

CONSULTANCY SERVICES FOR SURVEY, DESIGN AND EIA WORKS OF WATER SUPPLY AND
SEWERAGE FACILITIES IN 6 ISLANDS, MALDIVES

PACKAGE 5

WATER SUPPLY SYSTEM OF V. KEYODHOO, MALDIVES

For Ministry of National Planning and Housing Infrastructure, Republic of Maldives

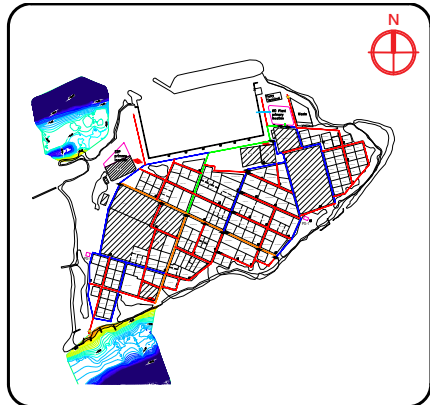
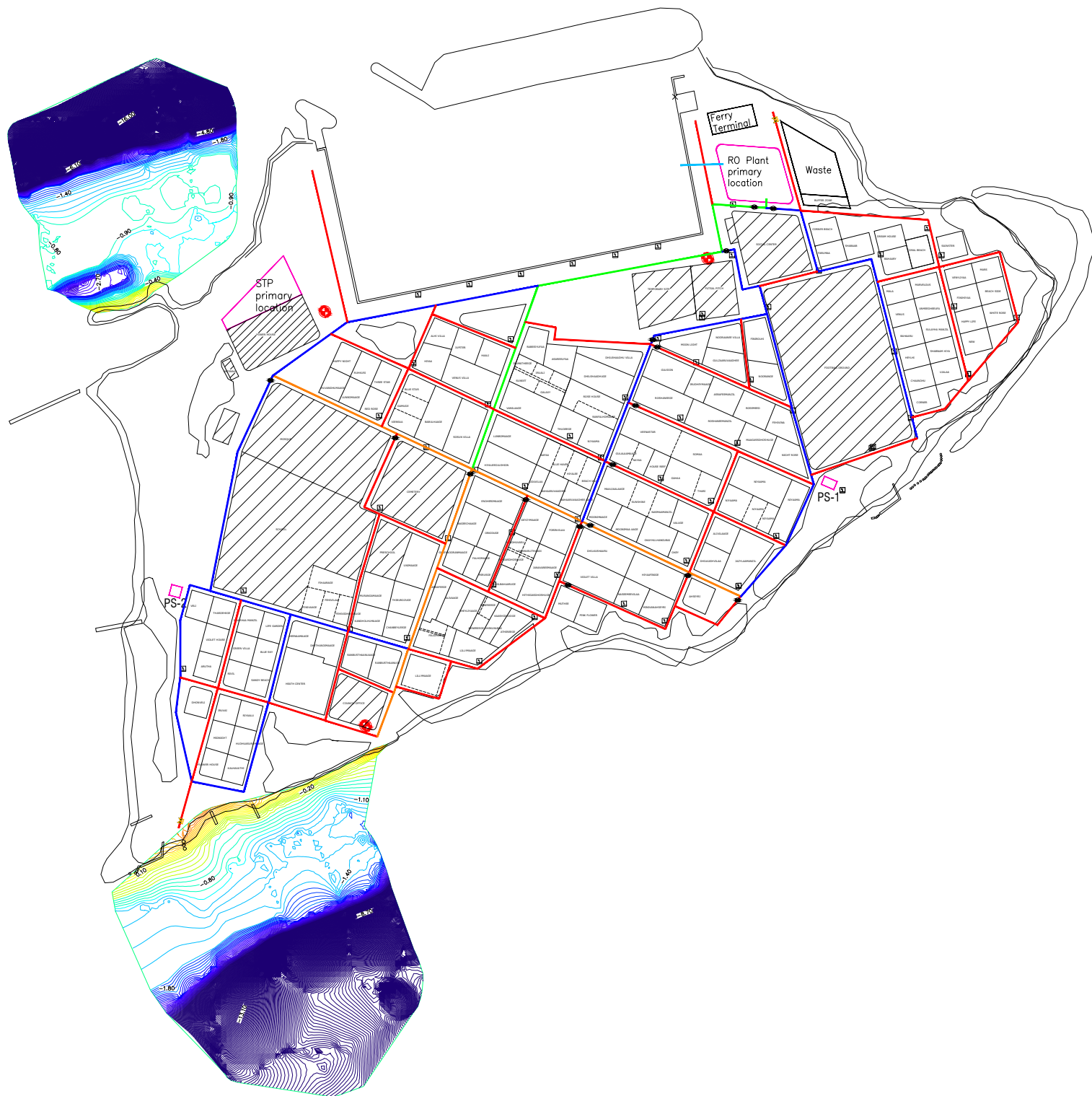
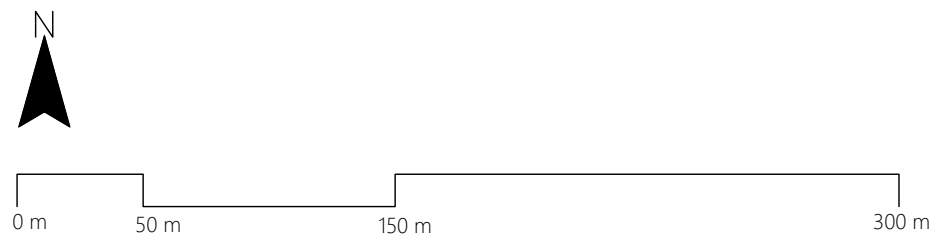


T: +960 333 3528 E: info@epoch.associates W: www.epoch.associates
A: 4A, 4th Floor, M. Ahigasdhoshuge, Fareedhee Magu Male' Republic of Maldives



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Legend

- Ø63 HDPE Water Main Distribution Pipe
- Ø90 HDPE Water Main Distribution Pipe
- Ø100 HDPE Water Main Distribution Pipe
- Gate Valves
- Junction
- Ø75 HDPE Water Main Distribution Pipe
- Ø110 HDPE Water Main Distribution Pipe
- Ø110 HDPE Brine Outfall Pipe
- Washout Valves

- Notes:
- All levels are shown in meters.
 - All levels are shown from mean sea level.
 - This drawing to be read in conjunction with all other relevant drawing and specifications.
 - All pressure pipes and fittings shall be installed using electro-fusion and butt-fusion technologies.
 - Pressure pipes shall be laid in between 0.7m - 1.0m below natural ground level to achieve best flat alignment based on topographic survey.
 - All the service connections to the mains shall be made using electro-fusion saddle and coupler.
 - Minimum size of the main water supply network shall be OD 63mm PE100, PN10, SDR17 HDPE pipe.
 - Minimum size of the house service line shall be OD 25mm PE100, PN16, SDR11 HDPE pipe.
 - Minimum size of commercial and other institutional connection service line shall be 50mm, PE100, PN16, SDR11 HDPE pipe.

MAINS DISTRIBUTION		
DIAMETER (mm)	LENGTH HDPE (m)	TYPE OF PIPE
63	2361	HDPE (PE100,PN10,SDR17)
75	1233	
110	441	
160	271	
Total	4306	
Gate Valves - 16 nos		
Washout Valves - 02 nos		

OUTFALL		
DIAMETER (mm)	LENGTH HDPE (m)	TYPE OF PIPE
110	- 24m (on land)	HDPE (PE100,PN10,SDR11)

PSM BENCHMARKS	
PERMANENT SURVEY MARK PSM 0301 338835.373E, 382648.909N 0.757m From MSL	
PERMANENT SURVEY MARK PSM 0302 338812.937E, 382876.671N 0.723m From MSL	
PERMANENT SURVEY MARK PSM 0303 339023.490E, 382905.977N 0.658m From MSL	

R00	JUNE 2020	STAGE -1	PD	SBC	SD
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Title:
Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 6 islands, Maldives - Package 5

Sub Title:
Water Supply System in V. Keyodhoo

Client:
Ministry of National Planning, Housing and Infrastructure, Republic of Maldives

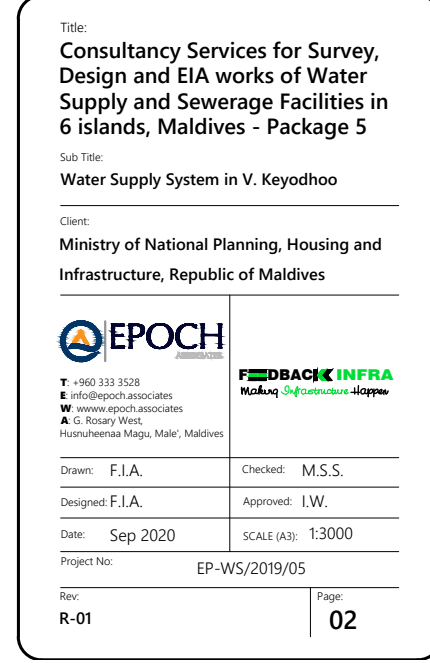
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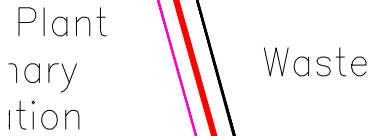
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V. KEYODHOO WATER NETWORK LAYOUT

1:3000







	Ø63 HDPE Water Main Distribution Pipe		Ø75 HDPE Water Main Distribution Pipe
	Ø90 HDPE Water Main Distribution Pipe		Ø110 HDPE Water Main Distribution Pipe
	Ø160 HDPE Water Main Distribution Pipe		Ø110 HDPE Brine Outfall Pipe
	Gate Valves		Washout Valves
	Junction		

- Notes:
- 1. All levels are shown in meters.
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- 3. This drawing to be read in conjunction with all other relevant drawing and specifications.
- 4. All pressure pipes and fittings shall be installed using electro-fusion and butt-fusion technologies.
- 5. All pressure pipes shall be laid in between 0.7m - 1.0m below natural ground level to achieve full alignment and on topographic survey.
- 6. All the service connections to the mains shall be made using electro-fusion saddle and coupler.
- 7. Minimum size of the main water supply network shall be OD 63mm PE100, PN10, SDR17 HDPE pipe.
- 8. Minimum size of the house service line shall be OD 25mm PE100, PN6, SDR11 HDPE pipe.
- 9. Minimum size of commercial and other institutional connection service line shall be 50mm, PE100, PN6, SDR11 HDPE pipe.

MAINS DISTRIBUTION		
DIAMETER (mm)	LENGTH HDPE (m)	TYPE OF PIPE
63	2361	HDPE (PE100,PN10,SDR17)
75	1233	
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160	271	
Total	4306	

Gate Valves	- 16 nos
Washout Valves	- 02 nos

DIAMETER (mm)	LENGTH HDPE (m)	TYPE OF PIPE
110	- 24m (on land)	HDPE (PE100, PN10, SDR11)

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	338859.573E, 382048.909N 0.757m From MSL
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Supply and Sewerage Facilities in
6 islands, Maldives - Package 5**

Sub Title:
Water Supply System in V. Keyodhoo

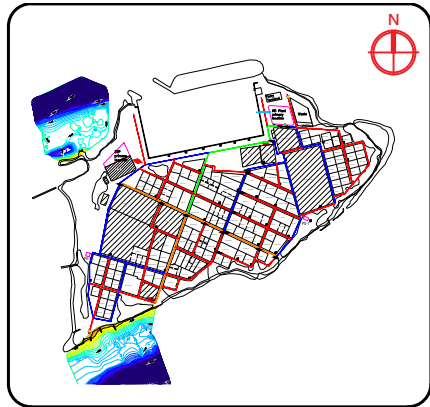
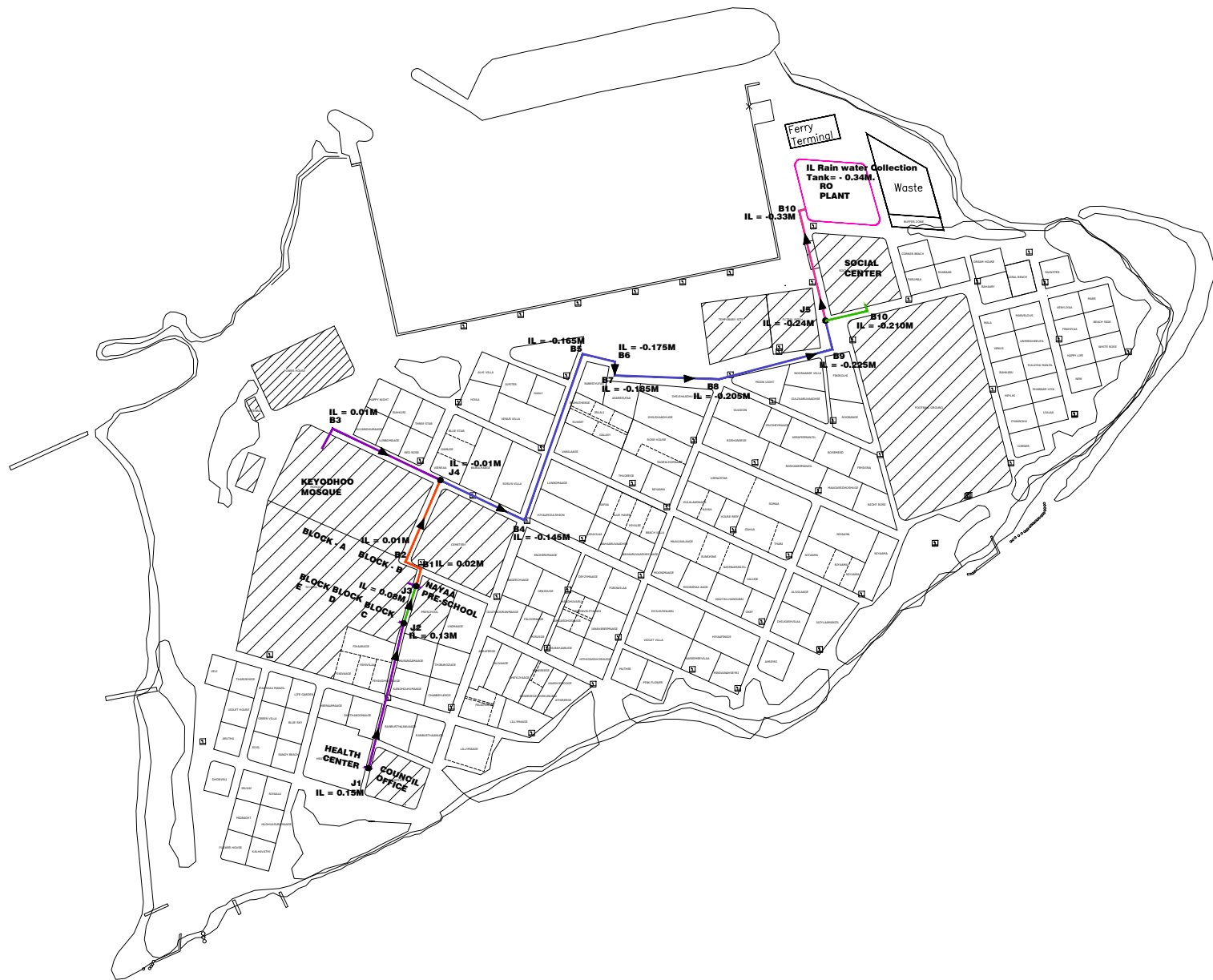
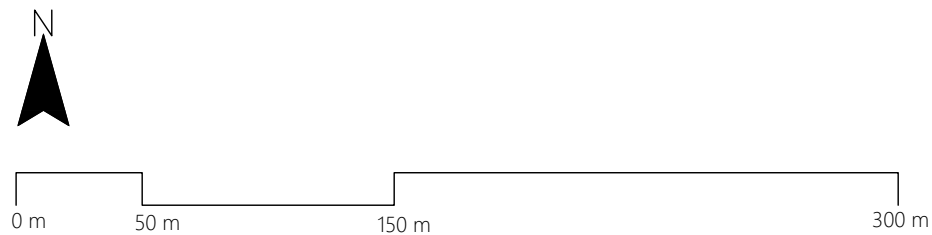
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Rev:	Page:
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Legend

- Ø160 HDPE Rainwater Flow Pipe
- Ø250 HDPE Rainwater Flow Pipe
- Ø355 HDPE Rainwater Flow Pipe
- Ø200 HDPE Rainwater Flow Pipe
- Ø280 HDPE Rainwater Flow Pipe
- Junction

Notes:
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3. This drawing to be read in conjunction with all other relevant drawing and specifications.

RAINWATER FLOW PIPES		
DIAMETER (mm)	LENGTH HDPE (m)	TYPE OF PIPE
160	157	HDPE (PE100, PN6, SDR26)
200	44	
250	61	
280	281	
355	60	
Total	603	

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Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 6 islands, Maldives - Package 5

Sub Title:
Water Supply System in V. Keyodhoo

Client:
Ministry of National Planning, Housing and Infrastructure, Republic of Maldives

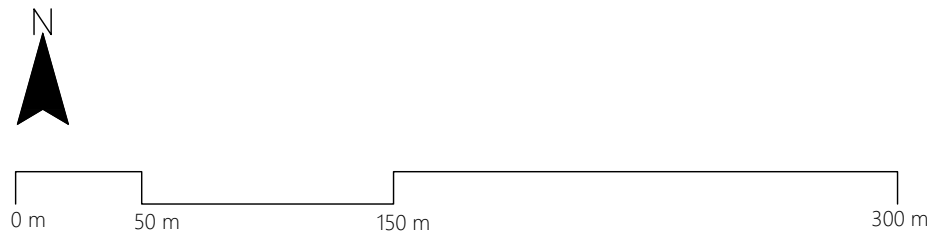
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E: info@epochassociates
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V. KEYODHOO RAINWATER COLLECTION NETWORK LAYOUT

1:3000



Legend

- Ø160 HDPE Rainwater Flow Pipe
- Ø250 HDPE Rainwater Flow Pipe
- Ø355 HDPE Rainwater Flow Pipe
- Ø200 HDPE Rainwater Flow Pipe
- Ø280 HDPE Rainwater Flow Pipe
- Junction

Notes:
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Sub Title:
Water Supply System in V. Keyodhoo

Client:
Ministry of National Planning, Housing and Infrastructure, Republic of Maldives

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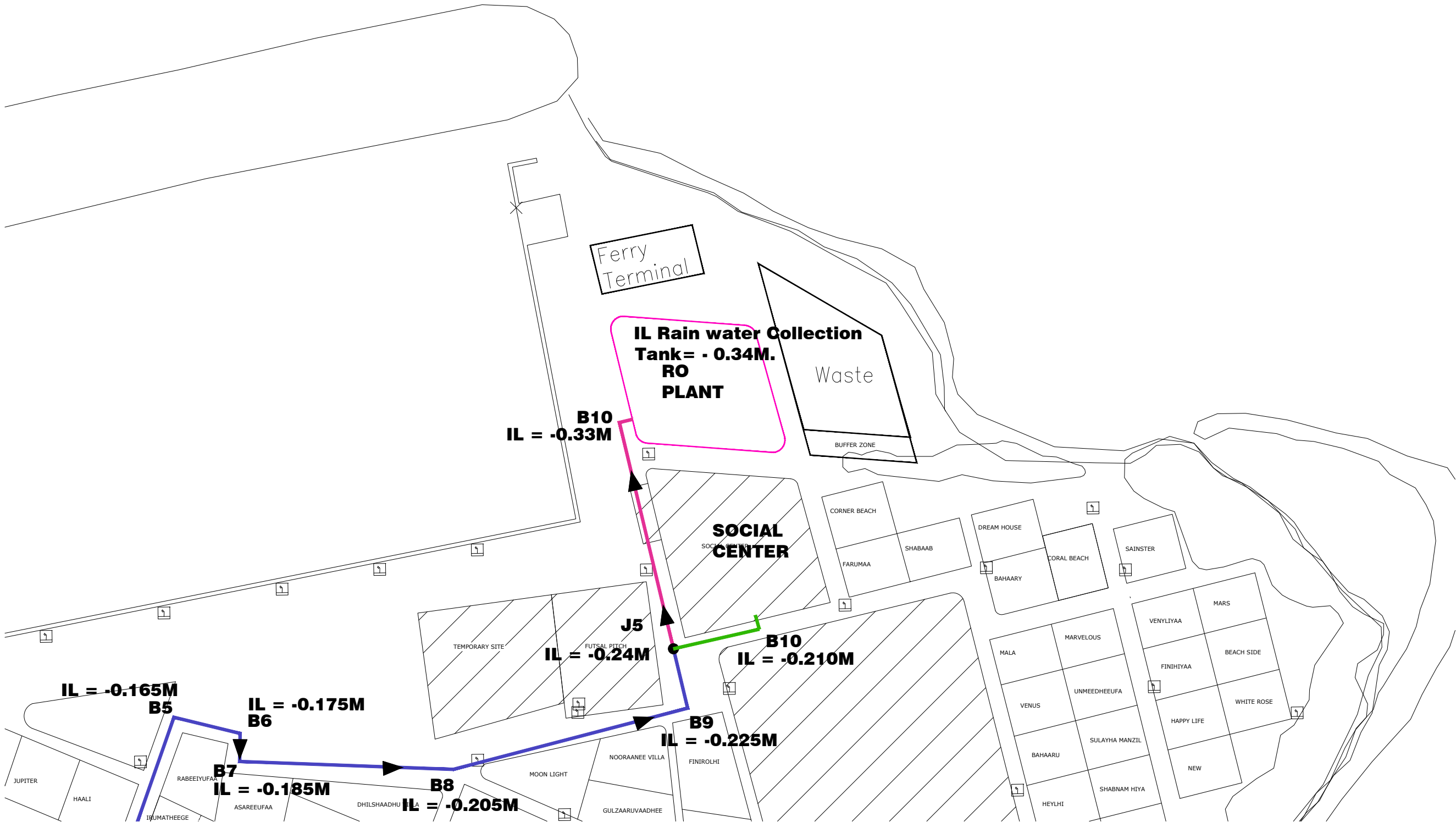
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V. KEYODHOO RAINWATER COLLECTION NETWORK ZONE LAYOUT

1:3000



Legend

- 0160 HDPE Rainwater Flow Pipe
- 0250 HDPE Rainwater Flow Pipe
- 0355 HDPE Rainwater Flow Pipe
- 0200 HDPE Rainwater Flow Pipe
- 0280 HDPE Rainwater Flow Pipe
- Junction

Notes:
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3. This drawing to be read in conjunction with all other relevant drawing and specifications.

RAINWATER FLOW PIPES		
DIAMETER (mm)	LENGTH HDPE (m)	TYPE OF PIPE
160	157	HDPE (PE100, PN6, SDR26)
200	44	
250	61	
280	281	
355	60	
Total	603	


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Title:
Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 6 islands, Maldives - Package 5

Sub Title:
Water Supply System in V. Keyodhoo

Client:
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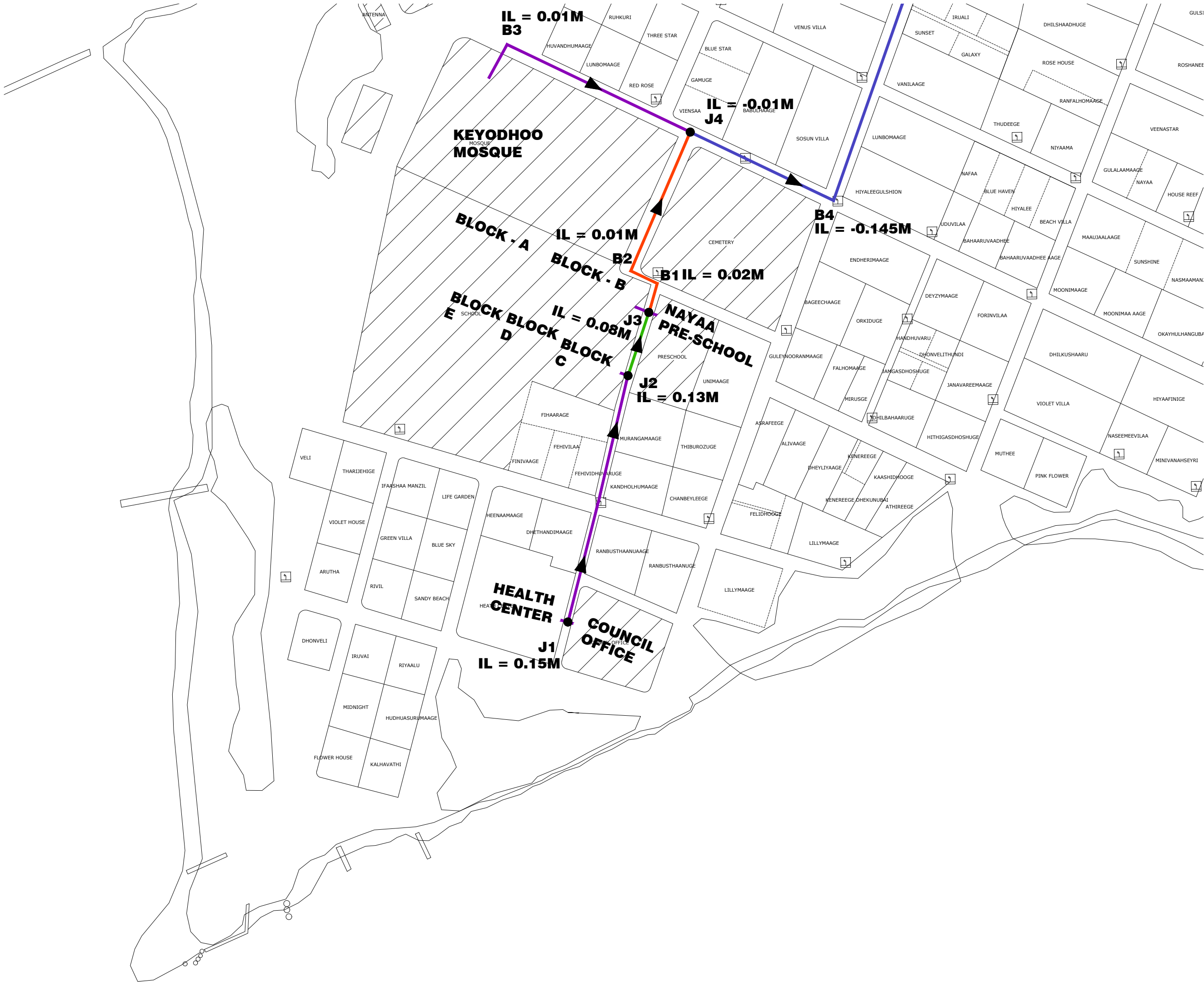


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T: +960 333 3528
E: info@epochassociates.com
W: www.epochassociates.com
A: G. Rosary West,
Husnuheena Magu, Male', Maldives



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Legend

Ø160 HDPE Rainwater Flow Pipe

Ø250 HDPE Rainwater Flow Pipe

Ø335 HDPE Rainwater Flow Pipe

Junction

Ø200 HDPE Rainwater Flow Pipe

Ø280 HDPE Rainwater Flow Pipe

Notes:

1. All levels are shown in meters.

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3. This drawing to be read in conjunction with all other relevant drawing and specifications.

