



رقم القطعة: ٣٧٤١
رقم الخوض: ١٥
رقم اللوحة: ٣٣
المدينة أو القرية: وادي الحمر

MECHANICAL DRAWINGS

Before final Review

NO.	REVISION	DATE	SIGN

PROJECT	PERMANENT EXHIBITION OF BADIA and RURAL PRODUCTS		
OWNER	THE MINISTRY OF AGRICULTURE		
DRAWING TITLE	COVER OF MECHANICAL DRAWINGS		
DESIGNED BY		DRAWN BY	DAO
CHECKED BY		REFERENCE	
SCALE		DATE	03/2021
NOTES :		PROJECT NO.	



رقم القطعة: ٣٧٤١
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NO.	MECHANICAL DRAWINGS
M-G-00	COVER
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M-G-04	DETAILS
M-G-05	U VALUE CALCULATION
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WATER	
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HVAC	
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M-502	BASEMENT FLOOR FIRE SYSTEM LAYOUT

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CHECKED BY		REFERENCE	2-Project/Project/Arch./Plan
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GENERAL ABBREVIATIONS

GSP	GALVANIZED STEEL PIPE
BSP	BLACK STEEL PIPE
UPVC	UNPLASTICISED POLYVINYL CHLORIDE
CPVC	CHLORINATED POLYVINYL CHLORIDE
MLP	MULTI-LAYER ALUMINIUM PIPE
PEX	CROSS-LINKED POLYETHYLENE PIPE (XLPE)
DIA	DIAMETER
KG	KILOGRAM
IL	INVERTED LEVEL
CL	COVER LEVEL
H/L	HIGH LEVEL
L/L	LOW LEVEL
U/G	UNDER GROUND
U/S	UNDER SLAB
BFS	BELOW FLOOR SLAB
U/T	UNDER TILE
I/W	IN WALL
D/D	DROP DOWN
F/A	FROM ABOVE
F/B	FROM BELOW
T/A	TO ABOVE
T/B	TO BELOW
NTS	NOT TO SCALE
M	METRE
MM	MILLIMETRE
MAX	MAXIMUM
MIN	MINIMUM

LEGEND

	CWS	DOMESTIC COLD WATER SUPPLY (CWS)
	HWS	DOMESTIC HOT WATER SUPPLY (HWS)
	HWR	HOT WATER RETURN
	DP	DRAIN PIPE (DP)
	VP	VENT PIPE (VP)
	C.O	CONDENSATE DRAIN PIPE (C.O)
	RP	RAIN WATER DRAIN PIPE (RP)
		GAS PIPE
		ISOLATING VALVE
		CHECK VALVE
		STRAINER
	FD	FLOOR DRAIN
	RD	ROOF DRAIN OUTLET
	CO	LINE CLEANOUT (ACCESS CAP)
	FCO	FLOOR CLEANOUT
	WCO	WALL CLEANOUT
	RVC	ROOF VENT COWL/CAP
	MH	MANHOLE
	RWM	RAIN WATER MANHOLE
	RWG	RAIN WATER GRATING
	HWC	HOT WATER CYLINDER
	FCU	FAN COIL UNIT
	G	GULLY TRAP
	T	THERMOSTAT
	SLD	SUPPLY LINER SLOT DIFFUSER
	RLD	RETURN LINER SLOT DIFFUSER
	SD	SUPPLY DIFFUSER
	RD	RETURN DIFFUSER
		SUPPLY GRILL
		RETURN GRILL
		GRAVITY DAMPER
		DUCTED INLINE FAN
		EXHAUST GRILL
		CASSETTE FAN
		INSECT SCREEN
		FLEXIBLE DUCT
		VOLUME DAMPER
		TOWEL DRIER

1.0 GENERAL NOTES

- 1.1 ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE STATED.
- 1.2 THE PLUMBING DRAWINGS AND HVAC DRAWINGS SHALL BE READ AS ONE UNIT INCLUDING PLANS, RISER DIAGRAMS AND MISCELLANEOUS DETAILS.
- 1.3 DRAWINGS SHALL NOT BE SCALED FOR EXECUTING THE WORKS. ALL MEASUREMENT SHALL BE MADE FROM ESTABLISHED LINES,LEVELS AND BENCH MARKS
- 1.4 THE DRAWINGS ARE ONLY DIAGRAMATIC. THE CONTRACTOR SHALL EXECUTE ALL WORK IN ACCORDANCE WITH THE APPROVED SHOP AND INSTALLATION DRAWINGS PER THE PROVISIONS OF THE SPECIFICATION.
- 1.5 THE MECHANICAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND MATERIAL CATALOGUES AND SAMPLES FOR REVIEW AND APPROVAL BY ENGINEER.
- 1.6 PLUMBING WORKS REQUIRING ELECTRICAL SERVICES SHALL BE COORDINATED WITH THE ELECTRICAL TRADE . HVAC WORKS REQUIRING PLUMBING AND ELECTRICAL SERVICES SHALL BE COORDINATED WITH THE PLUMBING AND ELECTRICAL TRADES , RESPECTIVELY.
- 1.7 PIPES PENETRATING THROUGH FLOORS, ROOFS AND WALLS SHALL BE PROVIDED WITH PIPE SLEEVES WITH ANNULAR SPACES FILLED WITH APPROVED COMPOUND AND TIGHTLY CAULKED.
- 1.8 VENT PIPES THROUGH ROOF SHALL HAVE VENT CAPS AND SHALL HAVE RIGID SUPPORTS AND BE MADE WATER-TIGHT WITH THE ROOF BY PROPER FLASHING.
- 1.9 EXPOSED PVC PIPES SHALL HAVE UV PROTECTION COATING
- 1.10 FANS SHALL HAVE FLEXIBLE CONNECTION
- 1.11 LINEAR SLOT DIFFUSER FLEXIBLE CONNECTION SHALL HAVE VOLUME DAMPER
- 1.12 ALL EXHAUST DUCTS CONNECTED TO SHAFT SHALL HAVE INSECT SCREEN AND GRAVITY DAMPER
- 1.13 THE FALSE CEILING VOID IS CONSIDERED AS RETURN AIR PLENUM UNLESS INDICATED OTHERWISE. ENSURE PROPERLY SIZED OPENINGS THROUGH PARTITIONS IS MAINTAINED FOR RETURN AIR FLOW
- 1.14 PROVIDE ALL ADEQUATE VOLUME DAMPERS AS SHOWN ON DRAWINGS AND WHERE DEEMED NECESSARY, FOR PROPER AIR BALANCING
- 1.15 FOR FINAL LOCATION OF AC CONDENSING UNIT REFER TO ARCHITECTURAL
- 1.16 TOWEL DRYER PIPES SHALL BE INSTALLED BEFORE FOAM CONCRETE

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MANHOLES SCHEDULES							
MANHOLE REF NO	COVER LEVEL CL	INVERTED LEVEL IL	OUTLET LEVEL OL	DEPTH MM	DIMENSION MM	COVER GRADE	REMARKS
MH-01	912.0	911.65	911.60	400	400 X 400	MEDIUM	
MH-02	912.0	911.65	911.60	400	400 X 400	MEDIUM	
MH-03	912.0	911.37	911.32	680	600 X 600	MEDIUM	
MH-04	912.0	911.0	910.95	1050	600 X 600	MEDIUM	with ladder
MH-05	912.0	910.58	910.53	1470	600 X 600	MEDIUM	with ladder
1- MANHOLE FRAME AND COVER SHALL BE COVER BY TILING 2- SLOPE OF EXTERNAL DRAINAGE PIPES SHALL BE 2/100 3- SLOPE OF EXTERNAL RAIN WATER DRAINAGE PIPES SHALL BE 1.0%							

PUMPS SCHEDULE									
PUMP REF	SERVICE	LOCATION	FLOW (L/S)	HEAD (M)	TYPE & CONTROL	MOTOR DATA		QTY	
						KW	POWER	DUTY	STAND BY
DOWP-01	BOOSTER PUMP	ROOF	1.6	32.36	CENTRIFUGAL, VERTICAL ST. ST. SHAFT& IMPELLER WITH PRESSURE SWITCH AND EASY PRESS VARIABLE SPEED	1.0	220/1/50	1	1
DOWP-02	BOOSTER PUMP	ROOF	4.89	30.90	CENTRIFUGAL, VERTICAL ST. ST. SHAFT& IMPELLER WITH PRESSURE SWITCH AND 350L PRESSURE VESSEL VARIABLE SPEED	1.0	220/1/50	1	1
RSP-01	RAIN SUBMERSIBLE	BASEMENT	35.8	7.75	CENTRIFUGAL, VERTICAL ST. ST. SHAFT& IMPELLER WITH PRESSURE SWITCH VARIABLE SPEED	1.0	220/1/50	1	1
P-01	LIFTING PUMP	CELLAR	2.4	23.89	CENTRIFUGAL, HORIZONTAL ST. ST. SHAFT& IMPELLER AND CONTROL PANEL	1.0	220/1/50	1	0
SP-01	SOLAR HEATING PUMP	ROOF	0.42	6.50	CENTRIFUGAL, HORIZONTAL ST. ST. SHAFT& IMPELLER WITH LEVEL SWITCH AND CONTROL PANEL	1.0	220/1/50	1	0
PUMPS OPERATION AND CONTROL 1-ALL COLD WATER PUMPS AND ENCLOSURE SHALL HAVE IP44 AND 40C OPERATING AMBIENT TEMP 2- HOT WATER PUMPS SHALL HAVE 100C OPERATING TEMP 3-ALL PUMPS SHALL WITHSTAND ALL STATIC AND DYNAMIC PRESSURE. 4-SUBMERSIBLE PUMPSET SHALL BE PN10 CONSTRUCTION, AND SHALL COMPRISE OF ONE DUTY, ONE STAND BY AND CONTROL PANEL. 4-ALL PUMP SETS SHALL HAVE CONTROL PANEL. 6-DRAIN AND RAIN SUBMERSIBLE PUMP SHALL OPERATE UNDER THE CONTROL OF LEVEL SWITCHES PROVIDED IN SUMP PIT AS FOLLOWS: - LOW LEVEL SWITCH (LS1) TO STOP THE RUNNING PUMP. (DRY RUN PROTECTION) WITH VISIBLE AND AUDIBLE ALARM - LOW LEVEL SWITCH (LS2) TO STOP THE DUTY RUNNING PUMP. - HIGH LEVEL SWITCH (LS3) TO START THE DUTY PUMP (1). - HIGH LEVEL SWITCH (LS3) TO START THE STAND BY PUMP (2). - HIGH LEVEL SWITCH (LS4) TO INITIATE VISIBLE AND AUDIBLE ALARM (OVER FLOW) 7-ALL PUMPS HEAD TO BE RECALCULATED ACCORDING TO SUBMITTALS. 8-PUMPS SHALL HAVE KINETIC BASE. 9-PUMPS SHALL HAVE FLEXIBLE CONNECTIONS WITH RIGID PIPES.									

FANS SCHEDULE									
REF. No.	SERVED AREA	LOCATION	AIR FLOW L/S	DESIGN PRESSURE PA	POWER KW	POWER SUPPLY	TYPE	CONTROL	QTY
EX.F-01	CAR PARKING	CELLAR	16,420	150	6	230/1/50	AXILA FAN IN-LINE TYPE FIRE RATED 300C/2hr	--ISOLATOR	2
EX.F-02	GENERATOR ROOM	CELLAR	145	15	0.15	230/1/50	- AXIAL TYPE WALL MOUNTED	--SWITCH	1
EX.F-03	MECHANICAL ROOM	CELLAR	165	15	0.15	230/1/50	- AXIAL TYPE WALL MOUNTED	--SWITCH	3
EX.F-04	TOILETS	CELLAR	135	130	0.2	230/1/50	- CENTRIFUGAL FAN IN-LINE TYPE SHUTTER	--LIGHT FOR TOILETS --TIMER	1
EX.F-05	TOILETS	GROUND	35	15	0.1	230/1/50	- AXIAL FAN CASSETTE TYPE -- SHUTTER	--LIGHT FOR TOILETS --TIMER	1
EX.F-06	ELECTRICAL ROOM	GROUND	55	—	0.1	230/1/50	- AXIAL FAN WALL MOUNTED	--LIGHT FOR ELE.ROOM --TIMER	1
EX.F-07	TOILETS	GROUND	80	—	0.1	230/1/50	- AXIAL FAN CASSETTE TYPE -- SHUTTER	--LIGHT FOR TOILETS --TIMER	1
EX.F-08	TOILETS/MALE	GROUND	135	100	0.2	230/1/50	- CENTRIFUGAL FAN IN-LINE TYPE SHUTTER	--LIGHT FOR TOILETS --TIMER	2
EX.F-09	TOILETS/FEMALE	GROUND	215	100	0.2	230/1/50	- CENTRIFUGAL FAN IN-LINE TYPE SHUTTER	--LIGHT FOR TOILETS --TIMER	1
EX.F-10	TOILETS	GROUND	200	100	0.2	230/1/50	- CENTRIFUGAL FAN IN-LINE TYPE SHUTTER	--LIGHT FOR TOILETS --TIMER	2
EX.F-11	TOILETS	GROUND	210	100	0.2	230/1/50	- CENTRIFUGAL FAN IN-LINE TYPE SHUTTER	--LIGHT FOR TOILETS --TIMER	1
EX.F-12	RESTURANT	GROUND	480	125	0.3	230/1/50	- CENTRIFUGAL FAN IN-LINE TYPE SHUTTER	--SWITCH	1
EX.F-13	KITCHEN HOOD	GROUND	2,166	350	1.5	230/1/50	- CENTRIFUGAL FAN ROOF MOUNTED -- FIRE RATED	--ISOLATOR	1
EX.F-14	EXHIBITION	GROUND	1,100	145	0.75	230/1/50	- CENTRIFUGAL FAN ROOF TYPE SHUTTER	--ISOLATOR	3
FA.F-01	CAR PARKING	CELLAR	8,210	120	3.5	230/1/50	- AXILA FAN IN-LINE TYPE	--ISOLATOR	2
FA.F-02	MAKE UP AIR KITCHEN HOOD	GROUND	1,730	135	1	230/1/50	- CENTRIFUGAL FAN IN-LINE TYPE SHUTTER	--ISOLATOR	1
FA.F-03	RESTURANT	GROUND	480	85	0.3	230/1/50	- CENTRIFUGAL FAN IN-LINE TYPE SHUTTER	--ISOLATOR	1
FA.F-04	EXHIBITION	GROUND	1,100	145	0.75	230/1/50	- CENTRIFUGAL FAN ROOF TYPE SHUTTER	--ISOLATOR	3
NOTES: -EXTERNAL PRESSURE CALCULATED WITHOUT ADDING THE PRESSURE DROP OF FILTER -ALL INDOOR FANS SHALL HAVE MAX 35db SOUND LEVEL -ALL OUTDOOR FANS SHALL HAVE MAX 55db SOUND LEVEL -ALL FANES SHALL BE INSTALLED ON STEEL BASE & HAVE FLEXIBLE CONNECTION. -OUTDOOR FANS SHALL BE IP65.									

