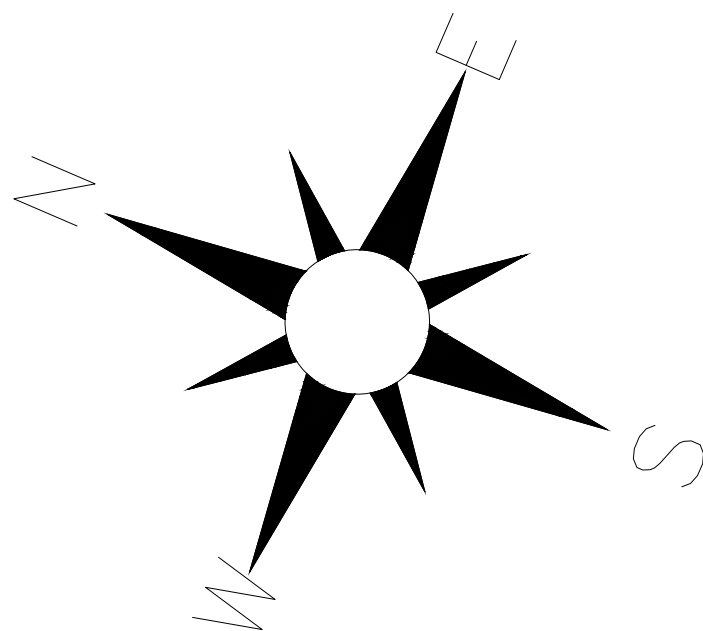




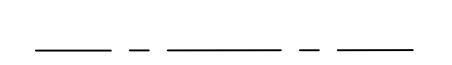

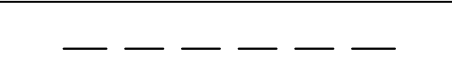
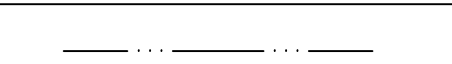

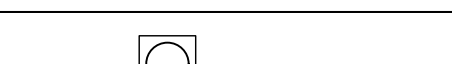

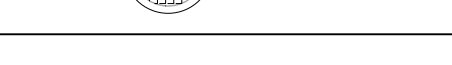

LIST OF DRAWINGS		
NO.	DRAWINGS NAME	SCALE
M-000	MECHANICAL LEGENDS	N.T.S
M-001	SITE PLAN: DRAINAGE SYSTEM LAYOUT	1:200
M-002	SITE PLAN: WATER SYSTEM LAYOUT	1:200
M-003	SITE PLAN: RAIN WATER AND IRRIGATION SYSTEM LAYOUT	1:200
M-004	SITE PLAN: FIRE SYSTEM LAYOUT	1:200
M-100	BASEMENT AND GROUND FLOOR: DRAINAGE SYSTEM LAYOUT	1:100
M-101	FIRST AND SECOND FLOOR: DRAINAGE SYSTEM LAYOUT	1:100
M-102	ROOF PLAN: DRAINAGE SYSTEM LAYOUT	1:100
M-200	BASEMENT AND GROUND FLOOR: WATER SYSTEM LAYOUT	1:100
M-201	FIRST AND SECOND FLOOR: WATER SYSTEM LAYOUT	1:100
M-202	ROOF PLAN: WATER SYSTEM LAYOUT	1:100
M-203	COLD WATER RISER DIAGRAM	N.T.S
M-204	HOT WATER RISER DIAGRAM	N.T.S
M-205	RO WATER RISER DIAGRAM	N.T.S
M-300	BASEMENT AND GROUND FLOOR: FIRE FIGHTING SYSTEM LAYOUT	1:100
M-301	FIRST AND SECOND FLOOR: FIRE FIGHTING SYSTEM LAYOUT	1:100
M-302	FIRE FIGHTING SYSTEM RISER DIAGRAM	N.T.S
M-400	BASEMENT AND GROUND FLOOR: HVAC – PIPING SYSTEM LAYOUT	1:100
M-401	FIRST AND SECOND FLOOR: HVAC – PIPING SYSTEM LAYOUT	1:100
M-402	ROOF PLAN: HVAC – PIPING SYSTEM LAYOUT	1:100
M-500	BASEMENT AND GROUND FLOOR: HVAC – (DUCTING) SYSTEM LAYOUT	1:100
M-501	FIRST AND SECOND FLOOR: HVAC – (DUCTING) SYSTEM LAYOUT	1:100
M-502	ROOF PLAN: HVAC – (DUCTING) SYSTEM LAYOUT	1:100
M-600	BASEMENT AND GROUND FLOOR: HVAC – FRESH & EXHAUST LAYOUT	1:100
M-601	FIRST AND SECOND FLOOR: HVAC – FRESH & EXHAUST LAYOUT	1:100
M-602	HVAC – FRESH & EXHAUST SYSTEM RISERS	N.T.S
M-700	BASEMENT FLOOR: HVAC – PRESSURIZATION &BALANCING LAYOUT	1:100
M-701	GROUND FLOOR: HVAC – PRESSURIZATION &BALANCING LAYOUT	1:100
M-702	FIRST FLOOR: HVAC – PRESSURIZATION &BALANCING LAYOUT	1:100
M-703	SECOND FLOOR: HVAC – PRESSURIZATION &BALANCING LAYOUT	1:100
M-800	BASEMENT AND GROUND FLOOR: HVAC – CONDENSATION LAYOUT	1:100
M-801	FIRST AND SECOND FLOOR: HVAC – CONDENSATION LAYOUT	1:100
M-900	WASTE ROOM – MECHANICAL SYSTEMS	1:50
M-901	FIRE PUMP ROOM	1:50
M-1000	MECHANICAL SCHEDULES	N.T.S
M-1001	INSULATION LAYOUT	N.T.S
M-1100	MECHANICAL DETAILS 01	N.T.S
M-1101	MECHANICAL DETAILS 02	N.T.S
M-1102	MECHANICAL DETAILS 03	N.T.S
M-1103	MECHANICAL DETAILS 04	N.T.S
M-1104	MECHANICAL DETAILS 05	N.T.S


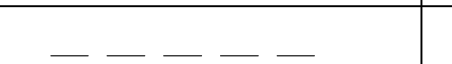
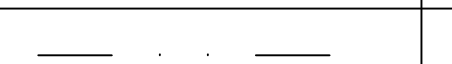

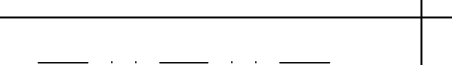
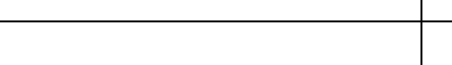
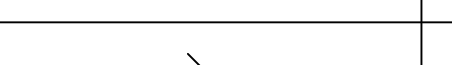

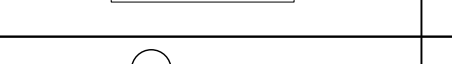
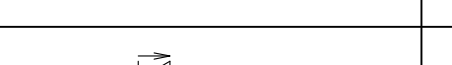
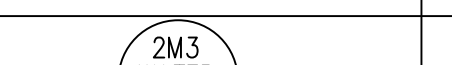
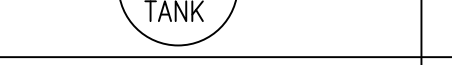
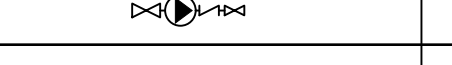


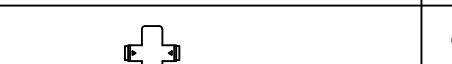
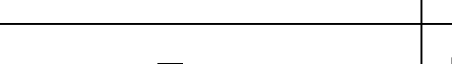
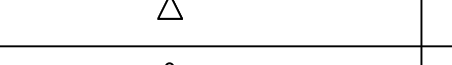


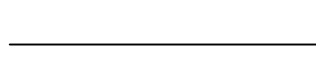
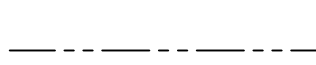





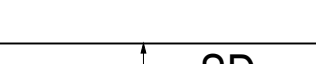

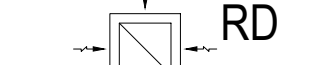
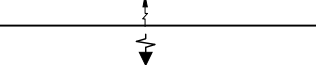
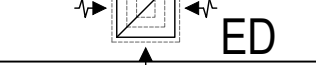








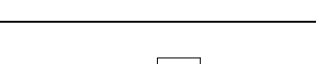

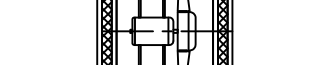



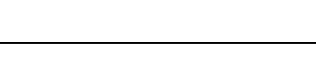

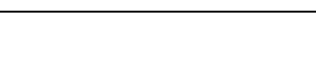

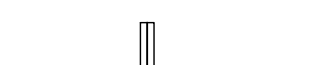

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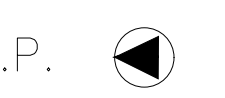
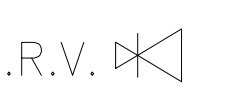

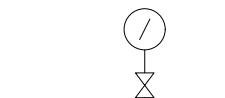

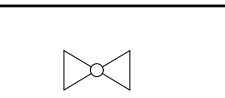
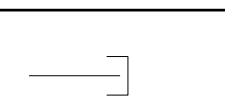
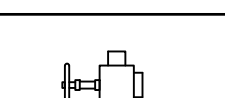
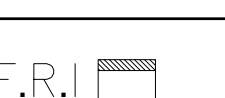
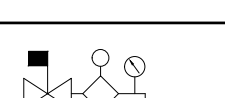

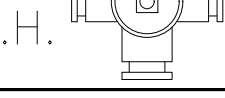
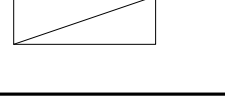


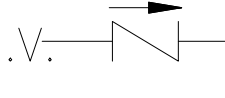
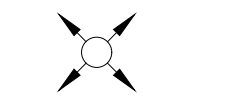
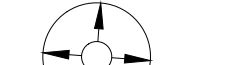

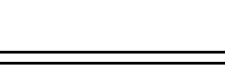
PLOT NO : 413			
DISTRICT : IRBID			
BASIN : 40 ALMUSRIB ALSHAMALIU			
REV. MARK	DATE	MADE BY	REMARKS
CLIENT	NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS		
MP CE	MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo		
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY		
DRG. TITLE	LIST OF MECHANICAL DRAWINGS		
DRAWN BY : MECH.T		SCALE: N.T.S	
DESIGNED BY : A.Q		DATE :DEC.-2023	
CHECKED BY : F.N		PROJECT No.	DRAWING No.
APPROVED BY: F.N			M-00

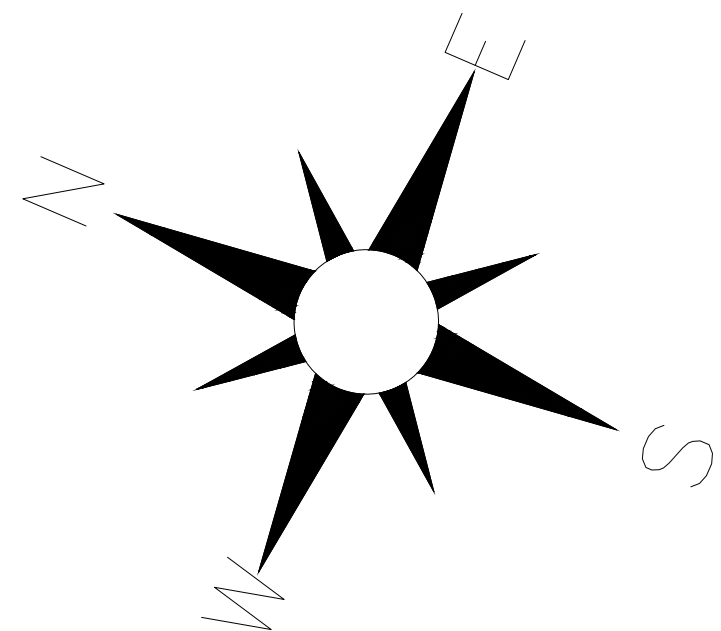
MECHANICAL ABBREVIATIONS		
LETTER	ABB.	DESCRIPTIONS
A	AC	AIR CONDITIONING
	AFC	ABOVE FALSE CEILING
C	CP	CONDENSATE DRAIN PIPE
	CCO	CEILING CLEAN OUT
	CWS	COLD WATER SUPPLY PIPE
D	DB	DRY BULB
	D/D	DROP DOWN
	DP	DRAIN PIPE
	EA	EXHAUST AIR
	EAD	EXHAUST AIR DUCT
	EAF	EXHAUST AIR FAN
	ED	EXHAUST DIFFUSER
	EAL	EXHAUST AIR LOUVER
	FA	FRESH AIR
	FAD	FRESH AIR DUCT
	F/A	FROM ABOVE
	F/B	FROM BELOW
	FD	FLOOR DRAIN
H	H/L	HIGH LEVEL
	HB	HOSE BIB
	IU	INSIDE AC UNIT
K	kW	KILO WATT
L	L/L	LOW LEVEL
	L/s	LITER PER SECOND
M	m	METER
	m²	SQUARE METER
	m³	CUBIC METER
	mm	MILLIMETER
N	NRV	NON - RETURN VALVE
	NC	NORMALLY CLOSED
	NRD	NON RETURN DAMPER
	NO	NORMALLY OPEN
R	RAD	RETURN AIR DUCT
	RF	REFRIGERANT DX PIPE
	RD	RETURN DIFFUSER
	RLD	RETURN LINEAR SLOT DIFFUSER
	RWP	RAIN WATER PIPE
S	SAD	SUPPLY AIR DUCT
	SD	SUPPLY DIFFUSER
	SLD	SUPPLY LINEAR DIFFUSER
	SP	SOIL DRAIN PIPE
T	T	THERMOSTAT
	T/A	TO ABOVE
	T/B	TO BELOW
	TYP.	TYPICAL ANNOTATION FOR THE SAME FLOOR
U	U/G	UNDER GROUND
	U/S	UNDER SLAB
	U/T	UNDER TILES
V	VD	VOLUME DAMPER
	VP	VENT PIPE
	WP	WASTE DRAIN PIPE

DRAINAGE SYSTEM	
SYMBOLS	DESCRIPTIONS
	U/G DRAIN PIPE
	H/L VENT PIPE
	U/S, H/L DRAIN PIPE
	U/T DRAIN PIPE
	CONDENSATE PIPE
	RAIN WATER PIPE
	CEILING CLEAN OUT
	FLOOR DRAIN
	DRAIN MANHOLE
	FLOOR CLEAN OUT
	SUMESABLE PUMP

WATER SUPPLY SYSTEM	
SYMBOLS	DESCRIPTIONS
	COLD WATER SUPPLY
	HOT WATER SUPPLY
	HOT WATER RETURN
	R.O COLD WATER
	SOFT HOT WATER SUPPLY
	SOFT HOT WATER RETURN
	FLOATING VALVE
	MAIN WATER METER
	ELECTRICAL HEATER
	CHECK VALVE
	POLY ETHELYNE TANK
	BOOSTER PUMP
	AAV
	WHA
	THERMOSTATIC VALVE
	ISOLATING VALVE
	DOUBLE REGULATING VALVE
	EXPANSION JOINT

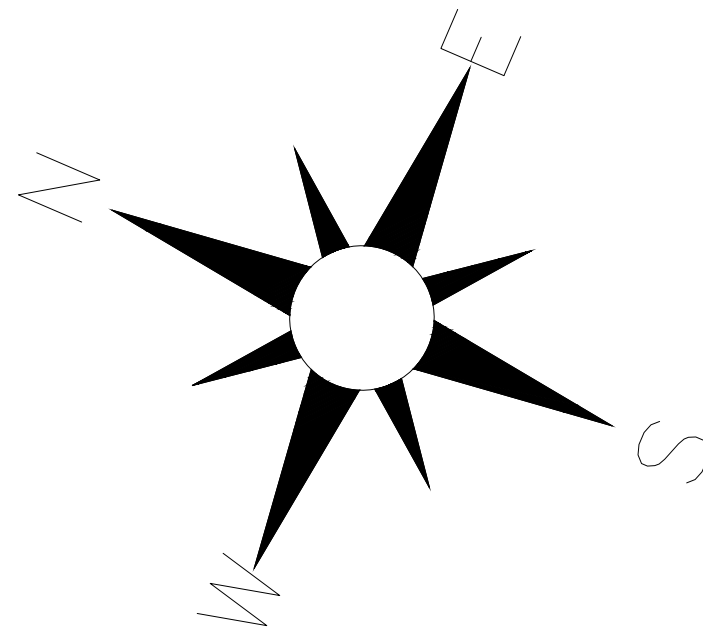
	HVAC SYSTEM
SYMBOLS	DESCRIPTIONS
	SUPPLY AIR DUCT
	RETURN AIR DUCT
	FRESH AIR DUCT
	CLEAN EXHAUST AIR DUCT
	DIRTY EXHAUST AIR DUCT
	REFRIGERANT PIPE
	DIRECTION OF AIR FLOW
	4-WAY SUPPLY DIFFUSER
	4-WAY RETURN DIFFUSER
	4-WAY EXHAUST AIR DIFFUSER
	INDOOR VRF DUCTED AC UNIT
	INDOOR VRF WALL AC UNIT
	INDOOR VRF CASSETTE AC UNIT
	VRF OUTDOOR UNIT
	OUTDOOR DUCTED SPLIT AC UNIT
	FLEXIBLE DUCT
	VOLUME CONTROL DAMPER
	INLINE CENTRIFUGAL FAN
	WINDOW PROPELLER FAN WITH AUTOMATIC SHUTTER
	THERMOSTAT
	ACCESS PANEL (600X600) mm
	DOOR GRILLE
	VOLUME DAMPER
	AIR HANDLING UNIT
	FLEXIBLE CONNECTOR
	PRESSURE GAUGE
	FLOW SWITCH
	BUTTERFLY VALVE
	THERMOMETER
	MOTORIZED VALVE
	DOUBLE REGULATING VALVE
	STR

FIRE PROTECTION SYMBOLS	
Symbol	Description
F.H.C. 	HOSEREEL CABINET (WITH FIRE EXTINGUISHER)
F.P. 	FIRE FIGHTING PUMP
P.R.V. 	PRESSURE REDUCING VALVE
	BUTTERFLY VALVE
	PRESSURE GAUGE
OS&Y 	OUTSIDE & YOKE GATE VALVE
	INSPECTOR'S TEST CONNECTION
	CAP & FLUSHING CONNECTION
	LANDING VALVE
F.R.I 	FIRE STOPPING OF INSULATED PIPE PENETRATIONS.
	ZONE CONTROL VALVE
F.H. 	FIRE HYDRANT, TWO HOSE OUTLETS AND PUMPER CONNECTION
	FIRE HYDRANT CABINET
S.C. 	FIRE DEPARTMENT INLET CONNECTION (SIAMESE CONNECTION)
A.C.V. 	ALARM CHECK VALVE
C.V. 	CHECK VALVE (WET)
	SPRINKLER HEAD – UPRIGHT (STANDARD RESPONSE)
	SPRINKLER HEAD – UPRIGHT & PENDENT
LINE DEFINITIONS	
	INDICATES MAIN LINE
	INDICATES BRANCHES
	INDICATES FIRE HOSE LINES
ABBREVIATION	
Dia	DIAMETER
D/D	DROP DOWN
F/A	FROM ABOVE
F/B	FROM BELOW
JP	JOCKEY PUMP
T/A	TO ABOVE
BS	BELOW SLAB



NOTES:

PLOT NO : 413			
DISTRICT : IRBID			
BASIN : 40 ALMUSRIB ALSHAMALIJU			
REV.	MARK	DATE	MADE BY
REMARKS			
CLIENT	NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS		
M P C E	MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo		
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY		
DRG. TITLE	MECHANICAL LEGENDS		
DRAWN BY : MECH.T		SCALE: N.T.S	
DESIGNED BY : A.Q		DATE : DEC.-2023	
CHECKED BY : F.N		PROJECT No.	DRAWING No.
APPROVED BY: F.N			M-000



NOTES:

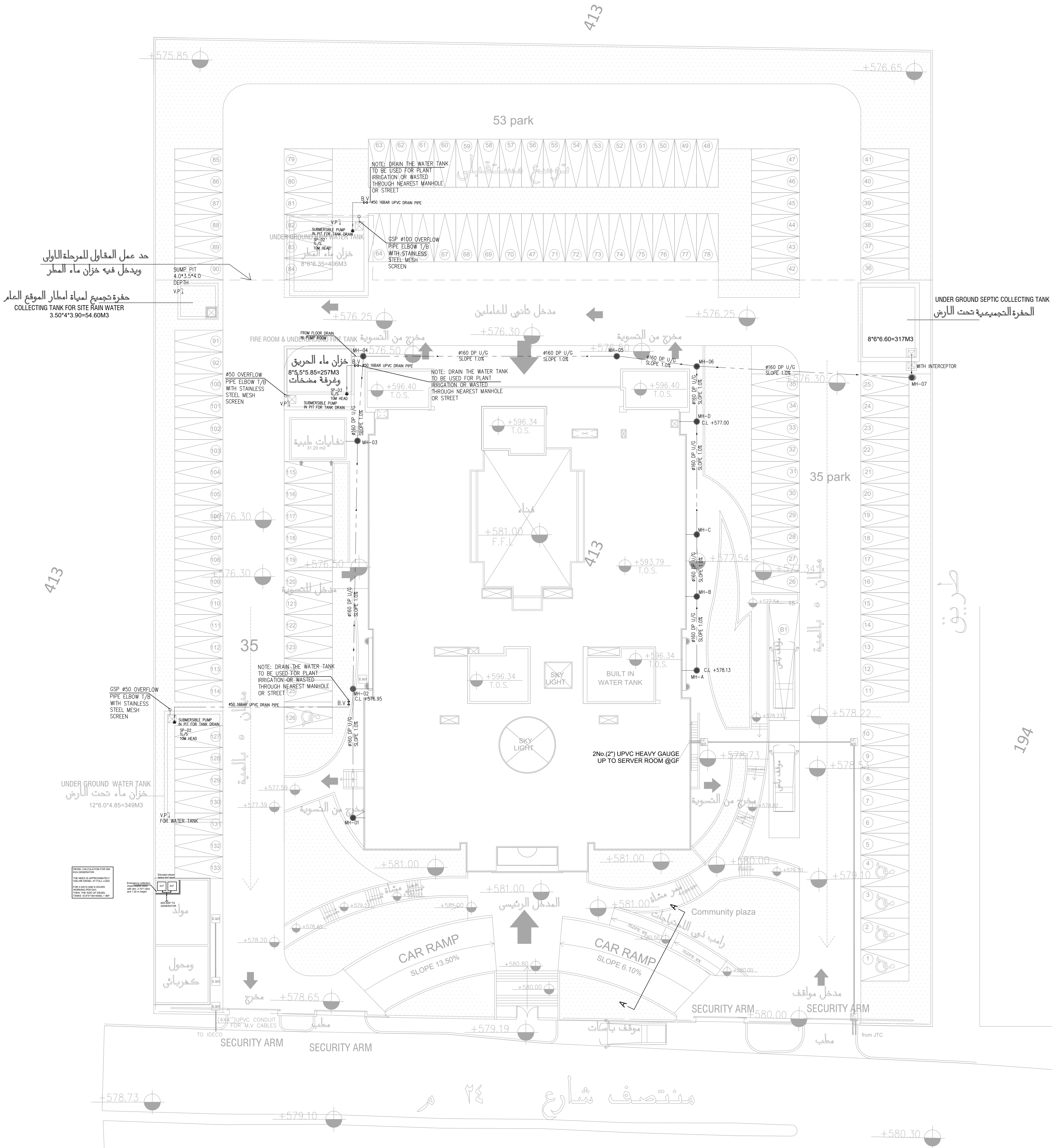
PLOT NO		:	413	
DISTRICT		:	IRBID	
BASIN		:	40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS	
CLIENT	NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MPC E	MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo			
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY			
RG. TITLE	SITE PLAN DRAINAGE SYSTEMS LAYOUT			
DRAWN BY : MECH.T			SCALE: 1:200	
DESIGNED BY : A.Q			DATE : DEC.-2023	
CHECKED BY : F.N			PROJECT No.	DRAWING No. M-001
APPROVED BY: F.N				

MANHOLES SCHEDULE (DRAINAGE)										
MANHOLE NO.	COVER LEVEL	"DISTANCE FROM PREVIOUS MANHOLE" (M)	"INVERT LEVEL IN "	"INVERT LEVEL OUT"	"DEPTH (M)"	COVER TYPE	"PIPE SIZE (MM)"	"MANHOLE SIZE (CM)"	"MANHOLE COVER SIZE (CM)"	NOTES
MH-01	577.59	-	-	576.00	1.59	MEDIUM DUTY	160	90	60	WTH STEEL LADDER
MH-02	576.95	14.00	575.86	575.81	1.09	MEDIUM DUTY	160	60	60	-
MH-03	576.30	28.00	575.53	575.48	0.82	MEDIUM DUTY	160	60	60	-
MH-04	576.50	9.00	575.39	575.34	0.60	MEDIUM DUTY	160	60	60	-
MH-05	576.50	30.00	575.04	574.99	1.51	MEDIUM DUTY	160	90	60	WTH STEEL LADDER
MH-06	576.50	9.00	574.90	574.85	1.65	MEDIUM DUTY	160	90	60	FROM MH-05 FROM MH-D
MH-07	576.30	24.00	574.61	574.56	1.74	HEAVY DUTY	160	90	60	WTH STEEL LADDER
MH-A	578.13	-	-	576.00	2.13	MEDIUM DUTY	160	90	60	WTH STEEL LADDER
MH-B	577.54	8.00	575.92	575.87	1.67	MEDIUM DUTY	160	90	60	WTH STEEL LADDER
MH-C	577.54	7.00	575.80	575.75	1.79	MEDIUM DUTY	160	90	60	WTH STEEL LADDER
MH-D	577.00	13.00	575.62	575.57	1.43	MEDIUM DUTY	160	60	60	-

مركز سكري اربد
حسابات خزان المياه
عدد الأشخاص=525
من الجدول (ك-3) في الكودة الموحدة لتزويد المباني بالمياه والصرف الصحي
فان معدل التدفق اليومي للصرف الصحي للأشخاص 76 لتر/يوم وبناء عليه سيكون اجمالي معدل التدفق اليومي للصرف الصحي 39900=525*76
و على سكون سعة الخزان المياه المطلوبة لسبعة ايام تخزين هي 45885 = 1.15*39900
وعليه ستكون سعة الخزان المياه المطلوبة لسبعة ايام تخزين هي 322=11362*7 متر مكعب

مركز السكري اربد
حسابات الحفرة التجميعية
عدد الأشخاص=525
من الجدول (ك-3) في الكودة الموحدة لتزويد المباني بالمياه والصرف الصحي
فان معدل التدفق اليومي للصرف الصحي للأشخاص في المكاتب 76 لتر/يوم وبناء عليه سيكون اجمالي معدل التدفق اليومي للصرف الصحي 39900=525*76
حسب الجدول (ك-3) في الكودة الموحدة لتزويد المباني بالمياه والصرف الصحي فان السعة الفعلية اللازمة لسبع ايام ستكون (39900*0.75+4260)*6 (ايام بالاسبوع)=205 متر مكعب فعلي
عليه سيكون العمق الفعلي المطلوب 4.3=(6*8)/205 متر
منسوب الدخول الي الحفرة من اخر منهل MH.7 هو 574.56
عليه سيكون منسوب قاع الحفرة 574.56-4.3=570.26
وعليه سيكون العمق الكلي للحفرة 576.30-570.26=6.04
عليه سيكون الحجم الكلي للحفرة 290 متر مكعب
والعمق الفعلي للحفرة المطلوب 6.04 متر
والحجم الفعلي للحفرة المطلوب 205 متر مكعب
والعمق الفعلي للحفرة 4.30 متر

وبناء عليه تم اخيار ابعاد الحفرة لتكون 8.0*6.0*6.70متر



حد عمل المقابل للمرحلة الاولى
ويدخل فيه خزان ماء المطر
حفرة تجميع لمياه امطار الموقع العام
COLLECTING TANK FOR SITE RAIN WATER
3.50*4.30=15.05M3

خزان ماء تحت الارض
12*6.0*4.85=349M3

محول كهربائي

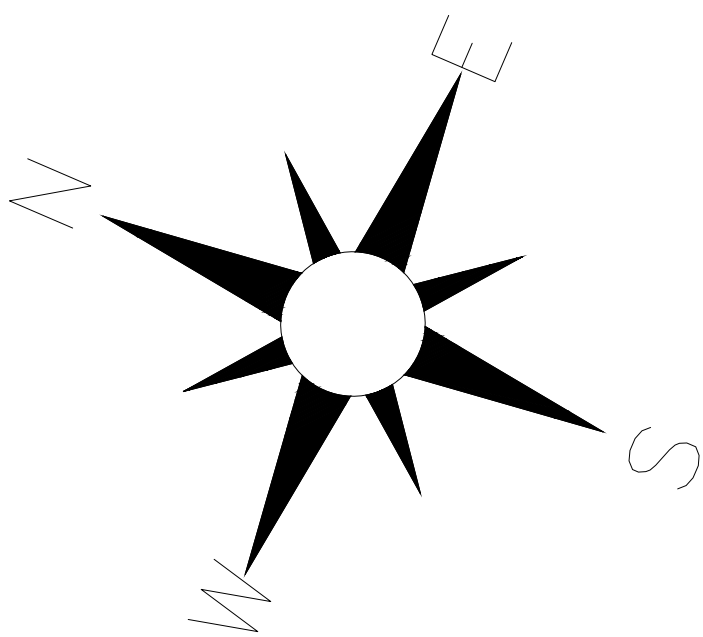
مداخل

مداخل

مداخل

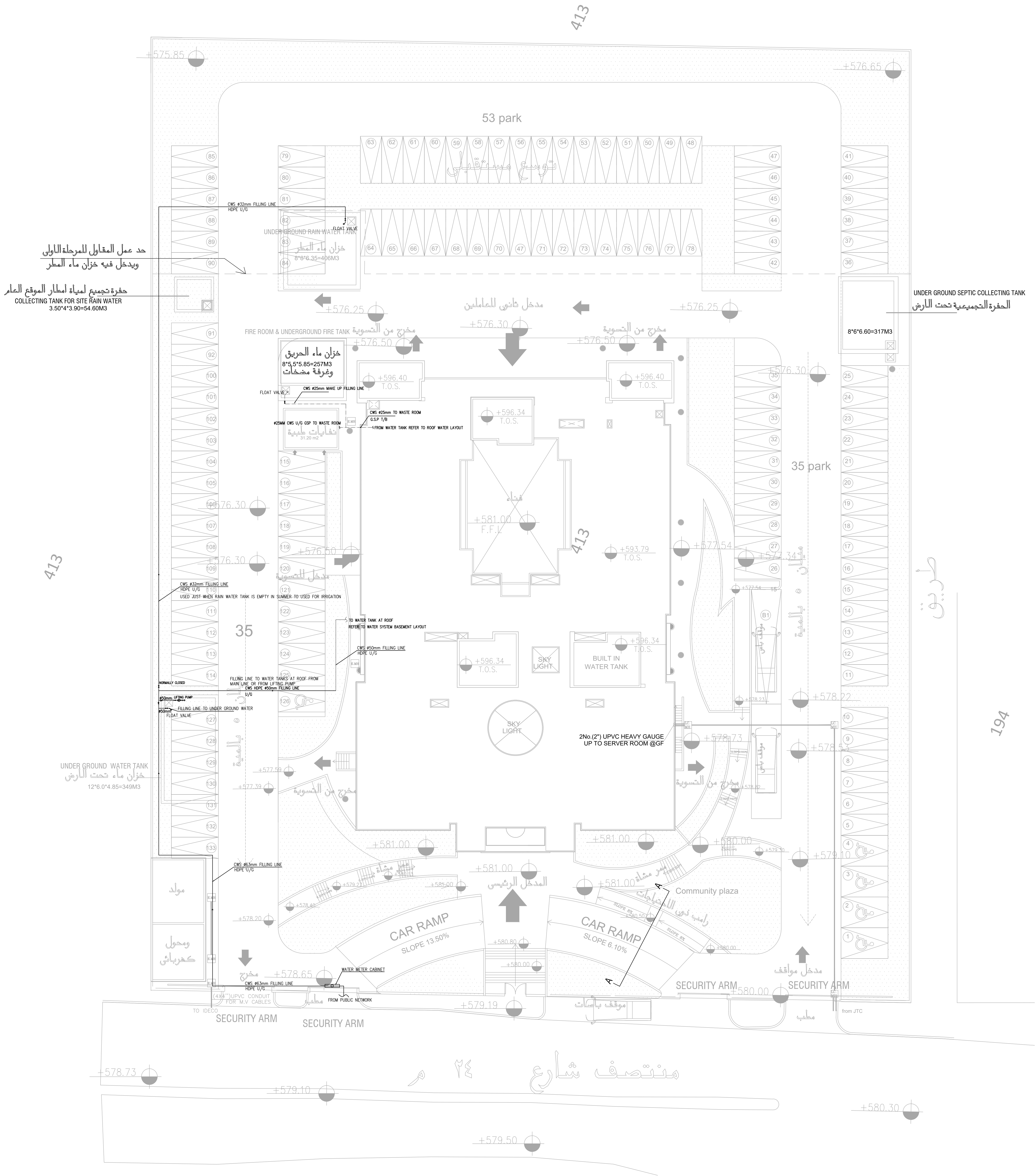
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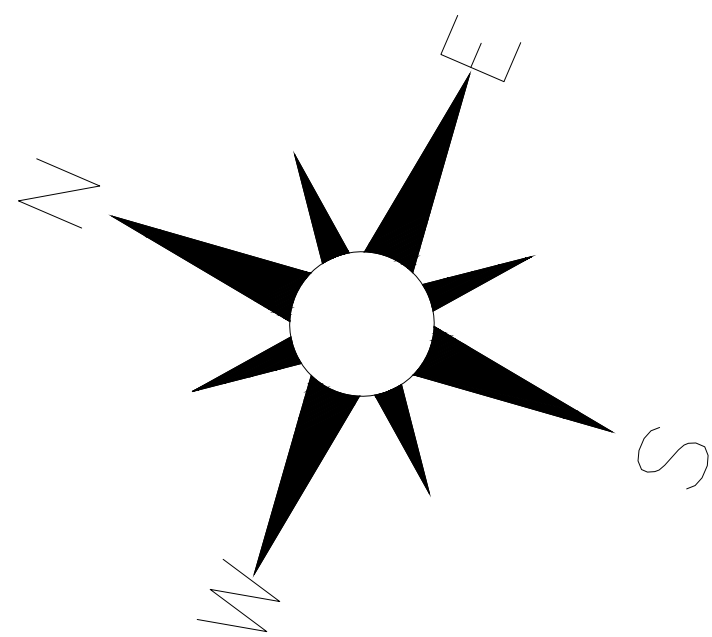
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NOTES:

PLOT NO		:	413	
DISTRICT		:	IRBID	
BASIN		:	40 ALMUSRIB ALSHAMALIUI	
REV. MARK	DATE	MADE BY	REMARKS	
CLIENT	NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo			
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY			
RG. TITLE	SITE PLAN WATER SYSTEMS LAYOUT			
DRAWN BY : MECH.T			SCALE: 1:200	
DESIGNED BY: A.Q			DATE :DEC.-2023	
CHECKED BY: F.N			PROJECT No.	DRAWING No. M-002
PPROVED BY: F.N				





NOTES:

PLOT NO : 413
DISTRICT : IRBID
BASIN : 40 ALMUSRIB ALSHAMALI

REV. MARK DATE MADE BY REMARKS

CLIENT NATIONAL CENTER FOR DIABETES
ENDOCRINOLOGY AND GENETICS

MADI & PARTNERS CONSULTING ENGINEERS
TEL:5829640-5829641 FAX:5829642
e-mail : mpce@index.com.jo

PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY
CENTER BUILDING IN IRBID CITY

DRG. TITLE SITE PLAN
RAIN WATER & IRRIGATION SYSTEM LAYOUT

DRAWN BY : MECH.T

SCALE: 1:200

DESIGNED BY : A.Q

DATE : DEC.-2023

CHECKED BY : F.N

PROJECT No. DRAWING No.

APPROVED BY: F.N

M-003

MANHOLES SCHEDULE (STORM WATER FROM ROOF TO RAIN WATER TANK)										
MANHOLE NO.	COVER LEVEL	"DISTANCE FROM PREVIOUS MANHOLE" (M)	"INVERT LEVEL IN"	"INVERT LEVEL OUT"	"DEPTH" (M)	COVER TYPE	"HOLE SIZE (MM)"	"MANHOLE SIZE (MM)"	"MANHOLE COVER SIZE (MM)"	NOTES
RW.C1	578.73	-	-	577.83	0.80	HEAVY DUTY	150	160	60	-
RW.C2	577.54	22.0	577.05	577.00	0.54	HEAVY DUTY	150	160	60	-
RW.C3	576.80	19.0	576.24	576.59	0.61	HEAVY DUTY	150	160	60	-
RW.C4	576.25	14.0	575.63	575.58	0.67	HEAVY DUTY	200	60	60	-
RW.C5	576.30	23.0	575.37	575.32	0.98	HEAVY DUTY	200	60	60	-
RW.C6	577.60	-	-	576.00	1.60	HEAVY DUTY	150	60	60	WITH STEEL LADDER
RW.C7	576.30	22.0	575.78	575.73	0.57	HEAVY DUTY	150	60	60	-
RW.C8	576.50	19.0	575.54	575.49	1.01	HEAVY DUTY	200	60	60	-
RW.C9	576.25	14.0	575.35	575.09	1.16	HEAVY DUTY	250	60	60	FROM RW.C8
RW.C10	576.25	19.0	575.34	575.09	1.16	HEAVY DUTY	250	60	60	FROM RW.C9

MANHOLES SCHEDULE (SITE STORM WATER)										
MANHOLE NO.	COVER LEVEL	"DISTANCE FROM PREVIOUS MANHOLE" (M)	"INVERT LEVEL IN"	"INVERT LEVEL OUT"	"DEPTH" (M)	COVER TYPE	"HOLE SIZE (MM)"	"MANHOLE COVER SIZE (MM)"	NOTES	
RW.1	580.00			579.00	1.00	HEAVY DUTY	150	60		
RW.2	578.22	30.00	577.50	577.45	0.77	HEAVY DUTY	200	60		
RW.3	577.80	17.00	576.40	576.90	1.40	HEAVY DUTY	200	60	ERROR MANHOLE	
RW.4	576.30	24.00	575.66	575.61	0.69	HEAVY DUTY	200	60		
RW.5	576.25	12.00	575.49	575.44	0.81	HEAVY DUTY	200	60		
RW.6	576.30	25.00	575.19	575.14	1.16	HEAVY DUTY	250	60		
RW.7	576.25	26.00	574.88	574.81	1.42	HEAVY DUTY	300	60		
RW.8	578.65			577.65	1.00	HEAVY DUTY	150	60		
RW.9	577.80	20.00	576.80	576.80	0.60	HEAVY DUTY	200	60		
RW.10	576.80	18.00	576.08	576.03	0.57	HEAVY DUTY	200	60		
RW.11	576.30	19.00	575.27	575.22	1.08	HEAVY DUTY	200	60		
RW.12	576.25	8.00	574.75	574.70	1.55	HEAVY DUTY	300	60	WITH STEEL LADDER	
RW.13	577.55		577.00	576.55	0.60	MEDIUM DUTY	160	60	TO RW.11 & 12	
RW.14	576.30		575.75	575.70	0.60	MEDIUM DUTY	160	60	TO RW.11 & 12	

مرکز سکری ایرد
حسابات خزان مياه الأمطار
مساحة الأسطح= 2000 متر مربع

من الجدول (ن-1) في الكودة الموحدة لتزويد المباني بالمياه

والصرف الصحي

فان معدلات هطول الأمطار السنوية لمنطقة المشروع= 400 مم

معامل الجريان= 0.8

ومن الجدول (ن-2) في الكودة الموحدة لتزويد المباني بالمياه

والصرف الصحي يمكن تحديد حجم الخزان حسب مساحة الأسطح

للمبنى مع أخذ معامل الجريان بالاعتبار

حجم خزان مياه الأمطار= 280 متر مكعب

عليه سيكون العمق الفعال المطلوب $4.38 = (8 \times 8) / 280$

منسوب الدخول الى الحفرة من اخر منهل هو 575.05

عليه سيكون منسوب قاع الحفرة $570.67 = 4.38 - 575.05$

وعليه سيكون العمق الكلي للحفرة $5.58 = 570.67 - 576.25$

وعليه

سيكون الحجم الكلي المطلوب للحفرة $5.58 \times 8 \times 8 = 357$ متر مكعب

والعمق الفعلي المطلوب للحفرة 5.58م

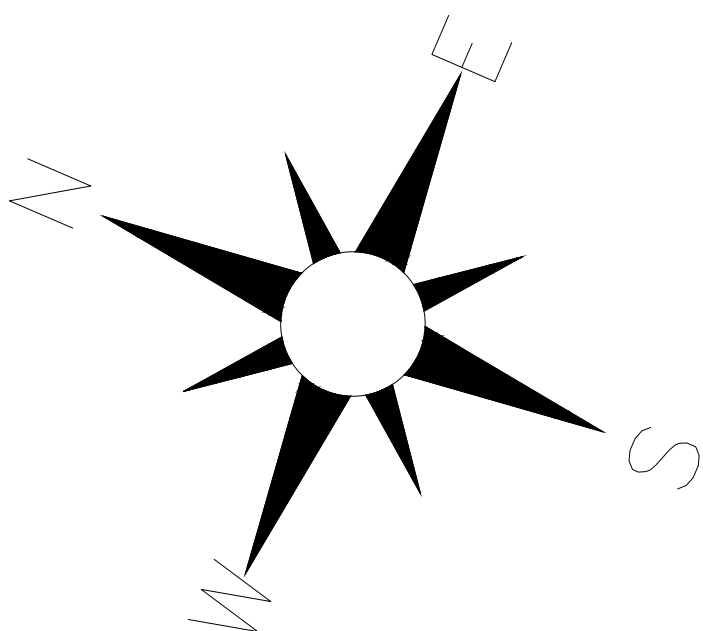
والحجم الفعال المطلوب للحفرة 280 متر مكعب

والعمق الفعال المطلوب للحفرة 4.38 متر

وبناء عليه تم اختيار الأبعاد التالية للحفرة بالتوافق مع الأقسام المعنية

متر $6.35 \times 8 \times 8$

RAIN WATER CALCULATION		SUMP PIT SIZING	
Total area=	7900 m ²		
STORM AREA =	7900 M ²	RAIN WATER INTENSITY=75mm/h	
		sump pit inflow = 0.075*AREA*0.8 green area factor	
		474 M ³ /H	
		132 L/s	
SUMP PIT SIZING			
All below load values data is taken from PWA Vol 3 and Salmons pump recommendations			
Sump Pit number:	RAIN		132 L/S
Usable Pit Volume:			
$V_{req} = \frac{T_{min} \times Q}{4}$			
T_{min} is the cycle time for the pump in seconds			
V_{req} is the required volume between the start and stop level in Litre			
Q is the incoming flow to the pit (pump flow) in L/s			
Recommended starts & stops per hour	6		
$T_{min} =$	600 seconds		
$Q_{req} =$	132 L/s		
$V_{req} =$	19750 Litre		
EQUIPMENT SIZE	3000 Litre		
Pit Dimensions			
Pit Length	4000 mm		
Pit Width	3500 mm		
Pit Area	14 m ²		
$Usable\ Depth_{req} = \frac{V_{req}}{Pit\ Area}$			
Usable Depth	1.625 m		
Lowest pipe invert level	1.55 m		
Minimum wet level considered for pump operation	0.3 m		
Total Pit depth	3.475 m		
Pit dimensions: Length (m) x Width (m) x Depth (m)	4 m x 3.5 m x 3.48 m		



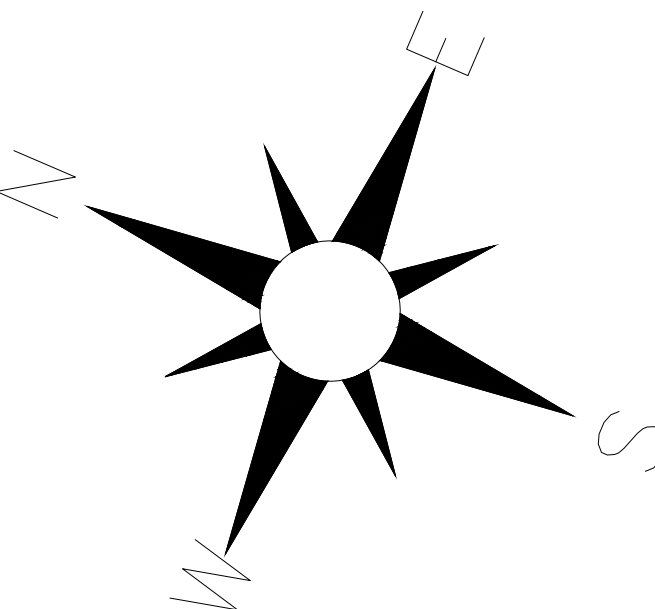
NOTES:

- من البناء من اربع طوابق
ية , ارضي , اول وثاني
- ابق التسوية +576.58
طابق الارضي +581.00
طابق الاول +584.80
طابق الثاني +588.80
طابق الطاني +593.79
بيوت الدرج +596.40
رف المصاعد +596.34

- في المشروع في الموقع العام
- MEDICAL WASTE ROOM
ELECTRIC GENERATOR
UNDERGROUND WATER TA
UNDER GROUND RAIN WAT
UNDERGROUND SITE-RAIN
UNDER GROUND SEPTIC CO
EXTERNAL FIRE ROOM & FI

- بعض مناطق مزروعة
في مخطط LANDSCAPE
- MANHOLES
LOW CURRENT MA
ELECTRICAL MA

PLOT NO		:	413	
DISTRICT		:	IRBID	
BASIN		:	40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS	
CLIENT	NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo			
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY			
DRG. TITLE	SITE PLAN FIRE FIGHTING SYSTEM LAYOUT			
DRAWN BY : MECH.T			SCALE: 1:200	
DESIGNED BY : MQ			DATE : DEC.-2023	
CHECKED BY : FM			PROJECT No.	
APPROVED BY: F.N			DRAWING No. M-004	

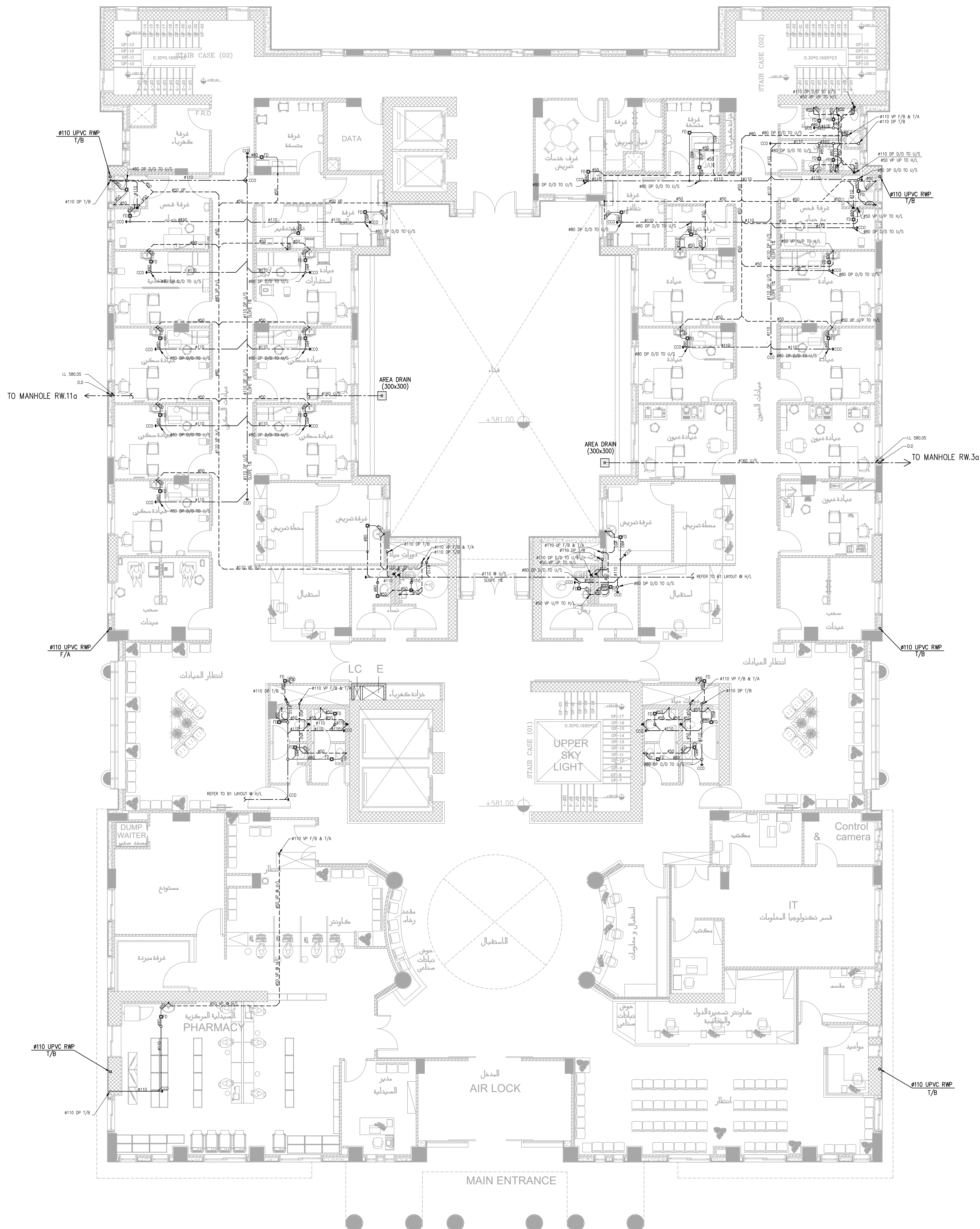
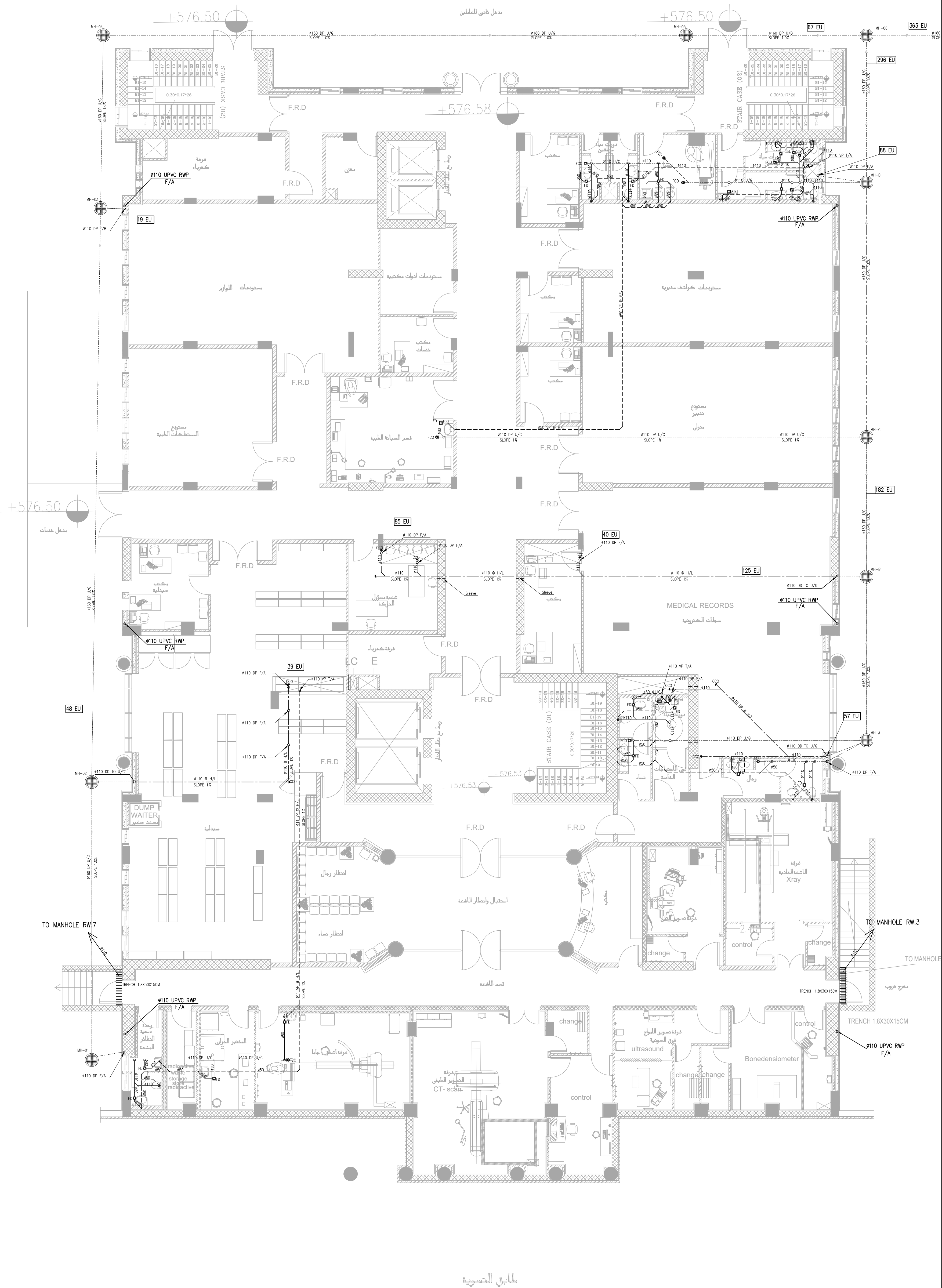


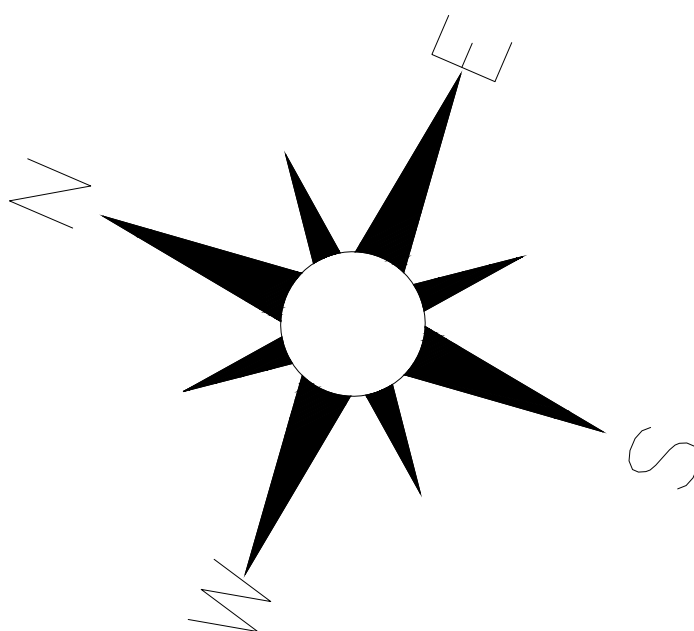
NOTES:

PIPE SIZE CONNECTING TO
FIXTURE

PLUMBING FIXTURE	CONNECT TO	PIPE SIZE (MM)
WC	TO MAIN PIPE	110
WB	TO FD	50
SHOWER	TO FD	50
SINK	TO FD	50
FD	TO MAIN PIPE	80
J.SINK	TO FD	50

PLOT NO		:		413	
DISTRICT		:		IRBID	
BASIN		:		40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY		REMARKS	
CLIENT		NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
M P C E		MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo			
PROJECT		NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY			
DRG. TITLE		BASEMENT AND GROUND FLOOR: DRAINAGE SYSTEM LAYOUT			
DRAWN BY		:		MECH.T	
SCALE:		1:100			
DESIGNED BY:		M/Q		DATE : DEC.-2023	
CHECKED BY:		M/M		PROJECT No.	
DRAWING No.		M-100			
APPROVED BY:		F.N			





NOTES:

PIPE SIZE CONNECTING TO
FIXTURE

PLUMBING FIXTURE	CONNECT TO	PIPE SIZE (MM)
WC	TO MAIN PIPE	110
WB	TO FD	50
SHOWER	TO FD	50
SINK	TO FD	50
FD	TO MAIN PIPE	80
J.SINK	TO FD	50

PLOT NO : 413

DISTRICT : IRBID

BASIN : 40 ALMUSRIB ALSHAMALI

REV. MARK DATE MADE BY REMARKS

CLIENT NATIONAL CENTER FOR DIABETES
ENDOCRINOLOGY AND GENETICS

MP MADI & PARTNERS CONSULTING ENGINEERS
CE TEL.5829640-5829641 FAX.5829642
e-mail : mpce@index.com.jo

PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY
CENTER BUILDING IN IRBID CITY

DRG. FIRST AND SECOND FLOOR:
TITLE DRAINAGE SYSTEM LAYOUT

DRAWN BY : MECH.T

SCALE: 1:100

DESIGNED BY : M

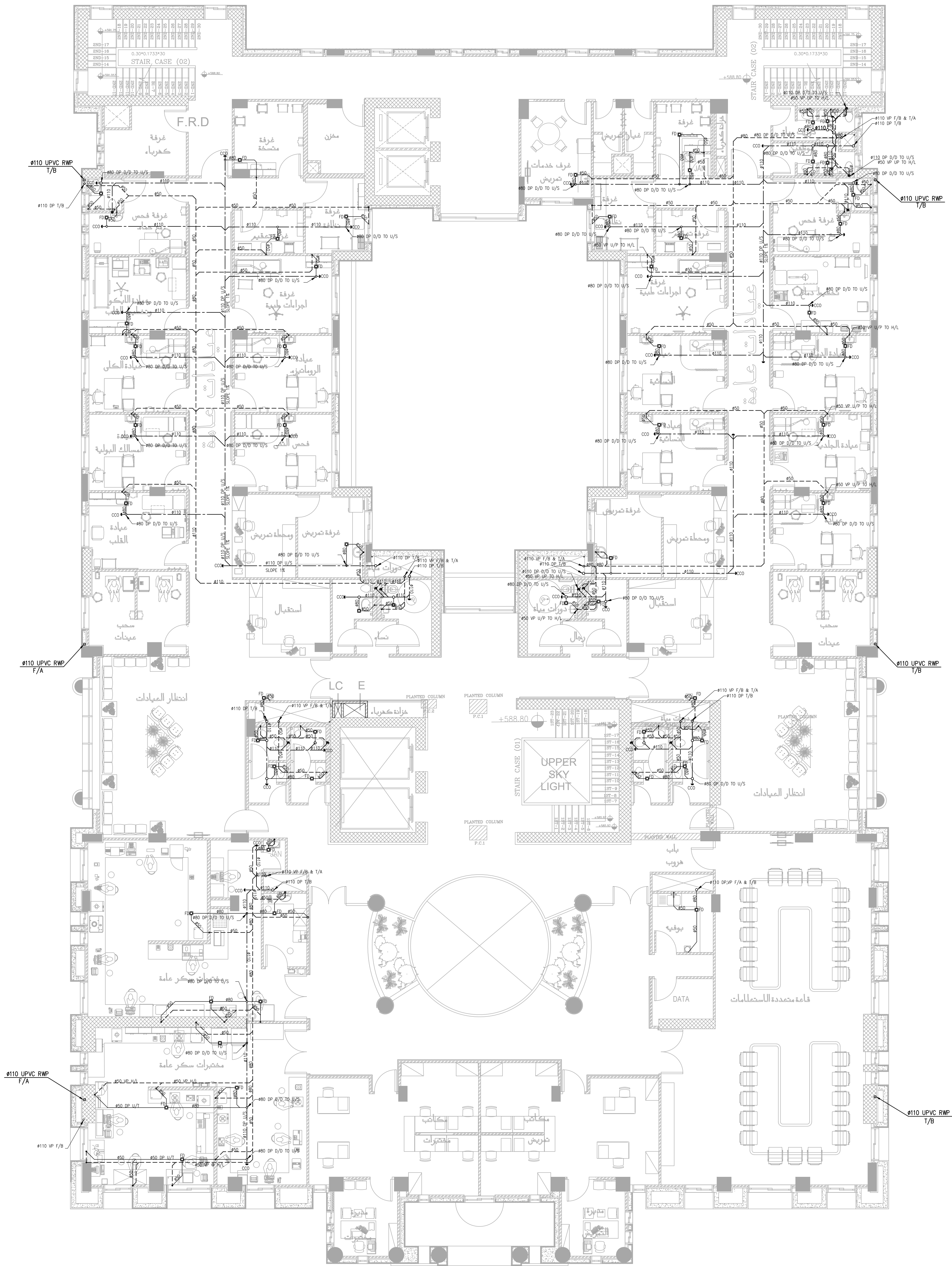
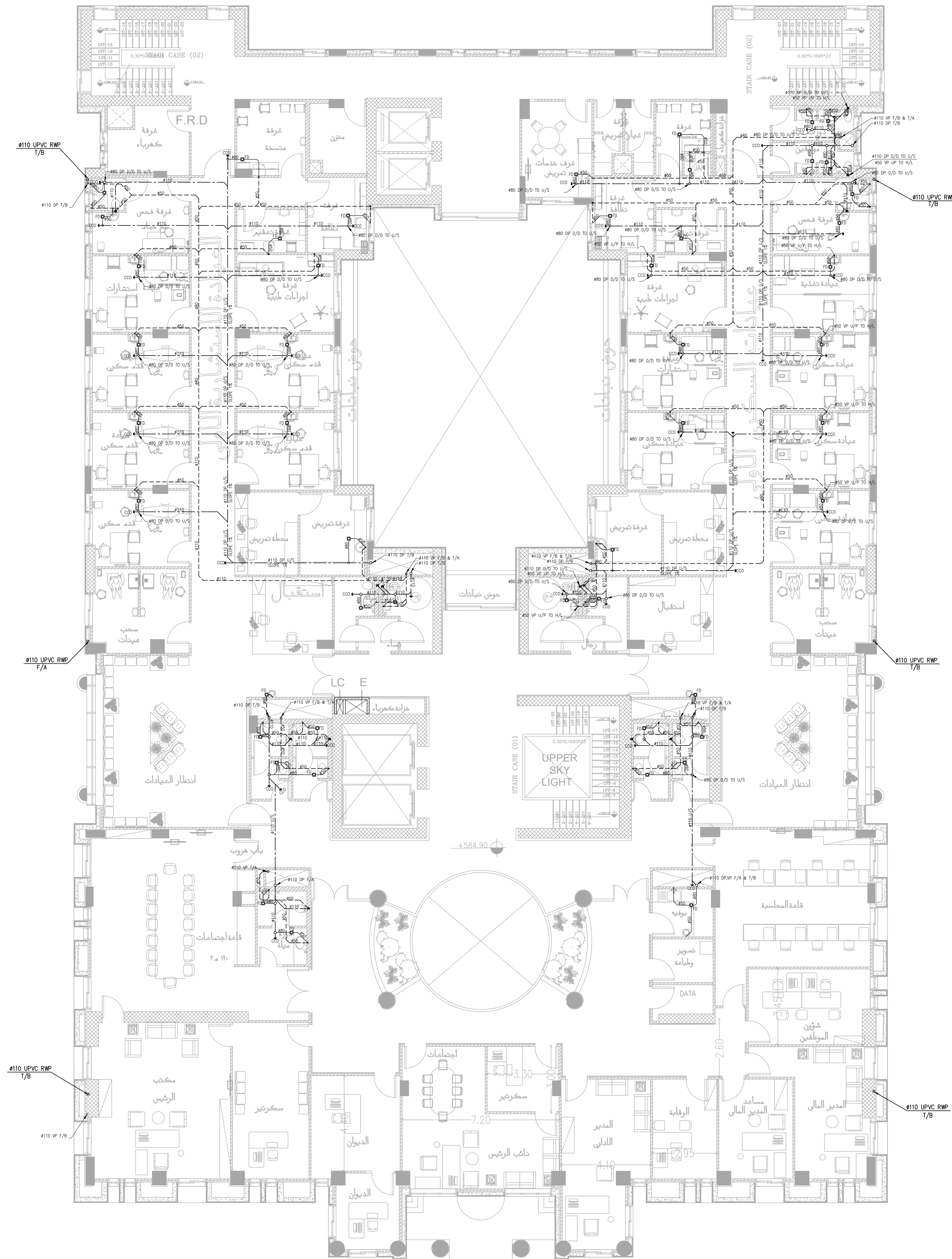
DATE : DEC.-2023

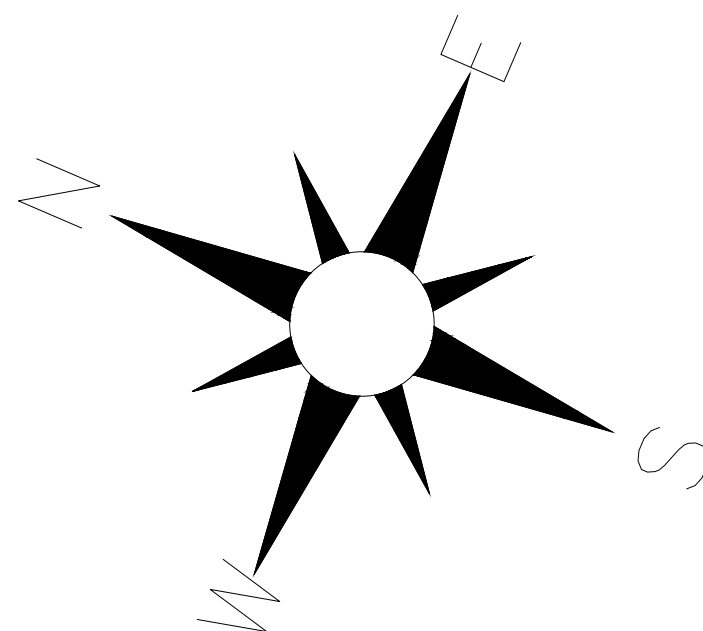
CHECKED BY : M

PROJECT No. DRAWING No.