RAINWATER FLOW PIPES

DIAMETER (mm)	LENGTH HDPE (m)	TYPE OF PIPE
160	157	HDPE (PE100/PN6, SDR26)
200	44	
250	61	
280	281	
335	60	
Total	603	

PSM BENCHMARKS

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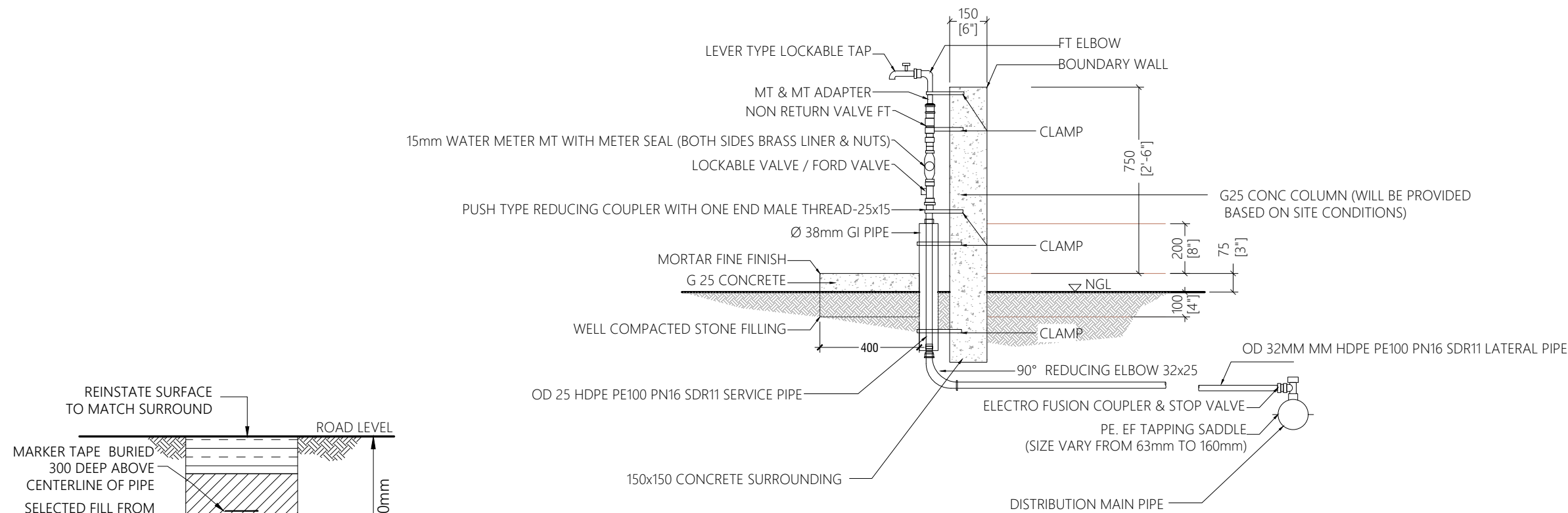
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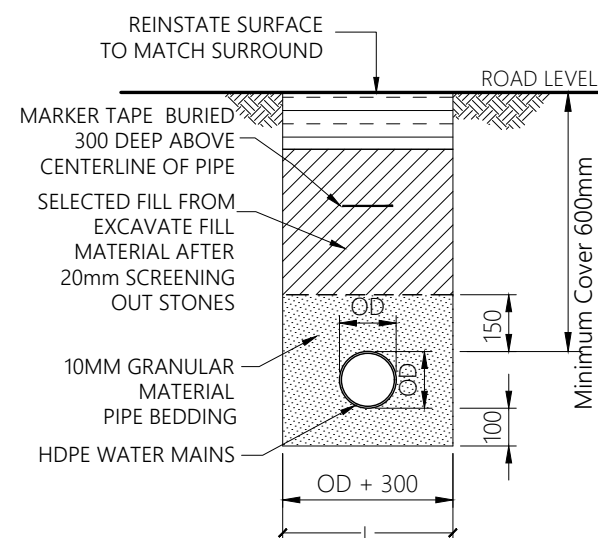
EPOCH
ENGINEERING PROJECT CONSULTANTS
T: +960 333 3528
E: info@epoch.associates
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A: G. Rosary West,
Husnuheena Magu, Male', Maldives

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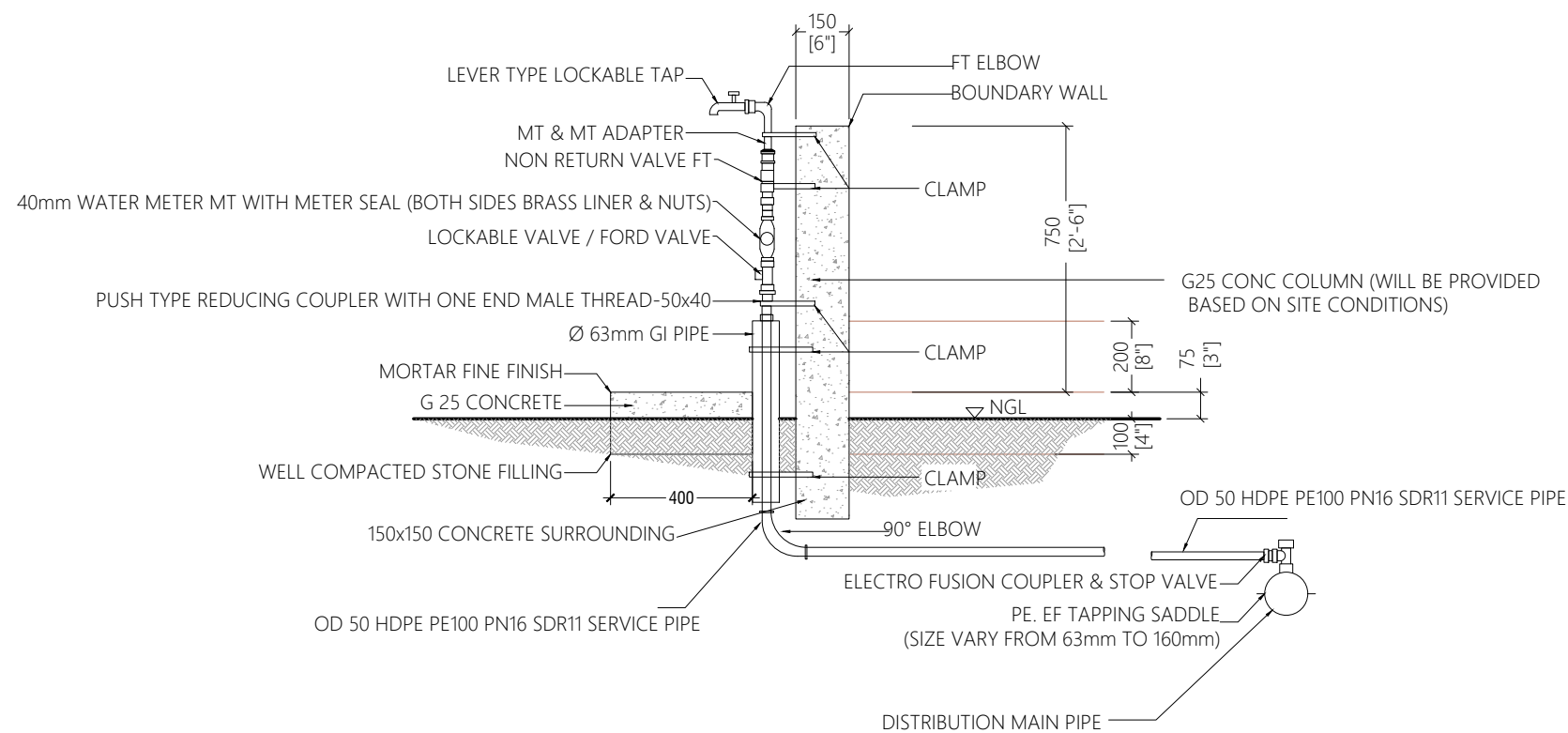
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WATER SUPPLY HOUSE CONNECTION DETAILS



TRENCH & BEDDING DETAILS



WATER SUPPLY COMMERCIAL/INSTITUTIONAL CONNECTION DETAILS

WATER SUPPLY HOUSE AND COMMERCIAL/INSTITUTIONAL CONNECTIONS

1:20

Legend

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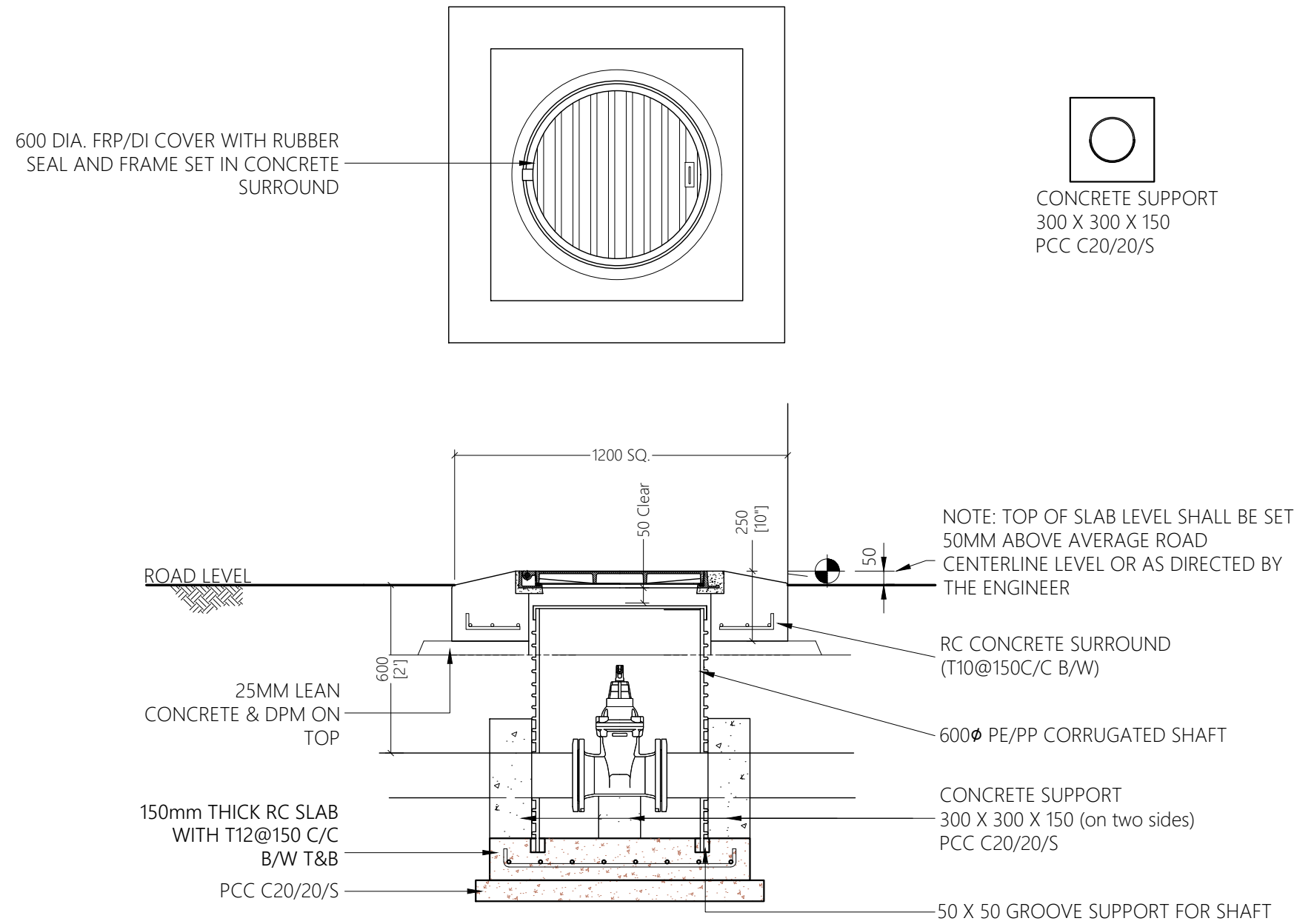
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Rev: R-01 Page: W-01



SECTION - VALVE CHAMBER

VALVE CHAMBER DETAILS

1:20



Legend

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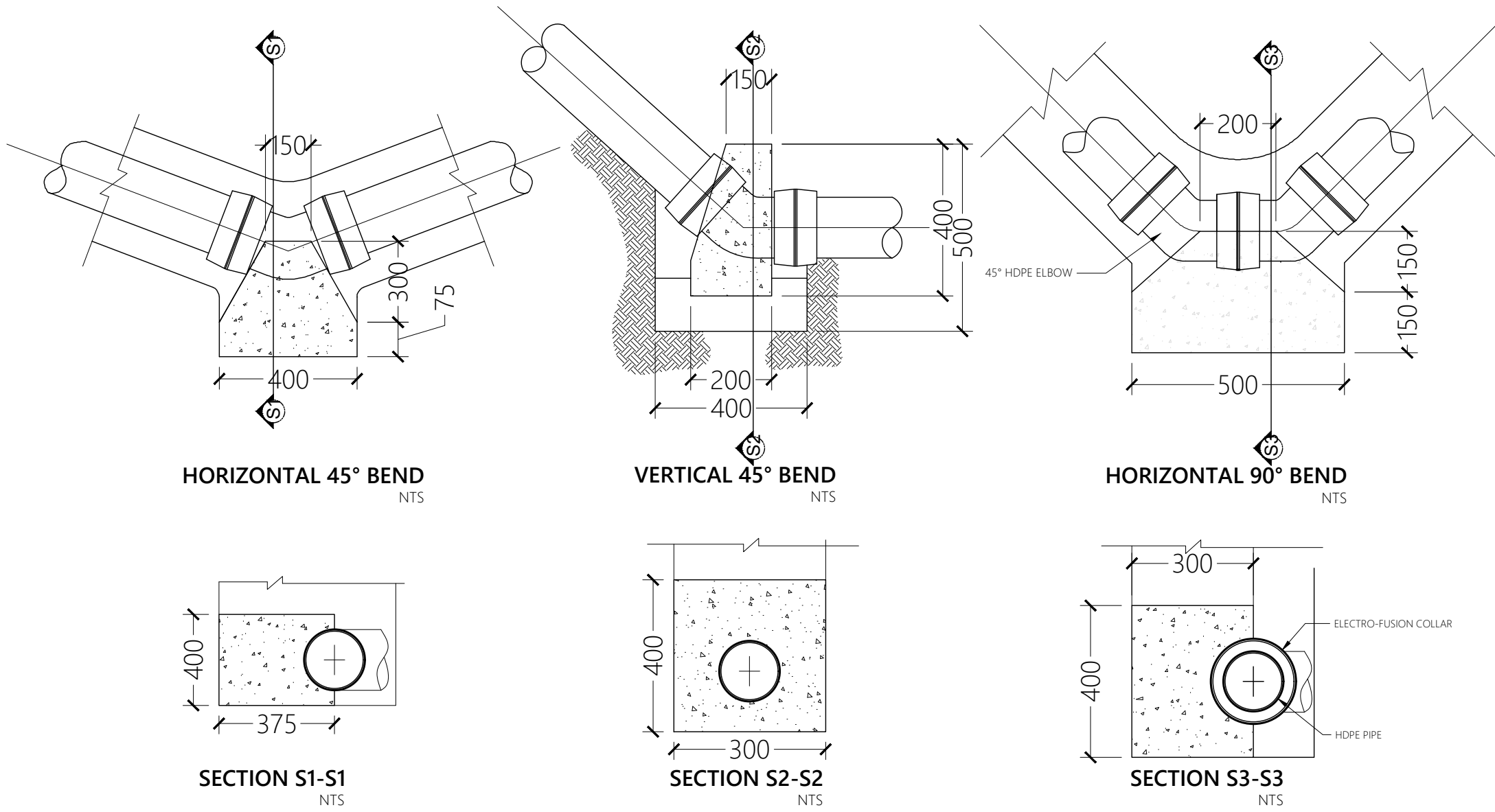
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THRUST BLOCK DETAILS

NTS



Legend

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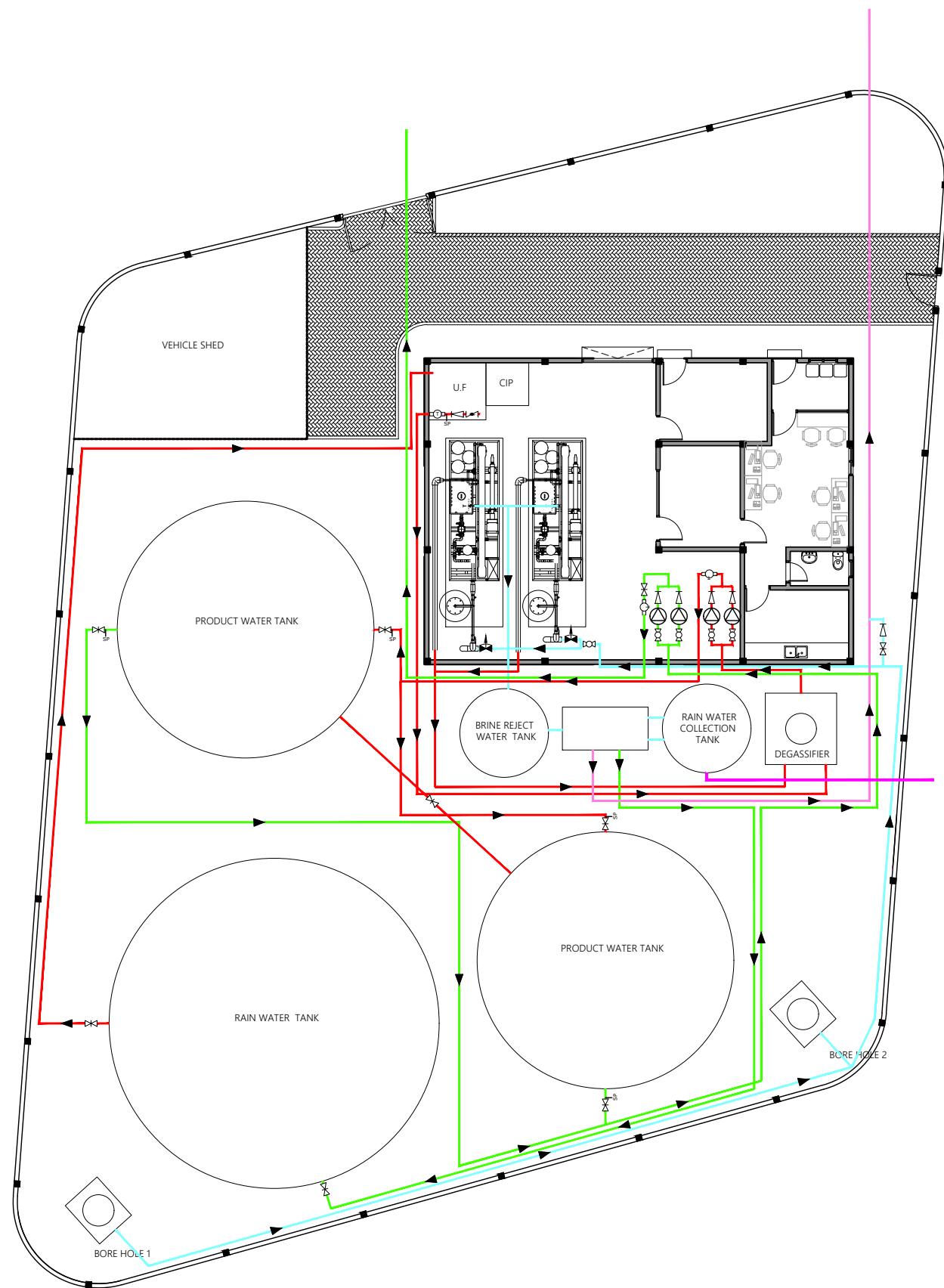
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PUMP DETAILS

- Borehole Pump : 2 Nos
- Flow (Q) = 36.7 m³/hr
- Head (H) = 50 m
- High Pressure Pump : 2 Nos
- Flow (Q) = 8.40 m³/hr
- Pressure Range = 45-65 bar
- Transfer Pump : 2 Nos
- Flow (Q) = 7.50 m³/hr
- Head (H) = 36 m
- Distribution Pump Set : 2 Nos
- Flow (Q) = 12.5 m³/hr
- Head (H) = 30 m
- Brine Pump : 2 Nos
- Flow (Q) = 11.7 m³/hr
- Head (H) = 10 m
- Rain Water lift Well Pump : 2 Nos
- Flow (Q) = 65.1 m³/hr
- Head (H) = 17m
- UF Feed Pump : 2 Nos
- Flow (Q) = 2.5 m³/hr
- Head (H) = 35 m

- Gate Valve
- Check Valve
- Totalizer
- Pump
- Closed Gate Valve
- Sampling Point
- Butterfly Valve
- Ball Valve

Legend

- Ø90 HDPE (PE100, PN10, SDR17)
- Ø63 HDPE (PE100, PN10, SDR17)
- Ø110 HDPE (PE100, PN10, SDR17)
- Ø160 HDPE (PE100, P10, SDR17)
- Ø110 HDPE (OUTFALL PE100, PN16, SDR11)
- Ø355 HDPE (RAINWATER PE100, PN6, SDR26)

Notes:

- All Pump sizes are based on 15 year demands.
- Rainwater collection Pump sizing is done considering Maximum Rainfall intensity of 50mm/hr.
- UF feed pump will be subject to Approved UF Plant suppliers approval.
- Both Feed Pump and High pressure pump capacity will need to be approved by the approved RO plant Supplier. The working pressure range will be established based on the approved suppliers requirements.
- Distribution Pump set will have Variable Frequency Drive.
- All pump control float switches and automated valves will be provided.

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INTERNAL PIPE LAYOUT

1:200



LEGEND										
ACTUATION		VALVES			FEATURES		CONDITION		ABBREVIATIONS	
	MANUALLY OPERATED		BUTTERFLY		MOTORIZED BALL		FLANGED CONNECTION		VALVE NORMALLY OPEN	LS - LEVEL SENSOR FT - FLOW TRANSMITTER PI - PRESSURE INDICATOR SP - SAMPLING POINT AR - AIR RELEASE P - PUMP PG - PRESSURE GAUGE PS - PRESSURE SENSOR CP - CONNECTION POINT LT - LEVEL TRANSMITTER QIT - CONDUCTIVITY INDICATOR PLC - PROGRAMMABLE LOGIC CONTROLLER
	PNEUMATIC DIAPHRAGM - SINGLE ACTING		BALL		TORTALIZER		TRAP		VALVE NORMALLY CLOSED	
	PNEUMATIC DIAPHRAGM - DOUBLE ACTING		DIAPHRAGM		GATE		DISCHARGE TO ATMOSPHERE			
	PNEUMATIC PISTON		3-WAY		CHECK VALVE		SAMPLING POINT			
	PNEUMATIC PISTON		SLUICE		MOTORIZED 3 WAY		FLOW INDICATOR			

NTS



Legend

Note:

- Borehole pumps to be controlled by Variable Frequency Drive (VFD)

R00	JUNE 2020	STAGE -1	PD	SBC	SD
REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.

Title:
**Consultancy Services for Survey,
Design and EIA works of Water
Supply and Sewerage Facilities in
6 islands, Maldives - Package 5**

Sub Title:
Water Supply System in V. Keyodhoo

Client: **Ministry of National Planning, Housing and Infrastructure, Republic of Maldives**



T: +960 333 3528
E: info@epoch.associates
W: www.epoch.associates
A: G. Rosary West,
 Husnuheenaa Magu, Male', Maldives



Drawn: F.I.A.	Checked: M.S.S.
Designed: F.I.A.	Approved: L.W.
Date: Sep 2020	SCALE (A3): NTS
Project No: EP-WS/2019/05	
Rev: R-01	Page: W-06



IWRM PLANT P&I DETAIL B

NTS

Note:



- SMBS Pre dosing chemical to be used only if Chlorine based dosing chemical is added prior to filtration.
- Union valve to be connected in between the two cartridge filters.
- MM filters to be controlled manually.

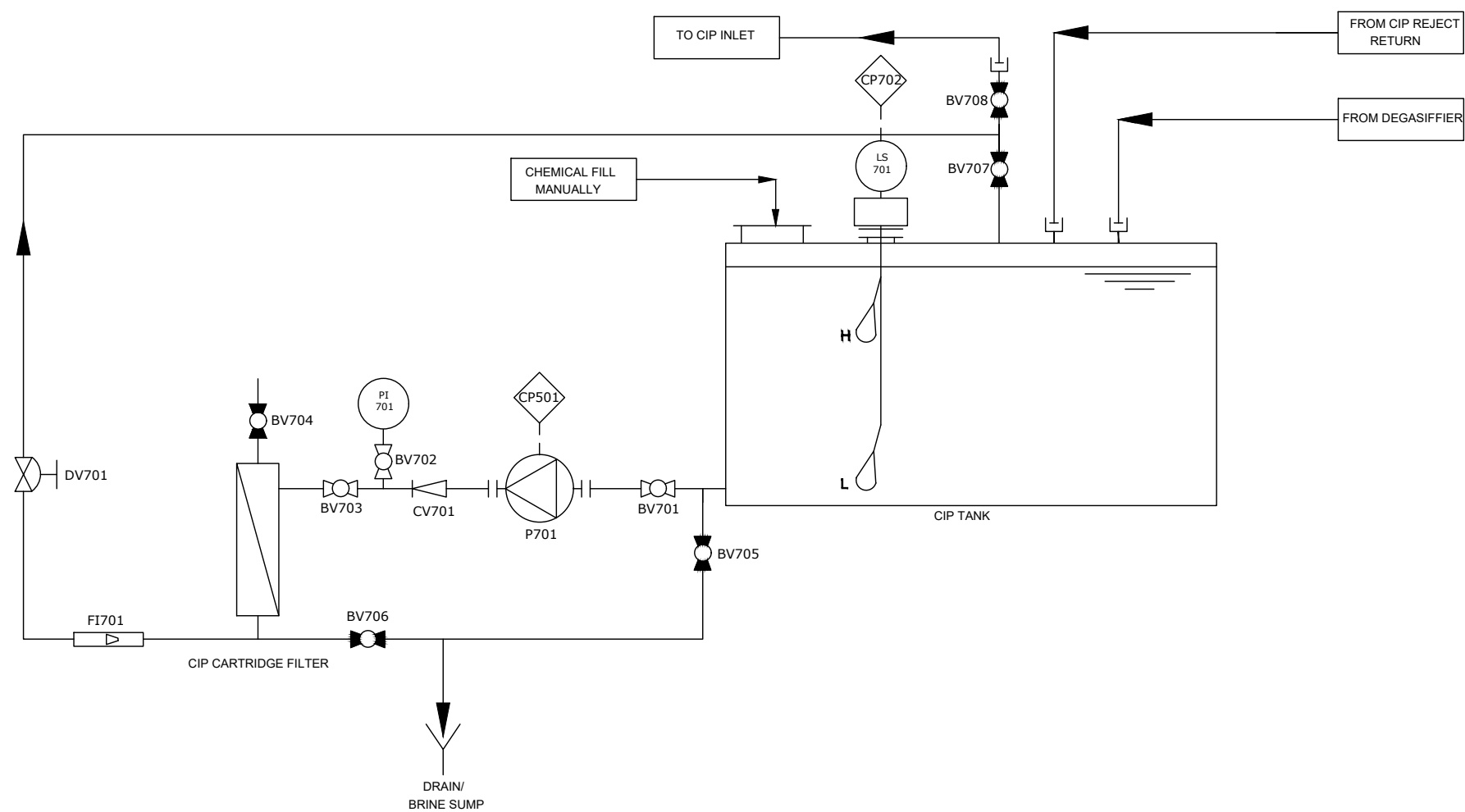
Title:
**Consultancy Services for Survey,
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T +960 333 3528 E info@epoch.associates W www.epoch.associates A G. Rosary West, Huzunheena Magu, Male', Maldives			
Drawn: F.I.A.		Checked: M.S.S.	
Designed: F.I.A.		Approved: I.W.	
Date: Sep 2020		SCALE (A3): NTS	
Project No: EP-WS/2019/05			
Rev: R-01	Page: W-07		



LEGEND										
ACTUATION		VALVES				FEATURES		CONDITION		ABBREVIATIONS
	MANUALLY OPERATED		BUTTERFLY		MOTORIZED BALL		FLANGED CONNECTION		VALVE NORMALLY OPEN	LS - LEVEL SENSOR FT - FLOW TRANSMITTER PI - PRESSURE INDICATOR SP - SAMPLING POINT AR - AIR RELEASE P - PUMP PG - PRESSURE GAUGE PS - PRESSURE SENSOR CP - CONNECTION POINT LT - LEVEL TRANSMITTER QIT - CONDUCTIVITY INDICATOR PLC - PROGRAMMABLE LOGIC CONTROLLER
	PNEUMATIC DIAPHRAGM - SINGLE ACTING		BALL		TORTALIZER		TRAP		VALVE NORMALLY CLOSED	
	PNEUMATIC DIAPHRAGM - DOUBLE ACTING		DIAPHRAGM		GATE		DISCHARGE TO ATMOSPHERE			
	PNEUMATIC PISTON		3-WAY		CHECK VALVE		SAMPLING POINT			
	PNEUMATIC PISTON		SLUICE		MOTORIZED 3 WAY		FLOW INDICATOR			

IWRM PLANT P&I DETAIL C

NTS



Legend

Note:

- Flexible hose VIC connection to be used for during CIP use and flushing.

R00	JUNE 2020	STAGE -1	PD	SBC	SD
REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.

Title:
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Supply and Sewerage Facilities in
6 islands, Maldives - Package 5**



Sub Title:
Water Supply System in V. Keyodhoo

Client: **Ministry of National Planning, Housing and Infrastructure, Republic of Maldives**

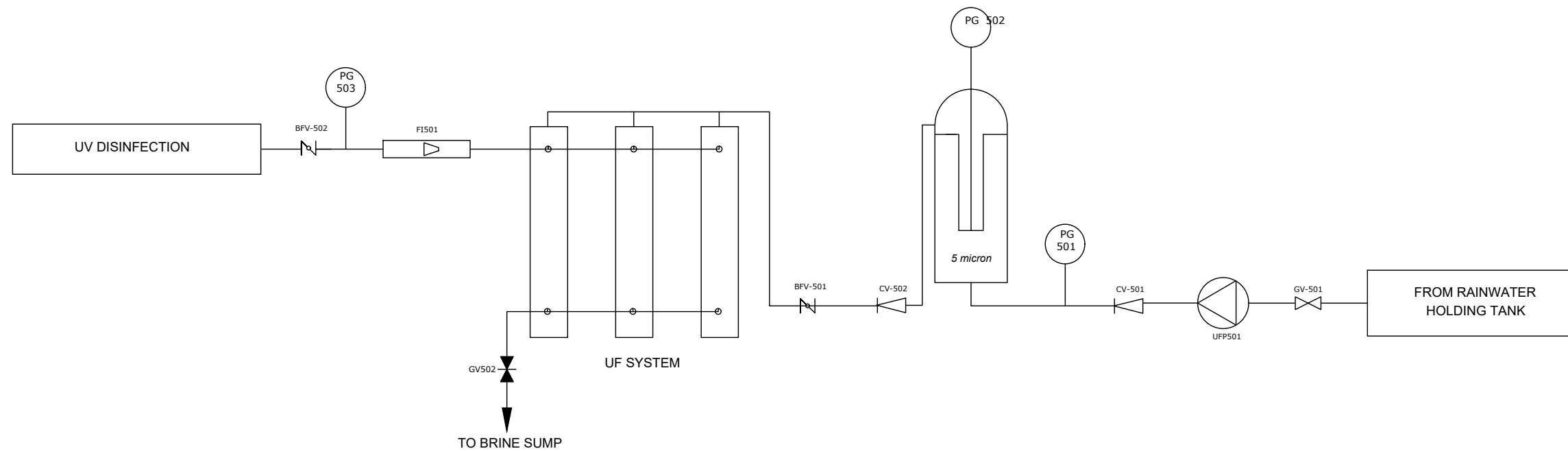


Drawn: F.I.A.	Checked: M.S.S.
Designed: F.I.A.	Approved: I.W.
Date: Sep 2020	SCALE (A3): NTS
Project No: EP-WS/2019/05	
Rev: R-01	Page: W-08























NTS

	
<p>T: +960 333 3528 E: info@epoch.analysics W: www.epoch.analysics A: G. Rosany West, Husnuheena Magu, Male', Maldives</p>	
<p>Drawn: F.I.A.</p>	<p>Checked: M.S.S.</p>
<p>Designed: F.I.A.</p>	<p>Approved: I.W.</p>
<p>Date: Sep 2020</p>	<p>SCALE (A3): NTS</p>
<p>Project No:</p>	<p>EP-WS/2019/05</p>
<p>Rev:</p>	<p>Page:</p>
<p>R-01</p>	<p>W-09</p>

UV DISINFECTION



DETAIL G

LEGEND										
ACTUATION		VALVES				FEATURES		CONDITION		ABBREVIATIONS
	MANUALLY OPERATED		BUTTERFLY		MOTORIZED BALL		FLANGED CONNECTION		VALVE NORMALLY OPEN	LS - LEVEL SENSOR FT - FLOW TRANSMITTER PI - PRESSURE INDICATOR SP - SAMPLING POINT AR - AIR RELEASE P - PUMP PG - PRESSURE GAUGE PS - PRESSURE SENSOR CP - CONNECTION POINT LT - LEVEL TRANSMITTER QIT - CONDUCTIVITY INDICATOR PLC - PROGRAMMABLE LOGIC CONTROLLER
	PNEUMATIC DIAPHRAGM - SINGLE ACTING		BALL		TORTALIZER		TRAP		VALVE NORMALLY CLOSED	
	PNEUMATIC DIAPHRAGM - DOUBLE ACTING		DIAPHRAGM		GATE		DISCHARGE TO ATMOSPHERE			
	PNEUMATIC PISTON		3-WAY		CHECK VALVE		SAMPLING POINT			
	PNEUMATIC PISTON		SLUICE		MOTORIZED 3 WAY		FLOW INDICATOR			

IWRM PLANT P&I DETAIL G

NTS



Legend

R00	JUNE 2020	STAGE -1	PD	SBC	SD
REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.

