

**PROPOSED DEVELOPMENT OF
GAWASCO OFFICE BLOCK IN
GARISSA TOWN**

&

**ADMINISTRATION /LABORATORY
IN DADAAB**

Drawing Sets



FRONT VIEW




BACK VIEW

NOTES

- 1) ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SHOWN.
- 2) ALL SETTING OUT DIMENSIONS SHALL BE CROSS-CHECKED ON SITE AND ANY INCONSISTENCIES IMMEDIATELY REPORTED TO THE ENGINEER / ARCHITECT FOR THE NECESSARY ACTION.
- 3) DEPTH TO FOUNDATION LEVEL SHALL BE DETERMINED ON SITE.
- 4) CONCRETE STRENGTH TO BE CLASS 25 FOR ALL STRUCTURAL ELEMENTS
- 5) MAXIMUM AGGREGATE SIZE FOR USE IN STRUCTURAL CONCRETE SHALL BE 20mm.
- 6) CONCRETE COVER TO REINFORCEMENT STEEL TO BE: (I) FOUNDATION = 50mm. (II) COLUMNS = 40mm (III) BEAMS = 30mm. (IV) SLAB & STAIRCASE = 25mm.
- 7) BLINDING TO BE CLASS 15 FOR ALL ELEMENTS
- 8) ALL CONCRETE WORKS SHALL BE QUALITY CONTROLLED AND MECHANICALLY VIBRATED TO THE STRUCTURAL ENGINEER'S SATISFACTION.
- 9) SHOP DRAWINGS MUST BE SUBMITTED IN GOOD TIME FOR APPROVAL BY THE ENGINEER BEFORE ASSEMBLY OF UNITS COMMENCE.
- 10) BUILDING STONES TO HAVE A CRUSHING STRENGTH OF $\geq 8N/mm^2$
- 11) DESIGN BEARING CAPACITY = $150kN/m^2$


REVISIONS		SIGN	DATE	APPROVED
C				
B				
A				

CONSULTANT:



Runji Consulting Group Ltd
Engineering & Project Management.
P. O. Box 68053-00200 Nairobi

In Association With




Hybrid Architects
P. O. Box 42081-00100 Nairobi

Project:

CONSULTANCY SERVICES FOR DESIGN REVIEW AND SUPERVISION OF IMMEDIATE WATER AND SANITATION WORKS; FOR GARISSA WATER AND SEWERAGE COMPANY AND DADAAB HOST COMMUNITIES IN GARISSA COUNTY.

Scale(s)	NTS	Date:	FEB. 2021
Dwg. No.	WS927/GWSC/OFF/00		
Design by: F.N.O	Drawn by: D.M.M		
Sign.....	Sign.....		
Checked by: C.M.M	Approved by: R.N		
Sign.....	Sign.....		

CLIENT:



GARISSA WATER AND SEWERAGE COMPANY
P.O Box 1088-70100, Garissa,Kenya

CONTRACT NO:			
PROJECT MANAGER	DATE	ENGINEER	DATE
Sign.....		Sign.....	

DWG. Title:

GAWASCO OFFICE
ARCHITECTURAL VISUAL (SHEET 1 OF 2)



SIDE VIEW




SIDE VIEW

NOTES


- 1) ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SHOWN.
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- 11) DESIGN BEARING CAPACITY = $150kN/m^2$

REVISIONS		SIGN	DATE	APPROVED
C				
B				
A				

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Scale(s)	NTS	Date:	FEB. 2021
Dwg. No.	WS927/GWSC/OFF/00		
Design by: F.N.O	Drawn by: D.M.M		
Sign.....	Sign.....		
Checked by: C.M.M	Approved by: R.N		
Sign.....	Sign.....		

CLIENT:

**GARISSA WATER AND SEWERAGE COMPANY**
P.O Box 1088-70100, Garissa,Kenya

CONTRACT NO:			
PROJECT MANAGER	DATE	ENGINEER	DATE
Sign.....		Sign.....	

DWG. Title:

GAWASCO OFFICE

ARCHITECTURAL VISUAL (SHEET 2 OF 2)

NOTES

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- 10) BUILDING STONES TO HAVE A CRUSHING STRENGTH OF ≥ 8N/mm²
- 11) DESIGN BEARING CAPACITY = 150kN/m²

REVISIONS SIGN DATE APPROVED

C				
B				
A				

CONSULTANT:



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In Association With



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Scale(s)

1:75

Date:

FEB. 2021

Dwg. No.

WS927/GWSC/OFF/02

Design by: F.N.O

Drawn by: D.M.M

Sign.....

Sign.....

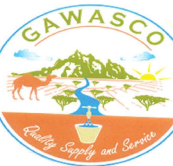
Checked by: C.M.M

Approved by: R.N

Sign.....

Sign.....

CLIENT:



GARISSA WATER AND SEWERAGE COMPANY
P.O Box 1088-70100, Garissa,Kenya

CONTRACT NO:

PROJECT MANAGER

DATE

ENGINEER

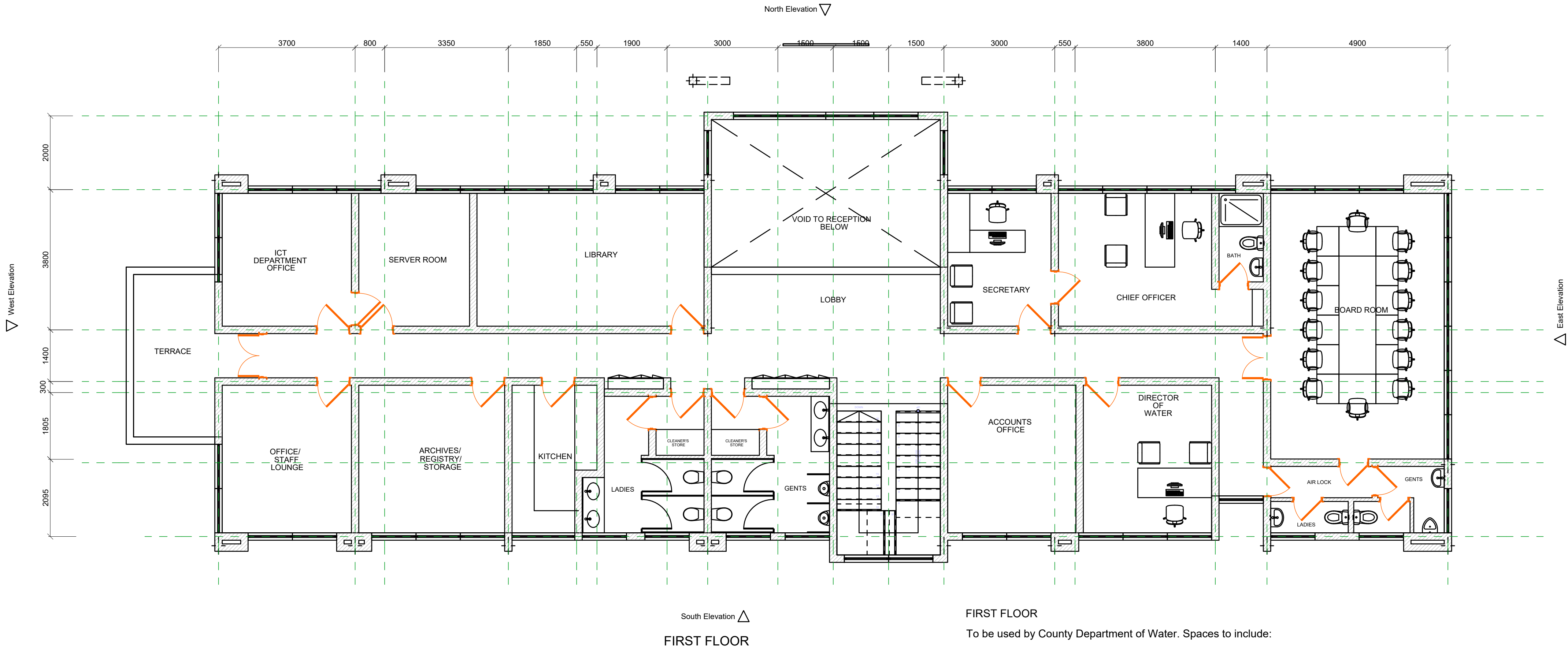
DATE

Sign.....

Sign.....

DWG. Title:

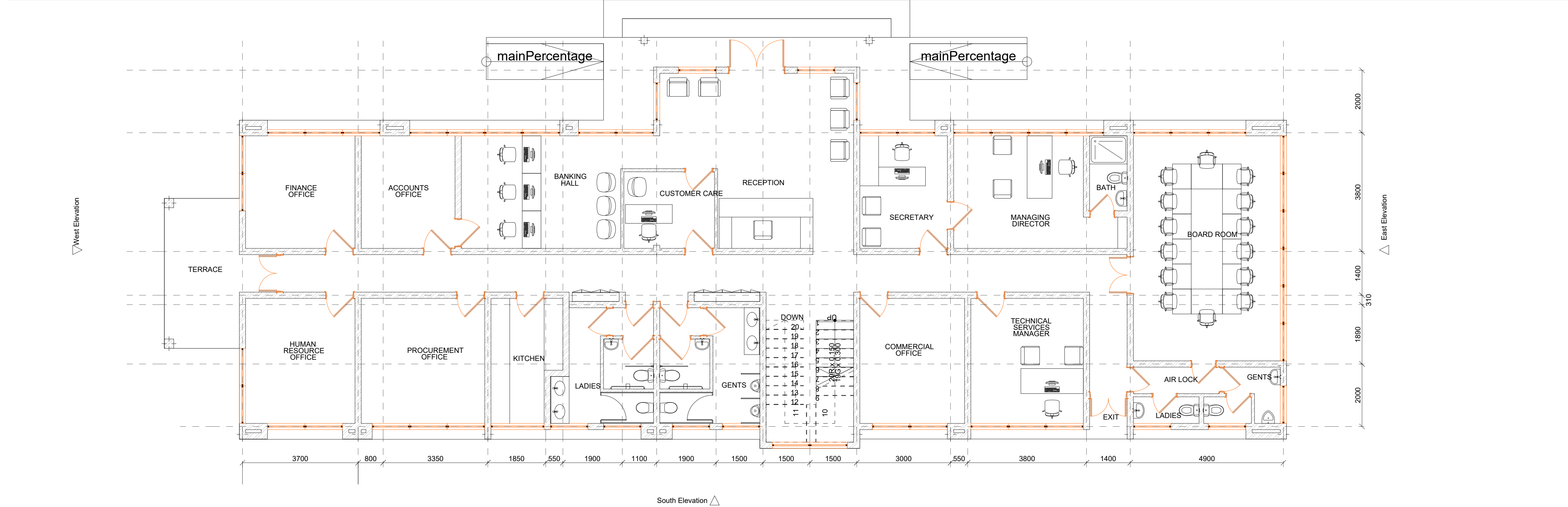
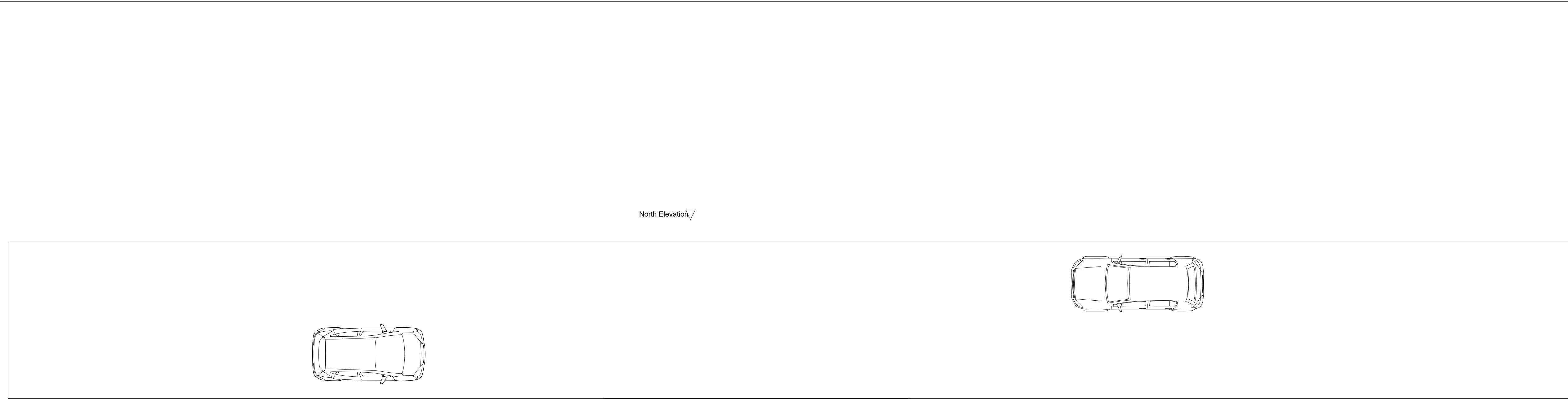
GAWASCO OFFICE
FIRST FLOOR



FIRST FLOOR

To be used by County Department of Water. Spaces to include:


1. Conference with washrooms (size of conference 7.2m by 4.7m) on RHS of layout
2. Chief officer's office with washroom and secretary's office (above GAWASCO MD's office)
3. Library (above the banking hall)
4. Director of Water's office above GAWASCO TSM's office
5. Archives/registry/storage
6. Server room
7. Staff washrooms
8. Accounts office
9. Kitchen



- NOTES**
- GROUND FLOOR**
- To be used by GAWASCO staff. Spaces to include:
1. Conference with washrooms (size of conference 7.2m by 4.7m) on RHS of layout
 2. MD's office with toilet and secretary's office
 3. Technical Services Manager office
 4. Finance office
 5. Commercial office
 6. Procurement office
 7. Customer care office
 8. Human resource office
 9. Banking hall
 10. Accounts office
 11. Kitchen
 12. Staff washrooms


REVISIONS		SIGN	DATE	APPROVED
C				
B				
A				

CONSULTANT:



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Engineering & Project Management.
P. O. Box 68053-00200 Nairobi

In Association With



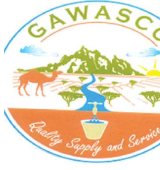
Hybrid Architects
P. O. Box 42081-00100 Nairobi

Project:

CONSULTANCY SERVICES FOR DESIGN REVIEW AND SUPERVISION OF IMMEDIATE WATER AND SANITATION WORKS; FOR GARISSA WATER AND SEWERAGE COMPANY AND DADAAB HOST COMMUNITIES IN GARISSA COUNTY.

Scale(s)	1:75	Date:	FEB. 2021
Dwg. No.	WS927/GWSC/OFF/01		
Design by: F.N.O	Drawn by: P.W.K		
Sign.....	Sign.....		
Checked by: C.M.M	Approved by: R.N		
Sign.....	Sign.....		

CLIENT:



GARISSA WATER AND SEWERAGE COMPANY
P.O Box 1088-70100, Garissa,Kenya

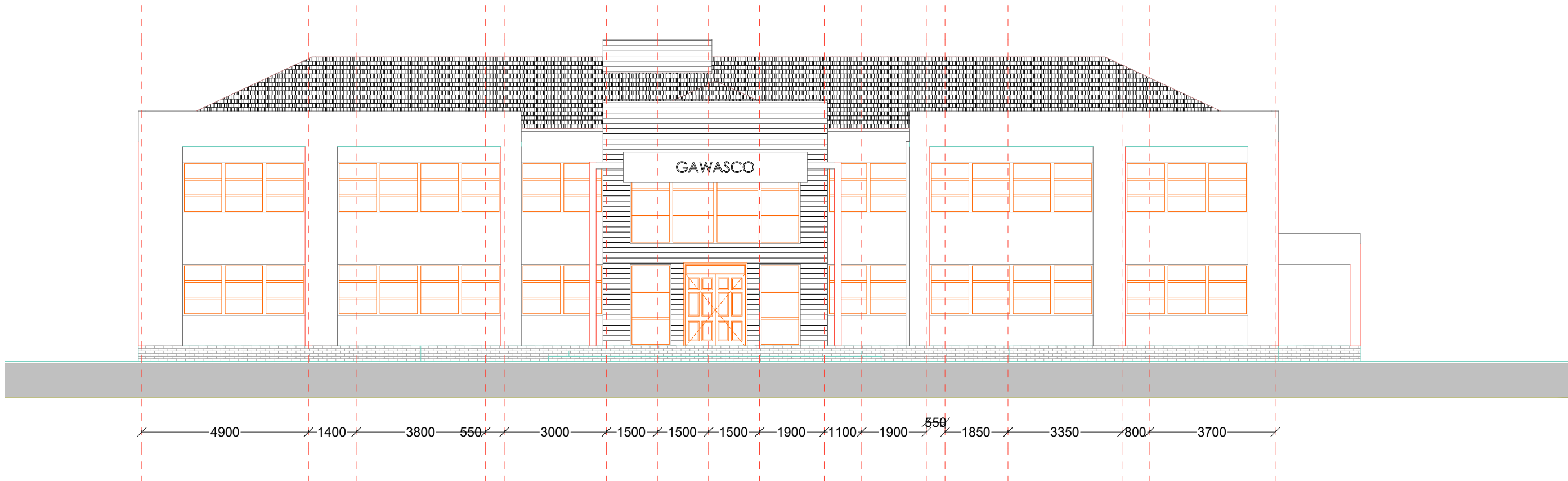
CONTRACT NO:			
PROJECT MANAGER	DATE	ENGINEER	DATE
Sign.....		Sign.....	

DWG. Title:

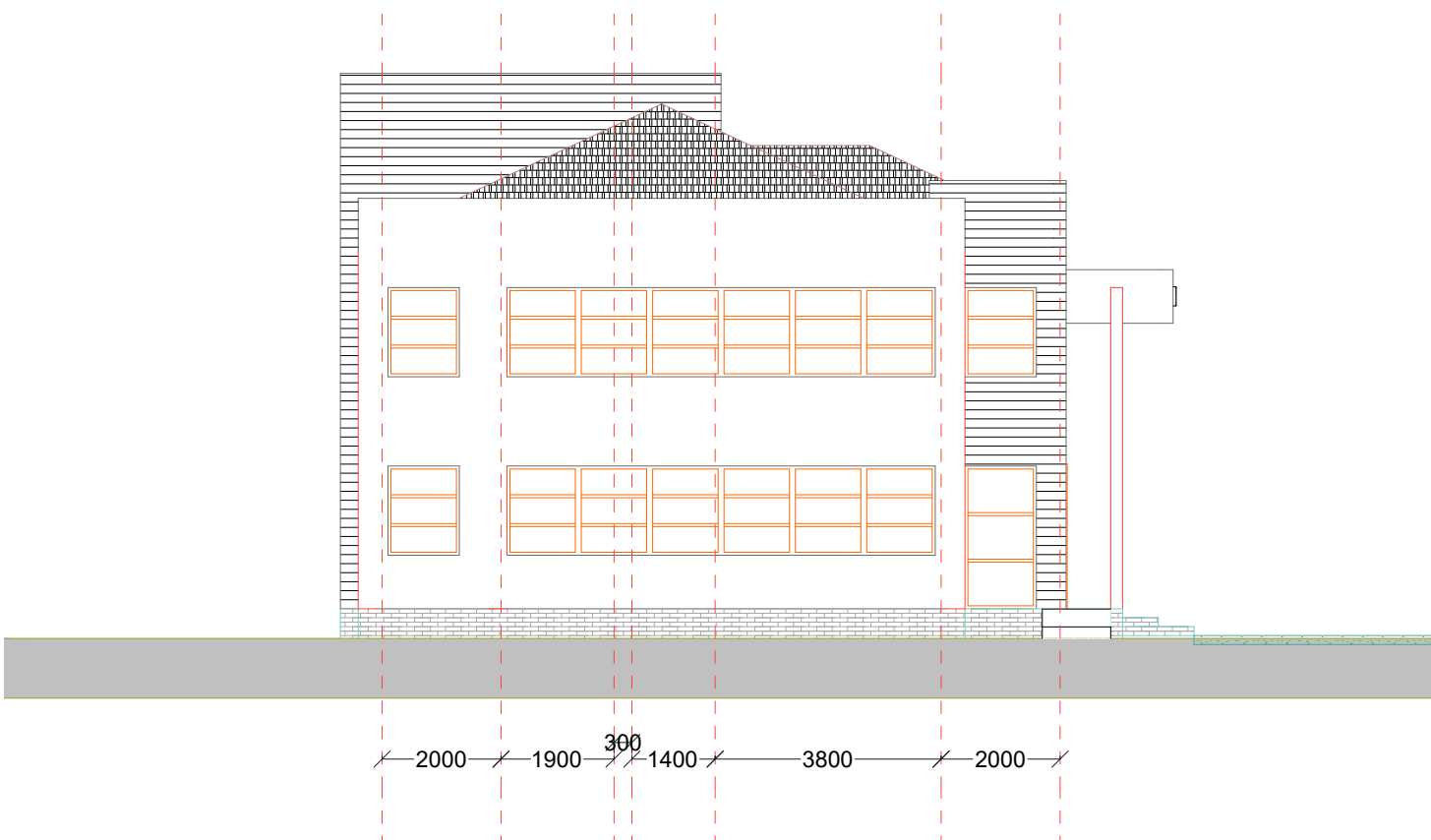
GAWASCO OFFICE

GROUND FLOOR LAYOUT

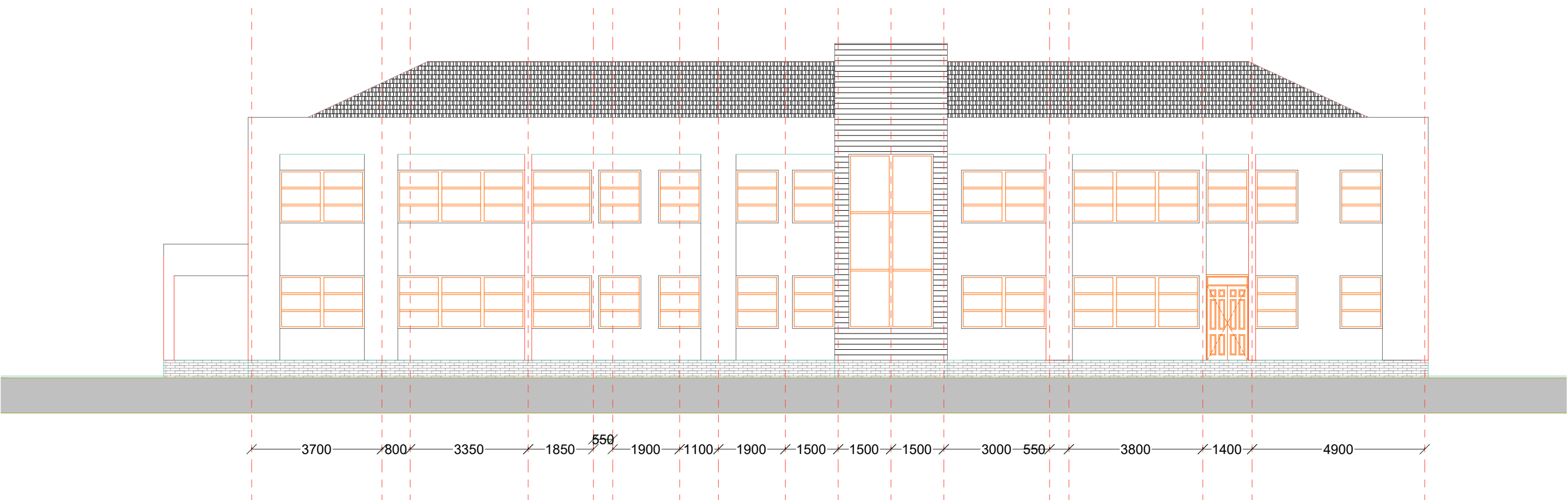
NOTES



NORTH ELEVATION



EAST ELEVATION




SOUTH ELEVATION



WEST ELEVATION

REVISIONS		SIGN	DATE	APPROVED
C				
B				
A				

CONSULTANT:

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Engineering & Project Management.
P. O. Box 68053-00200 Nairobi

In Association With

**Hybrid Architects**
P. O. Box 42081-00100 Nairobi

Project:

CONSULTANCY SERVICES FOR DESIGN REVIEW AND SUPERVISION OF IMMEDIATE WATER AND SANITATION WORKS; FOR GARISSA WATER AND SEWERAGE COMPANY AND DADAAB HOST COMMUNITIES IN GARISSA COUNTY.

Scale(s)	Date:
1:125	FEB. 2021

Dwg. No. **WS927/GWSC/OFF/03**

Design by: F.N.O

Drawn by: P.W.K

Sign.....

Sign.....


Checked by: C.M.M

Approved by: R.N

Sign.....

Sign.....

CLIENT:

**GARISSA WATER AND SEWERAGE COMPANY**
P.O Box 1088-70100, Garissa,Kenya

CONTRACT NO:

PROJECT MANAGER	DATE	ENGINEER	DATE
Sign.....		Sign.....	

DWG. Title:

**GAWASCO OFFICE
ELEVATIONS**

NOTES

ARCHITECTURAL

1. ALL DIMENSIONS TO BE CHECKED ON SITE ANY DISCREPANCIES TO BE VERIFIED WITH THE ARCHITECTS.
2. CONCRETE BLOCKSTONE WALL LESS THAN 200MM THICKNESS TO BE REINFORCED WITH HOOP IRON AT EVERY ALTERNATE COURSE.
3. DEPTH OF FOUNDATION TO BE DETERMINED ON SITE.
4. ALL REINFORCED CONCRETE WORK TO STRUCTURAL ENGINEERS DETAIL.
5. A SINGLE LAYER OF A 3PLY BITUMINOUS FELT TO BE PROVIDED BETWEEN MASONRY AND REINFORCED CONCRETE WORKS.
6. DRAINS PASSING UNDER DRIVEWAYS AND BUILDINGS TO BE ENCASED WITH MINIMUM 150MM THICK CONCRETE WORKS.
7. ALL INSPECTION CHAMBERS IN DRIVE AREAS TO HAVE HEAVY DUTY COVERS.
8. ALL PLUMBING AND DRAINAGE TO BE TO THE APPROVAL AND SATISFACTION OF M.H.O.
9. THIS DRAWING IS THE COPYRIGHT OF TRIAD ARCHITECTS. IT CANNOT BE COPIED, REPRODUCED, RETAINED OR DISCLOSED TO ANY UNAUTHORISED PERSONS.

FIRE FIGHTING

1. PROVIDE EMERGENCY LIGHTS AT STAIRWELLS.
2. PROVIDE AUTOMATIC ALARM TO COVER THE PROJECT.
3. FIRE RESISTANT DOORS TO FIRE ESCAPE STAIRCASES TO BE ONE HOUR FIRE RESISTANT, WITH AUTOMATIC DOOR CLOSERS.
4. ALL INTERNAL PARTITIONING MATERIALS BE HALF OUR FIRE RATED.
5. PROVIDE 100MM WET RISERS WITH ONE VALVE ON EACH FLOOR.
6. PROVIDE FIRE INSTRUCTIONS AND FIRE EXIT SIGNS.

REVISIONS SIGN DATE APPROVED

C			
B			
A			

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**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s)	1:100	Date:	FEB. 2021
Dwg. No.			
Design by:	Drawn by:		
Sign.....	Sign.....		
Checked by: C.M.M	Approved by: R.N		
Sign.....	Sign.....		

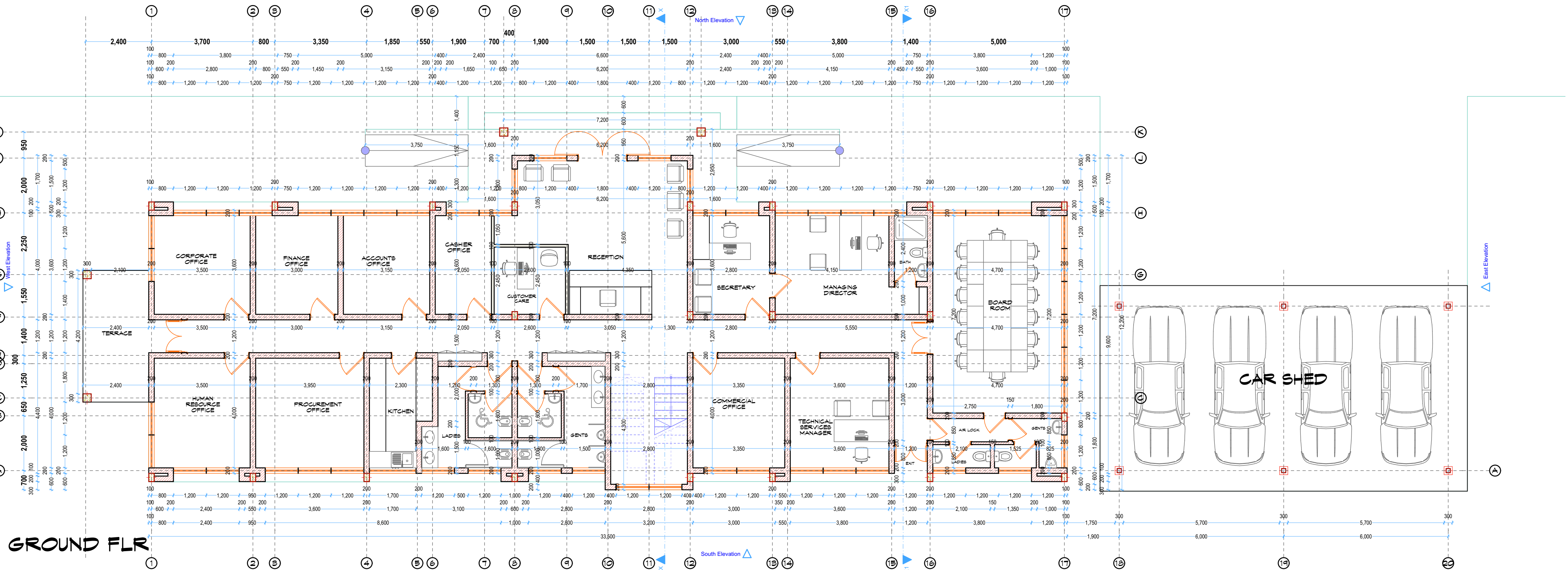
CLIENT:

**GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa,Kenya

CONTRACT NO:

PROJECT MANAGER	DATE	ENGINEER	DATE
Sign.....		Sign.....	

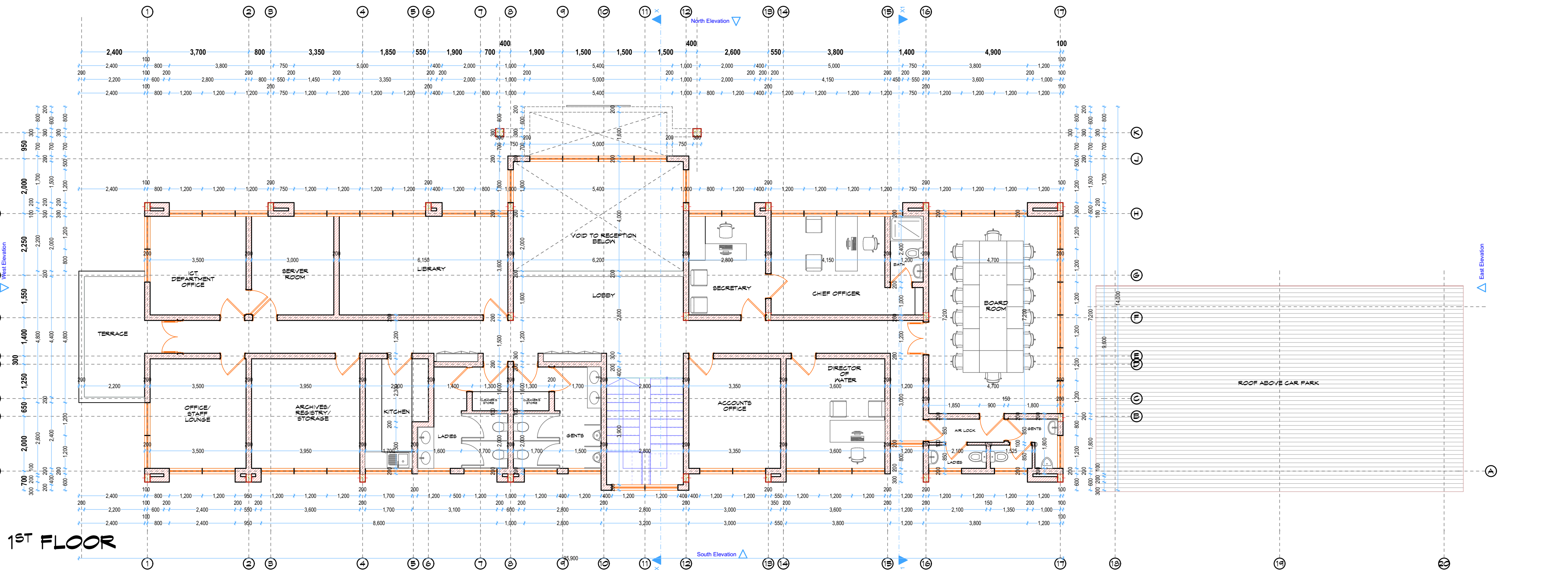
DWG. Title:



GROUND FLR

Ground Floor

1:100



1ST FLOOR

Story

1:100

NOTES

ARCHITECTURAL

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4. ALL REINFORCED CONCRETE WORK TO STRUCTURAL ENGINEERS DETAIL.
5. A SINGLE LAYER OF A 3PLY BITUMINOUS FELT TO BE PROVIDED BETWEEN MASONRY AND REINFORCED CONCRETE WORKS.
6. DRAINS PASSING UNDER DRIVEWAYS AND BUILDINGS TO BE ENCASED WITH MINIMUM 150MM THICK CONCRETE WORKS.
7. ALL INSPECTION CHAMBERS IN DRIVE AREAS TO HAVE HEAVY DUTY COVERS.
8. ALL PLUMBING AND DRAINAGE TO BE TO THE APPROVAL AND SATISFACTION OF M.H.O.
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FIRE FIGHTING

1. PROVIDE EMERGENCY LIGHTS AT STAIRWELLS.
2. PROVIDE AUTOMATIC ALARM TO COVER THE PROJECT.
3. FIRE RESISTANT DOORS TO FIRE ESCAPE STAIRCASES TO BE ONE HOUR FIRE RESISTANT, WITH AUTOMATIC DOOR CLOSERS.
4. ALL INTERNAL PARTITIONING MATERIALS BE HALF OUR FIRE RATED.
5. PROVIDE 100MM WET RISERS WITH ONE VALVE ON EACH FLOOR.
6. PROVIDE FIRE INSTRUCTIONS AND FIRE EXIT SIGNS.

REVISIONS SIGN DATE APPROVED

C				
B				
A				

CONSULTANT:



Runji Consulting Group Ltd
Engineering & Project Management.
P. O. Box 68053-00200 Nairobi

In Association With



Hybrid Architects
P. O. Box 42081-00100 Nairobi

Project:

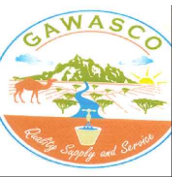
**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s)	1:100	Date:	FEB. 2021
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Dwg. No.	
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Design by:	Drawn by:
Sign.....	Sign.....
Checked by: C.M.M	Approved by: R.N
Sign.....	Sign.....

CLIENT:

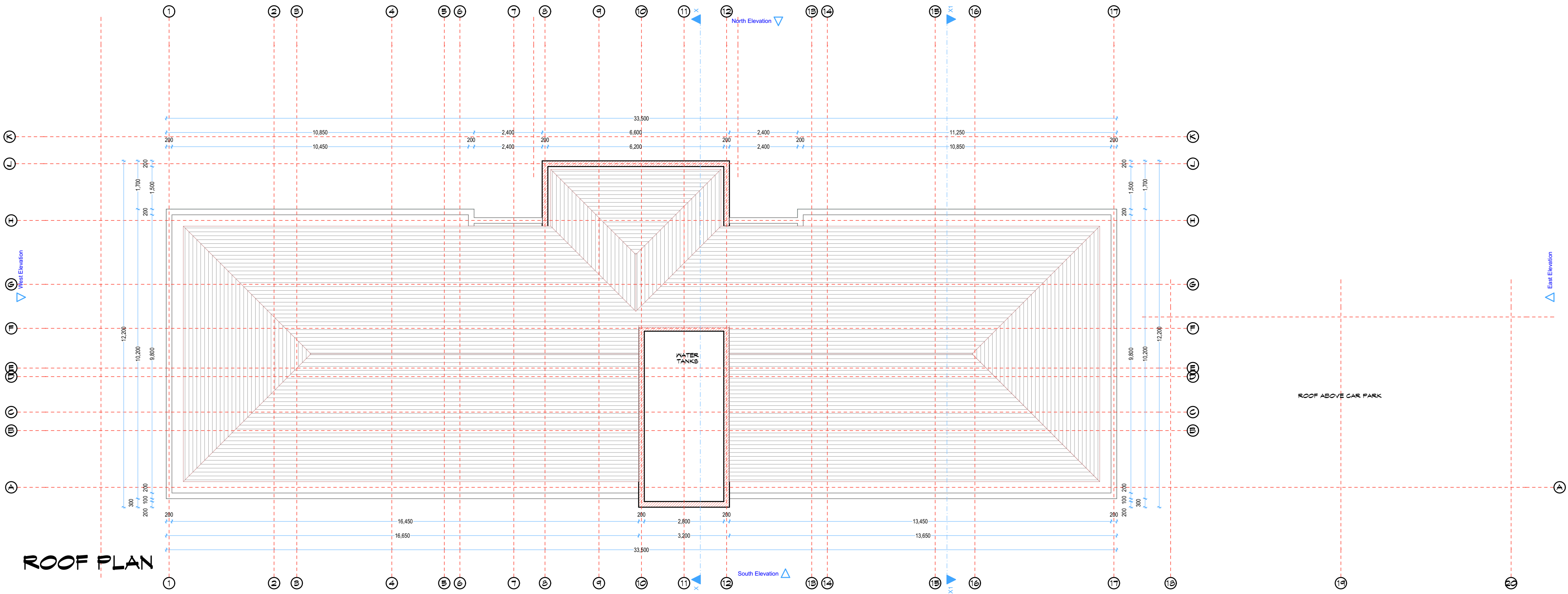


**GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa,Kenya

CONTRACT NO:

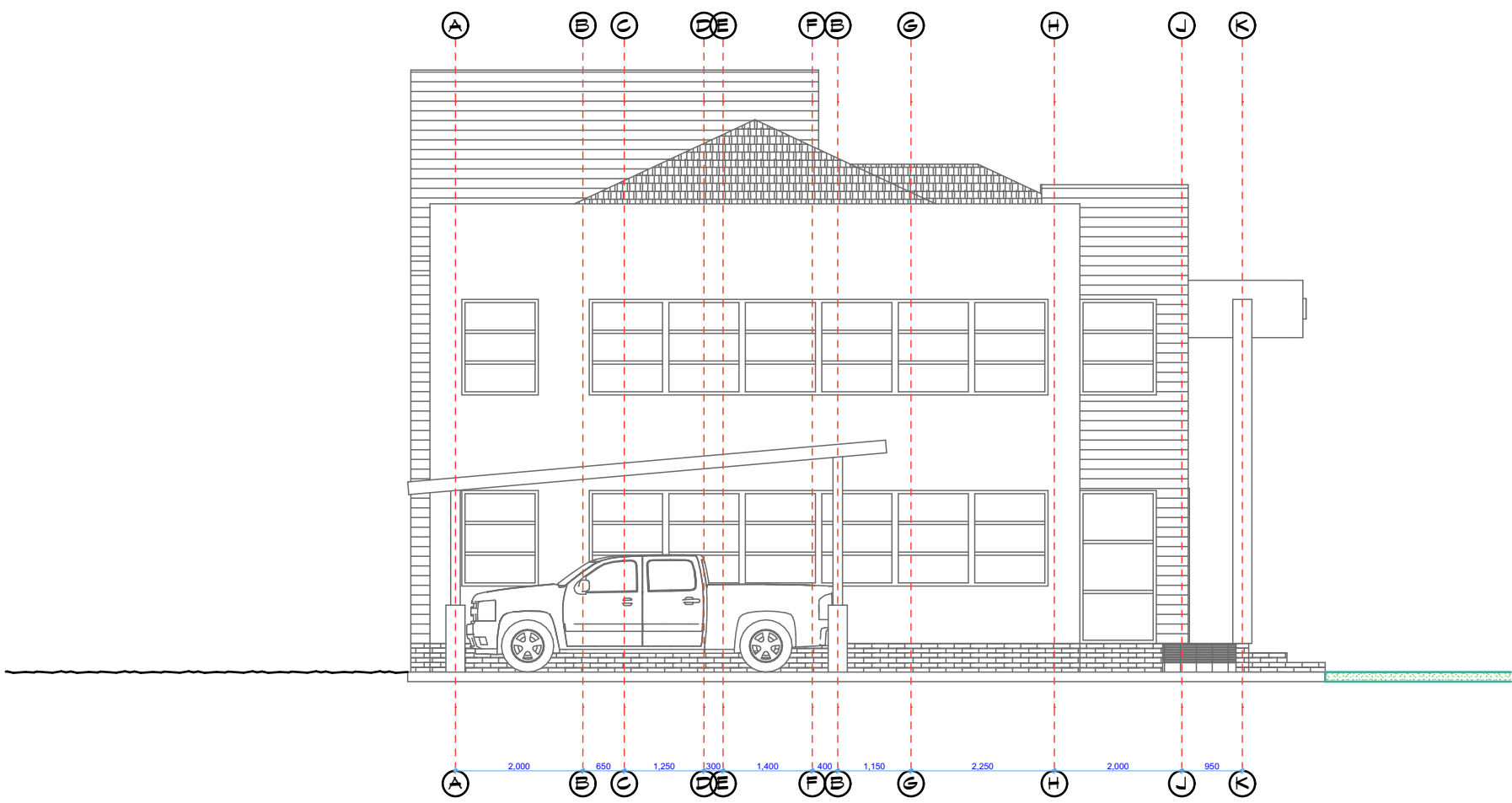
PROJECT MANAGER	DATE	ENGINEER	DATE
Sign.....		Sign.....	

