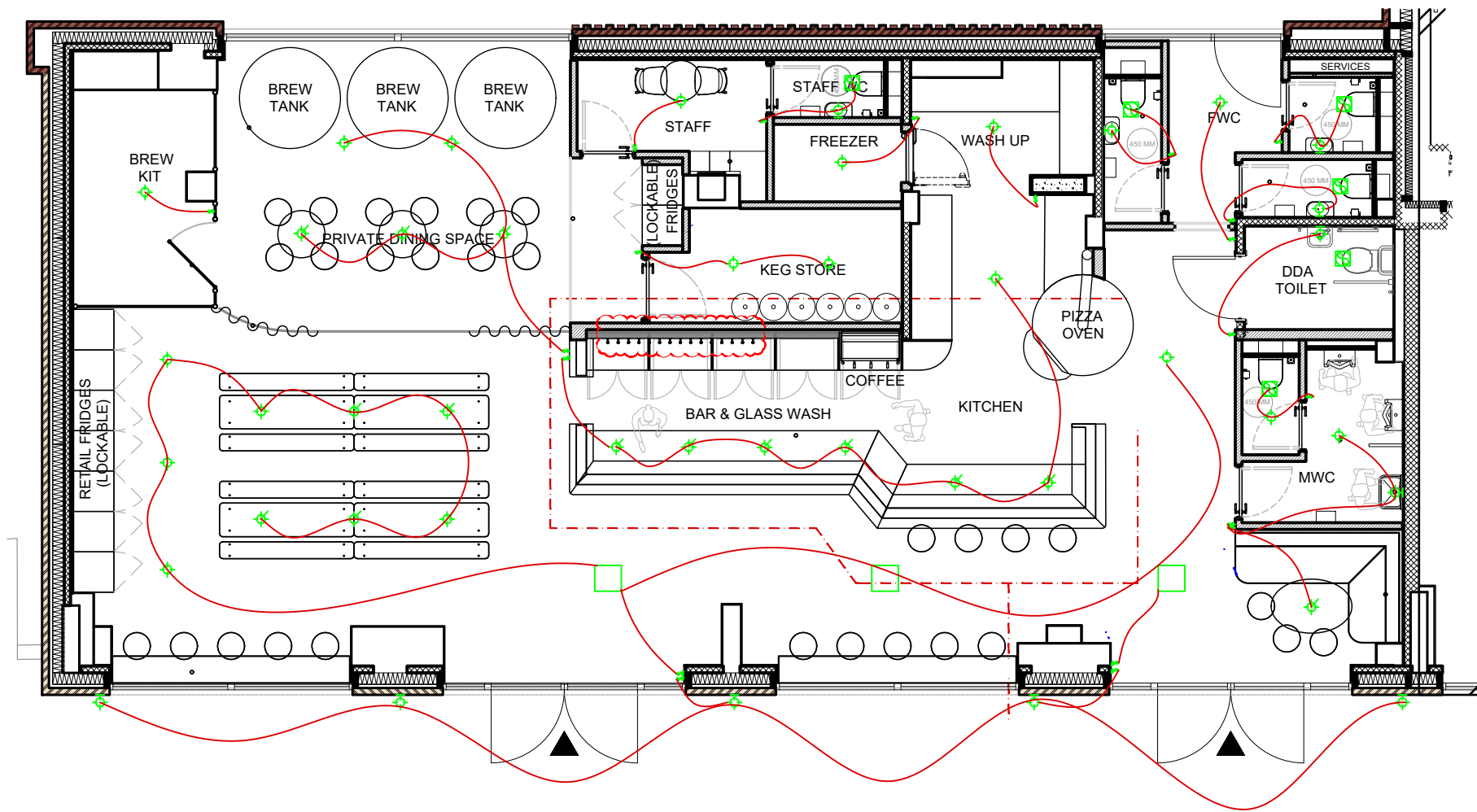




| ELECTRICAL LEGEND |                             |
|-------------------|-----------------------------|
|                   | 20W CEILING MOUNT LED LIGHT |
|                   | 20W HANGING LED LIGHT       |
|                   | SMOKE DETECTOR              |
|                   | 40W LED TUBE LIGHT 4 FEET   |
|                   | 40W LED LIGHT 4x4           |
|                   | ONE WAY SWITCH 220V         |
|                   | MULTI SOCKET OUTLET 220V    |
|                   | 10W WALL MOUNTED LED LIGHT  |
|                   | 60W CEILING FAN 220V        |
|                   | SUB DISTRIBUTION BOARD      |
|                   | MAIN DISTRIBUTION BOARD     |
|                   | 40W BATHROOM EXHAUST FAN    |
|                   | CALLING BELL                |



## ENGINEER'S TEAM

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### OWNER:

#### GENERAL ARRANGEMENT PLAN

ROCK LEOPARD BREWERY  
13 WAGTAIL WALK, LONDON, SE2 9FE

### SEAL:

Release for construction

## ELECTRICAL LIGHTING PLAN

Drawn by: Engr. Al Amin

Checked:

Date: NOV, 24.

