF POWER OUTLET (WP)		IP54 WEATHERPROOF SINGLE / DOUBLE POWER OUTLET AS NOTED ON DRAWING C/W COVER FLAP OVER SOCKET. MOUNT AT MINIMUM 1100mm AFFL U.N.O. RATING 10A U.N.O.	-	CLIPSAL WSCF227F	A
SINGLE-PHASE ISOLATOR		SINGLE-PHASE WEATHERPROOF ISOLATOR. MOUNT AT 1350mm AFFL U.N.O. RATING 20A U.N.O. CONNECT TO EQUIPMENT VIA FLEXIBLE CONDUIT.	-	CLIPSAL WHT20	A



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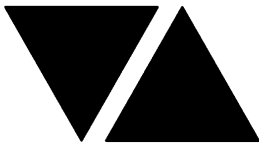
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TYPE	LAMPS	DESCRIPTION	COLOUR / ACCESSORY	CATALOGUE No	REV
THREE-PHASE ISOLATOR		THREE-PHASE WEATHERPROOF ISOLATOR. MOUNT AT 1350mm AFFL U.N.O. RATING 20A U.N.O. CONNECT TO EQUIPMENT VIA FLEXIBLE CONDUIT. "RSD" DENOTES ROLLER SHUTTER DOOR SUPPLY - COORDINATE LOCATION ONSITE WITH MOTOR.	-	CLIPSAL WHT35	A
HAND DRYER CONNECTION (HD)		20A ISOLATING SWITCH WALL MOUNTED AT 2400mm AFFL AND CONNECTED TO THE HAND DRYER UNIT AS PER DETAIL.	WHITE	CLIPSAL C2000 SERIES 30USM	A
EV CHARGER (EVx)		CONNECT THE CIRCUIT TO THE EV CHARGER AS PER THE EV CHARGER INSTRUCTIONS			A
CAT 6 COMMUNICATIONS OUTLET		RJ45 CAT-6 COMMUNICATIONS OUTLET, CABLED BACK TO THE COMMUNICATIONS RACK CR-A TERMINATED ONTO FACILITY PATCH PANELS VIA 4-PAIR CAT-6 UTP CABLE. MOUNT UP TO 3 RJ45 OUTLETS PER MULTI-GANG FACEPLATE WITH SEPARATE PERMANENT LABELLING FOR EACH OUTLET. MOUNT AT 300 AFFL U.N.O.	WHITE GENERAL WORKSHOP BLACK	CLIPSAL C2000 SERIES KRONE JACK C/W SHUTTER	A
WEATHERPROOF COMMUNICATIONS OUTLET (WP)		COMMUNICATIONS OUTLET AS PER THE COMMUNICATIONS OUTLET DESCRIPTION, MOUNTED WITHIN A WEATHERPROOF ENCLOSURE.	WHITE	CLIPSAL 255 SERIES	B
DB-A		REPLACE THE EXISTING DISTRIBUTION BOARD DB-A REFER TO THE NOTES AND DISTRIBUTION BOARD DB-A SCHEDULE FOR ADDITIONAL INFORMATION AND REQUIREMENTS. PROVIDE A SHOP DRAWING OF THE DB FOR APPROVAL. REMOVE ALL EXISTING CIRCUITS AND CABLING MADE REDUNDANT BY THE WORKS. REMOVE THE SWITCH AND SUBMAIN THAT PASSES THROUGH THE EXISTING DB-A TO DB-2			A
DB-K		NEW DISTRIBUTION BOARD DB-K REFER TO THE NOTES AND DISTRIBUTION BOARD DB-A SCHEDULE FOR ADDITIONAL INFORMATION AND REQUIREMENTS. PROVIDE A SHOP DRAWING OF THE DB FOR APPROVAL.			A
DB-1		NEW DISTRIBUTION BOARD DB-1 TO REPLACE ALL OF THE EXISTING MSB CIRCUITS. REMOVE ALL EXISTING CIRCUITS AND CABLING MADE REDUNDANT BY THE WORKS. RECONNECT ALL OF THE EXISTING CIRCUITS THAT REMAIN WITH NEW AS3000 COMPLIANT SWITCHGEAR THAT MATCHES THE EXISTING IN CAPACITY AND FUNCTION. REFER TO THE NOTES FOR ADDITIONAL INFORMATION AND REQUIREMENTS. PROVIDE A SHOP DRAWING OF THE DB FOR APPROVAL.			A
DB-2		EXISTING DISTRIBUTION BOARD DB-K TO REMAIN AS IS AND BE PROVIDED WITH A NEW SUPPLY FROM THE NEW MSB AS PER THE SCHEMATIC.			A
MSB		REPLACE THE EXISTING MSB WITH A NEW FLOOR MOUNTED MAIN SWITCHBOARD SECURED TO THE WALL REFER TO THE SCHEMATIC AND NOTES FOR ADDITIONAL INFORMATION AND REQUIREMENTS. PROVIDE A SHOP DRAWING OF THE MSB FOR APPROVAL.			A
METER (M)		UPGRADE THE EXISTING ENERGEX REVENUE METER INTO THE NEW MSB.			A



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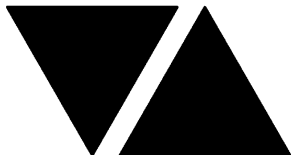
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TYPE	LAMPS	DESCRIPTION	COLOUR / ACCESSORY	CATALOGUE No	REV
MSSB		SHOWROOM MECHANICAL SERVICES SWITCHBOARD PROVIDED BY THE MECHANICAL SUB CONTRACTOR. COORDINATE THE SUBMAIN CONNECTION WITH THE MECHANICAL SUB CONTRACTOR ON SITE.			B
MSSB-WS		WORKSHOP MECHANICAL SERVICES SWITCHBOARD PROVIDED BY THE MECHANICAL SUB CONTRACTOR. COORDINATE THE SUBMAIN CONNECTION WITH THE MECHANICAL SUB CONTRACTOR ON SITE.			B
FLOOR BOX (FB1)		INSITU FLUSH FLOOR BOX C/W A DOUBLE GPOS+ 2 COMMUNICATIONS OUTLETS ON THE SAME FACEPLATE . PROVIDE A 32 DIA CONDUIT C/W A SPARE DRAW WIRE FROM THE REAR OF THE COMMUNICATIONS FACEPLATE TO THE CEILING SPACE ABOVE THE COMMUNICATIONS RACK CR-A. PROVIDE THE GPOS AND COMMUNICATIONS OUTLETS AS PER THE STANDARD DESCRIPTIONS.	STAINLESS STEEL	ECD FB2SHD	B
SIGN CONNECTION		COORDINATE THE LOCATION AND CONNECTION WITH THE SIGN CONTRACTOR ENSURING THE GPO / ISOLATORS ARE PROVIDED WITH APPROPRIATE WEATHER PROTECTION AND ARE CONCEALED FROM VIEW.			B
COMMUNICATIONS RACK CR-A		EXISTING COMMUNICATIONS RACK TO BE UPGRADED AS NECESSARY AND PROVIDED WITH ADDITIONAL PATCH PANELS TO ACCOMMODATE THE ADDITIONAL COMMUNICATIONS OUTLETS. REMOVE ALL REDUNDANT CABLING AND UPDATE THE PORT NUMBERING.			A



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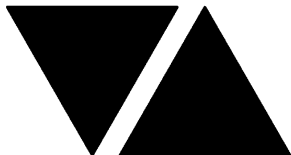
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DISTRIBUTION BOARD DB-A

REVISION A - 02 SEPTEMBER 2024

							REV
FAULT CURRENT:		6KA		MAIN SWITCH:		160A LOAD BREAK NON AUTO	A
CHASSIS SIZE:		2 X 72 POLES		SUPPLIED FROM:		MSB	A
CHASSIS RATING:		250A		CABLE:		4C 70	A
PHASES:		3					A
PROVIDE THE DB WITH A 600 WIDE EMPTY DIN RAIL TO ACCOMMODATE FUTURE CONTACTORS AND CONTROLS IN ADDITION TO THE INITIAL CONTROLS . PROVIDE THE DB WITH AN AS2293 EMERGENCY LIGHTING CONTROL SYSTEM TO CONTROL THE ASSOCIATED EMERGENCY LIGHTS. RECONNECT THE EXISTING DB-A CIRCUITS THAT REMAIN WITH NEW AS3000 COMPLIANT SWITCHGEAR THAT MATCHES THE EXISTING CAPACITY AND FUNCTION. UPDATE THE SCHEDULE WITH THE CIRCUIT USE AND LOCATION AT PRACTICAL COMPLETION							A
CIRC	PH	CIRCUIT BREAKER (amps)	CONTROL EQUIPMENT	CABLE SIZE ( mm2 )	LOCATION	CIRCUIT USE	
P1	1	20	RCBO	2.5	MITSUBISHI	OFFICES	A
P2	1	20	RCBO	2.5	MITSUBISHI	CLEANING	A
P3	1	20	RCBO	2.5	MITSUBISHI	RECEPTION	A
P4	1	20	RCBO	2.5	MITSUBISHI	HAND DRYER	A
P5	1	20	RCBO	2.5	MITSUBISHI	FLOOR BOXES	A
P6	1	20	RCBO	2.5	MITSUBISHI	FLOOR BOXES	A
P7	1	20	RCBO	2.5	MITSUBISHI	TV	A
P8	1	20	RCBO	2.5	KIA	CLEANING	A
P9	1	20	RCBO	2.5	KIA	OFFICES	A
P10	1	20	RCBO	2.5	KIA	CLEANING	A
P11	1	20	RCBO	2.5	KIA	TV	A
P12	1	20	RCBO	2.5	KIA	FLOOR BOXES	A
P13	1	20	RCBO	2.5	KIA	FLOOR BOXES	A
P14	1	20	RCBO	2.5	KIA	FLOOR BOXES	A
P15	1	20	RCBO	2.5	KIA	TV	A
P16	1	20	RCBO	2.5	KIA	HAND DRYER	A
P17	1	20	RCBO	2.5	MITSUBISHI	TV	A
P18	1	20	RCBO	2.5	MITSUBISHI	KITCHEN	A
P19	1	20	RCBO	2.5	MITSUBISHI	DISHWASHER	A
P20	1	20	RCBO	2.5	MITSUBISHI	REFRIGERATOR	A
P21	1	20	RCBO	2.5	MITSUBISHI	AUTO BOILER 20A	A
P22	1	20	RCBO	2.5	KIA	REFRIGERATOR	A
P23	1	20	RCBO	2.5	KIA	DISHWASHER	A
P24	1	20	RCBO	2.5	KIA	KITCHEN	A
P25	1	20	RCBO	2.5	KIA	AUTO BOILER 20A	A
P26	1	32	RCBO	6.0	EXTERNAL	EV CHARGER	A
P27	1	32	RCBO	6.0	EXTERNAL	EV CHARGER	A
P28	1	20	RCBO	2.5	KIA	SALES	A



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DISTRIBUTION BOARD DB-A

REVISION A - 02 SEPTEMBER 2024

<div>FAULT CURRENT: 6KA</div> <div>CHASSIS SIZE: 2 X 72 POLES</div> <div>CHASSIS RATING: 250A</div> <div>PHASES: 3</div> <div>MAIN SWITCH: 160A LOAD BREAK NON AUTO</div> <div>SUPPLIED FROM: MSB</div> <div>CABLE: 4C 70</div>							REV
							A
							A
							A
PROVIDE THE DB WITH A 600 WIDE EMPTY DIN RAIL TO ACCOMMODATE FUTURE CONTACTORS AND CONTROLS IN ADDITION TO THE INITIAL CONTROLS . PROVIDE THE DB WITH AN AS2293 EMERGENCY LIGHTING CONTROL SYSTEM TO CONTROL THE ASSOCIATED EMERGENCY LIGHTS. RECONNECT THE EXISTING DB-A CIRCUITS THAT REMAIN WITH NEW AS3000 COMPLIANT SWITCHGEAR THAT MATCHES THE EXISTING CAPACITY AND FUNCTION. UPDATE THE SCHEDULE WITH THE CIRCUIT USE AND LOCATION AT PRACTICAL COMPLETION							A
CIRC	PH	CIRCUIT BREAKER (amps)	CONTROL EQUIPMENT	CABLE SIZE ( mm2 )	LOCATION	CIRCUIT USE	
L1	1	20	RCBO PE ON DUSK OFF DAWN	2.5	EXTERNAL	SIGNS	A
L2	1	20	RCBO PE ON DUSK OFF DAWN	2.5	EXTERNAL	SIGNS	A
L3	1	20	RCBO PE ON DUSK OFF DAWN	2.5	EXTERNAL	PYLON	A
L4	1	20	RCBO PE ON DUSK OFF DAWN	2.5	EXTERNAL	PYLON	A
L5	1	20	RCBO	2.5	BOH	LIGHTS	A
L6	1	20	RCBO	2.5	BOH	LIGHTS	A
L7	1	20	RCBO	2.5	MITSUBISHI	LIGHTS	A
L8	1	20	RCBO	2.5	MITSUBISHI	LIGHTS	A
L9	1	20	RCBO	2.5	MITSUBISHI	LIGHTS	A
L10	1	20	RCBO	2.5	KIA	LIGHTS	A
L11	1	20	RCBO	2.5	KIA	LIGHTS	A
L12	1	20	RCBO	2.5	KIA	LIGHTS	A
L13	1	20	RCBO	2.5	KIA	DISPLAY	A
L14	1	20	RCBO	2.5	KIA	LIGHTS	A
L15	1	20	RCBO	2.5	KIA	LIGHTS	A
L16	1	20	RCBO	2.5	MITSUBISHI	LIGHTS	A
L17	1	20	RCBO	2.5	MITSUBISHI	LIGHTS	A
L18	1	20	RCBO	2.5	MITSUBISHI	LIGHTS	A





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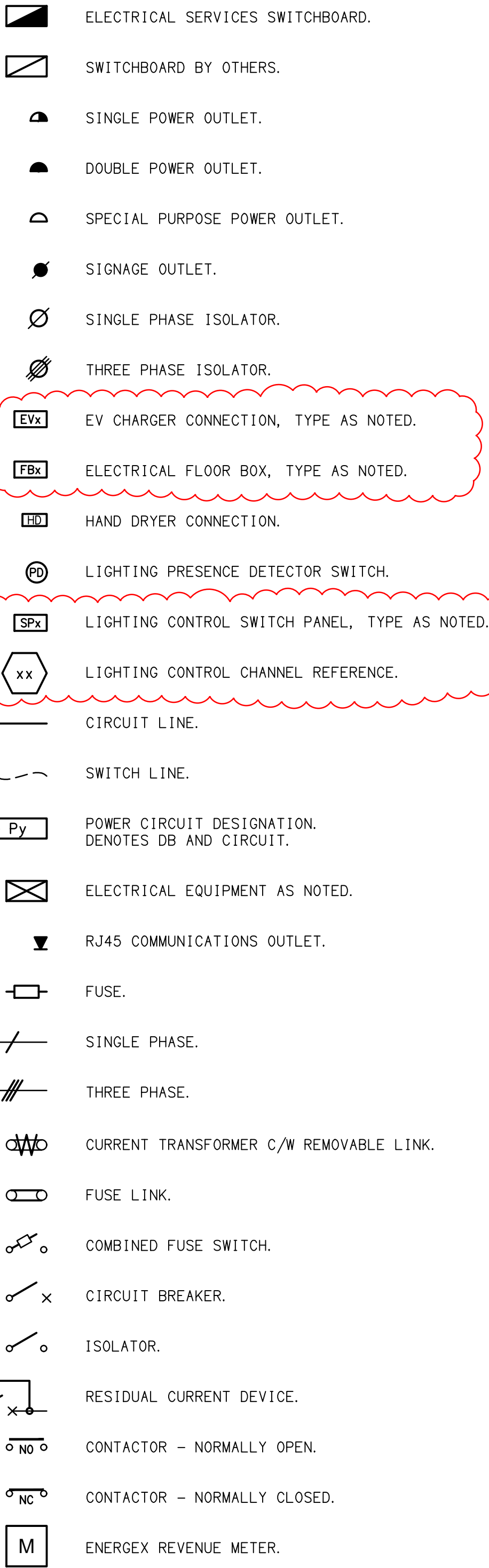
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DISTRIBUTION BOARD DB-K

