



The Republic of Uganda  
**MINISTRY OF WATER AND ENVIRONMENT**  
Directorate of Water Development  
**Rural Water and Sanitation Department**

In Financial Cooperation with



Bid For

**ALA - ORA WATER SUPPLY & SANITATION SYSTEM**

LOAN No.: \_\_\_\_\_  
PROJECT ID No.: \_\_\_\_\_

**LOT 3: CONSTRUCTION OF ENYAU WATER SUPPLY AND SANITATION SYSTEM**

**MWE/WRKS/22-23/.....**

**BIDDING DOCUMENTS**

**VOLUME 4 – BOOK OF DRAWINGS**

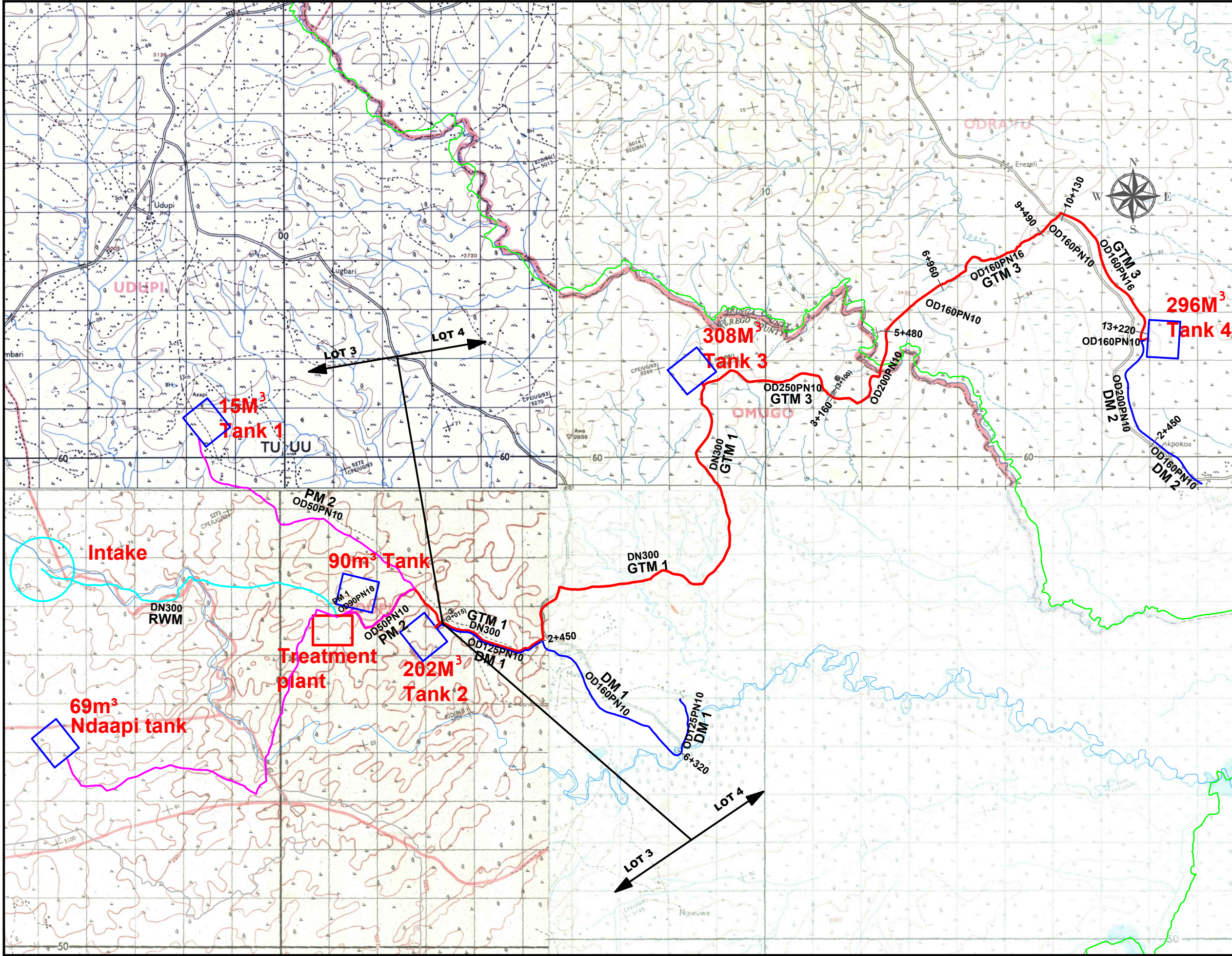
**ISSUED ON: JANUARY 2023**

CONSTRUCTION OF ENYAU WATER SUPPLY AND SANITATION SCHEME-LOT 3  
BOOK OF DRAWINGS CONTENT

ITEM	DESCRIPTION	DWG. NO.	SHEETS
	ENYAU Project General Layout	ENY-GL-001	2
Raw Water Works	Intake Structure	ENY-INT-001	3
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	Intake Guard House	ENY-INT-003	5
	Toilet (Intake)	ENY-INT-004	3
	Raw Water Main	ENY-RWM-001	14
Treatment Plant	Treatment Plant Site Layout	ENY-WTP-001A	1
	Treatment Plant Hydraulic Profile	ENY-WTP-001B	1
	Inlet Structure	ENY-WTP-002	1
	Alum Dosing House	ENY-WTP-003	6
	Flocculator	ENY-WTP-004	2
	Sedimentation Tank	ENY-WTP-005	2
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15m³ RESERVOIR (TANK 1/OTUMBALI) AREA			
Pumping Main 2	Pumped from WTP To 15m³ Reservoir	ENY-PM-002	17
To 15m³ Reservoir	Reservoir Site Layout	ENY-RES-MVP-001	1
	15m³ Reservoir Plan and Sections	ENY-RES-MVP-001	2
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202m³ RESERVOIR (TANK 2/MVEPI ZONE 3) AREA			
Gravity Main 2	To 202m³ Reservoir	ENY-GTM-002	1
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	202m³ Reservoir Plan and Sections	ENY-RES-MVP-002	2
Distribution Mains	Distribution 1	ENY-DM-001	15
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	69m³ Reservoir Plan and Sections	ENY-RES-MVP-005	2
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STRUCTURALS			
ITEM	DESCRIPTION	DWG. NO.	SHEETS
Raw Water Works	Intake Weir	AR/WSASS/EN/STR/001	4
	Intake Chamber	AR/WSASS/EN/STR/002	2
Treatment Plant	Inlet Structure	AR/WSASS/EN/STR/003	1
	Alum Dosing House	AR/WSASS/EN/STR/004	2
	Flocculator	AR/WSASS/EN/STR/005	4
	Sedimentation Tank	AR/WSASS/EN/STR/006	5
	Rapid Sand Filters	AR/WSASS/EN/STR/007	4
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	Clear water Tank	AR/WSASS/EN/STR/009	3
	Pump House	AR/WSASS/EN/STR/010	3
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STANDARD DRAWINGS			
ITEM	DESCRIPTION	DWG. NO.	SHEETS
0	General Notes	ALA-ORA-SD-000	1
1	Sign Board	ALA-ORA-SD-001	1
2	Gate Valve & Surface Box	ALA-ORA-SD-002	1
3	Fire Hydrant Chamber & Pipework	ALA-ORA-SD-003	1
4	Air Valve Chamber & Pipework	ALA-ORA-SD-004	1
5	Washout Details, Chamber & Outfall structure	ALA-ORA-SD-005	1
6	Anchor Block Details	ALA-ORA-SD-006	3
7	Trenching, Road Crossing ,Backfilling, Pipe Protection and Pipe Sleeving details	ALA-ORA-SD-007	2
8	Reinforcement Details for washout/ Valve Chamber and Roof slab details	ALA-ORA-SD-008	1
9	Step Iron & Flexible Pipe Joint Details	ALA-ORA-SD-009	1
10	Precast chamber cover slab and Section	ALA-ORA-SD-010	1
11	Marker Post & Pipe Support Details	ALA-ORA-SD-011	2
12	Fence Details	ALA-ORA-SD-012	2
13	Road Works	ALA-ORA-SD-013	1
14	Yard Tap	ALA-ORA-SD-014	1
15	Stand Post	ALA-ORA-SD-015	1
16	Water Office - Type 1	ALA-ORA-SD-016A	5
17	Water Office - Type 2	ALA-ORA-SD-016B	5
18	Septic Tank	ALA-ORA-SD-017	1
19	Manhole details & Soak pit details	ALA-ORA-SD-018	1
20	Lightning Conductor	ALA-ORA-SD-019	1
21	Pipe Bridge ≤ 10m	ALA-ORA-SD-020	3
22	Pipe Bridge ≤ 15m	ALA-ORA-SD-021	3
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24	Pipe Bridge ≤ 35m	ALA-ORA-SD-023	3
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3	Institutional VIP for Ladies	ALA-ORA-SAN-003	3
4	Incinerator Details	ALA-ORA-SAN-004	1
5	Elevated Water Tank	ALA-ORA-SAN-005	1
6	Septic Tank	ALA-ORA-SAN-006	1
7	Soak Pit Details	ALA-ORA-SAN-007	1







**LEGEND**

- Raw water main
- Gravity transmission Main
- Pumped transmission main
- Distribution Main
- Intake
- Water Treatment Plant
- Reservoirs
- District boundary
- Subcounty boundary



CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

 **THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

 **Alliance Consultants Ltd**  
In Association with  
 **Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**GENERAL SCHEME LAYOUT**

Surveyed by: R.K

Drawn by: J.B

Designed by: W.G.M

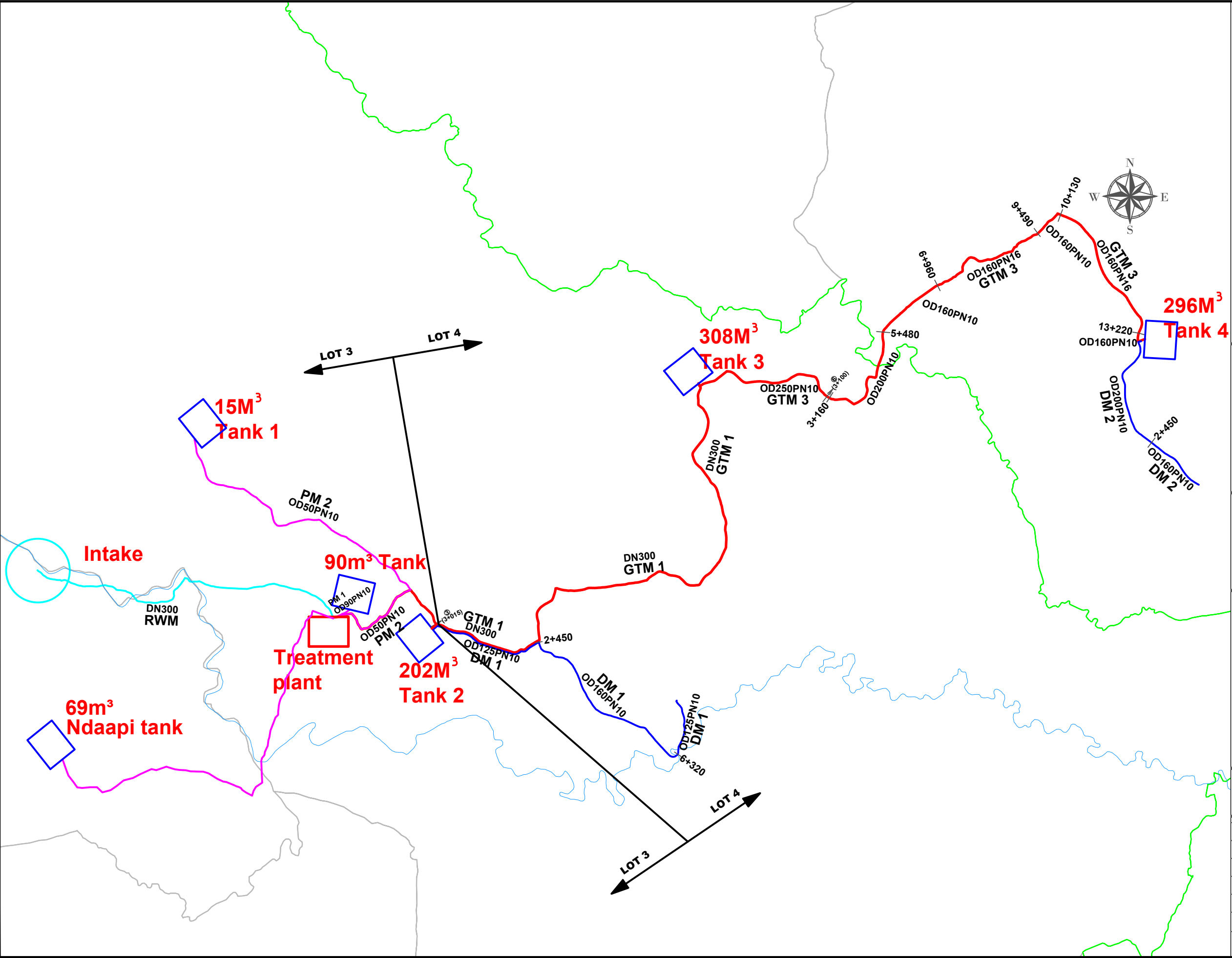
Checked by: J.K.K

Date: NOVEMBER 2022

DRG. No.: **ENY-GL-001**

Scale: N.T.S Sheet No.: 1 of 1





**LEGEND**

- Raw water main
- Gravity transmission Main
- Pumped transmission main
- Distribution Main
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- District boundary
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PROJECT :

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**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**GENERAL SCHEME LAYOUT**

Surveyed by: R.K

Drawn by: J.B

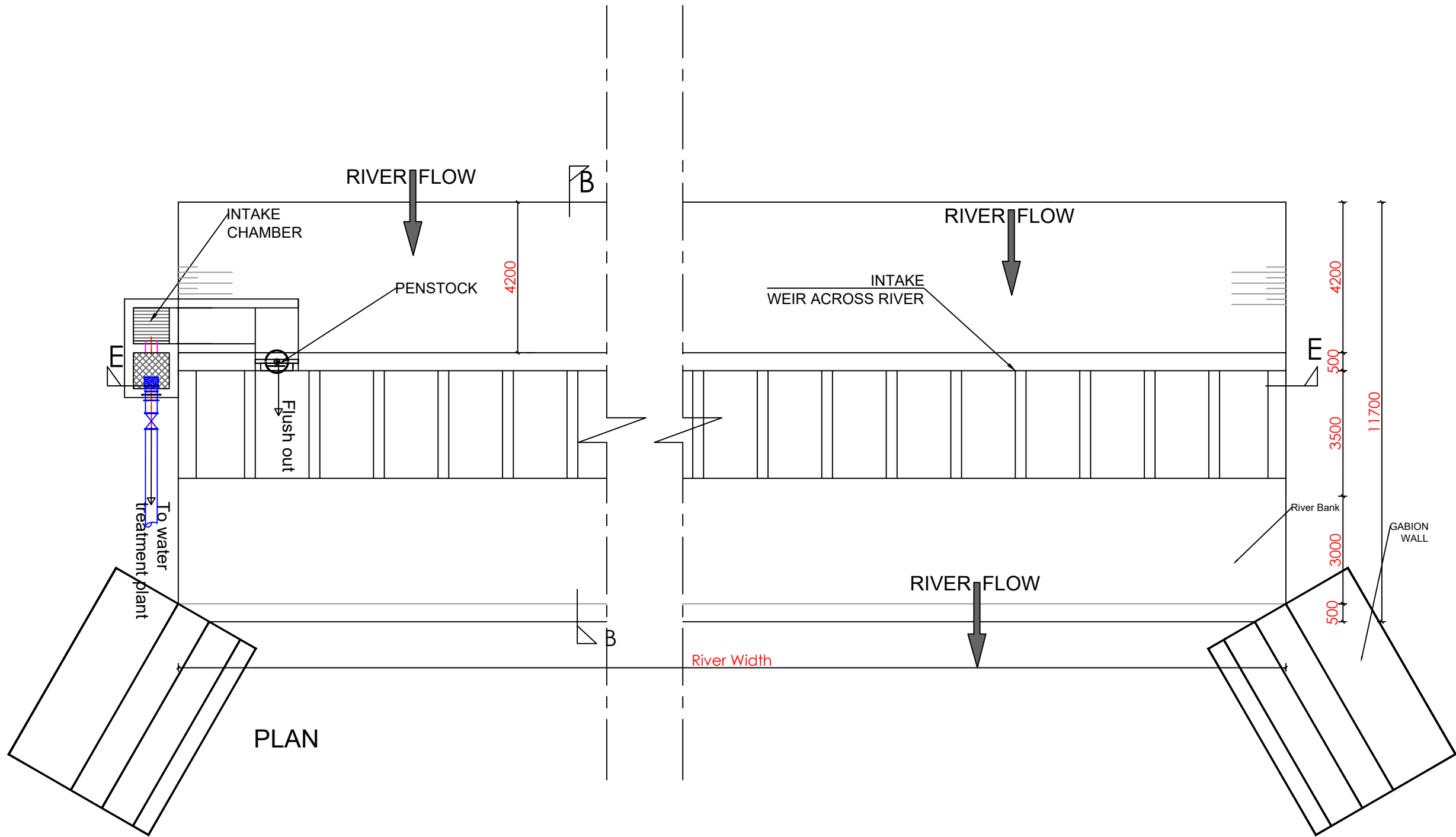
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Checked by: J.K.K

Date: NOVEMBER 2022

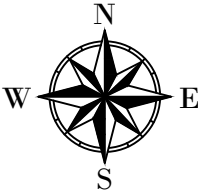
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LEGEND

River bed & banks



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**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

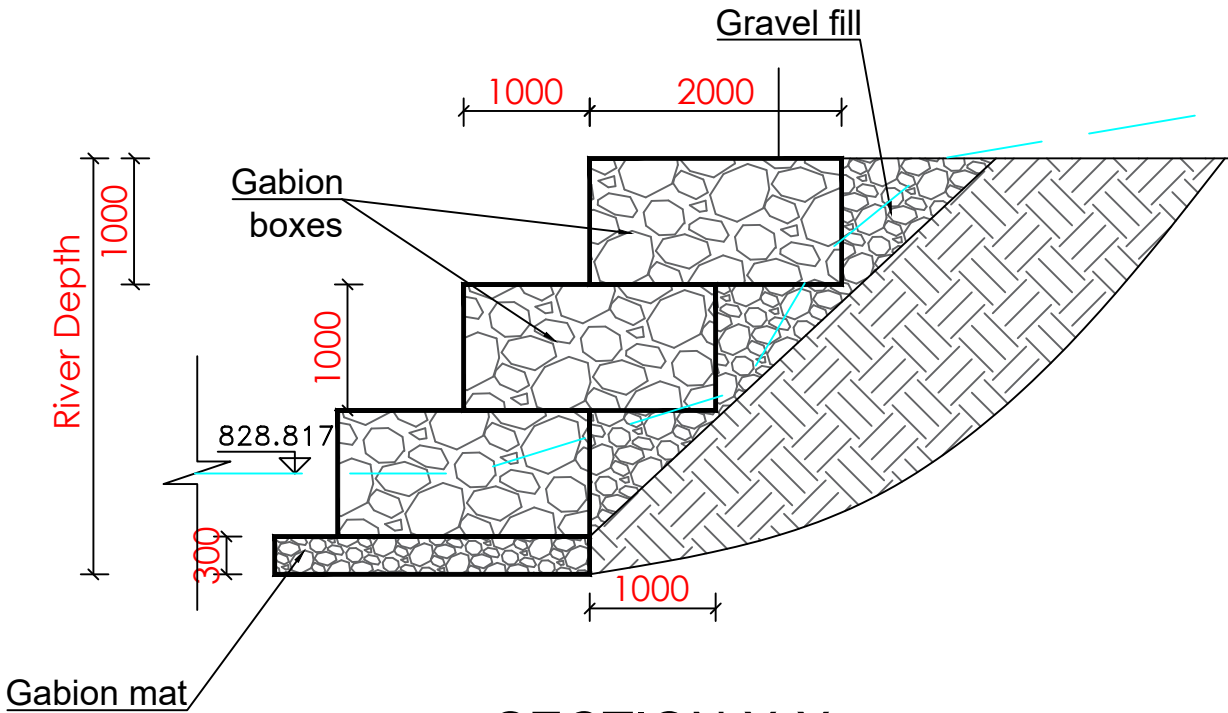
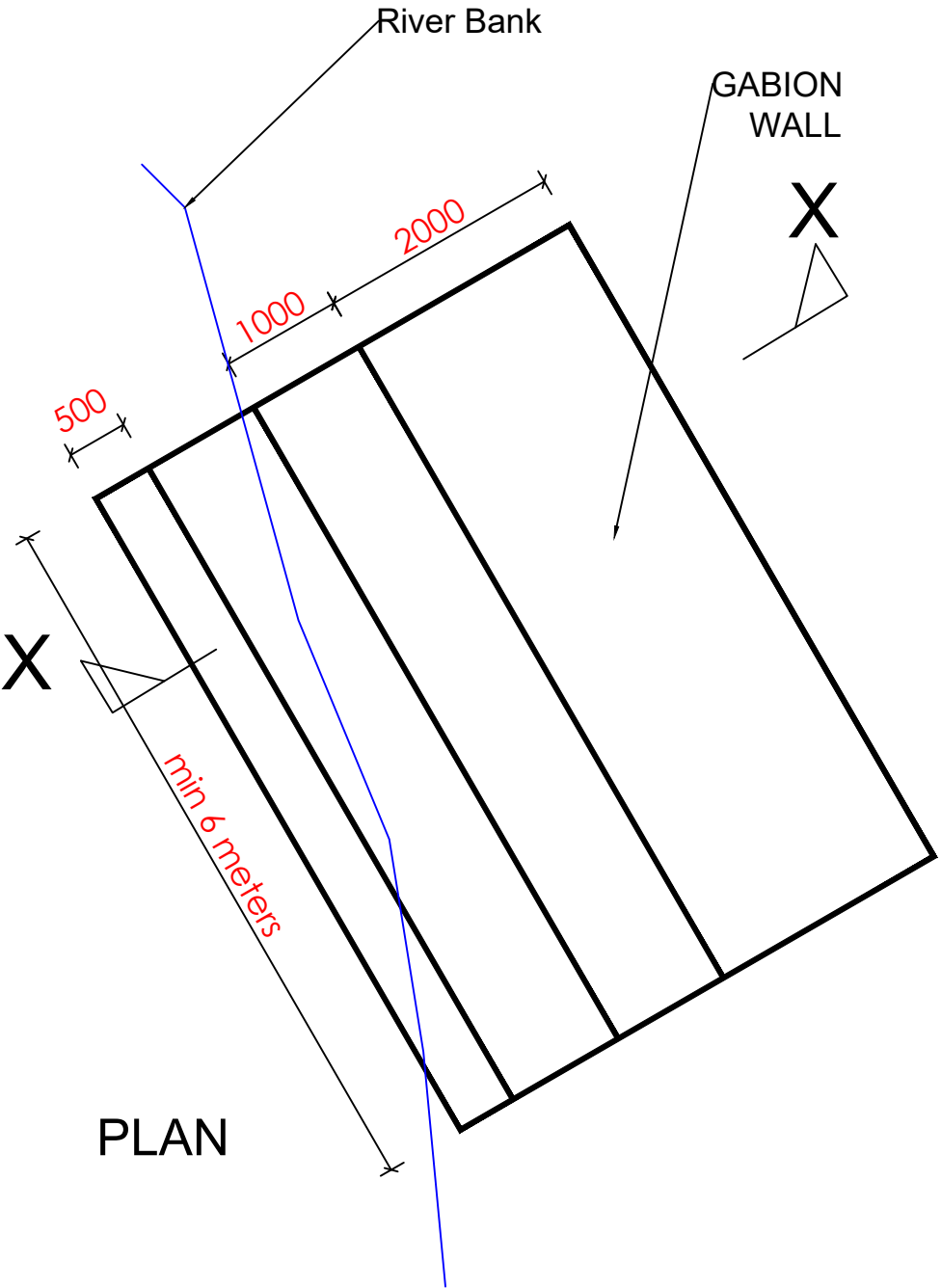
REVISIONS :		
No	Date	Description

DRAWING TITLE : **INTAKE STRUCTURE  
Plan**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-INT-001</b>
Scale:	1:125
Sheet No.:	1 of 3

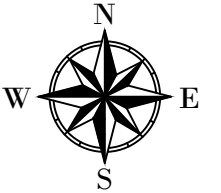


# GABION DETAILS



## LEGEND

River bed & banks



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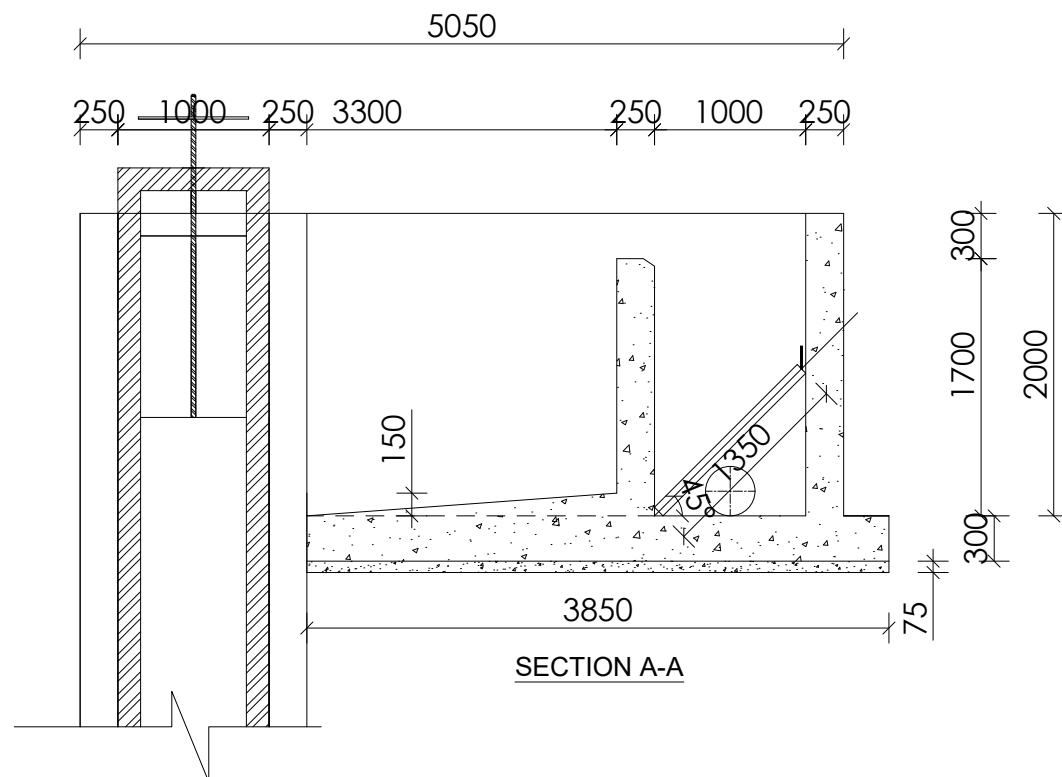
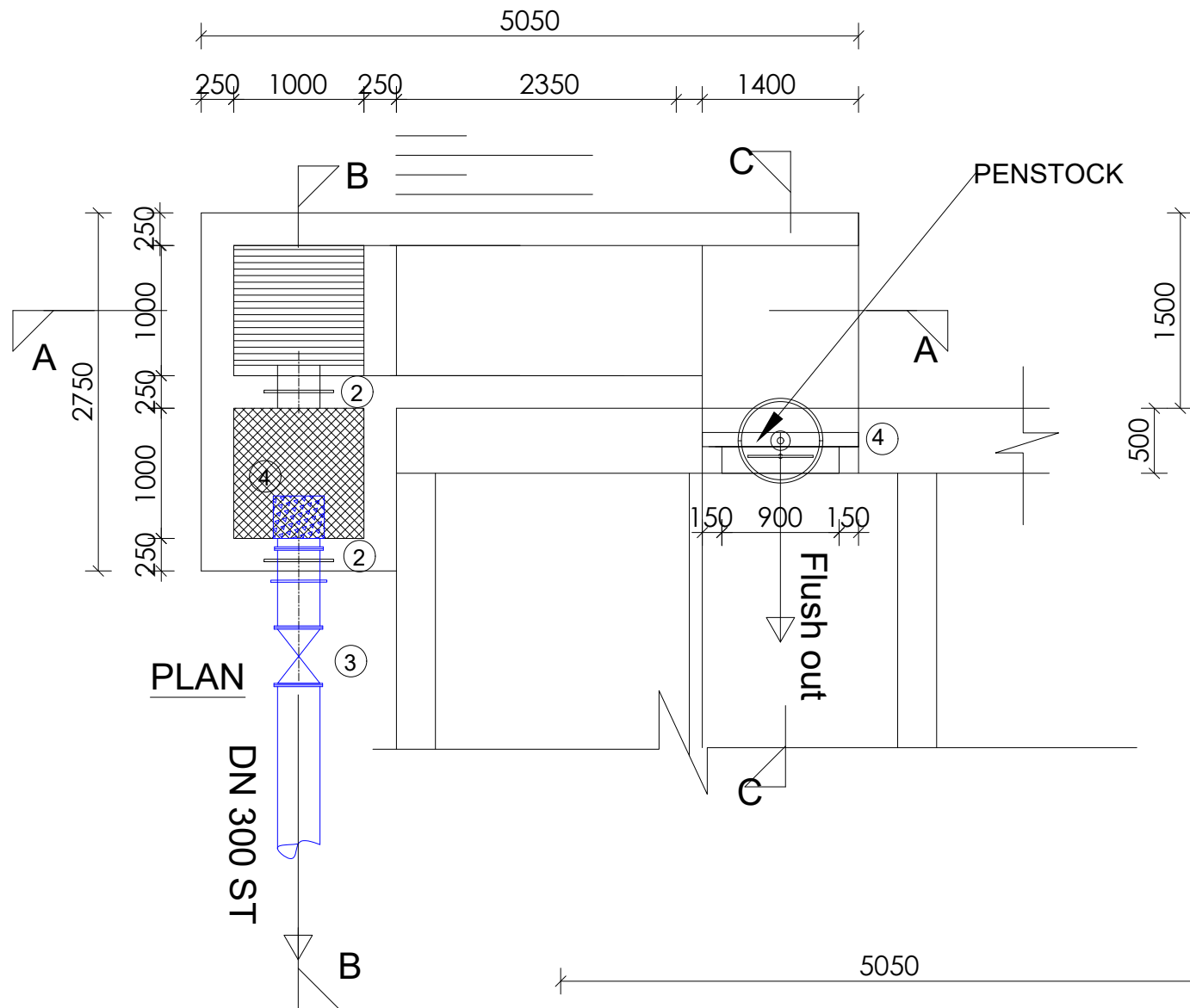
PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :		
No	Date	Description

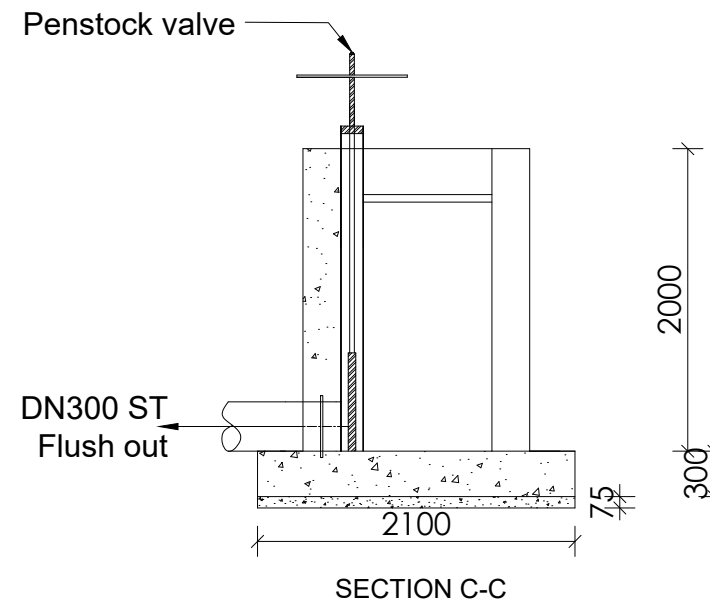
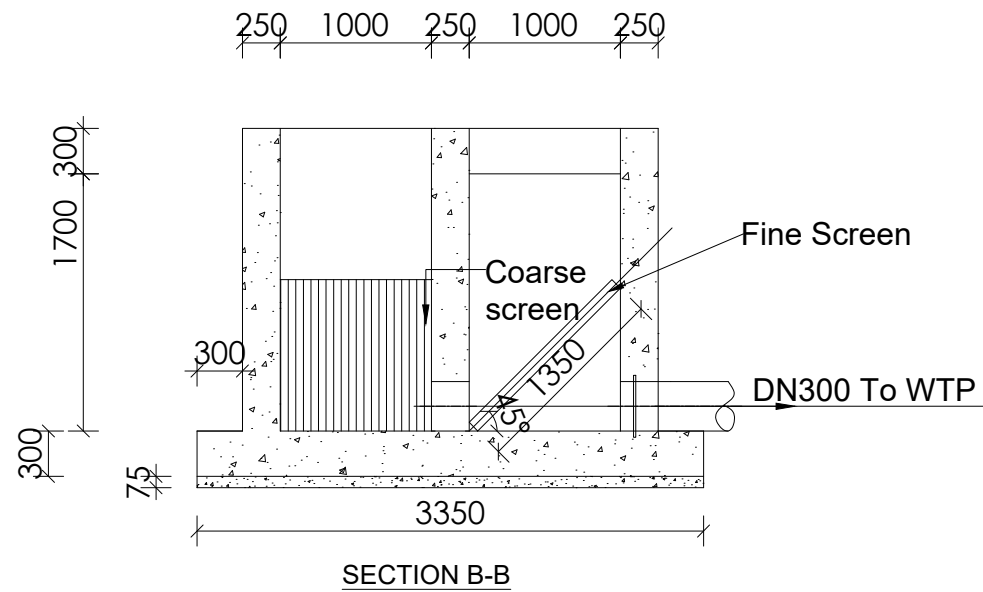
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INTAKE STRUCTURE  
Gabion Detail

