

MECHANICAL WORKING DRAWING

TITLE:

PROPOSED RESIDENTIAL DEVELOPMENT

CLIENT:

MRS. HAJARA A UMAR

LOCATION:

PLOT 7II CADASTRAL ZONE A06,
MAITAMA ABUJA FCT

DATE:

AUGUST, 2022

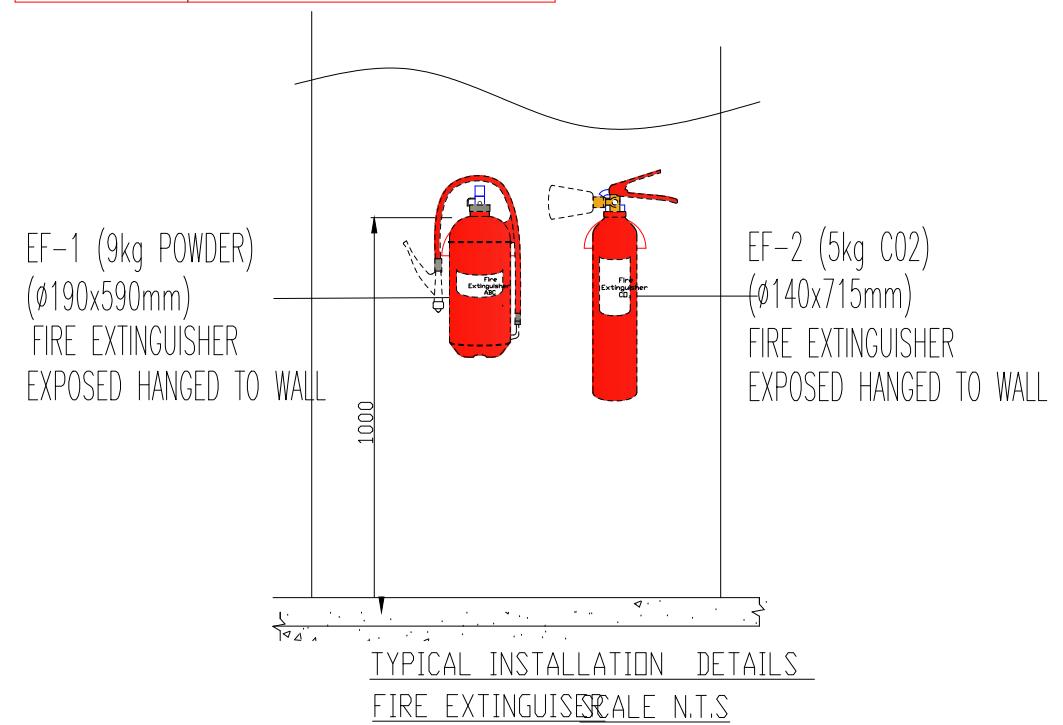
LEGEND

APPROVAL COLUMN

LEGEND	
SYMBOL	DESCRIPTION
	SOIL AND WASTE WATER PIPE
	WASTE PIPE
	COLD WATER PIPE
	Ø100 SOIL & WASTE PIPE FOR VENT
	100&50MM TRAPPED FLOOR DRAIN
	SOIL AND WASTE WATER MANHOLE/INSPECTION CHAMBER (600x600/450x450mm)
	METER CHAMBER
	NON RETURN VALVE
	ISOLATING VALVE
	ISOLATING VALVE(25mmØ)
	BRASS STAND BIP TAP
	S&WP
	COLD WATER PIPE
L/L	LOW LEVEL
TA.	TO ABOVE.
WP	WASTE PIPE
S&WP	SOIL AND WASTE WATER PIPE
UG	UNDERGROUND
FAD	FRESH AIR DUCT
RAD	RETURN AIR DUCT
EF-1	GX9 EXTRACTOR FAN:XPELIAR MAKE
EF-2	INDUSTRIAL EXTRACTOR FAN: MAKE:XPELIAR

LEGEND	
SYMBOL	DESCRIPTION
	BLACK THREADED STEEL PIPE SHD40.
	FIRE ALARM SOUNDER WITH STROBE
	MANUAL BREAK-GLASS CALL POINT (RED)
	FLASHING XENON BEACON
	ELECTRIC SIREN WITH STROBE LIGHT, GENT
	OPTICAL SMOKE DETECTOR
	IONIZATION SMOKE DETECTOR
	FM 200 AUTOMATIC DISCHARGE NOZZLE
	FM 200 ENTRANCE WARNING SIGN
	AUTOMATIC FIRE ALARM PANEL
	FM200 GAS CYLINDER COMPLETE WITH VALVE ASSEMBLY (52LTS)

HVAC	
SYMBOL	DESCRIPTION
	REFRIGERANT PIPE SUPPLY & RETURN
	CONTROL NETWORK
	CONDENSATE PIPE NETWORK
	REMOTE CONTROL WALL TYPE INBOARD UNIT Approved equal Daikin / Carrier Make.
	SQUARE SUPPLY GRILL
FE-1	5KG GAS/CO2 FIRE EXTINGUISHERS C5MH FIRE RATING 70B FE CO2 FIRE RATING 10A C FIRE EXTINGUISHERS HF9 FIRE RATING 27A C FE (EXPENDED HANGER TO WALL)
FE-2	14KG C FE (EXPENDED HANGER TO WALL)
	FAN COIL UNIT
	MULTI V OUTDOOR UNIT. Approved equal Daikin / Carrier Make.



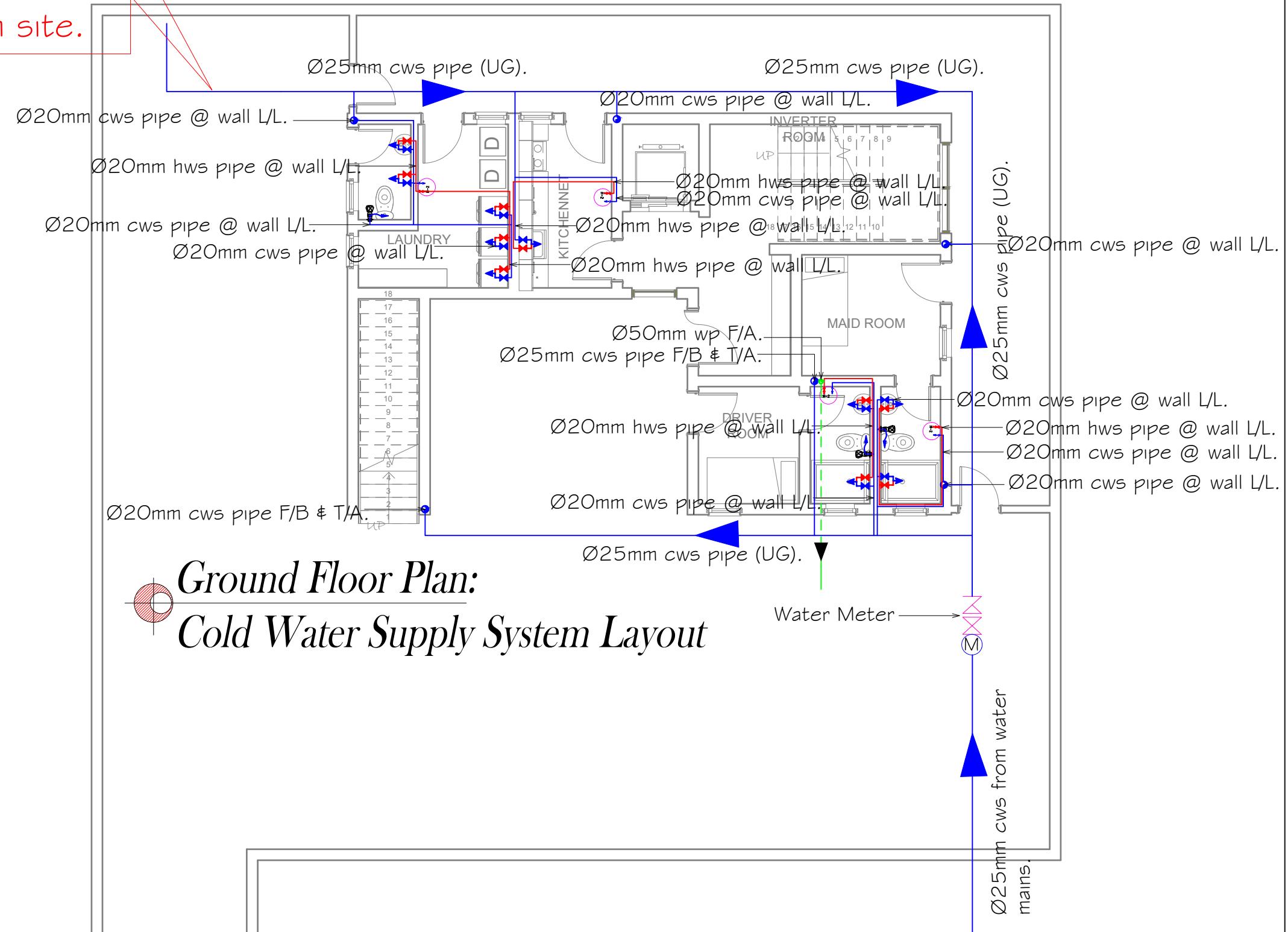
MECHANICAL SYMBOL DESCRIPTION

Client
MRS. HAJARA A UMAR

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

DESIGNED	CHECKED	Scale	Date	Sheet no	
ENGR. SHITTU KENNETH	ENGR. O. SAJO	NTS	AUGUST, 2022	ME - 00	Drawing title LEGEND

See Page 18 for
Tank details.
Location to be
decided on site.



Client
MRS. HAJARA A UMAR

DESIGNED

ENGR. SHITTU KENNETH

CHECKED

ENGR. O. SAJO

Scale

NTS

Date

AUGUST, 2022

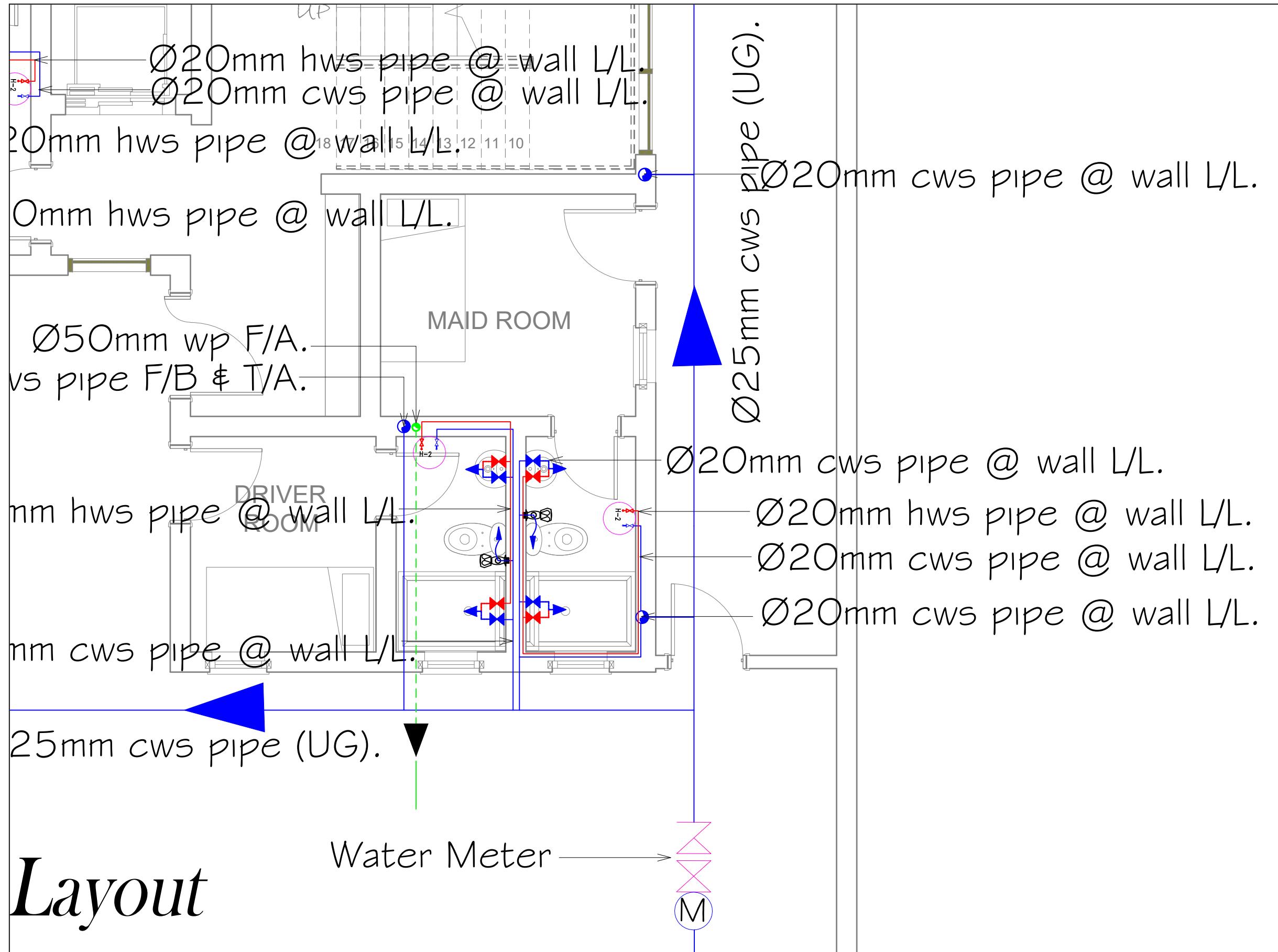
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ME - 01

