

MECHANICAL LEGEND

DRAINAGE SYSTEM	
ABBR. & SYMBOLS	DESIGNATION
	DRAIN PIPE
	VENT PIPE
FD	FLOOR DRAIN
CO	FLOOR CLEAN OUT
TD	TRENCH DRAIN
MH	MANHOLE
uPVC	UNPLASTICIZED POLYVINYL CHLORIDE
IL	INVERT LEVEL
T/B	TO BELOW
F/B	FROM BELOW
T/A	TO ABOVE
F/A	FROM ABOVE
D/D	DROP DOWN
A/F	ABOVE FALSE CEILING
SP	SUBMERSIBLE PUMP

WATER SYSTEM	
ABBR. & SYMBOLS	DESIGNATION
DHWS	DOMESTIC HOT WATER SUPPLY
DCWS	DOMESTIC COLD WATER SUPPLY
	IRRIGATION PIPE
	HAND SPRAY
	FLOAT VALVE
	STRAINER
	WATER CABINET
	GLOBE VALVE
	CHECK VALVE (NON RETURN VALVE)
PV	PRESSURE VESSEL
BV	BLADDER VESSEL
	PUMP
E.W.H.	ELECTRIC WATER HEATER
	WATER METER
	SUSPENDE CLEAN OUT
DCWP	DOMESTIC COLD WATER PUMP
BP	BOOSTER PUMP
IRP	IRRIGATION PUMP
N.C	NORMALLY CLOSED
GSP	GALVANIZED STEEL PIPE
cPVC	CHLORINATED POLYVINYL CHLORIDE
H/L	HIGH LEVEL
T/B	TO BELOW
F/B	FROM BELOW
T/A	TO ABOVE
F/A	FROM ABOVE
U/T	UNDER TILE
I/W	IN WALL
A/F	ABOVE FALSE CEILING

FIRE FIGHTING SYSTEM	
ABBR. & SYMBOLS	DESIGNATION
	FIRE HOSE REEL PIPE
F.Ex.	FIRE EXTINGUISHER
FHR	FIRE HOSE REEL
	FIRE HOSE REEL CABINET
H/L	HIGH LEVEL
T/B	TO BELOW
F/B	FROM BELOW
T/A	TO ABOVE
A/F	ABOVE FALSE CEILING

HVAC SYSTEM	
ABBR. & SYMBOLS	DESIGNATION
	HOT WATER SUPPLY
	HOT WATER RETURN
	PACKAGED AIR CONDITIONING UNIT
	SOUND ATTENUATOR
V.D.	VOLUME DAMPER
OU	OUTDOOR SPLIT UNIT
RF.P.	REFRIGERANT PIPE
B.M.	BELL MOUTH
TH	THERMOSTAT
	SUPPLY DIFFUSER
	RETURN DIFFUSER
	AIR GRILLE
	EXHAUST DIFFUSER
	VERTICAL DUCT
	INDOOR SPLIT UNIT
H.C.	HEATING CABINET
	EXHAUST FAN
	RADIATOR
T.R	TON OF REFRIGERATION
EX.D	EXHAUST DUCT
EX.F	EXHAUST FAN
HWB	HOT WATER BOILER
WSD	WAY SUPPLY DIFFUSER
WRD	WAY RETURN DIFFUSER
DB	DRY BULB TEMPERATURE
WB	WET BULB TEMPERATURE
H/L	HIGH LEVEL
T/B	TO BELOW
F/B	FROM BELOW
T/A	TO ABOVE
F/A	FROM ABOVE
U/T	UNDER TILE
I/W	IN WALL
D/D	DROP DOWN
A/F , AFC	ABOVE FALSE CEILING

NOTE:

1-CONTRACTOR SHALL CALCULATE PRESSURE LOSSES THROUGH VALVE, FITTINGS, STRAINERS, DOUBLE REGULATING VALVE, ETC....., FOR DETERMINATION OF PUMP HEAD ACCORDING TO SUGGESTED LAYOUT.

2-CONTRACTOR SHALL CALCULATE PRESSURE LOSSES THROUGH DAMPERS, FITTINGS, COIL, SOUND ATTENUATES ETC.... , FOR DETERMINATION OF FAN HEAD ACCORDING TO SUGGESTED LAYOUT.

REV.	DATE	REMARKS

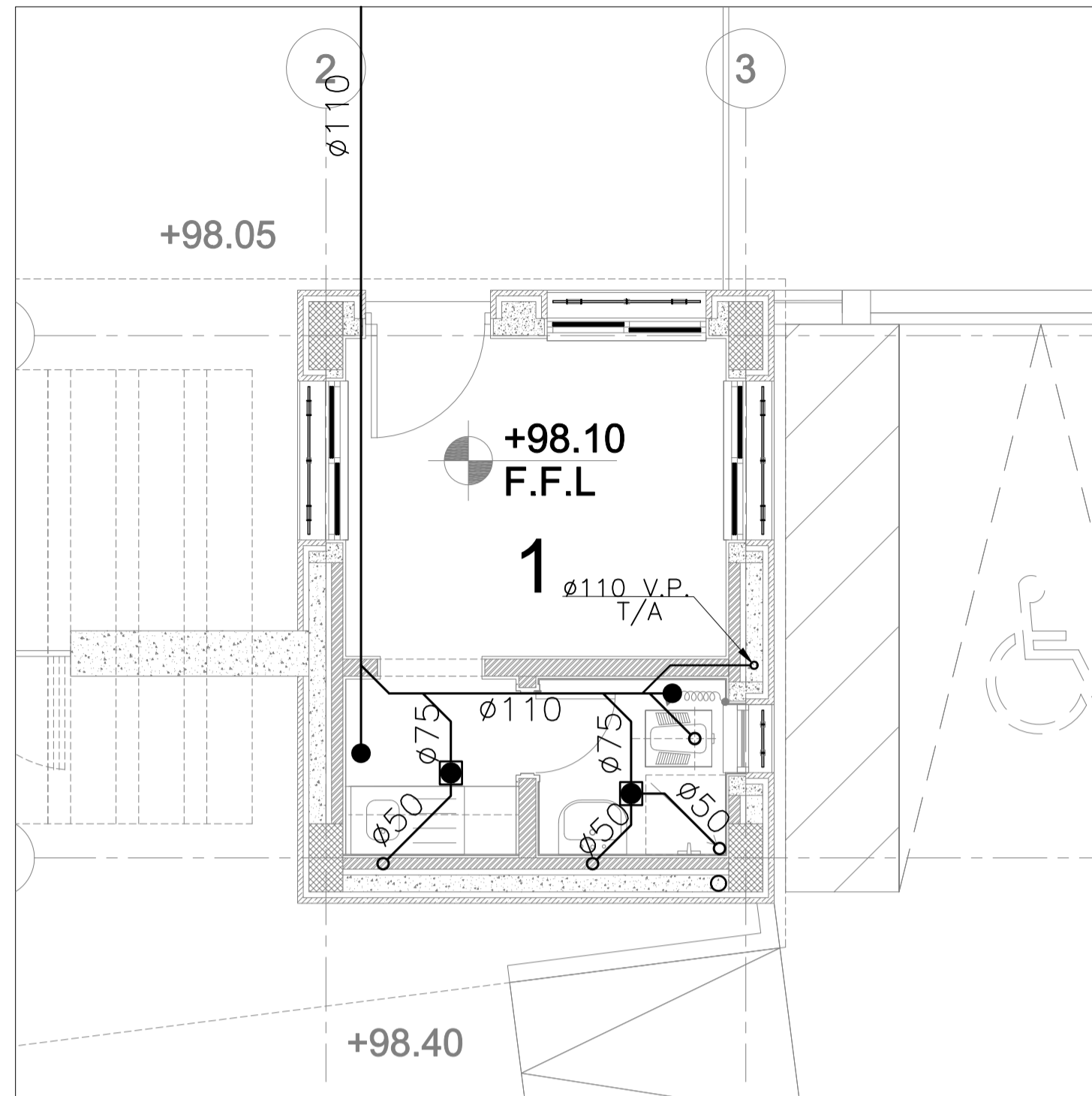
NOTES:



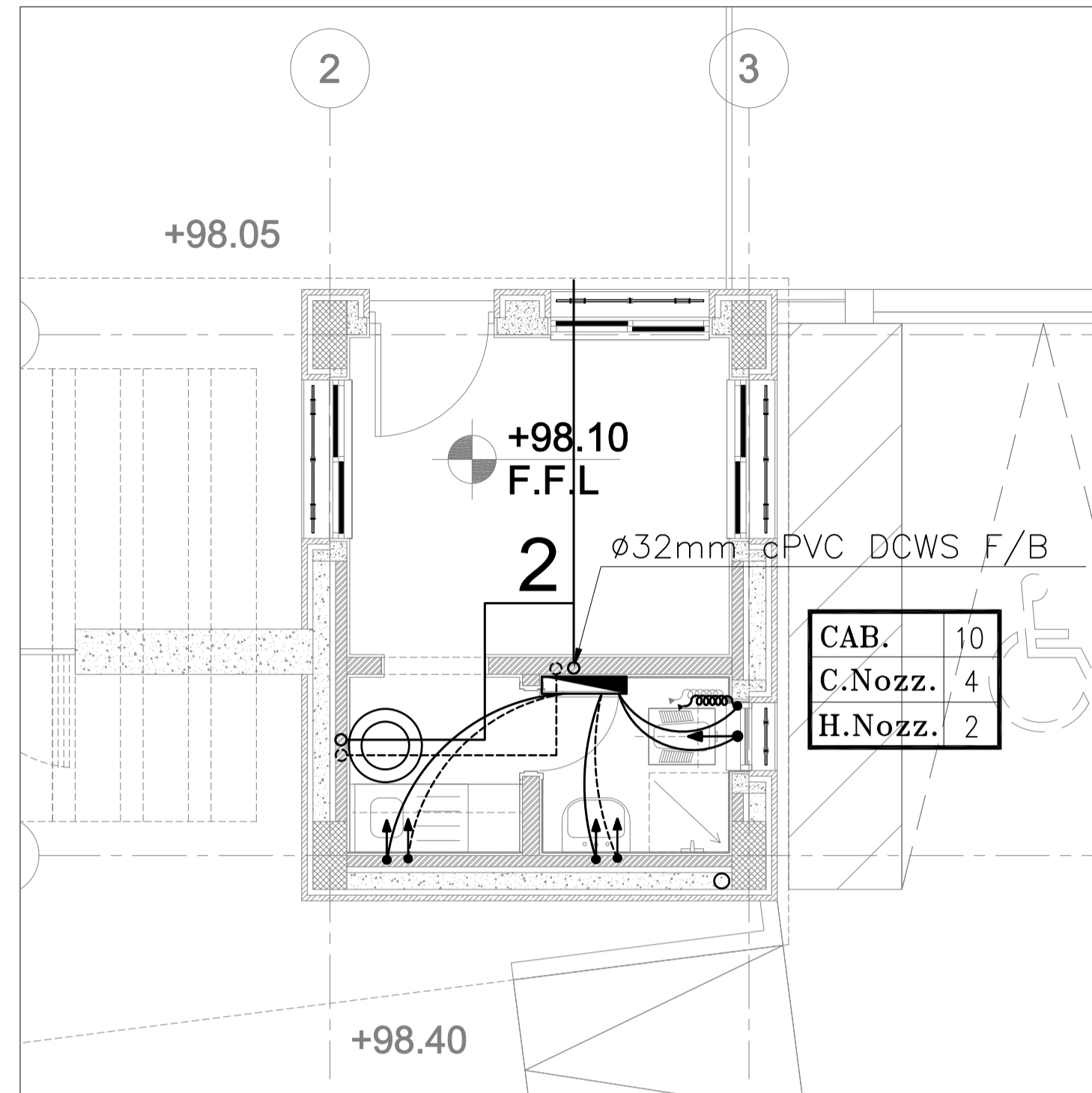
Jumana Bint Abi Taleb Basic Mixed School
(Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY
PROJECT (USAID SKEP)

DRAWING NAME: Mechanical Legend		
PLOT No 1496	LOCATION Marka	BASIN NO 1 Hanao Al Kassar

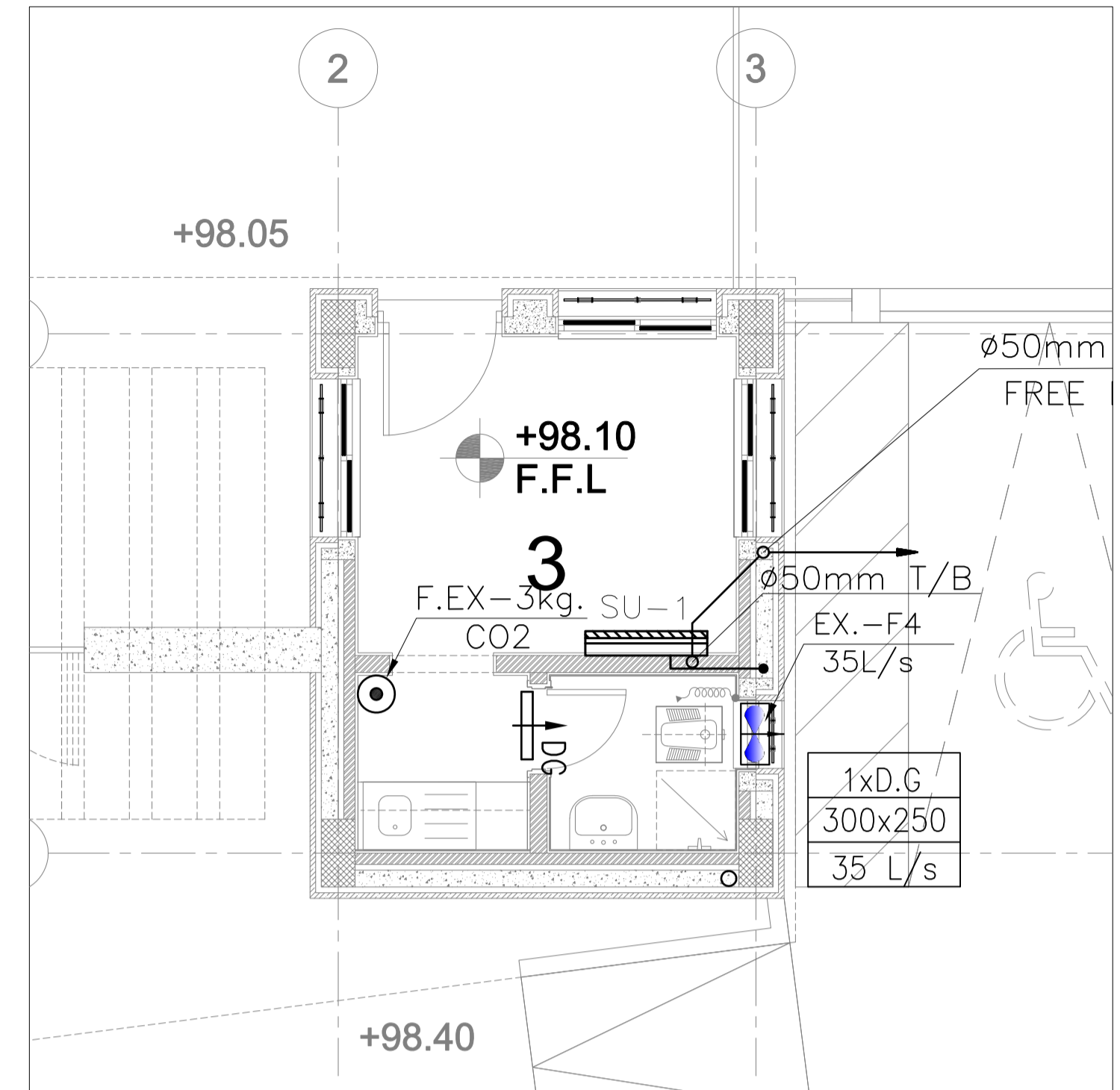
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SCALE: N.T.S	Date: MAY 2019	Approved: W.Z.	Rev.: 0
DRAWING NUMBER: SKEP 18-GM001			



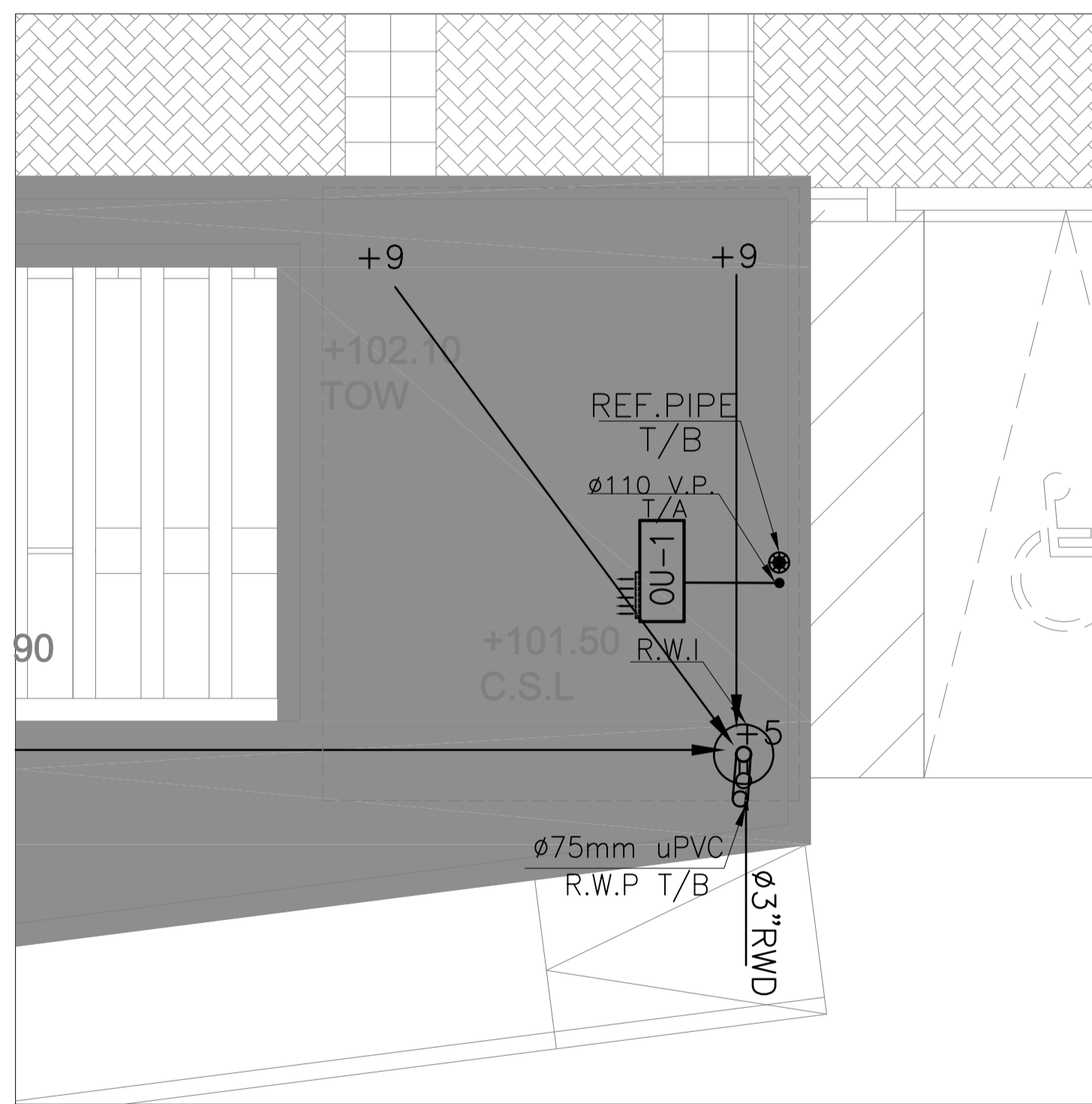
1 GUARD HOUSE LIGHTING SYSTEM LAYOUT



2 GUARD HOUSE POWER SYSTEM LAYOUT



3 DB-GR DISTRIBUTION BOARD SCHEDULE



4 CANTEEN LIGHTING SYSTEM LAYOUT

REV.	DATE	REMARKS

NOTES:



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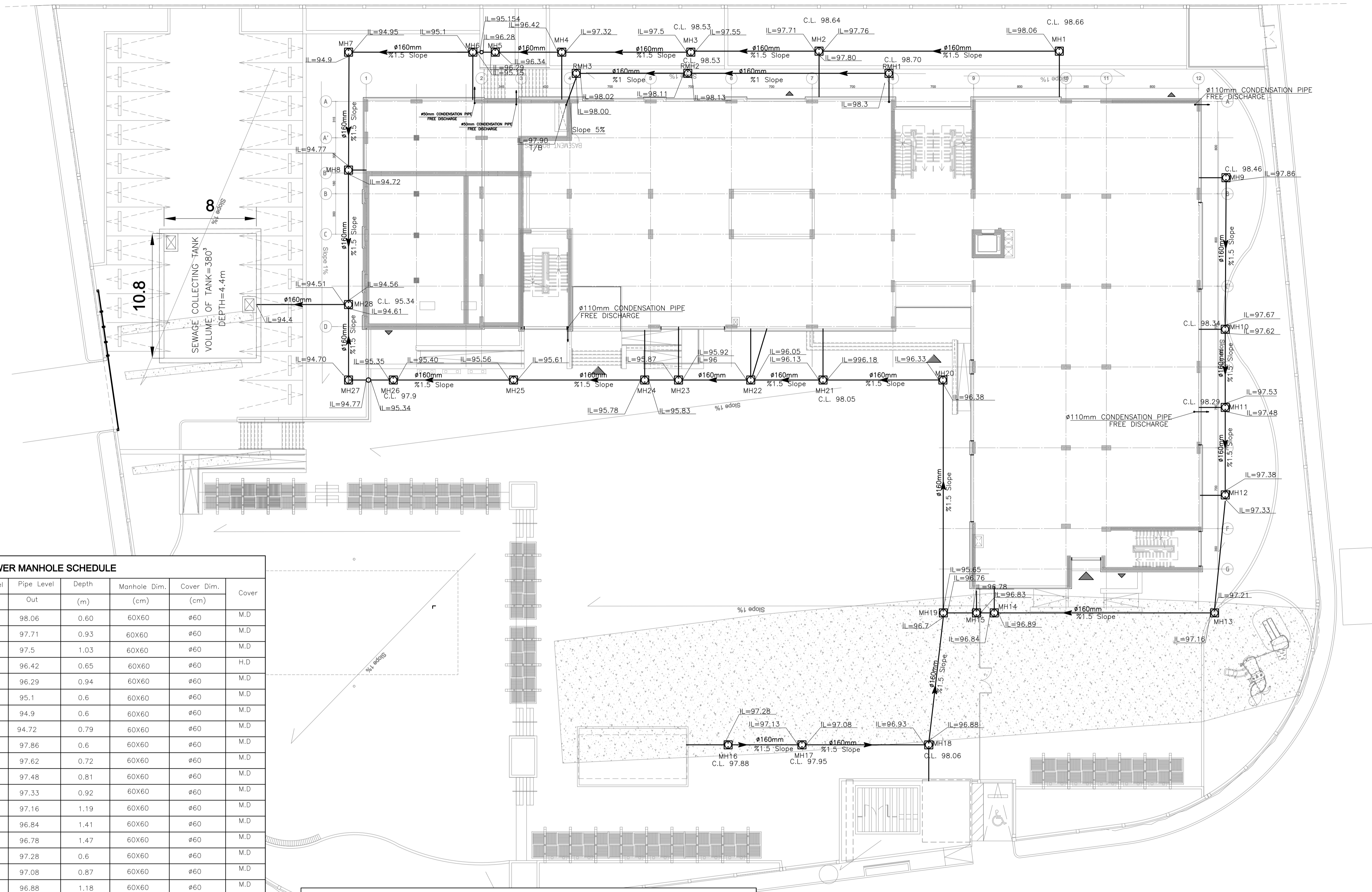
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MINISTRY OF EDUCATION



Jumana Bint Abi Taleb Basic Mixed School
(Amman- Marka)
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PROJECT (USAID SKEP)

DRAWING NAME:		
GUARD HOUSE AND CANTEEN ELECTRICAL LAYOUT		
DESIGN:	DRAWN:	CHECKED:
E.J.	CAD	A.J.
SCALE:	DATE:	APPROVED:
1:50	MAY 2019	W.Z.
DRAWING NUMBER:		
SKEP 18-GH100		

North:	
Rev.:	
0	



SANITARY SEWER MANHOLE SCHEDULE

Manhole No.	COVER Level	Pipe Level (in1)	Pipe Level (in2)	Pipe Level Out	Depth (m)	Manhole Dim. (cm)	Cover Dim. (cm)	Cover
MH1	+98.66	--	--	98.06	0.60	60X60	ø60	M.D
MH2	+98.64	97.76	--	97.71	0.93	60X60	ø60	M.D
MH3	+98.53	97.55	--	97.5	1.03	60X60	ø60	M.D
MH4	+97.07	97.32	--	96.42	0.65	60X60	ø60	H.D
MH5	+97.23	96.34	--	96.29	0.94	60X60	ø60	M.D
MH6	+95.7	95.15	--	95.1	0.6	60X60	ø60	M.D
MH7	+95.5	94.95	--	94.9	0.6	60X60	ø60	M.D
MH8	+95.45	94.77	--	94.72	0.79	60X60	ø60	M.D
MH9	+98.46	--	--	97.86	0.6	60X60	ø60	M.D
MH10	+98.34	97.67	--	97.62	0.72	60X60	ø60	M.D
MH11	+98.29	97.53	--	97.48	0.81	60X60	ø60	M.D
MH12	+98.25	97.38	--	97.33	0.92	60X60	ø60	M.D
MH13	+98.35	97.21	--	97.16	1.19	60X60	ø60	M.D
MH14	+98.25	96.89	--	96.84	1.41	60X60	ø60	M.D
MH15	+98.25	96.83	--	96.78	1.47	60X60	ø60	M.D
MH16	+97.88	--	--	97.28	0.6	60X60	ø60	M.D
MH17	+97.95	97.13	--	97.08	0.87	60X60	ø60	M.D
MH18	+98.06	96.93	--	96.88	1.18	60X60	ø60	M.D
MH19	+98.25	96.7	--	96.65	1.6	ø90	ø60	M.D
MH20	+98.15	96.38	--	96.33	1.82	ø90	ø60	M.D
MH21	+98.05	96.18	--	96.13	1.92	ø90	ø60	M.D
MH22	+98.00	96.05	--	96.00	2.00	ø90	ø60	M.D
MH23	+97.9	95.92	--	95.87	2.03	ø90	ø60	M.D
MH24	+97.87	95.83	--	95.78	2.12	ø90	ø60	M.D
MH25	+97.8	95.61	--	95.56	2.24	ø90	ø60	M.D
MH26	+97.9	95.40	--	95.35	2.55	ø90	ø60	M.D
MH27	+95.3	--	--	94.7	0.6	60X60	ø60	M.D
MH28	+95.34	94.61	94.56	94.51	0.83	60X60	ø60	M.D

RAIN WATER MANHOLE SCHEDULE

Manhole No.	COVER Level	Pipe Level (in1)	Pipe Level (in2)	Pipe Level Out	Manhole Dim. (cm)	Cover Dim. (cm)	Depth (m)	Cover
RMH1	+97.20	--	--	+96.80	0.40	ø60X60	ø60	M.D
RMH2	+97.24	+96.6	--	+96.55	0.69	ø60X60	ø60	M.D
RMH3	+97.29	+96.37	--	+96.32	0.97	ø60X60	ø60	M.D
RMH4	+97.34	+96.19	--	+96.14	1.2	ø60X60	ø60	M.D

NOTES:



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Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

DRAWING NAME:

**SITE LIGHTING PLAN
DRAINAGE SYSTEM PLAN**

PLOT No 1496

LOCATION Marka

BASIN NO 1 Hanao Al Kassar

Design: E.J.

SCALE: 1:200

DRAWING NUMBER: SKEP 18-PD100

Drawn: CAD

Date: MAY 2019

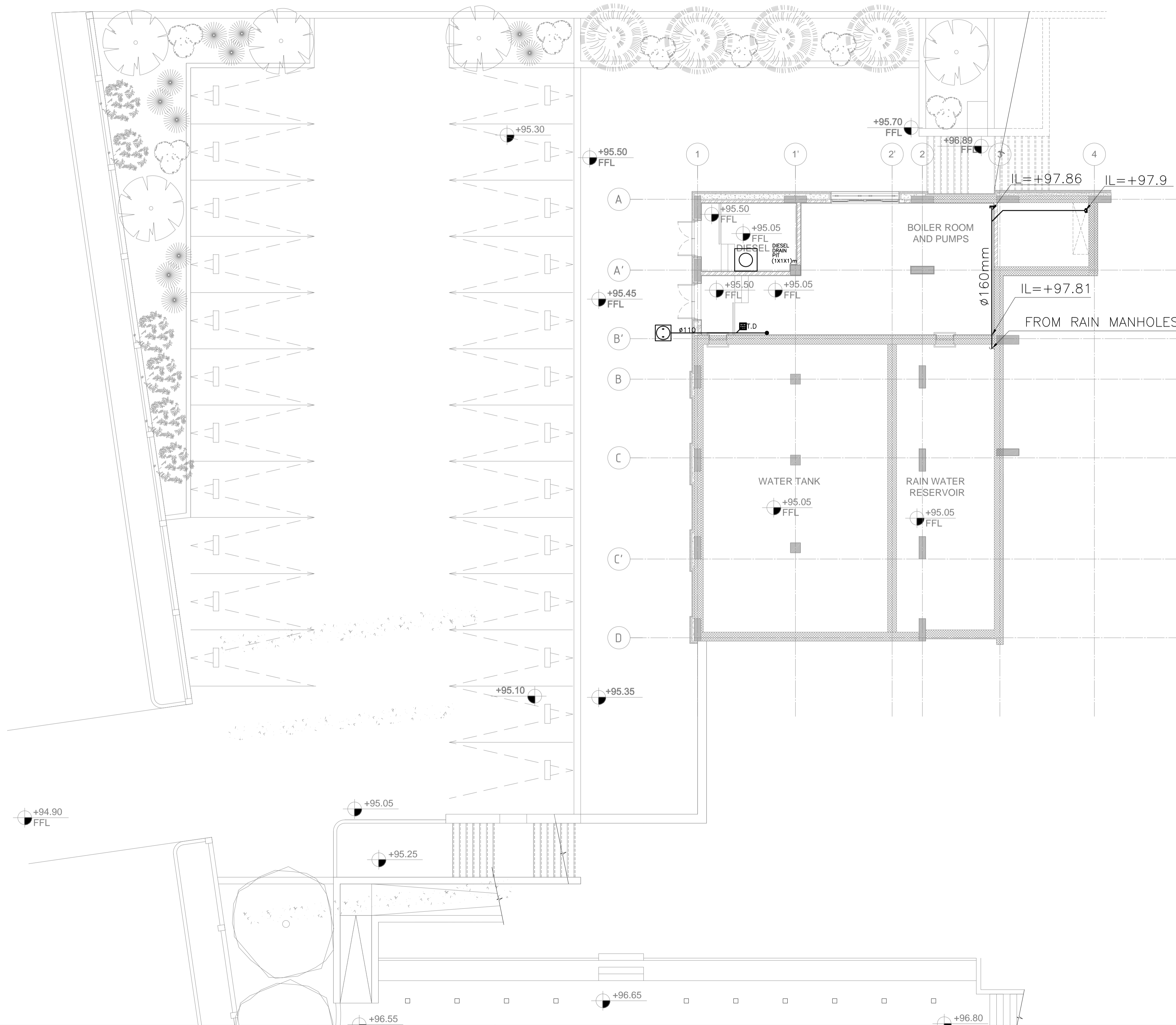
Checked: A.J.

Approved: W.Z.

North:

Rev: 0

REV.	DATE	REMARKS



REV.	DATE	REMARKS

NOTES:



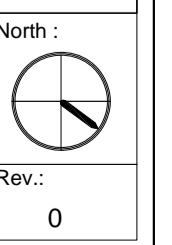
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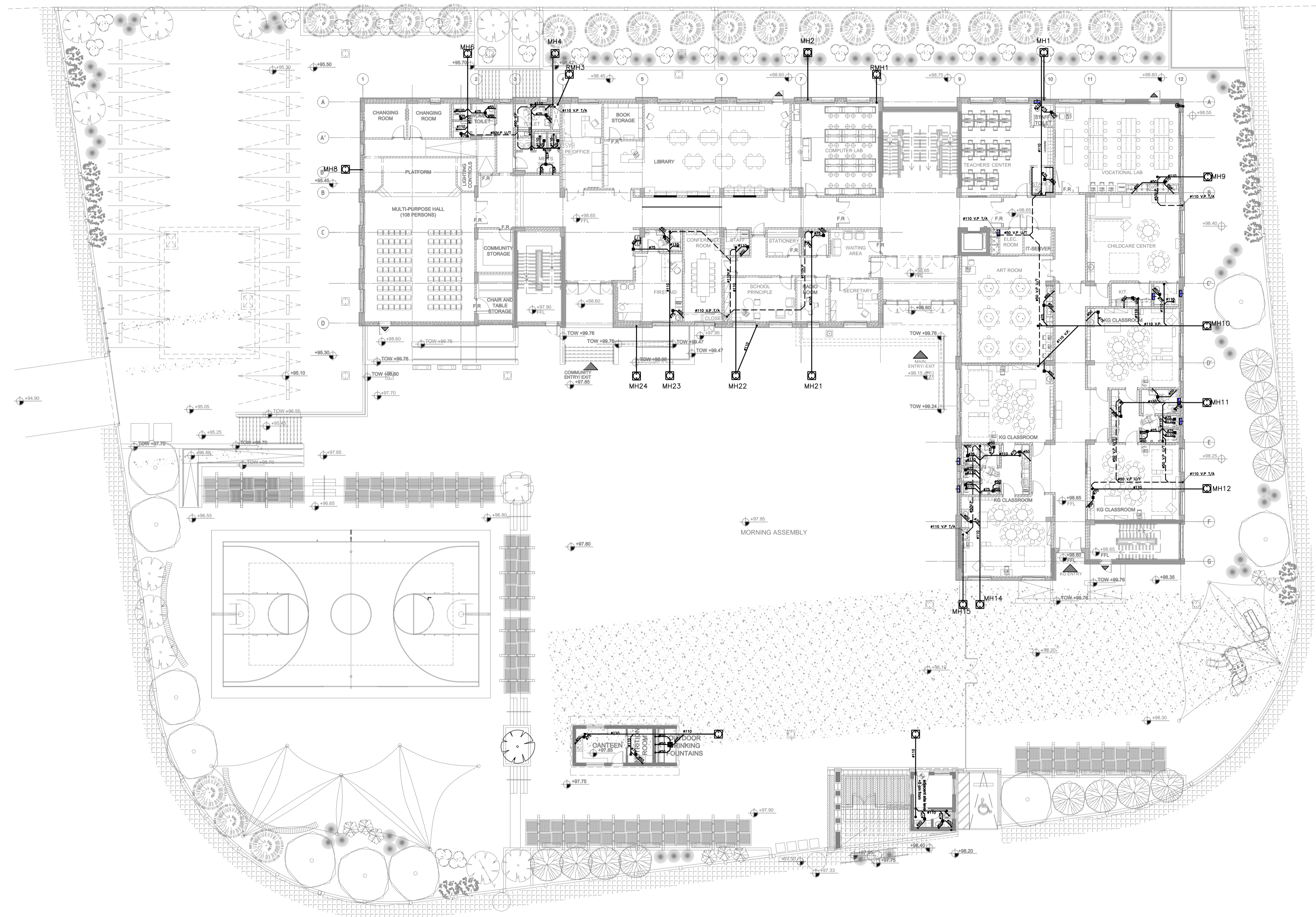


Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

DRAWING NAME: BASEMENT FLOOR DRAINAGE SYSTEM PLAN		
DESIGN: E.J.	DRAWN: CAD	CHECKED: A.J.
SCALE: 1:100	DATE: MAY 2019	APPROVED: W.Z.
PLOT No: 1496	LOCATION: Marka	BASIN NO: 1 Hanao Al Kassar

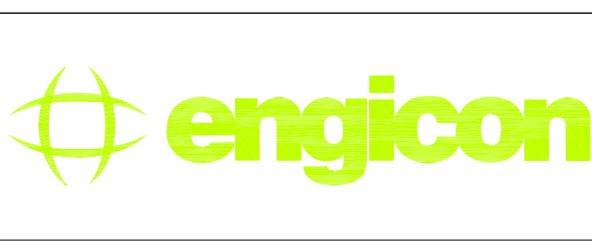
DRAWING NUMBER: SKEP 18-PD101	Rev.: 0
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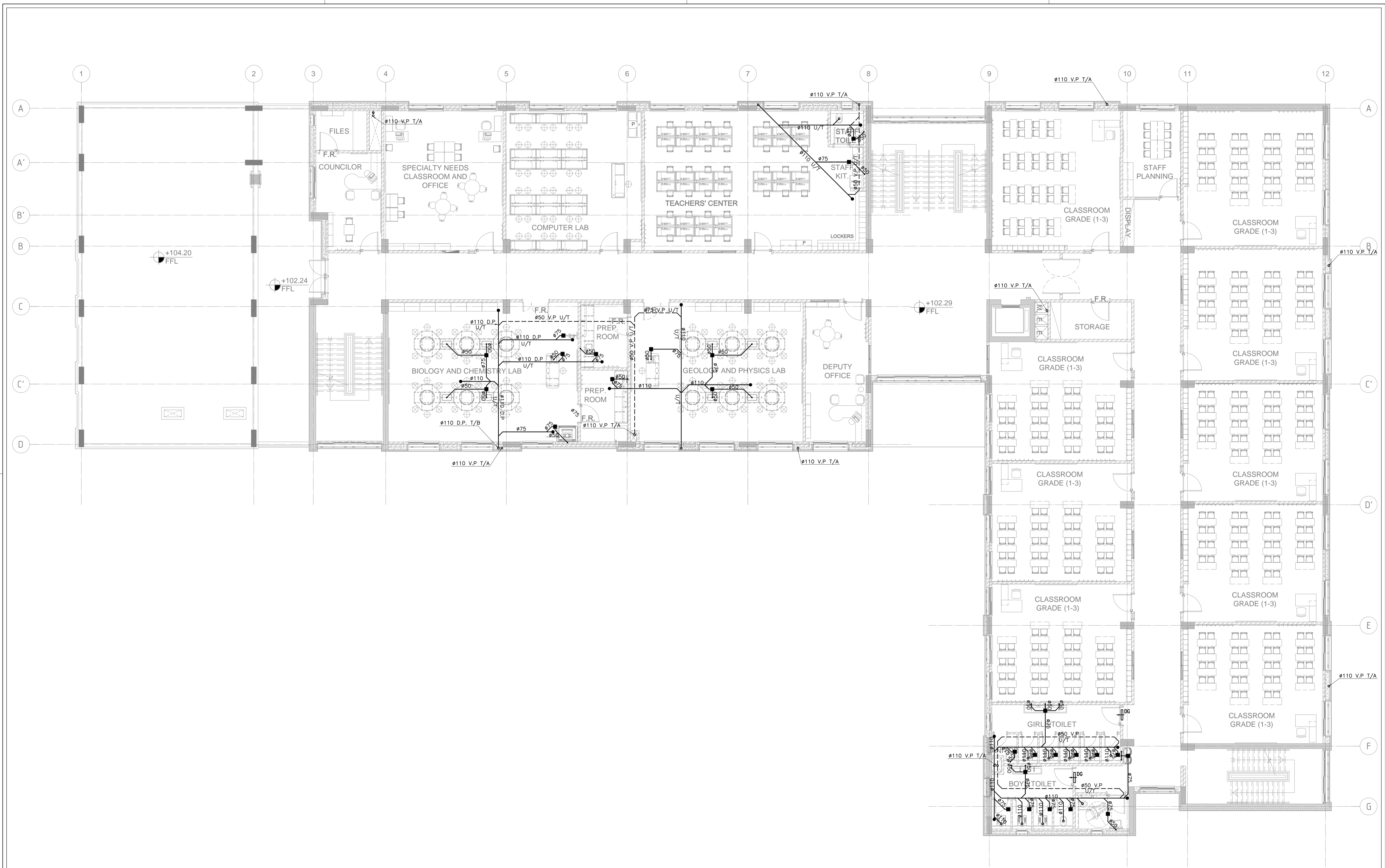
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PROJECT (USAID SKEP)

DRAWING NAME:		
GROUND FLOOR DRAINAGE SYSTEM PLAN		
PLOT No	LOCATION	BASIN NO
1496	Marka	1 Hanao Al Kassar

Design:	Drawn:	Checked:	North:
E.J.	CAD	A.J.	
SCALE: 1:200	Date: MAY 2019	Approved: W.Z.	
DRAWING NUMBER: SKEP 18-PD102			Rev.: 0



REV.	DATE	REMARKS

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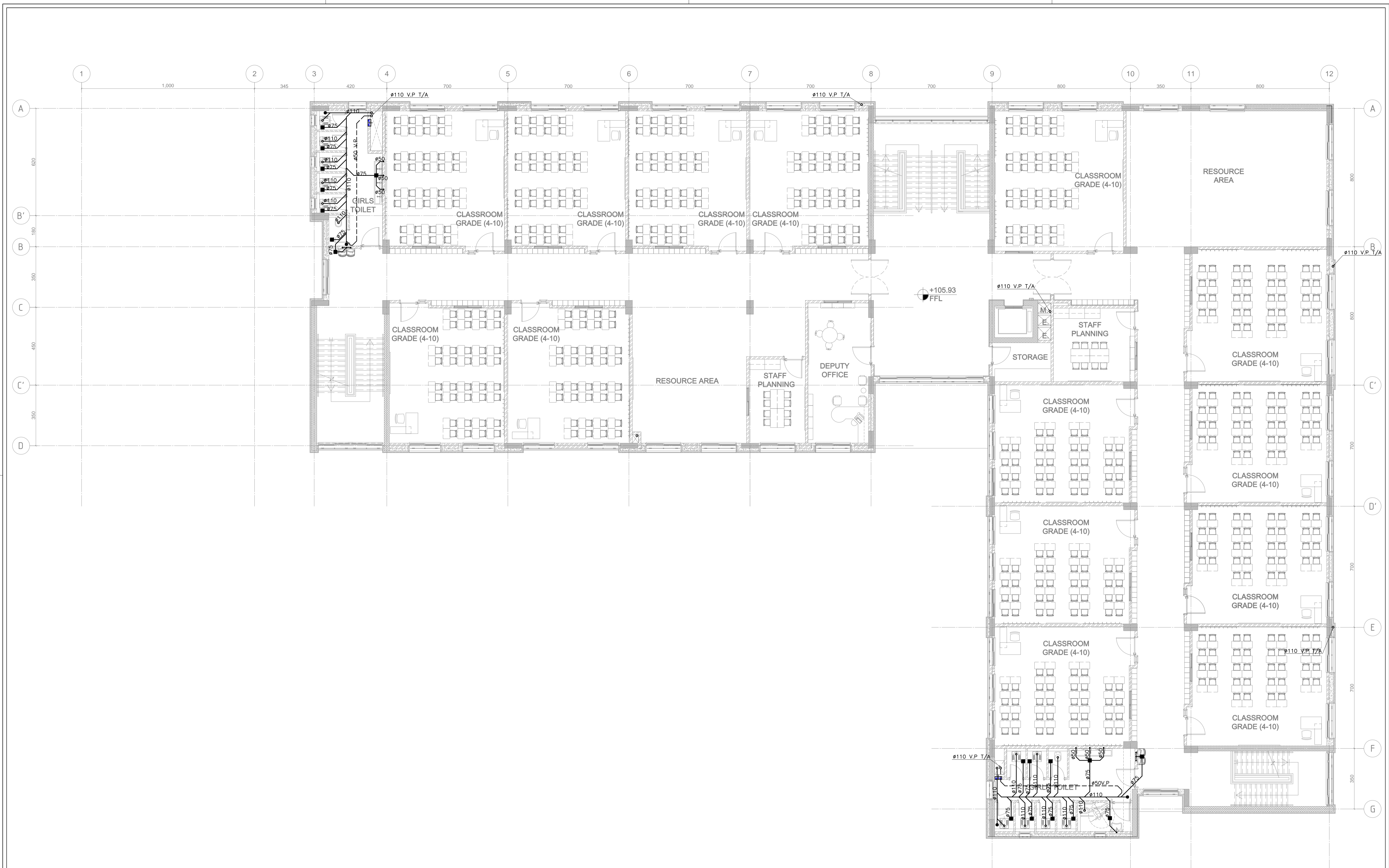


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SCHOOLS FOR A KNOWLEDGE ECONOMY
PROJECT (USAID SKEP)