DWG. Title:



ROOF PLAN

2. Story 1:100



East Elevation 1:100



West Elevation 1:100

NOTES

ARCHITECTURAL

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3. FIRE RESISTANT DOORS TO FIRE ESCAPE STAIRCASES TO BE ONE HOUR FIRE RESISTANT, WITH AUTOMATIC DOOR CLOSERS.
4. ALL INTERNAL PARTITIONING MATERIALS BE HALF OUR FIRE RATED.
5. PROVIDE 100MM WET RISERS WITH ONE VALVE ON EACH FLOOR.
6. PROVIDE FIRE INSTRUCTIONS AND FIRE EXIT SIGNS.

REVISIONS SIGN DATE APPROVED

C				
B				
A				

CONSULTANT:



Runji Consulting Group Ltd

Engineering & Project Management.
P. O. Box 68053-00200 Nairobi

In Association With



Hybrid Architects

P. O. Box 42081-00100 Nairobi

Project:

**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s)

1:100

Date:

FEB. 2021

Dwg. No.

Design by:

Drawn by:

Sign.....

Sign.....

Checked by: C.M.M

Approved by: R.N

Sign.....

Sign.....

CLIENT:



**GARISSA WATER AND SEWERAGE
COMPANY
P.O Box 1088-70100, Garissa,Kenya**

CONTRACT NO:

PROJECT MANAGER

DATE

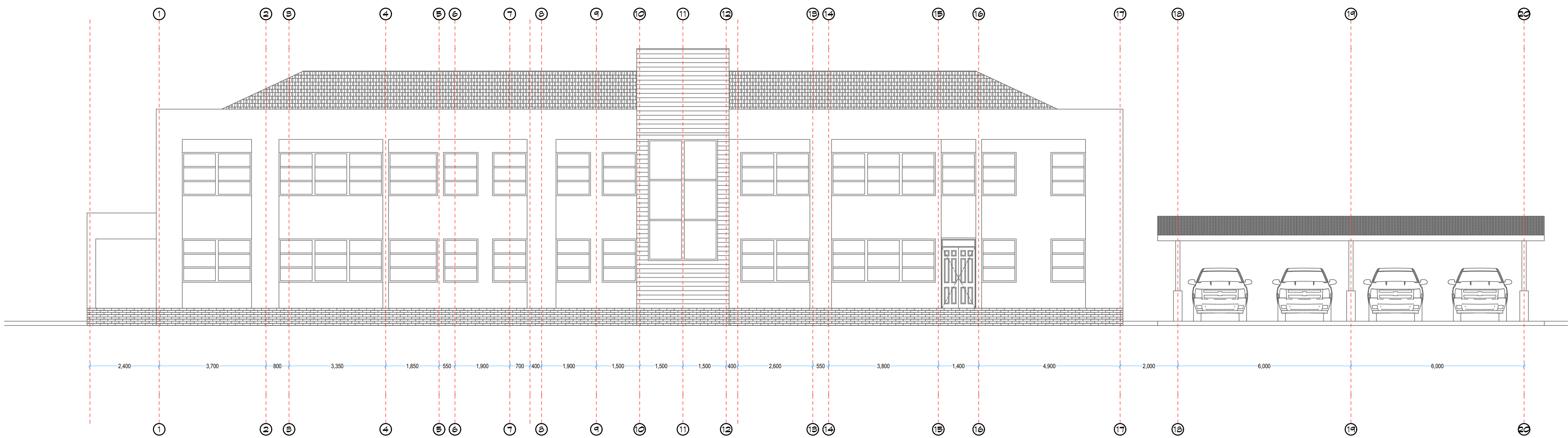
ENGINEER

DATE

Sign.....

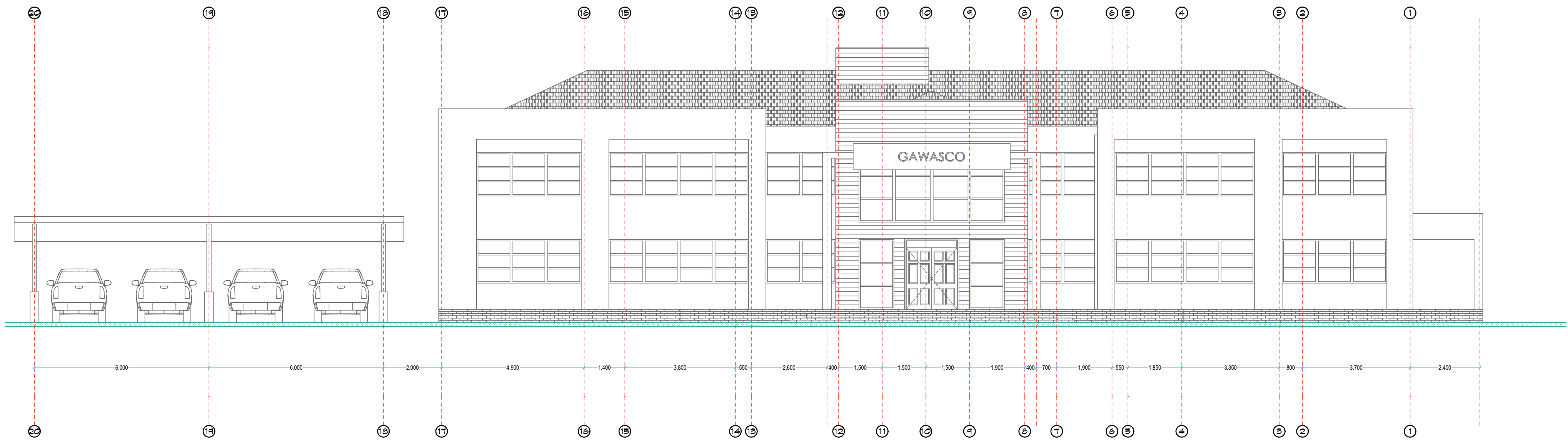
Sign.....

DWG. Title:



South Elevation

1:100



North Elevation

1:100

NOTES

ARCHITECTURAL

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FIRE FIGHTING

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2. PROVIDE AUTOMATIC ALARM TO COVER THE PROJECT.
3. FIRE RESISTANT DOORS TO FIRE ESCAPE STAIRCASES TO BE ONE HOUR FIRE RESISTANT, WITH AUTOMATIC DOOR CLOSERS.
4. ALL INTERNAL PARTITIONING MATERIALS BE HALF OUR FIRE RATED.
5. PROVIDE 100MM WET RISERS WITH ONE VALVE ON EACH FLOOR.
6. PROVIDE FIRE INSTRUCTIONS AND FIRE EXIT SIGNS.

REVISIONS SIGN DATE APPROVED

C				
B				
A				

CONSULTANT:

 **Runji Consulting Group Ltd**
Engineering & Project Management.
P. O. Box 68053-00200 Nairobi

In Association With

 **Hybrid Architects**
P. O. Box 42081-00100 Nairobi

Project:

**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s) 1:50 Date: FEB. 2021

Dwg. No.

Design by:

Sign.....

Checked by: C.M.M

Sign.....

Drawn by:

Sign.....

Approved by: R.N

Sign.....

CLIENT:



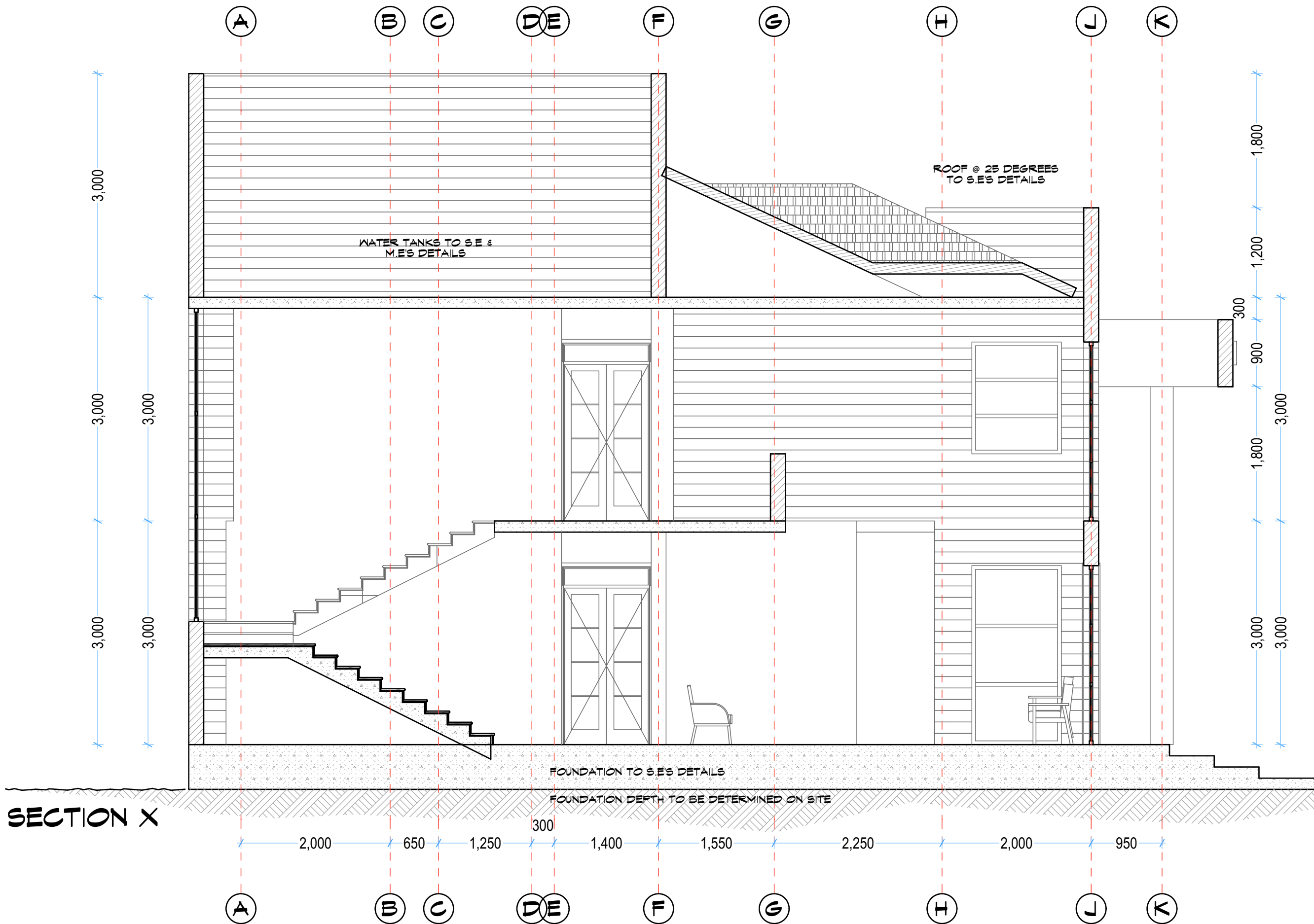
**GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa,Kenya

CONTRACT NO:

PROJECT MANAGER DATE ENGINEER DATE

Sign..... Sign.....

DWG. Title:

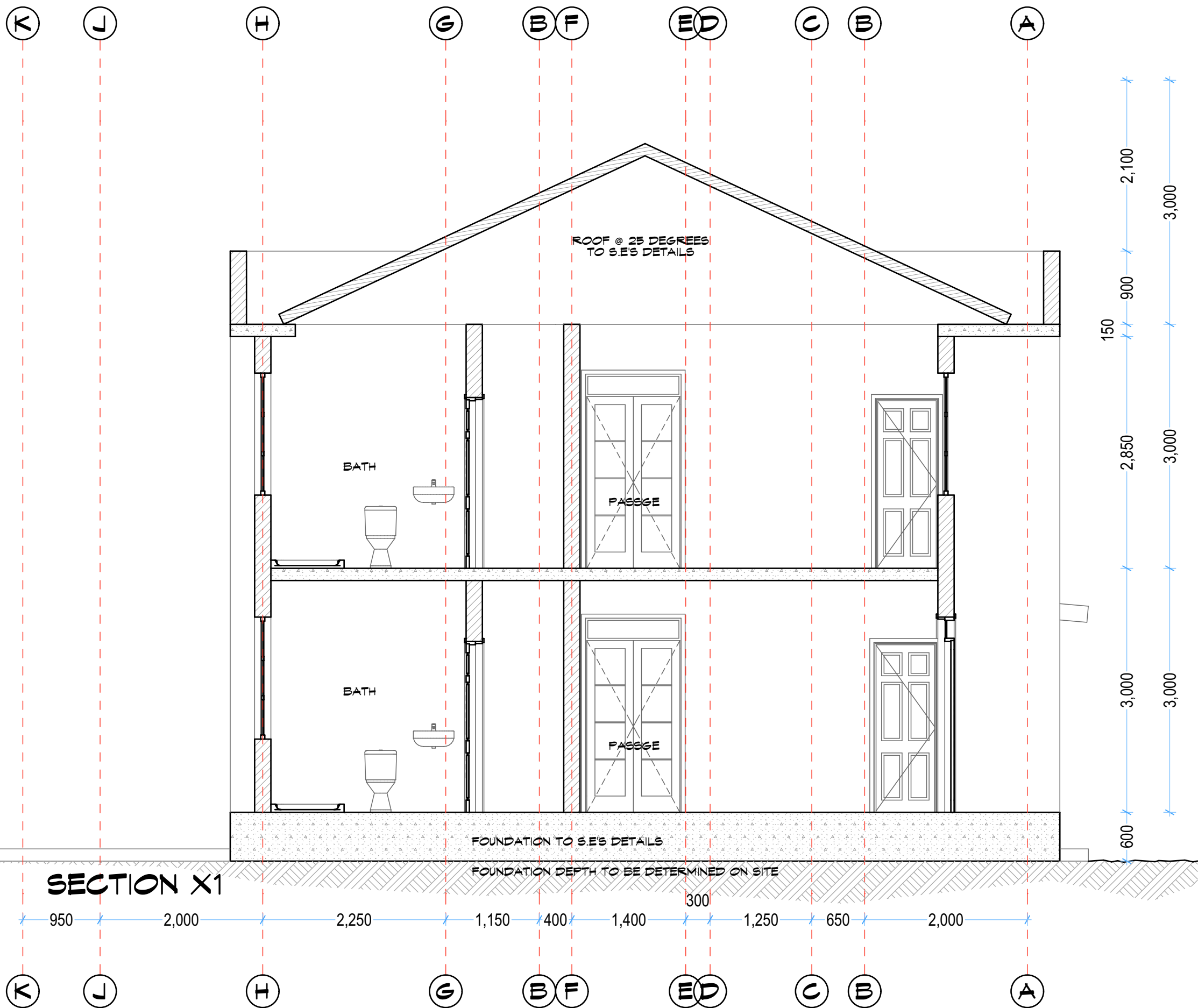


SECTION X

X

Building Section (1)

1:50

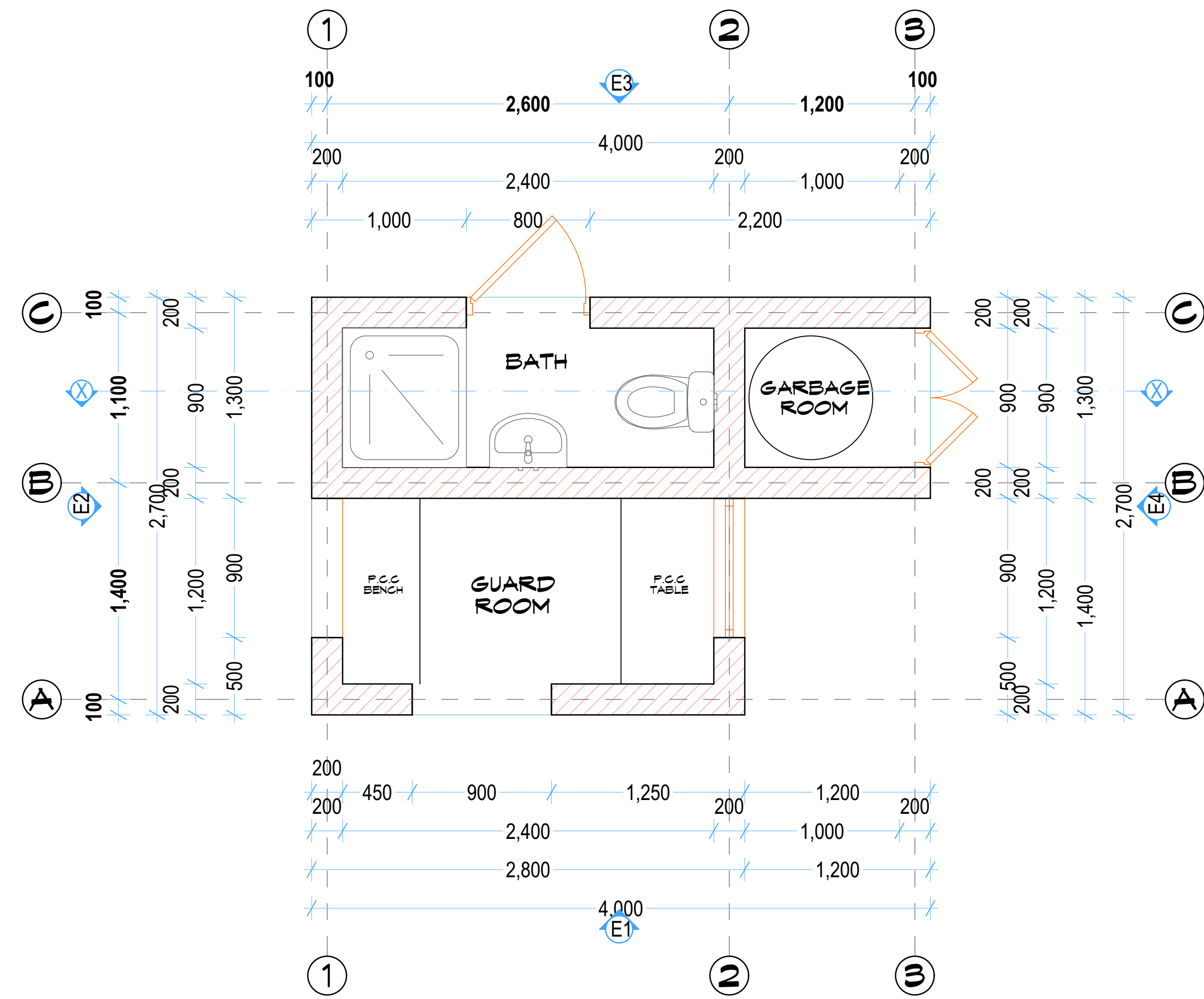


SECTION X1

X1

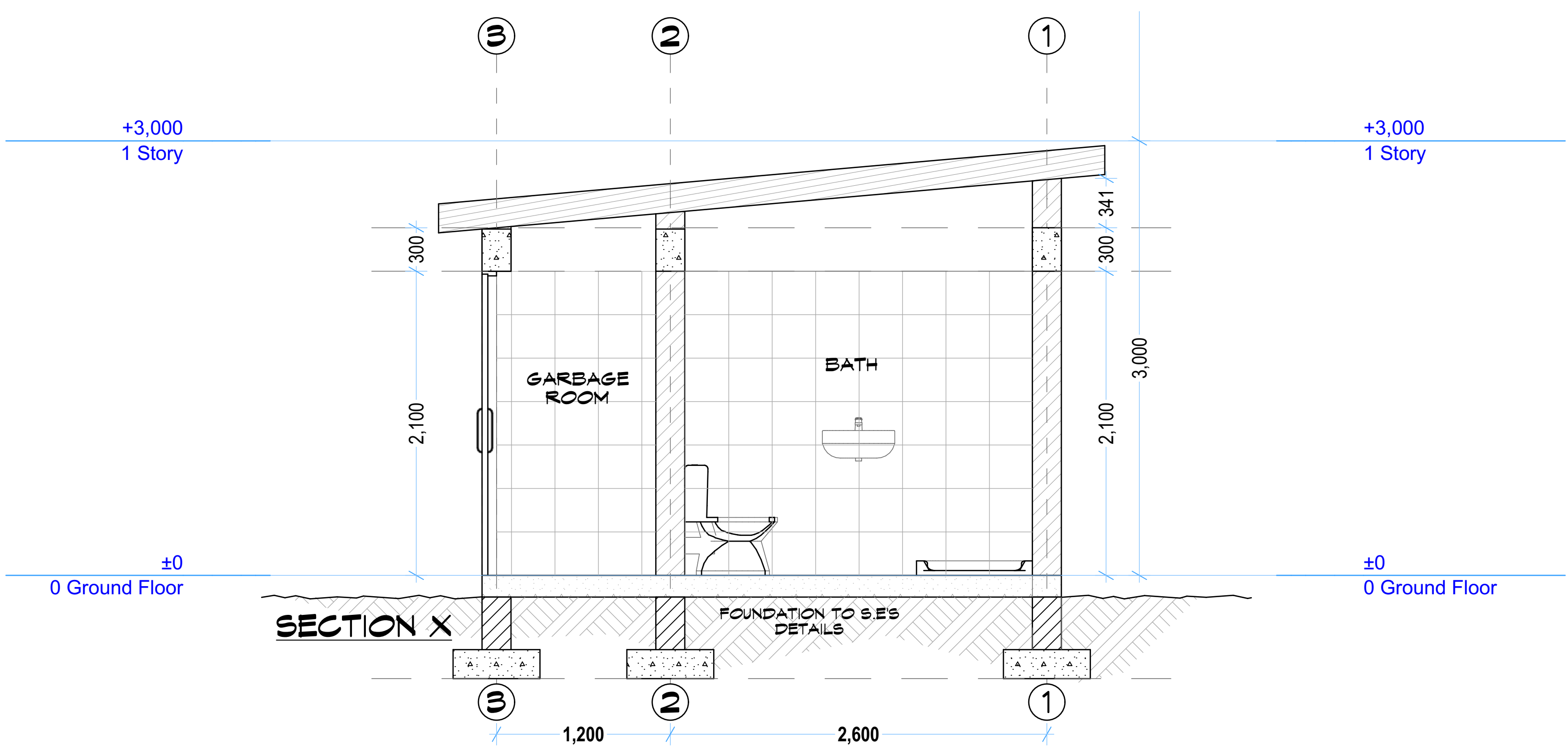
Building Section (1)

1:50



GROUND FLOOR

0. Ground Floor (1) 1:25



X Building Section (2) 1:25

NOTES

ARCHITECTURAL

1. ALL DIMENSIONS TO BE CHECKED ON SITE ANY DISCREPANCIES TO BE VERIFIED WITH THE ARCHITECTS.
2. CONCRETE BLOCKSTONE WALL LESS THAN 200MM THICKNESS TO BE REINFORCED WITH HOOP IRON AT EVERY ALTERNATE COURSE.
3. DEPTH OF FOUNDATION TO BE DETERMINED ON SITE.
4. ALL REINFORCED CONCRETE WORK TO STRUCTURAL ENGINEERS DETAIL.
5. A SINGLE LAYER OF A 3PLY BITUMINOUS FELT TO BE PROVIDED BETWEEN MASONRY AND REINFORCED CONCRETE WORKS.
6. DRAINS PASSING UNDER DRIVEWAYS AND BUILDINGS TO BE ENCASED WITH MINIMUM 150MM THICK CONCRETE WORKS.
7. ALL INSPECTION CHAMBERS IN DRIVE AREAS TO HAVE HEAVY DUTY COVERS.
8. ALL PLUMBING AND DRAINAGE TO BE TO THE APPROVAL AND SATISFACTION OF M.H.O.
9. THIS DRAWING IS THE COPYRIGHT OF TRIAD ARCHITECTS. IT CANNOT BE COPIED, REPRODUCED, RETAINED OR DISCLOSED TO ANY UNAUTHORISED PERSONS.

FIRE FIGHTING

1. PROVIDE EMERGENCY LIGHTS AT STAIRWELLS.
2. PROVIDE AUTOMATIC ALARM TO COVER THE PROJECT.
3. FIRE RESISTANT DOORS TO FIRE ESCAPE STAIRCASES TO BE ONE HOUR FIRE RESISTANT, WITH AUTOMATIC DOOR CLOSERS.
4. ALL INTERNAL PARTITIONING MATERIALS BE HALF OUR FIRE RATED.
5. PROVIDE 100MM WET RISERS WITH ONE VALVE ON EACH FLOOR.
6. PROVIDE FIRE INSTRUCTIONS AND FIRE EXIT SIGNS.

REVISIONS SIGN DATE APPROVED

C				
B				
A				

CONSULTANT:



Runji Consulting Group Ltd

Engineering & Project Management.
P. O. Box 68053-00200 Nairobi

In Association With



Hybrid Architects

P. O. Box 42081-00100 Nairobi

Project:

**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s)	1:25	Date:	FEB. 2021
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Dwg. No.

Design by: Drawn by:

Sign..... Sign.....

Checked by: C.M.M. Approved by: R.N

Sign..... Sign.....

CLIENT:



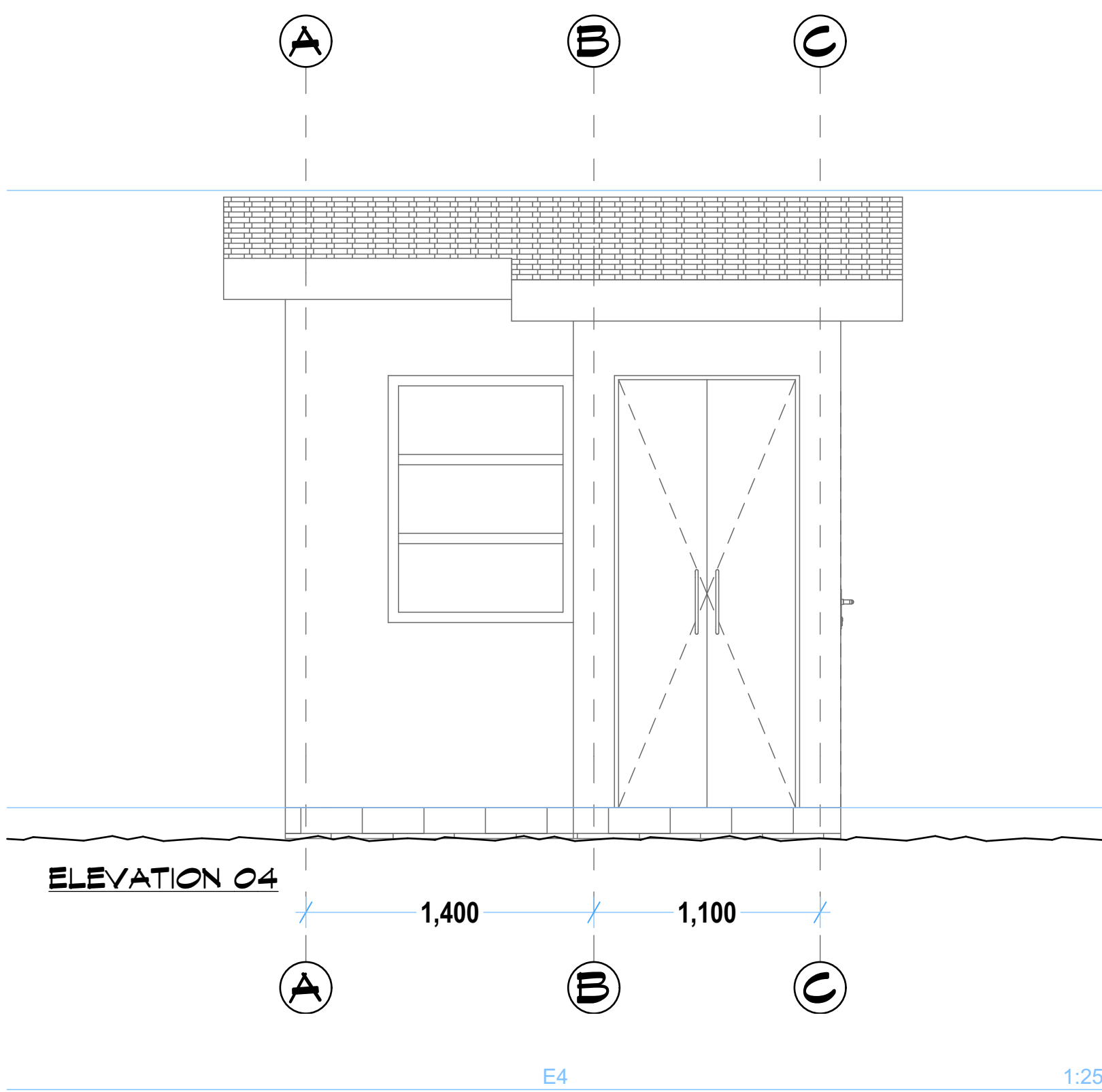
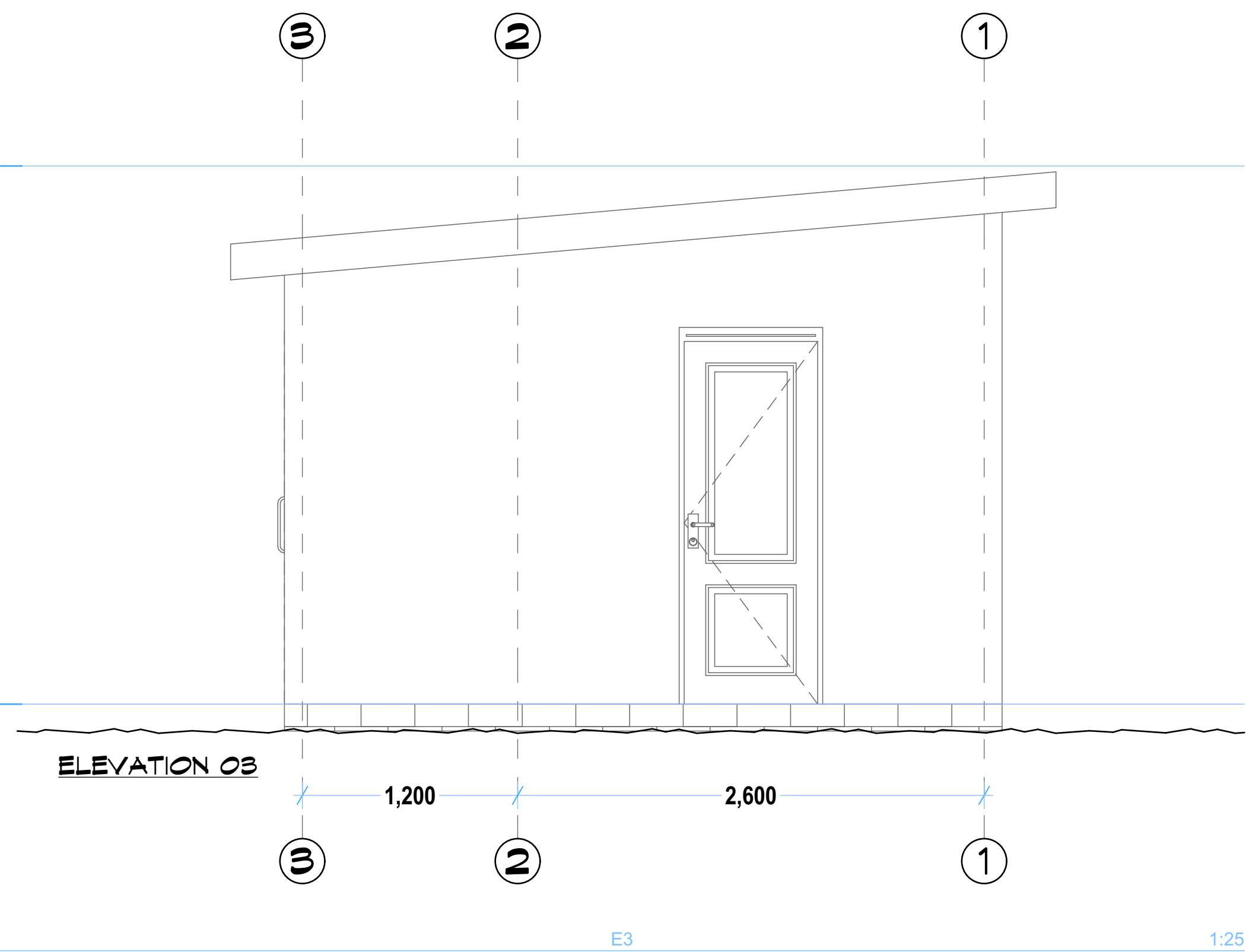
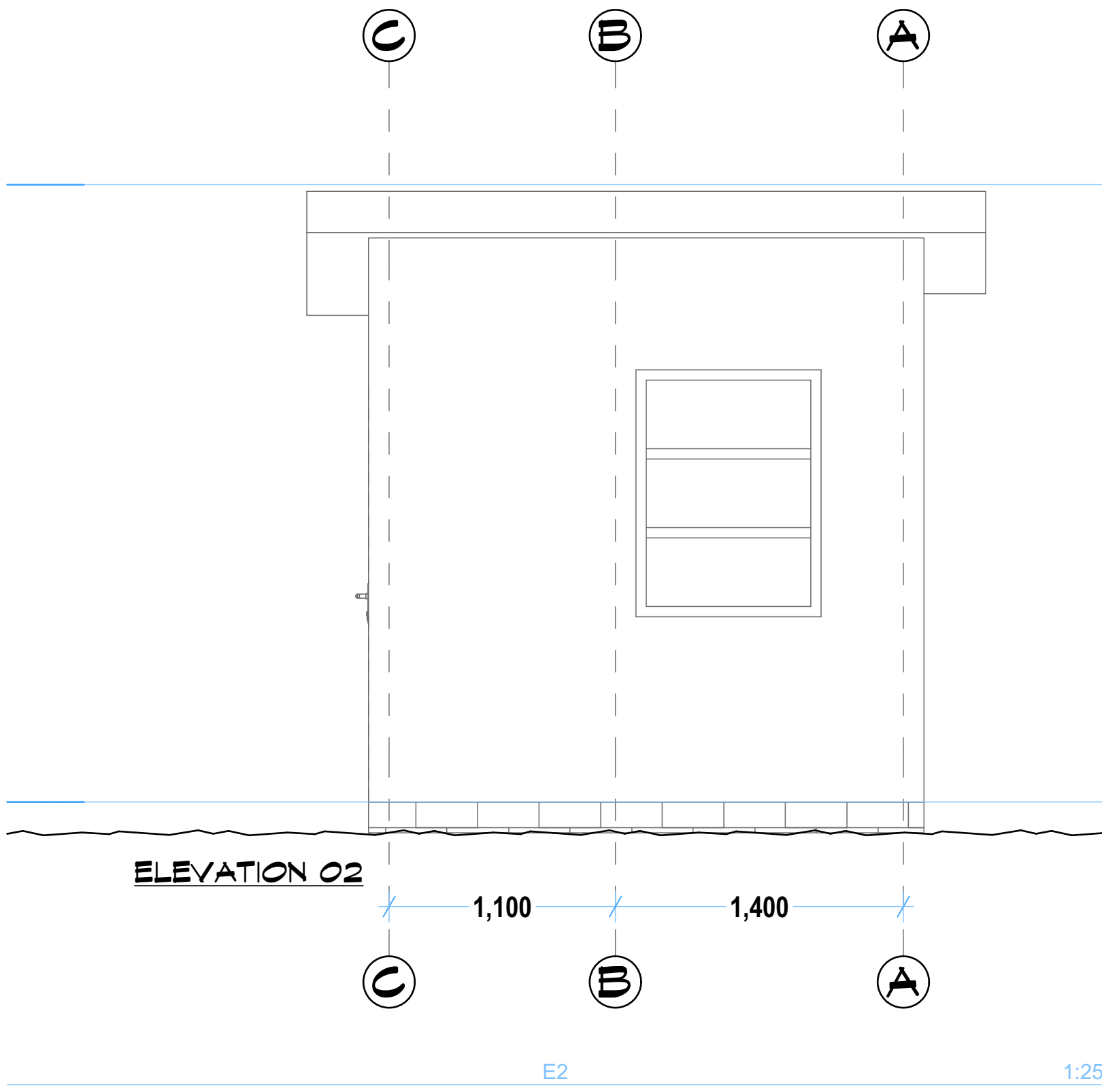
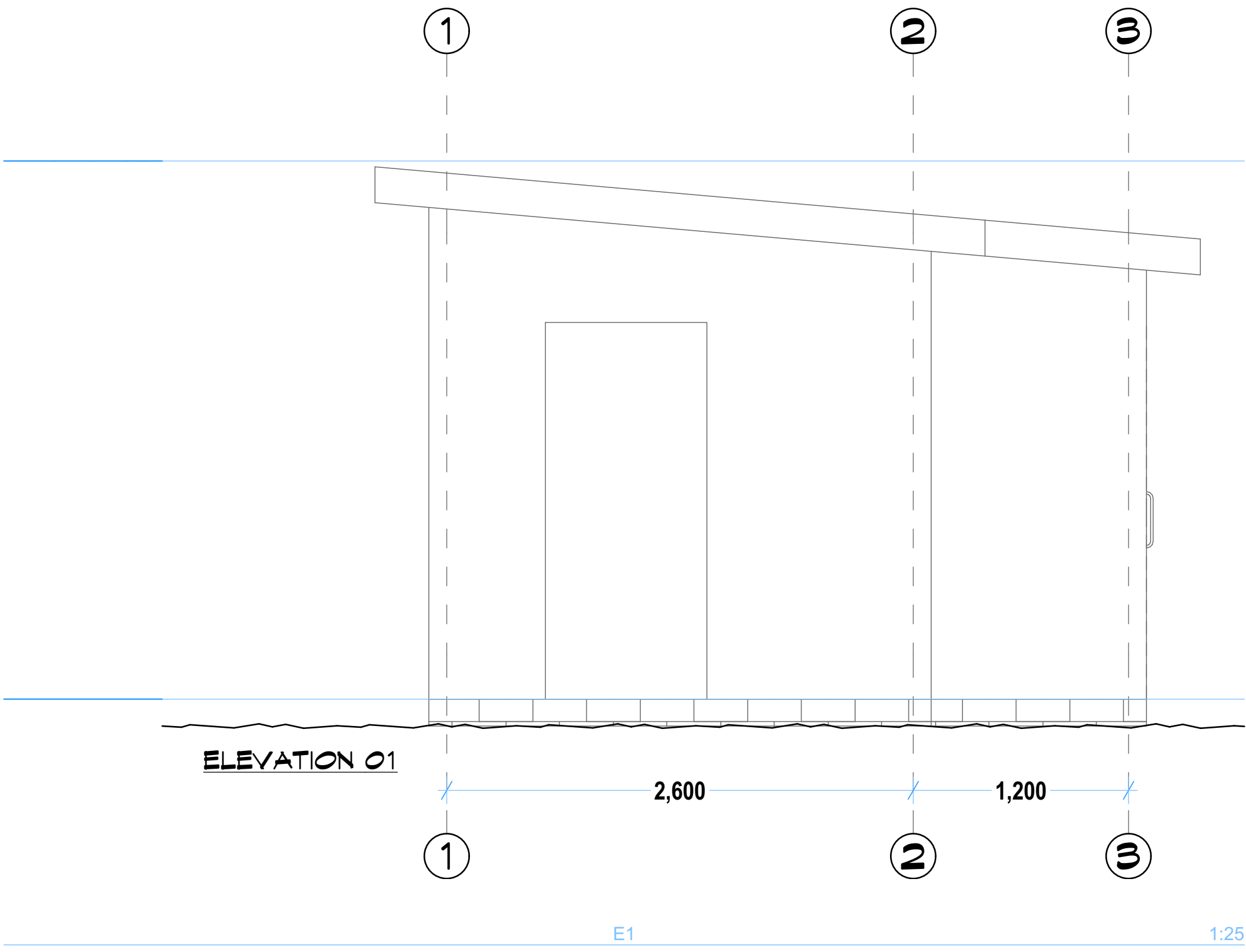
**GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa,Kenya

CONTRACT NO:

PROJECT MANAGER DATE ENGINEER DATE

Sign..... Sign.....