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ENY-INT-001
Scale:	1:60
Sheet No.:	3 of 3

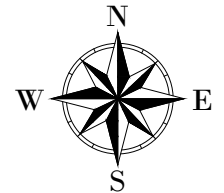


#### SCHEDULE OF PIPEWORK AND FITTINGS

- 1 No Penstock valve for DN 300 opening
- 2 No DN300 Pipe with Puddle Flange
- 1 No. DN300 Gate Valve
- 1 No. DN 300 Strainer



#### LEGEND



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CONSULTANT :



PROJECT :

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SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**INTAKE STRUCTURE  
Plan & Sections**

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

**ENY-INT-002**

Scale:

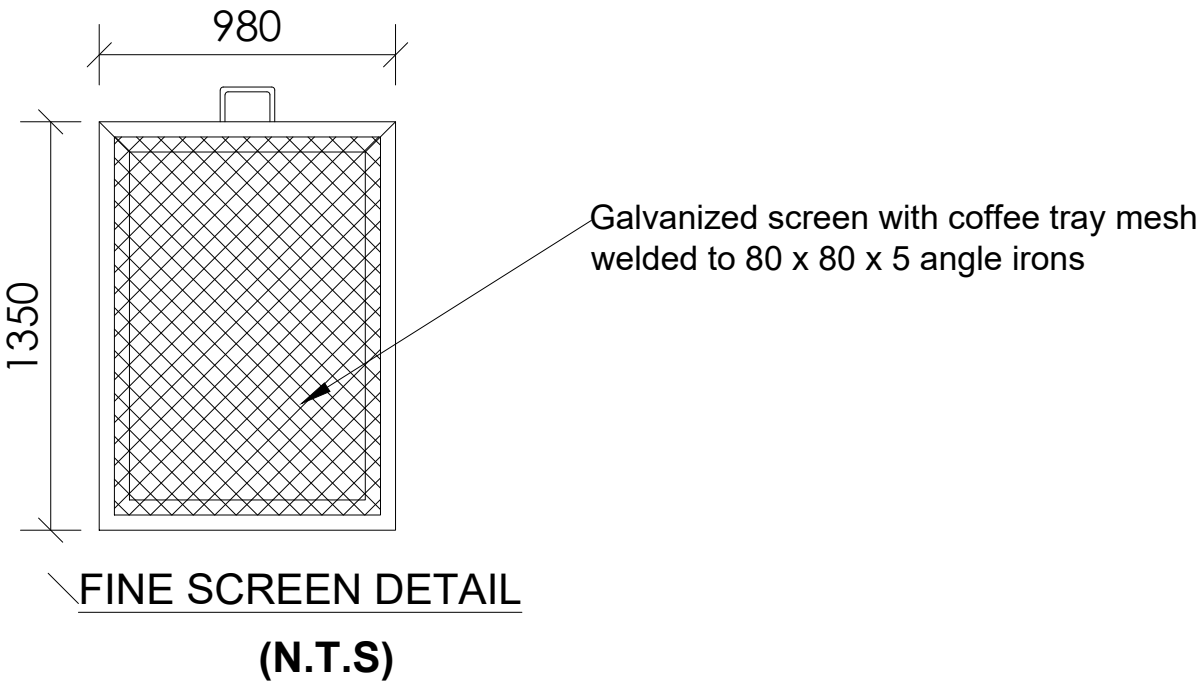
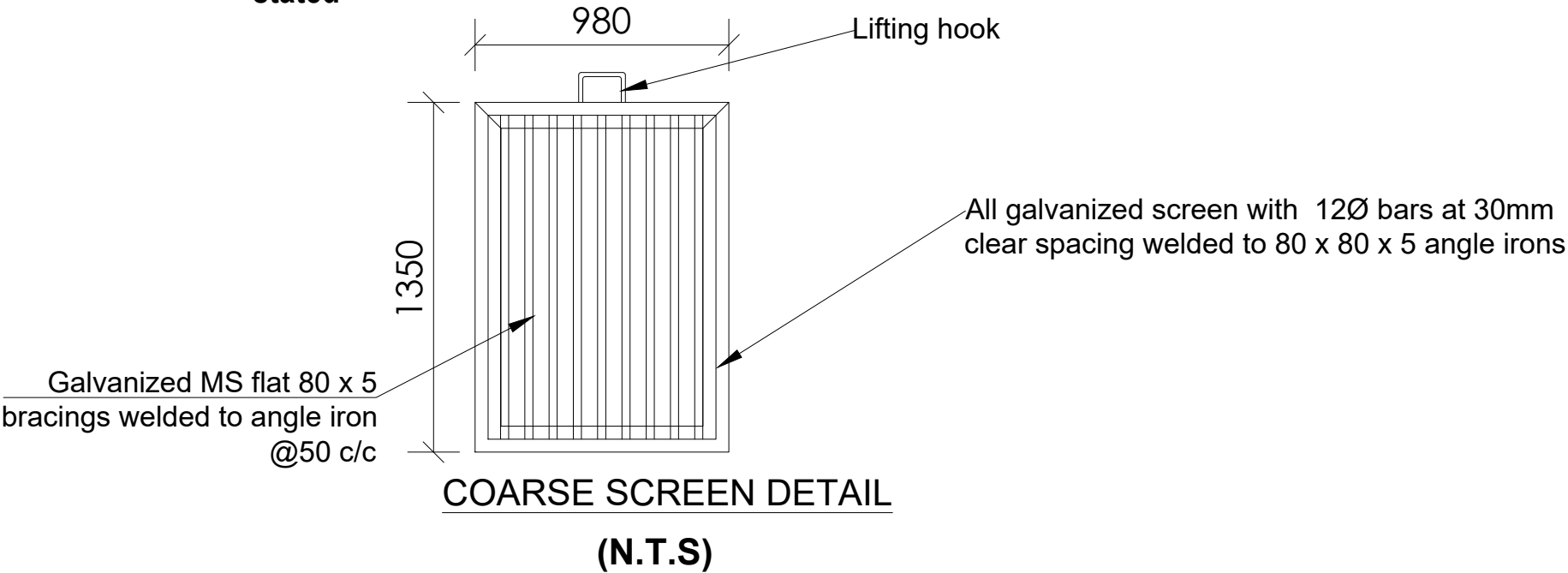
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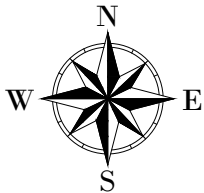
1 of 3

NOTES

1. All dimensions are in millimetres unless otherwise stated



LEGEND



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PROJECT :

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SANITATION PROJECT

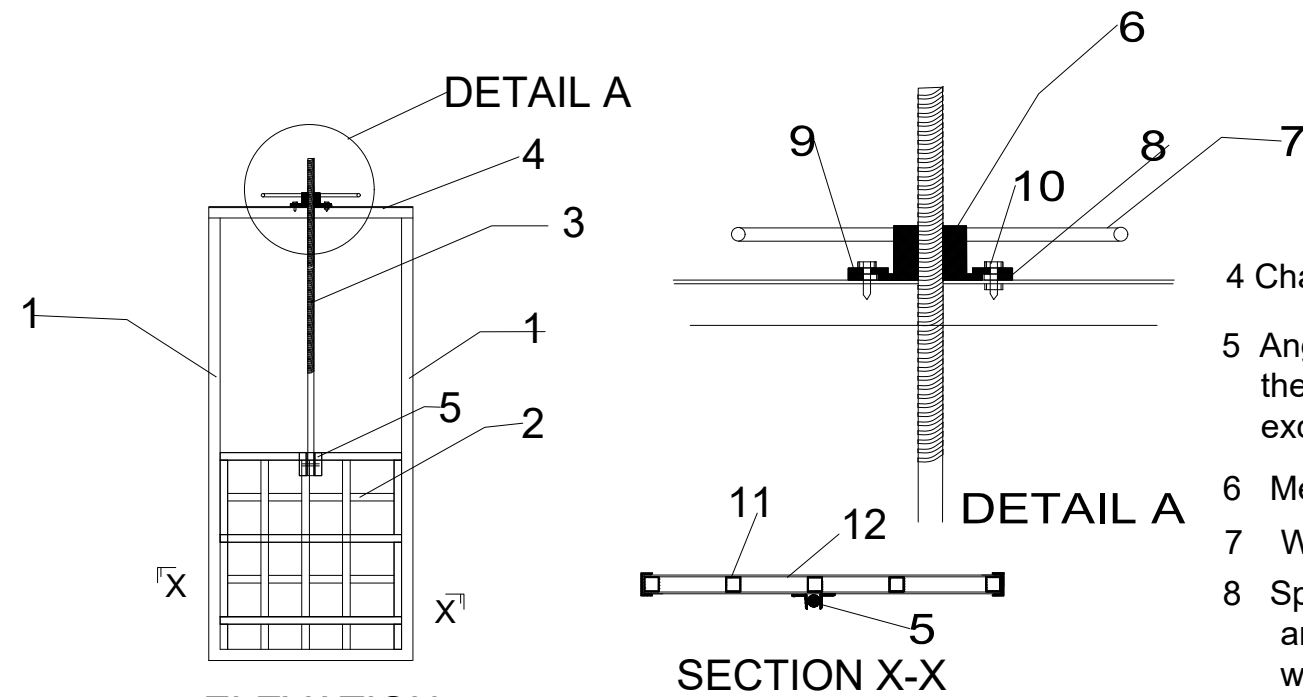
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

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Screen Details

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-INT-002</b>
Scale:	N.T.S
Sheet No.:	2 of 3

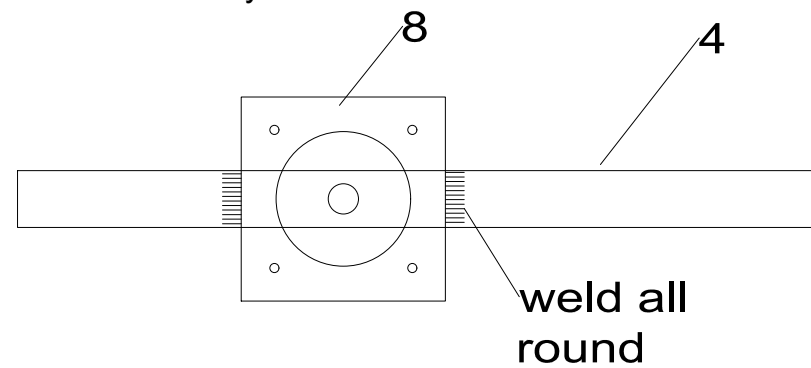


ELEVATION

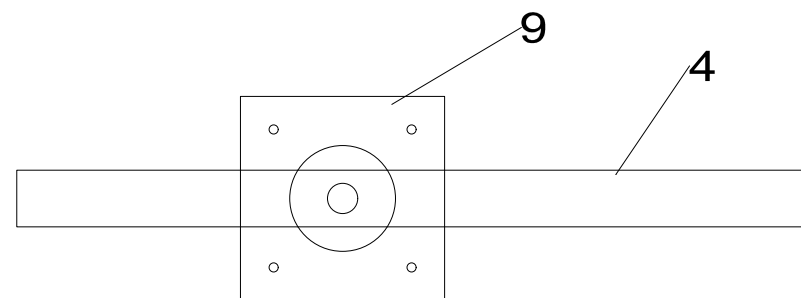
SECTION X-X

- 1 Channel section 75x38x6mm
- 2 Gate board formed by sandwiching a frame of SHS 50x50x3mm spaced at 270mm both ways
- 3 Threaded shaft 40mm dia attached to check board moved by mechanism in detail A 38x6mm

- 4 Channel section 75x38x6mm
- 5 Angle brackets 50X50x6mm fixing the shaft to the board with a pin that can shear on excessive turning of closing wheel 75x38x6mm
- 6 Metal piece with female thread to move the gate shaft
- 7 Wheel welded to part 6 above
- 8 Spacer plate 270x270x12mm with central hole 178mm dia and 4 No holes 12mm dia for bolts (see detail) It is welded all round to item 4
- 9 Steel plate 270x270x12mm with central hole 140mm dia and 4 No holes 12mm dia for bolts (see detail)
- 10 Bolts 10mm dia with necessary washers and nut
- 11 frame of SHS 50x50x3mm spaced at 270mm both ways
- 12 Steel Plate 1200x600x6mm covering each of the sides of steel sections



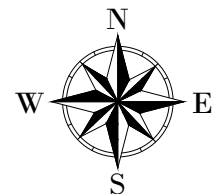
Detail of plate 8



Detail of plate 9

## DETAILS OF PENSTOCKS

### LEGEND



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PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**INTAKE CHAMBER  
Penstock Details**

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

**ENY-INT-002**

Scale:

1:50

Sheet No.:

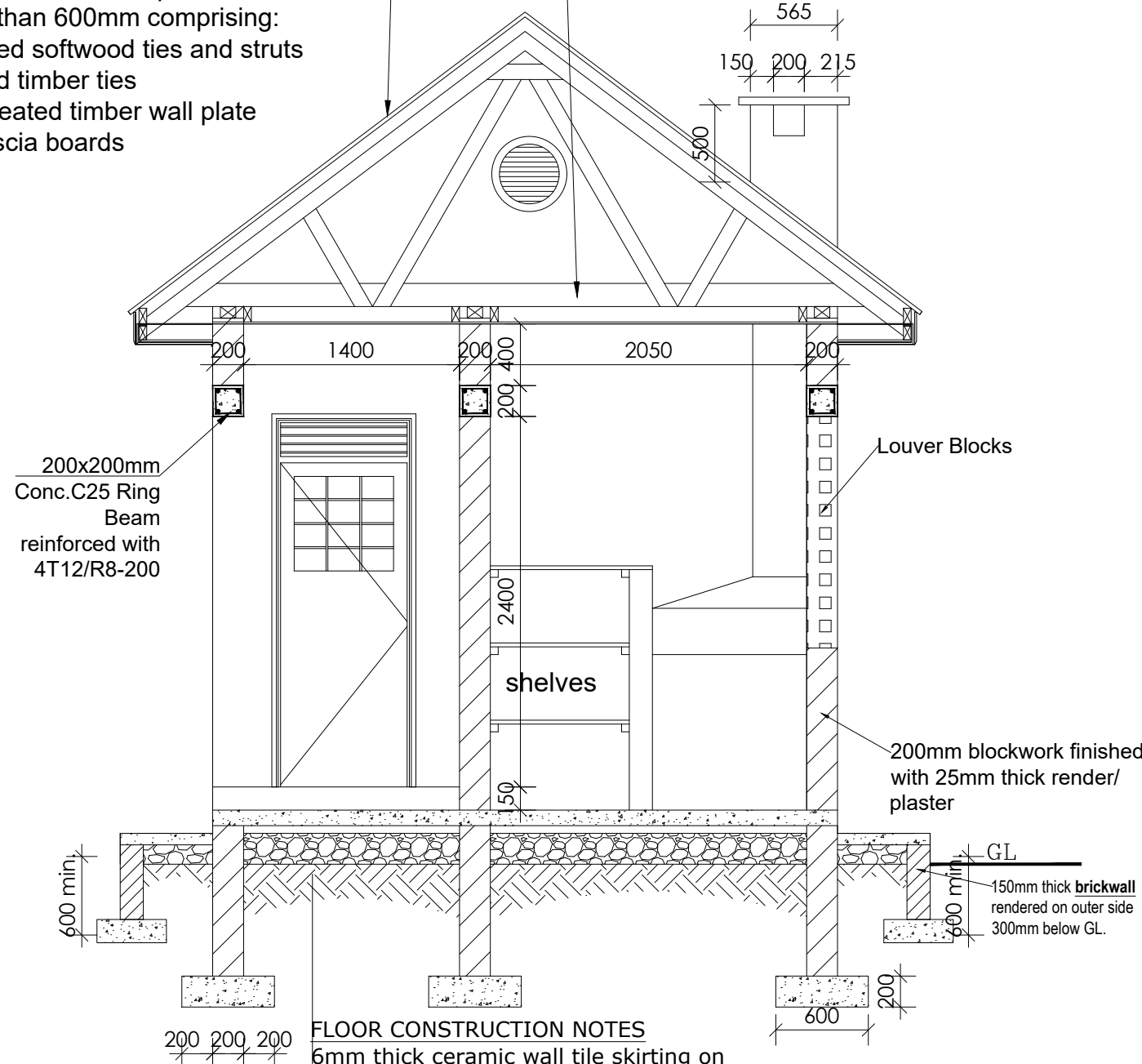
3 of 3





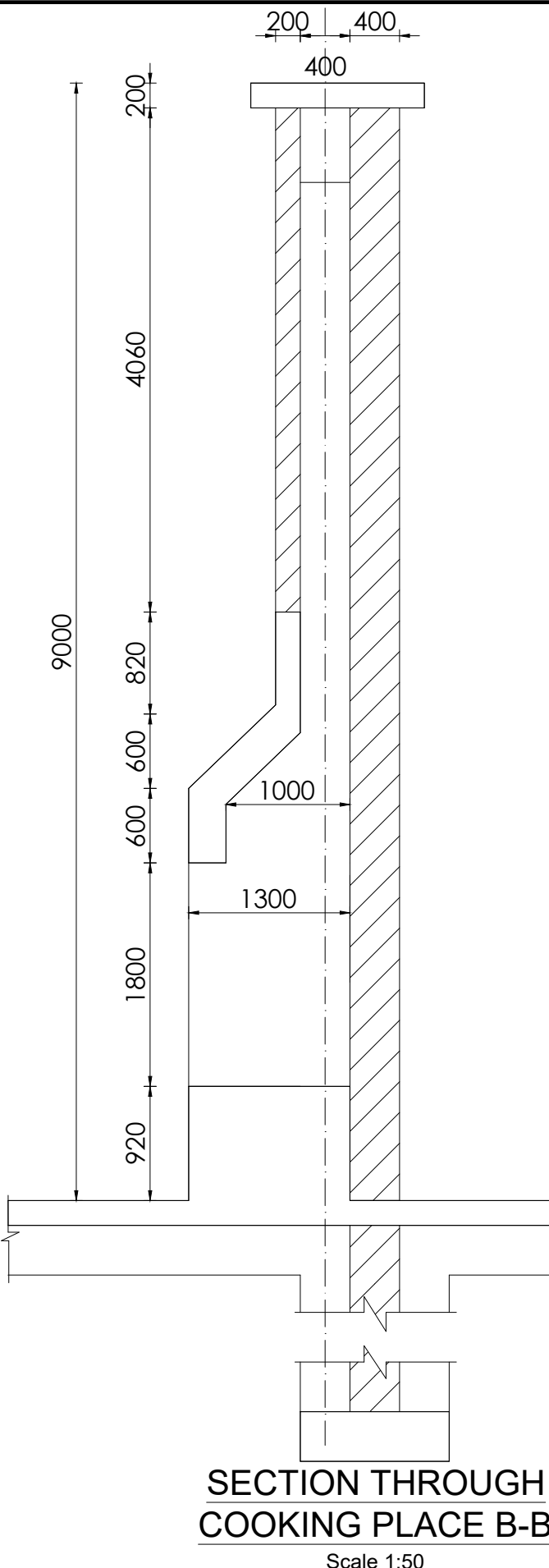
Roof Pitch -37°  
Fire clay ridge cap/ mangalore roofing tiles on 50 x 25 timber battens with gauge 32 GI plane sheet on chicken mesh  
Pressure treated roofing soft wood timber  
100 x 50mm treated timber rafters  
100 x 50 mm treated soft wood purlins on trusses spaced not more than 600mm comprising:  
100 x 50mm treated softwood ties and struts  
150x50mm treated timber ties  
on 150 x 75mm treated timber wall plate  
250mm plastic fascia boards

Ceiling notes  
20mm thick cement and sand plaster on  
12mm expanded metal lathing on  
100 x 50mm ceiling branderings at 600mm centres  
100 x 50mm ceiling joists at 1200mm centres



SECTION A-A

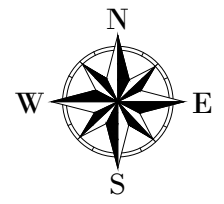
FLOOR CONSTRUCTION NOTES  
6mm thick ceramic wall tile skirting on  
8mm thick ceramic floor tiles on  
25mm cement and sand (1:3) screed on  
100mm C15 Reinforced cement concrete slab/ A142 BRC on  
DPM placed on  
200mm Hardcore stone bed blinded with 50mm sand  
150mm selected well compacted natural murram filling



SECTION THROUGH COOKING PLACE B-B

Scale 1:50

LEGEND



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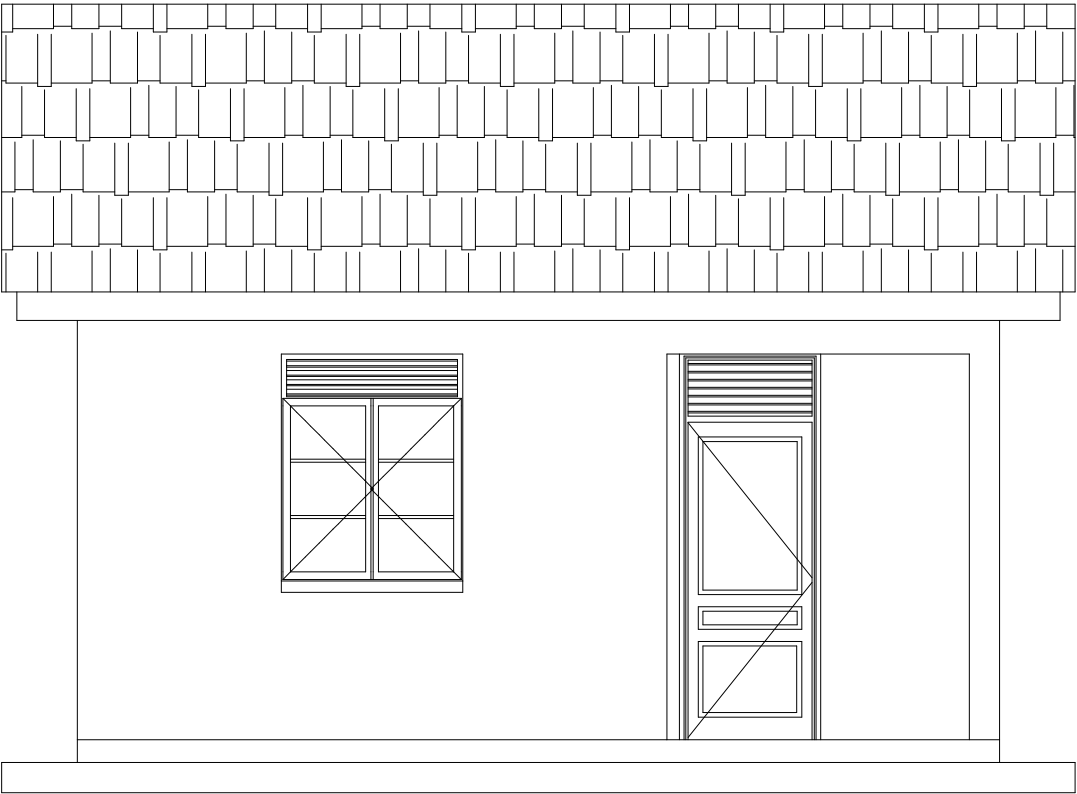
PROJECT :  
**ALA-ORA WATER SUPPLY AND SANITATION PROJECT**  
**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

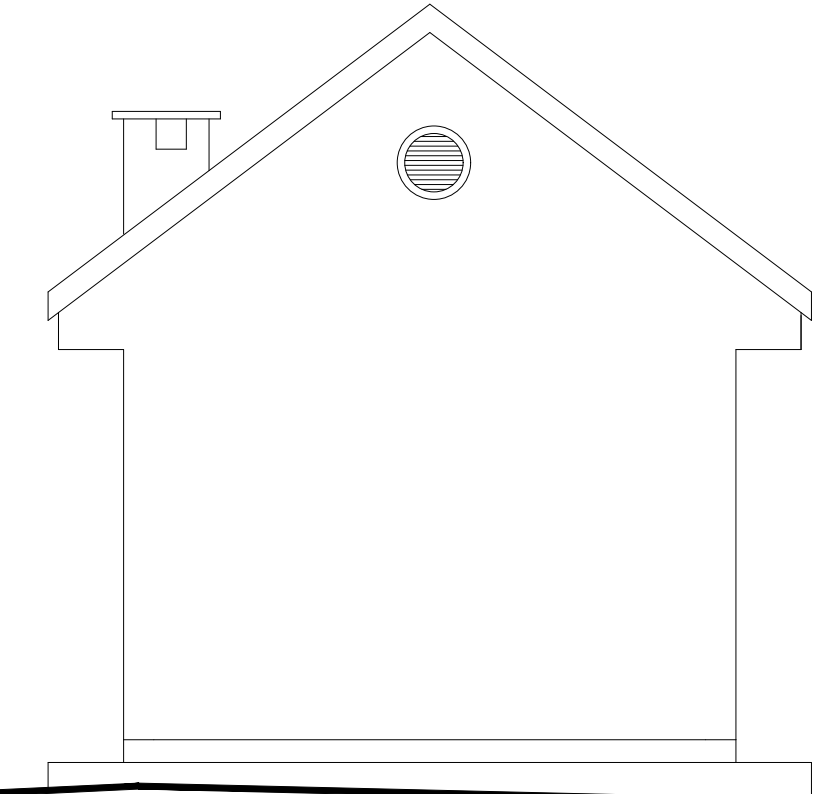
No	Date	Description

DRAWING TITLE : **INTAKE GUARD HOUSE**  
Section

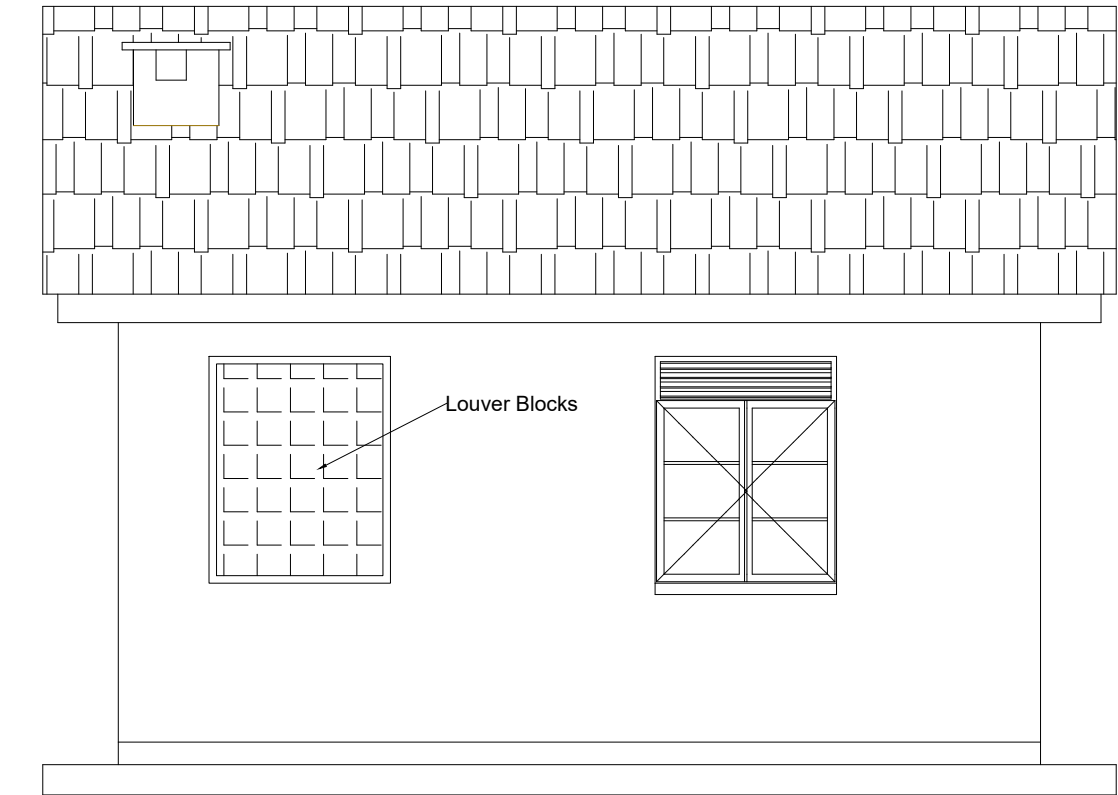
Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-INT-003</b>
Scale:	1:40
Sheet No.:	2 of 5



