

EQUIPMENT LOAD														
	Description	Qty (Nos.)	Type Of Socket	Power Ratings (Watt)	Average daily operation time (Hours)	Current Rating (A)	LF	DF	φ	PF	Total Active Power (Watt)	Total Active Power (KW)	Total Apparent Power (VA)	Total 3Ph Load (A)
1	SevenExcellence pH/Cond meter S470	1	13A TWIN POWER SOCKET	72	5	0.30	0.25	0.30	1.00	0.8	5.4	0.0054	3.9	0.01
2	TL2300 Tungsten Lamp Turbidimeter, EPA, 0 - 4000 NTU	1	13A TWIN POWER SOCKET	816	5	3.40	0.25	0.30	1.00	0.8	61.2	0.0612	44.2	0.11
3	Chloride Analyzer M926	1	13A TWIN POWER SOCKET	300	5	1.20	0.25	0.30	1.00	0.8	22.5	0.0225	16.2	0.04
4	DR6000 Spectrophotometer	1	13A TWIN POWER SOCKET	480	5	2.00	0.25	0.30	1.00	0.8	36.0	0.0360	26.0	0.06
5	DR3900 Spectrophotometer	1	13A TWIN POWER SOCKET	480	3	2.00	0.125	0.30	1.00	0.8	18.0	0.0180	13.0	0.03
6	DR1900 Spectrophotometer	1	Portable battery (4xAA) operated											
7	DRB200: Digital Reactor Block - 230 Vac	1	13A TWIN POWER SOCKET	900	1	3.91	0.05	0.3	1	0.8	13.5	0.0135	9.7	0.02
8	Acid Cabinet	This is just a specialized cabinet with no electricity												
9	Protector™ Airo™ Filtered Fume Hoods: 3 ft. Width	1	13A TWIN POWER SOCKET	1150	1	5	0.05	0.5	1	0.8	28.8	0.0288	20.7	0.05
10	QWS4 Water Still, 4L/h	1	15A POWER SOCKET	2880	3	12	0.125	1	3	0.8	360.0	0.3600	259.8	0.65
11	Water Deionizer Direct -Q 3UV	1	15A POWER SOCKET	3000	2	12.5	0.08	1	3	0.8	240.0	0.2400	173.2	0.43
12	Drying Oven 48L	1	13A TWIN POWER SOCKET	1440	2	6	0.08	0.5	1	0.8	57.6	0.0576	41.6	0.10
13	Precision Analytical Balance 310g Capacity	1	13A TWIN POWER SOCKET	552	4	2.3	0.15	0.3	1	0.8	24.8	0.0248	17.9	0.04
14	Electronic Balance 2200g capacity	1	13A TWIN POWER SOCKET	624	2	2.6	0.08	0.3	1	0.8	15.0	0.0150	10.8	0.03
15	Portable Colorimeter	2	Portable battery (4xAA) operated											
16	1L Blender	2	13A TWIN POWER SOCKET	360	1	3	0.05	0.3	1	0.8	10.8	0.0108	7.8	0.02
17	Laboratory Refrigerator	1	15A POWER SOCKET	400	24	15	1	0.75	3	0.8	300.0	0.3000	216.5	0.54
18	Hot Plate Stirrer, Ambient to 540°C, Ceramic	2	13A TWIN POWER SOCKET	744	1	3.1	0.08	0.3	1	0.8	35.7	0.0357	25.8	0.06
19	Temp and Humidity monitor	1	Battery operated											
20	Precision Low Temperature Refrigerated Incubator, 173L	1	13A TWIN POWER SOCKET	1334	24	5.8	1	0.5	1	0.8	667.0	0.6670	481.4	1.20
21	A600 Vertical Laminar flow fume hood	1	13A TWIN POWER SOCKET	924	3	4.2	0.125	0.3	1	0.8	34.7	0.0347	25.0	0.06
22	HQ440D Oxygen Demand Meter with Optical LBOD101 Sensor	1	13A TWIN POWER SOCKET	1080	6	4.5	0.5	0.5	1	0.8	270.0	0.2700	194.9	0.49
23	Automated Electronic Benchtop Sterilizers (19L)	1	15A POWER SOCKET	2880	3	12	0.125	1	3	0.8	360.0	0.3600	259.8	0.65
24	Temp and Humidity monitor	1	Battery operated											
25	Laboratory Refrigerator	2	15A POWER SOCKET	400	24	15	1	0.75	3	0.8	600.0	0.6000	433.0	1.08
26	Top loading Autoclave 60L	1	15A POWER SOCKET	3220	24	15	1	1	3	0.8	3220.0	3.2200	2323.9	5.81
27	Incubator (Micro)	4	13A TWIN POWER SOCKET	1150	24	5.8	1	0.5	1	0.8	2300.0	2.3000	1659.9	4.15
28	Vacuum Pump, 3.5 CFM, 60 Hz	1	13A TWIN POWER SOCKET	920	2	4	0.08	0.3	1	0.8	22.1	0.0221	15.9	0.04
29	Quanti-tray Sealer	1	13A TWIN POWER SOCKET	2400	2	5.8	0.08	1	1	0.8	192.0	0.1920	138.6	0.35
30	Temp and Humidity monitor	1	Battery operated											
31	Colony Counter 220 Vac, 50Hz	1	13A TWIN POWER SOCKET	800	2	3.64	0.08	0.3	1	0.8	19.2	0.0192	13.9	0.03
												8.9142	6.4	16.08












<b>Total Amps (3Ph)</b>	<b>16.08</b>
-------------------------	--------------

LOAD CALCULATION - OFFICE												
Description	Mode Of Operation	QTY	KW	PF	Per Unit (kVA)	Operating Hours	Total (kVA)	Load Factor	Demand Factor	Total Active Power (kW)	Total Active Power (kVA)	Load (400V)
13A TWIN POWER SOCKET	MANUAL	28	2.30	0.8	2.88	8	80.50	0.5	0.3	9.66	6.97	17.43
13 A POWER SOCKET	MANUAL	4	1.15	0.8	1.44	8	5.75	0.5	0.3	0.69	0.50	1.24
15 A POWER SOCKET W/EQUIPMENT												
CEILING LIGHT (12W)	MANUAL	19	0.01	0.8	0.01	12	0.24	0.5	1	0.095	0.07	0.17
CEILING SPOT LIGHT (5W)	MANUAL	9	0.01	0.8	0.01	8	0.11	0.5	1	0.045	0.03	0.08
CEILING MOUNT EXHAUST FAN 90M3/HR	MANUAL	1	0.08	0.8	0.10	8	0.10	0.33	0.5	0.0132	0.01	0.02
WEATHER PROOF WALL LIGHT	MANUAL	16	0.01	0.8	0.01	12	0.20	0.5	1	0.08	0.06	0.14
WEATHER PROOF CEILING LIGHT	MANUAL	8	0.01	0.8	0.01	12	0.10	0.5	1	0.04	0.03	0.07
9 KBTU AIR CONDITIONER	MANUAL	1	2.60	0.8	3.25	12	3.25	1	0.75	1.95	1.41	3.52
18 KBTU AIR CONDITIONER	MANUAL	3	5.20	0.8	6.50	12	19.50	1	0.5	7.8	5.63	14.07
										20.3732	14.70	36.76

LOAD CALCULATION - LABS												
Description	Mode Of Operation	QTY	KW	PF	Per Unit (kVA)	Operating Hours	Total (kVA)	Load Factor	Demand Factor	Total Active Power (kW)	Total Active Power (kVA)	Load (400V)
13A TWIN POWER SOCKET	MANUAL	9	2.30	0.8	2.88	12	25.88	0.5	0.3	3.105	2.24	5.60
13A TWIN POWER SOCKET W/EQUIPMENT	MANUAL	15										
13A POWER SOCKET	MANUAL	3	1.15	0.8	1.44	8	4.31	0.5	0.3	0.5175	0.37	0.93
CEILING LIGHT	MANUAL	22	0.01	0.8	0.01	12	0.28	0.5	1	0.11	0.08	0.20
15A POWER SOCKET	MANUAL											
15A POWER SOCKET W/EQUIPMENT AT HIGH LEVEL	MANUAL	6										
18 KBTU AIR CONDITIONER	MANUAL	2	5.20	0.8	6.50	24	13.00	1	0.5	5.2	3.75	9.38
12 KBTU AIR CONDITIONER	MANUAL	4	3.50	0.8	4.38	24	17.5	1	0.5	7	5.05	12.63
<b>EQUIPMENT LOAD</b>										8.91	6.43	16.08
<b>TOTAL</b>										24.85	17.93	44.83

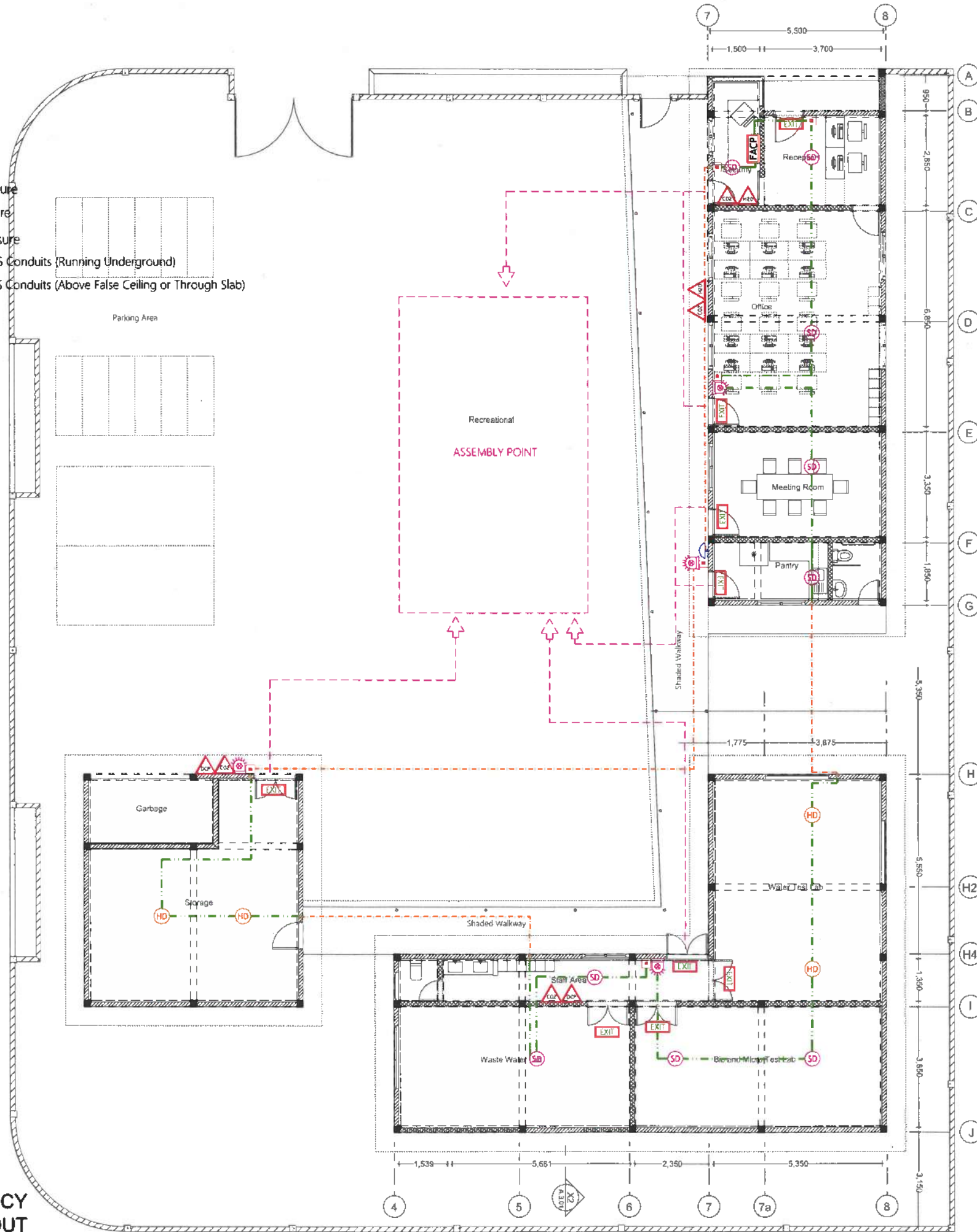
LOAD CALCULATION - STORE												
Description	Mode Of Operation	QTY	KW	PF	Per Unit (kVA)	Operating Hours	Total (kVA)	Load Factor	Demand Factor	Total Active Power (kW)	Total Active Power (kVA)	Load (400V)
13A TWIN POWER SOCKET	MANUAL	6	2.30	0.8	2.88	12	17.25	0.5	0.3	2.07	1.49	3.73
13A POWER SOCKET	MANUAL	2	1.15	0.8	1.44	8	2.88	0.5	0.3	0.345	0.25	0.62
15A POWER SOCKET W/EQUIPMENT												
18 KBTU AIR CONDITIONER	MANUAL	2	5.20	0.8	6.50	12	13.00	1	0.5	5.2	3.75	9.38
										7.615	5.50	13.74
<b>OVERALL</b>										52.83	38.13	95.33

**LEGEND**

-  Manual Call Point
-  Smoke Detector
-  Heat Detector
-  Sounder Bell (85 dB)
-  Fire Alarm Control Panel (Addressable)
-  CO<sub>2</sub> Extinguisher (load: 2kg) In Polycarbonate Enclosure
-  H<sub>2</sub>O Extinguisher (load: 9L) In Polycarbonate Enclosure
-  DCP Extinguisher (load: 6kg) In Polycarbonate Enclosure
-  2.5 sqmm Fire Retardant Low Smoke (FRLS) Cables In FRLS Conduits (Running Underground)
-  2.5 sqmm Fire Retardant Low Smoke (FRLS) Cables In FRLS Conduits (Above False Ceiling or Through Slab)
-  Exit Sign

**Notes: -**

- All relevant sign boards according to regulation 2019/R-1057 will be displayed in the Storage.
- AC will be provided in the Storage.
- The entrance door of the Storage is 90min fire rated door.
- Electrical lights, sockets and switches installed in the Storage shall be explosion proof.
- Explosion proof cameras are installed in the the Storage area.



**GROUND FLOOR FDP & EMERGENCY EVACUATION LAYOUT**  
1:100




**APPROVED BY**  
**FIRE AND RESCUE SERVICE**  
**MALDIVES NATIONAL DEFENCE FORCE**

Your Ref: (MEMO) 28-LA-1/28/2021/2541  
 Our Ref: MNDF-DB-P/28/2021/550  
 Date: 25-08-21  
 Checked By: *Sgt Mohamed Ashraf* Signature

PROPOSED SINGLE STOREY BUILDING AT  
**Regional Laboratory, HDH, Hanimaadhoo**  
 Client: Ministry Of Environment

June 2021

Services By: **Mohamed Rassam**  
 Checked By:  
 Drawn By: **Hussain Rasheed**



**EPOCH**

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 101, www.epochassociates.mv, G. Remy Street, Maamuraa Magu, Malé, Republic of Maldives

Rev: ..... Page: .....  
 .....  
 .....  
**FDP-01**





**Ministry of Environment**  
Male', Republic of Maldives.

ދިވެހިސަރުކާރުގެ ގެޒެޓް ގައި  
ބަޔާންކުރި ގޮތުގައި

ސަރުކާރުގެ ނަންބަރު: 438-WS/PRIV/2021/158

އިތުރު ފަންޓްޕްލާނުގެ ދަށުން ޖަދުވަލު 1 ގައި ބަޔާންކުރި ގޮތުގައި ޖަދުވަލު 1 ގައި

ސަފުޔާކުރުމުގެ

ޖަދުވަލު 1 ގައި ބަޔާންކުރި ގޮތުގައި.

ސަރުކާރުގެ ނަންބަރު 438-WS/PRIV/2021/158 ގެ ދަށުން

ސަރުކާރުގެ ނަންބަރު 438-WS/PRIV/2021/158 ގެ ދަށުން ޖަދުވަލު 1 ގައި ބަޔާންކުރި ގޮތުގައި ޖަދުވަލު 1 ގައި  
ބަޔާންކުރި ގޮތުގައި ޖަދުވަލު 1 ގައި ބަޔާންކުރި ގޮތުގައި ޖަދުވަލު 1 ގައި ބަޔާންކުރި ގޮތުގައި ޖަދުވަލު 1 ގައި  
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23 ސެޕްޓެމްބަރު 2021

05 ޕްރިލް 2021

އިތުރު ފަންޓްޕްލާނުގެ  
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ބަޔާންކުރި ގޮތުގައި ޖަދުވަލު 1 ގައި

11





LAND ALLOCATION MAP

PROPOSED SINGLE STOREY BUILDING AT

**REGIONAL LABORATORY FACILITY , HDH.HANIMAADHOO**

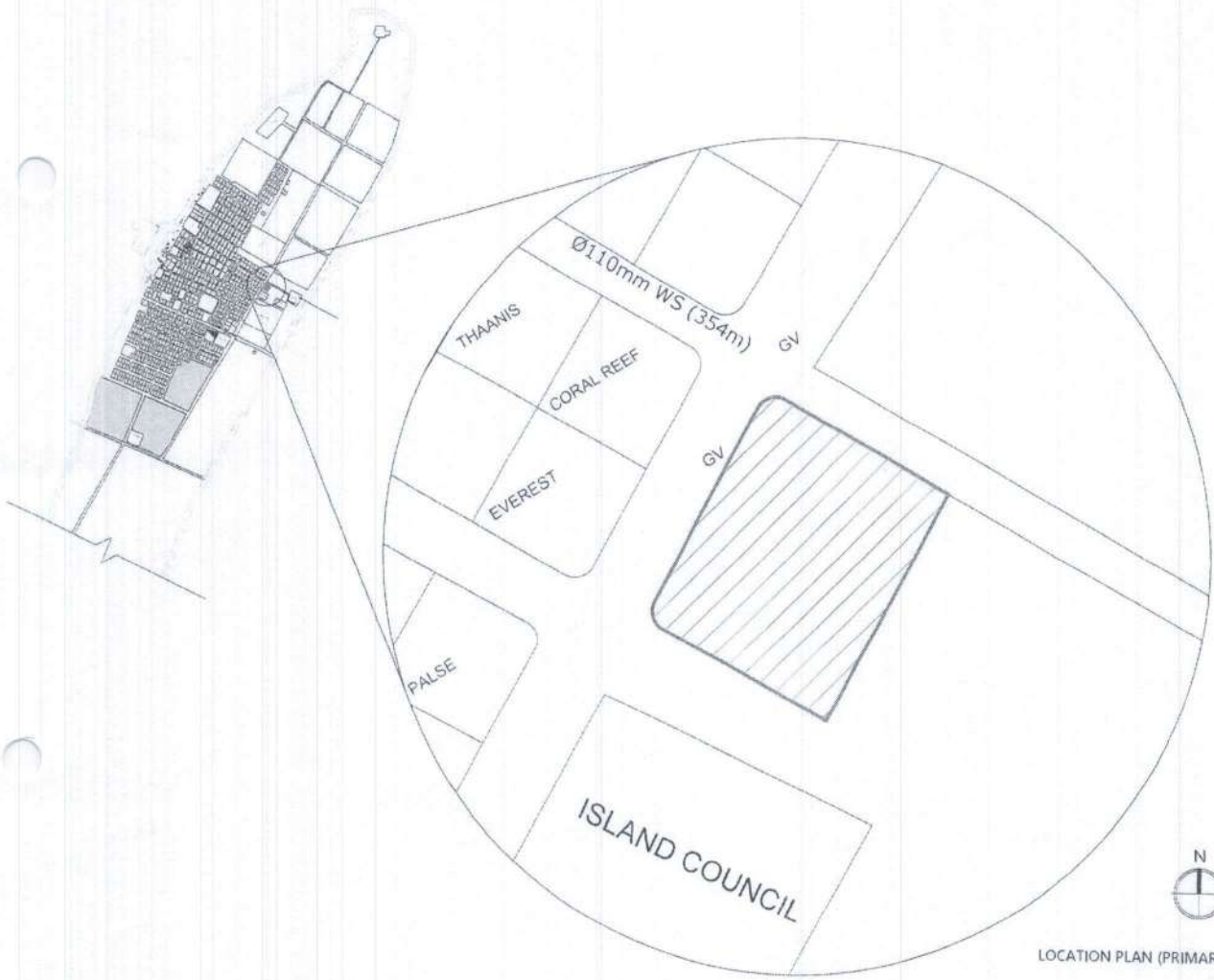
For Ministry of Environment, Male', Maldives



EPOCH

Environmental Protection and Control Agency





LOCATION PLAN (PRIMARY)

Regional Laboratory  
Hdh.Hanimaadhoo

Environmental Study

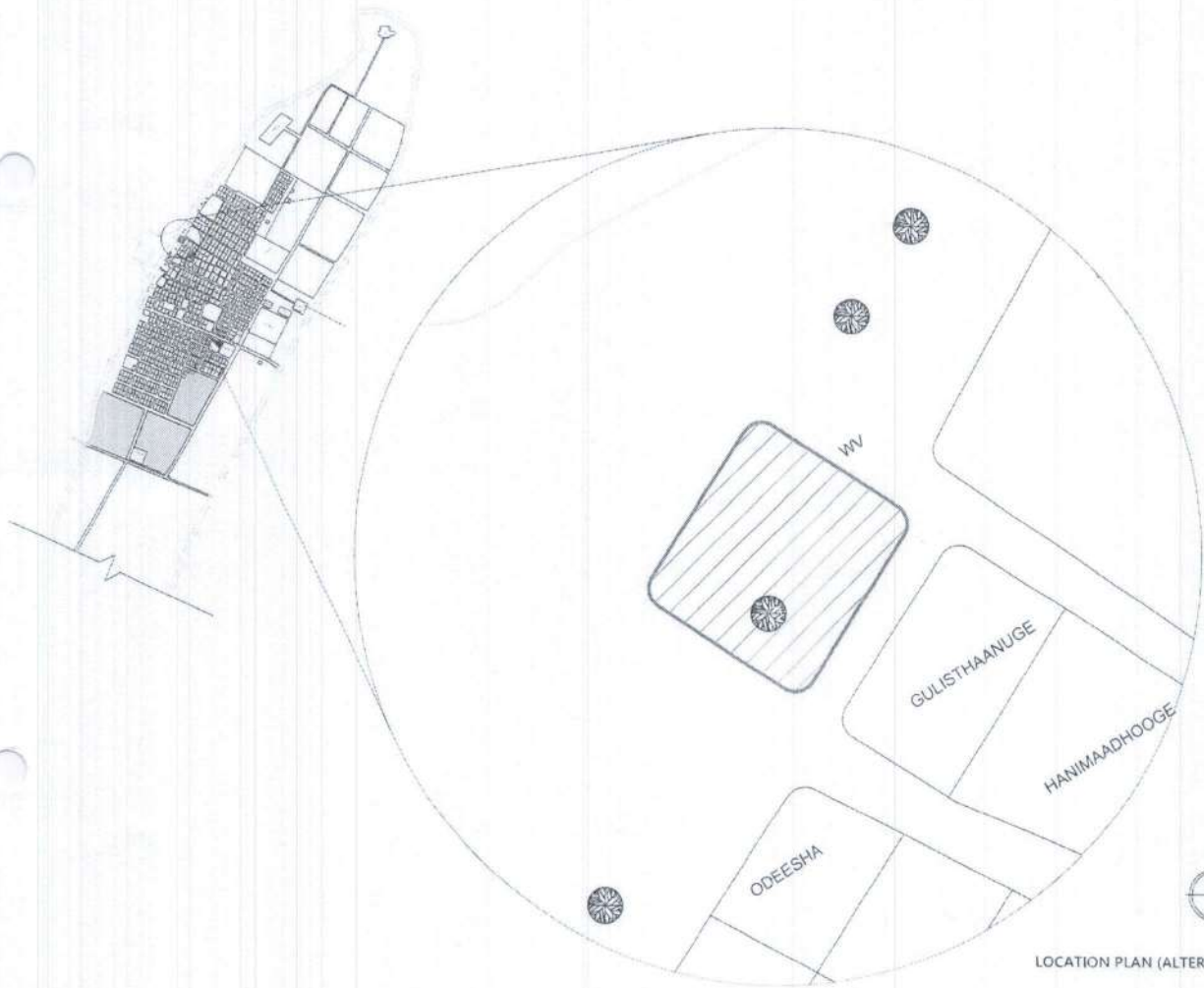
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Project: Environmental Study

Client: EPOCH

Sheet: A.1 (1)





LOCATION PLAN (ALTERNATE)

Regional Laboratory  
Hdh. Hanimaadhoo

Endamman Mottay

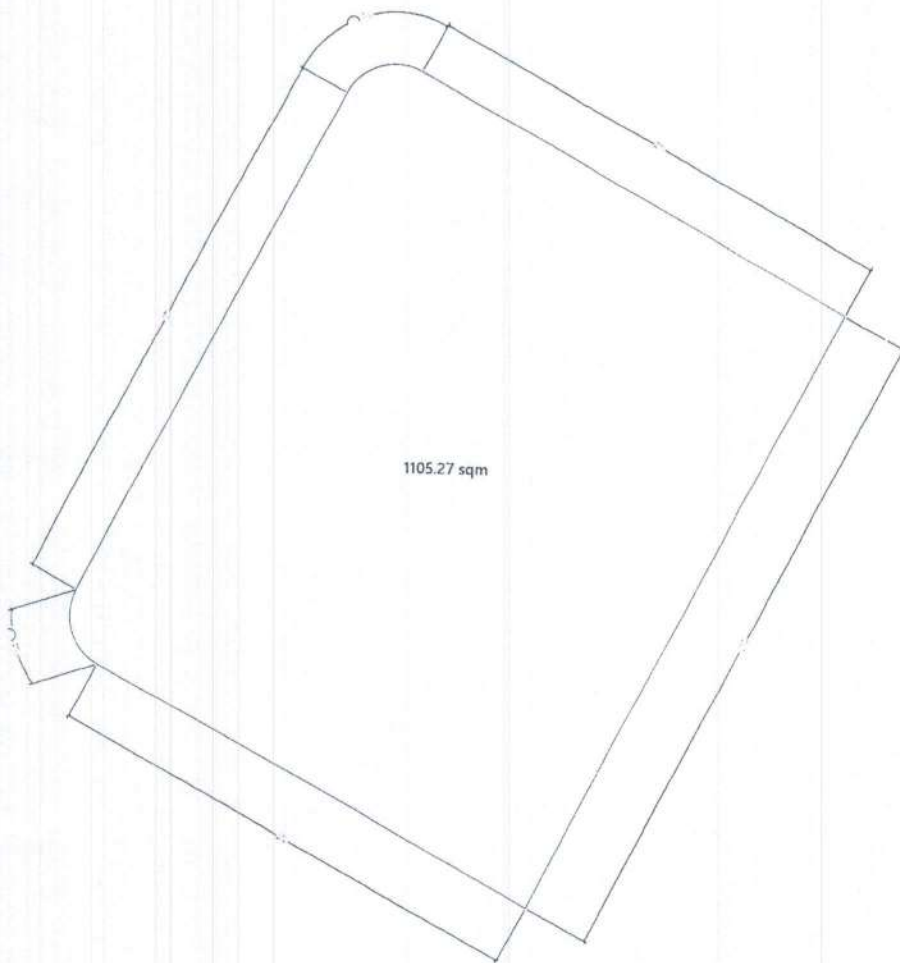
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Project: PROJECT/PLAN/NO

**EPOCH**

A.1 (2)





SITE PLAN (PRIMARY)

PROPOSED SPALL (CORE) BUILDING AT  
**Regional Laboratory**  
Hdh.Hanimaadhoo

Ministry of  
Environment Ministry

Misery 2021

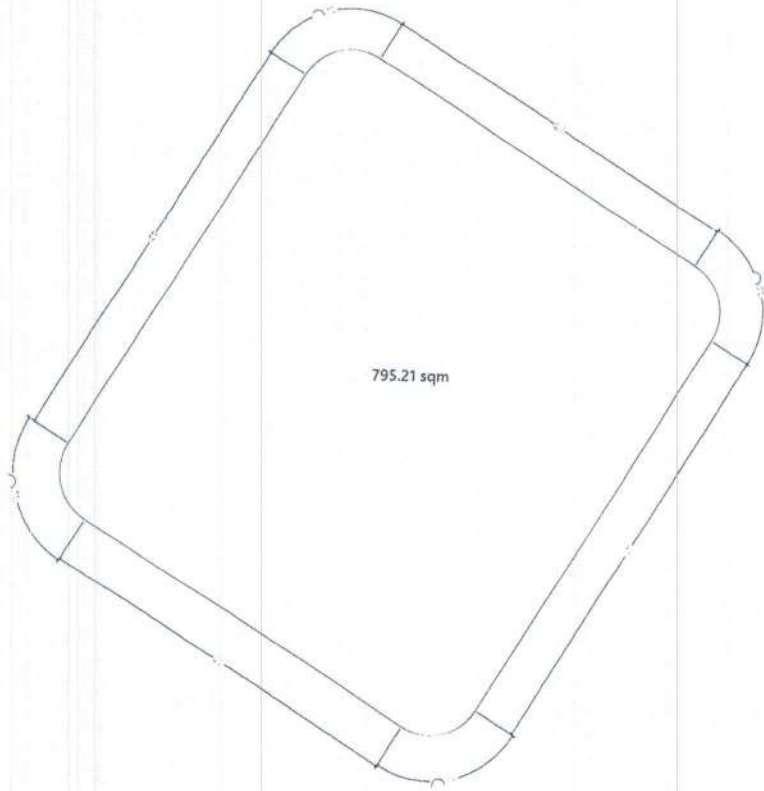
Author: -  
Designer: -  
Checked by: Ahmed Riyaz Wahneer



**EPOCH**

Environmental Protection & Conservation  
Ministry of Environment & Urban Planning  
Maldives

Scale: A.2 (1)




SITE PLAN (ALTERNATE)

PROPOSED SINGLE STOREY BUILDING AT  
**Regional Laboratory**  
Hdh.Hanimaadhoo

Ministry  
Environment Ministry

Version 2/01

Area: A  
Project:  
Client: **Ahmed Ryad Wahed**

  
**EPOCH**  
Engineering & Planning  
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Fax: +966 2 460 1101 | Email: info@epoch.com.sa

Scale: 1:500  
Sheet: **A.2 (2)**



# Hdh.Hanimaadhoo Regional Laboratory Design

## ARCHITECTURAL & STRUCTURAL DRAWINGS

Ministry of  
Environment,  
Maldives

## Sheet Index

Layout ID	Layout Name	Revision	Issued	Published	Remark
	Cover		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Sheet Index		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.1.01	Site Plan		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.2.01	Ground Floor Plan		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.2.02	Ground Floor Blow up Plans 01		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.2.03	Ground Floor Blow up Plans 02		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.2.04	Roof Plan		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.2.05	Roof Blow up Plans 01		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.2.06	Roof Blow up Plans 02		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.2.07	Ceiling Plan		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.2.08	Finishes Table		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.2.09	Furniture Layout		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.2.10	Furniture Inventory		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.3.01	Section 1		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.4.01	Elevation 1		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.5.01	All Opening Schedule		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
A.5.02	All Opening Schedule		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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B.1.02	Foundation Blow up Plans 01		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
B.1.03	Foundation Blow up Plans 02		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
B.2.01	Roof Beam and Truss Plan		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
B.2.02	Roof Framing Plan		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C.1.1	Structural Details 01		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C.1.2	Structural Detail 02		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C.1.3	Boundary Wall Detail		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C.1.4	Gate Detail		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C.1.5	Shelf Detail		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C.1.6	Cabinet		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C.1.7	Cabinet 2		<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Proposed

