



Web site: www.engrteam.com
Email: support@engrteam.com

CLIENT:

ADDRESS:

79-83 Great Portland St, W1W 7LS

CONFIDENTIALITY STATEMENT:
ALL DRAWINGS AND WRITTEN MATERIALS
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3. THE CONTRACTOR MUST CHECK ALL
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4. THE CONTRACTOR IS RESPONSIBLE FOR
PROVIDING ALL NECESSARY TEMPORARY
SUPPORT TO THE BUILDING AND ANY ADJACENT
STRUCTURES.

REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT: HEALTH CARE		
TITLE: GROUND FLOOR REFLECTED CEILING PLAN		
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: $1/128" = 1' 0"$
DATE : August 28, 2026		
DRAWING NO. R - 1		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
- WC1 / SV1 - SERVICE AND WC LIGHTS
- SUSPENDED CAN LIGHT 20W
- PIR SENSOR
- LCM LIGHTING CONTROL MODULE
- AD ABSENCE DETECTOR SENSOR / CONTROLLER
- THOR LUX CLEAN LINE RECESSED CLEAN ROOM LUMINARIES, LOW-GLARE OPTIC, TP (A)
- 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

Mechanical Legends	
	HEALTH TECHNICAL MEMORANDUM AIR HANDLING UNIT
	CONDENSER
	SUPPLY AIR DIFFUSER
	SUPPLY AIR DIFFUSER
	RETURN AIR DIFFUSER
	FIRE DAMPER
	KITCHEN CHIMNEY
	EXHAUST FAN
(E)	EXISTING EQUIPMENT
(N)	NEW EQUIPMENT
	AIR RETURN DUCT
	AIR SUPPLY DUCT
	FRESH AIR INPUT DUCT
	AIR OUTPUT DUCT
	DUCT TURNING UP / DOWN

Legend:

- SMOKE DETECTOR
- SMOKE & HEAT DETECTOR
- FUSE BOX
- ELECTRICAL WIRE
- FIRE PROTECTION CONTROL PANEL
- FIRE BLANKET
- PULL BUTTON
- FIRE EXTINGUISHER

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



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PROJECT:

HEALTH CARE

TITLE:

**BASEMENT FLOOR
REFLECTED CEILING PLAN**

PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: 1/128" = 1' 0"

DATE :

August 28, 2026

DRAWING NO.	REV.
R - 2	

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- ISOLATOR SWITCH
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- AREA CONTROLLER
- DOWNRIGHT SERVICE
- DOWNRIGHT ADJUSTABLE
- 300mm TRAY WORK

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	CONDENSER
	SUPPLY AIR DIFFUSER
	SUPPLY AIR DIFFUSER
	RETURN AIR DIFFUSER
	FIRE DAMPER
	KITCHEN CHIMNEY
	EXHAUST FAN
(E)	EXISTING EQUIPMENT
(N)	NEW EQUIPMENT
	AIR RETURN DUCT
	AIR SUPPLY DUCT
	FRESH AIR INPUT DUCT
	AIR OUTPUT DUCT
	DUCT TURNING UP / DOWN

Legend:

- SMOKE DETECTOR
- SMOKE & HEAT DETECTOR
- PIRE BOX
- ELECTRICAL WIRE
- FIRE PROTECTION CONTROL PANEL
- FIRE BLANKET
- FIRE BUTTON
- FIRE EXTINGUISHER

2 BASEMENT FLOOR REFLECTED CEILING PLAN
SCALE: 1/128" = 1'-0"

GENERAL SPECIFICATIONS
1. GENERAL: A. WORK INDICATED: Drawings are diagrammatic – do not scale for precise locations. Verify all existing site conditions; make adjustments as needed. B. 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 complete, complete installation. C. 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. D. 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/PAS standards. E. EXISTING OBSTRUCTIONS: Remove/relocate conflicting existing services to the Contract Administrator's satisfaction at no cost to the Employer. F. 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). G. 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). 2. COORDINATION AND SCHEDULING (CDM 2015 COMPLIANT): A. COORDINATION: Principal Contractor shall coordinate all trades, verify site conditions, and prevent spatial/scheduling conflicts. B. STAKEHOLDER COORDINATION: Coordinate with Subcontractors, suppliers, Statutory Undertakers, Building Safety Regulator (BSR) / Approved Inspector, Clerk of Works, Principal Designer, Contract Administrator, and Employer. C. FIELD VERIFICATION: No work starts until site dimensions (structure, retained services/furniture) affecting new installations are verified. D. MINIMISING DISTURBANCE: Phase work to minimise disruption in occupied areas. Submit Construction Phase Plan (CPP) and Programme for approval. Provide dust/impact protection (e.g., polythene, Heras screens) between zones. E. UTILITY SHUTDOWNS: Notify Employer in writing 14 days prior. Written approval required before shutdown. F. SITE EXAMINATION: Thoroughly examine site conditions. No claims for errors/omissions in site verification. 3. COMPLIANCE, PERMITS AND INSPECTIONS (BUILDING SAFETY ACT 2022): A. 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 - CIBSE/BSRIA Codes of Practice Obtain/pay for all Building Control applications, permits, and inspections (BSR/Approved Inspector). B. CERTIFICATION: Provide: - Building Regulations Completion Certificate - Commissioning Certificates (BSRIA BG 8/2021) - Electrical Installation Certificate (BS 7671:2022) - Gas Safe Certificates - Final Inspection Sign-off Deliver to Employer at Practical Completion. C. CURRENT STANDARDS: Use latest editions of standards applicable in the Local Authority/BSR jurisdiction. D. PRECEDENCE: Contract Documents > Referenced Standards. Notify Contract Administrator immediately of conflicts. E. 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 2008 F. UTILITIES: Comply with DNO (electric), GDNO (gas), and water supplier regulations. 4. DEFECTS LIABILITY PERIOD (JCT STANDARD): A. 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. 5. PRE-CONSTRUCTION INFORMATION (CDM 2015): A. 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) - Fire performance data (BS EN 13501) - Efficiency data (ErP/Energy Labelling) 6. HEALTH AND SAFETY FILE & AS-BUILTS (CDM 2015): A. 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 6904:2024 (Class Dcs-a1b-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 (¾")
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: Socket-outlets for: Laundry/utility rooms Fixed appliances (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 (IPX4 minimum) Installed with ≥ 600mm 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 compliant 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 542.3.1) Foundation electrode required per Regulation 542.2.1.4 2. FIRE PENETRATION SEALING *(Building Regs Part B 2023, BS EN 1366-4:2024, BS 7671:527.2)* 2.1 Fire Compartment Seals: Use BS EN 1366-4 certified systems (EI 60/90/120 rating) Submit manufacturer's Third-Party Certification (UKCA/UKAS) 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/CS") Installation date Test certificate reference
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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 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 §59 BS EN IEC 60598-1:2024 Part L 2023)* Recessed Fixtures: - Fire rating: EI 60 minimum where penetrating ceilings (BS EN 1365-2:2024) - Thermal management: Built-in temperature cut-offs (BS EN 62386-306) Lamps: - Smart-ready drivers (BS EN IEC 62386-105:2024) - Smart-ready 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 9999:2024) Digital twin coordinates required for high-risk buildings K. DEMOLITION (BS 6187:2024 CDM 2015 Reg 20 (2023 Amendment)) Circuit Removal: - Salvage audit: 95% non-ferrous metal recycling (EA Waste Directive) - Asbestos screening: Mandatory before removing old conduits Temporary supplies - Approved Voltage: Portable (HVO) generators only (Net Zero compliant) - Real-time monitoring (BS EN 50522:2024)

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). *(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 and telephony wiring by specialist installer (others). 4. All fixings and supports shall meet BS 7671 regulations and relevant building standards. Provide robust, non-corrosive support systems. D. ELECTRICAL IDENTIFICATION 1. All distribution boards, isolators, and major electrical equipment shall be fitted with engraved trafficway or equivalent labels, with minimum 25 mm high characters where visible to the public, 10 mm for plant room use. 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 to comply with BS 7671 (latest edition). Equipotential bonding shall be provided as required. 2. All final circuits shall include a CPC. All socket-outlets 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 separately derived system (e.g., generator) is installed, provide a TT, TN-S, or TN-C-S earthing arrangement in accordance with design and local authority approval. F. DISTRIBUTION BOARDS 1. 'Spade' in a distribution board shall indicate protection for future circuit protection devices, neutral and earth bars, and proper labelling. 2. Final circuit layouts and board schedules must match the design drawings. Any changes must be authorised by the project engineer. 3. Distribution board busbars shall support all final circuit breakers shall be Type B or C MCBs or RCBs as appropriate. 4. Confirm characteristics of motor protection devices (curve types, trip ratings) with the mechanical services provider prior to ordering. 5. Surface-mounted boards shall be installed with Unistrut-type steel framing or equivalent to provide structural support and clearances from the wall. 6. Distribution boards, provide a 20 mm conduit stub for every 3 spare ways to allow future additions. 7. Distribution boards to be from reputable manufacturers such as Schneider (Acti9), Hager, Eaton, ABB, or equivalent with UKCA/CE marking. 8. 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	(N) New item
AIC Amps Interrupting Capacity (Minimum)	NIC Not in Contract
BCP Bonding Conductor Protective	OEM Original Equipment Manufacturer
CB Circuit Breaker	OFO Owner Furnished Contractor Installed
C Conduit	P Pole (e.g., 1P, 3P)
CCT Circuit	PNL Panel (Distribution Board / Consumer Unit)
CPC Circuit Protective Conductor	PH Ø Phase
EC Empty Conduit	(R) Remove existing and relocate
(E) Existing to remain, continue in service	(RE) Relocated equipment
FA Fire Alarm	RECPT Receptacle (UK: Socket Outlet)
FLA Full Load Current (Amps)	RCD Residual Current Device
G Earth (Ground – UK uses "Earth")	SPD Surge Protective Device
HP Horsepower	SWA Steel Wire Armoured Cable
Ics/Icu Short-Circuit Breaking Capacity (BS EN 60947-2)	TBD To Be Determined
IP Ingress Protection Rating	UON Unless Otherwise Noted
kVA Kilovolt-Amps	V Volt
kW Kilowatt	W With
L Live	WP Weatherproof (IP rated)
LSZH Low Smoke Zero Halogen	XFMRT Transformer
LTG Lighting	(X) Remove with all associated wiring
MCB Miniature Circuit Breaker	
MH Mounting Height	
MLO Main Lug Only (not common in UK – state 'main terminals only')	

SYMBOLS/LEGENDS
WALL LIGHT 10W ADJUSTABLE FRAME RECESSED DOWNLIGHT 40W 30W CEILING MOUNT SANDAL LIGHT 10W CEILING MOUNT SANDAL LIGHT 40W CEILING MOUNT SANDAL LIGHT IP RATED RECESSED DOWNLIGHT 20W 3-GANG ROCKERY SWITCH 2-GANG ROCKERY SWITCH SINGLE GANG ROCKERY SWITCH SMOKE DETECTOR EXTRACT FAN 40W LINEAR LED STRIP DOUBLE SOCKET OUTLET 230V Single Socket COOKER/HOB HOOD FRIDGE/FREEZER 5 AMP SOCKET FOR LIGHTING 230V Microwave Wine Cooler MID LEVEL DOUBLE SOCKET OUTLET 230V HIGH LEVEL DOUBLE SOCKET OUTLET 230V LOW LEVEL DOUBLE SOCKET OUTLET 230V HIGH LEVEL SINGLE SOCKET OUTLET 230V UNDER FLOOR HEATING COMFORT COOLING CONTROL VIDEO ENTRY SYSTEM INTRUDER ALARM MOTION SENSOR CCTV CAMERA PIR MOTION SENSOR FOR LIGHTING CAT6 TO THE COMMUNAL DISTRIBUTION BOX (BT) CAT6 INTERNAL ETHERNET SMOKE DETECTOR SMOKE & CARBON MONOXIDE DETECTOR WITH SOUNDER EXTRACT FAN FUSE BOX 3-GANG ROCKERY SWITCH 2-GANG ROCKERY SWITCH SINGLE GANG ROCKERY SWITCH FUSED SPUR SWITCH SHAVER SOCKET HEAT DETECTOR WITH SOUNDER CEILING RECESSED SPEAKER DOOR CONTACT SENSOR FOR LIGHTING INTRUDER ALARM KEYPAD USB SOCKET OUTLET INTRUDER ALARM WINDOW CONTACT SWITCH INTRUDER ALARM DOOR CONTACT SWITCH



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PROJECT: HEALTH CARE

TITLE: **GENERAL NOTE FOR ELECTRICAL PLAN**

PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36:
		N/A

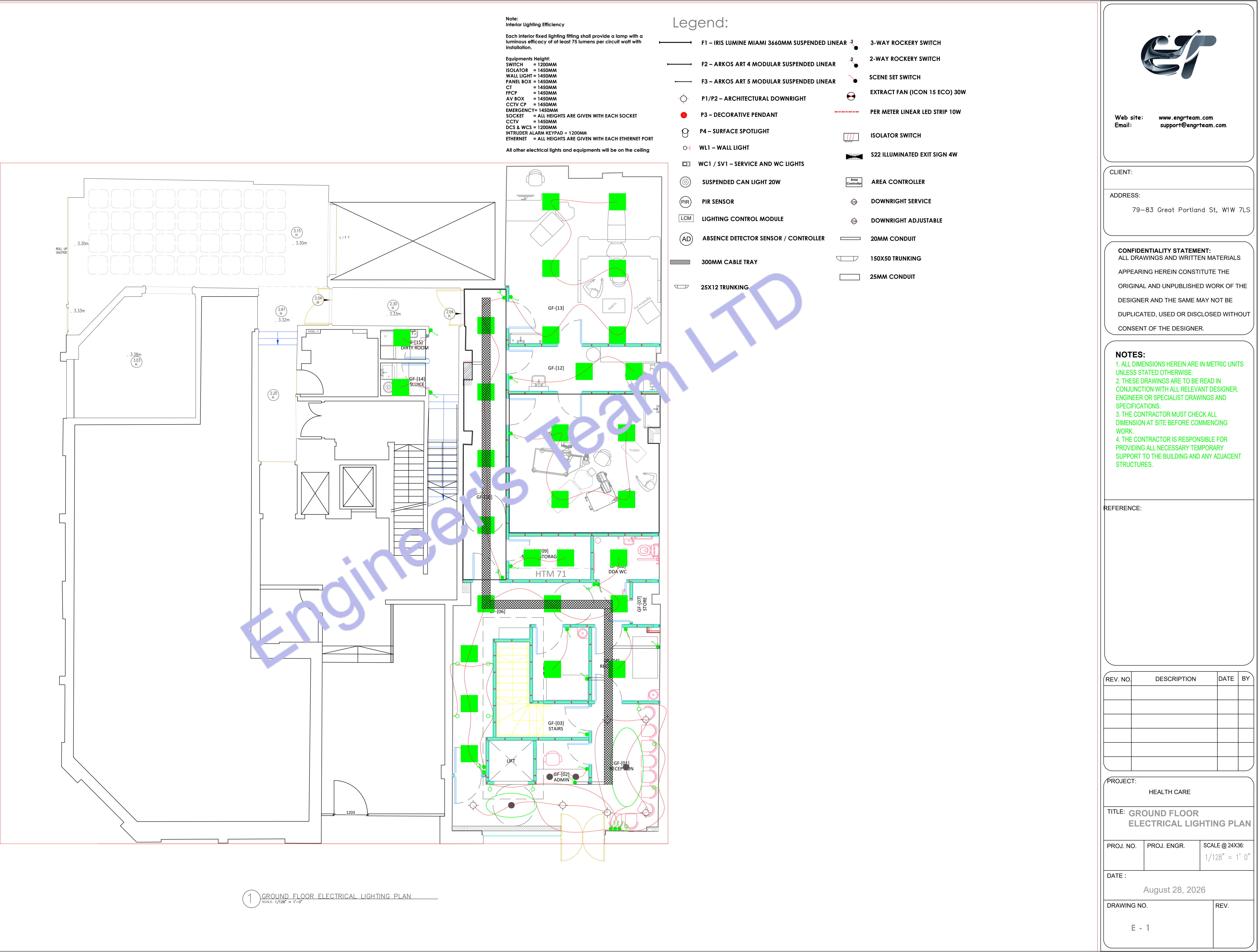
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E - 0

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STRUCTURES.

REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT: HEALTH CARE		
TITLE: GROUND FLOOR ELECTRICAL LIGHTING PLAN		
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: 1/128" = 1' 0"
DATE: August 28, 2026		
DRAWING NO. E - 1		REV.



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REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT: HEALTH CARE

TITLE: BASEMENT FLOOR
ELECTRICAL LIGHTING PLAN

PROJ. NO. PROJ. ENGR. SCALE @ 24X36:
1/128" = 1' 0"

DATE :
August 28, 2026

DRAWING NO. REV.
E - 2

Note:
Interior Lighting Efficiency

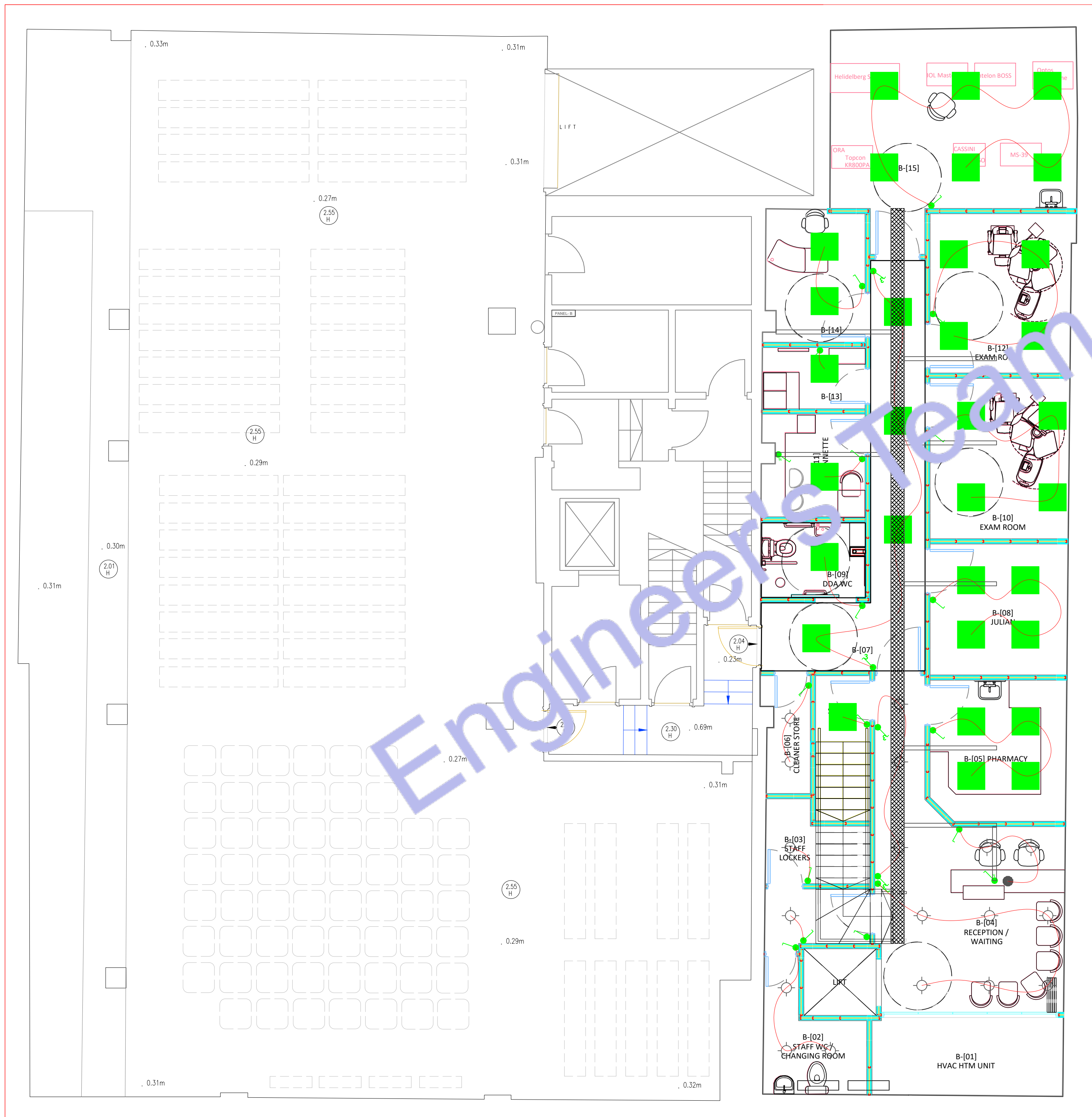
Each interior fixed lighting fitting shall provide a lamp with a
luminous efficacy of at least 75 lumens per circuit watt with
installation.

Equipments Height:
SWITCH = 1200MM
ISOLATOR = 1450MM
WALL LIGHT = 1450MM
PANEL BOX = 1450MM
CT = 1450MM
FPCP = 1450MM
AV BOX = 1450MM
CCTV CP = 1450MM
EMERGENCY = 1450MM
SOCKET = ALL HEIGHTS ARE GIVEN WITH EACH SOCKET
CCTV = 1450MM
DCS & WCS = 1200MM
INTRUDER ALARM KEYPAD = 1200MM
ETHERNET = ALL HEIGHTS ARE GIVEN WITH EACH ETHERNET PORT

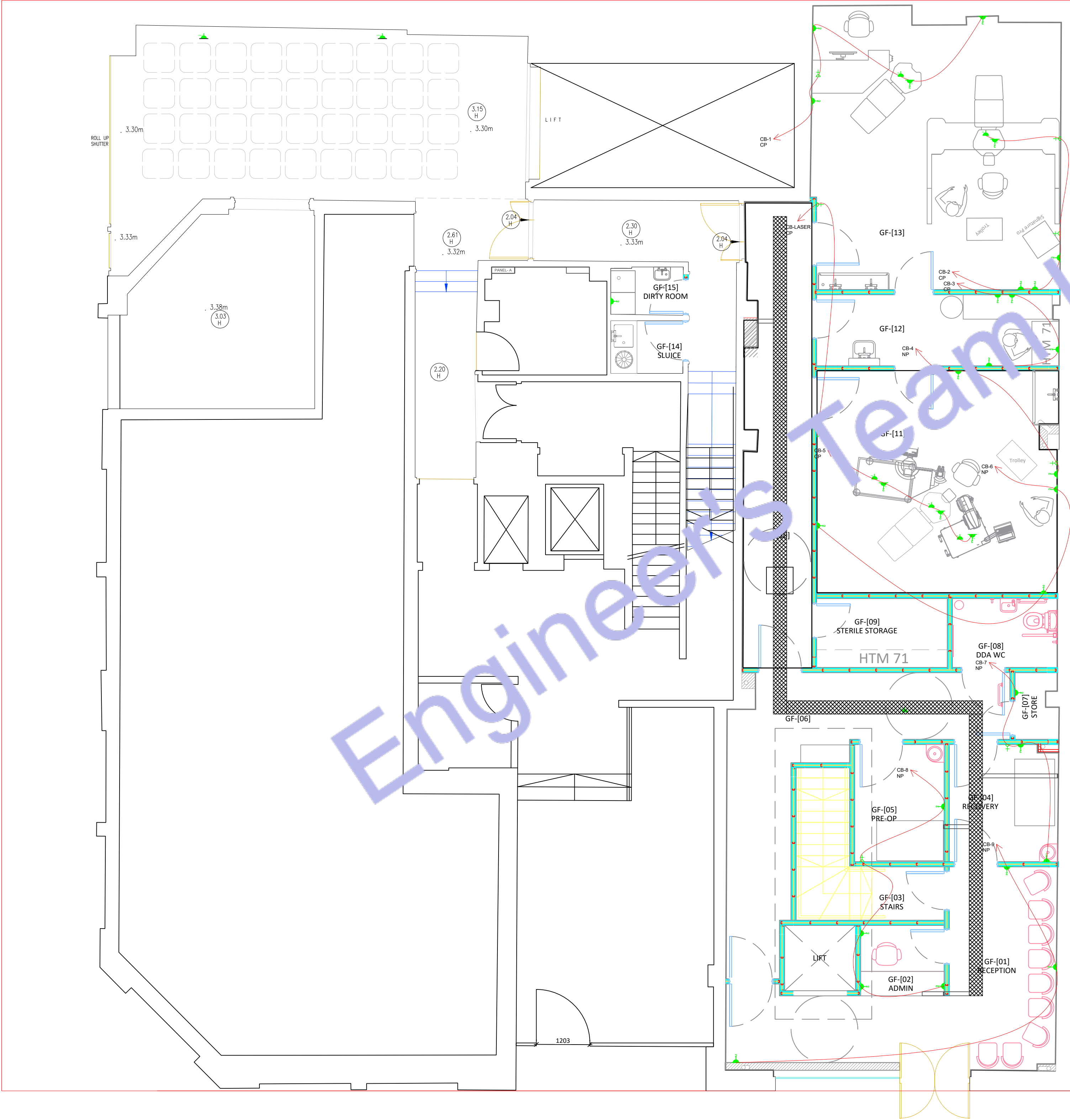
All other electrical lights and equipments will be on the ceiling

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
- WC1 / SV1 - SERVICE AND WC LIGHTS
- SUSPENDED CAN LIGHT 20W
- 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
- 30MM CABLE TRAY
- 25X12 TRUNKING
- 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
- NURSE CALL
- 20MM CONDUIT
- 150X50 TRUNKING
- 25MM CONDUIT



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



Legend:

- DOUBLE SOCKET OUTLET
- SINGLE SOCKET
- AIR HANDLING UNIT
- CONDENSER UNIT
- REFRIGERATOR
- 1 AMP SOCKET FOR LIGHTING
- MICROWAVE
- WINE COOLER
- HIGH LEVEL DOUBLE SOCKET OUTLET
- LOW LEVEL DOUBLE SOCKET OUTLET
- HIGH LEVEL SINGLE SOCKET OUTLET
- UNDER FLOOR HEATING
- ACCESS CONTROL
- VIDEO ENTRY SYSTEM
- CCTV MONITOR SYSTEM
- CCTV CAMERA
- PIR MOTION SENSOR FOR LIGHTING
- ELECTRICAL WIRE
- CLEAN POWER SOCKET
- NORMAL POWER SOCKET

CAT5 INTERNAL ETHERNETSMOKE DETECTORSMOKE & CARBON MONOXIDE DETECTOR WITH SOUNDEREXTRACT FANFUSE BOX3 GANG ROCKER SWITCH2 GANG ROCKER SWITCHSINGLE GANG ROCKER SWITCHFUSED SPUR SOCKETFLOOR MOUNT SOCKETSCREWLESS DUAL VOLTAGE SHAVES SOCKETDOOR CONTACT SENSOR FOR LIGHTINGINTRUDER ALARM KEYPADDOOR SOCKET OUTLETINTRUDER ALARM WINDOW CONTACT SWITCHINTRUDER ALARM DOOR CONTACT SWITCHELECTRICAL TOWEL RADIATORTELEVISIONINTERCOM POINT

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



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REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT: HEALTH CARE		
TITLE: GROUND FLOOR ELECTRICAL POWER PLAN		
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: 1/128" = 1' 0"
DATE: August 28, 2026		
DRAWING NO. E - 3		REV.