ELECTRICAL WATER HEATER			
REFERENCE No.	EWH-01	EWH-02	EWH-03
LOCATION	BASEMENT GROUND	GROUND	GROUND
SERVICE	Domestic Hot Water Supply	Domestic Hot Water Supply	Domestic Hot Water Supply
TYPE	HORIZONTAL STORAGE	HORIZONTAL STORAGE	HORIZONTAL STORAGE
STORAGE CAPACITY (L)	30	45	70
HEAT EXCHANGE — KW	2.41	3.83	5.95
ELECTRICAL CONSUMPTION	1KW	1.5KW	1.8KW
QTY	6	1	2
NOTES	—	—	—

WATER TANK SCHEDULE	
REF. NO	WT-1
LOCATION	ROOF
SERVICE	DOMESTIC COLD WATER
CONSTRUCTION	POLYETHYLENE
TYPE	HORIZONTAL
CAPACITY (L)	2000
QUANTITY	7

PEX PIPES SIZE SCHEDULE			
SANITARY FIXTURE	PIPE DIA. (MM)	WALL THICKNESS (MM)	SLEEVE DIA (MM)
WASH BASIN (WB)	ø16	2.2	ø32
WATER CLOSET (WC)	ø16	2.2	ø32
HAND SPRAY (HS)	ø16	2.2	ø32
SHOWER (SH)	ø20	2.2	ø32
BATH TUB (BT)	ø20	2.2	ø32
BIDET (UR)	ø16	2.2	ø32
SINK (S)	ø16	2.2	ø32
WASHING MACHINE (WM)	ø16	2.2	ø32

DRAINAGE PIPE CONNECTIONS SIZES _	
WATER CLOSET	ø110mm (ø4" NOMINAL)
BIDET	ø50mm (ø2" NOMINAL)
SINK	ø50mm (ø2" NOMINAL)
URINAL	ø50mm (ø2" NOMINAL)
FLOOR CLEANOUT	ø110mm (ø4" NOMINAL)
FLOOR DRAIN (FD)	ø110mm (ø4" NOMINAL)
SHOWER	ø50mm (ø2" NOMINAL)

SPLIT INDOOR Units									
Tag	Served Area	Cooling Capacity (KW)	Total (KW)	Sensibel (KW)	Heating Capacity (KW)	Power (KW)	Power Supply	Type	QTY
SU-01	REST ROOM	3.5	3	2.5	1500	230/1/50	Wall Mounted	2	
SU-02	PRAYER ROOM	5.5	5	4.5	2000	230/1/50	Wall Mounted	1	
SPLIT OUTDOOR Units									
OU-01	REST ROOM	3.5	3	2.5	1500	230/1/50	Wall Mounted	2	
OU-02	PRAYER ROOM	5.5	5	4.5	2000	230/1/50	Wall Mounted	1	
1- Indoor units shall be selected at Outdoor Design Temperature dBT= 38C & Indoor Design Temperature is dBT+23C / WBTr=18C 2-Indoor units shall be selected based on the total and sensibel capacities and required off coil temperatures at actual on coil temperatures, and air flow rate at actual external pressure 3- The selected capacities must give the required capacities on the actual pipe total length & the actual level difference between indoor & outdoor units (including pipe losses) 4-Indoor units shall be provided with with long life washable filter. 5-Thermostatic Controller shall be wired wit black light 6- Refrigerant 410A.									

JET FANS SCHEDULE				
REF. No.	FLOW (M3/hr)	THRUST (N)	QTY	REMARKS
JFU-01	4230/2115	21/5	—	— FIRE RATED 300C/2hr — UNIDIRECTIONAL , 2--SPED
** JET FAN QUANTITY WILL ESTIMATED ACCORDING TO CFD REPORTS & CIVIL DEFENSE APPROVAL				

VRF / VRV Indoor Units									
Tag	Served Area	Cooling Capacity (KW)	Total (KW)	Sensibel (KW)	Flow (L/s)	Heating Capacity (KW)	Coil Entering DBT (WB) (C)	Coil Leaving DBT (WB) (C)	Power (KW)
ID-01	Faience Assistance	2.20	1.90	131	1.20	23.9 / 15.5	10.8 / 10.0	250	230/1/50
ID-02	Faience Manager	3.20	2.80	200	2.20	23.9 / 15.7	11.0 / 10.2	350	230/1/50
ID-03	Open Office	4.70	4.20	288	3.50	24.8 / 15.7	10.5 / 9.7	475	230/1/50
ID-04	Manager	3.20	2.80	200	2.20	24.7 / 15.8	24.7 / 15.8	250	230/1/50
ID-05	Training Halls	8.00	6.61	651	6.20	25.9 / 16.7	10.4 / 9.6	675	230/1/50
ID-06	Meeting Room	2.40	1.80	131	1.50	25.9 / 16.8	10.1 / 9.3	200	230/1/50
ID-07	Lobby	6.00	4.80	391	4.70	26.4 / 18.4	10.9 / 9.1	500	230/1/50
ID-08	Waiting Area	10.50	9.40	647	7.40	24.9 / 15.7	10.4 / 9.6	750	230/1/50
ID-09	Reception	10.90	8.70	589	1.17	27.2 / 17.4	10.5 / 9.8	750	230/1/50
ID-10	Exhibition	14.15	11.05	781	0.85	27.2 / 17.4	10.5 / 9.8	850	230/1/50
1- Indoor units shall be selected at Outdoor Design Temperature dBT= 38C & Indoor Design Temperature is dBT+23C / WBTr=16C 2-Indoor units shall be selected based on the total and sensibel capacities and required off coil temperatures at actual on coil temperatures, and air flow rate at actual external pressure 3- The selected capacities must give the required capacities on the actual pipe total length & the actual level difference between indoor & outdoor units (including pipe losses) 4-Indoor units shall be provided with with long life washable filter. 5-Thermostatic Controller shall be wired wit black light 6- Refrigerant 410A.									

VRF /VRV Outdoor Units Schedule					
Ref	Location	Cooling Capacity (KW)	Heating Capacity (KW)	QTY	Electrical Data (V, Ph, Hz)
ODU-01	ROOF	43.8	28.68	1	380*4150V, 3ph, 50Hz
ODU-02	ROOF	40.2	26.5	1	380*4150V, 3ph, 50Hz
ODU-03	ROOF	115.65	108.35	1	380*4150V, 3ph, 50Hz
ODU-04	ROOF	127.35	88.65	1	380*4150V, 3ph, 50Hz
1- Outdoor units shall be selected at Outdoor Design Temperature dBT= 38C & Indoor Design Temperature is dBT+23C / WBTr=16C. 2- The selected capacities must give the required capacities on the actual pipe total length & the actual level difference between indoor & outdoor units. (including pipe losses) 3- Combination Ratio 100%. 4- Refrigerant 410A. 5- Final electricity power specification according supplier					

FIRE FIGHTING PUMPS SCHEDULE							
PUMP DESIGNATION	SERVICE	FLOW (L/S)	HEAD (KPa)	TYPE	MOTOR DATA		QTY
FP-1	FIRE ELECTRIC PUMP	22.1	556	CENTRIFUGAL,	RPM	KW	
					2900	22.5	380/1/50
							2
FP-2	FIRE JOCKEY PUMP	1.0	45	CENTRIFUGAL, HORIZONTAL SPLIT-CASE	2900	1.5	380/1/50
							1
NOTES: 1--THE PUMP SET SHALL BE PROVIDED WITH DRY RUNNING PROTECTION							

