Republic of Kenya

Kenya Marine Fisheries Socioeconomic Development Project (KEMFSED)
P.O. Box 58187-00200
NAIROBI

MINISTRY OF MINING, BLUE ECONOMY AND MARITIME AFFAIRS

Request for Bids

CONSTRUCTION OF NAMARET HATCHERY

Employer: State Department for Blue Economy & Fisheries
Project: Kenya Marine Fisheries Socio-Economic Development Project (KEMFSED)
Contract Title: **CONSTRUCTION OF NAMARET HATCHERY**
Country: Republic of Kenya
Loan No./Credit No/Grant No.: 6540-KE
RFBNo.: KE-MOMBE&MA-KWL-2024-004-CW

Issued on: **13TH FEBRUARY 2024**

VOLUME 4 OF 4

DRAWINGS

PROJECT 02
2 .CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE SHIMONI.

DRAWING NO 02-002-001

NO.	DRAWING/DOCUMENT	DRAWING NO	DRAWING SHEET	DRAWING FORMAT	DOCUMENT STATUS
	PROJECT 02 ARCHITECTURAL DRAWINGS.				
01	LIST OF DRAWINGS.	**02-001-000**	A3	PDF/DWG	PROVIDED
02	NAMARET SITE PLAN.	**02-001-001**	A3	PDF/DWG	PROVIDED
	2.A MARINE HATCHERY BUILDING.				
03	GROUND FLOOR PLAN	**02-001-002**	A3	PDF/DWG	PROVIDED
04	ROOF PLAN	**02-001-003**	A3	PDF/DWG	PROVIDED
05	ELEVATION DRAWINGS	**02-001-004**	A3	PDF/DWG	PROVIDED
06	SECTION DRAWINGS	**02-001-005**	A3	PDF/DWG	PROVIDED
07	3D'S DRAWINGS	**02-001-006**	A3	PDF/DWG	PROVIDED
	2.B ALGAE PRODUCTION BUILDING.				
08	GROUND FLOOR PLAN	**02-001-007**	A3	PDF/DWG	PROVIDED
09	ROOF PLAN	**02-001-008**	A3	PDF/DWG	PROVIDED
10	ELEVATION DRAWINGS	**02-001-009**	A3	PDF/DWG	PROVIDED
11	SECTION DRAWINGS	**02-001-010**	A3	PDF/DWG	PROVIDED
12	3D'S DRAWINGS	**02-001-011**	A3	PDF/DWG	PROVIDED
	2.C GENERATOR AND POWER HOUSE BUILDING.				
13	FLOOR & ROOF PLAN	**02-001-012**	A3	PDF/DWG	PROVIDED
14	ELEVATION & SECTIONS	**02-001-013**	A3	PDF/DWG	PROVIDED
15	3D'S DRAWINGS	**02-001-014**	A3	PDF/DWG	PROVIDED
	2.G OFFICE/WASHROOM BUILDING.				
16	FLOOR & ROOF PLAN	**02-001-015**	A3	PDF/DWG	PROVIDED
17	ELEVATION & SECTIONS	**02-001-016**	A3	PDF/DWG	PROVIDED
18	3D'S DRAWINGS	**02-001-017**	A3	PDF/DWG	PROVIDED
	2.D REVERSE OSMOSIS BUILDING.				
18	DRAWINGS	**02-001-018**	A3	PDF/DWG	PROVIDED
19	3D'S DRAWINGS	**02-001-019**	A3	PDF/DWG	PROVIDED
	2.E PUMP ROOM BUILDING.				
20	DRAWINGS	**02-001-020**	A3	PDF/DWG	PROVIDED
	2.J BATTERY ROOM BUILDING.				
21	DRAWINGS	**02-001-021**	A3	PDF/DWG	PROVIDED
22	DOOR SCHEDULES	**02-001-022**	A3	PDF/DWG	PROVIDED
23	WINDOW SCHEDULES	**02-001-023**	A3	PDF/DWG	PROVIDED
24	WETLAND DRAWINGS	**02-001-024**	A3	PDF/DWG	PROVIDED
25	STORAGE & TRIAL TANKS	**02-001-025**	A3	PDF/DWG	PROVIDED
26	POWER HOUSE N0 2	**02-001-026**	A3	PDF/DWG	PROVIDED
27	POWER HOUSE N0 2	**02-001-027**	A3	PDF/DWG	PROVIDED

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2. All soils under slab to be treated for termite control.

STRUCTURAL WORKS
1. All Structural works to Structural Engineer's Details.
2. All walls less than 200mm thick to be reinforced with hoôp wrought iron at every alternate course.

MECHANICAL
1. All plumbing and drainage works to comply with MOH and Local Authority's requirements.
2. Drains passing beneath buildings and driveways to be encased in 150mm concrete surround.
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5. Water meter to be at least 300mm above ground level.

ELECTRICAL
1. All conduits must be laid before plastering.

FIRE
1. Minimum 4500 litres water reserve for hosereels to the Approval of the Chief Fire Officer.
2. Automatic booster pump for FHRs to be provided to the satisfaction of chief fire officer.
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4. Minimun 2x9 litre water and 1x4.5 Kg Co2 Fire extinguishers
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PAVING
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REVISIONS

Project : **PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT**

Plot L . R. No.:

Location : **SHIMONI KWALE COUNTY**

Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

Subject :

WORKING DRAWINGS.

Consultancy :

ARPRIM CONSULTANTS
P.O BOX 12969-0040 NAIROBI
TEL: 020-884312/8
Website :www.arprimconsultants.com

Drawn by:	Checked by : -	Checked by : -
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Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-000**

02 NAMARET
SITE PLAN

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REVISIONS

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Plot L . R. No.:

Location : **SHIMONI KWALE COUNTY**

Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

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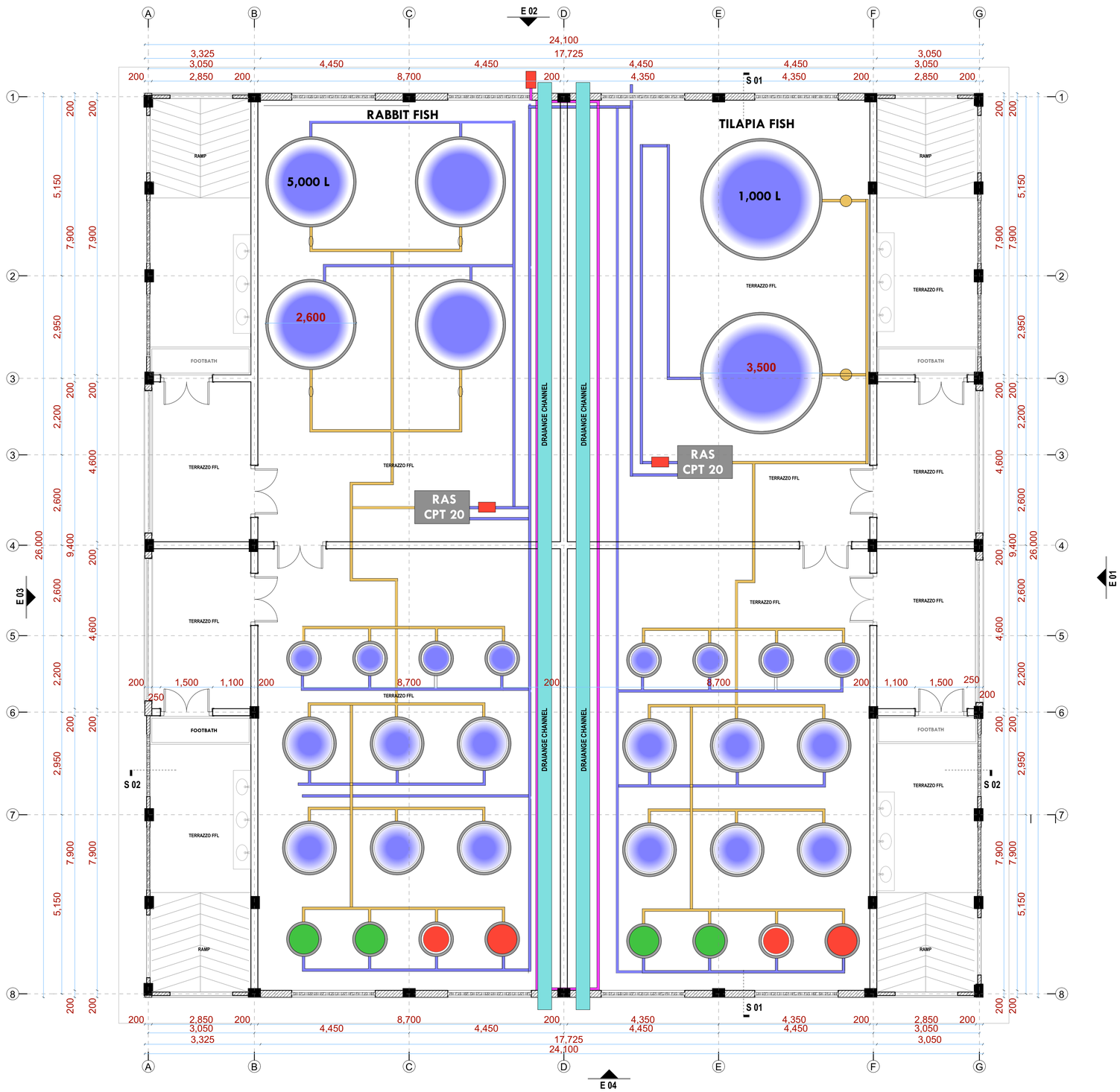
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-001**

2.A MARINE HATCHERY
GROUND FLOOR PLAN



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REVISIONS

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Plot L . R. No.:

Location : **SHIMONI KWALE COUNTY**

Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

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Subject :

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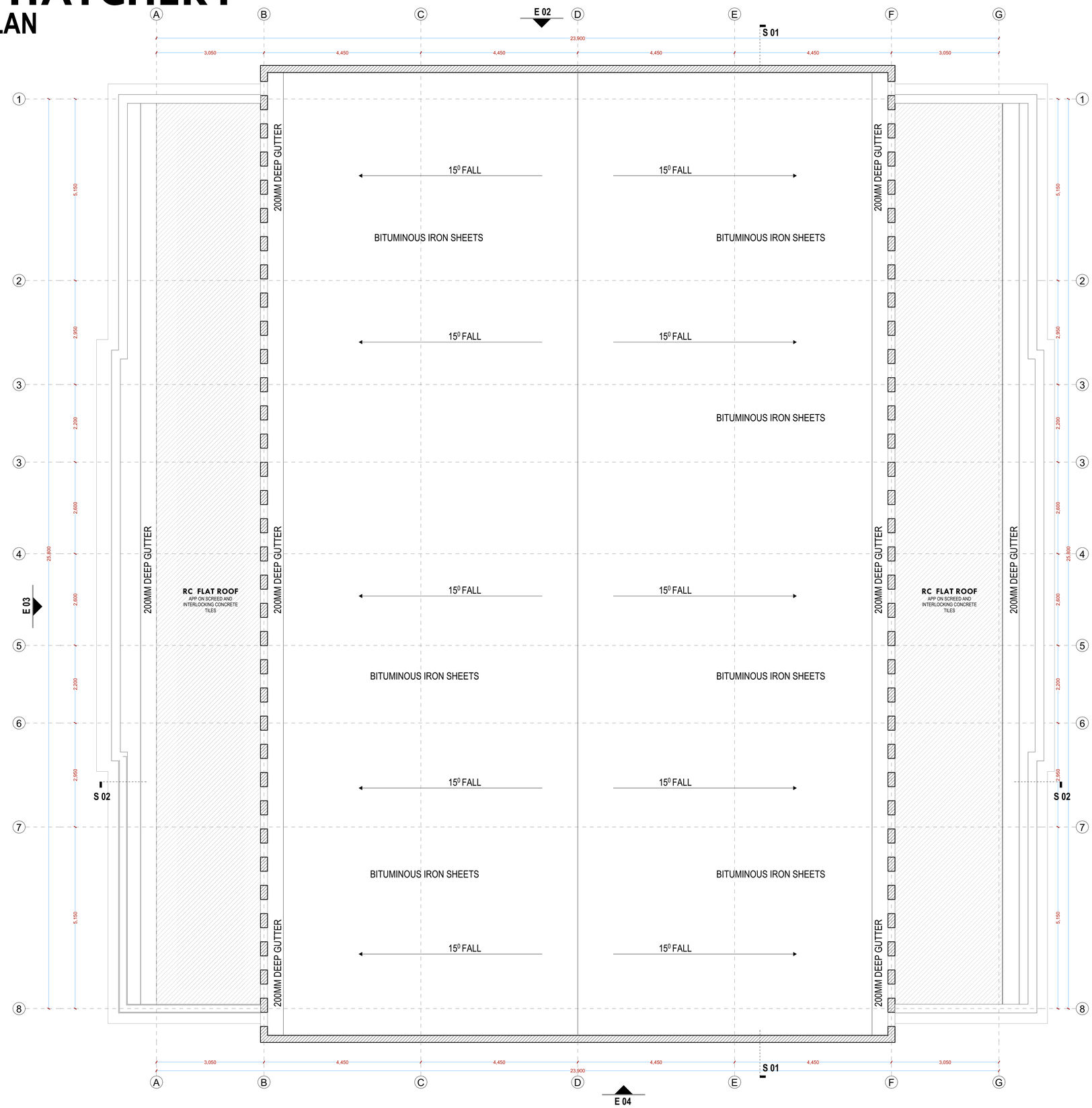
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-002**

2.A MARINE HATCHERY
ROOF PLAN



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REVISIONS

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Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

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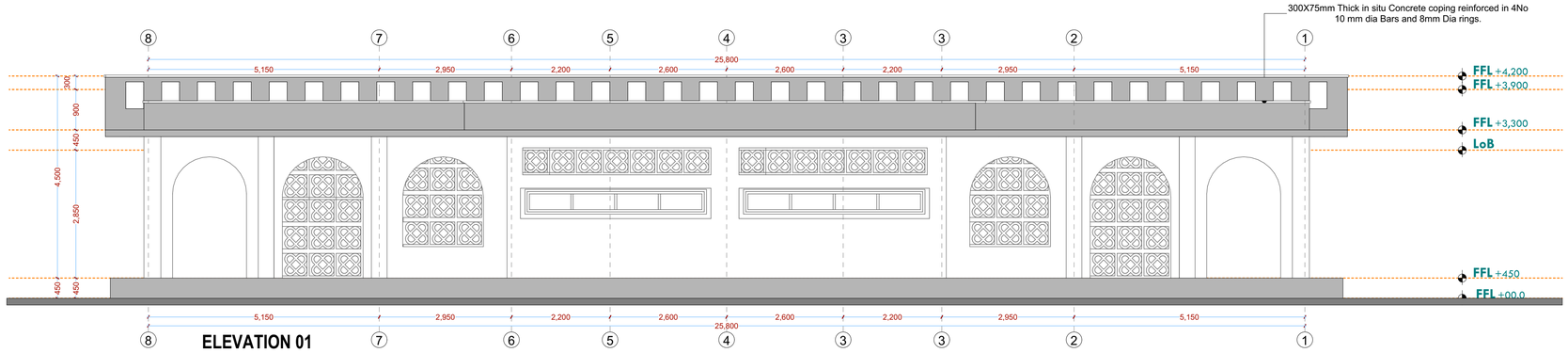
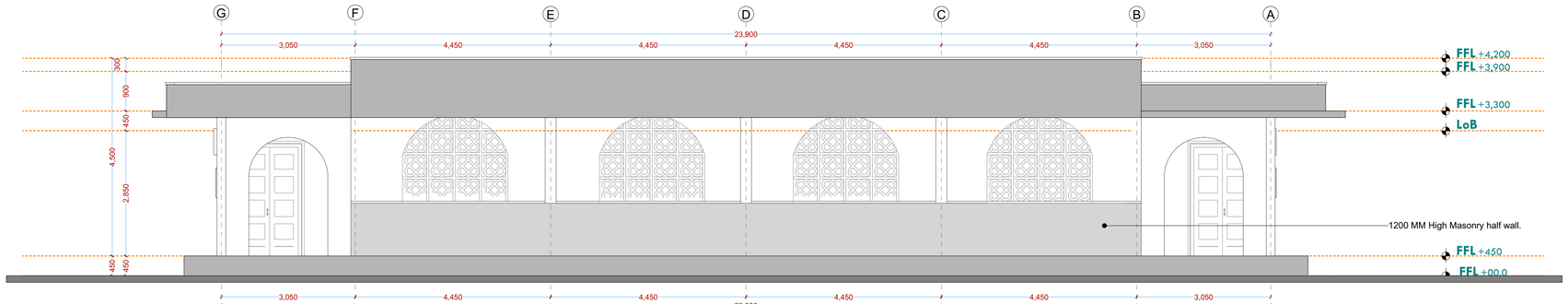
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-003**

2.A MARINE HATCHERY

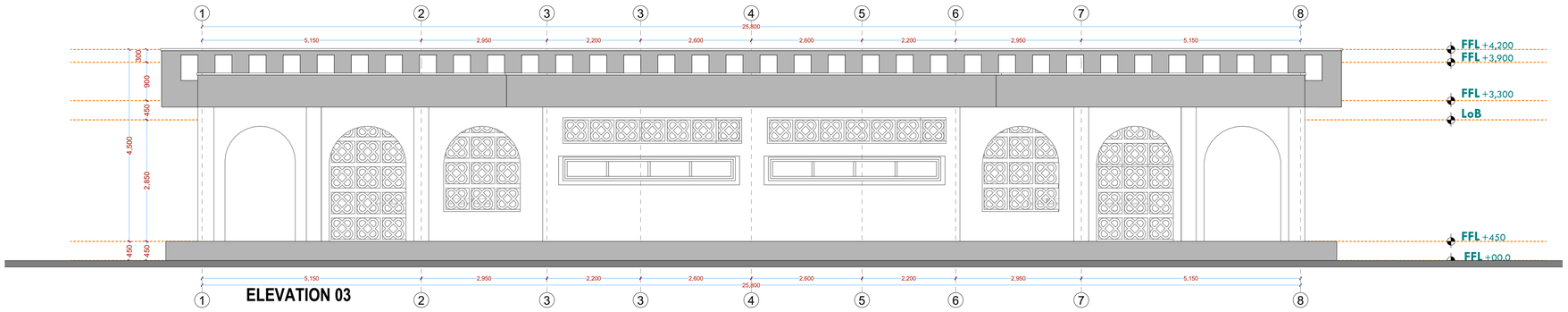
ELEVATIONS



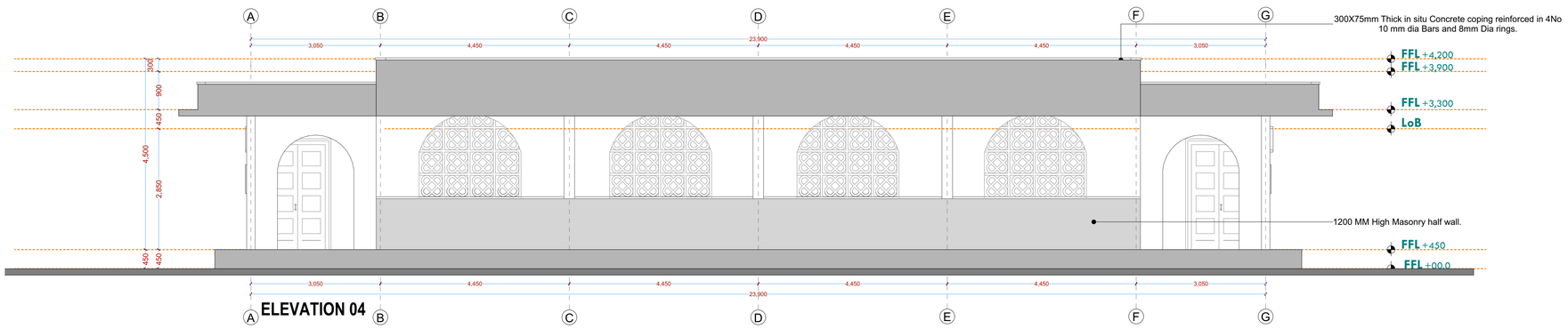
ELEVATION 01



ELEVATION 02



ELEVATION 03



ELEVATION 04

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Plot L . R. No.:

Location : **SHIMONI KWALE COUNTY**

Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

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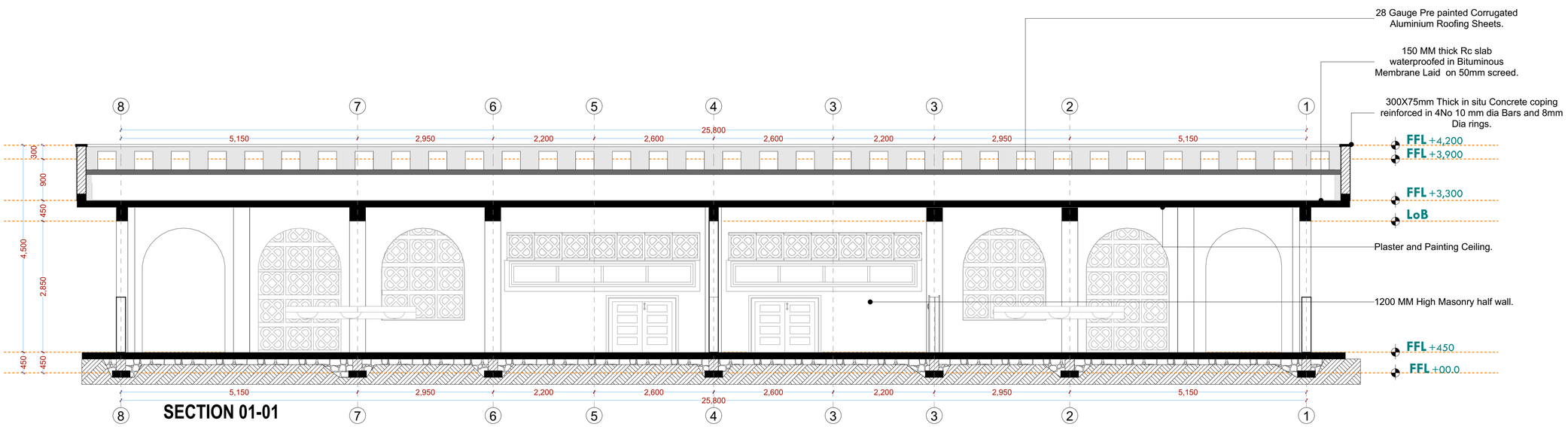
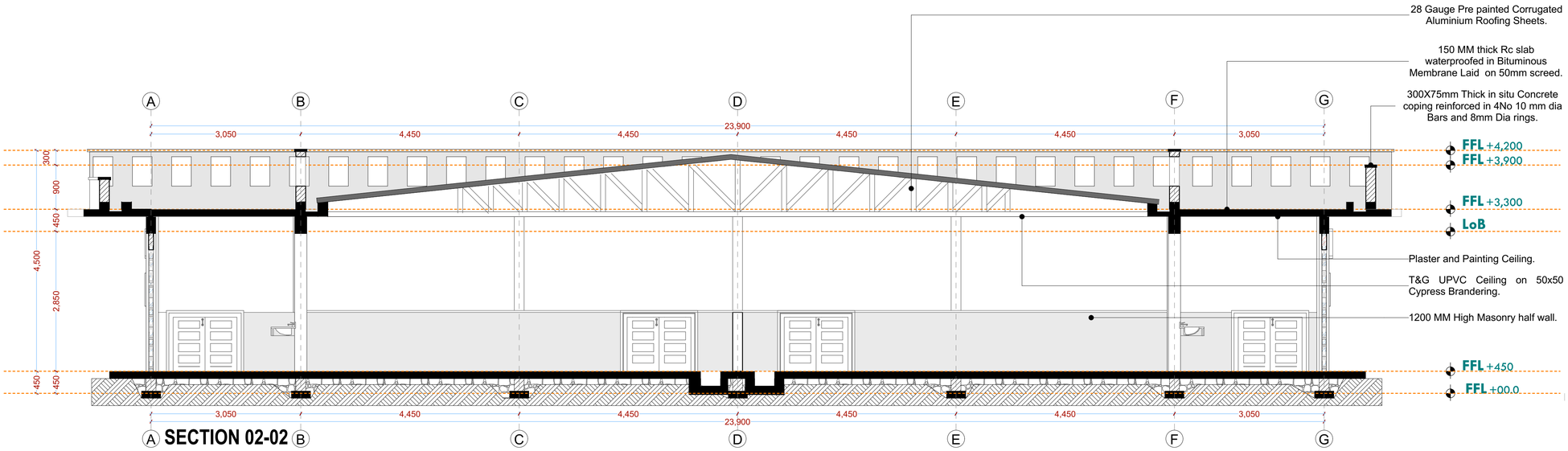
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-004**

2.A MARINE HATCHERY

SECTIONS



SECTION 01-01



SECTION 02-02

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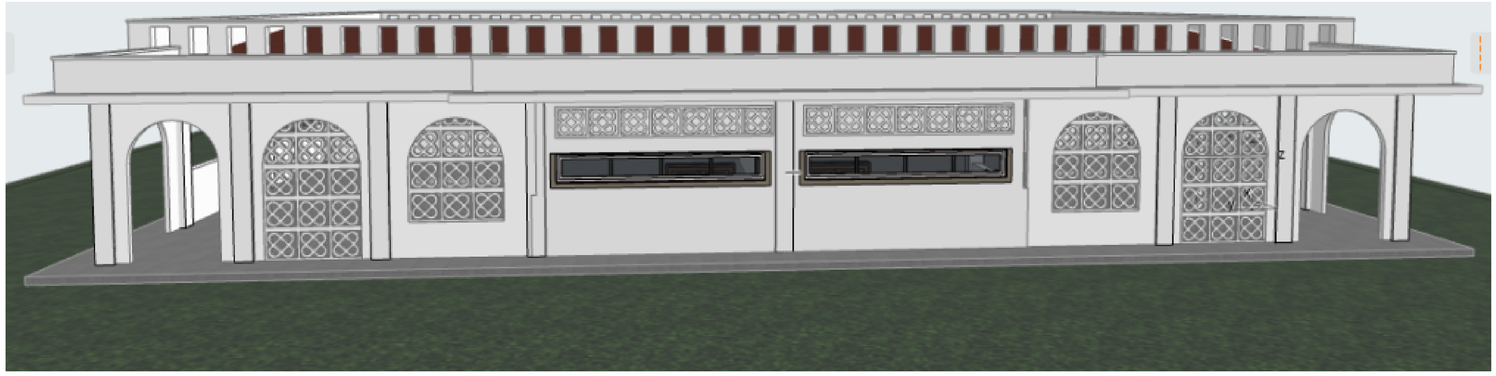
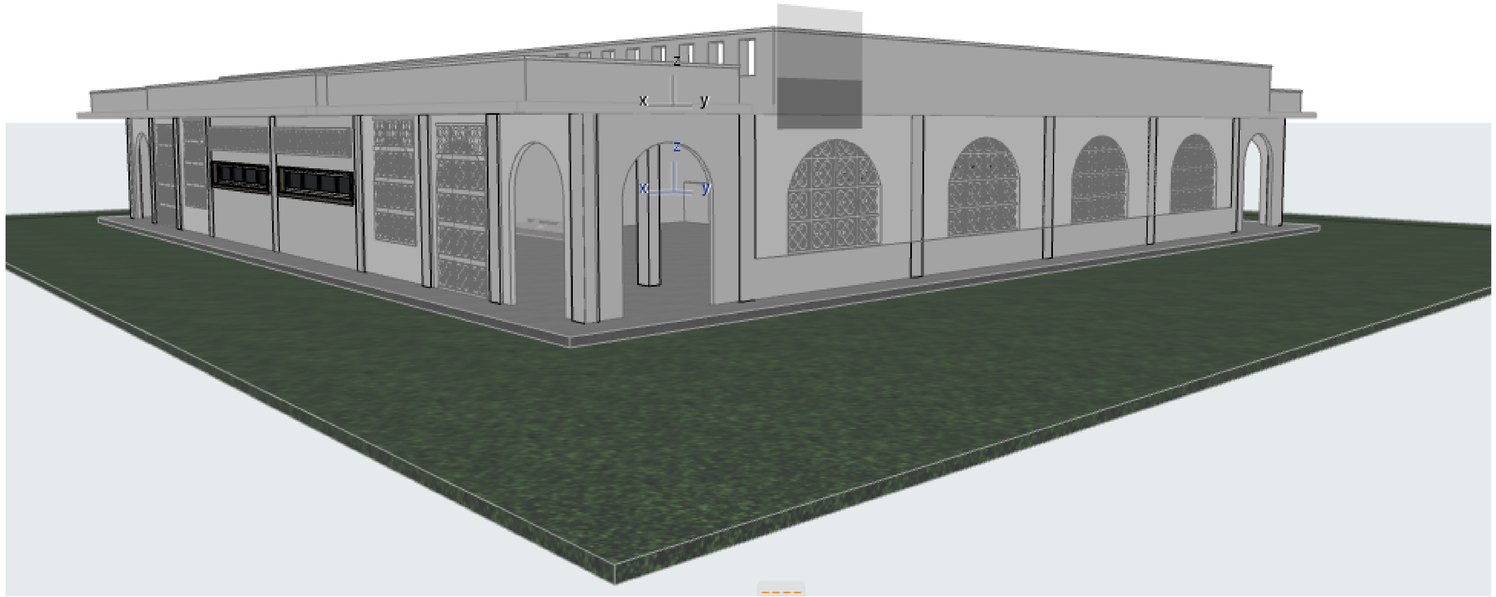
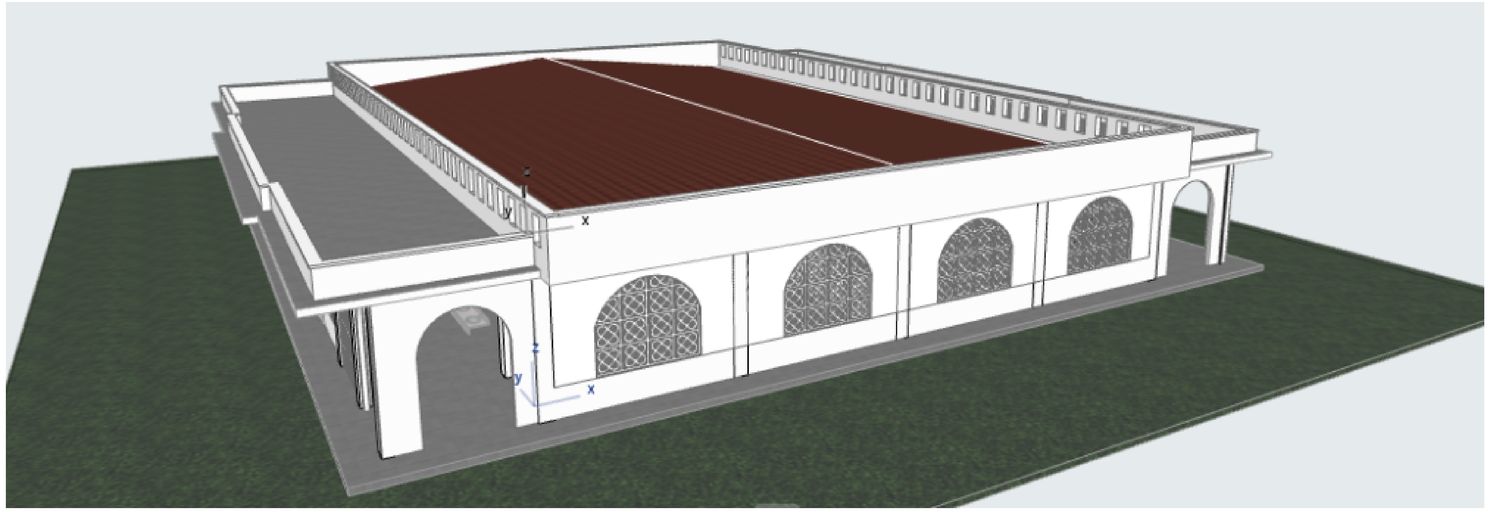
2.A MARINE HATCHERY

3Ds







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5. Water meter to be at least 300mm above ground level.

ELECTRICAL
1. All conduits must be laid before plastering.

FIRE
1. Minimum 4500 litres water reserve for hosereels to the Approval of the Chief Fire Officer.
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4. Minimun 2x9 litre water and 1x4.5 Kg Co2 Fire extinguishers
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6. All internal partitioning material to be half hour fireresistant.
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PAVING
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REVISIONS

Project : **PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT**

Plot L . R. No.:

Location : **SHIMONI KWALE COUNTY**

Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

Subject :

WORKING DRAWINGS.

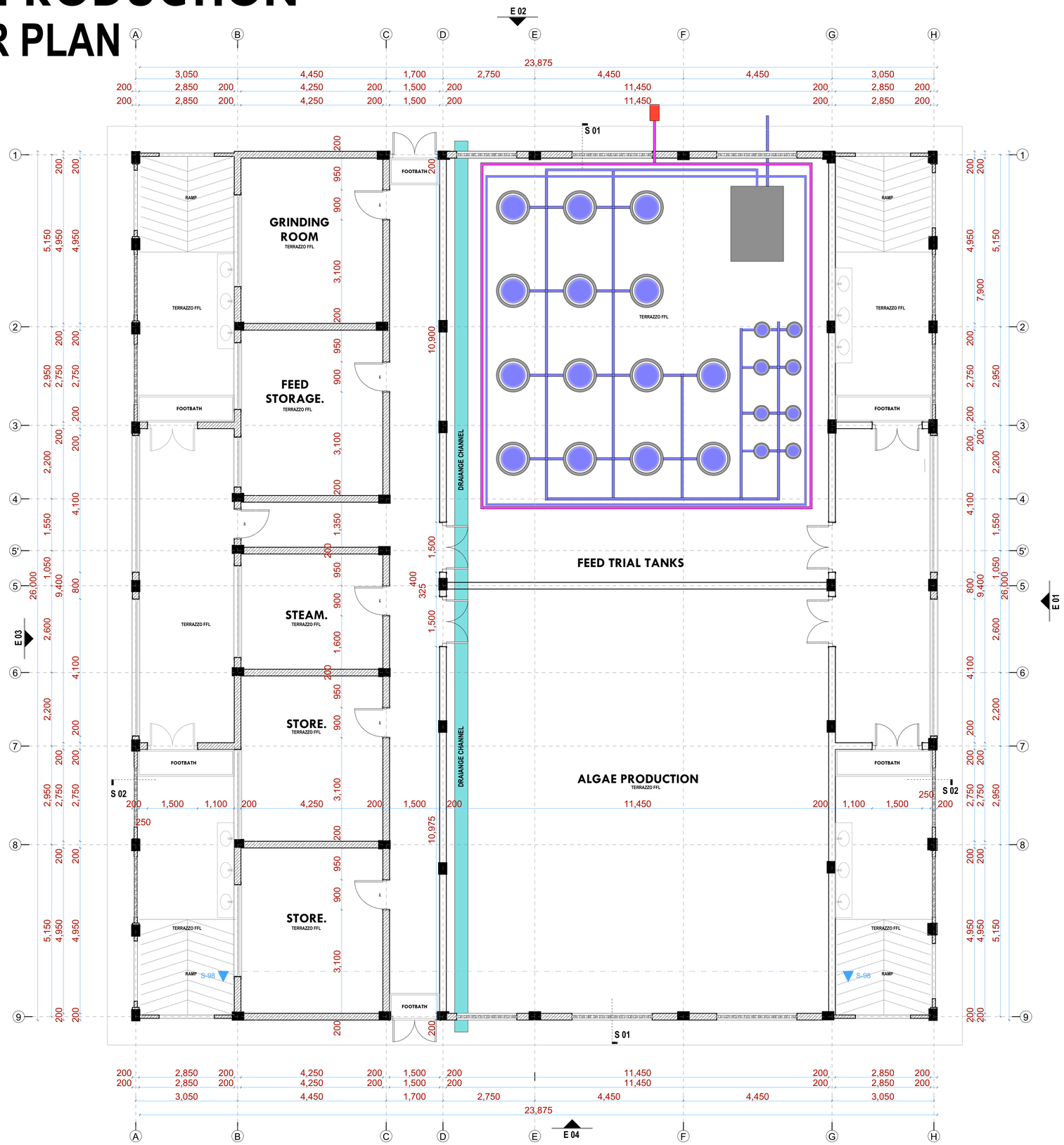
Consultancy :

ARPRIM CONSULTANTS
P.O BOX 12969-0040 NAIROBI
TEL: 020-884312/8
Website :www.arprimconsultants.com

Drawn by:	Checked by : -	Checked by : -
PETER MOMANYI B. Arch. (Hons).	**F. TUNDULI** B. Arch. (Hons) , M. Arch. (reg. No.A1552)	**J. MOMANYI** B. Arch. (Hons) , M. Arch. (reg. No.A1122)

Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-006**

2.B ALGAE PRODUCTION FLOOR PLAN



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Plot L . R. No.:

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Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

Subject :

WORKING DRAWINGS.

Consultancy :

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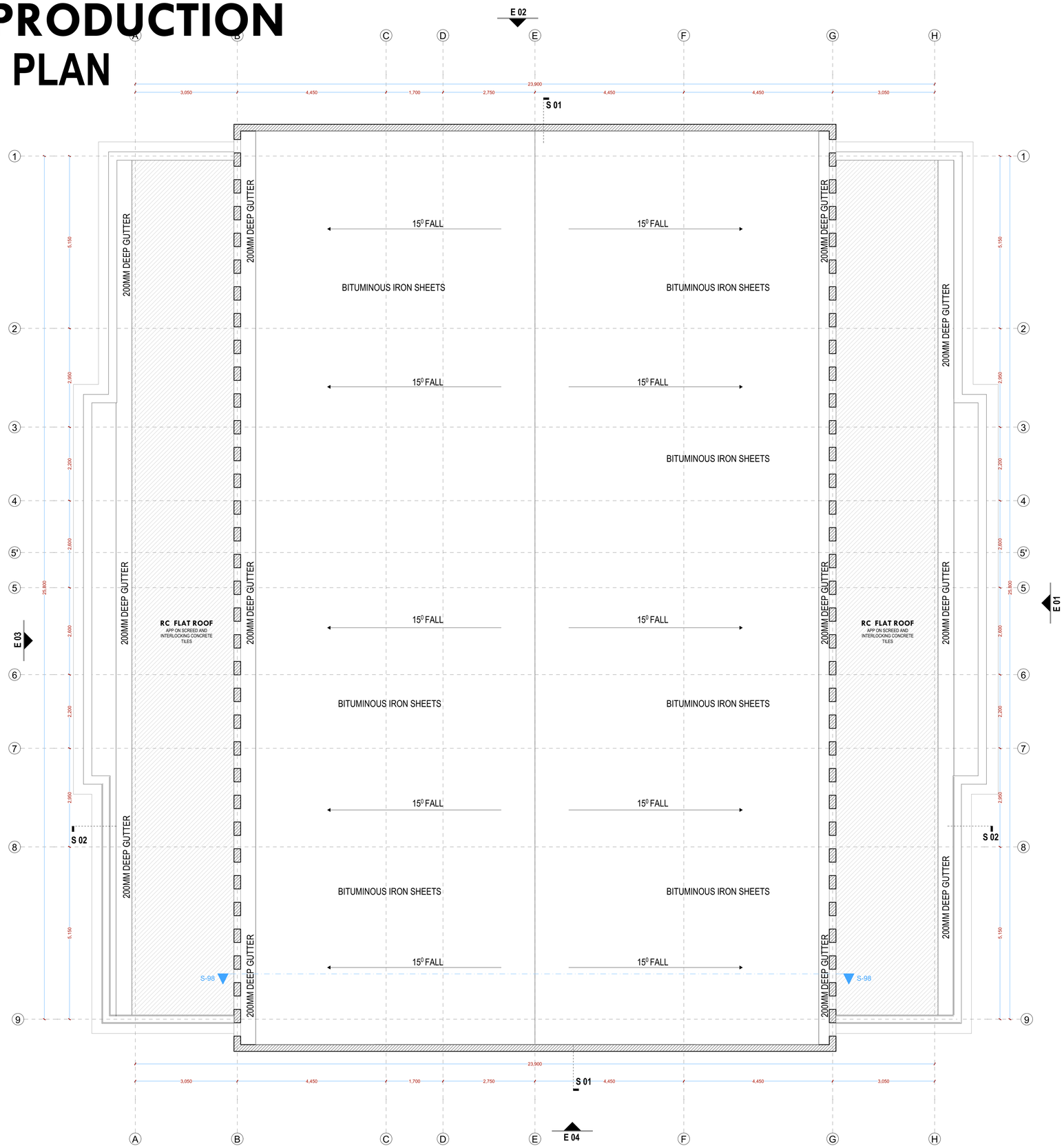
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-007**

2.B ALGAE PRODUCTION ROOF PLAN



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REVISIONS

Project : **PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT**

Plot L . R. No.:

Location : **SHIMONI KWALE COUNTY**

Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

Subject :

WORKING DRAWINGS.

Consultancy :

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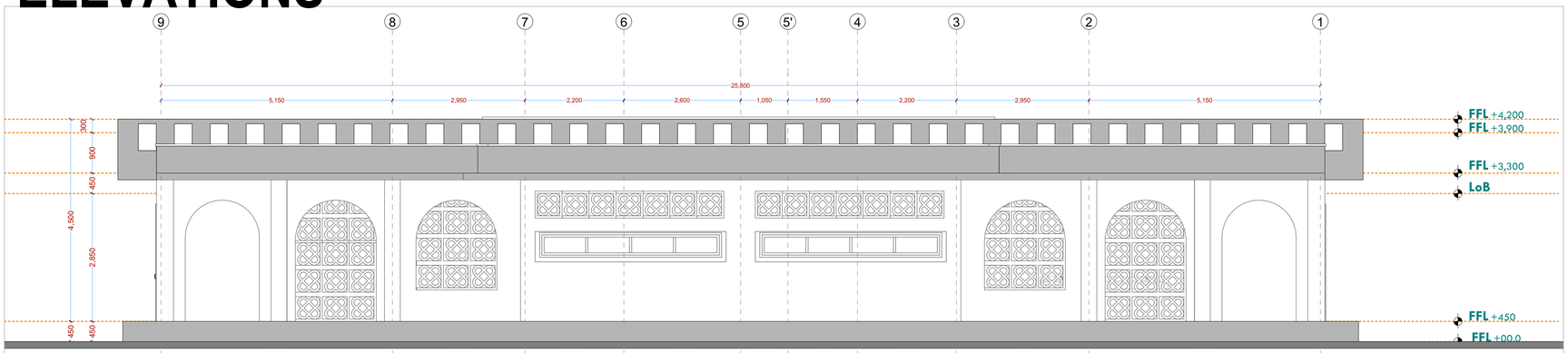
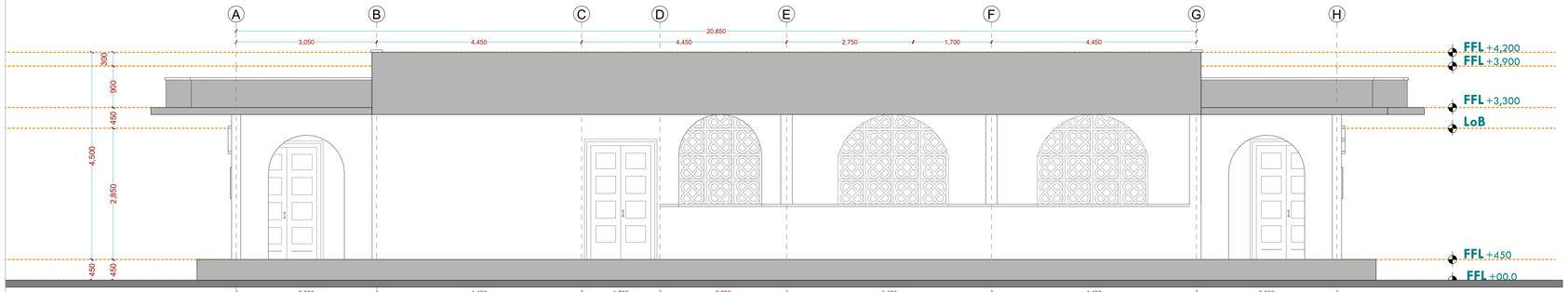
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-002-008**

2.B ALGAE PRODUCTION ELEVATIONS



ELEVATION 01



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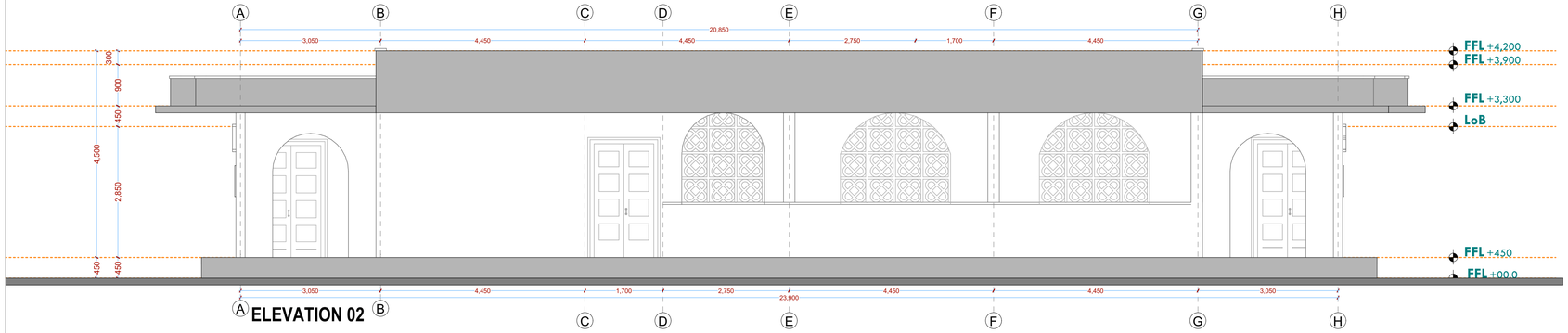
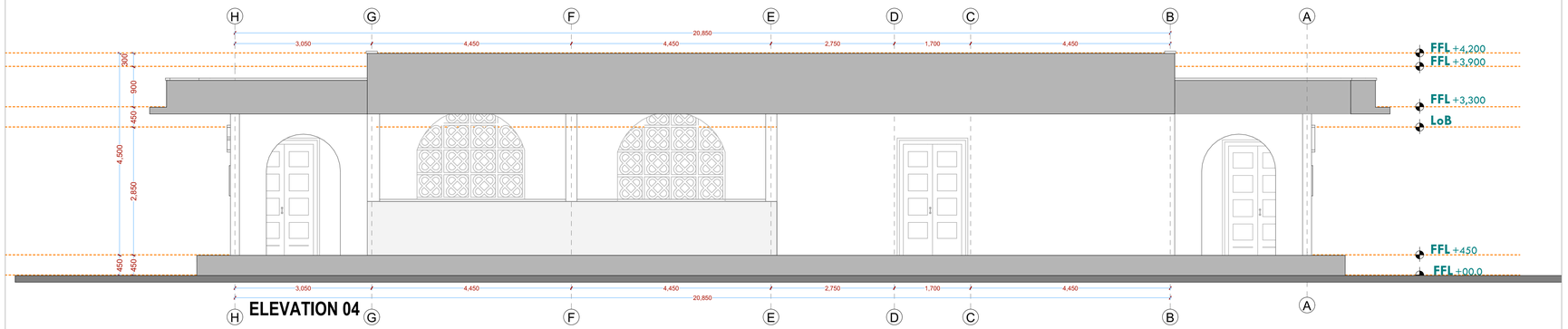


ELEVATION 02



ELEVATION 04

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REVISIONS

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Plot L . R. No.:

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Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

Subject :

WORKING DRAWINGS.

Consultancy :

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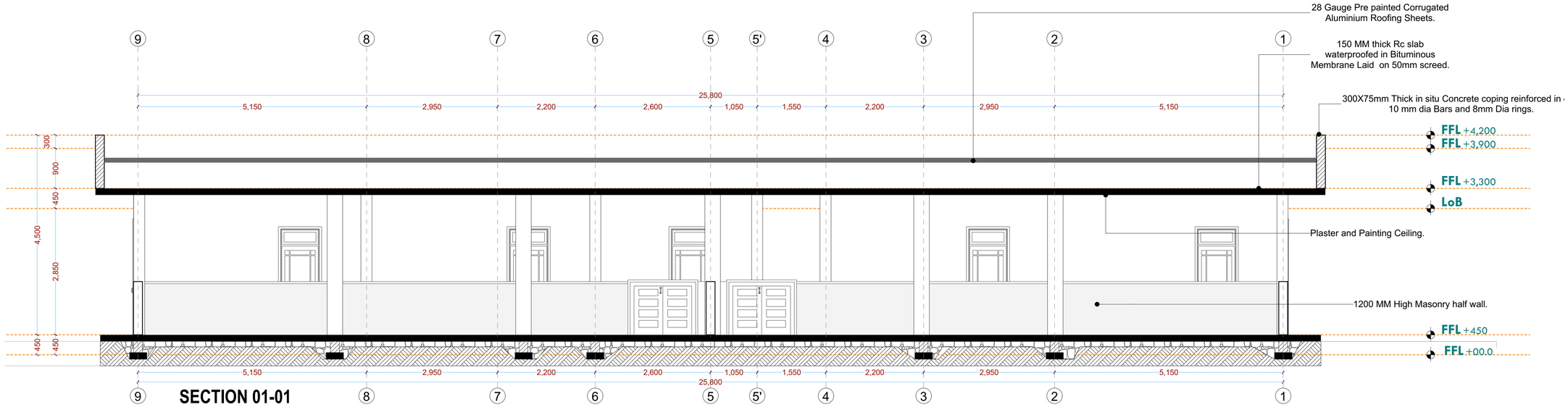
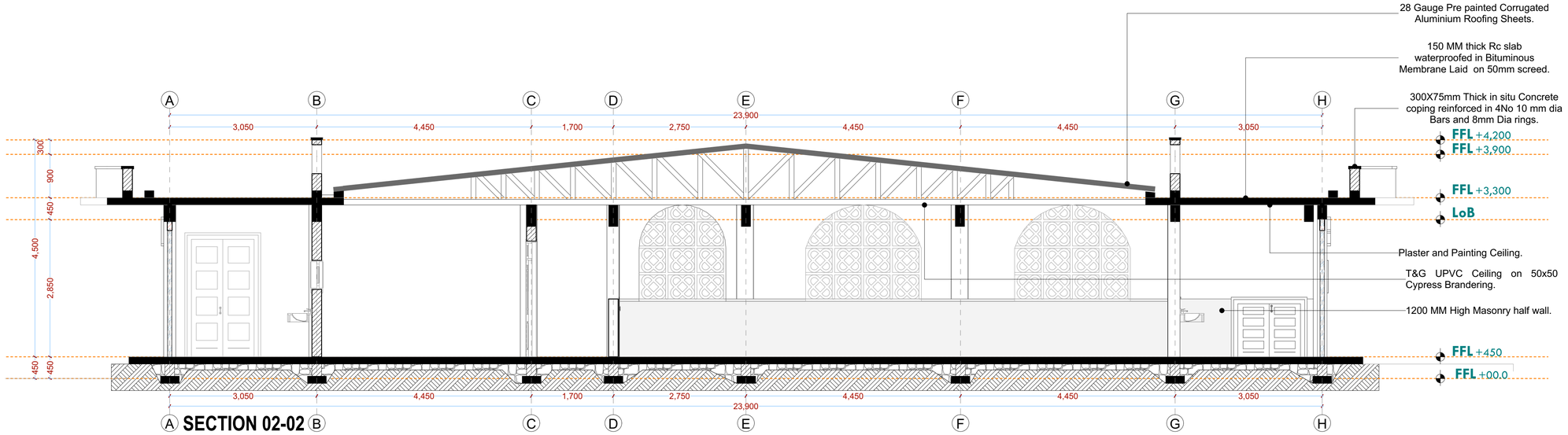
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-009**

2.B ALGAE PRODUCTION SECTIONS



SECTION 01-01



SECTION 02-02

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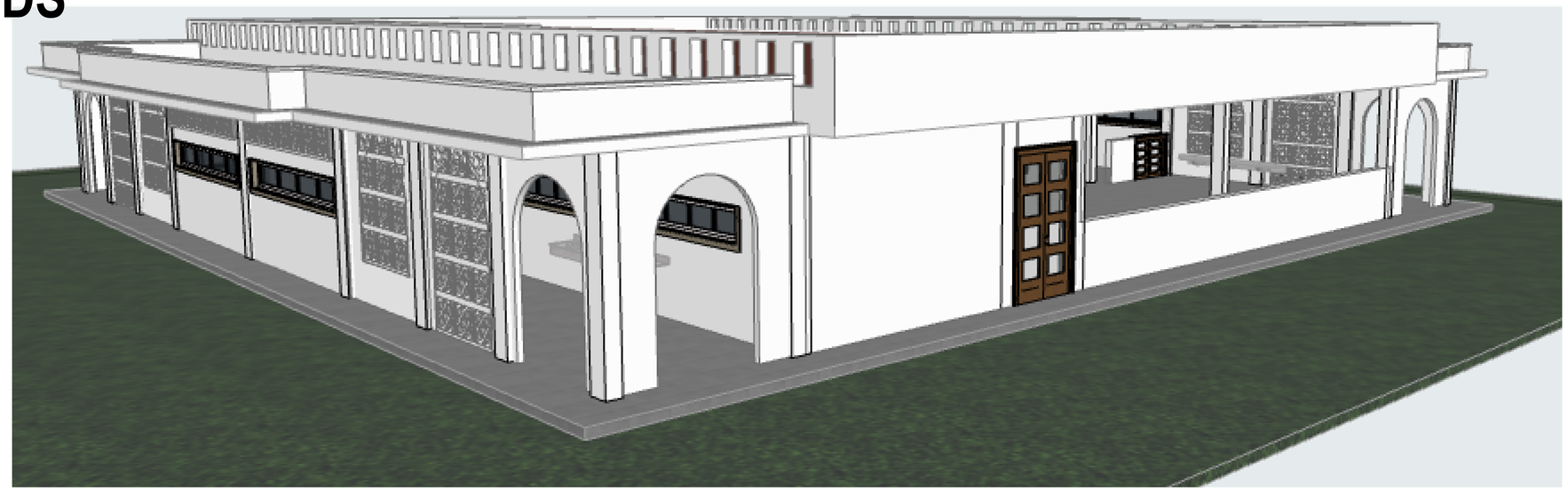
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-010**

2.B ALGAE PRODUCTION 3DS



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Plot L . R. No.:

Location : **SHIMONI KWALE COUNTY**

Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

Subject :

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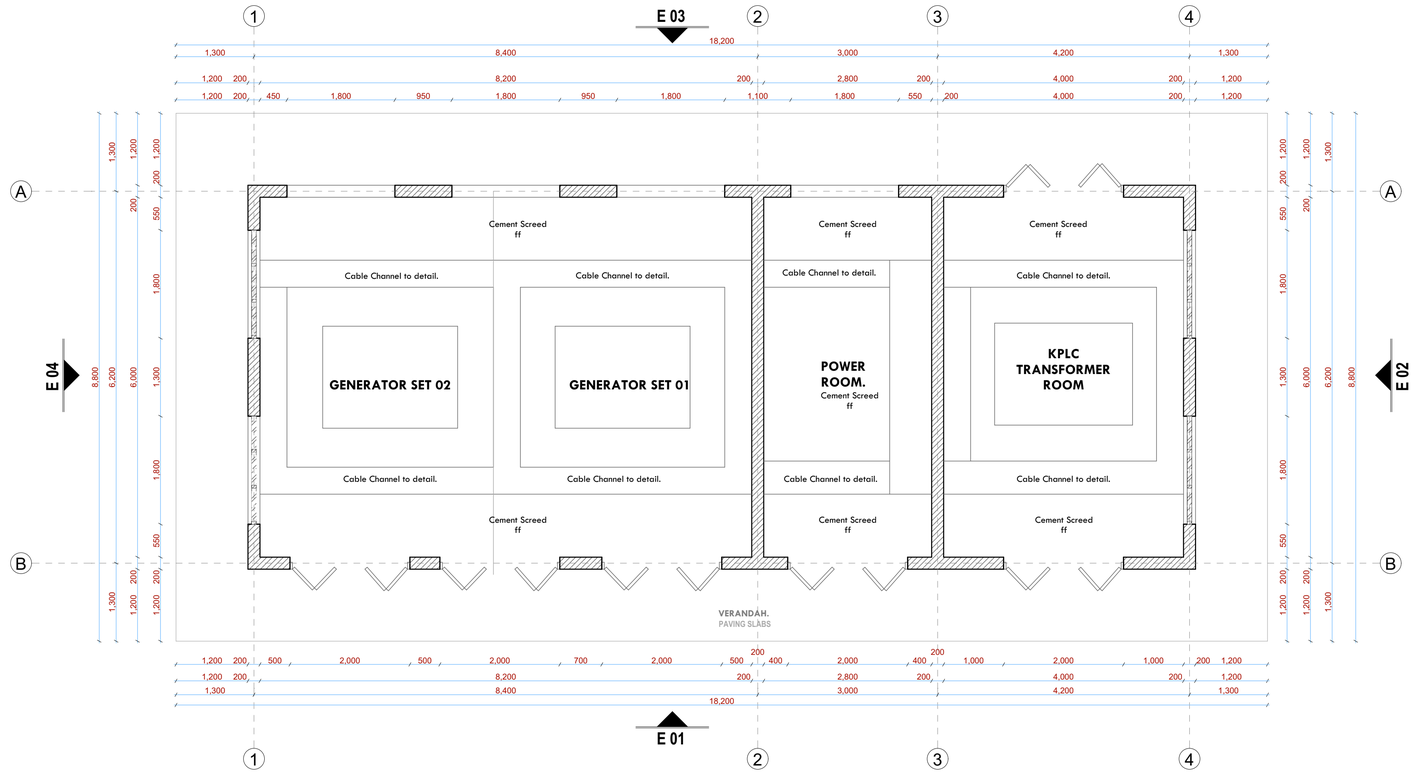
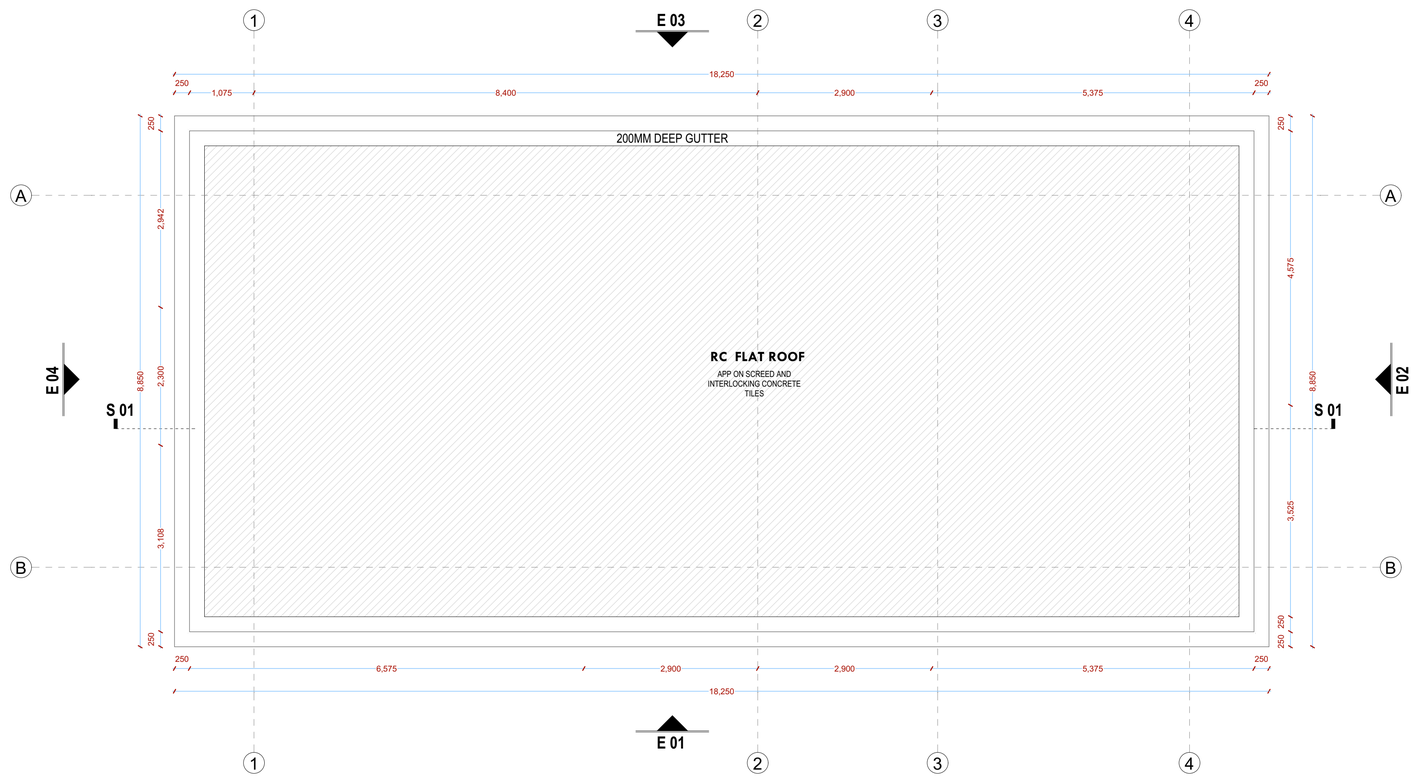
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-011**

2.C GENERATOR & POWERHOUSE
FLOOR AND ROOF PLAN





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7. All doors to fire-escape stair to be fire resistant with automatic
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PAVING
1. Brick paving to specialist's specifications, on clean river sand on compacted filling in layers of 150mm MAXS

REVISIONS

Project : **PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT**

Plot L . R. No.:

Location : **SHIMONI KWALE COUNTY**

Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

Subject :

WORKING DRAWINGS.

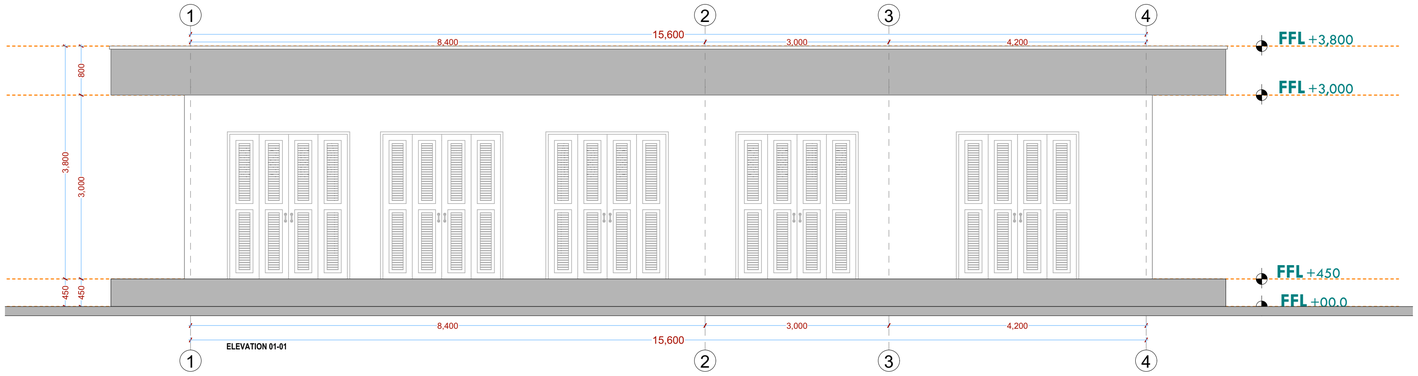
Consultancy :

ARPRIM CONSULTANTS
P.O BOX 12969-0040 NAIROBI
TEL: 020-884312/8
Website :www.arprimconsultants.com

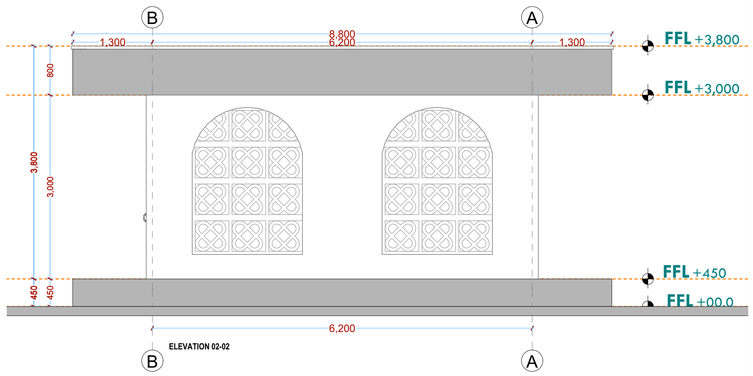
Drawn by:	Checked by : -	Checked by : -
PETER MOMANYI B. Arch. (Hons).	**F. TUNDULI** B. Arch. (Hons) , M. Arch. (reg. No.A1552)	**J. MOMANYI** B. Arch. (Hons) , M. Arch. (reg. No.A1122)

Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-012**

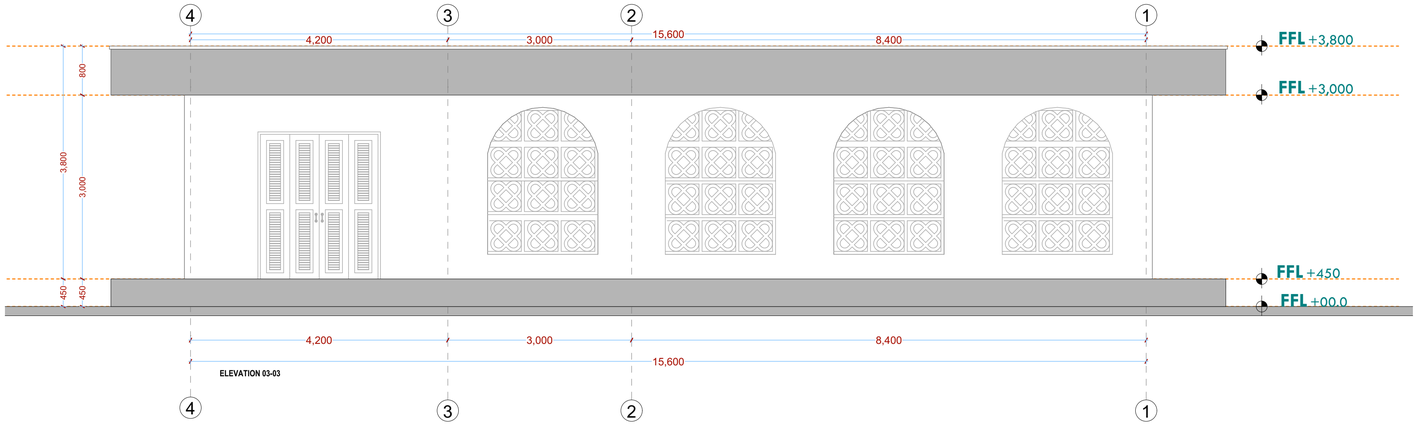
2.C GENERATOR & POWERHOUSE ELEVATIONS



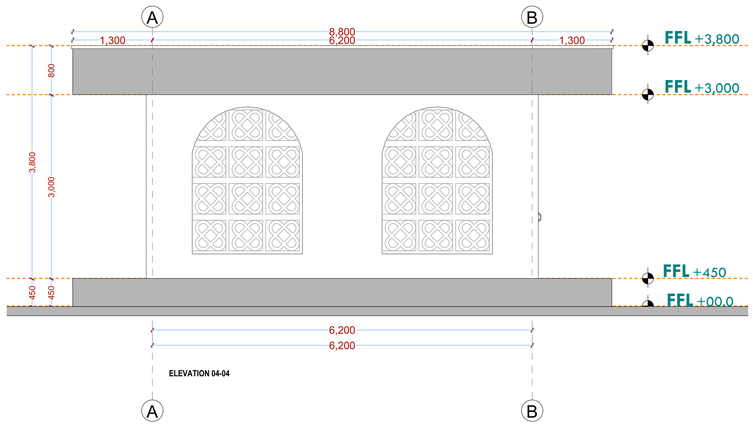
ELEVATION 01-01



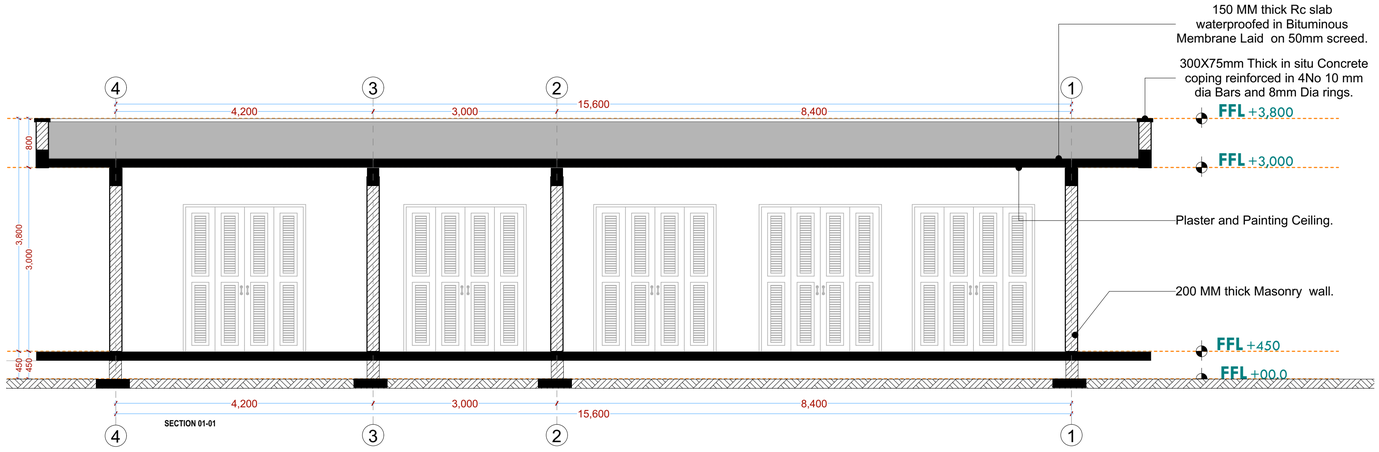
ELEVATION 02-02



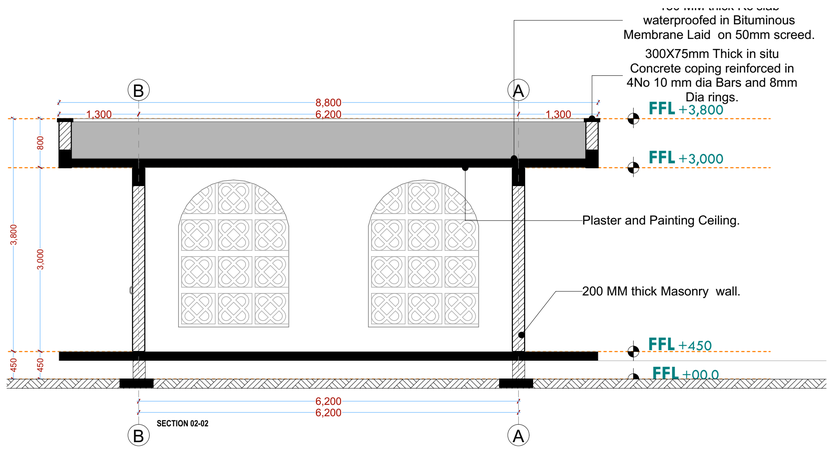
ELEVATION 03-03



ELEVATION 04-04



SECTION 01-01



SECTION 02-02

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REVISIONS

Project : **PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT**

Plot L . R. No.:

Location : **SHIMONI KWALE COUNTY**

Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

Subject :

WORKING DRAWINGS.

Consultancy :

ARPRIM CONSULTANTS
P.O BOX 12969-0040 NAIROBI
TEL: 020-884312/8
Website :www.arprimconsultants.com

Drawn by:	Checked by : -	Checked by : -
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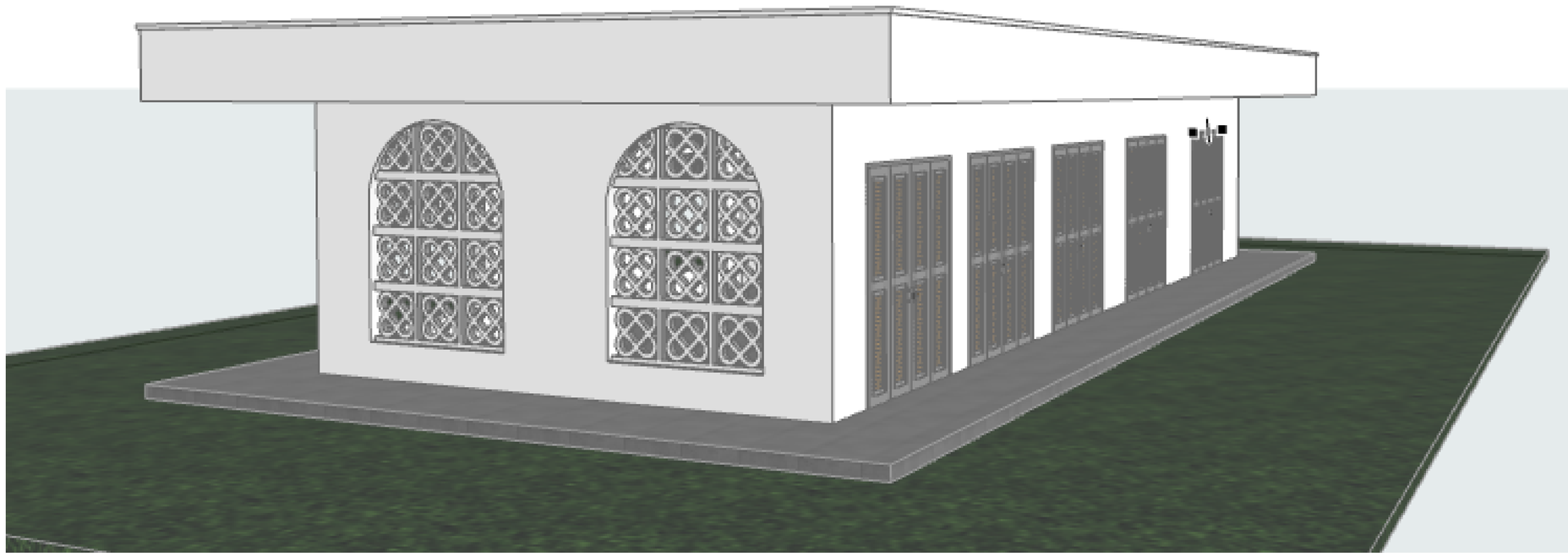
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.	
Scale 1:100	Drawing No: **02-001-013**	

2.C GENERATOR & POWERHOUSE

3Ds



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REVISIONS

Project : **PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT**

Plot L . R. No.:

Location : **SHIMONI KWALE COUNTY**

Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

Subject :

WORKING DRAWINGS.

