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Little Manor, Barnet Lane, Elstree
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CONFIDENTIALITY STATEMENT:
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SUPPORT TO THE BUILDING AND ANY ADJACENT
STRUCTURES.

REV. NO.	DESCRIPTION	DATE	BY

PROJECT:
Multi Floor House

TITLE:
**ELECTRICAL GENERAL
NOTE**

PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: N/A
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DATE :
August 28, 2026

DRAWING NO.	REV.
E - 0	

GENERAL SPECIFICATIONS

- GENERAL:
 - WORK INDICATED: Drawings are diagrammatic – do not scale for precise locations. Verify all existing site conditions; make adjustments as needed.
 - FURNISHING WORK: Provide all labour, materials, tools, plant, equipment, and services necessary for complete execution in accordance with the Contract at no additional cost to the Employer. Includes all incidental items for a compliant, complete installation.
 - COMPLETION & TESTING: All equipment shall be commissioned, tested, and handed over operational to the Employer's satisfaction. "Provide" means supply, install, commission, and make ready for use.
 - MATERIALS & EQUIPMENT: All materials/equipment shall be new, CE/UKCA marked (as required), and compliant with UKCA Regulations 2023. Compatible with existing interfaces. Install per manufacturer's instructions and BS/BSIA standards.
 - EXISTING OBSTRUCTIONS: Remove/relocate conflicting existing services to the Contract Administrator's satisfaction at no cost to the Employer.
 - PENETRATIONS & MAKING GOOD: Written Employer approval required before cutting structural elements or fire compartments. Make good all disturbed areas to match existing. Fire compartment penetrations must use certified systems (tested to BS 476-20/22 or BS EN 1366) and maintain fire resistance (Approved Document B, 2023 amendments).
 - SITE CLEANLINESS: Daily clearance of waste/debris. At Practical Completion, remove all plant/materials, leave site clean and ready for occupation (CDM 2015, Regulation 36).
- COORDINATION AND SCHEDULING (CDM 2015 COMPLIANT):
 - COORDINATION: Principal Contractor shall coordinate all trades, verify site conditions, and prevent spatial/scheduling conflicts.
 - STAKEHOLDER COORDINATION: Coordinate with Subcontractors, suppliers, Statutory Undertakers, Building Safety Regulator (BSR) / Approved Inspector, Clerk of Works, Principal Designer, Contract Administrator, and Employer.
 - FIELD VERIFICATION: No work starts until site dimensions (structure, retained services/furniture) are verified.
 - MINIMISING DISTURBANCE: Phase work to minimise disruption in occupied areas. Submit Construction Phase Plan (COP) and Programme for approval. Provide dust/impact protection (e.g., polythene, Heras screens) between zones.
 - UTILITY SHUTDOWNS: Notify Employer in writing 14 days prior. Written approval required before shutdown.
 - SITE EXAMINATION: Thoroughly examine site conditions. No claims for errors/omissions in site verification.
- COMPLIANCE, PERMITS AND INSPECTIONS (BUILDING SAFETY ACT 2022):
 - COMPLIANCE: Comply with:
 - Building Regulations 2010 (as amended, inc. 2023 Part B, L, F)
 - British Standards (BS, BS EN)
 - Construction Products Regulation (UKCA/CE)
 - Water Supply (Water Fittings) Regulations 1999
 - Gas Safety (Installation & Use) Regulations 1998
 - Electricity at Work Regulations 1989
 - Obtain/rev for all Building Control applications, permits, and inspections (BSR/Approved Inspector).
 - CERTIFICATION: Provide:
 - Building Regulations Completion Certificate
 - Commissioning Certificates (BSRIA BG/2021)
 - Electrical Installation Certificate (BS 7671:2022)
 - Gas Safe Certificates
 - Final Inspection Sign-off
 - Deliver to Employer at Practical Completion.
 - CURRENT STANDARDS: Use latest editions of standards applicable in the Local Authority/BSR jurisdiction.
 - PRECEDENCE: Contract Documents > Referenced Standards. Notify Contract Administrator immediately of conflicts.
 - HEALTH, SAFETY & ENVIRONMENT: Comply with:
 - CDM 2015 (Principal Contractor duties)
 - Health and Safety at Work Act 1974
 - COSHH 2002
 - Environmental Permitting (England & Wales) Regulations 2016
 - Site Waste Management Plans Regulations 2006
 - UTILITIES: Comply with DNO (electricity), GDMO (gas), and water supplier regulations.
- DEFECTS LIABILITY PERIOD (JCT STANDARD):
 - DEFECTS: Rectify defects in workmanship/materials arising within 12 months of Practical Completion at no cost to the Employer. Includes commissioning issues. Notify Contract Administrator within 7 days of discovery.
- PRE-CONSTRUCTION INFORMATION (CDM 2015):
 - SUBMISSIONS: Submit electronic Technical Submissions (shop drawings, calculations, O&M data, BIM LOD 300+ if applicable) for Contract Administrator/Principal Designer approval before ordering/installation. Include:
 - Declarations of Performance (UKCA/CE)
 - Fire performance data (BS EN 13501)
 - Efficiency data (ErP/Energy Labelling)
- HEALTH AND SAFETY FILE & AS-BUILTS (CDM 2015):
 - AS-BUILT RECORDS: Maintain on-site red-line markups of drawings showing all changes. Deliver digital + hard copy including:
 - Final As-Built drawings (PDF & CAD)
 - Operation & Maintenance (O&M) Manuals
 - Commissioning records
 - Warranties/certifications
 - Asset Information (Uniclass 2015)
 - Form Part G of the Health and Safety File to Employer at Practical Completion.

BRANCH CIRCUITRY AND FEEDER

CABLE TYPES
ALL conductors: Copper to BS EN 13601:2024 (100% recycled content)
Above ground:
Twin & Earth (T&E) to BS 6004:2024 (Class Dca-s1b,d1 fire rating)
Steel-Wire Armoured (SWA): Only for external feeds (BS 5467)
Non-metallic sheathed cables prohibited (Reg 522.8.10)

CONDUIT REQUIREMENTS

Location	Permitted System	Minimum Size
Internal walls	PVC-U conduit (BS EN 61386-21)	20mm (½")
Kitchens/bath	Galvanised steel (BS 4568:2024)	25mm (1")
External	Heavy-wall galvanised steel	25mm (1")
Underground	PVC-U (BS EN 61386-24)	32mm (1¼")

CIRCUIT PROTECTION

ALL final circuits: 30mA Type A RCD (Reg 411.3.3)
Critical circuits (bedrooms, living rooms):
AFDDs to BS EN 62606 (Reg 531.3.3)
EV Chargers: Dedicated RCBO (40A min) + Type B RCD

INSTALLATION RULES

Concealed wiring only in finished areas (No surface runs)
Min. depths:
Walls: ≥50mm from surface (Reg 522.6.204)
Floors: Under screed/joints (No contact with insulation)
Cable avoidance zones: ±150mm around ceilings/corners (Reg 522.6.202)

ELECTRICAL CODE NOTES

UK ELECTRICAL REGULATIONS COMPLIANCE NOTES
(BS 7671:2022 Amd 2, Building Regulations Part P, and British Standards)

SOCKET-OUTLETS (RECEPTACLES):
All new socket-outlets shall be shuttered type complying with BS 1363-2 (Regulation 553.1.7).

ARC FAULT PROTECTION:
Final circuits supplying 230V AC socket-outlets (≤ 32A) in habitable rooms (living rooms, bedrooms, dining rooms, studies, hallways, kitchens) shall be protected by:
AFDDs (Arc Fault Detection Devices) to BS EN 62606
Installed per Regulation 531.3.3 for high-risk locations.

EXTERIOR SOCKET-OUTLET ENCLOSURES:
Outdoor socket-outlets shall be housed in IP66-rated enclosures complying with BS EN 60670-22.

EXTERIOR SOCKET-OUTLETS:
All outdoor socket-outlets shall be:
Weatherproof (IP66) per BS EN 60529
Compliant with BS EN 60309-2 or BS 1363-2 with integral covers.