## Hdh.Hanimaadhoo Regional Laboratory Design

Client

Ministry of Environment,  
Maldives

8/22/2021

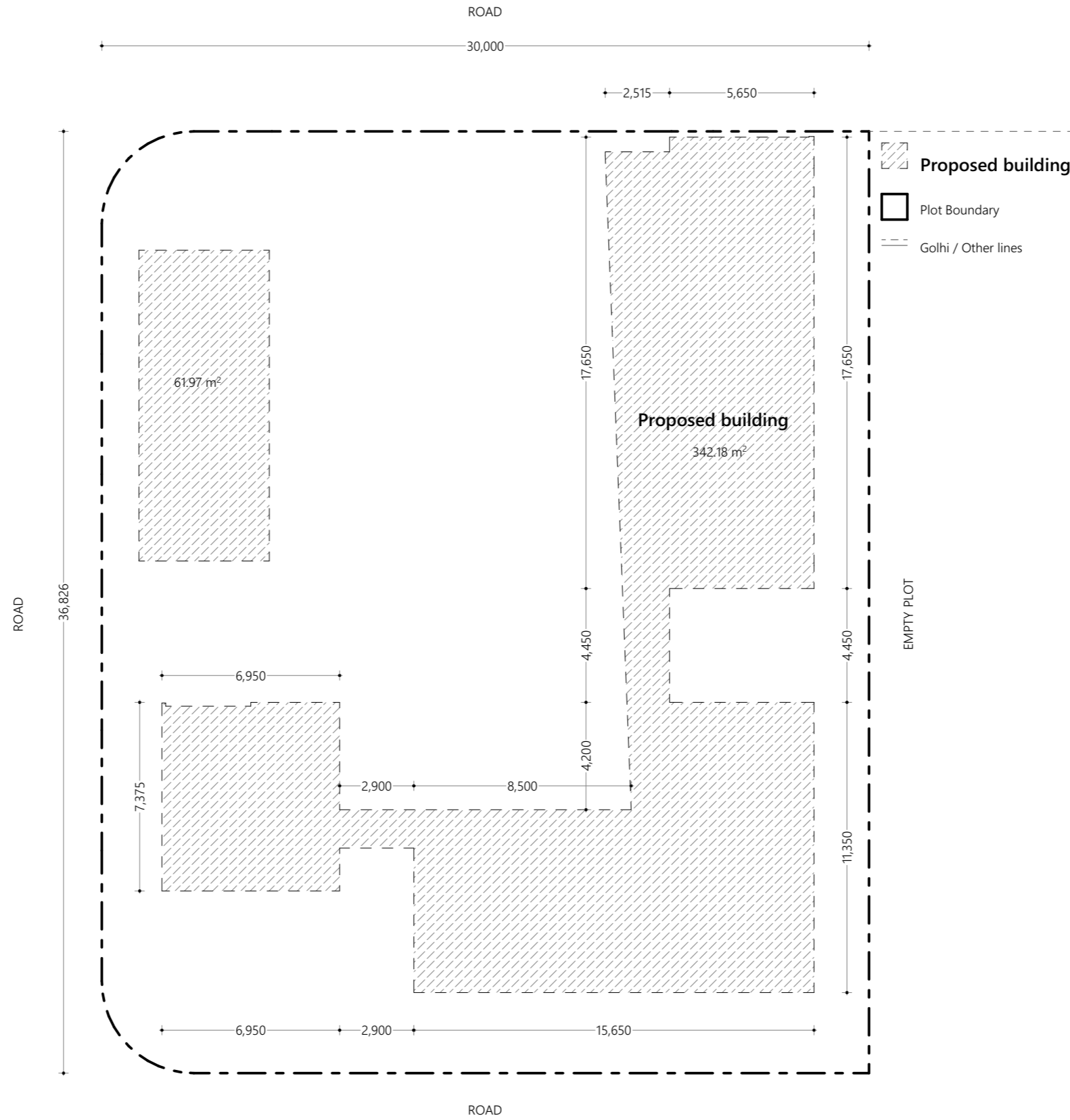
Architect **Fathmath Ihdha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**



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W epochassociates A G.Rosary West 3rd Floor,  
Husnuheena Magu, Male', Maldives

Rev:

Page:



### Building Information List

<b>Plot Area :</b>	(plot area)
<b>Footprint Area :</b>	(ground slab area)
<b>Built-up Area :</b>	(total area of all slabs)
<b>Longest Length :</b>	(length of footprint)
<b>Width Coefficient :</b>	(recheck from regulation)
<b>Open Areas :</b>	(voids and open areas)
<b>Building Height :</b>	(building height)
<b>Road Width :</b>	(width of road)

Site Plan  
1:200



Proposed  
**Hdh.Hanimaadhoo  
Regional  
Laboratory Design**

Client  
**Ministry of Environment,  
Maldives**

8/22/2021

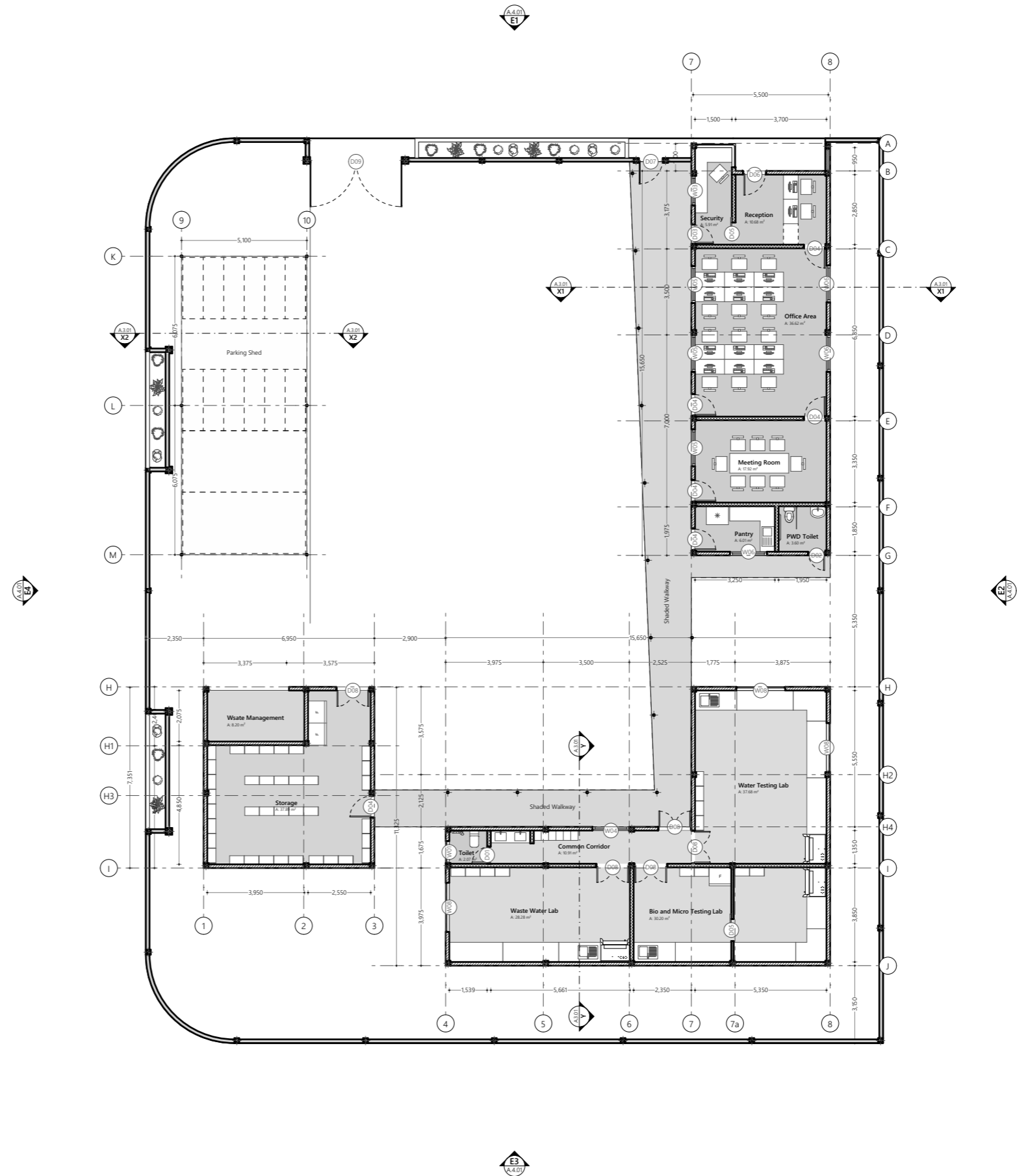
Architect **Fathmath Iudha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**

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Husuheena Magu, Male', Maldives

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A.1.01



**Ground Floor Plan**  
1:200

Proposed  
**Hdh.Hanimaadhoo  
Regional  
Laboratory Design**

Client  
**Ministry of Environment,  
Maldives**

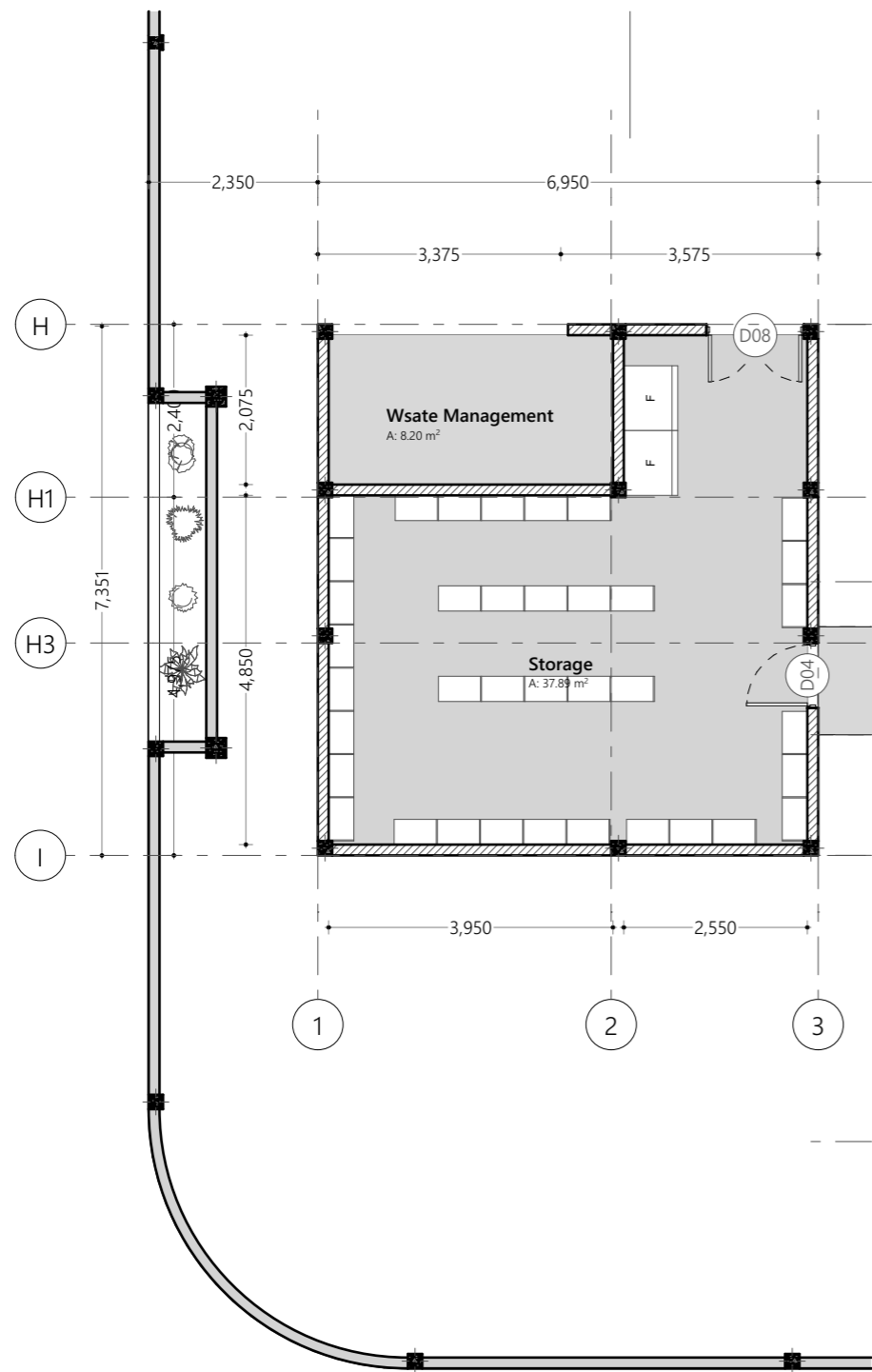
8/22/2021

Architect **Fathmath Ihdha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**

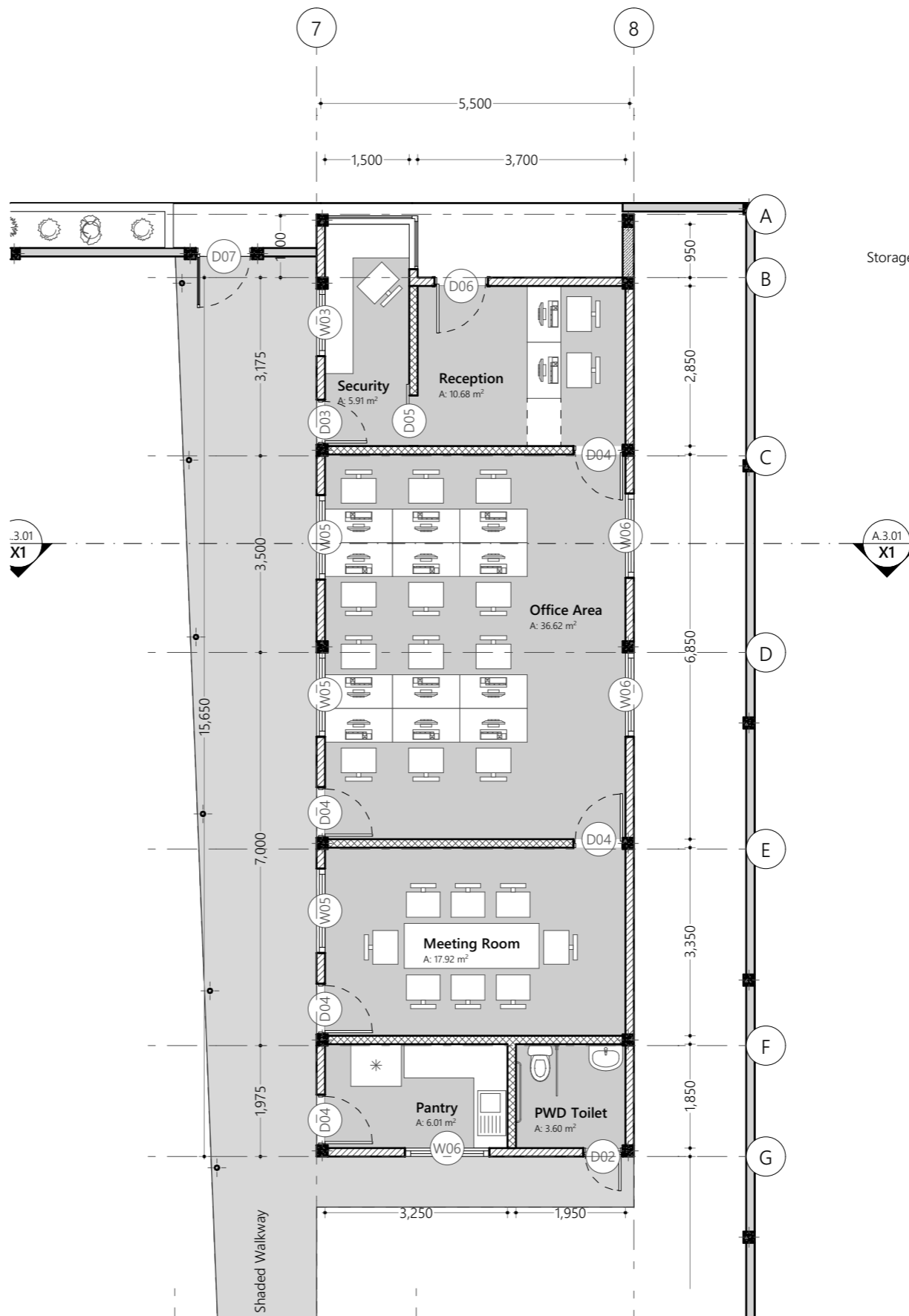


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W epochassociates A G.Rosary West 3rd Floor,  
Husnuheena Magu, Male', Maldives

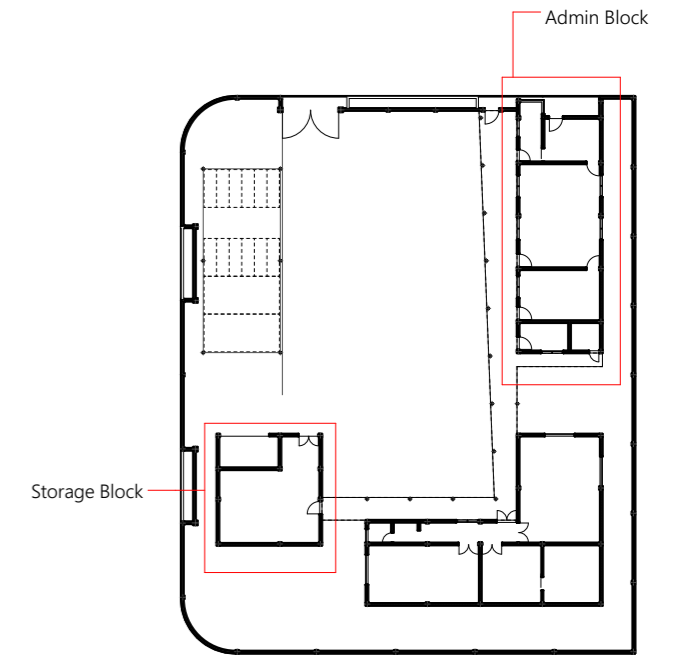




Storage Block Ground Floor Plan  
1:100



Admin Block Ground Floor Plan  
1:100



Proposed  
**Hdh.Hanimaadhoo  
Regional  
Laboratory Design**

Client  
**Ministry of Environment,  
Maldives**

8/22/2021

Architect **Fathmath Ihdha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**

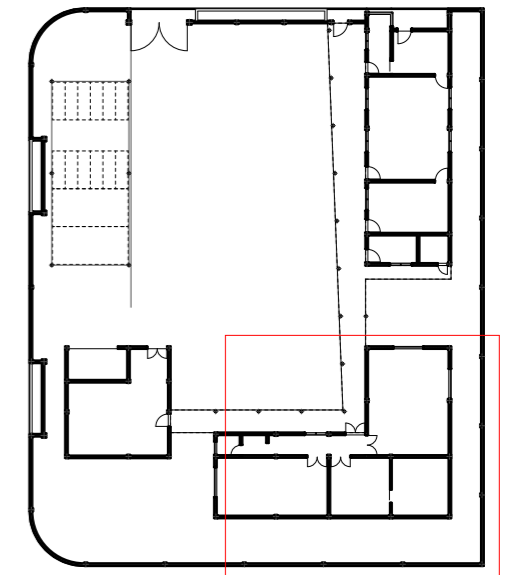


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Rev: Page:



Laboratory Block Ground Floor Plan  
1:100



Laboratory Block  
Key Plan  
1:500

Proposed  
**Hdh.Hanimaadhoo  
Regional  
Laboratory Design**

Client  
**Ministry of Environment,  
Maldives**

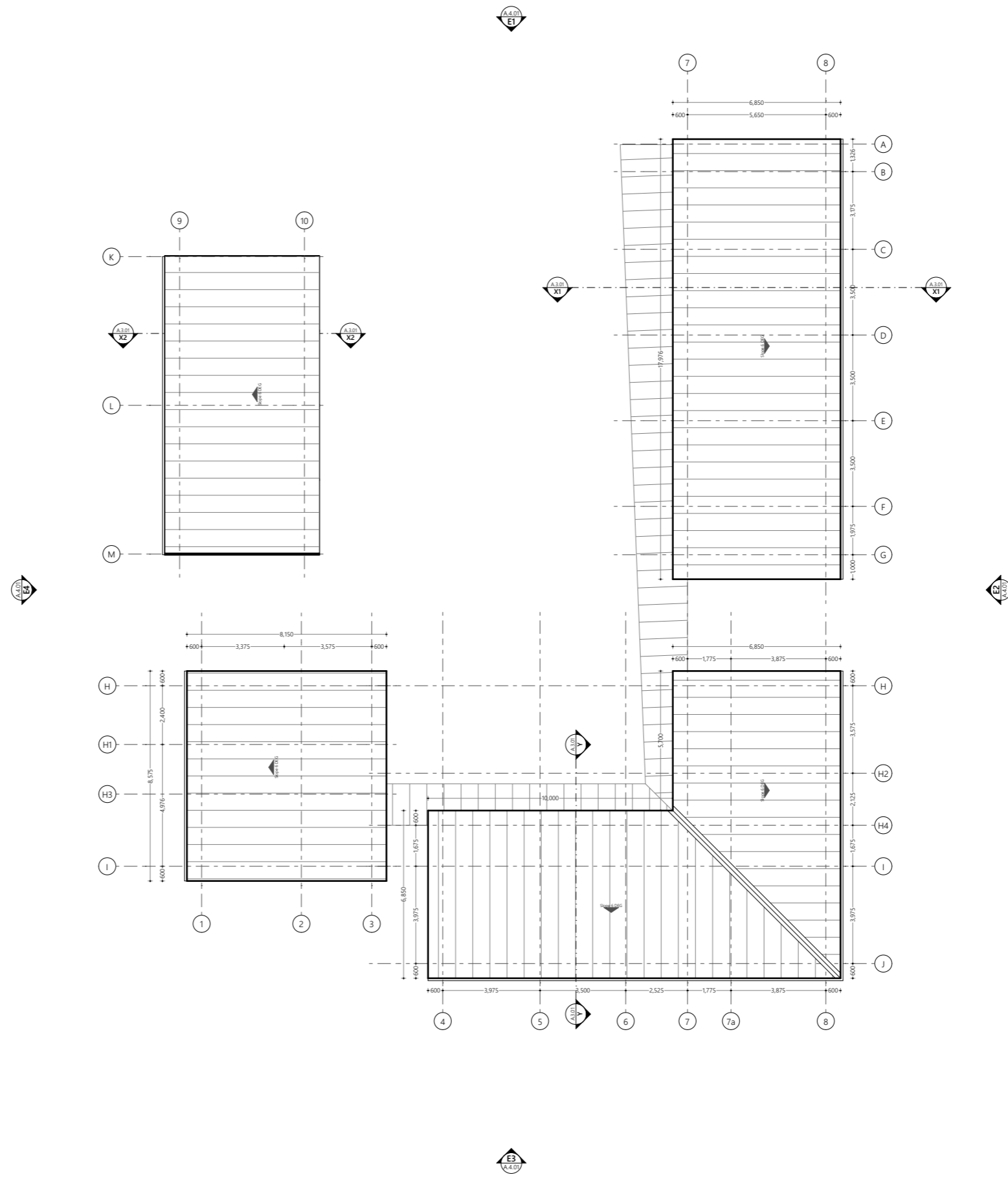
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Architect **Fathmath Iudha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**



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**A.2.03**



**Roof Plan**  
1:200

Proposed  
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Laboratory Design**

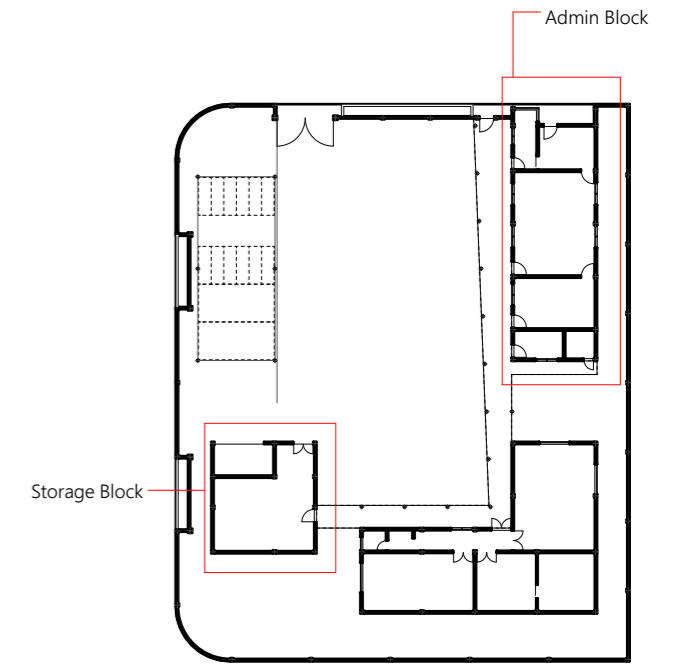
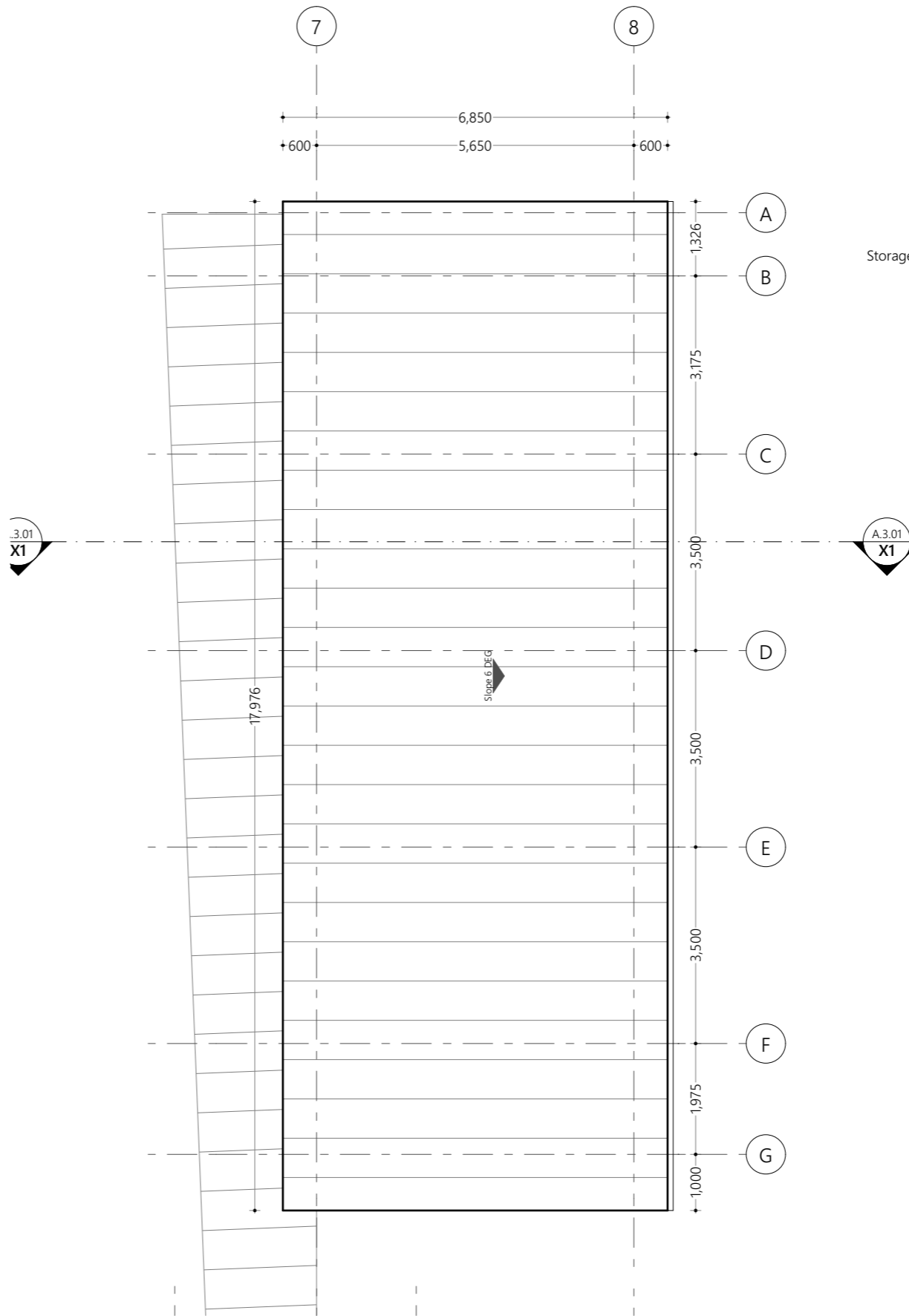
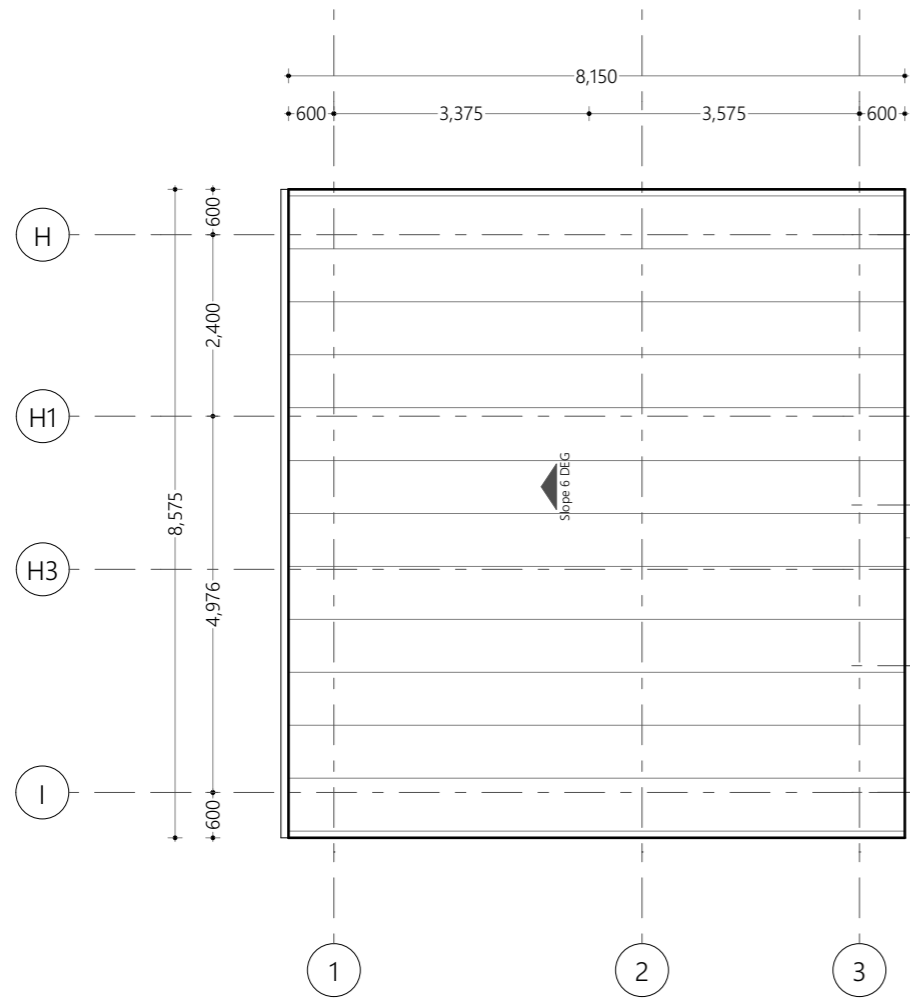
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Architect **Fathmath Iudha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**