REVISION A - 02 SEPTEMBER 2024

							REV
FAULT CURRENT:		6KA		MAIN SWITCH:		160A LOAD BREAK NON AUTO	A
CHASSIS SIZE:		72 POLES		SUPPLIED FROM:			A
CHASSIS RATING:		250A		CABLE:			A
PHASES:		3					A
PROVIDE THE DB WITH A 600 WIDE EMPTY DIN RAIL TO ACCOMMODATE FUTURE CONTACTORS AND CONTROLS IN ADDITION TO THE INITIAL CONTROLS . PROVIDE THE DB WITH AN AS2293 EMERGENCY LIGHTING CONTROL SYSTEM TO CONTROL THE ASSOCIATED EMERGENCY LIGHTS.							A
CIRC	PH	CIRCUIT BREAKER (amps)	CONTROL EQUIPMENT	CABLE SIZE ( mm2 )	LOCATION	CIRCUIT USE	
P1	3	20	RCBO	2.5	WORKSHOP	HOIST	A
P2	3	20	RCBO	2.5	WORKSHOP	HOIST	A
P3	3	20	RCBO	2.5	WORKSHOP	HOIST	A
P4	1	20	RCBO	2.5	WORKSHOP	20A OUTLET	A
P5	3	20	RCBO	2.5	WORKSHOP	3PH OUTLET	A
P6	1	20	RCBO	2.5	WORKSHOP	BENCHES	A
P7	1	20	RCBO	2.5	WORKSHOP	20A OUTLET	A
P8	1	20	RCBO	2.5	WORKSHOP	BENCHES	A
P9	3	20	RCBO	2.5	WORKSHOP	3PH OUTLET	A
P10	1	20	RCBO	2.5	WORKSHOP	20A OUTLET	A
P11	1	20	RCBO	2.5	WORKSHOP	TOOLS	A
P12	1	20	RCBO	2.5	WORKSHOP	TOOLS	A
P13	1	32	RCBO	6.0	WORKSHOP	CHARGERS	A
P14	1	20	RCBO	2.5	WORKSHOP	OFFICE	A
P15	3	20	RCBO	2.5	WORKSHOP	RSD	A
P16	3	40	RCBO	6.0	WORKSHOP	MSSB-WS	A
L1	1	20	RCBO	2.5	RECEPTION	LIGHTS	A
L2	1	20	RCBO	2.5		LIGHTS	A
L3	1	20	RCBO	2.5	OFFICE	LIGHTS	A
L4	1	20	RCBO	2.5	WORKSHOP	LIGHTS	A
L5	1	20	RCBO PE ON DUSK TC OFF	2.5	WORKSHOP	LIGHTS	A
L6	1	20	RCBO	2.5	PARTS	LIGHTS	A

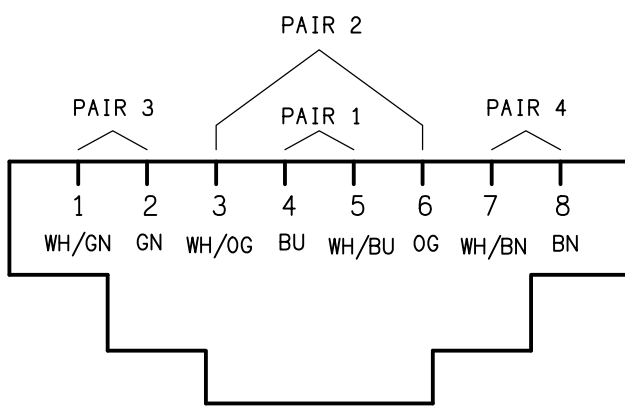
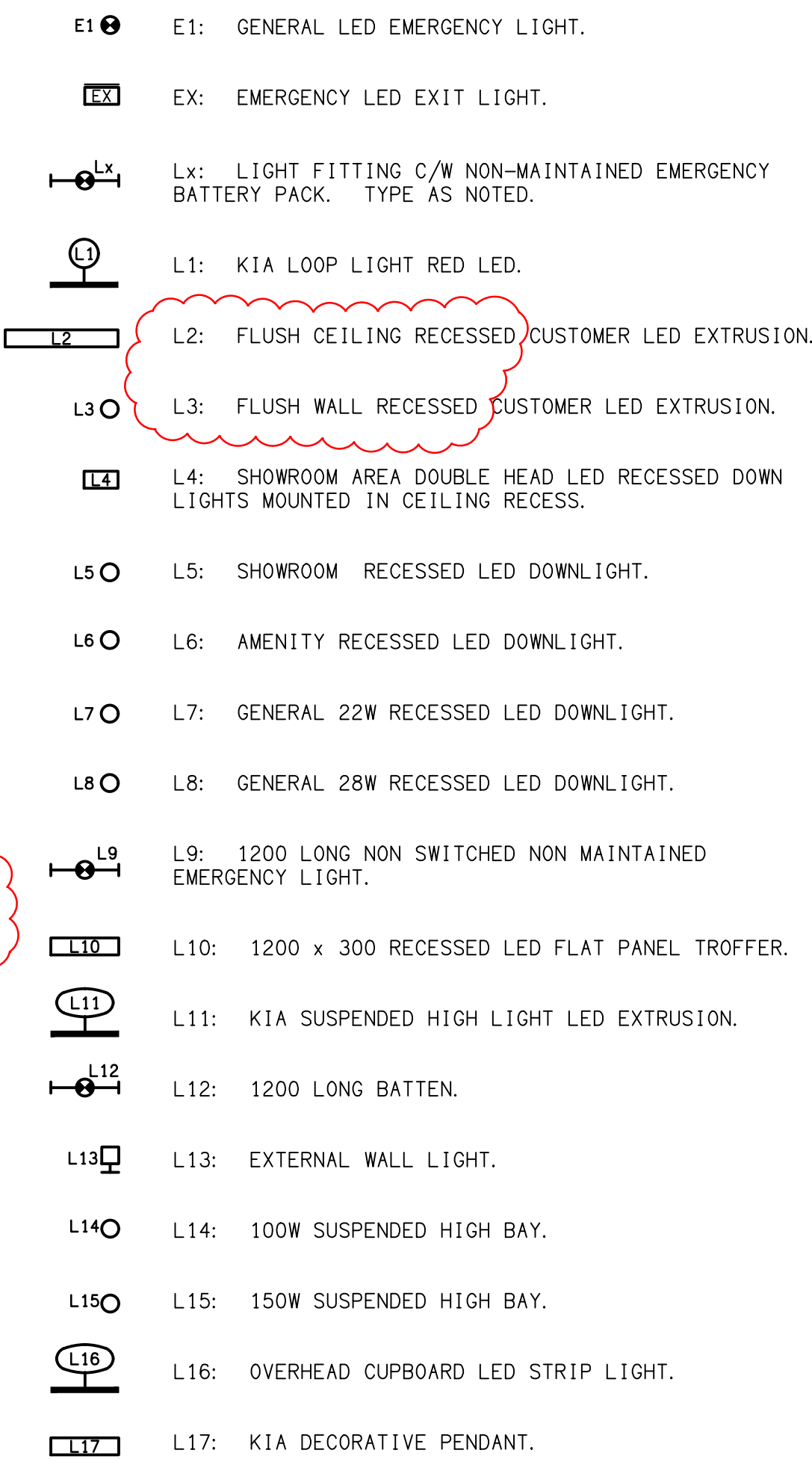
LEGEND



NOTE

ALL ELECTRICAL PENETRATIONS THROUGH THE ROOF SHEETING ARE TO BE IN LINE WITH THE STRUCTURAL OR MECHANICAL SERVICES PENETRATIONS TO AVOID DEDICATED FLASHINGS FOR THE ELECTRICAL SERVICES.

LEGEND



SCHEMATIC

RJ45 PINOUT CONFIGURATION  
NOT TO SCALE

EQUIPMENT:

TEST - TEST PUSH BUTTON MOUNTED ON THE DISTRIBUTION BOARD ESCUTCHEON.

RESET - RESET PUSH BUTTON MOUNTED ON THE DISTRIBUTION BOARD ESCUTCHEON.

LAMP - AMBER TEST INDICATING LAMP MOUNTED ON THE DISTRIBUTION BOARD ESCUTCHEON.

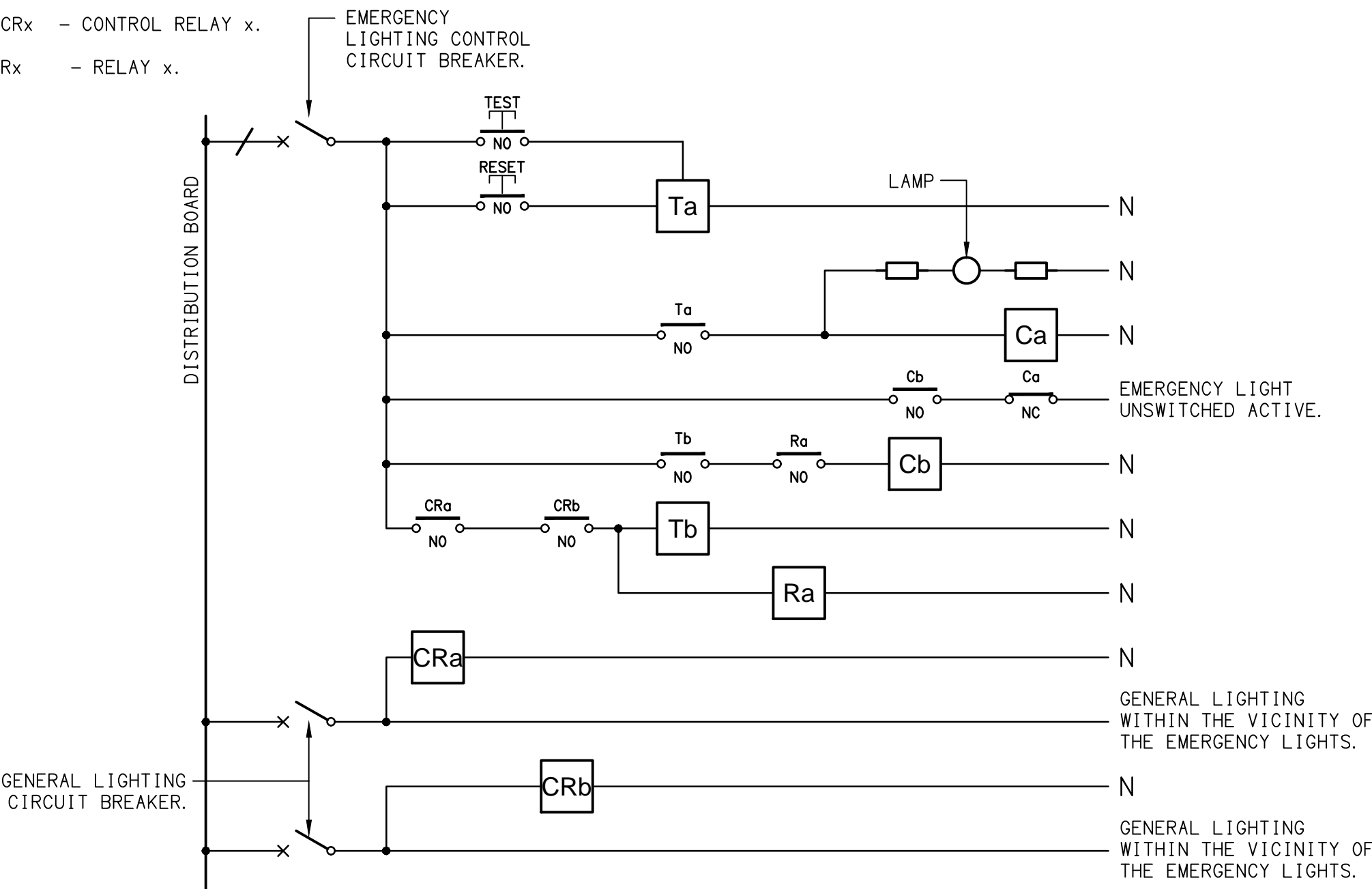
Ta - ADJUSTABLE 0-3 HOUR TIMED RELAY.

Tb - 15 MINUTE RUN-ON TIMER TO OPERATE UPON THE RETURN OF MAINS POWER.

Cx - CONTACTOR x.

CRx - CONTROL RELAY x.

Rx - RELAY x.