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REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT: HEALTH CARE

TITLE: BASEMENT FLOOR
ELECTRICAL POWER PLAN

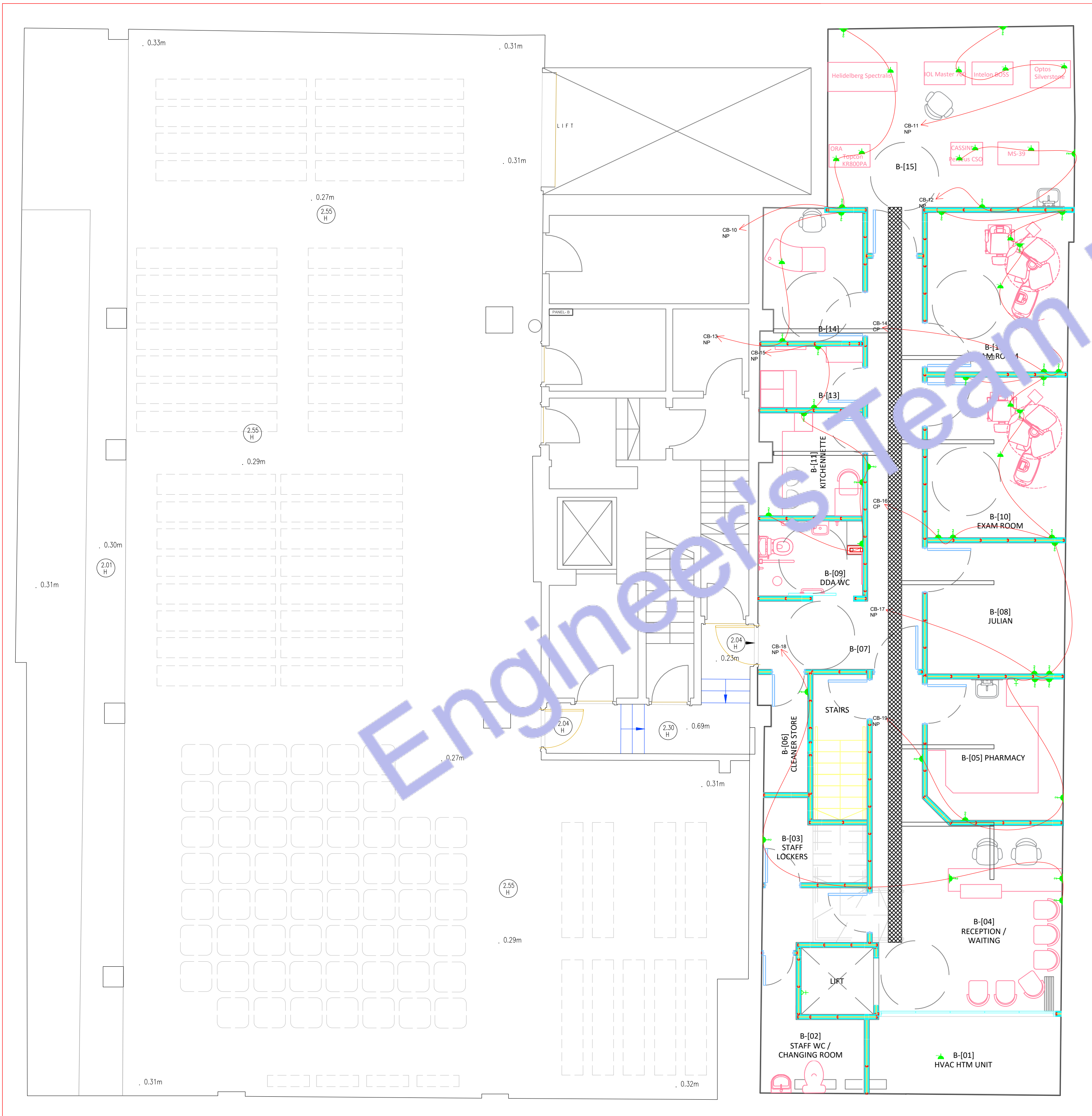
PROJ. NO. PROJ. ENGR. SCALE @ 24X36:
1/128" = 1' 0"

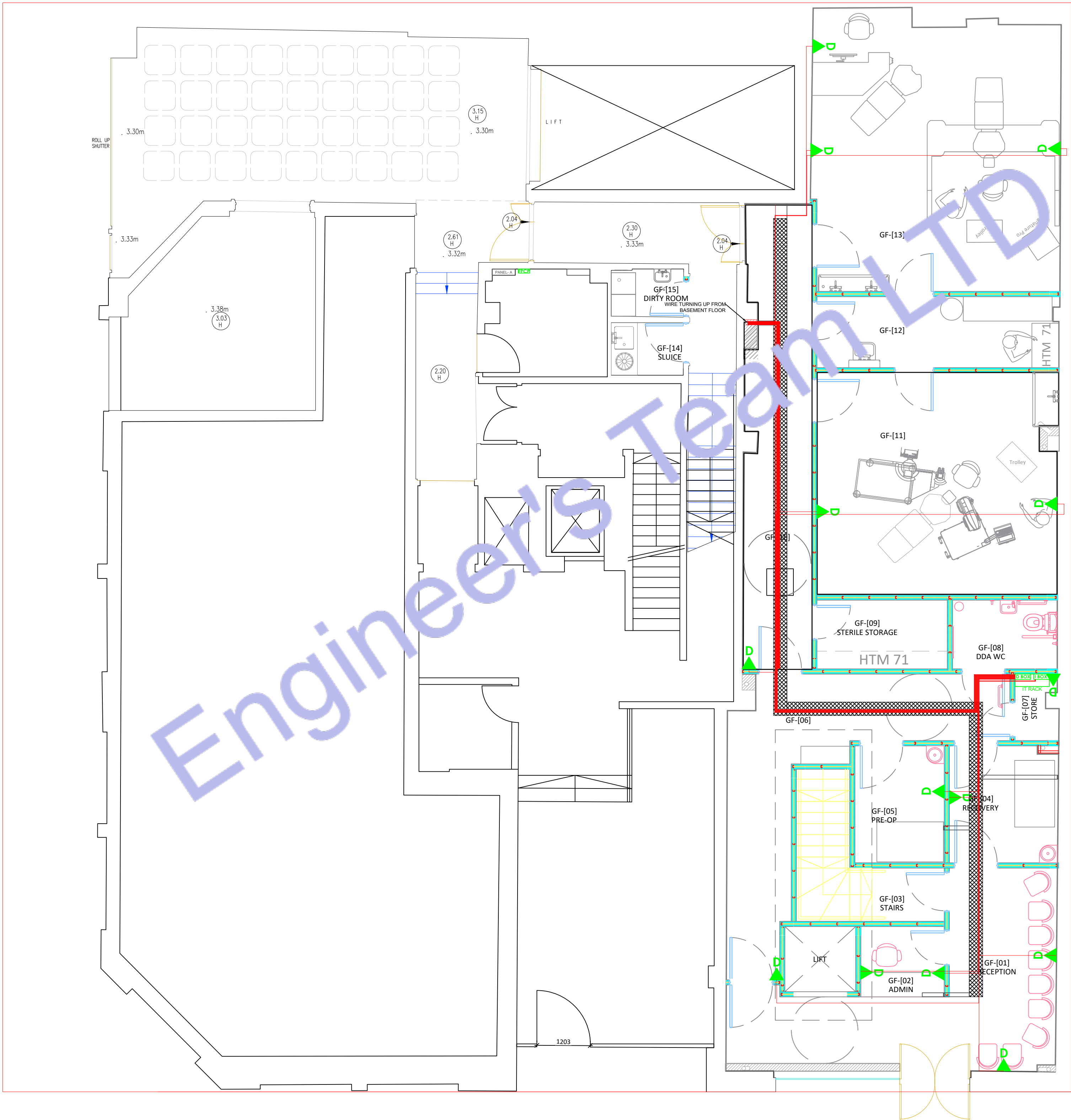
DATE :
August 28, 2026

DRAWING NO. REV.
E - 4

Legend:

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





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

Legend:

- CATA TO THE COMMUNAL DISTRIBUTION BOX (BT)
- CATA INTERNAL ETHERNET
- INTERCOM PORT
- ELECTRICAL WIRE
- ETHERNET/DATA BOX
- INTERCOM BOX



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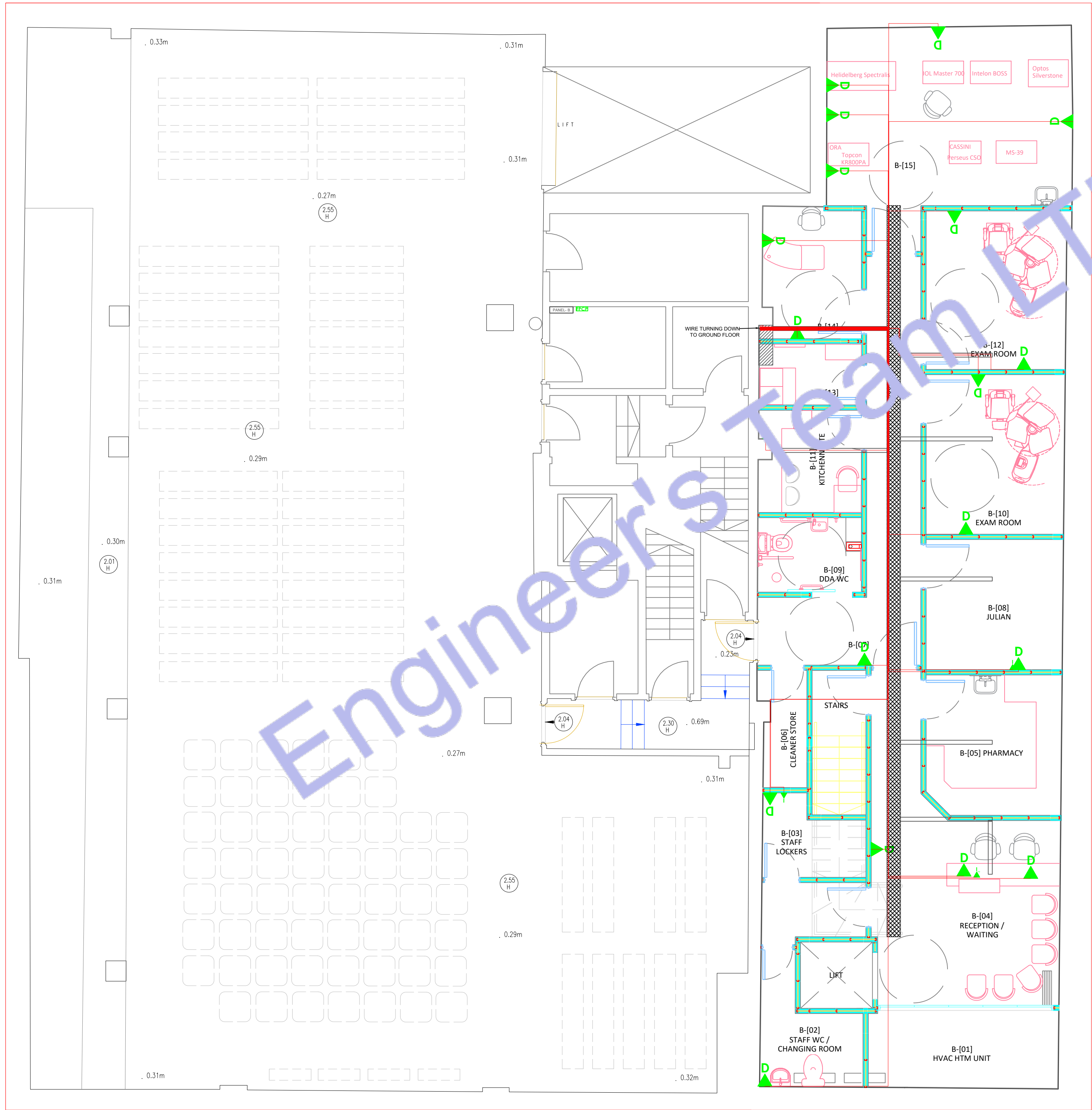
PROJECT: HEALTH CARE

TITLE: GROUND FLOOR ETHERNET
& INTERCOM PLAN

PROJ. NO. PROJ. ENGR. SCALE @ 24X36:
1/128" = 1' 0"

DATE :
August 28, 2026

DRAWING NO. REV.
E - 5



Legend:

- Cable to the COMMUNAL DISTRIBUTION BOX (BT)
- Cable INTERNAL ETHERNET
- INTERCOM POINT
- ELECTRICAL WIRE
- ETHERNET/DATE BOX
- INTERCOM BOX



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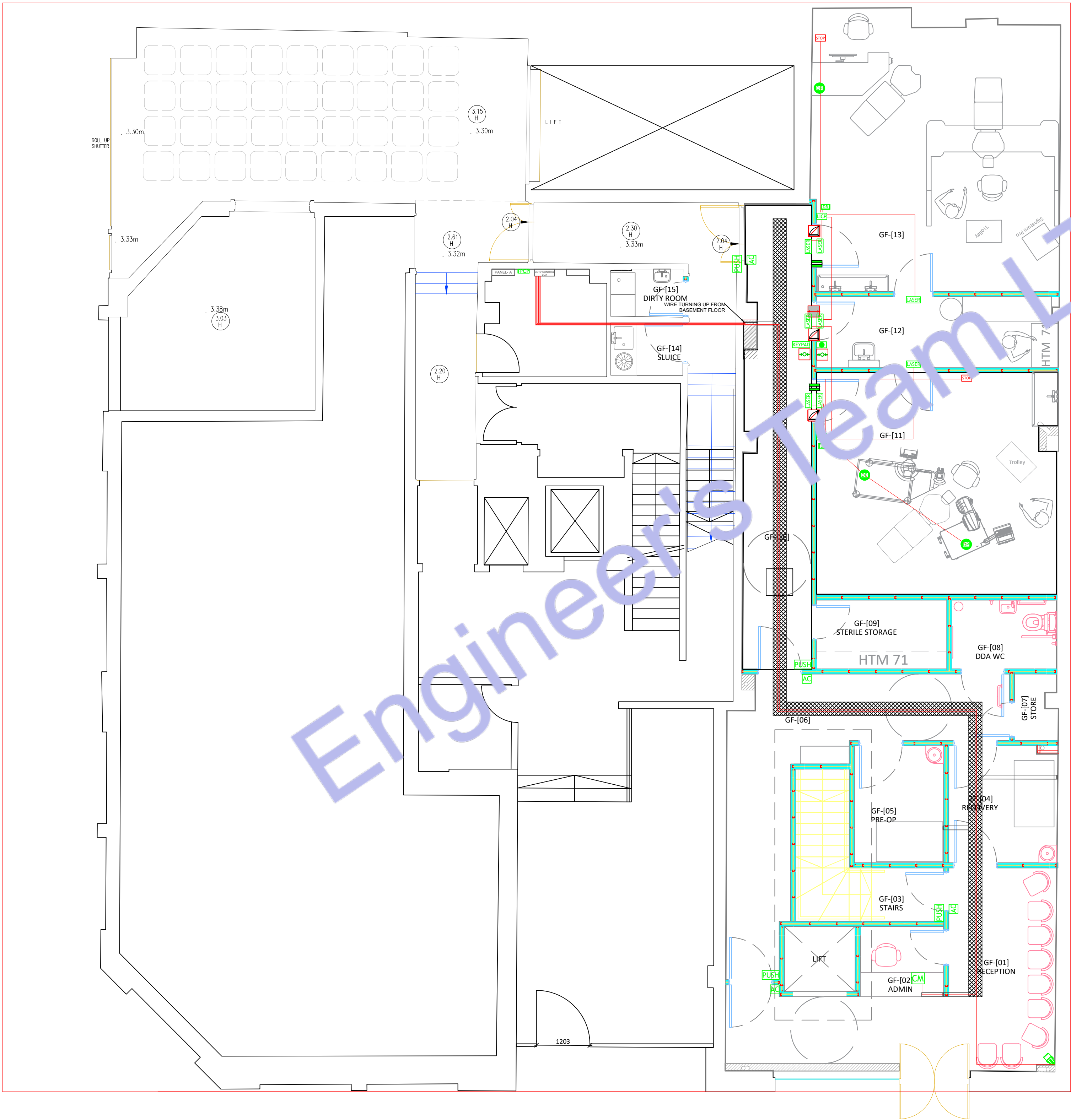
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REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT: HEALTH CARE	
TITLE: BASEMENT FLOOR ETHERNET & INTERCOM PLAN	
PROJ. NO.	PROJ. ENGR.
SCALE @ 24X36: 1/128" = 1' 0"	
DATE : August 28, 2026	
DRAWING NO. E - 6	REV.



Legend:

- ACCESS CONTROL KEYPAD / CARD PUNCH
- ACCESS CONTROL PUSH BUTTON
- LED LASER WARNING
- TOUCHSCREEN LASER INTERLOCK CONTROL PANEL
- EMERGENCY LIGHT WITH EXIT SIGN
- EMERGENCY LIGHT
- CCTV MONITOR SYSTEM
- CCTV CAMERA
- ELECTRICAL WIRE
- IS-MOC-12 INTERLOCK
- MAGLOCK 350 KG
- EMERGENCY STOP BREAK GLASS
- EMERGENCY PUSH BUTTON
- KEYPAD + OVERRIDE
- INTERLOCK DISTRIBUTION BOX / RELAYS
- ILLUMINATED PUSH PUSHBUTTON (EXIT)
- DOOR LOOP
- DEDICATED SAFETY INTERLOCK PORT OF THE LASER (BUILT IN)

LASER SAFETY INTERLOCK SYSTEM:

- DUAL CHANNEL INTERLOCK SWITCHES (P/E) ON ALL THEATRE / PREP ROOM DOORS
 - MAGLOCKS ON CONTROLLED DOORS
 - LED GREEN/RED LASER WARNING SIGNS
 - EMERGENCY STOP BUTTONS (BREAK-GLASS + PUSH BUTTON)
 - TOUCHSCREEN INTERLOCK CONTROLLER IN EACH THEATRE
 - ALL THEATRE DOORS INTERLOCKED TO PREVENT LASER OPERATION WHEN OPEN
 - SYSTEM FULLY COMPLIANT WITH BS EN 60825-1 AND MIRA GUIDANCE
- NOTES:
ALL THEATRE AND PREP ROOM DOORS ARE FULLY INTERLOCKED TO PREVENT LASER OPERATION WHEN OPEN.
SYSTEM COMPLIANT WITH BS EN 60825-1 AND MIRA GUIDANCE.
ALL INTERCONNECTING CABLES (LSZH) SHOWN AS DASHED LOW-VOLTAGE CONTROL LINES ON ELECTRICAL PLANS.
LABEL 'LASER INTERLOCK CONTROL'.

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



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PROJECT:

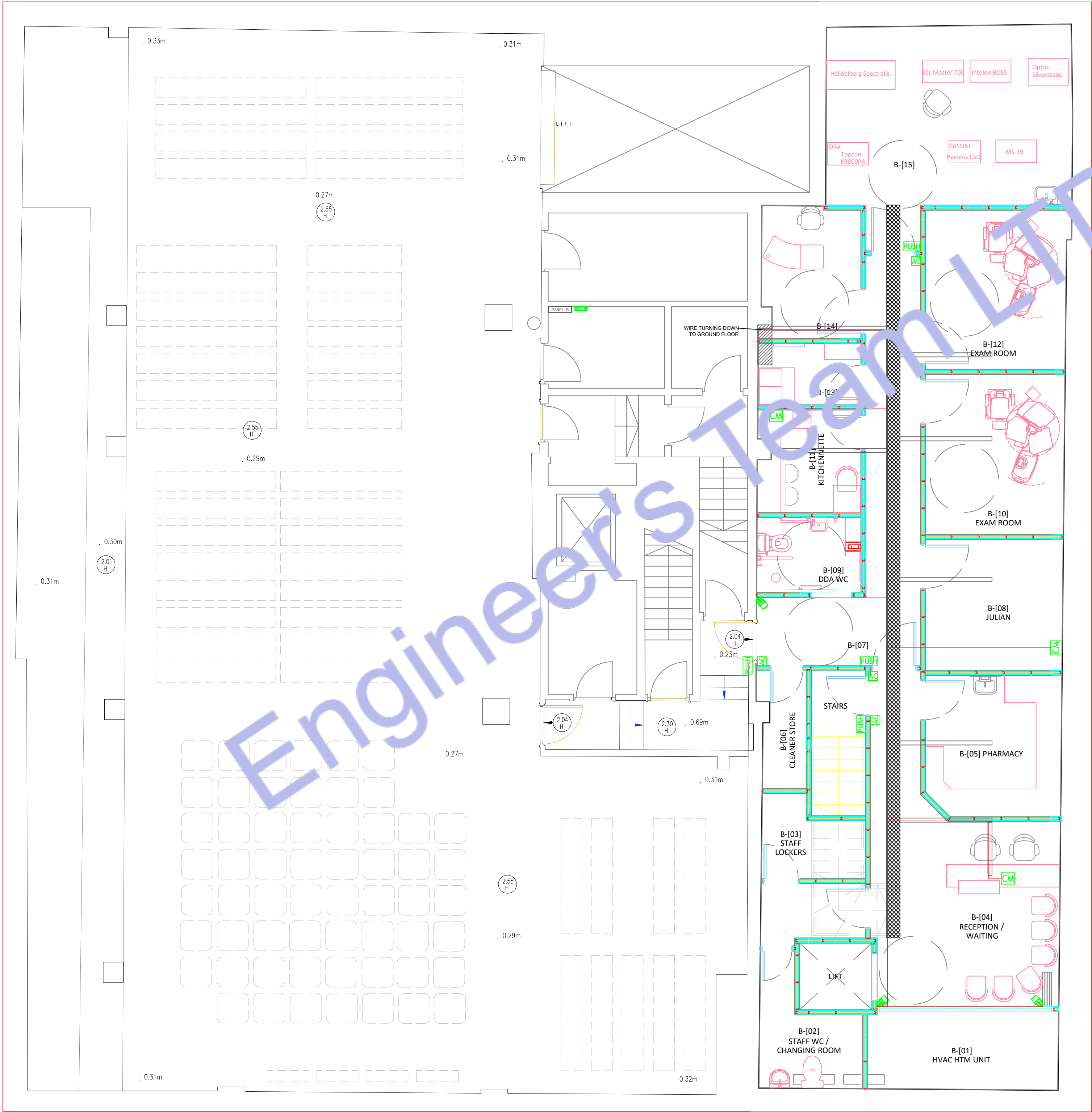
HEALTH CARE

TITLE: GROUND FLOOR SECURITY SYSTEM PLAN

PROJ. NO. PROJ. ENGR. SCALE @ 24X36:
1/128" = 1' 0"

DATE :
August 28, 2026

DRAWING NO. REV.
E - 7



2 BASEMENT FLOOR SECURITY SYSTEM PLAN
SCALE: 1/128" = 1'-0"

Legend:

- ACCESS CONTROL
- EMERGENCY LIGHT WITH EXIT SIGN
- EMERGENCY LIGHT
- CCTV MONITOR SYSTEM
- CCTV CAMERA
- ELECTRICAL WIRE



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REV. NO.	DESCRIPTION	DATE	BY

PROJECT:
HEALTH CARE

TITLE: BASEMENT FLOOR
SECURITY SYSTEM PLAN

PROJ. NO. PROJ. ENGR. SCALE @ 24X36:
1/128" = 1' 0"

DATE :
August 28, 2026

DRAWING NO. REV.
E - 8



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REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT:
HEALTH CARE

TITLE: **GROUND FLOOR FIRE
PROTECTION PLAN**

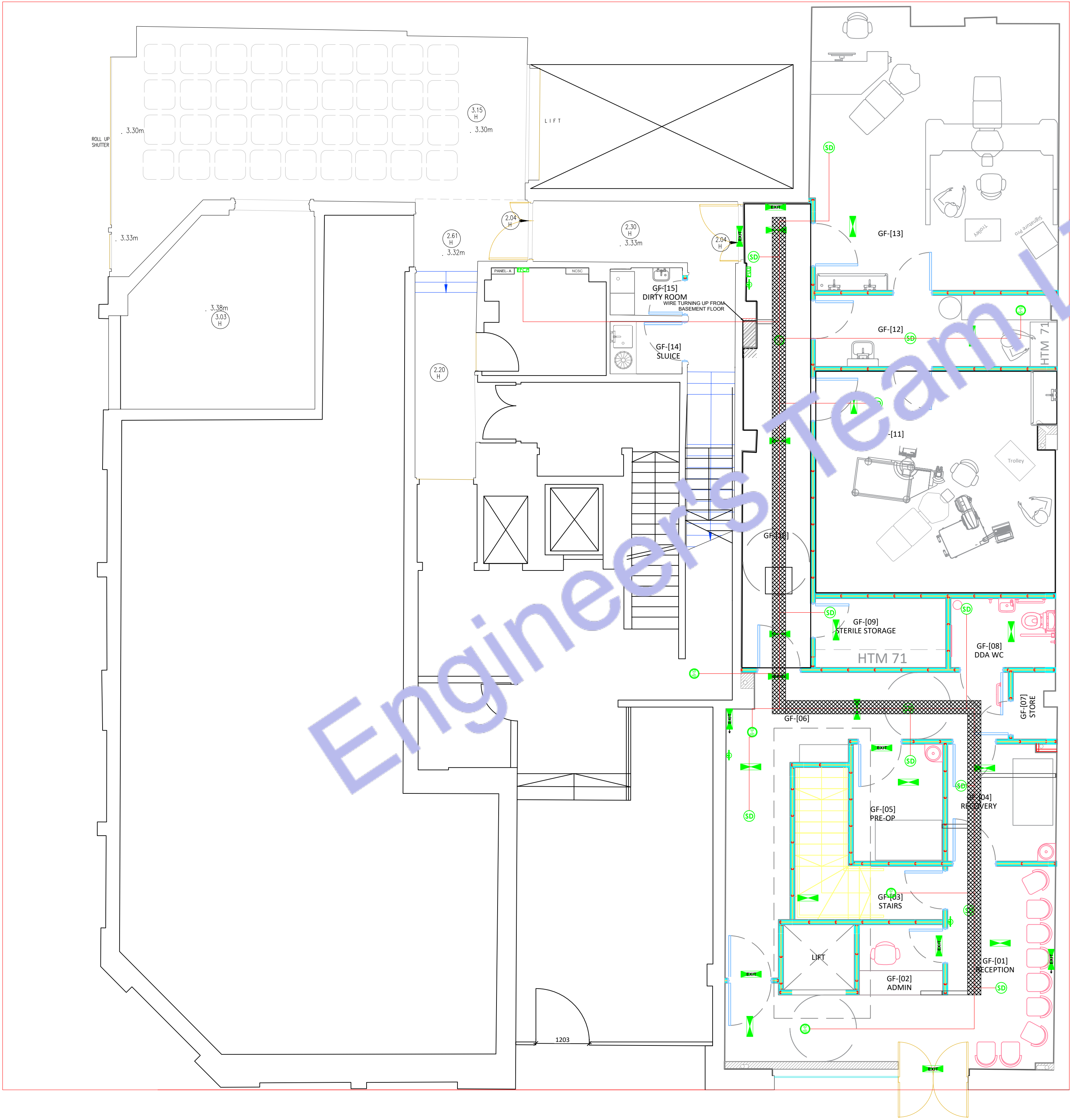
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: 1/128" = 1' 0"
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DATE :
August 28, 2026

DRAWING NO. E - 9	REV.
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Legend:

- ⊙ SMOKE DETECTOR
- ⊙ SMOKE & HEAT DETECTOR
- FUSE BOX
- ELECTRICAL WIRE
- FCB FIRE PROTECTION CONTROL PANEL
- FB FIRE BLANKET
- PB PULL BUTTON
- FE FIRE EXTINGUISHER



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



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REFERENCE:

[illegible]

PROJECT: HEALTH CARE

TITLE: BASEMENT FLOOR FIRE PROTECTION PLAN

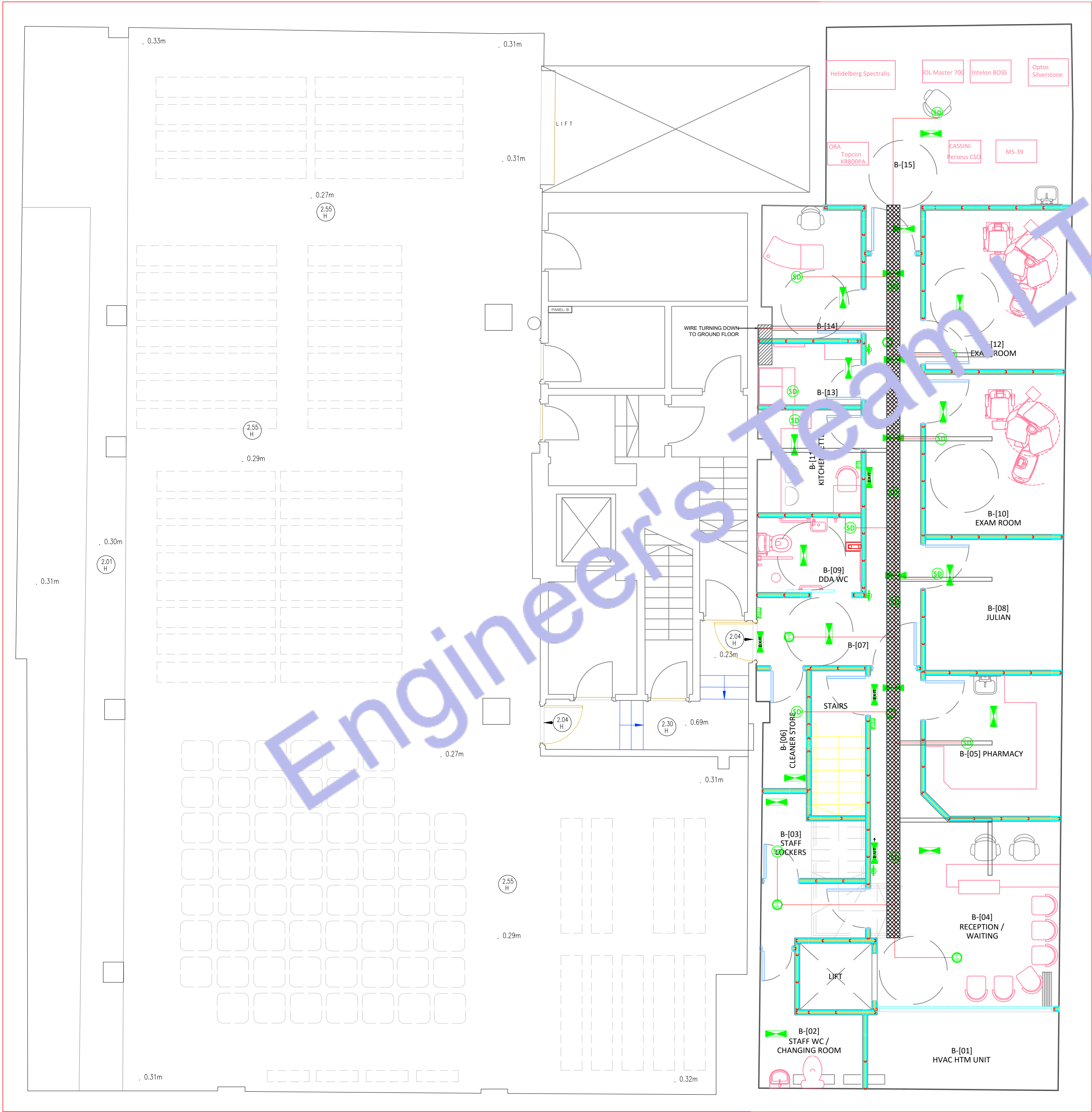
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: 1/128" = 1' 0"
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DATE : August 28, 2026

DRAWING NO.	REV.
E - 1 0	

Legend:

-  SMOKE DETECTOR
-  SMOKE & HEAT DETECTOR
-  FUSE BOX
-  ELECTRICAL WIRE
-  FIRE PROTECTION CONTROL PANEL
-  FIRE BLANKET
-  PULL BUTTON
-  FIRE EXTINGUISHER



2 BASEMENT FLOOR FIRE PROTECTION PLAN



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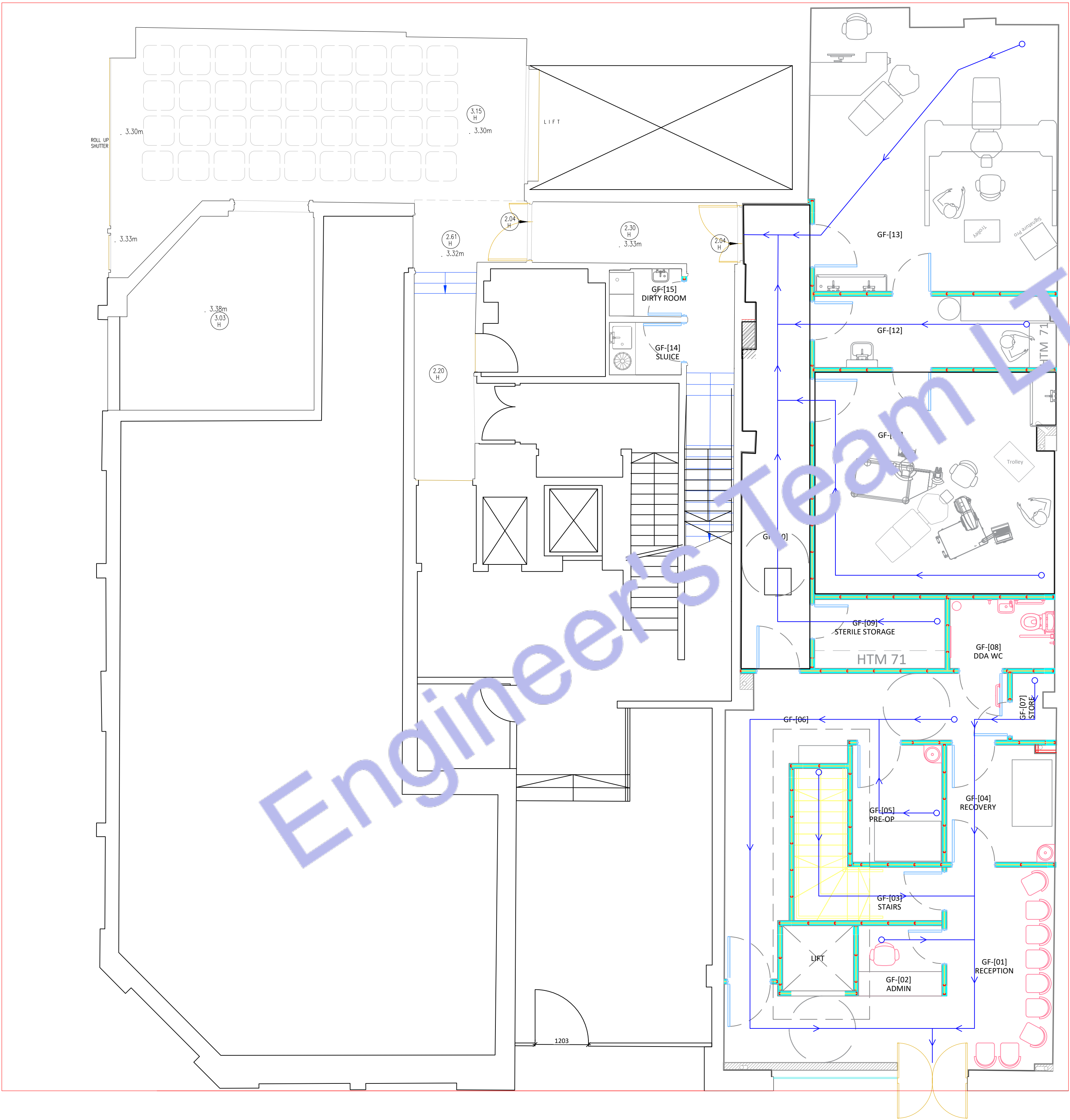
REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT:		HEALTH CARE	
TITLE: GROUND FLOOR ESCAPE ROUTE PLAN			
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: 1/128" = 1' 0"	
DATE : August 28, 2026			
DRAWING NO. E - 1 1		REV.	