E. 1

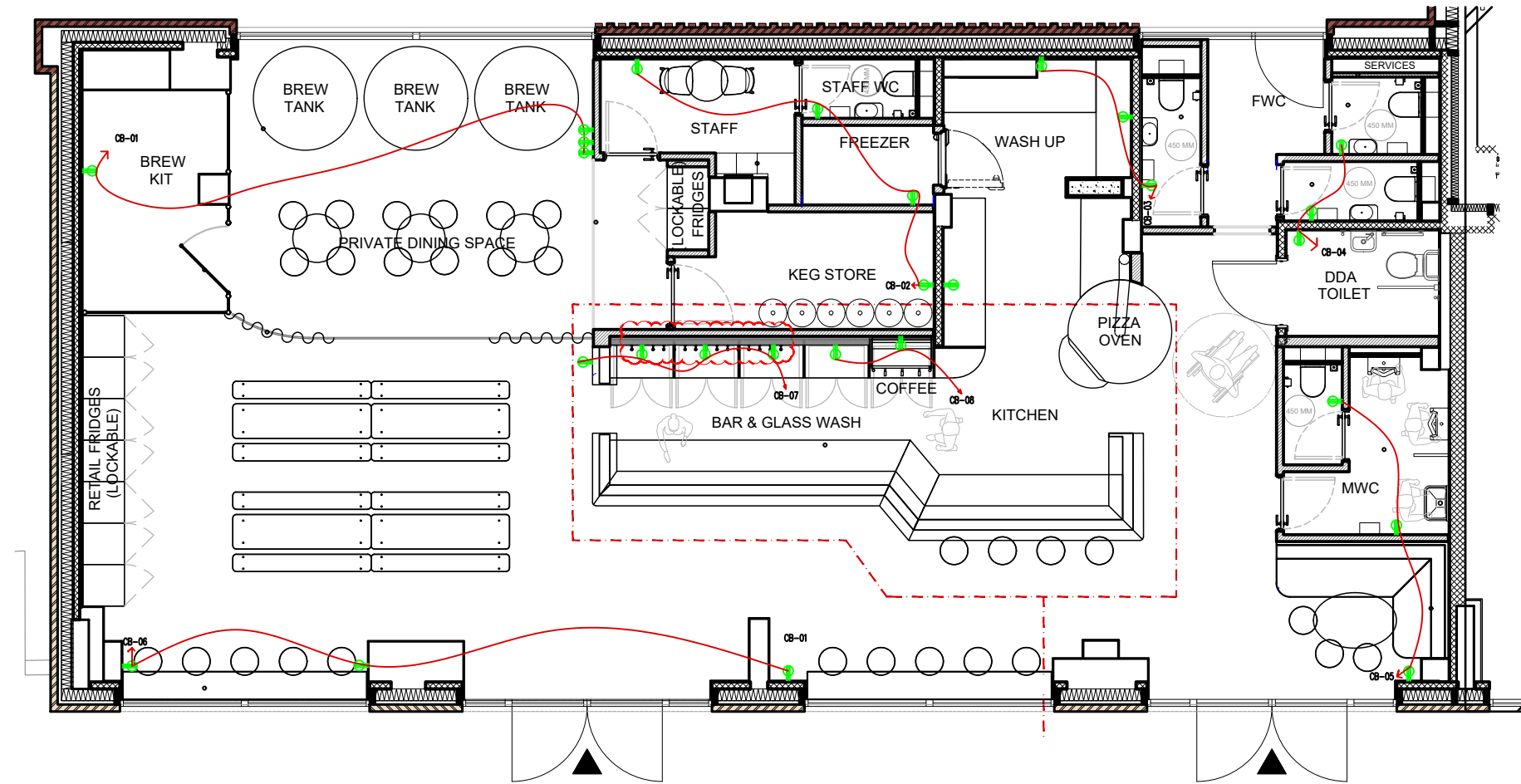
Scale: 1:100

### Note:

This Electrical Layout Plan has been developed for Rock Leopard Brewery, located at 13 Wagtail Walk, London, SE2 9FE. In designing this layout, we have ensured compliance with all applicable electrical codes and standards for brewery installations. The following regulatory codes and guidelines have been adhered to:

- British Standards (BS): The layout follows **BS 7671 (18th Edition)**, ensuring safety and regulatory compliance with wiring installations in the UK. This standard covers requirements for circuit design, fault protection, and grounding, which are critical in brewery environments with high energy loads and wet conditions.
- Electrical Safety Standards: We have also incorporated **UK Health and Safety Executive (HSE) guidelines** specific to brewery installations. These include provisions for safe electrical practices, risk mitigation for high-load machinery, and ventilation to avoid overheating and moisture build-up.
- IP Ratings and ATEX Directives: We have used equipment that complies with **Ingress Protection (IP) ratings** appropriate for moisture-prone areas and **ATEX standards** where applicable, ensuring explosion-proofing and safety in environments where flammable vapors may be present.
- Three-Phase Power Requirements: As breweries typically require significant electrical power, especially for three-phase motors and pumps, this plan accounts for adequate power distribution, aligned with guidelines for industrial settings (as advised by the Asia Brewers Network).

This document certifies that the electrical plan is up-to-date with all required codes, prioritizing safety, operational efficiency, and regulatory compliance throughout the installation at Rock Leopard Brewery.