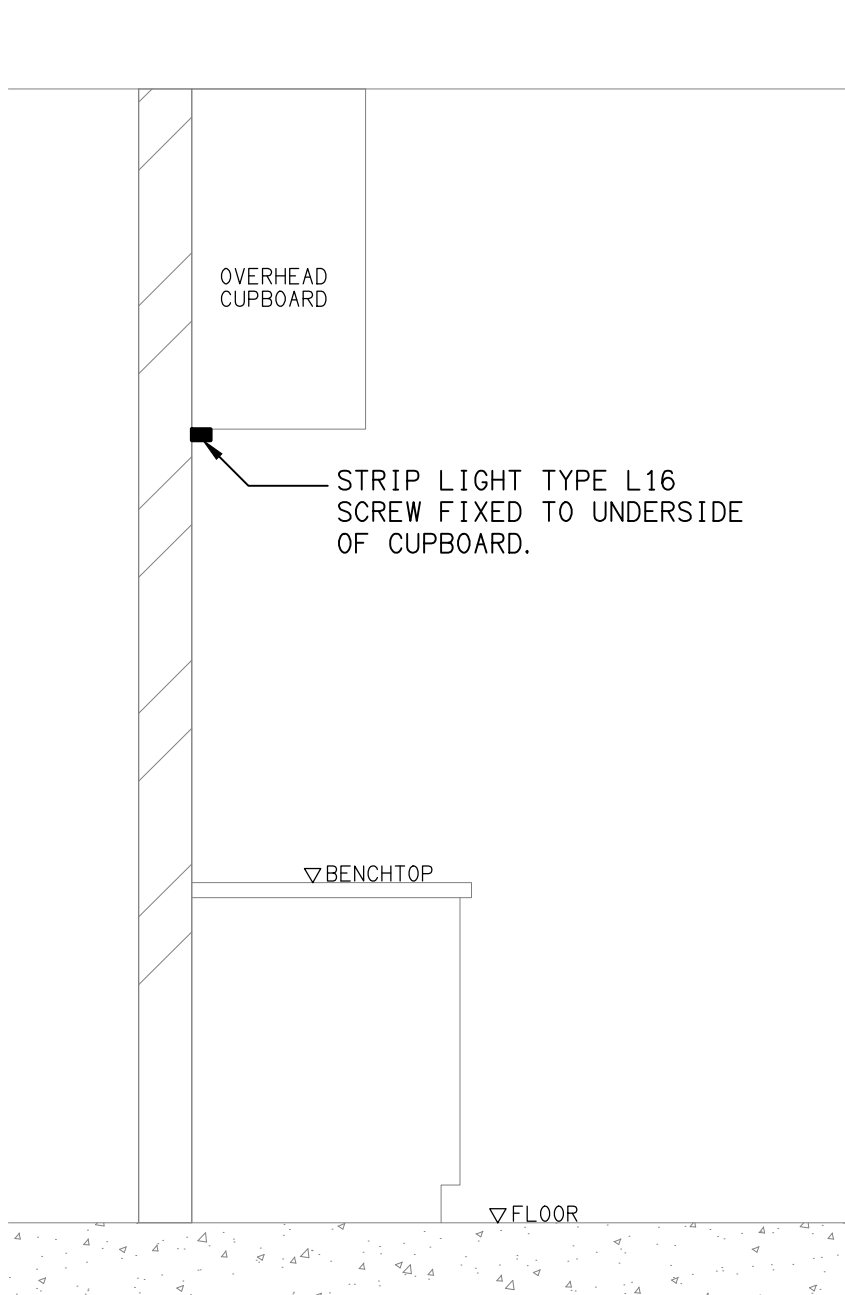
SCHEMATIC

EMERGENCY LIGHTING  
NOT TO SCALE

NOTES

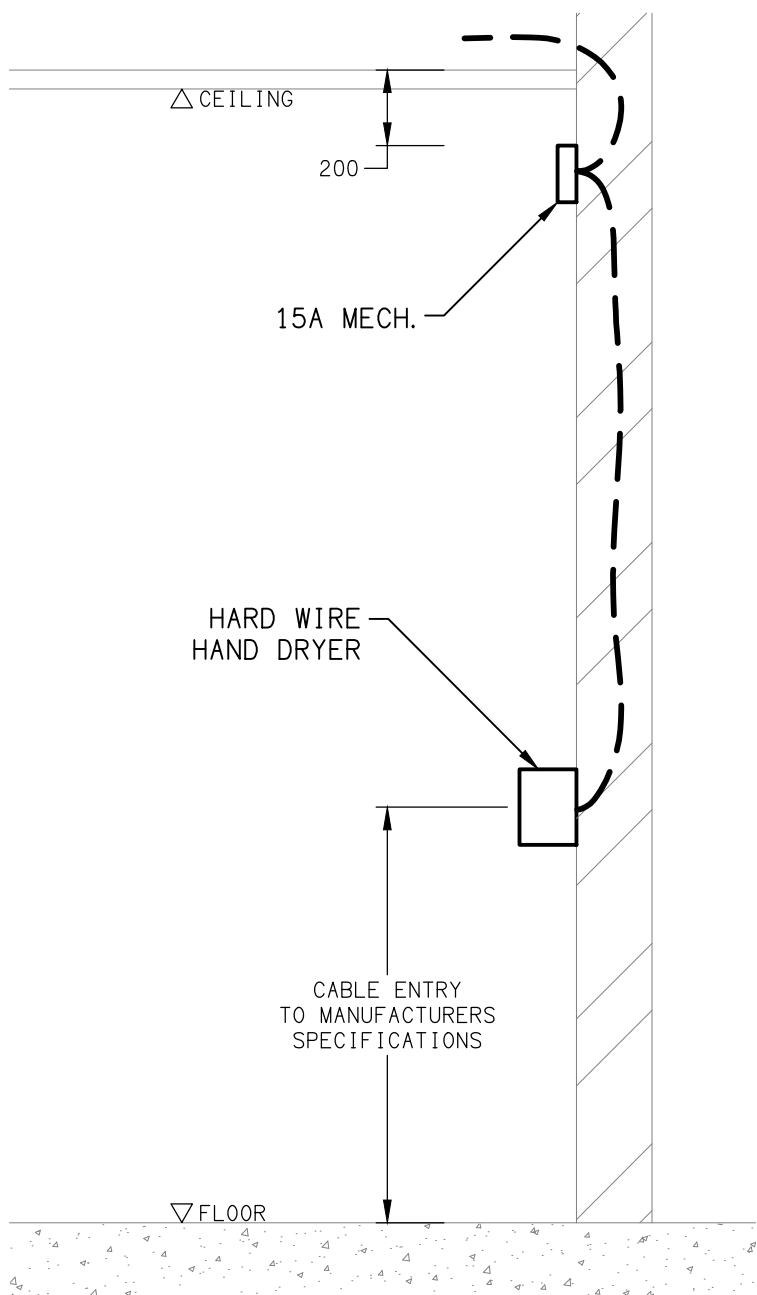
1. THE EMERGENCY LIGHT UNSWITCHED ACTIVE / GENERAL LIGHTING SWITCHED ACTIVE CIRCUIT ARRANGEMENT AND CONTROL IS TYPICAL FOR ALL CIRCUITS SUPPLYING EMERGENCY LIGHTS.

2. PROVIDE ADDITIONAL CONTROL RELAYS (CRx) CONFIGURED AS PER CRa AND CRb FOR ALL ADDITIONAL LIGHTING CIRCUITS THAT SUPPLY LIGHTS IN THE VICINITY OF THE EMERGENCY LIGHTS.



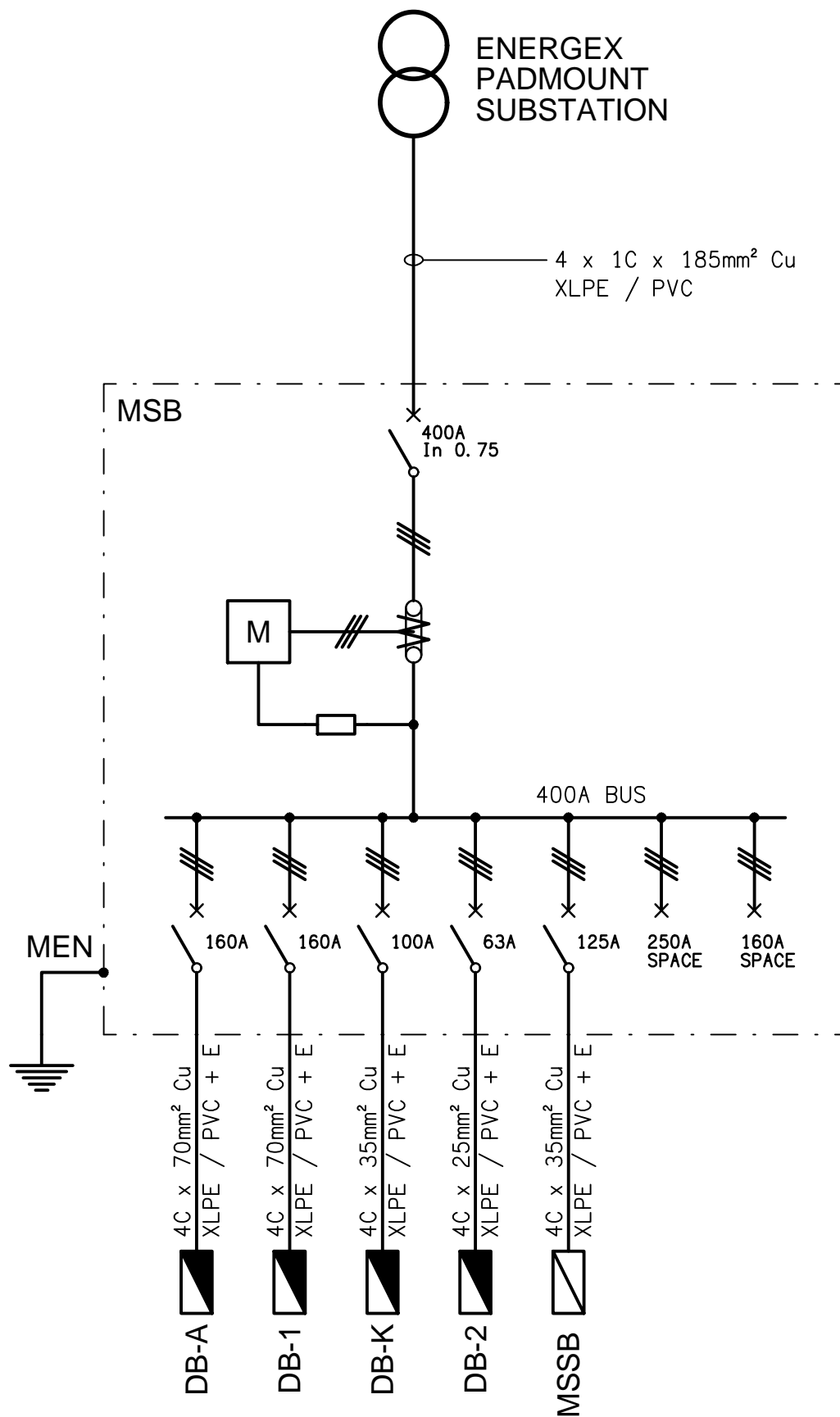
DETAIL

"L16" TYPE STRIP LIGHT MOUNTING  
NOT TO SCALE



DETAIL

HAND DRYER CONNECTION  
NOT TO SCALE



SCHEMATIC

POWER CONFIGURATION  
NOT TO SCALE

ELECTRICAL DESIGN GROUP BRISBANE  
PTY LTD  
ACN 092 710 793

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PROJECT:

TOOWONG KIA & MITSUBISHI

601 MILTON ROAD, TOOWONG

C	TENDER	16/09/2024
REV.	DESCRIPTION:	DATE:

DRAWING:  
**ELECTRICAL SERVICES**  
**LEGEND, SCHEMATICS & DETAILS**

SCALE:  
NOT TO SCALE AT A1

PROJECT NO:  
**C3227a**

DRAWING NO:  
**E01**

REVISION:  
**C**

NOTES

1. EXTENT OF WORKS

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

- SURVEY OF ALL EXISTING UNDERGROUND SERVICES IN THE VICINITY OF THE WORKS.
- SUPPLY AND INSTALLATION OF ALL COMPONENTS FORMING PART OF THE ELECTRICAL SERVICES.
- CO-ORDINATION.
- INSPECTIONS.
- TESTING AND COMMISSIONING.
- MAINTENANCE.
- AS BUILT DRAWINGS.
- MAINTENANCE MANUAL.
- CABLING, CABLE SUPPORT SYSTEMS AND ACCESS.
- POWER DISTRIBUTION.
- LIGHTING.
- COMMUNICATIONS CABLING.
- MODIFICATION, RELOCATION AND EXTENSION AS NECESSARY OF ALL EXISTING SERVICES THAT ARE IMPACTED BY THE WORKS OR REQUIRED TO BE EXTENDED BY THE WORKS.
- REMOVAL OF ALL EXISTING SERVICES MADE REDUNDANT BY THE WORKS.
- ANY TEMPORARY WORKS REQUIRED TO KEEP THE SITE OPERATING DURING THE CONSTRUCTION PROCESS.
- 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.

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.

PRIOR TO COMMENCING WORK CONSULT THE SITES 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

PRIOR TO COMMENCING WORK UNDERTAKE A DETAILED ACTIVE SURVEY OF ALL EXISTING UNDERGROUND SERVICES IN THE VICINITY OF THE WORKS. IDENTIFY ALL EXISTING UNDERGROUND SERVICES WITHIN THE SCOPE OF THE WORKS. THE SURVEY WILL NEED TO INCLUDE VACUUM EXCAVATION. PROVIDE A COPY OF THE SURVEY FOR APPROVAL INCLUDING ALL PITS AND CONDUITS DIMENSIONED OFF EXISTING BUILDINGS, THE CONTENTS OF THE CONDUITS INCLUDING THE CABLE TYPE SOURCE AND DESTINATION.

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.

CONFIRM THE POSITION OF ALL OUTLETS ON SITE WITH THE OPERATOR PRIOR TO ROUGH-IN.

ANY INTERRUPTION TO ANY ELECTRICAL SERVICES OUTSIDE OF THE AREA OF WORKS MUST BE RESTRICTED TO OUTSIDE OF THE FACILITIES OPERATING HOURS AND MUST BE ADVISED TO THE OPERATOR IN WRITING TWO WEEKS PRIOR AND LIMITED TO FOUR HOURS.

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 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.

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) AND THE NATIONAL ELECTRICITY METERING STANDARDS (NEM).
- AS/NZS3000.
- AS3008.
- LOCAL BRIGADE.
- WORKPLACE HEALTH AND SAFETY ACT.
- TELECOMMUNICATIONS ACT.
- ACMA REQUIREMENTS.

NOTES

3. 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.
- ENERGEX.
- STATE GOVERNMENT DEPARTMENT OF ENVIRONMENT AND HERITAGE.
- QLD GOVERNMENT, DIVISION OF WORKPLACE, HEALTH AND SAFETY.
- QLD FIRE AND EMERGENCY SERVICES.

4. 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 2.5mm² 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.

5. POWER DISTRIBUTION

IN ADDITION TO THE WORKS ASSOCIATED WITH THE BUILDINGS THE POWER DISTRIBUTION COMPONENT OF THE ELECTRICAL SERVICES SUB-CONTRACT INCLUDES REPLACING THE EXISTING ENERGEX SUPPLY AND MSB WITH A NEW ENERGEX PADMOUNT SUBSTATION AND MSB.

ENSURE THE NEW ENERGEX SUPPLY, MSB AND MDB ARE COMPLETE AT LEAST TWO MONTHS PRIOR TO PRACTICAL COMPLETION FOR COMMISSIONING. ARRANGE WITH THE BUILDER FOR THE SUBSTATION STRUCTURE TO BE COMPLETE AT LEAST SIX WEEKS PRIOR TO THE INSTALLATION OF THE ENERGEX TRANSFORMER. ARRANGE WITH ENERGEX TO HAVE THE NEW PADMOUNT SUBSTATION INSTALLED. PROVIDE AN UNDERGROUND CONSUMERS MAIN FROM THE SUBSTATION TO A NEW MAIN SWITCHBOARD.

A NEW DISTRIBUTION BOARD DB-K IS TO BE PROVIDED. A NEW DISTRIBUTION BOARD DB-1 IS TO BE PROVIDED TO SUPPLY THE EXISTING CIRCUITS SUPPLIED FROM THE EXISTING MSB. THE EXISTING DISTRIBUTION BOARD DB-A IS TO BE REPLACED. NEW SUBMAINS ARE TO BE PROVIDED FROM THE NEW MDB TO THE EXISTING DISTRIBUTION BOARD DB-2. THE NEW MSSB, THE NEW DISTRIBUTION BOARDS DB-K AND DB-1 AND THE REPLACED DISTRIBUTION BOARD DB-A. THE POWER DISTRIBUTION COMPONENT OF THE ELECTRICAL SERVICES SUB-CONTRACT INCLUDES THOUGH IS NOT LIMITED TO THE FOLLOWING EXTENT OF WORK:

- ENERGEX PADMOUNT SUBSTATION INCLUDING ALL CIVIL WORKS REQUIRED BY ENERGEX.
- ARRANGE THE ENERGEX SUPPLY CONNECTION AND METERING.
- UNDERGROUND CONSUMERS MAINS FROM THE ENERGEX PADMOUNT SUBSTATION TO THE MSB.
- MAIN SWITCHBOARD (MSB).
- SUBMAINS.
- NEW DISTRIBUTION BOARD DB-1 AND DB-K.
- REPLACEMENT OF DISTRIBUTION BOARD DB-A.
- EARTHING.
- CIRCUITS.
- ISOLATORS AND OUTLETS.
- SWITCH PANELS.
- INSTALLATION OF THE HAND DRYERS.
- CABLE ACCESS WAYS.
- TESTING AND COMMISSIONING.
- REMOVAL OF THE EXISTING ENERGEX AERIAL SERVICE, PROPERTY POLE, CONSUMERS MAINS AND MSB.
- REMOVAL OF ALL EXISTING SERVICES MADE REDUNDANT BY THE WORKS.
- THERMOSCAN ALL OF THE SWITCHBOARDS SUPPLIED OR MODIFIED AS PART OF THE WORKS WITHIN THE FIRST WEEK SCHOOL HAS COMMENCED AND SUBMIT THE THERMOSCAN FOR APPROVAL.

REFER TO THE POWER SCHEMATIC DRAWING FOR ADDITIONAL SWITCHBOARD REQUIREMENTS AND CONSTRUCTION NOTES. ENSURE ALL THREE PHASE CIRCUITS ARE PROVIDED WITH CORRECT PHASE ROTATION.

PROVIDE THE NEW MAIN SWITCHBOARD (MSB) AS FOLLOWS:

- PLINTH MOUNTED MECHANICALLY FIXED TO THE WALL.
- NATIONAL ELECTRICITY MARKET (NEM) COMPLIANT RETAIL METERING.
- PROVIDE A COPY OF THE ENERGEX APPROVAL OF THE MSB.
- MANUAL GENERATOR CHANGE OVER FACILITY WITH A MECHANICAL INTERLOCK BETWEEN THE MAINS AND GENERATOR SUPPLY.
- FACILITY TO CONNECT TEMPORARY GENERATOR MAINS OF THE SAME SIZE AS THE CONSUMERS MAINS THROUGH THE MSB PIT TO THE CHANGE OVER FACILITY.
- IP66 FORM 1.
- 316 STAINLESS STEEL OR ALUMINIUM ENCLOSURE, DOORS AND ESCUTCHEONS.
- POWDER COATED LIGHT GREY ENCLOSURE AND DOORS.
- POWDER COATED GLOSS WHITE ESCUTCHEONS.
- INTERNAL TEMPERATURE CONTROLLED ANTI CONDENSATION HEATER IN EACH CUBICAL.
- ENSURE THE MSB IS DESIGNED TO OPERATE IN DIRECT SUNLIGHT WITH AN AMBIENT TEMPERATURE OF 45 DEGREES.
- DOORS ON ALL CUBICLES WITH 3 POINT 92268 KEY LOCKABLE HANDLES OTHER THAN THE METER CUBICAL DOOR WHICH IS TO HAVE AN ENERGEX PADLOCK.
- 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.
- ENERGEX PADLOCK ON THE METER CUBICAL.
- TWO ENERGEX PADLOCK KEYS AND TWO 92268 KEYS.