Consultancy :

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Website :www.arprimconsultants.com

Drawn by:	Checked by : -	Checked by : -
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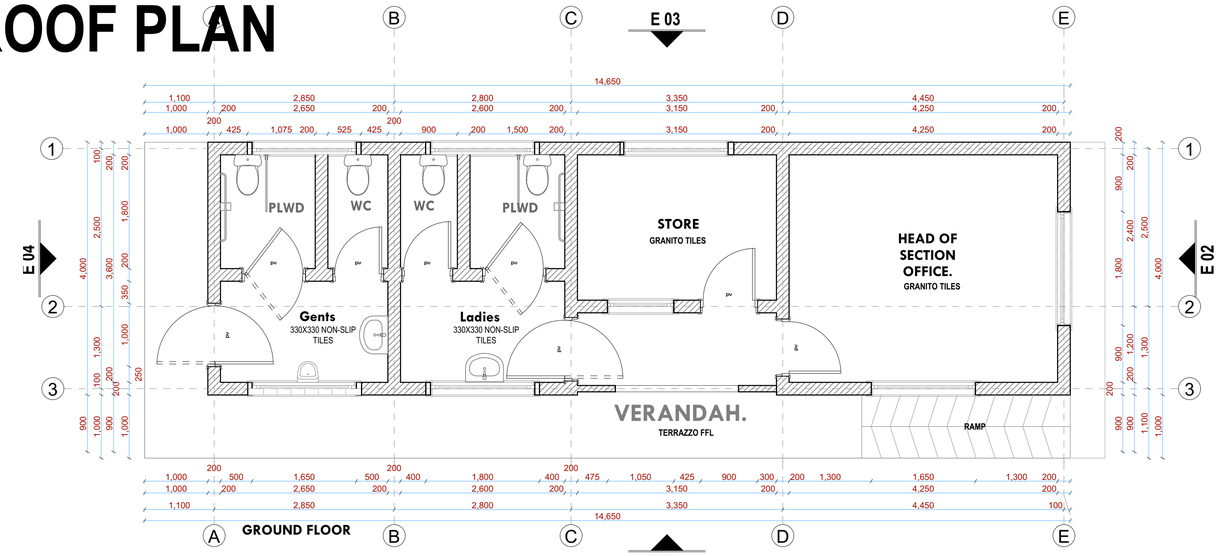
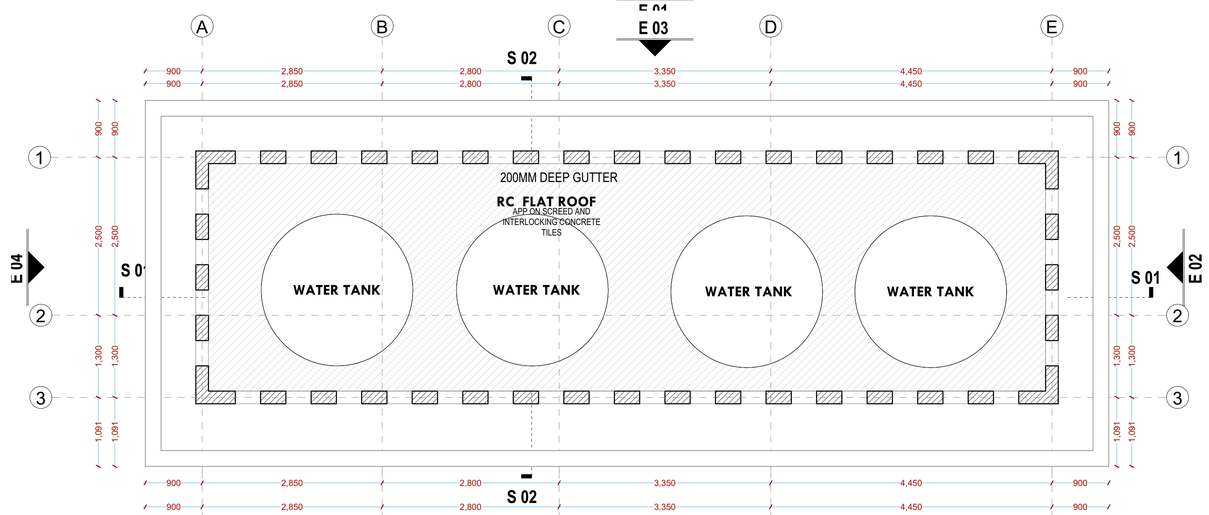
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-014**

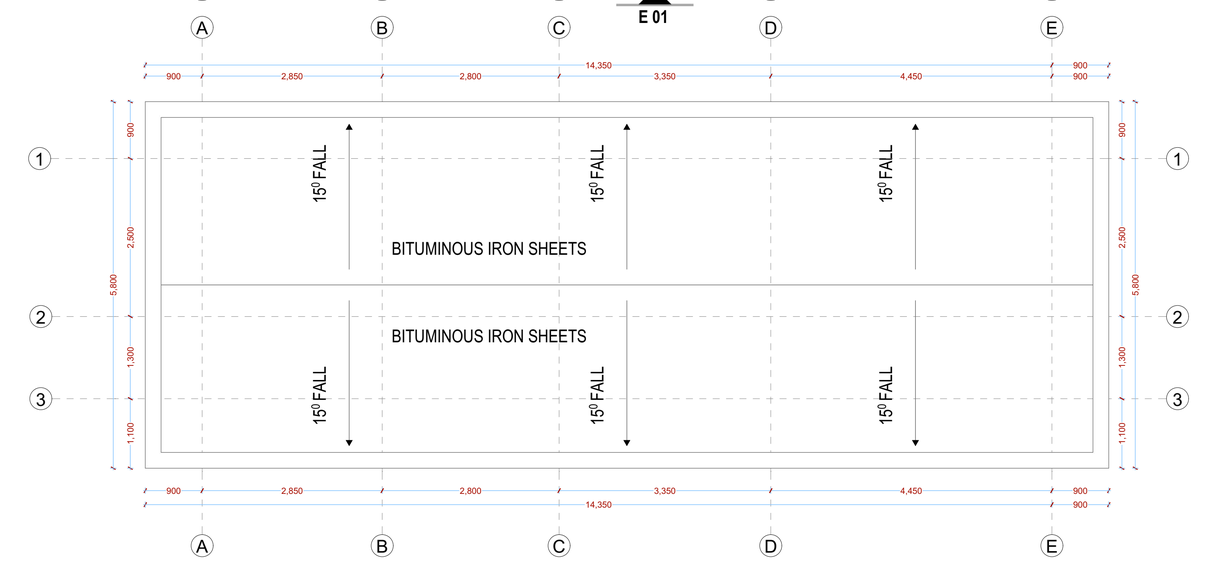
2.G OFFICE /WASHROOMS FLOOR AND ROOF PLAN 3N0



GROUND FLOOR



FIRST FLOOR PLAN



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REVISIONS

Project : **PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT**

Plot L . R. No.:

Location : **SHIMONI KWALE COUNTY**

Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

Subject :

WORKING DRAWINGS.

Consultancy :

ARPRIM CONSULTANTS
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TEL: 020-884312/8
Website :www.arprimconsultants.com

Drawn by:	Checked by : -	Checked by : -
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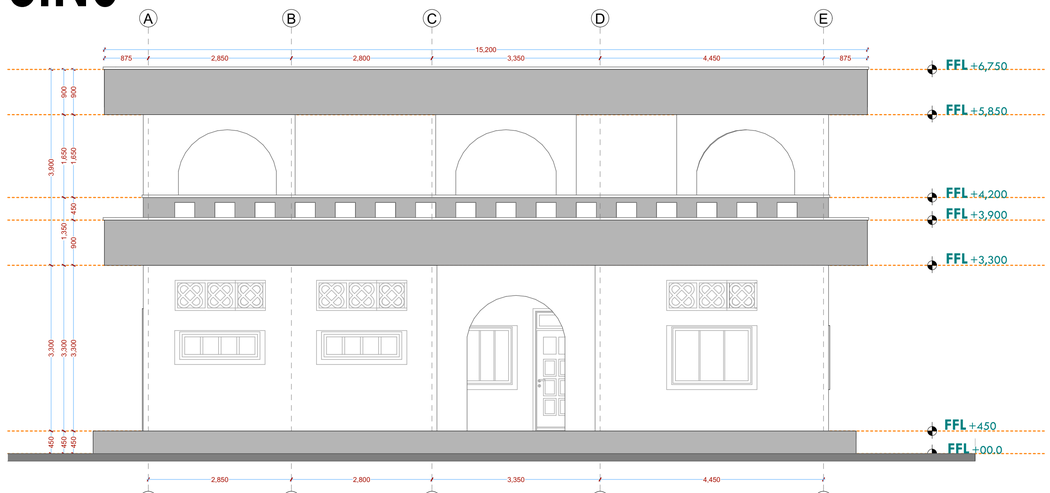
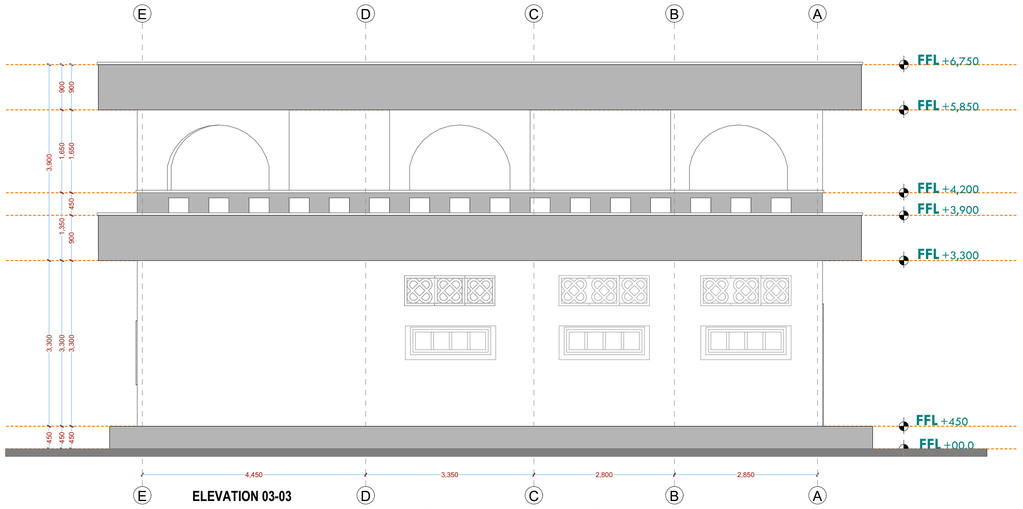
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-015**

2.G OFFICE /WASHROOMS ELEVATIONS ANDSECTIONS

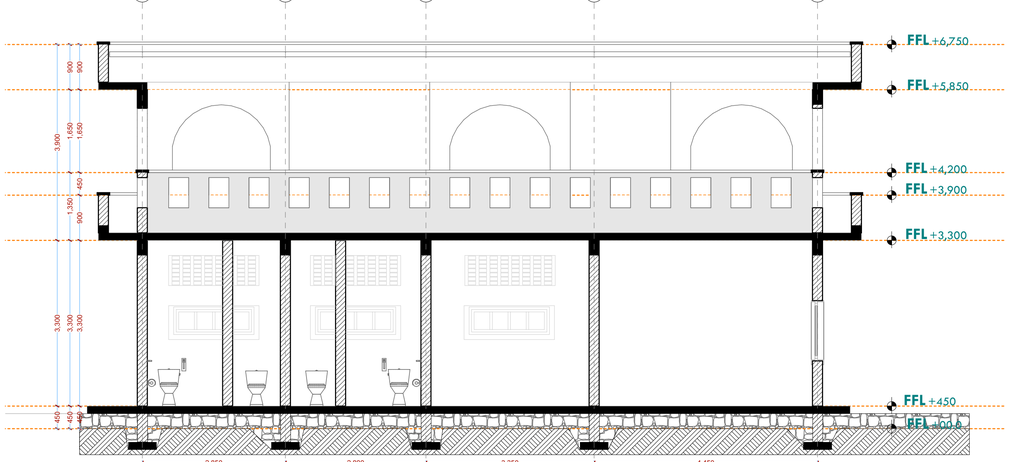
3.N0



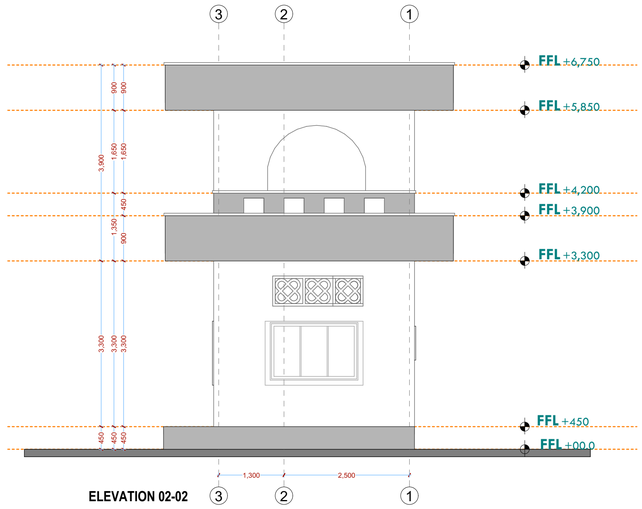
ELEVATION 01-01



ELEVATION 03-03



SECTION 01-01



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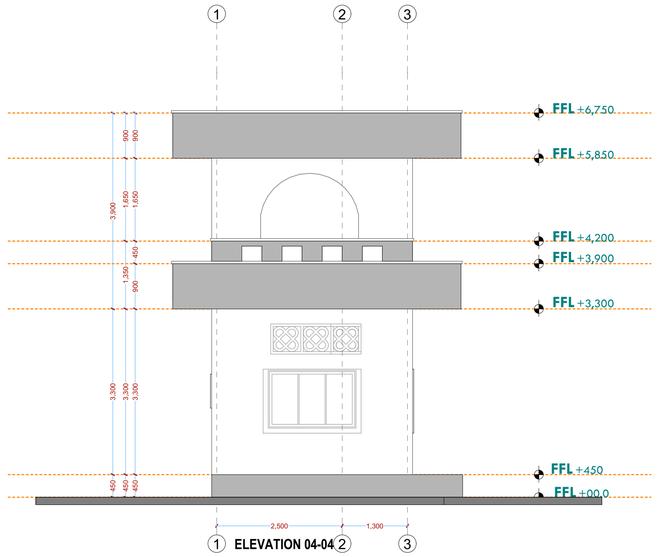
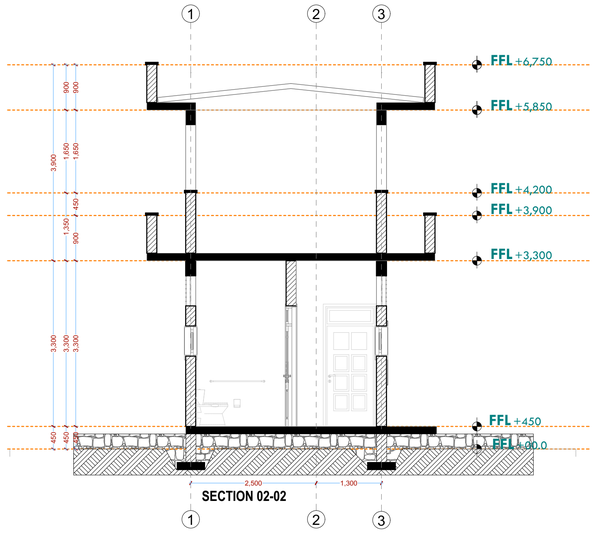


ELEVATION 04-04



SECTION 02-02

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REVISIONS

Project : **PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT**

Plot L . R. No.:

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Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

Subject :

WORKING DRAWINGS.

Consultancy :

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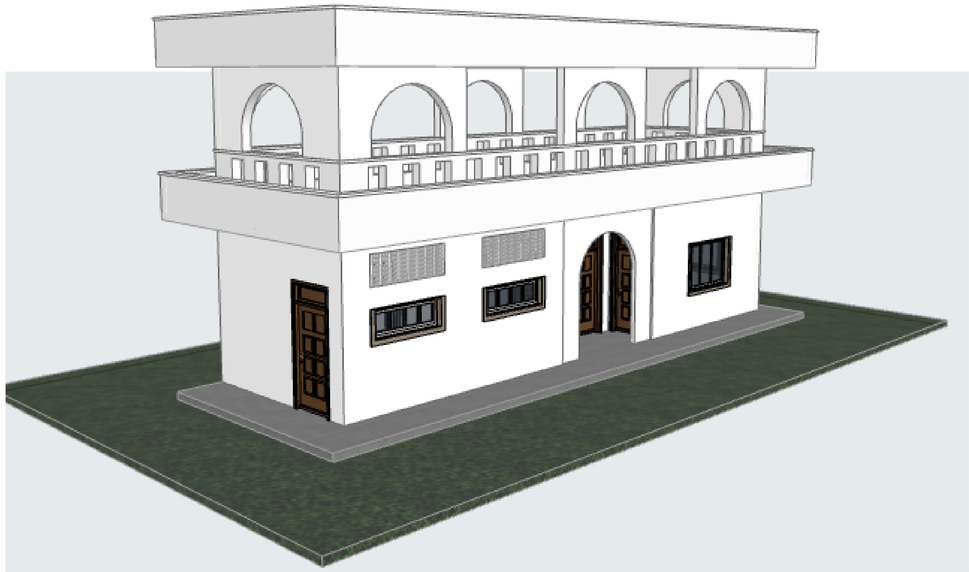
TEL: 020-884312/8
Website :www.arprimconsultants.com

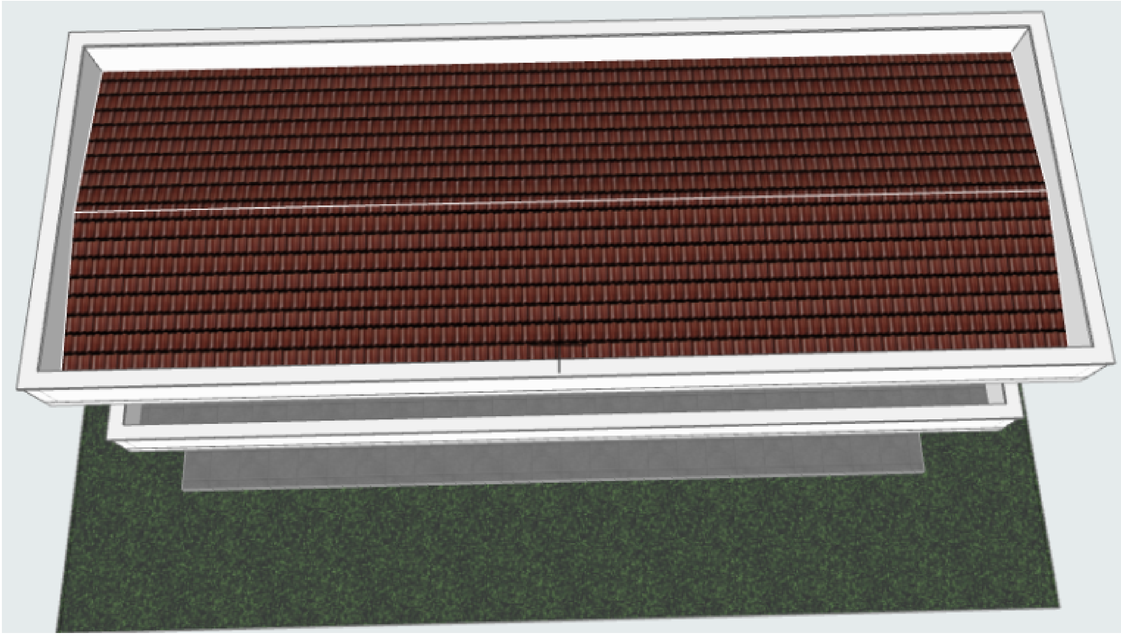
Drawn by:	Checked by : -	Checked by : -
PETER MOMANYI B. Arch. (Hons).	**F. TUNDULI** B. Arch. (Hons) , M. Arch. (reg. No.A1552)	**J. MOMANYI** B. Arch. (Hons) , M. Arch. (reg. No.A1122)

Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-016**

2.G OFFICE /WASHROOMS 3D's

3 N0





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Plot L . R. No.:

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Signature .....

Subject :

WORKING DRAWINGS.

Consultancy :

ARPRIM CONSULTANTS
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TEL: 020-884312/8
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Drawn by:	Checked by : -	Checked by : -
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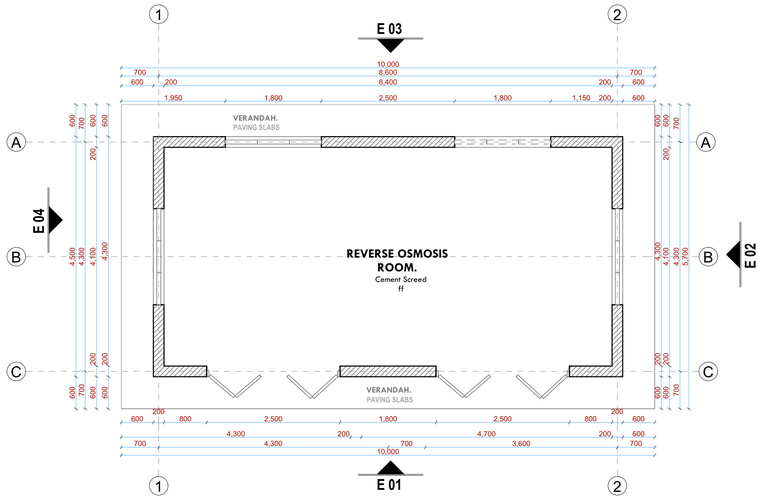
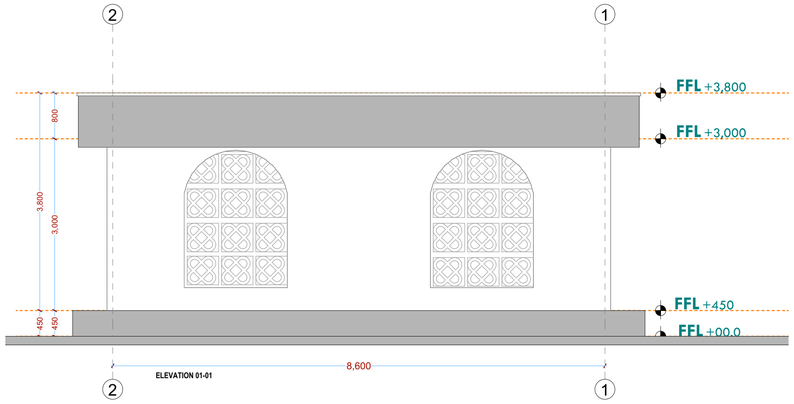
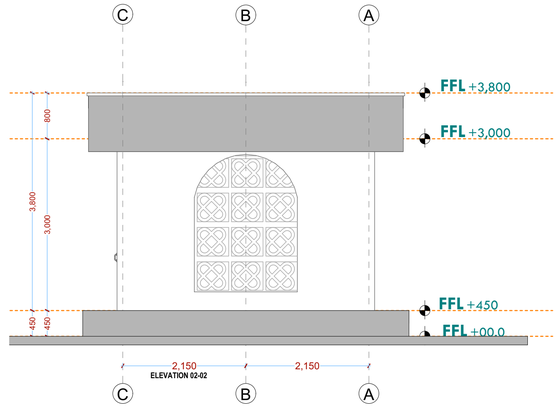
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.	
Scale 1:100	Drawing No: **02-002-017**	

2.D REVERSE OSMOSIS BUILDING





ELEVATION 01-01



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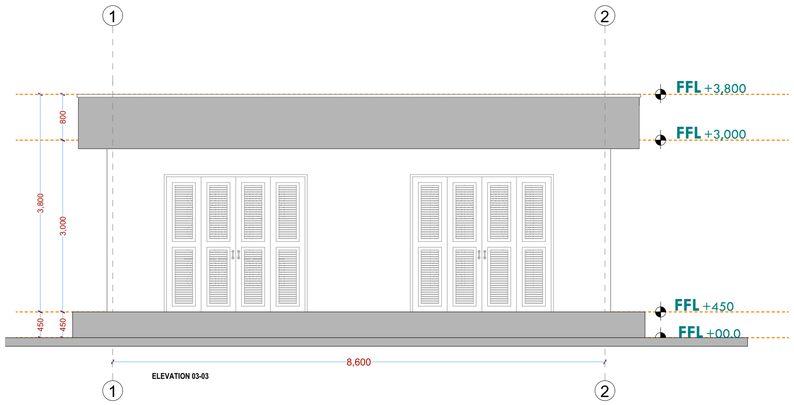

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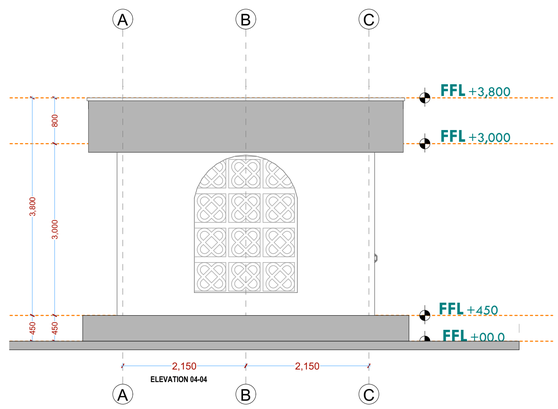

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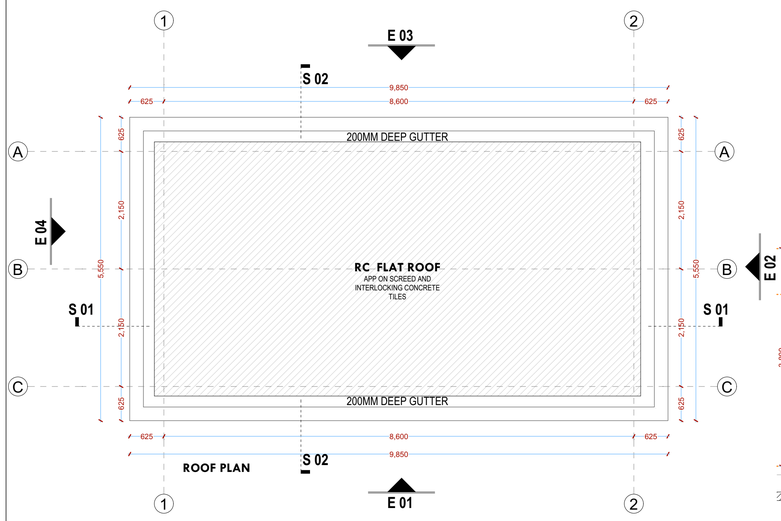
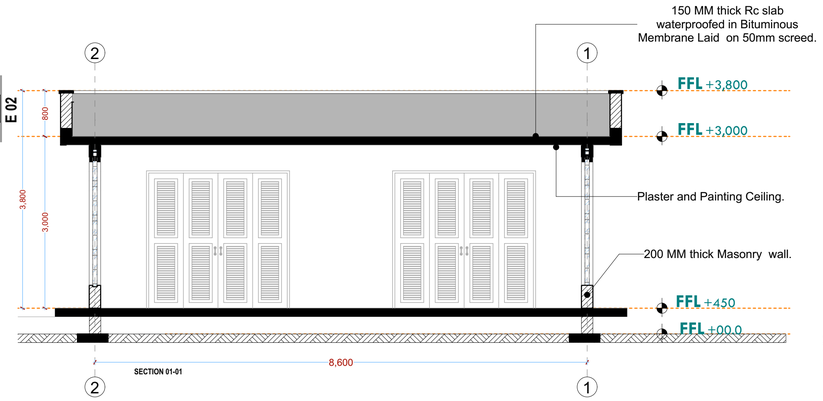
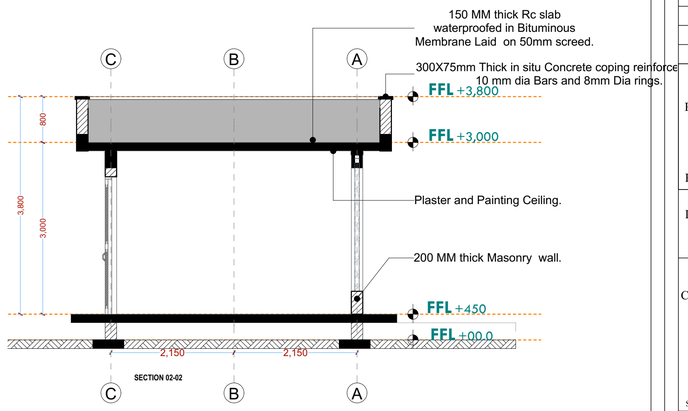


ROOF PLAN



SECTION 01-01



SECTION 02-02

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Plot L . R. No.:

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Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

Subject :

WORKING DRAWINGS.

Consultancy :

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P.O BOX 12969-0040 NAIROBI
TEL: 020-884312/8
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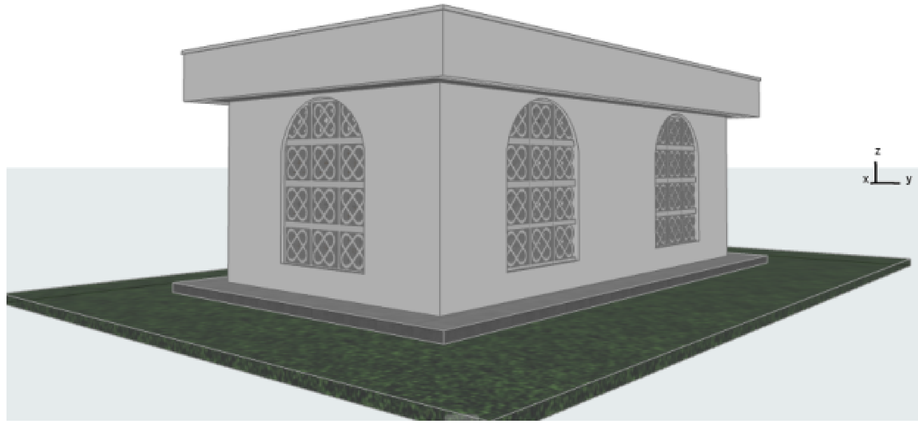
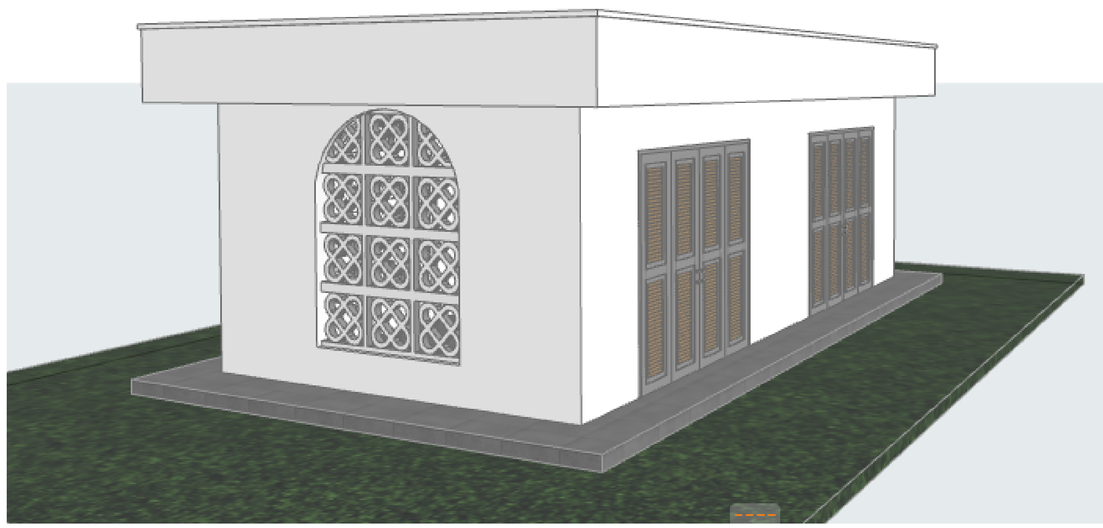
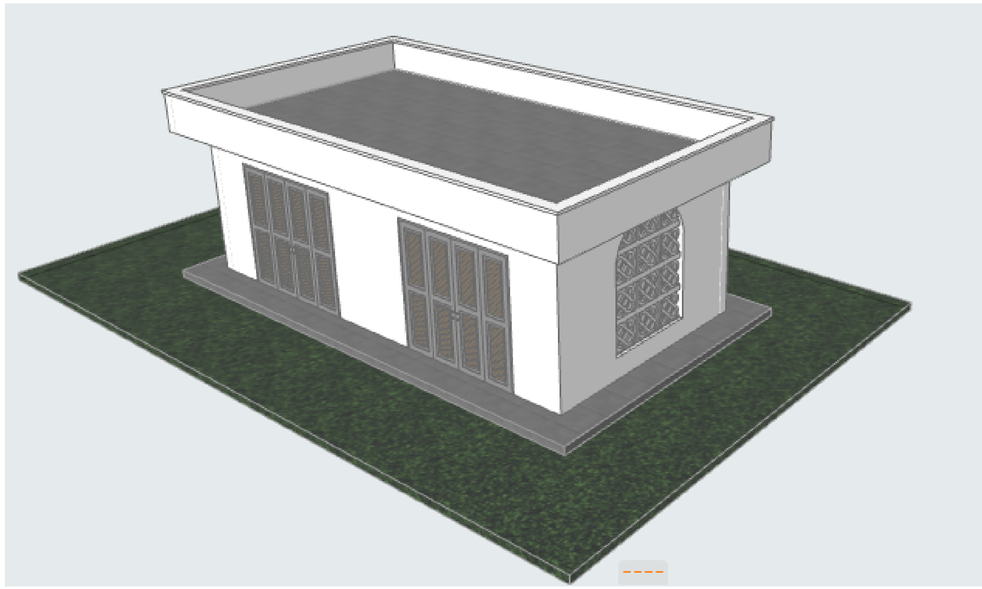
Drawn by:	Checked by : -	Checked by : -
PETER MOMANYI B. Arch. (Hons).	**F. TUNDULI** B. Arch. (Hons) , M. Arch. (reg. No.A1552)	**J. MOMANYI** B. Arch. (Hons) , M. Arch. (reg. No.A1122)

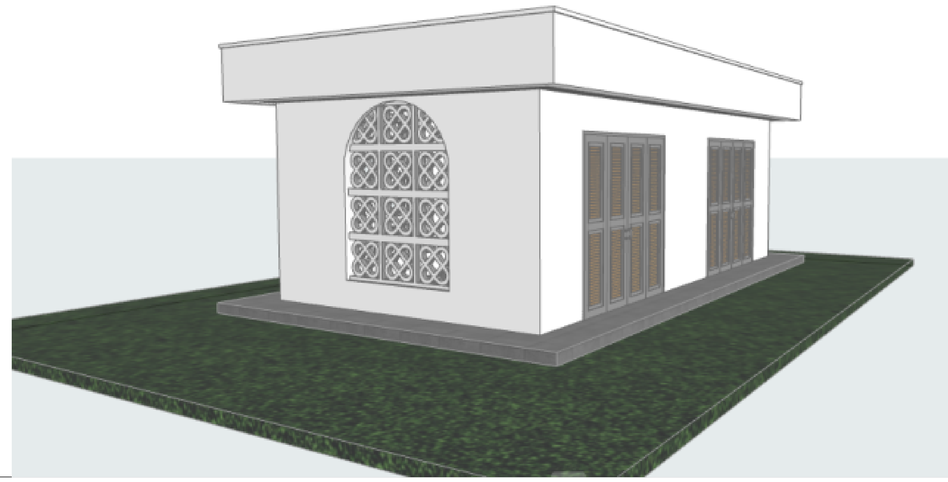
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-018**

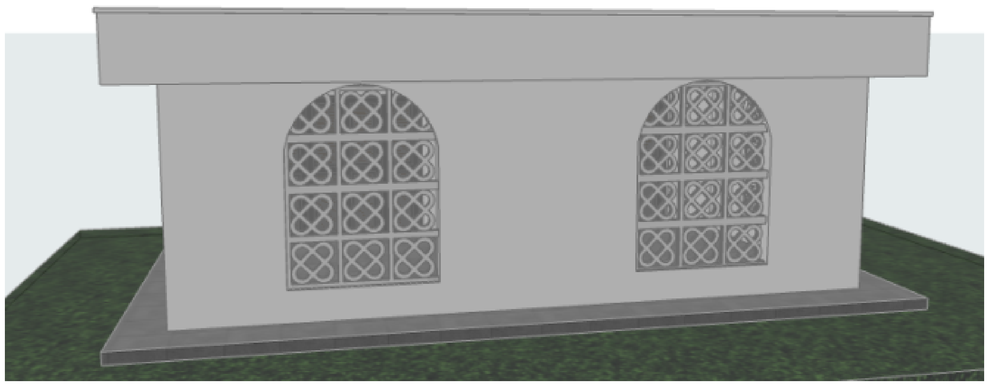
2.D | REVERSE OSMOSIS BUILDING 3D 's











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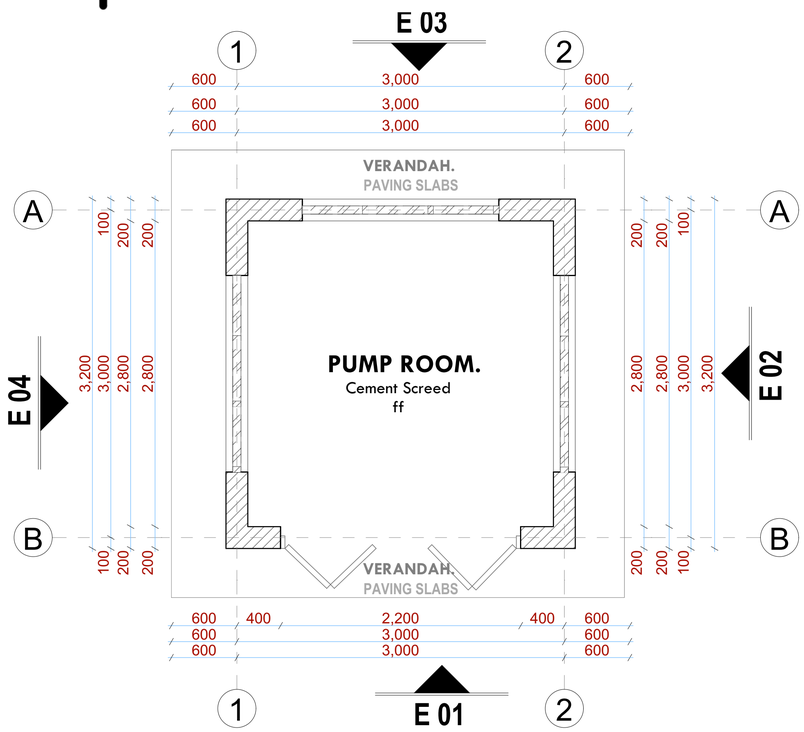
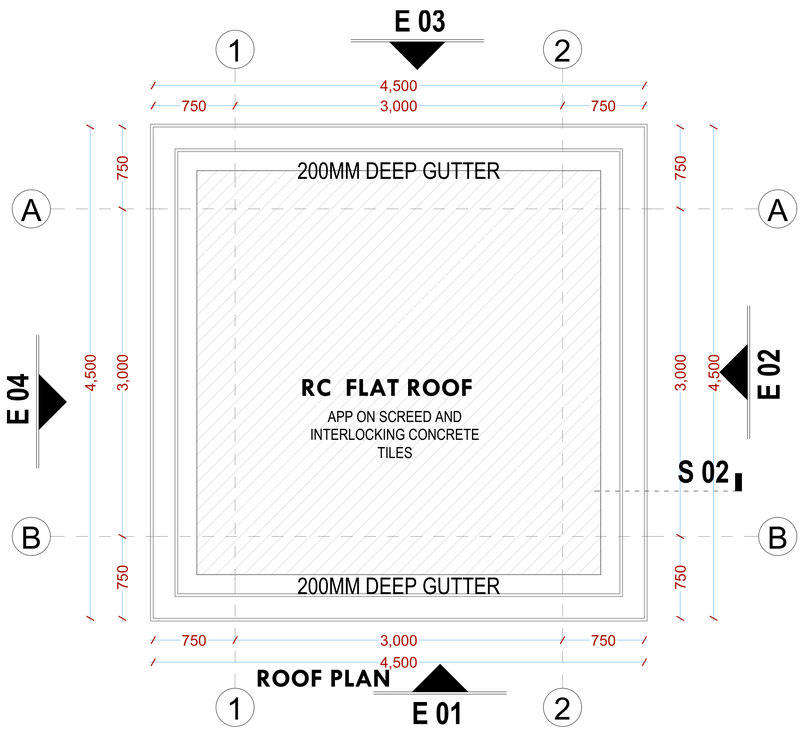
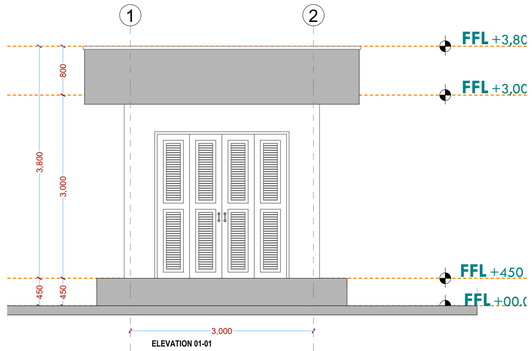
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-019**

2.E 2 No PUMP ROOM

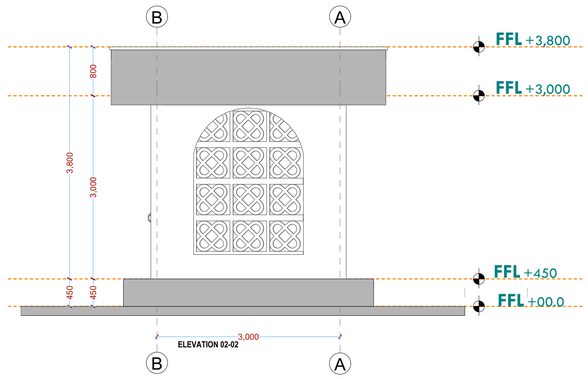




ROOF PLAN



ELEVATION 01-01



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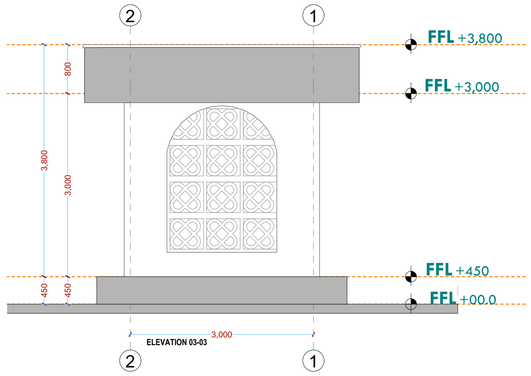

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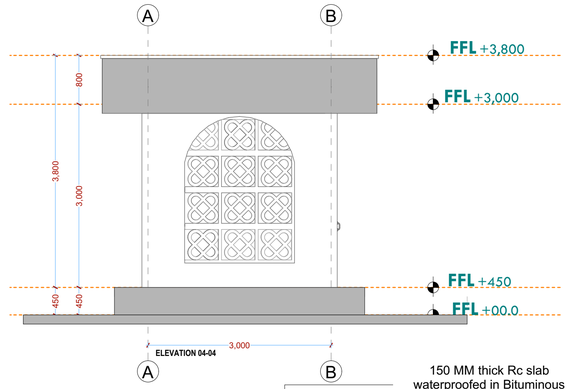

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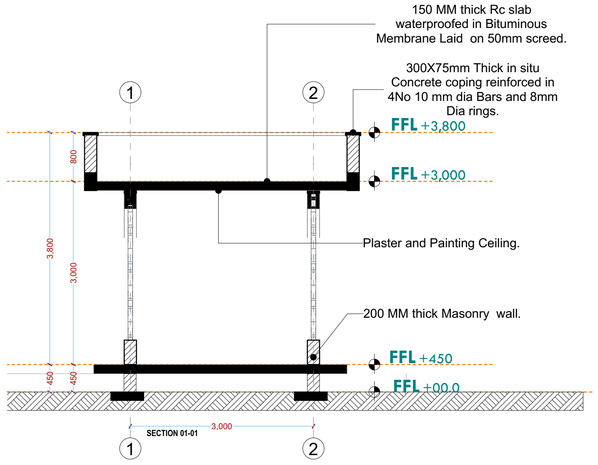

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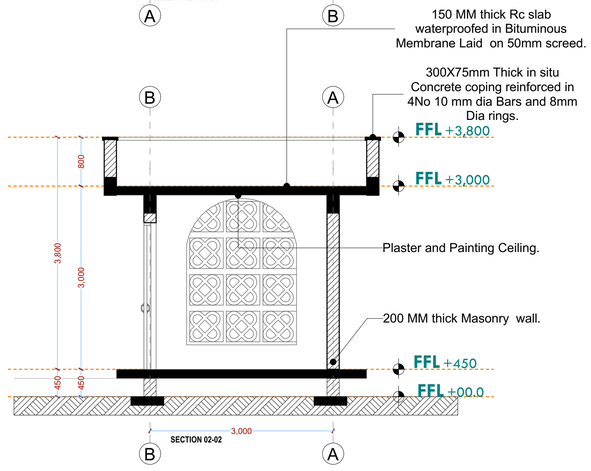

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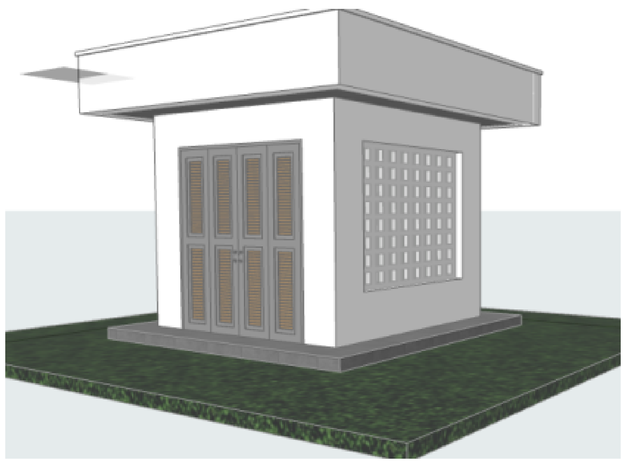

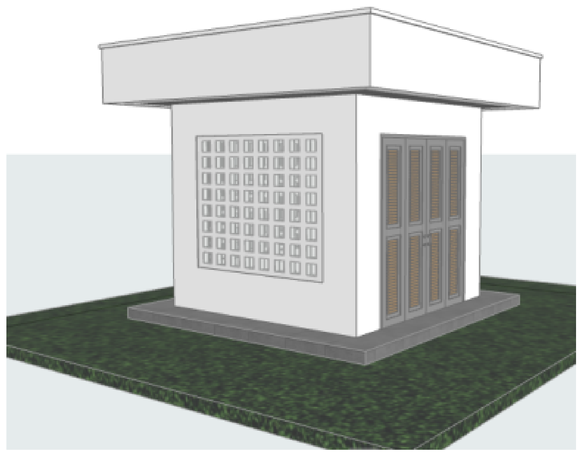

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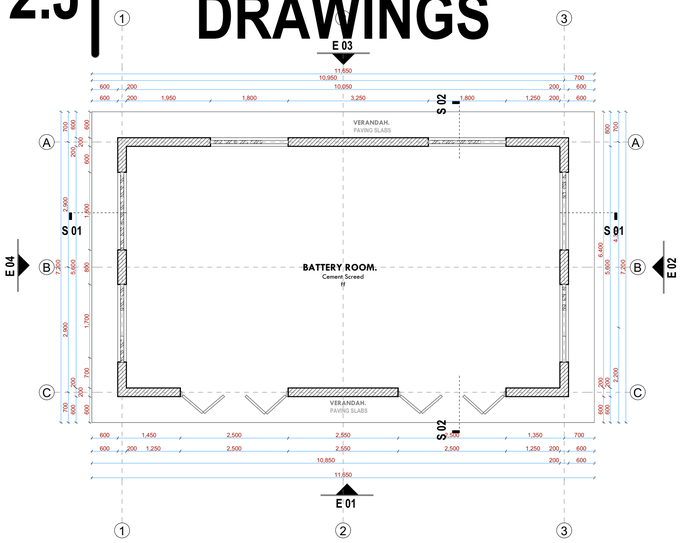
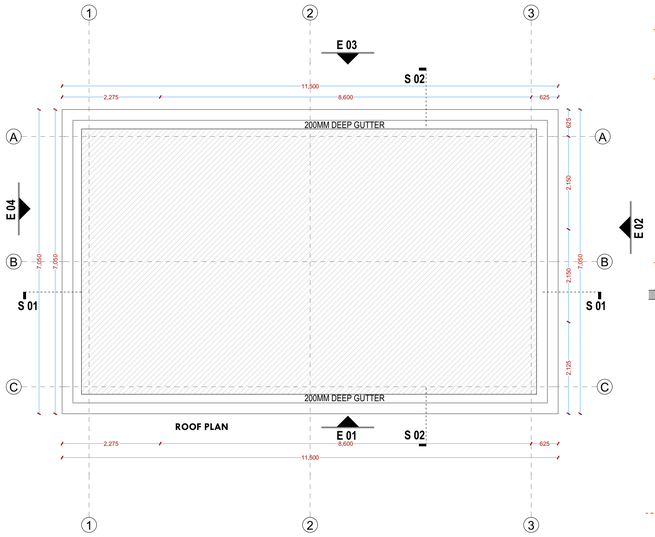
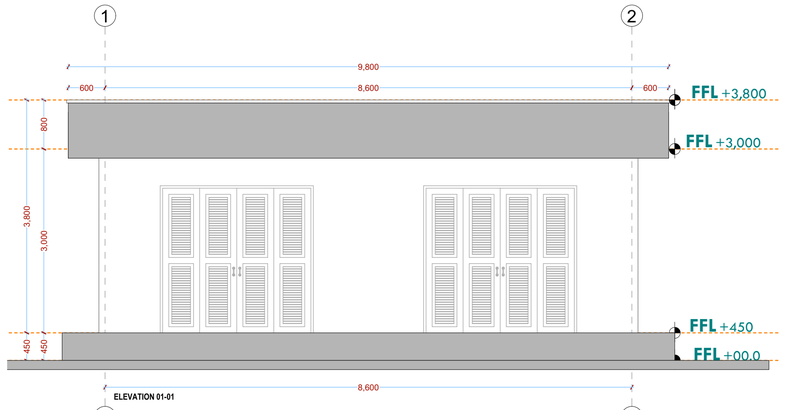
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-020**

2.J BATTERY ROOM DRAWINGS







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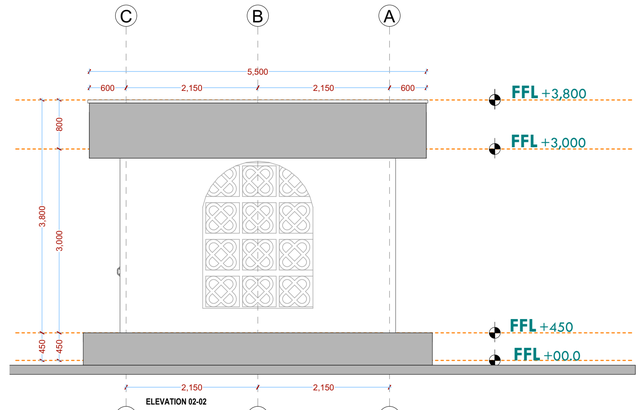

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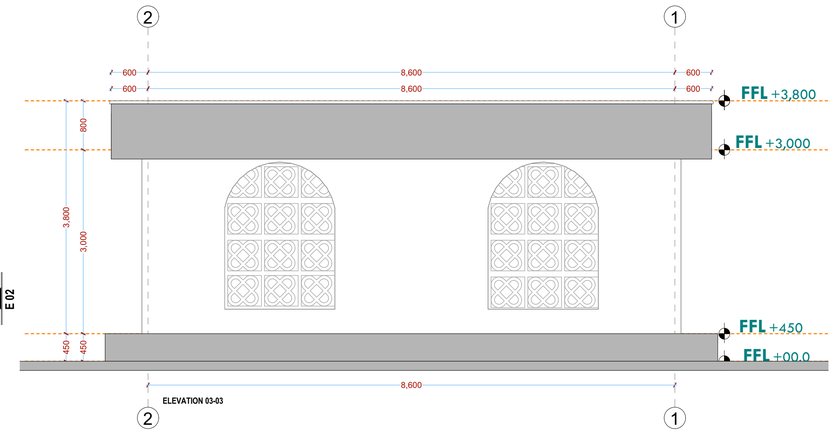

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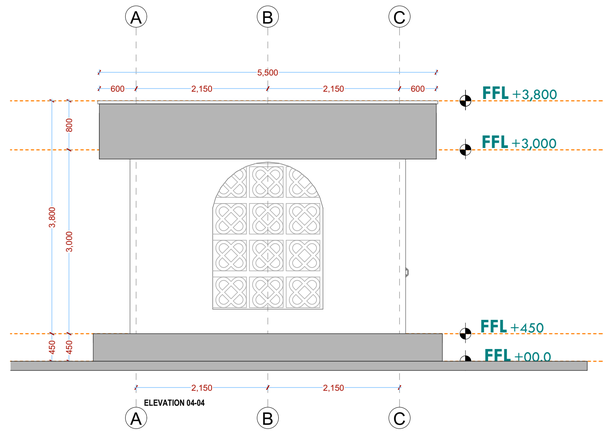

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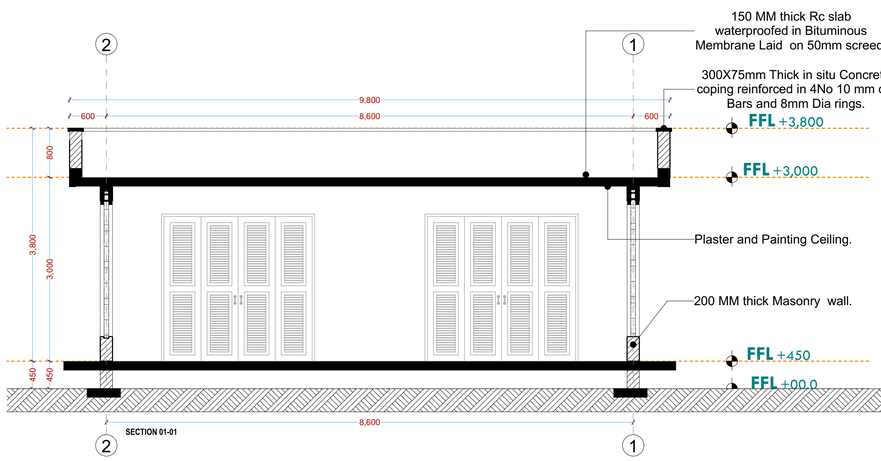

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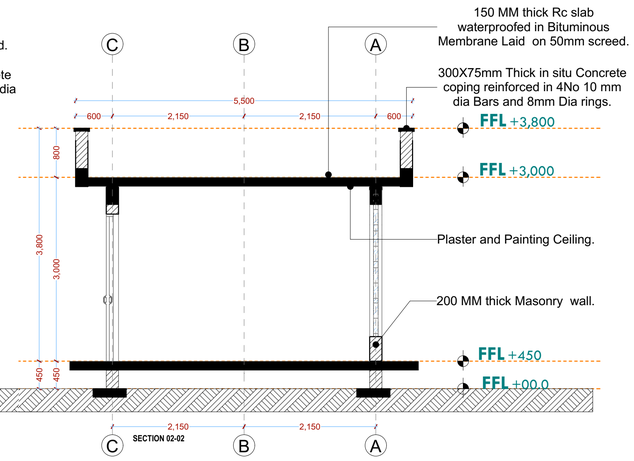

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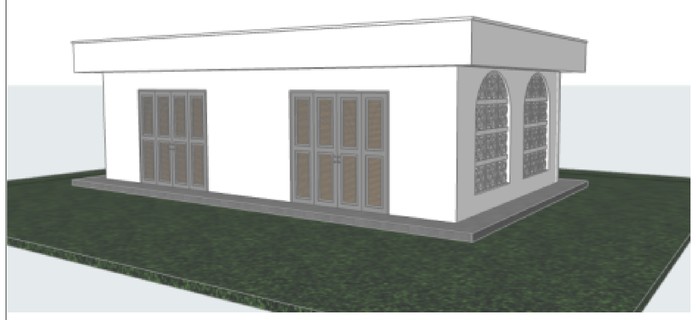

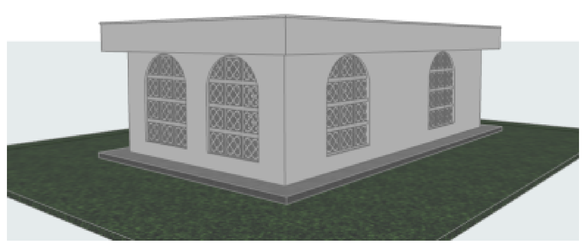

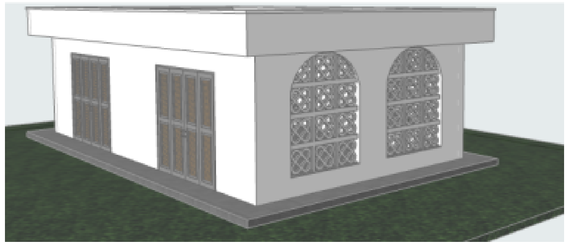

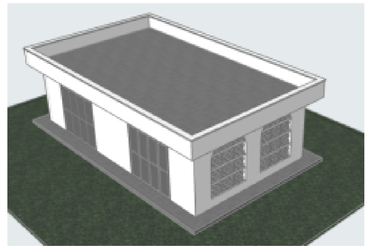

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Plot L . R. No.:

Location : **SHIMONI KWALE COUNTY**

Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

Subject :

WORKING DRAWINGS.

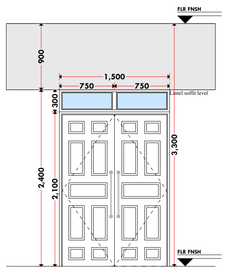
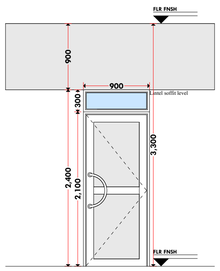
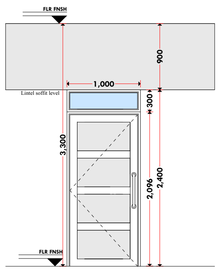
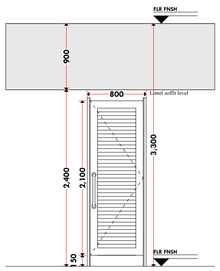
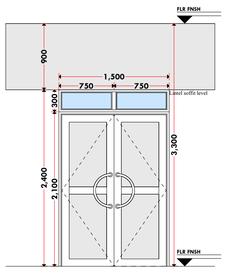
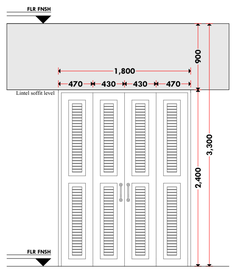
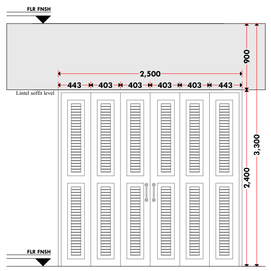
Consultancy :

ARPRIM CONSULTANTS
P.O BOX 12969-0040 NAIROBI
TEL: 020-884312/8
Website :www.arprimconsultants.com

Drawn by:	Checked by : -	Checked by : -
PETER MOMANYI B. Arch. (Hons).	**F. TUNDULI** B. Arch. (Hons) , M. Arch. (reg. No:A1552)	**J. MOMANYI** B. Arch. (Hons) , M. Arch. (reg. No:A1122)

Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-021**

DOOR SCHEDULE

NO.	D - 0 1	D - 0 2	D - 0 3	D - 0 4	D - 0 5	D - 0 6	D - 0 7
DESIGN							
LOCATION	MAIN ENTRANCE EXIT	OFFICES	P W D	WASHROOMS	PRODUCTION	GENERATOR ROOM POWER ROOM	PUMP ROOM REVERSE OSMOSIS ROOM
DESCRIPTION	2,100 X 1,500mm Polished Mvule double panelled door. 2,600 X 1,500mm Polished Mvule door frame with 200 X 50mm section. 1,500 X 500mm Fanlight with P.V.	2,100 X 900mm Powder Coated Aluminium Door Panel. Sand Blasted 5mm thick Glass Panel within the Aluminium Frame. 2,600 X 900mm Powder Coated Aluminium door frame with 200 X 50mm section. 900 X 500mm Fanlight with P.V.	2,100 X 1,100mm Powder Coated Aluminium Single Door Panel double swing. Sand Blasted 5mm thick Glass Panel within the Aluminium Frame. 2,600 X 1,100mm Powder Coated Aluminium door frame with 200 X 50mm section. 1,100 X 500mm Fanlight with P.V.	2,100 X 800mm Mvule Louvred Door Panel. 150 X 100mm Polished Mvule Door Frame.	2,100 X 1,500mm Powder Coated Aluminium Double Door Panel. Sand Blasted 5mm thick Glass Panel within the Aluminium Frame. 2,400 X 1,500mm Powder Coated Aluminium door frame with 200 X 50mm section. 1,500 X 300mm Fanlight with P.V.	2,400 X 1,800mm Mvule Louvred Door Panel. 150 X 100mm Polished Mvule Door Frame.	2,400 X 2,500mm Mvule Louvred Door Panel. 150 X 100mm Polished Mvule Door Frame.
QUANTITIES	1 0	0 7	0 4	0 2	1 0	0 2	0 2

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REVISIONS

Project : **PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT**

Plot L . R. No.:

Location : **SHIMONI KWALE COUNTY**

Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

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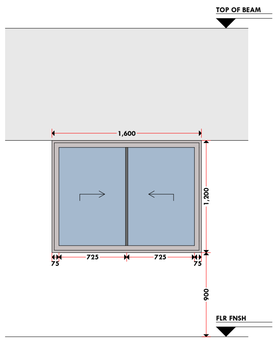
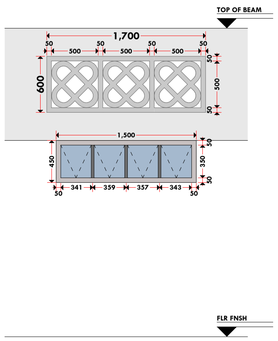
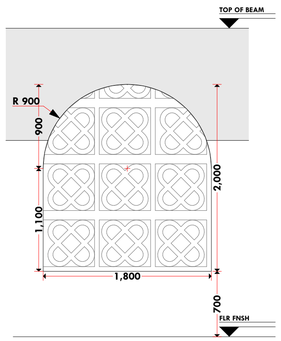
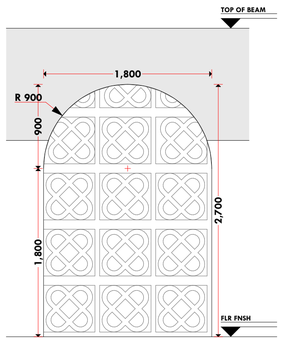
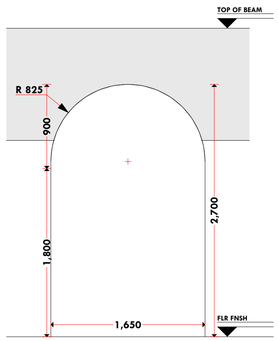
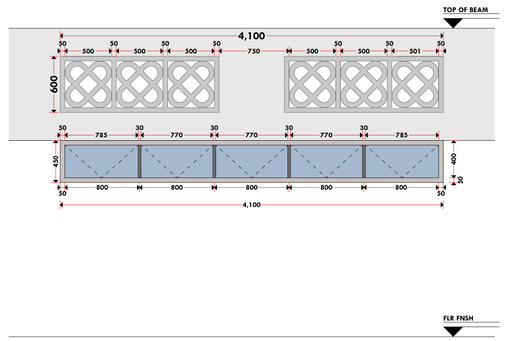
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-022**

WINDOW SCHEDULE

NAME	W - 01	W - 02	W - 03	O - 01	O - 02	W - 04
WINDOW DESIGN						
QUANTITY	03	05	10	08	08	08
LOCATION	WASHROOM	WASHROOM	PUMP ROOM, GENERATOR ROOM, POWER ROOM, WALKWAY, REVERSE OSMOSIS ROOM.	WALKWAY	WALKWAY	ENTRANCE
SPECIFICATIONS	Powder coated aluminium framed sliding windows complete with ironmongery, mullions, transomes, railing and necessary intermediate reinforcement elements including all weather strips, rubber glazing strips,couplings, sliding rails bars, window cills and window boards, quadrant & painted externally and internally; panes fixed with 6mm thick one way glass fixed with beadings.					

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REVISIONS

Project : **PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT**

Plot L . R. No.:

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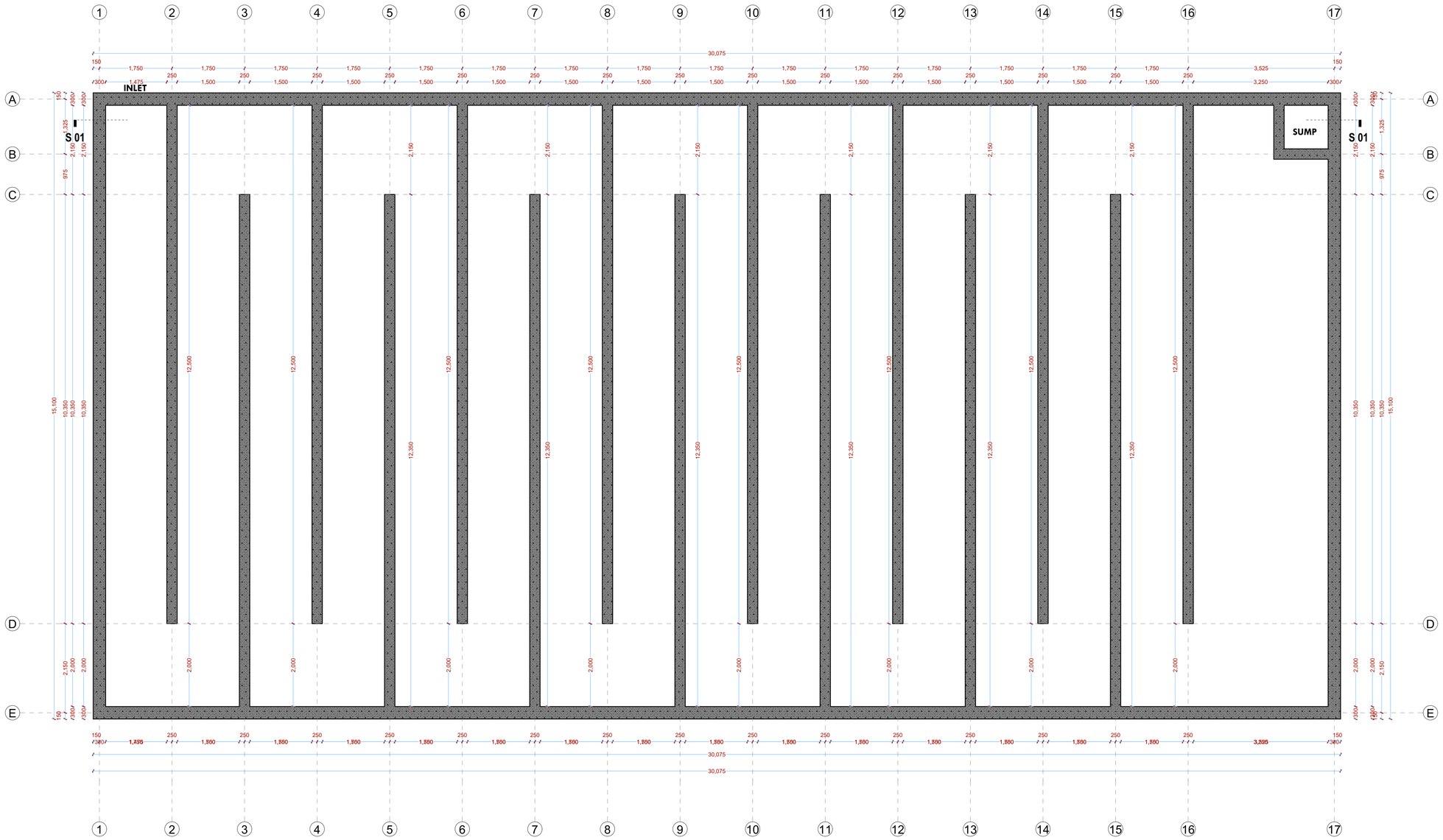
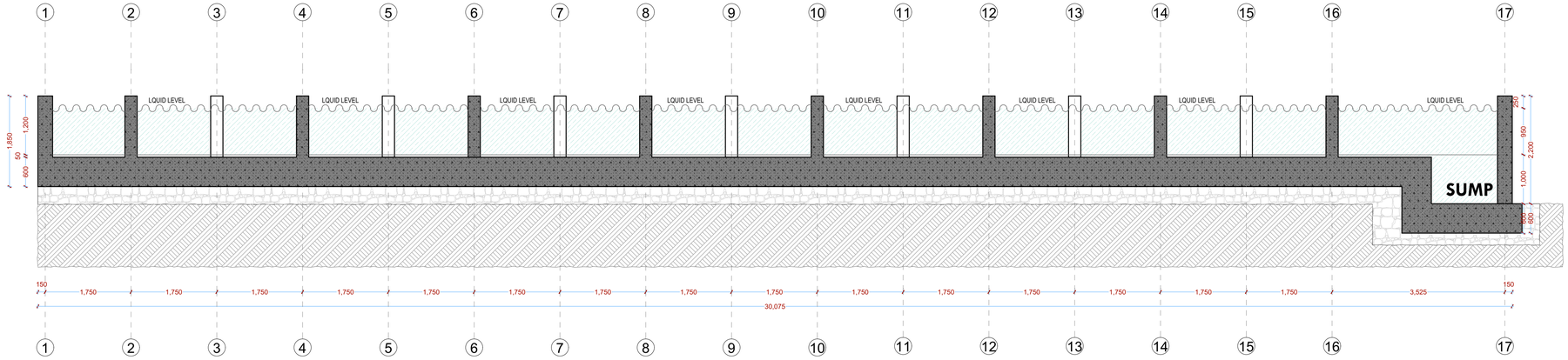
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-023**

2.1 WETLAND LAYOUT





SECTION 01- 01

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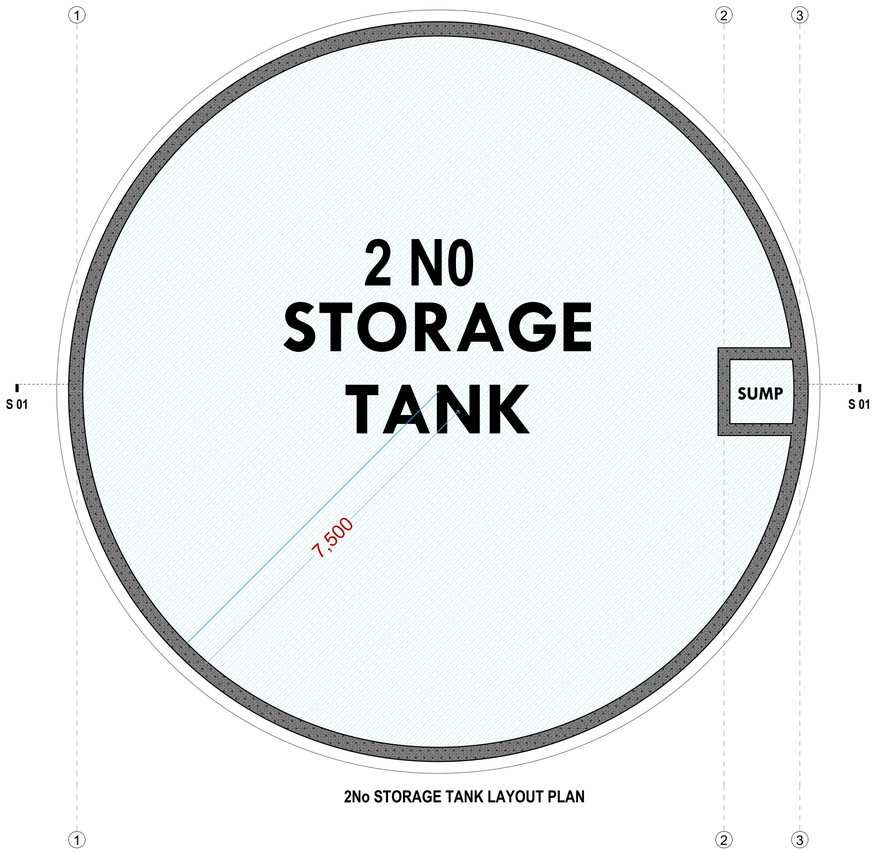
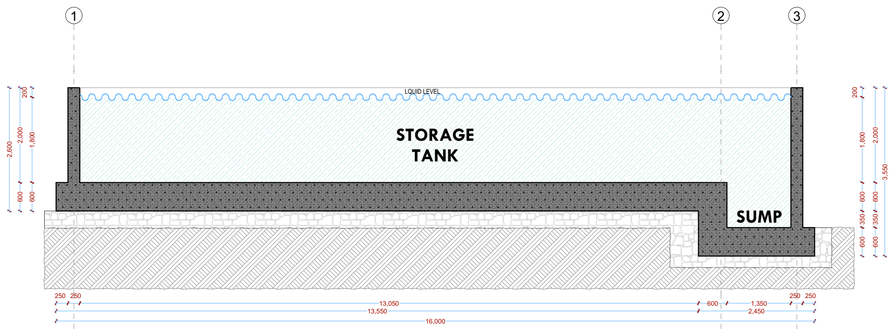
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-024**

2.K STORAGE & TRIAL TANKS

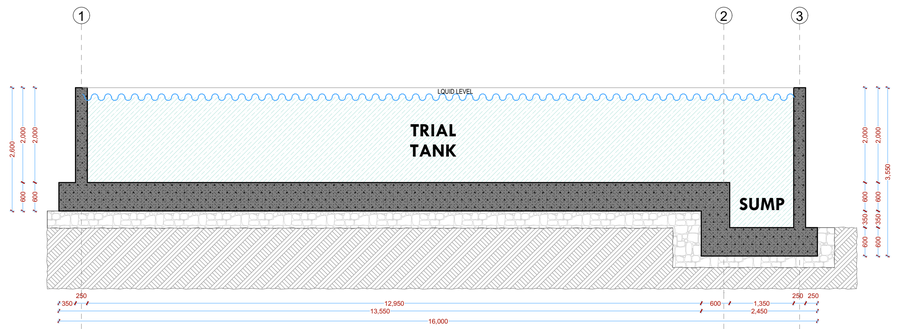


2No STORAGE TANK LAYOUT PLAN

2No TRIAL TANK LAYOUT PLAN.



