



# Renovation, Upgrading and Adopted Designs of WASH Facilities for BENANO BOARDING SCHOOL

Engineering Services for Site Assessment, Design Adaptation and supervision works for Rehabilitation of WASH  
and MHM Facilities in selected Secondary Schools in Somali Region

**Prepared for:** UNICEF

**Prepared by:** HALBEEG ARCHITECT & ENGINEERING CONSULTANCY

**Date:** September, 2025



## BENANO BOARDING SCHOOL

| SN | DESCRIPTION                                    | Remark   |
|----|------------------------------------------------|----------|
| 1  | Site Plan & Water supply installation          |          |
| 2  | 6 Seats Latrine Construction, for Girls        | New      |
| 3  | 6 Seats Latrine construction, for Boys         | New      |
| 4  | 10 Seat Latrine Renovate & Upgrade, for Girls  | Renovate |
| 5  | 10 Seat Latrine Renovate & Upgrade, for Boys   | Renovate |
| 6  | 2 Seat Latrine construction, for Staffs        | New      |
| 7  | MHM block Construction                         | New      |
| 8  | Drinking Water Tap Stand Construction, 10 taps | New      |
| 9  | Elevated Water Tanker Seat Construction, 20m3  | New      |
| 10 | Construction of 30m3 birka                     | New      |
| 11 | Incinerator                                    | New      |

# **SITE PLAN**

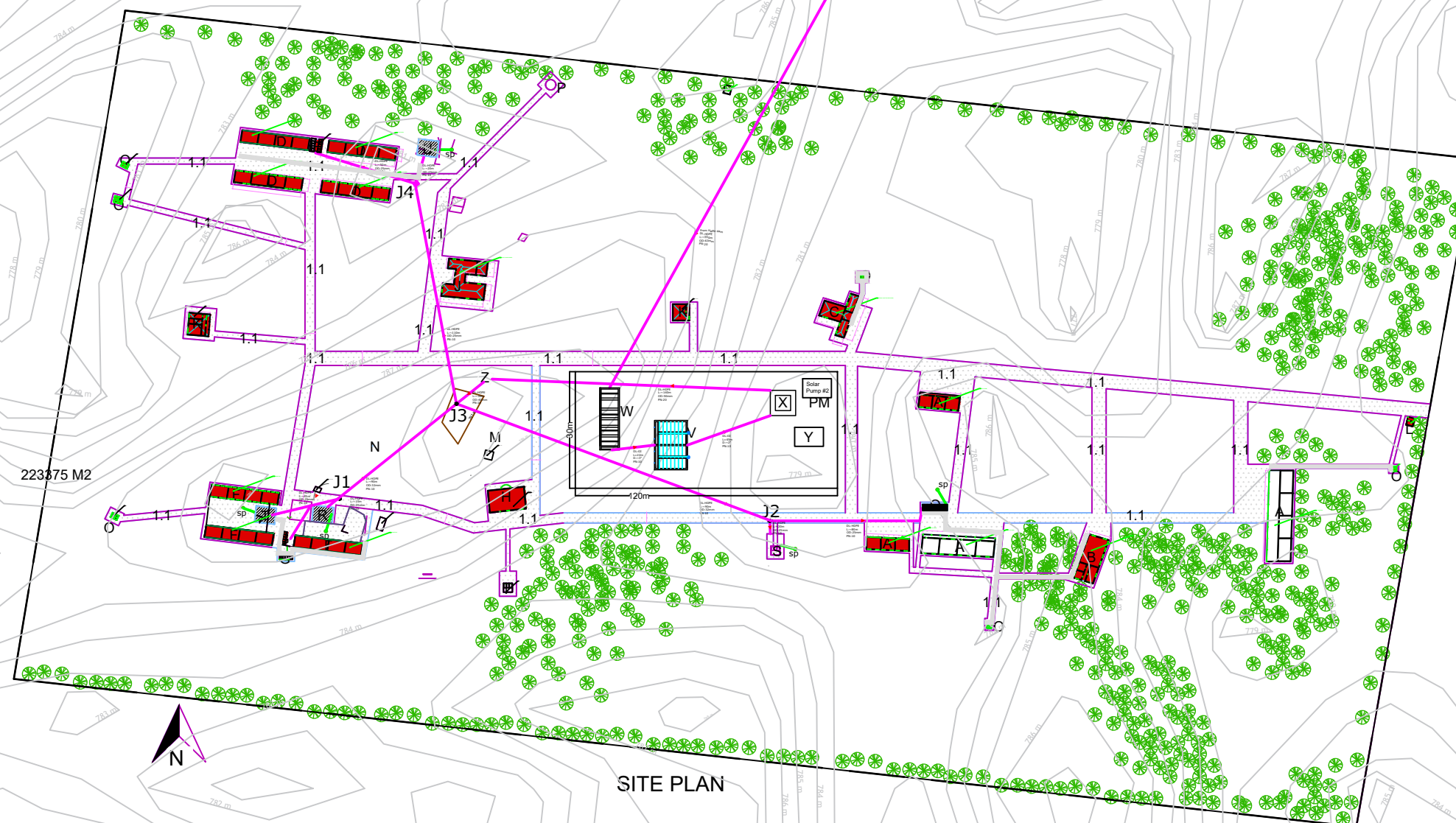
## LEGEND

- |   |                                         |    |                             |
|---|-----------------------------------------|----|-----------------------------|
| A | EXISTING CLASS ROOM                     | N  | GENERATOR HOUSE             |
| B | EXISTING ADMINISTRATION OFFICE          | O  | EXISTING TOILET             |
| C | EXISTING LIBRARY                        | P  | INCENERATOR                 |
| D | EXISTING MALE DORMITORY                 | Q  | DRINKING FOUNTAIN(NEW)      |
| E | EXISTING MALE LATRINE                   | R  | MHM(NEW)                    |
| F | EXISTING FEMALE DORMITORY               | S  | NEW STAFF LATRINE           |
| G | EXISTING FEMALE LATRINE                 | Z  | ELEVATED WATER TANKER (NEW) |
| H | EXISTING MOSQUE                         | T  | NEW GIRLS LATRINE           |
| I | EXISTING ABULUTION AND TOILET           | U  | NEW BOYS LATRINE            |
| J | EXISTING DINING HALL                    | PM | SOLAR PUMP #1 AND # 2       |
| K | EXISTING TEACHER'S DORMITORY            |    |                             |
| L | GAURD HOUSE                             |    |                             |
| V | SLOW SAND FILTER                        |    |                             |
| W | HORIZONTAL ROUGHING FILTER              |    |                             |
| X | NEW UNDERGROUND WATER RESERVOIR (BIRKA) |    |                             |
| Y | SAND WASHING AND STORING                |    |                             |

## MATERIAL LEGEND

- |                                                                                   |                           |
|-----------------------------------------------------------------------------------|---------------------------|
| 1.1                                                                               | CONCRETE PAVEMENT         |
|  | WALKWAY TO BE CONSTRUCTED |

TOTAL SITE AREA:



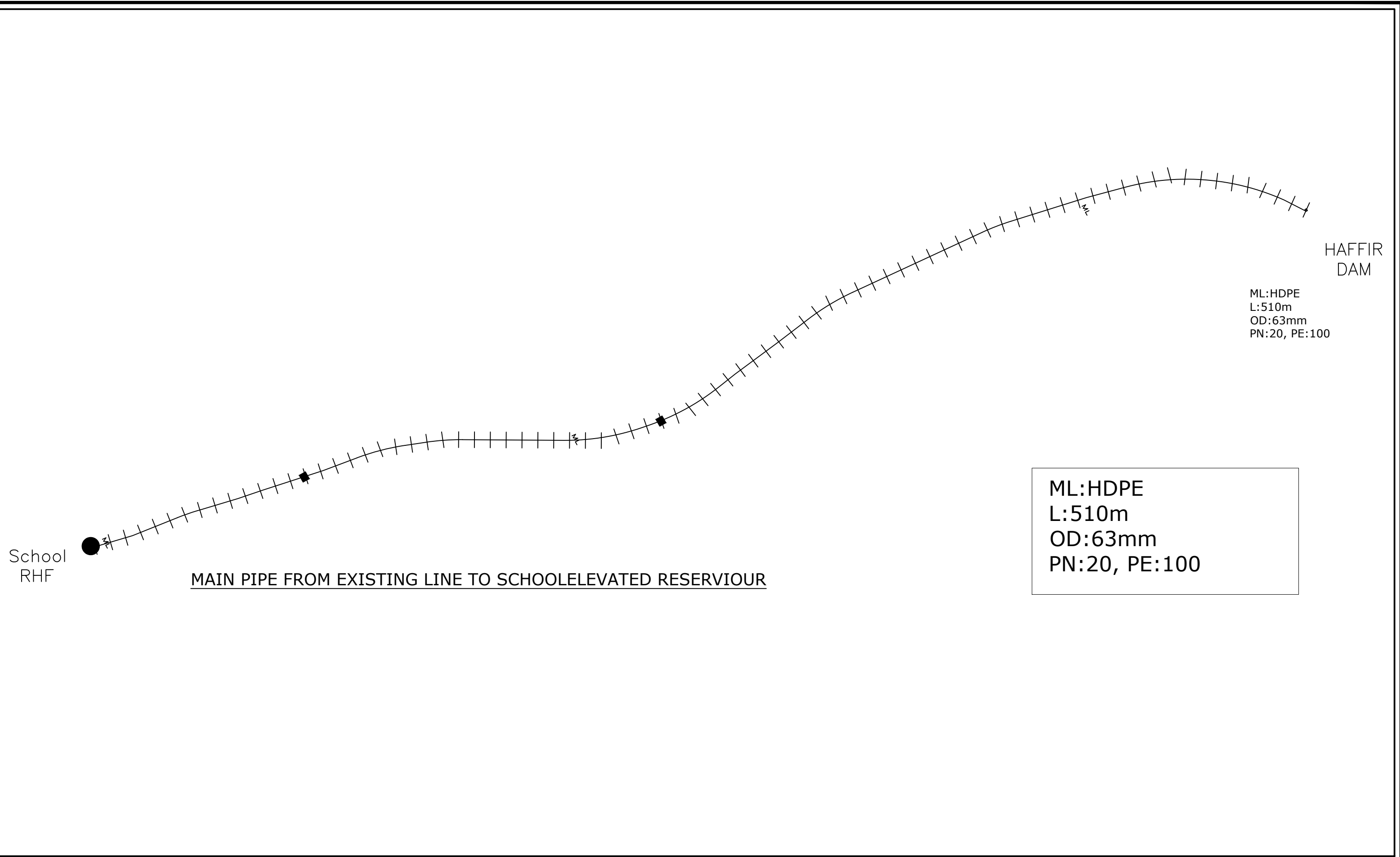
**PROJECT**  
Engineering Services for Site Assessment, Design Adaptation and supervision works for Rehabilitation of WASH and MHM Facilities in selected Secondary Schools in Somali Region

**OWNER**  
UNICEF

**DRAWING TITLE**  
PROPOSED SITE LAYOUT  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

**CAD BY.**  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

|                          |                           |                    |
|--------------------------|---------------------------|--------------------|
| <b>SCALE</b><br>AS SHOWN | <b>DATE</b><br>OCT., 2025 | <b>GN</b><br>01/01 |
|--------------------------|---------------------------|--------------------|

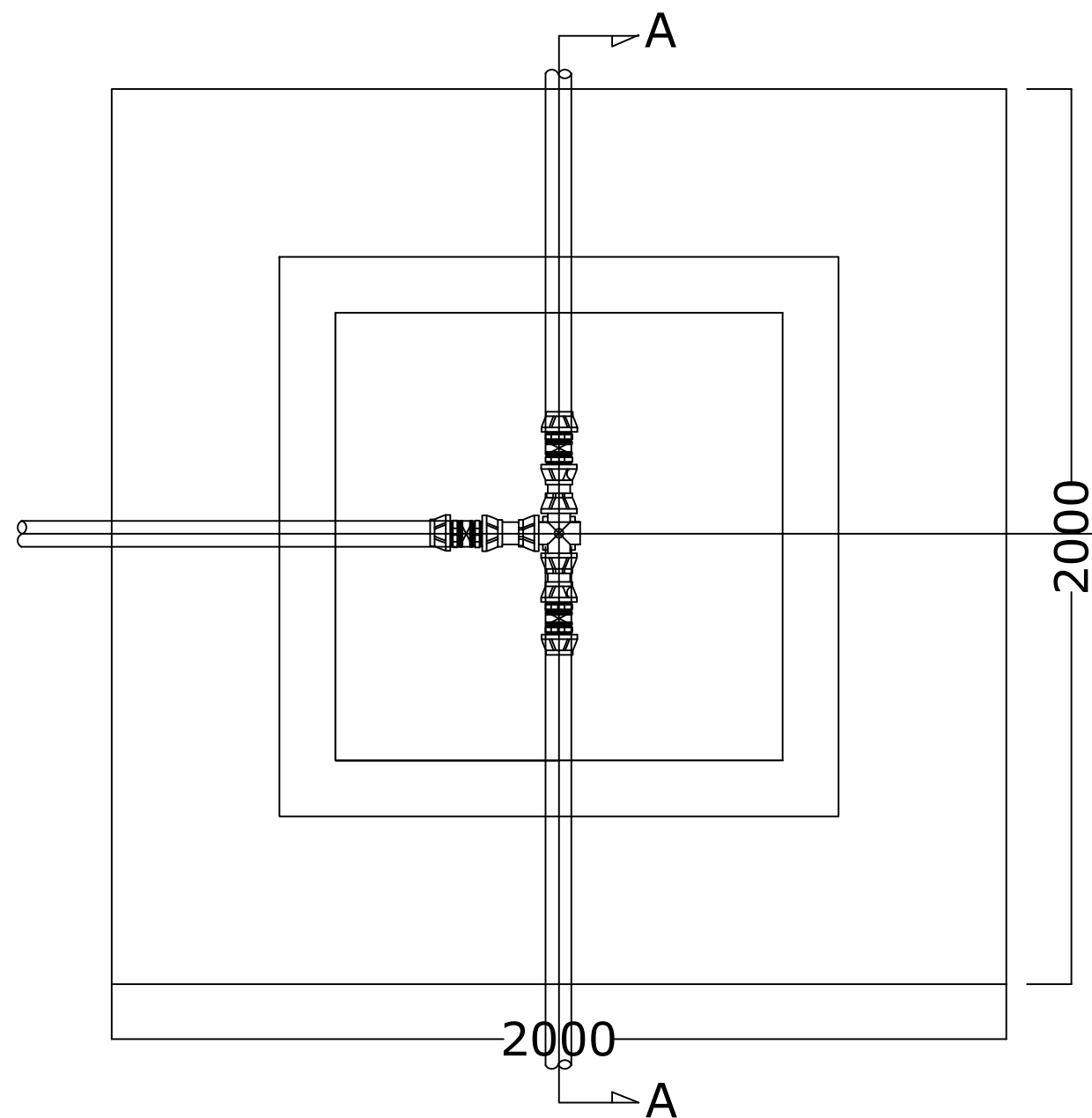


PROJECT  
Engineering Services for Site Assessment, Design Adaptation and supervision works for Rehabilitation of WASH and MHM Facilities in selected Secondary Schools in Somali Region

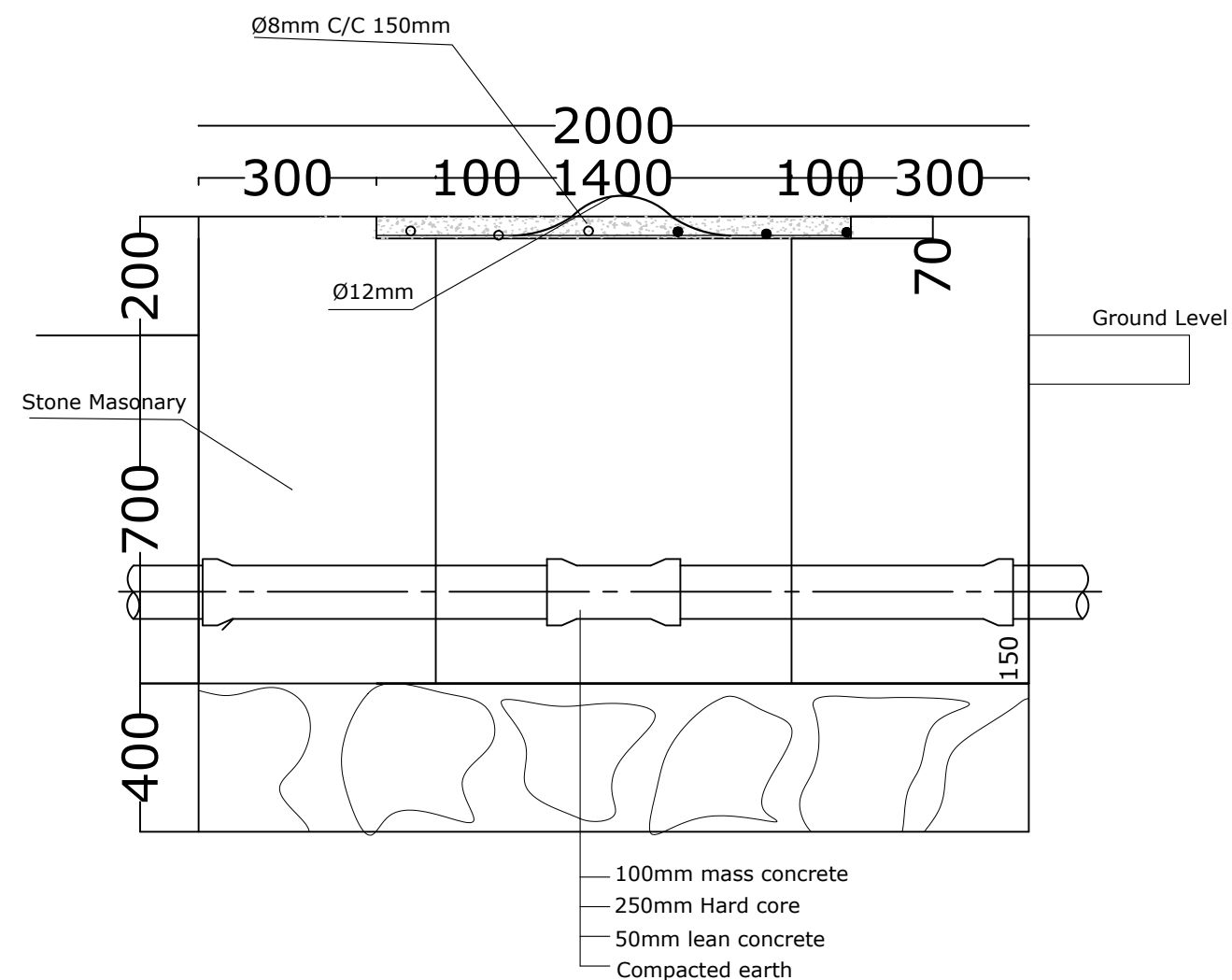
OWNER  
UNICEF

DRAWING TITLE  
MAIN PIPE LAYOUT  
Benano Boarding School, Gashamo District, Jarar Zone.

|                                                                     |                     |             |
|---------------------------------------------------------------------|---------------------|-------------|
| CAD BY.<br>HALBEEG ARCHITECT & ENGINEERING CONSULTANCY<br>Mesfin H. |                     |             |
| SCALE<br>AS SHOWN                                                   | DATE<br>SEPT., 2025 | DT<br>01/02 |



TYPICAL VALVE CHAMBER PLAN



SECTION A-A  
TYPICAL VALVE CHAMBER

CHAMBER BOX (J1)

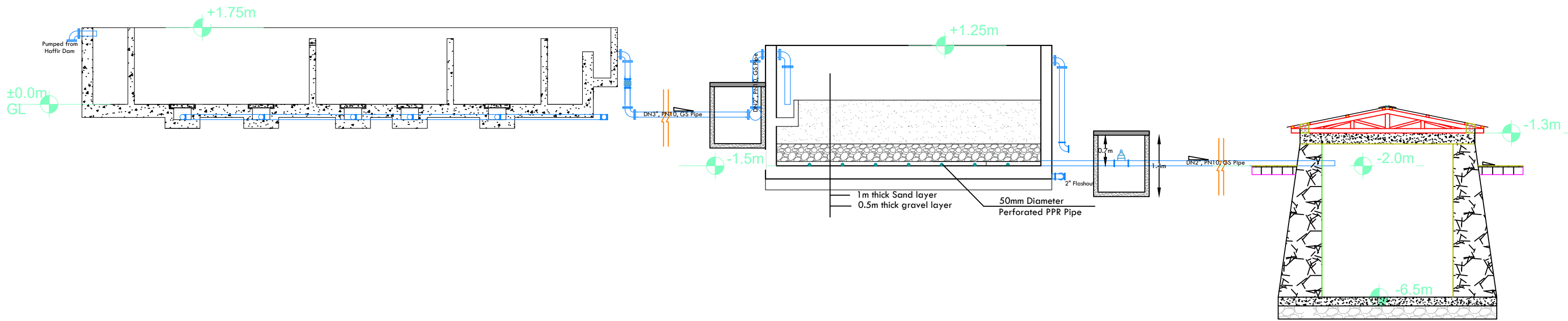
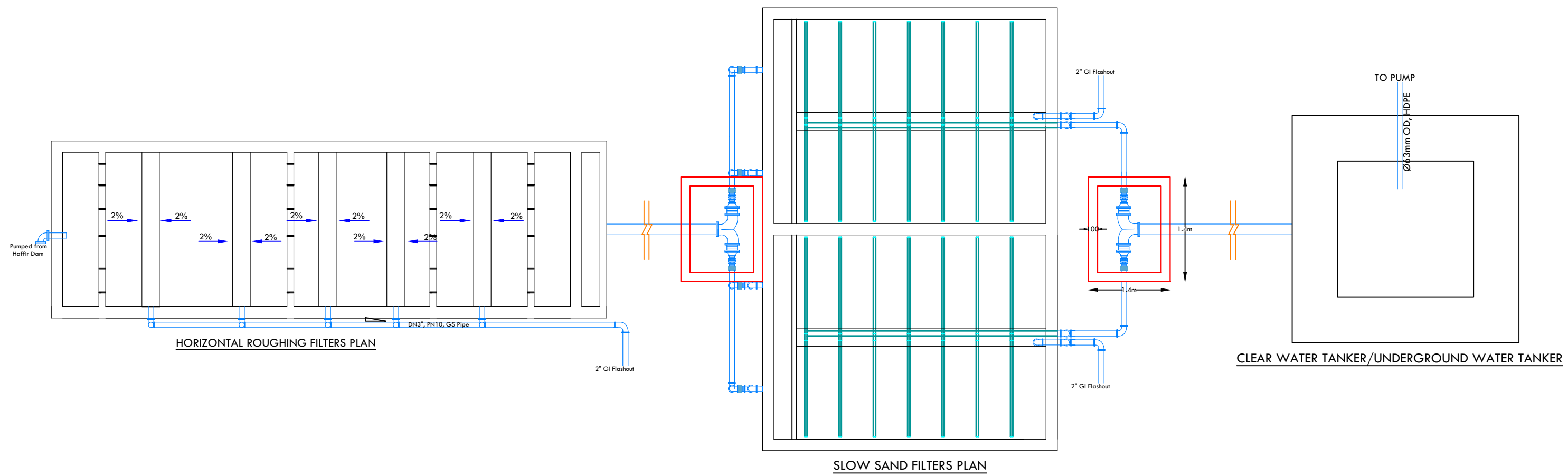
|  |   |                                 |          |   |
|--|---|---------------------------------|----------|---|
|  | 1 | HDPE Male Adaptor OD            | 25       | 3 |
|  | 2 | Bronze gate valve DN32          | 32       | 1 |
|  | 3 | HDPE Male Adaptor OD            | 32       | 2 |
|  | 4 | HDPE Compression Equal Cross OD | 25x25x25 | 1 |
|  | 5 | HDPE Piece Pipe OD              | 25       | 1 |
|  | 6 | HDPE Compression Tapper OD      | 25x32    | 1 |

CHAMBER BOX (J3)

|  |   |                                 |          |   |
|--|---|---------------------------------|----------|---|
|  | 1 | HDPE Male Adaptor OD            | 32       | 3 |
|  | 2 | Bronze gate valve DN32          | 40       | 1 |
|  | 3 | HDPE Male Adaptor OD            | 40       | 2 |
|  | 4 | HDPE Compression Equal Cross OD | 32x32x32 | 1 |
|  | 5 | HDPE Compression Tapper OD      | 40x32    | 1 |

CHAMBER BOX (J2/J4)

|  |   |                                     |          |   |
|--|---|-------------------------------------|----------|---|
|  | 1 | HDPE Male Adaptor OD                | 25       | 2 |
|  | 2 | Bronze gate valve DN40              | 32       | 1 |
|  | 3 | HDPE Piece Pipe OD                  | 32       | 1 |
|  | 4 | HDPE Compression Equal Cross Tee OD | 25x25x25 | 1 |
|  | 5 | HDPE Male Adaptor OD                | 32       | 2 |
|  | 6 | HDPE Compression Tapper OD          | 32x25    | 1 |



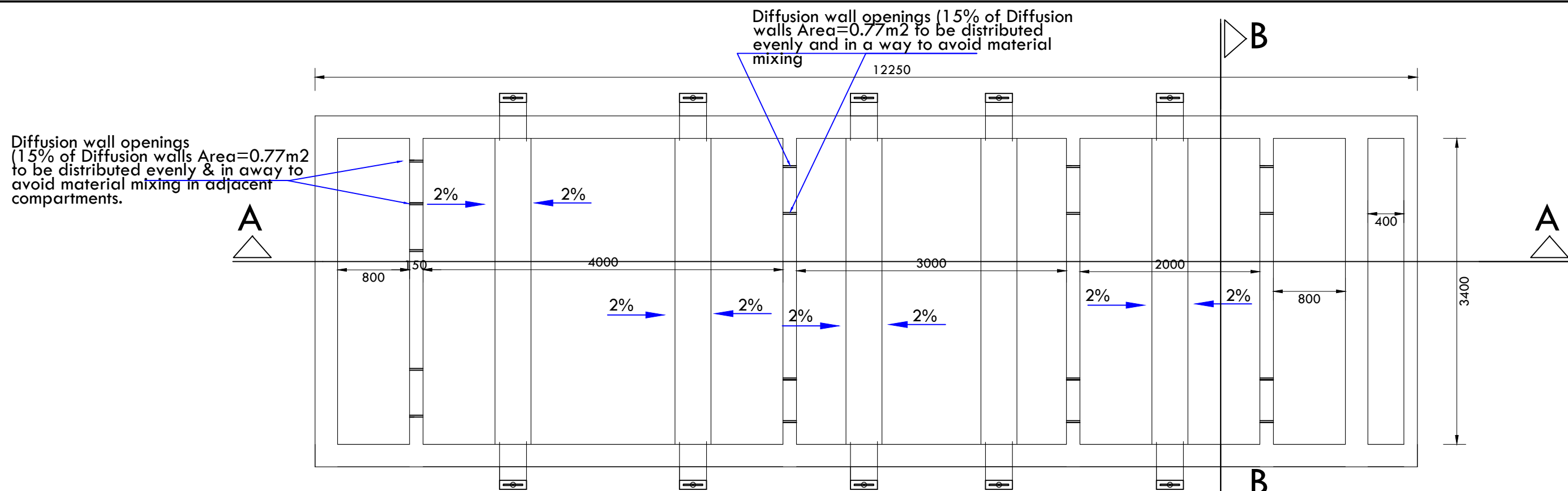
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 Engineering Services for Site Assessment, Design Adaptation and supervision works for Rehabilitation of WASH and MHM Facilities in selected Secondary Schools in Somali Region

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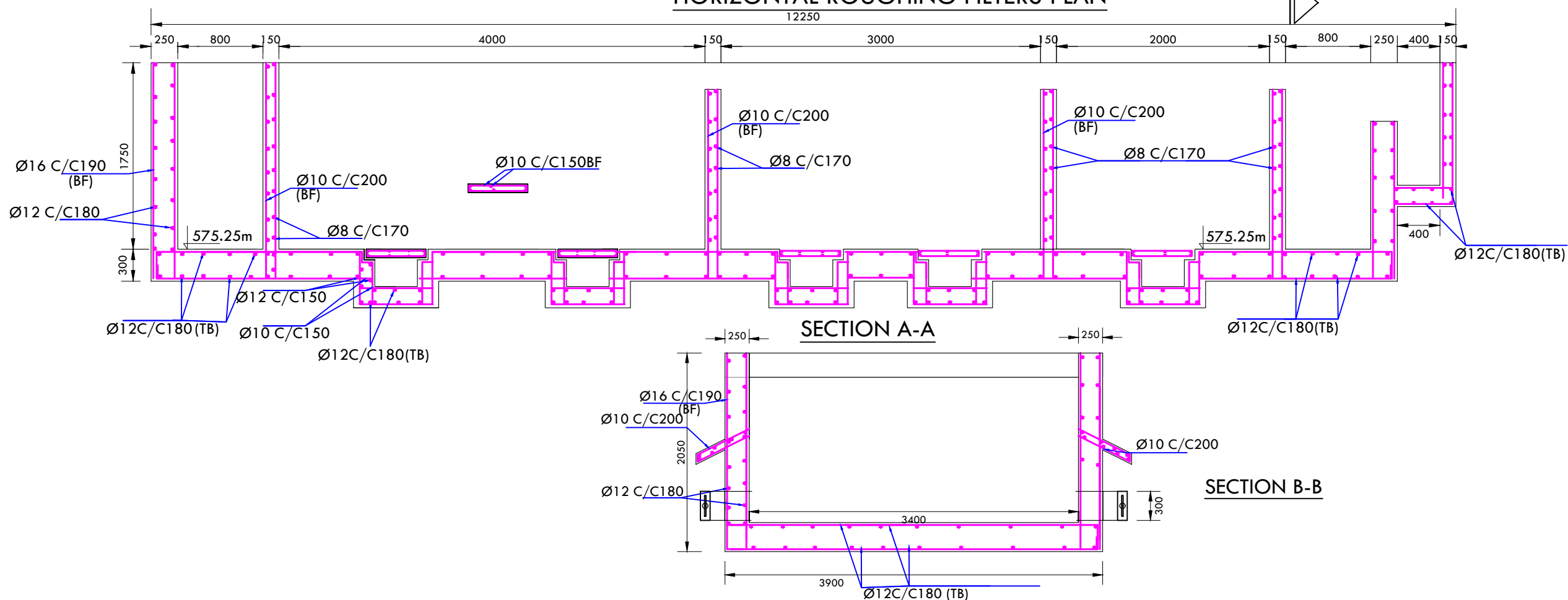
**DRAWING TITLE**  
 WATER TREATMENT FLOW  
 BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

**CAD BY.**  
 HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
 Mesfin H.

|                          |                            |                    |
|--------------------------|----------------------------|--------------------|
| <b>SCALE</b><br>AS SHOWN | <b>DATE</b><br>SEPT., 2025 | <b>EM</b><br>01/07 |
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HORIZONTAL ROUGHING FILTERS PLAN



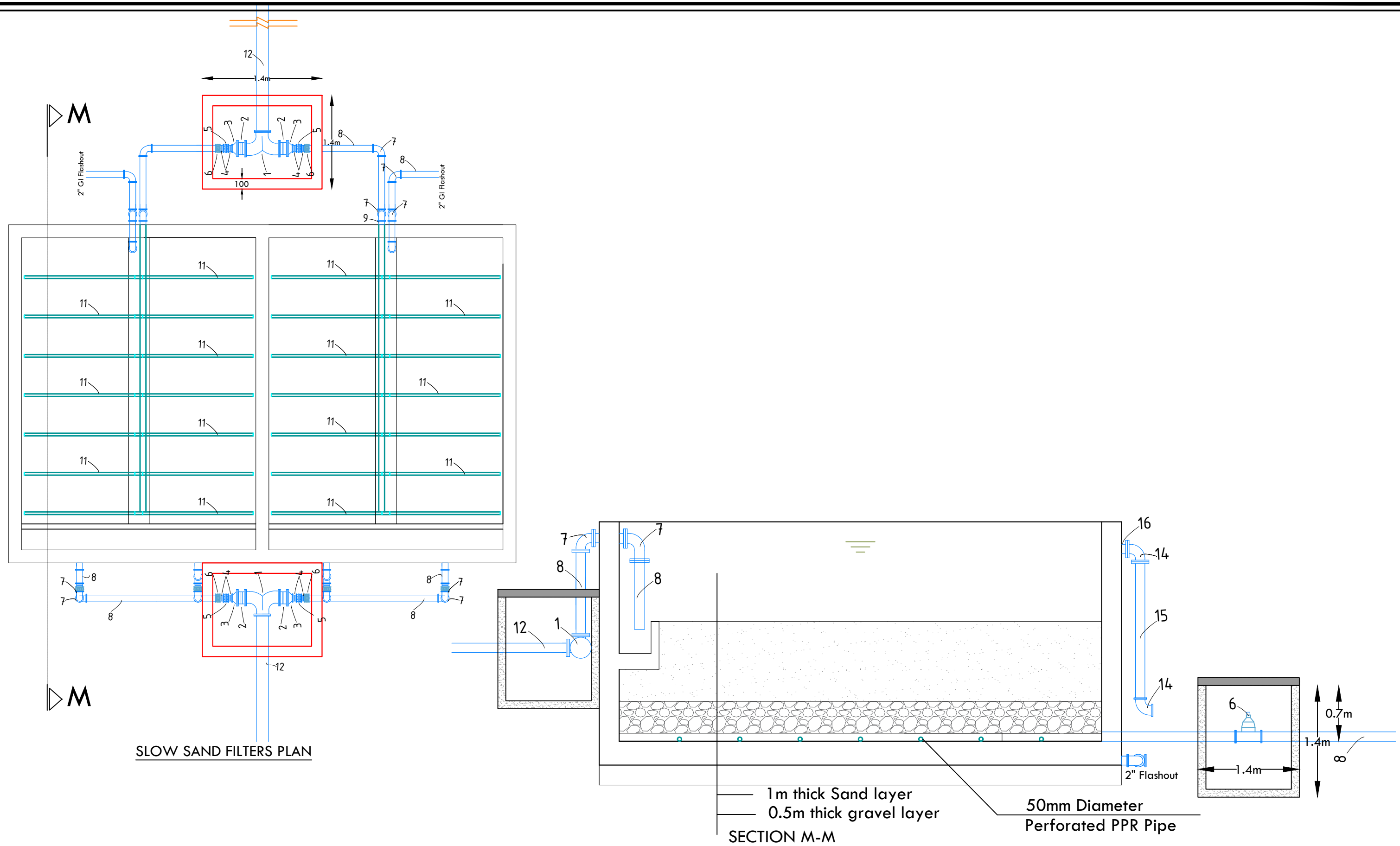
PROJECT  
Engineering Services for Site Assessment, Design Adaptation and supervision works for Rehabilitation of WASH and MHM Facilities in selected Secondary Schools in Somali Region

OWNER  
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DRAWING TITLE  
HORIZONTAL ROUGHING FILTER  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

CAD BY.  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

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|-------------------|---------------------|-------------|
| SCALE<br>AS SHOWN | DATE<br>SEPT., 2025 | EM<br>02/07 |
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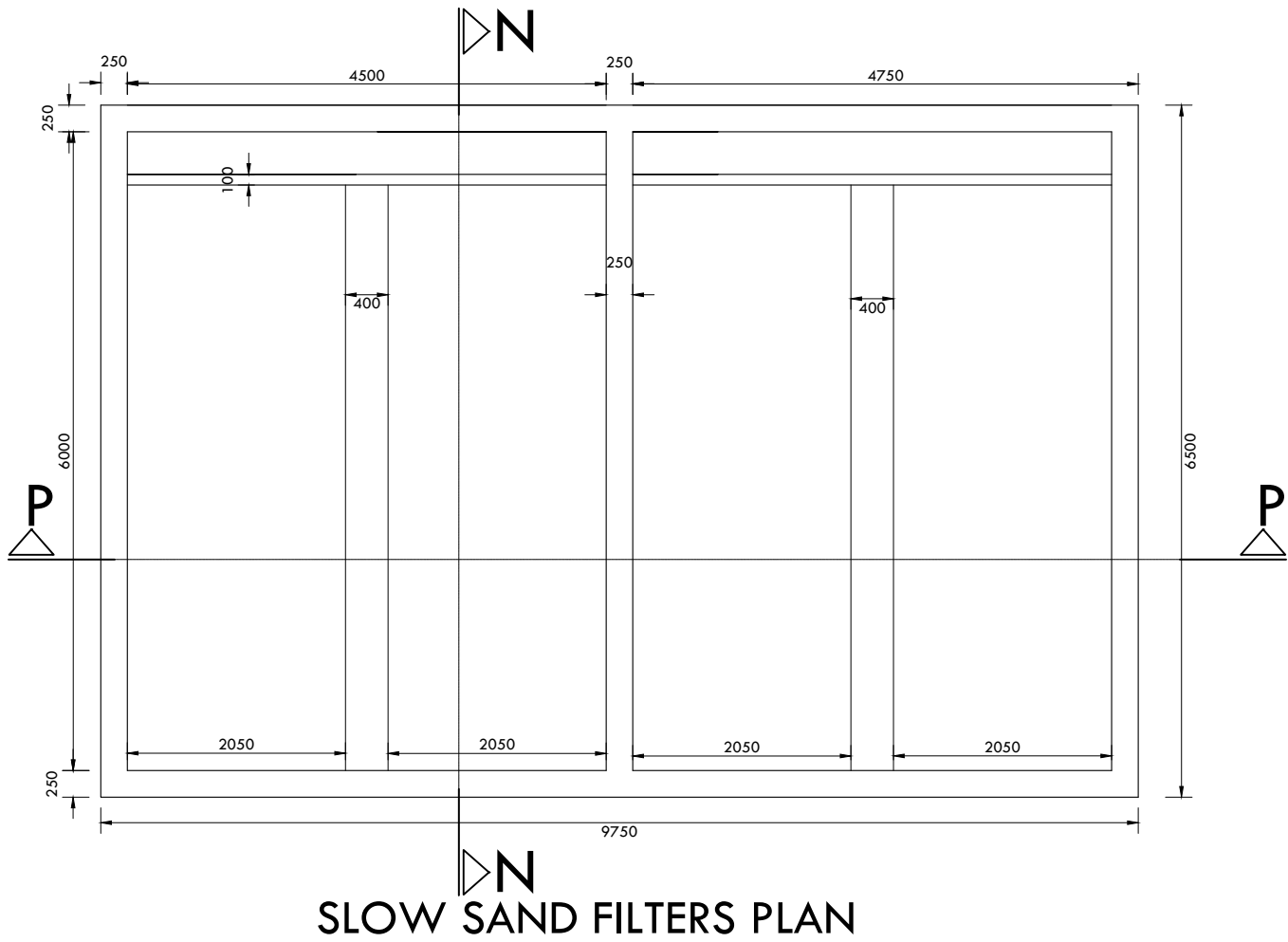


SLOW SAND FILTERS PLAN

1m thick Sand layer  
0.5m thick gravel layer  
SECTION M-M

50mm Diameter  
Perforated PPR Pipe

| EM02-Slow Sand Filters                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |               |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------------|
| It.No                                     | Item Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Unit | Quantity Rate |
| SSF Water Inlet & Outlet Pipes & Fittings |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |               |
| 1                                         | DN 3", PN10, GS Female threaded Tee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Pcs  | 1             |
| 2                                         | DN3" , PN10, GS Nipples                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PCs. | 4             |
| 3                                         | DM3"x2" ,PN10, GS Reducer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | PCs. | 4             |
| 4                                         | DN2", PN10, GS Nipples                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | PCs. | 8             |
| 5                                         | DN 2", PN10, GS Union                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | PCs. | 4             |
| 6                                         | DN2",PN10, Bronze Gate Valve                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | PCs. | 4             |
| 7                                         | DN2", PN10, GS Female threaded elbow                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | PCs. | 12            |
| 8                                         | DN2", PN, GS Pipe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | PCs. | 5             |
| 9                                         | DN2",PN10, GS Short Pipe with Central Puddle, L=700mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | PCs. | 4             |
| 12                                        | DN3", PN, GS Pipe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | PCs. | 2             |
| 10                                        | DN 2", PN10, GS Female threaded Tee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Pcs  | 1             |
| 11                                        | DN50mm, PN10, GS perforated Pipe laterals with perforations ofφ 0.3mm, C/C200mm at 450 from the center of the pipe to the downward direction with twin perforations. With lateral Spacing of C/C1000mm for two units. And connection GS φ50mm Tee casted in concrete precast with extension pipe L=250mm,GS φ50mm as per the drawings.                                                                                                                                                                                                                                                          | LS   | 1             |
| Overflow Pipes & Fittings                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |               |
| 14                                        | DN4", PN10, GS elbow                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | PCs. | 4             |
| 15                                        | DN4", PN10, GS Pipe, L=2m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | PCs. | 2             |
| 16                                        | DN4", PN10, GS Short pipe with central puddle L=700mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | PCs. | 2             |
| Filter Materials                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |               |
| 16                                        | Supply and place Filter Sand Material with gradation as specified/ with relevant standard for slow sand filters for two units. as per the drawings                                                                                                                                                                                                                                                                                                                                                                                                                                              | LS   | 1             |
| 17                                        | Supply and place Filter Material Support gravel with gradation as specified/ with relevant standard for slow sand filters for two units. as per the drawings                                                                                                                                                                                                                                                                                                                                                                                                                                    | LS   | 1             |
| Others                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |               |
| 18                                        | Interconnecting Pipes within the Treatment Compound/ from Horizontal Filters to Clear Water TankDN,3",PN10, GS Pipe,L=6m                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | PCs. | 3             |
| 19                                        | Internal & External ladder with GS, Pipe 2XL1=1650mm, 1XLext=3000mm,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | LS   | 1             |
| 20                                        | Pipe support with pipe clamp, anchor bolts etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | LS   | 1             |
| 21                                        | The Tenderer shall list below any additional works, obligations, or items referenced in the Conditions of Contract, Specifications, Drawings, or Data Schedules that are not separately included in the Schedule of Prices but for which a separate charge is desired. Such charges shall be entered in the "Amount" column. If no separate charge is indicated, it shall be understood that the prices quoted elsewhere in the Schedule of Prices fully cover all costs, materials, and obligations associated with these works or items. The Tenderer is to describe hereunder, inserting any |      |               |
| Total Carried to Summary of Bills         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |               |



PROJECT  
Engineering Services for Site Assessment, Design Adaptation and supervision works for Rehabilitation of WASH and MHM Facilities in selected Secondary Schools in Somali Region