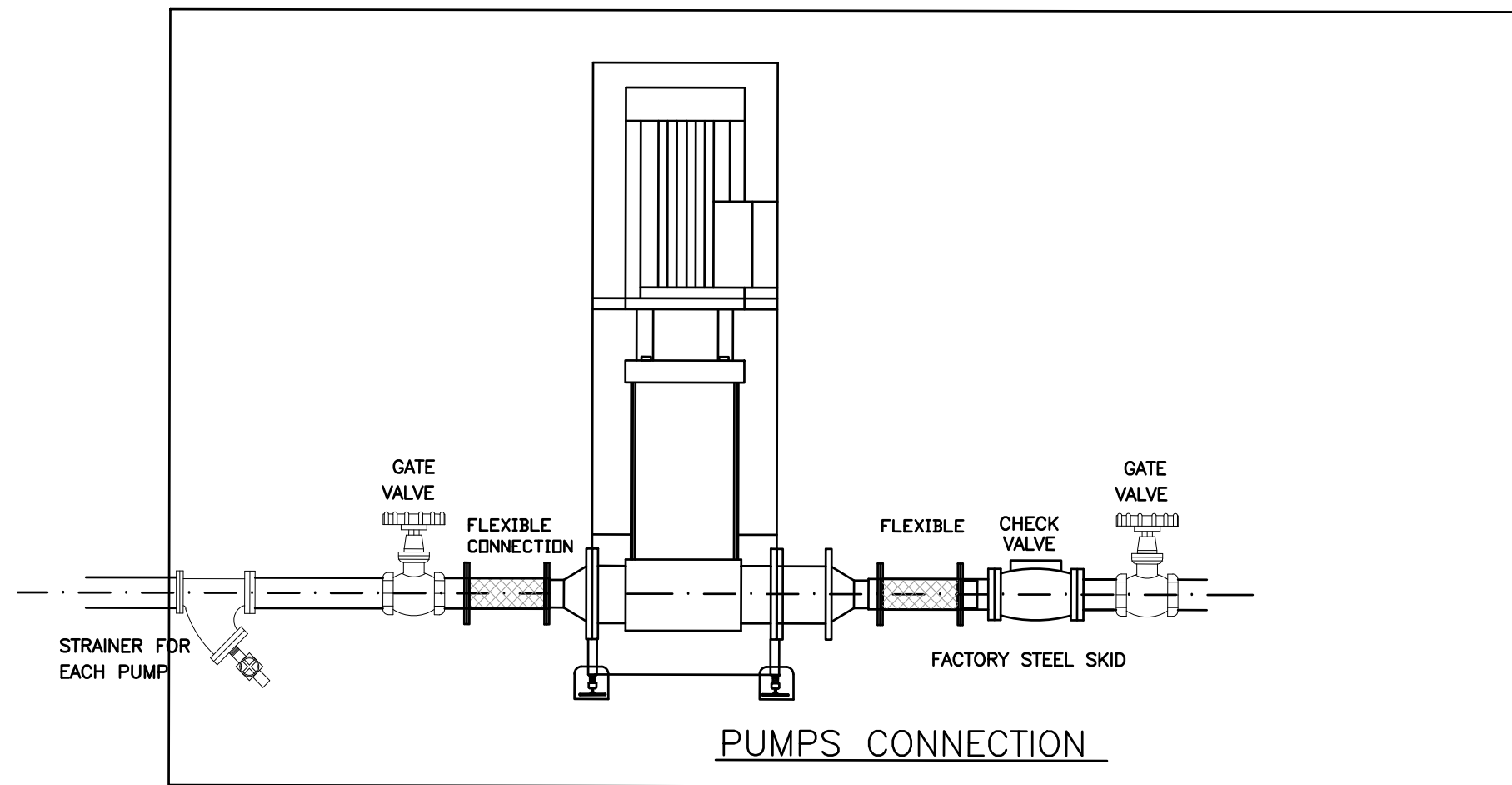
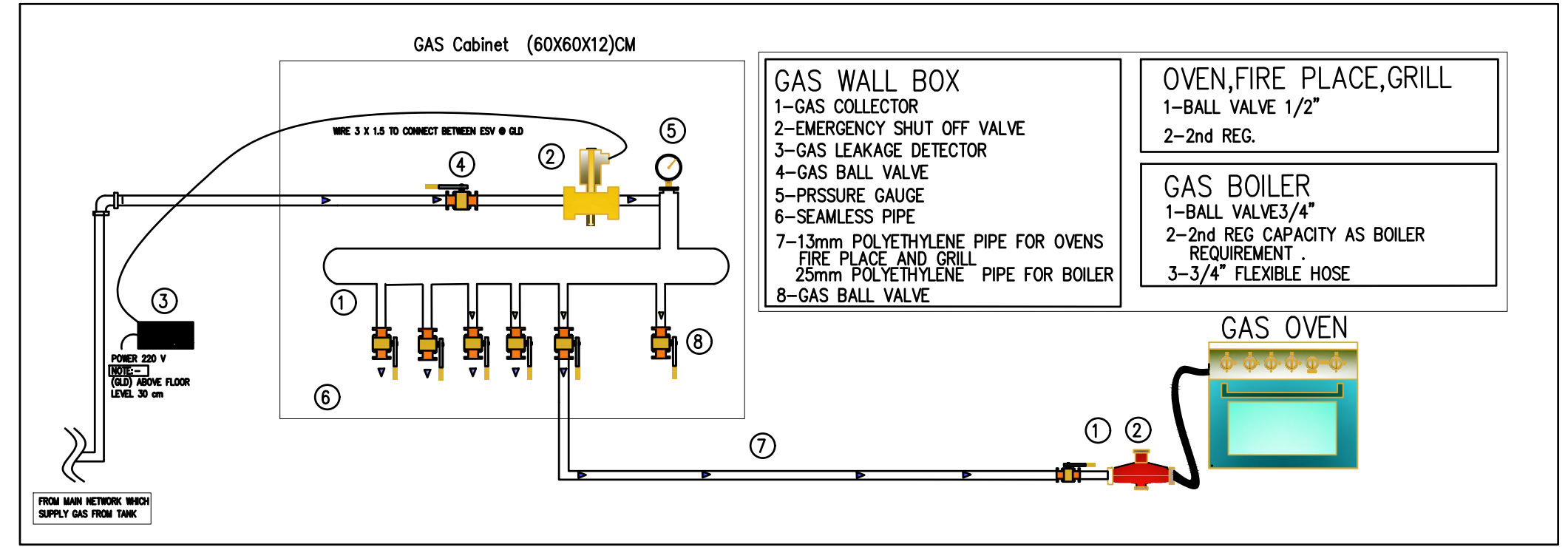
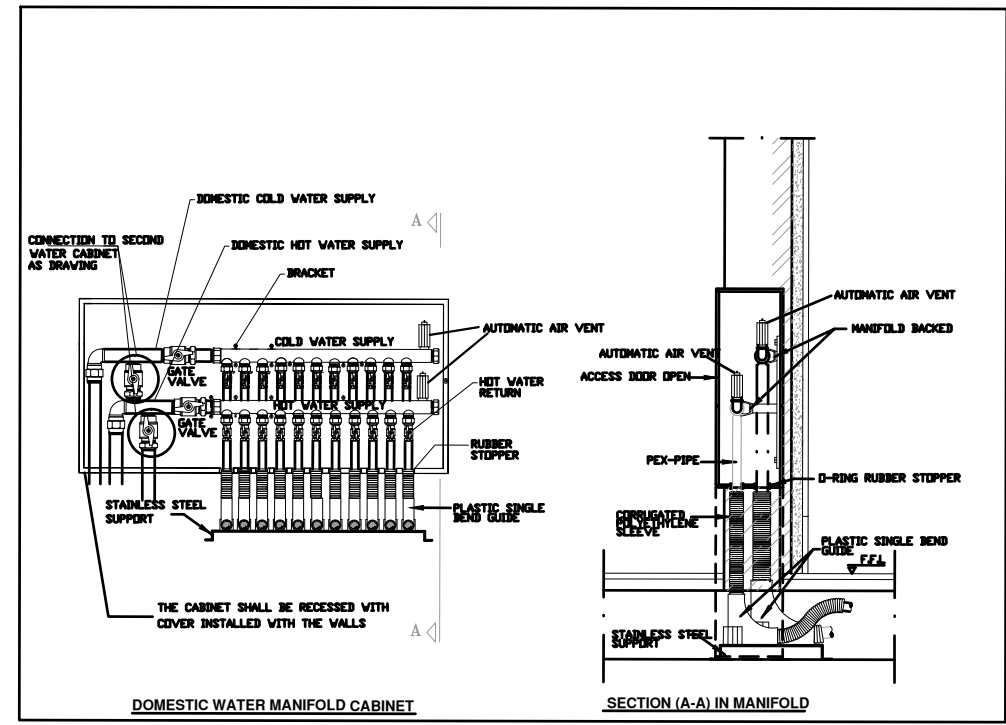
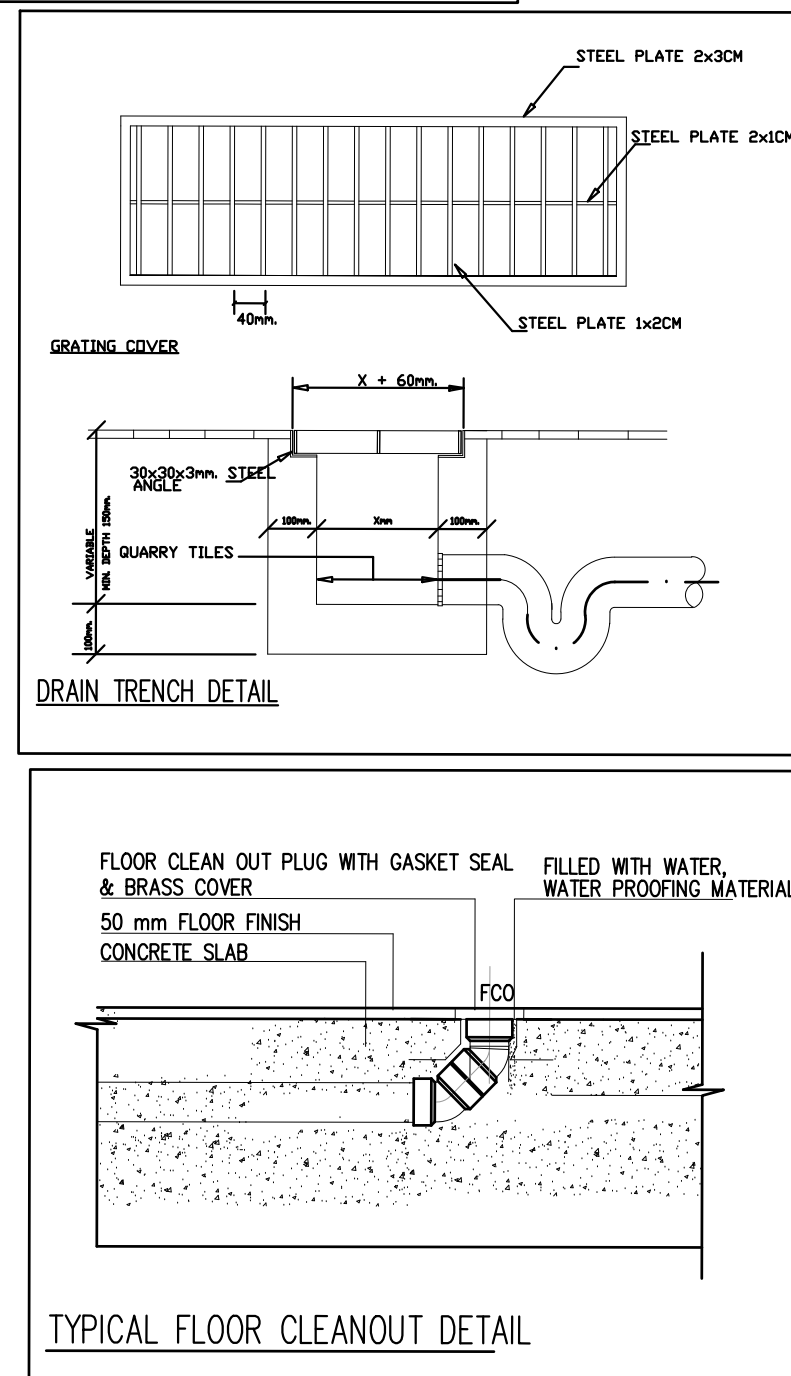
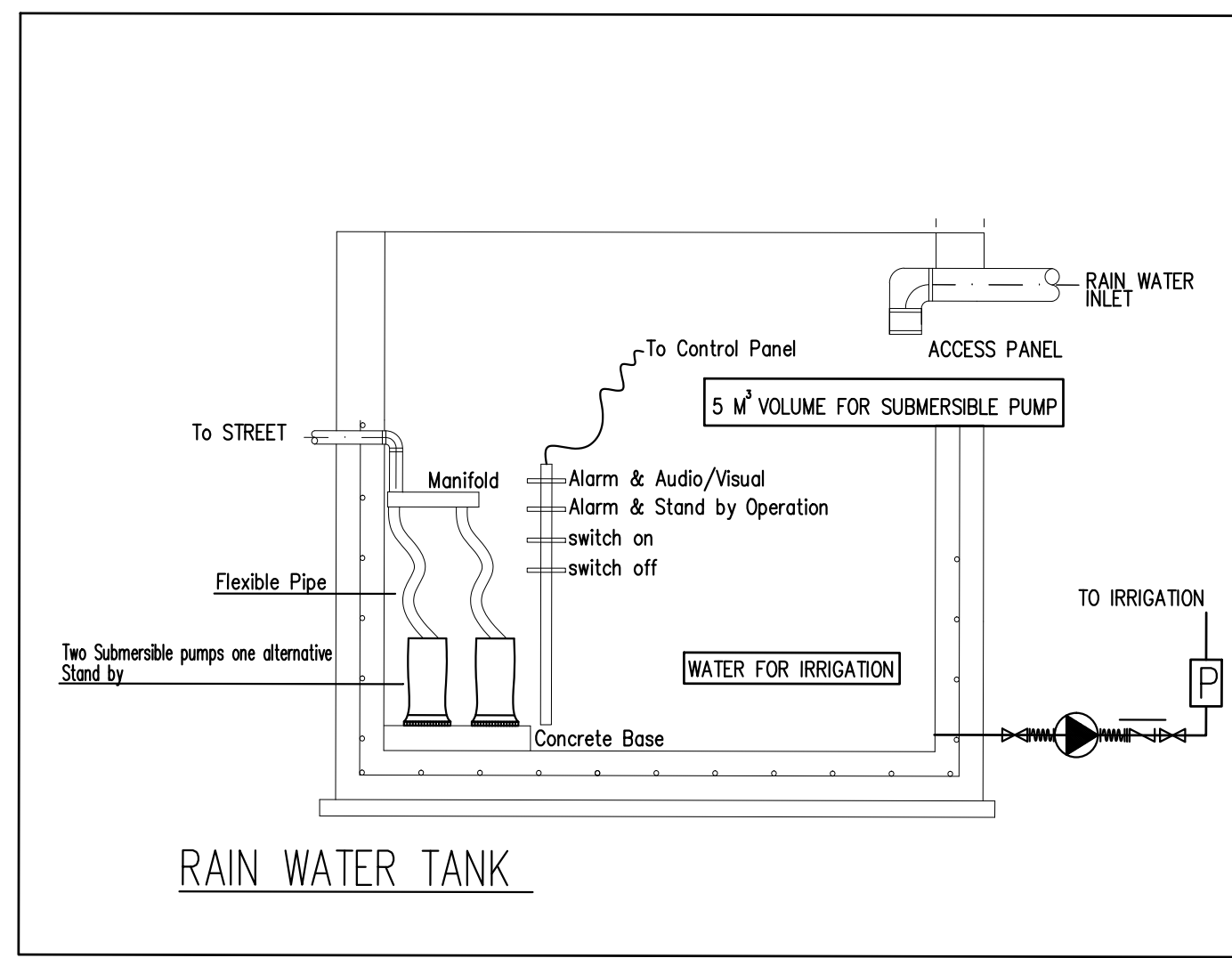
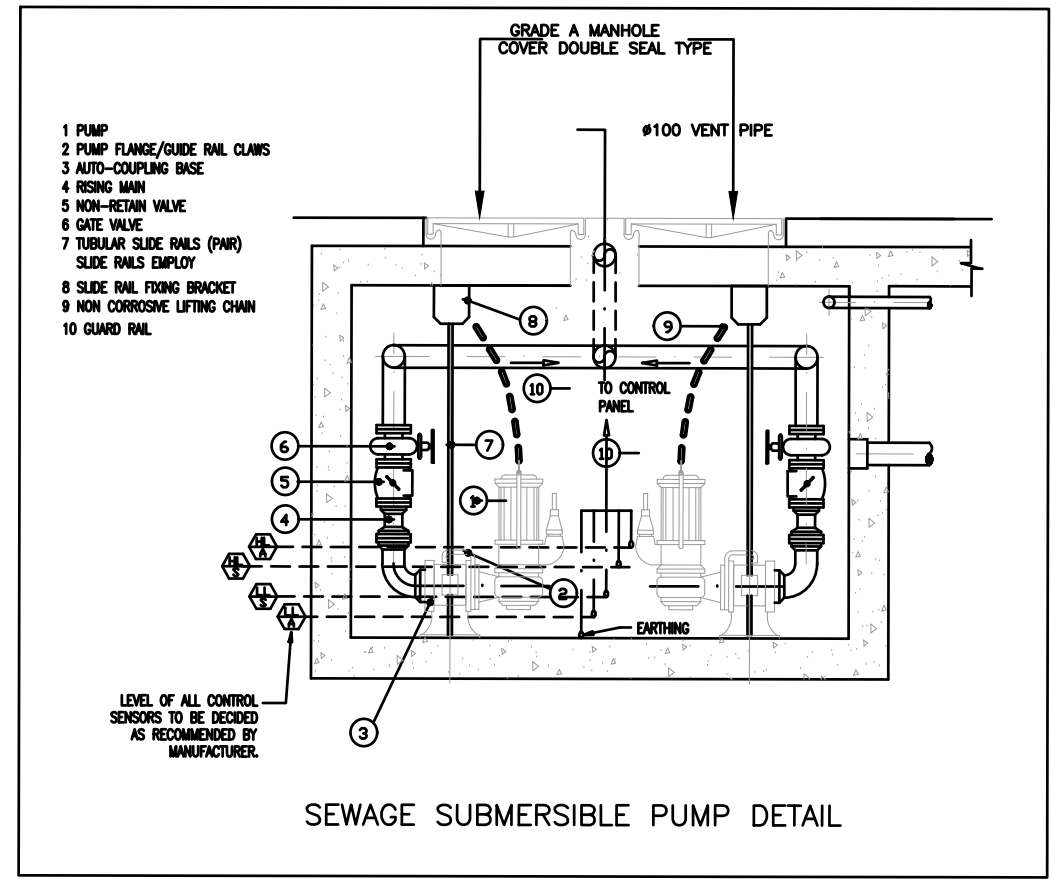
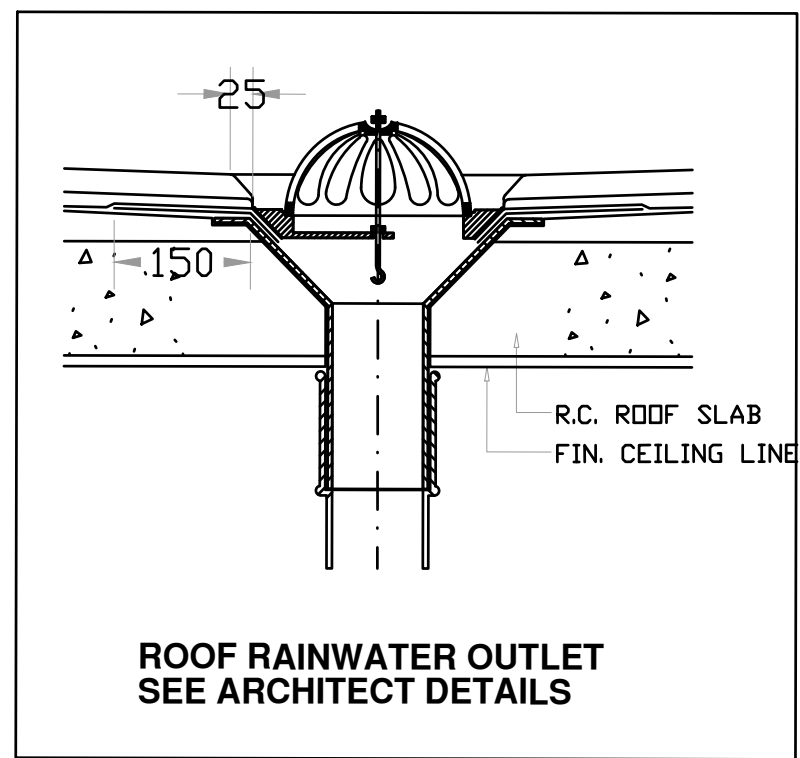