DWG. Title:



NOTES

ARCHITECTURAL

1. ALL DIMENSIONS TO BE CHECKED ON SITE ANY DISCREPANCIES TO BE VERIFIED WITH THE ARCHITECTS.
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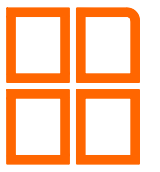
FIRE FIGHTING

1. PROVIDE EMERGENCY LIGHTS AT STAIRWELLS.
2. PROVIDE AUTOMATIC ALARM TO COVER THE PROJECT.
3. FIRE RESISTANT DOORS TO FIRE ESCAPE STAIRCASES TO BE ONE HOUR FIRE RESISTANT, WITH AUTOMATIC DOOR CLOSERS.
4. ALL INTERNAL PARTITIONING MATERIALS BE HALF OUR FIRE RATED.
5. PROVIDE 100MM WET RISERS WITH ONE VALVE ON EACH FLOOR.
6. PROVIDE FIRE INSTRUCTIONS AND FIRE EXIT SIGNS.

REVISIONS SIGN DATE APPROVED

C				
B				
A				

CONSULTANT:



Runji Consulting Group Ltd

Engineering & Project Management.
P. O. Box 68053-00200 Nairobi

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Project:

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GARISSA WATER AND SEWERAGE COMPANY AND
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Scale(s)	1:25	Date:	FEB. 2021
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Dwg. No.	
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Design by:	Drawn by:
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Sign.....	Sign.....
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Checked by: C.M.M	Approved by: R.N
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Sign.....	Sign.....
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CLIENT:



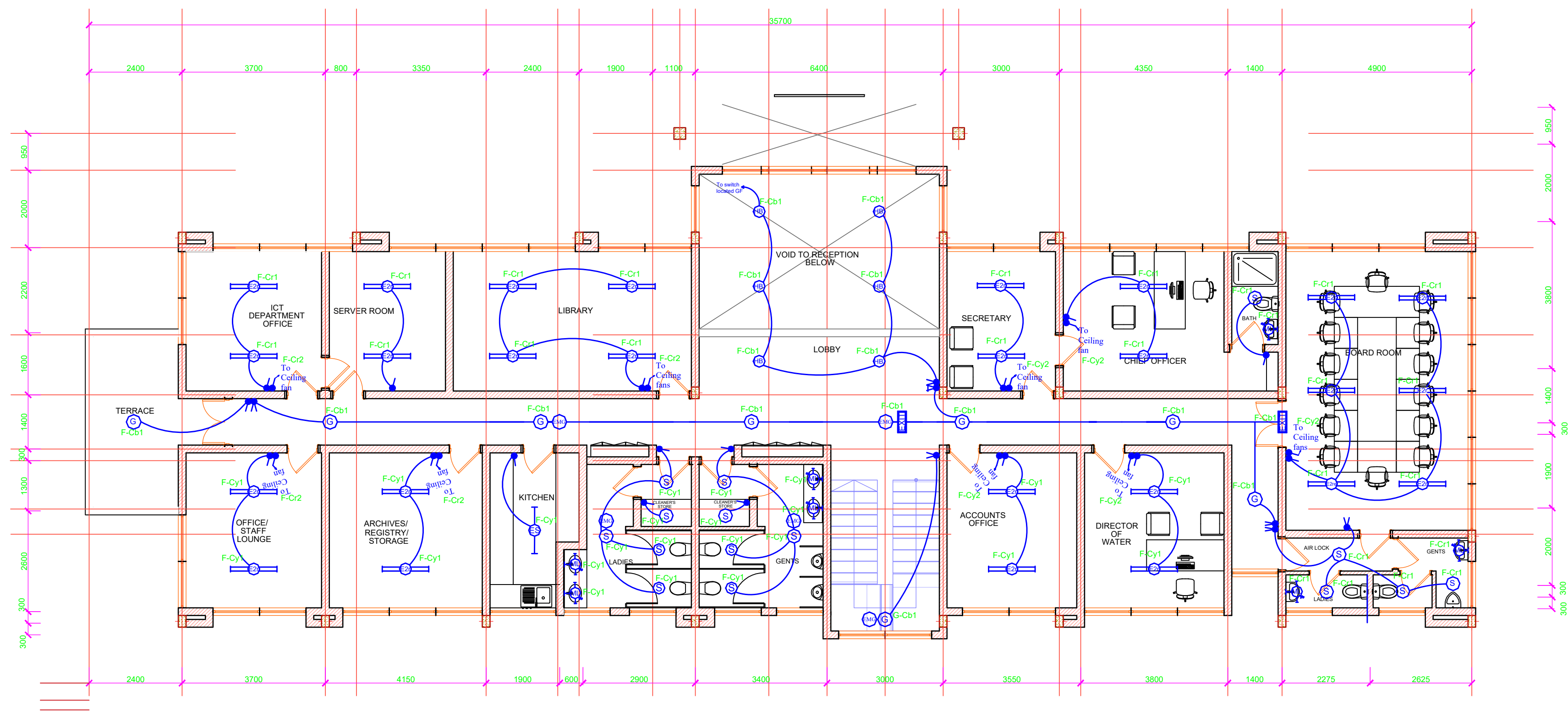
**GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa,Kenya

CONTRACT NO:	
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PROJECT MANAGER	DATE	ENGINEER	DATE
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Sign.....	Sign.....
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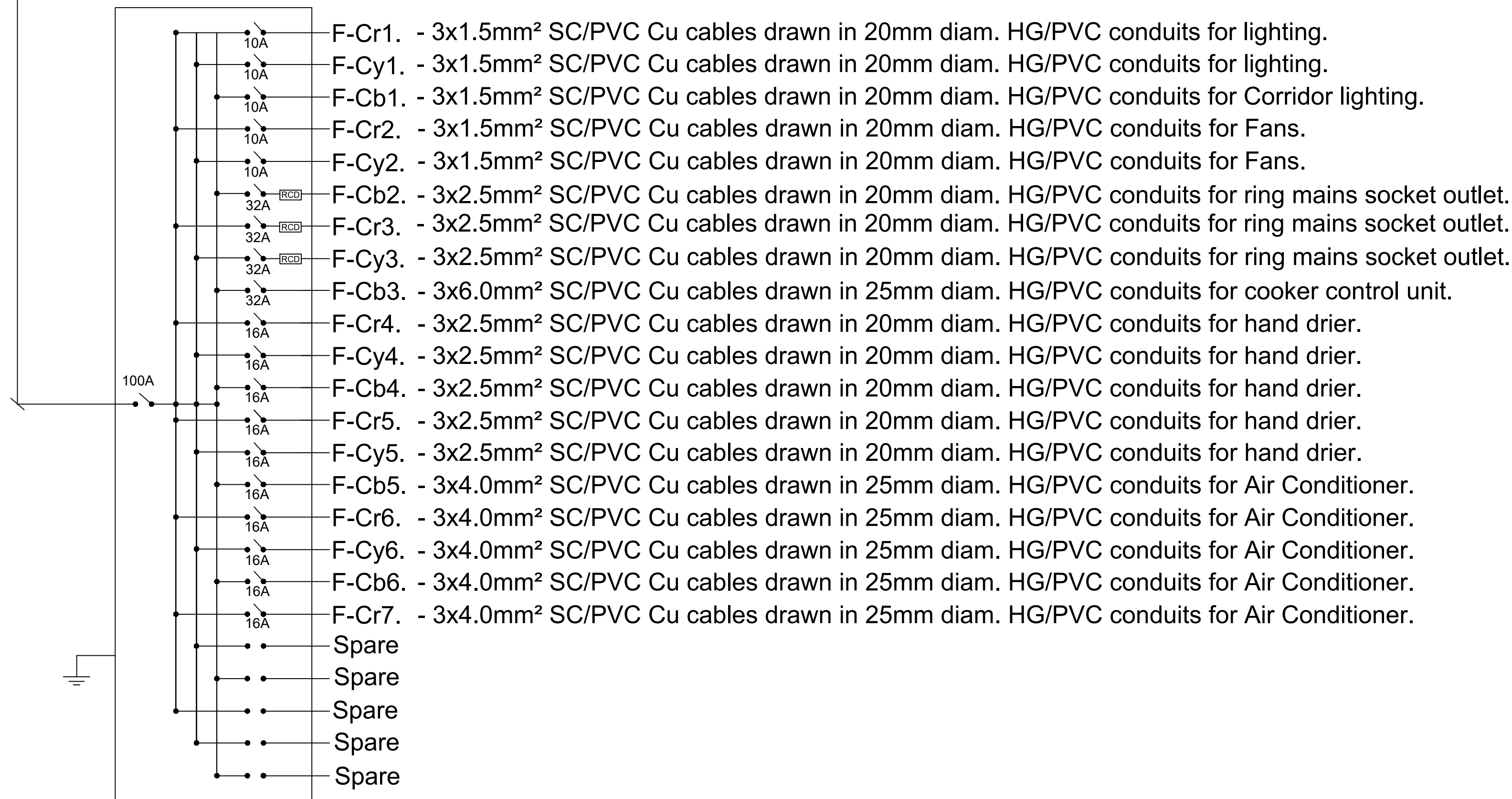
DWG. Title:	
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FIRST FLOOR
To be used by County Department of Water. Spaces to include:
1. Conference with washrooms (size of conference 7.2m by 4.7m) on RHS of layout
2. Chief officer's office with washroom and secretary's office (above GAWASCO MD's office)
3. Library (above the banking hall)
4. Director of Water's office above GAWASCO TSM's office
5. Archives/registry/storage
6. Server room
7. Staff washrooms
8. Accounts office
9. Kitchen

a) OFFICE BLOCK—FIRST FLOOR ELECTRICAL LIGHTING LAYOUT

5x10.0mm² SC/PVC Cu cables drawn in 50mm diam. HG/PVC conduits from office block GF Distribution Board.



b) 100A, 8-WAY, TPN OFFICE BLOCK DB-FF WIRING SCHEMATIC

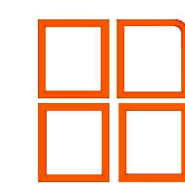
GENERAL NOTES

- 1) All conduits shall be black rigid super high impact heavy gauge class 'A' PVC
- 2) Conduit shall be installed buried in building fabric except when run on wooden or metal surface when they will be installed surface supported with saddles every 600mm.
- 3) All fire alarm cables used to be fire proof
- 4) Fire alarm cables to be segregated from the cables of other electrical systems.

REVISIONS

NO.	REVISIONS	SIGN	DATE	APPROVED

DESIGN REVIEW AND SUPERVISION BY:



Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

Project

**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s) 1:75 Date: AUGUST 2021

Dwg. No. **WS 927/GWSC/OFF/E/03**

Design by: I.M.O

Drawn by: I.M.O

Sign.....

Sign.....

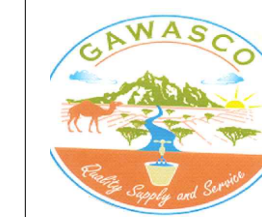
Checked by: J.J.M

Approved by: R.N

Sign.....

Sign.....

CLIENT:



**GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa, Kenya

CONTRACT NO:

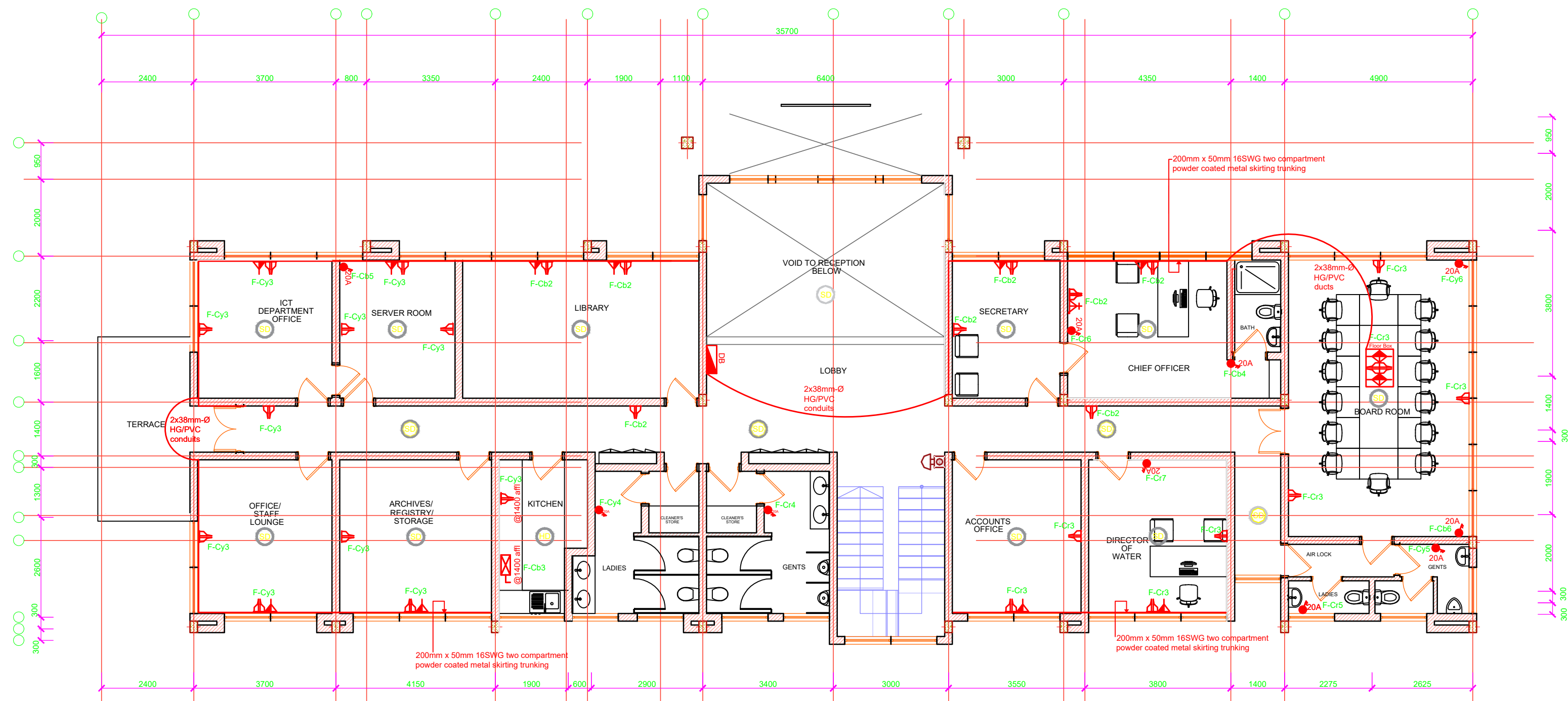
PROJECT MANAGER DATE ENGINEER DATE

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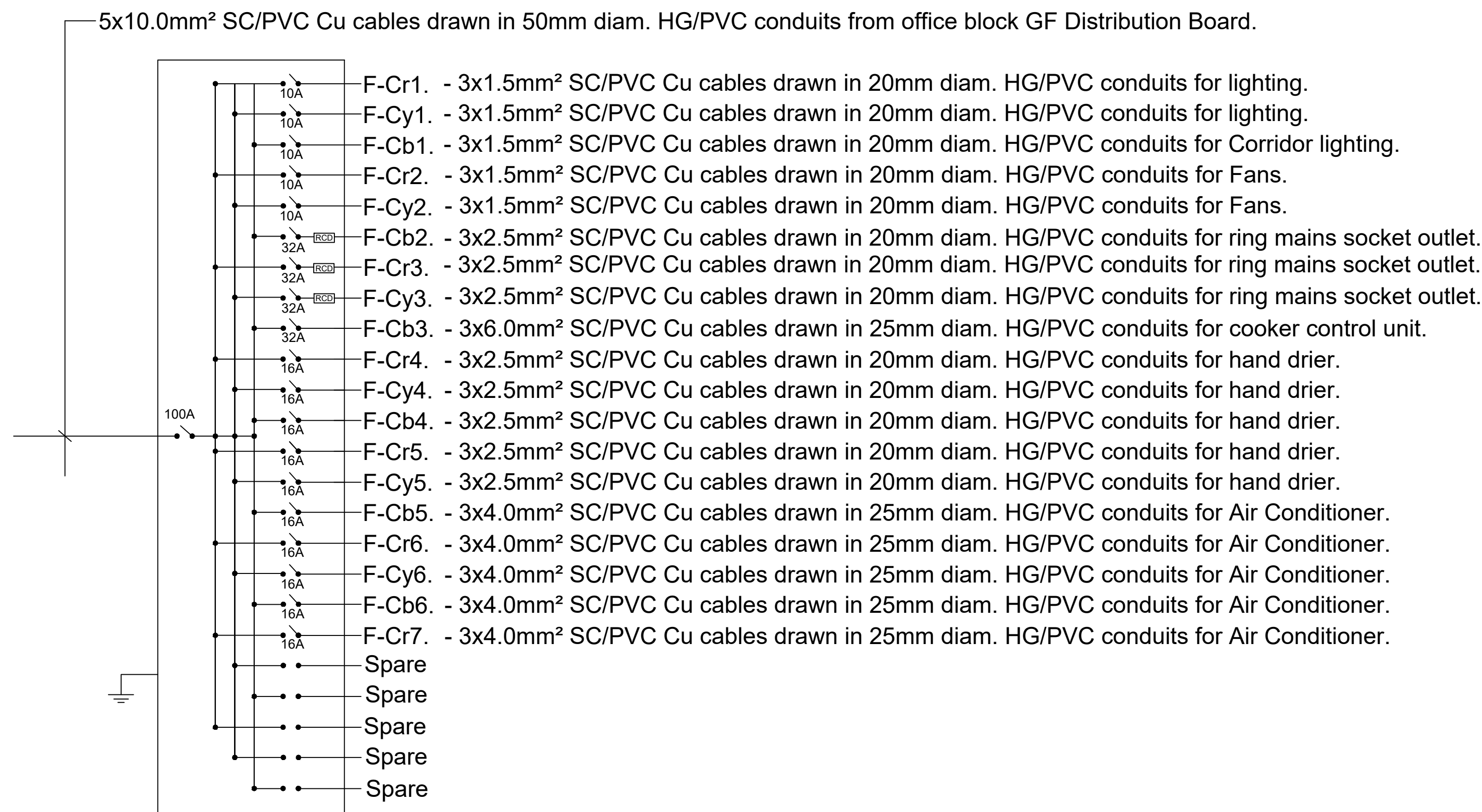
DWG. Title:

OFFICE BLOCK-FIRST FLOOR LIGHTING LAYOUT



- FIRST FLOOR
To be used by County Department of Water. Spaces to include:
1. Conference with washrooms (size of conference 7.2m by 4.7m) on RHS of layout
 2. Chief officer's office with washroom and secretary's office (above GAWASCO MD's office)
 3. Library (above the banking hall)
 4. Director of Water's office above GAWASCO TSM's office
 5. Archives/registry-storage
 6. Server room
 7. Staff washrooms
 8. Accounts office
 9. Kitchen

a) OFFICE BLOCK-FIRST FLOOR ELECTRICAL POWER LAYOUT



b) 100A, 8-WAY, TPN OFFICE BLOCK DB-FF WIRING SCHEMATIC

GENERAL NOTES

- 1) All conduits shall be black rigid super high impact heavy gauge class 'A' PVC
- 2) Conduit shall be installed buried in building fabric except when run on wooden or metal surface when they will be installed surface supported with saddles every 600mm.
- 3) All fire alarm cables used to be fire proof
- 4) Fire alarm cables to be segregated from the cables of other electrical systems.

REVISIONS

NO.	REVISIONS	SIGN	DATE	APPROVED

DESIGN REVIEW AND SUPERVISION BY:

Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

Project


**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s) 1:75 Date: AUGUST 2021

Dwg. No. **WS 927/GWSC/OFF/E/04**

Design by: I.M.O	Drawn by: I.M.O
Sign.....	Sign.....
Checked by: J.J.M	Approved by: R.N
Sign.....	Sign.....

CLIENT:

 **GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa,Kenya

CONTRACT NO:

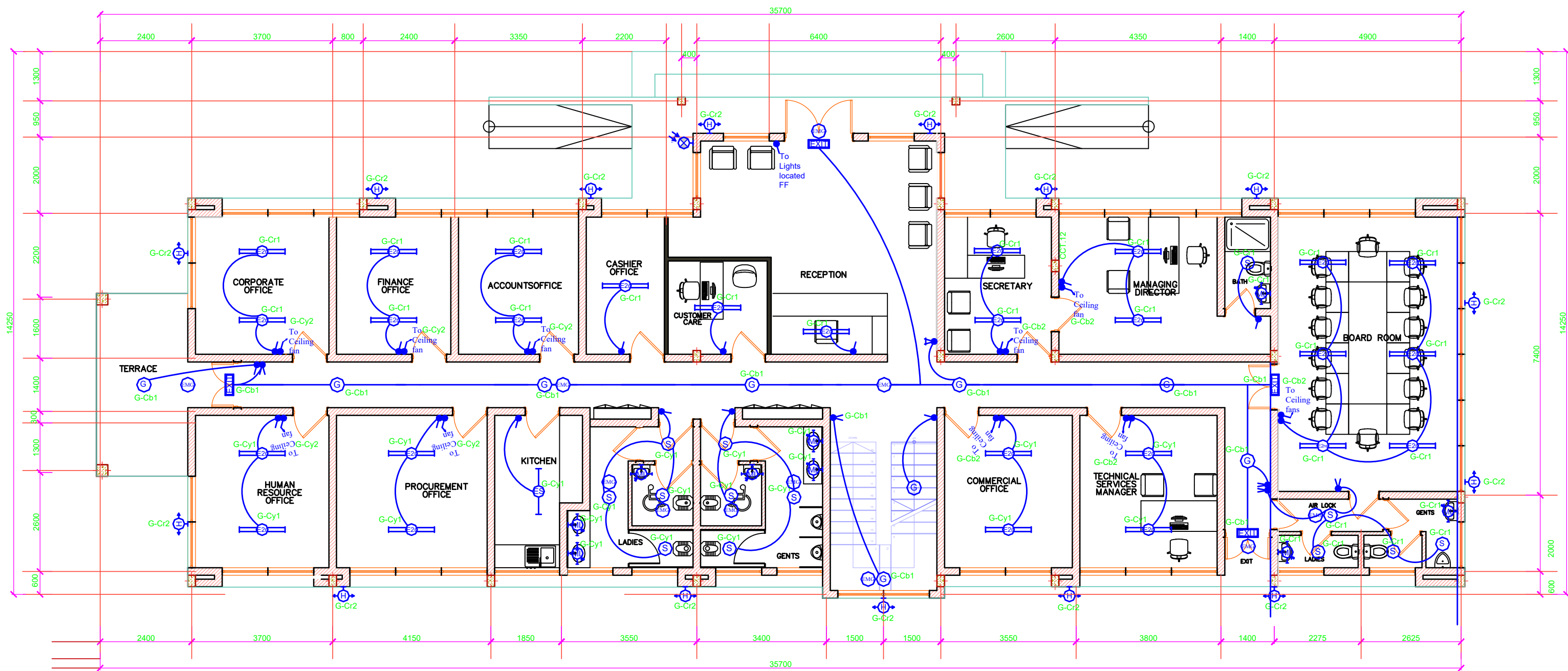
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DWG. Title:

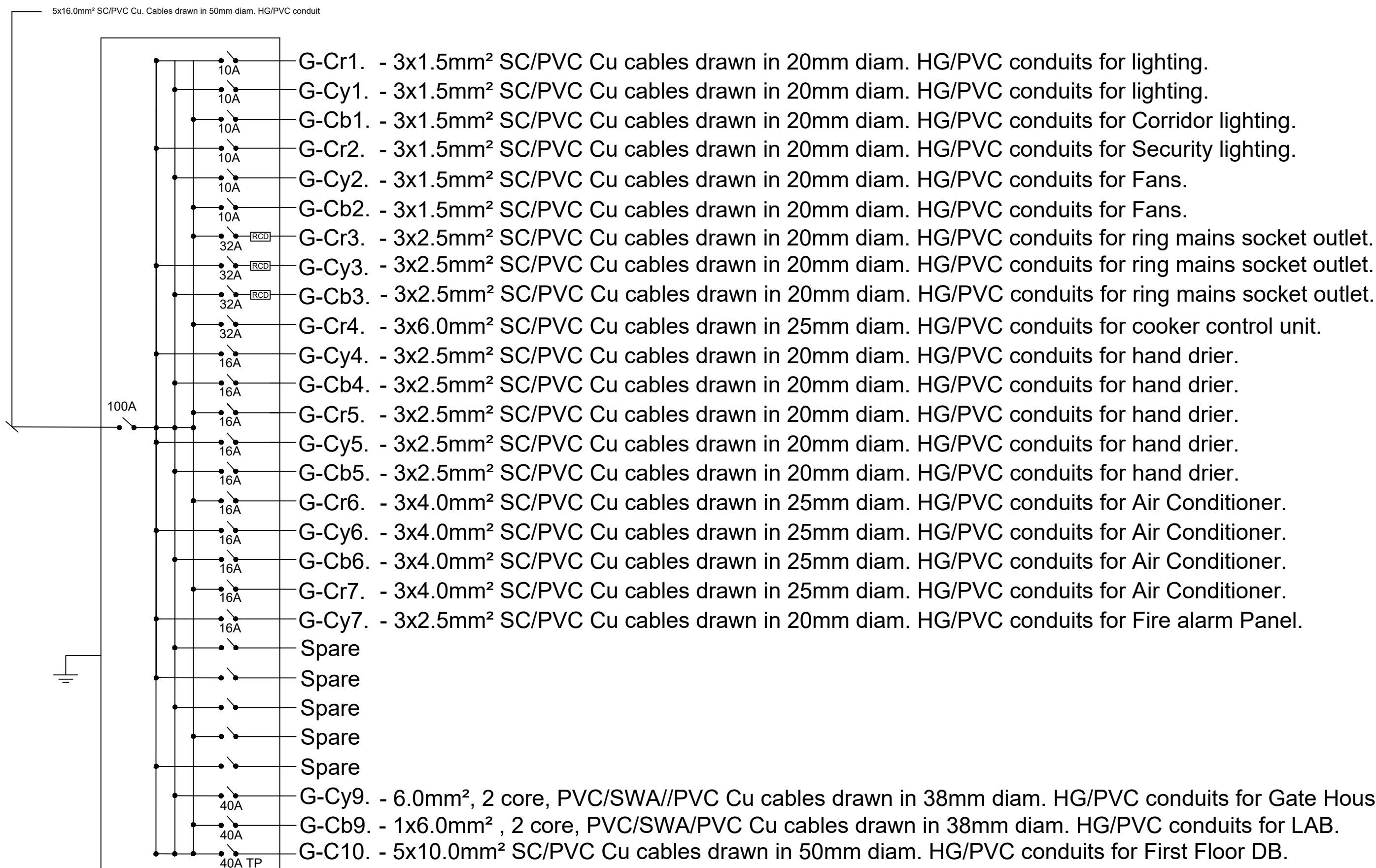
OFFICE BLOCK- FIRST FLOOR POWER LAYOUT

GENERAL NOTES

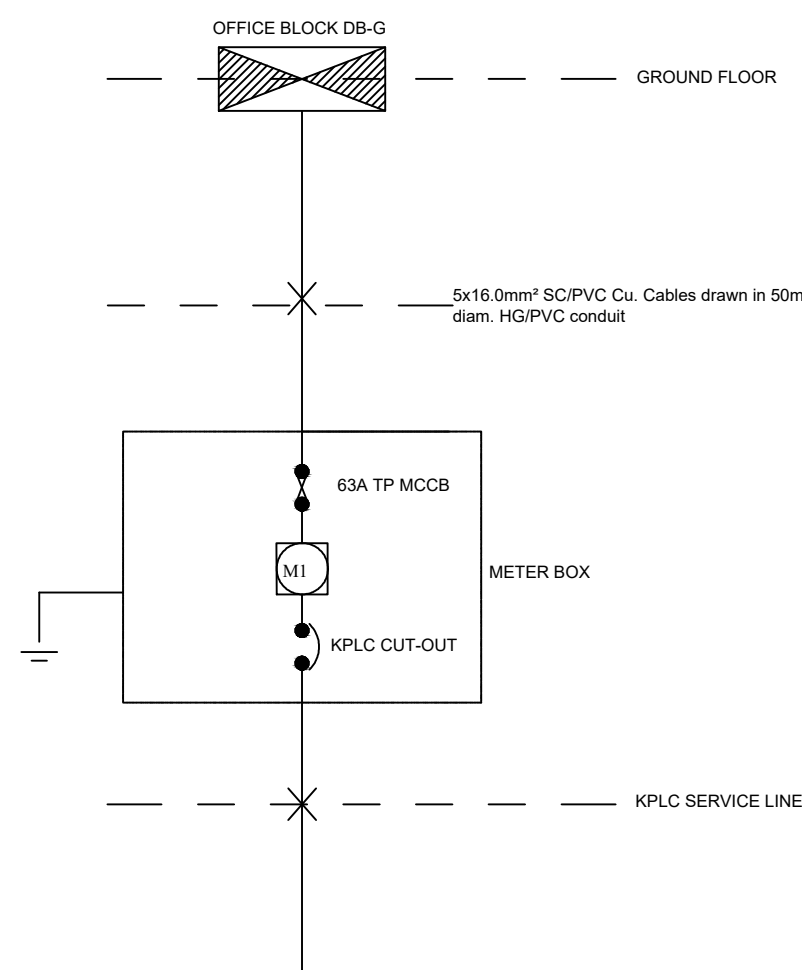
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- 2) Conduit shall be installed buried in building fabric except when run on wooden or metal surface when they will be installed surface supported with saddles every 600mm.
- 3) All fire alarm cables used to be fire proof
- 4) Fire alarm cables to be segregated from the cables of other electrical systems.



a) OFFICE BLOCK-GROUND FLOOR ELECTRICAL LIGHTING LAYOUT



b) 100A, 10-WAY, TPN OFFICE BLOCK DB-GF WIRING SCHEMATIC



c) POWER DISTRIBUTION SCHEMATICS

REVISIONS SIGN DATE APPROVED

DESIGN REVIEW AND SUPERVISION BY:

Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

Project
**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s) 1:75 Date: AUGUST 2021

Dwg. No. **WS 927/GWSC/OFF/E/01**

Design by: I.M.O Drawn by: I.M.O

Sign..... Sign.....

Checked by: J.J.M Approved by: R.N

Sign..... Sign.....

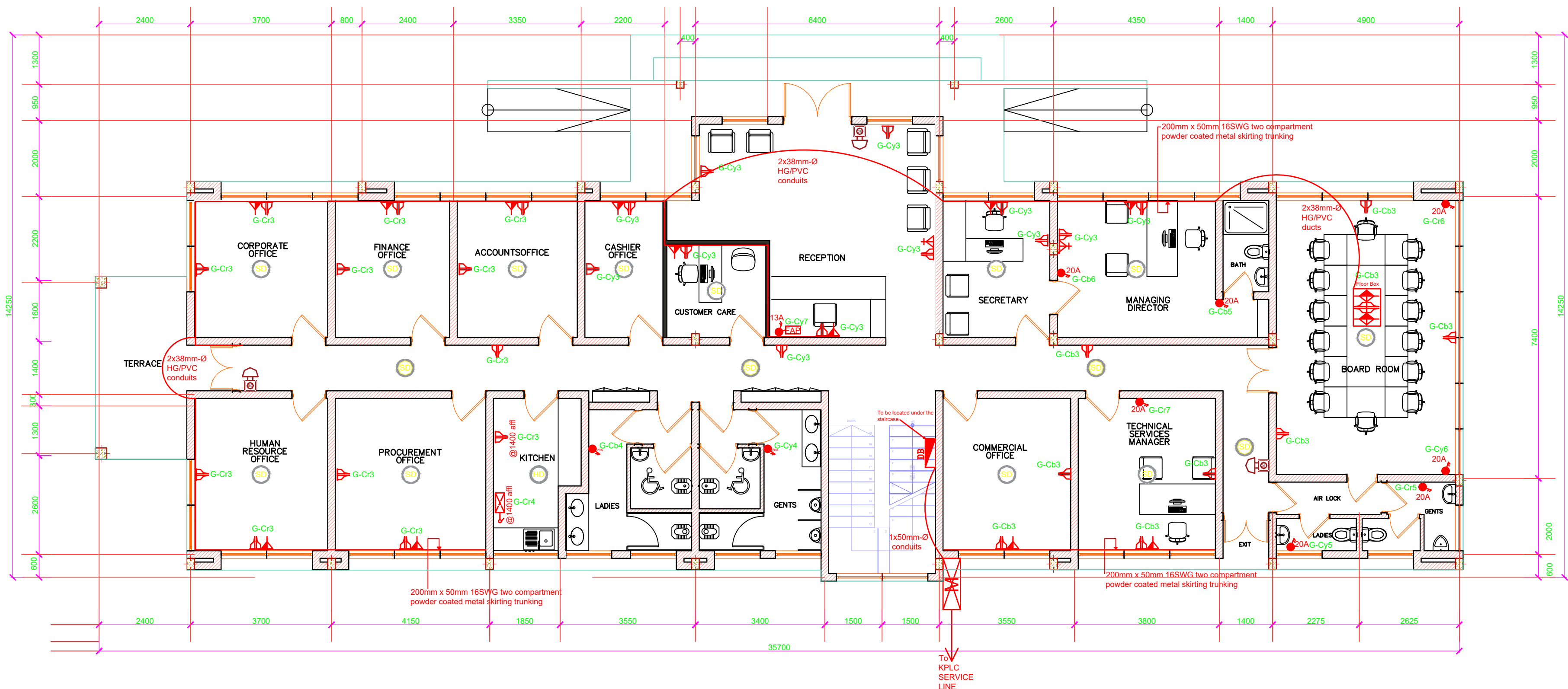
CLIENT:
**GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa, Kenya

CONTRACT NO:

PROJECT MANAGER DATE ENGINEER DATE

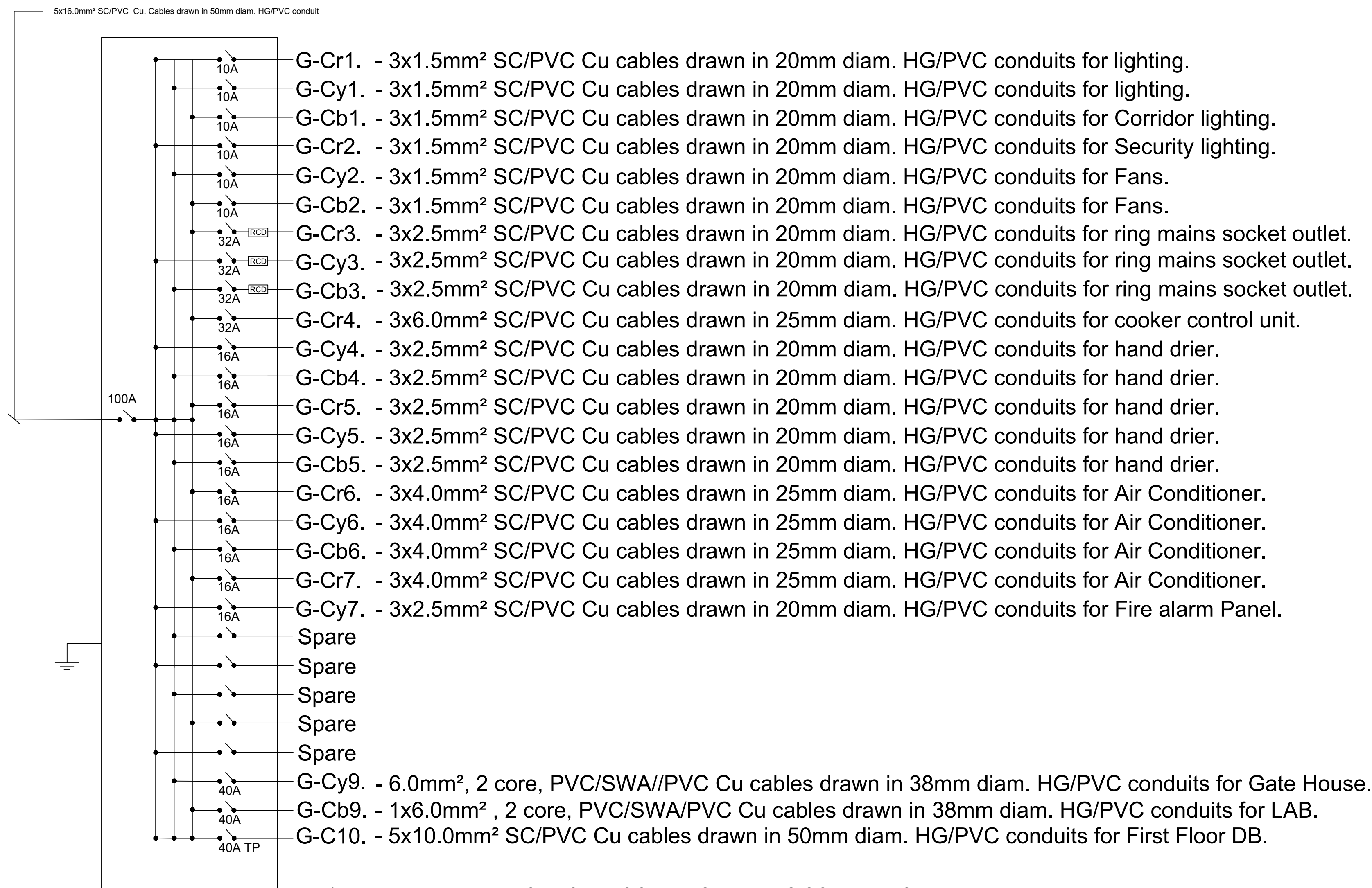
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DWG. Title:
OFFICE BLOCK-GROUND FLOOR LIGHTING LAYOUT

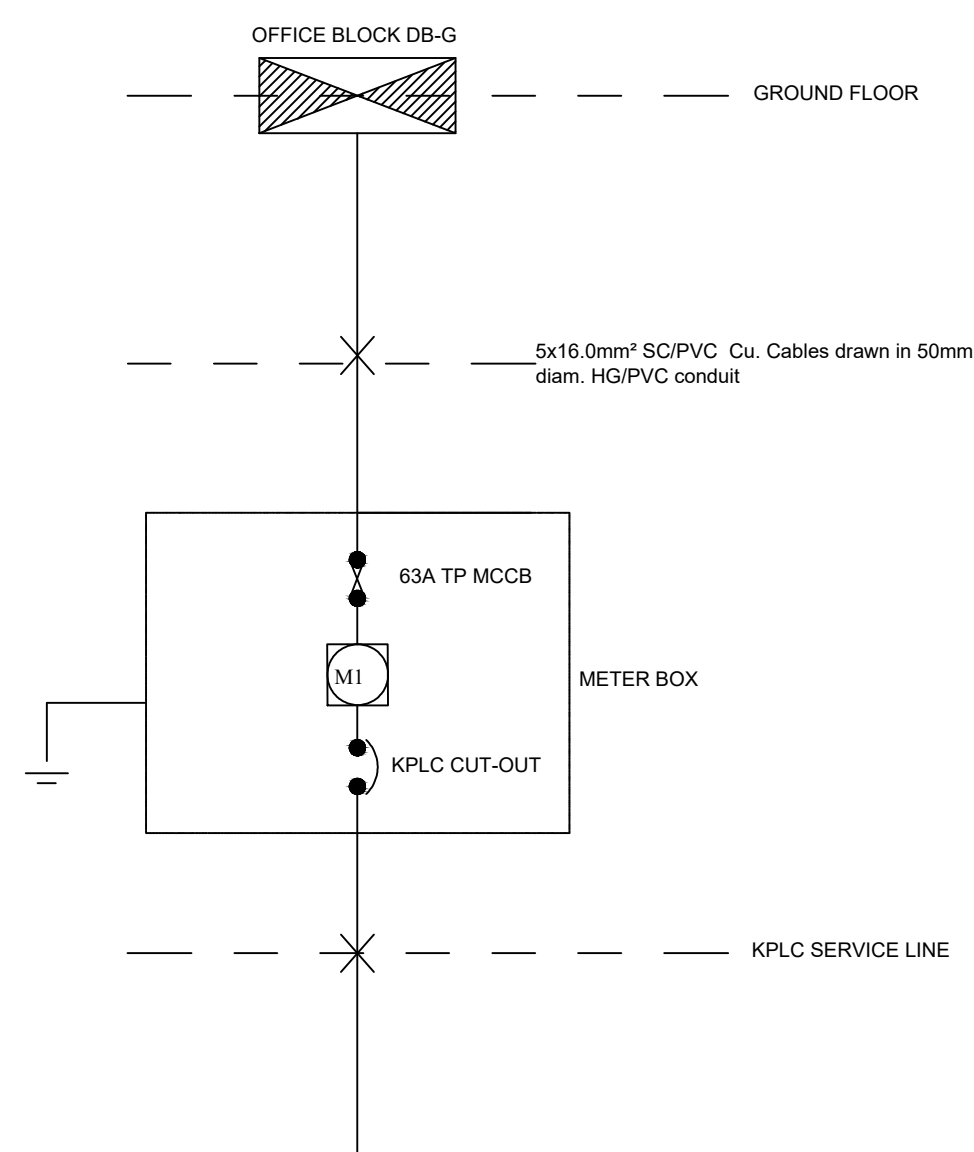


GROUND FLOOR
To be used by GAWASCO staff. Spaces to include:
1. Conference with washrooms (size of conference 7.2m by 4.7m) on RHS of layout
2. MD's office with toilet and secretary's office
3. Technical Services Manager office
4. Finance office
5. Commercial office
6. Procurement office
7. Customer care office
8. Human resource office
9. Banking hall
10. Accounts office
11. Kitchen
12. Staff washrooms

a) OFFICE BLOCK-GROUND FLOOR ELECTRICAL POWER LAYOUT



b) 100A, 10-WAY, TPN OFFICE BLOCK DB-GF WIRING SCHEMATIC



c) POWER DISTRIBUTION SCHEMATICS

GENERAL NOTES

- 1) All conduits shall be black rigid super high impact heavy gauge class 'A' PVC
- 2) Conduit shall be installed buried in building fabric except when run on wooden or metal surface when they will be installed surface supported with saddles every 600mm.
- 3) All fire alarm cables used to be fire proof
- 4) Fire alarm cables to be segregated from the cables of other electrical systems.