Legend:

← ESCAPE ROUTE & DIRECTION



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



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REFERENCE:

[illegible]

PROJECT:

HEALTH CARE

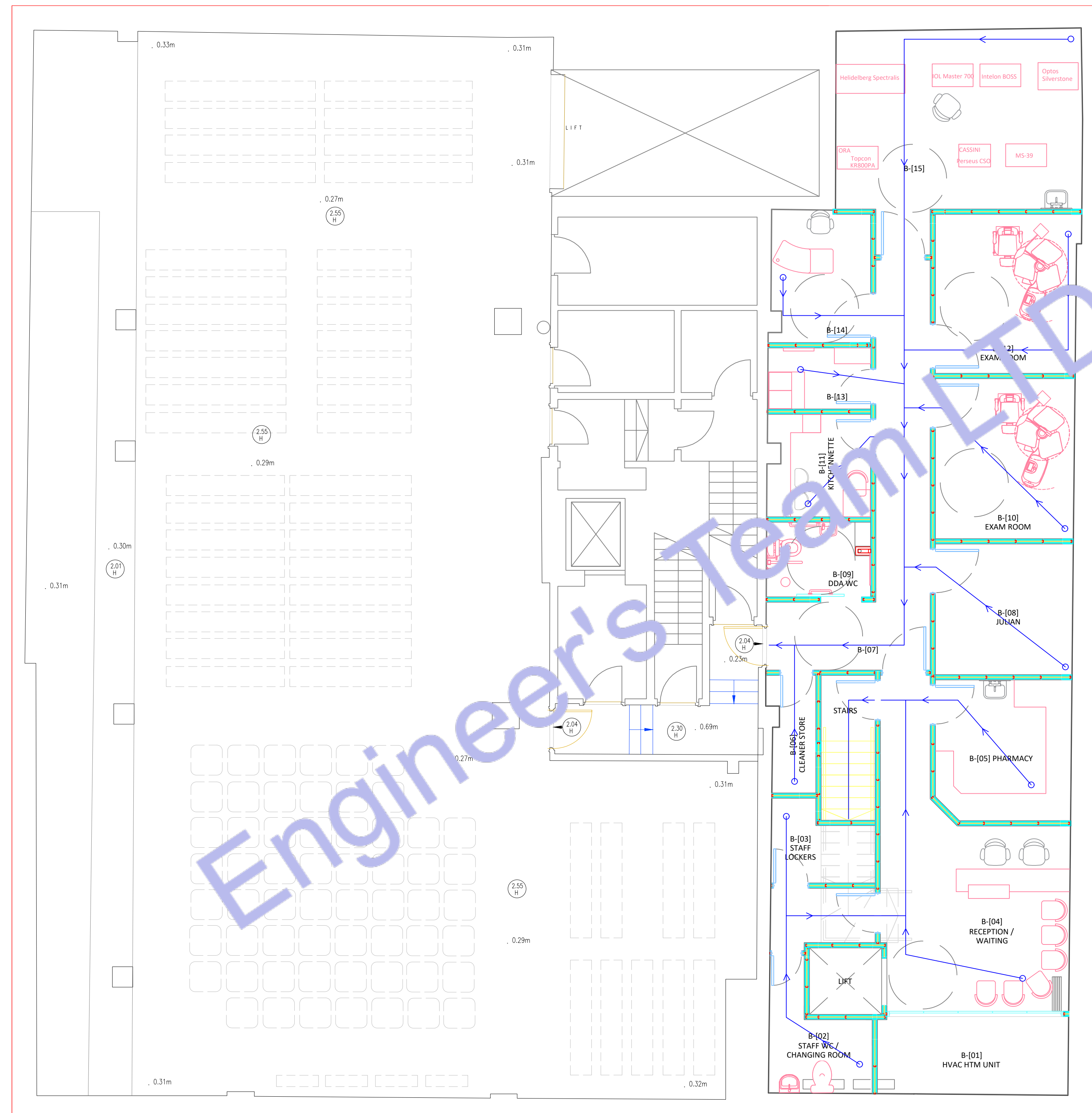
**TITLE: BASEMENT FLOOR ESCAPE
ROUTE PLAN**

PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: $1/128" = 1' 0"$
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DATE : August 28, 2026

DRAWING NO.	REV.
E - 1 2	

Legend:



2 BASEMENT FLOOR ESCAPE ROUTE PLAN
SCALE: 1/128" = 1'-0"



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3. THE CONTRACTOR MUST CHECK ALL
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WORK.

4. THE CONTRACTOR IS RESPONSIBLE FOR
PROVIDING ALL NECESSARY TEMPORARY
SUPPORT TO THE BUILDING AND ANY ADJACENT
STRUCTURES.

REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT:

HEALTH CARE

TITLE: **GROUND FLOOR NURSE
CALL PLAN**

PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: 1/128" = 1' 0"
-----------	-------------	----------------------------------

DATE :
August 28, 2026

DRAWING NO. E - 1 3	REV.
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Note:
Interior Lighting Efficiency

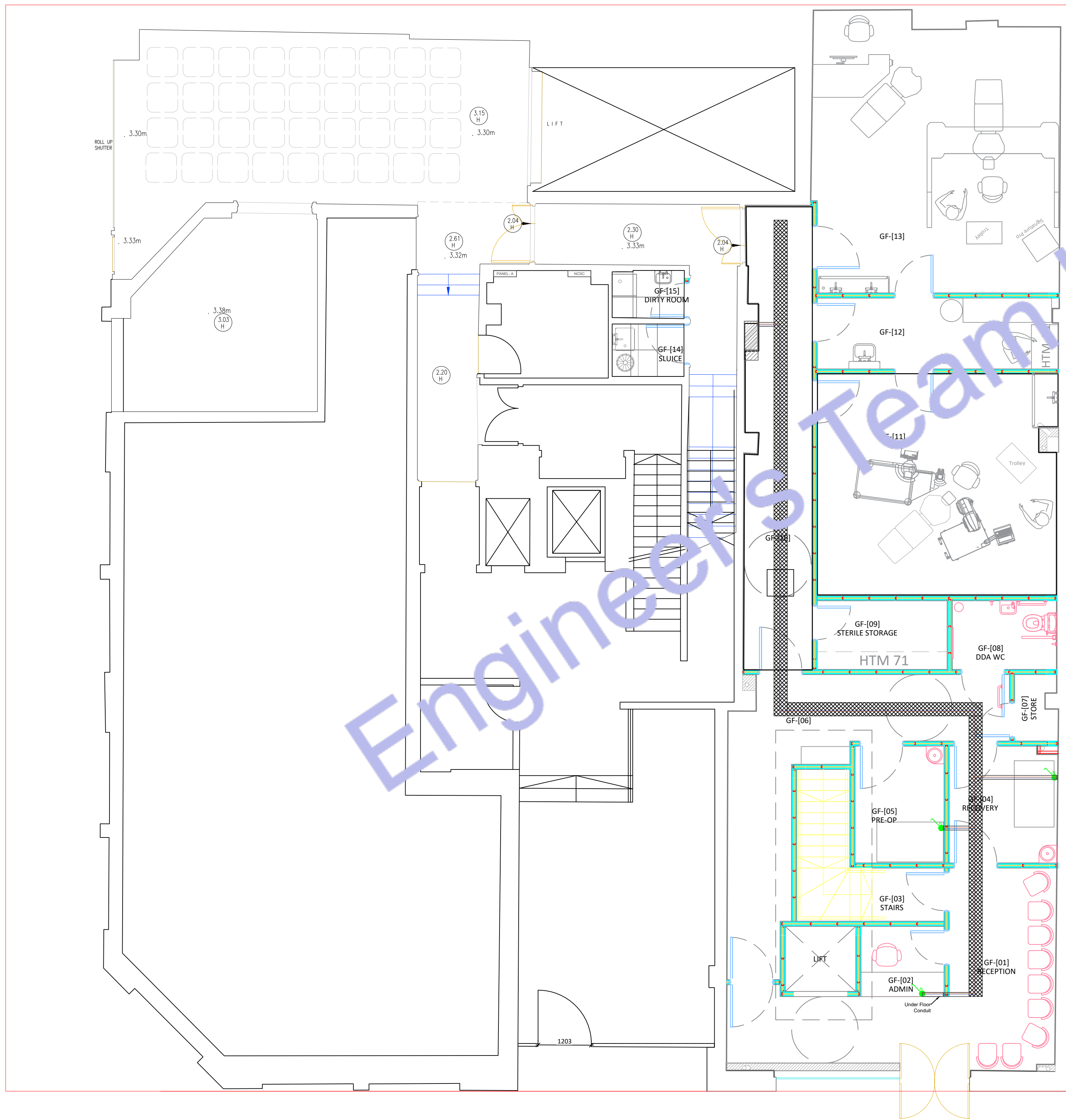
Each interior fixed lighting fitting shall provide a lamp with a
luminous efficacy of at least 75 lumens per circuit watt with
installation.

Equipments Height:
SWITCH = 1200MM
ISOLATOR = 1450MM
WALL LIGHT = 1450MM
PANEL BOX = 1450MM
CT = 1450MM
FPCP = 1450MM
AV BOX = 1450MM
CCTV CP = 1450MM
EMERGENCY= 1450MM
SOCKET = ALL HEIGHTS ARE GIVEN WITH EACH SOCKET
CCTV = 1450MM
DCS & WCS = 1200MM
INTRUDER ALARM KEYPAD = 1200MM
ETHERNET = ALL HEIGHTS ARE GIVEN WITH EACH ETHERNET PORT

All other electrical lights and equipments will be on the ceiling

Legend:

- N NURSE CALL BUTTON
- NCSC NURSE CALL SYSTEM CONTROLLER
- POWER CABLE
- SIGNAL CABLE
- 300MM CABLE TRAY
- 20X12 TRUNKING
- 20MM CONDUIT
- 150X50 TRUNKING
- 25MM CONDUIT



1 GROUND FLOOR NURSE CALL SYSTEM PLAN
Scale: 1/128" = 1'-0"



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CLIENT:

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REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT:
HEALTH CARE

TITLE: BASEMENT FLOOR NURSE
CALL PLAN

PROJ. NO. PROJ. ENGR. SCALE @ 24X36:
1/128" = 1' 0"

DATE :
August 28, 2026

DRAWING NO. REV.
E - 1 4

Note:
Interior Lighting Efficiency

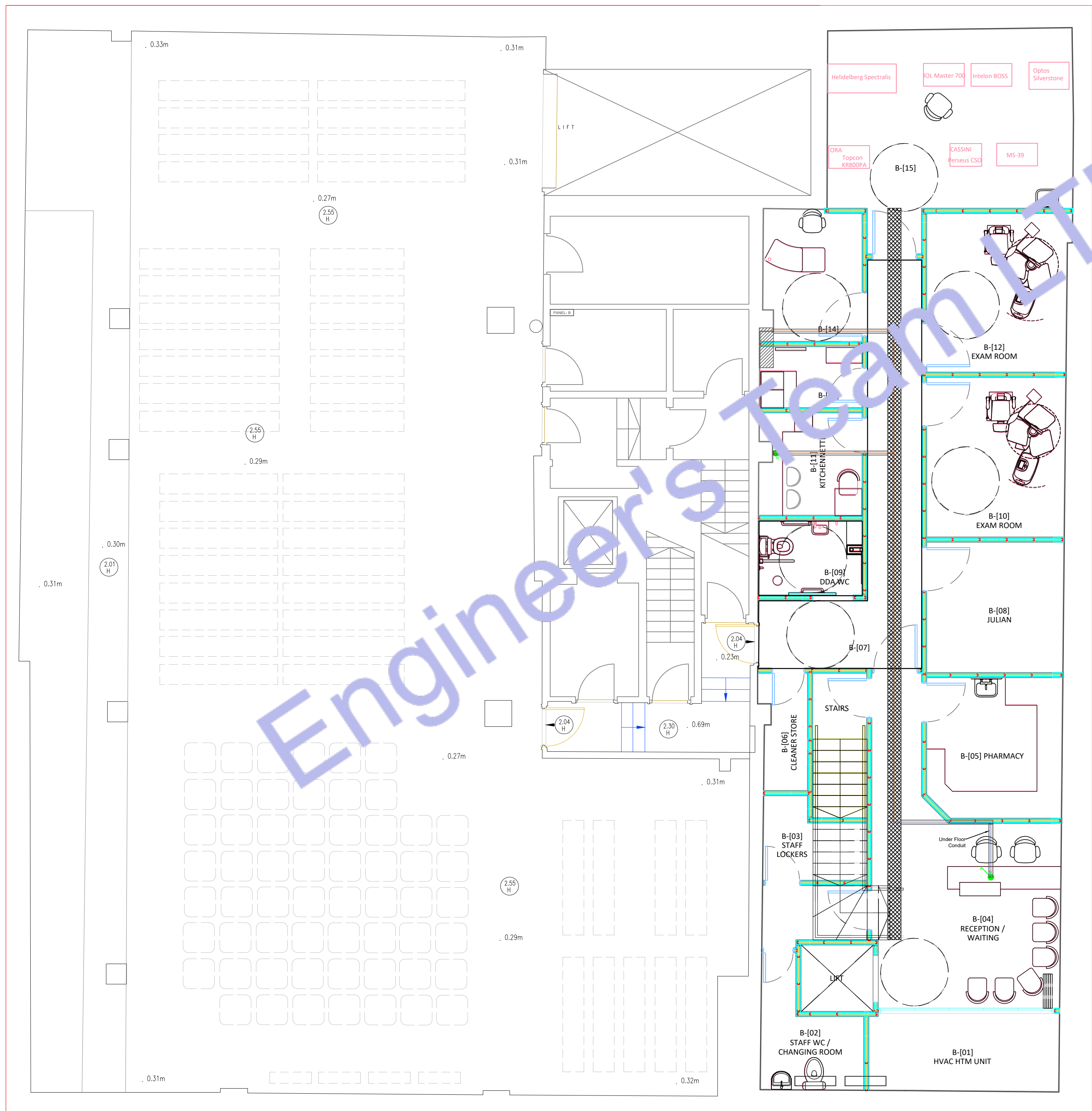
Each interior fixed lighting fitting shall provide a lamp with a
luminous efficacy of at least 75 lumens per circuit watt with
installation.

Equipments Height:
SWITCH = 1200MM
ISOLATOR = 1450MM
WALL LIGHT = 1450MM
PANEL BOX = 1450MM
CT = 1450MM
FFCP = 1450MM
AV BOX = 1450MM
CCTV CP = 1450MM
EMERGENCY = 1450MM
SOCKET = ALL HEIGHTS ARE GIVEN WITH EACH SOCKET
CCTV = 1450MM
DCS & WCS = 1200MM
INTRUDER ALARM KEYPAD = 1200MM
ETHERNET = ALL HEIGHTS ARE GIVEN WITH EACH ETHERNET PORT

All other electrical lights and equipments will be on the ceiling

Legend:

- NURSE CALL BUTTON
- NURSE CALL SYSTEM CONTROLLER
- POWER CABLE
- SIGNAL CABLE
- 300MM CABLE TRAY
- 20X12 TRUNKING
- 20MM CONDUIT
- 150X50 TRUNKING
- 25MM CONDUIT





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STRUCTURES.

REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT:

HEALTH CARE

TITLE: **ELECTRICAL LOAD
SCHEDULE & SLD**

PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: N/A
-----------	-------------	-----------------------

DATE :
August 28, 2026

DRAWING NO. E - 1 5	REV.
----------------------------	------

GF PANEL																
Panel Location- Voltage (Phase-Ground/Phase-Phase)		230	400	Source of Supply-From Service Disconnect/Meter												
Phase-1				Wire-3												
Rated Amps-60				AIC-10k												
MCCB 60 Amps MCCB Type-B				Mounting- Wall Surface												
Circuit	Description	New/ Existing	Load Type	Breaker Size	Poles	Wire Size	A		Wire Size	Poles	Breaker Size	Load Type	New/ Existing	Description	Circuit	
1	LIGHTING LOAD	N	MCB, Type-B	15	1	1.5	1825	900	2.5	1	20	MCB, Type-B	N	CB-02 CP	2	
3	CB-01 CP	N	MCB, Type-B	20	1	2.5	2300	600	2.5	1	20	MCB, Type-B	N	CB-04 NP	4	
5	CB-03 CP	N	MCB, Type-B	20	1	2.5	600	600	2.5	1	20	MCB, Type-B	N	CB-06 NP	6	
7	CB-05 CP	N	MCB, Type-B	20	1	2.5	2500	1000	2.5	1	20	MCB, Type-B	N	CB-08 NP	8	
9	CB-07 NP	N	MCB, Type-B	20	1	2.5	1200	250	2.5	1	20	MCB, Type-B	N	CB-LASER CP	10	
11	CB-09 NP	N	MCB, Type-B	20	1	2.5	600	--	--	--	--	--	--	SPARE	12	
13	SPARE	--	--	--	--	--	--	--	--	--	--	--	--	SPARE	14	
15	SPARE	--	--	--	--	--	--	--	--	--	--	--	--	SPARE	16	
17	SPARE	--	--	--	--	--	--	--	--	--	--	--	--	SPARE	18	
19	SPARE	--	--	--	--	--	--	--	--	--	--	--	--	SPARE	20	
							A									
							Connected Load (W)		12375							
							Connected Amps		53.80							
							Main Type and Amps Rating		60 Amps MCCB Type-B							
Demand Load Calculation																
Load Classification		Connected Load	Demand Factor	Estimated Demand												
Lighting - Dwelling Unit		1825	125%	2281.25												
Water Heater - Dwelling Unit		0	100%	0												
Receptacle		10550	65%	6857.5												
Cooling		0	100%	0												
Pump		0	125%	0												
Other		0	100%	0												
Demand Load		12375		9138.75												
Demand Amps				39.73369565												

MAIN PANEL																				
Panel Location- Voltage (Phase-Ground/Phase-Phase)		230	400	Source of Supply-From Service Disconnect/Meter																
Phase-1 Rated Amps-170				Wire-3 AIC-10k																
MCCB 170 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	170	3	50	48509	48509			50	3	170	RCD	N	ALL LOADS	2			
3						50			32134	32134								50	4	
5						50					37034						37034	50	6	
7	GF PANEL	N	MCB, Type-B	60	1	16	12375	15300			16	1	70	MCB, Type-B	N	B PANEL	8			
9	HVAC HTM-1 NP	N	MCB, Type-B	50	1	10			11300	13334			16	3	60	MCB, Type-B	N	WATER HEATER NP	10	
11	HVAC HTM-2 NP	N	MCB, Type-B	75	1	16					16200	13334	16						12	
13	LIFT NP	N	MCB, Type-B	35	3	4	7500	13334					16						14	
15						4			7500	0			--	--	--	--	SPARE	16		
17						4					7500	0	--	--	--	--	--	SPARE	18	
19	SPARE	--	--	--	--	--	0	0			--	--	--	--	--	SPARE	20			
							A	B	C	Total										
							48509	32134	37034	117677										
							Connected Load (W)													
							Connected Amps		169.86											
							Main Type and Amps Rating		170 Amps MCCB											
Demand Load Calculation																				
Load Classification		Connected Load	Demand Factor	Estimated Demand																
Lighting - Commercial Unit		3625	125%	4531.25																
Water Heater - Commercial Unit		40000	100%	40000																
Receptacle		46552	65%	30258.8																
Cooling		27500	100%	27500																
Pump		0	125%	0																
Other		0	100%	0																
Demand Load		117677		102290.05																
Demand Amps				148.2464493																

B PANEL																	
Panel Location- Voltage (Phase-Ground/Phase-Phase)		230	400	Source of Supply-From Service Disconnect/Meter													
Phase-1		Wire-3															
Rated Amps-70		AIC-10k															
MCCB		70 Amps MCCB Type-B		Mounting-		Wall Surface											
Circuit	Description	New/ Existing	Load Type	Breaker Size	Poles	Wire Size	A		Wire Size	Poles	Breaker Size	Load Type	New/ Existing	Description	Circuit		
1	LIGHTING LOAD	N	MCB, Type-B	15	1	1.5	1800	1000	2.5	1	20	MCB, Type-B	N	CB-11 NP	2		
3	CB-10 NP	N	MCB, Type-B	20	1	2.5	1000	800	2.5	1	20	MCB, Type-B	N	CB-13 NP	4		
5	CB-12 NP	N	MCB, Type-B	20	1	2.5	1200	2500	2.5	1	20	MCB, Type-B	N	CB-15 NP	6		
7	CB-14 CP	N	MCB, Type-B	20	1	2.5	1800	800	2.5	1	20	MCB, Type-B	N	CB-17 NP	8		
9	CB-16 CP	N	MCB, Type-B	20	1	2.5	1800	1400	2.5	1	20	MCB, Type-B	N	CB-19 NP	10		
11	CB-18 NP	N	MCB, Type-B	20	1	2.5	1200	--	--	--	--	--	--	SPARE	12		
13	SPARE	--	--	--	--	--	--	--	--	--	--	--	--	SPARE	14		
15	SPARE	--	--	--	--	--	--	--	--	--	--	--	--	SPARE	16		
17	SPARE	--	--	--	--	--	--	--	--	--	--	--	--	SPARE	18		
19	SPARE	--	--	--	--	--	--	--	--	--	--	--	--	SPARE	20		
							A										
							Connected Load (W)		100								
							Connected Amps		66								
							Main Type and Amp Rating		70 Amps MCCB Type-B								
Demand Load Calculation																	
Load Classification		Connected Load	Demand Factor	Estimated Demand													
Lighting - Dwelling Unit		1800	125%	2250													
Water Heater - Dwelling Unit		4000	100%	4000													
Receptacle		8500	65%	5525													
Cooling		1000	100%	1000													
Pump		0	125%	0													
Other		0	100%	0													
Demand Load		15300		12775													
Demand Amps				55.54347826													
230/400V THREE PHASE 5WIRE																	

GENERAL NOTES:

- I. 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: ⬡

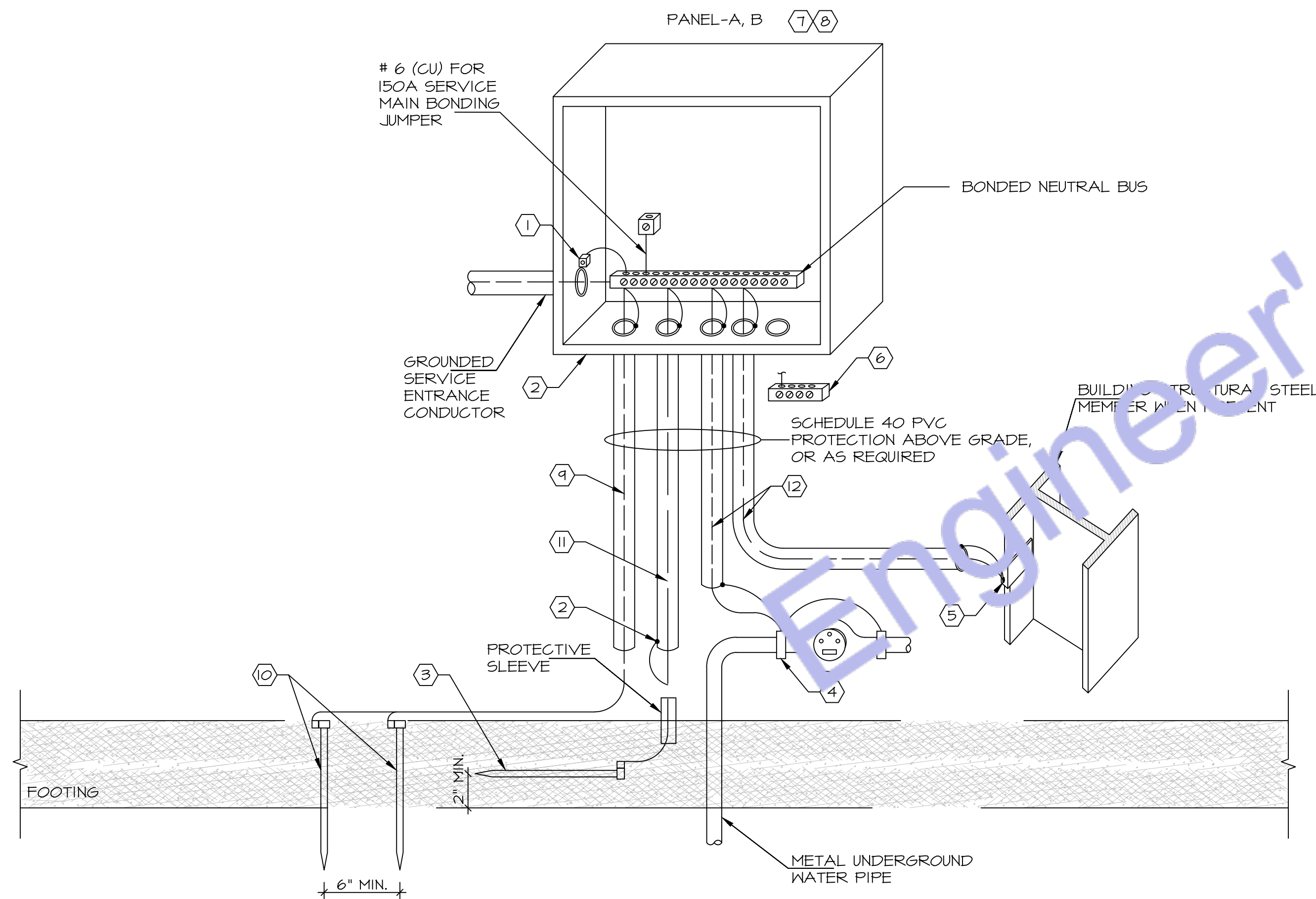
- I. ALL METAL CONDUITS ENCLOSING ANY SERVICE SHALL BE FITTED WITH A "BONDING BUSHING".
2. ALL METAL CONDUITS ENCLOSING ANY GROUNDING ELECTRODE CONDUCTOR SHALL BE FITTED WITH A "BONDING BUSHING" AT EACH END.
3. PROVIDE GROUNDING ELECTRODE PER NEC. ELECTRODE SHALL BE IN THE FORM OF A 20'-0" x 1/2" COPPER 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

- SOLID #4 COPPER WIRE IN PLACE OF THE GROUND ROD. IN REMODEL PROJECTS THAT WILL NOT HAVE NEW FOOTINGS INSTALLED, THIS SUPPLEMENTAL ELECTRODE SHALL BE PER NOTE #4 BELOW OR OTHER ELECTRODE PER NEC 250.52.
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.