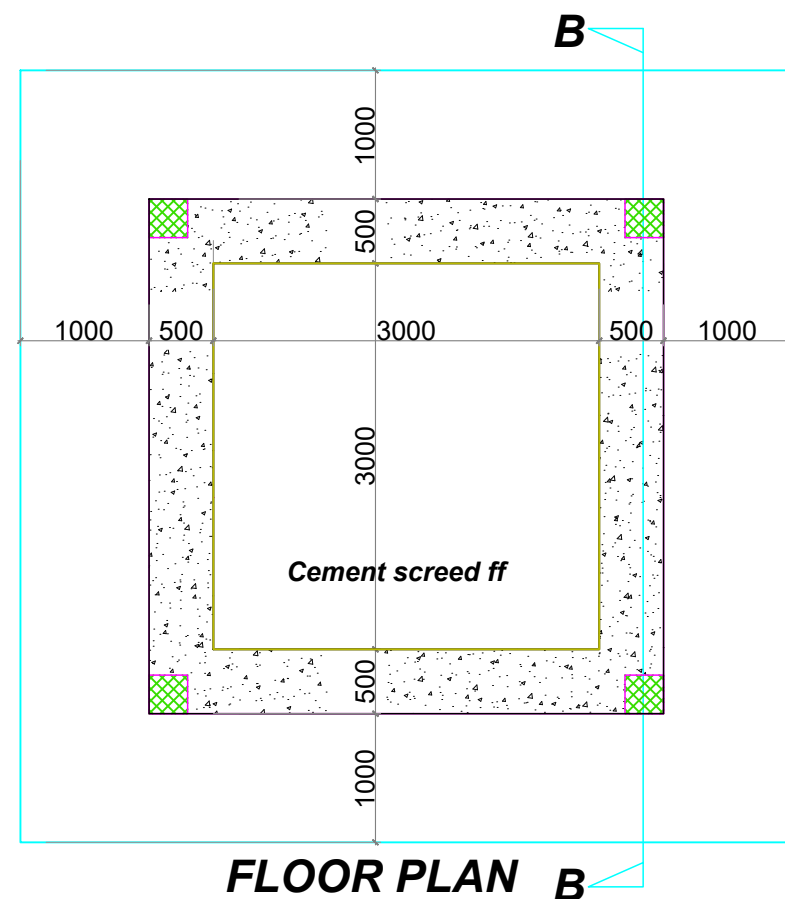
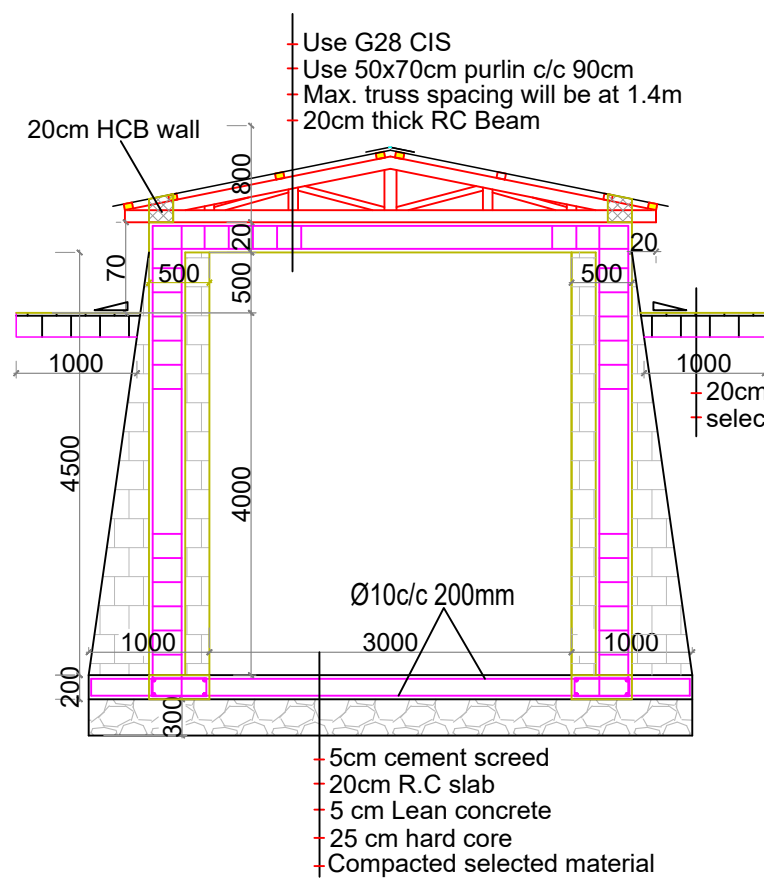
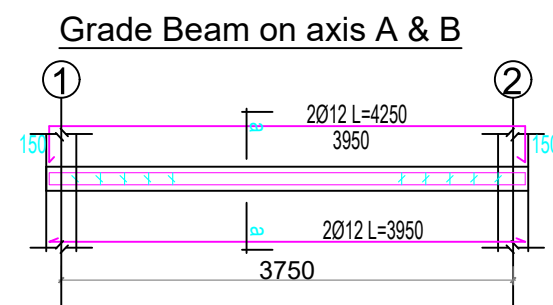
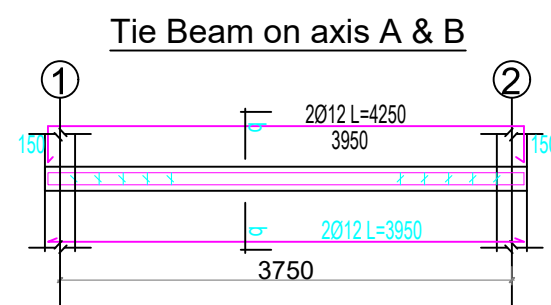
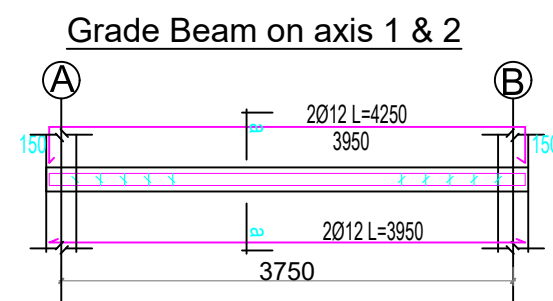
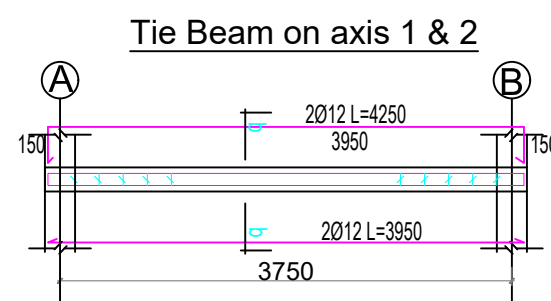
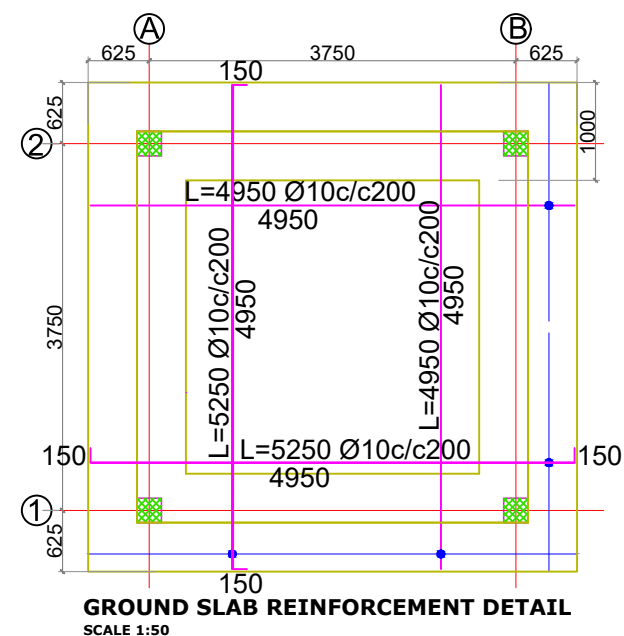
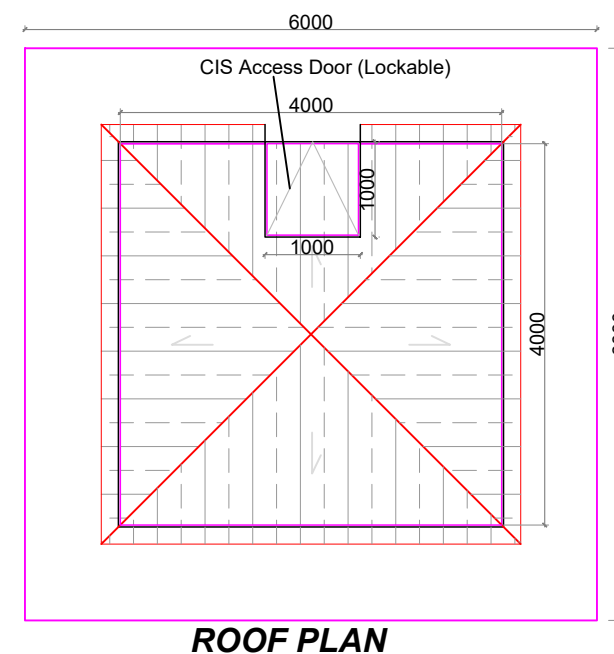
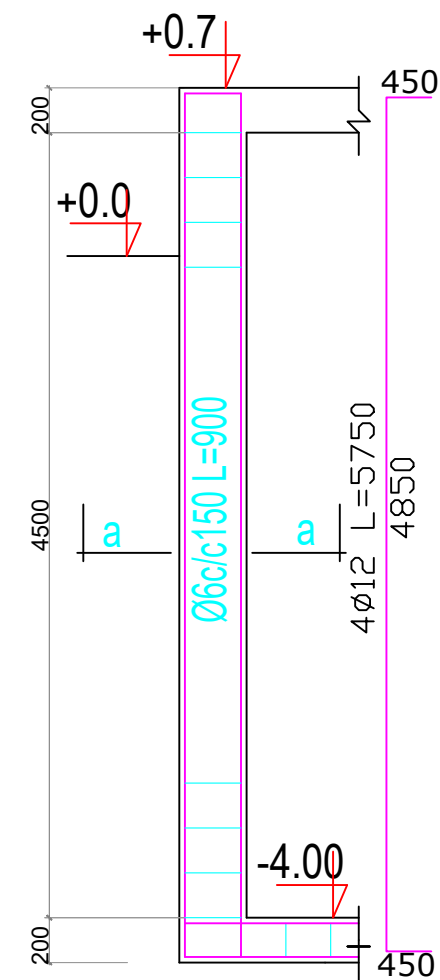
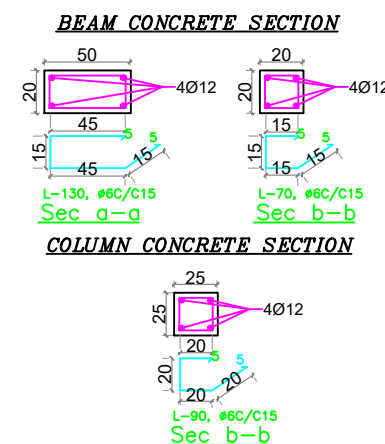
OWNER  
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DRAWING TITLE  
SLOW SAND FILTER  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

CAD BY.  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

|                   |                    |             |
|-------------------|--------------------|-------------|
| SCALE<br>AS SHOWN | DATE<br>SEPT.,2025 | EM<br>04/07 |
|-------------------|--------------------|-------------|





Notes:

- ROOF PLAN**
- Concrete Quality shall be C25.
  - Structural drawings should be read with Architectural drawings.
  - Reinforcement steel quality shall be  $f_{yk}=300\text{MPa}$  and  $f_{yk}=400\text{MPa}$  for rebar size less than 12 and greater than 10 respectively.
  - Black cotton soil shall be removed entirely & suitable selected material shall be backfilled (compacted in 20cm layers).
  - Hardcore layer of 25cm thickness shall be provided on top of the selected material.
  - Concrete cover for Beams and columns shall be 25mm.
  - Concrete cover for Slabs shall be 25mm.
  - Provide 20cm by 20cm access hole to be covered by wire mesh in masonry wall for pump hose/pipe.
  - Provide lockable access CIS door as indicated in the drawing.

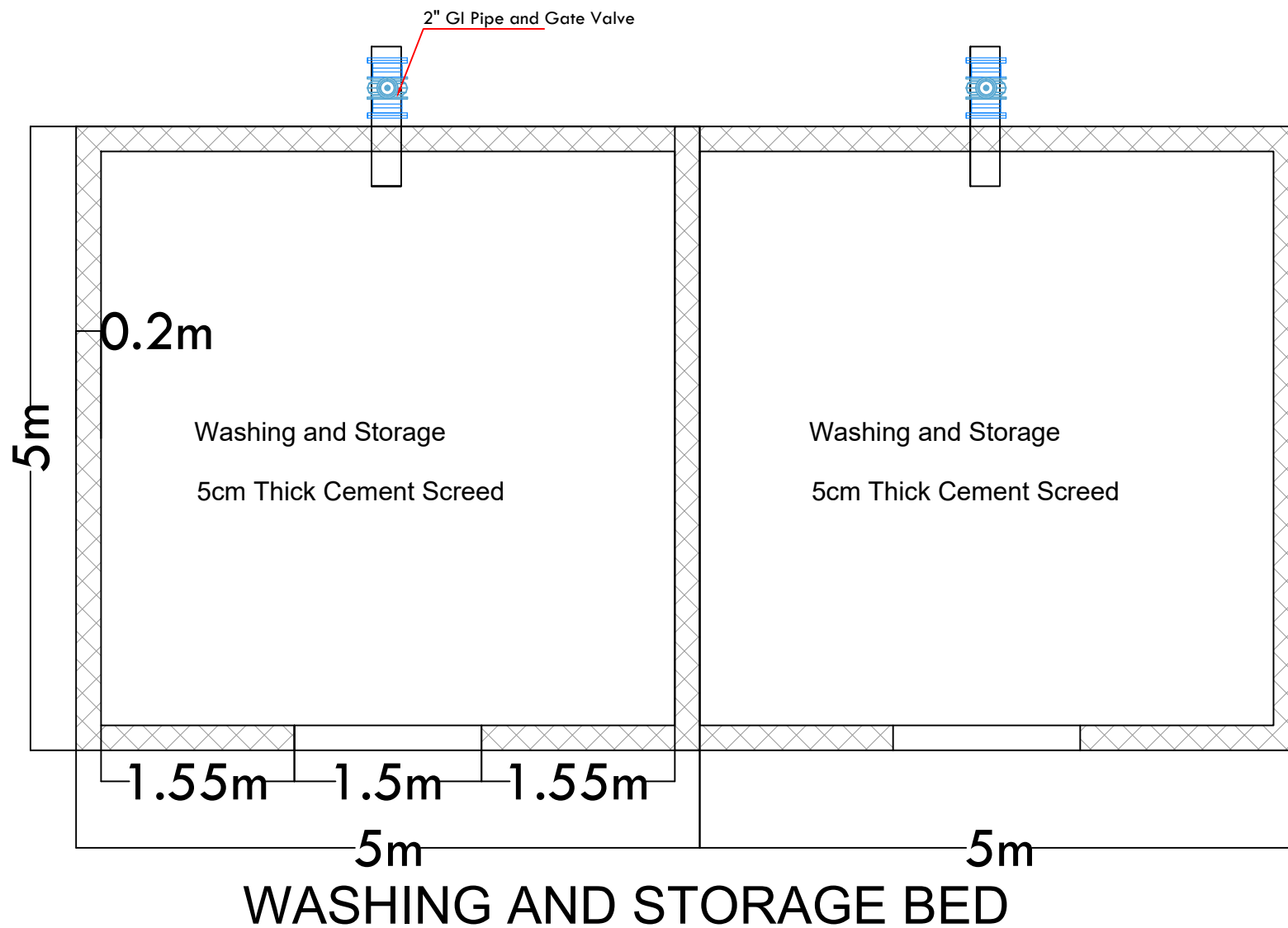
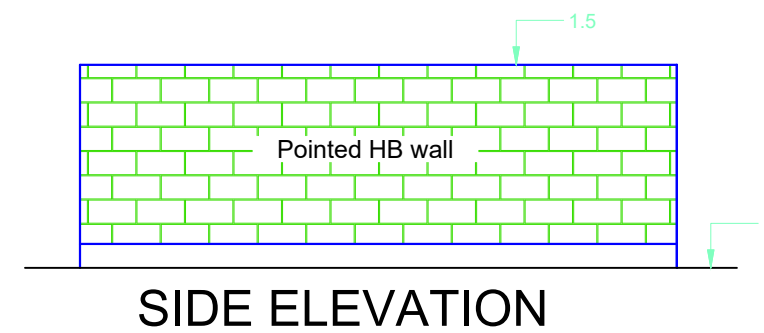
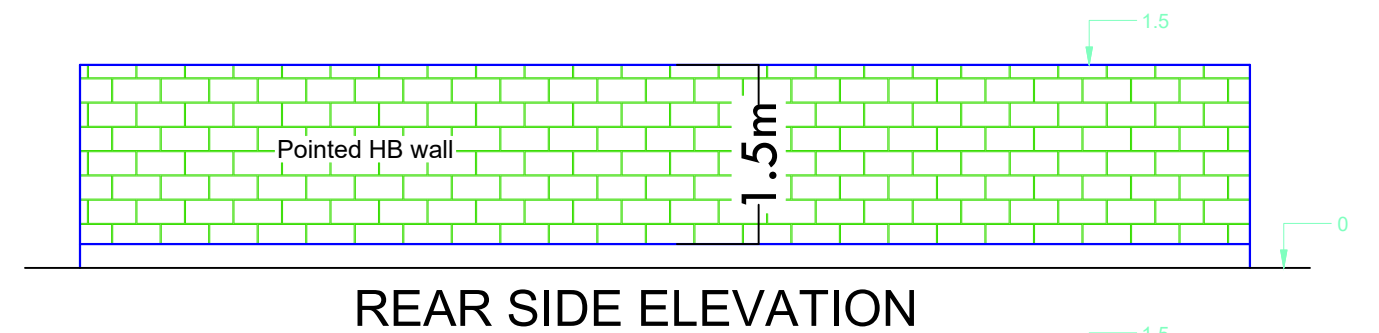
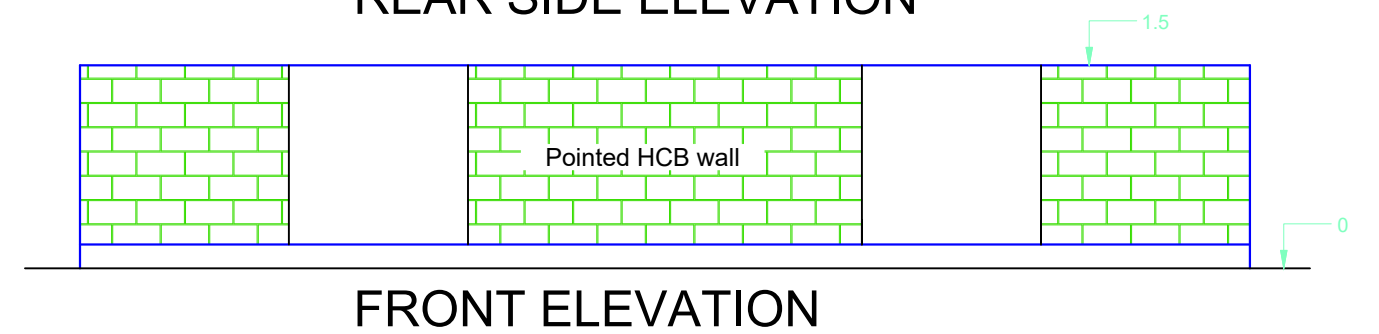
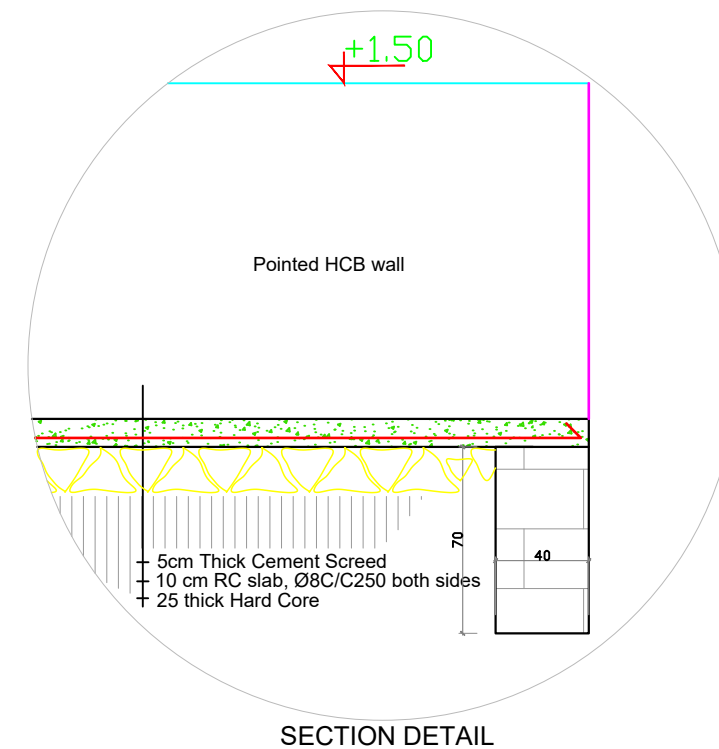
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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PROJECT                                                                                                                                                                        |
| Engineering Services for Site Assessment, Design Adaptation and supervision works for Rehabilitation of WASH and MHM Facilities in selected Secondary Schools in Somali Region |

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|                                                                                                      |  |
|------------------------------------------------------------------------------------------------------|--|
| DRAWING TITLE                                                                                        |  |
| CLEAN WATER TANKER/UNDERGROUND WATER TANKER<br>BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone. |  |

CAD BY.  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

|          |             |           |
|----------|-------------|-----------|
| SCALE    | DATE        | <b>EM</b> |
| AS SHOWN | SEPT., 2025 | 06/07     |



**PROJECT**  
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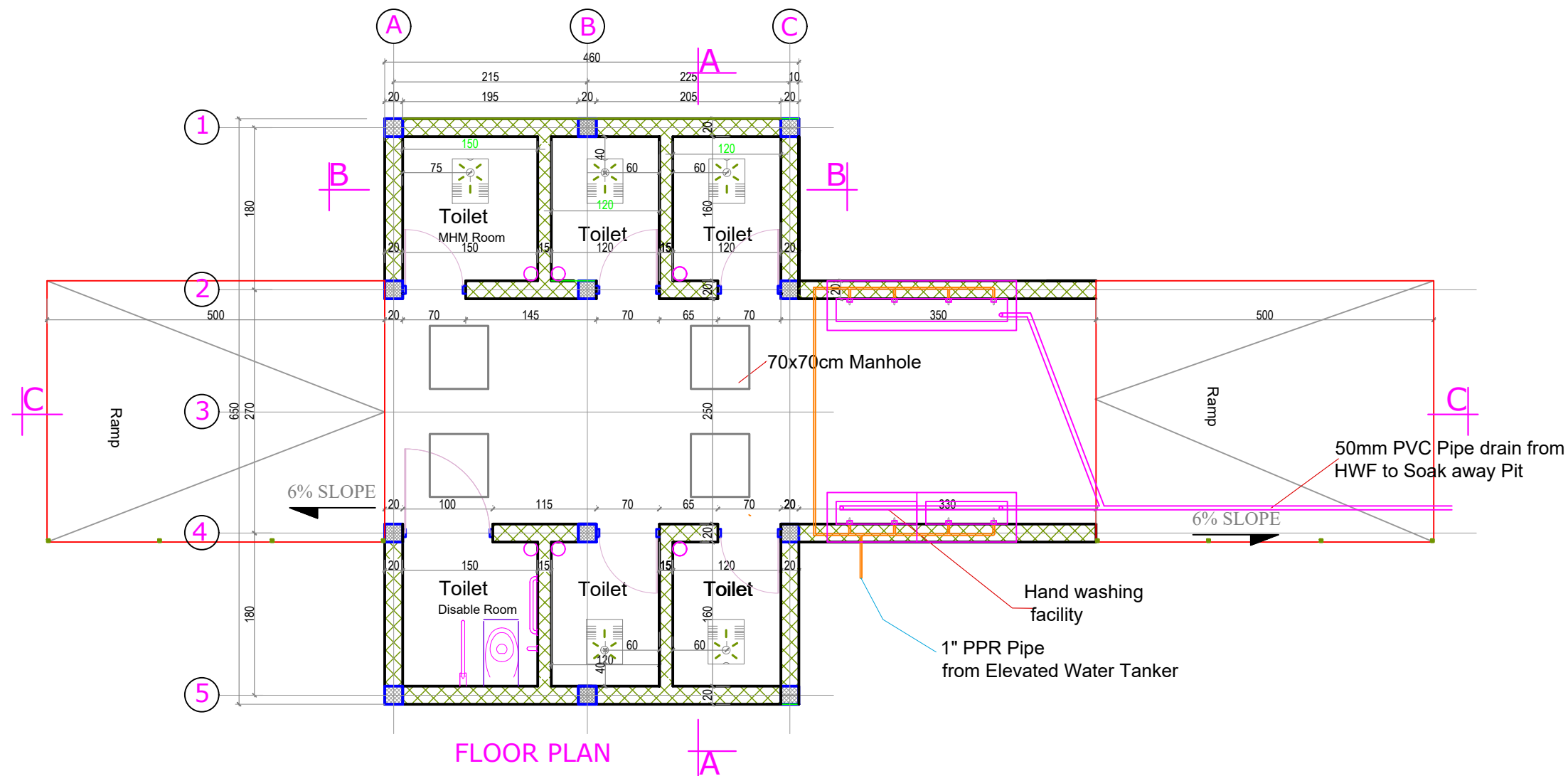
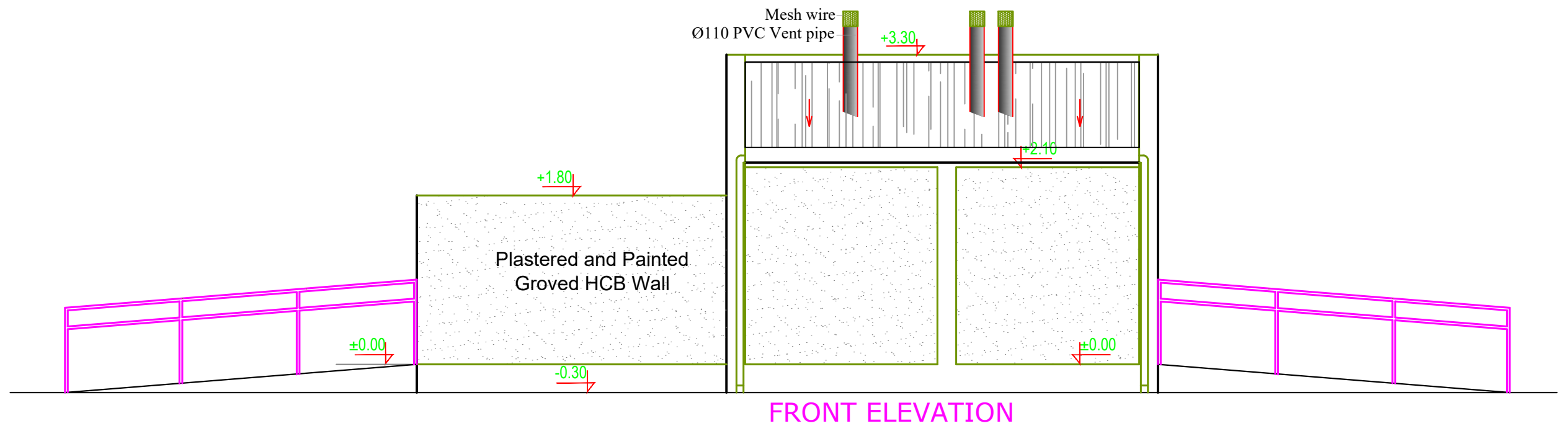
**OWNER**  
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**DRAWING TITLE**  
SAND WASHING AND STORAGE BED  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

**DAD BY:**  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

|                          |                            |                    |
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| <b>SCALE</b><br>AS SHOWN | <b>DATE</b><br>SEPT., 2025 | <b>EM</b><br>07/07 |
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# **ADOPTED WASH FACILITIES**



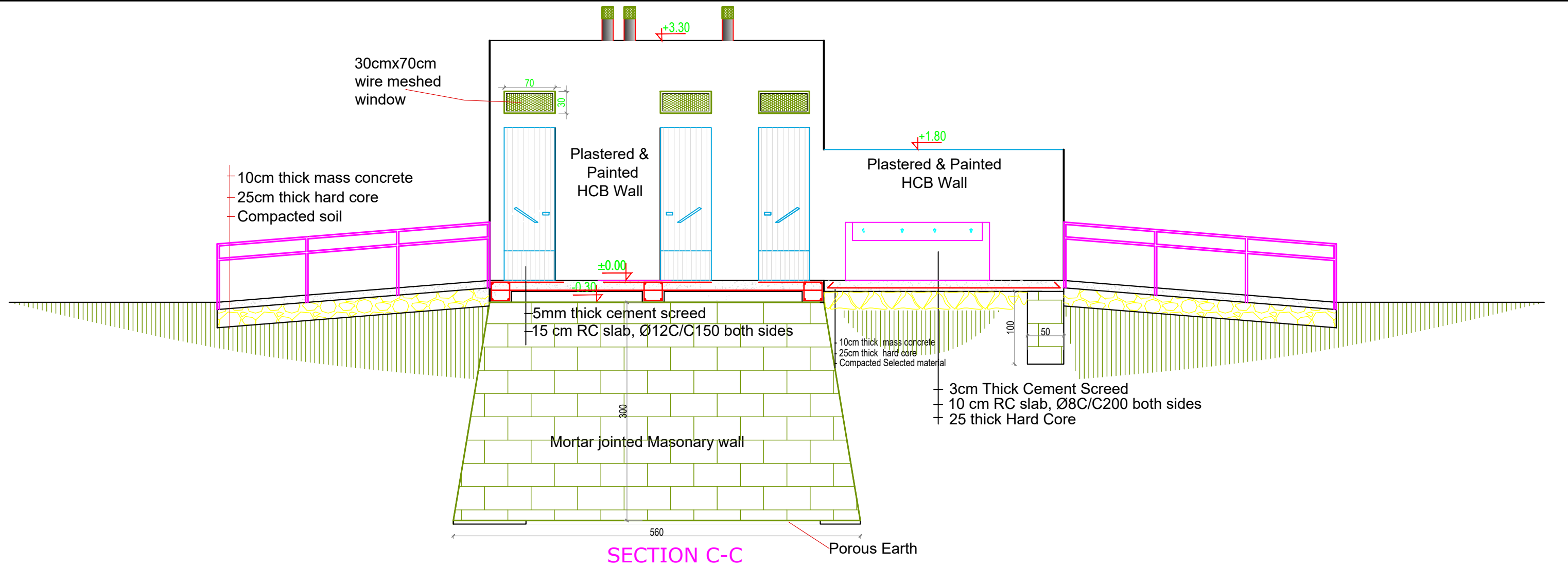
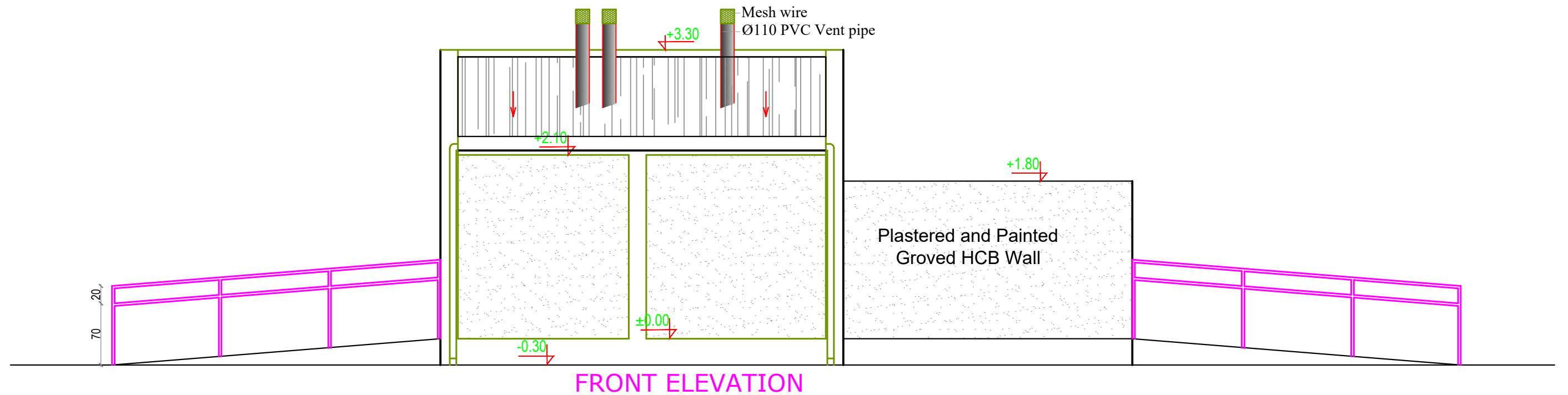
**PROJECT**  
Engineering Services for Site Assessment, Design Adaptation and Supervision works for Rehabilitation of WASH and MHM Facilities in Lot-2 Secondary Schools in Somali Region

**OWNER**  
**UNICEF**

**DRAWING TITLE**  
6 SEATS LATRINE BLOCK FOR BOYS  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

**CAD BY.**  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

|                          |                            |                    |
|--------------------------|----------------------------|--------------------|
| <b>SCALE</b><br>AS SHOWN | <b>DATE</b><br>SEPT., 2025 | <b>AR</b><br>01/05 |
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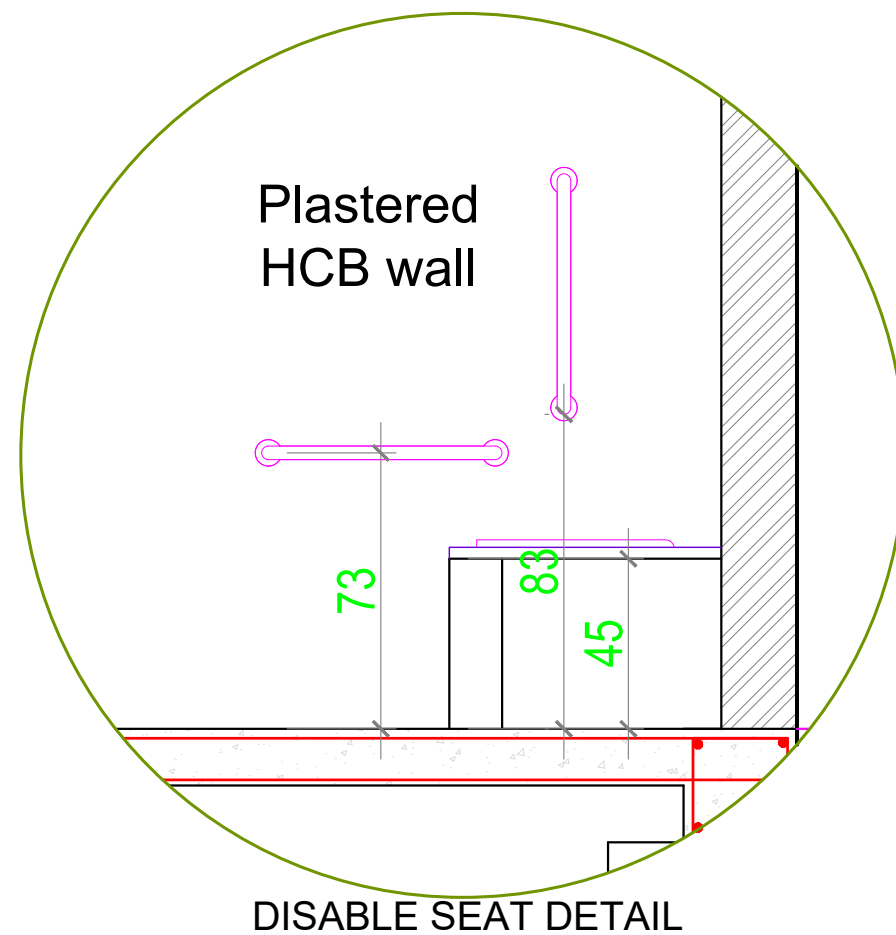
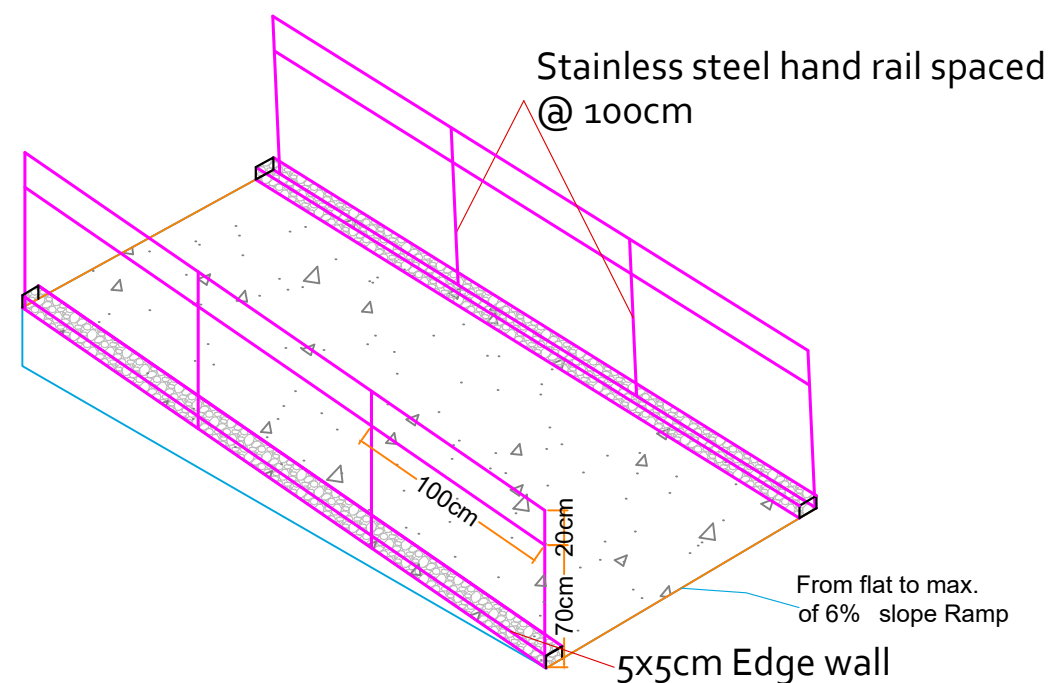
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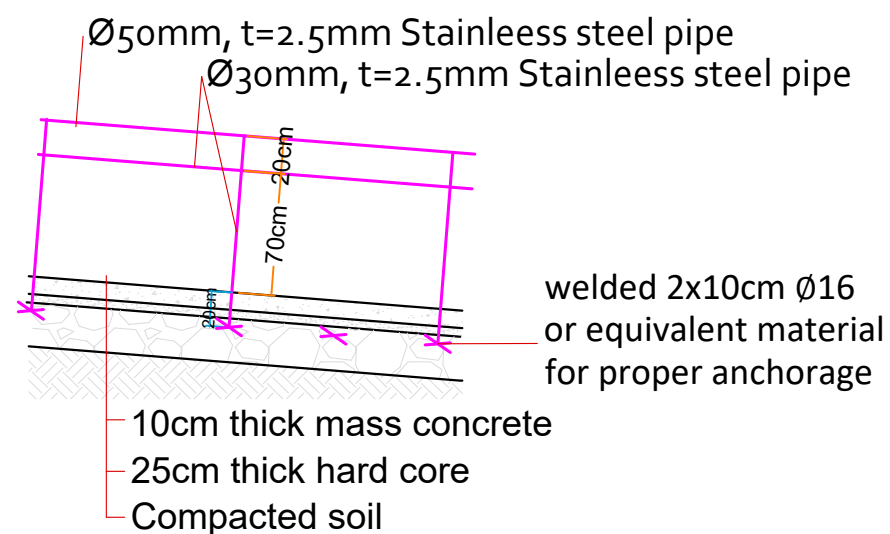
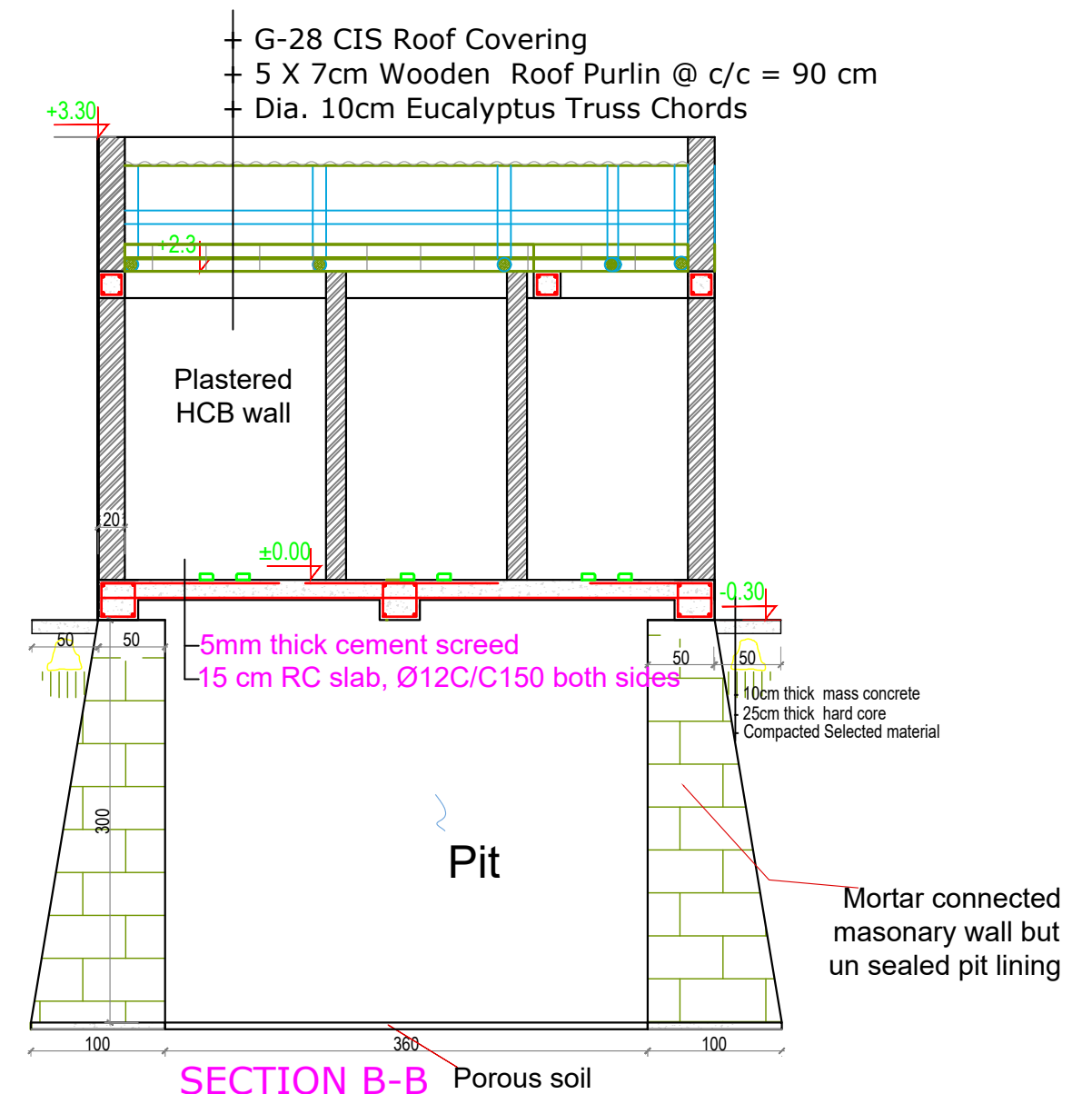
**DRAWING TITLE**  
6 SEATS LATRINE BLOCK FOR BOYS  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

**CAD BY.**  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

|                          |                            |                    |
|--------------------------|----------------------------|--------------------|
| <b>SCALE</b><br>AS SHOWN | <b>DATE</b><br>SEPT., 2025 | <b>AR</b><br>02/05 |
|--------------------------|----------------------------|--------------------|