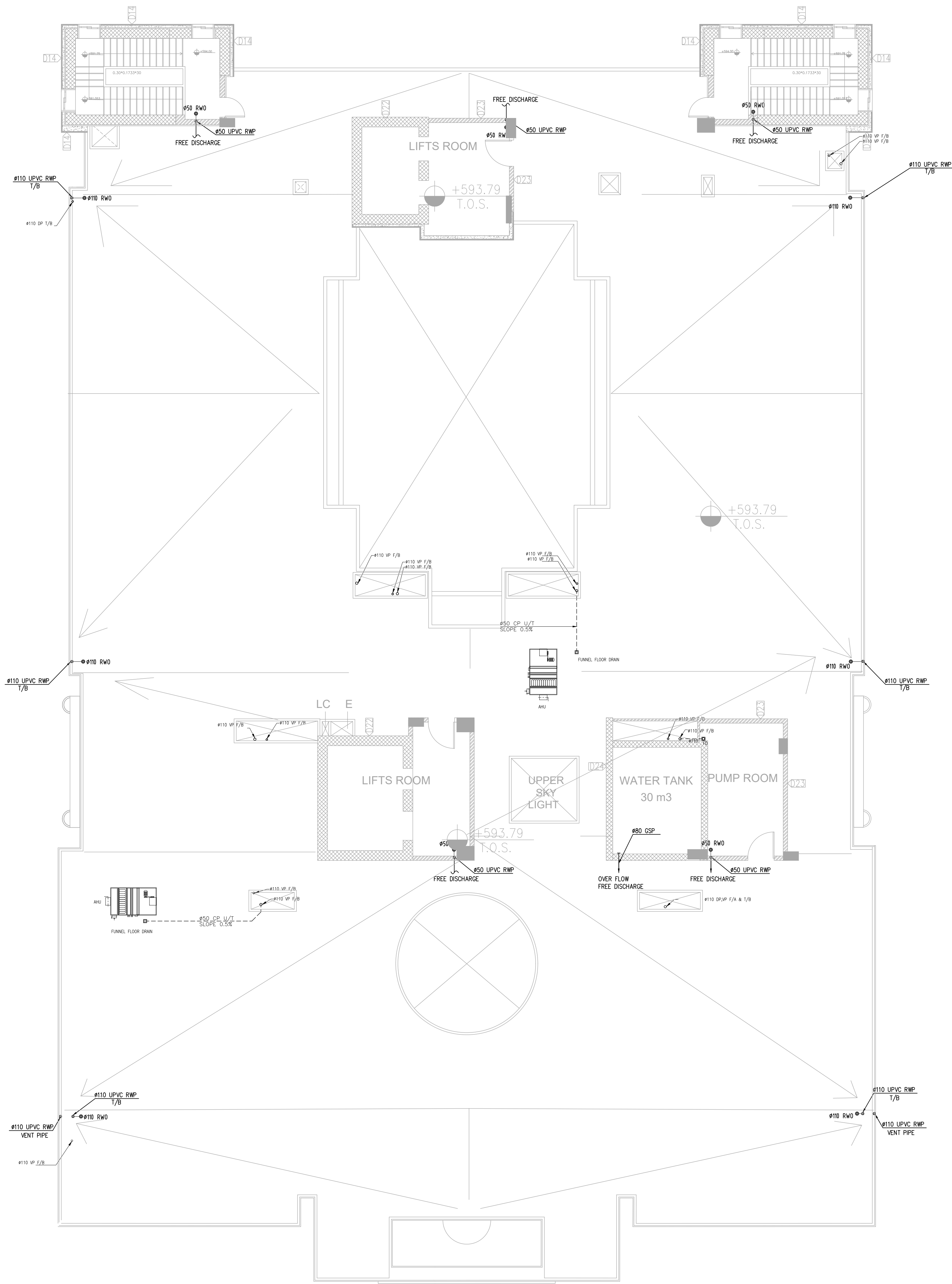
APPROVED BY: F.N

M-101



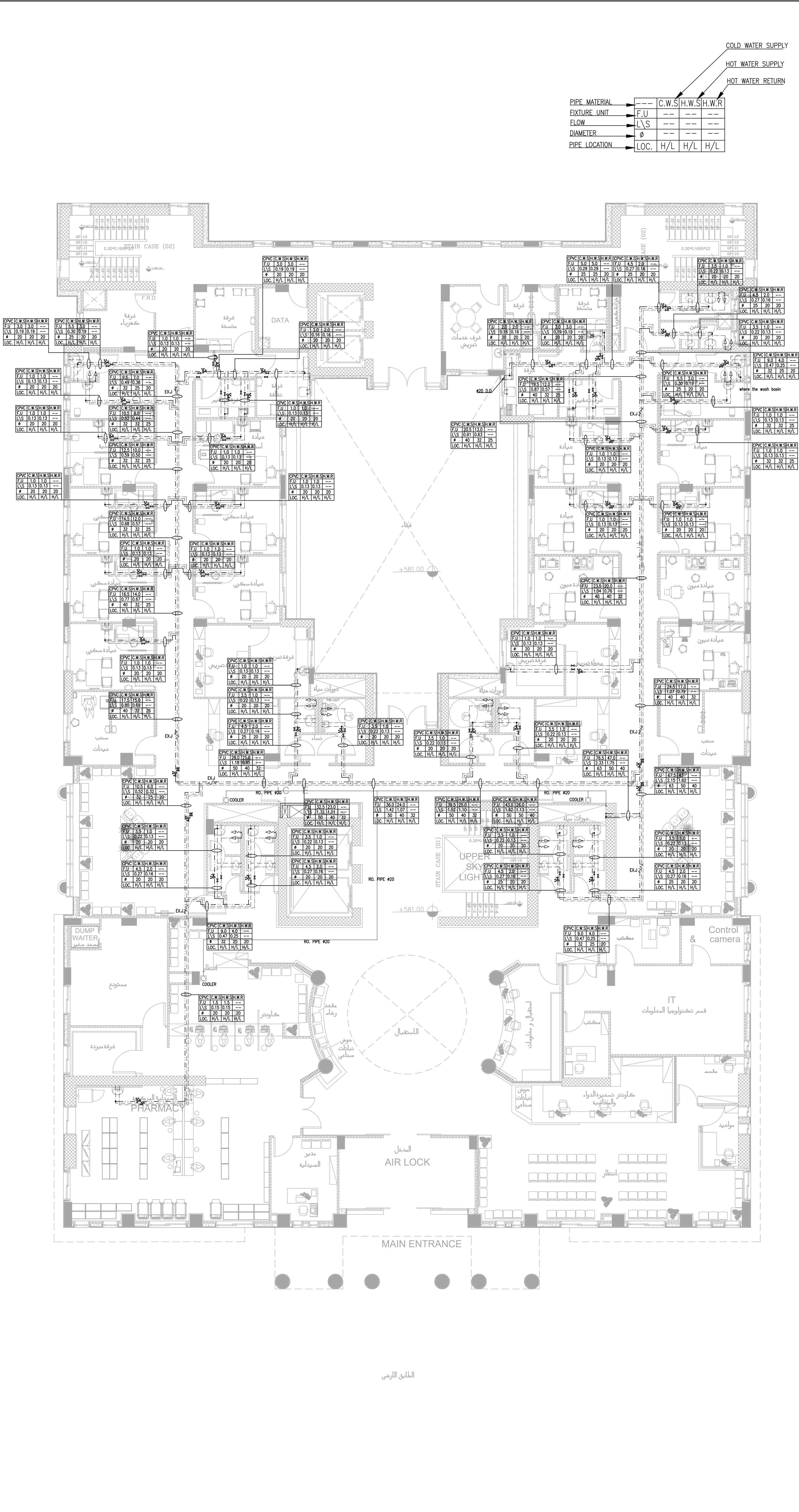
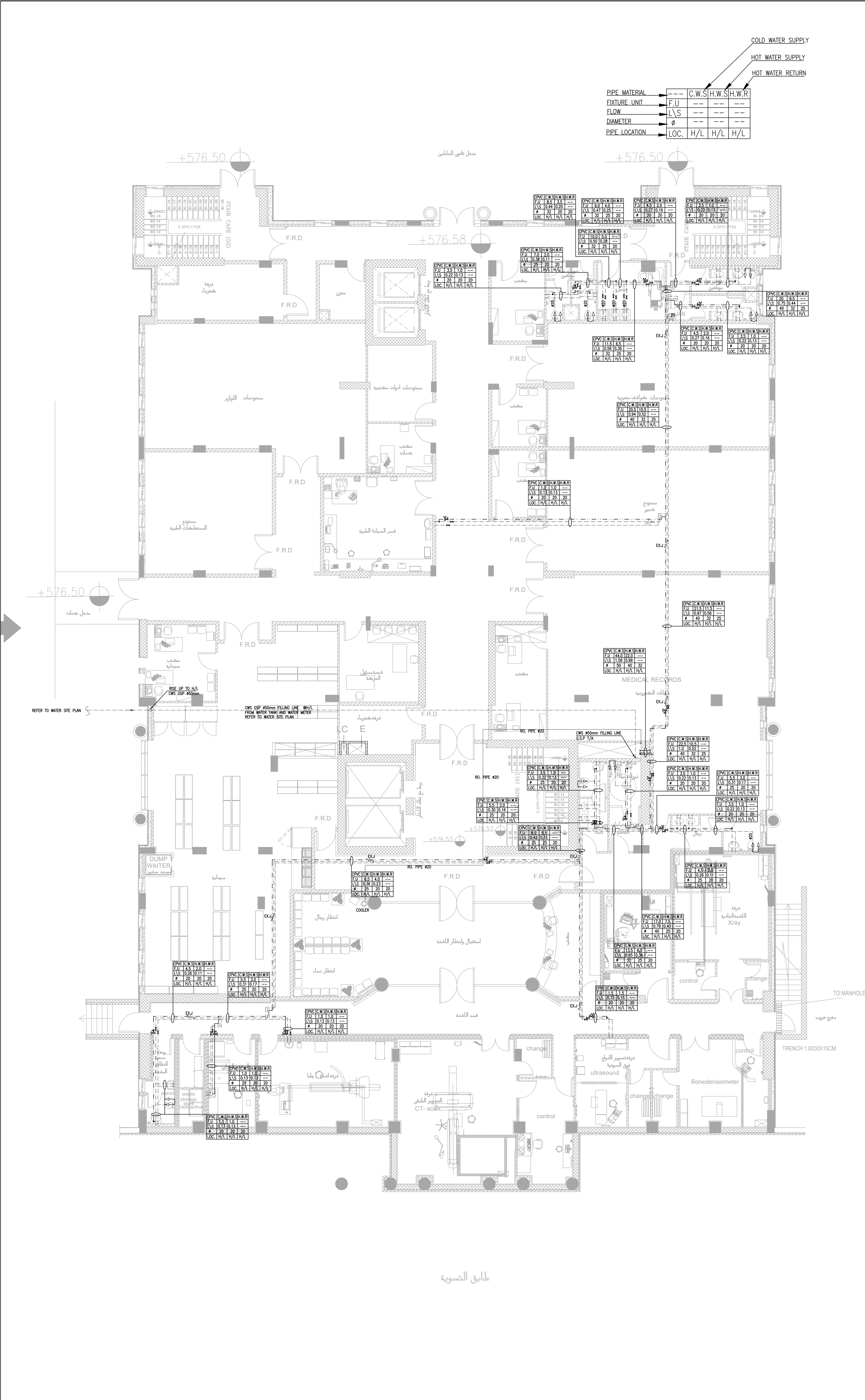



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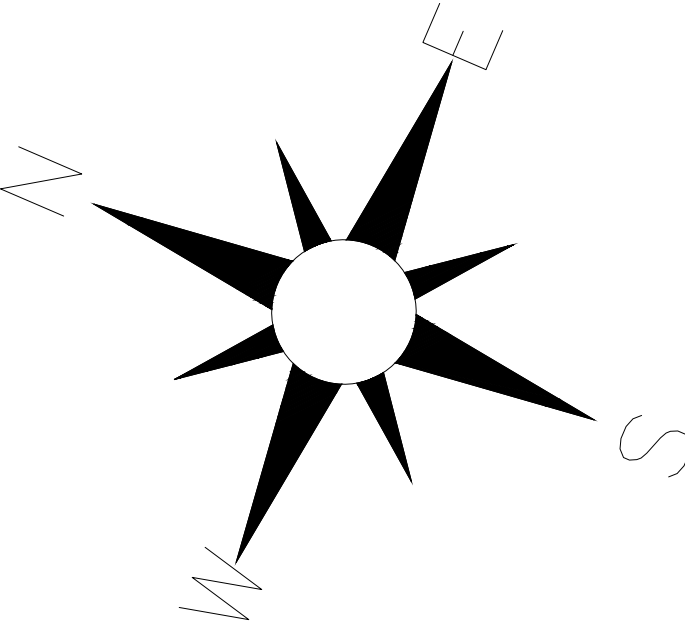


طابق الروف

PLOT NO		413	
DISTRICT		IRBID	
BASIN		40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS
CLIENT NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS		
	TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo		
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY		
DRG. TITLE	ROOF PLAN DRAINAGE SYSTEM LAYOUT		
DRAWN BY : MECH.T		SCALE: 1:100	
DESIGNED BY : MM		DATE : DEC.-2023	
CHECKED BY : DM		PROJECT No.	DRAWING No.
APPROVED BY: F.N			
		M-102	

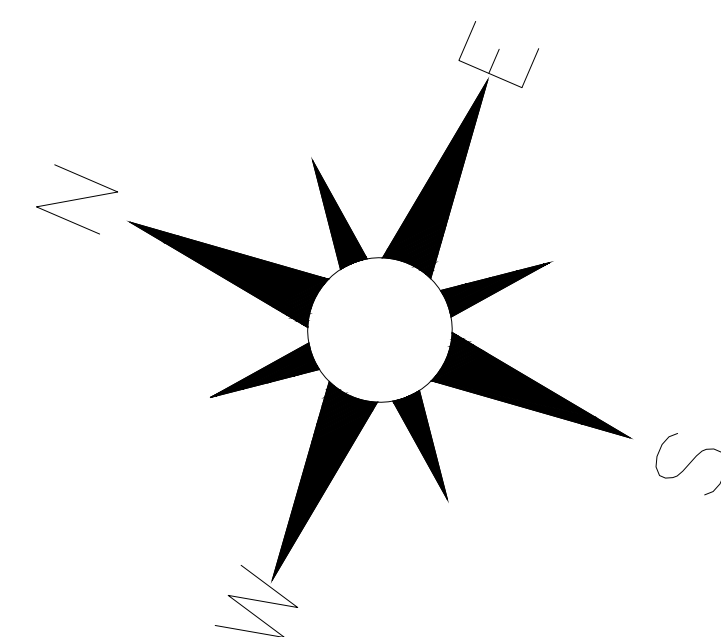
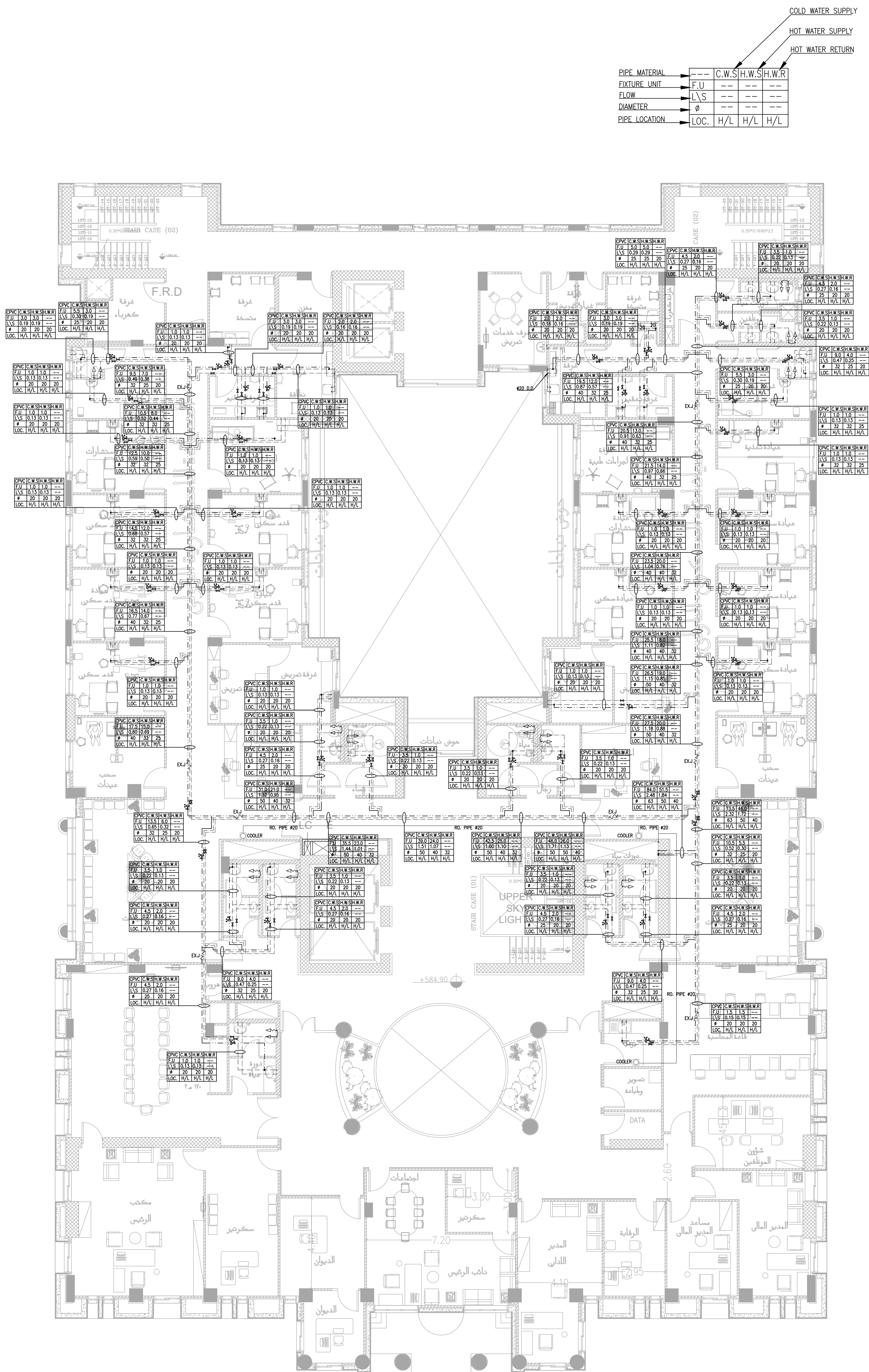






NOTES:

PLOT NO	:	413	
DISTRICT	:	IRBID	
BASIN	:	40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS
CLIENT	NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS		
MPC	MADI & PARTNERS CONSULTING ENGINEERS TEL: 5829640 - 5829641 FAX: 5829642 e-mail : mpce@index.com.jo		
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY		
DRG. TITLE	BASEMENT AND GROUND FLOOR: WATER SYSTEM LAYOUT		
DRAWN BY	:	MECH.T	SCALE: 1:100
DESIGNED BY	:	MQ	DATE : DEC.-2023
CHECKED BY	:	DM	PROJECT No. DRAWING No.
APPROVED BY	:	F.N	M-200



NOTES:

PLOT NO : 413
DISTRICT : IRBID
BASIN : 40 ALMUSRIB ALSHAMALI

REV. MARK DATE MADE BY REMARKS

CLIENT NATIONAL CENTER FOR DIABETES
ENDOCRINOLOGY AND GENETICS

MP MADI & PARTNERS CONSULTING ENGINEERS
CE TEL:5829640-5829641 FAX:5829642
e-mail : mpce@index.com.jo

PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY
CENTER BUILDING IN IRBID CITY

DRG. TITLE FIRST AND SECOND FLOOR:
WATER SYSTEM LAYOUT

DRAWN BY : MECH.T

SCALE: 1:100

DESIGNED BY : MQQ

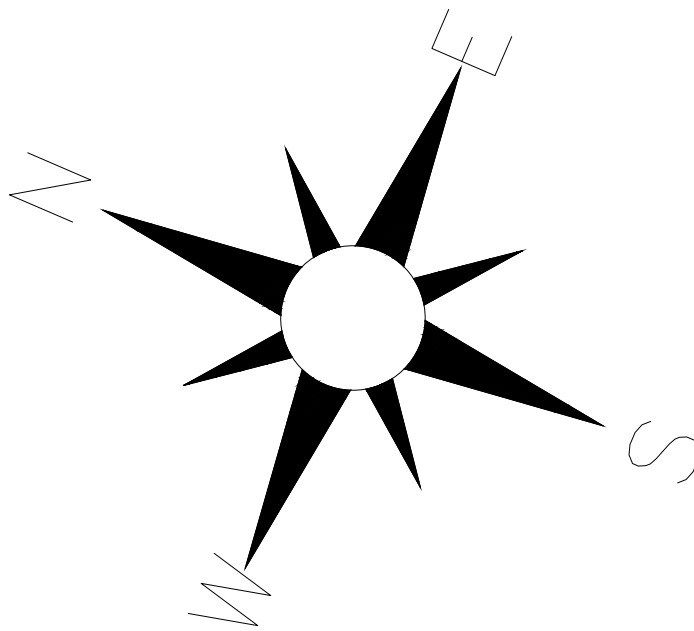
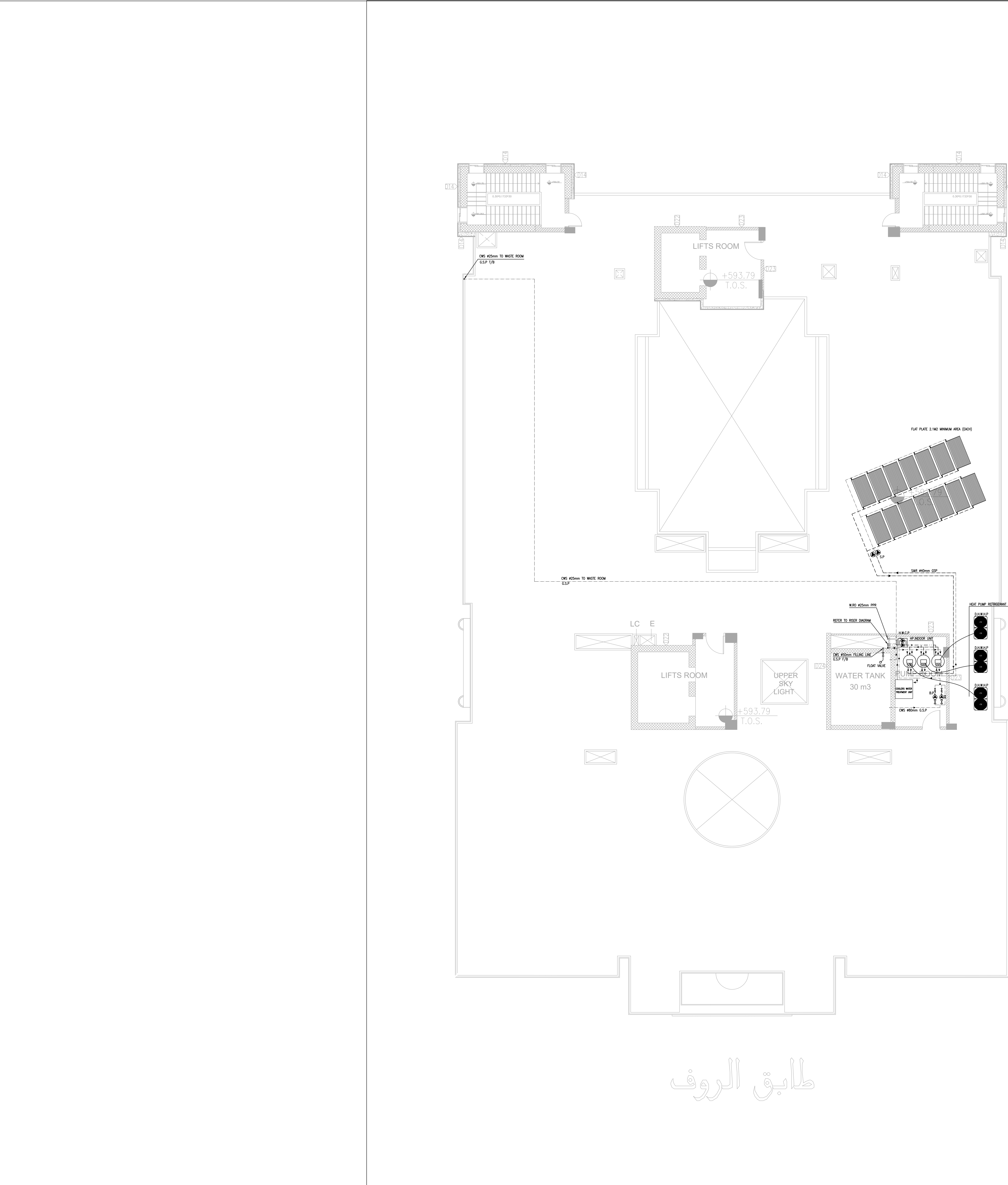
DATE : DEC.-2023

CHECKED BY : JOM

PROJECT No. DRAWING No.

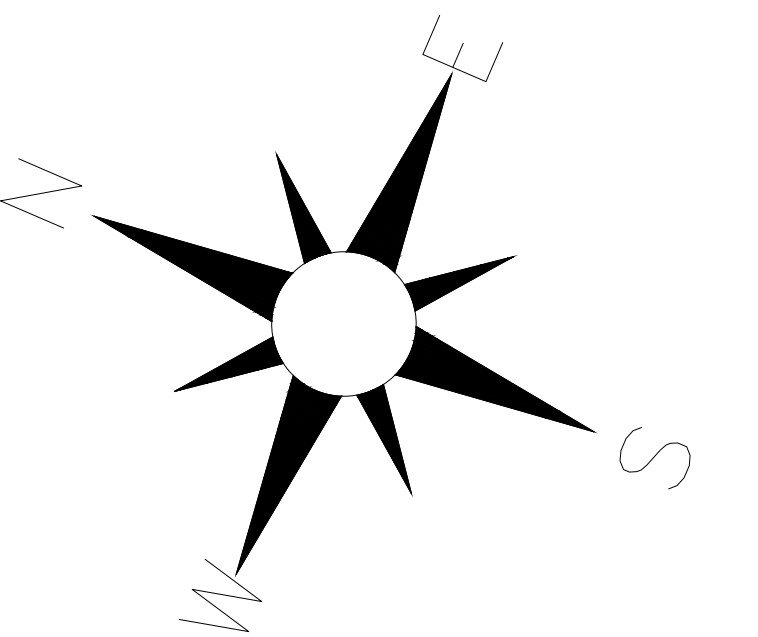
APPROVED BY: F.N

M-201



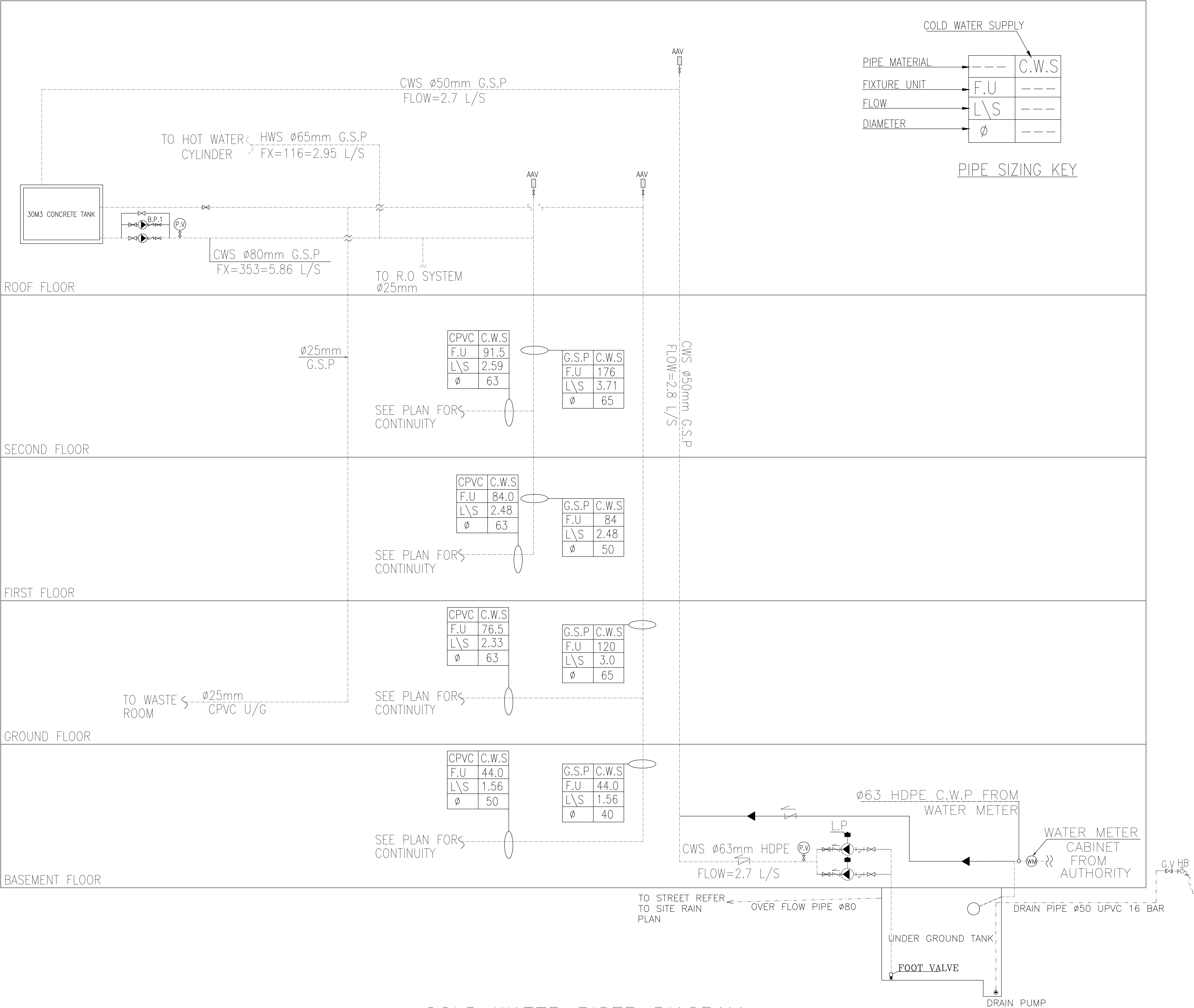
NOTES:

PLOT NO : 413	
DISTRICT : IRBID	
BASIN : 40 ALMUSRIB ALSHAMALIU	
REV. MARK	DATE
MADE BY	
REMARKS	
CLIENT	NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS
MP CE	MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY
DRG. TITLE	ROOF PLAN: WATER SYSTEM LAYOUT
DRAWN BY : MECH.T	SCALE: 1:100
DESIGNED BY : MQ	DATE : DEC.-2023
CHECKED BY : OM	PROJECT No. DRAWING No.
APPROVED BY: F.N	M-202

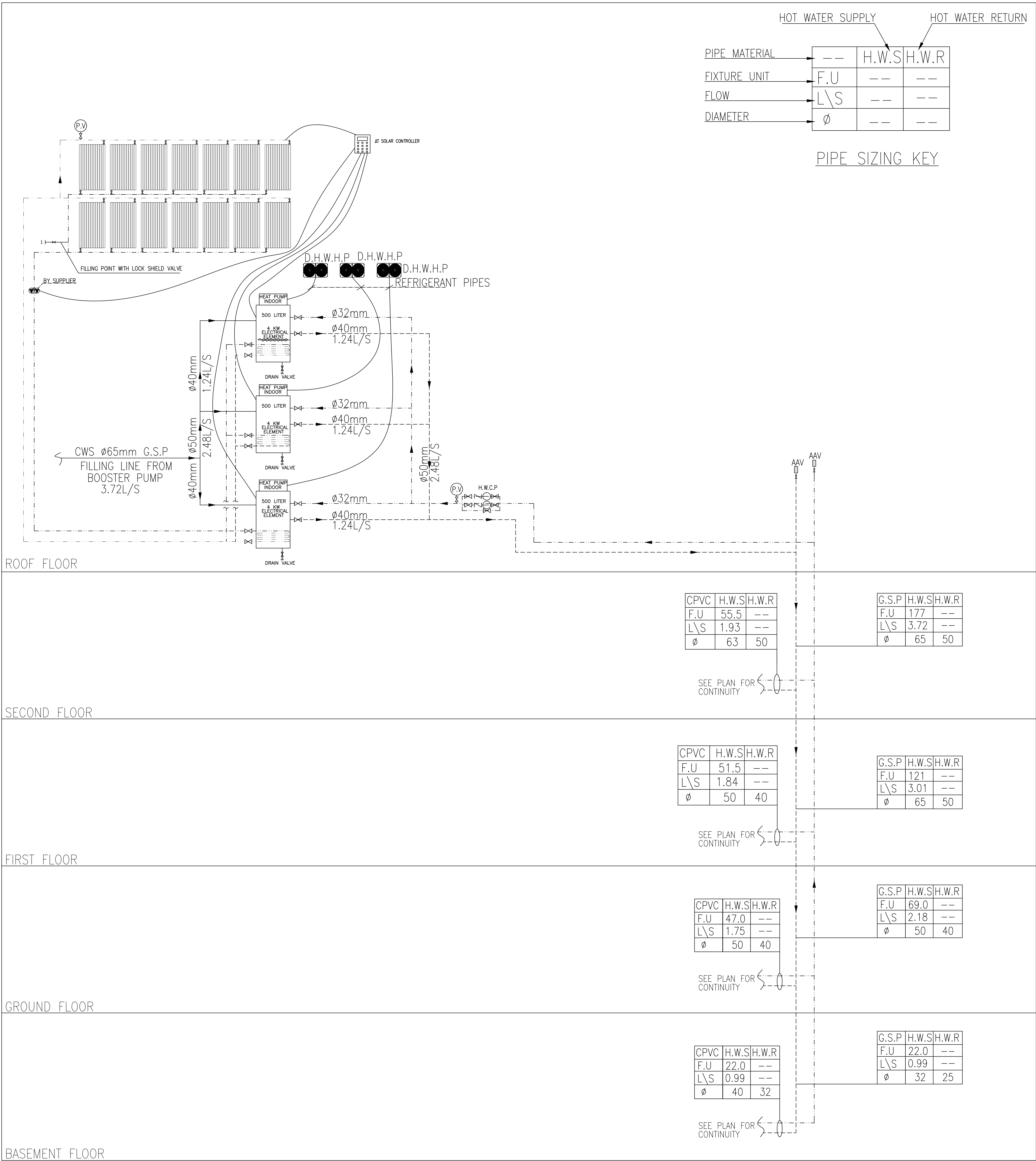


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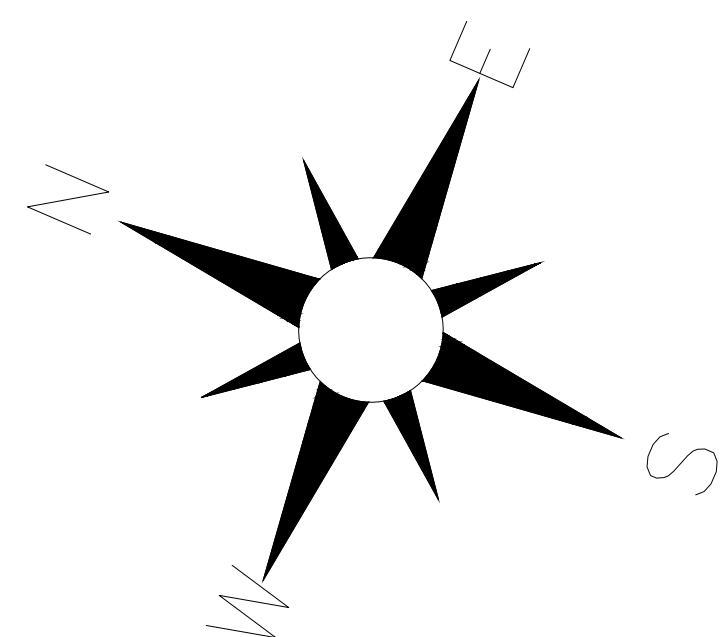
PLOT NO		:	413	
DISTRICT		:	IRBID	
BASIN		:	40 ALMUSRIB ALSHAMALI	
V. MARK	DATE	MADE BY	REMARKS	
CLIENT	NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo			
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY			
RG. TITLE	COLD WATER RISER DIAGRAM			
DRAWN BY : MECH.T			SCALE: N.T.S	
DESIGNED BY: MQ			DATE : DEC.-2023	
CHECKED BY: DM			PROJECT No. DRAWING No.	
APPROVED BY: F.N			M-203	



COLD WATER RISER DIAGRAM

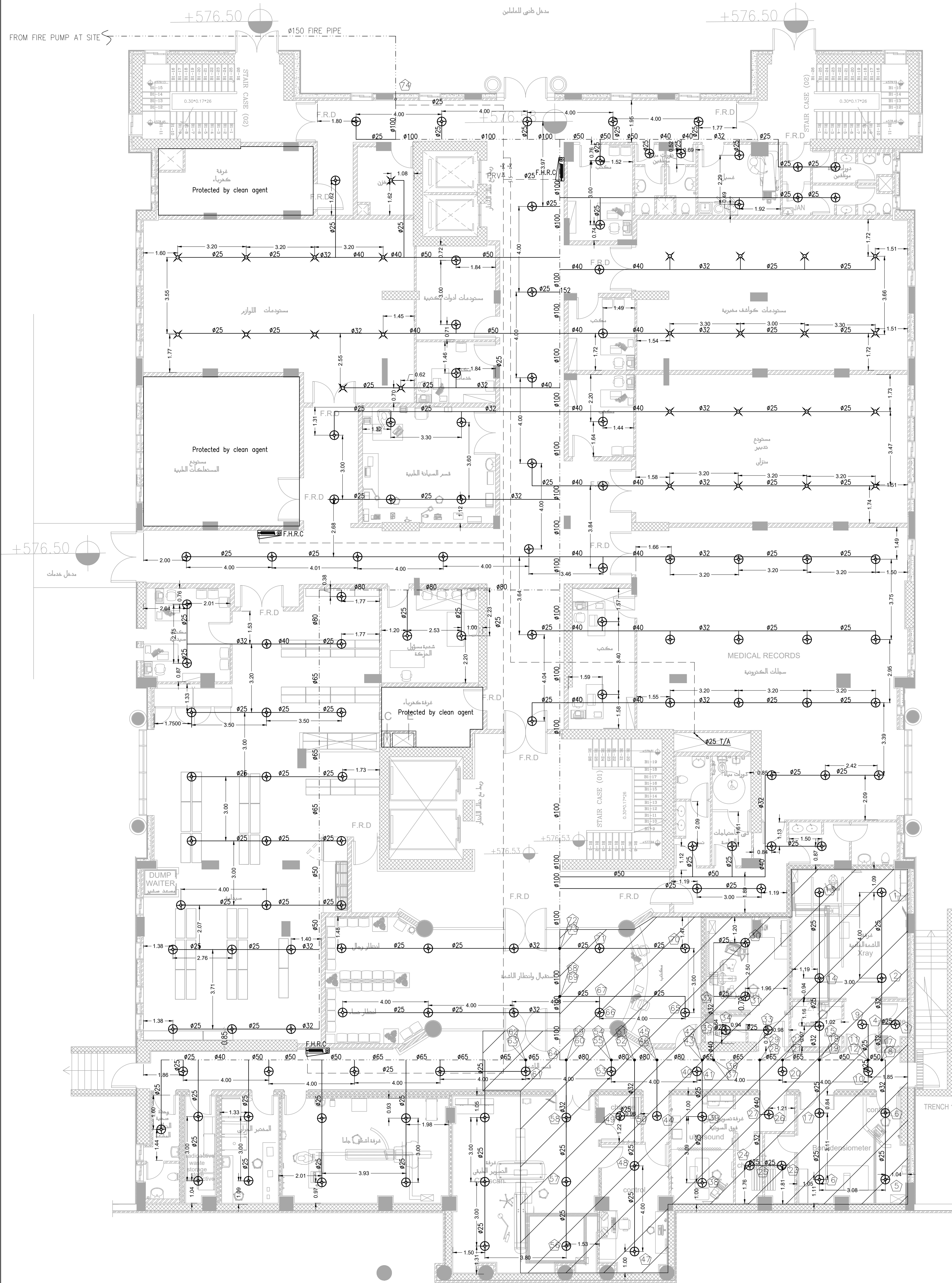


HOT WATER RISER DIAGRAM

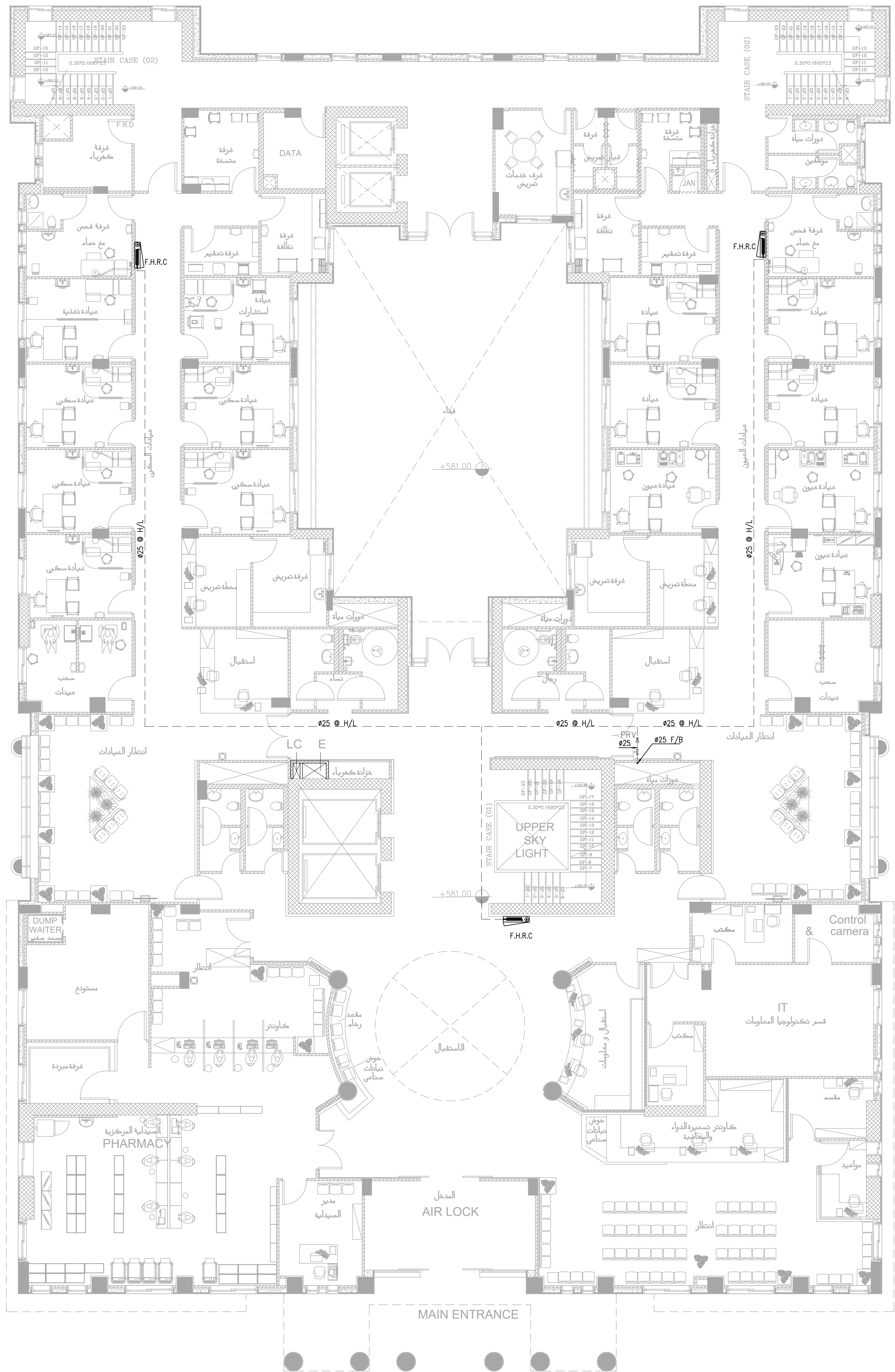


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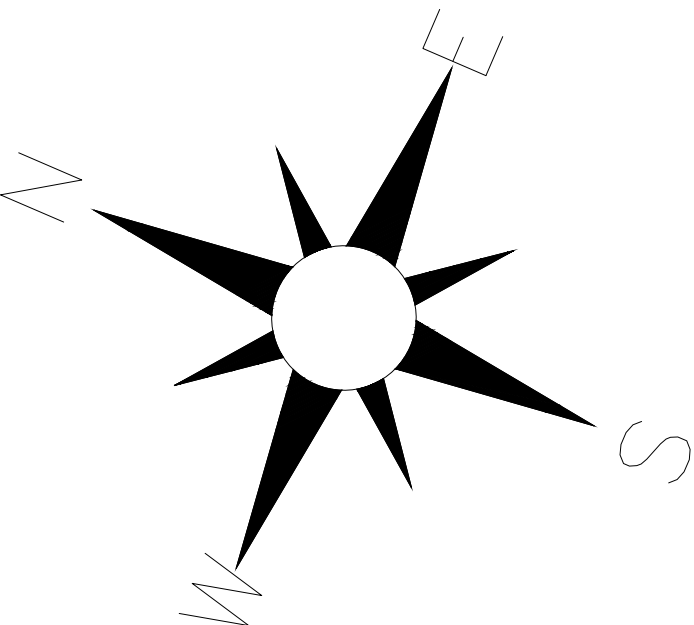
PLOT NO		:	413	
DISTRICT		:	IRBID	
BASIN		:	40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS	
CLIENT	NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo			
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY			
DRG. TITLE	HOT WATER RISER DIAGRAM			
DRAWN BY : MECH.T			SCALE: NTS	
DESIGNED BY: M			DATE : DEC.-2023	
CHECKED BY: M			PROJECT No. DRAWING No.	
APPROVED BY: F.N			M-204	



طابق التسوية



الطابق الرابع



NOTES:

PLOT NO : 413
DISTRICT : IRBID
BASIN : 40 ALMUSRIB ALSHAMALIU

REV. MARK DATE MADE BY REMARKS

CLIENT NATIONAL CENTER FOR DIABETES
ENDOCRINOLOGY AND GENETICS

MP MADI & PARTNERS CONSULTING ENGINEERS
CE TEL:5829640-5829641 FAX:5829642
e-mail : mpce@index.com.jo

PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY
CENTER BUILDING IN IRBID CITY

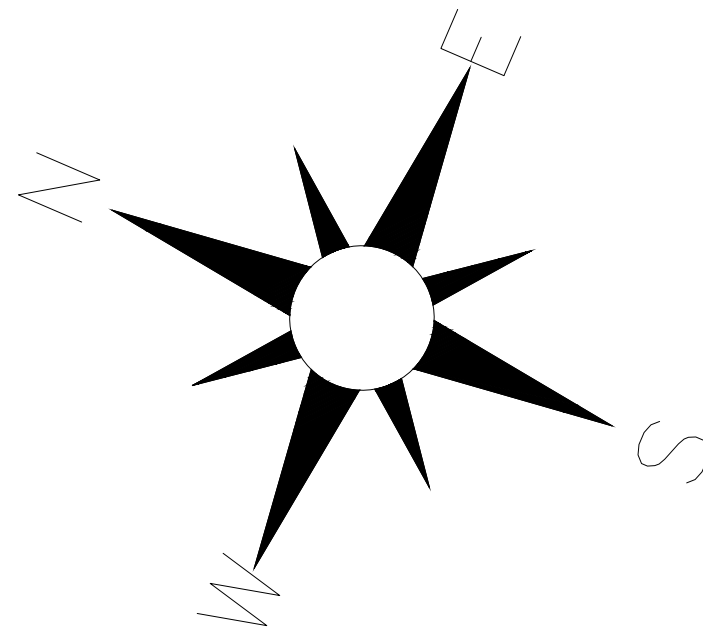
DRG. TITLE BASEMENT AND GROUND FLOOR:
FIRE SYSTEM LAYOUT

DRAWN BY : MECH.T SCALE: 1:100

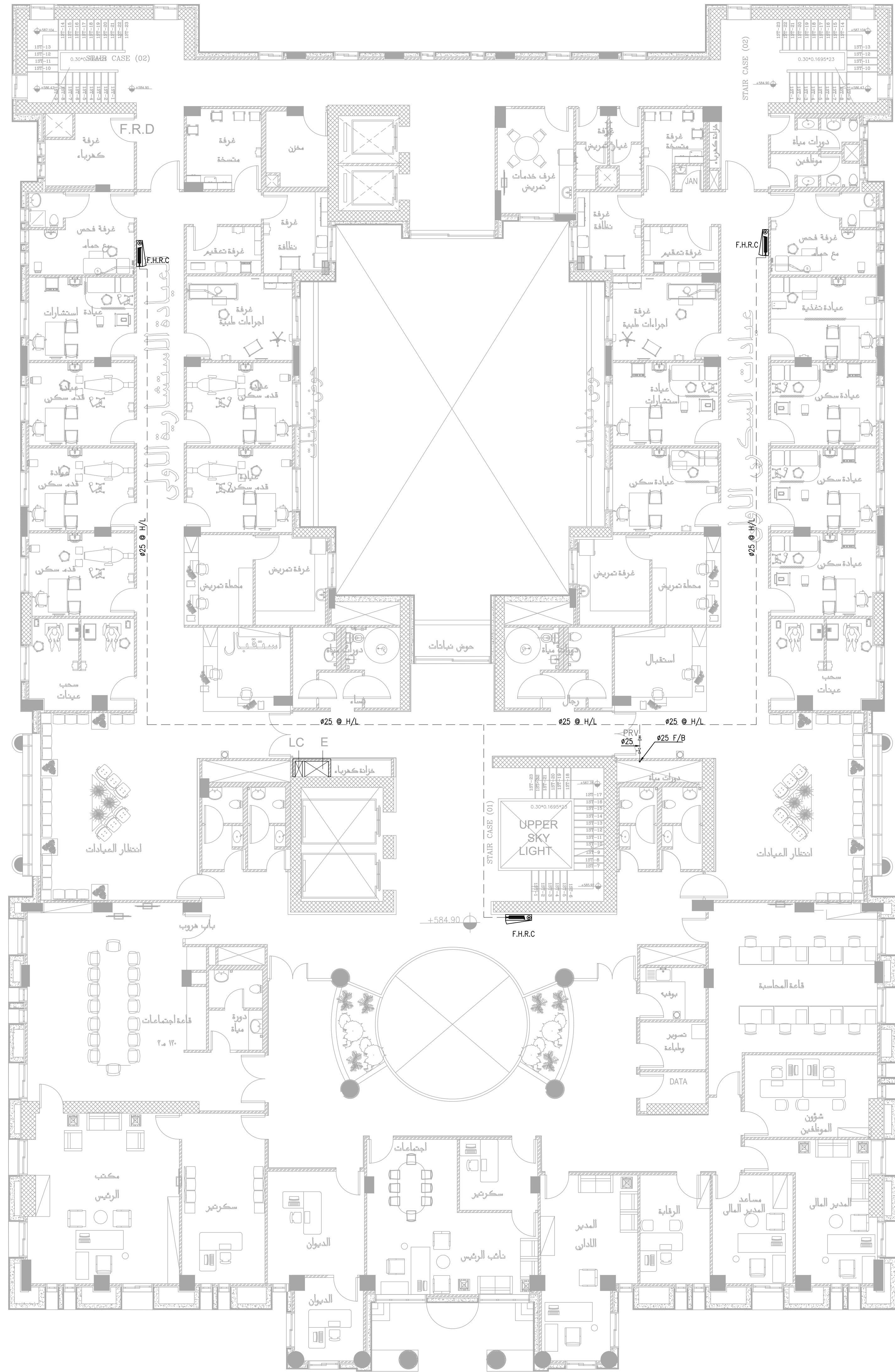
DESIGNED BY : MQR DATE : DEC.-2023

CHECKED BY : JOM PROJECT No. DRAWING No.

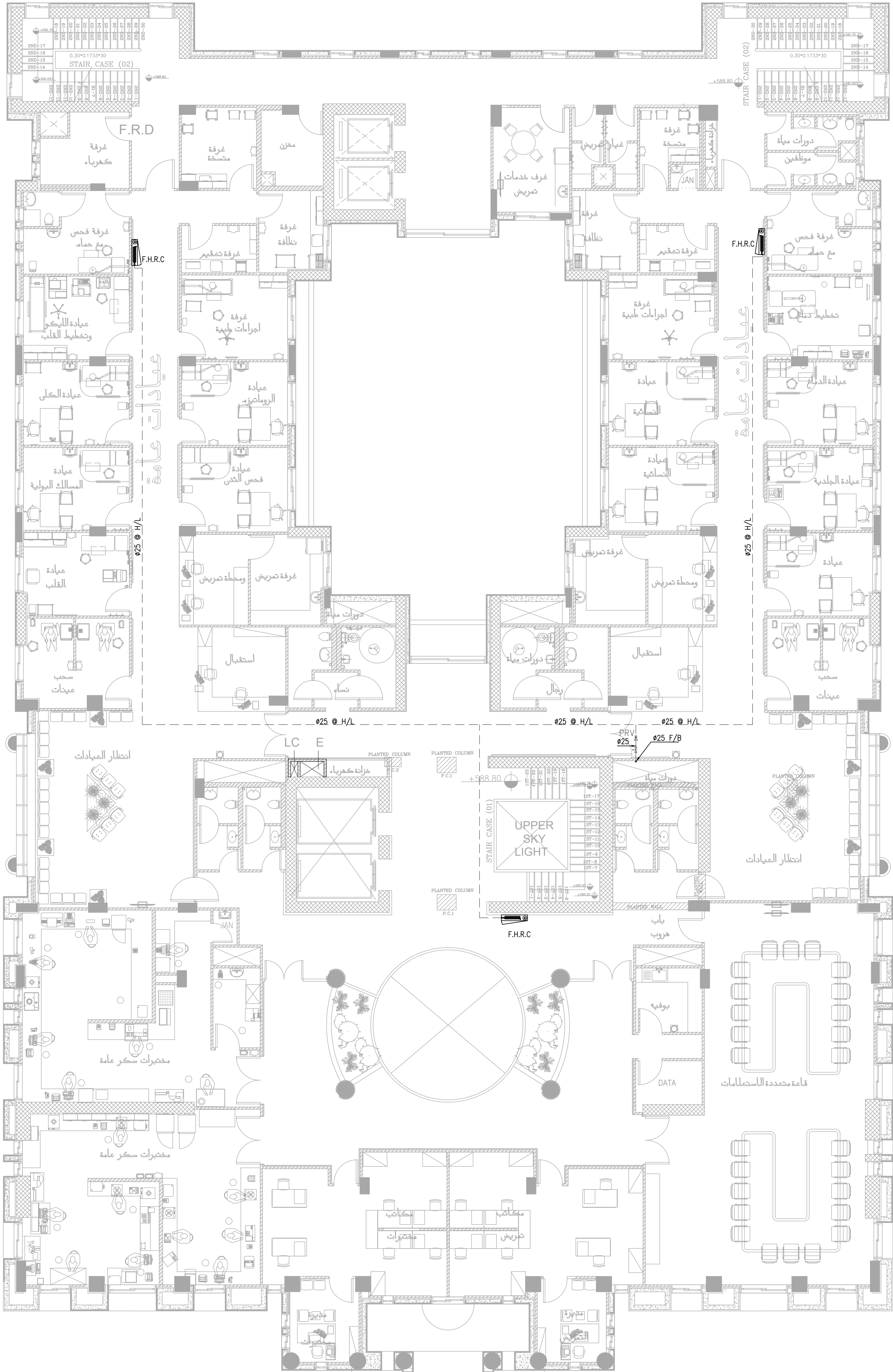
APPROVED BY: F.N M-300



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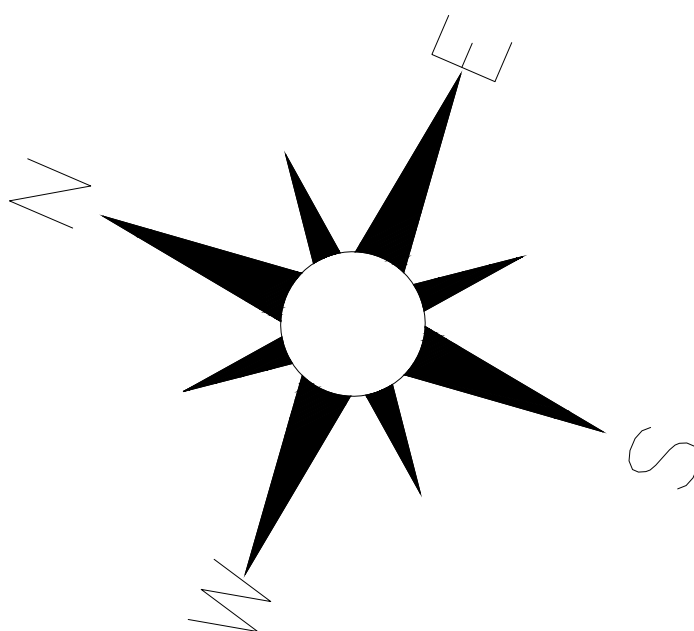


الطابق الاول



الطابق الثاني

PLOT NO		:	413	
DISTRICT		:	IRBID	
BASIN		:	40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS	
CLIENT	NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo			
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY			
DRG. TITLE	FIRST AND SECOND FLOOR: FIRE SYSTEM LAYOUT			
DRAWN BY : MECH.T			SCALE: 1:100	
DESIGNED BY : AMQ			DATE : DEC.-2023	
CHECKED BY : DM			PROJECT No.	DRAWING No. M-301
APPROVED BY : F.N				



NOTES:

PLOT NO		:	413	
DISTRICT		:	IRBID	
BASIN		:	40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS	
CLIENT	NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo			
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY			
DRG. TITLE	FIRE FIGHTING SYSTEM RISER DIAGRAM			
DRAWN BY : MECH.T			SCALE : N.T.S	
DESIGNED BY : MQ			DATE : DEC.-2023	
CHECKED BY : DM			PROJECT No.	DRAWING No.
APPROVED BY: F.N				
				M-302

* CAPACITIES OF REQUIRED FIRE PUMPS:

PUMP REF. NO.	FLOW GPM	HEAD BAR	POWER SUPPLY	MOTOR KW	QTY.	TYPE
MAIN. FP-1	1250	7.5	420/3/50	90	1- DUTY	VERTICAL TURBINE
STAND-BY. FP-2	1250	7.5	420/3/50	90	1-STANDBY (ELECTRICAL)	VERTICAL TURBINE
JOCKEY. J.P.	16	7.0	420/3/50	2	1 NO.	VERTICAL TURBINE

TOP OF STAIRS
F.F.L +596.76
S.S.L +596.61

ROOF
F.F.L +594.00
S.S.L +593.79

SECOND FLOOR

F.F.L +588.80
S.S.L +588.65

FIRST FLOOR

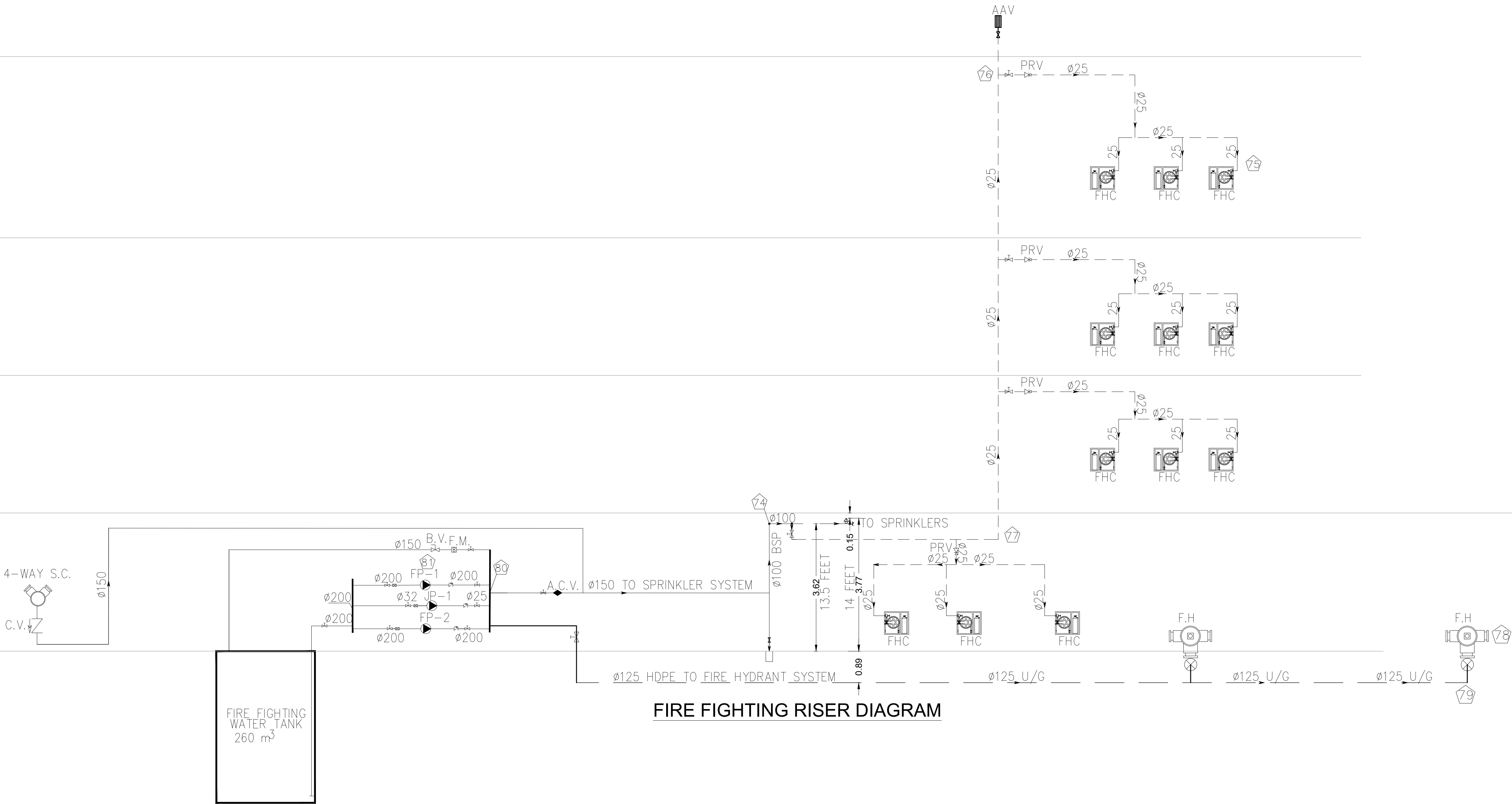
F.F.L +584.90
S.S.L +584.75

GROUND FLOOR

F.F.L +581.00
S.S.L +580.85

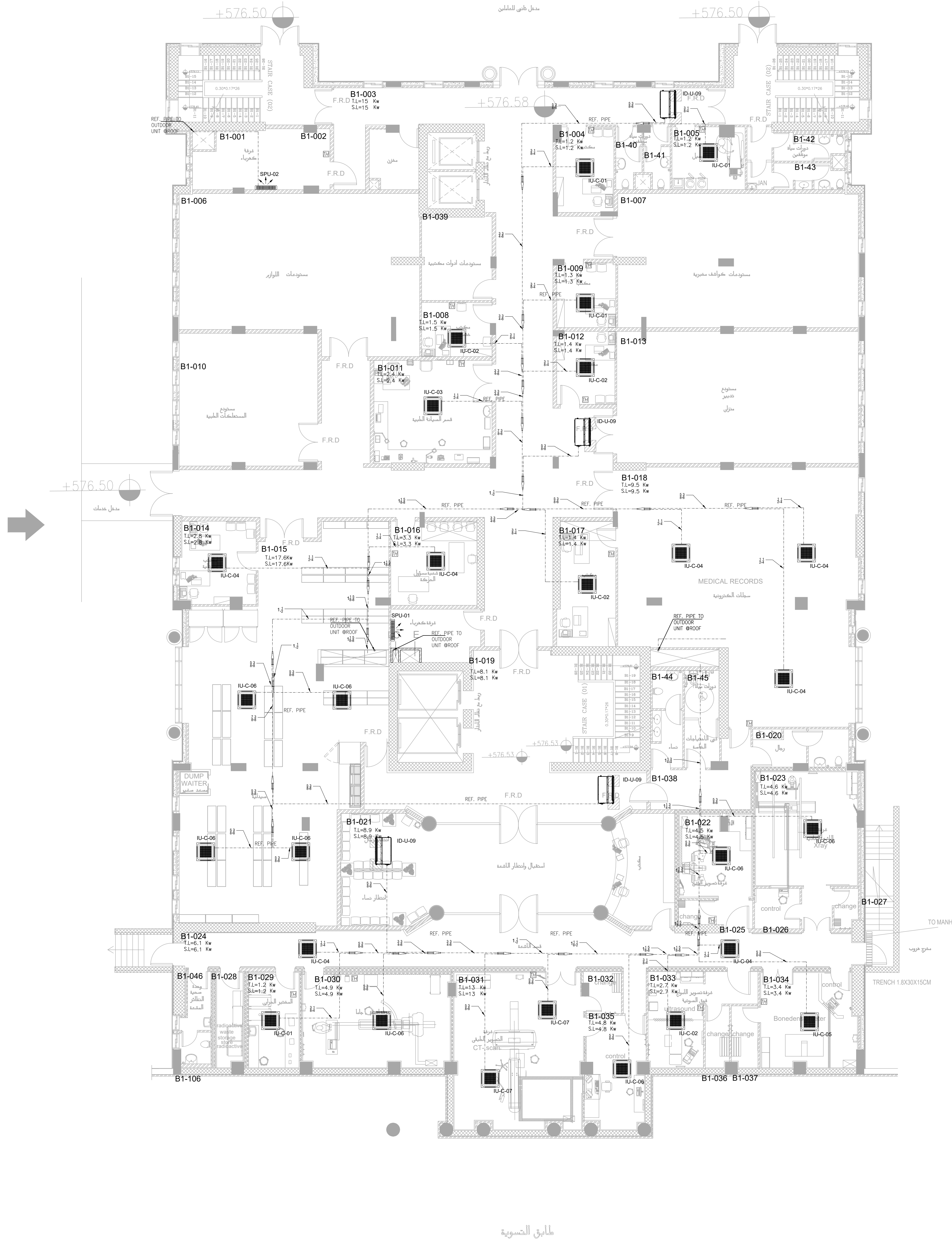
BASEMENT FLOOR

F.F.L +576.58
S.S.L +576.43

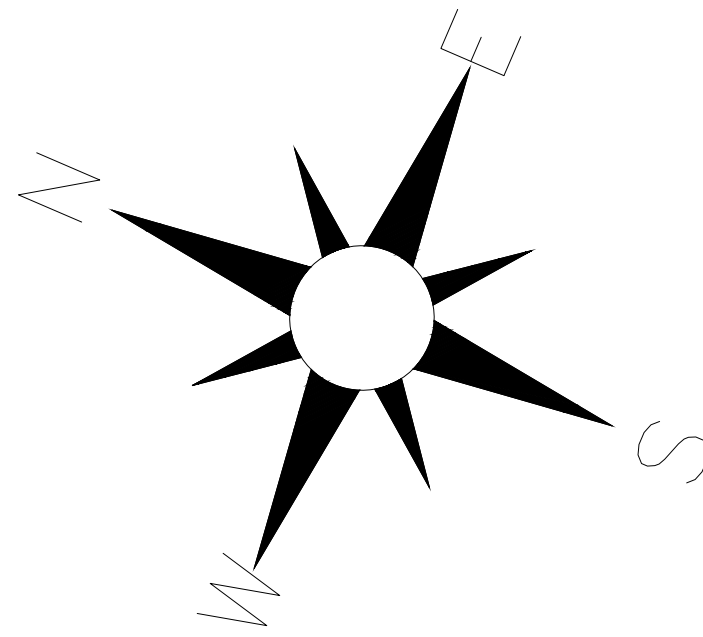
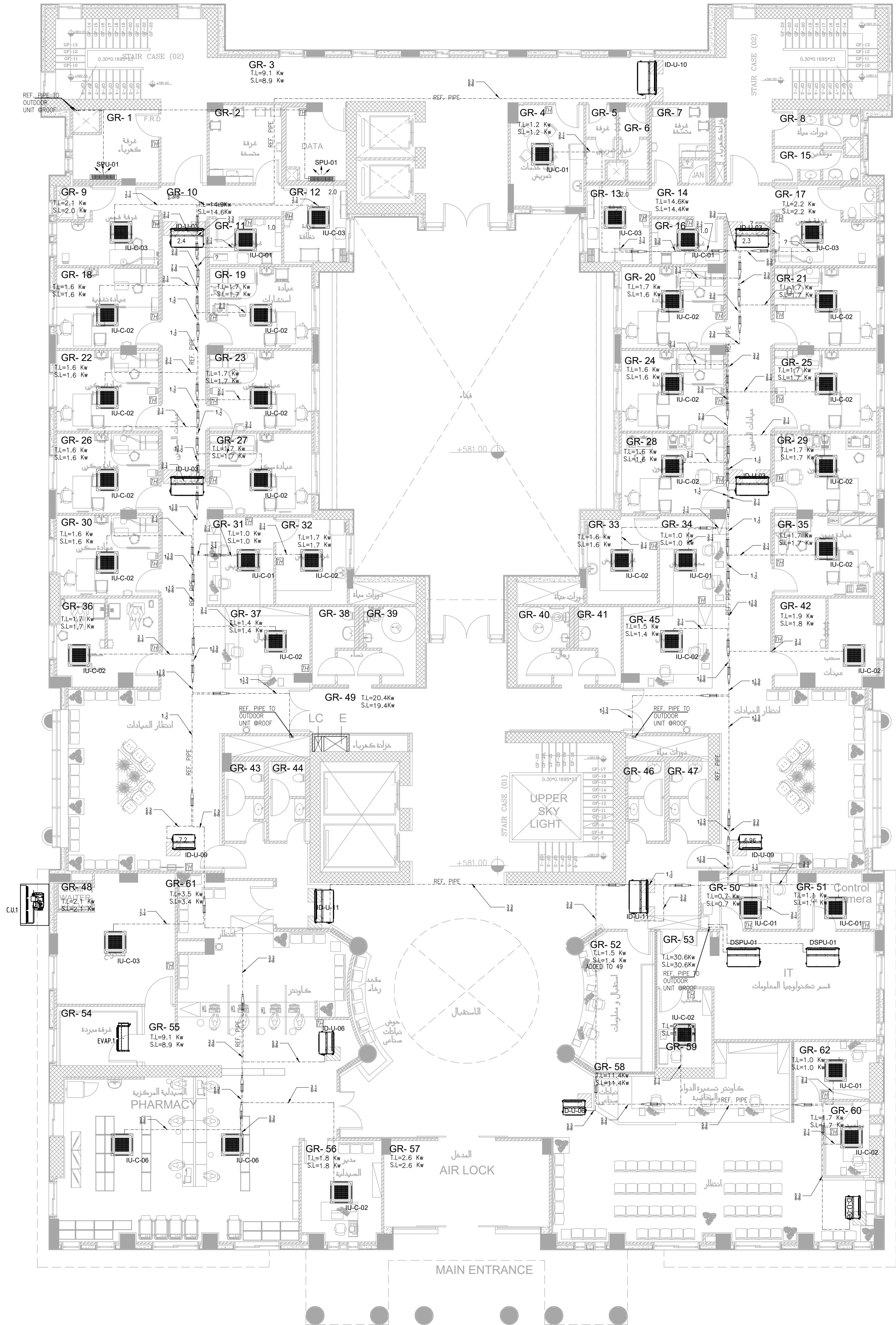