RCD PROTECTION:
Minimum breaking capacity: 16kA (up from 10kA for commercial sites per Reg 434.5.1)
Socket-outlets for:
Laundry/utility rooms (dishwashers, waste disposers)
Shall be protected by 30mA Type A RCDs (Regulation 411.3.3).

CUPBOARD LUMINAIRES:
Luminaires in storage cupboards shall be:
Totally enclosed (IP4X minimum)
Installed with ≥ 500mm clearance from storage areas (Regulation 559.5.1).

BATHROOM LUMINAIRES:
Luminaires above baths/showers shall be:
Rated for Zone 1/2 locations (IPX4 minimum)
Compliant with Section 701.55.2.

EARTHING ARRANGEMENT:
The installation shall utilise a foundation earth electrode (concrete-encased) per Regulation 542.2.1.4, supplemented by:
Main protective bonding to BS 951
Earth fault loop impedance compliance with Chapter 41.

MANDATORY CERTIFICATION & VERIFICATION
Initial Verification: Regulation 643.7 tests (insulation resistance, polarity, earth fault loop impedance).
Certification: Provide Electrical Installation Certificate (EIC) per Part 6.
Building Regulations: Part P Compliance Certificate for England/Wales.

MISCELLANEOUS ELECTRICAL

1. EARTHING & BONDING
(BS 7671:2022 Amd 2 Chapter 54, BS EN 62305-3:2024)
1.1 Equipment Bonding Conductors:
Size per Table 54.7 (e.g., 10mm² for ≤32A circuits)
Comply with Regulation 411.3.1.2 (automatic disconnection)
1.2 Device Earthing:
All accessories/switches to have CPC (Circuit Protective Conductor)
Regulation 411.3.1.1 compliance for exposed-conductive-parts
1.3 Main Earthing:
16mm² minimum for TN-C-S systems (Regulation 542.3)
Foundation electrode required per Regulation 542.2

2. FIRE PENETRATION SEALING
(Building Regs Part B 2023, BS EN 1366-4:2024, BS 7671:2022)
2.1 Fire Compartment Seals:
Use BS EN 1366-4 certified systems (EI 60/90/120 ratings)
Submit manufacturer's Third-Party Certification (UKCA/UK)
2.2 Temperature Transition Seals:
Apply non-setting compound (BS EN 60423-1:2024) for:
Cold storage penetrations
Internal-external transitions
Hygroscopic sealing putty for condensation control (e.g., Roxtec CMS)

3. VERIFICATION & TESTING
(BS 7671:2022 Amd 2 Part 6, BS EN 60364-6:2024)
3.1 Final Certification:
Complete Schedule of Inspections (Reg 641.1)
Pass mandatory tests:
≥100MΩ insulation resistance (Reg 643.3)
RCD trip ≤25ms (Reg 643.8)
Ze ≤0.35Ω for TN-C-S (Reg 643.7)

4. CONTAINMENT LABELING
(BS 7671:514.9, BS 1710:2024, Building Safety Act 2022)
4.1 Feeder Identification:
Laser-etched labels with:
Source DB
Load designation
Fault current rating
15mm letter height (was 3/4")
4.2 Junction Box Marking:
Machine-readable QR codes containing:
Circuit origin (e.g., "DB3/C5")
Installation date
Test certificate reference

SPECIFICATIONS

G. FUSES & PROTECTIVE DEVICES
(BS 7671:2022 Amd 2:2023 | BS 88-3:2024 | BS EN IEC 60269-1:2024)
Install fuses with BS 88-3:2024 compliance (enhanced DC fault ratings for solar/wind systems).
Labels must include:
Arc flash hazard warning (ISO 3864-2 symbols)
Carbon reduction data (per Building Regs Part Z consultation draft)
H. ISOLATION & CIRCUIT PROTECTION
(BS EN IEC 60947-3:2024 | BS EN 50618:2024 (DC systems))
Isolators:
1,500V DC rating required if PV/battery systems present
Padlock hasps: Must accommodate BS EN 1677-2:2024 safety locks
Interlocks: Dual mechanical/electronic where accessible to public
Compliant with BS EN 60309-2 or BS 1363-2 with integral covers.
Circuit Breakers:
Minimum breaking capacity: 16kA (up from 10kA for commercial sites per Reg 434.5.1)
Type F (Selective) breakers for critical circuits (hospitals/data centers)
Enclosures:
Location New Standard (2024)
Outdoor IP66 + IK10 impact rating
Kitchens Stainless 316L (BS EN 10088-3)
EV Charger Zones IP67 + UV stability certification
LIGHTING
(BS 7671:2022 Amd 2 §559 | BS EN IEC 60598-1:2024 | Part L 2023)
Recessed Fixtures:
Fire rating: EI 60 minimum where penetrating ceilings (BS EN 1385-2:2024)
Thermal management: Built-in temperature cut-offs (BS EN 62386-306)
Lamps:
Smart-ready drivers (BS EN IEC 62386-105:2024)
Circuit economy compliance: Lamps must be field-replaceable (Part L 2023)
J. EQUIPMENT LOCATION
(Building Safety Act 2022 Schedule 3)
Fire compartment boundaries:
No panels within 1.5m of compartment walls (BS 9999-1)
Digital twin coordinates required for high-risk +

WIRE & CABLE

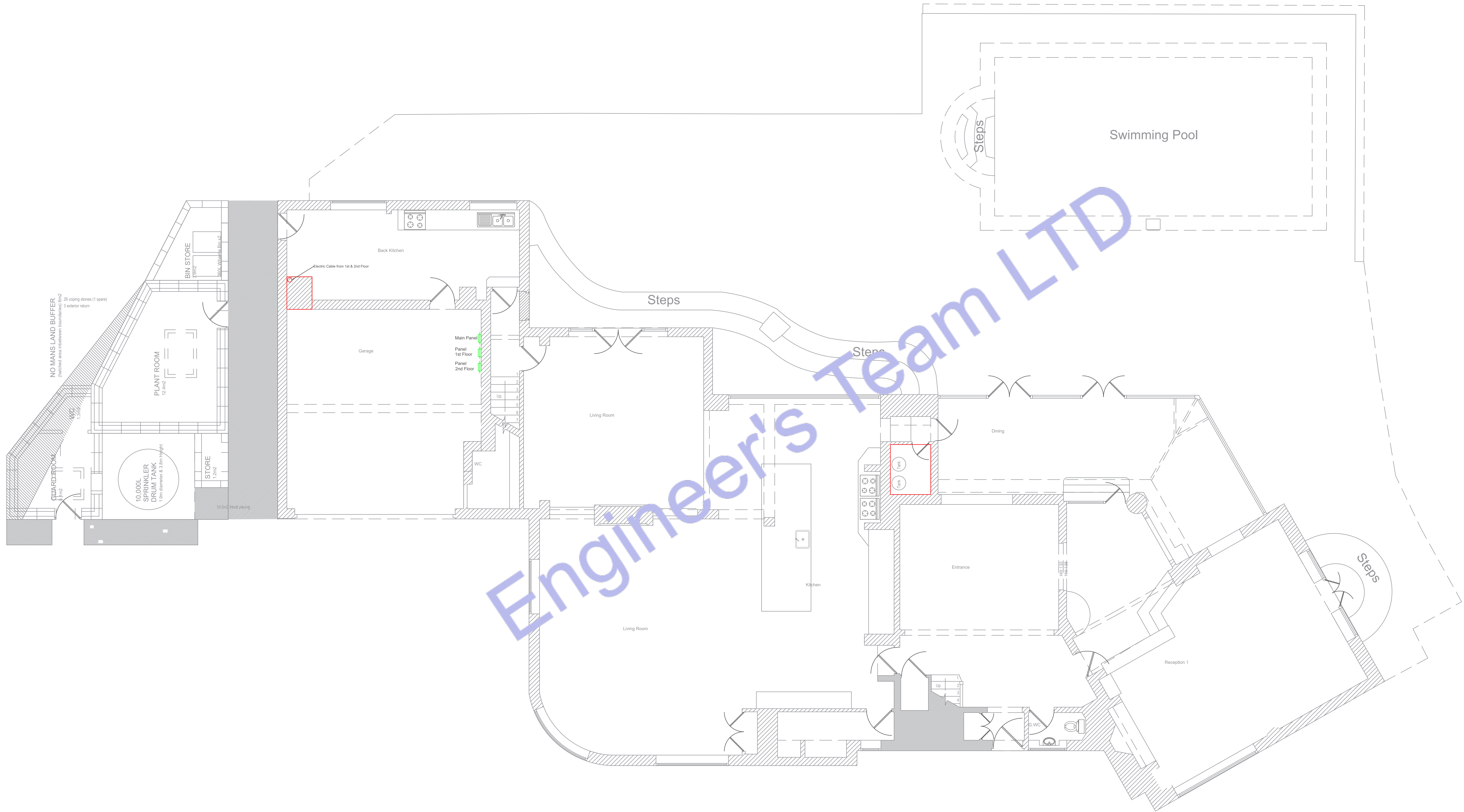
FEEDERS:
Copper conductors only. Insulation: 90°C thermosetting (e.g., BS EN 50525-2-21 H07Z-R) or equivalent meeting BS 7671 Table 5.1. Minimum rating: 90°C.
COLOUR CODE:
All wiring UK harmonised colours (BS 7671 Table 51 / Fig 51B):
Single-Phase: Brown (L1), Blue (N), Green/Yellow (CPC).
Three-Phase: Brown (L1), Black (L2), Grey (L3), Blue (N), Green/Yellow (CPC).
Pre-2004 colours (e.g., Red/Black) prohibited.
CONDUCTORS:
All conductors: Copper. Minimum size:
1.5 mm² (lighting circuits).
2.5 mm² (general socket/radial circuits).
4.1 Feeder Identification:
(Note: 1.0 mm² permitted for lighting per BS 7671, but 1.5 mm² specified for robustness/voltage drop).)
CIRCUIT PROTECTIVE CONDUCTORS (CPC / EARTHING):
All final circuits: Include separate CPC. Minimum size:
1.5 mm² (if mechanically protected) / 2.5 mm² (standard practice) for circuits ≤ 32A with 2.5 mm² phase conductors (per BS 7671 Table 54.7).
CIRCUIT DISTRIBUTION & NEUTRAL SIZING:
For IT equipment/circuits with high harmonic currents:
Neutral conductor ≥ 200% capacity of phase conductors.
(Oversizing required per BS 7671 Appendix 11 to mitigate harmonic overheating).
VOLTAGE DROP MANAGEMENT:
230V circuits > 30 metres run length:
Size conductors to ensure ≤ 3% drop (lighting) / ≤ 5% drop (other) (BS 7671 Appendix 4). Typically requires ≥ 4.0 mm² for longer runs/higher loads.