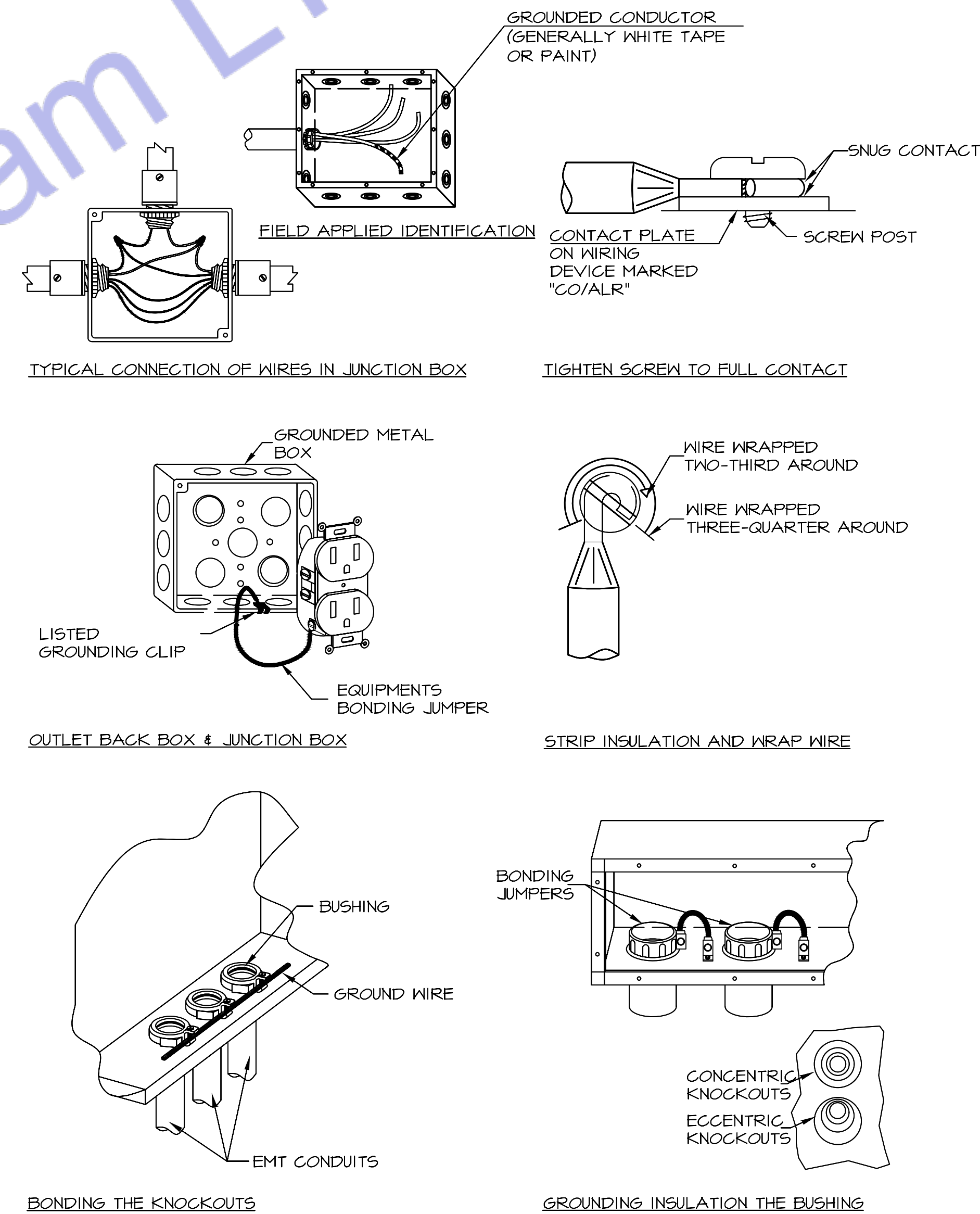
- INTERSYSTEM BONDING TERMINATION SHALL:
- 6.1. BE ACCESSIBLE FOR CONNECTION AND INSPECTION.
- 6.2. CONSIST OF A SET OF TERMINALS (LISTED AS GROUNDING AND BONDING EQUIPMENT) WITH THE CAPACITY OF NOT LESS THAN THREE INTERSYSTEM BONDING CONDUCTORS.
- 6.3. BE SECURELY MOUNTED AND ELECTRICALLY CONNECTED 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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REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT: HEALTH CARE		
TITLE: ELECTRICAL INSTALLATION INSTRUCTION		
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: N/A
DATE: August 28, 2026		
DRAWING NO. E - 1 6		REV.



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REFERENCE:

REV. NO	DESCRIPTION	DATE	BY

PROJECT: HEALTH CARE

TITLE: GENERAL NOTE FOR PLUMBING PLAN

PROJ. NO.

PROJ. ENGR.

SCALE @ 24X36:
N/A

DATE :
August 28, 2026

DRAWING NO.
M - 0

REV.

GENERAL SPECIFICATIONS

1. GENERAL (All specifications on this sheet as applicable)
- A. Work indicated on these drawings is diagrammatic and shall not be scaled. The drawings are intended to convey the scope of works and indicate the general arrangement of engineered systems. The Contractor shall verify all existing site conditions, dimensions, and services and make all necessary adjustments to complete the works in accordance with the Contract Documents.
- B. Provide all labour, materials, plant, tools, equipment, and services required to execute the works in accordance with the Contract Documents. All supplementary or incidental items necessary for a complete, safe, and fully operational installation shall be deemed included, whether or not specifically shown, at no additional cost to the Client.
- C. All equipment under this contract shall be fully installed, tested, commissioned, and left operational to the satisfaction of the Client and Engineer. These drawings are intended to represent finished works, tested and ready for use. Wherever the word "provide" is used, it shall mean supply, install, test, and commission complete.
- D. All materials and equipment shall be new, of first quality, UKCA/CE marked where applicable, and compatible with existing systems. Installation shall be carried out strictly in accordance with manufacturers' recommendations, relevant British Standards, and recognised good engineering practice.
- E. Where existing pipework, ductwork, containment, cabling, or other obstructions are encountered, the Contractor shall remove, reroute, rearrange, or relocate such items as necessary, subject to approval, at no additional cost.
- F. The Contractor shall obtain written approval prior to cutting or forming penetrations through slabs, walls, ceilings, roofs, or shafts for services. All disturbed areas shall be made good using matching materials and finishes. All penetrations through fire-resisting elements shall be sealed with approved fire-stopping systems to maintain fire integrity in accordance with Building Regulations Approved Document B.
- G. The Contractor shall maintain a clean and safe site at all times. Waste and debris shall be removed regularly. Upon completion, all tools, surplus materials, and temporary works shall be removed and the site left clean and ready for occupation.
2. COORDINATION AND PROGRAMMING
- A. The Contractor shall fully coordinate and programme the works of all trades. All existing site conditions shall be verified to avoid conflicts in routing, sequencing, and installation.
- B. The Contractor shall be responsible for full coordination between all subcontractors, suppliers, statutory authorities, utility providers, Building Control, the Architect/Engineer, building management, and the Client.
- C. No work shall commence until accurate site measurements and verification of existing structures, ceilings, services, and retained installations have been completed, where these may affect the installation of new systems or equipment.
- D. Works shall be phased and programmed to minimise disruption to occupied areas. A detailed programme shall be submitted for approval. Temporary partitions, dust control, and protective barriers shall be provided where necessary.
- E. The Contractor shall provide a minimum of fourteen (14) days' written notice prior to any required shutdown of utilities and shall obtain written approval before proceeding.
- F. The Contractor shall be deemed to have examined the premises and understood all conditions under which the works are to be carried out. No allowance shall be made for errors or omissions arising from failure to inspect the site.
3. CODES, PERMITS, AND INSPECTIONS (UK)
- A. All works shall be carried out in accordance with the latest applicable UK legislation, regulations, and standards. The Contractor shall obtain and pay for all required permits and approvals and arrange all inspections by the relevant Authorities Having Jurisdiction.
- B. Final approval and sign-off by Building Control and all relevant authorities shall be obtained at project completion. All completion certificates shall be issued and provided to the Client.
- C. Works shall comply with the current editions of all applicable British Standards, Building Regulations, and statutory requirements enforced at the project location.
- D. Codes and standards referenced represent minimum requirements. Where Contract Documents require a higher standard, the Contract Documents shall take precedence. Any conflicts shall be reported in writing prior to commencement.
- E. The Contractor shall comply with all Health and Safety Executive (HSE) requirements, including the Health and Safety at Work Act 1974 and CDM Regulations 2015.
- F. The Contractor shall comply with all requirements of statutory utility providers and local authorities.
4. WARRANTY
- A. All works shall be free from defects in workmanship and materials for a period of twelve (12) months from the date of Practical Completion. Any defects arising within this period shall be rectified by the Contractor at no additional cost.
5. SHOP DRAWINGS
- A. Shop drawings and product data shall be submitted electronically to the Engineer, Architect, and Client for approval. Submittals shall include manufacturers' technical data and certified performance information for all new equipment.
6. RECORD DRAWINGS / AS-BUILTS
- A. The Contractor shall maintain a complete and up-to-date set of marked-up drawings on site, recording all changes made during construction. Final as-built drawings and associated documentation shall be submitted to the Client upon completion of the works.

PLUMBING GENERAL NOTES & SPECIFICATIONS

- A. All water supply and vent pipework shall be routed as high as practicable and concealed above ceilings unless noted otherwise. All soil and waste pipework shall be routed as high as practicable below floor slab or floor structure unless noted otherwise.
- B. All soil and waste pipework shall be installed at gradients appropriate to pipe size and in accordance with BS EN 12056 and Approved Document H. All gradients and invert levels shall be verified prior to installation to ensure correct falls are maintained. The Contractor shall confirm that pipe routes and connections are feasible before commencing works.
- C. Provide complete and proper soil, waste, vent, hot water, and cold water connections to all fixtures and equipment, whether or not all branches, fittings, or connections are shown on the drawings. Refer to sanitary waste and water riser diagrams for pipe sizes and system configuration.
- D. The potable water system shall be flushed, cleaned, and disinfected in accordance with BS EN 806, Water Supply (Water Fittings) Regulations 1999, and local water authority requirements.
- E. The Plumbing Contractor shall coordinate with relevant subcontractors regarding the quantity and locations of access panels required for valves and fittings within walls and ceilings. Access panels shall be provided by the appropriate trade.
- F. Where horizontal water pipework conflicts with vent pipework within wall cavities, the Contractor shall provide additional water pipe drops or alternative routing to maintain compliance and accessibility.
- G. All pipe penetrations below sinks shall be sealed. All pipe penetrations through floor slabs or fire-resisting elements shall be sealed with approved fire-stopping materials in accordance with Approved Document B.
- H. Provide individual isolation valves to all plumbing fixtures and appliances. Valves shall be full-bore WRAS-approved ball valves suitable for potable water systems, with threaded, compression, or soldered connections as appropriate.
- I. The Contractor shall verify on site the exact location, depth, and direction of flow of all existing drainage and sewer pipework within the building and below ground prior to commencement of works.
- J. All pipework shall be adequately supported from existing or new structure using suitable proprietary pipe hangers and supports. Design, selection, spacing, and installation shall comply with relevant British Standards, manufacturers' recommendations, and good engineering practice.
- K. Slab Penetrations: Prior to any cutting or coring of slabs, suitable detection methods (such as ground-penetrating radar or equivalent) shall be used to identify reinforcement, post-tensioning cables, services, or conduits. Written approval from the Structural Engineer shall be obtained before proceeding.
- L. The Contractor shall make good all existing finishes, surfaces, and elements damaged during construction to match existing, unless otherwise noted.
- M. Provide and install dielectric or insulating unions where connections are made between dissimilar metals, as required to prevent galvanic corrosion.
- N. No new pipework shall be installed above new or existing electrical switchboards, distribution boards, panelboards, or motor control centres.
- O. Provide escutcheon plates at all locations where pipework passes through walls, floors, or ceilings. Plates shall fully cover penetration openings or sleeves. Finishes shall be chrome or nickel plated in exposed areas and primed/painted finish in concealed areas.

PLUMBING PIPING & INSULATION

DOMESTIC WATER PIPING

1. Above ground domestic water pipework shall be copper tube manufactured in accordance with BS EN 1057, hard-drawn (R250) temper, complete with wrought copper fittings. Joints shall be made using lead-free solder and non-corrosive flux suitable for potable water systems, installed in accordance with Water Supply (Water Fittings) Regulations 1999.
2. Provide full-bore isolation ball valves of dezincification-resistant brass or bronze construction, WRAS-approved for potable water use, with threaded, compression, or soldered ends as appropriate. Valves shall be suitable for the system operating pressure and temperature.

WASTE AND VENT PIPING

1. Soil, waste, and vent pipework shall be installed in accordance with BS EN 12056 and Approved Document H, using any of the following approved materials:
- Cast iron soil pipe systems to BS EN 877
- Copper waste and vent pipework to BS EN 1057
- Galvanised steel pipework where permitted
- All fittings shall be compatible with the selected pipe material and system type.
2. Plastic pipework (PVC-U, HDPE, or other approved materials) may be used for cold water, hot water, soil, waste, and vent systems where permitted by Building Regulations and the Local Authority. Vent terminals shall be installed in accordance with Approved Document H. Where roofs are accessible, soil and vent pipes shall terminate at a safe height above roof level in accordance with regulations.

INSULATION

1. Provide thermal insulation to all pipework and equipment in accordance with BS 5422 and Building Regulations Approved Document L. Insulation materials shall achieve appropriate fire performance classifications in accordance with BS EN 13501-1. Installation shall comply strictly with the insulation manufacturer's instructions. All cold water pipework shall be provided with a continuous vapour barrier to prevent condensation. External pipework insulation shall be protected with a suitable weather-resistant jacket.
- 1.1. Domestic cold water pipework: minimum 13 mm thickness
- 1.2. Domestic hot water pipework: minimum 25 mm thickness
- 1.3. Domestic circulating hot water pipework: minimum 25 mm thickness

PLUMBING CODE NOTES

1. Condensate Drainage
Condensate drains shall not be connected to the sanitary sewer system and shall not discharge into mop sinks or similar plumbing fixtures. Condensate shall be disposed of in accordance with applicable plumbing codes and local AHJ requirements.
2. Water Hammer Arrestors
Provide water hammer arrestors at all quick-closing valves and fixtures, including but not limited to:
Water closets
Dishwashers
Clothes washers
Other solenoid- or fast-acting valve equipment, as applicable
Water hammer arrestors shall conform to ASSE 1010 and be installed in accordance with manufacturer's recommendations.
3. Trap Seal Protection
Provide trap primers or approved barrier-type trap seal protection devices for all floor drains subject to evaporation or infrequent use.
Trap seal protection devices shall comply with ASSE 1072 and shall be installed per the manufacturer's installation instructions.

NATURAL GAS PIPING

1. GENERAL
Gas installation shall conform to the requirements of the Gas Safety (Installation and Use) Regulations (GSIUR), BS 6891, IGE/MP/2, IGE/MP/1, and all applicable UK standards and Local Authority / Gas Transporter requirements.
2. PIPING
A. Steel Pipe – 50 mm (2") and Smaller
Carbon steel pipework shall comply with BS EN 10255 (Medium Grade), black steel, threaded ends. Threaded joints shall be in accordance with BS Z1. Malleable iron threaded fittings shall comply with BS EN 10242, Class A or B.
- B. Steel Pipe – 65 mm (2½") and Larger
Carbon steel pipework shall comply with BS EN 10255 (Medium or Heavy Grade), welded joints. Steel butt-weld fittings shall comply with BS EN 10253.
3. VALVE LOCATIONS
Gas isolation valves shall not be installed within ceiling voids or air plenums and shall remain readily accessible for operation and maintenance in accordance with BS 6891.
4. CONCEALED PIPING
A. Concealed Locations
Gas pipework installed in concealed locations shall use approved permanent jointing methods only. The following fittings and joint types are not permitted in concealed locations:
Unions
Compression fittings
Gasketed joints
Mechanical couplings
Bushings
Swing joints
Running threads
All concealed joints shall be welded, brazed, or threaded as permitted by UK standards.
- B. Piping in Partitions
Gas pipework shall not be embedded in solid walls, concrete, or masonry. Pipework routed within partitions shall be sleeved or otherwise protected against mechanical damage. Pipework passing through walls or partitions shall be sleeved and sealed in accordance with BS 6891.
5. UNIONS
Where permitted, unions shall comply with BS EN 10242, malleable iron, ground-joint type, suitable for gas service, and installed only in accessible locations.
6. DIELECTRIC JOINTS
Where dissimilar metals are connected, provide approved insulating joints to prevent galvanic corrosion in accordance with IGE/MP standards and manufacturer recommendations.
7. CORROSION PROTECTION
Where gas pipework is exposed to corrosive environments or installed externally, pipe and fittings shall be protected using:
Factory-applied protective coating or
Site-applied corrosion protection system suitable for gas installations
Protection systems shall comply with BS EN ISO 12944 and manufacturer recommendations.
8. PLUG VALVES (65 mm and Larger)
Plug valves shall comply with BS EN 331 or BS EN 13774, suitable for gas service, with a minimum pressure rating appropriate to the system design.
Gas valves shall not be installed above ceilings.
9. GAS COCKS (50 mm and Smaller)
Gas cocks shall be:
CE-marked and approved for gas service
Bronze or brass body
Suitable for operating pressure of the system
Provided with lever or square head handle
Threaded connections complying with BS 21
10. BALL VALVES
Ball valves shall be:
Full-body type
CE-marked and approved for gas service
Brass or steel body with appropriate seals
Sized for the system design pressure
Installed in accessible locations only
11. GAS PRESSURE REGULATORS
Gas pressure regulators shall be:
CE-marked and approved for gas service
Sized for the inlet pressure, outlet pressure, and gas flow rate indicated
Installed in well-ventilated, accessible locations
Regulators shall be vented to atmosphere where required by:
The Gas Transporter
The regulator manufacturer
Vent piping shall:
Be of the same material as the gas pipework
Discharge externally to a safe, non-hazardous location
Terminate with a downward-facing outlet fitted with corrosion-resistant insect screening
12. TESTING AND COMMISSIONING
Gas pipework shall be pressure tested, purged, and commissioned in accordance with:
BS 6891
IGE/MP/1 or IGE/MP/2
Gas Transporter requirements
Local Authority and Building Control regulations
Test certificates shall be submitted prior to system energisation.

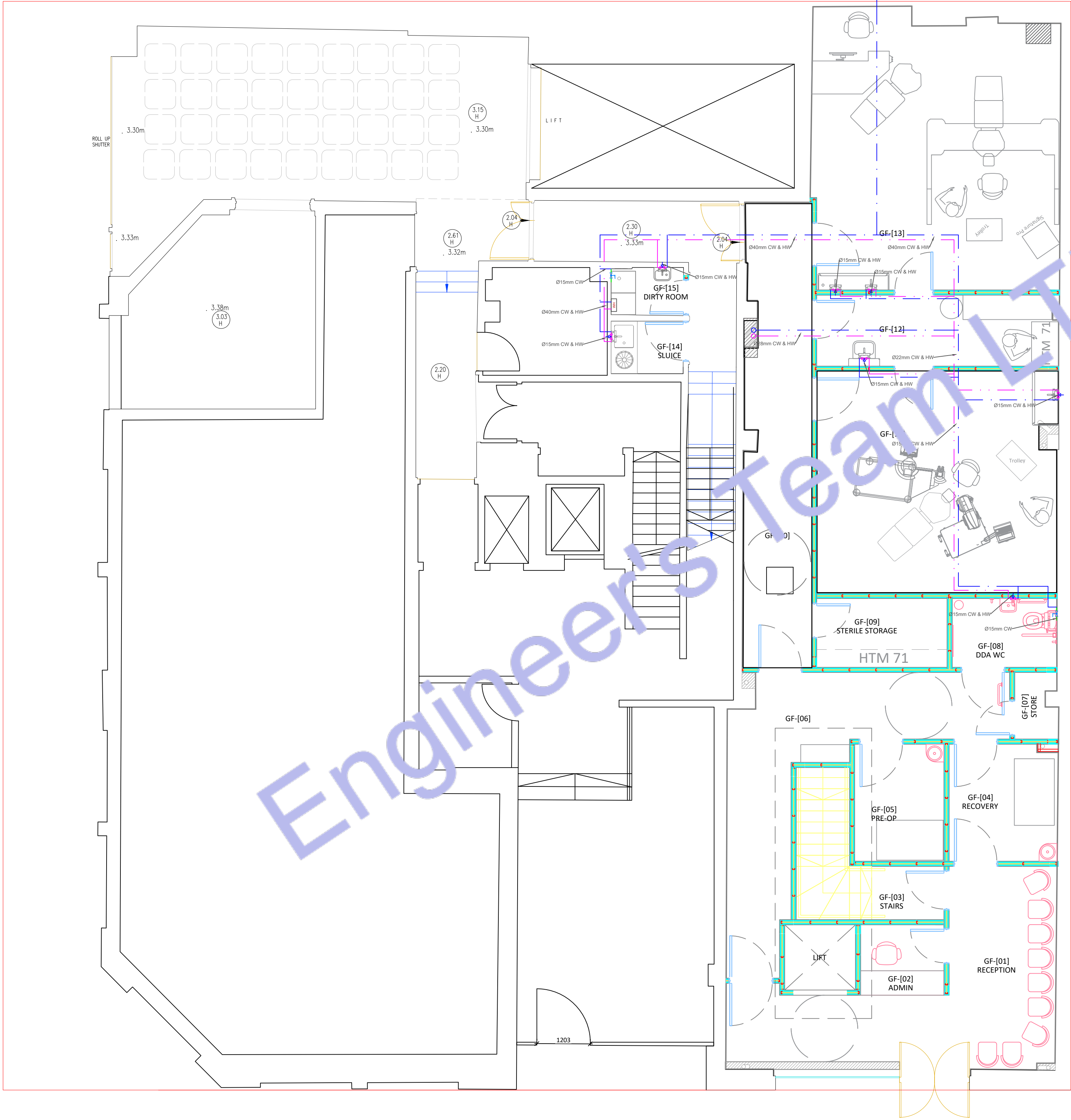
PLUMBING SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
		EXISTING PIPING OR EQUIPMENT TO REMAIN
		EXISTING PIPING OR EQUIPMENT TO BE REMOVED
	CW	DOMESTIC COLD WATER
	HW	DOMESTIC HOT WATER
	HWC	DOMESTIC HOT WATER RECIRCULATION
	WP	SANITARY SOIL AND WASTE
	VP	SANITARY VENT
	D	DRAIN LINE
	PD	PUMPED DISCHARGE
	G	NATURAL GAS
	ST	STORM WATER
		PIPE TURNING UP
		PIPE TURNING DOWN
		VALVE IN VERTICAL
		PIPE BRANCH BOTTOM TAKEOFF
		PIPE BRANCH TOP TAKEOFF
		CAPPED PIPE
		BALL VALVE
		CHECK VALVE
		UNION
		GATE VALVE
	PRV	PRESSURE REDUCING VALVE
		GAS COCK
		GAS METER
		COMBINATION BALANCING AND SHUT-OFF VALVE
	FDC	FIRE DEPARTMENT CONNECTION
		PIPE DIRECTION OF FLOW
	FD	FLOOR DRAIN
		POINT OF REMOVAL
		POINT OF CONNECTION TO EXISTING
		KEYED NOTE, DEMOLITION
		KEYED NOTE, NEW WORK

ABBREVIATIONS

(E)	EXISTING TO REMAIN	KW	KILOWATTS
(R)	EXISTING TO BE REMOVED AND RELOCATED	L	LAVATORY
(RE)	RELOCATED EQUIPMENT	LBS	POUNDS
(X)	DEMOLISHED EQUIPMENT	MAX	MAXIMUM
ABV	ABOVE	MECH	MECHANICAL
AFF	ABOVE FINISHED FLOOR	MBH	THOUSANDS OF BTU'S PER HOUR
BFP	BACKFLOW PREVENTER	MIN	MINIMUM
BTU	BRITISH THERMAL UNITS	MS	MOP SINK
CISPI	CAST IRON SOIL PIPE INSTITUTE	NSF	NATIONAL SANITARY FOUNDATION
CLG	CLEANOUT	OD	OVERFLOW DRAIN
CO	CLEANOUT	OSD	OPEN SITE DRAIN
CONT	CONTINUATION	PH	PHASE
CM	COFFEE MAKER	PSI	POUNDS PER SQUARE INCH
DF	DRINKING FOUNTAIN	RD	ROOF DRAIN
DFU	DRAINAGE FIXTURE UNITS	REF	REFRIGERATOR
DN	DOWN	RL	RAIN LEADER
DW	DISHWASHER	SH	SHOWER
DWG	DRAWING	SK	SINK
EA	EACH	SQ FT	SQUARE FOOT, FEET
ELEC	ELECTRIC, ELECTRICAL	SS	SERVICE SINK
ELEV	ELEVATION	TPV	TRAP PRIMER VALVE
EW	ELECTRIC WATER COOLER	TS	TAMPER SWITCH
°F	DEGREES FAHRENHEIT	TYP	TYPICAL
FCD	FLOOR CLEANOUT	U	URINAL
FD	FLOOR DRAIN	V	VOLT, VOLTS
GAL	GALLON, GALLONS	VS	VENT STACK
GD	GARBAGE DISPOSAL	VTR	VENT THROUGH ROOF
GPH	GALLONS PER HOUR	WI	WITH
GPM	GALLONS PER MINUTE	WC	WATER CLOSET
HB	HOSE BIB	WH	WATER HEATER
HD	HUB DRAIN	WHA	WATER HAMMER ARRESTOR
IM	ICE MAKER	WS	WASTE STACK
INV	INVERT ELEVATION		

WATER HEATER SCHEDULE									
Equipment	Brand	Model	Qty Served	Design Flow (L/min)	Temperature Rise (°C)	Heating Capacity (kW)	Voltage	Phase	Full Load Current (A)
Tankless Water Heater	Stiebel Eltron	DHB-E 27 SLI	9 Basins	18	30	40	400 V	3-Phase	56
							Breaker Size	Cable Size	
							63 A 1P MCB	16 mm² Cu XLPE/90kA	



PLUMBING LEGEND	
	BALL VALVE (BV)
	GATE VALVE (GV)
	MIXING VALVE (MV)
	FLOOR DRAIN (FD)
	FLOOR DRAIN (FD)
	HUB DRAIN (HD)
	FLOOR SINK (FS)
	PIPE TURNING UP
	PIPE TURNING DOWN
	EXISTING PIPE
	NEW PIPE
	INSTANT WATER HEATER
	GAS METER
	WATER METER
LINES TYPE LEGEND	
	COLD WATER LINE (CWL)
	HOT WATER LINE (HWL)
	RETURN LINE (RL)
	GAS LINE (GL)

Demand Cat.	Qty	Flow per Fixture (L/min)	Total Flow (L/min)
Wash Basin	7	4	28
WC Basin	2	4	8
Total Connected L	9		36

Applying 50% divergency
Total Flow = 54 L/min
L = 118-304 x 1.86 (90)
KW = 37.7

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



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REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT: HEALTH CARE

TITLE: GROUND FLOOR
WATER SUPPLY PLAN

PROJ. NO. PROJ. ENGR. SCALE @ 24X36:
1/128" = 1' 0"

DATE: August 28, 2026

DRAWING NO. REV.
M - 1



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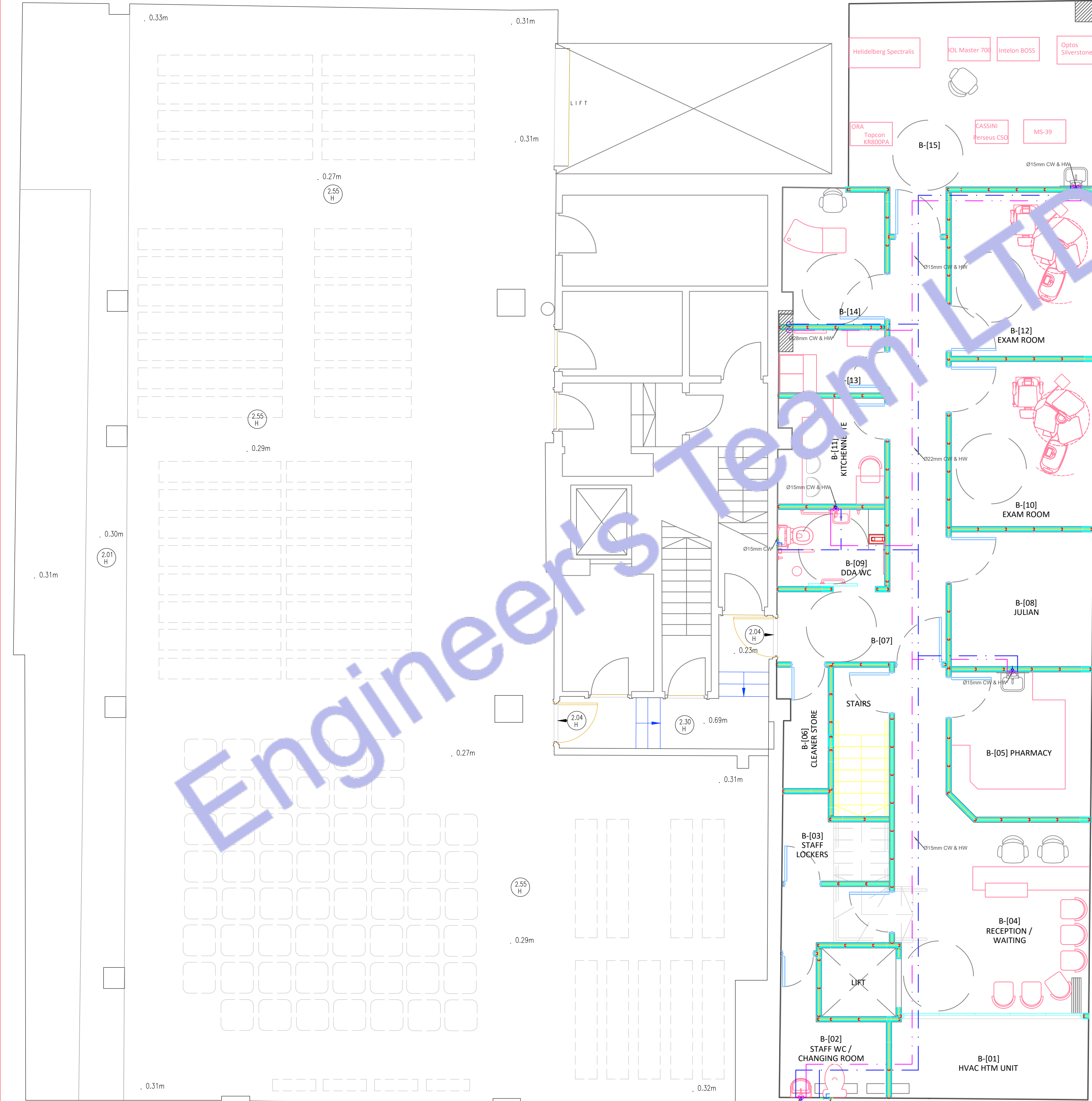
PROJECT: HEALTH CARE

TITLE: BASEMENT FLOOR
WATER SUPPLY PLAN

PROJ. NO. PROJ. ENGR. SCALE @ 24X36:
1/128" = 1' 0"

DATE : August 28, 2026

DRAWING NO. REV.
M - 2



PLUMBING LEGEND

- BALL VALVE (BV)
- CARE VALVE (CV)
- MIXING VALVE (MV)
- FLOOR CLEAN OUT (FCO)
- FLOOR DRAIN (FD)
- HUB DRAIN (HD)
- FLOOR SINK (FS)
- PIPE TURNING UP
- PIPE TURNING DOWN
- EXISTING PIPE
- NEW PIPE
- INSTANT WATER HEATER
- GAS METER
- WATER METER

LINE TYPE LEGEND

- COLD WATER LINE (CWL)
- HOT WATER LINE (HWL)
- SEWER LINE (SL)
- GAS LINE (GL)