RISER

NOTE: REFRIGERANT PIPE SIZE SHOULD BE CHECKED BY SPECIALIST SUPPLIER
FINAL SIZE AND DESIGN CALCULATION OF PIPE WORK SHALL BE DONE AND SHOWN IN SHOP DRAWING BY SPECIALIST
WITHOUT EXTRA COST



NOTE: REFRIGERANT PIPE SIZE SHOULD BE CHECKED BY SPECIALIST SUPPLIER
FINAL SIZE AND DESIGN CALCULATION OF PIPE WORK SHALL BE DONE AND SHOWN IN SHOP DRAWING BY SPECIALIST
WITHOUT EXTRA COST



NOTES:

PLOT NO : 413
DISTRICT : IRBID
BASIN : 40 ALMUSRIB ALSHAMALI

REV. MARK DATE MADE BY REMARKS

CLIENT NATIONAL CENTER FOR DIABETES
ENDOCRINOLOGY AND GENETICS

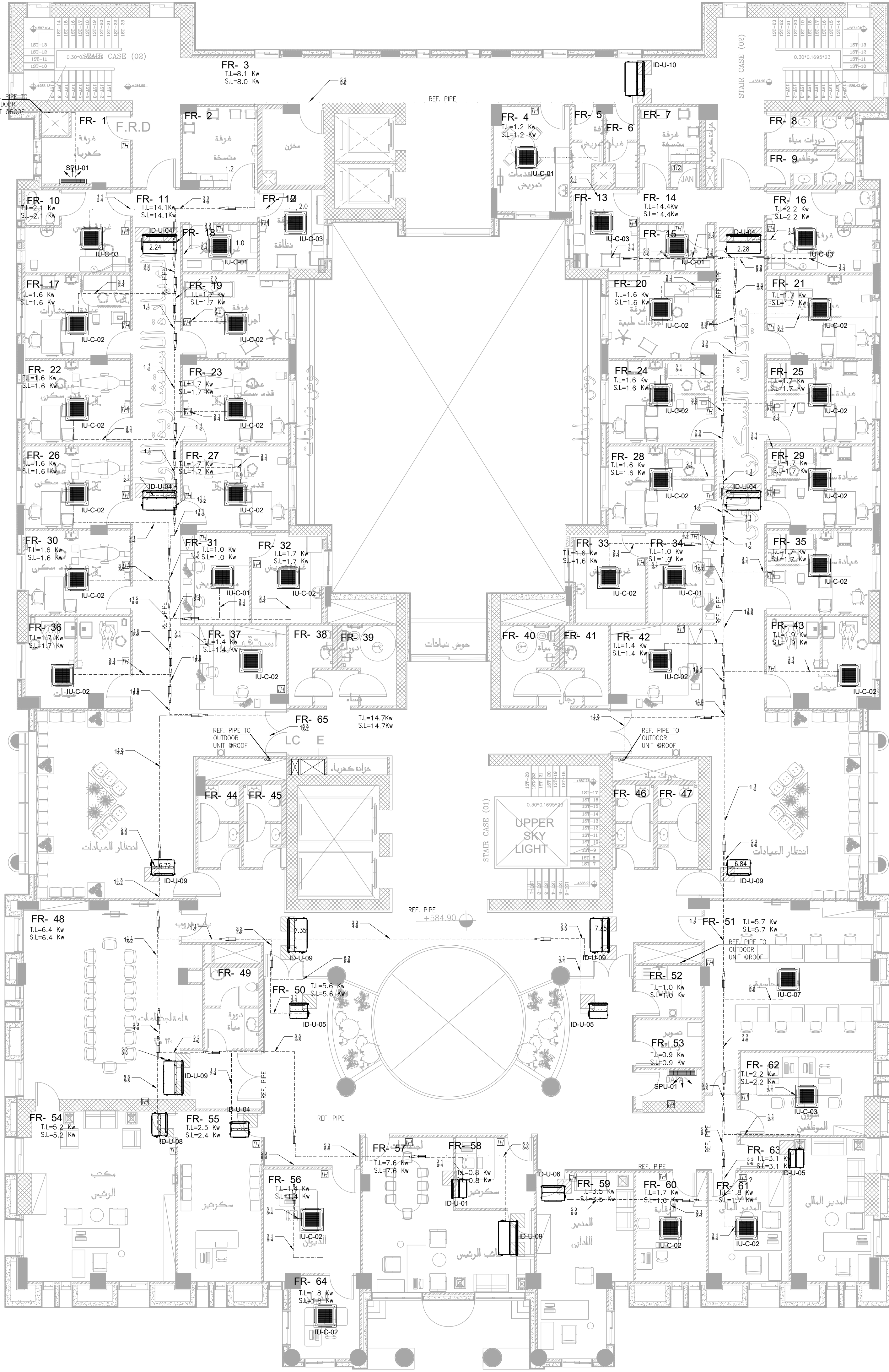
MP MADE & PARTNERS CONSULTING ENGINEERS
CE TEL:5829640-5829641 FAX:5829642
e-mail : mpce@index.com.jo

PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY
CENTER BUILDING IN IRBID CITY

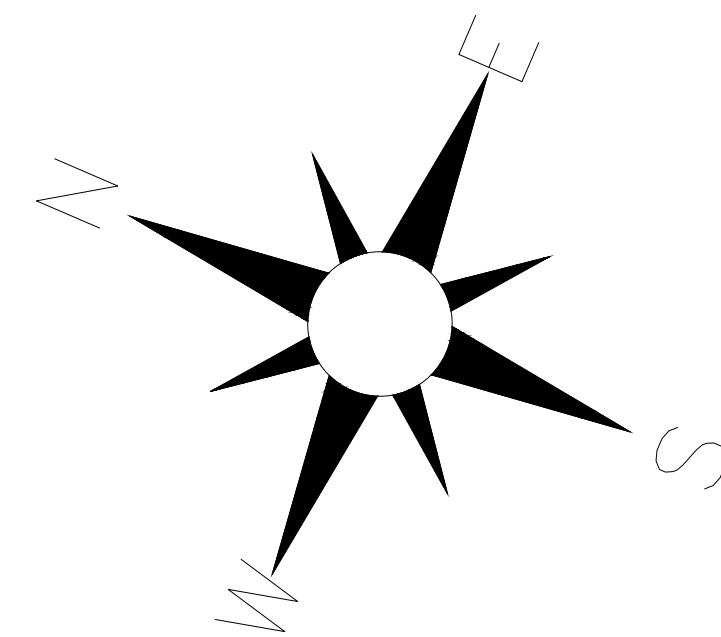
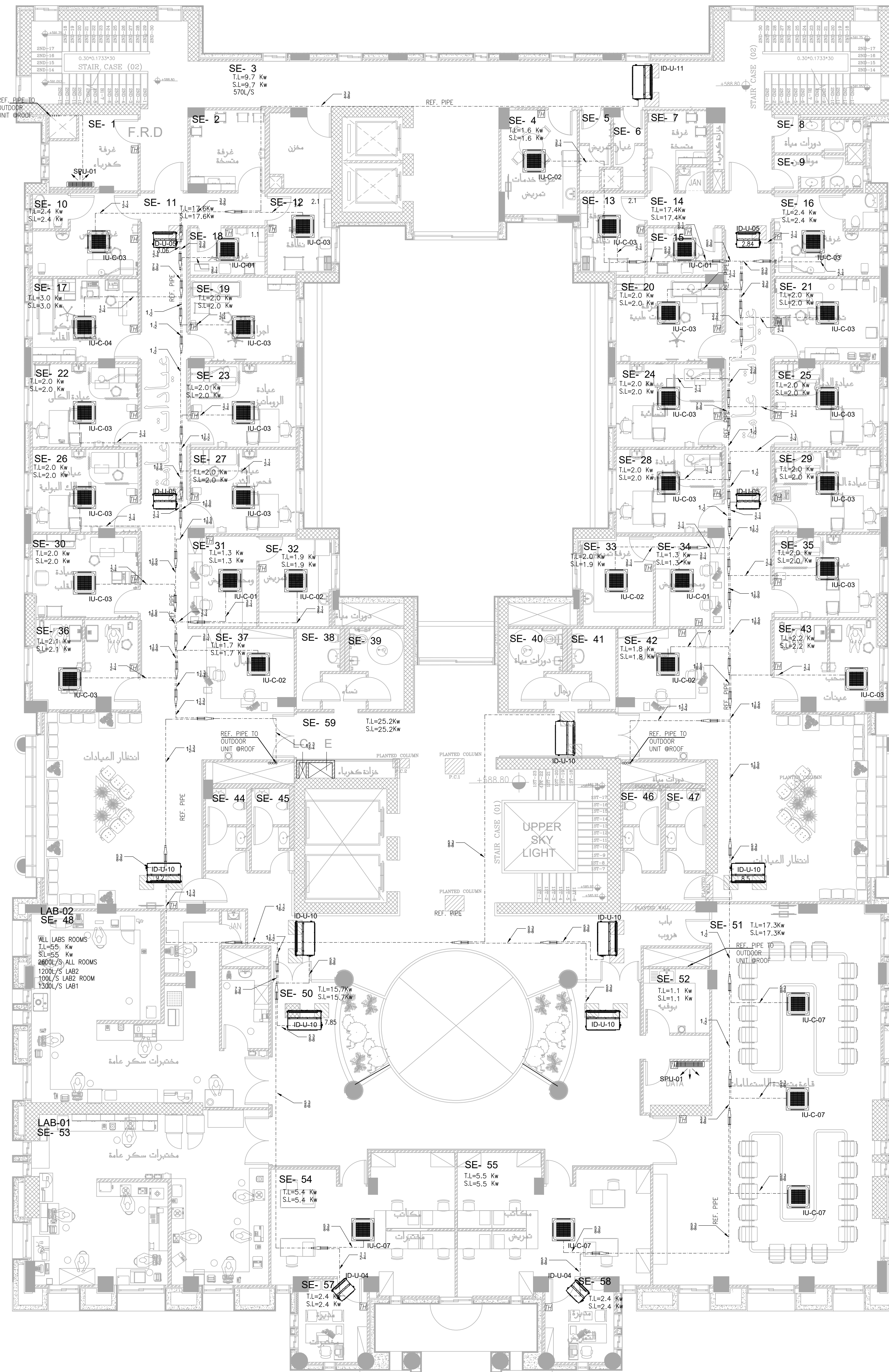
DRG. BASEMENT AND GROUND FLOOR:
TITLE HVAC PIPING SYSTEM LAYOUT

DRAWN BY : MECH.T SCALE: 1:100
DESIGNED BY : M.Q DATE : DEC.-2023
CHECKED BY : M.M PROJECT No. DRAWING No.
APPROVED BY: F.N M-400

NOTE: REFRIGERANT PIPE SIZE SHOULD BE CHECKED BY SPECIALIST SUPPLIER
FINAL SIZE AND DESIGN CALCULATION OF PIPE WORK SHALL BE DONE AND SHOWN IN SHOP DRAWING BY SPECIALIST
WITHOUT EXTRA COST



NOTE: REFRIGERANT PIPE SIZE SHOULD BE CHECKED BY SPECIALIST SUPPLIER
FINAL SIZE AND DESIGN CALCULATION OF PIPE WORK SHALL BE DONE AND SHOWN IN SHOP DRAWING BY SPECIALIST
WITHOUT EXTRA COST



NOTES:

PLOT NO : 413
DISTRICT : IRBID
BASIN : 40 ALMUSRIB ALSHAMALI

CLIENT NATIONAL CENTER FOR DIABETES
ENDOCRINOLOGY AND GENETICS

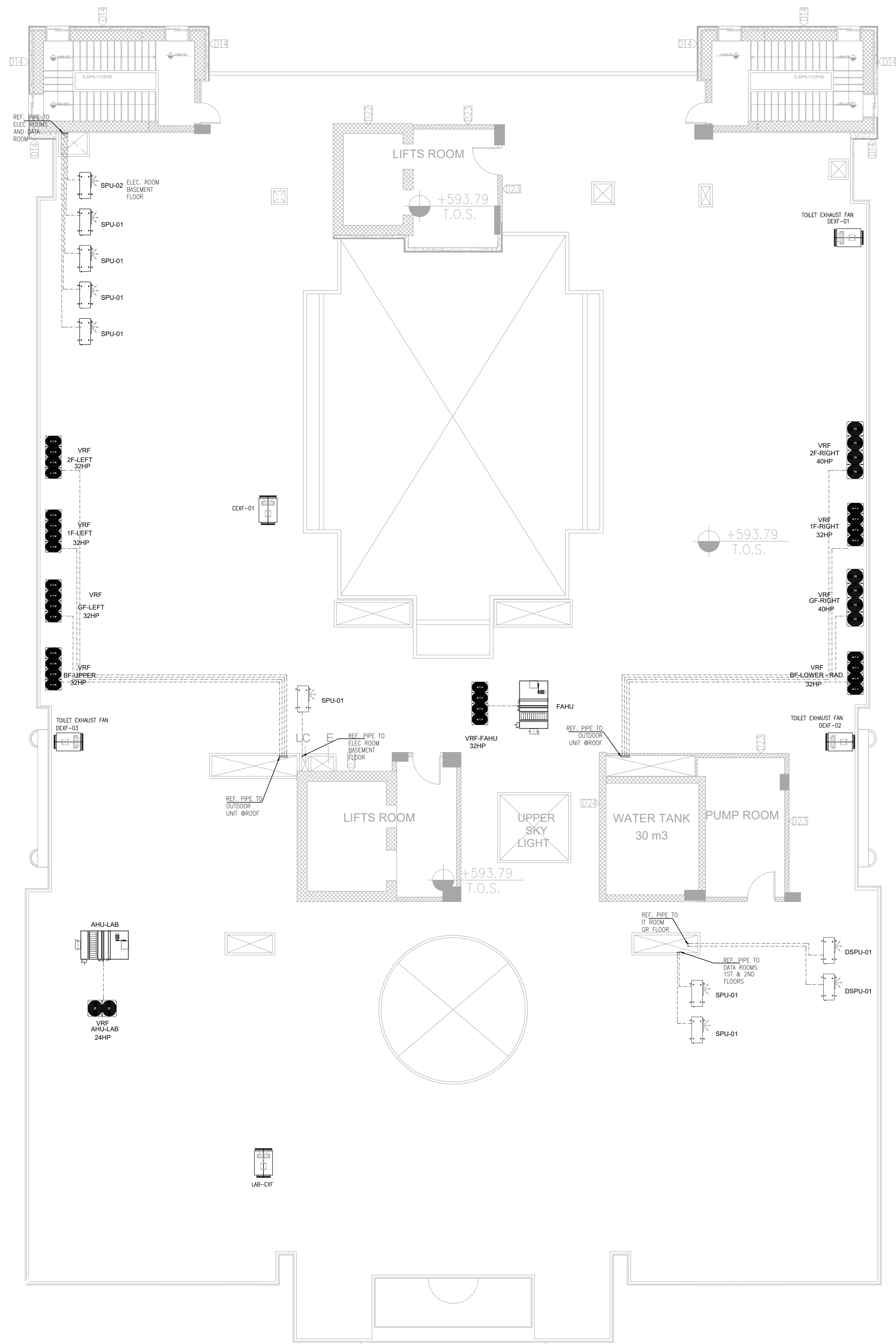
MADI & PARTNERS CONSULTING ENGINEERS
TEL:5829640-5829641 FAX:5829642
e-mail : mpce@index.com.jo

PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY
CENTER BUILDING IN IRBID CITY

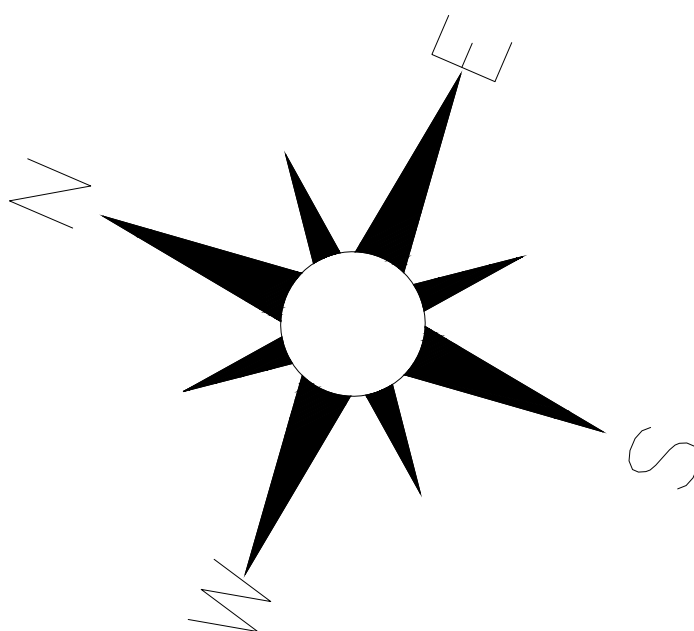
DRG. TITLE FIRST AND SECOND FLOOR
HVAC PIPING SYSTEM LAYOUT

DRAWN BY : MECH.T SCALE: 1:100
DESIGNED BY : M.Q DATE : DEC.-2023
CHECKED BY : M.M PROJECT No. DRAWING No.
APPROVED BY: F.N M-401

NOTE: REFRIGERANT PIPE SIZE SHOULD BE CHECKED BY SPECIALIST SUPPLIER
FINAL SIZE AND DESIGN CALCULATION OF PIPE WORK SHALL BE DONE AND SHOWN IN SHOP DRAWING BY SPECIALIST
WITHOUT EXTRA COST

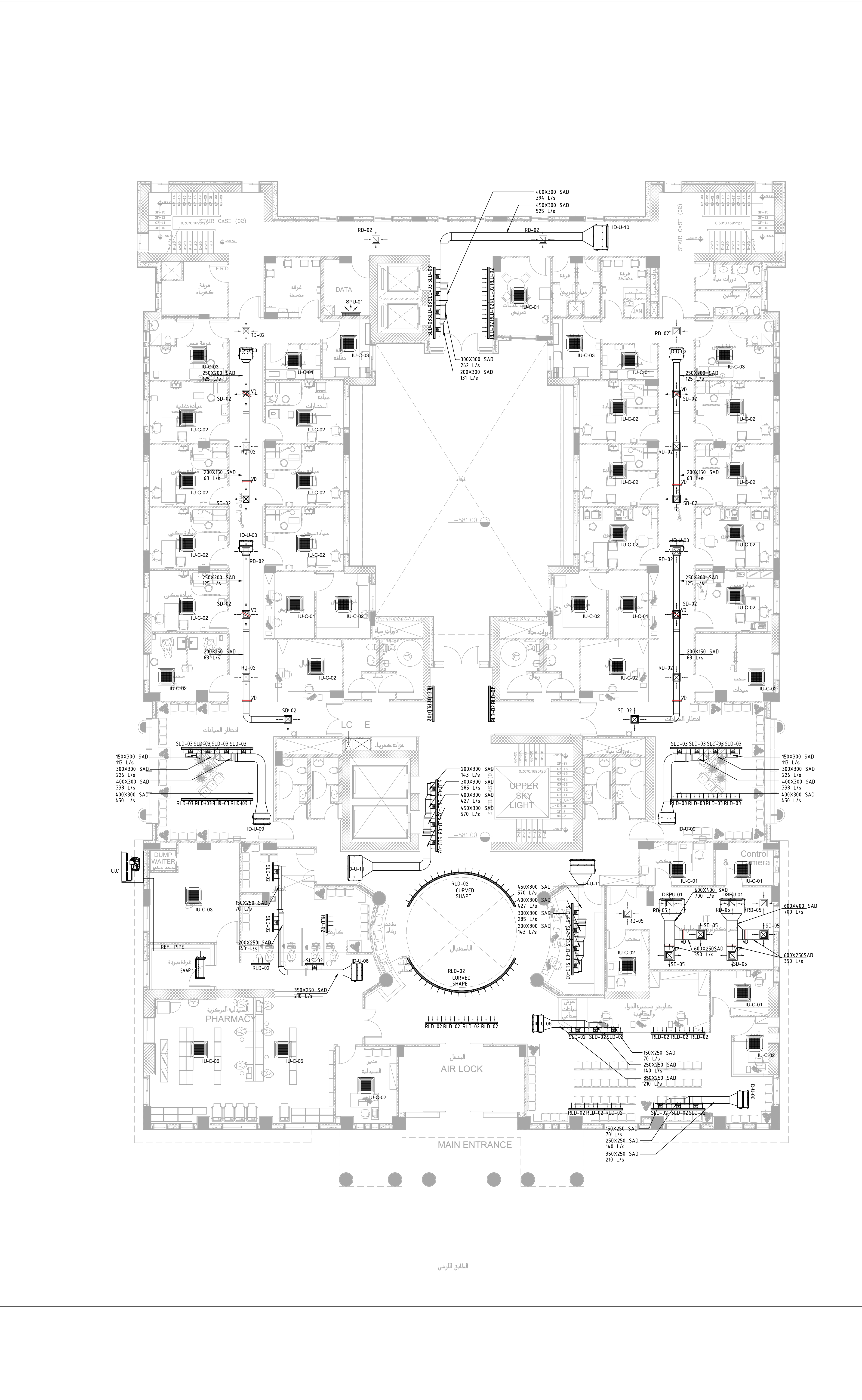


طابق الروف

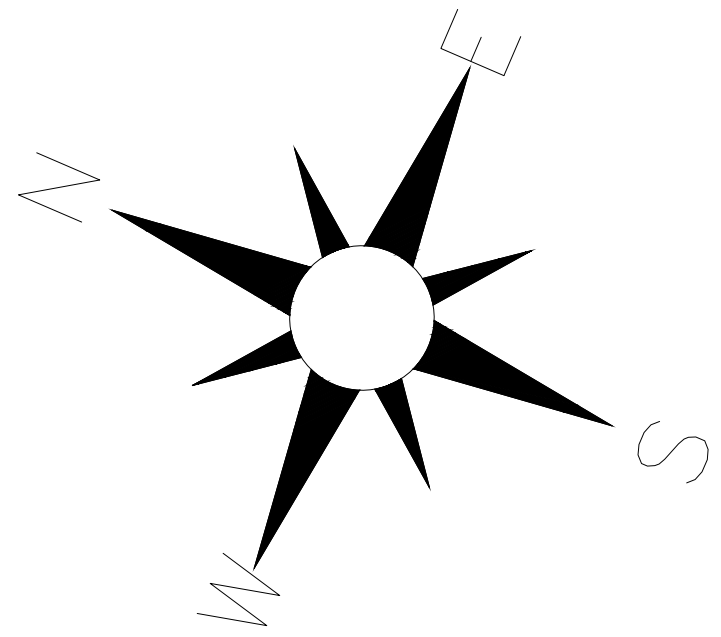


NOTES:

PLOT NO		413	
DISTRICT		IRBID	
BASIN		40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS
CLIENT NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo		
	PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY		
DRG. TITLE	ROOF PLAN: HVAC PIPING SYSTEM LAYOUT		
DRAWN BY : MECH.T		SCALE: 1:100	
DESIGNED BY : MQ		DATE : DEC.-2023	
CHECKED BY : DM		PROJECT No. DRAWING No.	
APPROVED BY: F.N		M-402	



NOTES:			
PLOT NO : 413			
DISTRICT : IRBID			
BASIN : 40 ALMUSRIB ALSHAMALI			
REV. MARK DATE MADE BY REMARKS			
CLIENT NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP MADI & PARTNERS CONSULTING ENGINEERS C E TEL:5829640-5829641 FAX:5829642 e-mail : mpce@index.com.jo			
PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY			
DRG. BASEMENT AND GROUND FLOOR: TITLE HVAC (DUCTING) SYSTEM LAYOUT			
DRAWN BY : MECH.T		SCALE: 1:100	
DESIGNED BY : M		DATE : DEC.-2023	
CHECKED BY : M		PROJECT No. DRAWING No.	
APPROVED BY: F.N		M-500	



NOTES:

PLOT NO : 413
DISTRICT : IRBID
BASIN : 40 ALMUSRIB ALSHAMALI

REV. MARK DATE MADE BY REMARKS

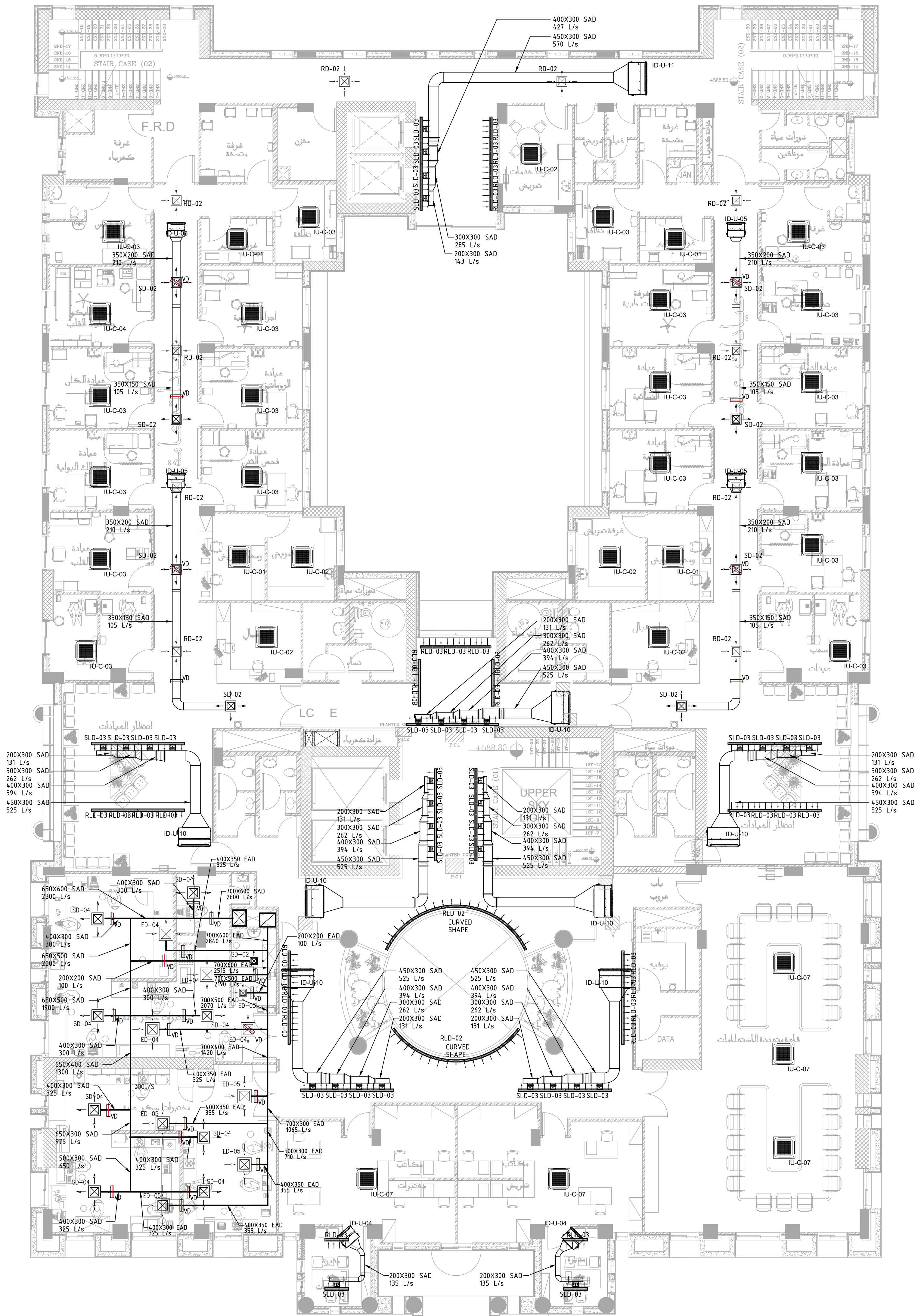
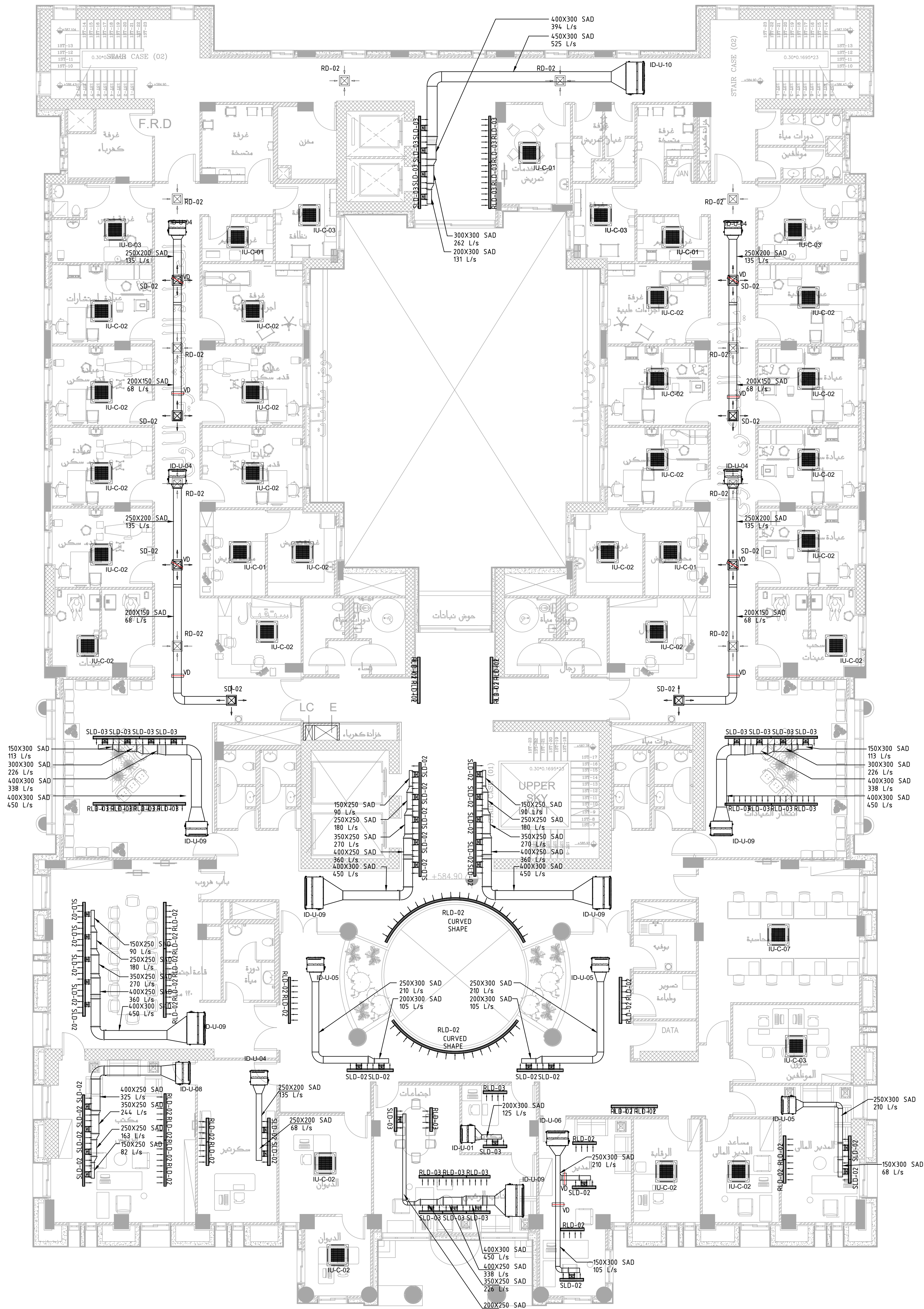
CLIENT NATIONAL CENTER FOR DIABETES
ENDOCRINOLOGY AND GENETICS

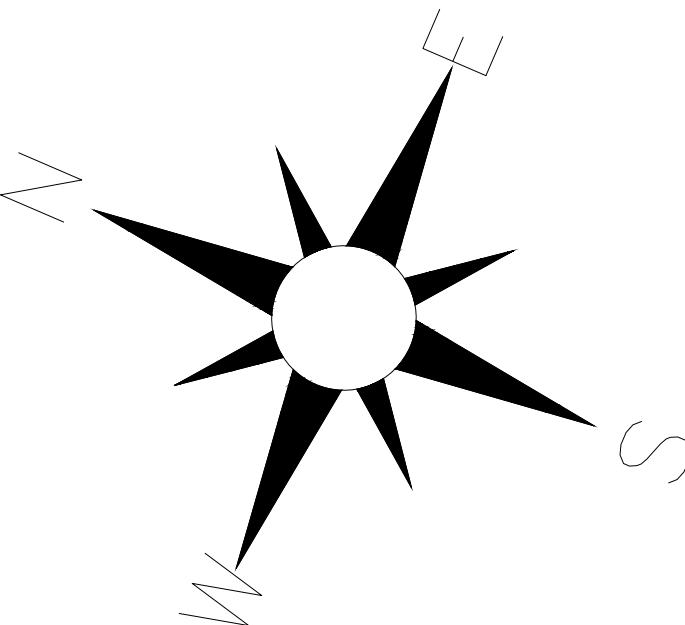
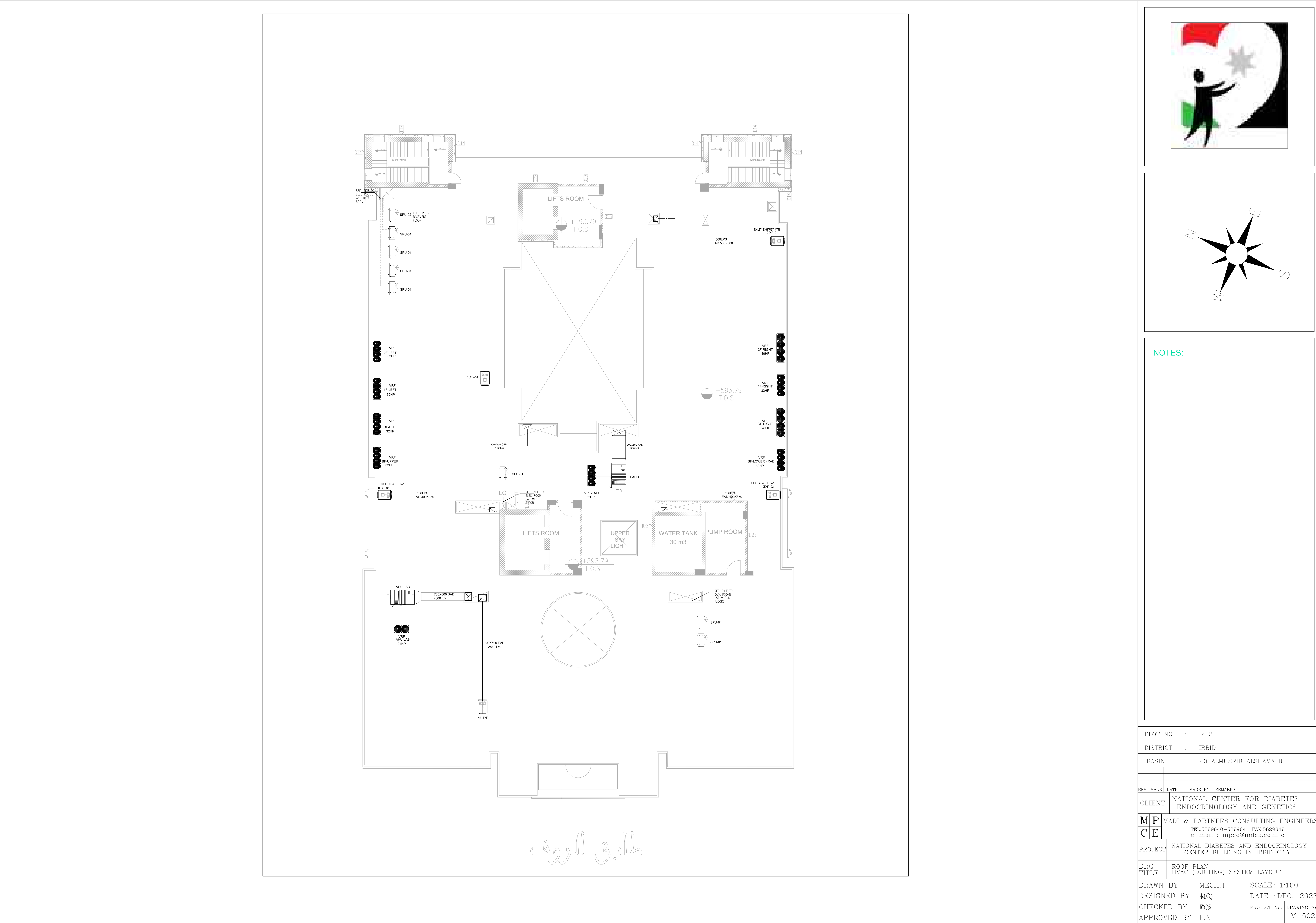
MP MADI & PARTNERS CONSULTING ENGINEERS
CE TEL:5829640-5829641 FAX:5829642
e-mail : mpce@index.com.jo

PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY
CENTER BUILDING IN IRBID CITY

DRG. TITLE FIRST AND SECOND FLOOR:
HVAC (DUCTING) SYSTEM LAYOUT

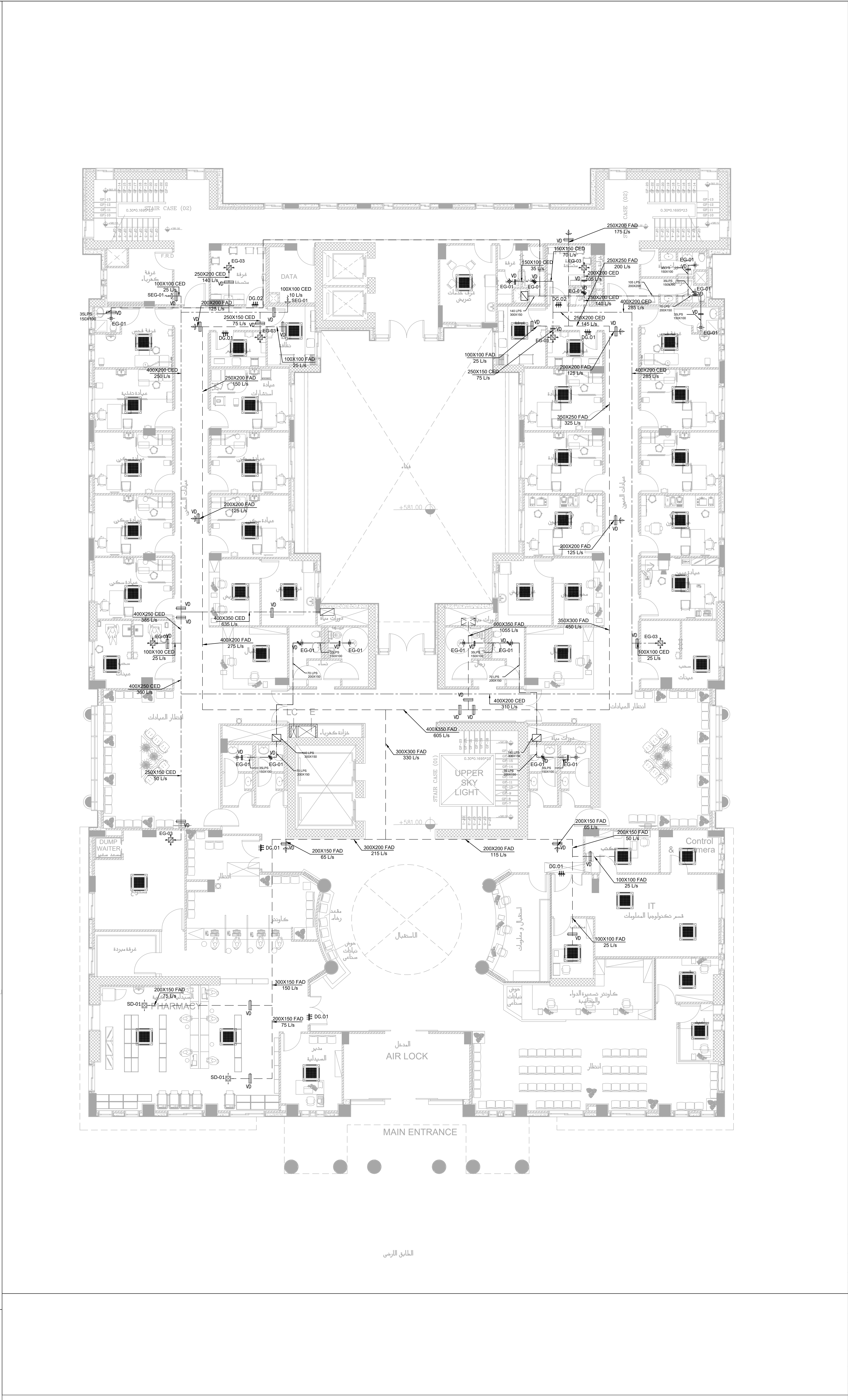
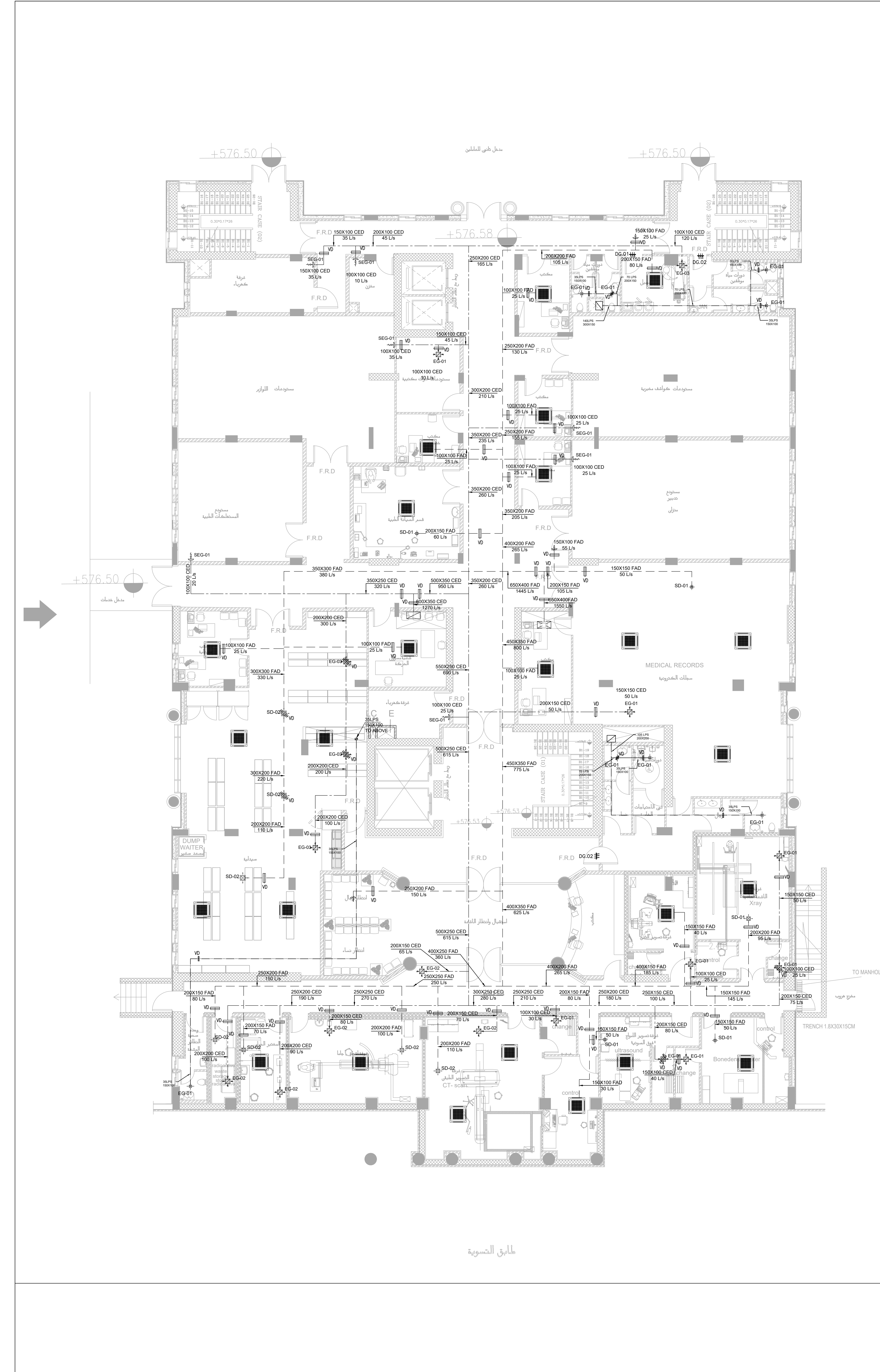
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DESIGNED BY : M.Q. DATE : DEC.-2023
CHECKED BY : M.M. PROJECT No. DRAWING No.
APPROVED BY: F.N. M-501



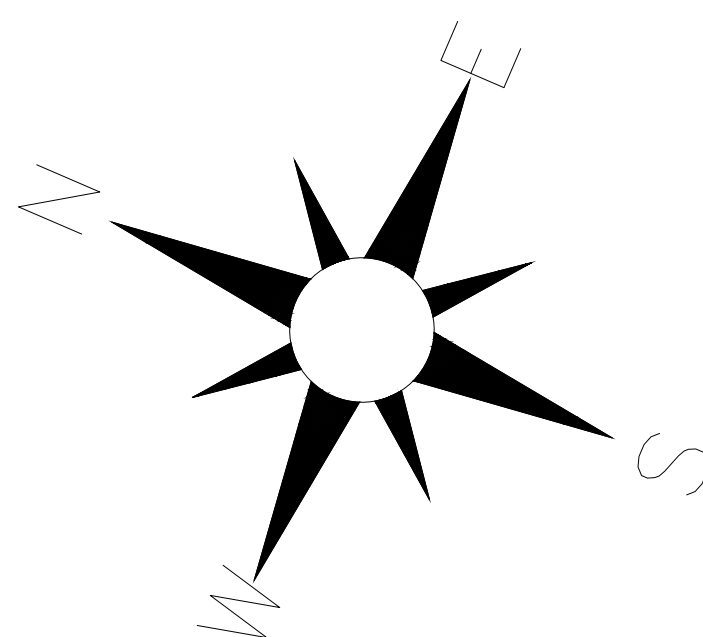


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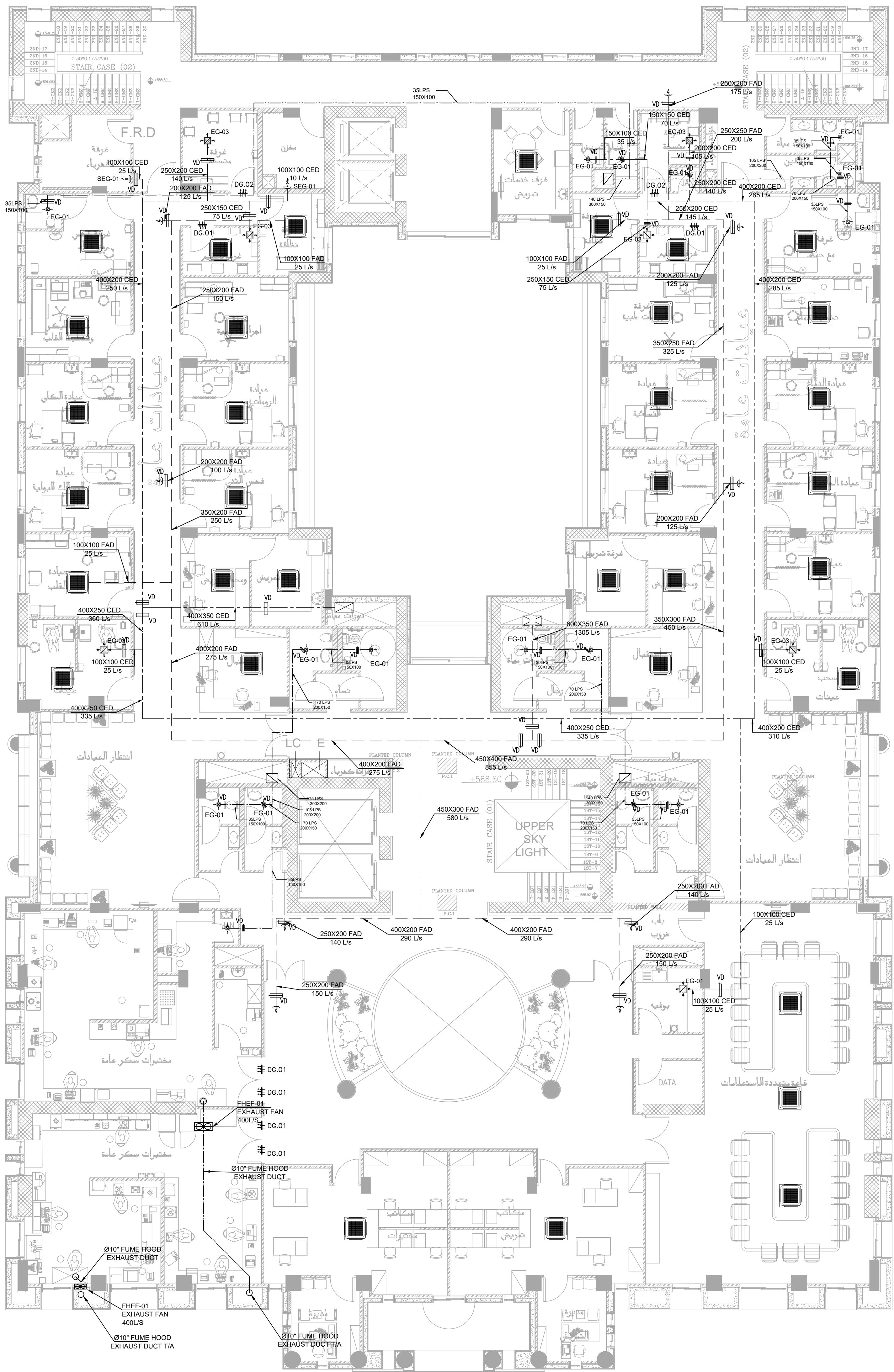
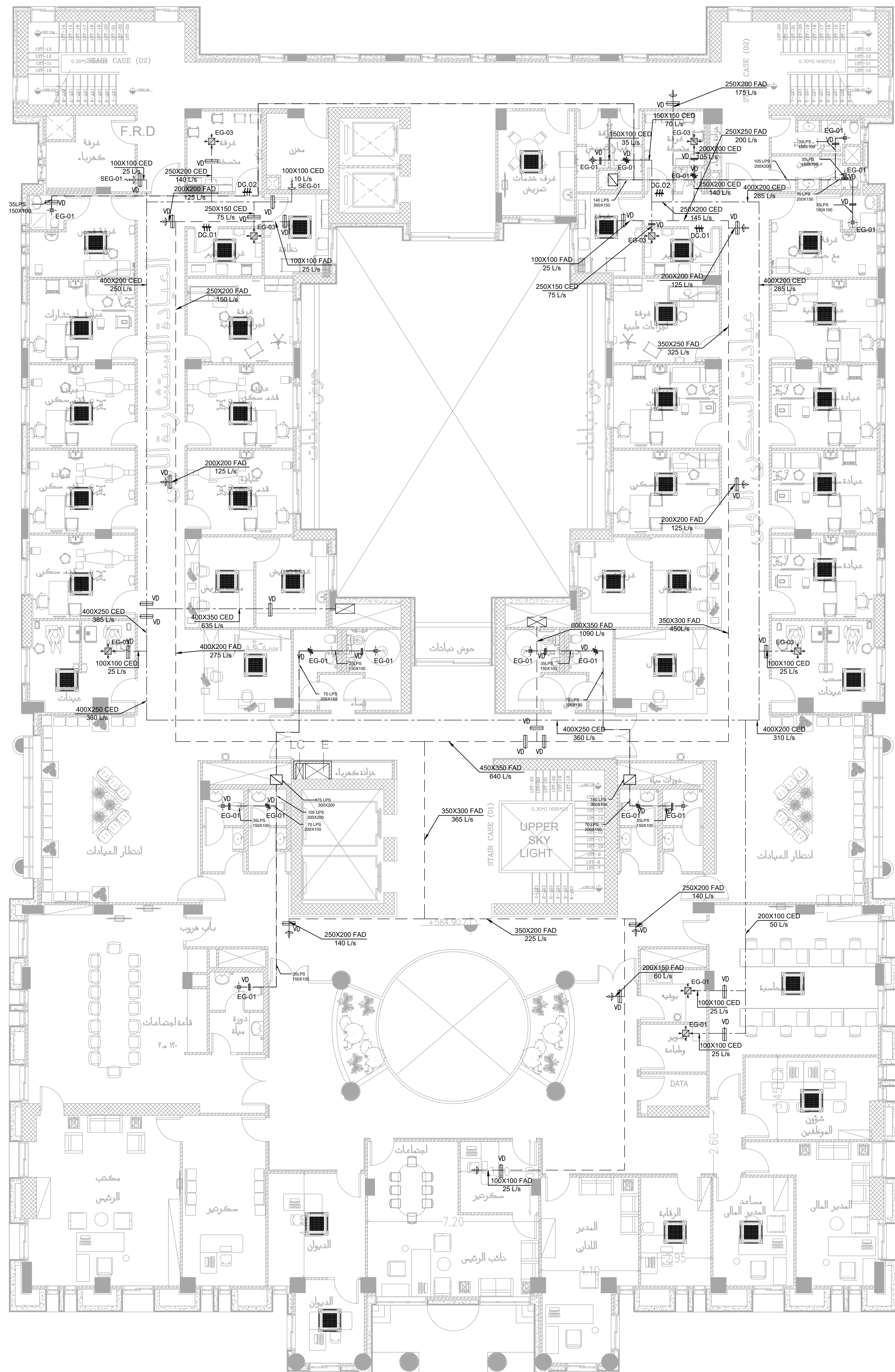
PLOT NO		413	
DISTRICT		IRBID	
BASIN		40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS
CLIENT NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS		
	TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo		
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY		
DRG. TITLE	ROOF PLAN: HVAC (DUCTING) SYSTEM LAYOUT		
DRAWN BY : MECH.T		SCALE: 1:100	
DESIGNED BY: MQ		DATE :DEC.- 2023	
CHECKED BY: DM		PROJECT No.	DRAWING No.
APPROVED BY: F.N			
		M-502	



NOTES:			
PLOT NO : 413			
DISTRICT : IRBID			
BASIN : 40 ALMUSRIB ALSHAMALI			
REV. MARK DATE MADE BY REMARKS			
CLIENT NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP MADI & PARTNERS CONSULTING ENGINEERS C E TEL:5829640-5829641 FAX:5829642 e-mail : mpce@index.com.jo			
PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY			
DRG. TITLE BASEMENT AND GROUND FLOOR: HVAC (FRESH & EXHAUST) LAYOUT			
DRAWN BY : MECH.T		SCALE: 1:100	
DESIGNED BY : M		DATE : DEC.-2023	
CHECKED BY : M		PROJECT No. DRAWING No.	
APPROVED BY: F.N		M-600	



NOTES:



PLOT NO : 413
DISTRICT : IRBID
BASIN : 40 ALMUSRIB ALSHAMALI

REV. MARK DATE MADE BY REMARKS

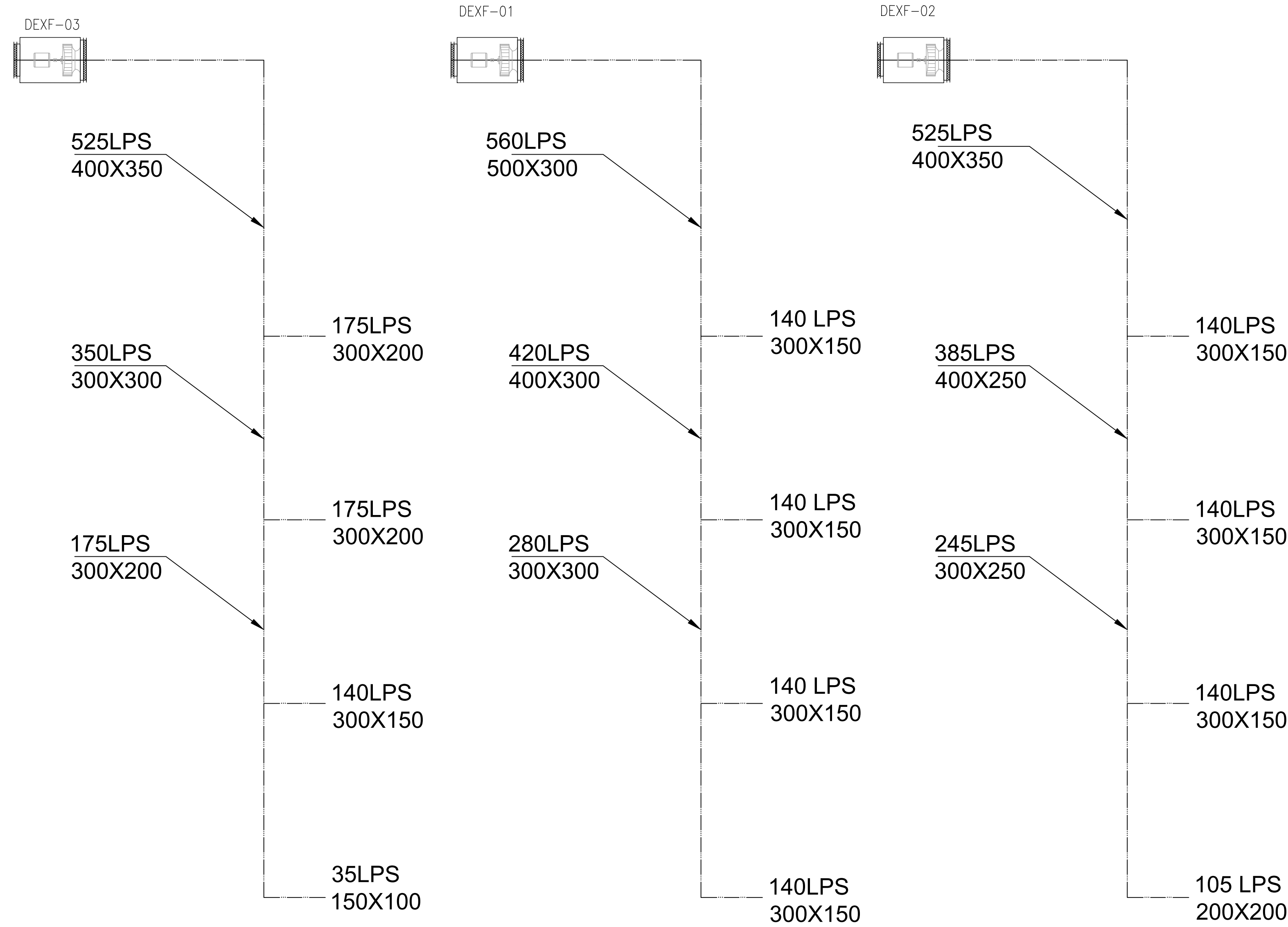
CLIENT NATIONAL CENTER FOR DIABETES
ENDOCRINOLOGY AND GENETICS

MP MADI & PARTNERS CONSULTING ENGINEERS
CE TEL:5829640-5829641 FAX:5829642
e-mail : mpce@index.com.jo

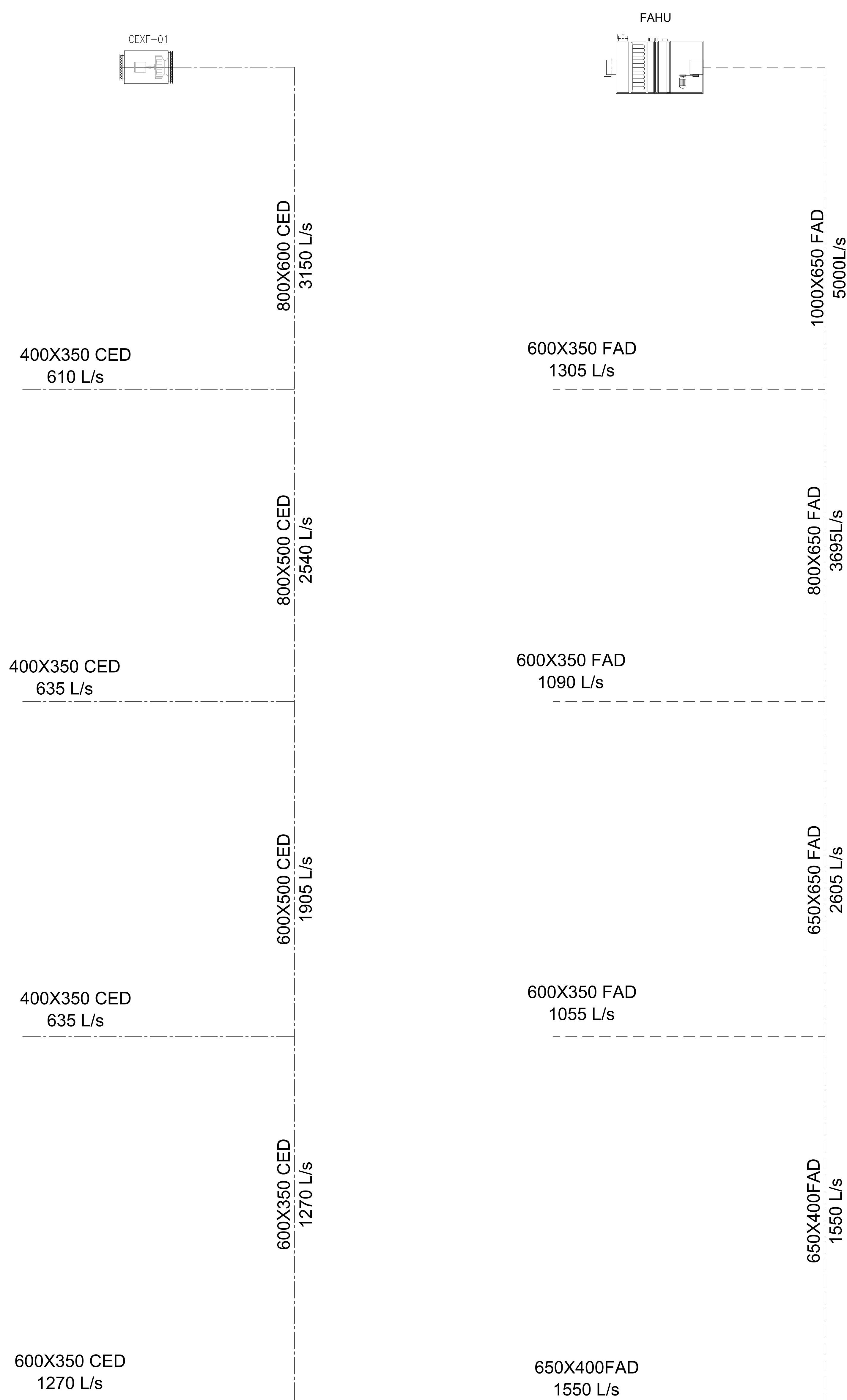
PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY
CENTER BUILDING IN IRBID CITY

DRG. TITLE FIRST AND SECOND FLOOR:
HVAC (FRESH & EXHAUST) LAYOUT

DRAWN BY : MECH.T SCALE: 1:100
DESIGNED BY : MQR DATE : DEC.-2023
CHECKED BY : JNM PROJECT No. DRAWING No.
APPROVED BY: F.N M-601



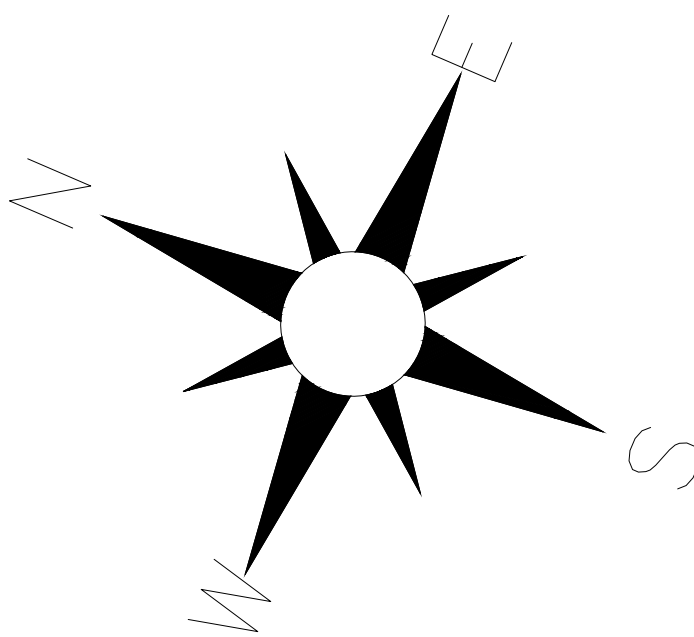
DIRTY EXHAUST RISER



CLEAN EXHAUST

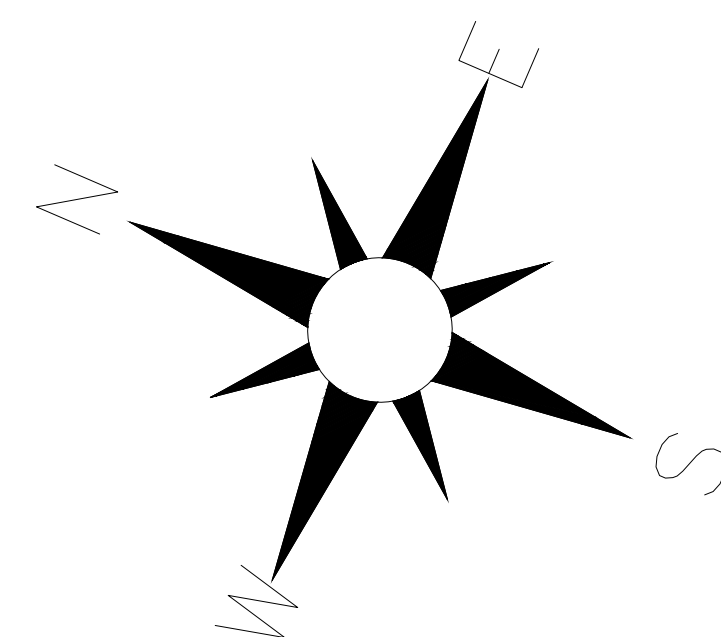
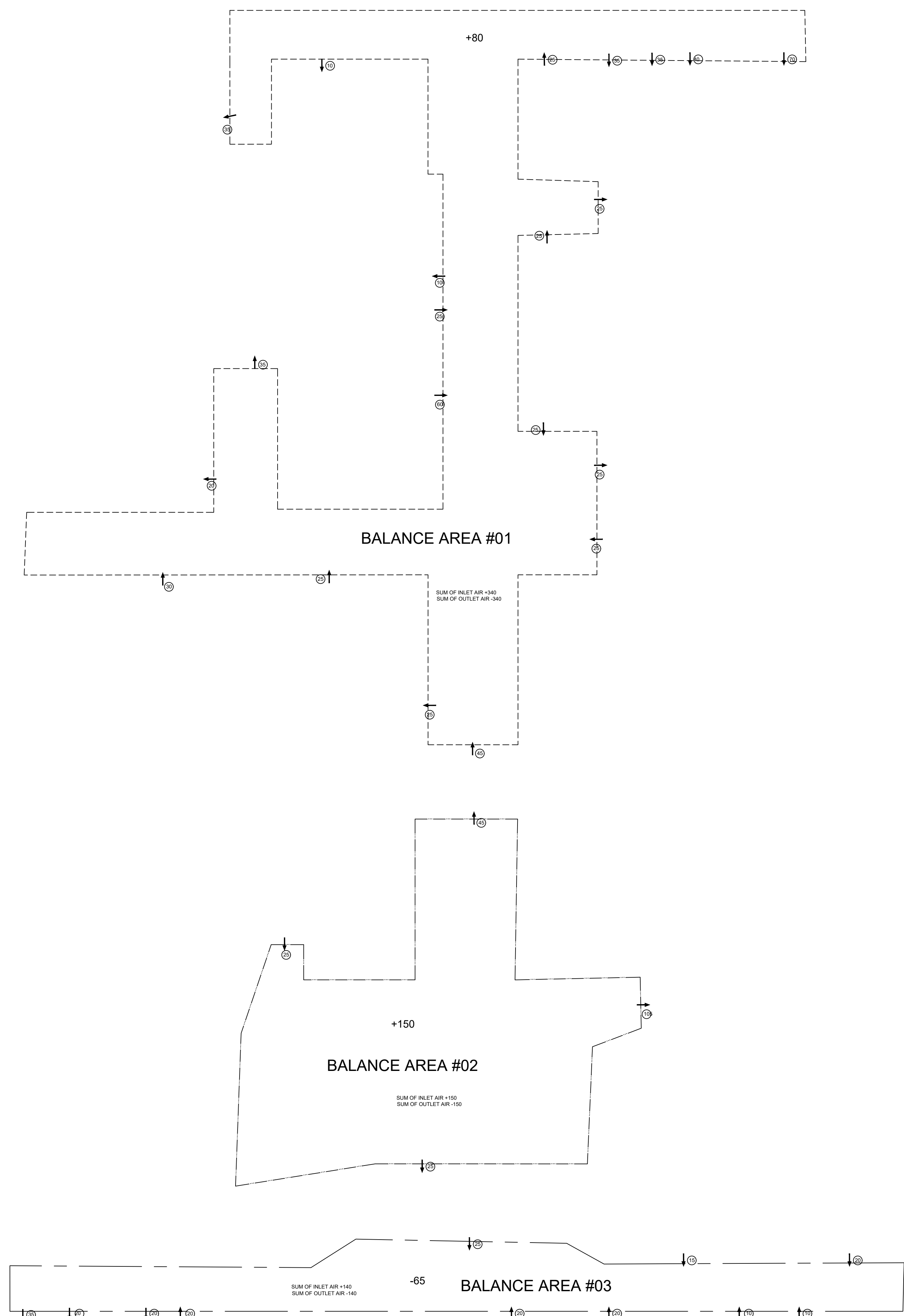
FRESH AIR