ELECTRICAL LEGEND

- MULTI SOCKET OUTLET 120V
- GFCI MULTI SOCKET OUTLET 120V
- INSTANT WATER HEATER



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ELECTRICAL POWER PLAN

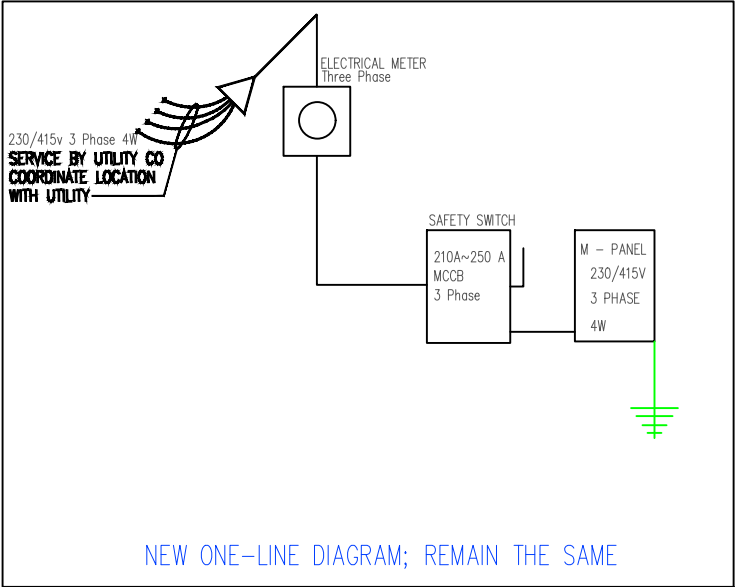
|           |               |
|-----------|---------------|
| Drawn by: | Engr. Al Amin |
| Checked:  |               |
| Date:     | NOV, 24.      |
| E. 2      |               |
| Scale:    | 1:100         |

| 230/415 VOLT 3 PHASE 4 WIRE ELECTRICAL SERVICE |                 |           |                     |              |
|------------------------------------------------|-----------------|-----------|---------------------|--------------|
| ITEM                                           | CONN. LOAD (VA) | DEMAND F. | DEMAND LOAD (WATTS) | TOTAL (AMPS) |
| LIGHTING                                       | 1100            | 125%      | 1375                |              |
| WATER HEATERS                                  | 2000            | 100%      | 2000                |              |
| EQUIPMENT                                      | 10866           | 65%       | 7063                |              |
| HVAC LOADS                                     | 24618           | 100%      | 24618               |              |
| SUB-TOTAL                                      | 38584           |           | 35056               |              |
| LARGEST MOTOR                                  | 0               | 125%      | 0                   |              |
| TOTAL @ 230V/415 V                             | 38584           |           | 35056               | 51           |

1E200PANEL SCHEDULE & SERVICE CALCULATION

| Material                             |      |
|--------------------------------------|------|
| Name                                 | Watt |
| CEILING MOUNT ROUND LED LIGHT        | 20W  |
| WALL MOUNT LED LIGHT                 | 10W  |
| CEILING MOUNT 2"X2" SQUARE LED LIGHT | 40W  |
| HANGING LIGHT                        | 20W  |

| ELECTRICAL PANEL - MAIN                          |       |      |          |           |         |         |         |                  |          |           |      |       |               |       |  |  |  |  |
|--------------------------------------------------|-------|------|----------|-----------|---------|---------|---------|------------------|----------|-----------|------|-------|---------------|-------|--|--|--|--|
| LOAD SERVED                                      | CKT # | TYPE | BKR TRIP | WIRE SIZE | PHASE A | PHASE B | PHASE C | PHASE A          | BKR TRIP | WIRE SIZE | TYPE | CKT # | LOAD SERVED   |       |  |  |  |  |
| HVAC-7 TONS                                      | 1     |      | 80       | #3        | 8206    |         |         | 1100             | 20       | #12       |      | 2     | LIGHTING LOAD |       |  |  |  |  |
|                                                  | 3     |      | 120      | #1/0      |         | 8206    |         | 2000             | 100      | #3        |      | 4     | WATER HEATER  |       |  |  |  |  |
|                                                  | 5     |      | 120      | #1/0      |         |         | 8206    | 3000             | 120      | #1/0      |      | 6     | CB-1          |       |  |  |  |  |
| CB-4                                             | 7     |      | 20       | #12       | 500     |         |         | 1500             | 20       | #1/0      |      | 8     | CB-2          |       |  |  |  |  |
| CB-5                                             | 9     |      | 100      | #3        | 500     |         |         | 500              | 120      | #1/0      |      | 10    | CB-3          |       |  |  |  |  |
| CB-6                                             | 11    |      | 100      | #3        | 500     |         |         | 1000             | 20       | #12       |      | 12    | CB-7          |       |  |  |  |  |
| CB-8                                             | 13    |      | 0        | #12       | 1683    |         |         | 0                | 0        | #12       |      | 14    | SPARE         |       |  |  |  |  |
|                                                  | 15    |      | 0        | #12       |         | 1683    |         | 0                | 0        | #12       |      | 16    | SPARE         |       |  |  |  |  |
| SPARE                                            | 17    |      | 0        | #12       | 0       |         |         | 0                | 0        | #12       |      | 18    | SPARE         |       |  |  |  |  |
|                                                  |       |      |          |           |         |         |         |                  |          |           |      |       |               |       |  |  |  |  |
| TOTAL VA PHASE A                                 |       |      |          |           | 11389   |         |         | 9100             |          |           |      |       |               | 20489 |  |  |  |  |
| TOTAL VA PHASE B                                 |       |      |          |           |         |         | 9889    |                  |          |           |      |       |               | 9889  |  |  |  |  |
| TOTAL VA PHASE C                                 |       |      |          |           |         |         |         | 8206             |          |           |      |       |               | 8206  |  |  |  |  |
| TOTAL VOLT-AMPS                                  |       |      |          |           |         |         |         |                  |          |           |      |       | 38584         |       |  |  |  |  |
|                                                  |       |      |          |           |         |         |         |                  |          |           |      |       |               |       |  |  |  |  |
| DIVIDE TOTAL VOLT-AMPS BY SYSTEM VOLTAGE (PHASE) |       |      |          |           |         |         |         | 230              |          | AMPS      |      |       |               | 168   |  |  |  |  |
|                                                  |       |      |          |           |         |         |         |                  |          |           |      |       |               |       |  |  |  |  |
| TOTAL CONNECTED LOAD (AMPS) @ 125%               |       |      |          |           |         |         |         | 210              |          |           |      |       |               |       |  |  |  |  |
| MAIN TYPE AND AMPERE RATING                      |       |      |          |           |         |         |         | 210-250 AMP MCCB |          |           |      |       |               |       |  |  |  |  |
| PANEL FEEDER SIZE - SEE RISER DIAGRAM            |       |      |          |           |         |         |         |                  |          |           |      |       |               |       |  |  |  |  |