DRAWING NAME:
**FIRST FLOOR
DRAINAGE SYSTEM PLAN**

DESIGN: E.J.
SCALE: 1:100
DATE: MAY 2019
DRAWING NUMBER: SKEP 18-PD103

Checked: A.J.	North:
Approved: W.Z.	Rev.: 0



REV.	DATE	REMARKS

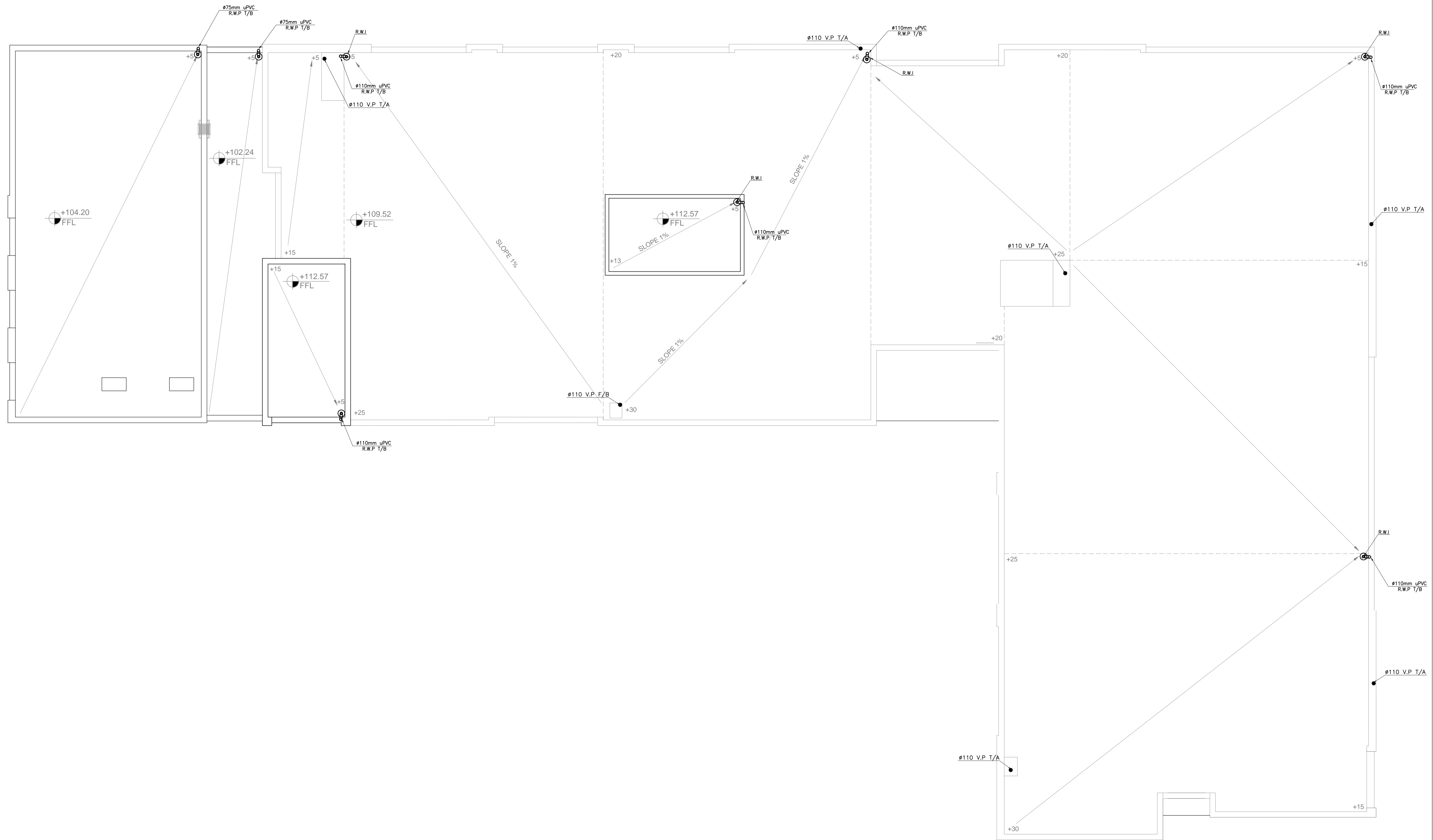
NOTES:



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PROJECT (USAID SKEP)

DRAWING NAME: SECOND FLOOR DRAINAGE SYSTEM PLAN		
PLOT No 1496	LOCATION Marka	BASIN NO 1 Hanao Al Kassar

Design: E.J.	Drawn: CAD	Checked: A.J.	North:
SCALE: 1:100	Date: MAY 2019	Approved: W.Z.	Rev.: 0
DRAWING NUMBER: SKEP 18-PD104			



REV.	DATE	REMARKS

NOTES:



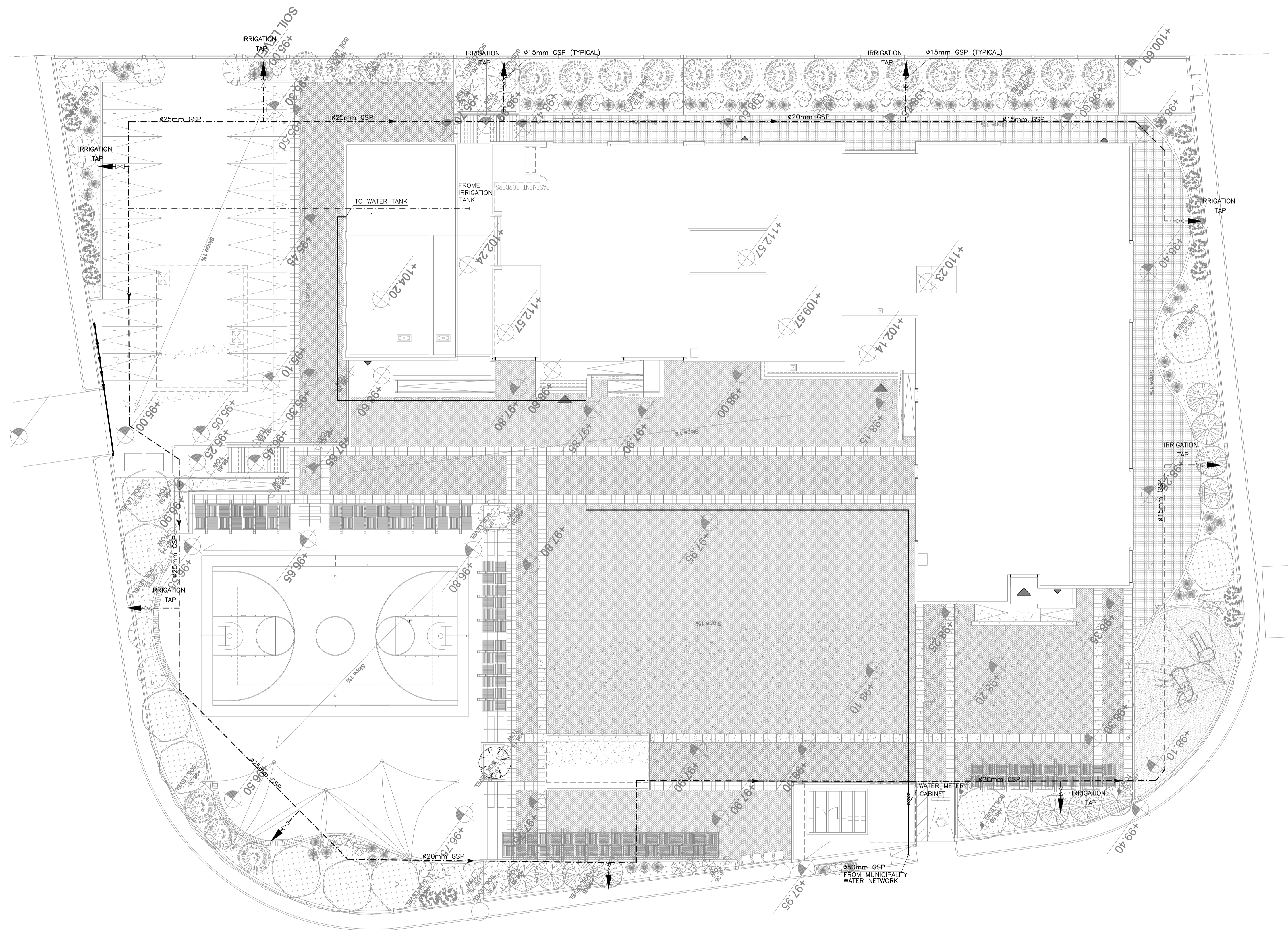
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SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

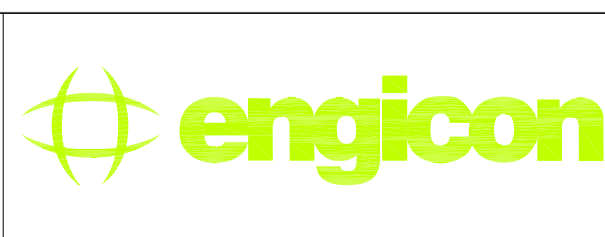
DRAWING NAME: ROOF PLAN DRAINAGE SYSTEM PLAN		
DESIGN: E.J.	DRAWN: CAD	CHECKED: A.J.
SCALE: 1:100	DATE: MAY 2019	APPROVED: W.Z.
PLOT No: 1496	LOCATION: Marka	BASIN NO: 1 Hanao Al Kassar

Design: E.J.	Drawn: CAD	Checked: A.J.	North:
Scale: 1:100	Date: MAY 2019	Approved: W.Z.	Rev.: 0
DRAWING NUMBER: SKEP 18-PD105			



REV.	DATE	REMARKS

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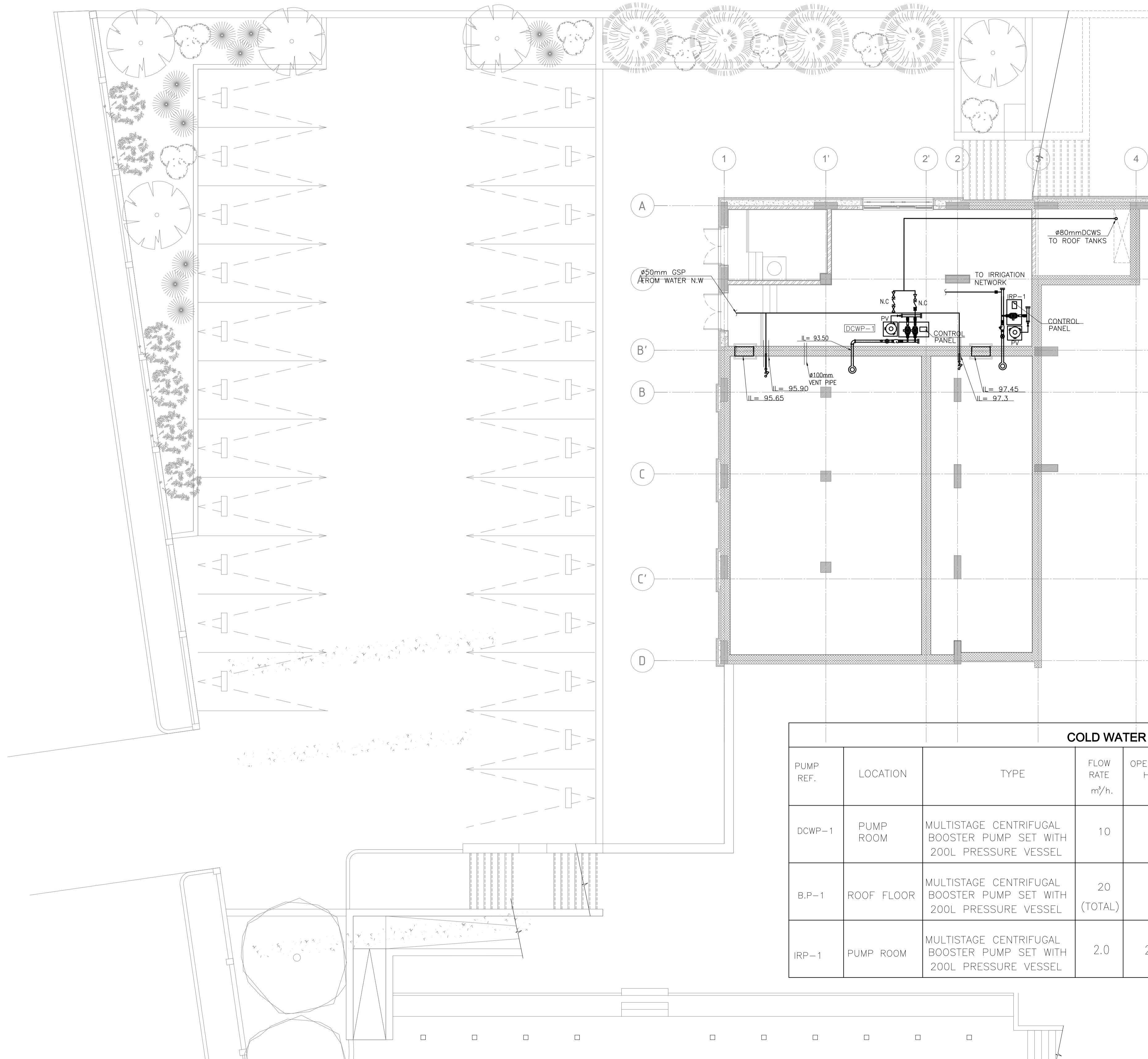


Jumana Bint Abi Taleb Basic Mixed School
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SCHOOLS FOR A KNOWLEDGE ECONOMY
PROJECT (USAID SKEP)

DRAWING NAME: SITE LIGHTING PLAN WATER DISTRIBUTION SYSTEM PLAN		
DESIGN: E.J.	DRAWN: CAD	CHECKED: A.J.
SCALE: 1:200	DATE: MAY 2019	APPROVED: W.Z.
PLOT No: 1496	LOCATION: Marka	BASIN No: 1 Hanao Al Kassar

DESIGN: E.J.	DRAWN: CAD	CHECKED: A.J.	NORTH:
SCALE: 1:200	DATE: MAY 2019	APPROVED: W.Z.	REV.: 0
DRAWING NUMBER: SKEP 18-PW100			

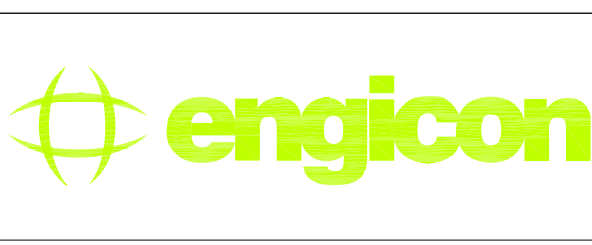
ELECTRIC WATER HEATERS SCHEDULE					
REF.NO	CAPACITY (L)	kW	TYPE	POWER SUPPLY	QTY
E.W.H.	50	1.2	VERTICAL	240/1/50	14



COLD WATER PUMPS SCHEDULE											
PUMP REF.	LOCATION	TYPE	FLOW RATE m ³ /h.	OPERATING HEAD (M)	SPEED CONTROL	ELECTRICAL DATA				QUANTITY	
						Estim. Kw	V	Phase	RPM	Duty	Stand By
DCWP-1	PUMP ROOM	MULTISTAGE CENTRIFUGAL BOOSTER PUMP SET WITH 200L PRESSURE VESSEL	10	20	CONSTANT SPEED	1.5	400	3	2900	1	1
B.P-1	ROOF FLOOR	MULTISTAGE CENTRIFUGAL BOOSTER PUMP SET WITH 200L PRESSURE VESSEL	20 (TOTAL)	20	VARIABLE SPEED	2.3	400	3	2900	2	1
IRP-1	PUMP ROOM	MULTISTAGE CENTRIFUGAL BOOSTER PUMP SET WITH 200L PRESSURE VESSEL	2.0	20	CONSTANT	0.5	230	1	2900	1	1

REV.	DATE	REMARKS

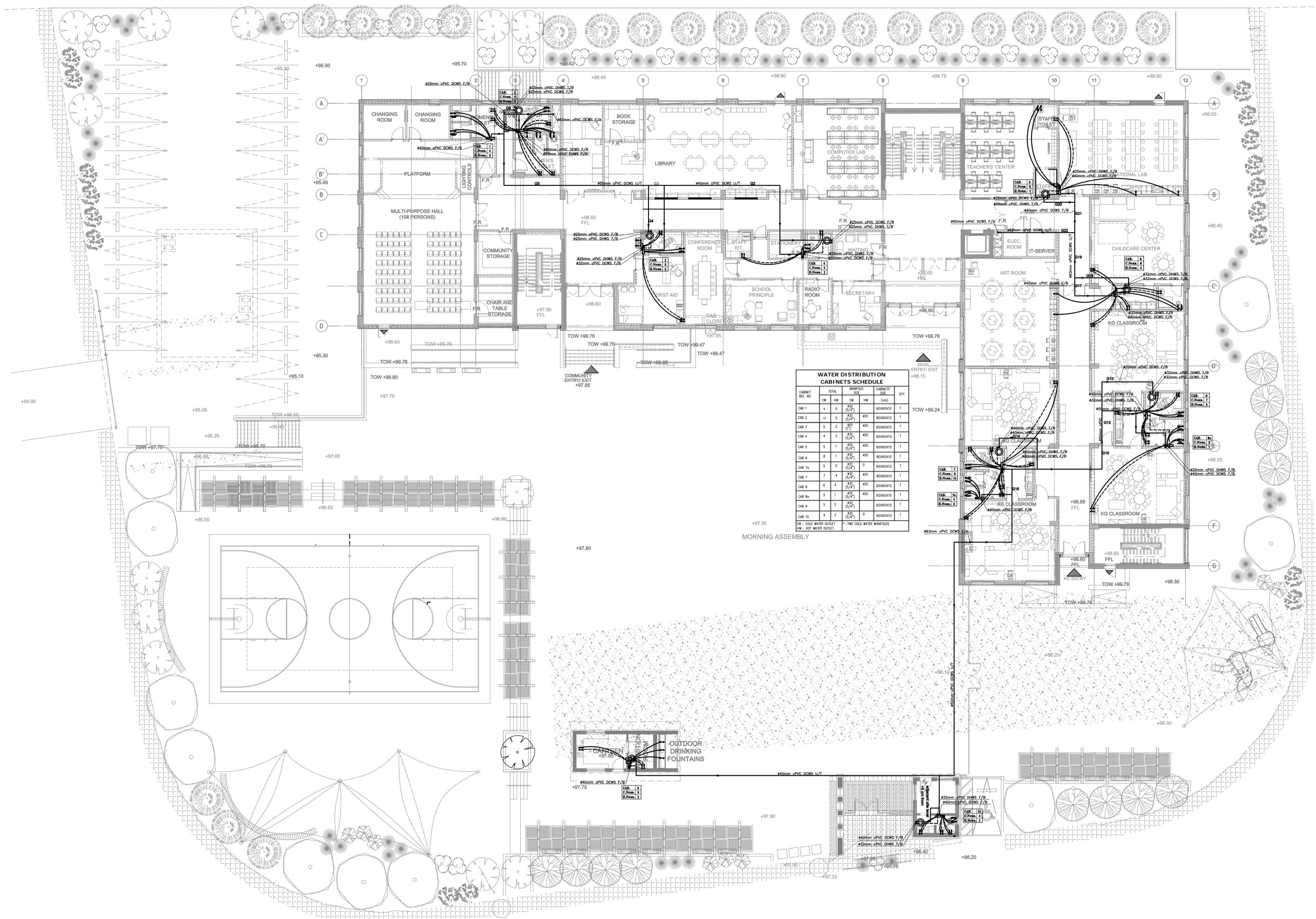
NOTES:



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PROJECT (USAID SKEP)

DRAWING NAME:
**BASEMENT FLOOR
WATER DISTRIBUTION SYSTEM PLAN**

Design: E.J.	Drawn: CAD	Checked: A.J.	North:
SCALE: 1:100	Date: MAY 2019	Approved: W.Z.	
PLOT No: 1496	LOCATION: Marka	BASIN NO: 1 Hanao Al Kassar	DRAWING NUMBER: SKEP 18-PW101
			Rev.: 0



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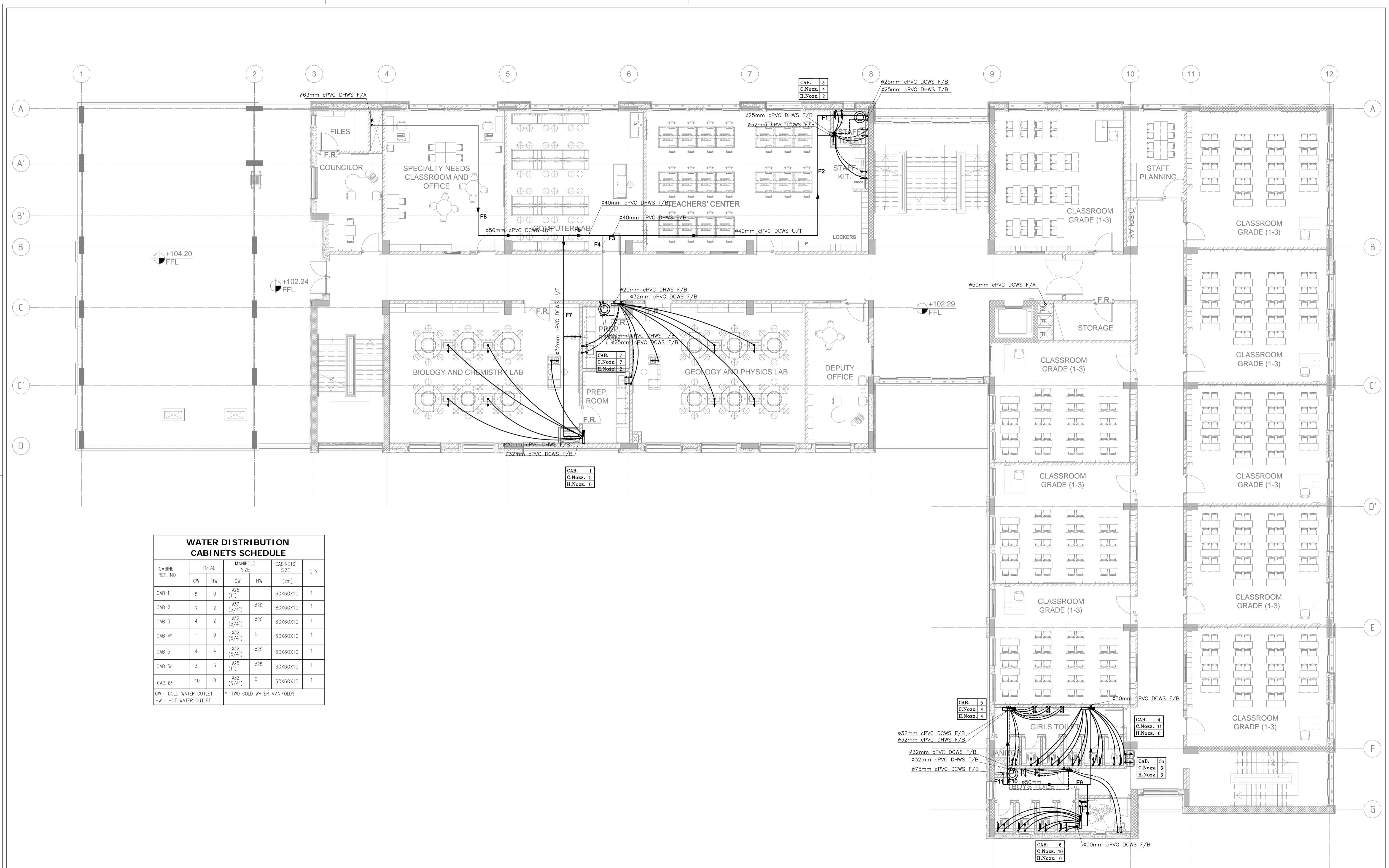


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PROJECT (USAID SKEP)

DRAWING NAME:
**GROUND FLOOR
WATER DISTRIBUTION SYSTEM PLAN**

PLOT No: 1496 LOCATION: Marka BASIN NO: 1 Hanao Al Kassar

Design: E.J.	Drawn: CAD	Checked: A.J.	North:
SCALE: 1:200	Date: MAY 2019	Approved: W.Z.	Rev.: 0
DRAWING NUMBER: SKEP 18-PW102			



**WATER DISTRIBUTION
CABINETS SCHEDULE**

CABINET REF. NO	TOTAL		MANIFOLD SIZE		CABINETS' SIZE (cm)	QTY.
	CW	HW	CW	HW		
CAB 1	5	0	ø25 (1")		60X60X10	1
CAB 2	7	2	ø32 (5/4")	ø20	80X60X10	1
CAB 3	4	2	ø32 (5/4")	ø20	60X60X10	1
CAB 4*	11	0	ø32 (5/4")	0	60X60X10	1
CAB 5	4	4	ø32 (5/4")	ø25	60X60X10	1
CAB 5a	3	3	ø25 (1")	ø25	60X60X10	1
CAB 6*	10	0	ø32 (5/4")	0	60X60X10	1

CW : COLD WATER OUTLET
HW : HOT WATER OUTLET

* : TWO COLD WATER MANIFOLDS

REV.	DATE	REMARKS

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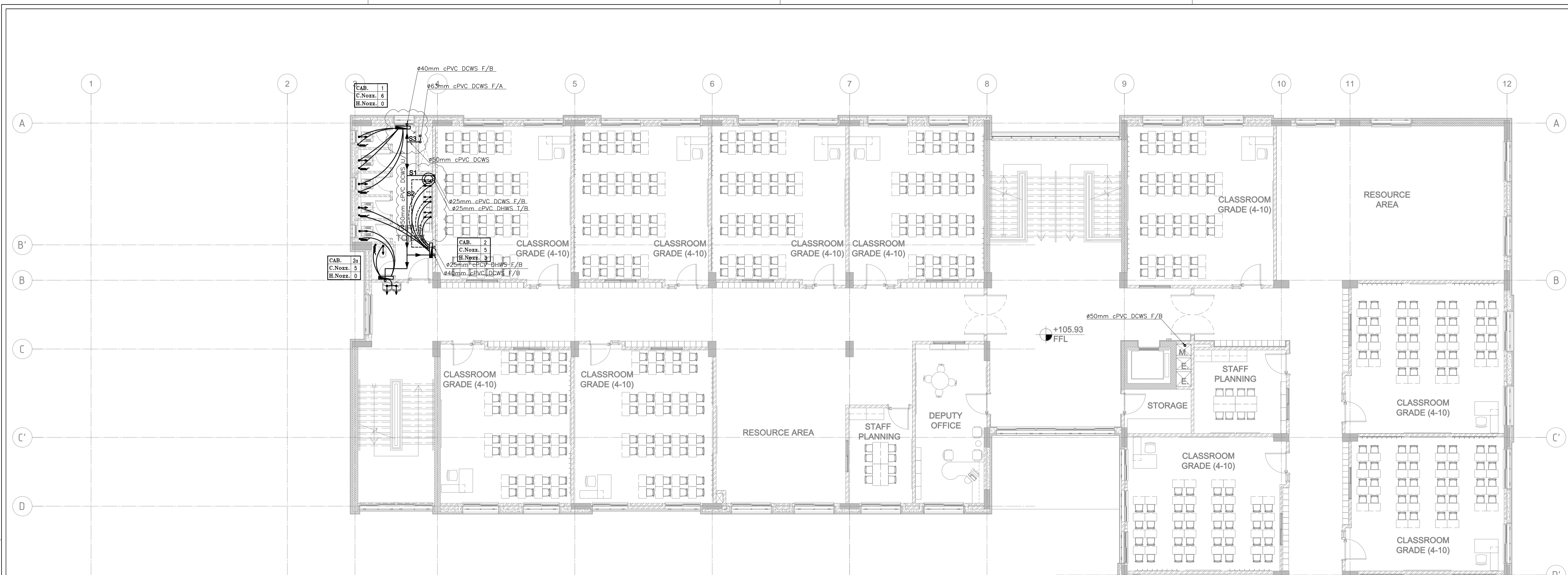


Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

DRAWING NAME:
FIRST FLOOR WATER DISTRIBUTION SYSTEM PLAN

Design: E.J.
SCALE: 1:100
Date: MAY 2019
DRAWING NUMBER: SKEP 18-PW103

Checked: A.J.	North:
Approved: W.Z.	Rev.: 0

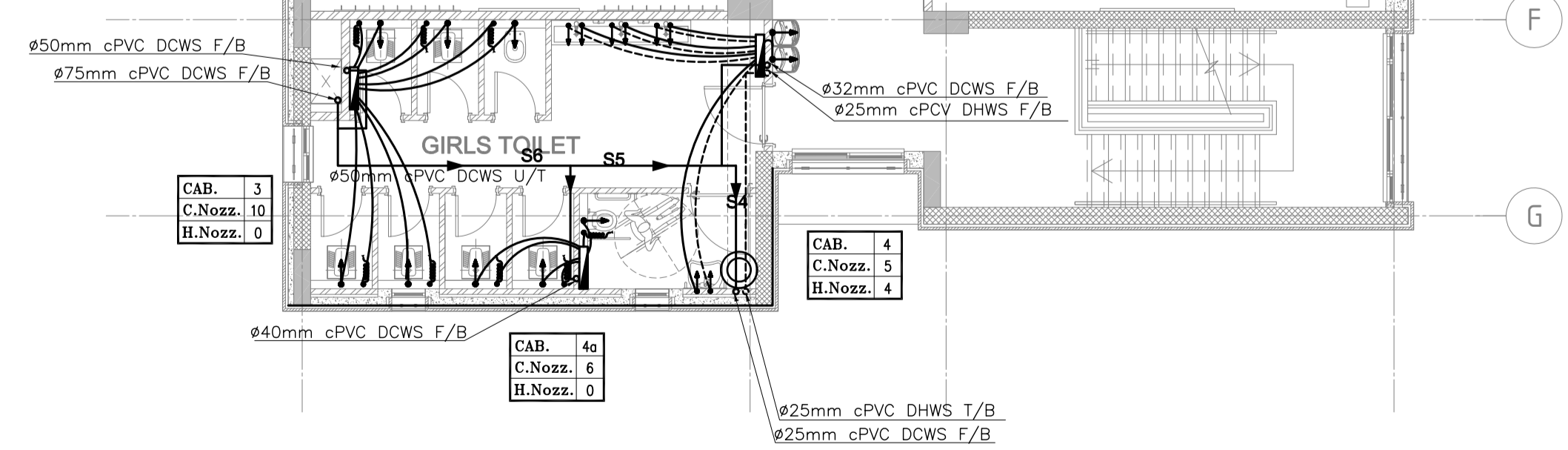


WATER DISTRIBUTION CABINETS SCHEDULE

CABINET REF. NO	TOTAL		MANIFOLD SIZE		CABINETS SIZE (cm)	QTY.
	CW	HW	CW	HW		
CAB 1	6	0	ø32 (5/4")	--	60X60X10	1
CAB 2a	5	0	ø32 (5/4")	--	60X60X10	1
CAB 2	5	3	ø32 (5/4")	ø20 (3/4")	60X60X10	1
CAB 3*	10	0	ø32 (5/4")	--	60X60X10	1
CAB 4a	6	0	ø32 (5/4")	--	60X60X10	1
CAB 4	5	4	ø32 (5/4")	ø20 (3/4")	80X60X10	1

CW : COLD WATER OUTLET
 HW : HOT WATER OUTLET

* : TWO COLD WATER MANIFOLDS

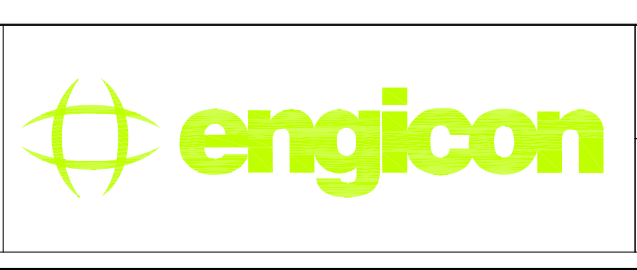


REV.	DATE	REMARKS

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Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
 SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

DRAWING NAME:
SECOND FLOOR WATER DISTRIBUTION SYSTEM PLAN

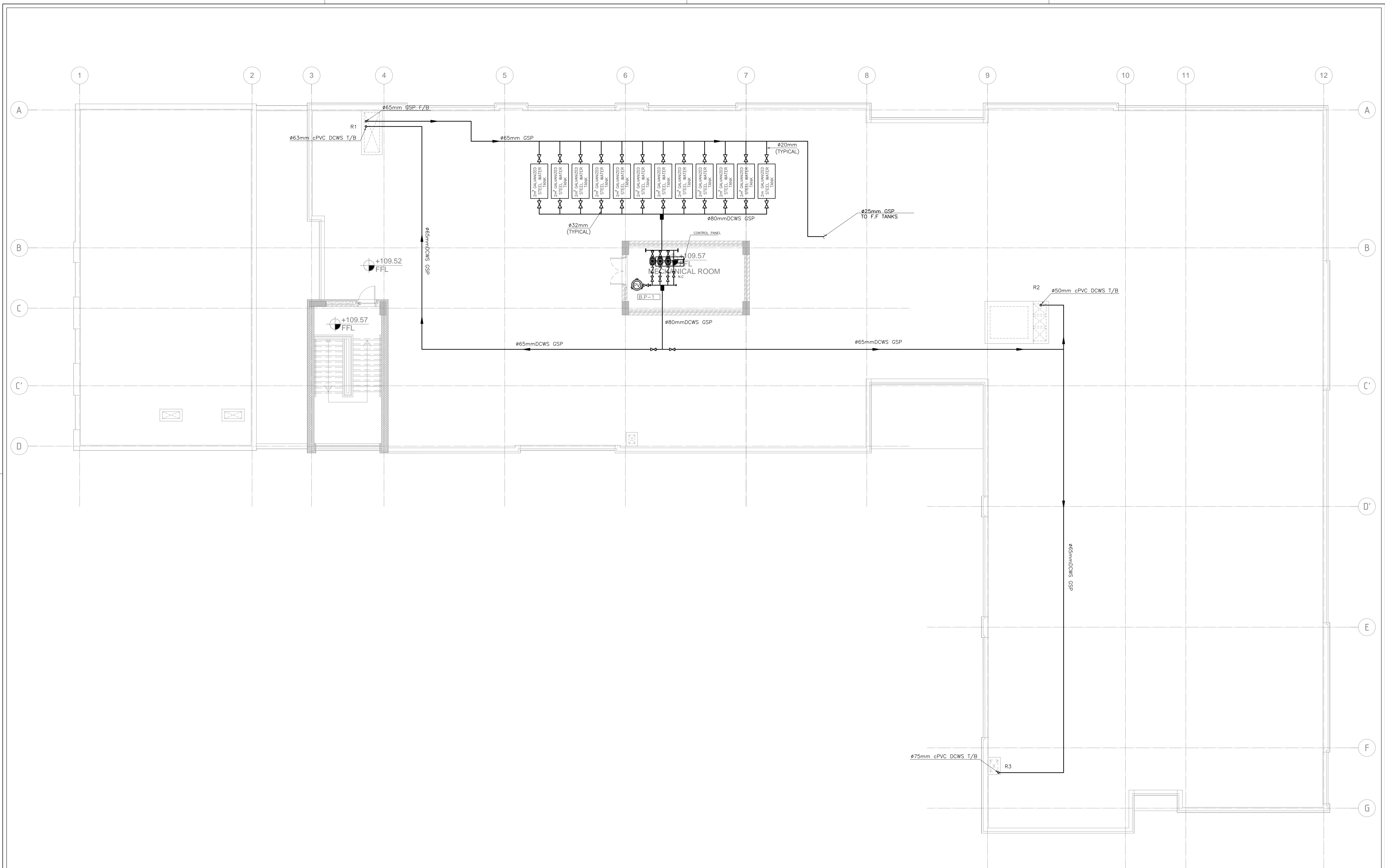
DESIGNER: E.J.
 DATE: MAY 2019
 SCALE: 1:100

PLOT No: 1496
 LOCATION: Marka
 BASIN NO: 1 Hanao Al Kassar

Checked: A.J.
 Approved: W.Z.
 DRAWING NUMBER: **SKEP 18-PW104**

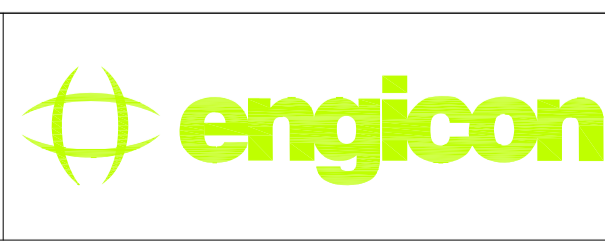
North:

Rev.: 0



REV.	DATE	REMARKS

NOTES:

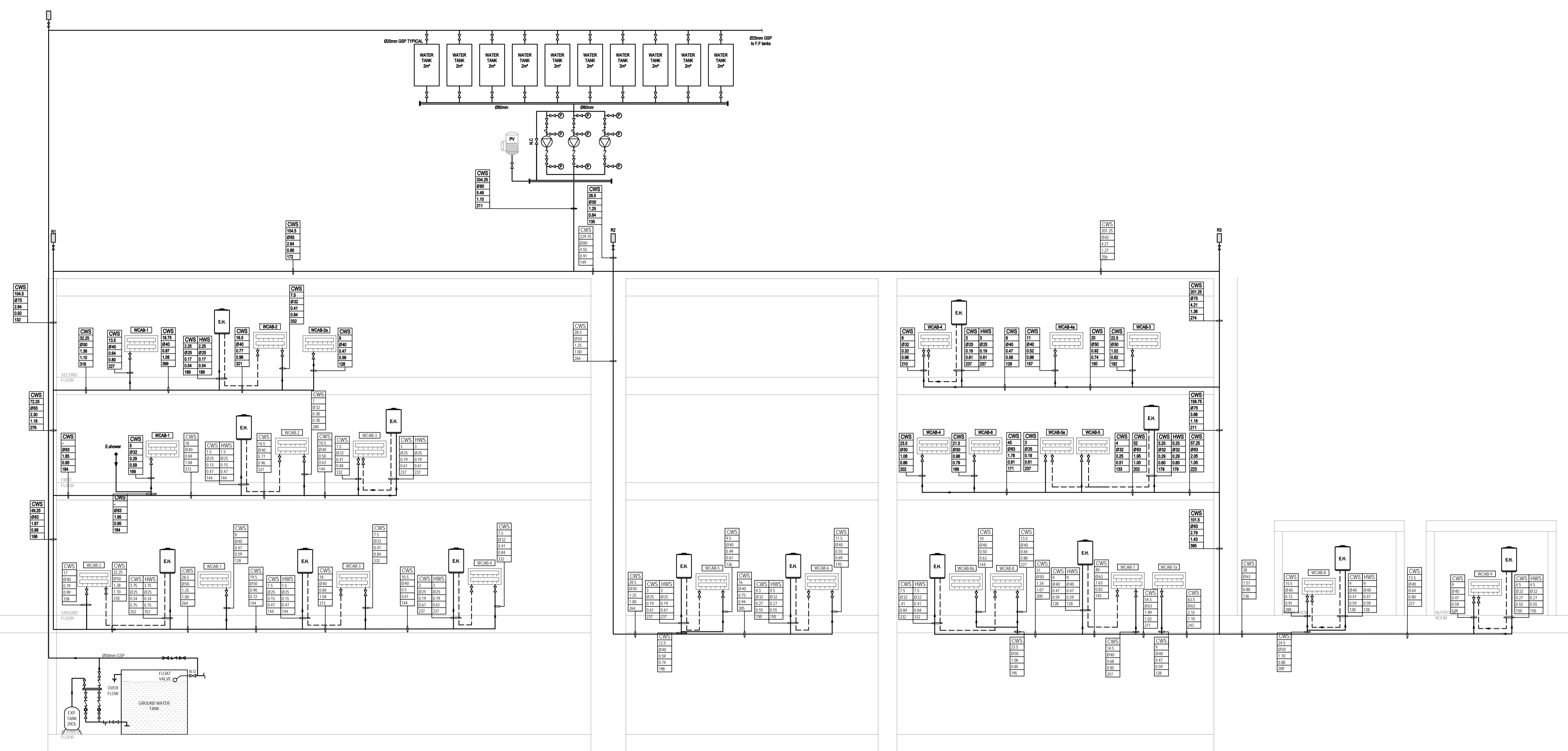


Jumana Bint Abi Taleb Basic Mixed School
(Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY
PROJECT (USAID SKEP)

DRAWING NAME: ROOF PLAN WATER DISTRIBUTION SYSTEM PLAN		
Design: E.J.	Drawn: CAD	Checked: A.J.
SCALE: 1:100	Date: MAY 2019	Approved: W.Z.
PLOT No 1496	LOCATION Marka	BASIN NO 1 Hanao Al Kassar

DRAWING NUMBER: SKEP 18-PW105	North:
Rev.: 0	

CWS	HWS	WATER FIXTURE UNITS
0.25	0.75	PIPE DIAMETER (mm)
2.5	7.5	WATER FLOW (l/s)
0.3	0.9	WATER VELOCITY (m/s)
0.09	0.27	WATER PRESSURE DROP (Pa/m)



NOTES:



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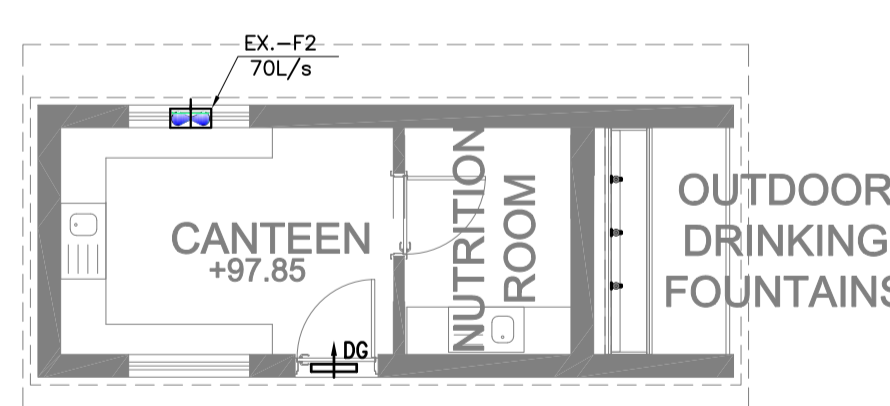
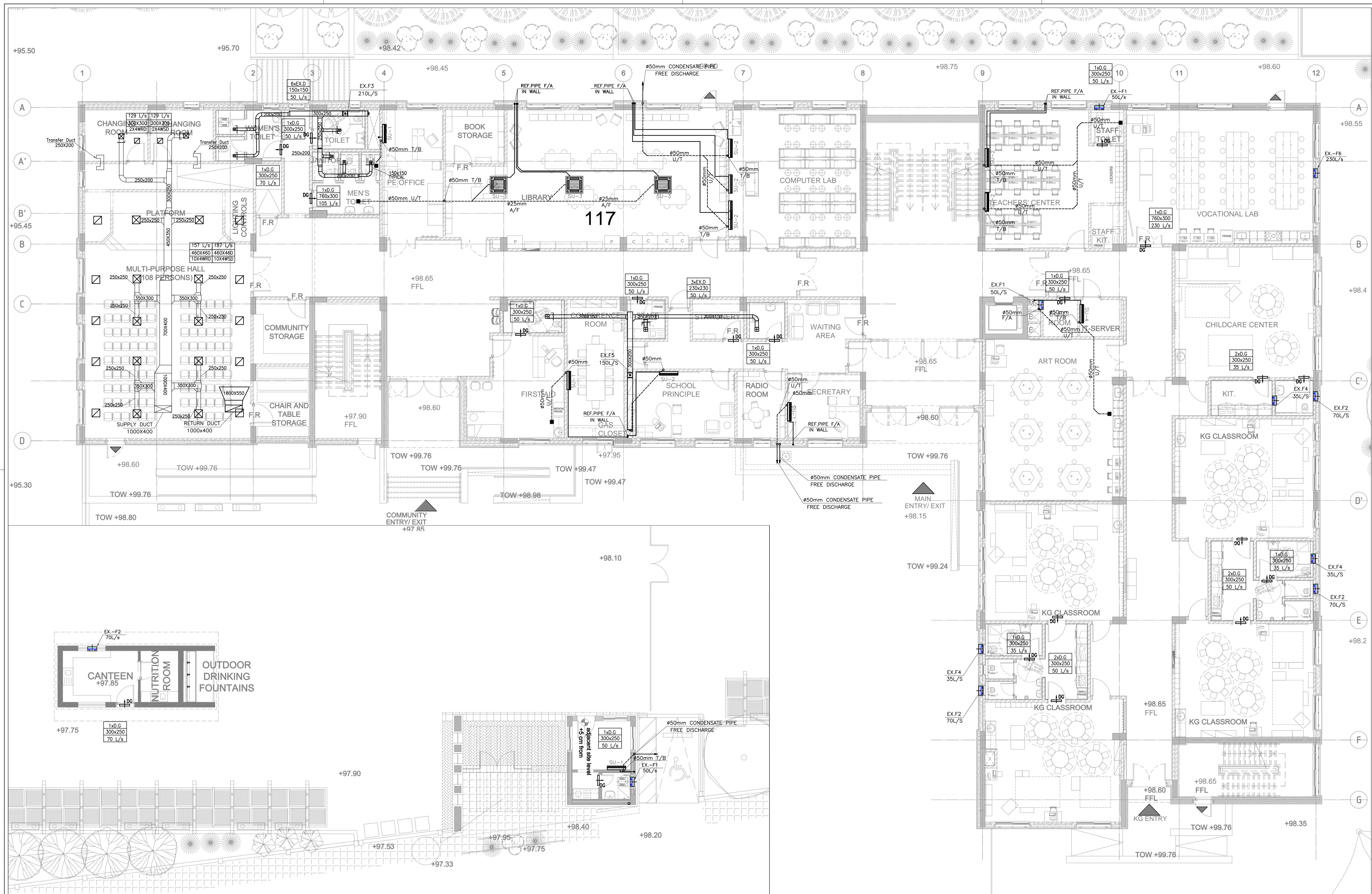


Jumana Bint Abi Taleb Basic Mixed School
(Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

DRAWING NAME: WATER DISTRIBUTION SYSTEM RISER DIAGRAM		
PLOT No 1496	LOCATION Marka	BASIN NO 1 Hanao Al Kassar

Design: S.H.	Drawn: CAD	Checked: A.J.	North:
SCALE: N.T.S.	Date: MAY 2019	Approved: W.Z.	
DRAWING NUMBER: SKEP 18-PW601			Rev.: 0

REV.	DATE	REMARKS



REV.	DATE	REMARKS

NOTES:



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Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

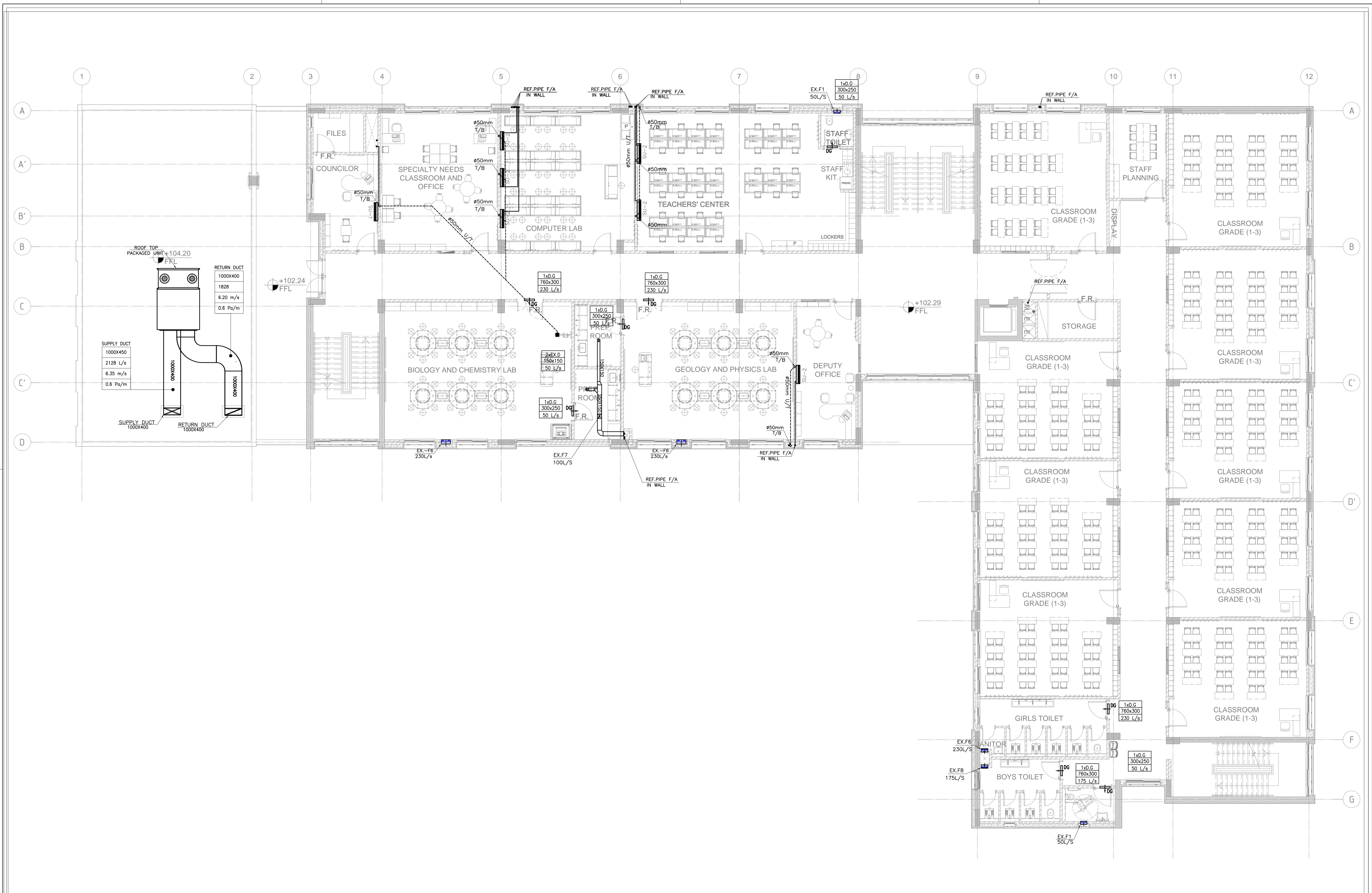
DRAWING NAME:
GROUND FLOOR HVAC DUCTING PLAN

PLOT No: 1496 LOCATION: Marka BASIN NO: 1 Hanau Al Kassar

Design: E.J. Drawn: CAD Checked: A.J. North:

SCALE: 1:100 Date: MAY 2019 Approved: W.Z.