REVISIONS

REVISIONS	SIGN	DATE	APPROVED

DESIGN REVIEW AND SUPERVISION BY:

Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

Project

**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s) 1:75 Date: AUGUST 2021

Dwg. No. **WS 927/GWSC/OFF/E/02**

Design by: I.M.O. Drawn by: I.M.O.

Sign..... Sign.....

Checked by: J.J.M. Approved by: R.N

Sign..... Sign.....

CLIENT:



**GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa, Kenya

CONTRACT NO:

PROJECT MANAGER DATE ENGINEER DATE

Sign..... Sign.....

DWG. Title:

OFFICE BLOCK-GROUND FLOOR POWER LAYOUT

ELECTRICAL INSTALLATION SYMBOLS	
LEGEND	
ITEM	DESCRIPTION
	one/two/three gang one way plastic moulded switch as Crabtree or approved equivalent
	one/two/three gang two way plastic moulded switch as Crabtree or approved equivalent
	one/two gang one way splash proof switch as crabtree or approved equivalent
	intermediate/dimmer switch as Crabtree or approved equivalent
	15A splash proof white socket outlet as Crabtree or approved equivalent
	13A single/twin switched plastic moulded socket outlet plates as Crabtree or approved equivalent
	15A/20A DP switch as Crabtree or approved equivalent
	Dual data/telephone outlet point as Crabtree or approved equivalent
	television outlet point as Crabtree or approved equivalent
	5W, 100 mm diameter Low Voltage LED downlight with warm white output light suitable for recessed installation in standard ceiling as Maximus or approved equivalent
	8W, 150 mm diameter Low Voltage LED downlight with warm white output light suitable for recessed installation in standard ceiling as Maximus or approved equivalent
	12W, 200 mm diameter Low Voltage LED downlight with warm white output light suitable for recessed installation in standard ceiling as Maximus or approved equivalent
	Ditto but moist and dust proof to EE approval
	53W, 220-240V, 50/60Hz, 600x600mm Recessed LED Panel Light c/w high brightness polished aluminium Louver as LUG cat. No. 060311.5L03B.311 or approved equivalent
	1200mm, IP65 rated dust and moisture resistant fluorescent fitting with injection moulded GRP Canopy and Polycarbonate diffuser and stainless steel toggles complete with 1 x 18W , T8 LED Tube lamp, day light as Thorn Aquaproof or approved equivalent
	1260x140x90 (LxWxH) mm, 130-300V, V, 50/60Hz, made of White polycarbonate body, Splash proof, IP65 rated with 32W, 1xLED ZVEI/ILCOS: LED/LED lamp (day light). To have direct, symmetric light distribution as ABB cat. Stanilite- Battern LED PBWAC35L-mains or approved equivalent
	Standard circular high bay luminaire, IP65, with polycarbonate body and white trim polycarbonate body and trim in white Polycarbonate opal diffuser and LED drivers for 90W LED lamps As Phillips or approved equivalent
	Surface mounted bulkhead with die cast aluminium body and opal polycarbonate diffuser, IP65, oval shape with visor complete with LED lamps as Thorn Roller
	600mm, Slim section fluorescent batten fitting with acrylic reeded diffuser and three position polycarbonate end-caps, IP 65 rated, complete with 12W, 250 mm diameter Low Voltage LED lamps as Thorn Arrowslim
	3W LED PCB, 6500K LED light source, Impact resistant polycarbonate diffuser and base on bulkhead for non-maintained emergency light with 3 hour minimum emergency duration as manufactured by Ansellto engineers approvals or approved equivalent.
	2.5W, 6500K LED light source, IP65 Self-contained single/double sided LED EXIT sign with 2.5W LED lamp for non-maintained emergency lighting for 3 hour duration as manufactured by Ansellto engineers approvals or approved equivalent.
	8W, 100 mm diameter Low Voltage LED downlight with warm white output light suitable for recessed installation in standard ceiling as Maximus or approved equivalent
	200mm diameter, 6.5w, (day light), Operating Voltage/Frequency/ High quality longtime LED lamps, IP65 rated made of Dark Gray die aluminium housing and white polycarbonate \ diffuser , suitable for wall mounting as Philips SMART LED WALL MOUNT Cat. No. BWS150 or approved equivalent
	Circular junction box complete with plastic cover
	45A DP cooker control unit with pilot light and an auxiliary 13A socket outlet as Crabtree or approved equivalent
	415V, 100A 4-Pole contactor auxilliary block as Telemecanique or approved equivalent
	5A photocell as Thorn QPK or approved equivalent
	18AWG Telephone/TV draw-in box to details
	18AWG power draw-in box to details
	Meter board to EE detail
	25mm X 3mm thick bare copper tape as Furse P. No. TC030
	2000mm by 15mm diameter copper rod as Furse P.No. RA240 Complete with: Copper multiple point as Furse P. No. RA 600 and Copper ridge saddle as Furse P No. SD115
	Copper Oblong test clamp as Furse P NO CN 105
	Earthing
	SP/DP/TP MCB's with an integral 30mA Residualcurrent operated circuit-breaker with integral overcurrent protection(RCBO's) as crabtree or approved equivalent
	Fire alarm manual call point to EE Detail as Menvier or approved equivalent
	Fire alarm 24V dc polarised 6" addressable fire bell for wall mounting to EE Detail as Menvier or approved equivalent
	Fire alarm photoelectric smoke detector to EE Detail as Menvier or approved equivalent
	Fire alarm rate of rise heat detector to EE Detail as Menvier or approved equivalent
	Bullet CCTV Camera to EE Details
	Fixed Dome CCTV Camera to EE Details
	PTZ CCTV Camera to EE Details
	Access Control Door Conroller to EE Details
	Access Control Switch to EE Details
	Fire alarm control panel

GENERAL NOTES

- 1) All conduits shall be black rigid super high impact heavy gauge class 'A' PVC
- 2) Conduit shall be installed buried in building fabric except when run on wooden or metal surface when they will be installed surface supported with saddles every 600mm.
- 3) All fire alarm cables used to be fire proof
- 4) Fire alarm cables to be segregated from the cables of other electrical systems.

REVISIONS SIGN DATE APPROVED

DESIGN REVIEW AND SUPERVISION BY:



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Project

IMMEDIATE WATER AND SANITATION WORKS; FOR GARISSA WATER AND SEWERAGE COMPANY AND DADAAB HOST COMMUNITIES IN GARISSA COUNTY.

Scale(s) 1:75 Date: AUGUST 2021

Dwg. No. **WS 927/GWSC/ES/E/01**

Design by: I.M.O	Drawn by: I.M.O
Sign.....	Sign.....
Checked by: J.J.M	Approved by: R.N
Sign.....	Sign.....

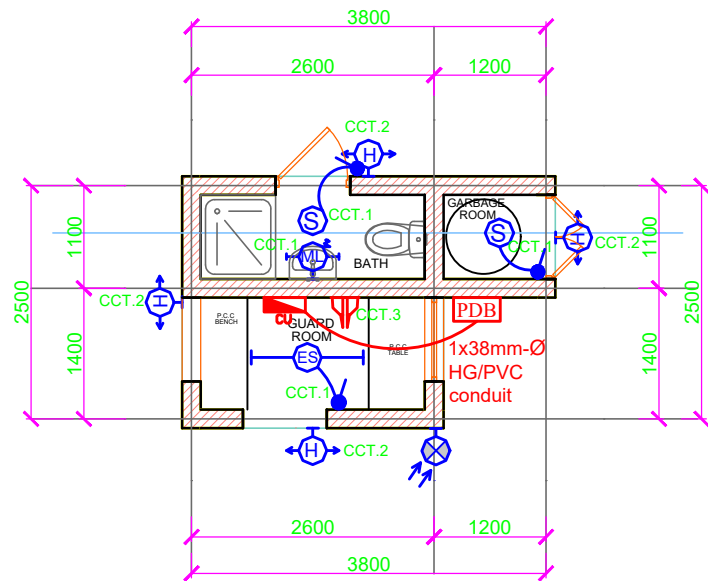
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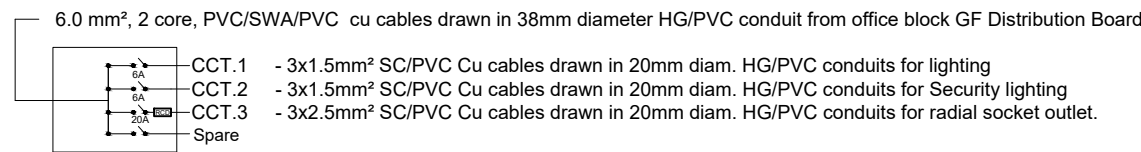
GARISSA WATER AND SEWERAGE COMPANY
P.O Box 1088-70100, Garissa,Kenya

CONTRACT NO:	
PROJECT MANAGER DATE	ENGINEER DATE
Sign.....	Sign.....
DWG. Title:	

ELECTRICAL SYMBOLS



a) GATE HOUSE LIGHTING & POWER LAYOUT



b) 4-WAY SPN CONSUMER UNIT - WIRING SCHEMATIC FOR GATEHOUSE

ELECTRICAL INSTALLATION SYMBOLS	
LEGEND	
ITEM	DESCRIPTION
	one/two/three gang one way plastic moulded switch as Crabtree or approved equivalent
	one/two/three gang two way plastic moulded switch as Crabtree or approved equivalent
	one/two gang one way splash proof switch as crabtree or approved equivalent
	intermediate/dimmer switch as Crabtree or approved equivalent
	15A splash proof white socket outlet as Crabtree or approved equivalent
	13A single/twin switched plastic moulded socket outlet plates as Crabtree or approved equivalent
	15A/20A DP switch as Crabtree or approved equivalent
	Dual data/telephone outlet point as Crabtree or approved equivalent
	television outlet point as Crabtree or approved equivalent
	5W, 100 mm diameter Low Voltage LED downlight with warm white output light suitable for recessed installation in standard ceiling as Maximus or approved equivalent
	8W, 150 mm diameter Low Voltage LED downlight with warm white output light suitable for recessed installation in standard ceiling as Maximus or approved equivalent
	12W, 200 mm diameter Low Voltage LED downlight with warm white output light suitable for recessed installation in standard ceiling as Maximus or approved equivalent
	Ditto but moist and dust proof to EE approval
	53W, 220-240V, 50/60Hz, 600x600mm Recessed LED Panel Light c/w high brightness polished aluminium Louver as LUG cat. No. 060311.5L03B.311 or approved equivalent
	1200mm, IP65 rated dust and moisture resistant fluorescent fitting with injection moulded GRP Canopy and Polycarbonate diffuser and stainless steel toggles complete with 1 x 18W T8 LED Tube lamp, day light as Thorn Aquaproof or approved equivalent
	1260x140x90 (LxWxH) mm, 130-300V, V, 50/60Hz, made of White polycarbonate body, Splash proof, IP65 rated with 32W, 1xLED ZVEI/ILCOS: LED/LED lamp (day light). To have direct, symmetric light distribution as ABB cat. Stanilite- Batter LED FBWAC35L-mains or approved equivalent
	Standard circular high bay luminaire, IP65, with polycarbonate body and white trim polycarbonate body and trim in white Polycarbonate opal diffuser and LED drivers for 90W LED lamps As Phillips or approved equivalent
	Surface mounted bulkhead with die cast aluminium body and opal polycarbonate diffuser, IP65, oval shape with visor complete with LED lamps as Thorn Roller
	600mm, Slim section fluorescent batten fitting with acrylic reeded diffuser and three position polycarbonate end-caps, IP 65 rated, complete with 12W, 250 mm diameter Low Voltage LED lamps as Thorn Arrowalim
	3W LED PCB, 4500K LED light source, Impact resistant polycarbonate diffuser and base on bulkhead for non-maintained emergency light with 3 hour minimum emergency duration as manufactured by Anselto engineers approvals or approved equivalent.
	2.5W, 6500K LED light source, IP65 Self-contained single/double sided LED EXIT sign with 2.5W LED lamp for non-maintained emergency lighting for 3 hour duration as manufactured by Anselto engineers approvals or approved equivalent.
	8W, 100 mm diameter Low Voltage LED downlight with warm white output light suitable for recessed installation in standard ceiling as Maximus or approved equivalent
	200mm diameter, 6.5w, (day light), Operating Voltage/Frequency/ High quality longtime LED lamps, IP65 rated made of Dark Gray die aluminium housing and white polycarbonate \ diffuser , suitable for wall mounting as Philips SMART LED WALL MOUNT Cat. No. BWS150 or approved equivalent
	Circular junction box complete with plastic cover
	45A DP cooker control unit with pilot light and an auxiliary 13A socket outlet as Crabtree or approved equivalent
	415V, 100A 4-Pole contactor auxiliary block as Telemecanique or approved equivalent
	5A photocell as Thorn QPK or approved equivalent
	18AWG Telephone/TV draw-in box to details
	18AWG power draw-in box to details
	Meter board to EE detail
	25mm X 3mm thick bare copper tape as Furse P. No. TC030
	2000mm by 15mm diameter copper rod as Furse P.No. RA240 Complete with: Copper multiple point as Furse P. No. RA 600 and Copper ridge saddle as Furse P No. SD115
	Copper Oblong test clamp as Furse P NO CN 105
	Earthing
	SP/DP/TP MCB's with an integral 30mA Residualcurrent operated circuit-breaker with integral overcurrent protection(RCBO's) as crabtree or approved equivalent
	Fire alarm manual call point to EE Detail as Menvier or approved equivalent
	Fire alarm 24V dc polarised 6" addressable fire bell for wall mounting to EE Detail as Menvier or approved equivalent
	Fire alarm photoelectric smoke detector to EE Detail as Menvier or approved equivalent
	Fire alarm rate of rise heat detector to EE Detail as Menvier or approved equivalent
	Bullet CCTV Camera to EE Details
	Fixed Dome CCTV Camera to EE Details
	PTZ CCTV Camera to EE Details
	Access Control Door Controller to EE Details
	Access Control Switch to EE Details
	Fire alarm control panel

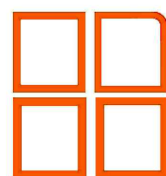
GENERAL NOTES

- 1) All conduits shall be black rigid super high impact heavy gauge class 'A' PVC
- 2) Conduit shall be installed buried in building fabric except when run on wooden or metal surface when they will be installed surface supported with saddles every 600mm.
- 3) All fire alarm cables used to be fire proof
- 4) Fire alarm cables to be segregated from the cables of other electrical systems.

REVISIONS

NO.	REVISIONS	SIGN	DATE	APPROVED

DESIGN REVIEW AND SUPERVISION BY:



Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

Project

**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s)	1:75	Date:	AUGUST 2021
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Dwg. No. **WS 927/GWSC/GH/E/01**

Design by: I.M.O	Drawn by: I.M.O
Sign.....	Sign.....
Checked by: J.J.M	Approved by: R.N
Sign.....	Sign.....

CLIENT:



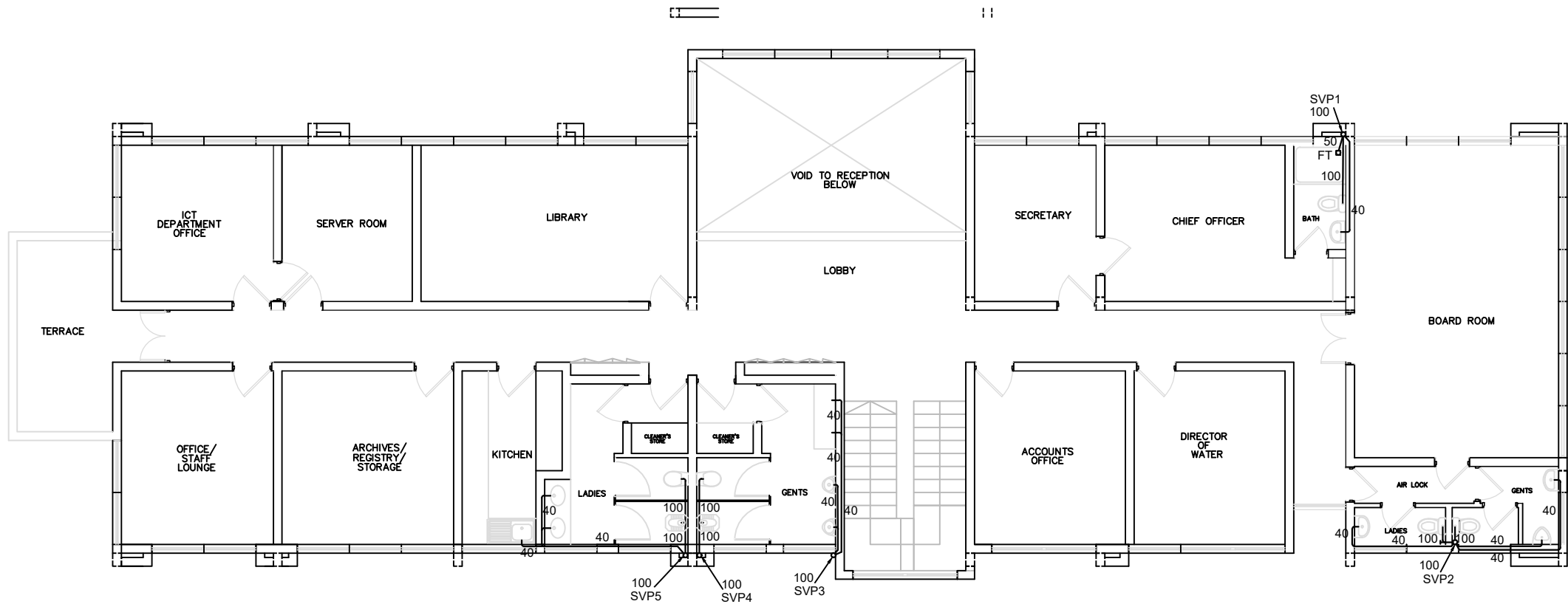
**GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa,Kenya

CONTRACT NO:

PROJECT MANAGER	DATE	ENGINEER	DATE
Sign.....		Sign.....	

DWG. Title:

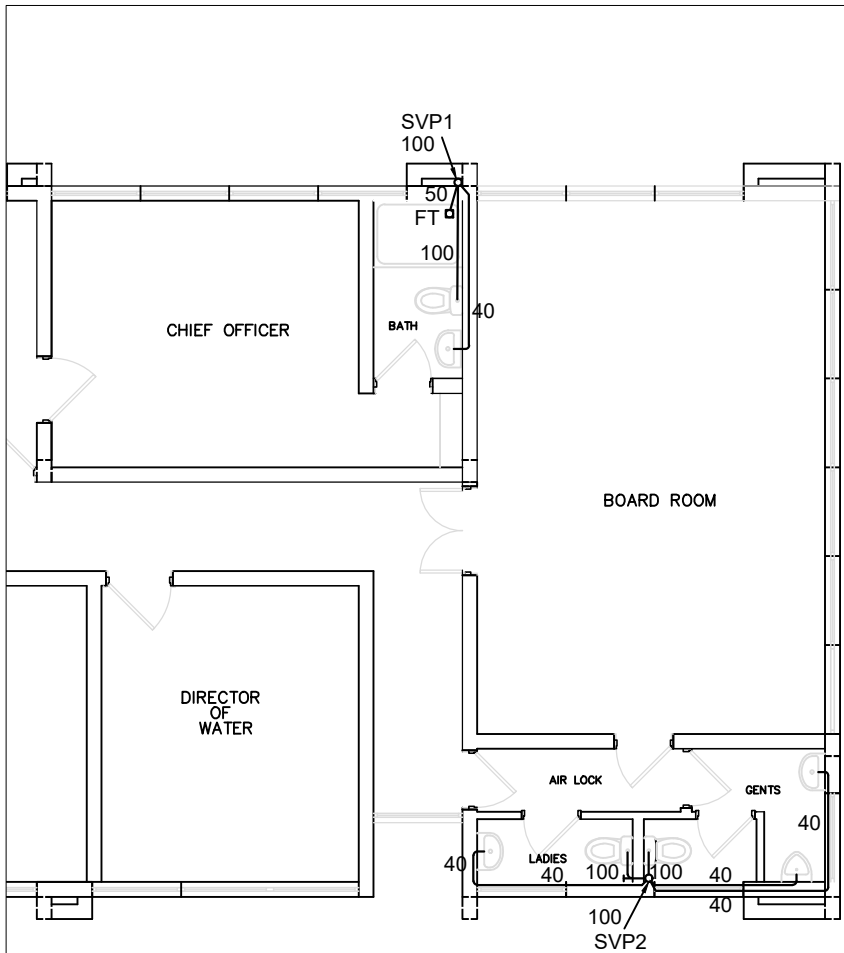
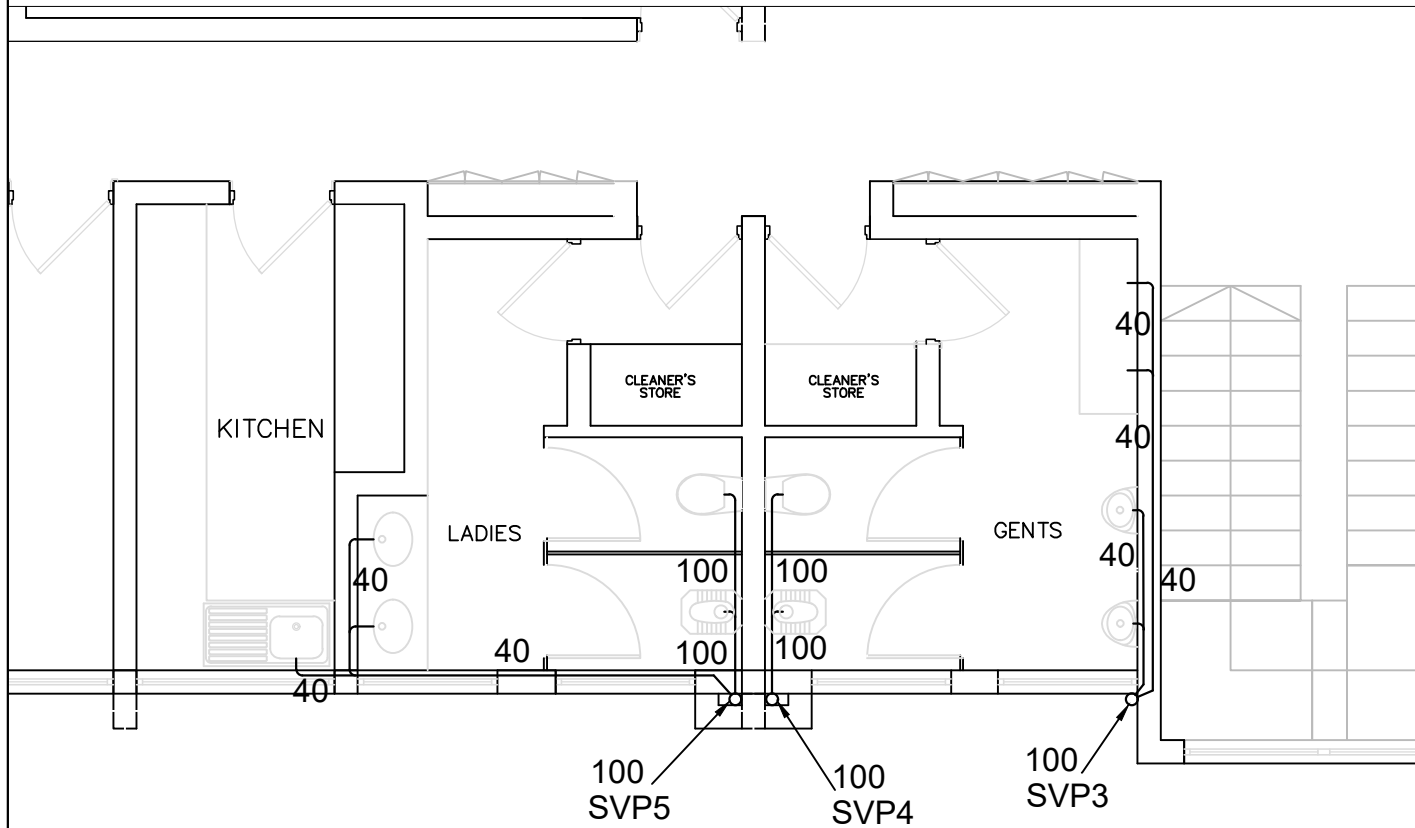
GATEHOUSE- LIGHTING AND POWER LAYOUT





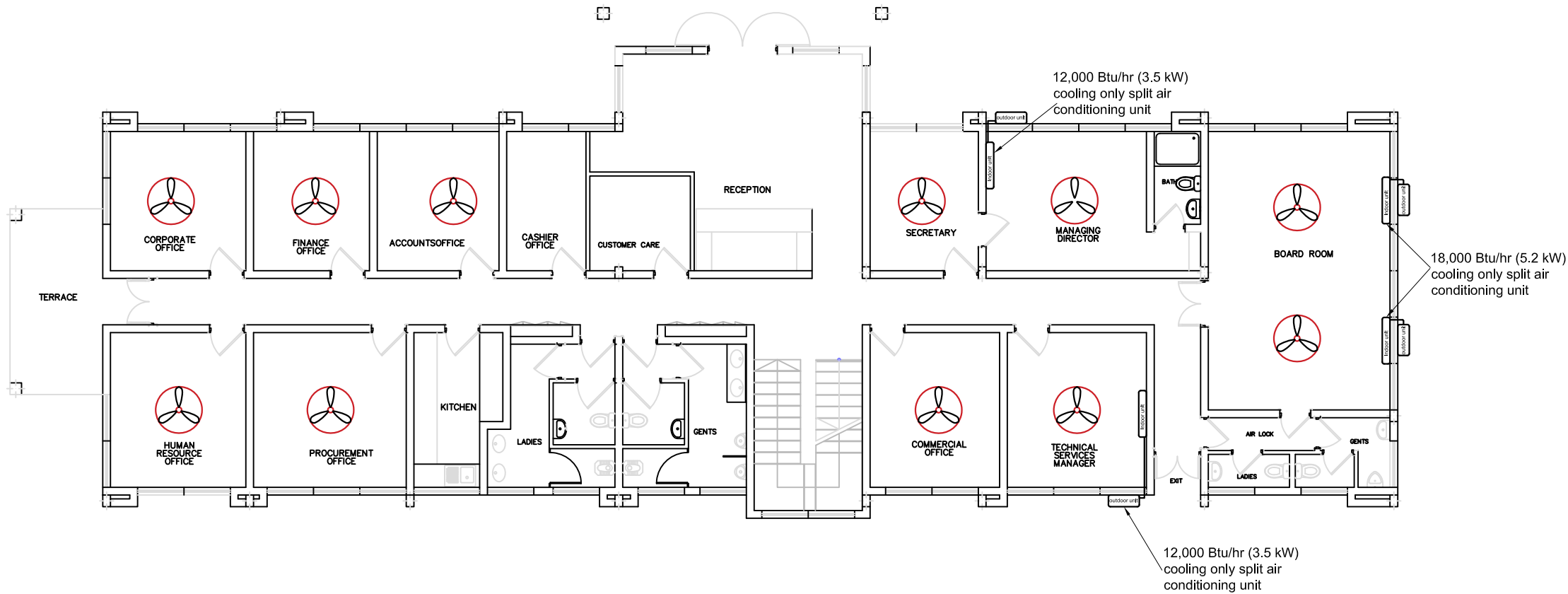
FIRST FLOOR DRAINAGE

LEGEND FOR DRAINAGE WORKS

- SVP - SOIL AND VENT PIPE
- VP - VENT PIPE
- WVP - WASTE AND VENT PIPE
- FT - FLOOR TRAP
- GT - GULLY TRAP
- IC - INSPECTION CHAMBER
- MH - MANHOLE
- RE - RODDING EYE



REVISIONS		SIGN	DATE	APPROVED
E				
D				
C				
B				
A				
DESIGN REVIEW AND SUPERVISION BY: Runji Consulting Group Ltd Engineering & Project Management. 3, Kindaruma Road (Off Ngong Road) P. O. Box 68053-00200 Nairobi Tel. (020) 2717213/4				
<div></div> <div>Project</div>				
IMMEDIATE WATER AND SANITATION WORKS; FOR GARISSA WATER AND SEWERAGE COMPANY AND DADAAB HOST COMMUNITIES IN GARISSA COUNTY.				
Scale(s) AS SHOWN		Date: AUGUST, 2021		
Dwg. No. WS 927/				
Design by: E.M.N.		Drawn by: E.M.N.		
Sign.....		Sign.....		
Checked by: JJM		Approved by: RN		
Sign.....		Sign.....		
CLIENT: <div><div>GARISSA WATER AND SEWERAGE COMPANY P.O Box 1088-70100, Garissa,Kenya</div></div>				
CONTRACT NO:				
PROJECT MANAGER		DATE	ENGINEER	DATE
Sign.....			Sign.....	
DWG. Title: OFFICE BLOCK FIRST FLOOR DRAINAGE				



GROUND FLOOR AIR CONDITIONING

LEGEND FOR AIR CONDITIONING

	1200mm diameter 3-blade ceiling fan 240v, 55w, 3-speed, remote control, metal construction
	12,000 Btu/hr (3.5 kW) cooling only, remote control, split air conditioning unit, 240v, 1.5 kW.
	18,000 Btu/hr (5.2 kW) cooling only, remote control, split air conditioning unit, 240v, 2.2 kW.

REVISIONS		SIGN	DATE	APPROVED
E				
D				
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A				

DESIGN REVIEW AND SUPERVISION BY:
 **Runji Consulting Group Ltd**
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

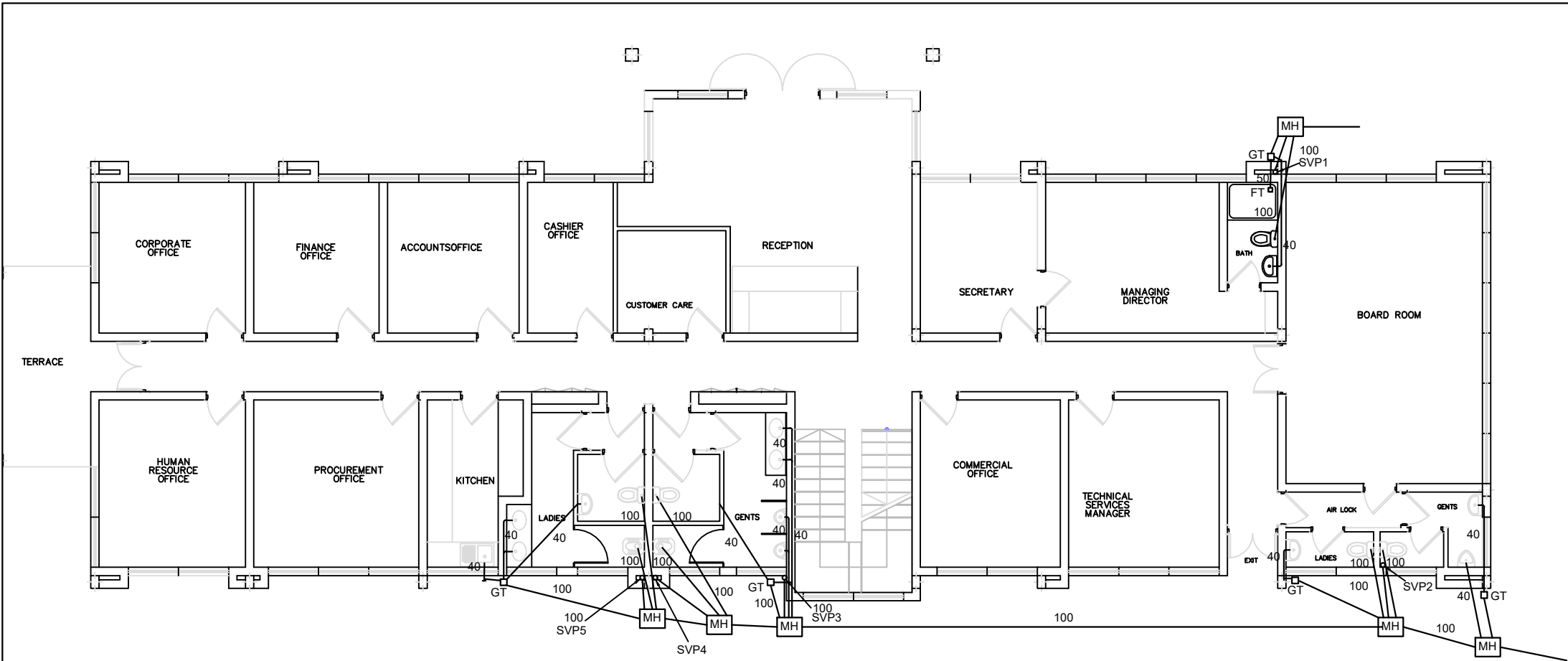
Project
**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s) AS SHOWN	Date: AUGUST, 2021
Dwg. No. WS 927/	
Design by: E.M.N.	Drawn by: E.M.N.
Sign.....	Sign.....
Checked by: JJM	Approved by: R.N
Sign.....	Sign.....

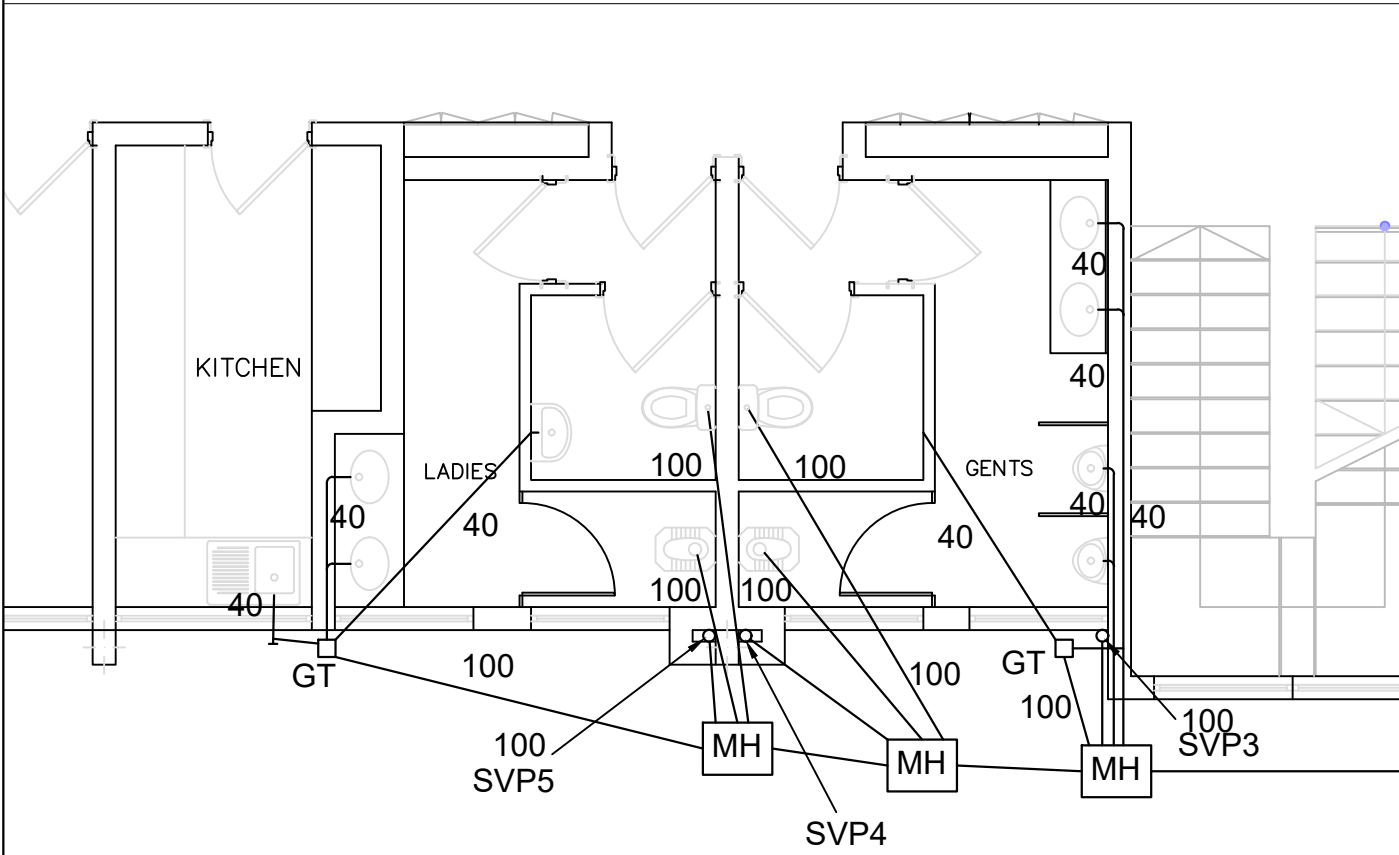
CLIENT:
 **GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa, Kenya

CONTRACT NO: -	
PROJECT MANAGER	DATE
ENGINEER	DATE
Sign.....	Sign.....

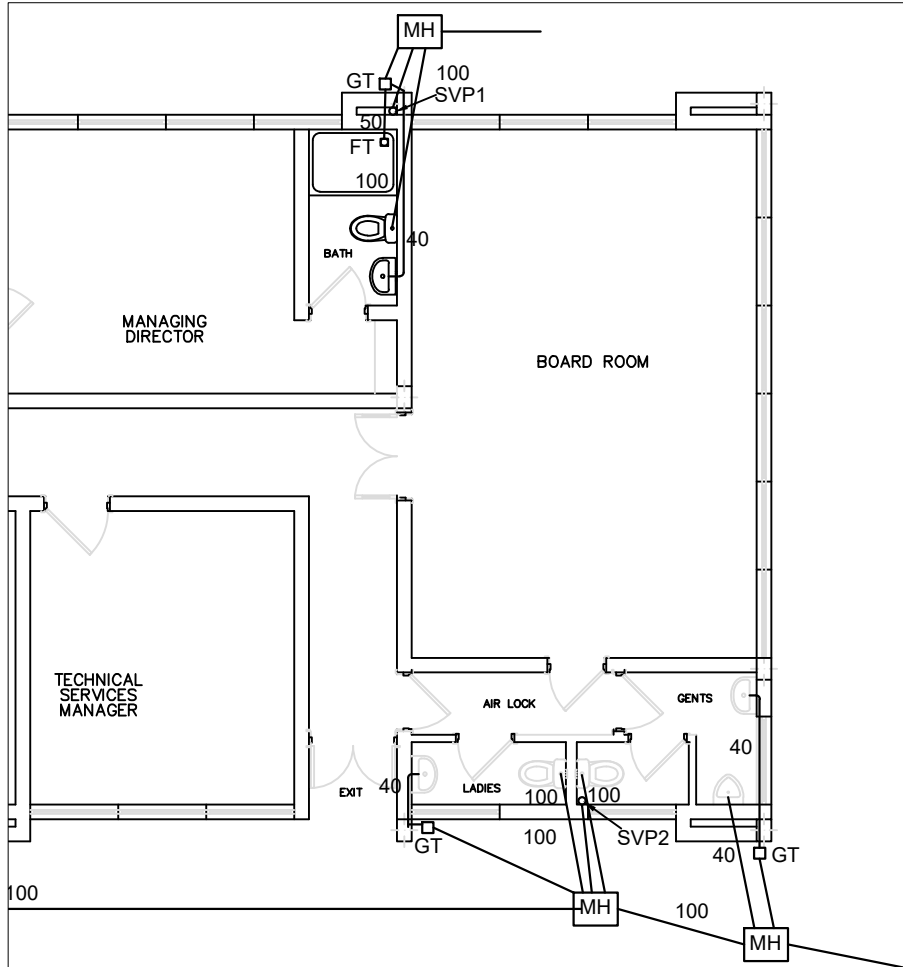
DWG. Title:
**OFFICE BLOCK
GROUND FLOOR AIR CONDITIONING**



GROUND FLOOR DRAINAGE



GROUND FLOOR DRAINAGE



LEGEND FOR DRAINAGE WORKS

- SVP - SOIL AND VENT PIPE
- VP - VENT PIPE
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- GT - GULLY TRAP
- IC - INSPECTION CHAMBER
- MH - MANHOLE
- RE - RODDING EYE

REVISIONS		SIGN	DATE	APPROVED
E				
D				
C				
B				
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DESIGN REVIEW AND SUPERVISION BY:
Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
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Project
**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s) AS SHOWN Date AUGUST, 2021


Dwg. No. **WS 927/**

Design by: E.M.N. Drawn by: E.M.N.