Title:
**Consultancy Services for Survey,
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Sub Title:

Water Supply System in V. Keyodhoo

Client:
**Ministry of National Planning, Housing and
Infrastructure, Republic of Maldives**



T: +960 333 3528
E: info@epoch.associates
W: www.epoch.associates
A: G. Rosary West,
 Husnuheena Magu, Male', Maldives



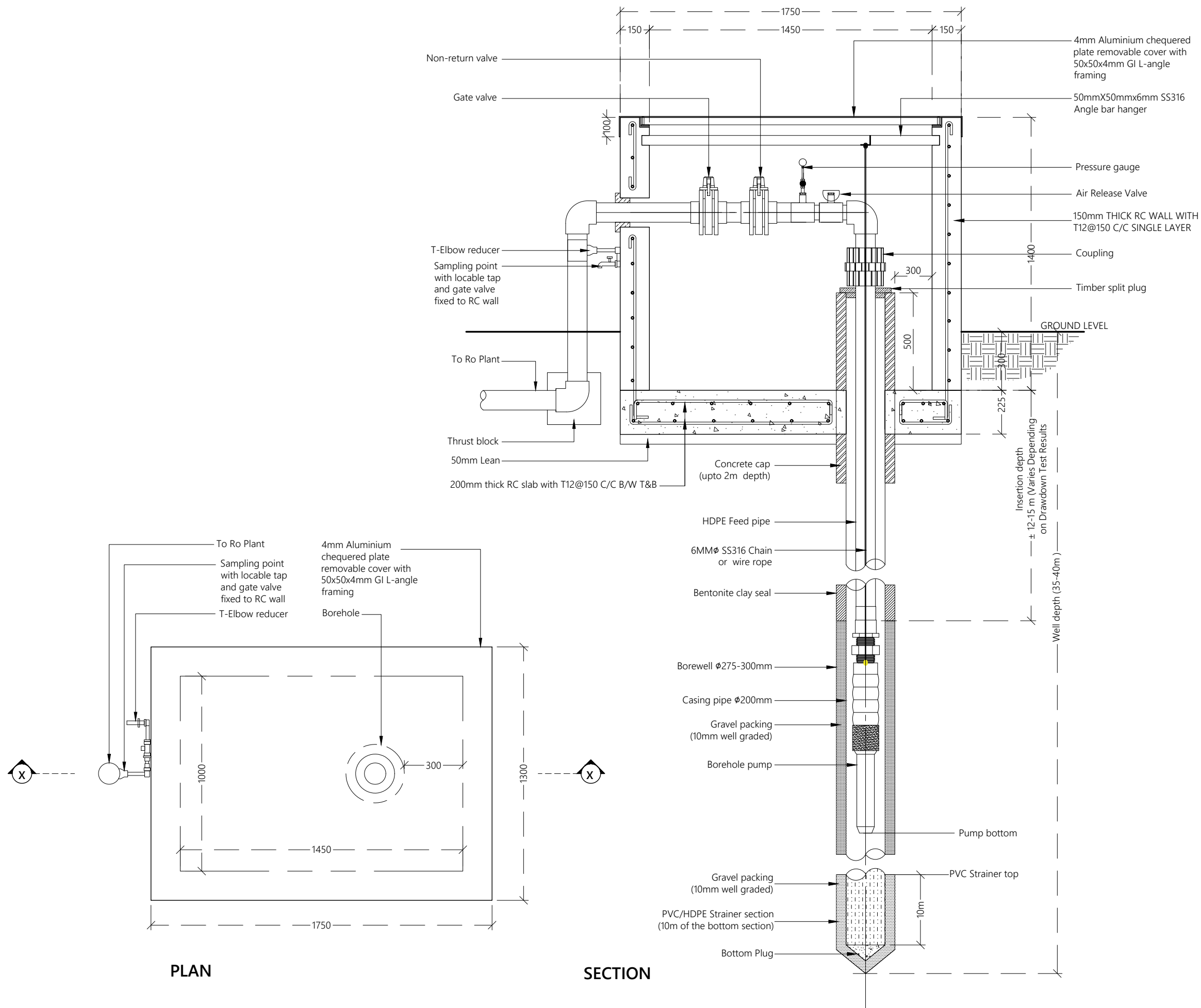
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Designed: F.I.A.	Approved: I.W.
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Date: Sep 2020	SCALE (A3): NTS
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Project No: EP-WS/2019/05

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BOREHOLE DETAILS

NTS



Legend

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R00	JUNE 2020	STAGE -1	PD	SBC	SD

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Sub Title:
Water Supply System in V. Keyodhoo

Client:
Ministry of National Planning, Housing and Infrastructure, Republic of Maldives

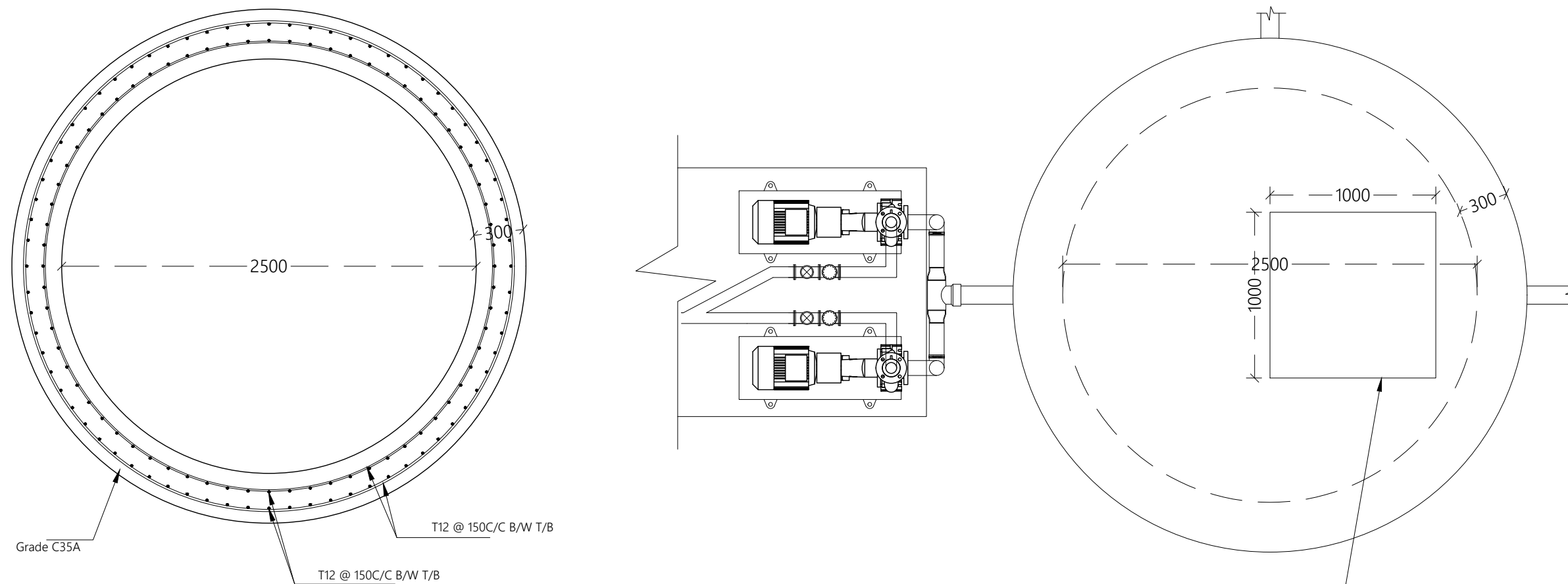


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E: info@epoch.associates
W: www.epoch.associates
A: G. Rosary West, Husnuheena Magu, Male', Maldives



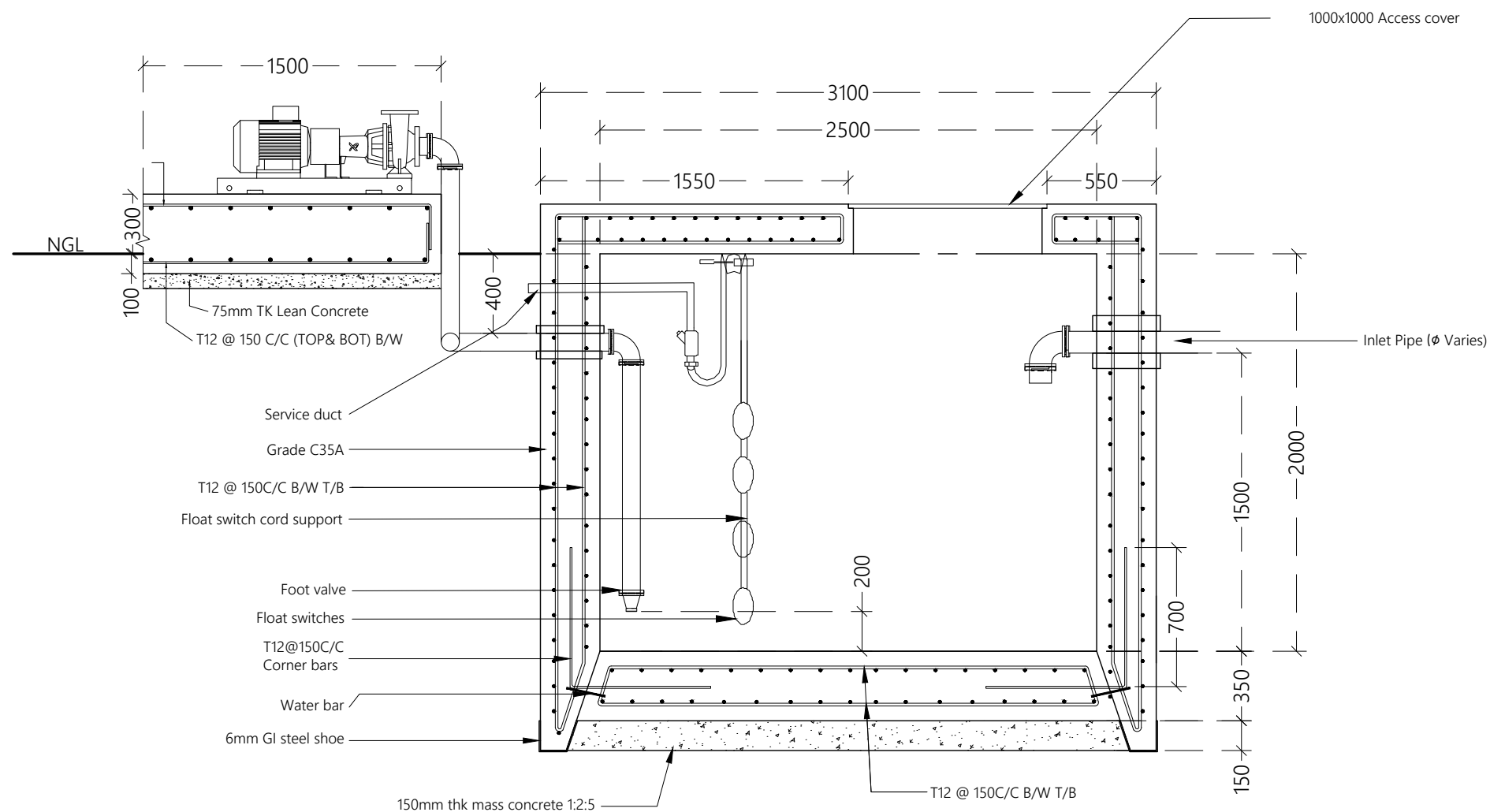
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Date: Sep 2020	SCALE (A3): NTS
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BRINE WATER TANK PLAN - STRUCTURAL

BRINE WATER TANK PLAN



BRINE WATER TANK SECTION X-X

BRINE TANK DETAILS

1:30



Legend

- Note:**
- Pumps, pipe work, fittings and control panel shall be installed in accordance with manufacturers recommendations.
 - Orientation of tanks and pipe work to suit location.

REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.
R00	JUNE 2020	STAGE -1	PD	SBC	SD

Title:
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Sub Title:
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Client:
Ministry of National Planning, Housing and Infrastructure, Republic of Maldives



T: +960 333 3528
E: info@epoch.associates
W: www.epoch.associates
A: G. Rosary West,
Husnuheena Magu, Male', Maldives



Drawn: F.I.A. Checked: M.S.S.

Designed: F.I.A. Approved: I.W.

Date: Sep 2020 SCALE (A3): 1:30

Project No: EP-WS/2019/05

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Legend

- Note:**
- Pumps, pipe work, fittings and control panel shall be installed in accordance with manufacturers recommendations.
 - Orientation of tanks and pipe work to suit location.
 - The rainwater lift well will have a filter to prevent entry of debris and dirt.

REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.
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Ministry of National Planning, Housing and Infrastructure, Republic of Maldives



T: +960 333 3528
E: info@epoch.associates
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A: G. Rosary West,
Husnuheena Magu, Male', Maldives



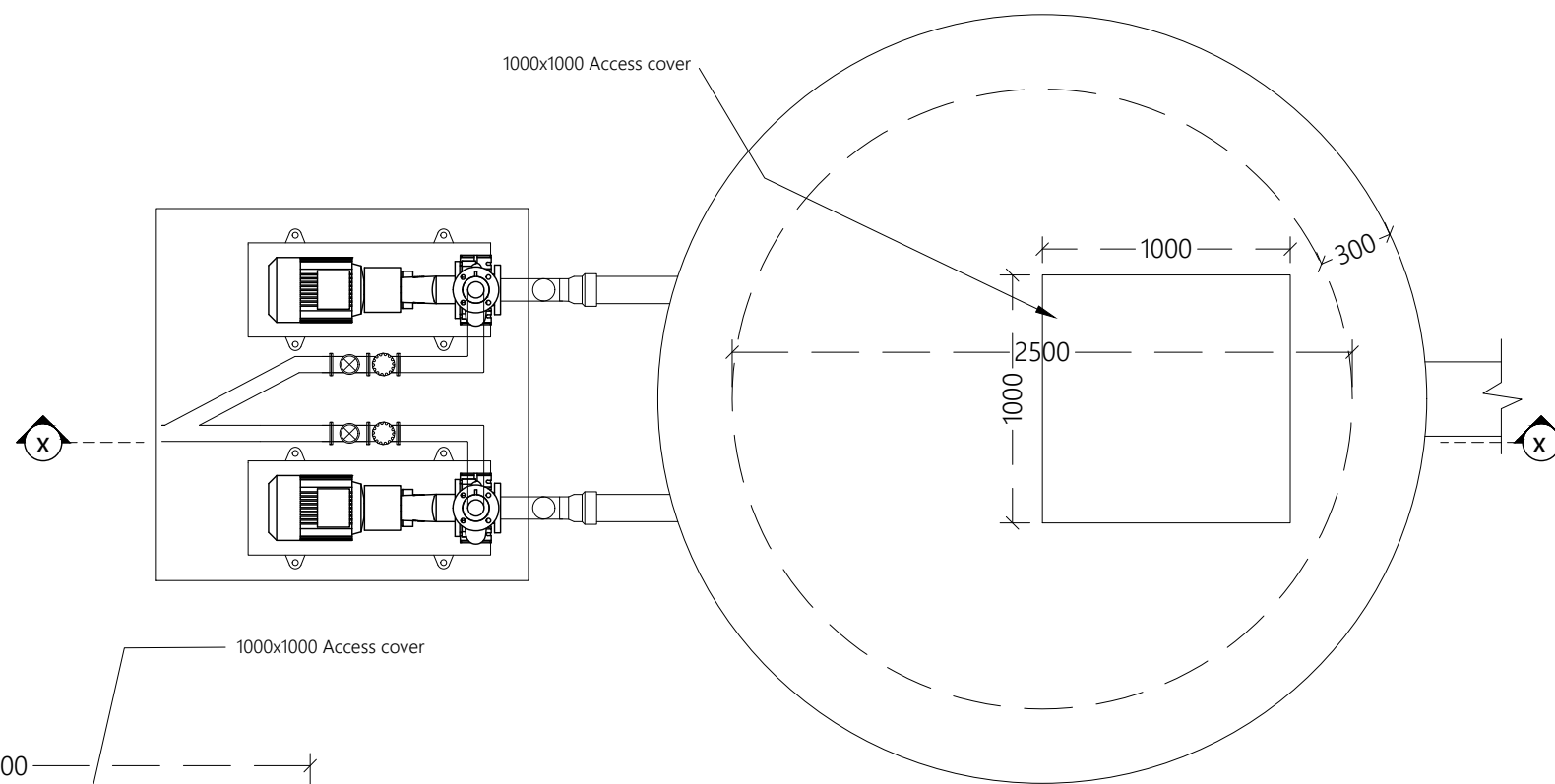
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Designed: F.I.A. Approved: I.W.

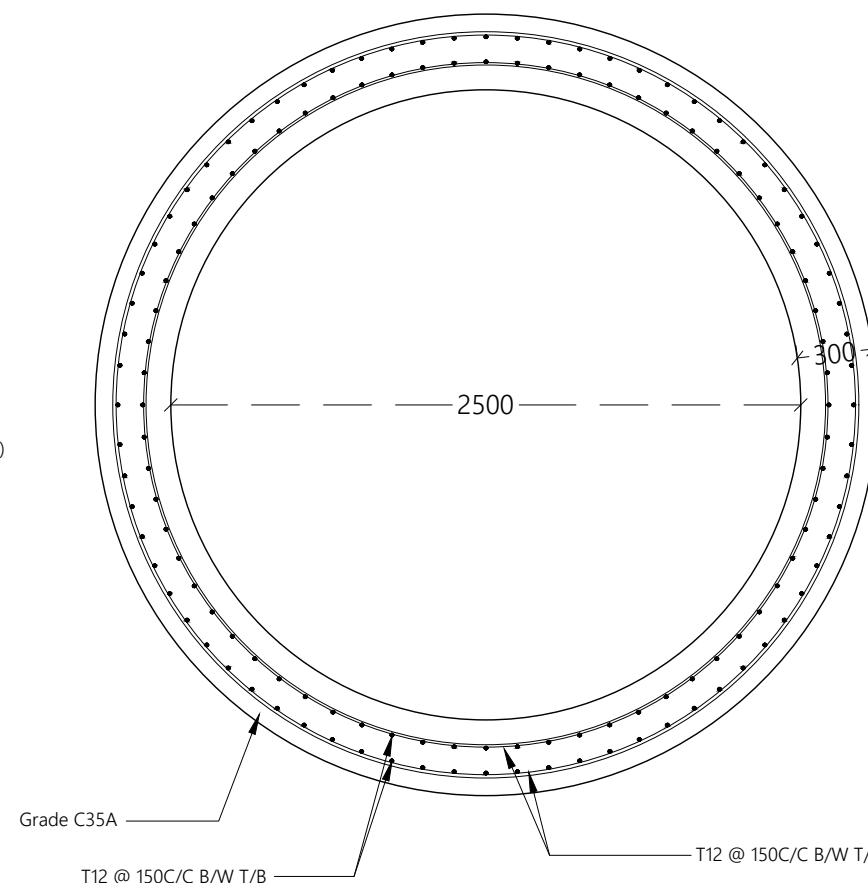
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Project No: EP-WS/2019/05

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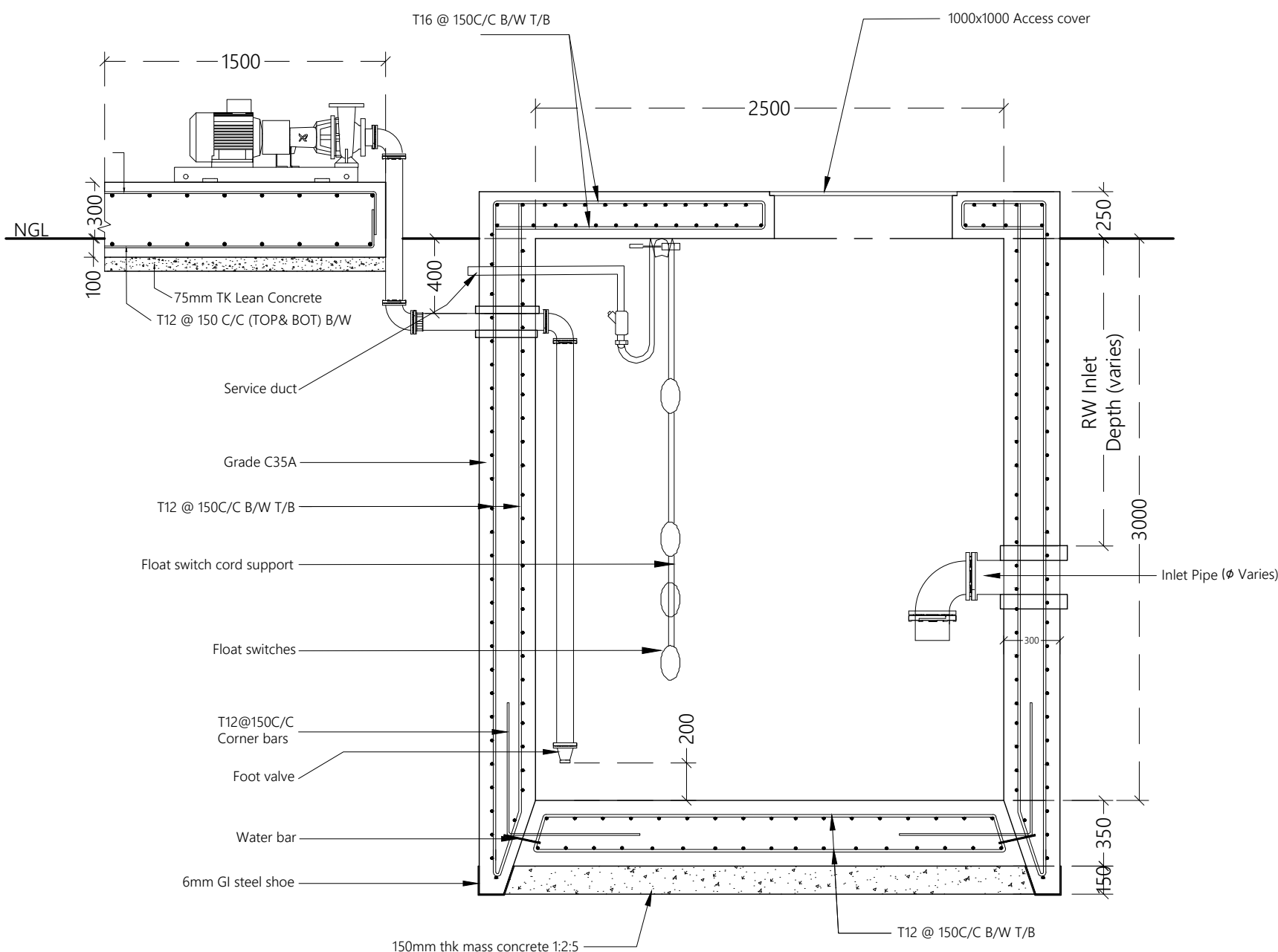
RAIN WATER LIFT WELL PLAN



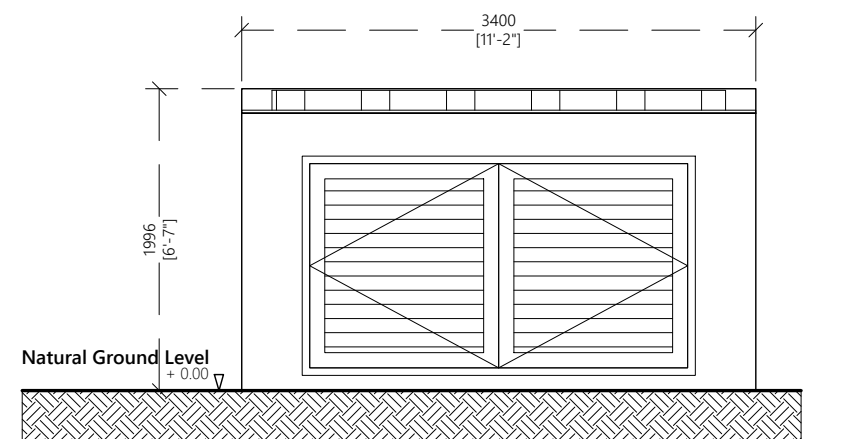
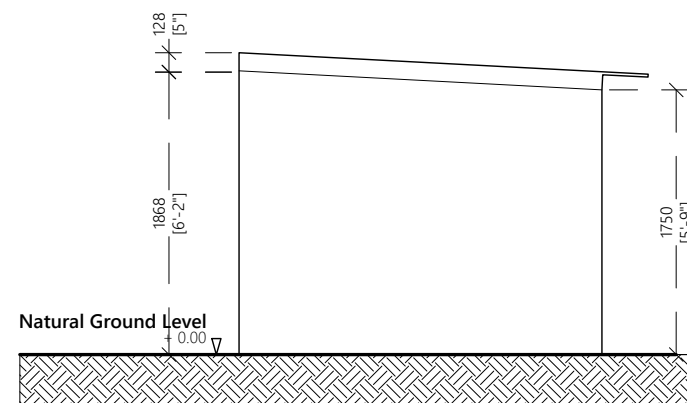
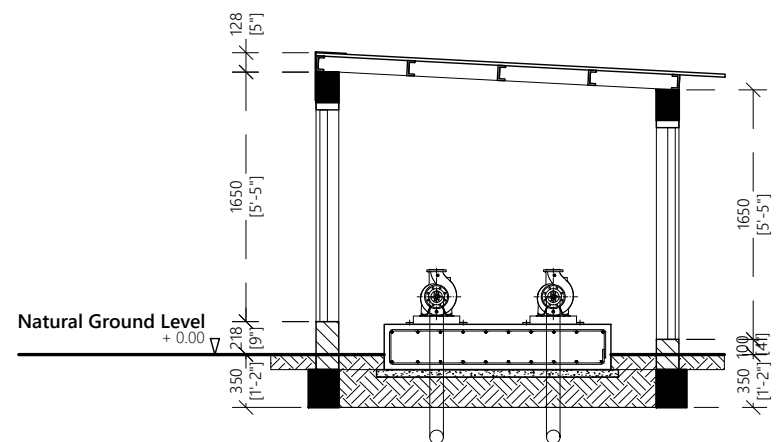
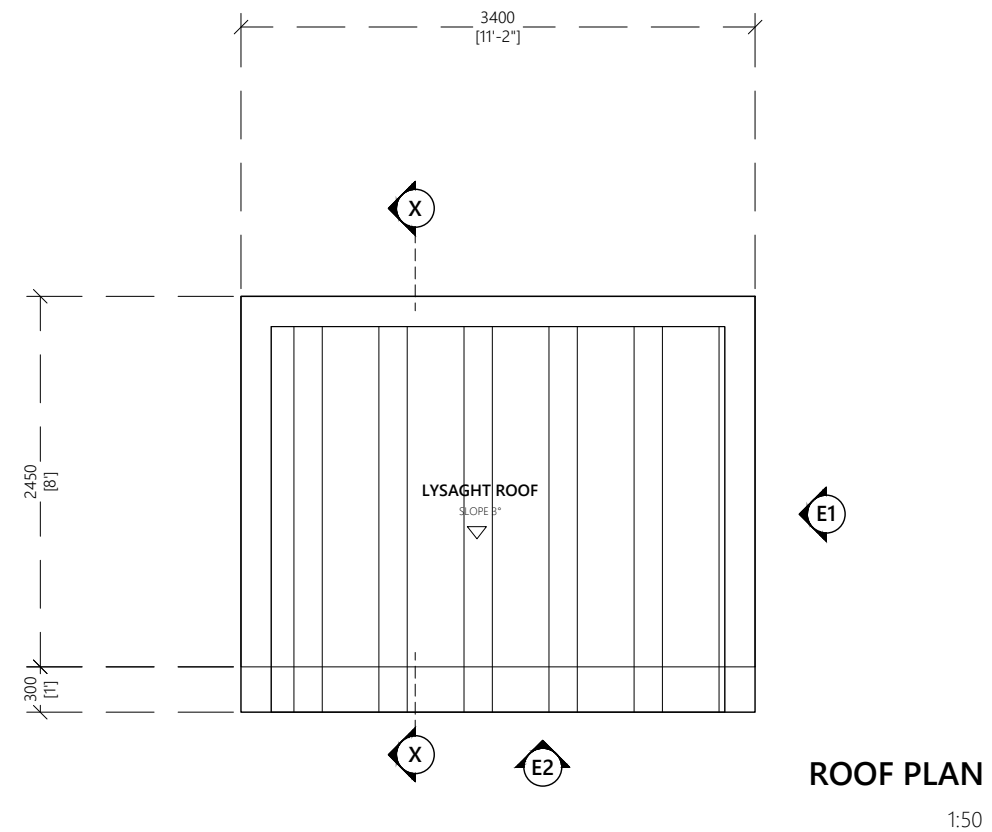
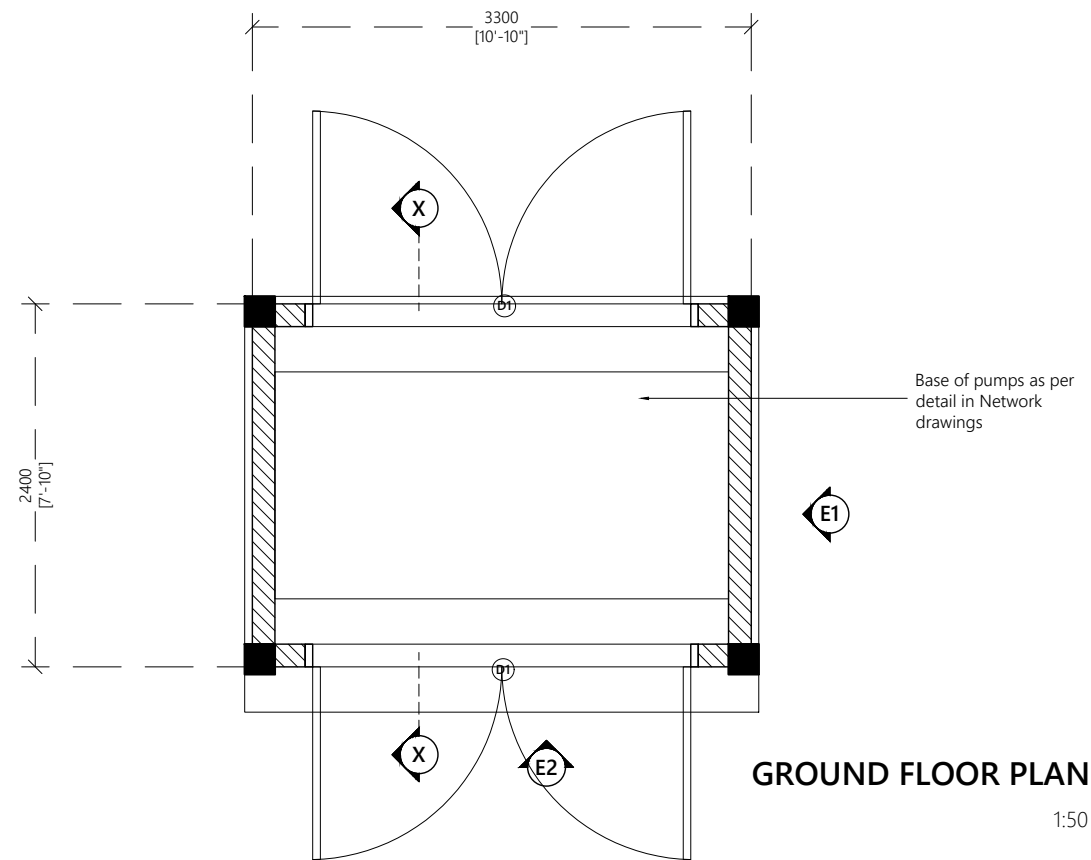
RAIN WATER LIFT WELL PLAN - STRUCTURAL

RAINWATER LIFT WELL DETAILS

1:30



RAIN WATER LIFT WELL SECTION X-X



PUMP SHED DETAILS



Legend

REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.
R00	JUNE 2020	STAGE -1	PD	SBC	SD

Title:
Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 6 islands, Maldives - Package 5

Sub Title:
Water Supply System in V. Keyodhoo

Client:
Ministry of National Planning, Housing and Infrastructure, Republic of Maldives



T: +960 333 3528
E: info@epoch.associates
W: www.epoch.associates
A: G. Rossary West,
Husnuheena Magu, Male', Maldives



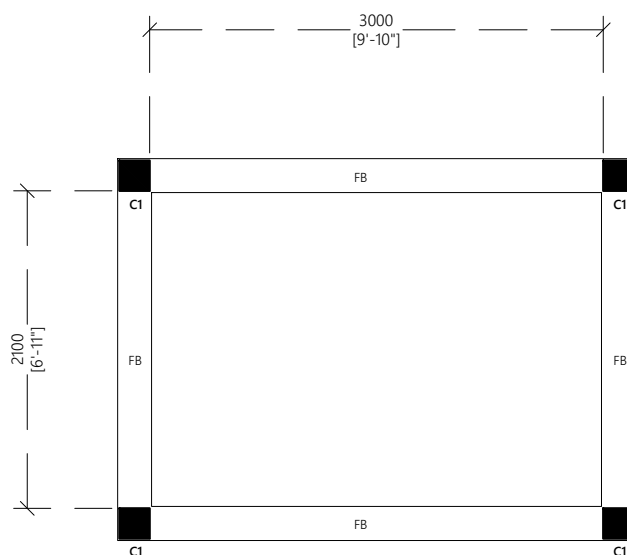
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Designed: F.I.A. Approved: I.W.