DRAWING NUMBER: **SKEP 18-MH102** Rev.: 0



REV.	DATE	REMARKS

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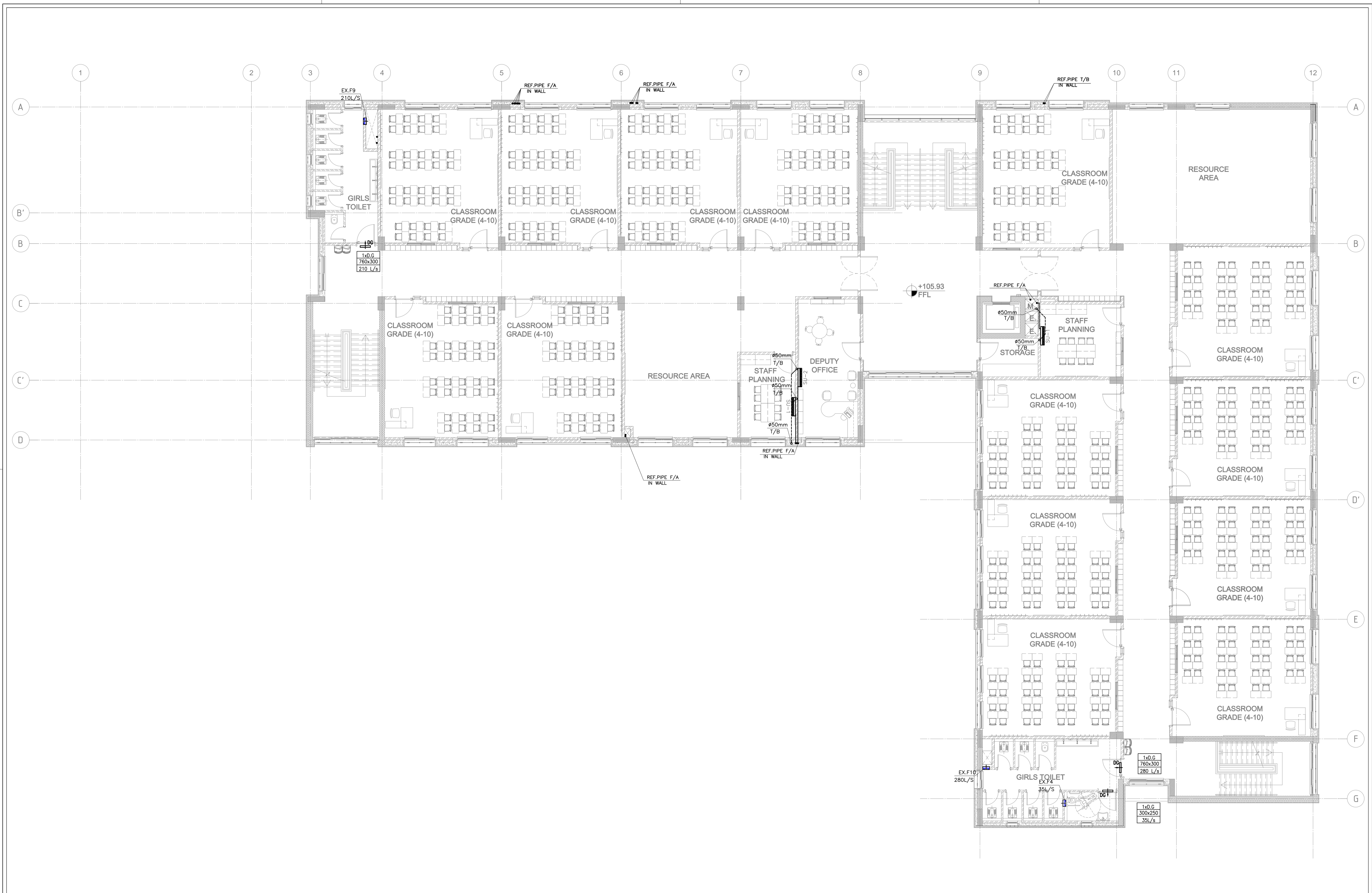


Jumana Bint Abi Taleb Basic Mixed School
(Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY
PROJECT (USAID SKEP)

DRAWING NAME: FIRST FLOOR HVAC DUCTING PLAN		
DESIGN: E.J.	DRAWN: CAD	CHECKED: A.J.
SCALE: 1:100	DATE: MAY 2019	APPROVED: W.Z.
PLOT No: 1496	LOCATION: Marka	BASIN NO: 1 Hanao Al Kassar

DRAWING NUMBER:
SKEP 18-MH103

North:
Rev.: 0



REV.	DATE	REMARKS

NOTES:

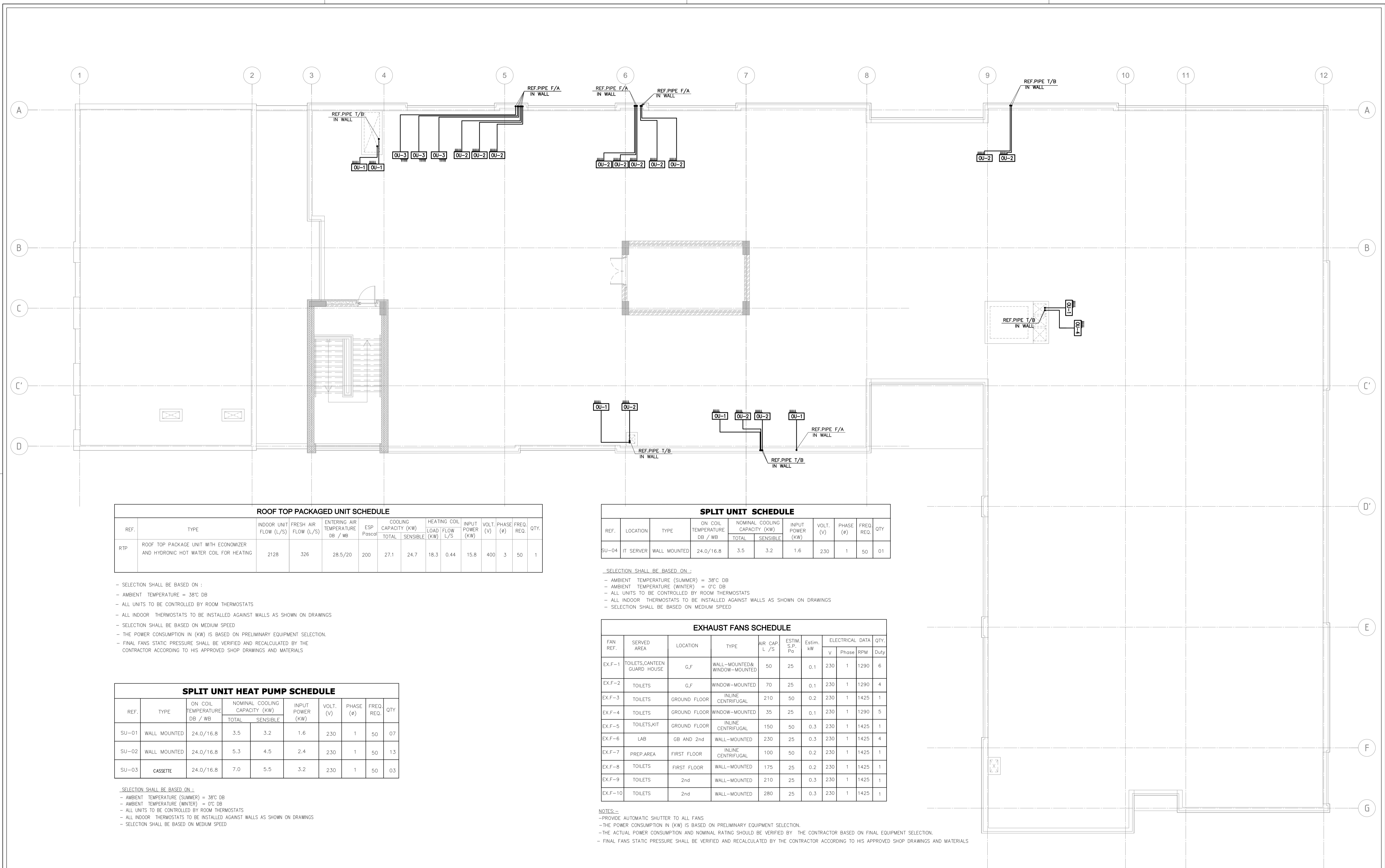


Jumana Bint Abi Taleb Basic Mixed School
(Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY
PROJECT (USAID SKEP)

DRAWING NAME:
**SECOND FLOOR
HVAC DUCTING PLAN**

PLOT No: 1496 LOCATION: Marka BASIN NO: 1 Hanao Al Kassar

Design:	Drawn: CAD	Checked:	North:
SCALE: E-J 1:100	Date: MAY 2019	Approved: A.J. W.Z.	Rev.: 0
DRAWING NUMBER: SKEP 18-MH104			



ROOF TOP PACKAGED UNIT SCHEDULE														
REF.	TYPE	INDOOR UNIT FLOW (L/S)	FRESH AIR FLOW (L/S)	ENTERING AIR TEMPERATURE Db / Wb	ESP Pascal	COOLING CAPACITY (KW)		HEATING COIL LOAD FLOW L/S		INPUT POWER (KW)	VOLT. (V)	PHASE (Ø)	FREQ. REQ.	QTY.
						TOTAL	SENSIBLE	TOTAL	SENSIBLE					
RTP	ROOF TOP PACKAGE UNIT WITH ECONOMIZER AND HYDRONIC HOT WATER COIL FOR HEATING	2128	326	28.5/20	200	27.1	24.7	18.3	0.44	15.8	400	3	50	1

- SELECTION SHALL BE BASED ON :
- AMBIENT TEMPERATURE (SUMMER) = 38°C DB
- AMBIENT TEMPERATURE (WINTER) = 0°C DB
- ALL UNITS TO BE CONTROLLED BY ROOM THERMOSTATS
- ALL INDOOR THERMOSTATS TO BE INSTALLED AGAINST WALLS AS SHOWN ON DRAWINGS
- SELECTION SHALL BE BASED ON MEDIUM SPEED
- THE POWER CONSUMPTION IN (KW) IS BASED ON PRELIMINARY EQUIPMENT SELECTION.
- FINAL FANS STATIC PRESSURE SHALL BE VERIFIED AND RECALCULATED BY THE CONTRACTOR ACCORDING TO HIS APPROVED SHOP DRAWINGS AND MATERIALS.

SPLIT UNIT HEAT PUMP SCHEDULE									
REF.	TYPE	ON COIL TEMPERATURE DB / WB	NOMINAL COOLING CAPACITY (KW)		INPUT POWER (KW)	VOLT. (V)	PHASE (Ø)	FREQ. REQ.	QTY
			TOTAL	SENSIBLE					
SU-01	WALL MOUNTED	24.0/16.8	3.5	3.2	1.6	230	1	50	07
SU-02	WALL MOUNTED	24.0/16.8	5.3	4.5	2.4	230	1	50	13
SU-03	CASSETTE	24.0/16.8	7.0	5.5	3.2	230	1	50	03

- SELECTION SHALL BE BASED ON :
- AMBIENT TEMPERATURE (SUMMER) = 38°C DB
- AMBIENT TEMPERATURE (WINTER) = 0°C DB
- ALL UNITS TO BE CONTROLLED BY ROOM THERMOSTATS
- ALL INDOOR THERMOSTATS TO BE INSTALLED AGAINST WALLS AS SHOWN ON DRAWINGS
- SELECTION SHALL BE BASED ON MEDIUM SPEED

SPLIT UNIT SCHEDULE										
REF.	LOCATION	TYPE	ON COIL TEMPERATURE DB / WB	NOMINAL COOLING CAPACITY (KW)		INPUT POWER (KW)	VOLT. (V)	PHASE (Ø)	FREQ. REQ.	QTY
				TOTAL	SENSIBLE					
SU-04	IT SERVER	WALL MOUNTED	24.0/16.8	3.5	3.2	1.6	230	1	50	01

- SELECTION SHALL BE BASED ON :
- AMBIENT TEMPERATURE (SUMMER) = 38°C DB
- AMBIENT TEMPERATURE (WINTER) = 0°C DB
- ALL UNITS TO BE CONTROLLED BY ROOM THERMOSTATS
- ALL INDOOR THERMOSTATS TO BE INSTALLED AGAINST WALLS AS SHOWN ON DRAWINGS
- SELECTION SHALL BE BASED ON MEDIUM SPEED

EXHAUST FANS SCHEDULE										
FAN REF.	SERVED AREA	LOCATION	TYPE	AIR CAP L / S	ESTIM. S.P. Pa	Estim. kW	ELECTRICAL DATA			QTY.
							V	Phase	RPM	
EX.F-1	TOILETS,CANTEEN GUARD HOUSE	G,F	WALL-MOUNTED& WINDOW-MOUNTED	50	25	0.1	230	1	1290	6
EX.F-2	TOILETS	G,F	WINDOW-MOUNTED	70	25	0.1	230	1	1290	4
EX.F-3	TOILETS	GROUND FLOOR	INLINE CENTRIFUGAL	210	50	0.2	230	1	1425	1
EX.F-4	TOILETS	GROUND FLOOR	WINDOW-MOUNTED	35	25	0.1	230	1	1290	5
EX.F-5	TOILETS,KIT	GROUND FLOOR	INLINE CENTRIFUGAL	150	50	0.3	230	1	1425	1
EX.F-6	LAB	GB AND 2nd	WALL-MOUNTED	230	25	0.3	230	1	1425	4
EX.F-7	PREP.AREA	FIRST FLOOR	INLINE CENTRIFUGAL	100	50	0.2	230	1	1425	1
EX.F-8	TOILETS	FIRST FLOOR	WALL-MOUNTED	175	25	0.2	230	1	1425	1
EX.F-9	TOILETS	2nd	WALL-MOUNTED	210	25	0.3	230	1	1425	1
EX.F-10	TOILETS	2nd	WALL-MOUNTED	280	25	0.3	230	1	1425	1

- PROVIDE AUTOMATIC SHUTTER TO ALL FANS
- THE POWER CONSUMPTION IN (KW) IS BASED ON PRELIMINARY EQUIPMENT SELECTION.
- THE ACTUAL POWER CONSUMPTION AND NOMINAL RATING SHOULD BE VERIFIED BY THE CONTRACTOR BASED ON FINAL EQUIPMENT SELECTION.
- FINAL FANS STATIC PRESSURE SHALL BE VERIFIED AND RECALCULATED BY THE CONTRACTOR ACCORDING TO HIS APPROVED SHOP DRAWINGS AND MATERIALS

REV.	DATE	REMARKS

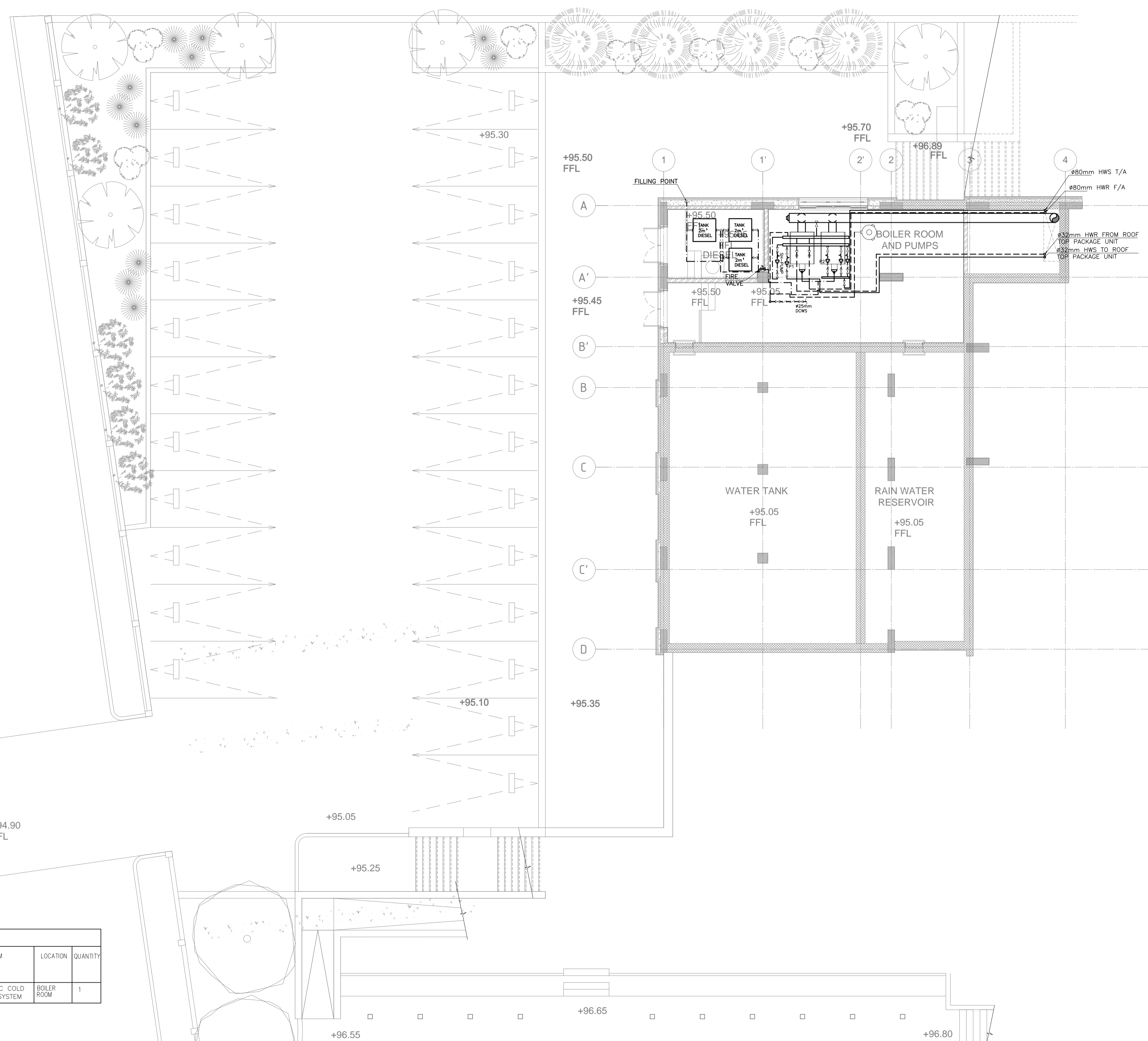
NOTES:



Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

DRAWING NAME: ROOF PLAN HVAC DUCTING PLAN		
Design: E.J.	Drawn: CAD	Checked: A.J.
SCALE: 1:100	Date: MAY 2019	Approved: W.Z.
PLOT No 1496	LOCATION Marka	BASIN NO 1 Hanao Al Kassar

DRAWING NUMBER: SKEP 18-MH105		North:
Rev.:	0	



HEATING WATER PUMPS SCHEDULE

PUMP REF.	SERVED AREA OR EQUIPMENT	LOCATION	TYPE	FLOW RATE L/S	OPERATING HEAD (M)	ELECTRICAL DATA				QUANTITY	
						Estim. Kw	V	Phase	RPM	Duty	Stand By
P1	ROOFTOP PACKAGE UNIT	BOILER ROOM	IN LINE SINGLE STAGE CENTRIFUGAL	0.44	25	0.4	230	1	2900	1	
P2	RADIATORS	BOILER ROOM	IN LINE SINGLE STAGE CENTRIFUGAL	7.95 (EACH)	15	1.6	400	3	2900	2	1
SH-PUMP	BOILERS	BOILER ROOM	IN LINE SINGLE STAGE CENTRIFUGAL	0.26	3	0.15	230	1	1450	1	

NOTES:-
 -THE POWER CONSUMPTION IN (KW) IS BASED ON PRELIMINARY EQUIPMENT SELECTION.
 -FINAL PUMPS OPERATING HEAD SHALL BE VERIFIED AND RECALCULATED BY THE CONTRACTOR ACCORDING TO HIS APPROVED SHOP DRAWINGS AND MATERIALS.

HEATING BOILER SCHEDULE

DESIGNATION	TITLE	LOCATION	DESCRIPTION	QUANTITY	DUTY
HWB	HEATING BOILER	BOILER ROOM	-SECTIONAL TYPE COMPLETE WITH INSULATED JACKET - CAPACITY = 245 KW - MAX. OPERATING PRESSURE = 6 Bar - FUEL : LIGHT OIL CLASS 2.	2	2

EXPANSION VESSELS SCHEDULE

REFERENCE		EX-VI
NUMBER REQUIRED		1
LOCATION		BOILER ROOM
SYSTEM		HEATING WATER SYSTEM
MAXIMUM OPERATING PRESSURE	bar	6
CAPACITY	LITER	200

AUTOMATIC AIR SEPARATOR

REF.	LOCATION	SYSTEM	TYPE	CAPACITY FLOW (L/S)	SIZE OF TANGENTIAL OPENINGS
AAS	BOILER ROOM	HEATING WATER	CENTRIFUGAL TYPE AIR SEPARATOR	8.33	4" FLANGED OR GROOVED

ELECTRONIC ANTI-SCALE UNIT

REF.	PIPE DIAMETER (mm)	CAPACITY (L/S)	VOLTAGE (VOLT)	ABSORBED POWER (WATT)	FREQUENCY RANGE (KHZ)	REQUIRED SPACE (mm)	SYSTEM	LOCATION	QUANTITY
(A.S)	100	8.33	24	3	3-32	500	DOMESTIC COLD WATER SYSTEM	BOILER ROOM	1

NOTES:



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Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

DRAWING NAME:

BASEMENT FLOOR HVAC PIPING SYSTEM PLAN

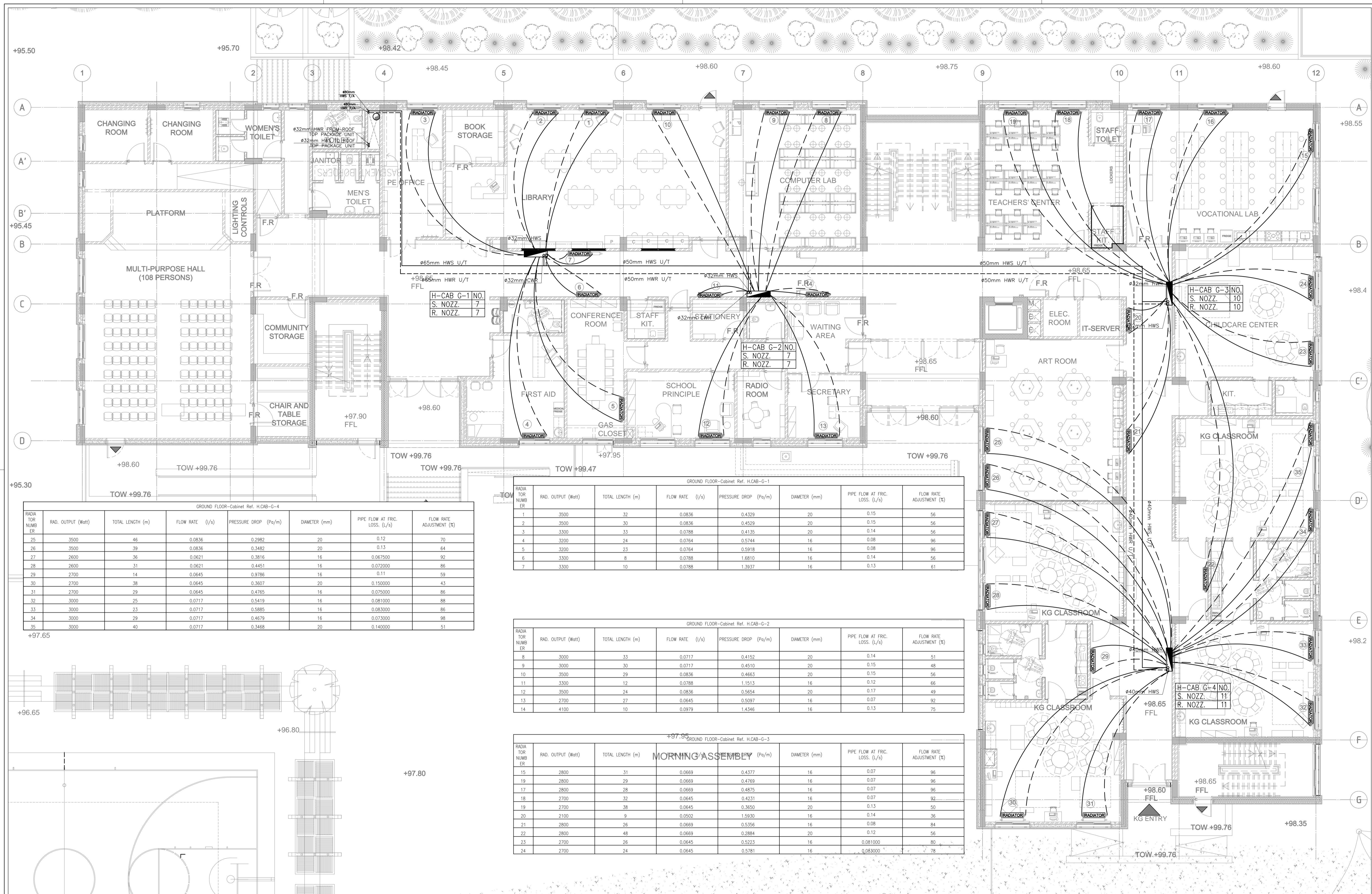
PLOT No 1496

LOCATION Marka

BASIN NO 1 Hanao Al Kassar

Design: E.J.	Drawn: CAD	Checked: A.J.	North:
SCALE: 1:100	Date: MAY 2019	Approved: W.Z.	
DRAWING NUMBER: SKEP 18-MP101		Rev.: 0	

REV.	DATE	REMARKS



GROUND FLOOR-Cabinet Ref. H.CAB-G-4

RADIATOR NUMBER	RAD. OUTPUT (Watt)	TOTAL LENGTH (m)	FLOW RATE (l/s)	PRESSURE DROP (Pa/m)	DIAMETER (mm)	PIPE FLOW AT FRIC. LOSS. (l/s)	FLOW RATE ADJUSTMENT (%)
25	3500	46	0.0836	0.2982	20	0.12	70
26	3500	39	0.0836	0.3482	20	0.13	64
27	2600	36	0.0621	0.3816	16	0.0675000	92
28	2600	31	0.0621	0.4451	16	0.0720000	86
29	2700	14	0.0645	0.9786	16	0.11	59
30	2700	38	0.0645	0.3607	20	0.1500000	43
31	2700	29	0.0645	0.4765	16	0.0750000	86
32	3000	25	0.0717	0.5419	16	0.0810000	88
33	3000	23	0.0717	0.5885	16	0.0830000	86
34	3000	29	0.0717	0.4679	16	0.0730000	98
35	3000	40	0.0717	0.3468	20	0.1400000	51

GROUND FLOOR-Cabinet Ref. H.CAB-G-1

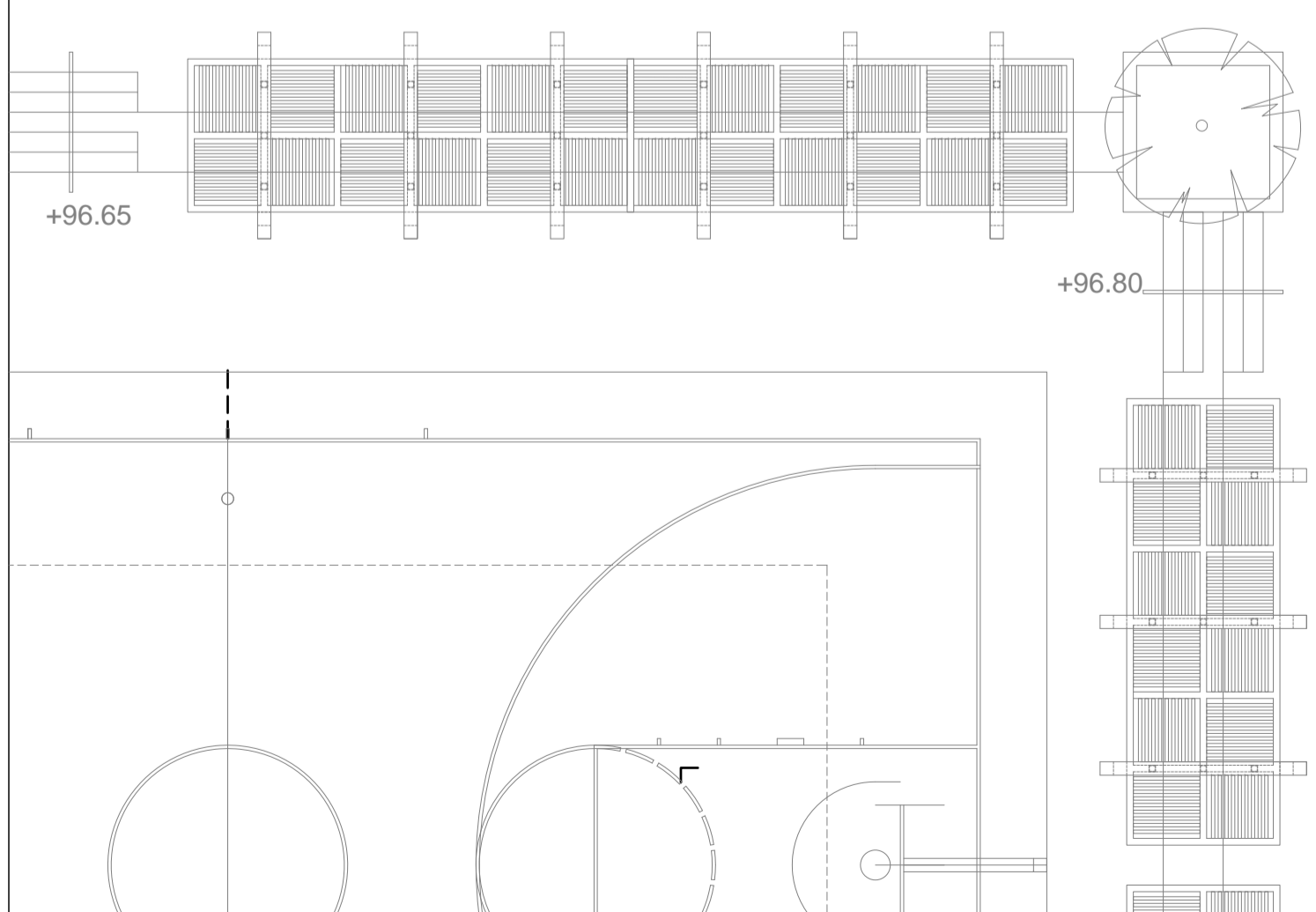
RADIATOR NUMBER	RAD. OUTPUT (Watt)	TOTAL LENGTH (m)	FLOW RATE (l/s)	PRESSURE DROP (Pa/m)	DIAMETER (mm)	PIPE FLOW AT FRIC. LOSS. (l/s)	FLOW RATE ADJUSTMENT (%)
1	3500	32	0.0836	0.4329	20	0.15	56
2	3500	30	0.0836	0.4529	20	0.15	56
3	3300	33	0.0788	0.4135	20	0.14	56
4	3200	24	0.0764	0.5744	16	0.08	96
5	3200	23	0.0764	0.5918	16	0.08	96
6	3300	8	0.0788	1.6810	16	0.14	56
7	3300	10	0.0788	1.3937	16	0.13	61

GROUND FLOOR-Cabinet Ref. H.CAB-G-2

RADIATOR NUMBER	RAD. OUTPUT (Watt)	TOTAL LENGTH (m)	FLOW RATE (l/s)	PRESSURE DROP (Pa/m)	DIAMETER (mm)	PIPE FLOW AT FRIC. LOSS. (l/s)	FLOW RATE ADJUSTMENT (%)
8	3000	33	0.0717	0.4152	20	0.14	51
9	3000	30	0.0717	0.4510	20	0.15	48
10	3500	29	0.0836	0.4663	20	0.15	56
11	3300	12	0.0788	1.1513	16	0.12	66
12	3500	24	0.0836	0.5654	20	0.17	49
13	2700	27	0.0645	0.5097	16	0.07	92
14	4100	10	0.0979	1.4346	16	0.13	75

GROUND FLOOR-Cabinet Ref. H.CAB-G-3

RADIATOR NUMBER	RAD. OUTPUT (Watt)	TOTAL LENGTH (m)	FLOW RATE (l/s)	PRESSURE DROP (Pa/m)	DIAMETER (mm)	PIPE FLOW AT FRIC. LOSS. (l/s)	FLOW RATE ADJUSTMENT (%)
15	2800	31	0.0669	0.4377	16	0.07	96
19	2800	29	0.0669	0.4769	16	0.07	96
17	2800	28	0.0669	0.4875	16	0.07	96
18	2700	32	0.0645	0.4231	16	0.07	92
19	2700	38	0.0645	0.3650	20	0.13	50
20	2100	9	0.0502	1.5930	16	0.14	36
21	2800	26	0.0669	0.5356	16	0.08	84
22	2800	48	0.0669	0.2884	20	0.12	56
23	2700	26	0.0645	0.5223	16	0.0810000	80
24	2700	24	0.0645	0.5781	16	0.0830000	78



NOTES:



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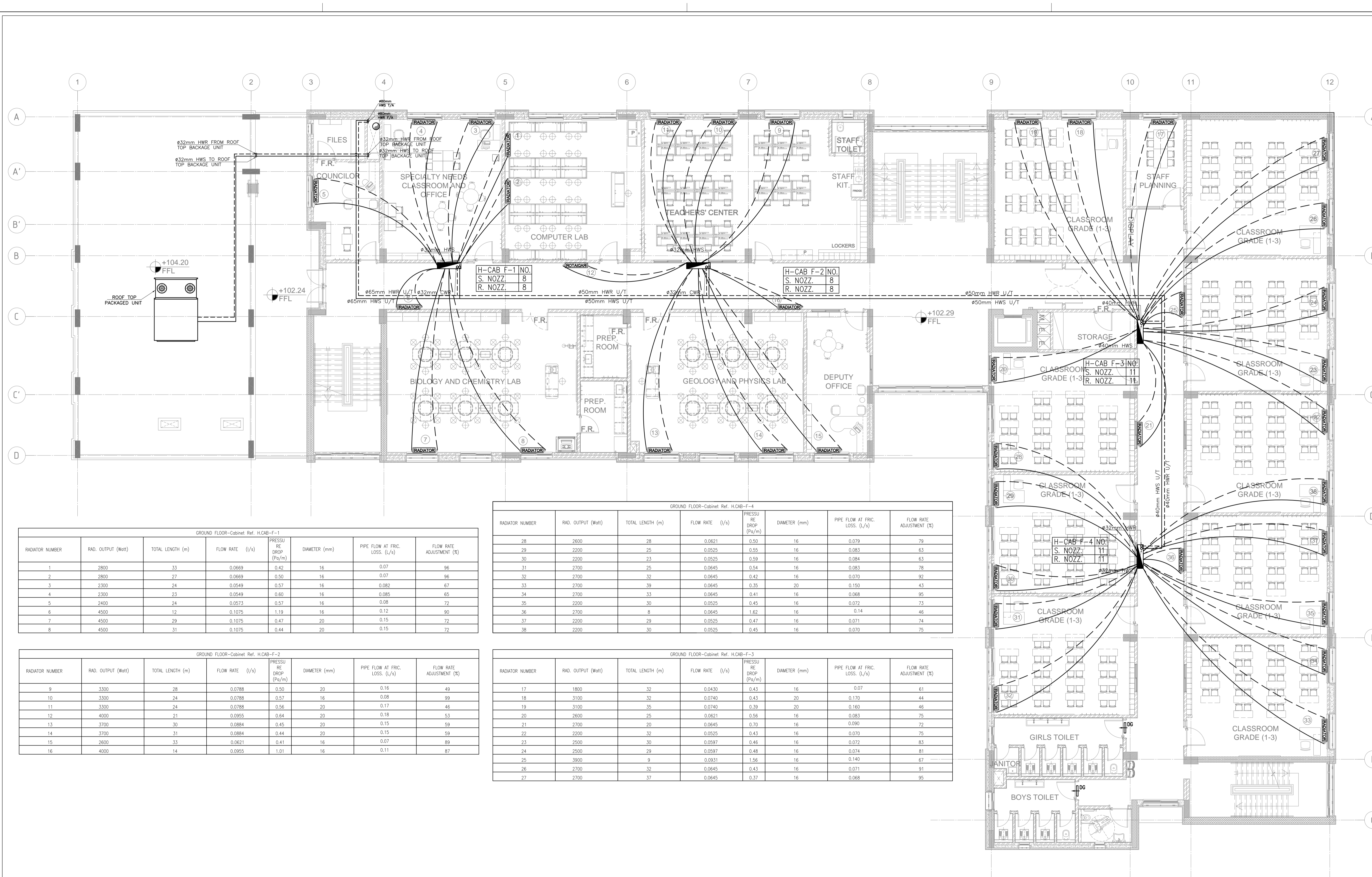
Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

DRAWING NAME:
GROUND FLOOR HVAC PIPING SYSTEM PLAN

PLOT No: 1496 LOCATION: Marka BASIN NO: 1 Hanau Al Kassar

Design: E.J.
SCALE: 1:100
Date: MAY 2019
Drawing NUMBER: SKEP 18-MP102

Checked: A.J.
Approved: W.Z.
North: [Compass Rose]
Rev.: 0



GROUND FLOOR-Cabinet Ref. H.CAB-F-1

RADIATOR NUMBER	RAD. OUTPUT (Watt)	TOTAL LENGTH (m)	FLOW RATE (l/s)	PRESSURE DROP (Pa/m)	DIAMETER (mm)	PIPE FLOW AT FRIC. LOSS. (L/s)	FLOW RATE ADJUSTMENT (%)
1	2800	33	0.0669	0.42	16	0.07	96
2	2800	27	0.0669	0.50	16	0.07	96
3	2300	24	0.0549	0.57	16	0.082	67
4	2300	23	0.0549	0.60	16	0.085	65
5	2400	24	0.0573	0.57	16	0.08	72
6	4500	12	0.1075	1.19	16	0.12	90
7	4500	29	0.1075	0.47	20	0.15	72
8	4500	31	0.1075	0.44	20	0.15	72

GROUND FLOOR-Cabinet Ref. H.CAB-F-2

RADIATOR NUMBER	RAD. OUTPUT (Watt)	TOTAL LENGTH (m)	FLOW RATE (l/s)	PRESSURE DROP (Pa/m)	DIAMETER (mm)	PIPE FLOW AT FRIC. LOSS. (L/s)	FLOW RATE ADJUSTMENT (%)
9	3300	28	0.0788	0.50	20	0.16	49
10	3300	24	0.0788	0.57	16	0.08	99
11	3300	24	0.0788	0.56	20	0.17	46
12	4000	21	0.0955	0.64	20	0.18	53
13	3700	30	0.0884	0.45	20	0.15	59
14	3700	31	0.0884	0.44	20	0.15	59
15	2600	33	0.0621	0.41	16	0.07	89
16	4000	14	0.0955	1.01	16	0.11	87

GROUND FLOOR-Cabinet Ref. H.CAB-F-4

RADIATOR NUMBER	RAD. OUTPUT (Watt)	TOTAL LENGTH (m)	FLOW RATE (l/s)	PRESSURE DROP (Pa/m)	DIAMETER (mm)	PIPE FLOW AT FRIC. LOSS. (L/s)	FLOW RATE ADJUSTMENT (%)
28	2600	28	0.0621	0.50	16	0.079	79
29	2200	25	0.0525	0.55	16	0.083	63
30	2200	23	0.0525	0.59	16	0.084	63
31	2700	25	0.0645	0.54	16	0.083	78
32	2700	32	0.0645	0.42	16	0.070	92
33	2700	39	0.0645	0.35	20	0.150	43
34	2700	33	0.0645	0.41	16	0.068	95
35	2200	30	0.0525	0.45	16	0.072	73
36	2700	8	0.0645	1.62	16	0.14	46
37	2200	29	0.0525	0.47	16	0.071	74
38	2200	30	0.0525	0.45	16	0.070	75

GROUND FLOOR-Cabinet Ref. H.CAB-F-3

RADIATOR NUMBER	RAD. OUTPUT (Watt)	TOTAL LENGTH (m)	FLOW RATE (l/s)	PRESSURE DROP (Pa/m)	DIAMETER (mm)	PIPE FLOW AT FRIC. LOSS. (L/s)	FLOW RATE ADJUSTMENT (%)
17	1800	32	0.0430	0.43	16	0.07	61
18	3100	32	0.0740	0.43	20	0.170	44
19	3100	35	0.0740	0.39	20	0.160	46
20	2600	25	0.0621	0.56	16	0.083	75
21	2700	20	0.0645	0.70	16	0.090	72
22	2200	32	0.0525	0.43	16	0.070	75
23	2500	30	0.0597	0.46	16	0.072	83
24	2500	29	0.0597	0.48	16	0.074	81
25	3900	9	0.0931	1.56	16	0.140	67
26	2700	32	0.0645	0.43	16	0.071	91
27	2700	37	0.0645	0.37	16	0.068	95