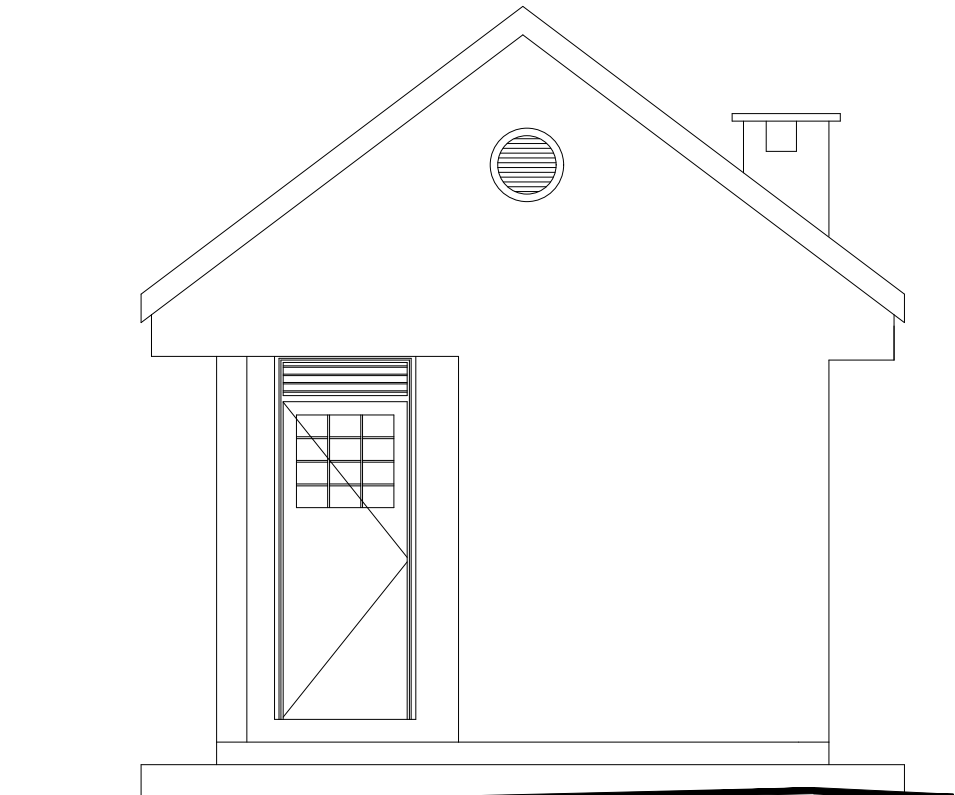
ELEVATION 1



ELEVATION 2

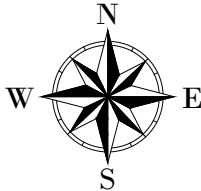


ELEVATION 3



ELEVATION 4

LEGEND



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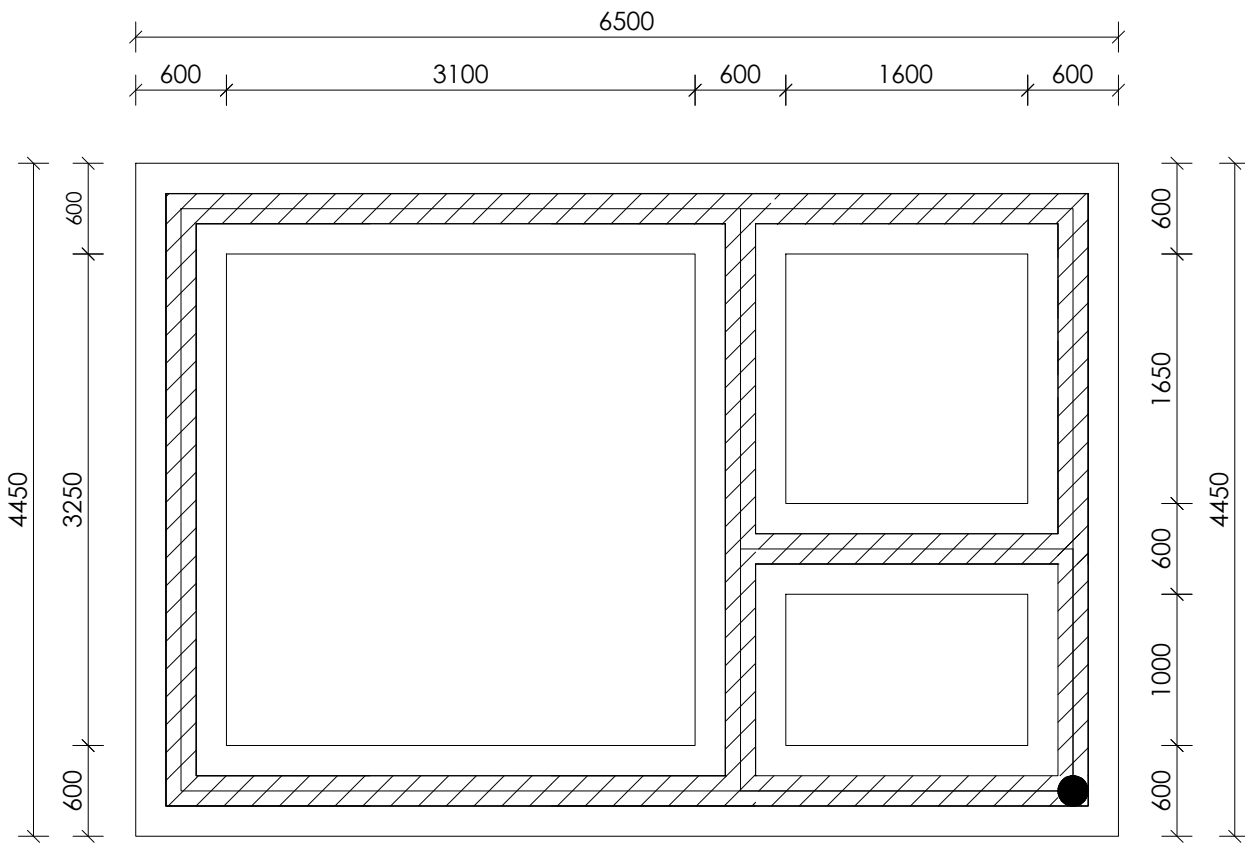
PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

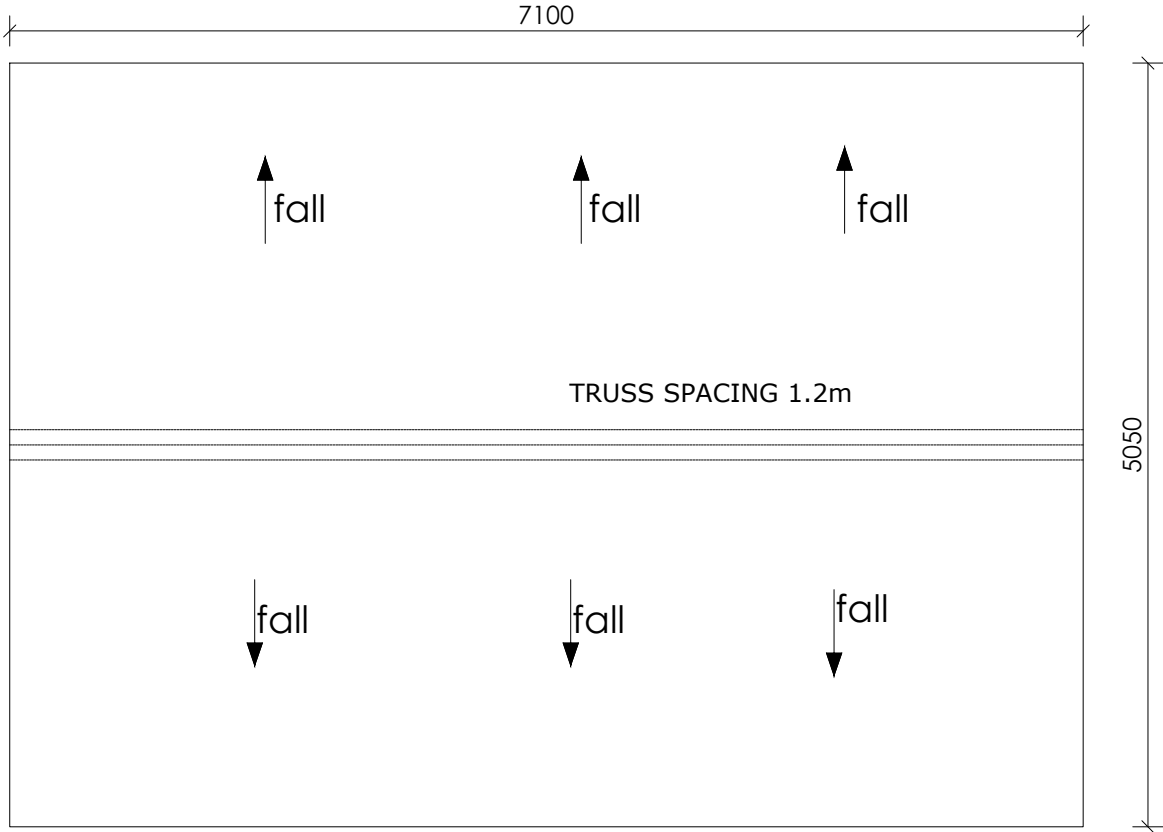
REVISIONS :		
No	Date	Description

DRAWING TITLE : **INTAKE GUARD HOUSE  
Elevations**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-INT-003</b>
Scale:	1:50
Sheet No.:	3 of 5

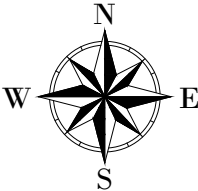


FOUNDATION LAYOUT



ROOF LAYOUT

LEGEND



CLIENT :

  
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**MINISTRY OF WATER AND ENVIRONMENT**

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PROJECT :

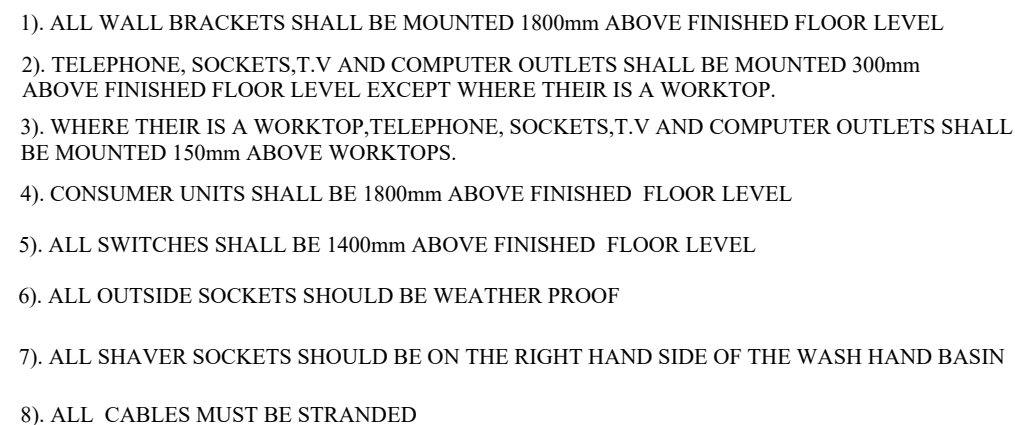
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **INTAKE GUARD HOUSE  
Roof & Foundation Layout**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-INT-003</b>
Scale:	1:50
Sheet No.:	4 of 5



### LEGEND

AT

AIR TERMINAL

**□ TB**

TEST CLAMP



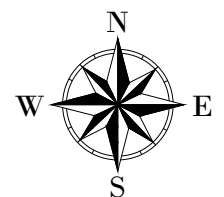
INSPECTION MANHOLE



EARTH ELECTRODE

HC HORIZONTAL CONDUCTOR

DC DOWN CONDUCTOR



CLIENT :



THE REPUBLIC OF UGANDA

**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:



CONSULTANT :



**Alliance Consultants Ltd**  
*In Association with*

**In Association with**

**Infra-Consult Ltd**

PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

## ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

REVISIONS :		
No	Date	Description

DRAWING TITLE : **INTAKE GUARD HOUSE**  
Electrical Layout

Surveyed by:
--------------

R.K

Drawn by:

A.K

Designed by:	
--------------	--

W.G.M

Checked by:	
-------------	--

J.K.K

Date:

January 2023

DRG. No.:	
-----------	--

**ENY-INT-003**

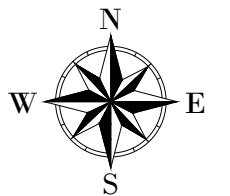
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Sheet No.:

5 of 5

# LEGEND



CLIENT :  
  
 THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
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**THE WORLD BANK**  
 IBRD • IDA | WORLD BANK GROUP

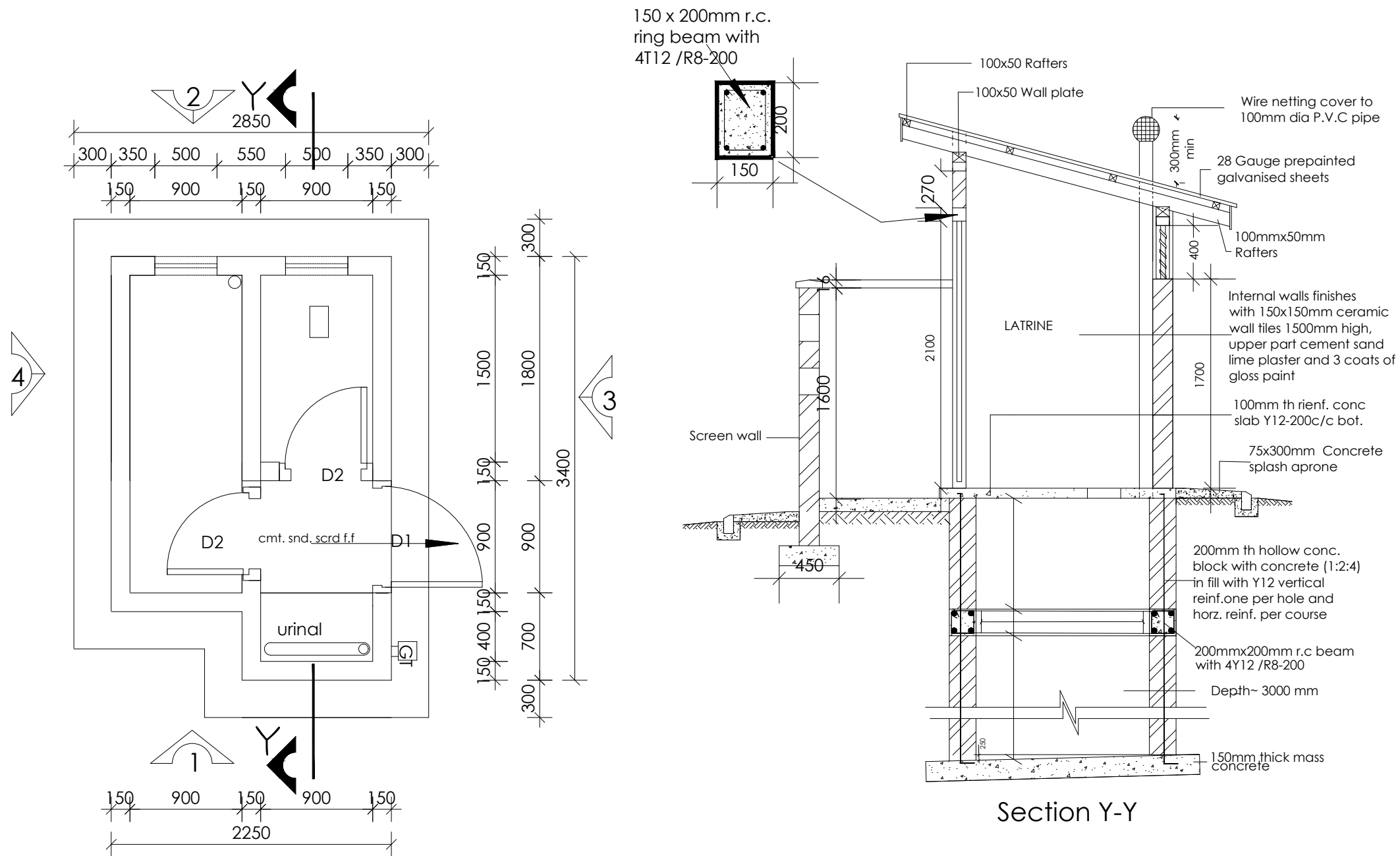
CONSULTANT :  
  
**Alliance Consultants Ltd**  
*In Association with*  
  
**Infra-Consult Ltd**

PROJECT :  
**ALA-ORA WATER SUPPLY AND  
 SANITATION PROJECT**  
**ENYAU WATER SUPPLY AND  
 SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

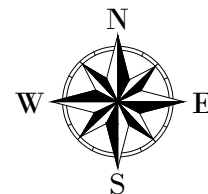
DRAWING TITLE : **TOILET (INTAKE)**  
 Plan and Section

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-INT-004</b>
Scale:	1:40
Sheet No.:	1 of 3



Section Y-Y

LEGEND



CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT

CO-FINANCED BY:



CONSULTANT :



Alliance Consultants Ltd  
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Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**TOILET (INTAKE)  
Elevations**

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

**ENY-INT-004**

Scale:

1:40

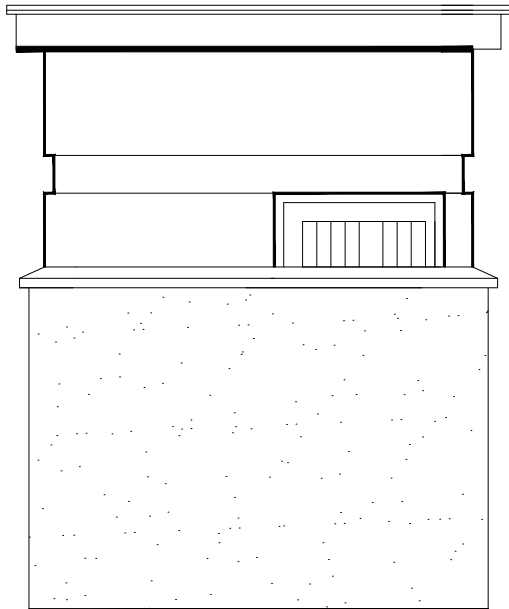
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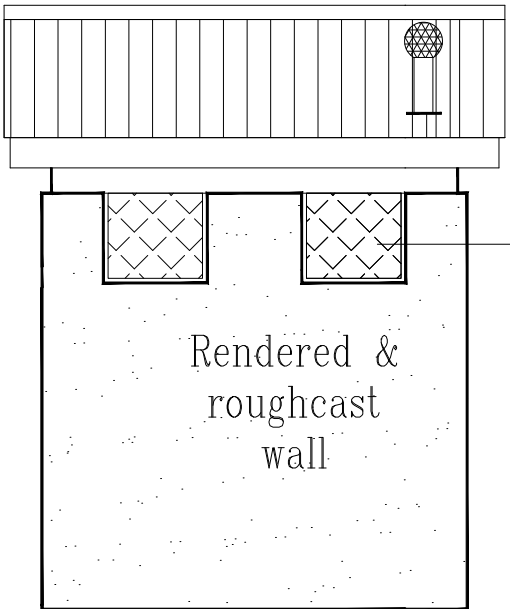
Door and Window Schedule

Mark Dimensions No. Description

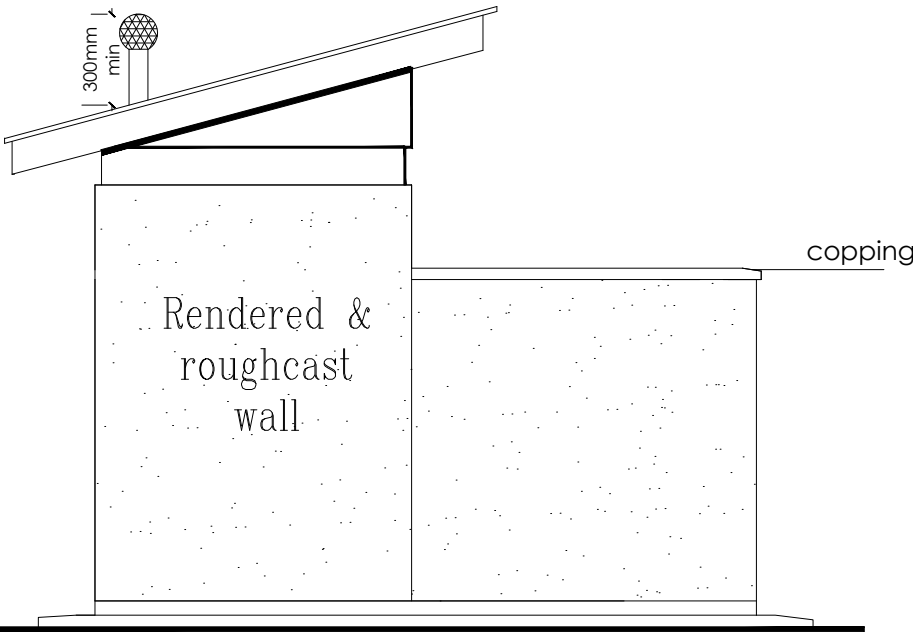
D1		1	Metal Grill door to approval
D2		2	Similar to D#



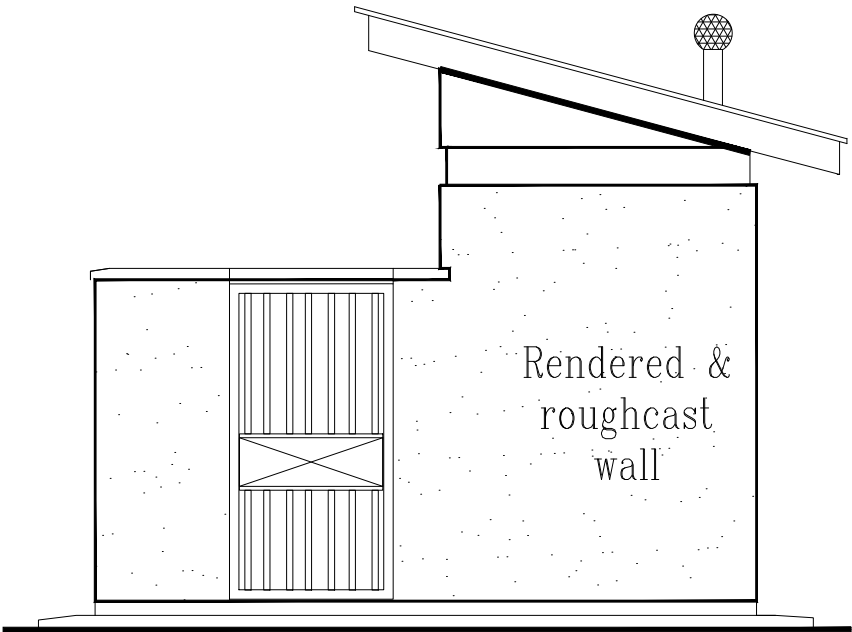
ELEVATION 1



ELEVATION 2



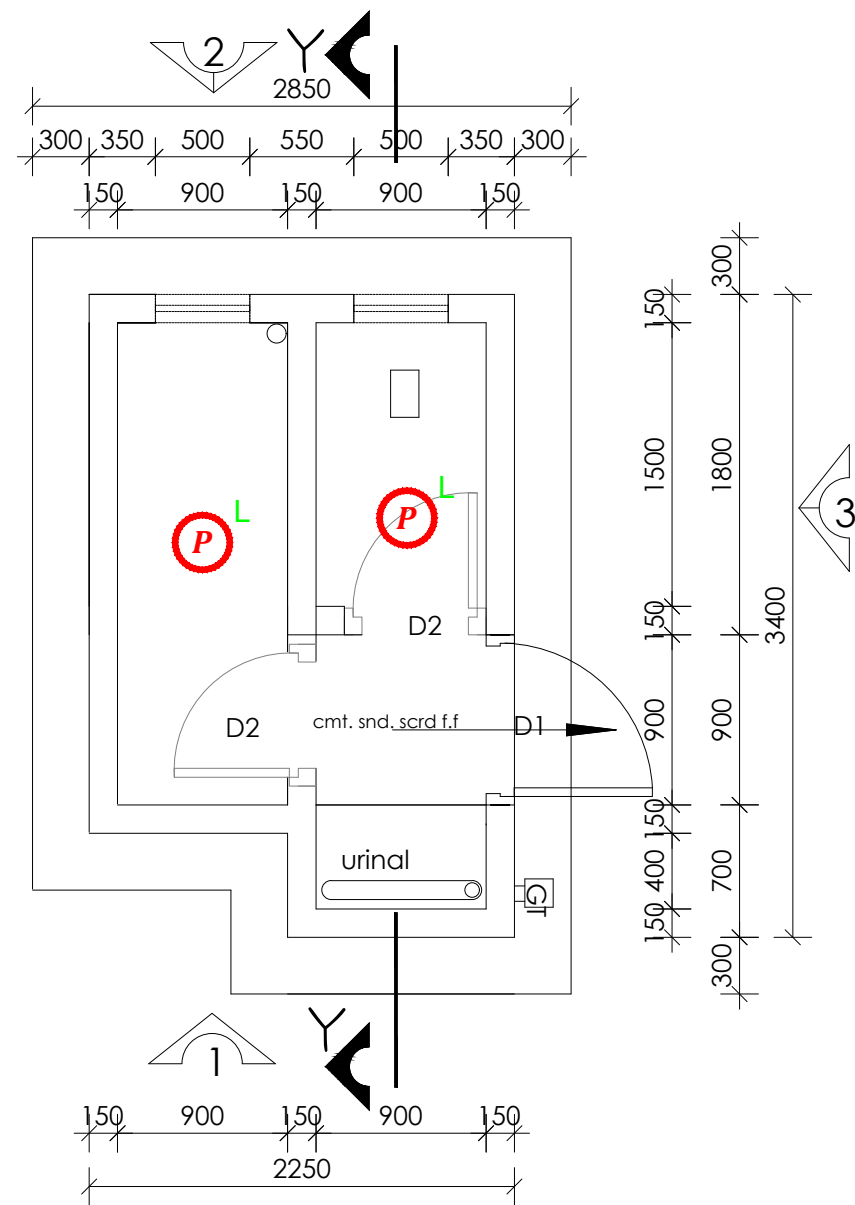
ELEVATION 4



ELEVATION 3

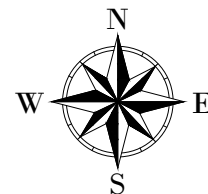
2-STANCE, 1-URINAL TOILET BLOCK





SYMBOL	DESCRIPTION
	1200mm 18W LED batten with a removable LED engine. IP20 As Thorn PopPack LED. or equal approved. (Light Type F1)
	Pendant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp
	Pendant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp
	Decorative Bed side lamp complete with flexible spot light arm as LEDS-C4 BALI (05-3217-19-82 + PAN-157-BY) to client's approval.
	wall mounted light

# LEGEND



CLIENT :



CO-FINANCED BY:



CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**TOILET (INTAKE)  
Electrical Layouts**

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

**ENY-INT-004**

Scale:

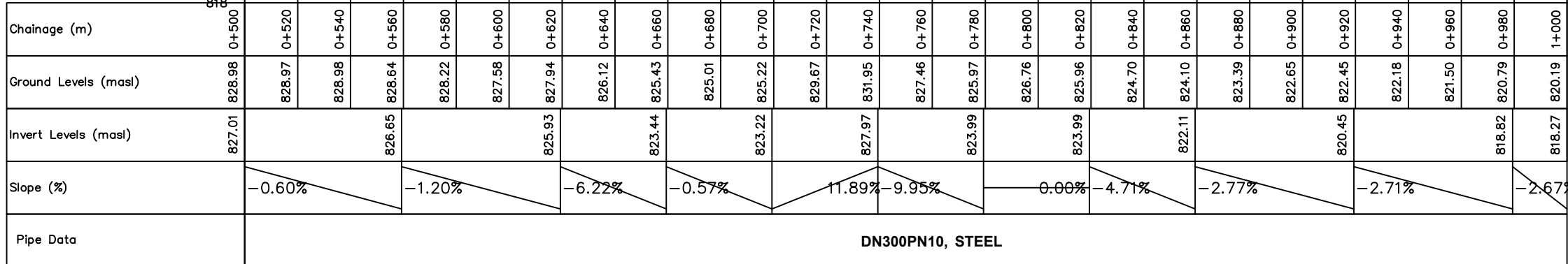
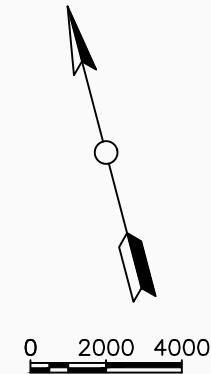
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Sheet No.:

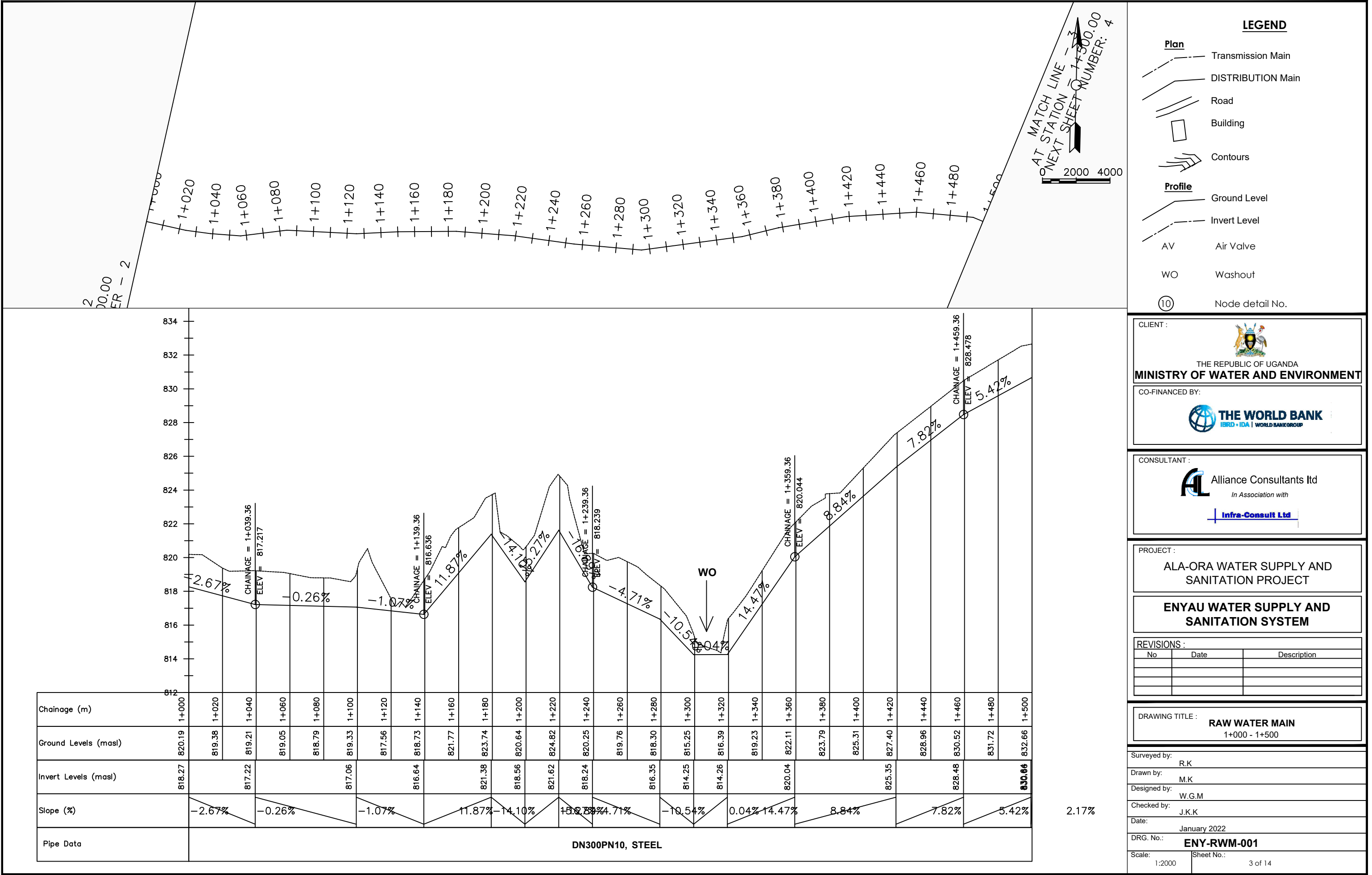
3 of 3

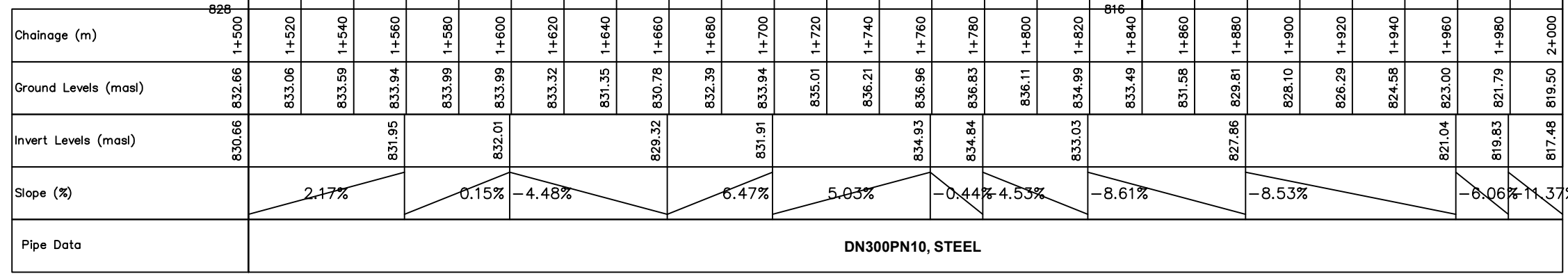
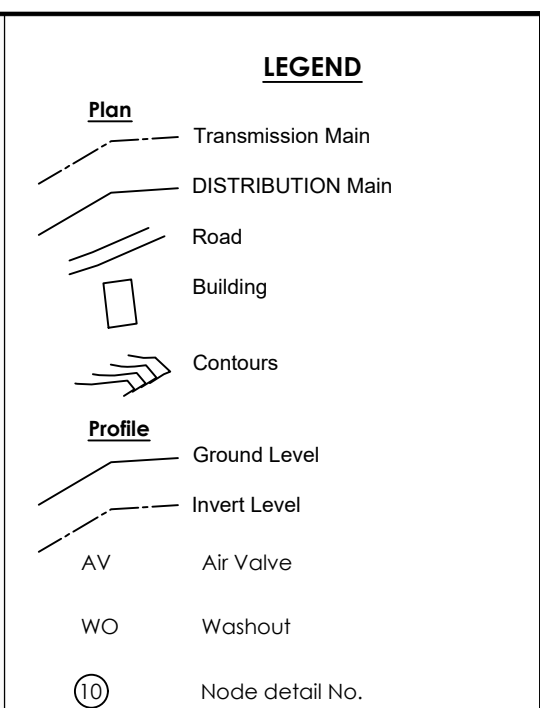
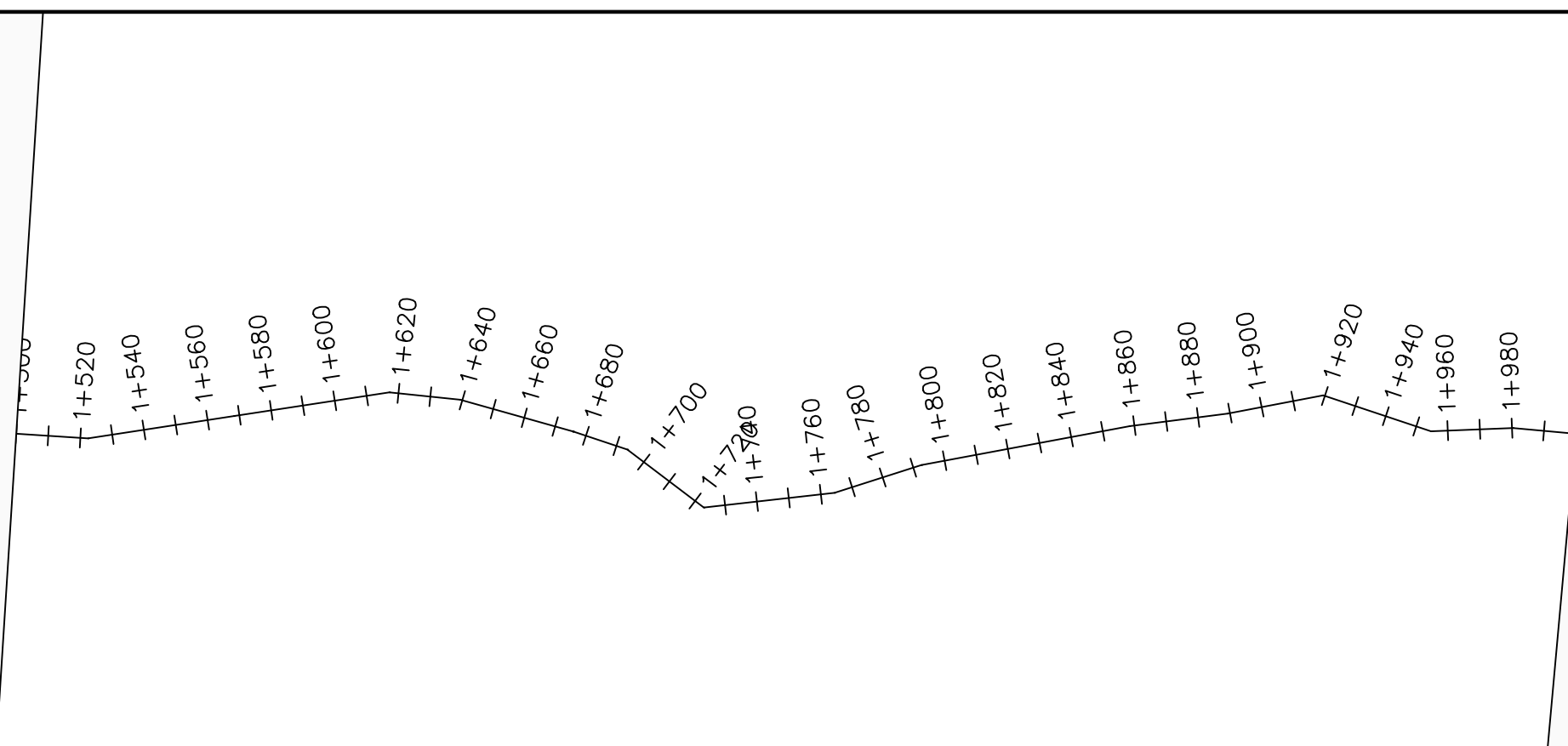