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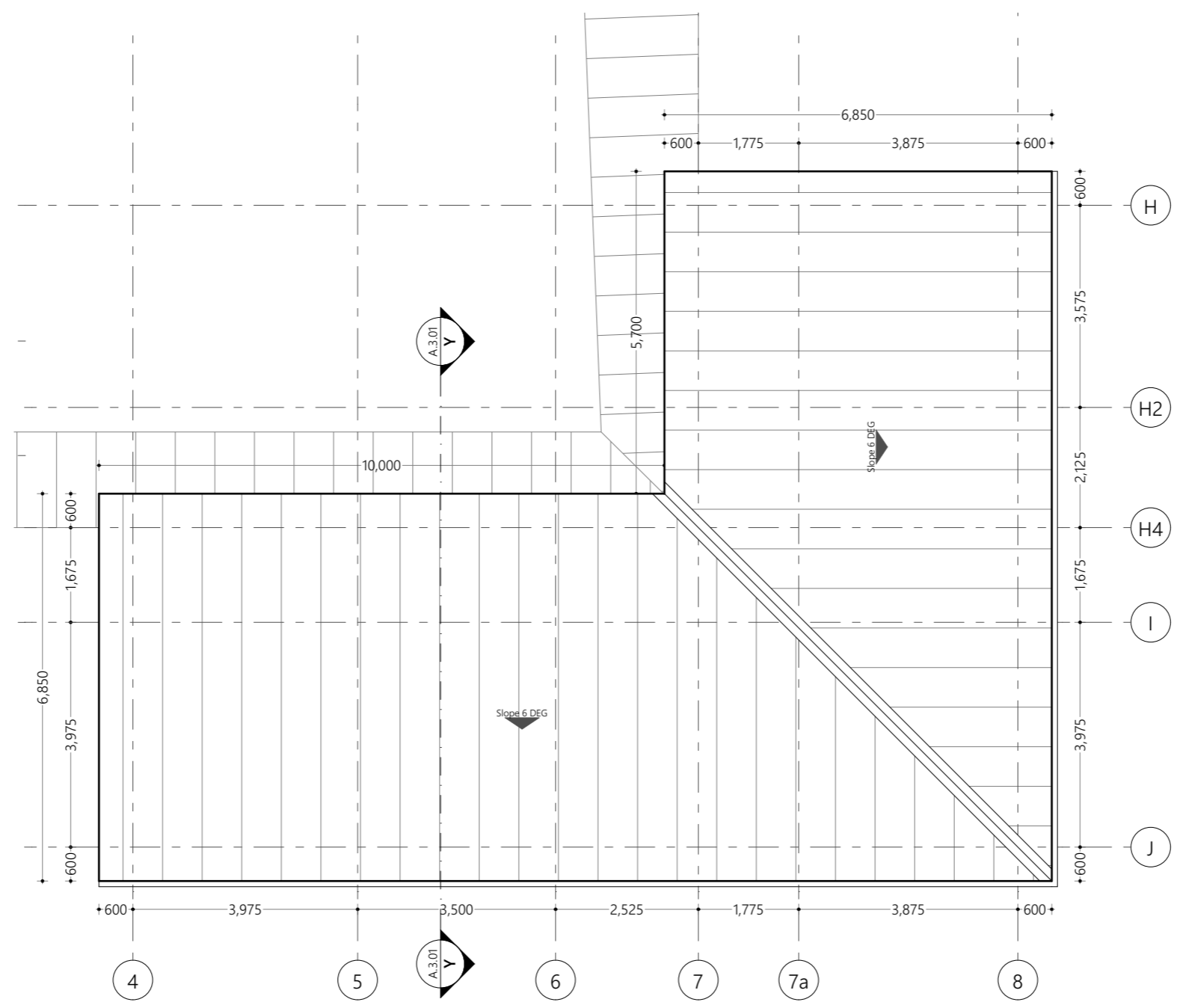
Architect **Fathmath Iudha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**



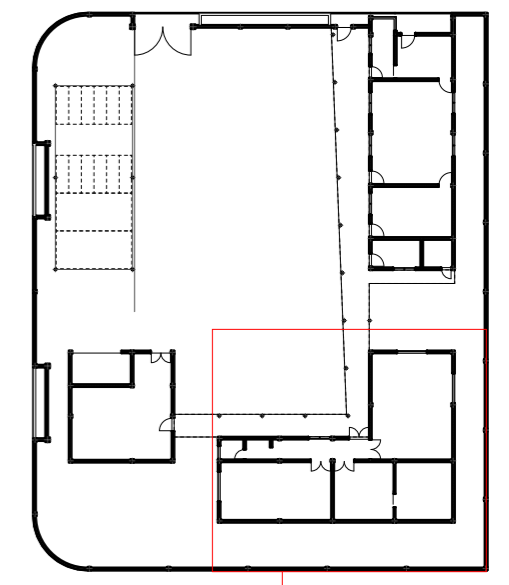
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Rev: Page:

A.2.05



Laboratory Block Ground Floor Plan  
1:100



Laboratory Block  
Key Plan  
1:500

Proposed  
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Laboratory Design**

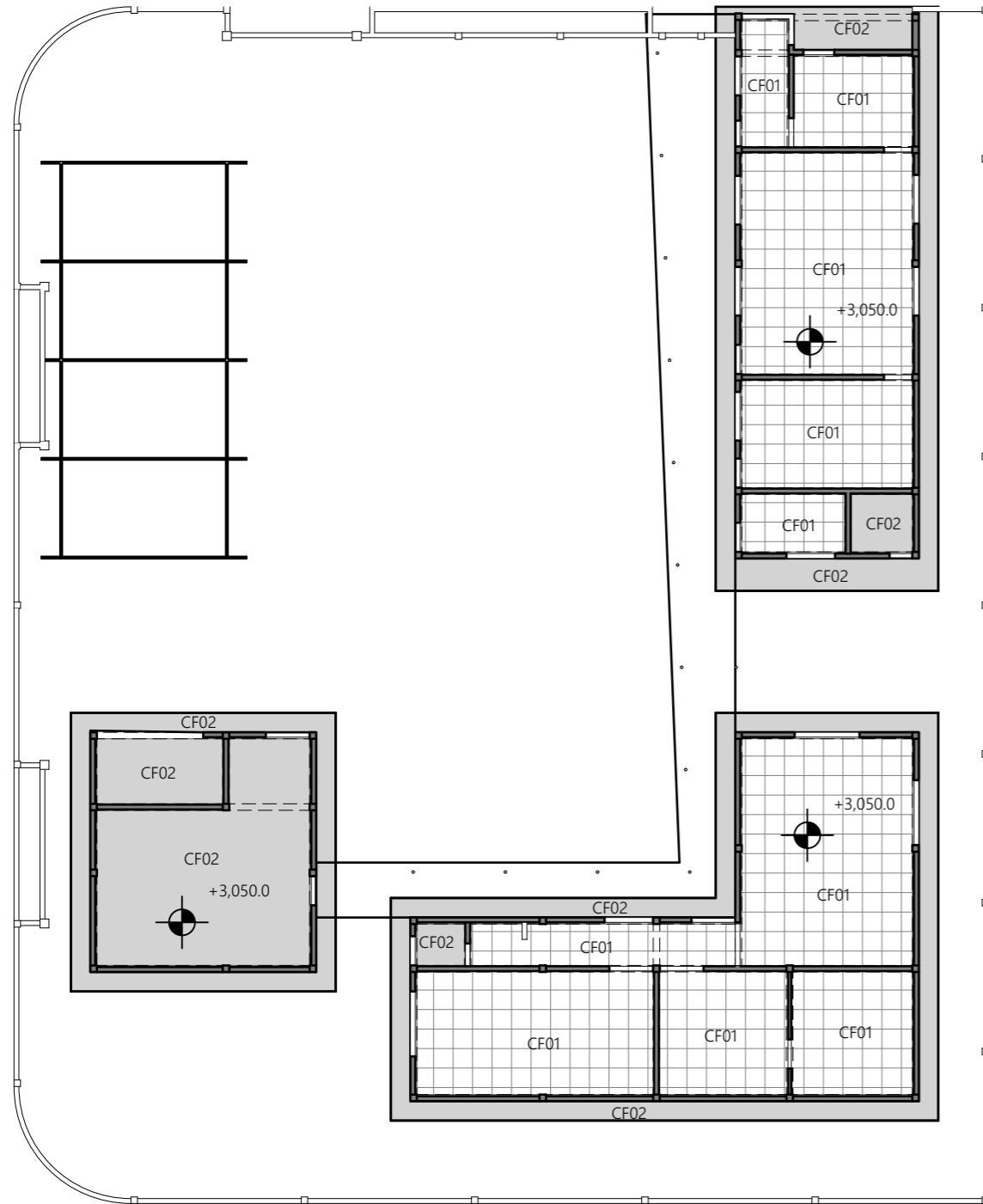
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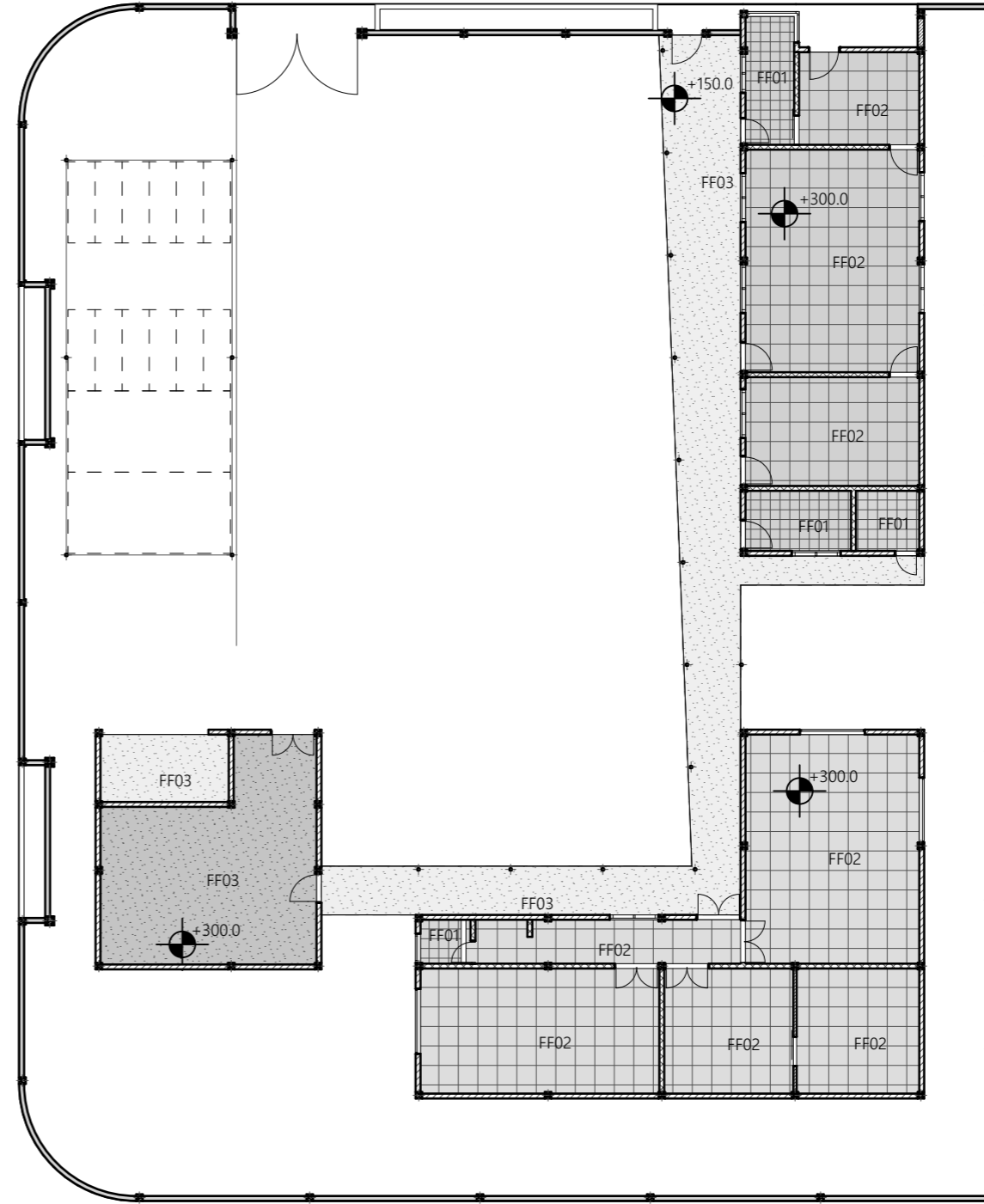
Architect **Fathmath Iudha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**



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**Roof Beam Level**  
1:200



**Ground Floor Finish Plan**  
1:200

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Architect **Fathmath Ihdha**  
Engineer **Adam Madheeh**  
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Rev: Page:

Zone Legend															
Lvl	Element ID	Zone Name	Calculated Area (Sqm)	FF	Floor Finish	Floor Substrate	SF	Skirting Finish	Skirting Substrate	WF	Wall Finish	Wall Substrate	CL	Ceiling Finish	Ceiling Substrate
<b>Ground Floor, 300</b>															
	01	Security	11.82	FF01	300x300mm homogenous / ceramic non skid floor tiles	Cement screed	SF01	150mm high epoxy paint coating	smooth putty on Cement	WF01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Cement Plaster	CL01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Gypsum plaster board
	02	Reception	21.36	FF02	600x600mm homogenous / ceramic non skid floor tiles	Cement screed	SF01	150mm high epoxy paint coating	smooth putty on Cement	WF01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Cement Plaster	CL01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Gypsum plaster board
	03	Parking Shed	123.94	FF03	N/A	N/A	SF01	N/A	N/A	-	N/A	N/A	CL01	N/A	N/A
	03	Shaded Walkway	151.56	FF03	Epoxy paint floor coating	Cement screed	SF01	150mm high epoxy paint coating	smooth putty on Cement	WF01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Cement Plaster	CL01	N/A	N/A
	04	Office Area	73.24	FF02	600x600mm homogenous / ceramic non skid floor tiles	Cement screed	SF01	150mm high epoxy paint coating	smooth putty on Cement	WF01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Cement Plaster	CL01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Gypsum plaster board
	05	Meeting Room	35.84	FF02	600x600mm homogenous / ceramic non skid floor tiles	Cement screed	SF01	150mm high epoxy paint coating	smooth putty on Cement	WF01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Cement Plaster	CL02	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Gypsum plaster board
	06	Pantry	12.02	FF01	300x300mm homogenous / ceramic non skid floor tiles	Cement screed	SF01	150mm high epoxy paint coating	smooth putty on Cement	WF01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Cement Plaster	CL02	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Gypsum plaster board
	07	PWD Toilet	7.20	FF01	300x300mm homogenous / ceramic non skid floor tiles	Cement screed	SF01	150mm high epoxy paint coating	smooth putty on Cement	WF01	Homogenous or ceramic tile, (300x600) up to ceiling level.	smooth putty on Cement Plaster	CL01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on cement board
	08	Bio and Micro Testing Lab	60.40	FF02	600x600mm homogenous / ceramic non skid floor tiles	Cement screed	SF01	150mm high epoxy paint coating	smooth putty on Cement	WF01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Cement Plaster	CL01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Gypsum plaster board
	09	Water Testing Lab	75.36	FF02	600x600mm homogenous / ceramic non skid floor tiles	Cement screed	SF01	150mm high epoxy paint coating	smooth putty on Cement	WF01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Cement Plaster	CL01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Gypsum plaster board
	10	Waste Water Lab	56.56	FF02	600x600mm homogenous / ceramic non skid floor tiles	Cement screed	SF01	150mm high epoxy paint coating	smooth putty on Cement	WF01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Cement Plaster	CL01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Gypsum plaster board
	11	Common Corridor	21.82	FF02	600x600mm homogenous / ceramic non skid floor tiles	Cement screed	SF01	150mm high epoxy paint coating	smooth putty on Cement	WF01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Cement Plaster	CL01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Gypsum plaster board
	12	Toilet	4.14	FF01	300x300mm homogenous / ceramic non skid floor tiles	Cement screed	SF01	150mm high epoxy paint coating	smooth putty on Cement	WF01	Homogenous or ceramic tile, (300x600) up to ceiling level.	smooth putty on Cement Plaster	CL02	based sealer and minimum 2 coats of semi gloss paint	smooth putty on cement board
	13	Storage	75.78	FF03	Epoxy paint floor coating	Cement screed	SF01	150mm high epoxy paint coating	smooth putty on Cement	WF01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Cement Plaster	CL02	based sealer and minimum 2 coats of semi gloss paint	smooth putty on cement board
	14	Wsate Management	16.40	FF03	Epoxy paint floor coating	Cement screed	SF01	150mm high epoxy paint coating	smooth putty on Cement	WF01	based sealer and minimum 2 coats of semi gloss paint	smooth putty on Cement Plaster	CL02	based sealer and minimum 2 coats of semi gloss paint	smooth putty on cement board

Proposed

## Hdh.Hanimaadhoo Regional Laboratory Design

Client

Ministry of Environment,  
Maldives

8/22/2021

Architect **Fathmath Ihdha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**

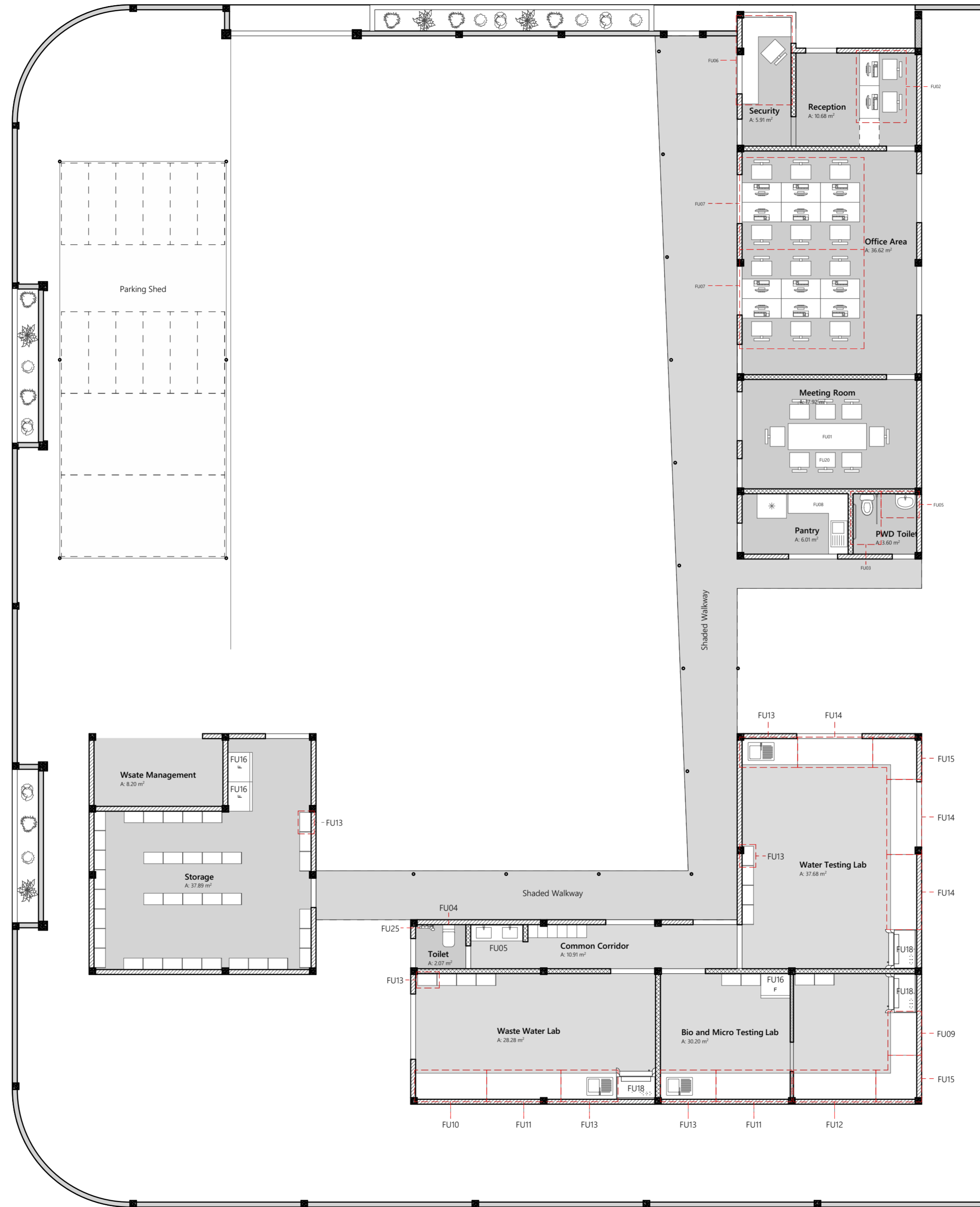


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A.2.08



Furniture Layout  
1:100



<b>Element ID</b>	F01	F02	F03	F04	F05	F05	FU06	FU07	FU08
<b>Quantity</b>	2	2	2	2	2	2	2	4	2
<b>Length (A)</b>	2,400	2,000	350	360	600	1,600	1,500	3,600	1,850
<b>Width (B)</b>	800	600	640	680	450	500	2,659	1,200	1,841
<b>Height (Z Size)</b>	750	1,150	430	400	140	25	750	1,150	2,250
<b>2D Symbol</b>									
<b>3D Front Axonometry</b>									
<b>Description</b>	Moveable	Moveable	---	---	---	---	Undefined	Undefined	Fixed

## Object Inventory

<b>Element ID</b>	FU09	FU10	FU11	FU12	FU13	FU14	FU15	FU16
<b>Quantity</b>	3	3	5	3	7	7	5	6
<b>Length (A)</b>	1,300	2,175	2,275	2,525	1,700	2,300	1,250	900
<b>Width (B)</b>	800	800	800	800	800	800	1,350	750
<b>Height (Z Size)</b>	900	900	900	900	900	900	900	1,930
<b>2D Symbol</b>								
<b>3D Front Axonometry</b>								
<b>Description</b>	---	---	---	---	---	---	Fixed	Undefined

## Object Inventory

<b>Element ID</b>	FU17	FU18	FU19	FU20
<b>Quantity</b>	99	6	2	16
<b>Length (A)</b>	600	1,200	1,000	600
<b>Width (B)</b>	350	960	1,000	600
<b>Height (Z Size)</b>	1,800	2,420	115	1,000
<b>2D Symbol</b>				
<b>3D Front Axonometry</b>				
<b>Description</b>	Undefined	Undefined	---	Fixed

## Object Inventory

Proposed  
**Hdh.Hanimaadhoo**  
**Regional**  
**Laboratory Design**

Client  
**Ministry of Environment,**  
**Maldives**

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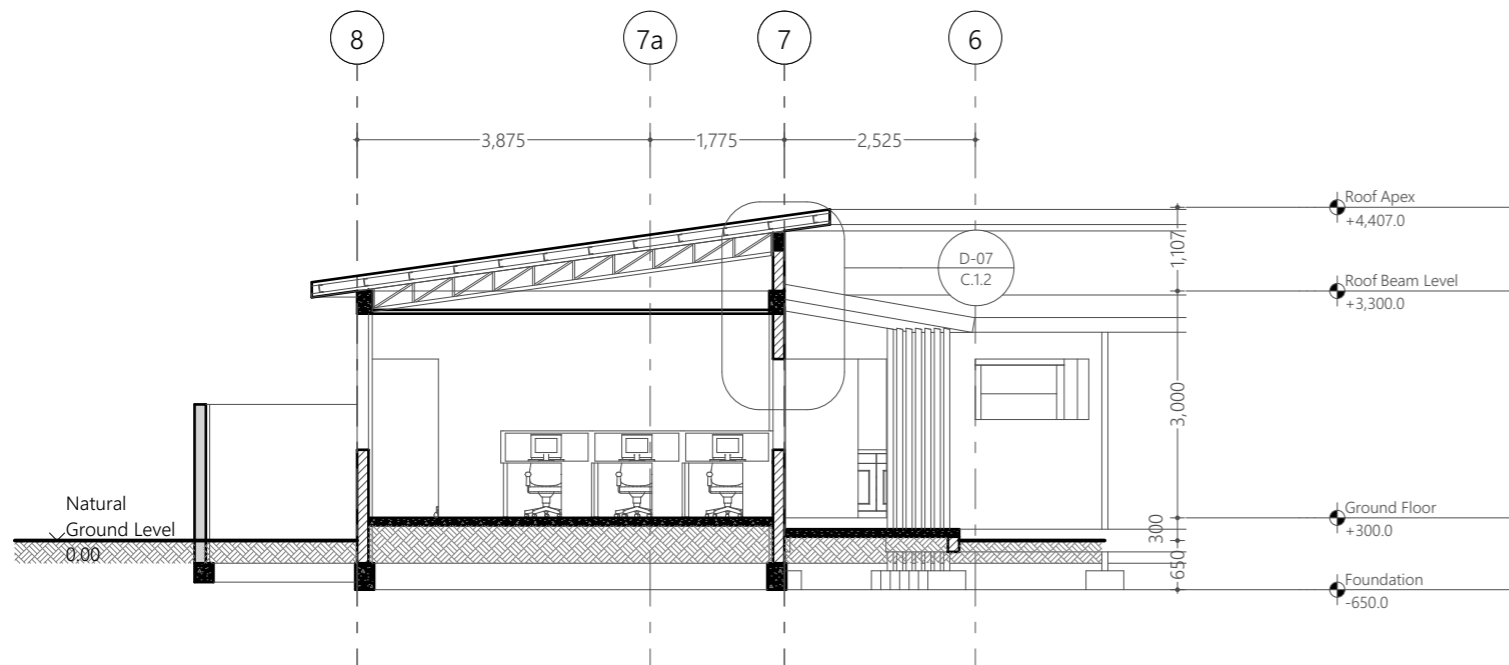
Architect **Fathmath Iudha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**

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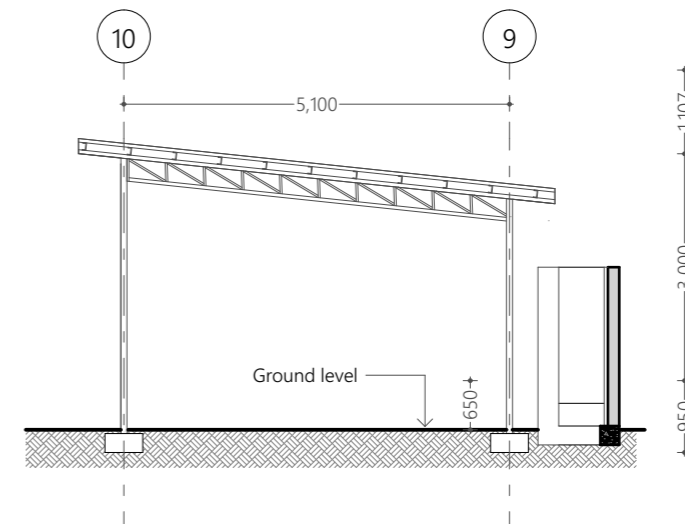
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Husnuheena Magu, Male', Maldives

Rev: Page:

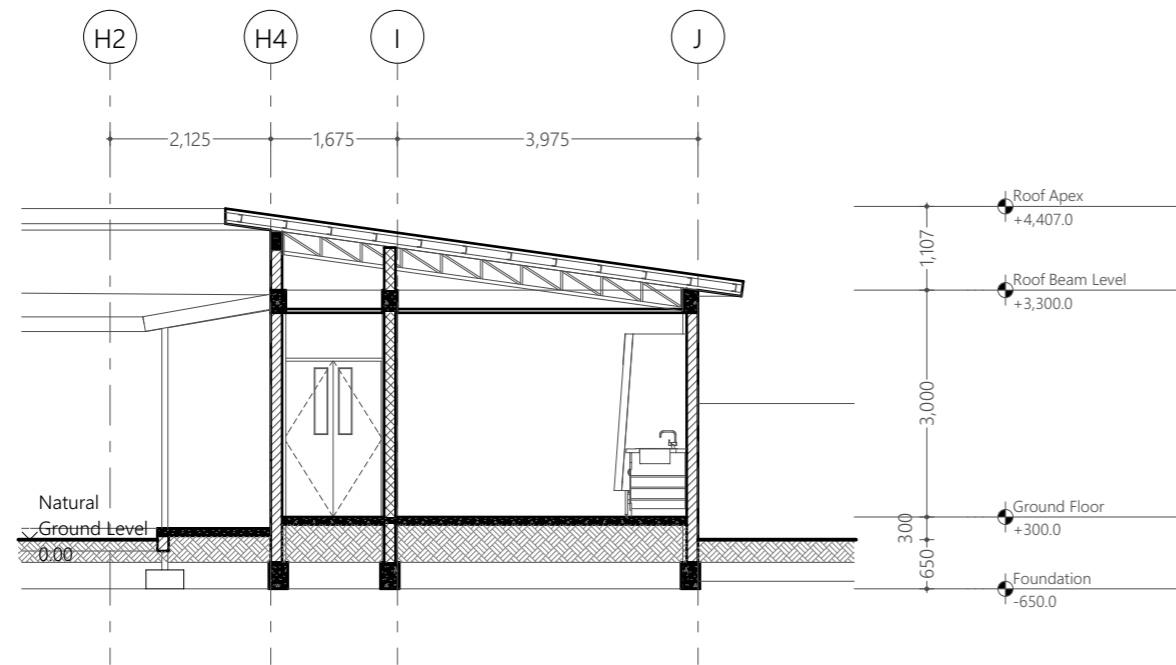
A.2.10



Section X1-X1  
1:100



Section X2-X2  
1:100



Section Y-Y  
1:100

Proposed  
**Hdh.Hanimaadhoo  
Regional  
Laboratory Design**

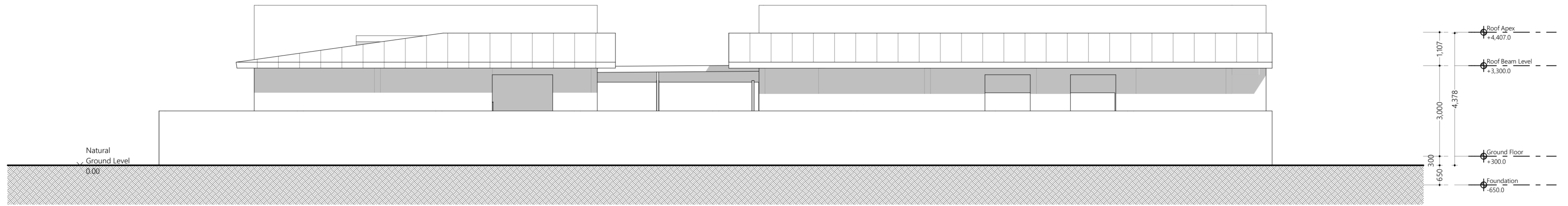
Client  
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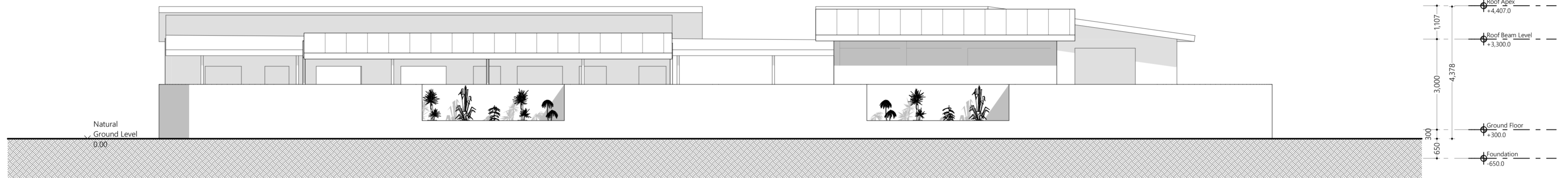
Architect **Fathmath Ihdha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**



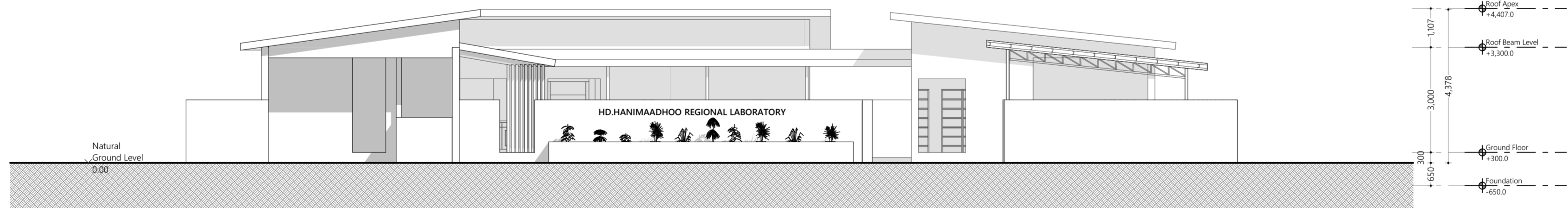
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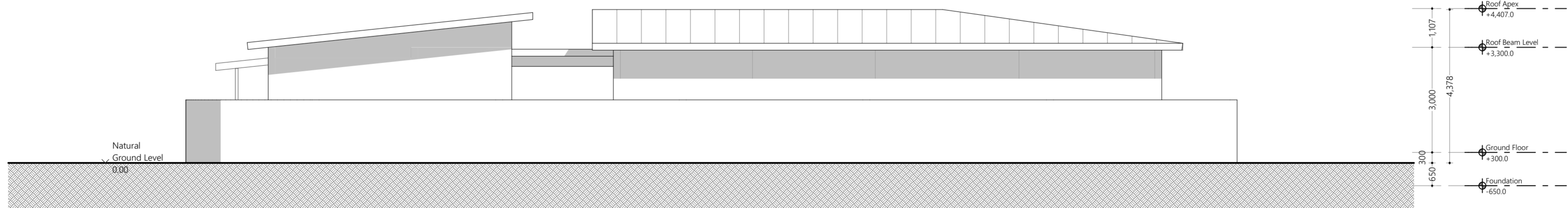
Elevation E2  
1:100