1E200SINGLE LINE DIAGRAM



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ELECTRICAL LOAD SHEDULE PLAN

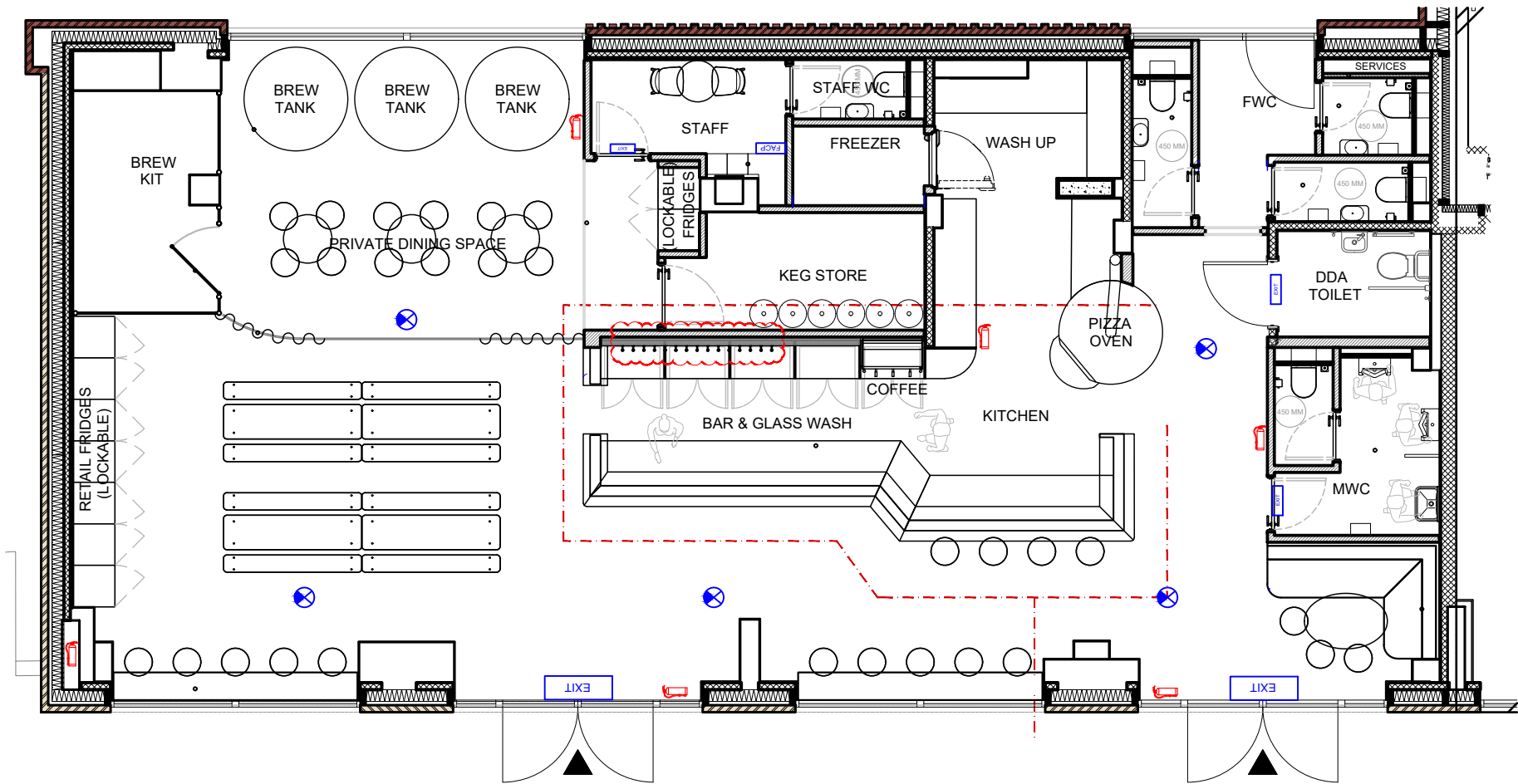
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Checked:

Date: NOV, 24.

E. 3

Scale: 1:100



| LEGENDS |                                  |
|---------|----------------------------------|
| SYMBOLS | DESCRIPTION                      |
|         | SMOKE DETECTOR                   |
|         | SOUNDER                          |
|         | MANUAL CALL POINT                |
|         | HEAT DETECTOR                    |
|         | FIRE ALARM CONTROL PANEL         |
|         | WHITE LED EXIT & EMERGENCY LIGHT |
|         | FIRE EXTINGUISHERS               |