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

Drawing title
GROUND FLOOR PLAN: WATER SUPPLY LAYOUT

APPROVAL COLUMN



Client
MRS. HAJARA A UMAR

DESIGNED

ENGR. SHITTU KENNETH

CHECKED

ENGR. O. SAJO

Scale

NTS

Date

AUGUST, 2022

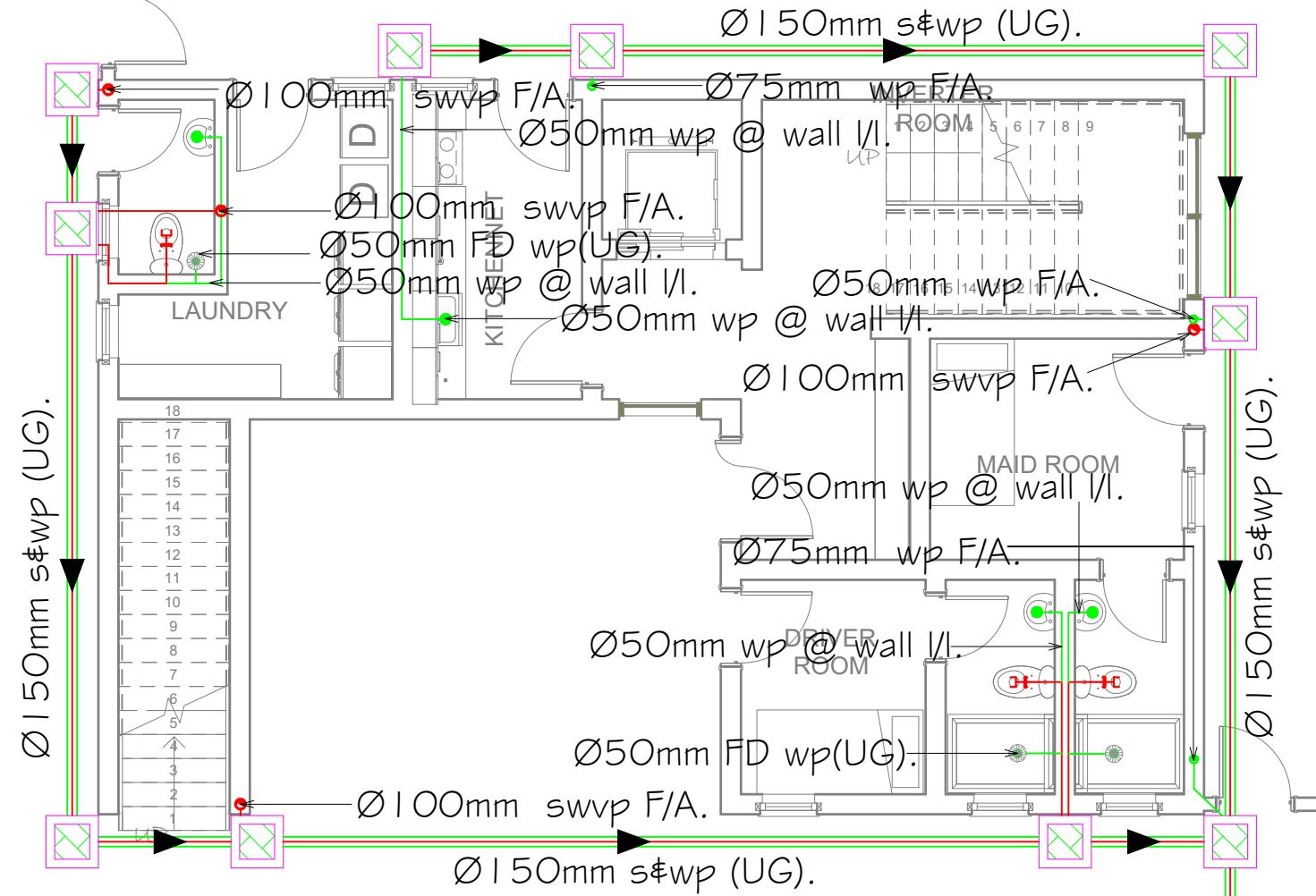
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ME - 01B

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

Drawing title
GROUND FLOOR PLAN: WATER SUPPLY LAYOUT

APPROVAL COLUMN



Ground Floor Plan:

Drainage System Layout

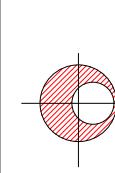
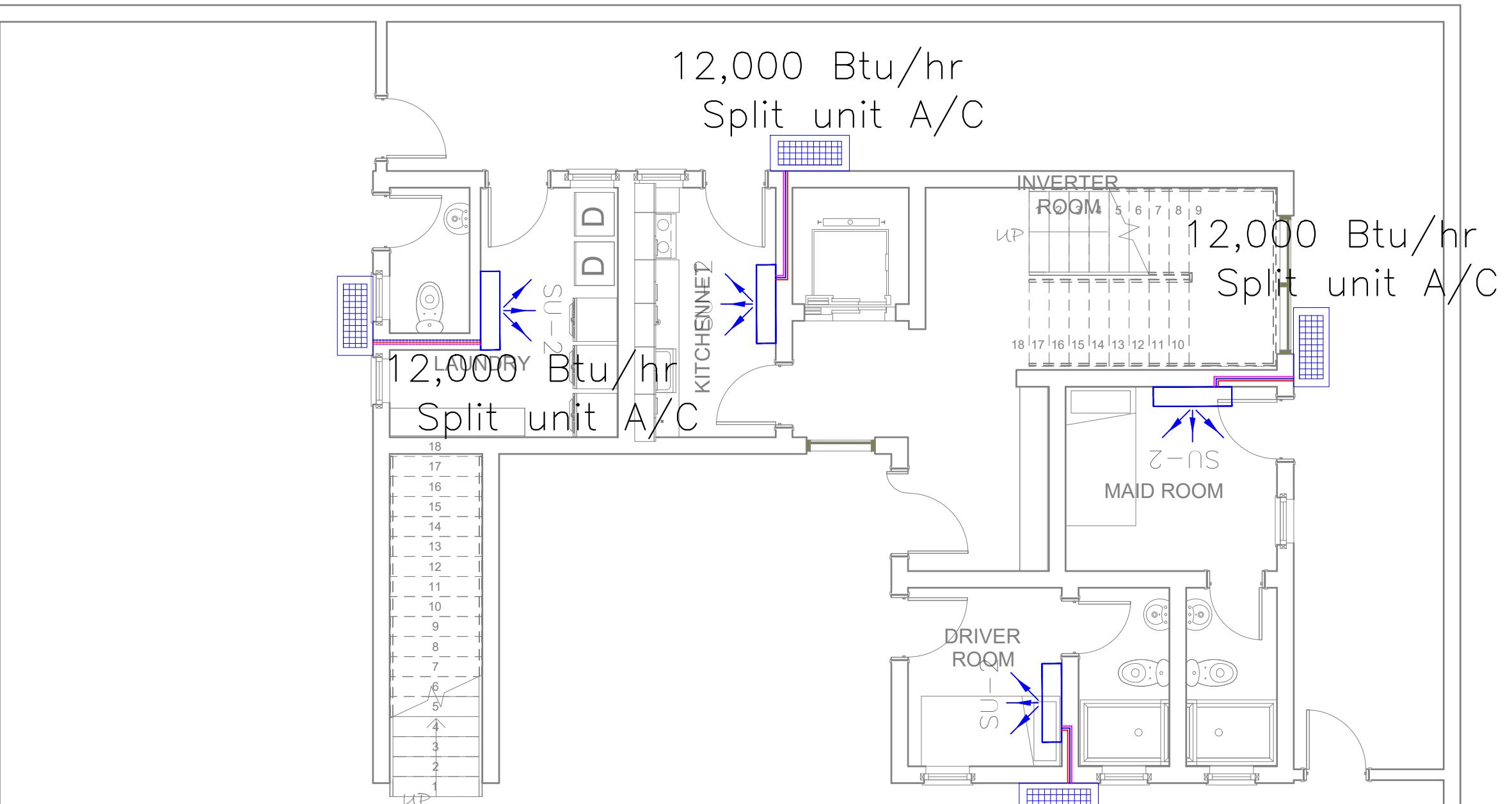
Client MRS. HAJARA A UMAR	DESIGNED ENGR. SHITTU KENNETH	CHECKED ENGR. O. SAJO	Scale NTS	Date AUGUST, 2022	Sheet no ME - 02
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Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711, CADASTRAL ZONE A22, MAITAMA, ABUJA, FCT.

Drawing title
GROUND FLOOR PLAN: DRAINAGE LAYOUT

APPROVAL COLUMN

APPROVAL COLUMN



Ground Floor Plan: Ventilation & Air-conditioning System Layout

Client
MRS. HAJARA A UMAR

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

DESIGNED

CHECKED

Scale

Date

Sheet no

ENGR. SHITTU KENNETH

ENGR. O. SAJO

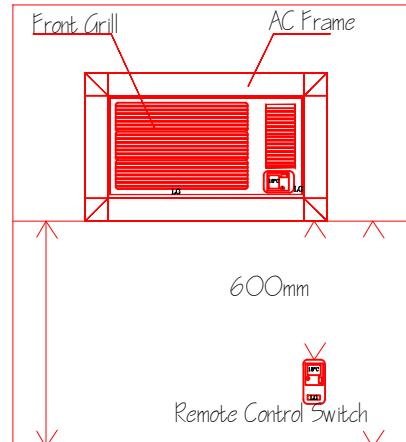
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AUGUST, 2022