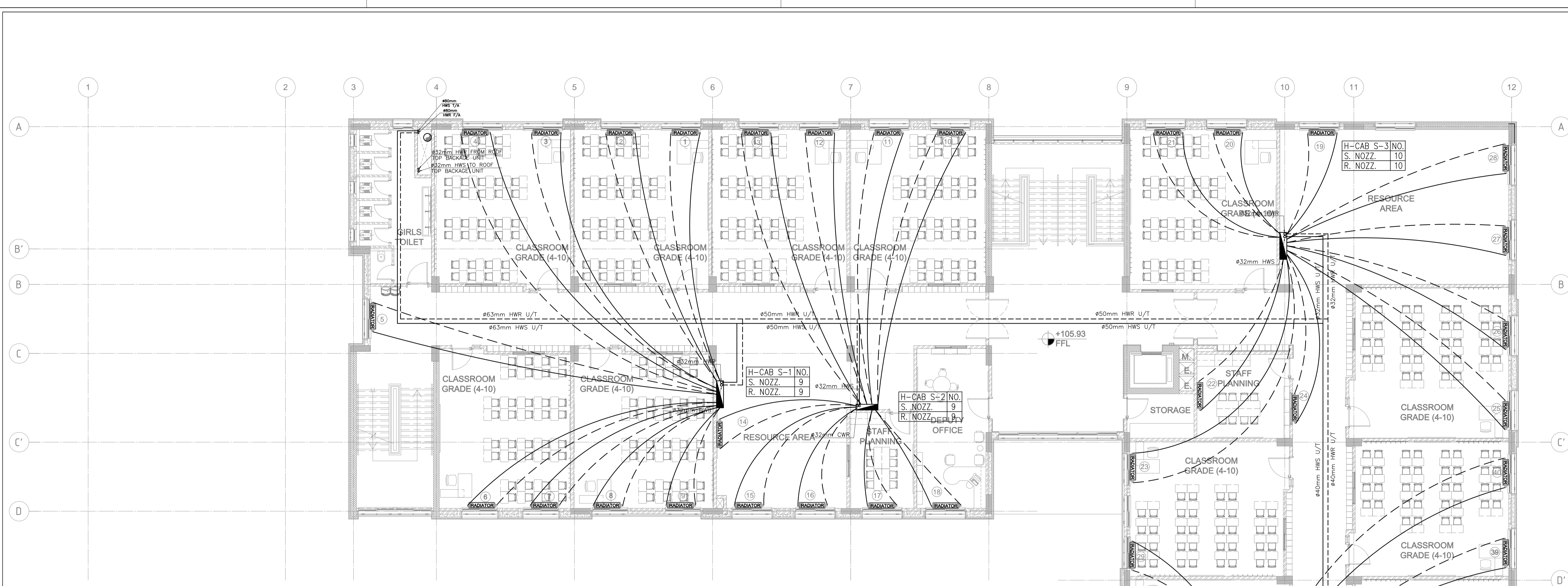
REV.	DATE	REMARKS

NOTES:



Jumana Bint Abi Taleb Basic Mixed School
(Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY
PROJECT (USAID SKEP)

DRAWING NAME: FIRST FLOOR HVAC PIPING SYSTEM PLAN		Design: E.J.	Drawn: CAD	Checked: A.J.	North:
PLOT No: 1496		SCALE: 1:100	Date: MAY 2019	Approved: W.Z.	Rev.: 0
LOCATION: Marka	BASIN NO: 1 Hanao Al Kassar	DRAWING NUMBER: SKEP 18-MP103			



SECOND FLOOR-Cabinet Ref. H.CAB-S-1							
RADIATOR NUMBER	RAD. OUTPUT (Watt)	TOTAL LENGTH (m)	FLOW RATE (l/s)	PRESSURE DROP (Pa/m)	DIAMETER (mm)	PIPE FLOW AT FRIC. LOSS. (L/s)	FLOW RATE ADJUSTMENT (%)
1	2500	35	0.0597	0.3965	16	0.068000	88
2	2500	36	0.0597	0.3827	16	0.067000	89
3	3000	43	0.0717	0.3197	20	0.140000	51
4	3000	48	0.0717	0.2849	20	0.135000	53
5	3700	47	0.0884	0.2925	20	0.12	74
6	2900	38	0.0693	0.3636	20	0.155000	45
7	2900	30	0.0693	0.4539	16	0.071000	98
8	2600	23	0.0621	0.5936	16	0.087000	71
9	2600	17	0.0621	0.8107	16	0.105000	59

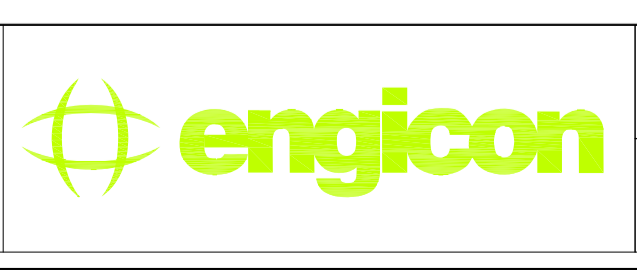
SECOND FLOOR-Cabinet Ref. H.CAB-S-3							
RADIATOR NUMBER	RAD. OUTPUT (Watt)	TOTAL LENGTH (m)	FLOW RATE (l/s)	PRESSURE DROP (Pa/m)	DIAMETER (mm)	PIPE FLOW AT FRIC. LOSS. (L/s)	FLOW RATE ADJUSTMENT (%)
19	3900	17	0.0931	0.8045	16	0.10	93
20	3400	17	0.0812	0.8155	16	0.105	77
21	3400	22	0.0812	0.6108	16	0.087	93
22	2200	25	0.0525	0.5513	16	0.080	66
23	2700	38	0.0645	0.3607	16	0.068	95
24	2600	26	0.0621	0.5366	16	0.080	78
25	2700	38	0.0645	0.3565	16	0.067	96
26	2700	33	0.0645	0.4096	16	0.068	95
27	3900	30	0.0931	0.4502	20	0.150	62
28	3900	32	0.0931	0.4322	20	0.150	62

SECOND FLOOR-Cabinet Ref. H.CAB-S-2							
RADIATOR NUMBER	RAD. OUTPUT (Watt)	TOTAL LENGTH (m)	FLOW RATE (l/s)	PRESSURE DROP (Pa/m)	DIAMETER (mm)	PIPE FLOW AT FRIC. LOSS. (L/s)	FLOW RATE ADJUSTMENT (%)
10	2900	39	0.0693	0.3515	20	0.150000	46
11	2900	37	0.0693	0.3660	20	0.160000	43
12	2500	37	0.0597	0.3675	16	0.065000	92
13	2500	39	0.0597	0.3508	16	0.061000	98
14	3200	23	0.0764	0.6035	16	0.08	96
15	3200	24	0.0764	0.5689	16	0.08	96
16	3200	18	0.0764	0.7762	16	0.09	85
17	1800	15	0.0430	0.9288	16	0.10	43
18	3300	17	0.0788	0.8213	16	0.10	79

SECOND FLOOR-Cabinet Ref. H.CAB-S-4							
RADIATOR NUMBER	RAD. OUTPUT (Watt)	TOTAL LENGTH (m)	FLOW RATE (l/s)	PRESSURE DROP (Pa/m)	DIAMETER (mm)	PIPE FLOW AT FRIC. LOSS. (L/s)	FLOW RATE ADJUSTMENT (%)
29	2700	30	0.0645	0.4507	16	0.071	91
30	2500	25	0.0597	0.5506	16	0.082	73
31	2500	18	0.0597	0.7784	16	0.098	61
32	3000	17	0.0717	0.8213	16	0.110	65
33	3000	22	0.0717	0.6135	16	0.087	82
34	3600	27	0.0860	0.5116	20	0.160	54
35	2500	40	0.0597	0.3425	16	0.061	98
36	2500	47	0.0597	0.2901	20	0.140	43
37	3000	38	0.0717	0.3577	20	0.150	48
38	3000	35	0.0717	0.3914	20	0.165	43
39	2700	34	0.0645	0.4023	16	0.068	95
40	2700	36	0.0645	0.3813	16	0.065	100

REV.	DATE	REMARKS

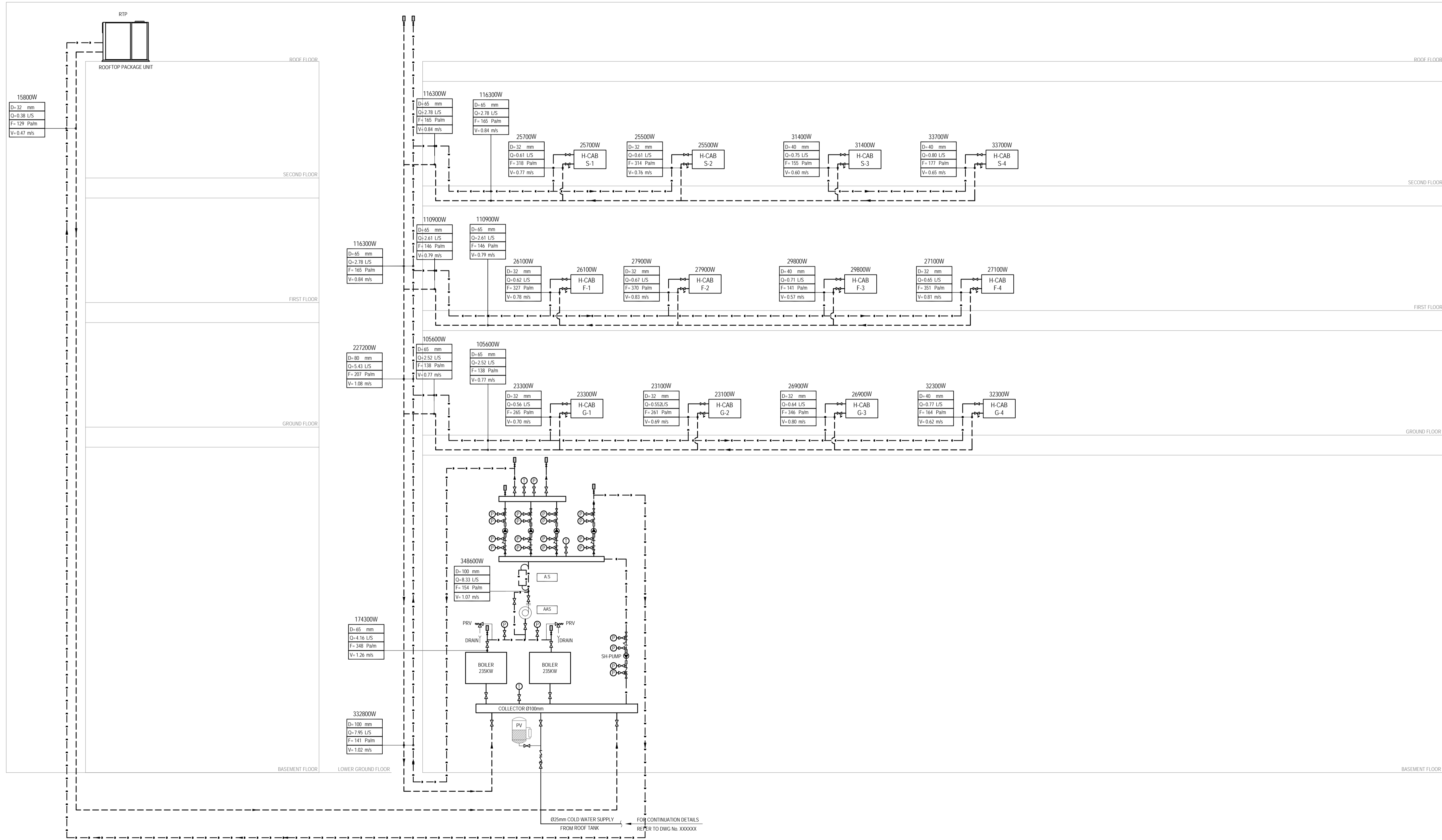
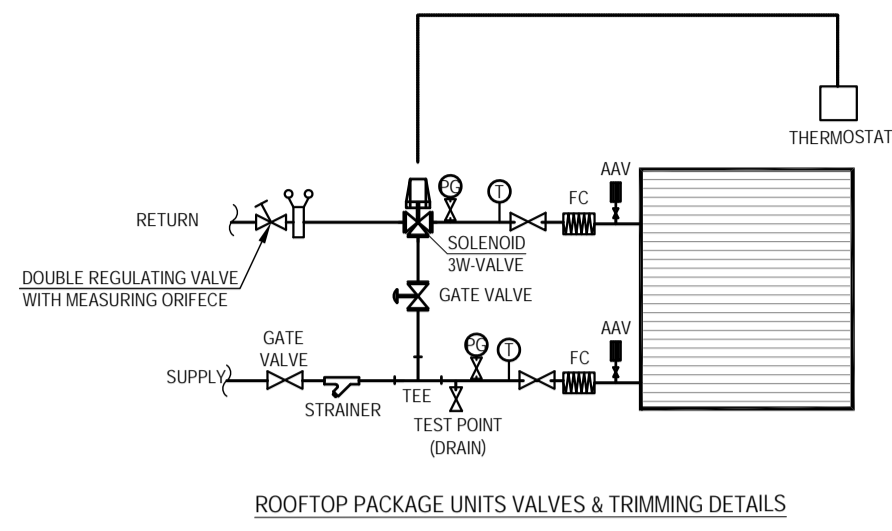
NOTES:



Jumana Bint Abi Taleb Basic Mixed School
(Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY
PROJECT (USAID SKEP)

DRAWING NAME: SECOND FLOOR HVAC PIPING SYSTEM PLAN		Design: E.J.	Drawn: CAD	Checked: A.J.	North:
PLOT No: 1496		SCALE: 1:100	Date: MAY 2019	Approved: W.Z.	Rev.: 0
LOCATION: Marka	BASIN NO: 1 Hanou Al Kassar	DRAWING NUMBER: SKEP 18-MP104			

D=25mm	DIAMETER
Q=0.23 L/S	FLOW
F=114 Palm	FRICTION
V=0.47 m/s	VELOCITY



REV.	DATE	REMARKS

NOTES:



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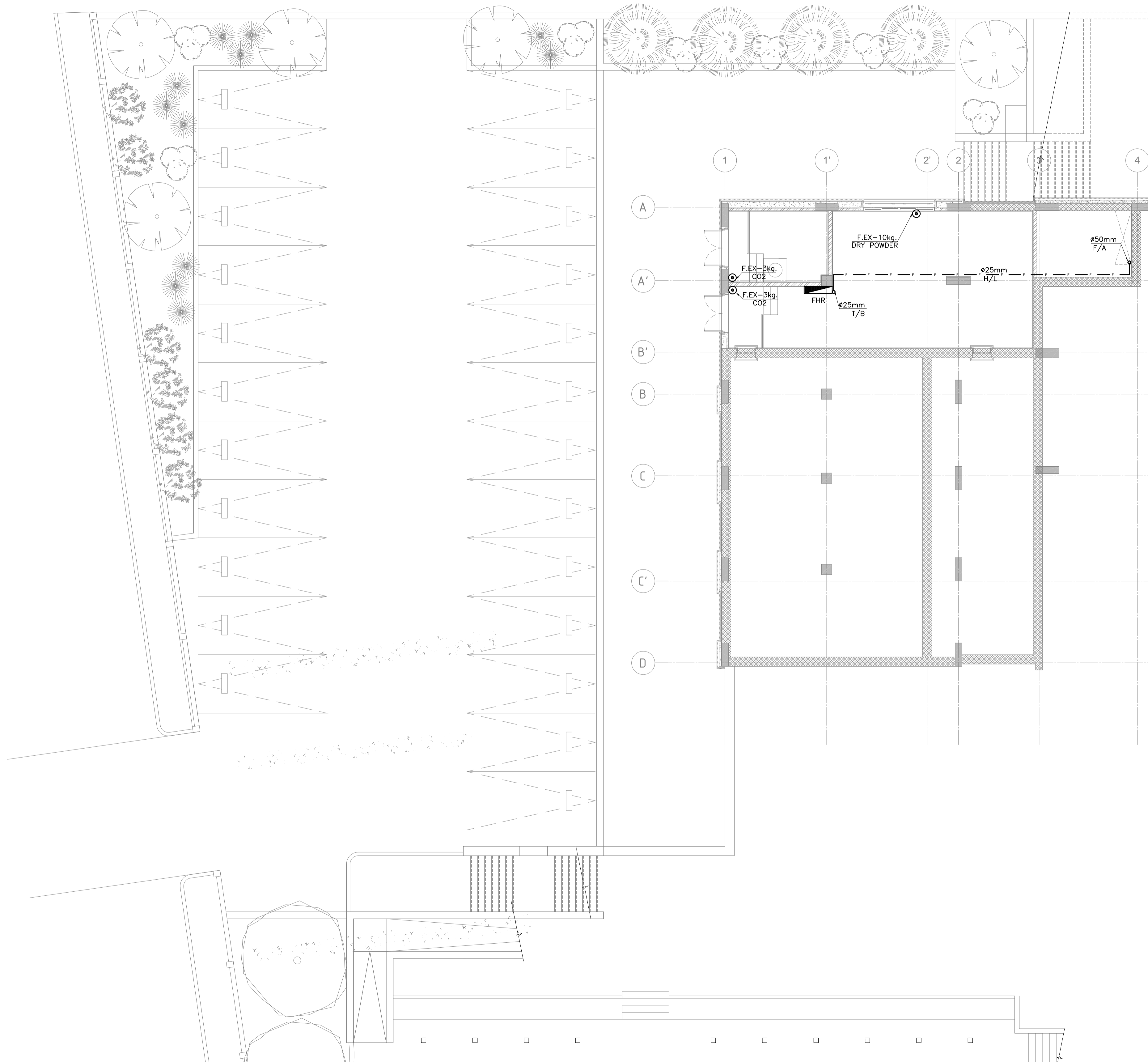
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DRAWING NAME: HVAC PIPING SYSTEM RISER DIAGRAM		
Design: E.J.	Drawn: CAD	Checked: A.J.
SCALE: N.T.S.	Date: MAY 2019	Approved: W.Z.
PLOT No: 1496	LOCATION: Marka	BASIN NO: 1 Hanao Al Kassar
DRAWING NUMBER: SKEP 18-MP601		

North:
Rev.: 0



REV.	DATE	REMARKS

NOTES:



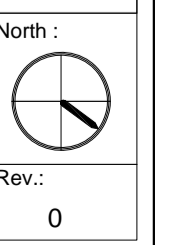
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Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

DRAWING NAME: BASEMENT FLOOR FIRE FIGHTING SYSTEM PLAN		
DESIGN: E.J.	DRAWN: CAD	CHECKED: A.J.
SCALE: 1:100	DATE: MAY 2019	APPROVED: W.Z.
PLOT No: 1496	LOCATION: Marka	BASIN NO: 1 Hanao Al Kassar

DRAWING NUMBER: SKEP 18-FX101





REV.	DATE	REMARKS

NOTES:



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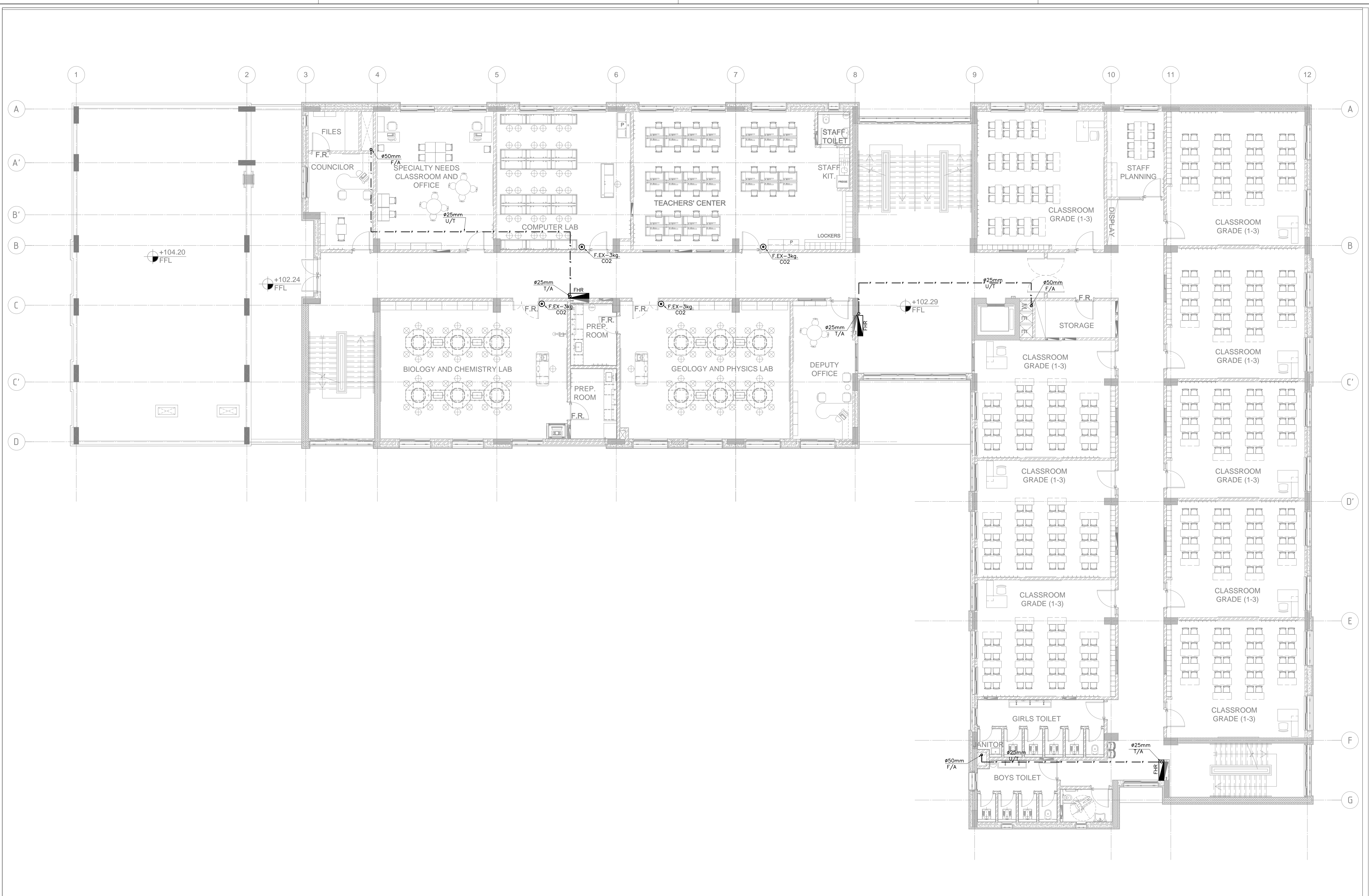
THE HASHEMITE KINGDOM OF JORDAN
MINISTRY OF EDUCATION



Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

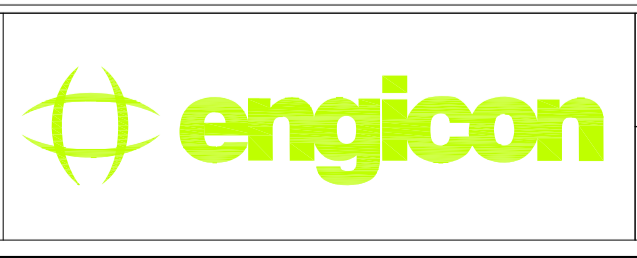
DRAWING NAME: GROUND FLOOR FIRE FIGHTING SYSTEM PLAN		
DESIGN: E.J.	DRAWN: CAD	CHECKED: A.J.
SCALE: 1:100	DATE: MAY 2019	APPROVED: W.Z.
PLOT No: 1496	LOCATION: Marka	BASIN No: 1 Hanao Al Kassar
DRAWING NUMBER: SKEP 18-FX102		

North:
Rev.: 0



REV.	DATE	REMARKS

NOTES:



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PROJECT (USAID SKEP)

DRAWING NAME:
**FIRST FLOOR
FIRE FIGHTING SYSTEM PLAN**

PLOT No: 1496 LOCATION: Marka BASIN NO: 1 Hanao Al Kassar

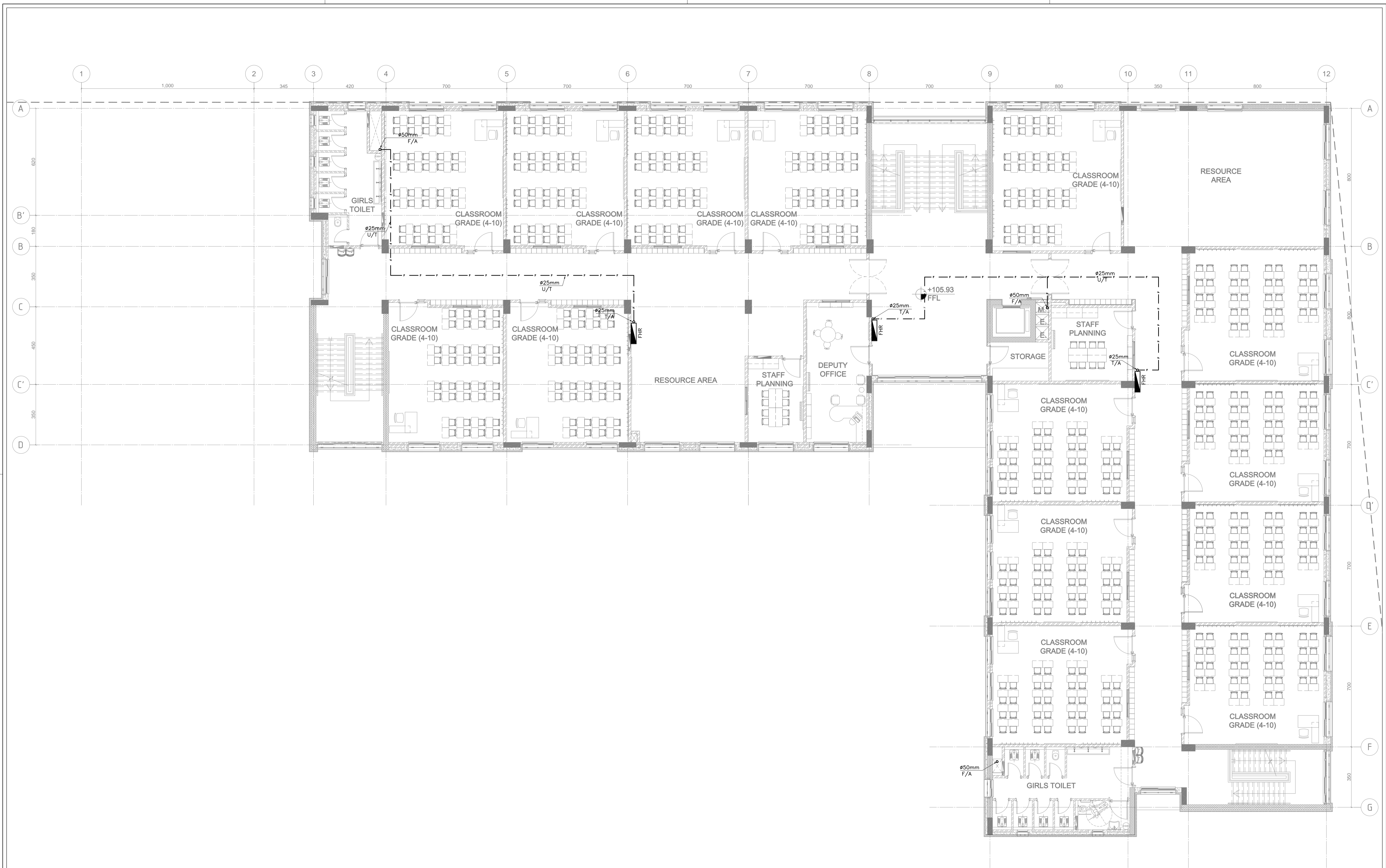
Design: E.J.
SCALE: 1:100
DRAWING NUMBER: SKEP 18-FX103

Drawn: CAD
Date: MAY 2019

Checked: A.J.
Approved: W.Z.

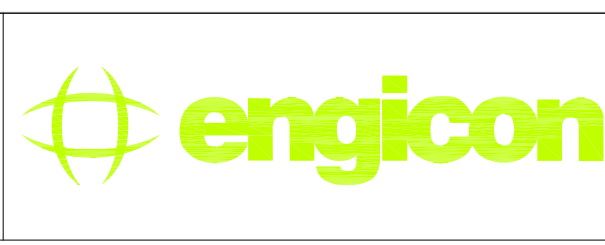
North:

Rev.: 0



REV.	DATE	REMARKS

NOTES:

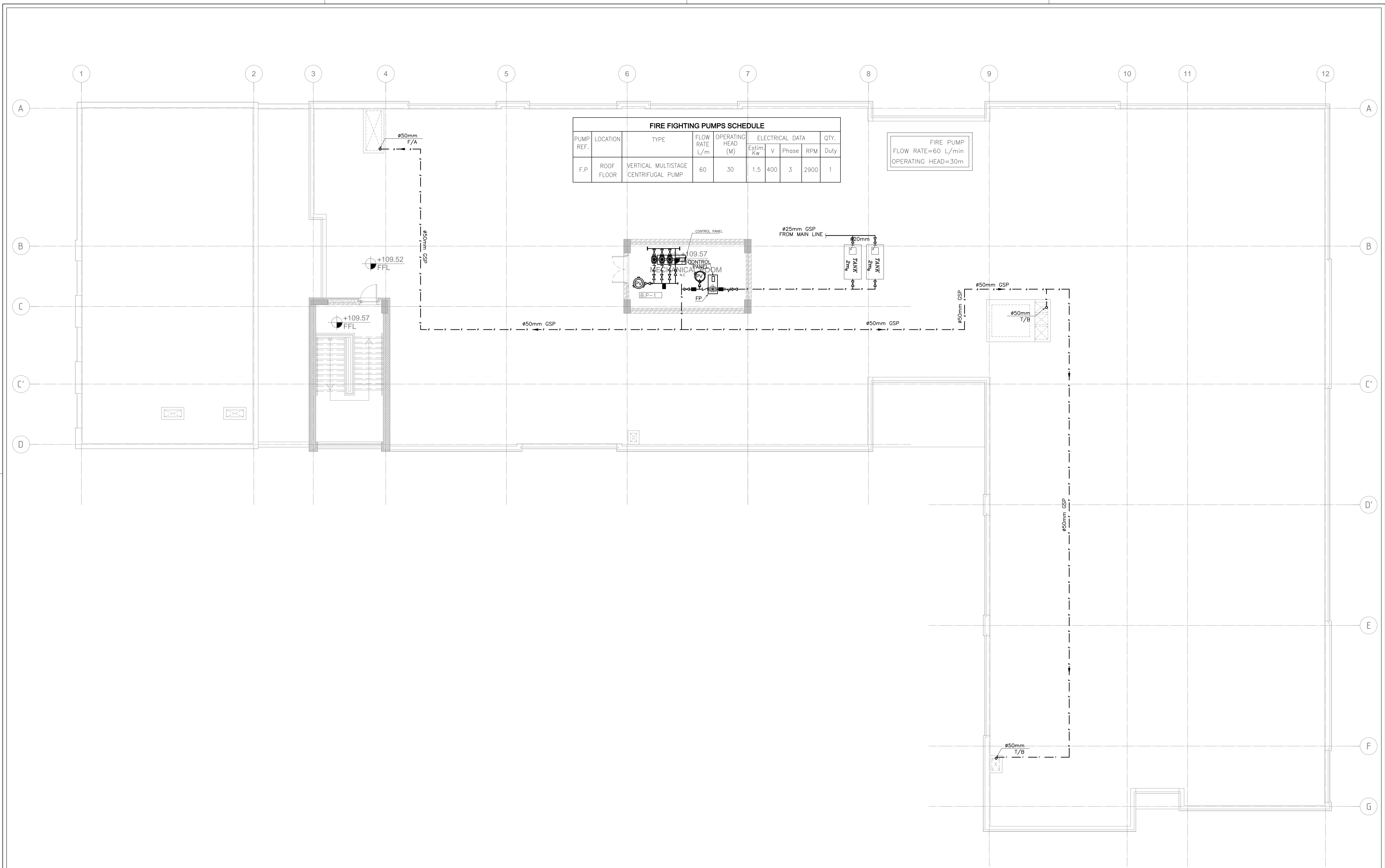


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PROJECT (USAID SKEP)

DRAWING NAME:
**SECOND FLOOR
FIRE FIGHTING SYSTEM PLAN**

PLOT No 1496	LOCATION Marka	BASIN NO 1 Hanao Al Kassar
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Design: E.J.	Drawn: CAD	Checked: A.J.	North:
SCALE: 1:100	Date: MAY 2019	Approved: W.Z.	Rev.: 0
DRAWING NUMBER: SKEP 18-FX104			

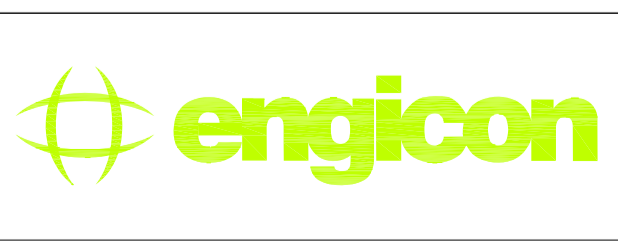


FIRE FIGHTING PUMPS SCHEDULE									
PUMP REF.	LOCATION	TYPE	FLOW RATE L/m	OPERATING HEAD (M)	ELECTRICAL DATA				QTY.
					Estim Kw	V	Phase	RPM	
F.P	ROOF FLOOR	VERTICAL MULTISTAGE CENTRIFUGAL PUMP	60	30	1.5	400	3	2900	1

FIRE PUMP
FLOW RATE=60 L/min
OPERATING HEAD=30m

REV.	DATE	REMARKS

NOTES:



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PROJECT (USAID SKEP)

DRAWING NAME:
**ROOF PLAN
FIRE FIGHTING SYSTEM PLAN**

DESIGN: E.J.	DRAWN: CAD	CHECKED: A.J.
SCALE: 1:100	DATE: MAY 2019	APPROVED: W.Z.
PLOT No: 1496	LOCATION: Marka	BASIN NO: 1 Hanao Al Kassar

DRAWING NUMBER: **SKEP 18-FX105**

Rev.: 0



REV.	DATE	REMARKS

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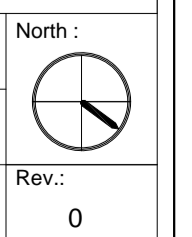
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MINISTRY OF EDUCATION

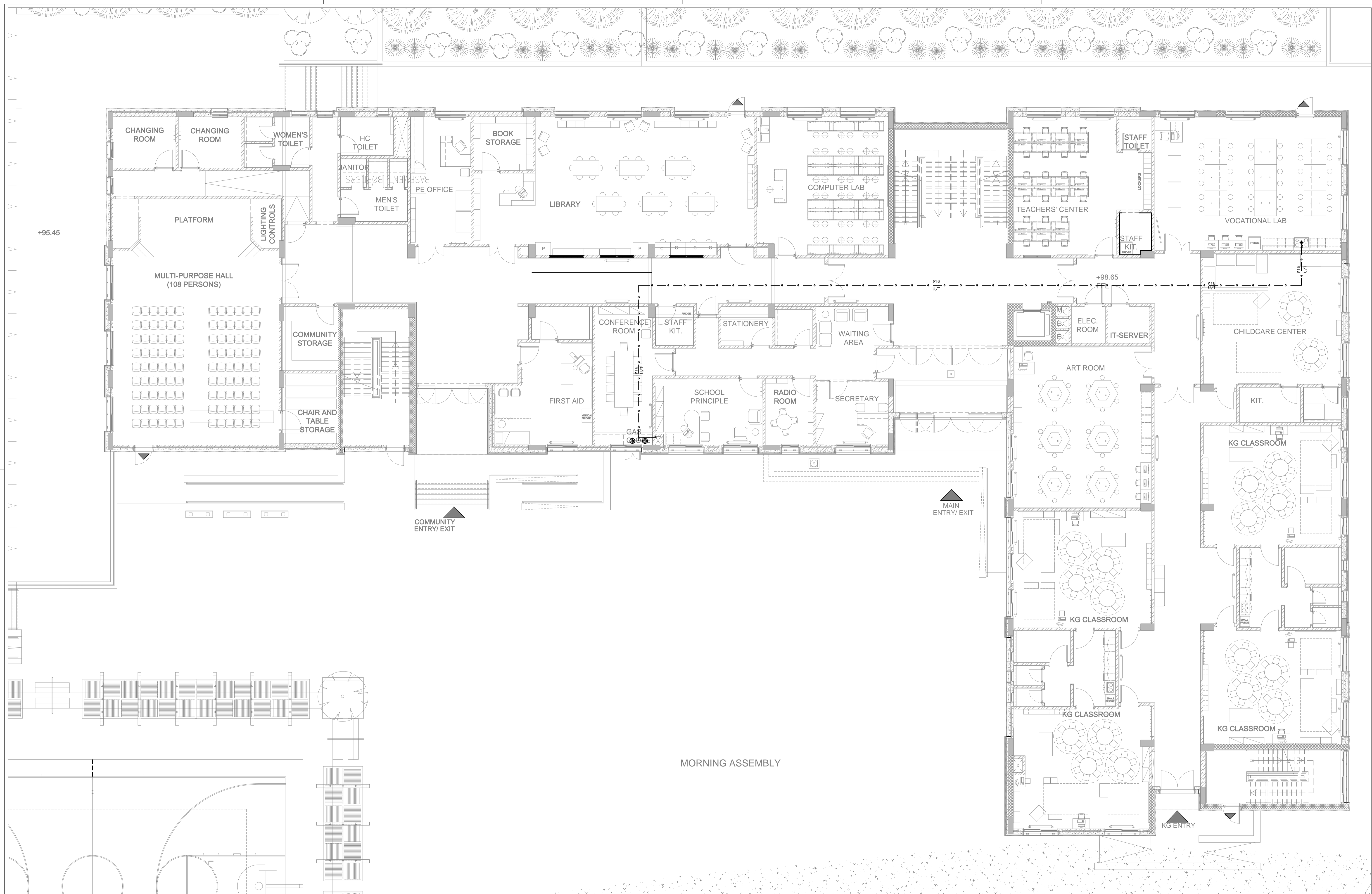


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(Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

DRAWING NAME: Fire Fighting System Riser Daigram		
DESIGN: E.J.	DRAWN: CAD	CHECKED: A.J.
SCALE: N.T.S.	DATE: MAY 2019	APPROVED: W.Z.
PLOT No: 1496	LOCATION: Marka	BASIN NO: 1 Hanao Al Kassar

DRAWING NUMBER: SKEP 18-FX601		Rev.: 0
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REV.	DATE	REMARKS

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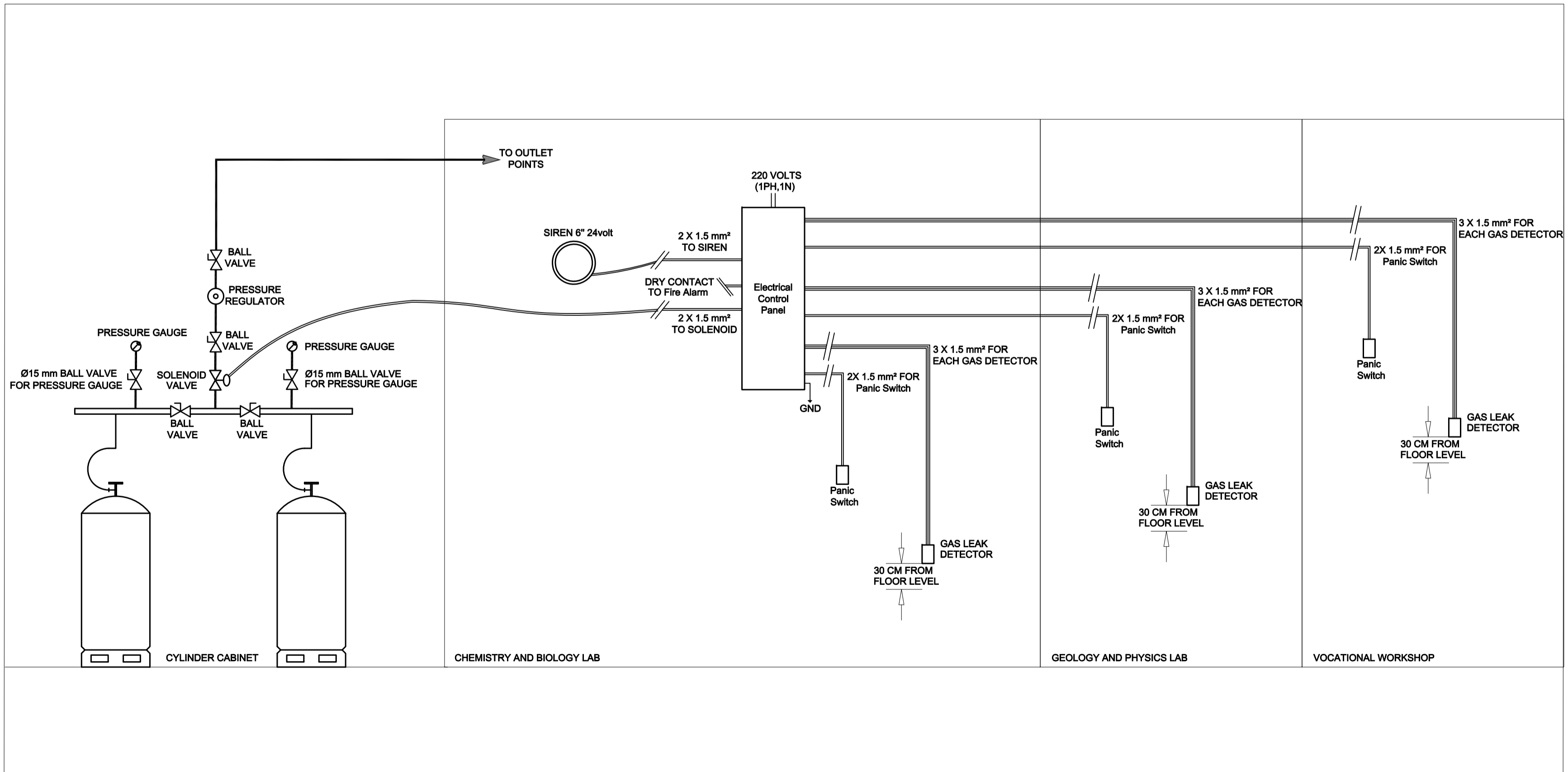
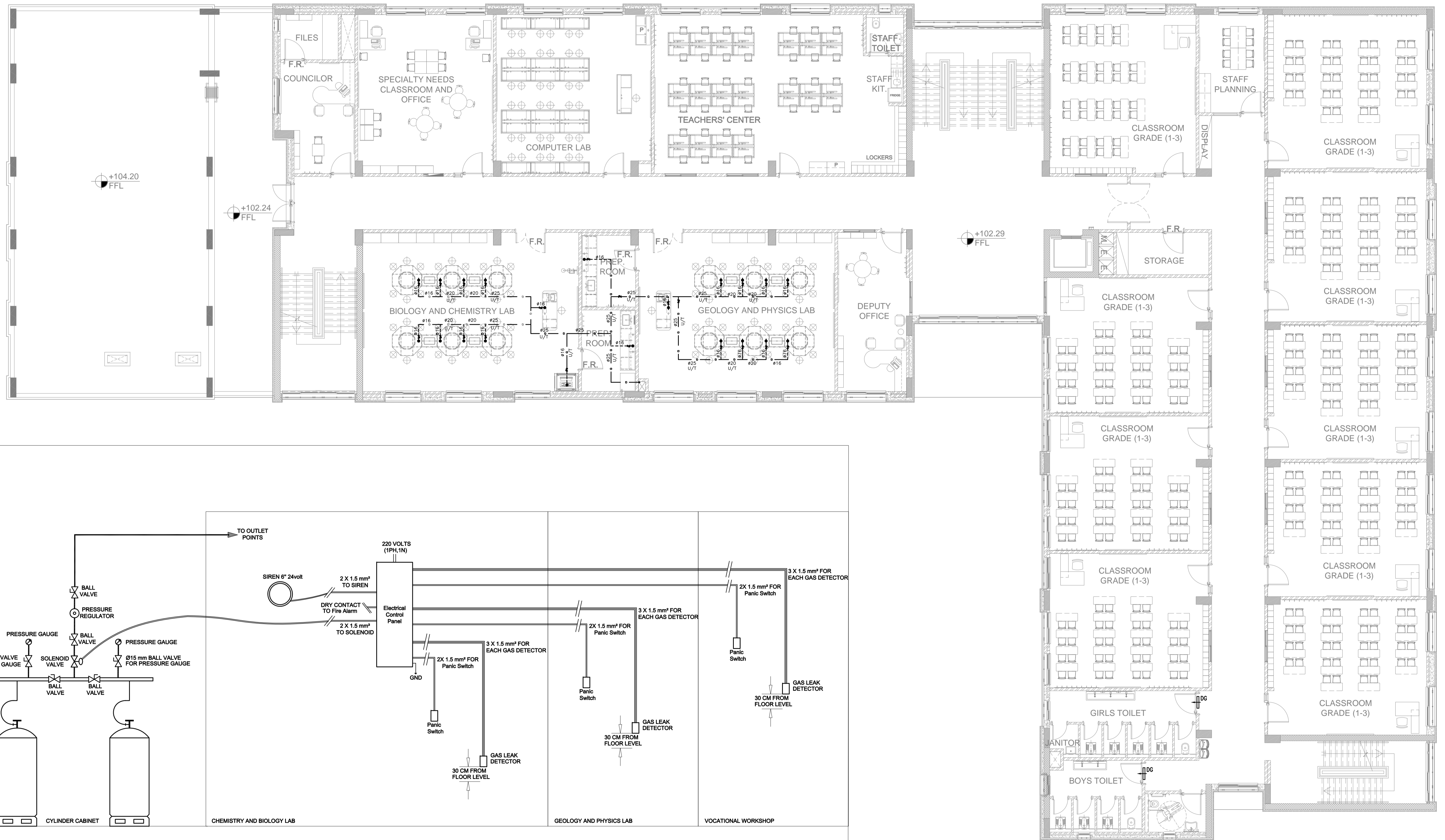
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Jumana Bint Abi Taleb Basic Mixed School
(Amman- Marka)
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DRAWING NAME: GROUND FLOOR LPG PLAN		
PLOT No 1496	LOCATION Marka	BASIN NO 1 Hanao Al Kassar