Sign..... Sign.....

Checked by: JJM Approved by: R.N

Sign..... Sign.....

CLIENT:
 **GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa, Kenya

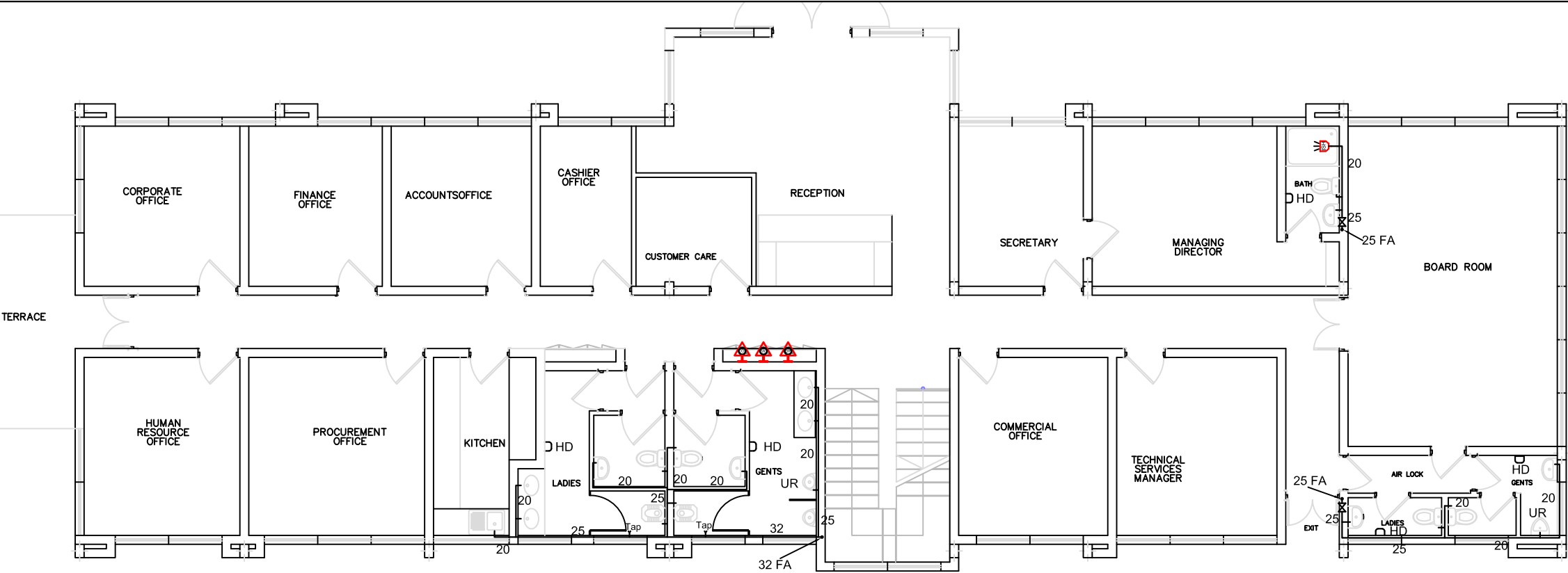
CONTRACT NO:

PROJECT MANAGER DATE ENGINEER DATE

Sign..... Sign.....

DWG. Title:

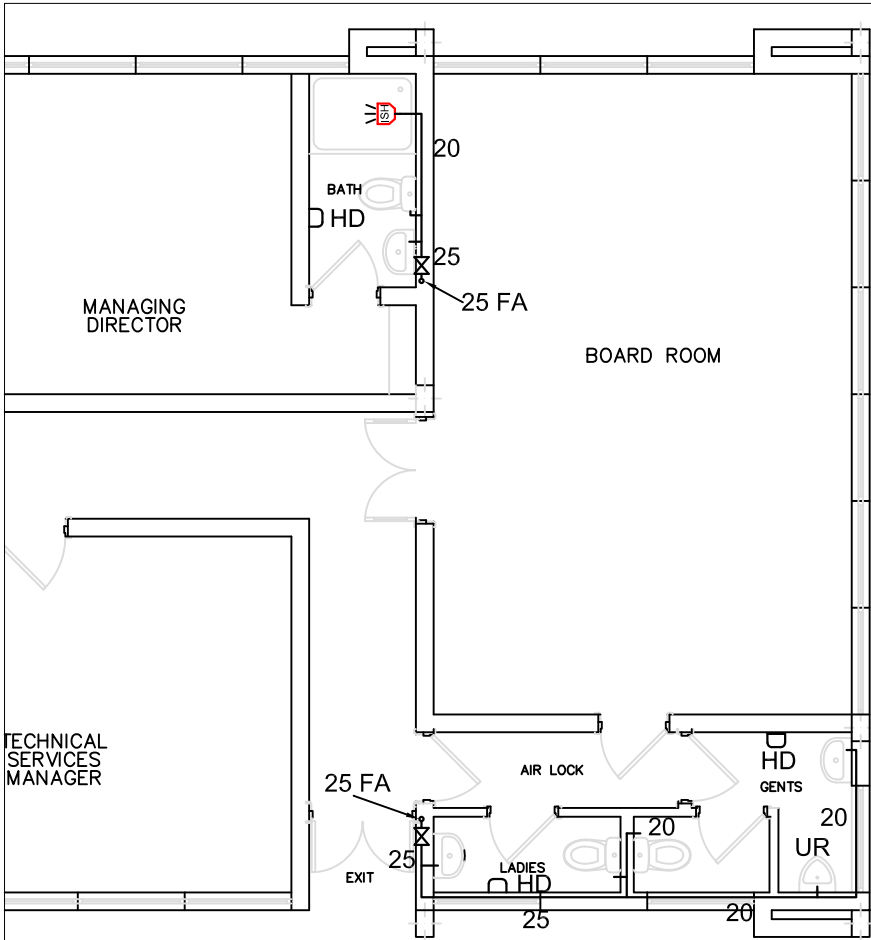
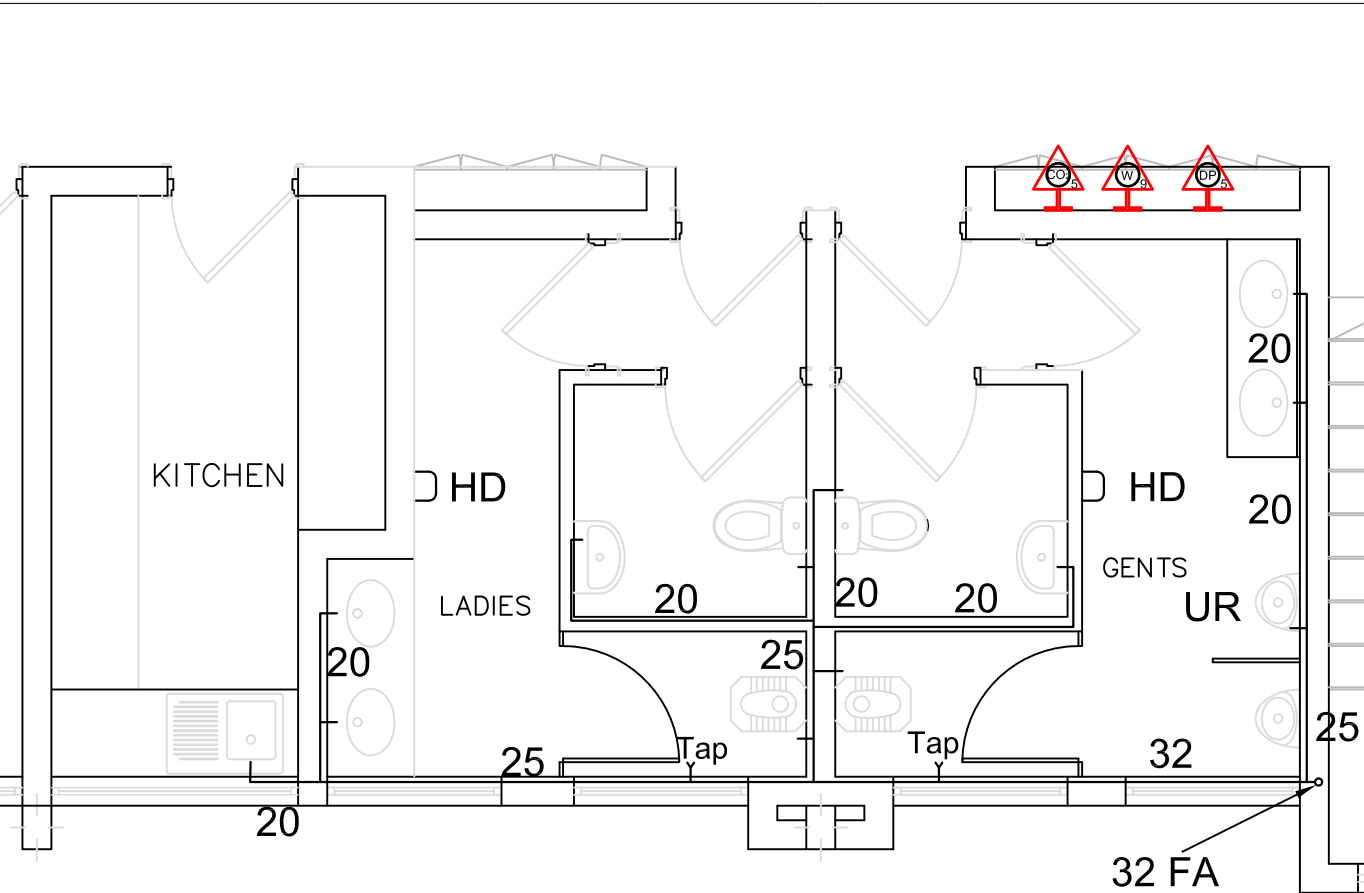
**OFFICE BLOCK
GROUND FLOOR DRAINAGE**





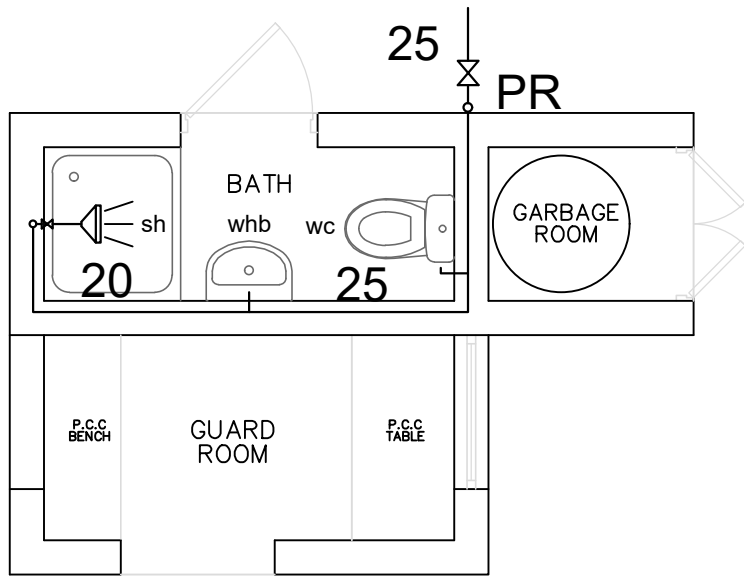
LEGEND FOR PLUMBING WORKS

- COLD WATER PIPE
- HOT WATER PIPE
- GATE VALVE
- NON-RETURN VALVE
- UNION
- CWS COLD WATER SERVICE
- HWS HOT WATER SERVICE
- WHB WASH HAND BASIN
- WC WATER CLOSET
- SH SHOWER
- ur URINAL
- W/M WASHING MACHINE
- TA TO ABOVE
- TB TO BELOW
- FA FROM ABOVE
- FB FROM BELOW
- RM RISING MAINS
- PR PIPE RISE
- PD PIPE DROP
- OF OVERFLOW PIPE
- SHOWER
- INSTANT SHOWER HEATER
- WATER METER
- 9 KG. WATER/CO₂ FIRE EXTINGUISHER
- 5 KG. CO₂ FIRE EXTINGUISHER
- 5 KG. DRY POWDER FIRE EXTINGUISHER
- HD HAND DRYER

GROUND FLOOR PLUMBING



REVISIONS		SIGN DATE APPROVED		
E				
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DESIGN REVIEW AND SUPERVISION BY:				
<div> Runji Consulting Group Ltd Engineering & Project Management. 3, Kindaruma Road (Off Ngong Road) P. O. Box 68053-00200 Nairobi Tel. (020) 2717213/4</div>				
Project				
IMMEDIATE WATER AND SANITATION WORKS; FOR GARISSA WATER AND SEWERAGE COMPANY AND DADAAB HOST COMMUNITIES IN GARISSA COUNTY.				
Scale(s)	AS SHOWN		Date:	AUGUST, 2021
Dwg. No.	WS 927/			
Design by: E.M.N.		Drawn by: E.M.N.		
Sign.....		Sign.....		
Checked by: J.M.		Approved by: R.N.		
Sign.....		Sign.....		
CLIENT:				
<div> GARISSA WATER AND SEWERAGE COMPANY P.O Box 1088-70100, Garissa,Kenya</div>				
CONTRACT NO:				
PROJECT MANAGER		DATE	ENGINEER	DATE
Sign.....		Sign.....		
DWG. Title:				
OFFICE BLOCK GROUND FLOOR PLUMBING				



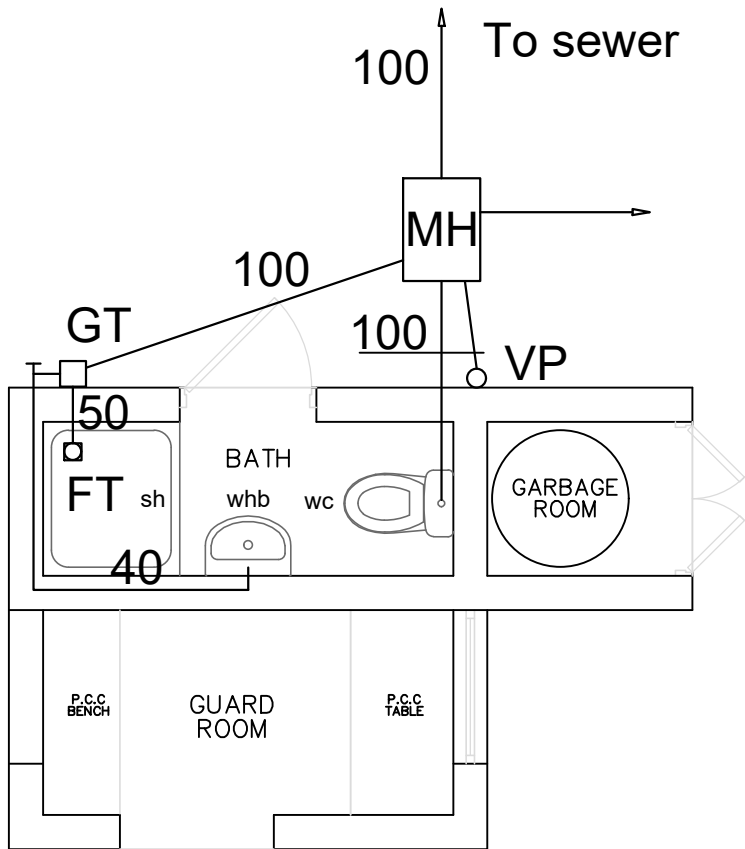
GATE HOUSE PLUMBING

LEGEND FOR PLUMBING WORKS

- COLD WATER PIPE
- HOT WATER PIPE
- GATE VALVE
- NON-RETURN VALVE
- UNION
- CWS COLD WATER SERVICE
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- 5 KG. CO2 FIRE EXTINGUISHER
- 5 KG. DRY POWDER FIRE EXTINGUISHER
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LEGEND FOR DRAINAGE WORKS

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- VP - VENT PIPE
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GATE HOUSE DRAINAGE

REVISIONS SIGN DATE APPROVED

E				
D				
C				
B				
A				

DESIGN REVIEW AND SUPERVISION BY:
Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

Project
**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s) AS SHOWN	Date: AUGUST, 2021
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Dwg. No. **WS 927/**

Design by: E.M.N.	Drawn by: E.M.N.
Sign.....	Sign.....
Checked by: J.M	Approved by: R.N
Sign.....	Sign.....

CLIENT:

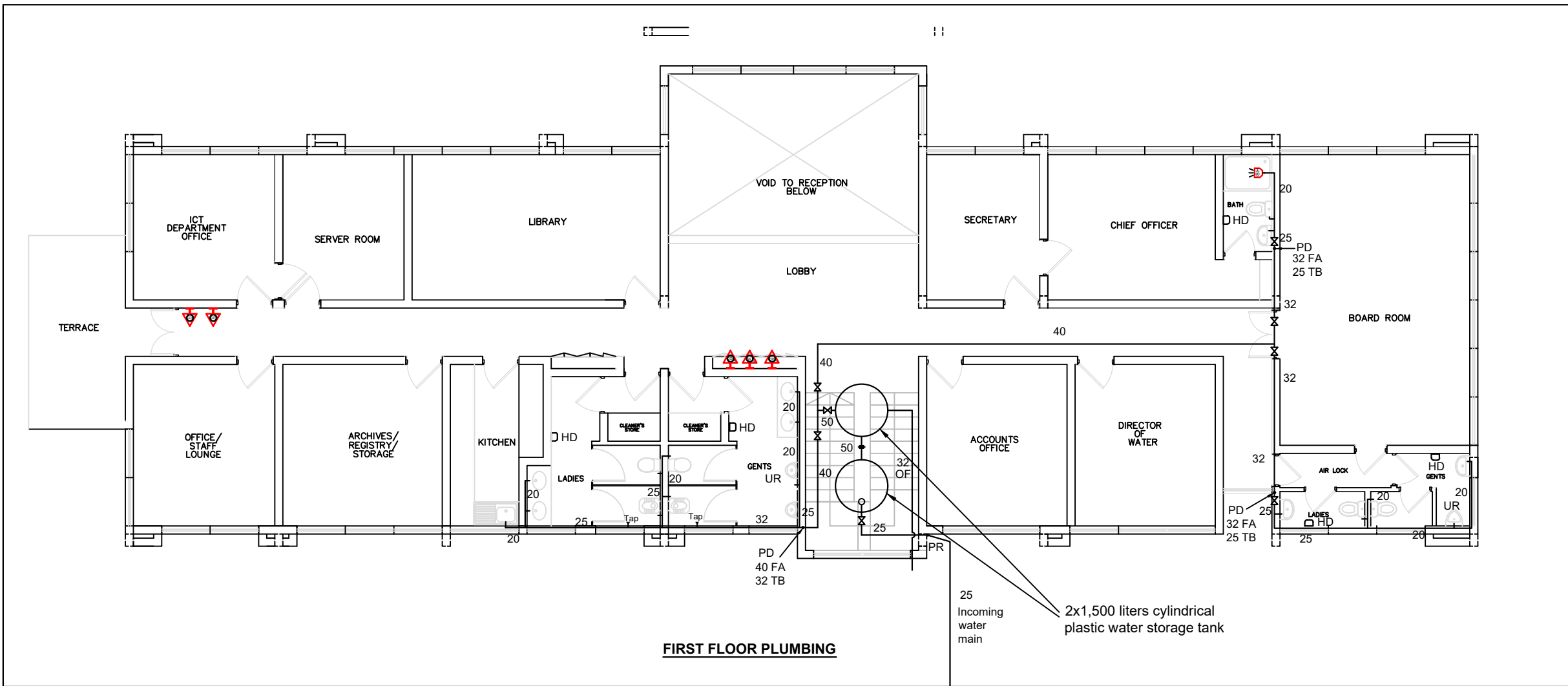
**GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa, Kenya

CONTRACT NO.:

PROJECT MANAGER	DATE	ENGINEER	DATE
Sign.....		Sign.....	

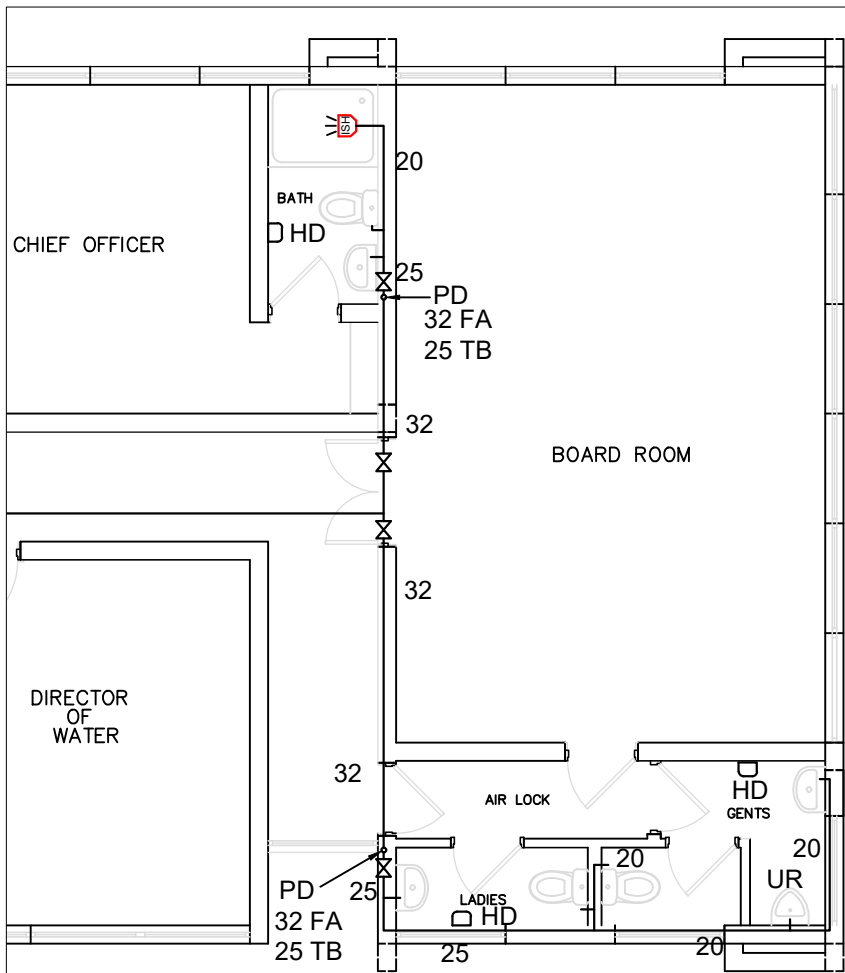
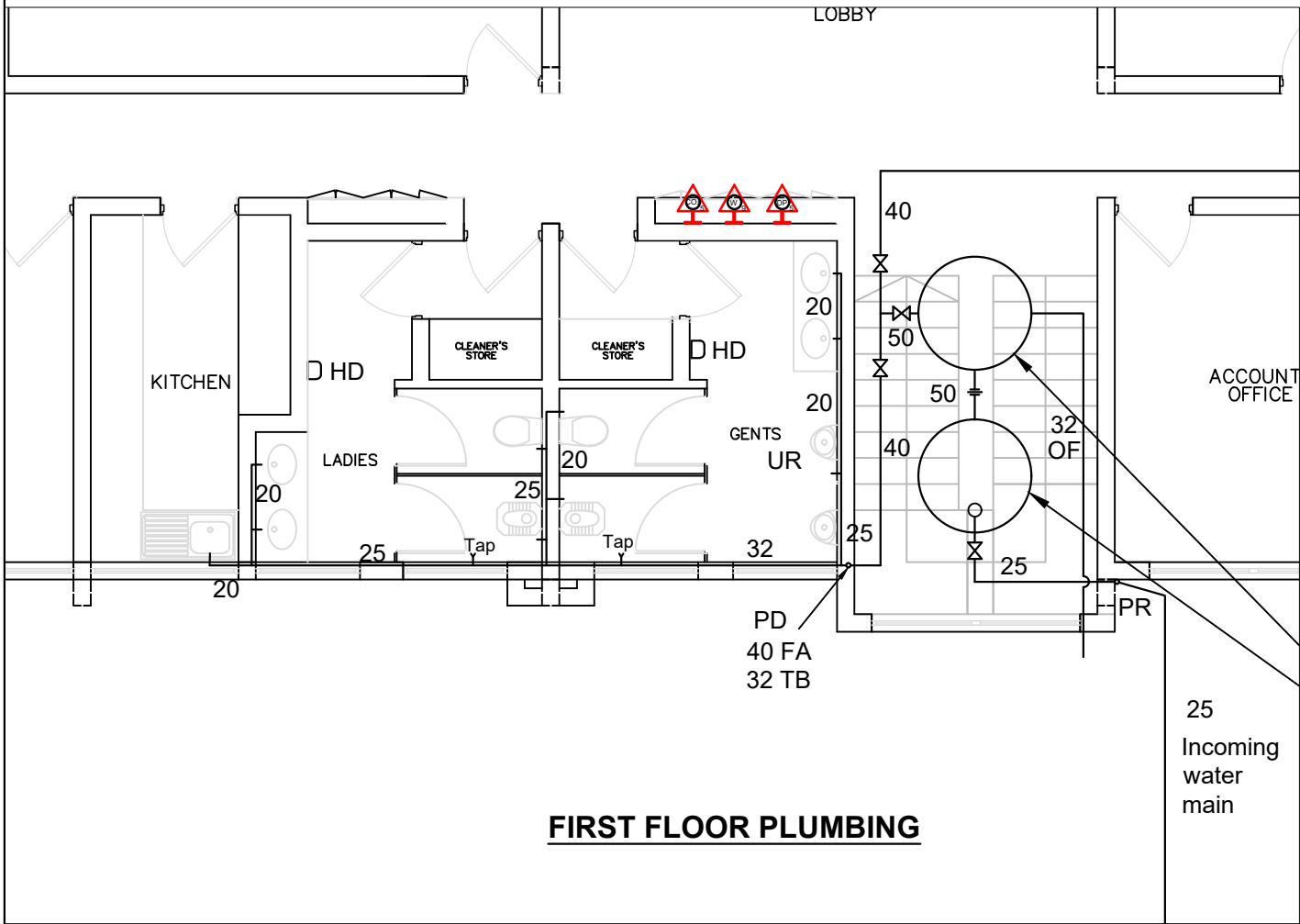
DWG. Title:

**GATE HOUSE
PLUMBING AND DRAINAGE**





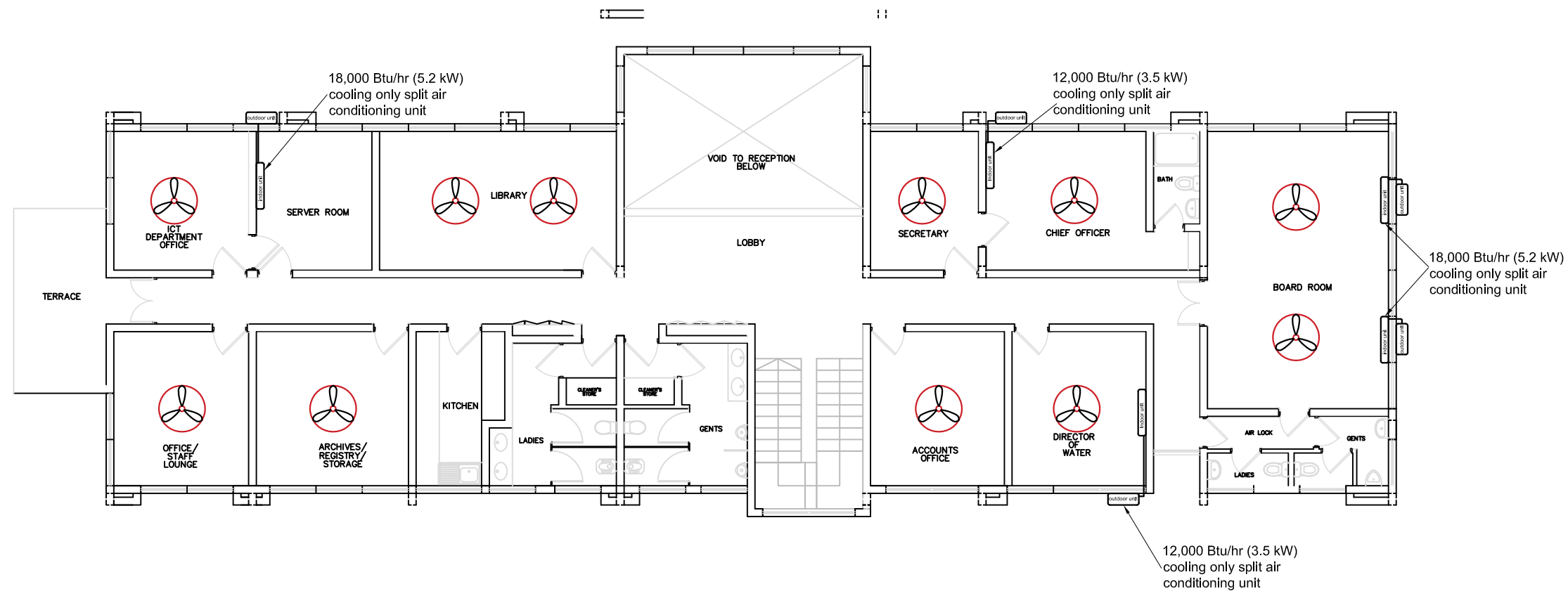
LEGEND FOR PLUMBING WORKS

- COLD WATER PIPE
- HOT WATER PIPE
- ⋈ GATE VALVE
- ⋈ NON-RETURN VALVE
- UNION
- CWS COLD WATER SERVICE
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- 5 KG. CO₂ FIRE EXTINGUISHER
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- HD HAND DRYER



REVISIONS		SIGN	DATE	APPROVED
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C				
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DESIGN REVIEW AND SUPERVISION BY:	
 Runji Consulting Group Ltd Engineering & Project Management. 3, Kindaruma Road (Off Ngong Road) P. O. Box 68053-00200 Nairobi Tel. (020) 2717213/4	
Project	
IMMEDIATE WATER AND SANITATION WORKS; FOR GARISSA WATER AND SEWERAGE COMPANY AND DADAAB HOST COMMUNITIES IN GARISSA COUNTY.	
Scale(s)	AS SHOWN
Date:	AUGUST, 2021
Dwg. No.	WS 927/
Design by: E.M.N.	Drawn by: E.M.N.
Sign.....	Sign.....
Checked by: J.M	Approved by: R.N
Sign.....	Sign.....
CLIENT:	
 GARISSA WATER AND SEWERAGE COMPANY P.O Box 1088-70100, Garissa, Kenya	
CONTRACT NO:	
PROJECT MANAGER	DATE
ENGINEER	DATE
Sign.....	Sign.....
DWG. Title:	
OFFICE BLOCK FIRST FLOOR PLUMBING	



Sign.

OFFICE BLOCK
FIRST FLOOR AIR CONDITIONING



- ## **GENERAL NOTES**
- 1) ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SHOWN.
 - 2) ALL SETTING OUT DIMENSIONS SHALL BE CROSS-CHECKED ON SITE AND ANY INCONSISTENCIES IMMEDIATELY REPORTED TO THE ENGINEER / ARCHITECT FOR THE NECESSARY ACTION.
 - 3) DEPTH TO FOUNDATION LEVEL SHALL BE DETERMINED ON SITE.
 - 4) CONCRETE STRENGTH TO BE CLASS 25 FOR ALL STRUCTURAL ELEMENTS
 - 5) MAXIMUM AGGREGATE SIZE FOR USE IN STRUCTURAL CONCRETE SHALL BE 20mm.
 - 6) CONCRETE COVER TO REINFORCEMENT STEEL TO BE: (I) FOUNDATION = 50mm. (II) COLUMNS = 40mm (III) BEAMS = 30mm. (IV) SLAB & STAIRCASE = 25mm.
 - 7) BLINDING TO BE CLASS 15 FOR ALL ELEMENTS
 - 8) ALL CONCRETE WORKS SHALL BE QUALITY CONTROLLED AND MECHANICALLY VIBRATED TO THE STRUCTURAL ENGINEER'S SATISFACTION.
 - 9) SHOP DRAWINGS MUST BE SUBMITTED IN GOOD TIME FOR APPROVAL BY THE ENGINEER BEFORE ASSEMBLY OF UNITS COMMENCE.
 - 10) BUILDING STONES TO HAVE A CRUSHING STRENGTH OF $\geq 8\text{N/mm}^2$
 - 11) DESIGN BEARING CAPACITY = 90kN/m^2

DESIGN REVIEW AND SUPERVISION BY:

Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s)	AS SHOWN	Date:	MAY. 2021
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Dwg. No. **WS 927/GWSC/OFF/STRUCT/01**

Design by: A.T.S	Drawn by: P.K.G
------------------	-----------------

Sign..... Sign.....

Checked by: L.K.W	Approved by: R.N
-------------------	------------------

CLIENT:

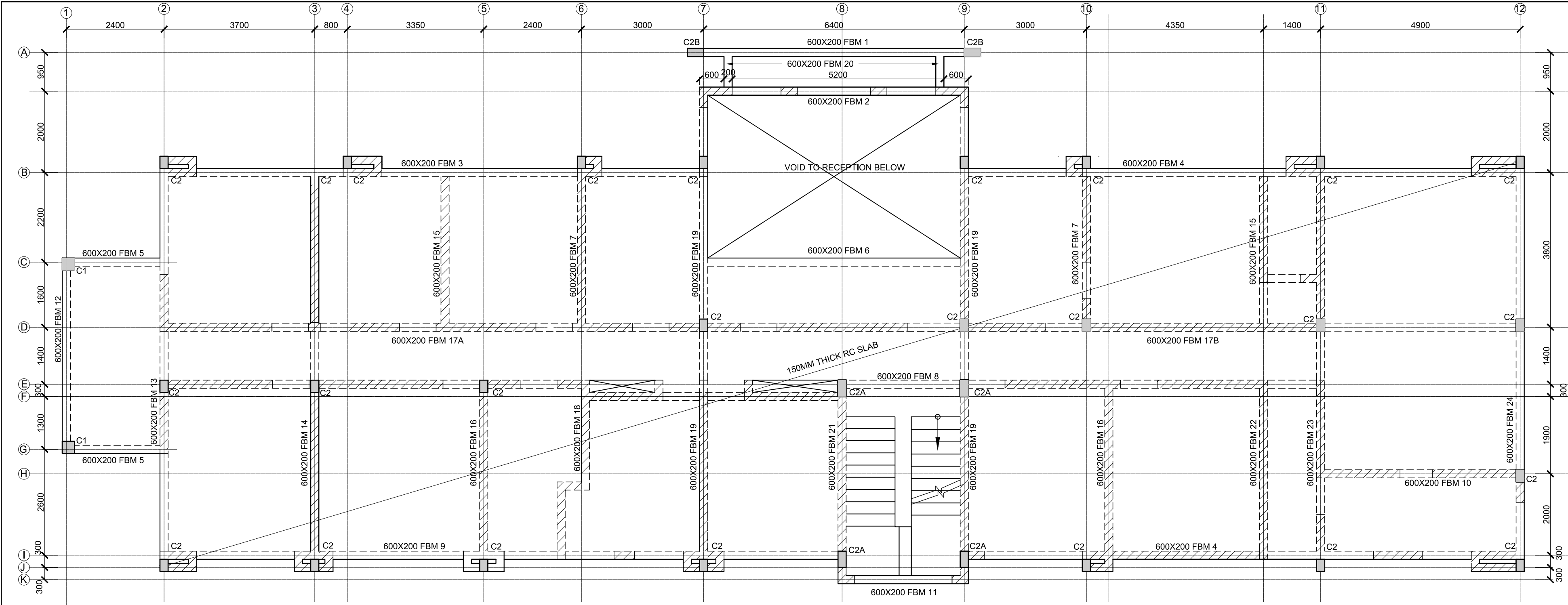
 **GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa,Kenya

CONTRACT NO:

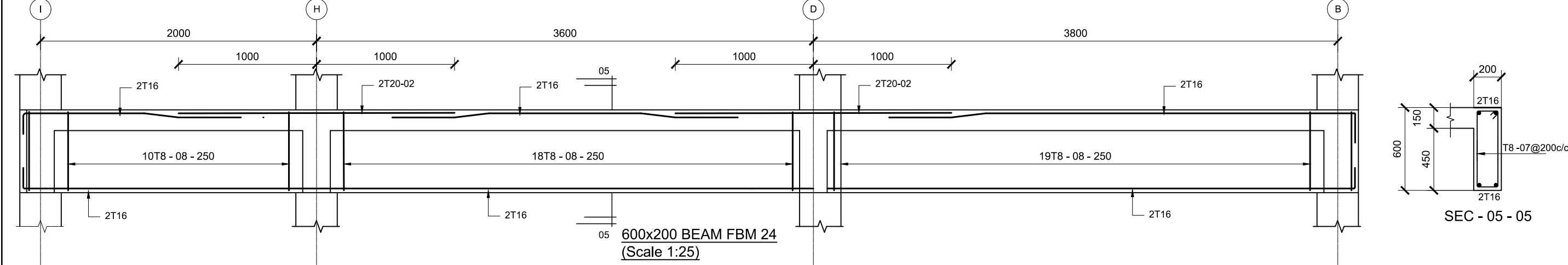
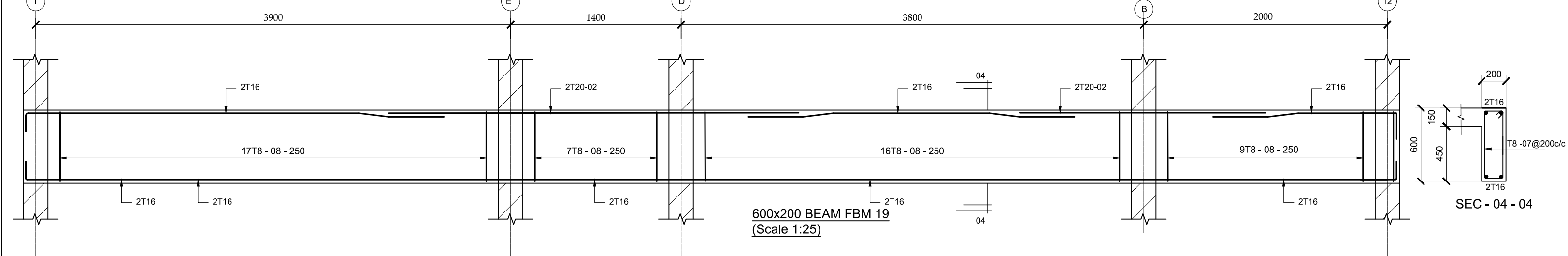
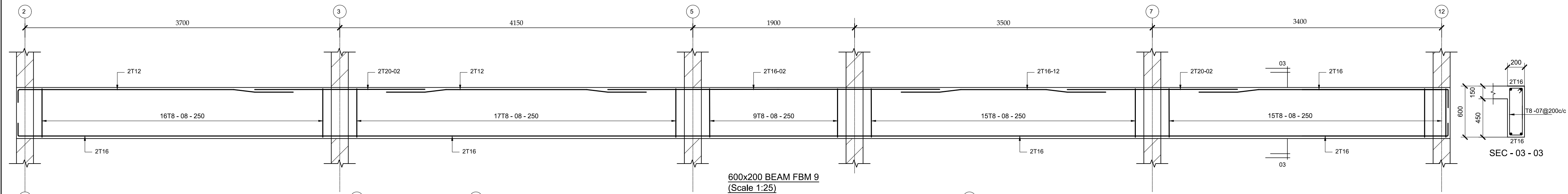
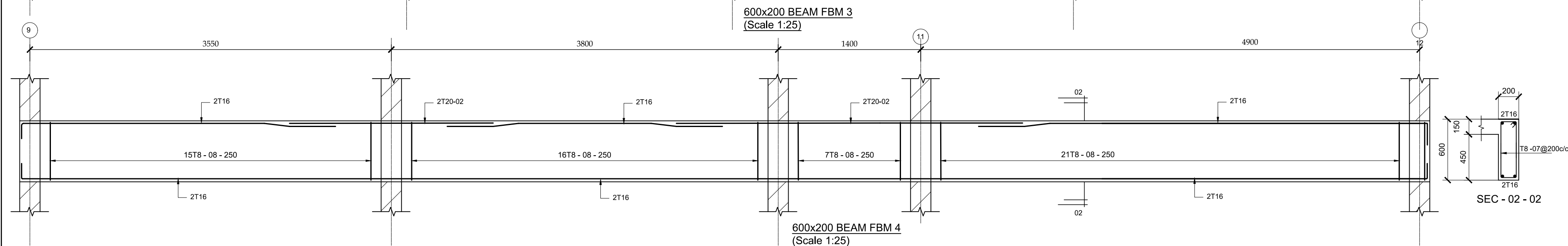
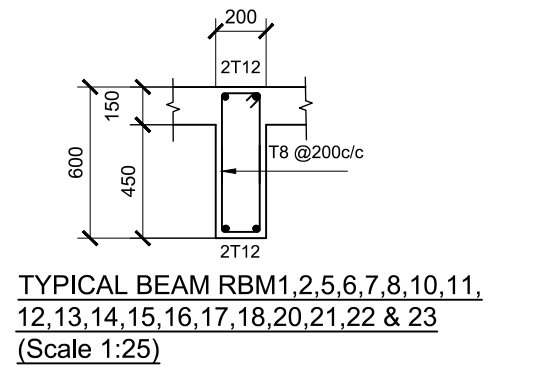
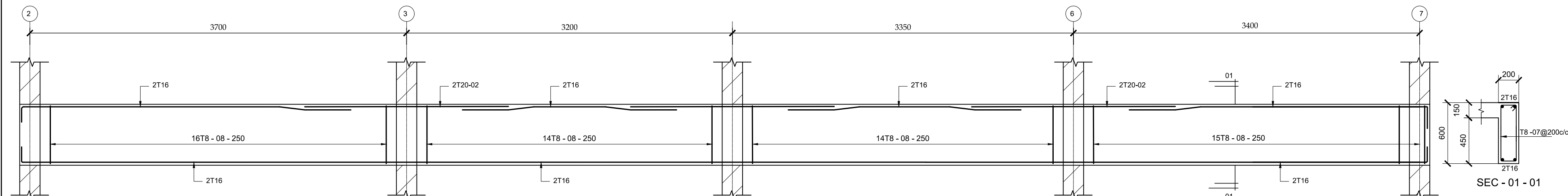
PROJECT MANAGER	DATE	ENGINEER	DATE
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Sign.....	Sign.....
DWG. Title:	

FOUNDATION AND FIRST FLOOR SLAB LAYOUT -
OFFICE BLOCK



FIRST FLOOR SLAB RC DETAILS (150mm THICK SLAB)
SCALE=1:75



GENERAL NOTES

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- 11) DESIGN BEARING CAPACITY = 90kN/m^2

REVISIONS SIGN DATE APPROVED

DESIGN REVIEW AND SUPERVISION BY:

Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

Project

**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s)

AS SHOWN

Date:

MAY 2021

Dwg. No.