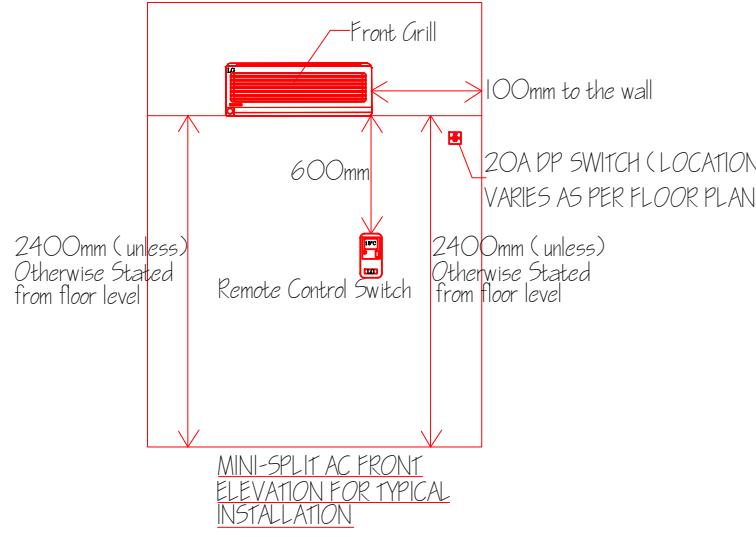
ME - 03

Drawing title
GROUND FLOOR: VENTILATION & AIR-CONDITIONING LAYOUT

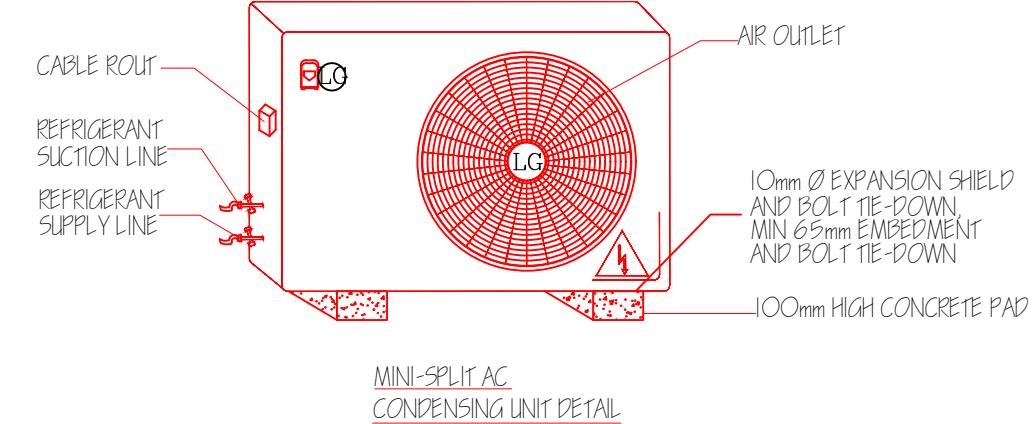
APPROVAL COLUMN



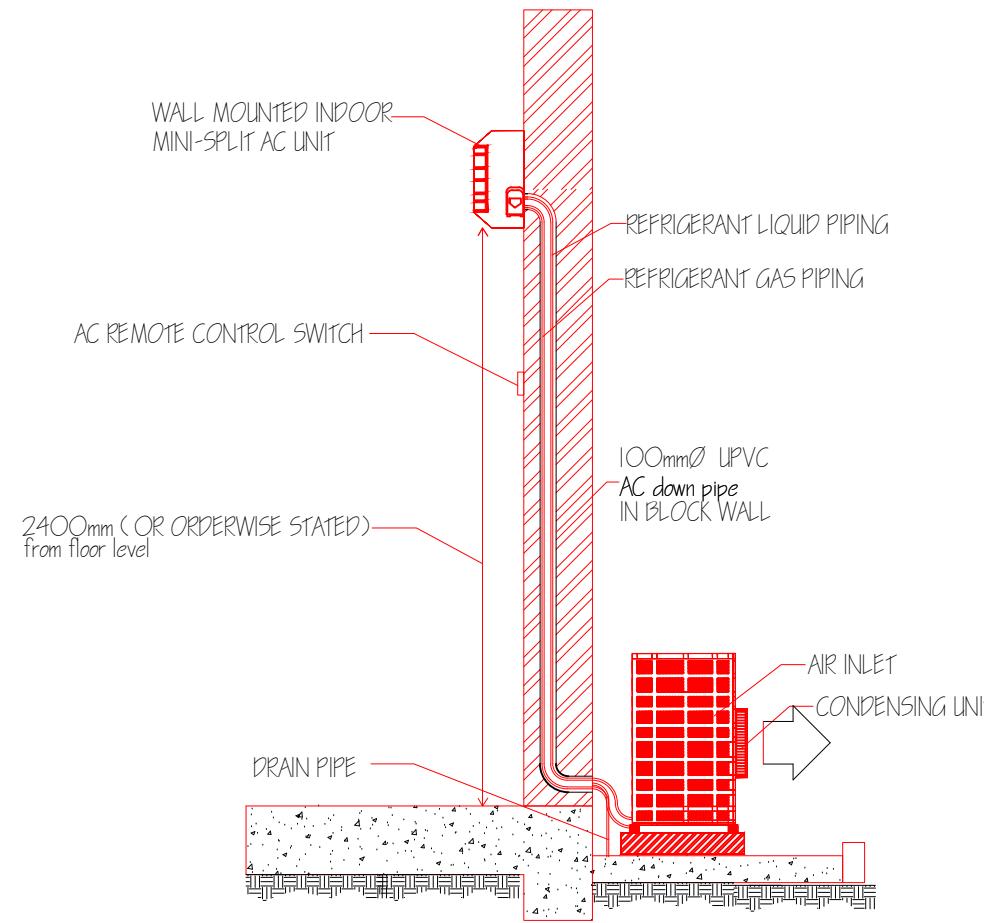
MINI-WINDOW AC FRONT ELEVATION FOR TYPICAL INSTALLATION



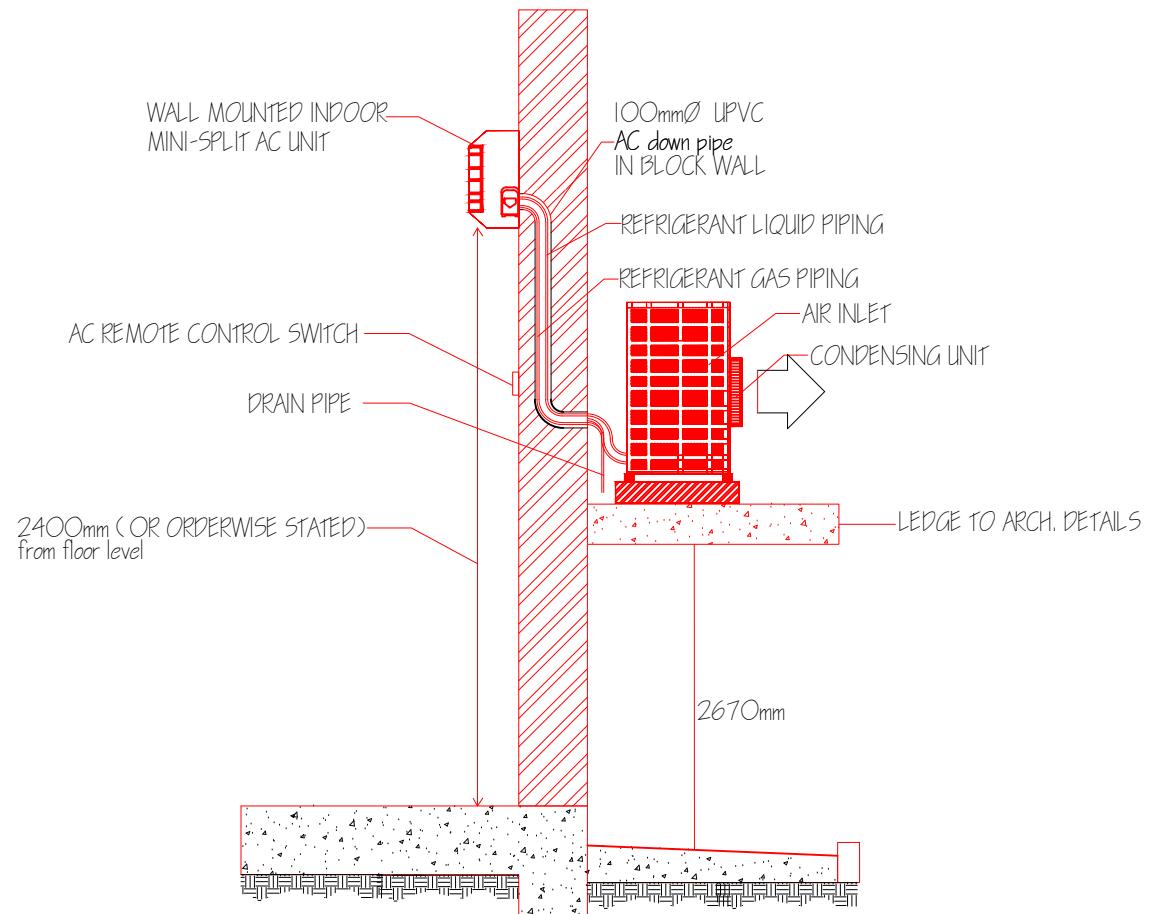
MINI-SPLIT AC FRONT ELEVATION FOR TYPICAL INSTALLATION



MINI-SPLIT AC CONDENSING UNIT DETAIL



TYPICAL AC INSTALLATION DETAILS



Client
MRS. HAJARA A UMAR

DESIGNED

ENGR. SHITTU KENNETH

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ENGR. O. SAJO

Scale

NTS

Date

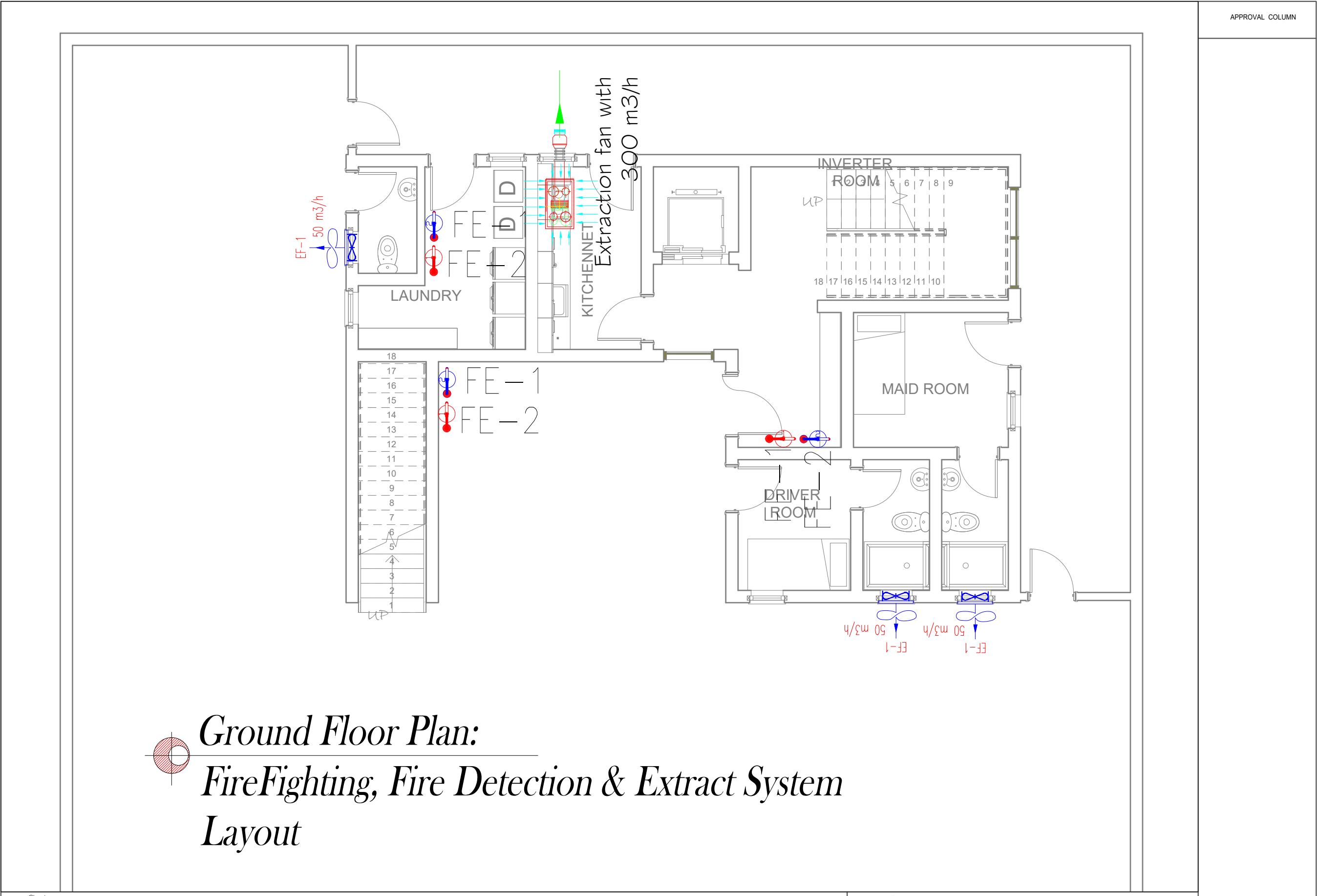
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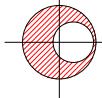
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ME - 03B

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

Drawing title
TYPICAL AC INSTALLATION DETAILS



 *Ground Floor Plan:
Fire Fighting, Fire Detection & Extract System
Layout*

Client
MRS. HAJARA A UMAR

DESIGNED

ENGR. SHITTU KENNETH

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ENGR. O. SAJO

Scale

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Date

AUGUST, 2022

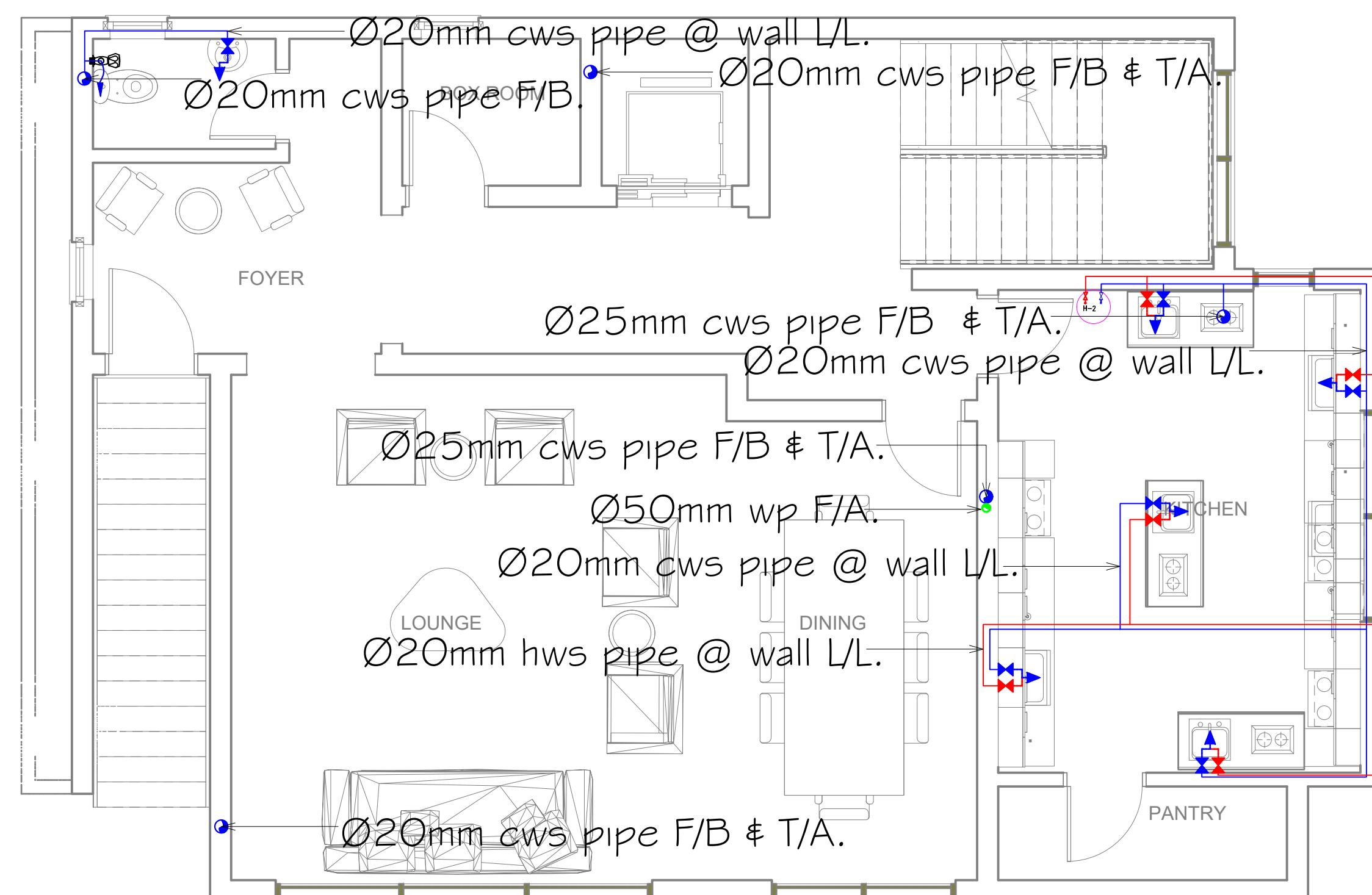
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ME - 04