2 BASEMENT FLOOR WATER SUPPLY PLAN
SCALE: 1/128" = 1'-0"



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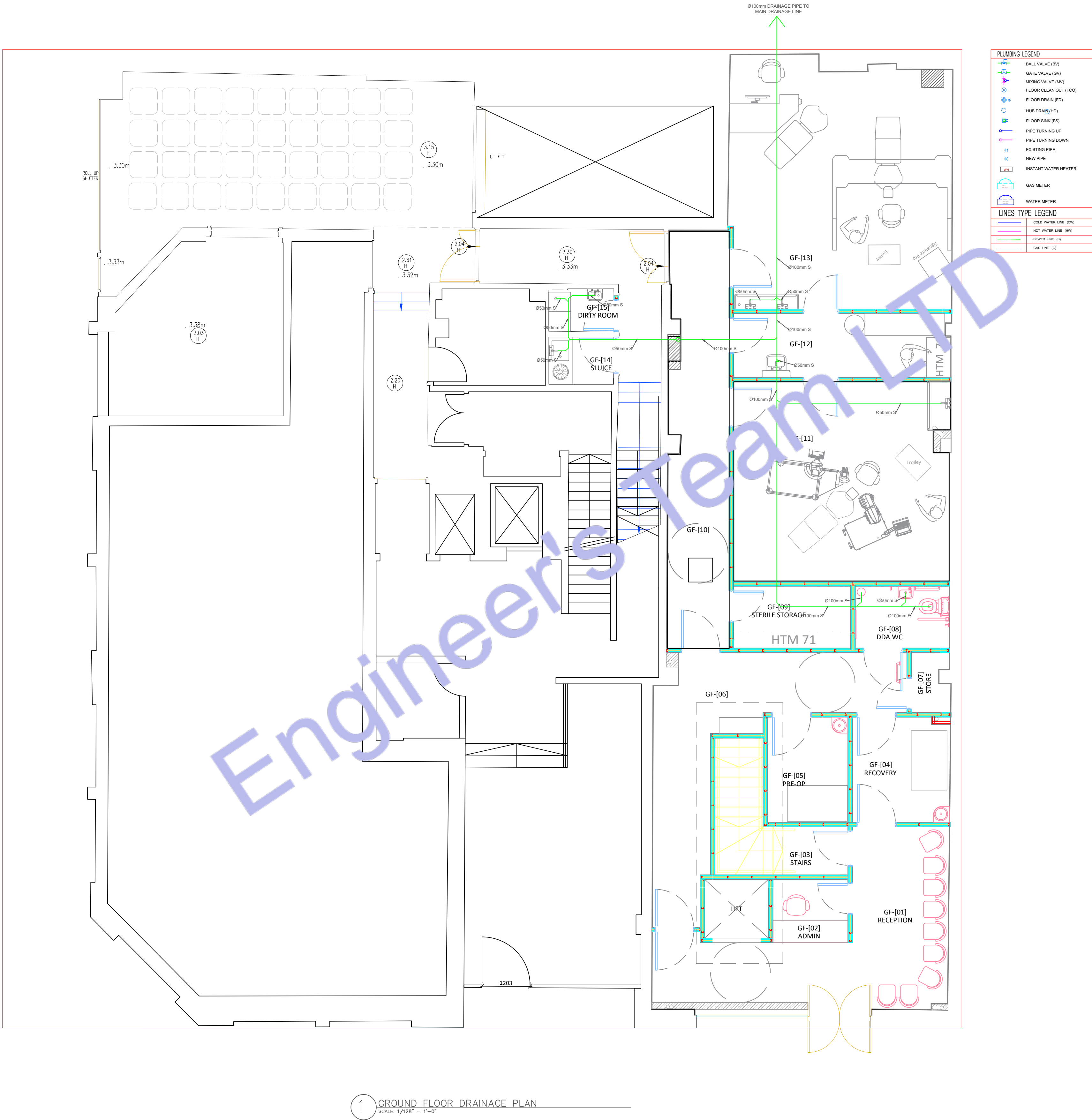
PROJECT: HEALTH CARE

TITLE: GROUND FLOOR
DRAINAGE PLAN

PROJ. NO. PROJ. ENGR. SCALE @ 24X36:
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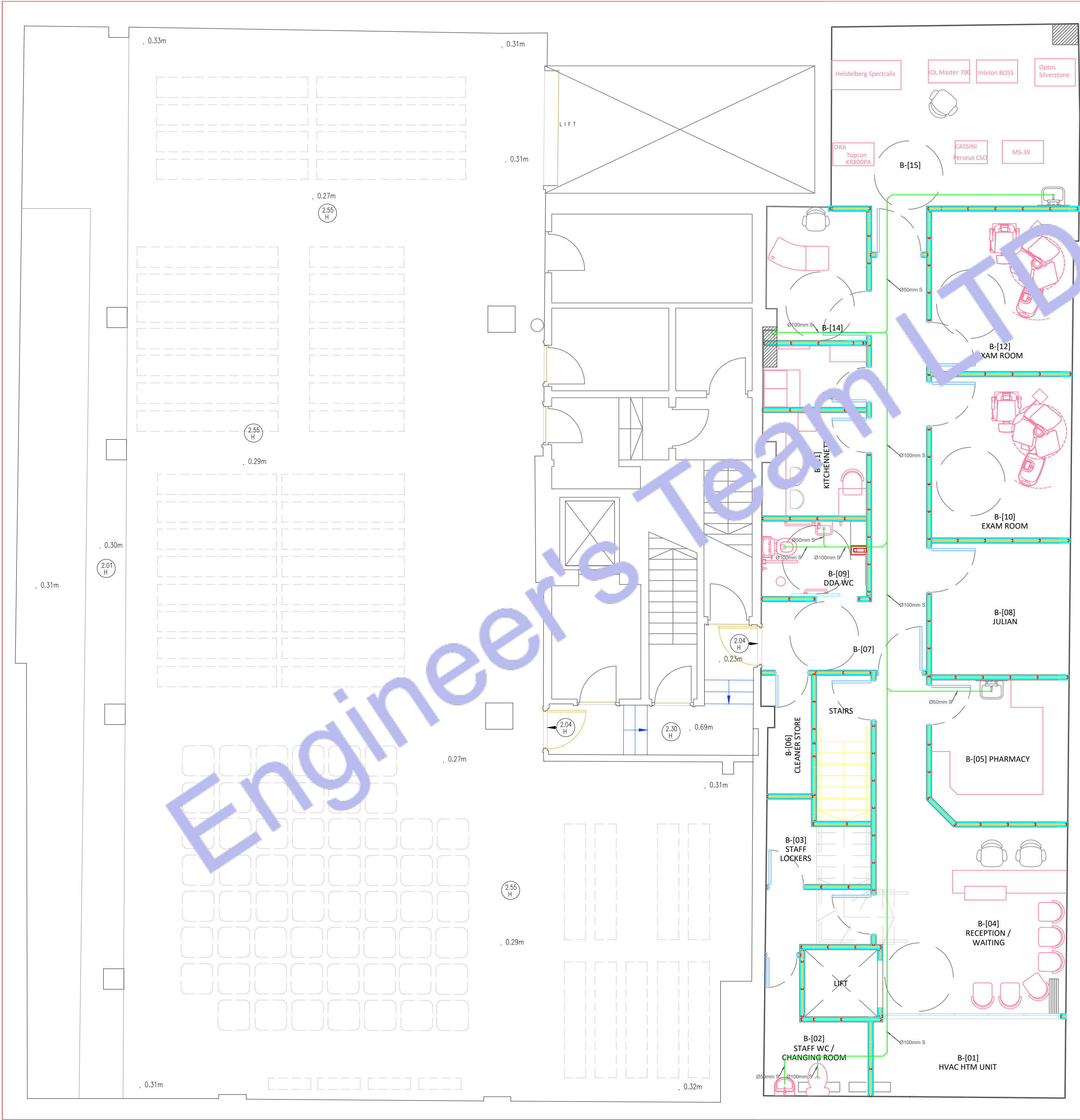
PROJECT: HEALTH CARE

TITLE: BASEMENT FLOOR
DRAINAGE PLAN

PROJ. NO. PROJ. ENGR. SCALE @ 24X36:
1/128" = 1' 0"

DATE : August 28, 2026

DRAWING NO. REV.
M - 4



PLUMBING LEGEND	
	BALL VALVE (BV)
	GATE VALVE (GV)
	MIXING VALVE (MV)
	FLOOR CLEAN OUT (FCO)
	FLOOR DRAIN (FD)
	HUB (HUB)
	FLOOR SINK (FS)
	PIPE TURNING UP
	PIPE TURNING DOWN
	EXISTING PIPE
	NEW PIPE
	INSTANT WATER HEATER
	WATER METER
LINES TYPE LEGEND	
	COLD WATER LINE (CW)
	HOT WATER LINE (HW)
	SEWER LINE (SL)
	GAS LINE (GL)

2 BASEMENT FLOOR DRAINAGE PLAN
SCALE 1/128" = 1'-0"



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REFERENCE

[illegible]

PROJECT:

HEALTH CARE

TITLE: PLUMBING INSTALLATION INSTRUCTION

PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36 N/A
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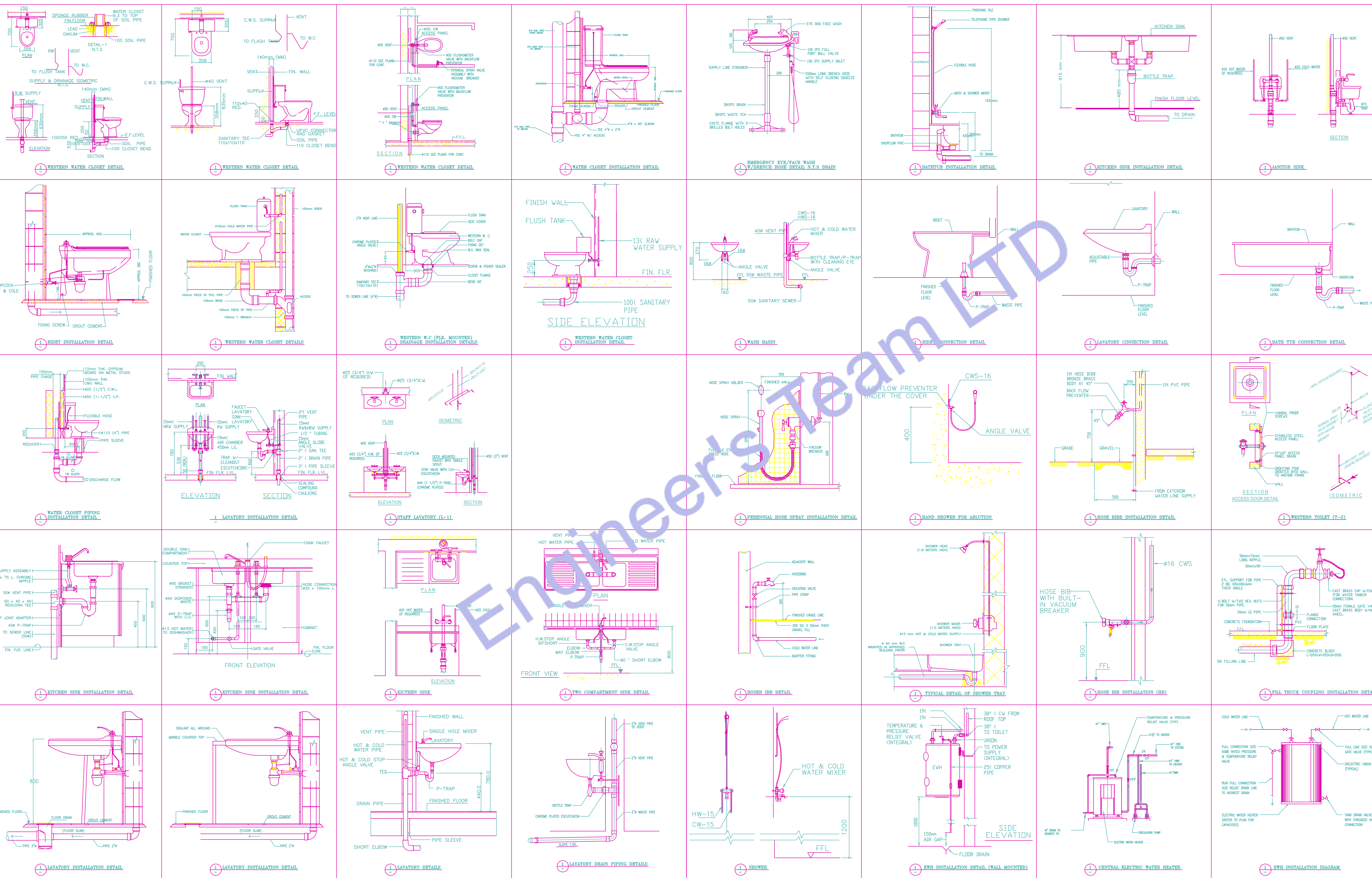
DATE :

August 28, 2026

DRAFTING NO

REV

M - 5



GENERAL SPECIFICATIONS
1. GENERAL (ALL SPECIFICATIONS ON THIS SHEET AS APPLICABLE)
A. Work indicated on these drawings is diagrammatic and shall not be scaled. The drawings are intended to convey the scope of work and general arrangement of services. The Contractor shall verify all existing site conditions prior to installation and make all necessary adjustments to complete the works in accordance with the Contract Documents and UK statutory requirements.
B. Provide all labour, materials, plant, tools, equipment, and services necessary for the complete execution of the works in accordance with the Contract Documents. All incidental or supplementary items required for a complete, safe, and operational installation shall be deemed included, whether or not specifically shown or described, at no additional cost to the Employer.
C. All systems and equipment shall be fully installed, tested, commissioned, and left in a complete operational condition to the satisfaction of the Employer. The term "Provide" shall be interpreted as supply, install, test, and commission.
D. All materials and equipment shall be new, of good quality, fit for purpose, and compatible with existing systems where interfaces occur. Installation shall be in accordance with manufacturers' instructions, relevant British Standards, CIBSE guidance, and recognised good engineering practice.
E. Where existing services or building elements obstruct new works, the Contractor shall coordinate and rearrange such items as required, subject to approval by the Contract Administrator, and without additional cost.
F. Written approval shall be obtained prior to cutting or forming penetrations through slabs, walls, ceilings, roofs, or fire compartments. All disturbed finishes shall be reinstated to match existing. All fire-resisting elements shall be reinstated to maintain required fire resistance in accordance with Approved Document B.
G. Maintain the site in a clean and safe condition at all times in accordance with CDM Regulations 2015. Remove waste daily. Upon completion, clear the site of all tools, materials, and debris and leave areas clean and ready for occupation.
2. COORDINATION AND PROGRAMMING
A. The Contractor shall fully coordinate all trades and verify existing conditions to prevent clashes in routing, access, or programme.
B. The Contractor is responsible for coordination between subcontractors, suppliers, statutory authorities, utility providers, the Client, and the Design Team.
C. No installation shall commence until all site dimensions, structural constraints, existing services, and retained fixtures have been verified.
D. Works shall be programmed and phased to minimise disruption to occupied areas. A detailed programme shall be submitted for approval. Temporary partitions or protection shall be provided where required.
E. Provide a minimum of fourteen (14) days' written notice prior to any planned shutdown of utilities. Written approval shall be obtained before shutdown.
F. The Contractor shall be deemed to have inspected the site and fully understood all conditions affecting the works. No claims shall be entertained for failure to do so.
3. STATUTORY COMPLIANCE, PERMITS AND INSPECTIONS (UK)
A. All works shall comply with the latest editions of applicable UK legislation and standards, including but not limited to: Building Regulations (England/Wales)
Approved Documents A, B, F, G, L, M
BS and EN Standards
CIBSE Guides
Health and Safety at Work Act 1974
CDM Regulations 2015
B. The Contractor shall obtain all required approvals, inspections, and completion certificates from Building Control and relevant Authorities Having Jurisdiction.
C. All works shall comply with statutory utility provider requirements and local authority regulations.
D. Where Contract Documents exceed statutory minimum requirements, the Contract Documents shall take precedence. Any conflict shall be reported in writing prior to installation.
E. The Contractor shall comply with all UK health, safety, and environmental legislation, including COSHH and waste management regulations.
F. All works shall comply with the requirements of relevant utility companies and network operators.
4. WARRANTY
A. All workmanship and materials shall be warranted for a minimum period of twelve (12) months from the date of Practical Completion. Defects arising during this period shall be remedied at no cost to the Employer.
5. SHOP DRAWINGS
A. Submit electronic shop drawings, manufacturers' data sheets, and performance information for all equipment for review and approval prior to installation.
6. RECORD DRAWINGS / AS-BUILT INFORMATION
A. Maintain a complete set of marked-up drawings on site recording all changes. Upon completion, provide electronic and hard-copy as-built drawings and manuals in accordance with CIBSE TM31 / Soft Landings principles, if applicable.

DUCTWORK & INSULATION
SHEET METAL DUCTWORK
A. All ductwork shall be galvanised steel fabricated and installed in accordance with DW/144 and BS EN 1507 / BS EN 12237.
B. All ductwork routes shall be site-verified prior to fabrication.
C. Duct leakage classes shall comply with DW/143. Testing shall be carried out where required.
D. Turning vanes shall be installed in elbows as recommended by DW/144.
E. Flexible duct connections shall be limited in length and installed in accordance with BS EN 13180.
F. Exposed ductwork shall be single-skin galvanised steel with approved seams.
DUCT INSULATION & ACOUSTIC LINING
Thermal Insulation Insulation thickness shall comply with Approved Document L and CIBSE Guide A.
Insulation Materials Insulation shall achieve appropriate fire performance in accordance with BS EN 13501-1.
Acoustic Lining Acoustic lining shall comply with BS EN ISO 11654 and be mould-resistant.

PIPING & INSULATION
REFRIGERANT & CONDENSATE PIPEWORK
1. Refrigerant pipework shall comply with BS EN 378 and manufacturer requirements.
1. Pipe identification shall comply with BS 1710.
3. Pipe routing shall not obstruct equipment servicing.
4. Condensate pipework shall be PVC-U or equivalent and installed to falls per Approved Document H.
5. Traps shall be provided where required.
6. Dissimilar metals shall be isolated to prevent corrosion.
PIPE INSULATION
1. Pipe insulation shall comply with Approved Document L.
2. External insulation shall be weather-protected.
3. Fire stopping shall comply with Approved Document B and BS 476 / BS EN 1366.

MECHANICAL CODE NOTES
1. No ductwork or pipework shall be installed above electrical switchgear, distribution boards, or control panels in accordance with BS 7671 and good engineering practice.
2. Materials within air plenums shall be non-combustible or achieve Class 0 or Class 1 fire classification in accordance with Approved Document B and BS EN 13501-1.
3. Verify roof warranty status prior to works. All roof penetrations shall be carried out by approved contractors.
4. Ductwork and horizontal pipework shall be installed as high as practicable and coordinated to avoid clashes.
5. Provide adequate access for maintenance, filter replacement, valves, and electrical isolation in accordance with CIBSE Guide M.
6. Structural approval shall be obtained for equipment loads exceeding manufacturer or structural limits.
7. Motorised dampers shall be provided on all outdoor air and exhaust air ducts where required by Approved Document F.
8. Provide balancing dampers on all main and branch ducts.
9. Fire dampers shall be installed where ductwork penetrates fire compartments in accordance with BS 9999 and BS EN 1366.
10. Provide access panels for fire, smoke, and control dampers.
11. Access panels shall be provided for all concealed valves and dampers.
12. Provide remote volume control where dampers are inaccessible.
13. External vents shall be corrosion-resistant and suitable for UK environmental conditions.

CONTROLS
1. Controls installation and commissioning shall be undertaken by competent specialists.
2. Thermostats shall be insulated from cold bridging on external walls.
3. Thermostats shall be installed at appropriate heights and coordinated with the Design Team.
4. Provide all required interfaces for full system control.
5. Demonstrate and commission all systems prior to handover in accordance with CIBSE Commissioning Codes.

TESTING & BALANCING
1. Scope Testing and balancing shall be carried out by competent commissioning specialists in accordance with CIBSE Commissioning Codes A, B, and M.
2. Pre-conditions All systems shall be complete, clean, and operational prior to commissioning.
3. Documentation Provide commissioning reports demonstrating compliance with design performance.
4. Recorded Data Record airflow rates, temperatures, capacities, and electrical data.
5. Functional Testing Demonstrate heating and cooling operation and record performance results.

ABBREVIATIONS			
(E)	EXISTING TO REMAIN	IN WG	INCHES OF WATER GAUGE
(R)	EXISTING TO BE REMOVED AND RELOCATED	KW	KILOWATTS
(RE)	RELOCATED EQUIPMENT	LAT	LEAVING AIR TEMPERATURE
ACU	AIR HANDLING UNIT	LBS	POUNDS
AFF	ABOVE FINISH FLOOR	LRA	LOCKED ROTOR AMPS
AHL	AIR HANDLING UNIT	LWT	LEAVING WATER TEMPERATURE
BA	BUILDING AUTOMATION SYSTEM	MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
BTU	BRITISH THERMAL UNITS PER HOUR	MCA	MINIMUM CIRCUIT AMPACITY
CFM	CUBIC FEET PER MINUTE	MIN	MINIMUM
CELG	CEILING	MOCP	MAX OVER-CURRENT PROTECTION
DE	DRY BULB TEMPERATURE	OA	OUTSIDE AIR
DP	DRAIN	PD	PRESSURE DROP
ENT	ENTERING AIR TEMPERATURE	PH	PHASE
EF	EXHAUST FAN	PSI	POUNDS PER SQUARE INCH
EFF	EFFICIENCY	RA	RETURN AIR
ESP	EXTERNAL STATIC PRESSURE	RH	RELATIVE HUMIDITY
EWB	ENTERING WET BULB TEMPERATURE	RLA	RUNNING LOAD AMPS
EWT	ENTERING WATER TEMPERATURE	RPM	REVOLUTIONS PER MINUTE
°F	DEGREES FAHRENHEIT	SA	SUPPLY AIR
FLA	FULL LOAD AMPS	SL	SOUND LINING
FPB	FAN POWERED BOX	TYP	TYPICAL
FT	FOOT, FEET	TF	TRANSFER FAN
GPM	GALLONS PER MINUTE	V	VOLT, VOLTS
HP	HORSEPOWER	VAV	VARIABLE AIR VOLUME
HZ	HERTZ (CYCLES PER SECOND)	W	WITH
IN	INCH, INCHES	WB	WET BULB TEMPERATURE
		WG	WATER GAUGE

HVAC SYMBOLS	
SYMBOL	DESCRIPTION
	EXISTING DUCTWORK, EQUIPMENT OR PIPING TO REMAIN
	EXISTING DUCTWORK, EQUIPMENT OR PIPING TO BE REMOVED OR RELOCATED
	NEW OR RELOCATED DUCTWORK, EQUIPMENT OR PIPING
	DUCTWORK WITH SOUNDLINING
	SUPPLY DUCT TURNING UP
	RETURN/EXHAUST DUCT TURNING UP
	SUPPLY DUCT TURNING DOWN
	RETURN/EXHAUST DUCT TURNING DOWN
	TRANSITION IN DUCT, SQUARE TO SQUARE
	TRANSITION IN DUCT, SQUARE TO ROUND
	SQUARE THROAT DUCT ELBOW WITHOUT TURNING VANES
	SQUARE THROAT DUCT ELBOW WITH TURNING VANES
	RADIUS ELBOW
	45 DEGREE TAP
	SPIN-IN RUNOUT FITTING WITH BALANCING DAMPER AND FLEXIBLE DUCT
	CONICAL TAP
	FLEXIBLE DUCT
	FLEXIBLE DUCT CONNECTION
	RECTANGULAR SUPPLY AIR DIFFUSER
	RETURN AIR GRILLE
	HUMIDISTAT, THERMOSTAT, CO2 SENSOR
	EXHAUST FAN
	SIDE WALL/DUCT REGISTER
	CFM DESIGNATION SYMBOL & QUANTITY
	KEYED NOTE, DEMOLITION
	KEYED NOTE, NEW WORK
	POINT OF REMOVAL
	POINT OF CONNECTION TO EXISTING
	DIFFUSER OR GRILLE DESIGNATION SYMBOL
	ACCESS DOOR, SIZE ON FLOOR PLANS
	RECTANGULAR SUPPLY AIR DIFFUSER
	VOLUME DAMPER
	FD: FIRE DAMPER SD: SMOKE DAMPER MD: MOTORIZED DAMPER FSD: COMBINATION FIRE/SMOKE DAMPER BDD: BACKDRAFT DAMPER
	VAV TAG: TYPE, BOX NUMBER AIRFLOW AND KW
	VAV BOX TYPE V-SHUT-OFF TYPE VAV BOX S-SERIES FAN POWERED BOX P-PARALLEL FAN POWERED BOX



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REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT: HEALTH CARE

TITLE: **GENERAL NOTE FOR HVAC PLAN**

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

DRAWING NO. M - 0 0	REV.
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REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

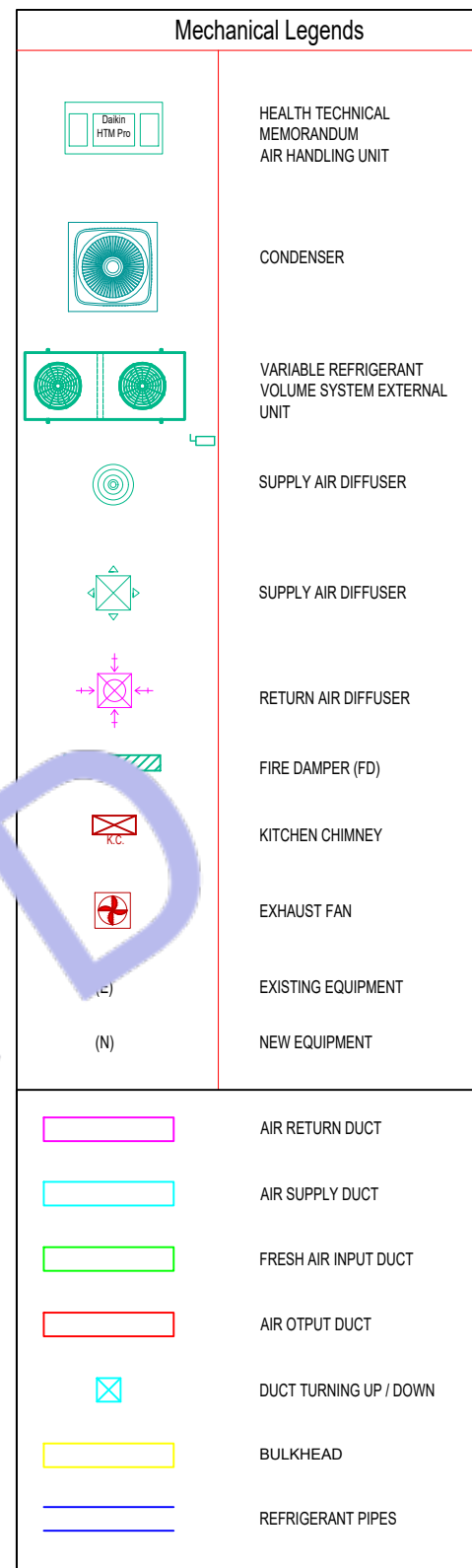
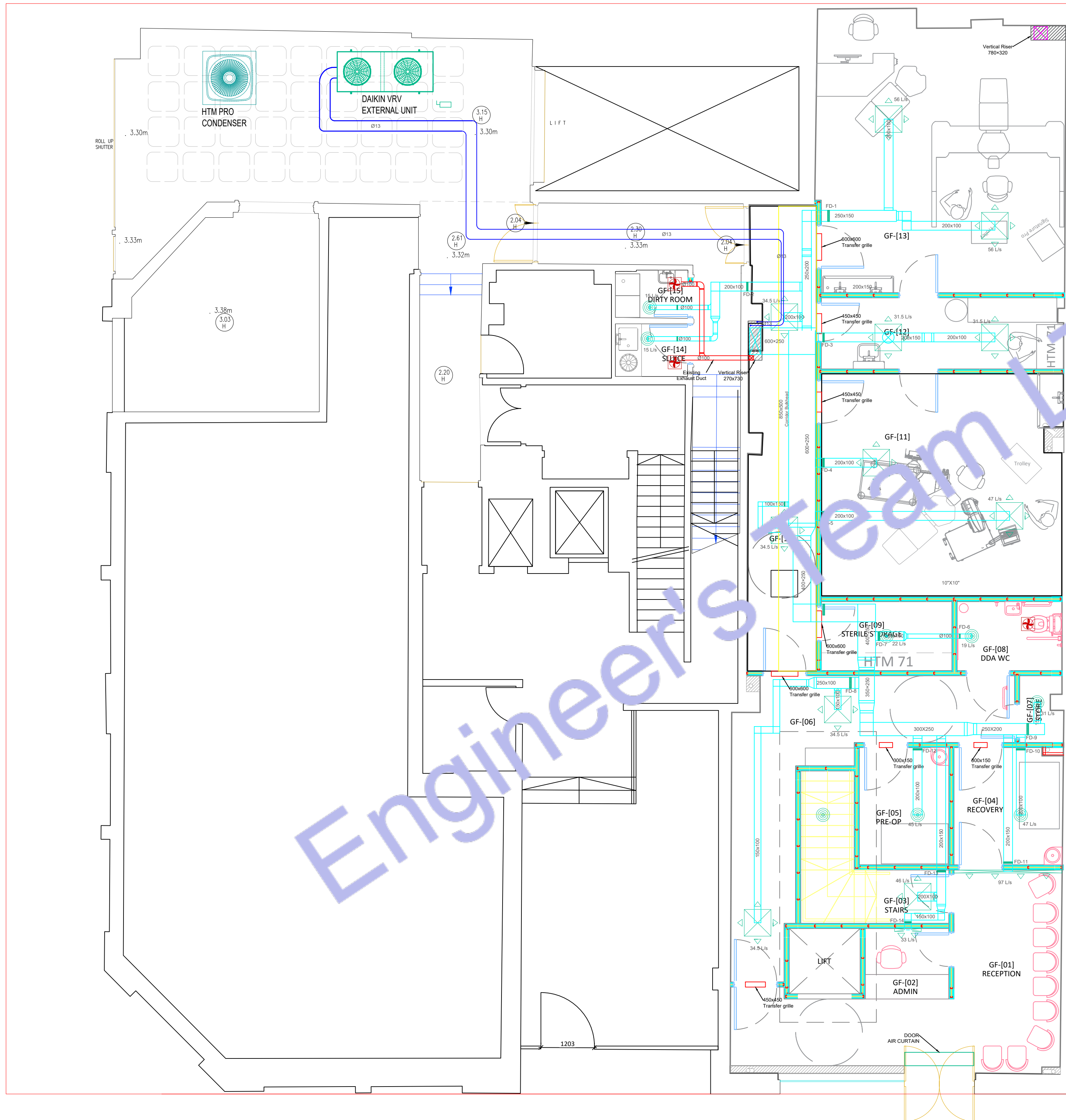
PROJECT:
HEALTH CARE

TITLE:
GROUND FLOOR HVAC PLAN

PROJ. NO. PROJ. ENGR. SCALE @ 24X36:
1/128" = 1' 0"

DATE:
August 28, 2026

DRAWING NO. REV.
M - 0 1



Ceiling Plenum Return System:
RETURN AIR SHALL BE VIA THE CEILING PLENUM SYSTEM. AIR
SHALL TRANSFER FROM CLINICAL ROOMS THROUGH DOOR
UNDERCUTS AND/OR HIGH LEVEL TRANSFER GRILLES INTO THE
CORRIDOR CEILING VOID, THEN RETURN TO THE HTM AIR HANDLING
UNIT. NO DEDICATED RETURN AIR DIFFUSERS ARE PROVIDED
UNLESS NOTED OTHERWISE.