SPECIFICATIONS

A. TRUNKING, BOXES AND CONDUITS:
1. OUTDOOR WIRING METHODS – INSTALLATION TO BE IN ACCORDANCE WITH BS 7671 AND BS EN STANDARDS:
a. Exposed installations: Use galvanised steel conduit to BS EN 61386.
b. Concealed installations: Use heavy-gauge steel conduit in compliance with BS EN 61386.
c. Underground installations: Use heavy-duty PVC-U ducting conforming to BS EN 61386-24 unless otherwise stated.
d. Connection to vibrating equipment: Use liquid-tight flexible metallic conduit or steel-wire armoured flexible cable.
e. Boxes and enclosures: Minimum IPX4 or IP65-rated enclosures for outdoor use.
2. INDOOR WIRING METHODS:
a. Connection to vibrating equipment: Use flexible metallic conduit or SY cable. In wet/damp areas, use liquid-tight conduit or equivalent rated cabling.
b. Damp or wet locations: Use galvanised steel conduit or SWA cable rated for the environment.
c. Exposed locations: Use galvanised steel conduit or surface-mounted trunking systems.
d. Concealed installations: Use steel conduit or LSZH (Low Smoke Zero Halogen) twin & earth cable in trunking or chased into walls.
e. Boxes and enclosures: Use IP20-rated boxes for dry indoor locations, IP66 stainless steel or GRP for wet/damp areas.
3. All final circuits in finished areas shall be installed concealed wherever practical.
4. Minimum conduit/trunking size shall be 20 mm diameter (or equivalent cross-sectional area).
5. All conduit fittings shall be of metallic compression type, with nylon grommets or insulated bushings at entry points.
6. All wiring shall be installed neatly, clipped or supported as high as practical and routed parallel/perpendicular to walls or ceiling lines.
7. Exposed extra-low voltage wiring (e.g. data, fire, security) shall be installed within suitable trunking or conduit unless otherwise indicated.
8. Install 100 mm square boxes (minimum) with appropriate surface or flush front plates as required.
9. Where walls are to be dry-lined or faced, and existing accessories are retained, provide approved back box extensions or relocate to align with new surface finishes.
B. CABLES AND CONDUCTORS
1. All fixed wiring shall be copper conductors, with LSZH insulation complying with BS EN 50525 or BS 6004. Minimum size: 1.5 mm² for lighting; 2.5 mm² for sockets.
2. All cable sizes and current ratings shall comply with BS 7671 and the IET On-Site Guide.
3. Armoured or flexible metallic cables shall include an internal green/yellow CPC (Circuit Protective Conductor) unless otherwise specified.
4. For radial or ring final circuits over 30 metres, increase conductor size to reduce voltage drop in accordance with BS 7671, typically to 4 mm².
C. WIRING ACCESSORIES AND COMMUNICATION OUTLETS
1. Verify exact location of all outlets, accessories and communication points with the Contract Administrator or Architect prior to installation. Minor relocations (within 1.5 m) shall be made without additional cost to the Employer.
2. Accessory faceplates shall be selected for finish and colour by the Architect (e.g., stainless steel, white moulded, etc.).
3. Data and communications outlet locations to be confirmed with Architect. Structured cabling / telephone wiring by specialist installer (others).
4. All fixings and supports shall meet BS 7671 regulations and relevant building standards. Provide robust, corrosion-resistant support systems.
D. ELECTRICAL IDENTIFICATION
1. All distribution boards, isolators, and major electrical equipment shall be fitted with engraved trafo/tyte or equivalent labels, with minimum 25 mm high characters where visible to the public.
2. Label access panels and doors concealing electrical apparatus with appropriate safety and identification signage in accordance with BS 7671 and Health & Safety regulations.
E. EARTHING & BONDING
1. All installations shall be earthed and bonded in compliance with BS 7671 (latest edition). Equipotential bonding shall be provided as required.
2. All final circuits shall include a CPC. All socket circuits shall include a minimum 2.5 mm² CPC for 2.5 mm² ring final circuits or 1.5 mm² CPC for 1.5 mm² radial circuits.
3. Where a separate earthed system (e.g., generator or inverter) is installed, provide a TT, TN-S, or TN-C-S earthing arrangement in accordance with BS 7671 and Health & Safety regulations.
F. DISTRIBUTION BOARDS
1. "Spacer" in a distribution board shall include provision for future circuit protection devices, neutral and earth bars, and proper labelling.
2. Final circuit layout and load schedules must match the design drawings. Any changes must be authorised by the project engineer.
3. Distribution board busbars shall be copper. All final circuit breakers shall be Type B or C MCBs or RCBs as appropriate. Inform characteristics of motor protection devices (curve types, trip ratings) with the mechanical services provider prior to ordering.
4. Surface-mounted boards shall be installed with Unistrut-type steel framing or equivalent to provide structural support and clearance from the wall.
5. For recessed boards, provide a 20 mm conduit stub for every 3 spare ways to allow future additions.
6. Distribution boards to be from reputable manufacturers such as Schneider (A919), Hager, Eaton, ABB, or equivalent with UKCA/CE marking.
7. Provide neatly typed and framed circuit schedules at each board showing clearly the load served by each circuit. All existing schedules impacted by new works shall be updated accordingly.