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

Drawing title
GROUND FLOOR FIREFIGHTING & EXTRACTOR SYSTEM LAYOUT

APPROVAL COLUMN



First Floor Plan:

Cold Water Supply System Layout

Client
MRS. HAJARA A UMAR

DESIGNED

ENGR. SHITTU KENNETH

CHECKED

ENGR. O. SAJO

Scale

NTS

Date

AUGUST, 2022

Sheet no

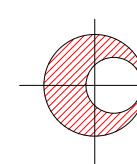
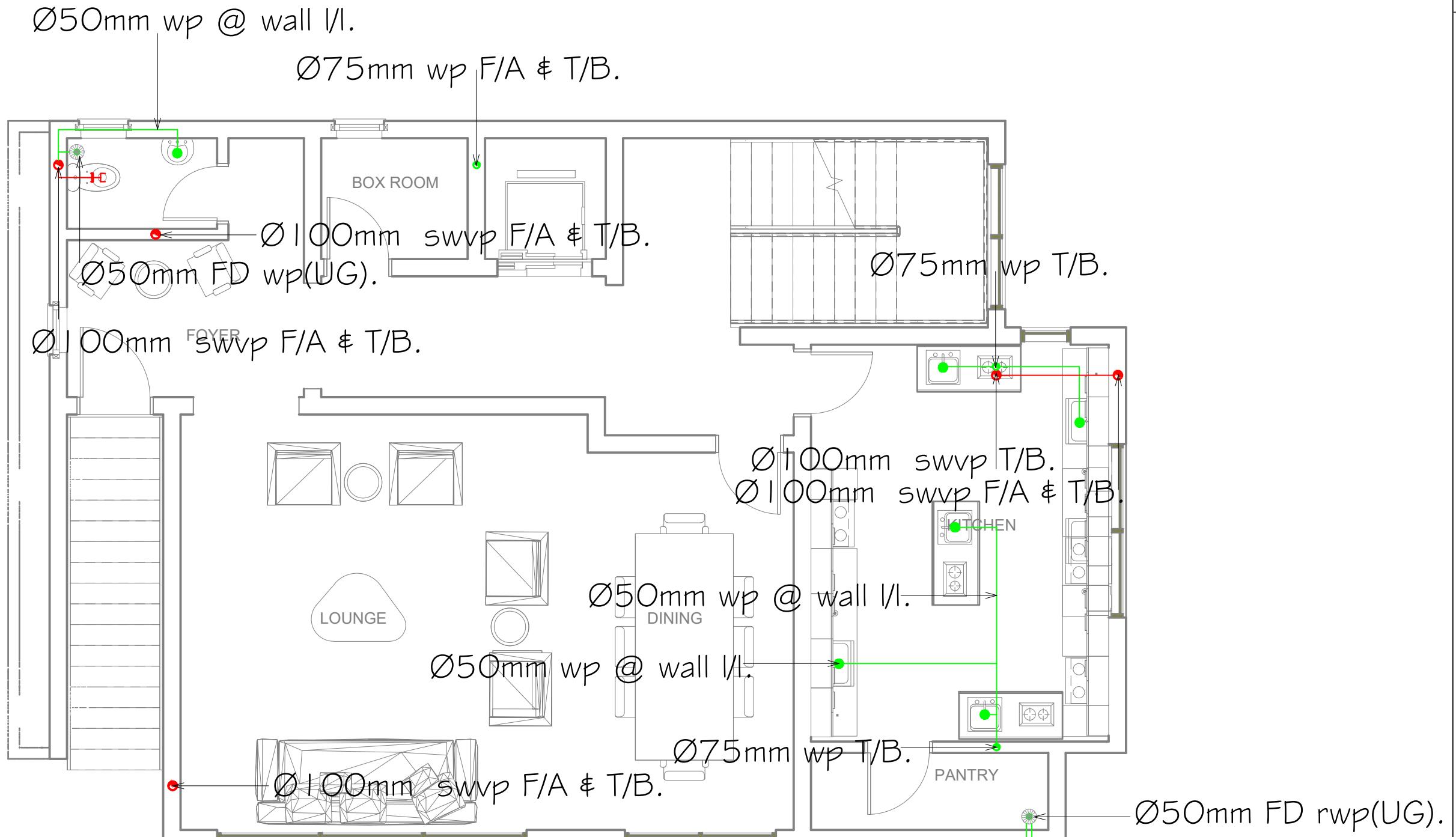
ME - 05

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

Drawing title
FIRST FLOOR: WATER SUPPLY LAYOUT

APPROVAL COLUMN

APPROVAL COLUMN



First Floor Plan: Drainage System Layout

Client
MRS. HAJARA A UMAR

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

DESIGNED

CHECKED

Scale

Date

Sheet no

ENGR. SHITTU KENNETH

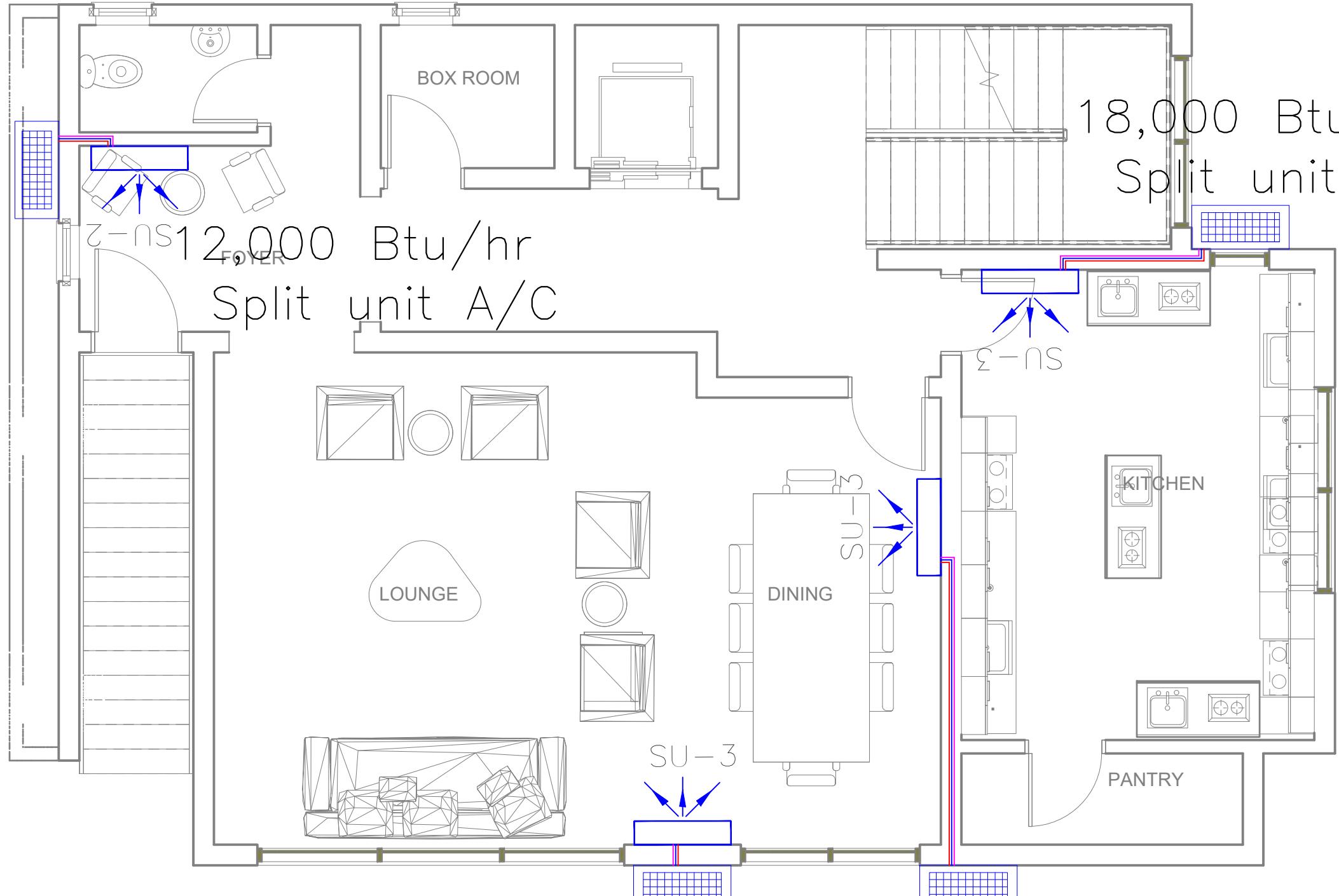
ENGR. O. SAJO

NTS

AUGUST, 2022

ME - 06

Drawing title
FIRST FLOOR PLAN: DRAINAGE LAYOUT



First Floor Plan: Ventilation & Air-conditioning System Layout

Client
MRS. HAJARA A UMAR

DESIGNED

ENGR. SHITTU KENNETH

CHECKED

ENGR. O. SAJO

Scale

NTS

Date

AUGUST, 2022

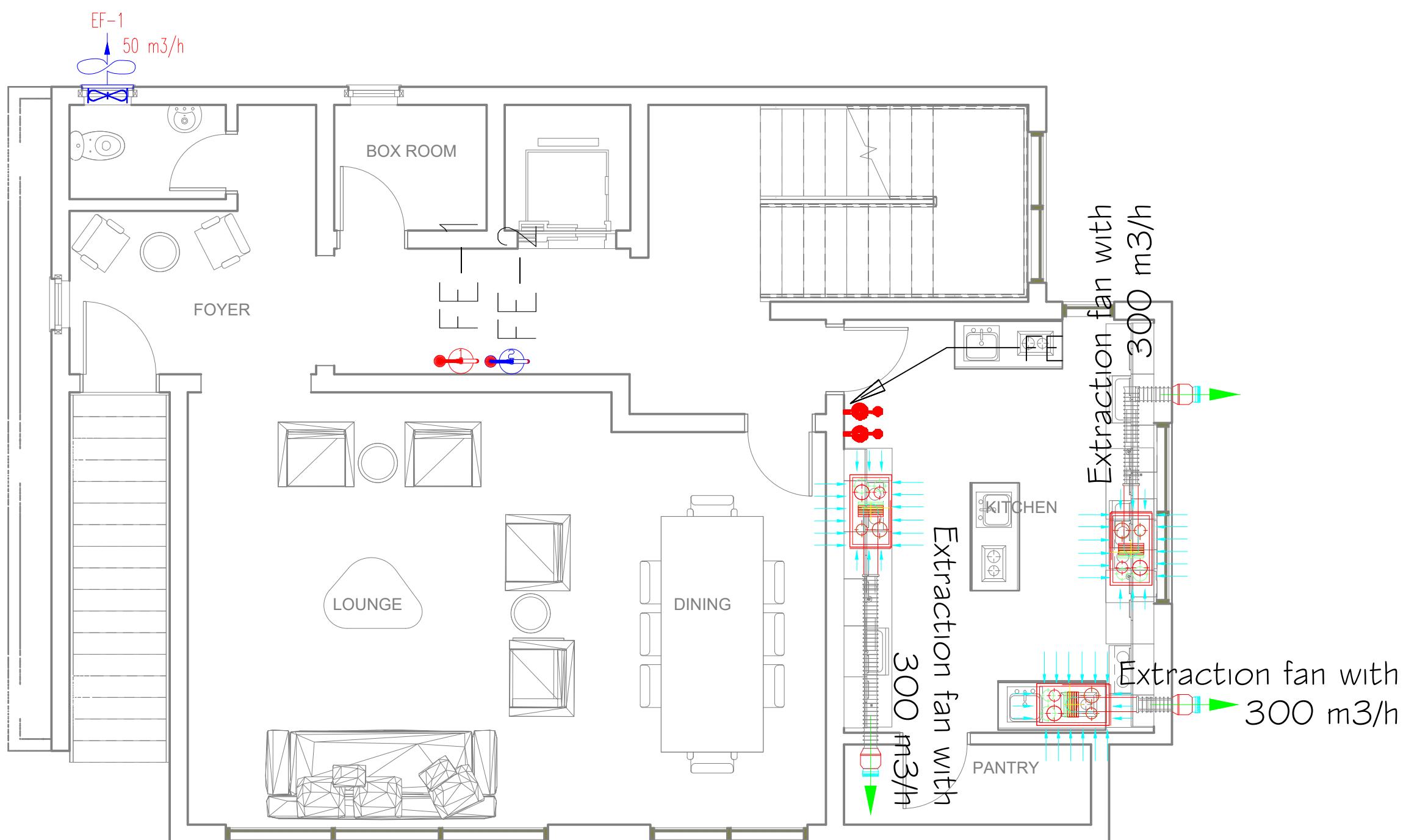
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ME - 07