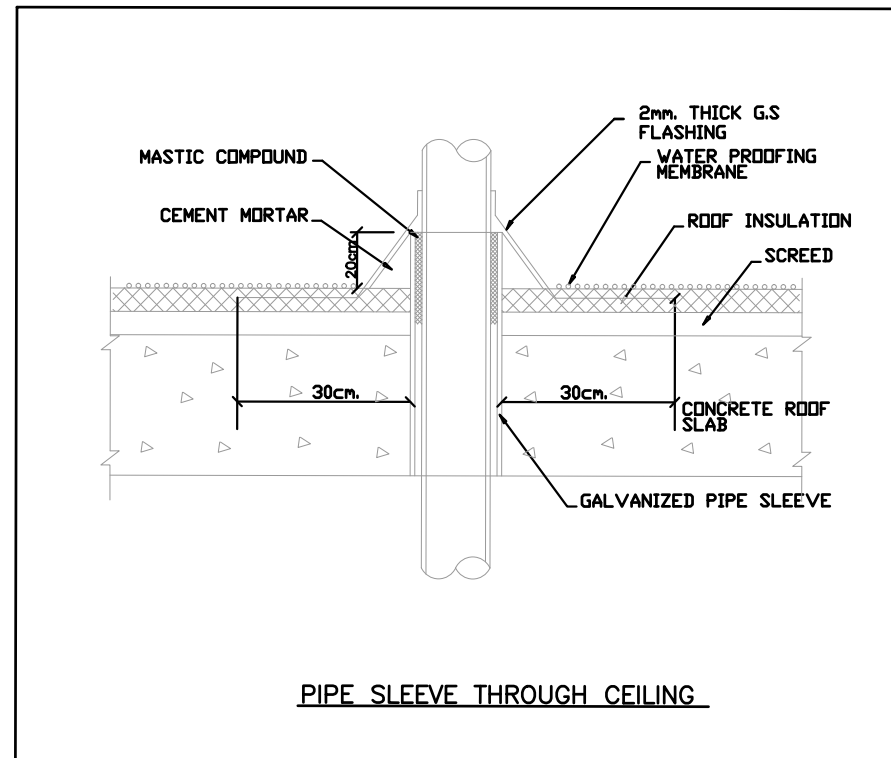
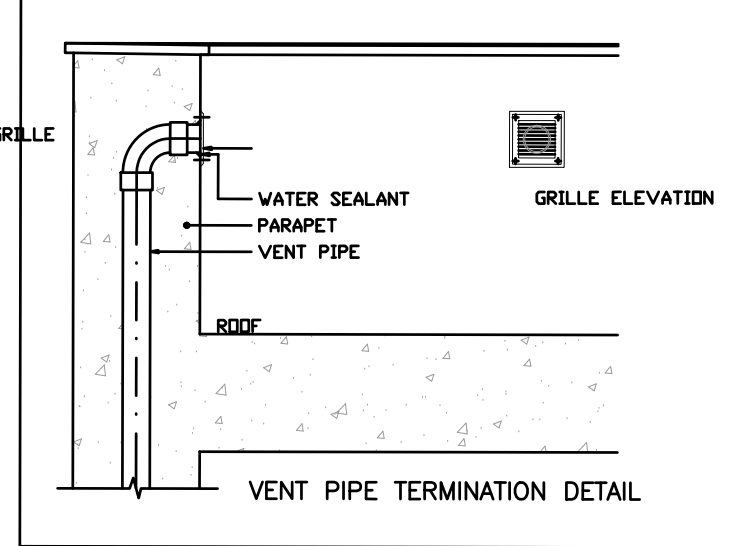
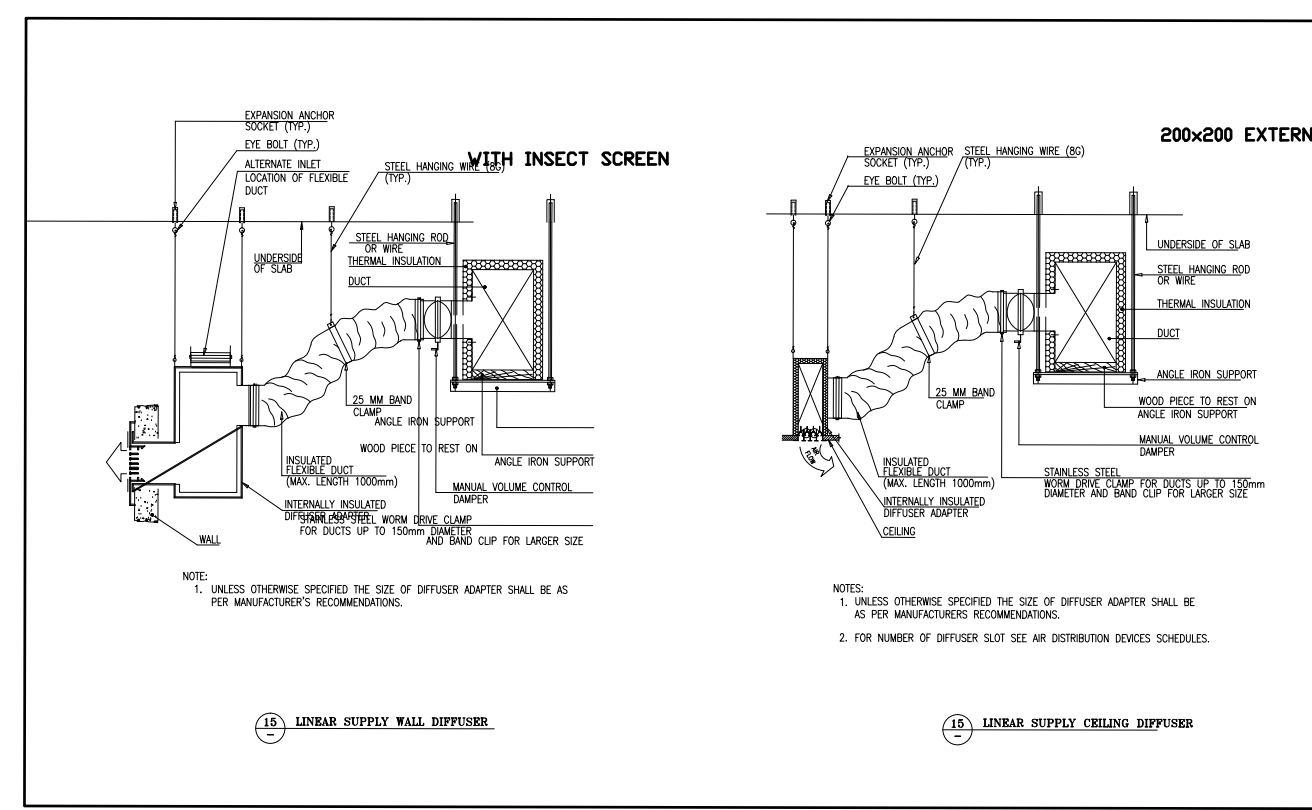
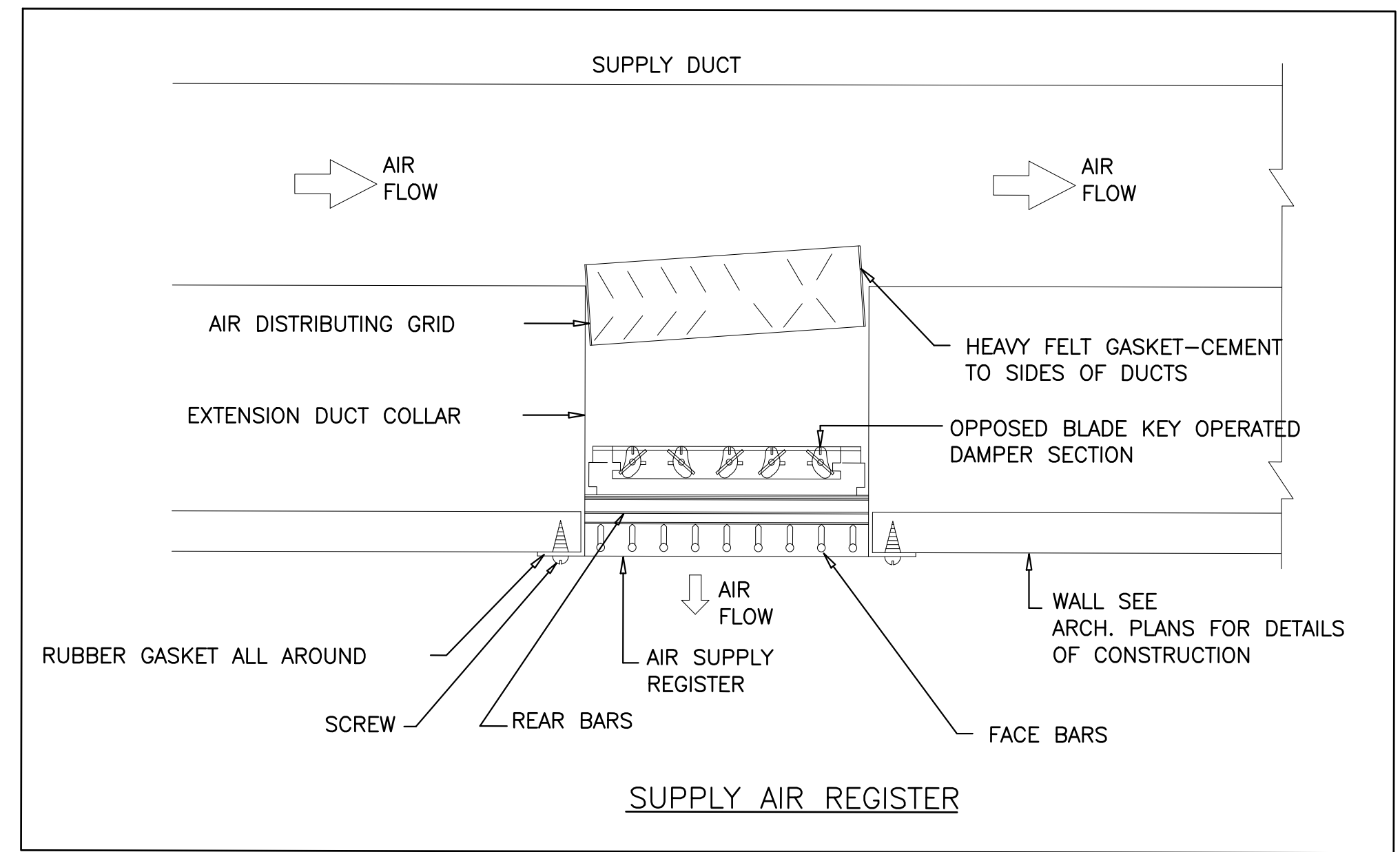
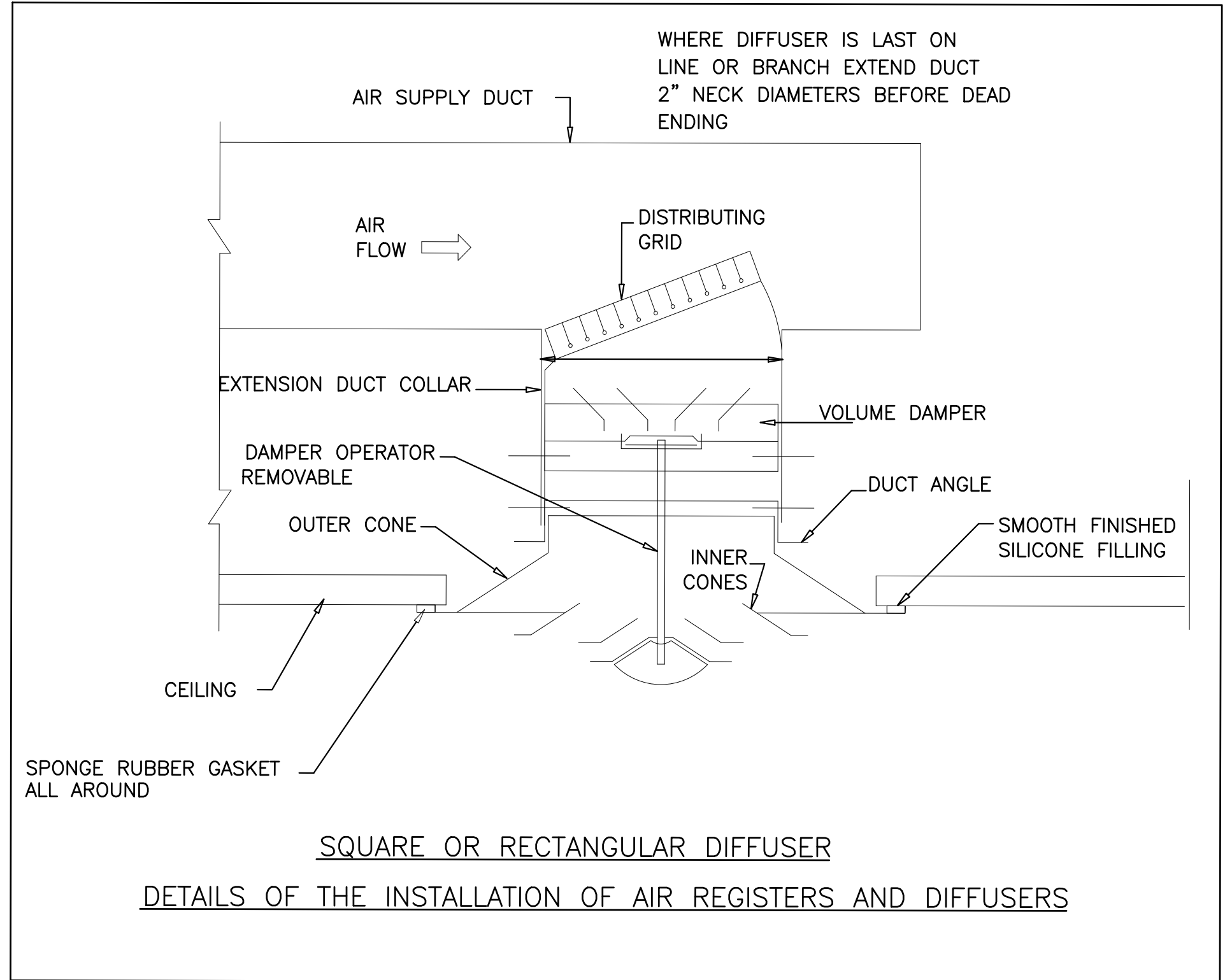
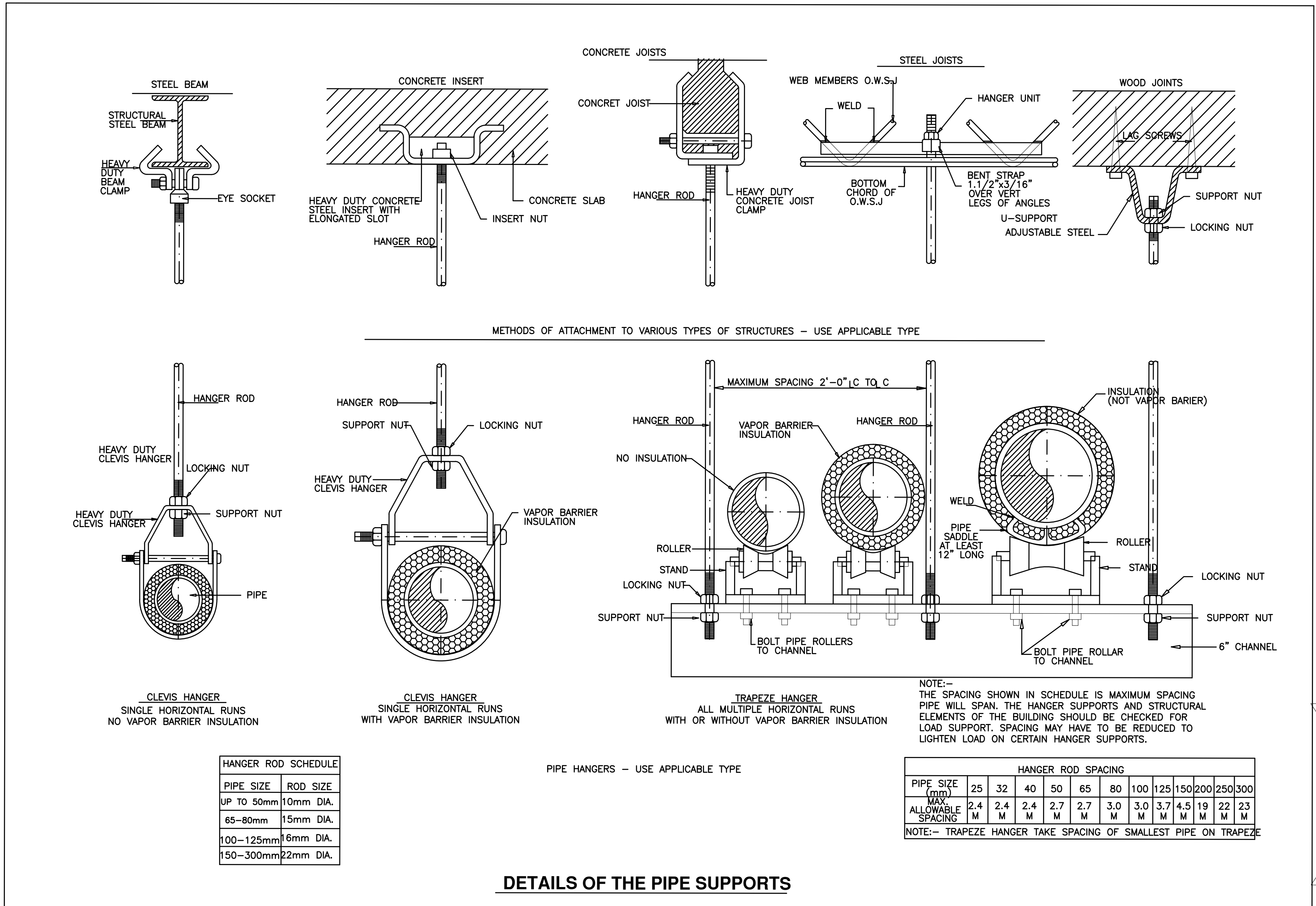