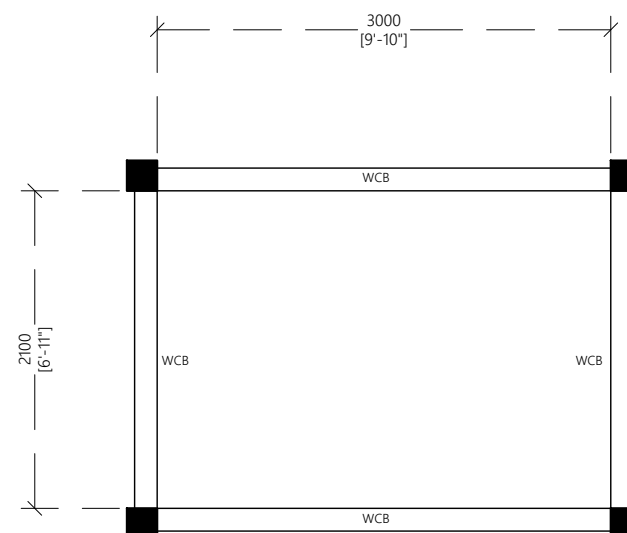
Date: Sep 2020 SCALE (A3): -

Project No: EP-WS/2019/05

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1:100



1:100

General Door Notes:

Dimensions shown on DWG indicate effective openings of frame

All frame depths are 100mm
All dor panel thicknesses are 35mm
All window panel thickness are 25mm
All frame edges shall be trimmed 3mm

All wooden components should be wood stained finish

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

All hardware should be provided for the performance of all functions of the units

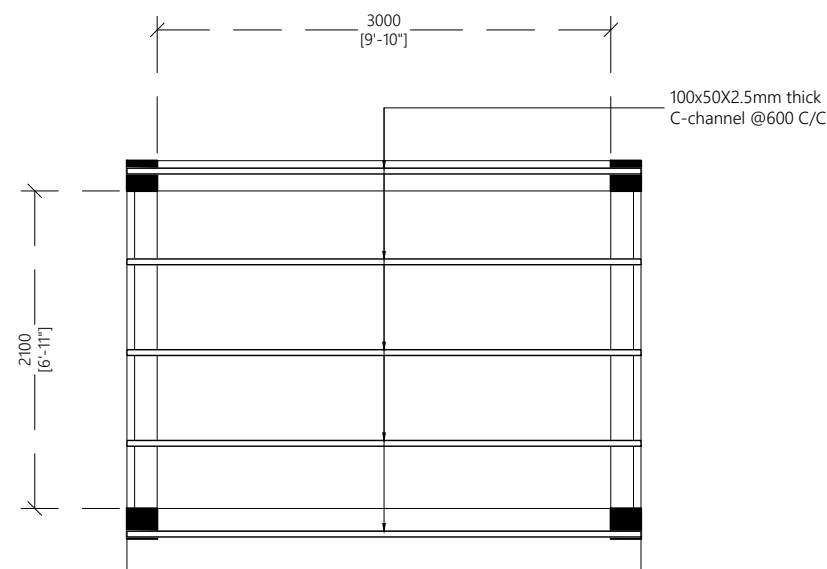
Hinges shall confirm to

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

1:100




1:100

Title:
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 EPOCH <small>ASSOCIATES</small>	FEEDBACK INFRA <i>Making Software Development Happen</i>
T: +960 333 3328 E: info@epoch.associates W: www.epoch.associates A: C. Rosany West, Husnuheena Magu, Male', Maldives	
Drawn: F.I.A.	Checked: M.S.S.
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Date: Sep 2020	SCALE (A3): 1:100
Project No: EP-WS/2019/05	
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1:20



1:20



Title:
**Consultancy Services for Survey,
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6 islands, Maldives - Package 5**

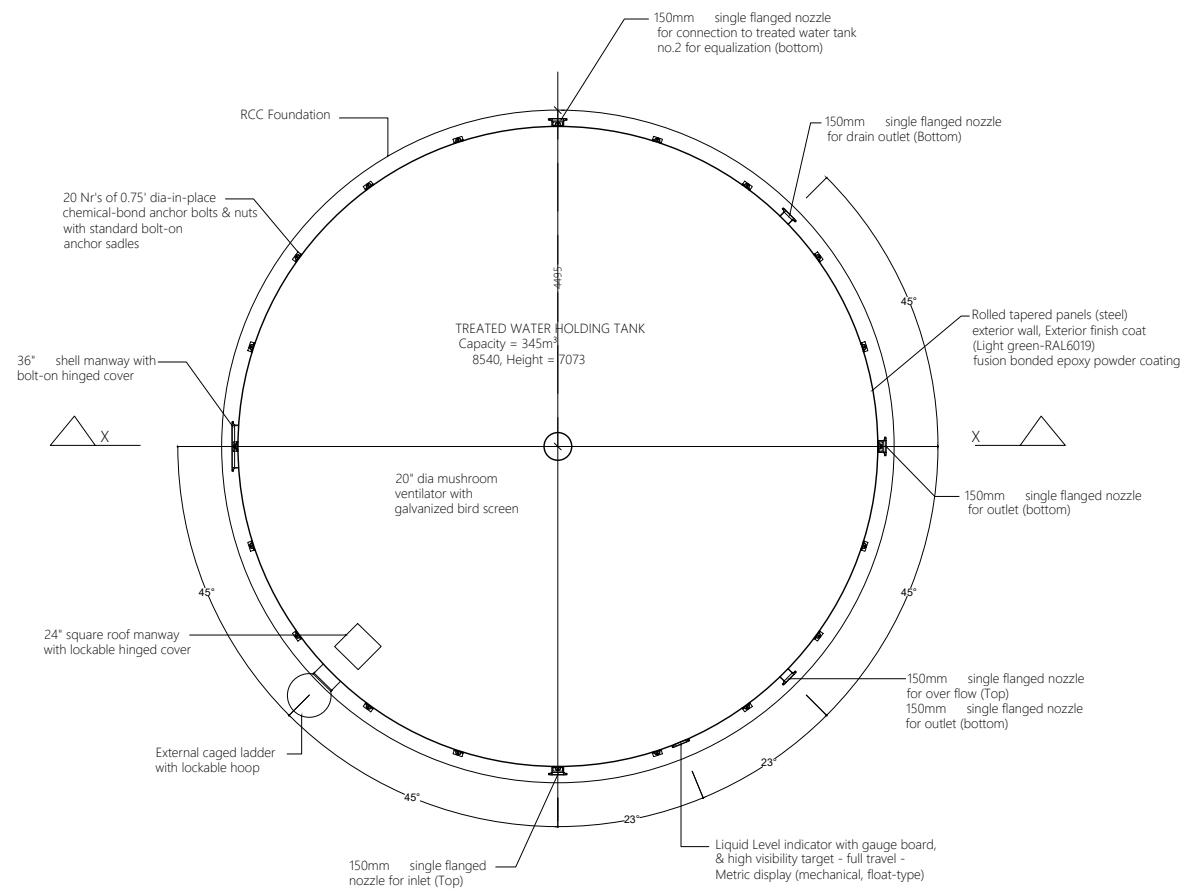
Sub Title:
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Project No: EP-WS/2019/05	
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1:20



Technical drawing of a 100,000-gallon oil storage tank, showing elevation and structural details. The drawing includes the following components and dimensions:

- Dimensions:**
 - Overall diameter: 8540
 - Height: 7073
 - Foundation width: 432 (13'-5")
 - Foundation length: 8990
 - Ground level: +0.00 (G.L.)
- Structural Details:**
 - Full deck perimeter guardrail
 - 150mm single flanged nozzle for inlet (Top)
 - 150mm single flanged nozzle for inlet (Top)
 - Liquid Level Indicator with gauge board & high visibility target - full travel - Metric display (mechanical, float-type)
 - 20 Nr's of 0.75" dia drill-in-place chemical-bond anchor bolts & nuts with standard bolt-on anchor saddles
 - 150mm single flanged nozzle for outlet (bottom)
 - 4 mil polythene sheets between foundation & fiberboard/tank bottom
 - Tank Foundation
- Accessories:**
 - 20" dia mushroom ventilator with galvanized bird screen
 - Rolled tapered panels (steel) exterior wall, Exterior finish coat (Light green-RAL6019) fusion bonded epoxy powder coating
 - External caged ladder with lockable hoop
 - 36" shell manway with bolt-on hinged cover
- Other Labels:**
 - 12
 - 0°

150mm tk. RCC slab (1:2:3)

+300(F.L)

450mm x 900mm concrete Ring Beam (RC)

+0.00(G.L)

8990

8540

8240

8690

A detailed cross-section diagram of a tank foundation. The diagram shows a central tank structure with a flat floor and vertical walls. The foundation consists of a 150mm thick reinforced concrete (RC) slab. The tank floor is made of fibre board (12.7mm thick) and a 4 mil polythene sheet. The tank walls are made of 150mm thick RC. The foundation is supported by a well-compacted hardcore with a bearing capacity of minimum 150 kpa. The foundation is reinforced with T10 bars at 150 c/c, top and bottom, and T10 rings at 150 c/c. The foundation is also reinforced with 6T20 bars. The foundation is finished with a 50mm thick lean concrete (1:2:4) layer. The dimensions of the foundation are 450mm x 600mm. The tank floor is at +300(F.L) and the tank walls are at +0.00(G.L).

TANK FLOOR

FIBRE BOARD 12.7MM TK. & 4 mil polythene sheet

TOP OF FOUNDATION

150mm tk. RC slab (1:2:3)

T10@150 c/c BW, Top & Bottom

T10 rings @ 150 c/c

Well Compacted hardcore Bearing capacity minimum 150kpa

450mm x 900mm RCC Ring beam

6T20

50mm thick Lean Concrete (1:2:4)

TANK ANCHORING AS PER MANUFACTURERS DETAILS

+300(F.L)

+0.00(G.L)

450

600

300

300

Note:-
Cover = 50mm
Lap length 50

NTS

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Project No: EP-WS/2019/05	
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Legend

REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.
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T: +960 333 3528
E: info@epoch.associates
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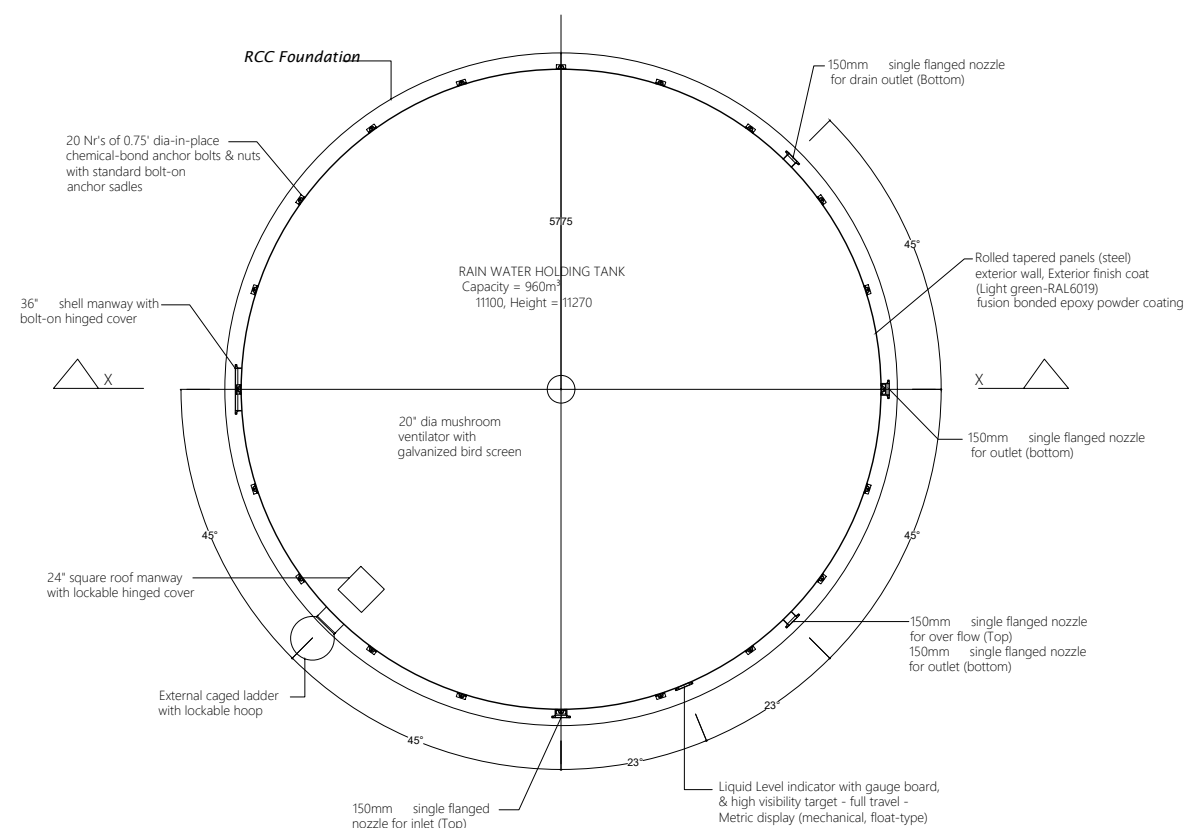
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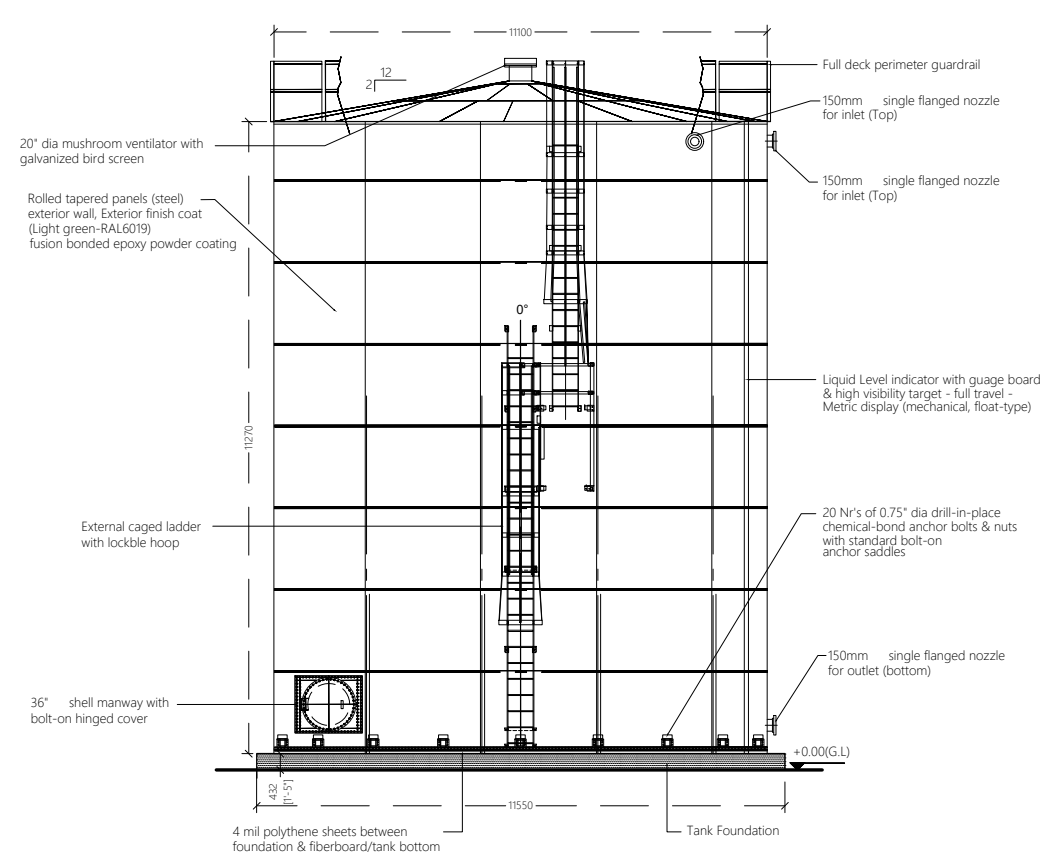
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Project No: EP-WS/2019/05

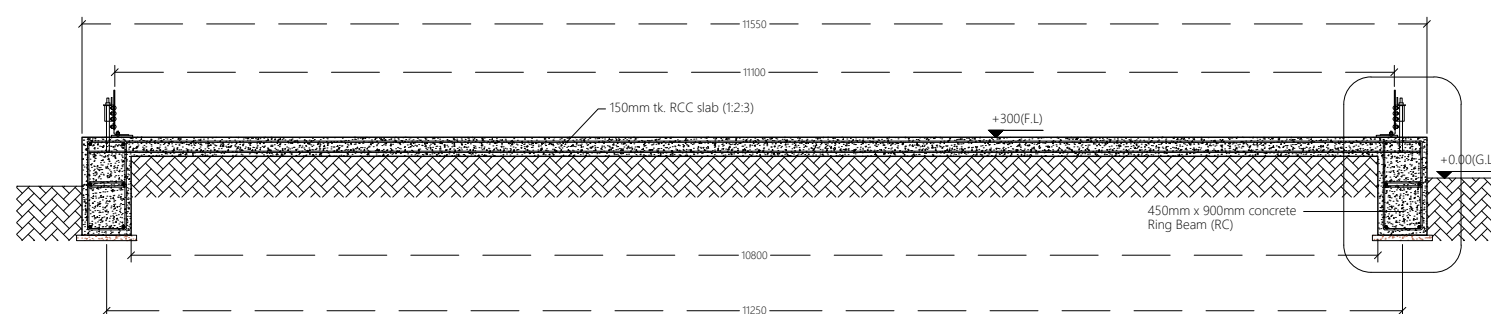
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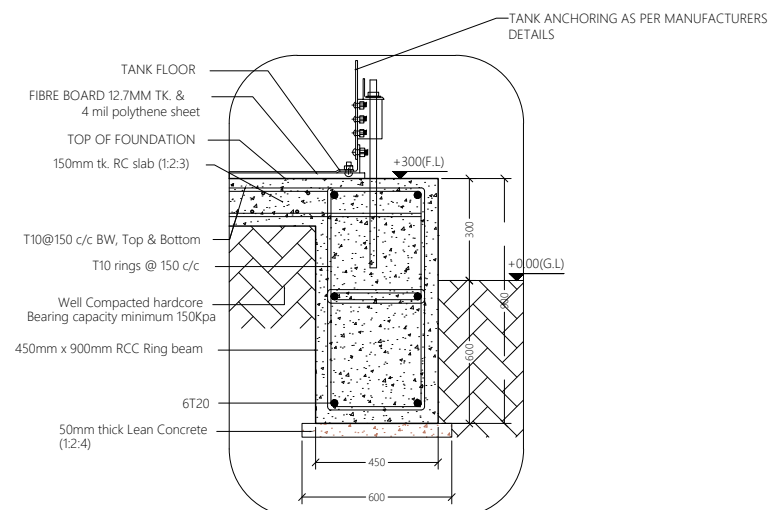
RAINWATER HOLDING TANK AND FOUNDATION- PLAN



RAINWATER HOLDING TANK AND FOUNDATION- ELEVATION



SECTION X-X

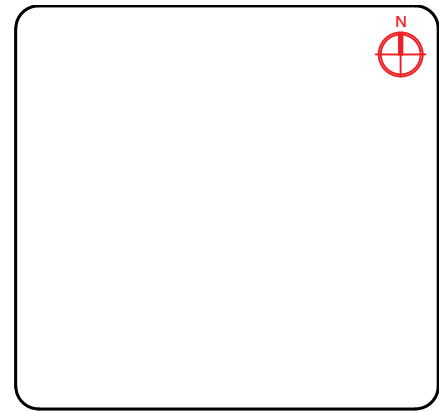


DETAIL

Note:-
Cover = 50mm
Lap length 50

RAINWATER HOLDING TANK DETAILS

NTS



Notes:



- All backing rings for stub flanges , nuts and bolts shall be grade 316 stainless steel.
- All pipe work shall be bedded on 10mm thick neoprene rubber seat in semicircular recess matching the O.D. the pipe.
- Fabricate specific pipe clamps to provide firm clamping action according to pipe O.D.
- All structural concrete shall be of grade C40A.
- All castings shall be done using sulphate resistant portland cement to BS 4027:1996.
- All structural reinforcement shall be epoxy coating of non-pre-stressed reinforcement to ASTM-A775/A775M.
- A cover of 75mm should be given for all reinforcements.

Notes:

- All backing rings for stub flanges , nuts and bolts shall be grade 316 stainless steel.
- All pipe work shall be bedded on 10mm thick neoprene rubber seat in nonsircular recess matching the O.D. the pipe.
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<p>Title:</p> <h1>Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 6 islands, Maldives - Package 5</h1>	
<p>Sub Title:</p> <h2>Water Supply System in V. Keyodhoo</h2>	
<p>Client:</p> <h3>Ministry of National Planning, Housing and Infrastructure, Republic of Maldives</h3>	
 <p>EPOCH ASSOCIATES</p> <p>T : +960 333 3528 E : info@epoch.associates W : www.epoch.associates A : G. Rosary West, Husnuheena Magu, Male', Maldives</p>	 <p>FIDBACK INFRA Making Infrastructure Happen</p>
<p>Drawn: F.J.A.</p>	<p>Checked: M.S.S.</p>
<p>Designed: F.J.A.</p>	<p>Approved: I.W.</p>
<p>Date: Sep 2020</p>	<p>SCALE (A3): NTS</p>
<p>Project No: EP-WS/2019/05</p>	
<p>Rev:</p> <p>R-01</p>	<p>Page:</p> <p>W-21</p>

Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 6 islands, Maldives - Package 5

Sub Title:

Water Supply System in V. Keyodhoo

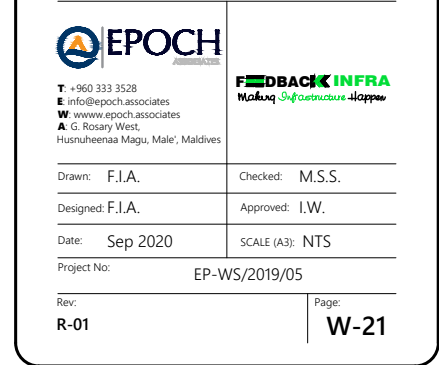
Client:

Ministry of National Planning, Housing and Infrastructure, Republic of Maldives

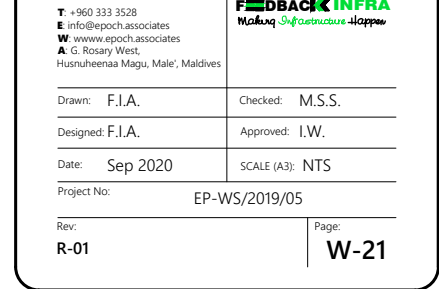
Water Supply System in V. Keyodhoo

Client:

**Ministry of National Planning, Housing and
Infrastructure, Republic of Maldives**

Ministry of National Planning, Housing and
Infrastructure, Republic of Maldives

T: +960 333 3528 E: info@epoch.associates W: www.epoch.associates A: G. Rosany West, Husnuheena Magu, Male', Maldives		FEDBACK INFRA <i>Making Infrastructure Happen</i>	
Drawn: F.I.A.		Checked: M.S.S.	
Designed: F.I.A.		Approved: I.W.	
Date: Sep 2020		SCALE (A3): NTS	
Project No:		EP-WS/2019/05	
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Project No: EP-WS/2019/05	
Rev:	Page:
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Project No: EP-WS/2019/05	
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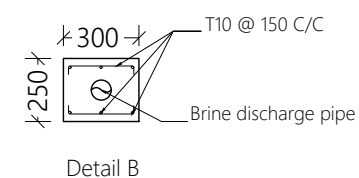
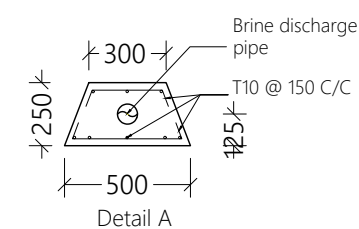
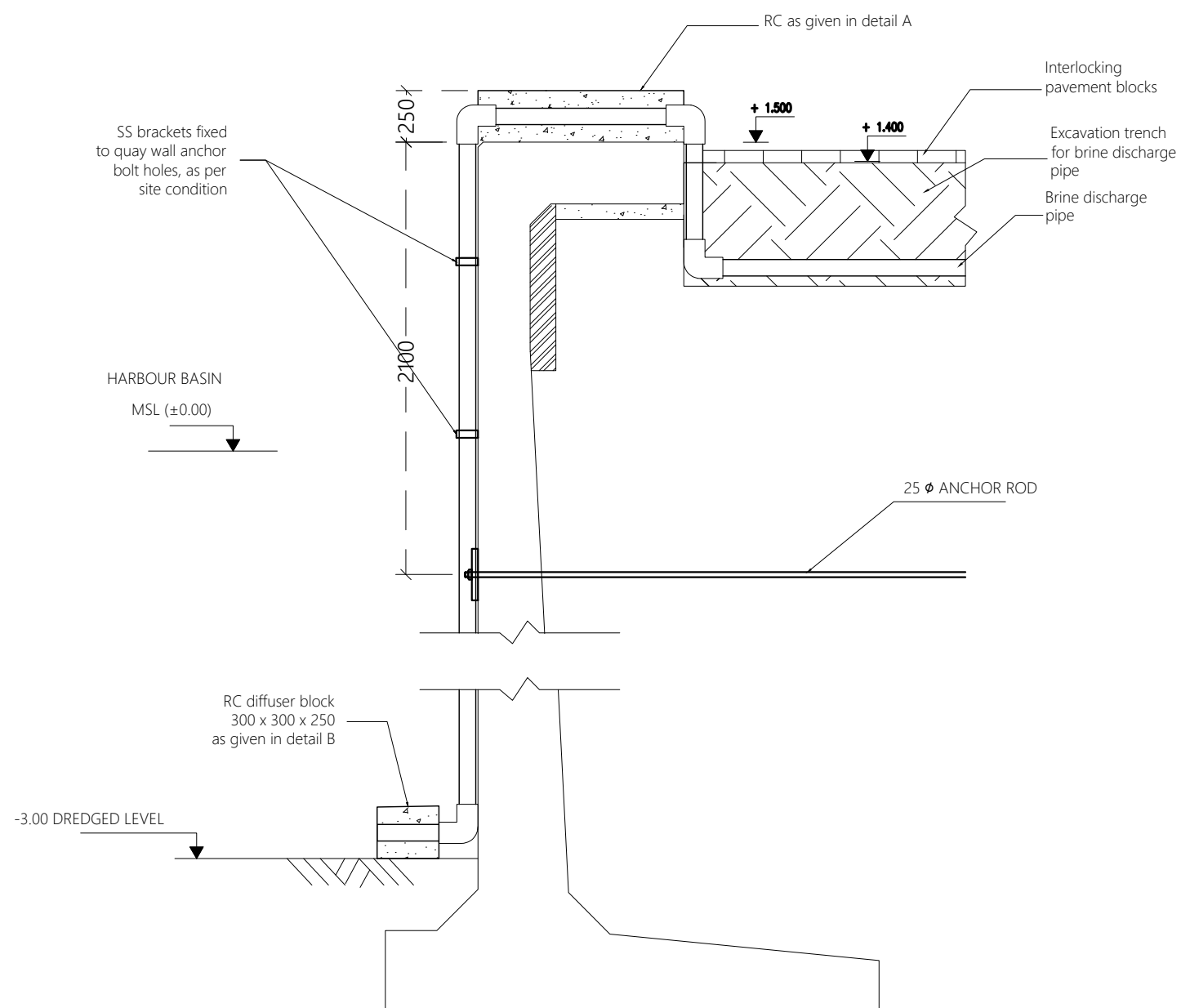
Date: Sep 2020	SCALE (A3): NTS
Project No: EP-WS/2019/05	
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Rev:	R-01	Page: W-21

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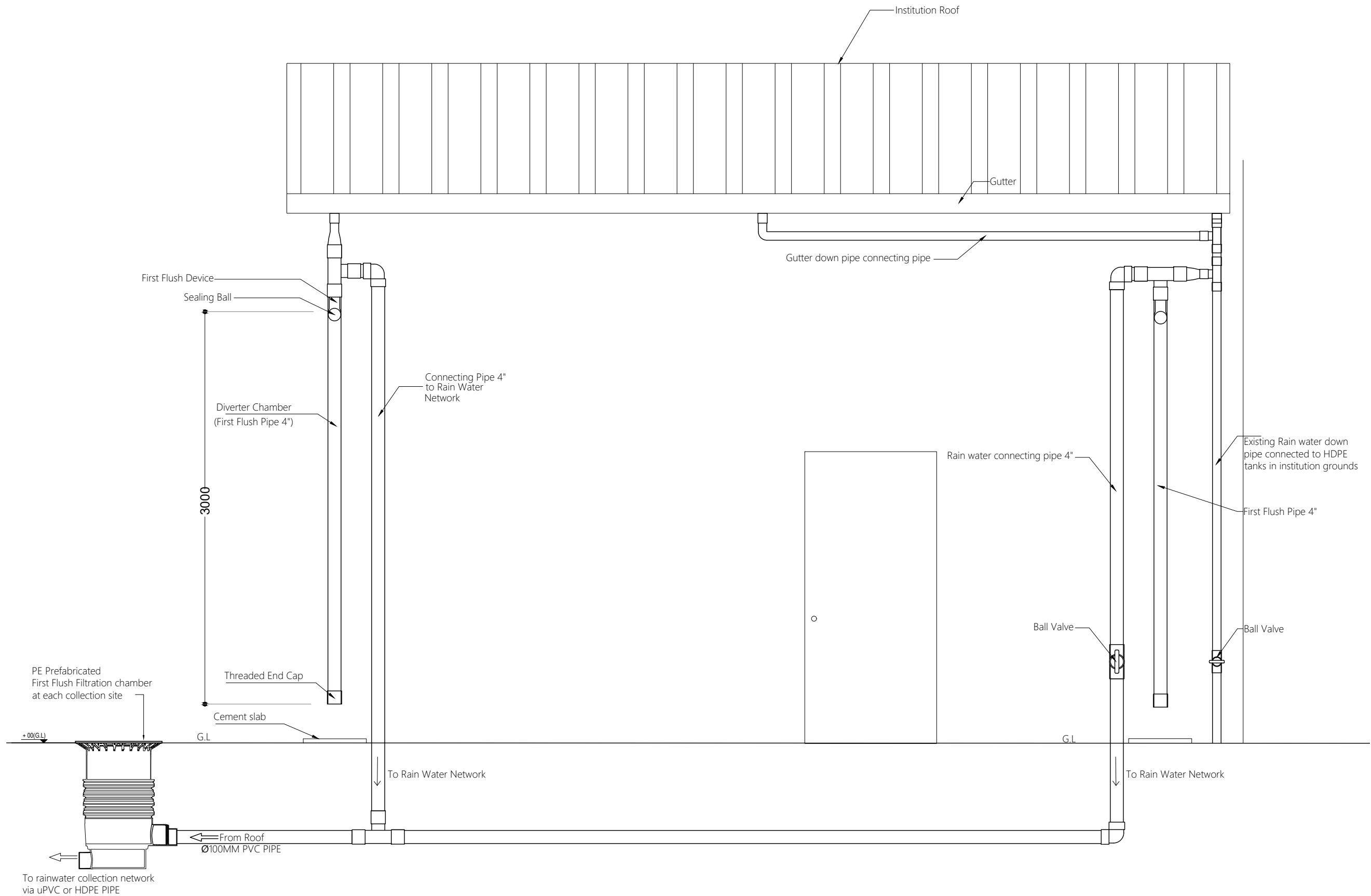
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BRINE HARBOUR DISCHARGE DETAILS

NTS



RAINWATER FIRST FLUSH MECHANISM

NTS



Legend

Notes:

- Prefab filtration chambers will be used as first flush mechanism.
- Filtration chambers suppliers to be approved by engineer.
- Number of chambers will be based on approved manufacturers roof area recommendations.
- Overflow mechanism will be installed on only corner down pipes or where necessary.
- All down pipes are 3 inch dia PVC pipes.
- The filtration chamber will have a screen to prevent entry of debris and dirt.