2 of 14





CLIENT : <div style="text-align: center; margin-top: 10px;">             THE REPUBLIC OF UGANDA  <b>MINISTRY OF WATER AND ENVIRONMENT</b> </div>																	
CO-FINANCED BY: <div style="text-align: center; margin-top: 10px;">  <b>THE WORLD BANK</b>  <small>IBRD • IDA   WORLD BANK GROUP</small> </div>																	
CONSULTANT : <div style="text-align: center; margin-top: 10px;">  <b>Alliance Consultants Ltd</b>  <i>In Association with</i>  <div style="display: inline-block; border-bottom: 1px solid blue; padding: 0 5px; margin-top: 5px;"> <b>Infra-Consult Ltd</b> </div> </div>																	
PROJECT : <div style="text-align: center; margin-top: 10px;"> <b>ALA-ORA WATER SUPPLY AND SANITATION PROJECT</b> </div>																	
<b>ENYAU WATER SUPPLY AND SANITATION SYSTEM</b>																	
REVISIONS : <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 10%;">No</th> <th style="width: 20%;">Date</th> <th style="width: 70%;">Description</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>			No	Date	Description												
No	Date	Description															
DRAWING TITLE : <div style="text-align: center; margin-top: 10px;"> <b>RAW WATER MAIN</b>  <b>1+500 - 2+000</b> </div>																	
Surveyed by: R.K																	
Drawn by: M.K																	
Designed by: W.G.M																	
Checked by: J.K.K																	
Date: January 2002																	
DRG. No.: <b>ENY-RWM-001</b>																	
Scale: 1:2000	Sheet No.: 4 of 14																









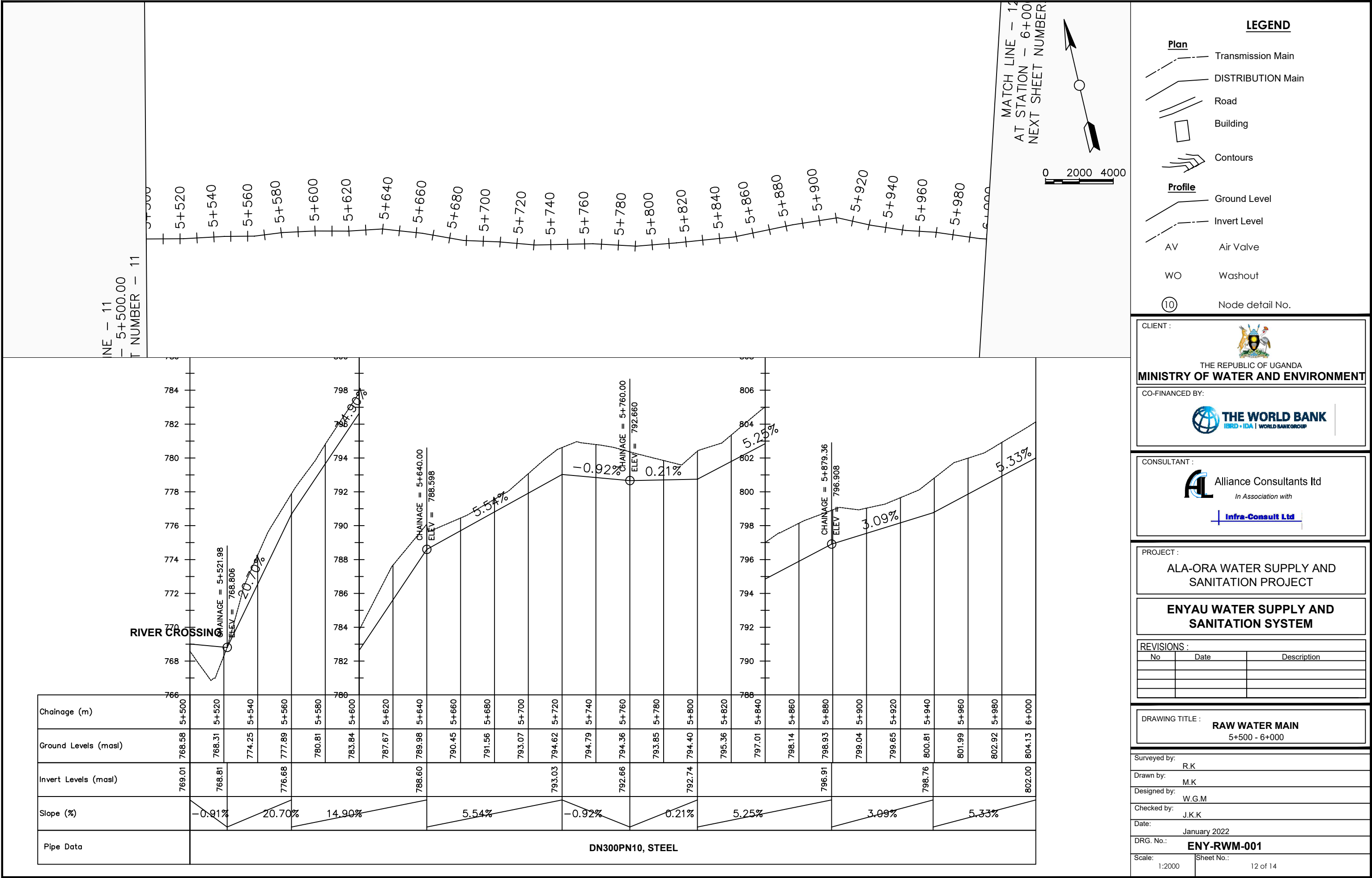




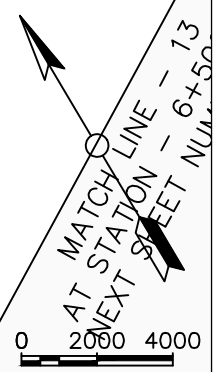








LINE - 12  
- 6+000.00  
ET NUMBER - 12



**LEGEND**


**Plan**

- Transmission Main
- DISTRIBUTION Main
- Road
- Building
- Contours

**Profile**

- Ground Level
- Invert Level
- AV Air Valve
- WO Washout
- Node detail No.

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

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CONSULTANT :



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*In Association with*

**Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

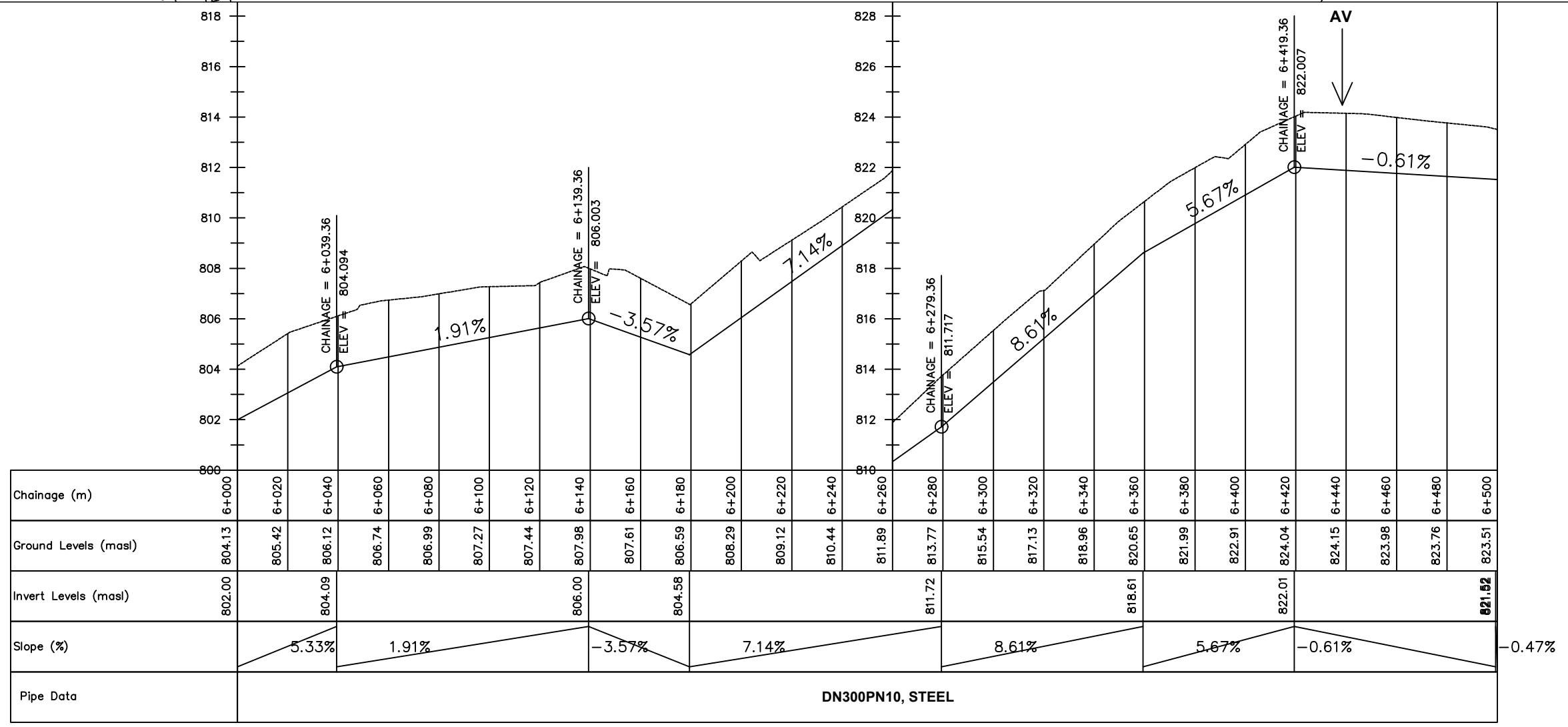
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

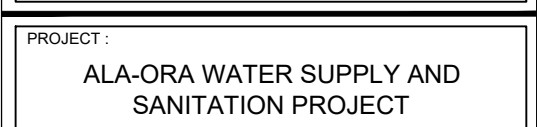
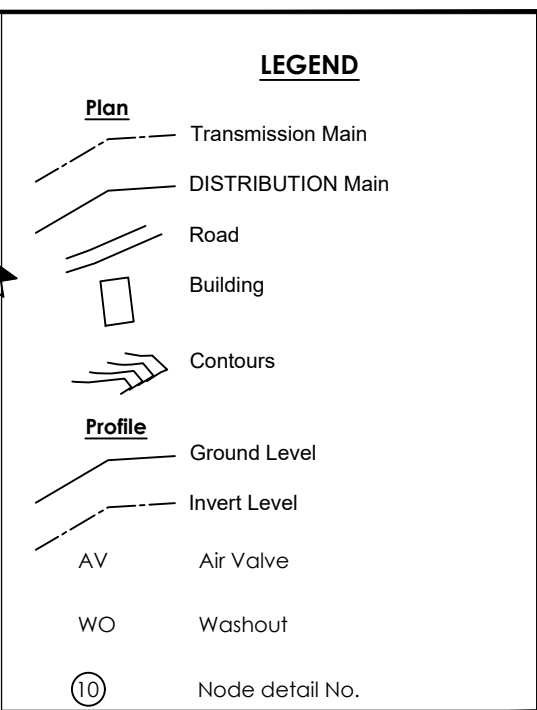
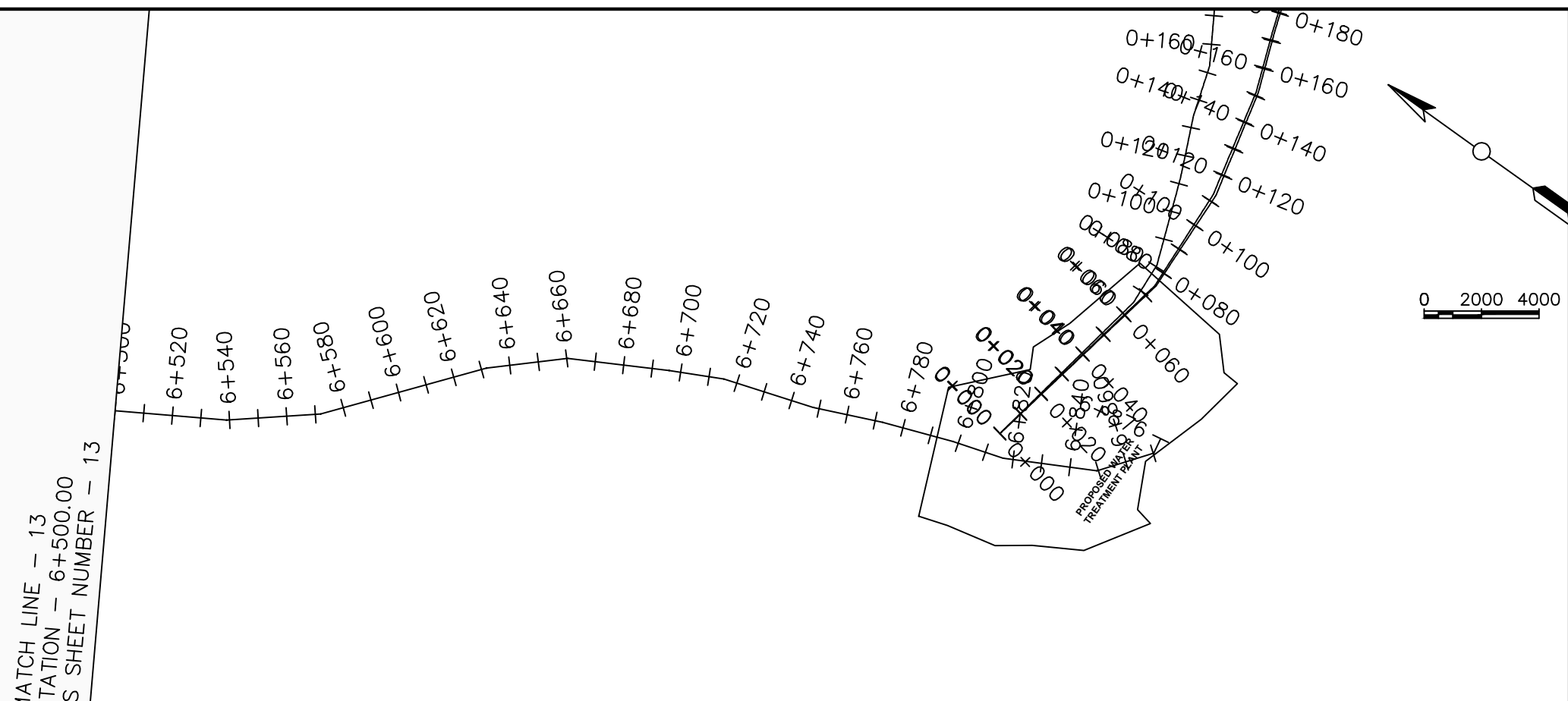
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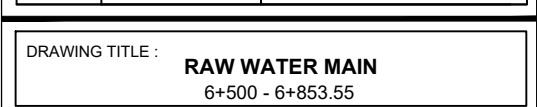
**RAW WATER MAIN**  
6+000 - 6+500

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2022
DRG. No.:	<b>ENY-RWM-001</b>
Scale:	1:2000
Sheet No.:	13 of 14

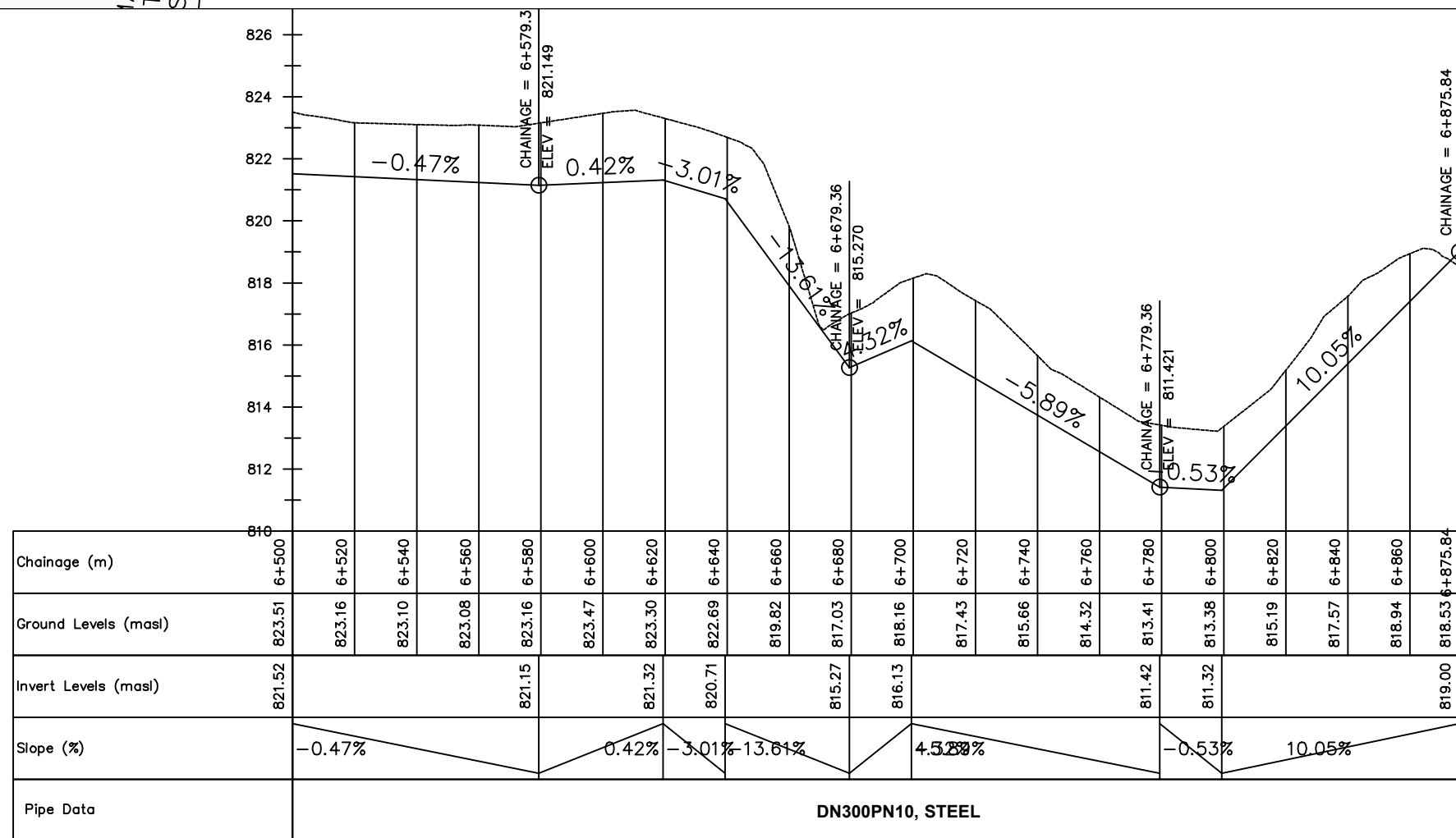




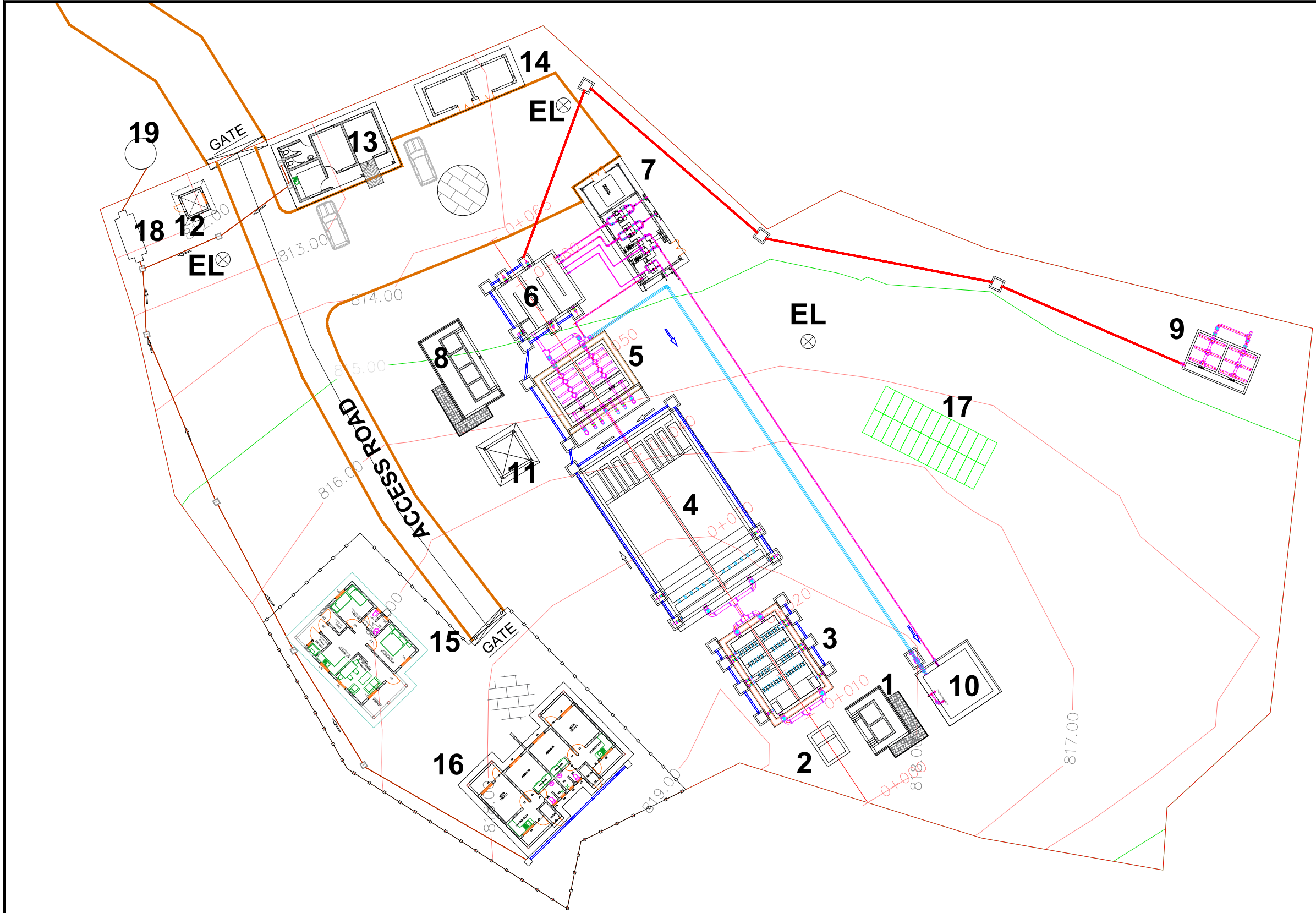
REVISIONS :		
No	Date	Description



Surveyed by:		R.K
Drawn by:		M.K
Designed by:		W.G.M
Checked by:		J.K.K
Date:		January 2022
DRG. No.:		<b>ENY-RWM-001</b>
Scale:	Sheet No.:	
1:2000		14 of 14

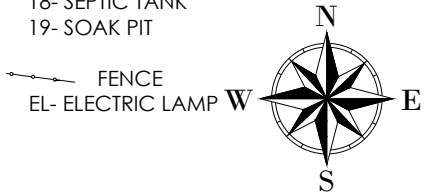






**LEGEND**

- 1- ALUM DOSING HOUSE
- 2-INLET CHAMBER
- 3- FLOCCULATOR
- 4- SEDIMENTATION TANK
- 5- RAPID SAND FILTERS
- 6- CLEAR WATER TANK
- 7- PUMP HOUSE
- 8- CHORINE HOUSE
- 9- SLUDGE DRYING BEDS
- 10- BACK WASH TANK
- 11-SAND STORAGE HOUSE
- 12- GUARD HOUSE
- 13 - ADMINISTRATION BUILDING
- 14 - CHEMICAL STORE
- 15- SUPERINTENDENT'S HOUSE
- 16- ATTENDANT'S HOUSES
- 17- SOLAR PANELS
- 18- SEPTIC TANK
- 19- SOAK PIT



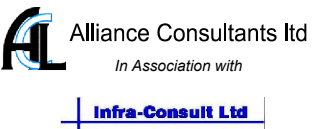
CLIENT :



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CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **TREATMENT PLANT SITE  
LAYOUT**

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

**ENY-WTP-001A**

Scale:

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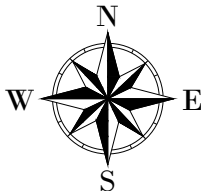
Sheet No.:

1 of 1

Alignment – (4) PROFILE

LEGEND

- 1- ALUM DOSING HOUSE
- 2- FLOCCULATOR
- 3- SEDIMENTATION TANK
- 4- RAPID SAND FILTERS
- 5- CLEAR WATER TANK



CLIENT :



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ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE : TREATMENT PLANT SITE  
PROFILE

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

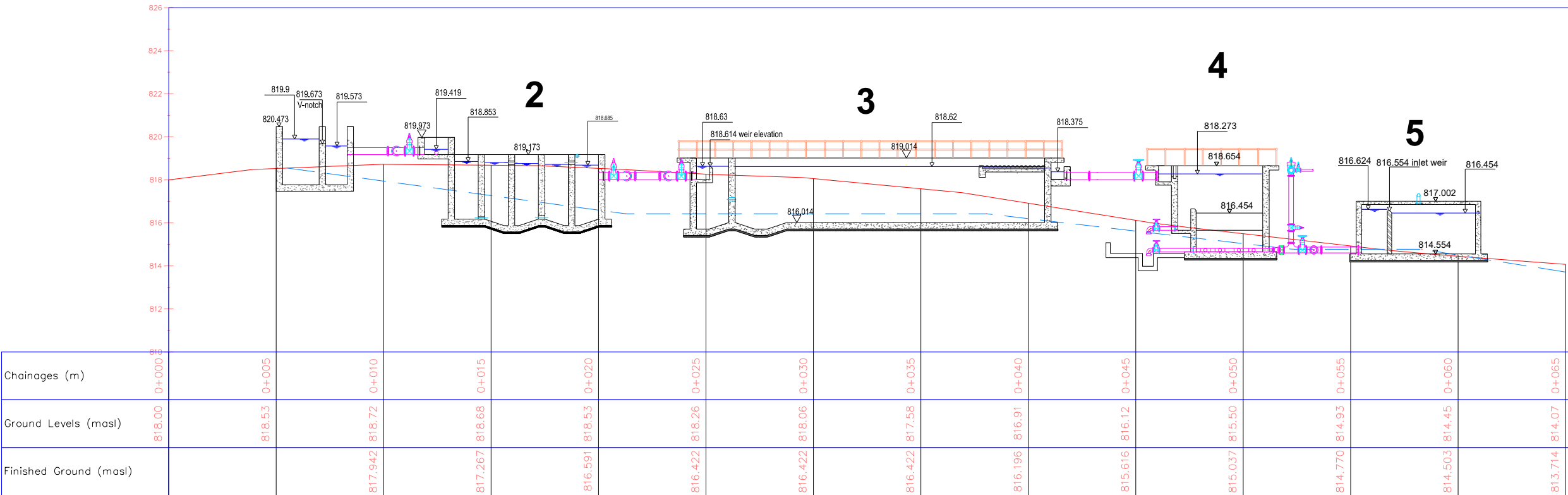
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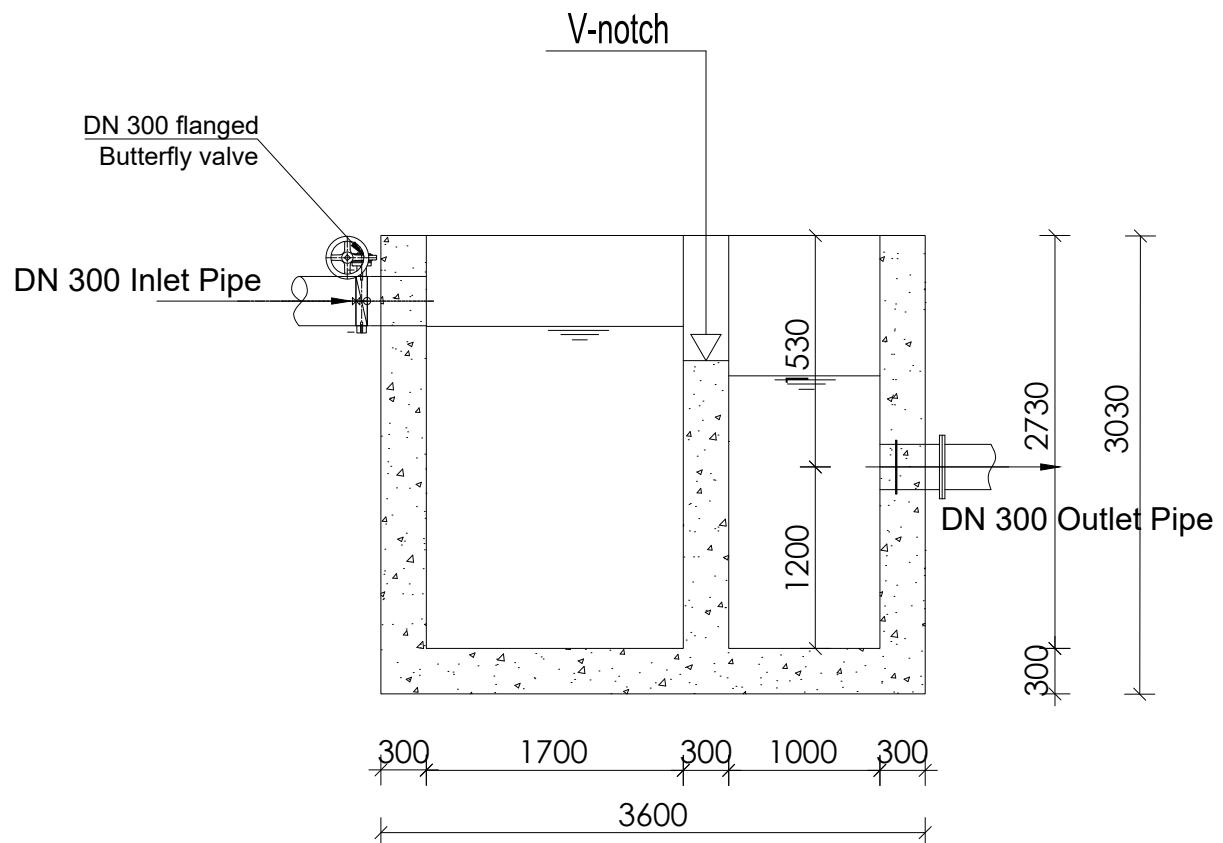
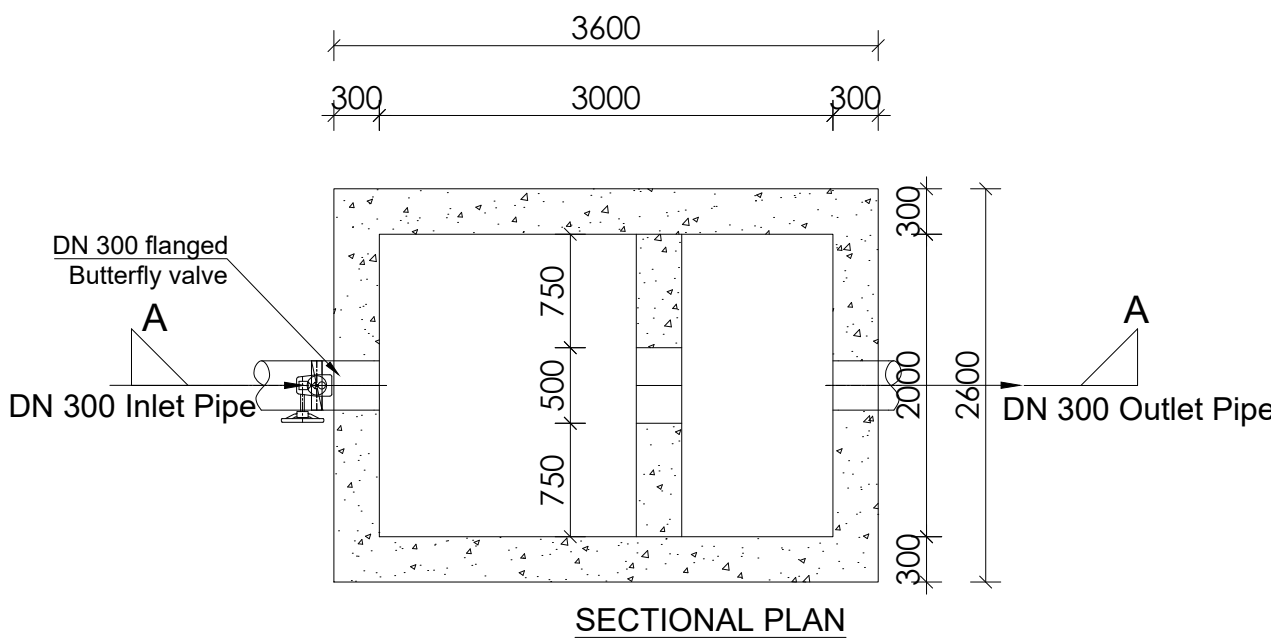
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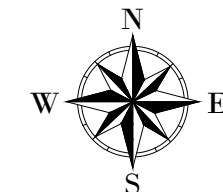
1 of 1