ABBREVIATIONS

A Ampere	N Neutral
AFF Above Finished Floor	NIC Not in Contract
AIC Amps Interrupting Capacity (Minimum)	OEM Original Equipment Manufacturer
BCP Bonding Conductor Protective	OCFI Owner Furnished Contractor Installed
CB Circuit Breaker	P Pole (e.g., 1P, 3P)
C Conduit	PAN Panel (Distribution Board / Consumer Unit)
CCT Circuit	PH / Ø Phase
CPC Circuit Protective Conductor	(R) Remove existing and relocate
EC Empty Conduit	RE Relocated equipment
(E) Existing to remain, continue in service	RECPT Receptacle (UK Socket Outlet)
FA Fire Alarm	RPD Residual Current Device
FLA Full Load Current (Amps)	SWA Steel Wire Armoured Cable
G Earth (Ground – UK uses "Earth")	TBD To Be Determined
HP Horsepower	UON Unless Otherwise Noted
Ics/IcsShort-Circuit Breaking Capacity (BS EN 60947-2)	V Volt
IP Ingress Protection Rating	W Wire
kVA Kilovolt-Amps	W/ With
kW Kilowatt	WP Weatherproof (IP rated)
L Live	XFM Transformer
LSZH Low Smoke Zero Halogen	(X) Remove with all associated wiring
LTC Lighting	
MCB Miniature Circuit Breaker	
MN Mounting Height	
MLO Main Lug Only (not common in UK – state "main terminals only")	



0 GROUND FLOOR PLAN
SCALE: 1/128" = 1'-0"



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REV. NO.	DESCRIPTION	DATE	BY

PROJECT:

Multi Floor House

TITLE:

GROUND FLOOR
ELECTRICAL POWER PLAN

PROJ. NO.

PROJ. ENGR.

SCALE @ 24X36:
1/128" = 1' 0"

DATE :

August 28, 2026

DRAWING NO.

E - 1

REV.



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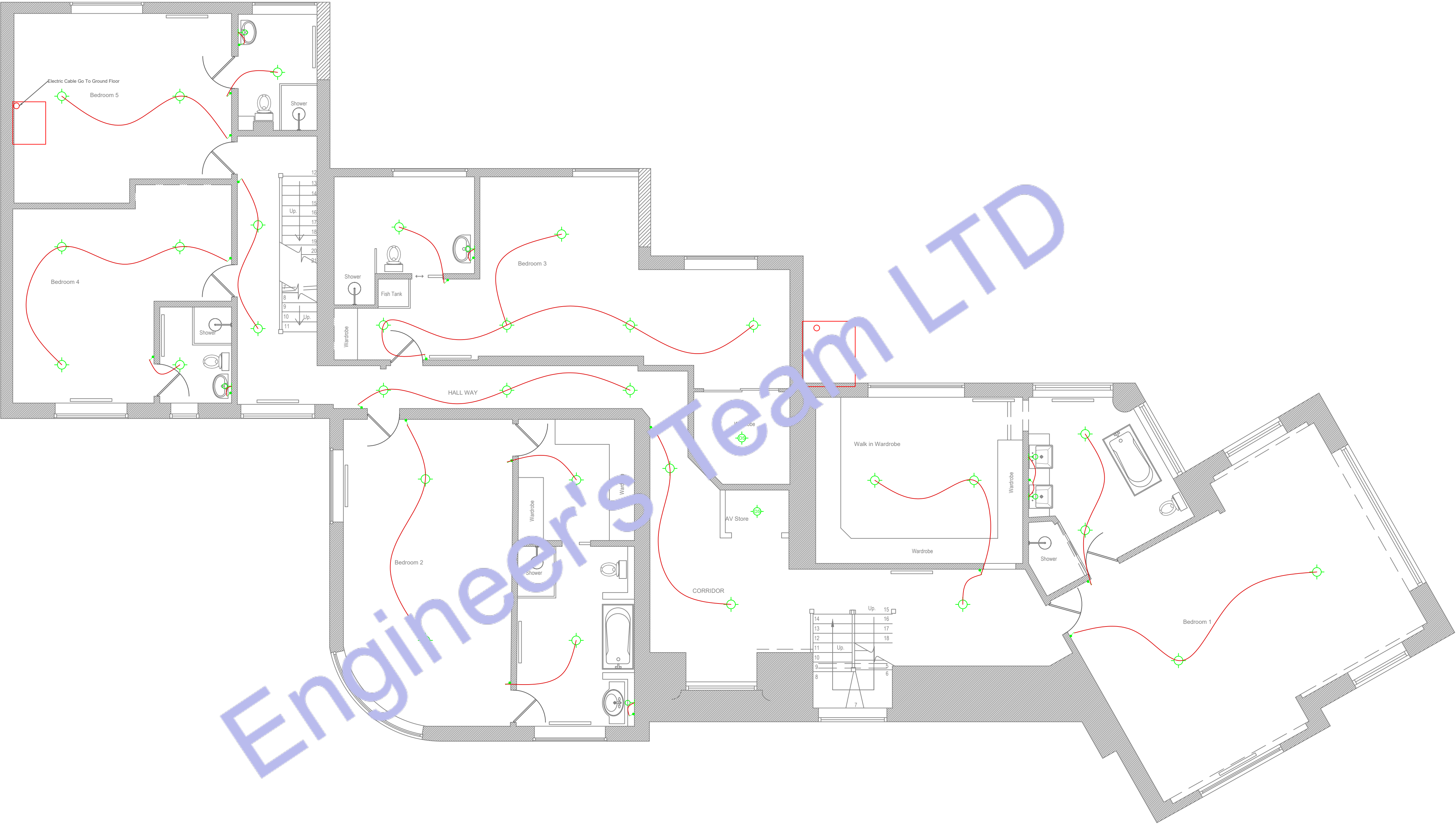
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REV. NO.	DESCRIPTION	DATE	BY

PROJECT: Multi Floor House			
TITLE: FIRST FLOOR ELECTRICAL LIGHTING PLAN			
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: 1/128" = 1' 0"	
DATE : August 28, 2026			
DRAWING NO. E - 2		REV.	

Legend:

- F1 – IRIS LUMINE MIAMI 3660MM SUSPENDED LINEAR
- F2 – ARKOS ART 4 MODULAR SUSPENDED LINEAR
- F3 – ARKOS ART 5 MODULAR SUSPENDED LINEAR
- P1/P2 – ARCHITECTURAL DOWNRIGHT
- P3 – DECORATIVE PENDANT
- P4 – SURFACE SPOTLIGHT
- WL1 – WALL LIGHT
- CANDLE LIGHT
- WC1 / SV1 – SERVICE AND WC LIGHTS
- SUSPENDED CAN LIGHT 20W
- PIR – PIR SENSOR
- LCM – LIGHTING CONTROL MODULE
- AD – ABSENCE DETECTOR SENSOR / CONTROLLER
- THOR LUX CLEAN LINE RECESSED CLEAN ROOM LUMINARIES, LOW-GLARE OPTIC, TP (A) DIFFUSER
- 3-WAY ROCKERY SWITCH
- 2-WAY ROCKERY SWITCH
- SCENE SET SWITCH
- EXTRACT FAN (ICON 15 ECO) 30W
- PER METER LINEAR LED STRIP 10W
- ISOLATOR SWITCH
- S22 ILLUMINATED EXIT SIGN 4W
- AREA CONTROLLER
- CLOSET DOWNRIGHT SERVICE
- DOWNRIGHT ADJUSTABLE
- 300mm TRAY WORK