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Title:
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Sub Title:
Water Supply System in V. Keyodhoo

Client:
Ministry of National Planning, Housing and Infrastructure, Republic of Maldives



T: +960 333 3528
E: info@epoch.associates
W: www.epoch.associates
A: G. Rossary West,
Husnuheena Magu, Male', Maldives



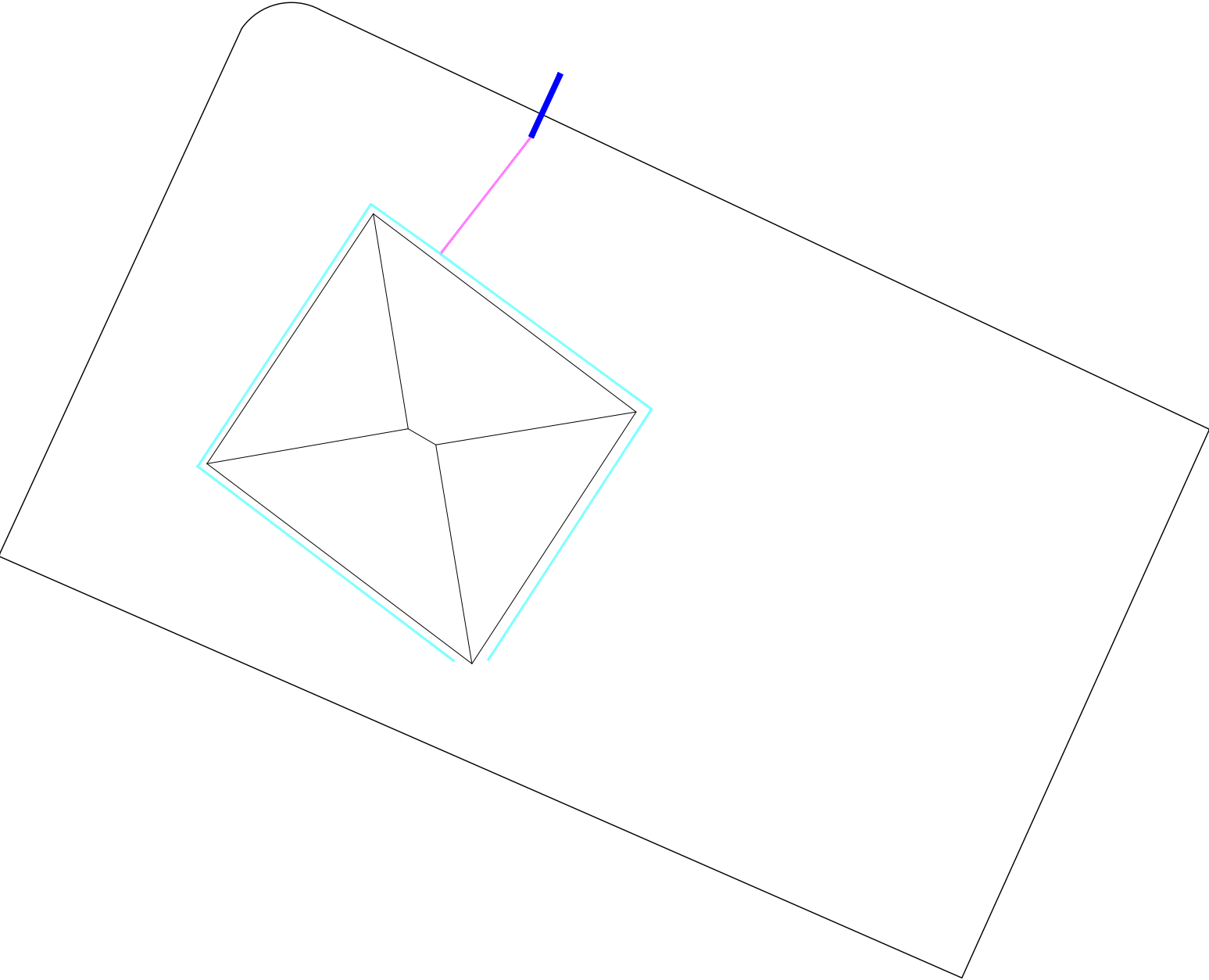
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Date: Sep 2020 SCALE (A3): NTS

Project No: EP-WS/2019/05

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INTERNAL NETWORK LAYOUT- MOSQUE

1:400



Legend

- = PVC PIPES Ø160mm
- = PVC PIPES Ø110mm

APPROXIMATE TOTAL NETWORK LENGTH = 97m

APPROXIMATE GUTTER LENGTH = 85m

APPROXIMATE PIPE NETWORK LENGTH (DIAMETER 160mm) = 10m

APPROXIMATE PIPE NETWORK LENGTH (DIAMETER 110mm) = 87m

R00	JUNE 2020	STAGE -1	PD	SBC	SD
REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.

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Sub Title:
Water Supply System in V. Keyodhoo

Client:
Ministry of National Planning, Housing and Infrastructure, Republic of Maldives



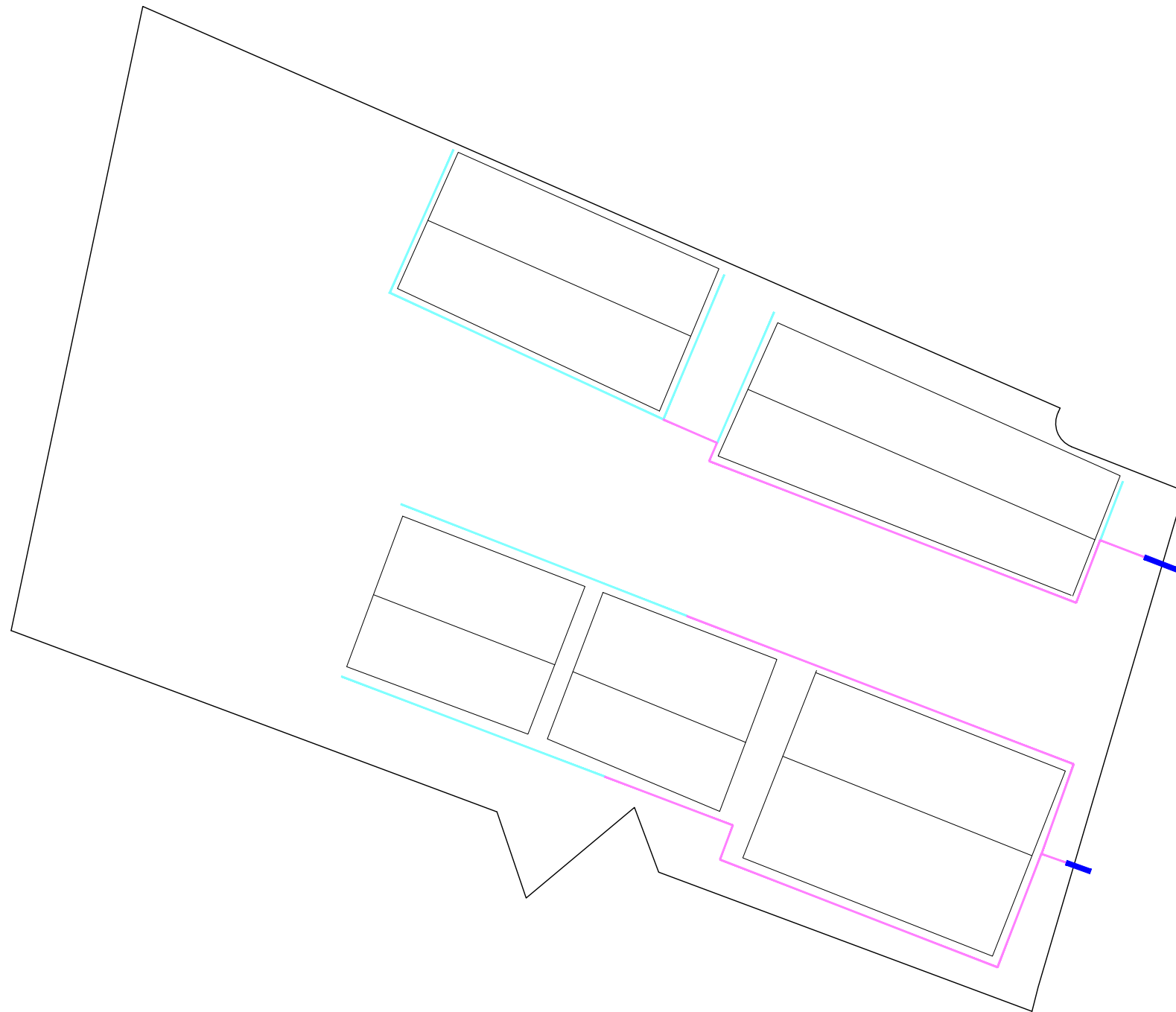
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T: +960 333 3528
E: info@epoch.associates
W: www.epoch.associates
A: G. Rossary West,
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Date: Sep 2020	SCALE (A3): 1:400
Project No: EP-WS/2019/05	
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Legend

— = PVC PIPES Ø160mm

— = PVC PIPES Ø110mm

APPROXIMATE TOTAL NETWORK LENGTH =
222m

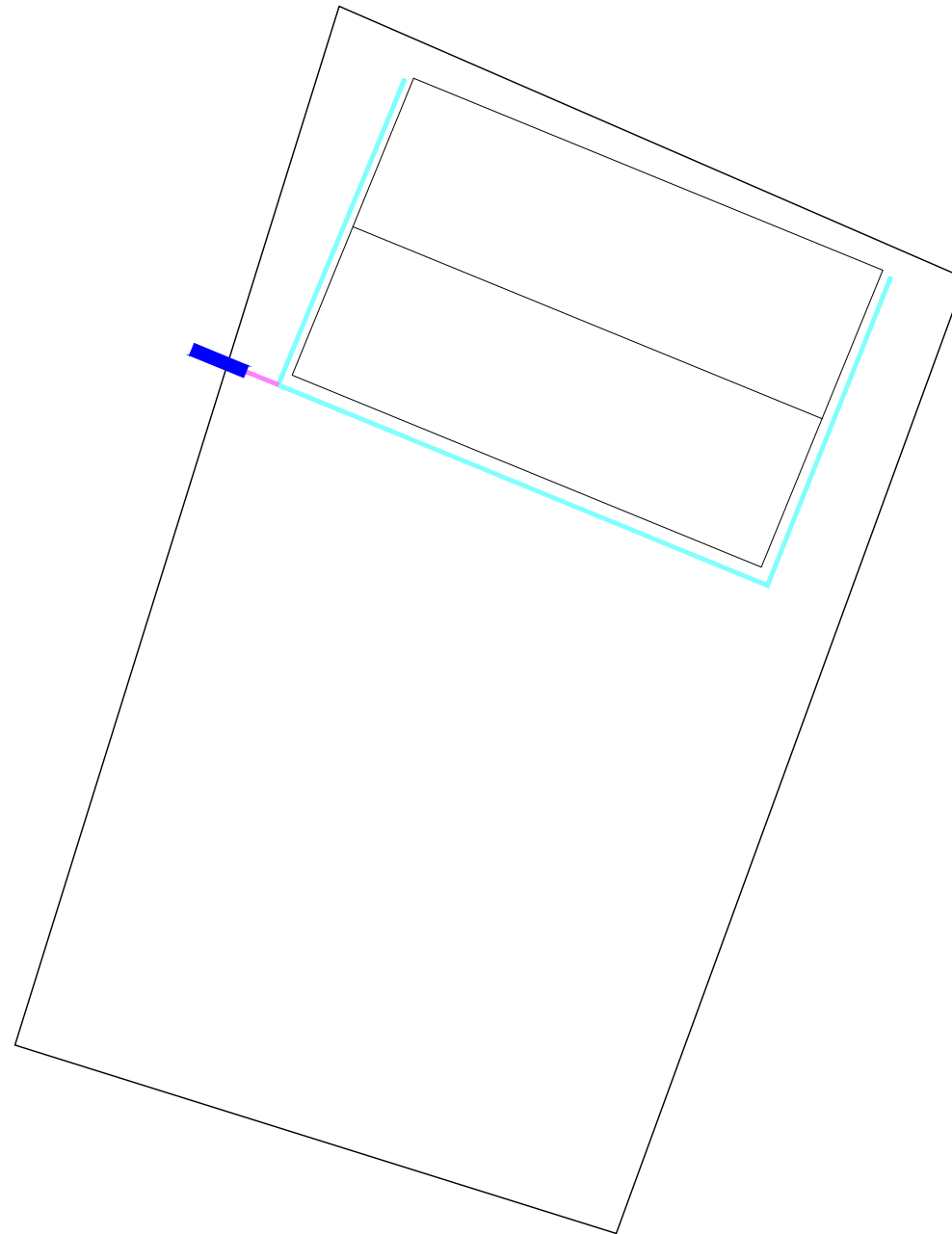
APPROXIMATE GUTTER LENGTH = 187m

APPROXIMATE PIPE NETWORK LENGTH (DIAMETER 160mm) = 122m

APPROXIMATE PIPE NETWORK LENGTH (DIAMETER 110mm) = 100m

INTERNAL NETWORK LAYOUT- KEYODHOO SCHOOL

1:400



Legend

— = PVC PIPES Ø160mm

— = PVC PIPES Ø110mm

APPROXIMATE TOTAL NETWORK LENGTH =
34m

APPROXIMATE GUTTER LENGTH = 28m

APPROXIMATE PIPE NETWORK LENGTH (DIAMETER 160mm) = 1m

APPROXIMATE PIPE NETWORK LENGTH (DIAMETER 110mm) = 33m

R00	JUNE 2020	STAGE -1	PD	SBC	SD
REV. NO.	Date	Revision Description	Drawn	Chkd	Appd

Title:
**Consultancy Services for Survey,
Design and EIA works of Water
Supply and Sewerage Facilities in
6 islands, Maldives - Package 5**

Sub Title:
Water Supply System in V. Keyodhoo

Client:
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E: info@epoch.associates
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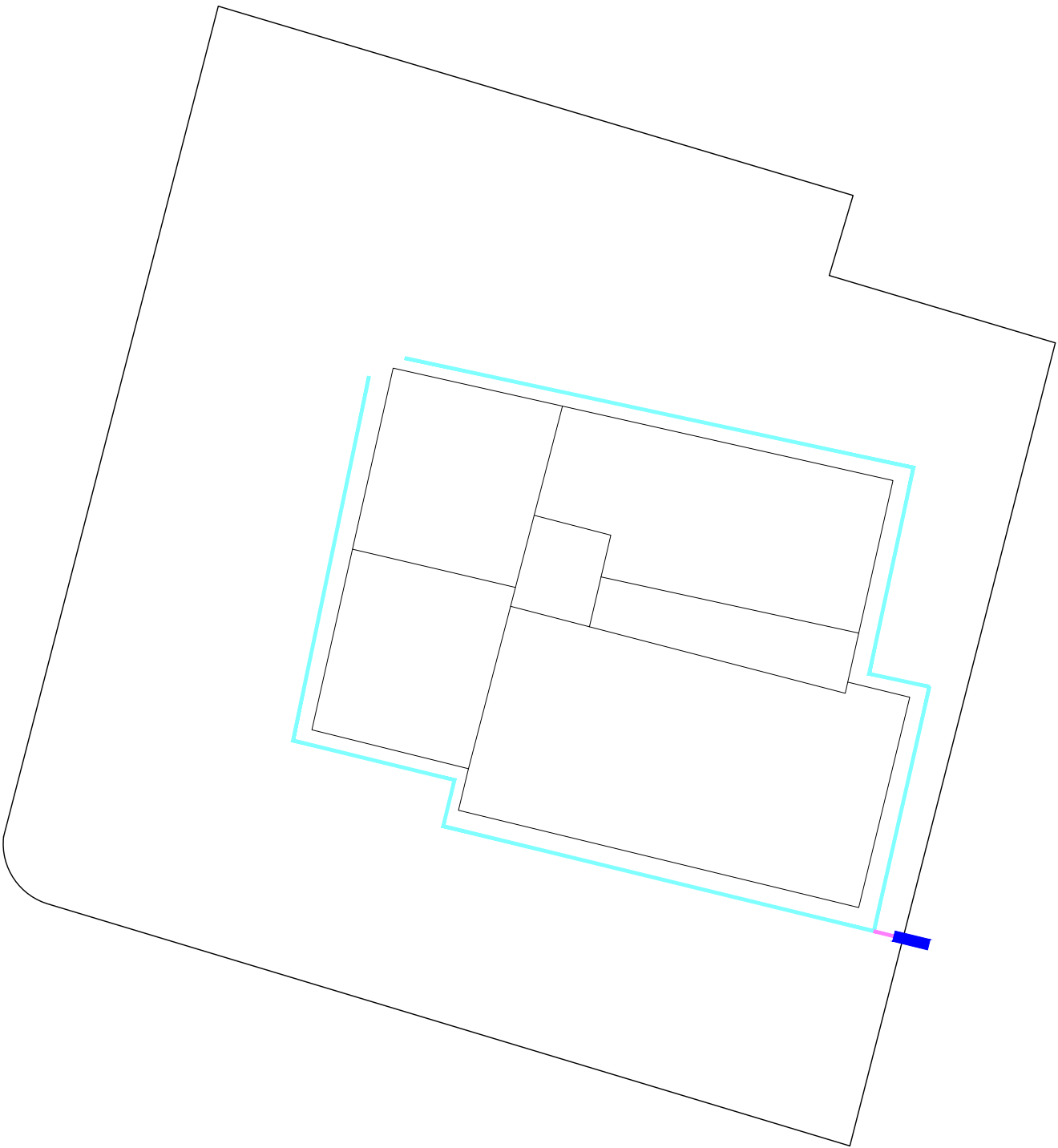
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Date: Sep 2020	SCALE (A3): 1:200
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Project No: EP-WS/2019/05

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INTERNAL NETWORK LAYOUT- HEALTH CENTER

1:200



Legend

— = PVC PIPES Ø160mm

— = PVC PIPES Ø110mm

APPROXIMATE TOTAL NETWORK LENGTH = 69m

APPROXIMATE GUTTER LENGTH = 65m

APPROXIMATE PIPE NETWORK LENGTH (DIAMETER 160mm) = 1m

APPROXIMATE PIPE NETWORK LENGTH (DIAMETER 110mm) = 68m

R00	JUNE 2020	STAGE -1	PD	SBC	SD
REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.

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Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 6 islands, Maldives - Package 5

Sub Title:
Water Supply System in V. Keyodhoo

Client:
Ministry of National Planning, Housing and Infrastructure, Republic of Maldives

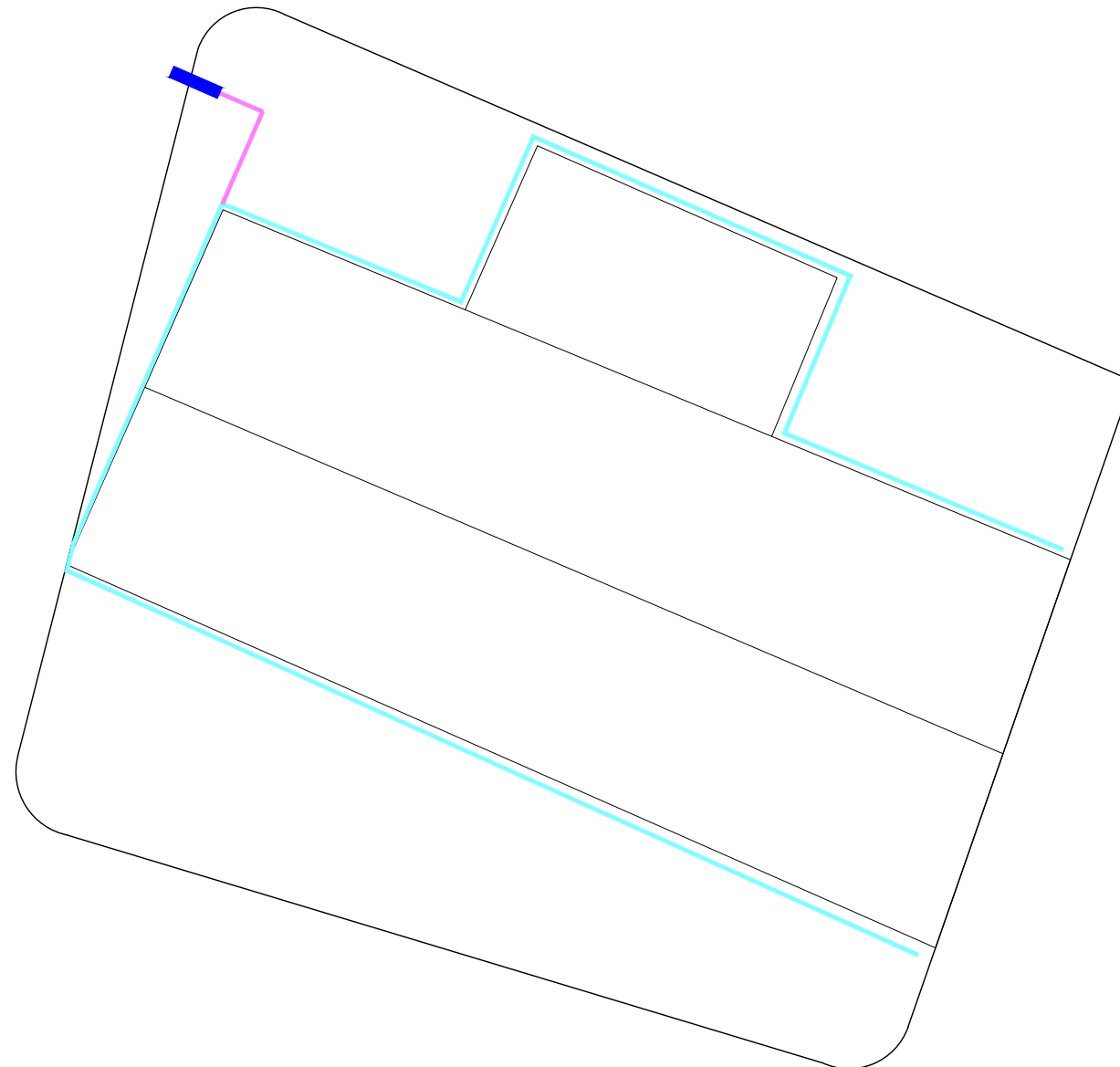


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E: info@epoch.associates
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A: G. Rosary West,
Husnuheena Magu, Male', Maldives



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Date: Sep 2020	SCALE (A3): 1:200
Project No: EP-WS/2019/05	
Rev: R-01	Page: W-26



Legend

— = PVC PIPES Ø160mm

— = PVC PIPES Ø110mm

APPROXIMATE TOTAL NETWORK LENGTH =
79m

APPROXIMATE GUTTER LENGTH = 64m

APPROXIMATE PIPE NETWORK LENGTH (DIAMETER 160mm) = 4m

APPROXIMATE PIPE NETWORK LENGTH (DIAMETER 110mm) = 75m

R00	JUNE 2020	STAGE -1	PD	SBC	SD
REV. NO.	Date	Revision Description	Drawn	Chkd	Appd

Title:
**Consultancy Services for Survey,
Design and EIA works of Water
Supply and Sewerage Facilities in
6 islands, Maldives - Package 5**

Sub Title:
Water Supply System in V. Keyodhoo

Client:
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T: +960 333 3528
E: info@epoch.associates
W: www.epoch.associates
A: G. Rosary West,
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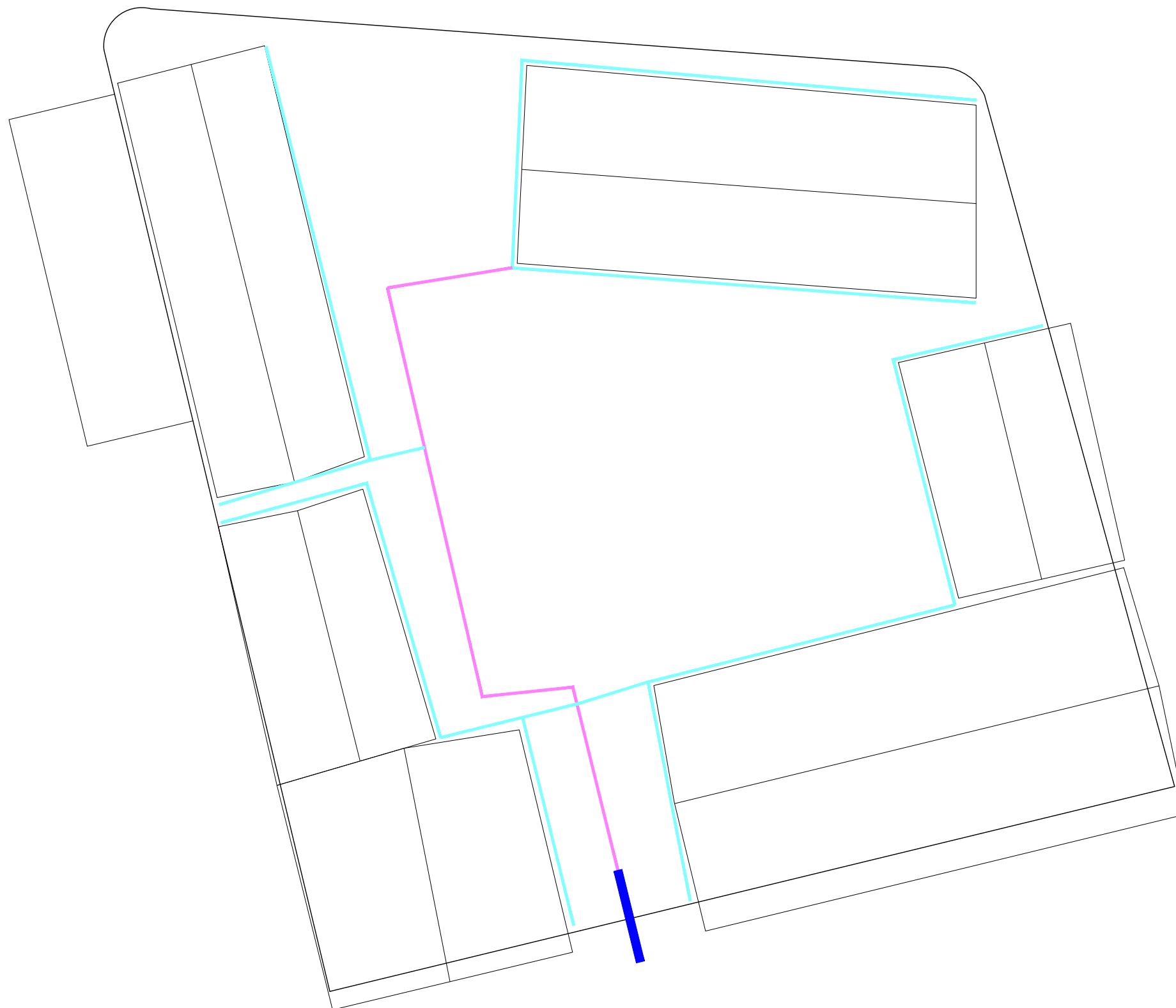
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INTERNAL NETWORK LAYOUT- COUNCIL OFFICE

1:200



Legend

— = PVC PIPES Ø160mm

———— = PVC PIPES Ø110mm

APPROXIMATE TOTAL NETWORK LENGTH =
181m

APPROXIMATE GUTTER LENGTH = 175m

APPROXIMATE PIPE NETWORK LENGTH (DIAMETER 160mm) = 34m

APPROXIMATE PIPE NETWORK LENGTH (DIAMETER 110mm) = 147m

R00	JUNE 2020	STAGE -1	PD	SBC	SD
REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.