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

Drawing title
FIRST FLOOR: VENTILATION & AIR-CONDITIONING LAYOUT

APPROVAL COLUMN



*First Floor Plan:
Fire Fighting, Fire Detection & Extract System
Layout*

Client
MRS. HAJARA A UMAR

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

DESIGNED

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Scale

Date

Sheet no

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ENGR. O. SAJO

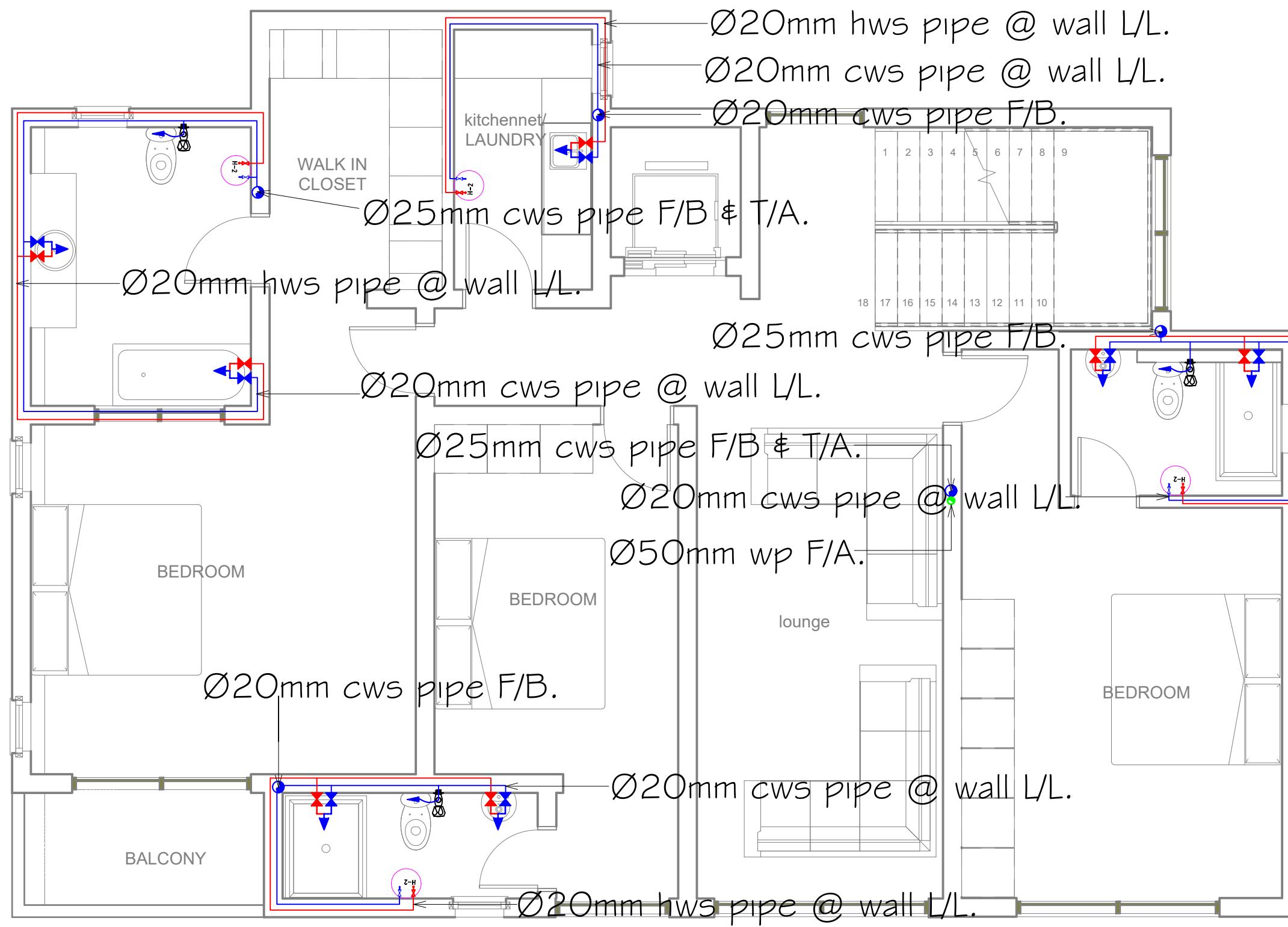
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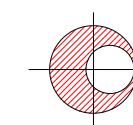
ME - 08

Drawing title
FIRST FLOOR FIREFIGHTING & EXTRACTOR SYSTEM LAYOUT

APPROVAL COLUMN



APPROVAL COLUMN



Second Floor Plan: Cold Water Supply System Layout

Client
MRS. HAJARA A UMAR

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

DESIGNED

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Scale

Date

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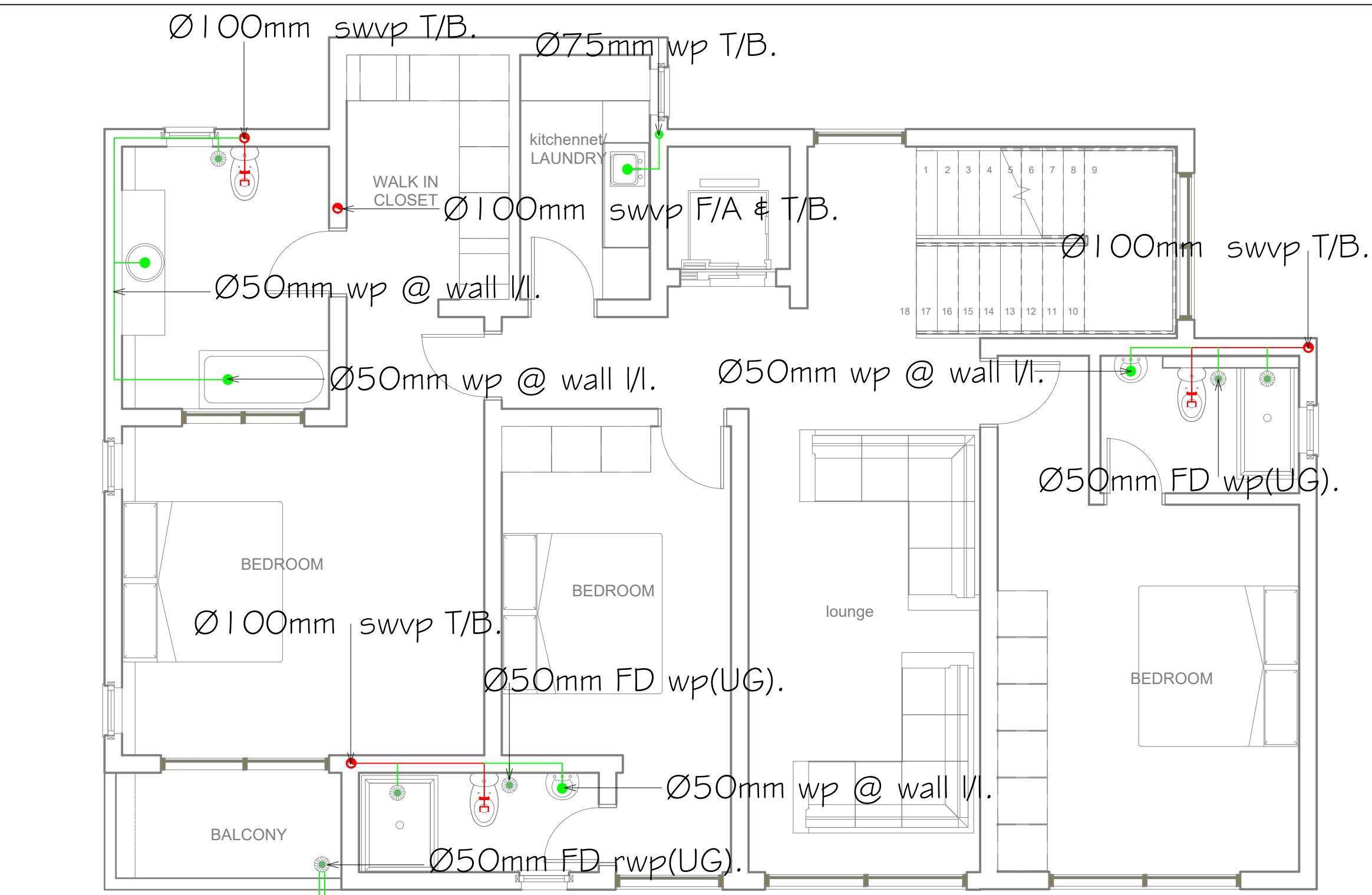
ENGR. O. SAJO

NTS

AUGUST, 2022

ME - 09

Drawing title
SECOND FLOOR PLAN: WATER SUPPLY SYSTEM



Second Floor Plan: Drainage System Layout

Client
MRS. HAJARA A UMAR

DESIGNED

ENGR. SHITTU KENNETH

CHECKED

ENGR. O. SAJO

Scale

NTS

Date

AUGUST, 2022

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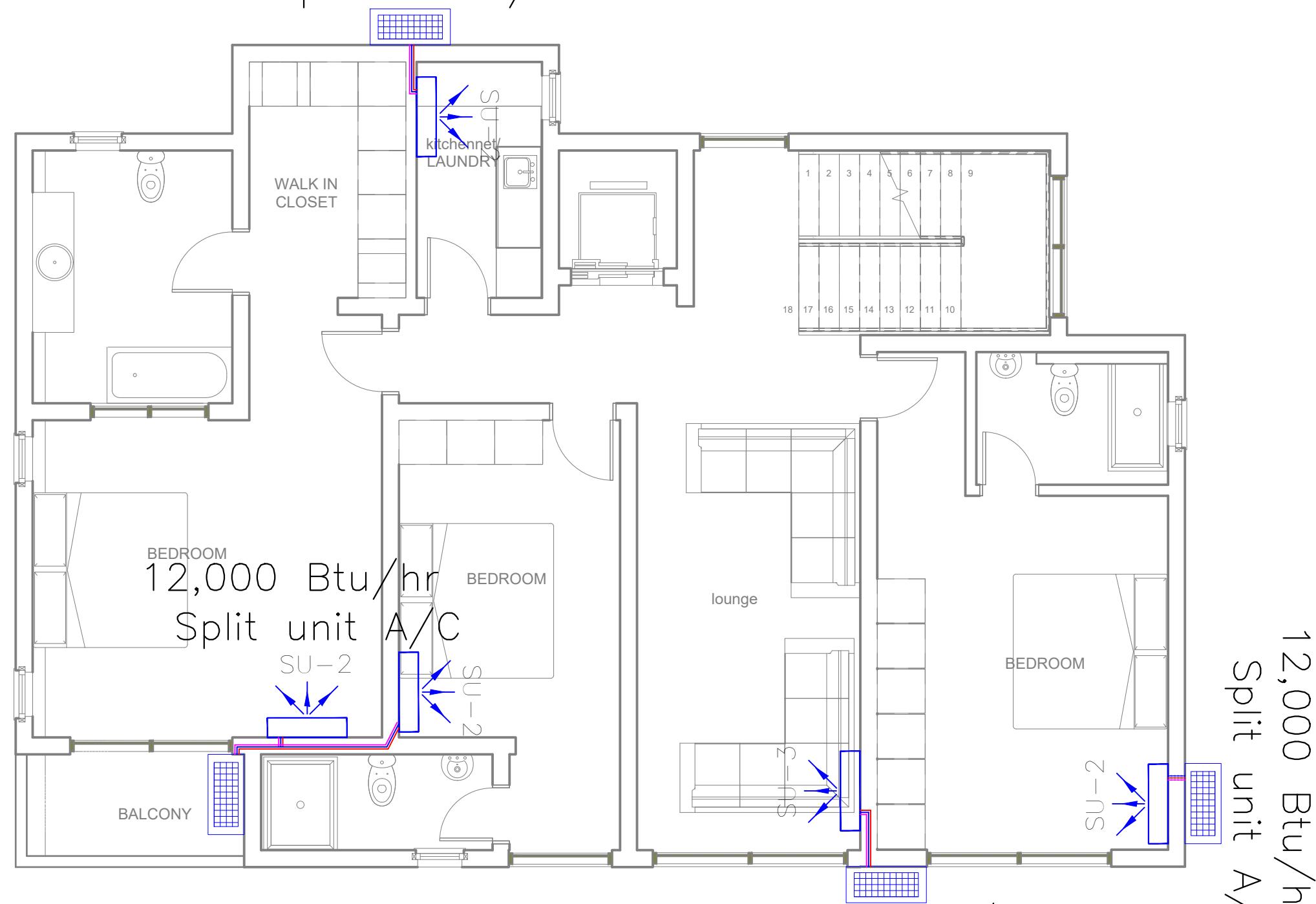
ME - 10