Design: E.J.	Drawn: CAD	Checked: A.J.	North:
SCALE: 1:100	Date: MAY 2019	Approved: W.Z.	Rev.: 0
DRAWING NUMBER: SKEP 18-PF102			



REV.	DATE	REMARKS

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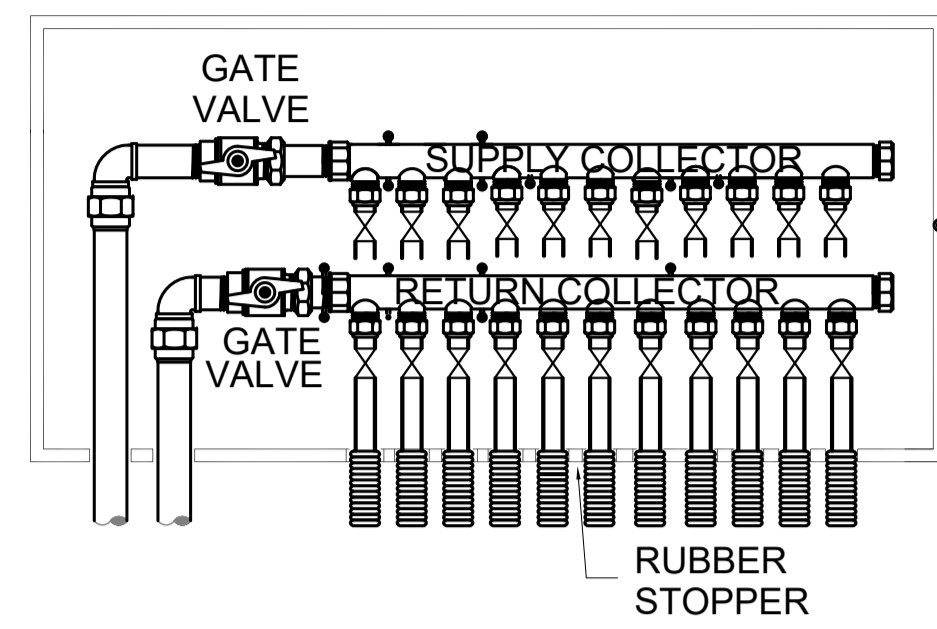
THE HASHEMITE KINGDOM OF JORDAN
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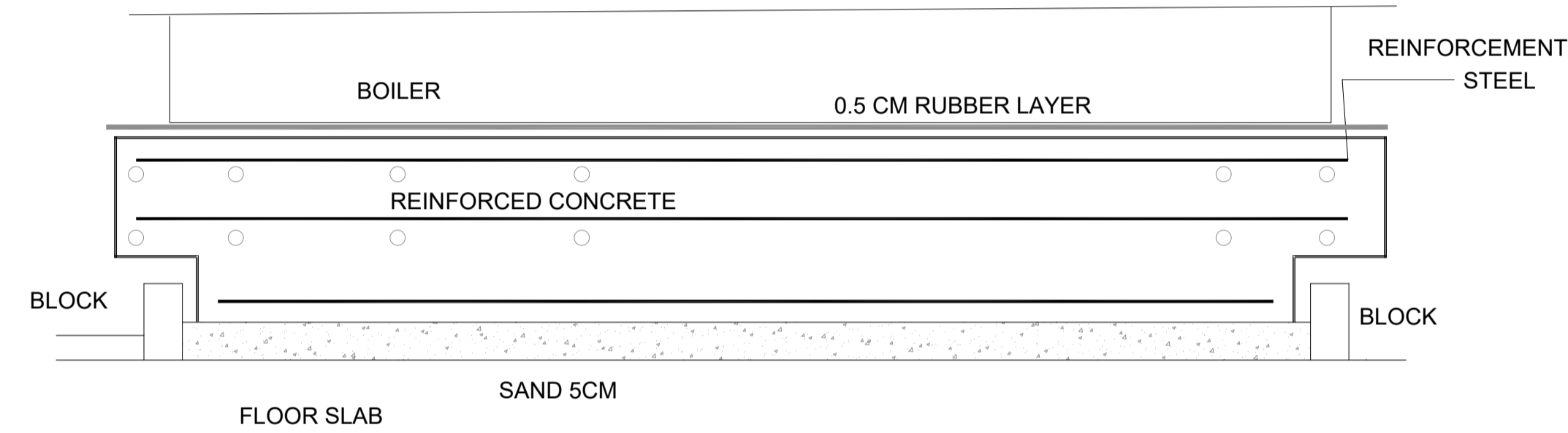
Jumana Bint Abi Taleb Basic Mixed School
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SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

DRAWING NAME: FIRST FLOOR LPG PLAN		
PLOT No 1496	LOCATION Marka	BASIN NO 1 Hanao Al Kassar

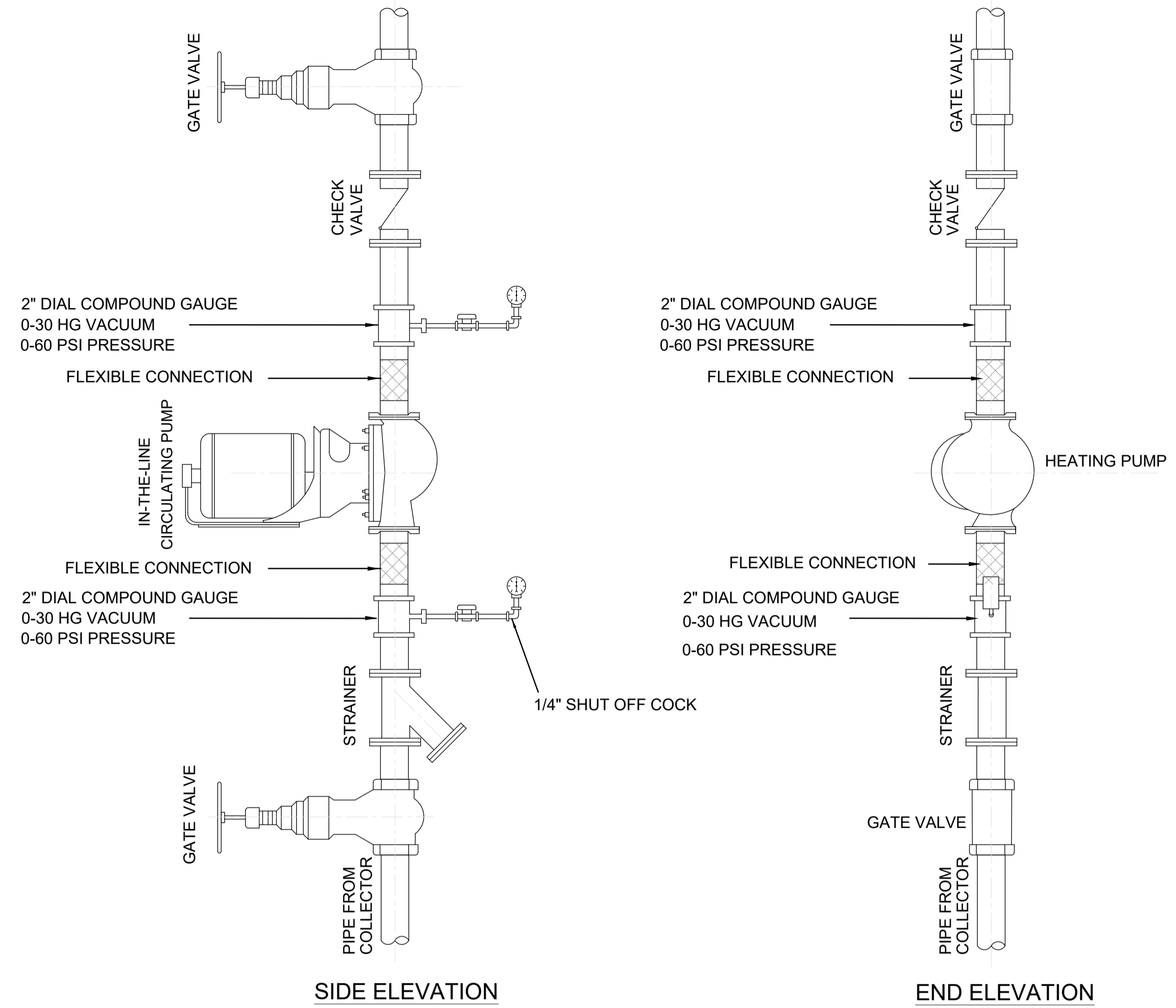
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DRAWING NUMBER: SKEP 18-PF103			



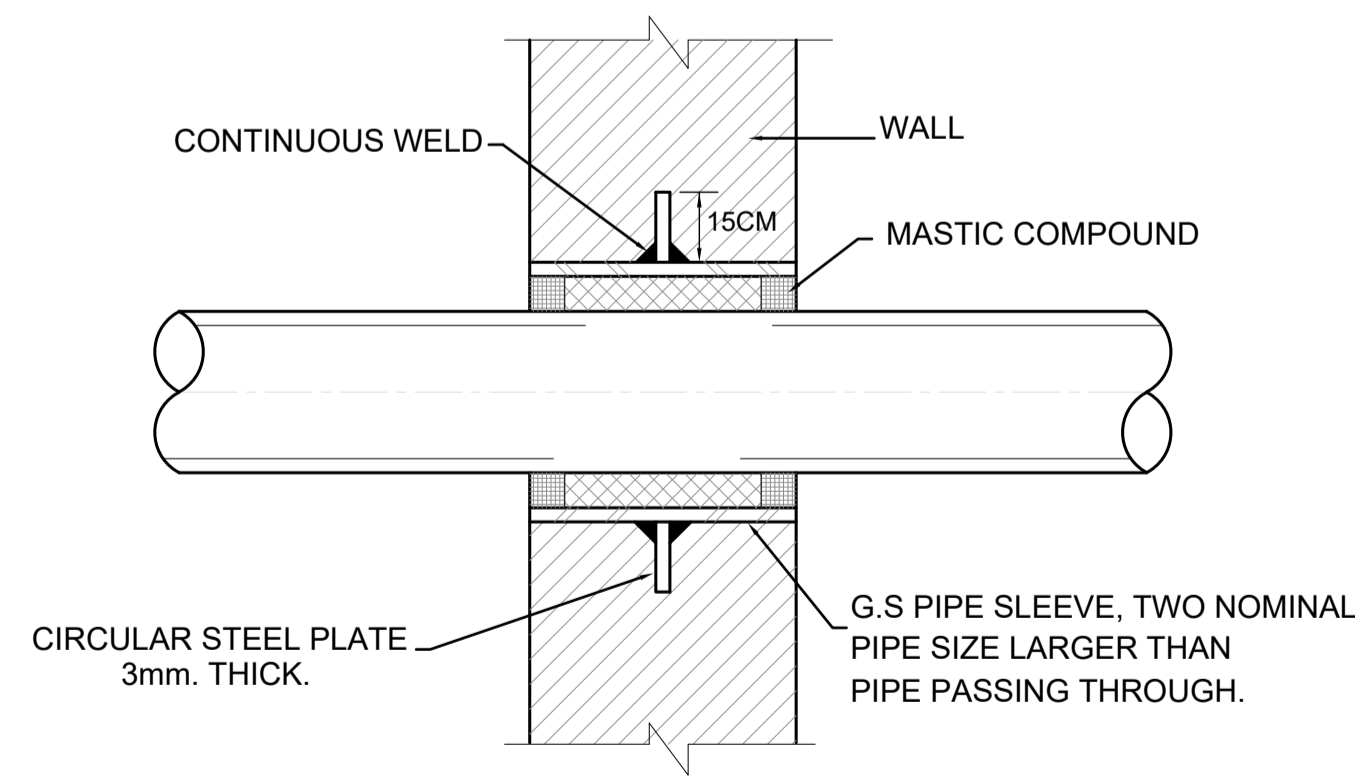
HEATING CABINET



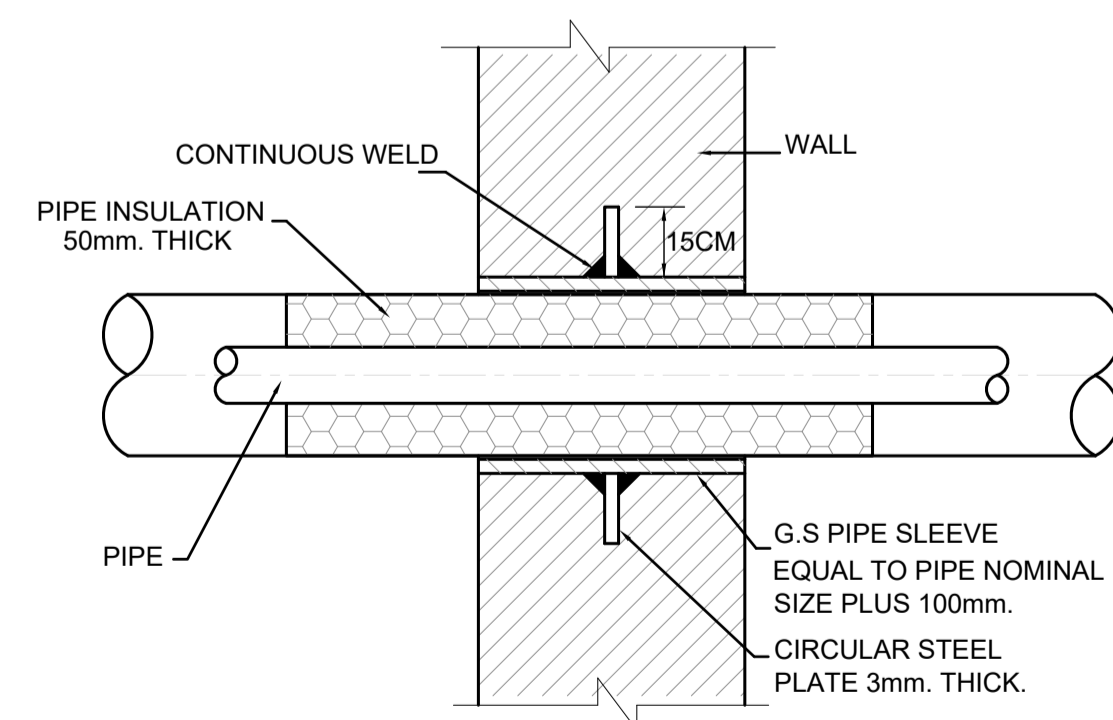
TYPICAL BASE ASSEMBLY FOR THE BOILER IN GROUND FLOOR



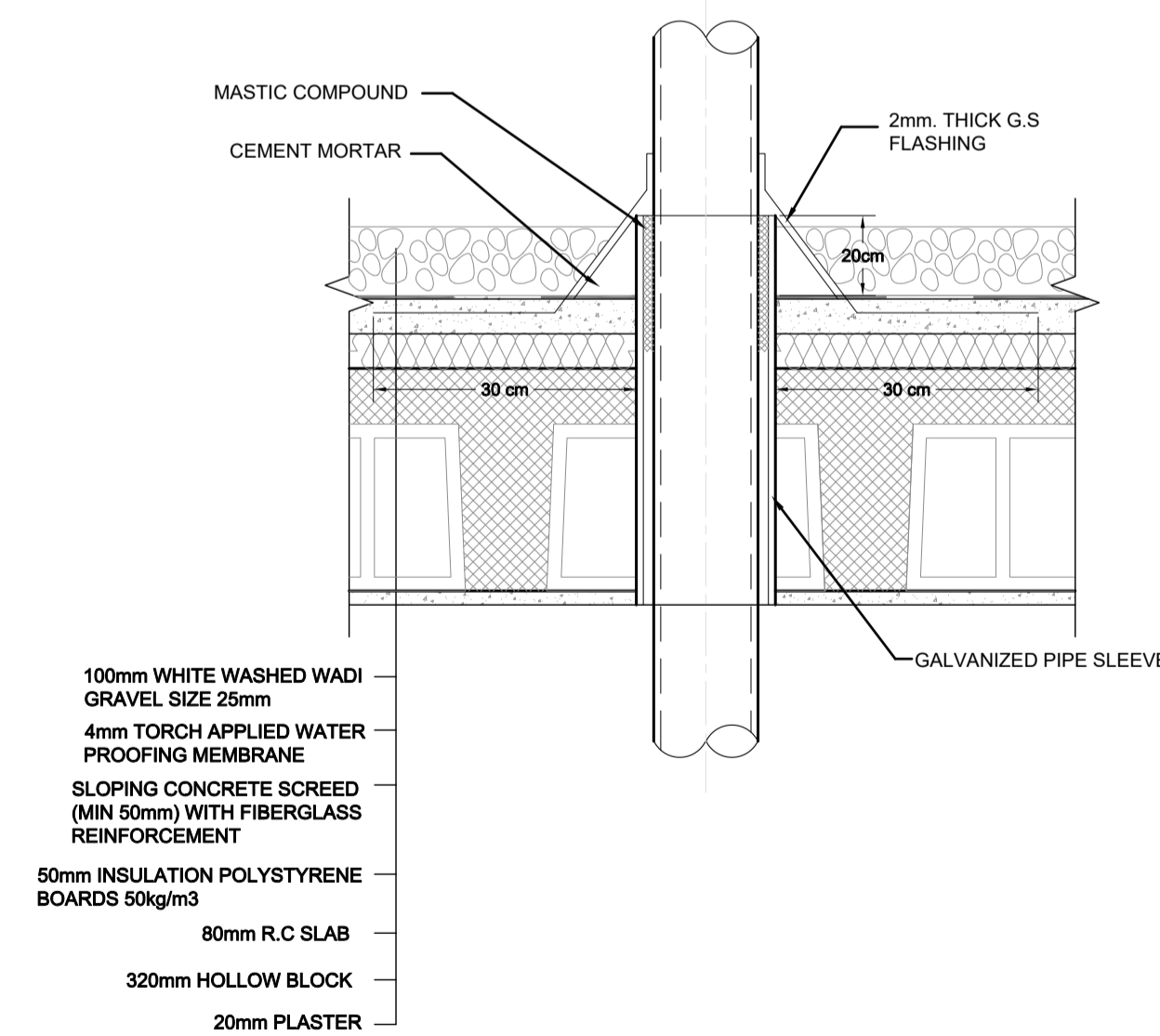
HEATING PUMP CONNECTIONS DETAIL (IN-LINE TYPE) LINE TYPE)



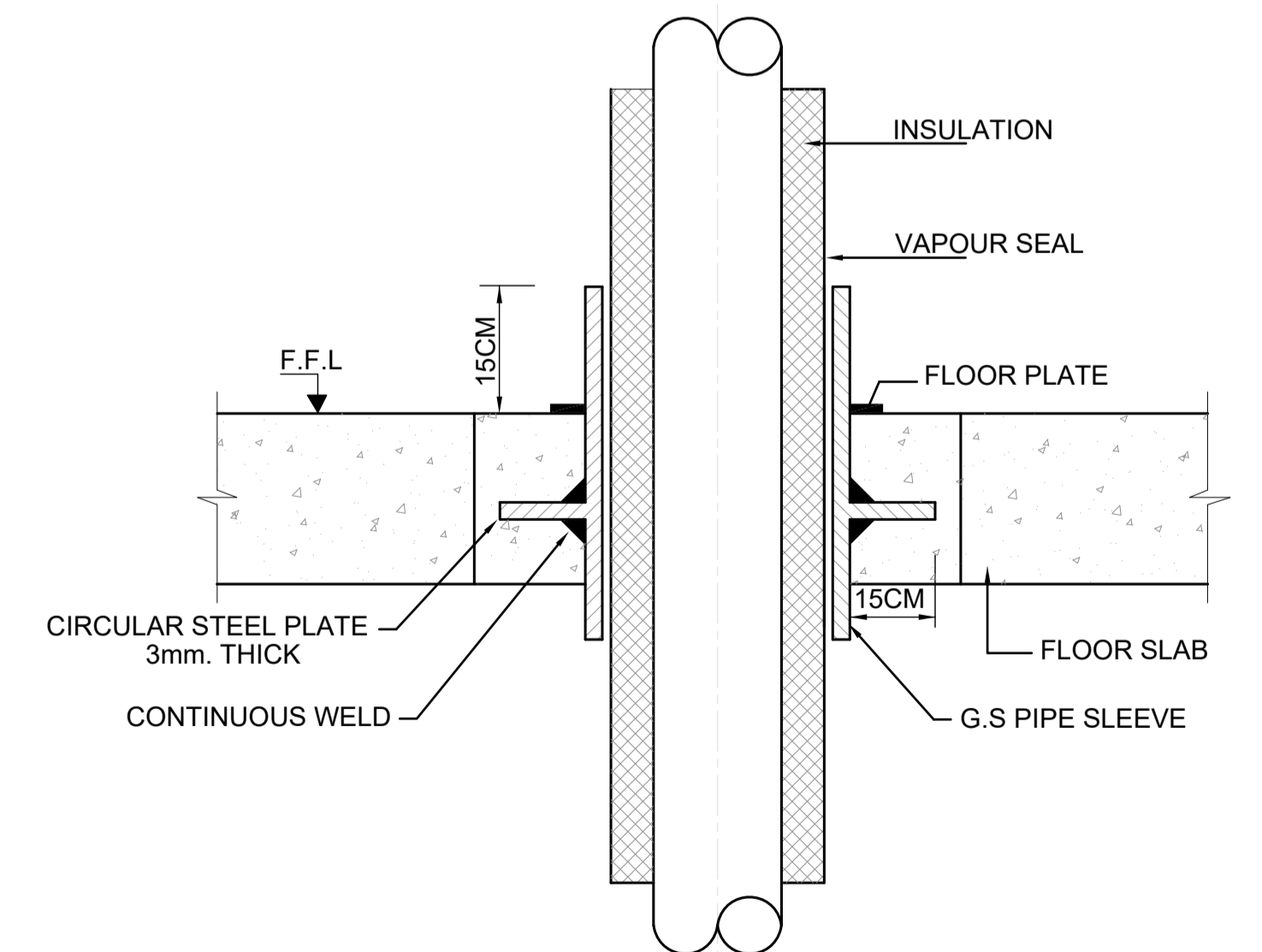
NOT INSULATED PIPE SLEEVE THROUGH WALL.



INSULATED PIPE SLEEVE THROUGH WALL



PIPE SLEEVE THROUGH ROOF



INSULATED PIPE SLEEVE THROUGH FLOOR SLAB

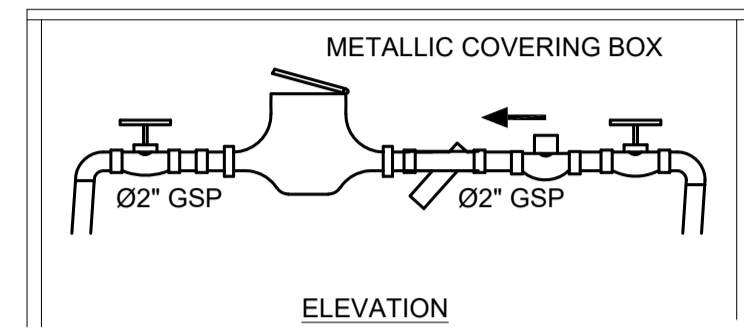
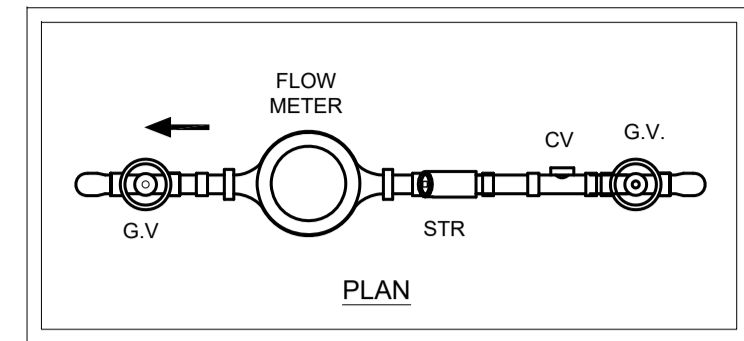
REV.	DATE	REMARKS
0	June 2019	VOL. IV - TENDER DRAWINGS

NOTES:

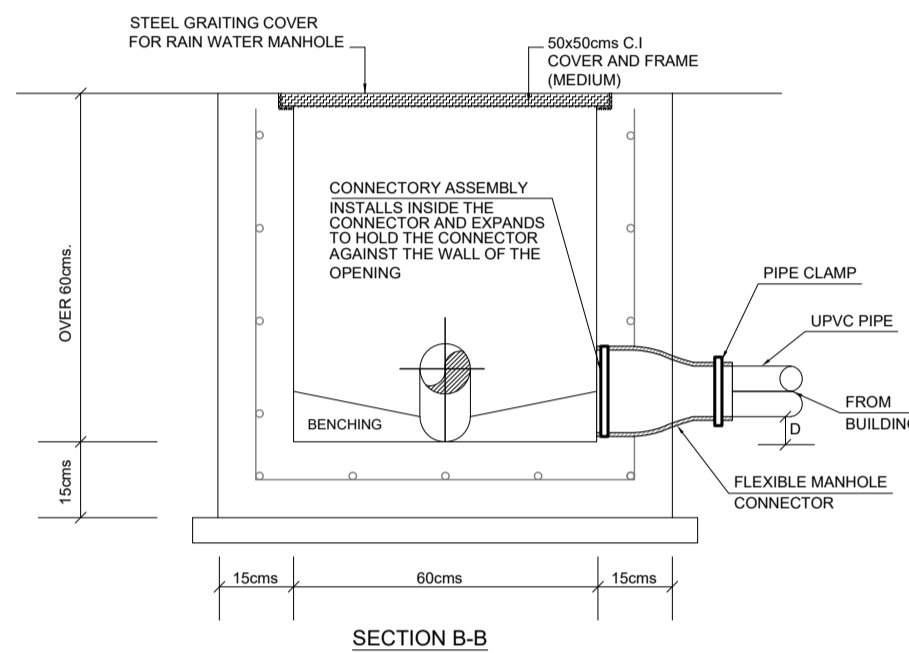
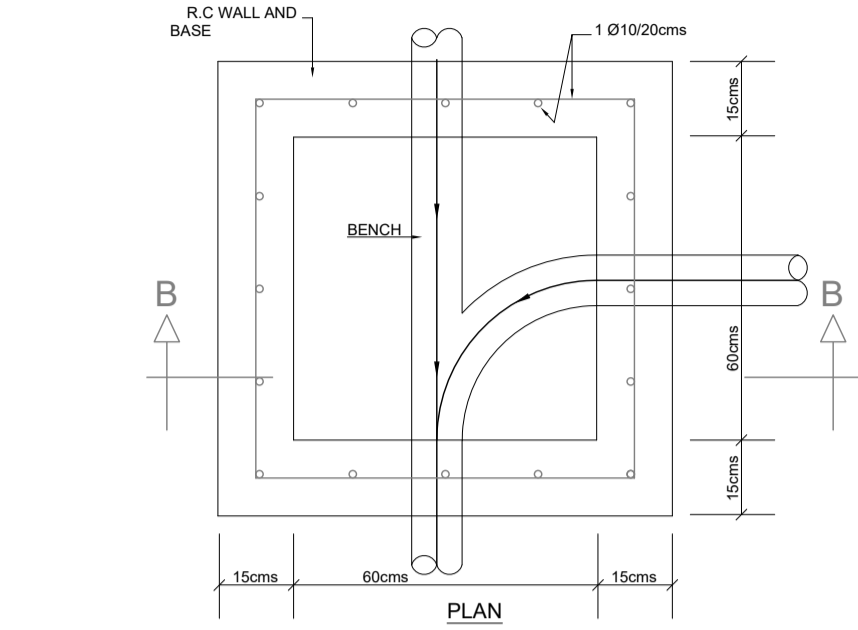


Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
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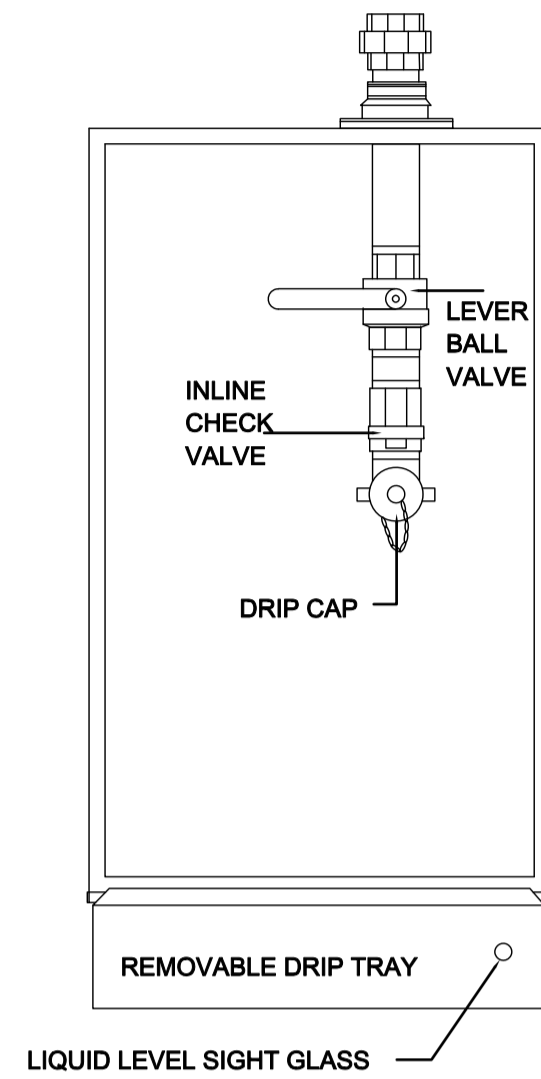
DRAWING NAME:		Design:		Drawn:		Checked:		North:	
MECHANICAL GENERAL DETAILS 01		CAD		CAD		A.J.		⊕	
SCALE:		Date:		Approved:		W.Z.			
N.T.S.		June 2019							
DRAWING NUMBER:		BASIN NO		Rev.:		SKEP 18-GM501		0	
1496		1 Hanao Al Kassab							



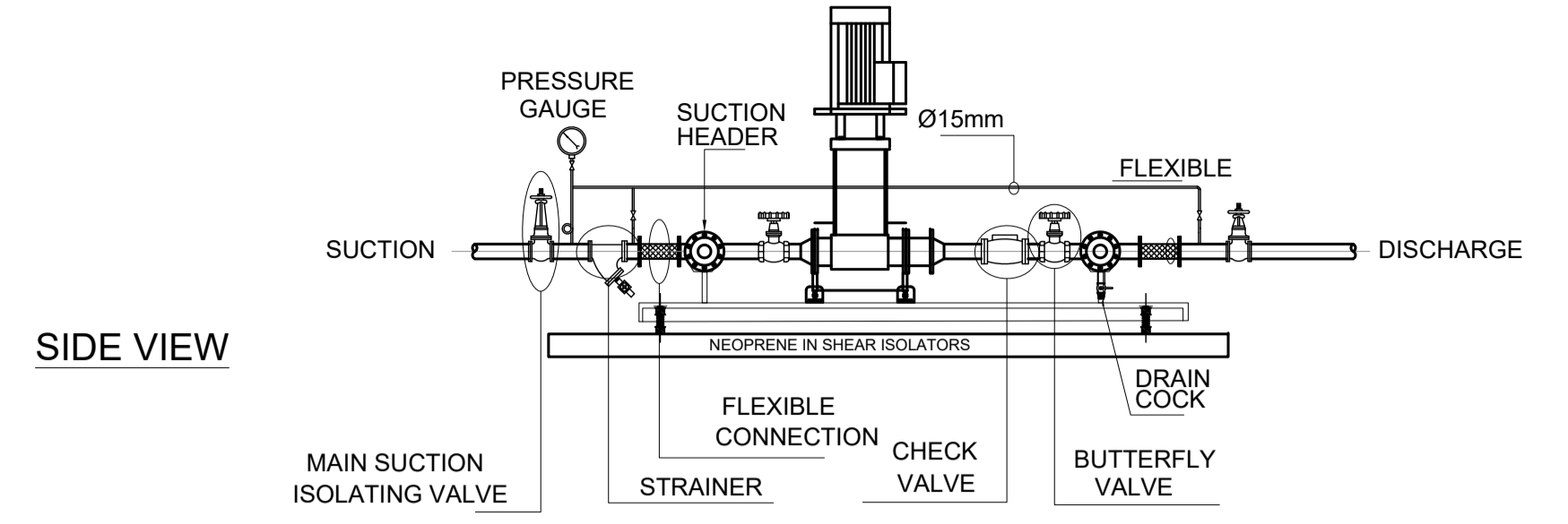
WATER FLOW METER



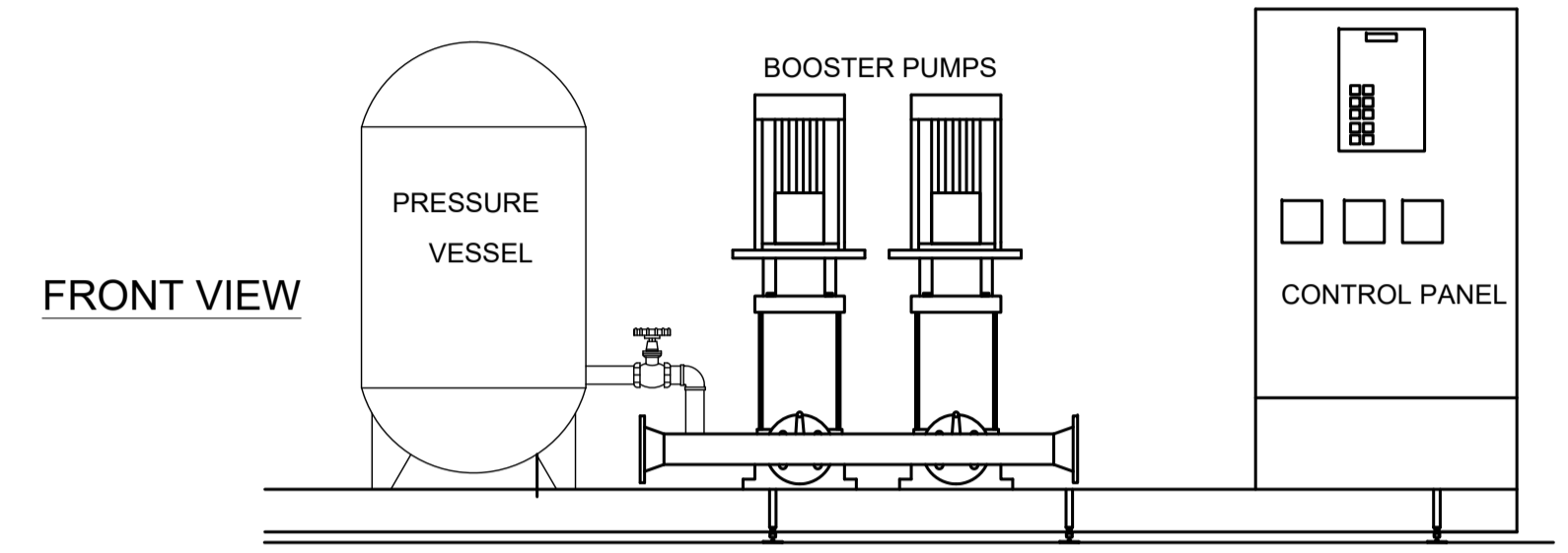
DRAINAGE MANHOLE - 60x60CM DEPTH UP TO 150CM.