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SCALE	DATE: 03/2022	PROJECT NO.	03/2021
NOTES :			



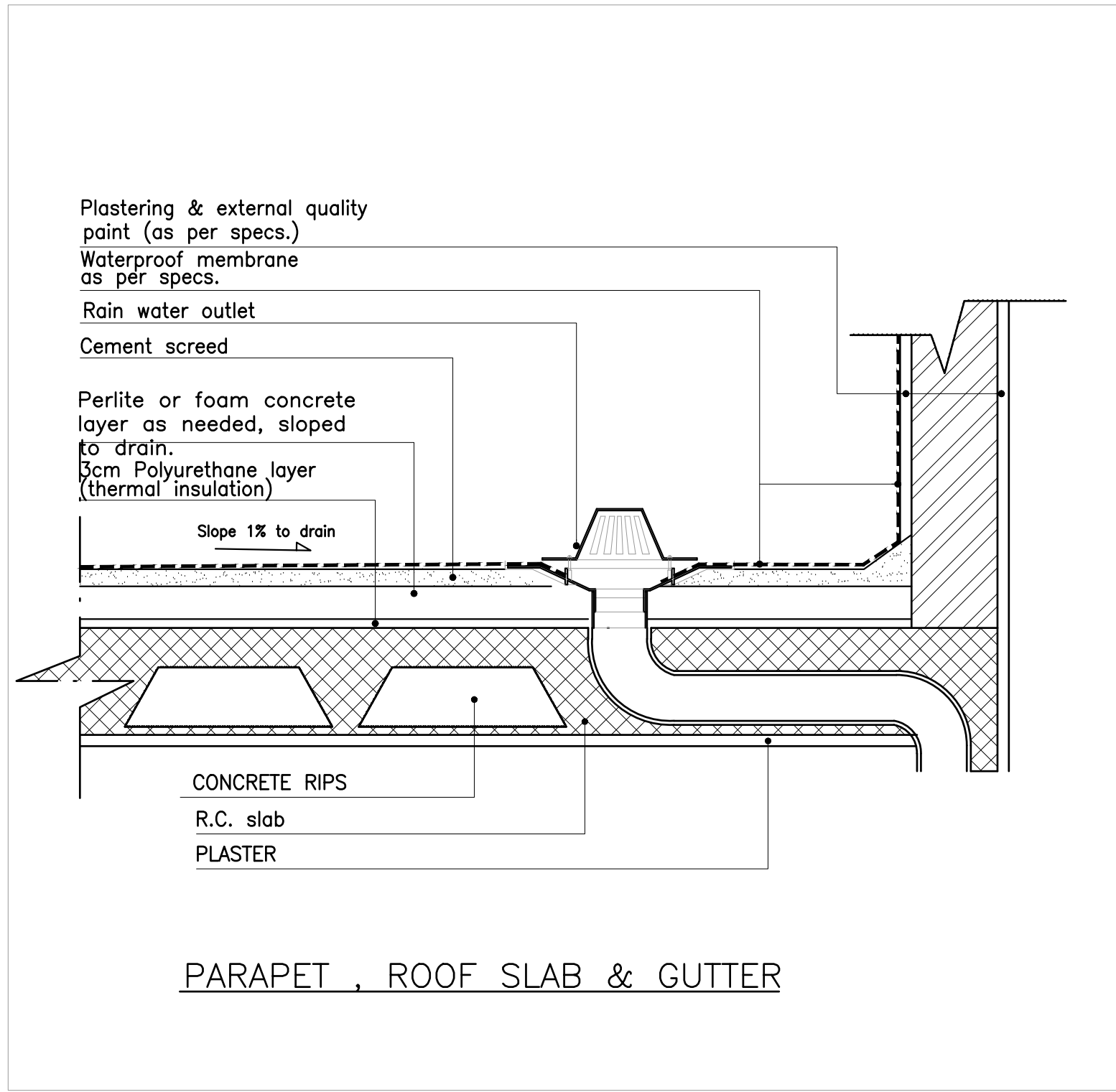
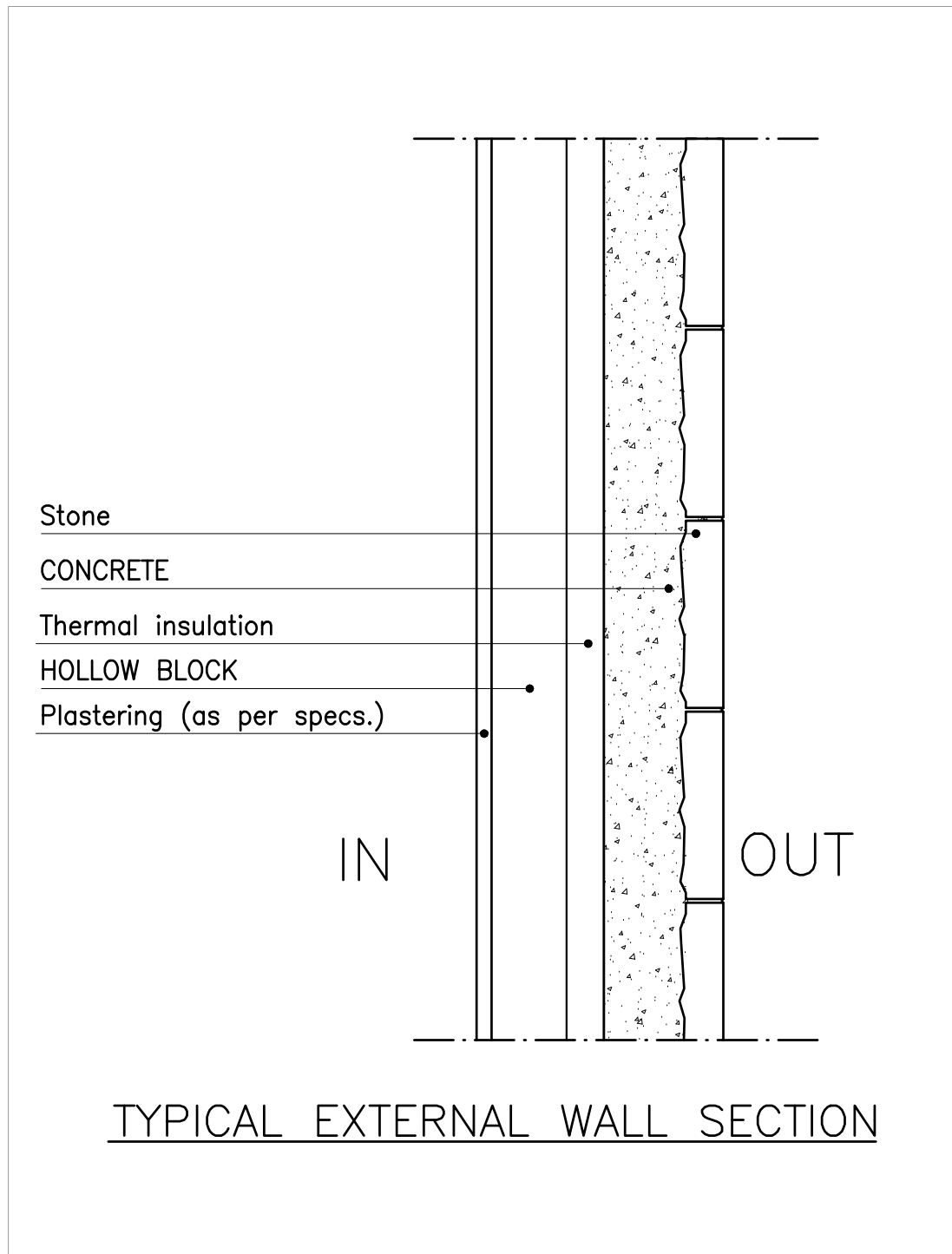
Before final Review

NO.	REVISION	DATE	SIGN

PROJECT	PERMANENT EXHIBITION OF BADIA and RURAL PRODUCTS			
OWNER	THE MINISTRY OF AGRICULTURE			
DRAWING TITLE	DETAILS			
DESIGNED BY		DRAWN BY	CAD	
CHECKED BY		REFERENCE		
		5/Project/Project/Arch./Phase		
SCALE	DATE MAR - 2022	PROJECT NO.	03/2021	PAGE NO.
NOTES :				



رقم القطعة: ٣٧٤١
رقم الخوض: ١٥
رقم اللوحة: ٣٣
المدينة أو القرية: وادي الحمر



U-Value Calculations

Wall Insulation

Material	Thickness(cm)	K(W/m.k)	R(m ² .K/W)
Inside Air Film			0.120
Plaster & Paint	2	0.72	0.028
Hollow Block	10	1	0.100
Thermal insulation	5	0.03	1.667
Concrete	20	1.75	0.114
Stone	5	1.75	0.029
Outside Air Film			0.030

$U_{wall} = 0.48$

Roof Insulation

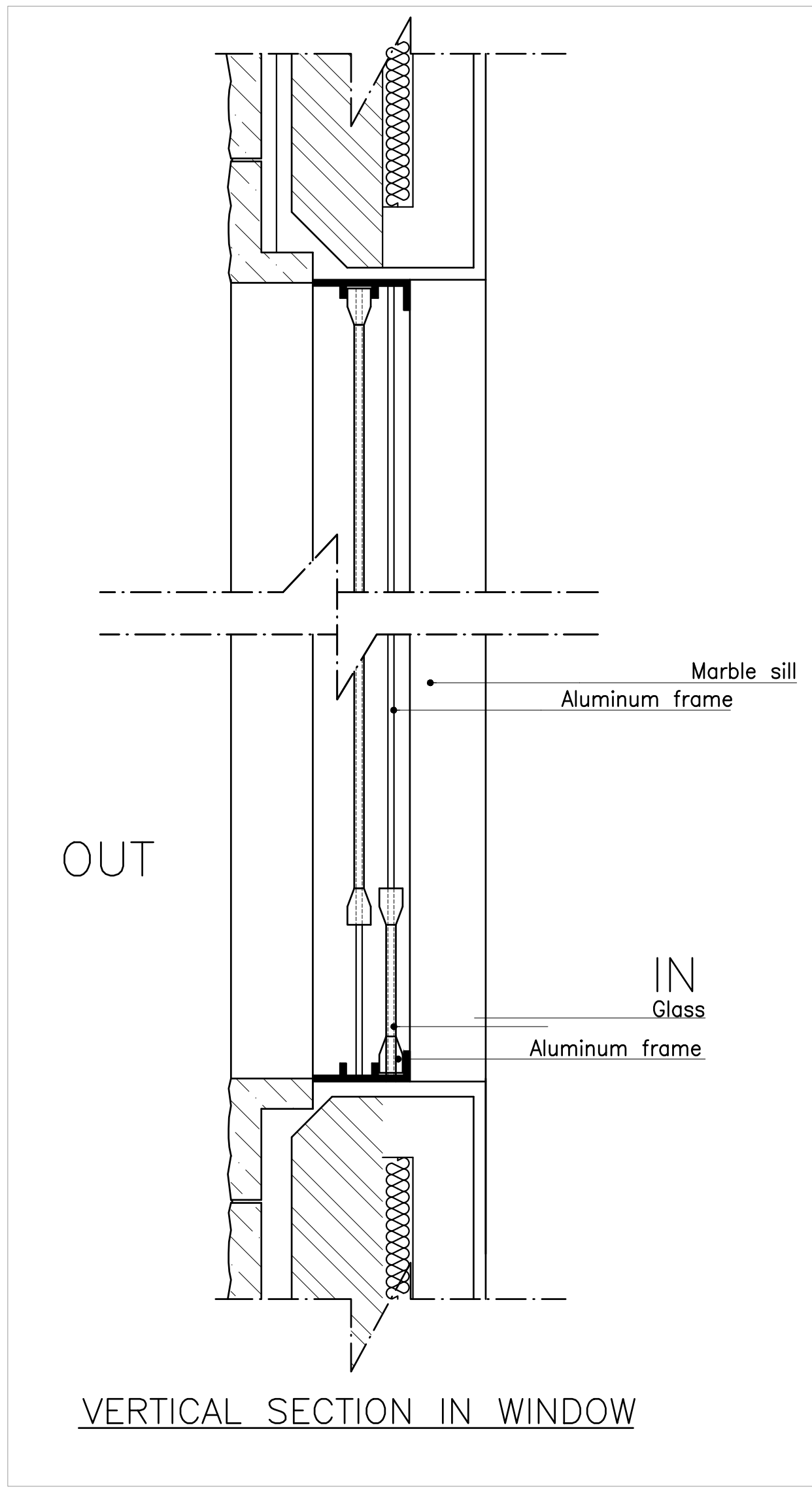
Material	Thickness(cm)	K(W/m.k)	R(m ² .K/W)
Inside Air Film			0.150
TILES	3	1.6	0.019
Mortar	2	1.4	0.014
LIGHT WEIGHT FILL	6	1.5	0.040
Water proofing	0.3	1.1	0.003
Cement screed	3	0.7	0.043
Foam Concrete	5	0.13	0.385
Extruded polystyrene	3	0.03	1.000
RC slab	8	1.44	0.056
rips	24	0.95	0.253
Plaster & Paint	2	1.2	0.017
Outside Air Film			0.020