FRESH & EXHAUST RISER



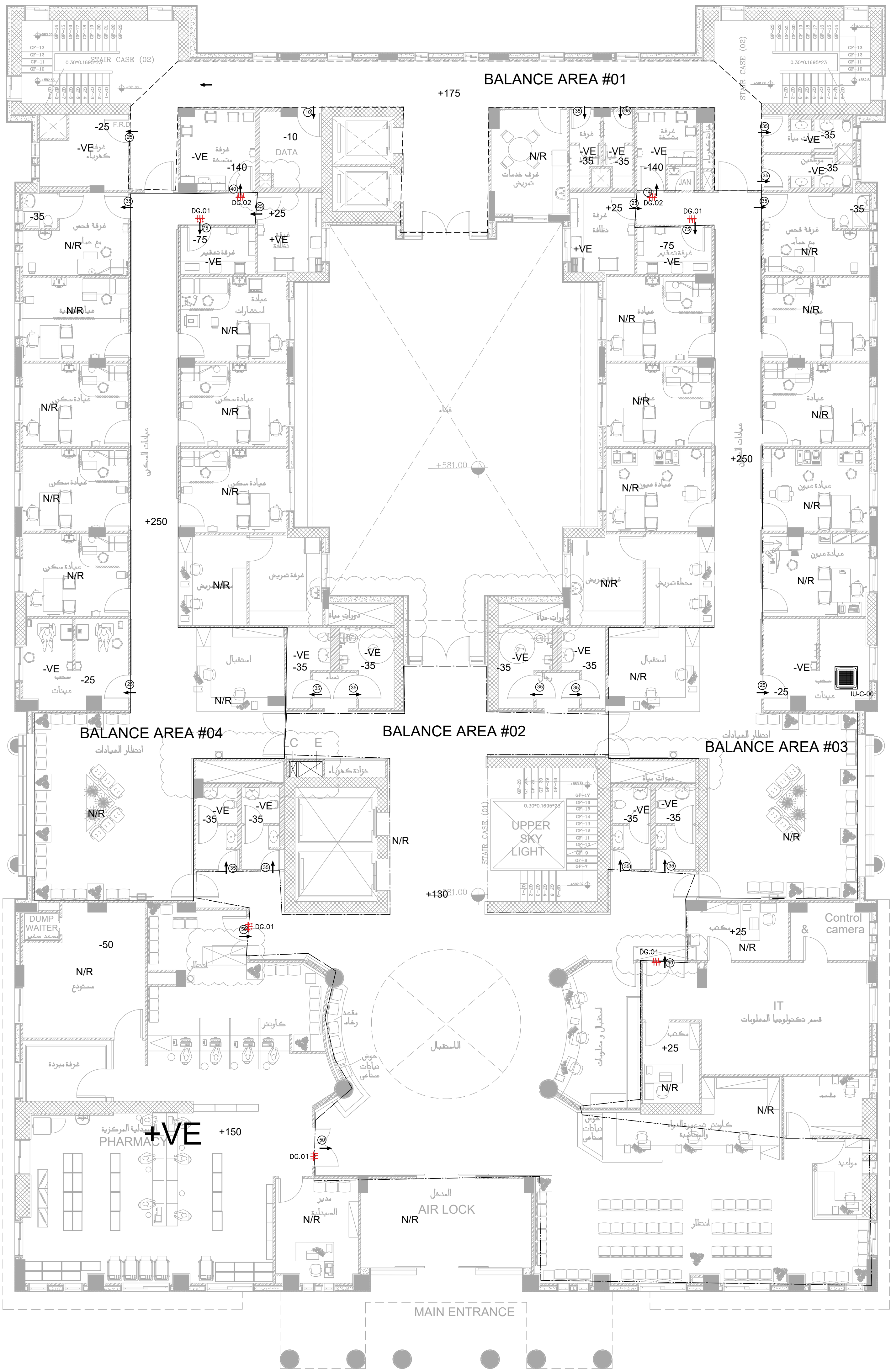
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PLOT NO		413	
DISTRICT		IRBID	
BASIN		40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS
CLIENT NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS		
	TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo		
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY		
DRG. TITLE	HVAC (FRESH & EXHAUST) RISERS		
DRAWN BY : MECH.T		SCALE : N.T.S	
DESIGNED BY : MQ		DATE : DEC.-2023	
CHECKED BY : DM		PROJECT No.	DRAWING No.
APPROVED BY : F.N			
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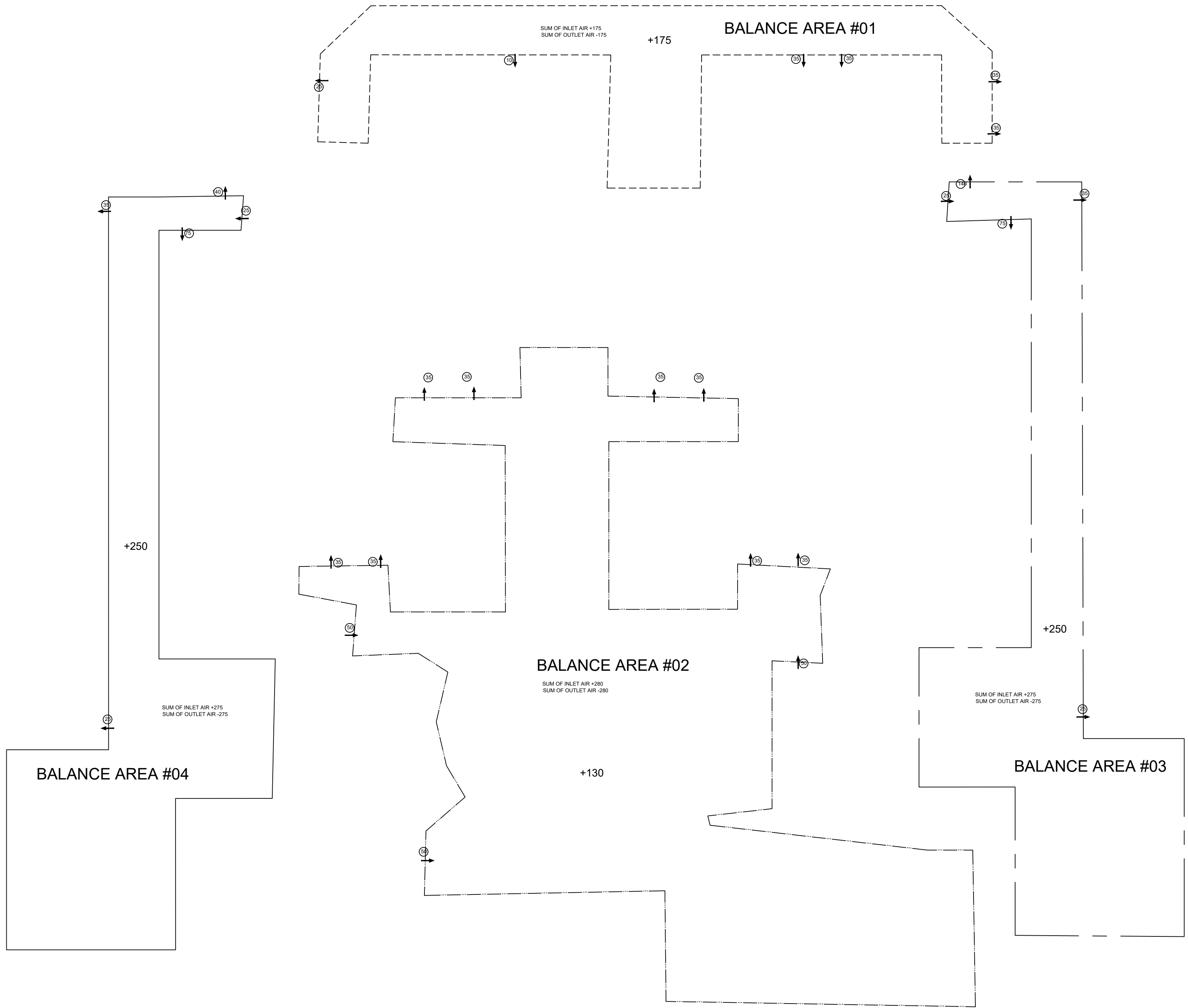


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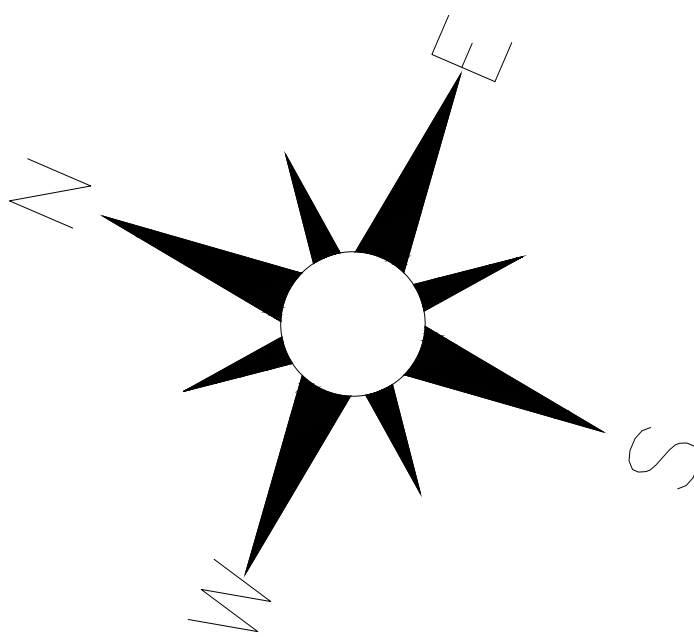
PLOT NO		413	
DISTRICT		IRBID	
BASIN		40 ALMUSRIB ALSHAMALIJI	
REV. MARK	DATE	MADE BY	REMARKS
CLIENT NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS		
	TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo		
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY		
DRG. TITLE	BASEMENT FLOOR: HVAC PRESSURIZATION & BALANCING LAYOUT		
DRAWN BY : MECH.T		SCALE: 1:100	
DESIGNED BY : MM		DATE : DEC. - 2023	
CHECKED BY : JN		PROJECT No.	DRAWING No.
APPROVED BY : FN			M - 700



المبنى الرئيسي

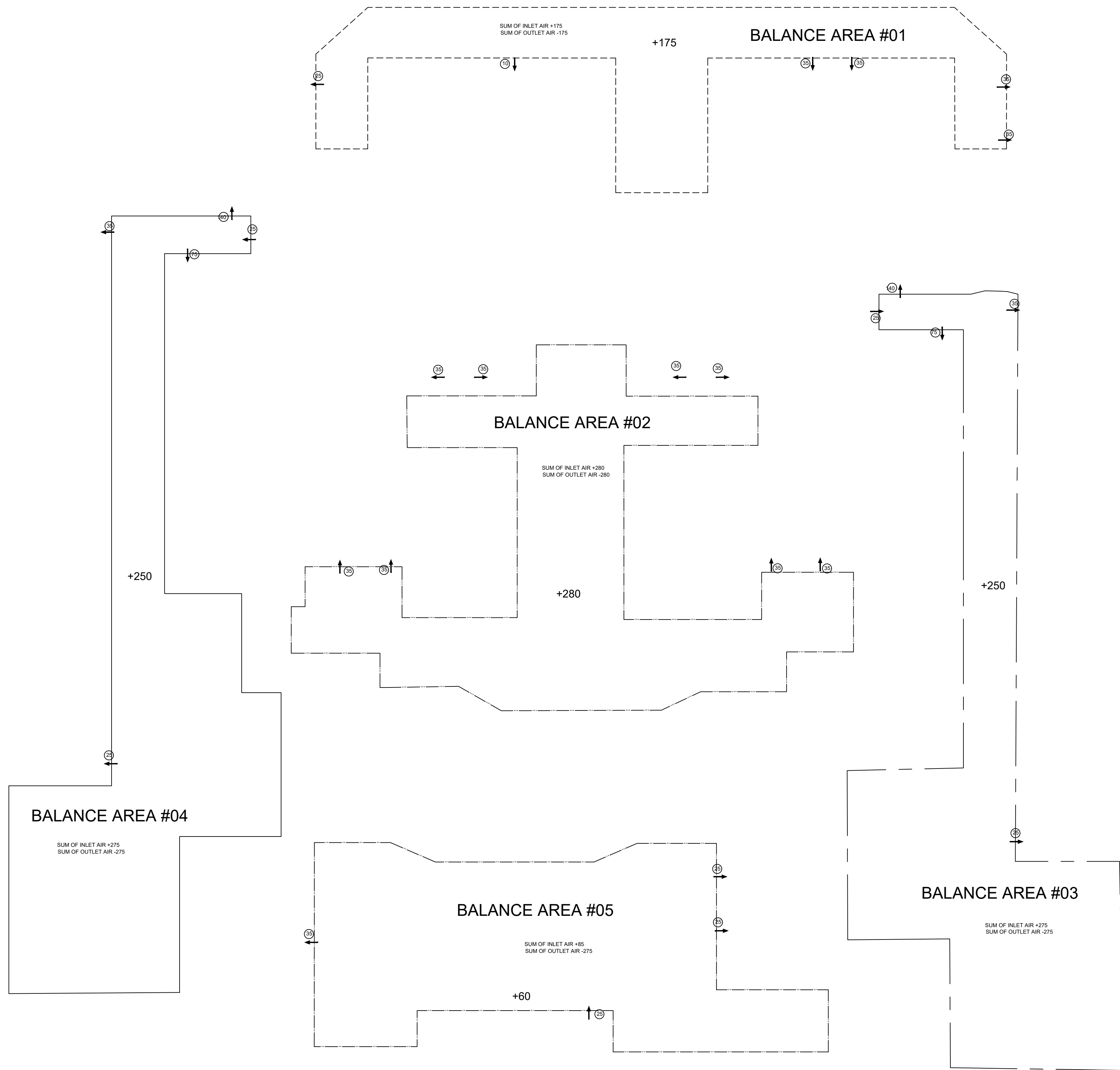
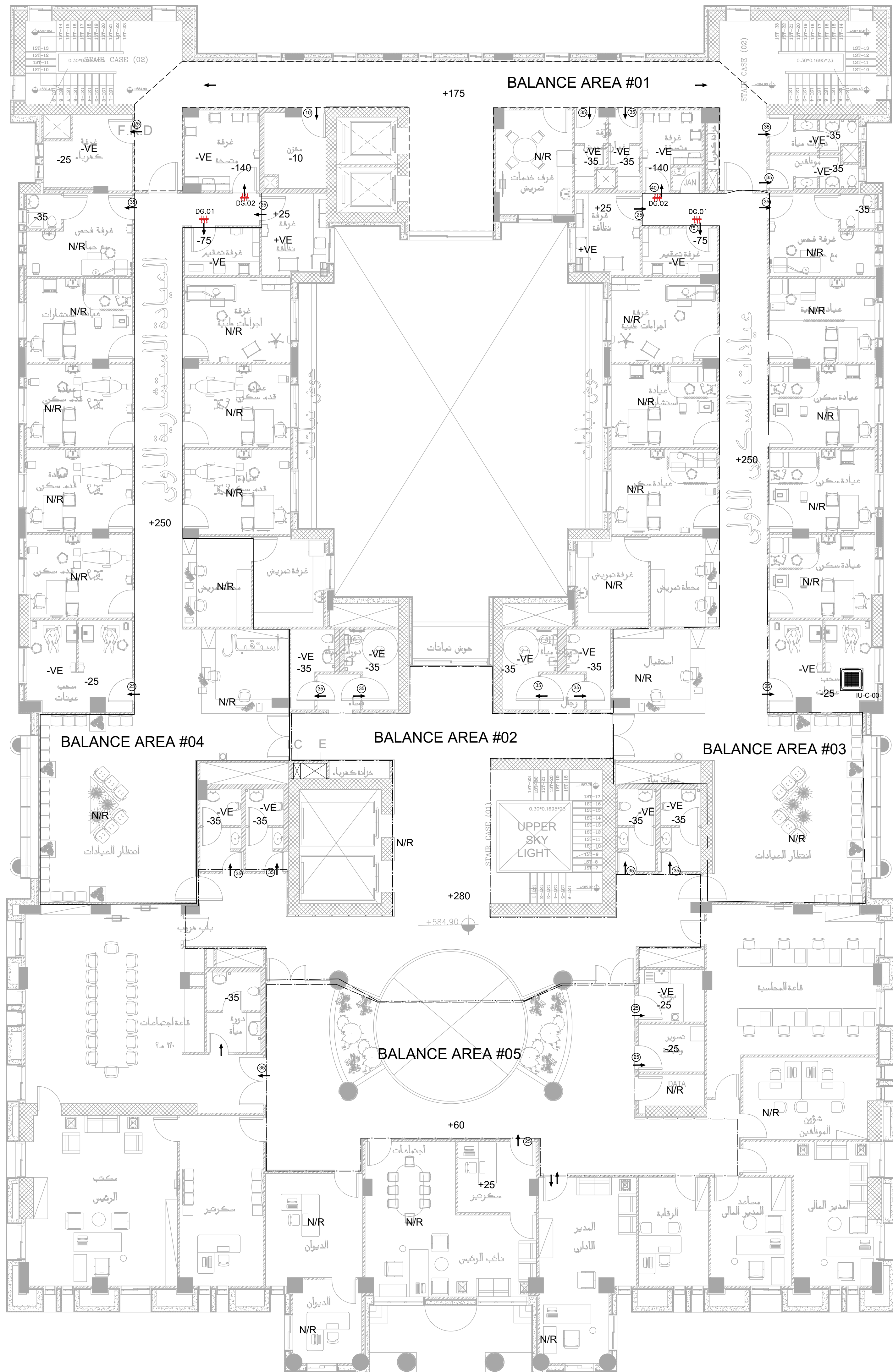


BALANCE AREA DETAIL



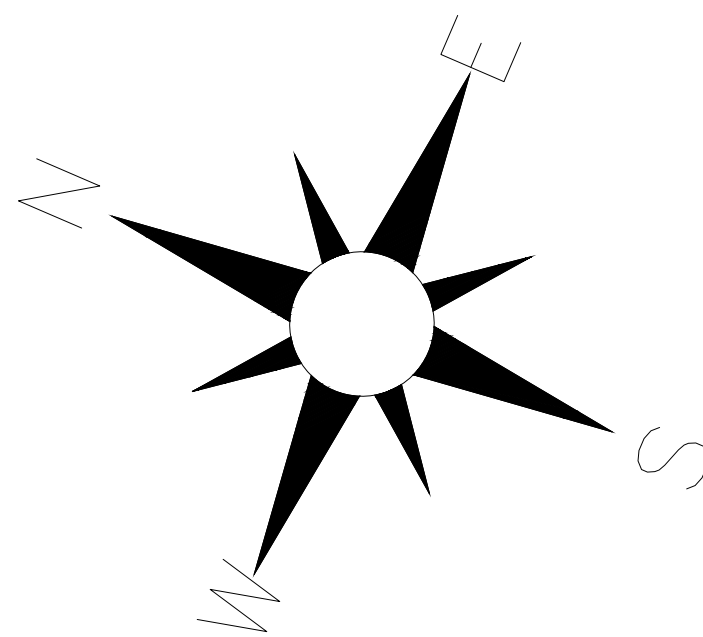
NOTES:

PLOT NO		:	413	
DISTRICT		:	IRBID	
BASIN		:	40 ALMUSRIB ALSHAMALI	
EV. MARK	DATE		MADE BY	REMARKS
CLIENT		NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS		
MP CE		MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo		
PROJECT		NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY		
DRG. TITLE		GROUND FLOOR: HVAC PRESSURIZATION & BALANCING LAYOUT		
DRAWN BY : MECH.T			SCALE: 1:100	
DESIGNED BY : AMQ			DATE : DEC.-2023	
CHECKED BY : DM			PROJECT No.	DRAWING No. M-701
APPROVED BY : F.N				



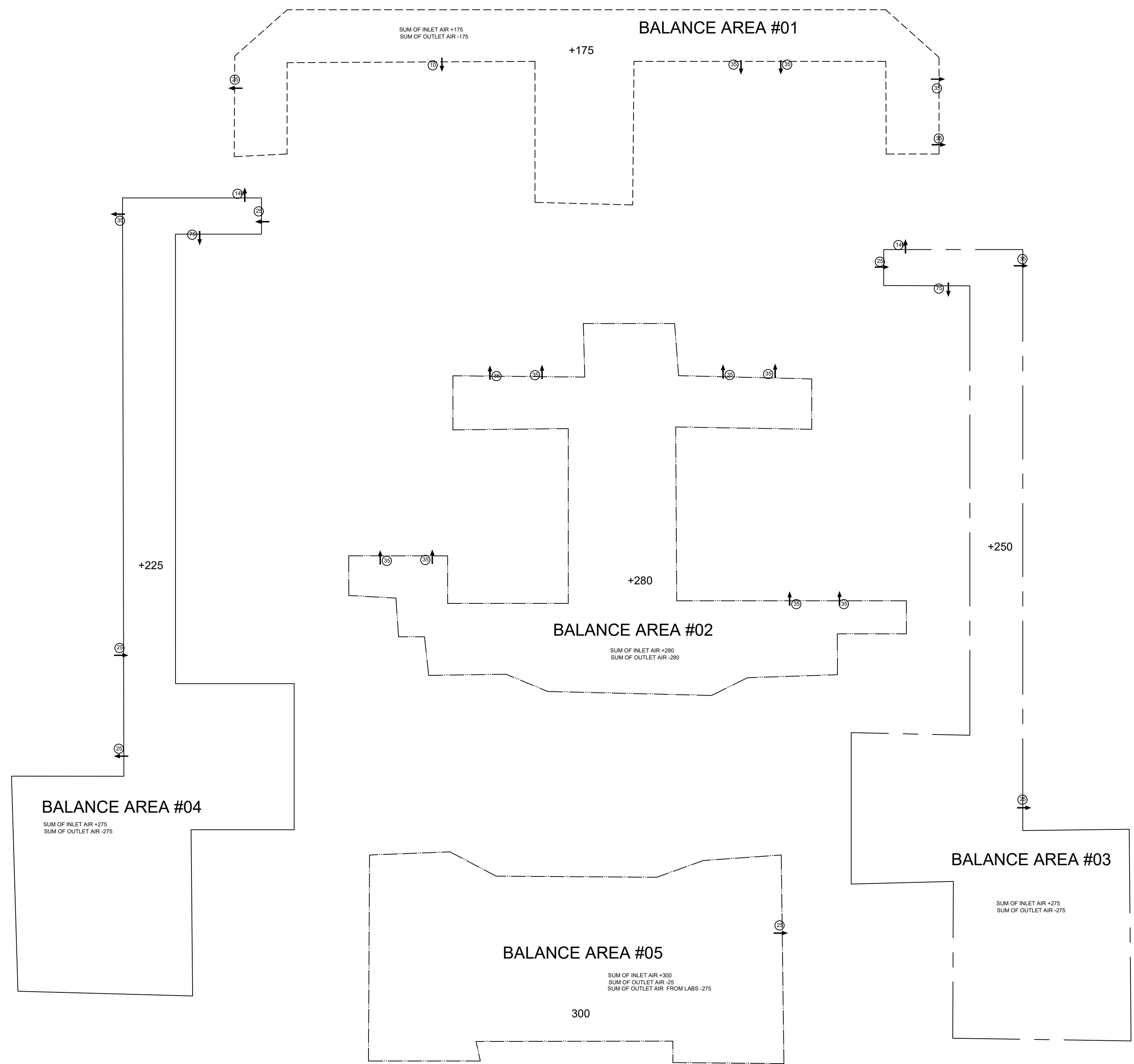
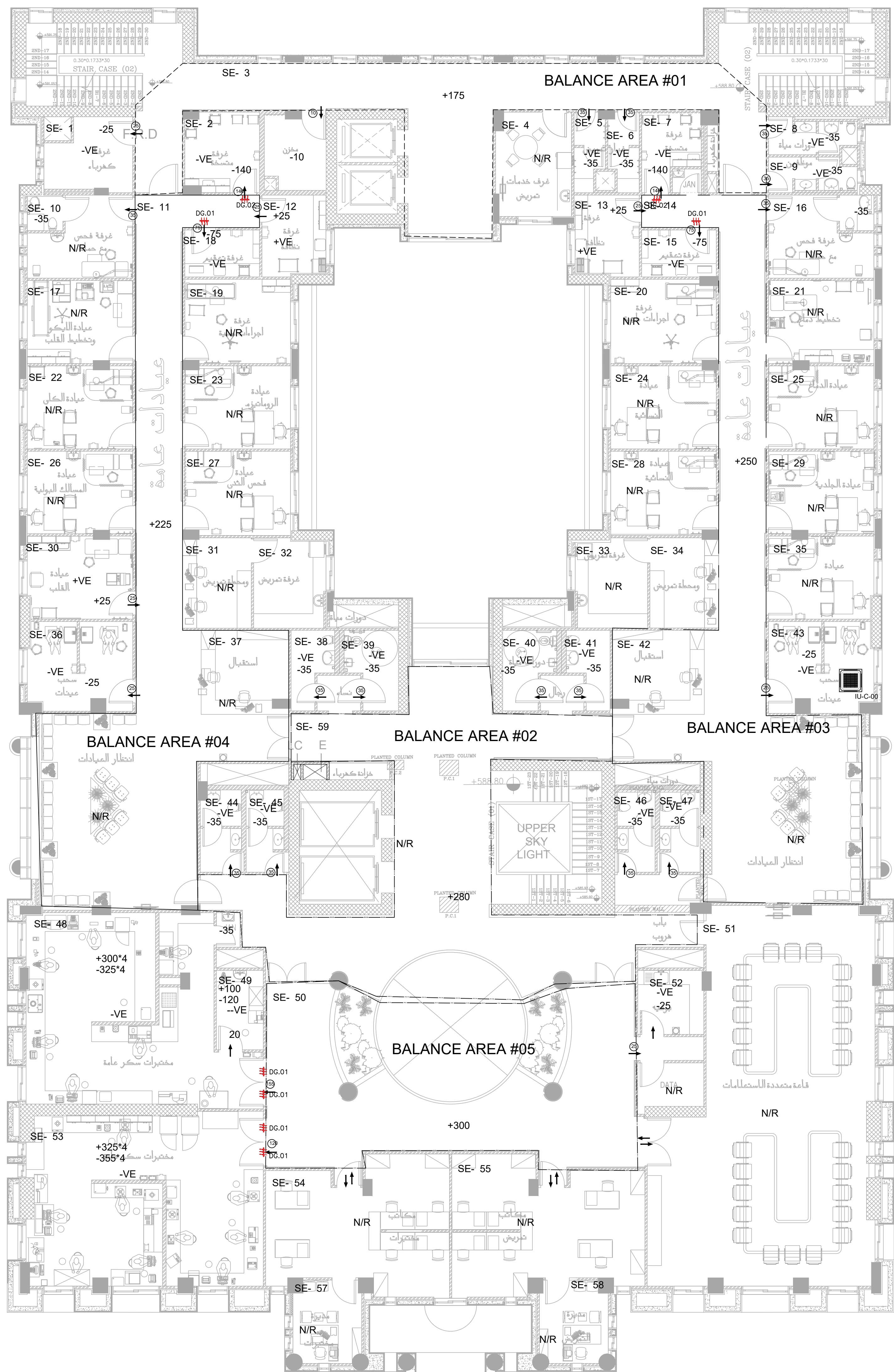
BALANCE AREA DETAIL

الطابق الاول

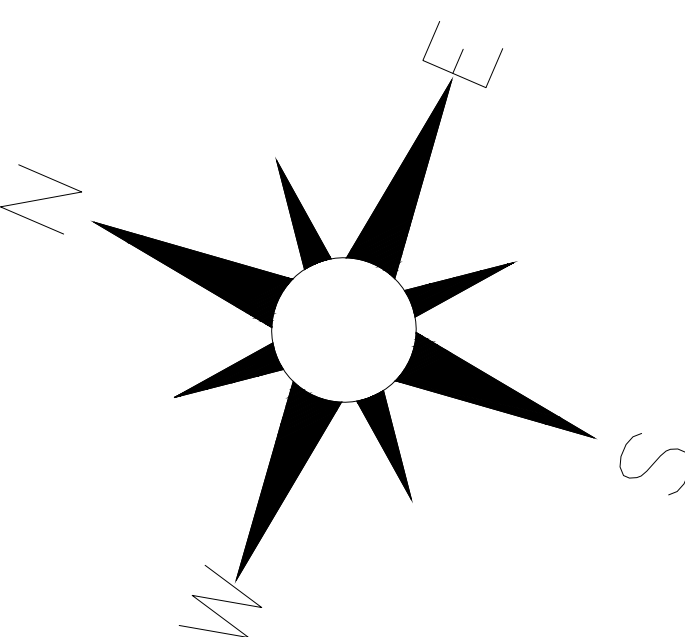


NOTES:

PLOT NO		413	
DISTRICT		IRBID	
BASIN		40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS
CLIENT NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS		
	TEL.5829640-5829641 FAX 5829642 e-mail : mpce@index.com.jo		
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY		
DRG. TITLE	FIRST FLOOR: HVAC PRESSURIZATION & BALANCING LAYOUT		
DRAWN BY : MECH.T		SCALE: 1:100	
DESIGNED BY : MM		DATE : DEC.-2023	
CHECKED BY : FM		PROJECT No.	DRAWING No. M-702
APPROVED BY: F.N			

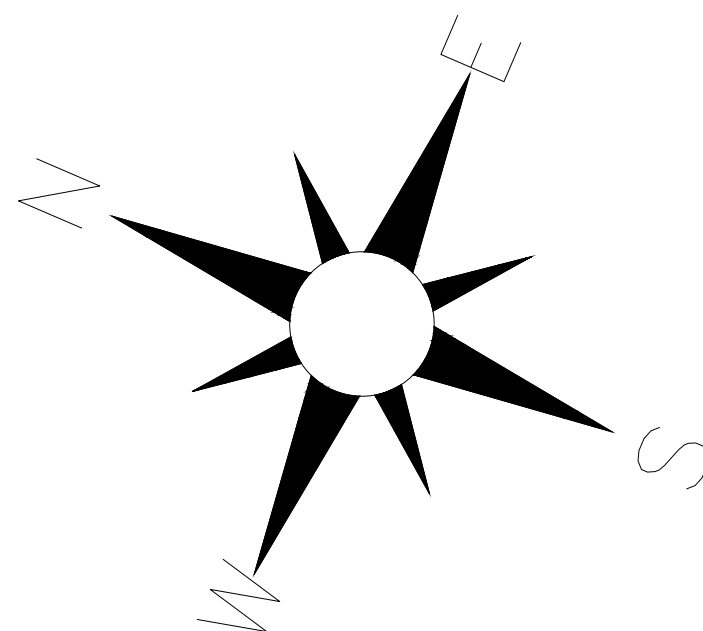


BALANCE AREA DETAIL



NOTES:

PLOT NO		413	
DISTRICT		IRBID	
BASIN		40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS
CLIENT		NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS	
MP CE	MADI & PARTNERS CONSULTING ENGINEERS		
	TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo		
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY		
DRG. TITLE	SECOND FLOOR: HVAC PRESSURIZATION & BALANCING LAYOUT		
DRAWN BY : MECH.T		SCALE: 1:100	
DESIGNED BY : MM		DATE : DEC.-2023	
CHECKED BY : DM		PROJECT No.	DRAWING No. M-703
APPROVED BY: F.N			



NOTES:

PLOT NO : 413
DISTRICT : IRBID
BASIN : 40 ALMUSRIB ALSHAMALI

REV. MARK DATE MADE BY REMARKS

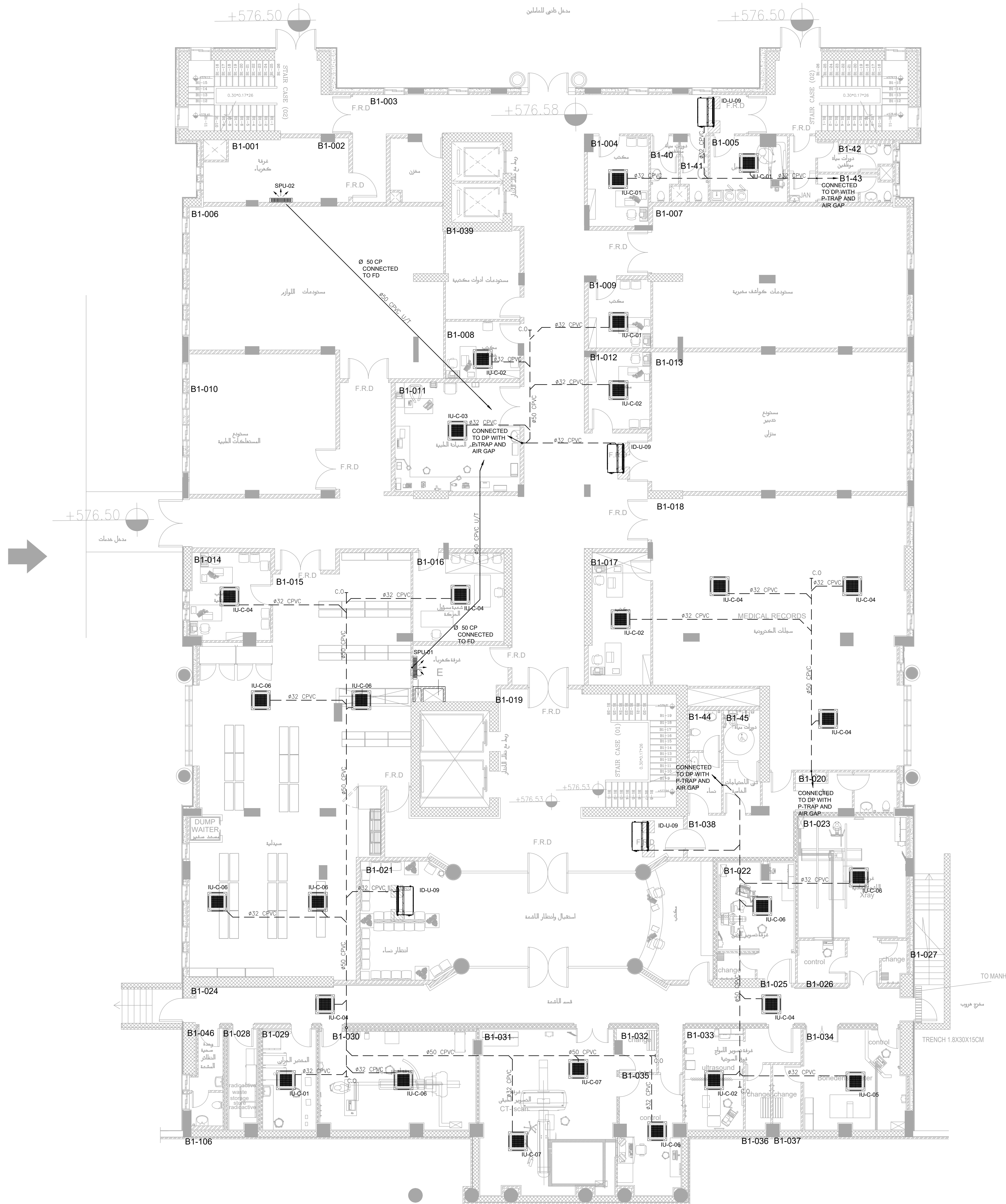
CLIENT NATIONAL CENTER FOR DIABETES
ENDOCRINOLOGY AND GENETICS

M P MADI & PARTNERS CONSULTING ENGINEERS
C E TEL:5829640-5829641 FAX:5829642
e-mail : mpce@index.com.jo

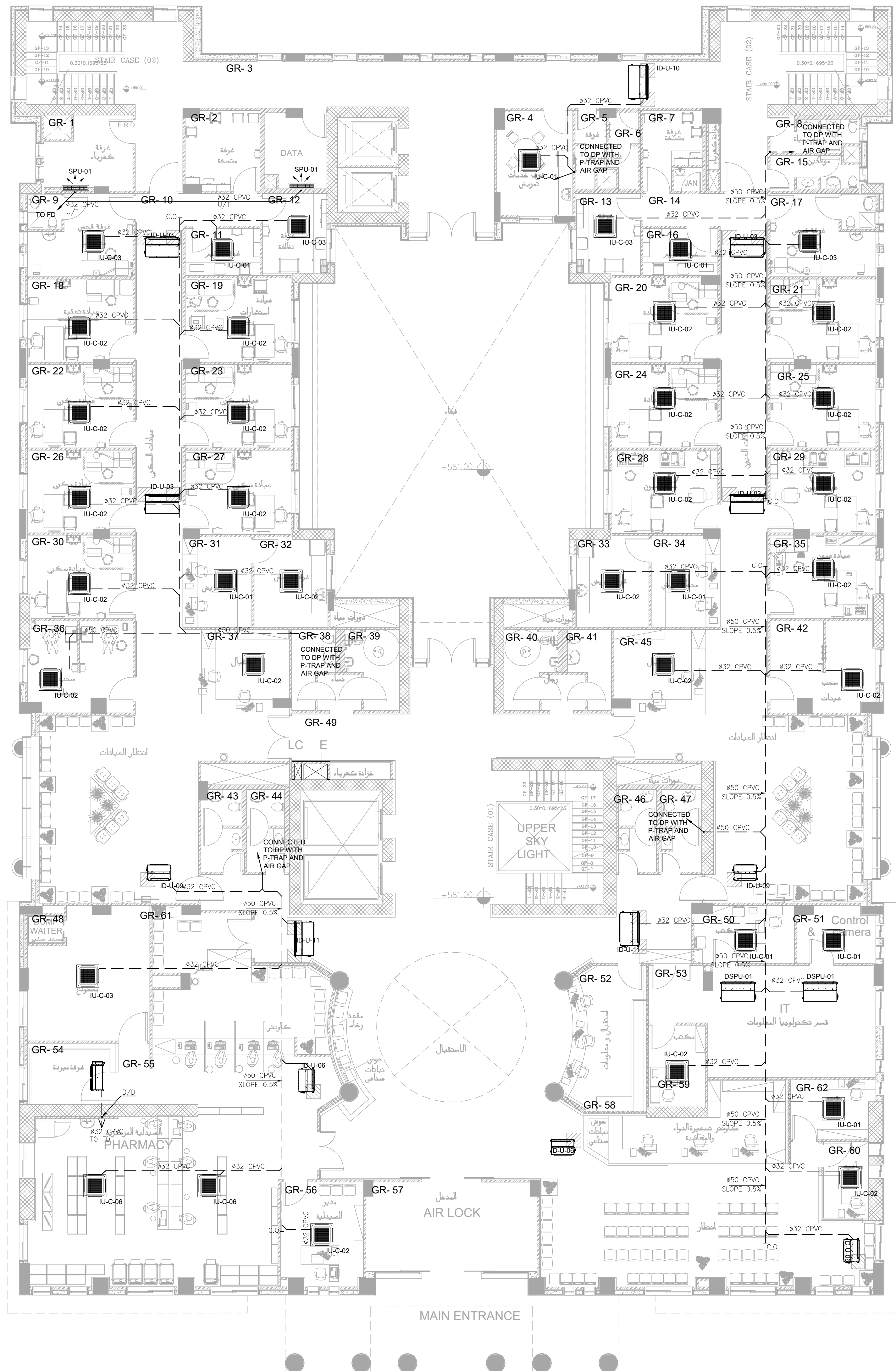
PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY
CENTER BUILDING IN IRBID CITY

DRG. TITLE BASEMENT AND GROUND FLOOR:
HVAC CONDENSATION LAYOUT

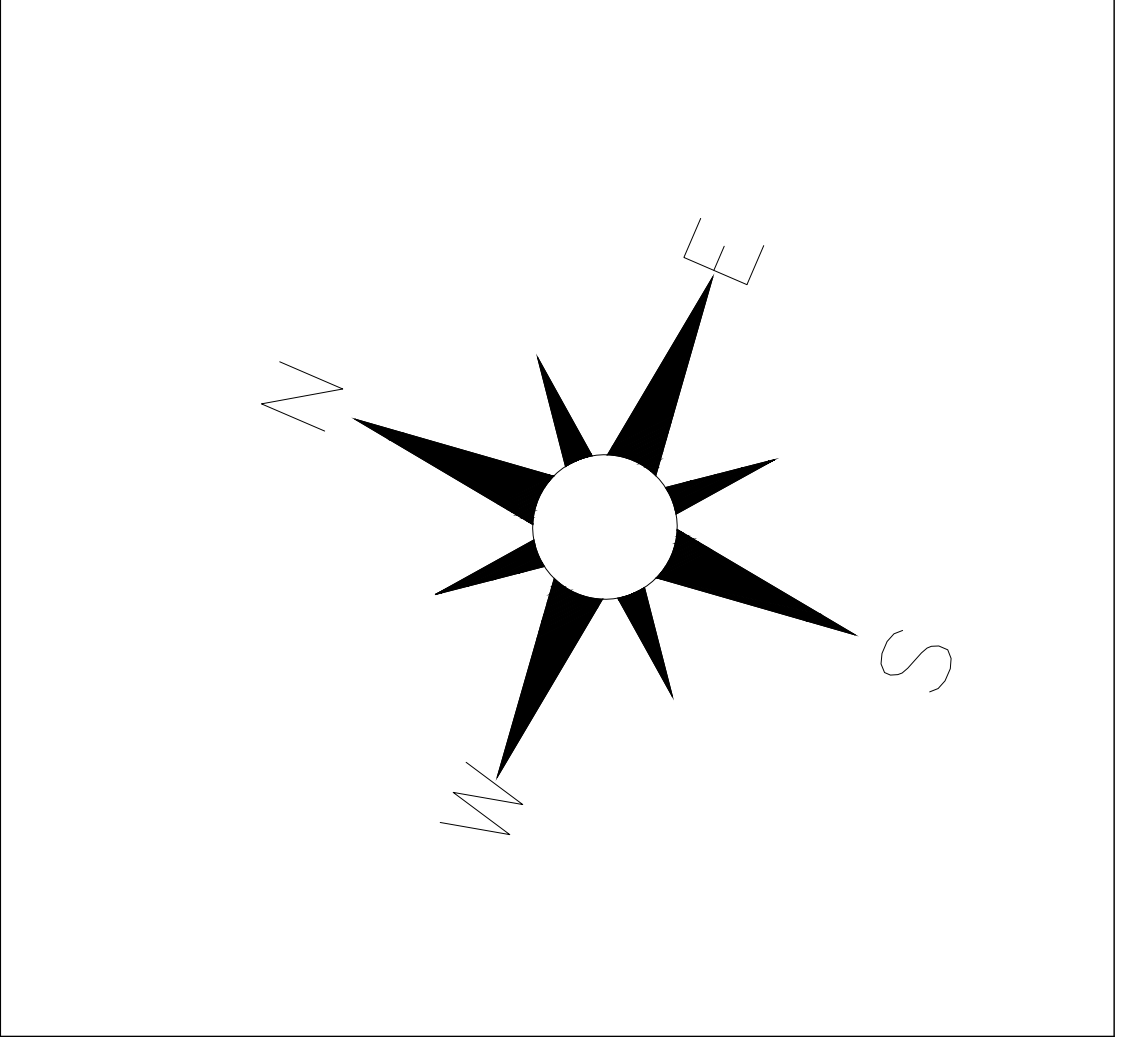
DRAWN BY : MECH.T SCALE: 1:100
DESIGNED BY : M Q DATE : DEC.-2023
CHECKED BY : M M PROJECT No. DRAWING No.
APPROVED BY: F.N M-800



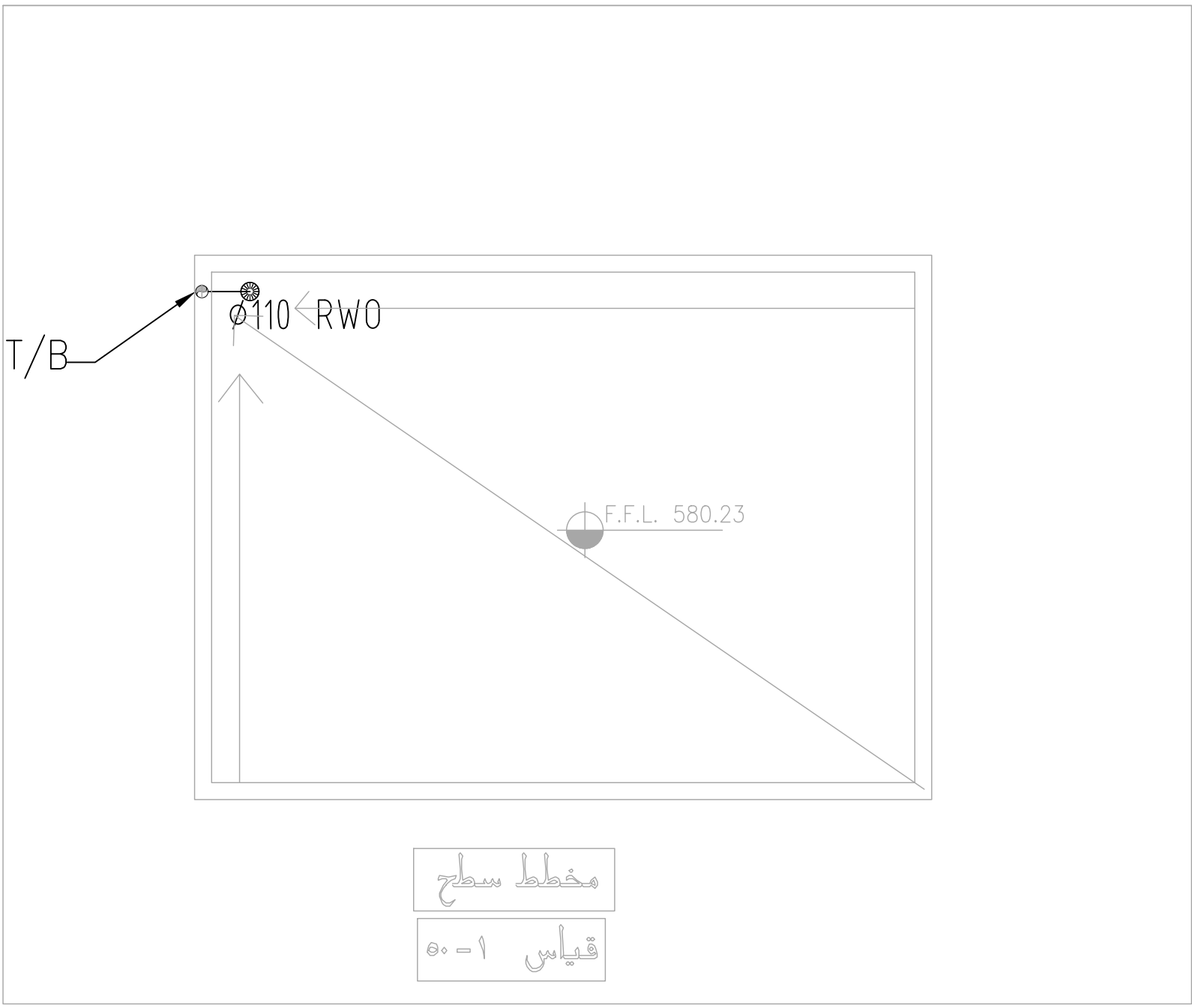
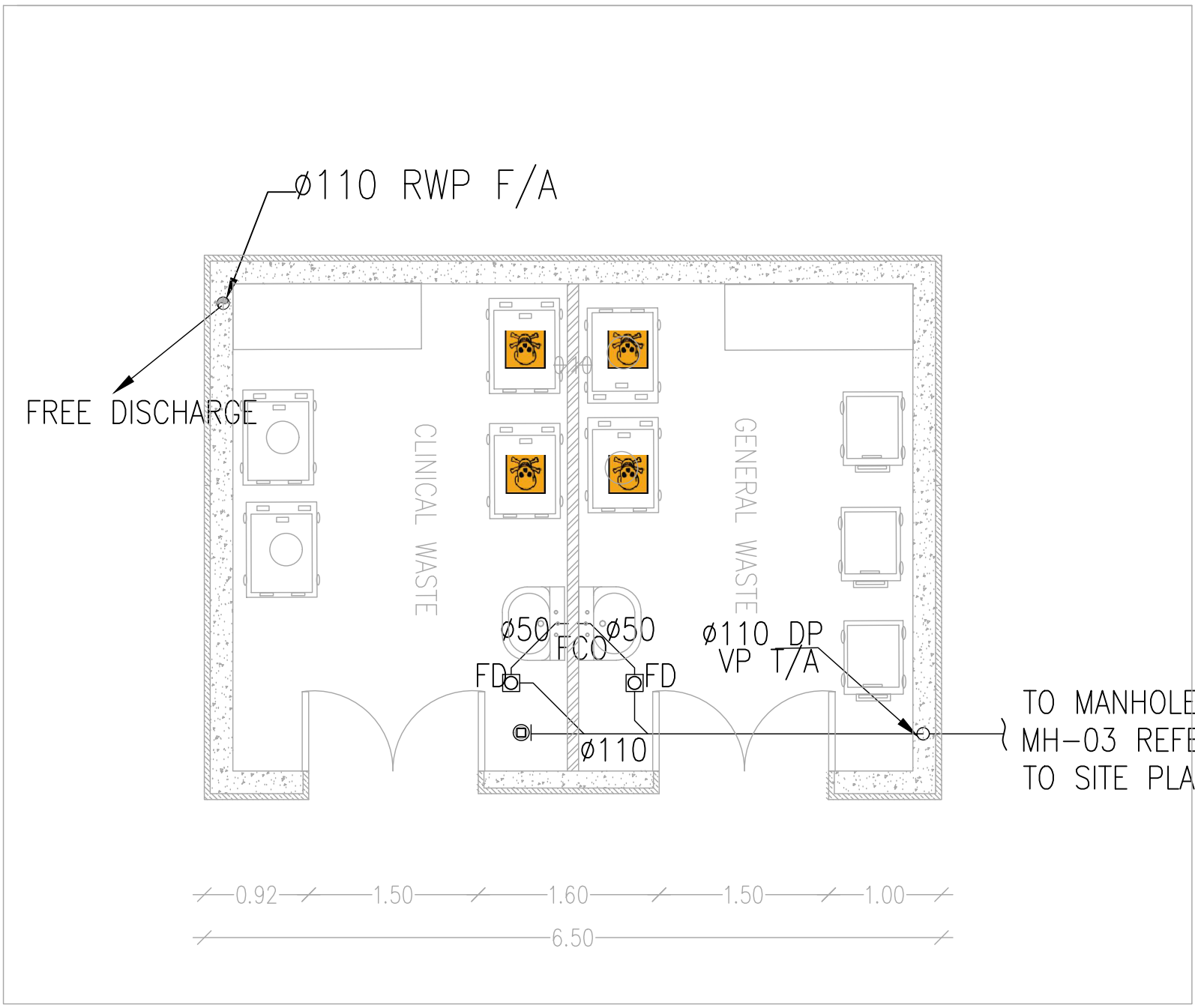
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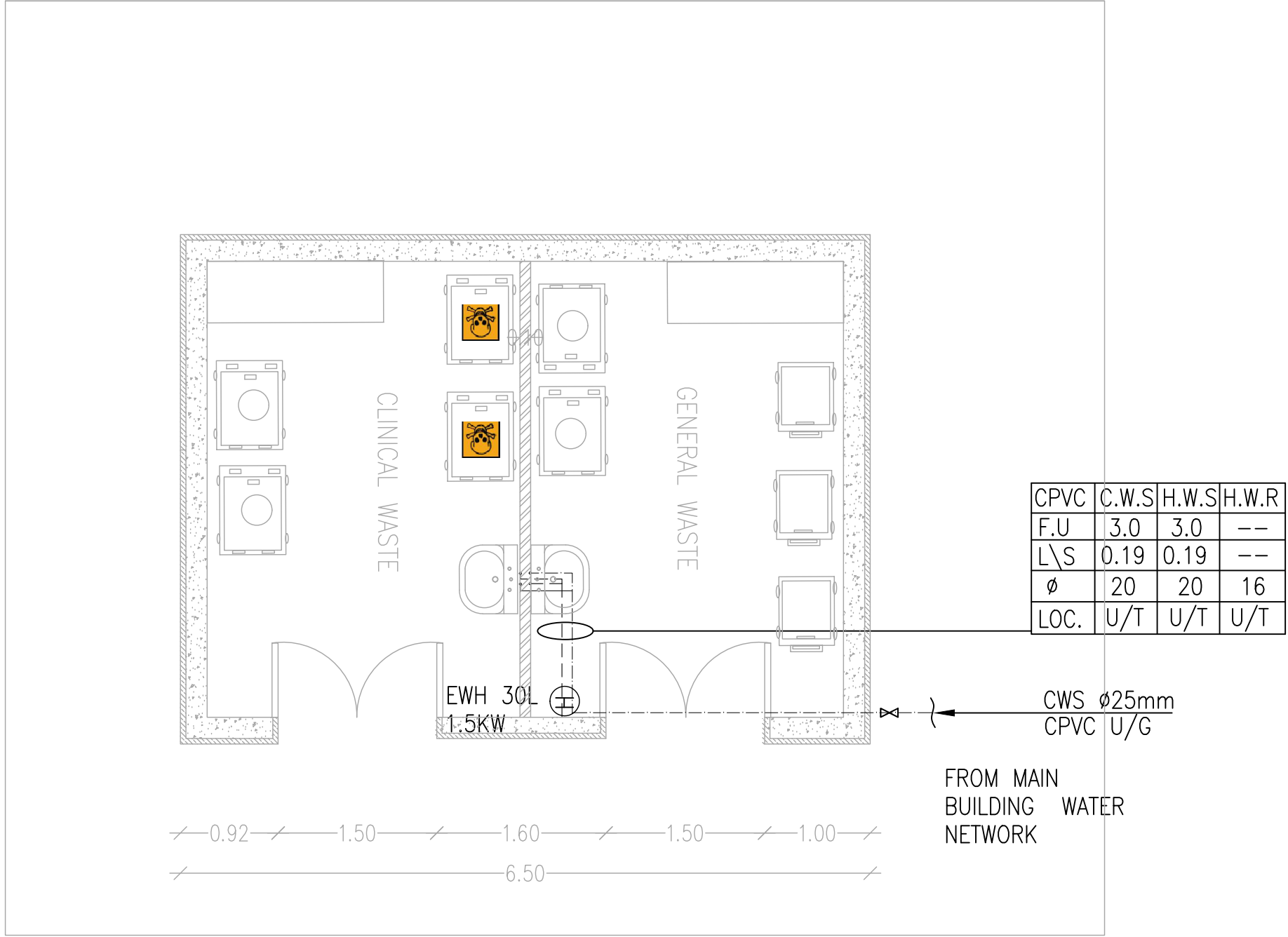
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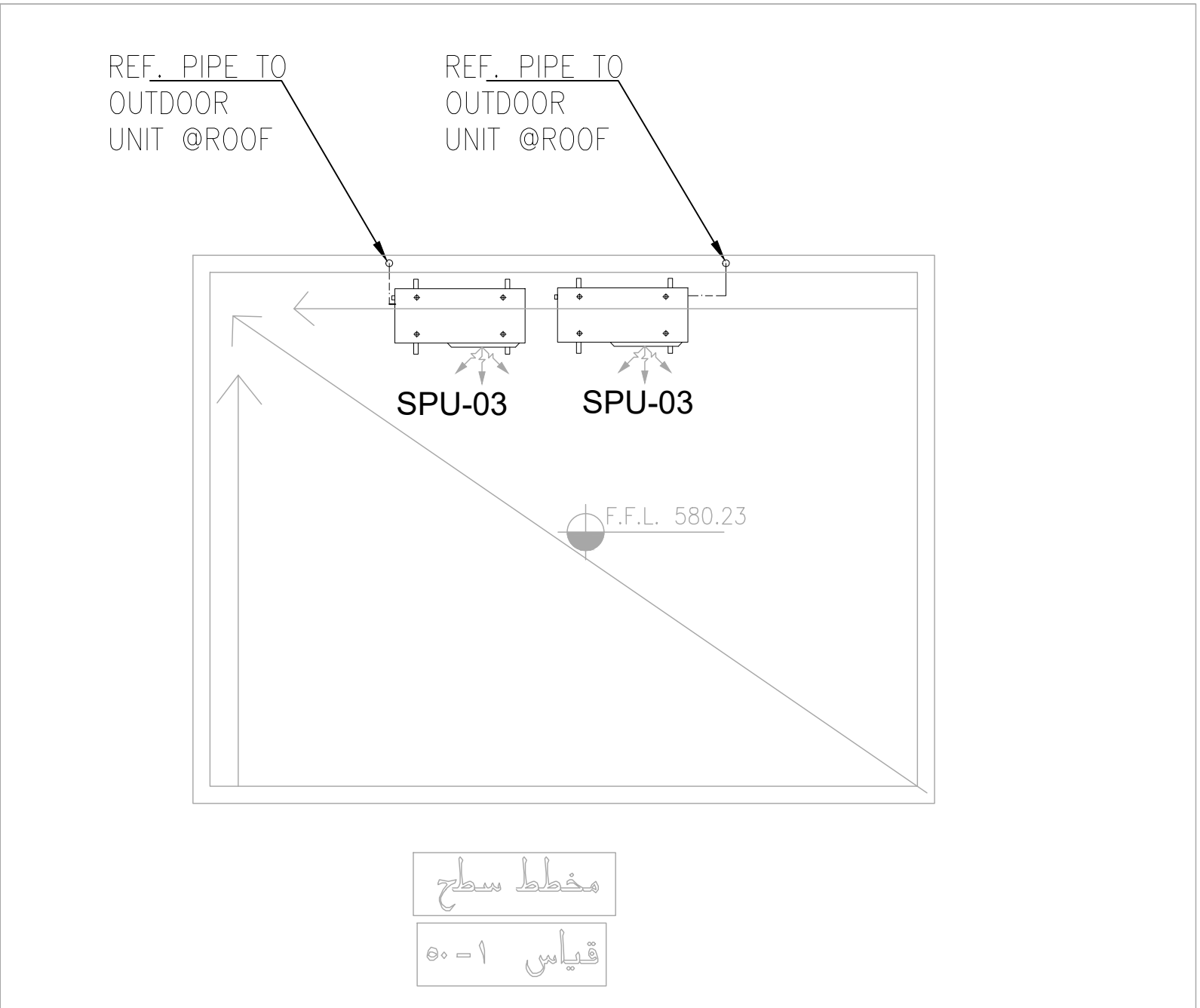
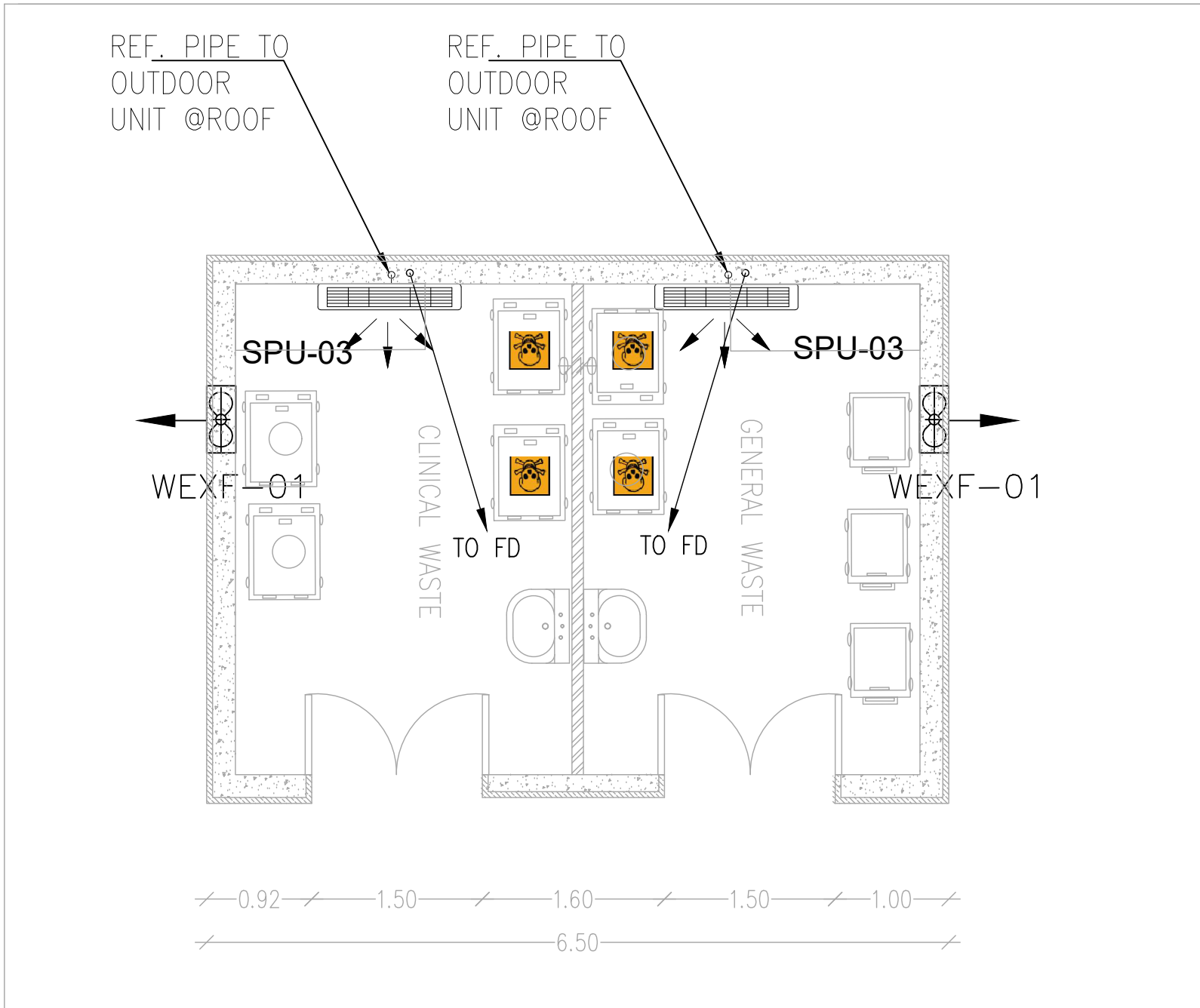
PLOT NO :		413	
DISTRICT :		IRBID	
BASIN :		40 ALMUSRIB ALSHAMALI	
V. MARK	DATE	MADE BY	REMARKS
CLIENT NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS		
	TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo		
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY		
RG. TLE	FIRST AND SECOND FLOOR: HVAC CONDENSATION LAYOUT		
DRAWN BY : MECH.T		SCALE: 1:100	
DESIGNED BY: M.Q		DATE : DEC.-2023	
CHECKED BY: J.N		PROJECT No.	DRAWING No. M-801
APPROVED BY: F.N			