SECTION 01- 01



SECTION 01- 01

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Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-025**

2.M

PUMP HOUSE N02 LOCATION

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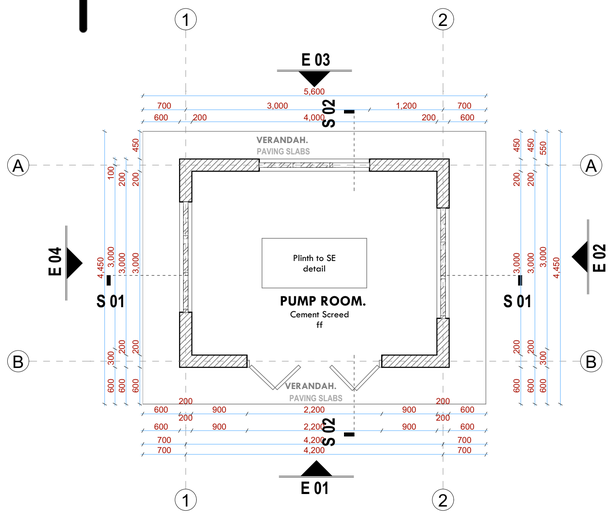
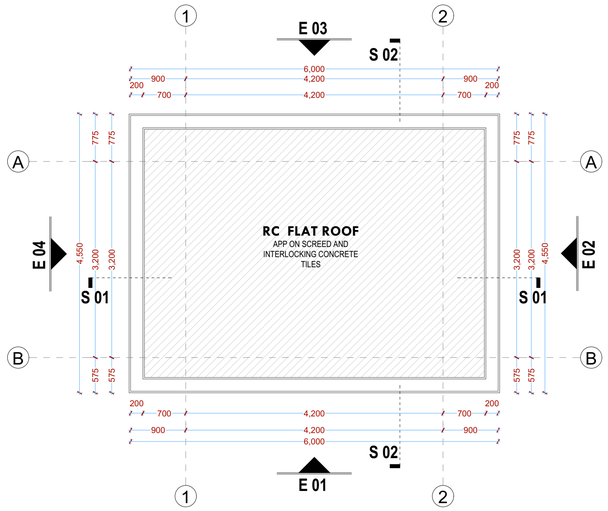
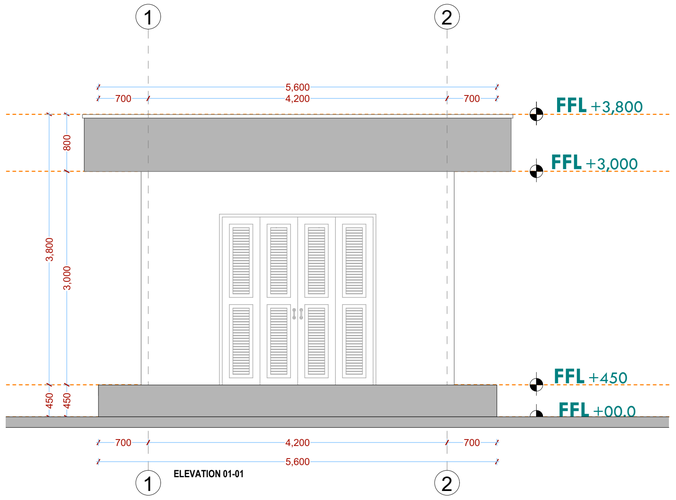
Date:NOV 2023	Job No . 2023/NOV/SHIMONI.
Scale 1:100	Drawing No: **02-001-026**

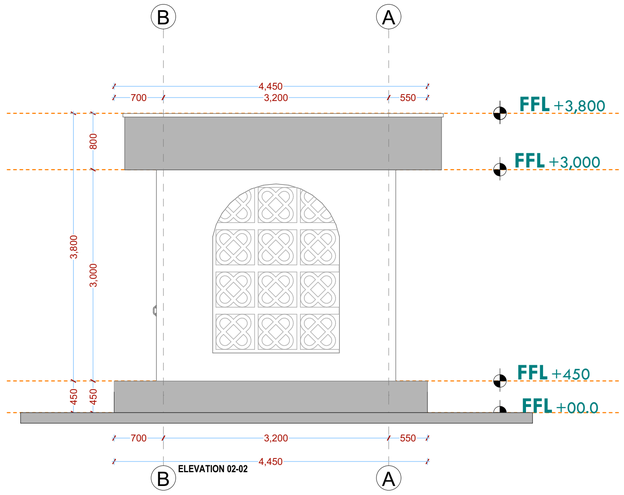
2.M PUMP HOUSE N02



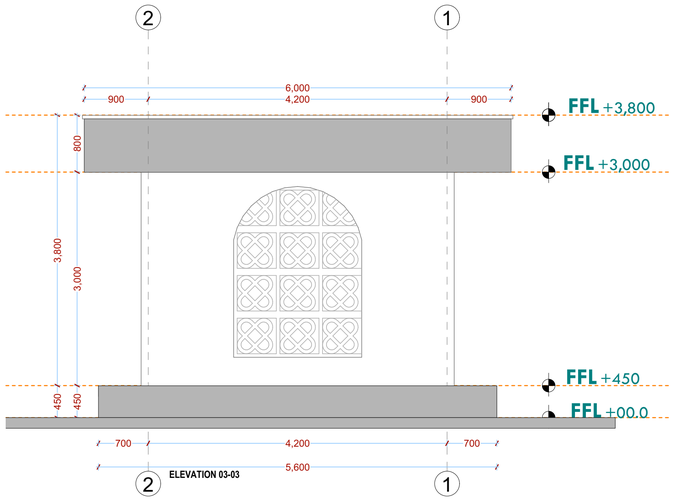




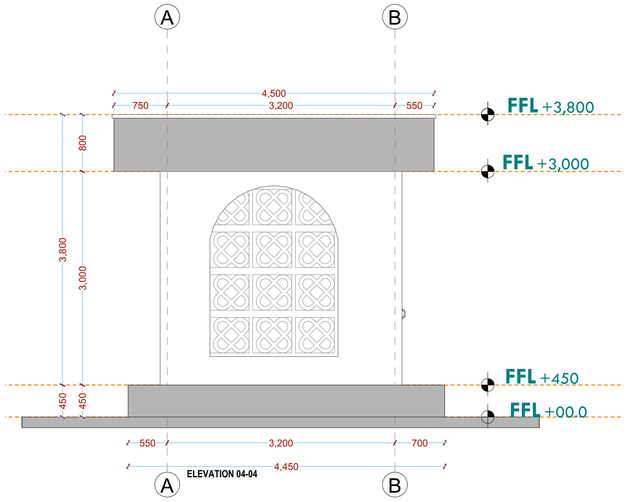
ELEVATION 01-01



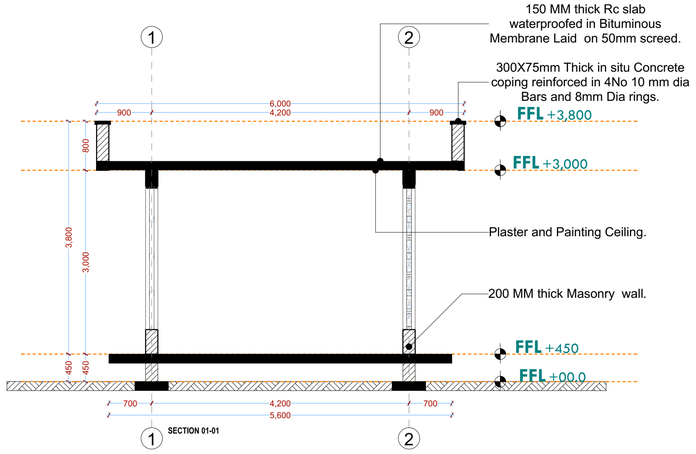
ELEVATION 02-02



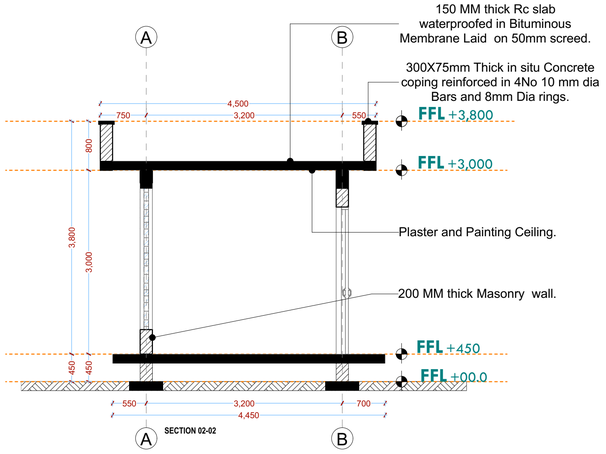
ELEVATION 03-03



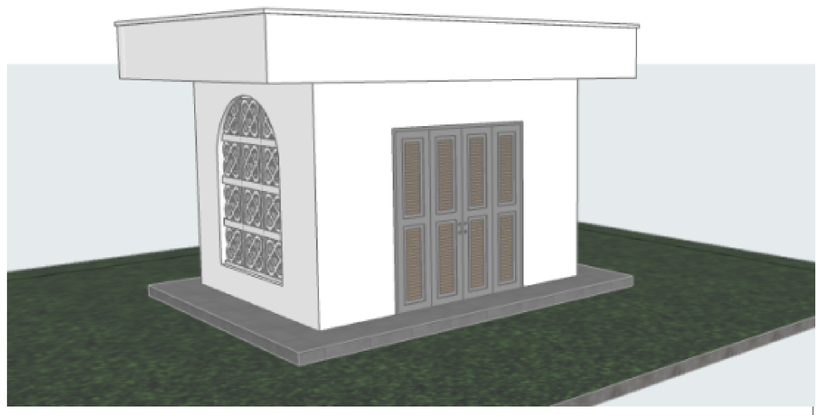
ELEVATION 04-04



SECTION 01-01



SECTION 02-02



NOTES

GENERAL
1. All materials and construction must comply with the national building regulations (Act No. 103 of 1977) including all amendments as well as the by-laws of the local authorities.
2. Dimensions to be confirmed on site.
3. Dimensions are taken to center lines or structural surfaces and do not include finishes except where otherwise stated.
4. Drawings not to be scaled.
5. All dimensions are shown in mm unless otherwise stated.
6. Contractor to cross-check dimensions before comencing construction and any descrepancies between this drawing and others including those issued by consultants and nominated subcontractors to be reported to the Architect for clarification.

CIVIL WORKS
1. All slabs at ground level to be poured over 1000 gauge polythene sheeting on 50-75mm coral screed on 50-100mm hardcore(coral rag base).
2. All soils under slab to be treated for termite control.

STRUCTURAL WORKS
1. All Structural works to Structural Engineer's Details.
2. All walls less than 200mm thick to be reinforced with hoop wrought iron at every alternate course.

MECHANICAL
1. All plumbing and drainage works to comply with MOH and Local Authority's requirements.
2. Drains passing beneath buildings and driveways to be encased in 150mm concrete surround.
3. All mechanical work must be coordinated with electrical and any conflicts be clarified before work begins.
4. Provide permanent ventilation above all doors and windows except bathroom and toilet doors.
5. Water meter to be at least 300mm above ground level.

ELECTRICAL
1. All conduits must be laid before plastering.

FIRE
1. Minimum 4500 litres water reserve for hosereels to the Approval of the Chief Fire Officer.
2. Automatic booster pump for FHRs to be provided to the satisfaction of chief fire officer.
3. Heat/Smoke detectors to be provided with and Electrical fire alarm system to the approval of chief fire offcer.
4. Minimun 2x9 litre water and 1x4.5 Kg Co2 Fire extinguishers to be provided per at parking and stair areas to the approval of chief fire offcer.
5. Fire instructional notices and fire exits to be provided at strategic positions
6. All internal partitioning material to be half hour fireresistant.
7. All doors to fire-escape stair to be fire resistant with automatic door closer.

FLOOR
1. All concrete slabs strictly to engineer's details and specifications.
2. Floor finishing on 25mm cement screed on 170mm thick concrete floor slab to engineer's details and specifications on 375-micron polyethylene DPC on compacted filling as per engineer's specifications. Treated against termites .

PAVING
1. Brick paving to specialist's specifications, on clean river sand on compacted filling in layers of 150mm MAXS

REVISIONS

Project : **PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT**

Plot L . R. No.:

Location : **SHIMONI KWALE COUNTY**

Client : **STATE DEPARTMENT FOR FISHERIES AQUACULTURE AND THE BLUE ECONOMY**

Signature .....

Subject :

WORKING DRAWINGS.

Consultancy :

ARPRIM CONSULTANTS
P.O BOX 12969-0040 NAIROBI
TEL: 020-884312/8
Website :www.arprimconsultants.com

Drawn by:	Checked by : -	Checked by : -
PETER MOMANYI B. Arch. (Hons).	**F. TUNDULI** B. Arch. (Hons) , M. Arch. (reg. No.A1552)	**J. MOMANYI** B. Arch. (Hons) , M. Arch. (reg. No.A1122)

Date:NOV 2023 | Job No . 2023/NOV/SHIMONI.

Scale 1:100 | Drawing No: **02-001-027**

PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.		
PAGE	DRAWING NUMBER	DRAWING TITLE
1	02-002-001	DRAWING LIST
2	02-002-002	SITE LAYOUT
3	02-002-003	MARINE HATCHERY - FOUNDATION AND COLUMN DETAIL
4	02-002-004	MARINE HATCHERY - ROOF LAYOUT
5	02-002-005	MARINE HATCHERY - ROOF SLAB RC DETAIL
6	02-002-006	MARINE HATCHERY - BEAM AND TRUSS DETAIL
7	02-002-007	ALGAE PRODUCTION - FOUNDATION AND COLUMN DETAIL
8	02-002-008	ALGAE PRODUCTION - ROOF LAYOUT
9	02-002-009	ALGAE PRODUCTION - ROOF SLAB RC DETAIL
10	02-002-010	ALGAE PRODUCTION - BEAM AND TRUSS DETAIL
11	02-002-011	PUMP ROOM - STRUCTURAL DETAIL
12	02-002-012	REVERSE OSMOSIS ROOM - STRUCTURAL DETAIL
13	02-002-013	GENERATOR AND POWER HOUSE - STRUCTURAL DETAIL
14	02-002-014	OFFICE WASHROOMS - STRUCTURAL DETAIL
15	02-002-015	BATTERY ROOM - STRUCTURAL DETAIL
16	02-002-016	BIO-REACTOR
17	02-002-017	CIVIL WORKS 1
18	02-002-018	INTAKE PUMP ROOM STRUCTURALS
19	02-002-019	STORAGE AND TRIAL TANK
20	02-002-020	WETLAND DETAIL
21	02-002-021	OCEAN WATER INTAKE PIPE PROFILE
22	02-002-022	OCEAN WATER PIPELINE AND SUPPORT STRUCTURE
23	02-002-023	OCEAN WATER INTAKE AND TRENCH
1A	02-002-002A	OCEAN WATER RETICULATION

Consultant:-
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E-mail: info@arprimconsultants.com

CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

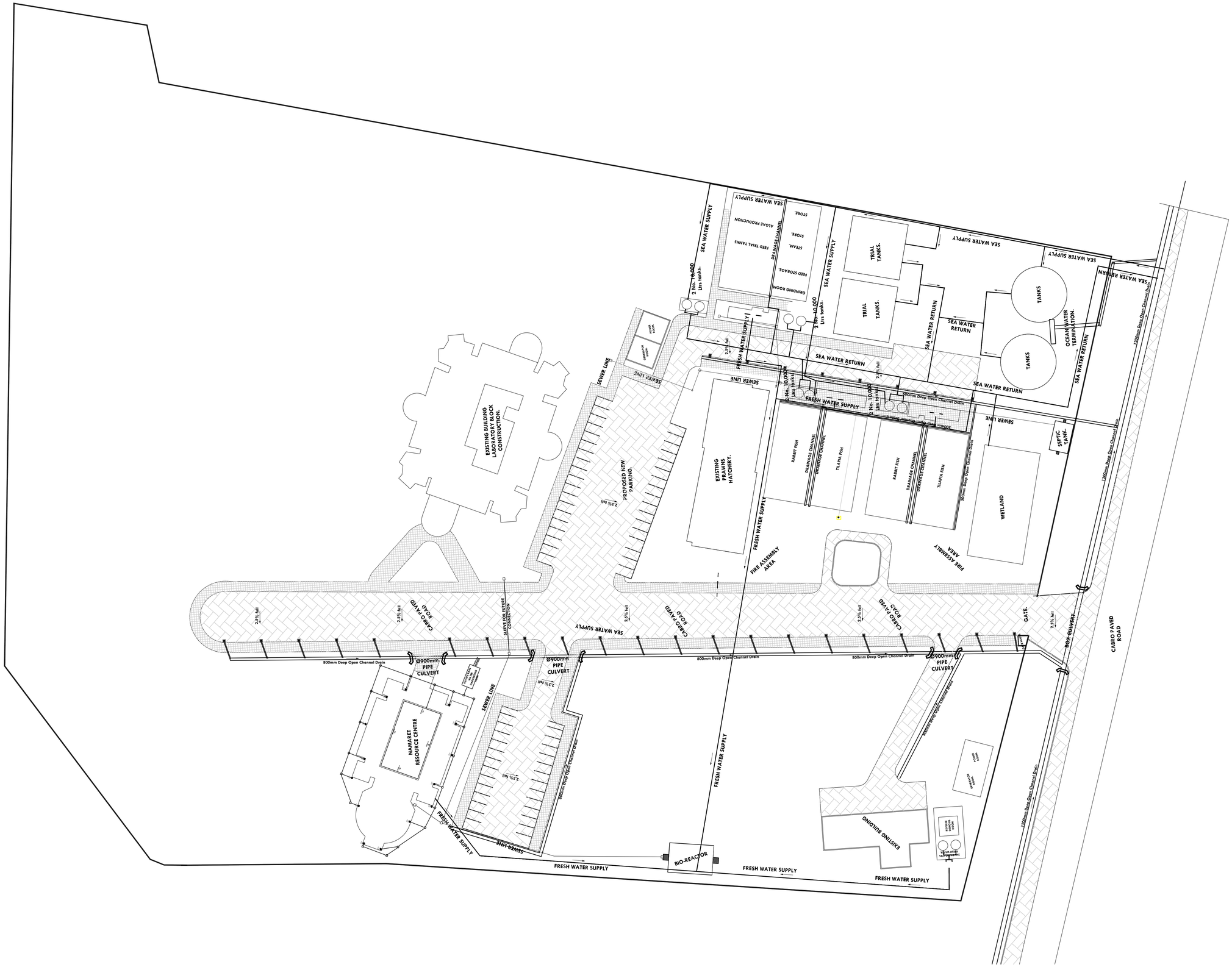
DRAWING TITLE:-
MARINE HATCHERY - DRAWINGS LIST

NOTES
1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:
   - Stairs, Slabs & Walls = 35mm
   - Beams (main bars) = 35mm
   - Post-tensioned beams = 40mm
   - Columns (main bars) = 40mm
   - Foundations = 75mm
5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 250 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be Class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

DRAWING NO. 02-002-001



CONSULTANT:-

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CLIENT:-

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PROJECT:-

PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-

PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-

SITE LAYOUT

NOTES

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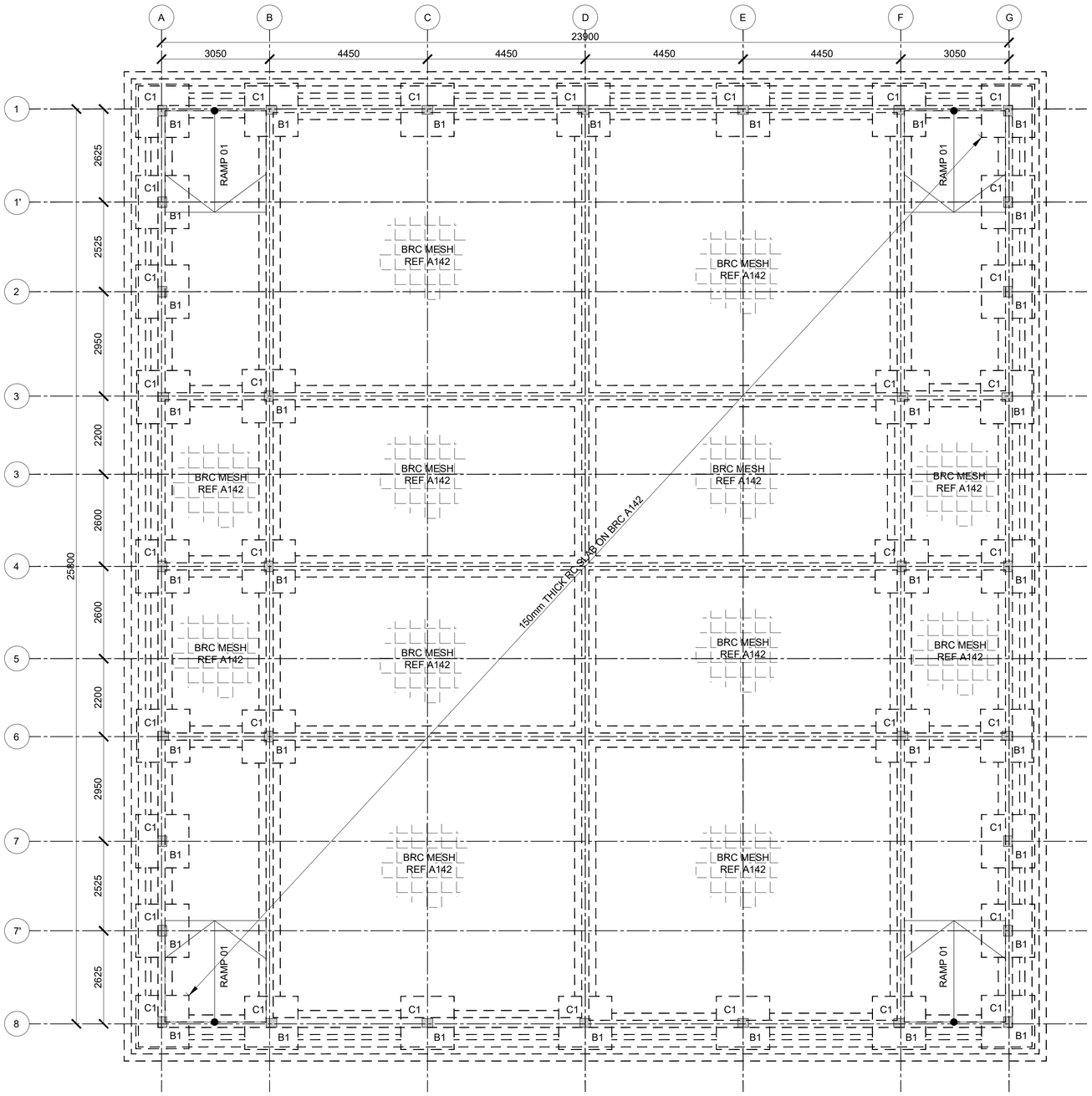
   - Post-tensioned beams = 40mm
   - Columns (main bars) = 40mm
   - Foundations = 75mm
5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 200 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

Designed by	DAN	Rev	Description	By	Date
Drawn by	DAN	D			
Checked by	HOH	C			
Scale	AS SHOWN	B			
		A			

DRAWING NO. 02-002-002



FOUNDATION/GROUND FLOOR LAYOUT
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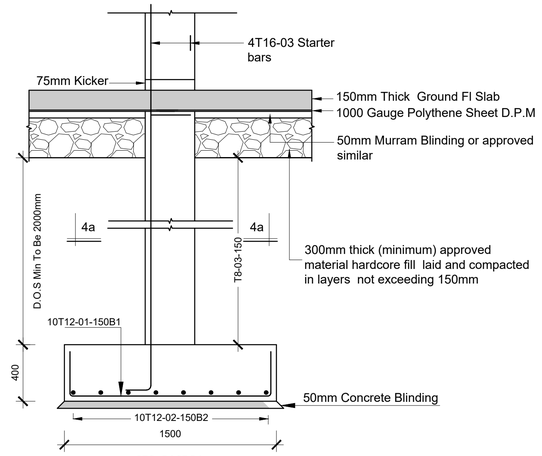
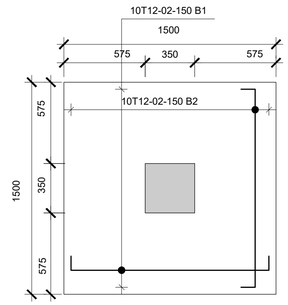
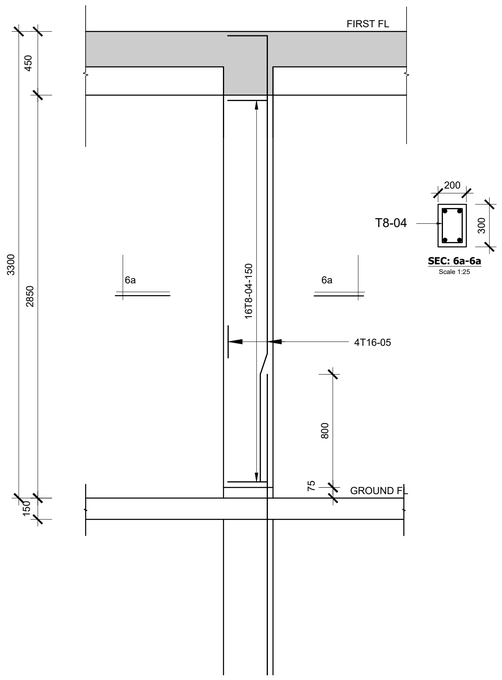


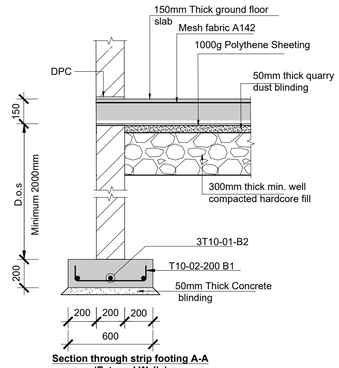
SEC:-BASE B1
(WITH COL C1)
Scale 1:25



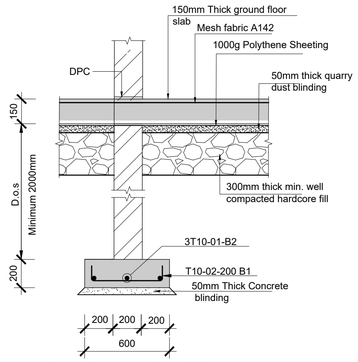
PLAN:-BASE B1
34 No.
Scale 1:25



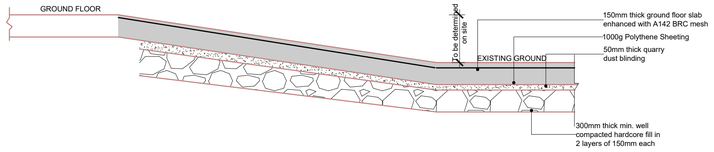
COLUMN C1
34 NO.THUS
300X200
Scale 1:25



Section through strip footing A-A
(External Walls)
scale 1:25



Section through strip footing B-B
(Internal Walls)
scale 1:25



SECTION THROUGH RAMP (1 IN 12)
(SCALE 1 : 25)

Consultant:-

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CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-
MARINE HATCHERY - FOUNDATION AND COLUMN DETAIL

NOTES

1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:
   - Stairs, Slabs & Walls = 35mm
   - Beams (main bars) = 35mm
   - Post-tensioned beams = 40mm
   - Columns (main bars) = 40mm
   - Foundations = 75mm
5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 250 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be Class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
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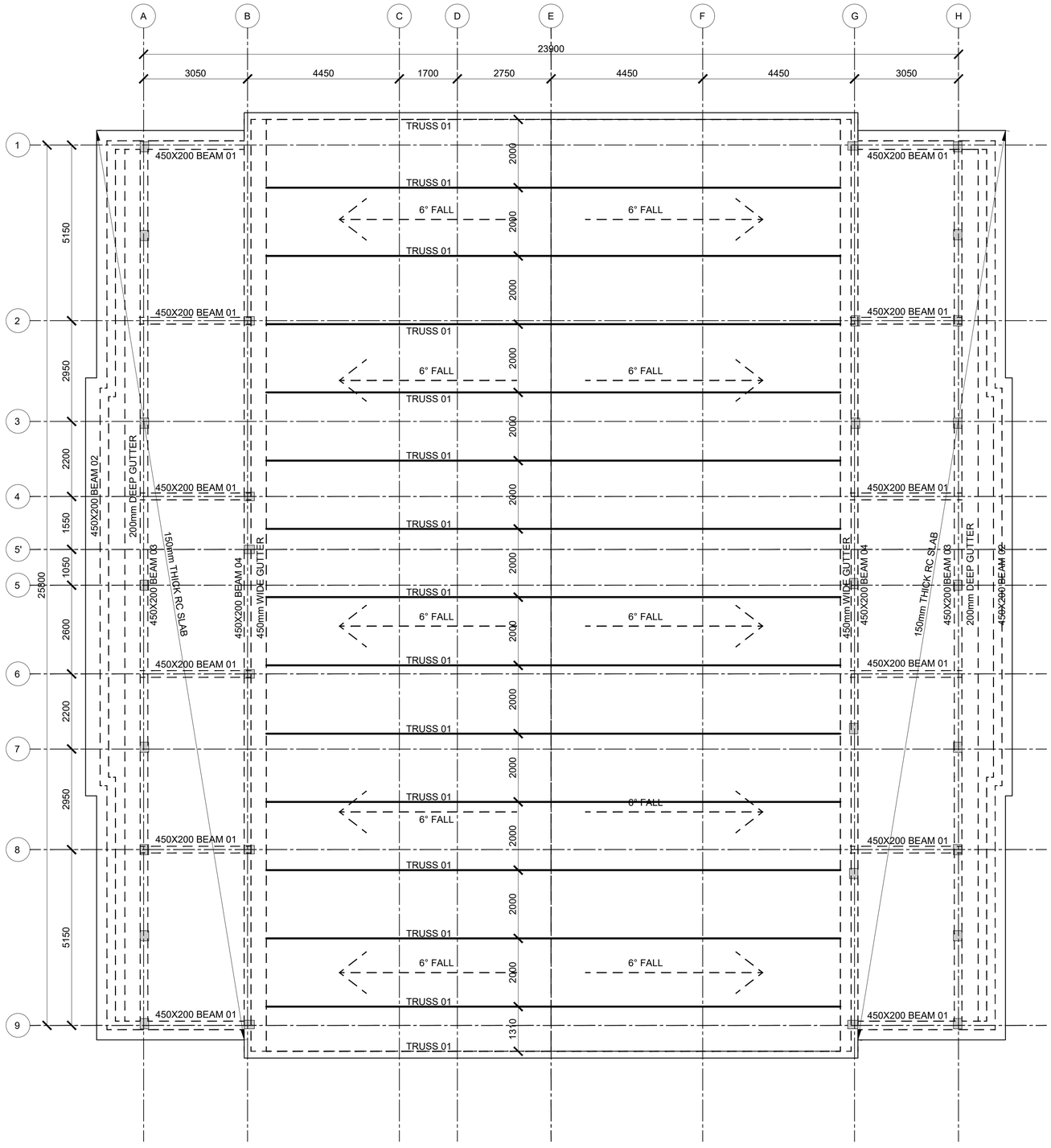
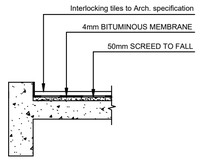
DRAWING NO. 02-002-003



ROOF LAYOUT
(SCALE 1:100)



TYPICAL ROOF SLAB
W/POOFING DETAIL

Consultant:-

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PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-
MARINE HATCHERY - ROOF LAYOUT

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11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
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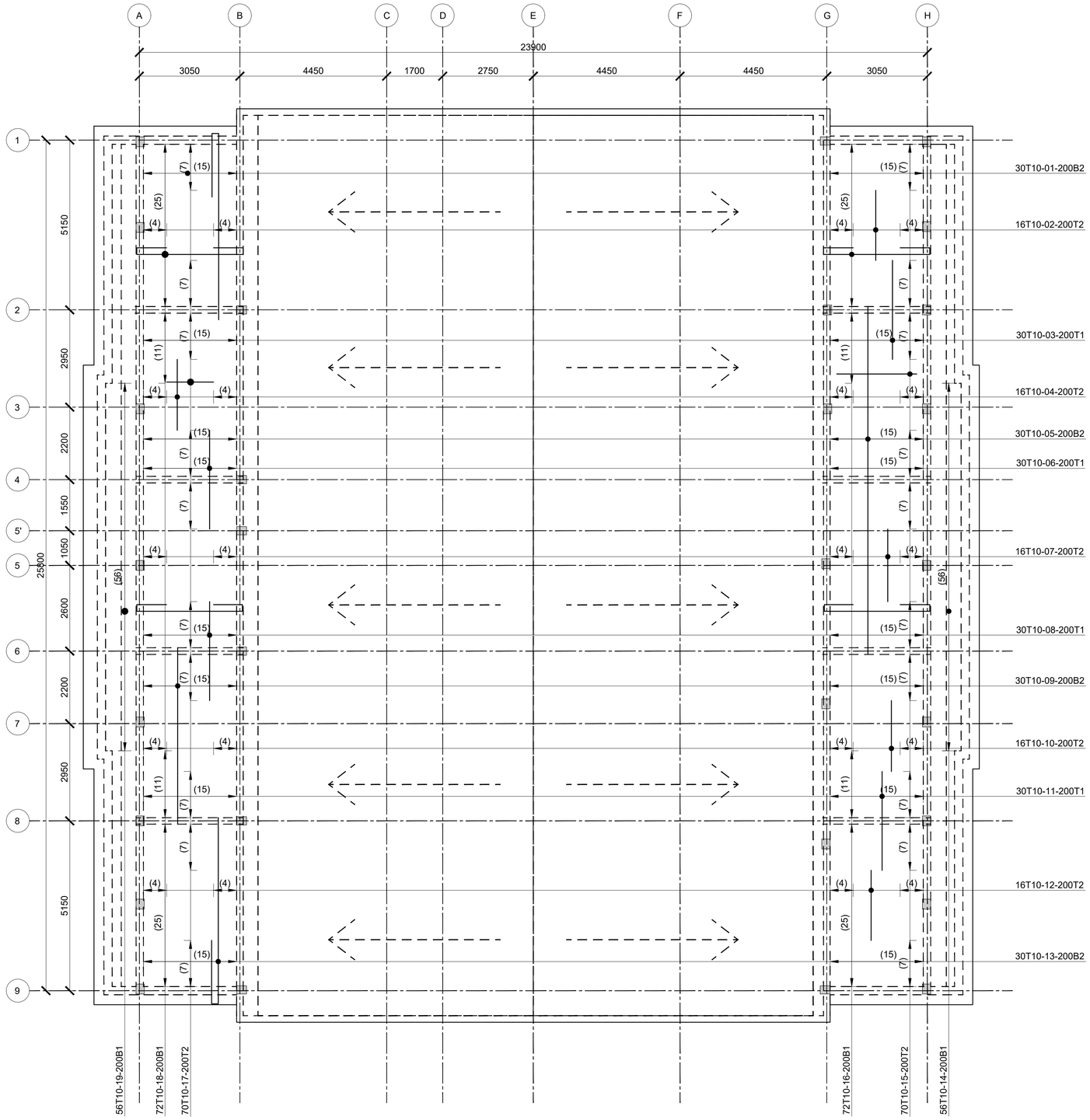
DRAWING NO. 02-002-004



ROOF SLAB RC DETAIL
(SCALE 1:100)

Consultant:-

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PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-
MARINE HATCHERY - ROOF SLAB RC DETAIL

NOTES

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Stairs, Slabs & Walls	= 35mm
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Columns (main bars)	= 40mm
Foundations	= 75mm

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10. Structural concrete to be Class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
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C			
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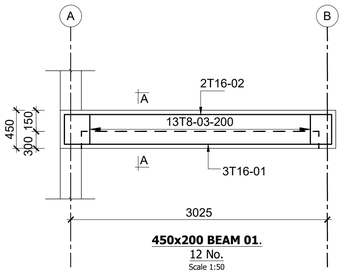
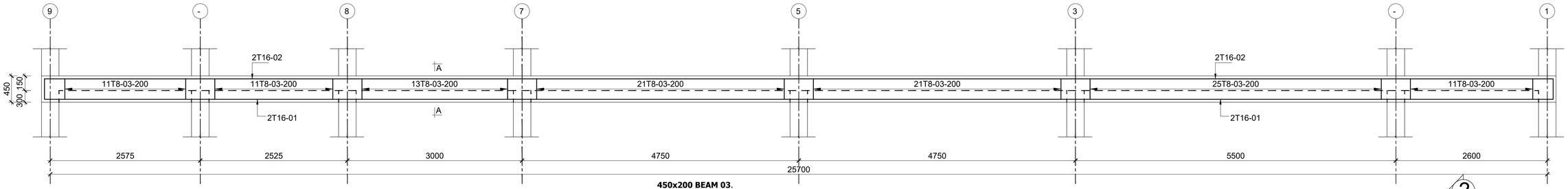
DRAWING NO. 02-002-005



450x200 BEAM 01.
12 No.
Scale 1:50

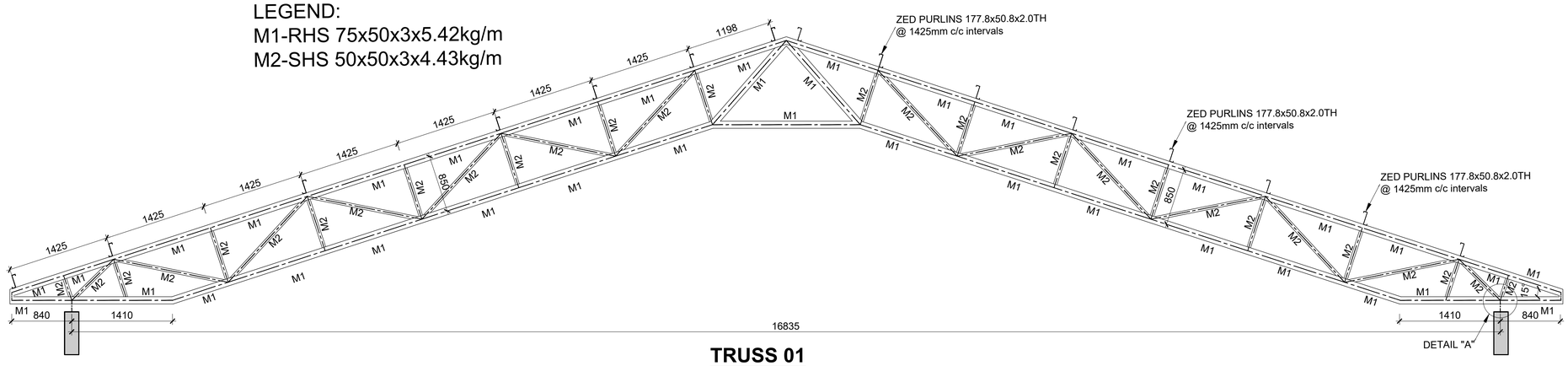
SECTION A-A
Scale 1:50



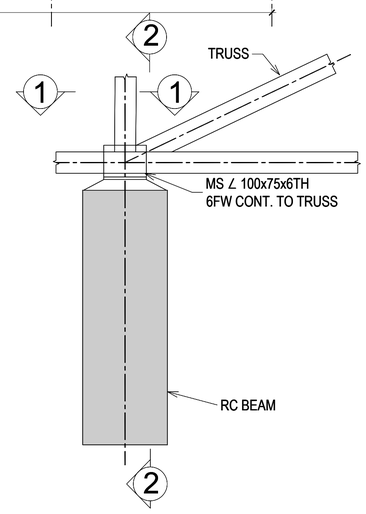
450x200 BEAM 03.
2 No.
Scale 1:25

SECTION A-A
Scale 1:50

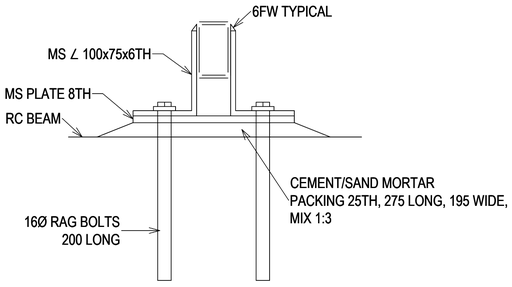
LEGEND:
M1-RHS 75x50x3x5.42kg/m
M2-SHS 50x50x3x4.43kg/m



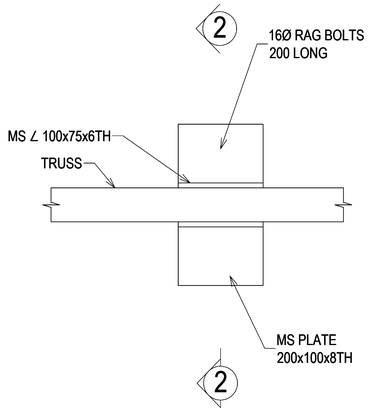
TRUSS 01
15 Nos
Scale 1:50



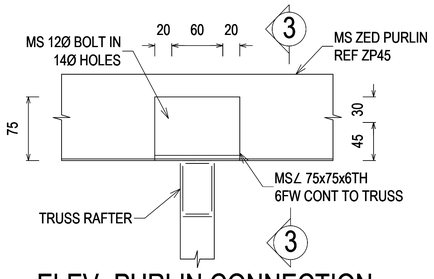
DETAIL A:TRUSS CONNECTION TO RING BEAM
Scale 1:10



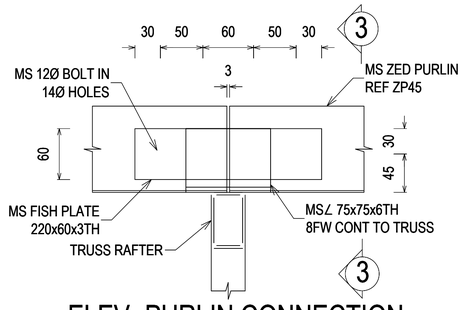
SECTION 2-2
Scale 1:5



SECTION 1-1
Scale 1:5



ELEV- PURLIN CONNECTION
PURLIN CONTINOUS OVER TRUSS
Scale 1:5



ELEV- PURLIN CONNECTION
PURLIN NOT CONTINOUS OVER TRUSS
Scale 1:5

Consultant:-
ARPRIM CONSORTIUM
P.O. Box 12969-00100,
Nairobi, KENYA.
Tel: 02 608 906
Fax: 02 608 907
E-mail: info@arprimconsultants.com

CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-
MARINE HATCHERY - BEAM AND TRUSS DETAIL

NOTES
1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:

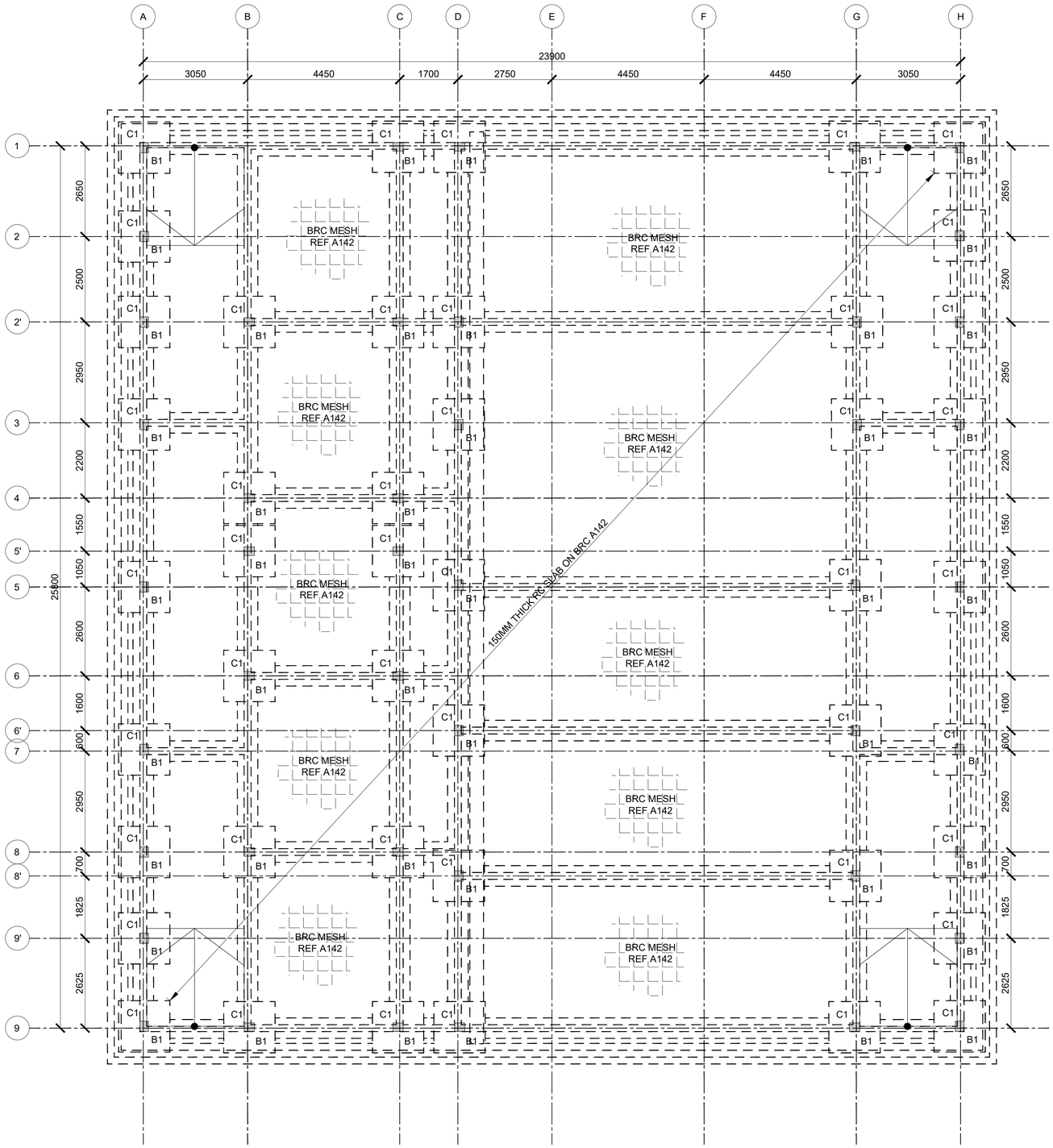
Stairs, Slabs & Walls	= 35mm
Beams (main bars)	= 35mm
Post-tensioned beams	= 40mm
Columns (main bars)	= 40mm
Foundations	= 75mm

5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 250 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be Class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

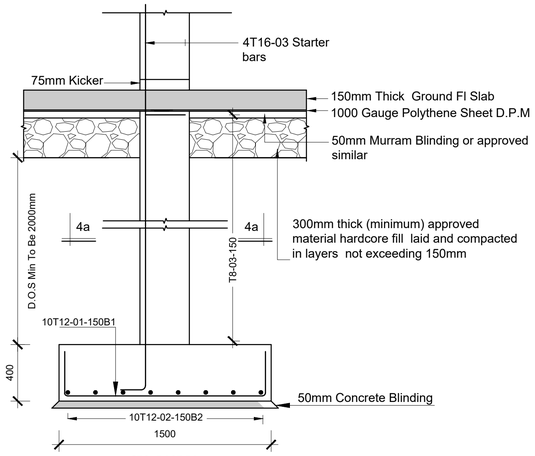
Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

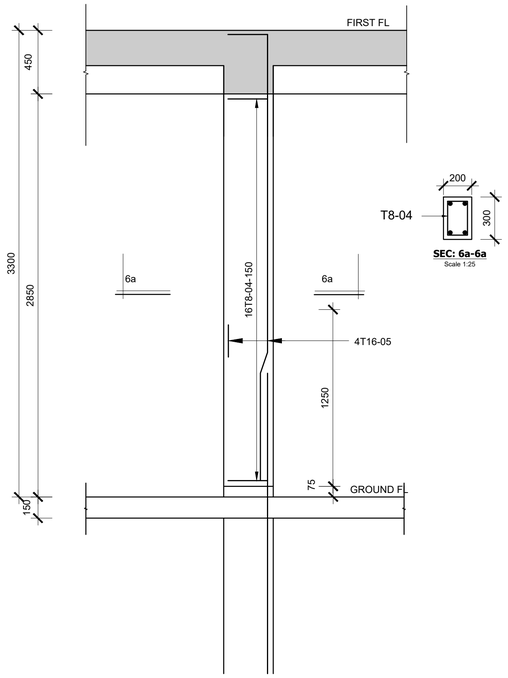
DRAWING NO. 02-002-006



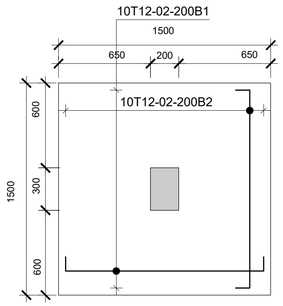
FOUNDATION/GROUND FLOOR LAYOUT
(SCALE 1:100)



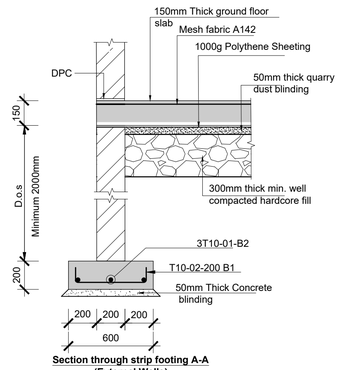
SEC:-BASE B1
(WITH COL C1)
Scale 1:25



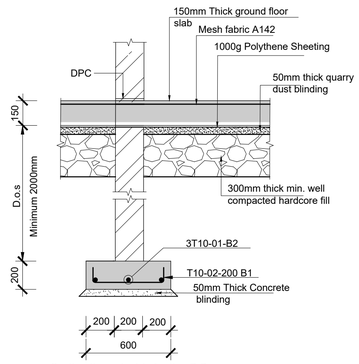
COLUMN C1
45 NO.THUS
300X200
Scale 1:25



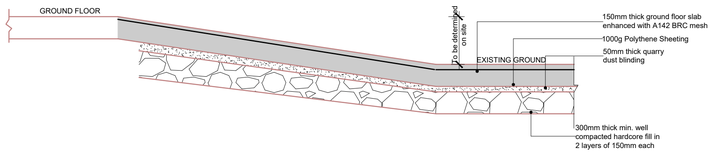
PLAN:-BASE B1
45 No.
Scale 1:25



Section through strip footing A-A
(External Walls)
scale 1:25



Section through strip footing B-B
(Internal Walls)
scale 1:25



SECTION THROUGH RAMP (1 IN 12)
(SCALE 1 : 25)

Consultant:-
ARPRIM CONSORTIUM
P.O. Box 12969-00100,
Nairobi, KENYA.
Tel: 02 608 906
Fax: 02 608 907
E-mail: info@arprimconsultants.com

CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-
ALGAE PRODUCTION - FOUNDATION AND COLUMN DETAIL

NOTES

1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:

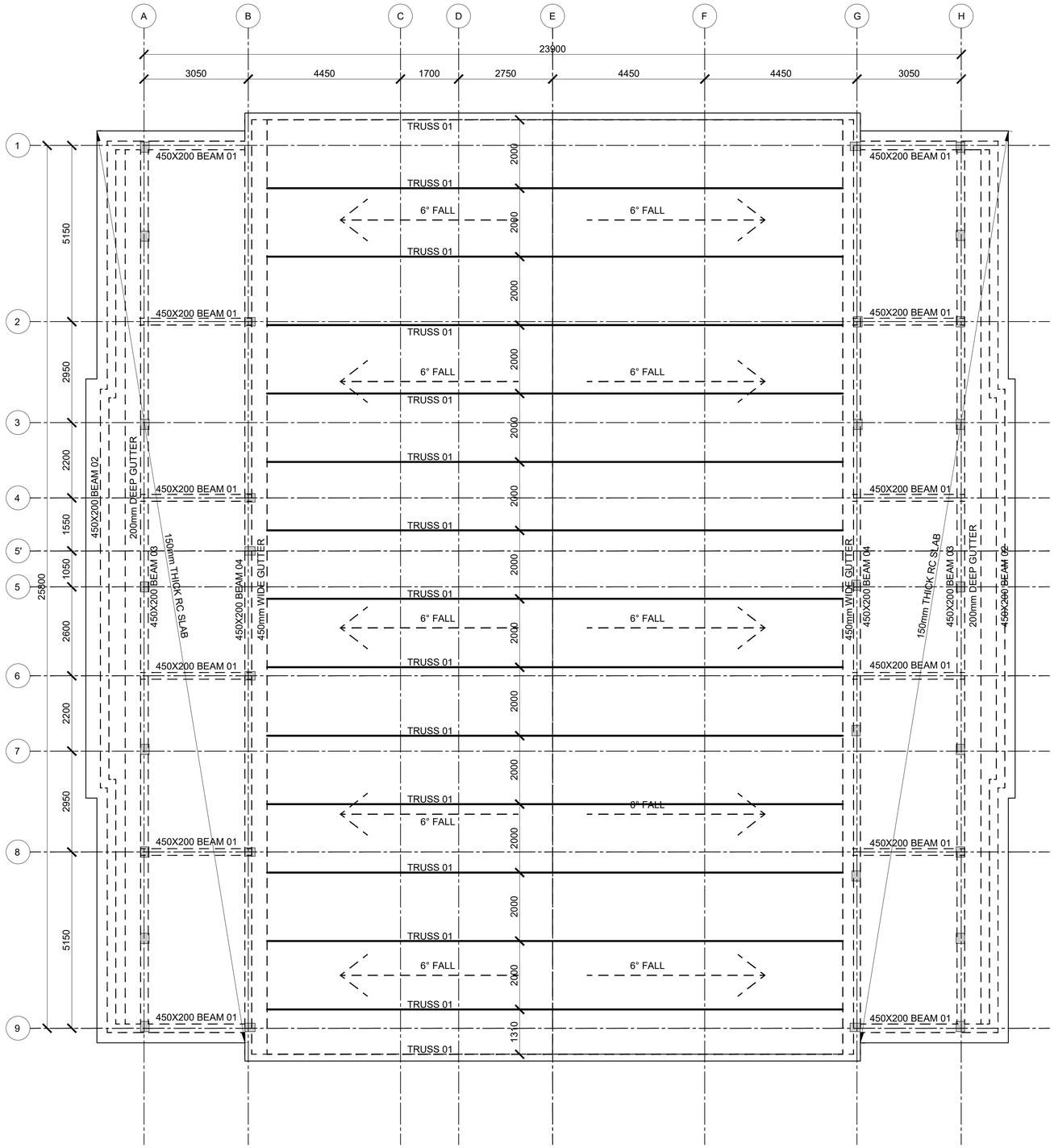
Stairs, Slabs & Walls	= 35mm
Beams (main bars)	= 35mm
Post-tensioned beams	= 40mm
Columns (main bars)	= 40mm
Foundations	= 75mm

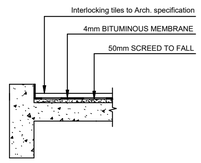
5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 250 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be Class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

DRAWING NO. 02-002-007





TYPICAL ROOF SLAB W/POOFING DETAIL

ROOF LAYOUT
(SCALE 1:100)

Consultant:-

ARPRIM CONSORTIUM
P.O. Box 12969-00100,
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CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-
ALGAE PRODUCTION - ROOF LAYOUT

NOTES

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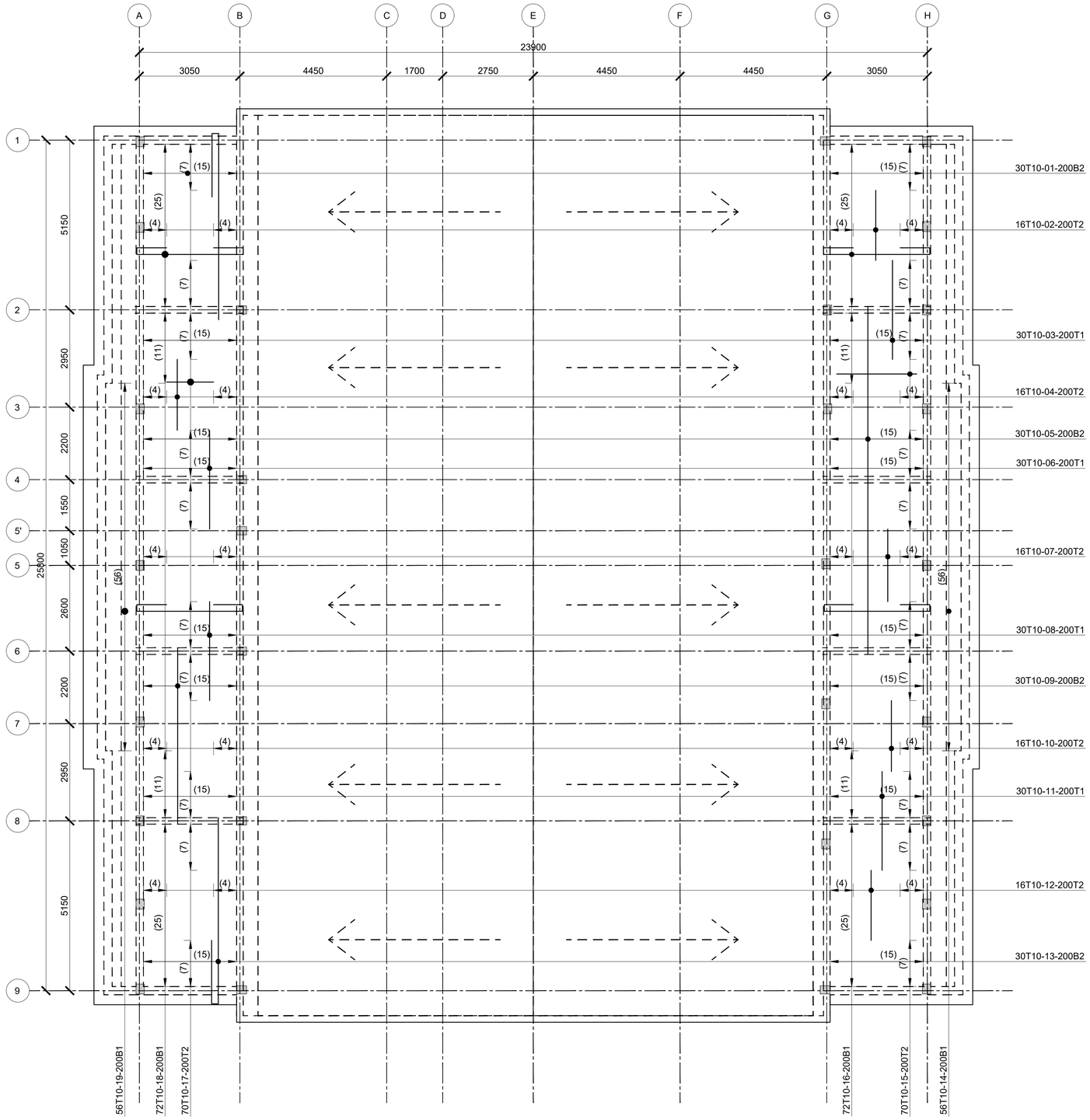
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

DRAWING NO. 02-002-008



ROOF SLAB RC DETAIL
(SCALE 1:100)

Consultant:-

ARPRIM CONSORTIUM
P.O. Box 12969-00100,
Nairobi, KENYA.
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CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-
ALGAE PRODUCTION - ROOF SLAB RC DETAIL

NOTES

1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
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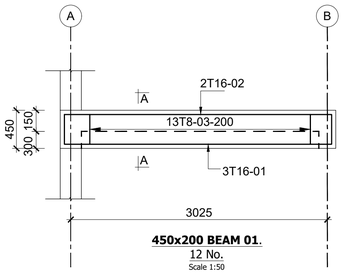
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

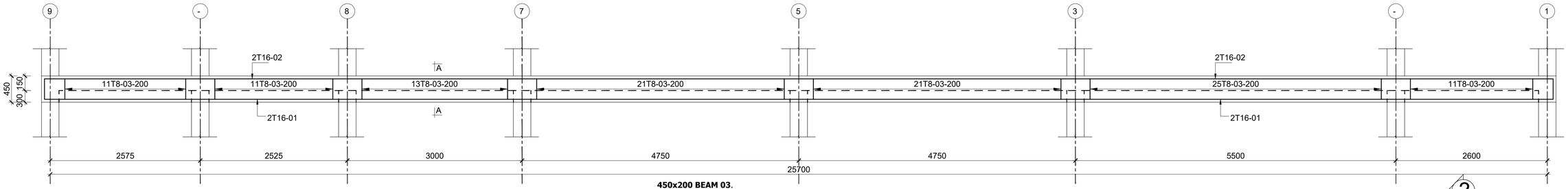
Rev	Description	By	Date
D			
C			
B			
A			

DRAWING NO. 02-002-009



450x200 BEAM 01.
12 No.
Scale 1:50

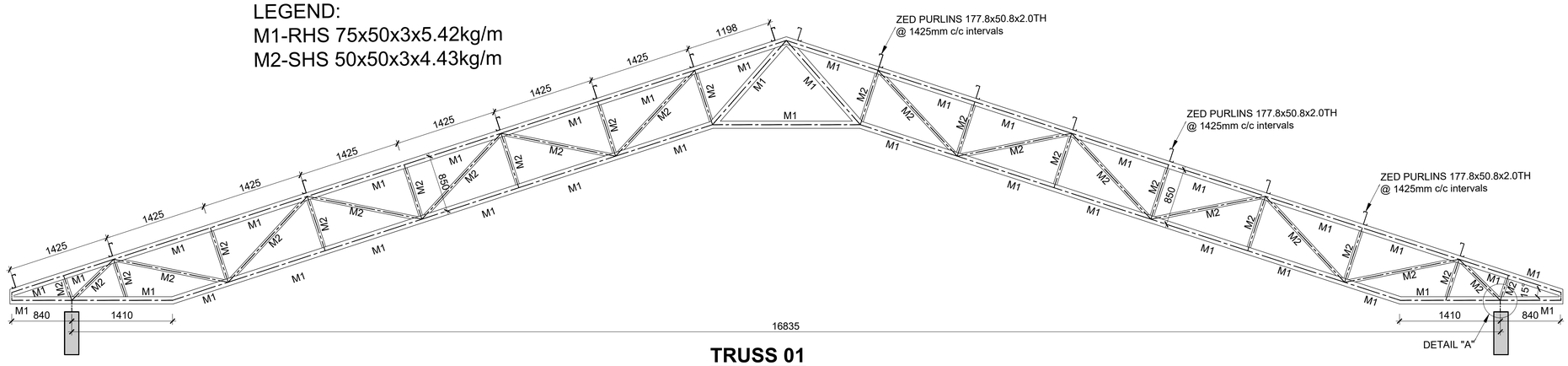
SECTION A-A
Scale 1:50



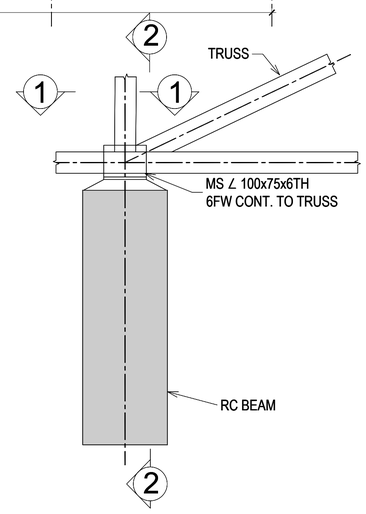
450x200 BEAM 03.
2 No.
Scale 1:25

SECTION A-A
Scale 1:50

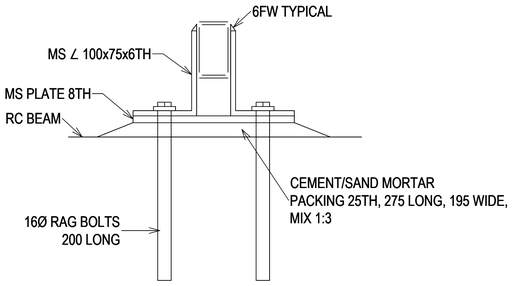
LEGEND:
M1-RHS 75x50x3x5.42kg/m
M2-SHS 50x50x3x4.43kg/m



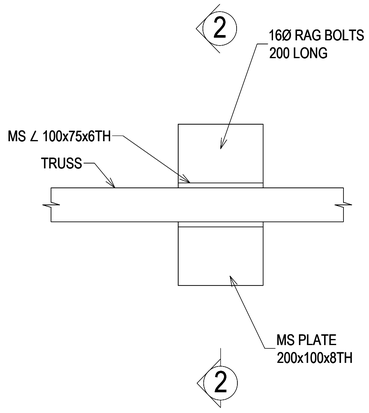
TRUSS 01
15 Nos
Scale 1:50



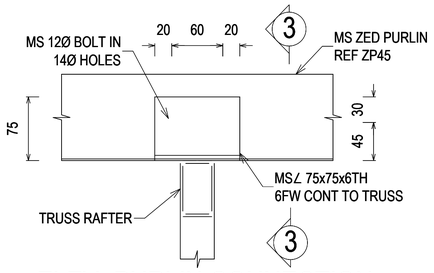
DETAIL A:TRUSS CONNECTION TO RING BEAM
Scale 1:10



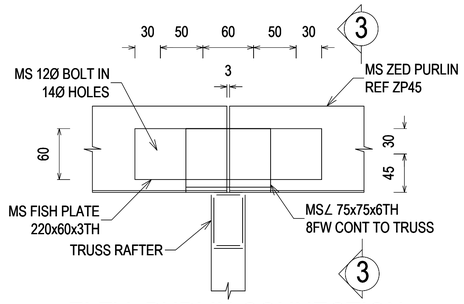
SECTION 2-2
Scale 1:5



SECTION 1-1
Scale 1:5



ELEV- PURLIN CONNECTION
PURLIN CONTINOUS OVER TRUSS
Scale 1:5



ELEV- PURLIN CONNECTION
PURLIN NOT CONTINOUS OVER TRUSS
Scale 1:5

Consultant:-
ARPRIM CONSORTIUM
P.O. Box 12969-00100,
Nairobi, KENYA.
Tel: 02 608 906
Fax: 02 608 907
E-mail: info@arprimconsultants.com

CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-
ALGAE PRODUCTION - BEAM AND TRUSS DETAIL

NOTES
1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
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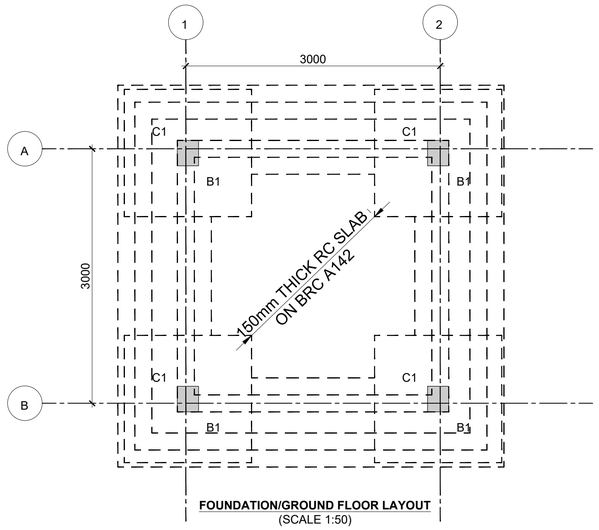
4. Minimum cover to all reinforcement to be:
   - Stairs, Slabs & Walls = 35mm
   - Beams (main bars) = 35mm
   - Post-tensioned beams = 40mm
   - Columns (main bars) = 40mm
   - Foundations = 75mm
5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 250 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be Class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

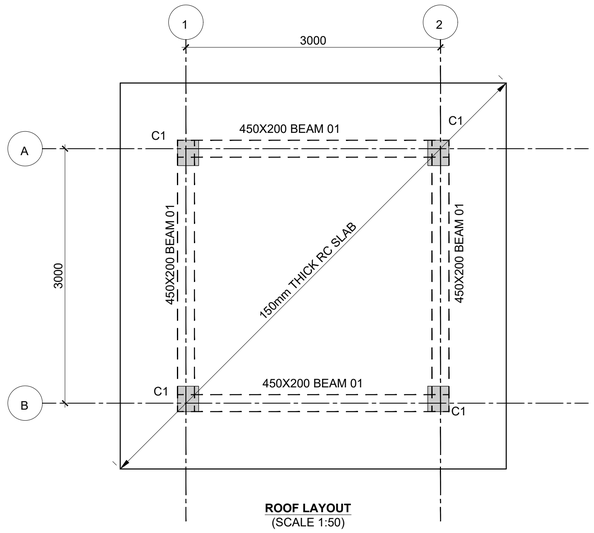
Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

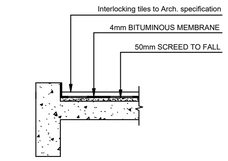
DRAWING NO. 02-002-010



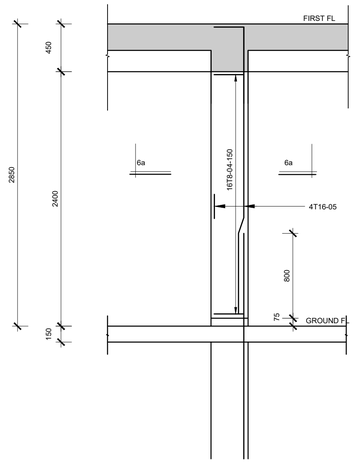
FOUNDATION/GROUND FLOOR LAYOUT
(SCALE 1:50)



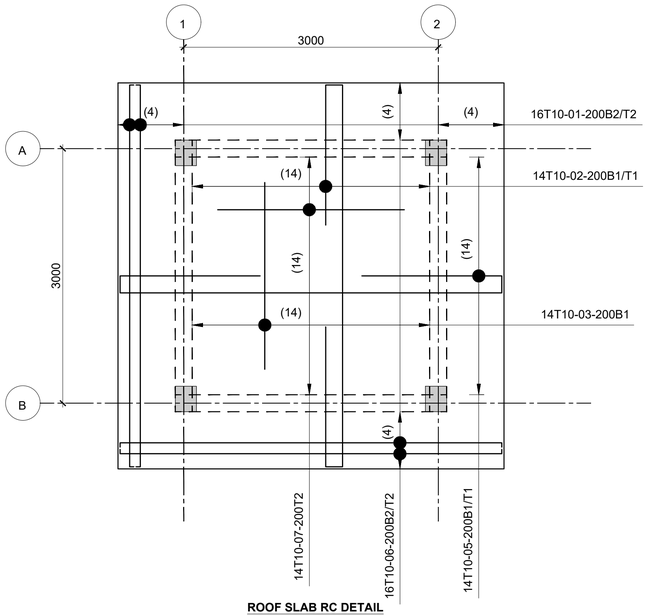
ROOF LAYOUT
(SCALE 1:50)



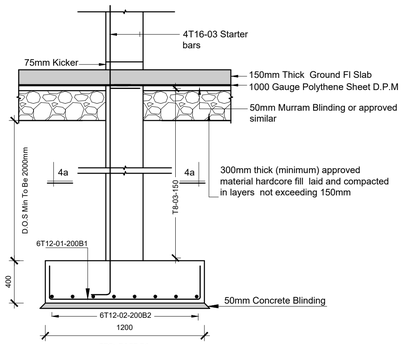
TYPICAL ROOF SLAB
W/POOFING DETAIL



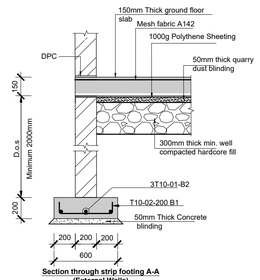
COLUMN C1
4 NO.THUS
200X200
Scale 1:25



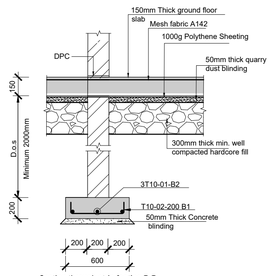
ROOF SLAB RC DETAIL
(SCALE 1:50)



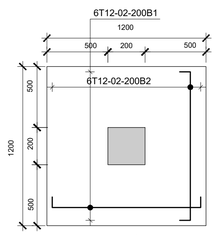
SEC:-BASE B1
(WITH COL C1)
Scale 1:25



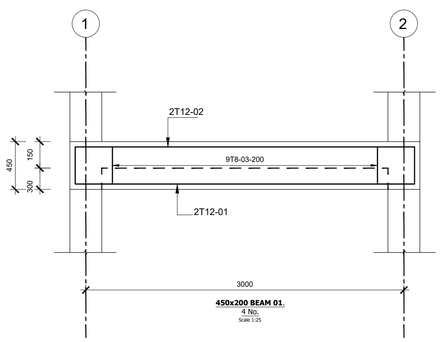
Section through strip footing A-A
(External Walls)
scale 1:25



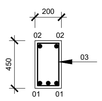
Section through strip footing B-B
(Internal Walls)
scale 1:25



PLAN:-BASE B1
4 No.
Scale 1:25



450x200 BEAM 01
4 No.
Scale 1:25



SECTION A-A
Scale 1:25

CONSULTANT:-

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Nairobi, KENYA.
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CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF OFFICE AND RELATED INFRASTRUCTURE, KILIFI COUNTY.