$U_{roof} = 0.50$

Wall Partition

Material	Thickness(cm)	K(W/m.k)	R(m ² .K/W)
Inside Air Film			0.120
Plaster & Paint	2	0.72	0.028
Hollow Block	10	1	0.100
Plaster & Paint	2	0.72	0.028
Inside Air Film			0.120

$U_{wall} = 2.53$



WINDOW U-VALUE

ALUMINUM WINDOW
(DOUBLE GLAZED)

$U_g(\text{windows}) = 3.4 \text{ W/m}^2 \cdot \text{K}$

OVERALL U-VALUE

$A_w(\text{walls}) = 859 \text{ m}^2 \quad U_w(\text{walls}) = 0.48 \text{ W/m}^2 \cdot \text{K}$

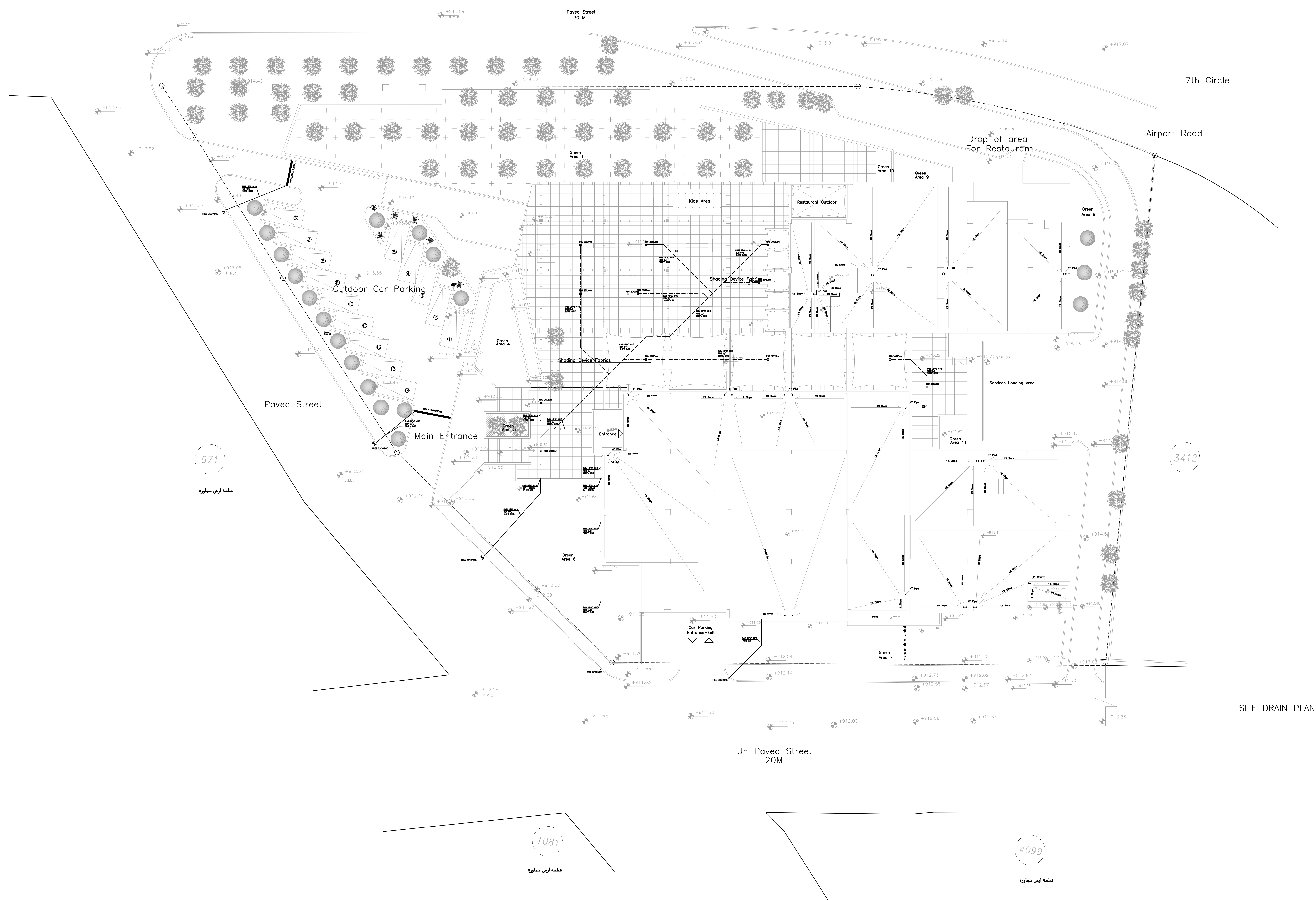
$A_g(\text{windows}) = 141 \text{ m}^2 \quad U_g(\text{windows}) = 3.4 \text{ W/m}^2 \cdot \text{K}$

$$U_{total} = \frac{A_w U_w + A_g U_g}{A_{total}} = \frac{859 \times 0.48 + 141 \times 3.4}{859 + 141} = 0.89 \text{ W/m}^2 \cdot \text{K}$$

Before final Review

NO.	REVISION	DATE	SIGN

PROJECT	PERMANENT EXHIBITION OF BADIA and RURAL PRODUCTS		
OWNER	THE MINISTRY OF AGRICULTURE		
DRAWING TITLE	U-VALUE CALCULATION		
DESIGNED BY		DRAWN BY	DAO
CHECKED BY		REFERENCE	
SCALE	DATE: 03/2022	PROJECT NO.	03/2021
NOTES :			PAGE NO. 1/1



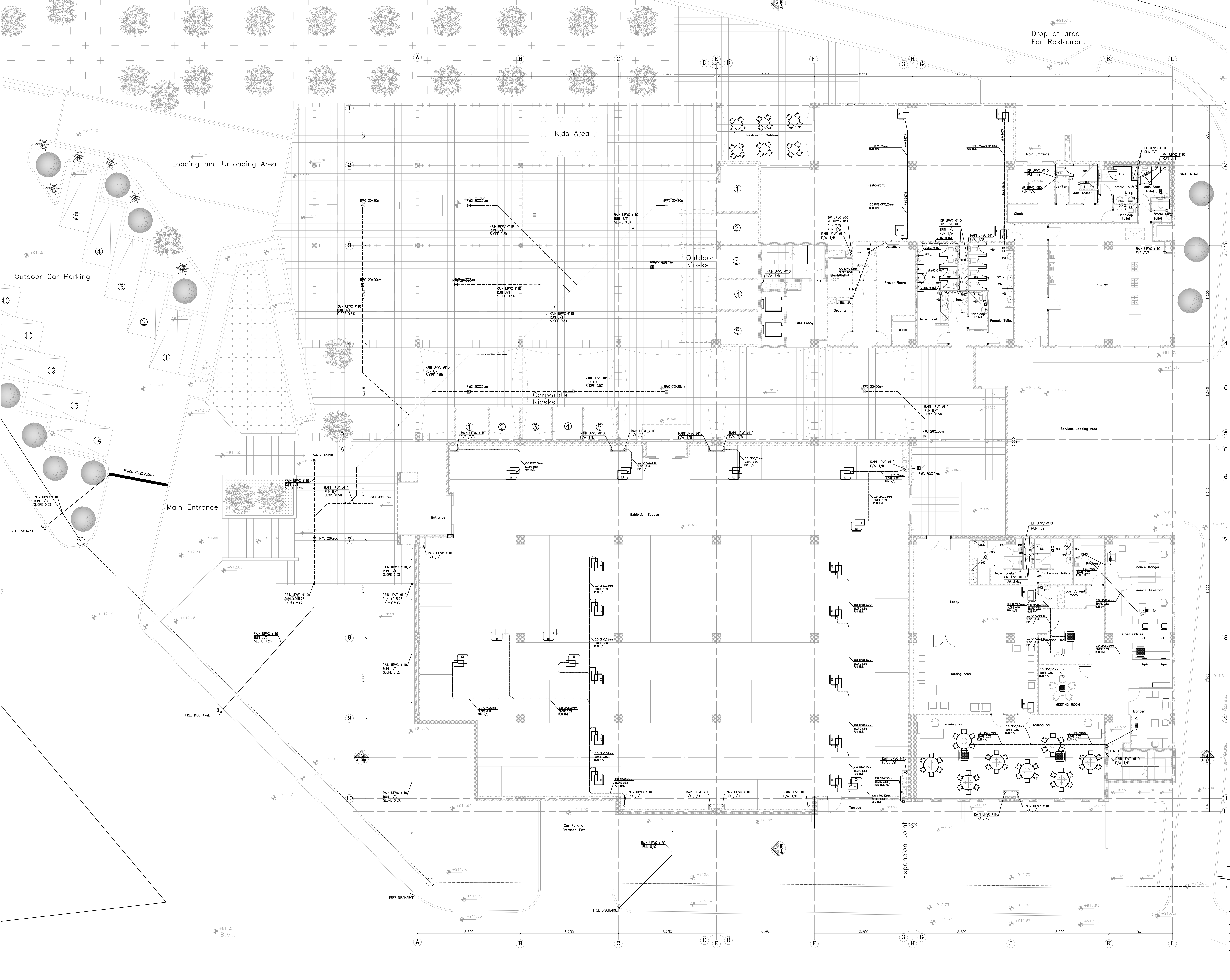
SITE DRAIN PLAN

Before final Review

NO.	REVISION	DATE	SIGN

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Before final Review



رقم القطعة: ٣٧٤٧
رقم الحوض: ١٥
رقم اللوحة: ٢٢
المدينة أو القرية: بني نصر

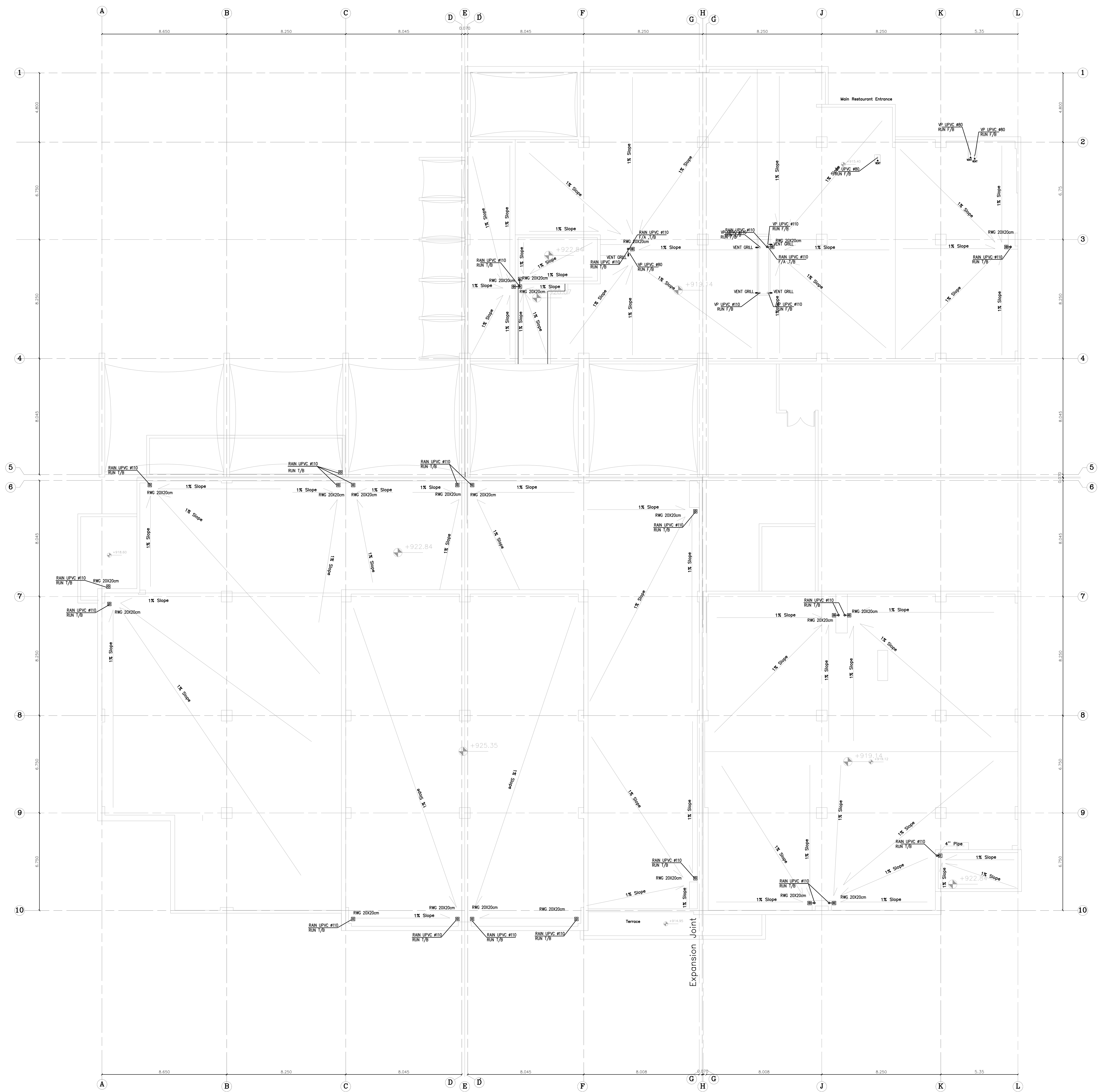
Before final Review

NO.	REVISION	DATE	SIGN

PROJECT	PERMANENT EXHIBITION OF BADIA AND RURAL PRODUCTS		
OWNER	THE MINISTRY OF AGRICULTURE		
DRAWING TITLE	GROUND FLOOR DRAIN SYSTEM LAYOUT		
DESIGNED BY		DRAWN BY	QAO
CHECKED BY		DATE	03/2021
SCALE	1:100	PROJECT NO.	03/2021
NOTES :			