WS 927/GWSC/OFF/STRUCT/02

Design by: A.T.S

Drawn by: P.K.G

Sign.....

Sign.....

Checked by: L.K.W

Approved by: R.N

Sign.....

Sign.....

CLIENT:



**GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa,Kenya

CONTRACT NO:

PROJECT MANAGER

DATE

ENGINEER

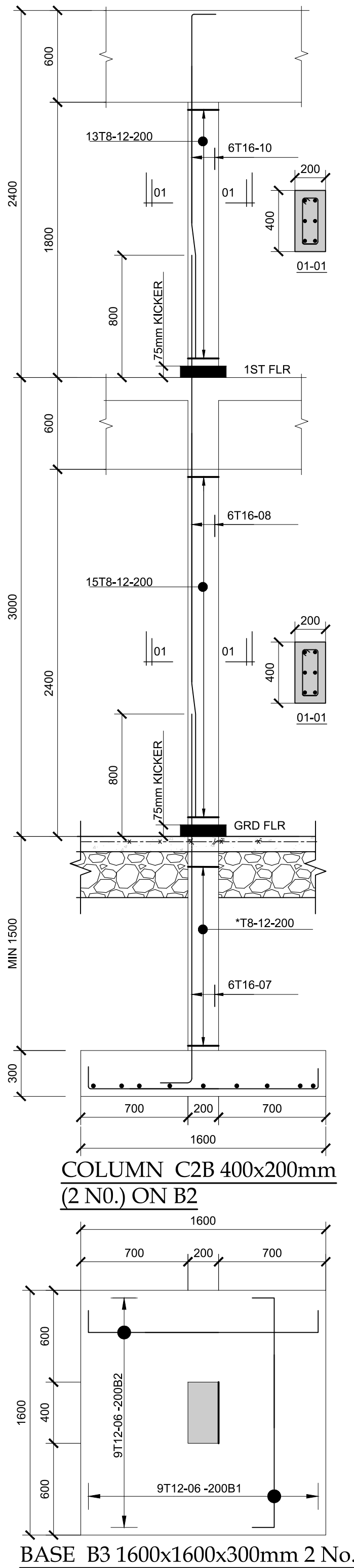
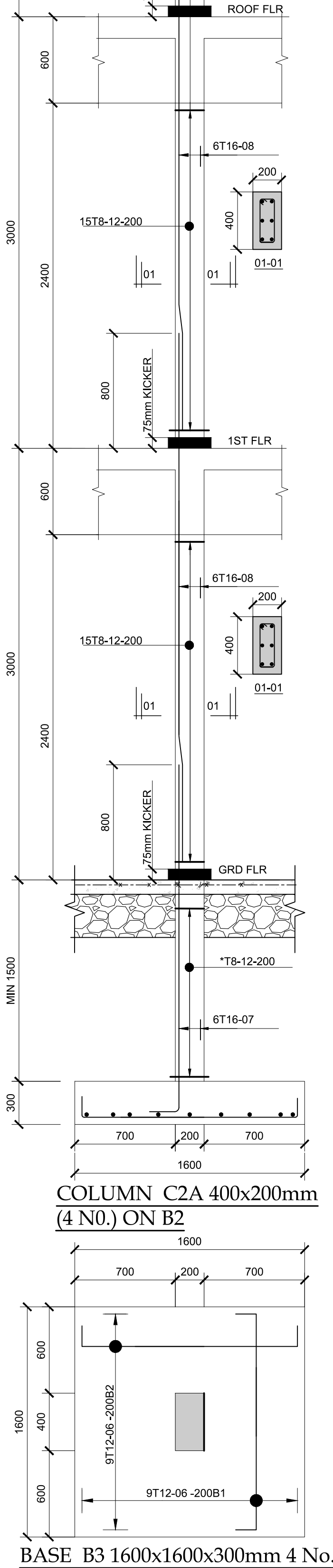
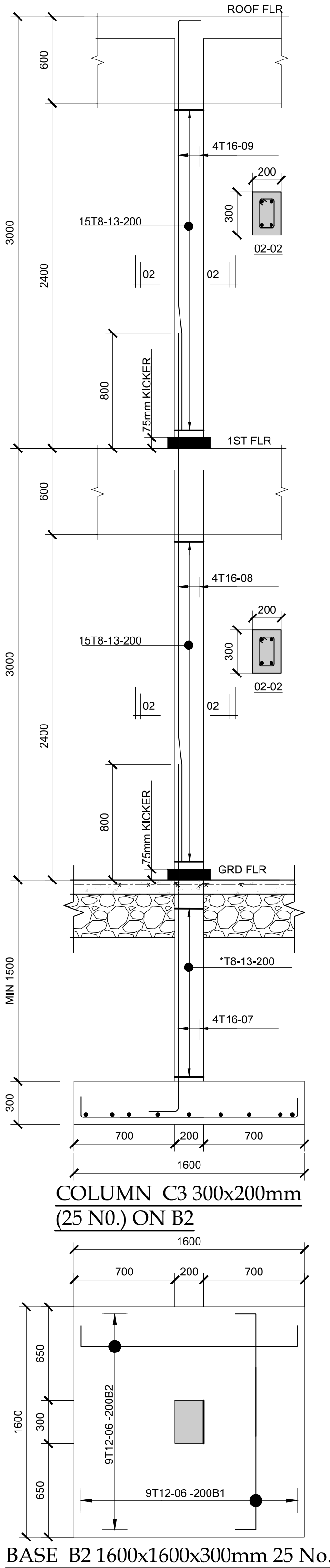
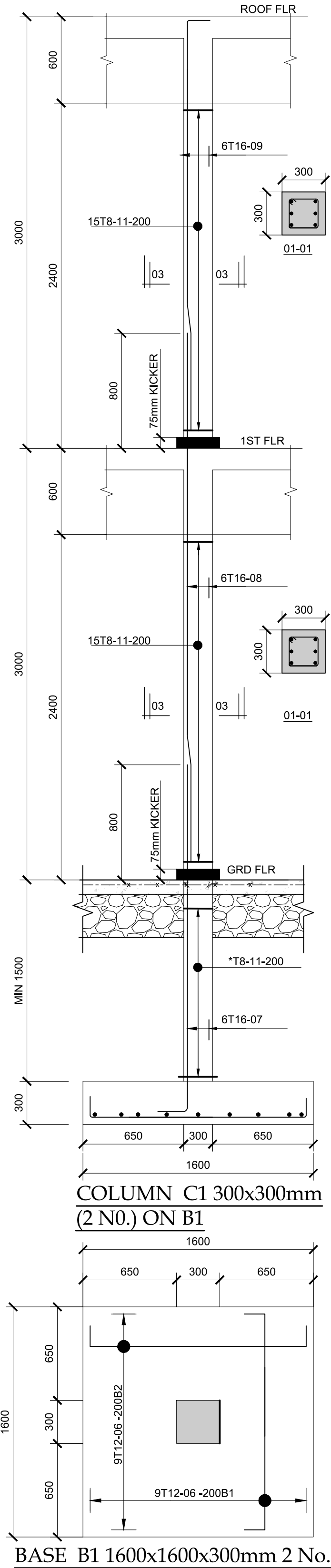
DATE

Sign.....

Sign.....

DWG. Title:

BEAMS AND STAIRCASE - OFFICE BLOCK



GENERAL NOTES

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- 8) ALL CONCRETE WORKS SHALL BE QUALITY CONTROLLED AND MECHANICALLY VIBRATED TO THE STRUCTURAL ENGINEER'S SATISFACTION.
- 9) SHOP DRAWINGS MUST BE SUBMITTED IN GOOD TIME FOR APPROVAL BY THE ENGINEER BEFORE ASSEMBLY OF UNITS COMMENCE.
- 10) BUILDING STONES TO HAVE A CRUSHING STRENGTH OF $\geq 8\text{N/mm}^2$
- 11) DESIGN BEARING CAPACITY = 90kN/m^2

REVISIONS

SIGN DATE APPROVED

DESIGN REVIEW AND SUPERVISION BY:

Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

Project

**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s)

AS SHOWN

Date:

MAY 2021

Dwg. No.

WS 927/GWSC/OFF/STRUCT/03

Design by: A.T.S

Drawn by: P.K.G

Sign.....

Sign.....

Checked by: L.K.W

Approved by: R.N

Sign.....

Sign.....

CLIENT:



**GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa, Kenya

CONTRACT NO:

PROJECT MANAGER

DATE

ENGINEER

DATE

Sign.....

Sign.....

DWG. Title:

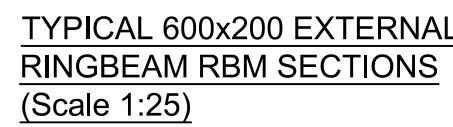
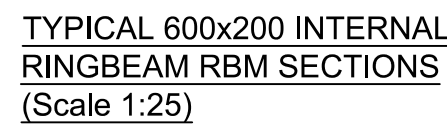
COLUMNS - OFFICE BLOCK



SCALE=1:50



SCALE=1:50

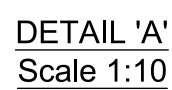


- NOTES

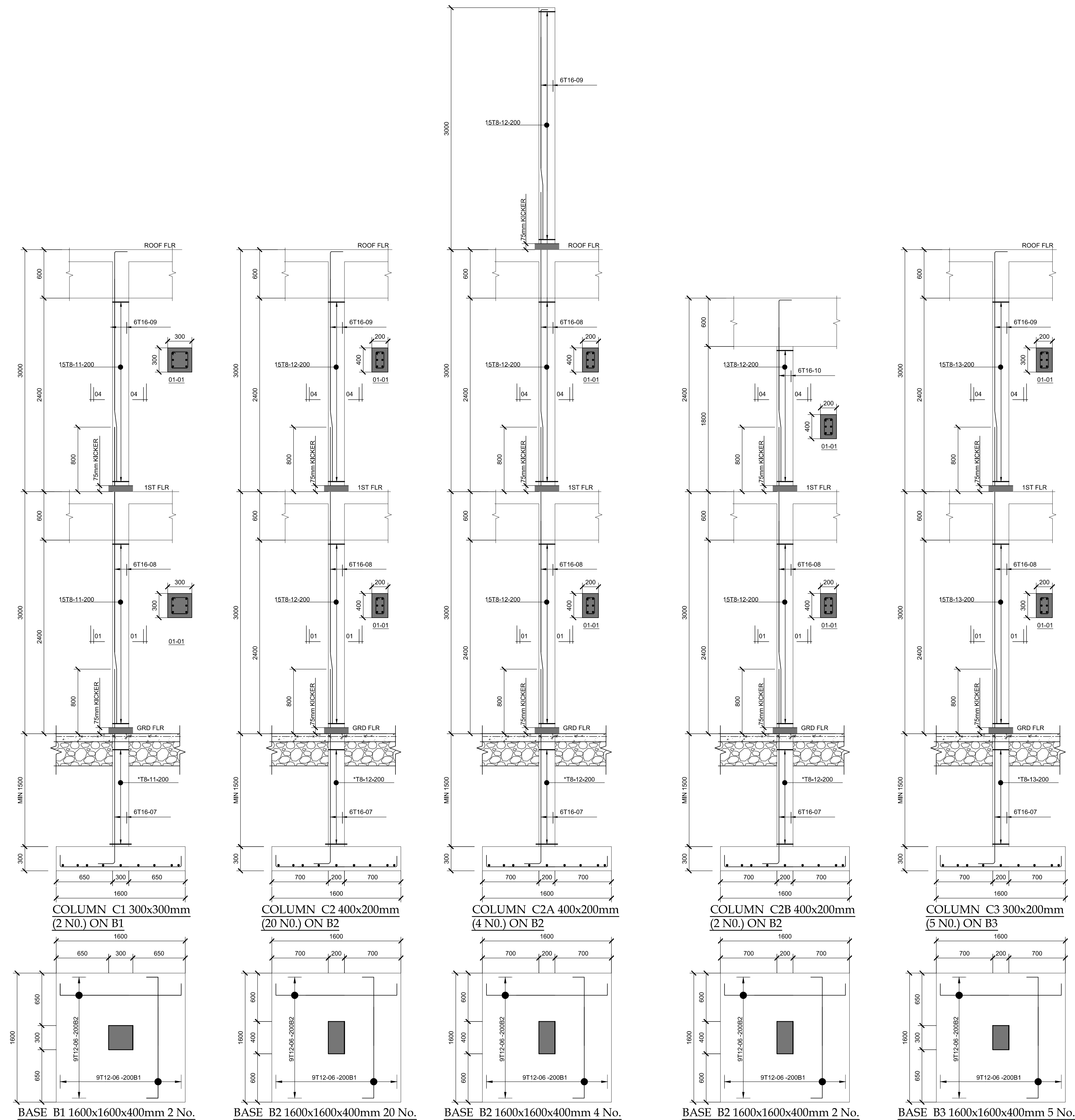
 - ALL HIPs AND VALLEYS ARE 150X50 RAFTERS
 - ALL INTERNAL MEMBERS ARE 100 x 50 TIMBER
 - ALL EXTERNAL MEMBERS ARE 150 x 50 TIMBER
 - ALL CONNECTION BY NAILING
 - ALL PURLINS ARE 100X50 TIMBER



SCALE=1:50

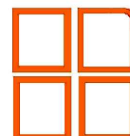



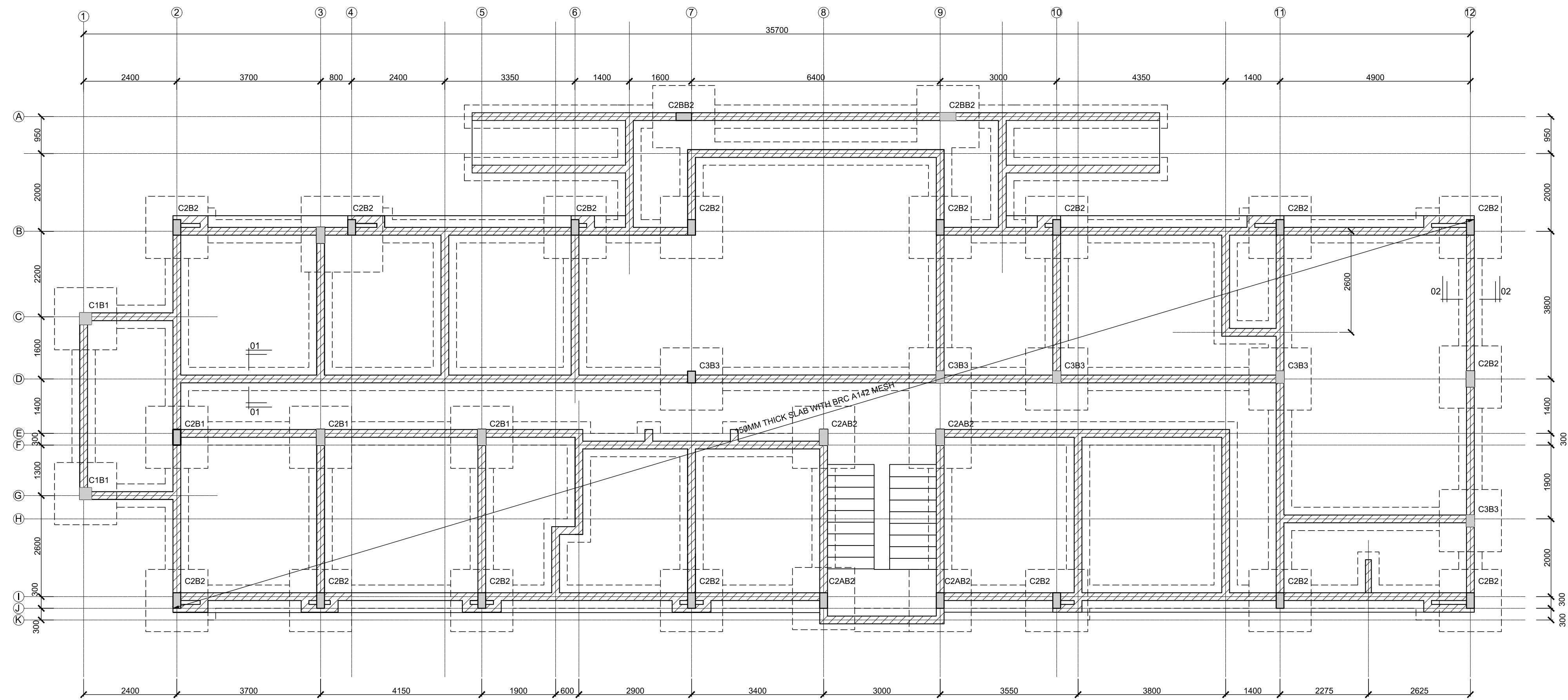
- 1) ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SHOWN.
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- 3) DEPTH TO FOUNDATION LEVEL SHALL BE DETERMINED ON SITE.
- 4) CONCRETE STRENGTH TO BE CLASS 25 FOR ALL STRUCTURAL ELEMENTS
- 5) MAXIMUM AGGREGATE SIZE FOR USE IN STRUCTURAL CONCRETE SHALL BE 20mm.
- 6) CONCRETE COVER TO REINFORCEMENT STEEL TO BE: (I) FOUNDATION = 50mm. (II) COLUMNS = 40mm (III) BEAMS = 30mm. (IV) SLAB & STAIRCASE = 25mm.
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- 9) SHOP DRAWINGS MUST BE SUBMITTED IN GOOD TIME FOR APPROVAL BY THE ENGINEER BEFORE ASSEMBLY OF UNITS COMMENCE.
- 10) BUILDING STONES TO HAVE A CRUSHING STRENGTH OF $\geq 8\text{N/mm}^2$
- 11) DESIGN BEARING CAPACITY = 90kN/m^2



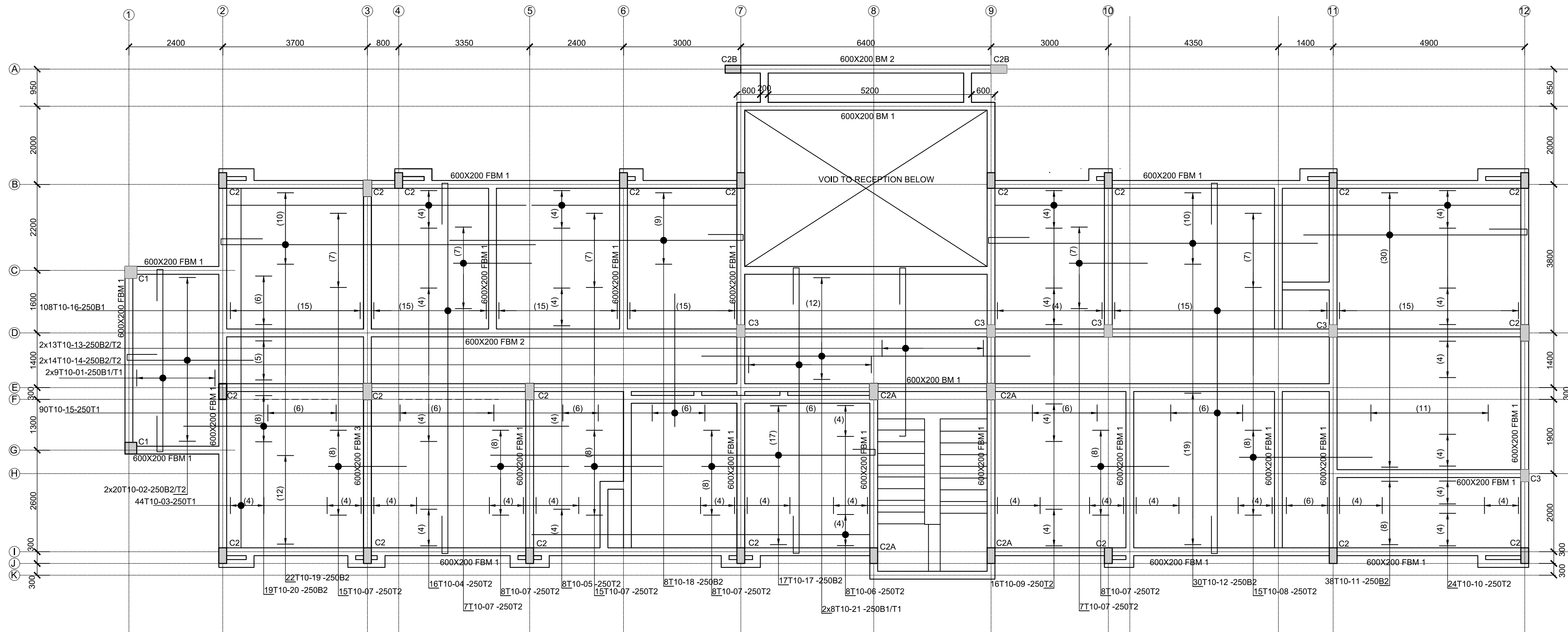
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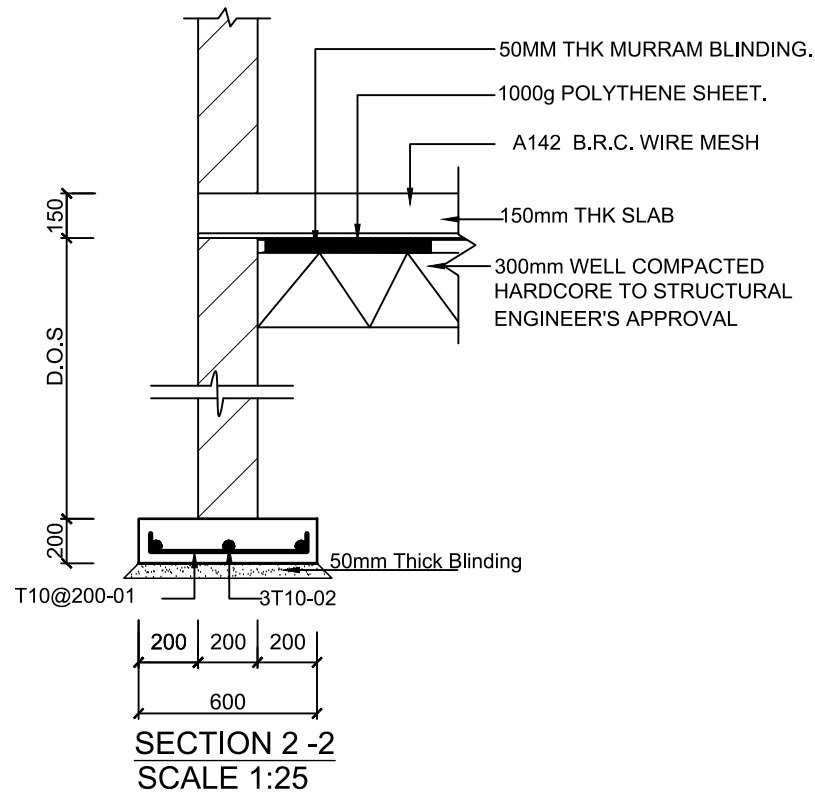
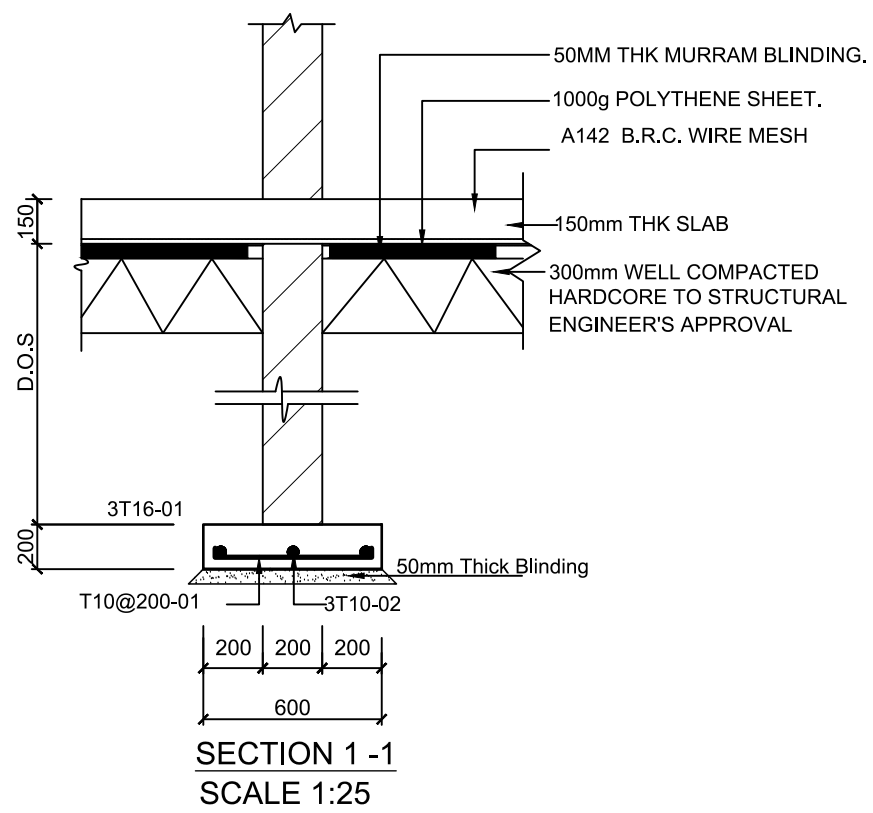
REVISIONS		SIGN DATE APPROVED	
DESIGN REVIEW AND SUPERVISION BY: <div> Runji Consulting Group Ltd Engineering & Project Management. 3, Kindaruma Road (Off Ngong Road) P. O. Box 68053-00200 Nairobi Tel. (020) 2717213/4</div>			
Project IMMEDIATE WATER AND SANITATION WORKS; FOR GARISSA WATER AND SEWERAGE COMPANY AND DADAAB HOST COMMUNITIES IN GARISSA COUNTY.			
Scale(s) AS SHOWN		Date: MAY 2021	
Dwg. No. WS 927/GWSC/OFF/STRUCT/03			
Design by: A.T.S Sign.....		Drawn by: P.K.G Sign.....	
Checked by: L.K.W Sign.....		Approved by: R.N Sign.....	
CLIENT: <div> GARISSA WATER AND SEWERAGE COMPANY P.O Box 1088-70100, Garissa,Kenya</div>			
CONTRACT NO:			
PROJECT MANAGER Sign.....		ENGINEER Sign.....	
DATE		DATE	
DWG. Title: COLUMNS - OFFICE BLOCK			



FOUNDATION/GROUND LAYOUT
SCALE=1:75



FIRST FLOOR SLAB RC DETAILS (150mm THICK SLAB)
SCALE=1:75



GENERAL NOTES

- 1) ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SHOWN.
- 2) ALL SETTING OUT DIMENSIONS SHALL BE CROSS-CHECKED ON SITE AND ANY INCONSISTENCIES IMMEDIATELY REPORTED TO THE ENGINEER / ARCHITECT FOR THE NECESSARY ACTION.
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REVISIONS SIGN DATE APPROVED

DESIGN REVIEW AND SUPERVISION BY:

Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

Project
**IMMEDIATE WATER AND SANITATION WORKS; FOR
GARISSA WATER AND SEWERAGE COMPANY AND
DADAAB HOST COMMUNITIES IN GARISSA COUNTY.**

Scale(s) AS SHOWN Date: MAY. 2021

Dwg. No. **WS 927/GWSC/OFF/STRUCT/01**

Design by: A.T.S Drawn by: P.K.G

Sign..... Sign.....

Checked by: L.K.W Approved by: R.N

Sign..... Sign.....

CLIENT:
**GARISSA WATER AND SEWERAGE
COMPANY**
P.O Box 1088-70100, Garissa, Kenya

CONTRACT NO:

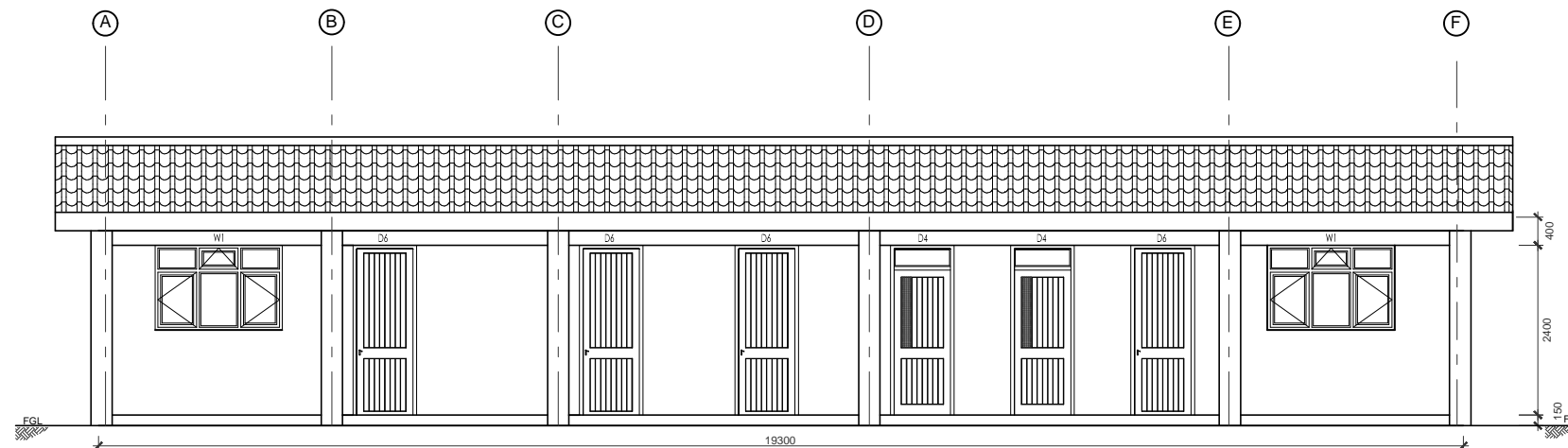
PROJECT MANAGER DATE ENGINEER DATE

Sign..... Sign.....

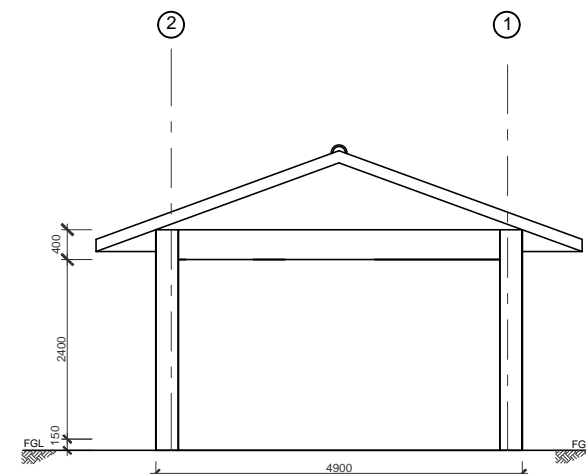
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**FOUNDATION AND FIRST FLOOR SLAB LAYOUT -
OFFICE BLOCK**

DADAAB

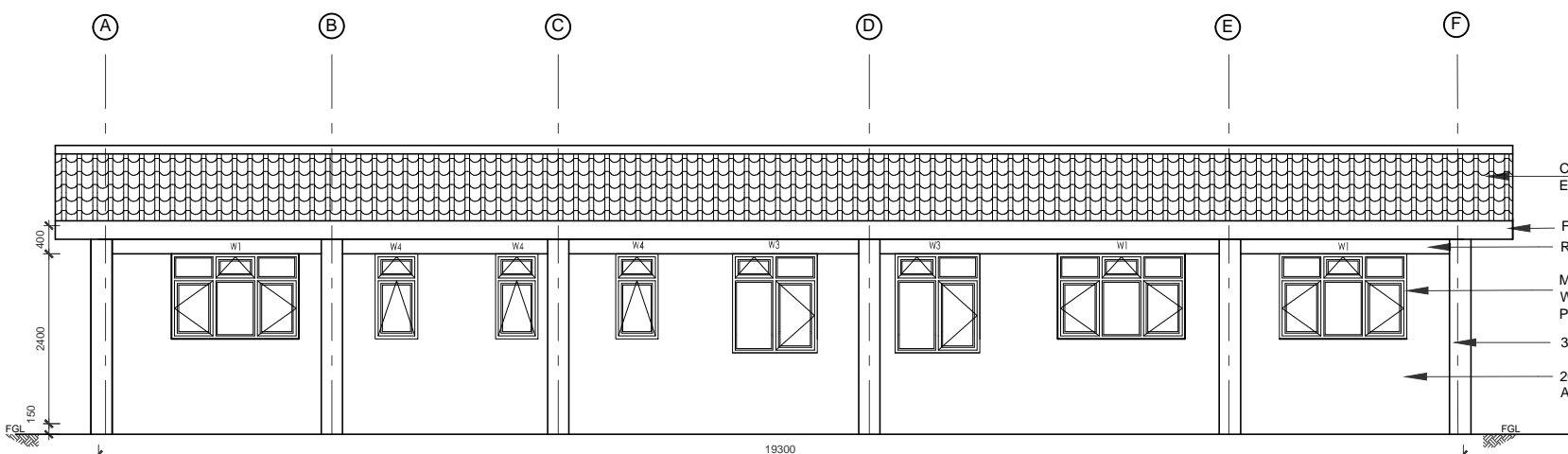
**ADMINISTRATION /LABORATORY
BLOCK**



**ADMINISTRATION BLOCK
FRONT ELEVATION 01**

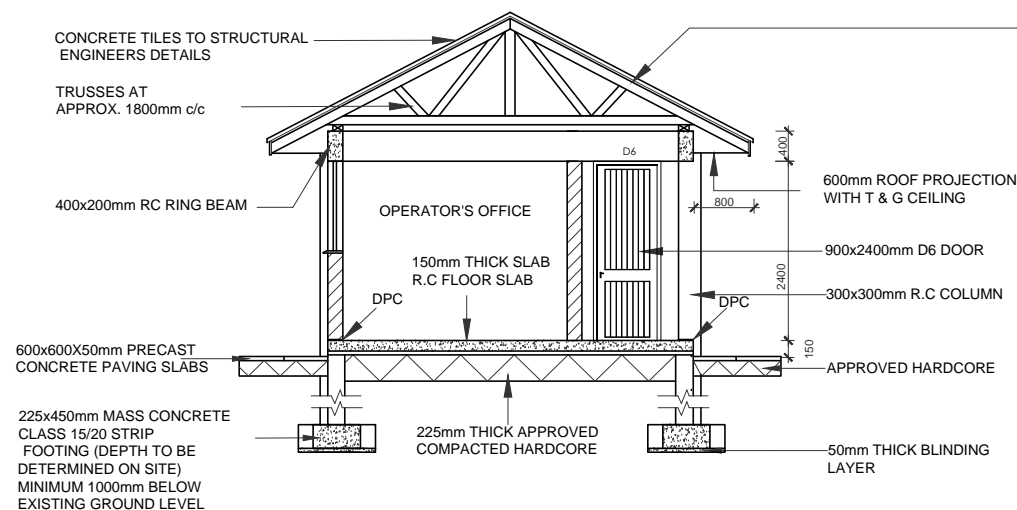


**ADMINISTRATION BLOCK
SIDE ELEVATION 02**



**ADMINISTRATION BLOCK
REAR ELEVATION 03**

- CONCRETE TILES TO STRUCTURAL ENGINEERS DETAILS
- FASCIA BOARD 250 x 40 mm
- RING BEAM RENDERED & PAINTED
- METAL CASEMENT WINDOWS WITH PERMANENT VENTS
- 300x300mm R.C COLUMN
- 200mm THICK MASONRY WALL PLASTERED AND PAINTED INTERNALLY AND EXTERNALLY



SECTION A-A

ROOF SPECIFICATION

- COLOURED CONCRETE TILES LAID AT A 22.5 DEG ON GAUGE 28 G.C.I. SHEETS ON:
1. TIMBER TRUSSES (150x50mm RAFTERS AND TIES 100x50mm STRUTS) AT 1800mm C/C (NO TRUSSES ALONG END WALLS) END WALLS LOAD BEARING
 2. 150x50mm RAFTERS BETWEEN TRUSSES AT 600mm C/C
 3. 100x50mm PURLINS AT TRUSS NODES
 4. 100x50mm WALL PLATE
 5. 200x50mm RIDGE BOARD
 6. 250x40mm FASCIA BOARD
 7. 40x40mm TIMBER BATTENS AT 300mm C/C
 8. 12mm CHIP BOARD CEILING
 9. EX 75x25mm CORNICE

NOTES:

1. DIMENSIONS IN mm UNLESS OTHERWISE SPECIFIED
2. SETTING OUT AND FOUNDATION MUST BE APPROVED BY ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION
3. ALL WINDOW CILLS TO HAVE 25mm x 25mm DRIPS
4. FOR DOORS AND WINDOWS SCHEDULE REFER TO DRG NO. M407/SD/15-17
5. ALL REINFORCED CONCRETE TO BE CLASS 25/20
6. 200 LITRES WATER STORAGE TANK TO BE PROVIDED IN ROOF SPACE
8. ABBREVIATIONS
DPC - DAMP PROOF COURSE
RC - REINFORCED CONCRETE
FGL - FINAL GROUND LEVEL

**WATER AND SANITATION SERVICES IMPROVEMENT PROJECT - ADDITIONAL FINANCING
(WaSSIP - AF)**

Client/Employer:



THE CHIEF EXECUTIVE OFFICER
COAST WATER SERVICES BOARD
P.O BOX 90417, 80100, MOMBASA. KENYA

Consulting Engineer:



MANGAT I.B. PATEL (MIBP) LIMITED
P.O. BOX 48674,
00100 - GPO, NAIROBI, KENYA
E-MAIL: mibp@africaonline.co.ke
Tel : +254-2-2710500
Fax : +254-2-2710549

In Association With:



CES
Salzgtter GmbH



Revisions:

REV.	DATE	REMARKS

Notes:

DESIGNED BY: I.M.M
DRAWN BY: I.M.M
CHECKED BY: P.N.N/J.N
APPROVED BY: R.S.R

SCALE: 1:100

PREPARATION OF SANITATION PLANS, FEASIBILITY STUDIES AND PRELIMINARY DESIGNS FOR WAJIR AND DAADAB TOWNS

IMMEDIATE URGENT WORKS - DADAAB PROJECT AREA

Drawing Title:

ADMINISTRATION BLOCK

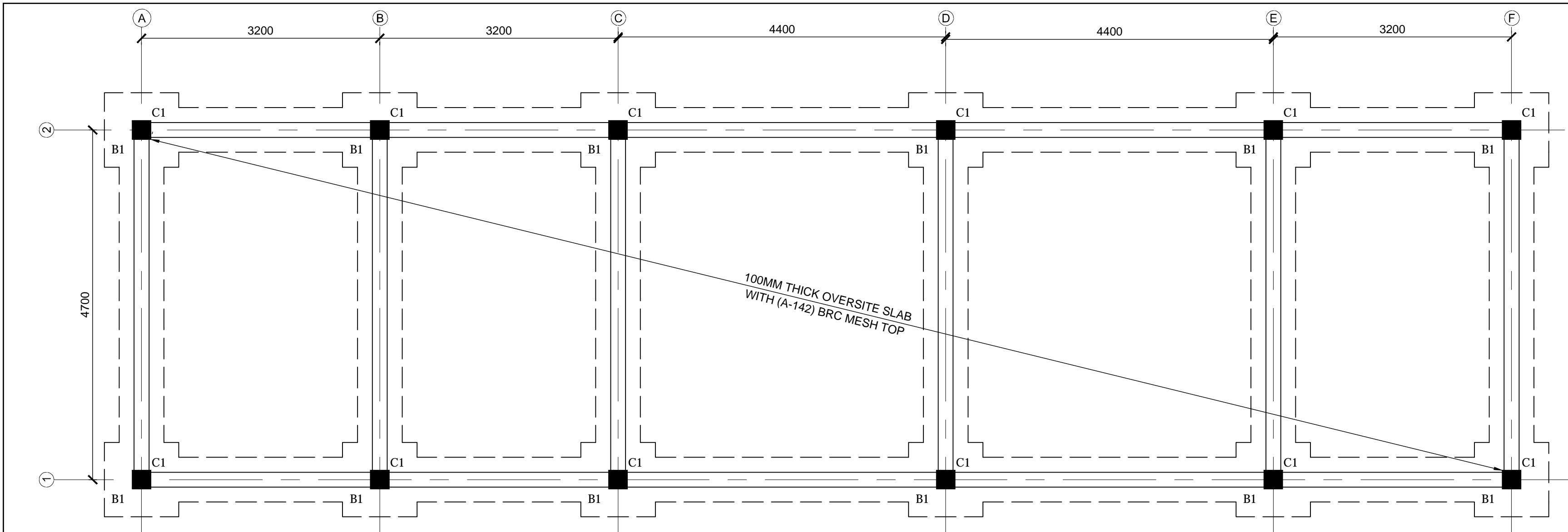
SECTION A-A AND ELEVATIONS

Date: MAY 2018

Drg. No.