RETURN AIR VIA CEILING PLENUM TO HTM AHU.

Corridor Bulkhead:
PROVIDE DROPPED PLASTERBOARD BULKHEAD, 800 mm WIDE x 800
mm DEEP. TO CONCEAL MAIN SUPPLY DUCTWORK. BULKHEAD
SHALL BE COORDINATED WITH ARCHITECTURAL CEILING LEVELS
AND MAINTAIN REQUIRED CLEARANCES FOR ACCESS, FIRE
DAMPERS, AND BUILDING SERVICES. REFER TO HVAC SECTIONS
FOR DETAILS.

Fire Stopping Detail:
ALL DUCTS, PIPES, CABLES, AND SERVICES PASSING THROUGH
FIRE-RATED WALLS, FLOORS, RISERS, AND BULKHEADS SHALL BE
SEALED USING APPROVED FIRE-STOPPING SYSTEMS TO MAINTAIN
THE REQUIRED FIRE RESISTANCE RATINGS OF THE BUILDING
ELEMENT.
PROVIDE INTUMESCENT FIRE-STOPPING MATERIAL AROUND ALL
SERVICE PENETRATIONS IN ACCORDANCE WITH THE
MANUFACTURER'S TESTED SYSTEM AND PROJECT FIRE STRATEGY.
ALL GAPS BETWEEN DUCTWORK AND BUILDING OPENINGS SHALL
BE SEALED WITH APPROVED FIRE-RATED SEALANT. INSTALLATION
SHALL COMPLY WITH THE FIRE STRATEGY AND THE
MANUFACTURER'S INSTALLATION REQUIREMENTS.
INSTALL FIRE DAMPERS AT ALL DUCT PENETRATIONS THROUGH
FIRE-RATED CONSTRUCTION. PROVIDE 450 x 450 mm ACCESS
PANELS ADJACENT TO EACH FIRE DAMPER FOR INSPECTION,
TESTING, AND MAINTENANCE.

WC VENTILATION
All WC exhaust fans will be new, and it will connect with the existing exhaust
duct.

General Note:
1. NO NEW SLAB PENETRATIONS SHALL BE PROVIDED. UTILIZE
THE EXISTING 200 x 800 mm STREET GRILLES AND THE
EXISTING 800 x 300 mm RISER OPENING.
2. GROUND FLOOR CLINICAL AREAS SHALL BE SERVED BY ONE
DAIKIN VRV PRO SEE 2. AIR HANDLING UNIT LOCATED IN THE
BASEMENT PLANT ROOM.
3. BASEMENT NON-CLINICAL AREAS SHALL BE SERVED BY THE
DAIKIN VRV SYSTEM.
4. ALL DUCTWORK SHALL BE INSULATED WITH 25 mm THERMAL
INSULATION UNLESS NOTED OTHERWISE.
5. PROVIDE APPROVED FIRE-STOPPING AT ALL SERVICE
PENETRATIONS THROUGH FIRE-RATED CONSTRUCTION.
6. PROVIDE 450 x 450 mm ACCESS PANELS ADJACENT TO ALL FIRE
DAMPERS.
7. ALL DIMENSIONS SHALL BE VERIFIED ON SITE BEFORE
FABRICATION OR INSTALLATION OF SERVICES.
8. ALL HVAC INSTALLATION SHALL BE FULLY COORDINATED WITH
ARCHITECTURAL, STRUCTURAL, FIRE, AND ELECTRICAL
DRAWINGS PRIOR TO CONSTRUCTION.
9. THE CLINICAL VENTILATION SYSTEM HAS BEEN DESIGNED TO
FOLLOW THE PROJECT VENTILATION STRATEGY AND THE
RELEVANT REQUIREMENTS OF HTM (S) FOR THE IDENTIFIED
CLINICAL AREAS. FINAL COMMISSIONING AND VALIDATION
SHALL CONFIRM COMPLIANCE WITH THE DESIGN INTENT PRIOR
TO HANDOVER.

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



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REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

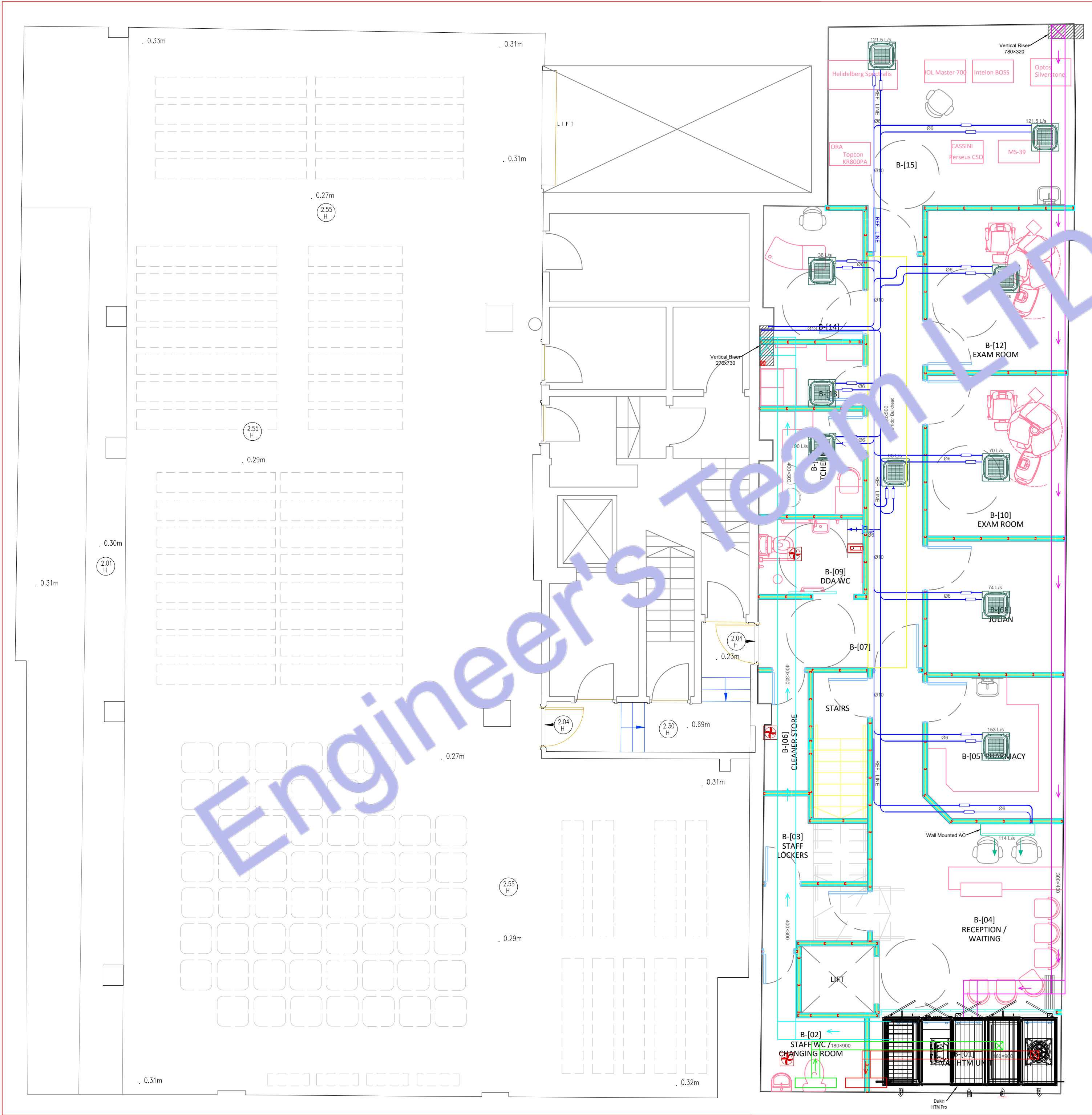
PROJECT: HEALTH CARE

TITLE: BASEMENT FLOOR HVAC
PLAN

PROJ. NO. PROJ. ENGR. SCALE @ 24X36:
1/128" = 1' 0"

DATE : August 28, 2026

DRAWING NO. REV.
M - 0 2



2 BASEMENT FLOOR HVAC PLAN
SCALE: 1/128" = 1'-0"

Air System Sizing Summary for HTM Pro Size 2

Air System Information
Air System Name HTM Pro Size 2
Equipment Class SPLT AHU
Air System Type SZCAV

Sizing Calculation Information
Calculation Months Jan to Dec
Sizing Data Calculated

Central Cooling Coil Sizing Data
Total coil load 11.5 kW
Sensible coil load 9.2 kW
Coil L/s at Jul 1900 758 L/s
Max block L/s 758 L/s
Sum of peak zone L/s 758 L/s
Sensible heat ratio 0.799
L/s (kW) 66.1
m³/kW 13.6
W/m² 73.6
Water flow @ 5.6 K rise N/A

Central Heating Coil Sizing Data
Max coil load 12.2 kW
Coil L/s at Des Htg 758 L/s
Max coil L/s 758 L/s
Water flow @ 11.1 K drop N/A

Supply Fan Sizing Data
Actual max L/s 758 L/s
Standard L/s 756 L/s
Actual max L/(s·m²) 4.87 L/(s·m²)

Outdoor Ventilation Air Data
Design airflow L/s 174 L/s
L/(s·m²) 1.12 L/(s·m²)

Zone Sizing Summary for HTM Pro Size 2

Air System Information
Air System Name HTM Pro Size 2
Equipment Class SPLT AHU
Air System Type SZCAV

Sizing Calculation Information
Calculation Months Jan to Dec
Sizing Data Calculated

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/s (m²)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11.1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11.1 K	Mixing Box Fan Airflow (L/s)
Zone 1	758	758	4.87	0.0	-	0.0	-	0

Zone Name	Zone Cooling Sensible Peak (kW)	Time of Sensible Cooling Load (kW)	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	10.4	Jul 2100	8.1	155.8

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/s (m³)
Zone 1							
GF-01 RECEPTION	1	1.3	Jul 2000	94	1.2	18.5	5.09
GF-02 ADMIN	1	0.4	Jul 1900	32	0.3	3.0	10.83
GF-03 STAIRS	1	0.6	Jul 2100	46	0.7	6.7	6.85
GF-04 RECOVERY	1	0.6	Jul 2100	46	0.4	6.5	7.01
GF-05 PRE-OP	1	0.6	Jul 2100	44	0.3	5.3	8.31
GF-06	1	0.9	Jul 2100	67	1.1	15.4	4.35
GF-07 STORE	1	0.4	Jul 2100	30	0.2	1.4	21.26
GF-08 DDA WC	1	0.3	Jul 2100	19	0.3	3.6	5.25
GF-09 STERILE STORAGE	1	0.3	Jul 2100	21	0.3	4.6	4.63
GF-10	1	0.9	Jul 2100	67	1.1	15.7	4.27
GF-11 OT	1	1.3	Jul 2100	62	0.7	27.3	3.37
GF-12	1	0.8	Jul 2100	62	0.4	8.7	7.09
GF-13 OT	1	1.5	Jul 2100	109	0.9	35.5	3.08
GF-14 SLUICE	1	0.2	Jul 2100	15	0.2	1.9	7.94
GF-15 DIRTY ROOM	1	0.2	Jul 2100	15	0.2	1.7	8.54

Zone Sizing Summary for Daikin VRV

Air System Information
Air System Name Daikin VRV
Equipment Class TERM
Air System Type VRF

Sizing Calculation Information
Calculation Months Jan to Dec
Sizing Data Calculated

Zone Name	Total Coil Load (kW)	Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB @ 5.6 K (°C)	Water Flow (L/s)	Time of Peak Coil Load	Zone L/s (m²)
Zone 1	14.0	11.9	24.5 / 17.7	13.9 / 13.1	-	Jun 1900	8.88

Zone Name	Heating Coil Load (kW)	Heating Coil Ent. Lvg DB (°C)	Htg Coil Water Flow @ 11.1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	8.5	16.6 / 24.3	-	928	0.000	0.000	161

	Cooling (kW)	Heating (kW)
Peak Coincident Indoor Unit Loads	11.9	8.5
Estimated Piping / Line Losses	0.0	0.0
Total Required ODU Capacity	11.9	8.5

Note: VRF piping / line losses are based on typical loss factors for this class of equipment. Actual line loss varies widely from one product to another. Therefore, when selecting equipment it is critical to consult manufacturer's guidance to utilize actual line loss data.

Zone Name	Zone Cooling Sensible Peak (kW)	Time of Sensible Cooling Load (kW)	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	12.7	Jul 2100	3.9	104.5

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/s (m³)
Zone 1							
B-04 RECEPTION	1	1.5	Jul 2100	111	0.9	20.1	5.84
B-05 PHARMACY	1	2.1	Jul 2100	150	0.4	9.4	15.92
B-08 JULIAN	1	1.0	Jul 2100	72	0.5	20.1	3.58
B-10 EXAM ROOM	1	0.9	Jul 2100	68	0.4	10.8	6.32
B-11 KITCHENNETTE	1	2.5	Jul 2100	186	0.3	5.2	35.72
B-12 EXAM ROOM(1)	1	0.9	Jul 2100	68	0.4	10.8	6.32
B-14	1	0.5	Jul 2100	35	0.3	6.4	5.53
B-15	1	3.2	Jul 2100	237	0.7	21.7	10.92

Ventilation Sizing Summary for HTM Pro Size 2

1. Summary
Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 174 L/s

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/s·m²)	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
GF-01 RECEPTION	1	18.5	10.0	94.2	2.50	0.30	0.0	0.0	30.6
GF-02 ADMIN	1	3.0	1.0	31.9	2.50	0.30	0.0	0.0	3.4
GF-03 STAIRS	1	6.7	3.0	45.9	2.50	0.30	0.0	0.0	9.5
GF-04 RECOVERY	1	6.5	2.0	45.5	2.50	0.30	0.0	0.0	7.0
GF-05 PRE-OP	1	5.3	2.0	44.0	2.50	0.30	0.0	0.0	6.6
GF-06	1	15.4	5.0	67.0	3.80	0.30	0.0	0.0	23.6
GF-07 STORE	1	1.4	1.0	29.8	2.50	0.30	0.0	0.0	2.9
GF-08 DDA WC	1	3.6	1.0	18.9	2.50	0.60	0.0	0.0	4.7
GF-09 STERILE STORAGE	1	4.6	1.0	21.3	2.50	0.30	0.0	0.0	3.9
GF-10	1	15.7	5.0	67.0	3.80	0.30	0.0	0.0	23.7
GF-11 OT	1	27.3	4.0	92.0	2.50	0.30	0.0	0.0	18.2
GF-12	1	8.7	4.0	61.7	2.50	0.30	0.0	0.0	12.6
GF-13 OT	1	35.5	4.0	109.3	2.50	0.30	0.0	0.0	20.7
GF-14 SLUICE	1	1.9	1.0	15.1	2.50	0.60	0.0	0.0	3.6
GF-15 DIRTY ROOM	1	1.7	1.0	14.5	2.50	0.60	0.0	0.0	3.5
Totals (incl. Space Multipliers)				758.2					174.4

Ventilation Sizing Summary for Daikin VRV

1. Summary
Ventilation Sizing Method Sum of Space OA Airflows

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/s·m²)	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
B-04 RECEPTION	1	20.1	10.0	111.4	2.50	0.30	0.0	0.0	31.0
B-05 PHARMACY	1	9.4	2.0	149.6	2.50	0.90	0.0	0.0	13.5
B-08 JULIAN	1	20.1	3.0	72.0	2.50	0.30	0.0	0.0	13.5
B-10 EXAM ROOM	1	10.8	5.0	68.2	2.50	0.30	0.0	0.0	15.7
B-11 KITCHENNETTE	1	5.2	3.0	185.8	3.80	0.60	0.0	0.0	14.5
B-12 EXAM ROOM(1)	1	10.8	5.0	68.2	2.50	0.30	0.0	0.0	15.7
B-14	1	6.4	3.0	35.4	2.50	0.30	0.0	0.0	9.4
B-15	1	21.7	7.0	237.0	5.00	0.60	0.0	0.0	48.0
Totals (incl. Space Multipliers)				927.6					161.5



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REV. NO.	DESCRIPTION	DATE	BY

PROJECT: HEALTH CARE

TITLE: HVAC SYSTEM DESIGN CALCULATION REPORT

PROJ. NO. PROJ. ENGR. SCALE @ 24X36: N/A

DATE: August 28, 2026

DRAWING NO. M - 03 REV.



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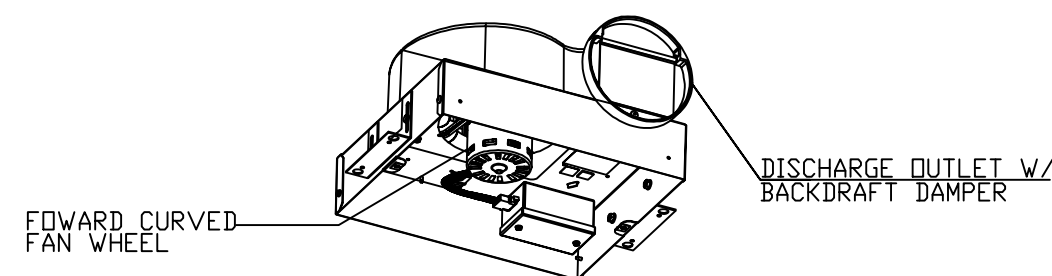
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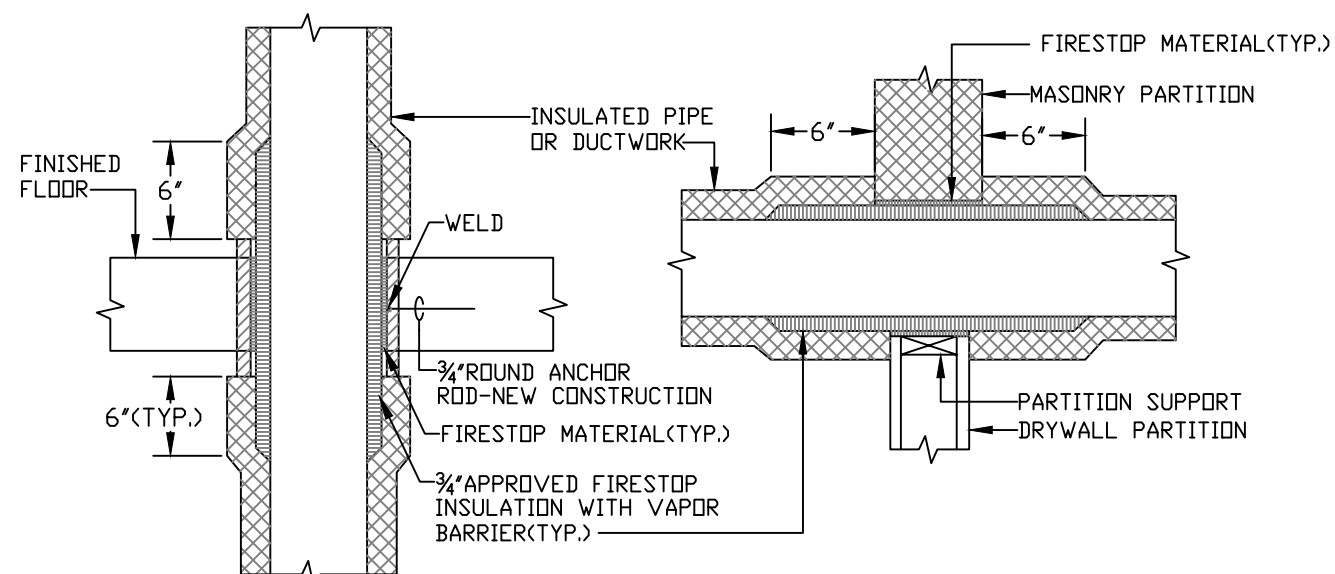
REV. NO.	DESCRIPTION	DATE	BY

PROJECT: HEALTH CARE			
TITLE: HVAC INSTALLATION INSTRUCTION			
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: N/A	
DATE : August 28, 2026			
DRAWING NO. M - 0 4		REV.	



CEILING FAN DETAIL

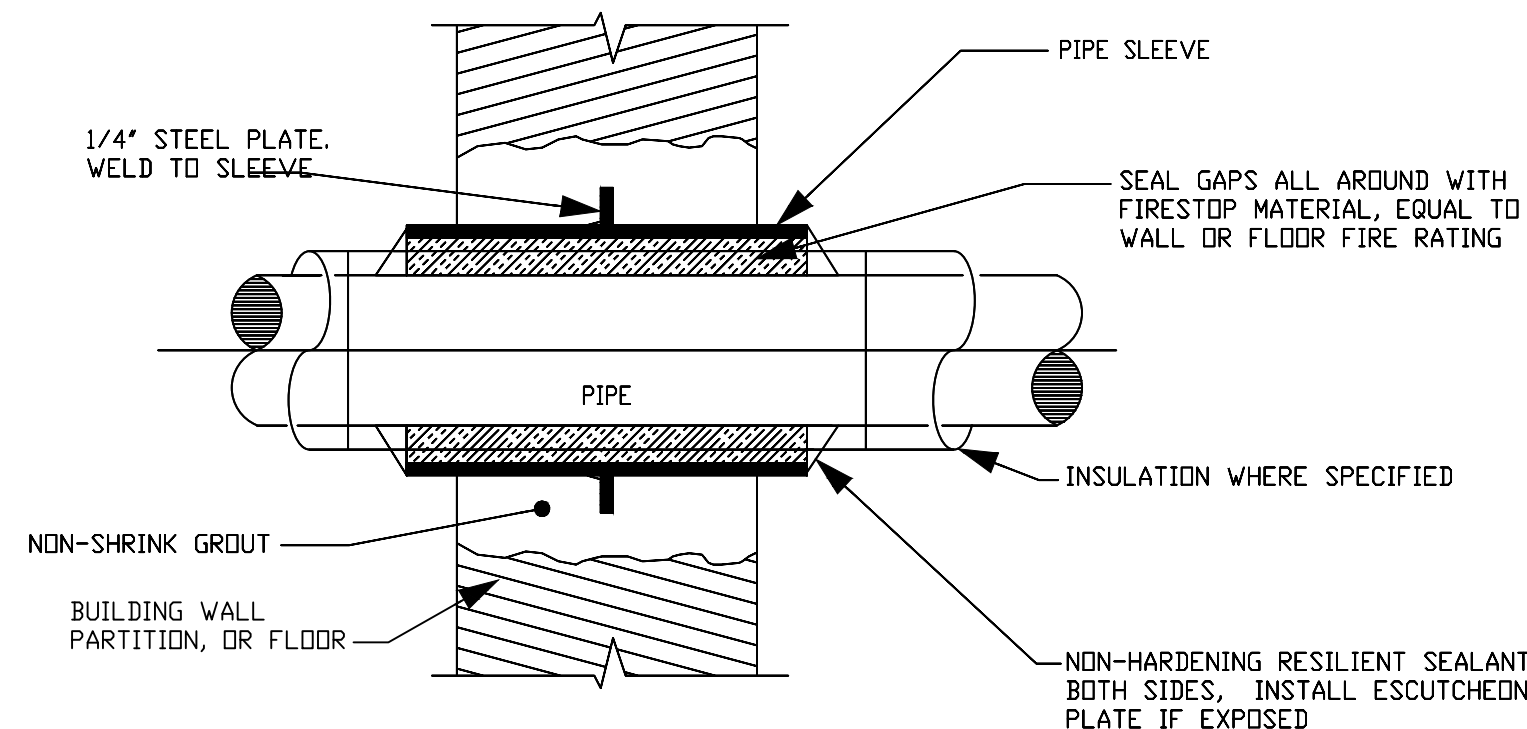
NOT TO SCALE
CEILING RADIATION DAMPERS SHALL BE
INSTALLED IN ACCORDANCE WITH UL 555C



FLOOR OR DECK PENETRATION
NOTE:
APPLICABLE TO PENETRATIONS OF ALL FIRE RATED MEMBRANES, IN ACCORDANCE WITH
2012 IBC 714. REFER UL LISTED FIRE STOPPING SYSTEMS UL-1479, UL-2043

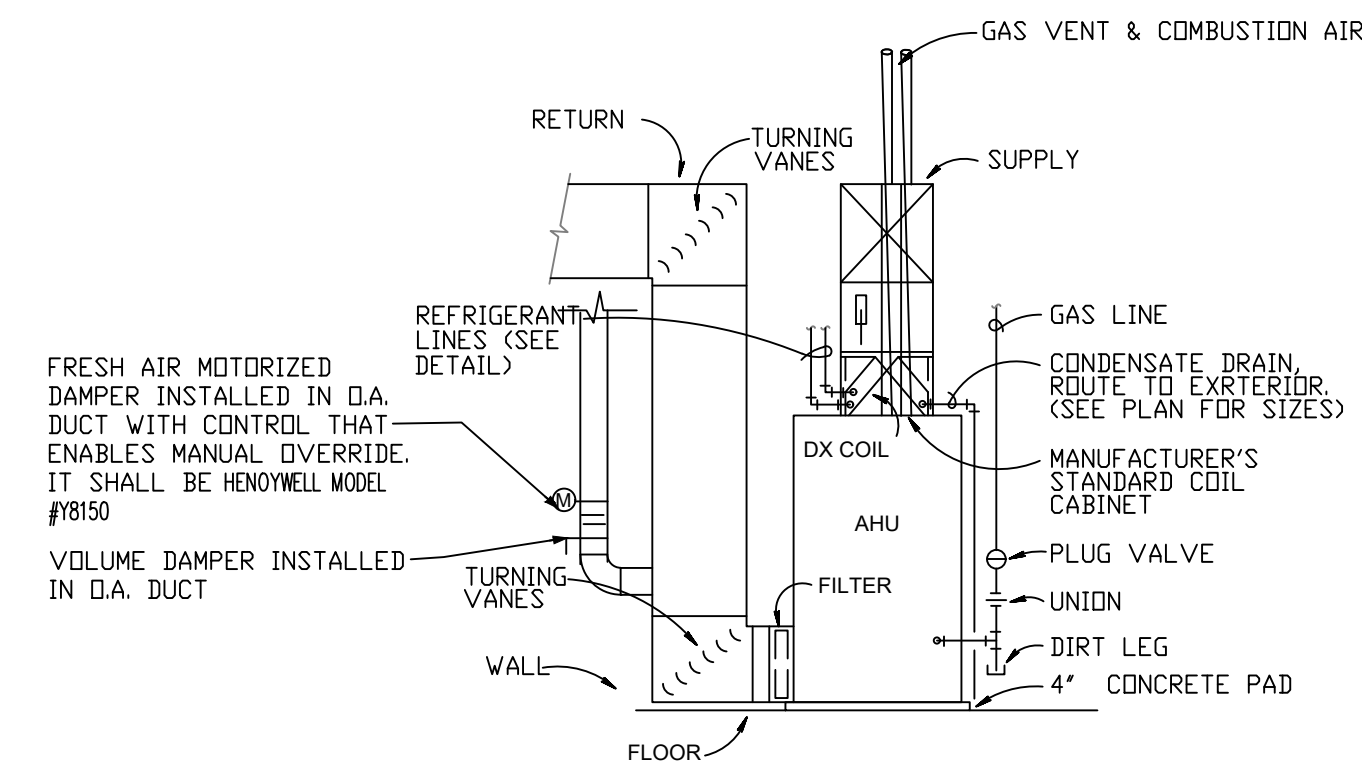
PENETRATION OF FIRE/SMOKE BARRIERS

NOT TO SCALE



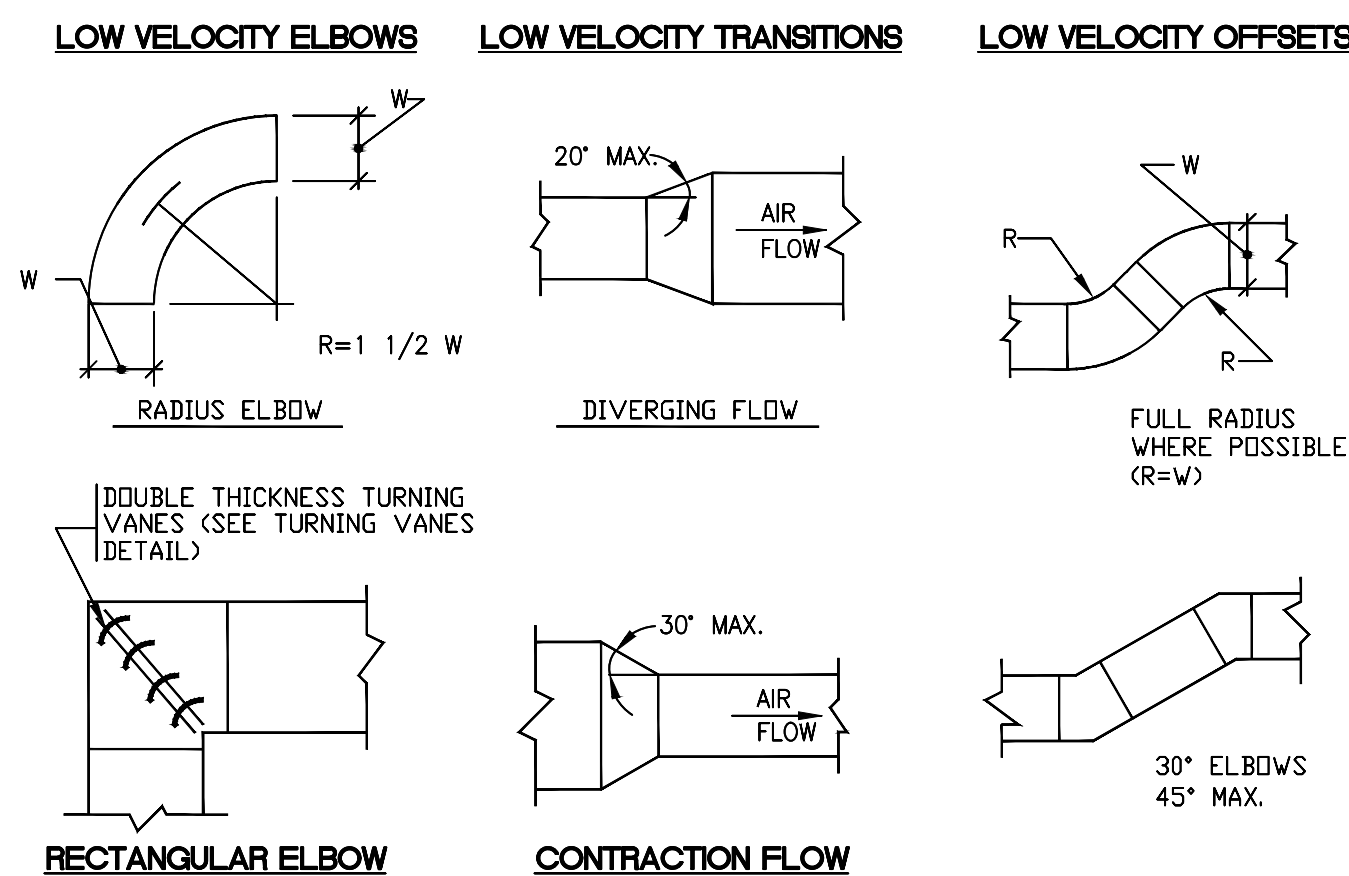
INTERIOR MASONRY WALL AND FLOOR PENETRATION

NOT TO SCALE



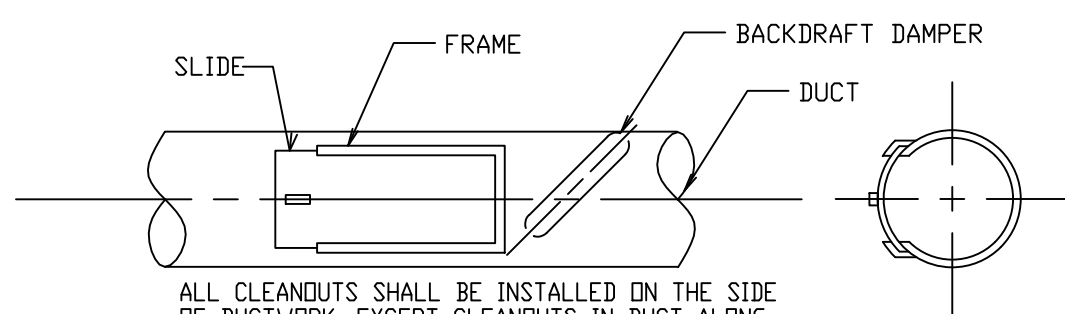
GAS-FIRED AIR HANDLING UNIT DETAIL

N.T.S.