Elevation E4  
1:100



Elevation E1  
1:100



Elevation E3  
1:100

Proposed  
**Hdh.Hanimaadhoo  
Regional  
Laboratory Design**

Client  
**Ministry of Environment,  
Maldives**

8/22/2021

ARCHITECT **Fathmath Ihudha**  
ENGINEER **Adam Madheeh**  
DRAWN BY **Ahmed Riyaz**



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**A.4.01**

All Openings Schedule

Element ID	D01	D02	D03	D04	D05	D06	D07	D08
Quantity	2	2	2	12	4	2	2	10
W x H Size	700x2,100	700x2,700	800x2,100	900x2,100	900x2,100	950x2,700	1,000x1,500	1,350x2,100
Sill height	0	0	0	0	0	0	0	0
Head height	2,100	2,700	2,100	2,100	2,100	2,700	1,500	2,100
2D Symbol								
View from Side Opposite to Opening Side								
Frame	Solid core GRP	Solid core GRP	Solid core GRP	Solid core GRP	Solid core GRP	Solid core GRP	04 25x25x2.5mm GI square sections	Solid core GRP
Door Leaf	Solid core GRP	Solid core GRP	Solid core GRP	Solid core GRP	Solid core GRP	Solid core GRP	04 25x25x2.5mm GI square sections	Solid core GRP
Window Sash	---	---	---	---	---	---	---	---
Glazing	01 (No Glazing)	01 Clear Glass	01 Clear Glass	01 Clear Glass	01 Clear Glass	01 Clear Glass	01 (No Glazing)	01 Clear Glass

All Openings Schedule  
1:1

Door and Window Notes

Dimensions shown on DWG indicate effective openings of frame

All frame depths are 100mm  
 All door leaf thicknesses are 35mm  
 All window sash thickness are 25mm  
 All frame edges shall be trimmed 3mm  
 All wooden components should be wood stained finish  
 All aluminum components to be powder coated (min. 60 microns)

All aluminum panels should be of 6mm thick unless specified  
 All glazing should be of 6mm unless specified

External units must comply the following weather conditions:  
 Wind pressure: 200 kg/sqm  
 Water tightness: 25 kg/sqm

All external frames / wall joints must be sealed with silicon sealant and the wedges trimmed with 12X12mm hardwood beading fixed to frames by brass nails

Sealant shall be provided at all joints while fabrication

All hardware should be provided for the performance of all functions of the units  
 Hinges shall confirm to

1) Door size more than 700X1900mm  
 WD: 125mm X2 sets  
 SD: 150mm X3 sets

2) Door size less than 700X1900mm  
 WD: 100mm X2 sets  
 SD: 125mm X2 sets

Locks shall be cylindrical with master key sets  
 Door knobs shall be 1000mm above FFL

Proposed  
**Hdh.Hanimaadhoo**  
**Regional**  
**Laboratory Design**

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8/22/2021

Architect **Fathmath Ihudha**  
 Engineer **Adam Madheeh**  
 Drawn By **Ahmed Riyaz**



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All Openings Schedule					
Element ID	D09	W01	W02	W03	W04
Quantity	2	2	2	2	2
W x H Size	3,800x1,800	900x800	900x1,700	1,200x1,200	1,500x800
Sill height	-300	1,900	1,000	900	1,300
Head height	1,500	2,700	2,700	2,100	2,100
2D Symbol					
View from Side Opposite to Opening Side					
Frame	04 25x25x2.5mm GI square sections	03 Powder Coated Aluminum	03 Powder Coated Aluminum	03 Powder Coated Aluminum	03 Powder Coated Aluminum
Door Leaf	04 25x25x2.5mm GI square sections	---	---	---	---
Window Sash	---	03 Powder Coated Aluminum	03 Powder Coated Aluminum	03 Powder Coated Aluminum	03 Powder Coated Aluminum
Glazing	01 (No Glazing)	01 Reflective Glass	01 Clear Glass	01 Reflective Glass	01 Reflective Glass

## All Openings Schedule 1:1

### Door and Window Notes

Dimensions shown on DWG indicate effective openings of frame

All frame depths are 100mm  
 All door leaf thicknesses are 35mm  
 All window sash thickness are 25mm  
 All frame edges shall be trimmed 3mm  
 All wooden components should be wood stained finish  
 All aluminum components to be powder coated (min. 60 microns)

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External units must comply the following weather conditions:  
 Wind pressure: 200 kg/sqm  
 Water tightness: 25 kg/sqm

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Sealant shall be provided at all joints while fabrication

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 WD: 125mm X2 sets  
 SD: 150mm X3 sets

2) Door size less than 700X1900mm  
 WD: 100mm X2 sets  
 SD: 125mm X2 sets

Locks shall be cylindrical with master key sets  
 Door knobs shall be 1000mm above FFL

Proposed  
**Hdh.Hanimaadhoo**  
**Regional**  
**Laboratory Design**

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8/22/2021

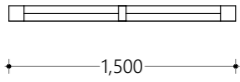
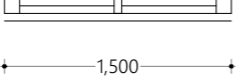
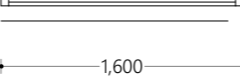
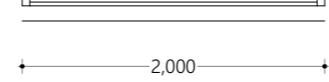
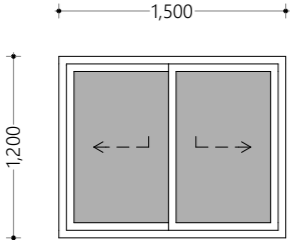
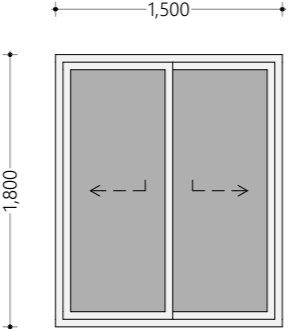
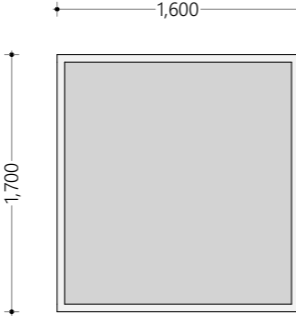
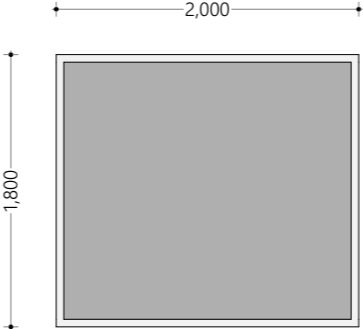
Architect **Fathmath Ihudha**  
 Engineer **Adam Madheeh**  
 Drawn By **Ahmed Riyaz**

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**A.5.02**

All Openings Schedule				
Element ID	W05	W06	W07	W08
Quantity	6	6	2	6
W x H Size	1,500x1,200	1,500x1,800	1,600x1,700	2,000x1,800
Sill height	900	900	1,000	900
Head height	2,100	2,700	2,700	2,700
2D Symbol				
View from Side Opposite to Opening Side				
Frame	03 Powder Coated Aluminum	03 Powder Coated Aluminum	03 Powder Coated Aluminum	03 Powder Coated Aluminum
Door Leaf	---	---	---	---
Window Sash	03 Powder Coated Aluminum	03 Powder Coated Aluminum	03 Powder Coated Aluminum	03 Powder Coated Aluminum
Glazing	01 Reflective Glass	01 Reflective Glass	01 Clear Glass	01 Reflective Glass

### Door and Window Notes

Dimensions shown on DWG indicate effective openings of frame

All frame depths are 100mm  
 All door leaf thicknesses are 35mm  
 All window sash thickness are 25mm  
 All frame edges shall be trimmed 3mm  
 All wooden components should be wood stained finish  
 All aluminum components to be powder coated (min. 60 microns)

All aluminum panels should be of 6mm thick unless specified  
 All glazing should be of 6mm unless specified

External units must comply the following weather conditions:  
 Wind pressure: 200 kg/sqm  
 Water tightness: 25 kg/sqm

All external frames / wall joints must be sealed with silicon sealant and the wedges trimmed with 12X12mm hardwood beading fixed to frames by brass nails

Sealant shall be provided at all joints while fabrication

All hardware should be provided for the performance of all functions of the units  
 Hinges shall confirm to

1) Door size more than 700X1900mm  
 WD: 125mm X2 sets  
 SD: 150mm X3 sets

2) Door size less than 700X1900mm  
 WD: 100mm X2 sets  
 SD: 125mm X2 sets

Locks shall be cylindrical with master key sets  
 Door knobs shall be 1000mm above FFL

## All Openings Schedule

1:1

Proposed  
**Hdh.Hanimaadhoo**  
**Regional**  
**Laboratory Design**

Client  
**Ministry of Environment,**  
**Maldives**

8/22/2021

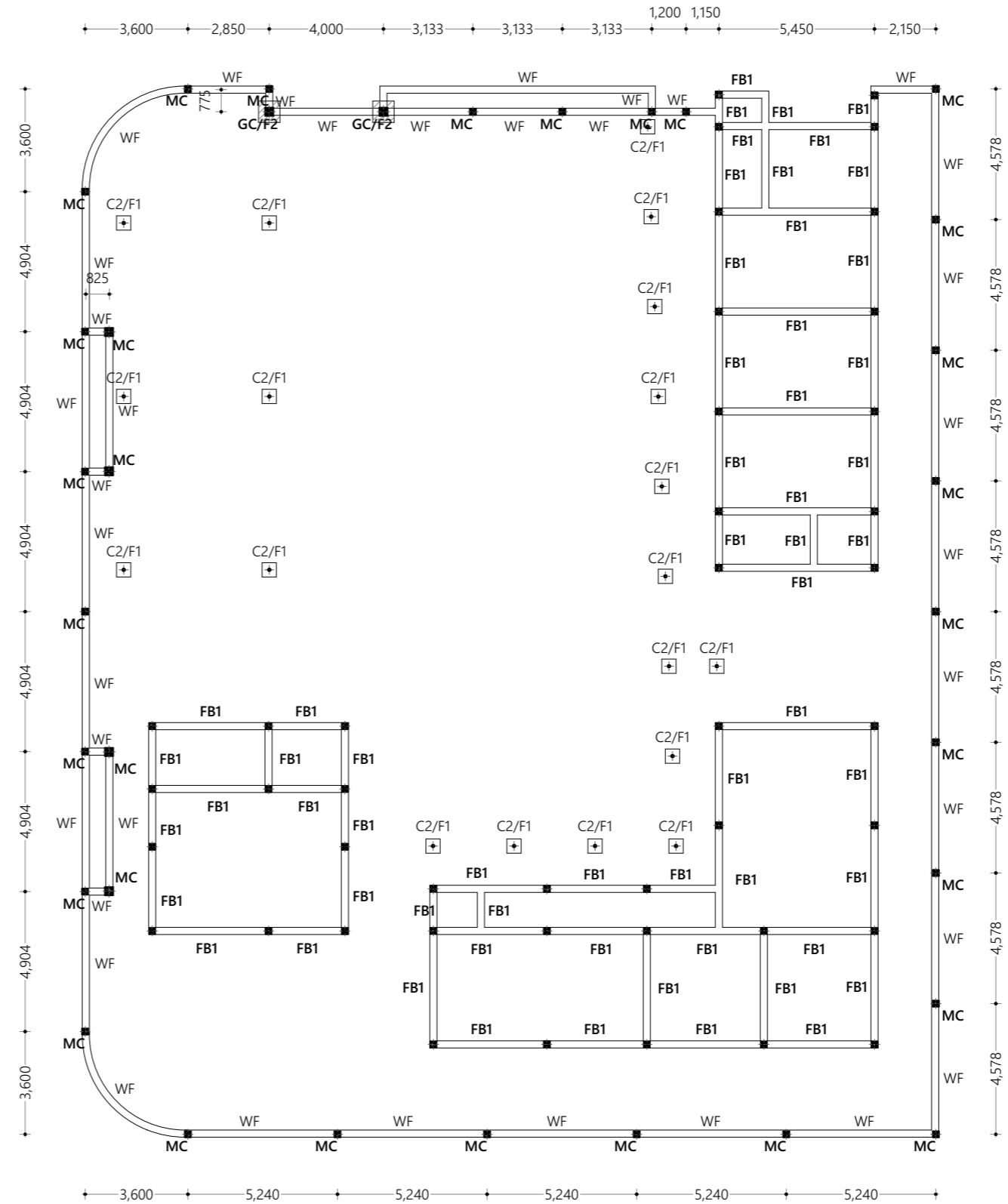
Architect **Fathmath Ihudha**  
 Engineer **Adam Madheeh**  
 Drawn By **Ahmed Riyaz**

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**A.5.03**



**Foundation Plan**  
1:200

Proposed  
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Regional  
Laboratory Design**

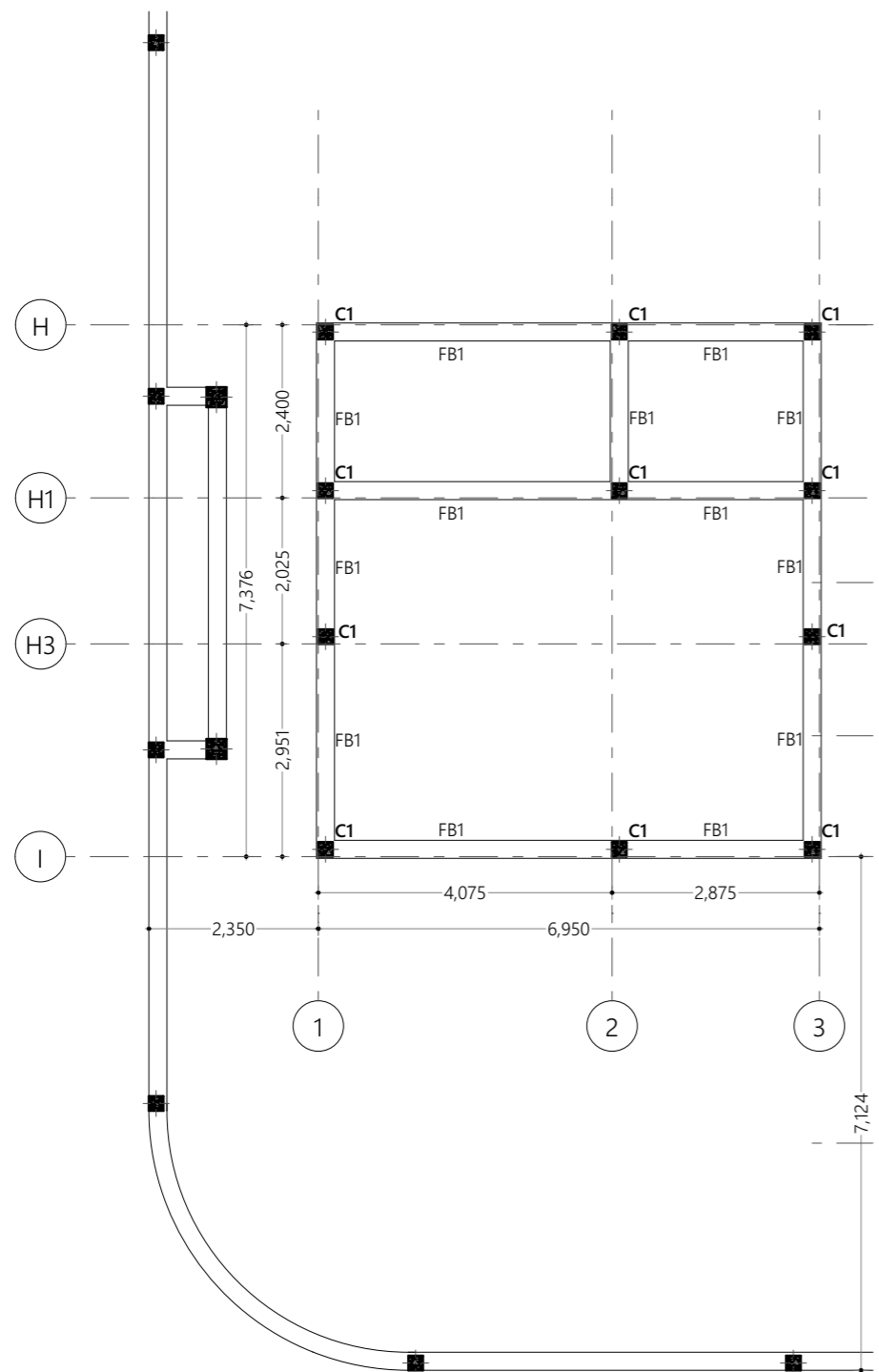
Client  
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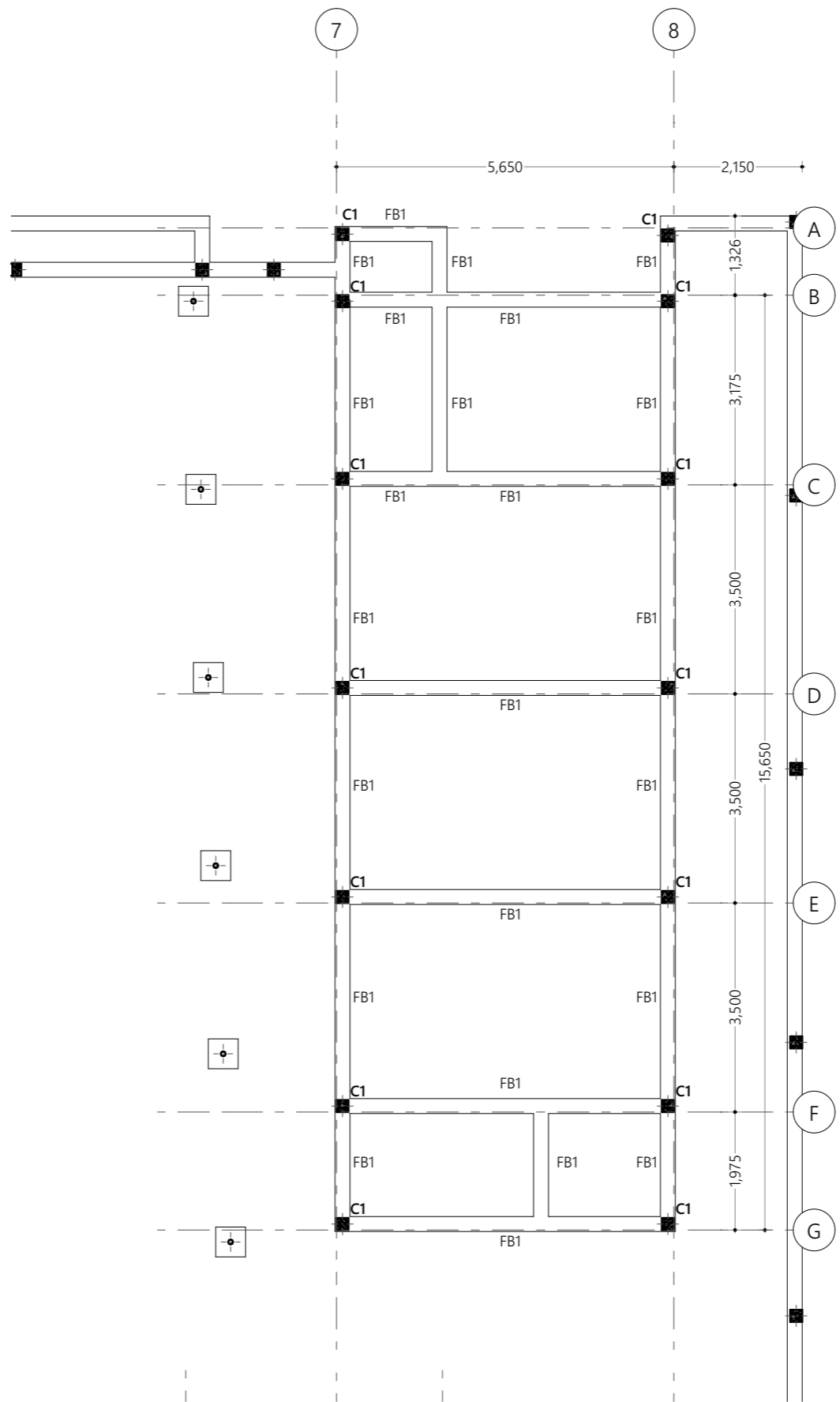
Architect **Fathmath Iudha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**



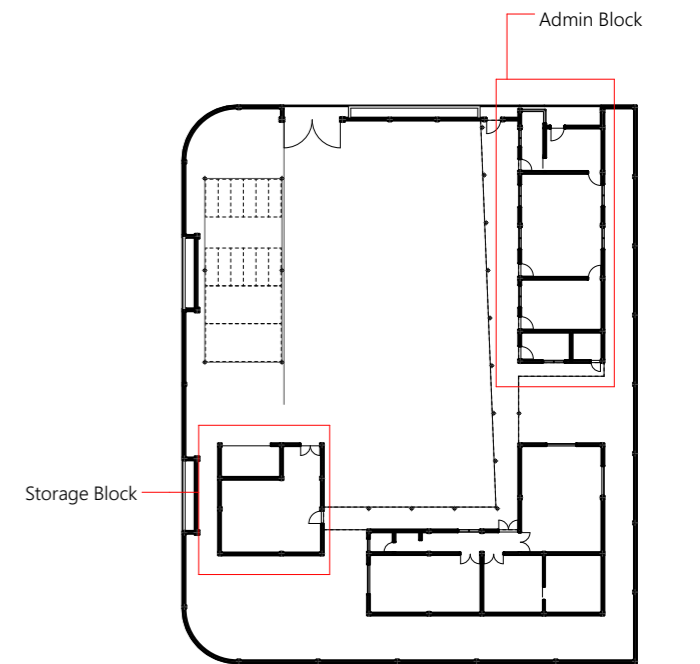
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**Storage Block Foundation Plan**  
1:100



**Admin Block Foundation Plan**  
1:100



**Key Plan**  
1:500

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Laboratory Design**

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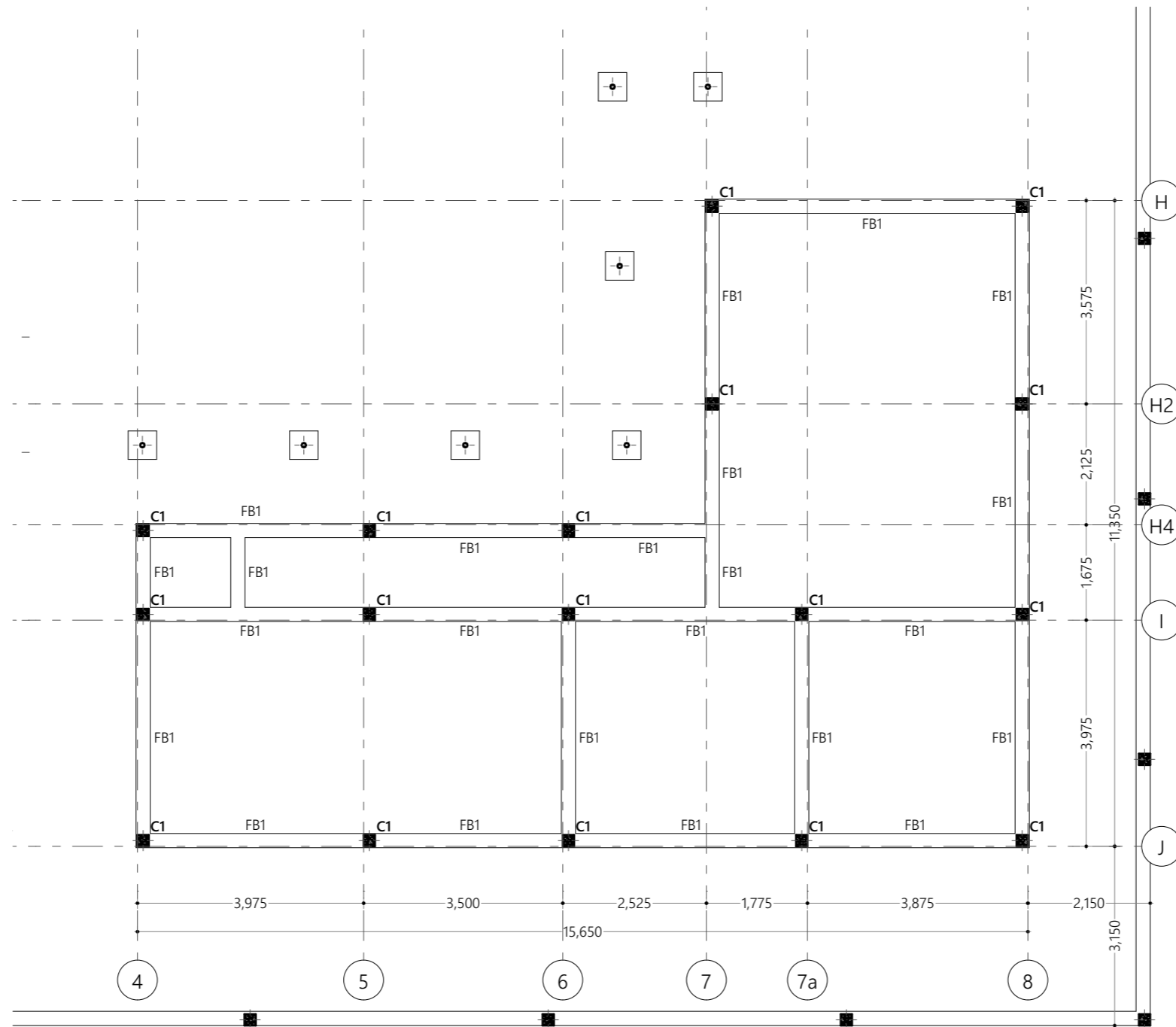
Architect **Fathmath Iudha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**



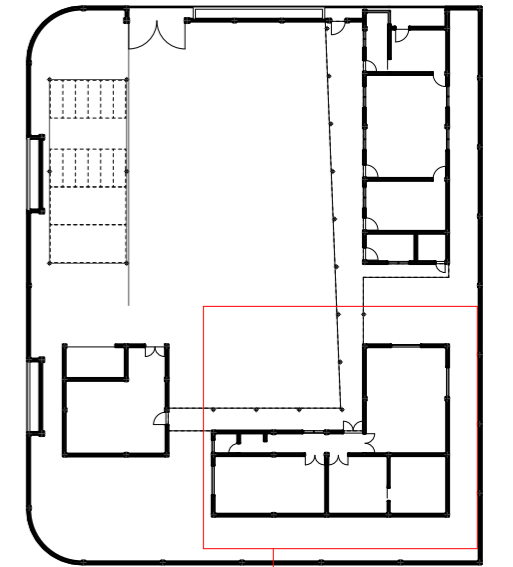
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Laboratory Block Foundation Plan  
1:100



Laboratory Block  
Key Plan  
1:500

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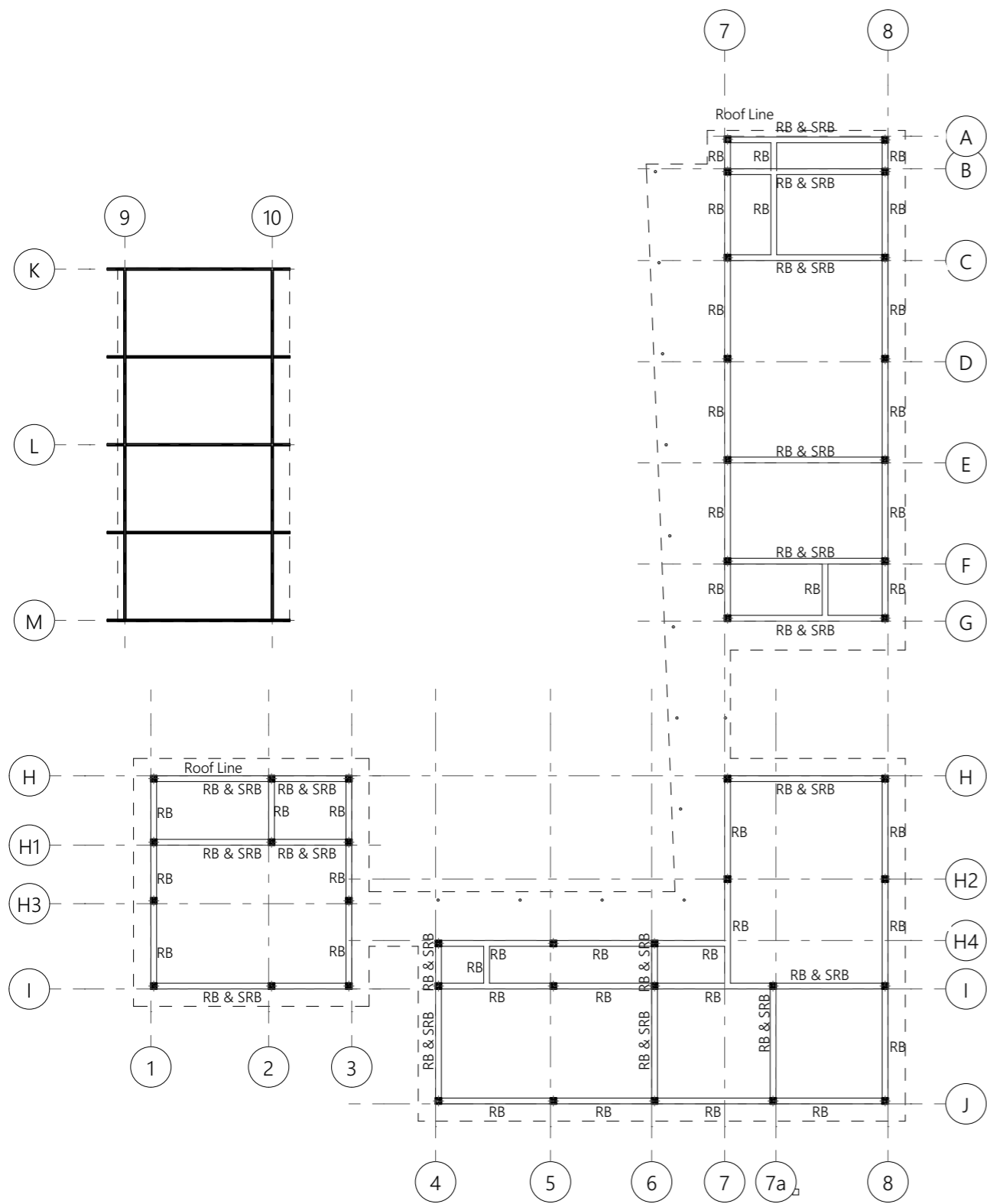
Architect **Fathmath Iudha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**