DRAWING TITLE:-
PROPOSED PUMP ROOM - STRUCTURAL DETAIL

NOTES

1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
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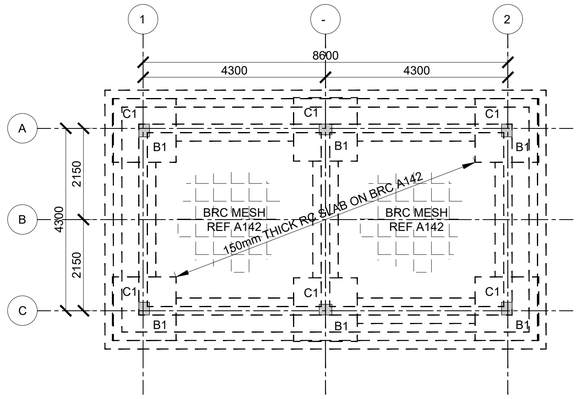
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

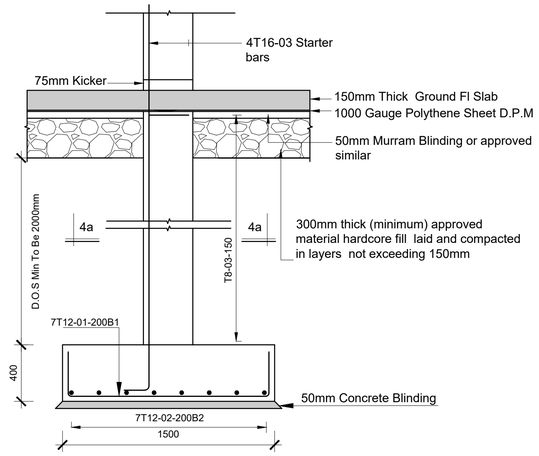
Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

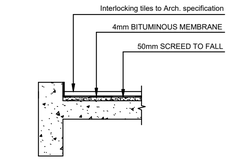
DRAWING NO. 05-002-011



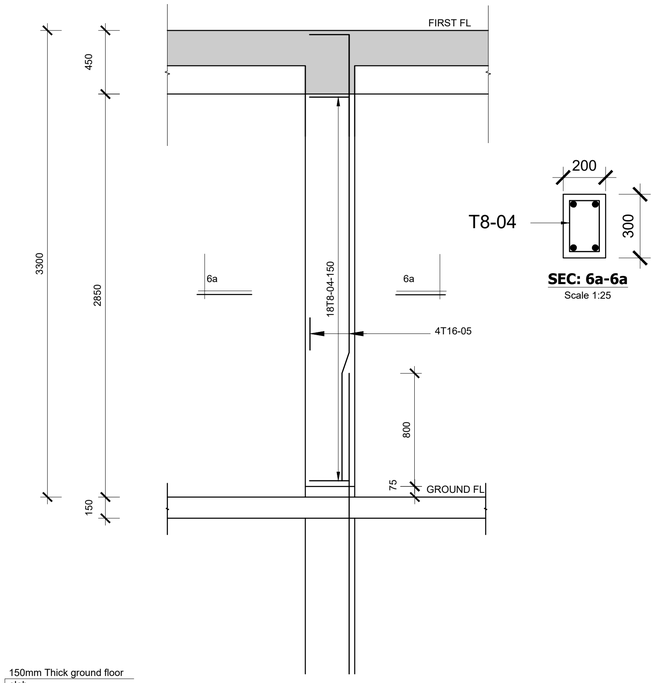
FOUNDATION/GROUND FLOOR LAYOUT
(SCALE 1:100)



SEC:-BASE B1
(WITH COL C1)
Scale 1:25

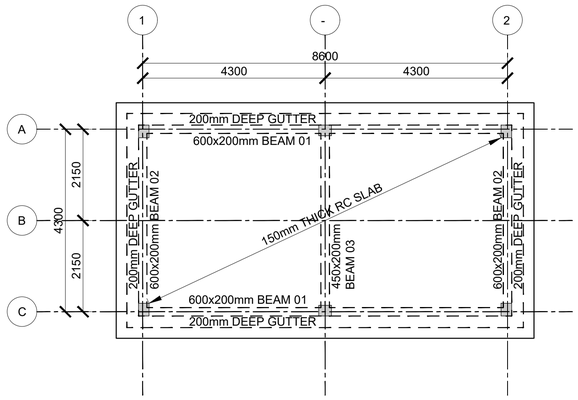


TYPICAL ROOF SLAB
W/POOFING DETAIL

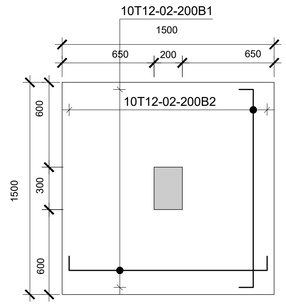


SEC: 6a-6a
Scale 1:25

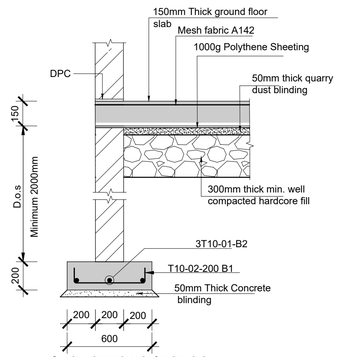
COLUMN C1
6 NO.THUS
300X200
Scale 1:50



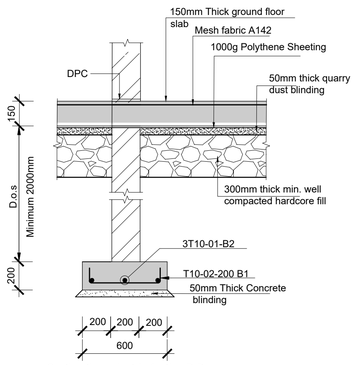
ROOF LAYOUT
(SCALE 1:100)



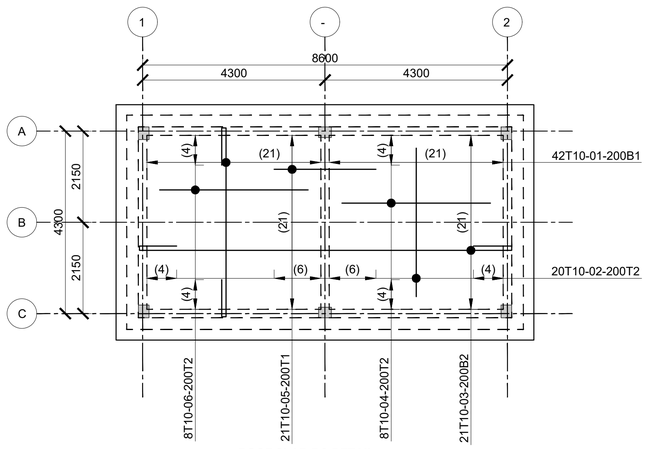
PLAN:-BASE B1
6 No.
Scale 1:25



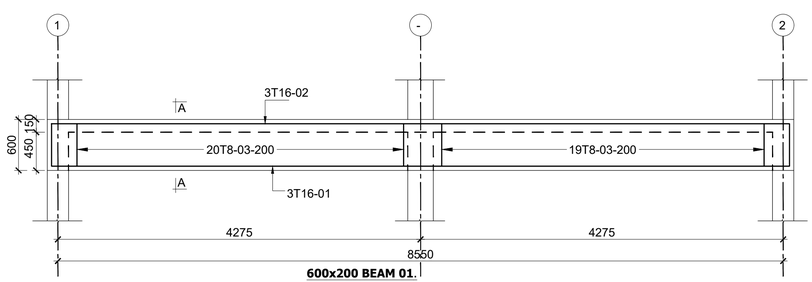
Section through strip footing A-A
(External Walls)
scale 1:25



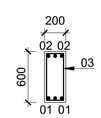
Section through strip footing B-B
(Internal Walls)
scale 1:25



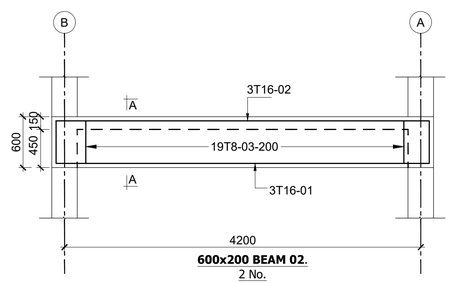
ROOF SLAB RC DETAIL
(SCALE 1:100)



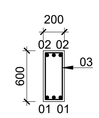
600x200 BEAM 01.
2 No.
Scale 1:50



SECTION A-A
Scale 1:50



600x200 BEAM 02.
2 No.
Scale 1:50



SECTION A-A
Scale 1:50

Consultant:-
ARPRIM CONSORTIUM
P.O. Box 12969-00100,
Nairobi, KENYA.
Tel: 02 608 906
Fax: 02 608 907
E-mail: info@arprimconsultants.com

CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-
PROPOSED REVERSE OSMOSIS ROOM - STRUCTURAL DETAIL

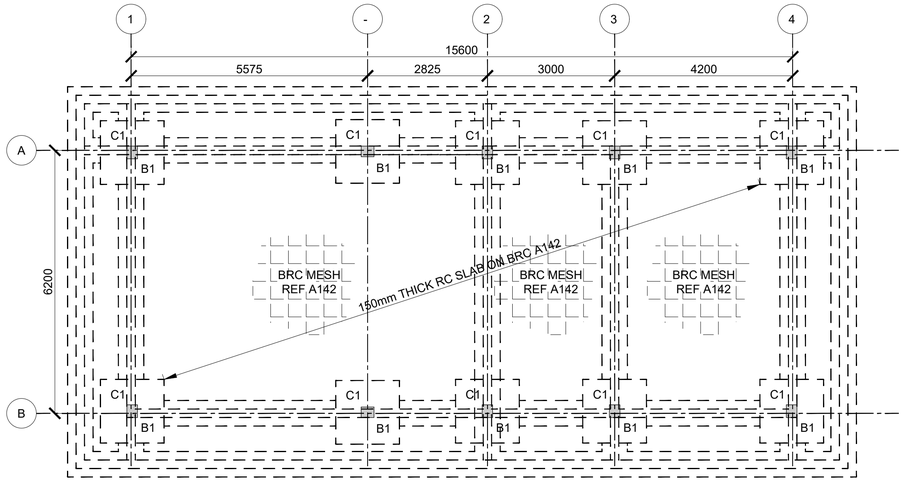
NOTES

1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:
   - Stairs, Slabs & Walls = 35mm
   - Beams (main bars) = 35mm
   - Post-tensioned beams = 40mm
   - Columns (main bars) = 40mm
   - Foundations = 75mm
5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 250 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be Class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

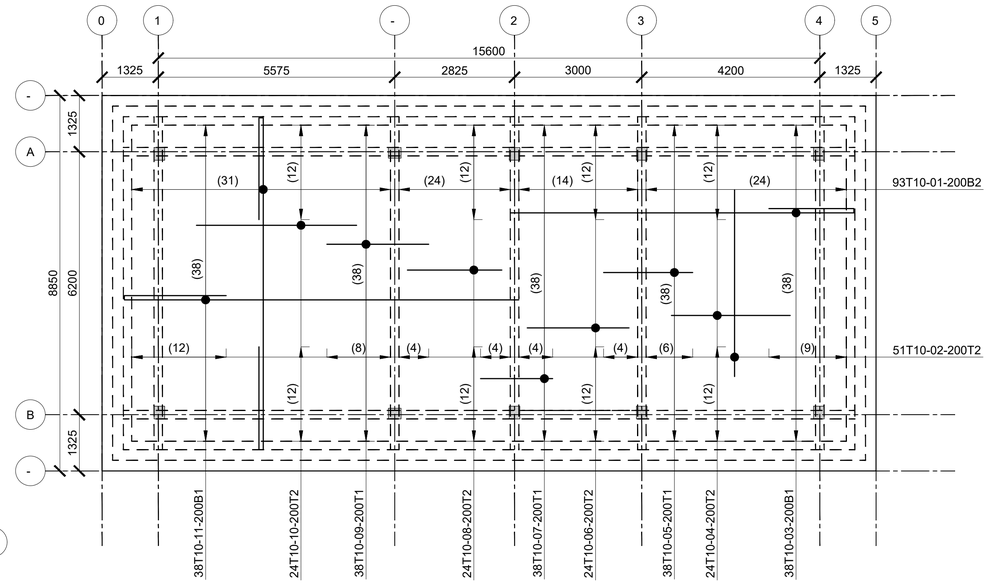
Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

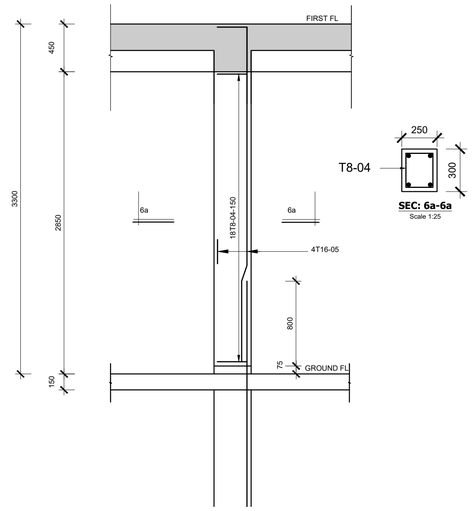
DRAWING NO. 02-002-012



FOUNDATION/GROUND FLOOR LAYOUT

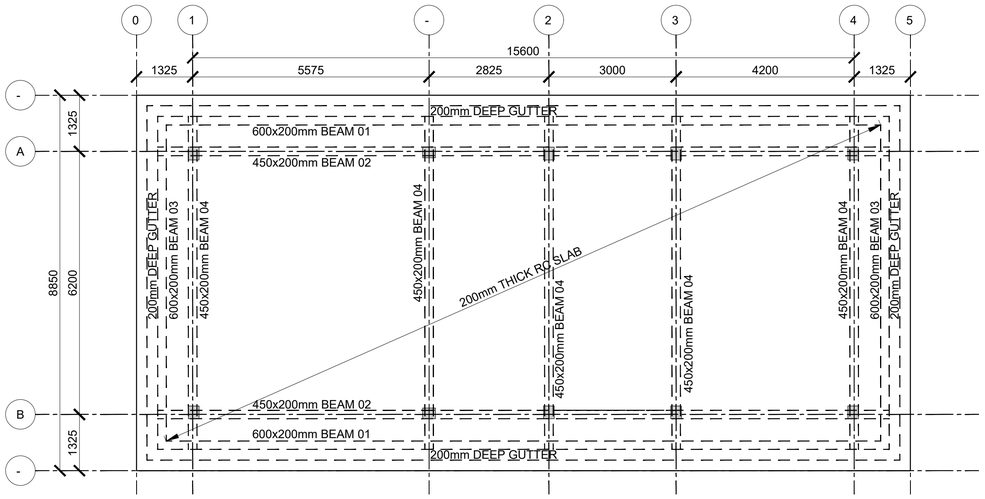


ROOF SLAB RC DETAIL
(SCALE 1:100)

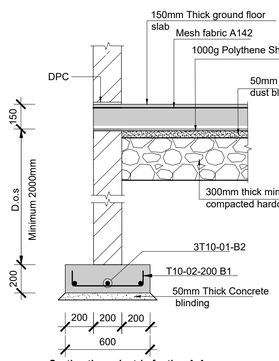


SEC: 6a-6a
Scale 1:25

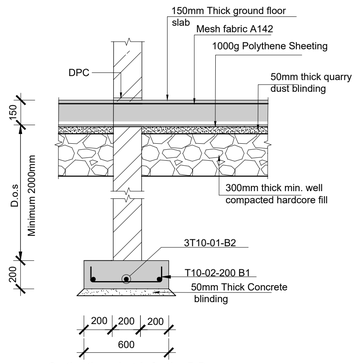
COLUMN C1
10 NO.THUS
300X250
Scale 1:50



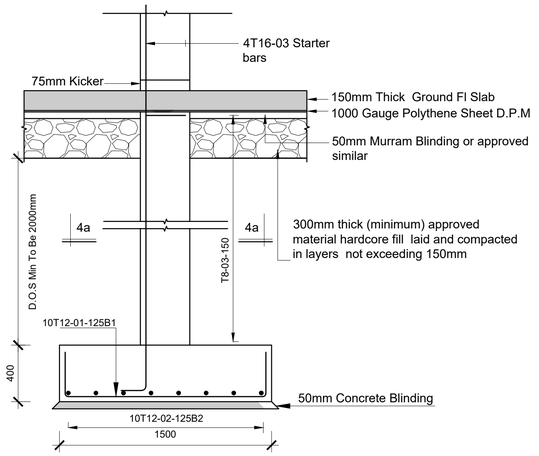
ROOF LAYOUT
(SCALE 1:100)



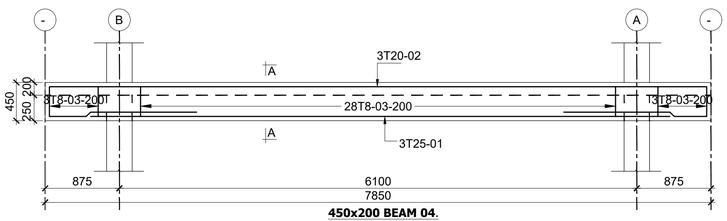
Section through strip footing A-A
(External Walls)
scale 1:25



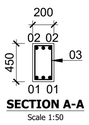
Section through strip footing B-B
(Internal Walls)
scale 1:25



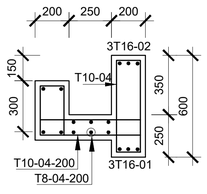
SEC:-BASE B1
(WITH COL C1)
Scale 1:25



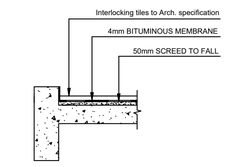
450x200 BEAM 04.
5 No.
Scale 1:50



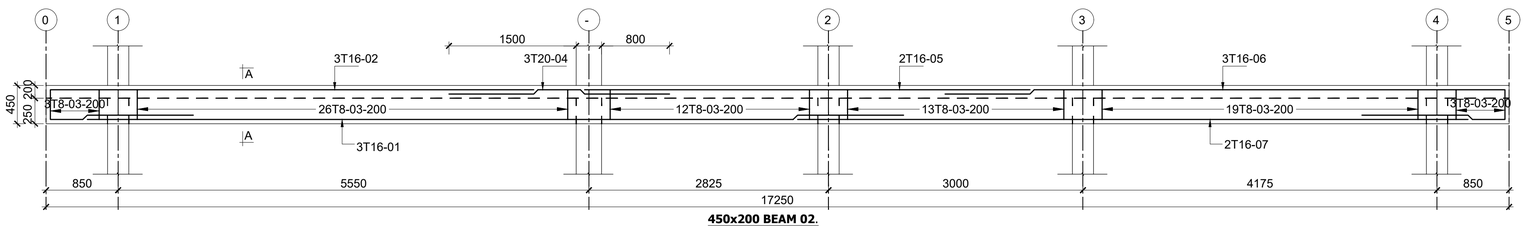
SECTION A-A
Scale 1:50



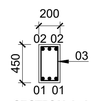
GUTTER SECTION
(SCALE 1:25)



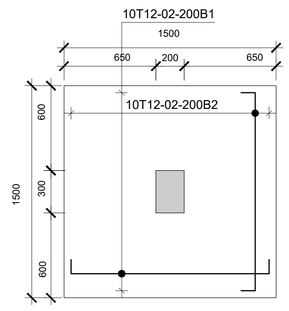
TYPICAL ROOF SLAB
W/POOFING DETAIL



450x200 BEAM 02.
2 No.
Scale 1:50



SECTION A-A
Scale 1:50



PLAN:-BASE B1
10 No.
Scale 1:25

Consultant:-
ARPRIM CONSORTIUM
P.O. Box 12969-00100,
Nairobi, KENYA.
Tel: 02 608 906
Fax: 02 608 907
E-mail: info@arprimconsultants.com

CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

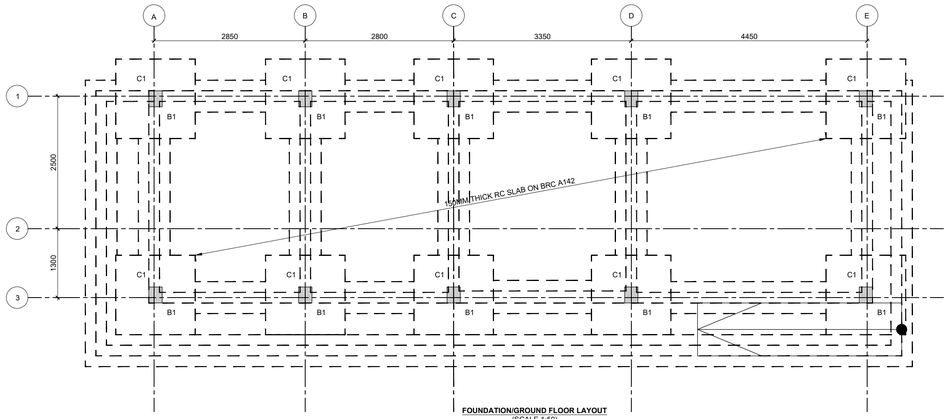
DRAWING TITLE:-
PROPOSED GENERATOR AND POWER HOUSE - STRUCTURAL DETAIL

NOTES

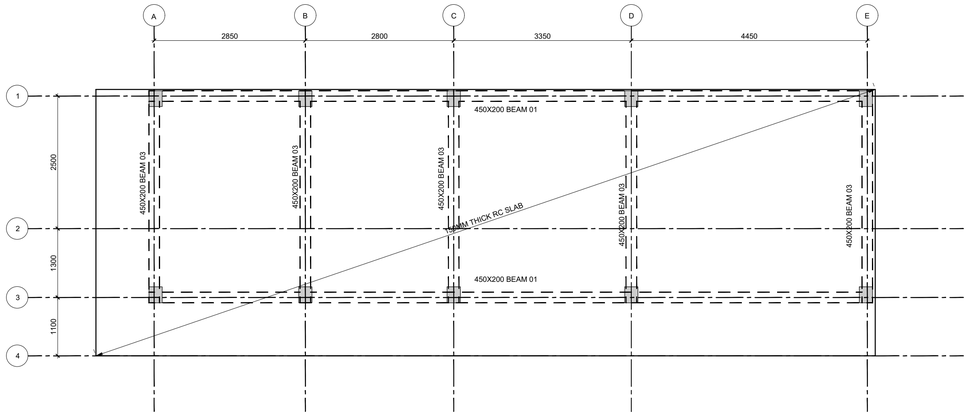
1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:
   - Stairs, Slabs & Walls = 35mm
   - Beams (main bars) = 35mm
   - Post-tensioned beams = 40mm
   - Columns (main bars) = 40mm
   - Foundations = 75mm
5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 250 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be Class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

		Rev	Description	By	Date
Designed by	DAN	D			
Drawn by	DAN	C			
Checked by	HOH	B			
Scale	AS SHOWN	A			

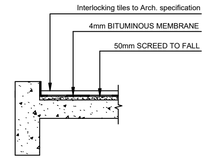
DRAWING NO. 02-002-013



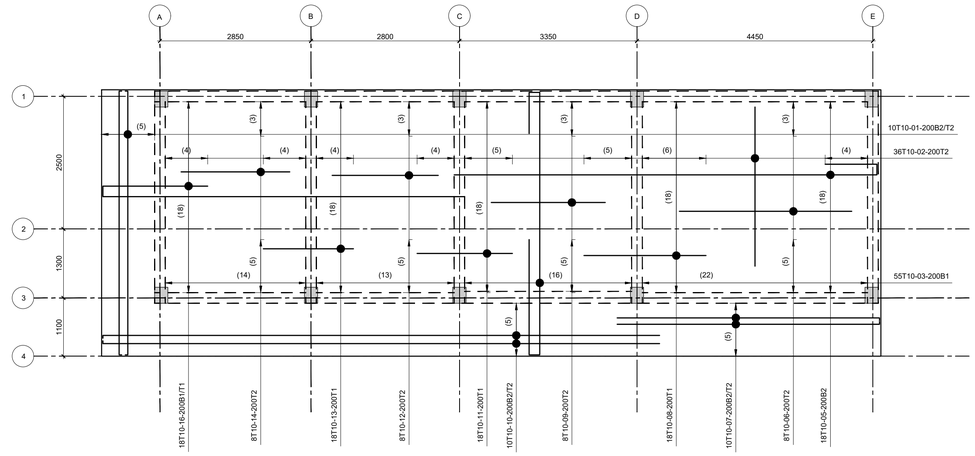
FOUNDATION/GROUND FLOOR LAYOUT
(SCALE 1:50)



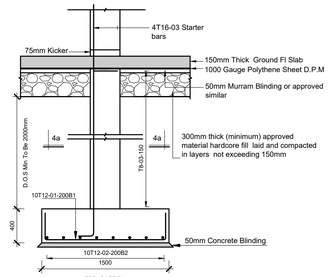
ROOF SLAB LAYOUT
(SCALE 1:50)



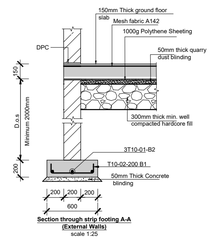
TYPICAL ROOF SLAB
W/POOFING DETAIL



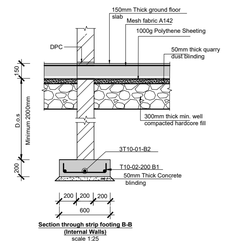
ROOF SLAB RC DETAIL
(SCALE 1:50)



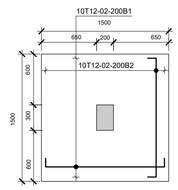
SEC:-BASE B1
(WITH CDL C1)
Scale 1:25



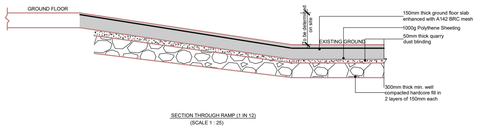
Section through strip footing A-A
(External Walls)
scale 1:25



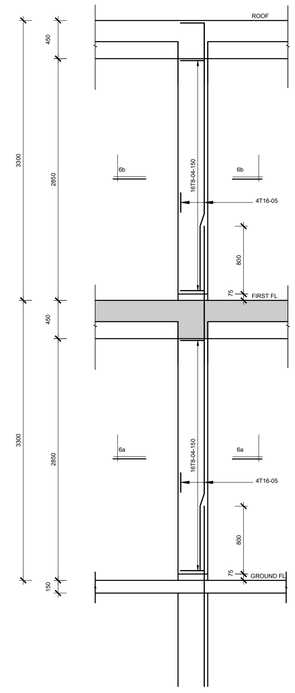
Section through strip footing B-B
(Internal Walls)
scale 1:25



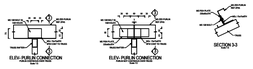
PLAN:-BASE B1
10 No.
Scale 1:25

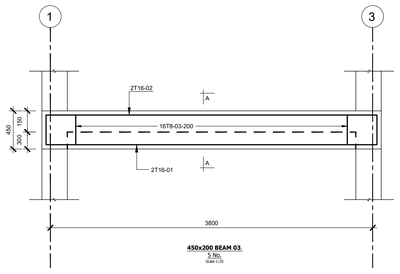


SECTION THROUGH RAMP (1: IN 12)
(SCALE 1 : 25)



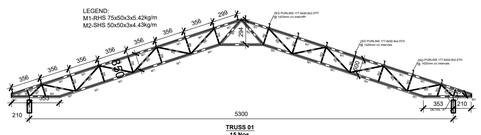
COLUMN C1
10 NO.TRUSS
300X200
Scale 1:25



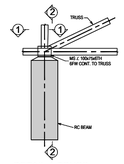


450x200 BEAM 03
3 No.
Scale 1:25

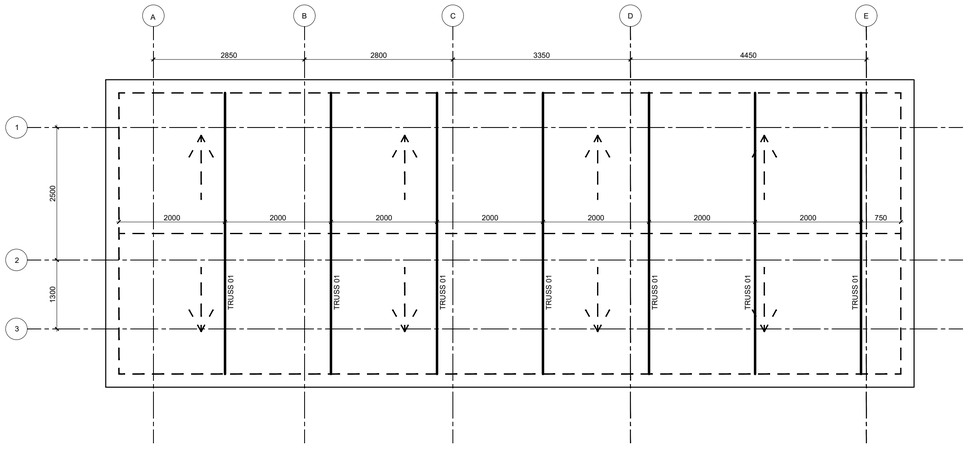
SECTION A-A
Scale 1:25



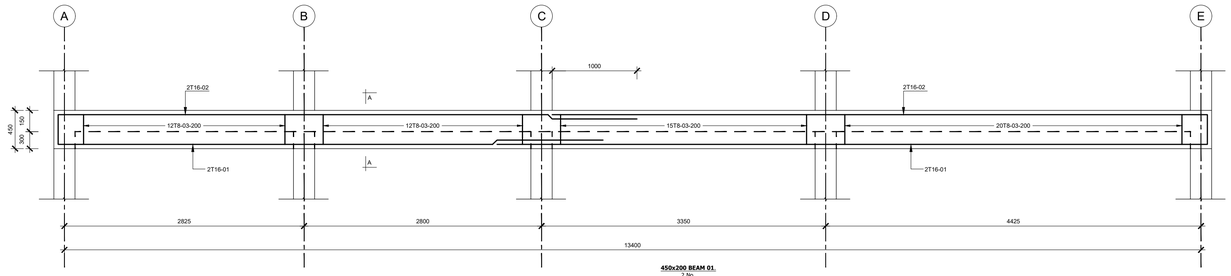
TRUSS 01
15 Nos
Scale 1:50



DETAIL A:TRUSS
CONNECTION
TO RING BEAM
Scale 1:10



ROOF LAYOUT
(SCALE 1:50)



450x200 BEAM 01
2 No.
Scale 1:25

SECTION A-A
Scale 1:25

CONSULTANT:-
ARPRIM CONSORTIUM
P.O. Box 12969-00100,
Nairobi, KENYA.
Tel: 02 608 906
Fax: 02 608 907
E-mail: info@arprimconsultants.com

CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-
PROPOSED OFFICE WASHROOMS - STRUCTURAL DETAIL

NOTES

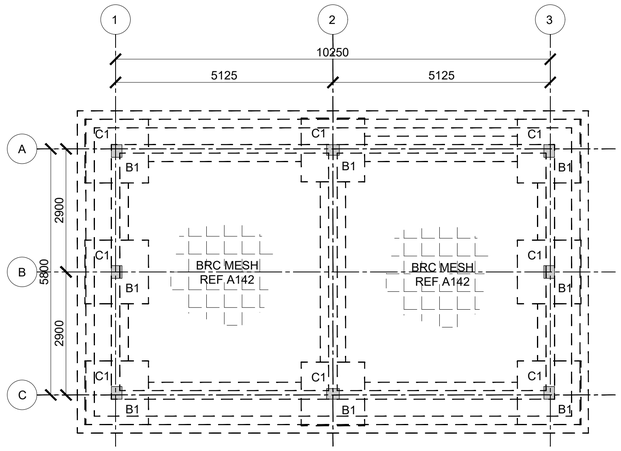
1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:

Stairs, Slabs & Walls	= 35mm
Beams (main bars)	= 35mm
Post-tensioned beams	= 40mm
Columns (main bars)	= 40mm
Foundations	= 75mm

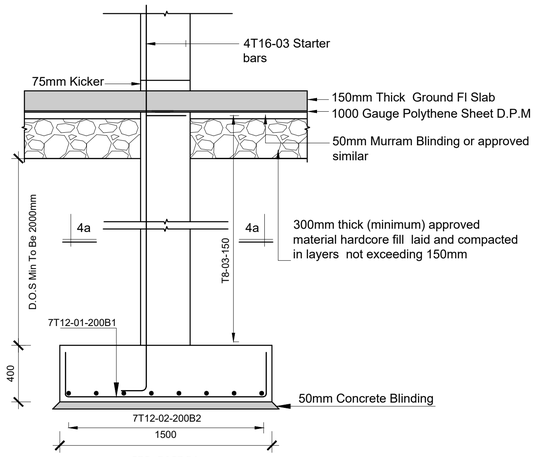
5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 250 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

		Rev	Description	By	Date
Designed by	DAN	D			
Drawn by	DAN	C			
Checked by	HOH	B			
Scale	AS SHOWN	A			

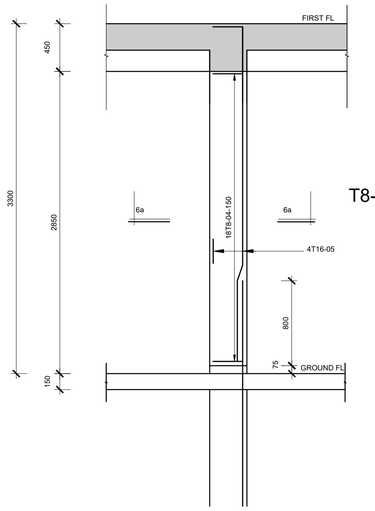
DRAWING NO. 02-002-014



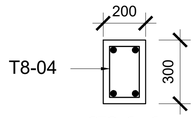
FOUNDATION/GROUND FLOOR LAYOUT
(SCALE 1:100)



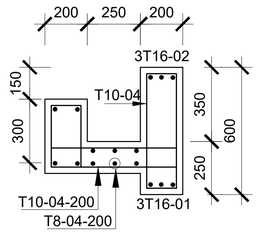
SEC:-BASE B1
(WITH COL C1)
Scale 1:25



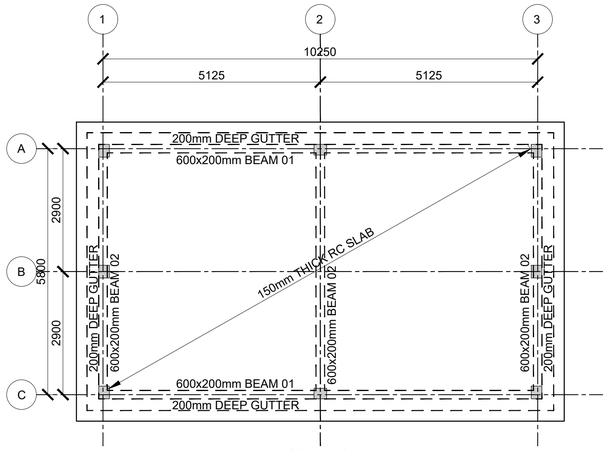
COLUMN C1
8 NO.THUS
300X200
Scale 1:50



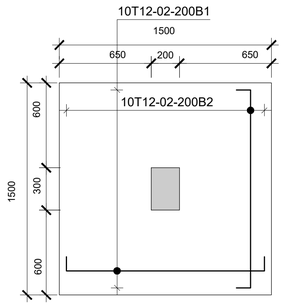
SEC: 6a-6a
Scale 1:25



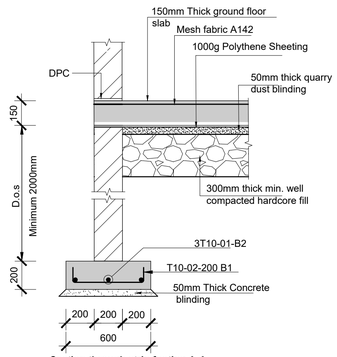
GUTTER SECTION
(SCALE 1:25)



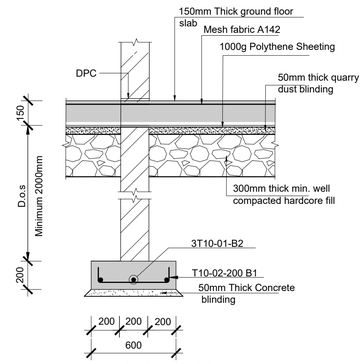
ROOF LAYOUT
(SCALE 1:100)



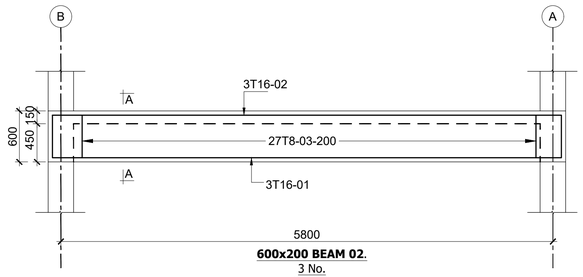
PLAN:-BASE B1
8 No.
Scale 1:25



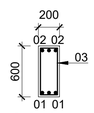
Section through strip footing A-A
(External Walls)
scale 1:25



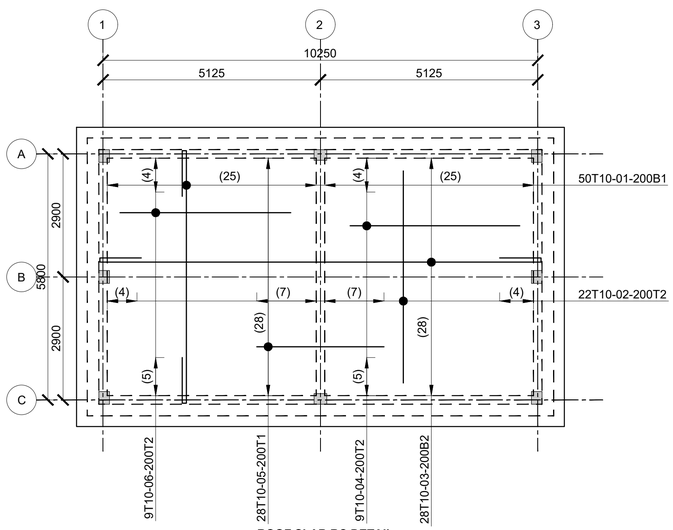
Section through strip footing B-B
(Internal Walls)
scale 1:25



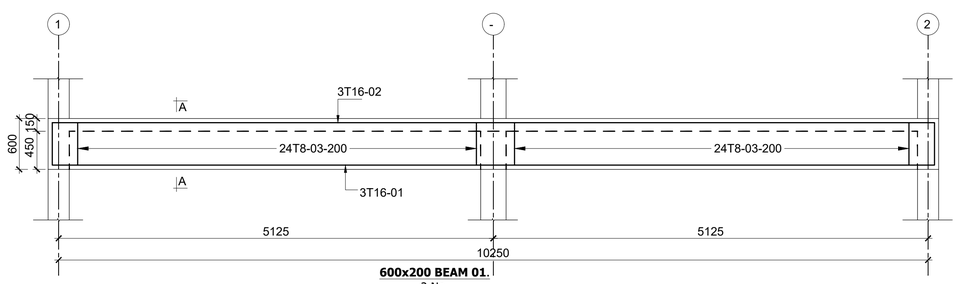
600x200 BEAM 02.
3 No.
Scale 1:50



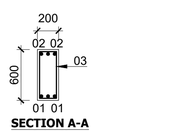
SECTION A-A
Scale 1:50



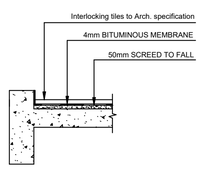
ROOF SLAB RC DETAIL
(SCALE 1:100)



600x200 BEAM 01.
2 No.
Scale 1:50



SECTION A-A
Scale 1:50



TYPICAL ROOF SLAB
W/POOFING DETAIL

Consultant:-

ARPRIM CONSORTIUM
P.O. Box 12969-00100,
Nairobi, KENYA.
Tel: 02 608 906
Fax: 02 608 907
E-mail: info@arprimconsultants.com

CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-
PROPOSED BATTERY ROOM - STRUCTURAL DETAIL

NOTES

1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:

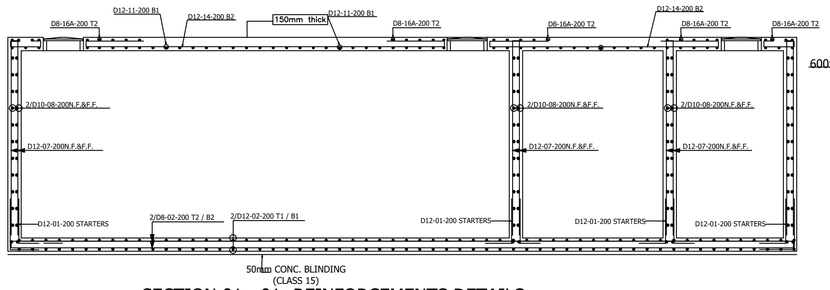
Stairs, Slabs & Walls	= 35mm
Beams (main bars)	= 35mm
Post-tensioned beams	= 40mm
Columns (main bars)	= 40mm
Foundations	= 75mm

5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 250 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be Class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

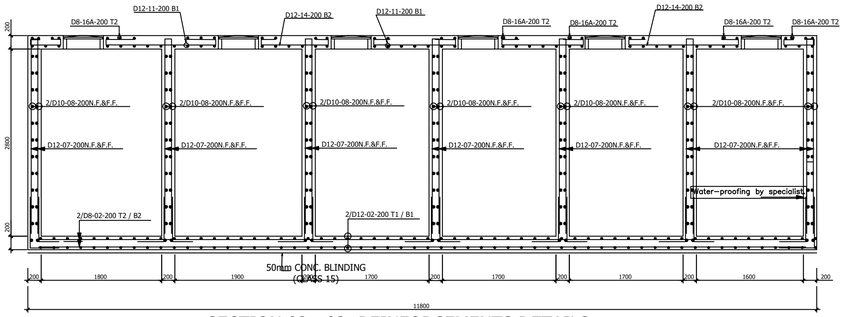
Rev	Description	By	Date
D			
C			
B			
A			

DRAWING NO. 02-002-015



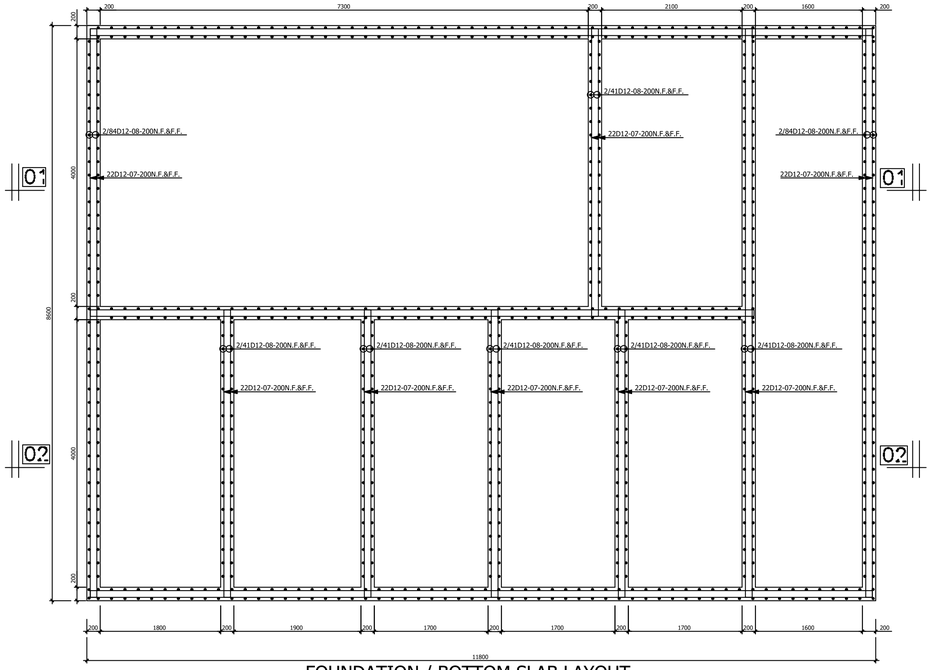
SECTION 01 - 01: REINFORCEMENTS DETAILS.

SCALE 1:25



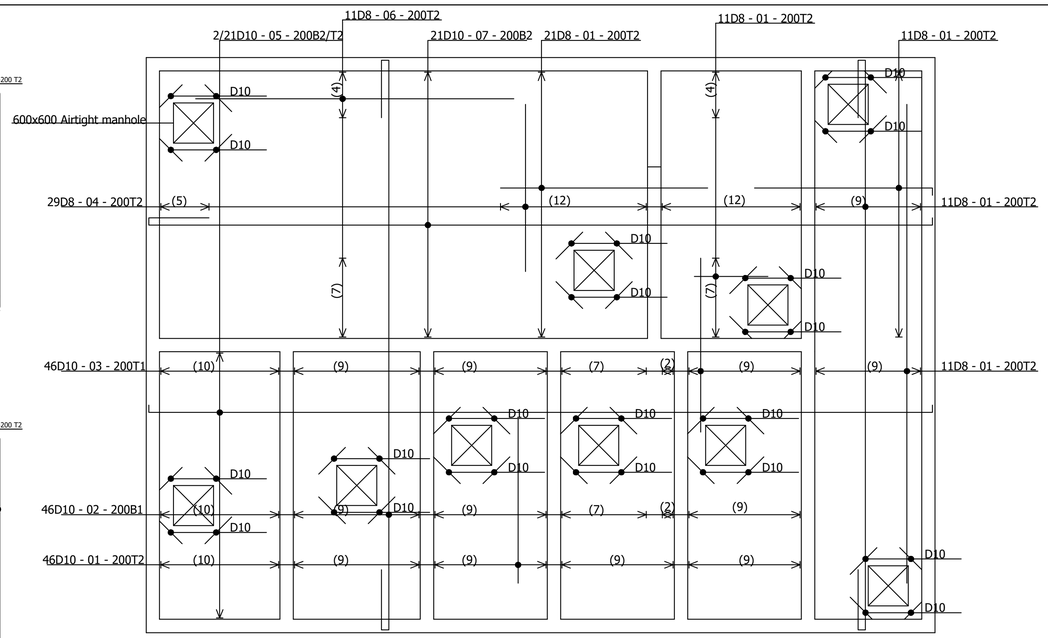
SECTION 02 - 02: REINFORCEMENTS DETAILS.

SCALE 1:25



FOUNDATION / BOTTOM SLAB LAYOUT

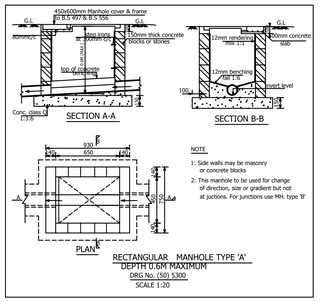
SCALE 1:25

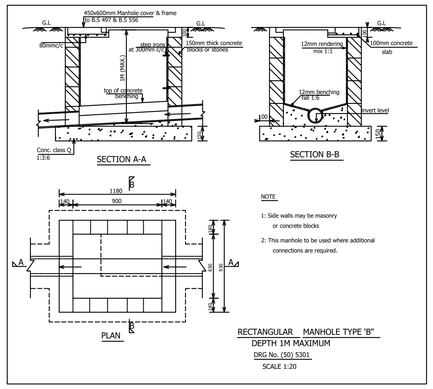


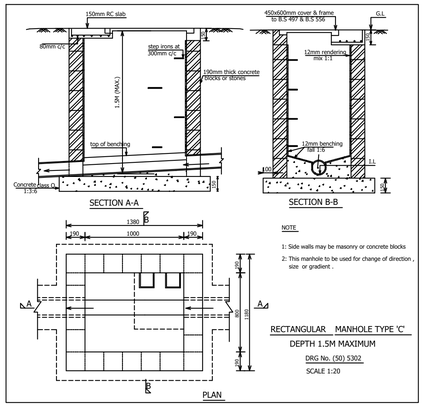
TOP SLAB LAYOUT

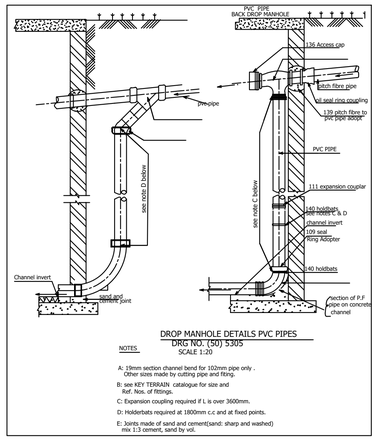
150mm THICK SOLID SLAB

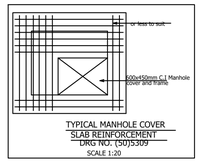
SCALE 1:25

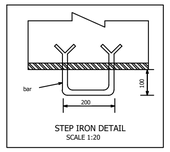












Consultant:-

ARPRIM CONSORTIUM

P.O. Box 12969-00100,
Nairobi, KENYA.
Tel: 02 608 906
Fax: 02 608 907
E-mail: info@arprimconsultants.com

CLIENT:-

STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-

PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-

PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-

MARINE HATCHERY - BIO-REACTOR DETAIL

NOTES

1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:

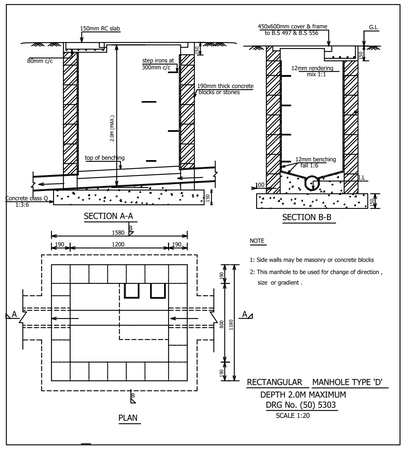
Stairs, Slabs & Walls	= 35mm
Beams (main bars)	= 35mm
Post-tensioned beams	= 40mm
Columns (main bars)	= 40mm
Foundations	= 75mm

5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 250 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be Class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

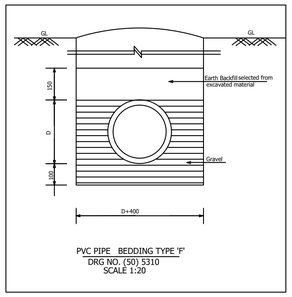
Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

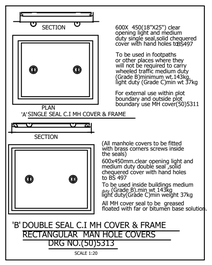
DRAWING NO. 02-002-016



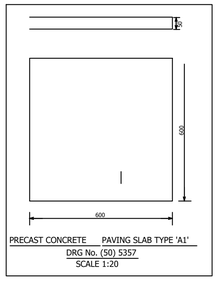
RECTANGULAR MANHOLE TYPE 'D'
DEPTH 2.0M MAXIMUM
DRG No. (50) 5303
SCALE 1:20



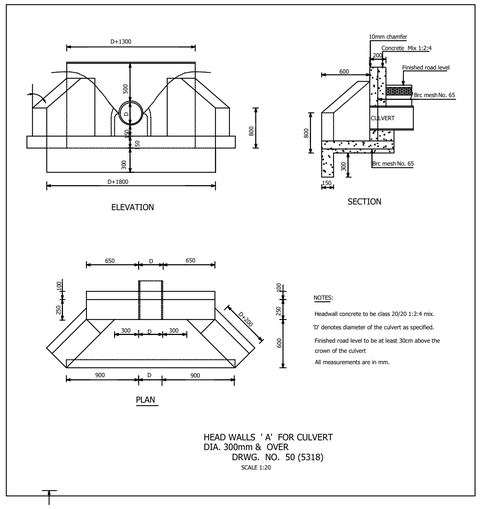
PVC PIPE BEDDING TYPE 'F'
DRG NO. (50) 5310
SCALE 1:20



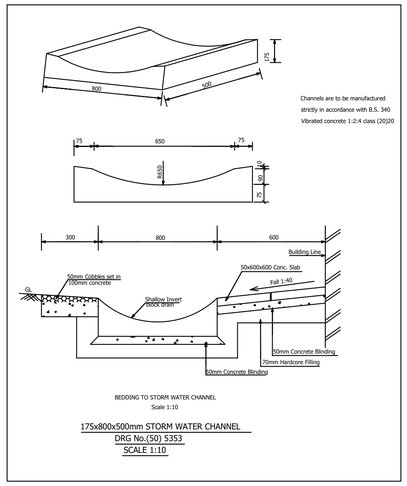
'B' DOUBLE SEAL C.I MH COVER & FRAME
RECTANGULAR MAN HOLE COVERS
DRG NO.(50)5313
SCALE 1:20



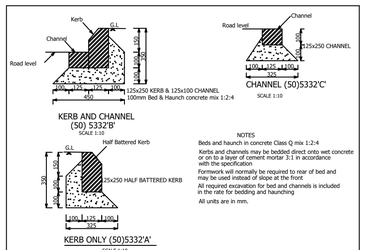
PRECAST CONCRETE PAVING SLAB TYPE 'A1'
DRG No. (50) 5357
SCALE 1:20

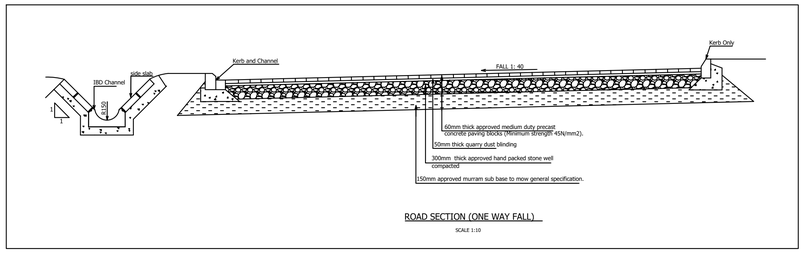


HEAD WALLS 'A' FOR CULVERT
DIA. 300mm & OVER
DRWG. NO. 50 (5318)
SCALE 1:20

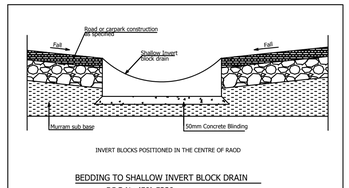


175x800x500mm STORM WATER CHANNEL
DRG No.(50) 5353
SCALE 1:10

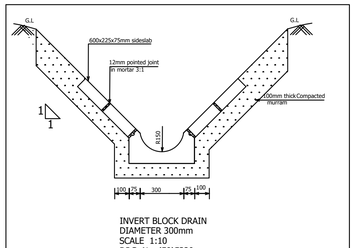




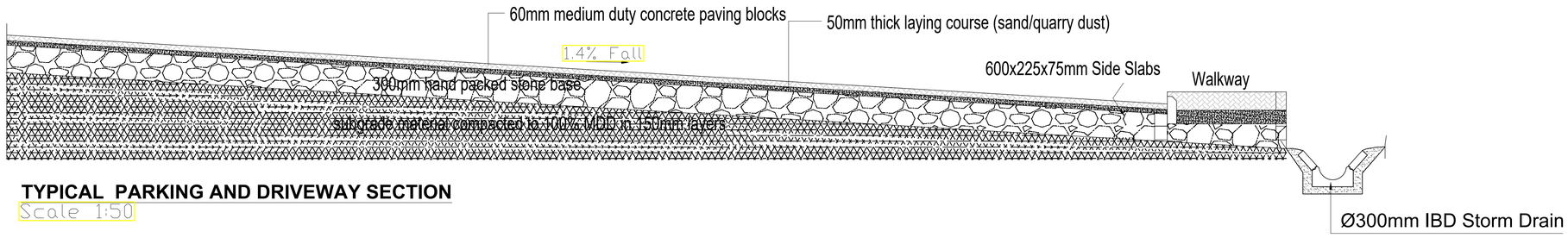
ROAD SECTION (ONE WAY FALL)
SCALE 1:10



BEDDING TO SHALLOW INVERT BLOCK DRAIN
DRG No.(50) 5330
SCALE 1:10



INVERT BLOCK DRAIN
DIAMETER 300mm
SCALE 1:10
DRG. No. (50)5329



TYPICAL PARKING AND DRIVEWAY SECTION
Scale 1:50

Consultant:-
ARPRIM CONSORTIUM
P.O. Box 12969-00100,
Nairobi, KENYA.
Tel: 02 608 906
Fax: 02 608 907
E-mail: info@arprimconsultants.com

CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

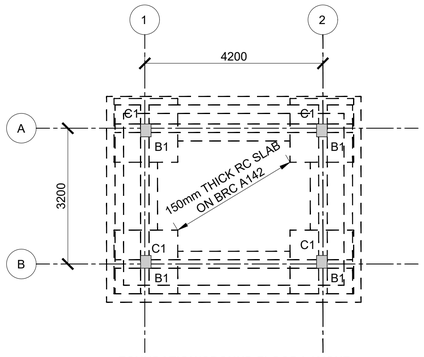
DRAWING TITLE:-
MARINE HATCHERY - CIVIL WORKS 1

NOTES
1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:
   - Stairs, Slabs & Walls = 35mm
   - Beams (main bars) = 35mm
   - Post-tensioned beams = 40mm
   - Columns (main bars) = 40mm
   - Foundations = 75mm
5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 250 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be Class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

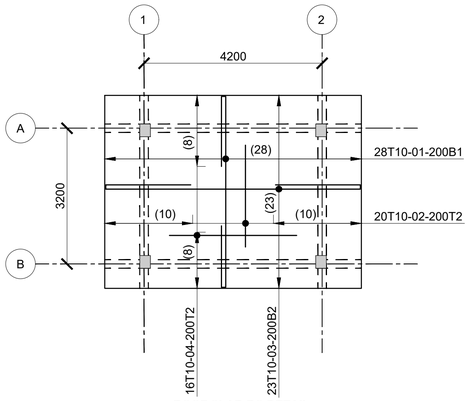
Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

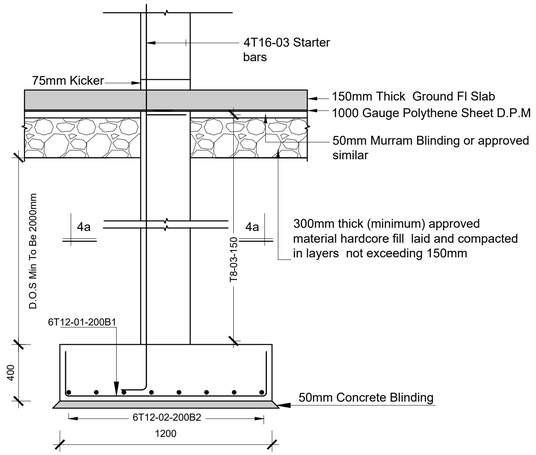
DRAWING NO. 02-002-017



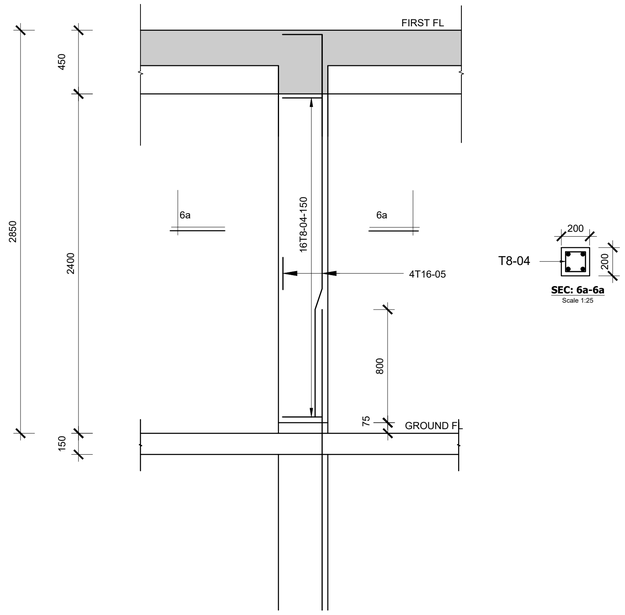
FOUNDATION/GROUND FLOOR LAYOUT
(SCALE 1:100)



ROOF SLAB RC DETAIL
(SCALE 1:100)

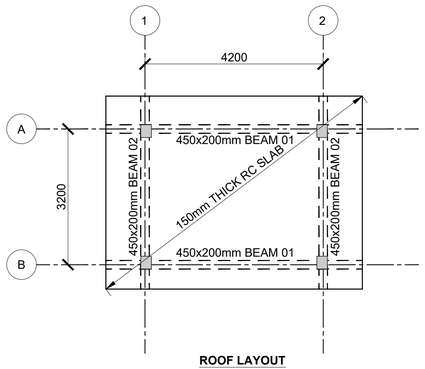


SEC:-BASE B1
(WITH COL C1)
Scale 1:25

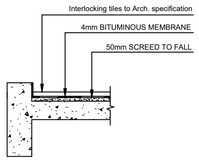


COLUMN C1
4 NO.THUS
200X200
Scale 1:25

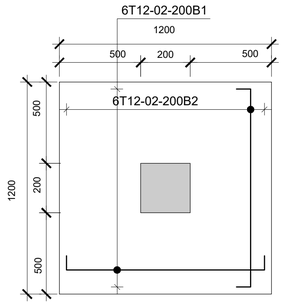
SEC: 6a-6a
Scale 1:25



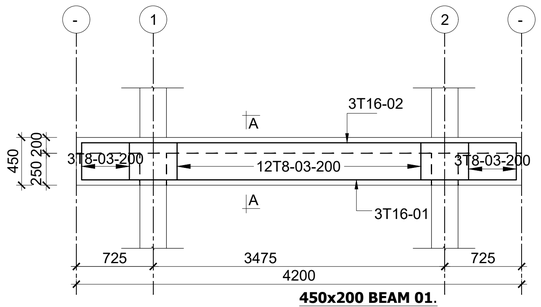
ROOF LAYOUT
(SCALE 1:100)



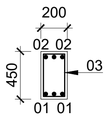
TYPICAL ROOF SLAB
W/POOFING DETAIL



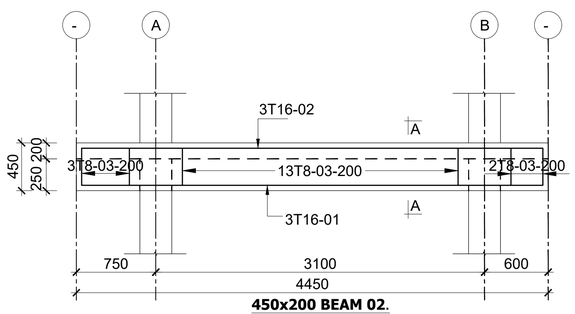
PLAN:-BASE B1
4 No.
Scale 1:25



450x200 BEAM 01.
2 No.
Scale 1:50



SECTION A-A
Scale 1:50



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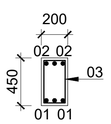
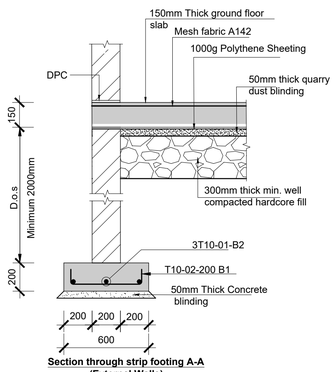
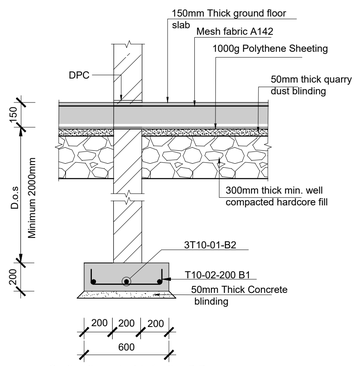
2 No.
Scale 1:50



SECTION A-A
Scale 1:50



Section through strip footing A-A
(External Walls)
scale 1:25



Section through strip footing B-B
(Internal Walls)
scale 1:25

Consultant:-

ARPRIM CONSORTIUM
P.O. Box 12969-00100,
Nairobi, KENYA.
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CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-
PROPOSED INTAKE PUMP ROOM - STRUCTURAL DETAIL

NOTES

1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:

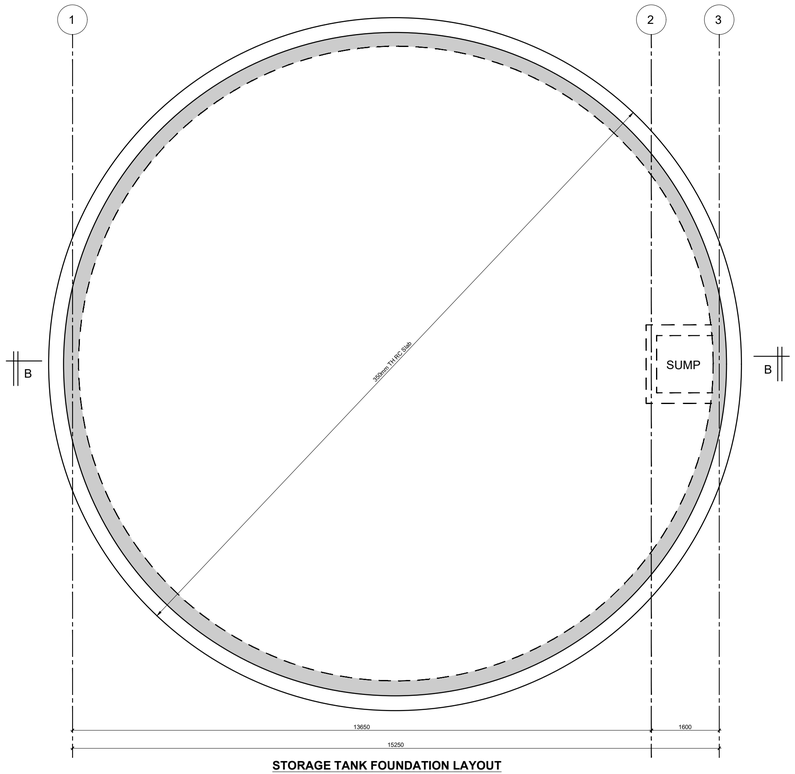
Stairs, Slabs & Walls	= 35mm
Beams (main bars)	= 35mm
Post-tensioned beams	= 40mm
Columns (main bars)	= 40mm
Foundations	= 75mm

5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 250 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be Class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

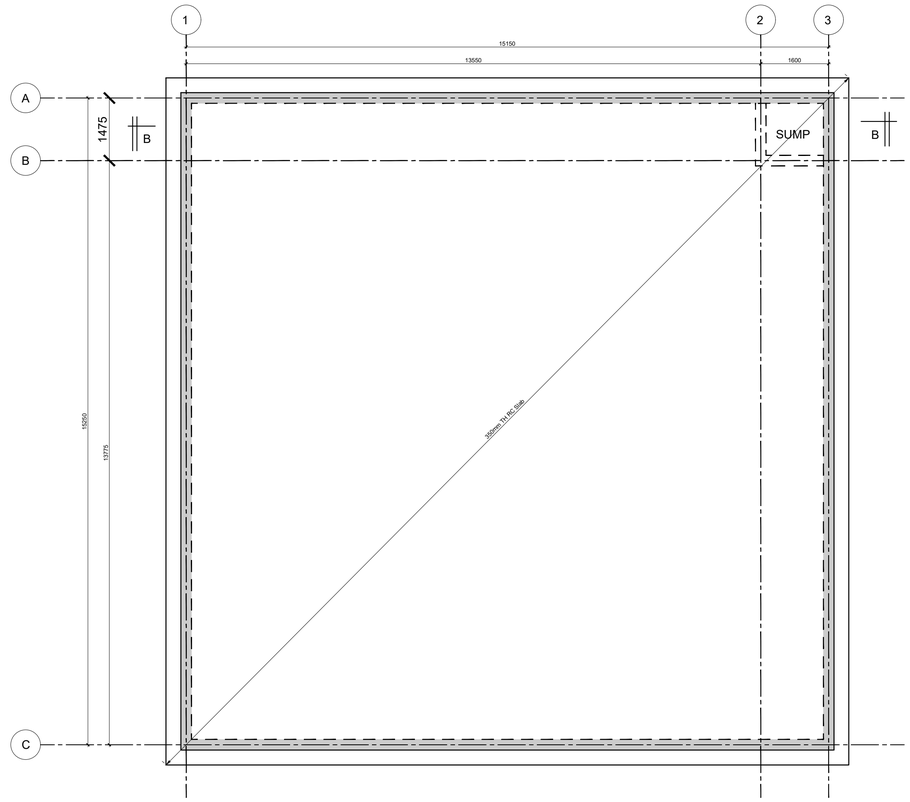
Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

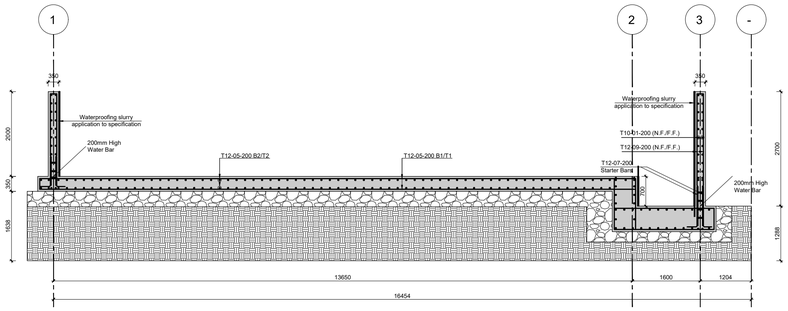
DRAWING NO. 02-002-018



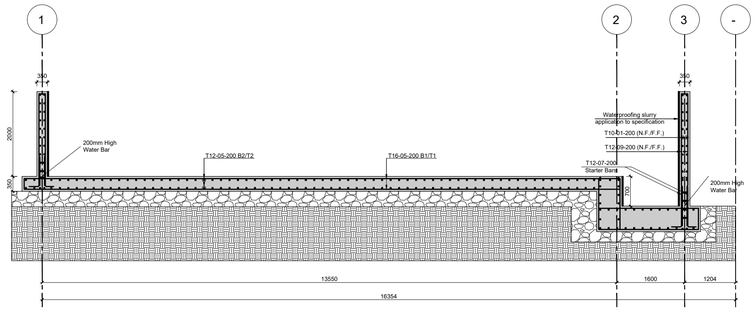
STORAGE TANK FOUNDATION LAYOUT
(SCALE 1:50)



TRIAL TANK FOUNDATION LAYOUT
(SCALE 1:50)



STORAGE TANK SECTION B-B
(SCALE 1:50)



TRIAL TANK SECTION B-B
(SCALE 1:50)

CONSULTANT:-

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P.O. Box 12969-00100,
Nairobi, KENYA.
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CLIENT:-

STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-

PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-

PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-

STORAGE AND TRIAL TANKS DETAIL

NOTES

1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:

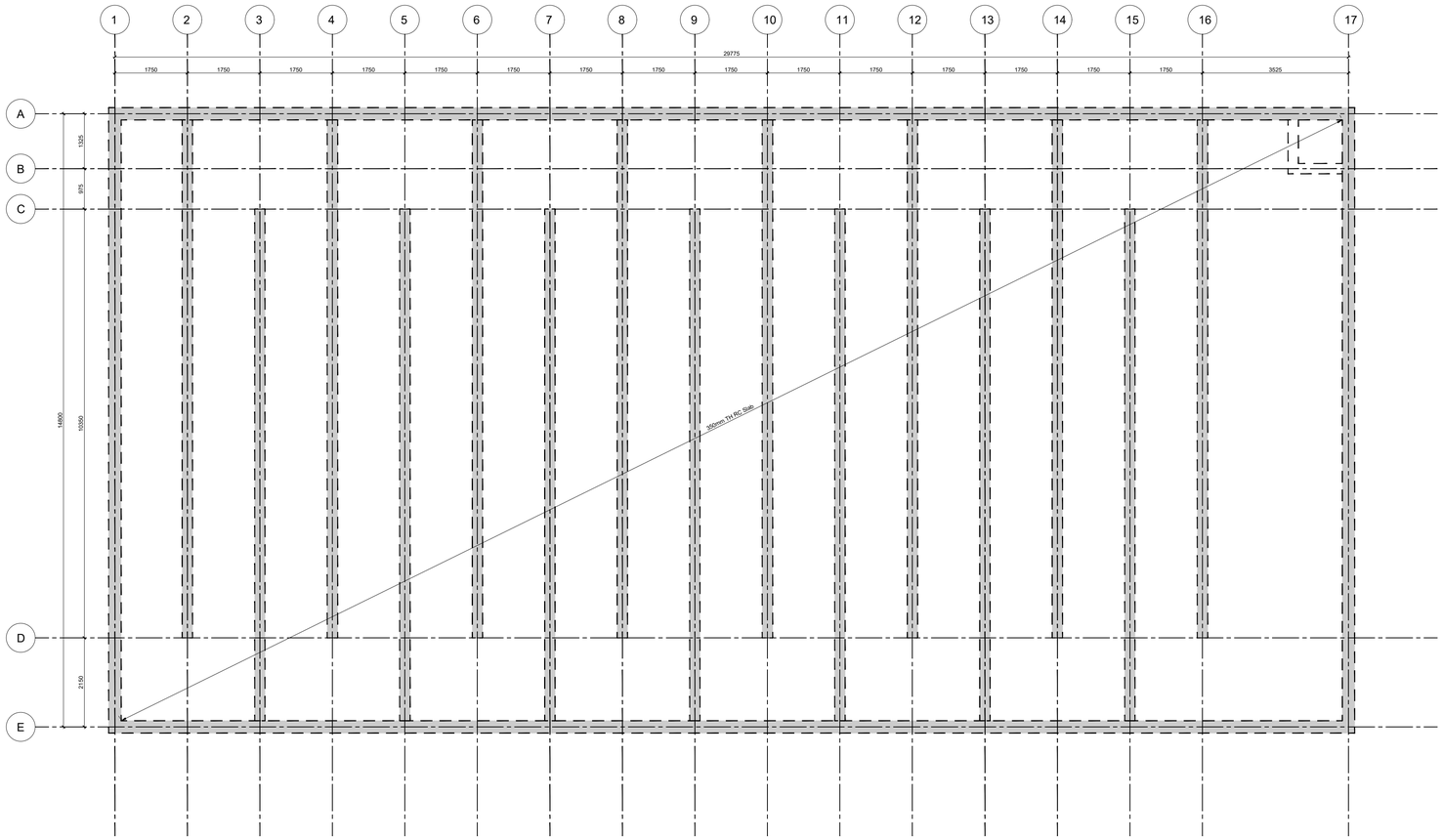
Stairs, Slabs & Walls	= 35mm
Beams (main bars)	= 35mm
Post-tensioned beams	= 40mm
Columns (main bars)	= 40mm
Foundations	= 75mm