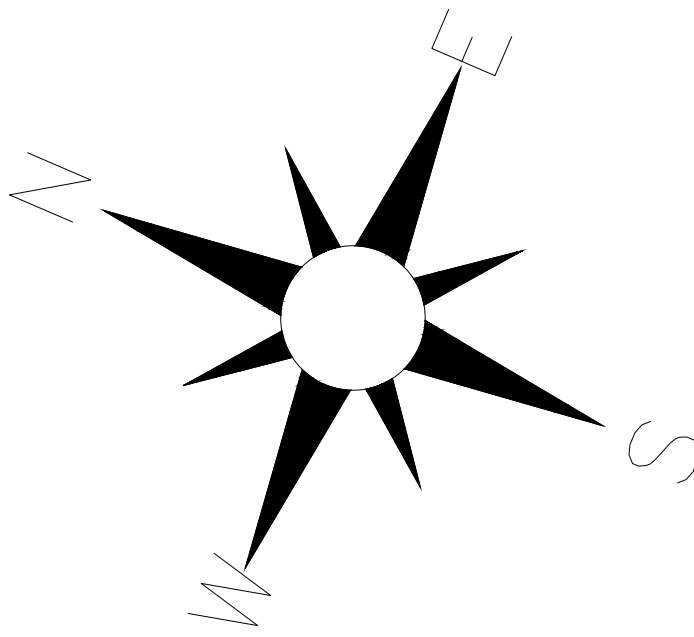
DRAINAGE SYSTEM



WATER SYSTEM

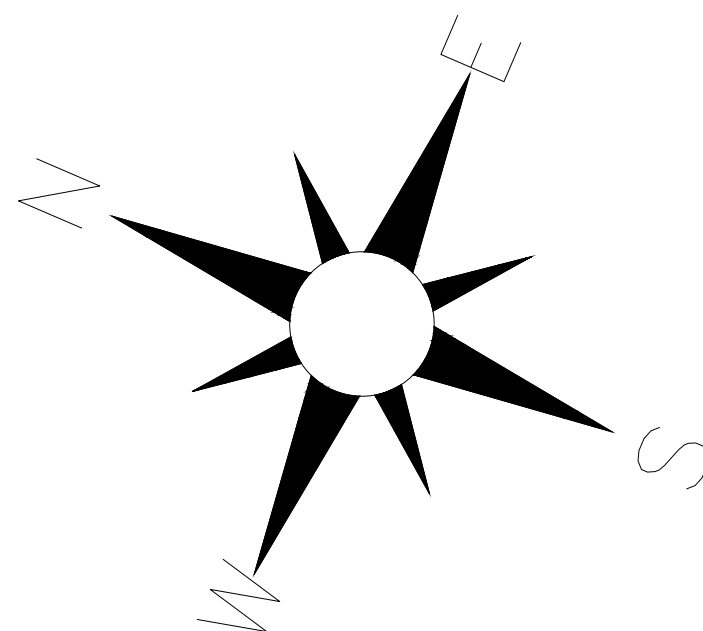


HVAC SYSTEM

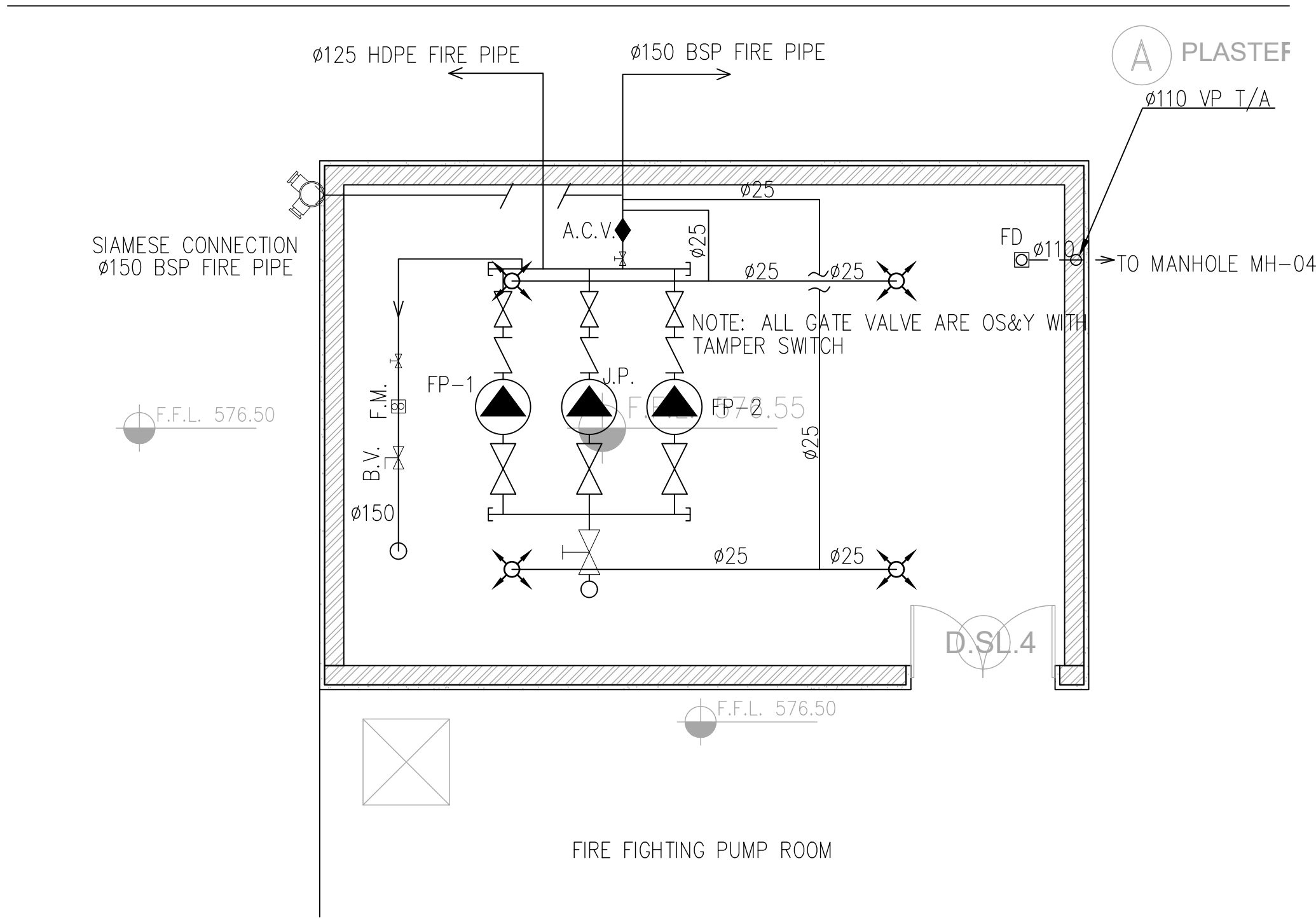


NOTES:

PLOT NO		:	413	
DISTRICT		:	IRBID	
BASIN		:	40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS	
CLIENT	NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo			
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY			
DRG. TITLE	WASTE ROOM MECHANICAL SYSTEMS			
DRAWN BY : MECH.T			SCALE: 1:50	
DESIGNED BY: A.Q			DATE : DEC.-2023	
CHECKED BY: F.N			PROJECT No.	DRAWING No. M-900
APPROVED BY: F.N				



NOTES:



PLOT NO		413	
DISTRICT		IRBID	
BASIN		40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS
CLIENT NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo		
	PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY		
DRG. TITLE	FIRE PUMP ROOM		
DRAWN BY : MECH.T		SCALE: 1:50	
DESIGNED BY : M		DATE : DEC.-2023	
CHECKED BY : F		PROJECT No.	DRAWING No.
APPROVED BY: F.N			
		M-901	

MANHOLES SCHEDULE (DRAINAGE)											
MANHOLE NO.	COVER LEVEL	DISTANCE FROM PREVIOUS MANHOLE (M)	INVERT LEVEL IN	INVERT LEVEL OUT	DEPTH (M)	COVER TYPE	PIPE SIZE (MM)	MANHOLE SIZE (CM)	MANHOLE COVER SIZE (CM)	NOTES	
MH-01	577.59	-	-	576.00	1.59	MEDIUM DUTY	160	90	60	WITH STEEL LADDER	
MH-02	576.95	14	575.86	575.81	1.09	MEDIUM DUTY	160	60	60	-	
MH-03	576.30	28	575.53	575.48	0.82	MEDIUM DUTY	160	60	60	-	
MH-04	576.50	9	575.39	575.34	0.60	MEDIUM DUTY	160	60	60	-	
MH-05	576.50	30	575.04	574.99	1.51	MEDIUM DUTY	160	90	60	WITH STEEL LADDER	
MH-06	576.50	9	574.90	574.85	1.65	MEDIUM DUTY	160	90	60	FROM MH-05 WITH STEEL LADDER	
MH-07	576.30	20	574.65	574.60	1.70	MEDIUM DUTY	160	90	60	WITH STEEL LADDER	
MH-A	578.13	-	-	576.00	2.13	MEDIUM DUTY	160	90	60	WITH STEEL LADDER	
MH-B	577.54	8	575.92	575.87	1.67	MEDIUM DUTY	160	90	60	WITH STEEL LADDER	
MH-C	577.54	7	575.80	575.75	1.79	MEDIUM DUTY	160	90	60	WITH STEEL LADDER	
MH-D	577.00	13	575.62	575.57	1.43	MEDIUM DUTY	160	60	60	-	

MANHOLES SCHEDULE (STORM WATER FROM ROOF TO RAIN WATER TANK)											
MANHOLE NO.	COVER LEVEL	DISTANCE FROM PREVIOUS MANHOLE (M)	INVERT LEVEL IN	INVERT LEVEL OUT	DEPTH (M)	COVER TYPE	PIPE SIZE (MM)	MANHOLE SIZE (CM)	MANHOLE COVER SIZE (CM)	NOTES	
RW-C1	578.73	-	-	577.93	0.80	MEDIUM DUTY	160	60	60	-	
RW-C2	577.54	22	577.05	577.00	0.54	MEDIUM DUTY	160	60	60	-	
RW-C3	576.80	19	576.24	576.19	0.61	MEDIUM DUTY	160	60	60	-	
RW-C4	576.25	14	575.63	575.58	0.67	MEDIUM DUTY	200	60	60	-	
RW-C5	576.30	21	575.37	575.32	0.98	HEAVY DUTY	200	60	60	-	
RW-C6	577.60	-	-	576.00	1.60	MEDIUM DUTY	160	90	60	WITH STEEL LADDER	
RW-C7	576.30	22	575.78	575.73	0.57	MEDIUM DUTY	160	60	60	-	
RW-C8	576.50	19	575.54	575.49	1.01	MEDIUM DUTY	200	60	60	-	
RW-C9	576.25	14	575.35	575.30	1.16	HEAVY DUTY	250	60	60	FROM RW-C8 FROM RW-C5	

MANHOLES SCHEDULE (SITE STORM WATER)											
MANHOLE NO.	COVER LEVEL	DISTANCE FROM PREVIOUS MANHOLE (M)	INVERT LEVEL IN	INVERT LEVEL OUT	DEPTH (M)	COVER TYPE	PIPE SIZE (MM)	MANHOLE SIZE (CM)	MANHOLE COVER SIZE (CM)	NOTES	
RW-1	580.00	-	-	579.00	1.00	HEAVY DUTY	160	60	60	-	
RW-2	578.32	30	577.50	577.45	0.77	HEAVY DUTY	200	60	60	-	
RW-3	577.30	17	576.60	576.50	1.40	HEAVY DUTY	200	60	60	DROP MANHOLE	
RW-4	576.30	24	575.66	575.61	0.69	HEAVY DUTY	200	60	60	-	
RW-5	576.25	12	575.49	575.44	0.81	HEAVY DUTY	200	60	60	-	
RW-6	576.30	25	575.19	575.14	1.16	HEAVY DUTY	250	60	60	-	
RW-7	576.25	26	574.88	574.83	1.42	HEAVY DUTY	300	60	60	-	
RW-8	576.65	-	-	577.65	1.00	HEAVY DUTY	160	60	60	-	
RW-9	577.40	20	576.65	576.60	0.60	HEAVY DUTY	200	60	60	-	
RW-10	576.60	18	576.08	576.03	0.57	HEAVY DUTY	200	60	60	-	
RW-11	576.30	19	575.27	575.22	1.08	HEAVY DUTY	200	60	60	-	
RW-12	576.25	6	574.75	574.70	1.35	HEAVY DUTY	300	90	60	WITH STEEL LADDER	
RW-13a	577.55	-	-	577.00	0.60	MEDIUM DUTY	160	60	60	TO (RW-11) R. 576.65	
RW-13b	576.30	-	-	575.75	0.60	MEDIUM DUTY	160	60	60	TO (RW-11) R. 575.50	

WATER PUMPS SCHEDULE-						
REF.	DESCRIPTION	LOCATION	QTY.	PARAMETERS (EACH)	ESTIMATED POWER (KW) EACH	NOTES
L.P.	LIFTING PUMP	SITE	ONE SET	2.7 L/S , 28.0 m HEAD	1.0	2 PUMPS WITH AUTOMATIC CHANGE OVER
B.P.	BOOSTING PUMP	ROOF FLOOR	ONE SET	5.86 L/S , 18.0 m HEAD	2.0	2 PUMPS WITH AUTOMATIC CHANGE OVER
H.W./C.HOT	WATER CIRCULATION PUMP	ROOF FLOOR	ONE SET	0.37 L/S , 9 m HEAD	0.20	2 PUMPS WITH AUTOMATIC CHANGE OVER
S.P.	SOLAR CIRCULATION PUMP	ROOF FLOOR	ONE SET	MANUFACTURER'S SIZING	0.20	---
I.P.	IRRIGATION PUMP	SITE	ONE SET	1.2 L/S , 20 m HEAD	1.0	2 PUMPS WITH AUTOMATIC CHANGE OVER
SP-D1	SUBMERSIBLE DRAIN PUMP	D. WATER TANK	1 DUTY PUMP	1.0 L/S , 10 m HEAD	0.7	----
SP-D2	SUBMERSIBLE DRAIN PUMP	IRR. WATER TANK	1 DUTY PUMP	1.0 L/S , 10 m HEAD	0.7	----
SP-D3	SUBMERSIBLE DRAIN PUMP	FIRE WATER TANK	1 DUTY PUMP	1.0 L/S , 10 m HEAD	0.7	----

THE PUMP HEAD INDICATED IN THE SCHEDULE IS AN ESTIMATED VALUE. THE CONTRACTOR SHOULD RECHECK THIS FIGURE AFTER FINALIZING THE SHOP DRAWING

DOMESTIC HOT WATER HEAT PUMP									
TAG	DESCRIPTION	LOCATION	TOTAL THERMAL CAPACITY (KW)	ELECTRICAL ELEMENT	POWER INPUT (KW)	VOLT	PHASE	COIL NO.	CAPACITY
D.H.W.H.P	DOMESTIC HOT WATER HEAT PUMP	ROOF	12.0	4 KW	6.95	400	3	1	500

SUBMERSIBLE PUMP										
PUMP NAME	SERVED AREA	LOCATION	DESIGNATION	FLOW (L/S)	TOTAL HEAD (m)	QUANTITY			ELECTRICAL DATA	
						DUTY	STAND BY	TOTAL	POWER (KW) EACH	Ø / V / Hz
SBMP-01	SITE	SITE	WASTE	132	20	LEAD LAG	LAG	3	23.0	3 / 400 / 50

NOTE:
- PUMP HEAD SHOWN ON SCHEDULE SHALL BE RECALCULATED BY THE CONTRACTOR BASED ON THE APPROVED SHOP DRAWINGS
- Sequence of operation: (2 lead-lag) (1 standby) alternately

VRF OUTDOOR UNIT SCHEDULE										
UNIT REF.	SERVED AREA	LOCATION	SELECTED COOLING CAPACITY (KW)	SELECTED HEATING CAPACITY (KW)	INPUT POWER (KW)	V/Hz/Ø	AMBIENT TEMPERATURE	QUANTITY	EMERGENCY	REMARKS
O.D.U.40HP	ONE FOR 2F-RIGHT ONE FOR GF-RIGHT	ROOF	90.0	122.0	32.0	400 / 50 / 3	35 °C	2	---	HEAT PUMP
O.D.U.24HP	AHU-LAB	ROOF	54.0	73.2	19.0	400 / 50 / 3	35 °C	1	---	HEAT PUMP
O.D.U.32HP	ONE FOR EACH OF 2F-LEFT 1F-LEFT 1F-UPPER 1F-LOWER 1F-DO	ROOF	72.0	96.8	25.0	400 / 50 / 3	35 °C	7	---	HEAT PUMP

NOTES: - DATA ABOVE IS BASED ON: COOLING - OUTDOOR DRY BULB TEMP = 35 °C & INDOOR DRY AND WET BULB TEMP =23/16 °C

HEATING - OUTDOOR DRY BULB TEMP = 0 °C & INDOOR DRY BULB TEMP =21 °C

Outdoor units shall operate at maximum operating temperature of 48C

Supplier/manufacture shall reflect his own electrical requirements for all indoor units and outdoor units without any claim

Unless selection shall be done after capacity correction according to refrigerant pipes length for the farthest indoor unit

ALL CONDENSATE DRAIN PIPE ARE CPVC PN16

VRF INDOOR UNITS SCHEDULES													
REF.	DESIGNATION	QTY.	NOMINAL AIR FLOW (L/S)	TOTAL COOLING CAPACITY (Kw)	SENSEBLE COOLING CAPACITY (Kw)	HEATING CAPACITY (Kw)	EXTERNAL STATIC PRESSURE (Pa)	ELECTRICAL DATA * POWER (WATT)	V / Hz / Ø	DB °C	WB °C	DB °C	WB °C
ID-U-01	DUCTED SPLIT UNIT	--	125	1.5	1.2	1.8	30	50	230/50/1	24.5	18.5	11.5	10.5
ID-U-02	DUCTED SPLIT UNIT	--	125	2.0	1.5	2.3	30	50	230/50/1	24.5	18.5	11.5	10.5
ID-U-03	DUCTED SPLIT UNIT	--	125	2.5	1.9	3.0	30	50	230/50/1	24.5	18.5	11.5	10.5
ID-U-04	DUCTED SPLIT UNIT	--	135	3.2	2.5	3.7	30	50	230/50/1	24.5	18.5	11.5	10.5
ID-U-05	DUCTED SPLIT UNIT	--	210	3.9	3.1	4.6	30	100	230/50/1	24.5	18.5	11.5	10.5
ID-U-06	DUCTED SPLIT UNIT	--	210	4.9	3.8	5.8	30	100	230/50/1	24.5	18.5	11.5	10.5
ID-U-07	DUCTED SPLIT UNIT	--	300	6.2	4.8	7.4	30	100	230/50/1	24.5	18.5	11.5	10.5
ID-U-08	DUCTED SPLIT UNIT	--	325	7.8	6.0	9.3	40	125	230/50/1	24.5	18.5	11.5	10.5
ID-U-09	DUCTED SPLIT UNIT	--	450	9.8	7.7	11.6	40	160	230/50/1	24.5	18.5	11.5	10.5
ID-U-10	DUCTED SPLIT UNIT	--	525	12.2	9.5	14.8	50	250	230/50/1	24.5	18.5	11.5	10.5
ID-U-11	DUCTED SPLIT UNIT	--	570	14.0	10.8	16.7	50	250	230/50/1	24.5	18.5	11.5	10.5

NOTES: - DATA ABOVE IS BASED ONCOOLING - OUTDOOR DRY BULB TEMP = 35 °C & INDOOR DRY AND WET BULB TEMP =23/16 °C

HEATING - OUTDOOR DRY BULB TEMP = 0 °C & INDOOR DRY BULB TEMP =21 °C

- CONTRACTOR IS RESPONSIBLE FOR VERIFYING FAN EXTERNAL STATIC PRESSURE BY CALCULATION OF ACTUAL RESISTANCE THROUGH DUCT, FILTERS, DAMPERS, AIR OUTLETS, ETC. AND RESIZING THE FAN ACCORDINGLY.

- ALL INDOOR UNITS SERVING ELECTRICAL ROOMS AND CONNECTED TO OUTDOOR UNITS SERVING ELECTRICAL ROOMS SHALL BE CONNECTED TO EMERGENCY POWER.

VRF DX 4-WAY CASSETTE UNIT						
INDOOR UNIT REF.	TOTAL CAPACITY (KW)	SENSEBLE CAPACITY (KW)	HEATING CAPACITY (KW)	INPUT POWER (KW)	V/HZ	REMARKS
IU-C-01	1.5	1.3	1.7	42	220 / 50 / 1	COOLING ONLY
IU-C-02	2.2	2.0	2.5	40	220 / 50 / 1	COOLING ONLY
IU-C-03	2.8	2.5	3.2	40	220 / 50 / 1	COOLING ONLY
IU-C-04	3.6	3.3	4.0	40	220 / 50 / 1	COOLING ONLY
IU-C-05	4.5	4.0	5.0	40	220 / 50 / 1	COOLING ONLY
IU-C-06	5.6	5.0	6.3	70	220 / 50 / 1	COOLING ONLY
IU-C-07	7.1	6.4	8.0	70	220 / 50 / 1	COOLING ONLY
IU-C-08	9.0	8.1	10.0	85	220 / 50 / 1	COOLING ONLY

NOTES: - INDOORS UNITS DATA BASED ON: COOLING - OUTDOOR DRY BULB TEMP = 35 °C & INDOOR DRY AND WET BULB TEMP =23/16 °C

HEATING - OUTDOOR DRY BULB TEMP = 0 °C & INDOOR DRY BULB TEMP =21 °C

- SENSEBLE HEAT RATIO IS BASED ON 1

- SELECTION SHALL BE BASED ON COOL TEMPERATURE IN THE CALCULATIONS

- FINAL SELECTION SHALL BE BASED ON TOTAL AND SENSEBLE COOLING LOAD

SIDE WALL EXHAUST GRILL						
REF.	TYPE	NOMINAL NECK SIZE (mm/mm)	AIR FLOW (L/s)	MAX. NECK VELOCITY (m/s)	NEGATIVE STATIC PRESSURE (Pa)	NC
SEG-01	SIDE WALL EXHAUST GRILL	200x100	UP TO 50	2.5	67	20

SUPPLY AIR DIFFUSERS SCHEDULE									
REF.	TYPE OF DIFFUSERS	NOMINAL NECK SIZE (mm/mm)	AIR FLOW (L/s)	MAX. NECK VELOCITY (m/s)	MAX. THROW (m)	MAX. PRESSURE DROP (Pa)	NC	FLEXIBLE CONN. SIZE (mm)	
SD-01	FOUR WAY SQUARE DIFFUSER WITH ADJUSTABLE VOLUME DAMPERS	150x150	UP TO 60	2.5	4.0	16.5	20	Ø150	
SD-02	FOUR WAY SQUARE DIFFUSER WITH ADJUSTABLE VOLUME DAMPERS	220x220	60-110	2.5	5.0	16.5	23	Ø200	
SD-03	FOUR WAY SQUARE DIFFUSER WITH ADJUSTABLE VOLUME DAMPERS	300x300	110-220	2.5	5.0	16.5	23	Ø250	
SD-04	FOUR WAY SQUARE DIFFUSER WITH ADJUSTABLE VOLUME DAMPERS	380x380	220-340	2.5	6.0	16.5	26	Ø300	
SD-05	FOUR WAY SQUARE DIFFUSER WITH ADJUSTABLE VOLUME DAMPERS	460x460	340-475	2.5	6.0	16.5	28	Ø400	

RETURN AIR DIFFUSERS SCHEDULE								
REF.	TYPE OF DIFFUSERS	NOMINAL NECK SIZE (mm/mm)	AIR FLOW (L/s)	MAX. NECK VELOCITY (m/s)	NEGATIVE STATIC PRESSURE (Pa)	NC	FLEXIBLE CONN. SIZE (mm)	
RD-01	FOUR WAY SQUARE DIFFUSER WITH ADJUSTABLE VOLUME DAMPERS	150x150	UP TO 60	2.5	67	20	Ø150	
RD-02	FOUR WAY SQUARE DIFFUSER WITH ADJUSTABLE VOLUME DAMPERS	220x220	60-110	2.5	67	22	Ø200	
RD-03	FOUR WAY SQUARE DIFFUSER WITH ADJUSTABLE VOLUME DAMPERS	300x300	110-220	2.5	67	22	Ø250	
RD-04	FOUR WAY SQUARE DIFFUSER WITH ADJUSTABLE VOLUME DAMPERS	380x380	220-340	2.5	67	25	Ø300	
RD-05	FOUR WAY SQUARE DIFFUSER WITH ADJUSTABLE VOLUME DAMPERS	460x460	340-475	2.5	67	27	Ø400	

0.4cm WATERPROOFING MEMBRANE WITH POTECTION

MIN.5 cm SMOOTH SURFACE SCREED WITH
SLOPE NOT LESS 0.5%

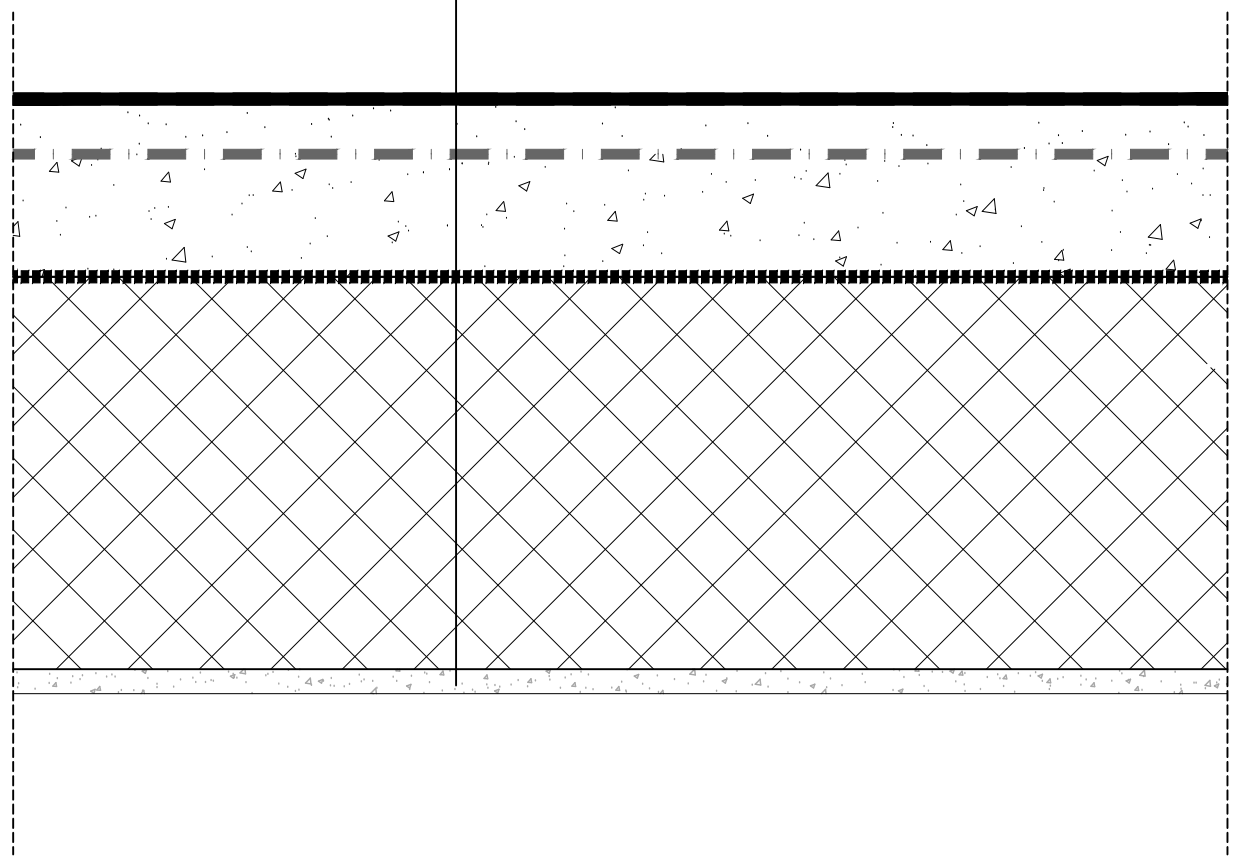
STEEL MESH

NYLON ROLLS

POLYURETHANE BOARDS THERMAL INSULATION 5 CM THICK

R.C slab 35cm.

PLASTER 2cm



ROOF THERMAL TRANSMITTANCE CALCULATION

LAYER	MATERIAL	THICKNESS (L) mm	CONDUCTIVITY (W/m.K)	RESISTANCE (m2.K/W)
1	EXTERNAL AIR	—	—	0.06
2	MEMBRANE	4.0	0.18	0.022
3	SCREED CONCRETE	50	1.00	0.05
4	POLYURETHANE INSU. (35 KG/m3)	50	0.030	1.67
5	CONCRETE SOLID SLAB	350	1.75	0.20
6	PLASTER	20	1.20	0.0167
7	INTERNAL AIR	—	—	0.12
TOTAL				2.14
U=1/R=1/2.14=0.46W/m ² C				

U roof=0.46 W/m² C

CONCRETE 15 cm

5 cm THICK NATURAL STONE
سطح معان او جماعين
NATURAL STONE COURSES

10 cm THICK HOLLOW
CEMENT BLOCK WALL

THERMAL INSULATION 5cm THICK
5CM POLYURETHANE FOAM

COLUMN

THERMAL INSULATION
POLYURETHANE FOAM 5 CM THICK
GYPSUM BOARD 12 MM
FIXED AS PER SUPPLIER

PLASTER 2 cm

OUT

IN

WALL THERMAL TRANSMITTANCE CALCULATION

LAYER	MATERIAL	THICKNESS (L) mm	CONDUCTIVITY (W/m.K)	RESISTANCE (m2.K/W)
1	EXTERNAL AIR	—	—	0.06
2	STONE	50	2.2	0.022
3	CONCRETE	150	1.75	0.086
4	EXTRUDED POLYSTYRENE (35 KG/m3)	50	0.03	1.67
5	HOLLOW BLOCK	100	1.1	0.091
6	CEMENT PLASTER	20	1.2	0.0167
7	INTERNAL AIR	—	—	0.12
TOTAL				2.066
U=1/R=1/2.066=0.48 W/m ² C				

U WALL=0.48 W/m² C

A: ALL AREA: 3500 M²

A1: GLASS AREA: 390 M²

A2: DOOR AREA: 18 M²

A3: NET AREA: 3092 M²

UxA=U1xA1+U2xA2+U3xA3

Ux3500 = 3.5 x390 + 3.5 x 18 +U3x(3092)

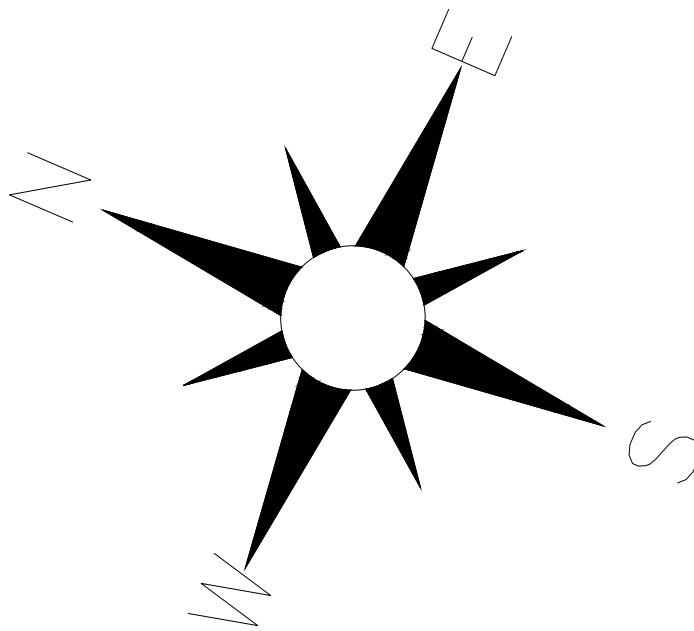
U : AS IN JORDAINIAN CODE MUST NOT EXCEED 1.6W/m².c°

SO:

U3(WALL)= 0.48 W/m².c° < 0.57

Ux3500 = 3.5 x390 + 3.5 x 18 +0.48x(3092)

U=.....0.83... W/m².c° ≤ 1.6



NOTES:

PLOT NO : 413

DISTRICT : IRBID

BASIN : 40 ALMUSRIB ALSHAMALIU

REV. MARK DATE MADE BY REMARKS

CLIENT NATIONAL CENTER FOR DIABETES
ENDOCRINOLOGY AND GENETICS

M P MADI & PARTNERS CONSULTING ENGINEERS
C E TEL.5829640-5829641 FAX.5829642
e-mail : mpce@index.com.jo

PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY
CENTER BUILDING IN IRBID CITY

DRG. TITLE INSULATION LAYOUT

DRAWN BY : MECH.T SCALE: N.T.S

DESIGNED BY: A.Q DATE :DEC.-2023

CHECKED BY : F.N

APPROVED BY: F.N

PROJECT No. DRAWING No.
M-1001

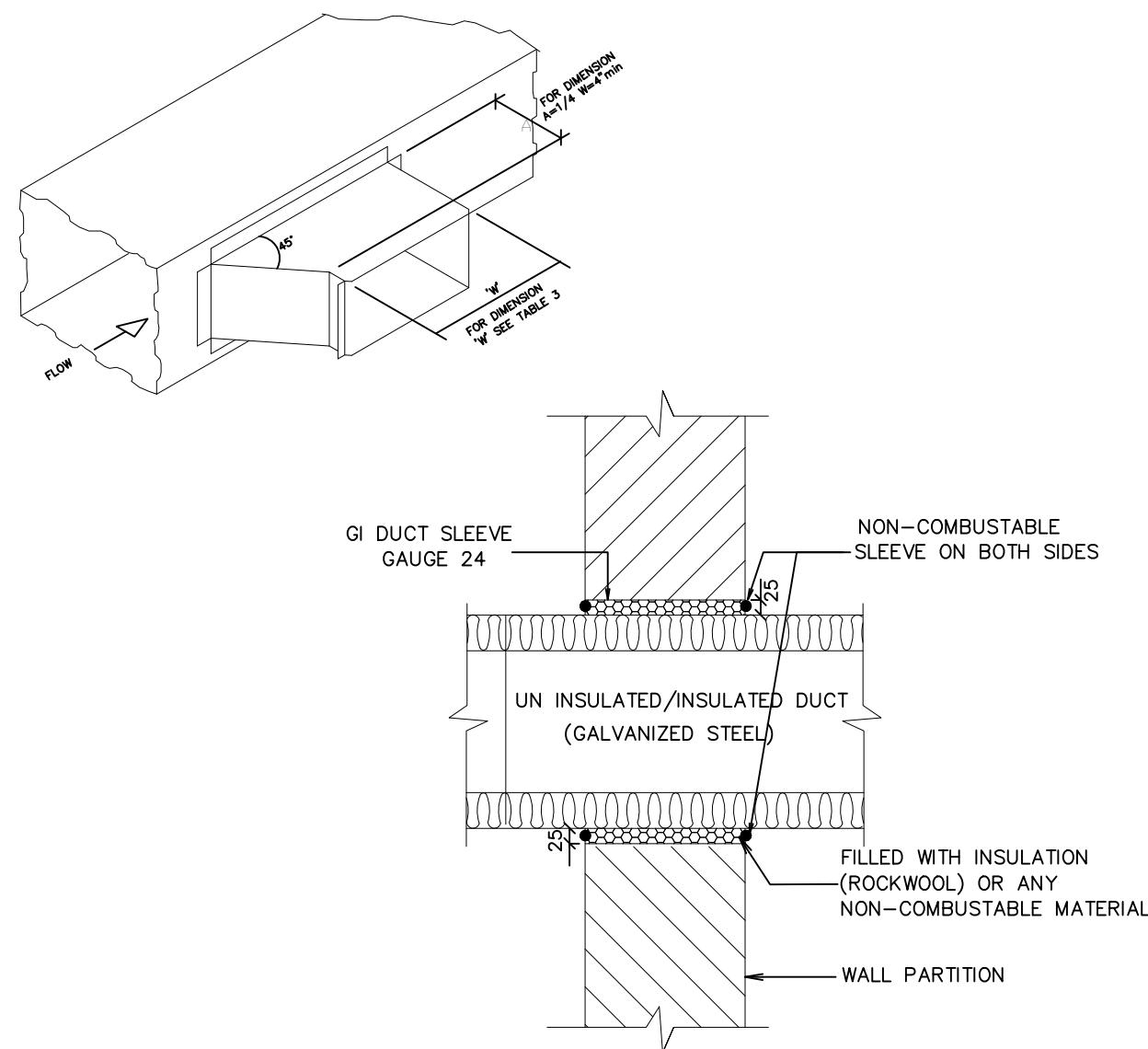
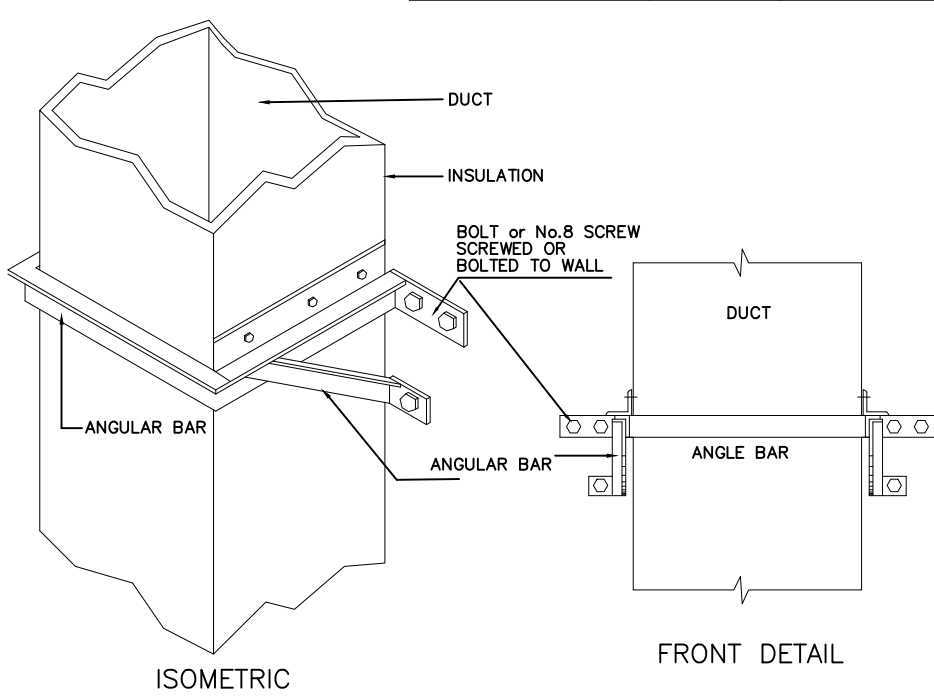
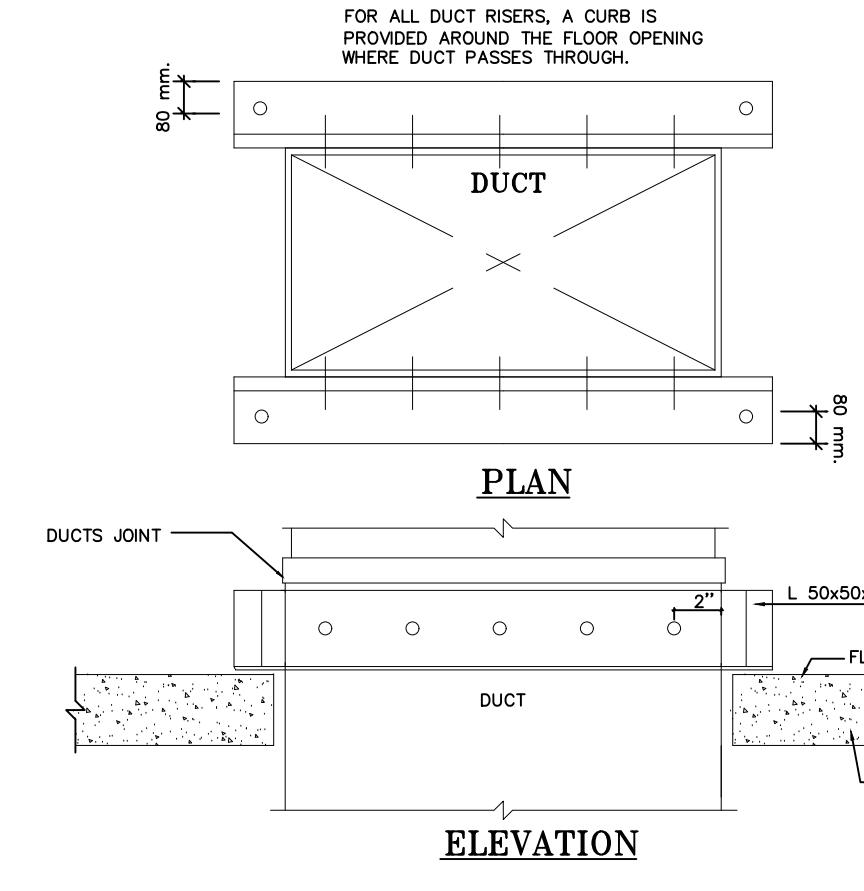
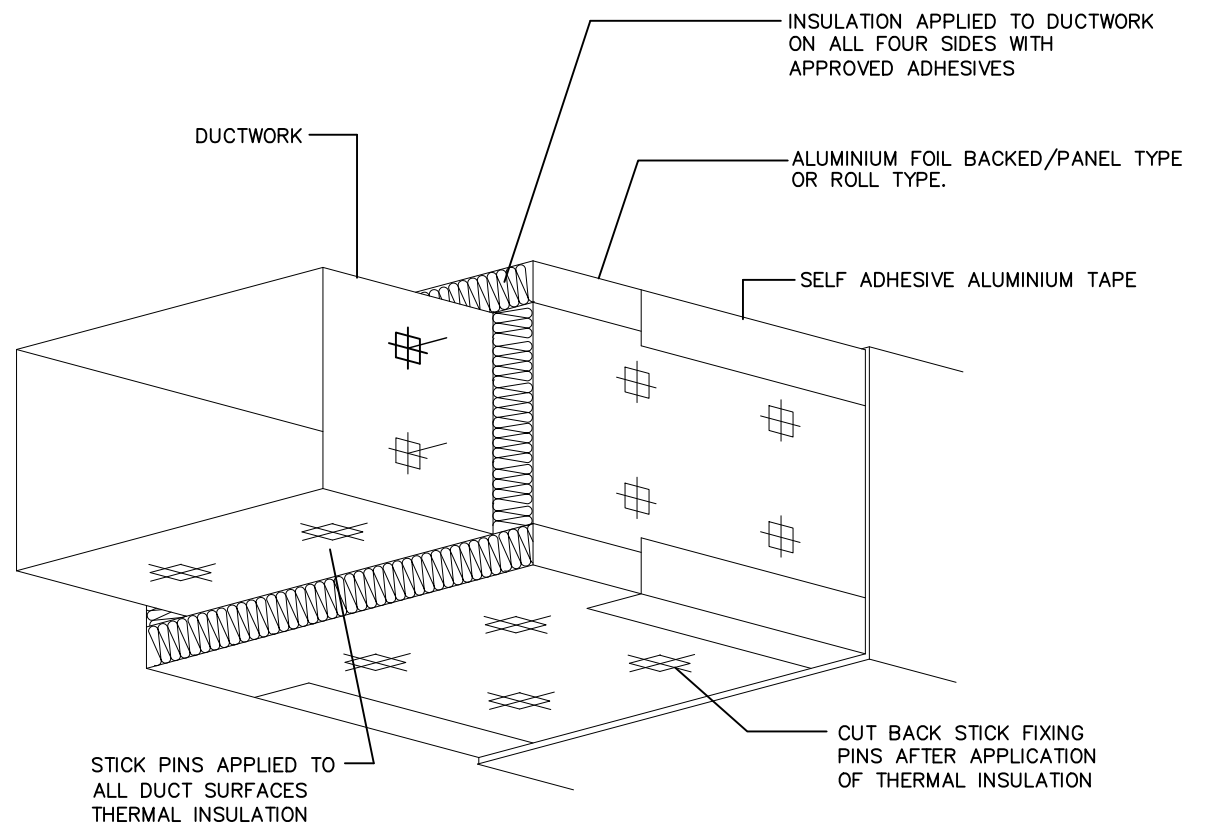
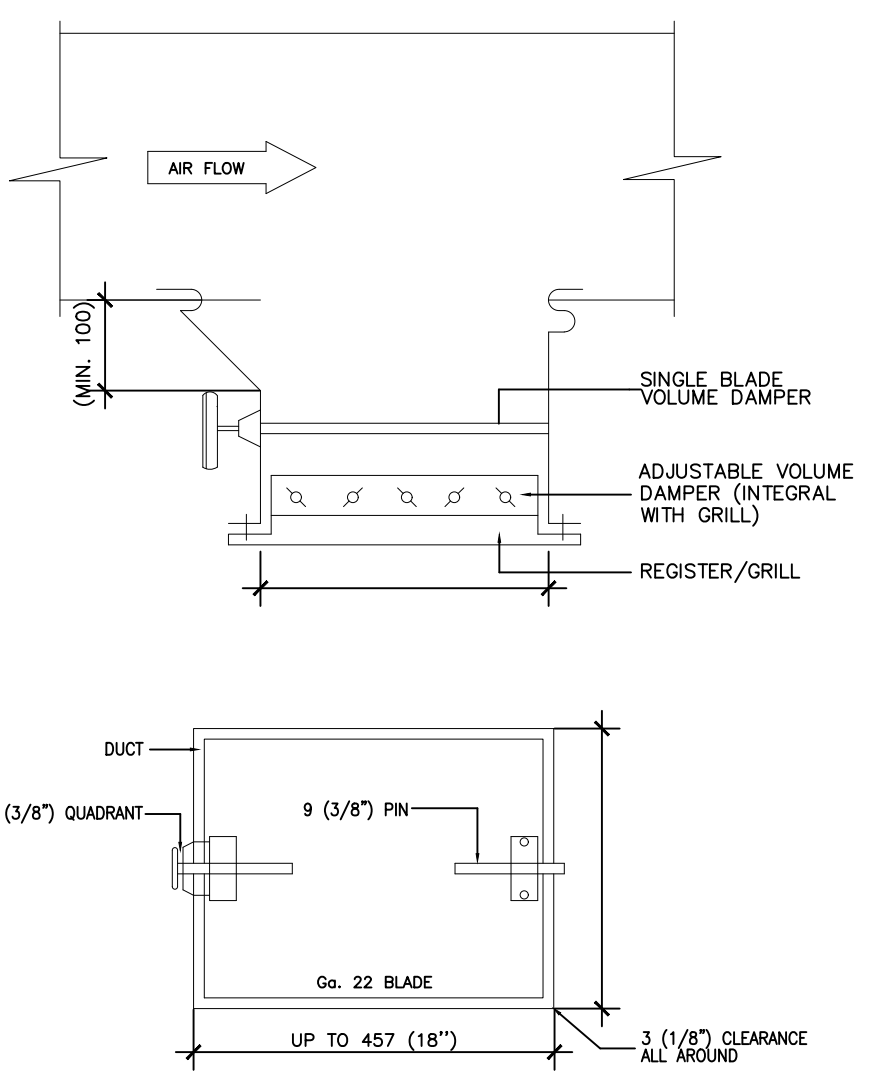
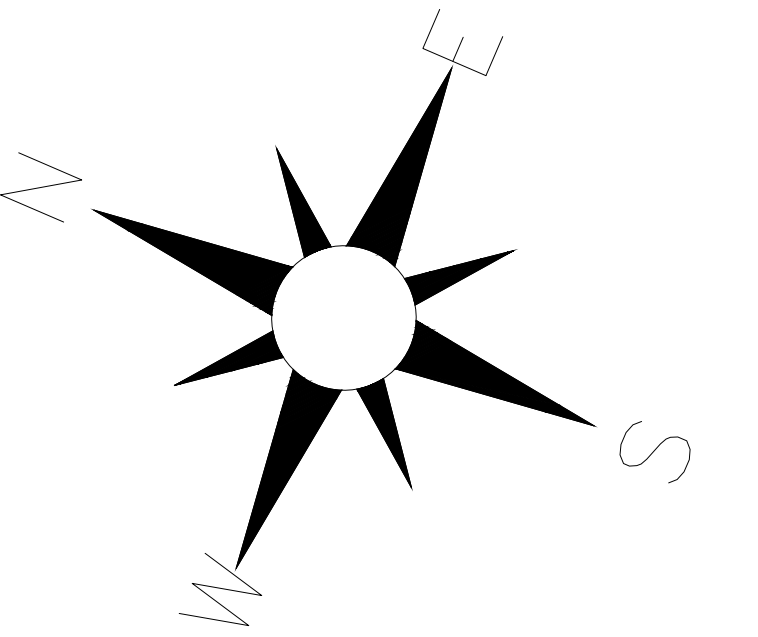
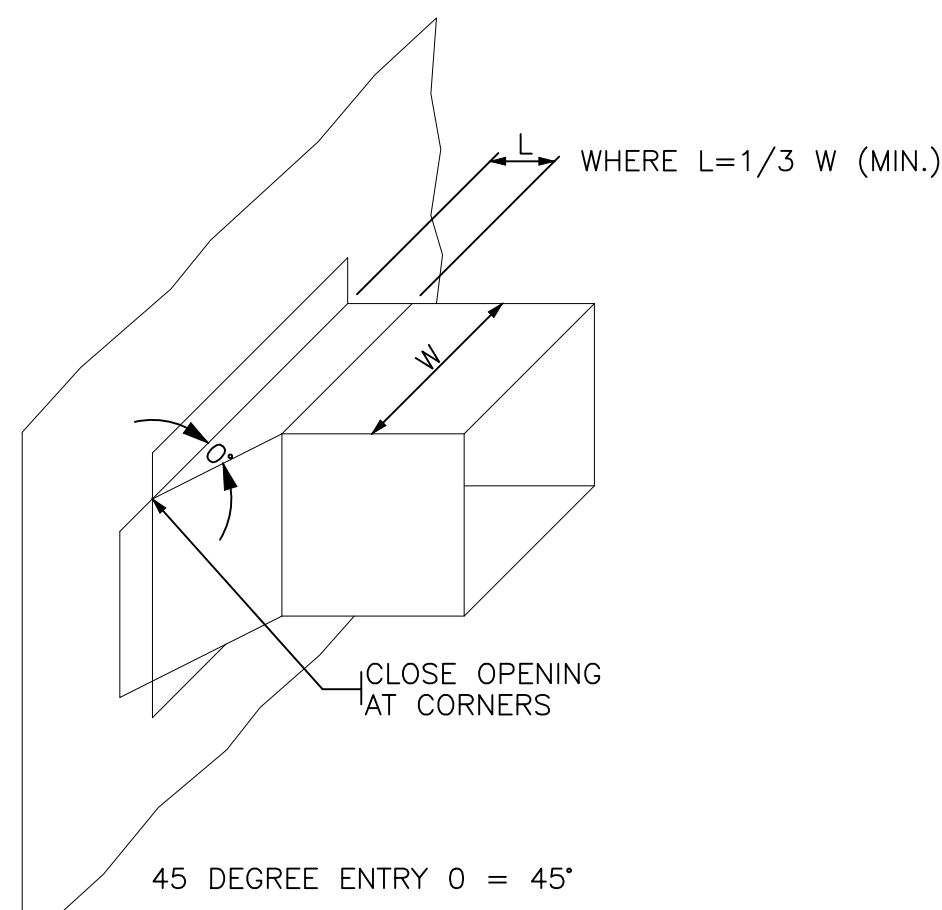
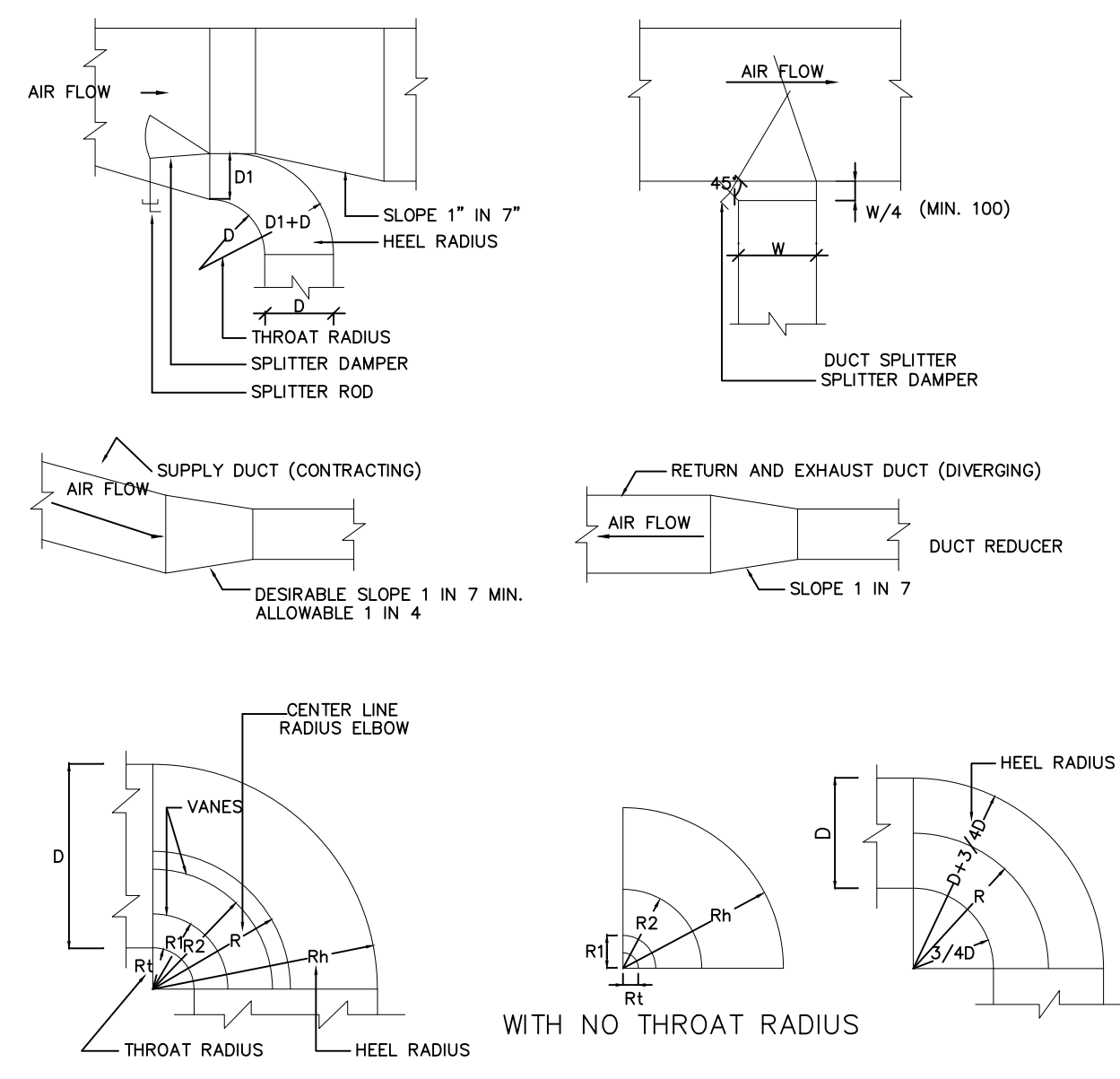
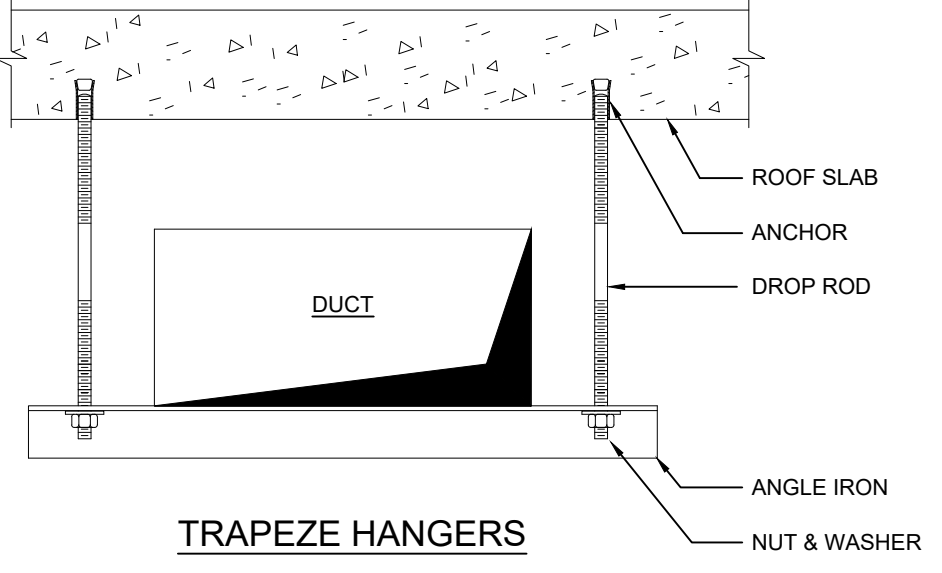
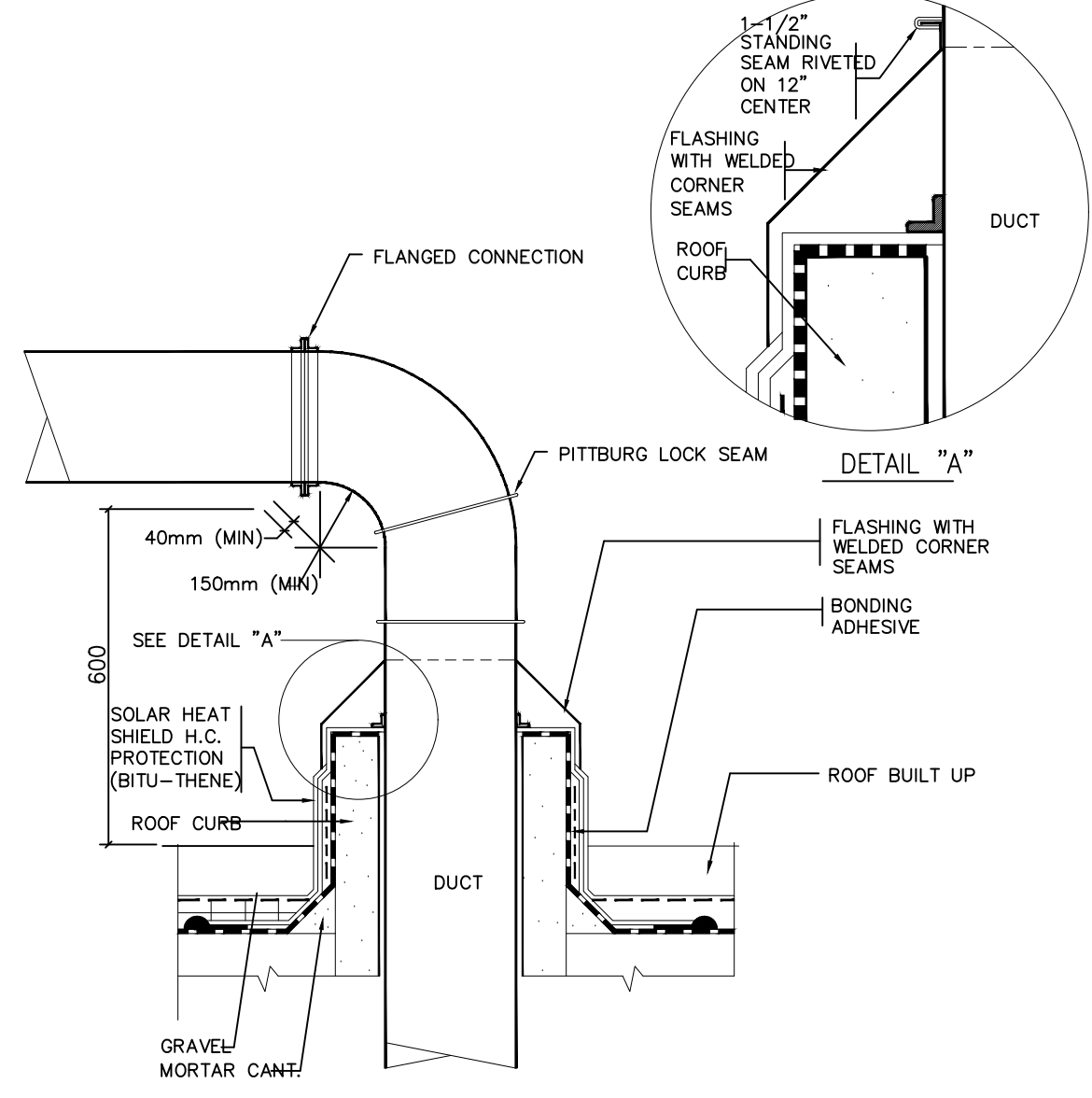


Diagram illustrating the assembly of a duct with reinforcement bars and a neoprene gasket. The assembly is shown in cross-section, mounted on a concrete base.

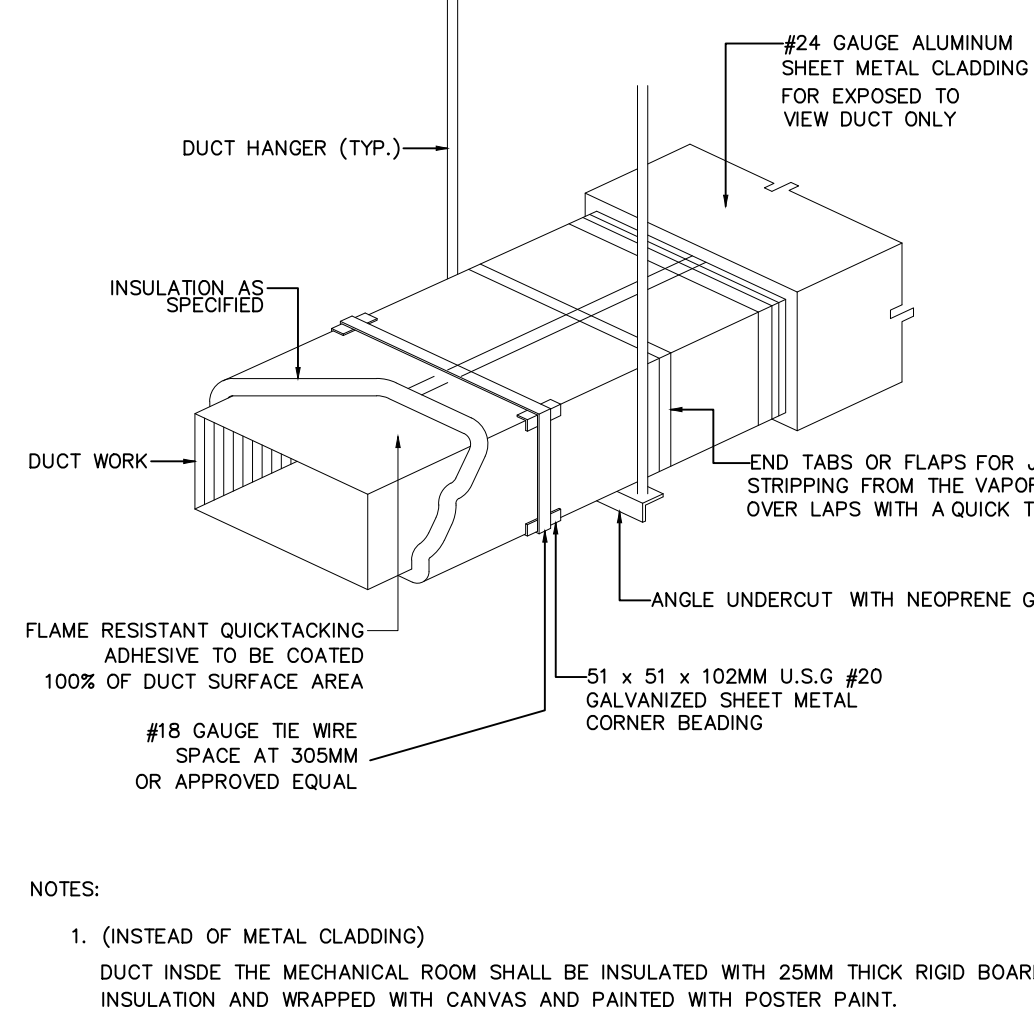
- THREADED ROD**: A vertical rod passing through the assembly.
- ANCHOR BOLT**: A bolt securing the assembly to the concrete base.
- DUCT**: A rectangular duct with a length dimensioned as $L+150\text{mm}$.
- DUCT-SEE PROJECT PLAN FOR SIZES**: A note indicating that the duct size is specified in the project plan.
- NEOPRENE GASKET**: A gasket located between the duct and the concrete base.
- REINFORCEMENT BARS**: Bars embedded in the concrete base, with dimensions:
 - 25x25x3 L BARS FOR $L < 1000$
 - 40x40x3 L BARS FOR $1000 < L < 4000$
 - 40x40x4 L BARS FOR $L > 1000$



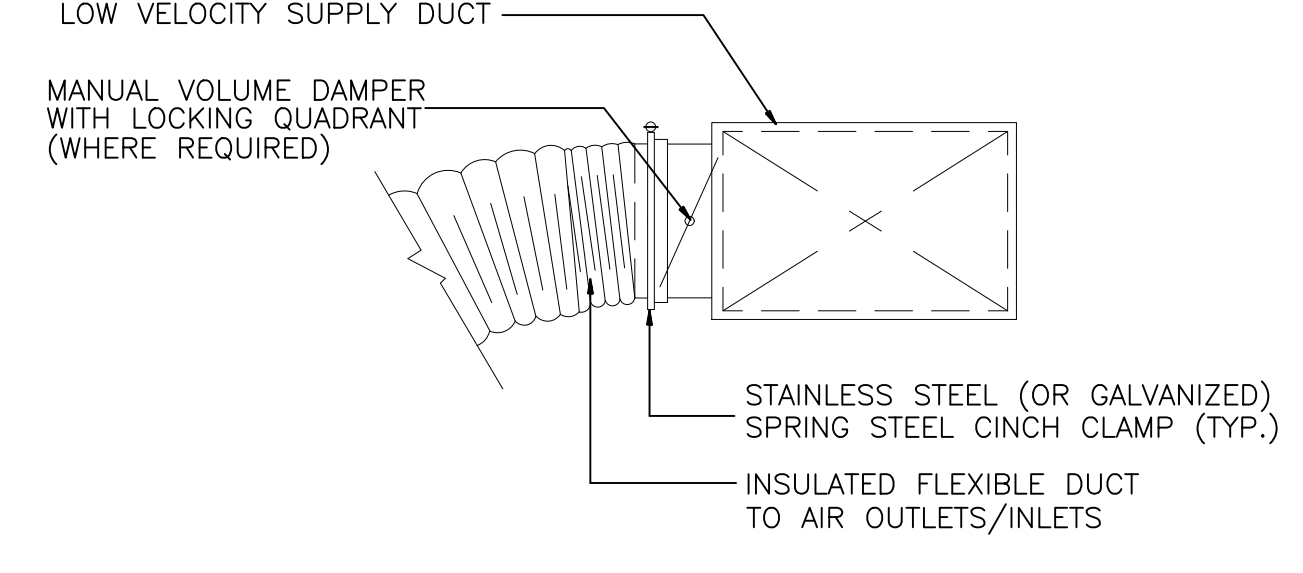
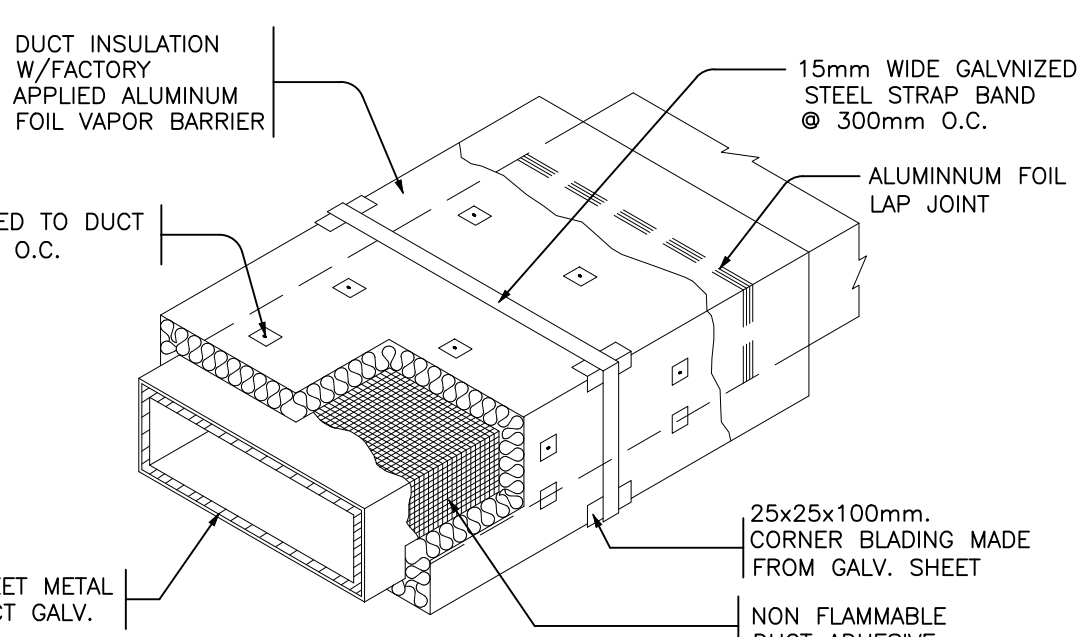
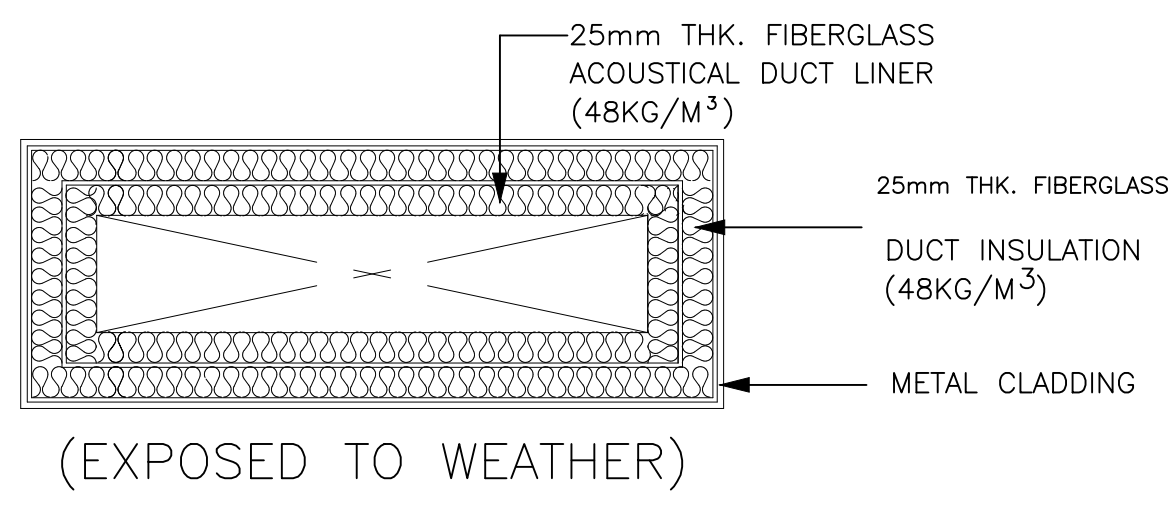
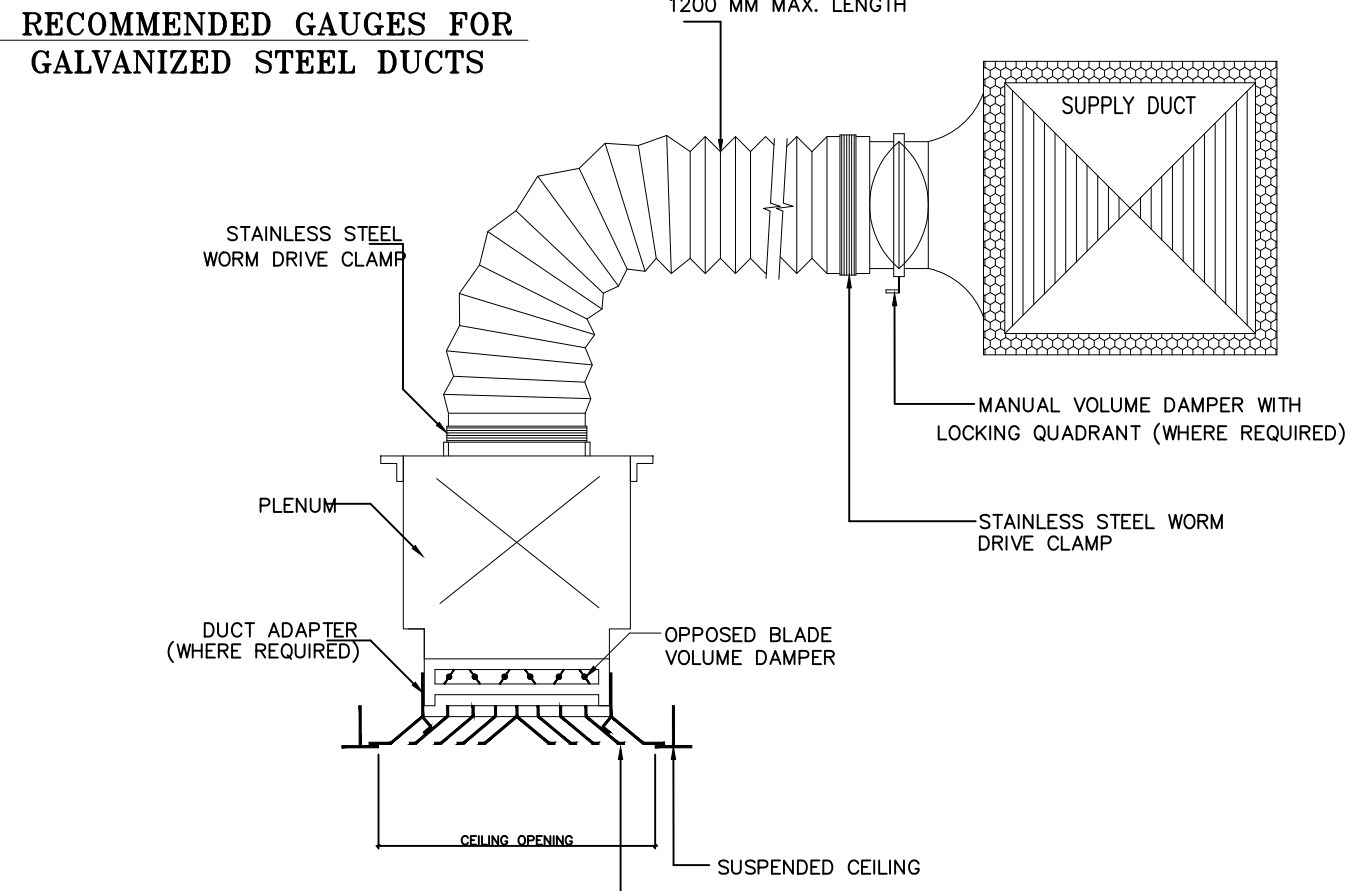
DUCT SIZE UP TO	ANGLE
900x450	40 x 40 x 3
1200x900	40 x 40 x 3
1500x750	40 x 40 x 5