**LEGEND**



CLIENT :




THE REPUBLIC OF UGANDA  
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PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

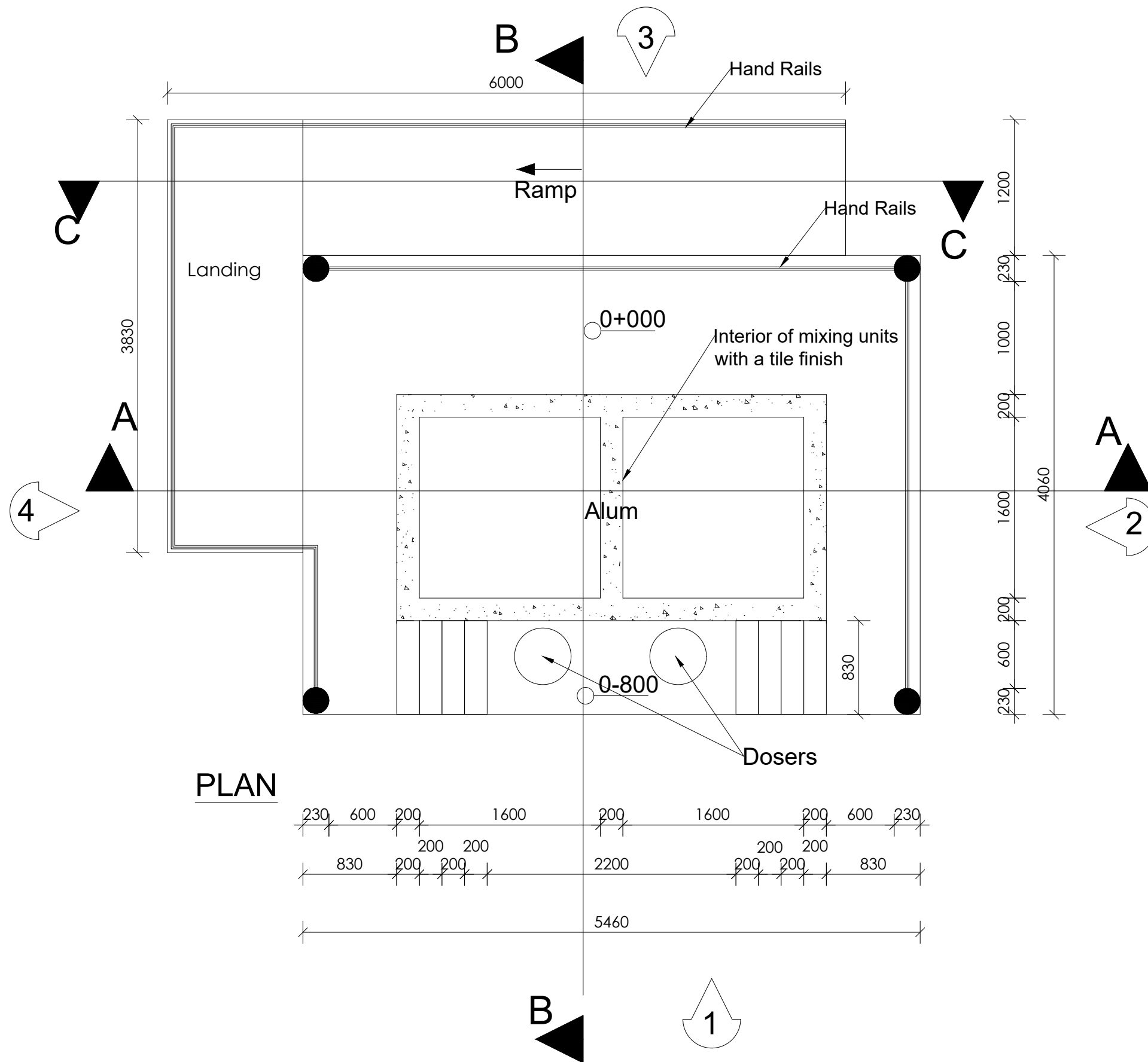
REVISIONS :

No	Date	Description

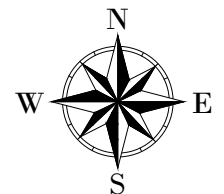
DRAWING TITLE :

**INLET STRUCTURE**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-002</b>
Scale:	1:50
Sheet No.:	1 of 1



# LEGEND



CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT

CO-FINANCED BY:



CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE : **ALUM DOSING HOUSE**  
Plan

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

**ENY-WTP-003**

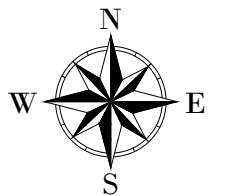
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Sheet No.:

1 of 6

# LEGEND



CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

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CONSULTANT :

 **Alliance Consultants Ltd**  
In Association with  
 **Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

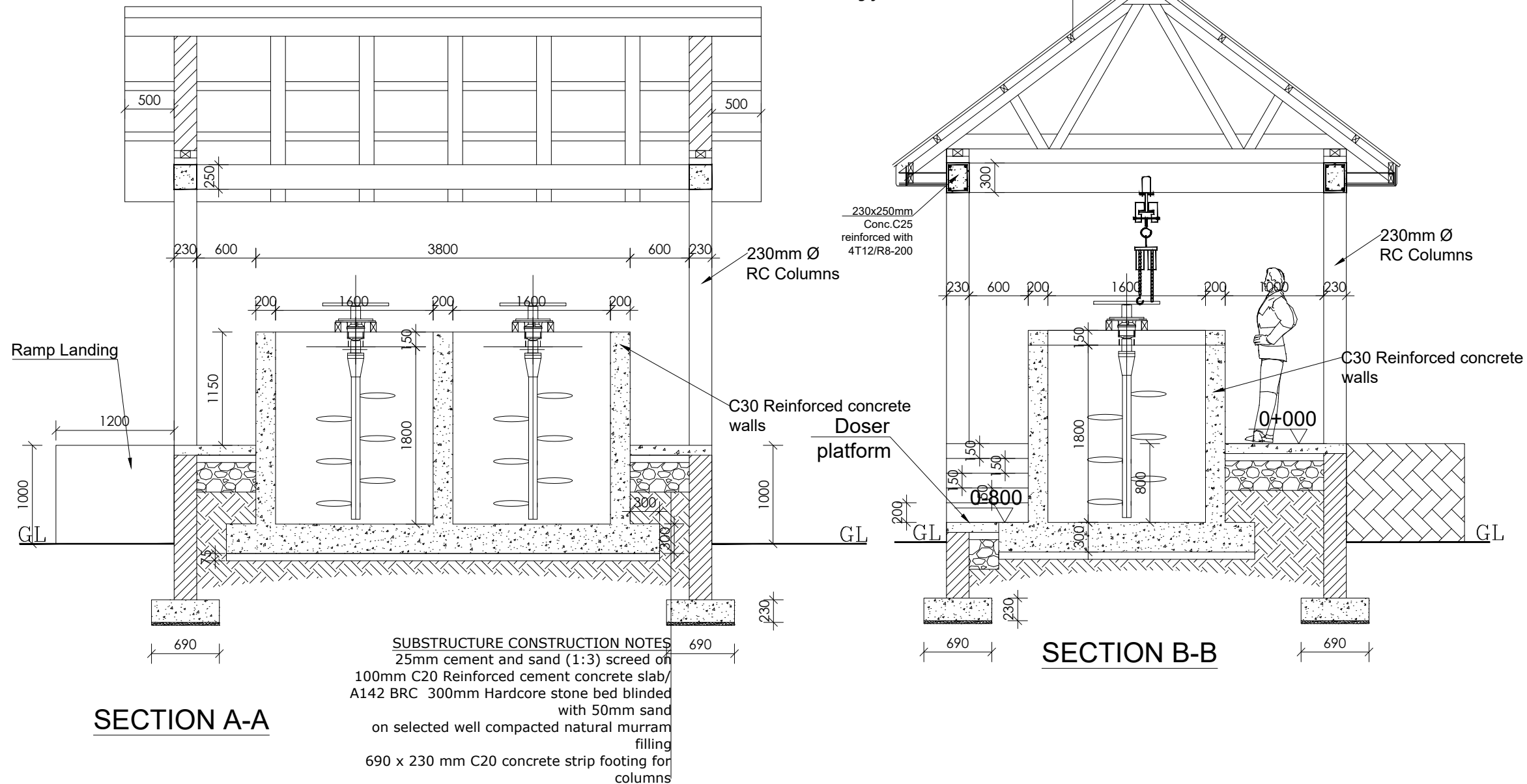
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Sections**

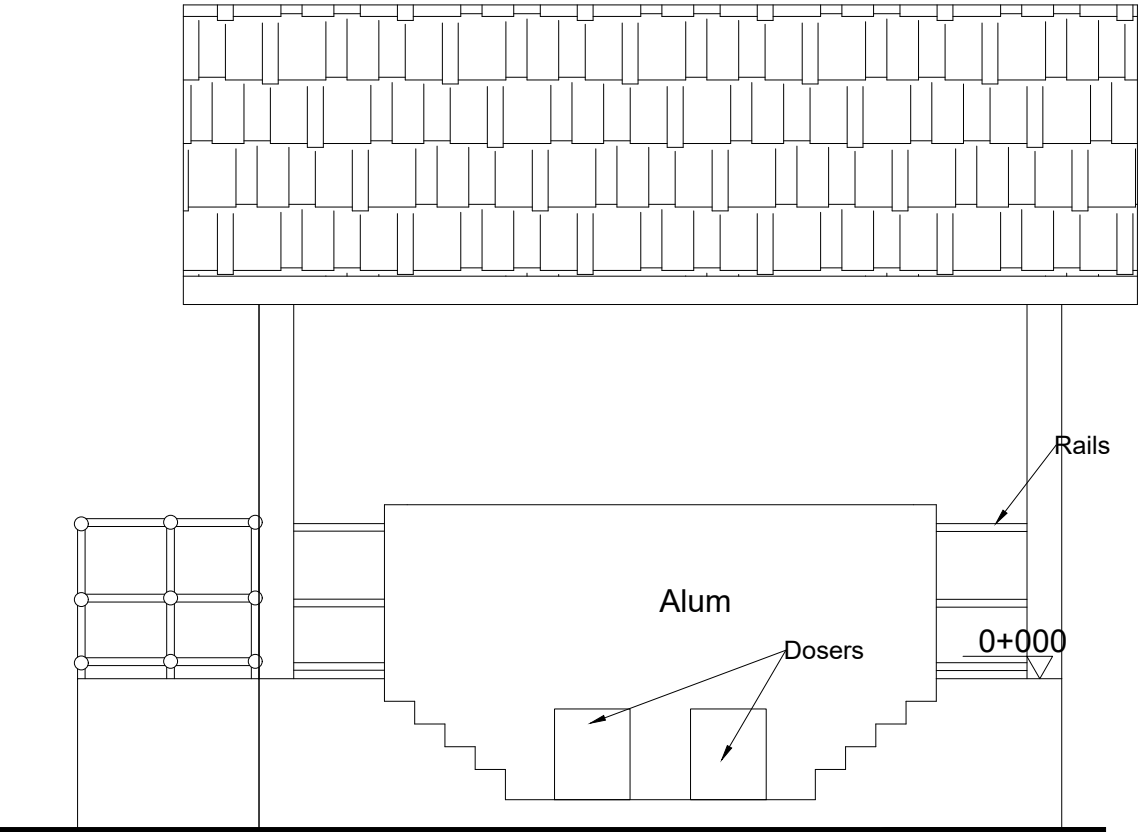
Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-003</b>
Scale:	1:50
Sheet No.:	2 of 6

## ROOF NOTES : pitch 37°

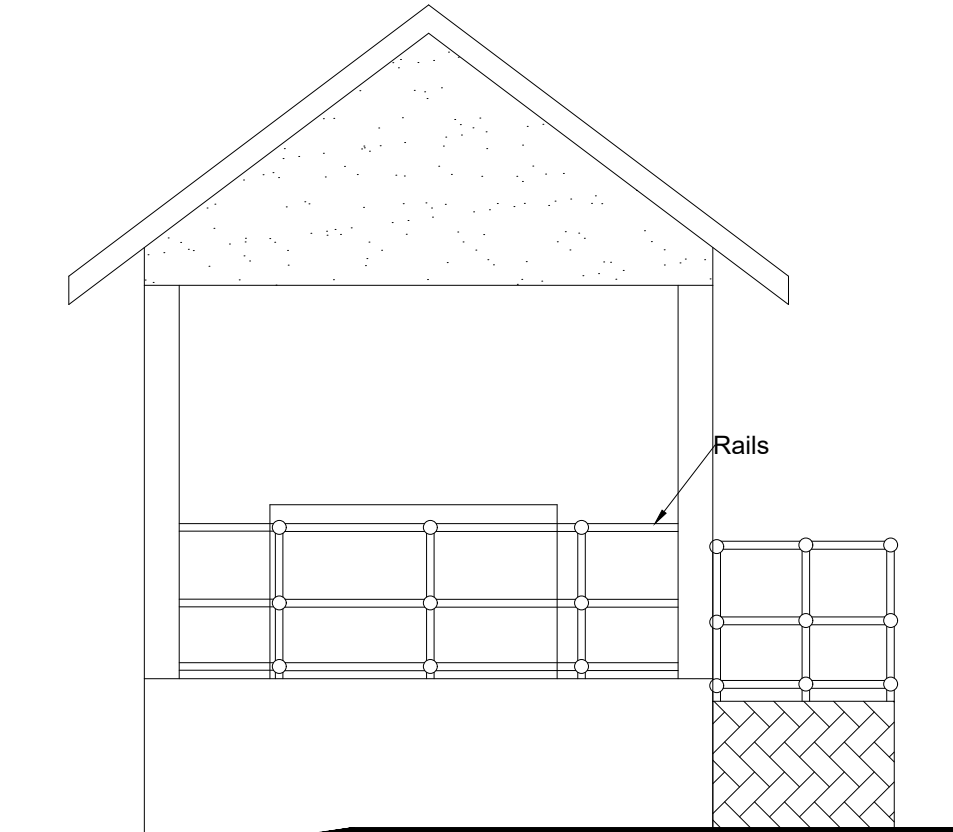
Fire clay ridge cap/Mangalore roofing tiles on  
50 X 25 timber battens with  
gauge 32 GI plane sheet  
**Pressure treated roofing soft wood timber**  
Double 100 x 50 mm timber rafters with  
100x 50mm struts & ties in truss with  
75 x 50 mm purlins on  
150 x 50mm tie beam on  
150 x 75 mm wall plate  
250 mm plastic fascia boards

**CEILING CONSTRUCTION NOTES:**  
20mm thick Cement and sand plaster on  
Expanded Metal Lathing on  
50 x 50mm Ceiling branderings at 600mm centres  
100 x 50mm Ceiling joists at 1200mm centres

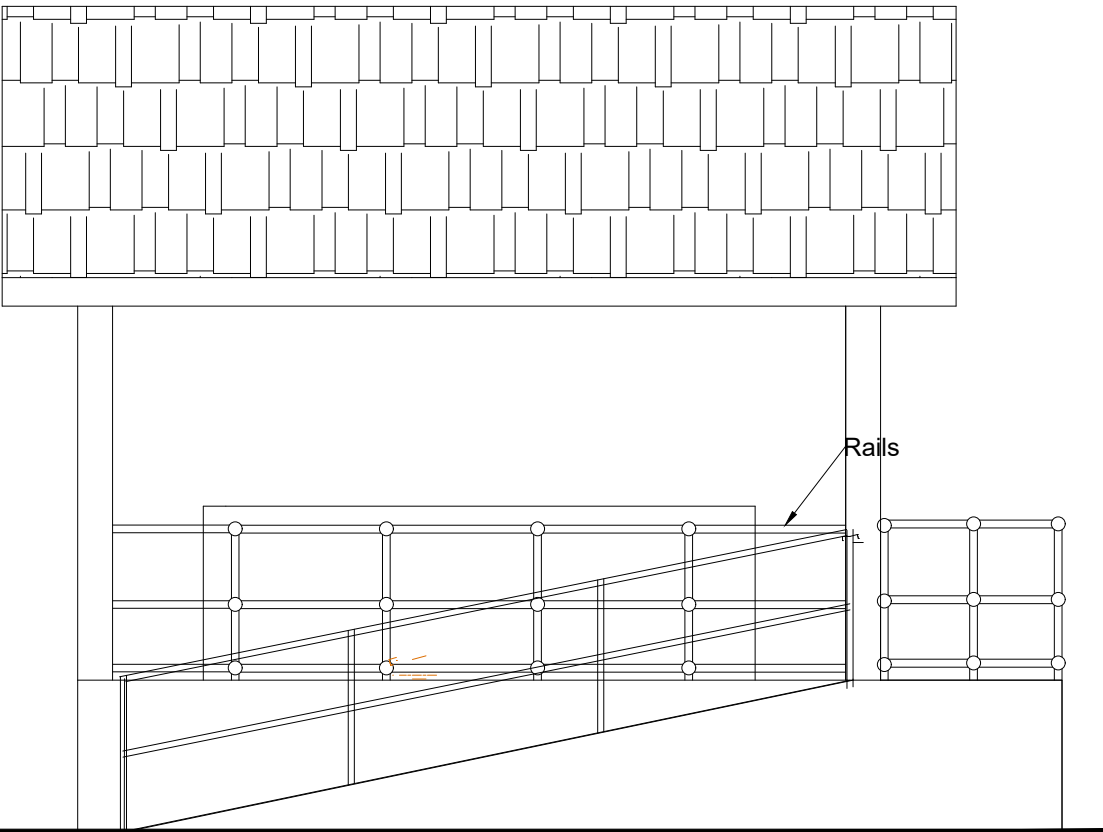




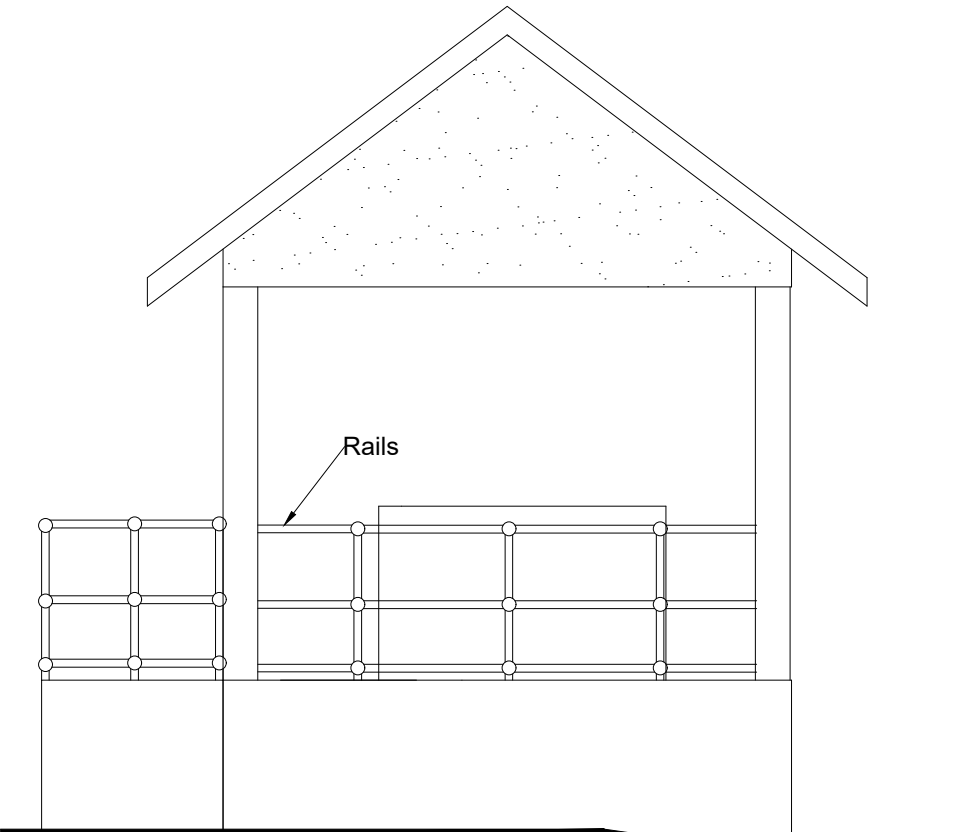
ELEVATION 1



ELEVATION 2

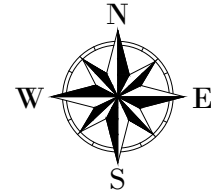


ELEVATION 3



ELEVATION 4

LEGEND



CLIENT :  
  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:  
  
**THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :  
 Alliance Consultants Ltd  
In Association with  
 Infra-Consult Ltd

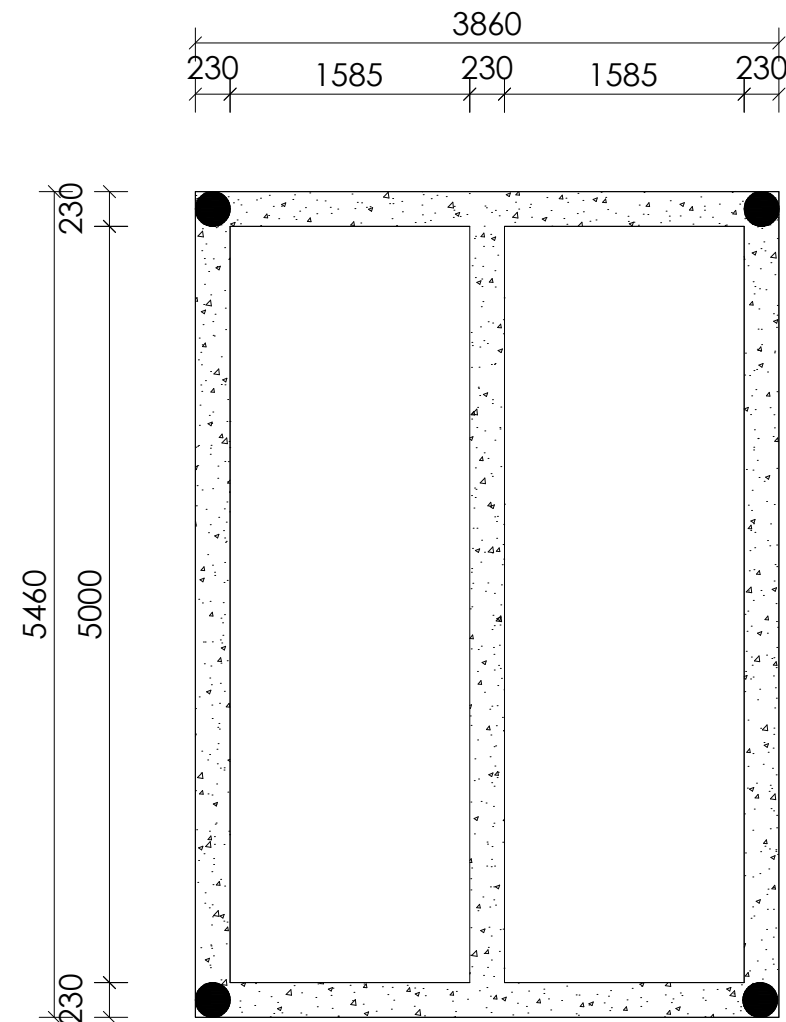
PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

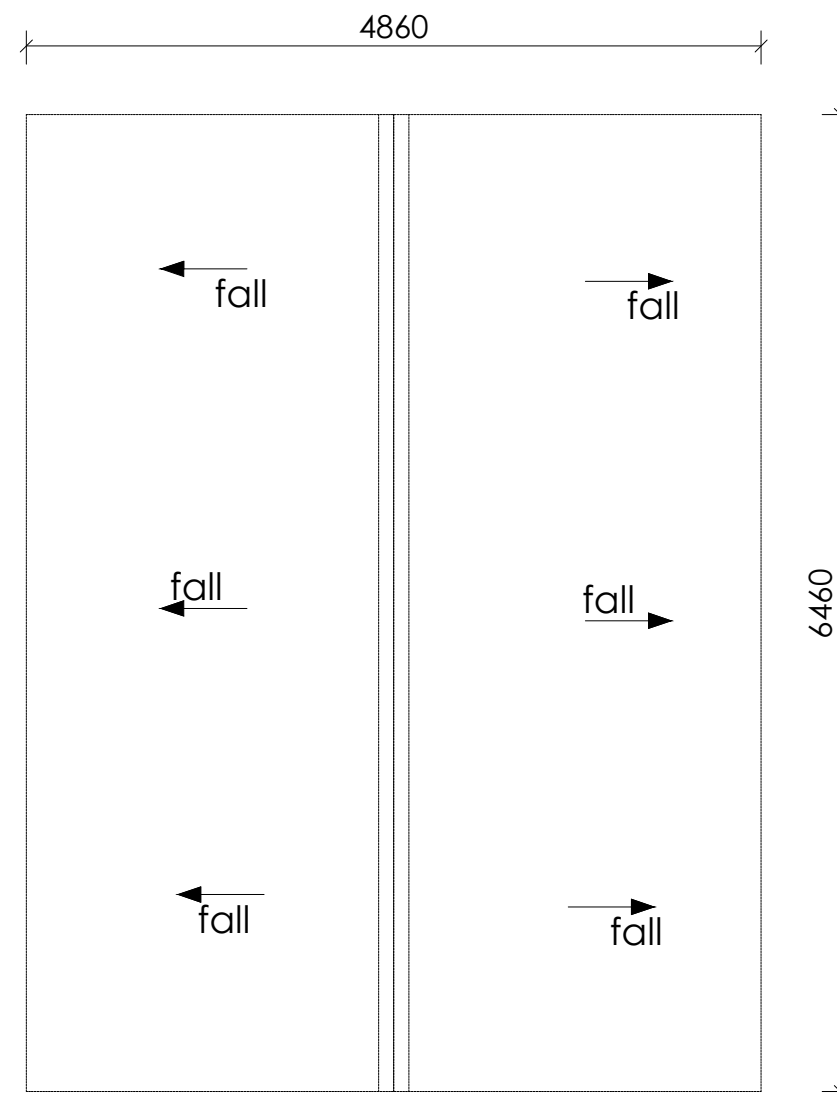
REVISIONS :		
No	Date	Description

DRAWING TITLE : **ALUM DOSING HOUSE  
Elevations**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-003</b>
Scale:	1:50
Sheet No.:	3 of 6

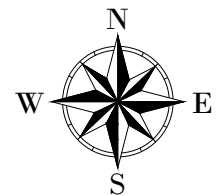


ROOF BEAM LAYOUT



ROOF LAYOUT

**LEGEND**



CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

  
**THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

 Alliance Consultants Ltd  
In Association with  
 **Infra-Consult Ltd**

PROJECT :

