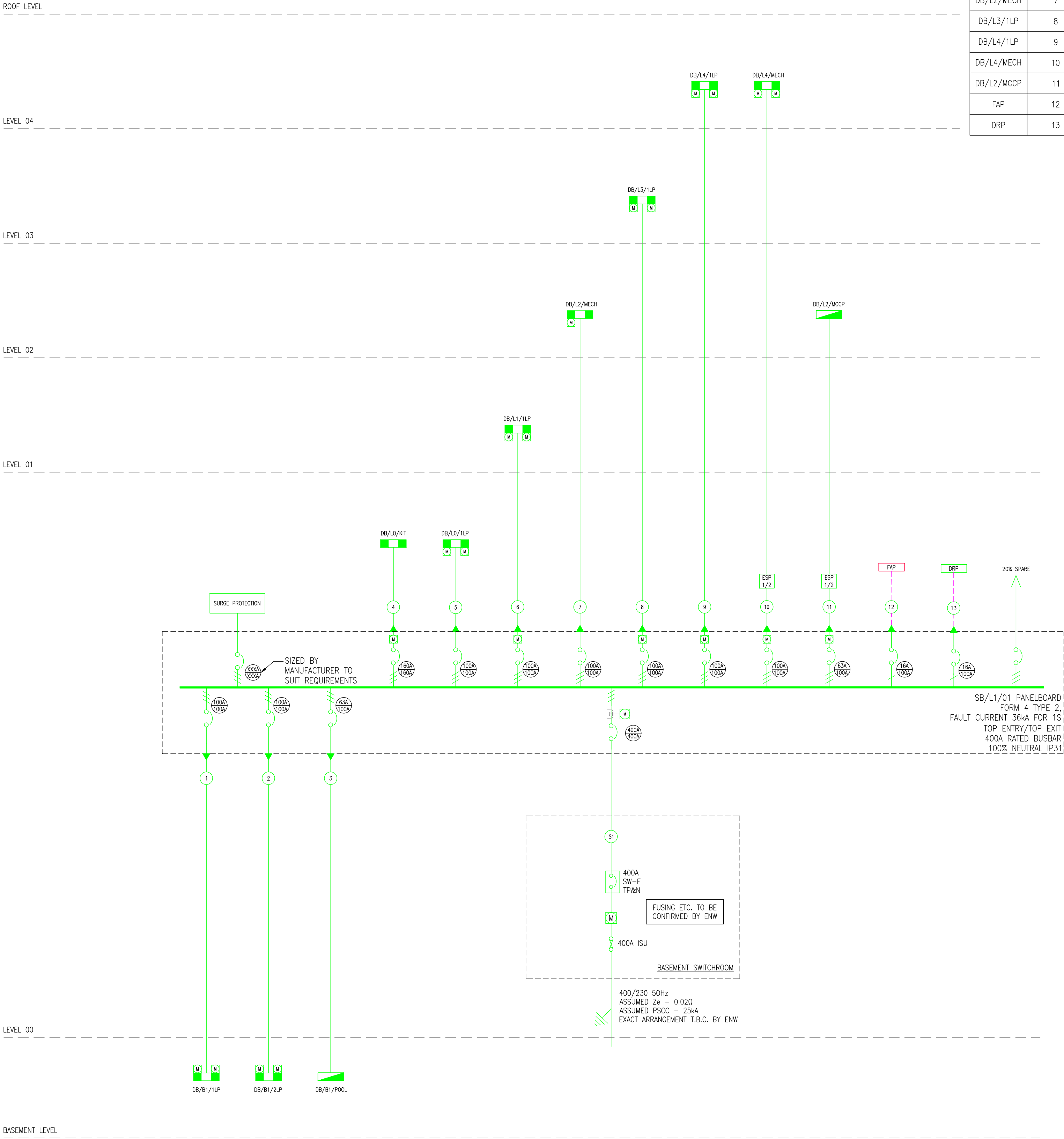




CABLE SCHEDULE				
REF	CABLE REF	CABLE TYPE	CABLE SIZE	CPC TYPE/SIZE
ISU	S1	CU XLPE/AWA/PVC singles	7No. 300mm singles	120mm ² Cu 6191X TBC
DB/B1/1LP	1	XLPE/SWA/LSF	50mm ² 4 core	25mm ²
DB/B1/2LP	2	XLPE/SWA/LSF	50mm ² 4 core	25mm ²
DB/B1/POOL	3	XLPE/SWA/LSF	35mm ² 3 core	16mm ²
DB/L0/KIT	4	XLPE/SWA/LSF	120mm ² 4 core	70mm ²
DB/L0/1LP	5	XLPE/SWA/LSF	50mm ² 4 core	25mm ²
DB/L1/1LP	6	XLPE/SWA/LSF	50mm ² 4 core	25mm ²
DB/L2/MECH	7	XLPE/SWA/LSF	50mm ² 4 core	25mm ²
DB/L3/1LP	8	XLPE/SWA/LSF	50mm ² 4 core	25mm ²
DB/L4/1LP	9	XLPE/SWA/LSF	50mm ² 4 core	25mm ²
DB/L4/MECH	10	XLPE/SWA/LSF	50mm ² 4 core	25mm ²
DB/L2/MCCP	11	XLPE/SWA/LSF	35mm ² 3 core	25mm ²
FAP	12	Enhanced Fire Rated Armoured	4mm ² 3 core	–
DRP	13	Enhanced Fire Rated Armoured	4mm ² 3 core	–