LIQUID LEVEL SIGHT GLASS

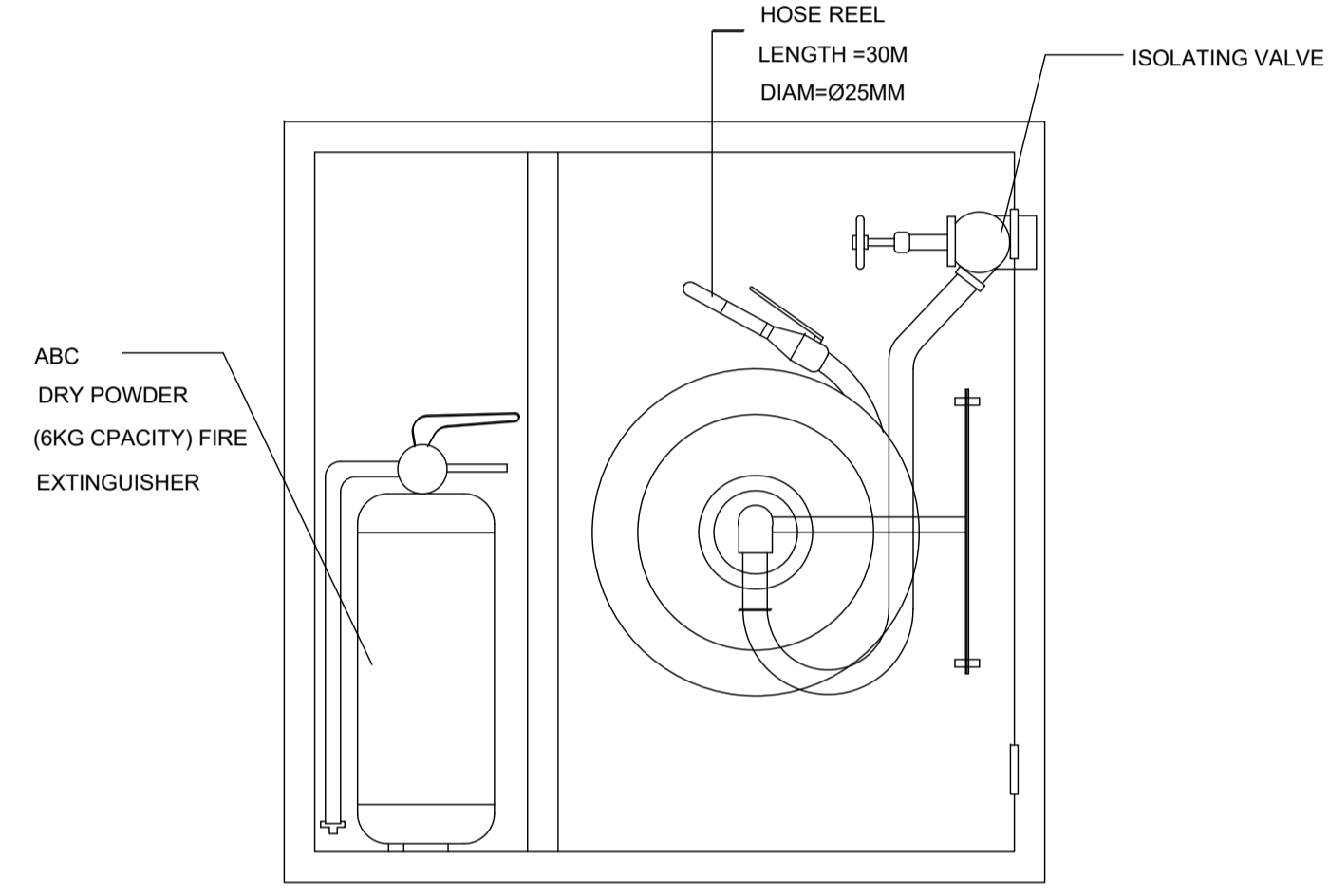


SIDE VIEW

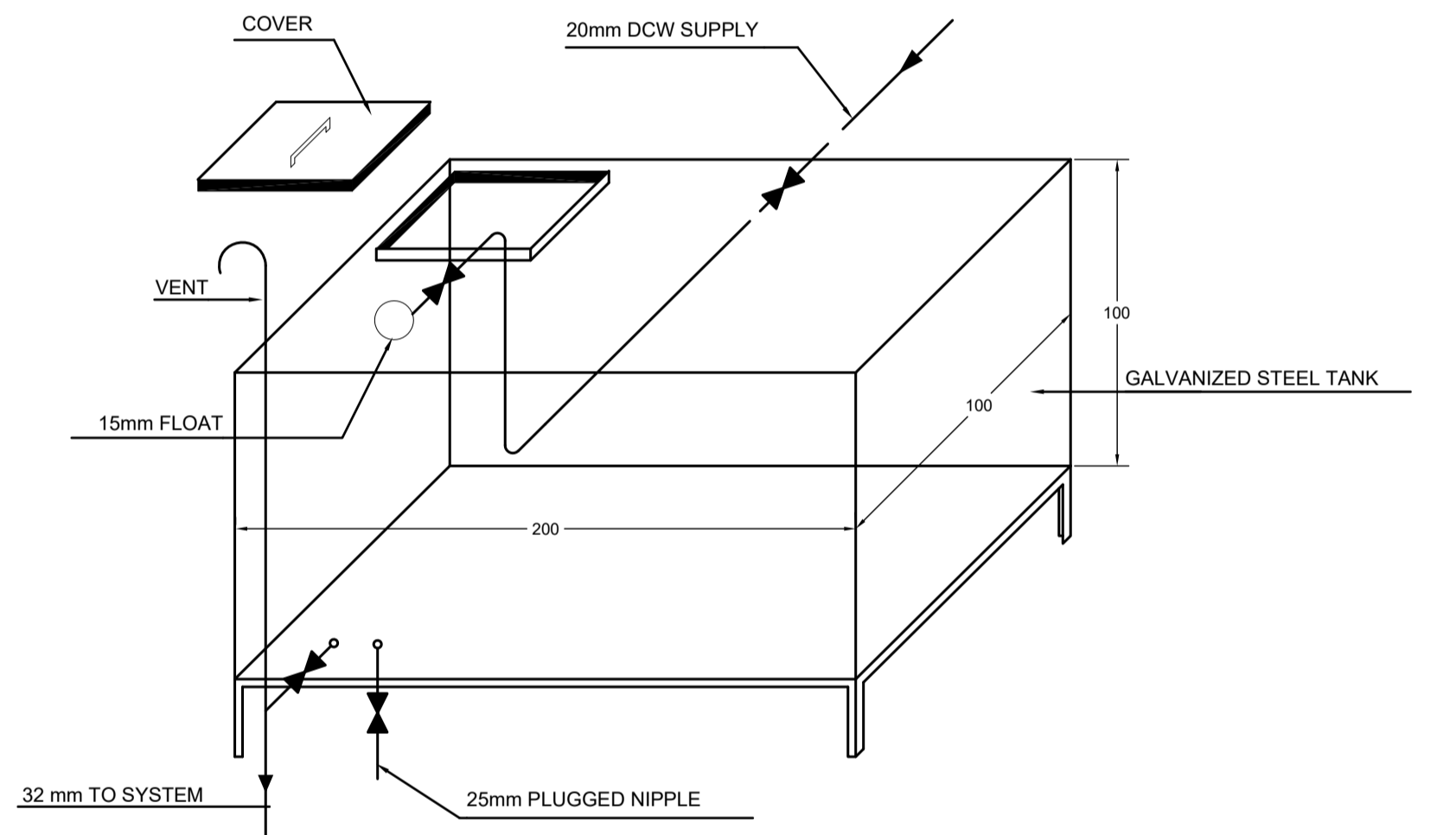


FRONT VIEW

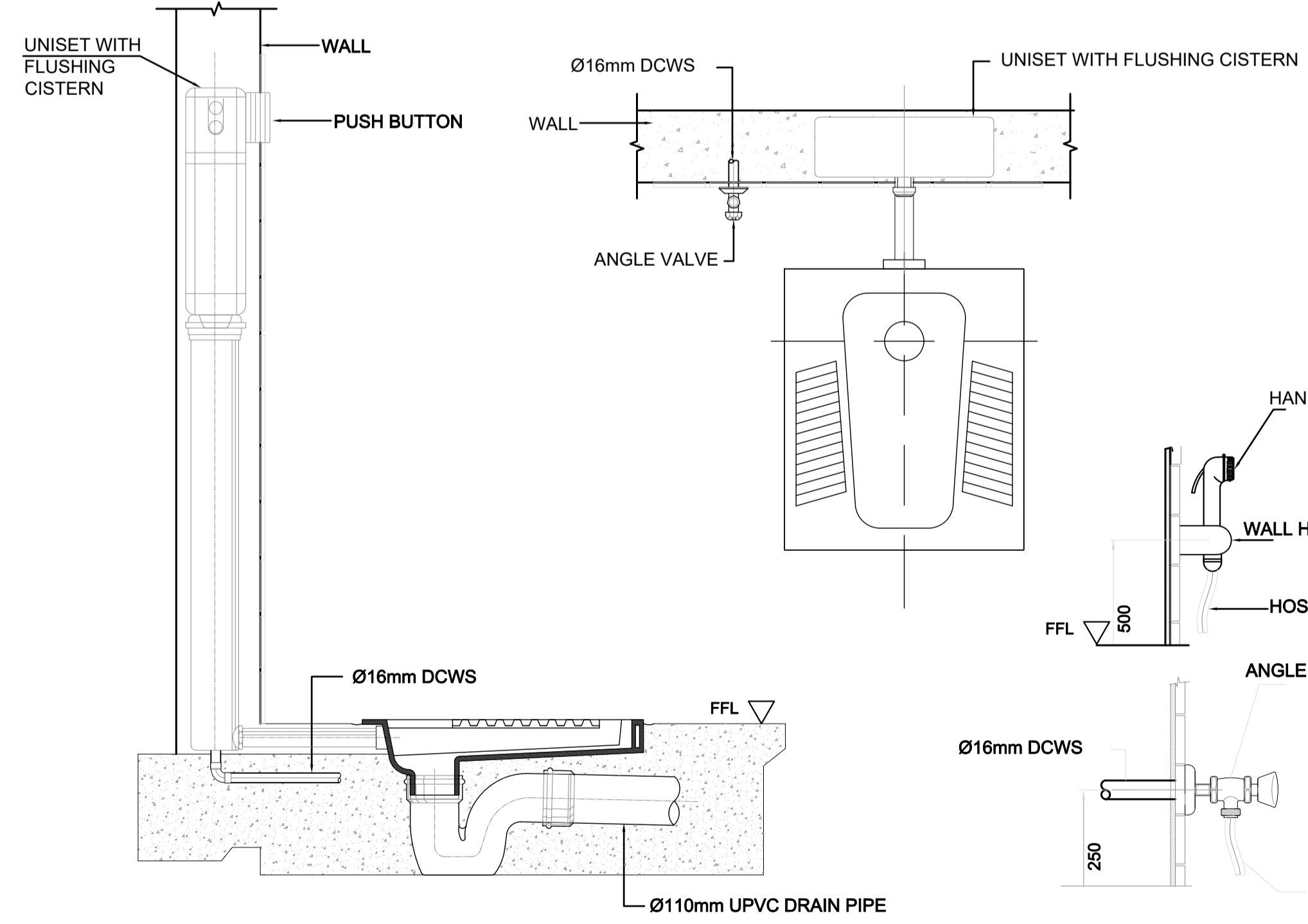
MAIN DOMESTIC COLD WATER PUMP DETAIL



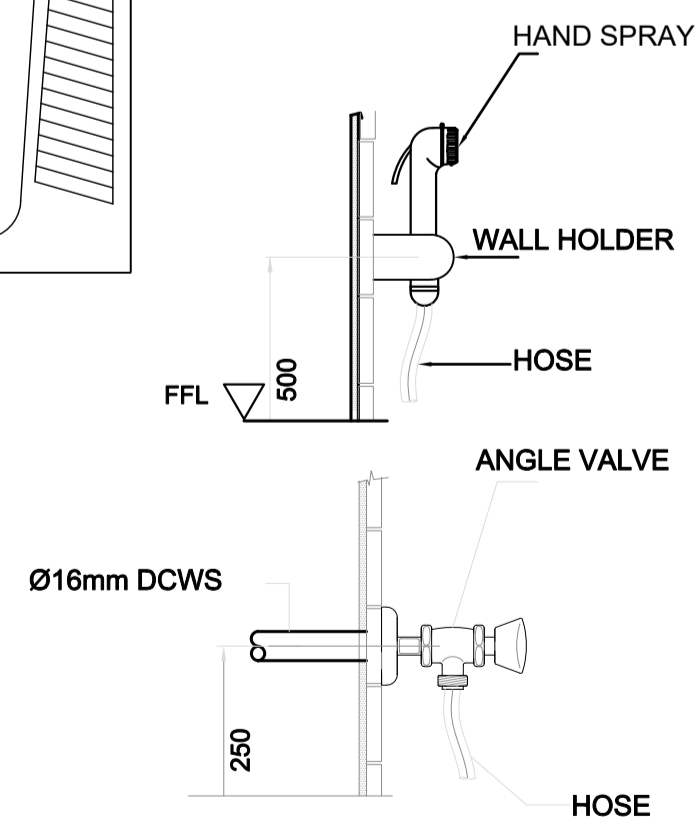
FIRE HOSE CABINET DETAIL



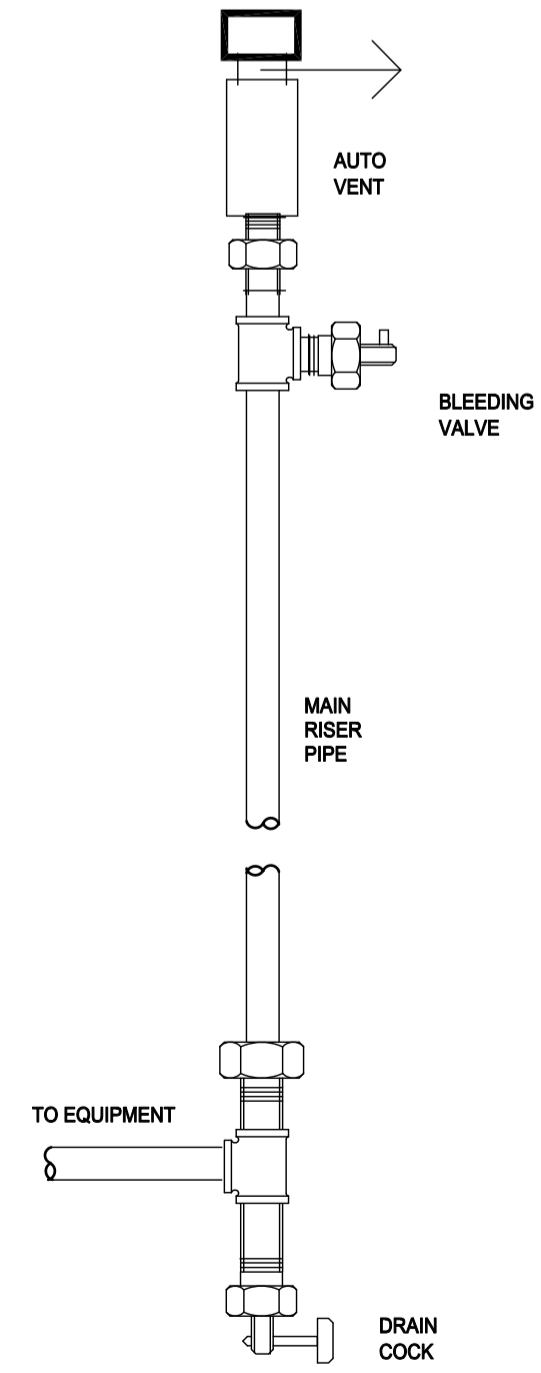
COLD WATER TANK



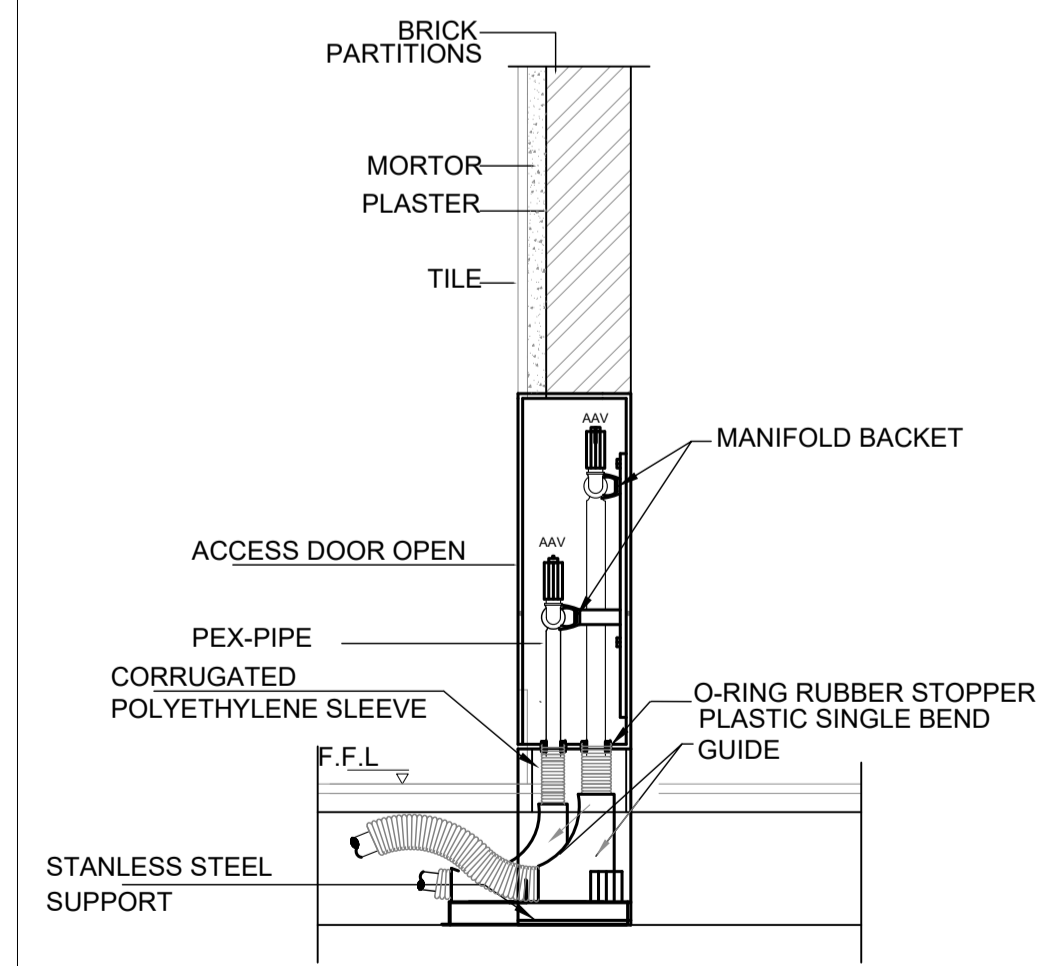
WC ESTERN TYPE DETAIL (WC-1)



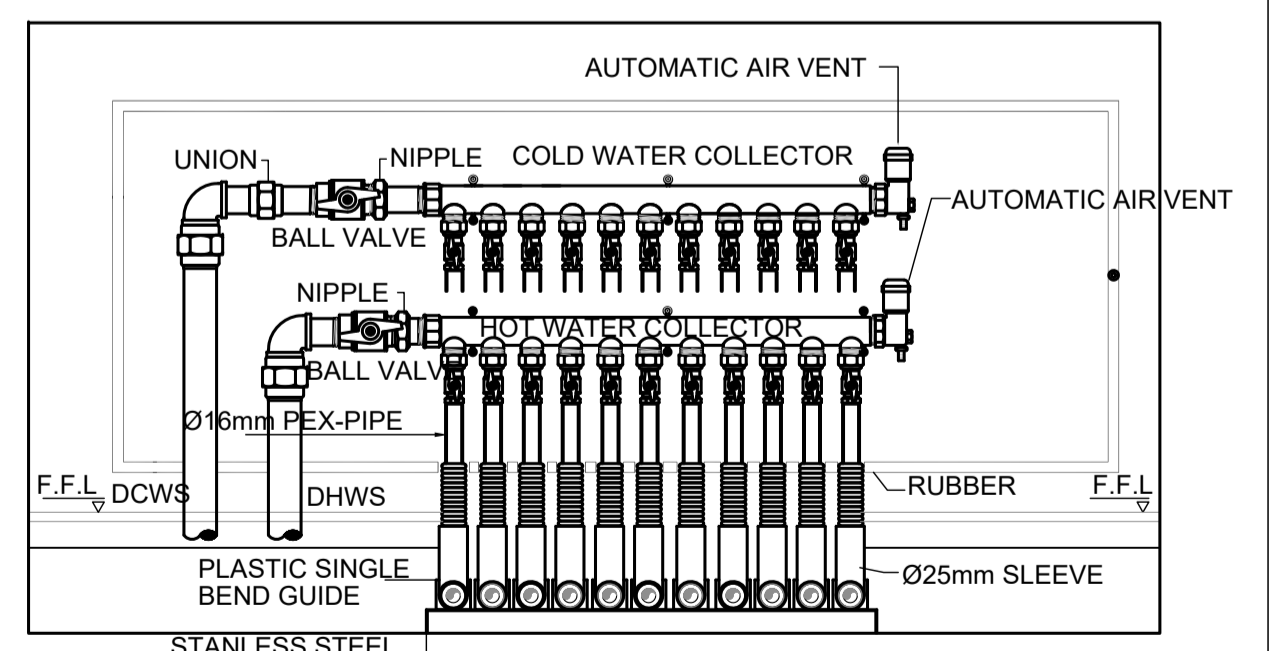
HAND SPRAY DETAIL FOR W.C



TYPICAL RISER FITTING DETAIL



SECTION IN MANIFOLD



ELEVATION VIEW

GENERAL WATER DISTRIBUTION CABINET DETAIL

REV.	DATE	REMARKS
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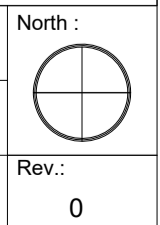
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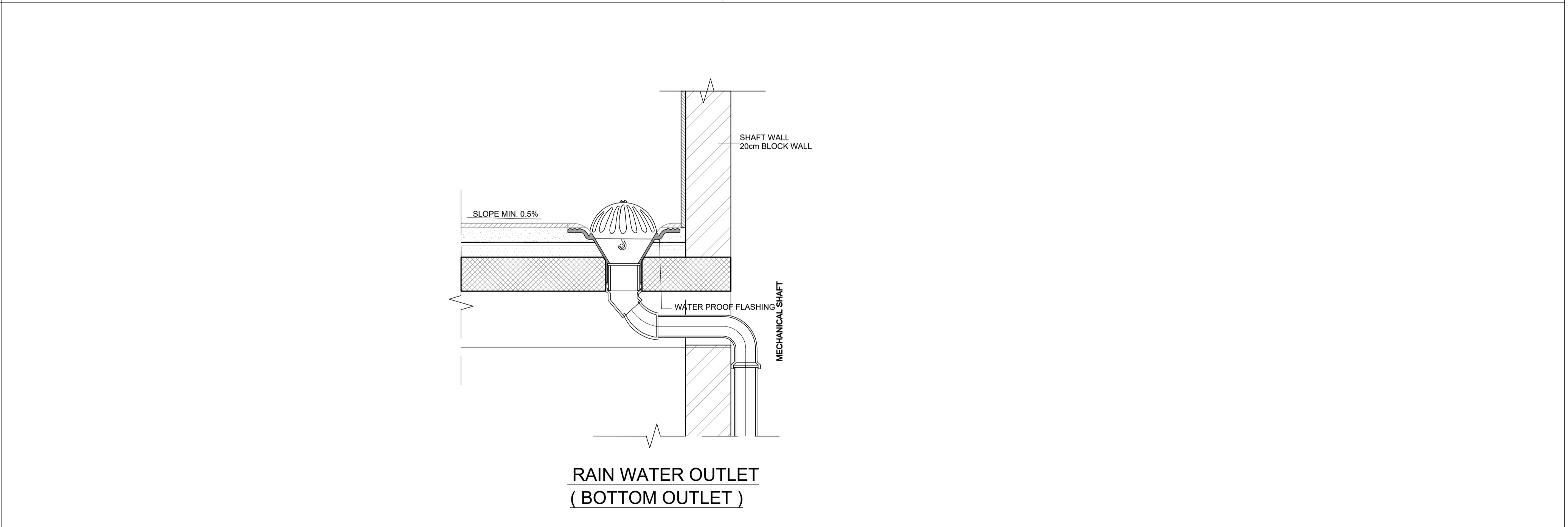
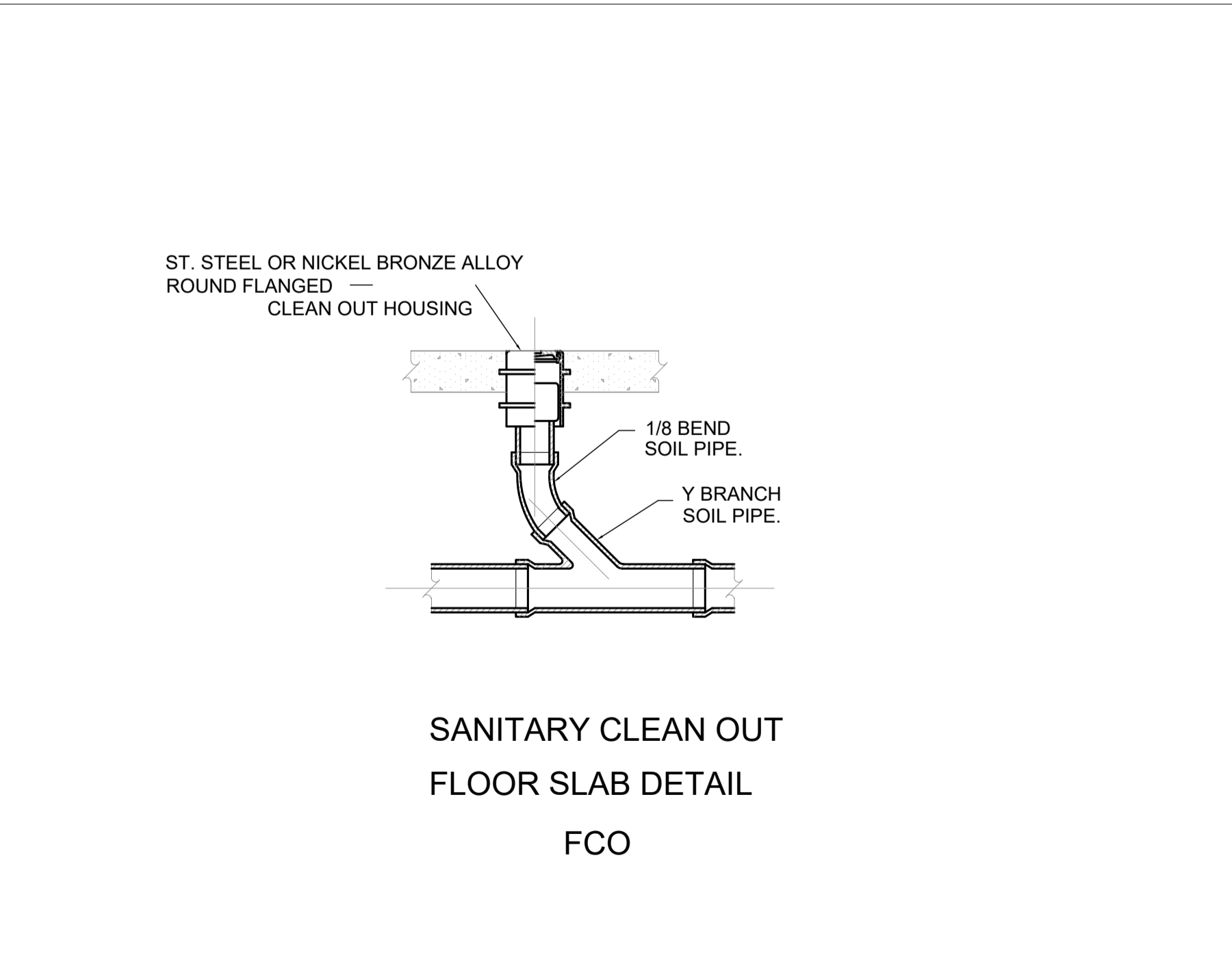
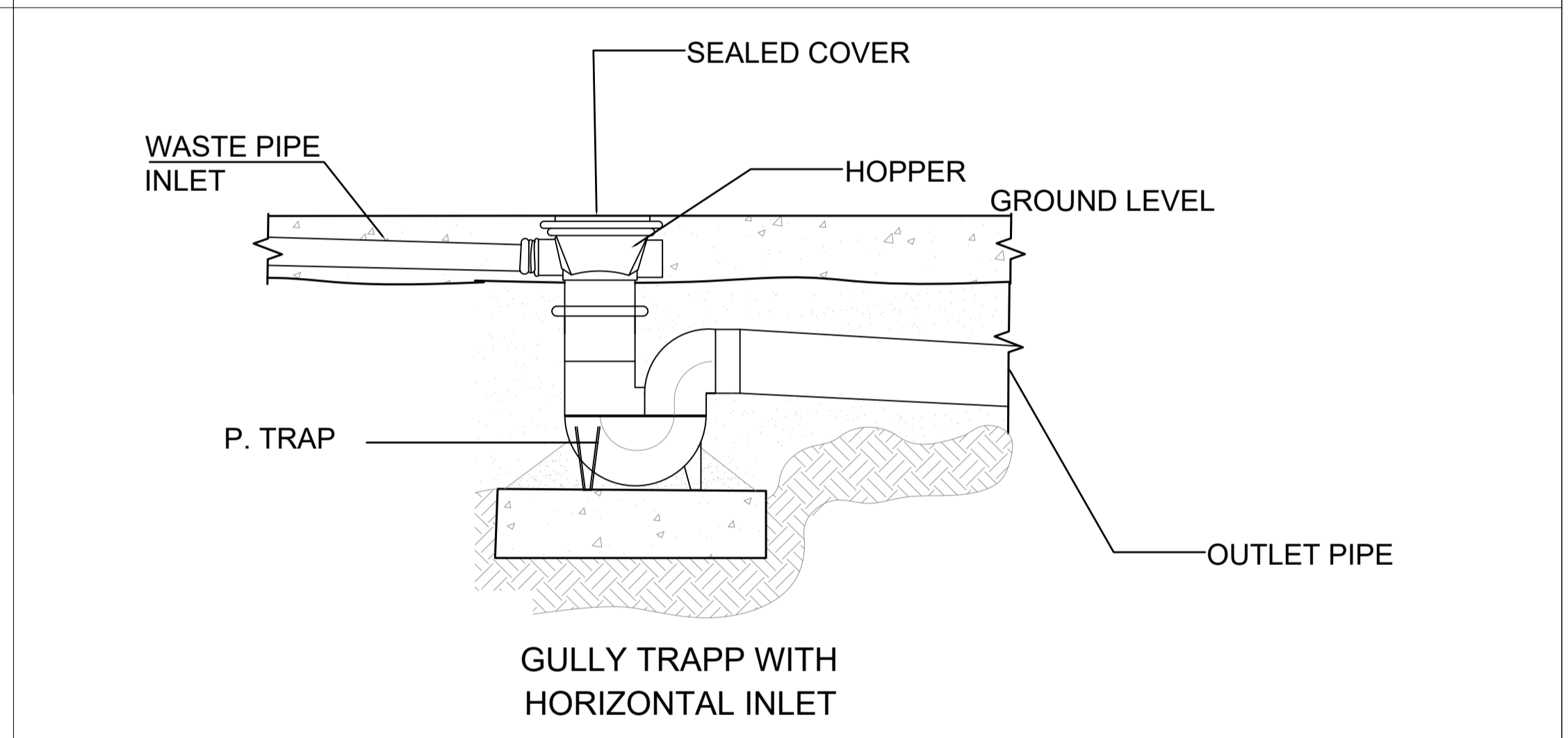
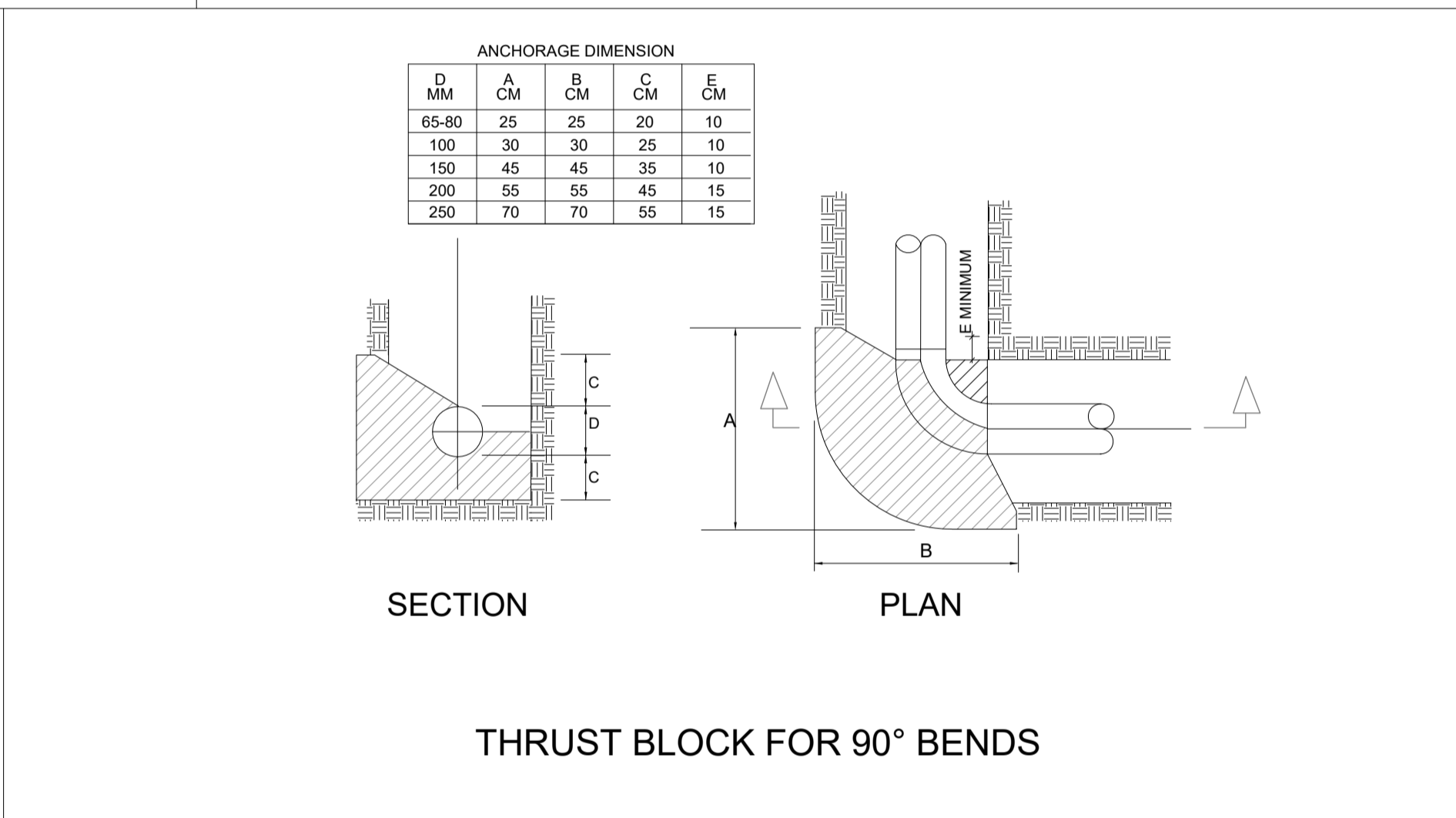
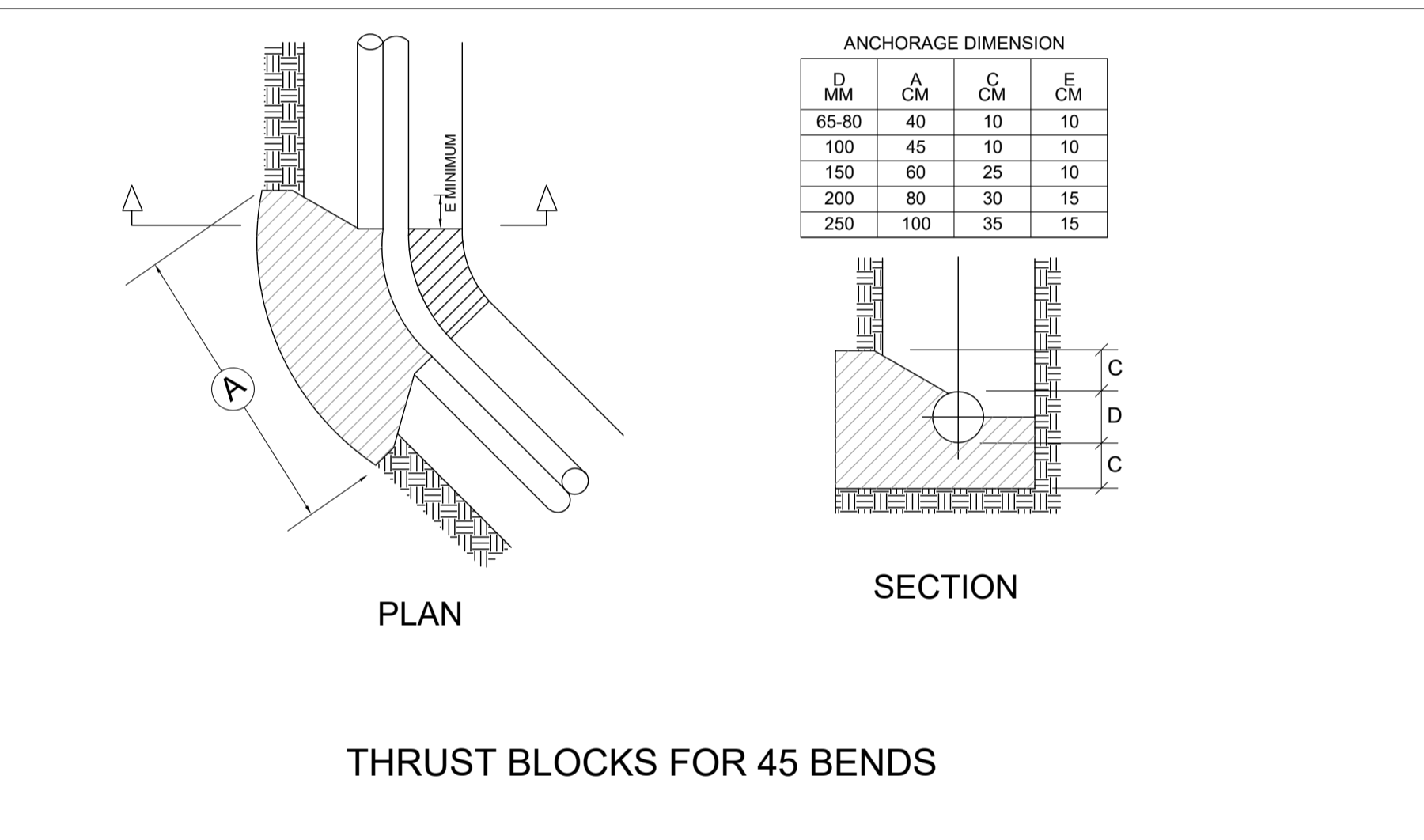
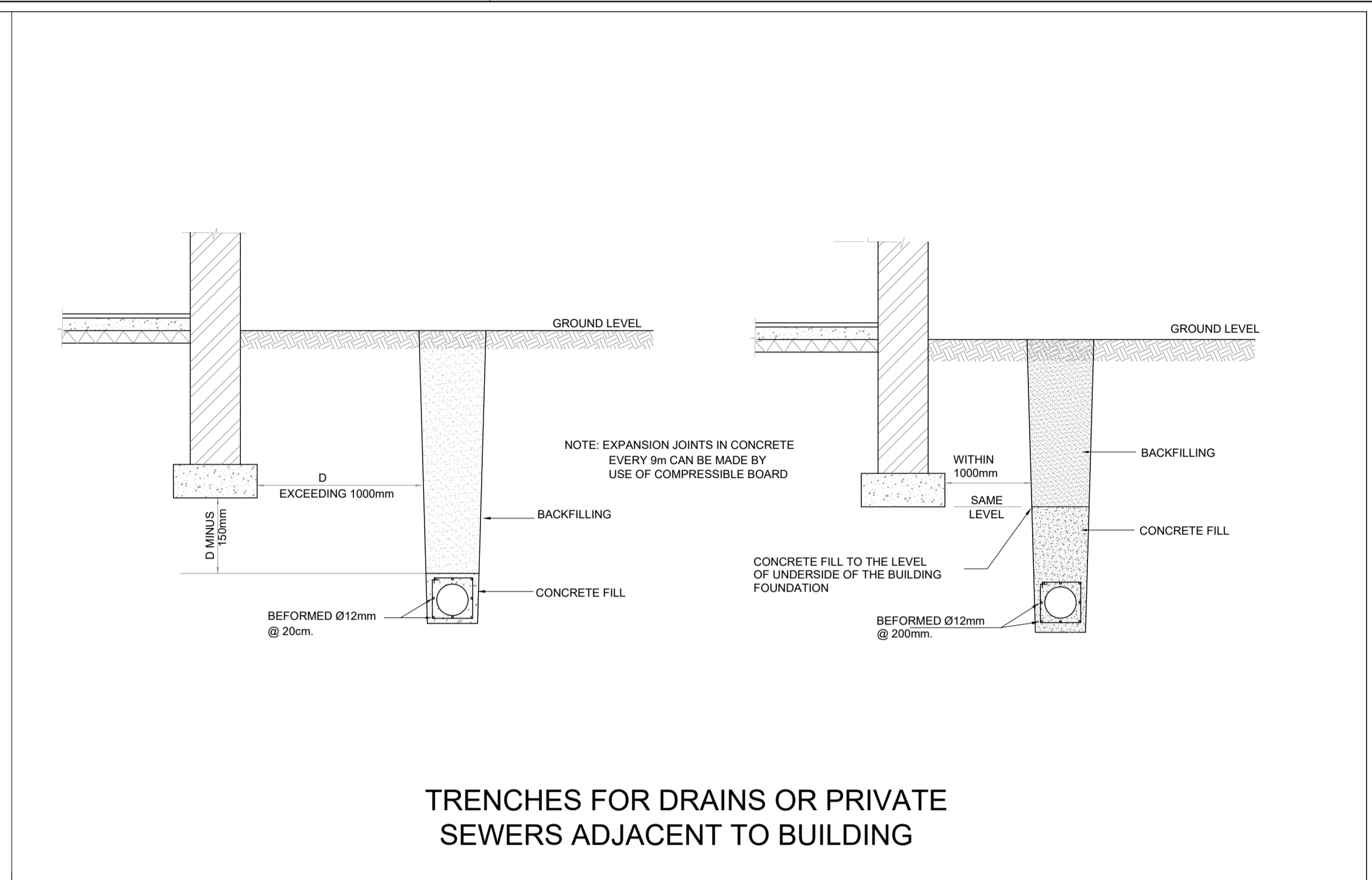
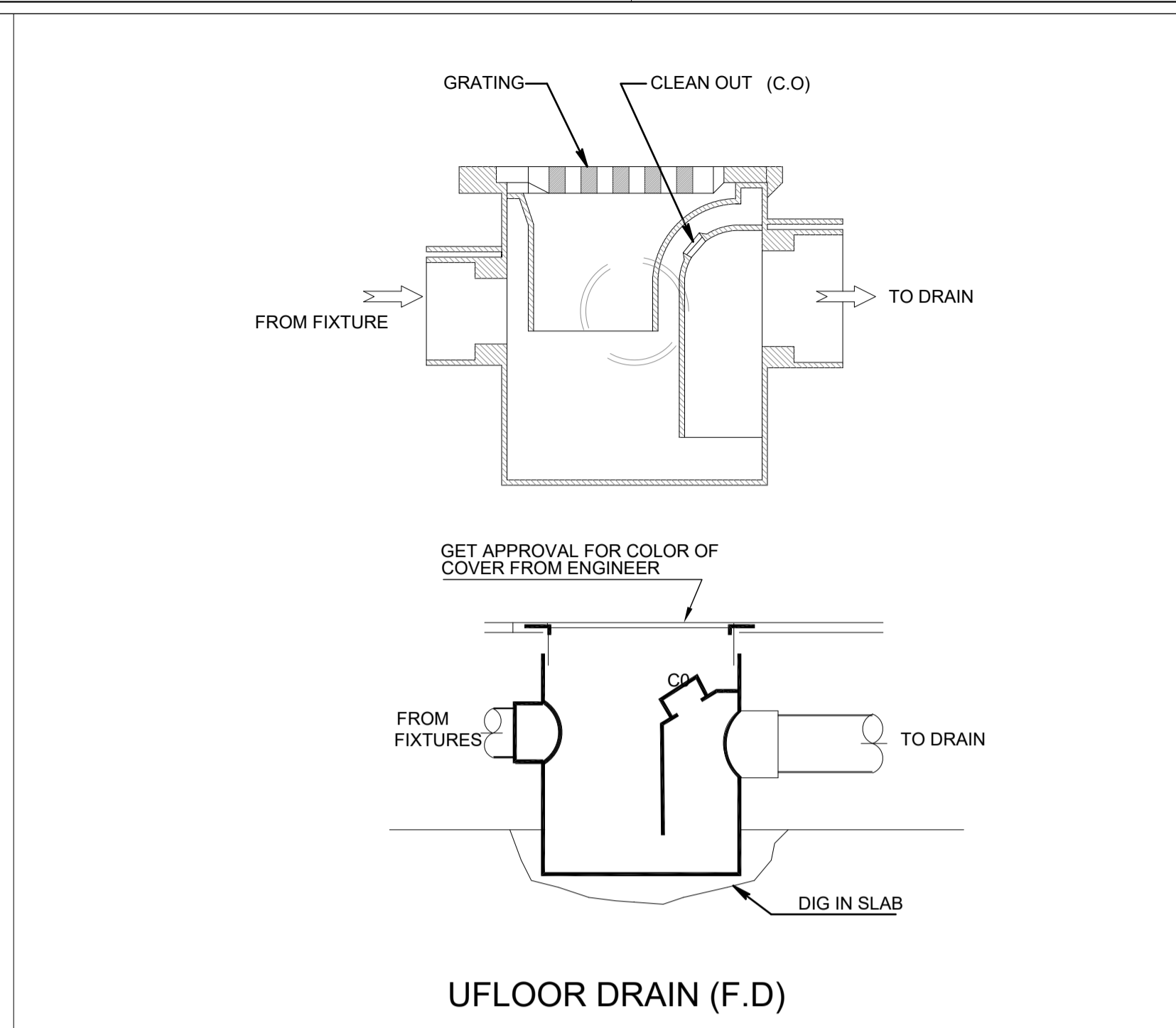
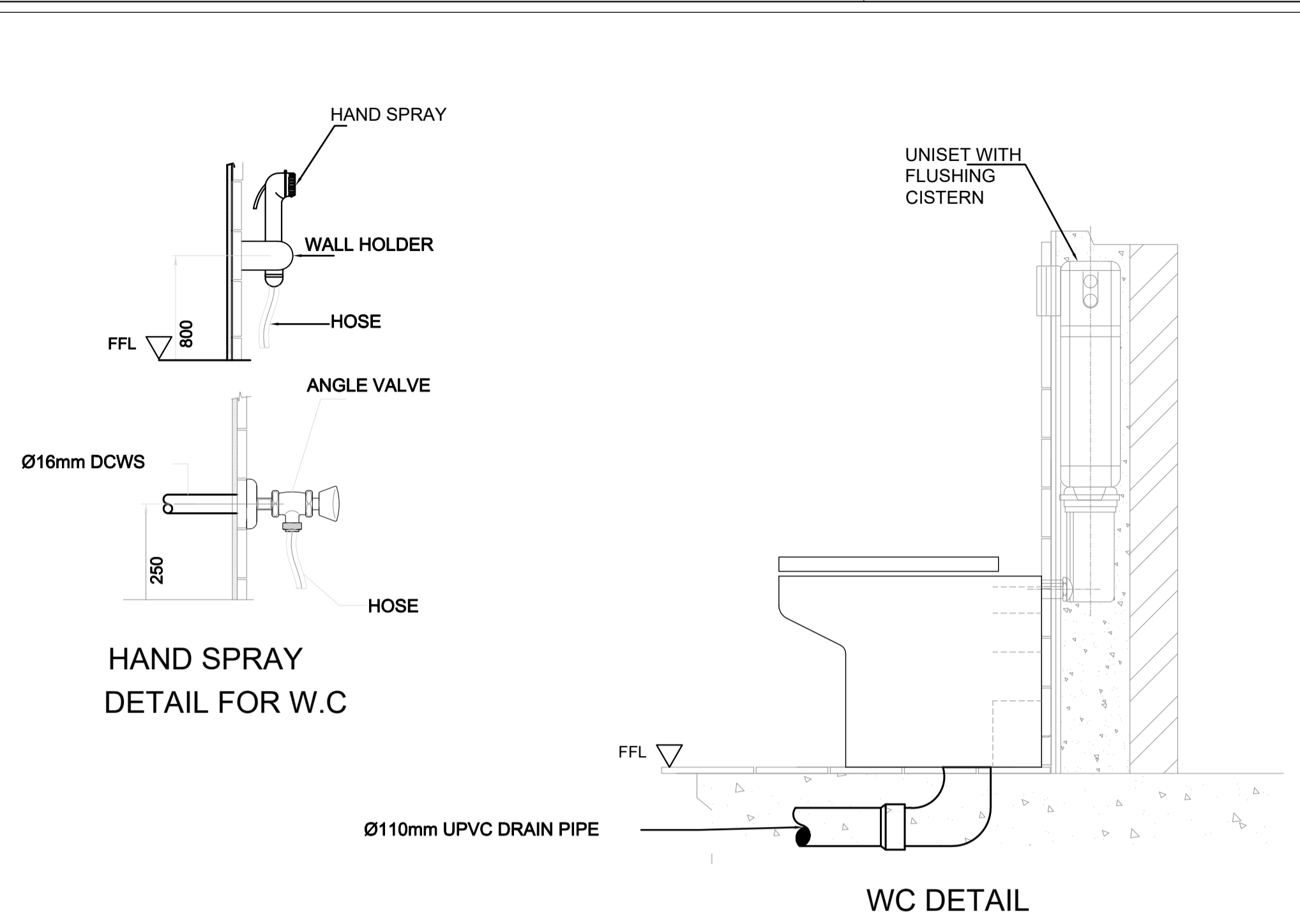


Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

DRAWING NAME: MECHANICAL GENERAL DETAILS 02
PLOT No: 1496
LOCATION: Marka
BASIN NO: 1 Hanao Al Kassar

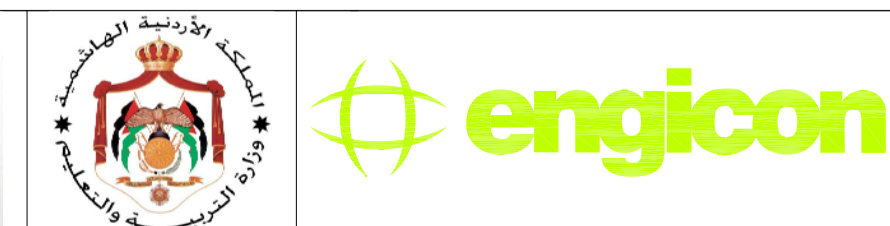
Design: CAD
Scale: N.T.S.
Date: June 2019
Drawing Number: SKEP 18-GM502





REV.	DATE	REMARKS
0	June 2019	VOL. IV - TENDER DRAWINGS

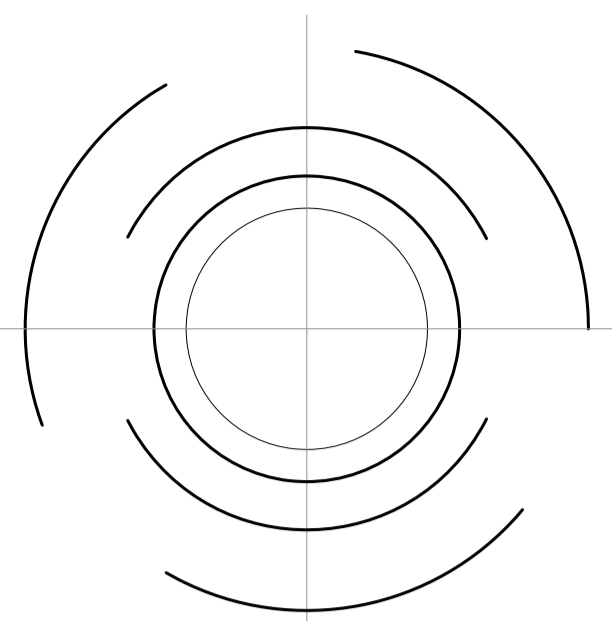
NOTES:



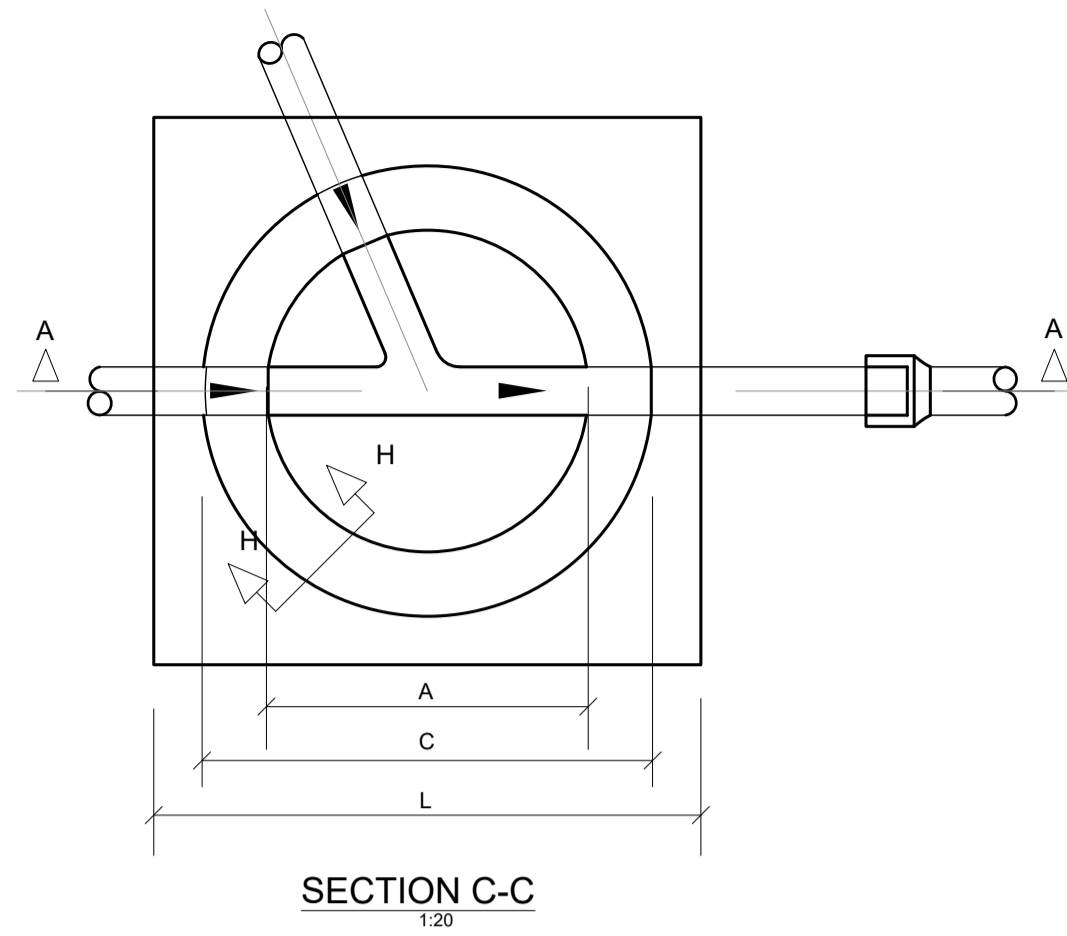
Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