PROVIDE DISTRIBUTION BOARDS DB-1, DB-K AND DB-A AS FOLLOWS:

- WALL MOUNTED.
- IP44 FORM 1.
- LIGHT GREY ENCLOSURE WHITE ESCUTCHEON.
- 3 POINT LOCKABLE 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.
- 40% SPARE POLES AT PRACTICAL COMPLETION.
- ALL COMPONENTS ARE TO BE LABELLED WITH NON-STICK LABELS.
- A CIRCUIT BREAKER TO SUPPLY THE KITCHEN REFRIGERATION SWITCHBOARD.
- A CIRCUIT BREAKER TO SUPPLY THE KITCHEN MECHANICAL SERVICES SWITCHBOARD.

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

ENSURE ALL OUTLETS AND ISOLATORS ARE POSITIONED SUCH THAT THEY ARE NOT COVERED BY THE EQUIPMENT.

NOTES

6. 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 LIGHTING.
- EMERGENCY AND EXIT LIGHTING.
- EARTHING OF THE LIGHTING INSTALLATION.
- LIGHTING CONTROL.
- LIGHTING SUBCIRCUITS.
- TESTING AND COMMISSIONING.

PROVIDE 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.)

7.0 COMMUNICATIONS CABLING

THE COMMUNICATIONS CABLING COMPONENT OF THIS CONTRACT INCLUDES NEW COMMUNICATION CAT 6 RJ45 OUTLETS CABLED TO MODULAR PATCH PANELS IN THE EXISTING COMMUNICATIONS RACK CR-A VIA CAT 6 UTP CABLING.

PROVIDE THE STRUCTURED CABLING SOLUTION TO MATCH THE EXISTING USED ACROSS THE SITE AND PROVIDED IT WITH A MANUFACTURERS 15 YEAR WARRANTY.


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

- CAT 6 COMMUNICATIONS OUTLETS.
- CAT 6 CABLING.
- MODIFICATIONS TO COMMUNICATIONS RACK CR-A TO ACCOMMODATE THE NEW PATCH PANELS.
- PATCH PANELS.
- FACTORY TERMINATED HDMI CABLES.
- LABELLING .
- TESTING AND COMMISSIONING.

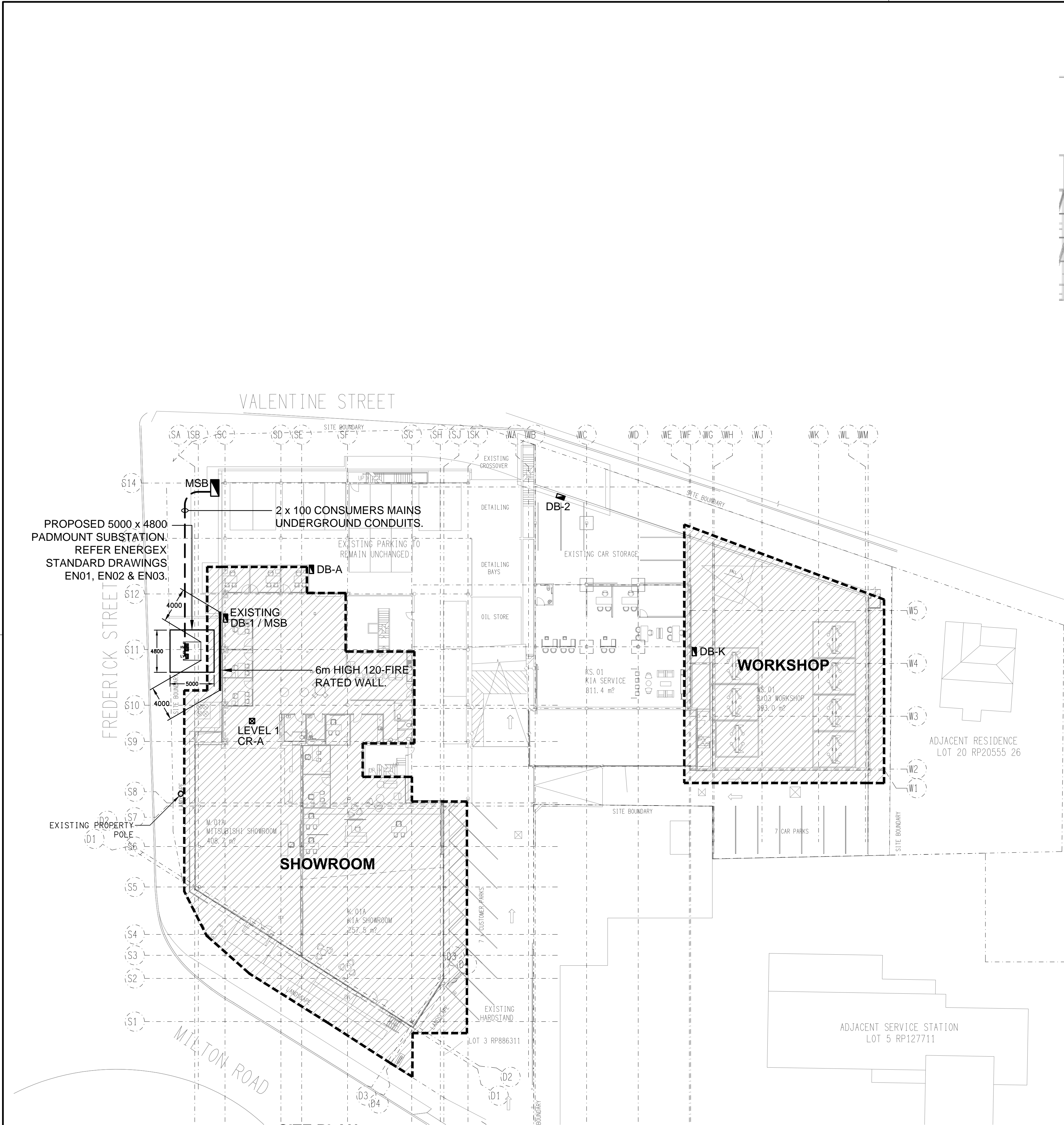
ALL COMMUNICATIONS CABLING IS TO BE UNDERTAKEN BY AN ACMA LICENCE HOLDER. THE PATCH LEADS, FLY LEADS, POE SWITCH AND UPS WILL BE PROVIDED BY THE SCHOOL.

8. ABBREVIATIONS

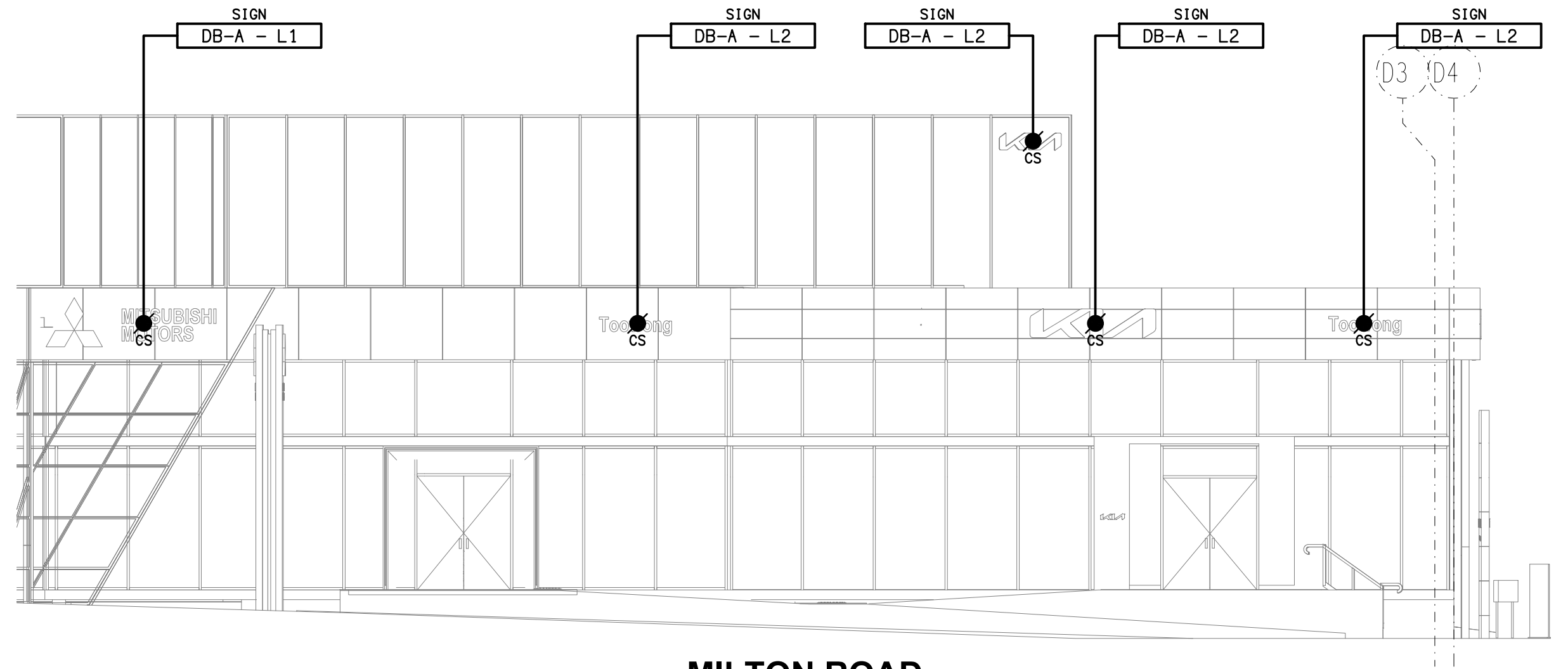
- A - AMP CURRENT RATING
- AB - MOUNT ABOVE BENCH.
- AFFL - ABOVE FINISHED FLOOR LEVEL.
- BB - MOUNT BELOW BENCH.
- BH - MOUNT ON BULKHEAD.
- CEIL - MOUNT ON CEILING.
- CS - MOUNT WITHIN CEILING SPACE.
- C/W - COMPLETE WITH.
- DR - DRYER.
- DW - DISHWASHER.
- HWS - HOT WATER SYSTEM.
- MCB - MINIATURE CIRCUIT BREAKER.
- MCOB - MOLDED CASE CIRCUIT BREAKER.
- MDB - MAIN DISTRIBUTION BOARD.
- MEN - MULTIPLE EARTH NEUTRAL LINK.
- MSB - MAIN SWITCHBOARD.
- MSSB - MECHANICAL SERVICES SWITCHBOARD.
- MW - MICROWAVE.
- N - NEON / LED INDICATOR WHEN ON.
- NTS - NOT TO SCALE.
- OV - OVEN.
- RCBO - CIRCUIT PROTECTED VIA A 30ma RESIDUAL CURRENT DEVICE INTEGRAL TO THE CIRCUIT BREAKER.
- REF - REFRIGERATOR.
- UNO - UNLESS NOTED OTHERWISE.
- WM - WASHING MACHINE.
- WP - WEATHERPROOF TO IP56 UNO.
- 500 - NUMBER DENOTES MOUNTING HEIGHT AFFL.

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TRADING AS: ELECTRICAL DESIGN GROUP		USE FIGURED DIMENSIONS IN PREFERENCE TO SCALE.		ELECTRICAL BUILDING SERVICES CONSULTANTS		DRAWING: <b>ELECTRICAL SERVICES NOTES</b>		REV: DESCRIPTION: DATE:	
ALL DIMENSIONS TO BE VERIFIED ONSITE.		BRISBANE GOLD COAST		P.O.Box 15, Sherwood Q.4075 Phone: (07) 3278 4375 Email: brisbane@edg.net.au Web: www.edg.net.au		601 MILTON ROAD, TOOWONG		SCALE: NOT TO SCALE AT A1	
						PROJECT NO: <b>C3227a</b>		DRAWING NO: <b>E02</b>	
								REVISION: <b>B</b>	