- NOTES
- ALL WORK SHALL COMPLY WITH BS7671 INCLUDING LATEST AMENDMENTS, ELECTRICITY AT WORK REGULATIONS 1989 AND HSE GUIDELINES.
 - LV SWITCHBOARDS SHALL BE FLOOR STANDING CUBICLE TYPE C/W 20% SPARE CAPACITY. A MINIMUM OF 20% SPARE CAPACITY & WAYS SHALL BE PROVIDED ON ALL DISTRIBUTION BOARDS.
 - LIFE SAFETY PANELBOARD SHALL BE ENCLOSED IN 2HR FIRE COMPARTMENT/ROOM. LIFE SAFETY SYSTEMS DUAL SUPPLIES CONNECTED VIA LOCAL ATS (ENCLOSED IN FIRE COMPARTMENT) c/w FINAL CONNECTIONS TO PLANT/EQUIPMENT IN FIRE RATED CABLE TO BS5819, BS9999 AND BS9991.
 - DIVERSE CABLE ROUTES SHALL BE PROVIDED FOR LIFE SAFETY SUPPLIES VIA ALTERNATE RISERS/FIRE RATED ENCLOSURES. ALL FIRE SAFETY PRIMARY AND SECONDARY SUPPLIES SHALL BE FIRE RATED IN ACCORDANCE WITH BS5819:2020.
 - THE MAIN INCOMING MULTI-FUNCTIONAL METER WITHIN THE MAIN LV SWITCH BOARDS SHALL PROVIDE THE FOLLOWING DISPLAYS AS A MINIMUM:
 - CURRENT PER PHASE
 - VOLTAGE PER LINE AND PHASE
 - KW MAX DEMAND
 - kVA MAX DEMAND
 - kWh CONSUMPTION
 - POWER FACTOR
 - kVAR MAX DEMAND
 - FREQUENCYDISTRIBUTION BOARDS TO BE PROVIDED WITH SPLIT METERING (WHERE INDICATED) FOR LIGHTING AND POWER, AND SHALL PROVIDE THE FOLLOWING DISPLAYS AS A MINIMUM:
 - kVA MAX DEMAND
 - kWh CONSUMPTION
 - ALL METERS SHALL HAVE RS-485/MQMBUS/MBUS COMMUNICATION OUTPUTS AND SHALL BE CABLED BACK TO THE COMMON MARSHALLING SECTION WITHIN THE MAIN SWITCH BOARD AND LEFT READY FOR CONNECTION TO AN ON SITE BMS ENERGY MONITORING AND METERING SET UP. CABLE TYPE TO METERING MANUFACTURER REQUIREMENTS AND WIRING/CONNECTIVITY DETAILS.
 - ELECTRICAL SAFETY RUBBER MATTING FOR ELECTRICAL SHOCK PROTECTION SHALL BE PROVIDED FOR THE FULL LENGTH OF THE LV PANEL SWITCHROOM AND A MINIMUM OF 1 METER WIDTH. THIS SHALL BE BLACK 9.5mm THICK, 650V PROTECTION TO BS921.
 - ELECTRONIC SURGE PROTECTION COMPLETE WITH VISUAL STATUS INDICATION, SELECTED & INSTALLED IN COMPLIANCE WITH BS EN 62305, I.E. TYPE 1/2 IN ACCORDANCE WITH SUPPLIERS REQUIREMENTS IN TERMS OF INSTRUMENTAL RATINGS OF CPD. IN ADDITION TO THE ABOVE PROVIDE SURGE PROTECTION TO FIRE ALARM PANEL, REFUGE PANEL AND SWITCH BOARDS / DISTRIBUTION BOARDS SUPPLYING EXTERNAL & ROOF EQUIPMENT.
 - TYPE 1 SPD'S SHALL BE INSTALLED ON ALL TELECOMS LINES ENTERING THE BUILDING. SURGE PROTECTION SHALL BE PROVIDED WITHIN DATA CABINETS SERVING EXTERNAL EQUIPMENT.
 - AN INDICATOR SHOWING THE STATUS OF THE SUPPLY (IE PRIMARY OR SECONDARY) SHALL BE PROVIDED ADJACENT TO THE LIFT LANDING DOOR AT THE FIRE SERVICE ACCESS LEVEL.
 - AUTOMATIC CHANGEOVER EQUIPMENT SHALL TAKE THE FORM OF PROPRIETARY 4 POLE AUTOMATIC TRANSFER SWITCHES COMPLETE WITH MANUAL BYPASS OVERRIDE AND ADJUSTABLE TIMER DELAY. ATS'S RATED AT 125A. PHASE SENSING SHALL BE UTILISED ON ALL ATS'S CONTRACTOR TO LIAISE WITH SOCOMEC ATS SPECIALIST FOR ADDITIONAL DETAILS.
 - SPARE WAY TO BE PROVIDED FOR CONNECTION OF FUTURE AUTOMATIC POWER FACTOR CORRECTION UNIT. EXACT SIZE OF POWER FACTOR CORRECTION KVAR TO BE DETERMINED FOLLOWING MEASUREMENTS OBTAINED AFTER PRACTICAL COMPLETION AND 3 MONTHS IN USE OPERATION.
 - WARNING LABELS TO BE PROVIDED AS FOLLOWS 'WARNING: THIS LIFE SAFETY SUPPLY REMAINS LIVE VIA A SECOND SUPPLY WHEN THIS SUPPLY IS TURNED OFF'. WARNING LABELS TO BE PROVIDED AS FOLLOWS 'WARNING, DUAL SUPPLY: DO NOT WORK ON THIS EQUIPMENT UNTIL IT IS ISOLATED FROM BOTH SOURCES OF SUPPLY'.
 - ALL 3 PHASE MCCB DEVICES UP TO 400A ARE TO BE SCHNEIDER MICROLOGIC 2.2 TYPE AND ALL OVER 400A ARE TO BE SCHNEIDER MICROLOGIC 5.3 TYPE. ALL SINGLE PHASE DEVICES ARE TO BE TMD TYPE.
 - FINAL INCOMING EARTH CABLE DETAILS TO BE CONFIRMED WITH IDNO.
 - ALL SUBMAIN CABLE SHALL BE INSTALLED IN SINGLE LAYER ARRANGEMENT.
 - DESIGN BASED ON SCHNEIDER PROTECTION DEVICES & BS 88 FUSES. ALL CABLING ARE LOW SMOKE ZERO HALOGEN AND RATED AT 90°C.
 - CT'S SHALL BE PROVIDED FOR UTILITY METERING COMPLETE WITH CERTIFICATION FROM CT MANUFACTURER WHICH IS TO BE SUPPLIED WITH THE PANEL DOCUMENTATION/MANUALS. CONNECTION OF THE DOOR MOUNTED METER SHALL BE FACILITATED BY THE PROVISION OF FUSES AND A CT CONNECTION BLOCK TO WHICH THE PANEL CT'S SHALL BE CONNECTED. THESE ITEMS TO BE LOCATED WITHIN THE CUBICLE BEHIND THE DOOR TO WHICH THE METER IS TO BE MOUNTED. AN ACCURATE RESISTANCE MEASUREMENT OF THE WIRING SHALL BE TAKEN AND THE VALUES TO BE RECORDED IN THE DOCUMENTATION/MANUALS. SWITCHGEAR MANUFACTURER TO INCLUDE ALL WIRING AND EQUIPMENT AS ABOVE AND PROVIDE DETAILED DRAWINGS