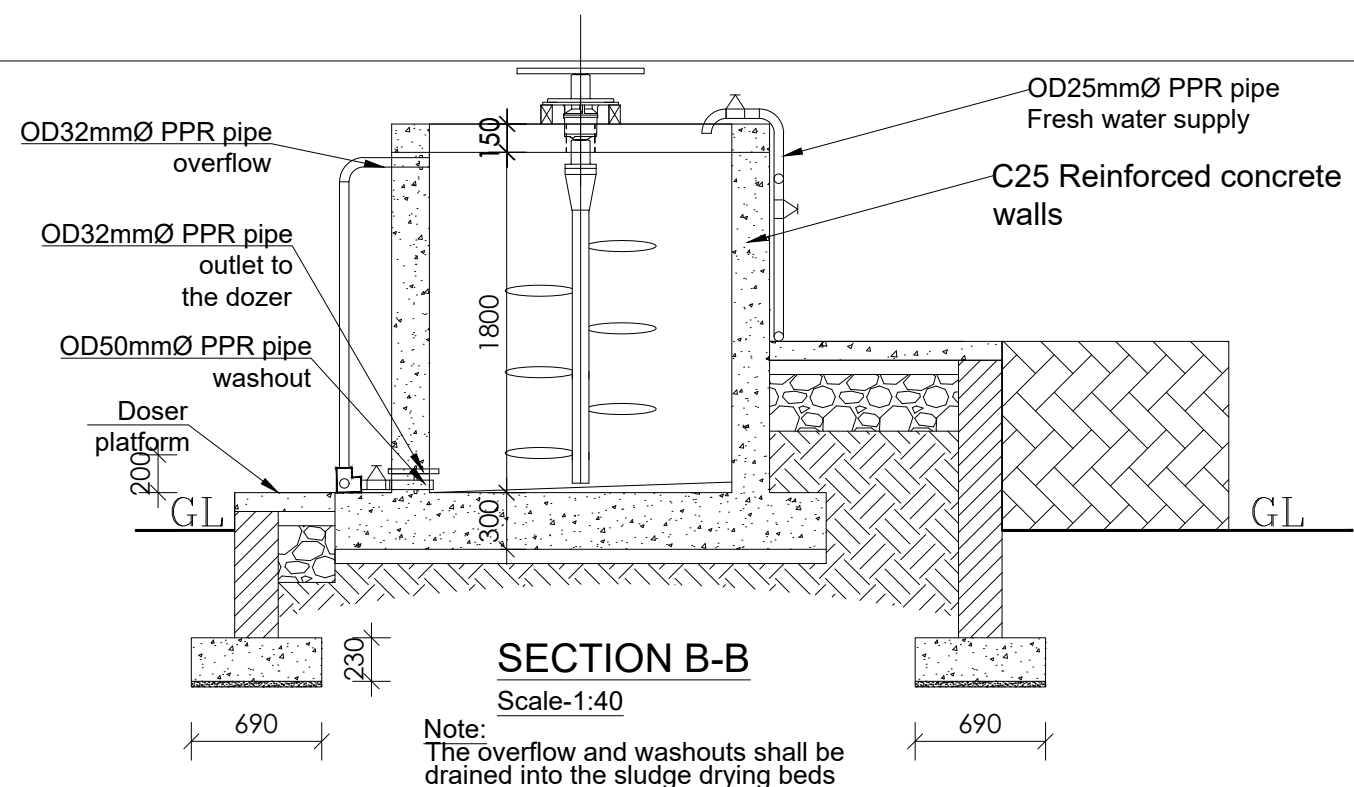
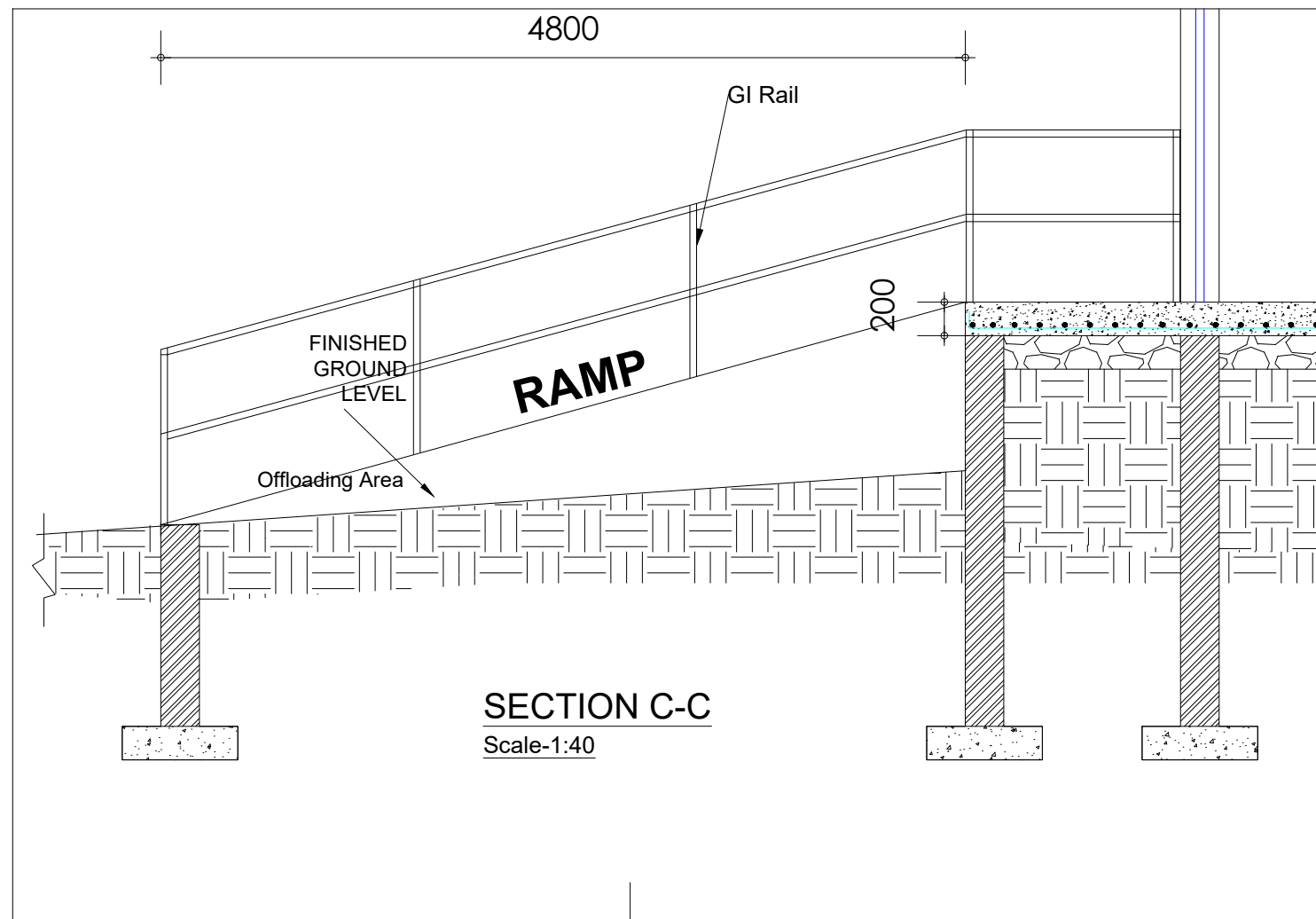
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

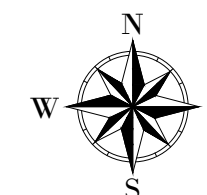
REVISIONS :		
No	Date	Description

DRAWING TITLE : **ALUM DOSING HOUSE**  
Roof and Roof Beam Layout

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-003</b>
Scale:	1:50
Sheet No.:	4 of 6



## LEGEND




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PROJECT :

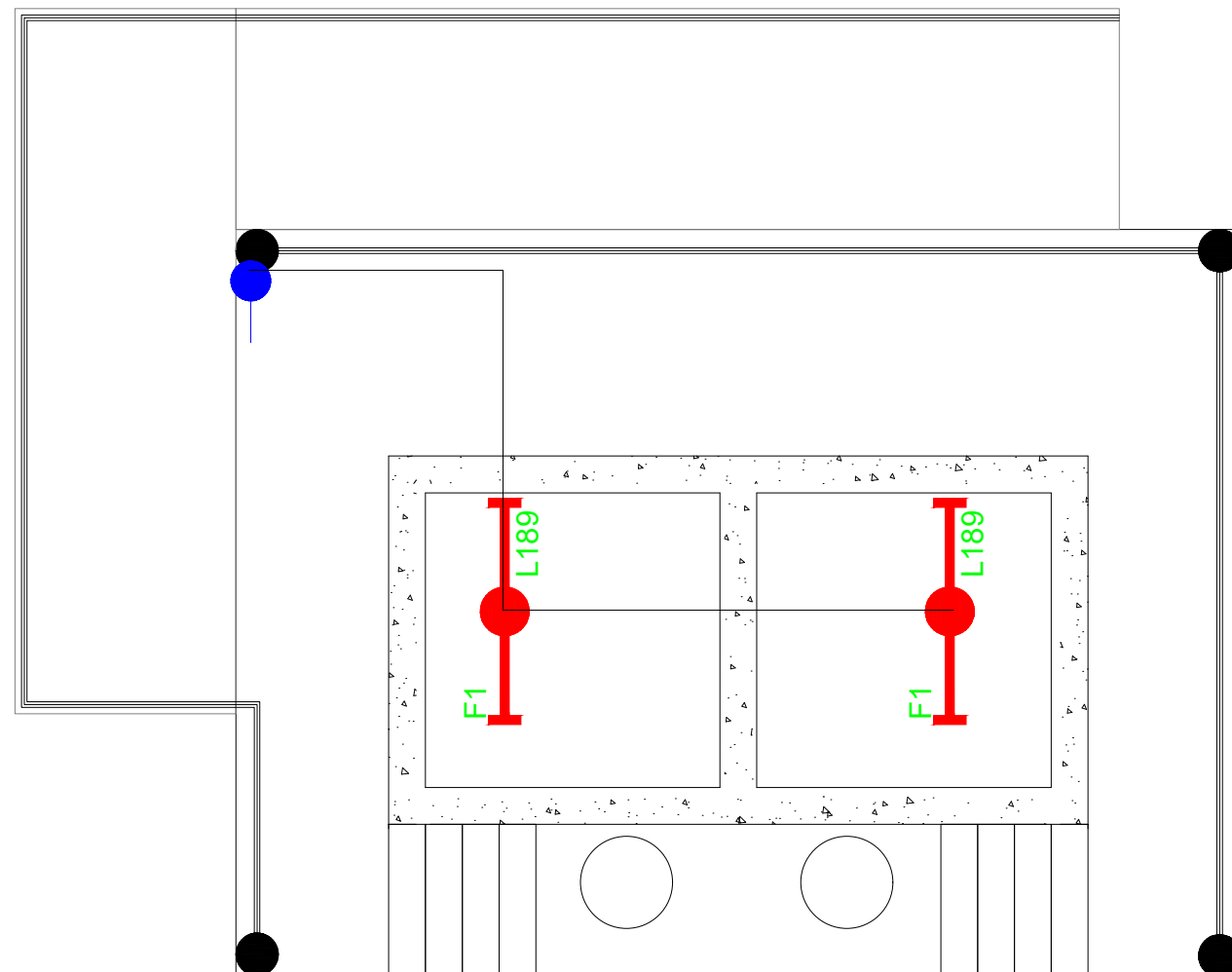
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**











**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

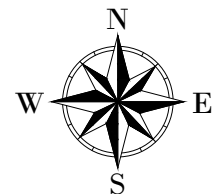
DRAWING TITLE : **ALUM DOSING HOUSE  
Details**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-003</b>
Scale:	1:40
Sheet No.:	5 of 6



SYMBOL	DESCRIPTION
	1200mm 18W LED batten with a removable LED engine. IP20 As Thorn PopPack LED. or equal approved. (Light Type F1)
	Pendant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp
	Pendant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp
	Pendant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp
	wall mounted light
	Socket outlet on Wall
	Consumer's Unit
	One Gang 1way Switch
	Two Gang 1way Switch
	Three Gang 1way Switch

## LEGEND



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**MINISTRY OF WATER AND ENVIRONMENT**

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PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

## ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

REVISIONS:		
No	Date	Description

DRAWING TITLE : **ALUM DOSING HOUSE**

## Electrical Layout

Surveyed by:
--------------

Drawn by:

Designed by:	
--------------	--

Checked by:	
-------------	--

Date:

January 2023

DRG. No.:	
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**ENY-WTP-003**

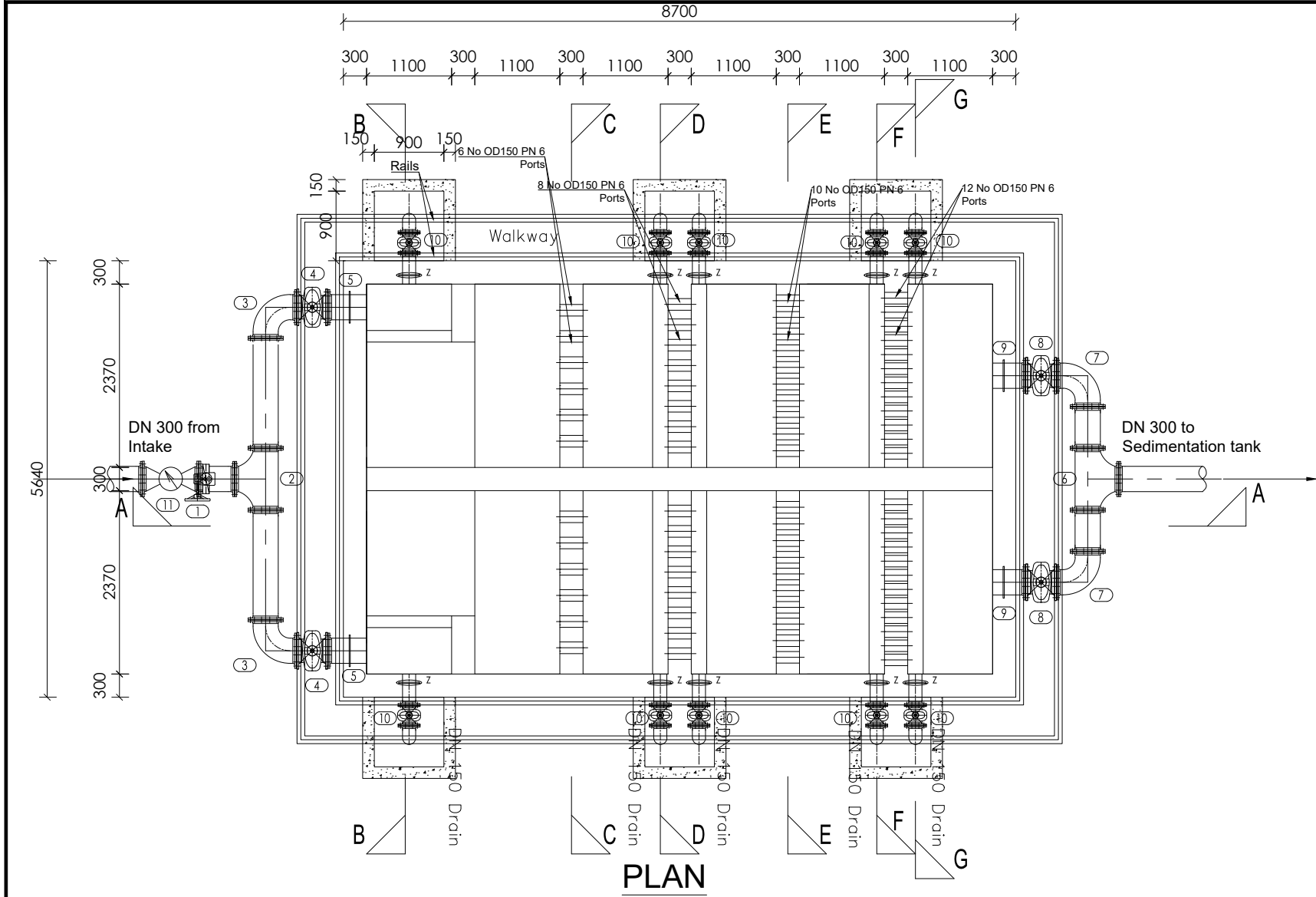
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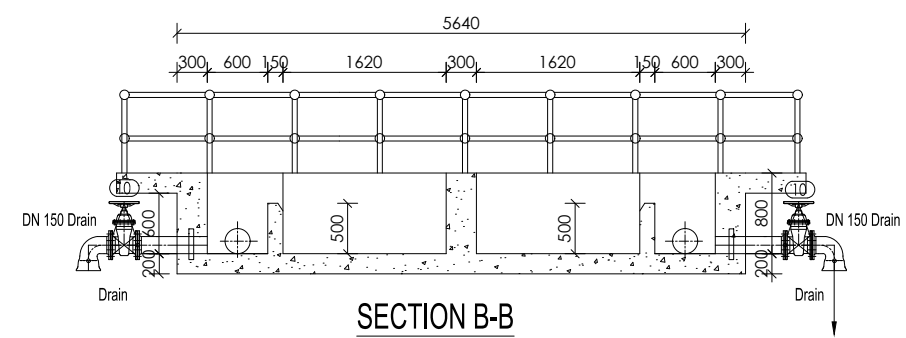
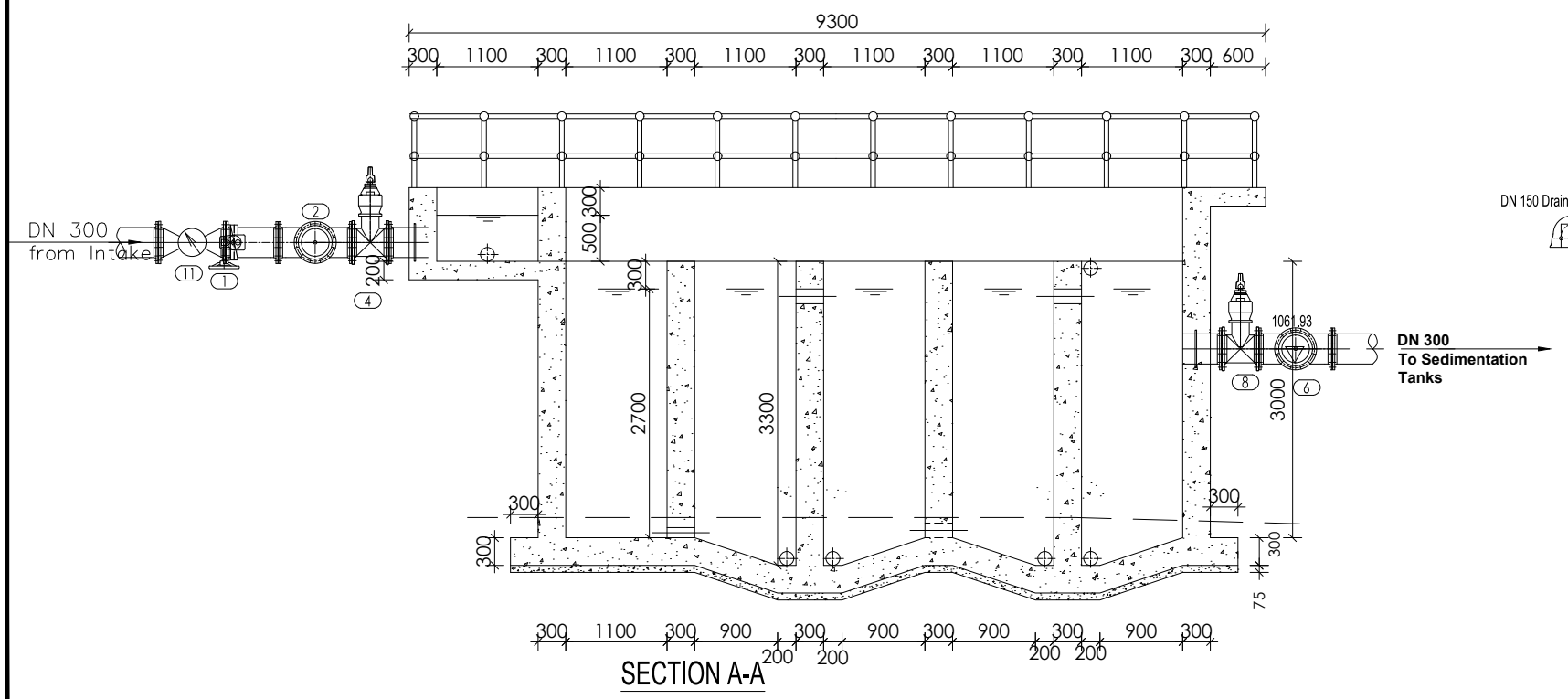
Sheet No.:

6 of 6

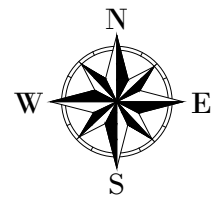





PIPES AND FITTINGS SCHEDULE		
ITEM	No. OF	DESCRIPTION
DN300 INLET PIPE		
1	1	DN300 FLANGED BUTTERFLY VALVE
11	1	DN300 FLANGED INSTANTANEOUS FLOW METER
2	1	DN300 FLANGED EQUAL TEE
3	2	DN300 FLANGED 90° BEND
4	2	DN300 FLANGED GATE VALVE WITH SPINDLES
5	2	DN300 FLANGED SPIGOT WITH PUDDLE FLANGE LENGTH NOT EXCEEDING 1m
DN300 OUTLET PIPE		
6	1	DN300 FLANGED EQUAL TEE
7	2	DN300 FLANGED 90° BEND
8	2	DN300 FLANGED GATE VALVE
9	2	DN300 FLANGED SPIGOT WITH PUDDLE FLANGE LENGTH NOT EXCEEDING 1m
DN150 DRAIN		
10	10	DN150 FLANGED GATE VALVE WITH SPINDLES
z	10	DN150 FLANGED SPIGOT WITH PUDDLE FLANGE LENGTH NOT EXCEEDING 1m



**LEGEND**




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**Alliance Consultants Ltd**  
In Association with



**Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION PROJECT**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**FLOCCULATOR**  
Plan & Sections

Surveyed by: R.K

Drawn by: A.K

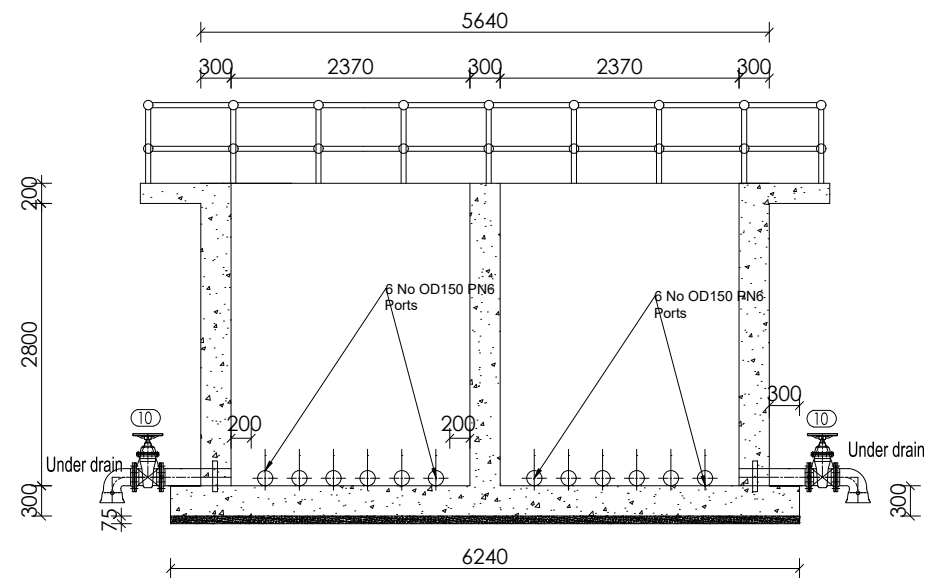
Designed by: W.G.M

Checked by: J.K.K

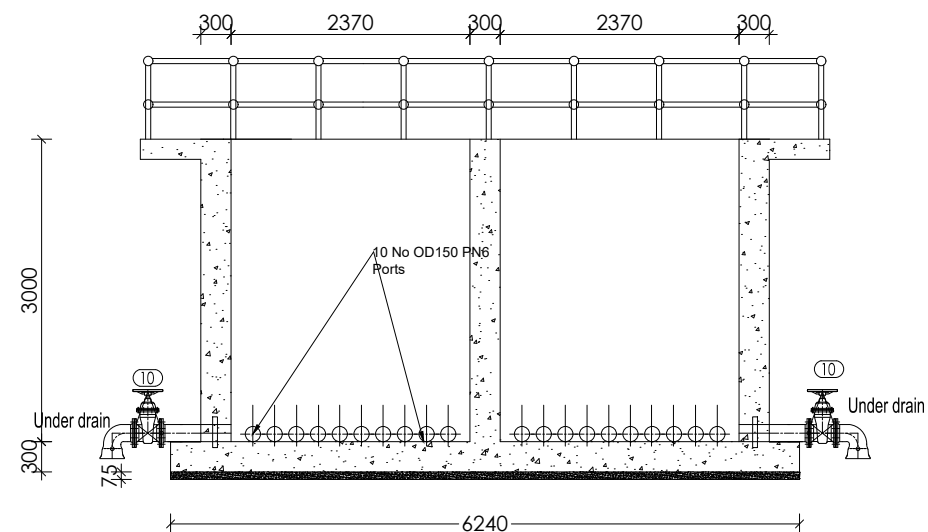
Date: January 2023

DRG. No.: **ENY-WTP-004**

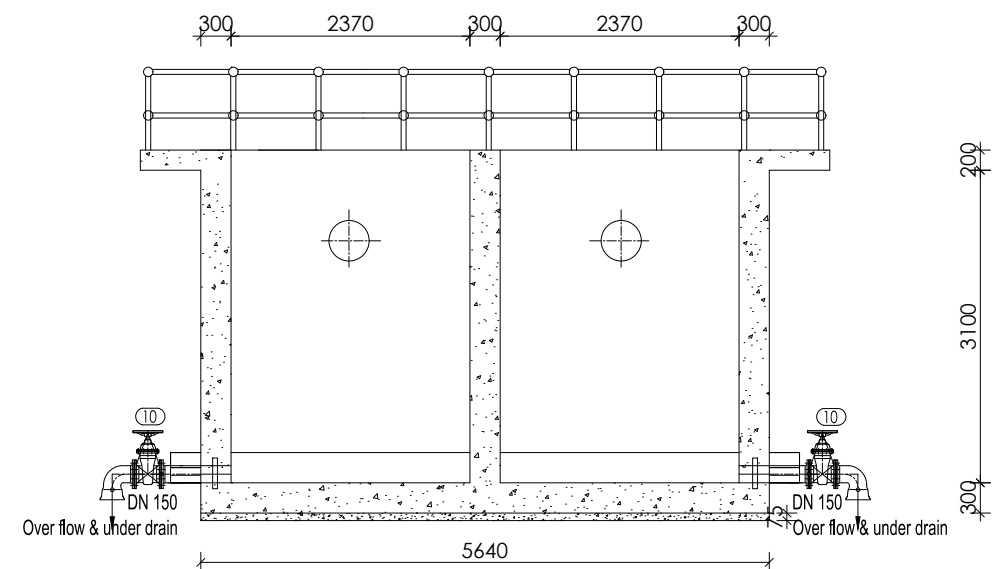
Scale: 1:75 Sheet No.: 1 of 2



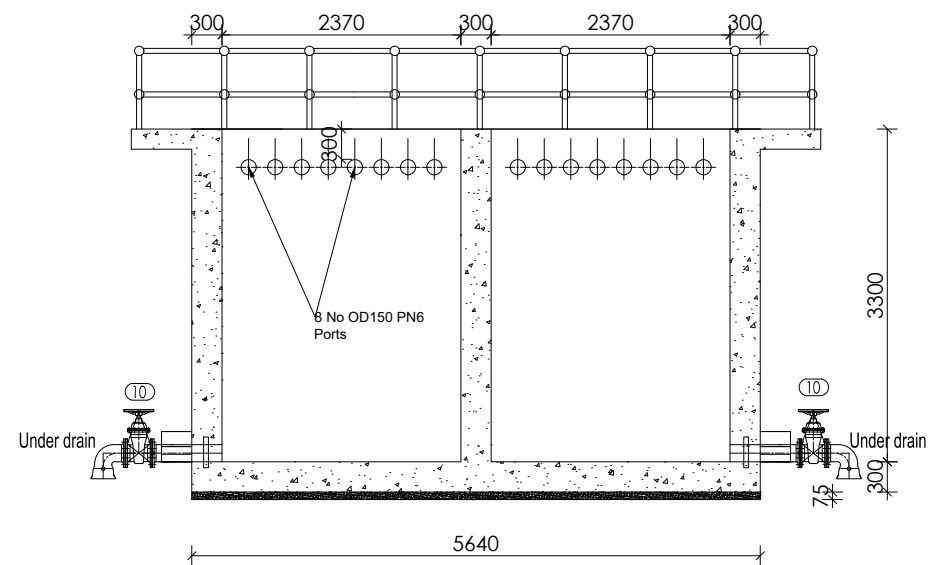
SECTION C-C



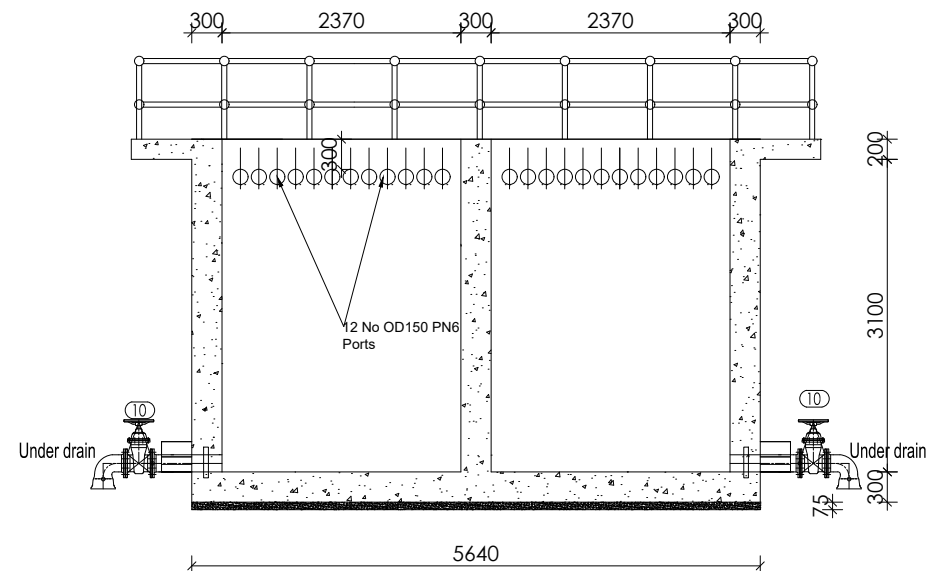
SECTION E-E



SECTION G-G

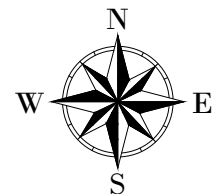


SECTION D-D



SECTION F-F

## LEGEND



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MINISTRY OF WATER AND ENVIRONMENT

CO-FINANCED BY:



CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE :

FLOCCULATOR  
Sections

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

ENY-WTP-004

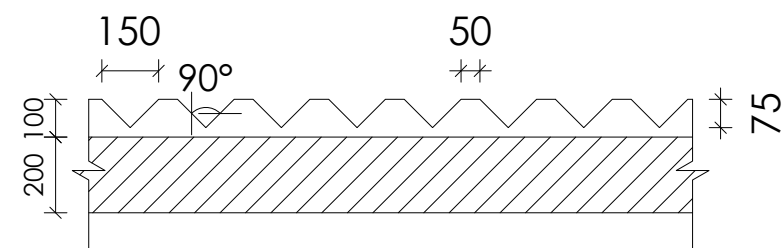
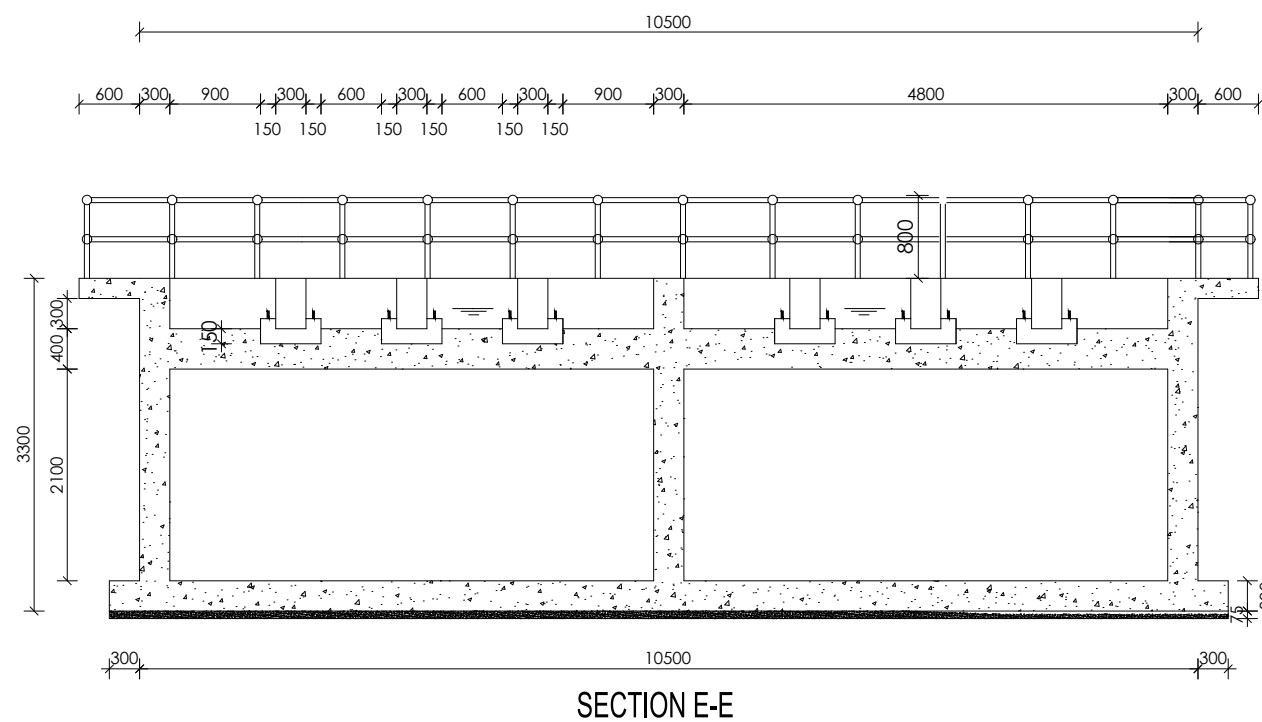
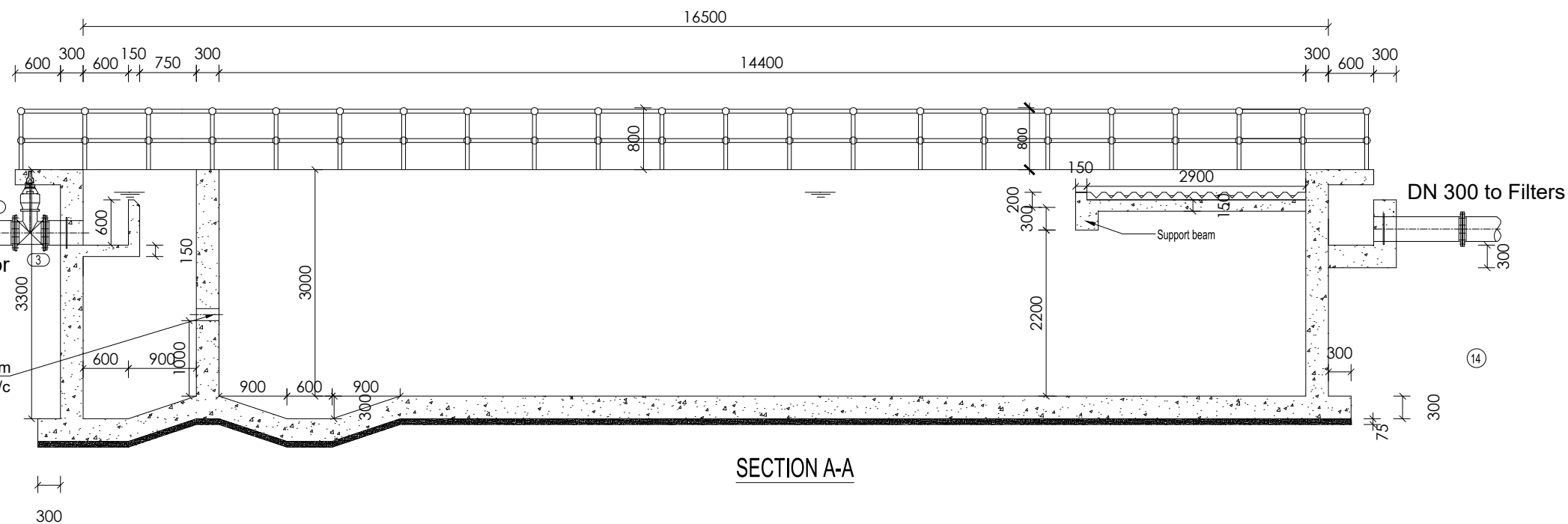
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Sheet No.:

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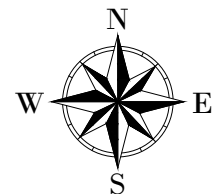




Steel Weir Plate Detail

Scale 1:20

## LEGEND



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CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **SEDIMENTATION TANK  
Sections**

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

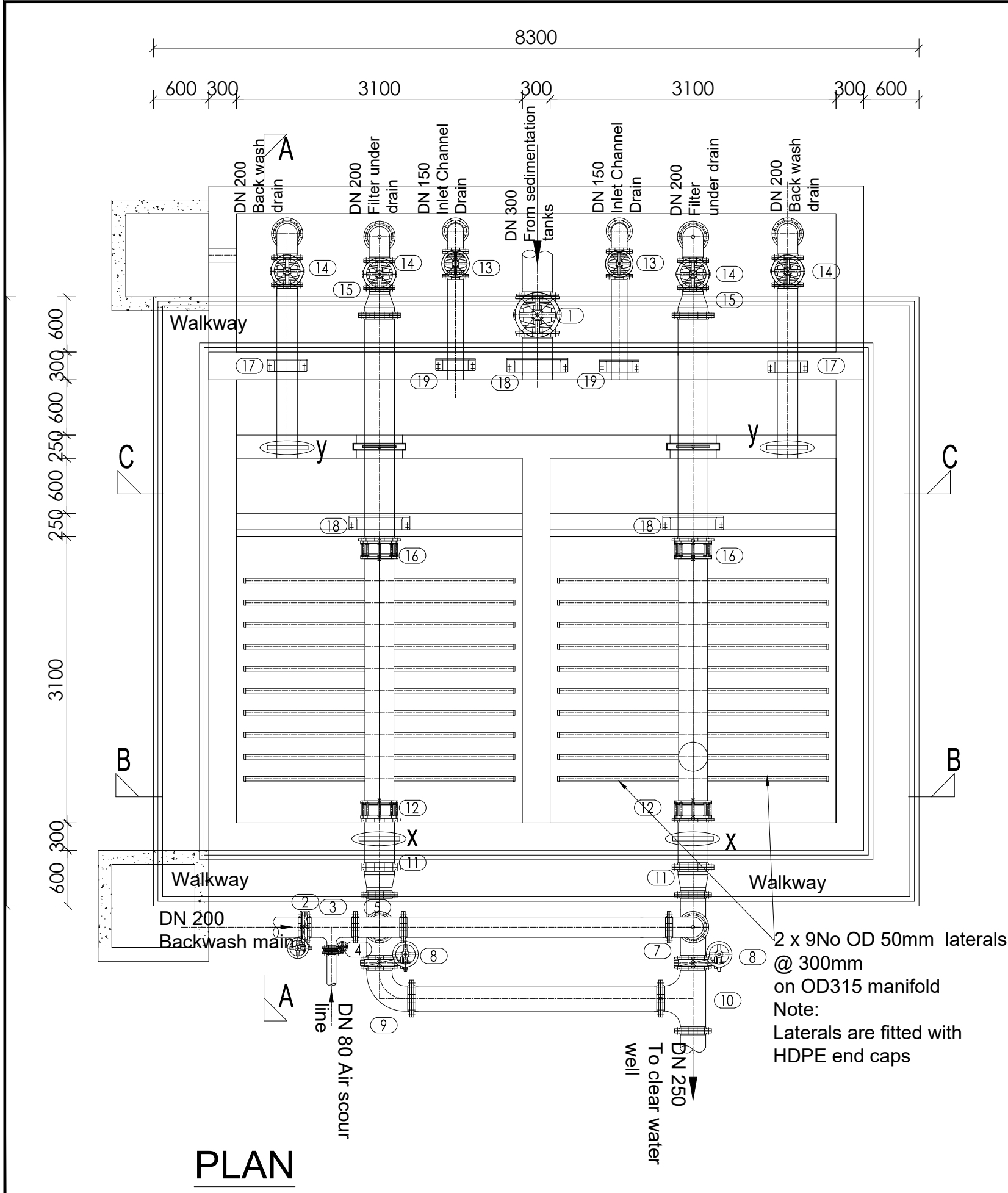
**ENY-WTP-005**

Scale:

1:75

Sheet No.:

2 of 2



PLAN

PIPES AND FITTINGS SCHEDULE (FILTERS)		
ITEM	No. OF	DESCRIPTION
INLET		
1	1	DN300 FLANGED GATE VALVE
2	3	DN200 FLANGED BUTTERFLY VALVE
3	1	DN200 x 80 FLANGED TEE
4	1	DN80 FLANGED BUTTERFLY VALVE
5	1	DN200 FLANGED EQUAL TEE
6	2	DN250 x 200 FLANGED TEE
7	1	DN200 FLANGED 90° BEND
20	2	DN200 FLANGED GATE VALVE
OUTLET		
8	2	DN250 FLANGED BUTTERFLY VALVE
9	1	DN250 FLANGED 90° BEND
10	1	DN250 FLANGED EQUAL TEE
11	1	DN300 / 250 FLANGED TAPERS
12	1	DN300/OD315 COUPLING
x	2	DN300 FLANGED & PUDDLED PIPE
y	2	DN200 FLANGED & PUDDLED PIPE
DRAINS		
13	2	DN150 FLANGED GATE VALVE
14	4	DN200 FLANGED GATE VALVE
15	2	DN300/DN200 FLANGED FLAT REDUCER
16	1	DN300/OD315 COUPLING
17	2	DN200 FLANGED SPIGOT PIPE WITH PUDDLE FLANGE
18	3	DN350 FLANGED SPIGOT PIPE WITH PUDDLE FLANGE
19	2	DN150 FLANGED SPIGOT PIPE WITH PUDDLE FLANGE

**LEGEND**

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CONSULTANT :

**Alliance Consultants Ltd**  
*In Association with*

**Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION PROJECT**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **RAPID SAND FILTERS Plan**

Surveyed by: R.K

Drawn by: A.K

Designed by: W.G.M

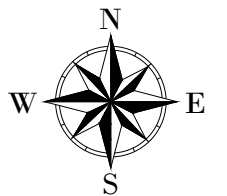
Checked by: J.K.K

Date: January 2023

DRG. No.: **ENY-WTP-006**

Scale: 1:50 Sheet No.: 1 of 3

# LEGEND



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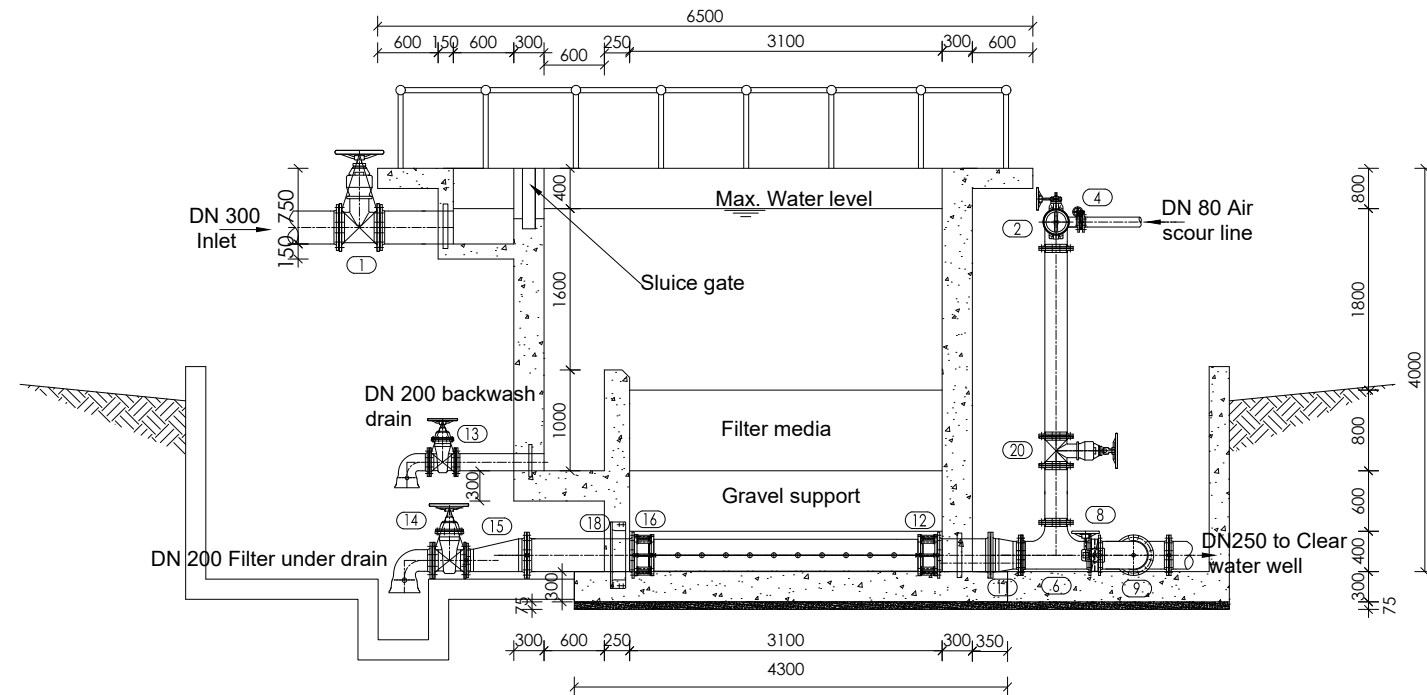
PROJECT :  
**ALA-ORA WATER SUPPLY AND  
 SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
 SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

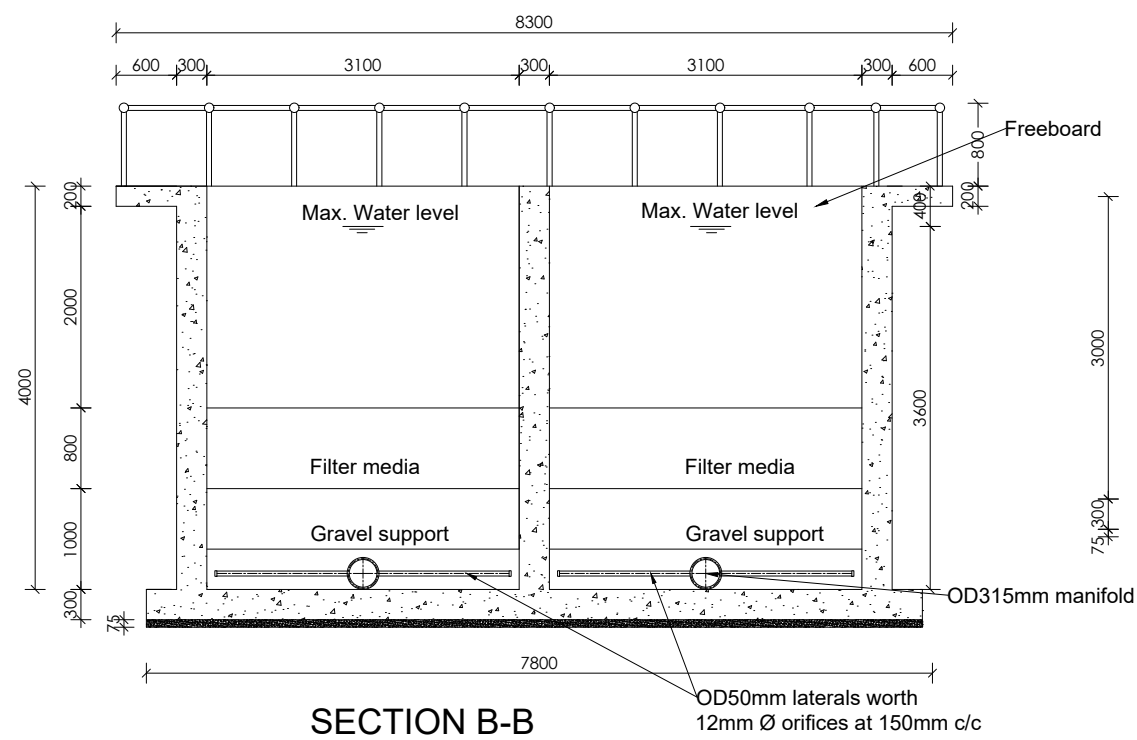
DRAWING TITLE : **RAPID SAND FILTERS  
 Sections**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-006</b>
Scale:	1:75
Sheet No.:	2 of 3

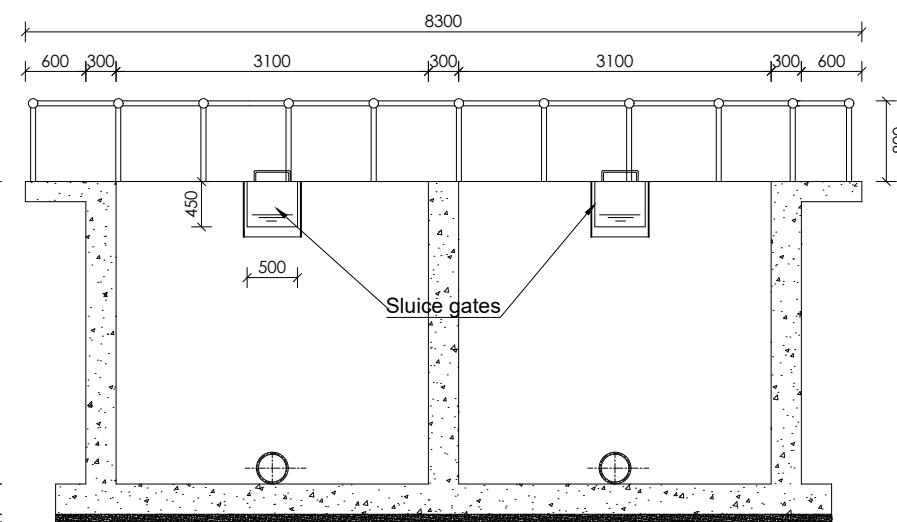


**SECTION A-A**

## OVERFLOW AND DRAIN SECTION

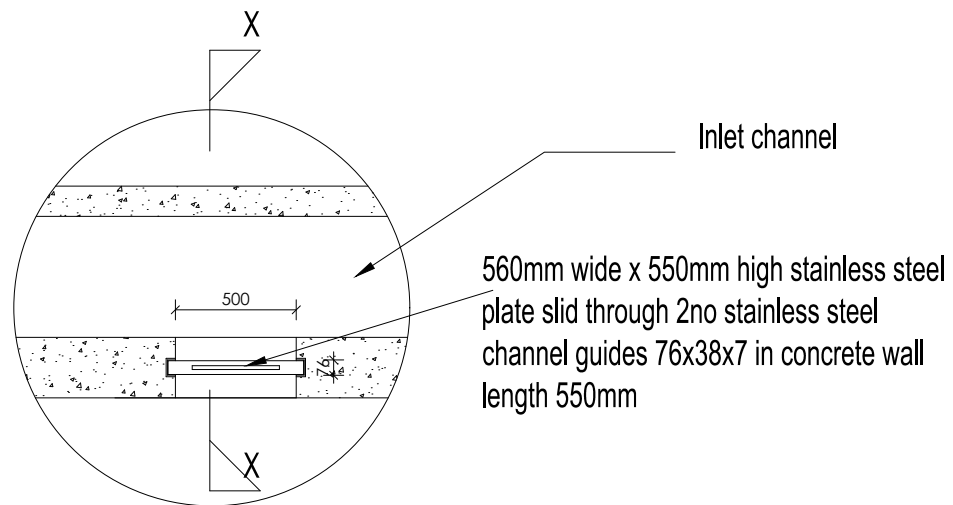


**SECTION B-B**



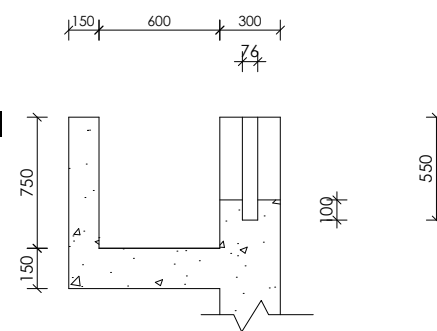
**SECTION C-C**





HAND STOCK FIXING  
PLAN DETAILS

DETAIL a

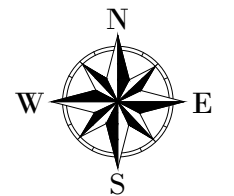


SECTION X-X

FILTER MEDIA SUPPORT BED

LAYER	DEPTH mm	Coefficient of Uniformity	EFFECTIVE SIZE mm
TOP	200	2.5	3.0
MIDDLE	200	2.5	10.0
BOTTOM	200	2.5	25.0

LEGEND



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SANITATION PROJECT**

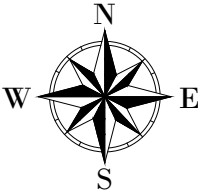
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **RAPID SAND FILTERS  
Details**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-006</b>
Scale:	1:75
Sheet No.:	3 of 3

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PROJECT :

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SANITATION PROJECT**

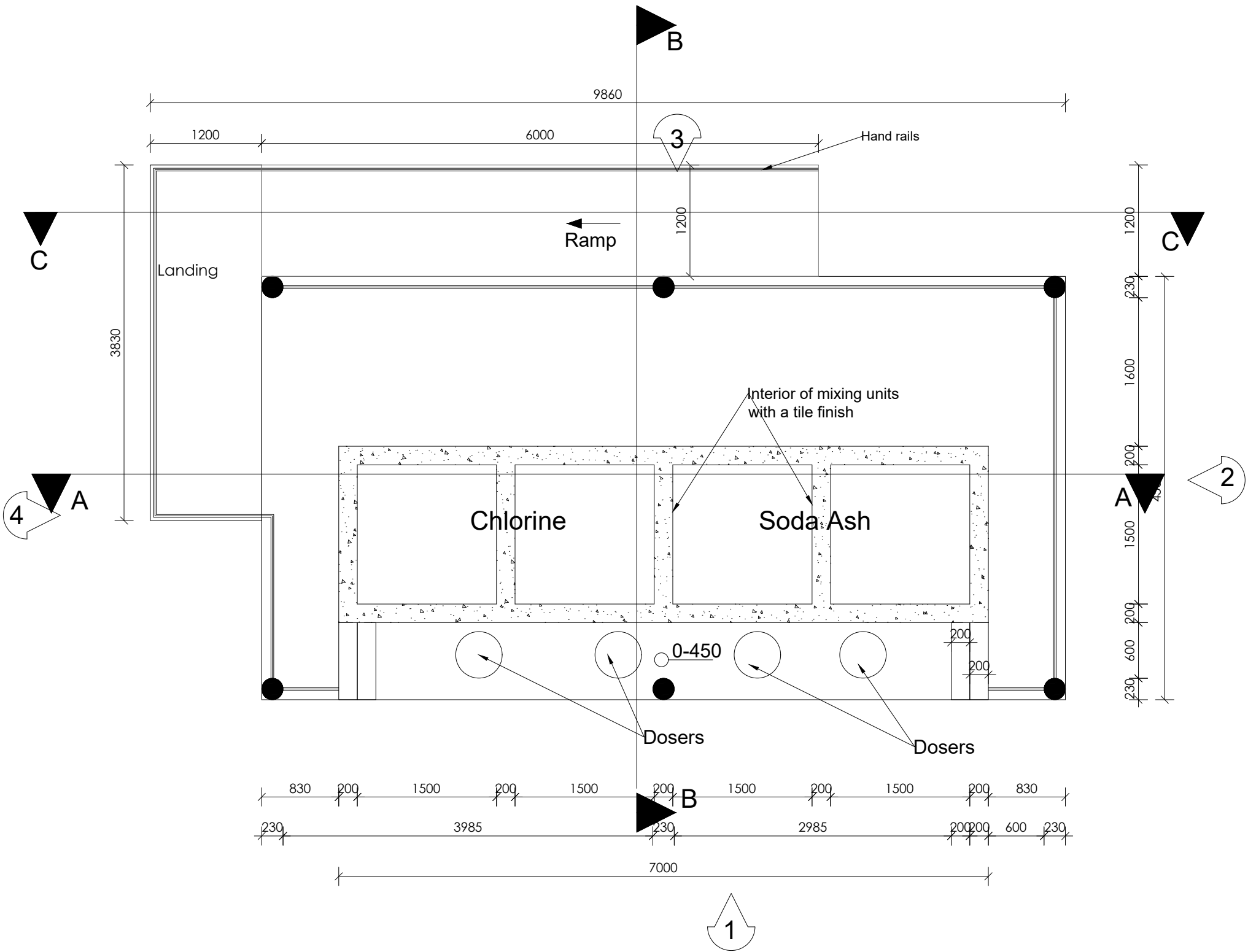
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

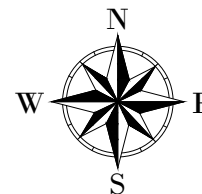
No	Date	Description

DRAWING TITLE : **CHLORINE & SODA ASH  
DOSING HOUSE**  
Plan

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-007</b>
Scale:	1:50
Sheet No.:	1 of 6



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PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE : **CHLORINE & SODA ASH  
DOSING HOUSE**  
Sections

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-007</b>
Scale:	1:50
Sheet No.:	2 of 6

ROOF NOTES : pitch 37°

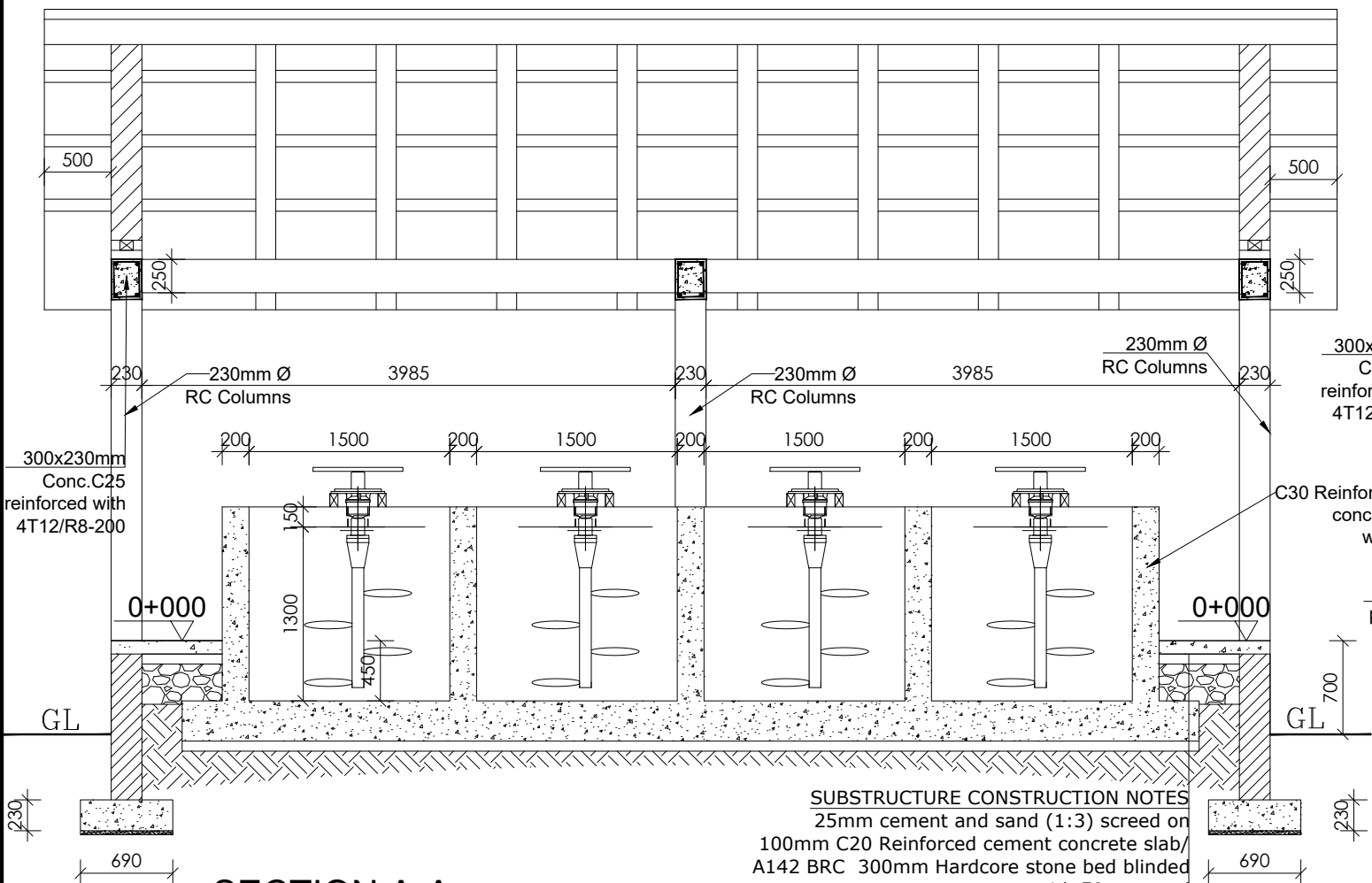
Fire clay ridge cap/Mangalore roofing tiles on  
50 X 25 timber battens with  
gauge 32 GI plane sheet

**Pressure treated roofing soft wood timber**

Double 100 x 50 mm timber rafters with  
100x 50mm struts & ties in truss with  
75 x 50 mm purlins on  
150 x 50mm tie beam on  
150 x 75 mm wall plate  
250 mm plastic fascia boards

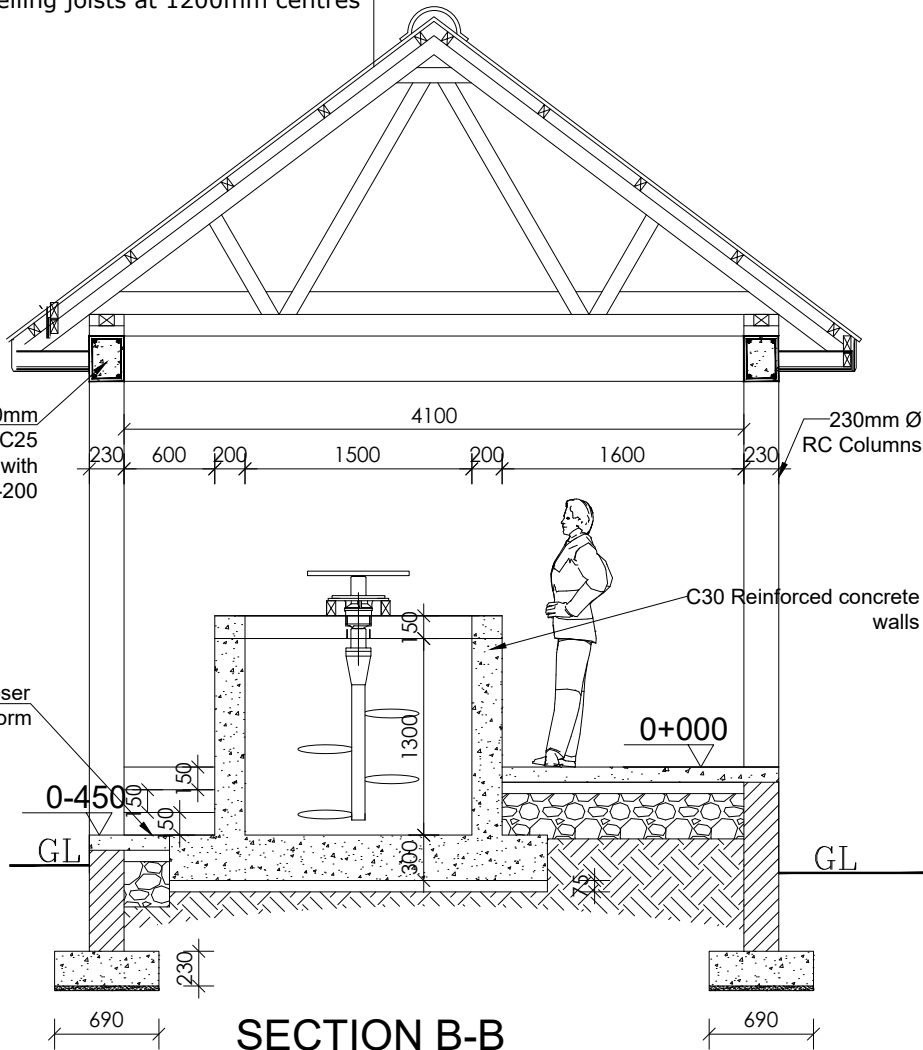
CEILING CONSTRUCTION NOTES:

20mm thick Cement and sand plaster on  
Expanded Metal Lathing on  
50 x 50mm Ceiling branderings at 600mm centres  
100 x 50mm Ceiling joists at 1200mm centres