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FIRE SAFTY PLAN

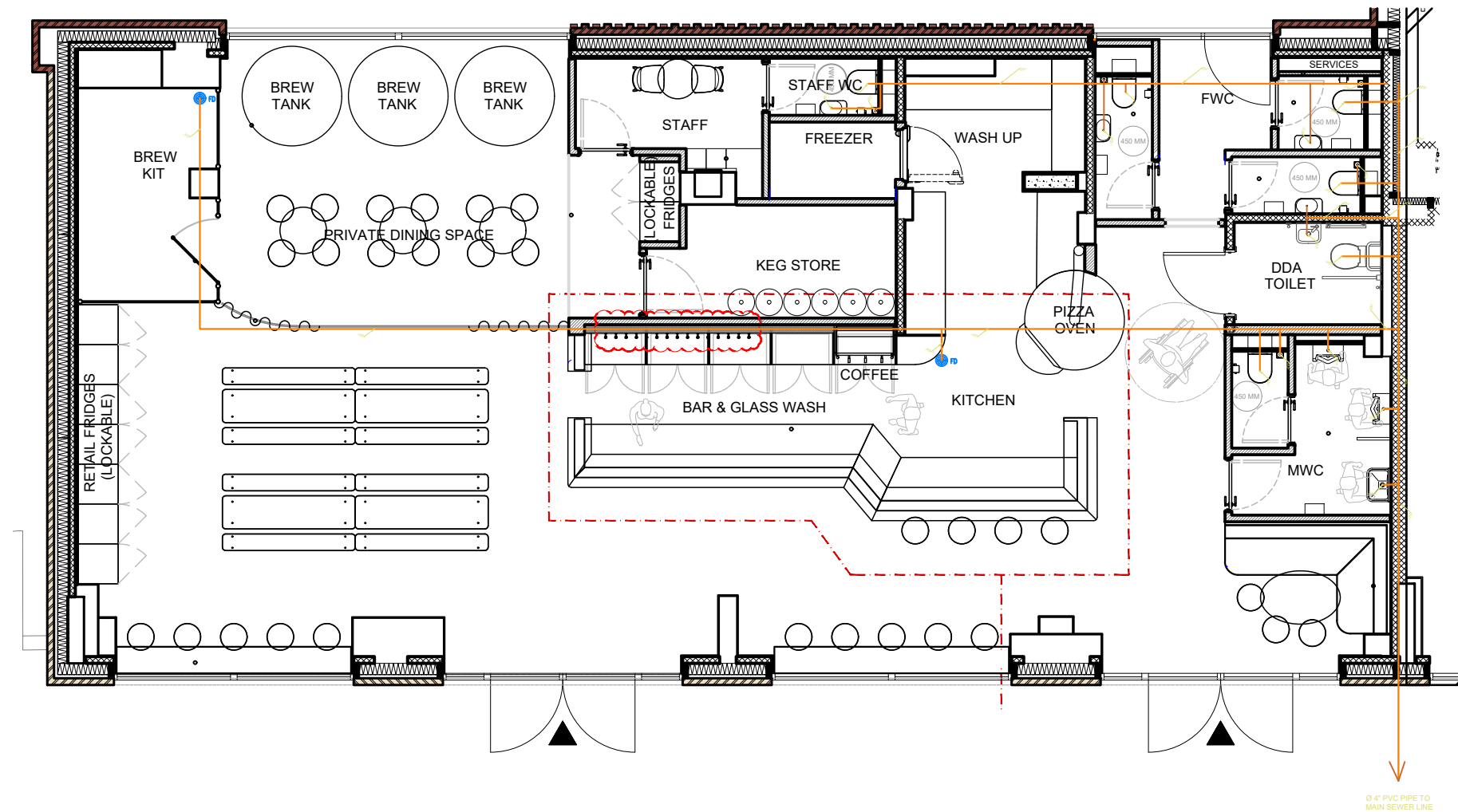
Drawn by: Engr. Al Amin  
Checked:  
Date: NOV, 24.  
F. 1  
Scale: 1:100

Note:

This Fire Safety Plan for Rock Leopard Brewery, located at 13 Wagtail Walk, London, SE2 9FE, has been developed in full compliance with the latest UK fire safety regulations and guidelines. The plan adheres to the following updated codes and standards:

- Regulatory Reform (Fire Safety) Order 2005 (RRO): This foundational legislation mandates that the responsible person ensures fire risk assessments and emergency response plans are in place and updated. It includes requirements for fire safety management, alarm systems, and clear evacuation routes.
- Fire Safety (England) Regulations 2022: These regulations, introduced to implement the Grenfell Tower Inquiry's recommendations, include mandatory updates for building safety. Key requirements under these regulations cover:
  - Monthly checks on firefighting lifts, equipment, and evacuation aids.
  - Installation and maintenance of a secure information box with up-to-date floor plans and building layouts for quick access by emergency services.
  - Placement of wayfinding signage to guide occupants in low visibility and indicate floor levels.
  - Displaying comprehensive fire safety instructions accessible to all occupants, detailing evacuation procedures and emergency contacts.
- Approved Document B (Fire Safety) of the Building Regulations 2019: This document provides essential guidelines for structural fire precautions, materials used, and escape routes to protect building integrity and ensure safe evacuation.

These measures ensure that the Rock Leopard Brewery's Fire Safety Plan aligns with the latest fire safety standards, addressing all required precautions and protections to safeguard occupants and property.