RAMP DETAIL FOR PEOPLE LIVING WITH DISABILITIES



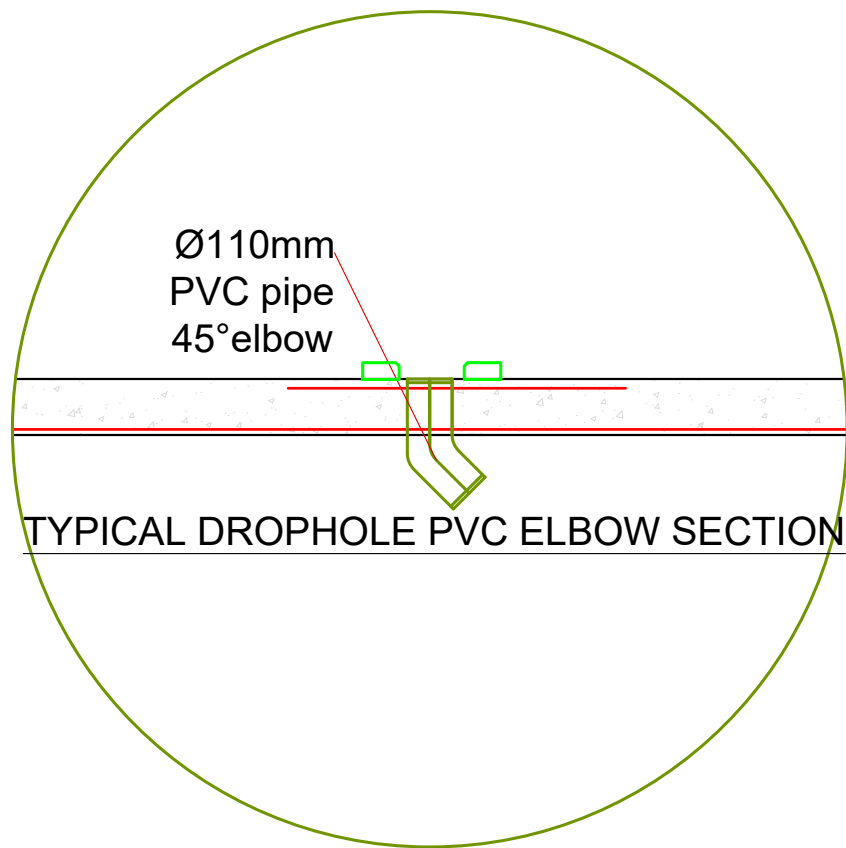
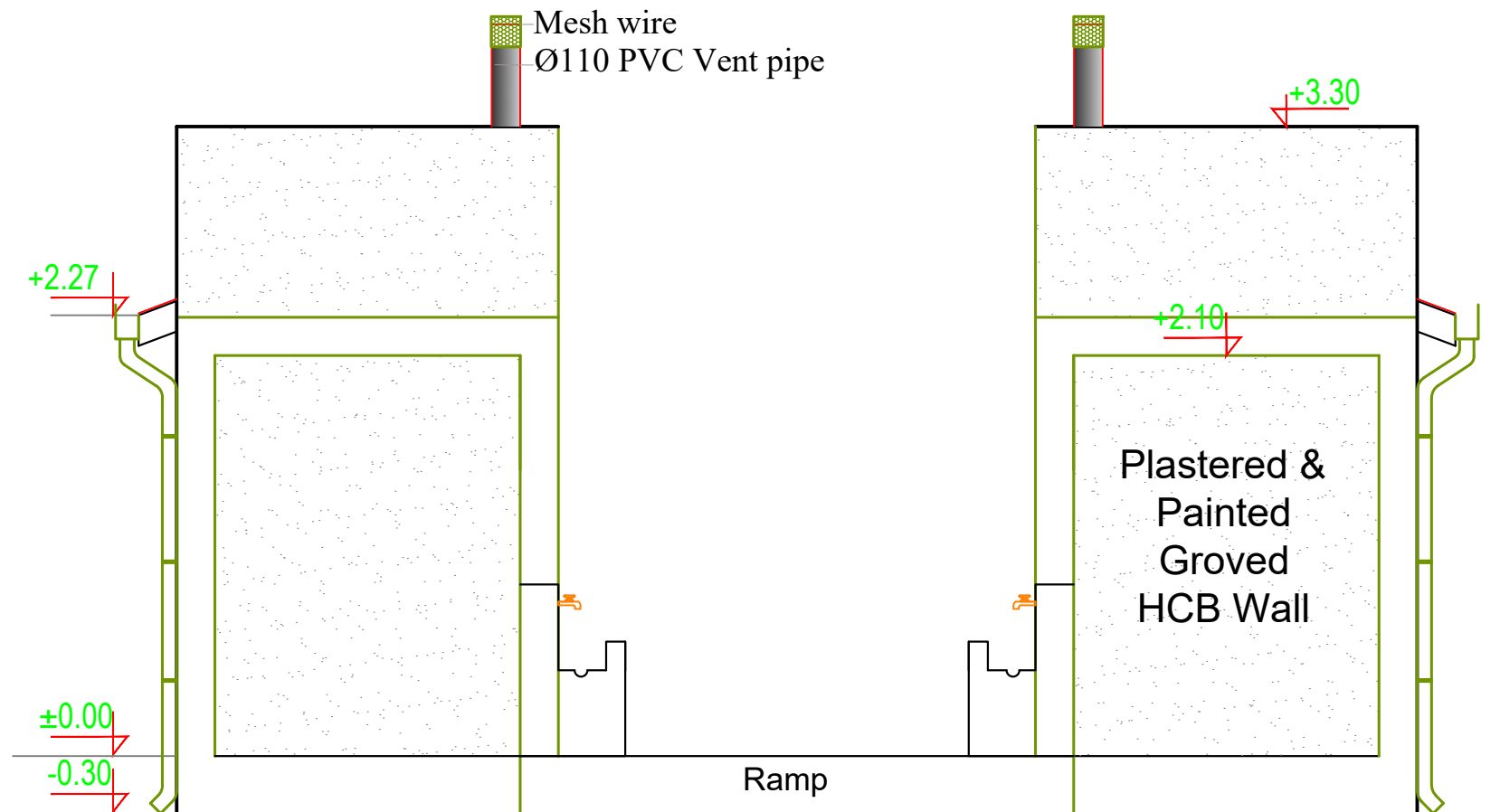
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OWNER  
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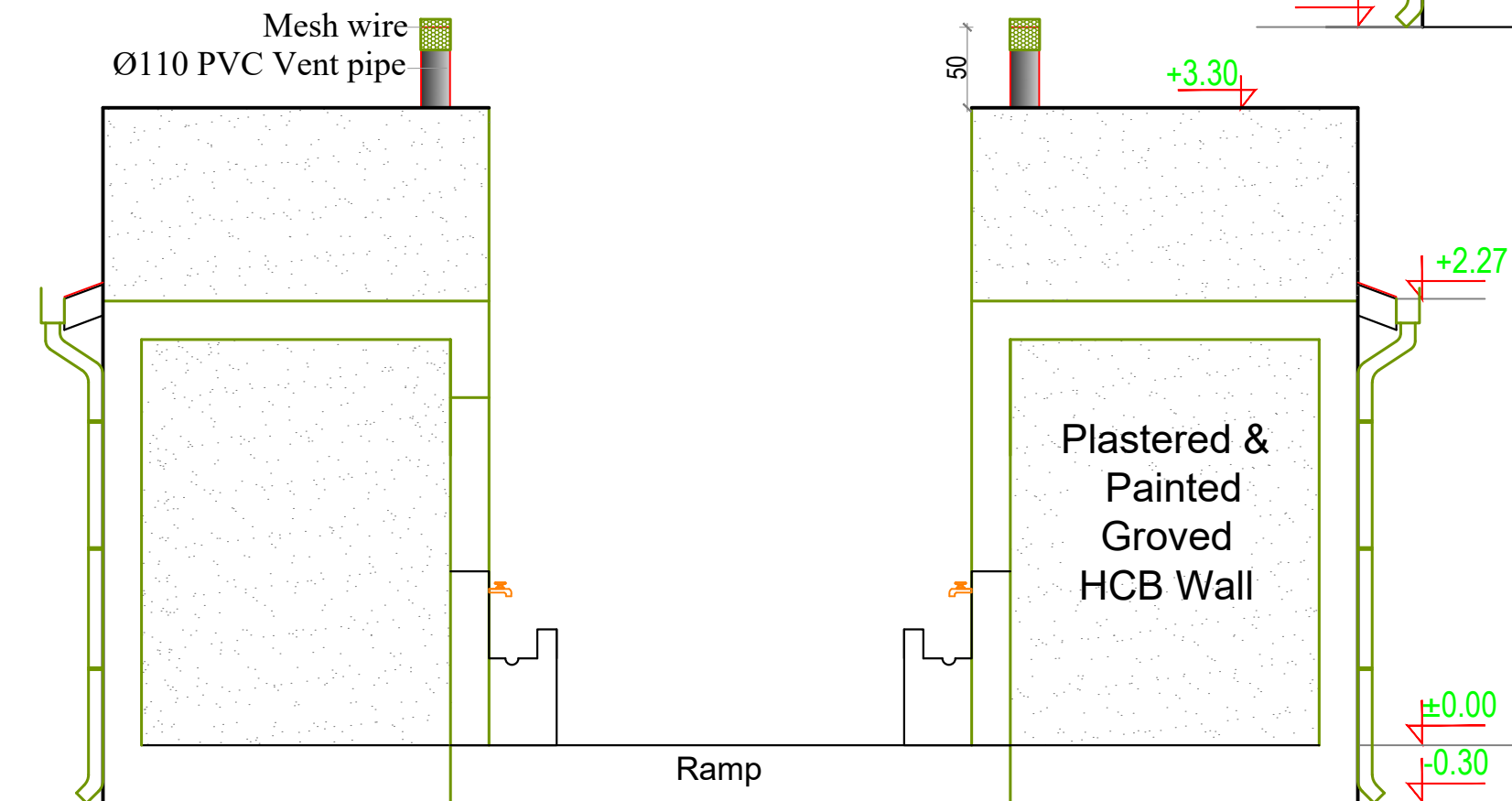
DRAWING TITLE  
6 SEATS LATRINE BLOCK FOR BOYS  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

CAD BY.  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

|                   |                     |             |
|-------------------|---------------------|-------------|
| SCALE<br>AS SHOWN | DATE<br>SEPT., 2025 | AR<br>03/05 |
|-------------------|---------------------|-------------|



LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION

**PROJECT**  
Engineering Services for Site Assessment, Design Adaptation and Supervision works for Rehabilitation of WASH and MHM Facilities in Lot-2 Secondary Schools in Somali Region

**OWNER**  
**UNICEF**

**DRAWING TITLE**  
6 SEATS LATRINE BLOCK FOR BOYS  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

|                                                                     |                     |             |
|---------------------------------------------------------------------|---------------------|-------------|
| CAD BY.<br>HALBEEG ARCHITECT & ENGINEERING CONSULTANCY<br>Mesfin H. |                     |             |
| SCALE<br>AS SHOWN                                                   | DATE<br>SEPT., 2025 | AR<br>04/05 |

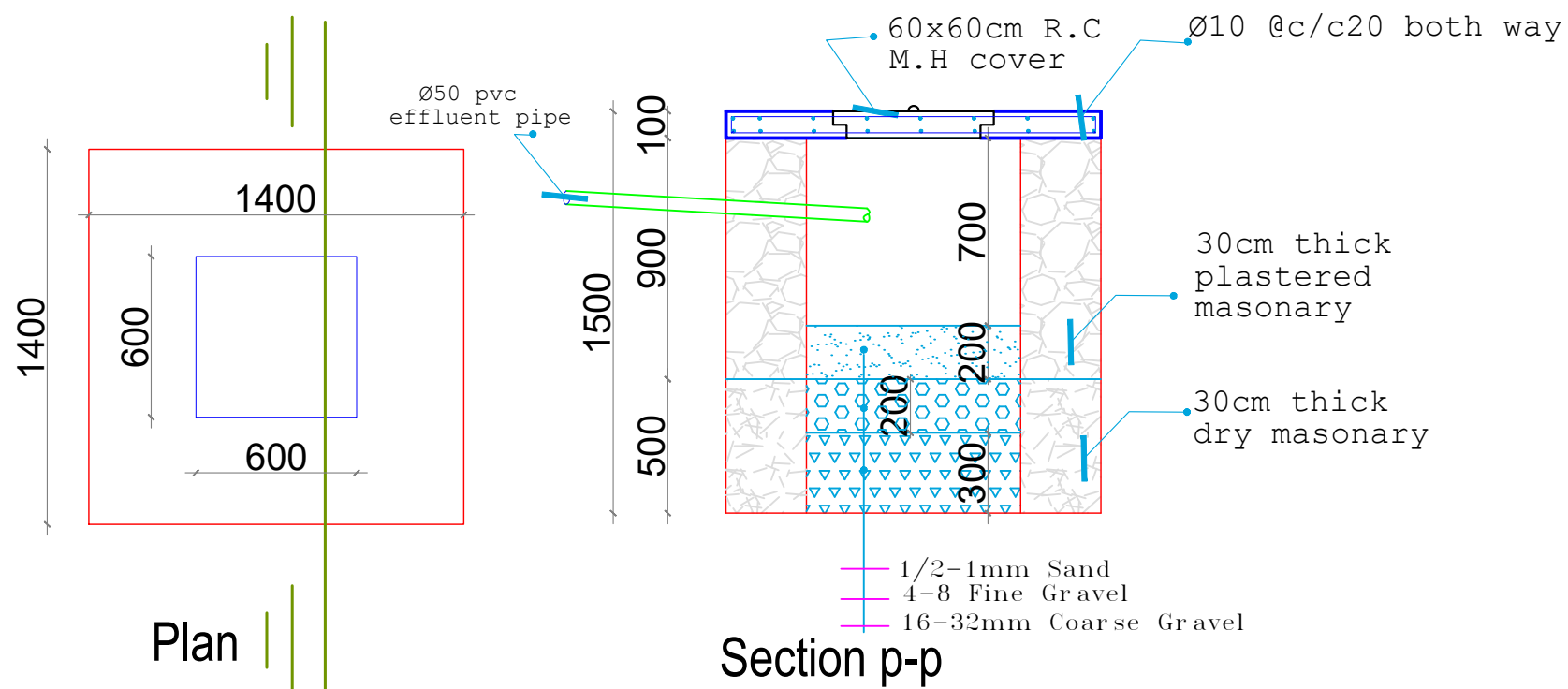
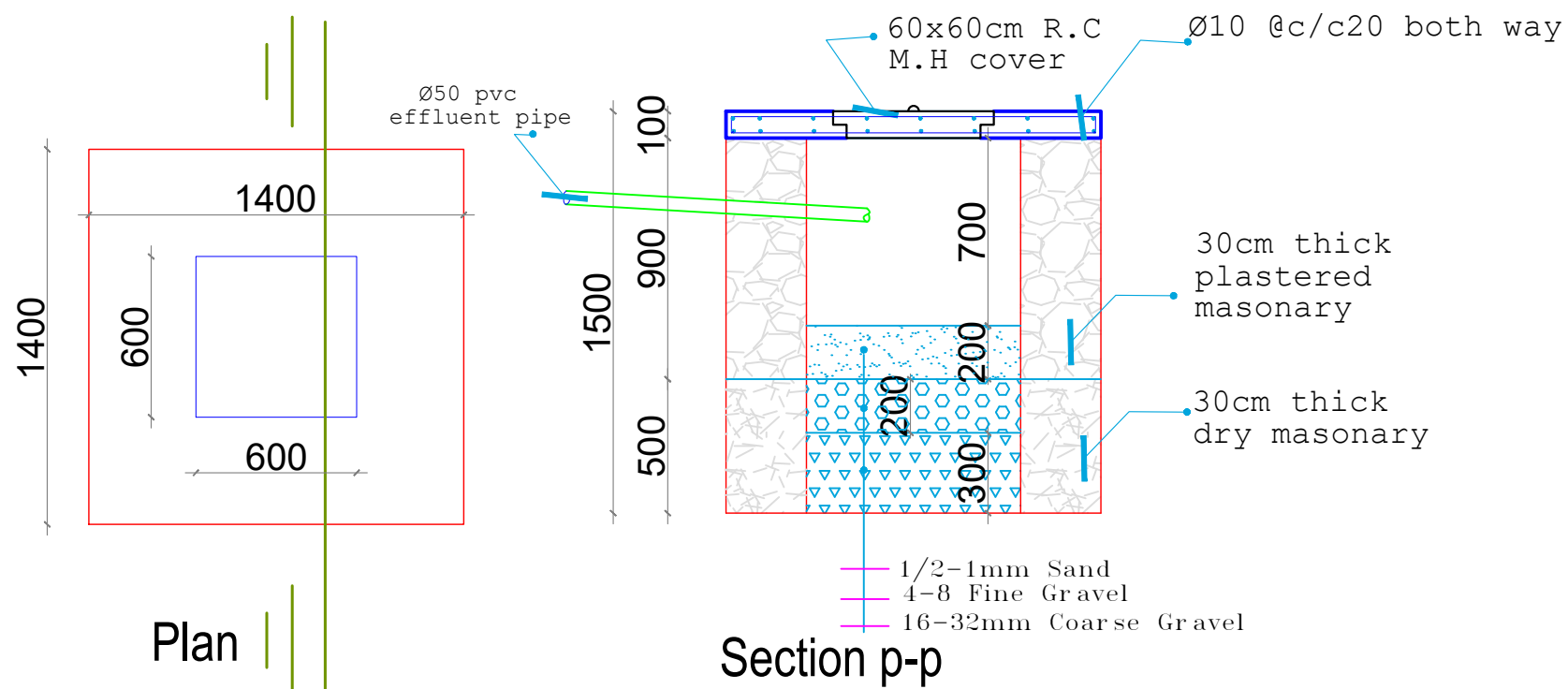
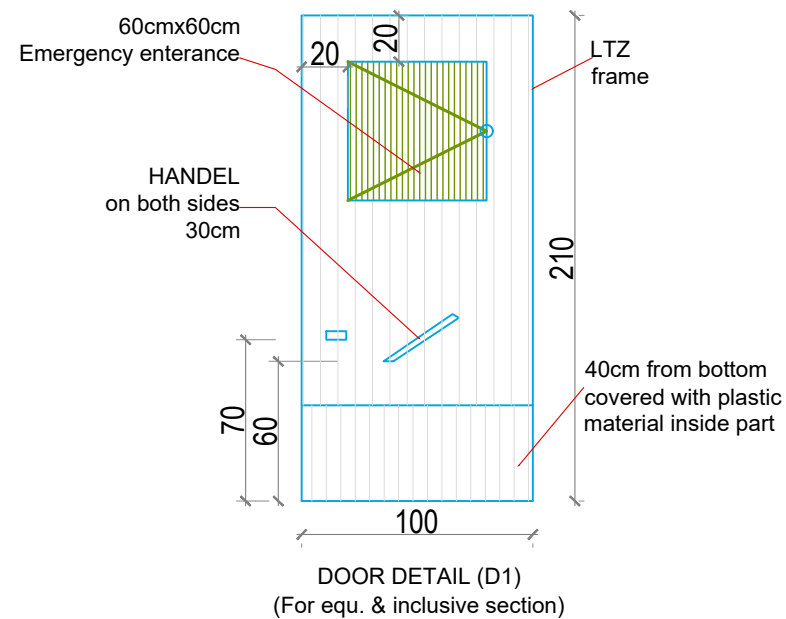
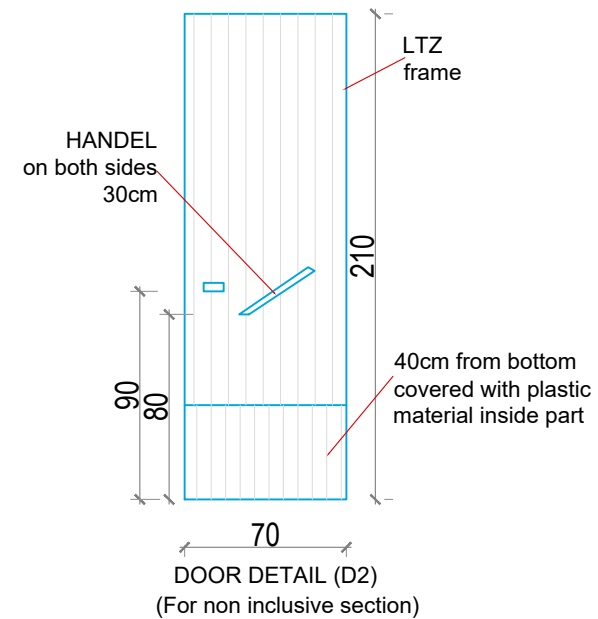
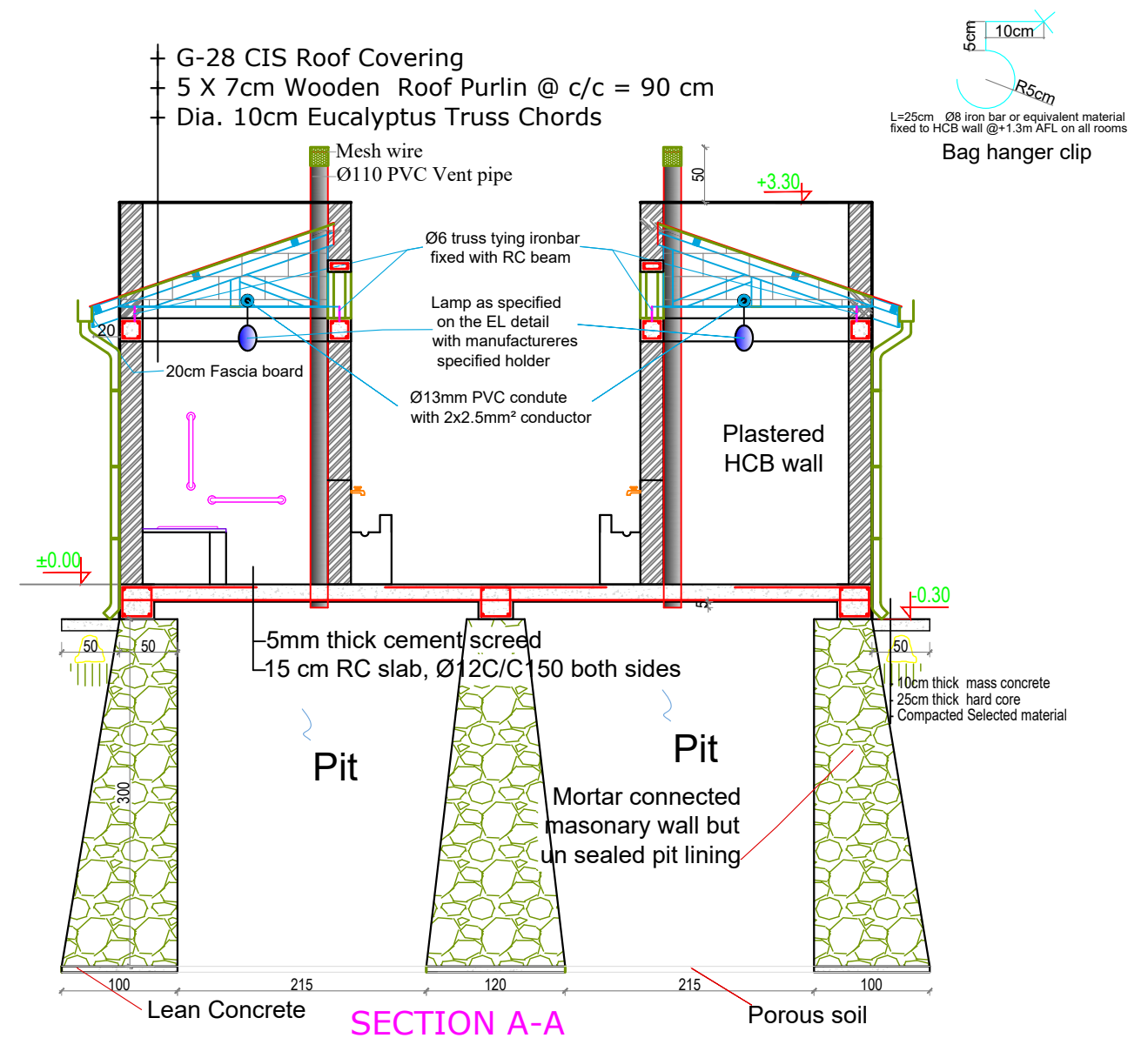
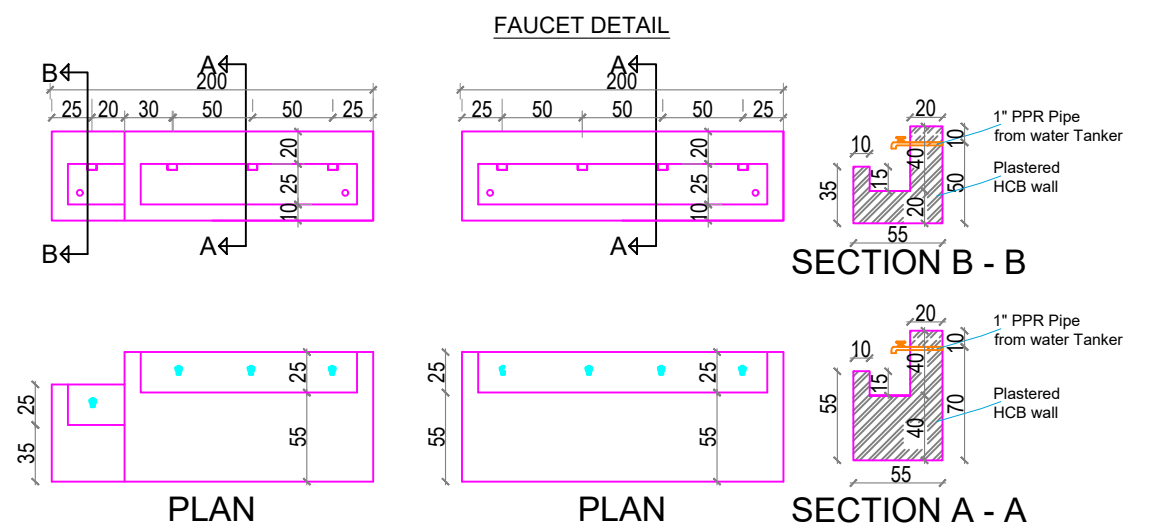
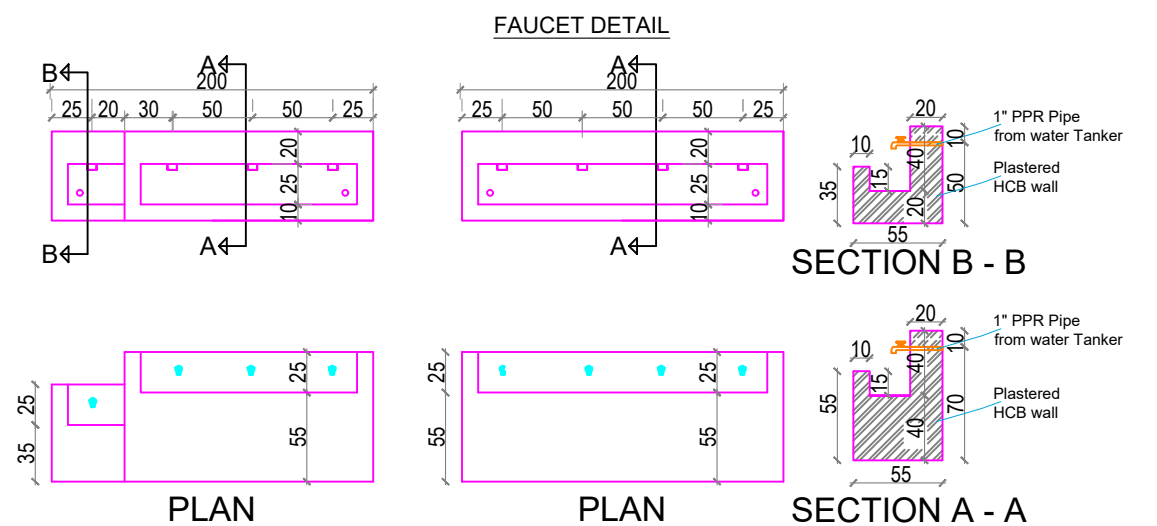
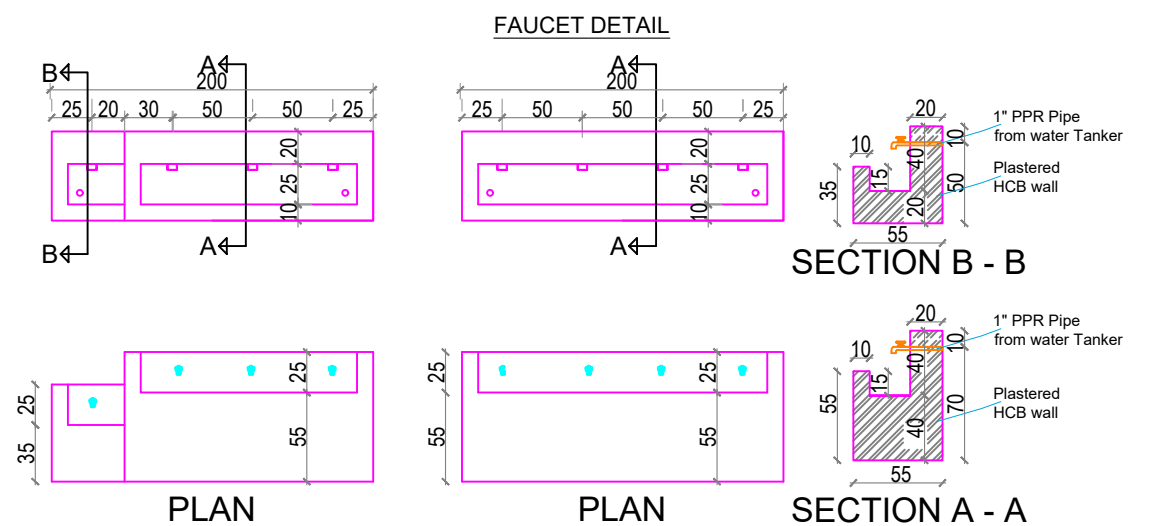
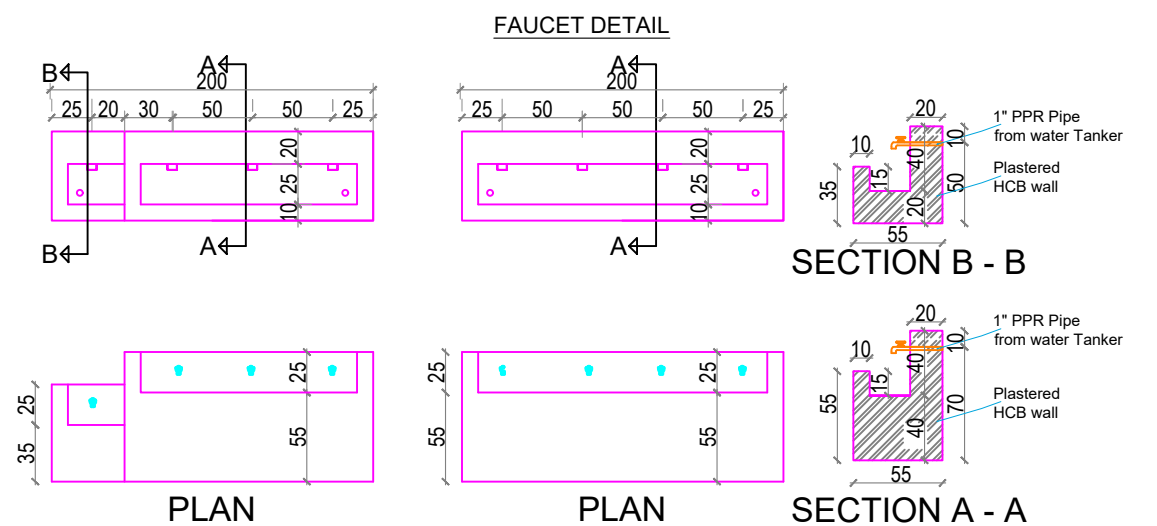
The drawing consists of two parts: a Plan view and a Section p-p view.

**Plan View:** Shows a square structure with an outer dimension of 1400 and an inner dimension of 600. A 1500 dimension is also indicated, likely representing the total width including the effluent pipe.

**Section p-p View:** Shows the vertical profile of the structure. The total height is 1500. The structure is composed of several layers:
 

- Top layer: 60x60cm R.C M.H cover with Ø10 @c/c20 reinforcement both ways.
- Below the cover: 30cm thick plastered masonry.
- Below the plastered masonry: 30cm thick dry masonry.
- Below the dry masonry: A layer of 1/2-1mm Sand, 4-8 Fine Gravel, and 16-32mm Coarse Gravel.

 The section also shows a 600x600 R.C chamber with Ø50 pvc effluent pipe.

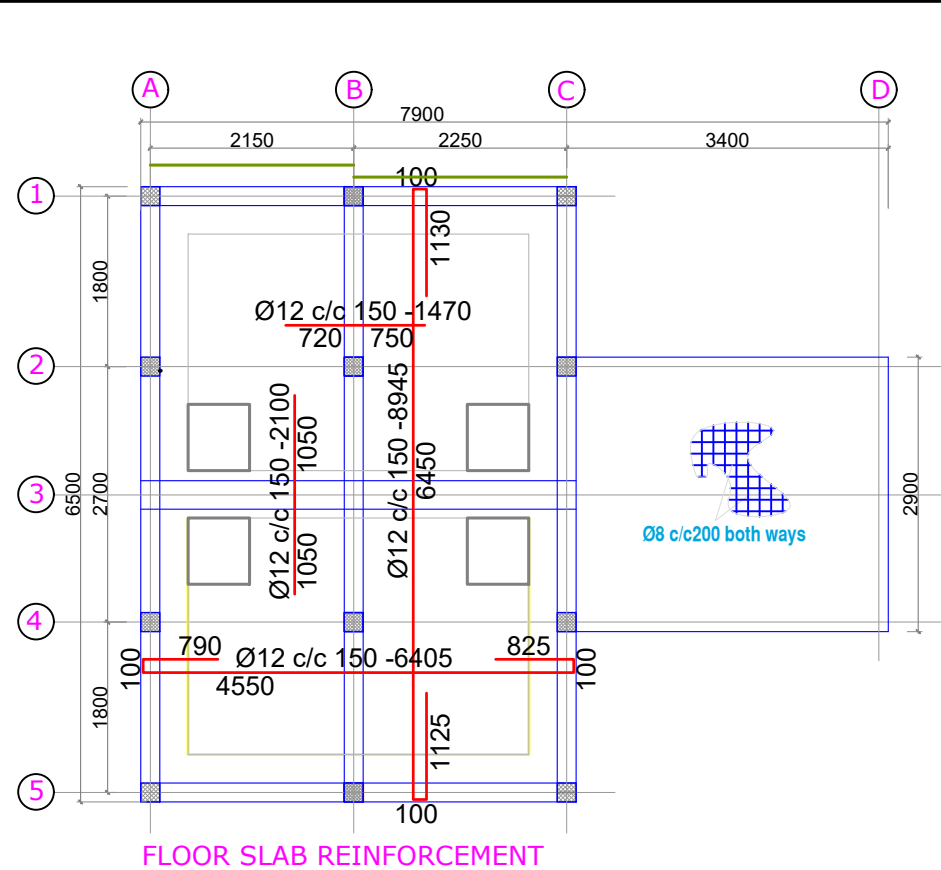
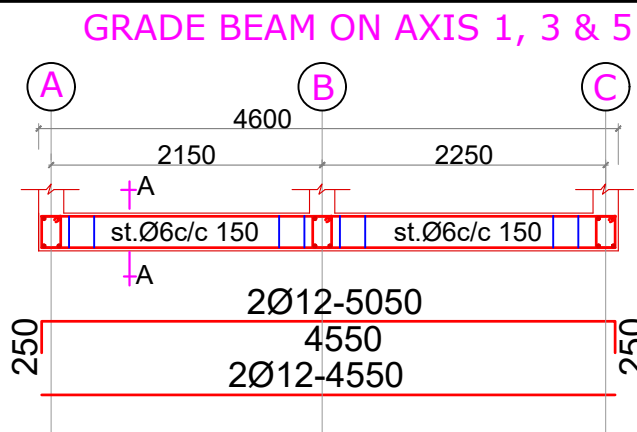
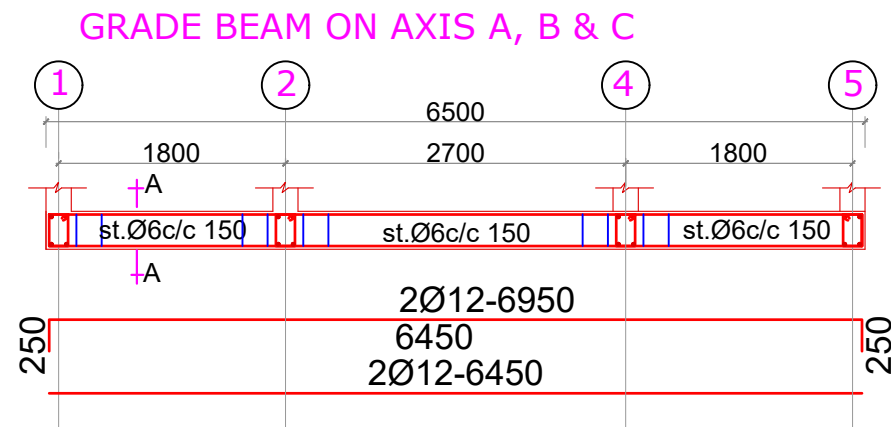
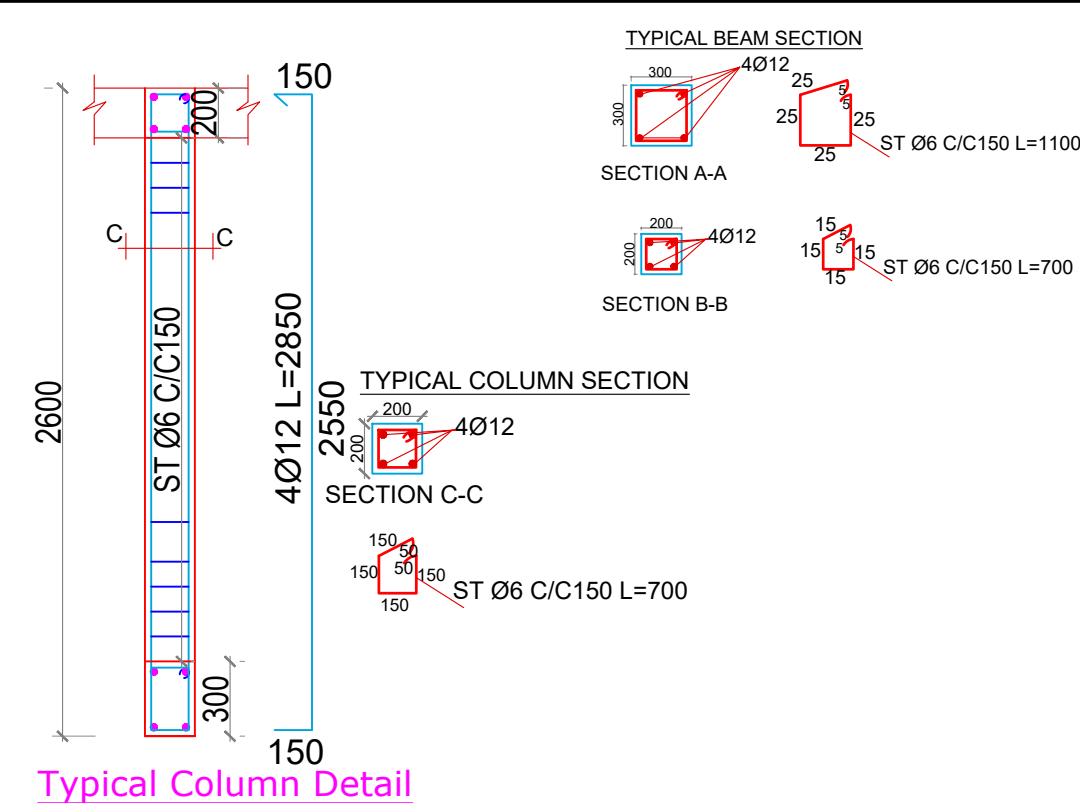
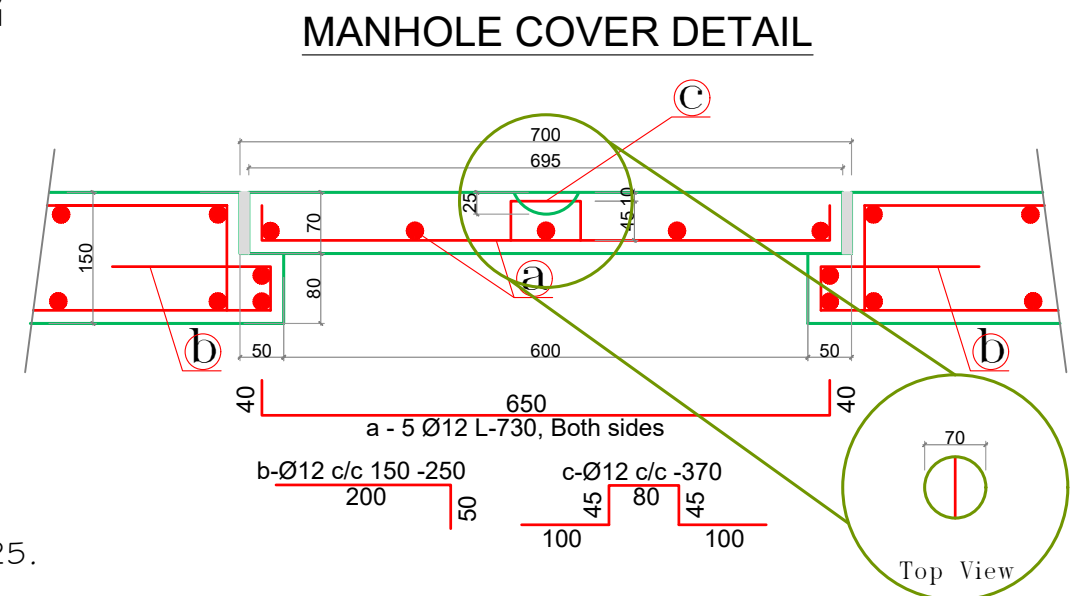
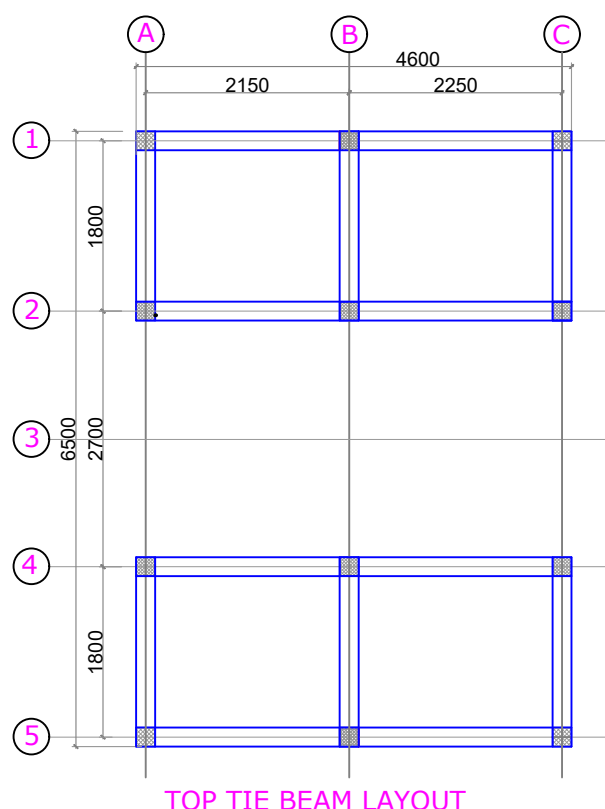


|                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PROJECT                                                                                                                                                                     |
| Engineering Services for Site Assessment, Design Adaptation and Supervision works for Rehabilitation of WASH and MHM Facilities in Lot-2 Secondary Schools in Somali Region |

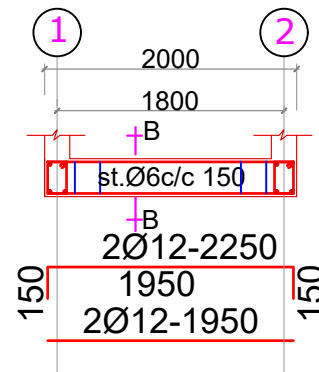
OWNER  
**UNICEF**

|                                                                                         |
|-----------------------------------------------------------------------------------------|
| DRAWING TITLE                                                                           |
| 6 SEATS LATRINE BLOCK FOR BOYS<br>BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone. |

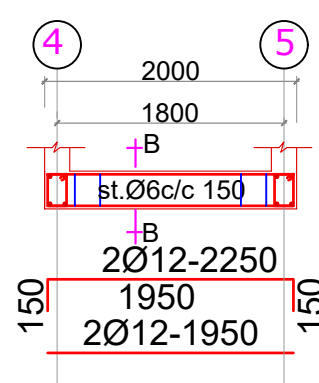
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| CAD BY.<br>HALBEEG ARCHITECT & ENGINEERING CONSULTANCY<br>Mesfin H. |                         |             |
| SCALE<br><br>AS SHOWN                                               | DATE<br><br>SEPT., 2025 | AR<br>05/05 |