1 FIRST FLOOR ELECTRICAL LIGHTNING PLAN
SCALE: 1/128" = 1'-0"



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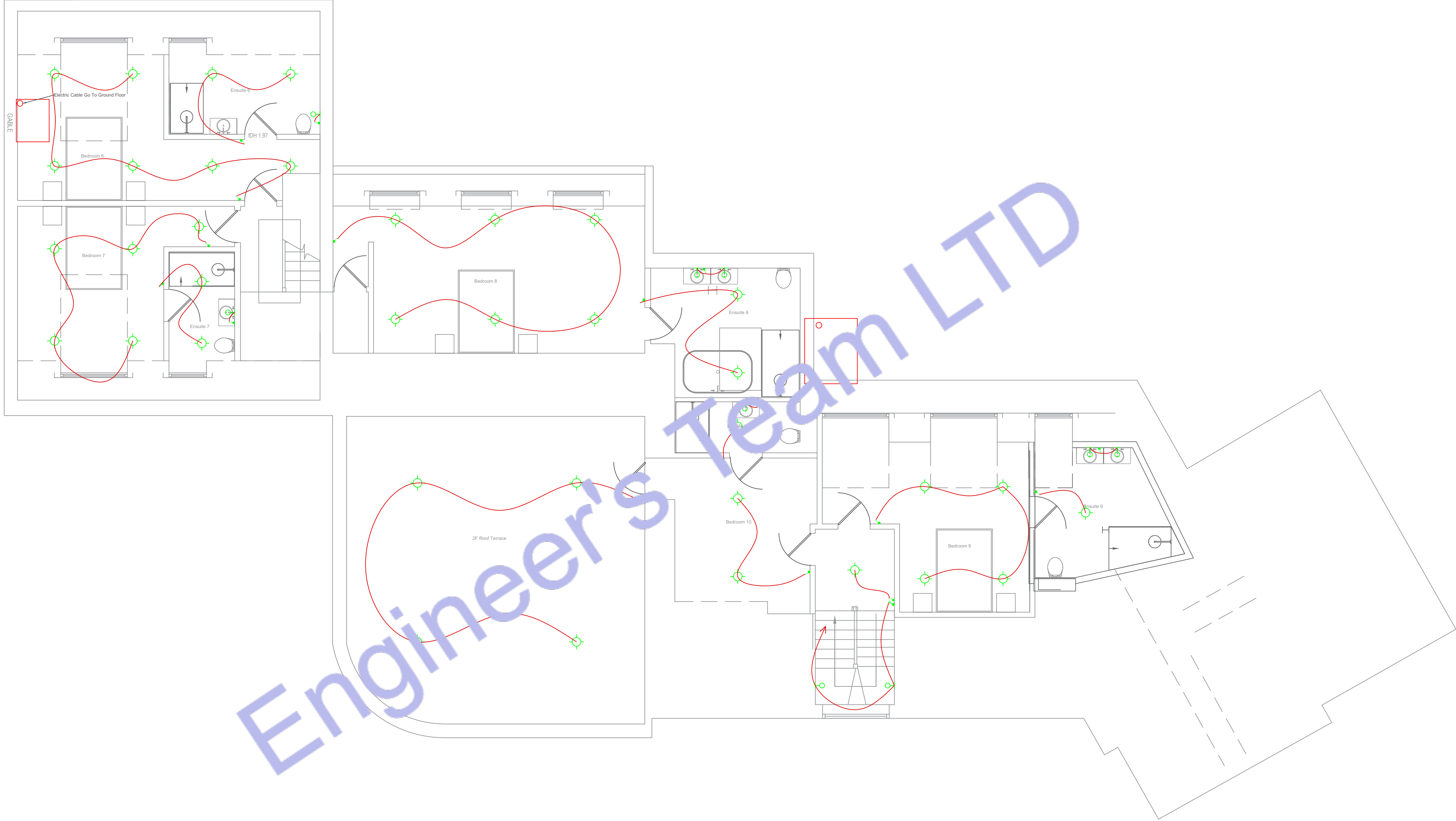
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REV. NO.	DESCRIPTION	DATE	BY

PROJECT: Multi Floor House		
TITLE: SECOND FLOOR ELECTRICAL LIGHTING PLAN		
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: 1/128" = 1' 0"
DATE : August 28, 2026		
DRAWING NO. E - 3		REV.

Legend:

- F1 – IRIS LUMINE MIAMI 3660MM SUSPENDED LINEAR
- F2 – ARKOS ART 4 MODULAR SUSPENDED LINEAR
- F3 – ARKOS ART 5 MODULAR SUSPENDED LINEAR
- P1/P2 – ARCHITECTURAL DOWNRIGHT
- P3 – DECORATIVE PENDANT
- P4 – SURFACE SPOTLIGHT
- WL1 – WALL LIGHT
- CANDLE LIGHT
- WC1 / SV1 – SERVICE AND WC LIGHTS
- SUSPENDED CAN LIGHT 20W
- PIR – PIR SENSOR
- LCM – LIGHTING CONTROL MODULE
- AD – ABSENCE DETECTOR SENSOR / CONTROLLER
- THOR LUX CLEAN LINE RECESSED CLEAN ROOM LUMINARIES, LOW-GLARE OPTIC, TP (A) DIFFUSER
- 3-WAY ROCKERY SWITCH
- 2-WAY ROCKERY SWITCH
- SCENE SET SWITCH
- EXTRACT FAN (ICON 15 ECO) 30W
- PER METER LINEAR LED STRIP 10W
- ISOLATOR SWITCH
- S22 ILLUMINATED EXIT SIGN 4W
- AREA CONTROLLER
- DOWNRIGHT SERVICE
- DOWNRIGHT ADJUSTABLE
- 300mm TRAY WORK



2 SECOND FLOOR ELECTRICAL LIGHTING PLAN
SCALE: 1/128" = 1'-0"



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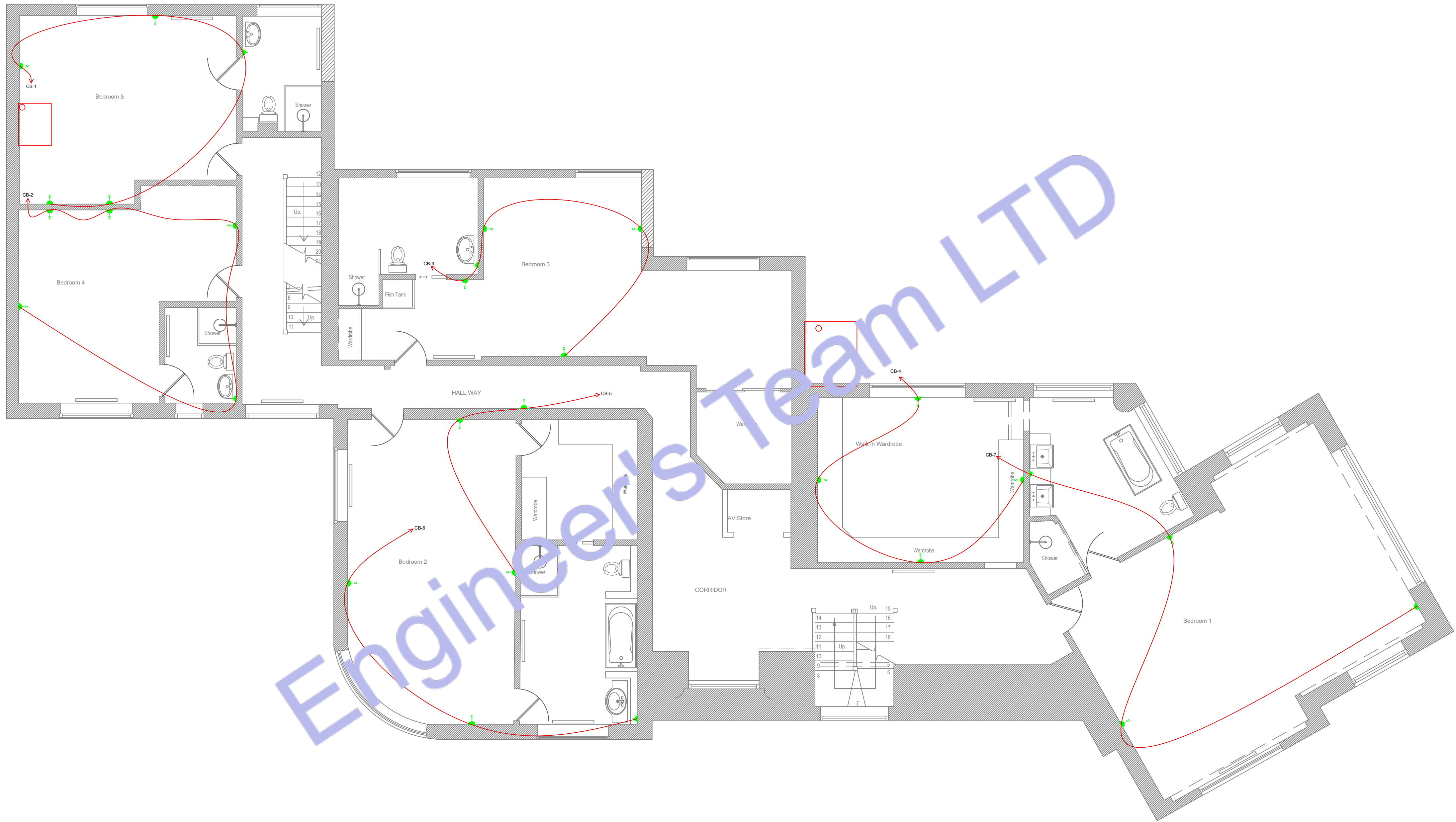
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STRUCTURES.