SEWERAGE LEGEND

WASTE WATER/ SEWER LINE (UPVC PIPE)

TOILET WASTE/ SEWER LINE (UPVC PIPE)



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## PLUMBING SEWERAGE PLAN

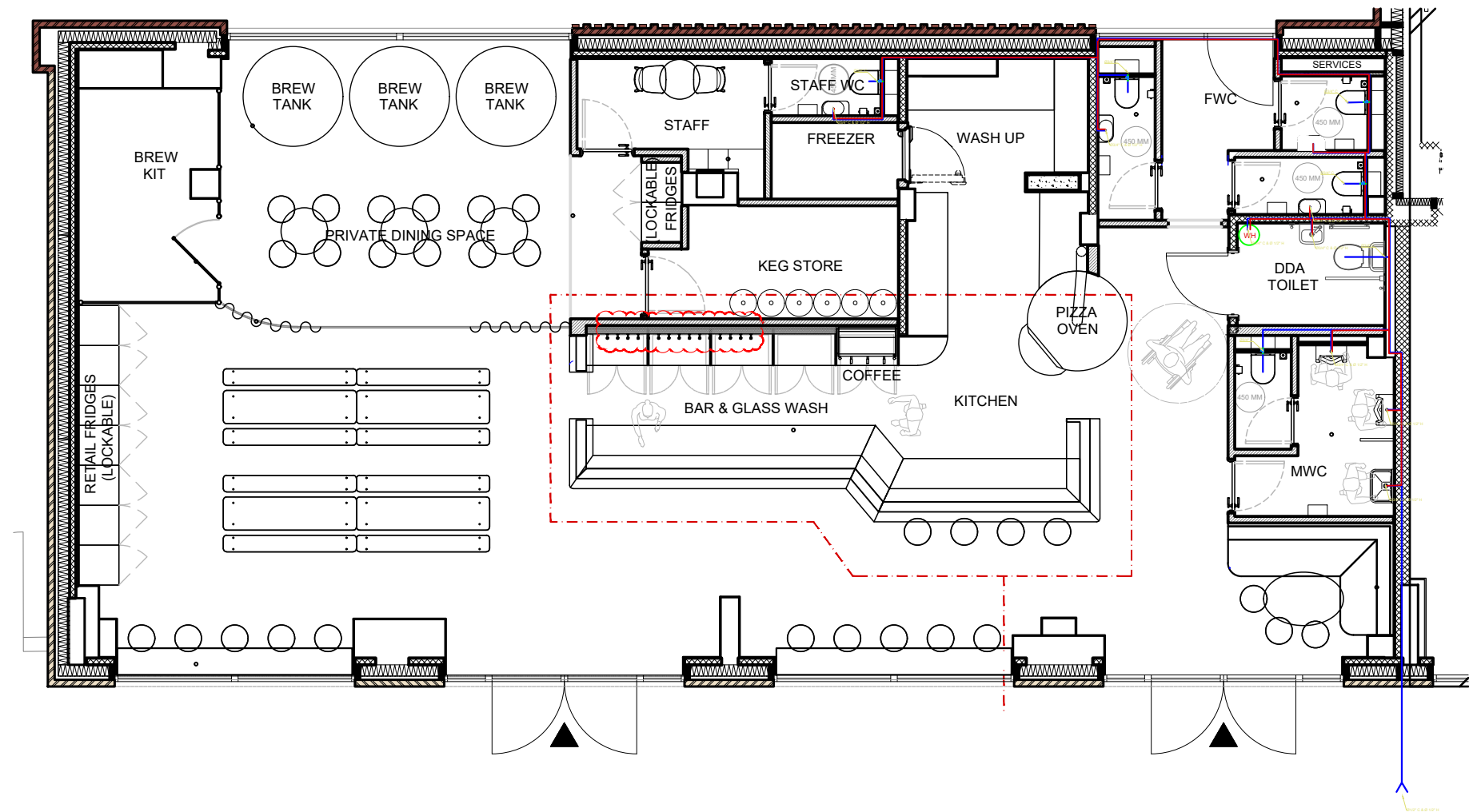
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Date: NOV, 24.

P. 1

Scale: 1:100



| PLUMBING LEGEND |                       |
|-----------------|-----------------------|
|                 | BALL VALVE (BV)       |
|                 | GATE VALVE (GV)       |
|                 | 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              |

| LINES TYPE LEGEND |                      |
|-------------------|----------------------|
|                   | COLD WATER LINE (CW) |
|                   | HOT WATER LINE (HW)  |
|                   | SEWER LINE (S)       |
|                   | GAS LINE (G)         |



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## PLUMBING WATER SUPPLY PLAN