5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 200 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

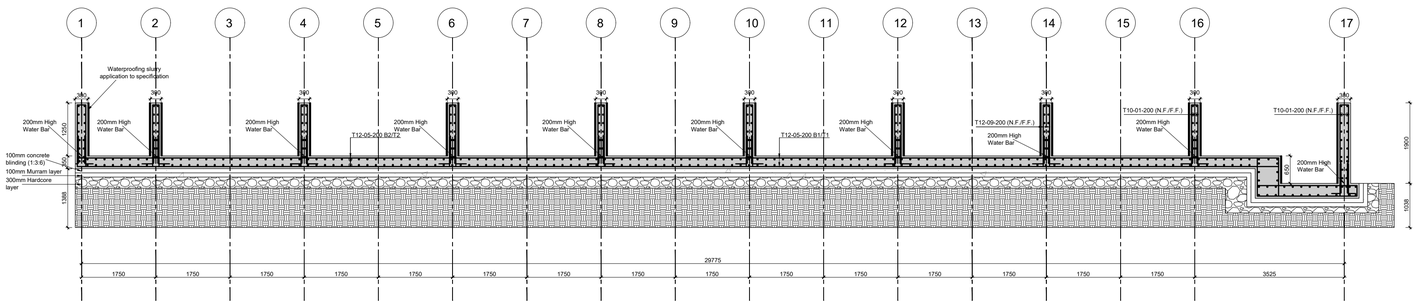
Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

DRAWING NO. 02-002-019



WETLAND FOUNDATION LAYOUT
(SCALE 1:50)



WETLAND SECTION
(SCALE 1:50)

CONSULTANT:-

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CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-
WETLAND STRUCTURAL DETAIL

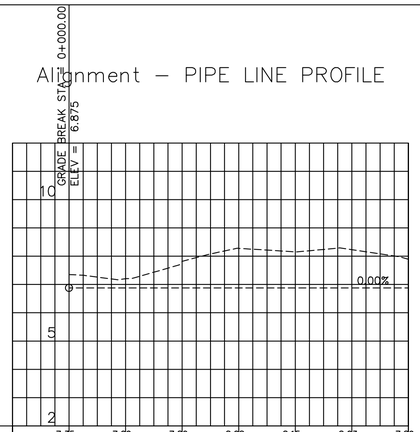
NOTES
1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:
   - Stairs, Slabs & Walls = 35mm
   - Beams (main bars) = 35mm
   - Post-tensioned beams = 40mm
   - Columns (main bars) = 40mm
   - Foundations = 75mm
5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 200 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

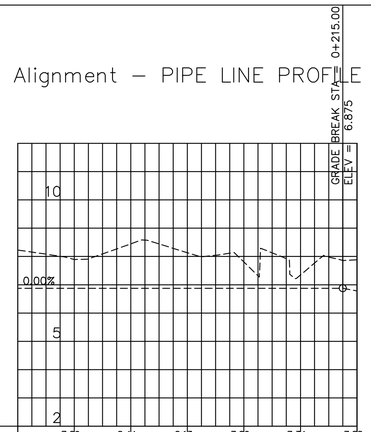
DRAWING NO. 02-002-020

Alignment – PIPE LINE PROFILE



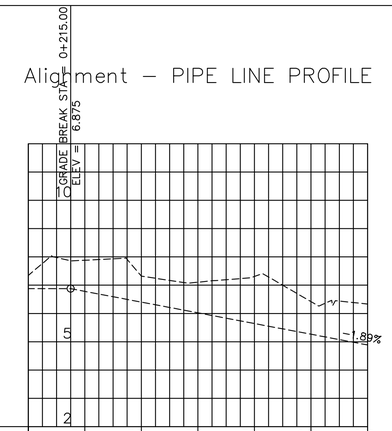
STATIC HEAD LEVELS (m)	7.35	7.20	7.82	8.28	8.15	8.23	7.89
HYDRAULIC GRADE LEVELS (m)	7.35	7.20	7.82	8.28	8.15	8.23	7.89
STATION	0+000	0+020	0+040	0+060	0+080	0+100	0+120
EXISTING GROUND LEVEL (m)	7.35	7.20	7.82	8.28	8.15	8.23	7.89
INVERT LEVELS (m)	7.20	7.00	7.82	8.28	8.15	8.23	7.89
SOIL TYPE							
FLOW							
Pipe Data							

Alignment – PIPE LINE PROFILE



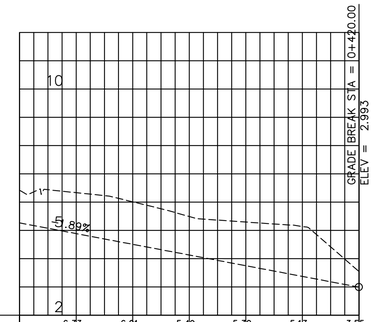
STATIC HEAD LEVELS (m)	7.89	8.44	8.13	7.80	7.34	7.88
HYDRAULIC GRADE LEVELS (m)	7.89	8.44	8.13	7.80	7.34	7.88
STATION	0+120	0+140	0+160	0+180	0+200	0+220
EXISTING GROUND LEVEL (m)	7.89	8.44	8.13	7.80	7.34	7.88
INVERT LEVELS (m)	7.89	8.44	8.13	7.80	7.34	7.88
SOIL TYPE						
FLOW						
Pipe Data						

Alignment – PIPE LINE PROFILE



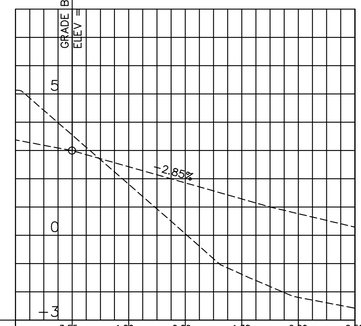
STATIC HEAD LEVELS (m)	7.88	7.32	7.11	7.31	6.42	6.33
HYDRAULIC GRADE LEVELS (m)	7.88	7.32	7.11	7.31	6.42	6.33
STATION	0+220	0+240	0+260	0+280	0+300	0+320
EXISTING GROUND LEVEL (m)	7.88	7.32	7.11	7.31	6.42	6.33
INVERT LEVELS (m)	7.88	7.32	7.11	7.31	6.42	6.33
SOIL TYPE						
FLOW						
Pipe Data						

Alignment – PIPE LINE PROFILE



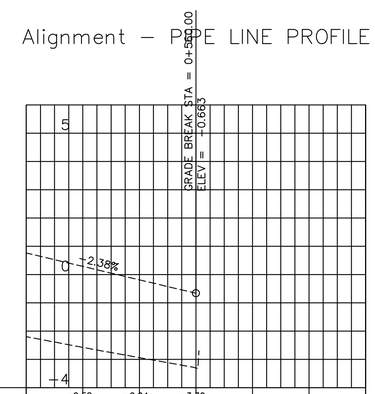
STATIC HEAD LEVELS (m)	6.33	6.01	5.49	5.30	5.13	3.55
HYDRAULIC GRADE LEVELS (m)	6.33	6.01	5.49	5.30	5.13	3.55
STATION	0+320	0+340	0+360	0+380	0+400	0+420
EXISTING GROUND LEVEL (m)	6.33	6.01	5.49	5.30	5.13	3.55
INVERT LEVELS (m)	6.33	6.01	5.49	5.30	5.13	3.55
SOIL TYPE						
FLOW						
Pipe Data						

Alignment – PIPE LINE PROFILE



STATIC HEAD LEVELS (m)	3.55	1.80	0.06	−1.38	−2.20	−2.58
HYDRAULIC GRADE LEVELS (m)	3.55	1.80	0.06	−1.38	−2.20	−2.58
STATION	0+420	0+440	0+460	0+480	0+500	0+520
EXISTING GROUND LEVEL (m)	3.55	1.80	0.06	−1.38	−2.20	−2.58
INVERT LEVELS (m)	3.55	1.80	0.06	−1.38	−2.20	−2.58
SOIL TYPE						
FLOW						
Pipe Data						

Alignment – PIPE LINE PROFILE



STATIC HEAD LEVELS (m)	−2.58	−2.94	−3.30			
HYDRAULIC GRADE LEVELS (m)	−2.58	−2.94	−3.30			
STATION	0+520	0+540	0+560	0+580	0+600	0+620
EXISTING GROUND LEVEL (m)	−2.58	−2.94	−3.30			
INVERT LEVELS (m)	−2.58	−2.94	−3.30			
SOIL TYPE						
FLOW						
Pipe Data						

CONSULTANT:-

ARPRIM CONSORTIUM

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Fax: 02 608 907
E-mail: info@arprimconsultants.com

CLIENT:-

STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-

PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-

PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-

OCEAN WATER INTAKE PIPE PROFILE

NOTES

1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:

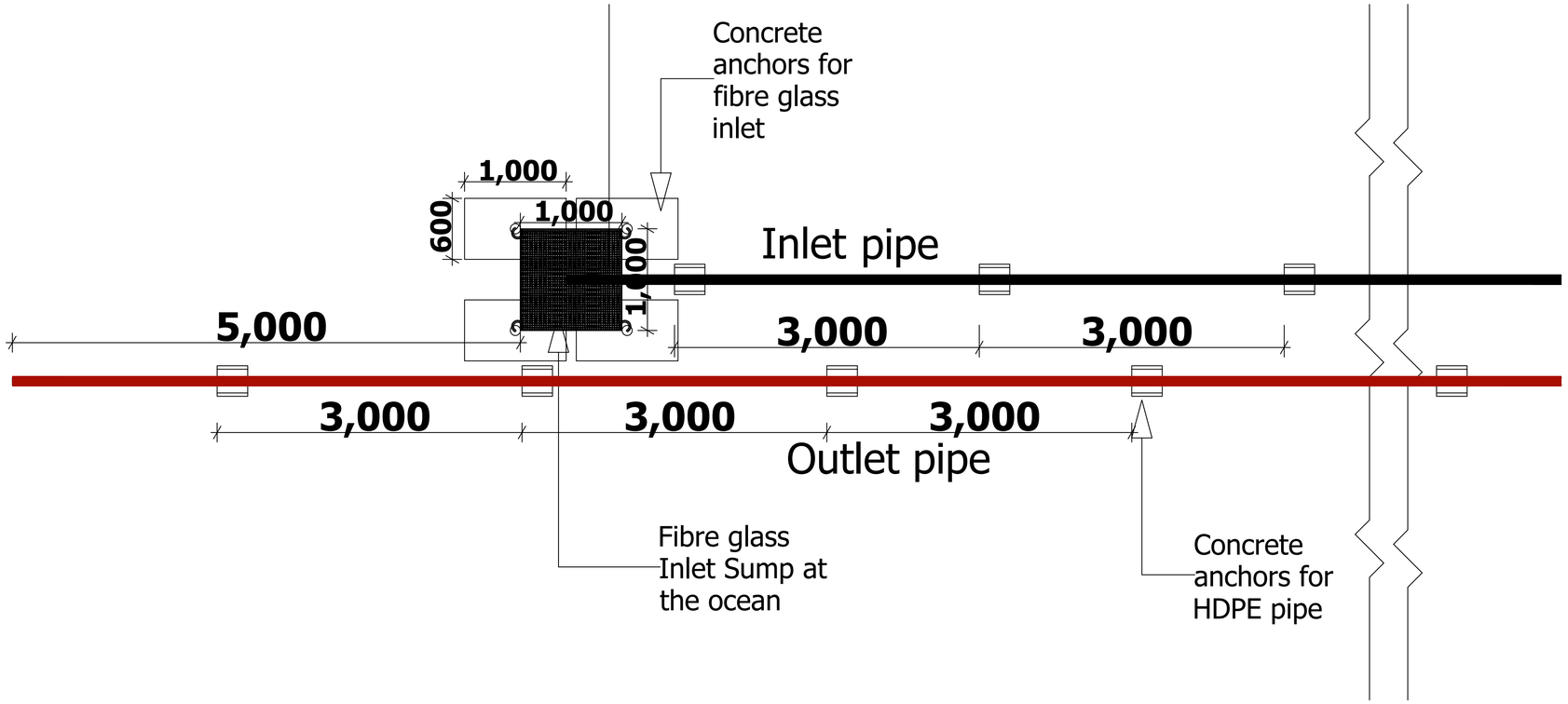
Stairs, Slabs & Walls	= 35mm
Beams (main bars)	= 35mm
Post-tensioned beams	= 40mm
Columns (main bars)	= 40mm
Foundations	= 75mm

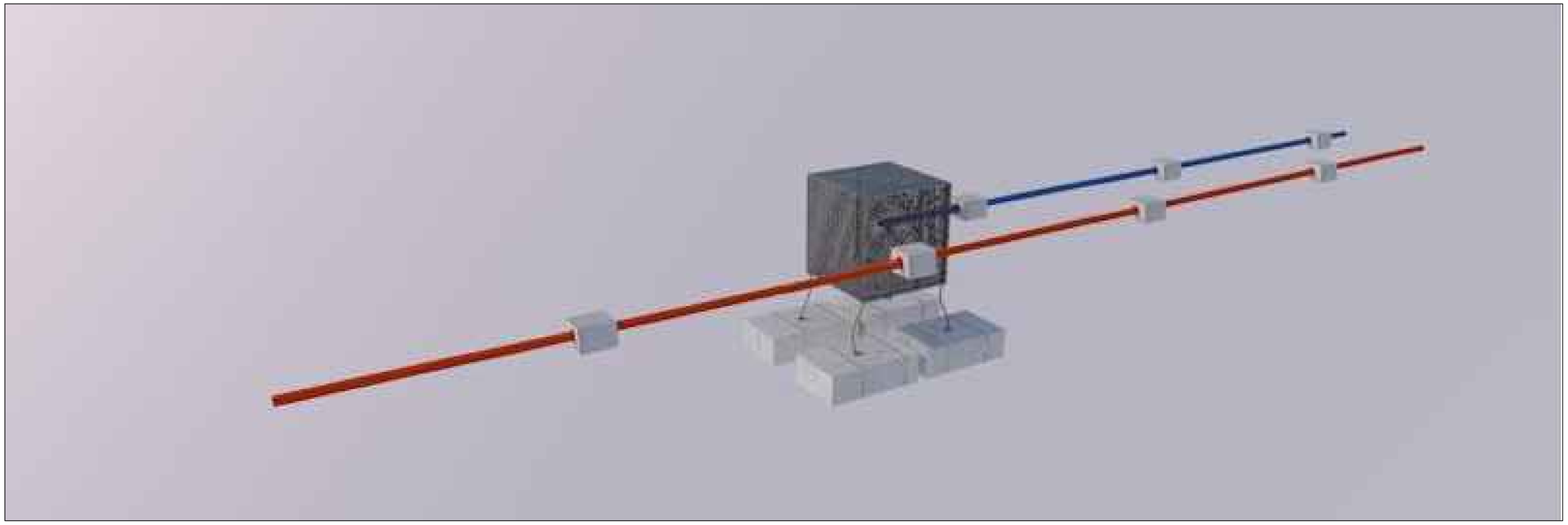
5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 200 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

DRAWING NO. 02-002-021





CONSULTANT:-

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Tel: 02 608 906
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CLIENT:-

STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-

PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-

PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-

OCEAN WATER PIPELINE AND SUPPORT STRUCTURE

NOTES

1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:

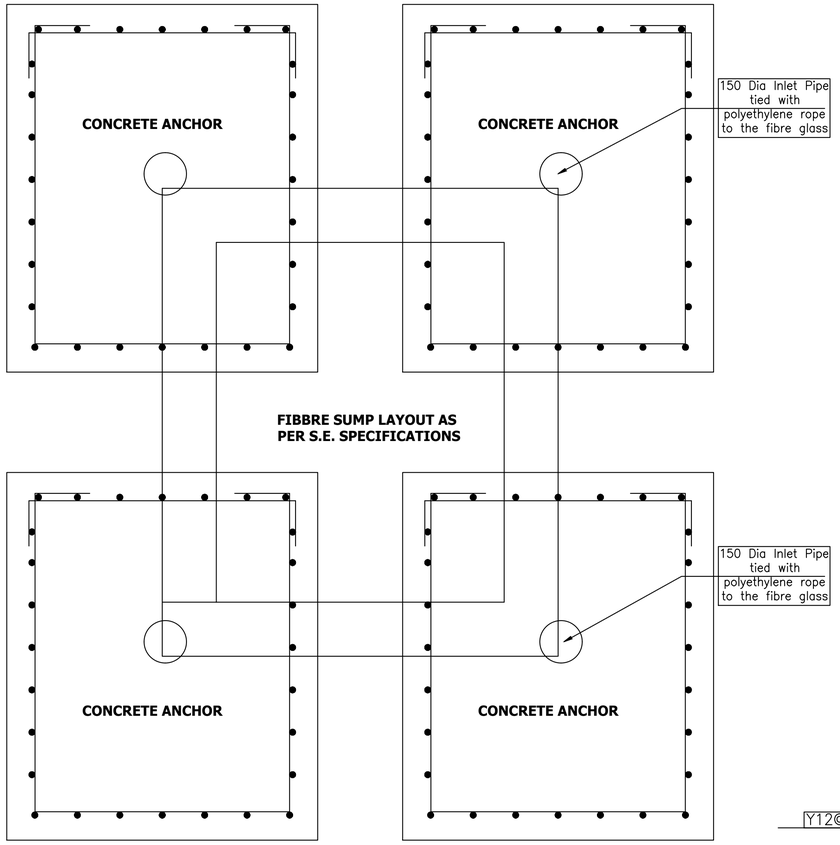
Stairs, Slabs & Walls	= 35mm
Beams (main bars)	= 35mm
Post-tensioned beams	= 40mm
Columns (main bars)	= 40mm
Foundations	= 75mm

5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 200 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

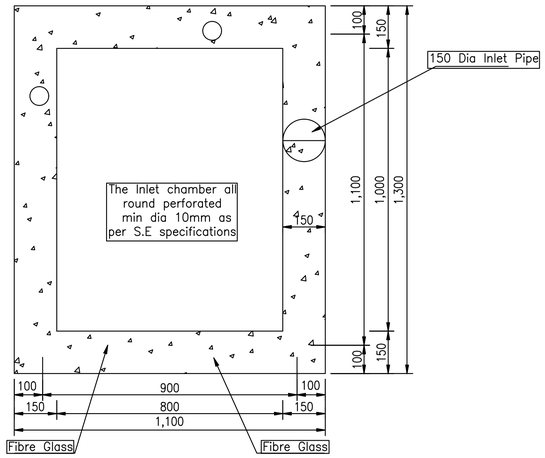
Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

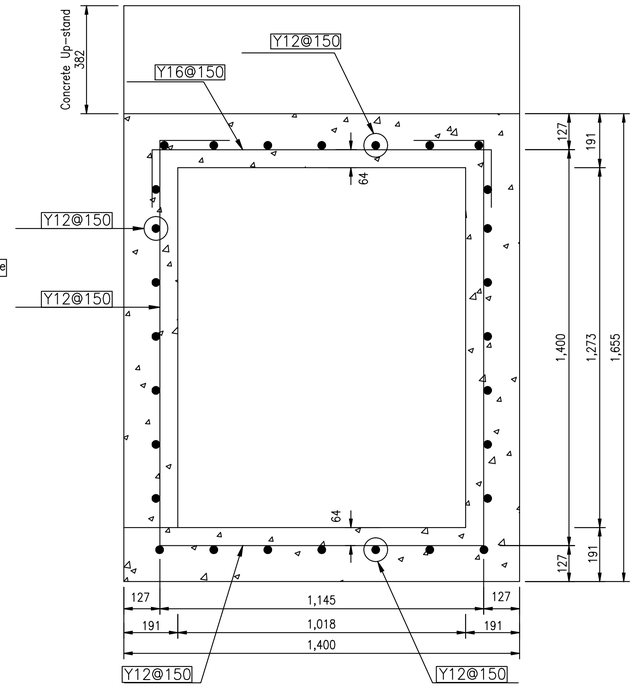
DRAWING NO. 02-002-022



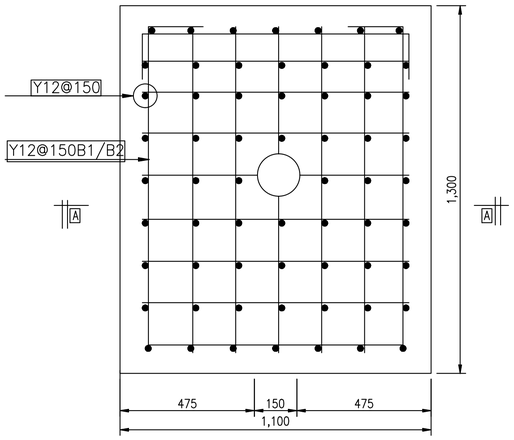
SUMP LAYOUT
Scale 1:10



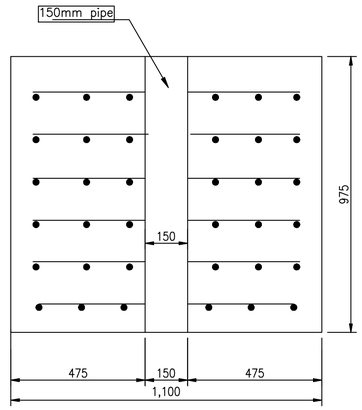
FIBRE GLASS LAYOUT
Scale 1:10



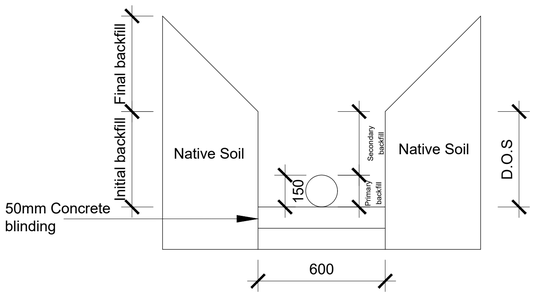
REINFORCED BOTTOM ANCHORAGE LAYOUT
Scale 1:10



TYPICAL ANCHOR REINFORCEMENT
Scale 1:10



TYPICAL ANCHOR REINFORCEMENT SECTION A--A
Scale 1:10



TYPICALTRENCH SECTION
(SCALE 1:25)

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E-mail: info@arprimconsultants.com

CLIENT:-
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-
PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-
PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-
OCEAN WATER INTAKE AND TRENCH - STRUCTURAL DETAIL

NOTES
1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:

Stairs, Slabs & Walls	= 35mm
Beams (main bars)	= 35mm
Post-tensioned beams	= 40mm
Columns (main bars)	= 40mm
Foundations	= 75mm

5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 200 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

Designed by	DAN
Drawn by	DAN
Checked by	HOH
Scale	AS SHOWN

Rev	Description	By	Date
D			
C			
B			
A			

DRAWING NO. 02-002-023

CONSULTANT:-

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CLIENT:-

STATE DEPARTMENT FOR FISHERIES, AQUACULTURE AND THE BLUE ECONOMY.

PROJECT:-

PROPOSED KENYA MARINE FISHERIES AND SOCIO-ECONOMIC DEVELOPMENT (KEMFSED) NATIONAL AND COUNTY FISHERIES INFRASTRUCTURE.

PROJECT TITLE:-

PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE, KWALE COUNTY.

DRAWING TITLE:-

OCEAN WATER RETICULATION LAYOUT

NOTES

1. Read this drawing in conjunction with relevant G.A., Services and Architectural drawings. Any descrepancy to be reported to the Engineer.
2. All dimensions are in millimetres unless specified otherwise.
3. All levels are indicated in m unless specified otherwise.
4. Minimum cover to all reinforcement to be:

Stairs, Slabs & Walls	= 35mm
Beams (main bars)	= 35mm
Post-tensioned beams	= 40mm
Columns (main bars)	= 40mm
Foundations	= 75mm

5. Maximum tolerance on concrete cover is +/- 5mm.
6. All high tensile (T) and mild steel (R) bars to be in accordance with BS 4449 and fabric mesh to be made from cold worked steel bars in accordance with BS 4483.
7. Minimum laps to all bars to be 50Ø unless stated otherwise.
8. Safe Bearing Pressure taken to be 200 KN/m².
9. Nominal aggregate size to be 20mm.
10. Structural concrete to be class 25 unless stated otherwise.
11. Concrete blinding to be class 15 unless stated otherwise.
12. Masonry Strength to be 7.0 N/mm².

		Rev	Description	By	Date
Designed by	DAN	D			
Drawn by	DAN	C			
Checked by	HOH	B			
Scale	AS SHOWN	A			

DRAWING NO. 02-002-002

DRAWING TITLE: PROPOSED CONSTRUCTION OF HATCHERY & RELATED INFRASTRUCTURE

DRAWING NUMBER: 02-003E- 001

No.	DRAWING/ DOCUMENT TITLE	DRAWING NUMBER	DRAWING SHEET	DRAWING FORMAT	DOCUMENT STATUS
D	**ELECTRICAL ENGINEERING DRAWINGS**				
1	LIST OF DRAWINGS	02- 003E- 001	A3	PDF/ EXCEL	Provided
2	LIGHTING & POWER SYSTEM GENERAL NOTES	02- 003E- 002	A3	PDF/ DWG	Provided
3	ELECTRICAL SCHEDULE OF SYMBOLS	02- 003E- 003	A3	PDF/ DWG	Provided
4	HATCHERYLIGHTING LAYOUT	02- 003E- 004	A2	PDF/ DWG	Provided
5	HATCHERY POWER LAYOUT	02- 003E- 005	A2	PDF/ DWG	Provided
6	HATCHERY FIRE ALARM LAYOUT	02- 003E- 006	A2	PDF/ DWG	Provided
7	HATCHERY CCTV LAYOUT	02- 003E- 007	A2	PDF/ DWG	Provided
8	HATCHERY SCHEMATICS	02- 003E- 008	A2	PDF/ DWG	Provided
9	RO & POWER PLANT ROOMS LIGHT	02- 003E- 009	A2	PDF/ DWG	Provided
10	RO & POWER PLANT ROOMS POWER	02- 003E- 010	A2	PDF/ DWG	Provided
11	RO & POWER PLANT ROOMS SCHEMATIC	02- 003E- 011	A2	PDF/ DWG	Provided
12	HATCHERY SUB- PANEL SCHEMATIC	02- 003E- 012	A2	PDF/ DWG	Provided
13	NAMARET MAIN SCHEMATIC	02- 003E- 013	A2	PDF/ DWG	Provided
14	BATTERY & PUMP ROOMS ELECTRICAL LAYOUT	02- 003E- 014	A2	PDF/ DWG	Provided
15	GATE HOUSE ELECTRICAL LAYOUT	02- 003E- 015	A2	PDF/ DWG	Provided
16	GATE HOUSE SCHEMATIC	02- 003E- 016	A2	PDF/ DWG	Provided
17	BATTERY & PUMP ROOMS SCHEMATICS	02- 003E- 017	A2	PDF/ DWG	Provided
18	SOLAR SCHEMATIC	02- 003E- 018	A2	PDF/ DWG	Provided
19	EARTHING DETAIL	02- 003E- 019	A2	PDF/ DWG	Provided
20	SOCKETS AND SWITCHES DETAIL	02- 003E- 020	A2	PDF/ DWG	Provided
21	CABLE TRAY DETAIL	02- 003E- 021	A2	PDF/ DWG	Provided
22	CONDUIT SUPPORT SYSTEM DETAIL	02- 003E- 022	A2	PDF/ DWG	Provided
23	STREET LIGHTING DETAIL	02- 003E- 023	A2	PDF/ DWG	Provided
24	SITE PLAN- STREET LIGHTING & POWER RETICULATION	01- 003E- 035	A2	PDF/ DWG	Provided

TENDER ISSUE

GENERAL NOTES

1. ALL ELECTRICAL WORKS CARRIED OUT SHALL COMPLY WITH THE LATEST EDITION OF IEEE WIRING REGULATIONS, BS 7671 AND RELEVANT LOCAL AUTHORITY REQUIREMENTS.
2. EARTHING INSTALLATION SYSTEM SHALL COMPLY WITH SECTION 5 OF WIRING REGULATION. SECTION 6 & 7 SHALL BE REFERENCED FOR ALL WIRING SYSTEMS. WIRING SHALL BE IN CONCEALED CONDUIT/TRUNKING UNLESS OTHERWISE SPECIFIED BY THE EE.
3. THE MOUNTING HEIGHT OF ALL SWITCH SOCKET OUTLET SHALL BE AT 300mm FROM FINISHED FLOOR LEVEL EXCEPT IN WET AREAS WHERE IT SHALL BE 1500mm FROM FINISHED FLOOR LEVEL OR UNLESS OTHERWISE STATED.
4. THE POSITIONING OF ALL LIGHTING LUMINAIRES, SWITCH SOCKET OUTLETS, DISTRIBUTION BOARDS ETC. AS SHOWN IN THE DRAWINGS ARE APPROXIMATE ONLY. THE EXACT POSITIONS SHALL BE DETERMINED AT SITE.
5. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE ELECTRICAL LOAD BALANCING, AND LABELING OF ALL EQUIPMENT AND SWITCHBOARDS THROUGHOUT THE INSTALLATION.
6. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO LIAISE WITH KPLC AND THE LOCAL AUTHORITIES FOR ALL CLEARANCES, CABLE JOINTING, TESTING AND ELECTRICITY METERING FOR THE INSTALLATION.
7. THE OVERALL RESISTANCE FOR THE EARTHING SYSTEM (ELECTRICAL) SHALL BE LESS THAN 1 OHM AND IN ANY CASE SHALL COMPLY WITH KPLC REQUIREMENTS.
8. ALL DISCHARGE LIGHTING LUMINAIRES, IF ANY, SHALL BE COMPLETE WITH BUILT-IN CONTROL GEAR, LAMP, LOW-LOSS BALLAST, AND AUXILIARY QUARTZ LAMP FOR DISCHARGE LAMP RE-STRIKING.
9. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SEALING OF ALL CABLE PENETRATION OPENINGS BETWEEN FLOOR SLAB AND WALLS ETC. WITH APPROVED FIRE RATING MATERIAL/SEALANT TO CONSULTANTS' APPROVAL.
10. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SEALING OF ALL CABLE PENETRATION OPENINGS THROUGH ROOF FLOOR SLABS, WALLS WITH APPROVED WATERPROOF MATERIALS AFTER THE INSTALLATION OF CABLES.
11. ALL FLUORESCENT LIGHTING LUMINAIRES SHALL BE COMPLETE WITH LOW LOSS BALLAST, TUBE LAMPS, ETC. COLOR OF LIGHT OUTPUT SHALL BE AS SPECIFIED BY THE CONSULTANT OR INTERIOR DECORATOR.
12. THE ELECTRICAL SUB-CONTRACTOR SHALL BACKFILL WITH SANDBAG THE MANHOLES AND DRAW PITS TO COMPLY TO TECHNICAL SPECIFICATIONS.
13. ALL CABLES TO BE LAID IN HD UPVC PIPES SHALL BE ENCASED IN CONCRETE WHEN LAID ACROSS THE DRIVEWAY.
14. ALL UNDERGROUND WIRING SHALL BE OF XLPE/SWA/PVC CABLE (IN HD UPVC PIPE FOR HARD GROUND / PAVEMENT).
15. IT IS THE ELECTRICAL SUB-CONTRACTOR'S RESPONSIBILITY TO PROVIDE EARTH FAULT AND OVERCURRENT TRIPPING DISCRIMINATION BETWEEN THE SWITCHBOARD AND THE INCOMING FEEDER TO COMPLY WITH THE LOCAL POWER UTILITY COMPANY AND THE CONSULTANT'S REQUIREMENTS.
16. THE ELECTRICAL SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPOTENTIAL EARTHING BONDING TO ALL METAL PARTS COMPLETED BY THE OTHER TRADES TO THE NEAREST ELECTRICAL PANEL / EARTH BAR.
17. ALL WIRING TO LIGHTING LUMINAIRES SHALL COMPRISE OF APPROVED CEILING ROSE FOR INDOOR INSTALLATION AND WEATHERPROOF JUNCTION BOX FOR OUTDOOR INSTALLATION. CONNECTION TO LIGHT FIXTURE SHALL BE BY MEANS OF PVC SHEATHED FLEXIBLE CABLE FOR NORMAL SUPPLY, FR CABLE FOR EMERGENCY SUPPLY AND ARMOURED CABLE FOR OUTDOOR INSTALLATION.
18. ALL LIGHTING POLE SPECIFIED SHALL COMPRISE OF RAIL MOUNTED 10A MCB IN THE COMPARTMENT. ALL POLE SHALL HAVE ITS OWN LIGHTNING ELECTRODES. OUTDOOR INSTALLATION SHALL BE IN HEAVY DUTY UPVC PIPES OF 100mm DIAMETER (MINIMUM).
19. MCB's RATED < 100A PROTECTING CABLES SUPPLYING LOADS WITH HIGH SWITCH-ON CURRENT (E.G. MOTORS, HID LAMPS, ETC.) SHALL HAVE TYPE 'C' MAGNETIC CURVE RATING UNLESS OTHERWISE INDICATED IN THE PLANS. UNLESS OTHERWISE STATED, ALL BUSBAR ARE OF HD COPPER AND SHALL BE RATED AT A CURRENT DENSITY OF NO MORE THAN 1.55A/sq. mm.
20. THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL NECESSARY LABOUR, MATERIALS AND EQUIPMENT FOR SATISFACTORY COMPLETION OF THE ENTIRE ELECTRICAL INSTALLATION AS GENERALLY DESCRIBED IN THE SPECIFICATION AND/OR SHOWN ON DRAWINGS.
21. ALL LOCATIONS OF EQUIPMENT AND CABLE ROUTES SHOWN ON THE DRAWING ARE APPROXIMATE. THE EXACT LOCATIONS MUST BE CO-ORDINATED ON SITE BEFORE INSTALLATION. FULLY CO-ORDINATED SHOP DRAWINGS MUST BE SUBMITTED TO THE CONSULTANT FOR APPROVAL BEFORE COMMENCEMENT OF WORK.
22. ALL SWITCHBOARDS AND DISTRIBUTION BOARDS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST DEWA REGULATIONS AND THE APPROVAL OF POWER UTILITY COMPANY. THEY SHALL BE PAINTED WITH A COAT OF ANTI-RUST PAINT AND TWO COATS OF SEMI-GLOSS TEAK PAINT OF BEST QUALITY TO THE APPROVAL OF THE CONSULTANT.
23. ALL POWER CONDUITS AND TRUNKING WHICH ARE EXPOSED SHALL BE PAINTED WITH A COAT OF RUST-RESISTING PRIMER AND TWO COATS OF ELECTRIC ORANGE.
24. ALL CONDUITS SHALL BE G.I., G.I. CONDUITS SHALL COMPLY WITH THE LATEST DEWA REGULATIONS ON ELECTRICAL INSTALLATIONS. MINIMUM SIZE SHALL NOT BE LESS THAN 20mm (INSIDE DIAMETER). ALL THREADS IN CONDUITS SHALL BE TREATED WITH ALUMINUM PAINT OR SIMILAR ANTITRUST PAINT TO PREVENT CORROSION AT JOINTS AND TERMINATION, CONNECTIONS SHALL BE BY MEANS OF COUPLER, SHALL BE USED FOR DIFFERENT CIRCUITS.
25. PHASE SEGREGATION SHALL COMPLY WITH THE LATEST REQUIREMENTS OF THE IEE WIRING REGULATIONS. SEPARATE CONDUITS SHALL BE USED FOR CABLES OF DIFFERENT CIRCUIT CATEGORIES. FOR 3 PHASE FINAL CIRCUITS, SEPARATE CONDUITS SHALL BE USED FOR DIFFERENT CIRCUITS.
26. ALL LIGHTING POINTS SHALL BE PROVIDED WITH CIRCUIT PROTECTIVE CONDUCTORS AND ALL METAL PARTS SHALL BE CONTINUOUSLY EARTHED THROUGHOUT.
27. THE ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL LIGHT LUMINAIRES AS SHOWN ON THE DRAWINGS. EACH FITTING SHALL HAVE ITS OWN INDEPENDENT SUPPORT REGARDLESS OF SURFACE, RECESSED OR SUSPENDED MOUNTING.
28. EACH CIRCUIT SHALL BE TESTED FOR GROUNDS AND SHORTS BY MEANS OF A MEGGER INSULATION RESISTANCE TESTING INSTRUMENT APPLYING A VOLTAGE OF NOT LESS THAN 500V D.C. UPON CIRCUIT UNDER TEST.
29. CABLES FOR ESSENTIAL CIRCUITS SUCH AS EMERGENCY LIGHTING CIRCUITS AND FIRE FIGHTING EQUIPMENT CIRCUITS ETC SHALL NOT BE DRAWN INTO THE SAME CONDUIT, DUCT OR TRUNKING INTENDED FOR NORMAL CIRCUITS AS PER IEE 364 WIRING REGULATION. ALL CABLES AND WIRES FOR LIFE SAFETY AND ESSENTIAL CIRCUIT SHALL BE OF 2HRS FIRE RATED.
30. FOR SINGLE PHASE SUPPLY, CIRCUITS OF DIFFERENT PHASES SHALL NOT SHARE THE SAME CONDUIT.
31. ALL SHUNT TRIP RELEASES OF ACB'S IN THE MAIN ELECTRICAL SWITCHBOARD SHALL BE RATED AT 30V DC. A BATTERY SUPPLY OF SUFFICIENT CAPACITY SHALL BE PROVIDED FOR THE TRIPPING OF ACBs, CAPACITY OF BATTERY SHALL BE SUBMITTED FOR THE CONSULTANT'S APPROVAL PRIOR TO INSTALLATION.
32. ALL EARTH TESTS SHALL BE CARRIED OUT WITH A 1000V MEGGER TEST INSTRUMENT AND IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF DEWA WIRING REGULATIONS.
33. THE LIGHTNING PROTECTION SYSTEM SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST DEWA REGULATIONS PRACTICE AND BS-EN 62305 AND INSTALLED TO THE SATISFACTION OF THE CONSULTANT.
34. THE ELECTRICAL CONTRACTOR SHALL LIASE WITH ELV SYSTEMS CONTRACTOR VIA THE MAIN CONTRACTOR TO ENSURE THAT POWER SUPPLIES FOR ALL EQUIPMENT ARE ADEQUATELY PROVIDED TO SUIT THE SYSTEM REQUIREMENTS.
35. EQUIPOTENTIAL BONDING SHALL BE PROVIDED FOR ALL TOILETS.
36. ALL POWER OUTLET, LIGHTING, ETC., LOCATIONS SHOWN ARE APPROXIMATE ONLY AND THE ELECTRICAL SUB-CONTRACTOR MUST CO-ORDINATE WITH LINX AND OR THE INTERIOR DESIGNER, AS WELL AS EQUIPMENT SUPPLIERS.
37. THE DISTRIBUTION AND SIZE OF THE TRUNKING/CABLE TRAY SHOWN ON THE DRAWINGS ARE MEANT TO FACILITATE THE CONTRACTOR THE PROPOSED ROUTING OF THE MAIN AND SUB-MAIN. THE CONTRACTOR SHALL SIZE THE TRUNKING/CABLE TRAY BASED ON THE EXACT CABLE SPACE AND CODE REQUIREMENTS. THE CONTRACTOR SHALL ALLOW 20% SPARE SPACE FOR FUTURE CABLE LAYING.
38. ALL ISOLATORS INSIDE MECHANICAL PLANTROOMS AND OTHER POTENTIALLY WET LOCATIONS SHALL BE PROVIDED WITH WEATHERPROOF ENCLOSURE (IP65).
39. CONTRACTOR TO CROSS REFER TO FIRE ALARM CAUSE AND EFFECT MATRIX. ALL DEVICES, INTERFACE, TERMINAL BLOCKS, WIRING, ETC. NECESSARY FOR SATISFACTORY OPERATION OF FIRE ALARM AND FIRE STRATEGY SHALL BE DEEM INCLUDED IN THIS CONTRACT.

ELECTRICAL BOARD AND COMPONENTS

1. ALL MCCB's INSTALLED SHALL COMPLETE WITH ADJUSTABLE THERMAL AND MAGNETIC SETTING OF APPROPRIATE RANGE.
2. ALL MCBs USED FOR PROTECTION OF LIGHTING AND SMALL POWER SHALL OF TYPE C CHARACTERISTIC. ALL MCCBs/MPCBs USED FOR PROTECTION OF MOTOR LOADS SHALL BE OF TYPE D CHARACTERISTIC. HOWEVER, MOTOR PROTECTION COORDINATION STUDY SHALL BE SUBMITTED BY THE CONTRACTOR FOR ENGINEER'S/CONSULTANT'S REVIEW AND APPROVAL.
3. MCCBs/MCBs IN THE MAIN SWITCHBOARDS, SUB-SWITCHBOARDS, DISTRIBUTION BOARDS SHOWN HEREIN AND OTHER DRAWINGS PROTECTING MOTOR CIRCUITS FOR PUMPS, FANS, AHU's, ETC. SHALL BE OF THE TYPE SUITABLE FOR MOTOR PROTECTION INCORPORATING OVERLOAD AND SHORT CIRCUIT PROTECTIVE DEVICES (ALSO EARTH FAULT PROTECTION WHERE SHOWN IN THE DRAWINGS) AND THEY SHALL BE SO SELECTED THAT THEY ARE ABLE TO COORDINATE WITH BOTH THE UPSTREAM AND DOWNSTREAM PROTECTION DEVICES.
4. ALL PROTECTION CTs SHALL BE OF CLASS COMPLYING TO DEWA REQUIRENT OR BETTER.
5. ALL METERING CTs SHALL BE OF CLASS COMPLYING TO DEWA REQUIREMENT OR BETTER.
6. BUSBAR MARKINGS, ARRANGEMENTS, CONNECTIONS AND GRADE OF COPPER SHALL COMPLY AS APPROPRIATE WITH BS.159, 1433 AND 1977.
7. ALL ELECTRICAL BOARDS BUSBARS SHALL BE OF HARD DRAWN TINNED COPPER AND SHALL HAVE A CURRENT DENSITY OF NOT LESS THAN 1.55A/SQ.MM. WHEN MORE THAN ONE SET OF BUSBARS ARE USED PER PHASE, APPROPRIATE DERATING FACTOR SHALL APPLY.
8. ALL NON-CURRENT CARRYING METALLIC PARTS OF THE DISTRIBUTION BOARDS SHALL BE BONDED TO SYSTEM EARTH.
9. THERE SHALL BE A COMMON EARTH BAR IN EACH ELECTRICAL BOARD.
10. THE NEUTRAL LINKS AND EARTH BARS IN THE ELECTRICAL BOARDS SHALL BE LOCATED AT AN EASILY ACCESSIBLE POSITION AND SHALL BE KEPT CLEAR OF ANY OBSTRUCTIONS.
11. NEUTRAL AND EARTH BARS SHALL HAVE SUFFICIENT NUMBER OF WAYS TO MATCH THE NUMBER OF SUB-CIRCUITS WITH SPARES.
12. THE MINIMUM CLEARANCE AROUND THE NEUTRAL LINKS SHALL BE 50mm.
13. THE ELECTRICAL SUB-CONTRACTOR IS REQUIRED TO CARRY OUT HIS OWN FAULT LEVEL CALCULATIONS BASING ON THE CHARACTERISTICS OF THE EQUIPMENT OFFERED AND THE ACTUAL/AGREED ROUTING (SUBJECT TO THE SUPERVISING CONSULTANT APPROVAL) OF THE ACTUAL/AGREED ROUTING (SUBJECT TO THE SUPERVISING CONSULTANT APPROVAL) OF THE ACTUAL/AGREED ROUTING (SUBJECT TO THE SUPERVISING CONSULTANT APPROVAL) OF THE CABLES AND THEREAFTER SELECT THE MOST APPROPRIATE RUPTURING CAPACITY OF SUB-SWITCHBOARDS, BUSBAR TRUNKING AND DISTRIBUTION BOARDS TO MEET THE PROSPECTIVE FAULT LEVELS. ALL COSTS IN CONNECTION THEREWITH SHALL BE DEEMED TO BE INCLUDED IN THE SUB-CONTRACT SUM. THE ELECTRICAL SUB-CONTRACTOR SHALL SUBMIT DETAILED CALCULATION & SELECTION FOR ELECTRICAL CONSULTANT'S APPROVAL.
14. ALL ELECTRICAL EQUIPMENT AND ACCESSORIES THAT ARE EXPOSED TO WEATHER SHALL BE OF WEATHERPROOF TYPE TO IP65, UNLESS OTHERWISE STATED.
15. IDMTL OVERCURRENT AND EARTH FAULT RELAYS SPECIFIED SHALL BE COMPLETE WITH HIGH SET ELEMENT.
16. ALL OVERCURRENT, EARTH FAULT RELAYS AND EARTH LEAKAGE RELAYS SHALL BE TESTED ON SITE BY ELECTRICAL LICENSED TESTER AND ALL COSTS CONNECTED THEREWITH SHALL BE DEEM TO BE INCLUDED IN THE SUB-CONTRACT SUM.
17. THE ELECTRICAL SUB-CONTRACTOR IS REQUIRED TO SUBMIT DETAILS OF FINAL ARRANGEMENT AND DIMENSIONAL LAYOUT OF ALL THE ITEMS OF EQUIPMENT IN RESPECTIVE ROOMS TO SUIT SITE CONDITIONS, ETC FOR REVIEW BY THE CONSULTANT BEFORE COMMENCEMENT OF INSTALLATION.
18. ALL MOTOR SHALL BE PROVIDED WITH EMERGENCY STOP BUTTON RIGHT NEXT TO THE EQUIPMENT.
19. UNLESS OTHERWISE INDICATED, THE MCCBs/MCBs INSTALLED FOR ANY MAIN SWITCHBOARDS, SUB-BOARDS AND DISTRIBUTION BOARDS SHALL HAVE THE FOLLOWING MINIMUM BREAKING CAPACITY :

MAIN SWITCHBOARD	: 50KA RMS. 1 SEC.
SUB BOARDS	: 35KA RMS. 1 SEC.
DISTRIBUTION BOARDS	: 10KA RMS. 1 SEC.

CO-ORDINATION AND INSTALLATION

1. THE ELECTRICAL CONTRACTOR SHALL OBTAIN APPROVAL FROM STRUCTURAL ENGINEERS FOR PENETRATION THROUGH R.C. BEAMS AND FLOOR SLABS PRIOR TO CONSTRUCTION.
2. ALL CONDUITS LAYOUT AND INSTALLATION METHODS SHALL BE IDENTICAL IN ALL ROOMS AS MUCH AS POSSIBLE.
3. ALL MATERIALS/ CABLES TO BE USED AND INSTALLATION METHOD SHALL COMPLY WITH THE TECHNICAL SPECIFICATION, STANDARDS, CODE OF PRACTICE AND AUTHORITY REQUIREMENT.
4. THE ELECTRICAL CONTRACTOR IS REQUIRED TO SUBMIT DETAILS OF FINAL ARRANGEMENT AND DIMENSIONAL LAYOUT OF ALL ITEMS OF EQUIPMENT IN RESPECTIVE ROOMS TO SUIT SITE CONDITIONS, ETC. FOR REVIEW BY THE SUPERVISING CONSULTANT BEFORE COMMENCEMENT OF INSTALLATION.
5. ALL ELECTRICAL AND ELV DRAWINGS SHALL BE READ IN CONJUCTION WITH THE LATEST ARCHITECTURAL DRAWINGS, INTERIOR DEISGN DRAWINGS, OTHER SERVICES DRAWINGS AND SPECIFICATIONS.

LIGHTNING PROTECTION SYSTEM

1. LIGHTNING PROTECTION SYSTEM SHALL COMPLY WITH IEC CODE OF BS EN 62305.
2. THE POSITIONS OF THE ELECTRODES FOR LIGHTNING PROTECTION SYSTEM ARE APPROXIMATE ONLY. THE EXACT LOCATIONS ON SITE SHALL BE DETERMINED SUCH THAT THE SPECIFIED REQUIREMENTS OF EARTHING SYSTEM ARE COMPLIED.
3. ELECTRICAL CONTRACTOR SHALL LIASE WITH MAIN CONTRACTOR FOR INSTALLATION OF EARTH ELECTRODE PITS. WATER PROOFING FOR ELECTRODES THROUGH R.C SLAB SHALL BE PROVIDED UNDER THIS CONTRACT.
4. ALL PENETRATIONS THROUGH ROOF TO BE MADE WATER TIGHT AFTER INSTALLATION OF DOWN CONDUCTOR CABLES, ETC.

EARTHING SYSTEM

1. EARTH RESISTANCE WILL BE TESTED UPON COMPLETION OF EACH EARTHING POINT INSTALLATION BEFORE INTERCONNECTION OF THE EARTH POINT.
2. EARTH RESISTIVITY TEST SHALL BE CARRIED AT EACH EARTHING POINT.
3. ALL TAPE/CABLES/CLAMP CONTACT SURFACE SHALL BE HEAVILY TINNED PRIOR TO CONNECTION.
4. PRECAUTIONARY MEASURES SHALL BE TAKEN SO AS NOT TO OVER EXCAVATE THE EARTHING PIT.
5. PROPERTIATARY CAD WELD CONNECTION SHALL BE EMPLOYED FOR CONNECTING EARTH CABLE TO EARTHING POINT STRICTLY IN ACCORDANCE TO THE INSTRUCTION OF THE SUPPLIER.
6. IMMEDIATELY UPON COMPLETION OF EACH GROUP OF EARTH POINT INSTALLATION, TEST SHALL BE CARRIED OUT TO ESTABLISH THE EARTH RESISTANCE. THE TEST RESULTS SHALL BE SUBMITTED TO CONSULTANT FOR APPROVAL.
7. AFTER COMPLETION OF THE EARTHING INSTALLATION AND SATISFACTORY TESTING, EACH OF THE EARTHING PIT SHALL BE SUITABLY GROUTED TO SUPERVISING CONSULTANT REQUIREMENT TO PREVENT INGRESS OF GROUND WATER. GROUTING MATERIALS USED SHALL BE SUBJECT TO CONSULTANT'S APPROVAL.

CABLES AND ANCILLARY PRODUCTS

1. ALL CABLES / WIRES FOR FINAL SUB-CIRCUIT WIRINGS SHALL BE PVC, MULTI-STRAND COPPER CONDUCTORS.
2. NO PVC CONDUIT/TRUNKING SHALL BE ALLOWED FOR THE WHOLE ELECTRICAL INSTALLATION UNLESS OTHERWISE STATED. IN GENERAL, ALL WIRING SHALL BE DONE WITHIN CONDUIT EMBEDDED IN SLAB FOR ALL SEVICES. EXPOSE CONDUIT/ WIRE SHALL NOT BE ACCEPTED.
3. SEPARATE CONDUIT/MULTI-GANG SWITCH BOX SHALL BE PROVIDED FOR FINAL SUB-CIRCUIT OF DIFFERENT PHASES. ALSO A SIGN SHALL BE PROVIDED TO INDICATE THE VOLTAGE BETWEEN THEM IN ACCORDANCE WITH DEWA REGULATION FOR THE INSTALLATIONS.
4. ALL EXTERNAL/LANDSCAPE LIGHTING POINTS SHALL BE PROVIDED WITH CABLES WITH ADDITIONAL LENGTH OF 5m.
5. SPACE FACTOR OF CONDUIT & TRUNKING SHALL COMPLY WITH DEWA REGULATION OF PRACTICE FOR WIRING OF ELECTRICAL EQUIPMENT OF BUILDINGS.
6. ALL SUB-MAINS CIRCUITS TO BE COMPLETE WITH CIRCUIT PROTECTIVE CONDUCTOR (CPC) COMPLYING TO DEWA REGULATION FOR THE INSTALLATIONS.
7. NEUTRAL & EARTH CABLES FOR EACH DIFFERENT CIRCUIT SHALL BE BROUGHT BACK TO THE SOURCE PANEL AND SHALL NOT BE LOOPED TOGETHER OUTSIDE THE PANEL.
8. ALL ELECTRICAL CONDUITS AND CONDUIT BOXES TO CAST WITHIN R.C. SLAB AT WET AREAS MUST HAVE TIGHTLY SEALED AND WATERPROOF JOINTS.
9. ALL UNDERGROUND JUNCTION BOXES SHALL BE OF G.I., TYPE. KNOCK OUT BOXES SHALL NOT BE USED AS UNDERFLOOR JUNCTION BOXES.
10. THE SIZES OF CABLE TRAY/TRUNKING/CONDUIT AS SHOWN IN DRAWINGS ARE APPROXIMATE ONLY. ELECTRICAL SUB-CONTRACTOR IS DEEMED TO HAVE ALLOWED IN HIS TENDER PRICE FOR ALL NECESSARY ADJUSTMENT TO ACCOMMODATE THE CABLES AND SHALL SUBMIT ALL DETAILED CO-ORDINATED CABLE CONDUIT/TRUNKING/TRAY/ LADDER ROUTE PLANS AND SECTION DRAWINGS TO THE SUPERVISON CONSULTANT FOR CLEARANCE PRIOR TO STARTING WORK ON SITE.
11. ALL UNDERGROUND CABLES CROSSING DRIVEWAYS OR HARDCORE AREAS ARE TO BE PROVIDED WITH HEAVY DUTY PVC PIPES, ENCASED IN CONCRETE WITH FULL HAUNCHING.
12. ALL STRAIGHT CONDUIT RUNS EXEEDING 8 METERS SHALL BE PROVIDED WITH JUNCTION BOX TO FACILITATE EASY WIRE / CABLE PULLING.
14. ALL FEEDER CABLES SHALL BE XLPE / SWA / LSOH FOR NORMAL CRCUIT AND XLPE / SWA / FR FOR EMERGENCY CIRCUITS.

LUMINAIRES

1. ALL LIGHTING SWITCHES SHALL COMPLY WITH CIBSE STANDARD, KENYA GREEN BUILDING REGULATION AND SHALL BE OF THE APPROVED TYPE.
2. FLUORESCENT LAMP TUBES USED AT PUBLIC AREAS SHALL BE OF COLOUR 83 WARM WHITE AND INSTANT START UNLESS OTHERWISE STATED AND OF LOW LOSS ENERGY SAVING TYPE.
3. ELECTRICAL CONTRACTOR SHALL REFER TO LIGHTING CONSULTANT – FOR FURTHER NOTES AND LEGENDS.
4. ALL EXIT LIGHTINGS SHALL BE POSITIONED NOT MORE THAN 2.4m ABOVE FFL. TO CENTRE OF FITTING.

POWER OUTLETS

1. SWITCH SOCKET OUTLETS AND SWITCHES MOUNTED SURFACE AT PLANTROOMS, STORES AND SIMILAR AREAS SHALL BE OF WEATHER PROOF TYPE UNLESS OTHERWISE STATED.
2. ALL ELECTRICAL EQUIPMENT & ACCESSORIES THAT ARE EXPOSED OR LESS THAN 2.0M AWAY FROM WET AREA SHALL BE OF WATERPROOF TYPE.
3. COLOUR FOR ALL SWITCHES, SWITCH SOCKET OUTLETS SHALL BE AS PER SUPERVISING CONSULTANT'S / ARCHITECT'S / INTERIOR DESIGNER'S SELECTION.
4. UNLESS OTHERWISE INDICATED, THE MOUNTING HEIGHTS FROM FINISHED FLOOR LEVELS FOR VARIOUS ITEMS OF ELECTRICAL WIRING ACCESSORIES/ EQUIPMENT SHALL BE AS FOLLOWS:

LIGHTING SWITCHES	–	1400mm TO CENTRELINE
SWITCH SOCKET OUTLETS	–	300mm TO CENTRELINE
DISTRIBUTION BOARDS	–	GENERALLY 1800mm TO TOP OF BOARD
WALL/COLUMN LIGHTS	–	2500mm TO CENTRELINE

5. THE ELECTRICAL CONTRACTOR SHALL NOTE THAT THE POSITIONS OF ELECTRICAL POINTS, LUMINAIRES, LIGHTING SWITCHES, SWITCH SOCKET OUTLETS ETC. ARE INDICATIVE AND APPROXIMATE AS SHOWN ON DRAWINGS. THE ACTUAL POSITIONS SHALL BE BASED ON THE CONSULTANT'S OR INTERIOR DESIGNER'S DRAWING. THE ELECTRICAL SUB-CONTRACTOR IS DEEMED TO HAVE ALLOWED IN HIS TENDER PRICE FOR ALL NECESSARY SITE ADJUSTMENT TO SUIT THE FINAL POSITIONS.
6. LOCATIONS FOR ELECTRICAL DISTRIBUTION BOARDS SHOWN IN THE PLANS ARE INDICATIVE ONLY. ELECTRICAL SUB-CONTRACTOR SHALL VERIFY ON SITE AND PROPOSE THEIR ACTUAL LOCATIONS ON THE SHOP DRAWING FOR CLEARANCE.
7. ELECTRICAL DISTRIBUTION BOARD SHALL NOT BE MOUNTED MORE THAN 1800mm ABOVE FFL. (MEASURED FROM FFL TO TOP OF DISTRIBUTION BOARD).
8. ALL ISOLATOR SHALL BE IP-65, IN METAL CABINET AND PAD-LOCKABLE.
9. FINAL LOCATION AND MOUNTING HEIGHT OF WIRING DEVICES SHALL BE COORDINATED WITH ARCHITECT AND ID CONSULTANT.
10. MOTORIZED DAMPER AND MOTORIZED VALVE WHERE REQUIRED BY MECHANICAL SHALL BE BE PROVIDED WITH RESPECTIVE FUSE CONNECTION UNIT TO BE CONNECTED TO RELATED EQUIPMENT LMCP OR AS OTHERWISE SHOWN ON PLAN.

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REVISIONS:

REV. No.	Details of Revision

PROJECT TITLE:

PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE

CLIENT:

STATE DEPARTMENT FOR FISHERIES AQUACULTURE & THE BLUE ECONOMY

CLIENT'S SIGNATURE:

Sign:

DRAWING TITLE:

ELECTRICAL DRAWINGS NOTES

Dwg. No.	02- 003E- 002		
Scale:	NTS		
Drawn by		Chek'd By	
Project no.:		Date:	
01		24.11.2023	

TENDER ISSUE

SCHEDULE OF SYMBOLS AND LIGHTING LUMINAIRES

10A 1 GANG 1 WAY white moulded switch plates

10 2 GANG 1 WAY white moulded switch plates

10A 3 GANG 1 WAY white moulded switch plates

10A 3 GANG 1 WAY white moulded switch plates

10A 1 GANG 2 WAY white moulded switch plates

10A 2 GANG 2 WAY white moulded switch plates

Outlet for 13A twin switched socket outlet complete with concealed conduit, box wiring in 3 x 2.5 mm² SC-PVC-CU cables and 13A twin switched socket outlet plate for raw power

Outlet for 13A twin switched socket outlet complete with concealed conduit, box wiring in 3 x 2.5 mm² SC-PVC-CU cables and 13A twin switched socket outlet plate for clean power

TPN Distribution Board
Complete with 100A TP integral isolator and all accessories including lockable cover with the the required MCB's and Blanking plates

SPN Consumer Unit
complete with 100A SPN integral isolator and all accessories including lockable cover with the the required MCB's and Blanking plates

Outlet for RJ45 face plate, complete with concealed HG PVC conduit, square PVC box, draw wire and blanking plate

Outlet for Television coaxial cable outlet point, complete with concealed HG PVC conduit, square PVC box, draw wire and TV outlet point

Outlet for cooker control unit comprising wiring in 3x6.0mm2 SC-PVC CU cables, twin box Dia. 25mm socket with neon lamp

Outlet for 15A round pin socket outlet complete with concealed conduit, box wiring in 3 x 4 mm² SC-PVC-CU cables and all accessories including 15A round pin socket outlet plate

TMH Extra Low Voltage manhole

HG PVC conduit link, and all accessories including 45A DP cooker control unit with neon lamp, and 13A integral

PMH Power manhole

Outlet point for instant water heaters, AC, Fans and under- sink water heater comprising 20mm diameter conduit, wiring in 3 x 4.0 mm² SC-PVC-CU cables and all accessories including 20A DP switch with neon light

400mm Wide Cable Ladder

400mm Wide Cable Tray for Power

400mm Wide Cable Tray for Data

H **Addressable Heat Detector**

FACP **Addressable Fire Alarm Control Panel**

S **Addressable Smoke Detector**

Addressable Push Button, Electric Sounder & Beacon

2D **1200mm 12W LED Mirror Front Light, surface mounted, 4000K Bathroom Mirror Light**

2 **High Quality Ultra Thin 12W Led Panel 300X300Mm Square Panel Light Indoor Lighting For Bathroom Type 2**

N **Type 'N' 12W LED 2D fixture for installation in stairwells and corridors**

E **Type Maintained LED fixture for Emergency installation with 3 - hour autonomy**

4C **Type '4C' 34W 1200mm High performance LED IP65, dust and moisture resistant luminaire**

4 **Type '4' 40W 1200mmX300mm High performance dust and moisture resistant luminarie**

C **Type 'C' 12W super efficient LED downlighter**

M **Type 'M' 50W Solar Floodlight for security lighting, mounted on building's walls**

600x600mm, 36W, super efficient Surface LED modular luminaries with curved diffuser

X **Type 'X' Bulkhead wall mounted light for the lift shaft**

EXIT **8W maintained LED Exit Emergency Light. Minimum 3-hour autonomy.**

IR **PIR Motion Sensor**

25mm x 3mm tinned annealed copper tape for both roof & down conductors

15mm multiple point copper air terminal complete with base

F2 **Type 'F2' 1500W High Volume Low Speed (HVLS) 5 blade ceiling fan for auditorium. Blade size: 12 feet; Fan Speed: 50RPM; Noise Level: 50DB**

F1 **Type 'F1' 49W 3 Blade Basic Ceiling Sweep Fan . Sweep: 1200mm; Fan Speed: 350RPM**

IP 67- Water & Dust Resistant, 4MP, Excellent low- light performance, 24/7 colourful imaging, Efficient Compression Technology Bullet CCTV Camera

IP 67- Water & Dust Resistant, 4MP, Excellent low- light performance, 24/7 colourful imaging, Efficient Compression Technology DOME CCTV Camera

4U **Type '4U' 34W 1200mm High performance LED UV IP65, dust and moisture resistant luminaire**

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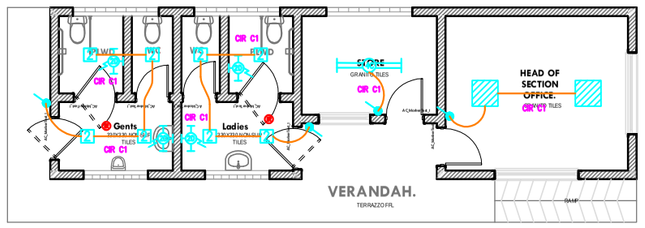
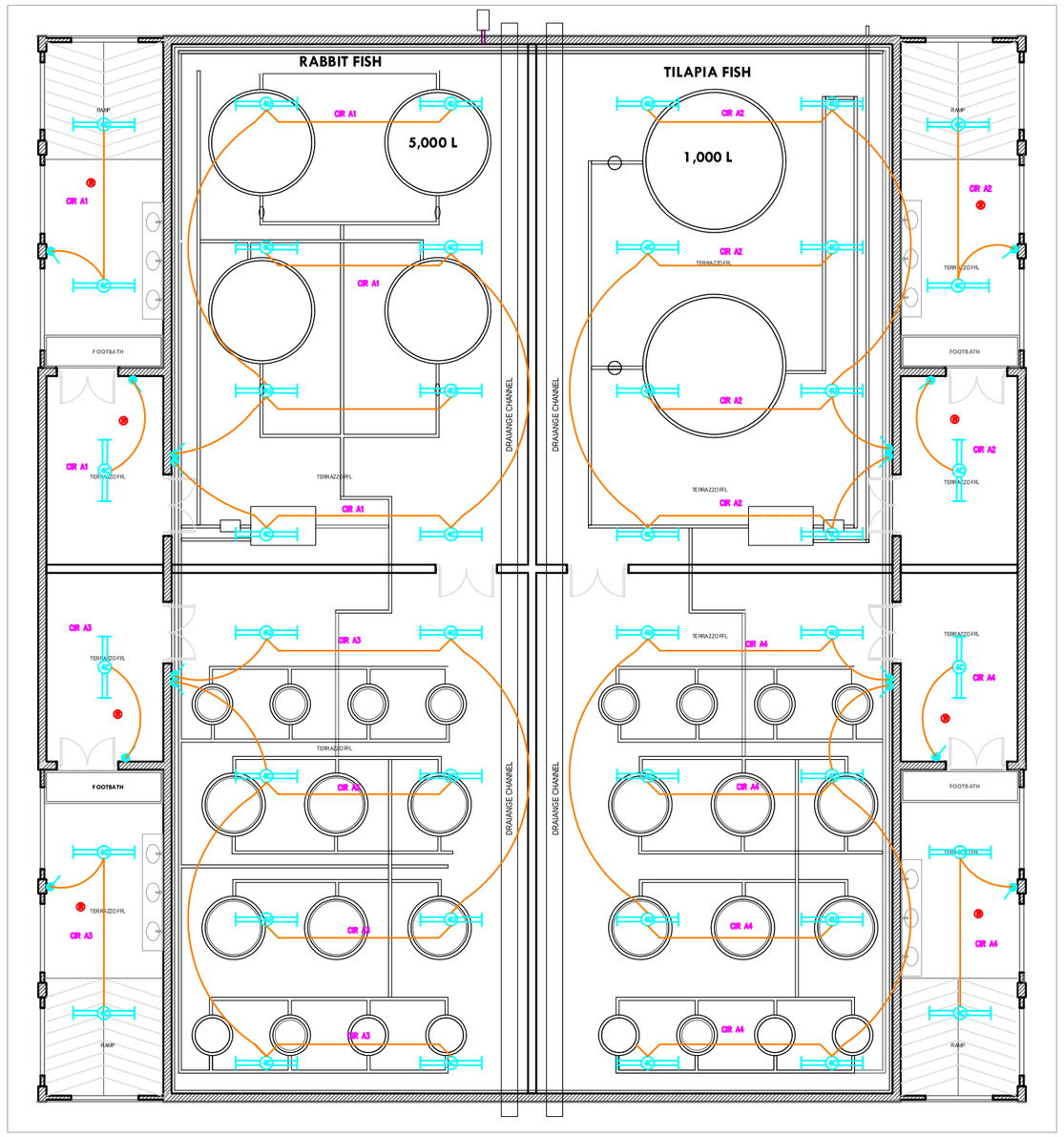
SCHEDULE OF SYMBOLS AND LIGHTING LUMINIARES

Dwg. No.	02- 003E- 003
Scale:	NTS
Drawn by	Chek'd By
Project no.: 01	Date: 24.11.2023

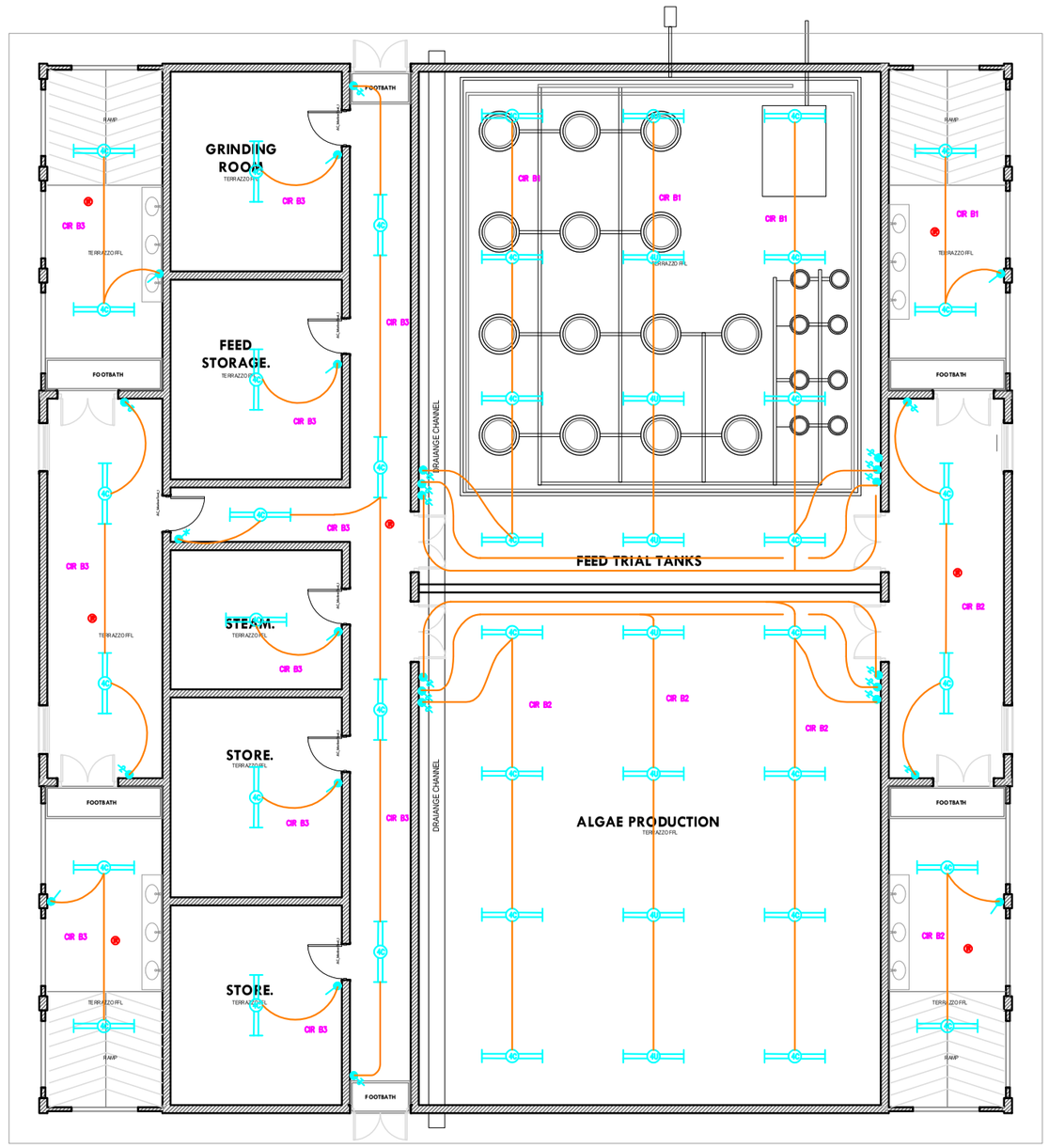
TENDER ISSUE



H.O.U OFFICE PLAN
LIGHTING LAYOUT



HATCHERY PLAN
LIGHTING LAYOUT



ALGAE PRODUCTION PLAN
LIGHTING LAYOUT

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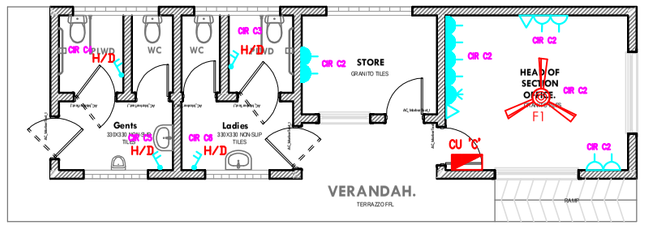
DRAWING TITLE:

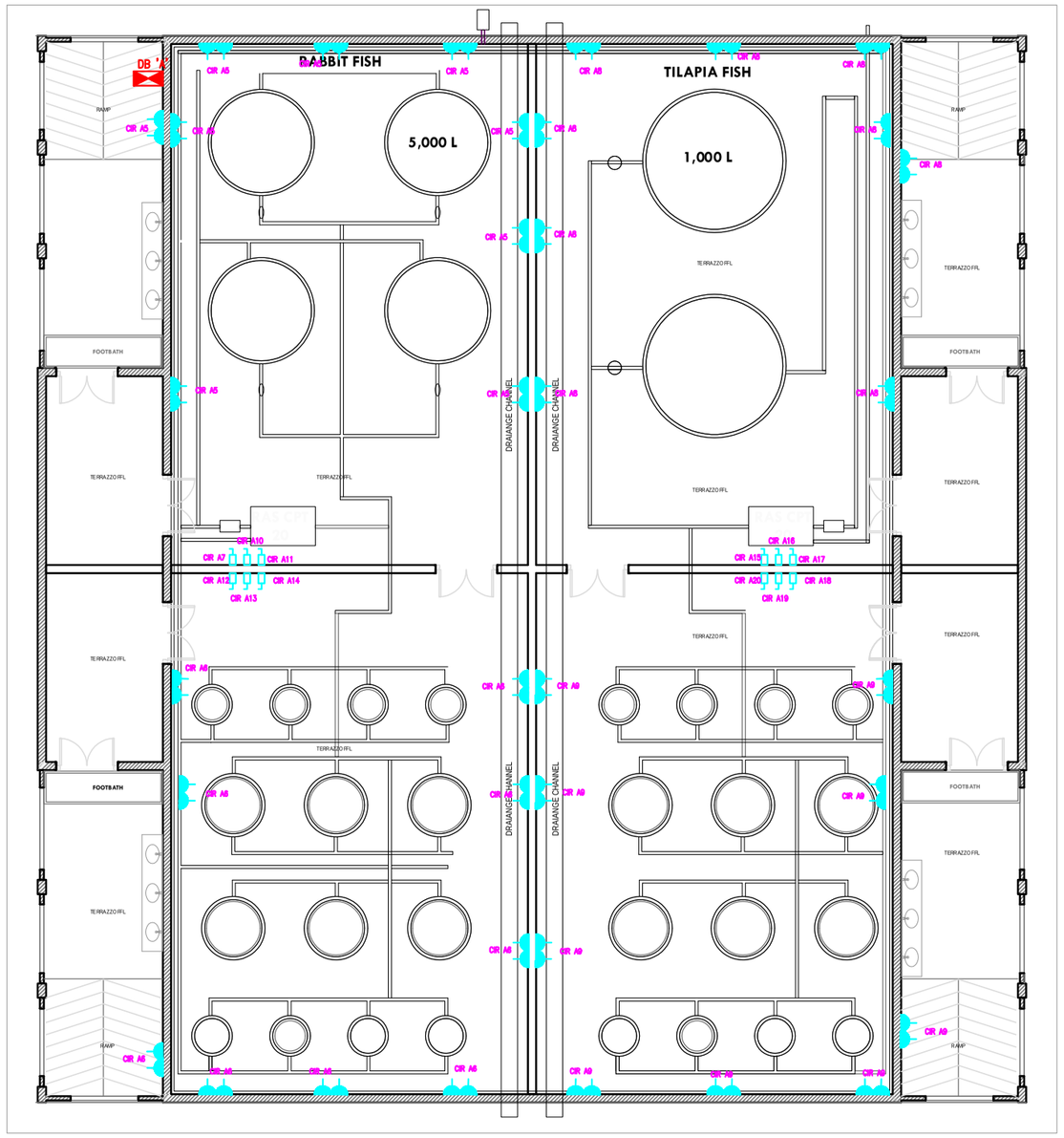
LIGHTING LAYOUT

Dwg. No.	02- 003E- 04		
Scale:	NTS		
Drawn by		Chek'd By	
Project no.:		Date:	
02		24.11.2023	