REV. NO.	DESCRIPTION	DATE	BY

PROJECT: Multi Floor House		
TITLE: FIRST FLOOR ELECTRICAL POWER PLAN		
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: 1/128" = 1' 0"
DATE : August 28, 2026		
DRAWING NO. E - 4		REV.

Legend:

	DOUBLE SOCKET OUTLET		CAT5 TO THE COMMUNAL DISTRIBUTION BOX (BT)
	Single Socket		CAT5 INTERNAL ETHERNET
	AIR HANDLING UNIT		SMOKE DETECTOR
	CONDENSER UNIT		SMOKE & CARBON MONOXIDE DETECTOR WITH SOUNDER
	FRIDGE/FREEZER		EXTRACT FAN
	3 AMP SOCKET FOR LIGHTING		FUSE BOX
	Microwave		3-GANG ROCKERY SWITCH
	Wine Cooler		2-GANG ROCKERY SWITCH
	MID LEVEL DOUBLE SOCKET OUTLET		SINGLE GANG ROCKERY SWITCH
	HIGH LEVEL DOUBLE SOCKET OUTLET		FUSED SPUR SOCKET
	LOW LEVEL DOUBLE SOCKET OUTLET		FLOOR MOUNT SOCKET
	HIGH LEVEL SINGLE SOCKET OUTLET		SCREW LESS DUAL VOLTAGE SHAVER SOCKET
	UNDER FLOOR HEATING		DOOR CONTACT SENSOR FOR LIGHTING
	ACCESS CONTROL		INTRUDER ALARM KEYPAD
	VIDEO ENTRY SYSTEM		USB-C SOCKET OUTLET
	CCTV MONITOR SYSTEM		INTRUDER ALARM WINDOW CONTACT SWITCH
	CCTV CAMERA		INTRUDER ALARM DOOR CONTACT SWITCH
	PIR MOTION SENSOR FOR LIGHTING		ELECTRICAL TOWEL RADIATOR
	ELECTRICAL WIRE		TELEVISION
			INTERCOM PORT



1 FIRST FLOOR ELECTRICAL POWER PLAN
SCALE: 1/128" = 1'-0"



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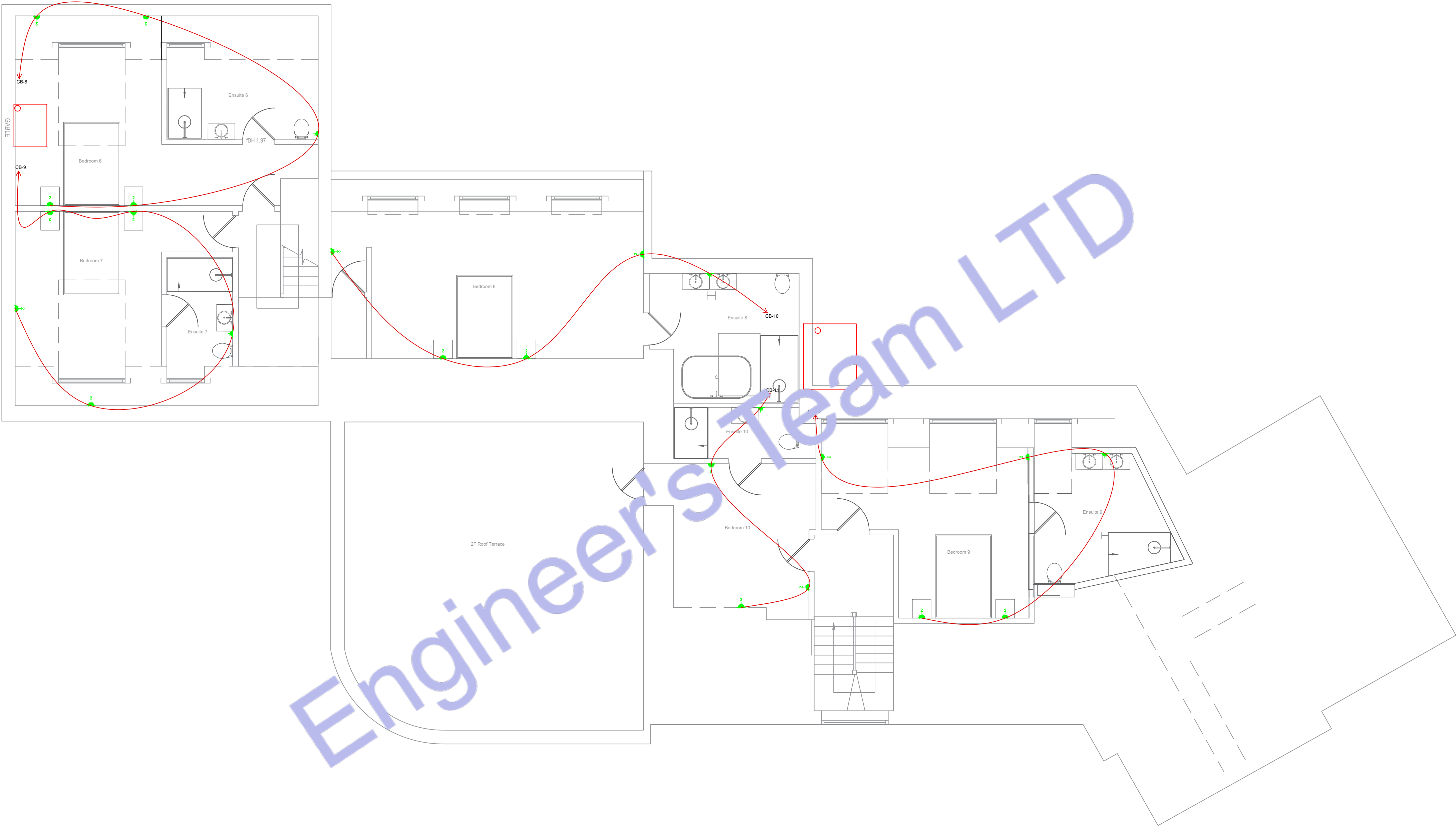
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REV. NO.	DESCRIPTION	DATE	BY

PROJECT: Multi Floor House			
TITLE: SECOND FLOOR ELECTRICAL POWER PLAN			
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: 1/128" = 1' 0"	
DATE : August 28, 2026			
DRAWING NO. E - 5		REV.	