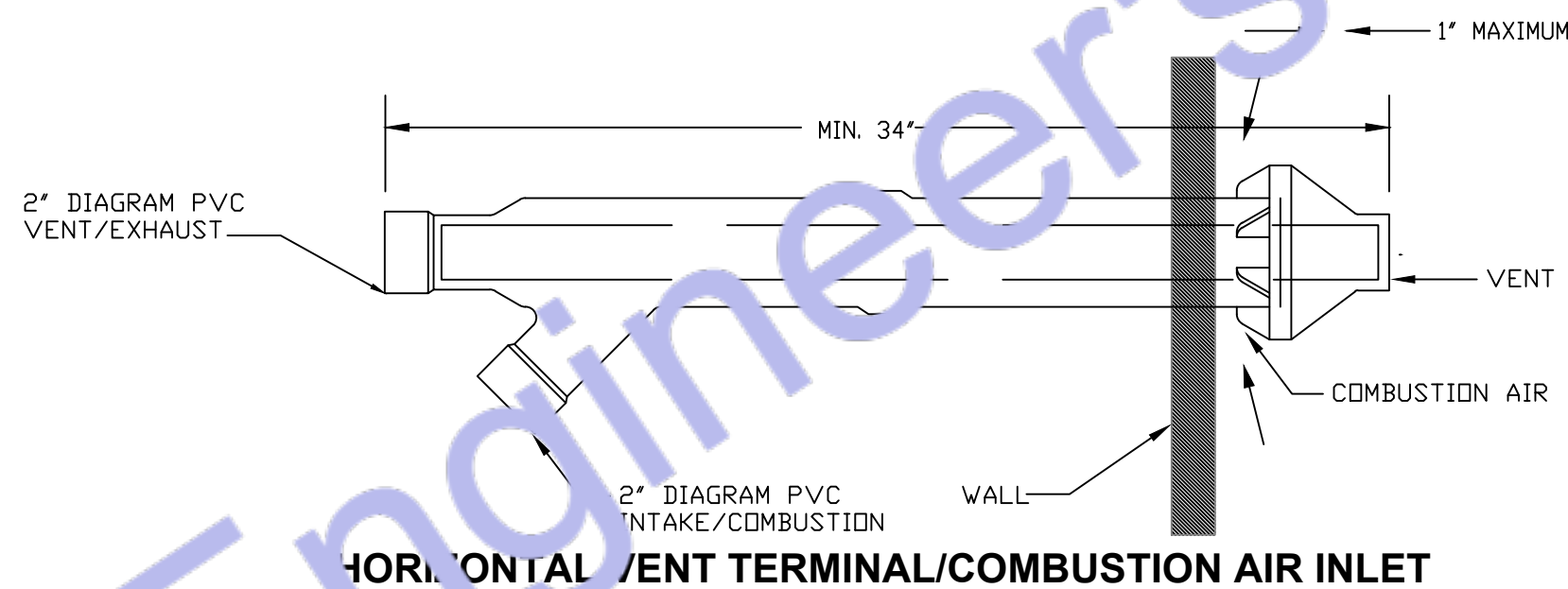
LOW VELOCITY TRANSITIONS, OFFSETS AND ELBOWS

NOT TO SCALE



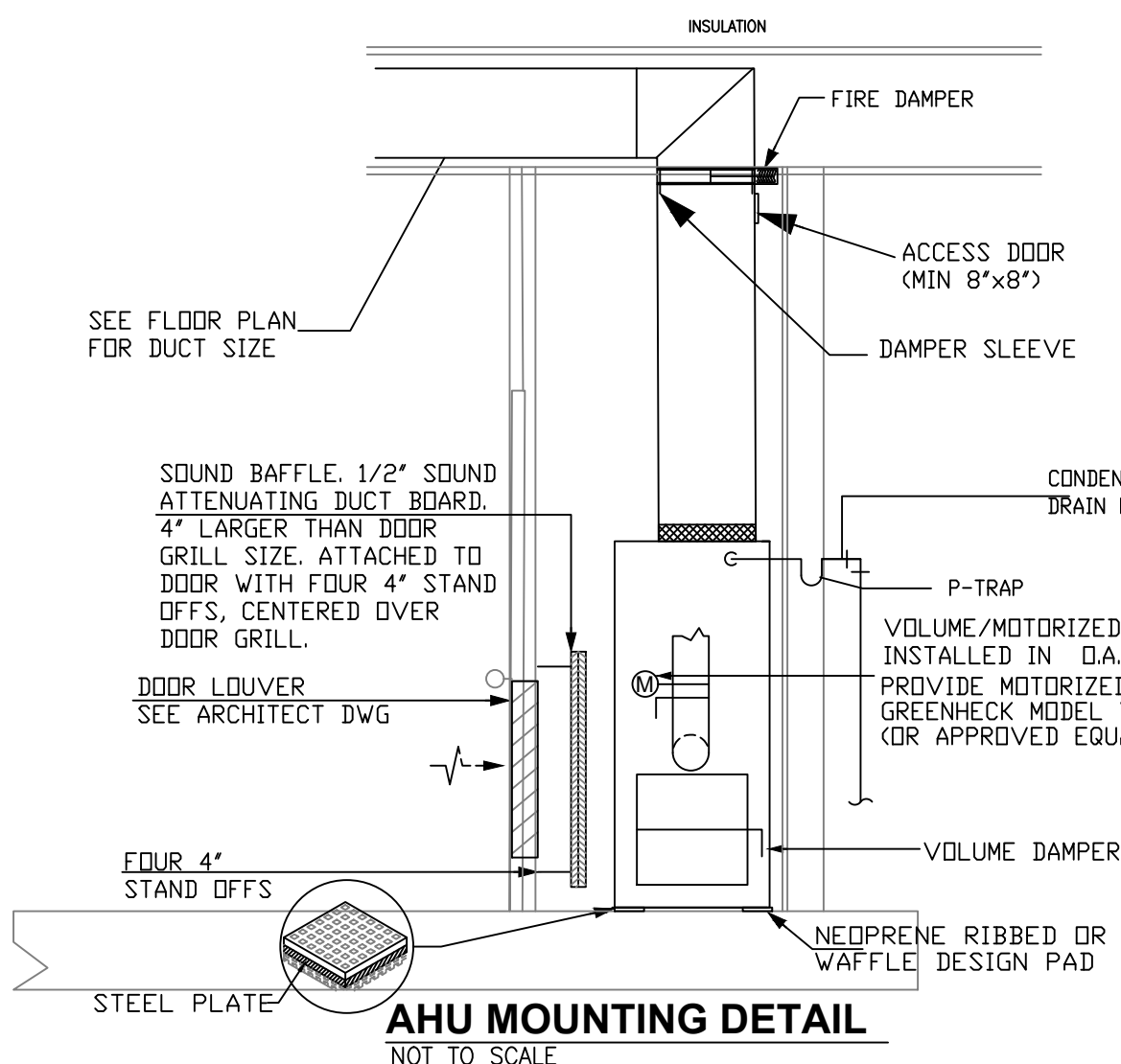
CLEAN OUT / INSPECTION DETAIL

NO SCALE



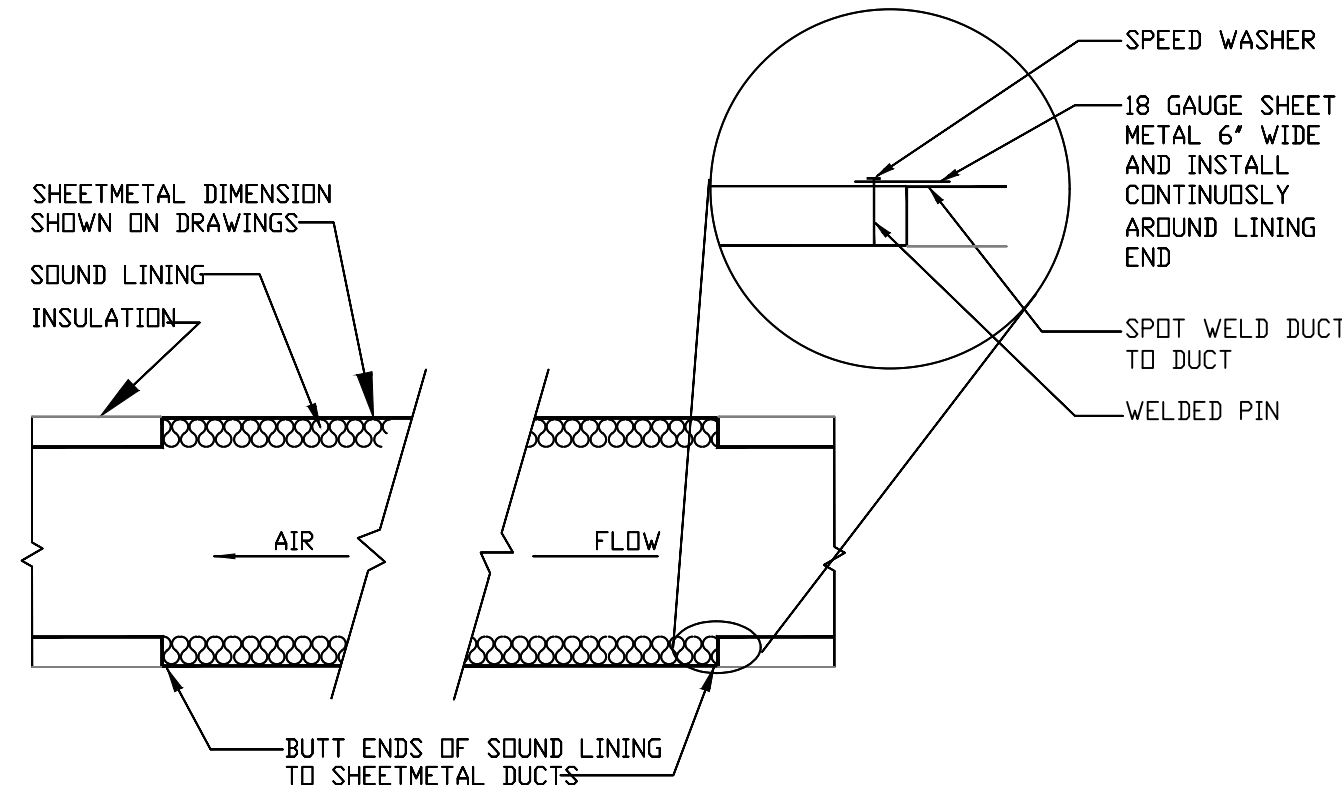
HORIZONTAL VENT TERMINAL/COMBUSTION AIR INLET

NOT TO SCALE
UL-PLASTIC PIPE AND FITTINGS USED TO VENT APPLIANCES SHALL BE INSTALLED IN
ACCORDANCE WITH THE APPLIANCE MANUFACTURER'S INSTRUCTIONS. PLASTIC PIPE VENTING
MATERIALS LISTED AND LABELED IN ACCORDANCE WITH UL 1738 SHALL BE INSTALLED IN
ACCORDANCE WITH THE VENT MANUFACTURER'S INSTALLATION INSTRUCTIONS. FLUID PVC PIPING
SHALL NOT BE USED FOR COMBUSTION GAS VENTING.



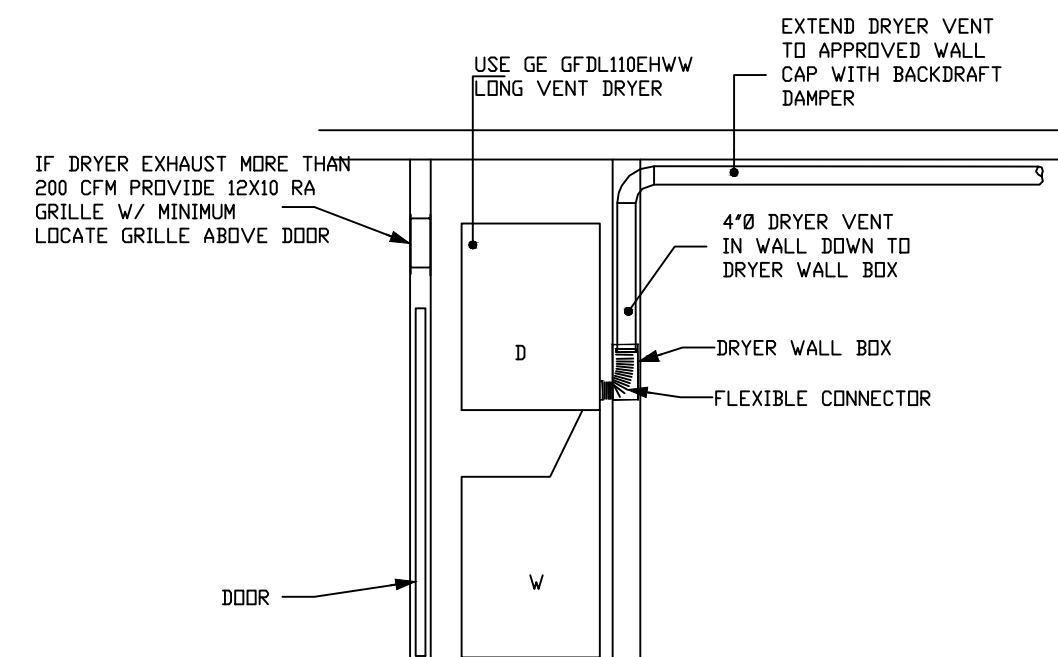
AHU MOUNTING DETAIL

NOT TO SCALE



TYPICAL SOUND LINING DETAIL

NOT TO SCALE



DRYER DETAIL

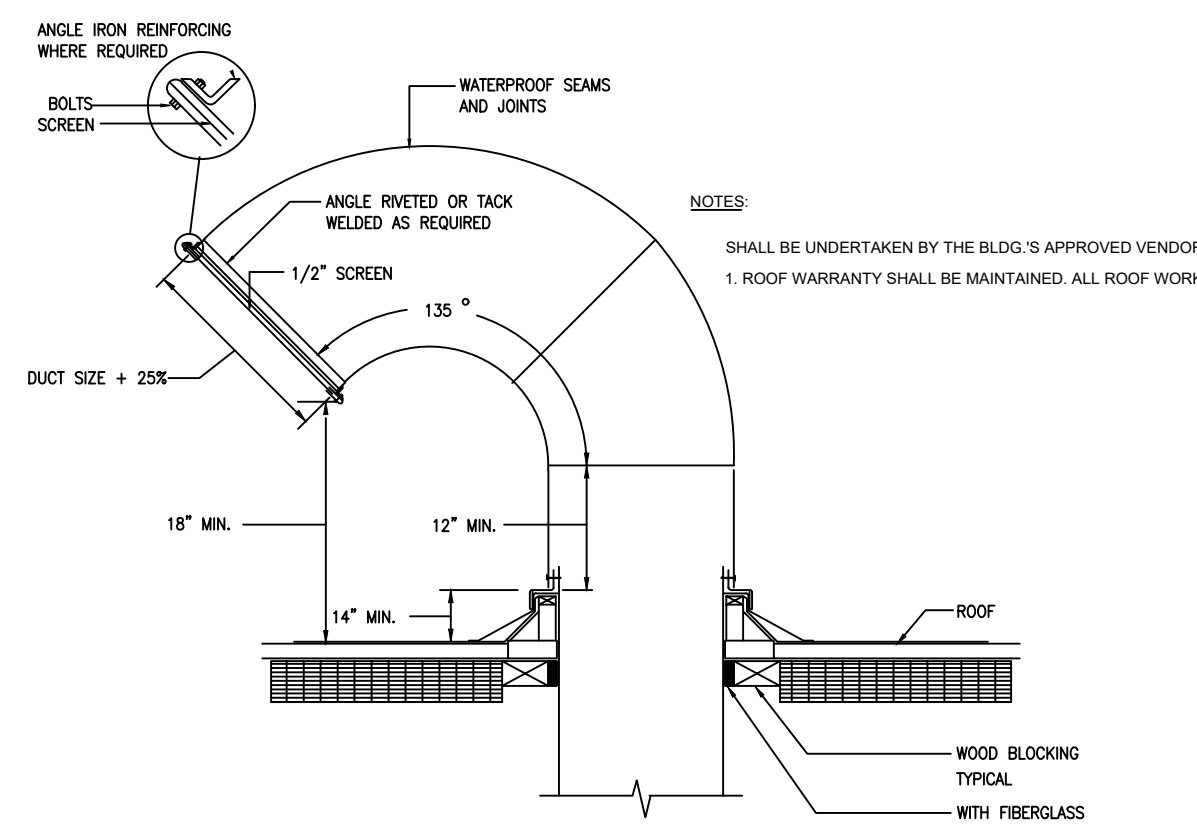
NOT TO SCALE

RESIDENTIAL GRILLES & REGISTERS SCHEDULE

DESIG	TYPE (REFER TO DETAILS)	SERVICE	AIR FLOW RANGE (CFM)	NOMINAL SIZE/ DESCRIPTION (INCH)	INLET/ NECK SIZE (IN)	BASIS OF DESIGN/REMARKS
A	REGISTER	SA	0-50	6x4	4"Ø	300RL, BORDER TYPE A
B	REGISTER	SA	51-100	6x6 OR 10X4	6"Ø	300RL, BORDER TYPE A
C	REGISTER	SA	101-150	10x6	7"Ø	300RL, BORDER TYPE A
D	REGISTER	SA	151-200	12x6	8"Ø	300RL, BORDER TYPE A
E	REGISTER	SA	201-250	14x6	9"Ø	300RL, BORDER TYPE A
F	RG	RA/EA	0-100	6x6	6x6	350RL, BORDER TYPE A
G	RG	RA/EA	101-200	8x8	8x8	350RL, BORDER TYPE A
H	RG	RA/EA	201-300	10x10	10x10	350RL, BORDER TYPE A
I	RG	RA/EA	301-450	12x12	12x12	350RL, BORDER TYPE A
J	RG	RA/EA	451-600	14x14	14x14	350RL, BORDER TYPE A
K	RG	RA/EA	601-800	16x16	16x16	350RL, BORDER TYPE A
L	RG	RA/EA	801-1100	18x18	18x18	350RL, BORDER TYPE A
M	RG	RA/EA	1101-1300	20x20	20x20	350RL, BORDER TYPE A
N	RG	RA/EA	1301-1600	22x22	22x22	350RL, BORDER TYPE A

NOTES:

- REFER TO ARCHITECT DRAWINGS FOR TYPE OF CEILING.
- MODEL NUMBERS IN "BASIS OF DESIGN" ARE TITUS
- PROVIDE HEAVY DUTY FRAME AND CORE WHERE MOUNTED IN FLOORS.
- PROVIDE WITH FIRE DAMPER FOR UL LISTED CEILING
- PROVIDE ROUND TO SQUARE ADAPTOR BOOT



GOOSENECK DETAIL

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REV. NO.	DESCRIPTION	DATE	BY

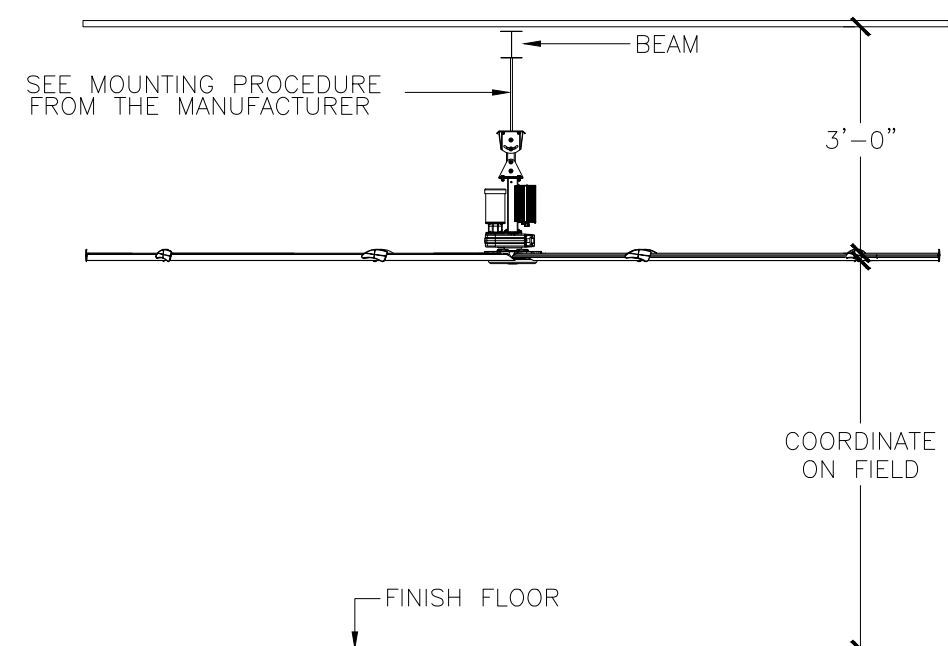
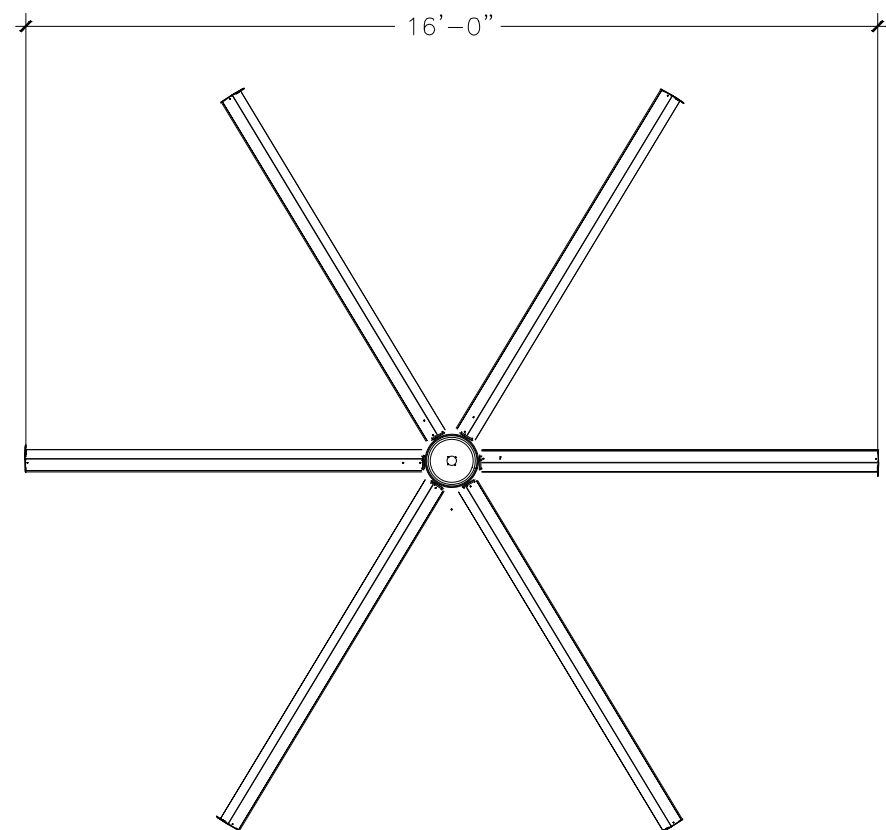
PROJECT:
HEALTH CARE

TITLE:
HVAC INSTALLATION
INSTRUCTION

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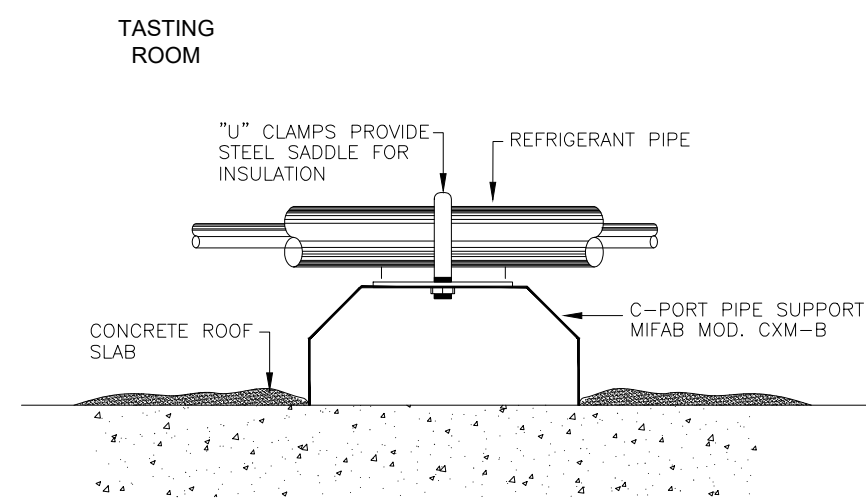
DATE :
August 28, 2026

DRAWING NO. M - 0 5	REV.
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1 PROPELLER (HVLS) FAN INSTALLATION DETAIL

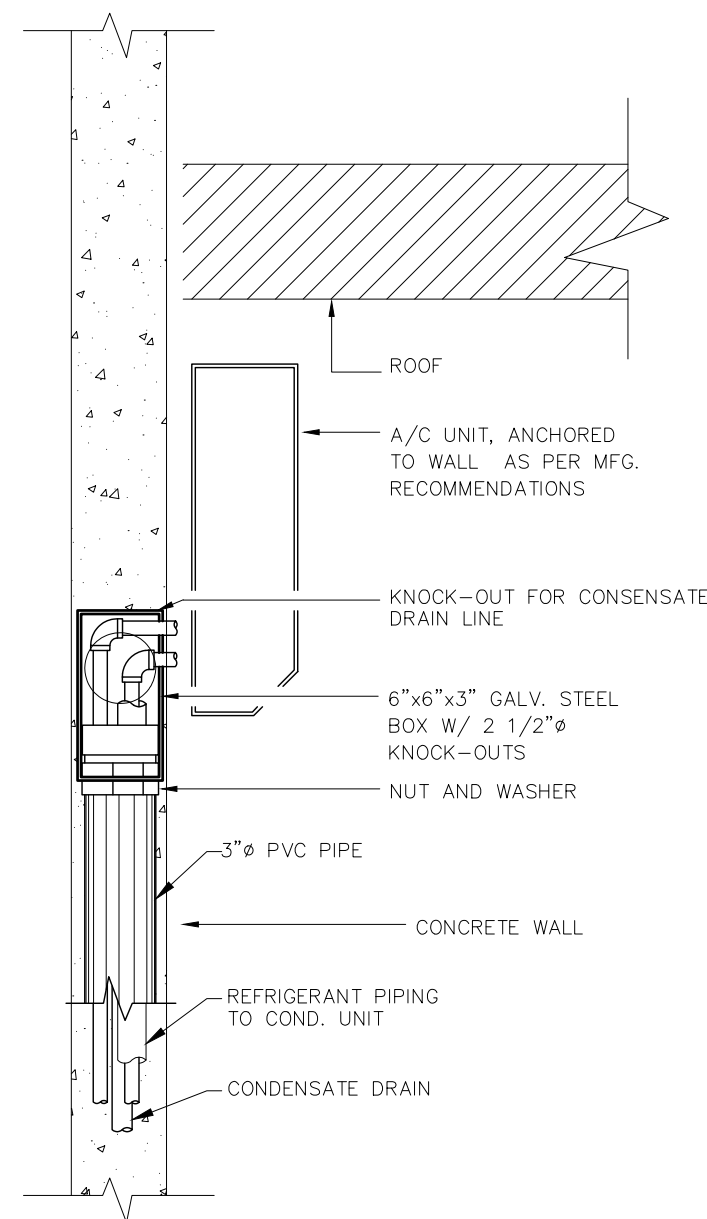
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*REFRIGERANT PIPE SUPPORT SHALL BE INSTALLED EVERY 5'-0" (MAX.) OF PIPE TO BE SUPPORTED