رقم القطعة: ٣٧٤١
رقم الخوض: ١٥
رقم اللوحة: ٢٢
المدينة أو القرية: وادي السمر



Before final Review

NO.	REVISION	DATE	SIGN

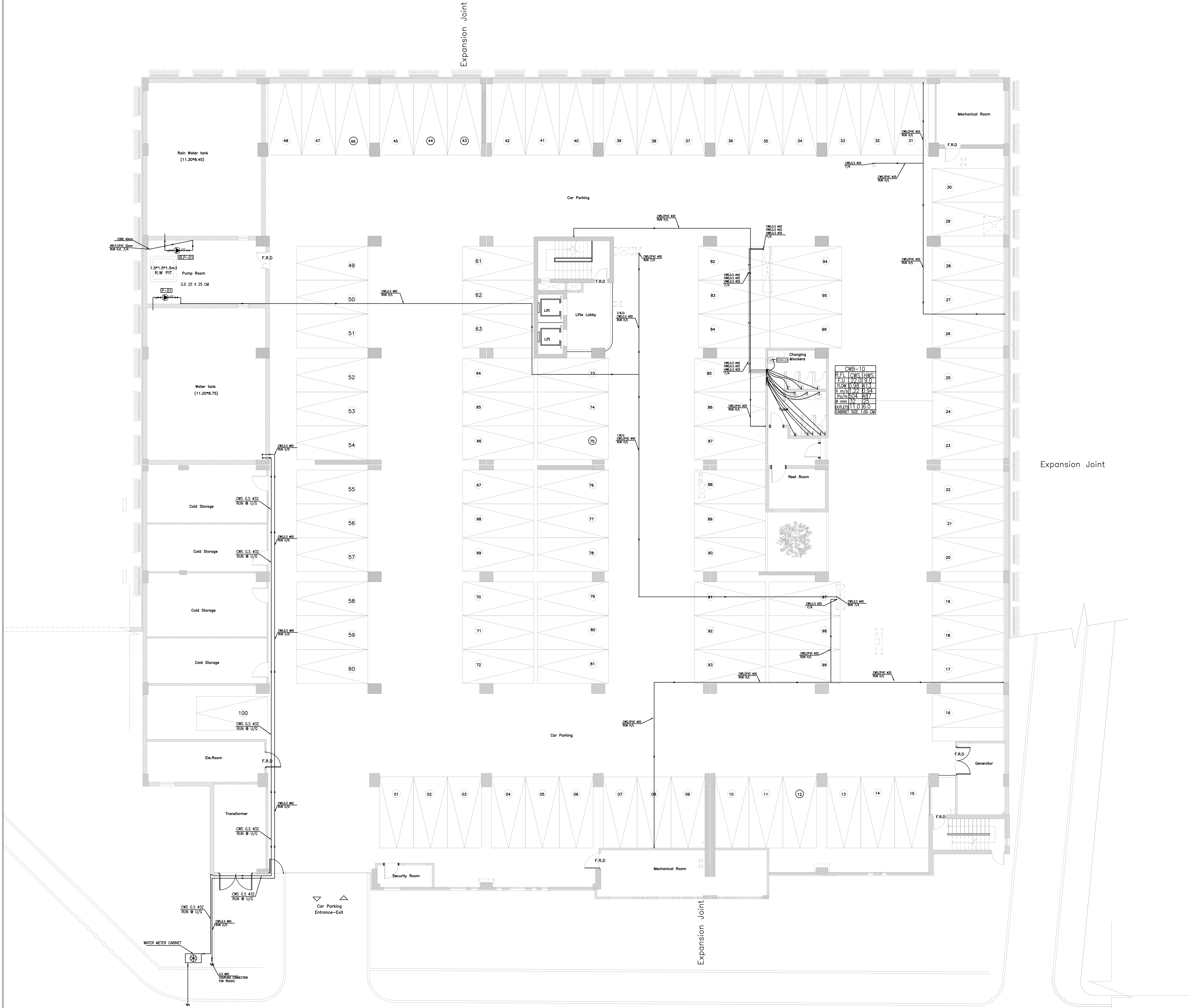
PROJECT	PERMANENT EXHIBITION OF BADIA and RURAL PRODUCTS		
OWNER	THE MINISTRY OF AGRICULTURE		
DRAWING TITLE	ROOF FLOOR DRAIN SYSTEM LAYOUT		
DESIGNED BY		DRAWN BY	QAD
CHECKED BY		APPROVED	
SCALE	1:100	DATE	03/2021
PROJECT NO.			
NOTES :			



BEFORE FINAL REVIEW

NO.	REVISION	DATE	SIGN

PROJECT	PERMANENT EXHIBITION OF BADIA and RURAL PRODUCT		
OWNER	THE MINISTRY OF AGRICULTURE		
DRAWING TITLE	SITE WATER SYSTEM LAYOUT		
DESIGNED BY		DRAWN BY	CAD
CHECKED BY		REFERENCE	
SCALE	1:300	DATE	06/2022
PROJECT NO.		DATE	06/2021
NOTES :			PAGE NO. 1 M 201





PROJECT	PERMANENT EXHIBITION OF BADIA AND RURAL PRODUCTS				
OWNER	THE MINISTRY OF AGRICULTURE				
DRAWING TITLE	(GROUND FLOOR WATER SYSTEM LAYOUT				
DESIGNED BY			DRAWN BY		CAD
CHECKED BY			REFERENCE S:Project/Plant/Arch./Plan		
SCALE	1:100	DATE JUNE -2022	PROJECT NO.	06/2021	PAGE NO.
NOTES :					



رقم القطعة: ٣٧٤١
رقم الخوض: ١٥
رقم اللوحة: ٣٣
المدينة أو القرية: وادي الحمر

BEFORE FINAL REVIEW

NO.	REVISION	DATE	SIGN

PROJECT	PERMANENT EXHIBITION OF BADIA and RURAL PRODUCTS		
OWNER	THE MINISTRY OF AGRICULTURE		
DRAWING TITLE	ROOF FLOOR WATER SYSTEM LAYOUT		
CHECKED BY		DATE	
SCALE	1:100	DATE	
NOTES :		PROJECT NO.	

TOP OF ROOF PLAN



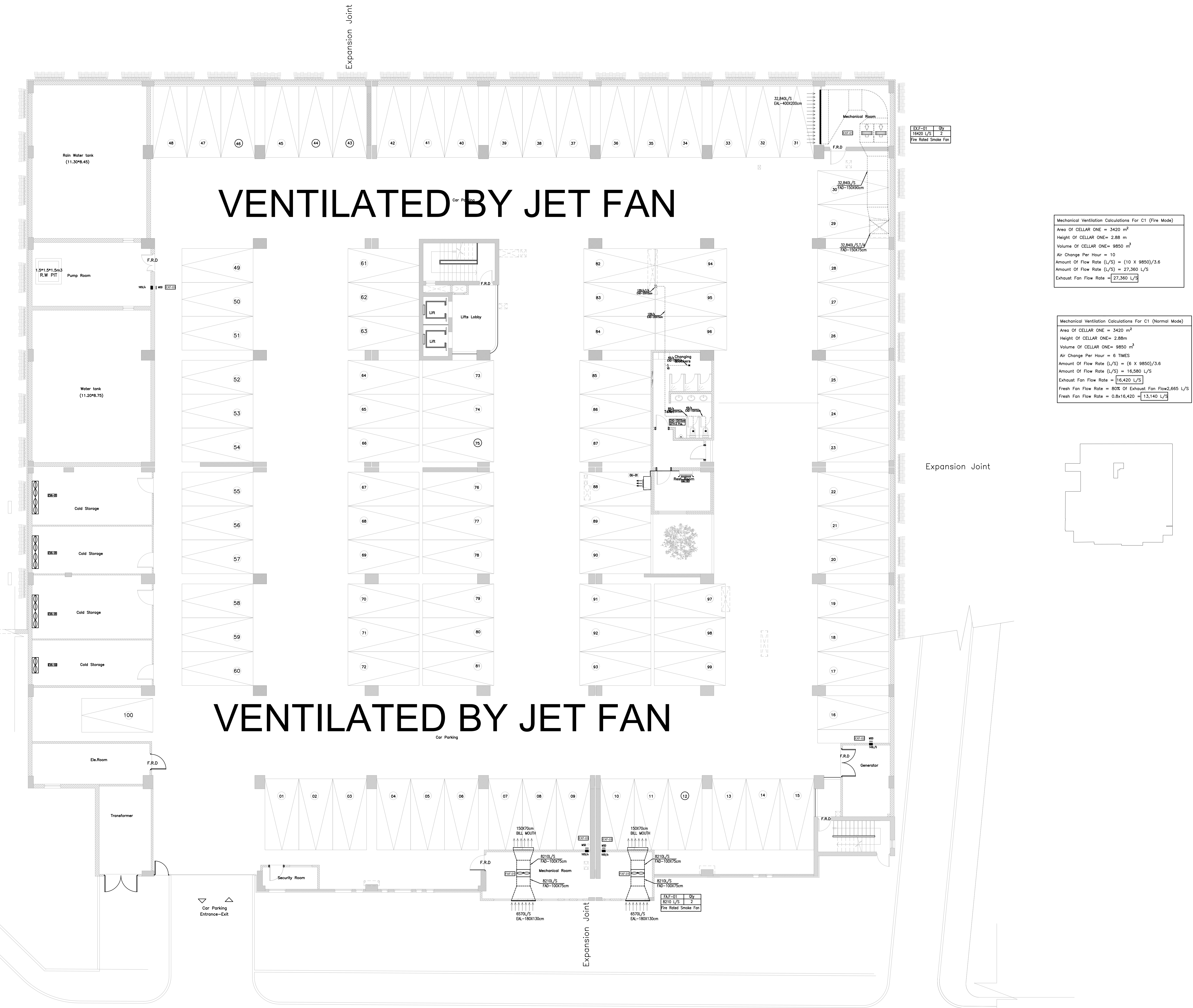
BEFORE FINAL REVIEW

NO.	REVISION	DATE	SIGN

PROJECT	PERMANENT EXHIBITION OF BADIA and RURAL PRODUCTION		
OWNER	THE MINISTRY OF AGRICULTURE		
DRAWING TITLE	WATER SYSTEM RISER		
DESIGNED BY		DRAWN BY	CAO
CHECKED BY		REFERENCE	5/Project/Project/Arch./Phase
DATE	06/2003		



رقم القطعة: ٣٧٤١
رقم الخوض: ١٥
رقم اللوحة: ٣٣
المدينة أو القرية: وادي العسر



Mechanical Ventilation Calculations For C1 (Fire Mode)	
Area Of CELLAR ONE =	3420 m ²
Height Of CELLAR ONE=	2.88 m
Volume Of CELLAR ONE=	9850 m ³
Air Change Per Hour =	10
Amount Of Flow Rate (L/S) =	(10 X 9850)/3.6
Amount Of Flow Rate (L/S) =	27,360 L/S
Exhaust Fan Flow Rate =	27,360 L/S

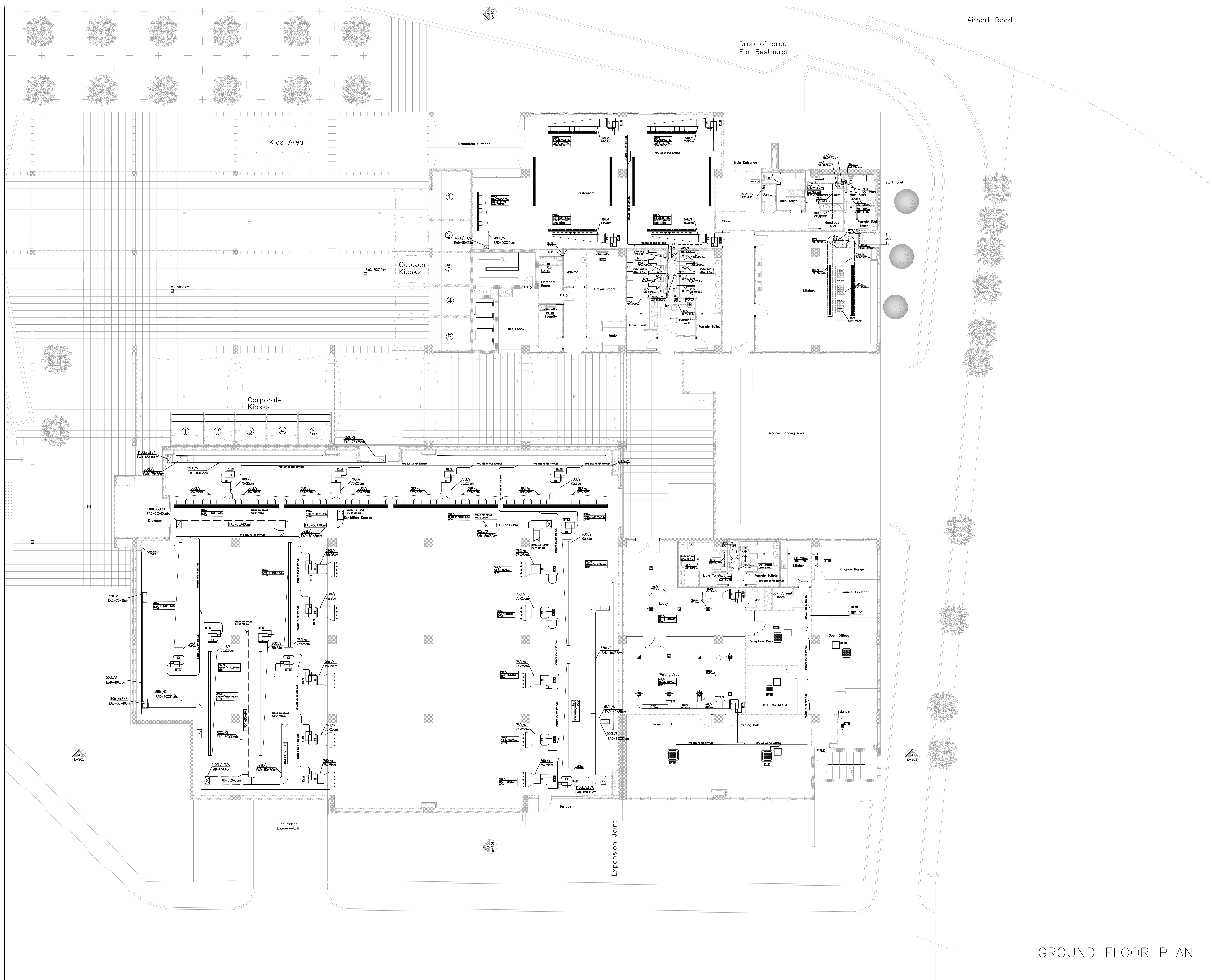
Mechanical Ventilation Calculations For C1 (Normal Mode)	
Area Of CELLAR ONE =	3420 m ²
Height Of CELLAR ONE=	2.88m
Volume Of CELLAR ONE=	9850 m ³
Air Change Per Hour =	6 TIMES
Amount Of Flow Rate (L/S) =	(6 X 9850)/3.6
Amount Of Flow Rate (L/S) =	16,580 L/S
Exhaust Fan Flow Rate =	16,420 L/S
Fresh Fan Flow Rate =	80% Of Exhaust Fan Flow2,665 L/S
Fresh Fan Flow Rate =	0.8x16,420 = 13,140 L/S

BEFORE FINAL REVIEW

NO.	REVISION	DATE	SIGN

PROJECT	PERMANENT EXHIBITION OF BADIA and RURAL PRODUCTS		
OWNER	THE MINISTRY OF AGRICULTURE		
DRAWING TITLE	BASEMENT FLOOR HVAC SYSTEM		
DESIGNED BY		DRAWN BY	DAD
CHECKED BY		REFERENCE	
SCALE		DATE	06/2021
NOTES :		PROJECT NO.	