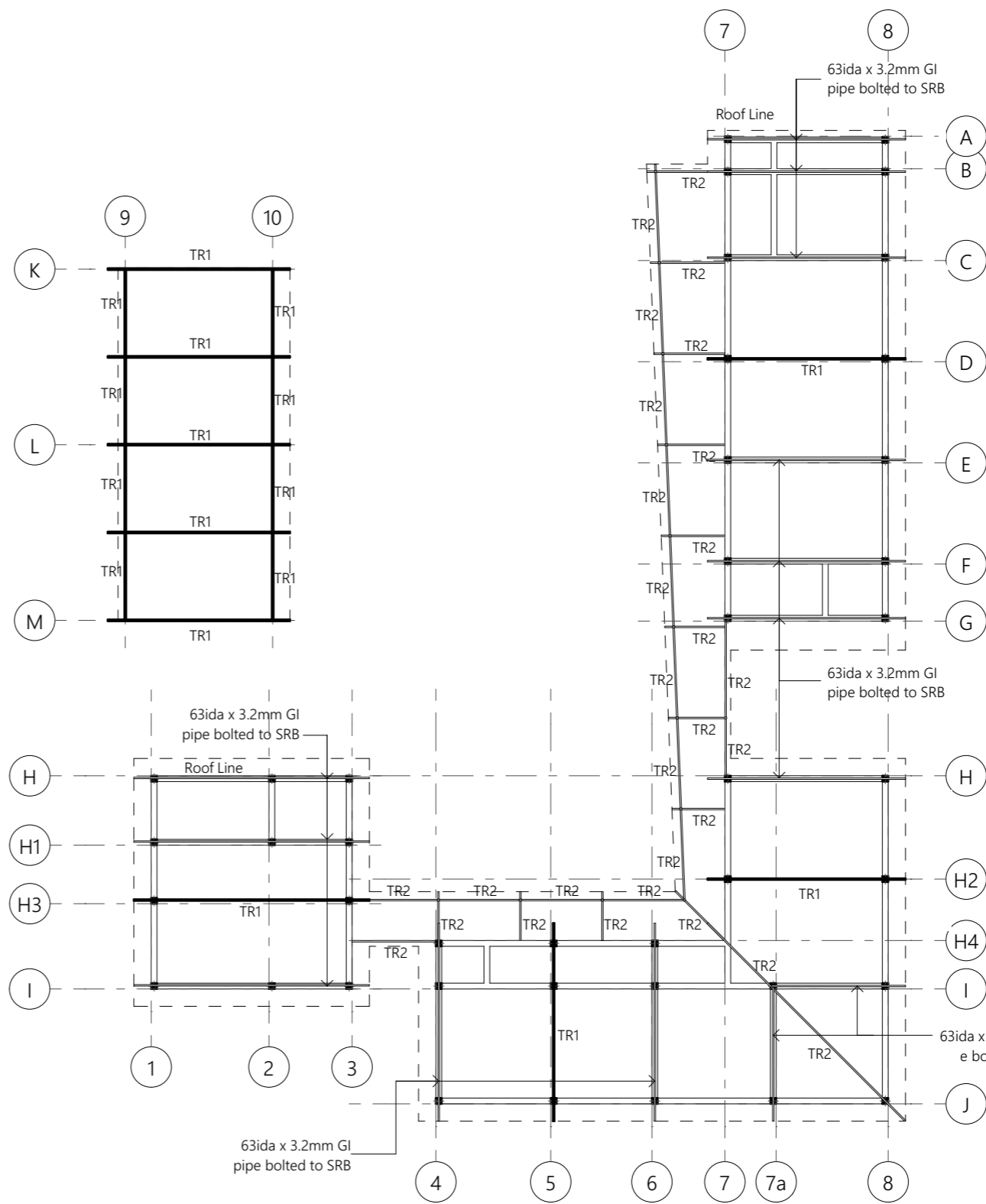
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B.1.03



**Roof Beam Plan**  
1:200



**Roof Truss Plan**  
1:200

Proposed  
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**Regional**  
**Laboratory Design**

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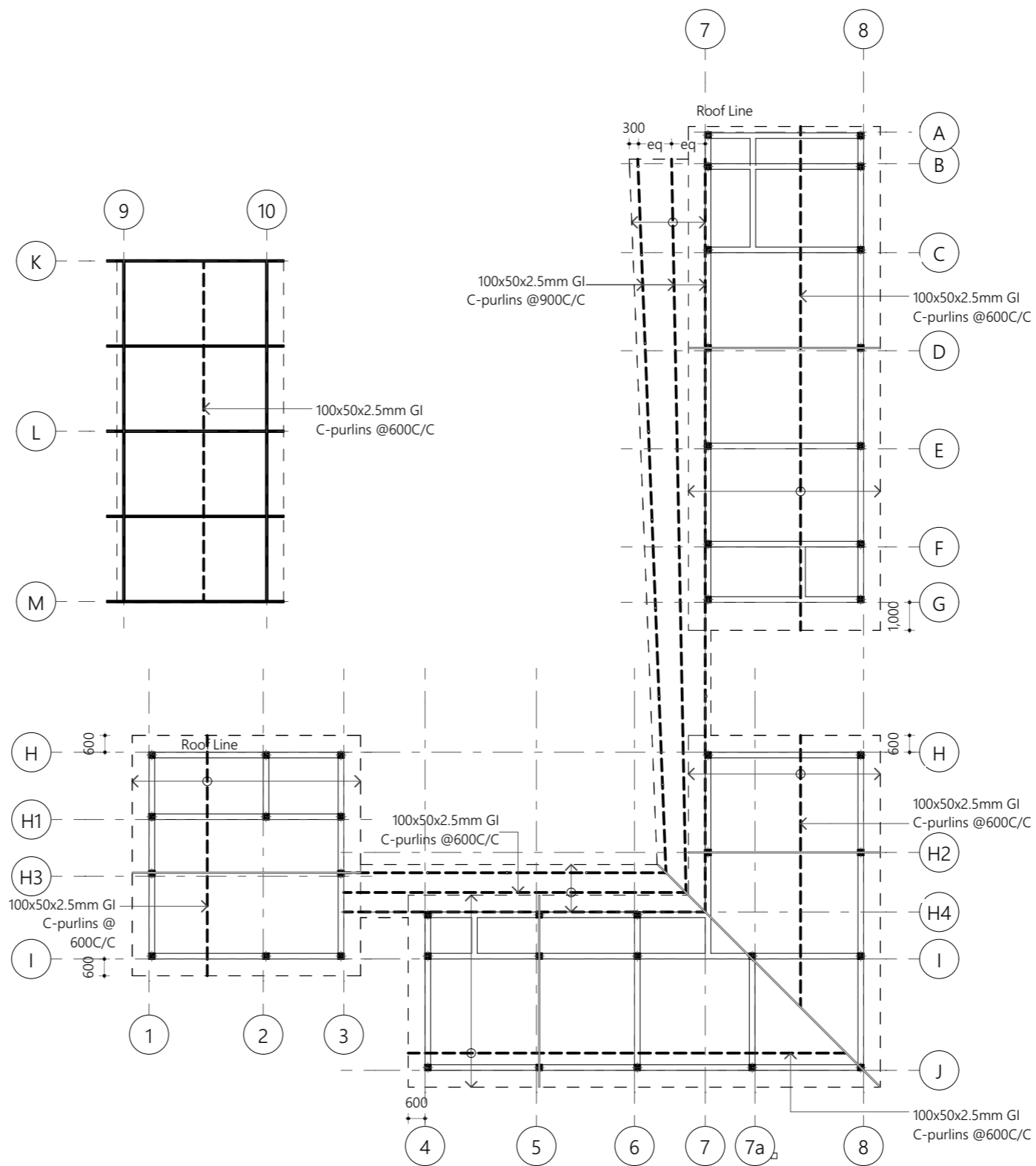
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**Roof Framing Plan**  
1:200

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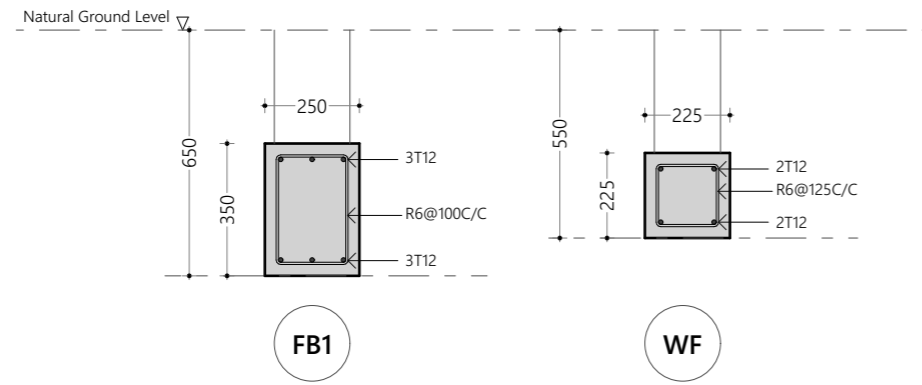
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Engineer **Adam Madheeh**  
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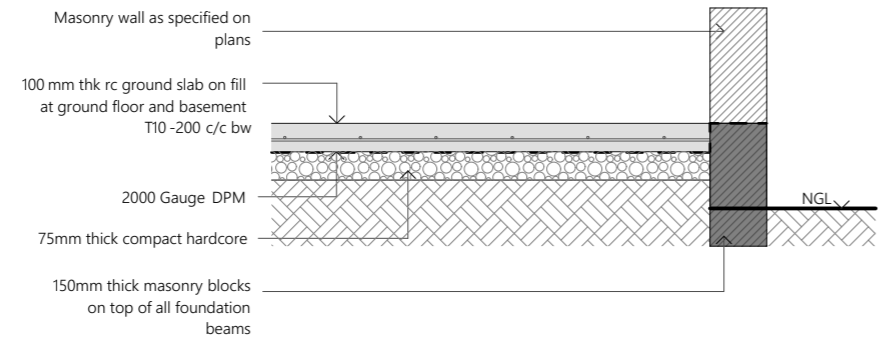


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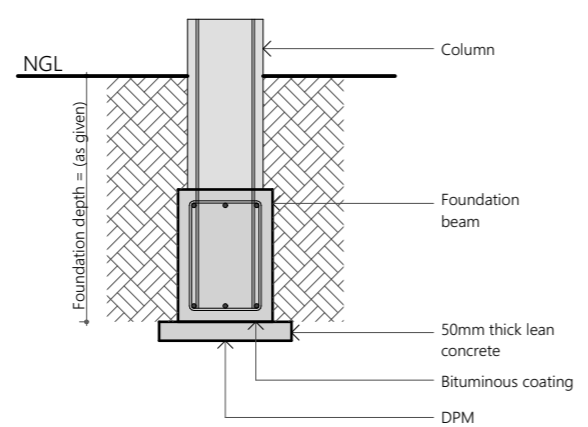


**Tie Beam Details**  
1:20

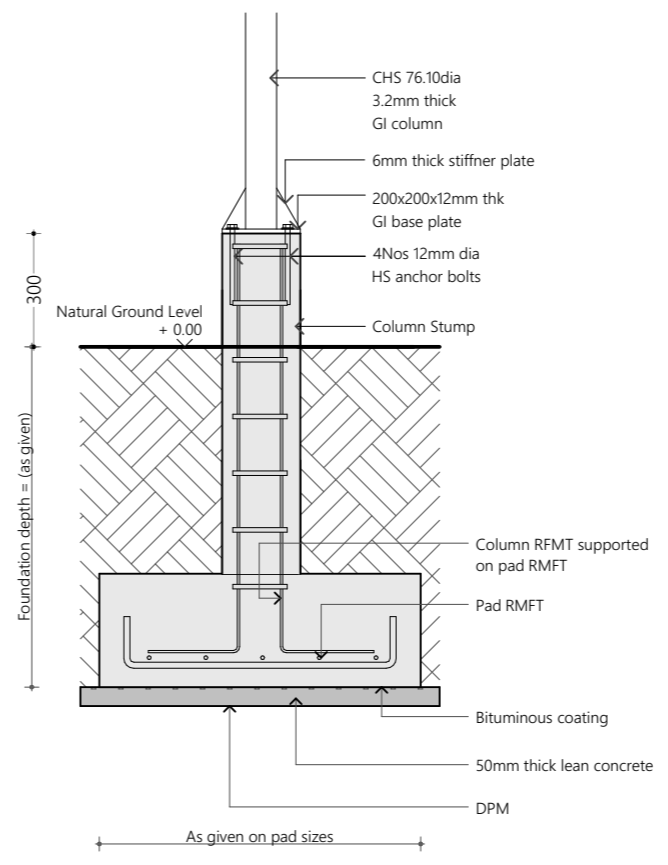


**Typical Ground Slab Construction Detail**  
1:20

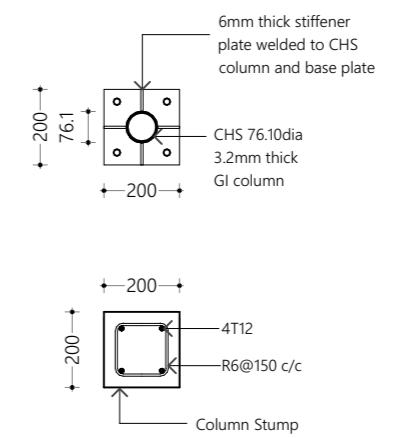
**Note :**  
All cover blocks shall be casted using grade C 25 / 30 concrete with 5-10 mm aggregates  
For slab, rebar spacer chairs spacing shall be minimum 1m spacing or 1 no. per 1 sqm



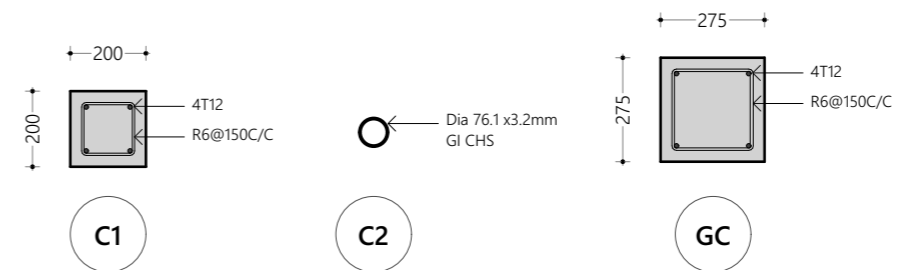
**Sectional View**  
**Typical Foundation Detail**  
1:20



**Typical Footing Section Detail**  
NTS



**Column and Stump Detail**  
1:20



**Column Detail**  
1:20

**Foundation Details:**

	Dimensions	Reinforcement	Foundation Depth
F1	550x550x300	T10@150C/C B/W (B)	650mm
F2	750x750x300	T10@150C/C B/W (B)	850mm

Ground Slab = 100mm thick RC slab on fill reinforced with T10@200C/C (B/W)

All Footings are to be laid on top of 50mm thick lean concrete  
Apply waterproofing to all substructure (below ground elements)

- Notes:**
- Cover to foundations = 50mm
  - Cover to floor slabs = 30mm
  - Cover to floor beams = 35mm
  - Cover to columns = 40mm
  - Laps = 45Dia (Dia=Bar Diameter)
  - Mid bars = 0.85 x Span
  - Sup bars = 1/3 x Span
  - Concrete mix = 1:2:3 (C:S:A)
  - Lean concrete mix = 1:2:5

Proposed  
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**Laboratory Design**

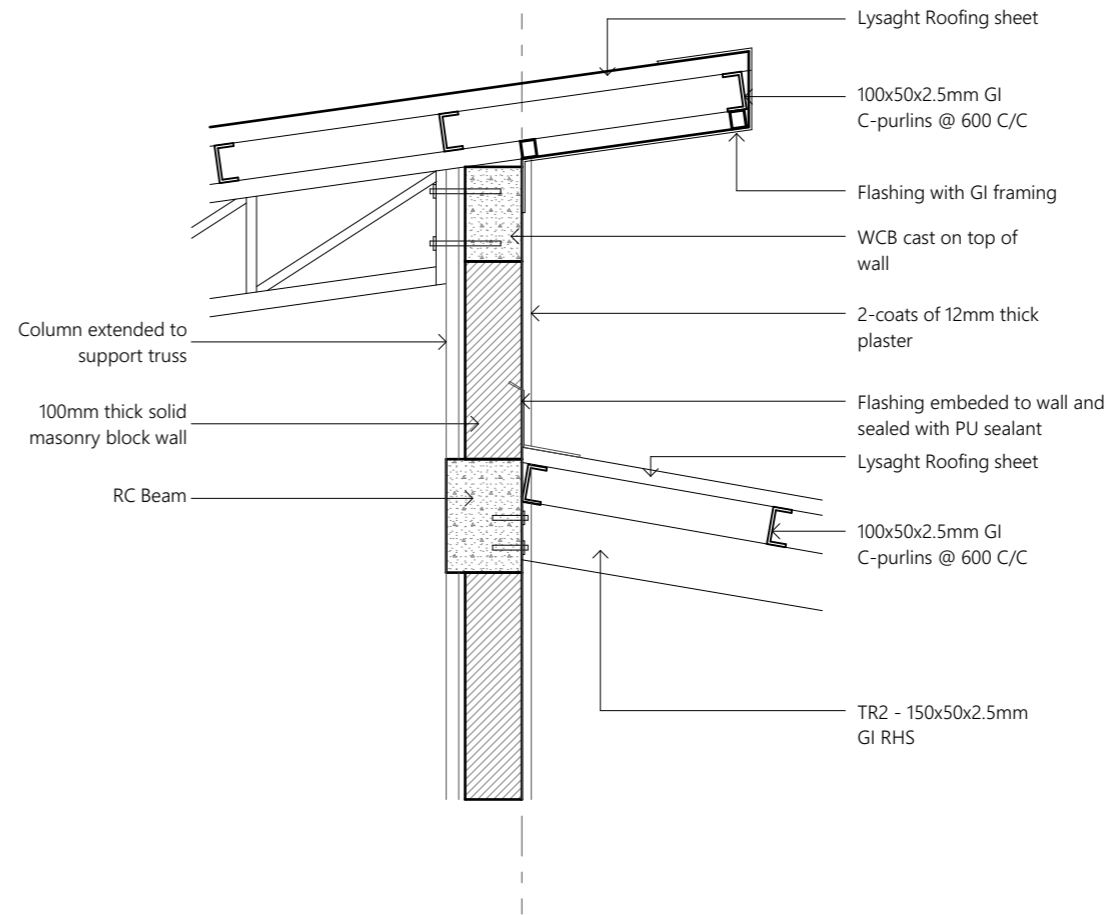
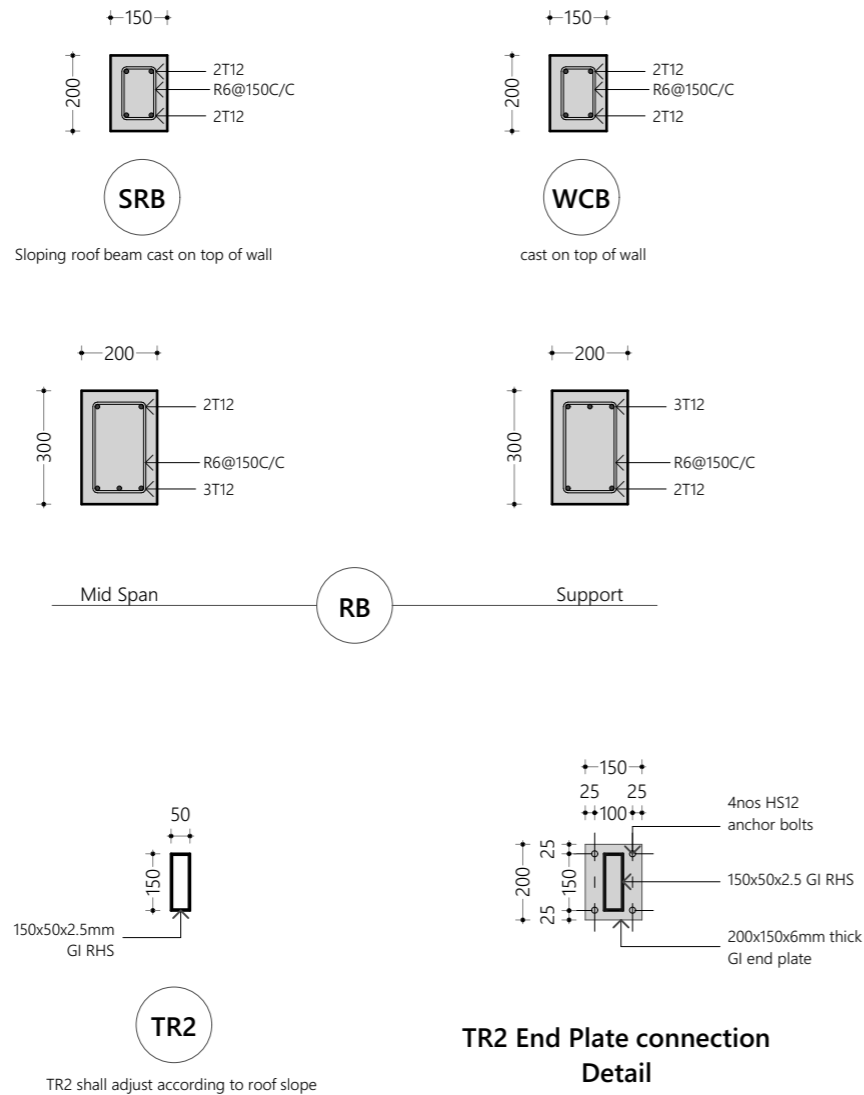
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Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**

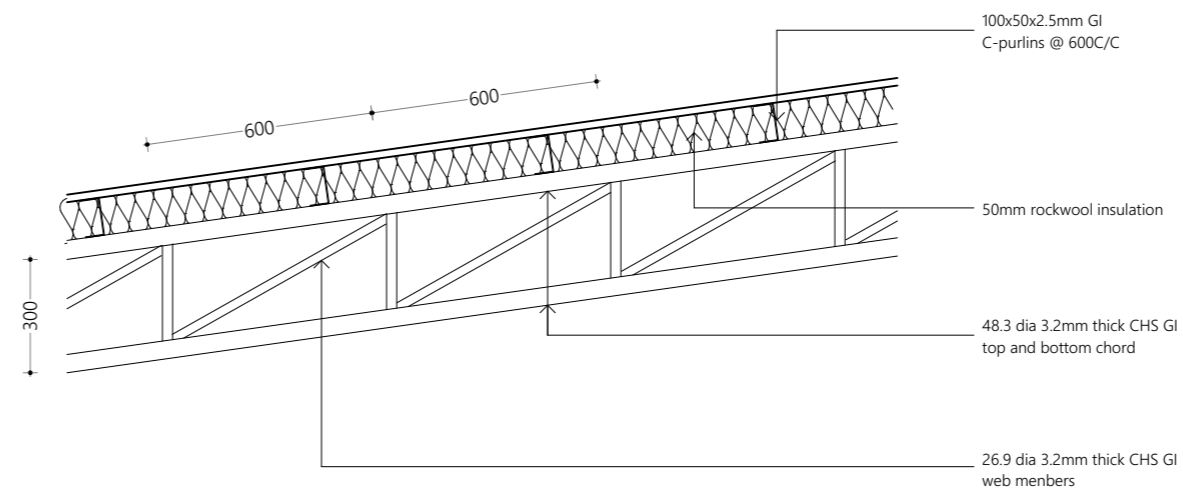
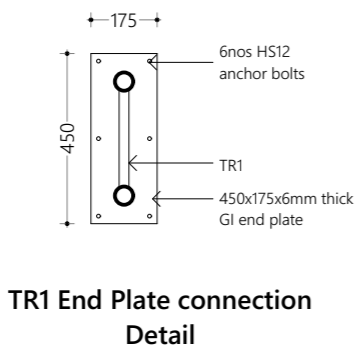


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**Beam Details**  
1:20

**Detail 07**  
1:20



**Notes:**

- Cover to foundations = 50mm
- Cover to floor slabs = 30mm
- Cover to floor beams = 35mm
- Cover to columns = 40mm
- Laps = 45Dia (Dia=Bar Diameter)
- Mid bars = 0.85 x Span
- Sup bars = 1/3 x Span
- Concrete mix = 1:2:3 (C:S:A)
- Lean concrete mix = 1:2:5

Proposed  
**Hdh.Hanimaadhoo Regional Laboratory Design**

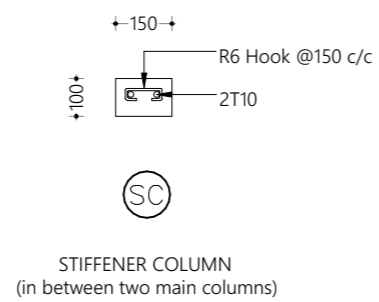
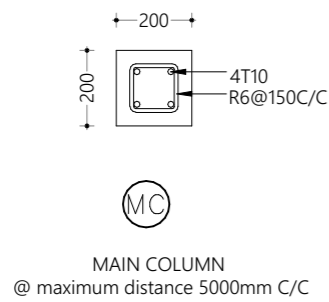
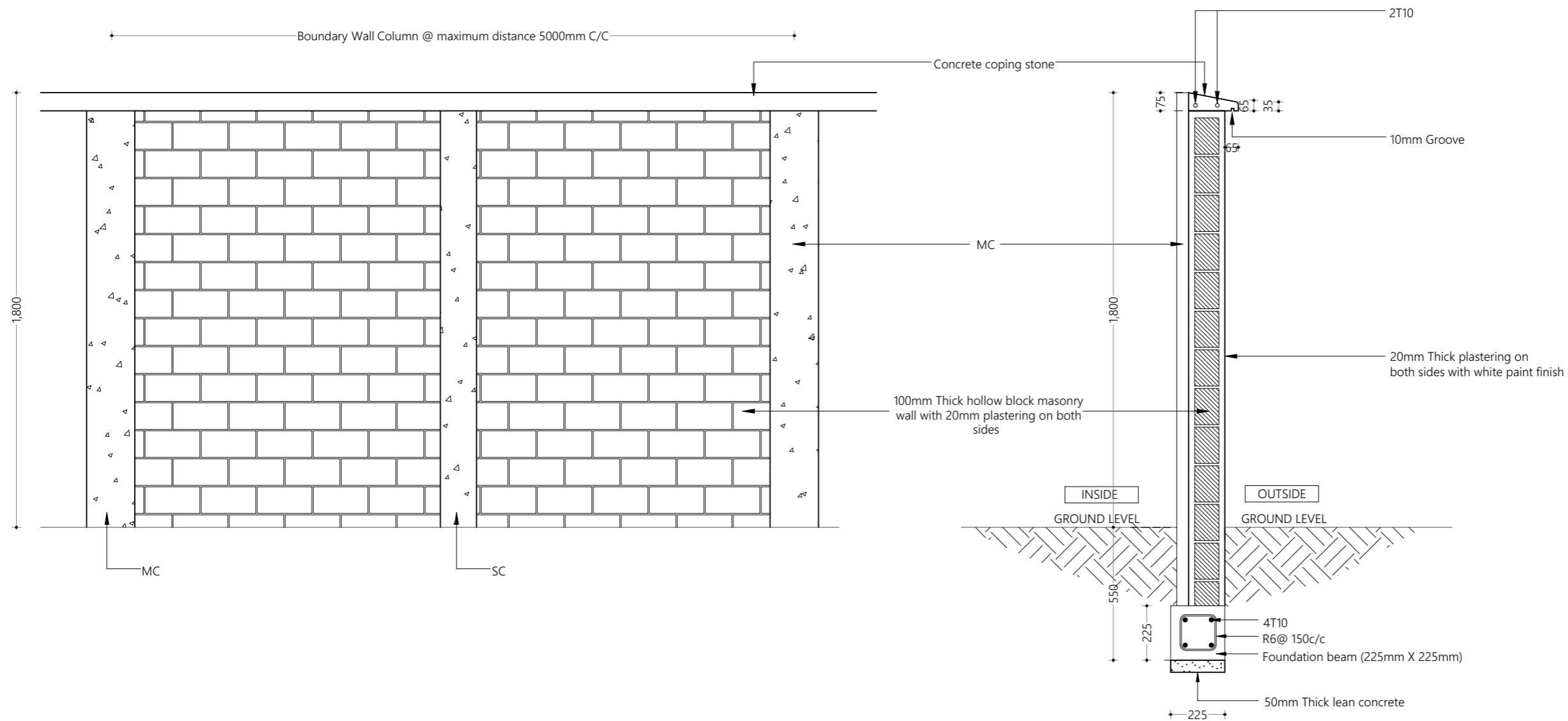
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Engineer **Adam Madheeh**  
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- NOTE:
- Provide T10 dowels from column extending 0.5m into the masonry wall. Dowels spacing starts from 1m above footing beam & 800mm c/c for the rest.
  - Main column & stiffener column shall be placed alternatively.

## Boundary Wall Detail 1:20

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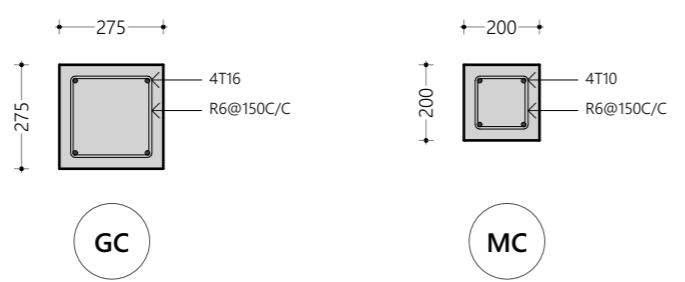
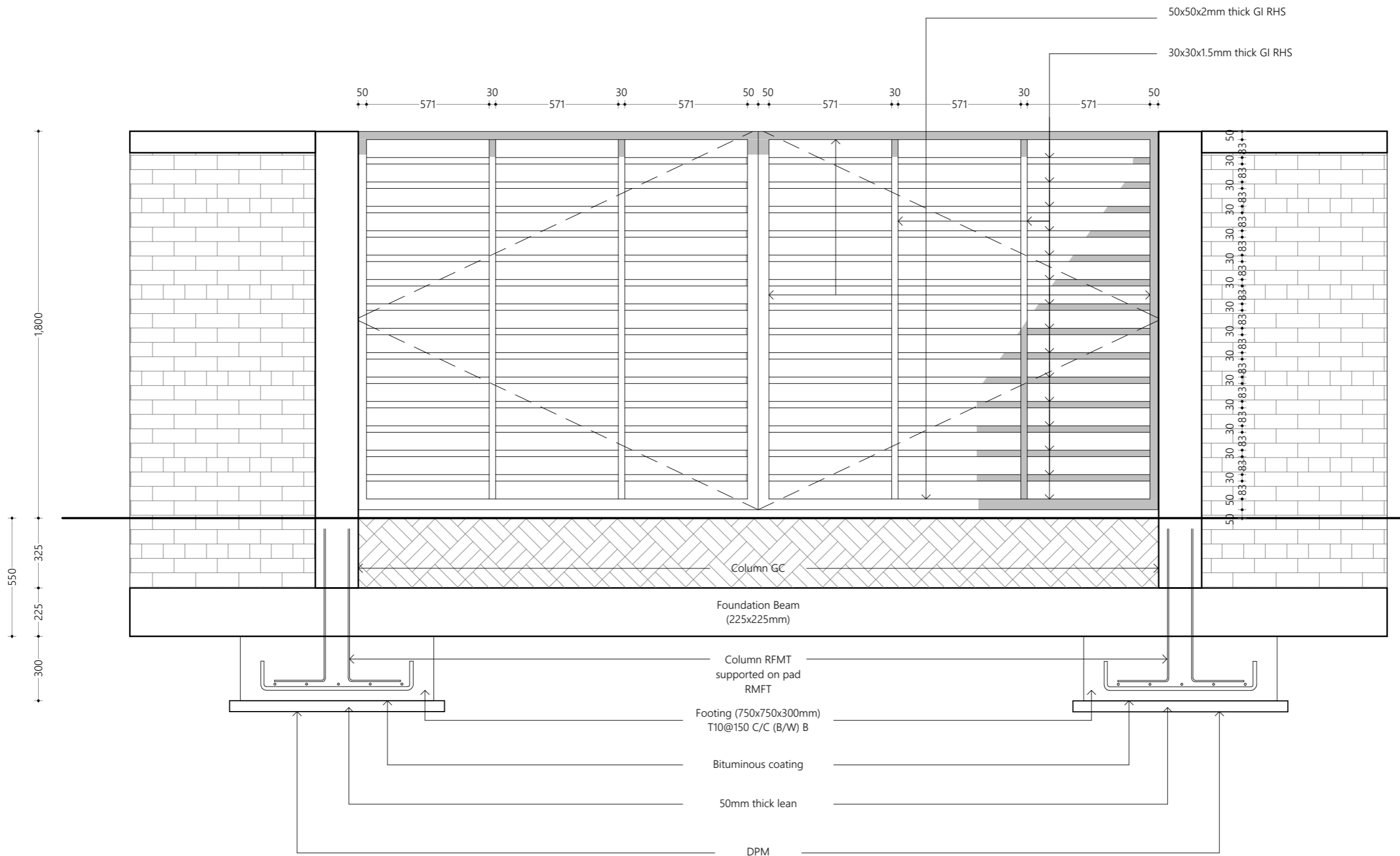
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Engineer **Adam Madheeh**  
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Rev: Page:



- FRAME MATERIAL : Steel gate frame 2mm thick GI sections RHS
- PANEL MATERIAL : Steel frame with 3mm GI steel panels (STL) as shown on elevation view
- All steel members and GI SHS to be applied with 2 coats of anti-corrosive paint with epoxy finishing paint
- Allowance shall be made to fix pad lock in Gates
- Cover for foundation pads and foundation beams shall be 50mm
- Cover for columns (GC) and(MC) shall be 40mm
- Concrete shall be of grade C25
- All concrete cold joints shall casted with bonding agent