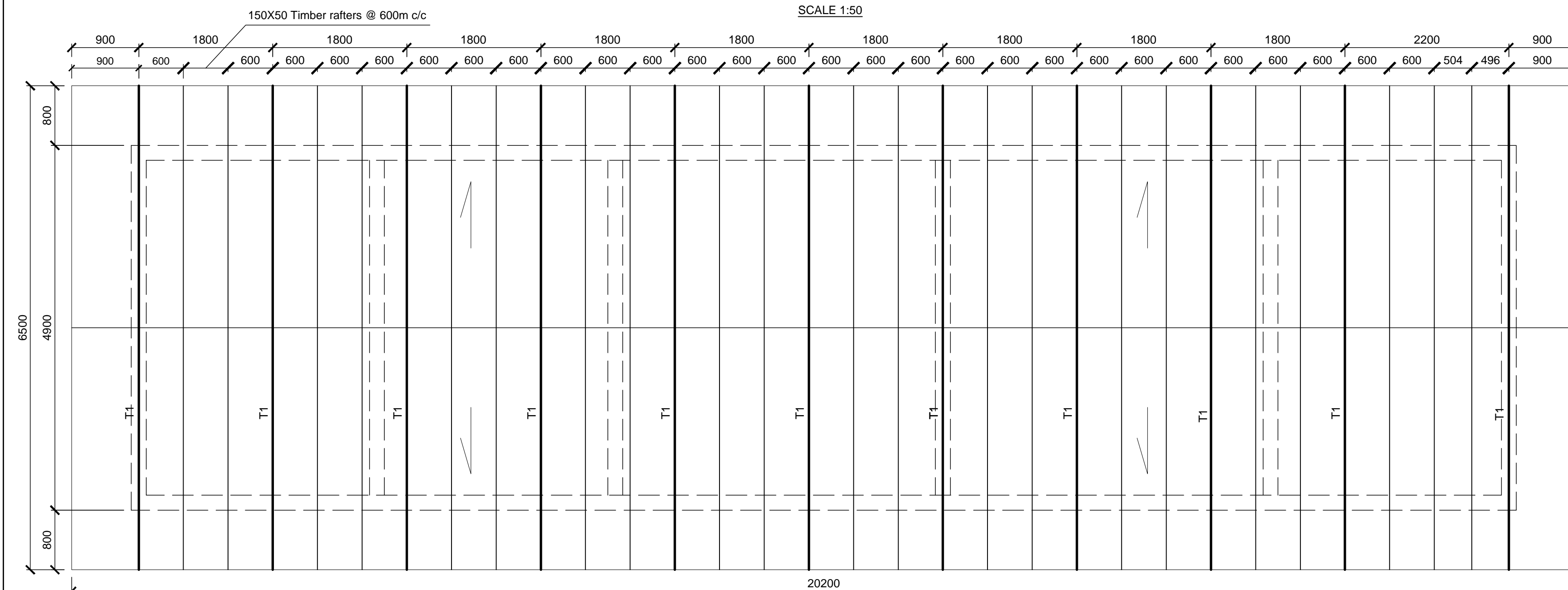
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Rev.



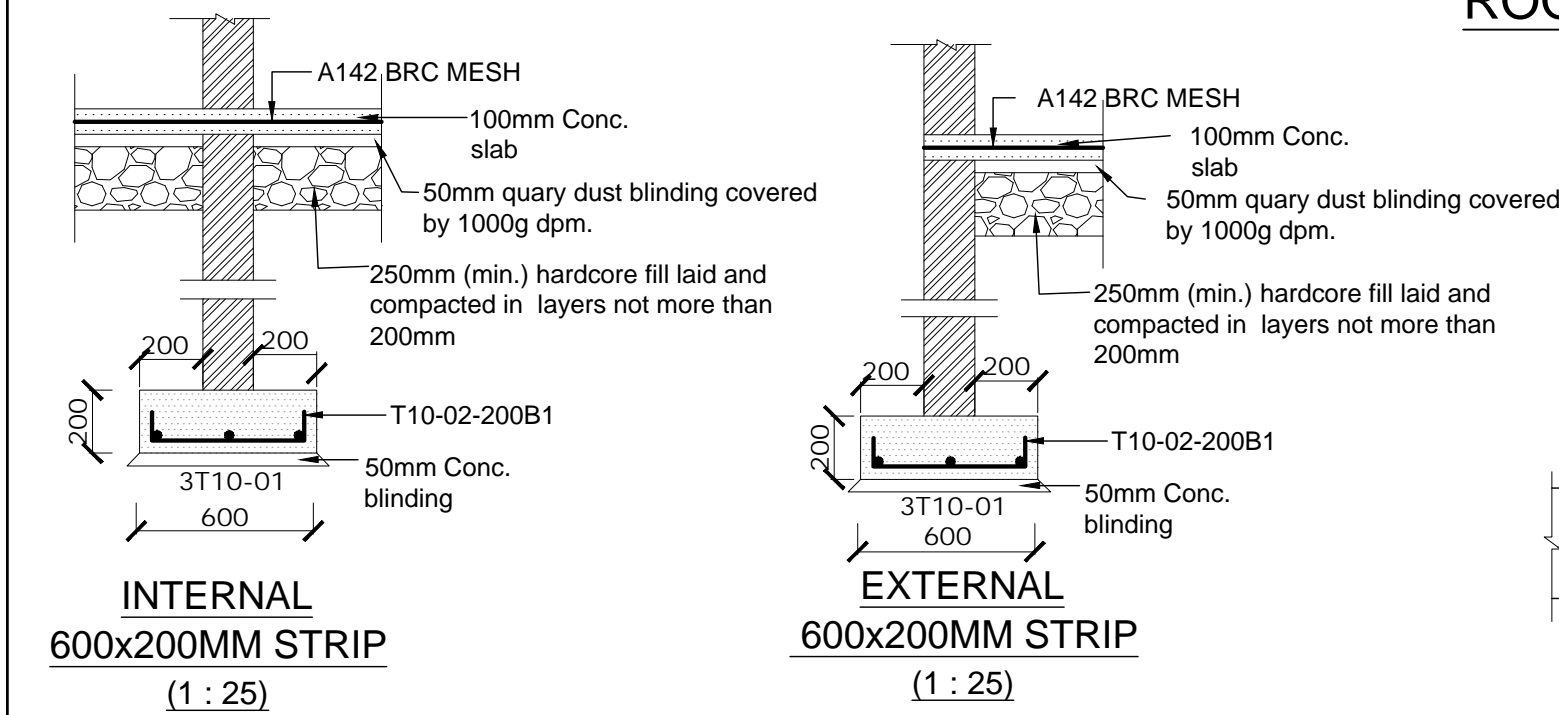
FOUNDATION LAYOUT PLAN

SCALE 1:50



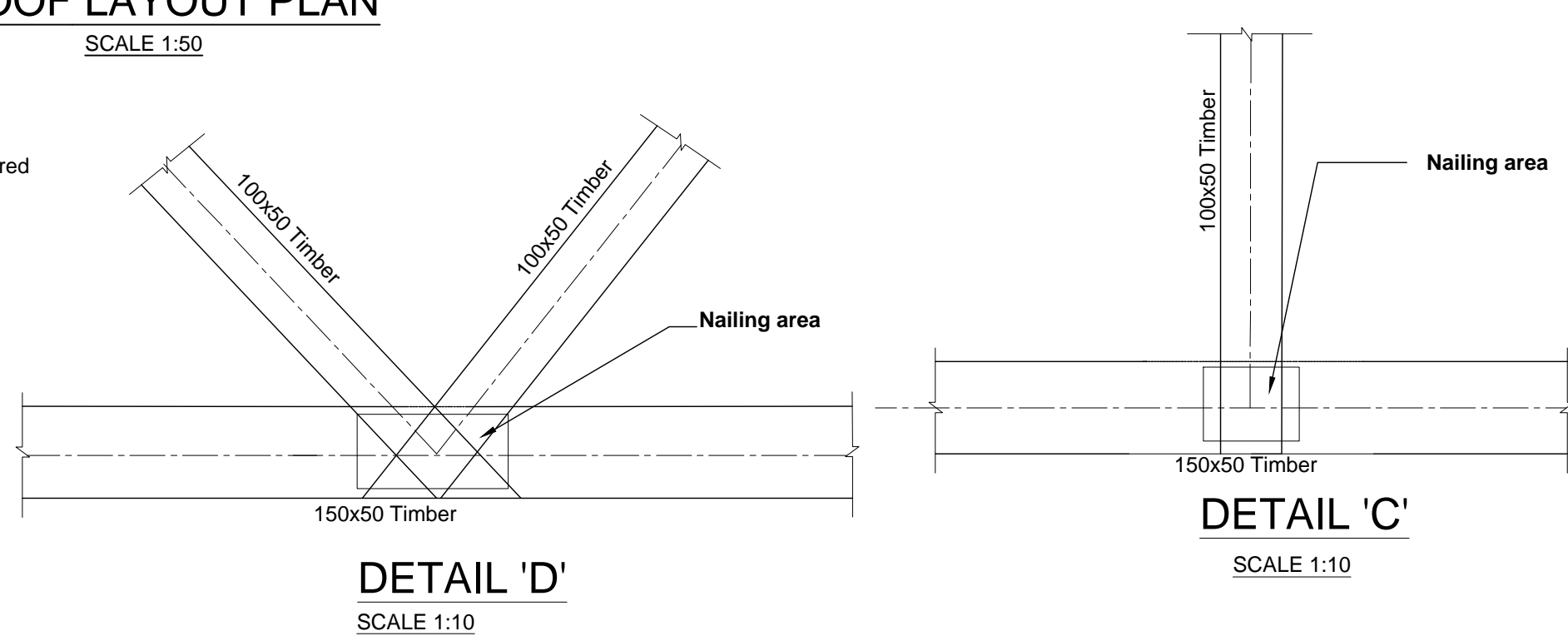
ROOF LAYOUT PLAN

SCALE 1:50



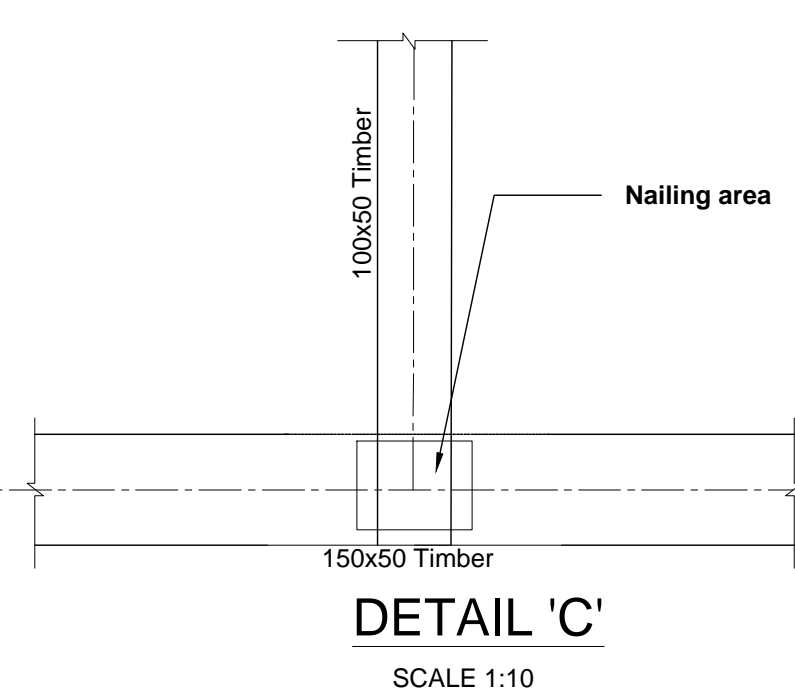
INTERNAL 600x200MM STRIP (1 : 25)

EXTERNAL 600x200MM STRIP (1 : 25)



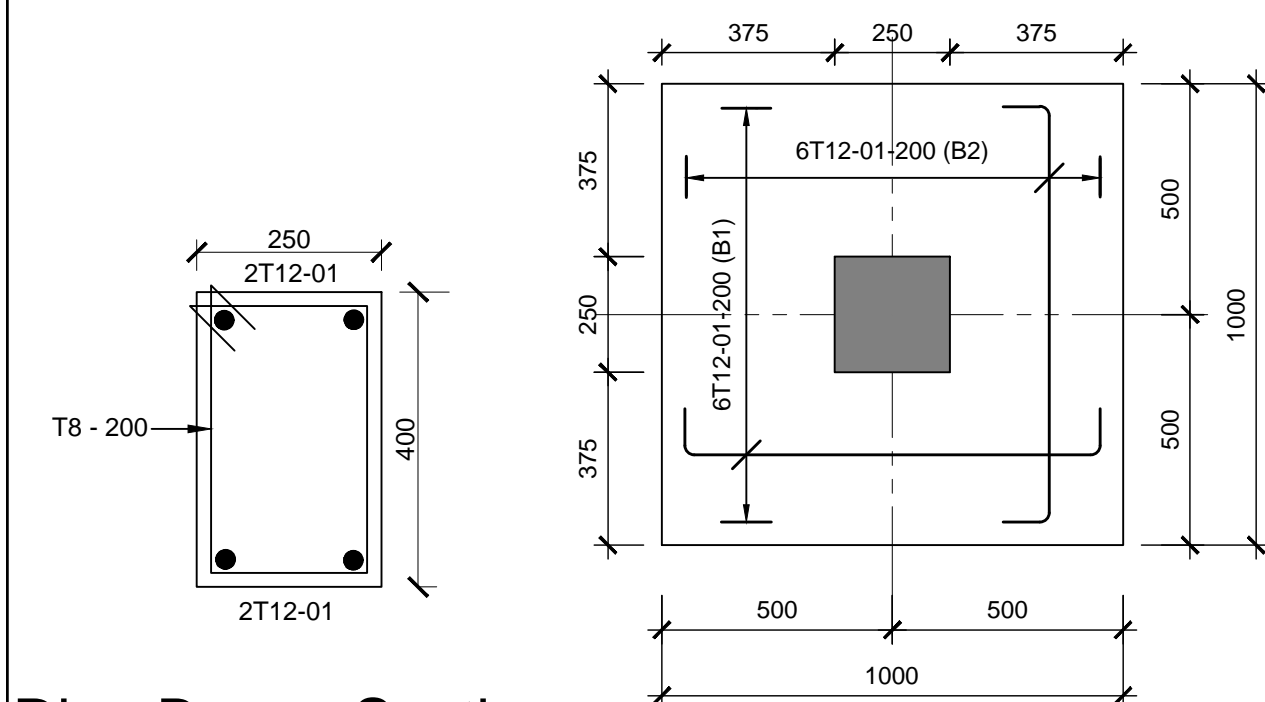
DETAIL 'D'

SCALE 1:10



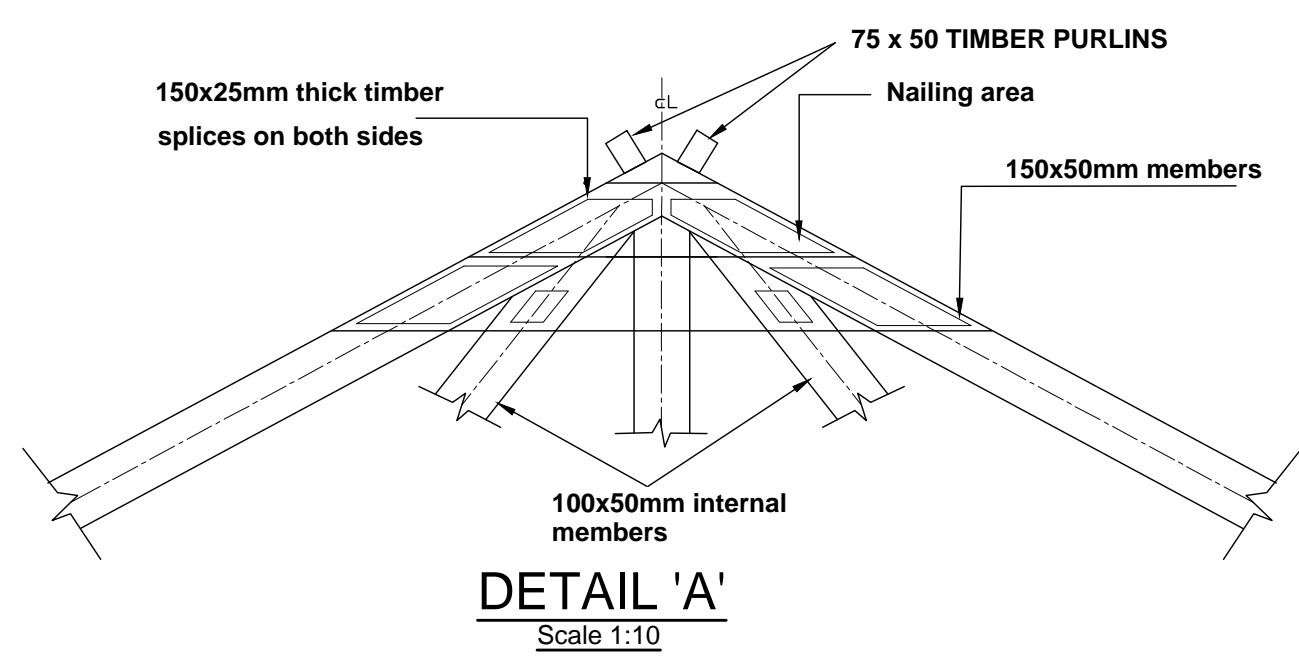
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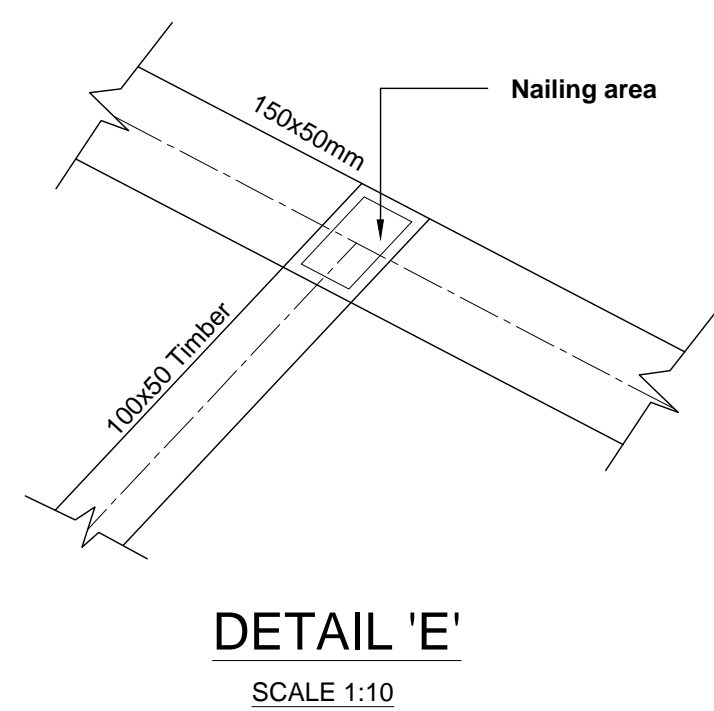
Ring Beam. Section Detail. (400 x 250) Scale. 1:10

1000 x 1000 x 300 DEEP BASE & 250 x 250 COLUMN C1. (12 Nos.)



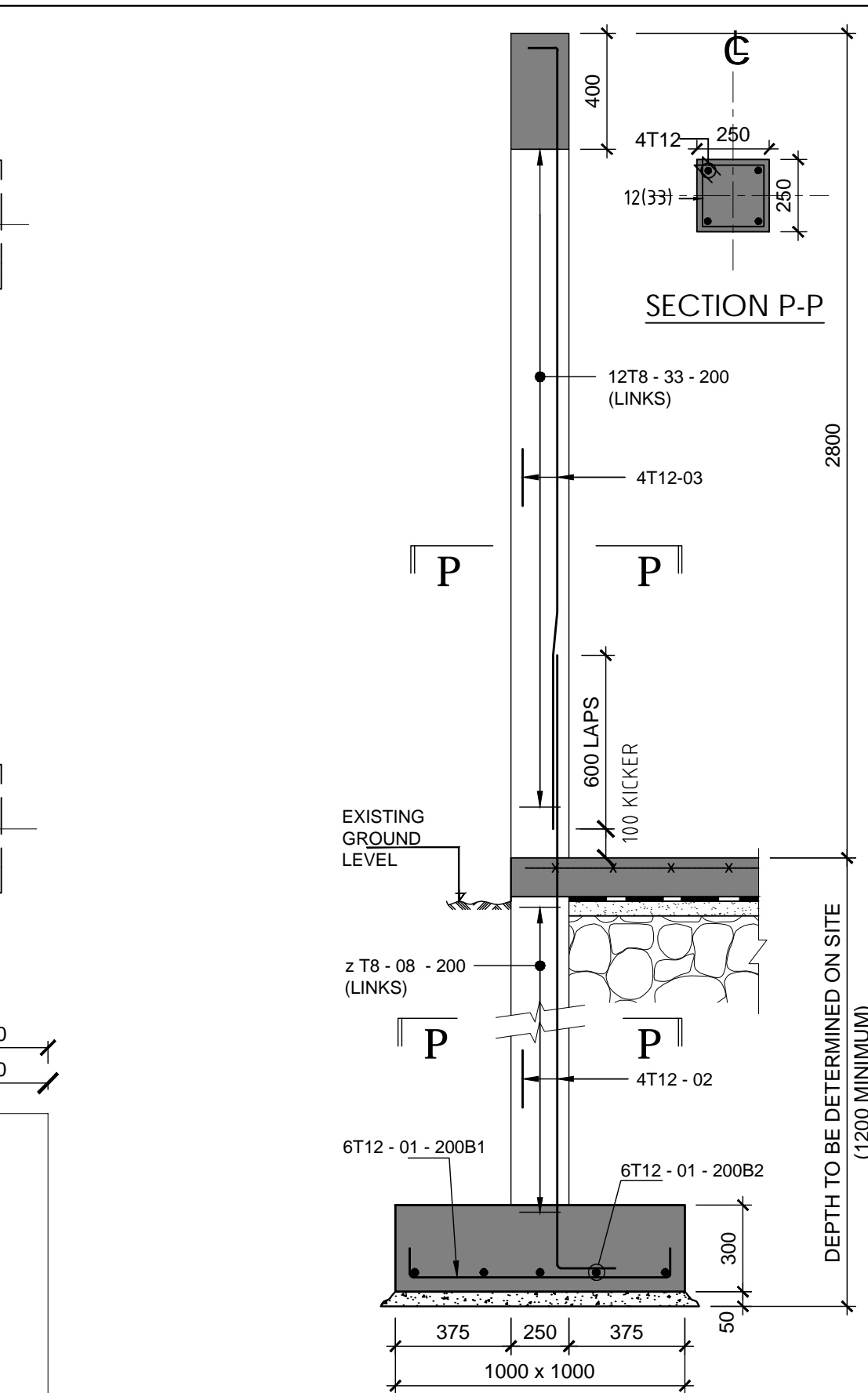
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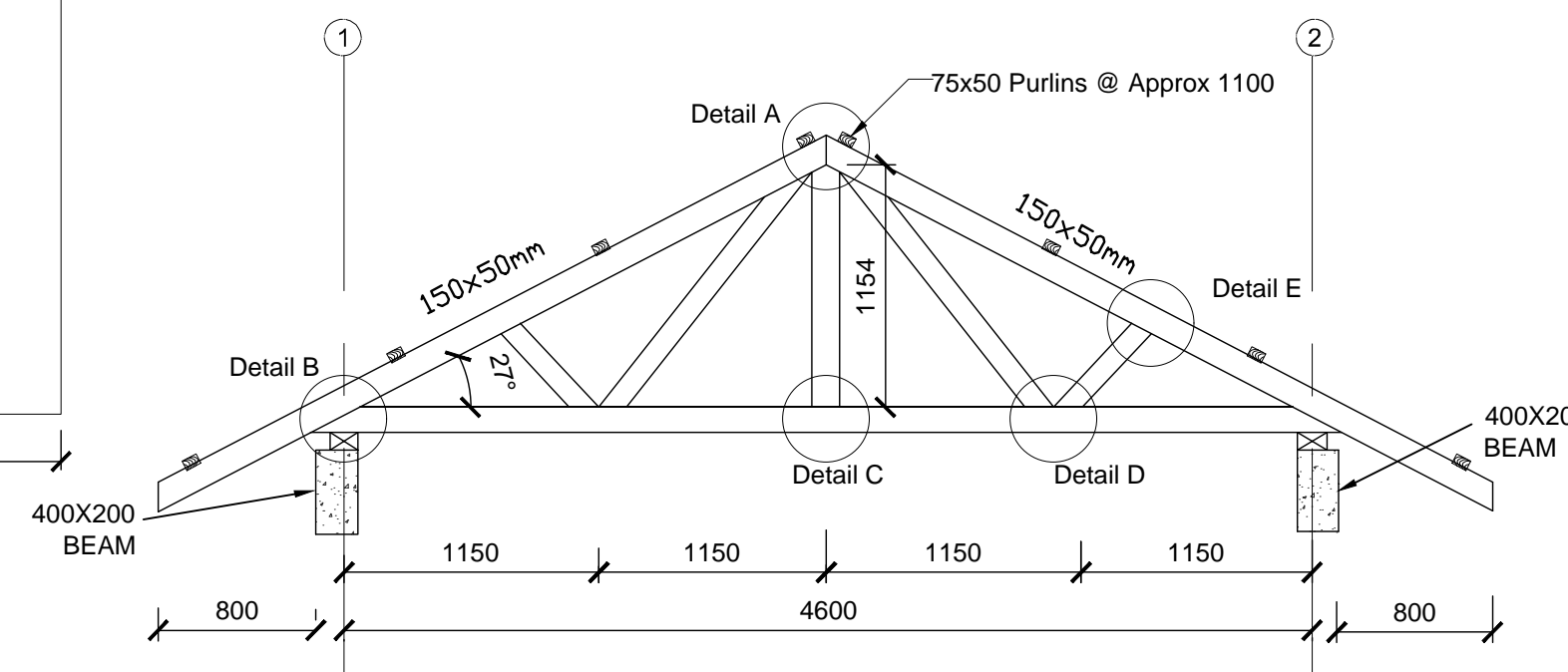


DETAIL 'E'

SCALE 1:10



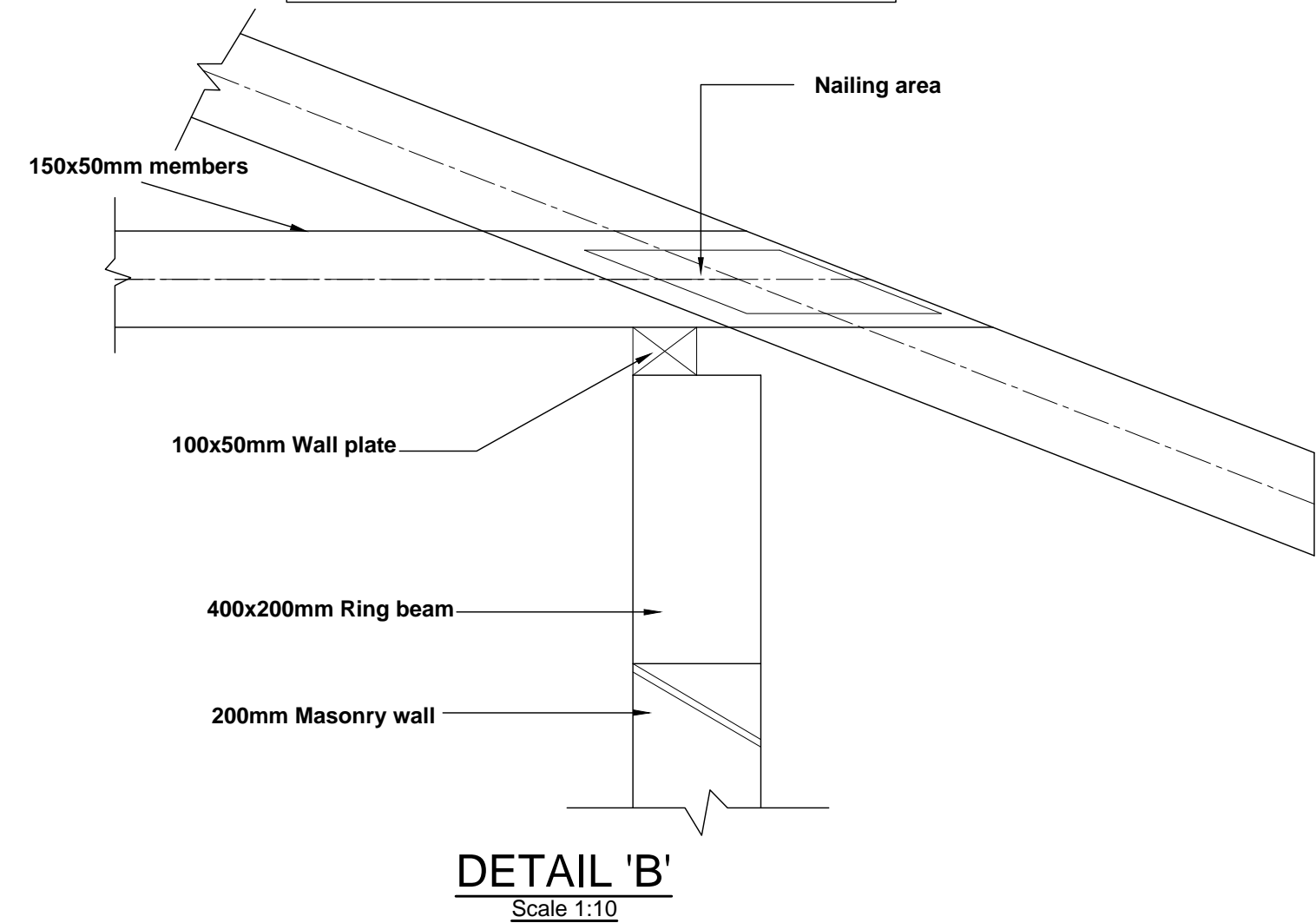
1000 x 1000 x 300 DEEP BASE & 250 x 250 COLUMN C1. (12Nos.)



TYPICAL TRUSS T1 (11No.) -

Scale 1:35

- NOTES
- ALL HIPS AND VALLEYS ARE 150x50 RAFTERS
 - ALL INTERNAL MEMBERS ARE 100 x 50 TIMBER
 - ALL EXTERNAL MEMBERS ARE 150 x 50 TIMBER
 - ALL CONNECTION BY NAILING
 - ALL PURLINS ARE 75x50 TIMBER



DETAIL 'B'

Scale 1:10

GENERAL NOTES

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- BUILDING STONES TO HAVE A CRUSHING STRENGTH OF 8N/mm²
- DESIGN BEARING CAPACITY = 150kN/m²

REVISIONS SIGN DATE APPROVED

DESIGN REVIEW AND SUPERVISION BY:

Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

Project
DESIGN REVIEW AND SUPERVISION OF IMMEDIATE WATER AND SANITATION WORKS FOR GARISSA WATER AND SANITATION COMPANY

Scale(s) Date: MARCH, 2021

Dwg. No.

Drawn by: D.M.M

Sign.....

Approved by: R.N

Sign.....

CLIENT:

GAWASCO
GARISSA WATER AND SANITATION COMPANY
P.O.BOX 1088-70100
GARISSA

CONTRACT NO:

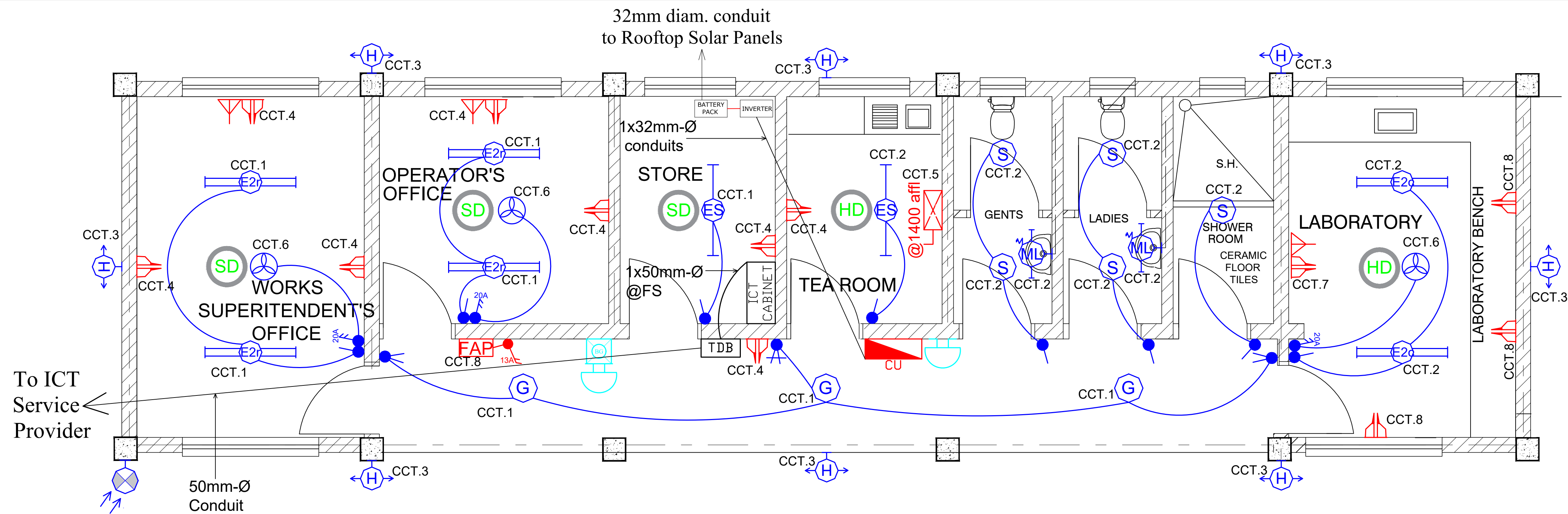
PROJECT MANAGER DATE ENGINEER DATE

Sign.....

Sign.....

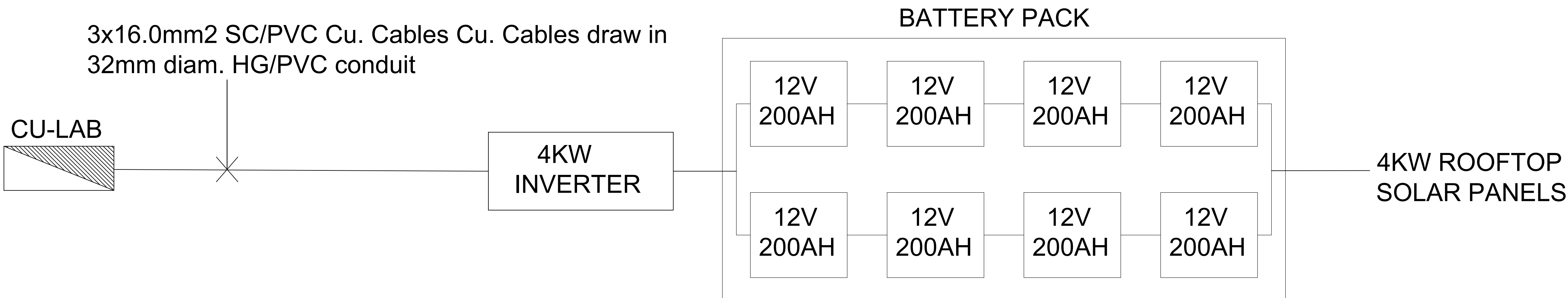
DWG. Title:

STRUCTURAL DETAILING FOR FOUNDATION LAYOUT, COLUMN BASE, COLUMN, BEAM AND ROOF -ADMINISTRATION BLOCK

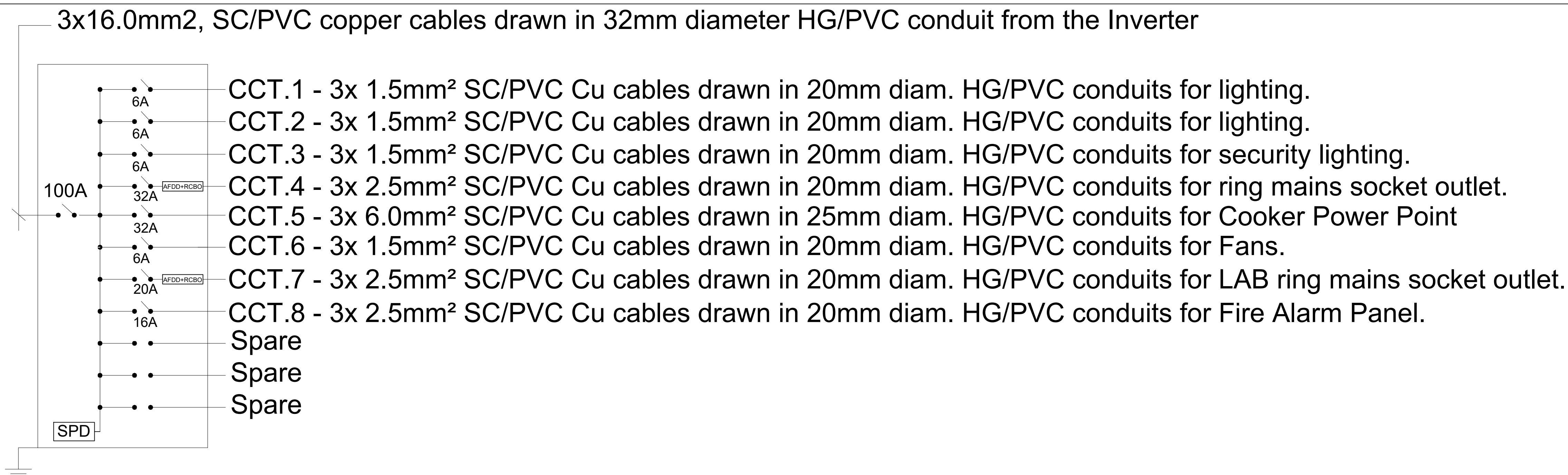


a) LIGHTING AND POWER LAYOUT

SCALE 1:30



b) SOLAR PV DISTRIBUTION SCHEMATICS



c) 11-WAY SPN CONSUMER UNIT- WIRING SCHEMATIC FOR LABORATORY

GENERAL NOTES

- 1) All conduits shall be black rigid super high impact heavy gauge class 'A' PVC
- 2) Conduit shall be installed buried in building fabric except when run on wooden or metal surface when they will be installed surface supported with saddles every 600mm.
- 3) All fire alarm cables used to be fire proof
- 4) Fire alarm cables to be segregated from the cables of other electrical systems.
- 5) All luminaires shall be LED type
- 6) Socket Outlets along the Lab Bench to be mounted above the Bench

REVISIONS

NO.	REVISIONS	SIGN	DATE	APPROVED
1				
2				
3				

DESIGN REVIEW AND SUPERVISION BY:

Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

Project
DESIGN REVIEW AND SUPERVISION OF IMMEDIATE WATER AND
SANITATION WORKS FOR GARISSA WATER AND SANITATION
COMPANY

Scale(s) AS SHOWN Date: MARCH, 2021

Dwg. No. **WS 927/GWSC/D/LAB/E/01**

Design by: I.M.O Drawn by: I.M.O

Sign..... Sign.....