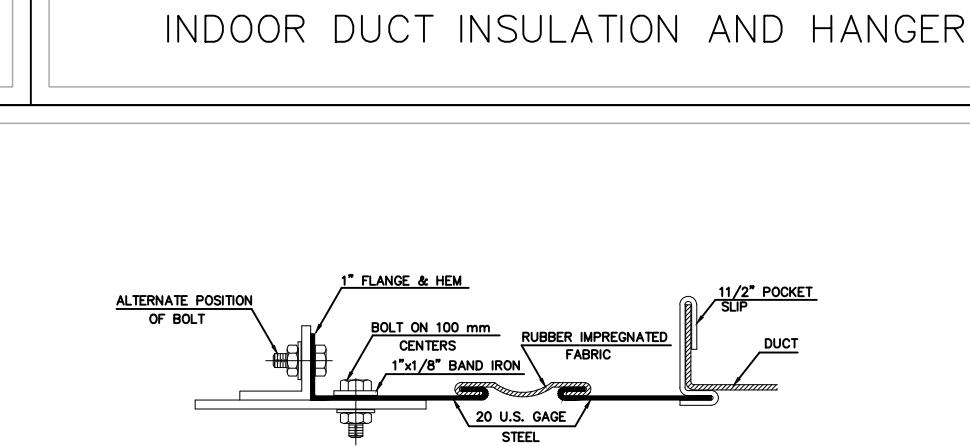
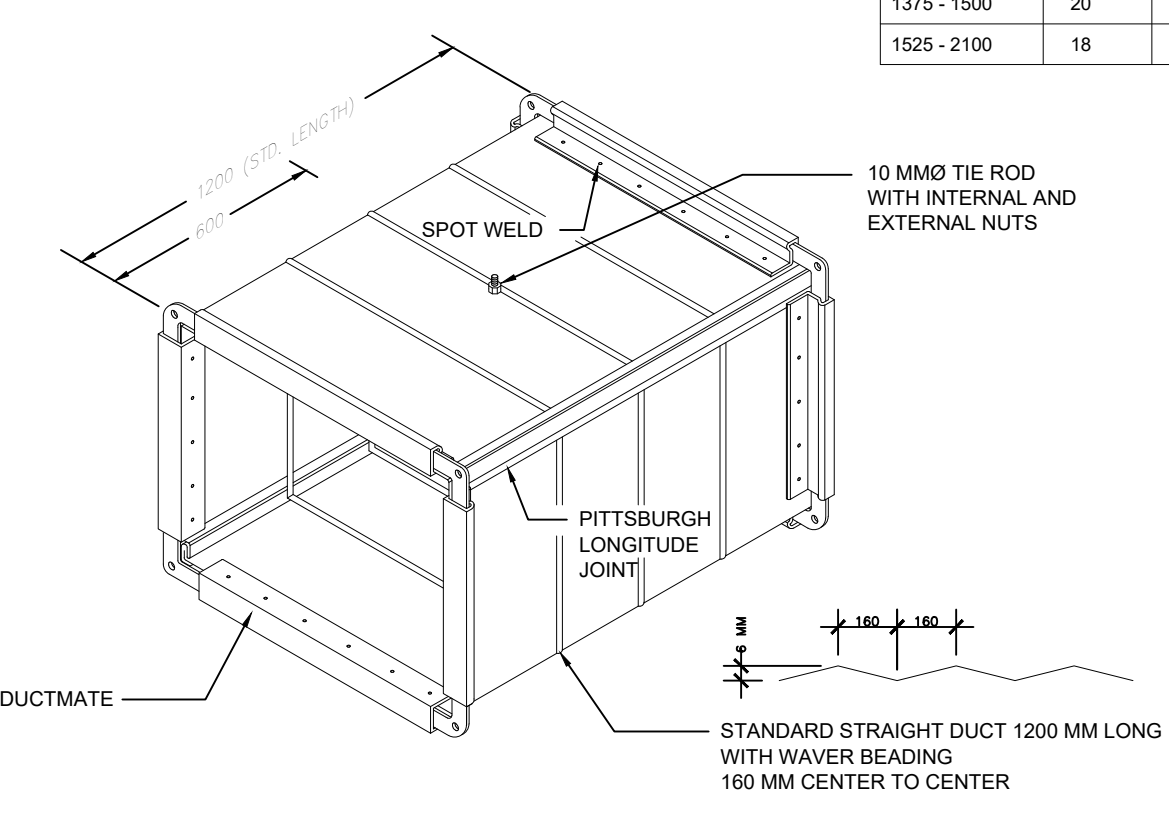
DUCT WIDTH (mm)	MAX. SUPPORT SPACING (mm)	WEIGHT (kg/m)	DUCT+REN. (kg/m)	ROD SIZE (mm)	ROD ALLOWABLE LOAD (kg)	ANGLE IRON SIZE (mm)	ANGLE IRON ALLOWABLE LOAD (kg)
0 TO 160	3000	MM	29	6	120	30 X 30 X 16.0	40
165 TO 750	3000	MM	67	6	120	30 X 30 X 16.0	145
755 TO 900	3000	MM	82	10	210	40 X 40 X 10	130
905 TO 1200	3000	MM	127	10	210	40 X 40 X 10	200
1205 TO 1350	3000	MM	162	10	310	40 X 40 X 6	190
1355 TO 1500	3000	MM	182	10	310	50 X 50 X 5	290
1505 TO 1750	3000	MM	259	12	570	50 X 50 X 6	360
1755 TO 2125	3000	MM	215	12	570	65 X 65 X 6	470
2130 TO 2500	1500	MM	210	12	570	65 X 65 X 6	470
2505 TO 3000	1500	MM	252	12	570	65 X 65 X 6	275



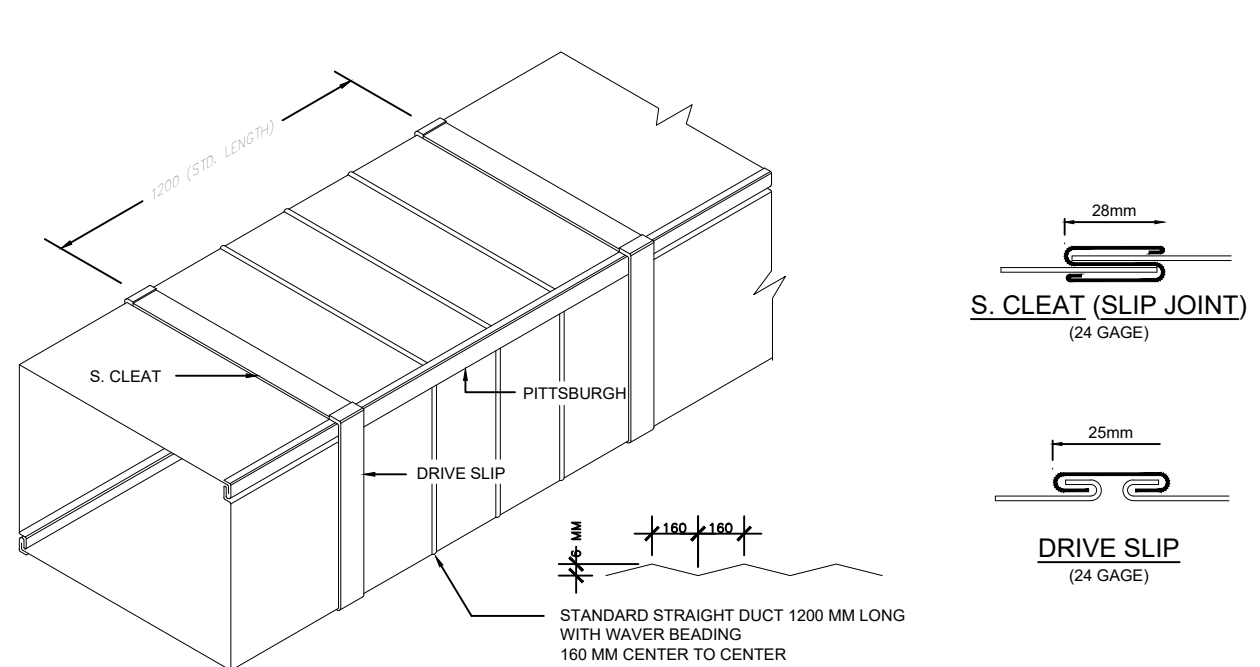
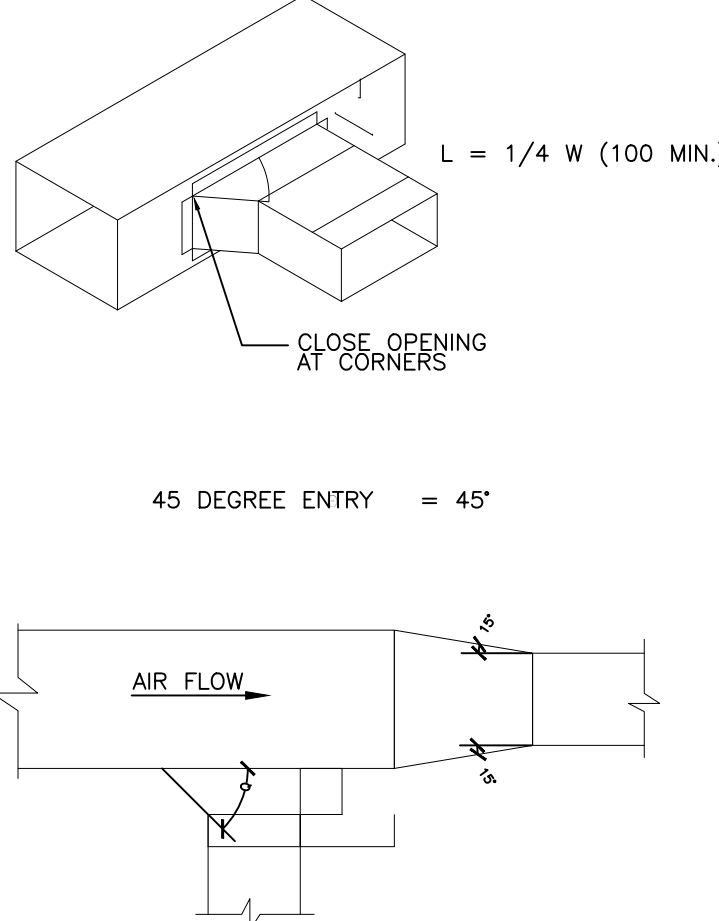
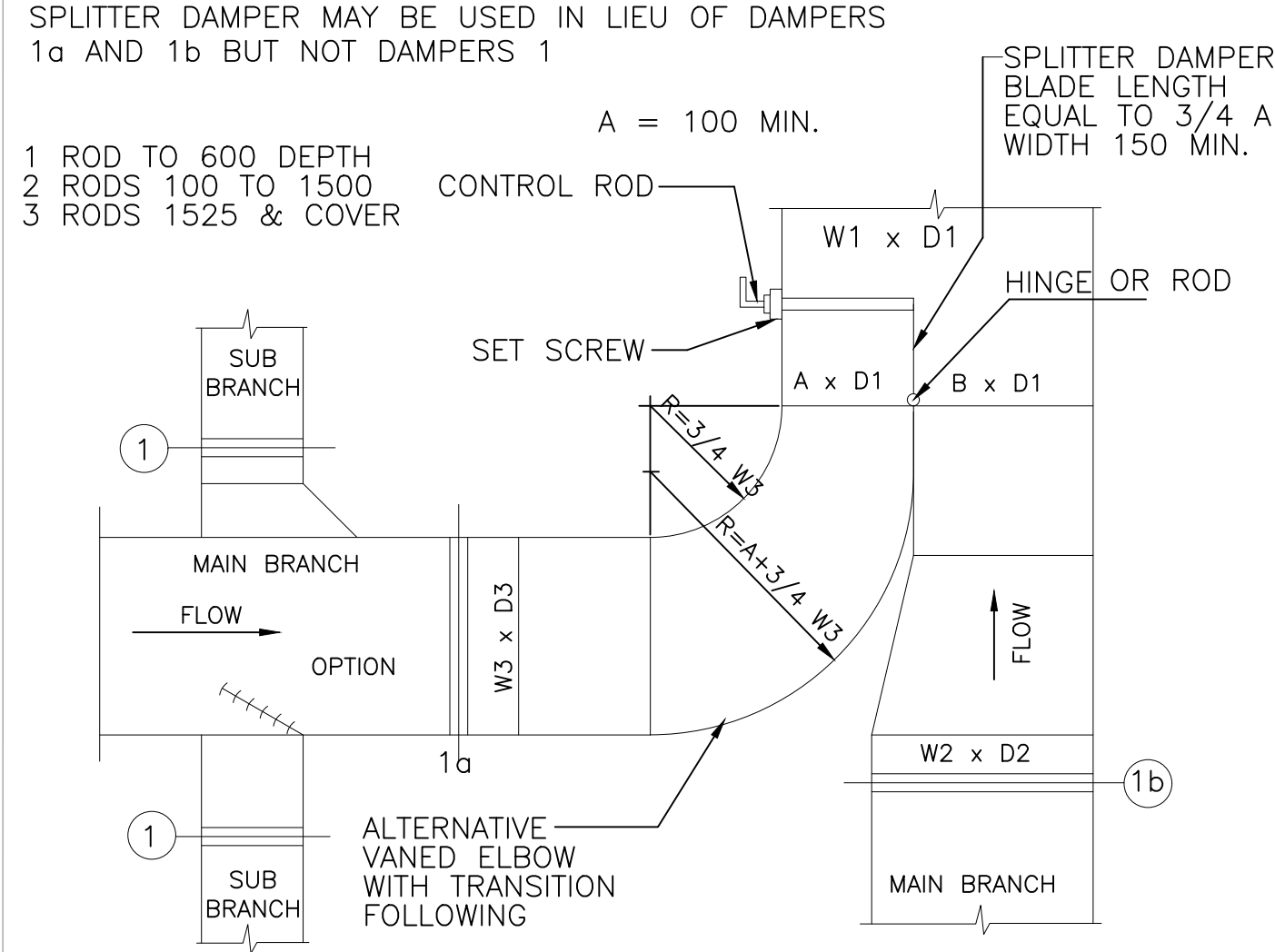
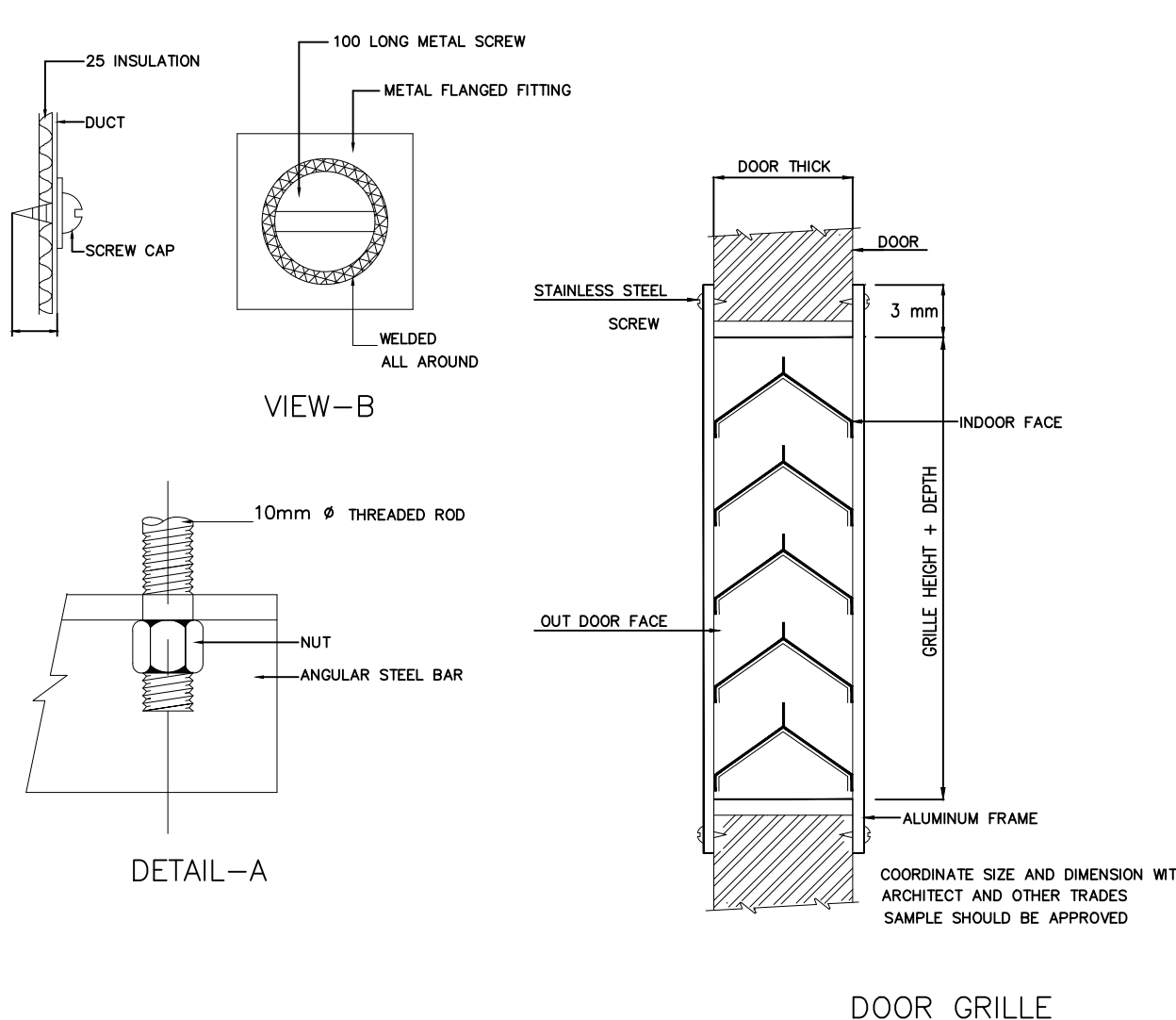
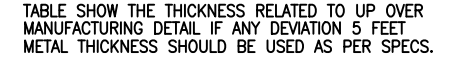
STEEL U.S. STD. GAUGE	RECTANGULAR DUCT WIDTH (mm)	WITH REIN- FORCEMENT R
24	UP TO 250	—
22	275 THRU 500	R
20	525 THRU 1025	R
18	1050 THRU 1500	R
16	1525 AND OVER	R



DUCT SIZE (mm)	GAGE	PRESSURE CLASS
1225 - 1800	22	250 Pa
1825 - 2100	20	250 Pa
2125 - 2400	18	250 Pa
1375 - 1500	20	500 Pa
1525 - 2100	18	500 Pa

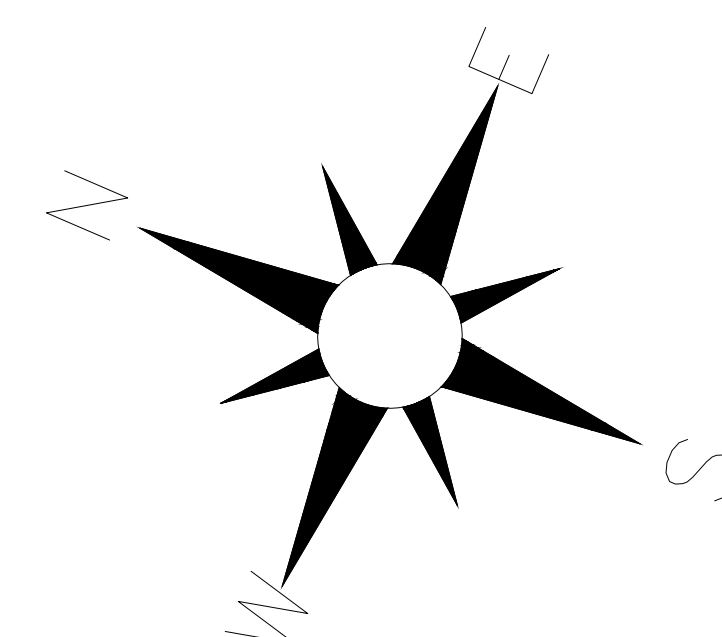
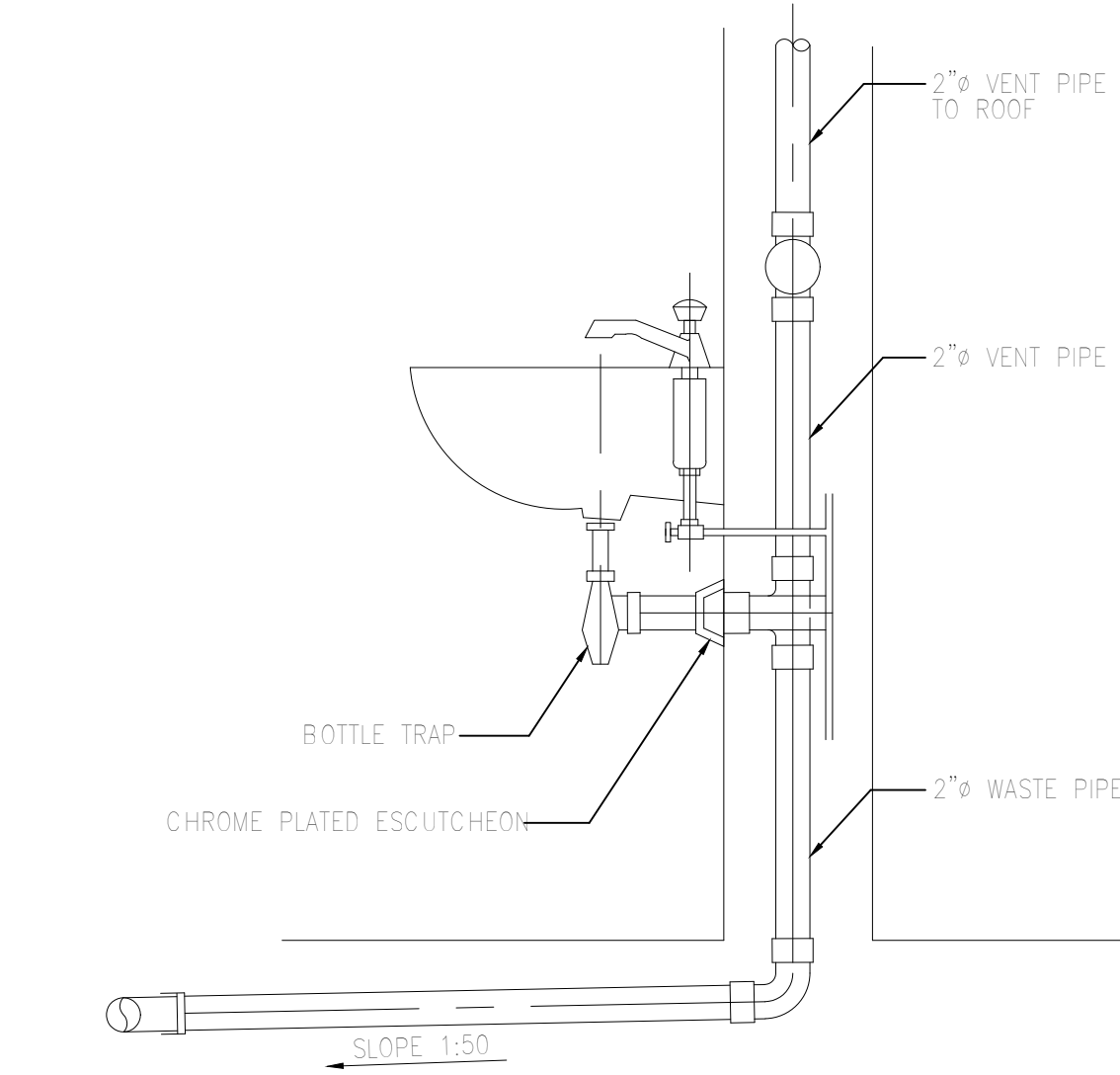
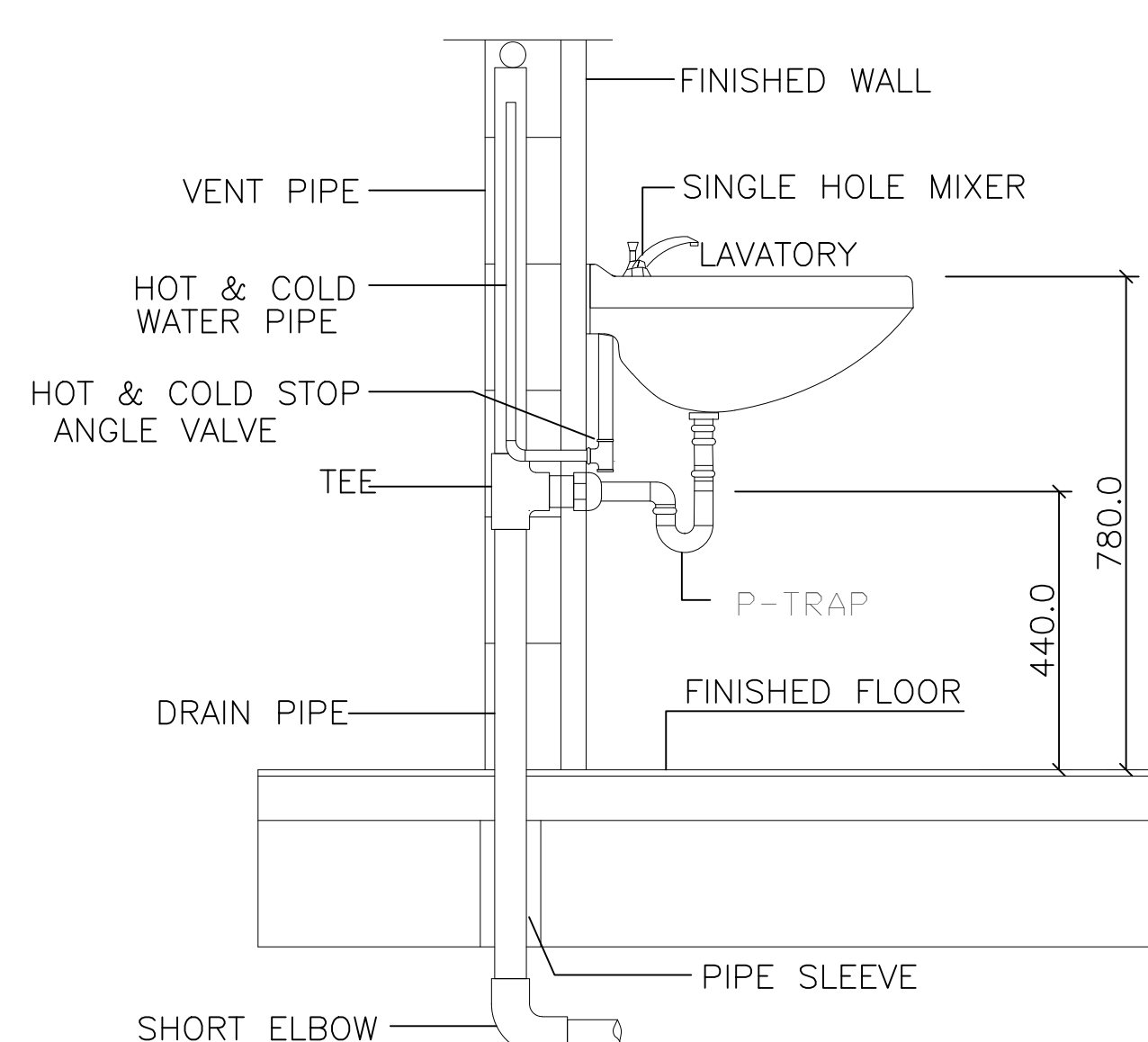
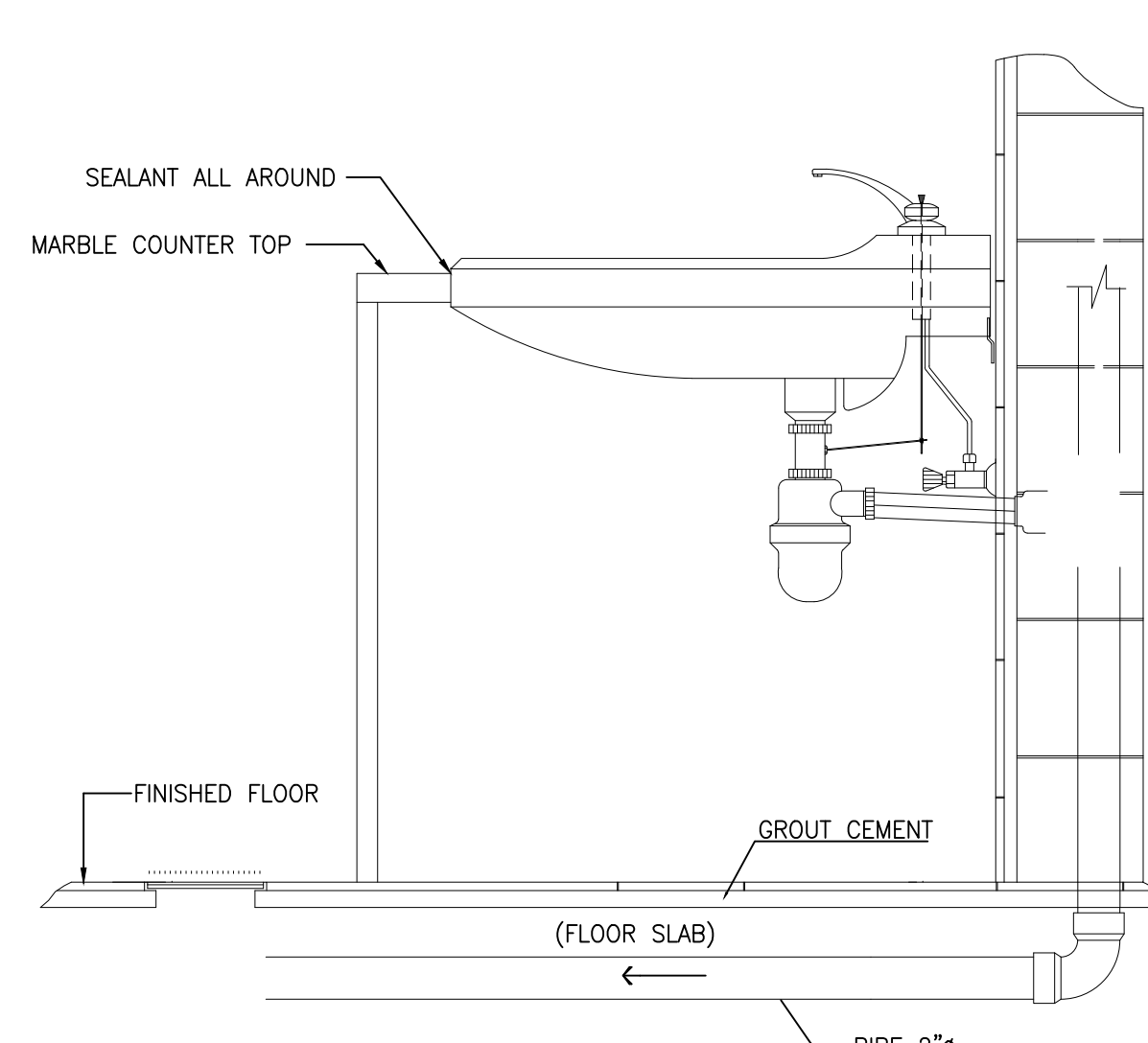
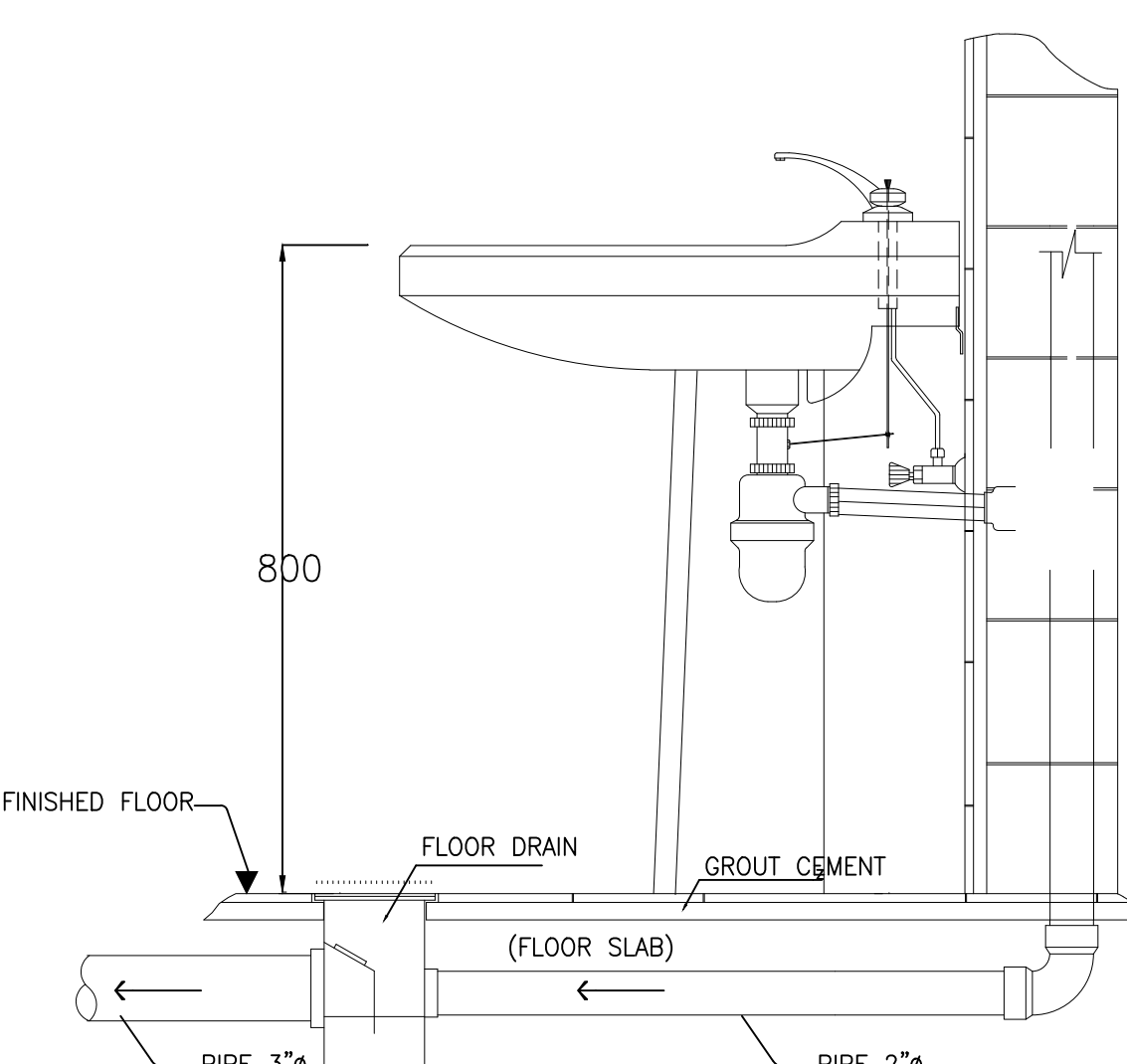
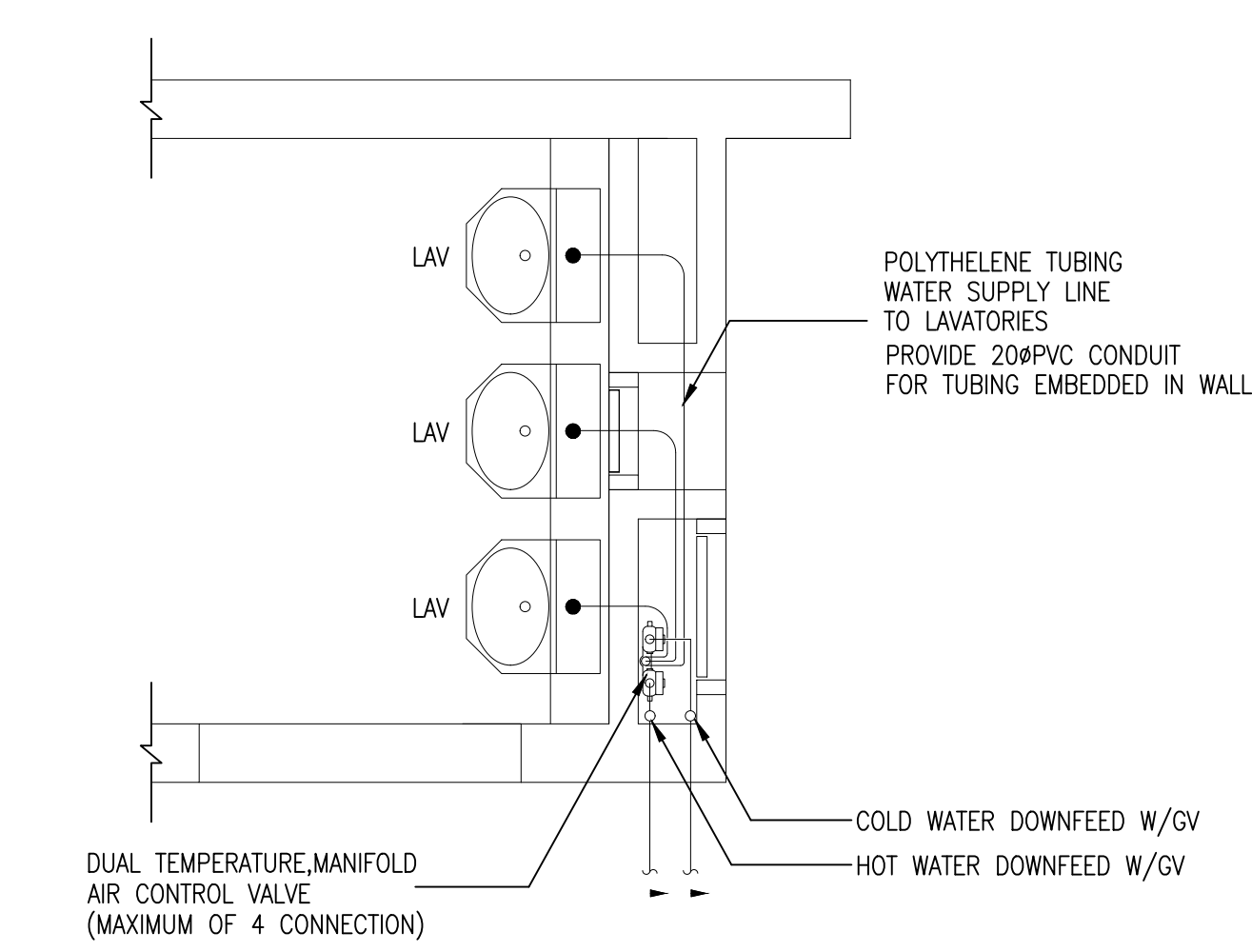
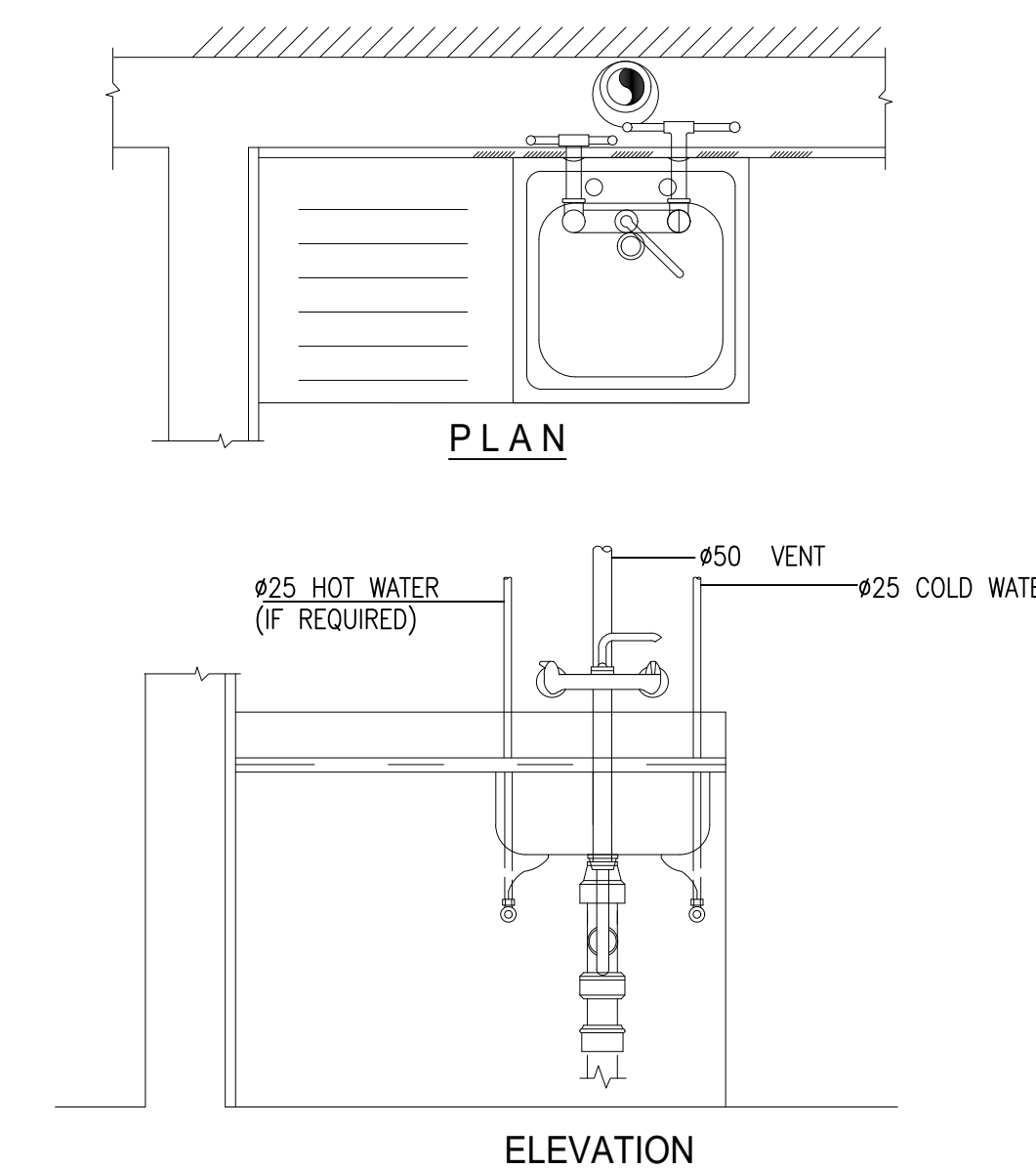
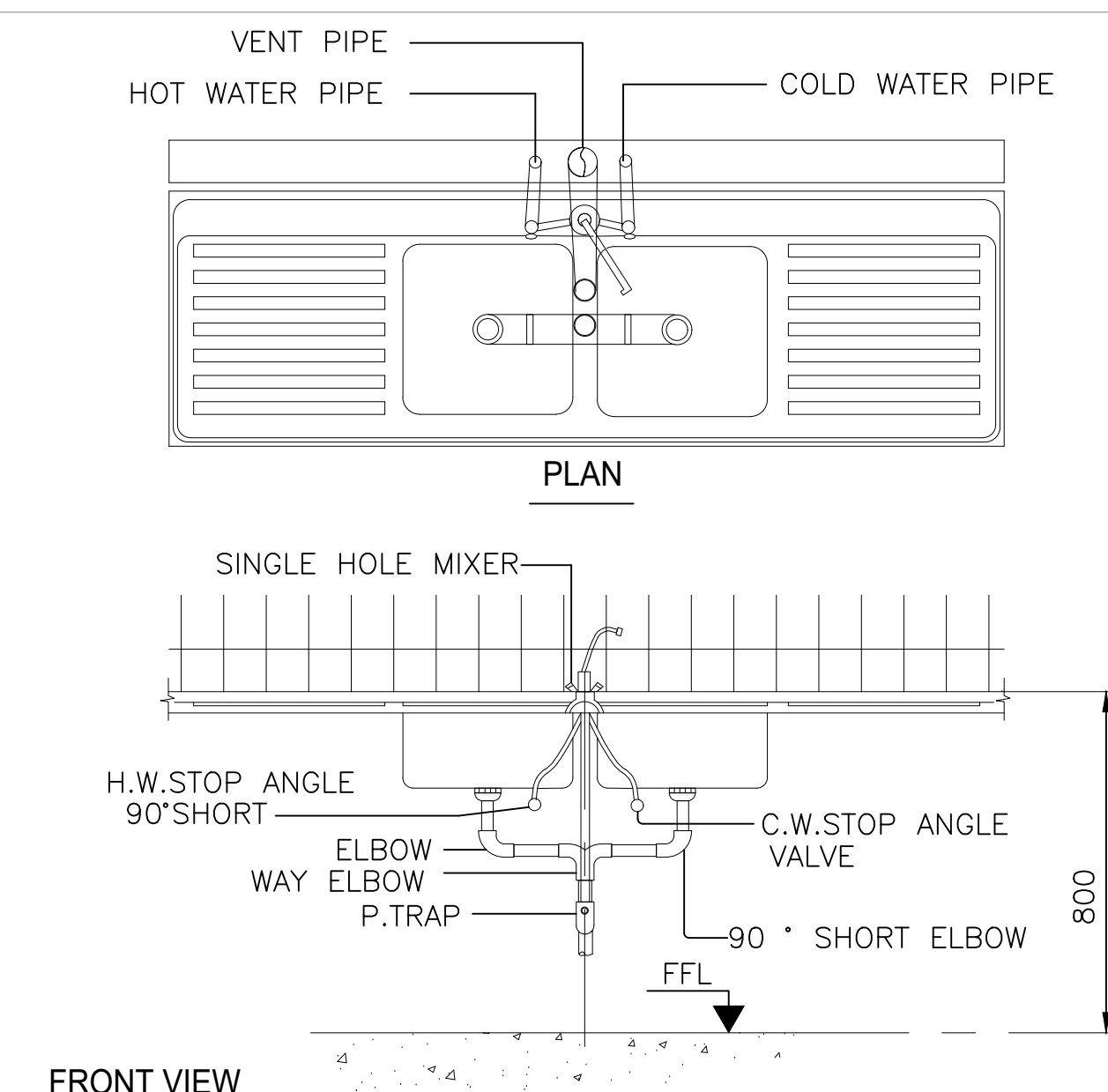
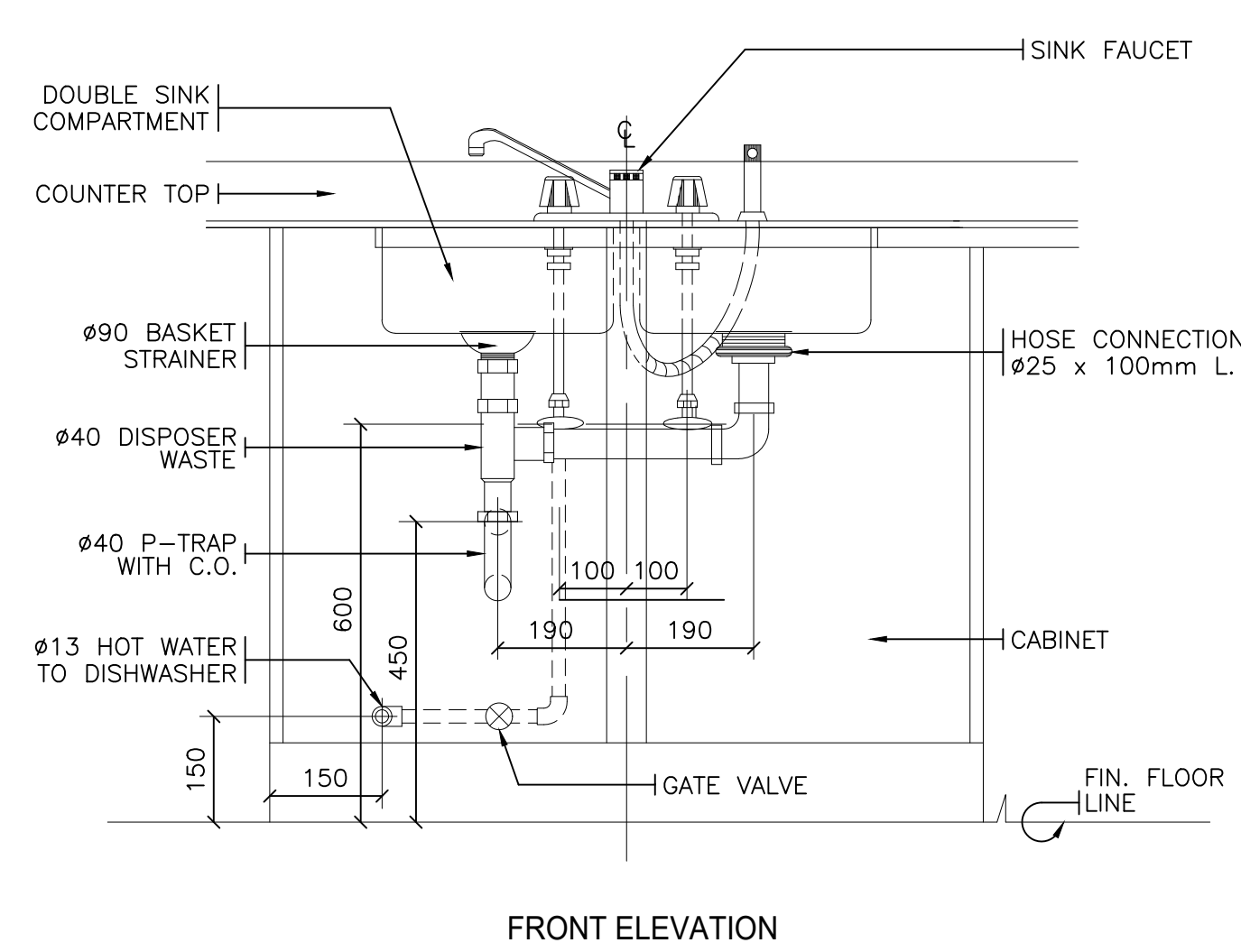
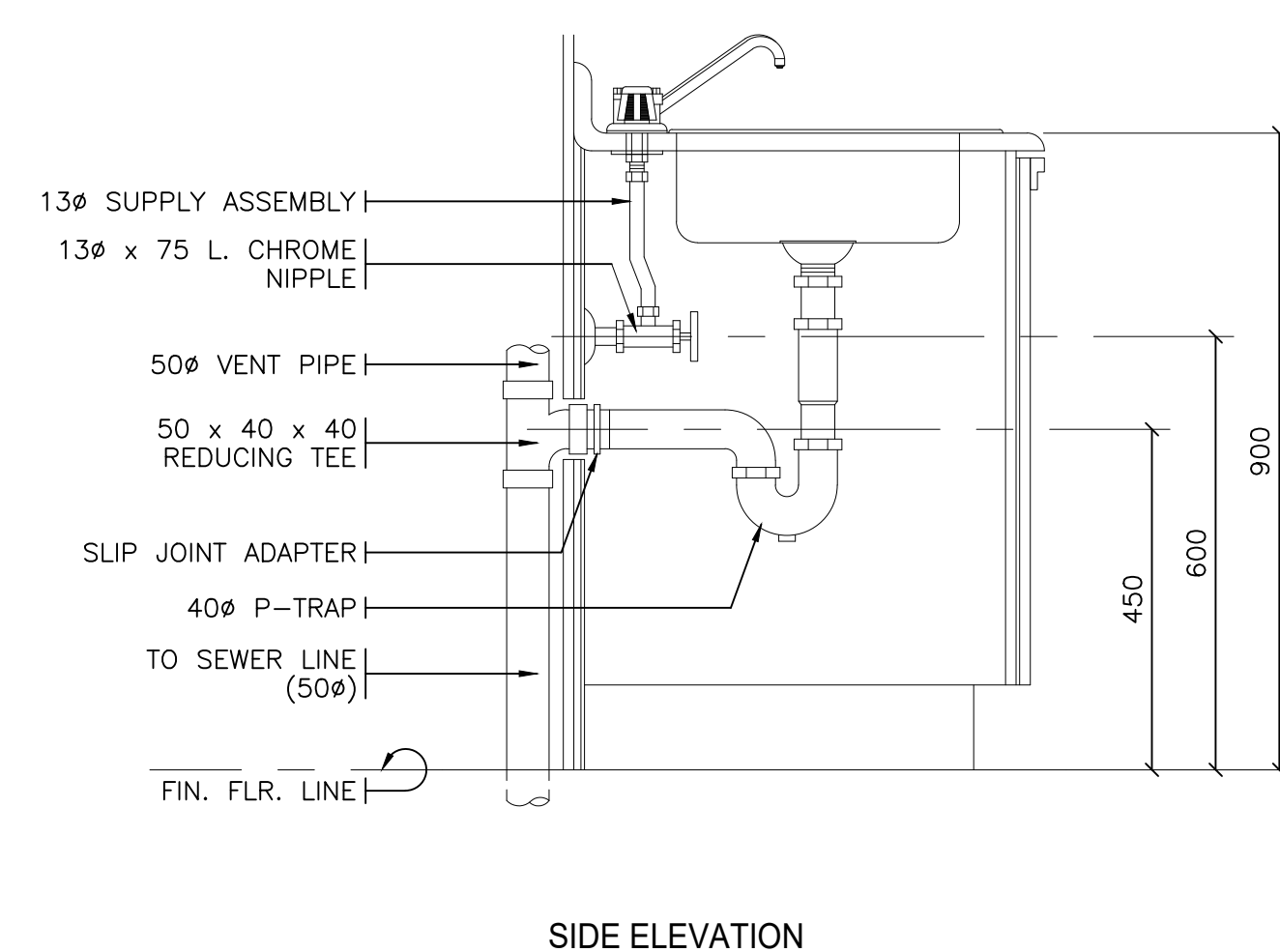
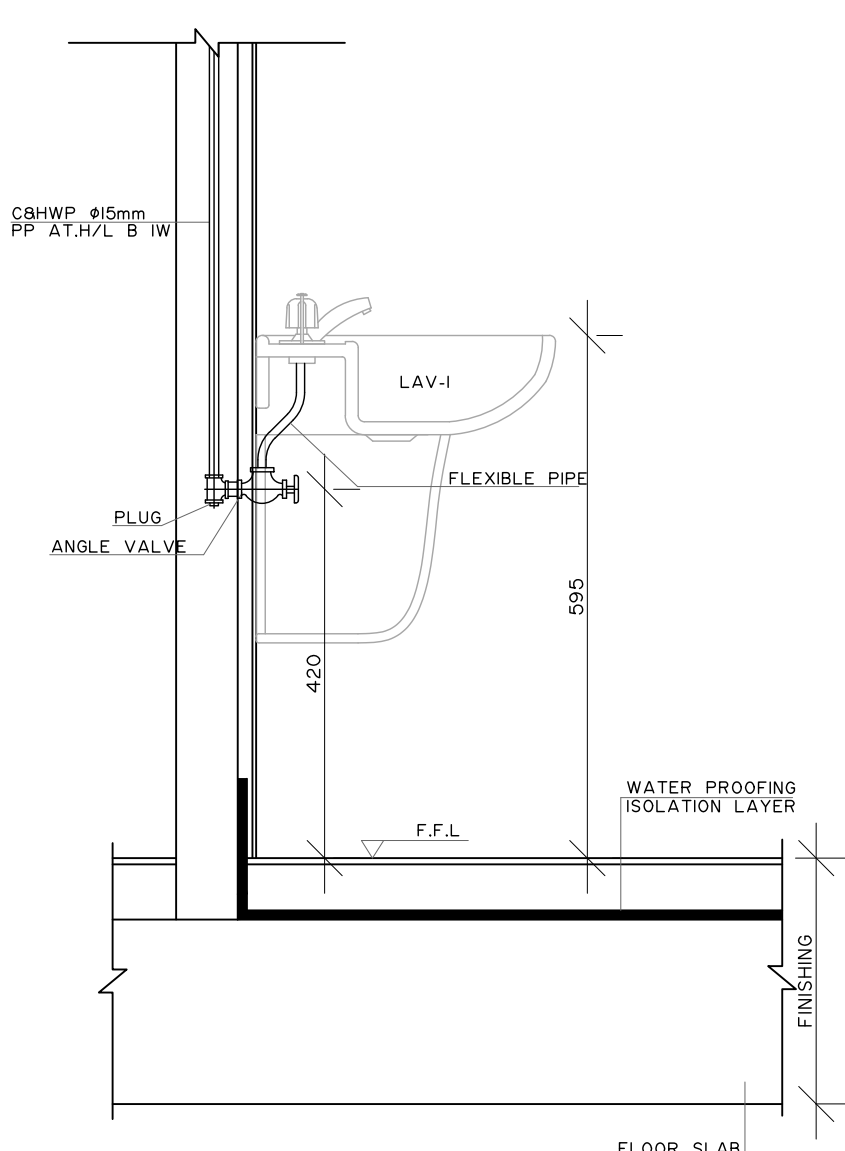
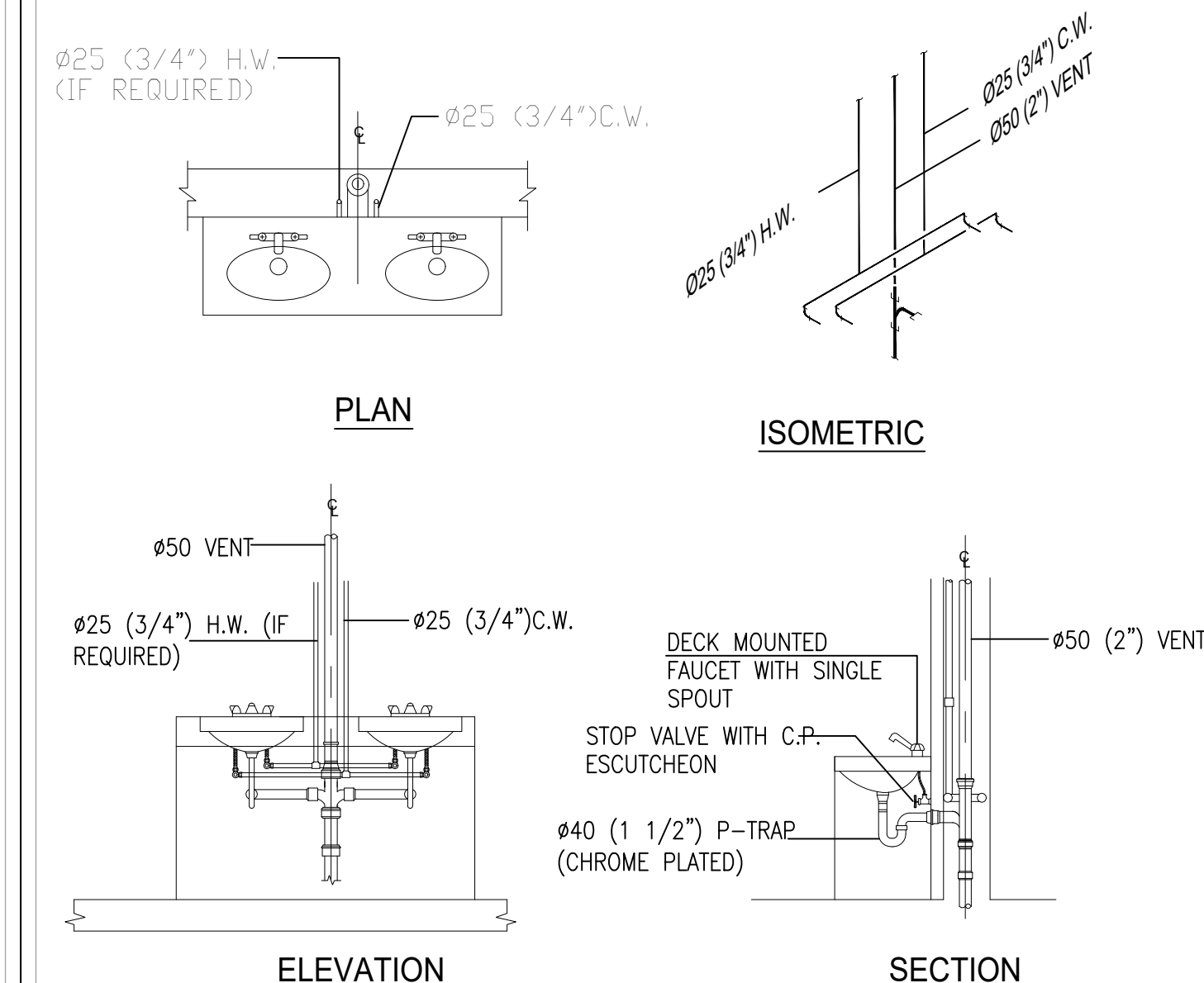
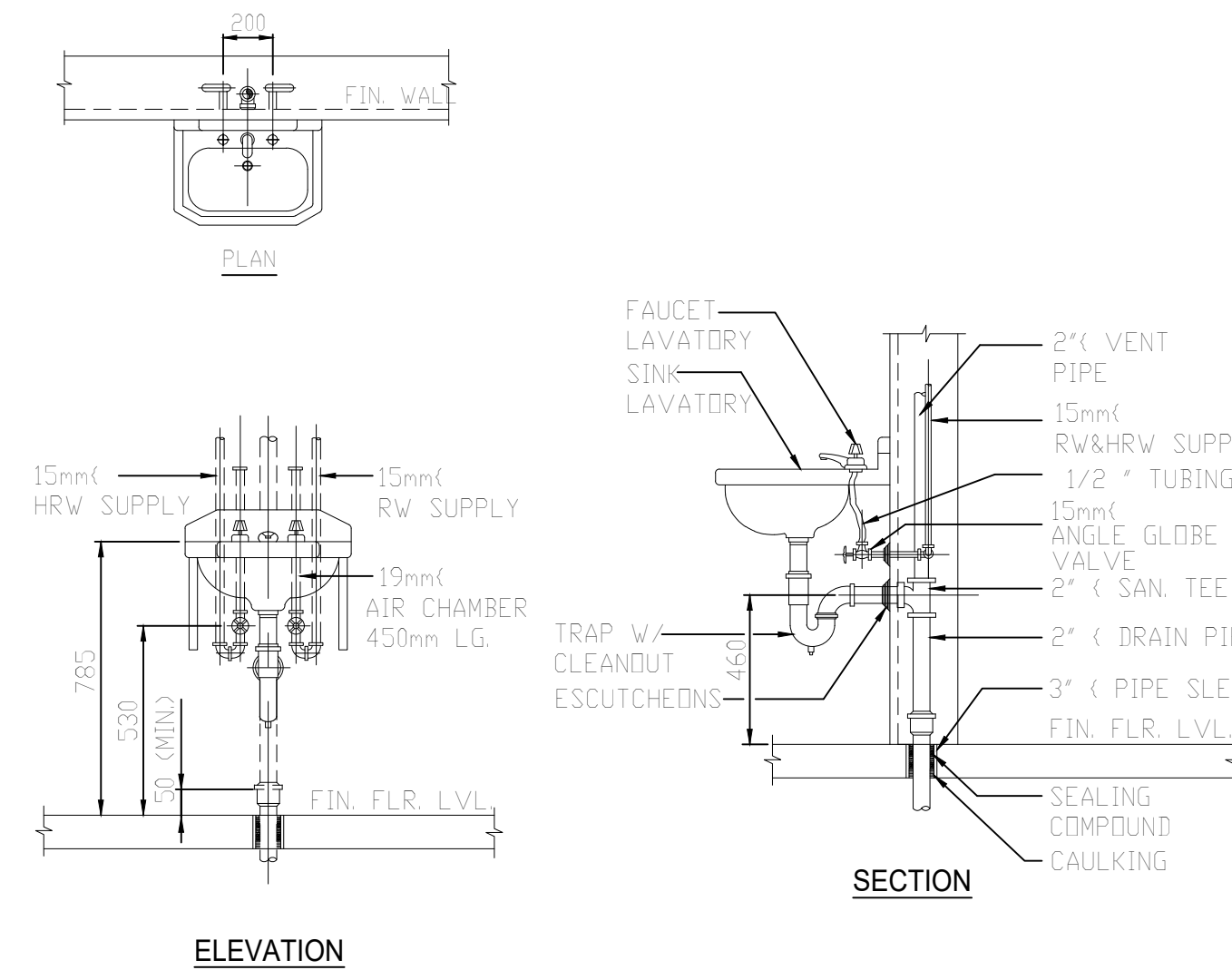
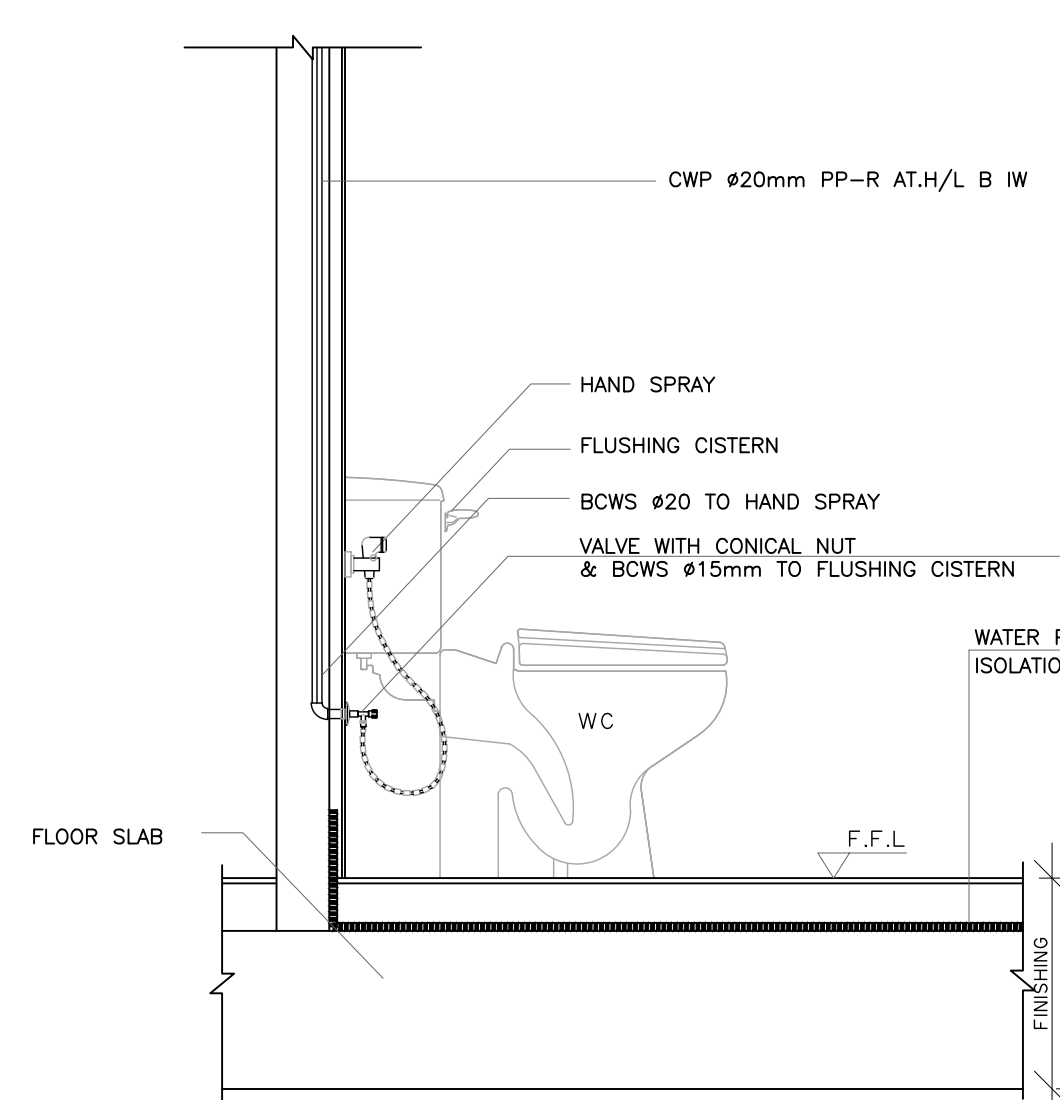
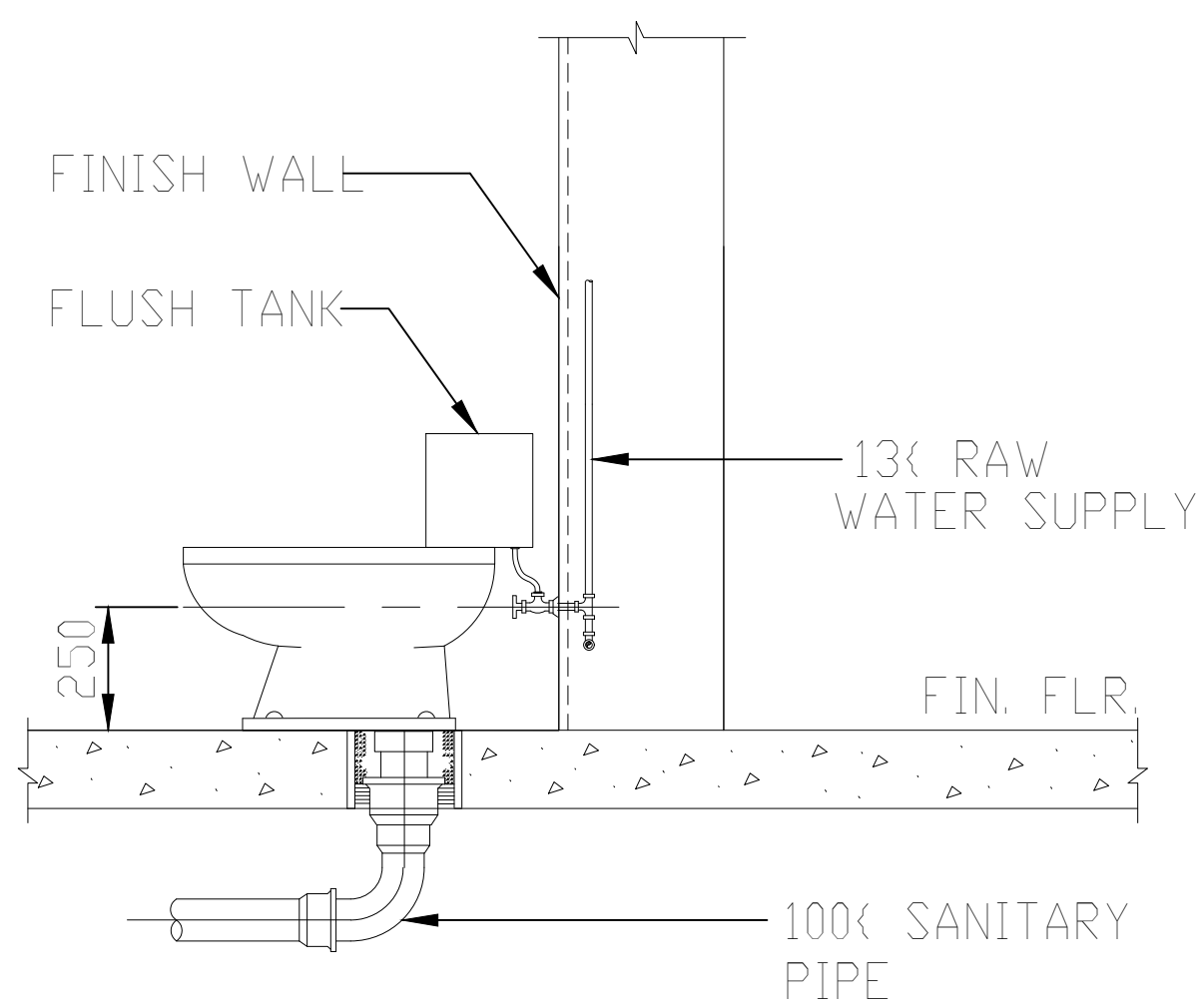
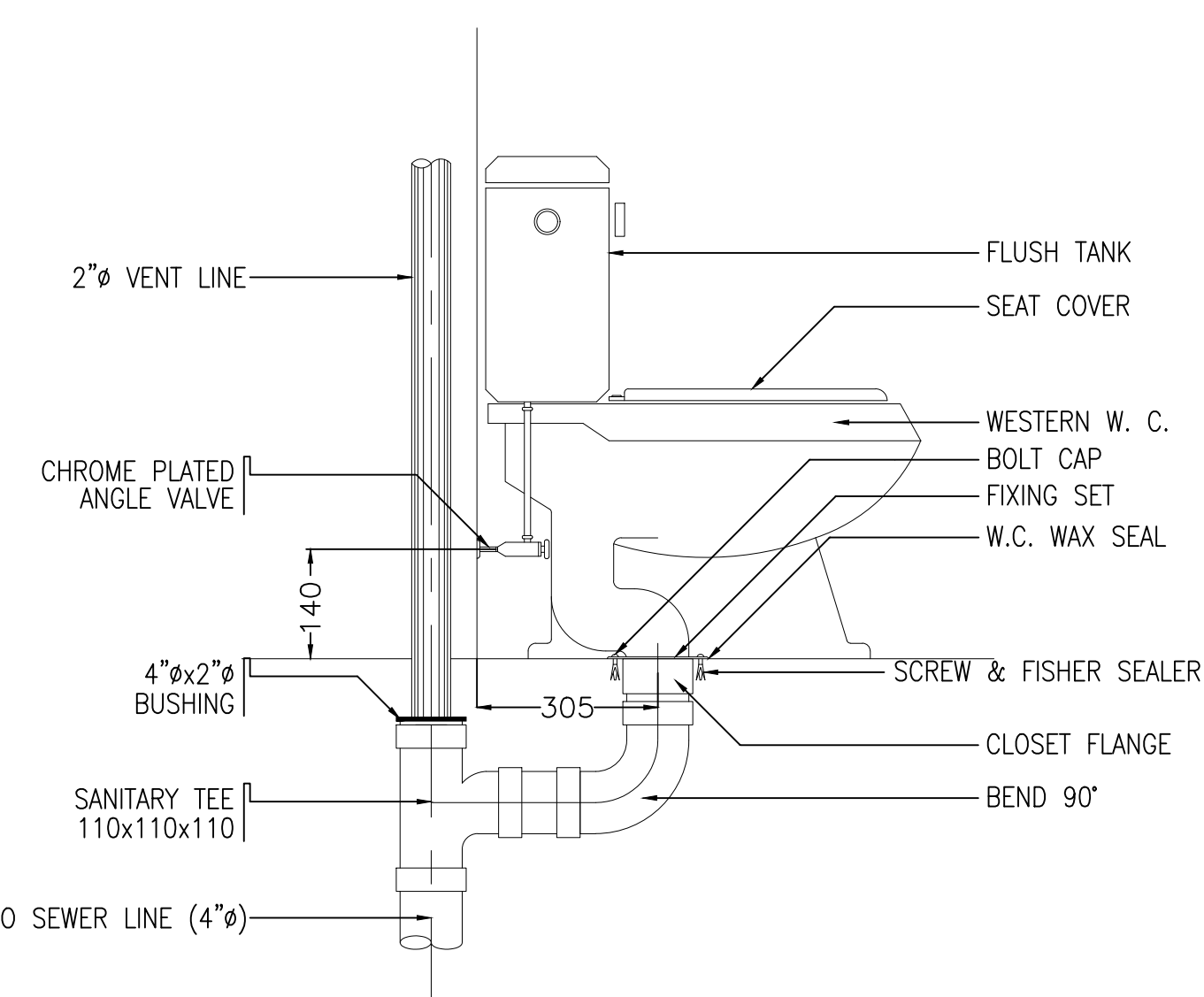
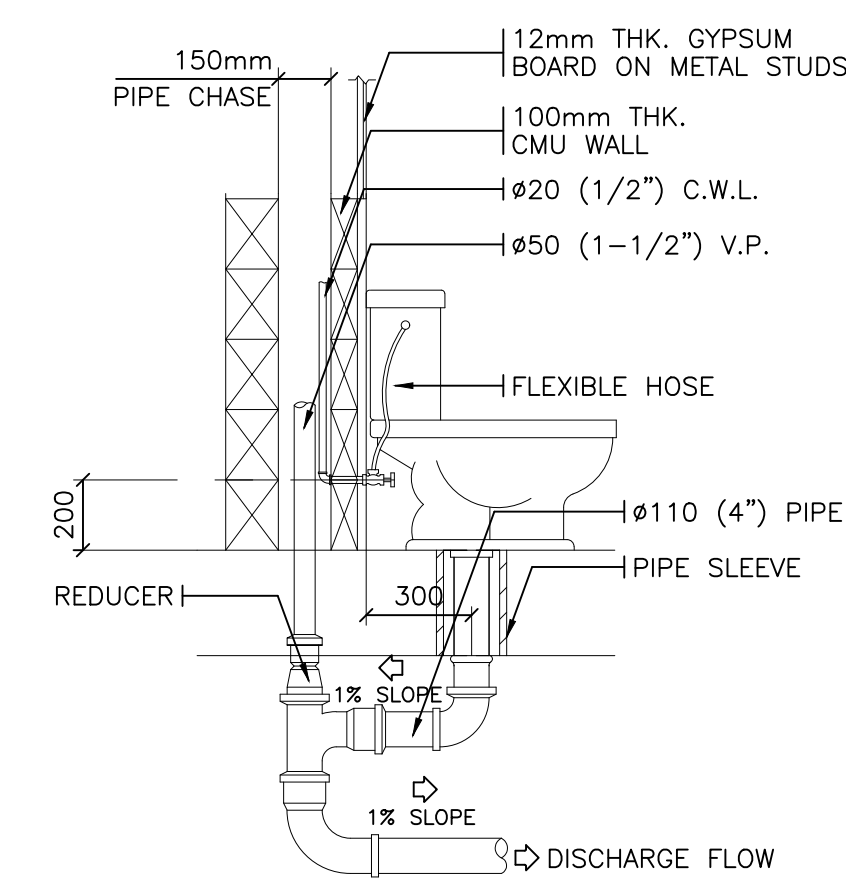
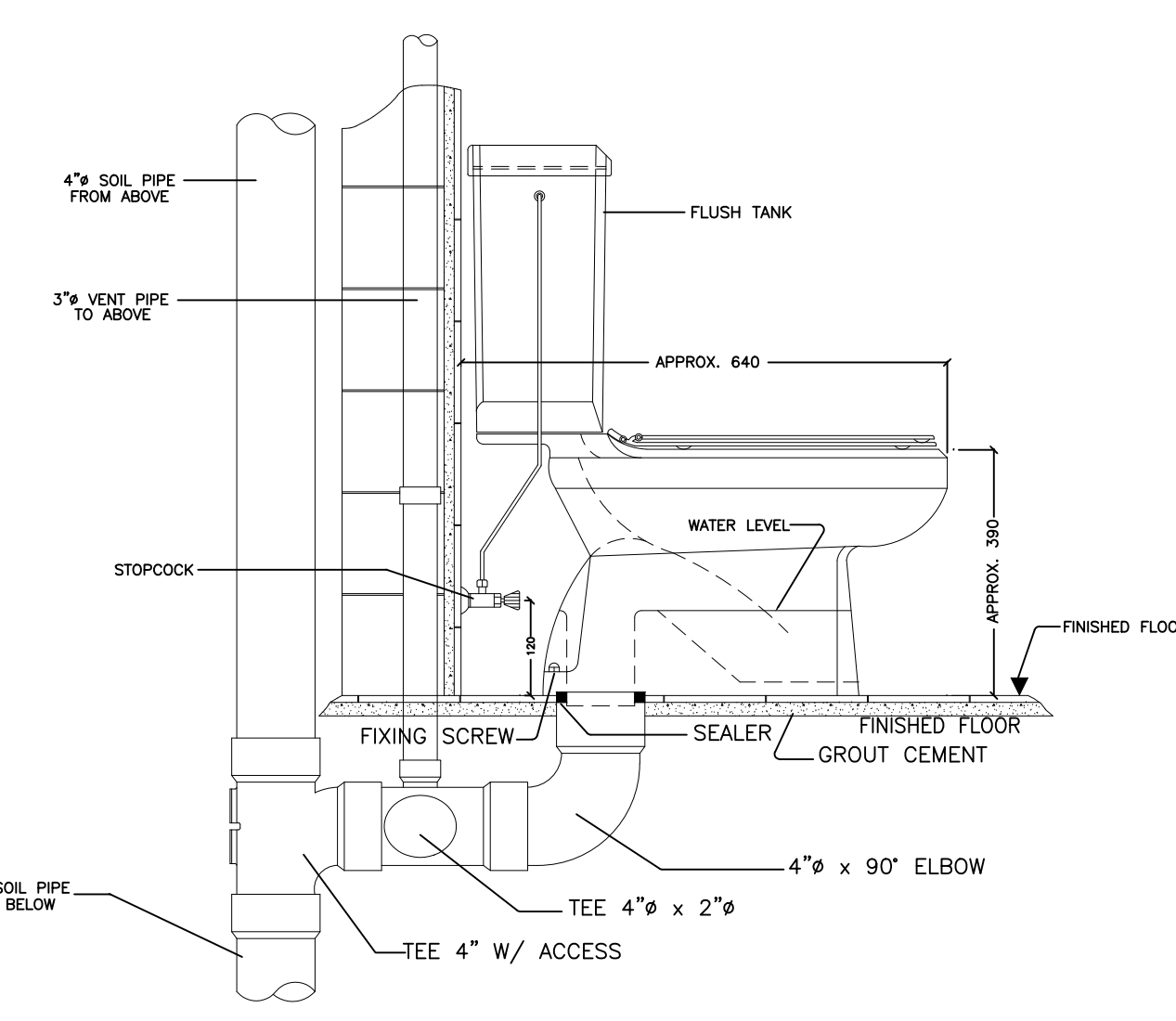
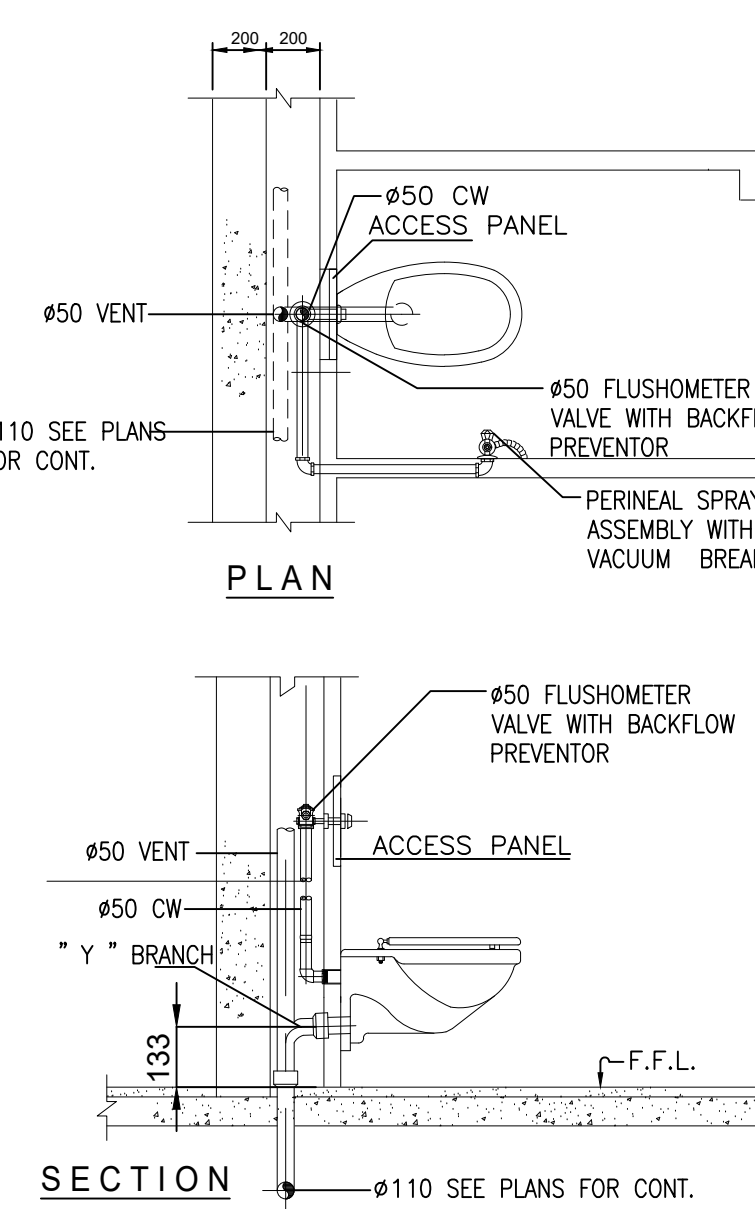
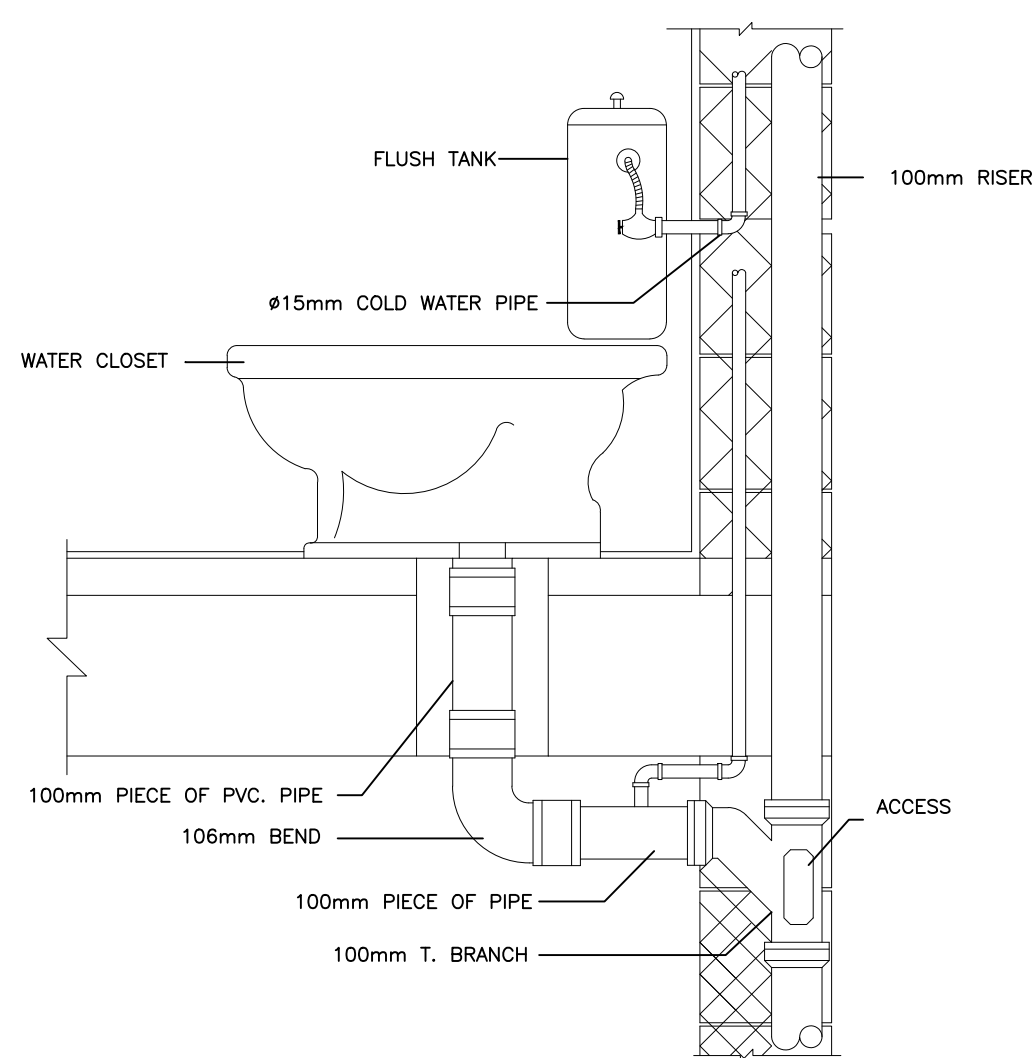
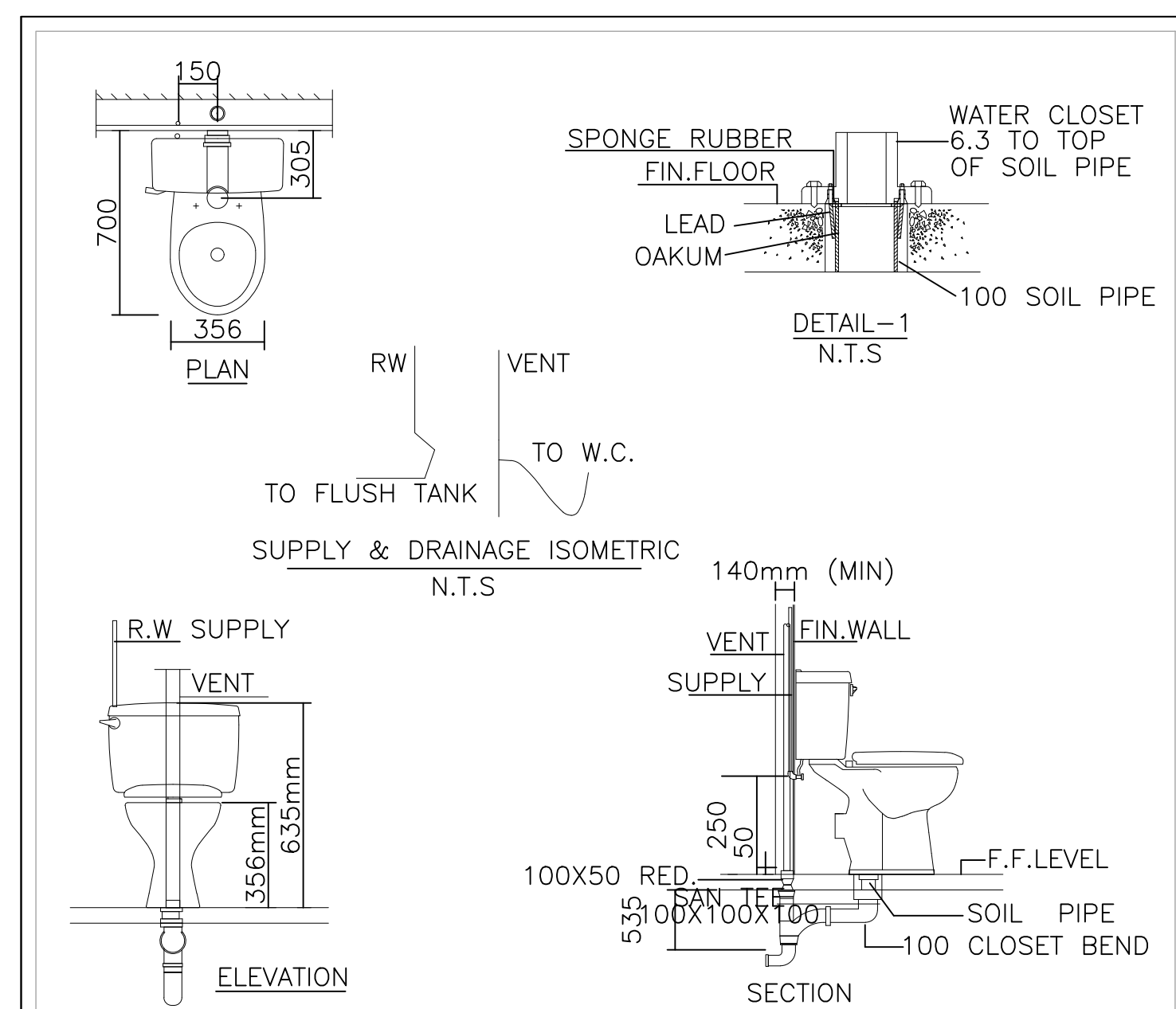