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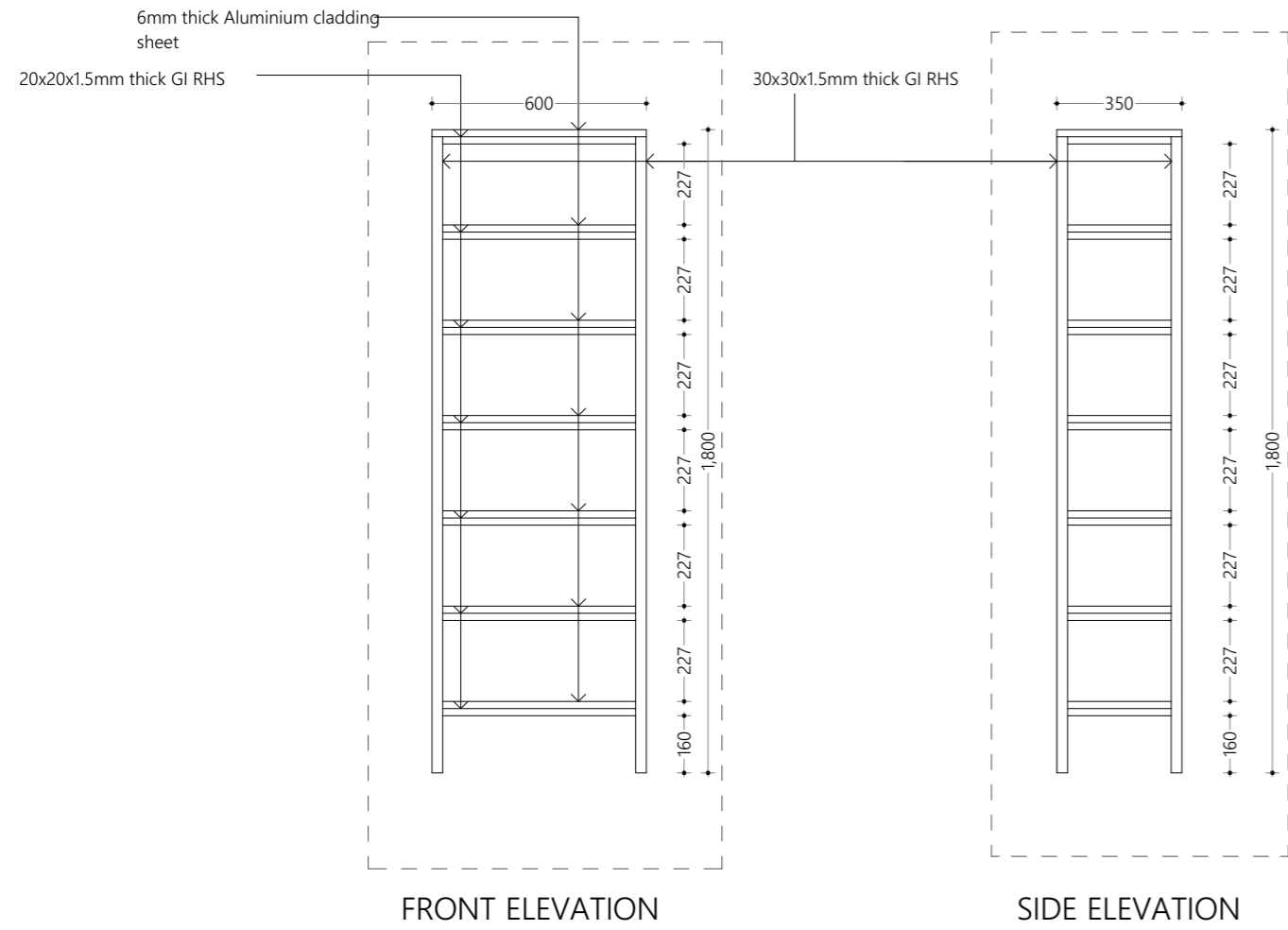
Architect **Fathmath Ihdha**  
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**Gate Detail**  
 1:20

Rev: Page:  
**C.1.4**



**Shelf FU16**  
1:20

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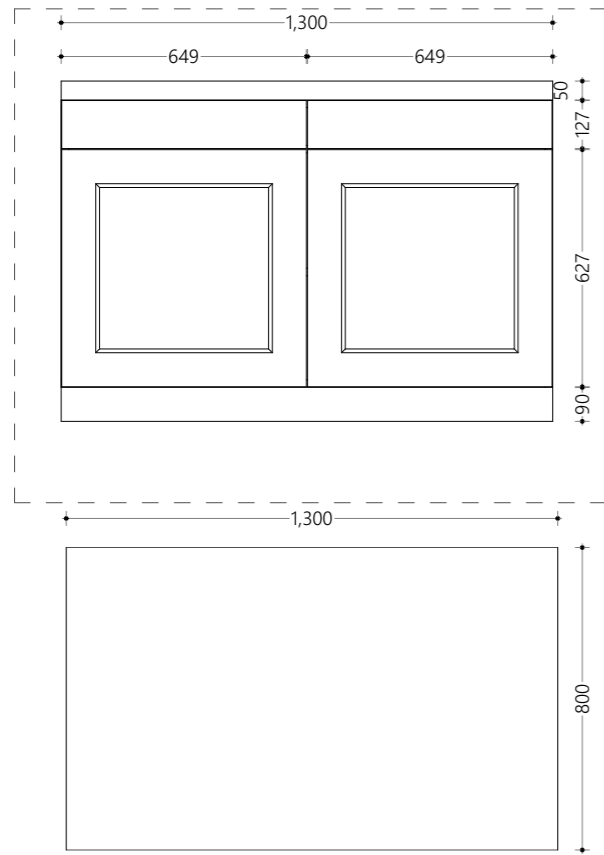
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Architect **Fathmath Iudha**  
Engineer **Adam Madheeh**  
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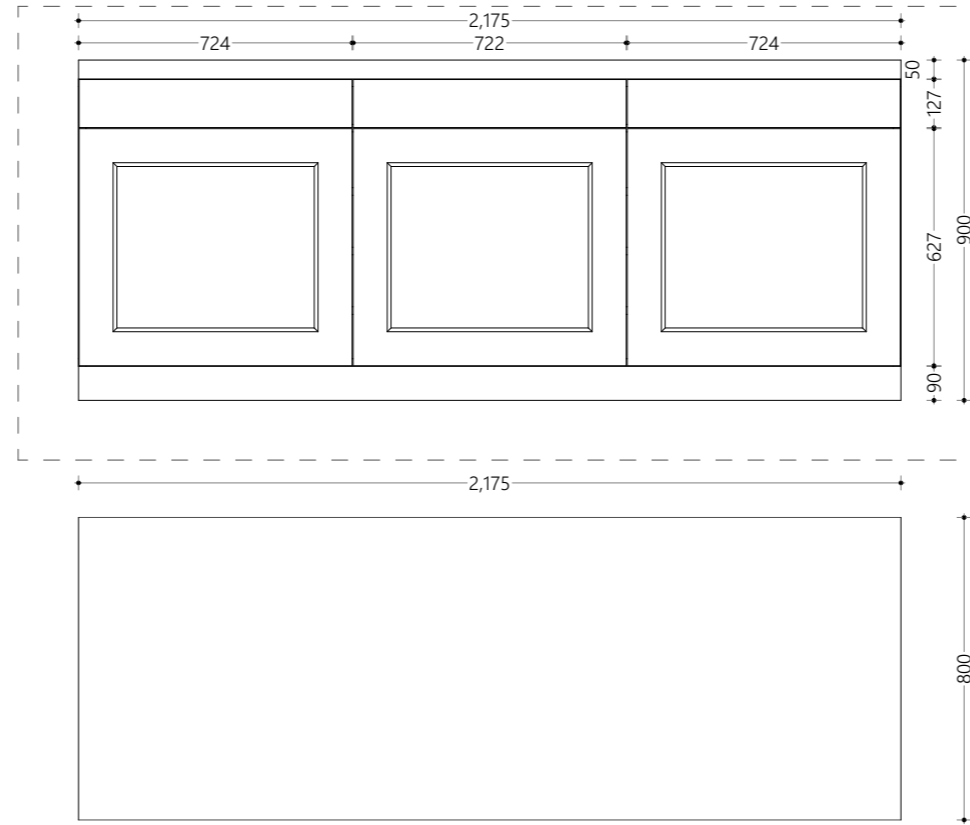


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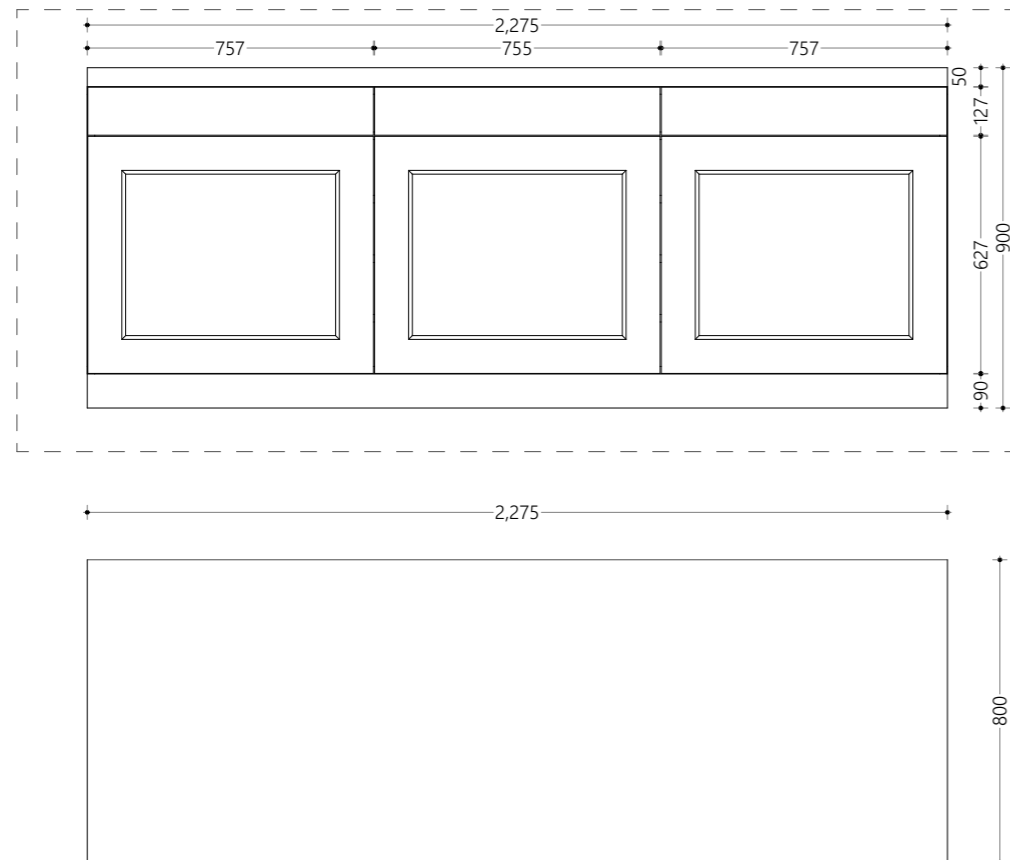
**Cabinet FU09**  
1:20



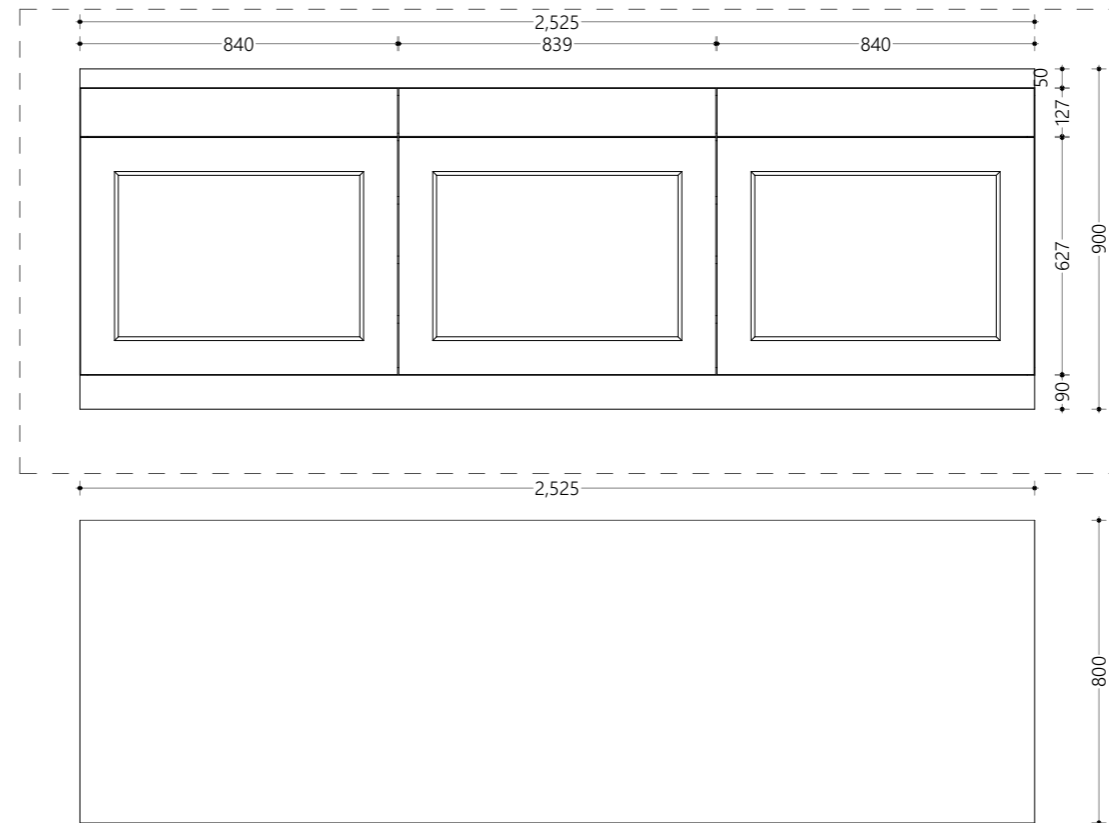
**Cabinet FU10**  
1:20

- CABINET TOP MATERIAL : White Granite  
- CUPBOARD MATERIAL : Block Board

1:20



**Cabinet FU11**  
1:20



**Cabinet FU12**  
1:20

Proposed  
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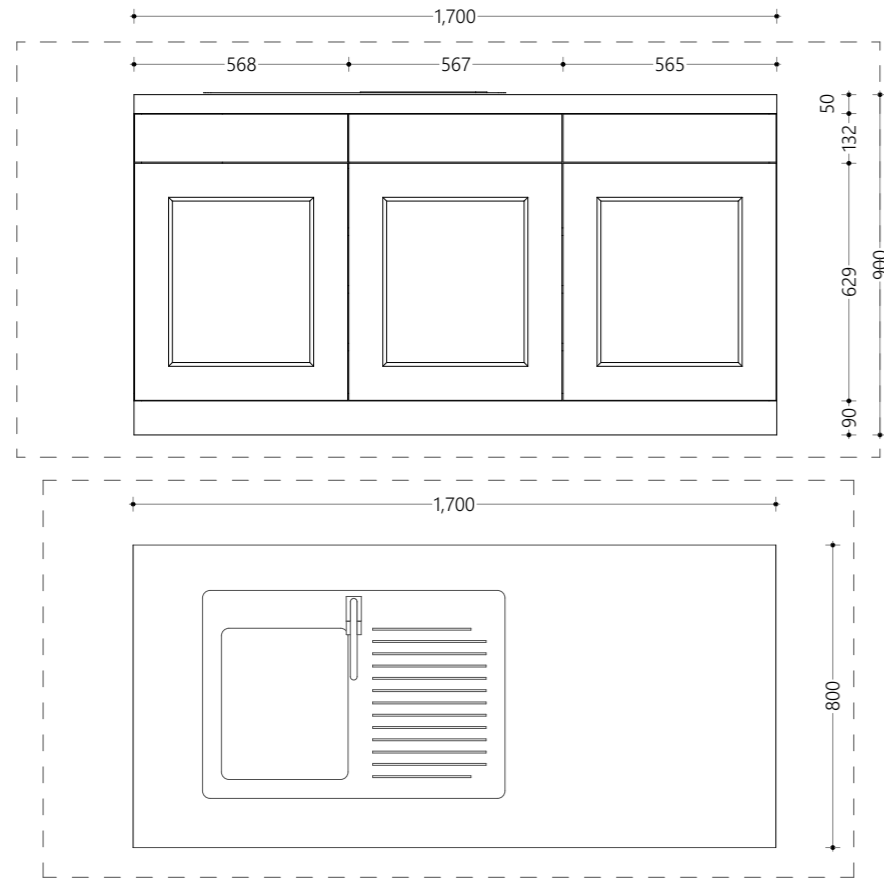
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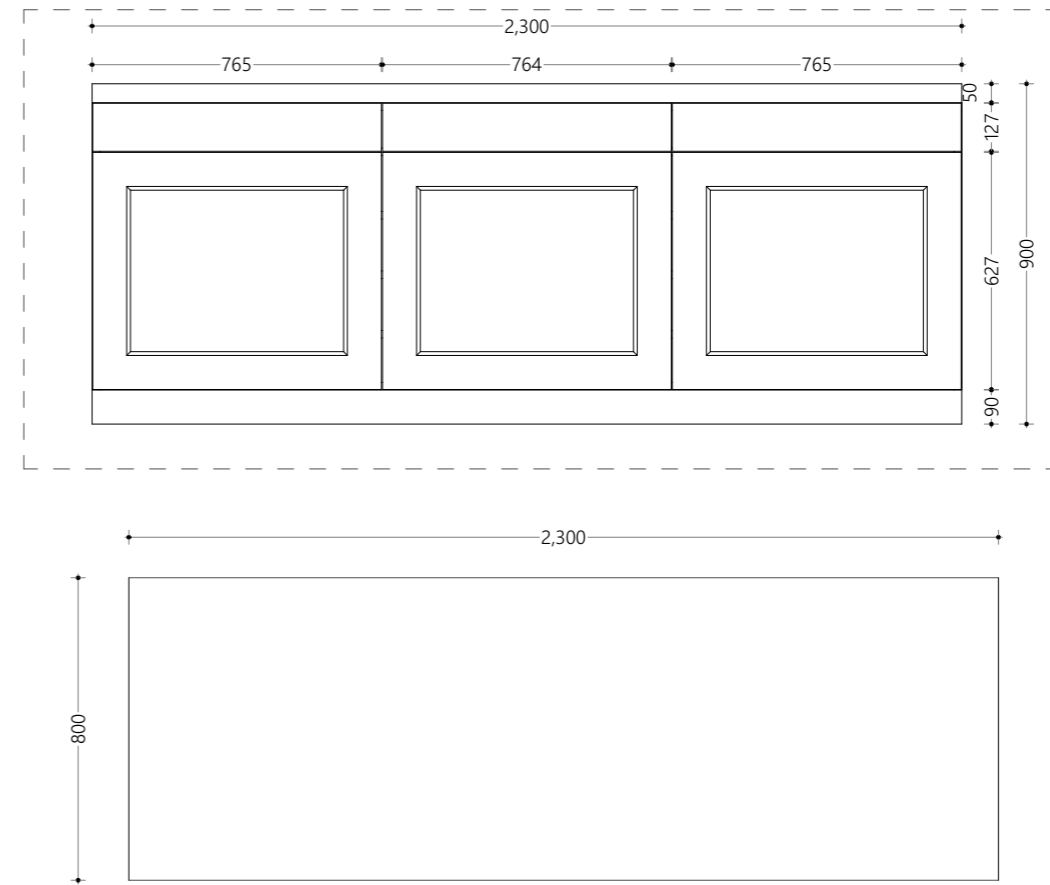
Architect **Fathmath Ihdha**  
Engineer **Adam Madheeh**  
Drawn By **Ahmed Riyaz**



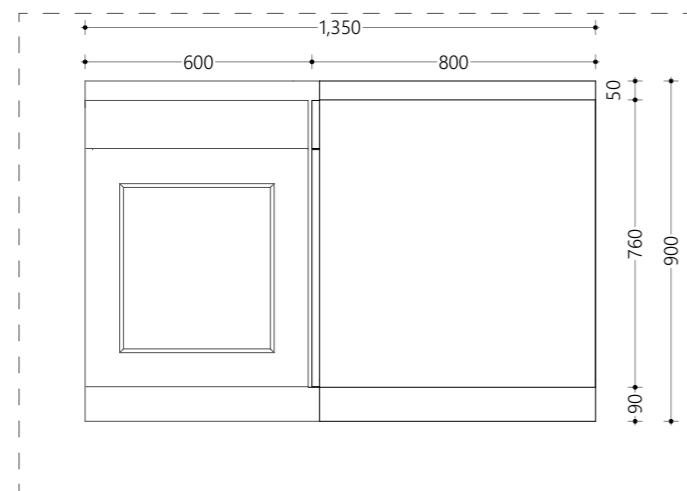
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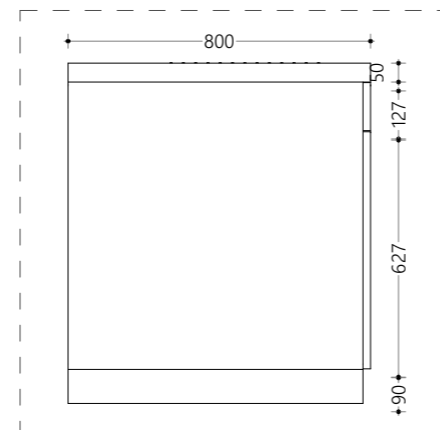
**Cabinet FU13**  
1:20



**Cabinet FU14**  
1:20



**Detail**  
1:20



**Common side Elevation**  
1:20

- CABINET TOP MATERIAL : White Granite  
- CUPBOARD MATERIAL : Block Board

1:20

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BUILDING SERVICES DRAWINGS OF

PROPOSED SINGLE STOREY BUILDING AT

**HDH. HANIMAADHOO REGIONAL LABORATORY**

**DESIGN**

For Ministry Of Environment

By Epoch Associates Pvt. Ltd



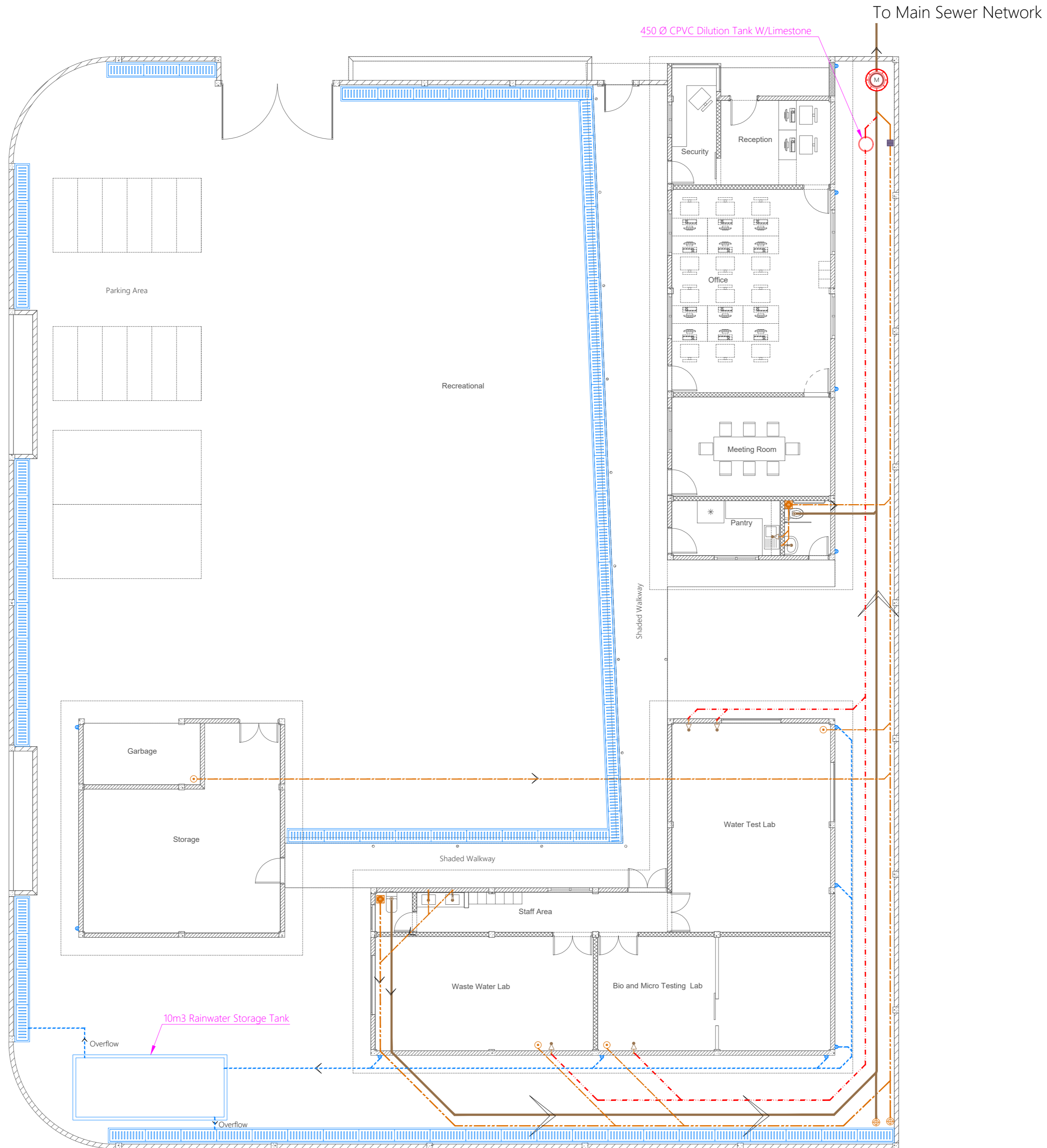
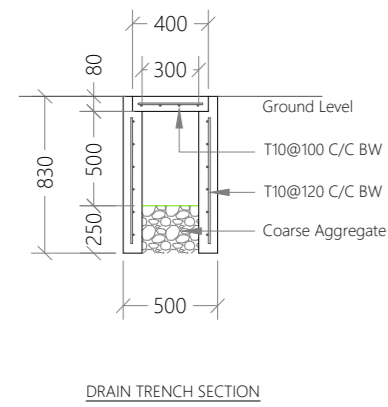
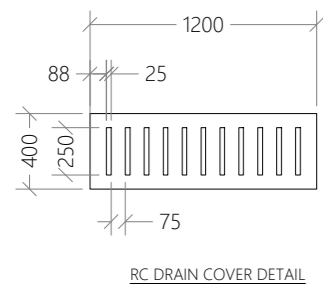
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**A:** 3rd Floor, G. Rosary West, Husnuheena Magu, Male' Republic of Maldives

- Legend**
- Floor Drain
  - Floor Gully
  - 110Ø Soil Pipe (uPVC Pipe)
  - 110Ø Soil Vent Pipe (uPVC Pipe)
  - 82Ø Waste Pipe (uPVC Pipe)
  - 82Ø Waste Vent Pipe (uPVC Pipe)
  - 82Ø Lab Waste Pipe (CPVC Pipe)
  - 82Ø Lab Waste Vent Pipe (CPVC Pipe)
  - 400Ø Waste Pipe (uPVC Pipe)
  - 110Ø Rain Water Pipes (uPVC Pipe)
  - 82Ø Rain Water Pipes (uPVC Pipe)
  - Manhole
  - Gully Trap
  - 110Ø Rainwater Outlet Perforated Cowl
  - 110Ø Rainwater Outlet
  - Rodding Eye
  - Bottle Trap
  - Precast Concrete Grate With 500mm Deep Concrete Drain Trench Without Base

**Notes: -**

- All Drainage Pipes Should Have At A Slope Of 1/150
- All Floor Drains Should Have 'P' Traps



PROPOSED SINGLE STOREY BUILDING AT  
**Regional Laboratory, HDH, Hanimaadhoo**  
 Client: Ministry Of Environment

June 2021  
 Services By: Mohamed Rassam  
 Checked By: Hussain Rasheed  
 Drawn By: Hussain Rasheed



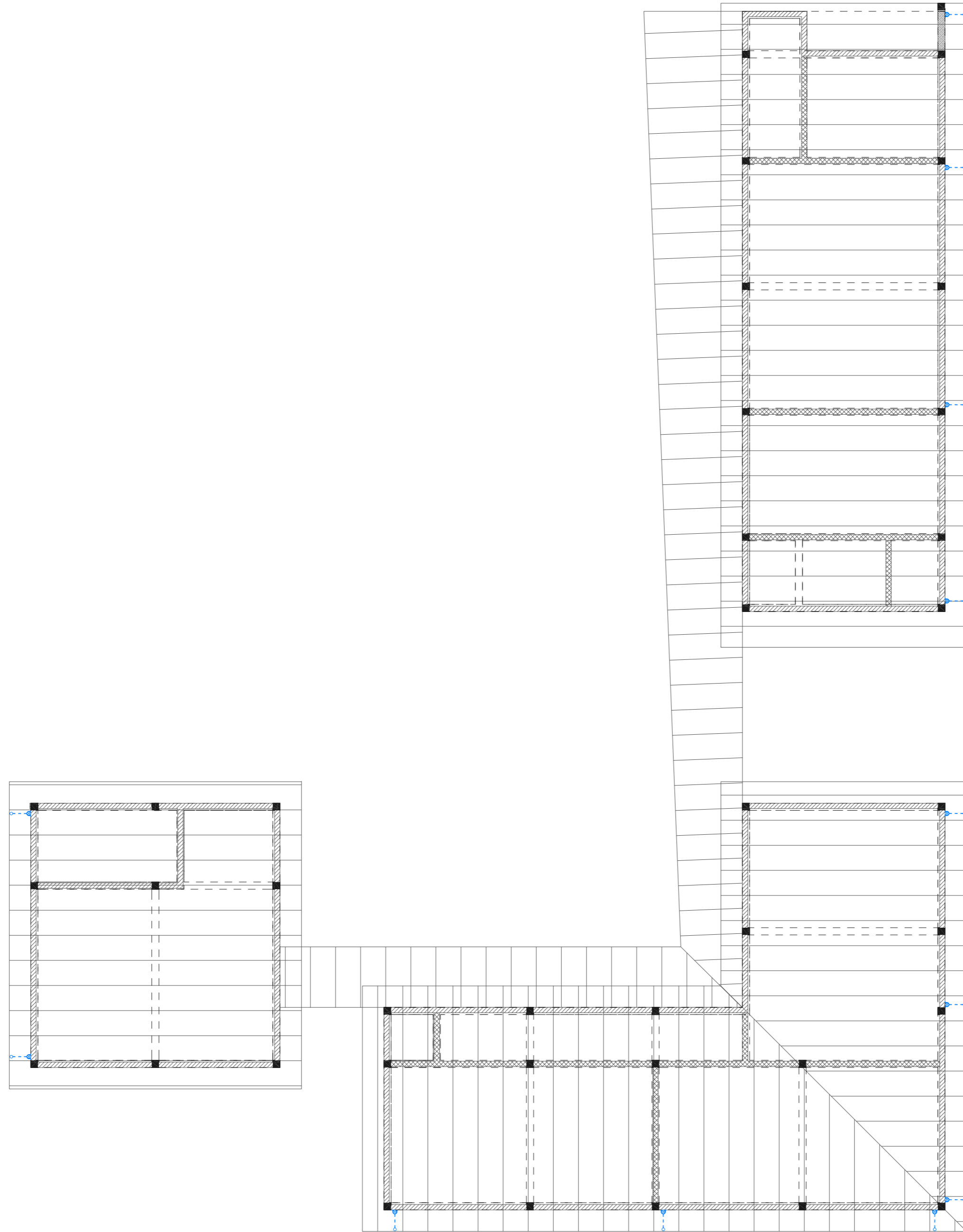
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Rev: ..... Page: .....  
 DR-01

**GROUND FLOOR DRAINAGE LAYOUT**  
 1:100

Legend

- 82Ø Rain Water Pipes (uPVC Pipe)
- 110Ø Rain Water Pipes (uPVC Pipe)



ROOF DRAINAGE LAYOUT  
1:100

PROPOSED SINGLE STOREY BUILDING AT  
**Regional  
Laboratory,  
HDH.  
Hanimaadhoo**  
Client:  
**Ministry Of Environment**