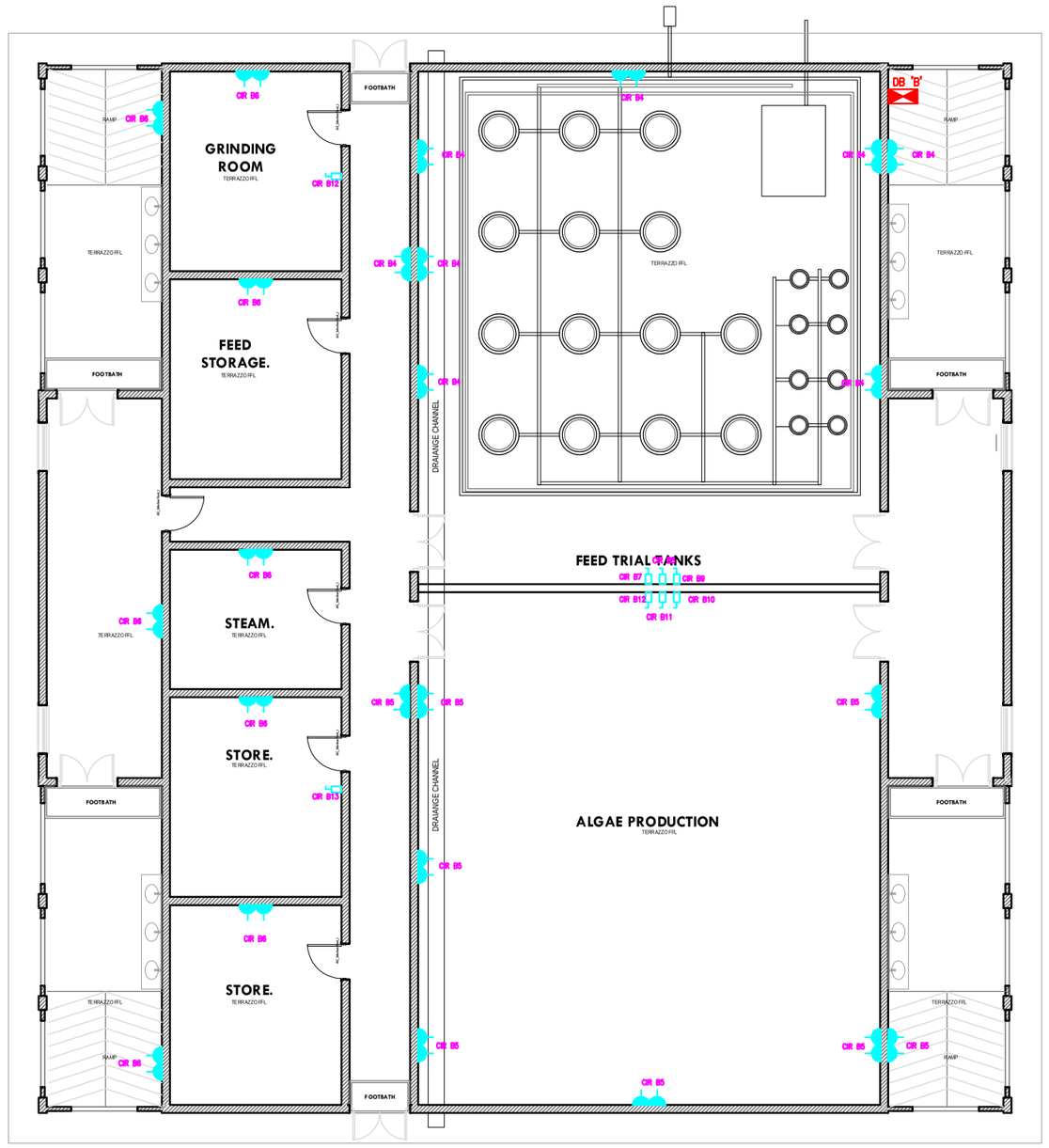
TENDER ISSUE



HOU OFFICE PLAN
POWER LAYOUT



HATCHERY PLAN
POWER LAYOUT



ALGAE PRODUCTION PLAN
POWER LAYOUT

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POWER LAYOUT

Dwg. No.	02- 003E- 05
Scale:	NTS
Drawn by	Chek'd By
Project no.: 02	Date: 24.11.2023

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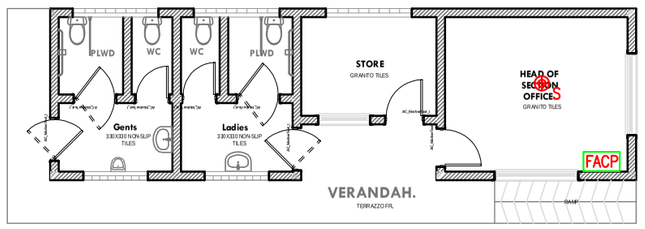
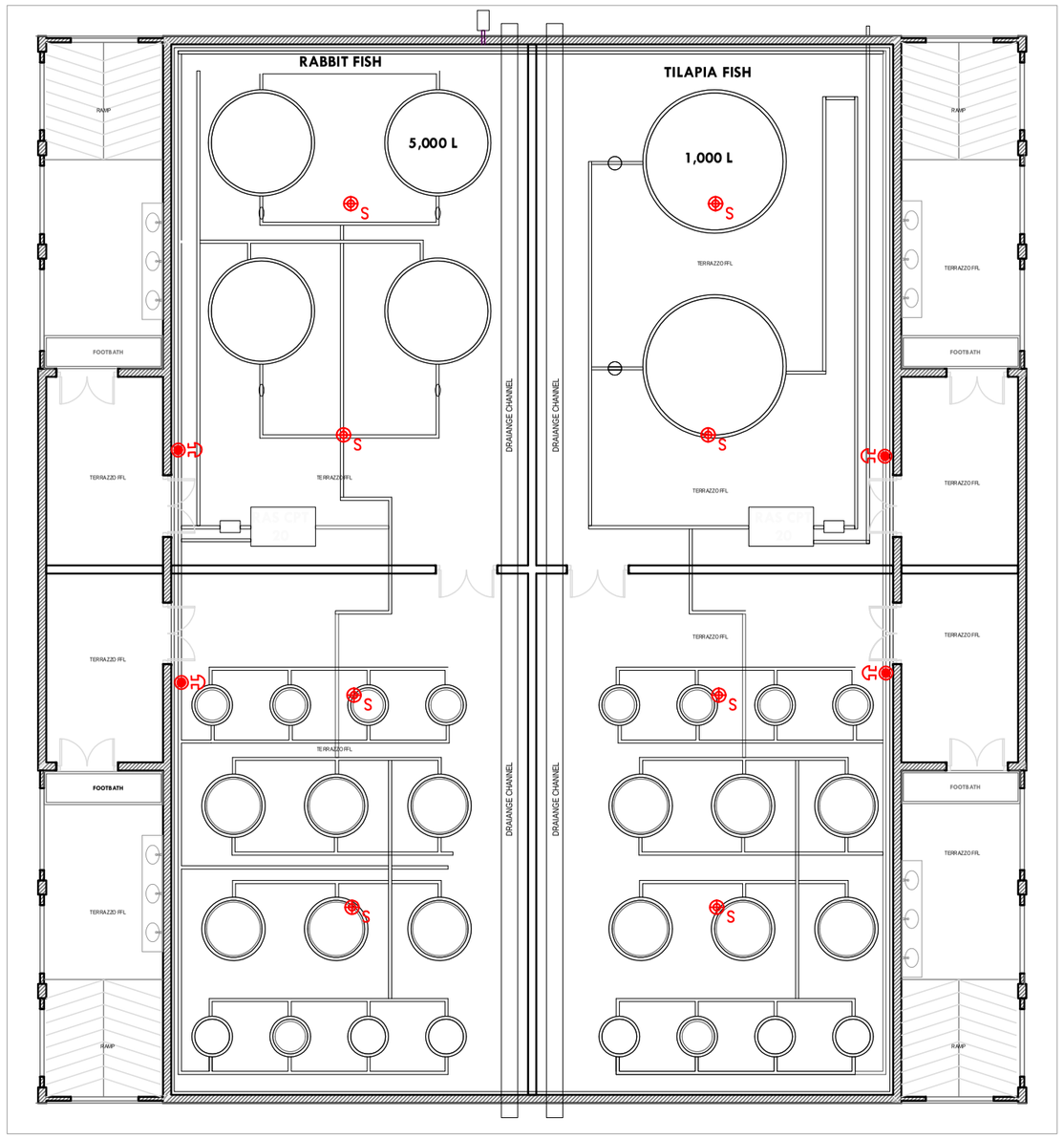
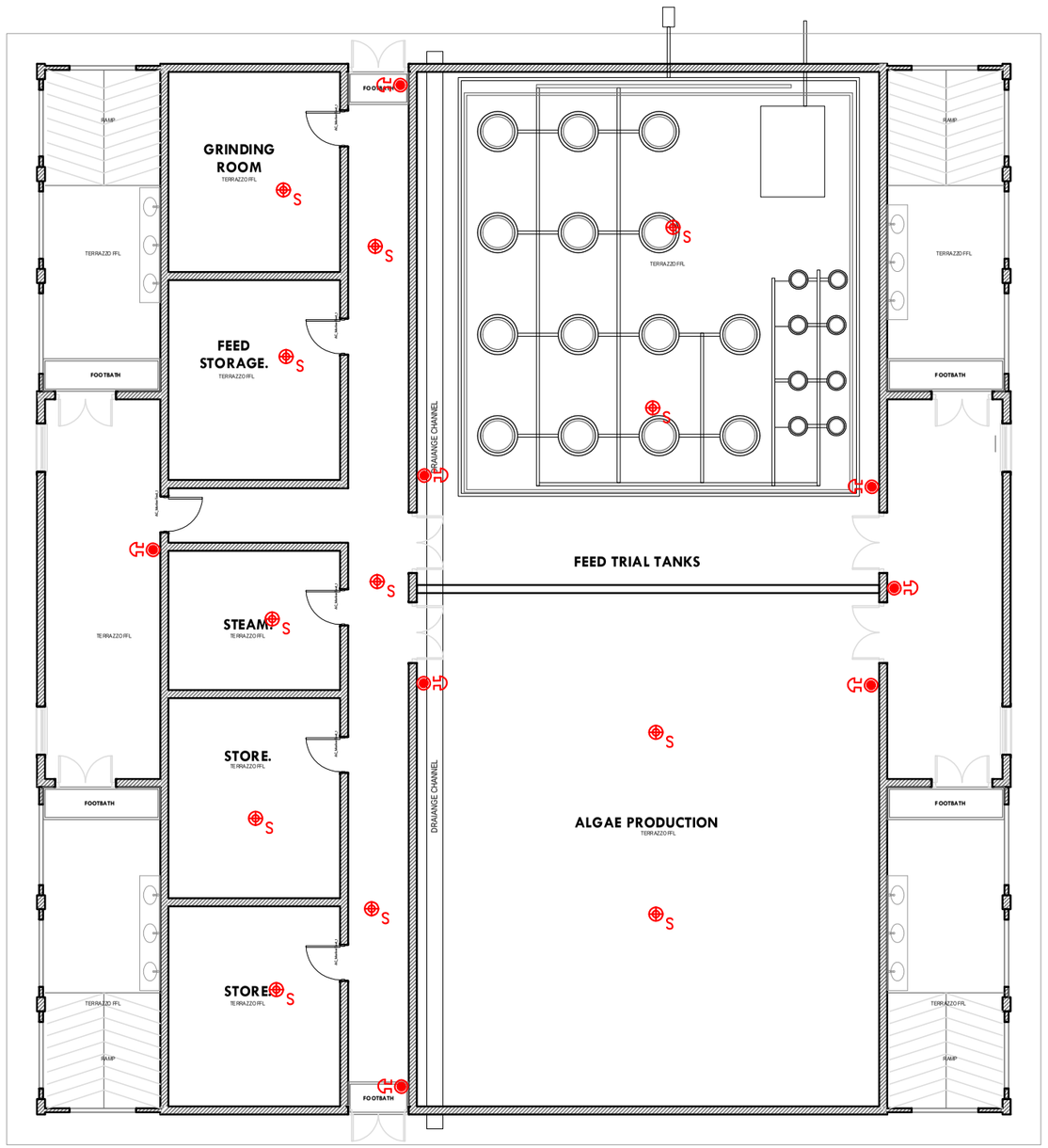


HOU OFFICE PLAN
FIRE ALARM LAYOUT



HATCHERY PLAN
FIRE ALARM LAYOUT



ALGAE PRODUCTION PLAN
FIRE ALARM LAYOUT

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FIRE ALARM LAYOUT

Dwg. No.	02- 003E- 06
Scale:	NTS
Drawn by	Chek'd By
Project no.: 02	Date: 24.11.2023

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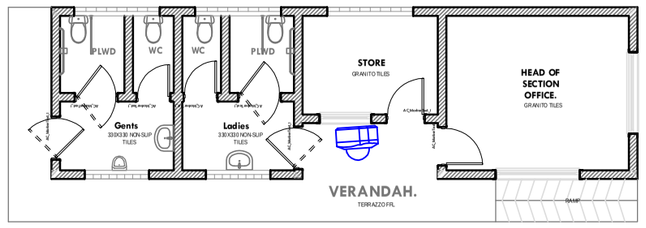
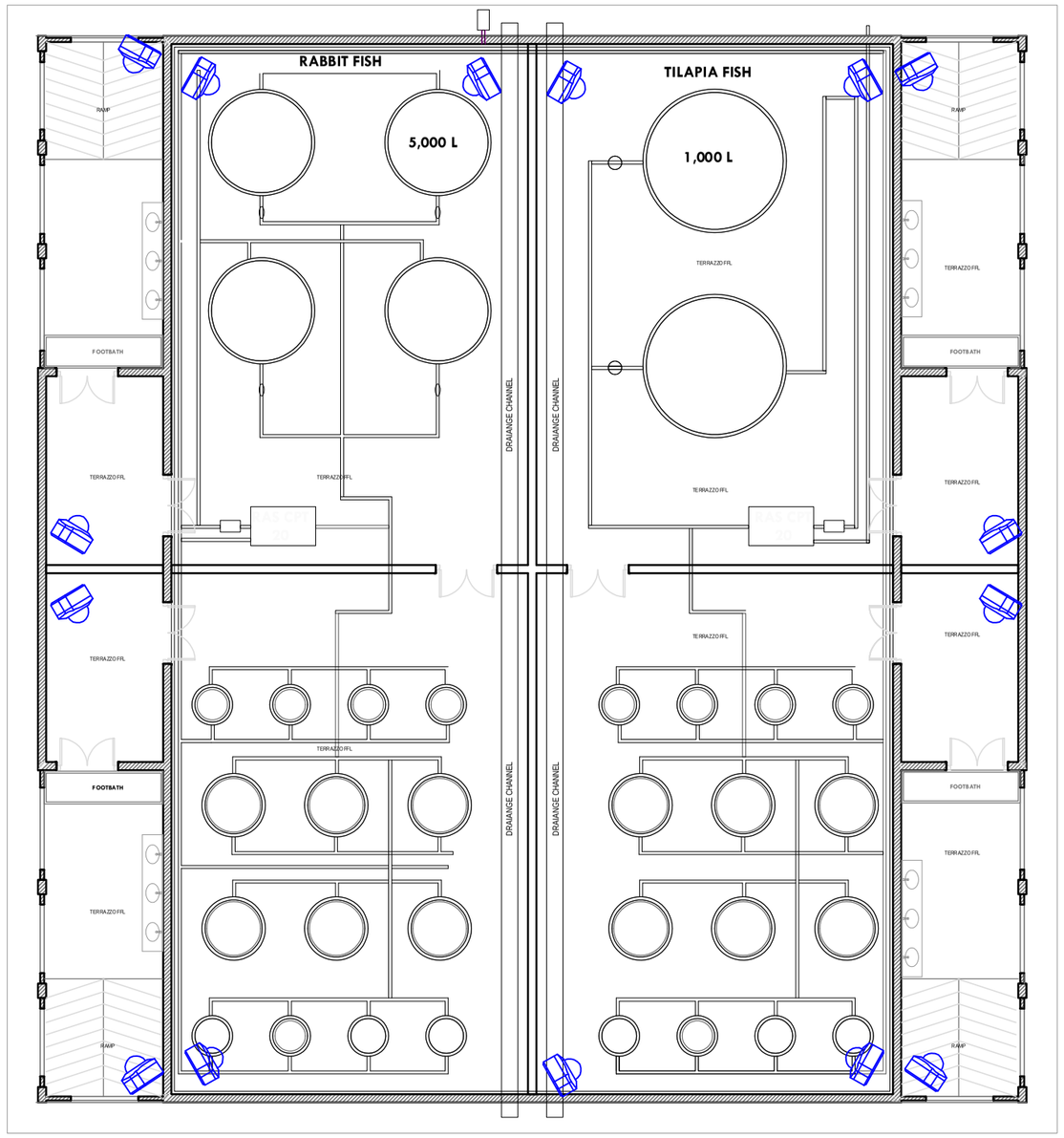
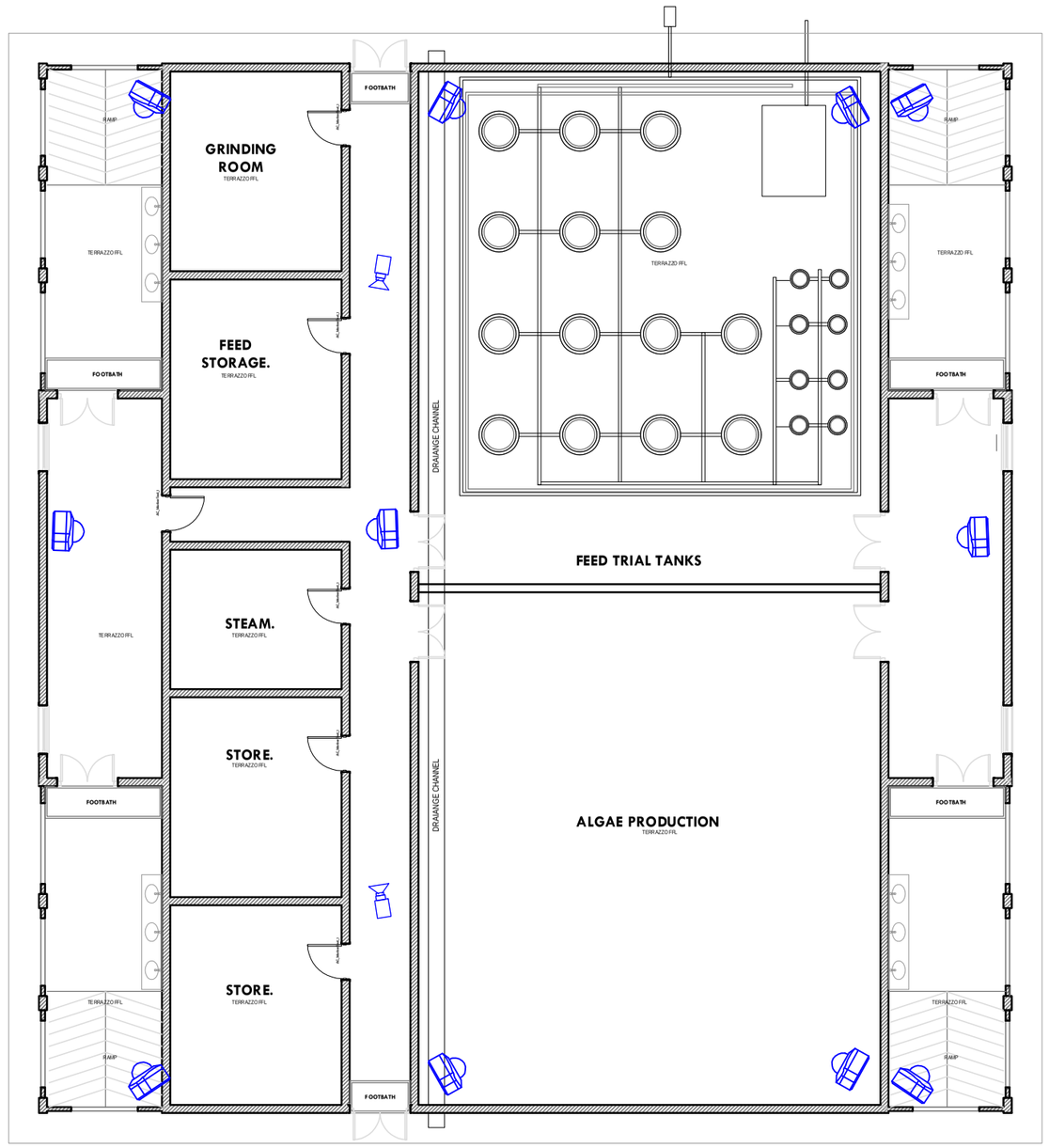


HOU OFFICE PLAN
CCTV LAYOUT



HATCHERY PLAN
CCTV LAYOUT



ALGAE PRODUCTION PLAN
CCTV LAYOUT

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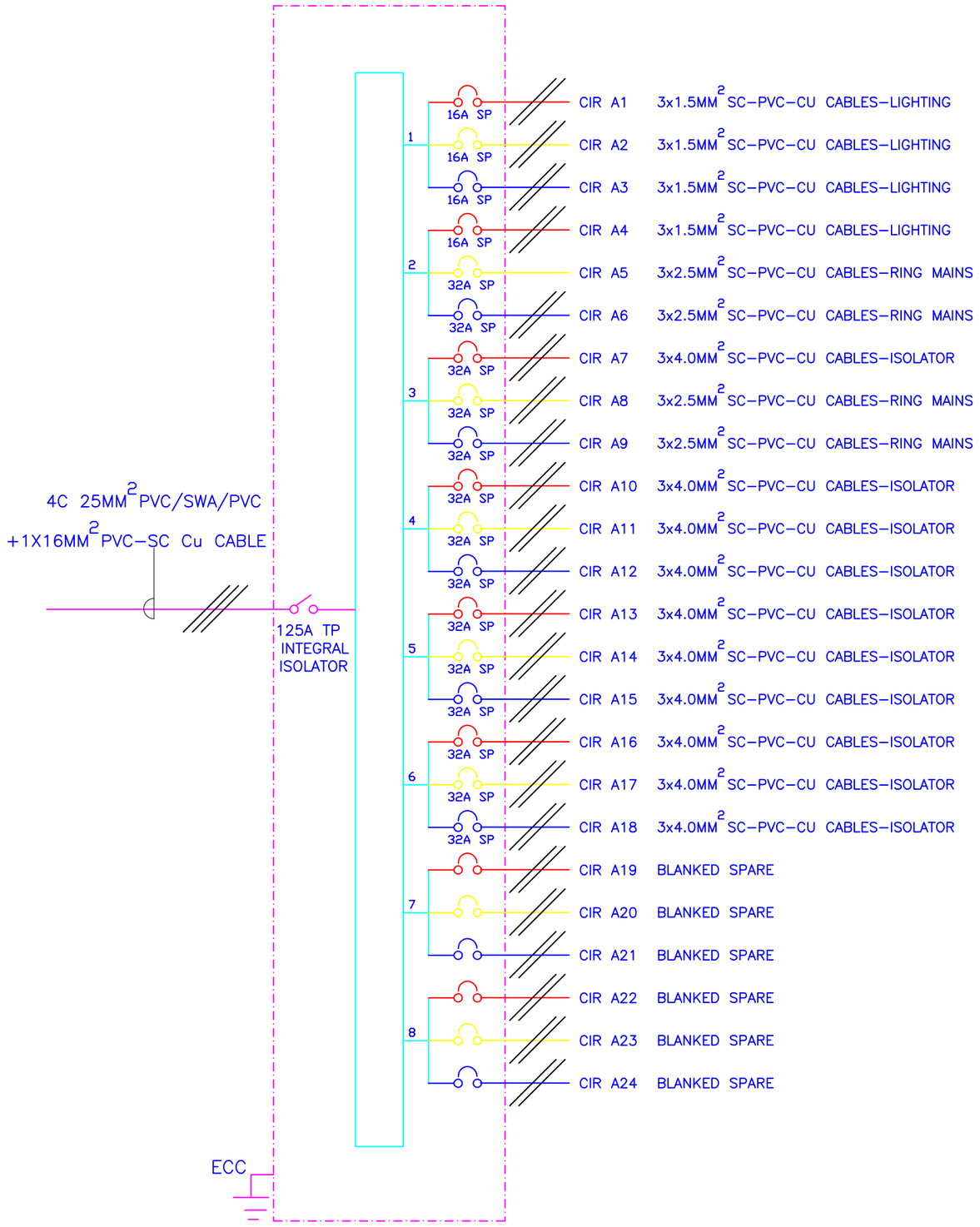
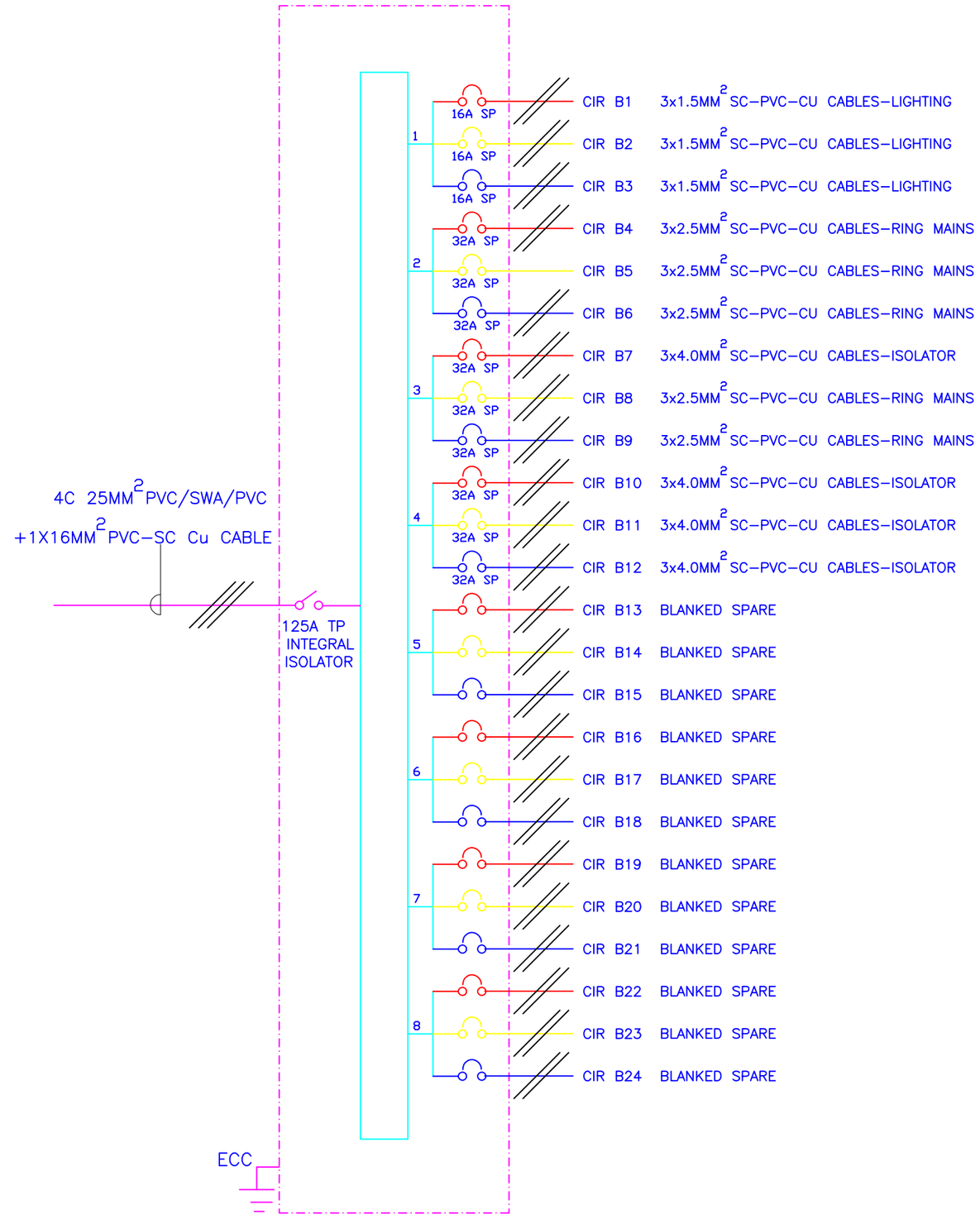
CCTV LAYOUT

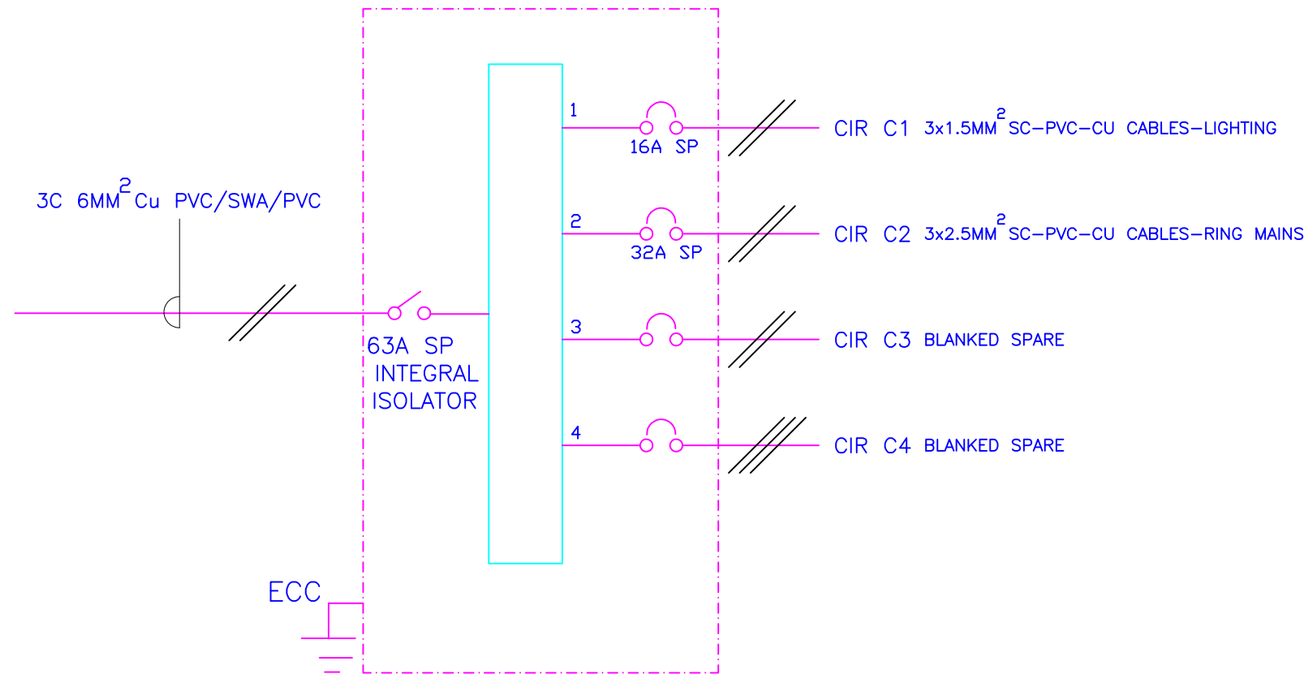
Dwg. No.	02- 003E- 07		
Scale:	NTS		
Drawn by		Chek'd By	
Project no.:		Date:	
02		24.11.2023	

8- WAY 100A TPN DISTRIBUTION BOARD 'A'
FOR RAW POWER DISTRIBUTION IN THE HATCHERY



8- WAY 100A TPN DISTRIBUTION BOARD 'B'
FOR RAW POWER DISTRIBUTION IN THE ALGAE PRODUCTION





SCHEMATICS

4- WAY 100A SPN CONSUMER UNIT 'C' FOR RAW POWER DISTRIBUTION- HEAD OF UNIT OFFICES

TENDER ISSUE

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SCHEMATICS

Dwg. No.	02- 003E- 08		
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Drawn by		Chek'd By	
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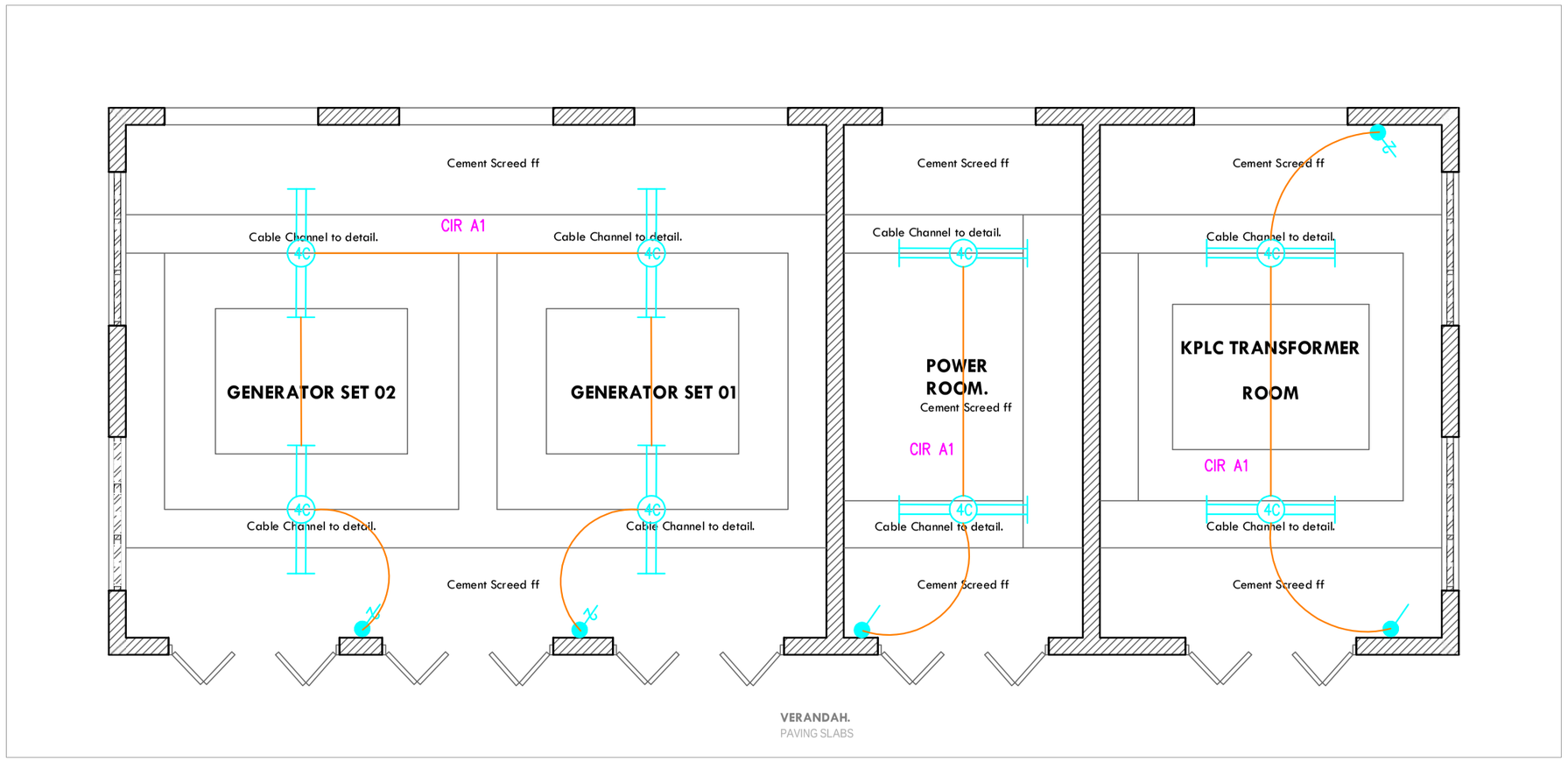
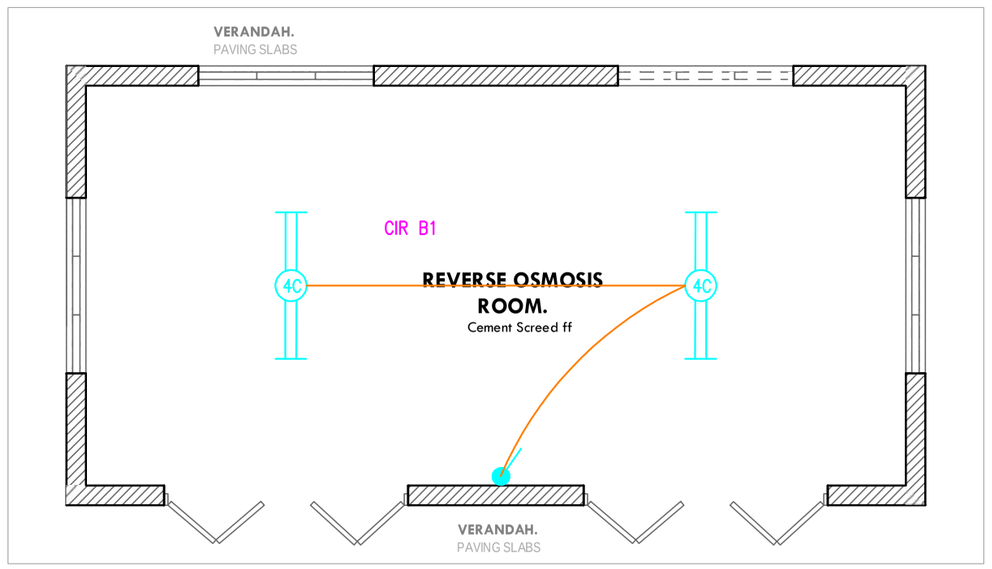
TENDER ISSUE



POWER HOUSE PLAN LIGHTING LAYOUT



RO PLANT ROOM PLAN LIGHTING LAYOUT

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REVISIONS:

REV. No.	Details of Revision

PROJECT TITLE:

PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE

CLIENT:

STATE DEPARTMENT FOR FISHERIES, AQUACULTURE & THE BLUE ECONOMY

CLIENT'S SIGNATURE:

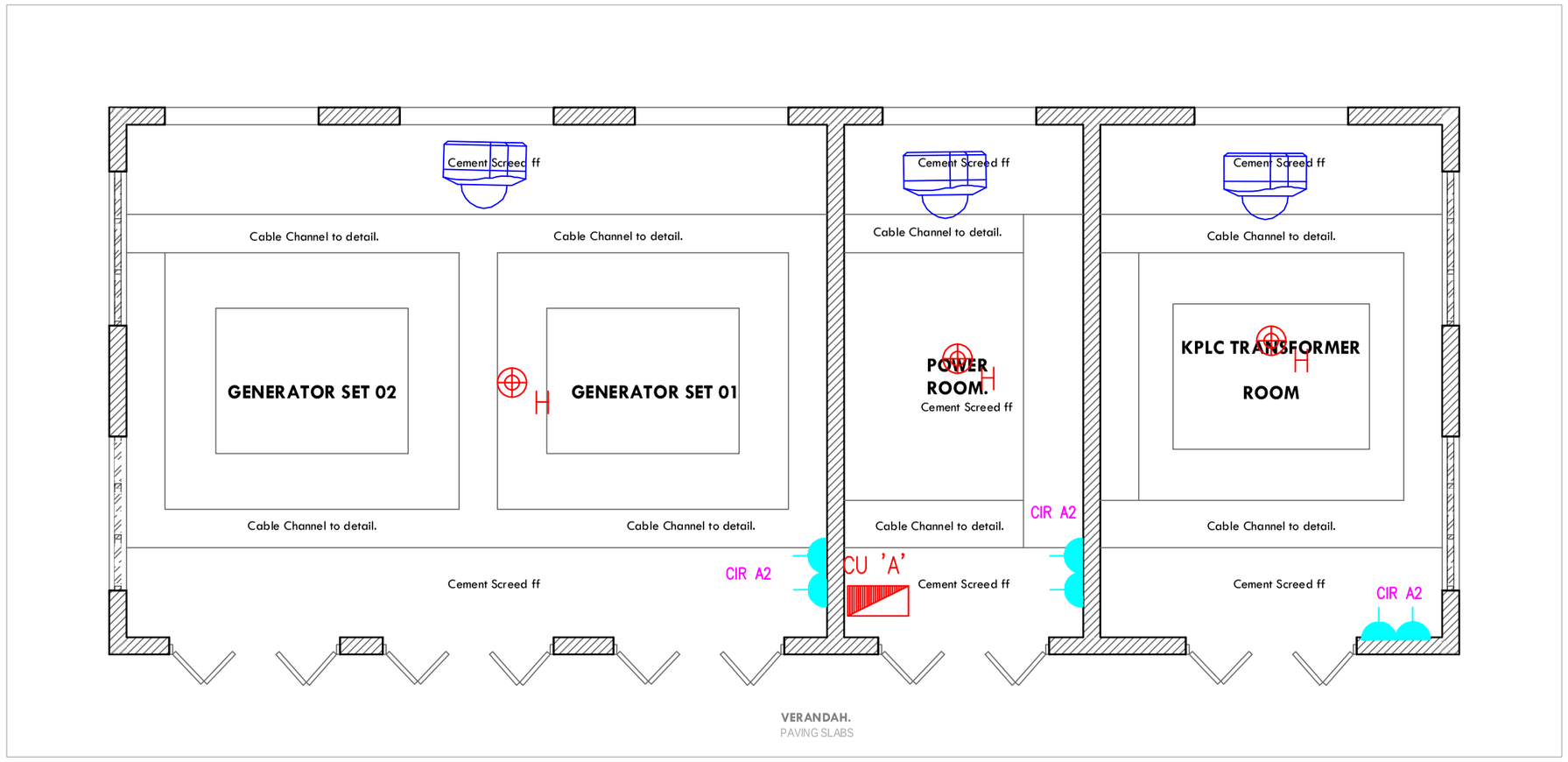
Sign:

DRAWING TITLE:

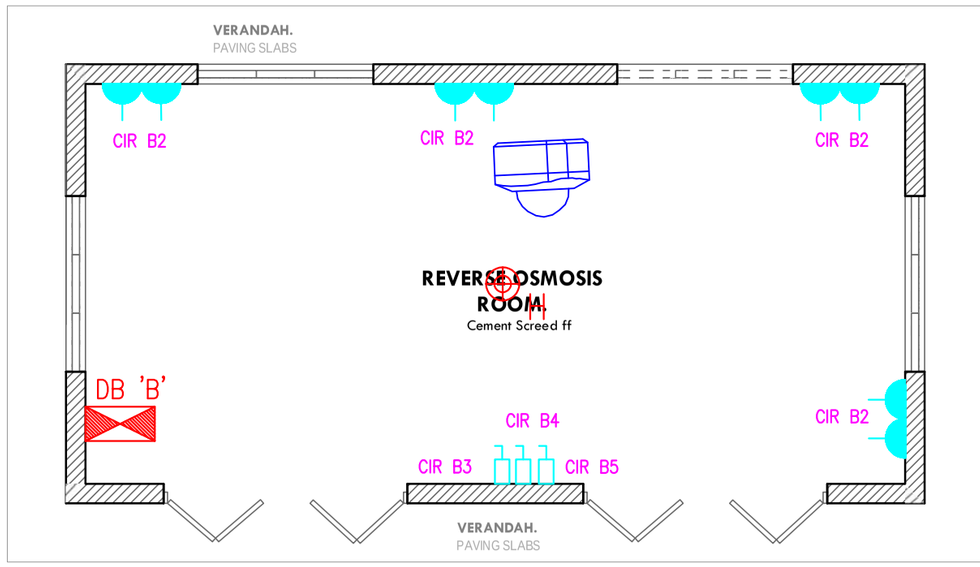
PLANT ROOMS LIGHTING LAYOUT

Dwg. No.	02- 003E- 09
Scale:	NTS
Drawn by	Chek'd By
Project no.: 02	Date: 24.11.2023

TENDER ISSUE



POWER HOUSE PLAN POWER LAYOUT



RO PLANT ROOM PLAN POWER LAYOUT

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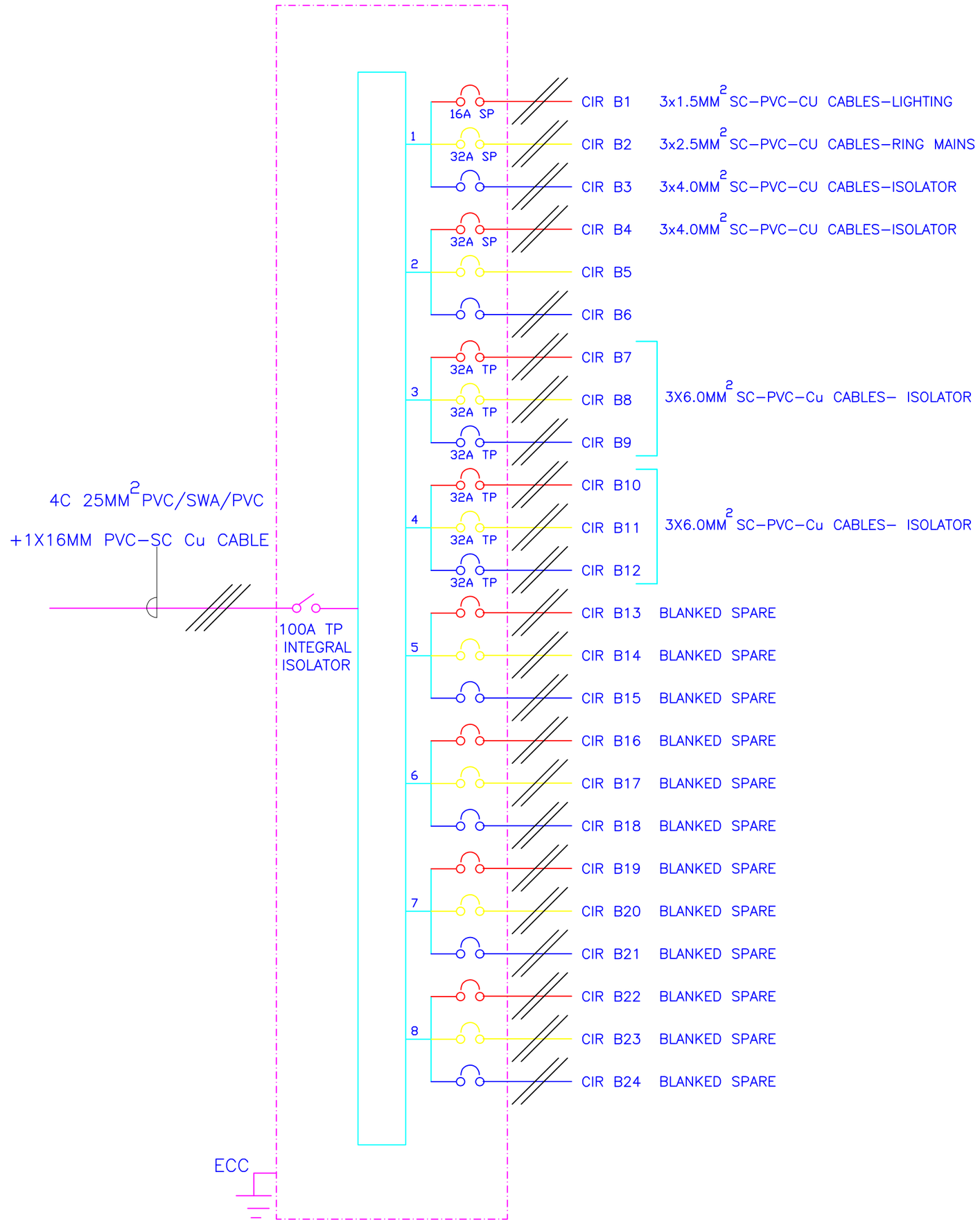
PLANT ROOMS POWER LAYOUT

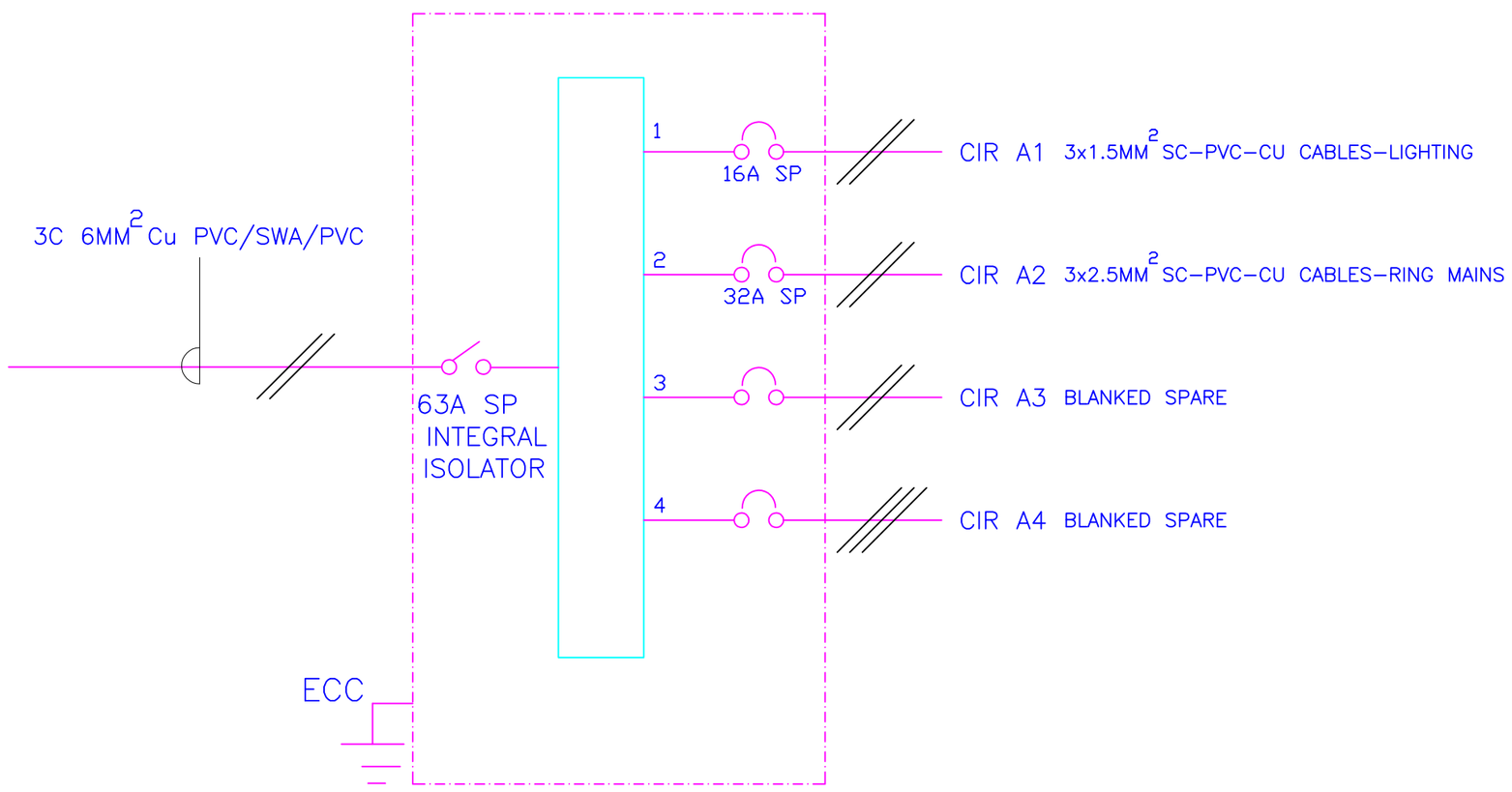
Dwg. No.	02- 003E- 10
Scale:	NTS
Drawn by	Chek'd By
Project no.: 02	Date: 24.11.2023

TENDER ISSUE

8- WAY 100A TPN DISTRIBUTION BOARD 'B' FOR RAW POWER DISTRIBUTION IN THE RO PLANT ROOM



4- WAY 100A SPN CONSUMER UNIT 'A' FOR RAW POWER DISTRIBUTION- POWER ROOMS



SCHEMATICS

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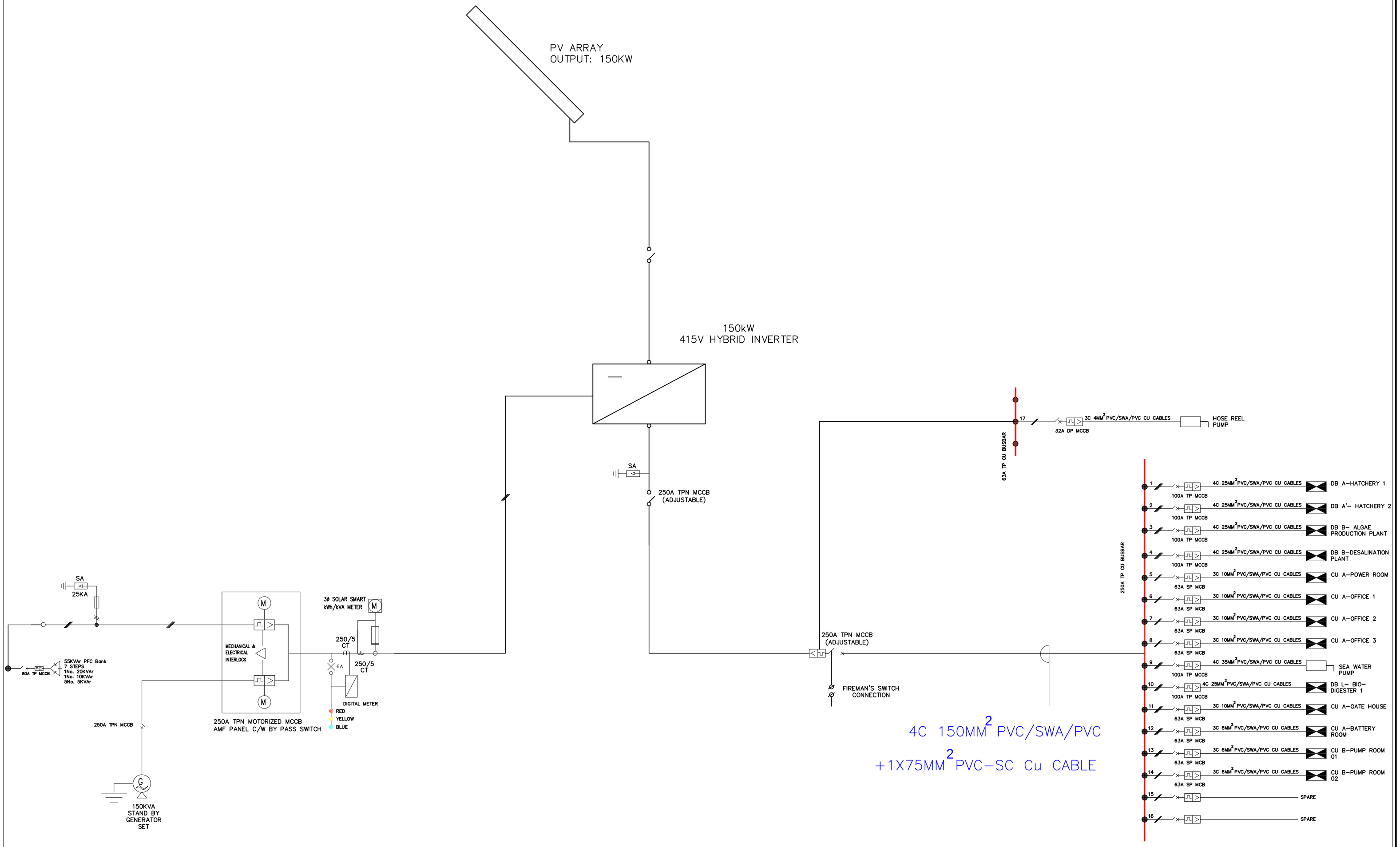
Sign:

DRAWING TITLE:

PLANT ROOMS SCHEMATICS

Dwg. No.	02- 003E- 11
Scale:	NTS
Drawn by	Chek'd By
Project no.: 02	Date: 24.11.2023

TENDER ISSUE



HATCHERIES SUB- BOARD IN SWITCH ROOM

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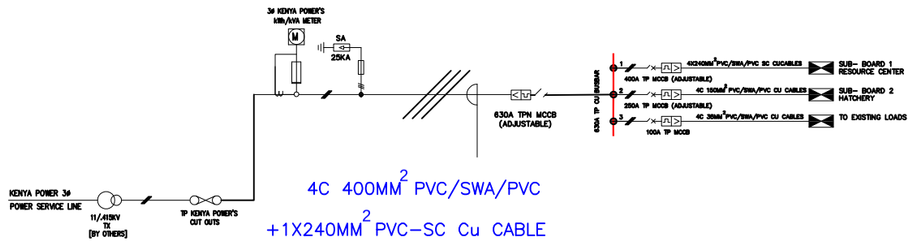
DRAWING TITLE:

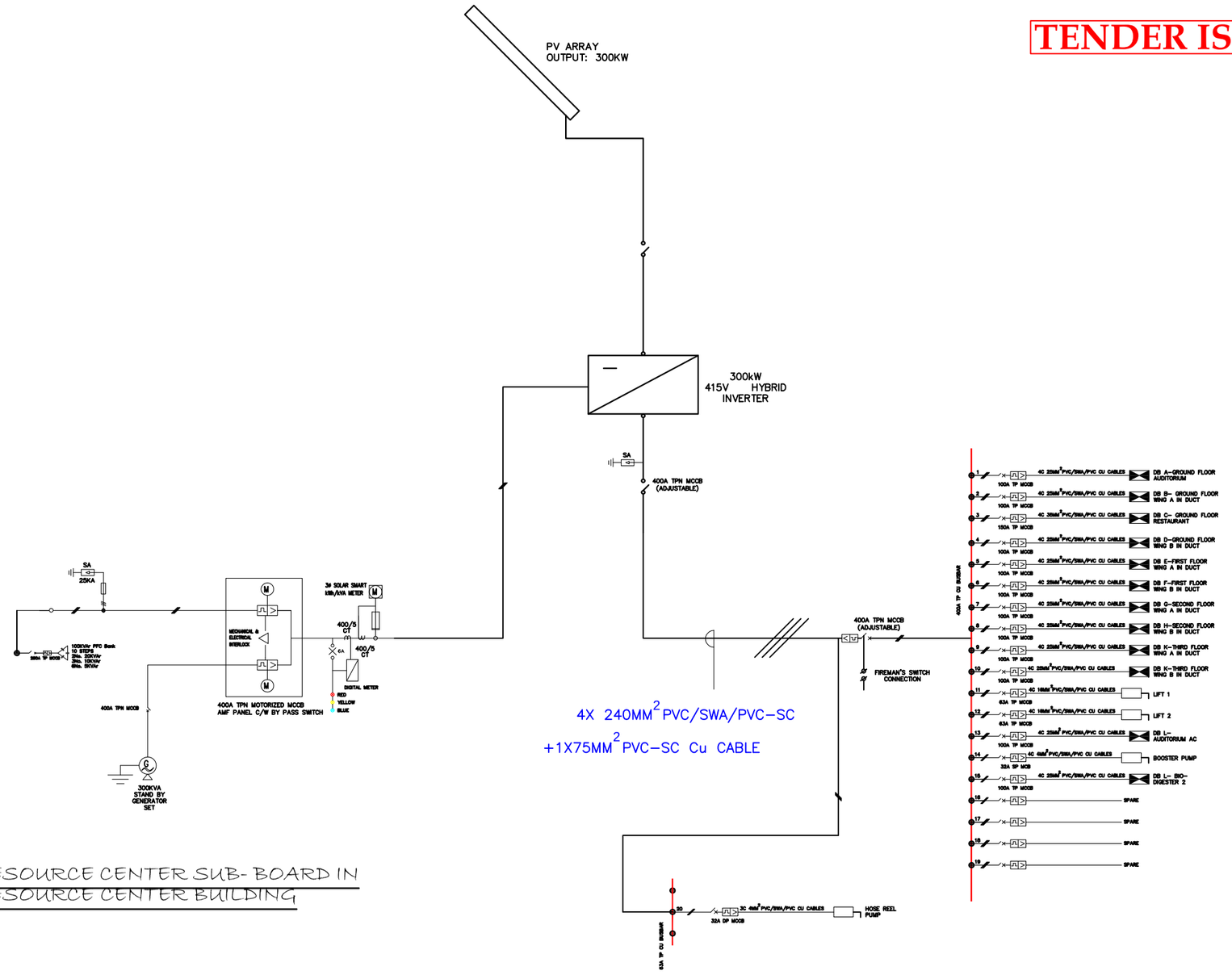
HATCHERIES SCHEMATIC

Dwg. No.	02- 003E- 012
Scale:	NTS
Drawn by	Chek'd By
Project no.: 02	Date: 14.12.2023

TENDER ISSUE

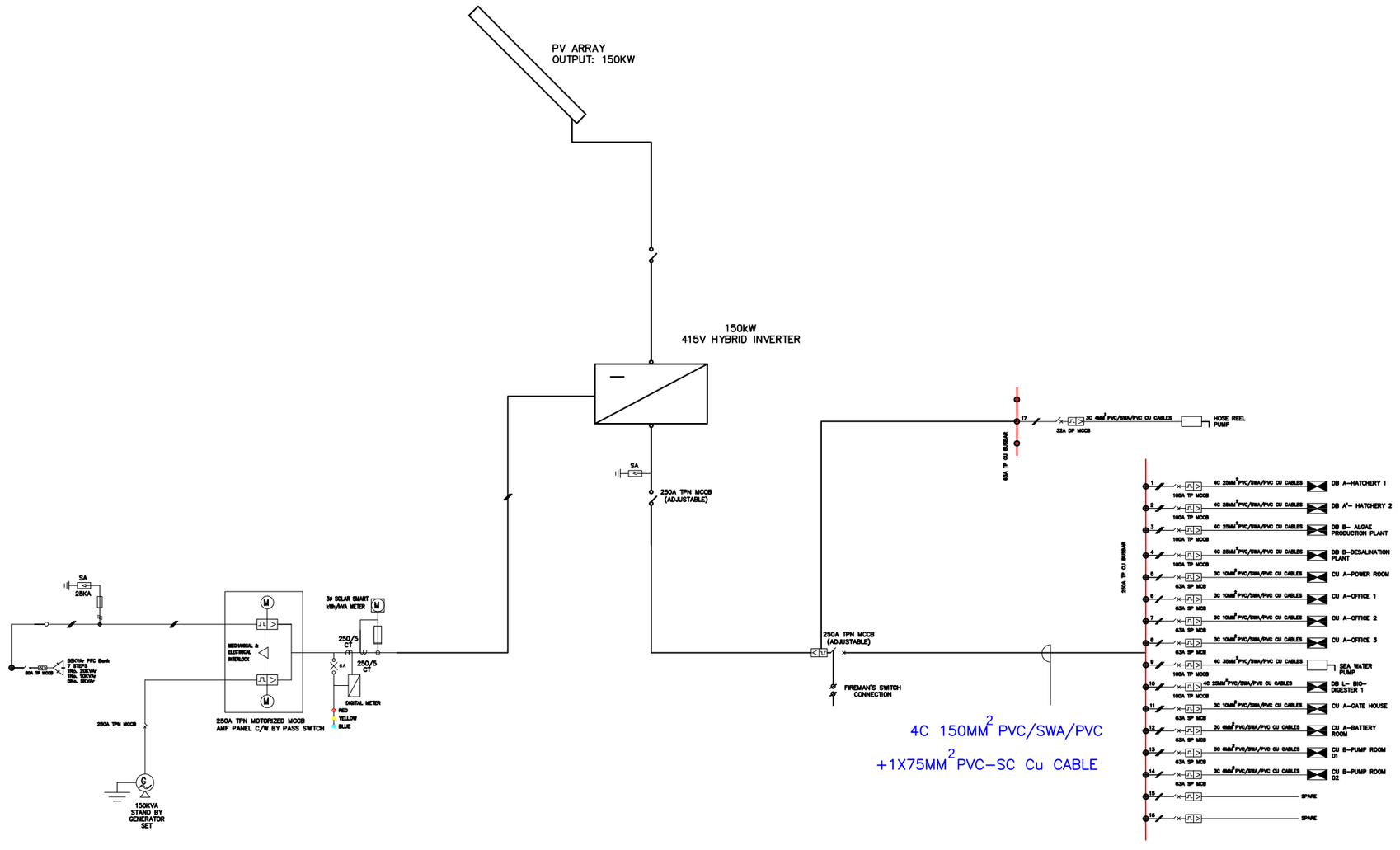


SPLITTER BOARD IN SWITCH ROOM



RESOURCE CENTER SUB- BOARD IN RESOURCE CENTER BUILDING

MAIN SCHEMATIC



HATCHERIES SUB- BOARD IN SWITCH ROOM

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DRAWING TITLE:

MAIN SCHEMATIC

Dwg. No.	02- 003E- 013		
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Project no.:		Date:	
02		15.12.2023	

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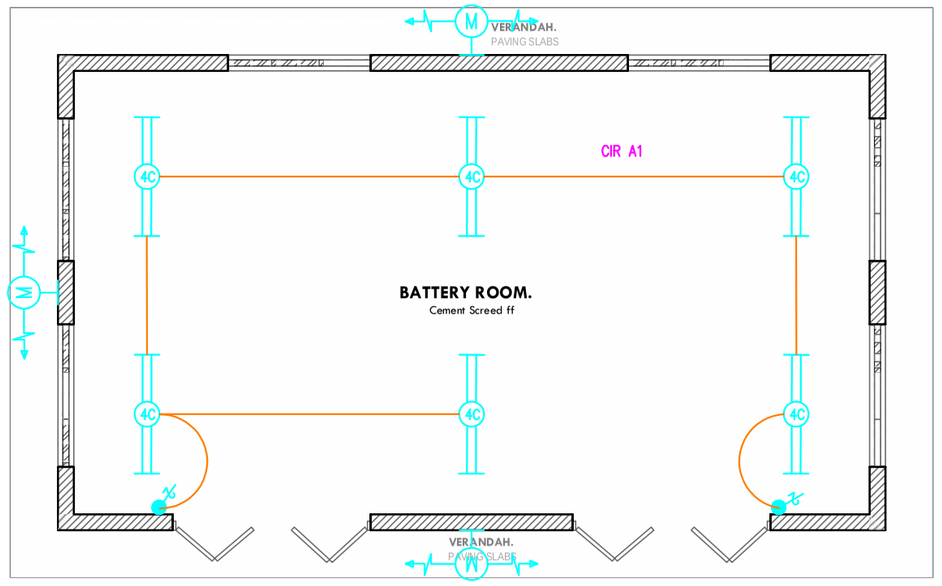
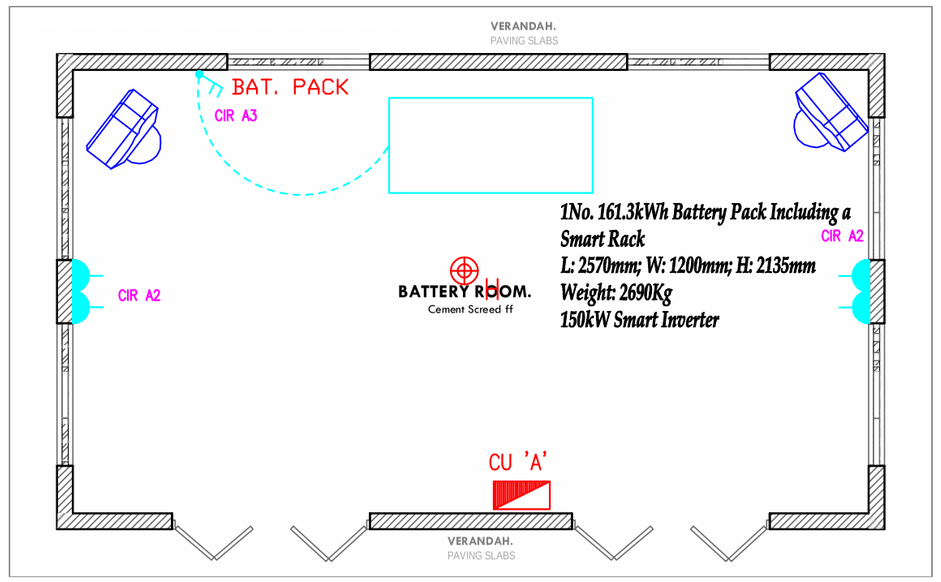
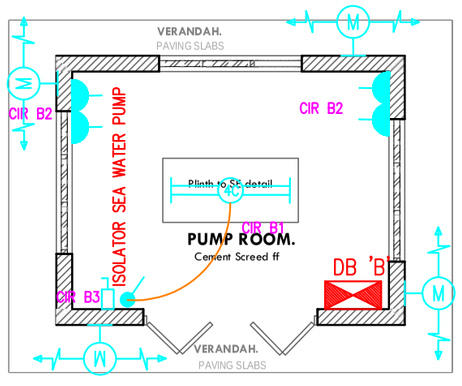


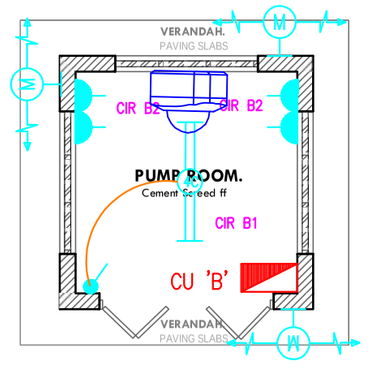
BATTERY ROOM PLAN
LIGHTING LAYOUT



BATTERY ROOM PLAN
POWER LAYOUT



PUMP ROOM 2 PLAN
ELECTRICAL LAYOUT



PUMP ROOM 1 PLAN
ELECTRICAL LAYOUT

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BATTERY & PUMP ROOMS ELECTRICAL LAYOUT

Dwg. No.	02- 003E- 14
Scale:	NTS
Drawn by	Chek'd By
Project no.: 02	Date: 24.11.2023

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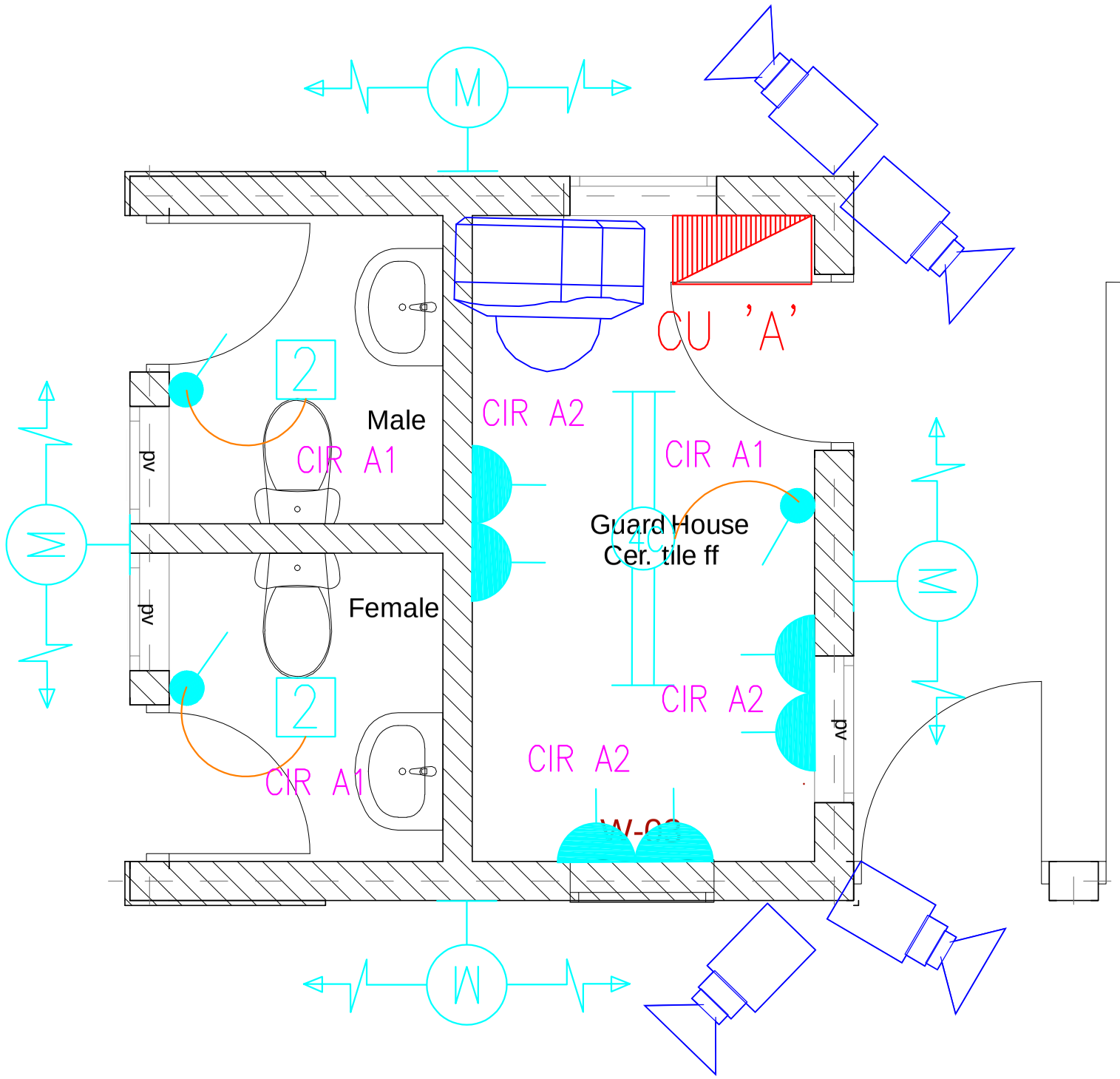