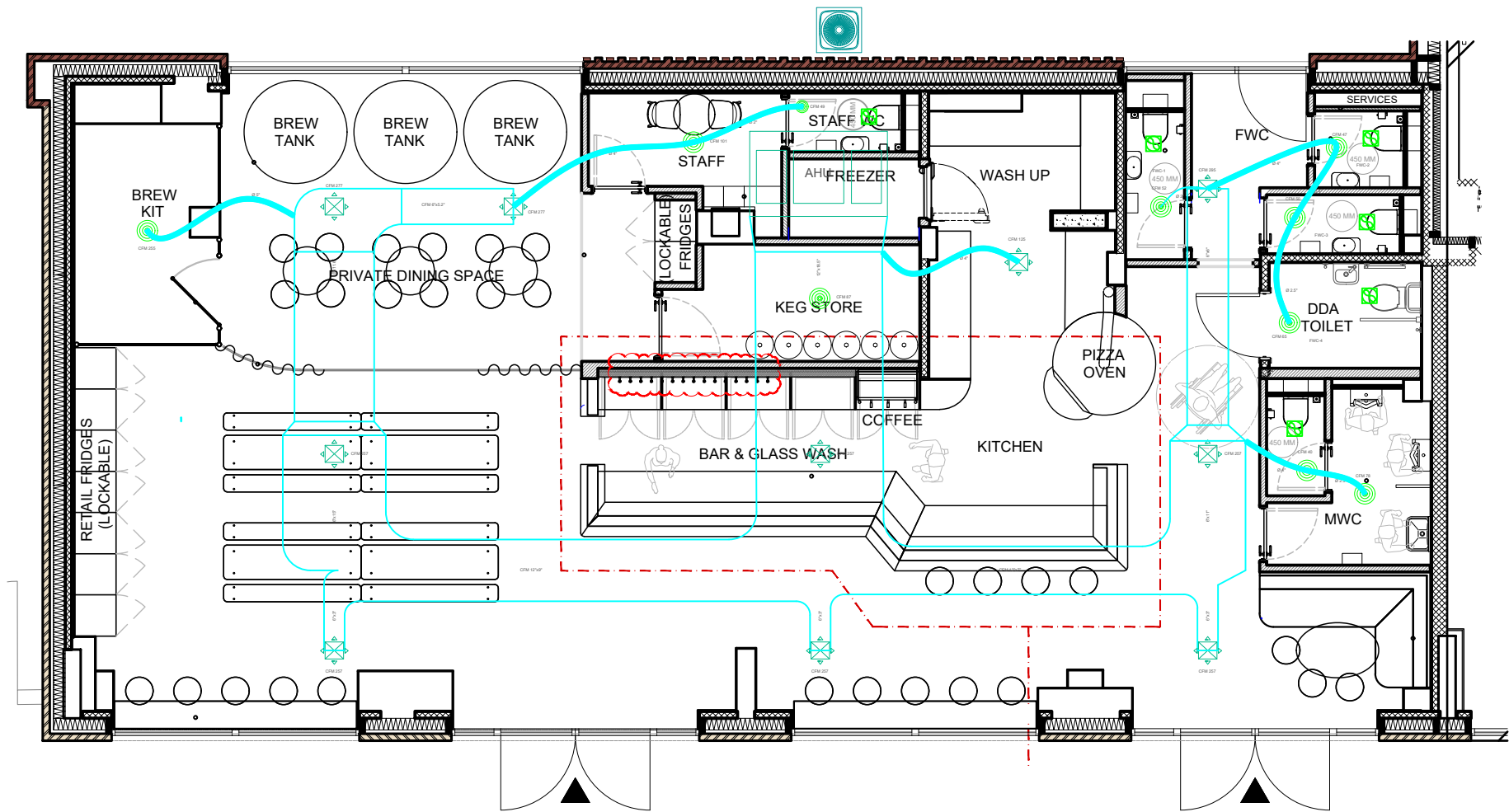
|           |               |
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| Drawn by: | Engr. Al Amin |
| Checked:  |               |
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| P. 2      |               |
| Scale:    | 1:100         |

Note:

This Plumbing Layout Plan for "Rock Leopard Brewery, 13 Wagtail Walk, London, SE2 9FE" has been prepared in full compliance with current UK plumbing regulations and best practices. Key codes and standards applied include:

- Building Regulations Part H: Outlining drainage and waste disposal standards, ensuring effective wastewater management and system reliability. This includes specific sizing and material requirements to minimize risk and ensure health and safety compliance.
- Water Supply (Water Fittings) Regulations 1999: Governing all aspects of water supply systems, this regulation prevents contamination and promotes efficient water usage, particularly relevant for brewery operations.
- BS EN 806 & BS 8558: Establishing guidelines for the design, installation, and maintenance of potable water systems to meet safety standards and avoid contamination in commercial settings.
- Updated Part L (2023): Implementing energy efficiency requirements for heating and hot water systems. Compliance here aligns with the industry's push towards sustainability and efficiency, particularly in reducing carbon impact for high-use water facilities like breweries.
- Future Homes Standard (FHS): Although fully effective in 2025, aspects of this evolving standard have been proactively incorporated, focusing on minimizing carbon emissions and preparing for future regulatory requirements in commercial plumbing setups.

This comprehensive adherence to standards ensures that the plumbing systems at Rock Leopard Brewery not only meet current safety and efficiency criteria but also anticipate future regulatory expectations, supporting both operational and environmental sustainability.



| Mechanical Legends |                      |
|--------------------|----------------------|
|                    | AIR HANDLING UNIT    |
|                    | ROOF TOP UNIT        |
|                    | OUTDOOR CONDENSER    |
|                    | SUPPLY AIR DIFFUSER  |
|                    | EXHAUST AIR DIFFUSER |
|                    | KITCHEN CHIMNEY      |
|                    | EXHAUST FAN          |
|                    | SUPPLY AIR DUCT      |



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## HVAC LAYOUT PLAN

Drawn by: Engr. Al Amin

Checked:

Date: NOV, 24.

H. 1

Scale: 1:100

### Note:

This HVAC layout plan for Rock Leopard Brewery has been created in compliance with all relevant and updated codes and standards required in London, UK. The design meets the following key regulations:

- Part F - Ventilation: Ensures adequate ventilation with attention to air quality, airflow, and humidity control. This includes adherence to specifications on preventing condensation and maintaining proper indoor air quality for industrial spaces.
- Part L - Conservation of Fuel and Power: Addresses energy efficiency, optimizing the HVAC system to reduce energy consumption while achieving the necessary heating and cooling performance. This part requires updates every few years to meet the evolving UK energy conservation standards.
- Part B - Fire Safety: Ensures all HVAC components are placed and designed to minimize fire hazards and provide safe egress, including provisions for smoke extraction where necessary. This compliance supports occupant safety in the case of an emergency.
- BS EN 378 - Refrigeration Systems and Heat Pumps: This British Standard governs the safe operation of refrigerants, ensuring environmental safety and adherence to UK standards for systems using refrigeration.
- CIBSE Guide B - Heating, Ventilating, Air Conditioning, and Refrigeration: As advised by the Chartered Institution of Building Services Engineers (CIBSE), this guide ensures the HVAC system follows best practices in mechanical and environmental engineering, emphasizing energy efficiency, thermal comfort, and safety.