PLOT No	LOCATION	BASIN NO
1496	Marka	1 Hanao Al Kassar

Design:	Drawn:	Checked:	North:
CAD	CAD	A.J.	⊕
SCALE:	Date:	Approved:	Rev.:
N.T.S.	June 2019	W.Z.	0
DRAWING NUMBER:			
SKEP 18-GM503			



MANHOLE COVER DETAIL
NTS

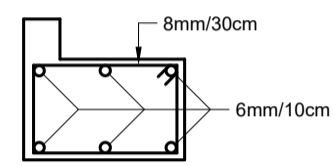


SECTION C-C
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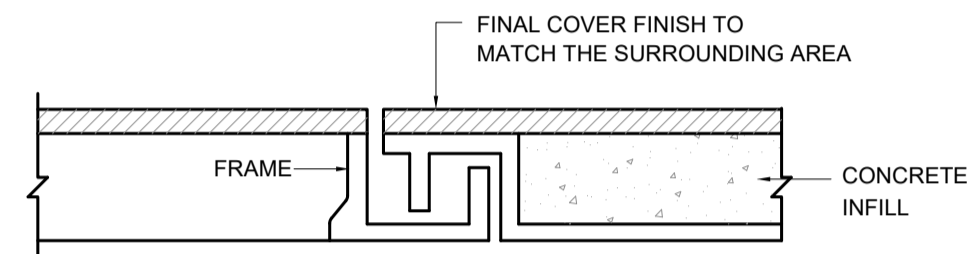
NOTE:-

* MANHOLE COVER LEVEL SHOULD BE COORDINATE WITH THE FINAL FINISH LEVEL

PIPE DIAMETER D(mm)	B (mm)
150	350
200	450
250	550
300	650

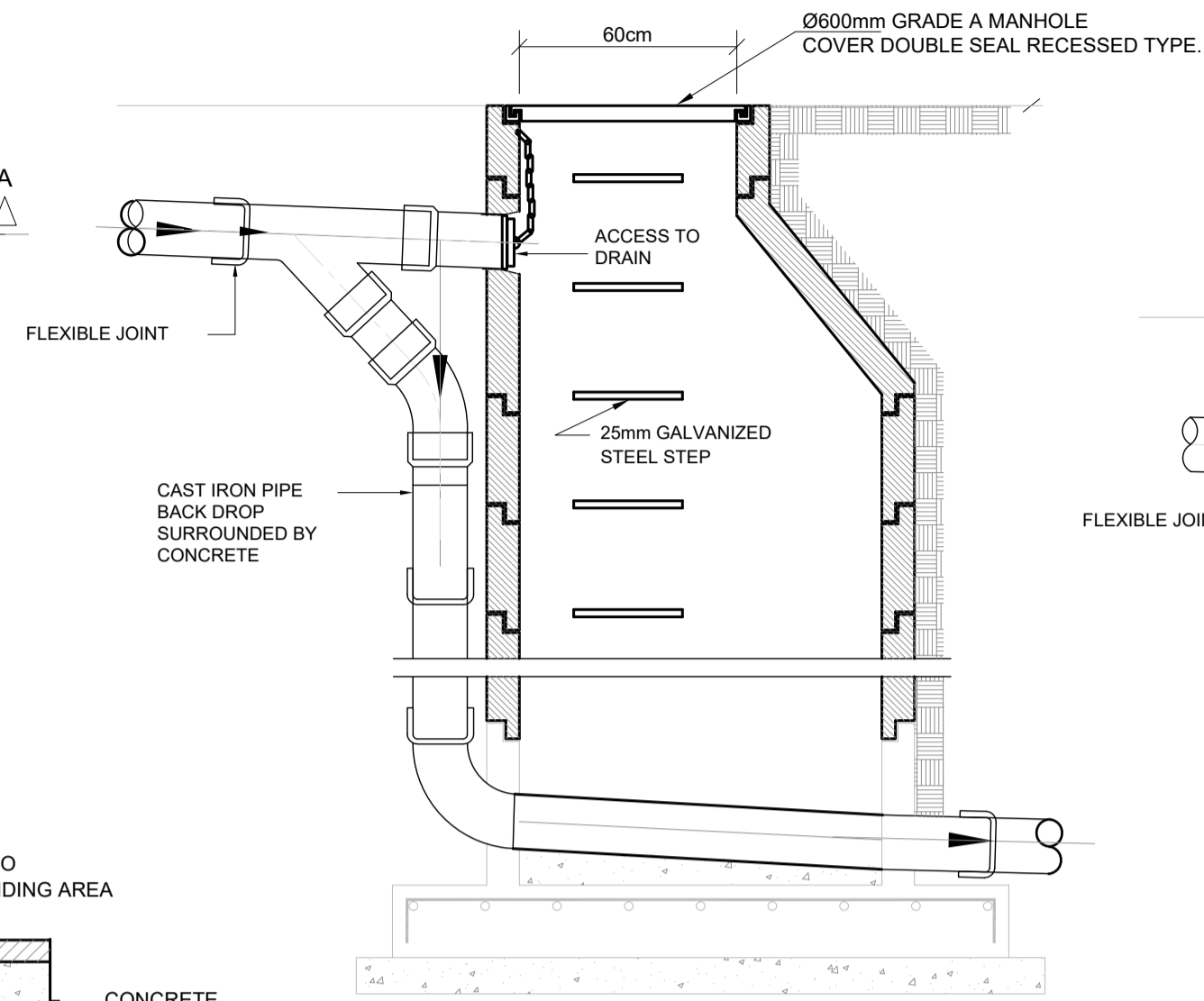


SECTION H-H

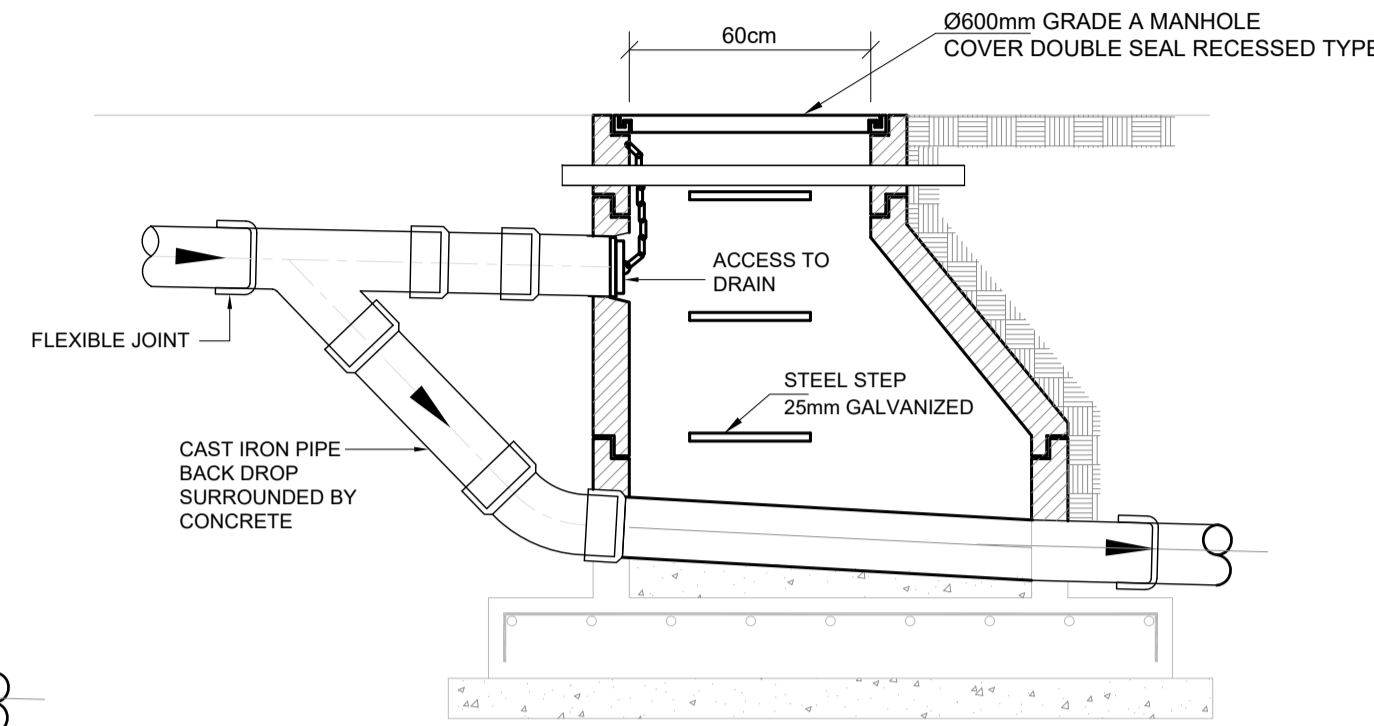


TYPICAL MANHOLE COVER
DETAIL FOR ALL MANHOLES
HAVE RECESSED COVER TYPE

SEWAGE MANHOLE DETAIL

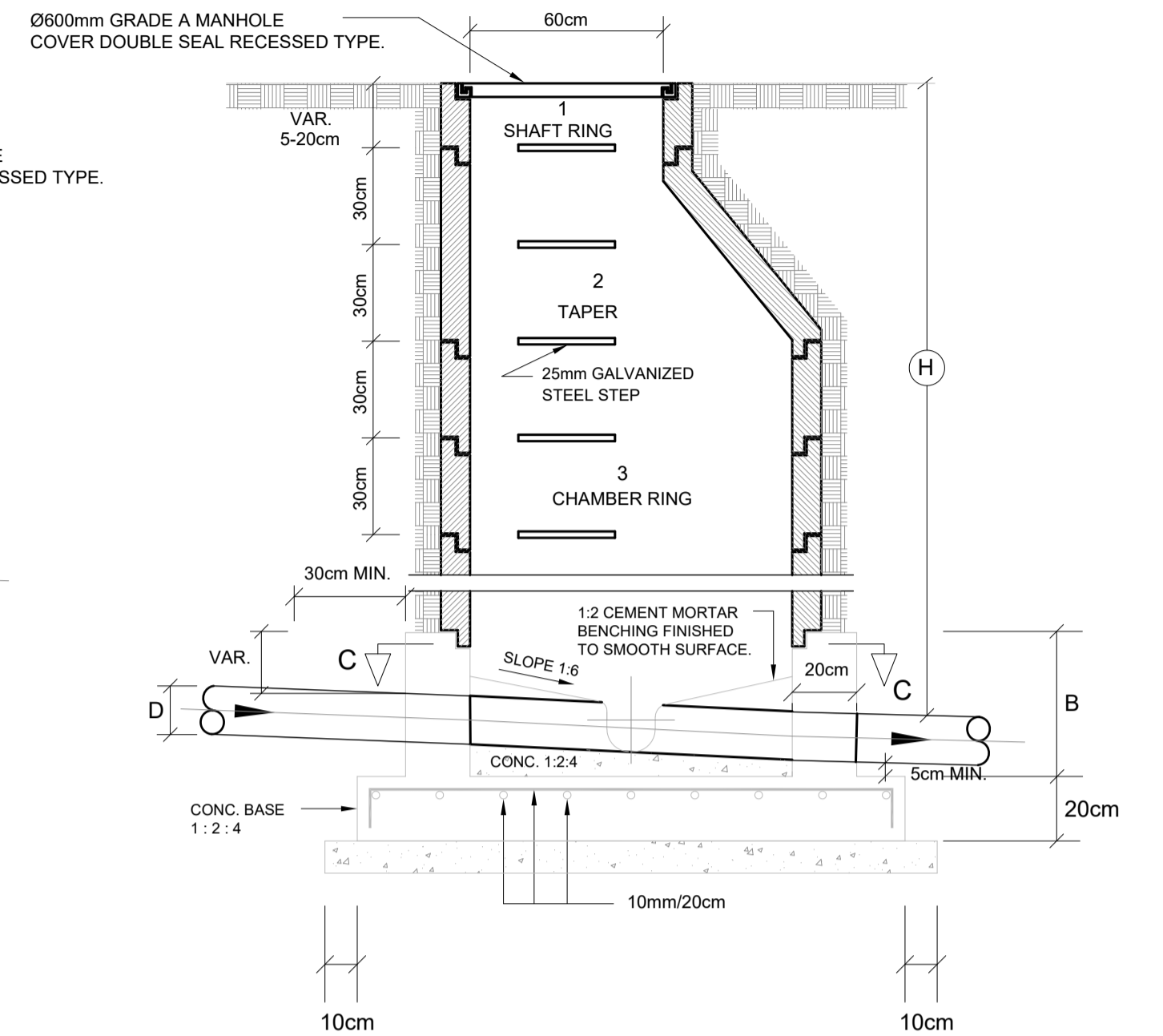


DROP MANHOLE TYPE (II)

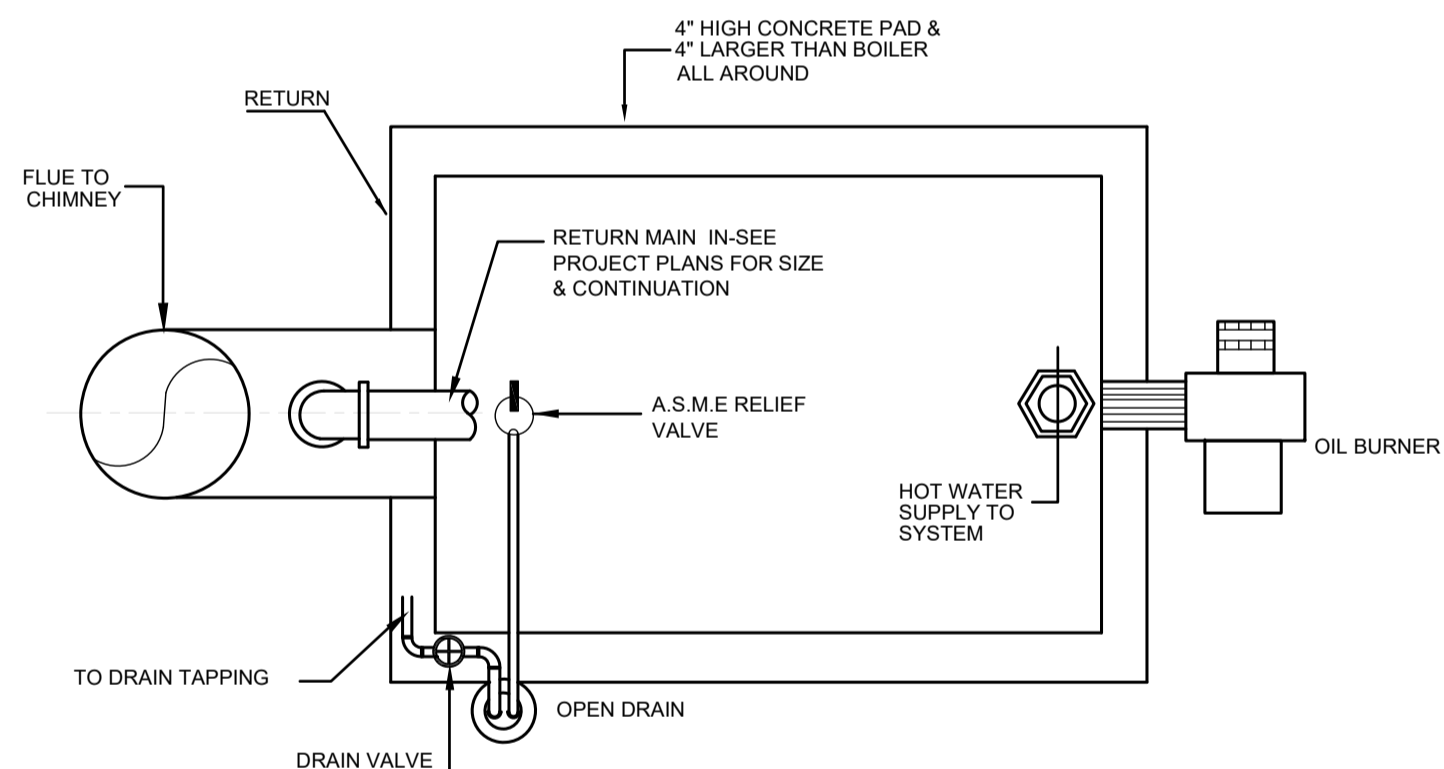


DROP MANHOLE TYPE (I)

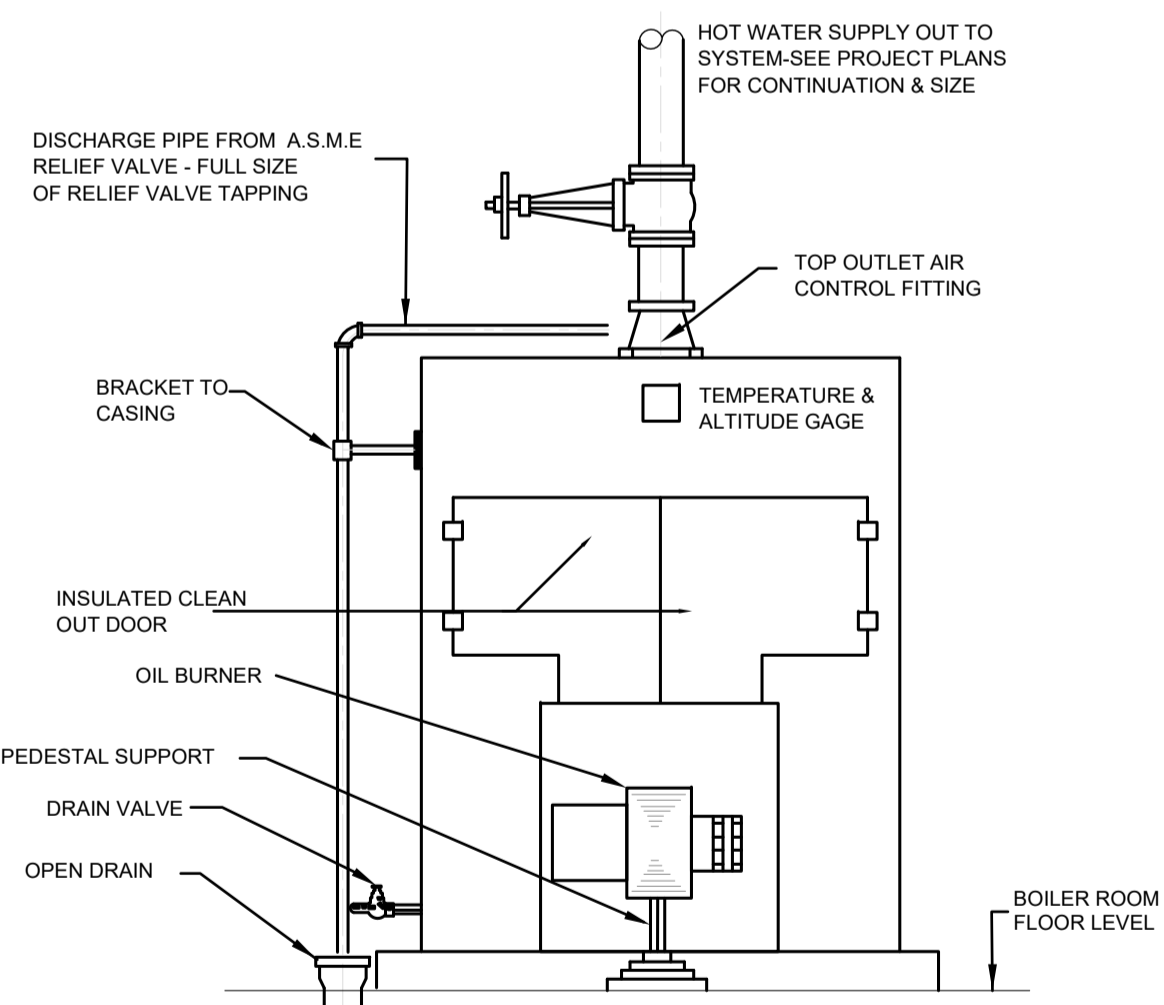
TRENCHES FOR DRAINS OR PRIVATE SEWERS ADJACENT TO BUILDING FOOTINGS



MANHOLE TYPE (II&III)
SECTION A-A
NTS

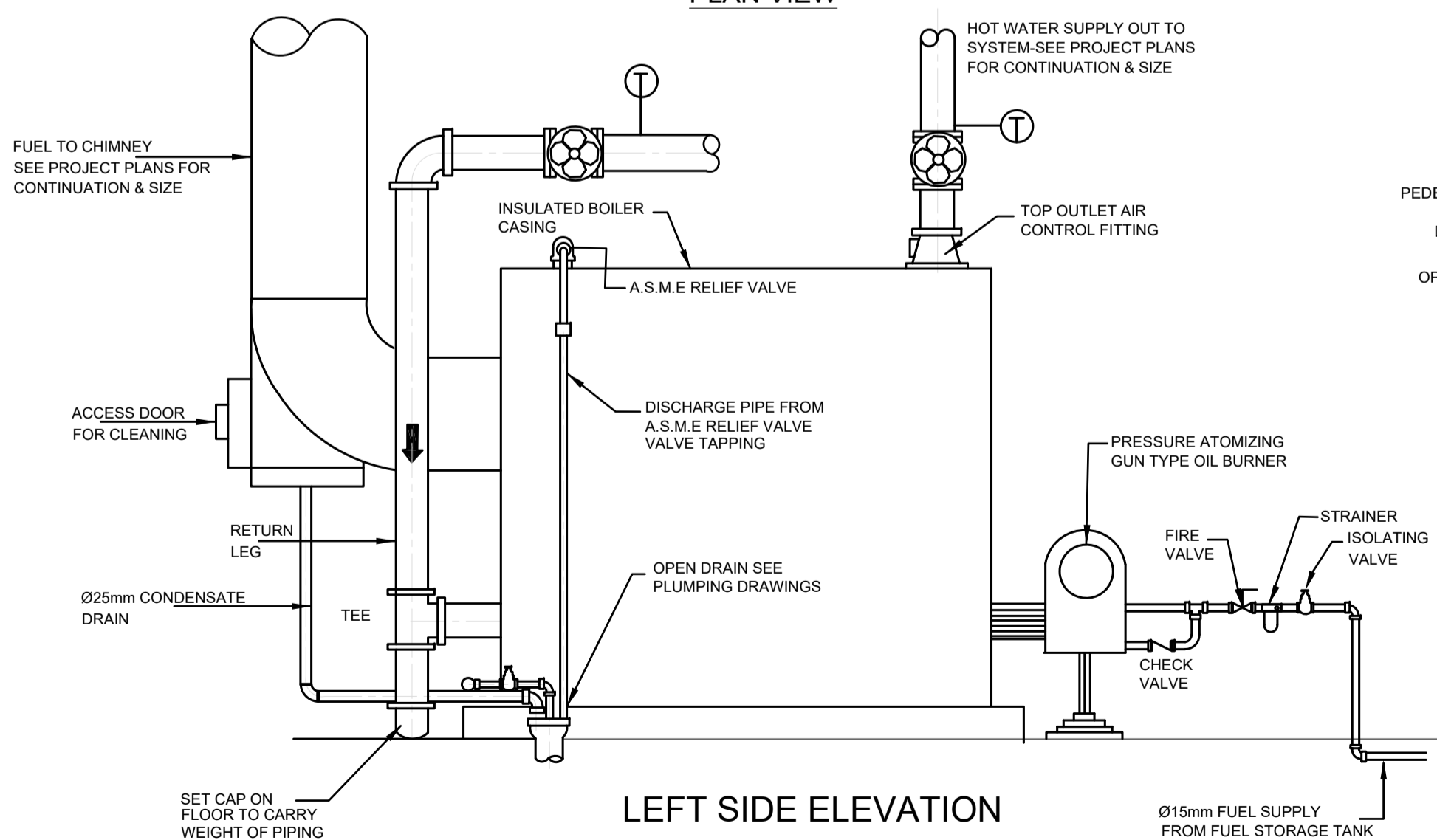


PLAN VIEW

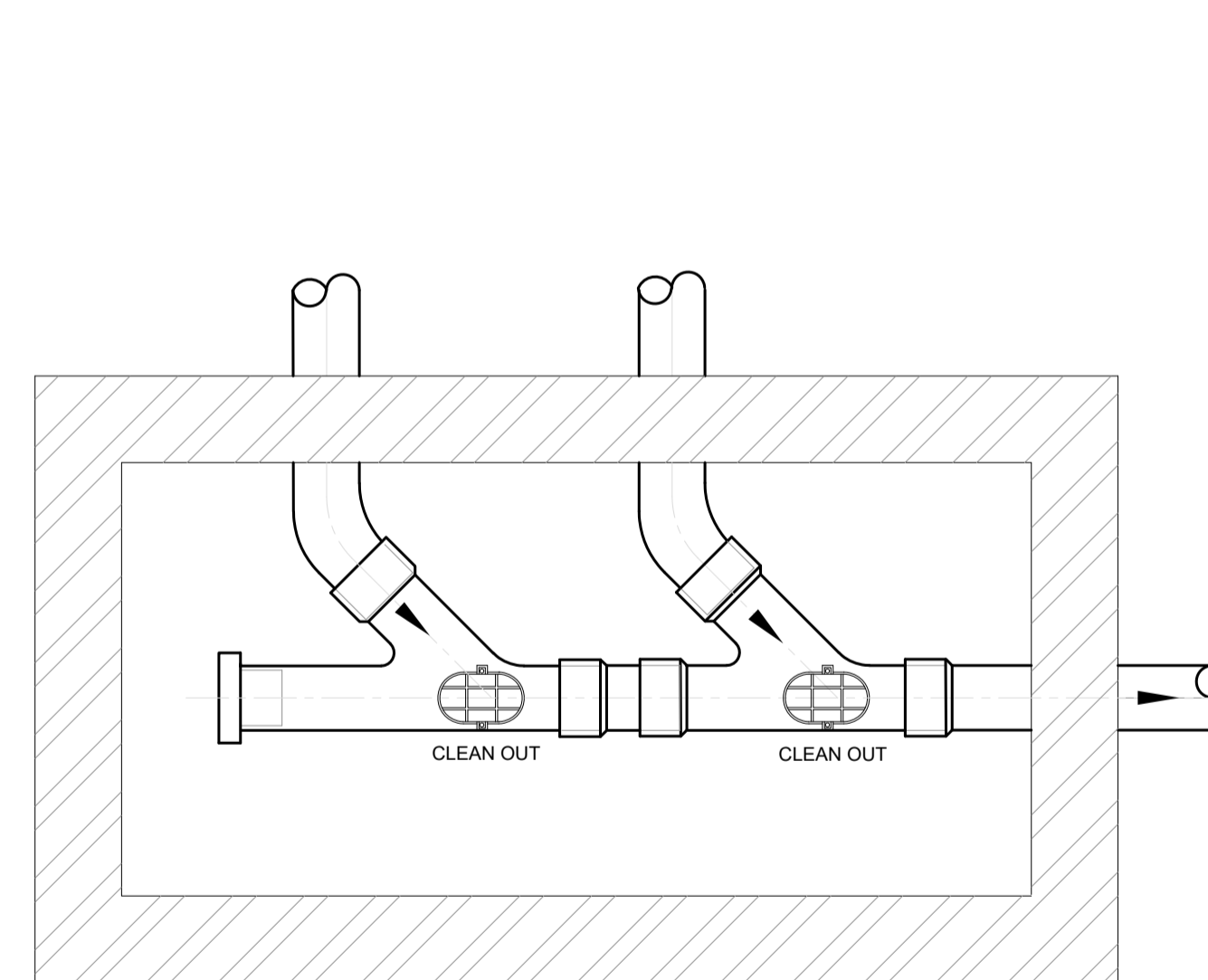


FRONT ELEVATION

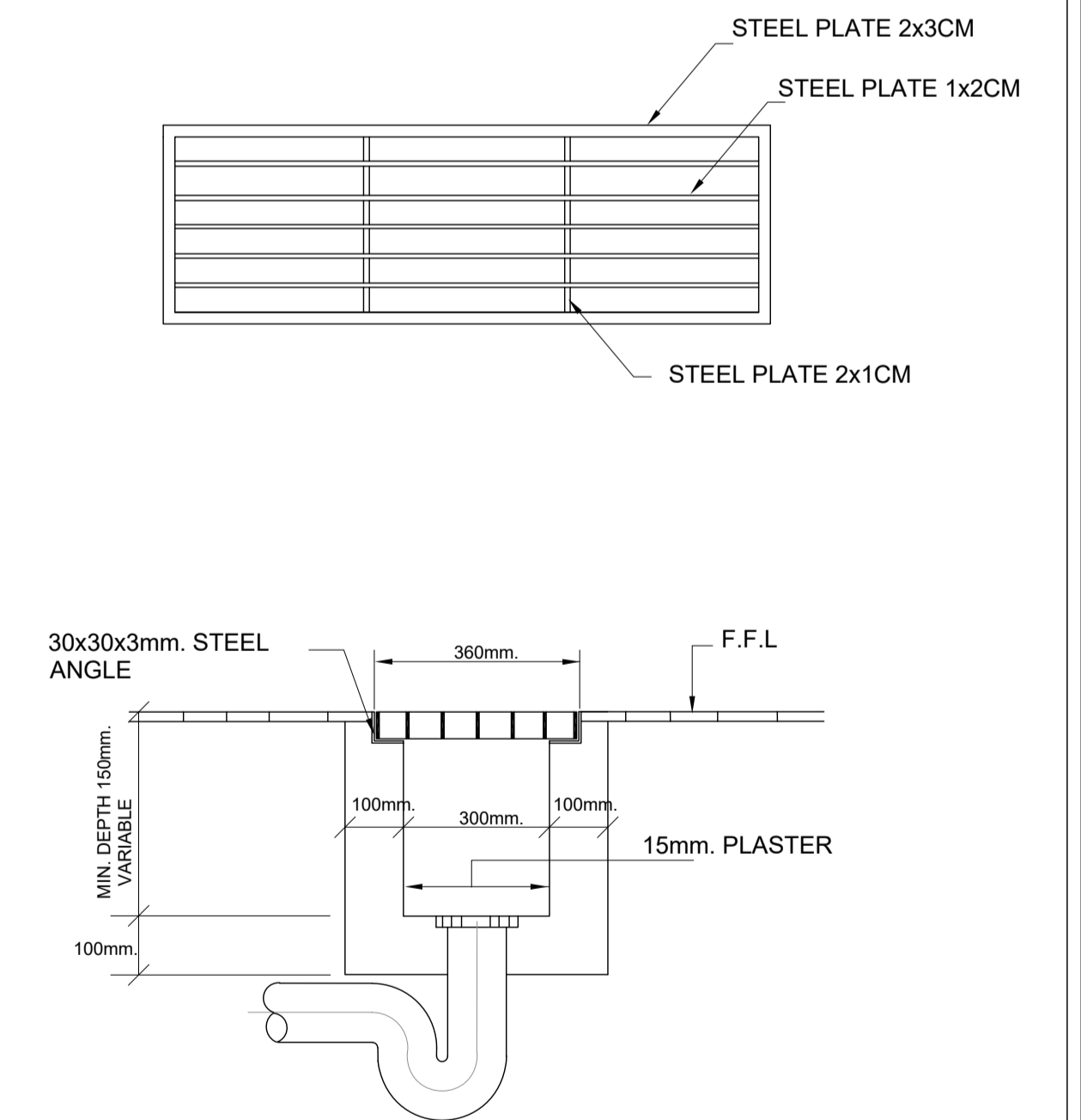
OIL FIRED, HOT WATER BOILER



LEFT SIDE ELEVATION



SEALED MANHOLE DETAIL
N.T.S



TRENCH DRAIN DETAIL

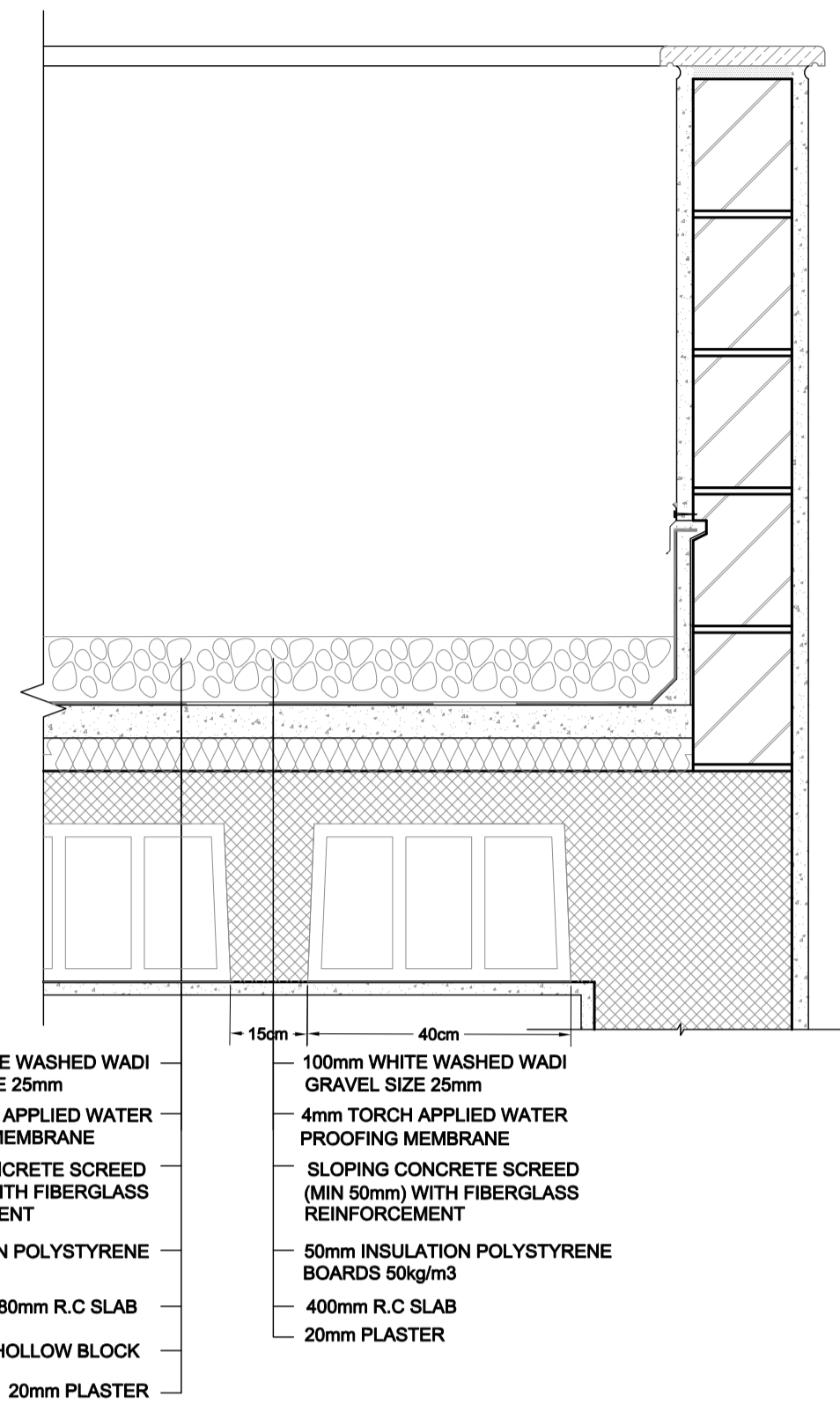
REV.	DATE	REMARKS
0	June 2019	VOL. IV - TENDER DRAWINGS

NOTES:



Jumana Bint Abi Taleb Basic Mixed School
(Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY
PROJECT (USAID SKEP)

DRAWING NAME: MECHANICAL GENERAL DETAILS 04		Design: CAD	Drawn: CAD	Checked: A.J.	North: ⊕
SCALE: N.T.S.		Date: June 2019	Approved: W.Z.		
PLOT No 1496	LOCATION Marka	BASIN NO 1 Hanao Al Kassar	DRAWING NUMBER: SKEP 18-GM504		Rev.: 0



U-VALUE CALCULATION			
SECTION IN ROOF/CONCRETE HOLLOW BLOCK			
Composition	(d)Thickness (m)	(k) Thermal Conductivity (W/m.c)	(R) Thermal Resistance (m2.c/W)
WHITE WASHED WADI GRAVEL SIZE	0.1	0.3	0.333
WATER PROOFING MEMBRANE	0.004	0.19	0.021
CONCRETE SCREED	0.05	1.75	0.0286
50mm INSULATION POLYSTYRENE BOARDS 50kg/m3	0.05	0.032	1.56
80 mm R. C SLAB	0.08	1.85	0.0432
HOLLOW BLOCK	0.32	0.95	0.337
PLASTER	0.02	0.72	0.028
Outside Resistance	-	-	0.04
Inside Resistance	-	-	0.1
TOTAL R=		2.49	
U1 =		0.401	
A1 =		0.40	

U-VALUE CALCULATION			
SECTION IN ROOF/RIB			
Composition	(d)Thickness (m)	(k) Thermal Conductivity (W/m.c)	(R) Thermal Resistance (m2.c/W)
WHITE WASHED WADI GRAVEL SIZE	0.1	0.3	0.333
WATER PROOFING MEMBRANE	0.004	0.19	0.021
CONCRETE SCREED	0.05	1.75	0.0286
50mm INSULATION POLYSTYRENE BOARDS 50kg/m3	0.05	0.032	1.56
80 mm R. C SLAB	0.08	1.85	0.0432
PLASTER	0.02	0.72	0.028
Outside Resistance	-	-	0.04
Inside Resistance	-	-	0.1
TOTAL R=		2.33	
U1 =		0.429	
A1 =		0.15	

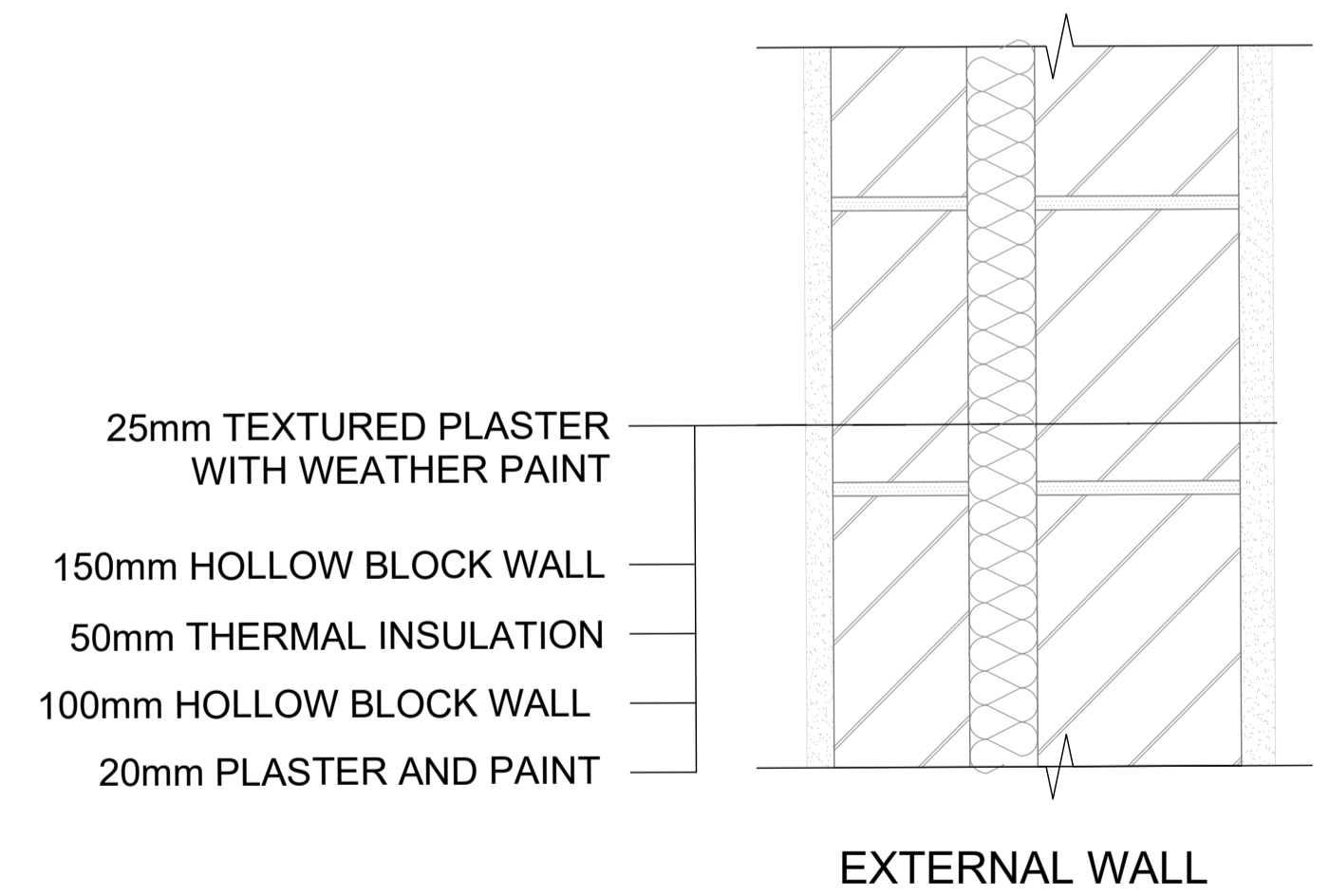
$$U = \frac{A_1 \times U_1 + A_2 \times U_2}{A_{TOTAL}}$$

OVER ALL FOR ROOF

$$U_{OVERALL} = 0.41 \text{ W/m.C}^{\circ}$$

OVER ALL USED

$$U_{OVERALL} = 0.55 \text{ W/m.C}^{\circ}$$



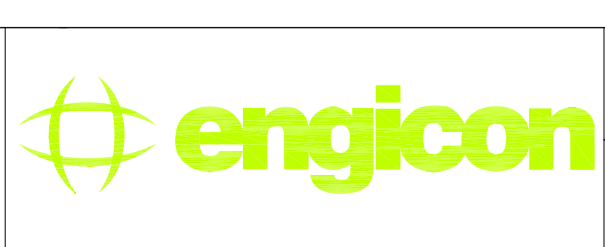
U-VALUE CALCULATION			
Composition	(d)Thickness (m)	(k) Thermal Conductivity (W/m.c)	(R) Thermal Resistance (m2.c/W)
PLASTER	0.02	0.72	0.0278
HOLLOW BLOCK	0.10	0.9	0.09
EXTRUDED POLYSTYRENE	0.05	0.032	1.56
HOLLOW BLOCK	0.15	0.9	0.166
PLASTER	0.025	0.72	0.0347
Outside Resistance	-	-	0.04
Inside Resistance	-	-	0.13
TOTAL R=		2.051	
U = 0.49		W/m.C	
SAFETY FACTOR 15%= 0.56		W/m.C	

Uoverall = (UoX Ao + UwX Aw + UdX Ad) / A = (2.8X482.4 + 0.49X4080.8 + 5.7X52.5) / (482.4 + 4080.8 + 52.5)

Uo: Thermal transmittance for windows
 Ao: Windows area, Ad: Doors area,
 Ud: Thermal transmittance for doors
 Aw: Area of the wall except Ao
 Uoverall = 0.791