Title:
**Consultancy Services for Survey,
Design and EIA works of Water
Supply and Sewerage Facilities in
6 islands, Maldives - Package 5**

Sub Title:
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**Ministry of National Planning, Housing and
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T: +960 333 3528
E: info@epoch.associates
W: www.epoch.associates
A: G. Rosary West,
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Date: Sep 2020	SCALE (A3): 1:200
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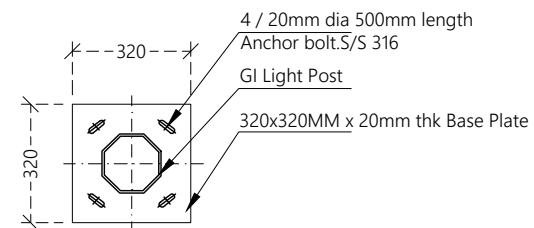
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INTERNAL NETWORK LAYOUT- SOCIAL CENTER

1:200



R00	JUNE 2020	STAGE -1	PD	SBC	SD
REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.

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Date: Sep 2020	SCALE (A3): NTS	
Project No: EP-WS/2019/05		
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NTS

ARCHITECTURAL AND STRUCTURAL DRAWINGS OF

PROPOSED SINGLE STOREY BUILDING AT

RO PLANT ADMIN BUILDING AND VEHICLE SHED, V.KEYODHOO

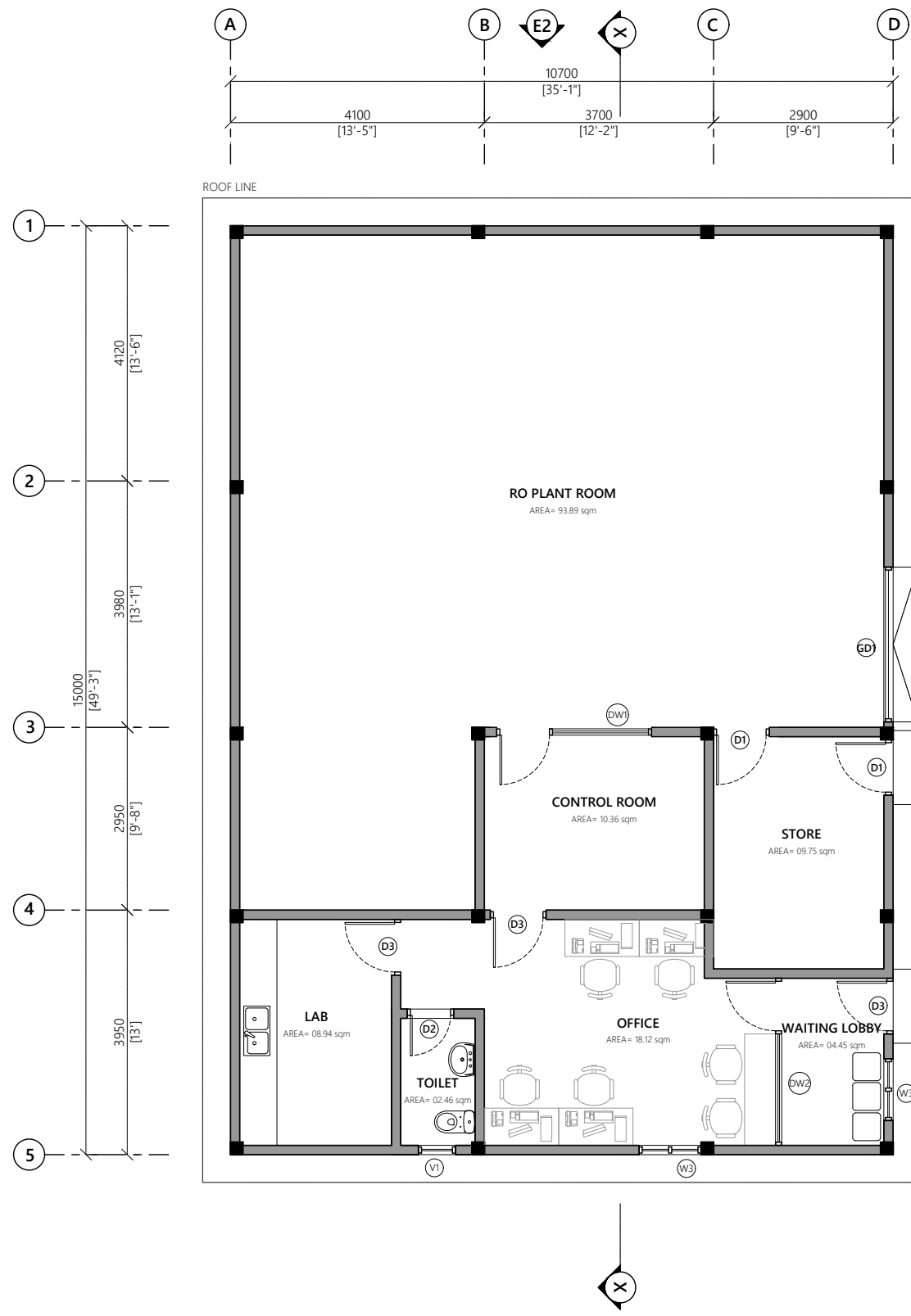
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Roof Plan	A.6 (1)
Elevations	A.6 (2)
Section	A.6 (2)
STRUCTURAL DRAWINGS (VEHICLE SHED)	
Foundation Plan	S.4 (1)
Roof Truss Plan	S.4 (2)
Roof Framing Plan	S.D (4)

ARCHITECTURAL AND STRUCTURAL DRAWINGS OF

PROPOSED SINGLE STOREY BUILDING AT

RO PLANT ADMIN BUILDING, V.KEYODHOO



Wall Legend:

150mm thick masonry blocks with 20mm plaster on exterior and 12mm plaster on interior

Wall Finish:

Internal Wall Finish: Easy to wash odour-less Nippon paint Ivory White

External Wall Finish: Weatherboard Algae guard Nippon September Cream

Toilet and shower walls: 300x300mm ceramic wall lanka tiles up to ceiling height with tile adhesive, use joint filler of appropriate color for grouting joints between tiles

Floor Finish:

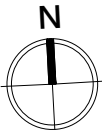
Floor Finishes: 600x600mm homogenous floor tiles with tile adhesive unless specified

Toilet Floor Finishes: 300x300mm homogenous non skid floor tiles with tile adhesive unless specified

Notes:

FFL of balconies and toilets should be 25mm lower than the FFL of respective floors

Water proofing to be applied in toilets, balconies and roof terrace prior to tiling



GROUND FLOOR PLAN

1:100

Legend

Note:

R00	AUG 2020	STAGE -1	A.S.A.	F.I.A.	M.H.
REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.

Title:
Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 6 Islands, Maldives – Package 6
Sub Title:
Water Supply System in GA.Dhevadhoo

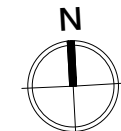
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W: www.epoch.associates
A: G. Rosary West, Huruheena Magu, Male', Maldives



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Project No: EP-WS/2019/06	
Rev: R-00	Page: A.2 (1)



1:100

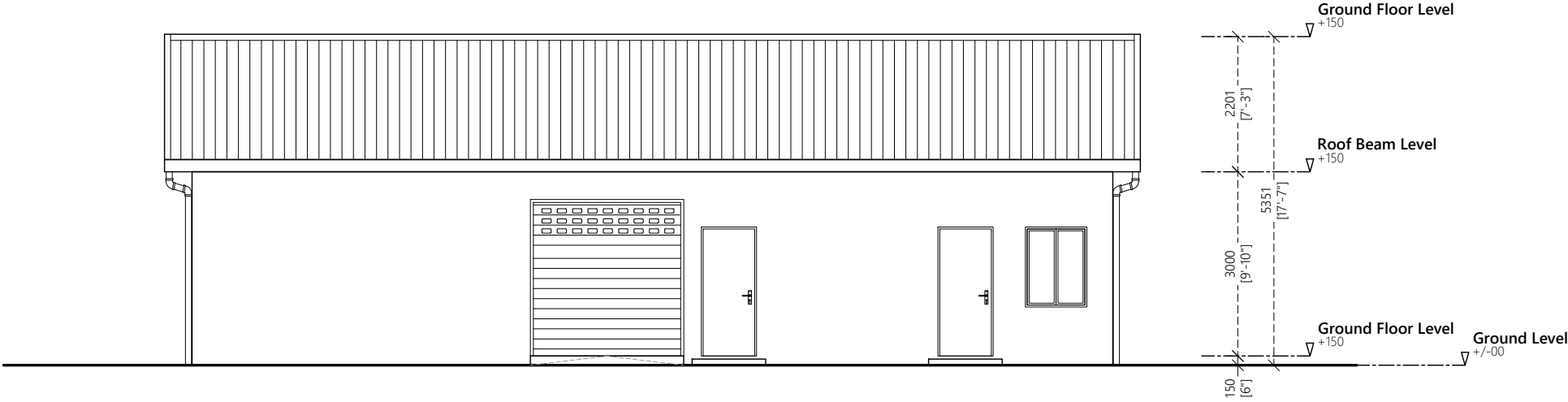
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A : G. Rosary West, Huzuruheena Magu, Male', Maldives	

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Date: Aug 2020	SCALE (A3): 1:100

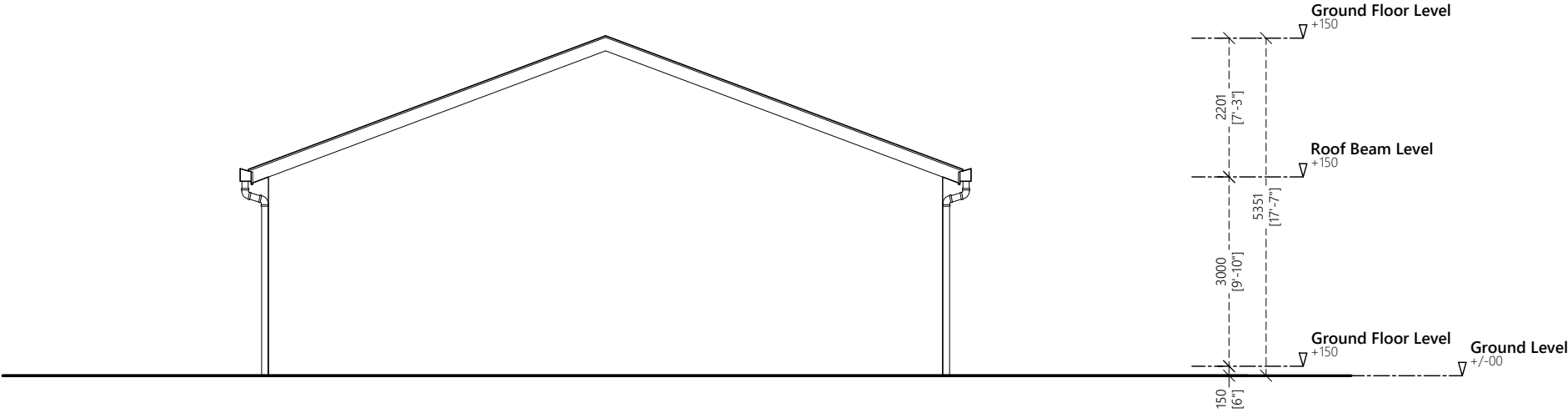
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A.2 (2)



ELEVATION E1
1:100



ELEVATION E2
1:100

Legend

Note:

R00	AUG 2020	STAGE -1	A.S.A.	F.I.A.	M.H.
REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.

Title:
Consultancy Services for
Survey, Design and EIA works of
Water Supply and Sewerage
Facilities
in 6 Islands, Maldives – Package 6
Sub Title:
Water Supply System in GA.Dhevadhoo

Client:
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T: +960 333 3528
E: info@epoch.associates
W: www.epoch.associates
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Designed: A.S.A.

Approved: M.H.

Date: Aug 2020

SCALE (A3): 1:100

Project No: EP-WS/2019/06

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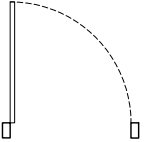
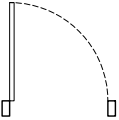
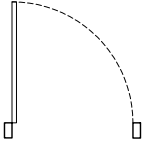
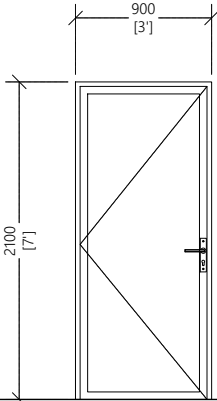
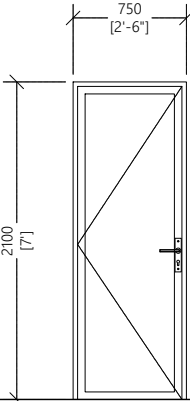
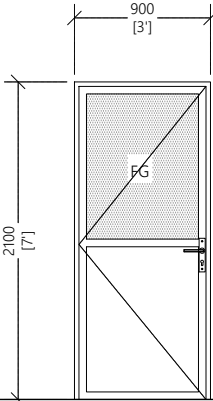
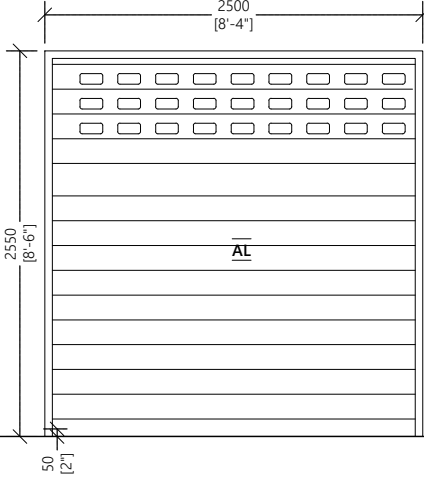
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A.3 (1)



1:100

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<p>Project No: EP-WS/2019/06</p> <p>Rev: R-00</p>	<p>Page: A.4(1)</p>

Door ID	D1	D2	D3	GD1
Plan view				
Elevation view				
FFL				50 [2"]
Frame material	Aluminum black powder coated	Aluminum black powder coated	Aluminum black powder coated	Aluminum framed roller shutter
Panel material	Aluminum cladding sheet	Aluminum cladding sheet	Aluminum cladding sheet & Fixed clear glass	Aluminium
Openable area	1.74	1.45	1.74	6.0

General Notes:

Dimensions shown on DWG indicate effective openings of frame

All frame depths are 100mm
All dor panel thicknesses are 35mm
All window manel thickness are 25mm
Al frame edges shal be trimmed 3mm

All wooden components should be wood stained finish

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

All hardware should be provided for the performance of al 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 be1000mm above FFL

DOOR & WINDOW SCHEDULE -1

1:50

Legend

Note:

R00	AUG 2020	STAGE -1	A.S.A.	F.I.A.	M.H.
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T: +960 333 3528
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Date: Aug 2020	SCALE (A3): 1:50
Project No: EP-WS/2019/06	
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Door ID	DW 1	DW 2	W3
Plan view			
Elevation view			
FFL			
Frame material	Aluminum black powder coated	Aluminum black powder coated	Aluminum black powder coated
Panel material	Aluminum cladding sheet & Fixed clear glass	Aluminum cladding sheet & Fixed clear glass	Reflective Glass
Openable area	-	-	-

Door ID	V1
Plan view	
Elevation view	
FFL	
Frame material	Aluminum black powder coated
Panel material	Reflective Glass
Openable area	0.32

General Notes:

Dimensions shown on DWG indicate effective openings of frame

All frame depths are 100mm
All dor panel thicknesses are 35mm
All window manel thickness are 25mm
Al frame edges shal be trimmed 3mm

All wooden components should be wood stained finish

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

All hardware should be provided for the performance of al 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 be1000mm above FFL

DOOR & WINDOW SCHEDULE -2

1:50

Legend

Note:

R00	AUG 2020	STAGE -1	A.S.A.	F.I.A.	M.H.
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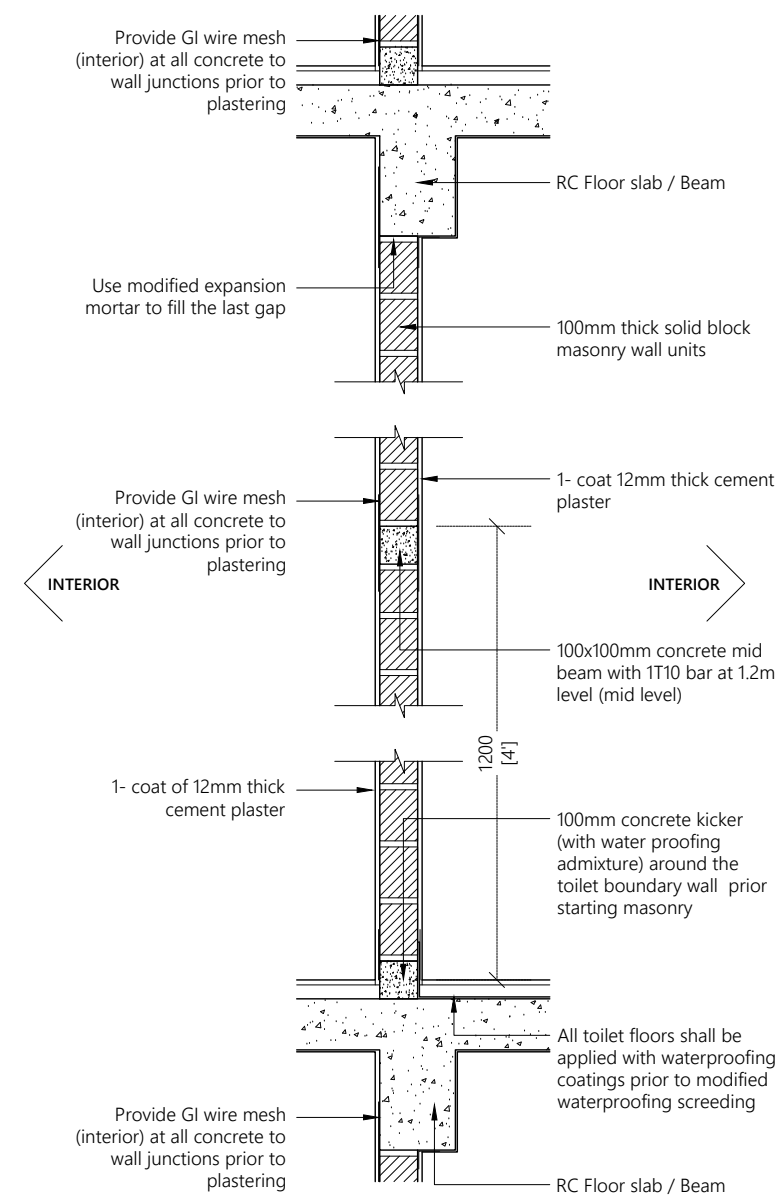
Title:
Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 6 Islands, Maldives – Package 6
Sub Title:
Water Supply System in GA.Dhevvdhoo

Client:
Ministry of National Planning, Housing and Infrastructure, Republic of Maldives

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E: info@epoch.associates
W: www.epoch.associates
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Project No: EP-WS/2019/06
Rev: R-00 Page: A.5 (2)

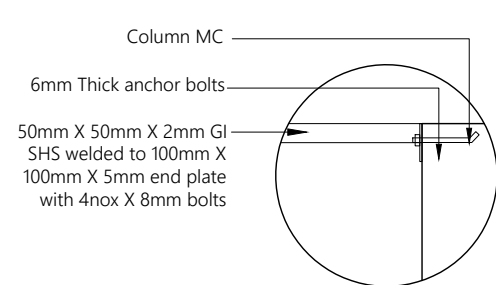
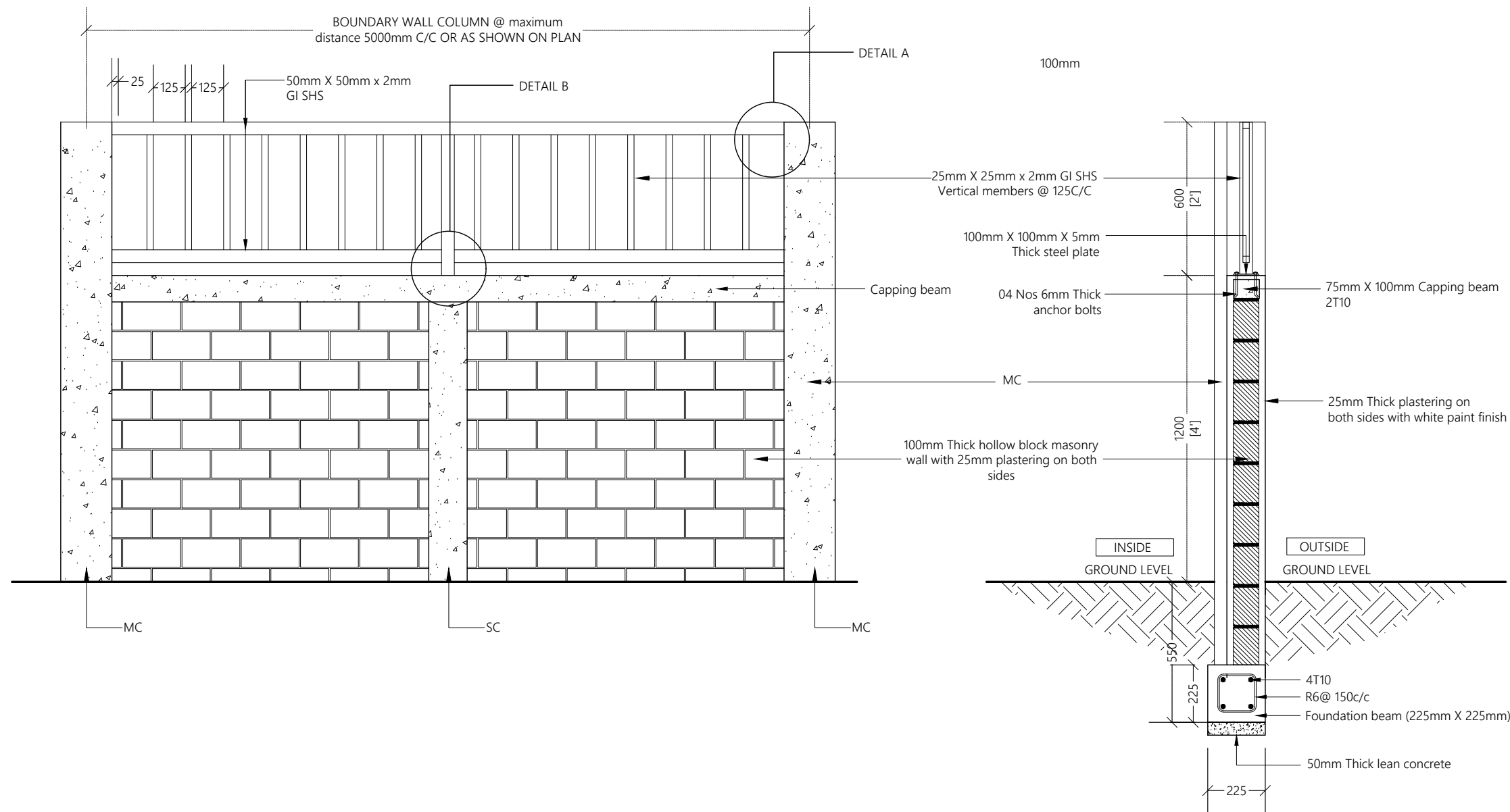


- Concrete surfaces shall be thoroughly cleaned with water & applied with mastercast 141 or equivalent bonding mortar prior to plastering.
- Plastering mortar mix shall be 1:4 (cement: sand) ratio.
- Plaster mix shall be modified using fibre wool & mastercast 141 or equivalent plasticisers as per manufacturer's specification.
- Height of placing blocks shall be maximum 1.2m per day.
- After initial coat of plastering, water curing shall be provided for minimum 3 days & after final coat, water curing shall be provided for 7 days.

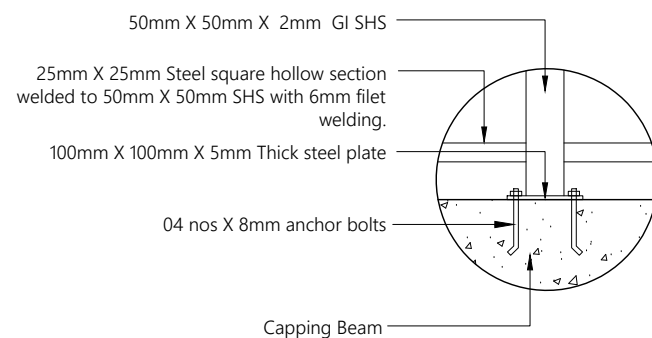
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REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.

Rev:	Page:
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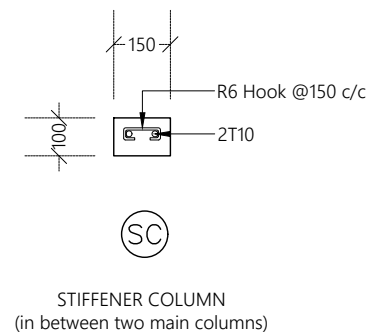
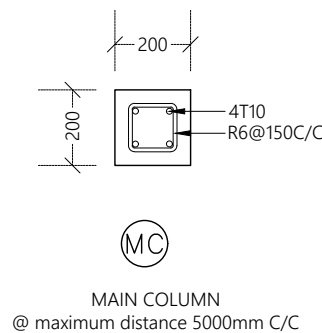
1:20



DETAIL A
1:10



DETAIL B
1:10



NOTE:
- FRAME MATERIAL : Steel gate frame 2.5mm thick GI sections SHS
- 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

BOUNDARY WALL DETAIL

1:20

Legend

Note:

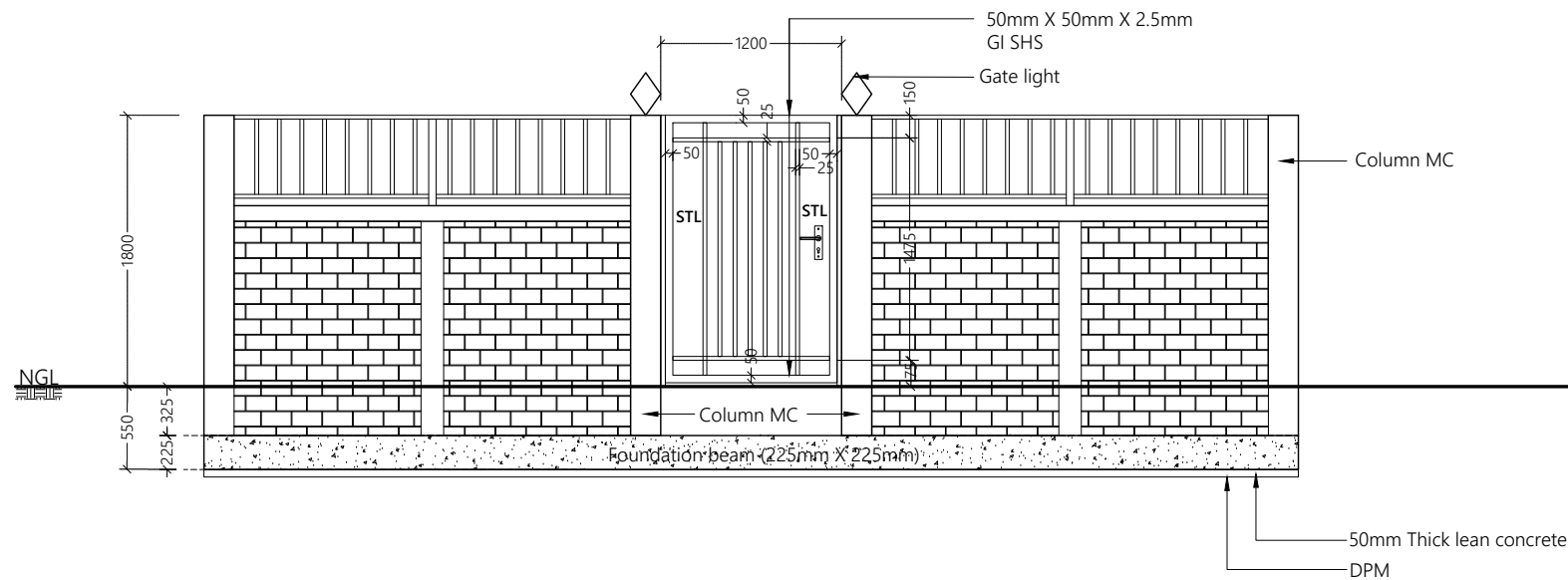
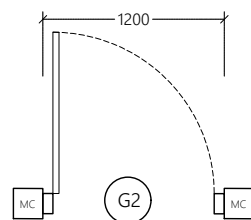
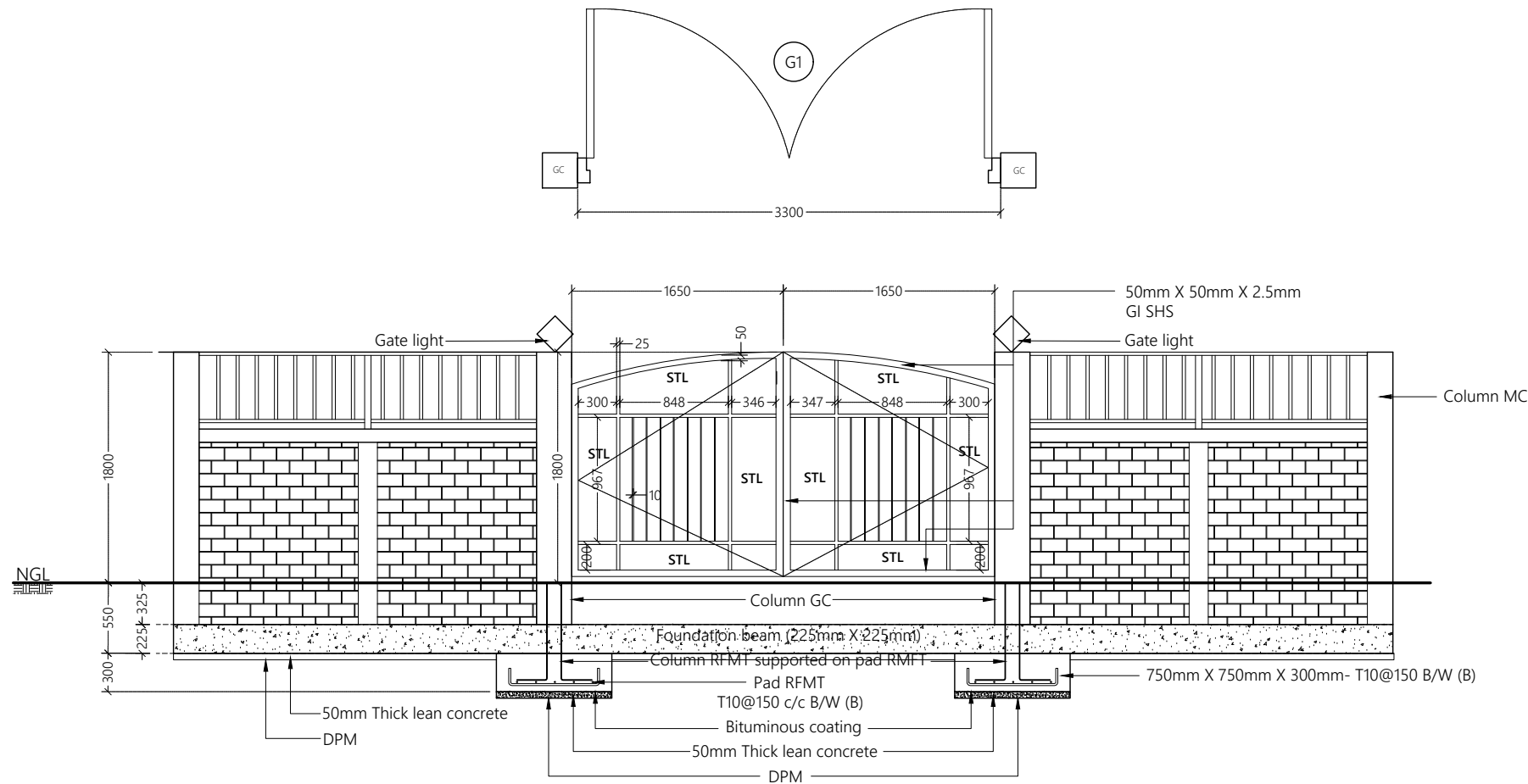
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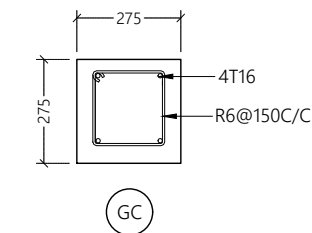
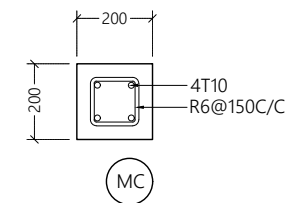
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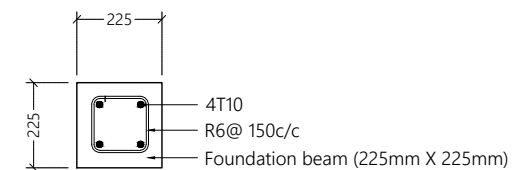
GATE DETAILS