Legend:

DOUBLE SOCKET OUTLET	CABLE TO THE COMMUNAL DISTRIBUTION BOX (BT)
Single Socket	CAT5 INTERNAL ETHERNET
AIR HANDLING UNIT	SMOKE DETECTOR
CONDENSER UNIT	SMOKE & CARBON MONOXIDE DETECTOR WITH SOUNDER
FRIDGE/FREEZER	EXTRACT FAN
5 AMP SOCKET FOR LIGHTING	FUSE BOX
Microwave	3-GANG ROCKER SWITCH
Wine Cooler	2-GANG ROCKER SWITCH
MID LEVEL DOUBLE SOCKET OUTLET	SINGLE GANG ROCKER SWITCH
HIGH LEVEL DOUBLE SOCKET OUTLET	FUSED SPUR SOCKET
LOW LEVEL DOUBLE SOCKET OUTLET	FLOOR MOUNT SOCKET
HIGH LEVEL SINGLE SOCKET OUTLET	SCREW LED DUAL VOLTAGE SHAVER SOCKET
UNDER FLOOR HEATING	DOOR CONTACT SENSOR FOR LIGHTING
ACCESS CONTROL	USB-C SOCKET OUTLET
VIDEO ENTRY SYSTEM	INTRUDER ALARM KEYPAD
CCTV MONITOR SYSTEM	INTRUDER ALARM WINDOW CONTACT SWITCH
CCTV CAMERA	INTRUDER ALARM DOOR CONTACT SWITCH
PIR MOTION SENSOR FOR LIGHTING	ELECTRICAL TOWEL RADIATOR
ELECTRICAL WIRE	TELEVISION
	INTERCOM PORT



2 SECOND FLOOR ELECTRICAL POWER PLAN
SCALE: 1/128" = 1'-0"



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REV. NO.	DESCRIPTION	DATE	BY

PROJECT:

Multi Floor House

TITLE:

ELECTRICAL LOAD

SCHEDULE & SLID

PROJ. NO.	
-----------	--

PROJ. ENGR.

SCALE @ 24X36

N/A

DATE :

August 28, 2026

DRAWING NO.

REV.

MAIN PANEL

Panel Location-																			
Voltage (Phase-Ground/Phase-Phase)		230	400	Source of Supply-From Service Disconnect/Meter															
Phase-		1	Wire-			3													
Rated Amps-		125	AIC-			10k													
MCCB		125 Amps MCCB	Mounting-			Wall Surface													
Circuit	Description	New/ Existing	Load Type	Breaker Size	Poles	Wire Size	A	B	C	Wire Size	Poles	Breaker Size	Load Type	New/ Existing	Description	Circuit			
1	ALL LOADS	N	SPD	125	3	35	16634	16634		35	3	125	RCD	N	ALL LOADS	2			
3						35		15084	15084	35						4			
5						35			14334	14334						35	6		
7	PANEL A (1st Floor)	N	MCB, Type-B	25	1	2.5	1400	900		2.5	1	25	MCB, Type-B	N	PANEL B (2nd Floor)	8			
9						6		7334	750	2.5	1	20	MCB, Type-B	N	Water Booster Pump	10			
11	HVAC HTM-1	N	MCB, Type-B	35	3	6			7334	0	--	--	--	--	SPARE	12			
13						6	7334	0		--	--	--	--	--	SPARE	14			
15						6		7000	0	--	--	--	--	--	SPARE	16			
17	HVAC HTM-2	N	MCB, Type-B	35	3	6			7000	0	--	--	--	--	SPARE	18			
19						6	7000	0		--	--	--	--	--	SPARE	20			
						A		B		C		Total Amps							
						16634		15084		14334		16634							
						Connected Amps													
						Main Type and Amps Rating						125 Amps MCCB							
Demand Load Calculation																			
Load Classification		Connected Load	Demand Factor	Estimated Demand															
Lighting - Commercial Unit		1530	125%	1912.5															
Combine Water Heater		0	100%	0															
Receptacle		770	65%	500.5															
Cooling		43002	100%	43002															
Pump		750	125%	937.5															
Other		0	100%	0															
Demand Load		46052		46352.5															
Demand Amps				67.17753623															

230/400V THREE PHASE 5WIRE 125 A SERVICE

ELECTRICAL METER

125A MCB MAIN SWITCH

125A SPD

125A RCD

BUS

20A MCB 1-φ

20A MCB 3-φ

20A MCB 1-φ

20A MCB 3-φ

25A MCB 1-φ

25A MCB 1-φ

HVAC -1

BUSTER PUMP

HVAC -2

Panel A

Panel B

TO CONNECTED LOAD

TO CONNECTED LOAD

GENERAL NOTES:

1. A LISTED INTERSYSTEM BONDING TERMINATION PROVIDING THE REQUIRED NUMBER OF TERMINALS (MINIMUM OF THREE) FOR CONNECTING OTHER BUILDING SYSTEMS TO THE GROUNDING SYSTEM OF THE ELECTRICAL POWER SUPPLY (NEC250.94).

KEY NOTES: Ⓢ

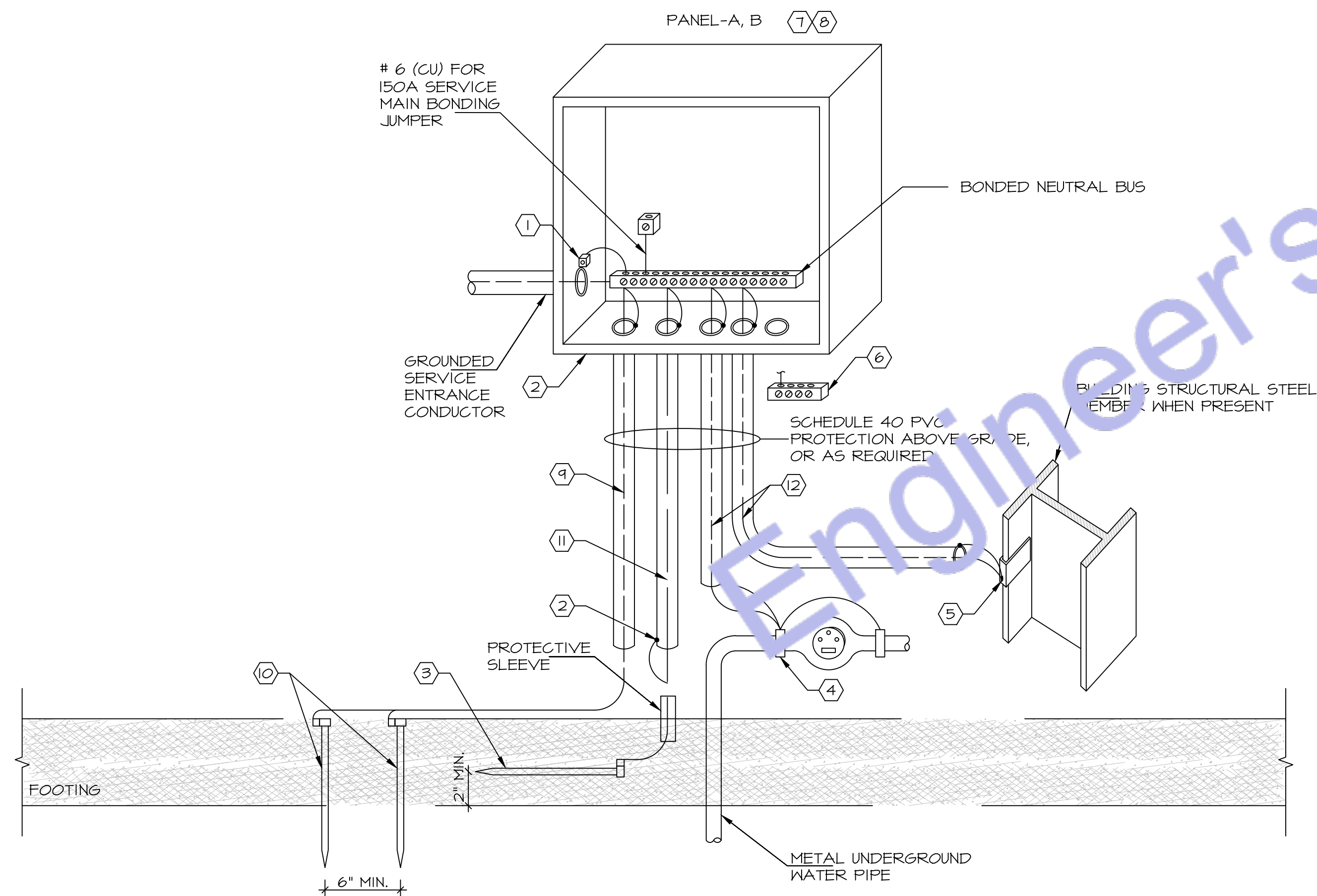
1. ALL METAL CONDUITS ENCLOSING ANY SERVICE SHALL BE FITTED WITH A "BONDING BUSHING".
2. ALL METAL CONDUITS ENCLOSING ANY GROUNDING ELECTRODE CONDUCTOR SHALL BE FITTED WITH A "BONDING BUSHING" AT EACH END.
3. PROVIDE GROUNDING ELECTRODE PER NEC. ELECTRODE SHALL BE IN THE FORM OF A 20'-0" x 1/2" COPPER CLAD GROUND ROD LAID AT LEAST 2" OFF THE BOTTOM OF A CONCRETE FOOTING. SECURE THE GROUND ROD TO THE REBAR WITH STEEL TIE WRAPS. IF THE REBAR BEING USED IN THE FOOTING IS SMALLER THAN 1/2" (#4), THEN USE 20' OF BARE