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

Drawing title
SECOND FLOOR PLAN: DRAINAGE SYSTEM

APPROVAL COLUMN

APPROVAL COLUMN



Second Floor Plan:
Ventilation & Air-conditioning System Layout

Client
MRS. HAJARA A UMAR

DESIGNED

ENGR. SHITTU KENNETH

CHECKED

ENGR. O. SAJO

Scale

NTS

Date

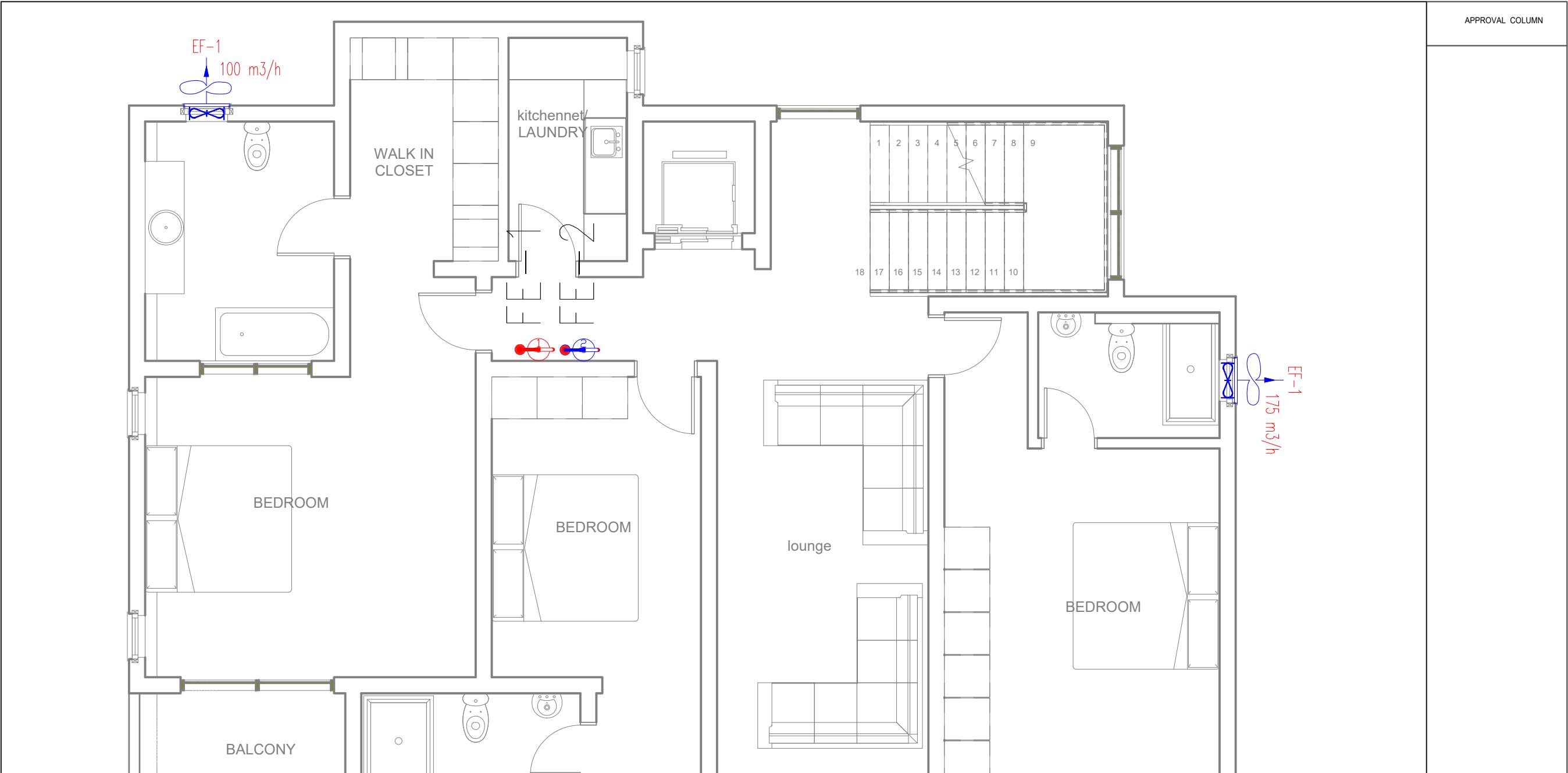
AUGUST, 2022

Sheet no

ME - II

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

Drawing title
SECOND FLOOR PLAN: VENTILATION & AIR-CONDITIONING SYSTEM LAYOUT



Second Floor Plan: Fire Fighting, Fire Detection & Extract System Layout

Client
MRS. HAJARA A UMAR

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

DESIGNED

CHECKED

Scale

Date

Sheet no

ENGR. SHITTU KENNETH

ENGR. O. SAJO

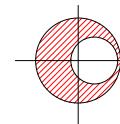
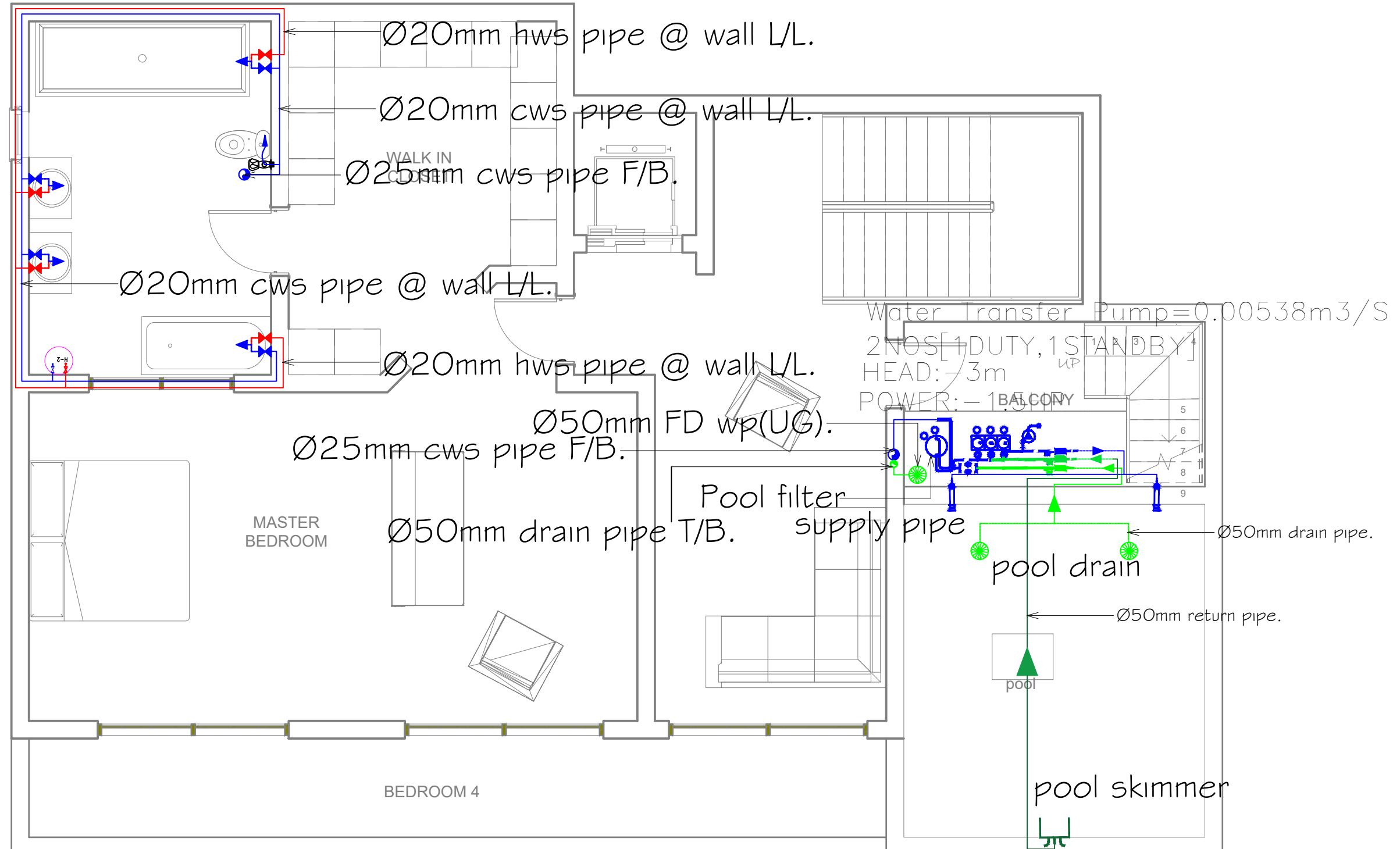
NTS

AUGUST, 2022

ME - 12

Drawing title
SECOND FLOOR PLAN: FIREFIGHTING, & EXTRACTION SYSTEM LAYOUT

APPROVAL COLUMN



Third Floor Plan: Cold Water Supply System Layout

Client
MRS. HAJARA A UMAR

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

DESIGNED

CHECKED

Scale

Date

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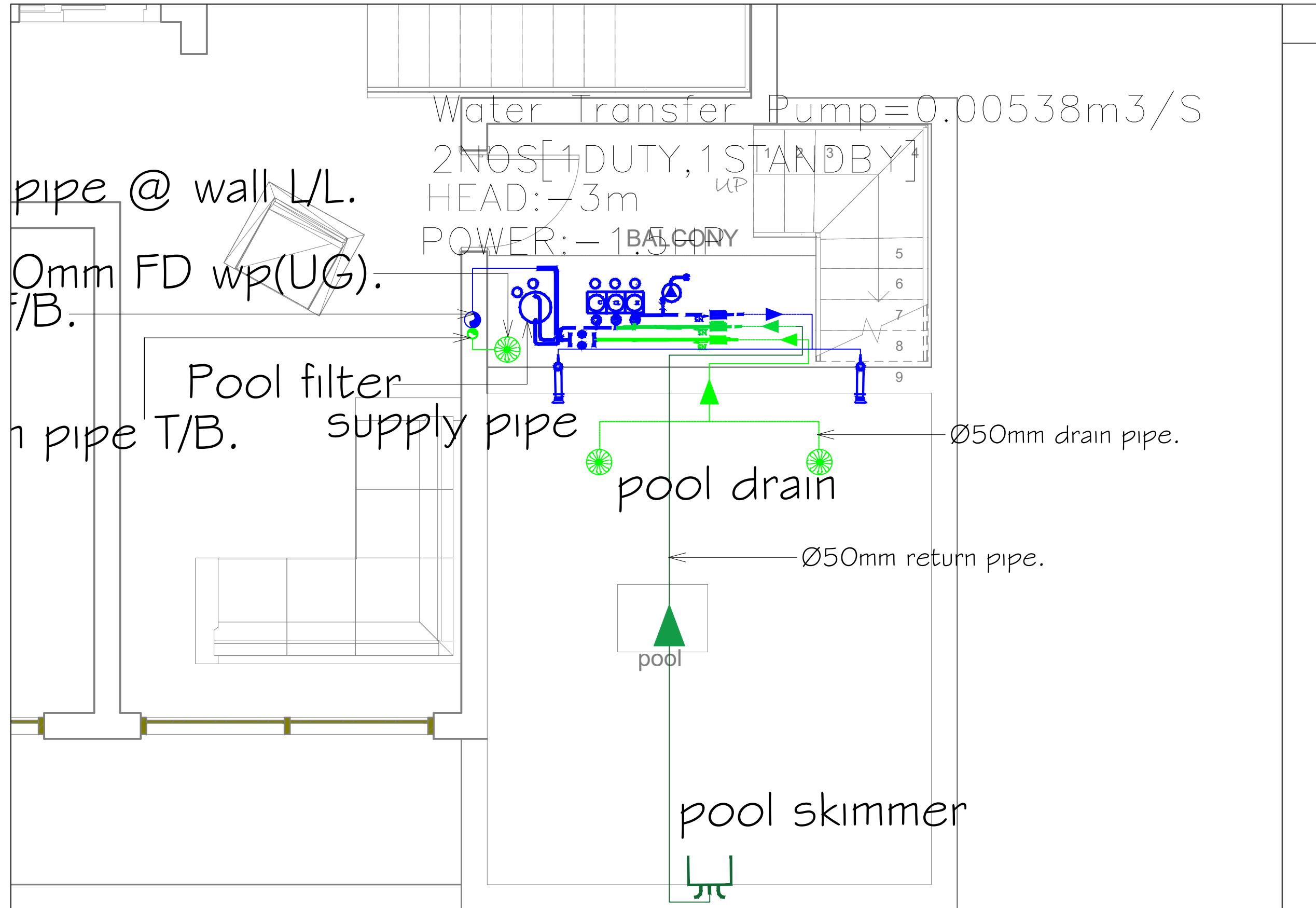
ENGR. O. SAJO