June 2021

Services By: Mohamed Rassam  
Checked By:  
Drawn By: Hussain Rasheed



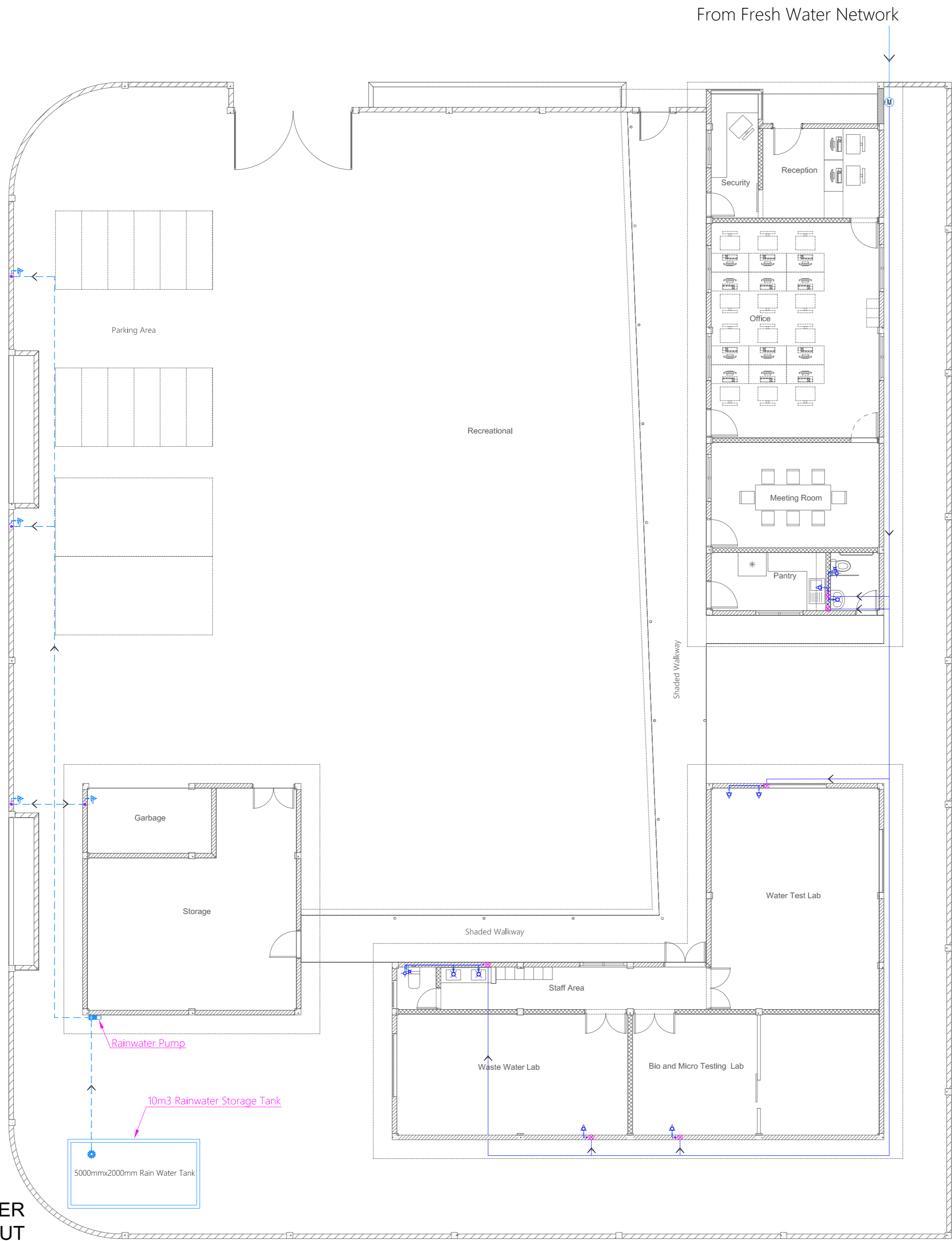
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Rev: --- Page: ---  
--- ---  
--- --- **DR-02**

- Legend**
- 160 Cold Water Supply To Basin Faucet
  - 160 Cold Water Supply To Sink Tap
  - 160 Cold Water Supply To Bidet Shower
  - 160 Cold Water Supply To Cistern
  - MWSC / FENAKA Meter
  - Rise In Wall
  - 250 Cold Water Supply Pipes Running Underground
  - 200 Cold Water Supply Pipes Running In Wall
  - 160 Rain Water Supply To Wall Tap
  - 160 Rain Water Supply (RWS) Pipes
  - 250 Rain Water Supply (RWS) Pipes
  - Foot Valve With Strainer
  - Rain Water Pump

**Notes: -**  
 -All Cold Water Pipes Should Be PVC



**GROUND FLOOR PLUMBING & RAINWATER IRRIGATION LAYOUT**  
 1:100

PROPOSED SINGLE STOREY BUILDING AT  
**Regional Laboratory, HDH. Hanimaadhoo**  
 Client: Ministry Of Environment

June 2021  
 Services By: Mohamed Rassam  
 Checked By: Hussain Rasheed  
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Rev: --- Page: **PL-01**

Main Power Cable From Service Provider Main Telephone/Internet Cable From Service Provider

- Legend**
- 13A Twin Socket
  - 13A Twin Socket With USB Ports
  - 15A Switched Socket @ H.L.
  - 15A Twin Socket With Explosion Proof Plug @ H.L.
  - 13A Twin Socket In Floor Mount Pop-up Box
  - 13A Twin Socket With Explosion Proof Plug
  - 13A Socket With Explosion Proof Plug
  - 15A Switch
  - 13A Power Socket
  - Distribution Board
  - High Level
  - 82Ø PVC Duct For TV Cable Lead In Below Ground Slab
  - Main Incoming Cable For Power In 110Ø PVC Duct Below Ground Slab
  - Internet Switchboard
  - Telephone Outlet
  - Computer Network Outlet
  - HDMI Socket
  - Emergency Light
  - Emergency Light With Explosion Proof Housing
  - IT Distribution Board
  - Computer Network Outlet In Floor Mount Pop-up Box
  - Telephone Extension In Floor Mount Pop-up Box
  - Twin Computer Network Outlet In Floor Mount Pop-up Box

**Notes: -**  
 - All Twin Sockets At 300mm From F.F.L. Except Located At Desk Station Area Which Shall Be At 1200mm From F.F.L.  
 - All Computer, TV And Telephone Points At 300mm From F.F.L.



- Legend**
- Refrigerant Pipes
  - 25Ø Condensate Drain Pipe
  - 40Ø Condensate Drain Riser Pipe
  - Fume Cupboard Hood
  - Wall Mount Air Conditioner
  - Outdoor Condensing Unit
- Notes: -**  
 - Fume hood as per equipment specifications.

GROUND FLOOR POWER & ACV LAYOUT  
 1:100

PROPOSED SINGLE STOREY BUILDING AT  
**Regional Laboratory, HDH. Hanimaadhoo**  
 Client: Ministry Of Environment













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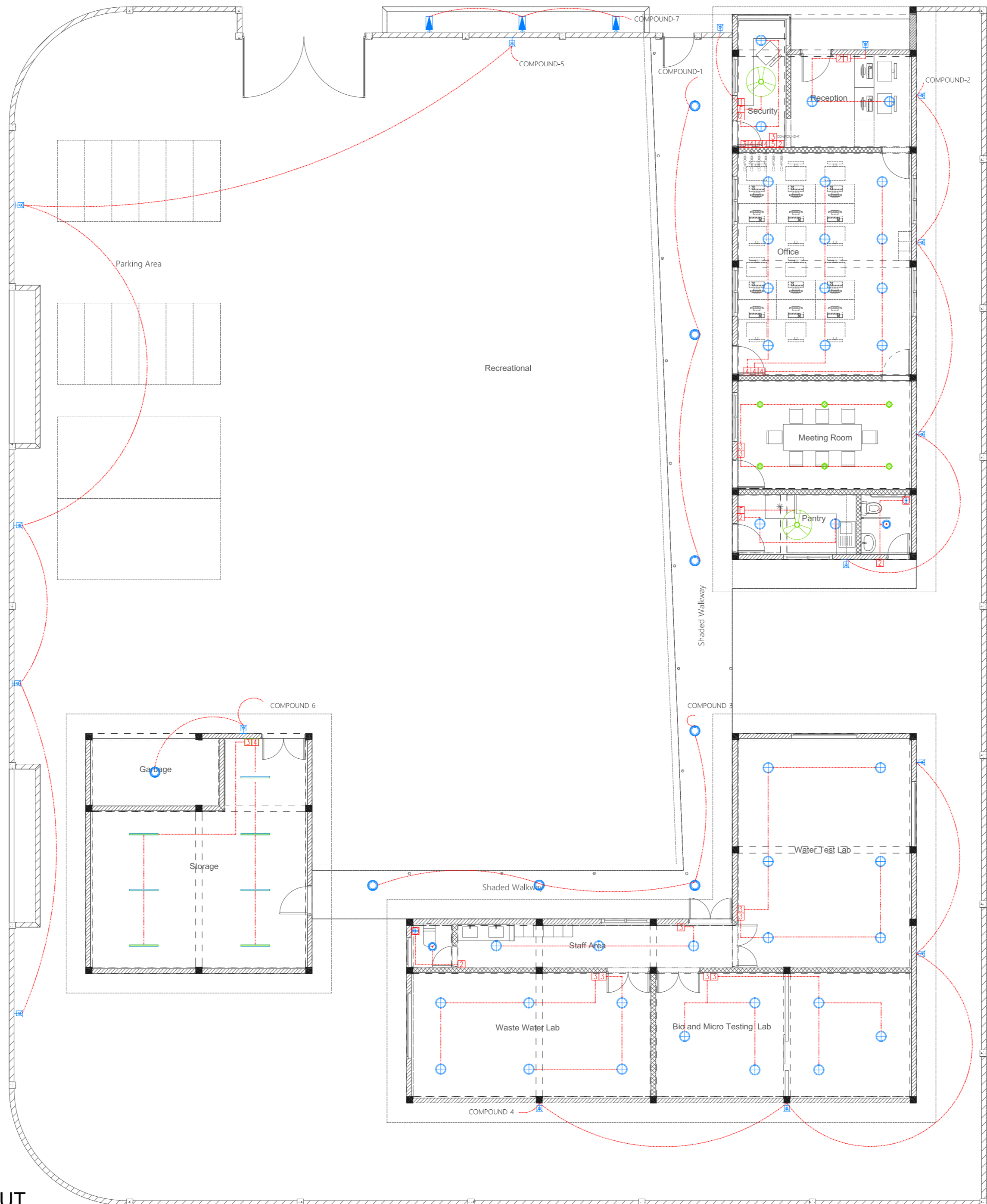


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 --- ---  
**PAC-01**

Legend

-  Ceiling Light (18W)
-  Ceiling Light (12W)
-  Recessed Ceiling Light (12W)
-  Ceiling Down Light (18W) - Weather Proof
-  Weather Proof Wall Light IP55 (12W)
-  Spike Light
-  12W LED Explosion Proof Tube Light
-  Ceiling Mount Spot Light (5W)
-  Light Switch (1 Gang - 5 Gang)
-  Explosion Proof Light Switch (3 Gang - 4 Gang)
-  Ceiling Fan Switch With Controller
-  29" To 36" Ceiling Fan
-  Ceiling Mounted Exhaust Fan 90m3/hr



GROUND FLOOR LIGHTING LAYOUT  
1:100

PROPOSED SINGLE STOREY BUILDING AT  
**Regional  
Laboratory,  
HDH.  
Hanimaadhoo**  
Client:  
**Ministry Of Environment**

June 2021

Services By: Mohamed Rassam  
Checked By: Hussain Rasheed  
Drawn By: Hussain Rasheed














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Rev: --- Page: ---  
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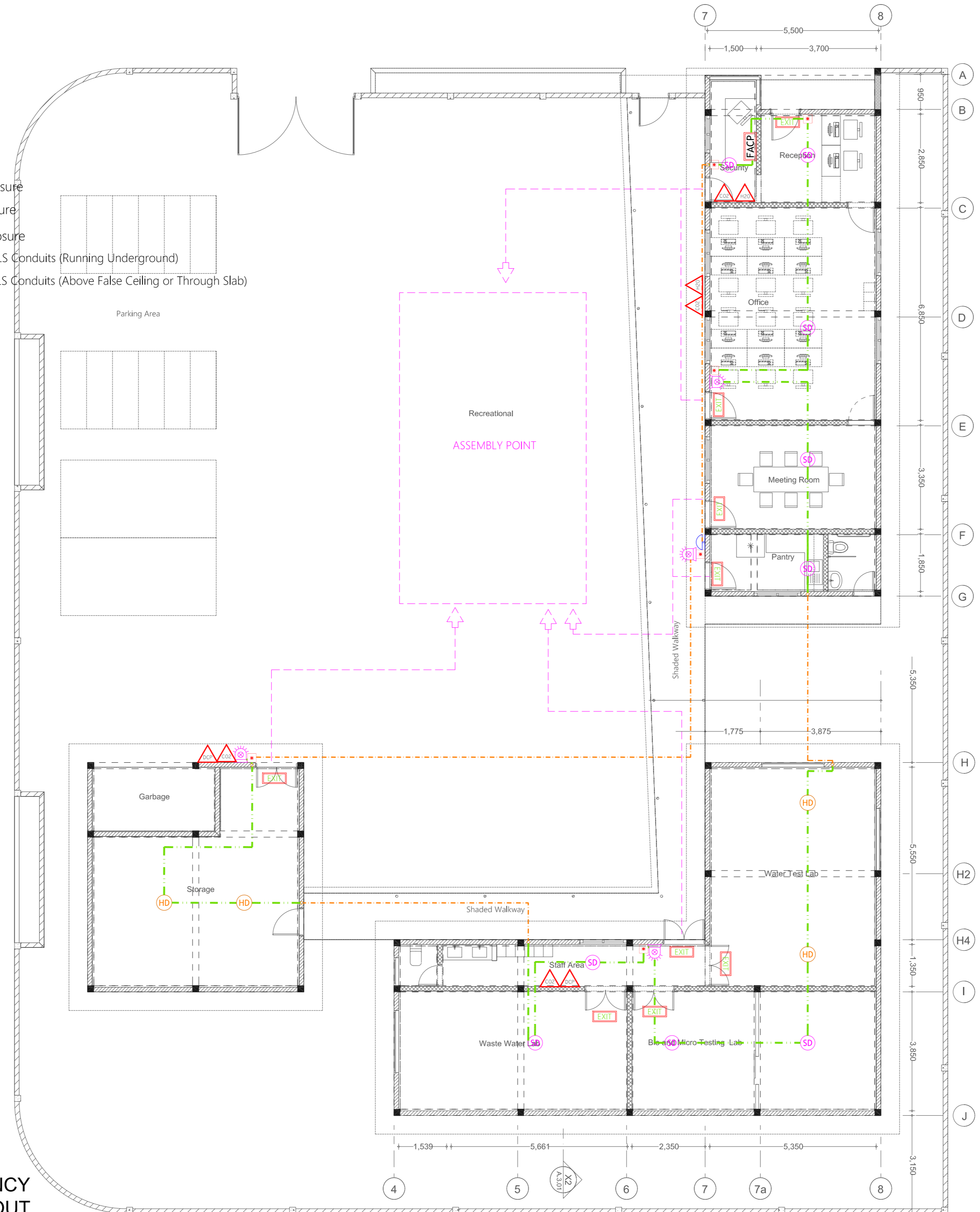


**LEGEND**

-  Manual Call Point
-  Smoke Detector
-  Heat Detector
-  Sounder Bell (85 dB)
-  Fire Alarm Control Panel (Addressable)
-  CO<sub>2</sub> Extinguisher (load: 2kg) In Polycarbonate Enclosure
-  H<sub>2</sub>O Extinguisher (load: 9L) In Polycarbonate Enclosure
-  DCP Extinguisher (load: 6kg) In Polycarbonate Enclosure
-  2.5 sqmm Fire Retardant Low Smoke (FRLS) Cables In FRLS Conduits (Running Underground)
-  2.5 sqmm Fire Retardant Low Smoke (FRLS) Cables In FRLS Conduits (Above False Ceiling or Through Slab)
-  Exit Sign

**Notes: -**

- All relevant sign boards according to regulation 2019/R-1057 will be displayed in the Storage.
- AC will be provided in the Storage.
- The entrance door of the Storage is 90min fire rated door.
- Electrical lights, sockets and switches installed in the Storage shall be explosion proof.
- Explosion proof cameras are installed in the the Storage area.



**GROUND FLOOR FDP & EMERGENCY EVACUATION LAYOUT**  
1:100

PROPOSED SINGLE STOREY BUILDING AT  
**Regional Laboratory, HDH. Hanimaadhoo**  
Client: Ministry Of Environment









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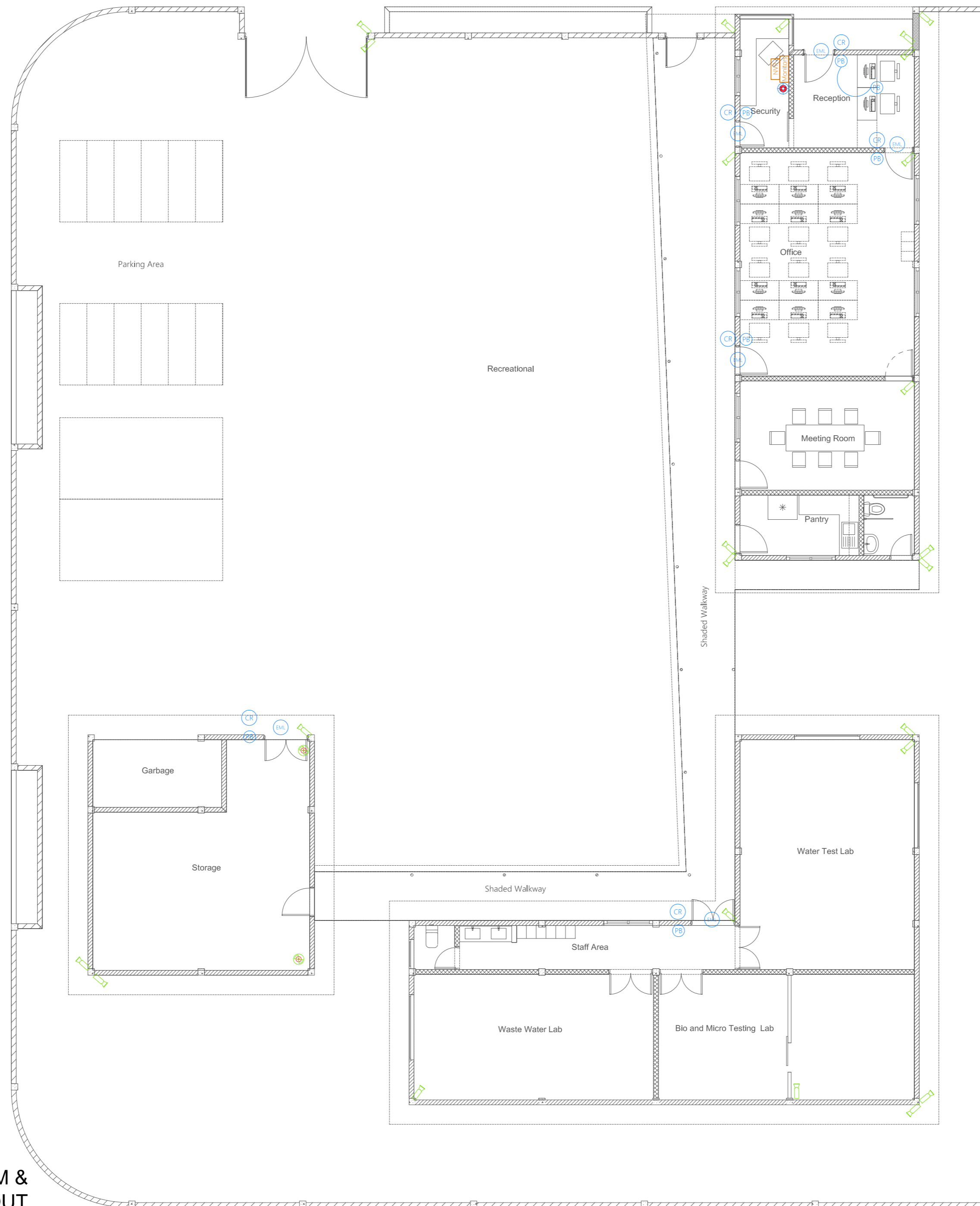


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Rev: ... Page: ...  
**FDP-01**

LEGEND

-  Electromagnetic Lock
-  RFID Card Reader
-  Push Button
-  Door Security Alarm
-  Network Video Recorder [NVR]
-  Security Monitor
-  Angular Camera
-  360 Degree Camera With Explosion Proof Housing



**GROUND FLOOR CONTROL SYSTEM & SURVEILLANCE LAYOUT**  
1:100

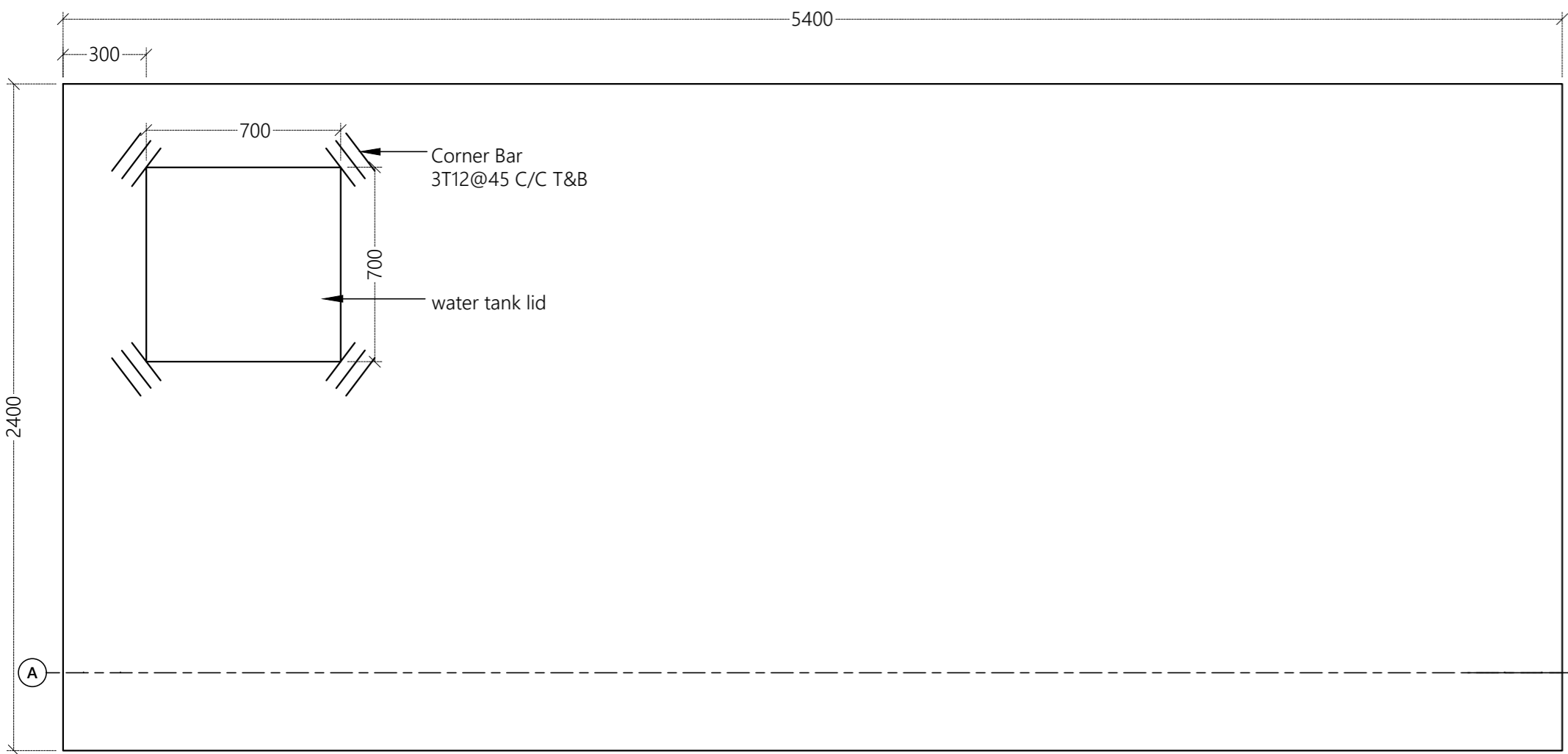
PROPOSED SINGLE STOREY BUILDING AT  
**Regional Laboratory, HDH. Hanimaadhoo**  
 Client: Ministry Of Environment

June 2021  
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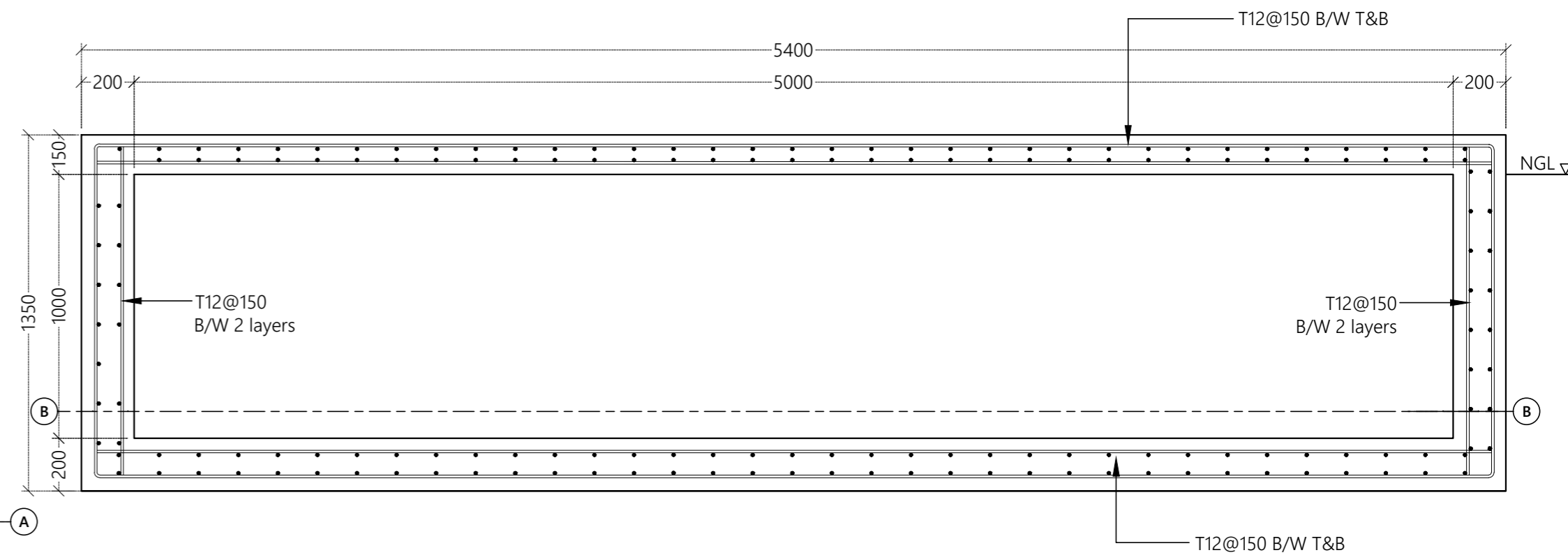


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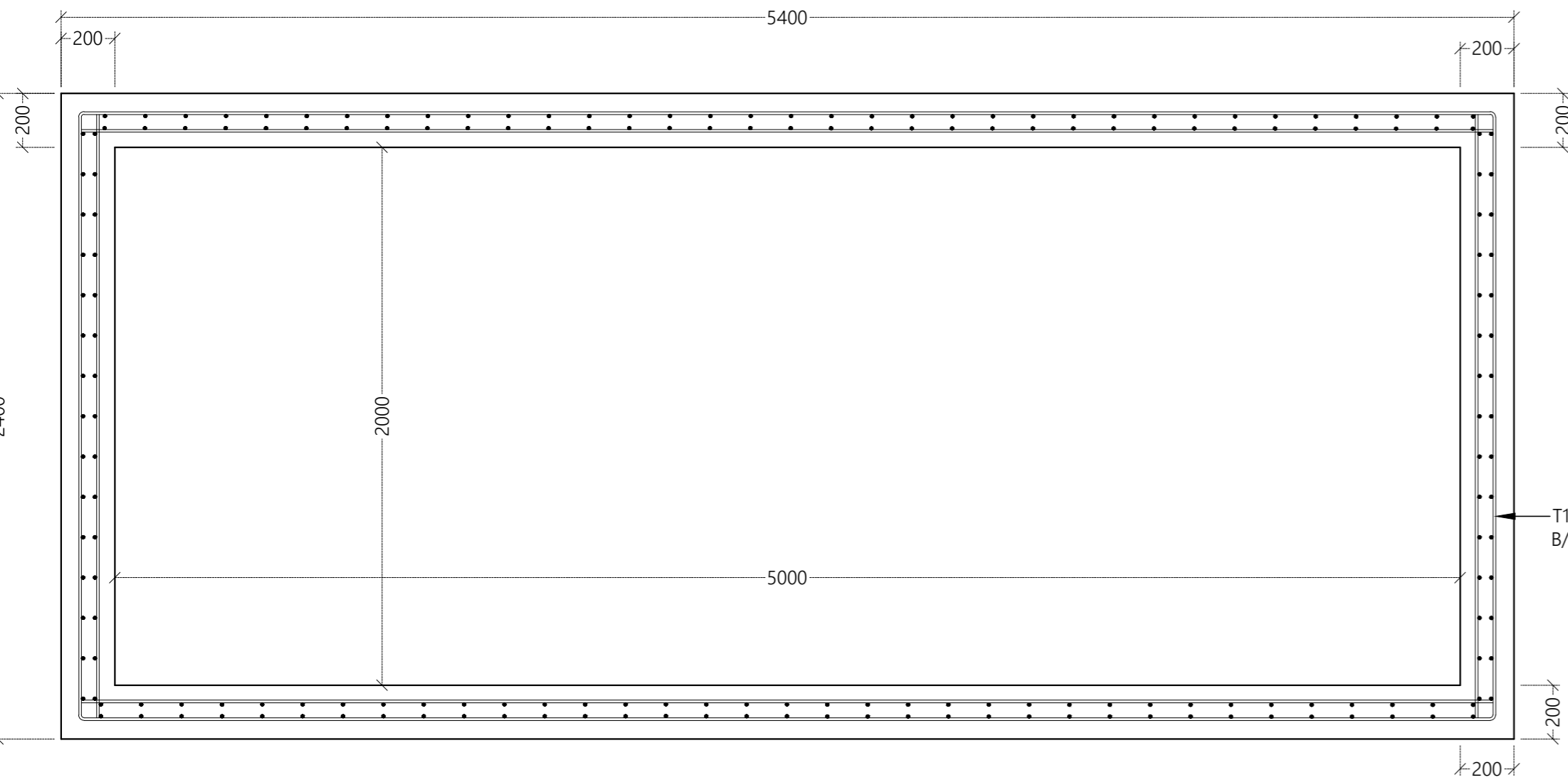
Rev: --- Page: ---  
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TANK DETAILS  
1:20

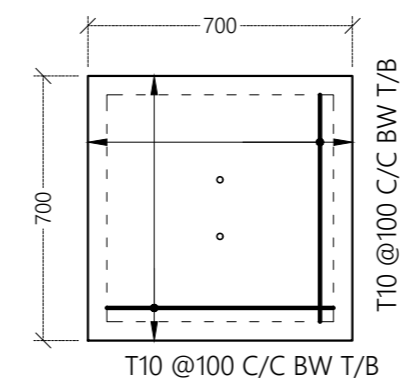


SECTION A-A  
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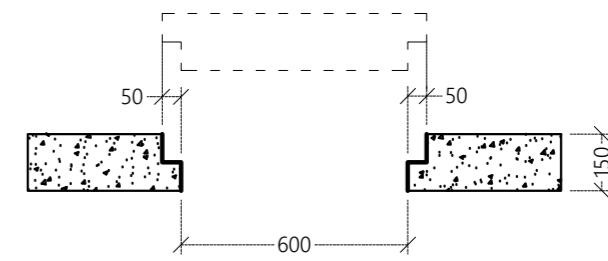