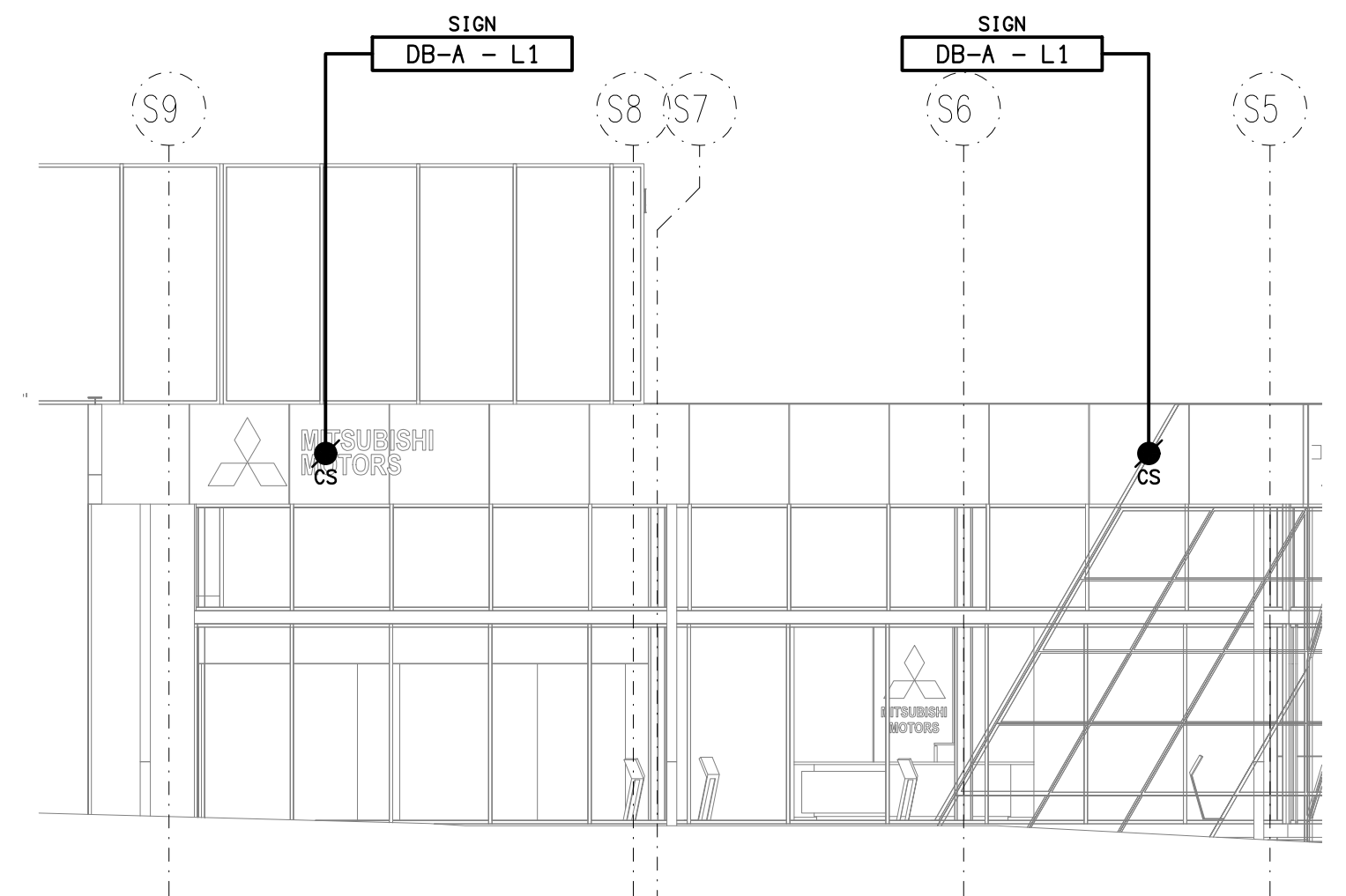




**SITE PLAN**  
TOOWONG KIA & MITSUBISHI  
SCALE 1: 250

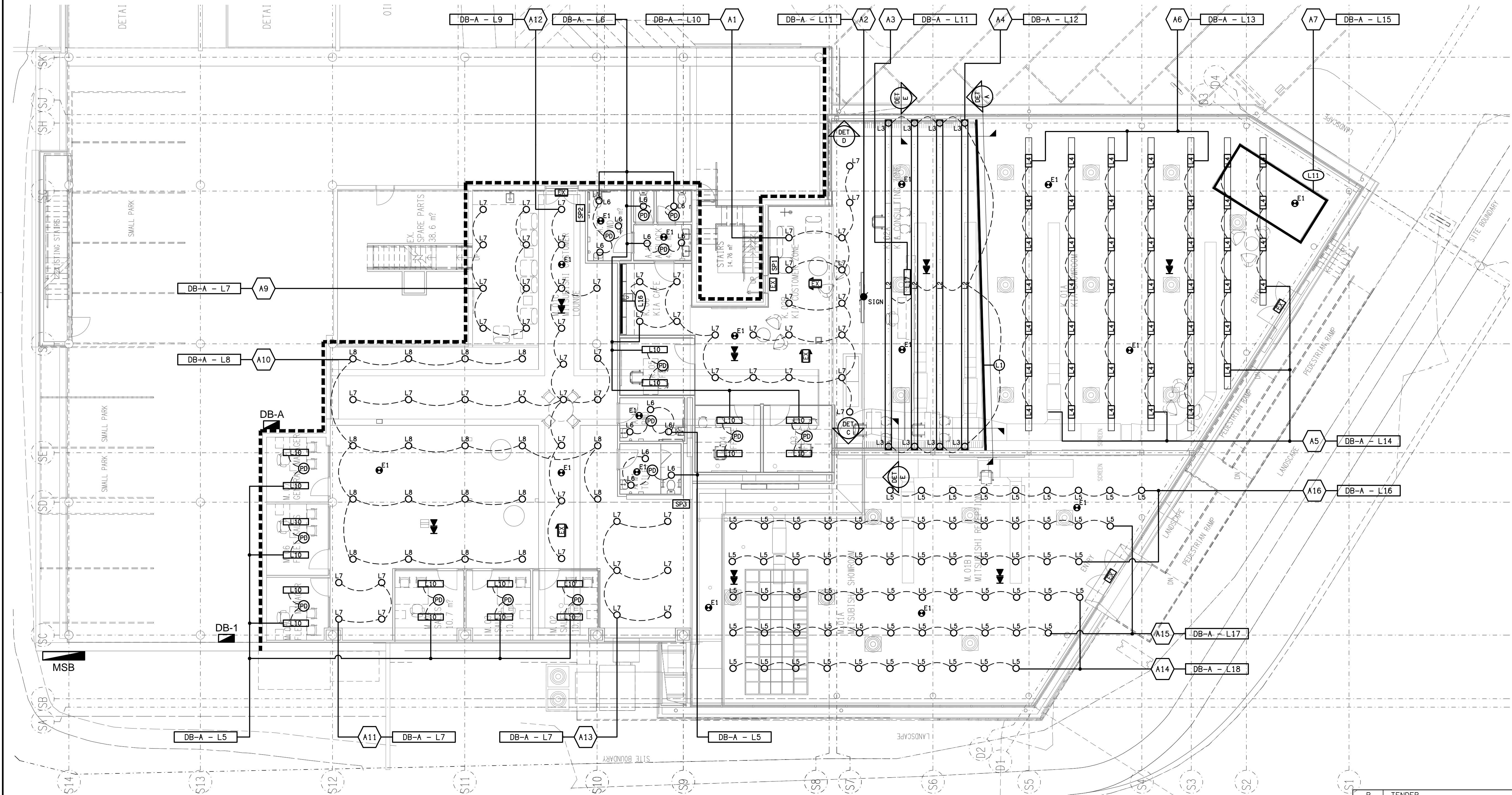
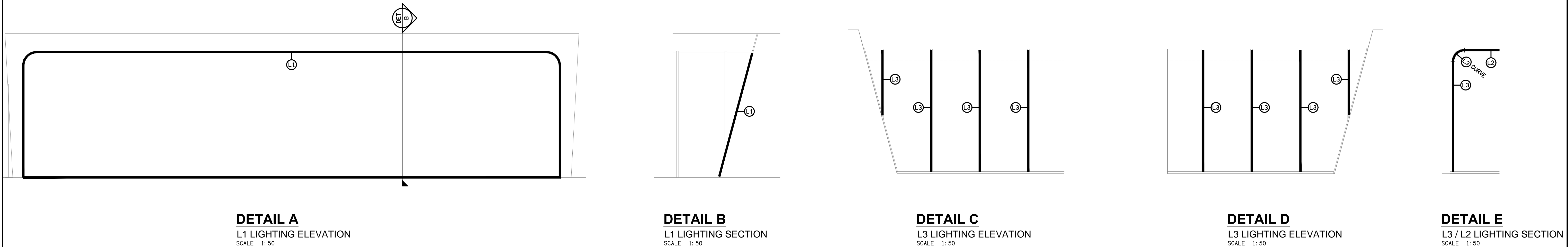


**MILTON ROAD**  
EXTERNAL BUILDING ELEVATION  
SCALE 1: 100



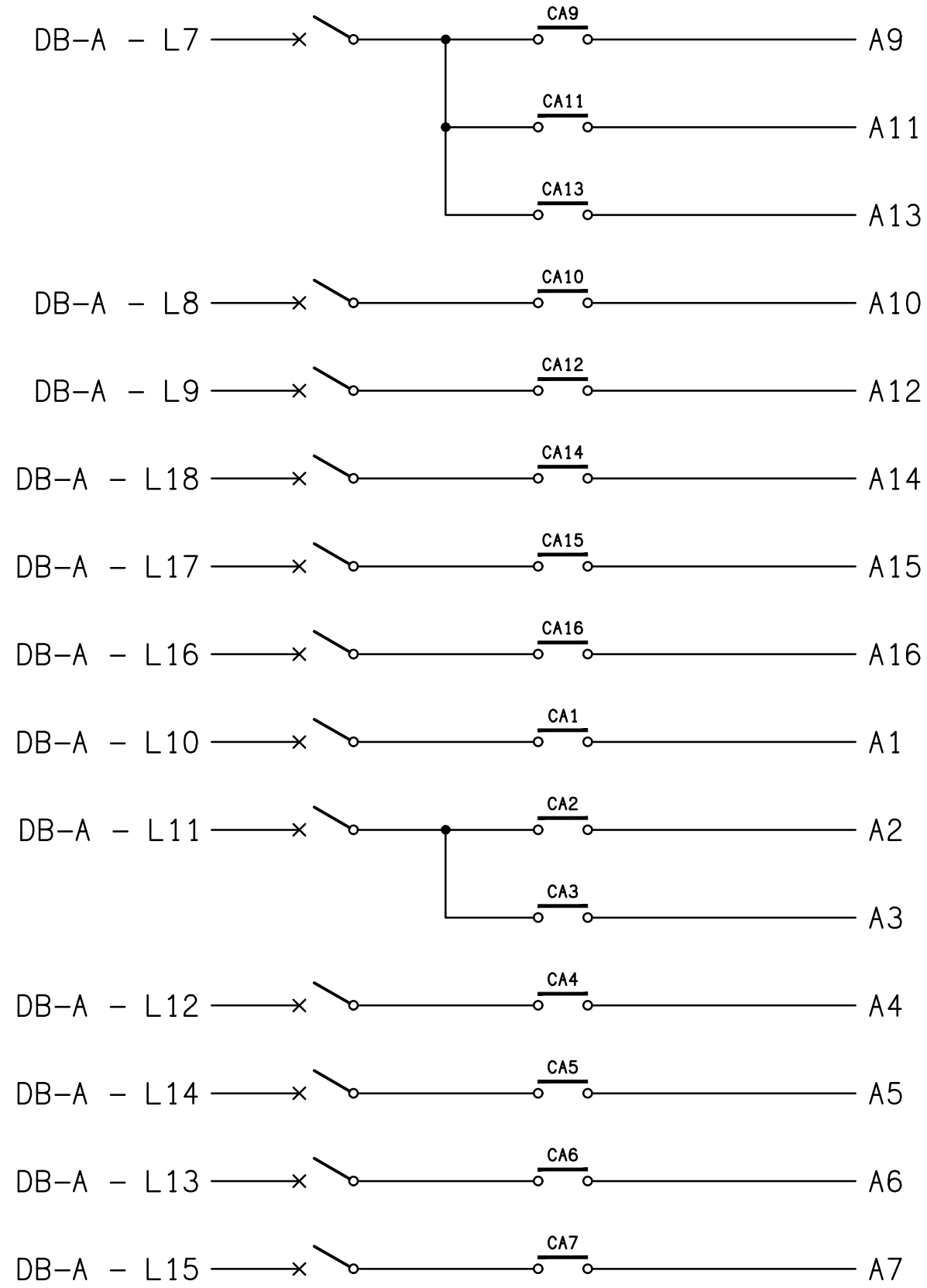
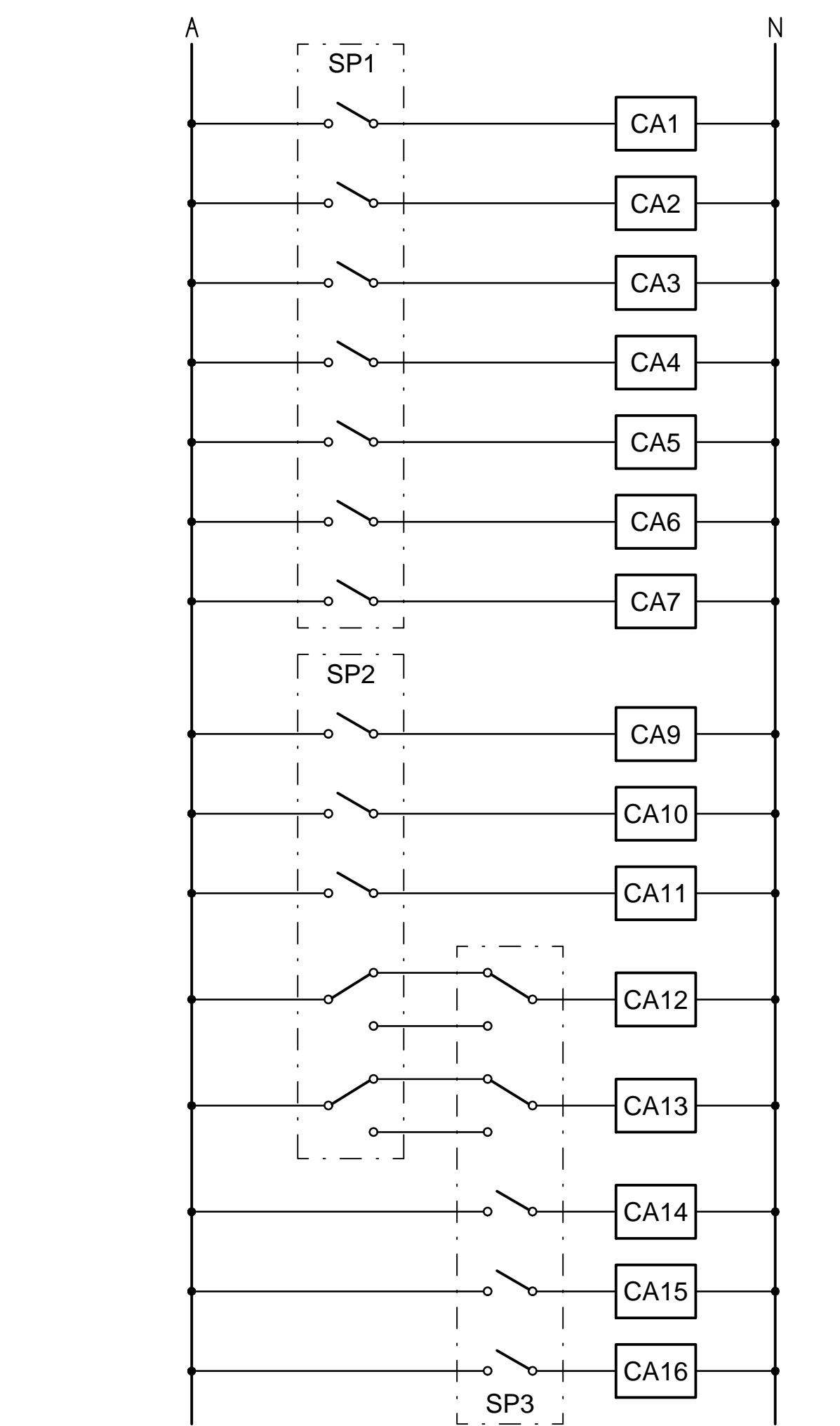
**FREDERICK STREET**  
EXTERNAL BUILDING ELEVATION  
SCALE 1: 100