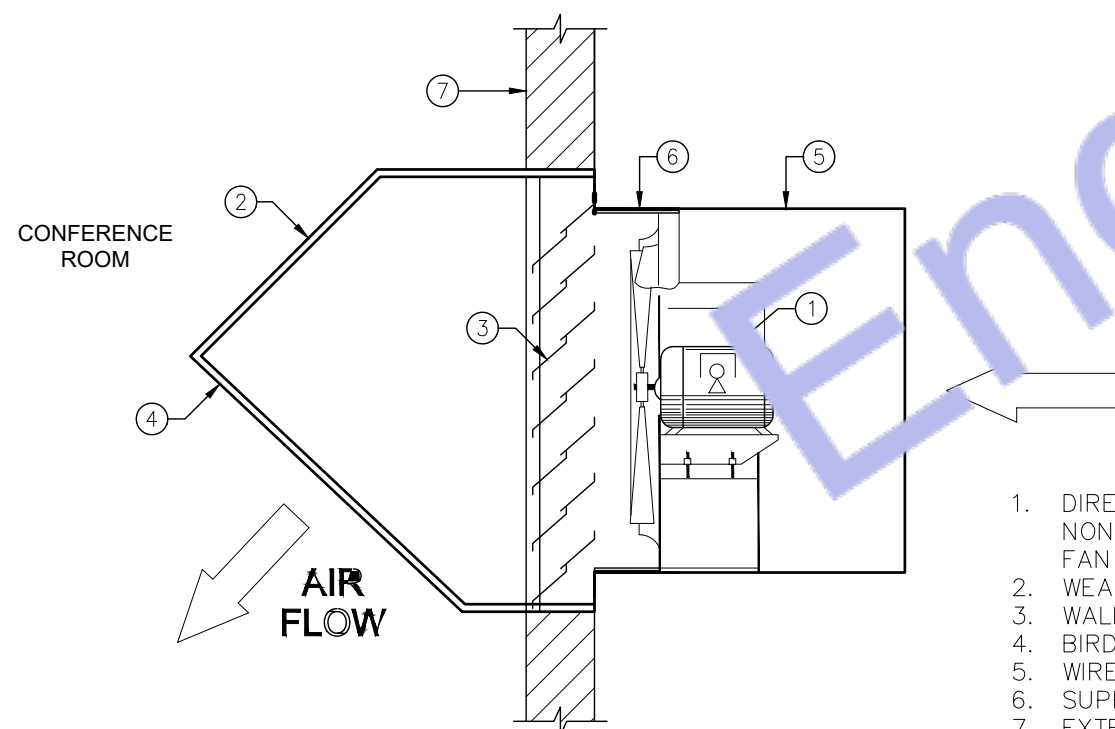
2 REFRIGERANTS PIPES SUPPORT

NOT TO SCALE



3 MINI SPLIT COIL UNIT WITH PLENUM INSTALLATION DETAIL

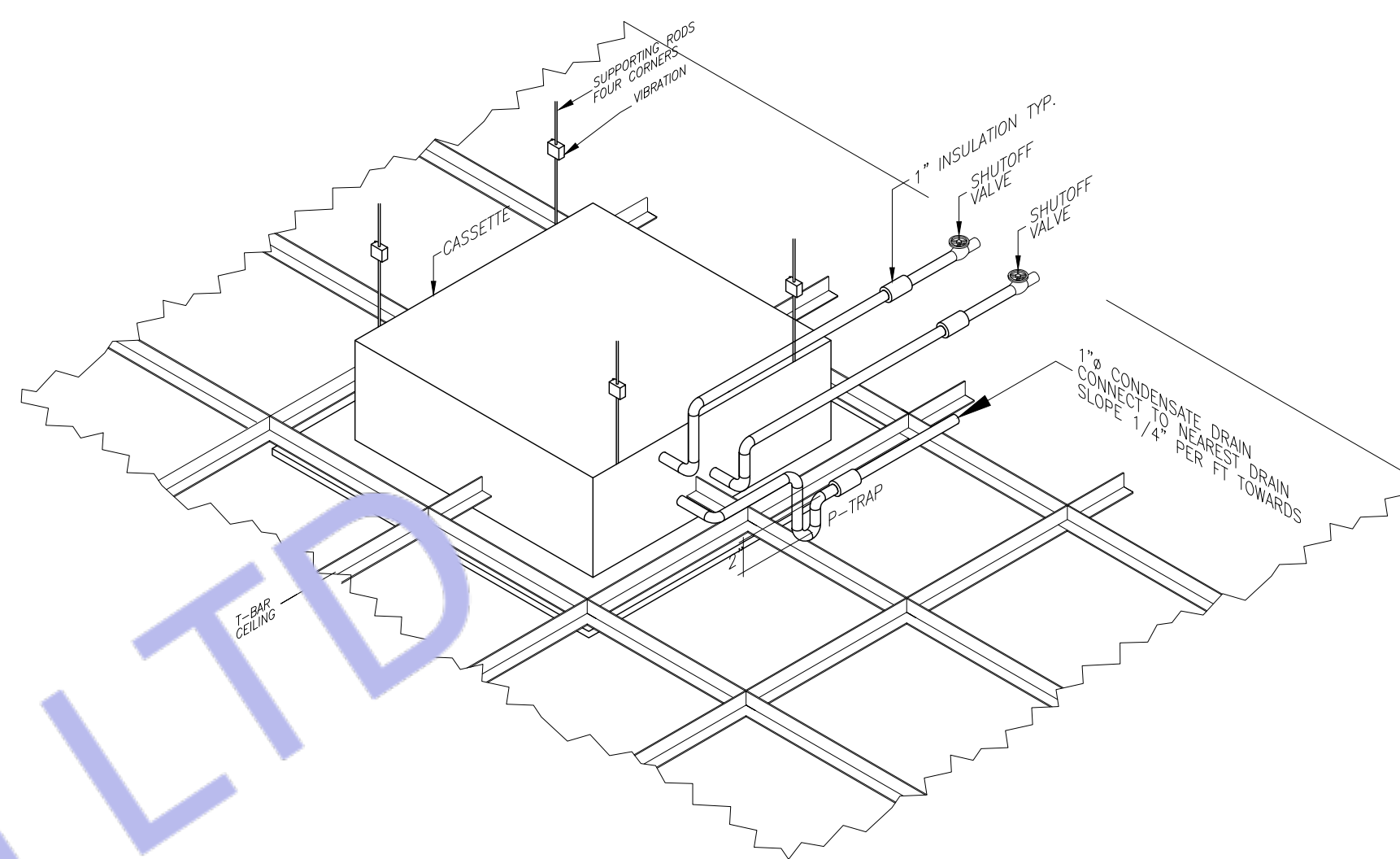
NOT TO SCALE



ELEVATION

5 CONDENSING UNIT ANCHORING DETAIL

NOT TO SCALE



6 WALL VENTILATOR INSTALLATION DETAIL

NOT TO SCALE

NOTE:
1. THE FANS SHALL BE INTERLOCKED WITH THE LIGHTING SWITCH.

7 CASSETTE UNIT INSTALLATION DETAIL

NOTE: THE A/C UNIT SHALL BE HANGED SEISMICALLY FROM ROOF SLAB OR STEEL JOIST.

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REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT:

HEALTH CARE

TITLE:

HVAC INSTALLATION
INSTRUCTION

PROJ. NO.

PROJ. ENGR.

SCALE @ 24X36:

N/A

DATE :

August 28, 2026

DRAWING NO.

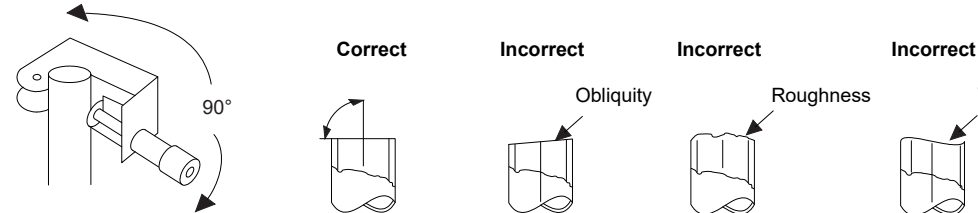
REV.

M - 0 6

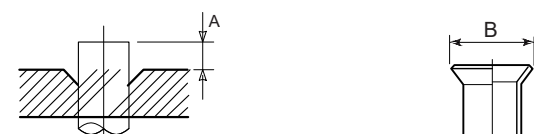
Pipe connection method

Flaring

1. Cut the pipe with a pipe cutter.



2. Remove the burr inside the pipe.
When removing the burr, be careful that the chips do not fall into the pipe.
3. Remove the flare nuts attached to the outdoor / indoor unit, then insert them into each of the pipes.
4. Flare the pipes.
See the following table for the projection margin (A) and flaring size (B).



Pipe	Outside diameter	Thickness	A		B	Flare Nut		
			Rigid (clutch type) R410A tool	Imperial (wing nut type) R410A tool		Width across flat	Tighten torque	
in	1/4"	0.03"	0 to 0.02"	0.04" to 0.06"	0.39"	0.67"	10.3 to 13.3	14 to 18
mm	6.35	0.8	0 to 0.5	1.0 to 1.5	9.9	17	14 to 18	1.4 to 1.8
in	3/8"	0.03"	0 to 0.02"	0.04" to 0.06"	0.52"	0.87"	24.3 to 31.0	33 to 42
mm	9.52	0.8	0 to 0.5	1.0 to 1.5	13.2	22	33 to 42	3.3 to 4.2
in	1/2"	0.03"	0 to 0.02"	0.04" to 0.06"	0.65"	1.02"	36.1 to 45.0	49 to 61
mm	12.7	0.8	0 to 0.5	1.0 to 1.5	16.6	26	49 to 61	4.9 to 6.1
in	5/8"	0.04"	0 to 0.02"	0.04" to 0.06"	0.78"	1.14"	46.5 to 56.8	63 to 77
mm	15.88	1.0	0 to 0.5	1.0 to 1.5	19.7	29	63 to 77	6.3 to 7.7
in	3/4"	0.05"	0 to 0.02"	0.04" to 0.06"	0.94"	1.42"	73.8 to 88.5	100 to 120
mm	19.05	1.2	0 to 0.5	1.0 to 1.5	24.0	36	100 to 120	10.0 to 12.0

Selection of pipe materials and size

Selection of pipe material

Material: Phosphorus deoxidation seam-less pipe

Capacity code of indoor and outdoor units

- For the indoor unit, the capacity code is decided at each capacity rank.
- The outdoor unit's capacity codes are decided at each capacity rank.
- The maximum No. of the connectable indoor unit and the total value of the indoor unit's capacity codes are also decided.

Minimum wall thickness for R410A application

Soft	Half Hard or Hard	OD (inch)	OD (mm)	Minimum wall thickness (mm)
OK	OK	1/4"	6.35	0.80
OK	OK	3/8"	9.52	0.80
OK	OK	1/2"	12.70	0.80
OK	OK	5/8"	15.88	1.00
NG * (1)	OK	3/4"	19.05	1.00

* (1) If the pipe size is Ø3/4" (19.05), use a suitable material.

Table 1

Indoor unit capacity type	Capacity code Equivalent to capacity	Indoor unit capacity type	Capacity code Equivalent to capacity
007 type	7.5	036 type	36
009 type	9.5	042 type	42
012 type	12	048 type	48
015 type	15.4	—	—
018 type	18	—	—
021 type	21	—	—
024 type	24	—	—
027 type	27	—	—
030 type	30	—	—

Table 2

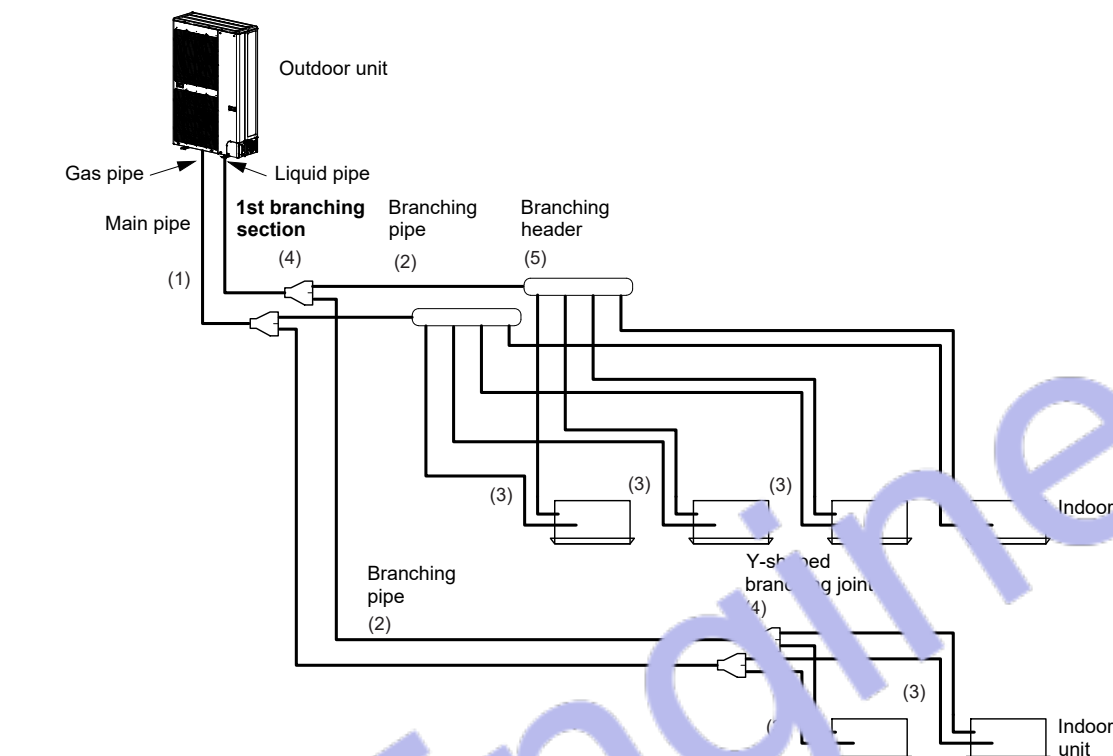
Outdoor unit capacity type	Capacity code Equivalent to capacity	No. of connectable indoor units	Total capacity code of connectable indoor units	
036 type	36	2 to 6	Min. * (2)	Max.
048 type	48	2 to 8	24	64
060 type	60	2 to 9	30	81

Coupling size of brazed pipe

Connected section	
External size	Internal size

Standard outer dia. of connected copper pipe	Connected section		Min. depth of insertion		Oval value	Min. thickness of coupling
	External size	Internal size	K	G		
in	1/4"	1/4"±0.001 0.25"	0.28"	0.24"	0.002" or less	0.02"
mm	6.35	6.35±0.03 6.45	7	6	0.06 or less	0.5
in	3/8"	3/8"±0.001 0.38"	0.31"	0.28"	0.003" or less	0.02"
mm	9.52	9.52±0.03 9.62	8	7	0.08 or less	0.6
in	1/2"	1/2"±0.001 0.50"	0.35"	0.31"	0.004" or less	0.03"
mm	12.7	12.7±0.03 12.81	9	8	0.10 or less	0.7
in	5/8"	5/8"±0.001 0.63"	0.35"	0.31"	0.005" or less	0.03"
mm	15.88	15.88±0.03 16.00 9.8	0.43"	0.39"	0.13 or less	0.8
in	3/4"	3/4"±0.001 0.76"	0.43"	0.39"	0.006" or less	0.03"
mm	19.05	19.05±0.03 19.19 11	10	10	0.15 or less	0.8

Selection of refrigerant piping



No.	Piping parts Name	Selection of pipe size	Remarks
(1)	Outdoor unit ↓ 1st branching section	Main pipe Outdoor unit capacity type 0367 type 0487 type 0607 type Gas pipe Ø5/8" Ø5/8" Ø3/4" Liquid pipe Ø3/8" Ø3/8" Ø3/8"	Same as the outdoor unit's connecting pipe size.
(2)	Branching section ↓ Branching section	Branching pipe Pipe size between branching sections Total capacity codes of indoor units at down stream side Equivalent to capacity Below 23 23 to below 61 61 or more Gas pipe Ø1/2" Ø5/8" Ø3/4" Liquid pipe Ø3/8" Ø3/8" Ø3/8"	Pipe size differs based on the total capacity code value of the indoor units at the downstream side. If the total value exceeds the capacity code of the outdoor unit, apply the capacity code of the outdoor unit. (See Table 1 and 2.)

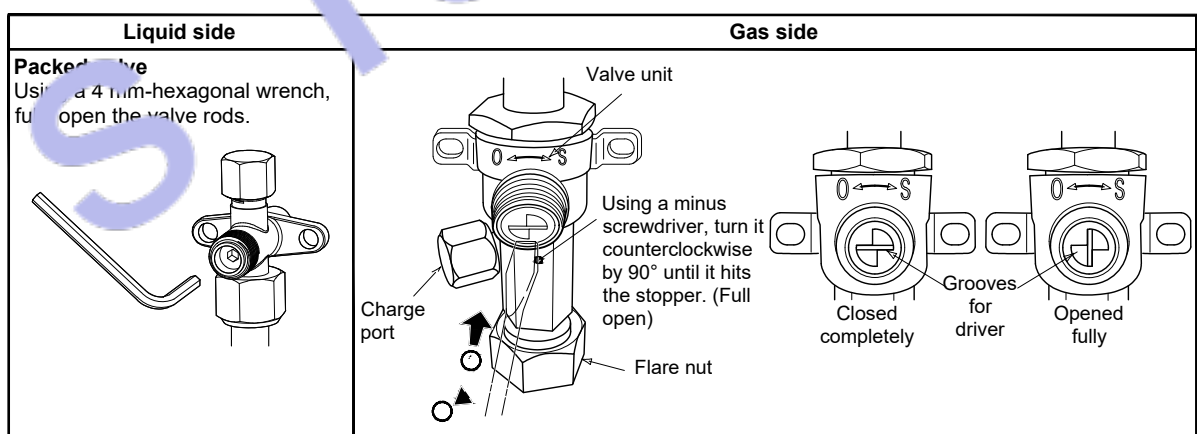
(3)	Branching section ↓ Indoor unit	Indoor unit connecting pipe	Connecting pipe size of indoor unit
			Capacity rank 007 to 012 type 015 to 018 type 021 to 048 type Gas pipe Ø3/8" Ø1/4" Ø1/2" Ø1/4" Ø5/8" Ø3/8"
(4)	Branching section	Y-shaped branching joint	Selection of branching section (Y-shaped branching joint) Model name Y-shape branch joint RBM-BY55UL
(5)	Branching section	Branching header	Selection of branching section (Branching header) Model name Branching header* For 4 branches For 8 branches RBM-HY1043UL RBM-HY1083UL

Piping Length	Total extension of pipe (liquid pipe, real length) Furthest piping length L ("1") Max. equivalent length of main pipe Max. equivalent length of furthest piping from 1st branching LI ("1") Max. real length of indoor unit connecting pipe	Allowable value (ft (m))	Pipes
		91 (180) 328 (100) 410 (125) 213 (65) 115 (35) 49 (15)	L1 + L2 + L3 + a + b + c + d + e + f L1 + L3 L1 L3 + f a, b, c, d, e, f
Height Difference	Height between indoor and outdoor units H1 Upper outdoor unit Lower outdoor unit Height between indoor units H2	164 (50) 131 (40) 49 (15)	

*1 Furthest indoor unit from 1st branch to be named "A".

Full opening of the valve

Open the valves of the outdoor unit fully.



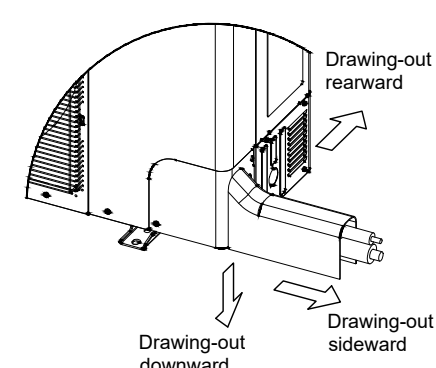
Heat insulation for pipe

- Apply the pipe's heat insulation separately at the liquid and gas sides.
- Be sure to use a thermal insulator resistant up to 248 °F (120 °C) or higher for pipes at the gas side.

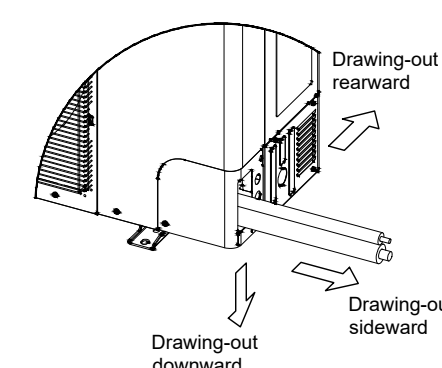
Finishing after connecting pipes

- After the piping connection work has been finished, cover the opening of the piping / wiring panel with the piping cover, or fill silicon or putty in the space between the pipes.
- In case of drawing-out the pipes downward or sideward, also close the openings of the base plate and the side plate.
- Under the opened condition, a problem may be caused due to the entering of water or dust.

When using the piping cover



When not using the piping cover

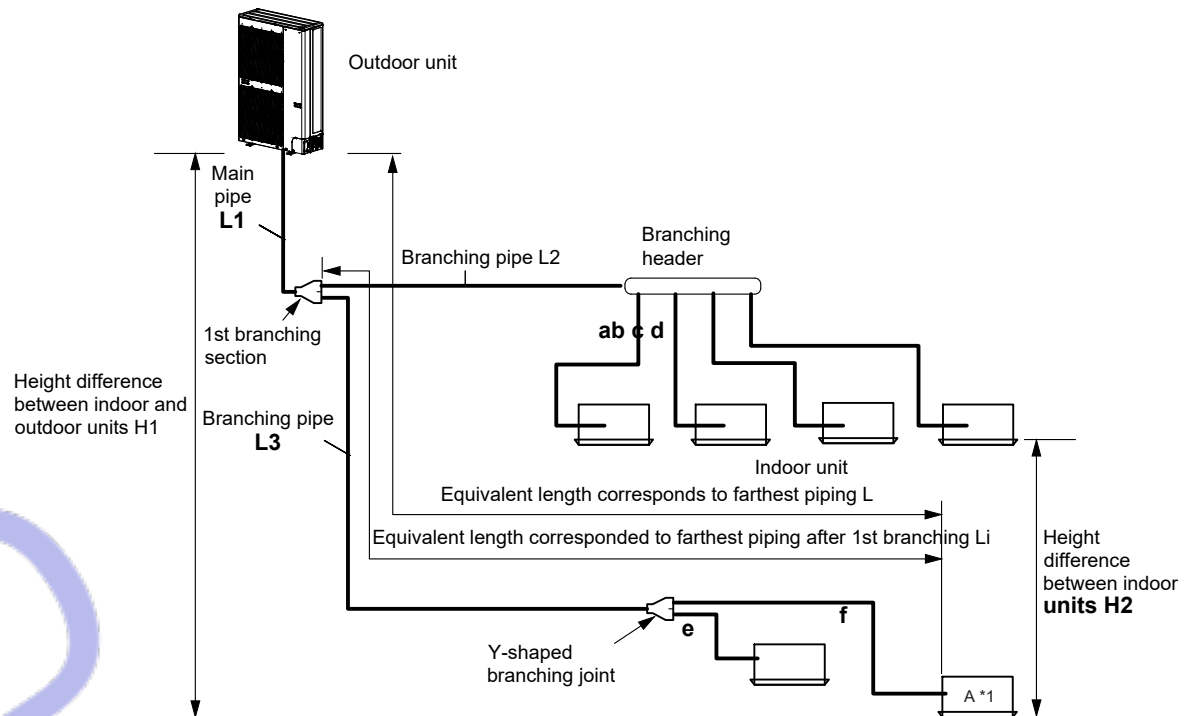


Pipe holding bracket

Attach the pipe holding brackets following the table below.

Diameter of pipe in (mm)	Interval
Ø3/4" (Ø19.05) or less	78.7" (2 m)

Allowable length / height difference of the refrigerant piping



Adding refrigerant

After vacuuming is complete, exchange the vacuum pump with a refrigerant canister and start the additional charging of refrigerant.

Calculation of additional refrigerant charge amount

The default refrigerant amount does not include the refrigerant for pipes at the local site.
For refrigerant to be charged in pipes at the local site, calculate the amount and charge it additionally.

Outdoor unit type	MAP0367	MAP0487	MAP0607
Charging amount (lbs (kg))	14.8 (6.7)	14.8 (6.7)	14.8 (6.7)

Additional refrigerant charge amount at local site	= Real length of liquid pipe × Additional refrigerant charge amount per 1 ft liquid pipe (Table 1) × 1.2 + Compensation by outdoor HP (Table 2)	
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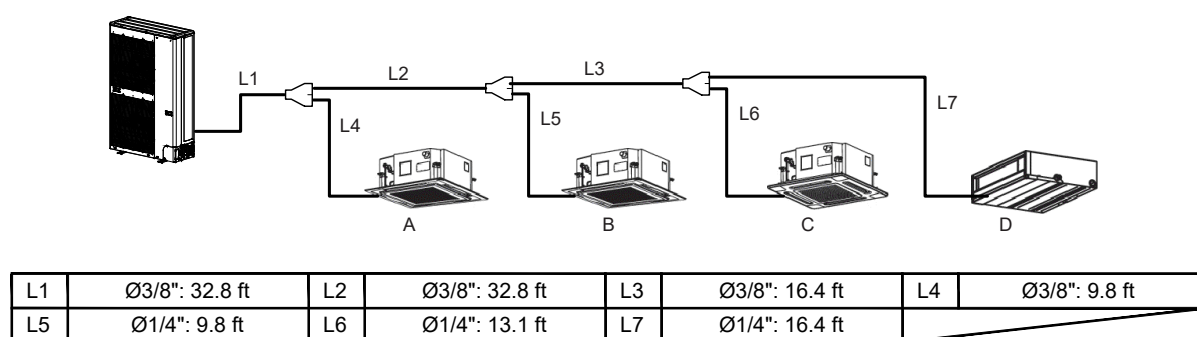
Table 1

Liquid pipe dia. (in)	Ø1/4"	Ø3/8"
Additional refrigerant amount / 1 ft liquid pipe (lbs/ft)	0.017	0.038

Table 2

Outdoor unit type	MAP0367	MAP0487	MAP0607
Compensation by outdoor capacity (lbs (kg))	0 (0)	0.88 (0.4)	1.76 (0.8)

Example: (060 type)



Additional charge amount R (kg)

Lx: Real total length of liquid pipe diameter 1/4" (ft)
Ly: Real total length of liquid pipe diameter 3/8" (ft)

$$= (Lx \times 0.017 \text{ lbs/ft}) + (Ly \times 0.038 \text{ lbs/ft}) \times 1.2 + (1.76 \text{ lbs})$$
$$= (39.3 \times 0.017 \text{ lbs}) + (91.8 \times 0.038 \text{ lbs}) \times 1.2 + (1.76 \text{ lbs})$$
$$= 6.75 \text{ lbs}$$



1-2-2. Indoor unit

Type	Appearance	Model name	Capacity type	Capacity code	Cooling capacity (kBtu/h)	Heating capacity (kBtu/h)
4-Way Cassette		MMU-AP0072H2UL	007 type	7.5	7.5	8.5
		MMU-AP0092H2UL	009 type	9.5	9.5	10.5
		MMU-AP0122H2UL	012 type	12	12	13.5
		MMU-AP0152H2UL	015 type	15.4	15.4	17
		MMU-AP0182H2UL	018 type	18	18	20
		MMU-AP0212H2UL	021 type	21	21	24
		MMU-AP0242H2UL	024 type	24	24	27
		MMU-AP0302H2UL	030 type	30	30	34
		MMU-AP0362H2UL	036 type	36	36	40
		MMU-AP0422H2UL	042 type	42	42	47.5
Compact 4-Way Cassette		*MMU-AP0072H2UL-1	007 type	7.5	7.5	8.5
		MMU-AP0071MH2UL	007 type	7.5	7.5	8.5
		MMU-AP0091MH2UL	009 type	9.5	9.5	10.5
		MMU-AP0121MH2UL	012 type	12	12	13.5
Ceiling		MMU-AP0151MH2UL	015 type	15.4	15.4	17
		MMU-AP0181MH2UL	018 type	18	18	20
		MMC-AP0181H2UL	018 type	18	18	20
		MMC-AP0241H2UL	024 type	24	24	27
High Wall		MMC-AP0361H2UL	036 type	36	36	40
		MMC-AP0421H2UL	042 type	42	42	47.5
		MMK-AP0073H2UL	007 type	7.5	7.5	8.5
		MMK-AP0093H2UL	009 type	9.5	9.5	10.5
		MMK-AP0123H2UL	012 type	12	12	13.5
Slim Ducted		MMK-AP0153H2UL	015 type	15.4	15.4	17
		MMK-AP0183H2UL	018 type	18	18	20
		MMK-AP0243H2UL	024 type	24	24	27
		MMD-AP0074SPH2UL	007 type	7.5	7.5	8.5
Medium Static Duct		MMD-AP0094SPH2UL	009 type	9.5	9.5	10.5
		MMD-AP0124SPH2UL	012 type	12	12	13.5
		MMD-AP0154SPH2UL	015 type	15.4	15.4	17
		MMD-AP0184SPH2UL	018 type	18	18	20
		MMD-AP0074BH2UL	007 type	7.5	7.5	8.5
		MMD-AP0094BH2UL	009 type	9.5	9.5	10.5
		MMD-AP0124BH2UL	012 type	12	12	13.5
		MMD-AP0154BH2UL	015 type	15.4	15.4	17
		MMD-AP0184BH2UL	018 type	18	18	20
		MMD-AP0214BH2UL	021 type	21	21	24
		MMD-AP0244BH2UL	024 type	24	24	27
		MMD-AP0304BH2UL	030 type	30	30	34
		MMD-AP0364BH2UL	036 type	36	36	40
		MMD-AP0424BH2UL	042 type	42	42	47.5
		MMD-AP0484BH2UL	048 type	48	48	54
High Static Duct		MMD-AP0304H2UL	030 type	30	30	34
		MMD-AP0364H2UL	036 type	36	36	40
		MMD-AP0484H2UL	048 type	48	48	54
Floor console exposed		MML-AP0074H2UL	007 type	7.5	7.5	8.5
		MML-AP0094H2UL	009 type	9.5	9.5	10.5
		MML-AP0124H2UL	012 type	12	12	13.5
		MML-AP0154H2UL	015 type	15.4	15.4	17
		MML-AP0184H2UL	018 type	18	18	20
Floor console recessed		MML-AP0244H2UL	024 type	24	24	27
		MML-AP0074BH2UL	007 type	7.5	7.5	8.5
		MML-AP0094BH2UL	009 type	9.5	9.5	10.5
		MML-AP0124BH2UL	012 type	12	12	13.5
		MML-AP0154BH2UL	015 type	15.4	15.4	17
		MML-AP0184BH2UL	018 type	18	18	20
		MML-AP0244BH2UL	024 type	24	24	27

* If MMU-AP0072H2UL-1 is included in the system, operation temperature is different.
Cooling operation : 14.0°F to 109.0°F 1Heating operation : 14.0°F to 60.0°F



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REFERENCE:

REV. NO.	DESCRIPTION	DATE	BY

PROJECT: HEALTH CARE

TITLE: HVAC INSTALLATION
INSTRUCTION

PROJ. NO. PROJ. ENGR. SCALE @ 24X36:
N/A

DATE : August 28, 2026

DRAWING NO. REV.
M - 0 7



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

 support@engrteam.com

 <https://engrteam.com>

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