DUCT SIZE	DUCT GAGE	JOINT SPACING	JOINT TYPE	JOINT GAGE	REINFORCEMENT
6-12	28	6-7	1-1	28	NONE
13-24	28	6-7	T-2 or T-3	28	ANGLE 1x1 GASS OR U CHANNEL
25-36	28	6-7	1-10	28	NONE
37-48	24	3-4	1-13	24	BAR 1x1/8
49-60	22	3-4	1-14	22	ANGLE 1x1x1/8
60-72	20	3-4	1-22	20	ANGLE 11/4x11/4x1/8
OVER-72	20	3-4	1-22	20	ANGLE 11/2x11/2x1/8



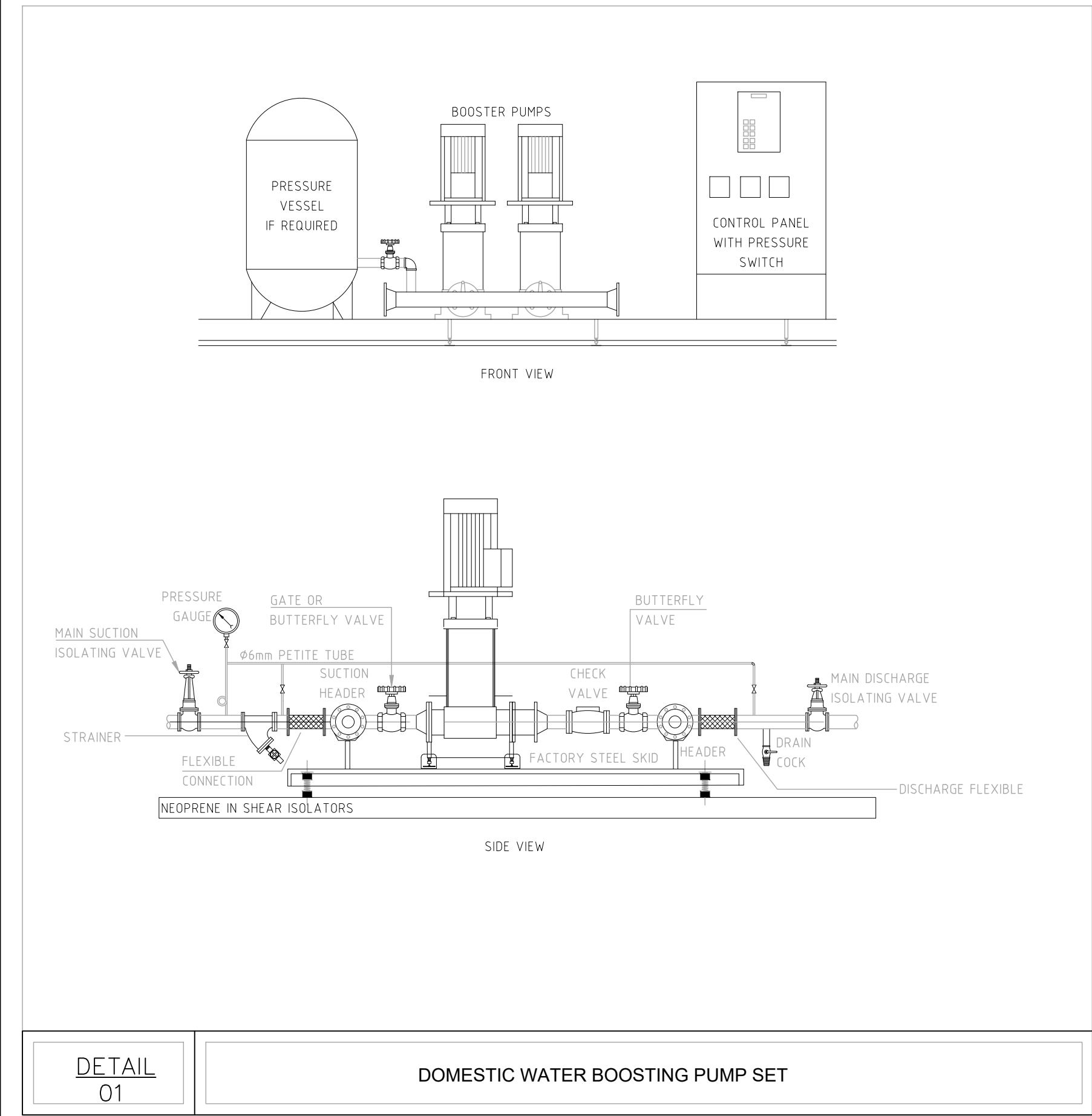
DUCT SIZE (mm)	GAGE	PRESSURE CLASS
0 - 250	26	250 Pa
275 - 500	24	250 Pa
0 - 250	26	500 Pa
275 - 500	24	500 Pa



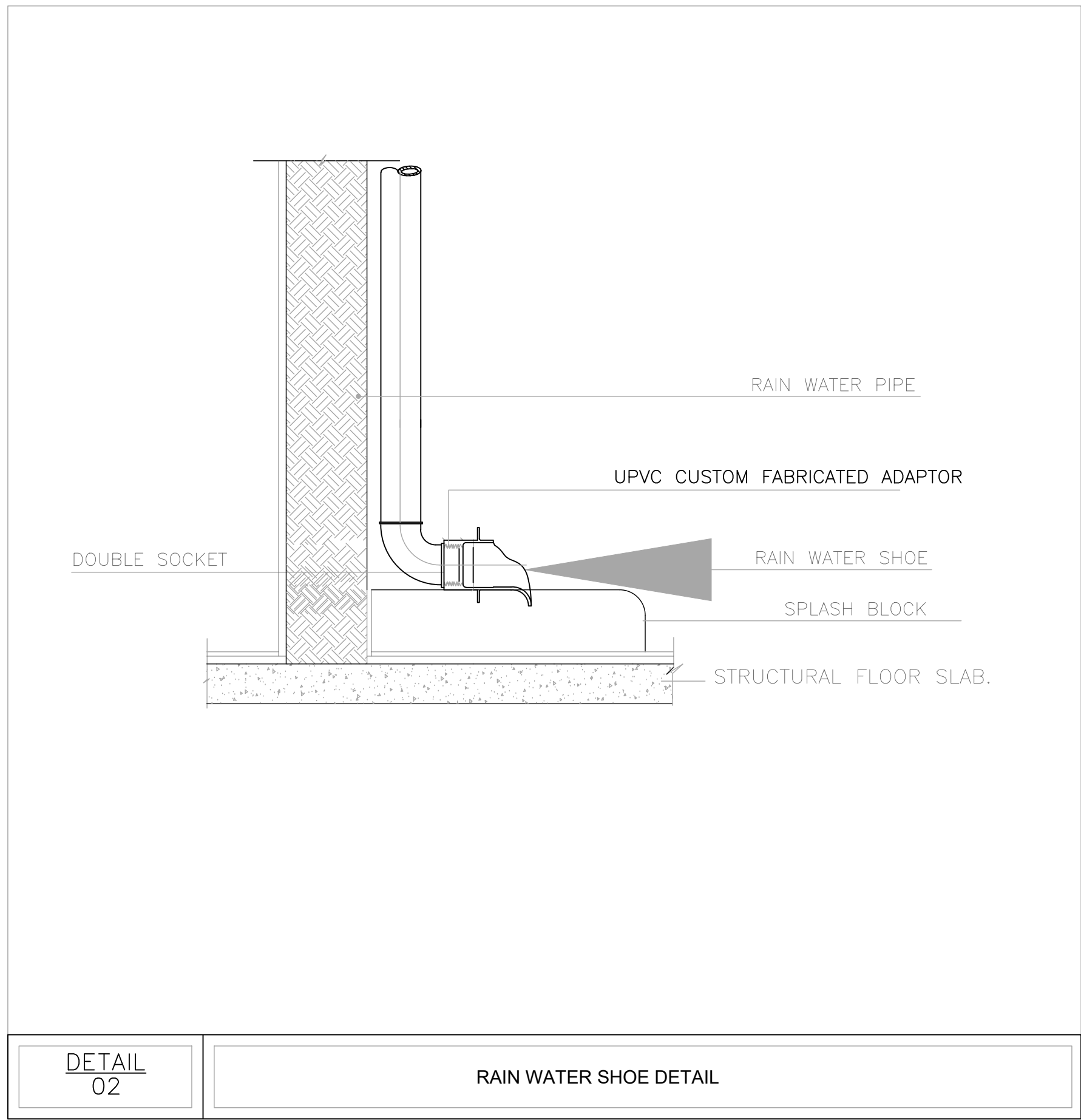


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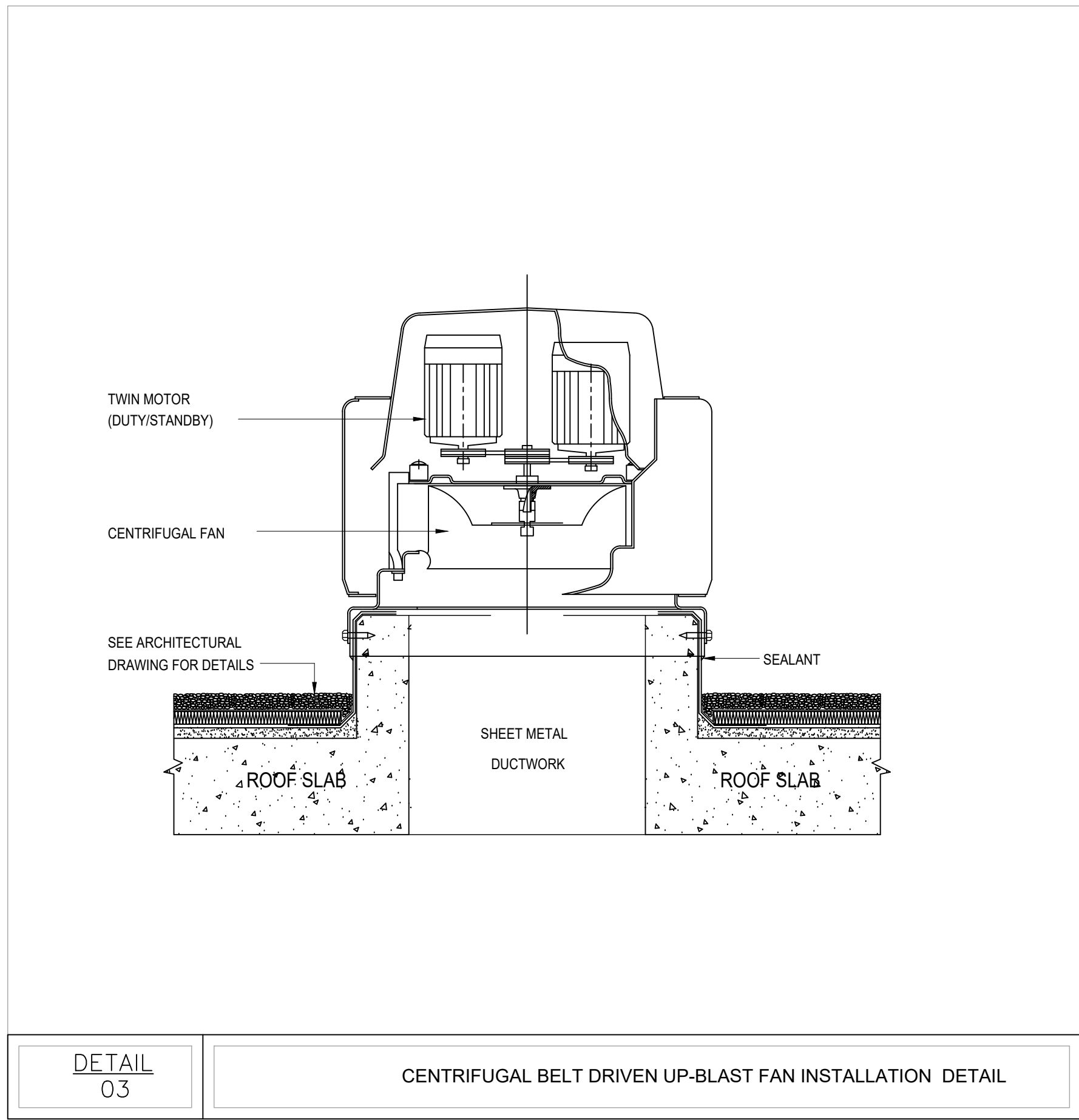
PLOT NO		: 413	
DISTRICT		: IRBID	
BASIN		: 40 ALMUSRIB ALSHAMALI	
REV.	MARK	DATE	MADE BY
CLIENT		NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS	
M	P	MADI & PARTNERS CONSULTING ENGINEERS	
C	E	TEL:5829640-5829641 FAX:5829642 e-mail : mpce@index.com.jo	
PROJECT		NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY	
DRG. TITLE		MECHANICAL DETAILS 02	
DRAWN BY : MECH.T		SCALE: NTS	
DESIGNED BY : A.Q		DATE : DEC.-2023	
CHECKED BY : F.N		PROJECT No.	DRAWING No.
APPROVED BY: F.N			M-1101



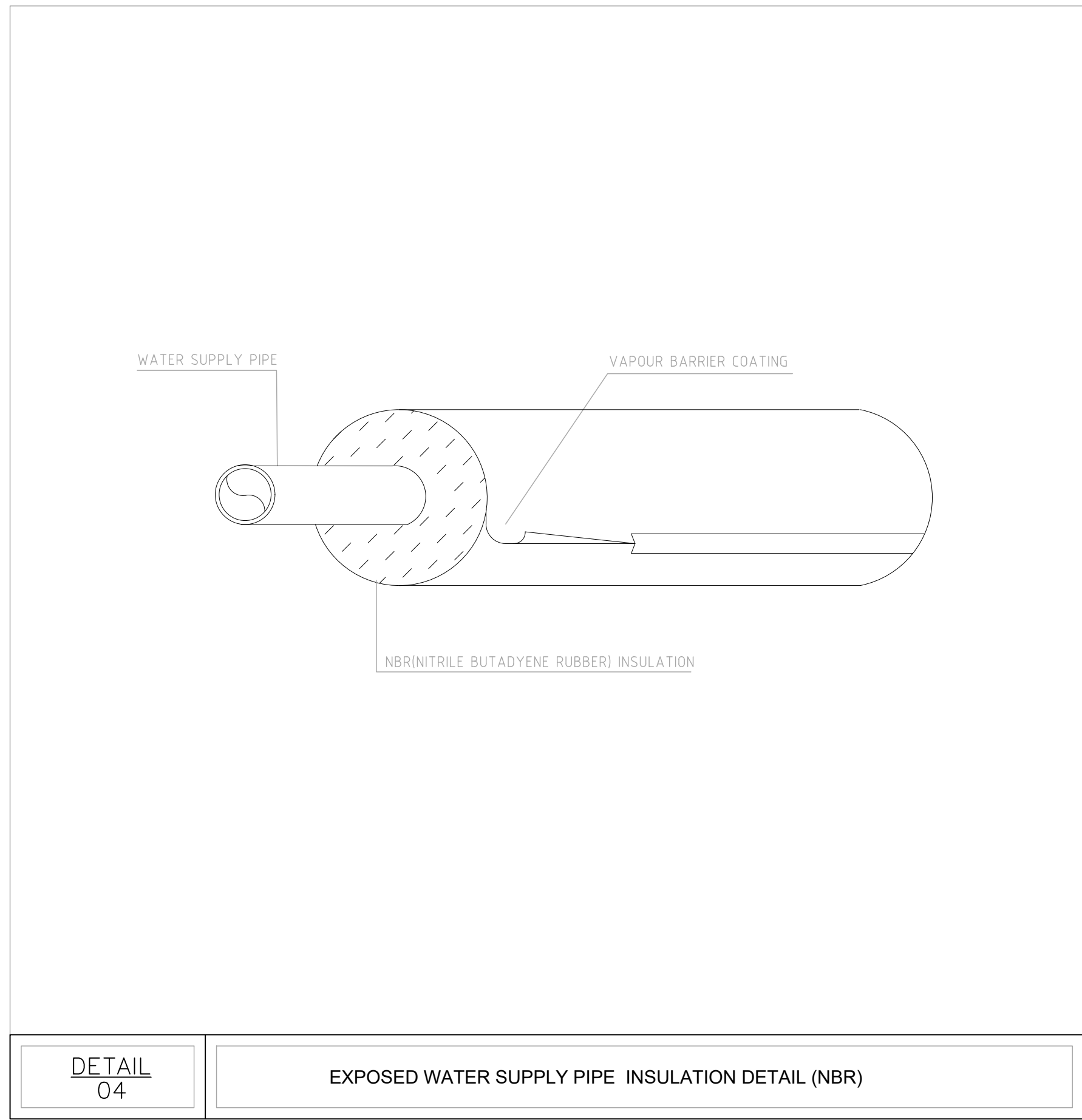
DETAIL 01 DOMESTIC WATER BOOSTING PUMP SET



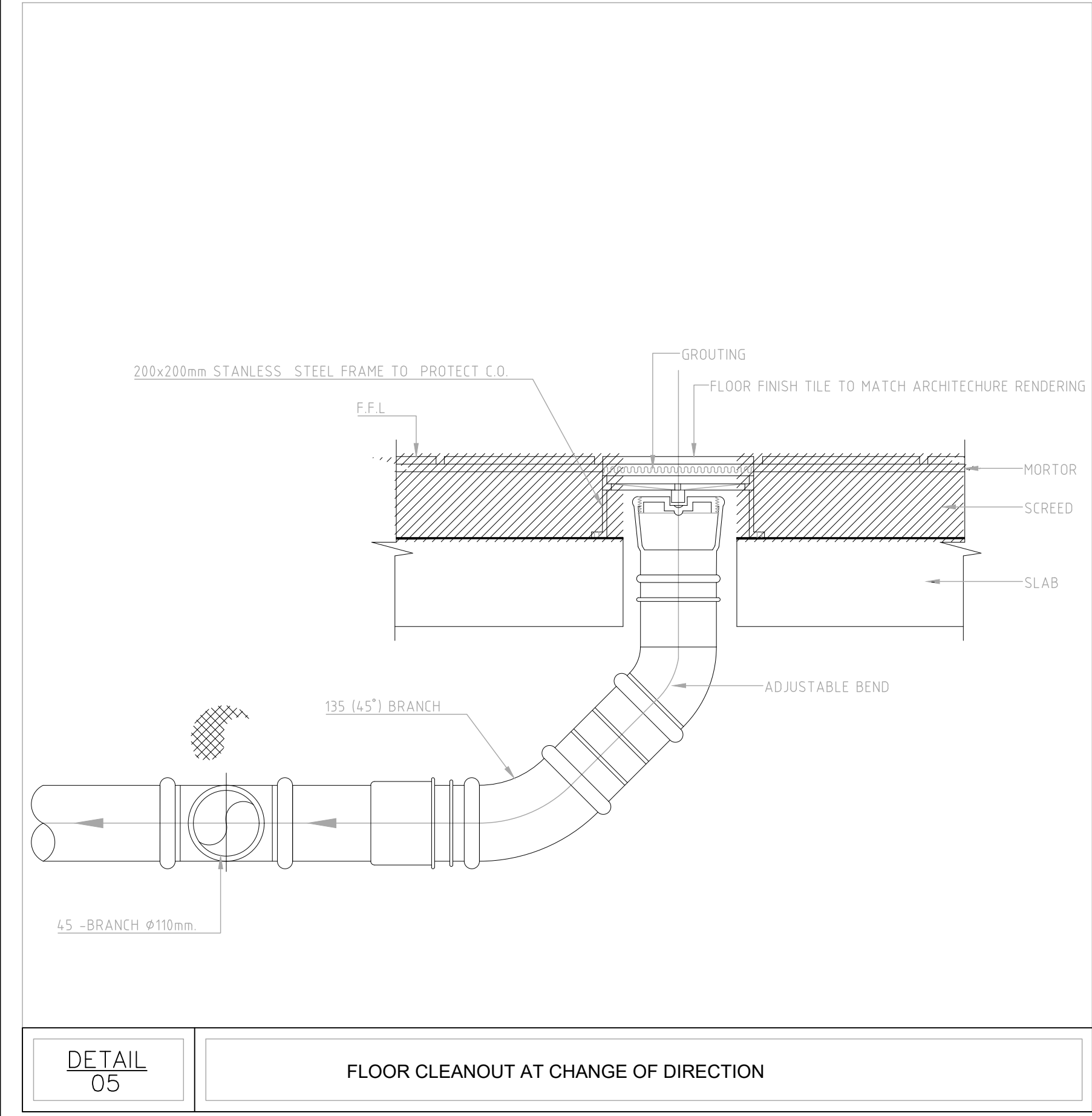
DETAIL 02 RAIN WATER SHOE DETAIL



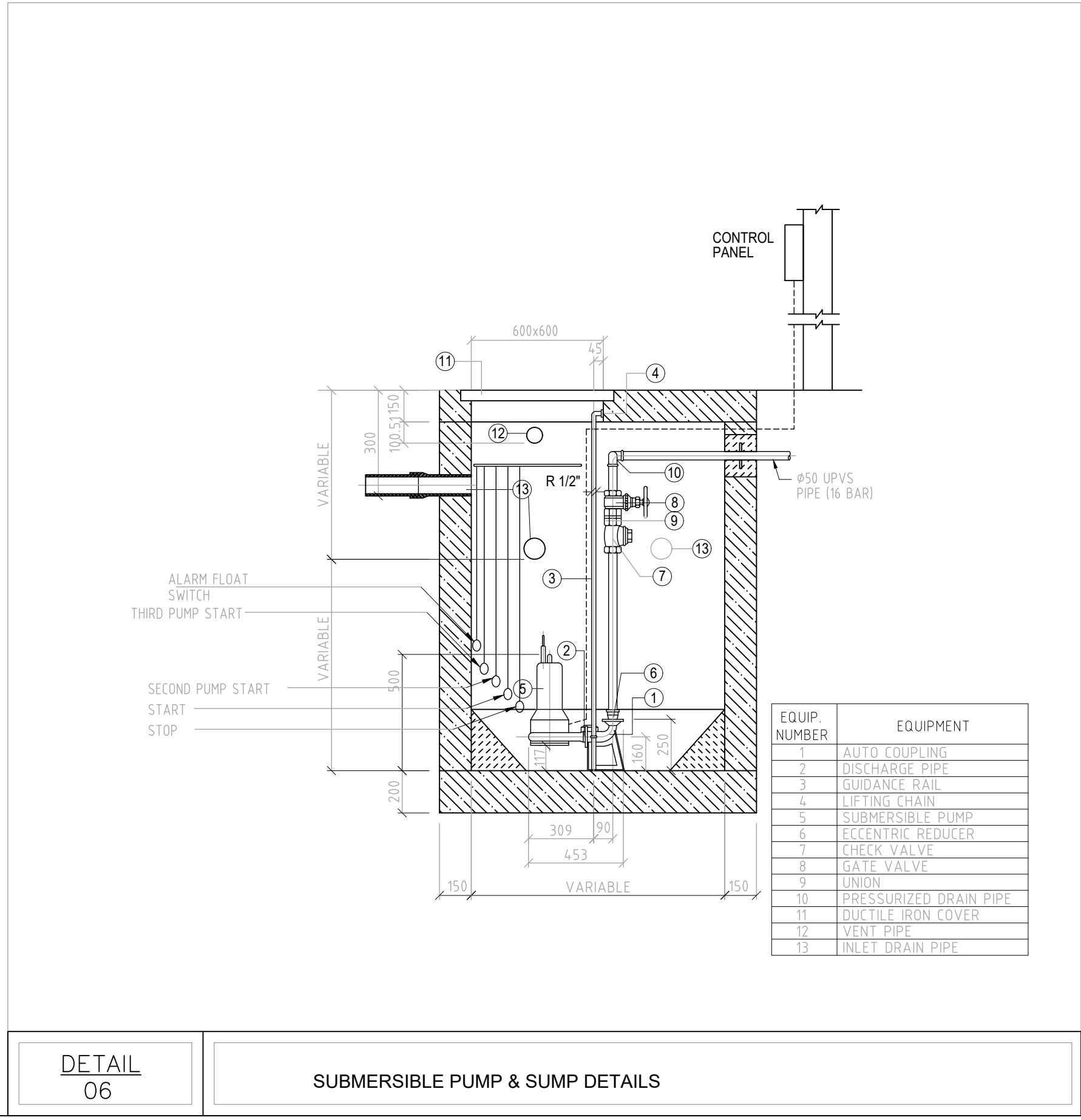
DETAIL 03 CENTRIFUGAL BELT DRIVEN UP-BLAST FAN INSTALLATION DETAIL



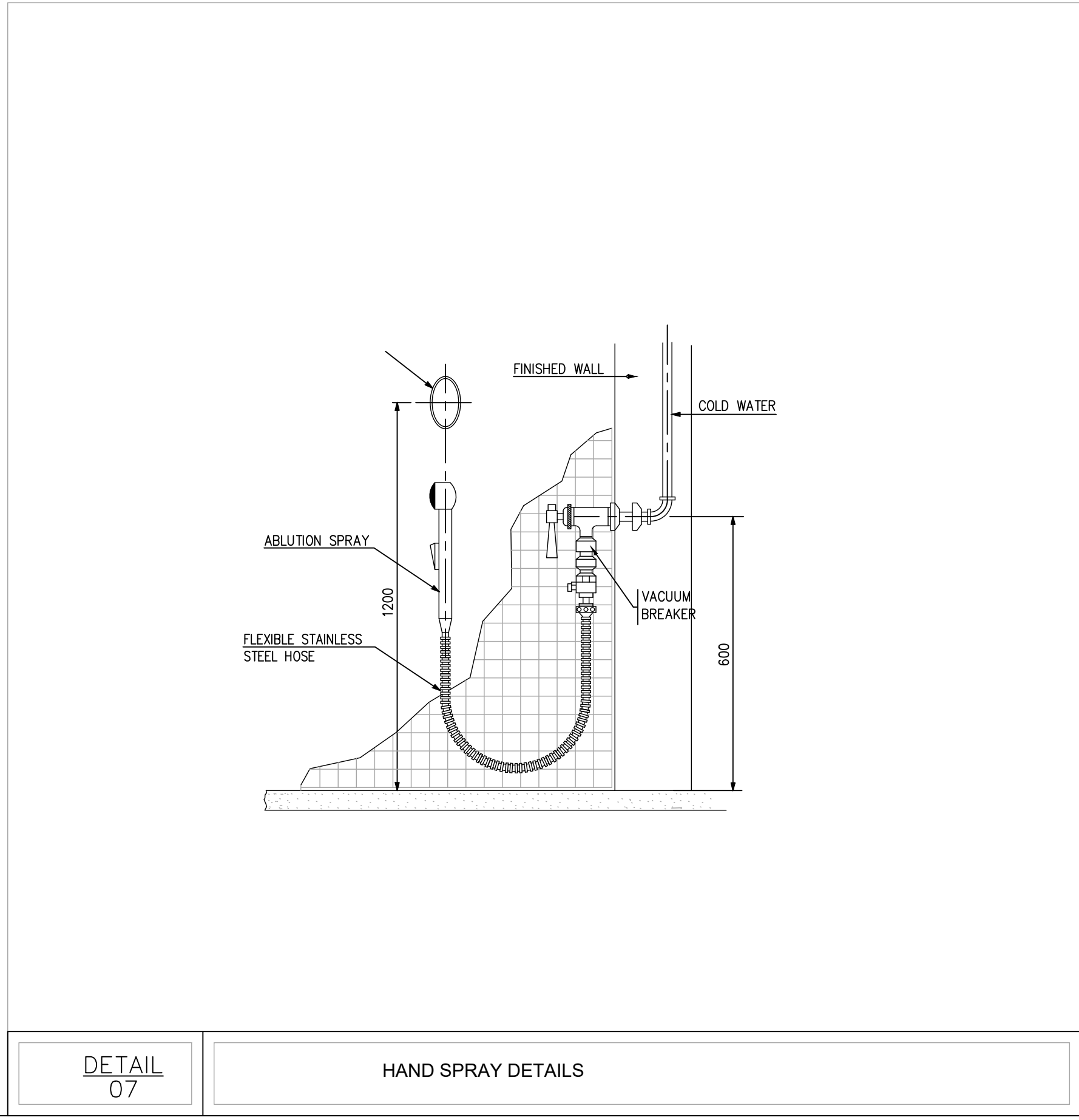
DETAIL 04 EXPOSED WATER SUPPLY PIPE INSULATION DETAIL (NBR)



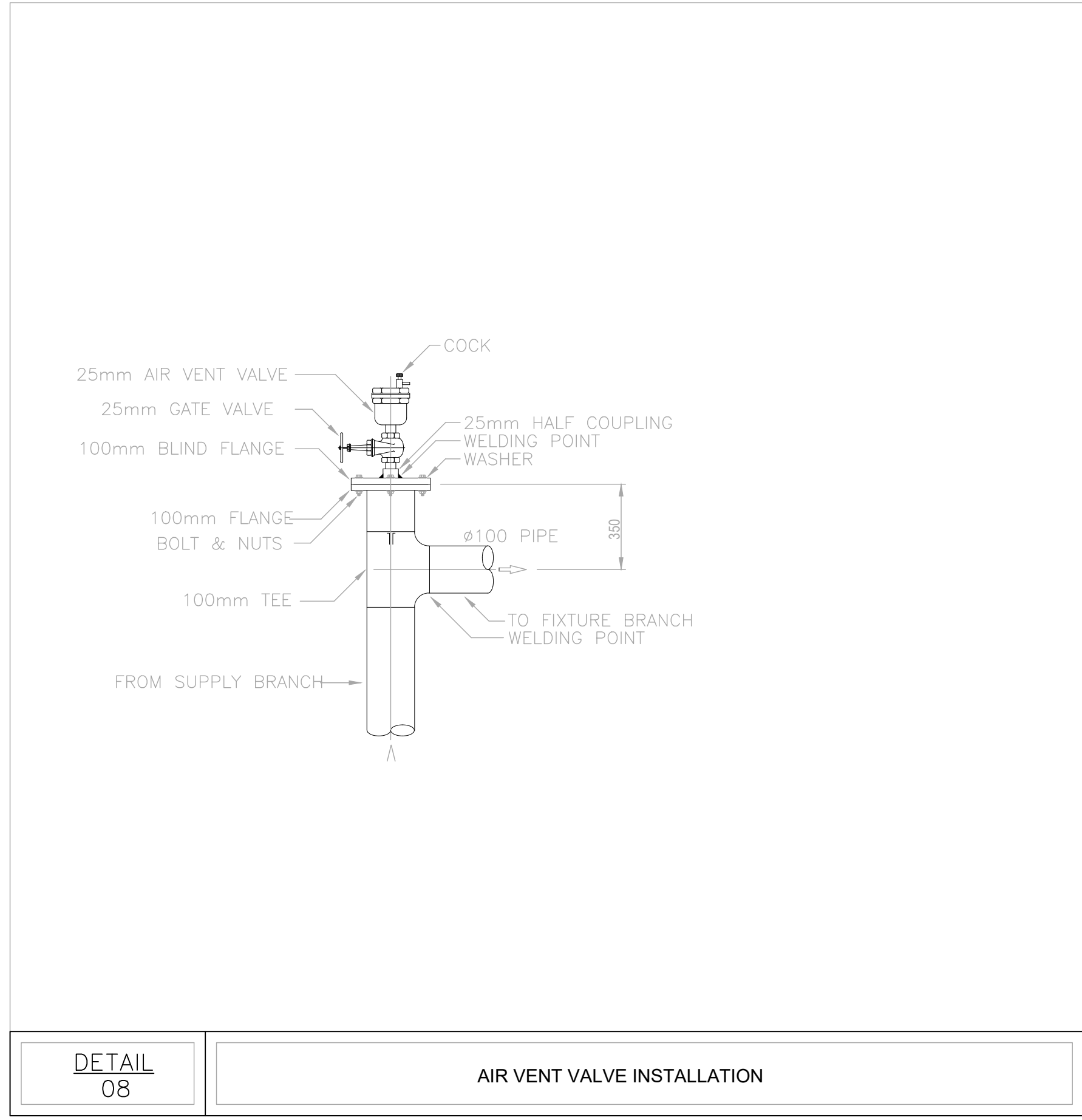
DETAIL 05 FLOOR CLEANOUT AT CHANGE OF DIRECTION



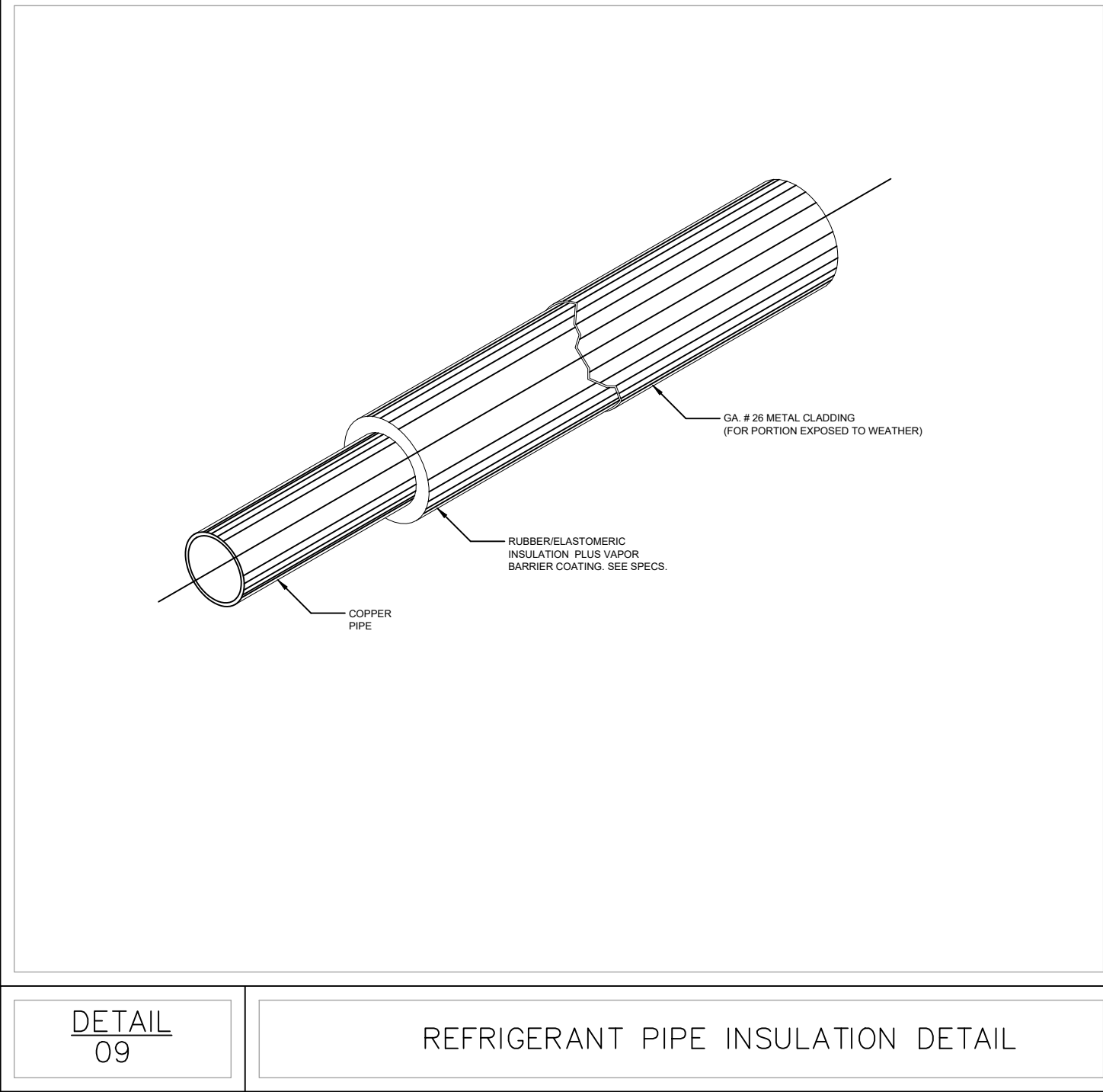
DETAIL 06 SUBMERSIBLE PUMP & SUMP DETAILS