**TOP TIE BEAM ON AXIS A, B & C**



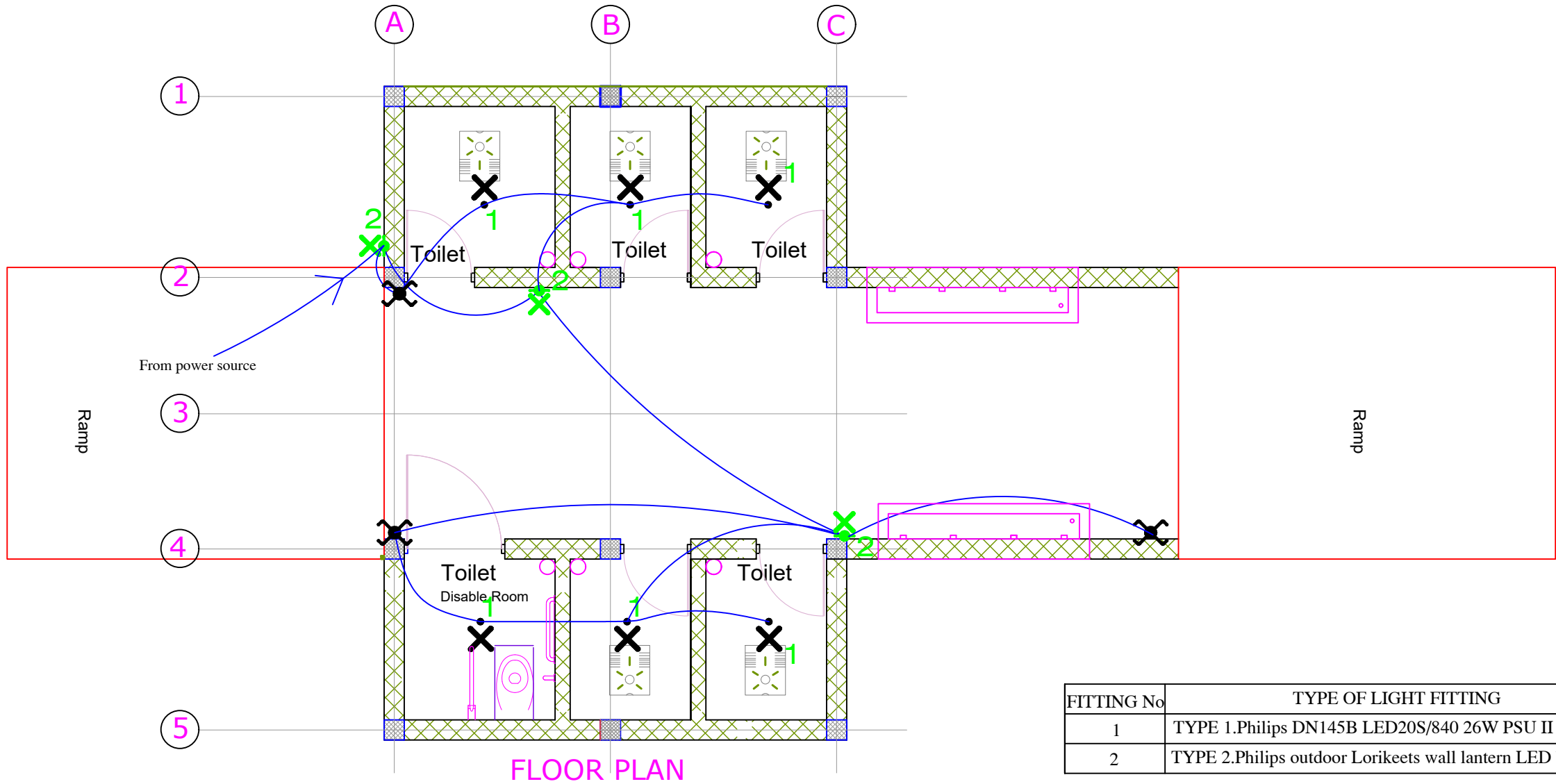
**TOP TIE BEAM ON AXIS A, B & C**



**Notes:**

- Concrete Quality shall be C25.
- Structural drawings should be read with Architectural drawings.
- Reinforcement steel quality shall be fyk=300MPa and fyk=400MPa for rebar size less than 12 and greater than 10 respectively.
- Black cotton soil shall be removed entirely & suitable selected material shall be backfilled (compacted in 20cm layers).
- Hardcore layer of 25cm thickness shall be provided on top of the selected material.
- Concrete cover for Beams and columns shall be 25mm.
- Concrete cover for Slabs shall be 25mm.

|                                                                                                                                                                                                           |                                    |                                                                                                                              |                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>PROJECT</div> <div>Engineering Services for Site Assessment, Design Adaptation and Supervision works for Rehabilitation of WASH and MHM Facilities in Lot-2 Secondary Schools in Somali Region</div> | <div>OWNER</div> <div>UNICEF</div> | <div>DRAWING TITLE</div> <div>6 SEATS LATRINE BLOCK FOR BOYS<br/>BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.</div> | <div>CAD BY.</div> <div>HALBEEG ARCHITECT &amp; ENGINEERING CONSULTANCY<br/>Mesfin H.</div> <div><div>SCALE</div><div>AS SHOWN</div><div>DATE</div><div>SEPT., 2025</div><div>ST</div><div>01/01</div></div> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



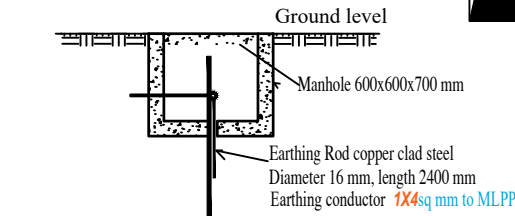
| FITTING No | TYPE OF LIGHT FITTING                                                                 | LOCATION                    |
|------------|---------------------------------------------------------------------------------------|-----------------------------|
| 1          | TYPE 1.Philips DN145B LED20S/840 26W PSU II WH, 2100 lm                               | Internal Toilet Rooms       |
| 2          | TYPE 2.Philips outdoor Lorikeets wall lantern LED black 1x3.5W water resistance IP 44 | External Wall mounted Light |

| SDB-F.TOILET |             |        |                     |      |       |   |   |
|--------------|-------------|--------|---------------------|------|-------|---|---|
| B.NO         | DESCRIPTION | P(KW)  | A(mm <sup>2</sup> ) | I(A) | R     | S | T |
| 1            | LIGHTING    | 0.1415 | 2x2.5               | 10   | 0.171 |   |   |
| 2            | RESERVE     |        |                     |      |       |   |   |
| 3            | TOTAL       |        |                     |      | 0.17  |   |   |

FROM  
FROM EXISTING  
MDB

3X4MM<sup>2</sup>  
20A/1P

P-TOTAL 0.171 KW  
P-MAX 0.171 KW  
I-L 0.971A  
NAME SDB-TOILET  
DF 1



1. Earthing resistance shall not be greater than 5 Ohm.
2. If earthing resistance is greater than 5 Ohm additional electrode shall be buried spaced not less than the length of the electrode.

### LEGEND

- Light fitting, fluorescent, wall mounted
- Light fitting, CFL, ceiling mounted
- Two way double gang - multi circuit switch, 6A - flush mounted

### Note

The recommended switch box location is 1.20m - 1.30m from FFL & 15cm from door edge.  
Locate switch box 92cm above FFL in Disable room & 15cm from door edge.  
All electric wires needs to run through PVC condutes and closed junction box.

PROJECT  
Engineering Services for Site Assessment, Design Adaptation and Supervision works for Rehabilitation of WASH and MHM Facilities in Lot-2 Secondary Schools in Somali Region

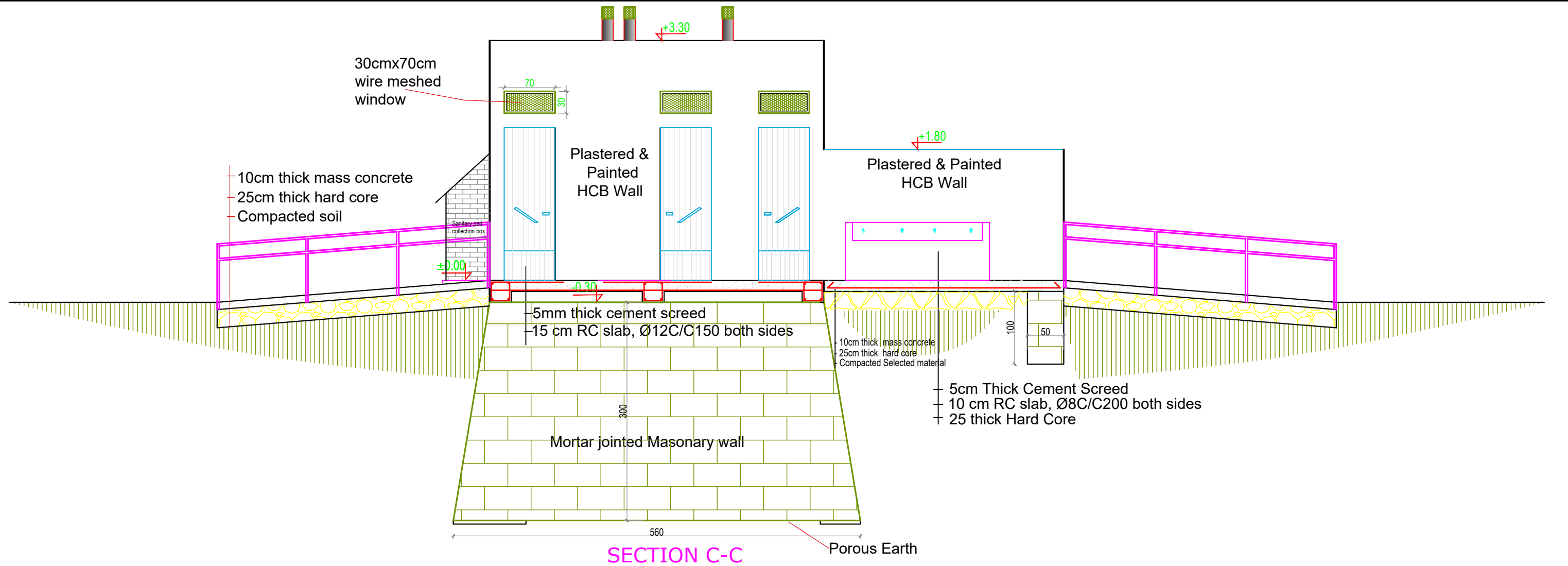
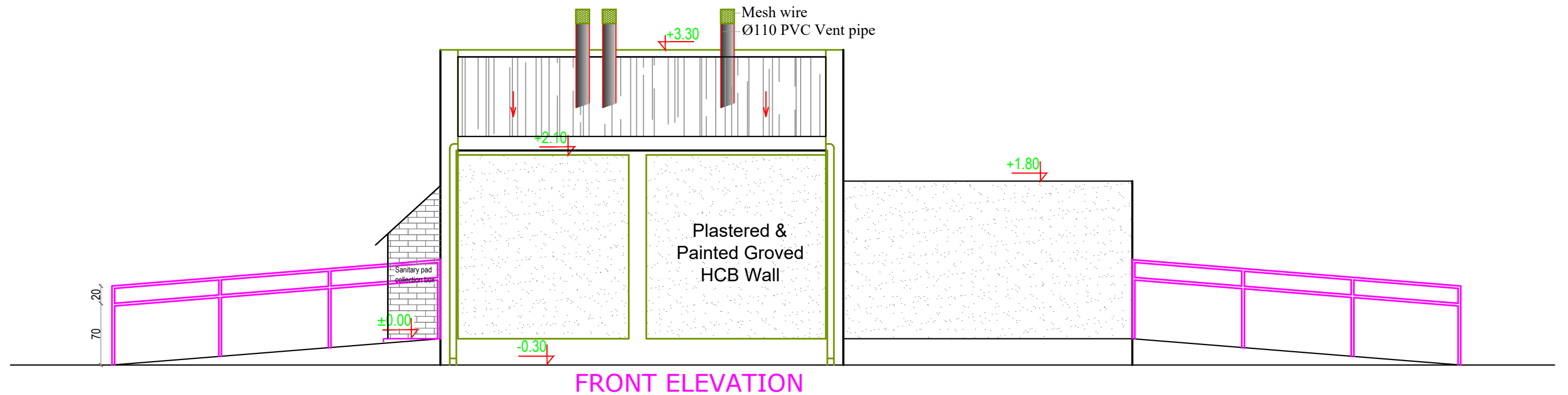
OWNER  
**UNICEF**

DRAWING TITLE  
6 SEATS LATRINE BLOCK FOR BOYS  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

CAD BY.  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

|                   |                     |             |
|-------------------|---------------------|-------------|
| SCALE<br>AS SHOWN | DATE<br>SEPT., 2025 | EL<br>01/01 |
|-------------------|---------------------|-------------|





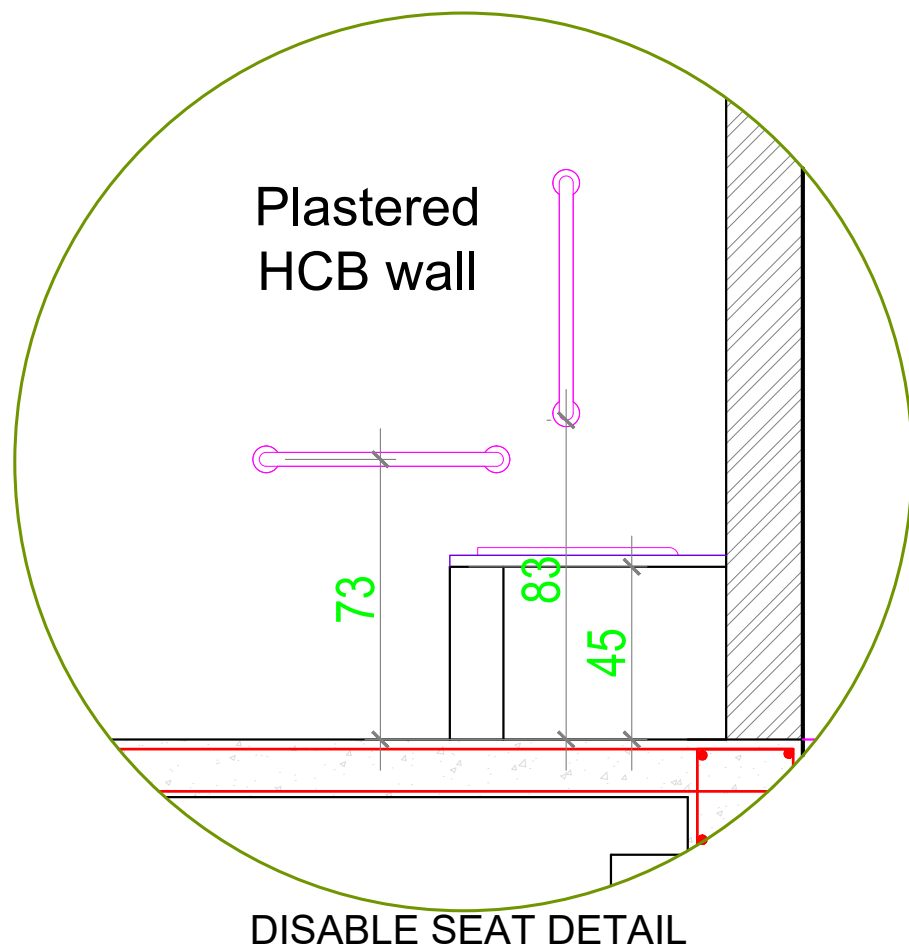
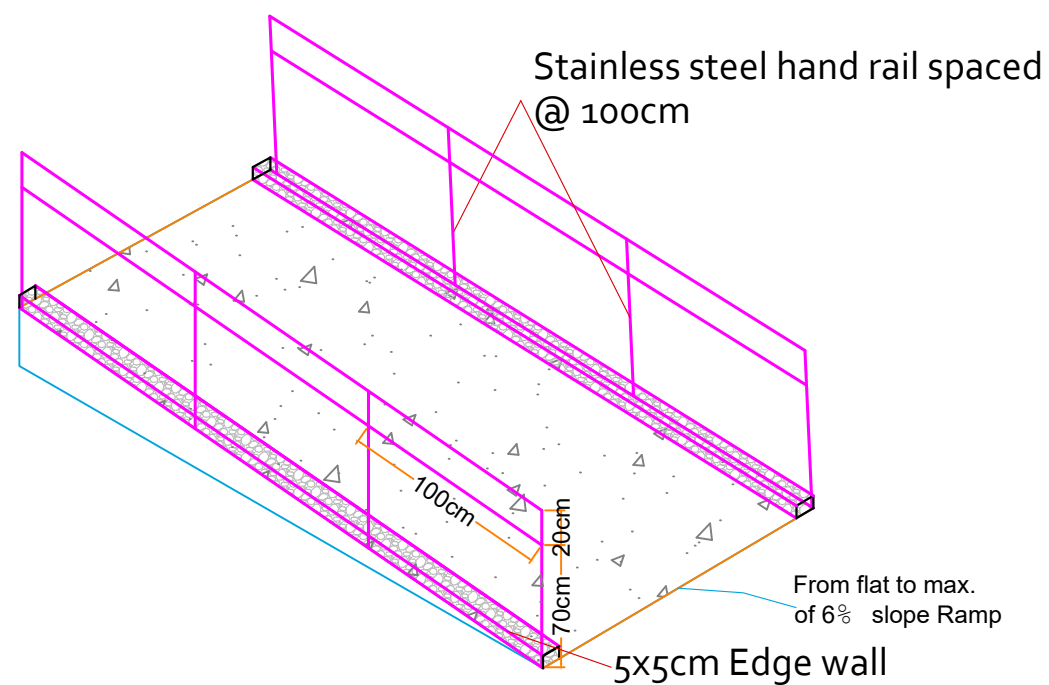
**PROJECT**  
Engineering Services for Site Assessment, Design Adaptation and supervision works for Rehabilitation of WASH and MHM Facilities in selected Secondary Schools in Somali Region

**OWNER**  
**UNICEF**

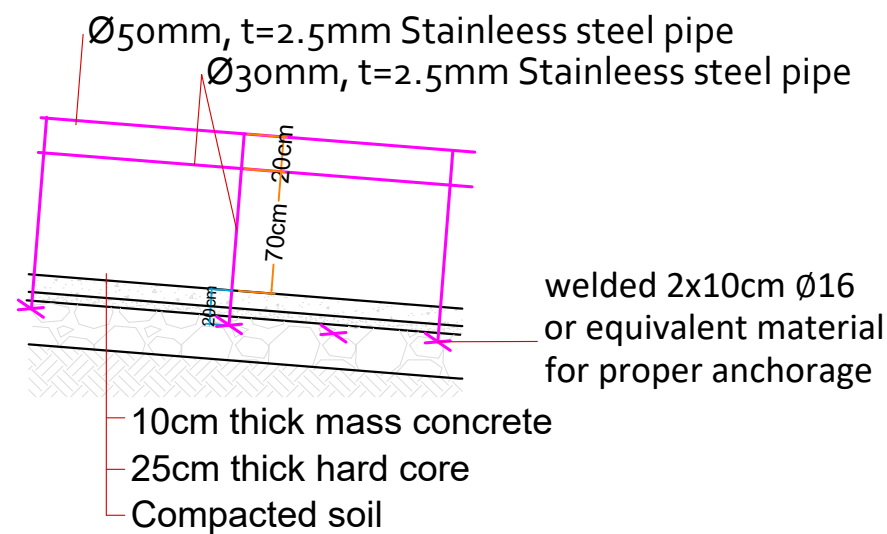
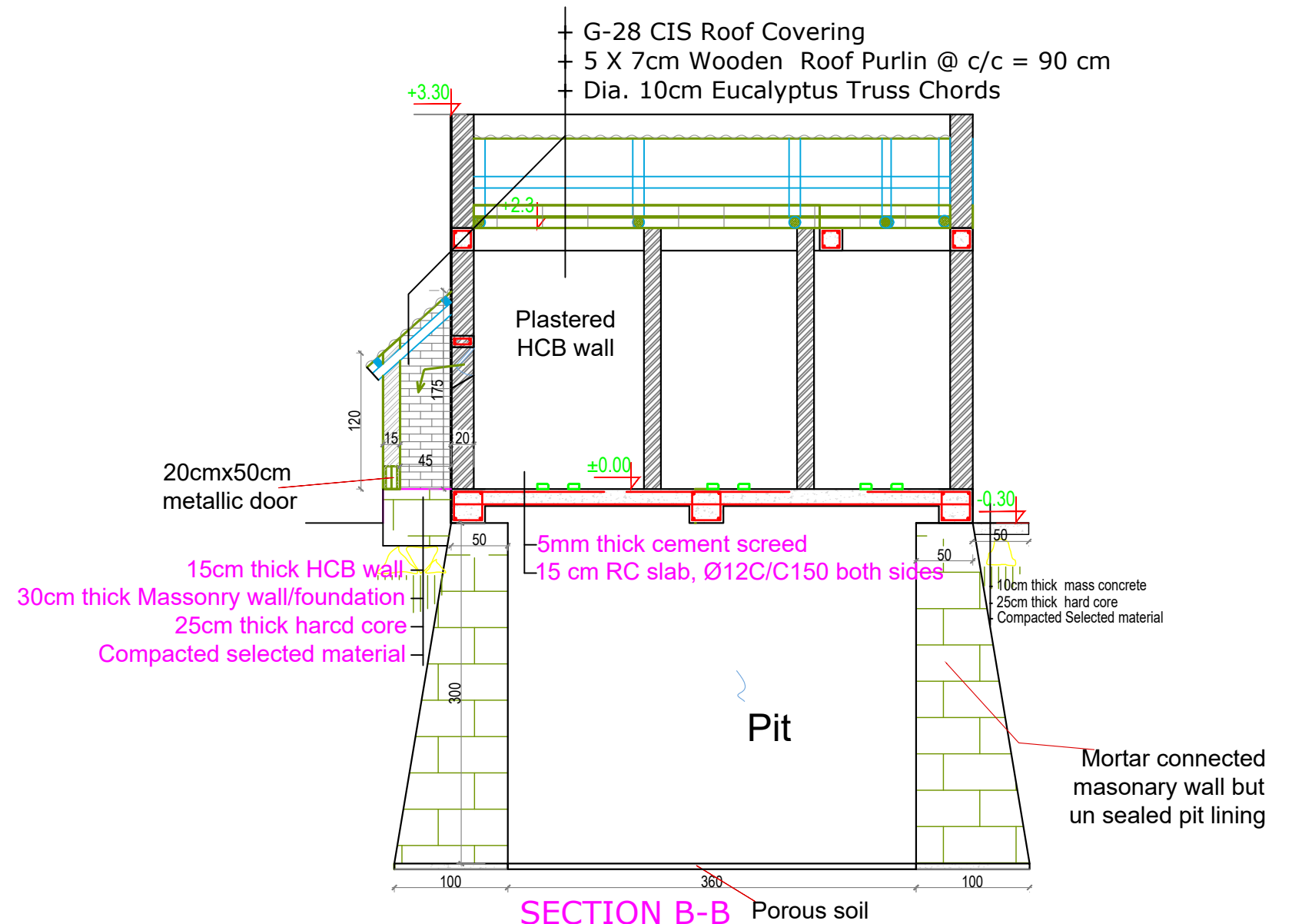
**DRAWING TITLE**  
6 SEATS LATRINE BLOCK FOR GIRLS  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

**CAD BY.**  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

|                          |                            |                    |
|--------------------------|----------------------------|--------------------|
| <b>SCALE</b><br>AS SHOWN | <b>DATE</b><br>SEPT., 2025 | <b>AR</b><br>02/05 |
|--------------------------|----------------------------|--------------------|



RAMP DETAIL FOR PEOPLE LIVING WITH DISABILITIES



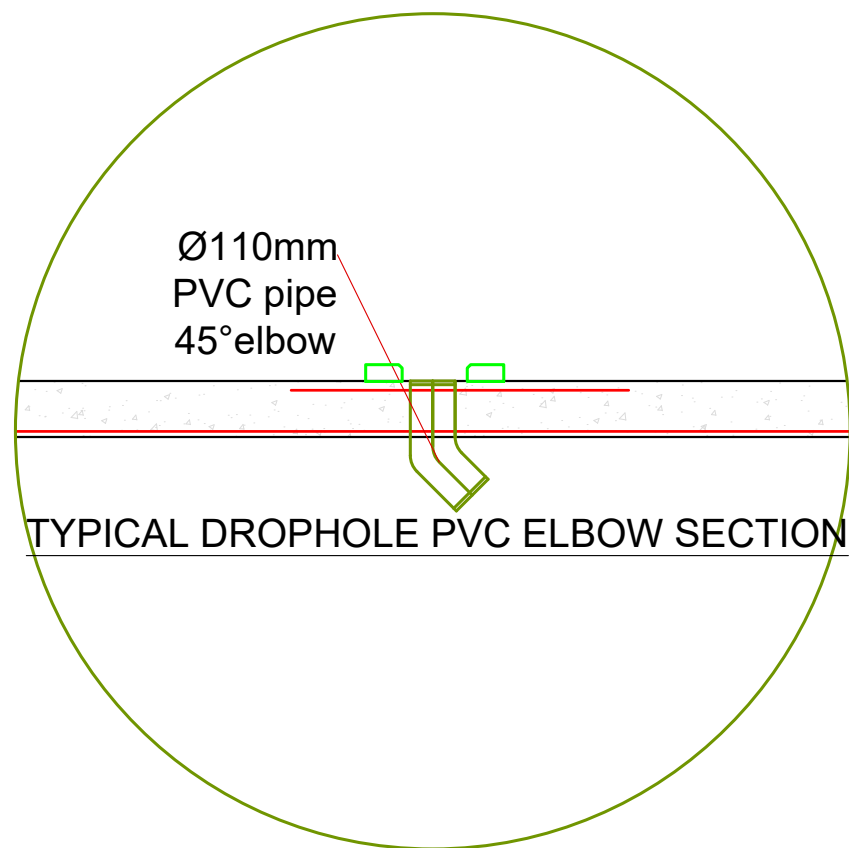
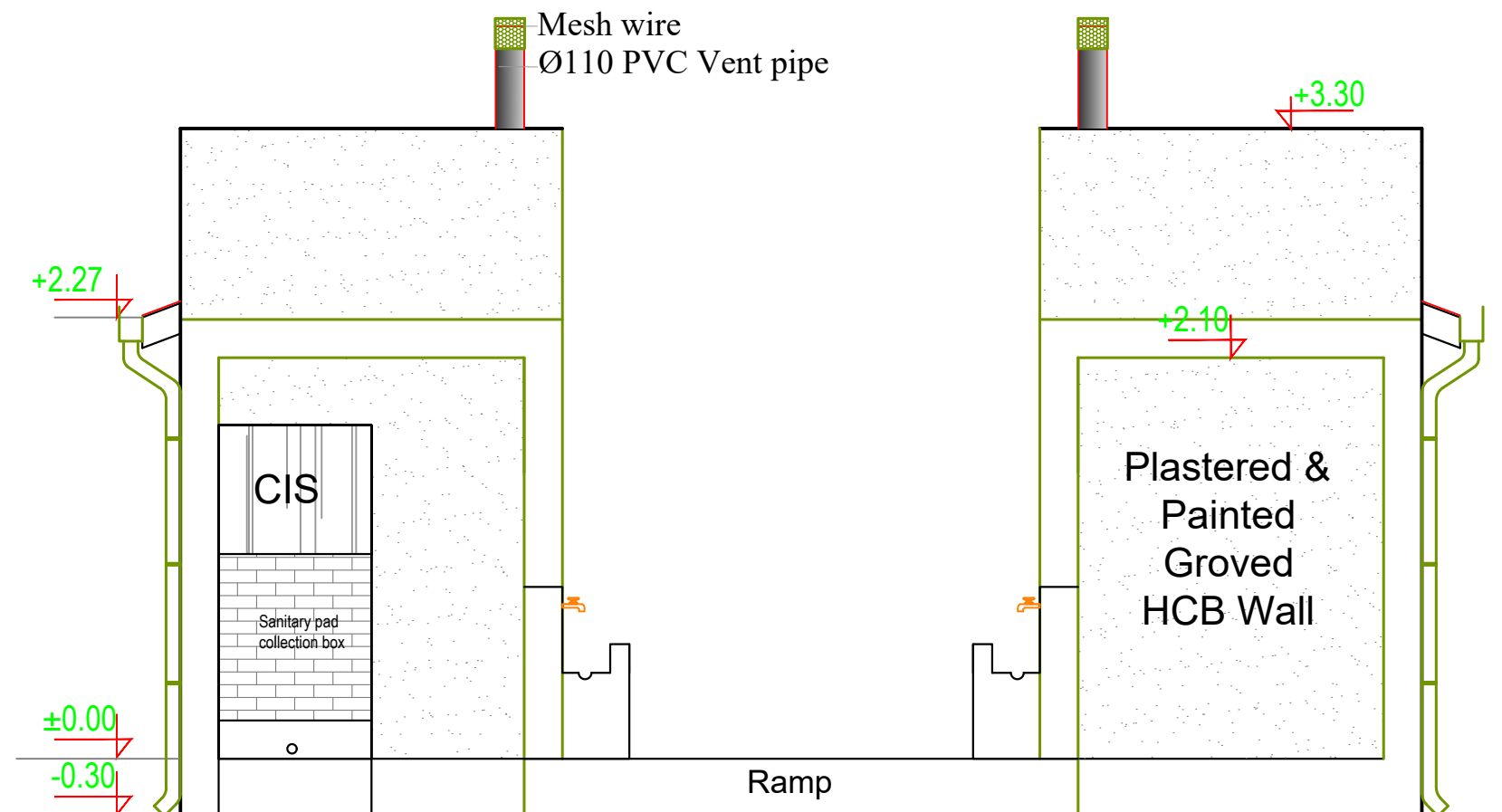
PROJECT  
Engineering Services for Site Assessment, Design Adaptation and supervision works for Rehabilitation of WASH and MHM Facilities in selected Secondary Schools in Somali Region

OWNER  
**UNICEF**

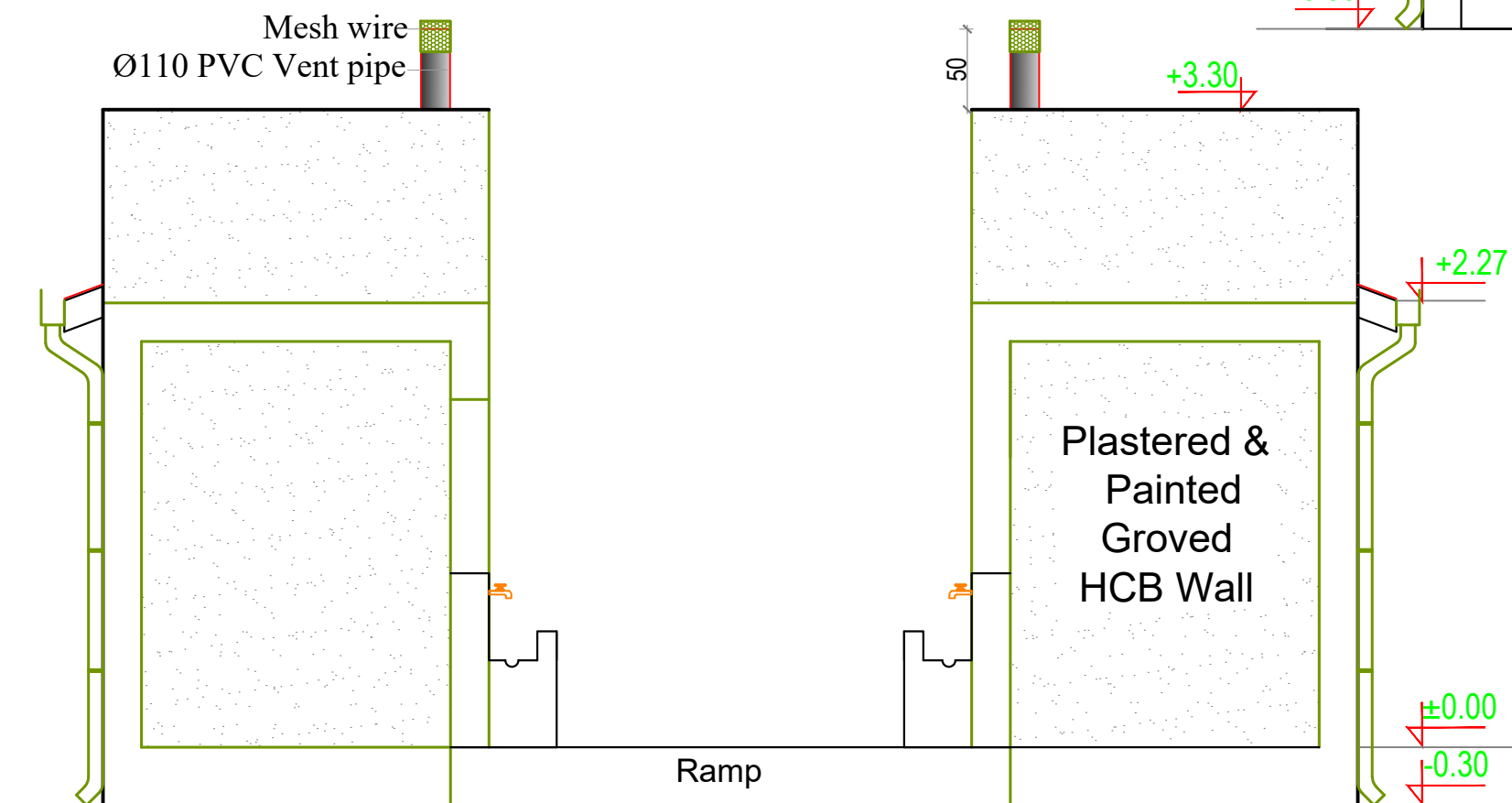
DRAWING TITLE  
6 SEATS LATRINE BLOCK FOR GIRLS  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

CAD BY.  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

|                   |                     |             |
|-------------------|---------------------|-------------|
| SCALE<br>AS SHOWN | DATE<br>SEPT., 2025 | AR<br>03/05 |
|-------------------|---------------------|-------------|



LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION

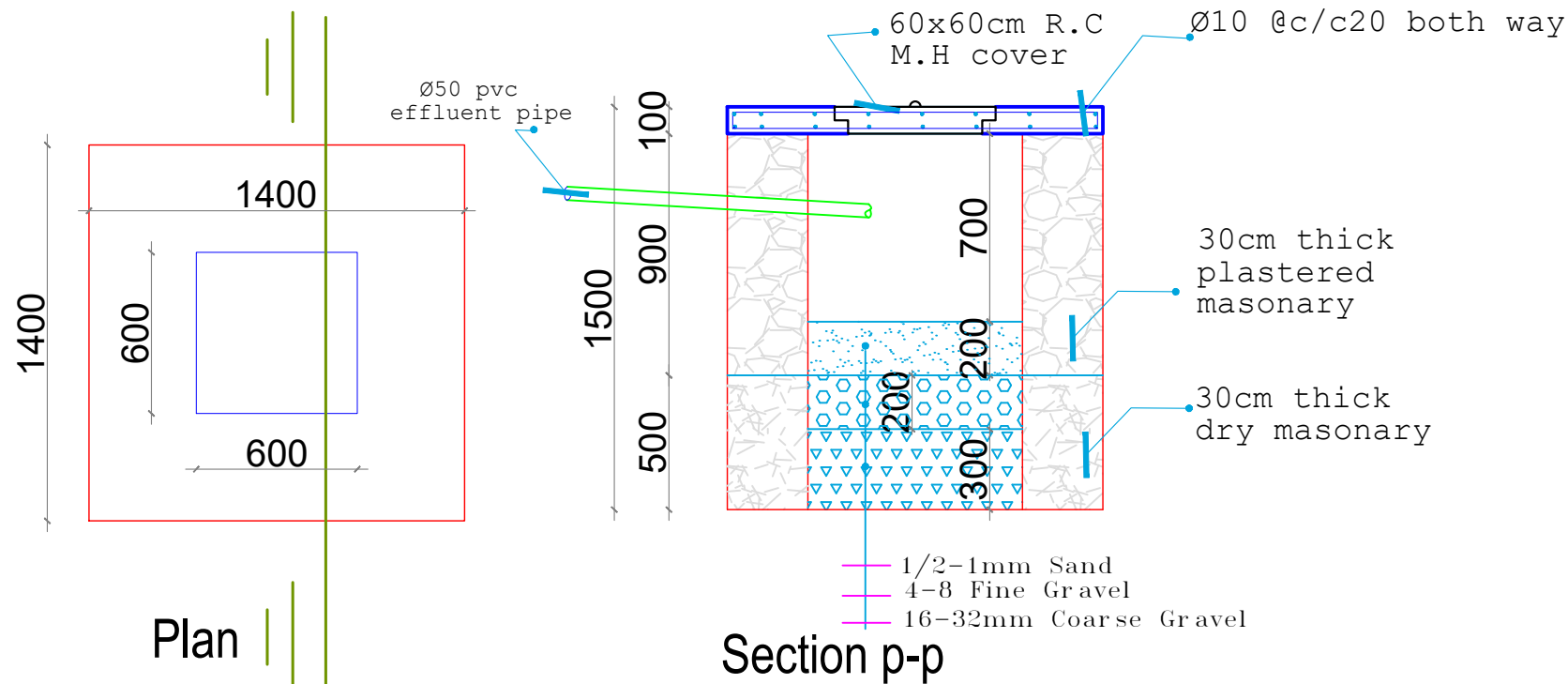
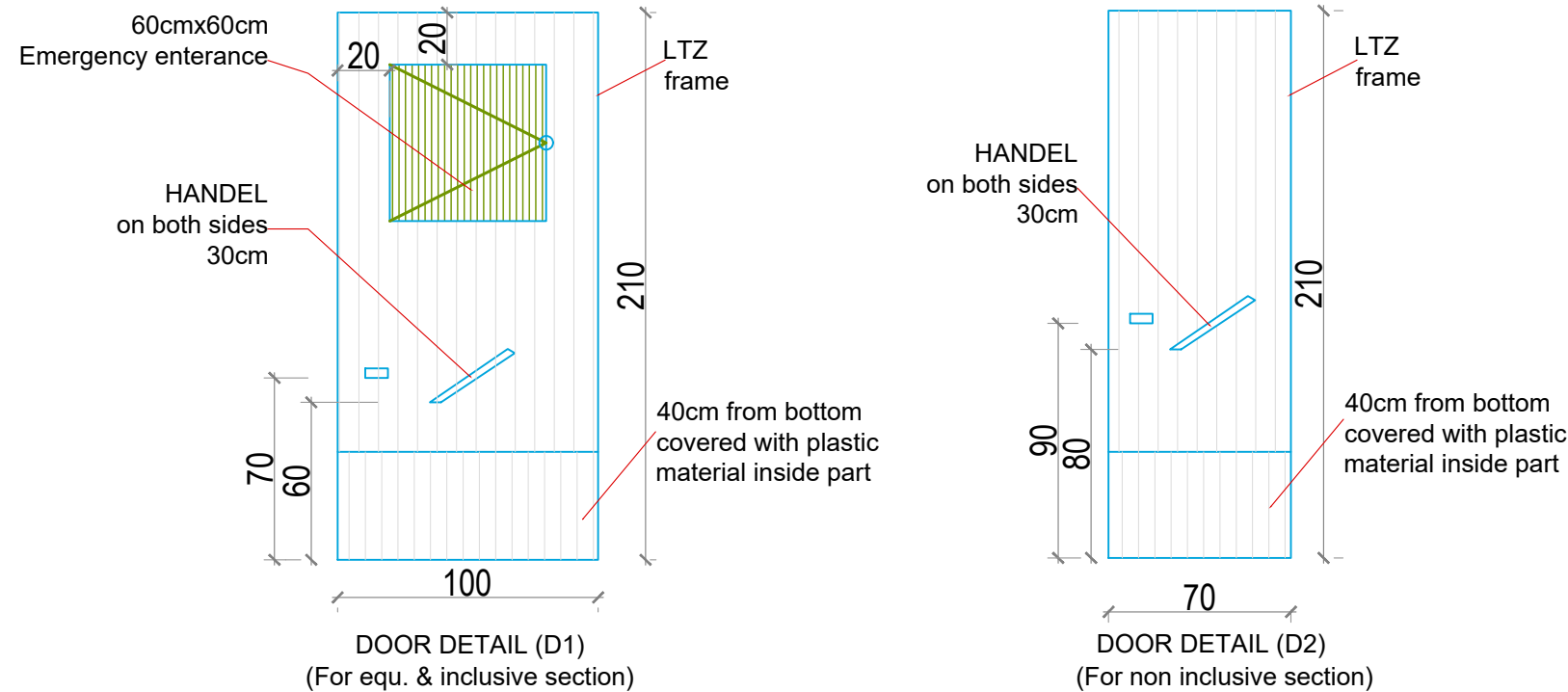
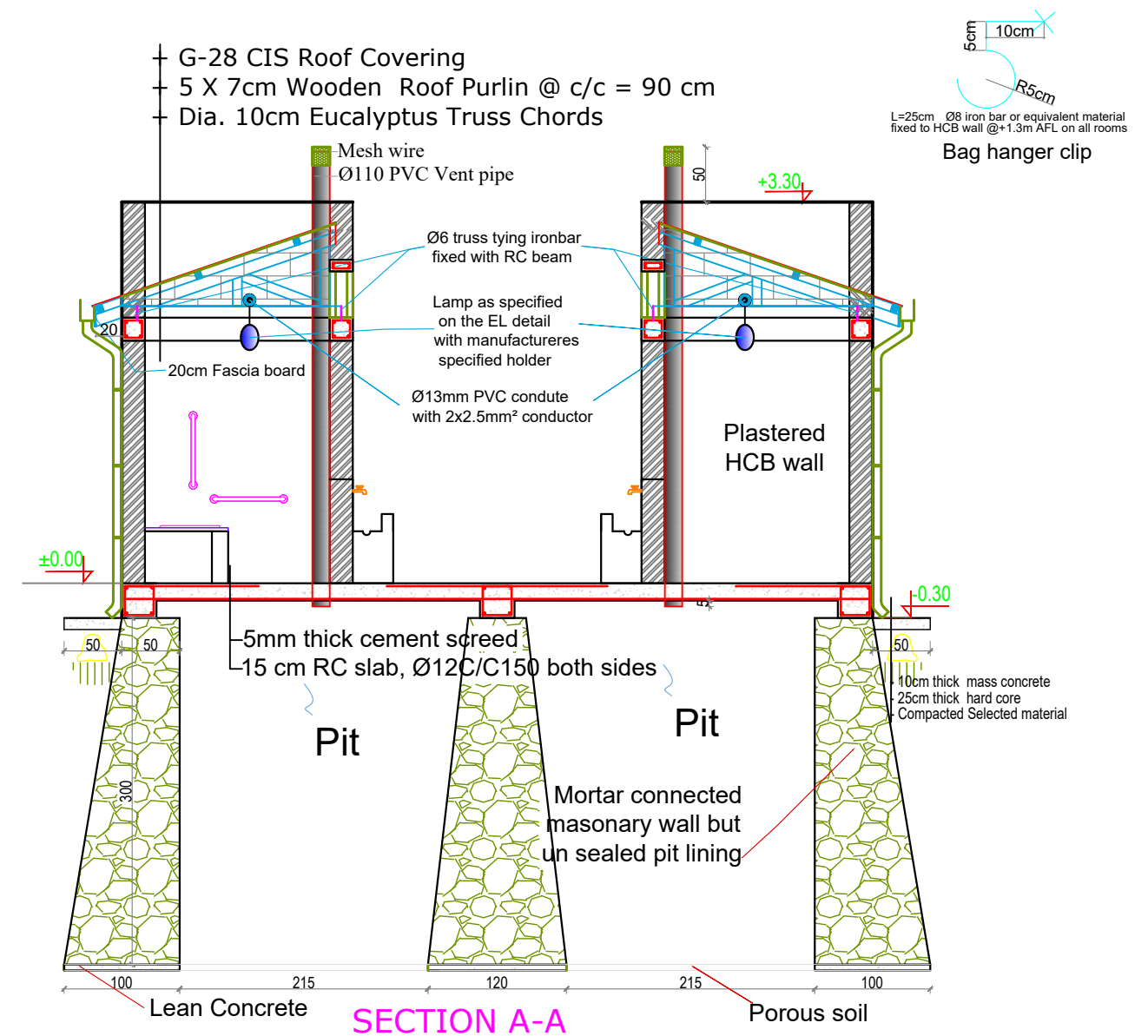
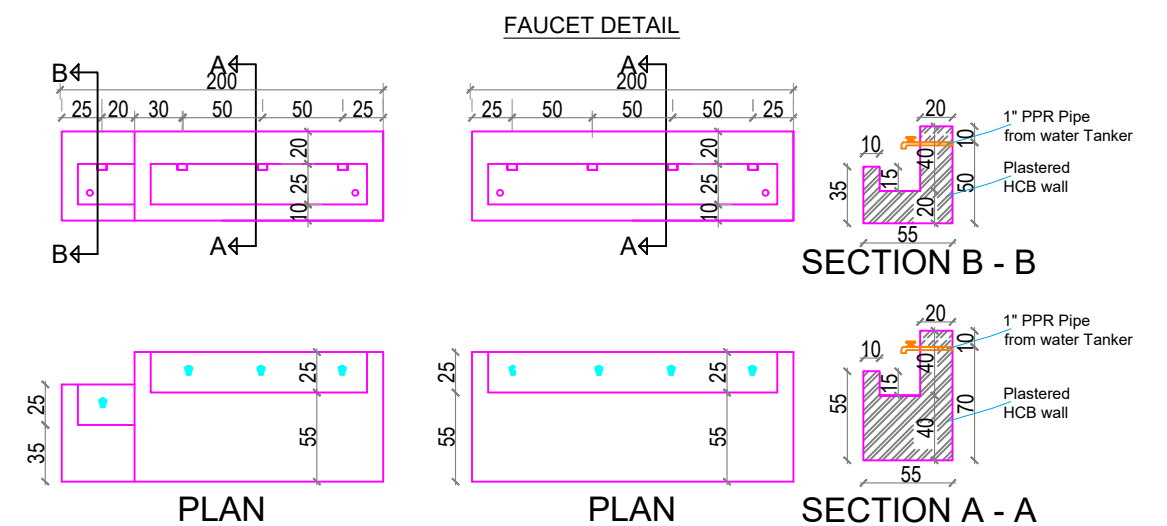
**PROJECT**  
Engineering Services for Site Assessment, Design Adaptation and supervision works for Rehabilitation of WASH and MHM Facilities in selected Secondary Schools in Somali Region