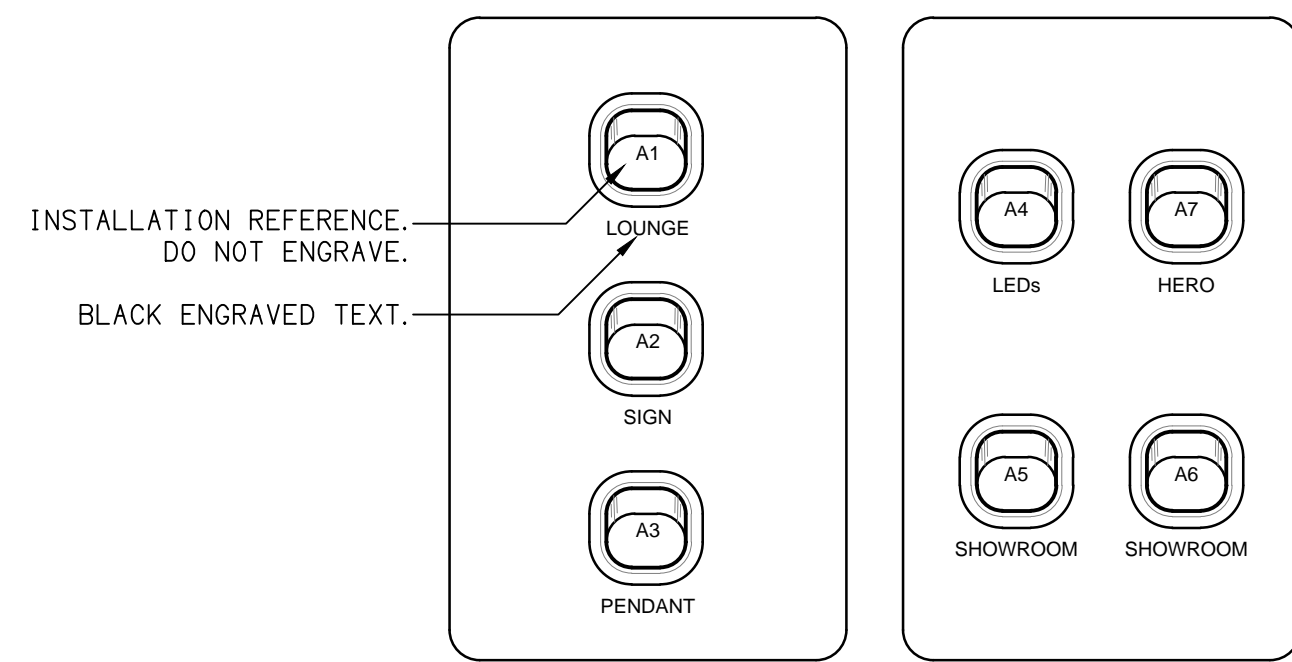




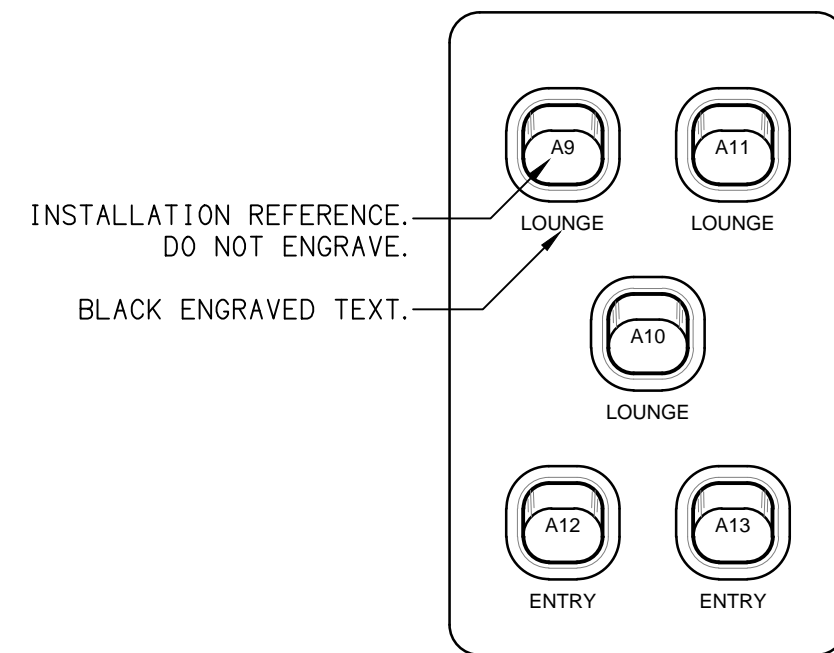




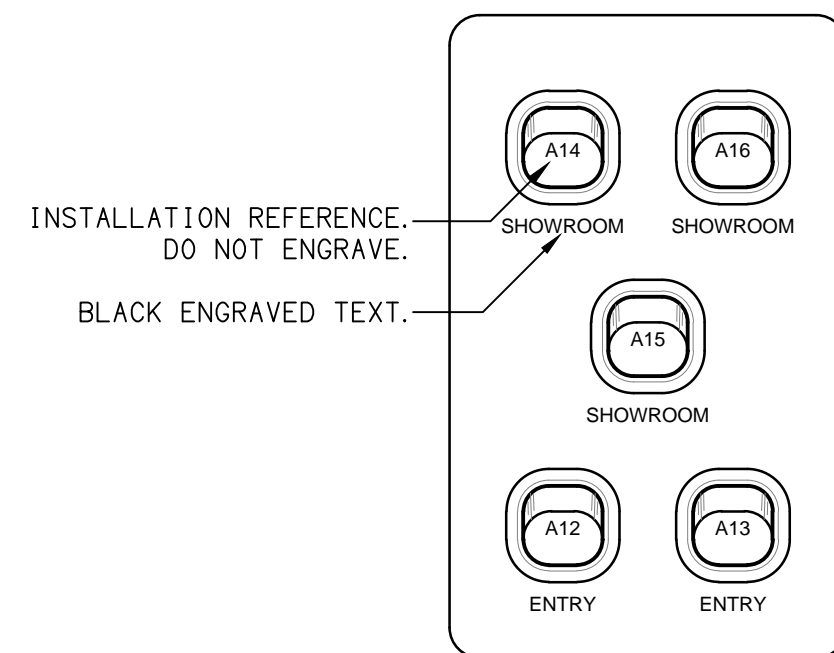
**SCHEMATIC**  
SWITCH PANEL SP1, SP2 & SP3  
NOT TO SCALE



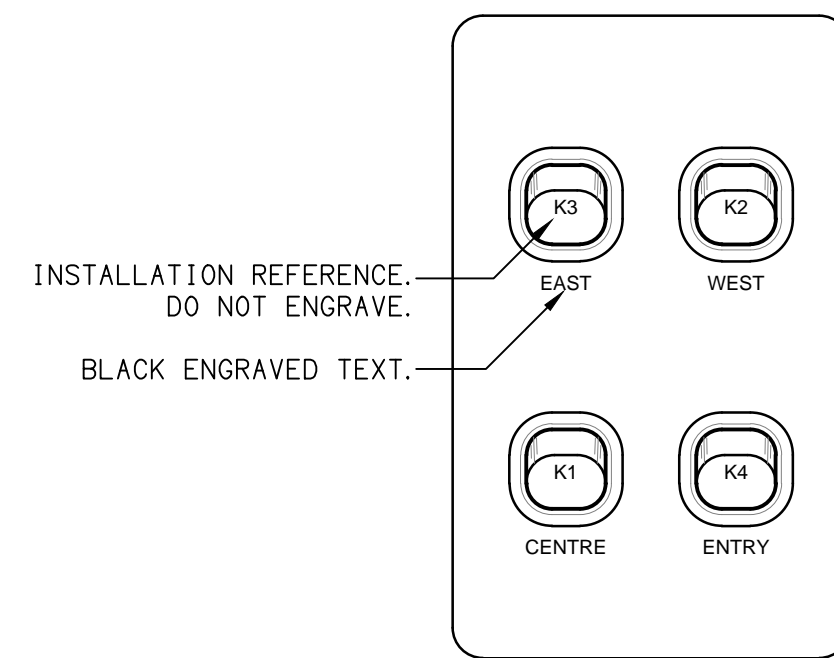
**DETAIL**  
SWITCH PANEL SP1 ELEVATION  
NOT TO SCALE



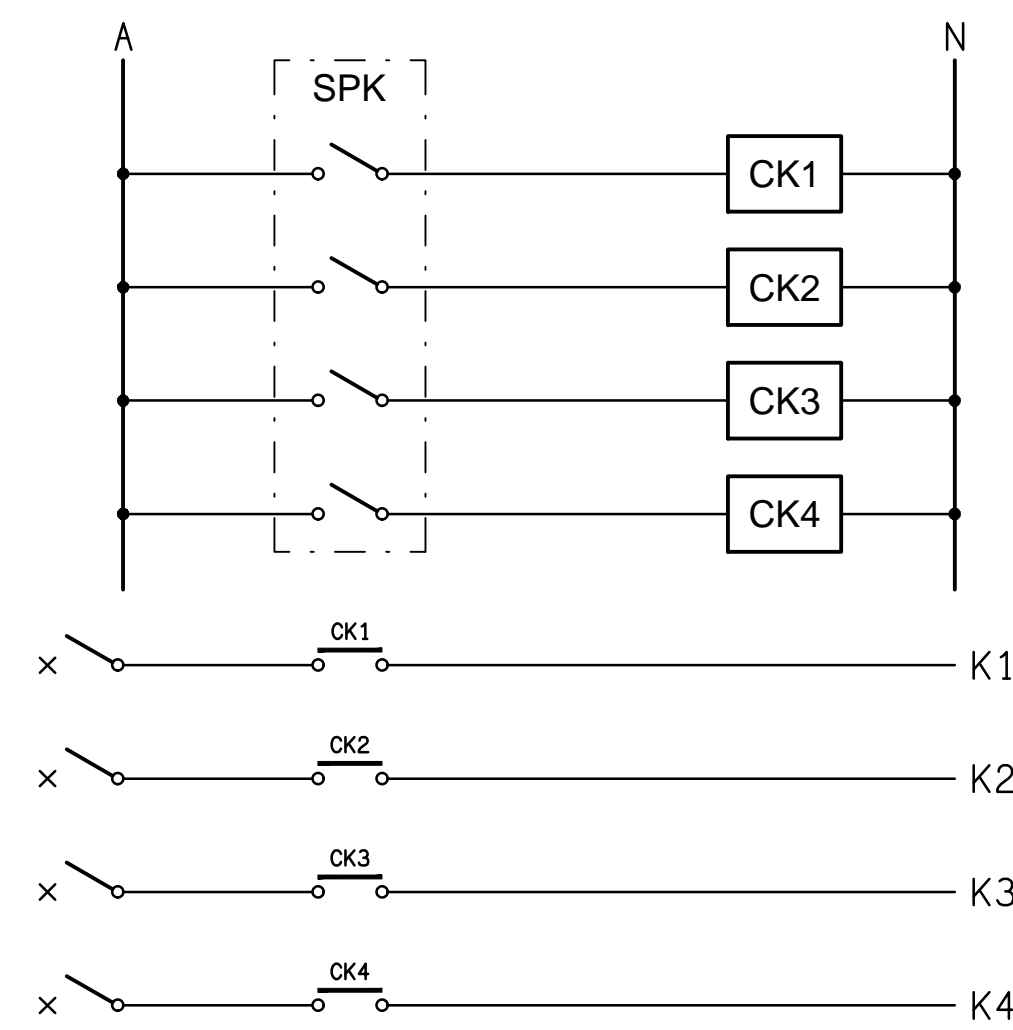
**DETAIL**  
SWITCH PANEL SP2 ELEVATION  
NOT TO SCALE