1:50



COLUMN DETAILS

1:20



FOUNDATION BEAM DETAIL

1:20

Legend

Note:

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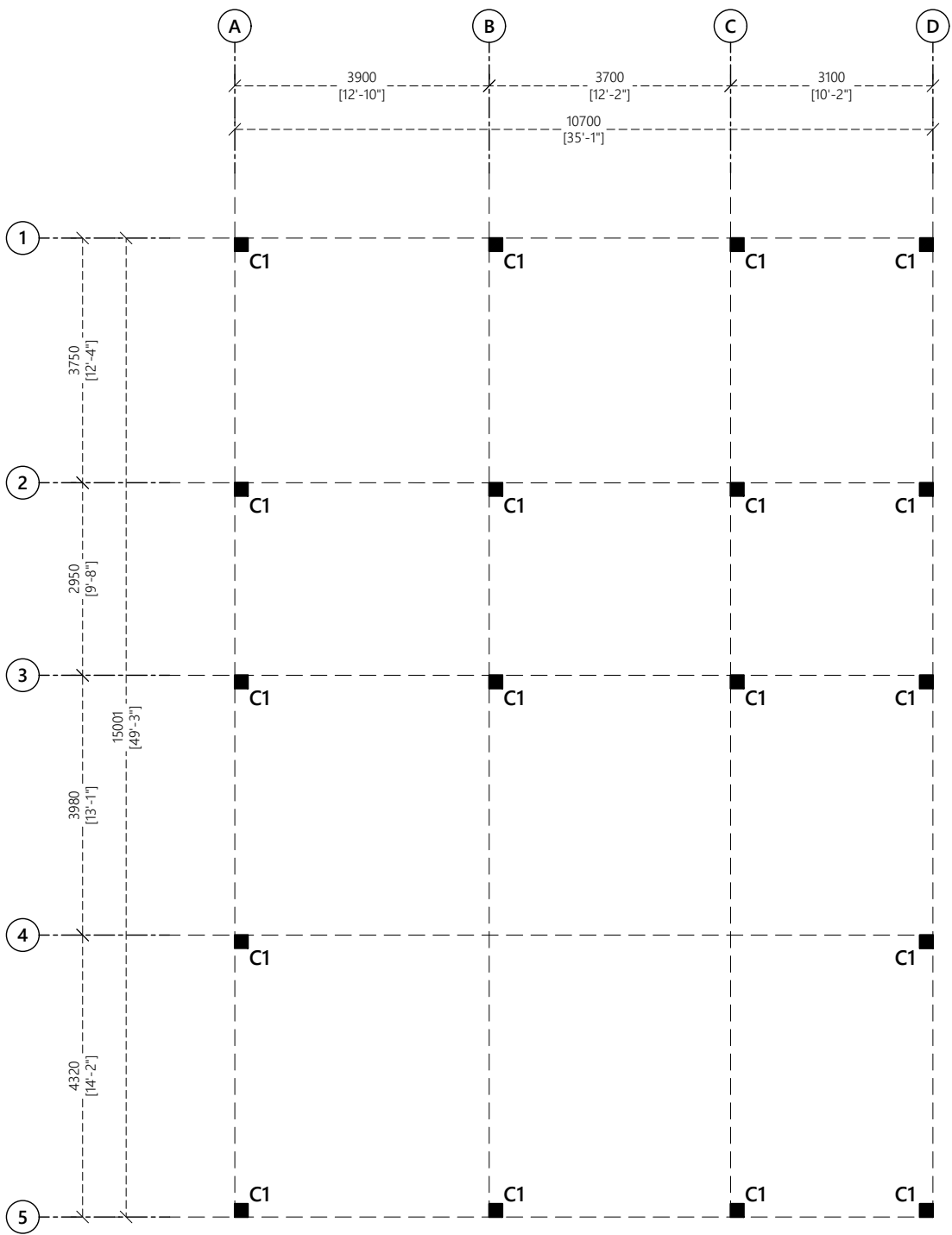
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COLUMN LAYOUT PLAN

1:100

Legend

Note:

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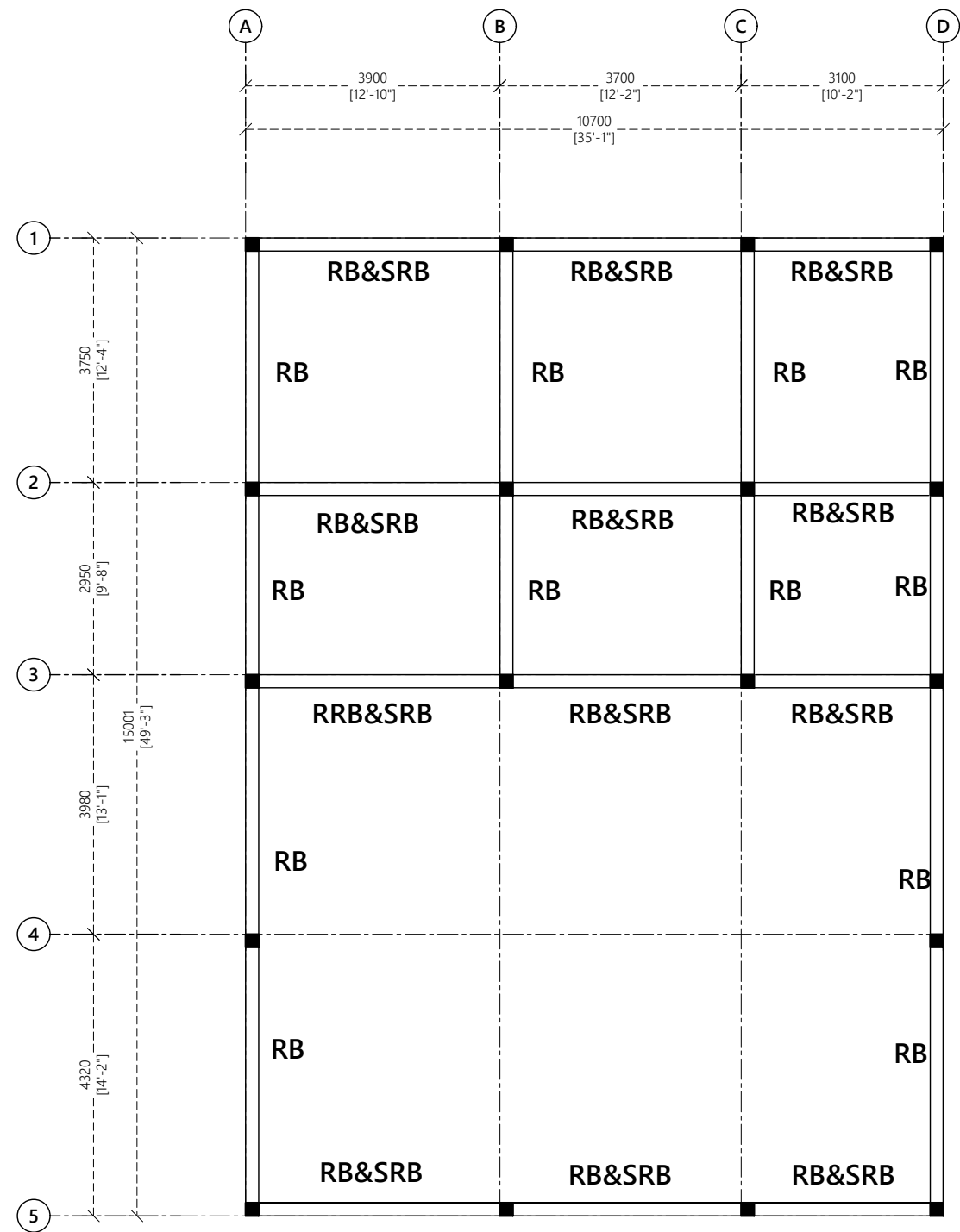
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ROOF BEAM PLAN

1:100

Legend

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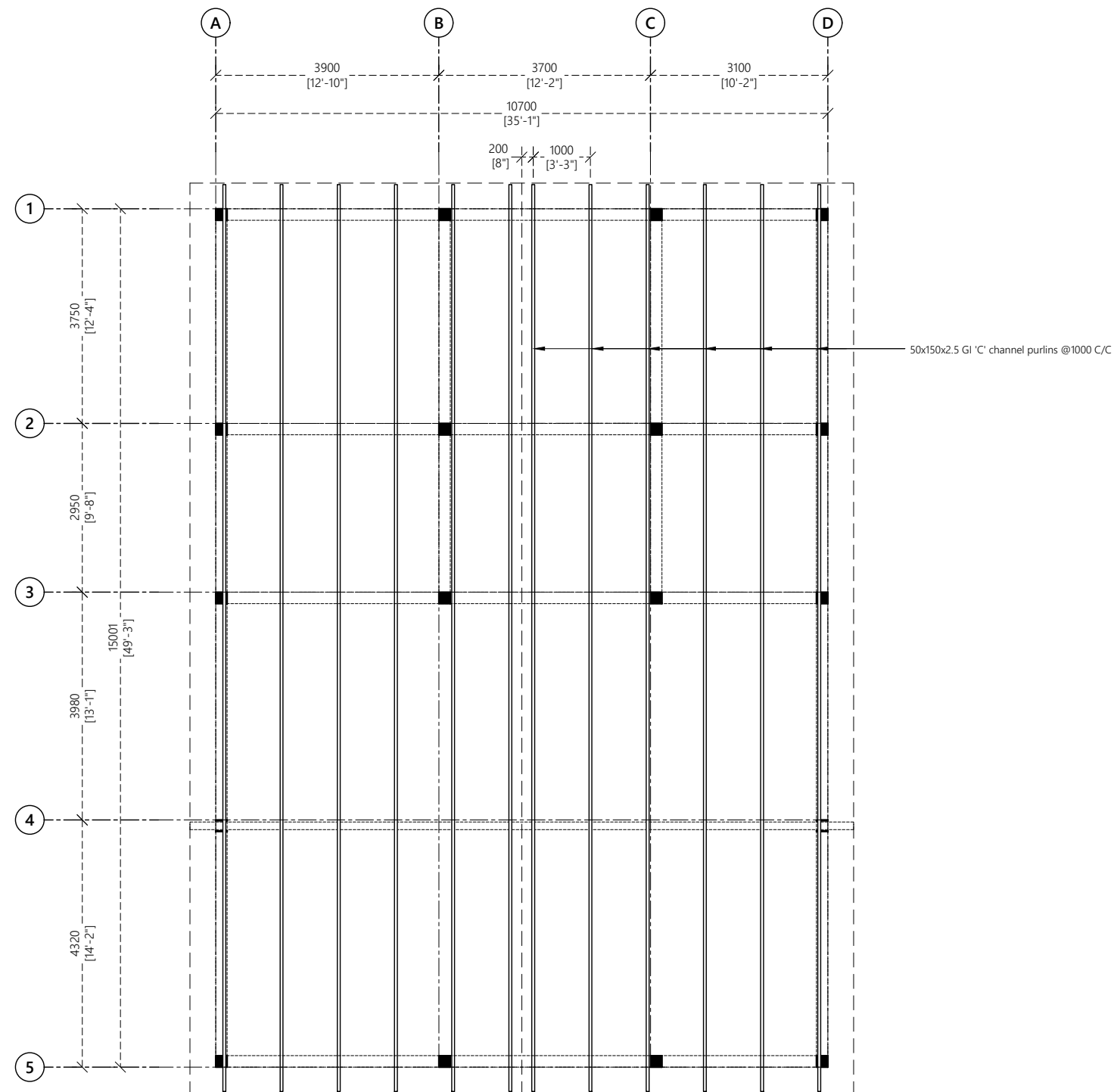
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SCALE (A3): 1:100

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ROOF FRAMING PLAN

1:100

Legend

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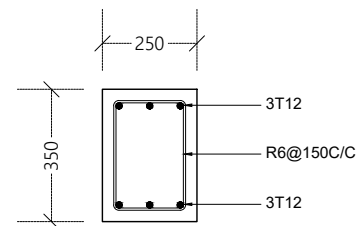
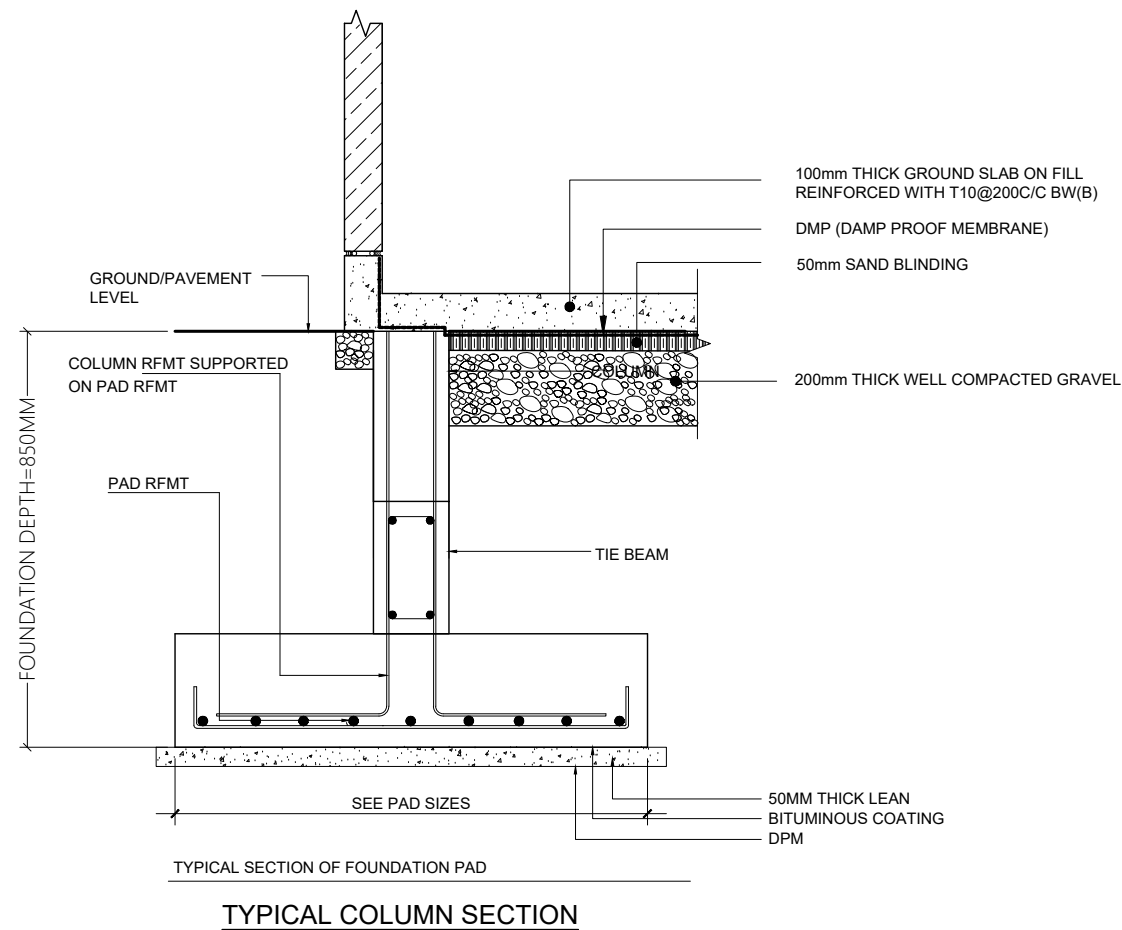
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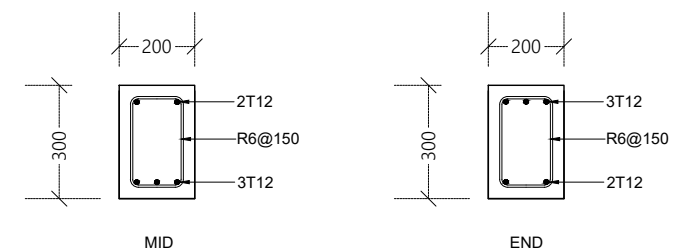
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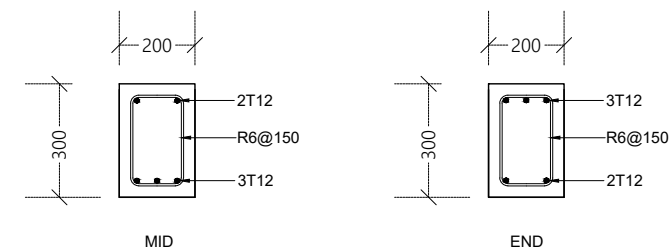
FOUNDATION BEAM (FB)

F1 - 650x650x250 - T10@150C/C B/W (B)

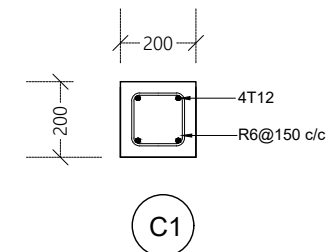
FOUNDATION PAD DETAILS



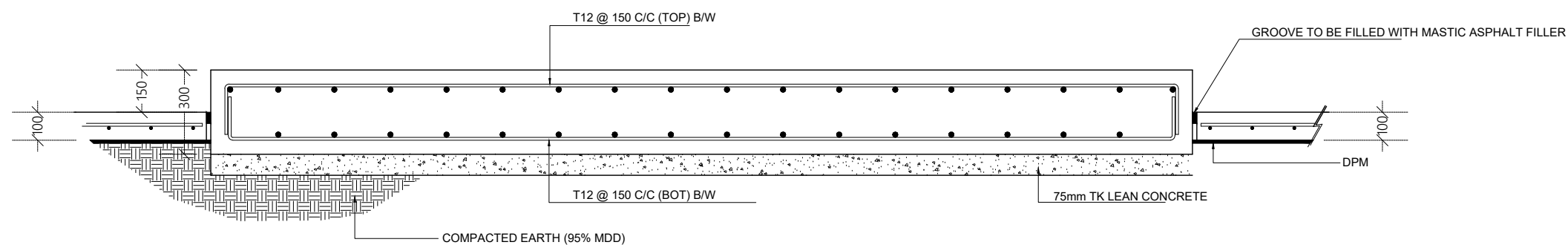
ROOF BEAM (RB)



SLOPING ROOF BEAM (SRB)



COLUMN DETAIL



RO PLANT BASE DETAIL

STRUCTURAL DETAILS

1:20

Legend

Note:

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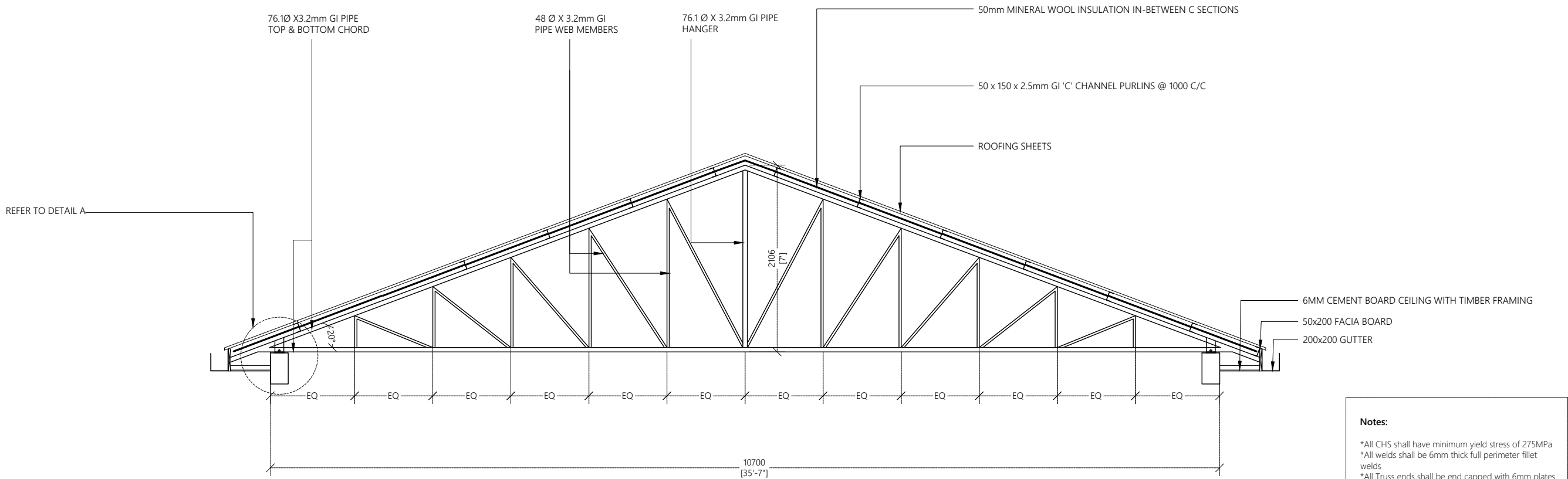
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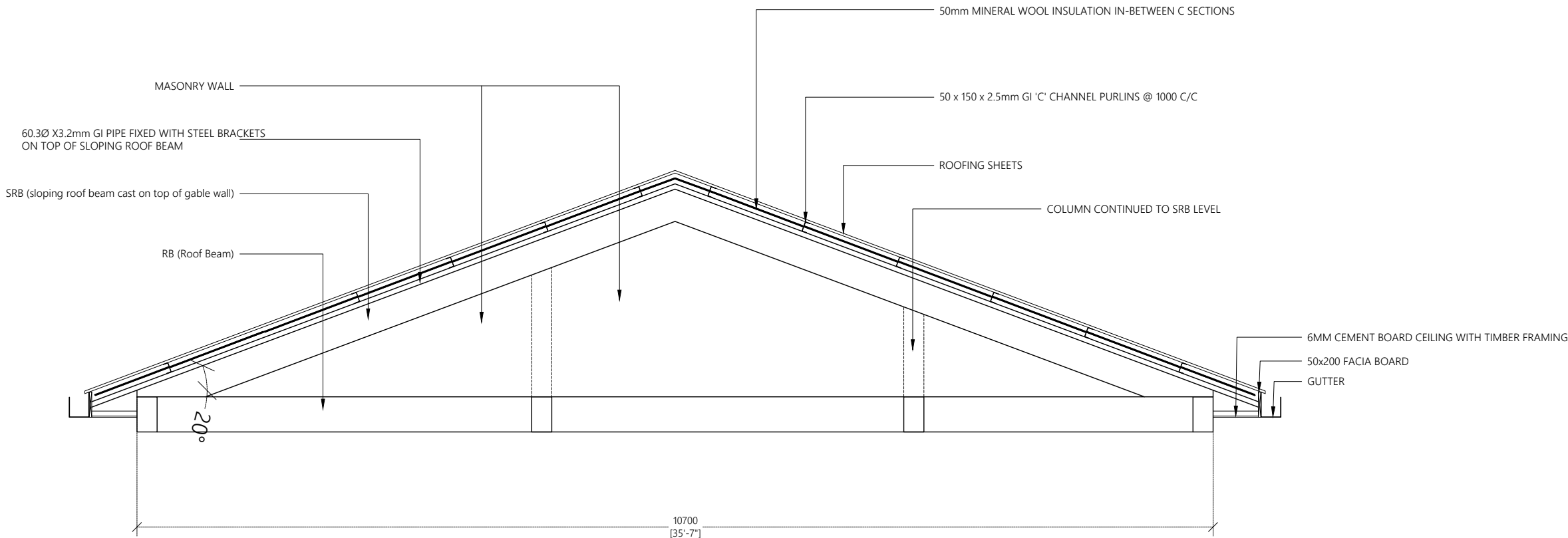


Notes:

- *All CHS shall have minimum yield stress of 275MPa
- *All welds shall be 6mm thick full perimeter fillet welds
- *All Truss ends shall be end capped with 6mm plates
- *All truss members shall be protected with anti corrosive coatings

TRUSS DETAIL TR1 @ GRID 2

1:50



DETAIL OF 63Øx3.2MM PIPE FIXED ON GRID 1,3,4 & 5

1:50

Legend

Note:

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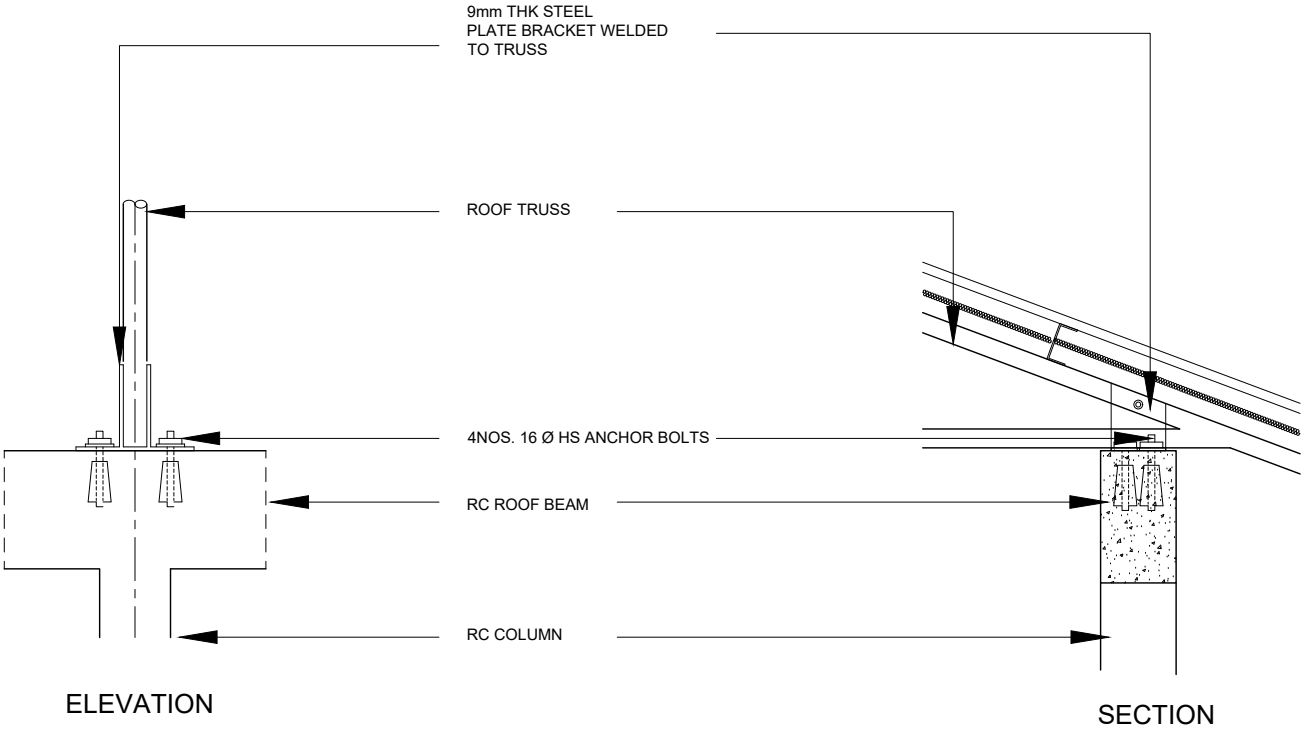
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S.D (3)