TANK DETAILS  
1:20

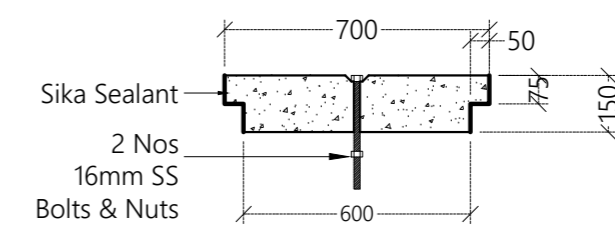
SECTION B-B  
1:20



WATER TANK LID - PLAN  
1:20



WATER TANK OPENNING - SECTION  
1:20



WATER TANK LID - SECTION  
1:20

PROPOSED SINGLE STOREY BUILDING AT  
**Regional  
Laboratory,  
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Rev: ..... Page:  
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..... **TD-01**

Water Quality Test Parameters (Chemical)					
#	Chemical Test	REAGENTS	MANUFACTURER	Product/Material Number	Remarks
1	Conductivity/ TDS/Salinity	Conductivity Standard solution 1413 $\mu$ S/cm (250ml)	METTLER TOLEDO™	51350092	At 20ml per calibration, 12 tests per bottle. 1.5 calibrations daily for 366 days. For RO and ground water
2		Conductivity standard 84 $\mu$ S/cm, 250 mL	METTLER TOLEDO™	51302153	At 20ml per calibration, 12 tests per bottle. 1 calibration weekly for 52 weeks. For Rainwater and mineral water
3		Conductivity standard 12.88mS, 250 mL	METTLER TOLEDO™	51350094	At 20ml per calibration, 12 tests per bottle. 1 calibration weekly for 52 weeks. For Seawater/boreholes
4	pH	Buffer pH 4.01, 250mL	METTLER TOLEDO™	51350004	At 20ml per calibration, 12 tests per bottle. 1.5 calibrations daily for 366 days. For RO and ground water
5		Buffer pH 7.00, 250mL	METTLER TOLEDO™	51350006	
6		Buffer pH 9.21, 250mL	METTLER TOLEDO™	51350008	

7	<b>Turbidity</b>	Stablcal Turbidity Standards Calibration Kit, 2100A Turbidimeter, Sealed Vials	HACH	2659105	Kit includes Sealed Vials - 1.0, 10, 100 and 1000 NTU
8	<b>Aluminium</b>	Aluminum Standard Solution, 100 mg/L as Al (NIST), 100 mL	HACH	1417442	1 test per year for 200 customers
9		ECR Reagent Powder Pillows, 20 mL, pk/100	HACH	2603849	
10		ECR Masking Reagent Solution, 25 mL SCDB	HACH	2380123	
11		Hexamethylenetetramine Buffer Reagent Powder Pillows, pk/100	HACH	2603999	
15	<b>Arsenic</b>	Arsenic Standard Solution, 1000 mg/L as As, 100 mL	HACH	1457142	1 test per year for 60 customers
16		Hydrochloric Acid, ACS (500ml)	HACH	13449	
17		Lead Acetate Solution, 10%, (100ml)	HACH	1458042	
18		Potassium Iodide Solution, 20% (100ml)	HACH	1456842	
19		Pyridine, ACS (500ml)	HACH	1446949	
20		Silver Diethyldithiocarbamate (25g)	HACH	1447624	
21		Stannous Chloride Solution (100ml)	HACH	1456942	
22		Zinc, 20-mesh, ACS (454g)	HACH	79501	
23	<b>Barium</b>	Barium Standard Solution, 1000 mg/L as Ba (NIST), 100 mL	HACH	1461142	1 test per year for 200 customers
24		BariVer™ 4 Barium Reagent Powder Pillow pk/100	HACH	1206499	
25	<b>Boron</b>	Boron Standard Solution, 1000 mg/L as B (NIST), 100 mL	HACH	191442	1 test per year for 100 customers
26		BoroVer®« 3 Boron Reagent Powder Pillows, pk/100	HACH	1417099	
27		Sulfuric Acid, ACS, 500 mL	HACH	97949	
28	<b>Cadmium</b>	Cadmium Standard Solution, 100 mg/L as Cd (NIST), 100 mL	HACH	1402442	1 test per year for 100 customers
29		Buffer Powder Pillows for Heavy Metals, Citrate Type, pk/100	HACH	1420299	
30		DithiVer Metals Reagent Powder Pillows pk/100	HACH	1261699	
31		Chloroform, ACS (4L)	HACH	1445817	

32		Potassium Cyanide (125g)	HACH	76714	
33		Sodium Hydroxide Solution, 50% (500ml)	HACH	218049	
34	<b>Calcium Hardness (High Range)</b>	Calcium Hardness Standard Solution, 10,000 mg/L as CaCO <sub>3</sub> (NIST), pk/16 10-mL Ampules	HACH	218710	1 test per year for 100 customers
35		CalVer® 2 Calcium Indicator Powder Pillows, pk/100	HACH	94799	
36		Potassium Hydroxide Standard Solution, 8.00 N, 100 mL MDB	HACH	28232H	
37		EDTA Digital Titrator Cartridge, 0.800 M	HACH	1439901	
38		Alkali Solution for Calcium and Magnesium, 100 mL MDB	HACH	2241732	
39	<b>Calcium Hardness (Low Range)</b>	Calcium/Magnesium Indicator Solution, 100 mL MDB	HACH	2241832	1 test per year for 200 customers
40		EDTA Solution, 1M, 50 mL SCDB	HACH	2241926	
41		EGTA Solution, 50 mL SCDB	HACH	2229726	
42		Chloride standard solution 200 mg/l 600ml	Sherwood Scientific™	156203	
43	Combined Acid Buffer Solution 500ml	Sherwood Scientific™	00156208		
44	<b>Chlorine Dioxide</b>	Chlorine Standard Solution, 50-75 mg/L as Cl <sub>2</sub> , pk/16 - 10 mL Voluette Ampules (NIST)	HACH	1426810	1 test per year for 100 customers
45		DPD Free Chlorine Reagent Powder Pillows, 10 mL, pk/100	HACH	2105569	
46		Glycine Reagent, 10%, 29 mL SCDB	HACH	2762133	
47	<b>Free Chlorine</b>	Chlorine Standard Solution, 25-30 mg/L as Cl <sub>2</sub> , pk/20 - 2 mL PourRite Ampules (NIST)	HACH	2630020	At 95 tests per week for 52 weeks
48		DPD Free Chlorine Reagent Powder Pillows, 10 mL, pk/1000	HACH	2105528	
49	<b>Total Chlorine</b>	Chlorine Standard Solution, 25-30 mg/L as Cl <sub>2</sub> , pk/20 - 2 mL PourRite Ampules (NIST)	HACH	2630020	1 test per year for 100 customers

50		DPD Total Chlorine Reagent Powder Pillow, 10-mL	HACH	2105669	
51	<b>Chromium Hexavalent</b>	Chromium, Hexavalent, Standard Solution, 50 mg/L Cr <sup>6+</sup> (NIST), 100 mL	HACH	81042H	1 test per year for 100 customers
52		ChromaVer® 3 Chromium Reagent Powder Pillows, 5 or 10 mL, pk/100	HACH	1271099	
53	<b>Cobalt</b>	Cobalt Standard Solution, 1000 mg/L as Co (NIST), 100 mL	HACH	2150342	1 test per year for 100 customers
54		EDTA Reagent Powder Pillows, pk/100	HACH	700599	
55		Phthalate-Phosphate Reagent Powder Pillows, 10 mL, pk/100	HACH	2615199	
56		PAN Indicator Solution, 0.3%, 100 mL	HACH	2150232	
57	<b>Copper</b>	Copper Standard Solution, 100 mg/L as Cu (NIST), 100 mL	HACH	12842	1 test per year for 100 customers
58		CuVer® 1 Copper Reagent Powder Pillows, 10 mL, pk/100	HACH	2105869	
59	<b>Cyanide</b>	Potassium Cyanide (125g)	HACH	76714	1 test per year for 100 customers
60		CyaniVer 3 Cyanide Reagent Powder Pillows, 10 mL, pk/100	HACH	2106869	
61		CyaniVer 4 Cyanide Reagent Powder Pillows, 10 mL, pk/100	HACH	2106969	
62		CyaniVer 5 Cyanide Reagent Powder Pillows, 10 mL, pk/100	HACH	2107069	
63	<b>Fluoride</b>	Fluoride Standard Solution, 0.2 mg/L as F (NIST), 500 mL	HACH	40502	1 test per year for 125 customers
64		SPADNS Fluoride Reagent Solution, 500 mL	HACH	44449	
65	<b>Iodine</b>	Chlorine Standard Solution, 25-30 mg/L as Cl <sub>2</sub> , pk/20 - 2 mL PourRite Ampules (NIST)	HACH	2630020	1 test per year for 100 customers
66		DPD Total Chlorine Reagent Powder Pillow, 10-mL	HACH	2105669	1 test per year for 100 customers

67	<b>Iron</b>	FerroVer® Iron Reagent Powder Pillows, 10 mL, pk/100	HACH	2105769	At 50 tests per month for 1 year.
68	<b>Lead</b>	Lead Standard Solution, 100 mg/L as Pb (NIST), 100mL	HACH	1261742	1 test per year for 100 customers
69		Buffer Powder Pillows for Heavy Metals, Citrate Type, pk/100	HACH	1420299	
70		Chloroform, ACS (4L)	HACH	1445817	
71		DithiVer® Metals Reagent Powder Pillows, pk/100	HACH	1261699	
72		Potassium Cyanide (125g)	HACH	76714	
73		Sodium Hydroxide Standard Solution, 5.0 N, 1 L	HACH	245053	
74	<b>Magnesium Hardness (Low Range)</b>	Alkali Solution for Calcium and Magnesium, 100 mL MDB	HACH	2241732	1 test per year for 100 customers
75		Calcium/Magnesium Indicator Solution, 100 mL MDB	HACH	2241832	
76		EDTA Solution, 1M, 50 mL SCDB	HACH	2241926	
77	<b>Manganese (High Range)</b>	Manganese Standard Solution, 1000 mg/L as Mn (NIST), 100 mL	HACH	1279142	1 test per year for 100 customers
78		Manganese Reagent Set, HR, 10 mL	HACH	2430000	
79	<b>Manganese (Low Range)</b>	Manganese Standard Solution, 10 mg/L as Mn (NIST), pk/20 - 2 mL PourRite Ampules	HACH	2605820	1 test per year for 100 customers
80		Alkaline Cyanide Reagent, 50 mL SCDB	HACH	2122326	
81		Ascorbic Acid Powder Pillows, pk/100	HACH	1457799	
82		PAN Indicator Solution, 0.1%, 100 mL	HACH	2122432	
85	<b>Nickel</b>	Nickel Standard Solution, 1000 mg/L as Ni (NIST), 100 mL	HACH	1417642	1 test per year for 100 customers
86		EDTA Reagent Powder Pillows, pk/100	HACH	700599	
87		Phthalate-Phosphate Reagent Powder Pillows, 10 mL, pk/100	HACH	2615199	
88		PAN Indicator Solution, 0.3%, 100 mL	HACH	2150232	
89	<b>Nitrate</b>	Nitrate Standard Solution, 100 mg/L, 500 mL	HACH	194749	



90		NitraVer® 5 Nitrate Reagent Powder Pillows, 10 mL, pk/100	HACH	2106169	At 50 tests per month for 1 year.
91	Nitrite	Sodium Nitrite, ACS	HACH	245201	1 test per year for 100 customers
92		NitriVer® 3 Nitrite Reagent Powder Pillows, 10 mL, pk/100	HACH	2107169	
93	Nitrogen Ammonia	Nitrogen-Ammonia Reagent Set, Nessler	HACH	2458200	1 set is 250 tests. At 50 tests per month for 1 year.
94		Nitrogen-Ammonia Standard Solution, 50 mg/L as NH <sub>3</sub> -N, pk/16 - 10 mL Voluette Ampules	HACH	1479110	
95	Ozone	SpecCheck Gel Secondary Standard Set, Ozone, Mid-Range	HACH	2708000	50 tests per year for LR, MR and HR
96		Ozone AccuVac® Ampules, LR, pk/25	HACH	2516025	
97		Ozone AccuVac® Ampules, MR, pk/25	HACH	2517025	
98		Ozone Accuvac, 0.01-1.5 mg/L O <sub>3</sub> pk/25	HACH	2518025	
99	Phenols	Chloroform, ACS (4L)	HACH	1445817	1 test per year for 100 customers
100		Phenol Reagent Powder Pillows, pk/100	HACH	87299	
101		Phenol 2 Reagent Powder Pillows, pk/100	HACH	183699	
102		Hardness 1 Buffer Solution, 100 mL MDB	HACH	42432	
103	Phosphate	Phosphate Standard Solution, 10 mg/L, 946 mL	HACH	1420416	1 test per year for 100 customers
104		PhosVer® 3 Phosphate Reagent Powder Pillows, 10 mL, pk/100	HACH	2106069	
105		Phosphorus (Reactive) TNT Reagent Set, Low Range	HACH	2742545	
106	Phosphorus	Phosphorus Standard Solution, 1000 mg/L as P (NIST), 100 mL	HACH	2321142	1 test per year for 100 customers
107		Potassium Persulfate Powder Pillows, pk/100	HACH	2084769	
108		Sodium Hydroxide Solution, 5.0 N (1L)	HACH	245053	
109		Sulfuric Acid Standard Solution, 5.25 N, 1 L	HACH	244953	
110	Potassium	Potassium Standard Solution, 100 mg/L, 500 mL	HACH	2351749	

111		Potassium 1 Reagent Powder Pillows, pk/25	HACH	1432198	1 test per year for 100 customers
112		Potassium 2 Reagent Solution Pillows, pk/25	HACH	1432298	
113		Potassium 3 Reagent Powder Pillows, pk/100	HACH	1432399	
114	<b>Sulfate</b>	Sulfate Standard Solution, 1000 mg/L as SO <sub>4</sub> (NIST), 500 mL	HACH	2175749	1 test per year for 100 customers
115		SulfaVer® 4 Sulfate Reagent Powder Pillows, 10 mL, pk/100	HACH	2106769	
116	<b>Sulfide</b>	Sulfide 1 Reagent, 500 mL	HACH	181649	At 50 tests per month for 1 year.
117		Sulfide 2 Reagent, 500 mL	HACH	181749	
118	<b>Total Alkalinity</b>	Alkalinity Standard Solution, 25,000 mg/L as CaCO <sub>3</sub> , pk/16 - 10 mL Voluette® Ampules	HACH	1427810	1 test per year for 100 customers
119		Bromcresol Green-Methyl Red Indicator Powder Pillows, pk/100	HACH	94399	
120		Phenolphthalein Indicator Powder Pillows, pk/100	HACH	94299	
121		Sulfuric Acid Digital Titrator Cartridge, 1.600 N	HACH	1438901	
122	<b>Total Hardness (High Range)</b>	Hardness Quality Control Standard, High Range, 500 mL	HACH	2833349	At 10 tests per month for 1 year.
123		Manver 2 Hardness Indicator Powder Pillows, 50 mL Sample, pk/100	HACH	85199	
124		Hardness 1 Buffer Solution, 500 mL	HACH	42449	
125		EDTA Digital Titrator Cartridge, 0.800 M	HACH	1439901	
126	<b>Total Hardness (Low Range)</b>	Hardness Quality Control Standard, Low Range, 500 mL	HACH	2833449	At 50 tests per month for 1 year.
127		Alkali Solution, 500 mL	HACH	2241749	
128		Calcium/Magnesium Indicator Solution, 500 mL	HACH	2241849	
129		EDTA Solution, 1M, 50 mL SCDB	HACH	2241926	

130		EGTA Solution, 50 mL SCDB	HACH	2229726	
131	Zinc	Zinc Standard Solution, 100 mg/L as Zn (NIST), 100 mL	HACH	237842	1 test per year for 100 customers
132		Cyclohexanone, 100 mL	HACH	1403332	
133		ZincoVer® 5 Zinc Reagent Powder Pillows, 20 mL, pk/100	HACH	2106669	
134	Chemical Oxygen Demand (COD)	Chemical Oxygen Demand (COD) TNTplus Vial Test, LR (3-150 mg/L COD), 25 Tests	HACH	TNT821	1 test per year for 250 customers
135		Chemical Oxygen Demand (COD) TNTplus Vial Test, HR (20-1,500 mg/L COD), 150 Tests	HACH	TNT82206	1 test per year for 300 customers
136	Biological Oxygen Demand (BOD)	Nitrification Inhibitor for BOD, Formula 2533™, TCMP, 35 g	HACH	253335	1 test per year for 400 customers
137		Respirometric BOD Nutrient Buffer Solution Pillows, pk/50	HACH	2962266	
138	Apparent and True Colour	TE, pH 8.0, RNase-free, 500ml	ThermoFisher	AM9849	Variable amount of tests. Approximately 200-500 tests.
139		Hydrochloric Acid Standard Solution, 1.00 N, 1 L	HACH	2321353	
140		Sodium Hydroxide Standard Solution, 1.000 N, 1 L	HACH	104553	
141	Total Petroleum Hydrocarbon	TPH Immunoassay Reagent Set	HACH	2774300	Up to 18 tests per set, upto 360 tests a year
142	Total Kjeldahl nitrogen (TKN)	Nitrogen (Total Kjeldahl) Reagent Set	HACH	2495300	250 tests per set, 500 tests per year
143	Total organic carbon (TOC)	Total Organic Carbon (TOC) Reagent Set, LR	HACH	2760345	25-50 tests per set for LR & HR, 250-500 tests per year
144		Total Organic Carbon (TOC) Reagent Set, HR	HACH	2760445	
145	Oil & Grease	Hydrochloric Acid Standard Solution, 6.0 N (1:1), 500 mL	HACH	88449	Variable amount of tests.
146		Hexanes, 500 mL	HACH	1447849	
147		Silica Gel Desiccant with Indicator, 454 g	HACH	1426901	

148		Silica Gel, 100-200 mesh, 500 g	HACH	2665034	
149		Sodium Sulfate, Anhydrous, 454 g	HACH	709901	

Water Quality Test Parameters (Microbiological)				
#	Chemical Test	REAGENTS	MANUFACTURER	Remarks
1	<b>Total Coliforms (Hach)</b>	m-ColiBlue24 <sup>®</sup> Broth, Plastic Ampules, PK/50	HACH	At 25 tests per week for 52 weeks
2	<b>Fecal Coliforms (Hach)</b>	m-FC with Rosolic Acid, 2 mL plastic ampules, pk/50	HACH	At 25 tests per week for 52 weeks
3	<b>Total Coliforms (Colilert)</b>	Colilert-18 (200-test pack)	IDEXX	At 25 tests per week for 52 weeks
4		Quanti-Tray (100 pack)	IDEXX	
5	<b>Fecal Coliforms (Colilert)</b>	Colilert-18 (200-test pack)	IDEXX	At 25 tests per week for 52 weeks
6		Quanti-Tray (100 pack)	IDEXX	
7	<b>Heterotrophic plate count (HPC for Quanti-Tray<sup>®</sup>)</b>	HPC for Quanti-Tray <sup>®</sup> pk/20	IDEXX	AT 400 tests per year
8		Quanti-Tray (100 pack)	IDEXX	
9	<b>Heterotrophic plate count (HPC for Quanti-Tray<sup>®</sup> HR)</b>	HPC for Quanti-Tray <sup>®</sup> pk/20	IDEXX	AT 600 tests per year
10		Quanti-Tray 2000 pk/100	IDEXX	
14	<b>Enterococcus (Enterolert<sup>®</sup>)</b>	Enterolert-E (20-test pack)	IDEXX	At 600 tests per year
15		Quanti-Tray (100 pack)	IDEXX	

16		Quanti-Tray 2000 pk/100	IDEXX	
17	<b>Pseudomonas (Pseudalert®)</b>	Pseudalert (20-test pack)	IDEXX	At 600 tests per year
18		Quanti-Tray (100 pack)	IDEXX	
19		Quanti-Tray 2000 pk/100	IDEXX	
20	<b>E.Coli (Colilert)</b>	Colilert-18 (20-test pack)	IDEXX	At 600 tests per year
21		Quanti-Tray (100 pack)	IDEXX	
22		Quanti-Tray 2000 pk/100	IDEXX	
23	<b>Sterile Bag with Sodium Thiosulfate, pk/100</b>		HACH	8000 bags per year

**Equipment**

Qty	Instrument Description	Manufacturer
1	SevenExcellence pH/Cond meter S470	Metller Toledo
1	TL2300 Tungsten Lamp Turbidimeter, EPA, 0 - 4000 NTU	HACH
1	Chloride Analyzer M926	Sherwood
1	DR6000 Spectrophotometer	HACH
1	DR3900 Spectrophotometer	HACH
1	DR1900 Spectrophotometer	HACH
1	DRB200: Digital Reactor Block - 230 Vac	Hach
1	Acid Cabinet	Eagle
1	Protector™ Airo™ Filtered Fume Hoods: 3 ft. Width	Labconco
1	QWS4 Water Still, 4L/h	Dynalon
1	Water Deionizer Direct -Q 3UV	MilliporeSigma
1	Drying Oven 48L	Thermo Scientific
1	Precision Analytical Balance 310g Capacity	Sartorius Secura
1	Electronic Balance 2200g capacity	Ohaus
2	Portable Colorimeter	Hach
2	1L Blender	Conair
1	Laboratory Refrigerator	Thermo Scientific
2	Hot Plate Stirrer, Ambient to 540°C, Ceramic	Fisherbrand
1	Temp and Humidity monitor	HACH
1	Precision Low Temperature Refrigerated Incubator, 173L	Thermo Scientific
1	A600 Vertical Laminar flow fume hood	Air Clean
1	HQ440D Oxygen Demand Meter with Optical LBOD101 Sensor	HACH
1	Automated Electronic Benchtop Sterilizers (19L)	Heidolph™
1	Temp and Humidity monitor	HACH
2	Laboratory Refrigerator	Thermo Scientific
1	Top loading Autoclave 60L	PriorClave
4	Incubator (Micro)	Hach
1	Vacuum Pump, 3.5 CFM, 60 Hz	Hach
1	Quanti-tray Sealer	Idexx
1	Temp and Humidity monitor	HACH
1	Colony Counter 220 Vac, 50Hz	Hach

QTY	Lab Apparatus	Manufacturer
2	tenSette pipet 0.1 to 1ml 1	Hach
2	tenSette pipet 0.1 to 1ml tips pk/1000	Hach
2	tenSette pipet 1ml to 10ml	Hach
4	tenSette pipet 1ml to 10ml tips pk/50	Hach
1	Pipet, volumetric, Class A, 2.0-mL pk/6	DWK
2	Pipet filler, safety bulb	Fisherbrand
2	Sample Cells 10ml , matched set 8	Hach
5	Sample Cells 10ml , Matched pair	Hach
5	Sample Cells 10 ml, Matched pair with caps	Hach
5	Sample Cells 25 ml, Matched pair with caps	Hach
5	Sample Cells 25 ml, Matched pair	Hach
2	Sample Cells 25 ml ,Matched set 8	Hach
1	Mixing Cylinder Graduated 25ml with glass stopper pk/18	Pyrex
1	Mixing Cylinder Graduated 50ml with glass stopper pk/12	Pyrex
1	Mixing Cylinder, graduated, 100-mL, polypropylene pk/12	Fisherbrand
1	Mixing Cylinder Graduated 250ml with glass stopper pk/8	Pyrex
1	Mixing Cylinder, graduated, 500-mL, polypropylene pk/6	Fisherbrand
30	BOD glass bottles 300ml with glass stopper	Hach
2	Beaker, 50 mL, glass pk/12	Pyrex
1	Beaker, 250-mL glass pk/12	Pyrex
1	Beaker, 600-mL, polypropylene pk/6	Corning
1	Flask, Erlenmeyer, 250-mL pk/6	Thermo Scientific
1	Flask, Erlenmeyer, 125-mL pk/12	Thermo Scientific
2	Funnel, separatory, 500 mL	Pyrex
2	Support ring (4-inch) and stand (5 x 8-inch base)	Eisco
2	Dropper, measuring, 0.5-mL and 1.0-mL pk/5	Hach
3	Test tube rack	Fisherbrand
5	Magnetic stirrer and stir bar	Fisherbrand
10	Membrane filter, 0.45 micron pk/150	Hach
15	Petri dish with absorbent pad, 47-mm pk/100	Hach
6	forceps	Hach
2	Quanti-tray 2000	Idexx
2	Quanti-tray 2000 well rubber insert	Idexx
2	Quanti-tray pk/100	Idexx
4	Quanti tray rubber insert	Idexx
10	Glass bottle with screw cap 250 ml pk/10	Fisherbrand
10	Glass bottle with screw cap 500 ml pk/10	Fisherbrand
1	Glass bottle with screw cap 1000 ml pk/10	Fisherbrand
3	Wash bottles pk/6	Fisherbrand
5	L30 Multipurpose wipers pk/300	Wypall
1	X50 Cloth wipers case pf 450	Wypall
15	sterile bags pk/100	Hach



QTY	PPE	Manufacturer
10	Nitrile gloves pk/100	Fisherbrand
1	Neoprene Gloves pk/12	Honeywell
2	Autoclave gloves	Wells Lamont
6	work boots	Tingley
10	Safety Glasses	Fisherbrand
4	N95 Filtering face piece respirators pk/20	3M
6	5000 series half-facepiece respirator	3M
20	Respirator Cartridges	3M
10	Lab coats	Fisherbrand

**Residential Islands**

#	Atoll	Island	Ongoing Projects	Population	Water	Sewerage	Operator
1	HA	Hoarafushi	11	3413	Operational	Operational	FENAKA
2	HA	Baarah	13	381	Planned	Project Ongoing	To be decided
3	HA	Kelaa	12	891	Planned	Operational	FENAKA
4	HA	Ihavandhoo	11	1051	Operational	Operational	FENAKA
5	HA	Utheemu	11	899	Planned	Operational	FENAKA
6	HA	Uligamu	8	528	Project Ongoing	Project Ongoing	To be decided
7	HA	Vashafaru	6	899	Planned	Project Ongoing	To be decided
8	HA	Maarandhoo	7	1051	Project Ongoing	Project Ongoing	To be decided
9	HA	Muraidhoo	8	891	Project Ongoing	Operational	FENAKA
10	HA	Mulhadhoo	4	381	Planned	Planned	To be decided
11	HA	Filladhoo	8	1118	Project Ongoing	Project Ongoing	To be decided
12	HA	Dhindhoo	22	4186	Operational	Operational	FENAKA
13	HA	Thuraakunu	7	704	Operational	Operational	FENAKA
14	HA	Thakandhoo	6	965	Project Ongoing	Project Ongoing	To be decided
15	HDh	Hanimaadhoo	13	2166	Operational	Operational	FENAKA
16	HDh	Hirimaradhoo	6	566	Project Ongoing	Project Ongoing	To be decided
17	HDh	Nolhivaranfaru	11	1854	Project Ongoing	Operational	FENAKA
18	HDh	Nolhivaram	10	2646	Project Ongoing	Operational	FENAKA
19	HDh	Neykurendhoo	10	1400	Planned	Planned	To be decided
20	HDh	Naivaadhoo	11	849	Project Ongoing	Planned	To be decided

<b>21</b>	HDh	Nellaidhoo	10	1297	Planned	Planned	To be decided
<b>22</b>	HDh	Kurinbi	9	745	Project Ongoing	Project Ongoing	To be decided
<b>23</b>	HDh	Kulhudhufushi	37	9838	Operational	Operational	MWSC
<b>24</b>	HDh	Kumundhoo	9	1478	Project Ongoing	Project Ongoing	To be decided
<b>25</b>	HDh	Vaikaradhoo	11	1856	Planned	Planned	To be decided
<b>26</b>	HDh	Makunudhoo	10	1774	Planned	Planned	To be decided
<b>27</b>	HDh	Finey	9	571	Project Ongoing	Project Ongoing	To be decided
<b>28</b>	Sh	Narudhoo	6	624	Project Ongoing	Project Ongoing	To be decided
<b>29</b>	Sh	Noomaraa	5	488	Planned	Planned	To be decided
<b>30</b>	Sh	Bileyfahi	6	693	Planned	Planned	To be decided
<b>31</b>	Sh	Lhaimagu	8	824	Planned	Planned	To be decided
<b>32</b>	Sh	Kanditheemu	9	1546	Project Ongoing	Operational	FENAKA
<b>33</b>	Sh	Komandoo	7	1877	Project Ongoing	Project Ongoing	To be decided
<b>34</b>	Sh	Maroshi	4	971	Project Ongoing	Project Ongoing	To be decided
<b>35</b>	Sh	Ma'ungoodhoo	6	1155	Project Ongoing	Project Ongoing	To be decided
<b>36</b>	Sh	Milandhoo	9	2490	Operational	Operational	FENAKA
<b>37</b>	Sh	Funadhoo	13	2553	Planned	Operational	FENAKA
<b>38</b>	Sh	Foakaidhoo	10	1770	Project Ongoing	Project Ongoing	To be decided
<b>39</b>	Sh	Feevah	8	1111	Project Ongoing	Project Ongoing	To be decided
<b>40</b>	Sh	Feydhoo	7	1242	Planned	Planned	To be decided
<b>41</b>	Sh	Goidhoo	6	753	Project Ongoing	Project Ongoing	To be decided
<b>42</b>	N	Henbadhoo	7	748	Project Ongoing	Operational	FENAKA
<b>43</b>	N	Holhudhoo	9	2218	Project Ongoing	Operational	FENAKA

<b>44</b>	N	Lhohi	7	921	Project Ongoing	Project Ongoing	To be decided
<b>45</b>	N	Kendhikulhudhoo	11	1872	Project Ongoing	Project Ongoing	To be decided
<b>46</b>	N	Kudafari	8	849	Project Ongoing	Project Ongoing	To be decided
<b>47</b>	N	Velidhoo	11	2649	Operational	Operational	FENAKA
<b>48</b>	N	Manadhoo	15	1940	Planned	Operational	FENAKA
<b>49</b>	N	Maalhendhoo	10	908	Project Ongoing	Project Ongoing	To be decided
<b>50</b>	N	Maafaru	11	1207	Project Ongoing	Project Ongoing	To be decided
<b>51</b>	N	Miladhoo	10	1499	Planned	Operational	FENAKA
<b>52</b>	N	Magoodhoo	6	428	Planned	Planned	To be decided
<b>53</b>	N	Fohdhoo	9	471	Project Ongoing	Project Ongoing	To be decided
<b>54</b>	N	Landhoo	7	1078	Planned	Project Ongoing	To be decided

**Tourism Zones**

#	Facility Type	Name	Atoll	Island	Rooms	Beds	Operator
1	Yatch-Marina	Hideaway Beach Resort and Spa at Dhonakulhi Island	Haa Alifu	Dhonakulhi	110	220	Dhonakulhi Investments Pvt Limited
2	Resort	JA Manafaru	Haa Alifu	Manafaru	87	174	Jarh Maldives Pvt Ltd
3	Resort	Hondaafushi Island Resort	Haa Dhaalu	Hondaafushi	59	118	Mr. Abdulla Ali
4	Hotel	The Barefoot Eco Hotel	Haa Dhaalu	Hanimaadhoo	52	104	Barefoot Noomadi Hotel Pvt Ltd
5	Resort	Sirru Fen Fushi	Shaviyani	Gaakoshibee	122	298	GBH Maldives Resorts Pvt Ltd
6	Resort	JW Marriott Maldives Resort & Spa	Shaviyani	Vagaru	86	159	Bon Free Private Limited
7	Resort	Mövenpick Resort Kuredhivaru Maldives	Noonu	Kuredhivaru	111	222	Zen Resort Pvt. Ltd
8	Resort	Noku Maldives	Noonu	Kudafunafaru	50	100	Roxy Maldives Resort & Spa Pvt Ltd
9	Resort	Robinson Club Noonu	Noonu	Orivaru	150	300	Robinson Club Maldives Pvt Ltd
10	Resort	Cheval Blanc Randheli	Noonu	Randheli	60	120	I & T Management Pvt Ltd
11	Resort	Soneva Jani	Noonu	Medhufaru	56	112	Soneva Management (BVI) Ltd.
12	Resort	The Sun Siyam Iru Fushi Maldives	Noonu	Medhafushi	224	448	Sun Travel & Tour Pvt.Ltd
13	Resort	Velaa Private Island Maldives	Noonu	Fushivelaavaru	67	134	Velaa Island Maldives Pvt Ltd