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DESIGNERS RISK ASSESSMENT
Under section 11, 18 - Construction (Design and Management) Regulations 2015

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION
There are no significant, unusual or location specific risks which are not obvious to a competent contractor or likely to be difficult to manage

SUPPLY & DISTRIBUTION SCHEMATIC	
SYMBOL	REFERENCE
	UTILITY METER (MID). IMP/EXP DENOTES IMPORT EXPORT CAPABILITY
	MULTI FUNCTION SUB METER
	TRANSFORMER
	SP&N CONSUMER UNIT C/W SURGE PROTECTION
	TP&N DISTRIBUTION BOARD
	SPLIT METERED TP&N DISTRIBUTION BOARD
	MECHANICAL CONTROL PANEL (MCP)
	FIRE ALARM PANEL (FAP)
	ISOLATOR (XA DENOTES RATING) (AV DENOTES VOLTAGE) (XP DENOTES NUMBER OF POLES)
	MOULDED CASE CIRCUIT BREAKER
	AUTOMATIC TRANSFER SWITCH
	FUSED SWITCH
	FUSED WAY
	TRIP SIZE FRAME SIZE ACB/MCCB RATING TRIP/FRAME SIZE
	SURGE PROTECTION DEVICE. TYPE AS INDICATED
	MULTIWAY DISTRIBUTION UNIT
	CUT OUT
	DOUBLE POLE SWITCH
	SINGLE PHASE SP&N
	THREE PHASE TP&N
	LIFE SAFETY CABLING
	GENERAL POWER CABLING

-	P02	PRELIMINARY ISSUE	CW	BD	13.01.23
-	P01	PRELIMINARY ISSUE	CW	BD	08.12.22
STA	REV	DESCRIPTION	DES	CHD	DATE

PURPOSE OF ISSUE
PRELIMINARY ISSUE

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CLIENT

PROJECT
LIVERPOOL ROAD
MANCHESTER

TITLE
ELECTRICAL SERVICES
LV SCHEMATIC

SCALE N.T.S	ORIGINAL SIZE A1	DATE DEC '22
DRAWN CW	DESIGNED CW	CHECKED BD

PROJECT | ORIGINATOR | ZONE | LEVEL | TYPE | ROLE | CLASS | NUMBER
P1824-NOV-XX-XX-SCH-E-6001

REVISION
P02

LV SCHEMATIC