GATE HOUSE PLAN ELECTRICAL LAYOUT

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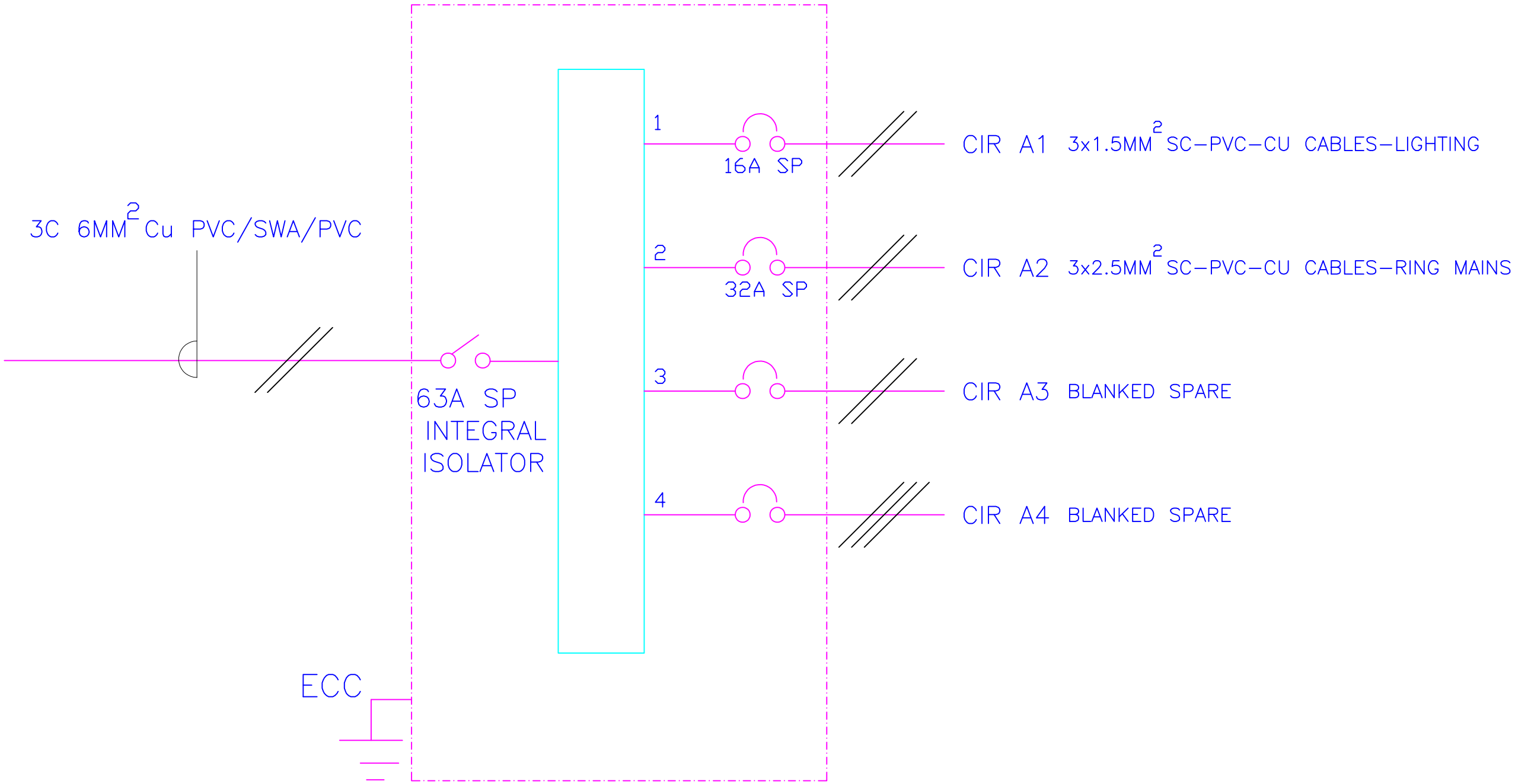
GATE HOUSE ELECTRICAL LAYOUT

Dwg. No.	02- 003E- 15
Scale:	NTS
Drawn by	Chek'd By
Project no.:	Date:
02	29.12.2023

TENDER ISSUE

4- WAY 100A SPN CONSUMER UNIT 'A' FOR RAW POWER DISTRIBUTION- GUARD HOUSE



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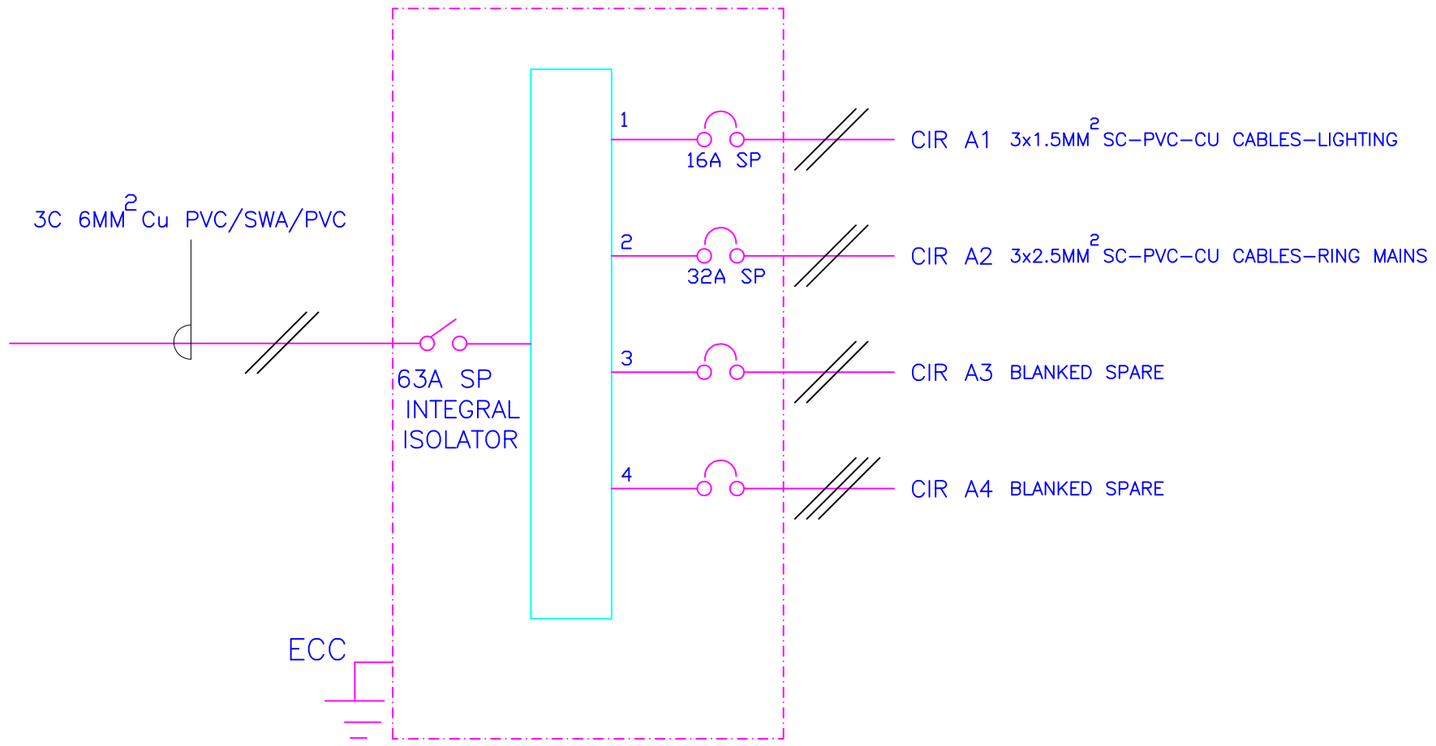
GATE HOUSE SCHEMATIC

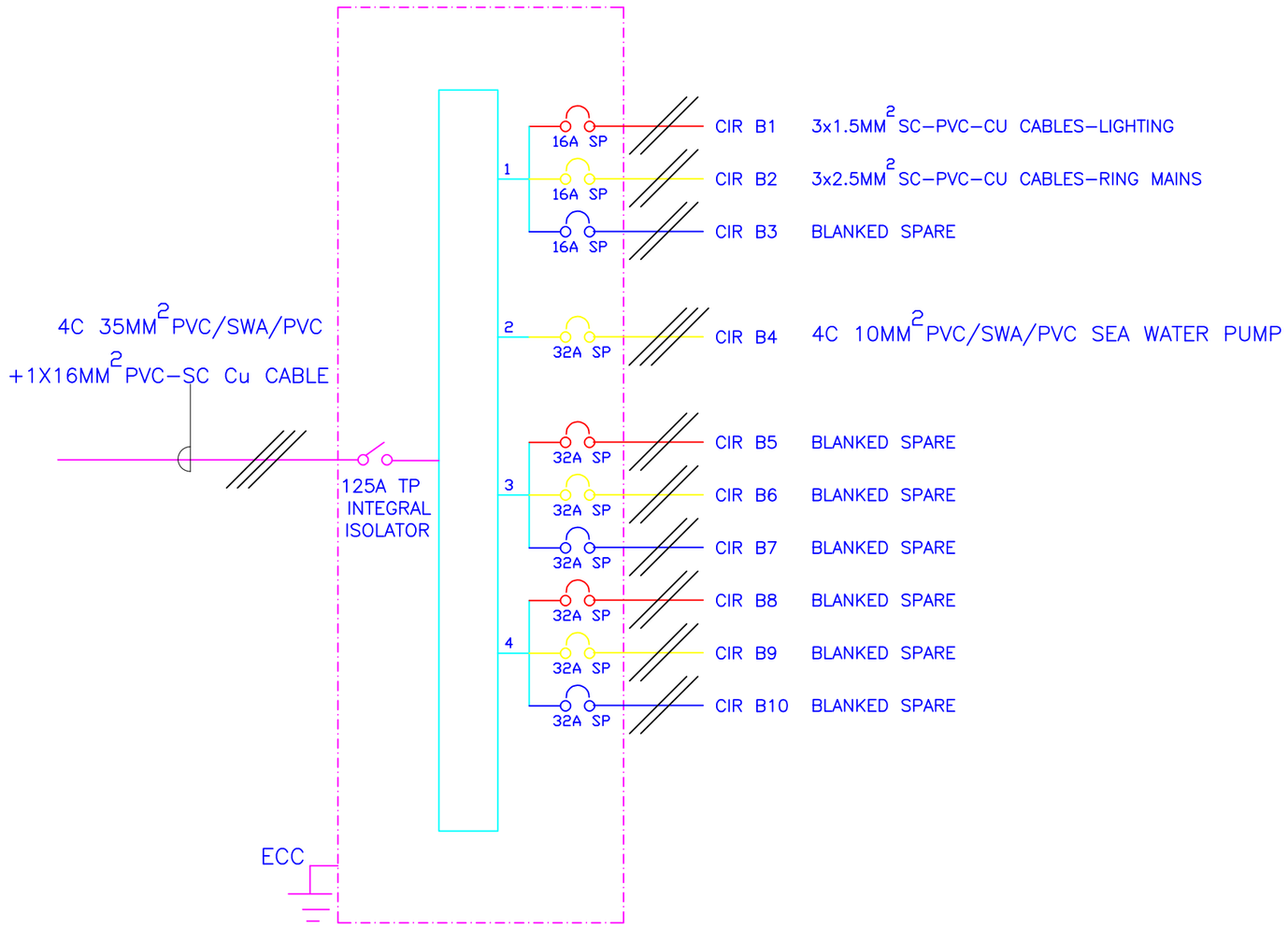
Dwg. No.	02- 003E- 16		
Scale:	NTS		
Drawn by		Chek'd By	
Project no.:		Date:	
02		29.12.2023	

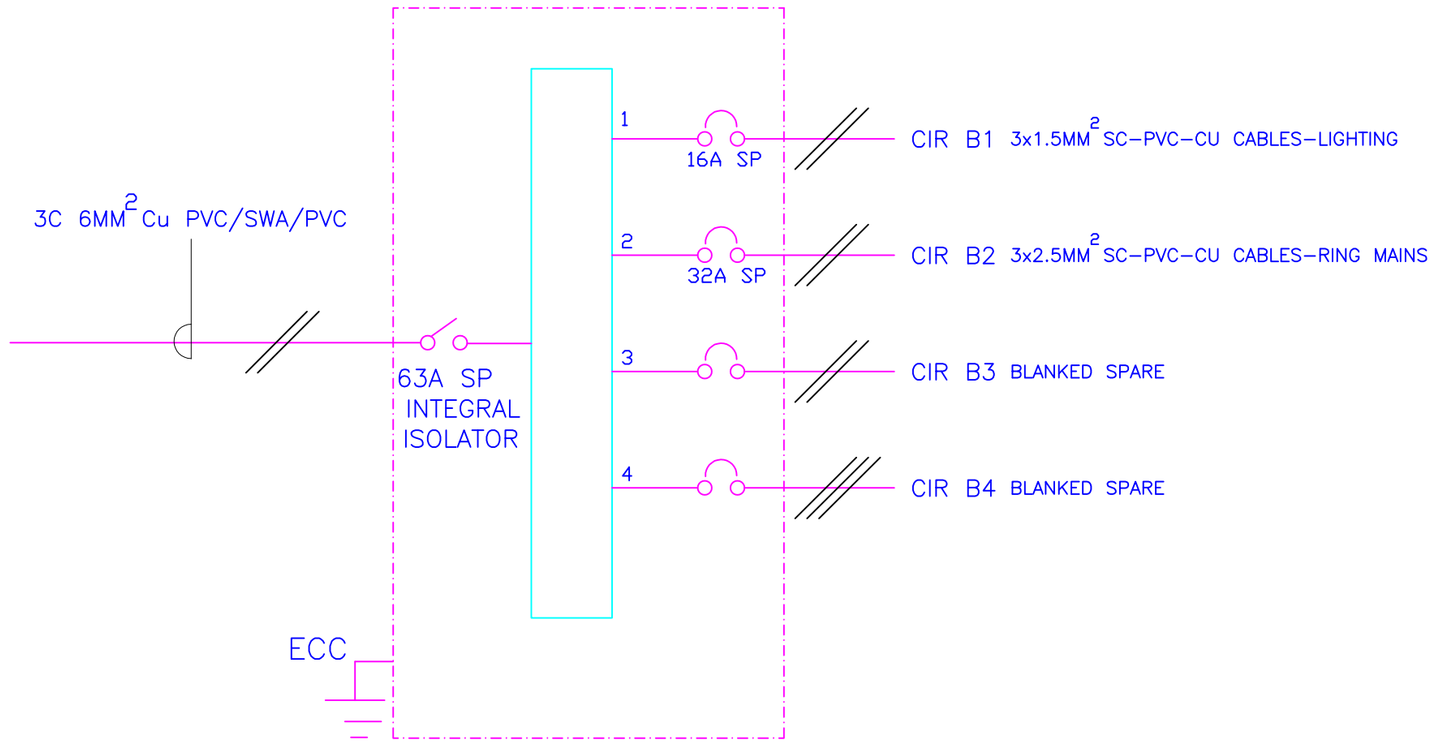
TENDER ISSUE

4– WAY 100A SPN CONSUMER UNIT 'A' FOR RAW POWER DISTRIBUTION– BATTERY ROOM



4– WAY 100A TPN DISTRIBUTION BOARD 'B' FOR RAW POWER DISTRIBUTION IN PUMP ROOM2 (AT SEA)





4– WAY 100A SPN CONSUMER UNIT 'B' FOR RAW POWER DISTRIBUTION– PUMP ROOM

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Sign:

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BATTERY & PUMP ROOMS SCEMATICS

Dwg. No.	02- 003E- 17		
Scale:	NTS		
Drawn by		Chek'd By	
Project no.:		Date:	
02		24.11.2023	

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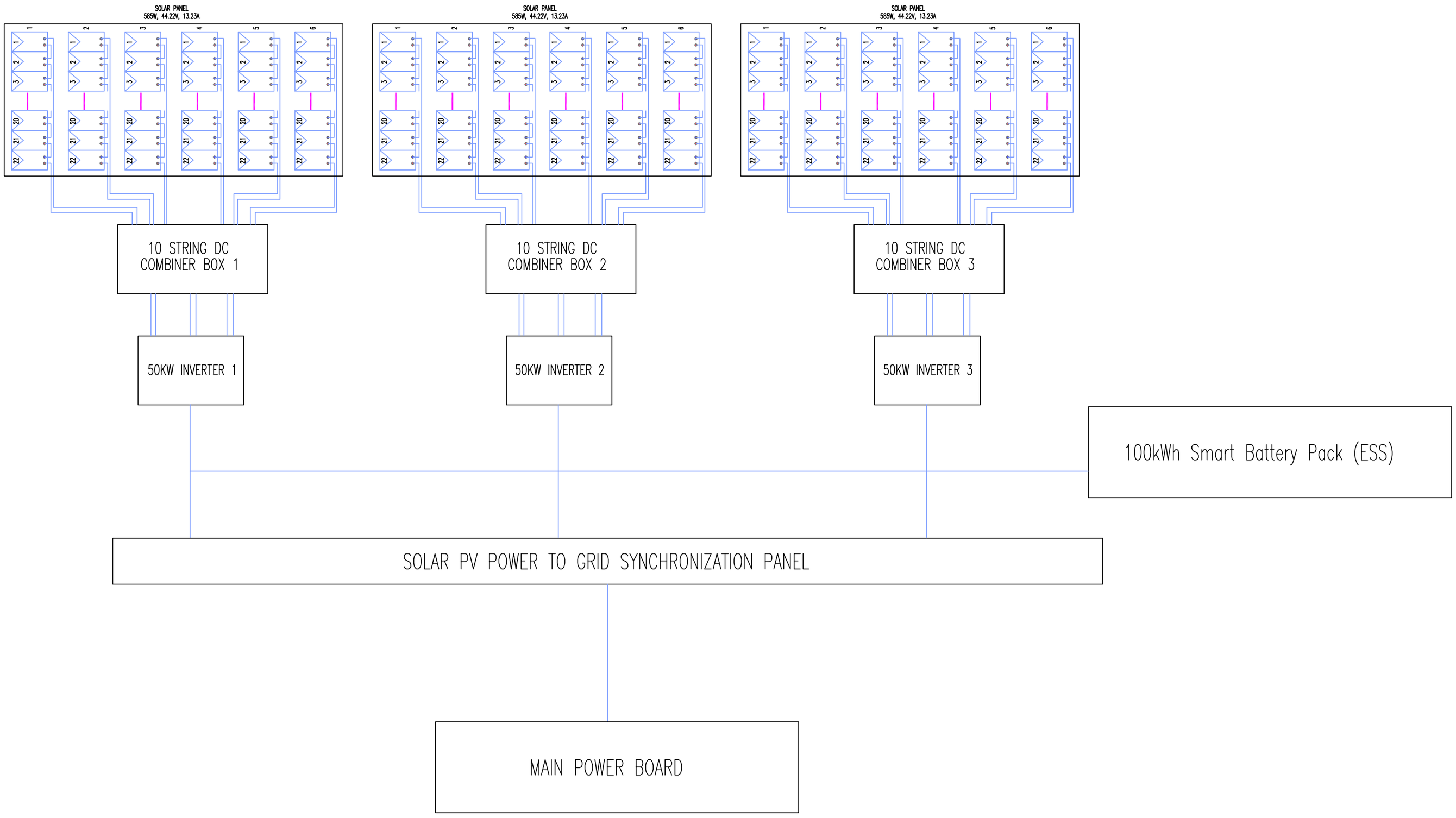

POWER SYSTEM SOLAR SCHEMATIC

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REVISIONS:

REV. No.	Details of Revision

PROJECT TITLE:

PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE

CLIENT:

STATE DEPARTMENT FOR FISHERIES, AQUACULTURE & THE BLUE ECONOMY

CLIENT'S SIGNATURE:

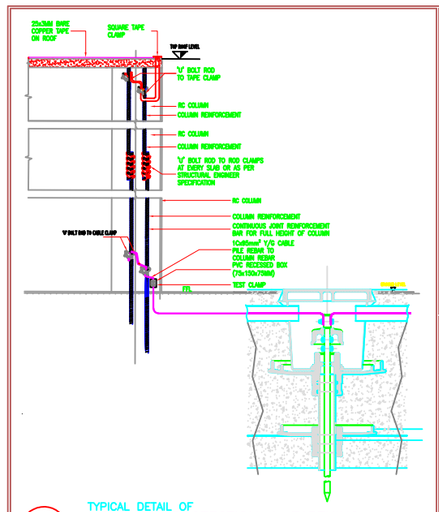
Sign:

DRAWING TITLE:

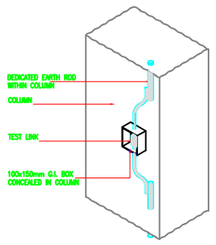
POWER SYSTEM SOLAR SCHEMATIC

Dwg. No.	02- 003E- 018		
Scale:	NTS		
Drawn by		Chek'd By	
Project no.:		Date:	
02		24.11.2023	

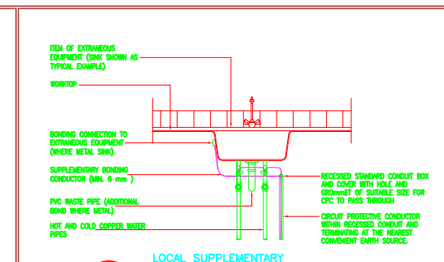
TENDER ISSUE



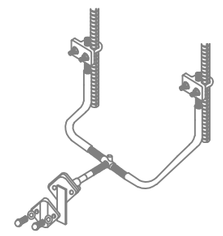
1 ELP — TYPICAL DETAIL OF LIGHTNING PROTECTION & EARTHING — NTS



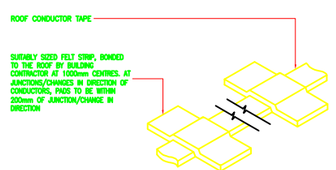
5 ELP — TEST LINK — NTS



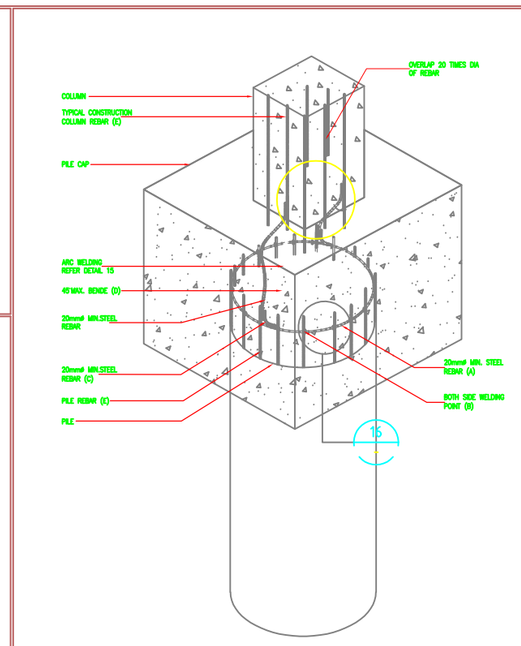
10 ELP — LOCAL SUPPLEMENTARY BONDING TO EXTRANEOUS EQUIPMENT — NTS



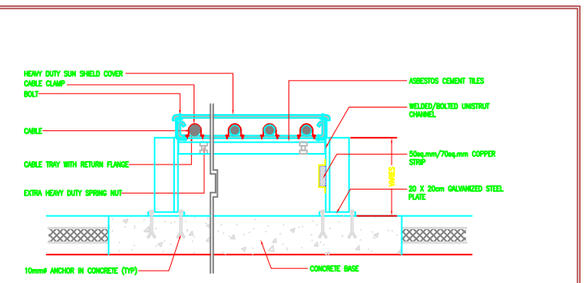
6 ELP — CONNECTION TO REINFORCEMENT BARS USING CLAMP — NTS



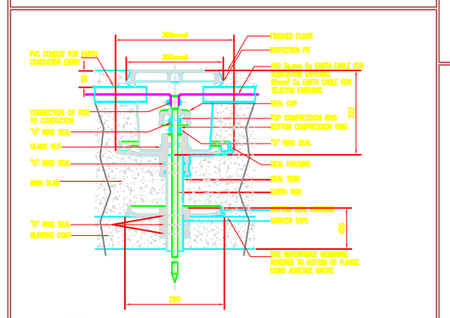
11 ELP — ROOF TAPE FIXING DETAIL — NTS



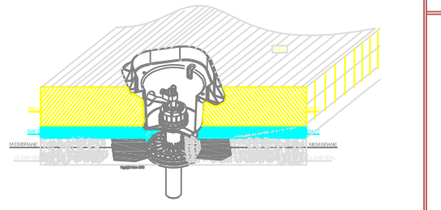
OPTION – A



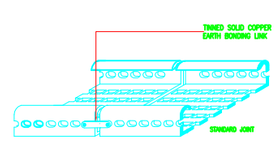
20 ELP — ROOF CABLE TRAY DETAIL — NTS



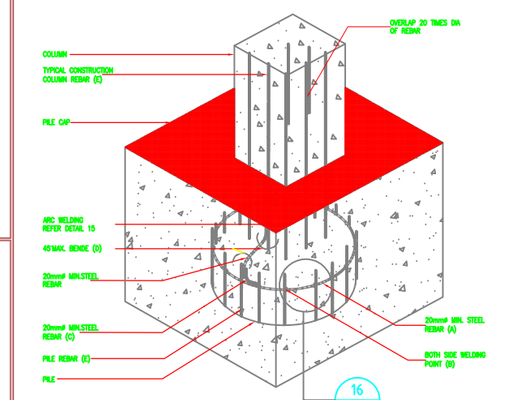
2 ELP — TYPICAL DETAIL OF EARTH PIT WITH DOUBLE FLANGE — NTS



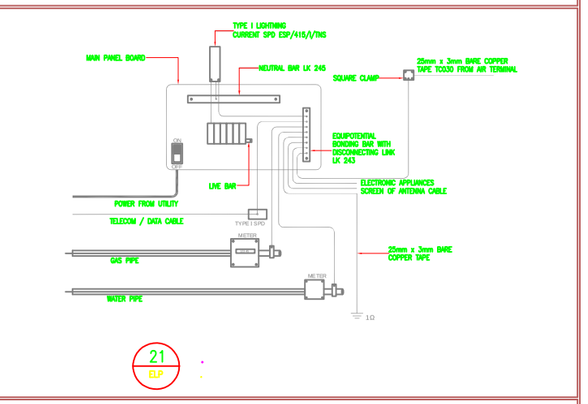
7 ELP — EARTH SEAL INSTALLATION IN THE RAFT — NTS



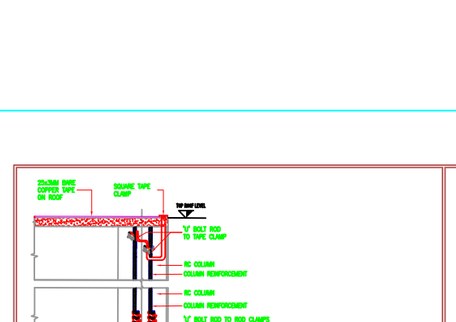
16 ELP — CABLE TRAY BONDING — NTS



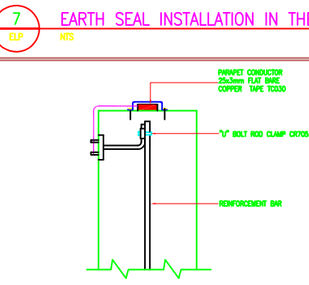
17 ELP — COLUMN REBAR TO PILE REBAR WELDING DETAIL — NTS



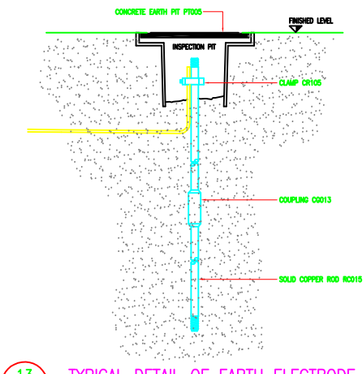
21 ELP



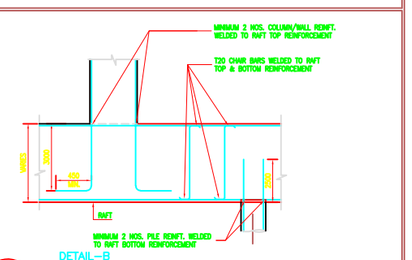
3 ELP — LIGHTNING PROTECTION EARTHING THROUGH RAFT — NTS



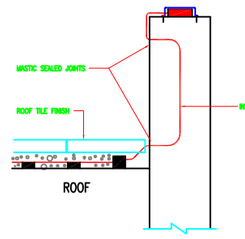
8 ELP — DETAIL – A — NTS



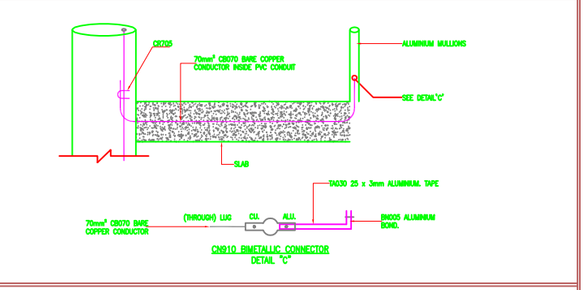
13 ELP — TYPICAL DETAIL OF EARTH ELECTRODE — NTS



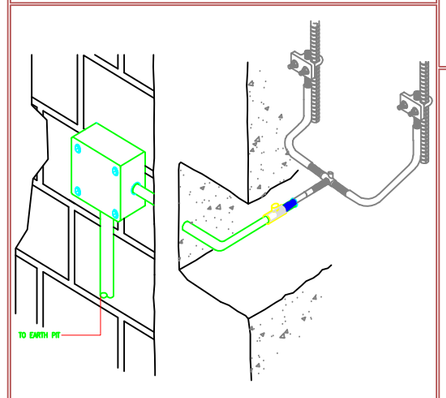
9 ELP — DETAIL–B (TYPICAL LIGHTNING PROTECTION DETAIL) — NTS



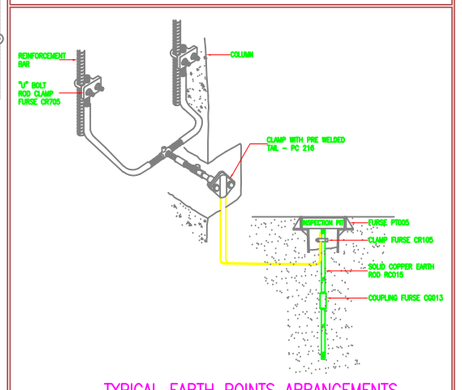
18 ELP — TYPICAL ARRANGEMENT TO LINK HIGH PARAPET TO LOW LEVEL — NTS



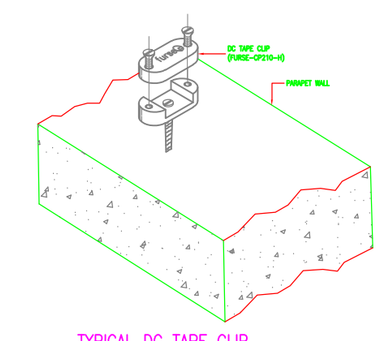
22 ELP — EXTENDED AIR TERMINATION NETWORK DETAILS OF BOUNDING & CLADDING WALL — NTS



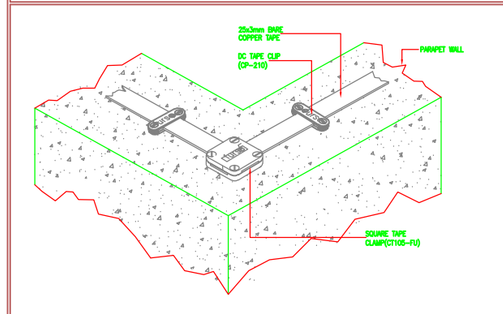
4 ELP — TYPICAL EARTH POINTS ARRANGEMENTS — NTS



15 ELP — TYPICAL EARTH POINTS ARRANGEMENTS & TYPICAL DETAIL OF EARTH ELECTRODE — NTS



14 ELP — TYPICAL DC TAPE CLIP INSTALLATION DETAIL ON PARAPET WALL — NTS



19 ELP — FIXING DETAIL — NTS

GENERAL NOTES:

1. DO NOT SCALE FROM THE DRAWING.
2. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVEL IN METERS UNLESS NOTED OTHERWISE.
3. ALL DIMENSIONS TO BE VERIFIED ON SITE AND APPROVED BY THE ENGINEERS
4. THE DRAWINGS SHOULD BE READ IN CONJUNCTION WITH OTHER RELEVANT ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND CIVIL DRAWING AND RELEVENT SECTION OF THE SPECIFICATION.
5. THE SPECIALIST LIGHTNING PROTECTION INSTALLER SHALL PROVIDE A LIGHTNING PROTECTION SYSTEM COMPLETELY INACCORDANCE WITH
   BSEN 62305 (1 – 4) : 2011, DESIGN STANDARDS
   BSEN 50164 : 2000 MANUFACTURING STANDARDS FOR STRUCTURAL COMPONENTS
   IEC 62561 (PART 1–7) MANUFACTURING STANDARDS FOR STRUCTURAL COMPONENTS
   BS EN 61643 – MANUFACTURING STANDARDS FOR SURGE PROTECTION DEVICES
6. THE SPECIALIST LIGHTNING PROTECTION INSTALLER SHALL SUBMIT THE RISK EVALUATION AND THE ACHIEVED LIGHTNING PROTECTION LEVEL (LPL) CALCULATION BASED ON BS EN 62305 – PART 2. NOTE: DO NOT USE EC62305 PARAMETERS & CALCULATORS
7. THE SPECIALIST LIGHTNING PROTECTION INSTALLER SHALL USE 25X3 MM BARE COPPER TAPE OF 99.99% PURITY (COMPLYING WITH BS EN 13601), (OR PVC COATED AS THE CASE MAY REQUIRE, COMPLYING WITH THE SAME) TO FORM THE AIR–TERMINATION MESH ON THE UPPERMOST PART OF THE STRUCTURE AND RING CONDUCTOR AROUND THE STRUCTURE.
8. THE SPECIALIST LIGHTNING PROTECTION INSTALLER SHALL USE 25X3MM COPPER TAPE AS RING CONDUCTOR AND THIS TAPE SHOULD BE BONDED TO ALL DOWN CONDUCTORS AROUND THE PERIPHERY AND A BRANCH CONDUCTOR TO BE TAKEN HORIZONTALLY. ALSO ALL THESE DOWN CONDUCTORS TO BE BONDED TO THE ALUMINUM CLADDING WALL USING BI–METALLIC CLAMPS (IN COMPLIANCE TO BSEN 50164).
9. ALL THE FIXING CLIPS FOR THE COPPER TAPE SHALL BE METALLIC (COMPLYING WITH CLASS 'A' OF THE ELECTRICAL TESTING BASED ON BSEN 50164) AND SHALL BE FIXED AT AN INTERVAL OF 500MM (1000 MM FIXING DISTANCE FOR FIXING CONDUCTORS ON VERTICAL SURFACE UP TO 20M FROM THE GROUND LEVEL AND ON THE HORIZONTAL SURFACE I.E. ROOF).
10. A MINIMUM OF TWO RE–INFORCING BARS SHALL BE USED AS DOWN CONDUCTORS IN EACH COLUMN.
11. THE MINIMUM OVERLAP DIMENSION TO CONNECT TWO RE–BARS SHALL BE AT LEAST 20 TIMES THE DIAMETER OF THE RE–BAR AND PREFERABLY ARC WELDED. IF IT IS NOT PRACTICAL TO ARC–WELD STAINLESS STEEL CLAMPS SHOULD BE USED TO OVERLAP THE REBARS EACH 100M SPACING TILL THE ABOVE DIMENSION IS ACHIEVED.
12. THE ELECTRICAL CONTINUITY OF THE REINFORCING BARS SHALL BE DETERMINED BY ELECTRICAL TESTING BETWEEN THE UPPERMOST PART AND THE GROUND LEVEL. THE OVERALL ELECTRICAL RESISTANCE SHOULD NOT BE GREATER THAN 0.20 Ω, MEASURED USING TEST EQUIPMENT SUITABLE FOR THIS PURPOSE. THE SPECIALIST LIGHTNING PROTECTION INSTALLER SHOULD SUBMIT TEST REPORTS BEFORE COMMENCEMENT OF THE INSTALLATION.
13. THE COMPOSITE CLASS – ALUMINIUM PANEL SHALL BE BONDED TO ALL THE DOWN CONDUCTORS AT THE VARIOUS GLAND LEVELS AS PER THE ROLLING SPHERE SPACING BY USING BI–METALLIC CLAMPS COMPLYING TO BSEN 50164.
14. A MINIMUM OF 2400 MM LENGTH OF SOLID COPPER ROD WITH NICKEL PLATING SHALL BE PROVIDED WITH EACH DOWN CONDUCTOR SEPARATELY. THE SPECIALIST LIGHTNING PROTECTION INSTALLER SHALL SUBMIT THE CALCULATION FOR DECIDING THE NUMBER OF EARTH RODS IN EACH EARTH PIT TO ACHIEVE THE REQUIRED RESISTANCE TO EARTH VALUE.
15. THE COMPLETE LIGHTNING PROTECTION SYSTEM MEASURED AT ANY POINT, SHOULD NOT EXCEED 10 OHMS.
16. THE RESISTANCE TO EARTH FOR ELECTRICAL AND TELECOM PITS SHOULD NOT EXCEED 1 OHM.
17. IF CLEAR EARTH IS NOT AVAILABLE, THEN THE SPECIALIST LIGHTNING PROTECTION INSTALLER HAS TO INSTALL THE EARTH PIT INSIDE THE BUILDING USING COMPRESSION TYPE MEMBRANE SEALANT EARTH ELECTRODE SEALS.
18. THE SEAL WILL WITHSTAND WATER PRESSURE UP TO 70 PSI (EQUAL TO A 55 METER HEAD OF WATER). THE EARTH SEAL FLANGE SHALL BE FREE FROM DUST / DEBRIS, GREASE/PAINT BEFORE POURING OF THE CONCRETE. TEST REPORT TO BSEN50164/IEC62561 MUST BE SUBMITTED
19. A SPECIALIST INSTALLER SHOULD BE EMPLOYED TO DO THE INSTALLATION OR SHALL BE DONE UNDER THE SUPERVISION OF THE MANUFACTURER OR THE MANUFACTURER'S AUTHORISED REPRESENTATIVE.
20. SPECIALIST LIGHTNING PROTECTION INSTALLER ALSO HAS TO ENSURE, BASED ON BSEN 62305 – IV, THAT SUITABLE CO–ORDINATED OVER–VOLTAGE SURGE PROTECTION DEVICES WITH AN EXTRA LOW LET – THROUGH VOLTAGE (NOT TO EXCEED 600V) ARE USED FOR PROTECTING ANY TERMINAL DEVICES I.E. DBs FEEDING CRITICAL SERVICES OR EVEN THE LOCAL CRITICAL ELECTRICAL GADGET.
21. THE SERVICE EQUIPMENTS ON THE ROOF (I.E. CHILLER UNITS ETC) TO BE PROTECTED USING VERTICAL AIR TERMINALS INSTALLED AT A SUITABLE SEPARATION DISTANCE. THE CABLE FROM THE EQUIPMENT SHALL BE PROTECTED USING AN OVER – VOLTAGE PROTECTION SPD.
22. THE EQUIPMENT SHALL NOT BE BONDED TO THE AIR TERMINATION NETWORK.
23. SPECIALIST LIGHTNING PROTECTION INSTALLER SHALL GIVE THE CALCULATION OF THE SUITABLE SEPARATION DISTANCE.
24. PROTECTORS SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF:
    BS EN 61643–PART11, BS 2914:1972 & IEEE C62.41–1991
    THE PEAK TRANSIENT LET–THROUGH VOLTAGE SHALL NOT EXCEED 600 VOLTS, FOR SPDs WITH A NOMINAL WORKING VOLTAGE OF 230 OR 240 VOLTS, (6KV 1.2/50 µS OPEN CIRCUIT VOLTAGE, 3KA 8/20µS SHORT CIRCUIT CURRENT).
25. ALL SURGE PROTECTION DEVICES TO BE USED SHALL BE FROM THE SAME MANUFACTURER WHO SUPPLIES THE STRUCTURAL LIGHTNING PROTECTION.
26. THE SPECIALIST LIGHTNING PROTECTION INSTALLER SHALL ENSURE PROPER CO–ORDINATION BETWEEN THE STRUCTURAL, CIVIL, ELECTRICAL AND THE CLADDING INSTALLER
27. ALL INSTALLATION DETAILS SHALL BE AGREED WITH THE ENGINEER PRIOR TO COMMENCEMENT OF WORK.
28. THE SPECIALIST LIGHTNING PROTECTION INSTALLER SHALL OBTAIN AN INSPECTION CERTIFICATE FROM THE MANUFACTURER OR ITS AUTHORIZED REPRESENTATIVE TOWARDS THE SATISFACTORY INSTALLATION OF THE SYSTEM AND THAT PROPER MATERIAL IN ACCORDANCE TO THE ABOVE STANDARD HAS BEEN USED
29. THE SHOP DRAWINGS MUST BE APPROVED BY THE MANUFACTURER OR THE MANUFACTURER'S AUTHORIZED REPRESENTATIVE, WHICH HAS TO BE USED FOR INSTALLATION AFTERWARDS TO ENSURE TOTAL ADHERENCE TO THE STANDARDS AND REQUIREMENTS.
30. THE MANUFACTURER OR THE MANUFACTURER'S AUTHORIZED REPRESENTATIVE WILL HAVE TO SURVEY AND CERTIFY THE INSTALLATION TO ENSURE THE STANDARDS.
31. THE MANUFACTURER OR THE MANUFACTURER'S AUTHORIZED REPRESENTATIVE WILL CERTIFY THE BILL OF MATERIALS, PROVIDED BY THE SPECIALIST LIGHTNING PROTECTION INSTALLER FOR THE PROJECT.
32. THE SPECIALIST LIGHTNING PROTECTION INSTALLER MUST SUBMIT THE TEST CERTIFICATES OF THE MATERIALS USED AS PER BSEN 50164, WHICH SHOULD BE ATTESTED IN ORIGINAL BY THE MANUFACTURER OR THE MANUFACTURER'S AUTHORIZED REPRESENTATIVE
33. THE PERIODIC INSPECTIONS AND TESTS HAVE TO BE REPEATED AT FIXED INTERVALS, AS MENTIONED IN THE BSEN 62305 – PART III.
34. PRE–WELDED EARTH POINTS SUITABLE FOR USE WITH 7MM REBAR IS USED TO CONNECT THE AIR TERMINATION NETWORK TO THE DOWN CONDUCTORS.
35. LIGHT WEIGHT INSPECTION EARTH PIT WITH CONCRETE LID SHOULD BE PLACED AS CLOSE AS POSSIBLE (500 – 1000MM) FROM FINISHED WALL.
36. CONTRACTOR TO ENSURE ELECTRICAL CONTINUITY THROUGH OUT THE PINNACLE STEEL STRUCTURE.

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ARPRIM CONSORTIUM,
PO. BOX 12969-0040,
NAIROBI. KENYA.

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CLIENT:

STATE DEPARTMENT FOR FISHERIES, AQUACULTURE & THE BLUE ECONOMY

CLIENT'S SIGNATURE:

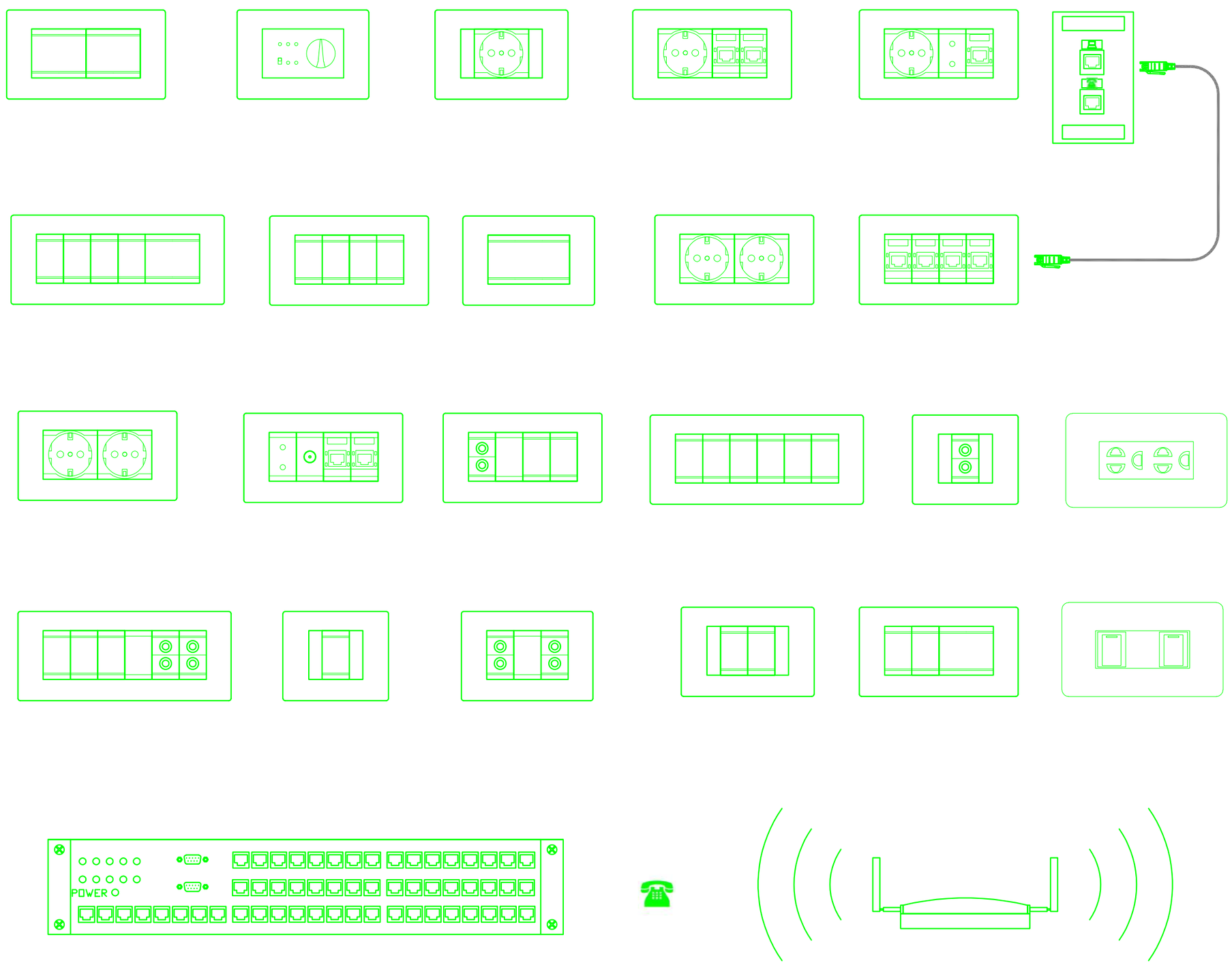
Sign:

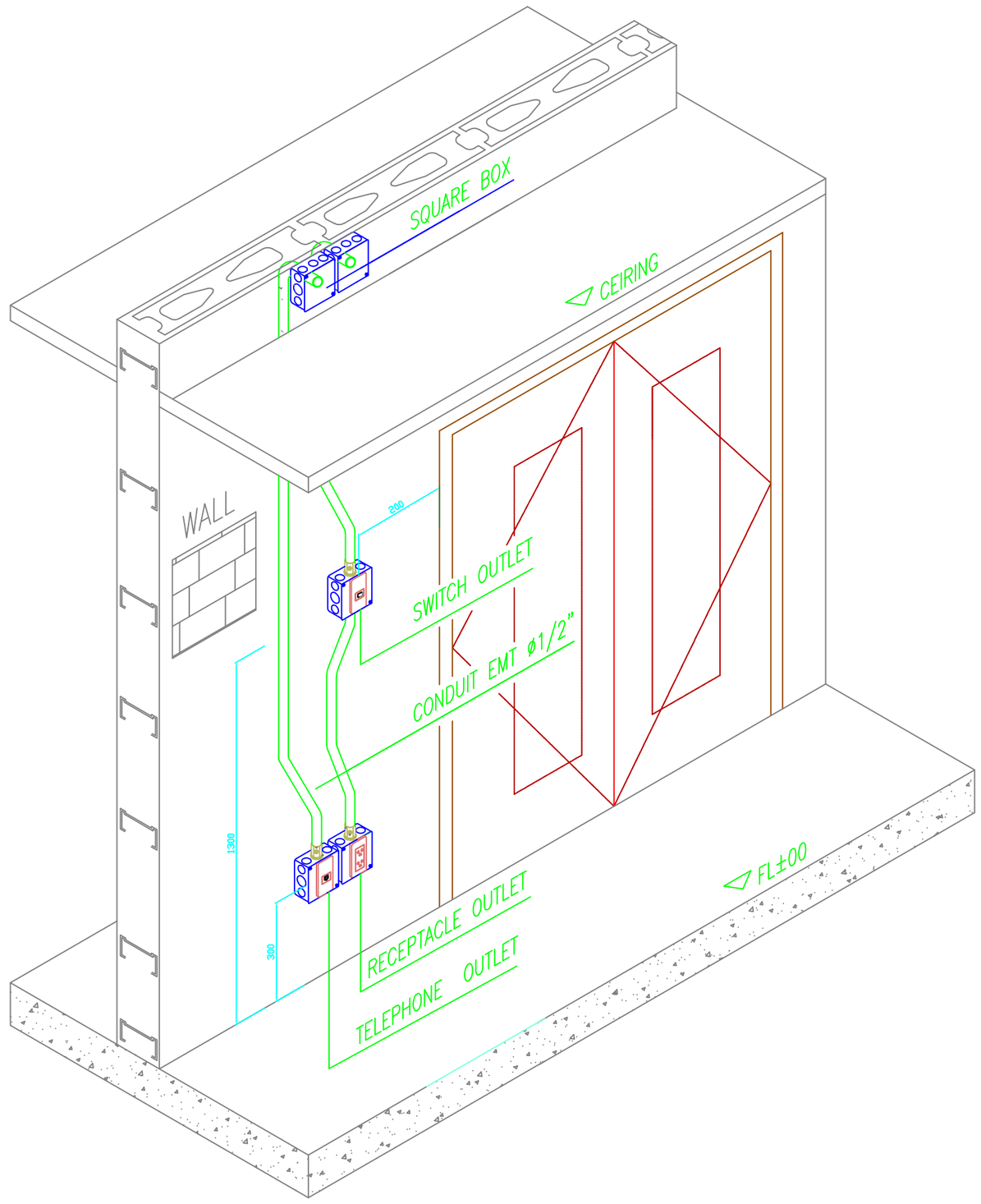
DRAWING TITLE:

POWER SYSTEM EARTHING &LIGHTNING PROTECTTION DETAIL

Dwg. No.	02- 003E- 019		
Scale:	NTS		
Drawn by		Chek'd By	
Project no.:		Date:	
02		24.11.2023	

TENDER ISSUE





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CLIENT'S SIGNATURE:

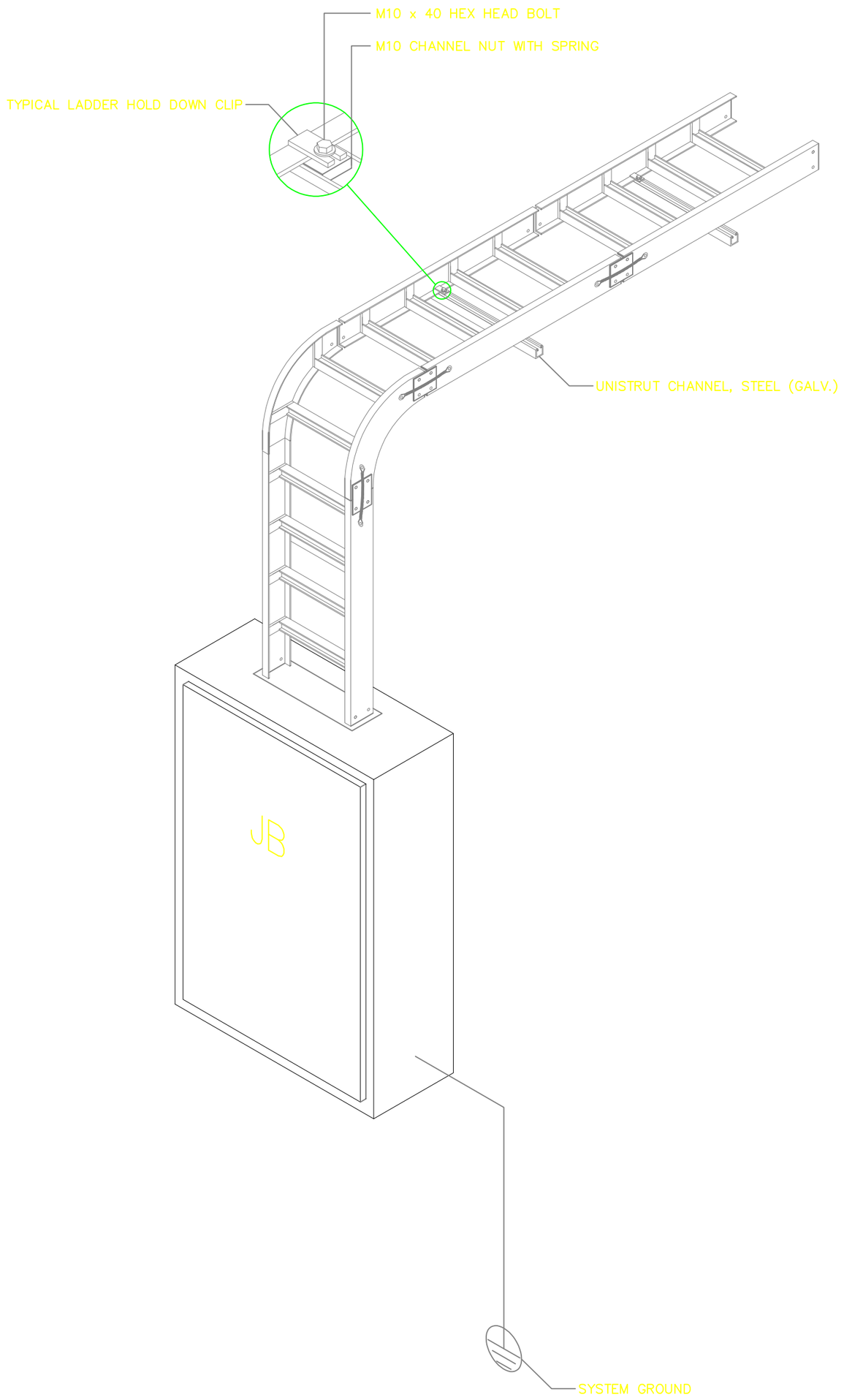
Sign:

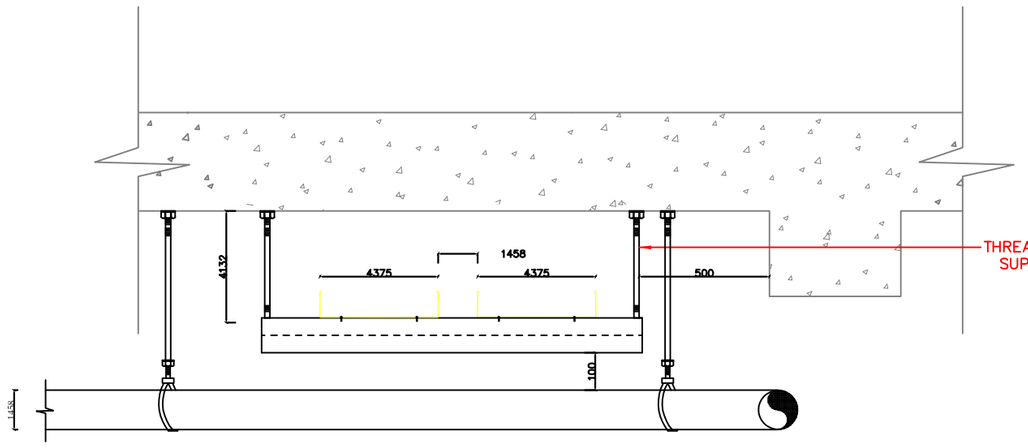
DRAWING TITLE:

SOCKET & SWITCHES DETAIL

Dwg. No.	02- 003E- 020		
Scale:	NTS		
Drawn by		Chek'd By	
Project no.:		Date:	
02		24.11.2023	

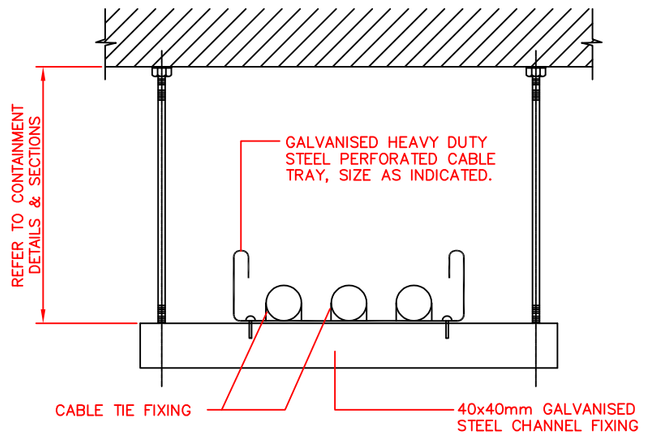
TENDER ISSUE





NOTE

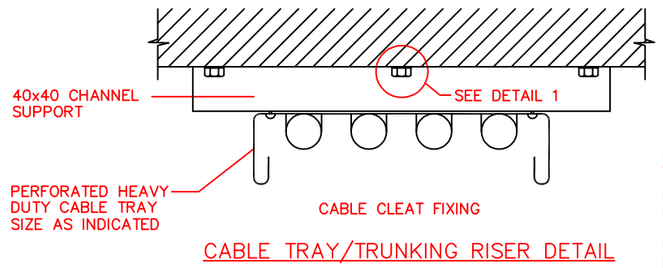
CHANNELS TO BE PAINTED ALL CUT THREADS AND WITH GALVAFROID PAINT



HORIZONTAL CABLE TRAY /TRUNKING SUPPORT STANDARD DETAIL

NOTE

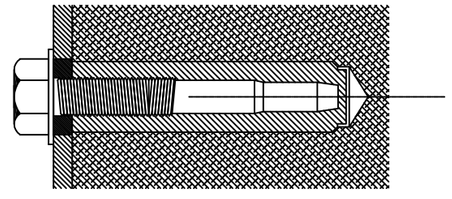
CHANNELS TO BE PAINTED ALL CUT THREADS AND WITH GALVAFROID PAINT



CABLE TRAY/TRUNKING RISER DETAIL

NOTE

D EQUALS THE SPACING BETWEEN CABLES AND ALSO EQUALS THE DIAMETER OF THE LARGEST ADJACENT CABLE



STEEL ANCHOR C/W BUILT IN EXPANSION PLUG TO BE USED IN FIXING CABLE TRAY SUPPORTS TO CONCRETE SLAB

DETAIL 1

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REVISIONS:

REV. No.	Details of Revision

PROJECT TITLE:

PROPOSED CONSTRUCTION OF RESOURCE CENTER & RELATED INFRASTRUCTURE- SHIMONI

CLIENT:

STATE DEPARTMENT FOR FISHERIES, AQUACULTURE & THE BLUE ECONOMY

CLIENT'S SIGNATURE:

Sign:

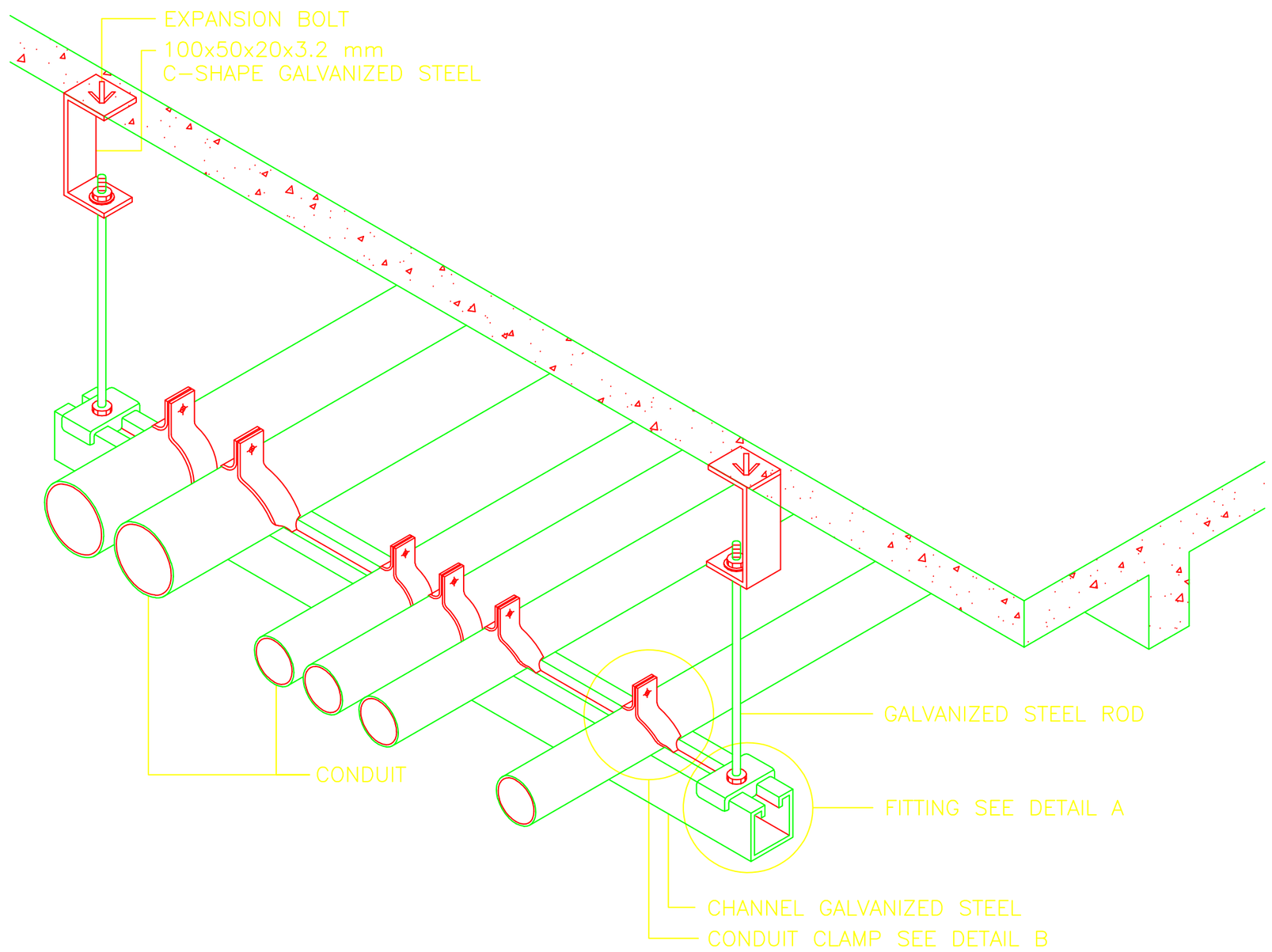
DRAWING TITLE:

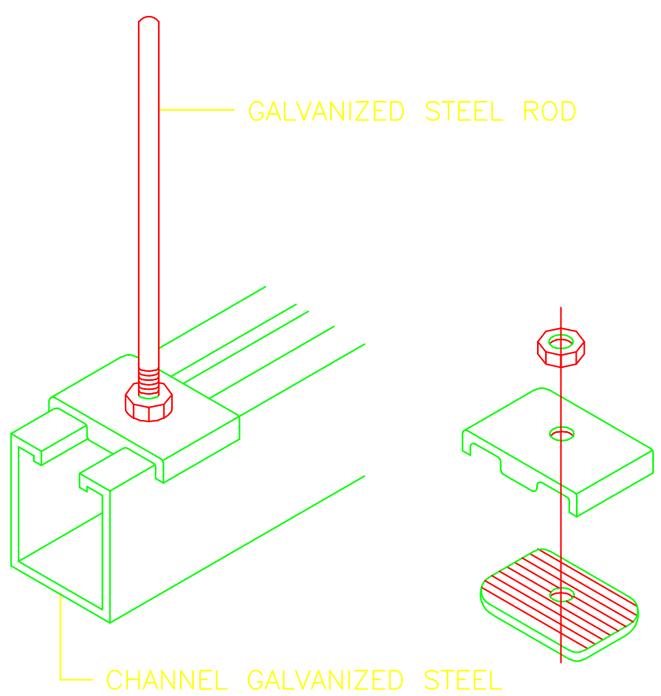
CABLE TRAY DETAIL

Dwg. No.	02- 003E- 021		
Scale:	NTS		
Drawn by		Chek'd By	
Project no.:		Date:	
02		24.11.2023	

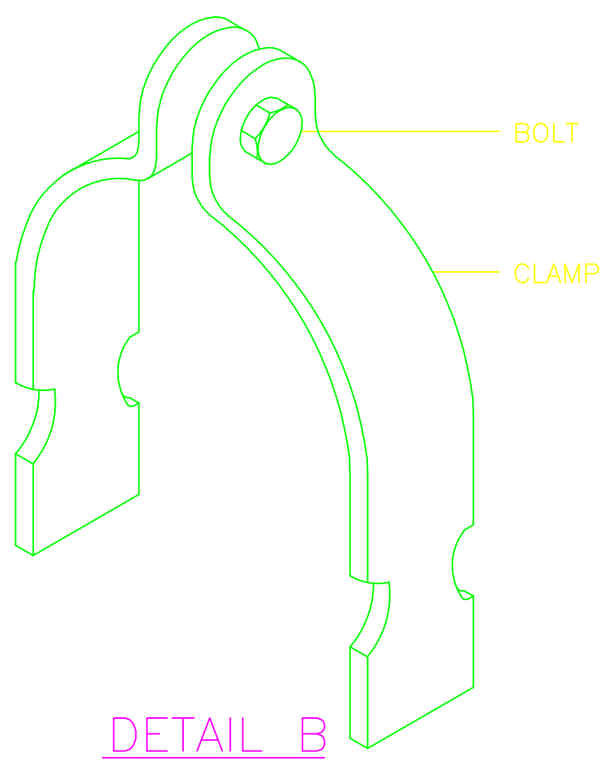
CONDUIT SUPPORT

TENDER ISSUE





DETAIL A



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REV. No.	Details of Revision

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CLIENT:

STATE DEPARTMENT FOR FISHERIES, AQUACULTURE & THE BLUE ECONOMY

CLIENT'S SIGNATURE:

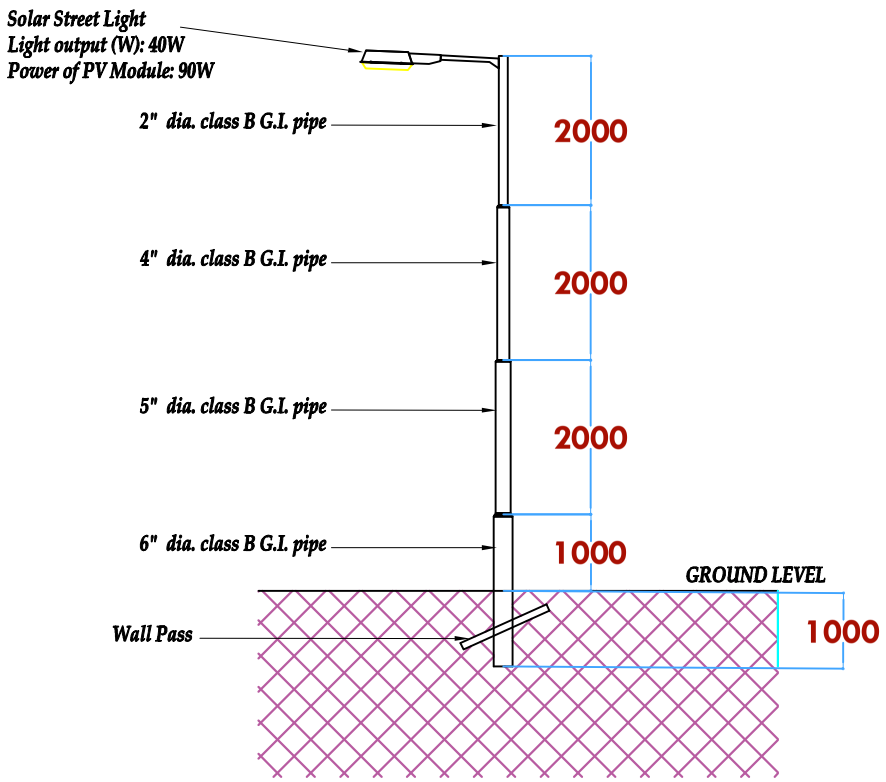
Sign:

DRAWING TITLE:

CONDUIT SUPPORT DETAIL

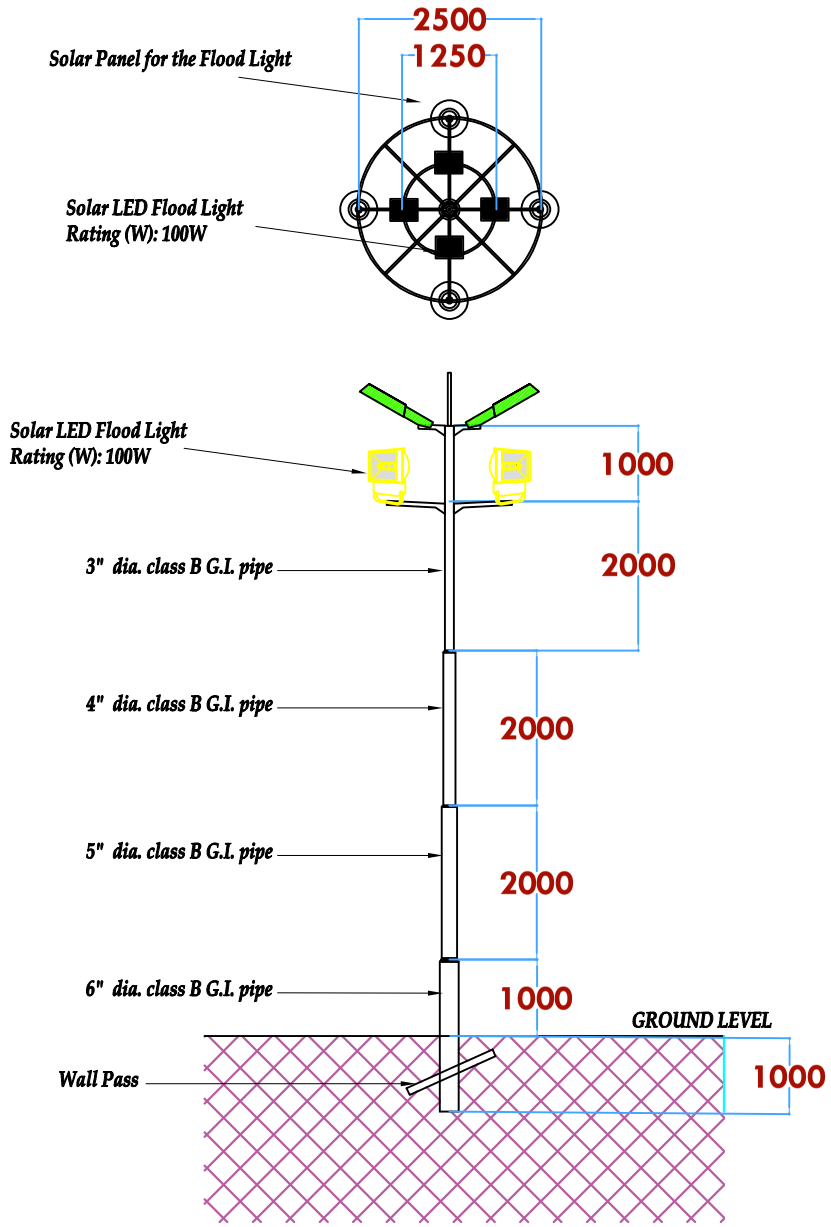
Dwg. No.	02- 003E- 022
Scale:	NTS
Drawn by	
Chek'd By	
Project no.:	02
Date:	24.11.2023

TENDER ISSUE



P4

STREET LIGHT DETAIL



TYPE M SOLAR FLOOD LIGHT DETAIL

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PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE

CLIENT:

STATE DEPARTMENT FOR FISHERIES AQUACULTURE & THE BLUE ECONOMY

CLIENT'S SIGNATURE:

Sign:

DRAWING TITLE:

STREET LIGHTING DETAIL

Dwg. No.	02- 003E- 023
Scale:	NTS
Drawn by	Chek'd By
Project no.: 02	Date: 24.11.2023