BASEMENT FLOOR PLAN



رقم القطعة: ٣٧٤١
رقم الخوض: ١٥
رقم اللوحة: ٢٢
المدينة أو القرية: وادي الحمر

BEFORE FINAL REVIEW

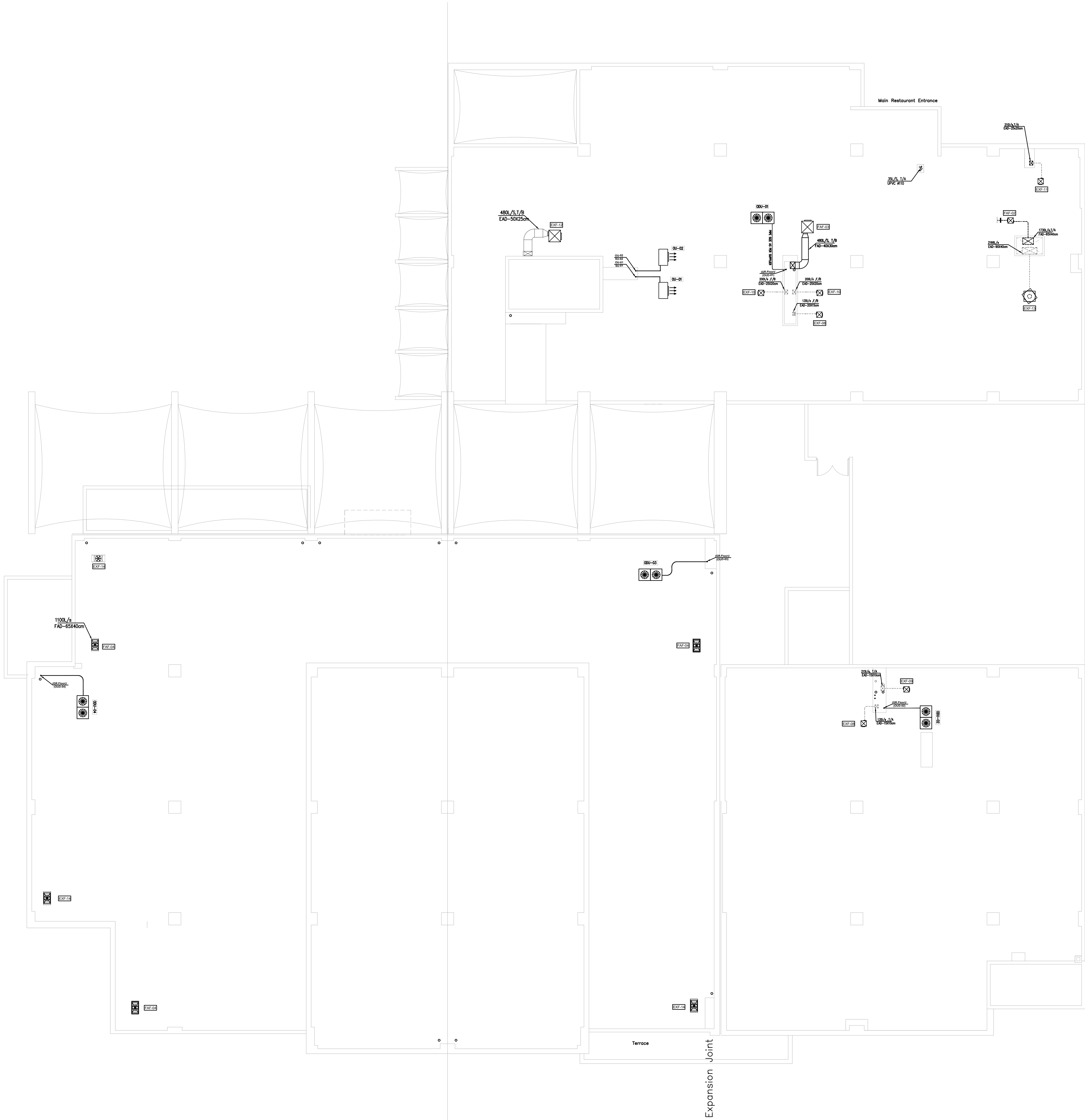
NO.	REVISION	DATE	SIGN

PROJECT	PERMANENT EXHIBITION OF BADIA and RURAL PRODUCTS		
OWNER	THE MINISTRY OF AGRICULTURE		
DRAWING TITLE	GROUND FLOOR HVAC SYSTEM		
DESIGNED BY		DRAWN BY	DAD
CHECKED BY		REFERENCE	
DATE	JUNE 2022	PROJECT NO.	06/2021
SCALE		PAGE NO.	
NOTES :			

GROUND FLOOR PLAN



رقم القطعة: ٣٧٤١
رقم الخوض: ١٥
رقم اللوحة: ٣٣
المدينة أو القرية: وادي الحمر



BEFORE FINAL REVIEW

NO.	REVISION	DATE	SIGN

PROJECT	PERMANENT EXHIBITION OF BADIA and RURAL PRODUCTS		
OWNER	THE MINISTRY OF AGRICULTURE		
DRAWING TITLE	ROOF FLOOR HVAC SYSTEM		
CHECKED BY	DATE	PROJECT NO.	PAGE NO.
NOTES :			

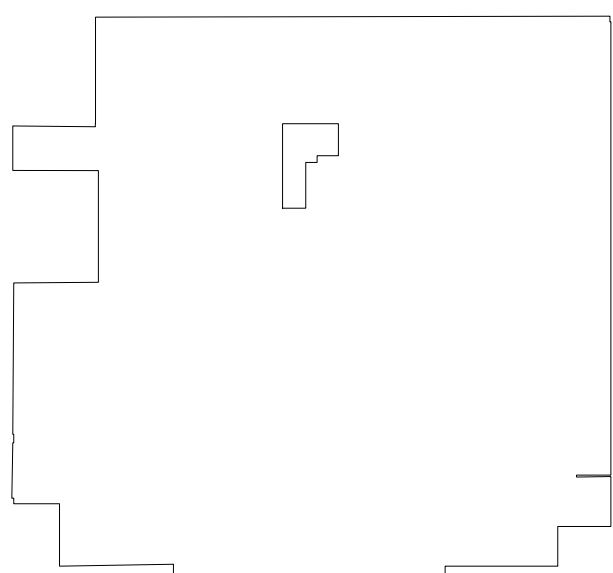
TOP OF ROOF PLAN



رقم القطعة: ٣٧٤١
رقم الخوض: ١٥
رقم اللوحة: ٣٣
المدينة أو القرية: وادي النصار

Mechanical Ventilation Calculations For C1 (Fire Mode)	
Area Of CELLAR ONE =	3420 m ²
Height Of CELLAR ONE=	2.88m
Volume Of CELLAR ONE=	9850 m ³
Air Change Per Hour =	10
Amount Of Flow Rate (L/S) =	(10 X 9850)/3.6
Amount Of Flow Rate (L/S) =	27,360 L/S
Exhaust Fan Flow Rate =	27,360 L/S

Mechanical Ventilation Calculations For C1 (Normal Mode)	
Area Of CELLAR ONE =	3420 m ²
Height Of CELLAR ONE=	2.88m
Volume Of CELLAR ONE=	9850 m ³
Air Change Per Hour =	6 TIMES
Amount Of Flow Rate (L/S) =	(6 X 9850)/3.6
Amount Of Flow Rate (L/S) =	16,580 L/S
Exhaust Fan Flow Rate =	16,420 L/S
Fresh Fan Flow Rate = 80% Of Exhaust Fan Flow	13,140 L/S
Fresh Fan Flow Rate =	0.8x16,420 = 13,140 L/S

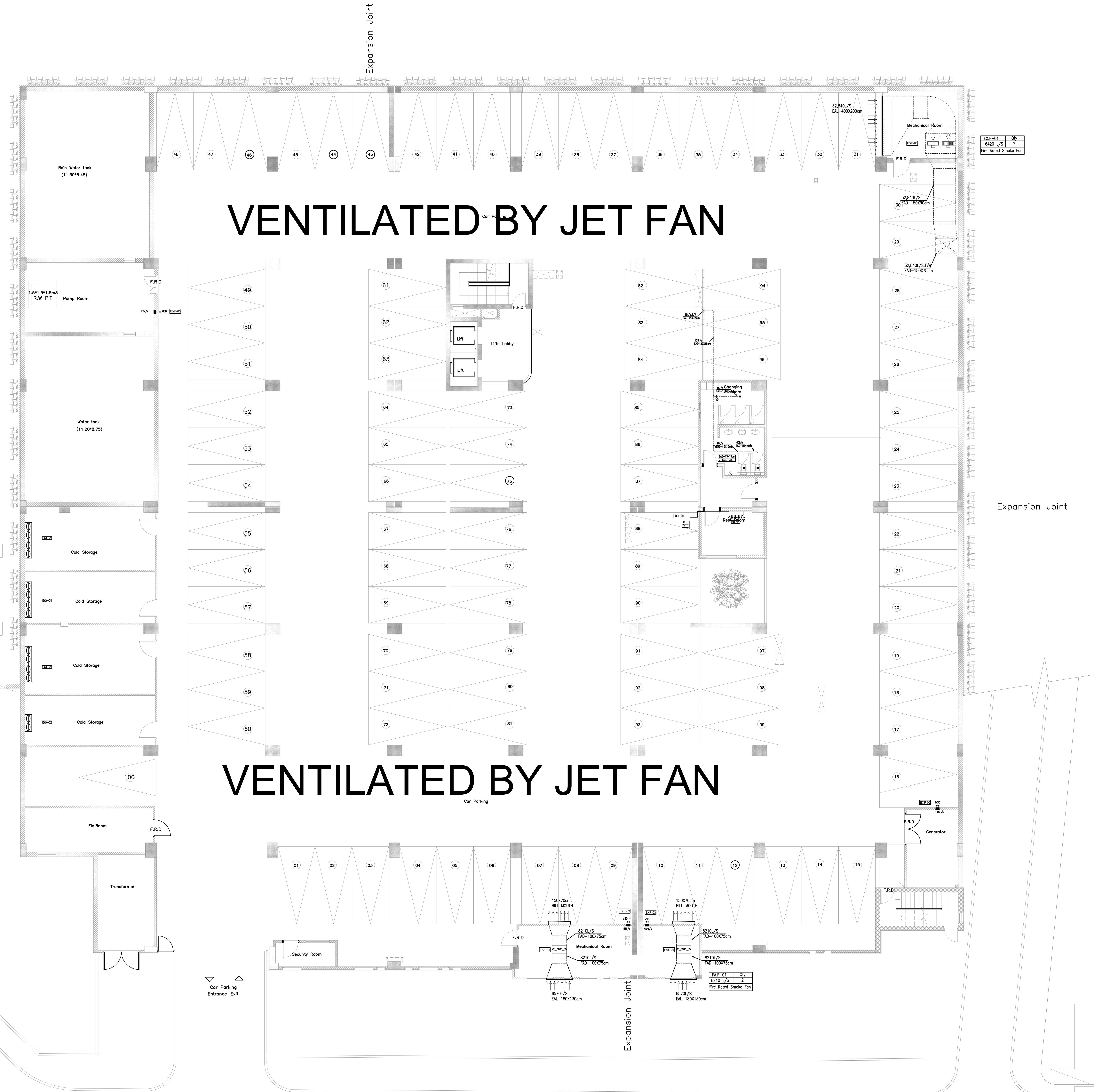


BEFORE FINAL REVIEW

NO.	REVISION	DATE	SIGN

PROJECT	PERMANENT EXHIBITION OF BADIA and RURAL PRODUCTS		
OWNER	THE MINISTRY OF AGRICULTURE		
DRAWING TITLE	BASEMENT FLOOR VENTILATION SYSTEM		
DESIGNED BY		DRAWN BY	DAD
CHECKED BY		REVIEWED	
SCALE		DATE	06/2021
PROJECT NO.			
NOTES :			

BASEMENT FLOOR PLAN





SITE DRAIN PLAN

BEFORE FINAL REVIEW

NO.	REVISION	DATE	SIGN

PROJECT	PERMANENT EXHIBITION OF BADIA and RURAL PRODUCTS		
OWNER	THE MINISTRY OF AGRICULTURE		
DRAWING TITLE	SITE FIRE SYSTEM LAYOUT		
CHECKED BY	DATE	PROJECT NO.	PAGE NO.
SCALE	1:200	06/2021	14/00
NOTES :			



NO.	REVISION	DATE	SIGN

PROJECT	PERMANENT EXHIBITION OF BADIA and RURAL PRODUCTS		
OWNER	THE MINISTRY OF AGRICULTURE		
DRAWING TITLE	GROUND FLOOR FIRE SYSTEM LAYOUT		
DESIGNED BY		DRAWN BY	CAD
CHECKED BY		REFERENCE	S/Projects/Project/Arch/Plans
SCALE 1:100	DATE	PROJECT NO.	06/2021 PAGE NO.

DATE	DATE	JUNE -2022	THEORY TEST	DATE	DATE
NOTES :					





رقم المنطقة: ٣٧٤٩
رقم الحوض: ١٥
رقم اللوحة: ٢٢
المدينة أو القرية: باب المبر

BEFORE FINAL REVIEW

NO.	REVISION	DATE	SIGN

PROJECT	PERMANENT EXHIBITION OF BADIA and RURAL PRODUCTS		
OWNER	THE MINISTRY OF AGRICULTURE		
DRAWING TITLE	BASEMENT FLOOR FIRE SYSTEM LAYOUT		
DESIGNED BY		DRAWN BY	CAD
CHECKED BY		REVISOR	
SCALE	1:100	DATE	JUNE - 2022
PROJECT NO.		DATE	06/2021
FILE NO.			
NOTES :			

BASEMENT FLOOR PLAN