NTS

AUGUST, 2022

ME - 13

Drawing title
THIRD FLOOR PLAN: WATER SUPPLY SYSTEM LAYOUT



Client
MRS. HAJARA A UMAR

DESIGNED

ENGR. SHITTU KENNETH

CHECKED

ENGR. O. SAJO

Scale

NTS

Date

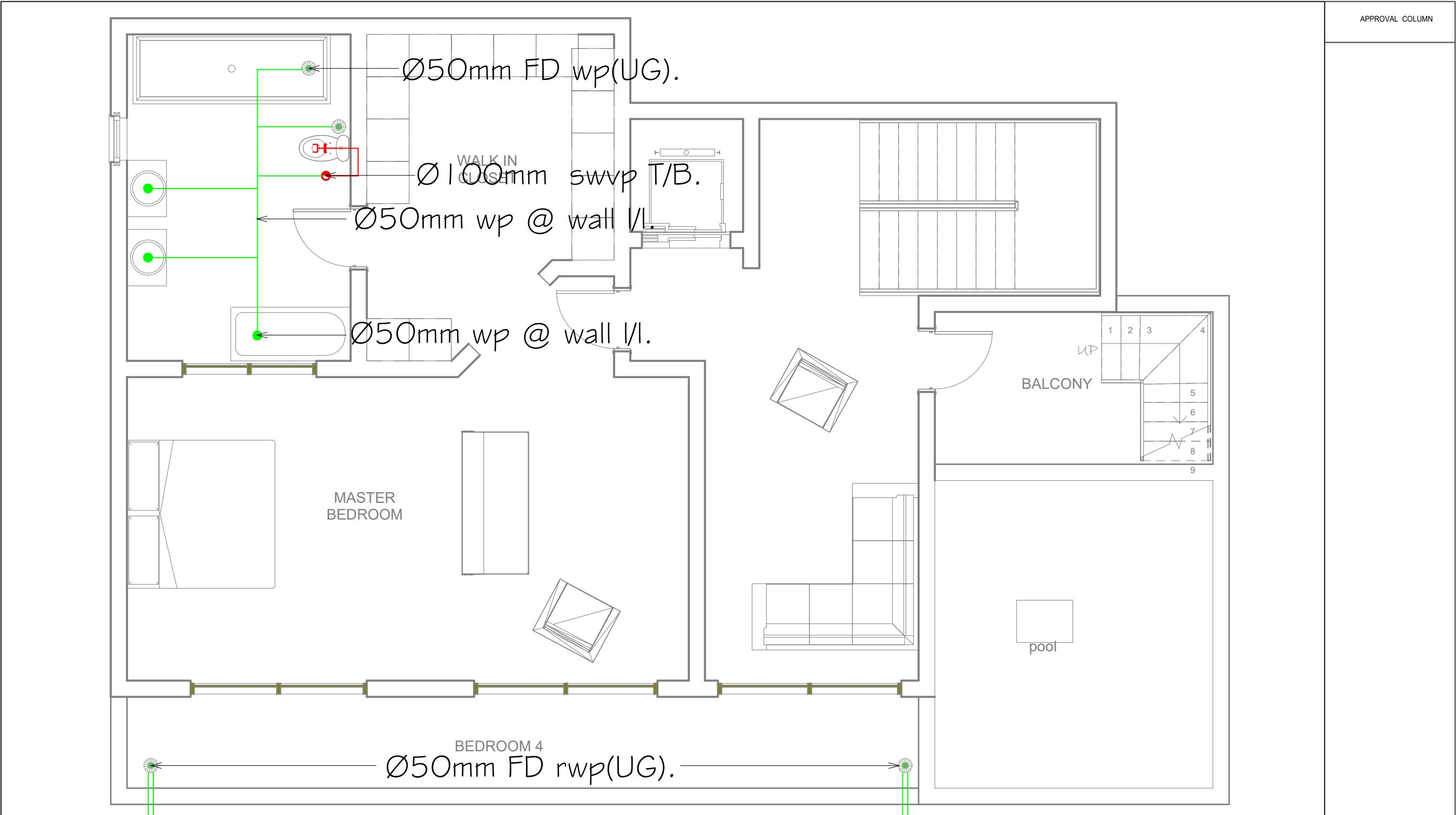
AUGUST, 2022

Sheet no

ME - I3B

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

Drawing title
THIRD FLOOR PLAN: SWIMMING POOL LAYOUT



Third Floor Plan: Drainage System Layout

Client
MRS. HAJARA A UMAR

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

DESIGNED

CHECKED

Scale

Date

Sheet no

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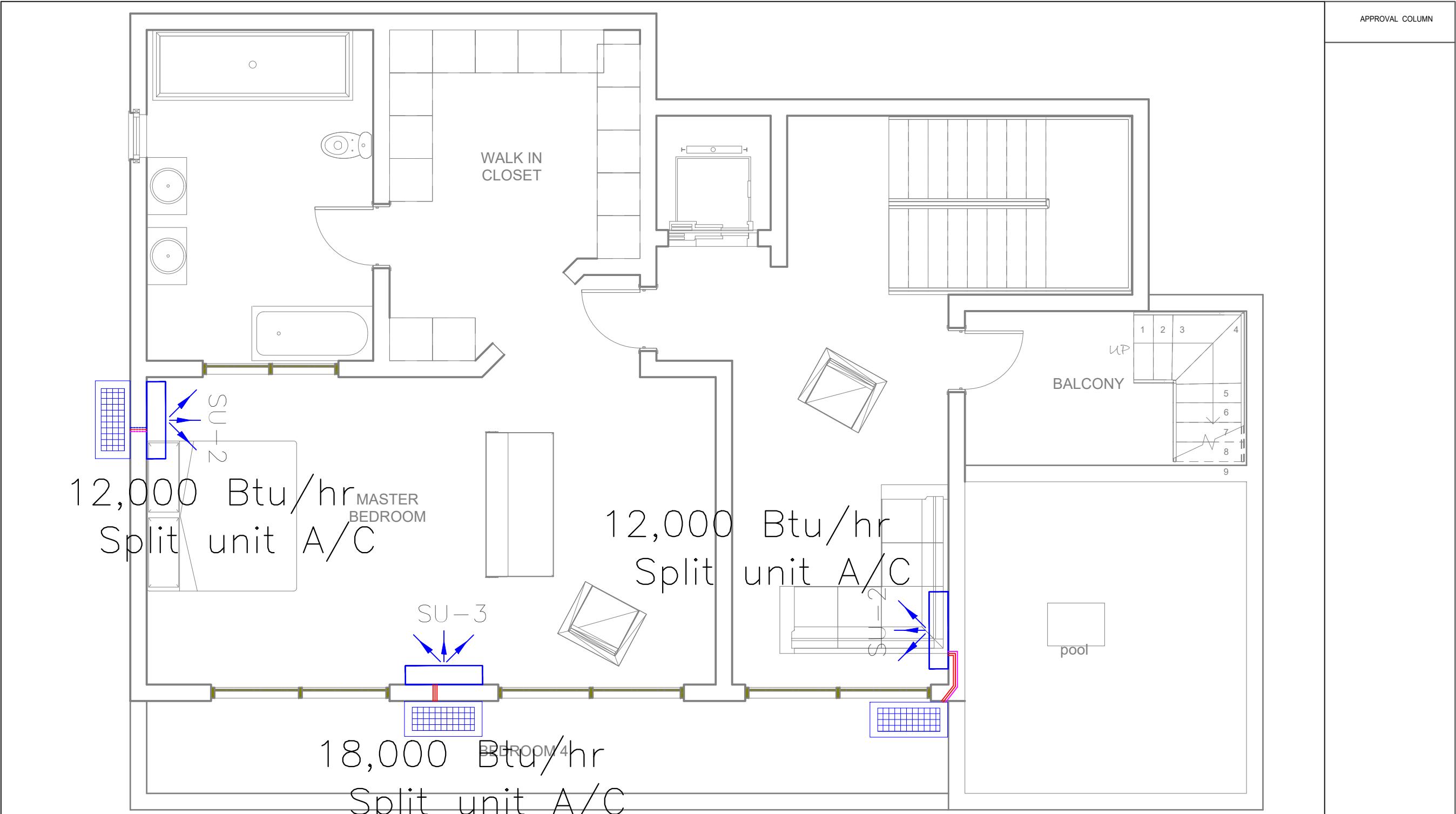
ENGR. O. SAJO

NTS

AUGUST, 2022

ME - 14

Drawing title
THIRD FLOOR PLAN: DRAINAGE SYSTEM LAYOUT



Third Floor Plan: Ventilation & Air-conditioning System Layout

Client
MRS. HAJARA A UMAR

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

DESIGNED

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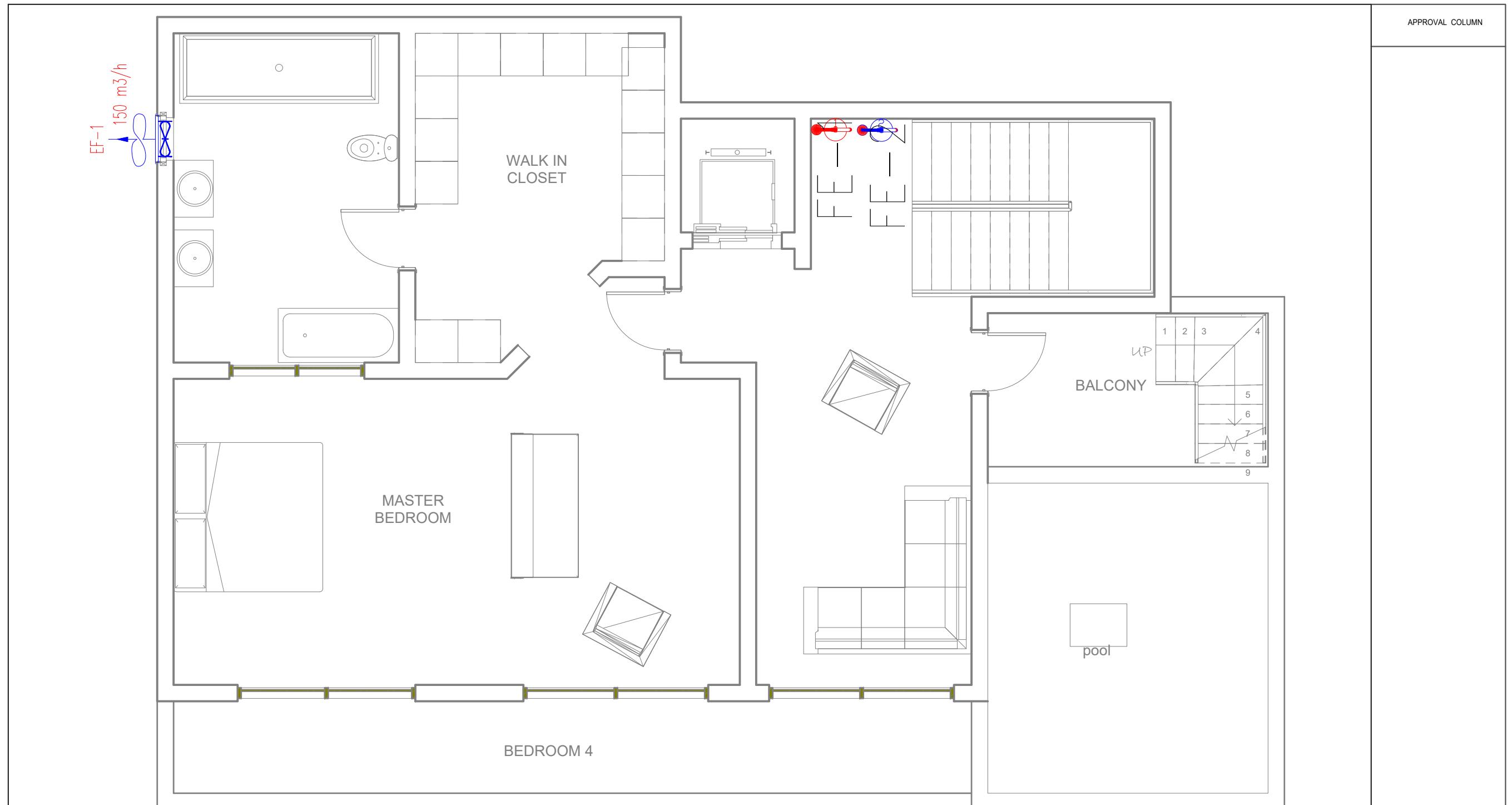
ENGR. O. SAJO

NTS

AUGUST, 2022

ME - 15

Drawing title
THIRD FLOOR PLAN: VENTILATION & AIR-CONDITIONING SYSTEM LAYOUT



Third Floor Plan: Fire Fighting, Fire Detection & Extract System Layout

Client
MRS. HAJARA A UMAR

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

DESIGNED

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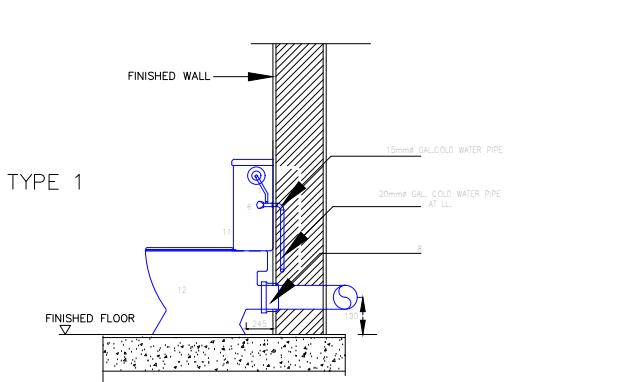
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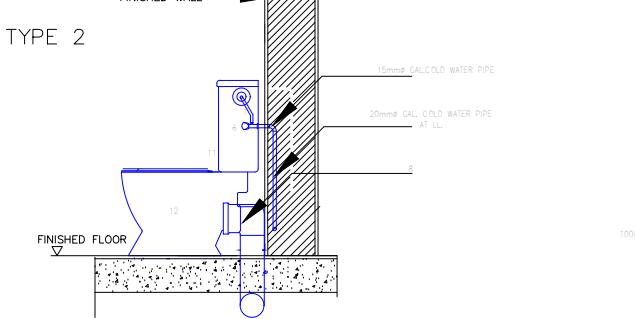
AUGUST, 2022