**DETAIL**  
SWITCH PANEL SP3 ELEVATION  
NOT TO SCALE



**DETAIL**  
SWITCH PANEL SPK ELEVATION  
NOT TO SCALE

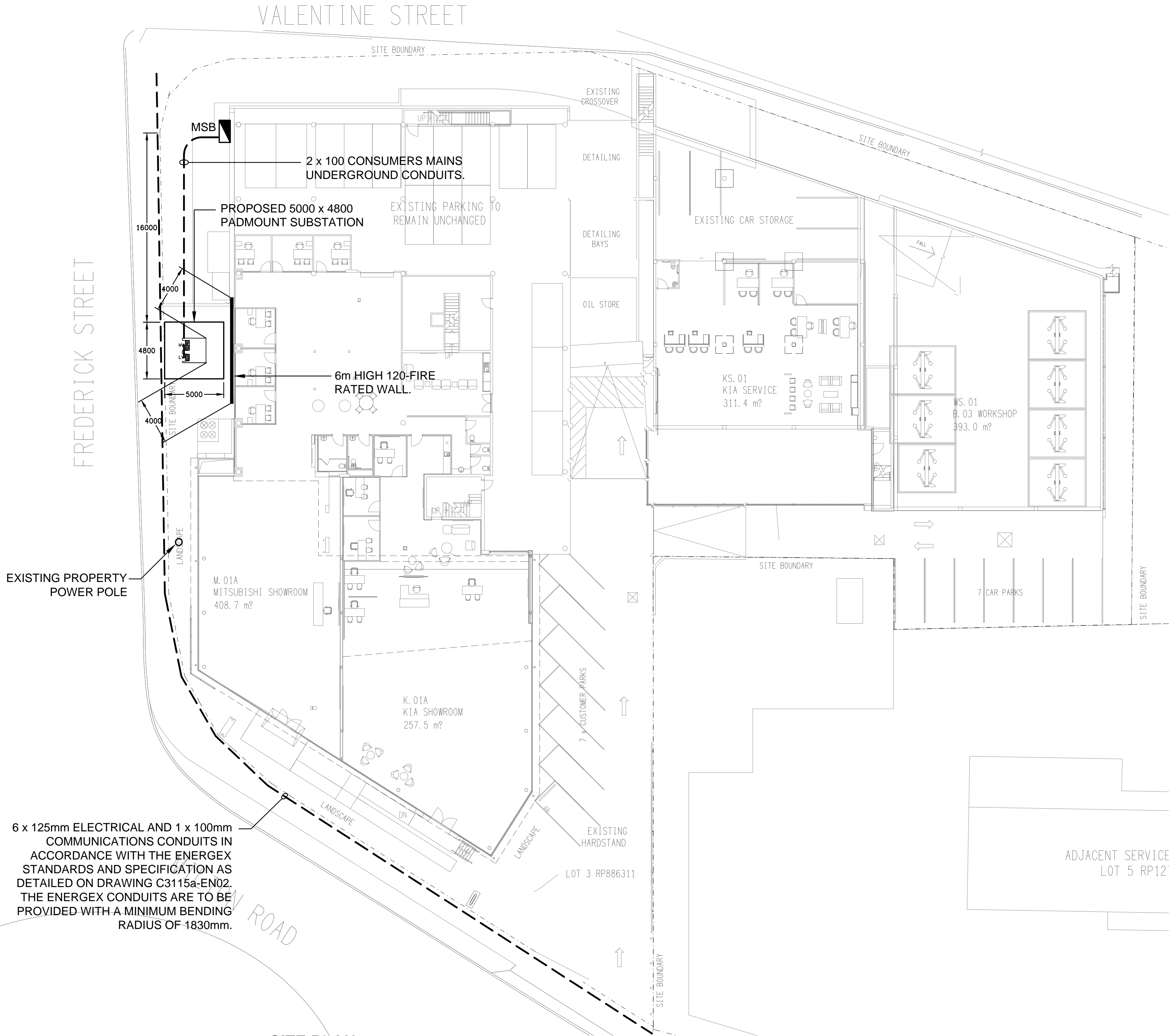


**SCHEMATIC**  
SWITCH PANEL SPK  
NOT TO SCALE

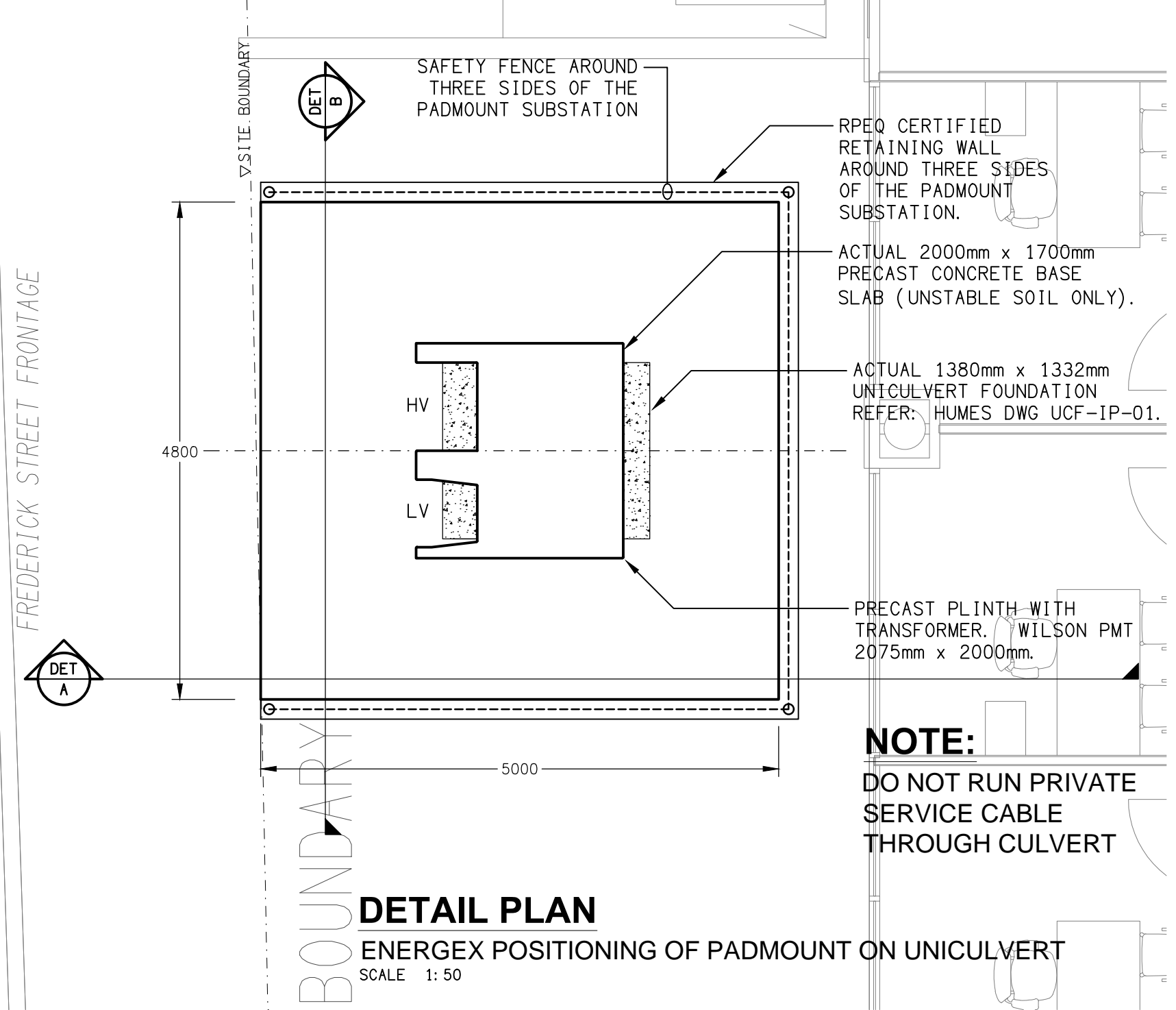


**NOTE:**  
Q100 FLOOD LEVEL RL TBA AHD.  
PADMOUNT SUBSTATION RL TBA AHD.

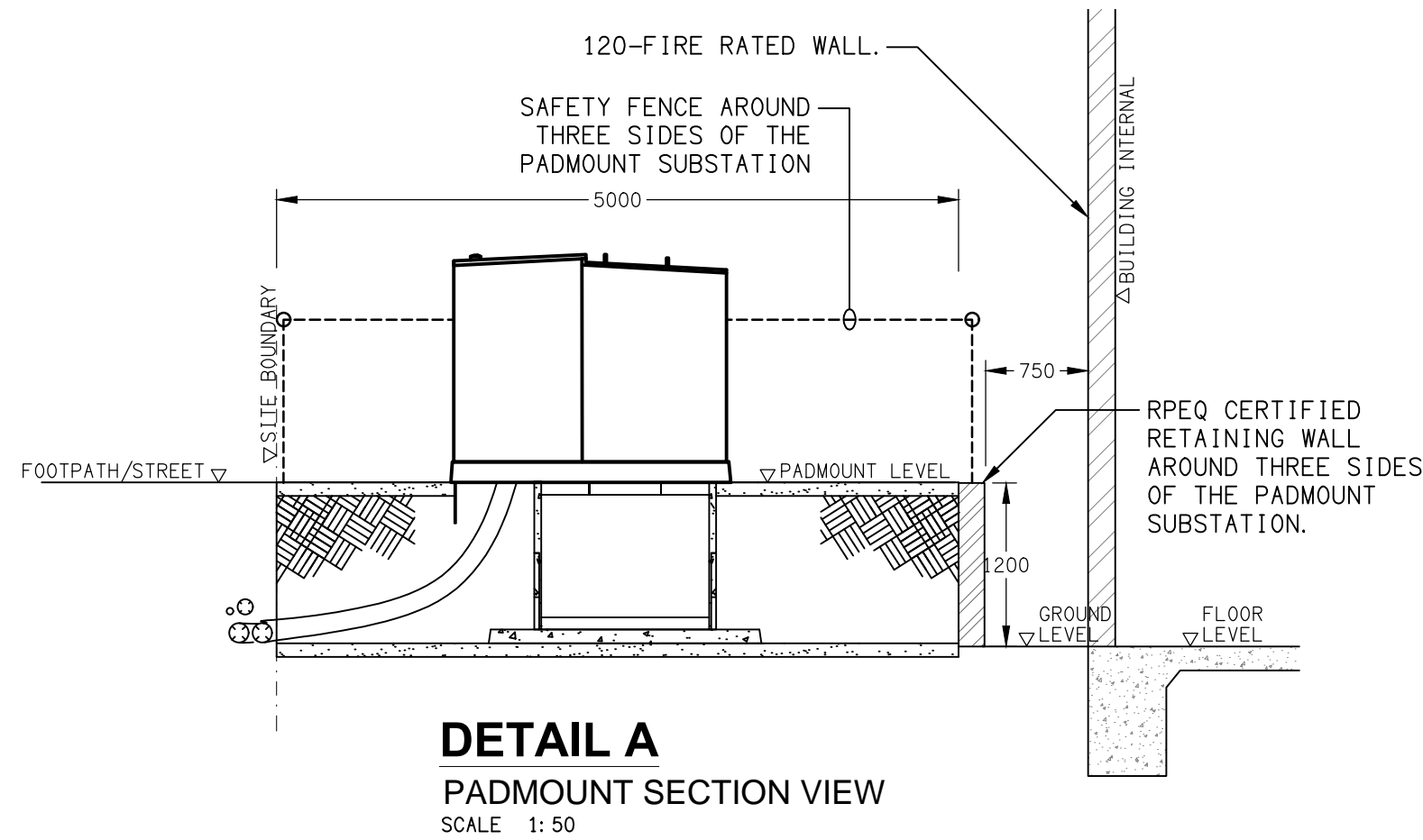
**NOTE:**  
FOR ALL ENERGEX RELATED CONSTRUCTION  
QUERIES THE ELECTRICAL DESIGN GROUP ON  
(07) 3278 4375 IS THE FIRST POINT OF CALL.



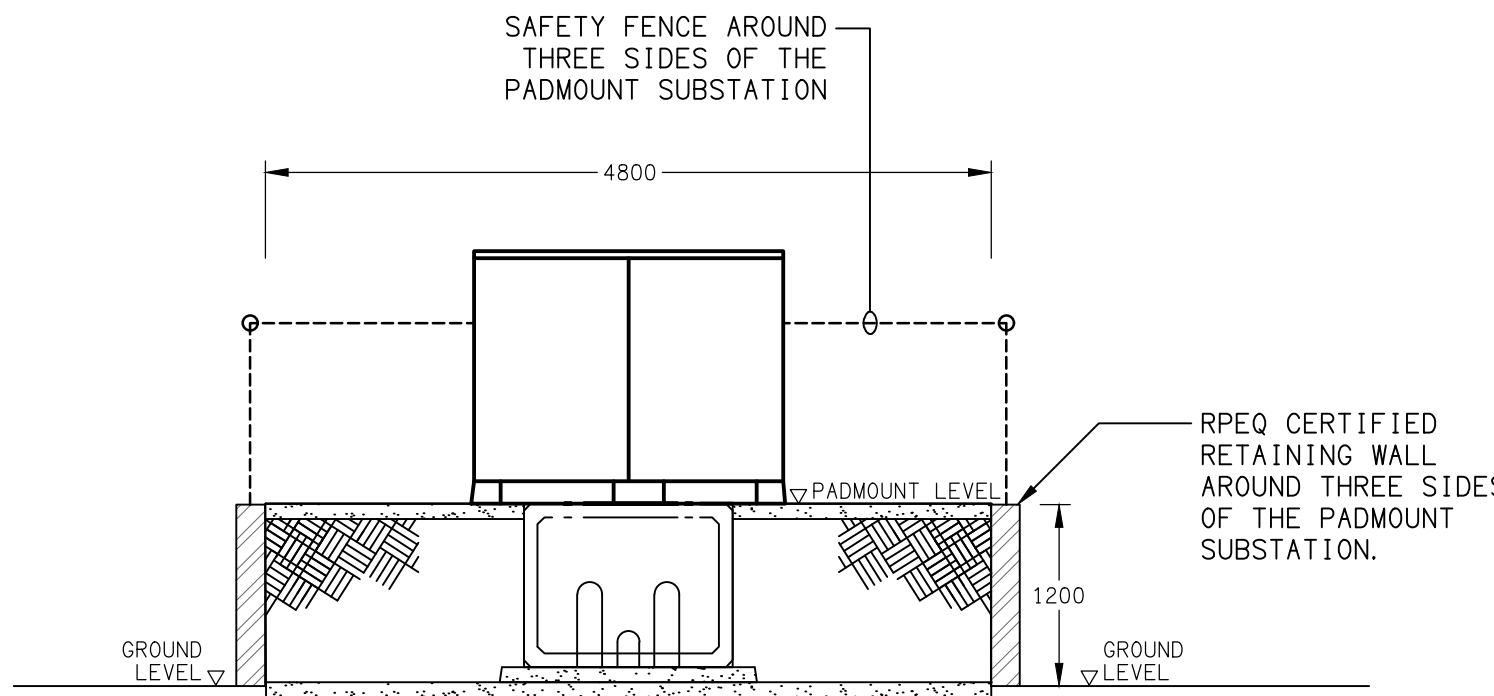
**SITE PLAN**  
PROPOSED PADMOUNT SUBSTATION  
SCALE 1:200



**DETAIL PLAN**  
ENERGEX POSITIONING OF PADMOUNT ON UNCULTVERT  
SCALE 1:50



**DETAIL A**  
PADMOUNT SECTION VIEW  
SCALE 1:50



**DETAIL B**  
PADMOUNT SECTION VIEW  
SCALE 1:50

ENERGEX ACCEPTANCE

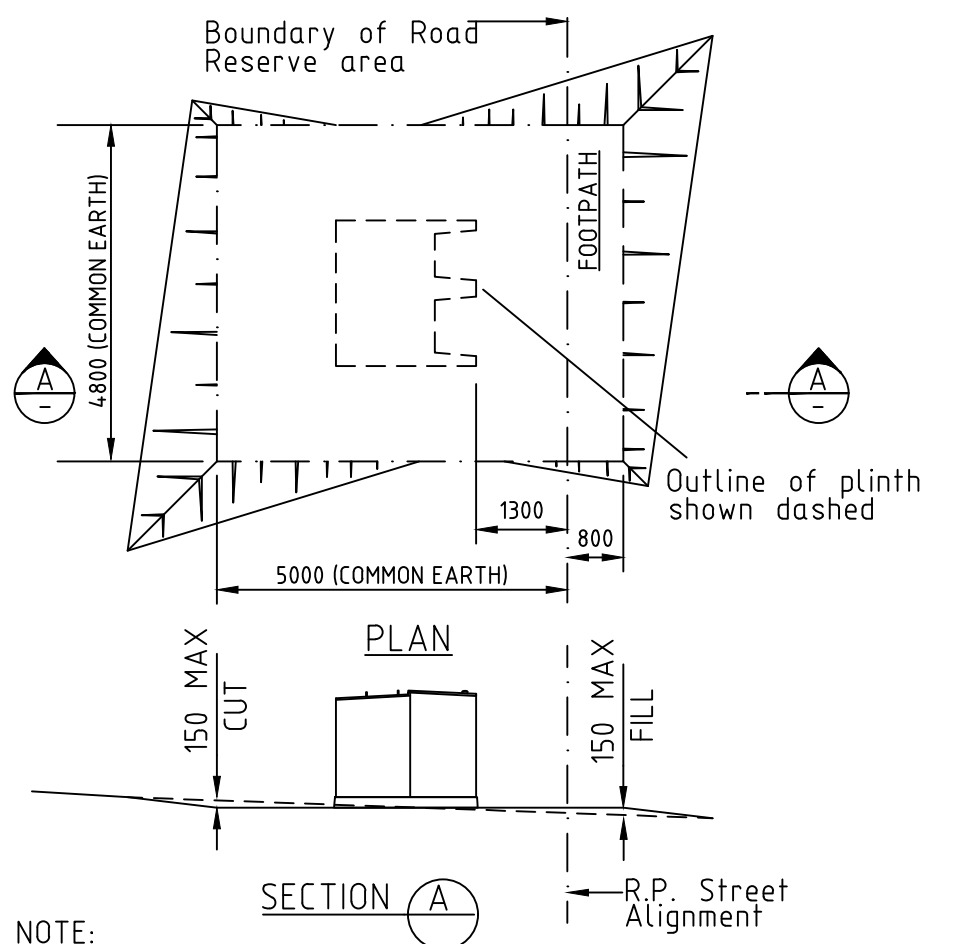
NAME .....  
OFFICE .....  
SIGNED .....  
DATE / /

ENERGEX takes no responsibility for the accuracy of the information provided on this drawing



ELECTRICAL DESIGN GROUP BRISBANE PTY LTD ACN 092 710 793	THE COPYRIGHT OF THIS DRAWING REMAINS THE PROPERTY OF THE ELECTRICAL DESIGN GROUP.	CULVERT INSPECTION REQUIRED BEFORE TRANSFORMER IS DELIVERED - 5 BUSINESS DAYS PRIOR NOTICE NEEDED. CONTACT _____ PH: _____ EMAIL: _____	 <b>ELECTRICAL DESIGN GROUP</b> ELECTRICAL BUILDING SERVICES CONSULTANTS BRISBANE GOLD COAST  P.O.Box 15, Sherwood Q.4075 Phone: (07) 3278 4375 Email: brisbane@edg.net.au Web: www.edg.net.au	PROJECT: <b>TOOWONG KIA &amp; MITSUBISHI</b>  601 MILTON ROAD, TOOWONG	DRAWING: <b>ELECTRICAL SERVICES</b> <b>ENERGEX PADMOUNT SUBSTATION</b> <b>SITE PLAN</b>			
					SCALE: AS SHOWN AT A1	PROJECT NO: <b>C3227a</b>	DRAWING NO: <b>EN01</b>	REVISION: <b>C</b>