**OWNER**  
**UNICEF**

**DRAWING TITLE**  
6 SEATS LATRINE BLOCK FOR GIRLS  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

|                                                                     |                     |             |
|---------------------------------------------------------------------|---------------------|-------------|
| CAD BY.<br>HALBEEG ARCHITECT & ENGINEERING CONSULTANCY<br>Mesfin H. |                     |             |
| SCALE<br>AS SHOWN                                                   | DATE<br>SEPT., 2025 | AR<br>04/05 |

## SOAK AWAY PIT



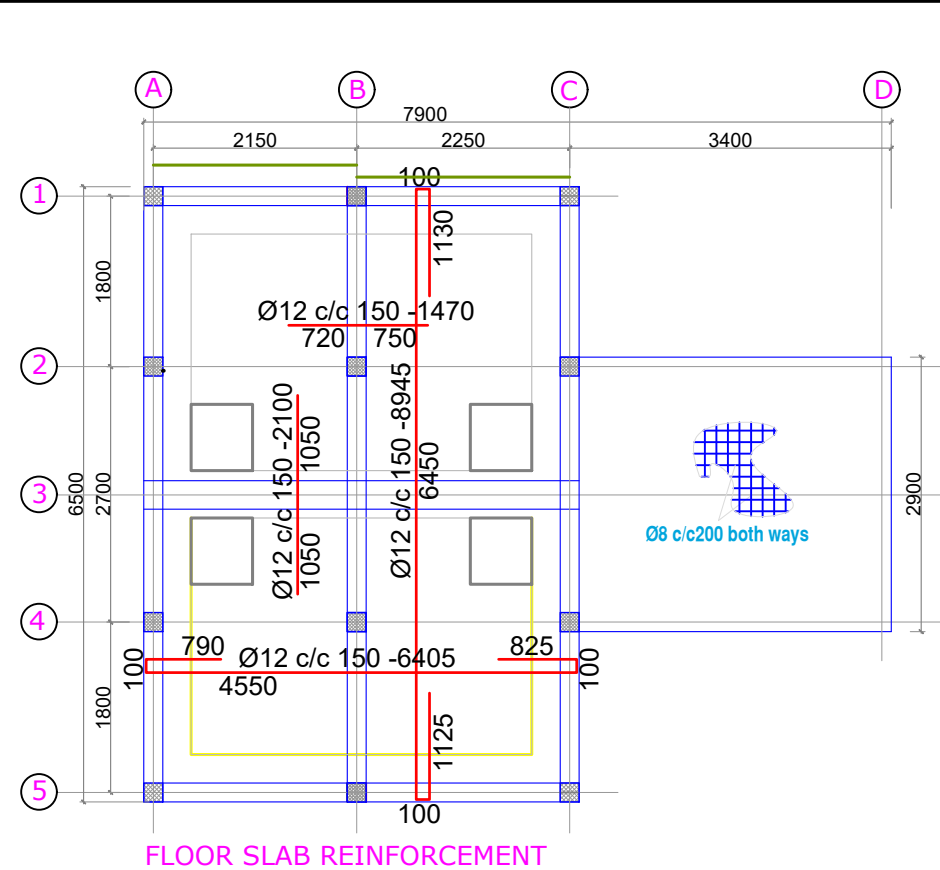
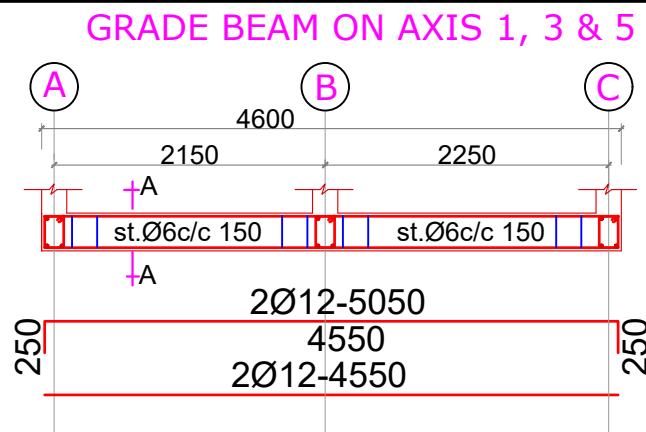
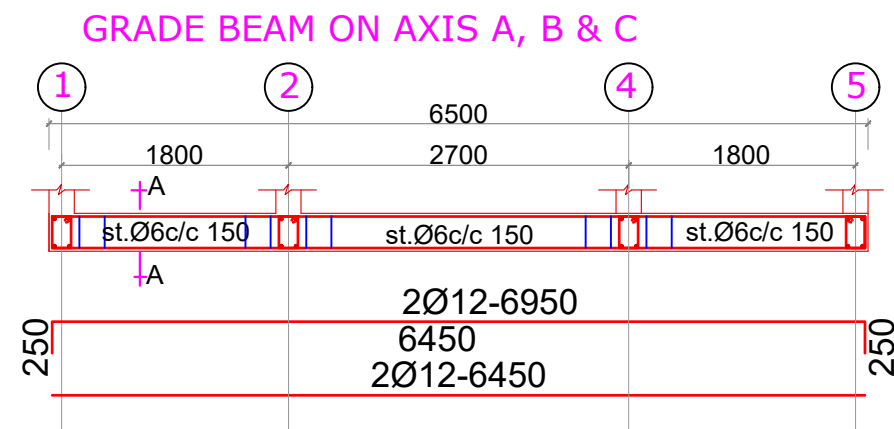
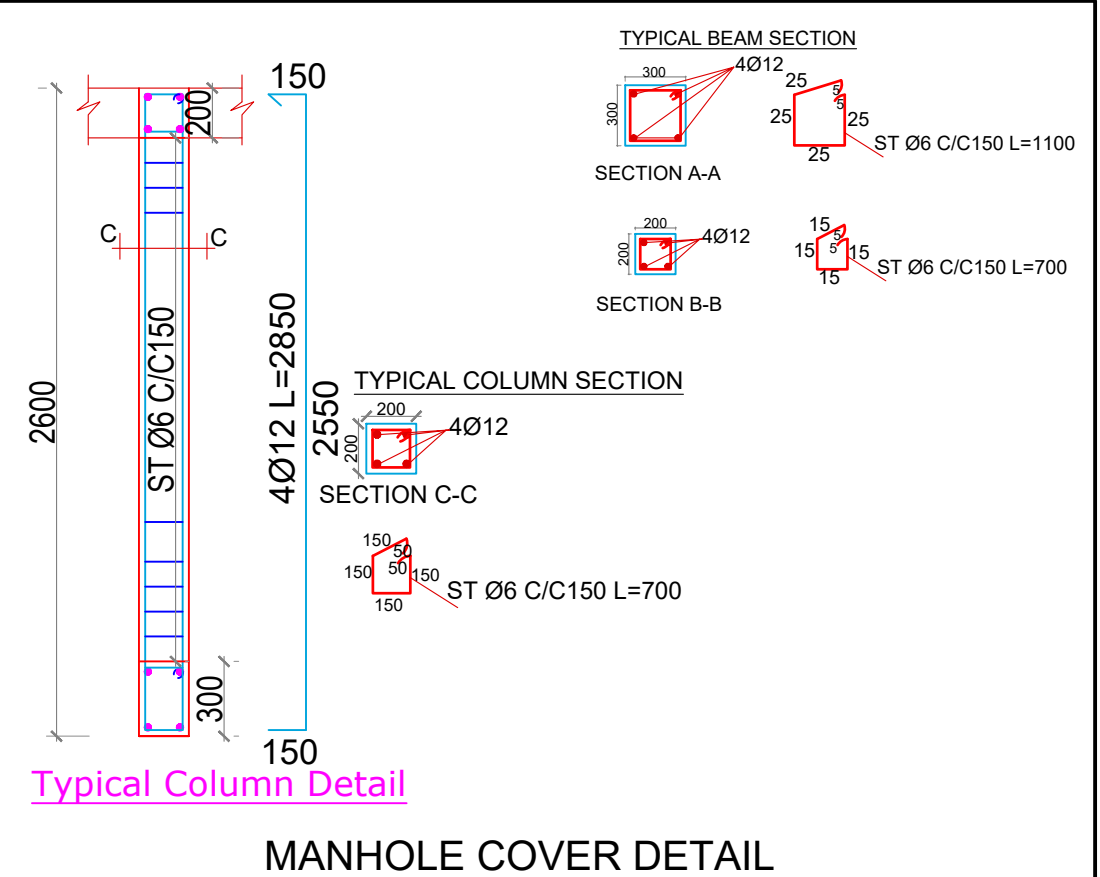
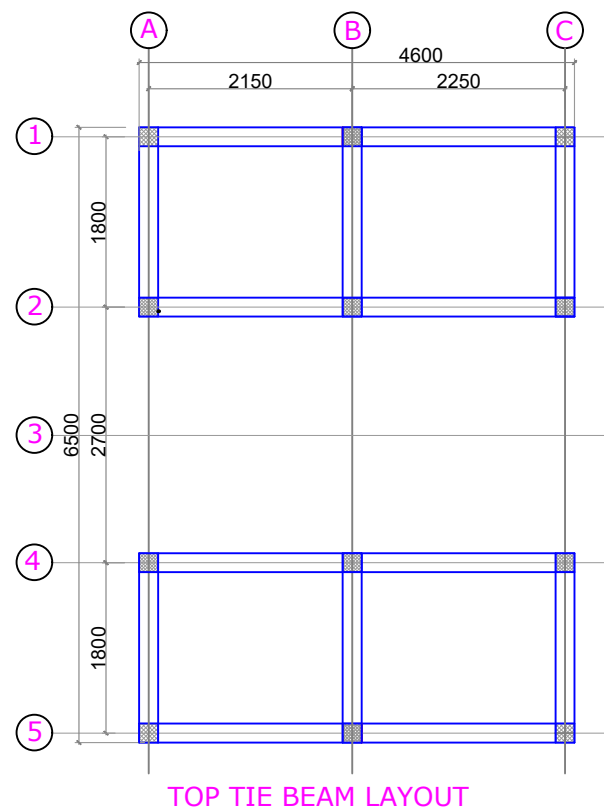
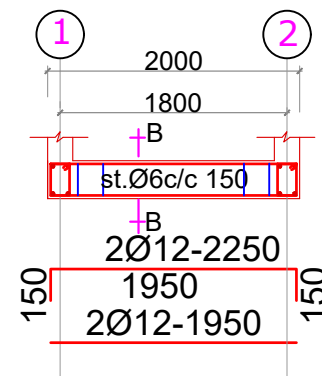
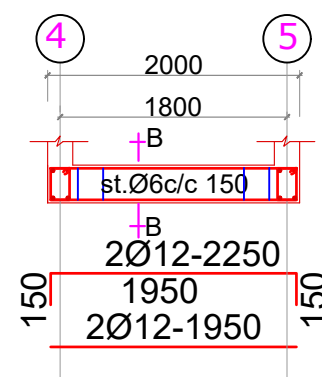
**PROJECT**  
Engineering Services for Site Assessment, Design Adaptation and supervision works for Rehabilitation of WASH and MHM Facilities in selected Secondary Schools in Somali Region

**OWNER**  
**UNICEF**

**DRAWING TITLE**  
6 SEATS LATRINE BLOCK FOR GIRLS  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

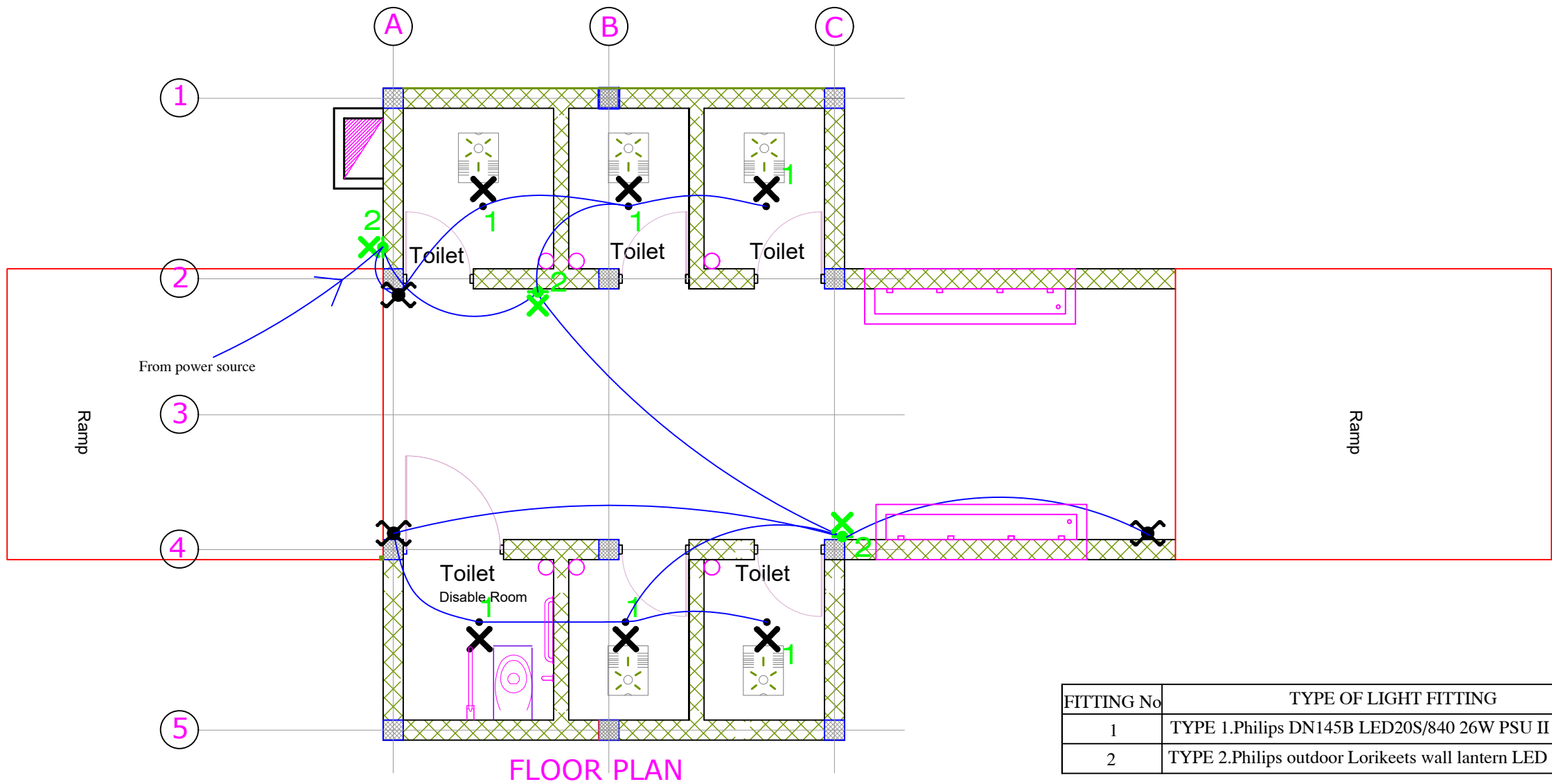
**CAD BY.**  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

|                          |                            |                    |
|--------------------------|----------------------------|--------------------|
| <b>SCALE</b><br>AS SHOWN | <b>DATE</b><br>SEPT., 2025 | <b>AR</b><br>05/05 |
|--------------------------|----------------------------|--------------------|



- Notes:

- Concrete Quality shall be C25.
- Structural drawings should be read with Architectural drawings.
- Reinforcement steel quality shall be  $f_{yk}=300\text{MPa}$  and  $f_{yk}=400\text{MPa}$  for rebar size less than 12 and greater than 10 respectively.
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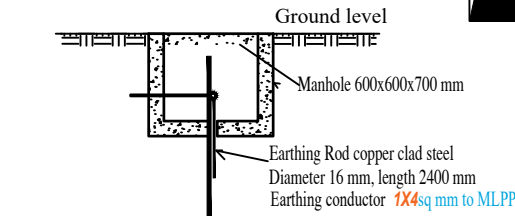
| FITTING No | TYPE OF LIGHT FITTING                                                                 | LOCATION                    |
|------------|---------------------------------------------------------------------------------------|-----------------------------|
| 1          | TYPE 1.Philips DN145B LED20S/840 26W PSU II WH, 2100 lm                               | Internal Toilet Rooms       |
| 2          | TYPE 2.Philips outdoor Lorikeets wall lantern LED black 1x3.5W water resistance IP 44 | External Wall mounted Light |

| SDB-F.TOILET |             |        |                     |      |       |   |   |
|--------------|-------------|--------|---------------------|------|-------|---|---|
| B.NO         | DESCRIPTION | P(KW)  | A(mm <sup>2</sup> ) | I(A) | R     | S | T |
| 1            | LIGHTING    | 0.1415 | 2x2.5               | 10   | 0.171 |   |   |
| 2            | RESERVE     |        |                     |      |       |   |   |
| 3            | TOTAL       |        |                     |      | 0.17  |   |   |

FROM  
FROM EXISTING  
MDB

P-TOTAL 0.171 KW  
P-MAX 0.171 KW  
I-L 0.971A  
NAME SDB-TOILET  
DF 1

3x4MM<sup>2</sup>  
20A/1P



1. Earthing resistance shall not be greater than 5 Ohm.
2. If earthing resistance is greater than 5 Ohm additional electrode shall be buried spaced not less than the length of the electrode.

### LEGEND

- Light fitting, fluorescent, wall mounted
- Light fitting, CFL, ceiling mounted
- Two way double gang - multi circuit switch, 6A - flush mounted

### Note

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Locate switch box 92cm above FFL in Disable room & 15cm from door edge.  
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**OWNER**  
**UNICEF**

**DRAWING TITLE**  
6 SEATS LATRINE BLOCK FOR GIRLS  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

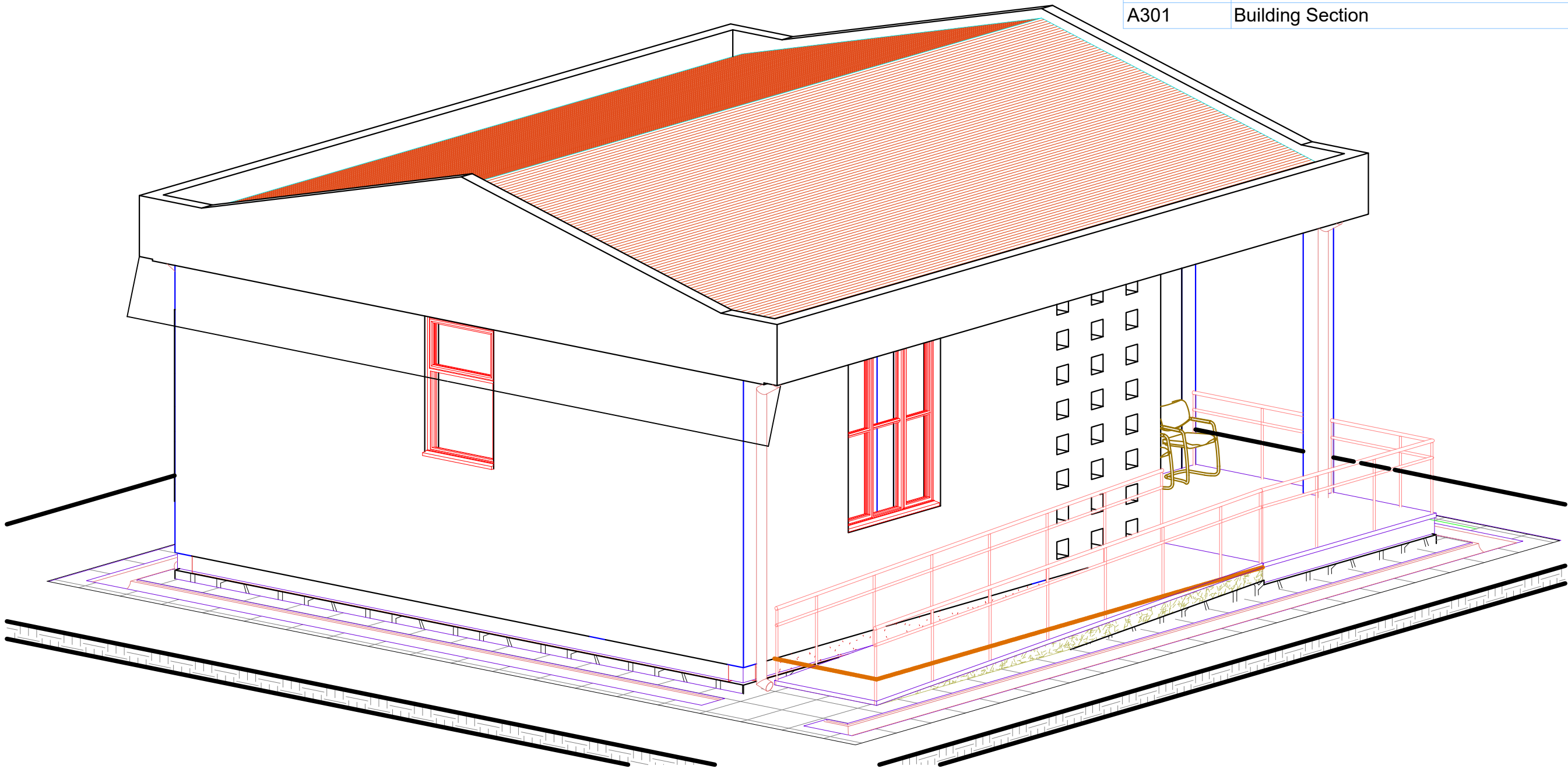
**CAD BY.**  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

|                          |                            |                    |
|--------------------------|----------------------------|--------------------|
| <b>SCALE</b><br>AS SHOWN | <b>DATE</b><br>SEPT., 2025 | <b>EL</b><br>01/01 |
|--------------------------|----------------------------|--------------------|

# MHM FACILITY

-Sheet List

| Sheet Number | Sheet Name               |
|--------------|--------------------------|
| A100         | 3D View & Drawing Sheet  |
| A101         | Floor Plans & Elevations |
| A201         | Elevations & Sections    |
| A301         | Building Section         |



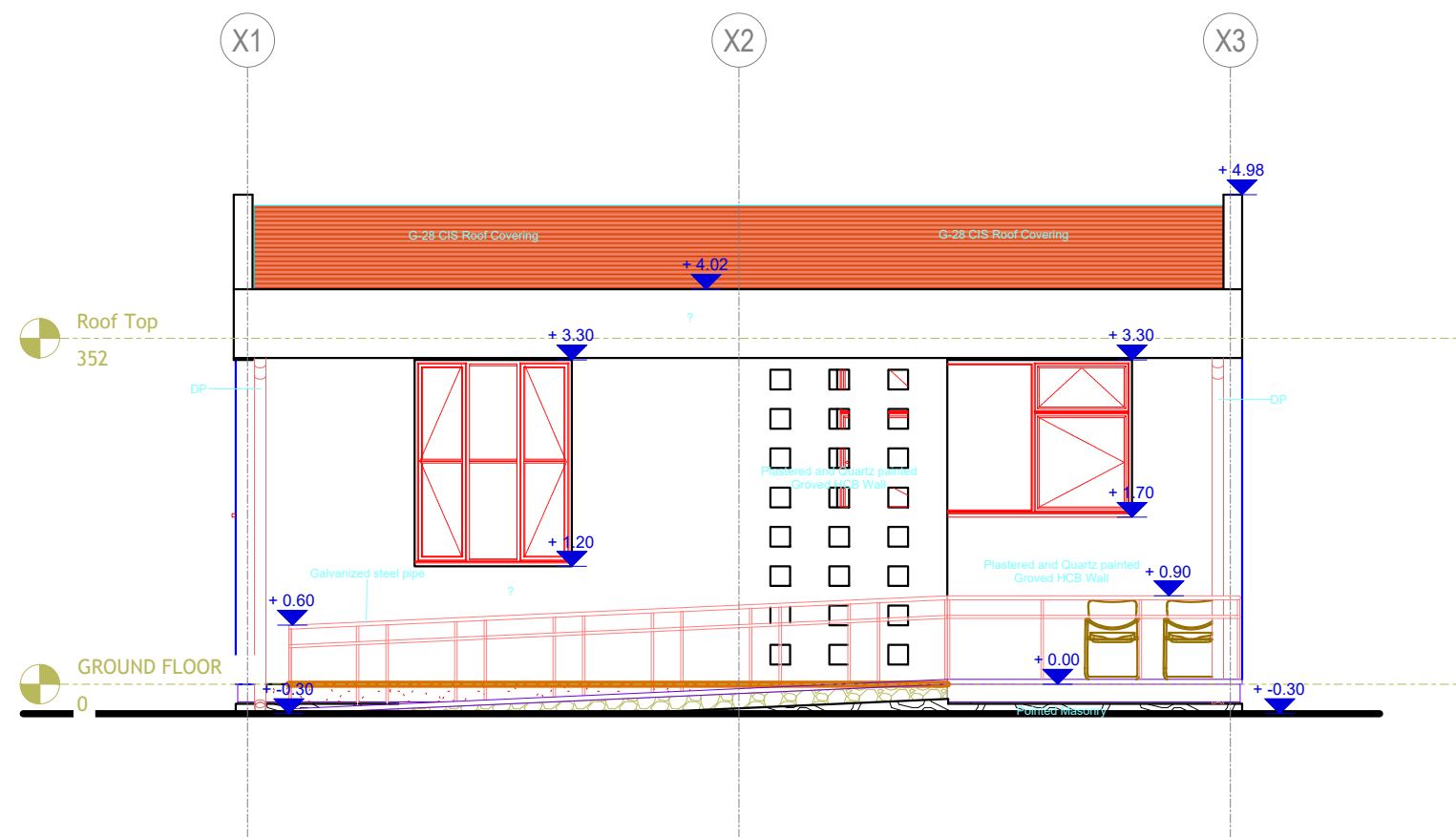
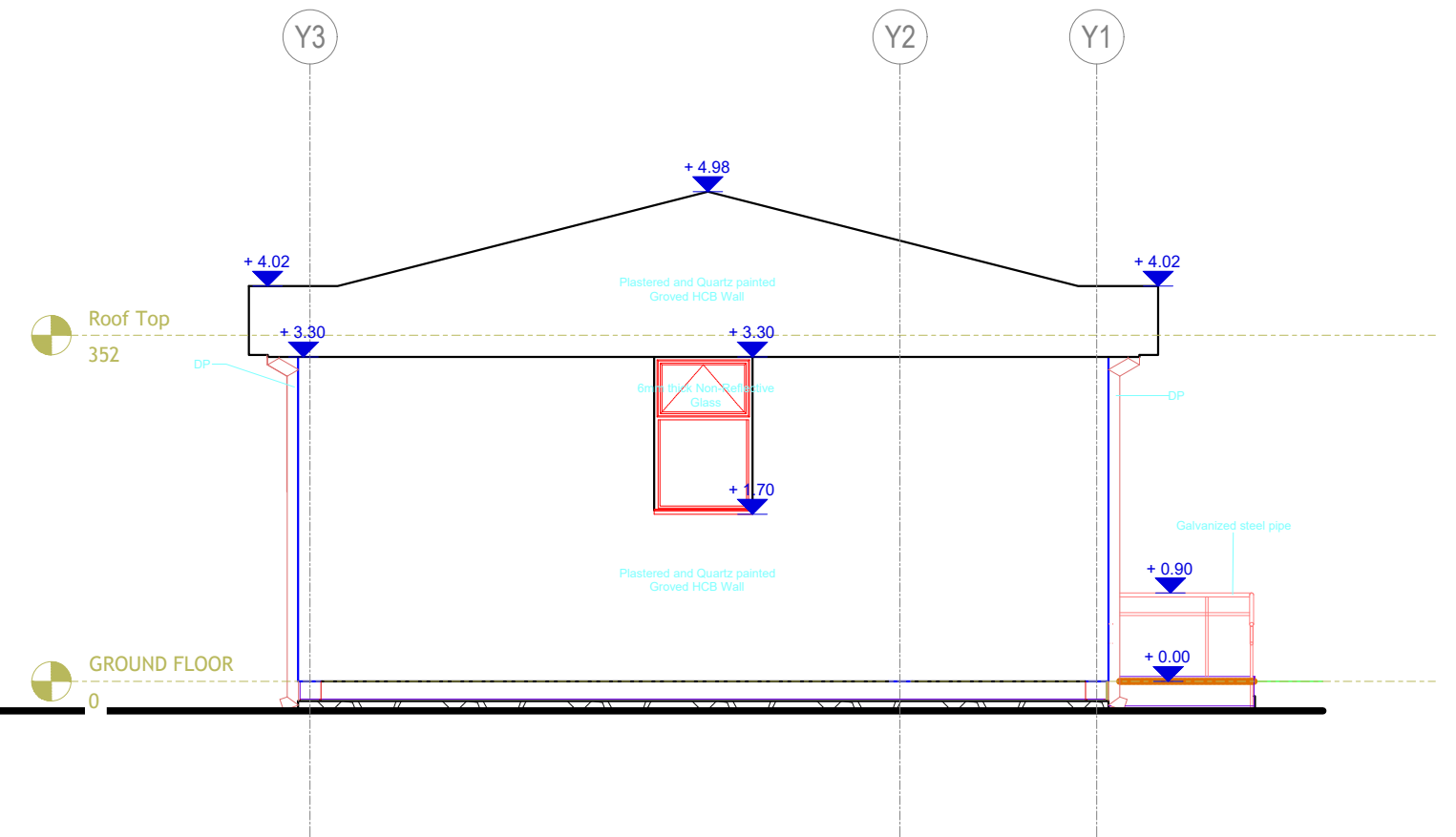
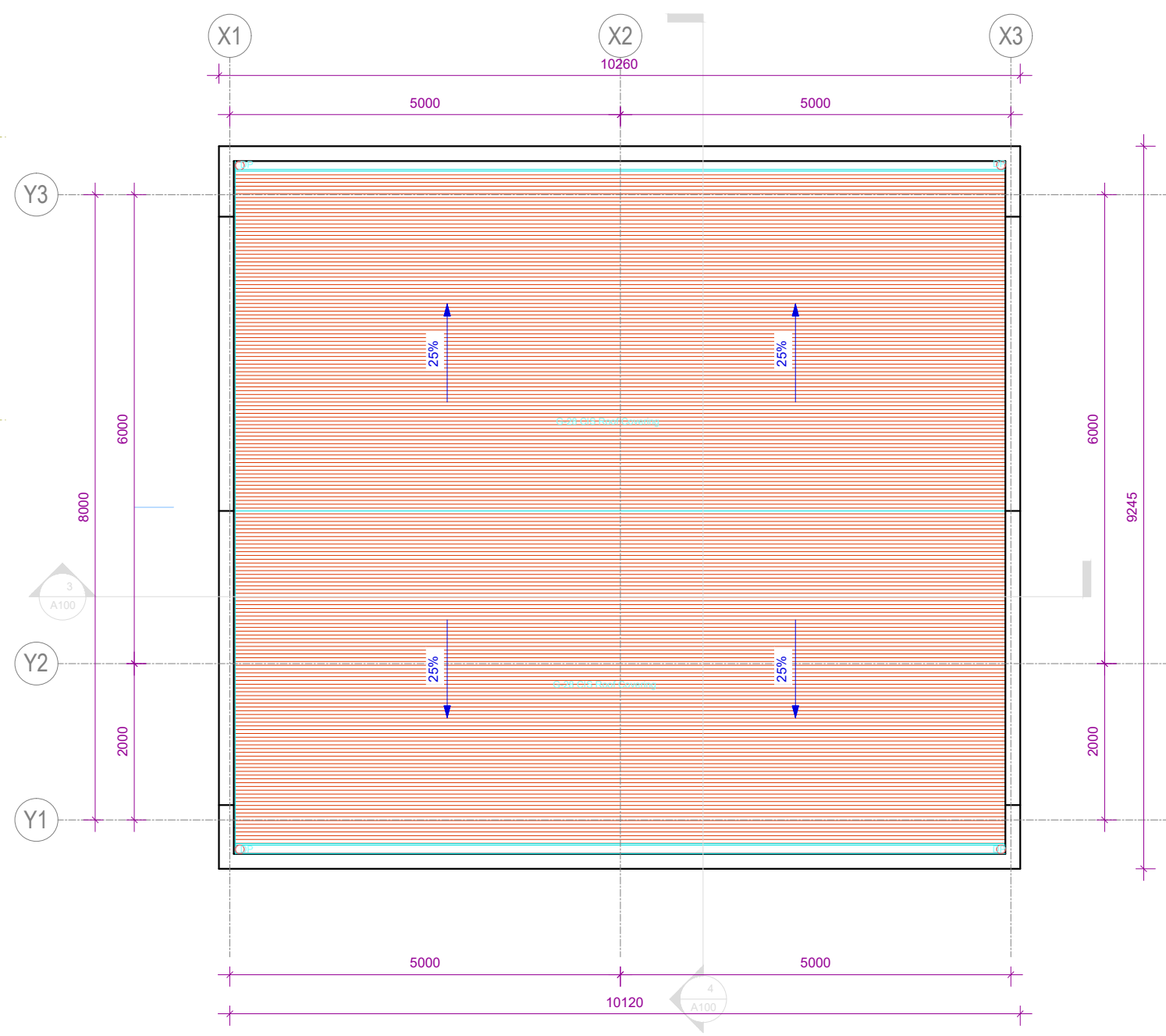
PROJECT  
Engineering Services for Site Assessment, Design Adaptation and Supervision works for Rehabilitation of WASH and MHM Facilities in Lot-2 Secondary Schools in Somali Region

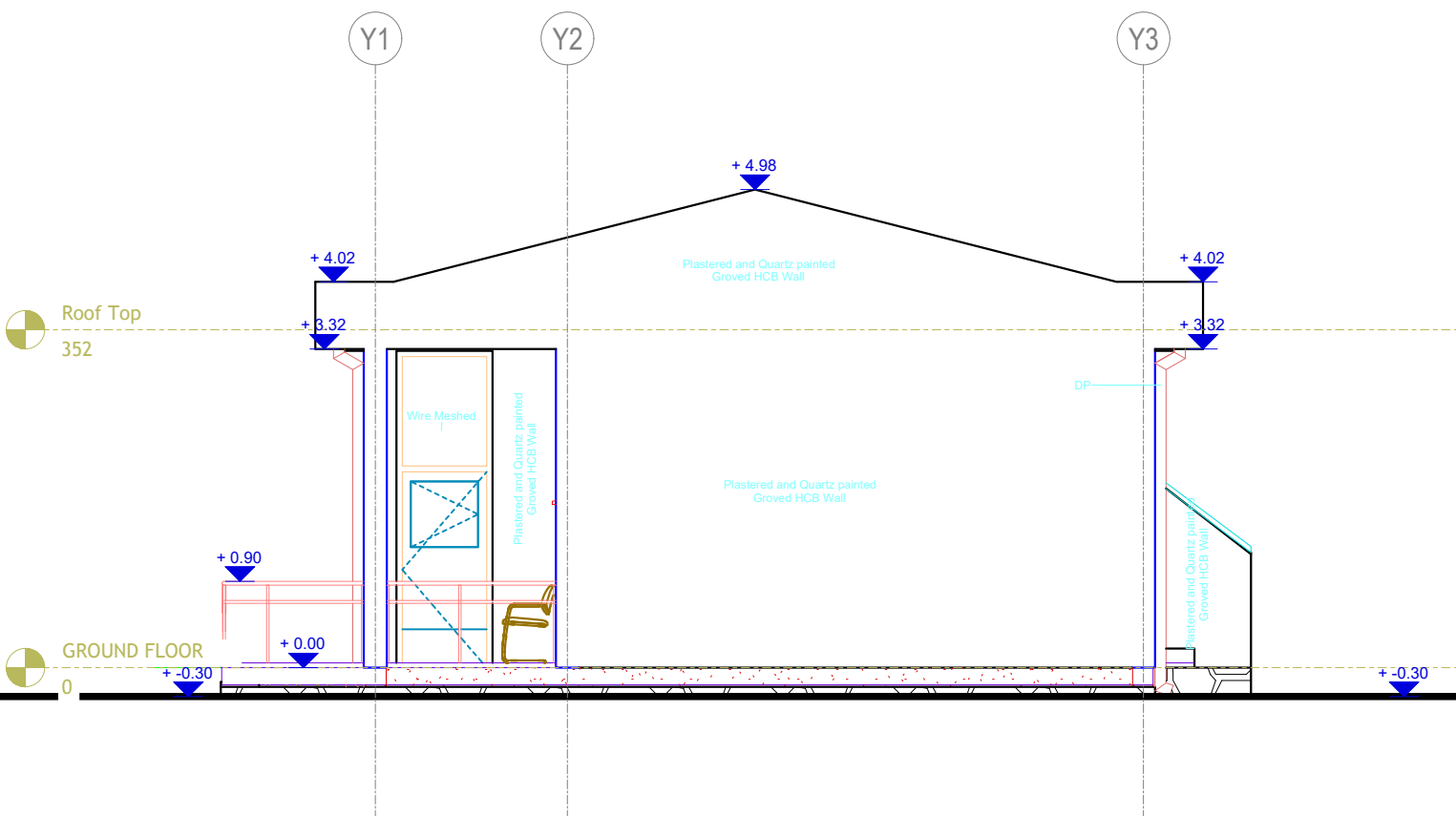
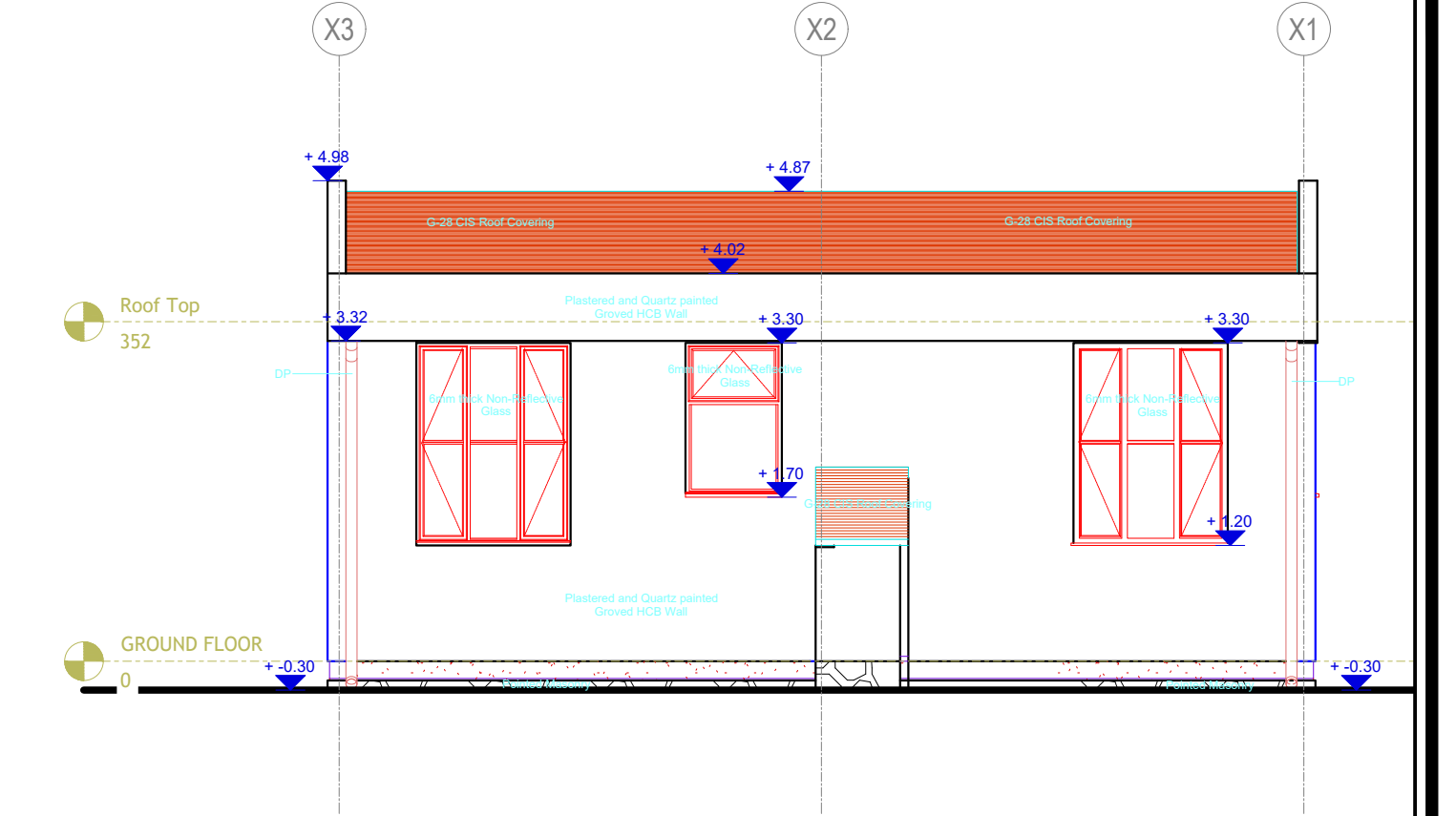
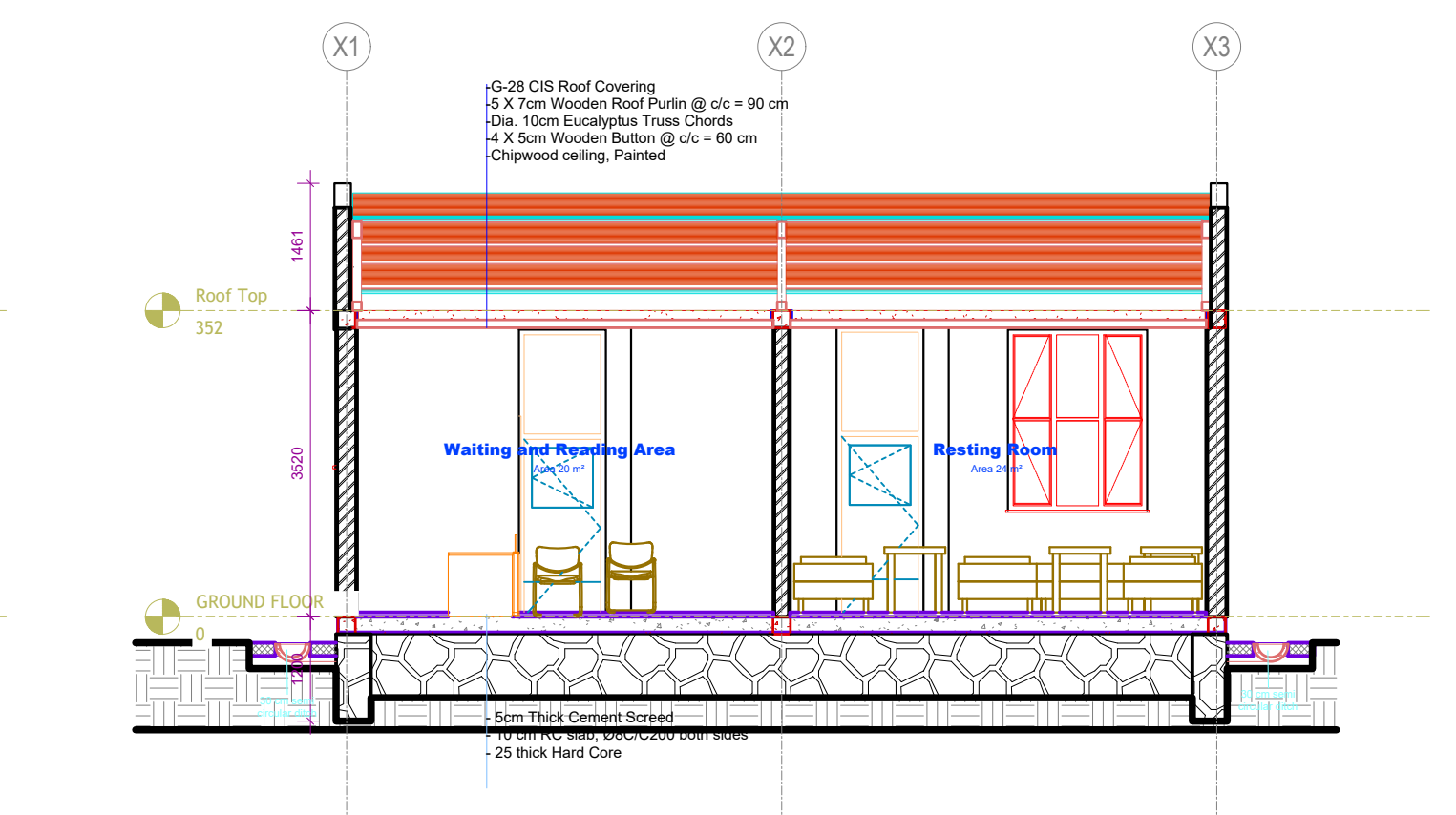
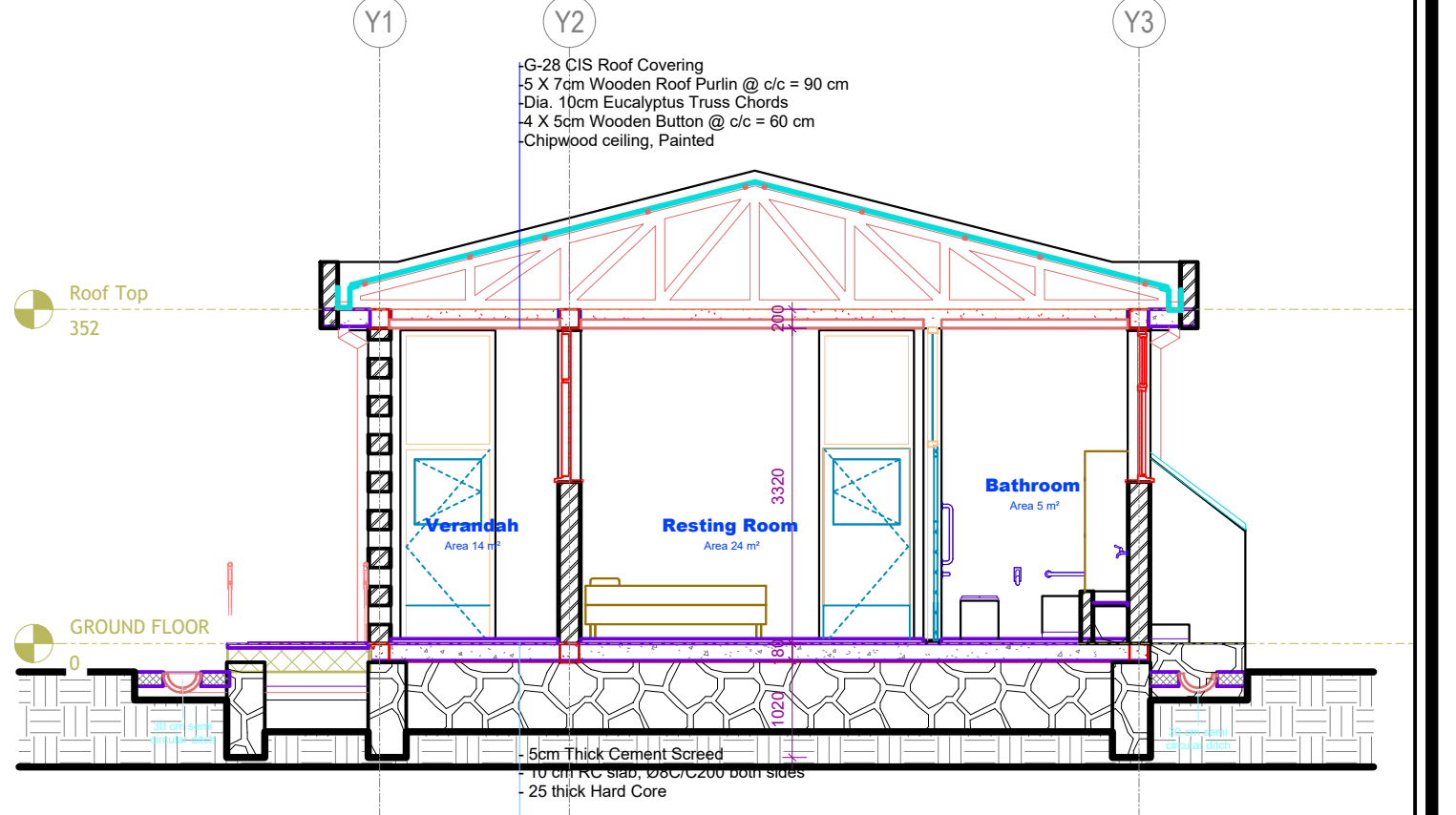
OWNER  
**UNICEF**