ME - 16

Drawing title
THIRD FLOOR PLAN: FIREFIGHTING, & EXTRACTION SYSTEM LAYOUT

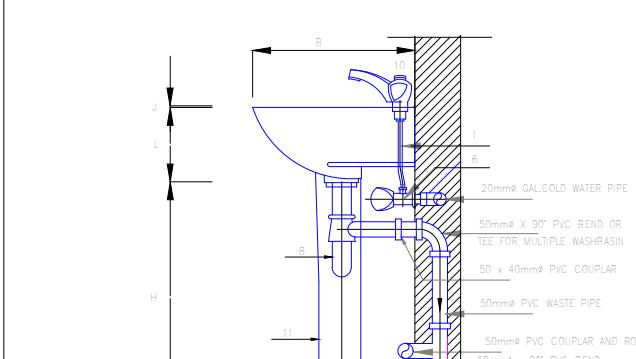


INSTALLATION ASSESSORIES		
S/No.	DESCRIPTION	QTY.
1.	15mm ² FLEXIBLE HOSE	1
2.	15mm ² GAL. SOCKET	1
3.	15mm ² X 90° BEND	1
4.	15mm ² GAL. NIPPLE	1
5.	15mm ² ISOLATING VALVE	1
6.	20 x 15mm ² REDUCING TEE	1
7.	32mm ² PLASTIC BOTTLE "P" TRAP	1
8.	TIFFANY WASHBASIN IN VITROUS CHINA	1
9.	15mm ² MILLENIUM PILLAR TAP	1
10.	TIFFANY PEDESTAL WITH KUPLA FITMENT	1
11.	FINISHED FLOOR	



PIPE NETWORK SHOWING VARIOUS FITTINGS		
A	B	C
505	410	395
560	455	430
610	470	485
D	E	F
270	200	75
290	200	70
300	200	65
G	H	J
795	170	20
790	180	20
790	180	20
K	L	
185	195	
210		

WATER CLOSET INSTALLATION DETAILS



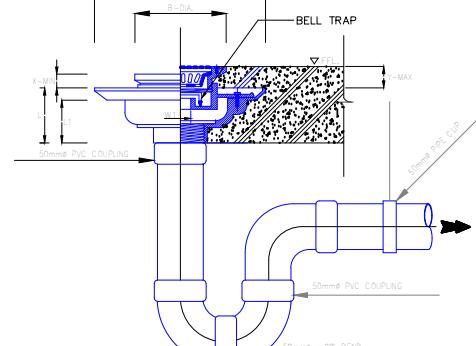
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7.	32mm ² PLASTIC BOTTLE "P" TRAP	1
8.	TIFFANY WASHBASIN IN VITROUS CHINA	1
9.	15mm ² MILLENIUM PILLAR TAP	1
10.	TIFFANY PEDESTAL WITH KUPLA FITMENT	1

A	B	C	D	E	F	G	H	J	L
505	410	395	270	200	75	170	795	20	185
560	455	430	290	200	70	180	790	20	195
610	470	485	300	200	65	180	790	20	210

PIPE NETWORK SHOWING VARIOUS FITTINGS

WASH HAND BASIN INSTALLATION DETAILS

PIPE SIZE	W	W1	L	L1
65	229.5	45	79	64
80	229.5	45	79	64
100	275	97	78	57

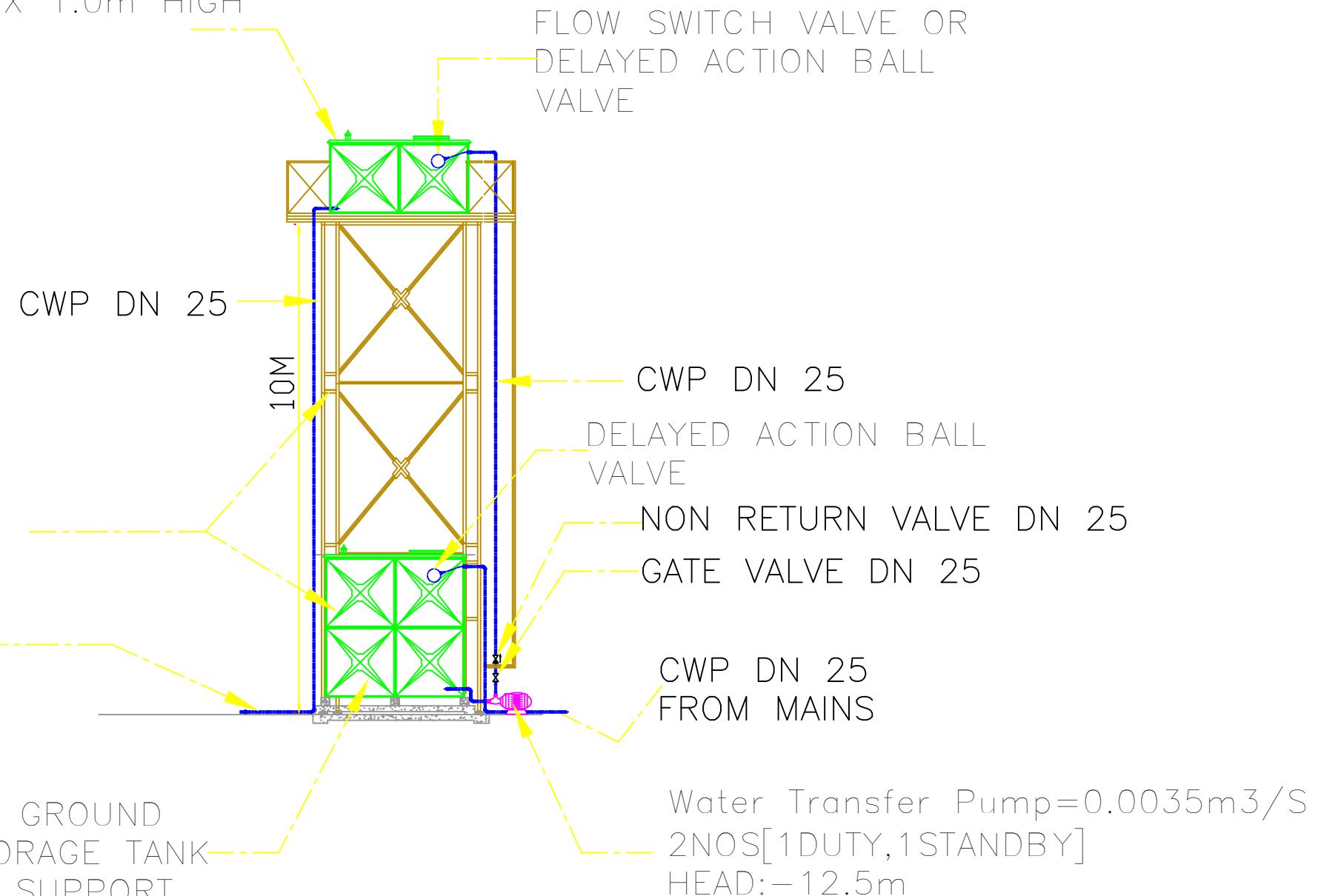


4,000LITRES CAPACITY ELEVATED
BRAITHWAITE WATER STORAGE TANK
ON STRUCTURAL STEEL SUPPORT
SIZE:2.0m X 2.0m X 1.0m HIGH

STRUCTURAL
STEEL SUPPORT.[SEE
STRUCTURAL ENGINEER
FOR DETAIL'S]

CWP DN 25 TO SITE
DISTRIBUTION NETWORK

10,000LITRES CAPACITY GROUND
BRAITHWAITE WATER STORAGE TANK
ON STRUCTURAL STEEL SUPPORT
SIZE:2.5m X 2.0m X 2.0m HIGH



Client
MRS. HAJARA A UMAR

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ENGR. SHITTU KENNETH

CHECKED
ENGR. O. SAJO

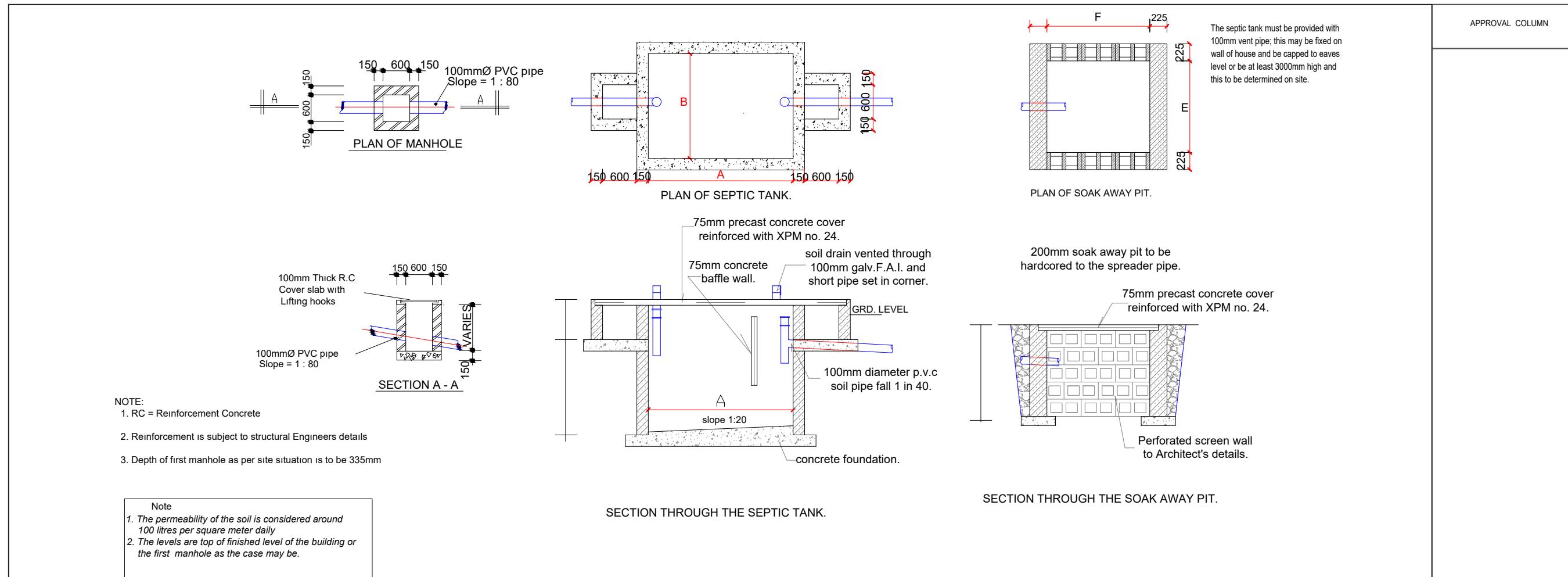
Scale
NTS

Date
AUGUST, 2022

Sheet no
ME - 18

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

Drawing title
TANK DETAILS



septic tank No	septic tank schedule			soak away schedule					
	No of person all waste	Capacity (Cubic metres)	Dimension(metres)			Capacity (Cubic metres)	Dimension(metres)		
A	B	D	E	F	D				
1	5	2.88	2.40	0.80	1.50	0.96	0.80	0.80	1.50
2	10	3.84	2.40	0.80	2.00	1.28	0.80	0.80	2.00
3	20	6.00	3.00	1.00	2.00	2.00	1.00	1.00	2.00
4	30	7.40	3.60	1.20	2.00	2.88	1.20	1.20	2.00
5	40	10.14	3.90	1.30	2.00	3.38	1.30	1.30	2.00
6	50	11.76	4.20	1.40	2.00	3.92	1.40	1.40	2.00
7	60	13.50	4.50	1.50	2.00	4.50	1.50	1.50	2.00
8	100	19.20	4.80	1.60	2.50	6.40	1.60	1.60	2.50
9	160	30.00	6.00	2.00	2.50	10.00	2.00	2.00	2.50

SEPTIC TANK AND SOAKAWAY SCHEDULE

Client
MRS. HAJARA A UMAR

Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

DESIGNED

CHECKED

Scale

Date

Sheet no

ENGR. SHITTU KENNETH

ENGR. O. SAJO

NTS

AUGUST, 2022

ME - 19

Drawing title
SEPTIC TANK AND SOAKAWAY SCHEDULE

APPROVAL COLUMN

Tank sizing calculation

	WC	WHR	SHOWER	SINK	BATH
Ground Floor	3	3	3	1	0
First Floor	1	1	0	2	0
Second Floor	3	3	2	1	1
Third Floor	1	1	1	1	1
TOTAL NUMBER	8	8	6	5	2

Fixture	Total No.	Requirement/ litre	Total vol./ litres
WC	8	180	1440
WHR	8	90	720
Shower	6	135	810
Sink	5	135	675
Bath	2	135	270

Total volume of water requirement for the fixtures per day **3915 litres**

Assuming 20% additional water requirement for external services **4698 litres**

Assuming 70% diversity factor, Total water requirement is given as **3288.6 litres**

Ground tank size for 3 days **9865.8**

9.8658

Client
MRS. HAJARA A UMAR

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AT PLOT 711 CADASTRAL ZONE A06, MAITAMA ABUJA FCT

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AUGUST, 2022

ME - 20

Drawing title
TANK SIZING