TENDER ISSUE

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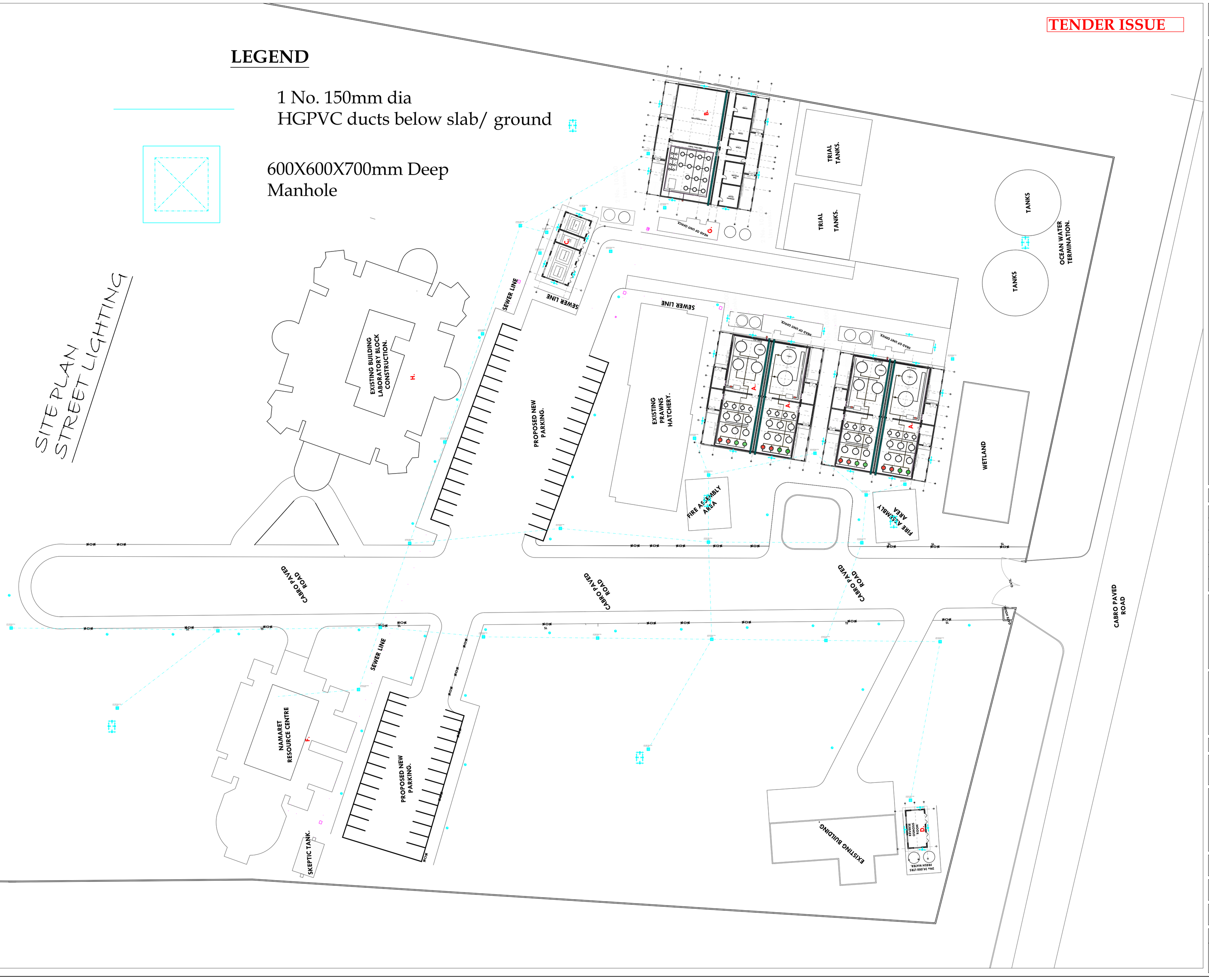
LEGEND

1 No. 150mm dia
HGPVC ducts below slab/ ground

600X600X700mm Deep
Manhole

SITE PLAN
STREET LIGHTING



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REVISIONS:

REV. No.	Details of Revision
001.	Additional Details on Power Reticualtion

PROJECT TITLE:

PROPOSED NAMARET RESOURCE CENTRE

CLIENT:

KEMFSED

CLIENT'S SIGNATURE:

Sign:

DRAWING TITLE:

SITE PLAN
POWER RETICULATION &
STREET LIGHTING

Dwg. No.	01-003E-35
Scale:	NTS
Drawn by	Chek'd By
Project no.: 01	Date: 14.11.2023

DRAWING TITLE: PROPOSED CONSTRUCTION OF HATCHERY & RELATED INFRASTRUCTURE

DRAWING NUMBER: 02-003M- 001

No.	DRAWING/ DOCUMENT TITLE	DRAWING NUMBER	DRAWING SHEET	DRAWING FORMAT	DOCUMENT STATUS
D	**ELECTRICAL ENGINEERING DRAWINGS**				
1	LIST OF DRAWINGS	02- 003M- 001	A3	PDF/ EXCEL	Provided
2	HATCHERY	02- 003M- 002	A2	PDF/ DWG	Provided
3	GROUND DRAINAGE	02- 003M- 003	A2	PDF/ DWG	Provided
4	GROUND PLUMBING	02- 003M- 004	A2	PDF/ DWG	Provided
5	ROOF PLUMBING & DRAINAGE	02- 003M- 005	A2	PDF/ DWG	Provided
6	SEA & FRESH WATER RETICULATION	02- 003M- 006	A2	PDF/ DWG	Provided
7	BATTERY ROOM & PUMP ROOM DRAINAGE	02- 003M- 007	A2	PDF/ DWG	Provided
8	SERVICE BUILDING DRAINAGE	02- 003M- 008	A2	PDF/ DWG	Provided
9	REVERSE OSMOSIS EQUIPMENT LAYOUT	02- 003M- 009	A2	PDF/ DWG	Provided
10	GATE HOUSE DRAINAGE	02- 003M- 010	A2	PDF/ DWG	Provided
11	GATE HOUSE PLUMBING	02- 003M- 011	A2	PDF/ DWG	Provided

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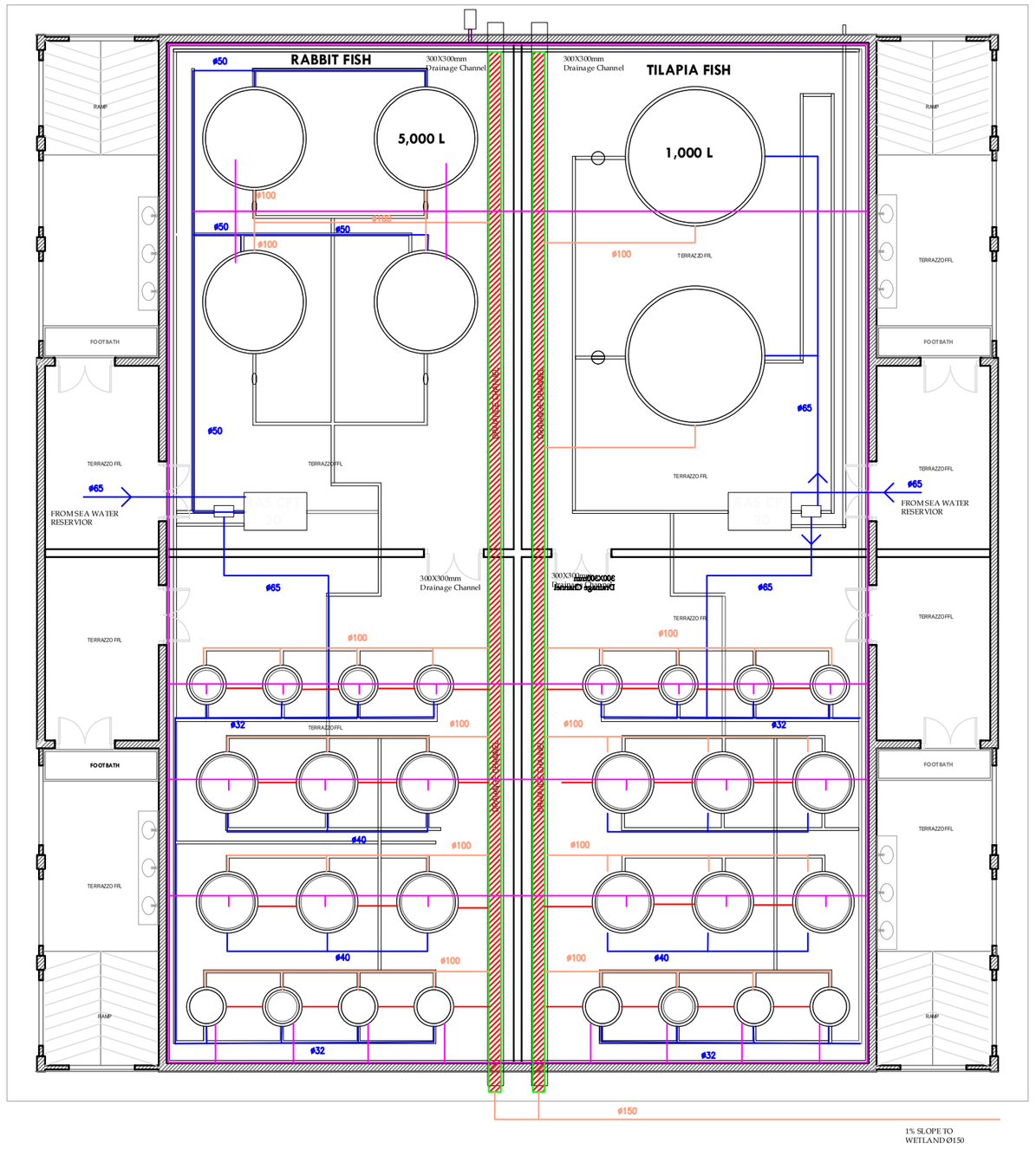

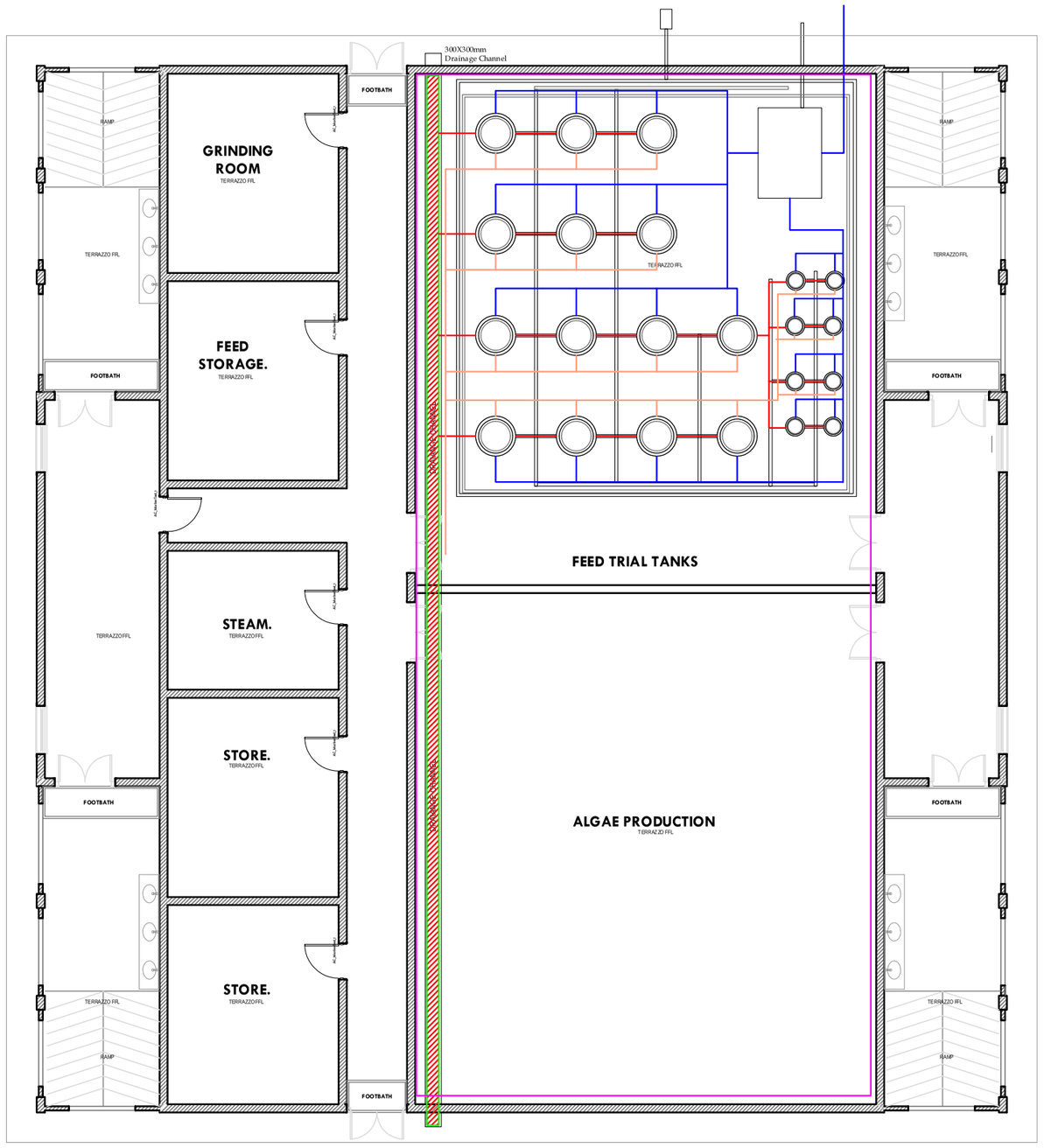

LEGEND

- BROODSTOCK TANK DRAIN
- SEA WATER RETURN
- SEA WATER SUPPLY
- BLOWER LINE AT HIGH LEVEL

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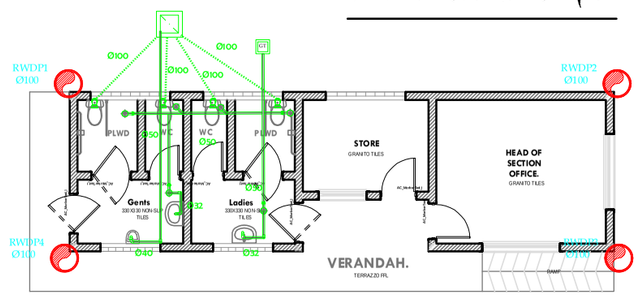
DRAWING TITLE:

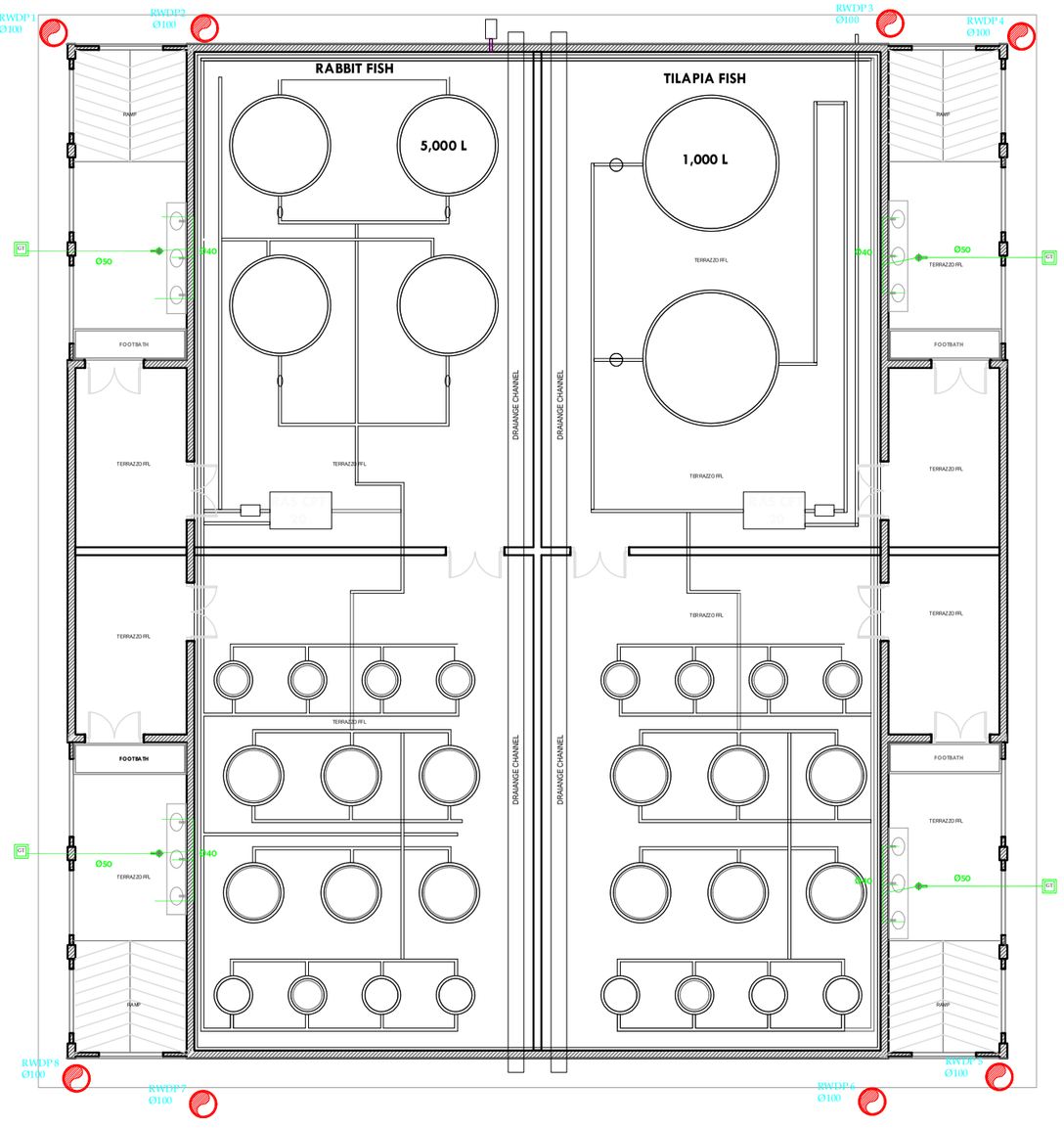
HATCHERY & AQUACULTURE LAYOUT

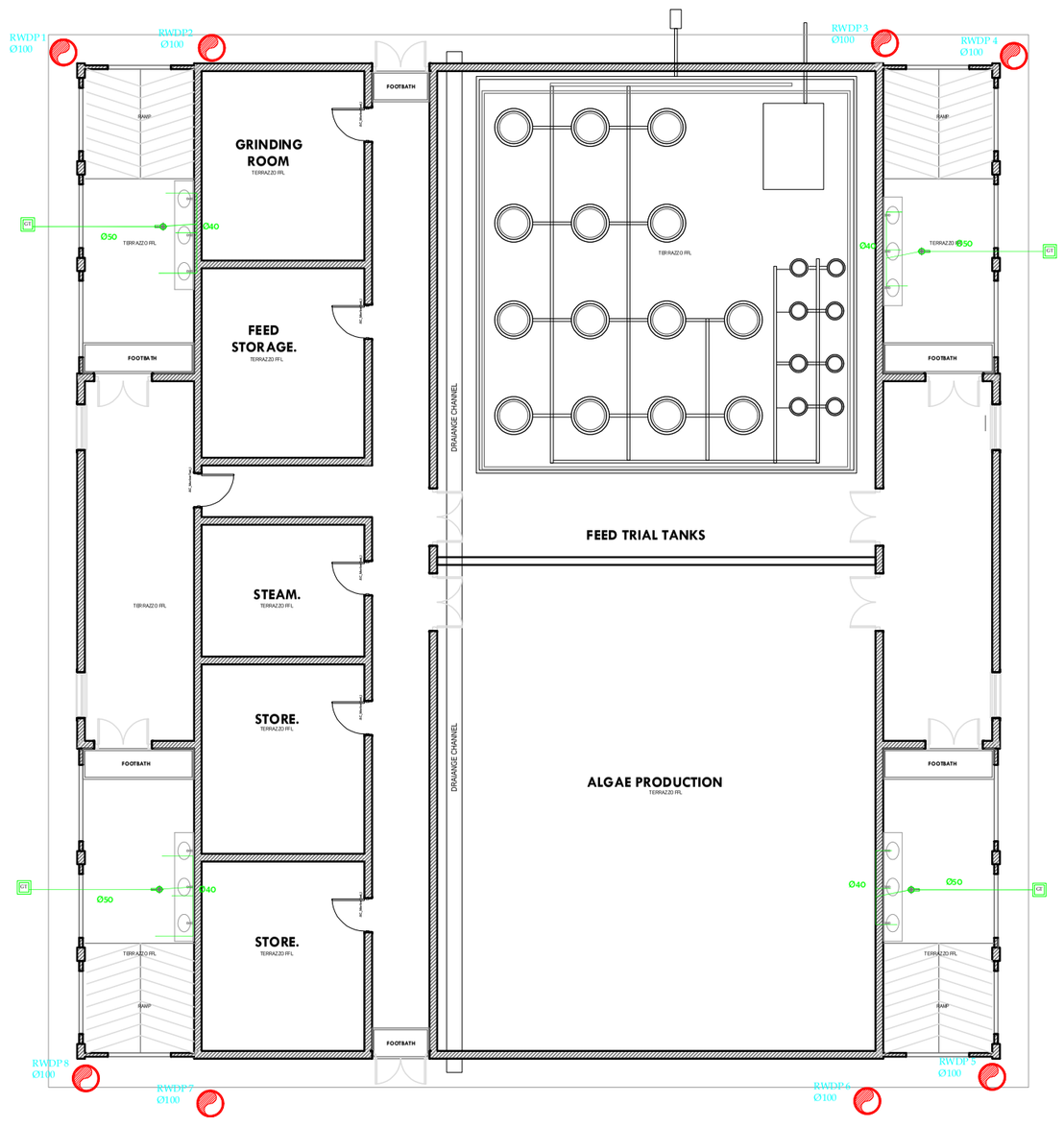
Dwg. No.	02- 003M- 02		
Scale:	NTS		
Drawn by		Chek'd By	
Project no.:		Date:	
02		24.11.2023	

TENDER ISSUE

DRAINAGE







LEGEND

WVP —— WASTE VENT PIPE
SVP —— SOIL VENT PIPE
I.S —— INSIDE SLAB PIPING
S —— SURFACE PIPING
TB —— TO BELOW
FA —— FROM ABOVE
—— RAIN WATER DOWN PIPE
—— DRAINAGE SERVISES (uPVC GREY PIPE)

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STATE DEPARTMENT FOR FISHERIES, AQUACULTURE & THE BLUE ECONOMY

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Sign:

DRAWING TITLE:

DRAINAGE LAYOUT

Dwg. No.	02- 003M- 03		
Scale:	NTS		
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Project no.:		Date:	
02		24.11.2023	

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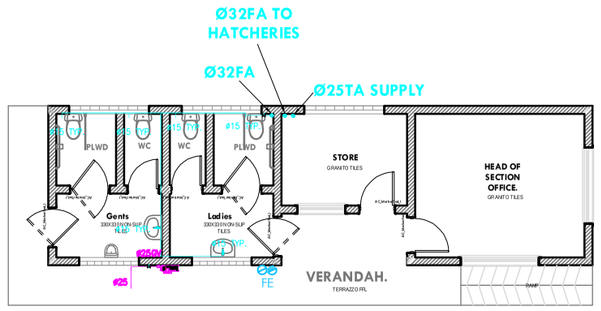
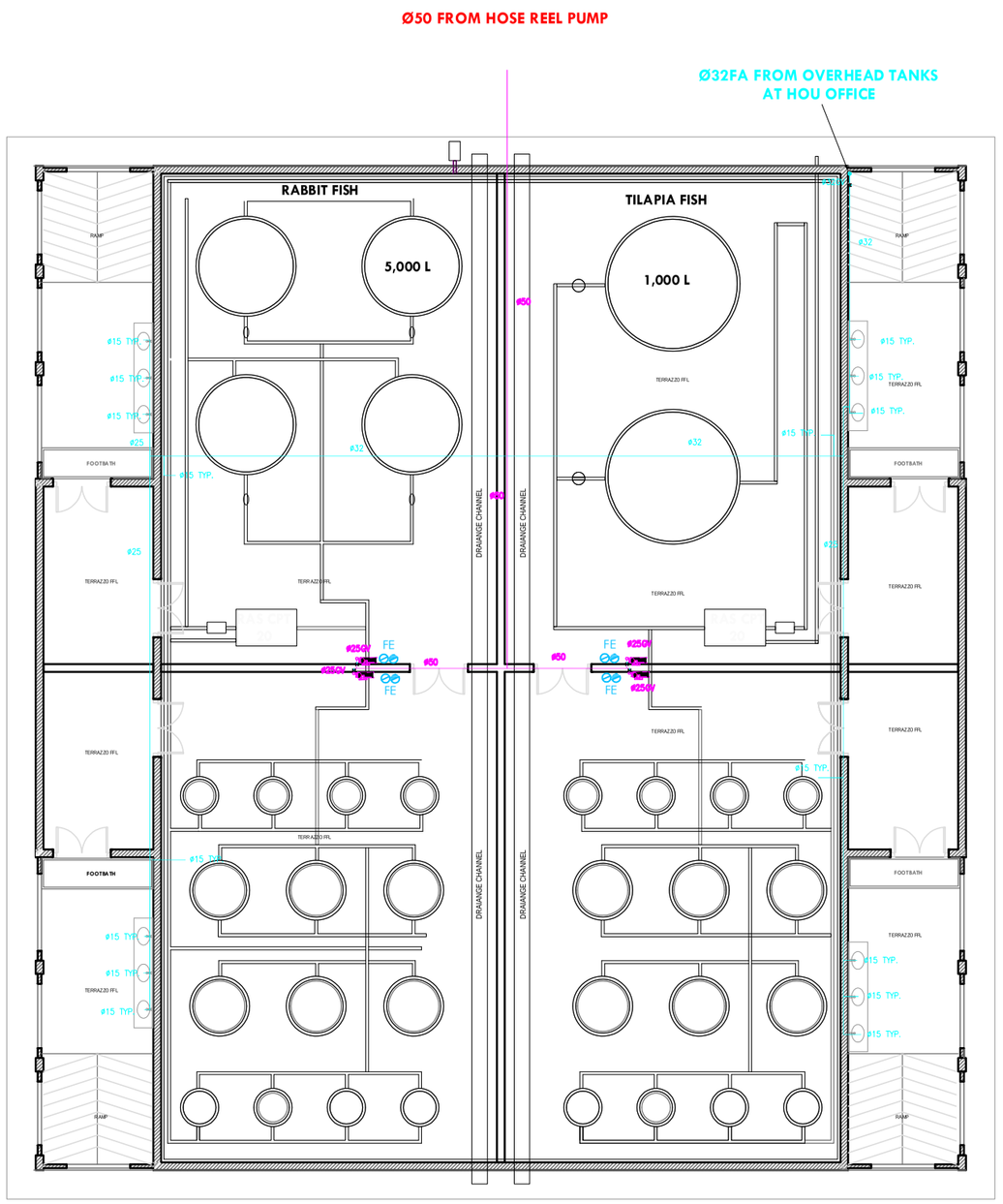
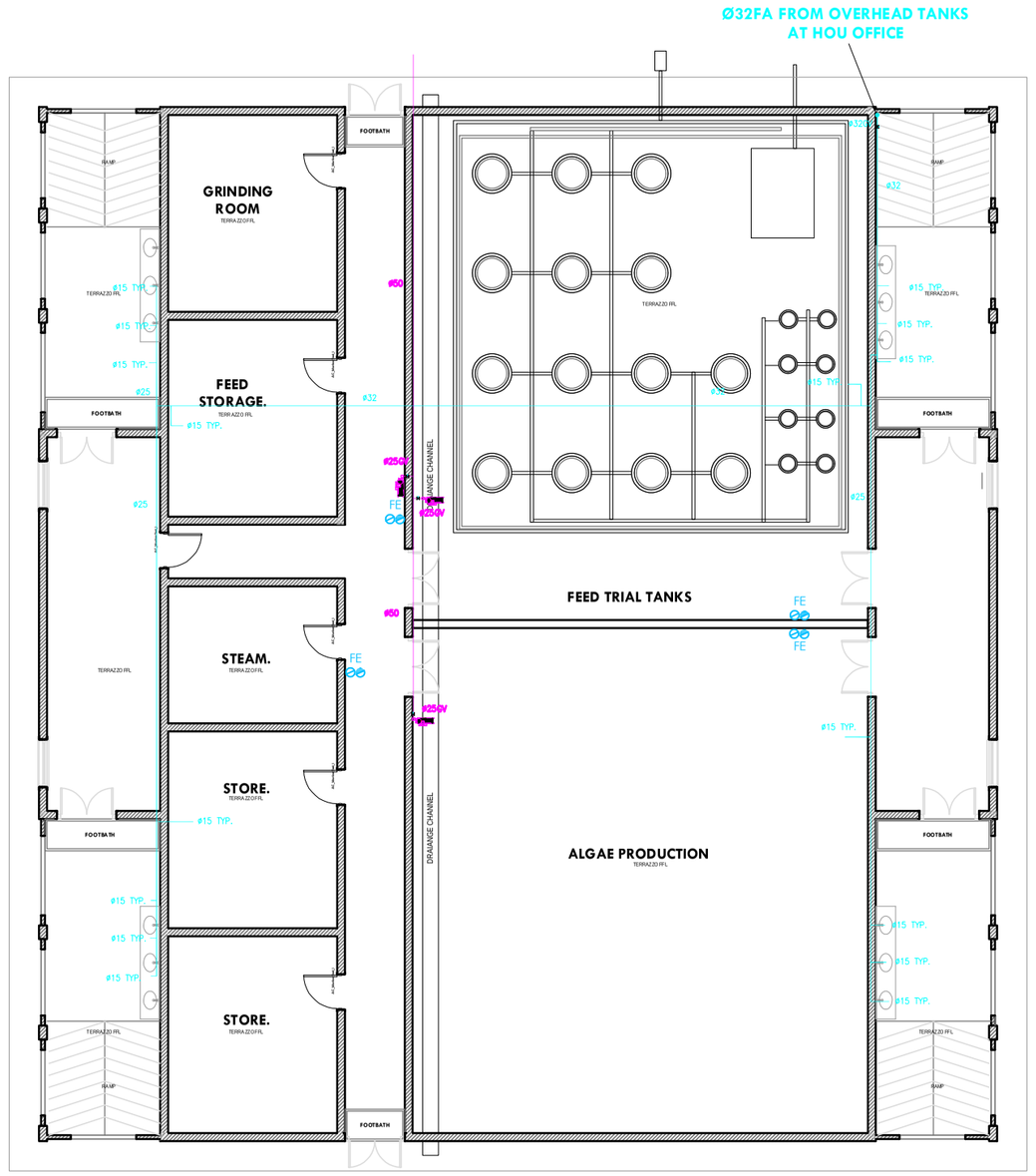


PLUMBING





LEGEND

GROUND FLOOR

- CWS — COLD WATER SUPPY
- TB — TO BELOW
- FA — FROM ABOVE
- TA — TO ABOVE
- FE — 9L WATER CO FIRE EXTINGUISHER
- FE — 9KG DRY POWDER FIRE EXTINGUISHER
- HR — 30m HOSEREEL
- — LANDING VALVE
- PPR — POLY PROPELEYNE RANDOM
- GMS — GALVANIZED STEEL PIPE (CLASS B)
- — PLUMBING SERVICES (PPR PN 20 MATERIAL)
- — HOSEREEL SERVICES (GMS CLASS 'B')

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PLUMBING

Dwg. No.	02- 003M- 04
Scale:	NTS
Drawn by	Chek'd By
Project no.: 02	Date: 24.11.2023

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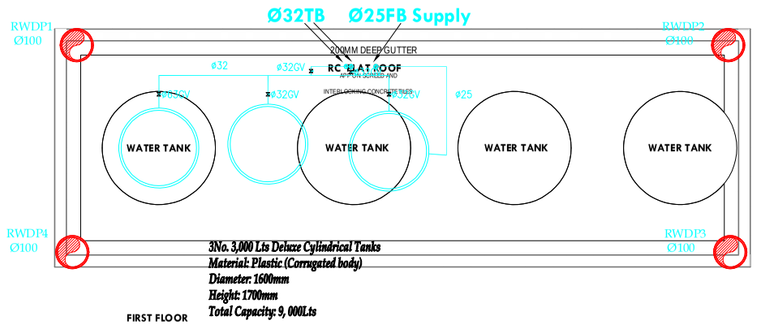

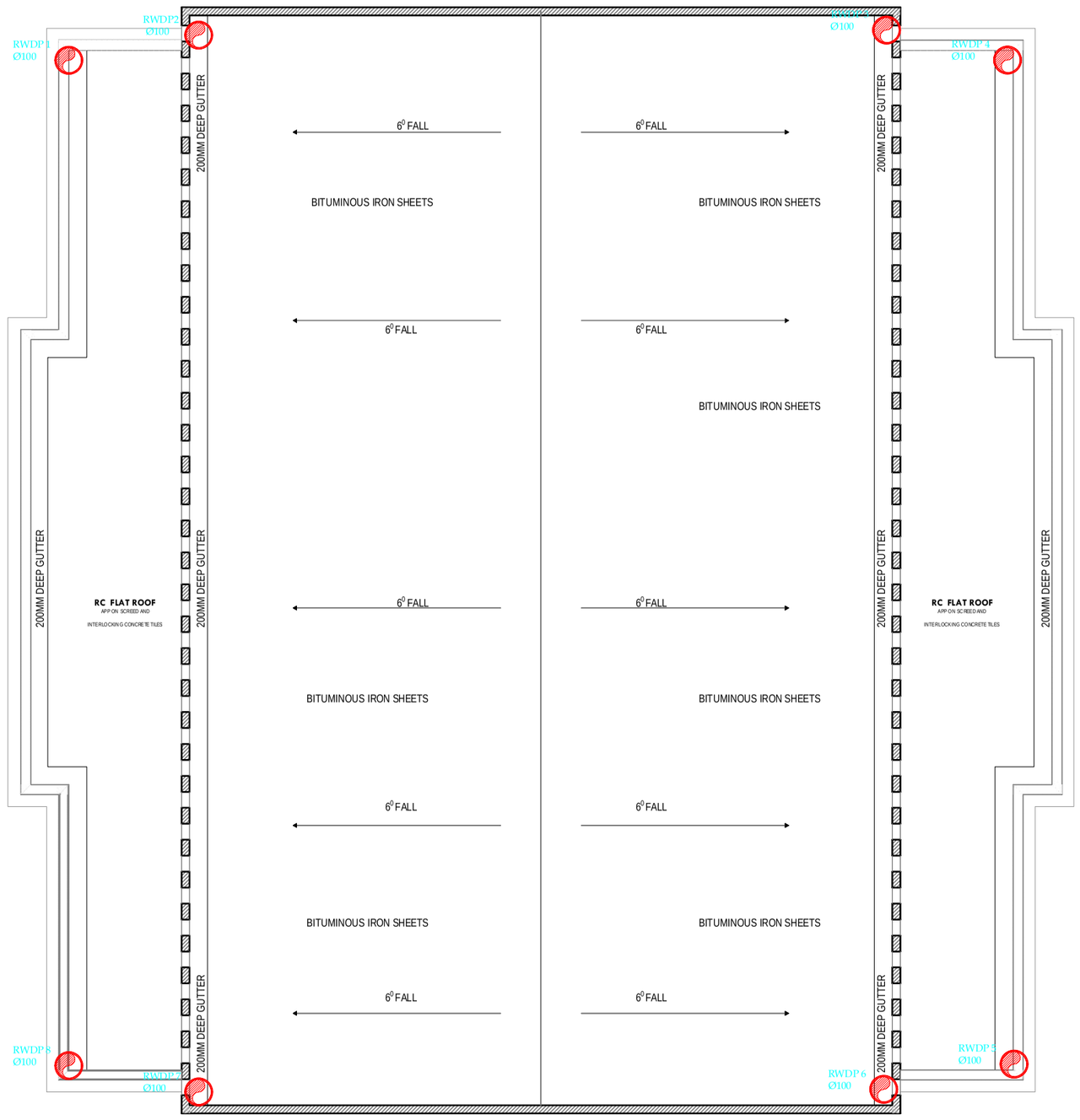

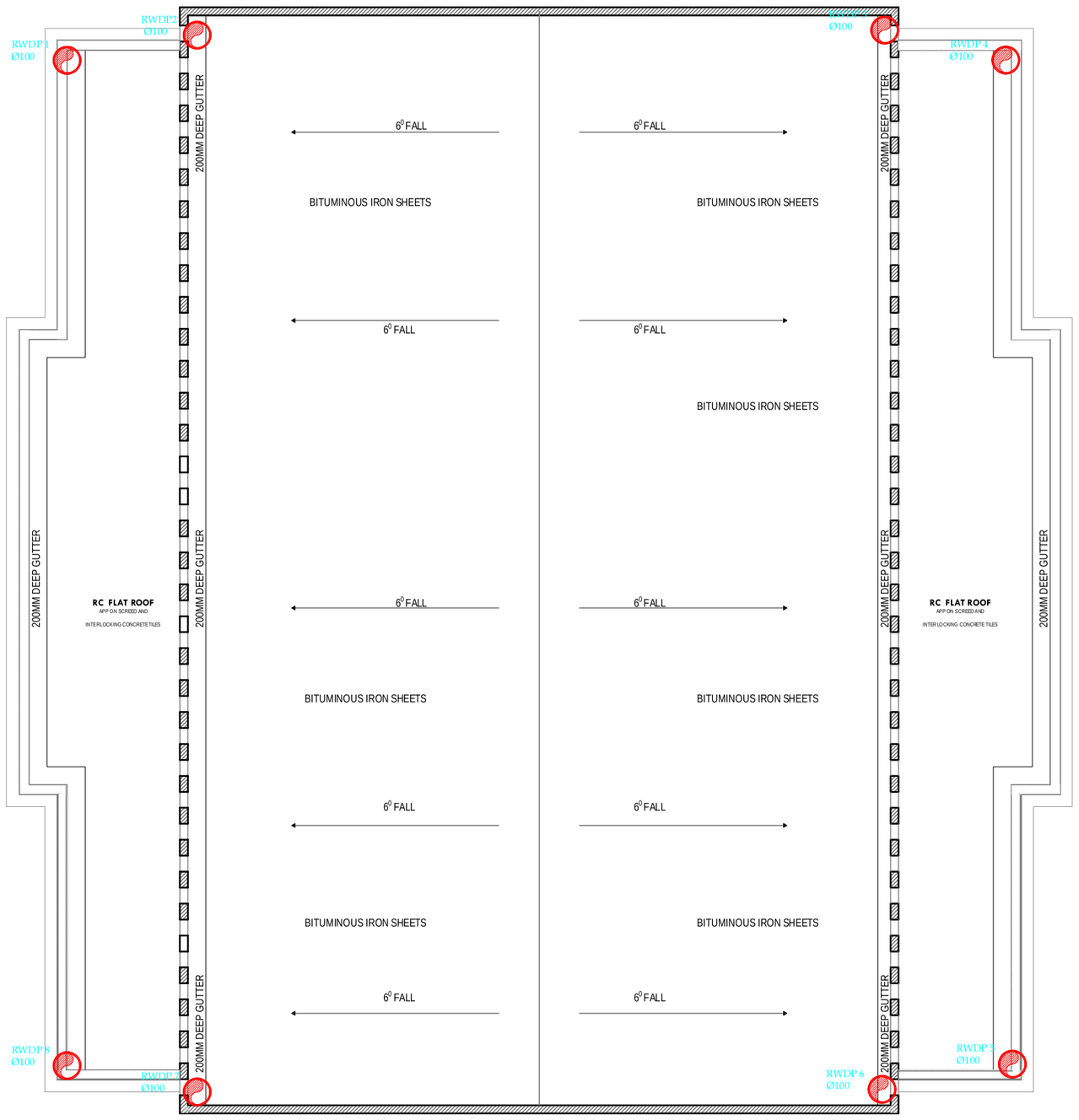

ROOF P&D

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CLIENT:

STATE DEPARTMENT FOR FISHERIES, AQUACULTURE & THE BLUE ECONOMY

CLIENT'S SIGNATURE:

Sign:

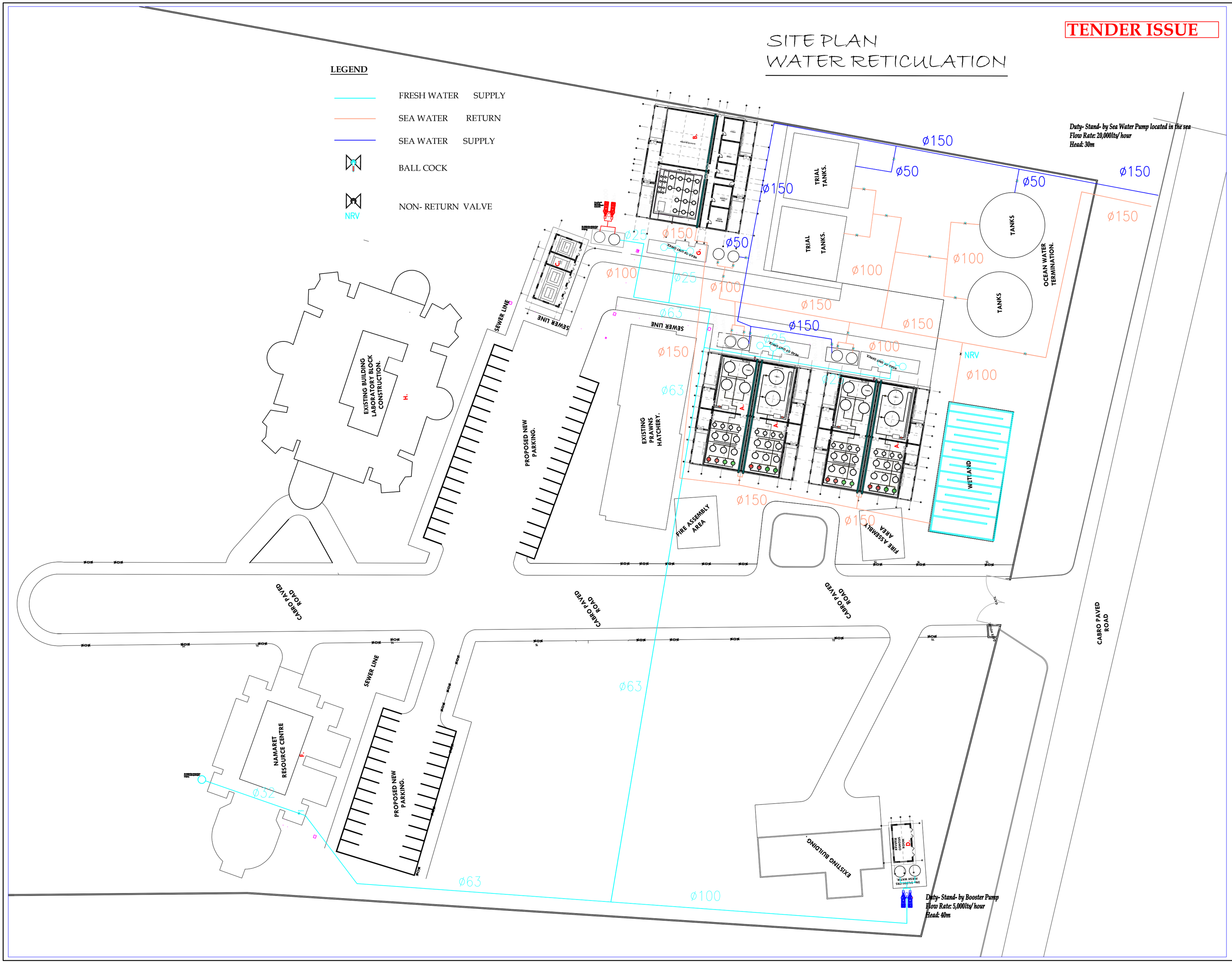
DRAWING TITLE:

ROOF PLUMBING AND DRAINAGE

Dwg. No.	02- 003M- 05		
Scale:	NTS		
Drawn by		Chek'd By	
Project no.:		Date:	
02		24.11.2023	

SITE PLAN
WATER RETICULATION

TENDER ISSUE



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REVISIONS:

REV. No.	Details of Revision

PROJECT TITLE:

PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE

CLIENT:

STATE DEPARTMENT FOR FISHERIES, AQUACULTURE & THE BLUE ECONOMY

CLIENT'S SIGNATURE:

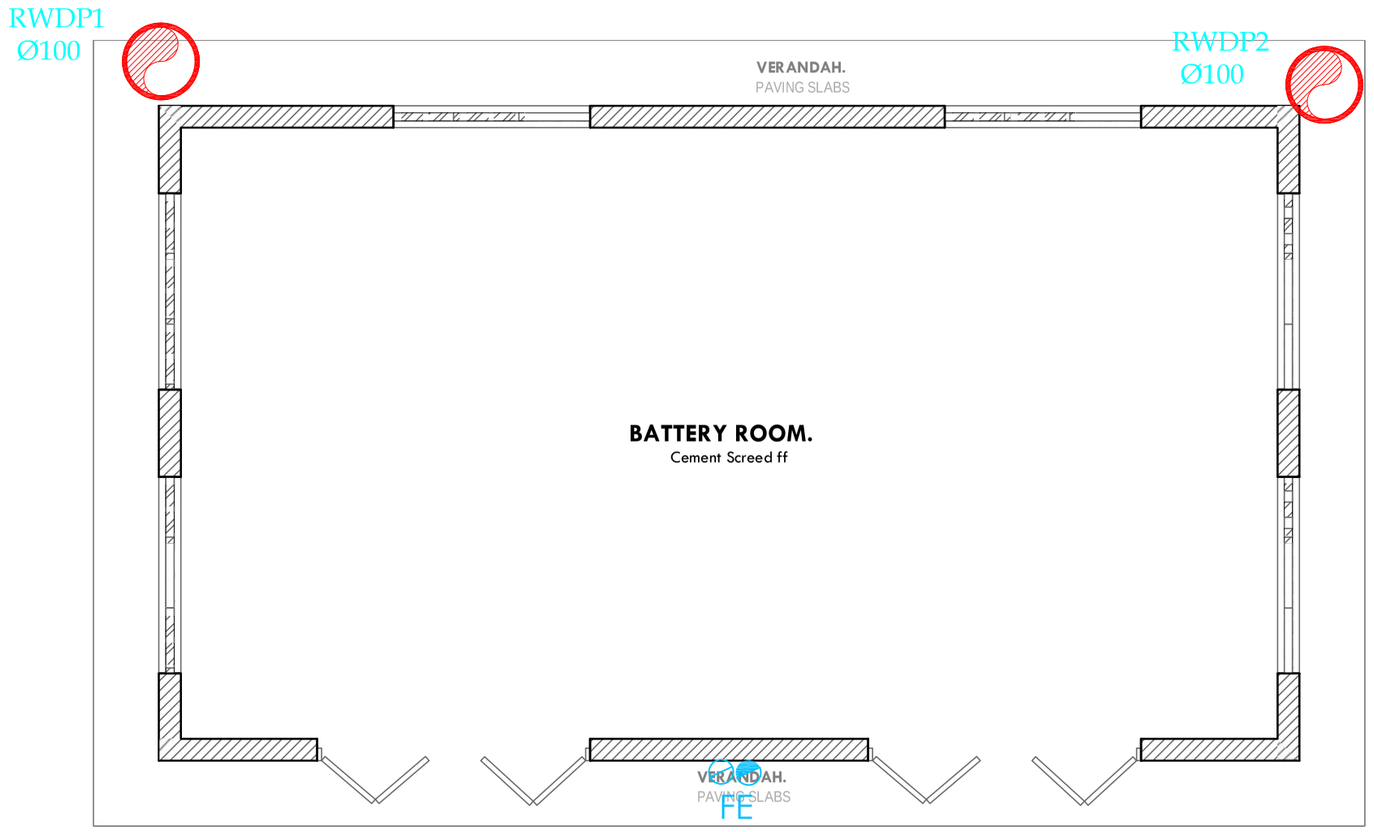
Sign:

DRAWING TITLE:

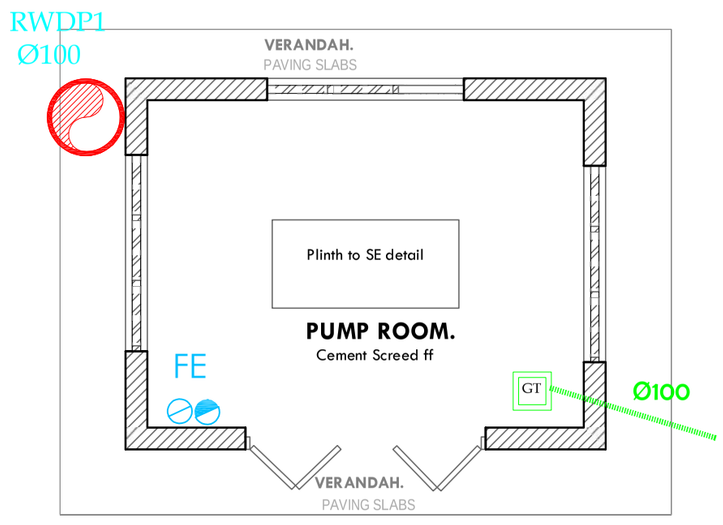
SEA & FRESH WATER RETICULATION

Dwg. No.	02- 003M- 06
Scale:	NTS
Drawn by	
Chek'd By	
Project no.:	02
Date:	24.11.2023

TENDER ISSUE

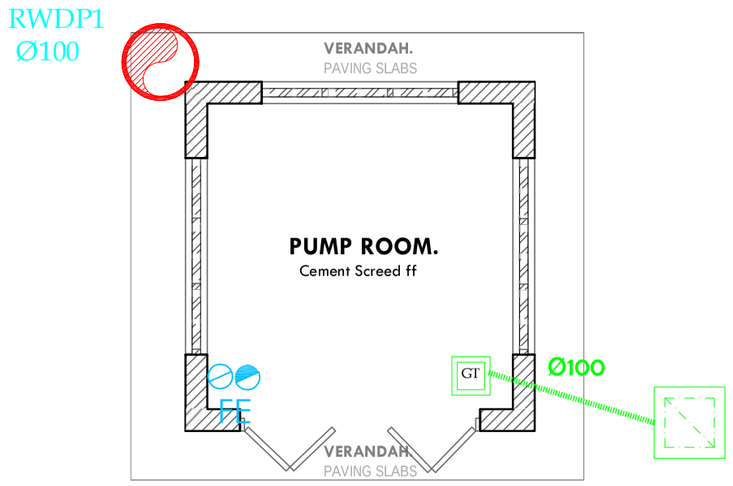


BATTERY HOUSE PLAN DRAINAGE LAYOUT



PUMP HOUSE 02 PLAN DRAINAGE LAYOUT

PUMP HOUSE 01 PLAN DRAINAGE LAYOUT



LEGEND

WVP —— WASTE VENT PIPE
SVP —— SOIL VENT PIPE
I.S —— INSIDE SLAB PIPING
S —— SURFACE PIPING
TB —— TO BELOW
FA —— FROM ABOVE
RWDPX Ø100 —— RAIN WATER DOWN PIPE
—— DRAINAGE SERVISES (uPVC GREY PIPE)
FE —— 9L WATER CO FIRE EXTINGUISHER
FE —— 9KG DRY POWDER FIRE EXTINGUISHER

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PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE

CLIENT:

STATE DEPARTMENT FOR FISHERIES, AQUACULTURE & THE BLUE ECONOMY

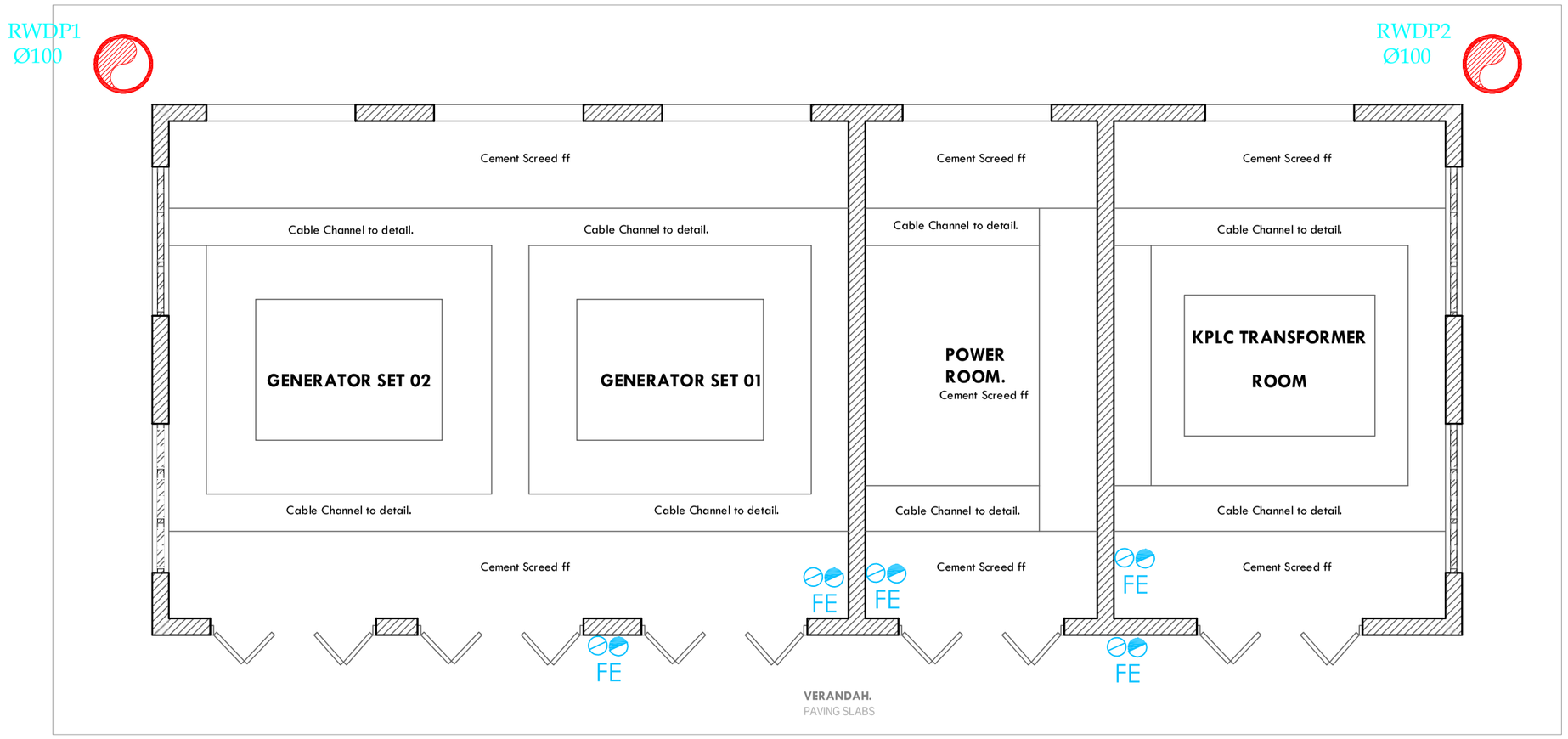
CLIENT'S SIGNATURE:

Sign:

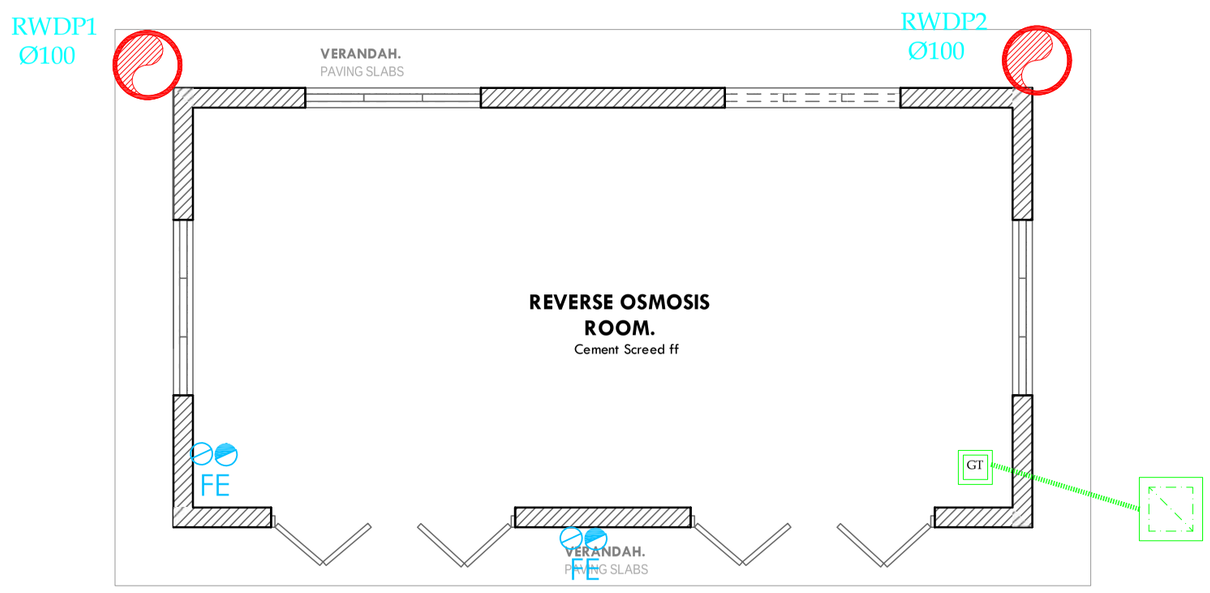
DRAWING TITLE:

BATTERY & PUMP ROOMS DRAINAGE LAYOUT

Dwg. No.	02- 003M- 07		
Scale:	NTS		
Drawn by		Chek'd By	
Project no.:		Date:	
02		29.12.2023	



POWER HOUSE PLAN DRAINAGE LAYOUT



RO PLANT ROOM PLAN DRAINAGE LAYOUT

LEGEND

WVP —— WASTE VENT PIPE
SVP —— SOIL VENT PIPE
I.S —— INSIDE SLAB PIPING
S —— SURFACE PIPING
TB —— TO BELOW
FA —— FROM ABOVE
RWDP X Ø100 —— RAIN WATER DOWN PIPE
—— DRAINAGE SERVISES (uPVC GREY PIPE)
GT —— 4" GULLY TRAP
FE —— 9L WATER CO FIRE EXTINGUISHER
FE —— 9KG DRY POWDER FIRE EXTINGUISHER

TENDER ISSUE

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REVISIONS:

REV. No.	Details of Revision

PROJECT TITLE:

PROPOSED CONSTRUCTION OF HATCHERY AND RELATED INFRASTRUCTURE

CLIENT:

STATE DEPARTMENT FOR FISHERIES, AQUACULTURE & THE BLUE ECONOMY

CLIENT'S SIGNATURE:

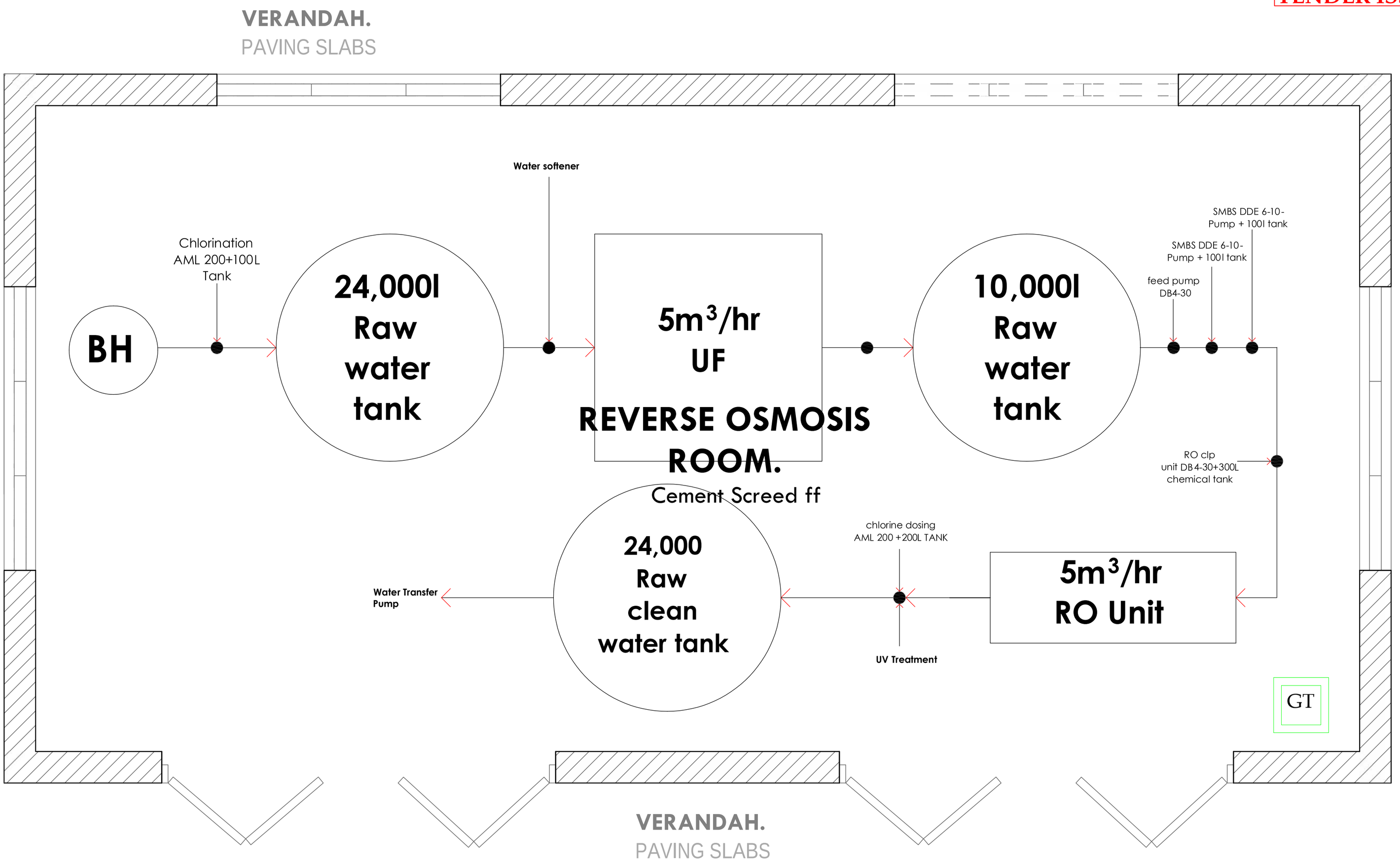
Sign:

DRAWING TITLE:

PLANT ROOMS DRAINAGE LAYOUT

Dwg. No.	02- 003M- 08
Scale:	NTS
Drawn by	Chek'd By
Project no.: 02	Date: 29.12.2023

TENDER ISSUE



RO PLANT ROOM PLAN EQUIPMENT LAYOUT

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CLIENT:

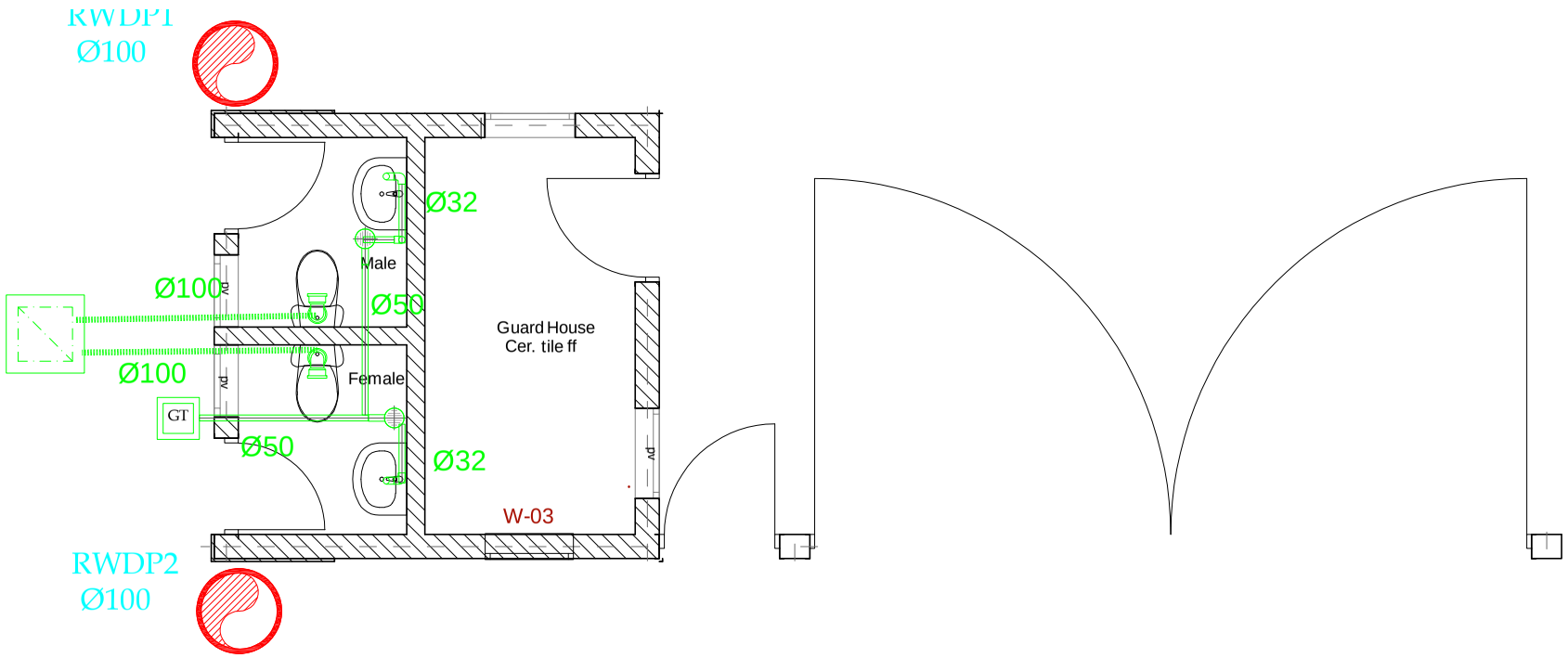
STATE DEPARTMENT FOR FISHERIES, AQUACULTURE & THE BLUE ECONOMY

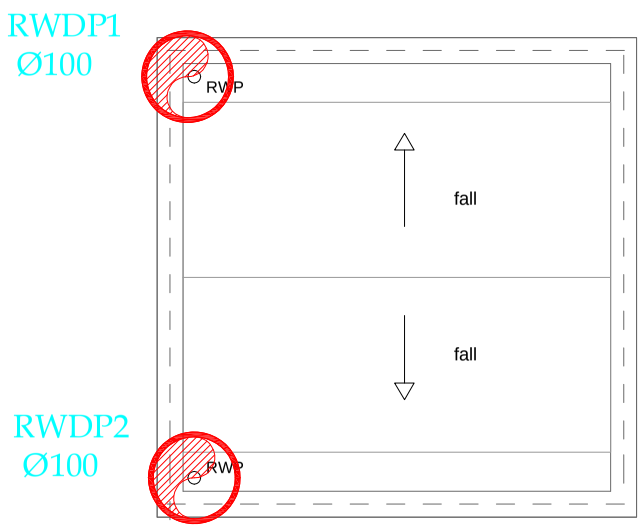
CLIENT'S SIGNATURE:

Sign:

DRAWING TITLE:
REVERSE OSMOSIS PLANT ROOM EQUIPMENT LAYOUT

Dwg. No.	02- 003M- 09
Scale:	NTS
Drawn by	Chek'd By
Project no.: 02	Date: 24.11.2023





LEGEND

WVP —— WASTE VENT PIPE

SVP —— SOIL VENT PIPE

I.S —— INSIDE SLAB PIPING

S —— SURFACE PIPING

TB —— TO BELOW

FA —— FROM ABOVE

RWDP X Ø100 —— RAIN WATER DOWN PIPE

—— DRAINAGE SERVISES (uPVC GREY PIPE)

GT —— 4" GULLY TRAP

DRAINAGE

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CLIENT:

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CLIENT'S SIGNATURE:

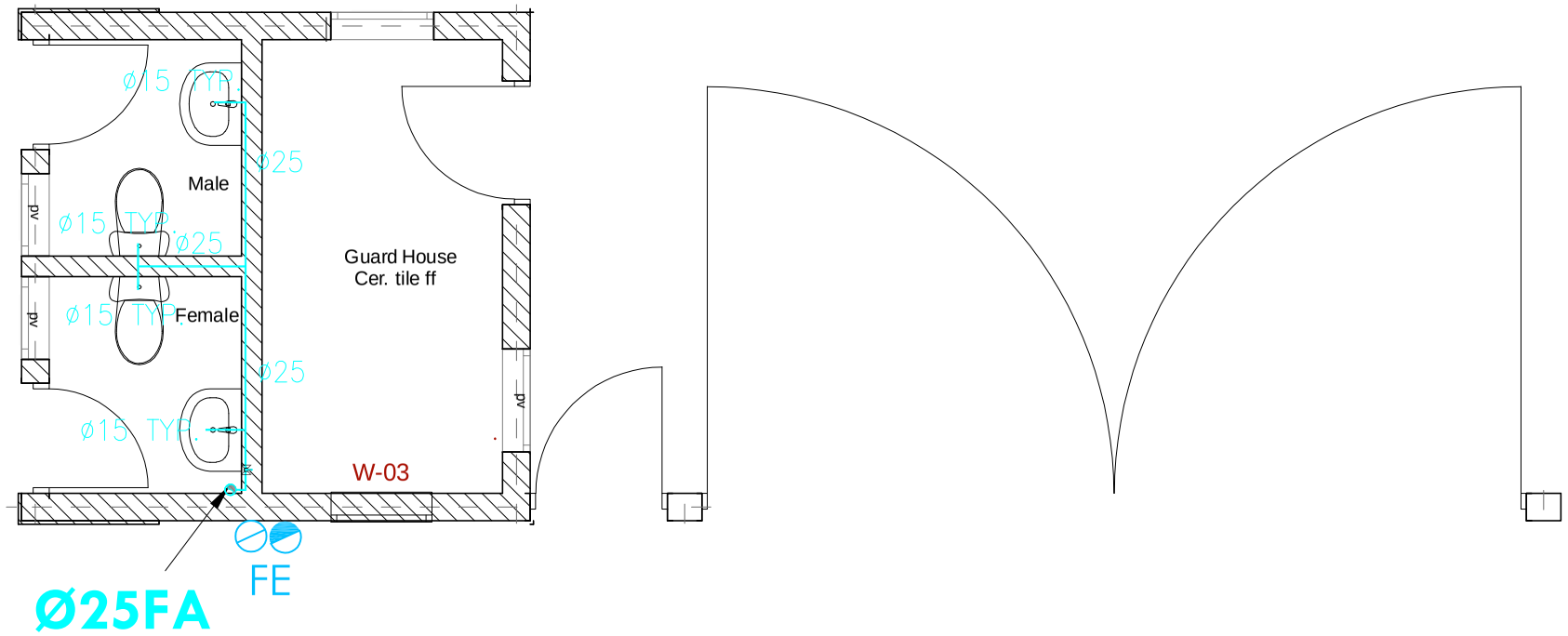
Sign:

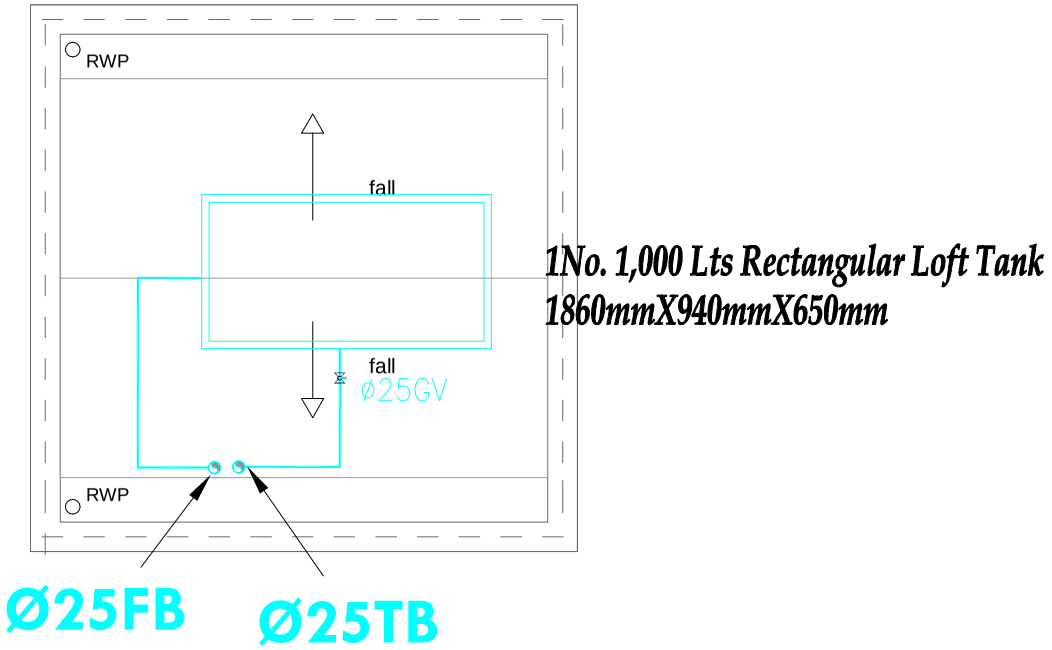
DRAWING TITLE:

GATE HOUSE DRAINAGE LAYOUT

Dwg. No.	02- 003M- 10
Scale:	NTS
Drawn by	Chek'd By
Project no.:	Date:
02	29.12.2023

TENDER ISSUE





1No. 1,000 Lts Rectangular Loft Tank
1860mmX940mmX650mm

PLUMBING

LEGEND

CWS	——	COLD WATER SUPPY
TB	——	TO BELOW
FA	——	FROM ABOVE
TA	——	TO ABOVE
FE	——	9L WATER CO FIRE EXTINGUISHER
FE	——	9KG DRY POWDER FIRE EXTINGUISHER
HR	——	30m HOSEREEL
	——	LANDING VALVE
PPR	——	POLY PROPELEYNE RANDOM
GMS	——	GALVANIZED STEEL PIPE (CLASS B)
	——	PLUMBING SERVICES (PPR PN 20 MATERIAL)
	——	HOSEREEL SERVICES (GMS CLASS 'B')

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CLIENT:

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CLIENT'S SIGNATURE:

Sign:

DRAWING TITLE:

GATE HOUSE PLUMBING

Dwg. No.	02- 003M- 11
Scale:	NTS
Drawn by	Chek'd By
Project no.:	Date:
02	29.12.2023