DRAWING TITLE  
MHM BLOCK  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

|                   |                     |             |
|-------------------|---------------------|-------------|
| SCALE<br>AS SHOWN | DATE<br>SEPT., 2025 | AR<br>01/04 |
|-------------------|---------------------|-------------|







# GENERAL NOTES

## GENERAL

1). THE PROJECT SHALL CONFORM TO ETHIOPIAN BUILDING CODE OF STANDARD ES–EN:2015 AND THE FOLLOWING INTERNATIONAL DESIGN STANDARDS

- A. EUROPEAN STANDARDS:
  - EN1990:2002,
  - EN1991–1–1:2002
  - EN1992–1–1:2004
  - EN1993–1–1:2006
  - EN1998–1–1:2004
  - DIN 1045–1:2001
- B. AMERICAN CONCRETE INSTITUTION
  - ACI318–08

2). ALL STRUCTURAL WORK SHALL CONFORM TO THE PROJECT DRAWINGS, ALL DRAWING NOTES, AND APPLICABLE REFERENCE STANDARDS. THE SCOPE OF WORK IS NOT SOLELY DEFINED BY THESE DRAWINGS.

3). TYPICAL DETAILS APPLY THROUGHOUT THE PROJECT EVEN IF NOT SPECIFICALLY REFERENCED IN PLANS OR DETAILS.

4). DO NOT USE SCALED DIMENSIONS; USE ONLY WRITTEN DIMENSIONS. WHERE NO DIMENSION IS PROVIDED, CONSULT THE ARCHITECT/ENGINEER FOR CLARIFICATIONS BEFORE PROCEEDING WITH WORK.

5). SEE ARCHITECTURAL DRAWINGS FOR SITE POSITIONING AND PROJECT DATUM REFERENCE.

6). THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF PERSONS AND PROPERTY AND THE MEANS AND METHODS OF CONSTRUCTION.

7). STRUCTURAL ELEMENTS SHALL BE CENTERED ABOUT GRIDLINES OR DIMENSION LINES, UNLESS OTHERWISE NOTED.

8). ALL STRUCTURAL WORK SHALL BE COORDINATED WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, ETC. REQUIREMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN ON PLAN. DISCREPANCIES AND/OR INTERFERENCES SHALL BE REPORTED TO THE ARCHITECT/ENGINEER IMMEDIATELY. ALL PENETRATIONS AND DUCT POSITIONS TO BE COORDINATED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

9). OPENINGS SHALL NOT BE MADE IN ANY STRUCTURAL MEMBER UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.

10).DEFICIENT WORK AND WORK NOT IN CONFORMANCE WITH THE CONTRACT DOCUMENTS AS IDENTIFIED BY THE ARCHITECT, ENGINEER, OR INSPECTOR SHALL BE REPAIRED AT THE CONTRACTOR’S EXPENSE. CONTRACTOR SHALL COMPENSATE OWNER FOR SERVICES ARISING FROM DEFICIENT WORK.

11). THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY REQUIRED DEWATERING OF THE SITE DURING CONSTRUCTION.

12). USE THE ELEVATION DRAWING IN CONJUNCTION WITH ELEVATION DRAWING .

## FOUNDATIONS

1). FOUNDATION DESIGN CRITERIA ARE BASED ON THE RECOMMENDATIONS CONTAINED WITHIN THE BUILDING GEOTECHNICAL REPORT.

2). SLAB–ON–GRADE SHALL BE PLACED ON WELL GRADED, FULLY COMPACTED BEARING SURFACE FREE OF VOIDS AND ORGANIC MATERIALS.

3). WATER SHALL NOT BE ALLOWED TO STAND IN TRENCHES OR FORMS BEFORE OR AFTER CONCRETE IS PLACED, AND SHALL BE PUMPED OUT. IF BOTTOMS OF TRENCHES BECOME SOFTENED DUE TO RAIN OR OTHER WATER BEFORE FOUNDATIONS ARE CAST, THE CONTRACTOR SHALL, AT THEIR OWN EXPENSE, EXCAVATE THE SOFTENED MATERIAL AND REPLACE WITH CONCRETE.

4). WHERE SOIL CONDITIONS ARE FOUND DURING CONSTRUCTION THAT DO NOT MEET CRITERIA DESCRIBED IN THE REPORT, SPECIAL INSPECTOR/CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER IMMEDIATELY.

5). LOCATION OF UNDERGROUND UTILITIES SHALL BE VERIFIED PRIOR TO CONSTRUCTION OF FOUNDATION TO AVOID ANY INTERFERENCE. CONTRACTOR SHALL EXPOSE EXISTING UTILITY LINES IN THE IMMEDIATE AREA TO DETERMINE THEIR EXACT INVERT ELEVATION, SIZE AND LOCATION RELATIVE TO THE FOUNDATION. NOTIFY THE ENGINEER IMMEDIATELY OF ANY INTERFERENCE WITH FOOTINGS OR THE FOUNDATION WALL.

## REINFORCED CONCRETE

1). CONCRETE SHALL CONFORM TO THE FOLLOWING CYLINDER STRENGTH/CUBE STRENGTH (fck/fck,cube) VALUES

- MAIN BLOCK
  - SHEAR WALL AND COLUMNS – C25/30(C30)
  - FOUNDATION, SLAB, BEAM,RETAINING WALL, STAIR AND RAMP ST– C25/30(C30)
  - INTERSECTION BETWEEN SLAB/STAIR AND RETAINING WALL, SHEAR WALL AND COLUMNS– C25/30(C30)
- 2). REINFORCING STEEL SHALL BE:
  - CLASS B DEFORMED BARS WITH MINIMUM YIELD STRENGTH OF fy=400kN/m<sup>2</sup> (S–400B) FOR DIAMETERS <= 14  
fy=500kN/m<sup>2</sup> (S–500B) FOR DIAMETERS > 14

3). PROVIDE DOWELS OR CONTINUOUS REINFORCING BETWEEN ALL CONCRETE ELEMENTS. FOR FOUNDATIONS PROVIDE DOWELS OF SAME NUMBER AND SIZE AS THE VERTICAL REINFORCEMENT OF STRUCTURE ABOVE UNLESS NOTED OTHERWISE. FOR OTHER STRUCTURAL ELEMENTS, VERTICAL DOWELS SHALL MATCH THE GREATER REINFORCING OF EACH ELEMENT.

4). BAR SPLICES MAY BE DELETED AND CONTINUOUS REINFORCING USED AT CONTRACTORS OPTION. BAR SPLICES SHALL BE MADE AT POINTS OF MINIMUM STRESS. IN FRAMED BEAMS AND SLABS SPLICE TOP BARS AT MID–SPAN, BOTTOM BARS OVER SUPPORTS.

5). STEEL REINFORCEMENT SHOP DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR AND SHALL INDICATE:

- A. MATERIAL AND GRADE
- B. BAR SCHEDULES WITH BAR LENGTHS AND BENT BAR DIAGRAMs
- C. ARRANGEMENT, SPACING, COVER, LAP LOCATIONS AND LENGTHs
- D. SPECIAL REINFORCEMENT AT OPENINGs
- E. ALL EMBEDDED INSERTs, ANCHORs AND CAST–IN PLACE STEELWORK CONNECTIONs ALL OPENINGs AND EMBEDDED FIXINGs FOR CRANES, LIFTs, PUMPS AND OTHER TEMPORARY WORKs

6). ALL PIPE AND CONDUIT OPENINGs SHALL BE SLEEVED AND CAST IN PLACE UNLESS OTHERWISE NOTED. DO NOT SAW CUT, CORE OR CORE DRILL STRUCTURAL CONCRETE WITHOUT EXPLICIT DIRECTION FROM THE STRUCTURAL ENGINEER.

7). CONDUIT AND PIPES SHALL NOT BE PERMITTED IN STRUCTURAL CONCRETE ELEMENTs UNLESS SPECIFICALLY REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER. ANY CONDUITs TO BE EMBEDDED IN THE STRUCTURAL CONCRETE SHALL BE SUBMITTED FOR STRUCTURAL REVIEW.

8). CONTRACTOR TO SUBMIT CONCRETE MIX DESIGN AT LEAST TWO WEEKs PRIOR TO CONCRETE POUR FOR APPROVAL BY THE STRUCTURAL ENGINEER.

9). ALL REINFORCEMENT SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS OR STIRRUPS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL BARS.

10). ALL REINFORCING BARS SHALL BE LAPPED AS SPECIFICALLY DETAILED ON THE DRAWINGs.

11). SUBMIT SHOP DRAWINGs SHOWING CONSTRUCTION JOINT DETAIlS, LOCATIONs AND THE SEQUENCE OF POURS FOR THE STRUCTURAL ENGINEER’S REVIEW PRIOR TO BEGINNING WORK.

12). NO HORIZONTAL CONSTRUCTION JOINTs WILL BE PERMITTED IN BEAMs, WALLs AND SLABs UNLESS SPECIFICALLY SHOWN ON THE DRAWINGs OR APPROVED IN WRITING PRIOR TO CONSTRUCTION BY THE ENGINEER.

13). MECHANICAL, ELECTRICAL AND PLUMBING LIGHTNING RODs, OPENINGs AND SLEEVES ARE SHOWN INDICATIVELY AND CONTRACTOR TO COORDINATE WITH RESPECTIVE TRADEs.

14). ALL ADJOINING SURFACEs NOT CAST MONOLITHICALLY SHALL BE ROUGHENED FOR THE ENTIRE INTERSECTING SURFACE AND APPLY A BONDING AGENT AS REQUIRED.

15). CONTRACTOR SHALL COORDINATE SLAB DEPRESSIONs FOR FLOOR FINISHES WITH THE ARCHITECTURAL DRAWINGs.

16). CONTRACTOR SHALL COORDINATE LOCATION OF INSERTs, WELDED PLATES, AND OTHER ITEMs TO BE EMBEDDED IN CONCRETE WITH ARCHITECTURAL AND MECHANICAL DRAWINGs.

17). HORIZONTAL PIPES OR CONDUITs PLACED IN SLABs SHALL NOT BE SPACED CLOSER THAN 3X THE DIAMETER ON CENTER. PIPES AND CONDUITs PLACED IN SLABs SHALL NOT HAVE AN OUTSIDE DIAMETER LARGER THAN 1/3 OF SLAB THICKNESS. ALUMINUM CONDUITs SHALL NOT BE PLACED IN CONCRETE. NO CONDUITs SHALL BE PLACED IN THE SLAB WITHIN 600mm OF ANY COLUMN FACE.

18). LONGITUDINAL BARS IN BETWEEN TWO DIFFERENT SECTIONs OF COLUMNs HAS TO BE BENT 1:6 SLOPE TO AVOID YIELDING OF BARS.(REFER THE DRAWING BELOW)

19). USE ø8/250 DISTRIBUTION REBAR AT SLABs

## CONCRETE JOINTS

1). CONSTRUCTION JOINTs SHALL BE INSTALLED SUCH THAT STRENGTH AND APPEARANCE OF CONCRETE ARE NOT IMPAIRED.

- A. LAYOUT OF CONTRACTION JOINTs IN SLABs ON GRADE SHALL NOT EXCEED 7.5M IN LENGTH WITH A MAXIMUM ASPECT RATIO BETWEEN LONG AND SHORT DIRECTIONs OF 1.5.
- B. CONSTRUCTION JOINTs IN CONCRETE FRAME AND SLAB SHALL OCCUR AT THE THIRD (3RD) POINT OF THE SPANs IN EITHER DIRECTION. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTs AND SPLICED ONLY AT LOCATIONs NOTED ON THE DRAWINGs.
- C. WHERE THERE IS DIFFERENCE IN CONCRETE GRADE BETWEEN FLOOR SLABs AND COLUMN OR SHEARWALL, CAST PORTION OF SLAB WITH THE HIGHER CONCRETE GRADE ACCORDING TO THE DETAIL PROVIDED.

## LOADS

THE BUILDING IS DESIGNED FOR THE FOLLOWIN LOADS.

1). LIVE LOADS (UNIFORMLY DISTRIBUTED)

|            |                       |
|------------|-----------------------|
| MAIN BLOCK |                       |
| SCHOOL     | 3.0 kN/m <sup>2</sup> |

- 2). SEISMIC CRITERIA
- MAIN BLOCK

SEISMIC FORCE RESISTING SYSTEM:
  - E/W: FRAME SYSTEM
  - N/S: FRAME SYSTEM

PEAK GROUND ACCELERATION = 0.01G  
GROUND TYPE = C  
BUILDING IMPORTANCE CLASS = II  
DUCTILITY CLASS = DCM

PROJECT

Engineering Services for Site Assessment, Design Adaptation and Supervision works for Rehabilitation of WASH and MHM Facilities in Lot-2 Secondary Schools in Somali Region

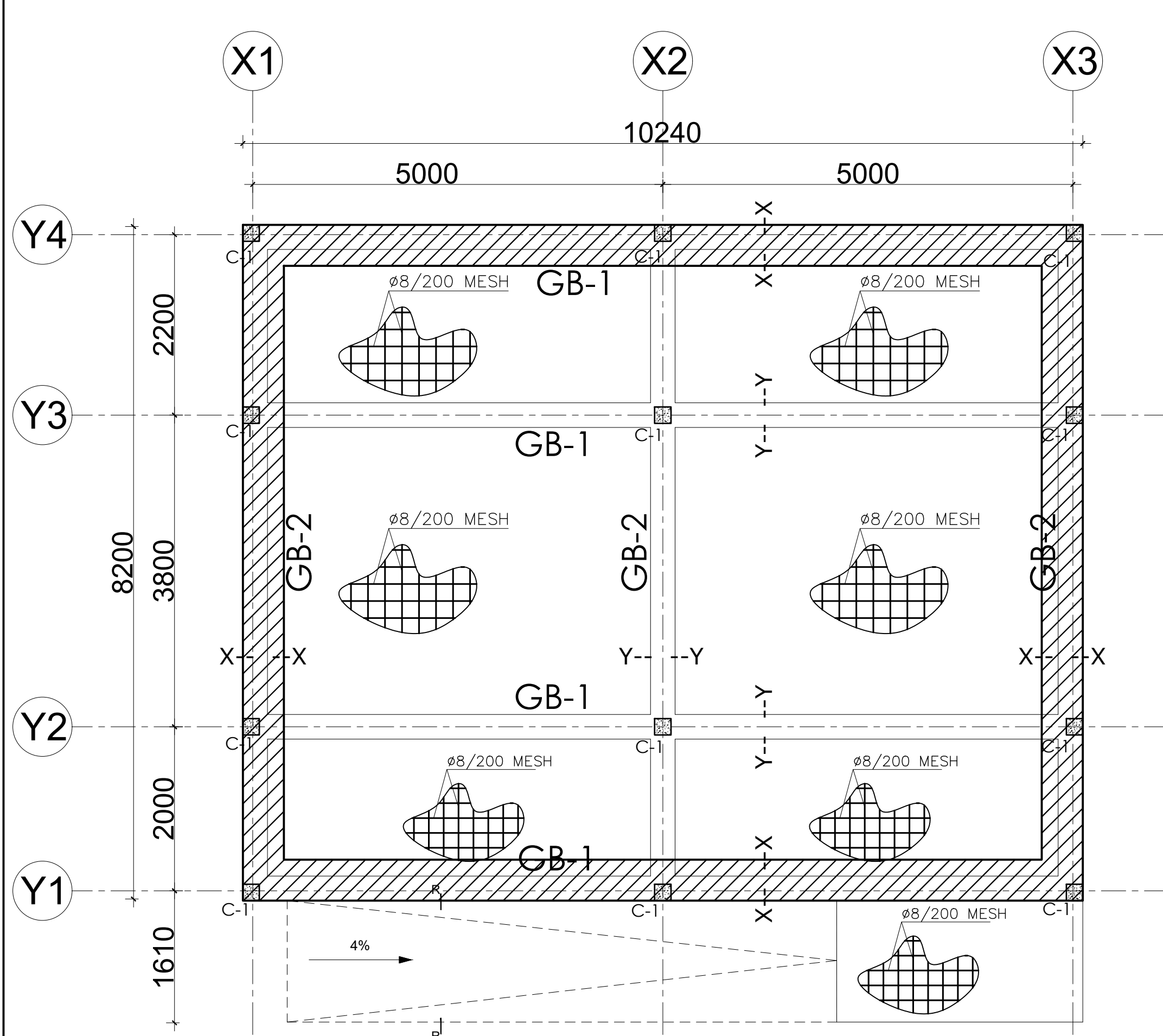
OWNER

UNICEF

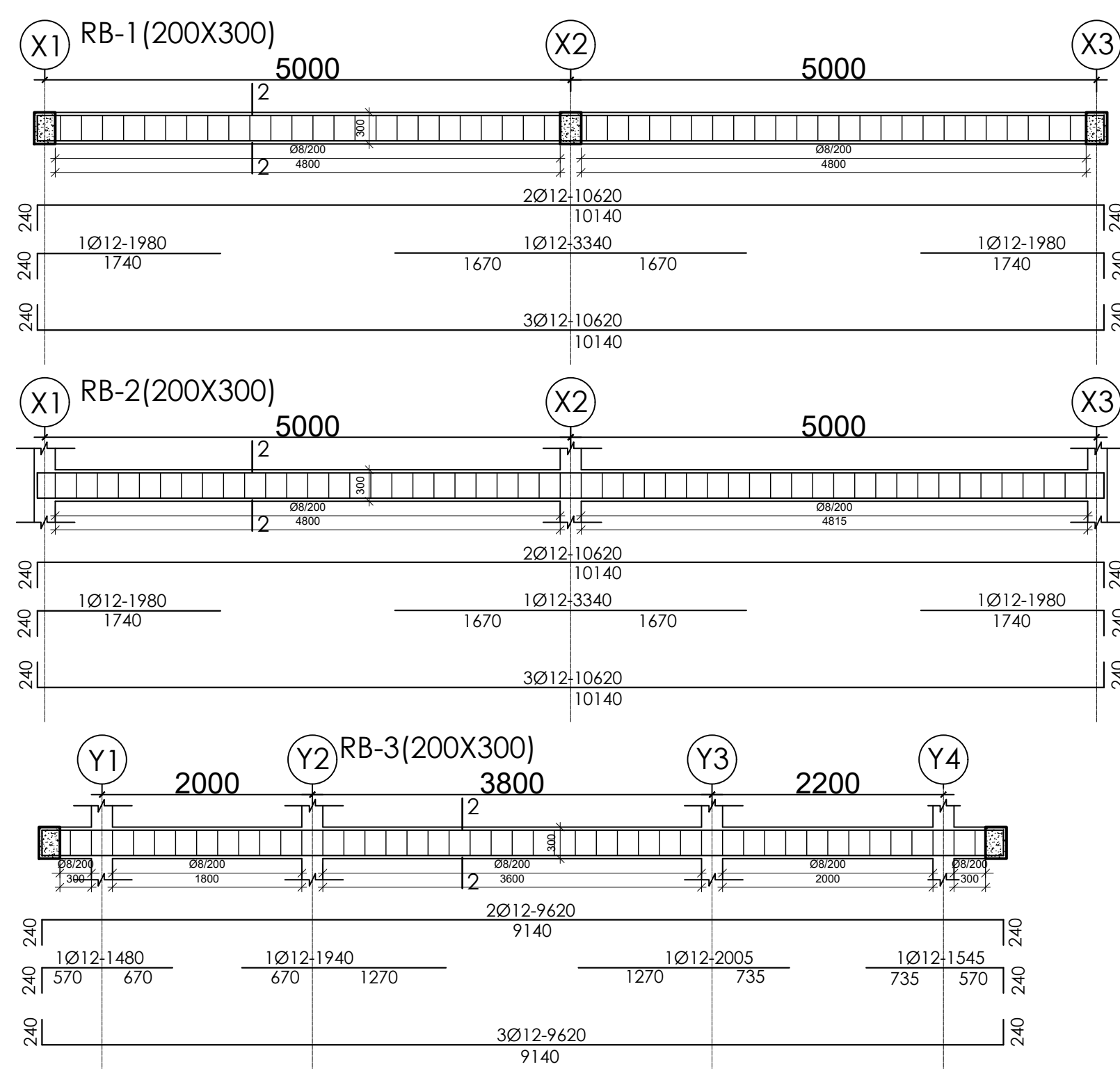
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MHM BLOCK  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

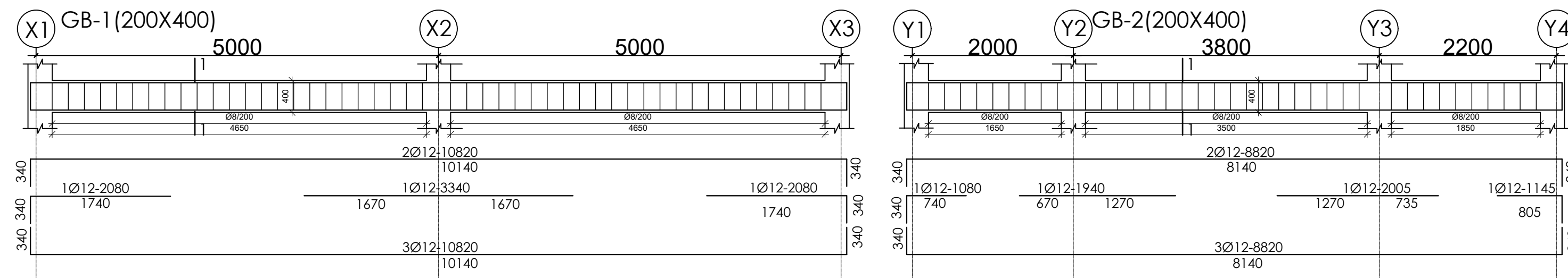
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| SCALE    | DATE       | ST<br>01/02 |
| AS SHOWN | SEPT.,2025 |             |



Footing, Ground Floor Beam & Columns Layout @ level (±0.00m )  
sc 1:50

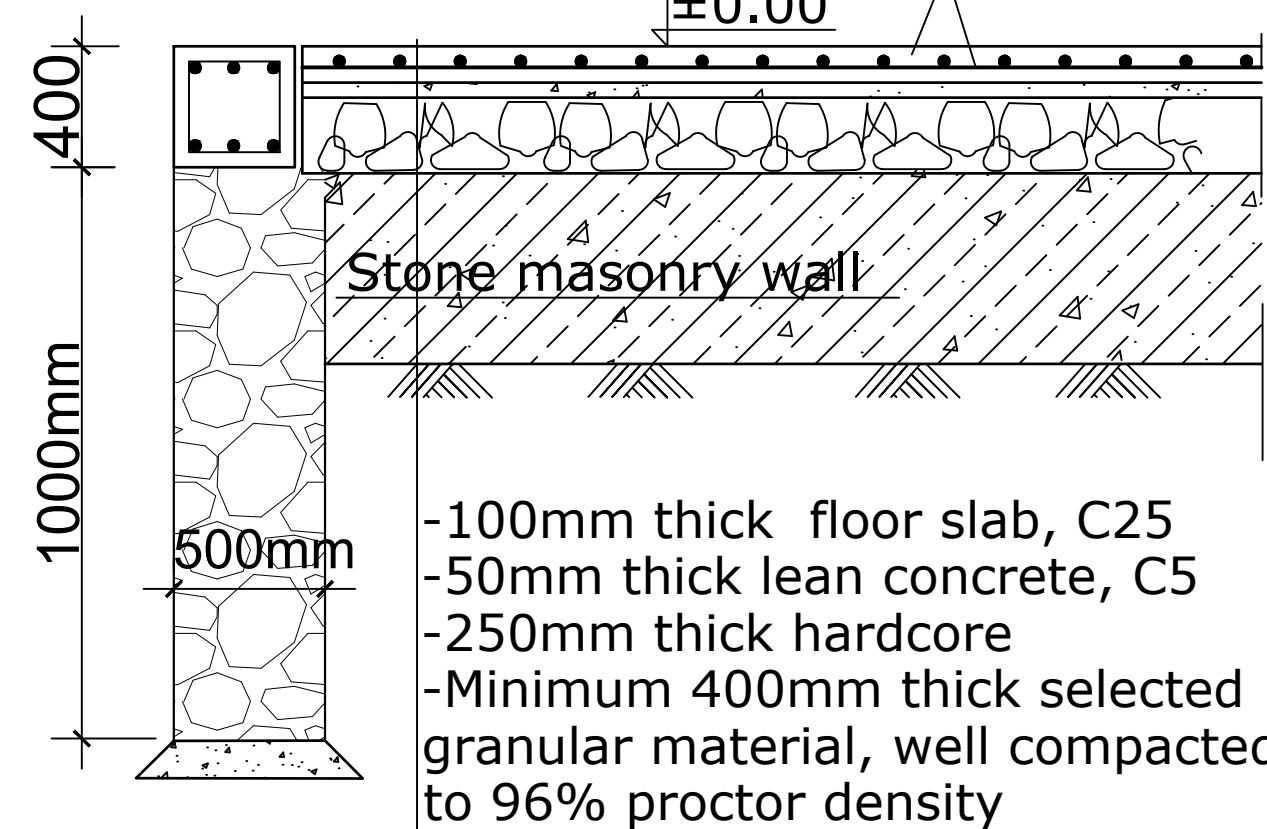


Roof Beam Layout @ level (+3.52m )  
sc 1:50



SECTION X-X

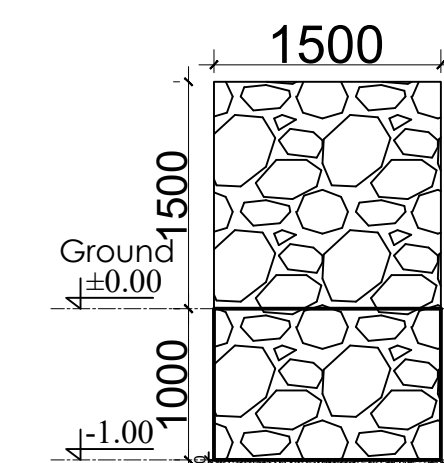
SC.1:25



SECTION Y-Y

SC.1:25

Masonry Water Tanker Seat

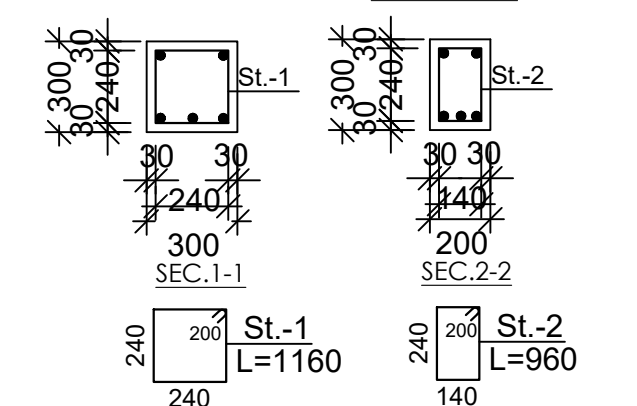


SECTION D-D

sc 1:50

Beam Sections

SC.1:25

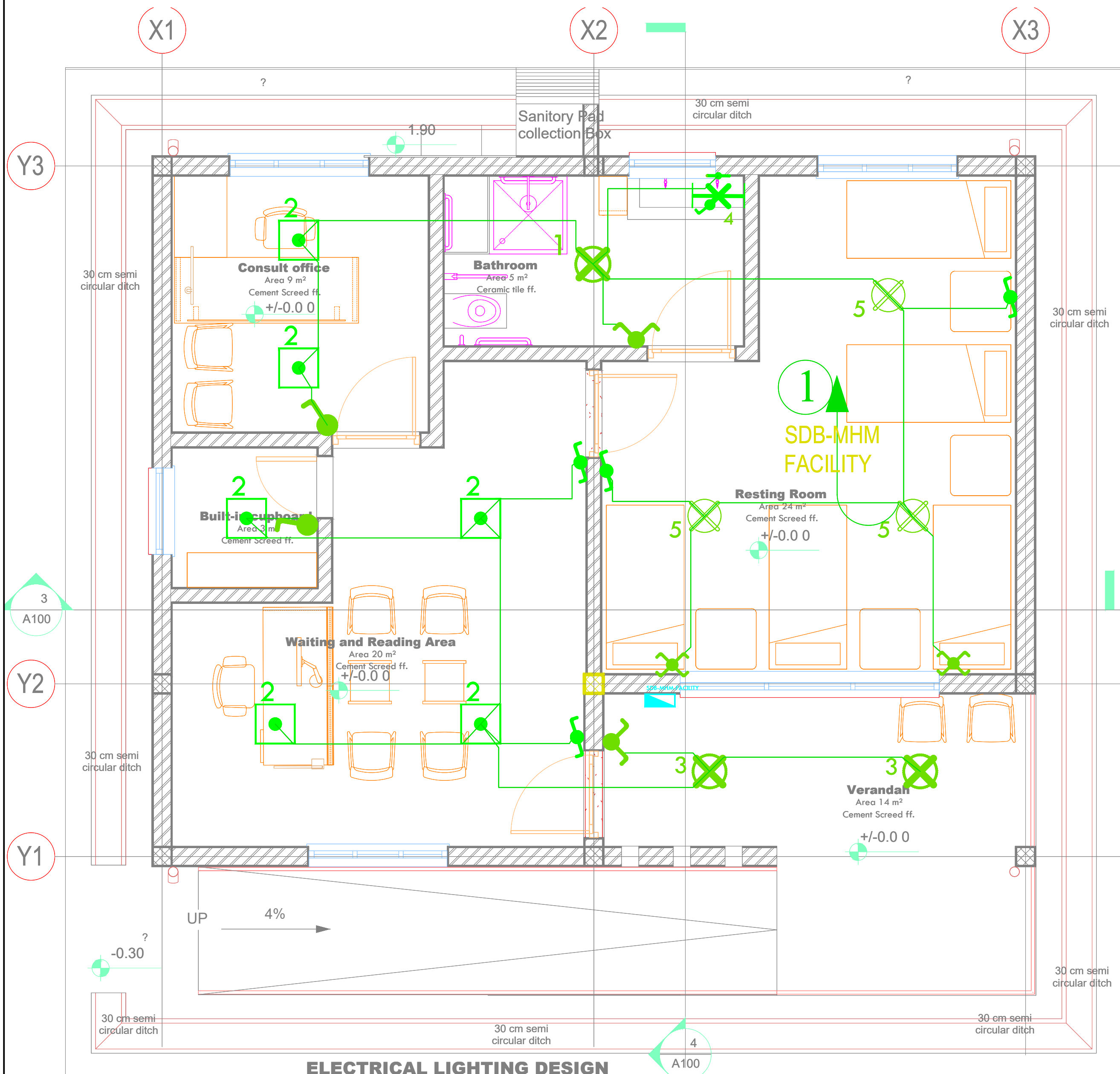


PROJECT  
Engineering Services for Site Assessment, Design Adaptation and Supervision works for Rehabilitation of WASH and MHM Facilities in Lot-2 Secondary Schools in Somali Region

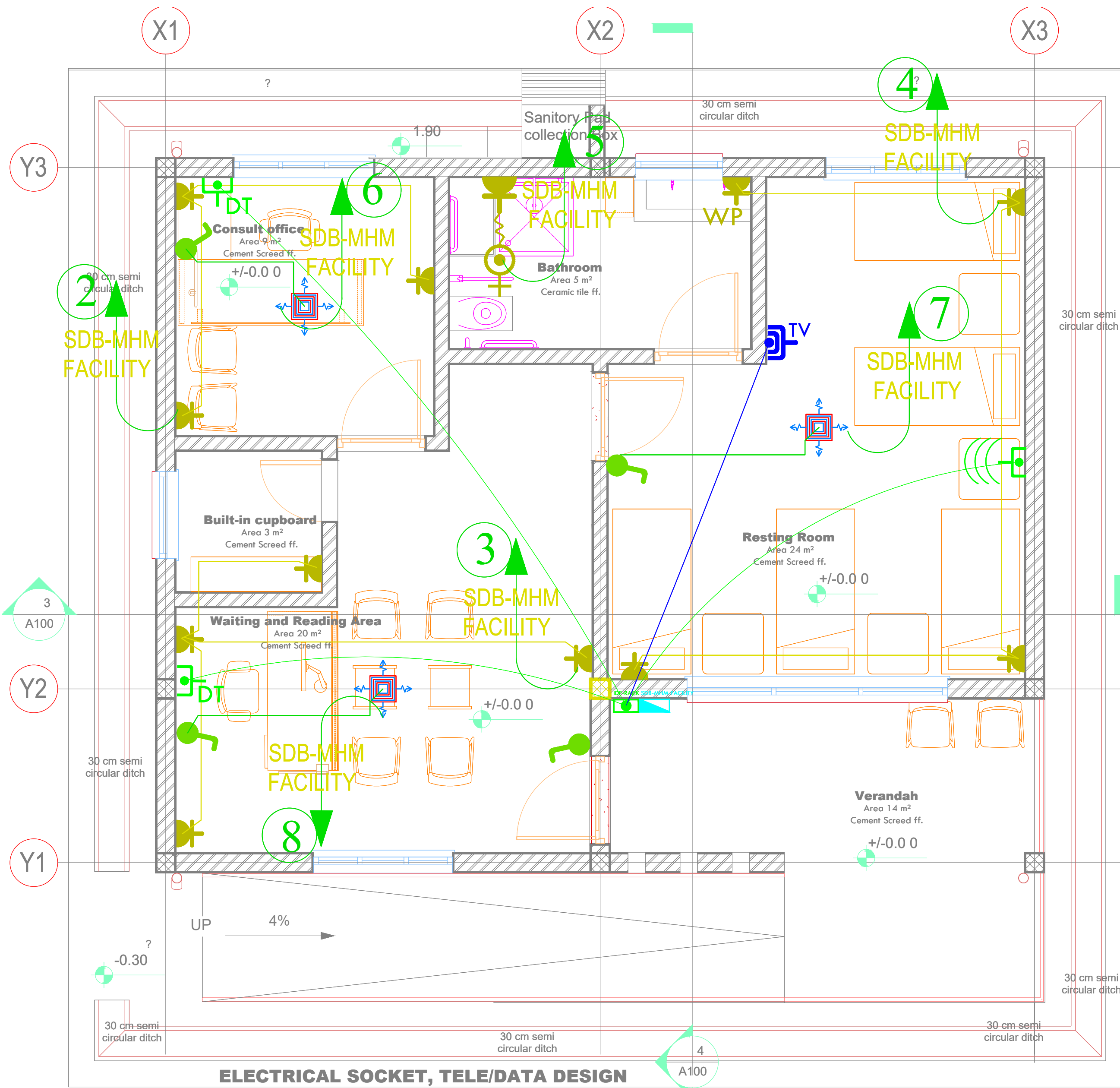
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**UNICEF**

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BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

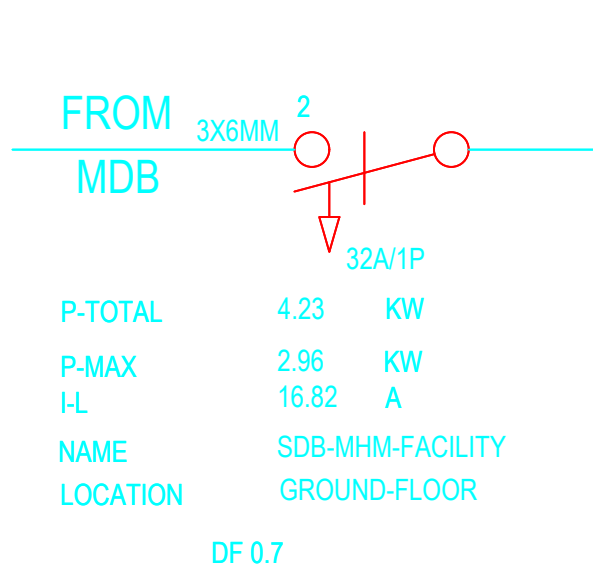
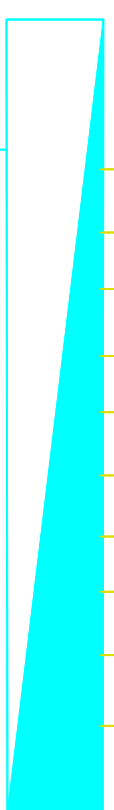
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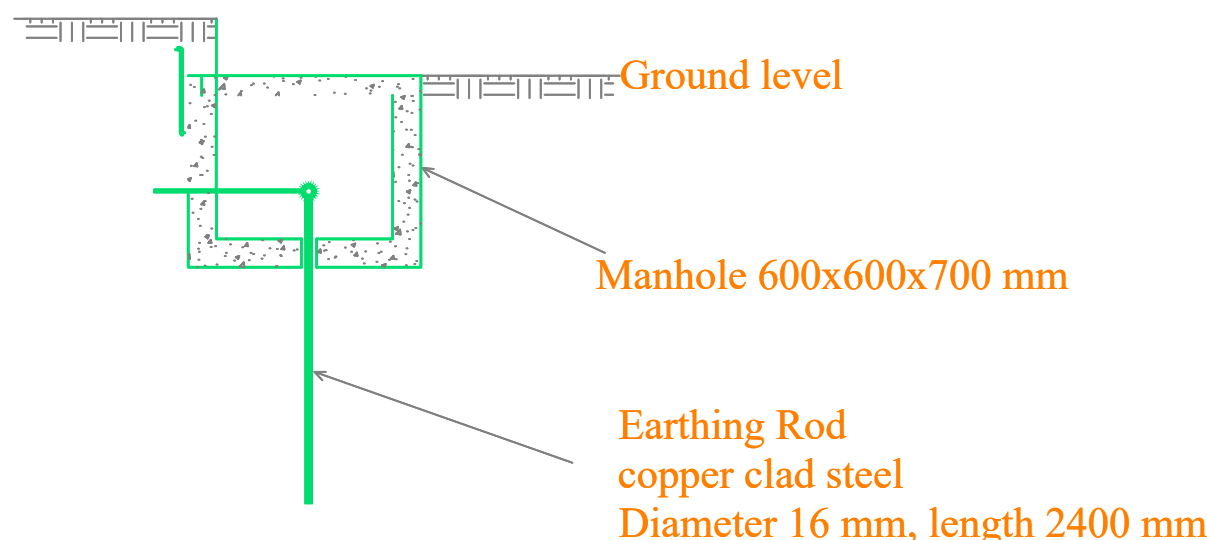
ELECTRICAL LIGHTING DESIGN