REV.	DATE	REMARKS
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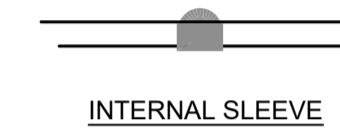
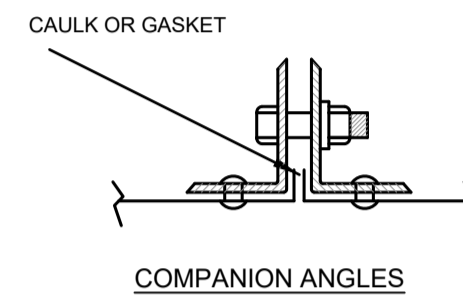
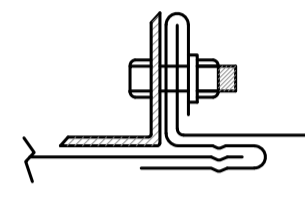
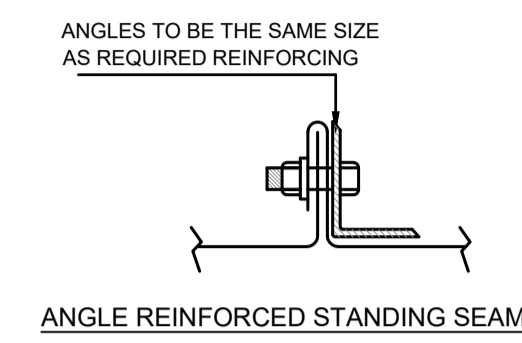
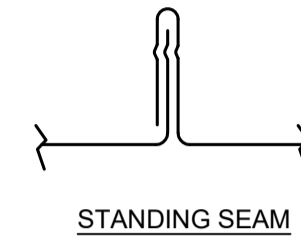
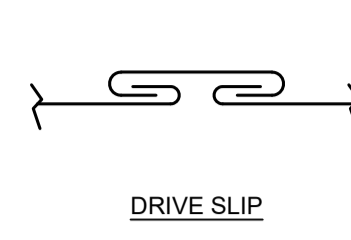
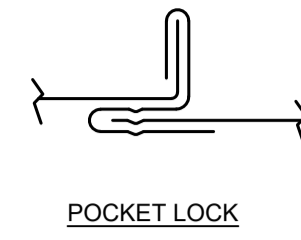
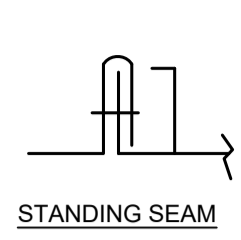
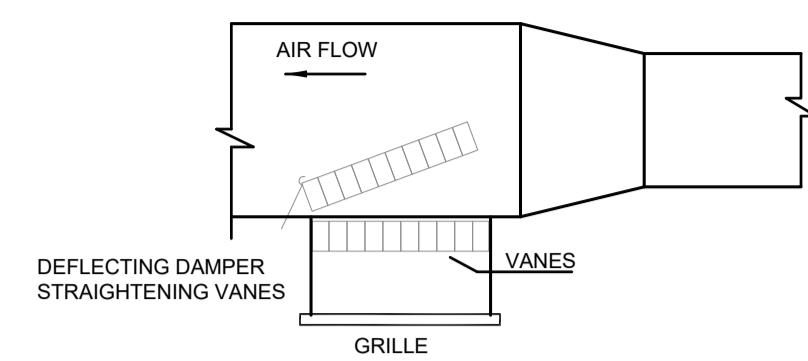
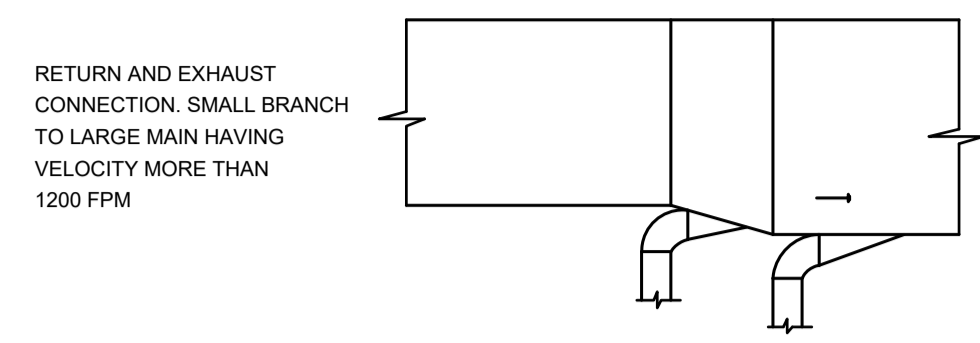
NOTES:



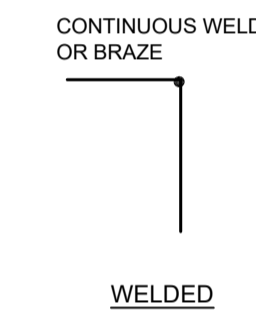
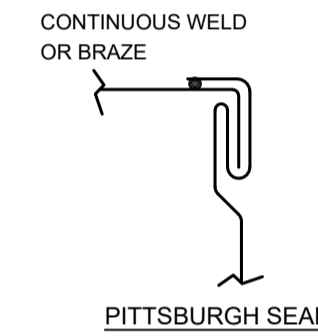
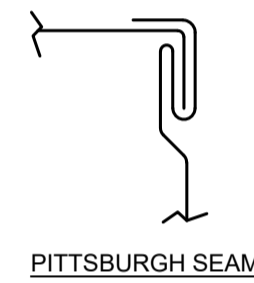
Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
 SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

Design: CAD	Drawn: CAD	Checked: A.J.	North:
SCALE: N.T.S.	Date: June 2019	Approved: W.Z.	
PLOT No: 1496	LOCATION: Marka	BASIN NO: 1 Hanao Al Kassar	DRAWING NUMBER: SKEP 18-GM505

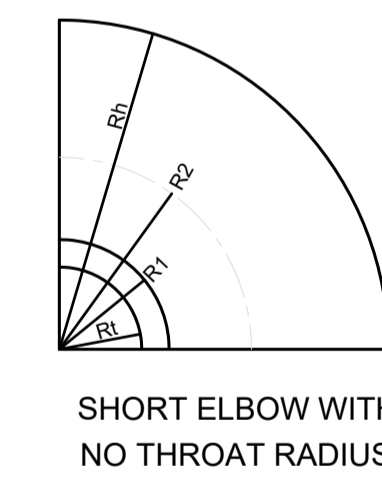
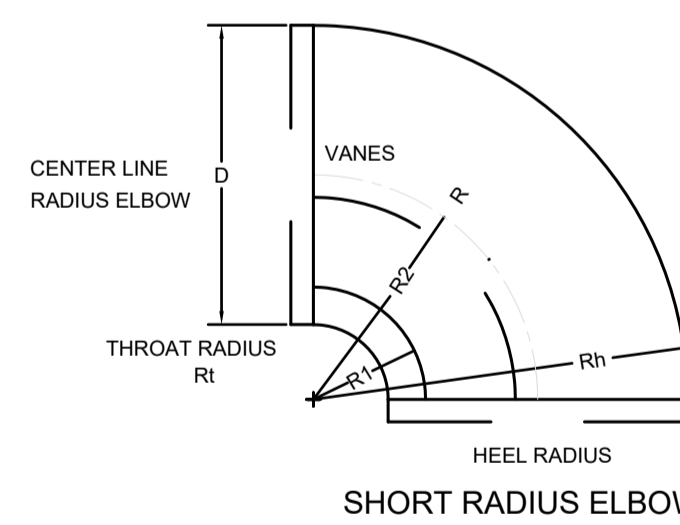
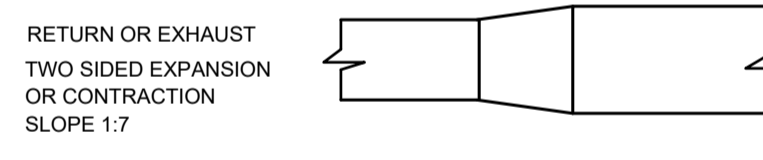
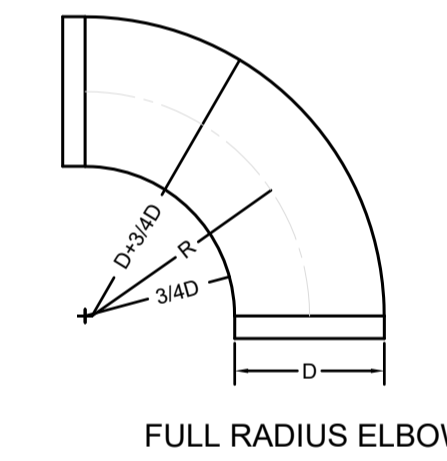
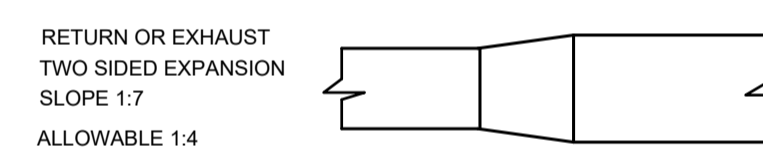
Rev.: 0



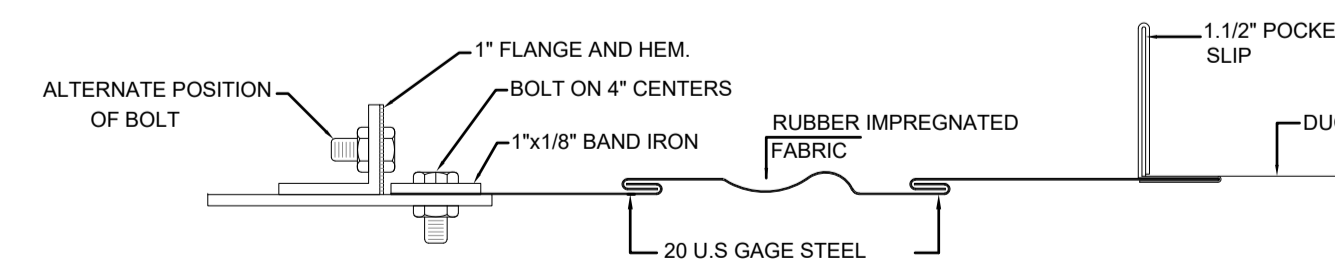
TRANSVERSE FLUSH SEAMS



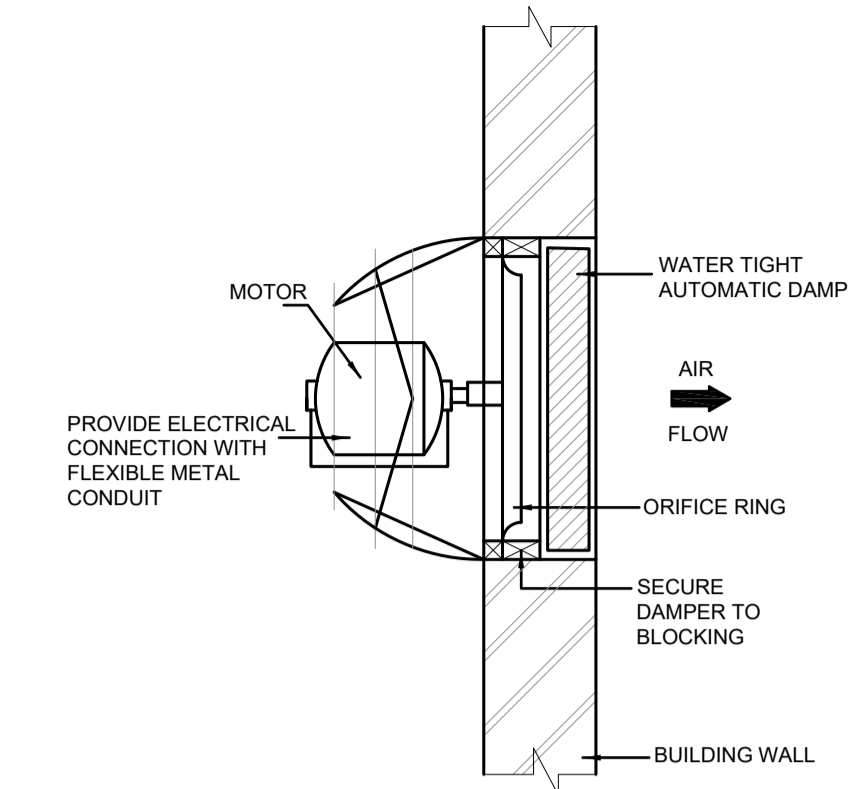
LONGITUDINAL JOINTS



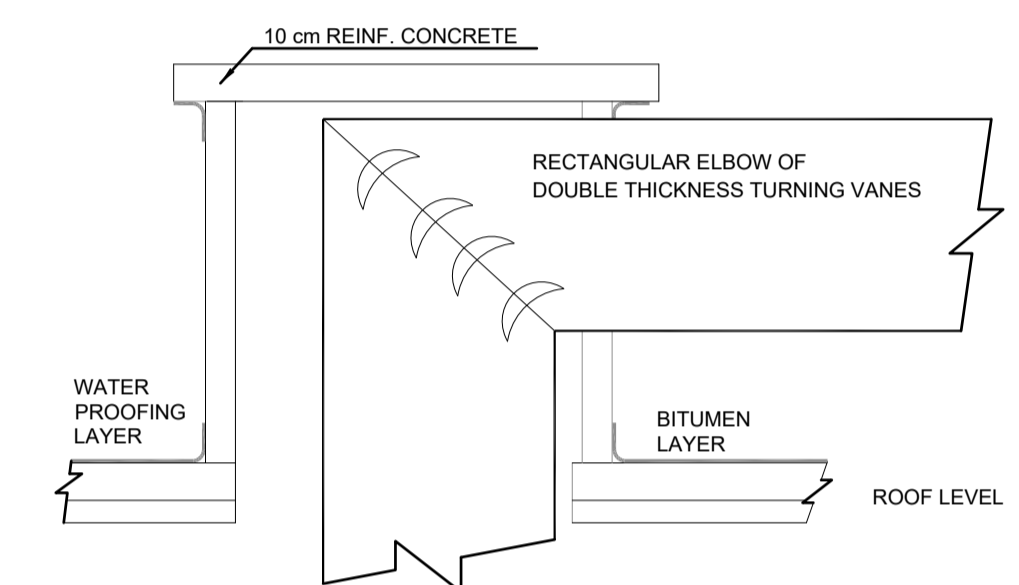
RECTANGULAR DUCT ELBOWS DETAILS (HACV DETAILS)



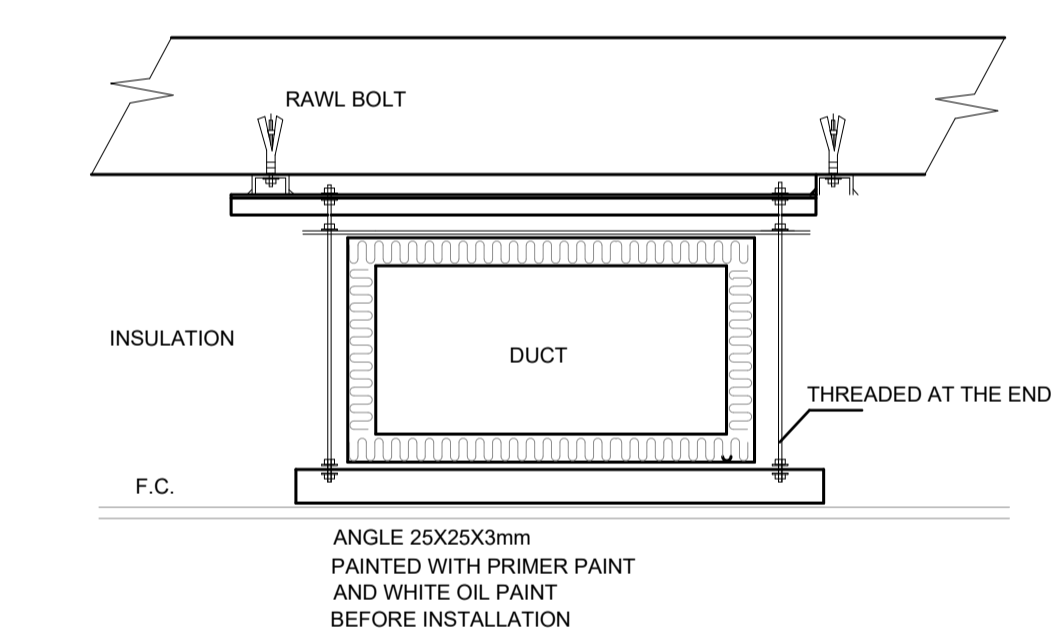
FLEXIBLE CONNECTION DETAIL



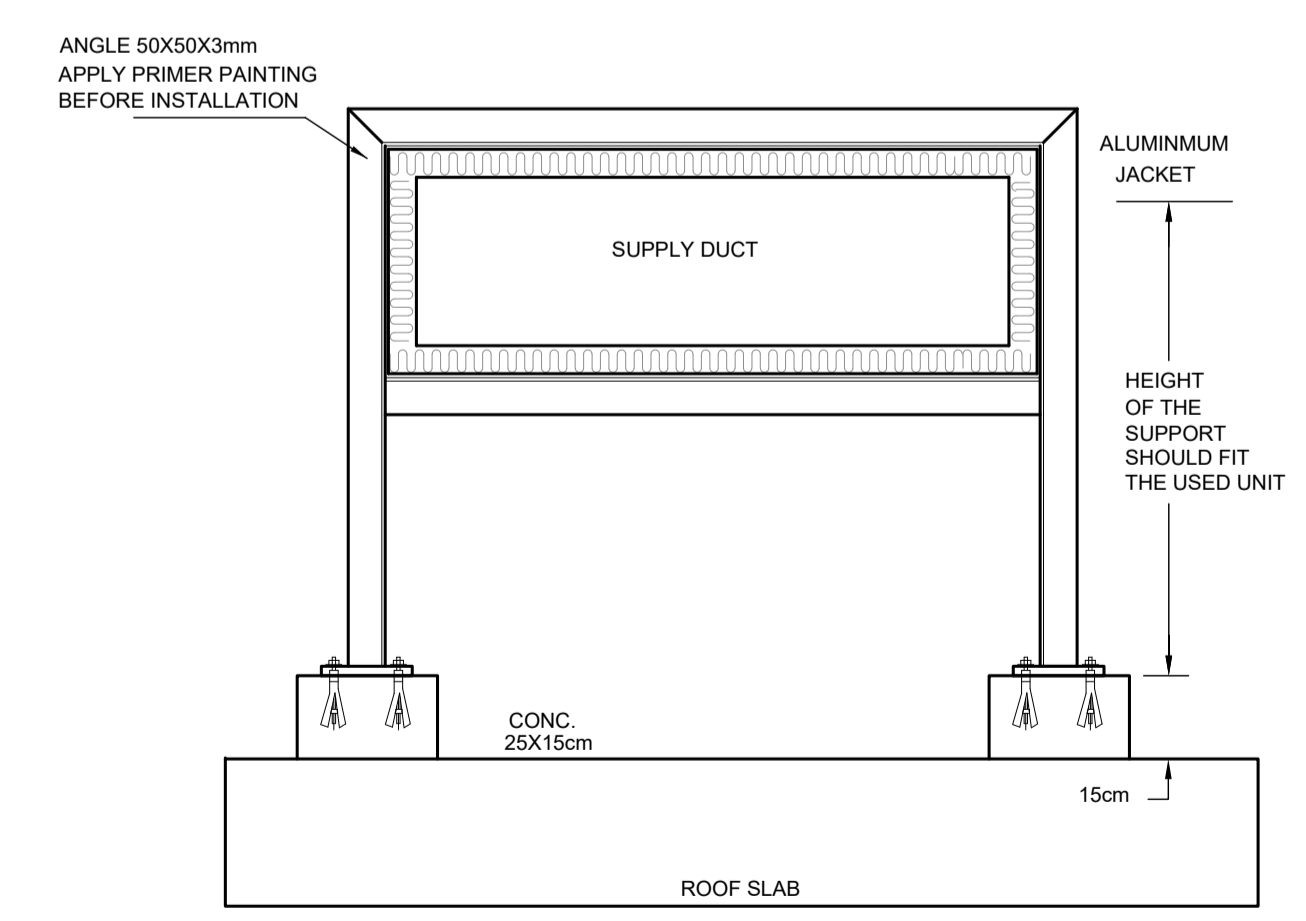
DETAILS OF THE INSTALLATION OF EXTRACT FAN



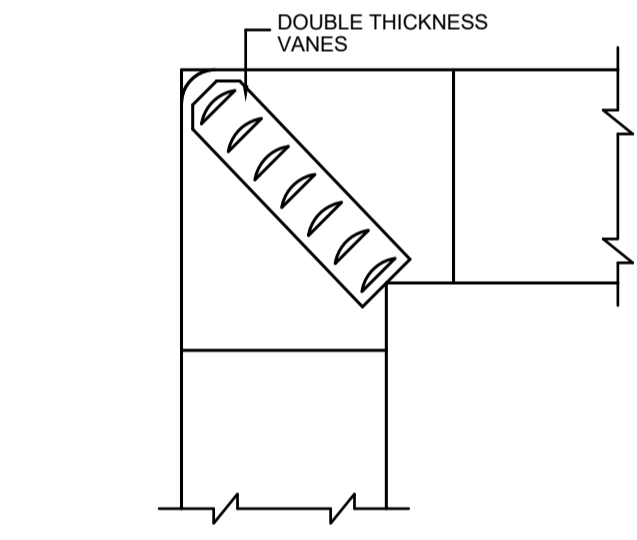
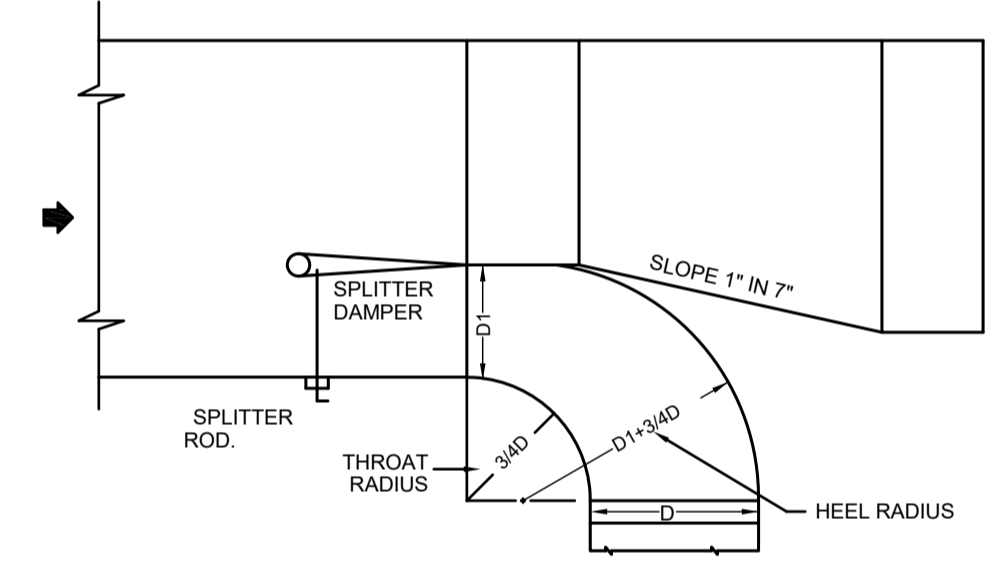
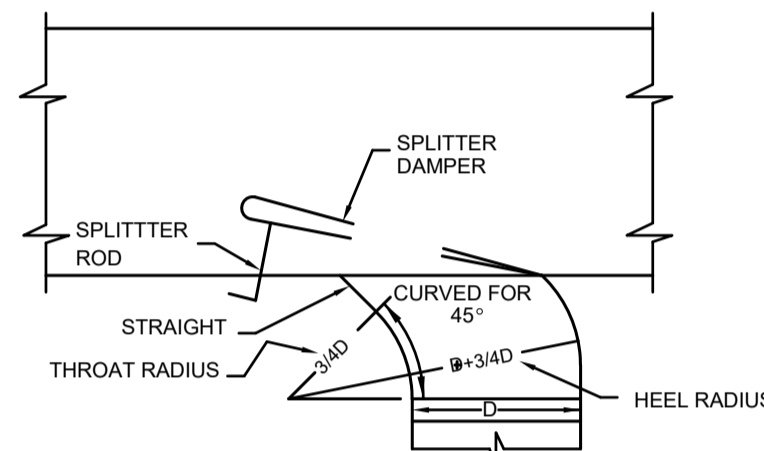
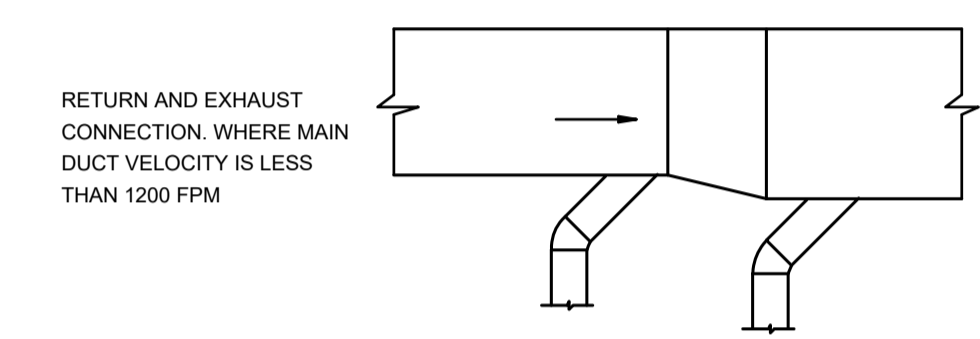
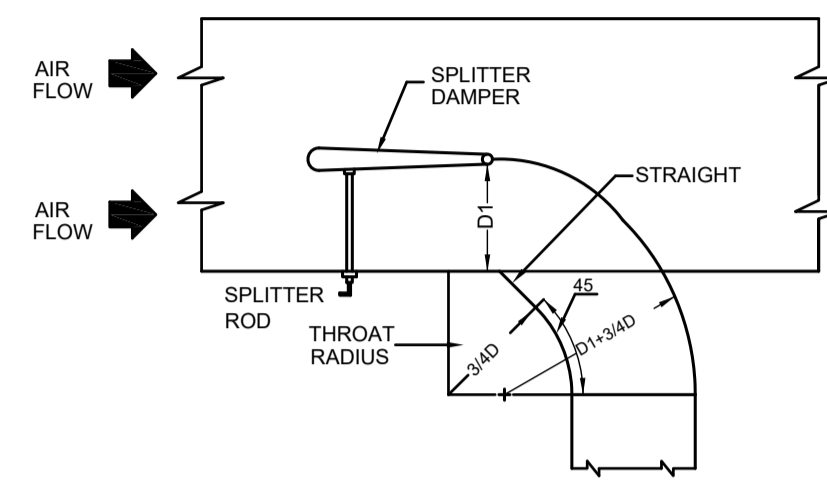
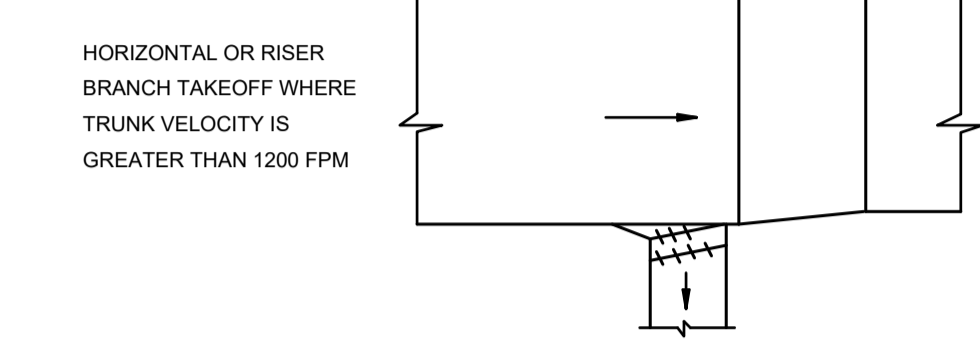
PENETRATION OF DUCTS THROUGH ROOF SLAB



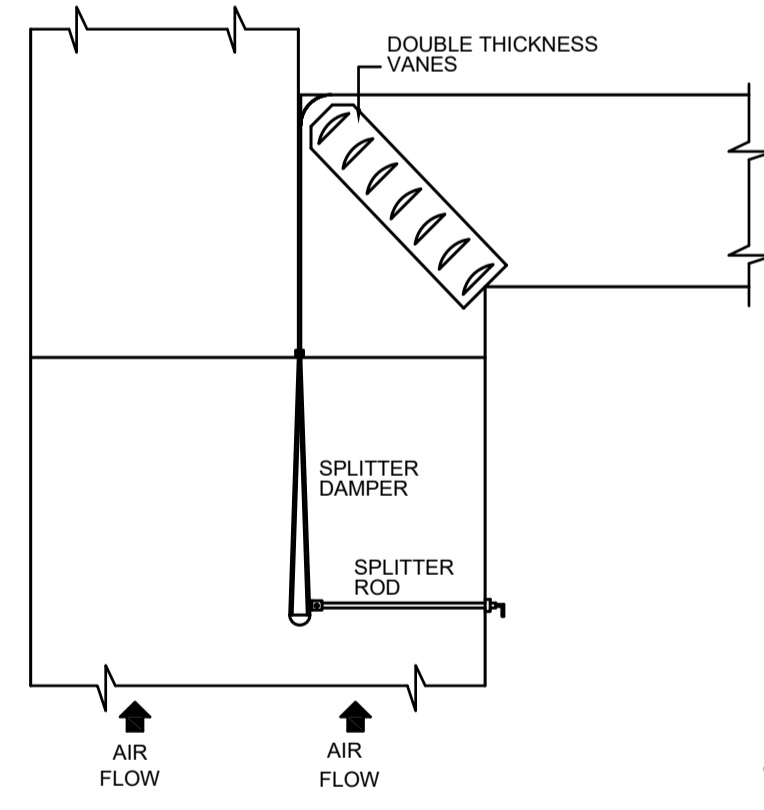
DUCT SUSPENSION FROM CEILING



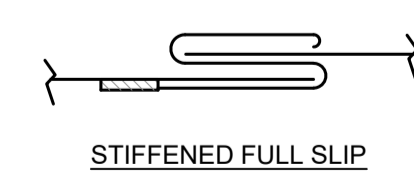
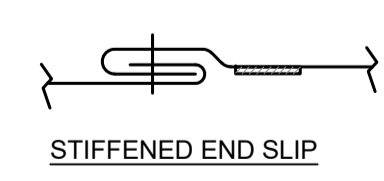
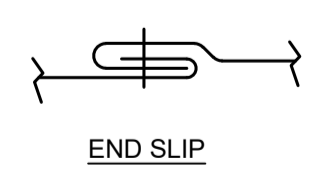
DUCT INSTALLATION ON ROOF



VANED SQUARE ELBOW



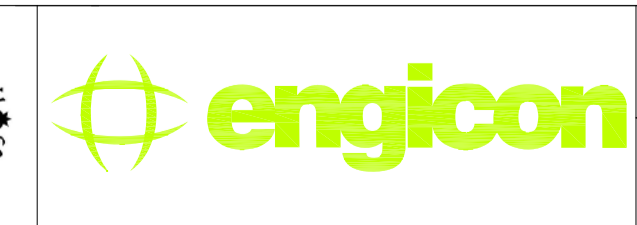
TYPICAL TAKE-OFFS



TRANSVERSE JOINTS

REV.	DATE	REMARKS
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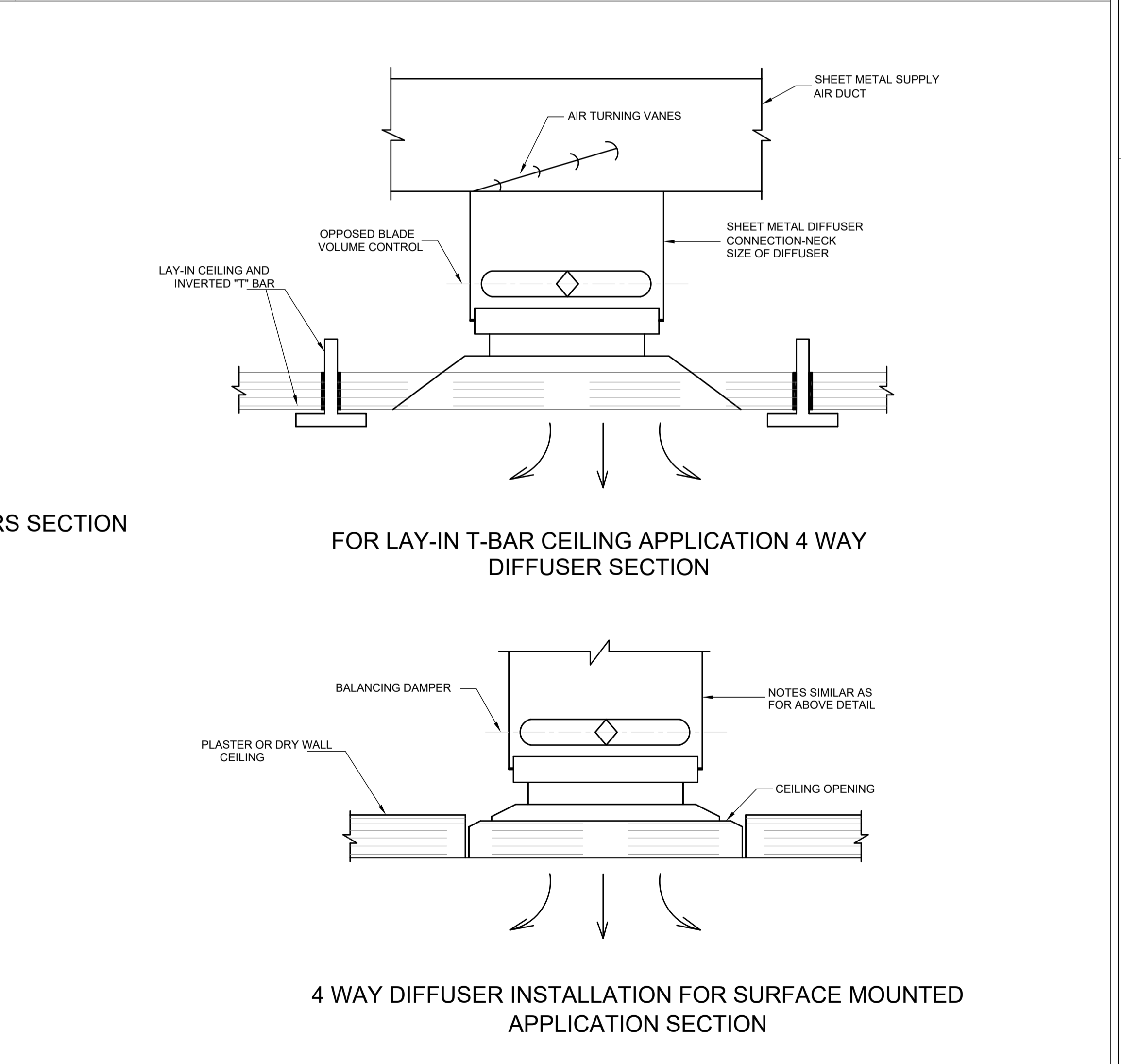
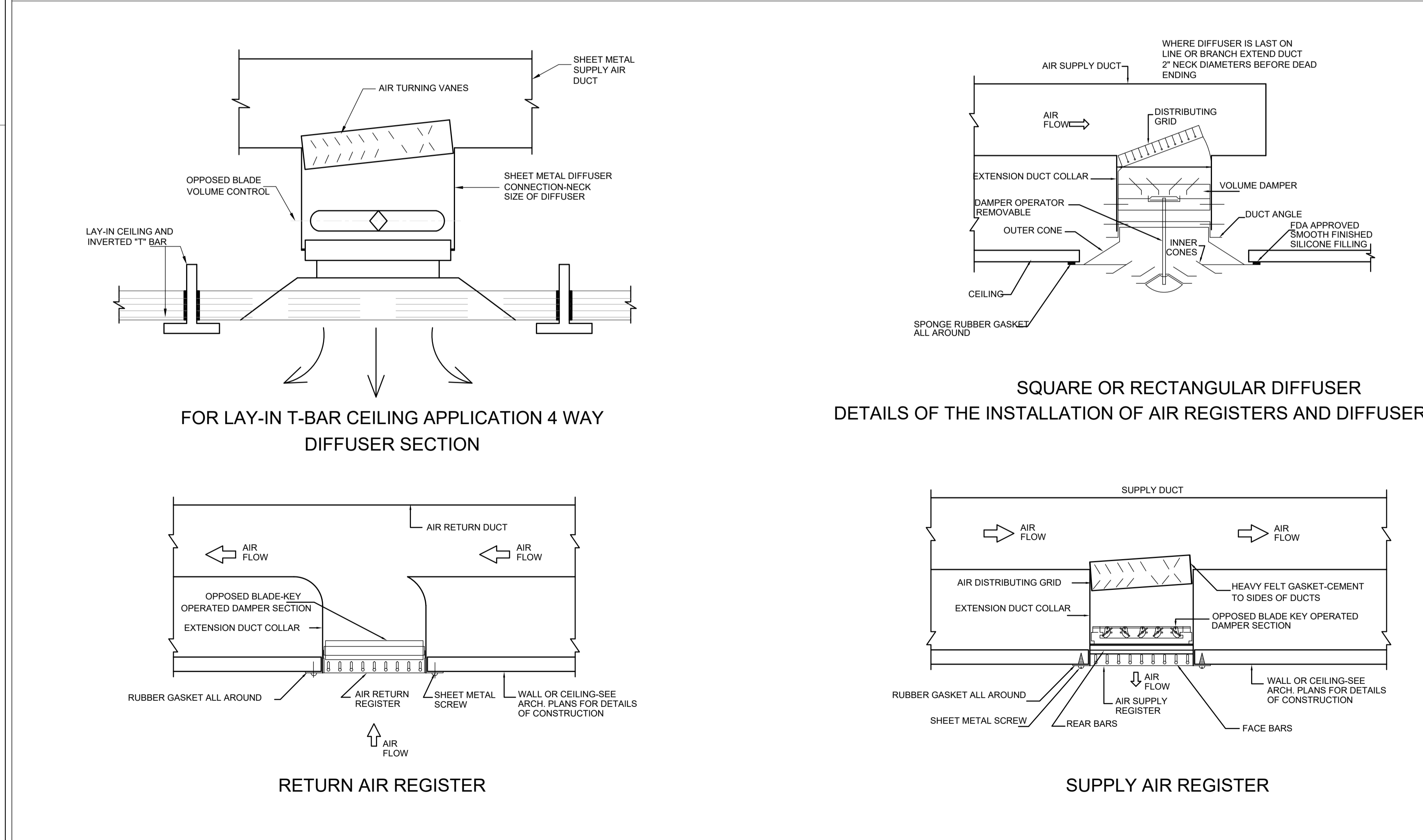
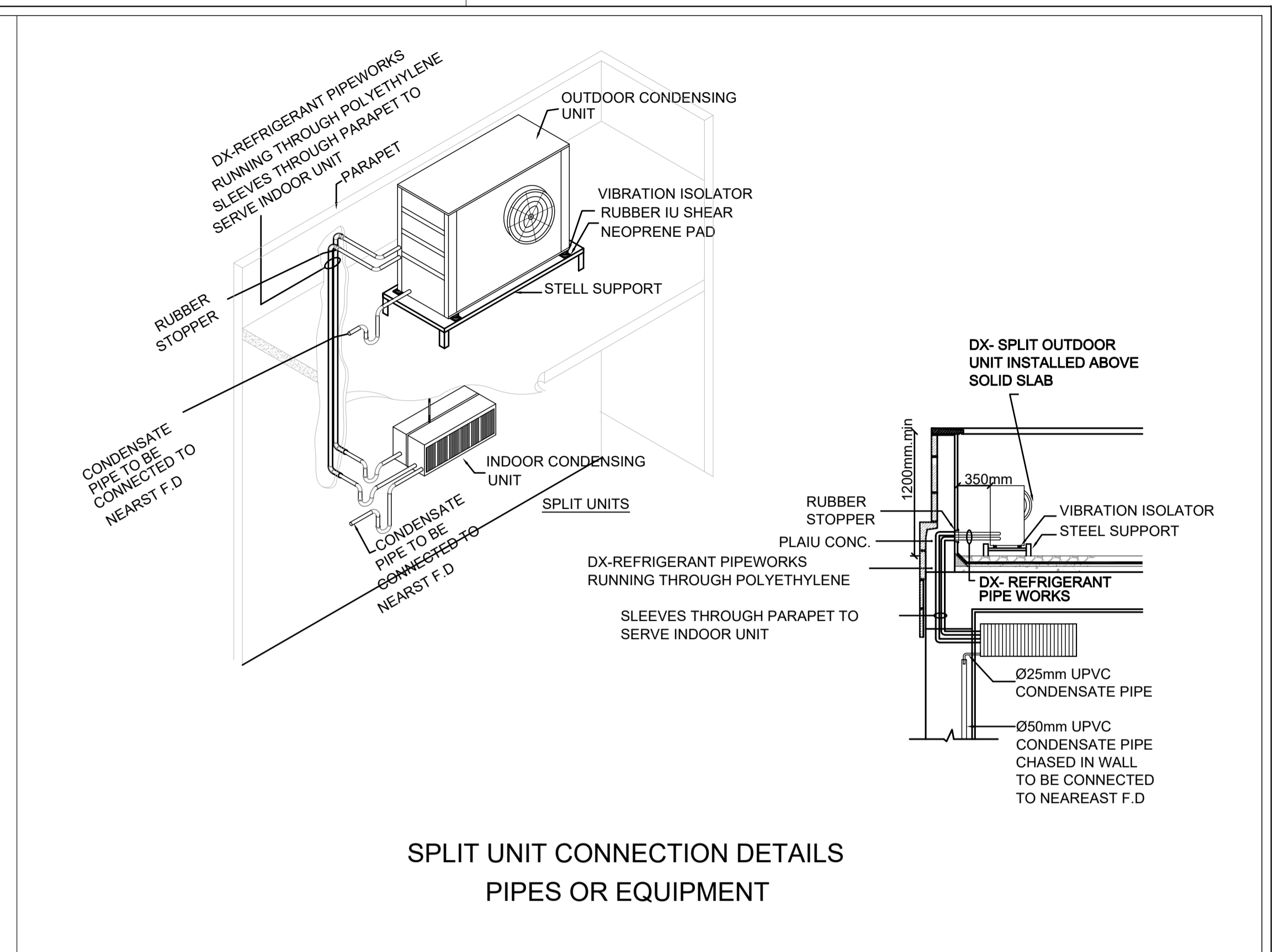
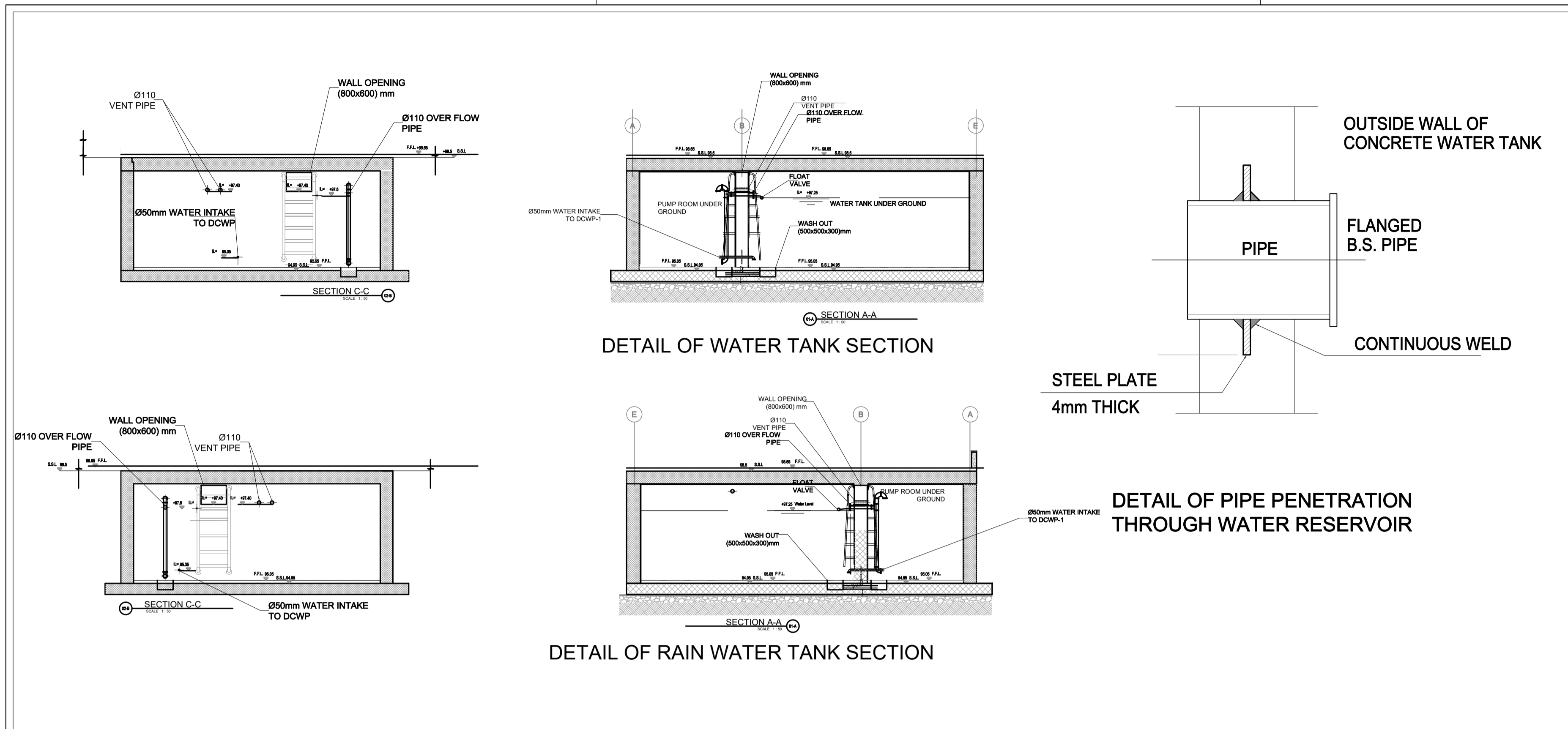
NOTES:



Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

DRAWING NAME:	MECHANICAL GENERAL DETAILS 06
Design:	CAD
Drawn:	CAD
Checked:	A.J.
SCALE:	N.T.S.
Date:	June 2019
Approved:	W.Z.
DRAWING NUMBER:	SKEP 18-GM506
PLOT No:	1496
LOCATION:	Marka
BASIN NO:	1 Hanao Al Kassar

North:	⊕
Rev.:	0



REV.	DATE	REMARKS
0	June 2019	VOL. IV - TENDER DRAWINGS

NOTES:



Jumana Bint Abi Taleb Basic Mixed School (Amman- Marka)
SCHOOLS FOR A KNOWLEDGE ECONOMY PROJECT (USAID SKEP)

DRAWING NAME:
MECHANICAL GENERAL DETAILS 07

Design: CAD
Scale: N.T.S.
Date: June 2019

Drawn: CAD
Date: June 2019

Checked: A.J.
Approved: W.Z.

DRAWING NUMBER:
SKEP 18-GM507

Plot No	Location	Basin No	Rev.
1496	Marka	1 Hanao Al Kassar	0