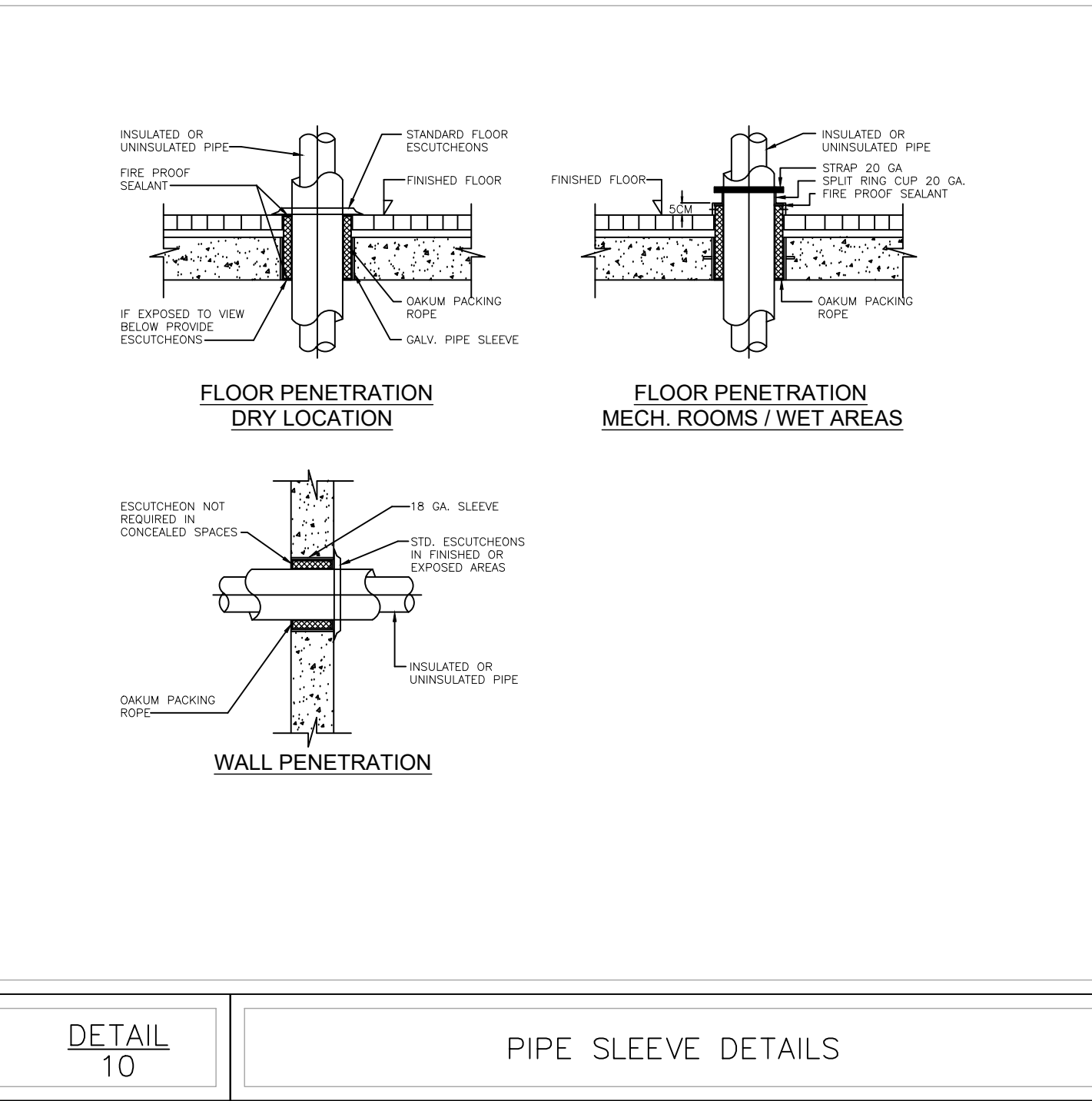
DETAIL 07 HAND SPRAY DETAILS



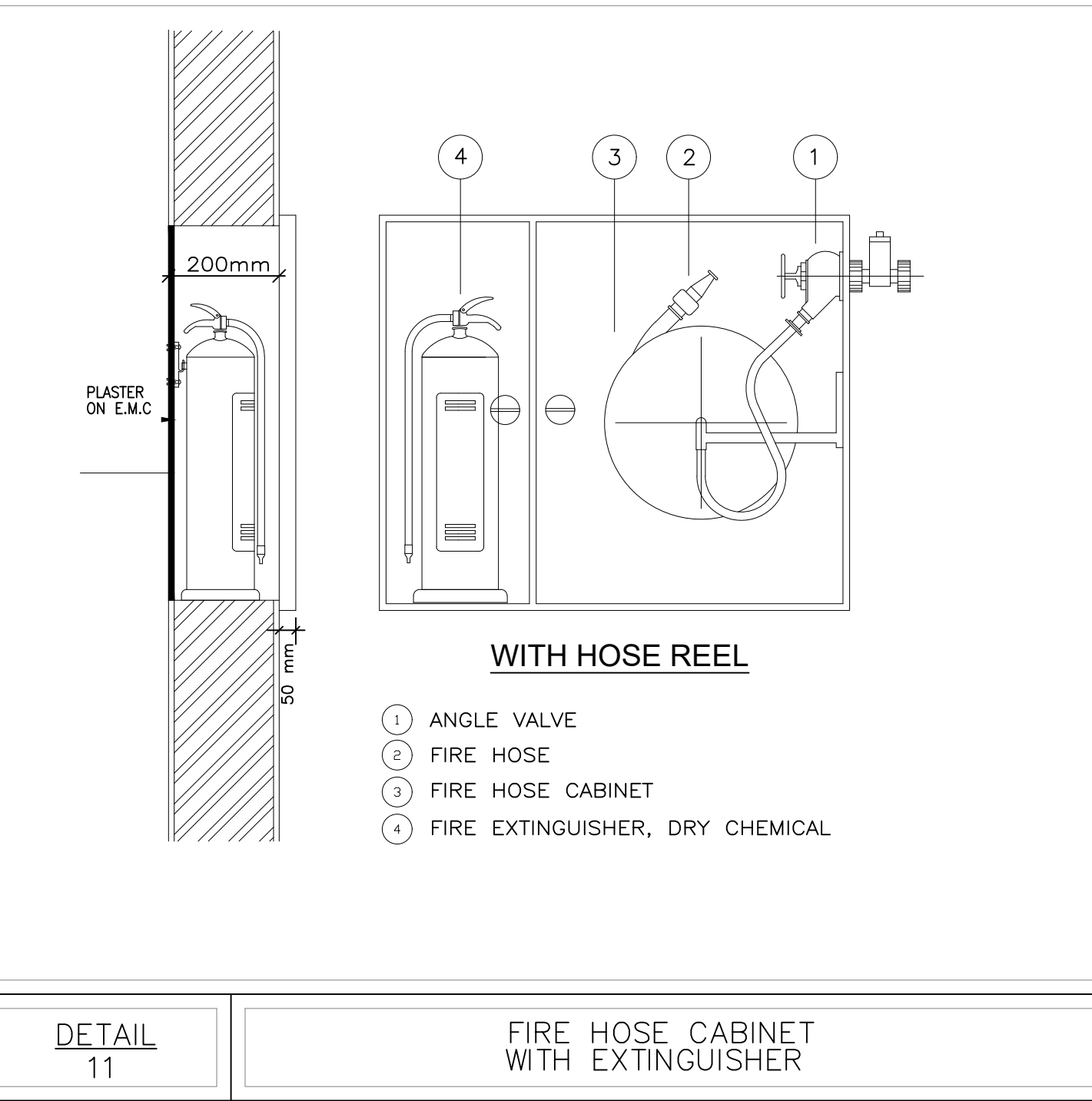
DETAIL 08 AIR VENT VALVE INSTALLATION



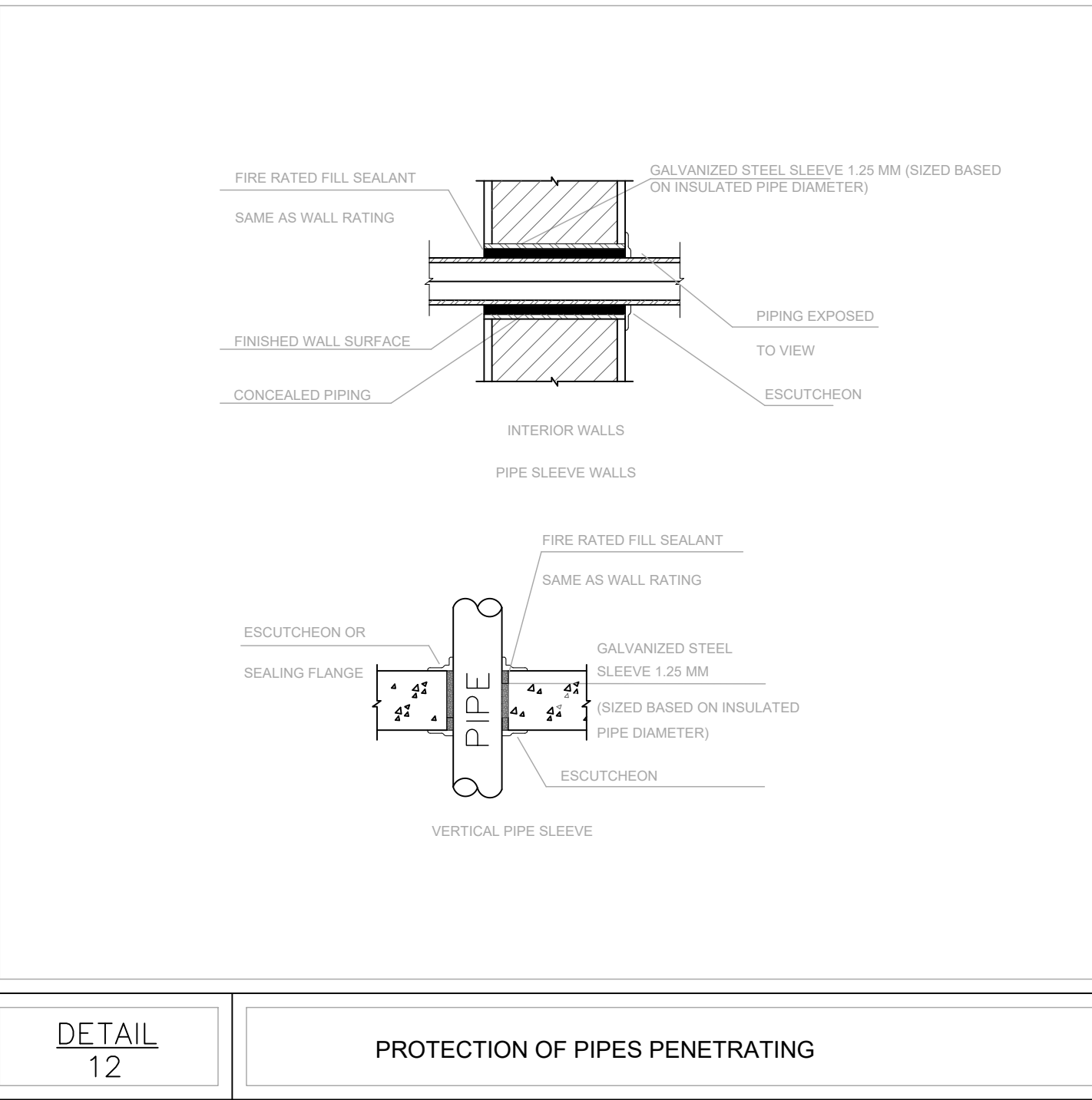
DETAIL 09 REFRIGERANT PIPE INSULATION DETAIL



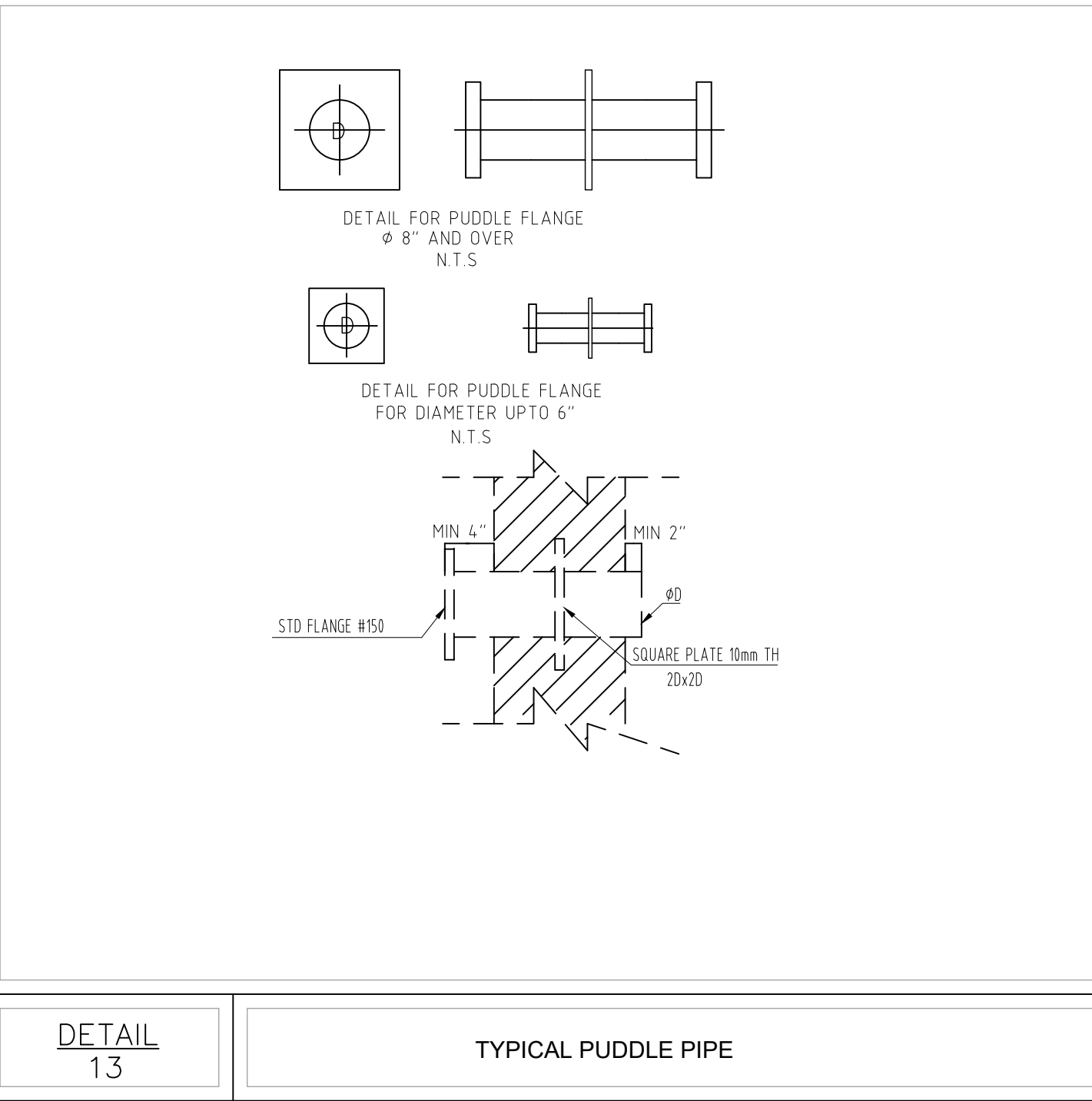
DETAIL 10 PIPE SLEEVE DETAILS



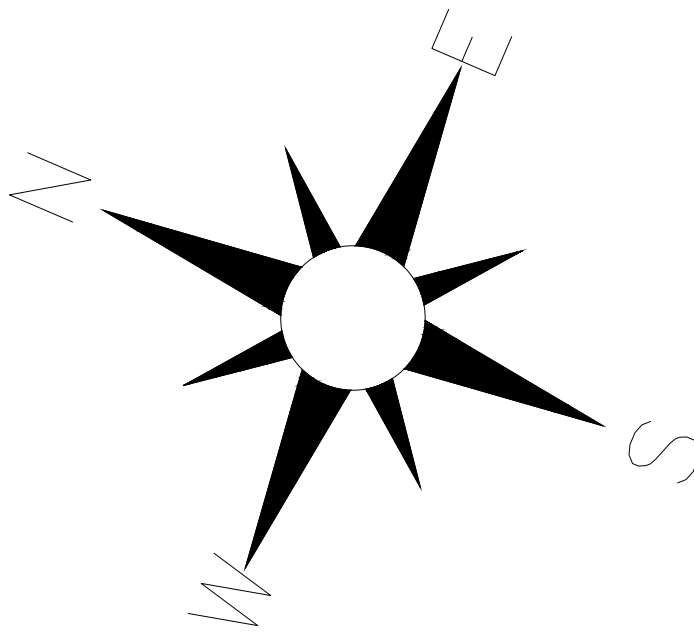
DETAIL 11 FIRE HOSE CABINET WITH EXTINGUISHER



DETAIL 12 PROTECTION OF PIPES PENETRATING

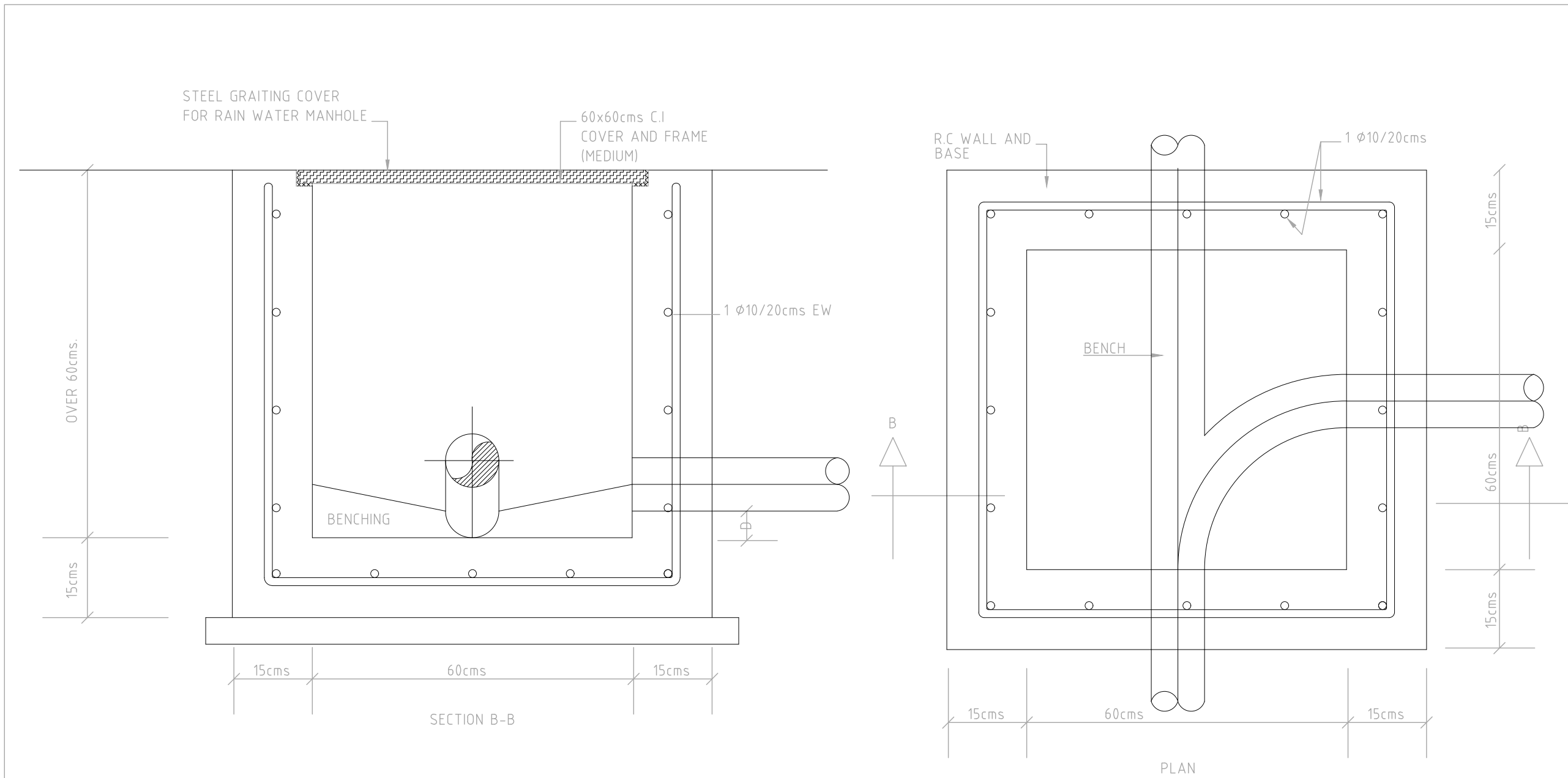


DETAIL 13 TYPICAL PUDDLE PIPE



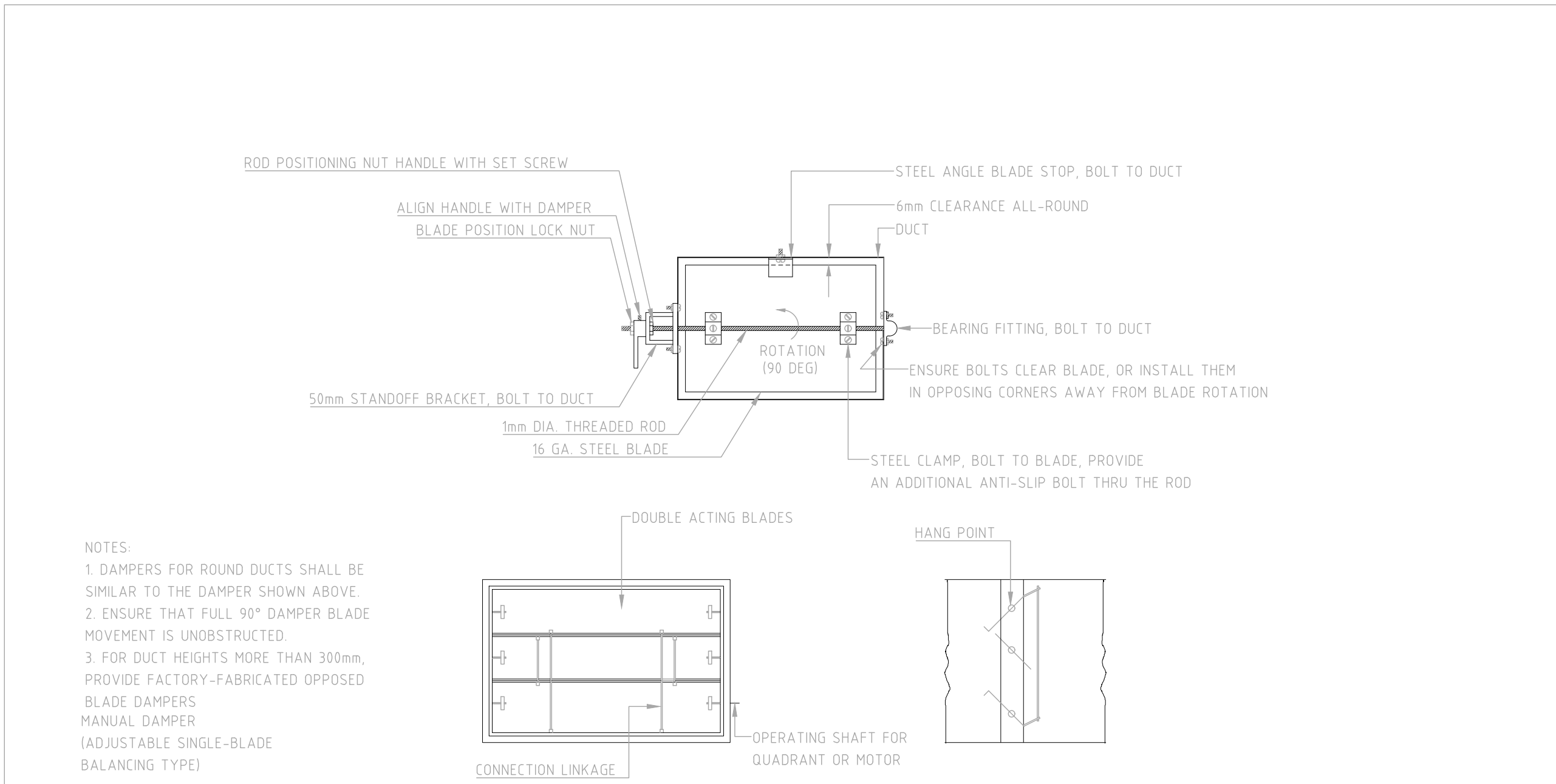
NOTES:

PLOT NO		:	413	
DISTRICT		:	IRBID	
BASIN		:	40 ALMUSRIB ALSHAMALI	
REV. MARK	DATE	MADE BY	REMARKS	
CLIENT	NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS			
MP CE	MADI & PARTNERS CONSULTING ENGINEERS TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo			
PROJECT	NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY			
DRG. TITLE	MECHANICAL DETAILS 03			
DRAWN BY : MECH.T			SCALE: NTS	
DESIGNED BY: A.Q			DATE : DEC.-2023	
CHECKED BY: F.N			PROJECT No.	DRAWING No. M-1102
APPROVED BY: F.N				



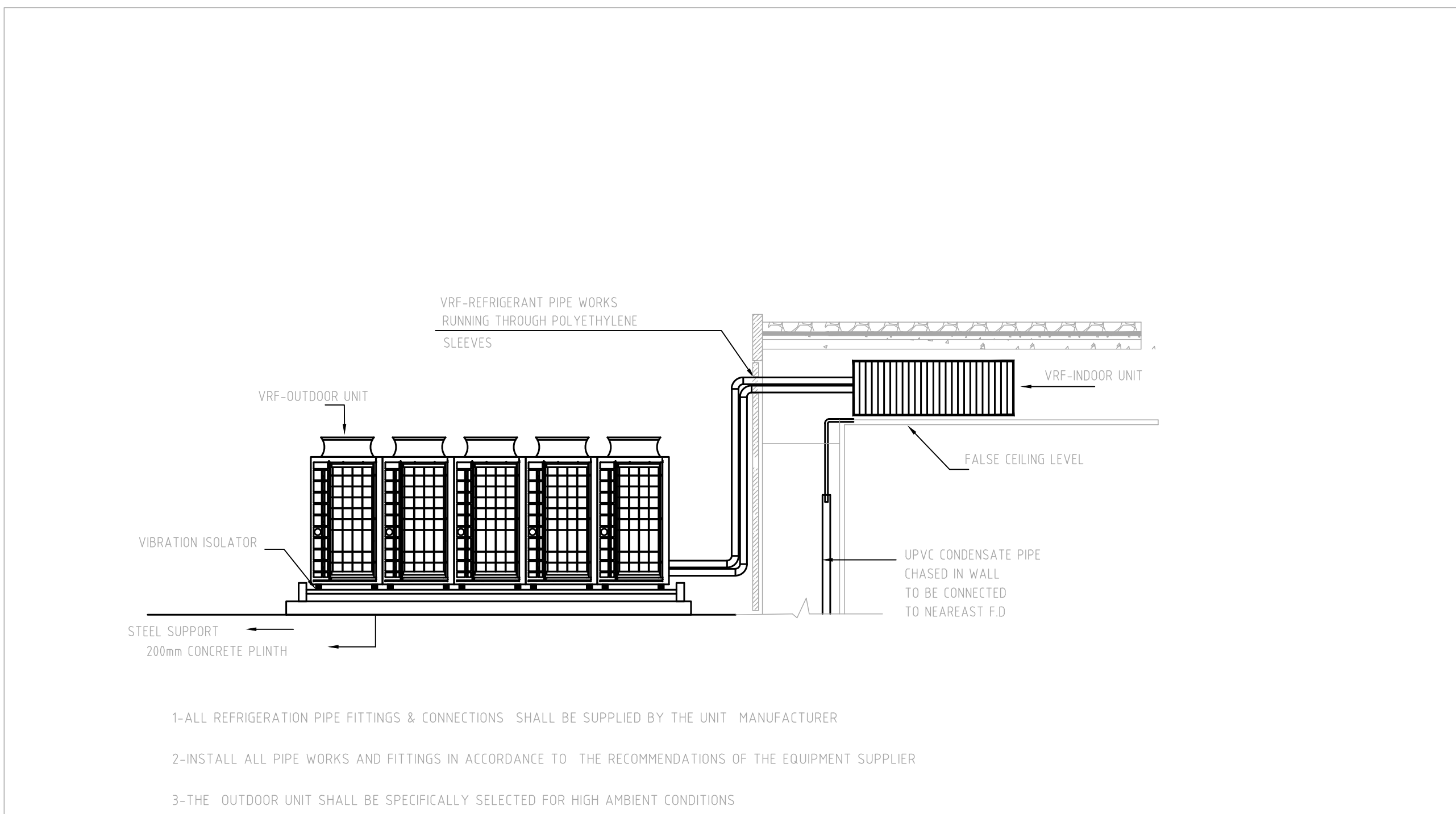
DETAIL 01

DRAINAGE MANHOLE - 60x60CM DEPTH 45CM-150CM.



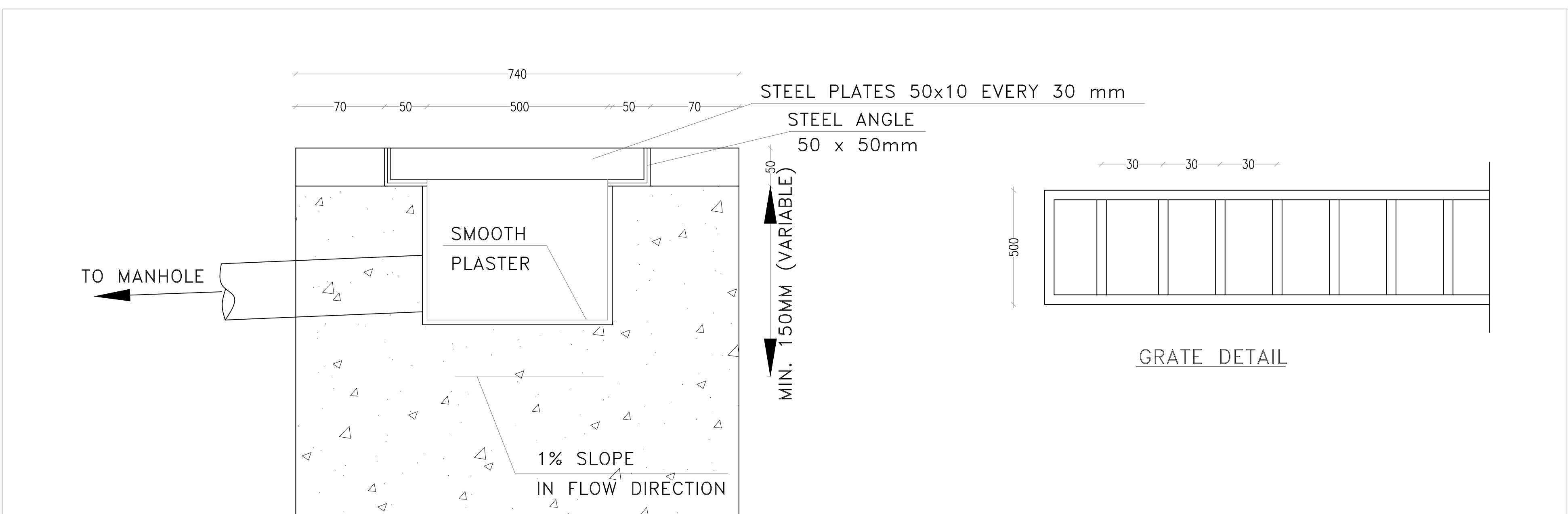
DETAIL 02

TYPICAL VOLUME DAMPERS



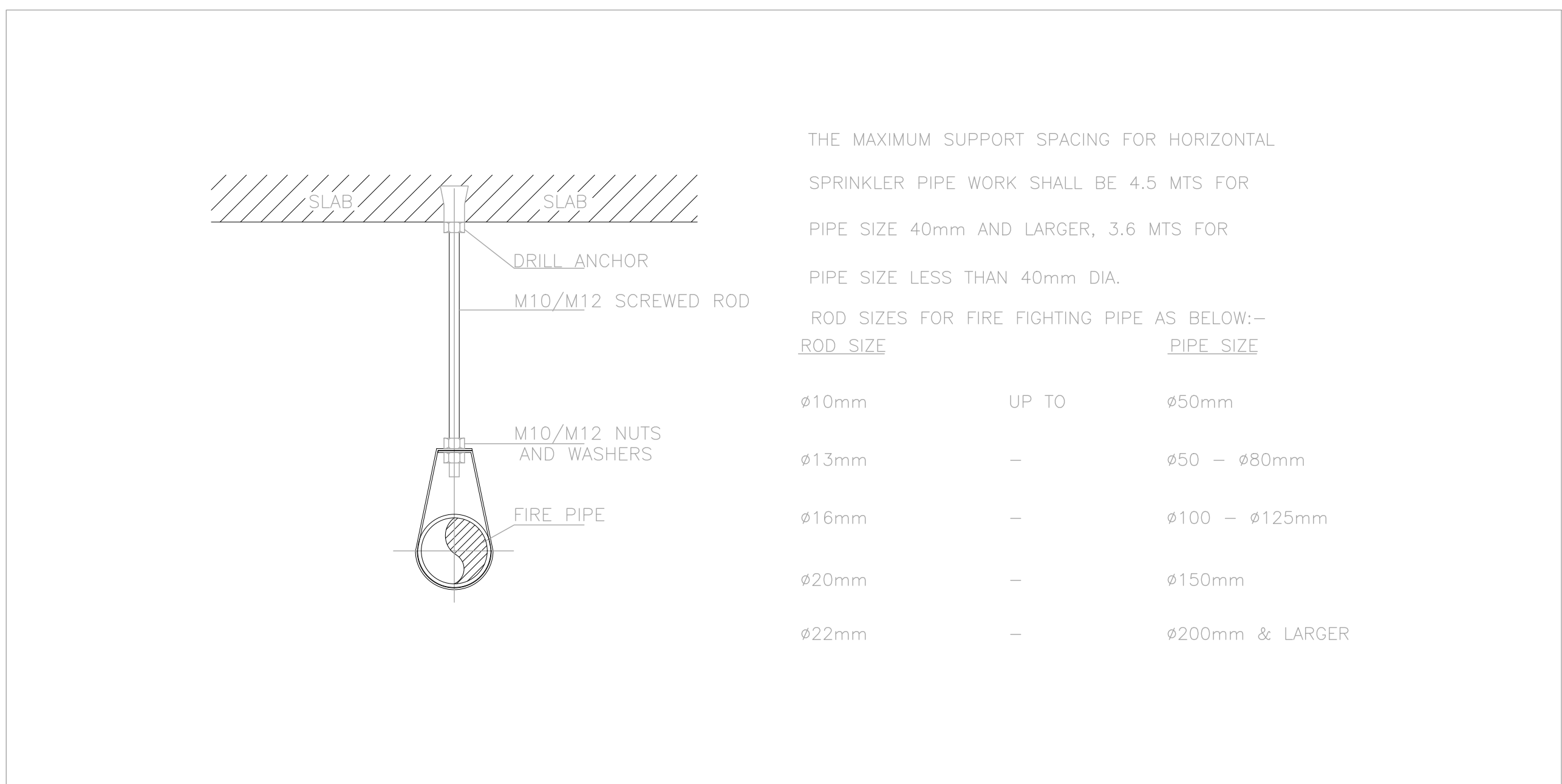
DETAIL 03

VRF INSTALLATION DETAIL



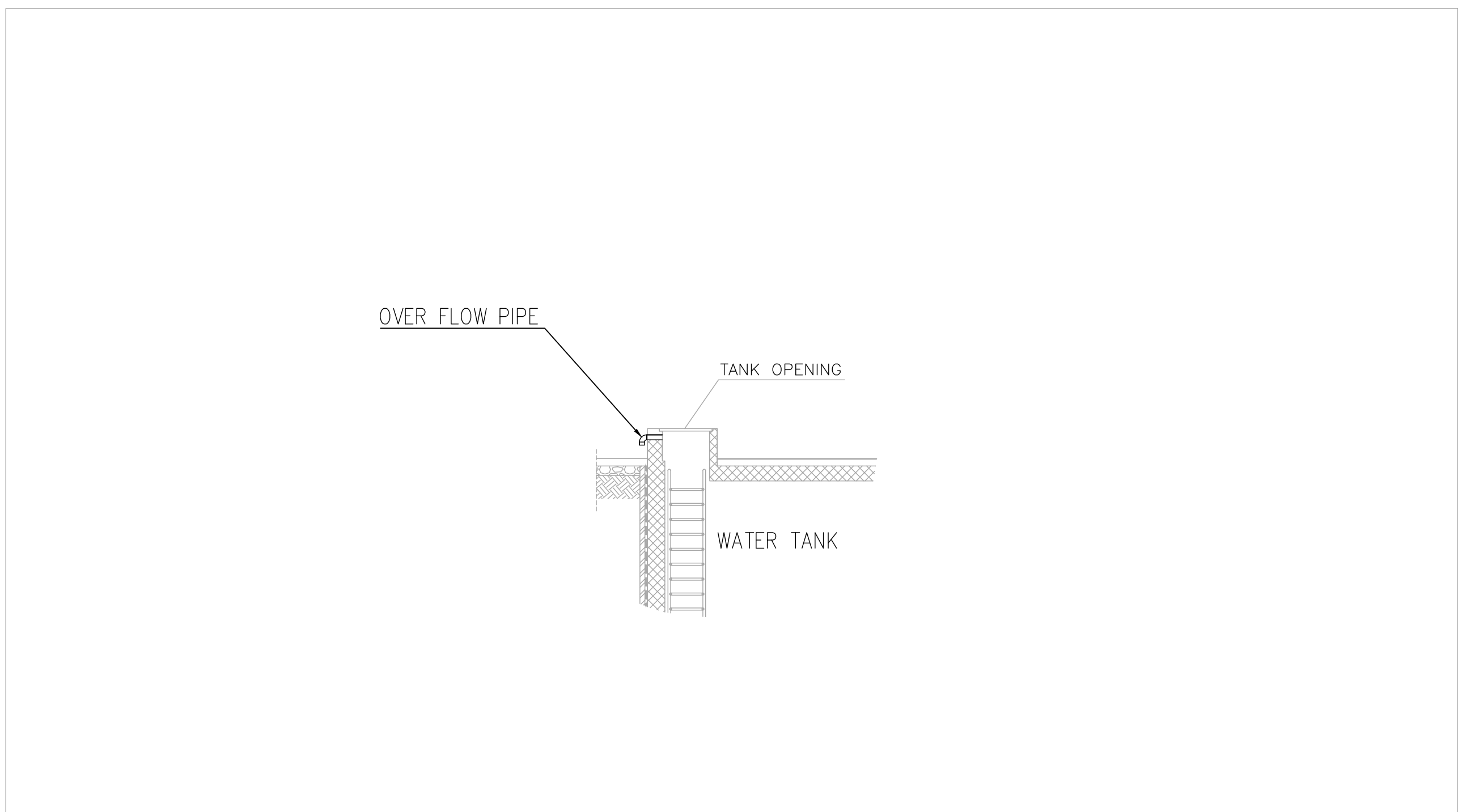
DETAIL 04

TYPICAL TRENCH



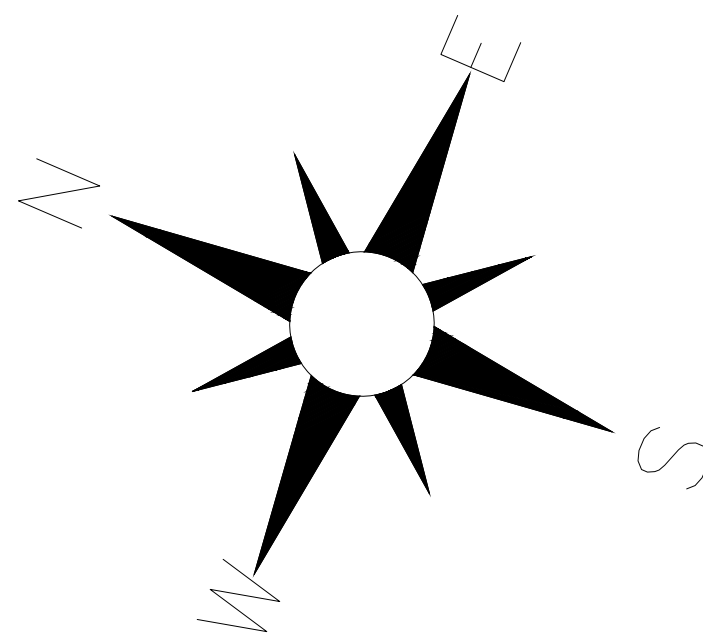
DETAIL 05

PIPE HANGER DETAIL



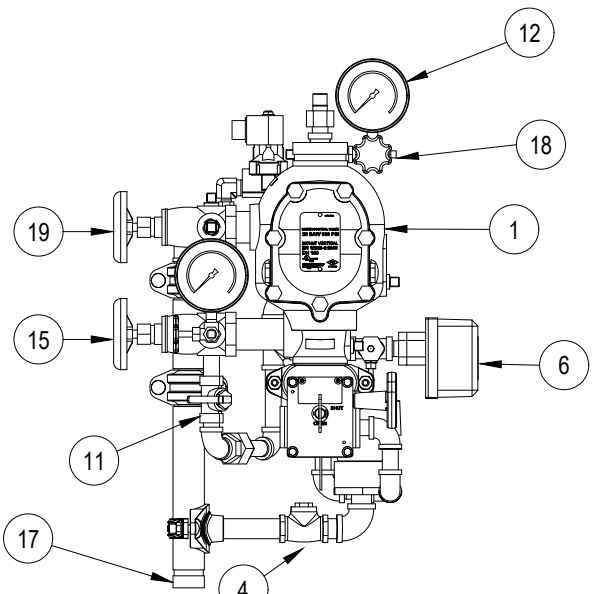
DETAIL 06

OVER FLOW DETAIL

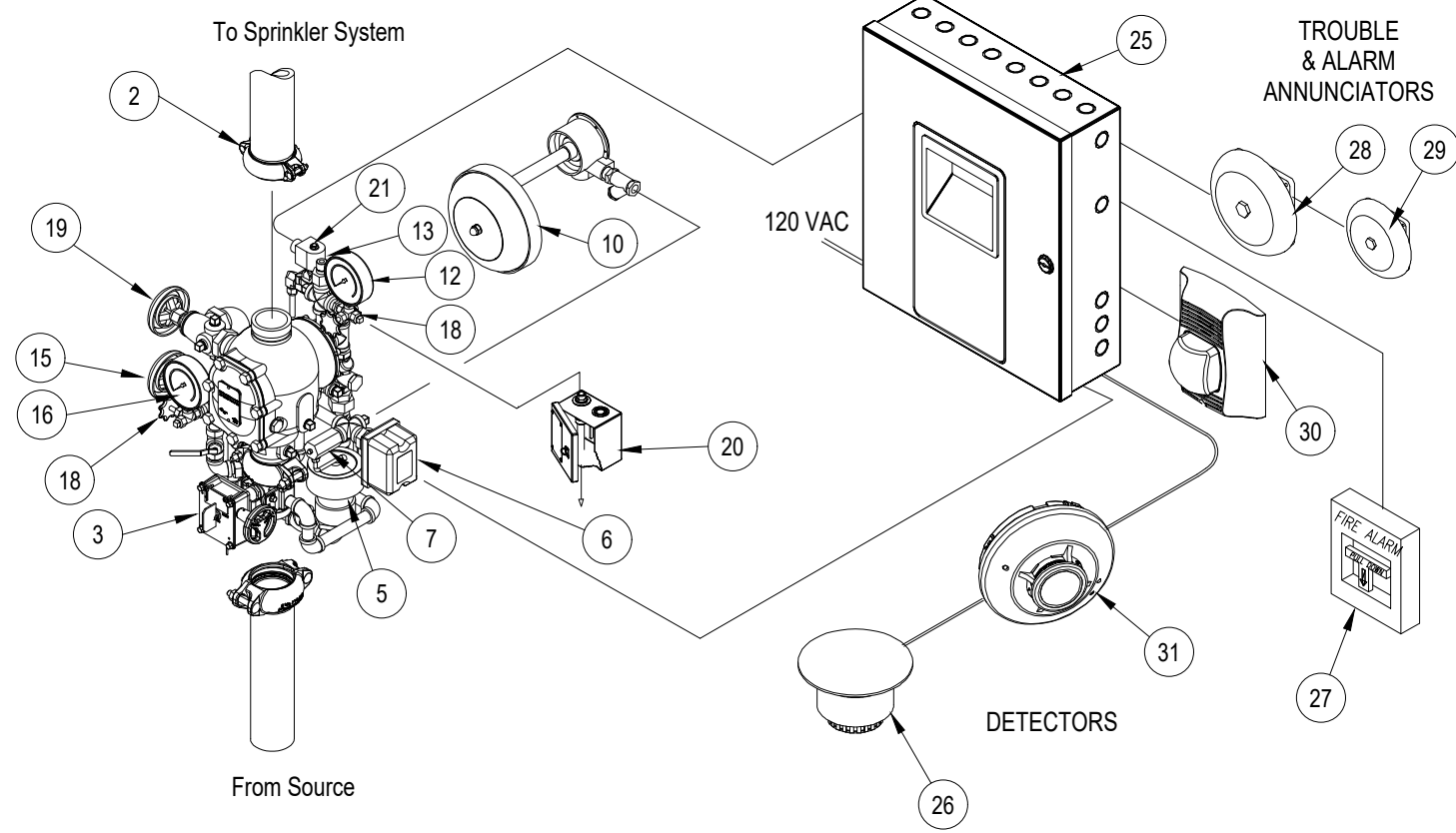
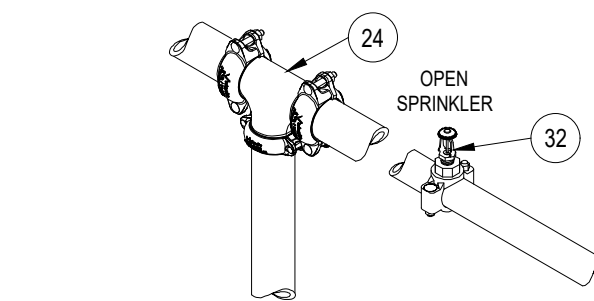


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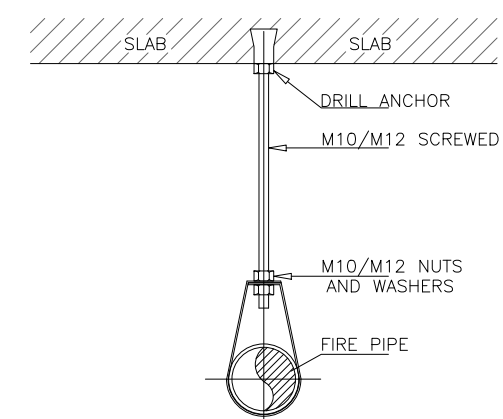
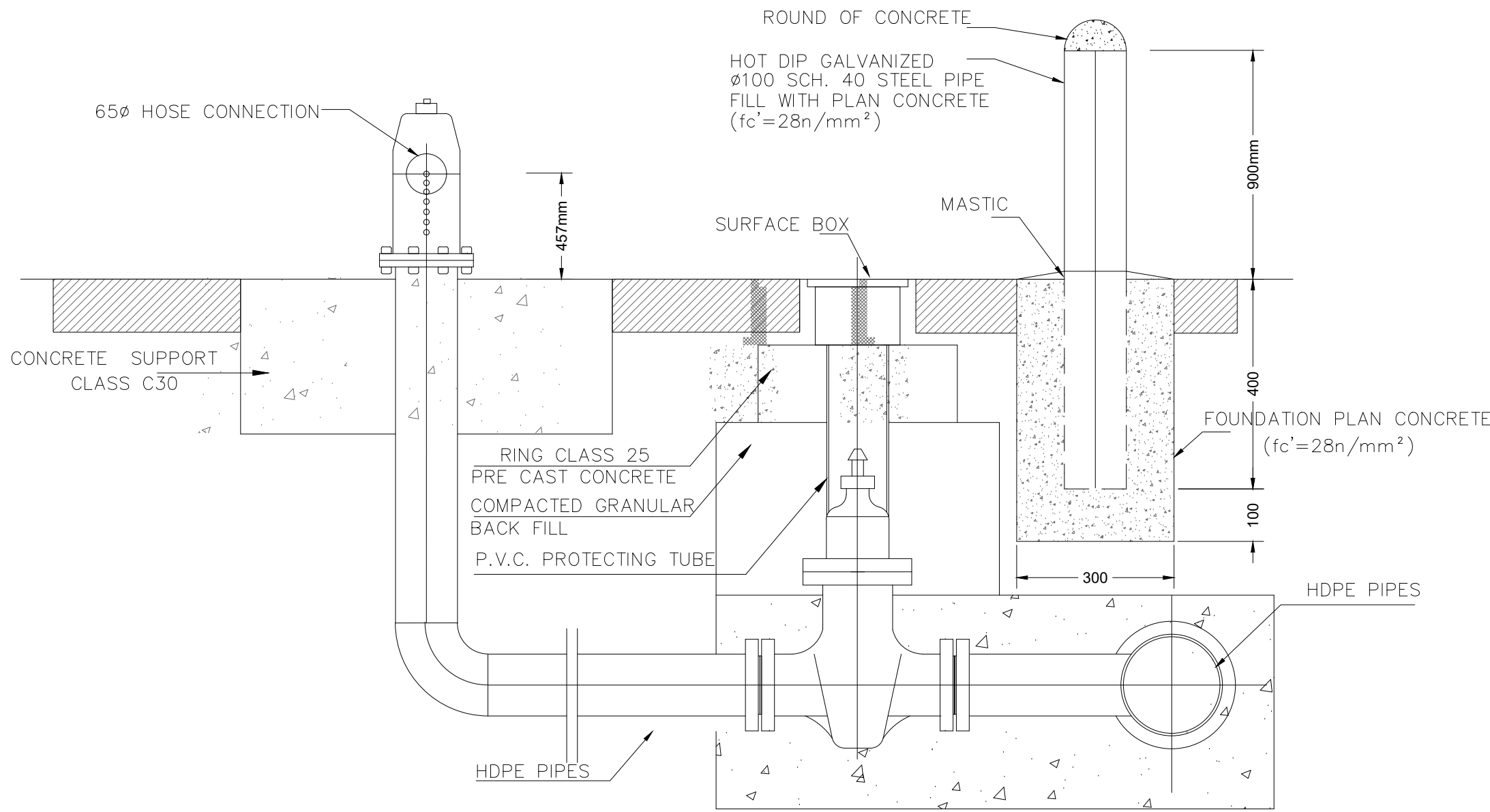
PLOT NO		:	413	
DISTRICT		:	IRBID	
BASIN		:	40 ALMUSRIB ALSHAMALIJU	
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CLIENT		NATIONAL CENTER FOR DIABETES ENDOCRINOLOGY AND GENETICS		
MP CE	MADI & PARTNERS CONSULTING ENGINEERS			
	TEL.5829640-5829641 FAX.5829642 e-mail : mpce@index.com.jo			
PROJECT		NATIONAL DIABETES AND ENDOCRINOLOGY CENTER BUILDING IN IRBID CITY		
DRG. TITLE		MECHANICAL DETAILS 04		
DRAWN BY : MECH.T			SCALE: NTS	
DESIGNED BY: A.Q			DATE : DEC.- 2023	
CHECKED BY: F.N			PROJECT No.	DRAWING No. M-1103
APPROVED BY: F.N				



FRONT VIEW

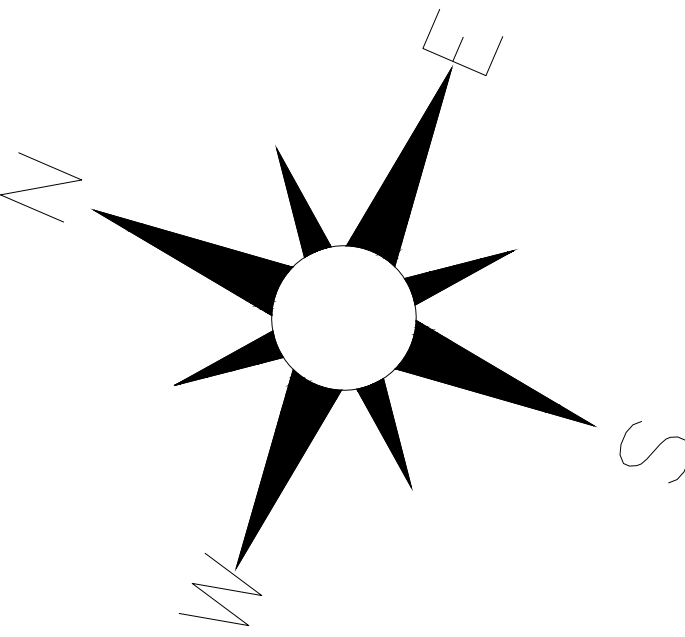


PRODUCT LEGEND	
1	Deluge Valve
2	Rigid Couplings
3	Butterfly Valve
4	Drain Swing Check Valve
5	Drift Cup
6	System Sensor Alarm Pressure Switch
7	Drift Check Valve
8	Diaphragm-Charge-Line Ball Valve (normally Open)
9	Strainer/Check/Restrictor Assembly
10	Water Motor Alarm (Optional)
11	Alarm Test Ball Valve
12	Diaphragm-Charge-Line Pressure Gauge
13	Auto Drain
14	Water Supply Main Drain Valve - Flow Test
15	Water Supply Pressure Gauge
16	Drain Connection Kit
17	Gauge Valve
18	System Main Drain Valve
19	Manual Pull Station
20	Solenoid Valve
21	Tee
22	System Sensor Control Panel
23	Ion Smoke Detector: System Sensor, 4 Wire, 24 VDC
24	Electric Pull Station: System Sensor
25	8" Supervisory Bell: System Sensor, 24VDC, Polarized
26	6" Trouble Bell: System Sensor, 24VDC, Polarized
27	Horn/Stroke (Waterflow) System Sensor(RED)
28	135 Degrees rate of rise and fixed temperature Heat Detector System Sensor 5621
29	Upright Sprinkler(Open)



THE MAXIMUM SUPPORT SPACING FOR HORIZONTAL SPRINKLER PIPE WORK SHALL BE 4.5 MTS FOR PIPE SIZE 40mm AND LARGER, 3.6 MTS FOR PIPE SIZE LESS THAN 40mm DIA.

ROD SIZES FOR FIRE FIGHTING PIPE AS BELOW:-	
ROD SIZE	PIPE SIZE
#10mm	UP TO #50mm
#13mm	- #50 - #80mm
#16mm	- #100 - #125mm
#20mm	- #150mm
#22mm	- #200mm & LARGER



NOTES:

DETAIL 01

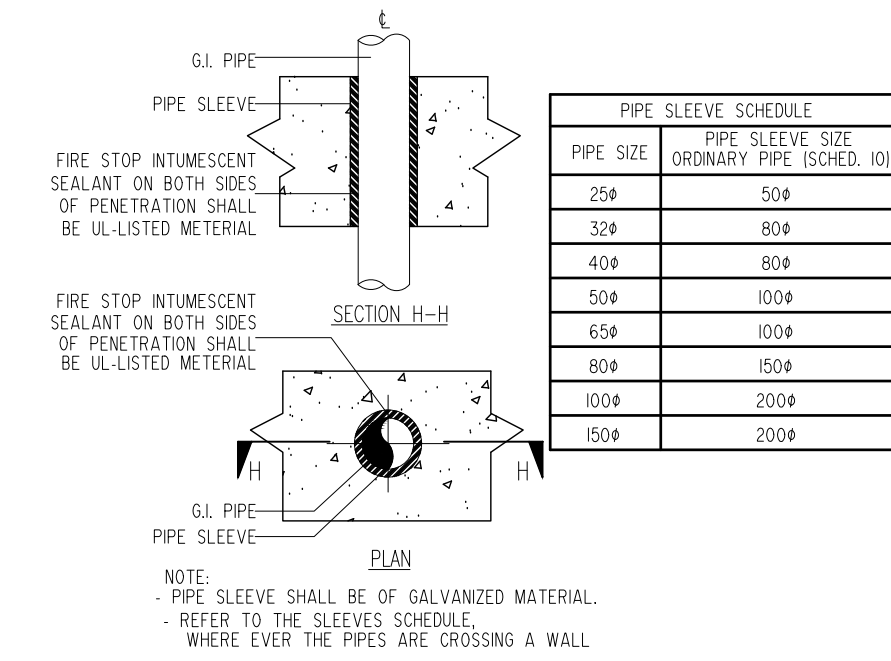
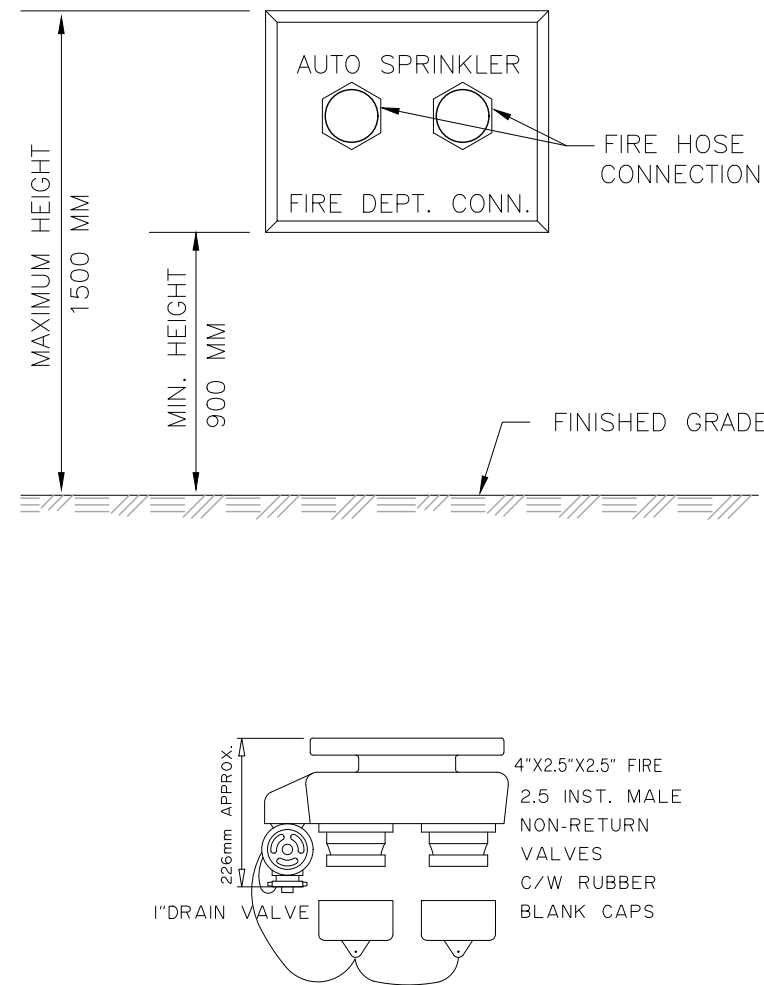
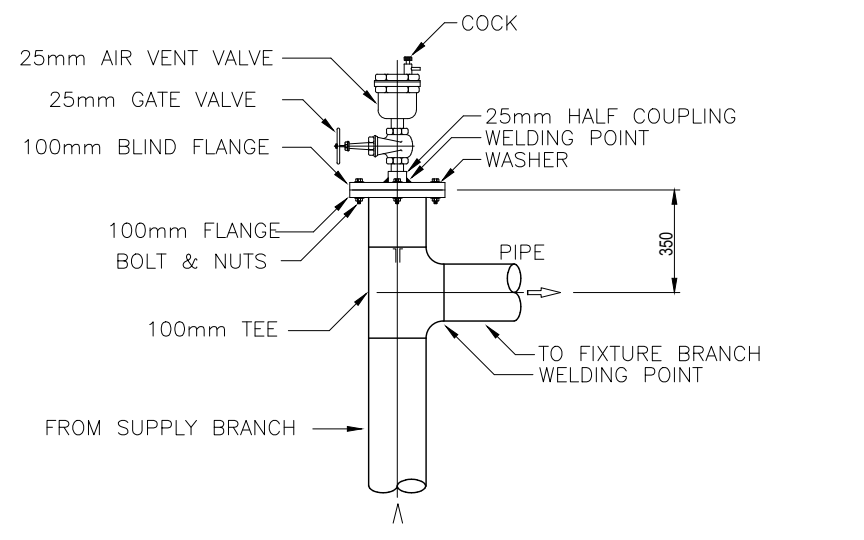
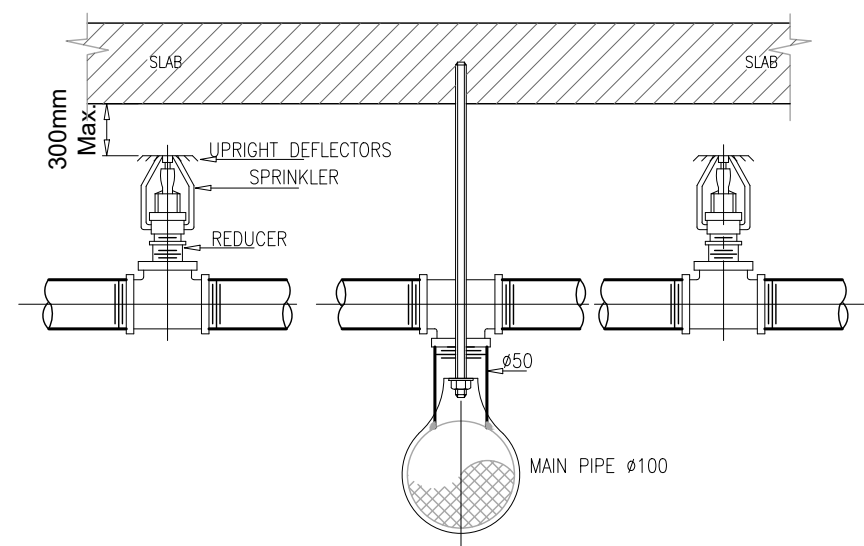
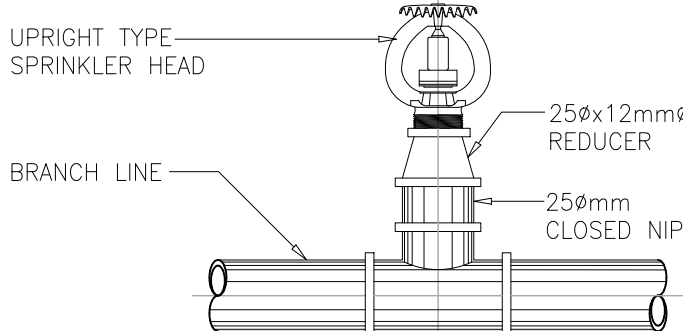
DELUGE SYSTEM-ELECTRIC ACTUATION
SCALE: N.T.S.

DETAIL 02

FIRE HYDRANT CONNECTION DETAIL
SCALE: N.T.S.

DETAIL 03

PIPE HANGER DETAIL



DETAIL 04

TYPICAL UPRIGHT TYPE

DETAIL 05

TYPICAL UPRIGHT TYPE

DETAIL 06

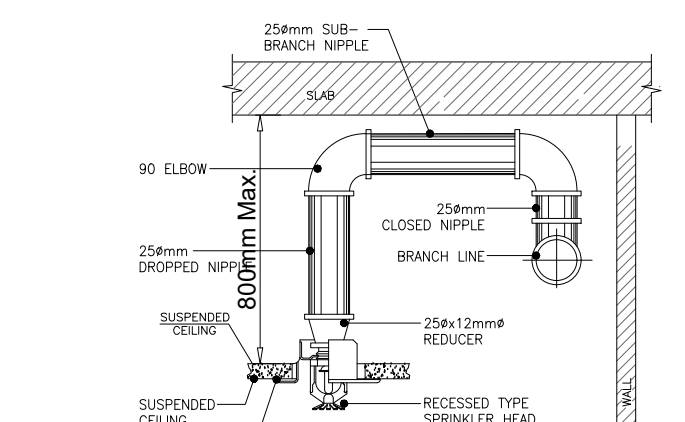
AIR VENT VALVE INSTALLATION

DETAIL 07

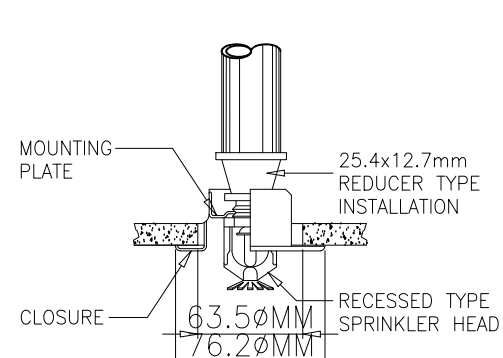
FIRE DEPARTMENT CONNECTION
GENERAL ARRANGEMENT

DETAIL 08

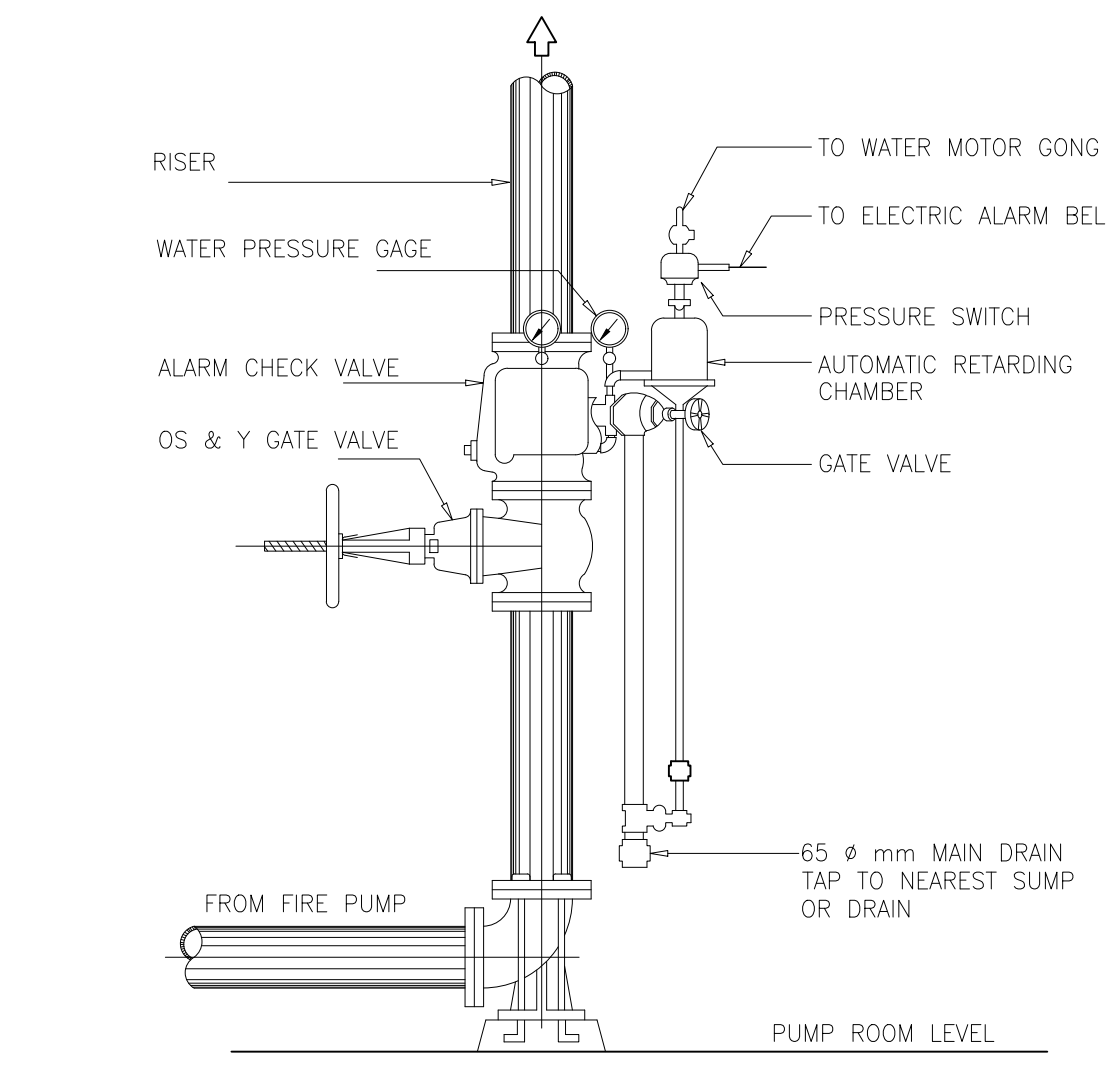
PIPE SLEEVE INSTALLATION DETAIL



TYPICAL RECESSED PENDENT SPRINKLER HEAD TYPE



TYPICAL RECESSED TYPE



DETAIL OF ALARM CHECK VALVE ASSEMBLY

DETAIL 09

PENDENT SPRINKLER INSTALLATION DETAIL

DETAIL 10

TYPICAL RECESSED TYPE

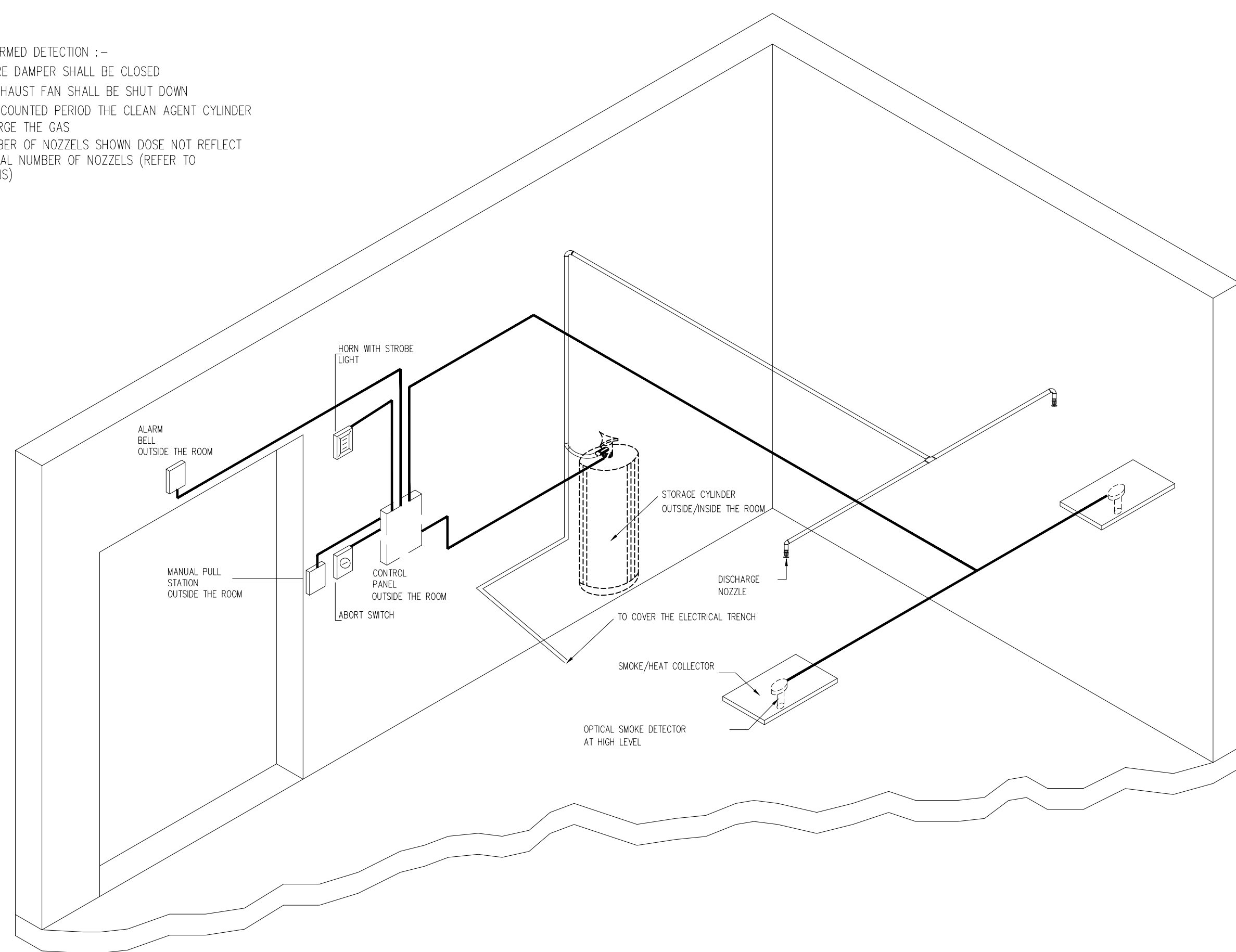
DETAIL 11

DETAIL OF ALARM CHECK VALVE ASSEMBLY

DETAIL 12

CLEAN AGENT SUPPRESSION SYSTEM INSTALLATION DETAIL

NOTE :-
-ON CONFIRMED DETECTION :-
1- THE FIRE DAMPER SHALL BE CLOSED
2- THE EXHAUST FAN SHALL BE SHUT DOWN
3- AFTER COUNTED PERIOD THE CLEAN AGENT CYLINDER DISCHARGE THE GAS
-THE NUMBER OF NOZZELS SHOWN DOES NOT REFLECT THE ACTUAL NUMBER OF NOZZELS (REFER TO FIRE PLANS)



PLOT NO : 413

DISTRICT : IRBID

BASIN : 40 ALMUSRIB ALSHAMALI

REV. MARK DATE MADE BY REMARKS

CLIENT NATIONAL CENTER FOR DIABETES
ENDOCRINOLOGY AND GENETICS

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PROJECT NATIONAL DIABETES AND ENDOCRINOLOGY
CENTER BUILDING IN IRBID CITY

DRG. TITLE MECHANICAL DETAILS 05

DRAWN BY : MECH.T

SCALE: NTS

DESIGNED BY : A.Q

DATE : DEC.-2023

CHECKED BY : F.N

PROJECT No. DRAWING No.

APPROVED BY: F.N

M-1104