ELECTRICAL SOCKET, TELE/DATA DESIGN



| SDB-MHM FACILITY |              |       |        |      |      |   |   |  |
|------------------|--------------|-------|--------|------|------|---|---|--|
| B.NO             | DESCRIPTION  | P(KW) | A(mm²) | I(A) | R    | S | T |  |
| 1                | LIGHTING     | 0.29  | 2x2.5  | 10   | 0.29 |   |   |  |
| 2                | SOCKET       | 0.60  | 3x2.5  | 16   | 0.60 |   |   |  |
| 3                | SOCKET       | 0.80  | 3x2.5  | 16   | 0.80 |   |   |  |
| 4                | SOCKET       | 0.80  | 3x2.5  | 16   | 0.80 |   |   |  |
| 5                | WATER HEATER | 1.50  | 3x4    | 25   | 1.50 |   |   |  |
| 6                | CEILING FAN  | 0.08  | 2x2.5  | 10   | 0.08 |   |   |  |
| 7                | CEILING FAN  | 0.08  | 2x2.5  | 10   | 0.08 |   |   |  |
| 8                | CEILING FAN  | 0.08  | 2x2.5  | 10   | 0.08 |   |   |  |
| 9                | RESERVE      |       |        |      |      |   |   |  |
| 10               | RESERVE      |       |        |      |      |   |   |  |
| 11               | TOTAL        |       |        |      | 4.23 |   |   |  |



- Earthing conductor  
1X6sq mm to MLPP
1. Earthing resistance shall not be greater than 5 Ohm.
  2. If earthing resistance is greater than 5 Ohm additional electrode shall be buried spaced not less than the length of the electrode.

| SYMBOL | DESCRIPTION         |
|--------|---------------------|
|        | Single switch       |
|        | Two gang switch     |
|        | Two way switch      |
|        | Three gang switch   |
|        | Intermediate switch |

|  |                                          |
|--|------------------------------------------|
|  | TV point                                 |
|  | Single Data and single telephone point   |
|  | Socket Outlet, Water heater              |
|  | wifi point                               |
|  | Single Socket point                      |
|  | Panasonic Ceiling Fan F-56XZ2, 76W, IP21 |

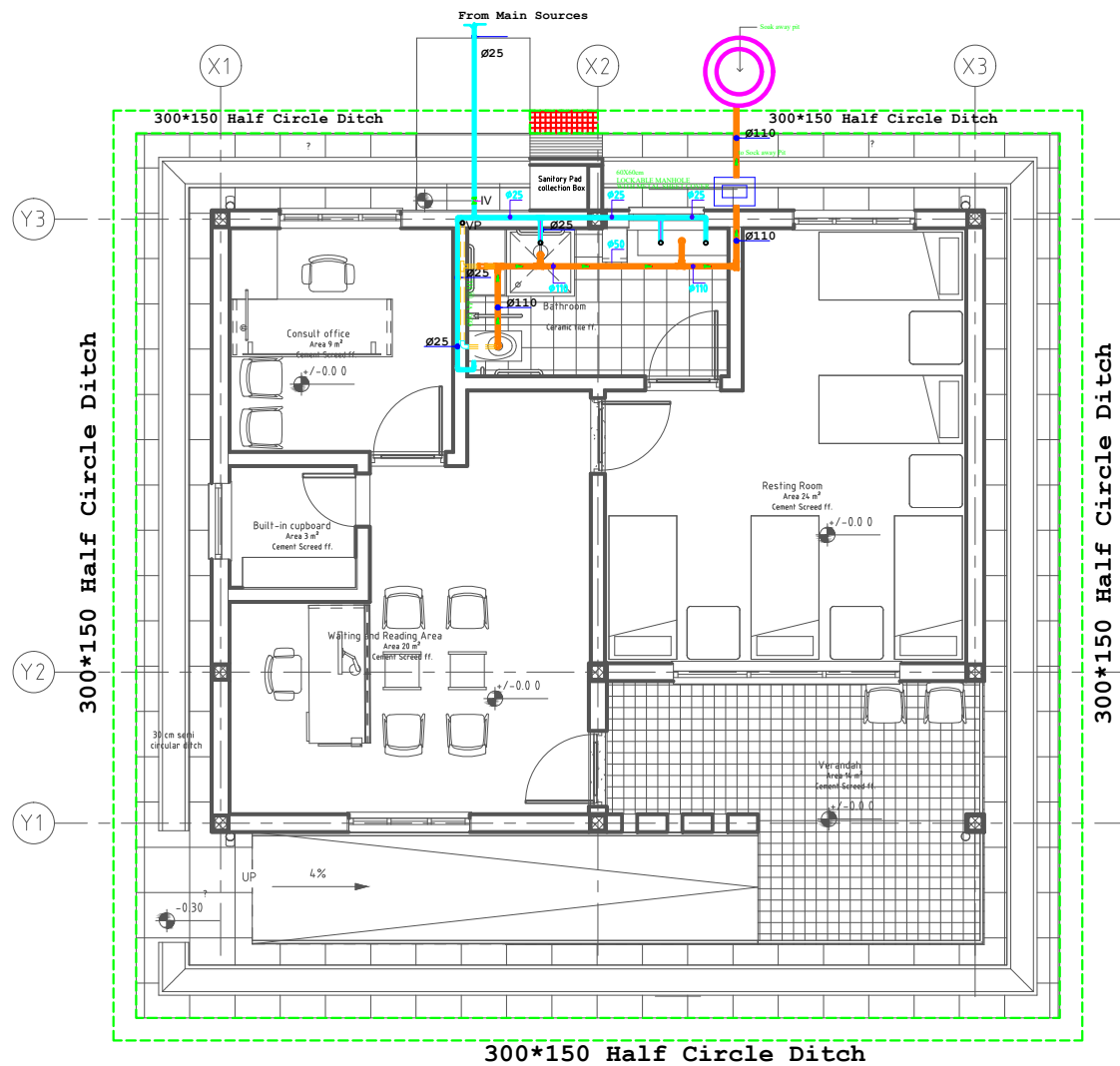
| FITTING TYPES (SPECIFIED OR EQUIVALENT ) |                                                                |                      |
|------------------------------------------|----------------------------------------------------------------|----------------------|
|                                          | DESCRIPTION                                                    | PURPOSE              |
|                                          | TYPE 1.Philips DN145B LED20S/840 26W PSU II WH, 2100 lm        | INTERNAL TOILET ROOM |
|                                          | TYPE 2.Philips RC091V LED36S/840 40W PSU W60L60 GM G2, 3600 lm | OFFICE               |
|                                          | TYPE 3.Oppl LED Downlight Ecomax II,24W,20000lm,wh, 30000hr    | CORRIDOR             |
|                                          | Type 4. Philips 919515813929, mirror light with switch, 10W    | Mirror               |
|                                          | TYPE 5. Philips Superslim LED IP44 , 18W ,2500lm white         | BED ROOM             |

PROJECT  
Engineering Services for Site Assessment, Design Adaptation and Supervision works for Rehabilitation of WASH and MHM Facilities in Lot-2 Secondary Schools in Somali Region

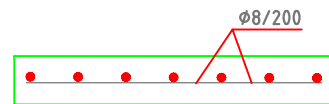
OWNER  
UNICEF

DRAWING TITLE  
MHM BLOCK  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

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| SCALE<br>AS SHOWN | DATE<br>SEPT.,2025 | EL<br>01/01 |
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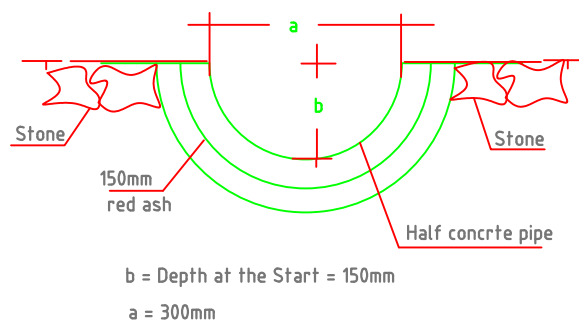
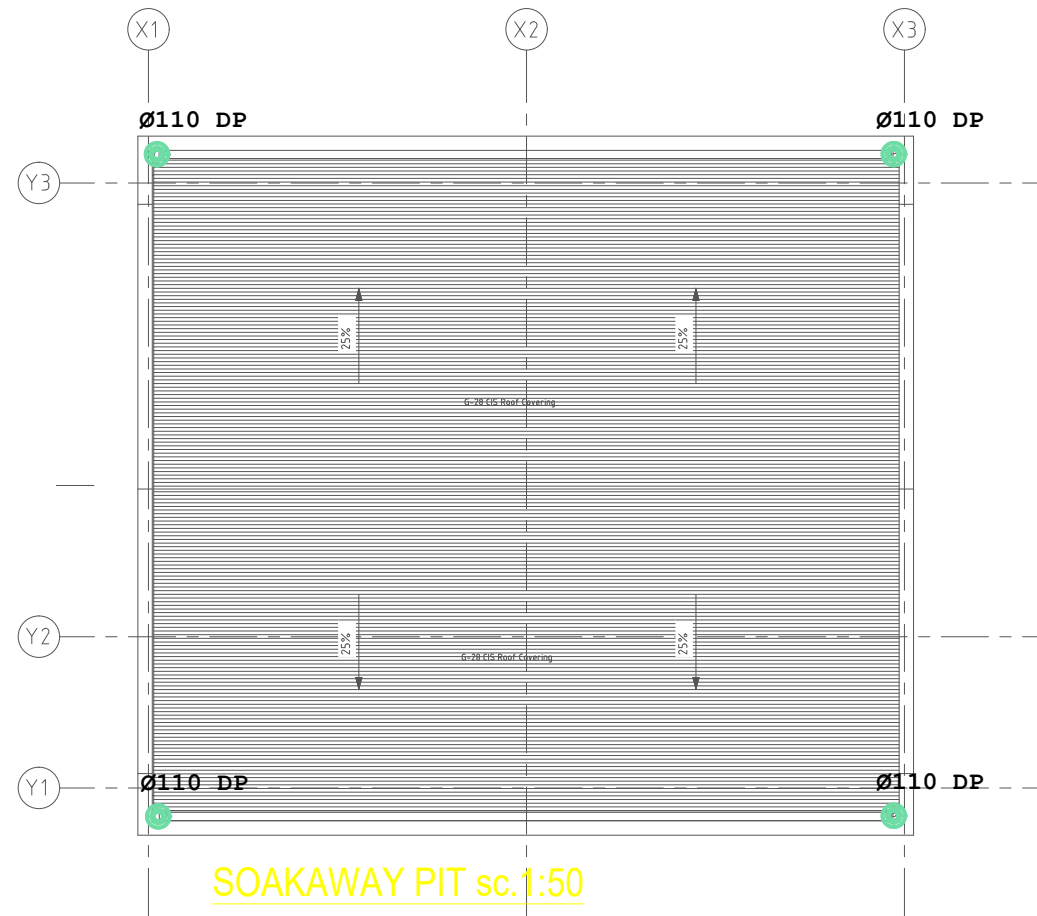


### SLAB COVER

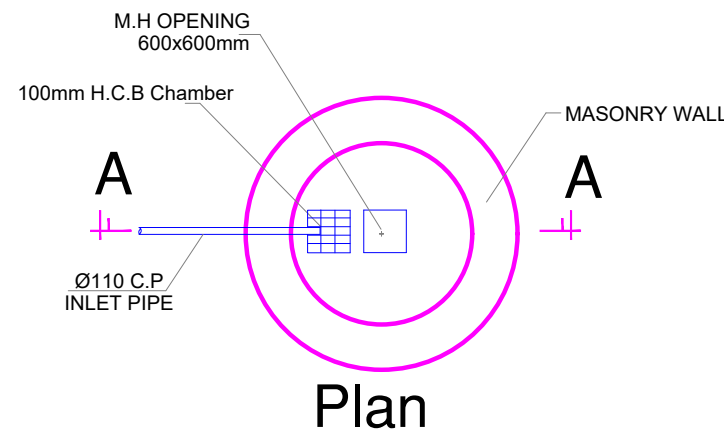
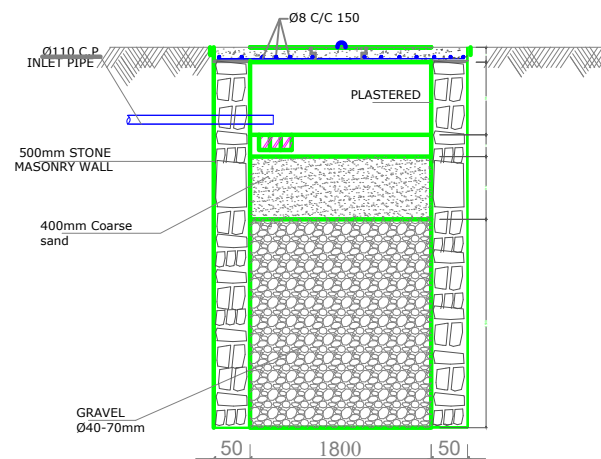


### HALF CONCRETE PIPE OPEN CHANNEL

Sc.1:10



### SOAKAWAY PIT sc.1:50



### LEGEND

1. All HWB,KS AND WC GATE VALVES HAVE TO BE INSTALLED AT +0.40 ABOVE FFL.
2. HWB HAS TO BE INSTALLED AT LEVEL +0.80 HIGH ABOVE FFL.
3. GATE VALVES FOR WATER HEATERS AND SH HAVE TO BE INSTALLED +1.50 HIGH ABOVE FFL.
4. BOTTOM OF WATER HEATER HAS TO BE +1.8 HIGH ABOVE FFL.
5. ALL PVC PIPES CROSSING A BEAM SHALL PASS THROUGH A SLEEVE WHICH HAS THE NEXT HIGHER COMMERCIAL DIAMETER THAN THE PIPE.
6. WATER PIPES INSTALLED IN THE CEILINGS HAS TO BE FIRMLY TIED WITH THE TRUSS AND SHOULD BE SEAMLESS TO AVOID LEAKAGE.
7. ALL PVC WASTE STACK PIPES INSTALLED ON THE OUTSIDE WALL OF THE BUILDINGS SHALL BE PAINTED AVOID THERMAL AND UV DAMAGE.

### LEGEND

- HWB..... HAND WASH BASIN  
 WC..... WATER CLOSET  
 SH..... SHOWER HEAD  
 BT..... BATH TUB  
 FFL..... FLOOR FINISH LEVEL  
 MH..... MANHOLE  
 CO..... FLOOR MOUNTED CLEANOUT  
 UPVC COLD WATER PIPE  
 PVC WASTE WATER PIPE  
 GATE VALVE  
 ND-50/090..... NOMINAL DIAMETER 50MM  
 PVC PIPE FOR SEWERAGE  
 ND-20/25..... NOMINAL DIAMETER 50 MM UPVC  
 PRESSURE PIPE FOR WATER SUPPLY  
 H/L.....HIGHER LEVEL  
 L/L.....LOWER LEVEL  
 CO.....CLEAN OUT  
 FHC.....FIRE HYDRANT CABINET  
 DP.....DOWN PIPE  
 A.V.....AIR VENT  
 CP.....CATCH PIT  
 W.S.....Water Supply Riser  
 W.....Waste Riser  
 L.....Laundry  
 ST.....Steam Bath

**PROJECT**  
 Engineering Services for Site Assessment, Design Adaptation and Supervision works for Rehabilitation of WASH and MHM Facilities in Lot-2 Secondary Schools in Somali Region

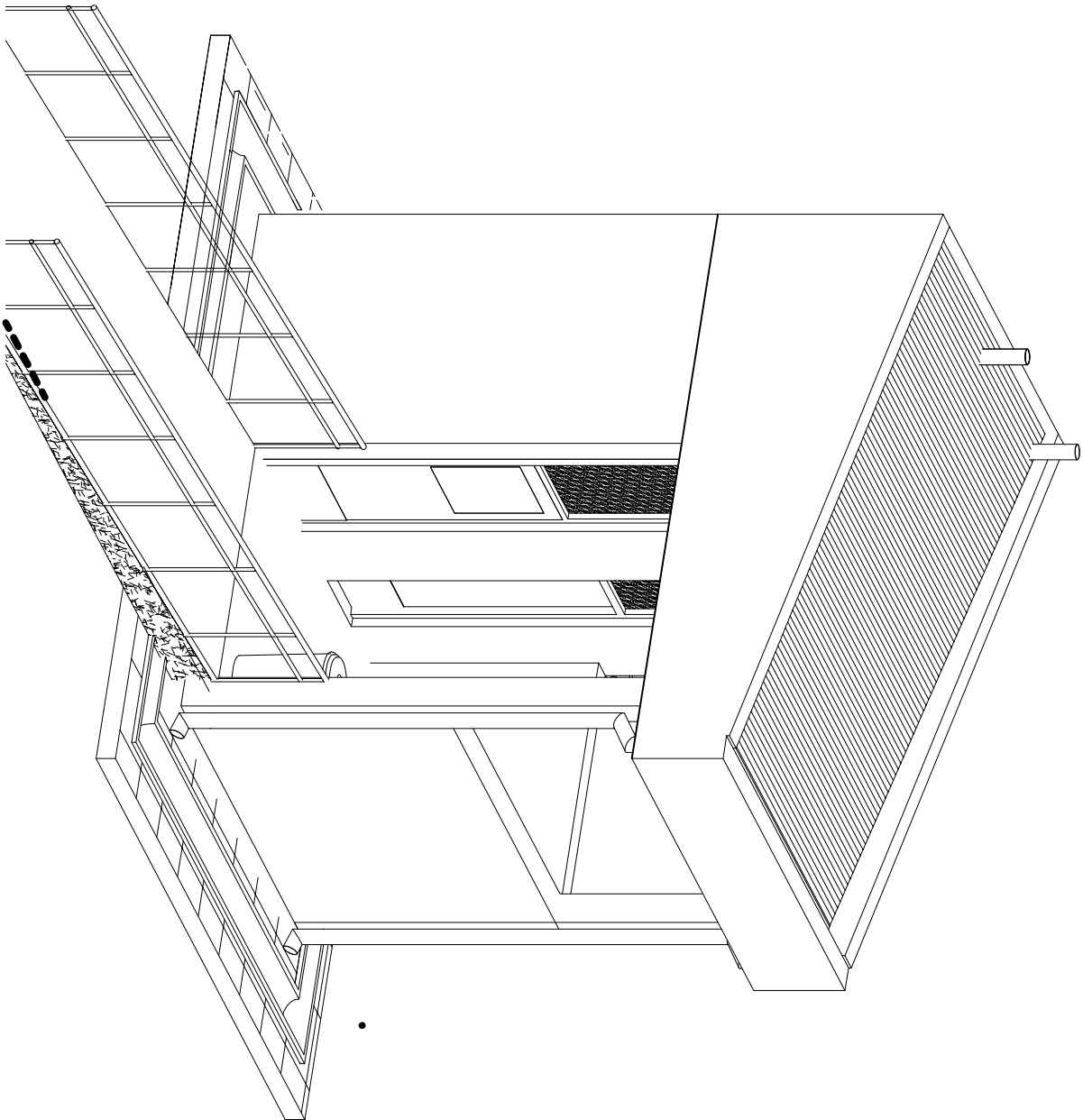
**OWNER**  
 UNICEF

**DRAWING TITLE**  
 MHM BLOCK  
 BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

|          |            |             |
|----------|------------|-------------|
| SCALE    | DATE       | SN<br>01/01 |
| AS SHOWN | SEPT.,2025 |             |

| -Sheet List  |                         |
|--------------|-------------------------|
| Sheet Number | Sheet Name              |
| A100         | 3D View & Drawing Sheet |
| A101         | Plans & sections        |
| A201         | Building Elevation      |

|      |                         |
|------|-------------------------|
| A100 | 3D View & Drawing Sheet |
| A101 | Plans & sections        |
| A201 | Building Elevation      |

[illegible]

UNICEF ETHIOPIA

**VIP LATRINE FOR TEACHERS TOILET (4 SEATS)**

### 3D Mow & Drawing Sheet

September, 2025

Design Status.

# A100



# GENERAL NOTES

## GENERAL

- 1). THE PROJECT SHALL CONFORM TO ETHIOPIAN BUILDING CODE OF STANDARD ES-EN:2015 AND THE FOLLOWING INTERNATIONAL DESIGN STANDARDS
  - A. EUROPEAN STANDARDS:
    - EN1990:2002
    - EN1991-1-1:2002
    - EN1992-1-1:2004
    - EN1993-1-1:2006
    - EN1998-1-1:2004
    - DIN 1045-1:2001
  - B. AMERICAN CONCRETE INSTITUTION
    - AC318-08
- 2). ALL STRUCTURAL WORK SHALL CONFORM TO THE PROJECT DRAWINGS, ALL DRAWING NOTES, AND APPLICABLE REFERENCE STANDARDS. THE SCOPE OF WORK IS NOT SOLELY DEFINED BY THESE DRAWINGS.
- 3). TYPICAL DETAILS APPLY THROUGHOUT THE PROJECT EVEN IF NOT SPECIFICALLY REFERENCED IN PLANS OR DETAILS.
- 4). DO NOT USE SCALED DIMENSIONS; USE ONLY WRITTEN DIMENSIONS. WHERE NO DIMENSION IS PROVIDED, CONSULT THE ARCHITECT/ENGINEER FOR CLARIFICATIONS BEFORE PROCEEDING WITH WORK.
- 5). SEE ARCHITECTURAL DRAWINGS FOR SITE POSITIONING AND PROJECT DATUM REFERENCE.
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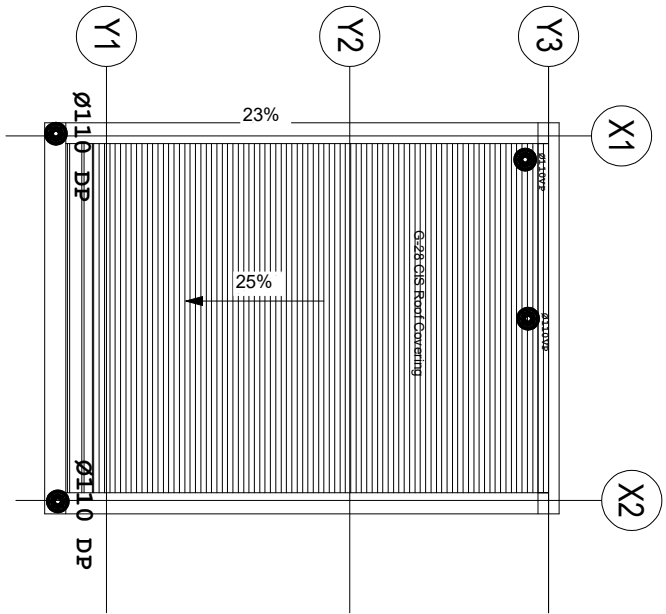
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      - FOUNDATION, SLAB, BEAM,RETAINING WALL, STAIR AND RAMP ST– C20/25(C25)
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      - CLASS B DEFORMED BARS WITH MINIMUM YIELD STRENGTH OF  $f_y=400\text{KN}/\text{m}^2$  (S–400B) FOR ALL DIAMETERS
    - 3). PROVIDE DOWELS OR CONTINUOUS REINFORCING BETWEEN ALL CONCRETE ELEMENTS. FOR FOUNDATIONS PROVIDE DOWELS OF SAME NUMBER AND SIZE AS THE VERTICAL REINFORCEMENT OF STRUCTURE ABOVE UNLESS NOTED OTHERWISE. FOR OTHER STRUCTURAL ELEMENTS, VERTICAL DOWELS SHALL MATCH THE GREATER REINFORCING OF EACH ELEMENT.
    - 4). BAR SPLICES MAY BE DELETED AND CONTINUOUS REINFORCING USED AT CONTRACTORS OPTION. BAR SPLICES SHALL BE MADE AT POINTS OF MINIMUM STRESS. IN FRAMED BEAMS AND SLABS SPLICE TOP BARS AT MID-SPAN, BOTTOM BARS OVER SUPPORTS.
    - 5). STEEL REINFORCEMENT SHOP DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR AND SHALL INDICATE:
      - A. MATERIAL AND GRADE
      - B. BAR SCHEDULES WITH BAR LENGTHS AND BENT BAR DIAGRAMS
      - C. ARRANGEMENT, SPACING, COVER, LAP LOCATIONS AND LENGTHS
      - D. SPECIAL REINFORCEMENT AT OPENINGS
      - E. ALL EMBEDDED INSERTS, ANCHORS AND CAST-IN PLACE STEELWORK CONNECTIONS ALL OPENINGS AND EMBEDDED FIXINGS FOR CRANES, LIFTS, PUMPS AND OTHER TEMPORARY WORKS
    - 6). ALL PIPE AND CONDUIT OPENINGS SHALL BE SLEEVED AND CAST IN PLACE UNLESS OTHERWISE NOTED. DO NOT SAW CUT, CORE OR CORE DRILL STRUCTURAL CONCRETE WITHOUT EXPLICIT DIRECTION FROM THE STRUCTURAL ENGINEER.
    - 7). CONDUIT AND PIPES SHALL NOT BE PERMITTED IN STRUCTURAL CONCRETE ELEMENTS UNLESS SPECIFICALLY REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER. ANY CONDUITS TO BE EMBEDDED IN THE STRUCTURAL CONCRETE SHALL BE SUBMITTED FOR STRUCTURAL REVIEW.
    - 8). CONTRACTOR TO SUBMIT CONCRETE MIX DESIGN AT LEAST TWO WEEKS PRIOR TO CONCRETE POUR FOR APPROVAL BY THE STRUCTURAL ENGINEER.
    - 9). ALL REINFORCEMENT SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS OR STRUPRS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL BARS.
    - 10). ALL REINFORCING BARS SHALL BE LAPPED AS SPECIFICALLY DETAILED ON THE DRAWINGS.
    - 11). SUBMIT SHOP DRAWINGS SHOWING CONSTRUCTION JOINT DETAILS, LOCATIONS AND THE SEQUENCE OF POURS FOR THE STRUCTURAL ENGINEER'S REVIEW PRIOR TO BEGINNING WORK.
    - 12). NO HORIZONTAL CONSTRUCTION JOINTS WILL BE PERMITTED IN BEAMS, WALLS AND SLABS UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS OR APPROVED IN WRITING PRIOR TO CONSTRUCTION BY THE ENGINEER.
    - 13). MECHANICAL, ELECTRICAL AND PLUMBING LIGHTNING RODS, OPENINGS AND SLEEVES ARE SHOWN INDICATIVELY AND CONTRACTOR TO COORDINATE WITH RESPECTIVE TRADES.
    - 14). ALL ADJOINING SURFACES NOT CAST MONOLITHICALLY SHALL BE ROUGHENED FOR THE ENTIRE INTERSECTING SURFACE AND APPLY A BONDING AGENT AS REQUIRED.
    - 15). CONTRACTOR SHALL COORDINATE SLAB DEPRESSIONS FOR FLOOR FINISHES WITH THE ARCHITECTURAL DRAWINGS.
    - 16). CONTRACTOR SHALL COORDINATE LOCATION OF INSERTS, WELDED PLATES, AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
    - 17). HORIZONTAL PIPES OR CONDUITS PLACED IN SLABS SHALL NOT BE SPACED CLOSER THAN 3X THE DIAMETER ON CENTER. PIPES AND CONDUITS PLACED IN SLABS SHALL NOT HAVE AN OUTSIDE DIAMETER LARGER THAN 1/3 OF SLAB THICKNESS. ALUMINUM CONDUITS SHALL NOT BE PLACED IN CONCRETE. NO CONDUITS SHALL BE PLACED IN THE SLAB WITHIN 600mm OF ANY COLUMN FACE.
    - 18). LONGITUDINAL BARS IN BETWEEN TWO DIFFERENT SECTIONS OF COLUMNS HAS TO BE BENT 1:6 SLOPE TO AVOID YELDING OF BARS.(REFER THE DRAWING BELOW)
    - 19). USE  $\varnothing 8/250$  DISTRIBUTION REBAR AT SLABS
- ### CONCRETE JOINTS
- 1). CONSTRUCTION JOINTS SHALL BE INSTALLED SUCH THAT STRENGTH AND APPEARANCE OF CONCRETE ARE NOT IMPAIRED.
    - A. LAYOUT OF CONTRACTION JOINTS IN SLABS ON GRADE SHALL NOT EXCEED 7.5M IN LENGTH WITH A MAXIMUM ASPECT RATIO BETWEEN LONG AND SHORT DIRECTIONS OF 1.5.
    - B. CONSTRUCTION JOINTS IN CONCRETE FRAME AND SLAB SHALL OCCUR AT THE THIRD (3RD) POINT OF THE SPANS IN EITHER DIRECTION. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS AND SPLICED ONLY AT LOCATIONS NOTED ON THE DRAWINGS.
    - C. WHERE THERE IS DIFFERENCE IN CONCRETE GRADE BETWEEN FLOOR SLABS AND COLUMN OR SHEARWALL, CAST PORTION OF SLAB WITH THE HIGHER CONCRETE GRADE ACCORDING TO THE DETAIL PROVIDED.

## LOADS

- THE BUILDING IS DESIGNED FOR THE FOLLOWING LOADS.
- 1). LIVE LOADS (UNIFORMLY DISTRIBUTED)
    - MAIN BLOCK
      - 3.0 kN/m<sup>2</sup>
    - 2). SEISMIC CRITERIA
      - MAIN BLOCK
        - SEISMIC FORCE RESISTING SYSTEM:
          - E/W: FRAME SYSTEM
          - N/S: FRAME SYSTEM
        - PEAK GROUND ACCELERATION = 0.01G
        - GROUND TYPE = C
        - BUILDING IMPORTANCE CLASS = II
        - DUCTILITY CLASS = DCM

|                                                                                |      |                           |             |
|--------------------------------------------------------------------------------|------|---------------------------|-------------|
| 3                                                                              |      |                           |             |
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| NO                                                                             | DATE | AMENDMENT                 | DESCRIPTION |
| REVISIONS                                                                      |      |                           |             |
| Consultant: Halbeeg Architects and Engineers<br>Consultancy                    |      |                           |             |
| Client UNICEF ETHIOPIA                                                         |      |                           |             |
| Address:                                                                       |      |                           |             |
| Project: Rehabilitation of WASH & Small Facilities in Schools in Somali Region |      |                           |             |
| Drawing Title:<br><br>(W/ LATRINE FOR TEACHERS/2 SEATS)<br>General Note        |      |                           |             |
| Approved By                                                                    |      |                           |             |
| Designed by: Meelin H.                                                         |      |                           |             |
| Drawn by:                                                                      |      | Scale: 1:25, 1:50 & 1:100 |             |
| Date: September, 2025                                                          |      | Drawing No.: 1            |             |
| FINAL                                                                          |      | ST - 01/03                |             |

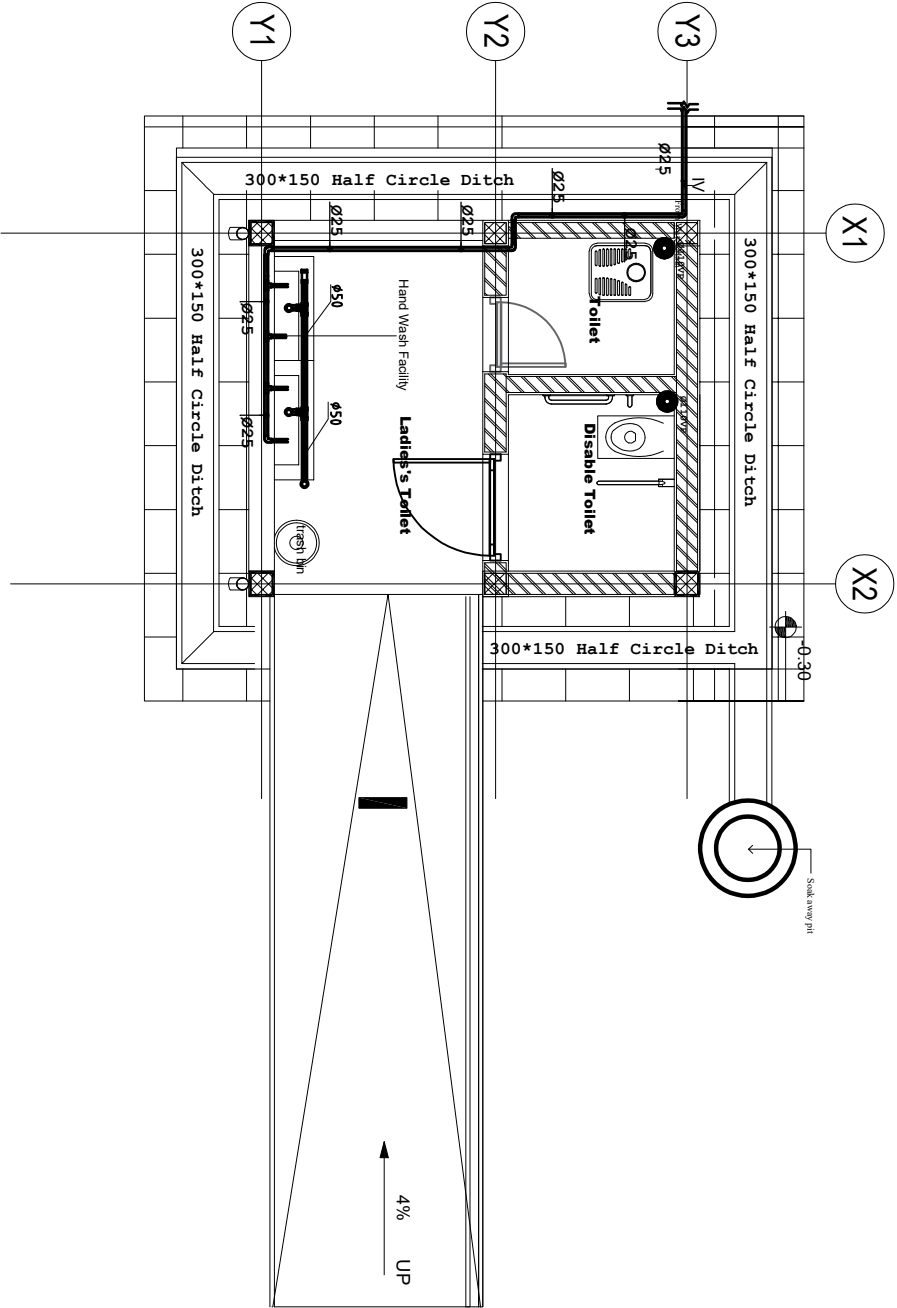


LEGEND

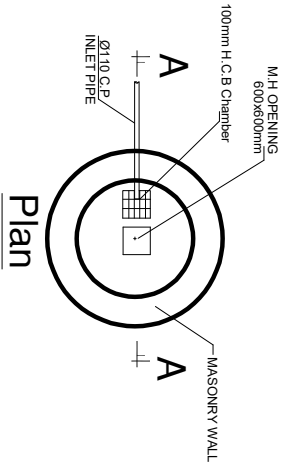
- 1. ALL HWBKS AND WC GATE VALVES HAVE TO BE INSTALLED AT +0.40 ABOVE FFL.
- 2. HWB HAS TO BE INSTALLED AT LEVEL +0.80 HIGH ABOVE FFL.
- 3. GATE VALVES FOR WATER HEATERS AND SH HAVE TO INSTALLED +1.50 HIGH ABOVE FFL.
- 4. BOTTOM OF WATER HEATER HAS TO BE +1.8 HIGH ABOVE FFL.
- 5. ALL PVC PIPES CROSSING A BEAM SHALL PASS THROUGH A SLEEVE WHICH HAS THE NEXT HIGHER COMMERCIAL DIAMETER THAN THE PIPE.
- 6. WATER PIPES INSTALLED IN THE CEILINGS HAS TO BE FIRML Y TIED WITH THE TRUSS AND SHOULD BE SEAMLESS TO AVOID LEAKAGE.
- 7. ALL PVC WASTE STACK PIPES INSTALLED ON THE OUTSIDE WALL OF THE BUILDINGS SHALL BE PAINTED AVOID THERMAL AND UV DAMAGE.

LEGEND

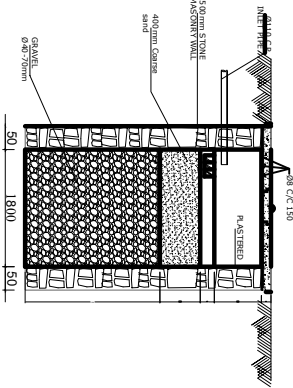
- HWB..... HAND WASH BASIN
- WC..... WATER CLOSET
- SH..... SHOWER HEAD
- BT..... BATH TUB
- FFL..... FLOOR FINISH LEVEL
- MH..... MANHOLE
- CO..... FLOOR MOUNTED CLEANOUT
- UPVC..... UPVC COLD WATER PIPE
- PVC..... PVC WASTE WATER PIPE
- GATE VALVE
- ND-50/090..... NOMINAL DIAMETER 50MM PVC PIPE FOR SEWERAGE
- ND-20/25..... NOMINAL DIAMETER 50 MM UPVC PRESSURE PIPE FOR WATER SUPPLY
- H/L..... HIGHER LEVEL
- L/L..... LOWER LEVEL
- CO..... CLEAN OUT
- FHC..... FIRE HYDRANT CABINET
- DP..... DOWN PIPE
- A.V..... AIR VENT
- CP..... CATCH PIT
- W.S..... Water Supply Riser
- W..... Waste Riser
- L..... Laundry
- ST..... Steam Bath



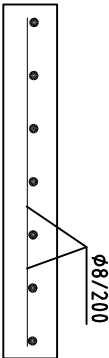
SOAKAWAY PIT sc.1:50



Plan

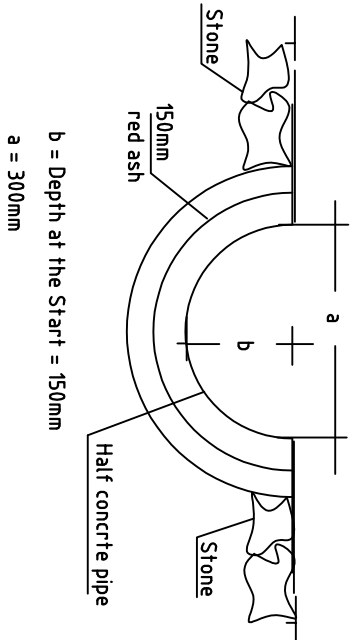


SLAB COVER



HALF CONCRETE PIPE OPEN CHANNEL

Sc.1:10



Key Plan:



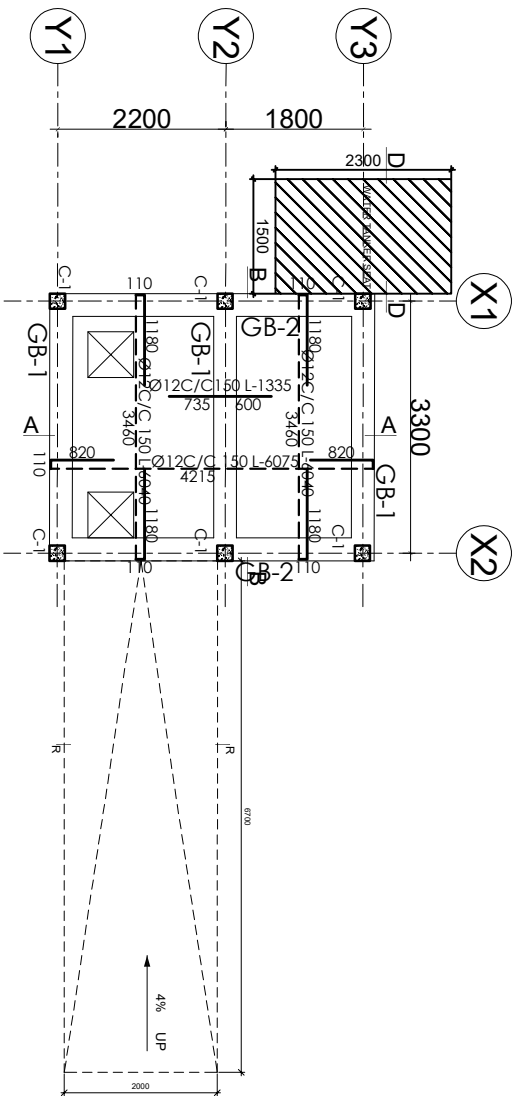
NOTES

- 1. DO NOT SCALE FROM THE DRAWINGS.
- 2. ALL DIMENSIONS TO BE VERIFIED ON SITE BY THE CONTRACTOR PRIOR TO MANUFACTURE AND INSTALLATION.
- 3. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH OTHER RELEVANT ARCHITECTURAL, STRUCTURAL AND ALL RELEVANT SECTIONS OF THE SPECIFICATIONS.