This layout has been meticulously planned to meet all these standards, ensuring it aligns with current UK codes and promotes operational efficiency, safety, and environmental responsibility.

## EXHAUST FAN SCHEDULE

| MARK | SERVING  | CFM  | SP | WATTS | RPM  | VOLTAGE  | MAKE MODEL           | NOTES | FAN TYPE |
|------|----------|------|----|-------|------|----------|----------------------|-------|----------|
| EF-1 | BATHROOM | 50   | -  | 50    | 460  | 120/60/1 | Broan-NuTone 688     |       | IN-LINE  |
| EF-2 | KITCHEN  | 1600 | -  | 78    | 1291 | 115/60/1 | HOODMART 28D-1600-FF |       | IN-LINE  |

### NOTES

- COMPLETE W/BACKDRAFT DAMPER.
- PROVIDE THERMOSTATIC CONTROL DEVICES
- INTERLOCK TO OPERATE WHENEVER RTU'S OPERATE.
- MAINTAIN A MINIMUM CLEARANCE OF 10'-0" FROM ALL INTAKE AIR FANS AND ALL ROOF TOP UNITS OUTSIDE AIR INTAKE OPENINGS.



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## HVAC PLAN

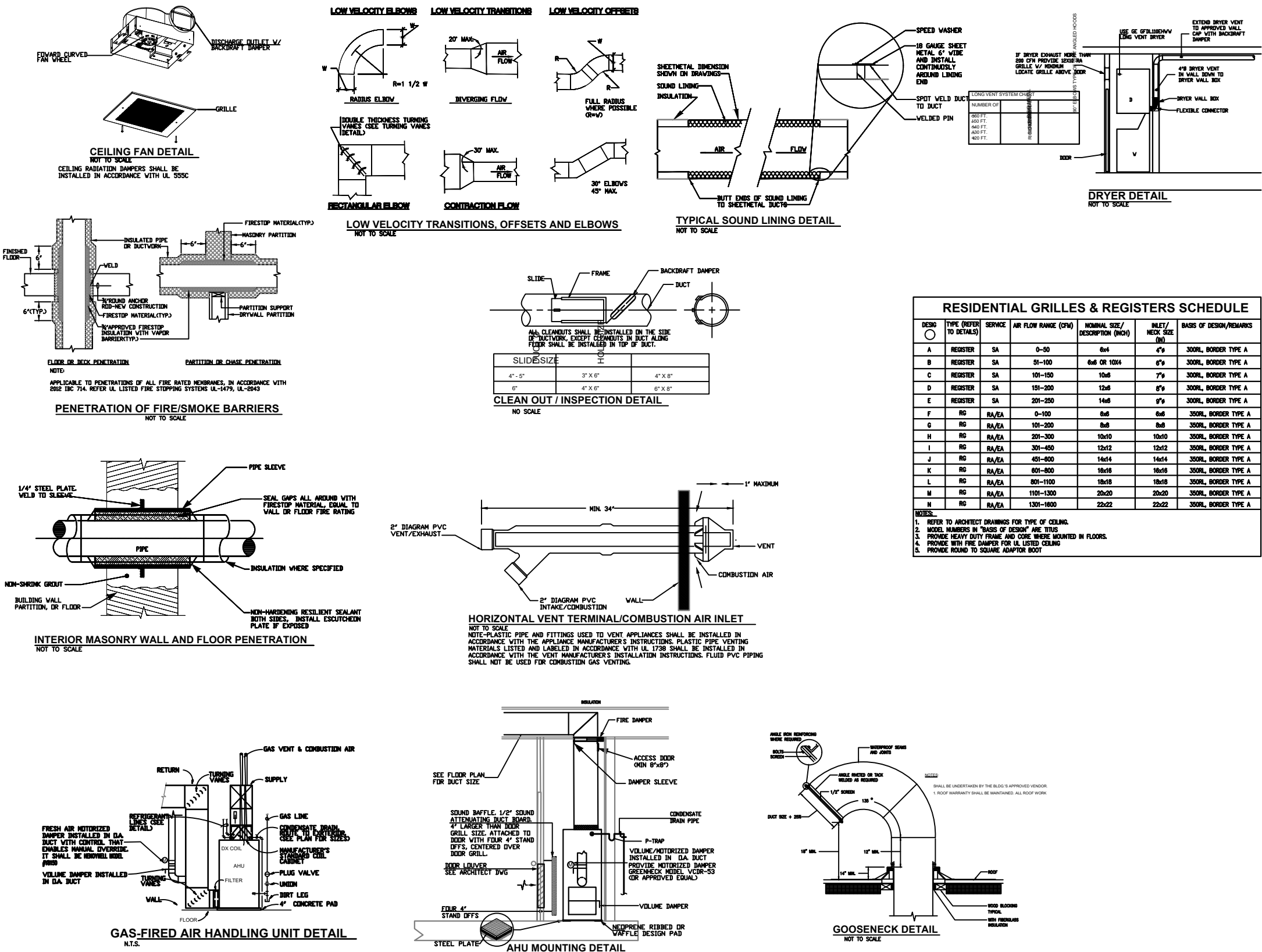
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Checked:

Date: NOV, 24.

H. 2

Scale: 1:100





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

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