Checked by: J.J.M Approved by: R.N

Sign..... Sign.....

CLIENT:

GAWASCO
GARISSA WATER AND SANITATION COMPANY
P.O.BOX 1088-70100
GARISSA

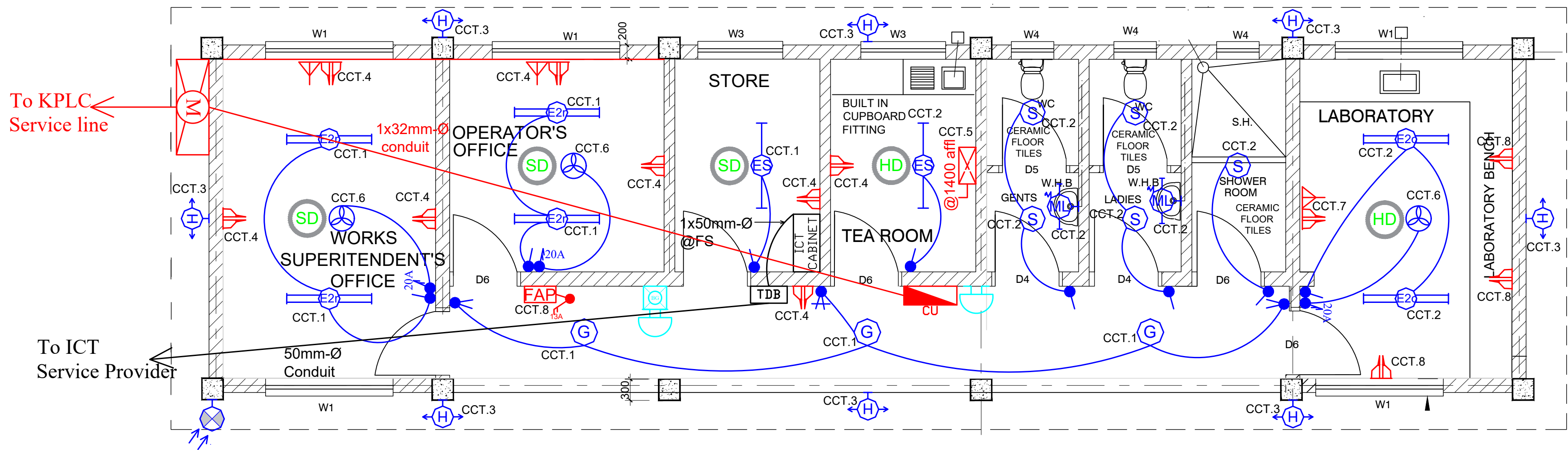
CONTRACT NO:

PROJECT MANAGER DATE ENGINEER DATE

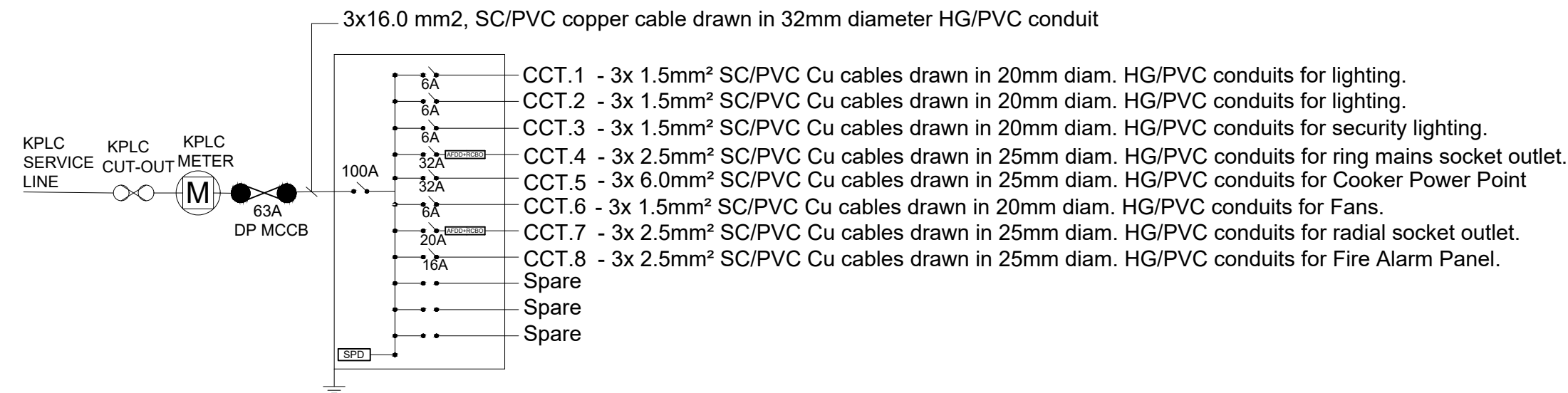
Sign..... Sign.....

DWG. Title:

DAADAB ADMINISTRATION/LABORATORY BLOCK
ELECTRICAL LAYOUT



a) ELECTRICAL LIGHTING AND POWER LAYOUT
SCALE 1:40



b) 11 -WAY SPN CONSUMER UNIT - WIRING SCHEMATIC FOR LABORATORY

ELECTRICAL INSTALLATION SYMBOLS	
LEGEND	
ITEM	DESCRIPTION
	one/two/three gang one way plastic moulded switch as Crabtree or approved equivalent
	one/two/three gang two way plastic moulded switch as Crabtree or approved equivalent
	one/two gang one way splash proof switch as crabtree or approved equivalent
	intermediate/dimmer switch as Crabtree or approved equivalent
	13A single/twin switched plastic moulded socket outlet plates as Crabtree or approved equivalent
	15A/20A DP switch as Crabtree or approved equivalent
	Dual data/telephone outlet point as Crabtree or approved equivalent
	AFDD (Arc Fault Detection Device) with combined RCBO (Residual Current Circuit Breaker with Overload Protection) as Lewden AFDD RCBO range or approved equivalent
	12W, 1200mm, LED batten luminaire, high colour rendering(CRI>80), IP20, lifetime upto 20,000 hours, as Ledvance(Osram) or approved equivalent
	High performance, IP65 dust and moisture proof corrosion resistant luminaire with GRP canopy, PMMA diffuser and stainless steel toggles, 47W LED as Thorn Corrosion Force II or approved equivalent.
	A versatile square luminaire, 600mm x 600mm for recessed/surface mounting with 36W LED light source, 4000K colour temperature, CRI>80 and a lifetime of 50,000 Hours @L70- Ta 25C as Thorn Omega LED or approved equivalent
	Fresh contemporary circular luminaire with 1200lm, 12W LED with polycarbonate body and opal diffuser in polycarbonate with electronic gear connected to Quick Fix Bracket as Thorn Loire or approved equivalent
	Surface mounted bulkhead with die cast aluminium body and opal polycarbonate diffuser, IP65, oval shape with visor complete with LED lamps as Thorn Roller
	600mm, Slim section flourescent batten fitting with acryllic reeded diffuser and three position polycarbonate end-caps, IP 65 rated, complete with 12W, 250 mm diameter Low Voltage LED lamps as Thorn Arrowslim
	3W LED PCB, 6500K LED light source, Impact resistant polycarbonate diffuser and base on bulkhead for non-maintained emergency light with 3 hour minimum emergency duration as manufactured by Ansellto engineers approvals or approved equivalent.
	2.5W, 6500K LED light source, IP65 Self-contained single/double sided LED EXIT sign with 2.5W LED lamp for non-maintained emergency lighting for 3 hour duration as manufactured by Ansellto engineers approvals or approved equivalent.
	8W, 100 mm diameter Low Voltage LED downlight with warm white output light suitable for recessed installation in standard ceiling as Maximus or approved equivalent
	Circular junction box complete with plastic cover
	45A DP cooker control unit with pilot light and an auxiliary 13A socket outlet as Crabtree or approved equivalent
	415V, 100A 4-Pole contactor auxilliary block as Telemechanique or approved equivalent
	5A photocell as Thorn QPK or approved equivalent
	18AWG Telephone/TV draw-in box to details
	18AWG power draw-in box to details
	Meter board to EE detail
	25mm X 3mm thick bare copper tape as Furse P. No. TC030
	2000mm by 15mm diameter copper rod as Furse P.No. RA240 Complete with: Copper multiple point as Furse P. No. RA 600 and Copper ridge saddle as Furse P No. SD115
	Copper Oblong test clamp as Furse P NO CN 105
	Earthing
	SP/DP/TP MCB's with an integral 30mA Residualcurrent operated circuit-breaker with integral overcurrent protection(RCBO's) as crabtree or approved equivalent
	Fire alarm manual call point to EE Detail as Menvier or approved equivalent
	Fire alarm 24V de polarised 6" addressable fire bell for wall mounting to EE Detail as Menvier or approved equivalent
	Fire alarm photoelectric smoke detector to EE Detail as Menvier or approved equivalent
	Fire alarm rate of rise heat detector to EE Detail as Menvier or approved equivalent
	Fire alarm control panel
	Surge Protective Devices SPD Class II as ABB SPD FP- OVRT2 3N40-275PQS or approved equivalent

c) ELECTRICAL SYMBOLS

GENERAL NOTES

- 1) All conduits shall be black rigid super high impact heavy gauge class 'A' PVC
- 2) Conduit shall be installed buried in building fabric except when run on wooden or metal surface when they will be installed surface supported with saddles every 600mm.
- 3) All fire alarm cables used to be fire proof
- 4) Fire alarm cables to be segregated from the cables of other electrical systems.
- 5) All luminaires shall be LED type
- 6) Socket Outlets along the Lab Bench to be mounted above the Bench

REVISIONS SIGN DATE APPROVED

DESIGN REVIEW AND SUPERVISION BY:
Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

Project
DESIGN REVIEW AND SUPERVISION OF IMMEDIATE WATER AND
SANITATION WORKS FOR GARISSA WATER AND SANITATION
COMPANY

Scale(s) AS SHOWN Date: MARCH. 2021

Dwg. No. **WS 927/GWSC/D/LAB/E/01**

Design by: I.M.O Drawn by: I.M.O

Sign..... Sign.....

Checked by: J.J.M Approved by: R.N

Sign..... Sign.....

CLIENT:

GARISSA WATER AND SANITATION COMPANY
P.O.BOX 1088-70100
GARISSA

CONTRACT NO:

PROJECT MANAGER DATE ENGINEER DATE

Sign..... Sign.....

DWG. Title:

DAADAB ADMINISTRATION/LABORATORY BLOCK
LIGHTING AND POWER LAYOUT

ELECTRICAL INSTALLATION SYMBOLS	
LEGEND	
ITEM	DESCRIPTION
	one/two/three gang one way plastic moulded switch as Crabtree or approved equivalent
	one/two/three gang two way plastic moulded switch as Crabtree or approved equivalent
	one/two gang one way splash proof switch as crabtree or approved equivalent
	Intermediate/dimmer switch as Crabtree or approved equivalent
	15A splash proof white socket outlet as Crabtree or approved equivalent
	13A single/twin switched plastic moulded socket outlet plates as Crabtree or approved equivalent
	15A/20A DP switch as Crabtree or approved equivalent
	Dual data/telephone outlet point as Crabtree or approved equivalent
	AFDD (Arc Fault Detection Device) with combined RCBO (Residual Current Circuit Breaker with Overload Protection) as Ledwden AFDD RCBO range or approved equivalent
	12W, 1200mm, LED batten luminaire, high colour rendering(CRI>80), IP20, lifetime upto 20,000hours, as Ledvance(Osram) or approved equivalent.
	High performance, IP65 dust and moisture proof corrosion resistant luminaire with GRP canopy, PMMA diffuser and stainless steel toggles, 47W LED as Thorn Corrosion Force II or approved equivalent
	A versatile square luminaire, 600mm x 600mm for recessed/surface mounting with 36W LED light source,4000K colour temperature, CRI>80 and a lifetime of 50,000 Hours @ L70 Ta 25C as Thorn Omega LEDor approved equivalent
	Fresh contemporary circular luminaire with 1200lm, 12W LED with polycarbonate body and opal diffuserin polycarbonate with electronic gear connected toQuick Fix Bracket as Thorn Loire or approved equivalent
	Surface mounted bulkhead with die cast aluminium body and opal polycarbonate diffuser, IP65, oval shape with visor complete with LED lamps as Thorn Roller
	600mm, Slim section flourescent batten fitting with acryllic reeded diffuser and three position polycarbonate end-caps, IP 65 rated, complete with 12W, 250 mm diameter Low Voltage LED lamps as Thorn Arrowslim
	3W LED PCB, 6500K LED light source, Impact resistant polycarbonate diffuser and base on bulkhead for non-maintained emergency light with 3 hour minimum emergency duration as manufactured by Ansellto engineers approvals or approved equivalent.
	2.5W, 6500K LED light source, IP65 Self-contained single/double sided LED EXIT sign with 2.5W LED lamp for non-maintained emergency lighting for 3 hour duration as manufactured by Ansellto engineers approvals or approved equivalent.
	8W, 100 mm diameter Low Voltage LED downlight with warm white output light suitable for recessed installation in standard ceiling as Maximus or approved equivalent
	Circular junction box complete with plastic cover
	45A DP cooker control unit with pilot light and an auxiliary 13A socket outlet as Crabtree or approved equivalent
	415V, 100A 4-Pole contactor auxilliary block as Telemecanique or approved equivalent
	5A photocell as Thorn QPK or approved equivalent
	18AWG Telephone/TV draw-in box to details
	18AWG power draw-in box to details
	Meter board to EE detail
	25mm x 3mm thick bare copper tape as Furse P. No. TC030
	2000mm by 15mm diameter copper rod as Furse P.No. RA240 Complete with: Copper multiple point as Furse P. No. RA 600 and Copper ridge saddle as Furse P No. SD115
	Copper Oblong test clamp as Furse P NO CN 105
	Earthing
	SP/DP/TP MCB`s with an integral 30mA Residualcurrent operated circuit-breaker with integral overcurrent protection(RCBO`s) as crabtree or approved equivalent
	Fire alarm manual call point to EE Detail as Menvier or approved equivalent
	Fire alarm 24V dc polarised 6" addressable fire bell for wall mounting to EE Detail as Menvier or approved equivalent
	Fire alarm photoelectric smoke detector to EE Detail as Menvier or approved equivalent
	Fire alarm rate of rise heat detector to EE Detail as Menvier or approved equivalent
	Fire alarm control panel
	Surge Protective Devices SPD Class II as ABB SPD FP-OVRT2 3N40-275PQS or approved equivalent

ELECTRICAL SYMBOLS

- GENERAL NOTES
- 1)

All conduits shall be black rigid super high impact heavy gauge class 'A' PVC
- 2)

Conduit shall be installed buried in building fabric except when run on wooden or metal surface when they will be installed surface supported with saddles every 600mm.
- 3)

All fire alarm cables used to be fire proof
- 4)

Fire alarm cables to be segregated from the cables of other electrical systems.
- 5)

All luminaires shall be LED type
- 6)

Socket Outlets along the Lab Bench to be mounted above the Bench

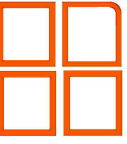
REVISIONS

SIGN

DATE

APPROVED

DESIGN REVIEW AND SUPERVISION BY:



Runji Consulting Group Ltd
Engineering & Project Management.
3, Kindaruma Road (Off Ngong Road)
P. O. Box 68053-00200 Nairobi
Tel. (020) 2717213/4

Project

DESIGN REVIEW AND SUPERVISION OF IMMEDIATE WATER AND SANITATION WORKS FOR GARISSA WATER AND SANITATION COMPANY

Scale(s)

AS SHOWN

Date:

MARCH. 2021

Dwg. No.

WS 927/GWSC/D/LAB/E/02

Design by: I.M.O

Drawn by: I.M.O

Sign.....

Sign.....


Checked by: J.J.M

Approved by: R.N

Sign.....

Sign.....

CLIENT:



GARISSA WATER AND SANITATION COMPANY
P.O.BOX 1088-70100
GARISSA

CONTRACT NO:

PROJECT MANAGER

DATE

ENGINEER

DATE

Sign.....

Sign.....

DWG. Title:

DAADAB ADMINISTRATION/LABORATORY BLOCK
ELECTRICAL SYMBOLS

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED
2. ALL STEELWORK IS TO BE CLEANED IN ACCORDANCE WITH THE SPECIFICATION ON DIPPED GALVANIZED
3. ALL PRECAST ITEMS TO BE OF MINIMUM CONCRETE CLASS 20
4. ALL EXPOSED CONCRETE EDGES OF POSTS TO HAVE 20x2mm CHAMFERS
5. CHAIN LINK TO BE GAUGE 12 GALVANIZED STEEL PLAIN WIRES
6. WIRES ON CRANK TO BE GAUGE 12 GALVANIZED STEEL BARBED WIRE
7. STRAINING WIRES TO BE GAUGE 12 GALVANIZED STEEL
8. INTERMEDIATE POSTS TO BE AT 3000mm C/C
9. JOINTS IN CHAIN LINK FENCING TO OCCUR AT INTERMEDIATE POSTS. TRANSVERSE JOINTS TO BE OPENED WITH GAUGE 12 GALVANIZED STEEL PLATES FULLY ATTACHED TO THE CONNECTING ELEMENTS
10. ALL TENSIONED BOLTS, NUTS, WASHERS, STUDS AND WIRES SHALL BE GALVANIZED

LEGEND

- Ø - DIAMETER
- G.M.S - GALVANIZED MILD STEEL
- C.C - CENTER TO CENTER
- M.S - MILD STEEL

REVISIONS

	NO.	DATE	APPROVED
C			
B			
A			

CONSULTANT:

Project:

Scale(s)	1:50	Date:
Dwg. No.		

Design by:

Checked by:

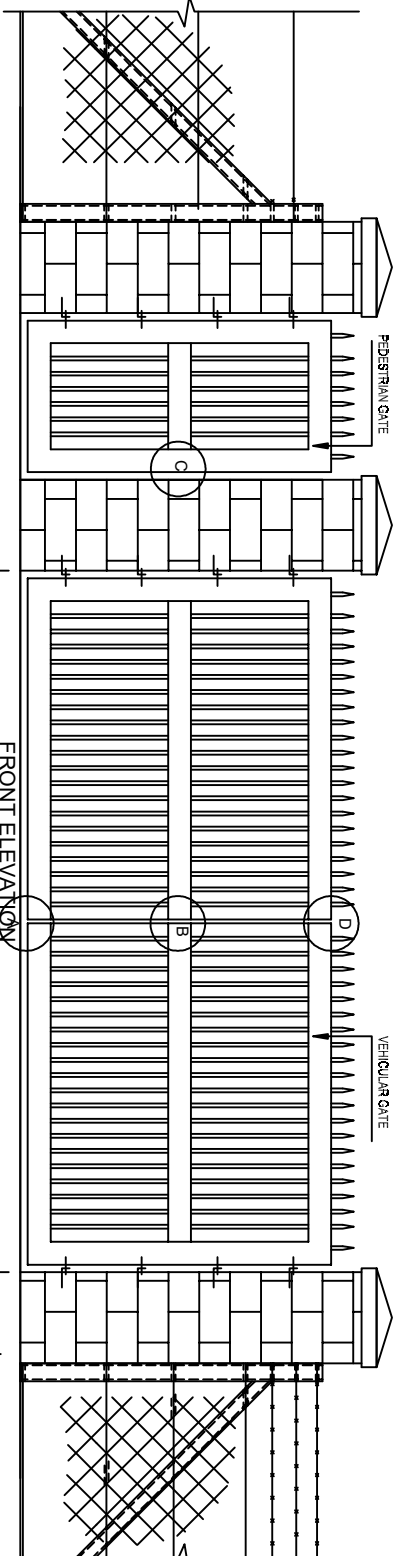
Sign

CLIENT:

CONTRACT NO.

PROJECT MANAGER

Sign



FRONT ELEVATION

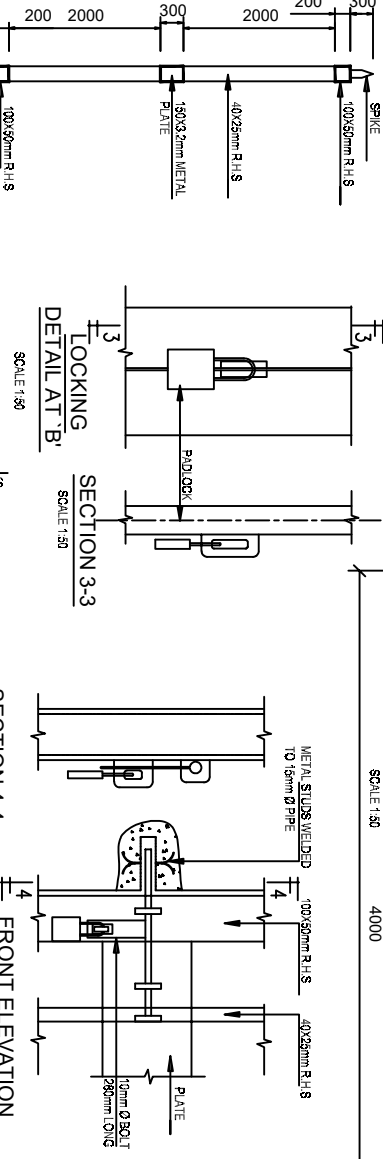
SCALE: 1:50

DETAIL OF HINGE

SCALE: 1:50

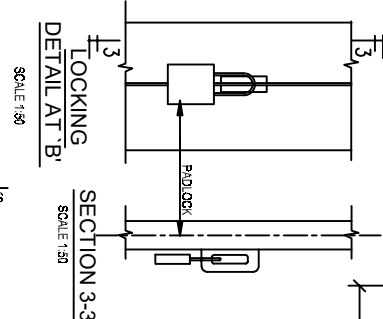
MAIN LOCKING AT 'A'

SCALE: 1:50



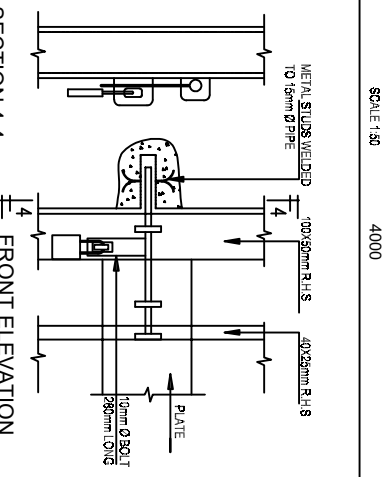
SECTION 2-2

SCALE: 1:50



SECTION 3-3

SCALE: 1:50

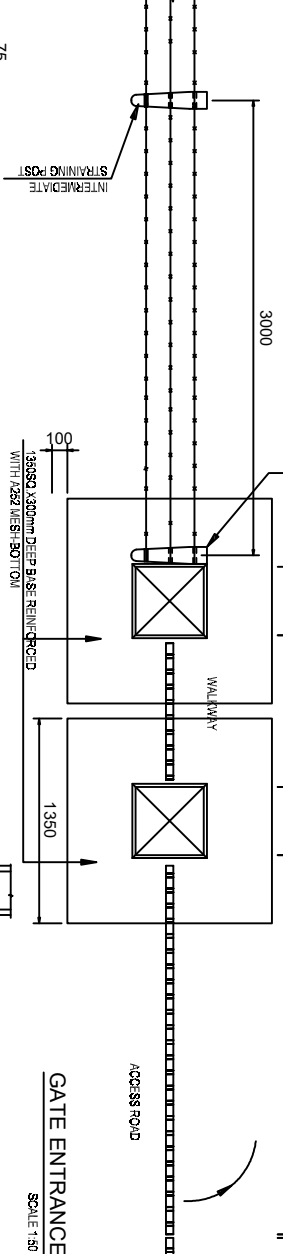


SECTION 4-4

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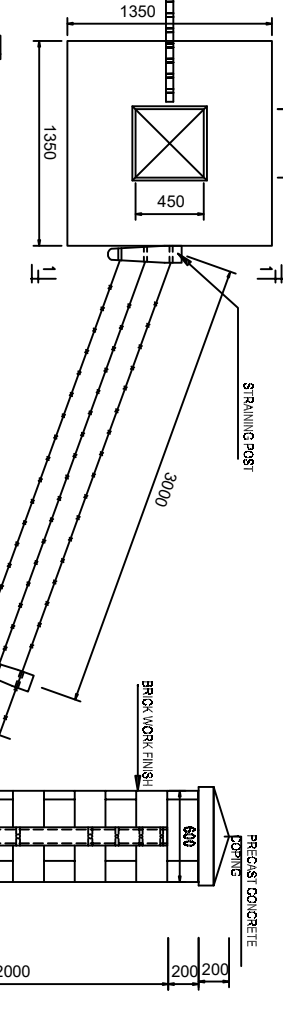
FRONT ELEVATION
DETAIL OF LOCKING AT 'C'

SCALE: 1:50



GATE ENTRANCE DETAIL PLAN

SCALE: 1:50



SECTION 1-1

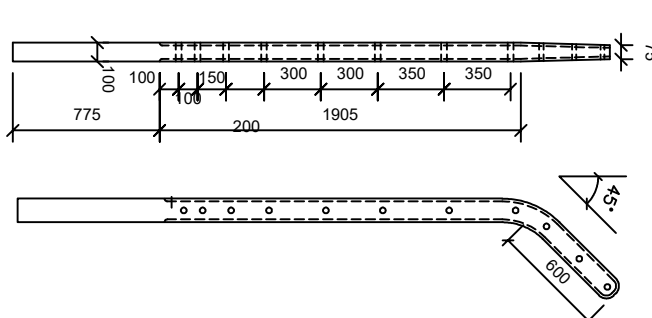
SCALE: 1:50

GATE - CATCH FRONT ELEVATION

SCALE: 1:50

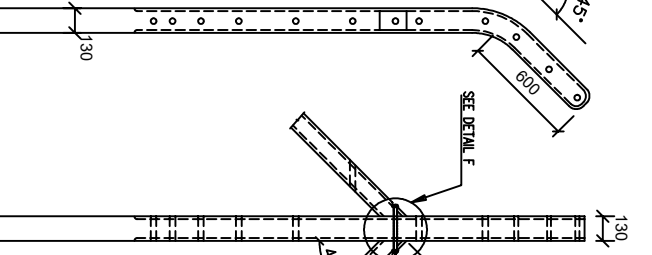
SECTION 5-5

SCALE: 1:50



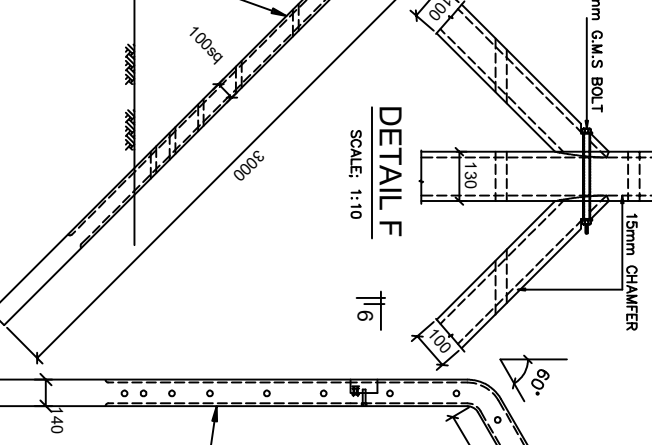
FRONT
INTERMEDIATE POST

SCALE: 1:50



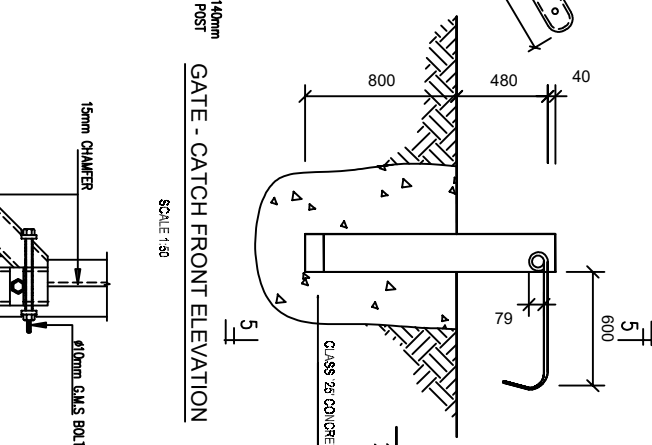
SIDE
FRONT
STRAINING POST

SCALE: 1:50



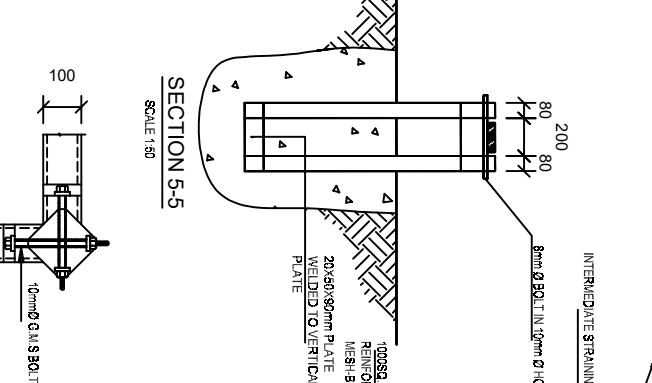
DETAIL F

SCALE: 1:10



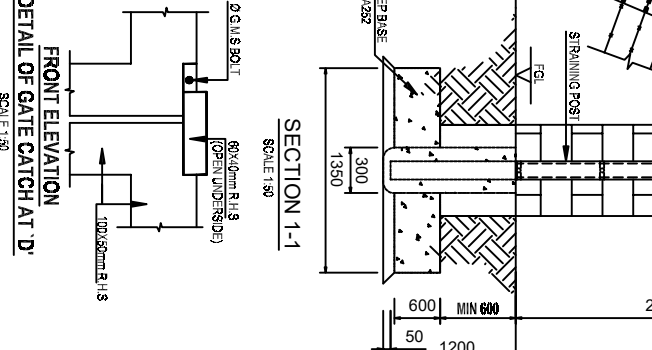
SECTION 7-7

SCALE: 1:50



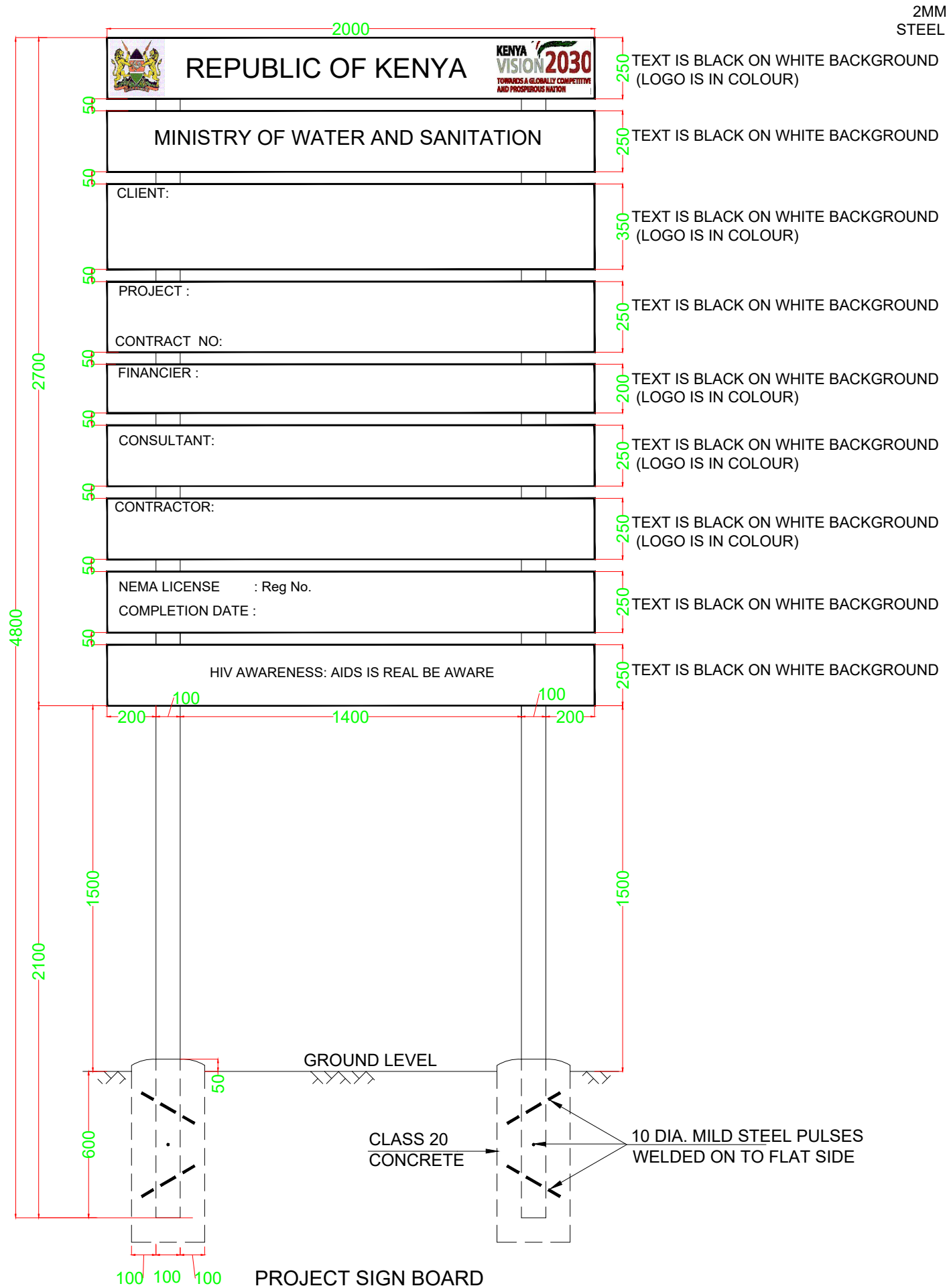
SECTION 6-6

SCALE: 1:50

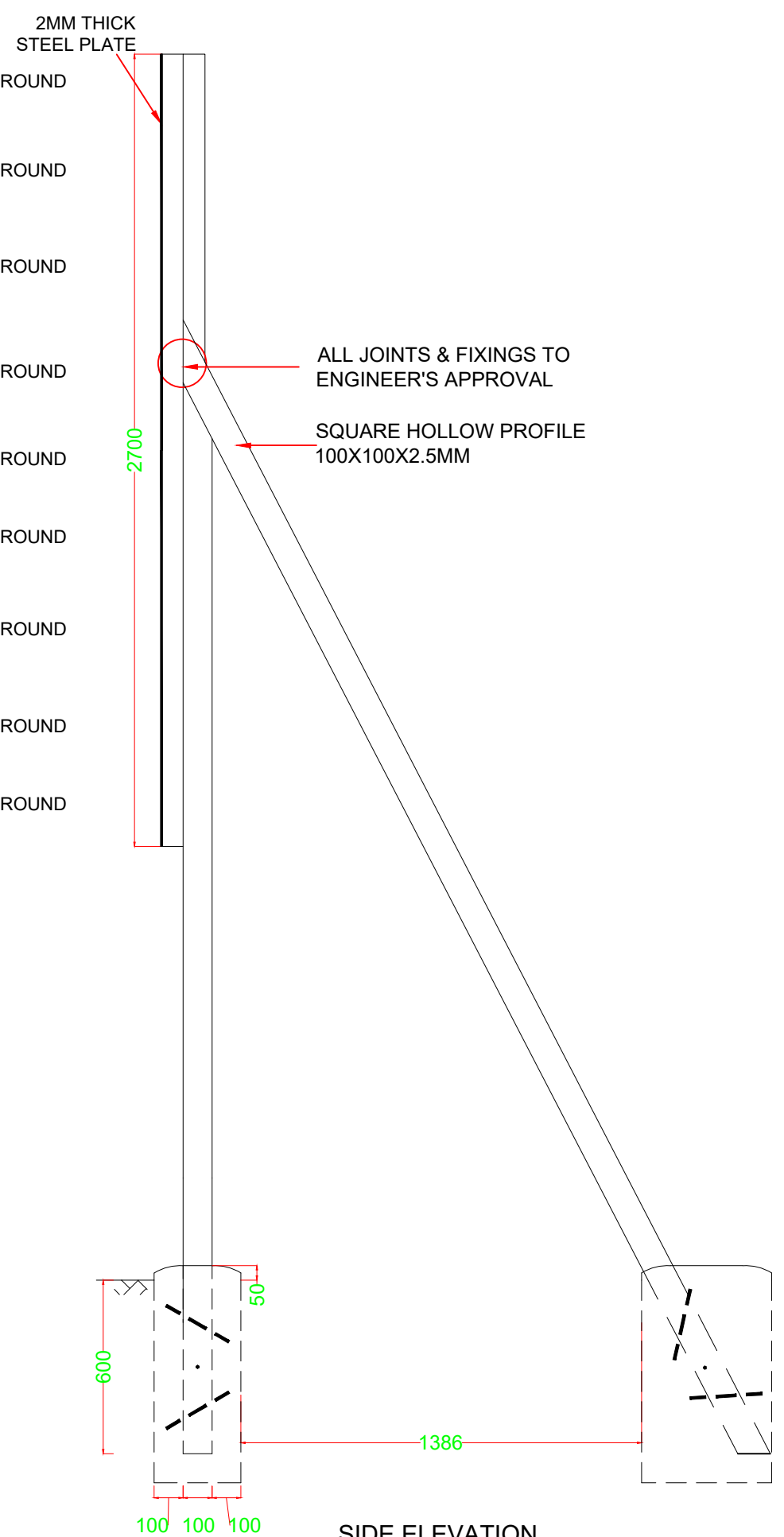


FRONT ELEVATION
DETAIL OF GATE CATCH AT 'D'

SCALE: 1:50



PROJECT SIGN BOARD
SCALE 1:20



SIDE ELEVATION
SCALE 1:20

NOTES :

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.

SPECIFICATIONS:


- ALL TEXT IS HELVETICA (ARIAL) FONT.
- COLOUR SPECIFICATION:
 - WHITE: B.S 873 PART 1 - CLAUSE 1-3.2
 - BLACK: B.S 873 PART 1 - CLAUSE 1-3.3
 - BLUE: B.S 4800 No. 18 E 53
 - RED: B.S 381C No. 537
 - YELLOW: B.S 381C No. 355
 - GREEN: B.S 4800 No. 14 C 39
- THE COLOUR OF THE PAINT CONFORMS TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS B.S 2660 No. 0 013
- THE PAINT IS DURABLE PAINT QUALITY.
- DURING THE DURATION OF THE PROJECT THE SIGN BOARD TO BE MAINTAINED IN GOOD CONDITION.

SPECIAL NOTES:

SIGN BOARDS SHALL BE ERECTED AT LOCATIONS AS DIRECTED BY THE ENGINEER.

REVISIONS		SIGNDATEAPPROVED	
C			
B			
A			

CONSULTANT:

 **Runji Consulting Group Ltd**
Engineering & Project Management.
P. O. Box 68053-00200 Nairobi

Project:


CONSULTANCY SERVICES FOR DESIGN REVIEW AND SUPERVISION OF IMMEDIATE WATER AND SANITATION WORKS; FOR GARISSA WATER AND SEWERAGE COMPANY AND DADAAB HOST COMMUNITIES IN GARISSA COUNTY.

Scale(s)	AS SHOWN	Date:	APRIL 2023
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Dwg. No. WS909/BH/STD/015

Design by: V.N.V	Drawn by: P.W.K
Sign.....	Sign.....
Checked by: F.N.O	Approved by: R.N
Sign.....	Sign.....

CLIENT:

 GARISSA WATER AND SEWERAGE COMPANY P.O BOX 1088-70100, GARISSA, KENYA

CONTRACT NO:	
--------------	--

PROJECT MANAGER	DATE	ENGINEER	DATE
Sign.....		Sign.....	

DWG. Title:

TYPICAL PROJECT SIGN BOARD DETAILS