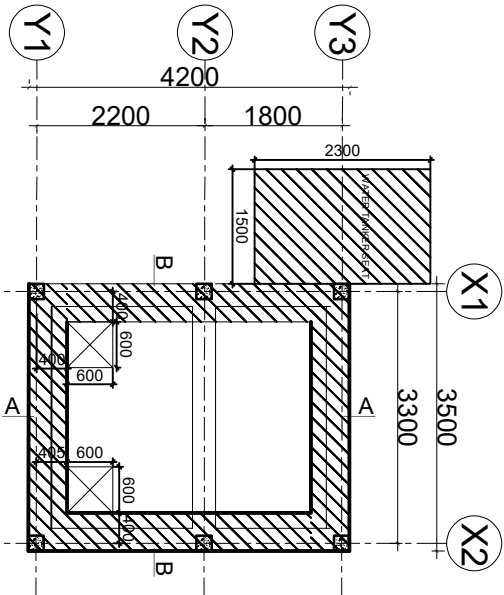
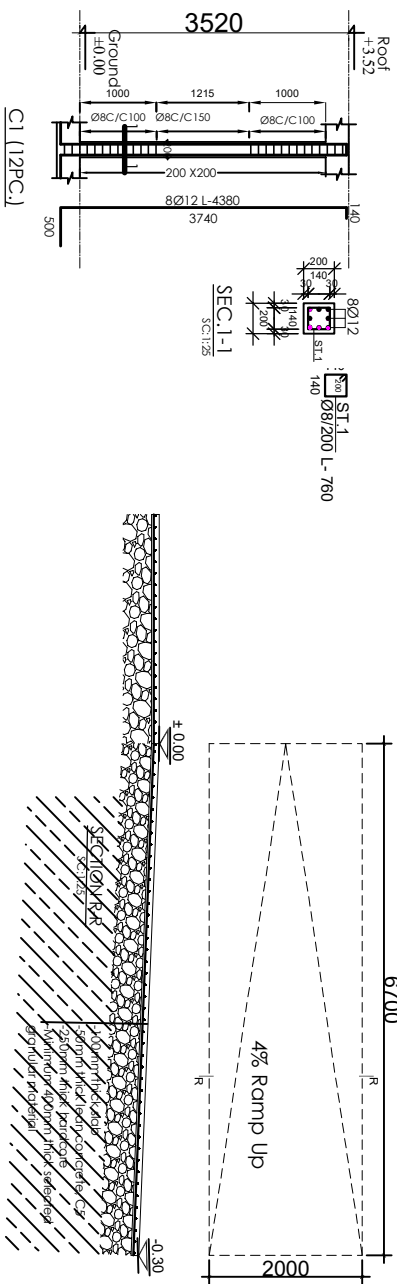
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| Client | UNICEF ETHIOPIA |
|--------|-----------------|

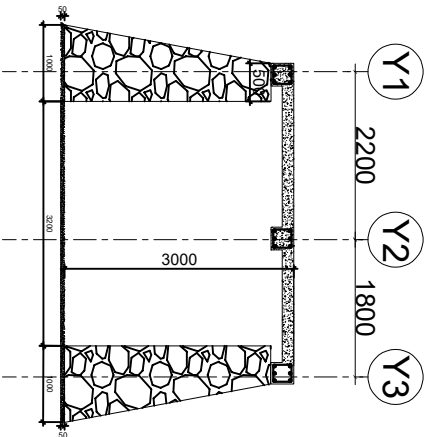
|                         |                                            |               |          |
|-------------------------|--------------------------------------------|---------------|----------|
| Project                 | VIP LATRINE FOR TEACHERS TOILET ( 2 SEATS) |               |          |
| Project Address         |                                            |               |          |
| Drawing title           |                                            |               |          |
| Architect (Design Team) |                                            |               |          |
| Drawn by                |                                            | Scale         |          |
| Date                    | SEPTEMBER 2025                             |               |          |
| Project No.             |                                            | Design Status | FINAL    |
| Design Revision         |                                            | Drawing No.   | SN 01/01 |



Ground Floor Beam, Columns Layout & Slab Reinforcement @ level (±0.00m)  
sc 1:50

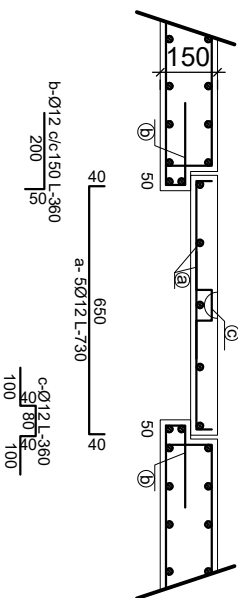
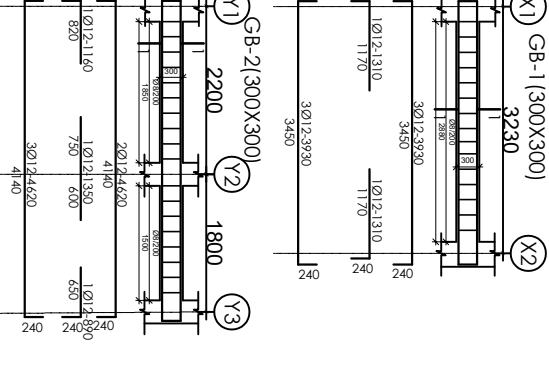


SECTION B-B  
sc 1:50

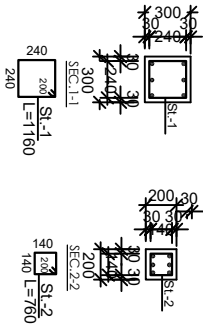


SECTION A-A  
sc 1:50

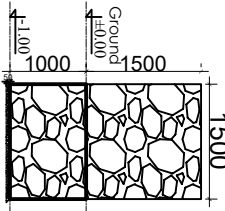
MANHOLE COVER DETAIL



Beam Sections  
SC:1:25



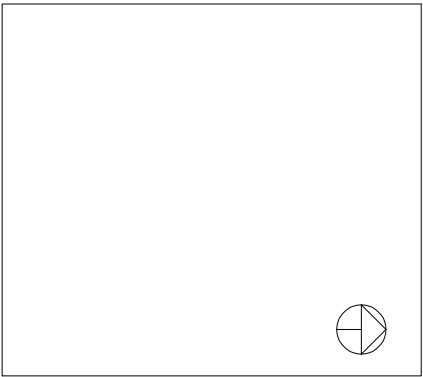
Masonry Water Tanker Seat



SECTION D-D  
sc 1:50

|                                                                                                   |      |                           |             |
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| 2                                                                                                 |      |                           |             |
| 1                                                                                                 |      |                           |             |
| NO                                                                                                | DATE | AMENDMENT                 | DESCRIPTION |
| REVISIONS                                                                                         |      |                           |             |
| Consultant Halbeeg Architects and Engineers<br>Consultancy                                        |      |                           |             |
| Client UNICEF ETHIOPIA                                                                            |      |                           |             |
| Address:                                                                                          |      |                           |             |
| Project: Rehabilitation of WASH & Small Facilities in Schools in Somali Region                    |      |                           |             |
| Drawing Title: Columns, Beams, Columns Layout & Column, Beam, Ramp, Masonry & Plt Section Detail. |      |                           |             |
| Approved By                                                                                       |      |                           |             |
| Designed By: Meelin H.                                                                            |      |                           |             |
| Drawn By:                                                                                         |      | Scale:                    |             |
| Date: September, 2025                                                                             |      | 1:25, 1:50 & 1:100        |             |
| Drawing Phase : FINAL                                                                             |      | Drawing No.: 1 ST - 02/03 |             |





NOTES

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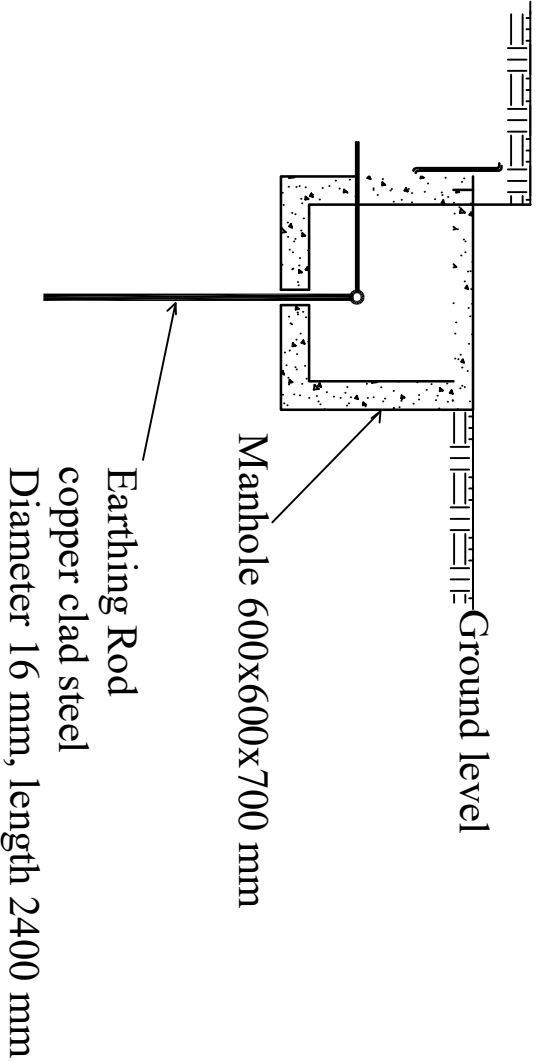
Client  
**UNICEF ETHIOPIA**

Project  
**VIP LATRINE FOR TEACHERS TOILET (2 SEATS)**

Project Address

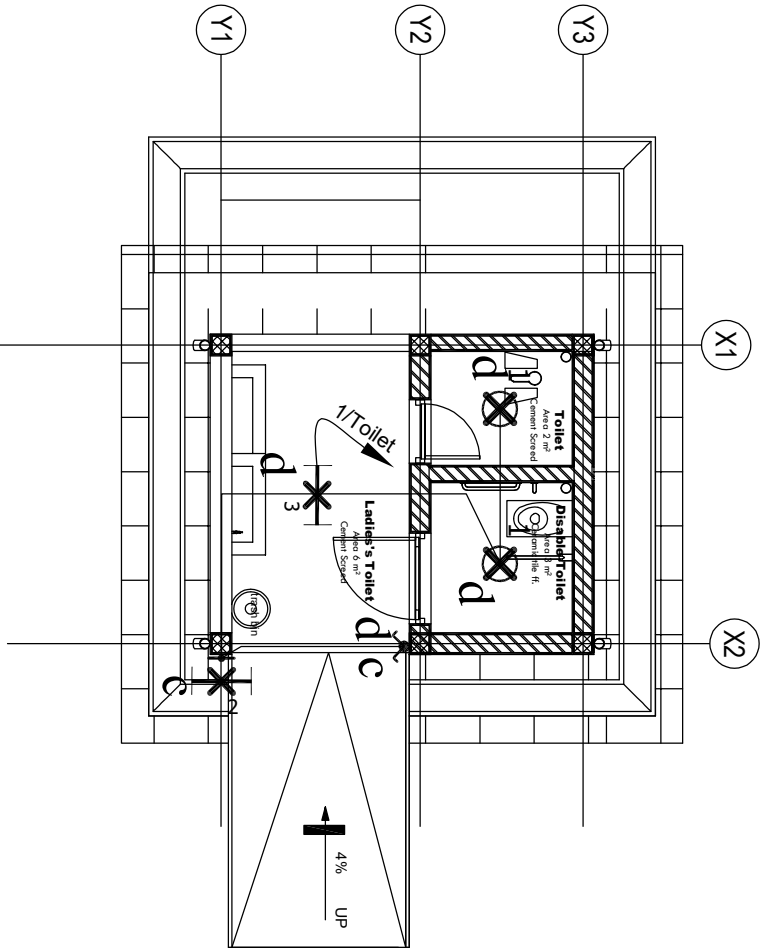
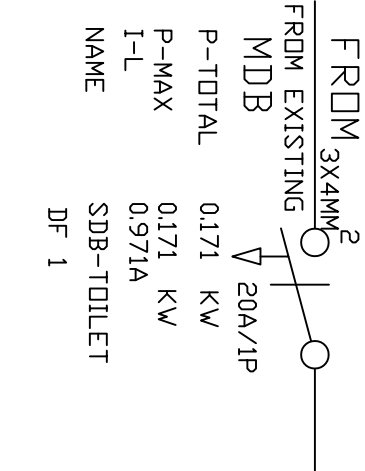
Drawing Title  
**Architectural Design (mm)**

|                       |                 |
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| Drawn By              | Scale           |
| <b>SEPTEMBER 2025</b> |                 |
| Project No.           | Design Status   |
|                       | <b>FINAL</b>    |
| Design Revision       | Drawing No.     |
|                       | <b>EL 01/01</b> |



- ### Earthing conductor
- 1X4sq mm to MLPP**
1. Earthing resistance shall not be greater than 5 Ohm.
  2. If earthing resistance is greater than 5 Ohm additional electrode shall be buried spaced not less than the length of the electrode.

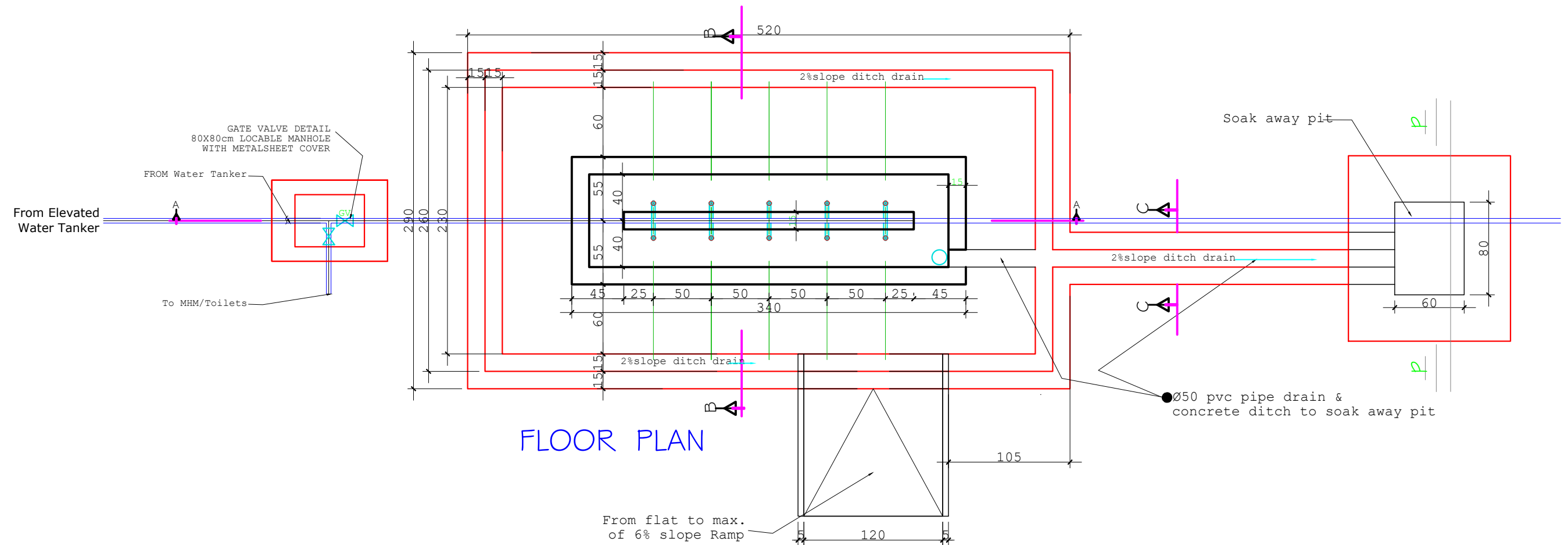
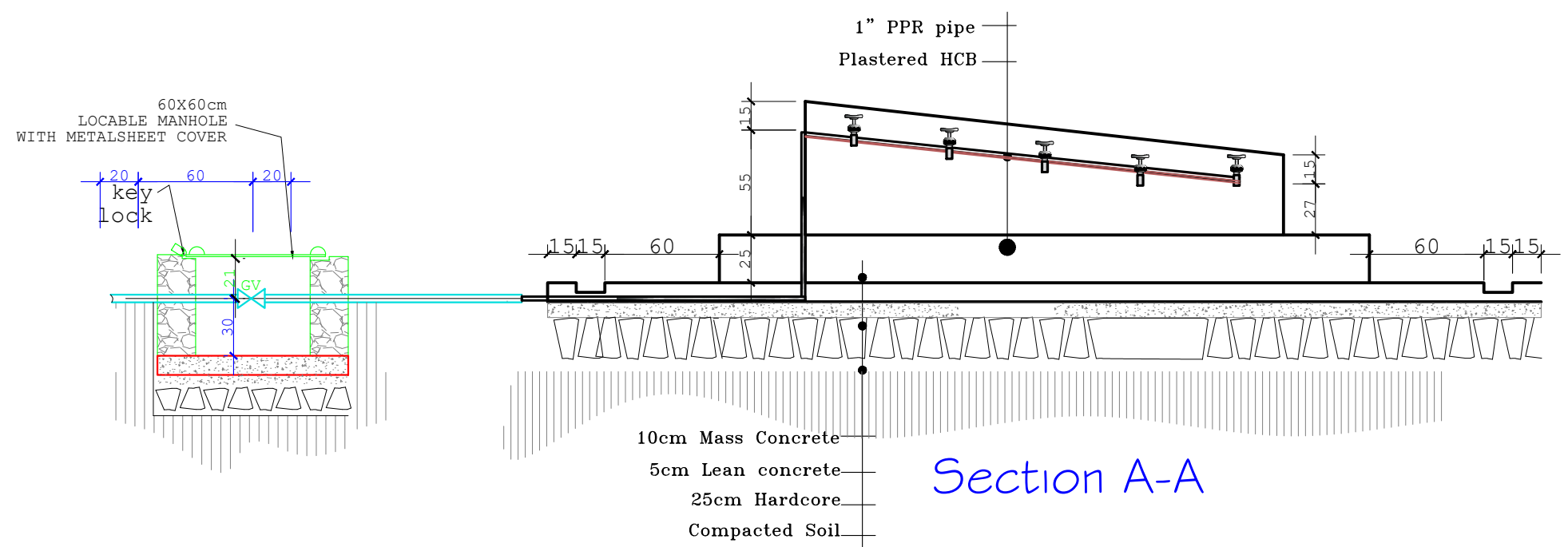
| SYMBOL | DESCRIPTION         |
|--------|---------------------|
|        | Single switch       |
|        | Two gang switch     |
|        | Two way switch      |
|        | Three gang switch   |
|        | Intermediate switch |



| SDB-F TOILET |             |        |                    |      |       |
|--------------|-------------|--------|--------------------|------|-------|
| B.NO         | DESCRIPTION | P(KW)  | A(m <sup>2</sup> ) | I(A) | R     |
| 1            | LIGHTING    | 0.1415 | 2x2.5              | 10   | 0.171 |
| 3            | RESERVE     |        |                    |      |       |
| 4            | RESERVE     |        |                    |      |       |
| 5            | TOTAL       |        |                    |      | 0.17  |

## FITTING TYPES (SPECIFIED OR EQUIVALENT )

| DESCRIPTION |                                                                                       |
|-------------|---------------------------------------------------------------------------------------|
| 1           | TYPE 1.Philips DN145B LED20S/840 26W PSU II WH, 2100 lm                               |
| 2           | TYPE 2.Philips outdoor Lorikeets wall lantern LED black 1x3.5W water resistance IP 44 |
| 3           | TYPE 3. Philips WT060C LED36S/840 PSU TW1 L1200 ,3600 lm, 30W, IP 66                  |



**PROJECT**  
Engineering Services for Site Assessment, Design Adaptation and Supervision works for Rehabilitation of WASH and MHM Facilities in Lot-2 Secondary Schools in Somali Region

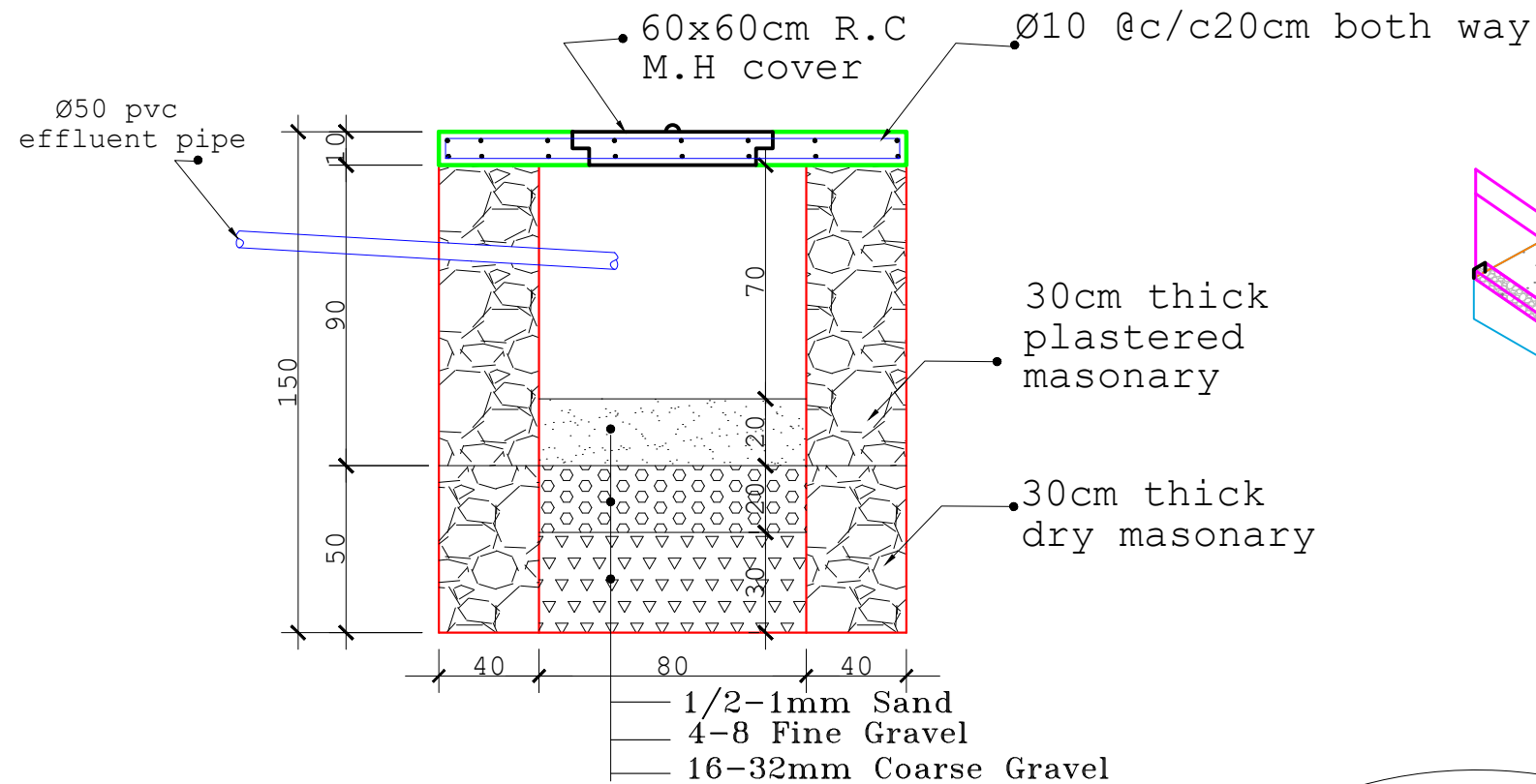
**OWNER**  
**UNICEF**

**DRAWING TITLE**  
10 TAP WATER FOUNTAIN & SOAK AWAY PIT DETAILS  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

**CAD BY.**  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

|                          |                            |              |
|--------------------------|----------------------------|--------------|
| <b>SCALE</b><br>AS SHOWN | <b>DATE</b><br>SEPT., 2025 | <b>01/02</b> |
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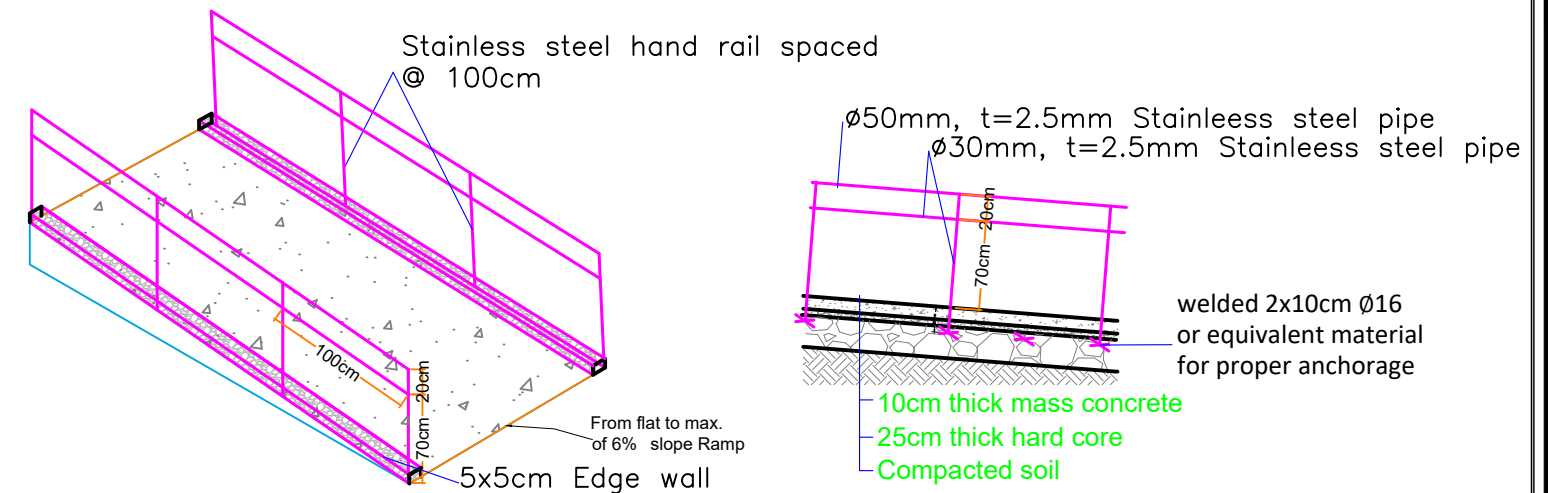
## SOAK AWAY PIT



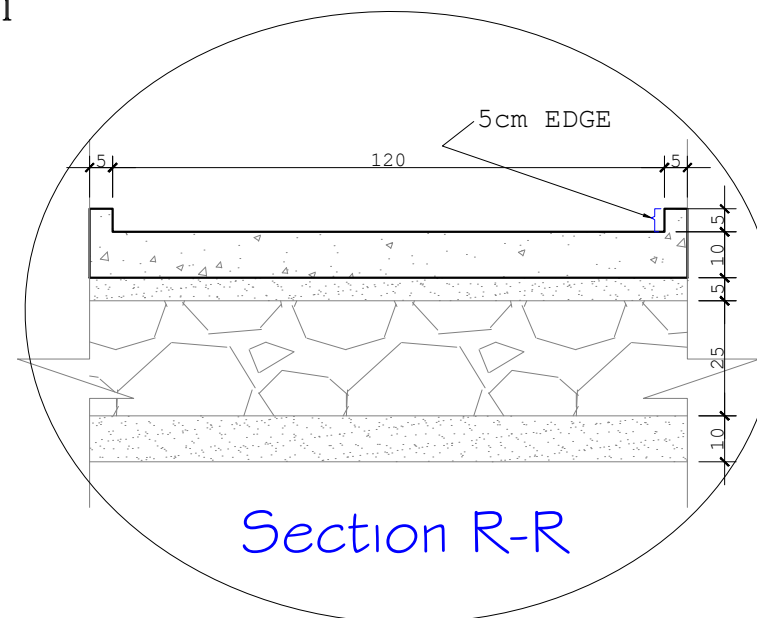
Section p-p

### NOTE

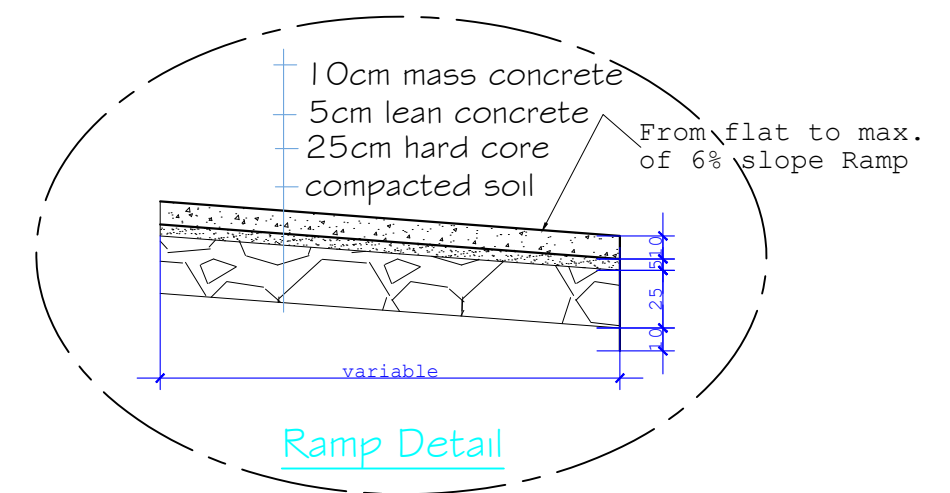
1. Any Change based on site level engineering judgment is possible.
2. Handrail can be constructed a long side of ramp where necessary.
3. Ramp should be constructed only on one side of the water point in the direction of faucet designed for Equity and Inclusion aspect.
4. The slope of the ramp should be from flat (plane) to 8% depending on nature of topography.
5. Maximum wheel chair size (1.2m) should be considered to construct ramp (to determine width)
6. 5cm thick edge (sort of Guiding edge) should be casted at two at two sides of ramp to protect sudden sliding of wheel chairs .
7. Ramps to be construct should be some what rough to ease walking for curanch users.
8. Each and every water point constructed should be as per this design.
9. Without compromising the average distance from users, water point shall be located on relatively flat site as much as possible.



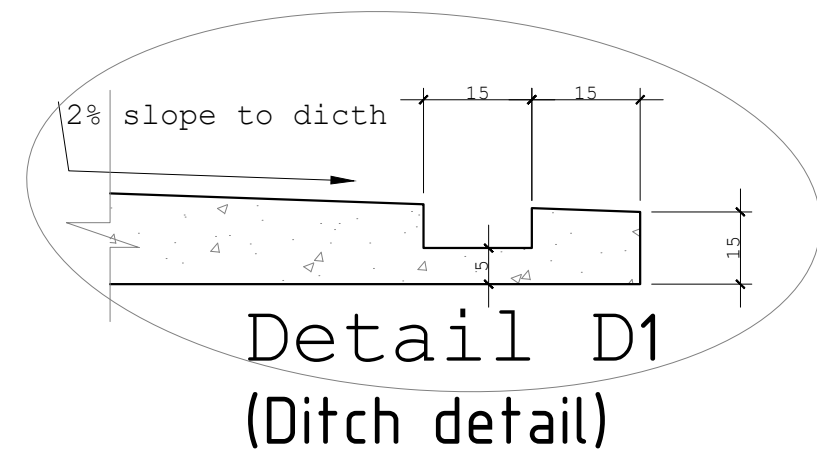
RAMP DETAIL FOR PEOPLE LIVING WITH DISABILITIES



Section R-R



Ramp Detail



Detail D1  
(Ditch detail)

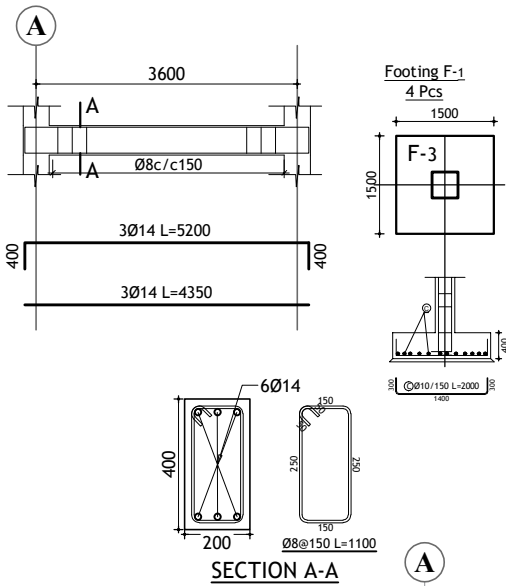
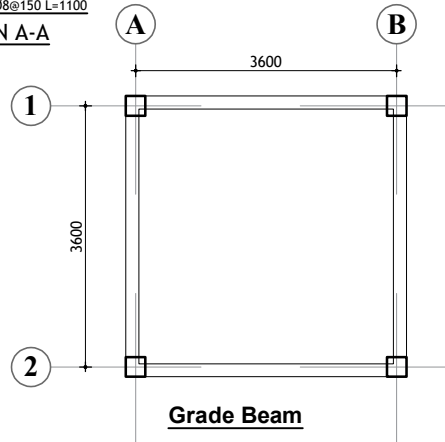
**PROJECT**  
Engineering Services for Site Assessment, Design Adaptation and Supervision works for Rehabilitation of WASH and MHM Facilities in Lot-2 Secondary Schools in Somali Region

**OWNER**  
**UNICEF**

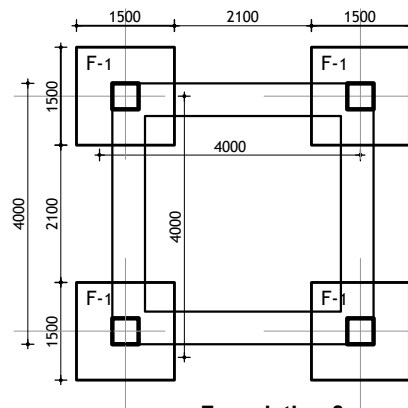
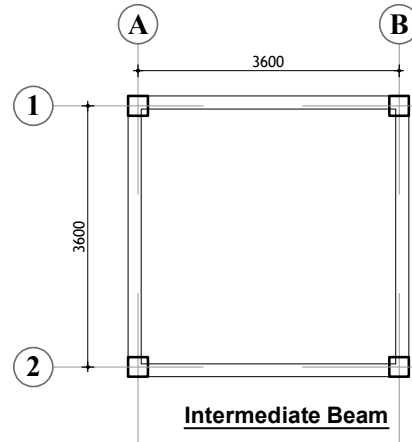
**DRAWING TITLE**  
I/O TAP WATER FOUNTAIN & SOAK AWAY PIT DETAILS  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

**CAD BY:**  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.  
**SCALE** AS SHOWN  
**DATE** SEPT., 2025  
**02/02**

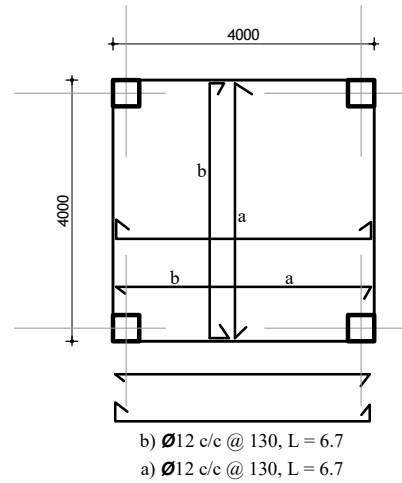
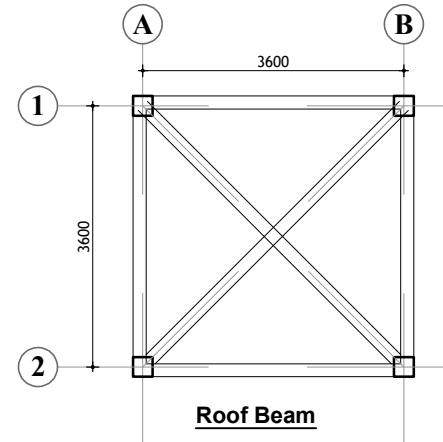
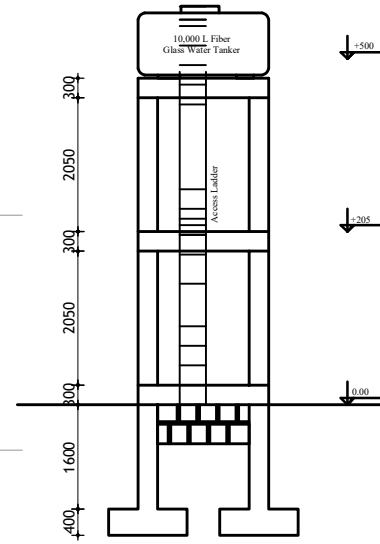
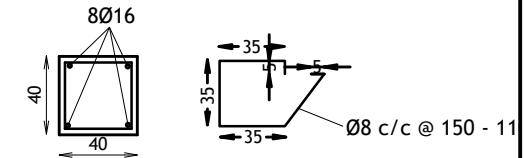
## Beam Detail



## Foundation & Masonry Layout



## 20cm Slab Reinforcement



### Notes:

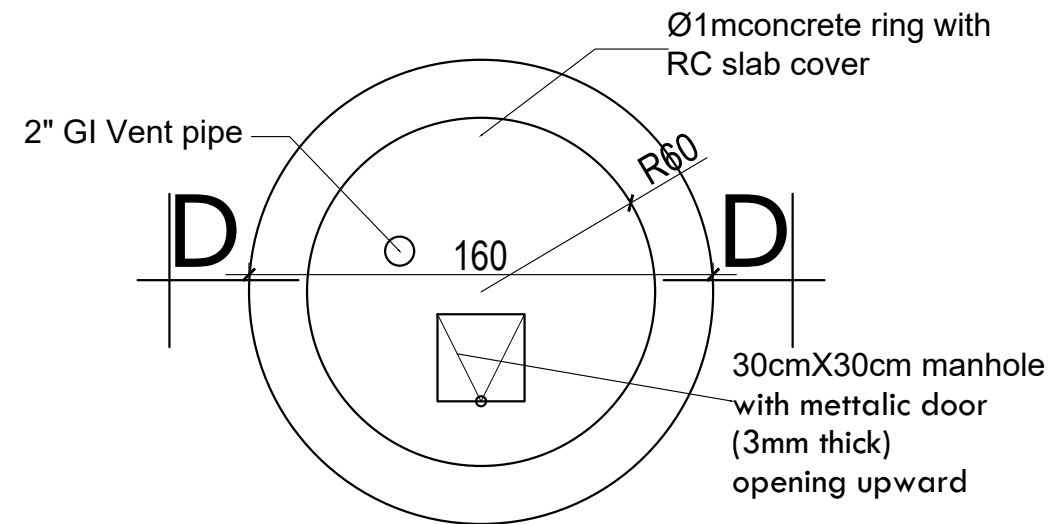
- Concrete Quality shall be C25.
- Structural drawings should be read with Architectural drawings.
- Reinforcement steel quality shall be  $f_{yk}=400\text{MPa}$  and  $f_{yk}=500\text{MPa}$  for rebar size less than 8 and greater than 10 respectively.
- Black cotton soil shall be removed entirely & suitable selected material shall be backfilled (compacted in 20cm layers).
- Hardcore layer of 25cm thickness shall be provided on top of the selected material.
- Concrete cover for Beams and columns shall be 25mm.
- Concrete cover for Slabs shall be 25mm.

**PROJECT**  
Engineering Services for Site Assessment, Design Adaptation and supervision works for Rehabilitation of WASH and MHM Facilities in selected Secondary Schools in Somali Region

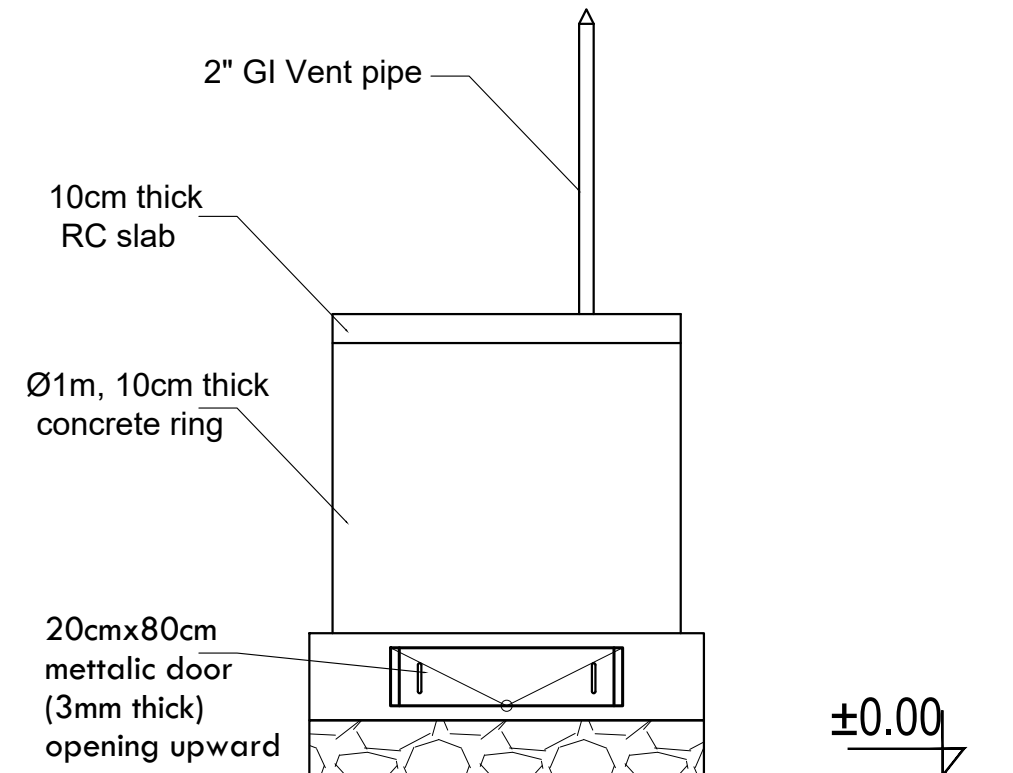
**OWNER**  
**UNICEF**

**DRAWING TITLE**  
Elevated Water Tanker Structure  
BENANO BOARDING SCHOOL, Gashamo District, Jarar Zone.

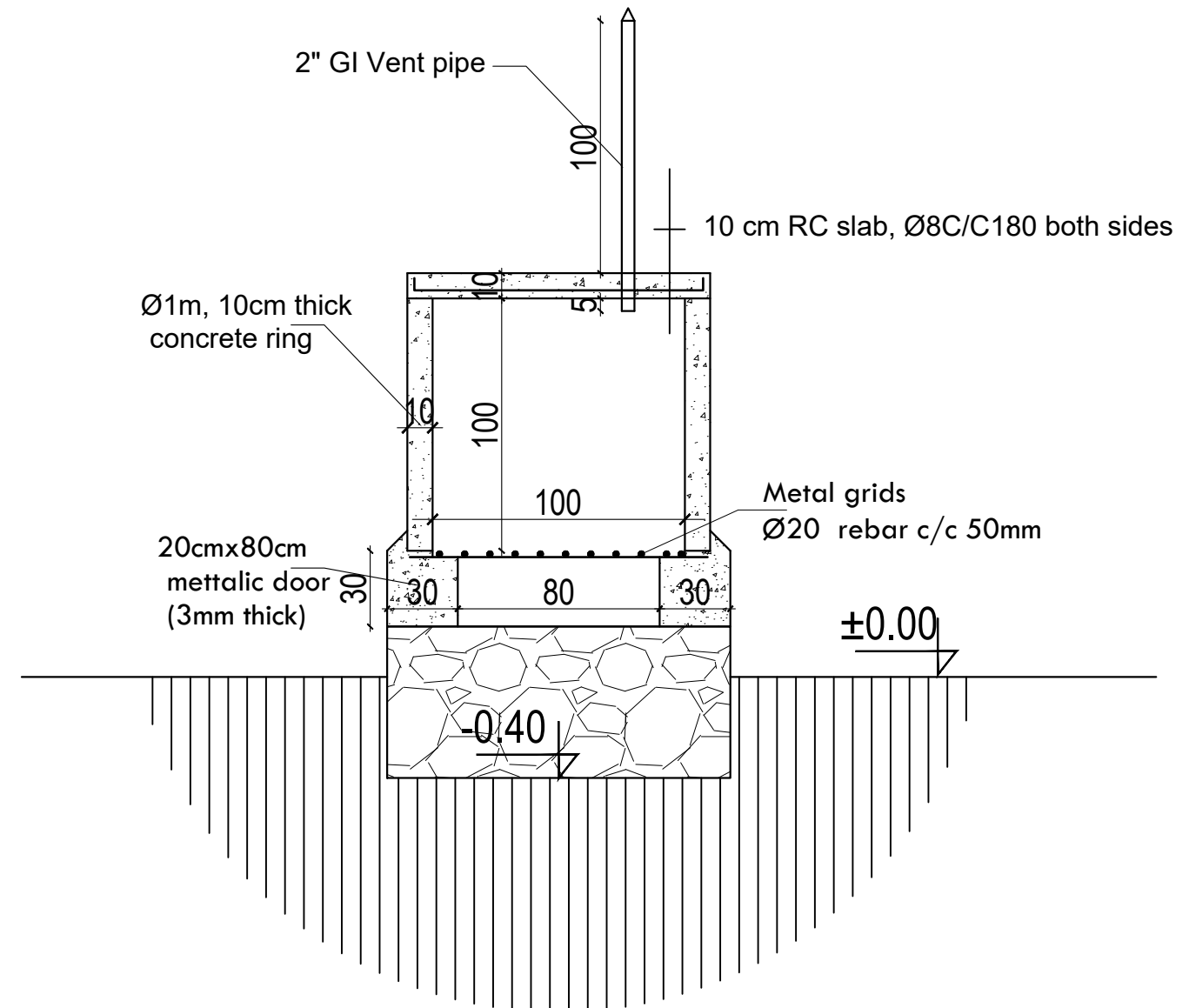
**CAD BY:**  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.  
**SCALE** **DATE** **ST**  
AS SHOWN SEPT., 2025 01/01



**PLAN**  
**(Incinerator)**



**ELEVATION**  
**(Incinerator)**



**SECTION D-D**  
**(Incinerator)**

**PROJECT**  
Engineering Services for Site Assessment, Design Adaptation and supervision works for Rehabilitation of WASH and MHM Facilities in selected Secondary Schools in Somali Region

**OWNER**  
**UNICEF**

**DRAWING TITLE**  
**INCENERATOR**  
Benano Boarding School, Gashamo District, Jarar Zone.

**CAD BY.**  
HALBEEG ARCHITECT & ENGINEERING CONSULTANCY  
Mesfin H.

|                          |                            |                    |
|--------------------------|----------------------------|--------------------|
| <b>SCALE</b><br>AS SHOWN | <b>DATE</b><br>SEPT., 2025 | <b>AR</b><br>01/01 |
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