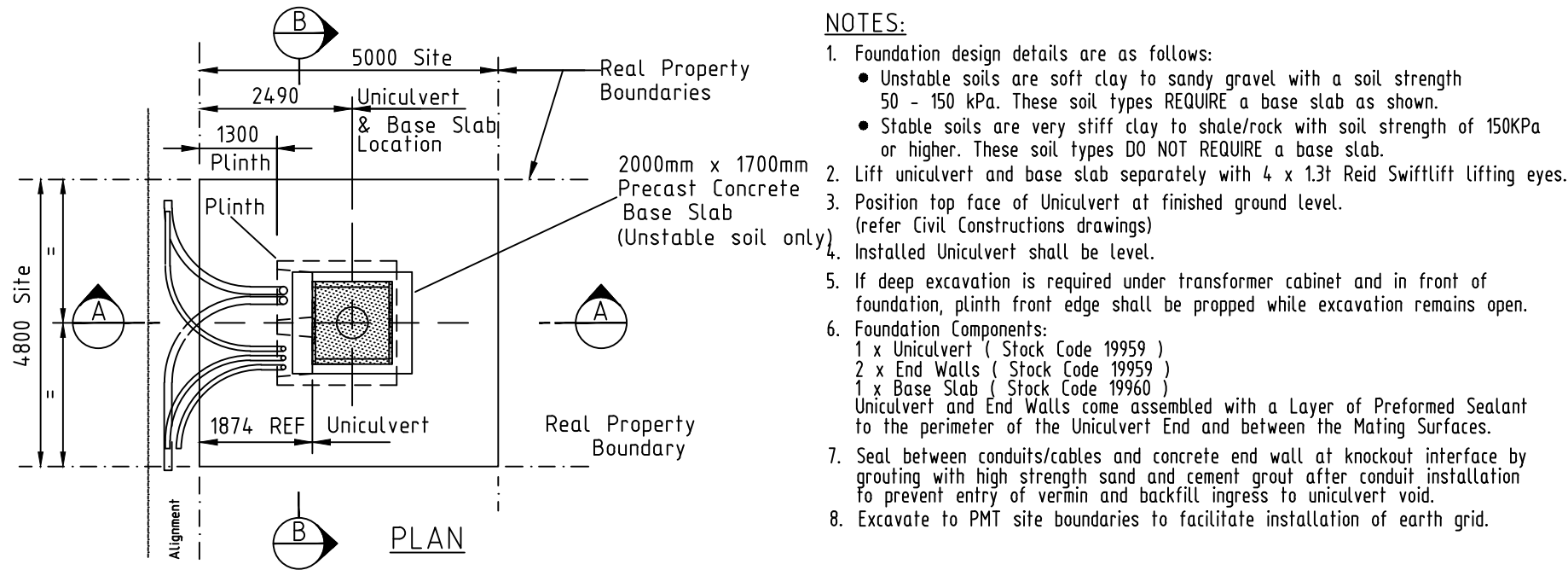




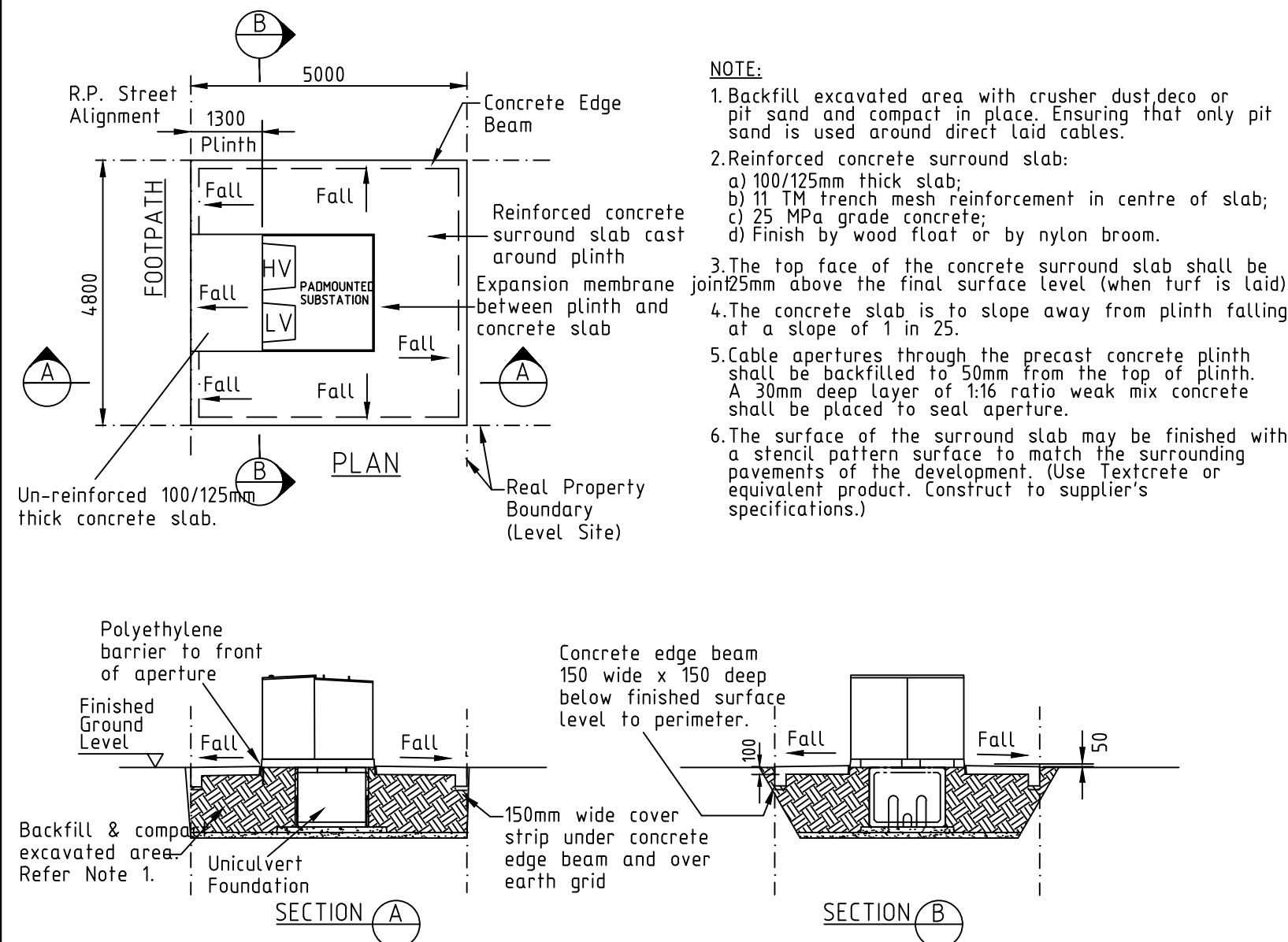
- NOTE:**
- ENERGEX's padmount clearance zone shall be levelled and surrounding area graded to ensure no water ponding.
  - No services other than the ENERGEX's electric cables shall pass through this substation site.
  - Clear access to the transformer shall be maintained for ENERGEX's personnel and heavy equipment.
  - After installation is complete the site surface is to be finished with a concrete slab. Refer UDC Manual Sect C3
  - Mature landscaping (including trees, sprinklers etc.) shall not encroach onto the substation site.
  - Cut and fill levels greater than 150mm will require a Civil RPEQ certified design to ensure levels, compaction standards, drainage have been considered, Sites requiring retaining walls shall be designed in accordance with C3-2.6.

SITE PREPARATION DETAIL

REQUIRED TASKS CUSTOMER RESPONSIBILITIES	DATE COMPLETED		CHECKED BY
	YES	NO	
24 HOUR ACCESS PROVIDED.			
PADMOUNTED SUBSTATION SITE IS LEVEL.			
PADMOUNTED SUBSTATION SITE SIZE - 5.0M x 4.8M			
RETAINING WALLS (INCL. RPEQ APPROVAL IF REQUIRED).			
PADMOUNTED SUBSTATION SITE IS CLEAR OF ALL SERVICES.			
CORRECT FOUNDATION INSTALLED.			
CONDUITS ARE INSTALLED (INCLUDING BUNGS & DRAW WIRES)			
CONDUITS TRENCHES BACKFILLED & COMPACTED.			
FENCES INSTALLED.			
HAVE 2000mm DEDICATED CLEAR ZONE IN FRONT OF PLINTH.			
CUSTOMER RESPONSIBILITIES PRIOR TO COMMISSIONING			
SITE BACKFILLED & COMPACTED (INCLUDING UNDER PLINTH)			
BOUNDARY SURROUND & SITE SURFACE CONCRETED.			
AREA SUITABLY DRAINED (NO PONDING)			
SITE CLEANED-UP NEATLY.			
NOTE: x if applicable.			



FOUNDATION DETAIL



REINSTATEMENT DETAIL

Cable conduit shall be of the following type;  
125mm Dia. UPVC Light Duty Rigid Pressure pipe to AS/NZS2053. Conduit bends shall have a Minimum radius of 1830mm.

The conduits shall be laid in a straight line with sealed joints. Should any deviation be required in conduit route, 1830mm radius bends shall be used. Bends shall not be greater than 30 degrees. Cable pits shall be used for greater deviations. Refer to ENERGEX Planner for details.

The conduits shall have 750mm minimum cover and shall be bedded on compacted sand or fine granular soil free of rocks. The socket ends of conduits shall finish 150mm beyond the R.P. alignment and shall have 750mm min cover below finished footpath level at the R.P. alignment.

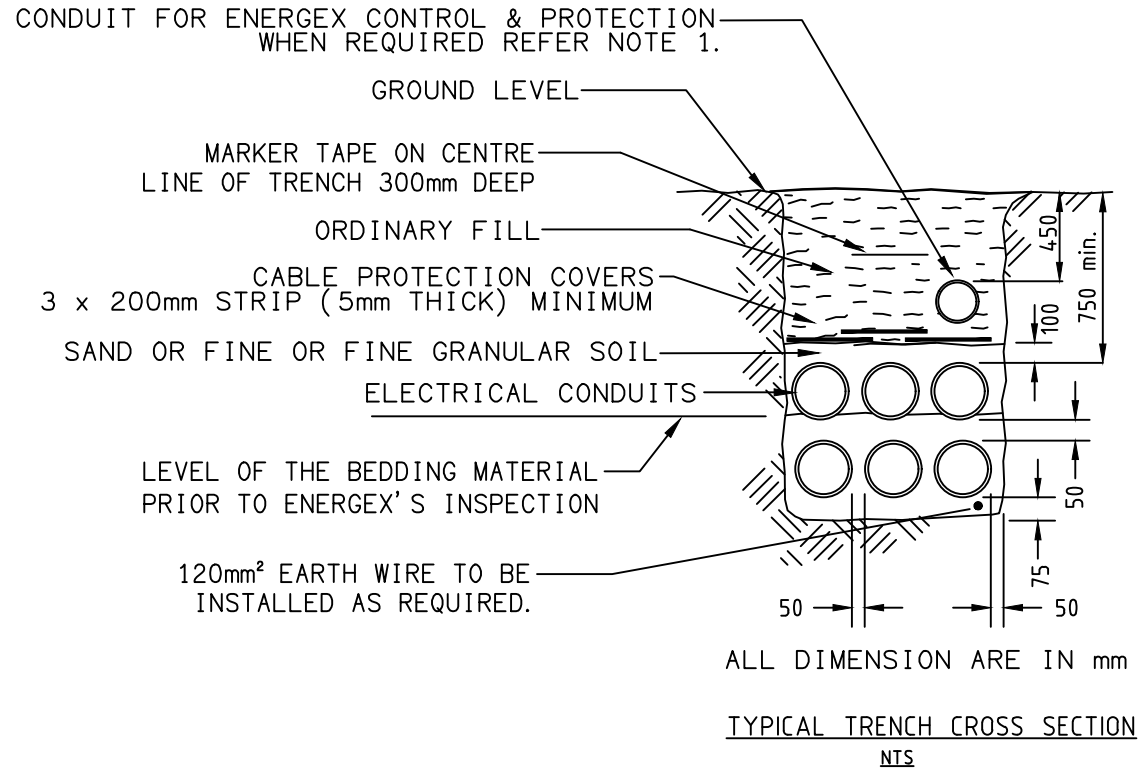
A bellmouth shall be provided where the conduits terminate in the substation wall or wall of a substation trench. A 2.5mm plastic coated steel draw wire or 6mm braided Polypropylene Rope "BORAL KA10850" shall be installed in each conduit (1kN min. breaking strength).

Because of the physical distortion likely in large groups of buried UPVC conduits, High Density conduits shall be used for groups of more than 6 conduits. Conduits shall be 125mm or 150mm as specified by ENERGEX and shall be supplied and installed by the developer. Conduits shall be securely sealed by builder to prevent ingress of dirt until cable installation by ENERGEX and then resealed by ENERGEX.

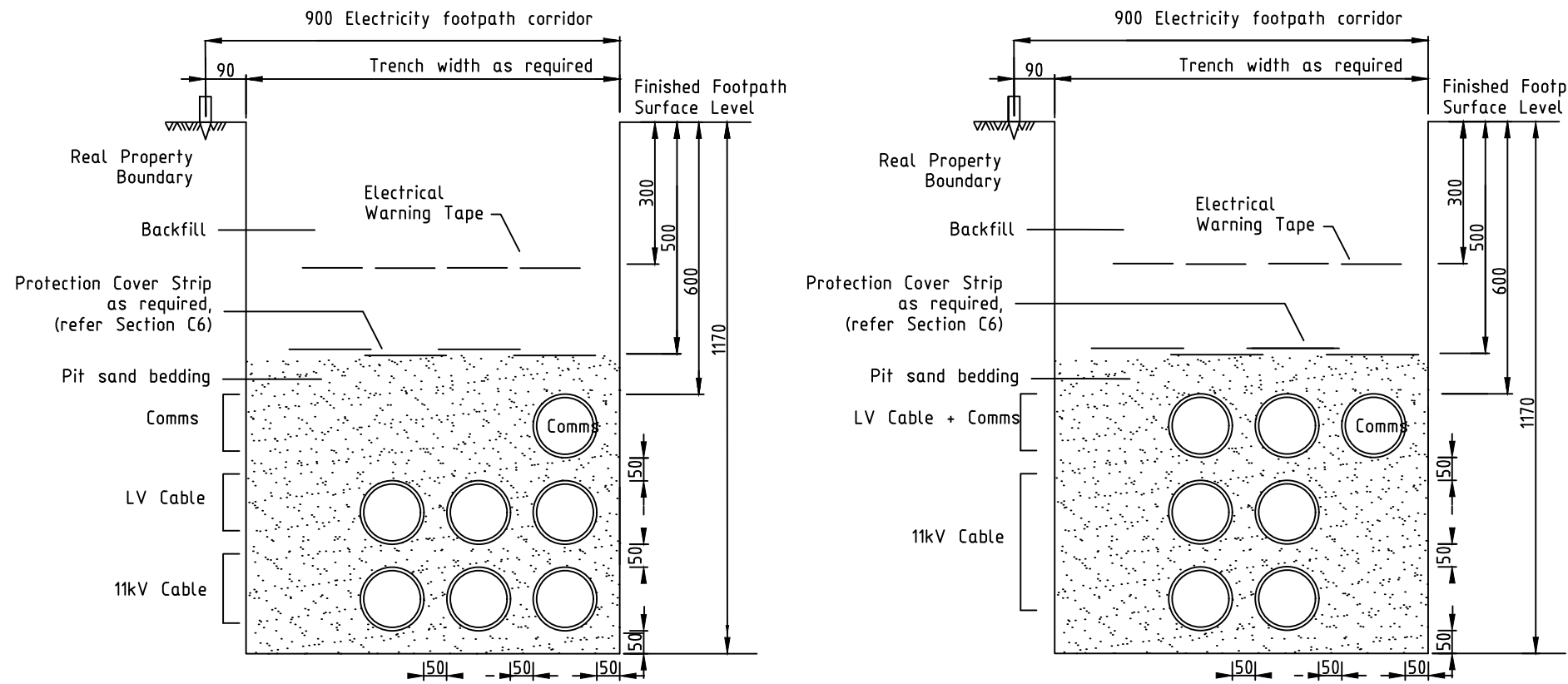
ENERGEX may need to install an earth wire and earth rods in conduit trenches from the substation site.

Electricity Supply Conduits and Cables shall have polymeric cable protection covers placed 100mm above the top conduit face of the electricity supply conduits and cables. Cable protection cover strips shall be lapped when placed together; 100mm minimum along the longitudinal axis; 40mm minimum along the traverse axis and shall extend 40mm minimum past the external edges of the conduit/cable bank.

Polymeric cable protection cover shall be a minimum of 5mm thick as described in Australian Standard; AS/NZS 4702 for Polymeric Cable Protection Covers.



TYPICAL TRENCH CROSS SECTION FOR ENERGEX CONDUITS IN PRIVATE PROPERTY



TYPICAL CROSS SECTION - 11KV AND C&I (FOOTPATH ON PUBLIC FOOTPATHS)

NOTES

- CABLE CONDUIT SHALL BE OF THE FOLLOWING TYPE: LIGHT DUTY ELECTRICAL CONDUIT TO AS/NZS 2053. CONDUIT BENDS SHALL HAVE A MINIMUM RADIUS OF 1830mm.
- CONDUITS SHALL BE 125mm ORANGE FOR ELECTRICAL AND 100mm WHITE (LOCATED TOP KERBSIDE) AS SPECIFIED BY ENERGEX AND SHALL BE SUPPLIED AND INSTALLED BY THE DEVELOPER OR ENERGEX. CONDUITS SHALL BE SECURELY SEALED TO PREVENT INGRESS OF DIRT UNTIL CABLE INSTALLATION AND THEN RESEALED.
- EACH CONDUIT TO BE FITTED WITH A 6mm BRAID POLYPROPYLENE DRAW ROPE TO PULL IN HAULAGE ROPE. (MINIMUM BREAKING STRENGTH OF 1.0kN.)
- ENERGEX MAY NEED TO INSTALL AN EARTH WIRE AND EARTH RODS IN CONDUIT TRENCHES FROM THE SUBSTATION SITE.
- ELECTRICITY SUPPLY CONDUITS AND CABLES SHALL HAVE POLYMERIC CABLE PROTECTION COVER STRIPS PLACED 100mm ABOVE THE TOP CONDUIT FACE OF THE ELECTRICITY SUPPLY CONDUITS AND CABLES. CABLE PROTECTION COVER STRIP SHALL BE LAPPED WHEN PLACED TOGETHER; 100mm MINIMUM ALONG THE LONGITUDINAL AXIS, 40mm MINIMUM ALONG THE TRAVERSE AXIS AND SHALL EXTEND 40mm MINIMUM PAST THE EXTERNAL EDGES OF THE CONDUIT/CABLE BANK.
- POLYMERIC CABLE PROTECTION COVER SHALL BE A MINIMUM OF 5mm THICK AS DESCRIBED IN THE AUSTRALIAN STANDARD; AS4702 FPR POLYMERIC CABLE PROTECTION COVERS.
- REDUCED CONDUIT SEPARATION MAY BE ACCEPTED TO AVOID SPECIFIC OBSTACLES
- MIN. DEPTHS SHOWN ARE THOSE DEPTHS REQUIRED BY CODE OF PRACTICE, WORKS (MINOR ROADS) AND DMR (ARTERIAL ROADS).

**Note**  
ENERGEX will not commission the transformer until the transformer site has been completed to ENERGEX specifications (including the concrete surround).

ENERGEX specifications for construction of the transformer site and installation of conduits on private property are available at the following web address.  
[https://swp.energex.com.au/service\\_providers/technical\\_docs/asp/technical\\_documents.asp](https://swp.energex.com.au/service_providers/technical_docs/asp/technical_documents.asp)

Underground Distribution Construction Manual 00305 v16  
Section C1 - Conduits  
Section C2 - Excavations & Reinstatements  
Section C3 - Padmount Transformer Sites

Commercial and Industrial Substations Manual 00293 v11  
Section 14 - Drawing 11040-A4-14-33 Sht 2

The site contractor is to refer all substation construction queries to their electrical consultant.

ENERGEX ACCEPTANCE	
NAME	.....
OFFICE	.....
SIGNED	.....
DATE	/ /
ENERGEX takes no responsibility for the accuracy of the information provided on this drawing	