4. FOR CONNECTION TO COLD WATER MAIN. CONNECT WITHIN 5 FT. OF CONTACT OF EARTH.
5. IF STRUCTURAL STEEL MEMBER OR REBARS ARE AVAILABLE, BOND IT TO THE SERVICE USING A UL LISTED IRREVERSIBLE CLAMP OR WELDING LUG.
6. PROVIDE A INTERSYSTEM BONDING TERMINATION PER NEC 250.94.

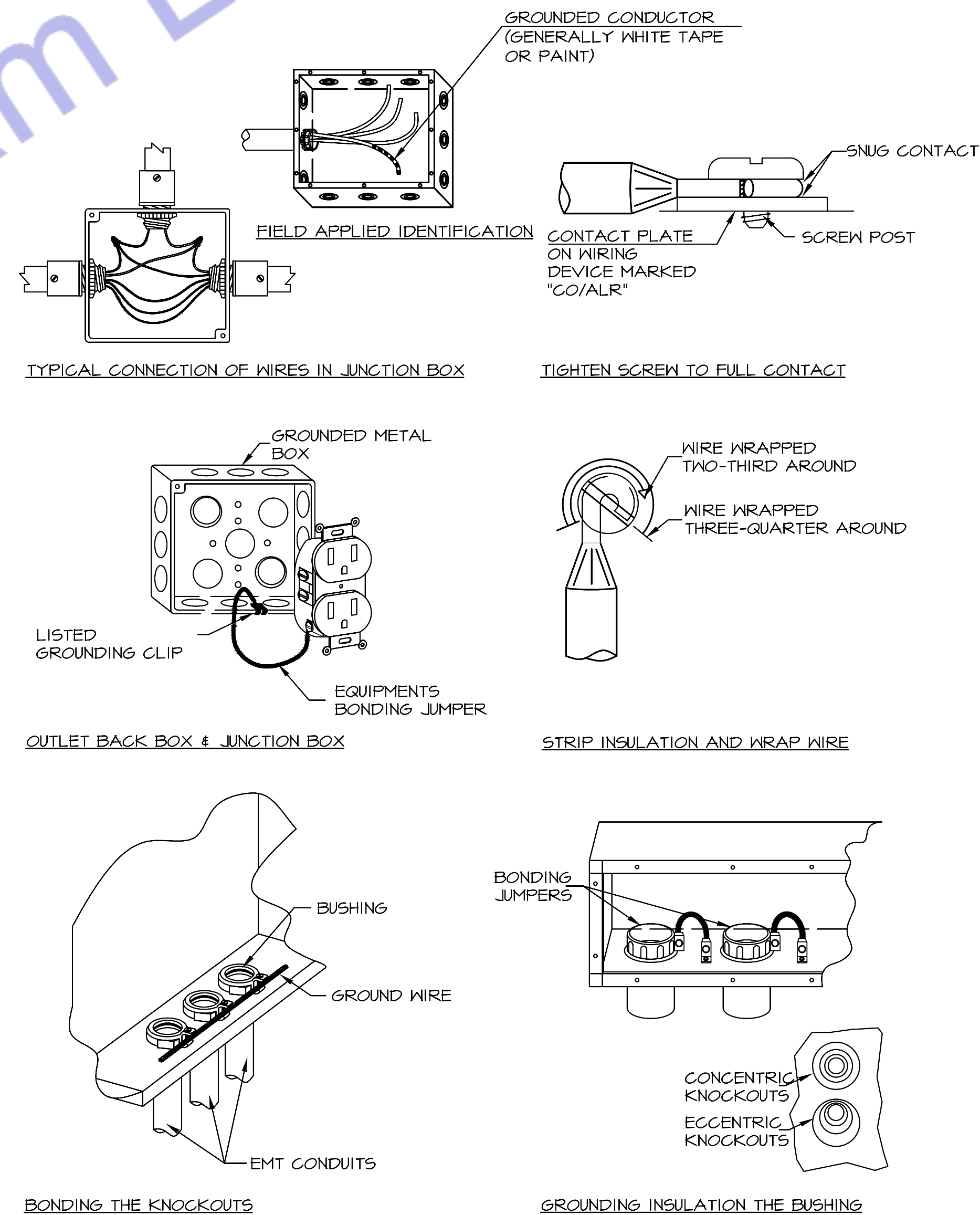
- INTERSYSTEM BONDING TERMINATION SHALL:
- 6.1. BE ACCESSIBLE FOR CONNECTION AND INSPECTION.
- 6.2. CONSIST OF A SET OF TERMINALS (LISTED AS GROUNDING AND BONDING EQUIPMENT) WITH THE CAPACITY OF NOT LESS THAN THREE INTERSYSTEM BONDING CONDUCTORS.
- 6.3. BE SECURELY MOUNTED AND ELECTRICALLY CONNECTED TO SERVICE EQUIPMENT, METER ENCLOSURE, OR EXPOSED NON METALLIC SERVICE RACEWAY, OR BE MOUNTED ON ONE OF THESE ENCLOSURES AND BE CONNECTED TO THE ENCLOSURE OR GROUNDING

- ELECTRODE CONDUCTOR WITH A MINIMUM #6 CU CONDUCTOR.
- 6.4. BE SECURELY MOUNTED TO THE BUILDING'S DISCONNECTING MEANS, OR BE MOUNTED AT THE DISCONNECTING MEANS AND BE CONNECTED TO THE METALLIC ENCLOSURE OR GROUNDING ELECTRODE CONDUCTOR WITH A MINIMUM #6 CU CONDUCTOR.
7. ALL BRANCH CIRCUIT AND FEEDER CONDUITS ARE TO HAVE AN INSULATED EQUIPMENT GROUNDING CONDUCTOR REGARDLESS OF THE CONDUIT MATERIAL.
8. WHEN THE SERVICE CONSISTS OF MULTIPLE DISCONNECTING MEANS IN SEPARATE ENCLOSURES, CONNECT A TAP

- CONDUCTOR FROM THE MAIN GROUNDING ELECTRODE CONDUCTOR TO EACH DISCONNECTING MEANS. SIZE THIS TAP BASED ON THE LARGEST SERVICE CONDUCTOR IN THAT SERVICE DISCONNECT ENCLOSURE.
9. #6 COPPER GROUNDING ELECTRODE CONDUCTOR.
10. INSTALL #6 CU TO TWO 5/8"x 8" MIN. GROUND RODS AS SHOWN.
11. #4 COPPER GROUNDING ELECTRODE CONDUCTOR.
12. COPPER GROUNDING ELECTRODE CONDUCTOR. PROVIDE #6 COPPER.



1 GROUNDING ELECTRODE SYSTEM DIAGRAM
E500 SCALE: NOT TO SCALE



2 BONDING DETAILS
E500 SCALE: NOT TO SCALE



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REV. NO.	DESCRIPTION	DATE	BY

PROJECT: Multi Floor House		
TITLE: ELECTRICAL INSTALLATION ISTRATION		
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: N/A
DATE : August 28, 2026		
DRAWING NO. E - 7		REV.



Designed By Engr. Al Amin (MEP Engineer | Director - Engineer's Team LTD)

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