DETAIL A

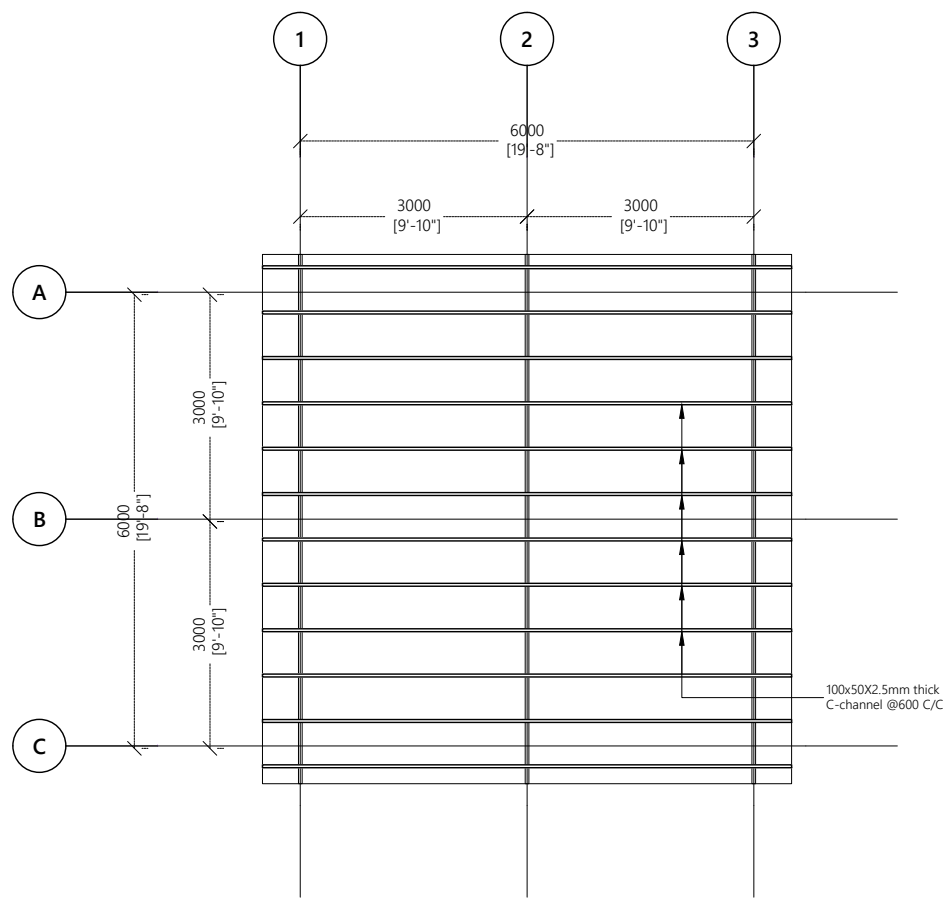
1:20

ARCHITECTURAL AND STRUCTURAL DRAWINGS OF

PROPOSED SINGLE STOREY BUILDING AT

RO PLANT VEHICLE SHED, V.KEYODHOO





ROOF FRAMING PLAN

1:100

Legend

Note:

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S.4(2)

BUILDING SERVICES DRAWINGS OF
PROPOSED SINGLE STOREY BUILDING AT
RO PLANT ADMIN BUILDING, V.KEYODHOO

For Ministry of National Planning, Housing and Infrastructure

CONTENTS

BUILDING SERVICES DRAWINGS	
GROUND FLOOR POWER AND ACV LAYOUT	PAC-01
GROUND FLOOR FDP LAYOUT	FDP-01
GROUND FLOOR LIGHTING LAYOUT	EL-01
GROUND FLOOR PLUMBING LAYOUT	PL-01
GROUND FLOOR DRAINAGE LAYOUT	DR-01
ROOF DRAINAGE LAYOUT	DR-02
SITE LIGHTING LAYOUT	EL-02

	13A Twin Socket
	13A Twin Socket With USB Ports
	15A Switched Socket @ H.L.
	15A Socket In Polycarbonate Box
	15A Switch @ 1200mm From F.F.L.
	13A Power Socket

HL. High Level

—— 82Ø PVC Duct For Tel./Internet Cable Lead In Below Ground Slab

— Main Incoming Cable For Power In 110Ø PVC Duct Below Ground Slab

ISB Internet Switchboard

Telephone Outlet

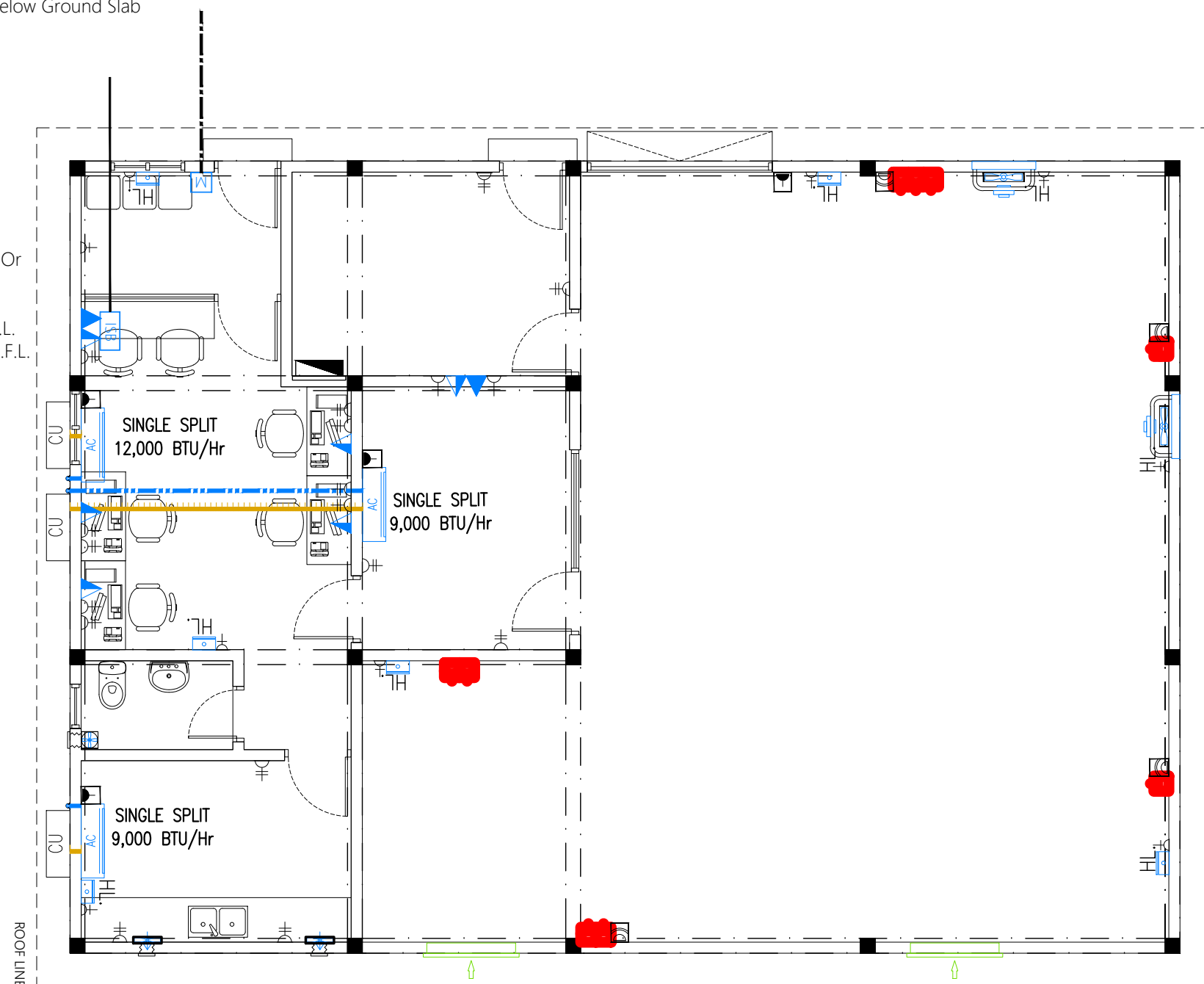
 Computer Network Outlet

 Emergency Light

M Electricity Meter

Notes: -

- All 13A Power Outlets For Kitchen Hood Or Under Cabinet Or Wardrobe Lights At 1800mm From F.F.L.
- All Twin Sockets At 300mm From F.F.L. Except Located At Kitchen Cupboard Area Which Shall Be At 1200mm From F.F.L.
- All Computer, TV And Telephone Points At 300mm From F.F.L.
- All 20A Switched Neon Indicator At 1200mm From F.F.L.



	Refrigerator
	2500 BTU
	4000 BTU
	Wall Mounted AC Unit
	Outdoor Condensing Unit
	Ceiling Fan
	Wall Mounted Unit
	Single Motor Unit
	Fresh Air Unit

Legend

Note:

- All 13A Power Outlets For Kitchen Hood Or Under Cabinet Or Wardrobe Lights At 1800mm From F.F.L.
- All Twin Sockets At 300mm From F.F.L. Except Located At Kitchen Cupboard Area Which Shall Be At 1200mm From F.F.L.
- All Computer, TV And Telephone Points At 300mm From F.F.L.
- All 20A Switched Neon Indicator At 1200mm From F.F.L.

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Checked:	M.R.
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Designed: H.R.

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SCALE (A3): 1:75

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Rev:	Pac
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Rev:













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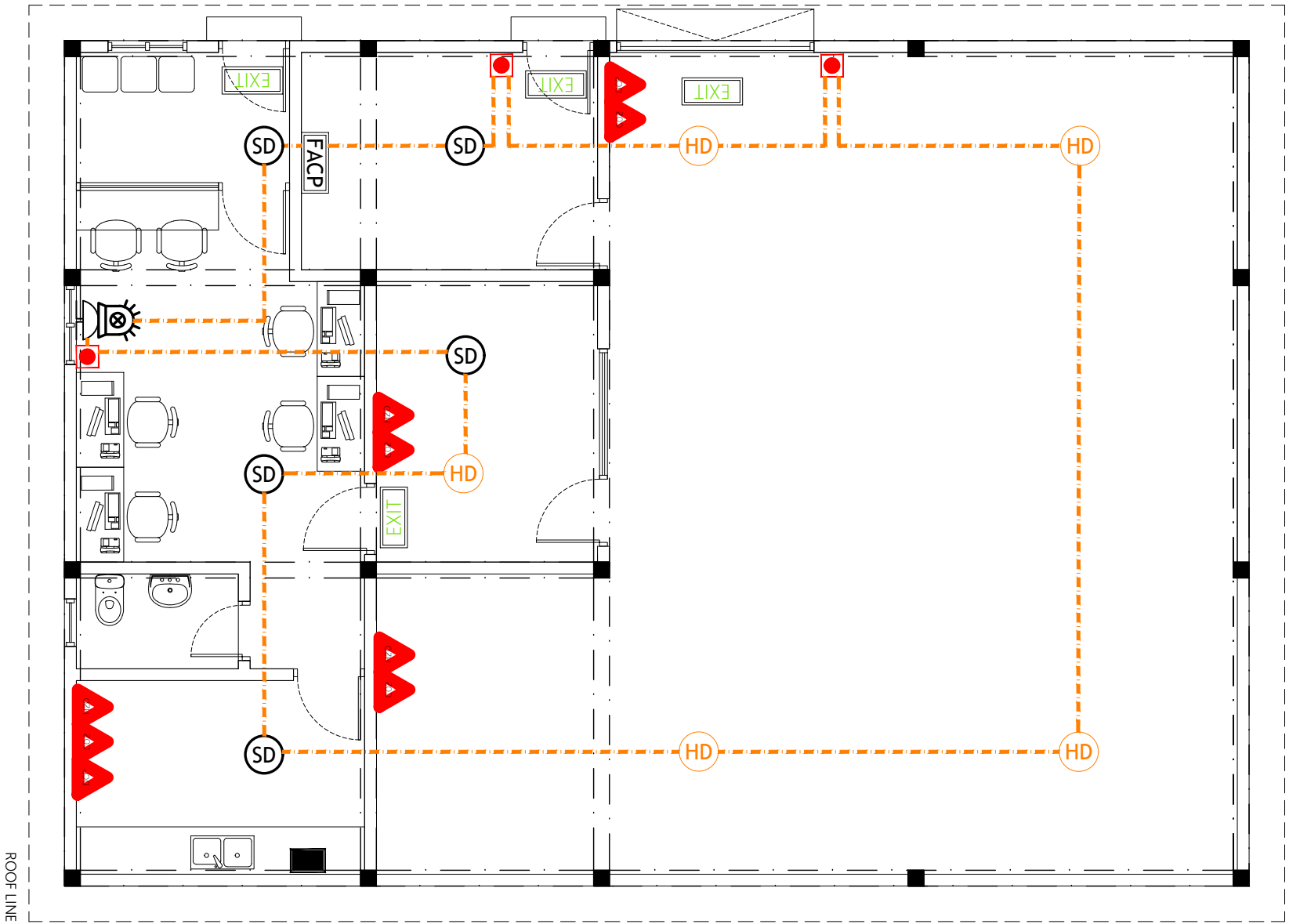
R-00

PAC-01

GROUND FLOOR POWER A

Legend

-  DCP Extinguisher (load: 6kg) In Polycarbonate Enclosure
-  CO₂ Extinguisher (load: 2kg) In Polycarbonate Enclosure
-  H₂O Extinguisher (load: 9L) In Polycarbonate Enclosure
-  Manual Call Point
-  Smoke Detector
-  Heat Detector
-  Beacon
-  Sounder Bell
-  Fire Blanket
-  2.5mm² Fire Retardant Low Smoke (FRLS) Cables In FRLS Conduits
-  Fire Alarm Control Panel
-  Exit Sign



Legend

Note:

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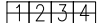








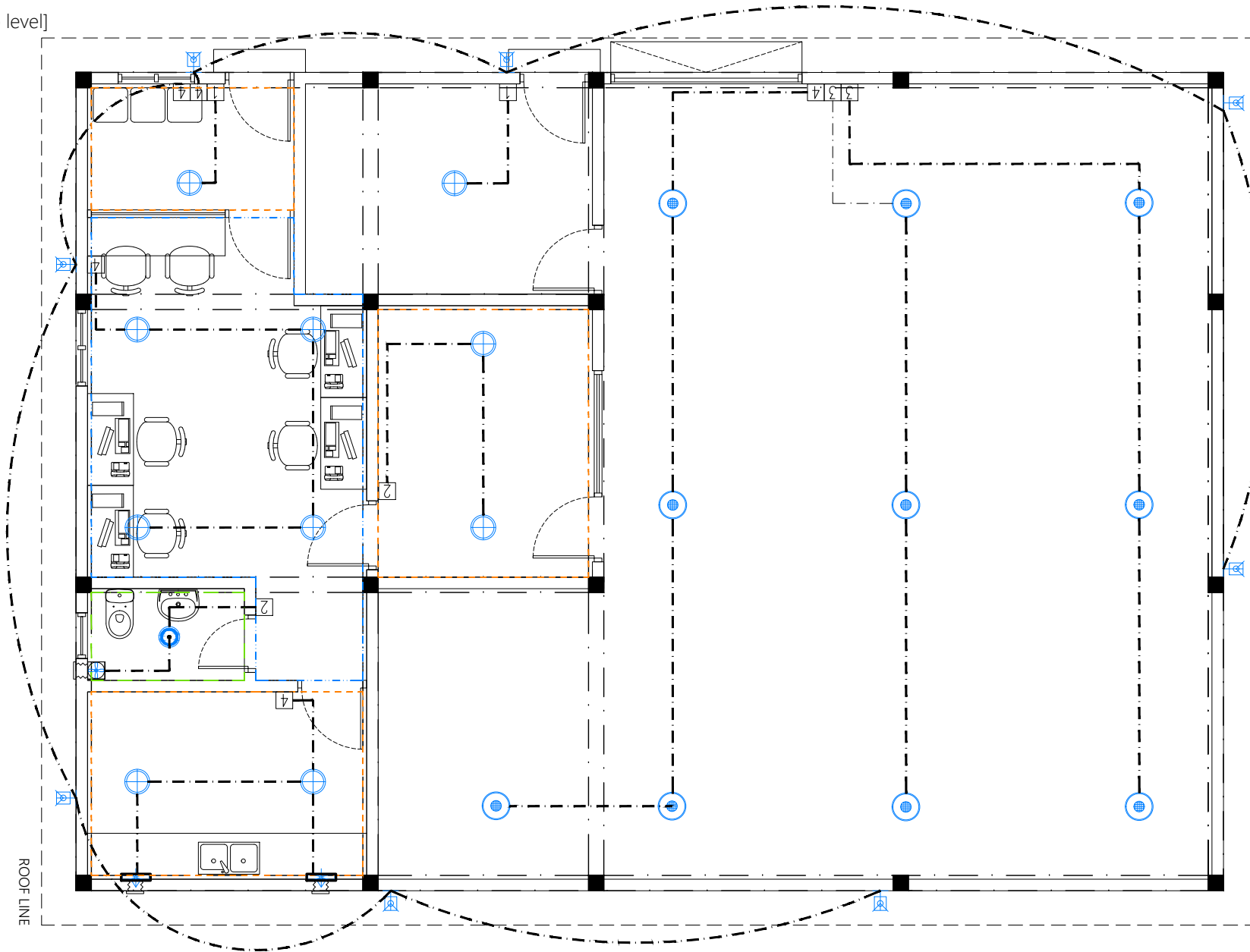
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Legend

-  Ceiling Light (12W)
-  Recessed Ceiling Light (12W)
-  Weather Proof Wall Light IP55 (12W)
-  60W, HPS, Low Bay Light
-  Light Switch (1 Gang - 4 Gang)
-  Two Way Light Switches (1 Gang - 4 Gang)
-  SINGLE INTAKE, CENTRIFUGAL, EXTERNAL MOTOR, 800M3/Hr
-  Ceiling Mounted Exhaust Fan 90m3/hr
-  Wall Mounted Exhaust Fan
-  Cement Board False Ceiling [200mm below beam bottom]
-  Plaster Board False Ceiling [200mm below beam bottom]
-  Plaster Board False Ceiling [at roof beam top level]



GROUND FLOOR LIO

Legend

Note:

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










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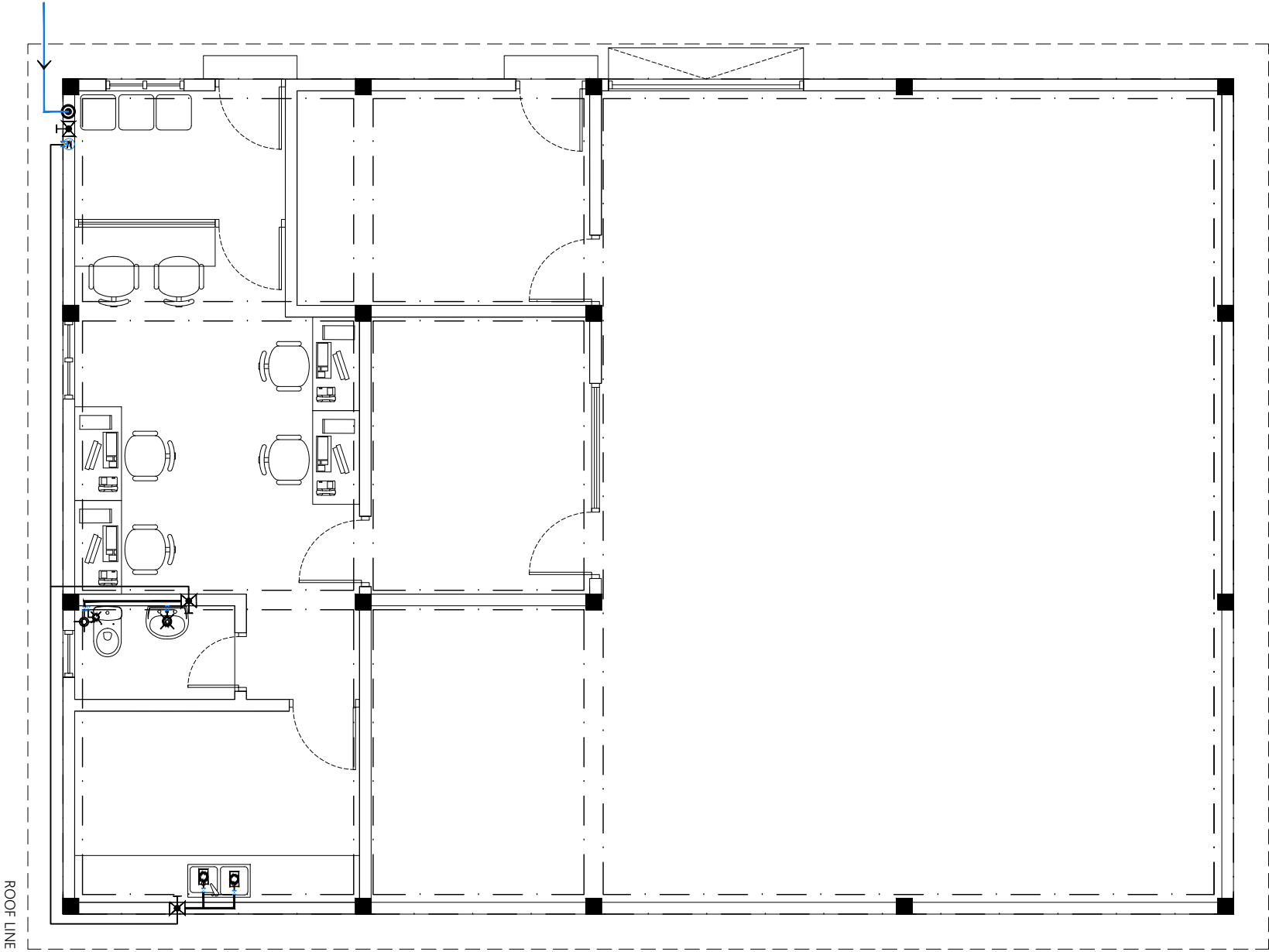


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Designed: H.R.	Approved: M.R.
Date: Aug 2020	SCALE (A3): 1:75
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Legend

-  16Ø Cold Water Supply To Basin Faucet
-  16Ø Cold Water Supply To Bidet Shower
-  16Ø Cold Water Supply To Wall Tap
-  16Ø Cold Water Supply To Cistern
-  Gate Valve
-  Rise In Wall
-  MWSC Meter
-  25Ø Cold Water Supply Pipes Running Underground
-  20Ø Cold Water Supply Pipes Running In Wall

PIPE FROM MAINS SUPPLY



GROUND FLOOR PLU



Legend

Note:

R00	AUG 2020	STAGE -1	H.R.	M.R.	M.R.
REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.

Title:
**Consultancy Services for
Survey, Design and EIA works of
Water Supply and Sewerage
Facilities
in 6 Islands, Maldives – Package 6**
Sub Title:
Water Supply System in GA.Dhevvadhoo

Client:
**Ministry of National Planning, Housing and
Infrastructure, Republic of Maldives**



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- Notes: -

CONNECTED TO MAIN NETWORK

CONNECTED TO RAINWATER NETWORK

CONNECTED TO RAINWATER NETWORK

CONNECTED TO RAINWATER NETWORK

TO BRINE TANK

CONNECTED TO RAINWATER NETWORK

GROUND FLOOR D














Legend

R00	AUG 2020	STAGE -1	H.R.	M.R.	M.R.
REV. NO.	Date	Revision Description	Drawn	Chkd	Appd.

Drawn: H.R.	Checked: M.R.
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Rev: R-00	Page: DR-01

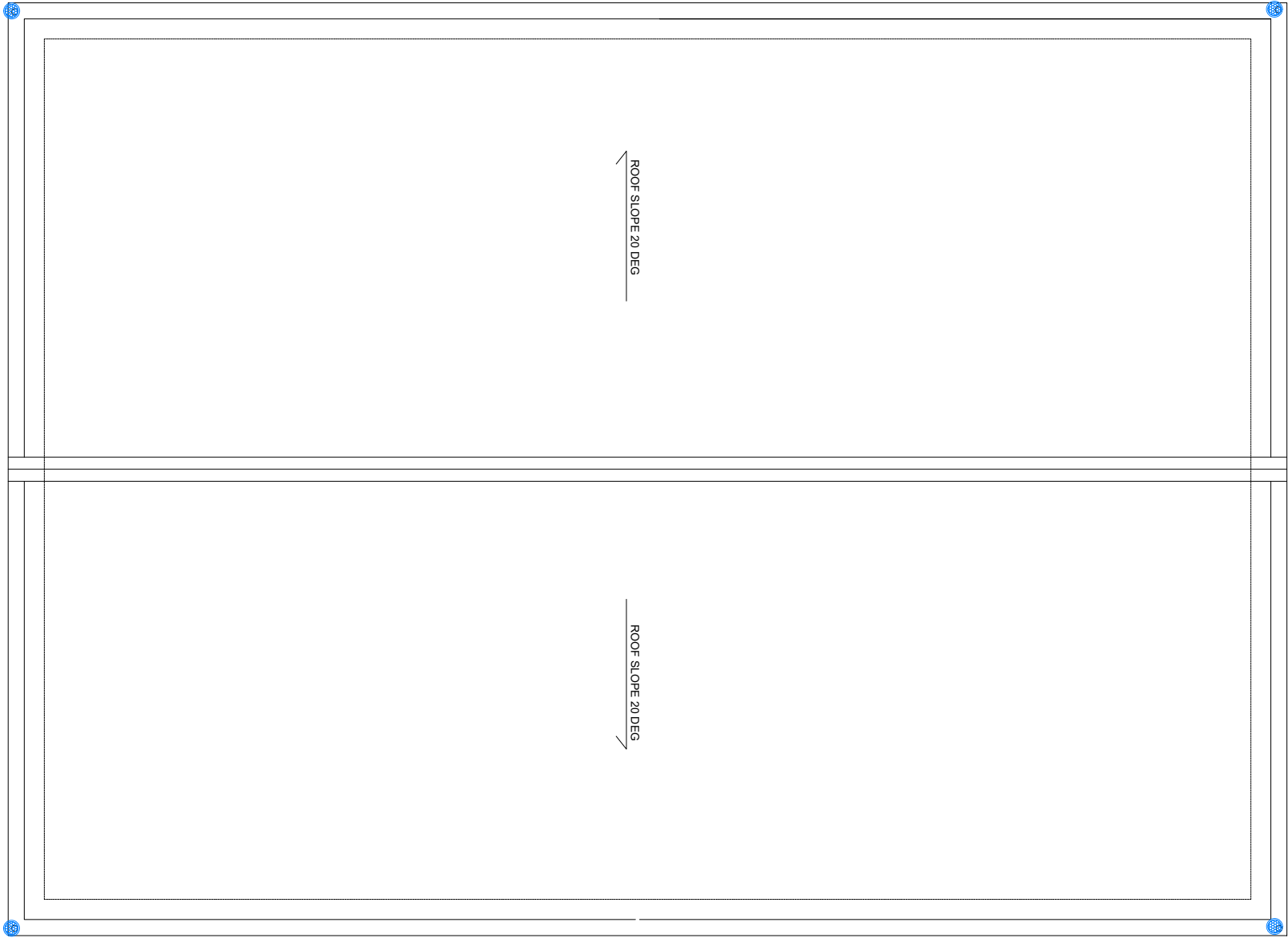
FEEDBACK INFRA
Making Infrastructure Happen

Legend

-  Floor Drain
-  Floor Gully
-  82Ø Soil Pipe (uPVC Pipe)
-  82Ø Soil Vent Pipe (uPVC Pipe)
-  63Ø Waste Pipe (uPVC Pipe)
-  63Ø Waste Vent Pipe (uPVC Pipe)
-  40Ø Waste Pipe (uPVC Pipe)
-  50Ø Manhole Vent Pipe (uPVC Pipe)
-  110Ø Rain Water Pipes (uPVC Pipe)
-  Gully Trap
-  110Ø Rainwater Outlet
-  Clean Out Point
-  Bottle Trap

Notes: -

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



GROUND FLOOR



Legend

Note:

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

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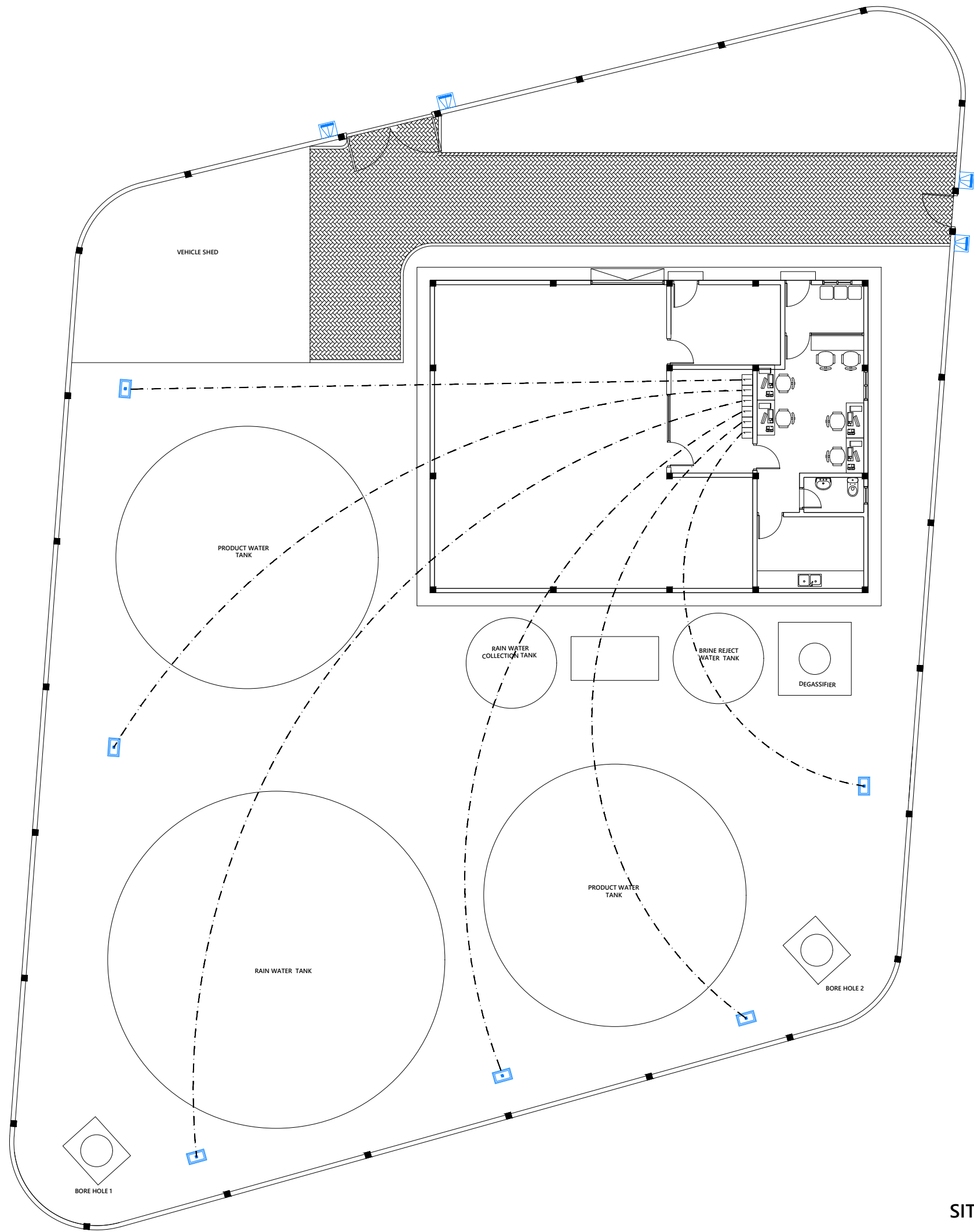


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- Legend
- 100W LED Flood Light IP65 @ 6m Light Post
 - Solar Powered LED Gate Lights (12W)
 - Light Switch (1 Gang - 4 Gang)



SITE LIGHTING LAYOUT
1:150



Legend

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

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FEEDBACK INFRA
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