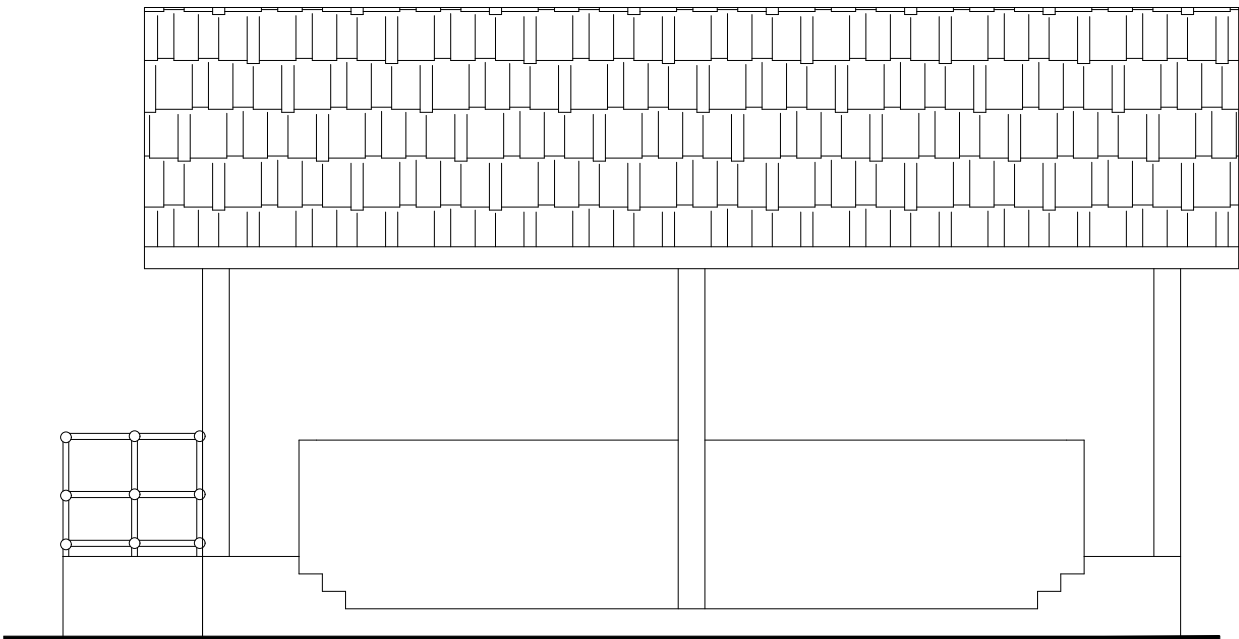


SECTION A-A

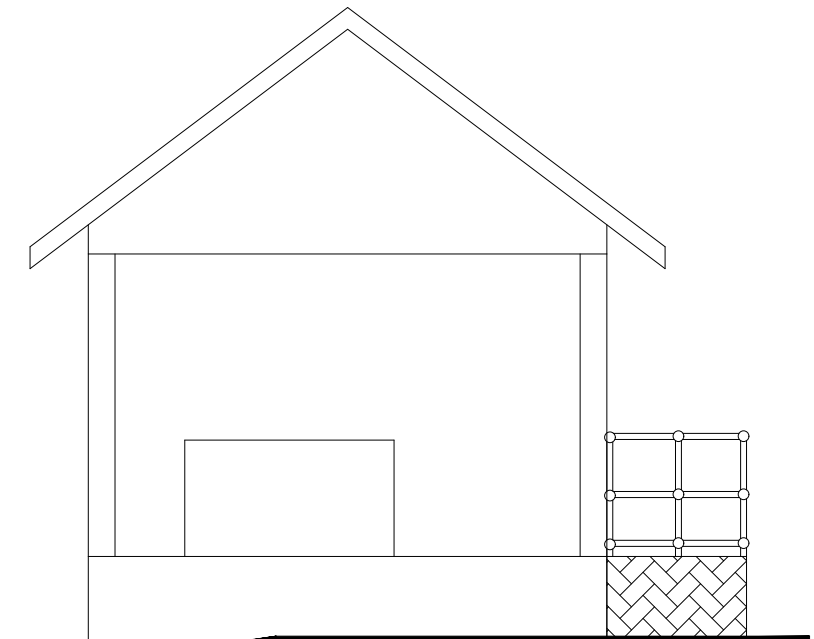
**SUBSTRUCTURE CONSTRUCTION NOTES**  
25mm cement and sand (1:3) screed on  
100mm C20 Reinforced cement concrete slab/  
A142 BRC 300mm Hardcore stone bed blinded  
with 50mm sand  
on selected well compacted natural murrum  
filling  
690 x 230 mm C20 concrete strip footing for  
columns



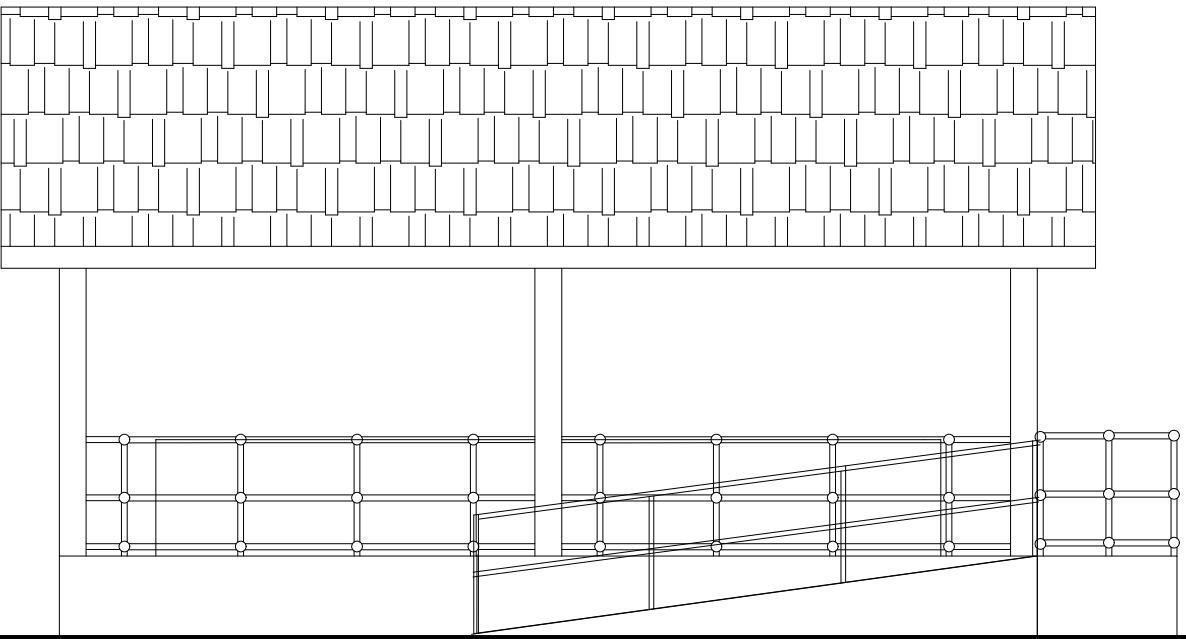
SECTION B-B



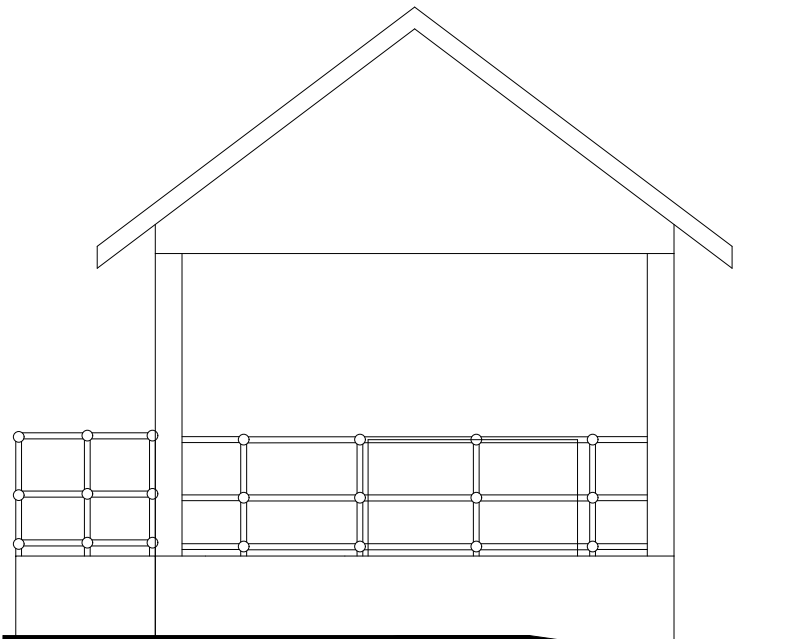
ELEVATION 1



ELEVATION 2

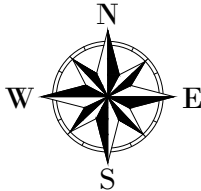


ELEVATION 3



ELEVATION 4

LEGEND



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**MINISTRY OF WATER AND ENVIRONMENT**

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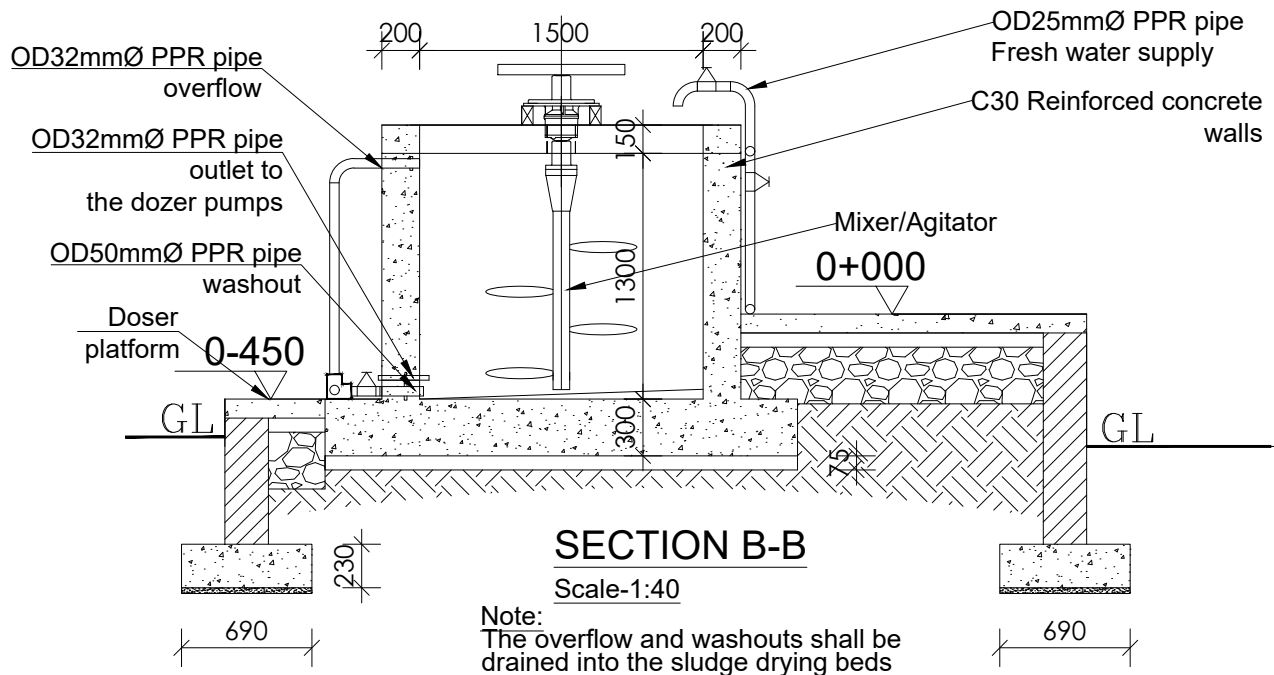
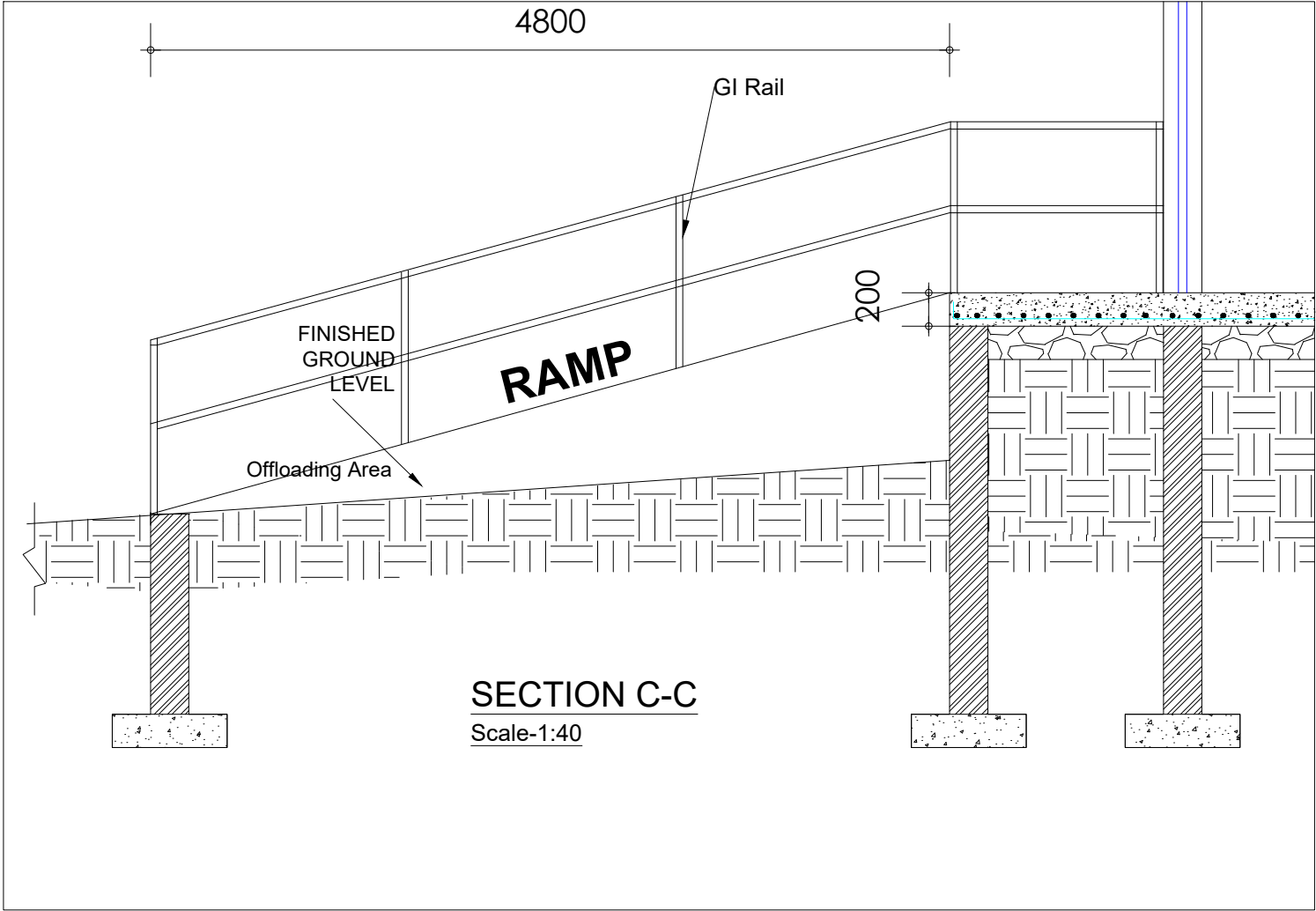
PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

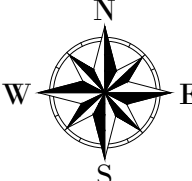
REVISIONS :		
No	Date	Description

DRAWING TITLE : **CHLORINE & SODA ASH  
DOSING HOUSE  
Elevations**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-007</b>
Scale:	1:65
Sheet No.:	3 of 6



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THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

  
**THE WORLD BANK**  
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CONSULTANT :

 Alliance Consultants Ltd  
In Association with  
 Infra-Consult Ltd

PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

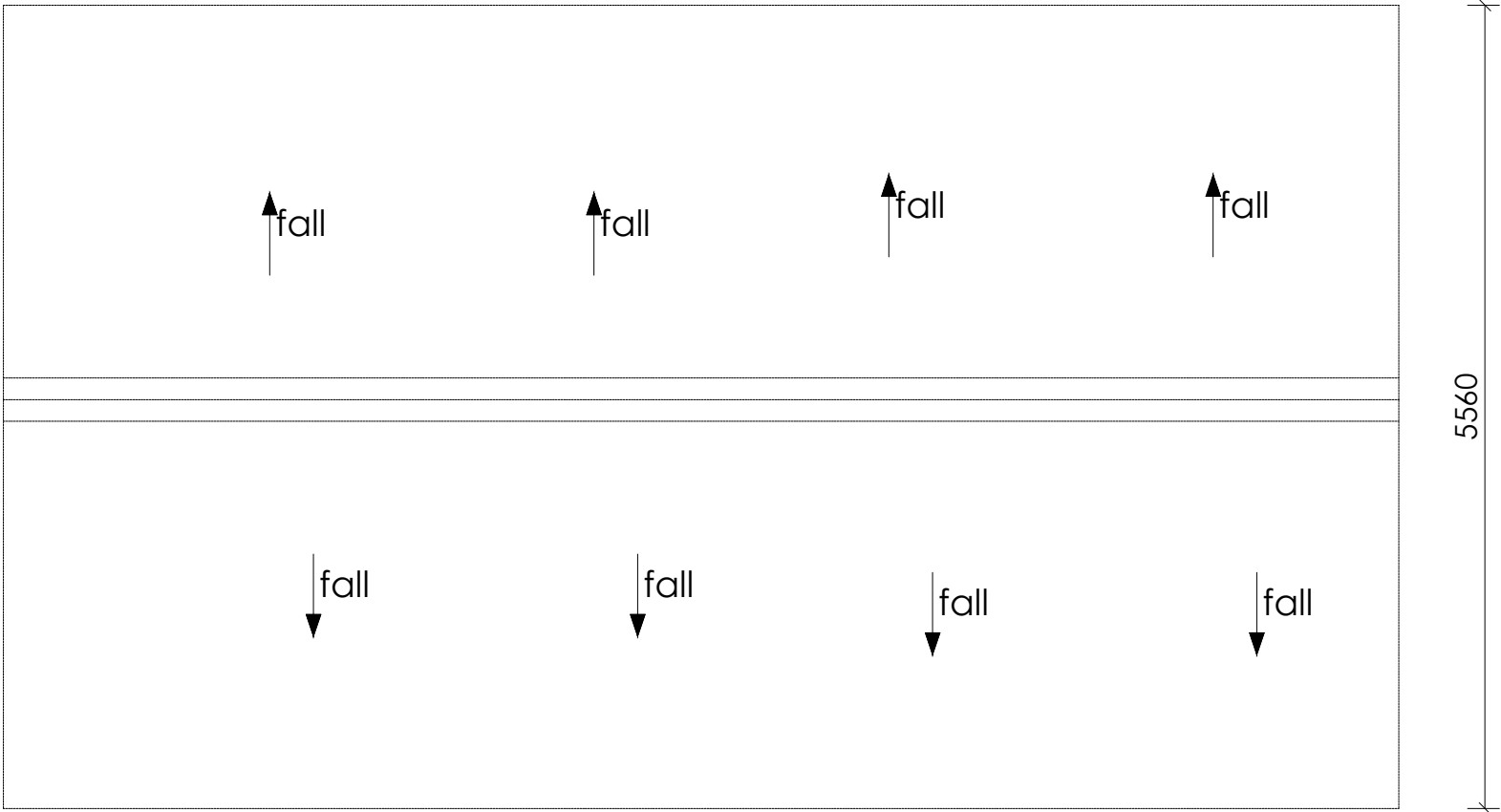
REVISIONS :

No	Date	Description

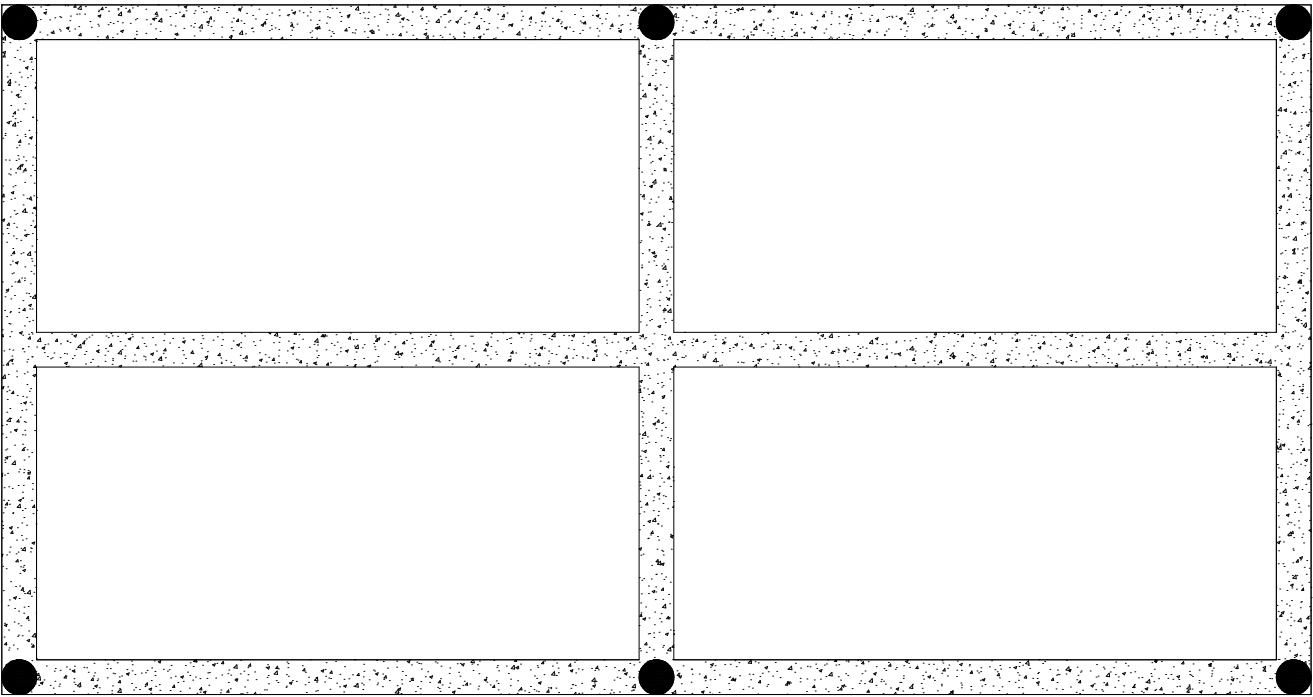
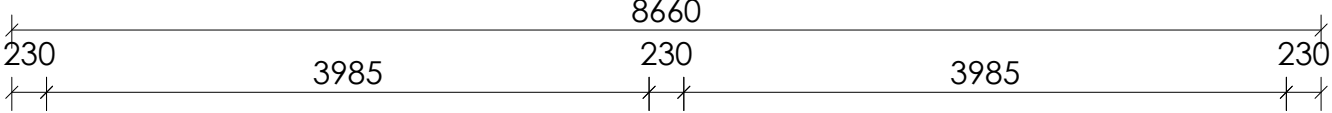
DRAWING TITLE : **CHLORINE & SODA ASH  
DOSING HOUSE  
Details**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-007</b>
Scale:	1:40
Sheet No.:	4 of 6

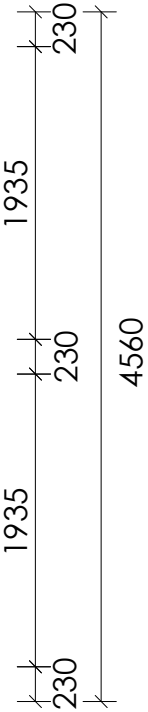




ROOF LAYOUT



ROOF BEAM LAYOUT



**LEGEND**

CLIENT :

THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

**THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

**Alliance Consultants Ltd**  
*In Association with*

**Infra-Consult Ltd**

PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **CHLORINE DOSING HOUSE**  
Roof & Foundation Layout

Surveyed by: R.K

Drawn by: A.K

Designed by: W.G.M

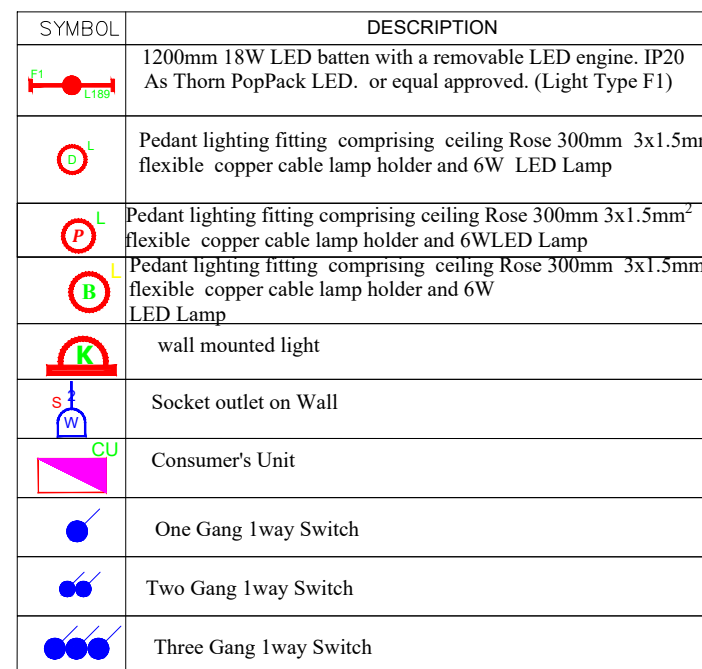
Checked by: J.K.K

Date: January 2023

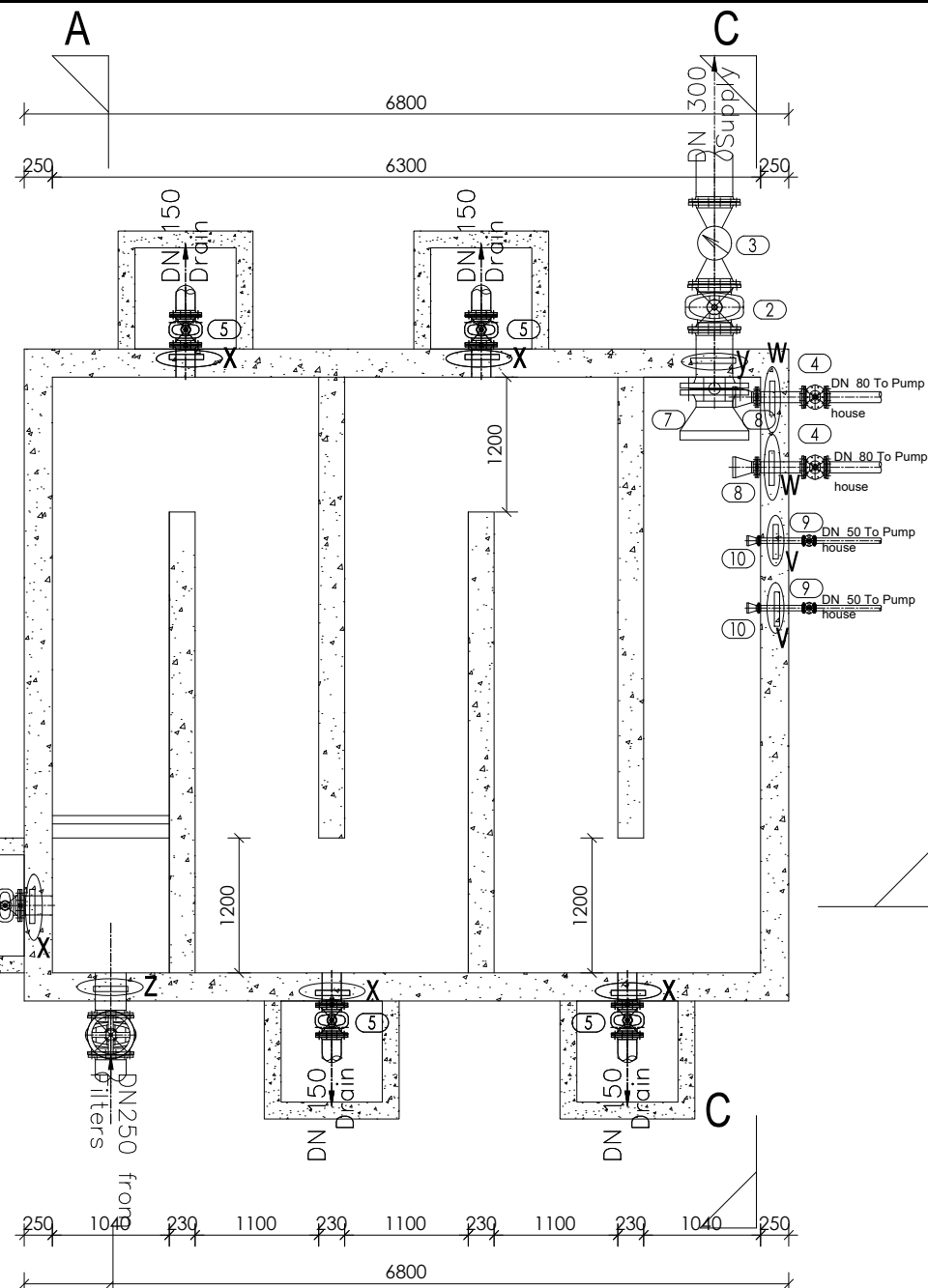
DRG. No.: **ENY-WTP-007**

Scale: 1:50

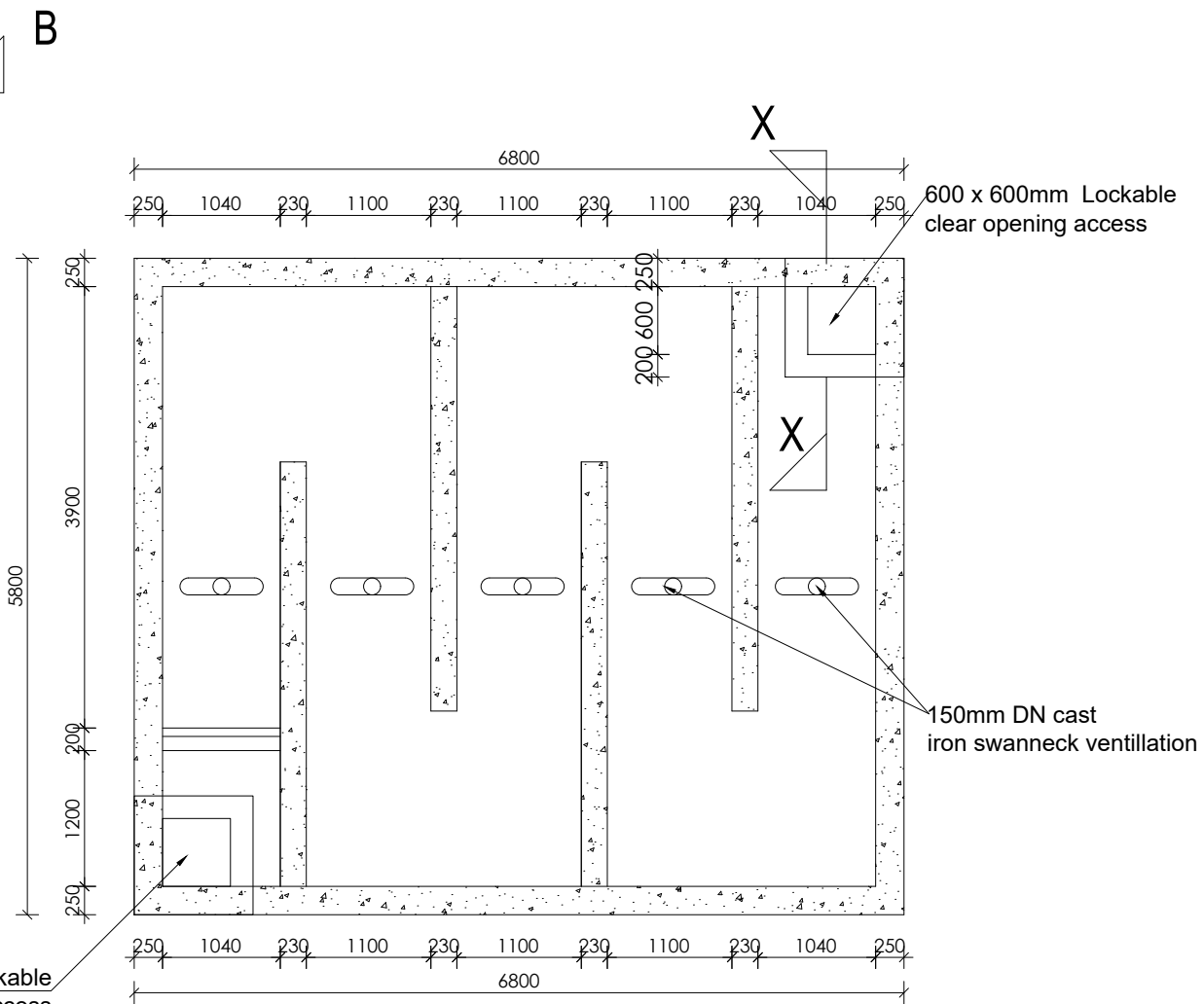
Sheet No.: 5 of 6



Sheet No.: 6 of 6

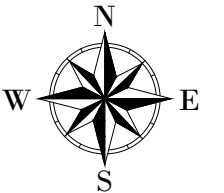


**PLAN**



**ROOF PLAN**

**LEGEND**



CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

 **THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

 **Alliance Consultants Ltd**  
In Association with  
 **Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION PROJECT**

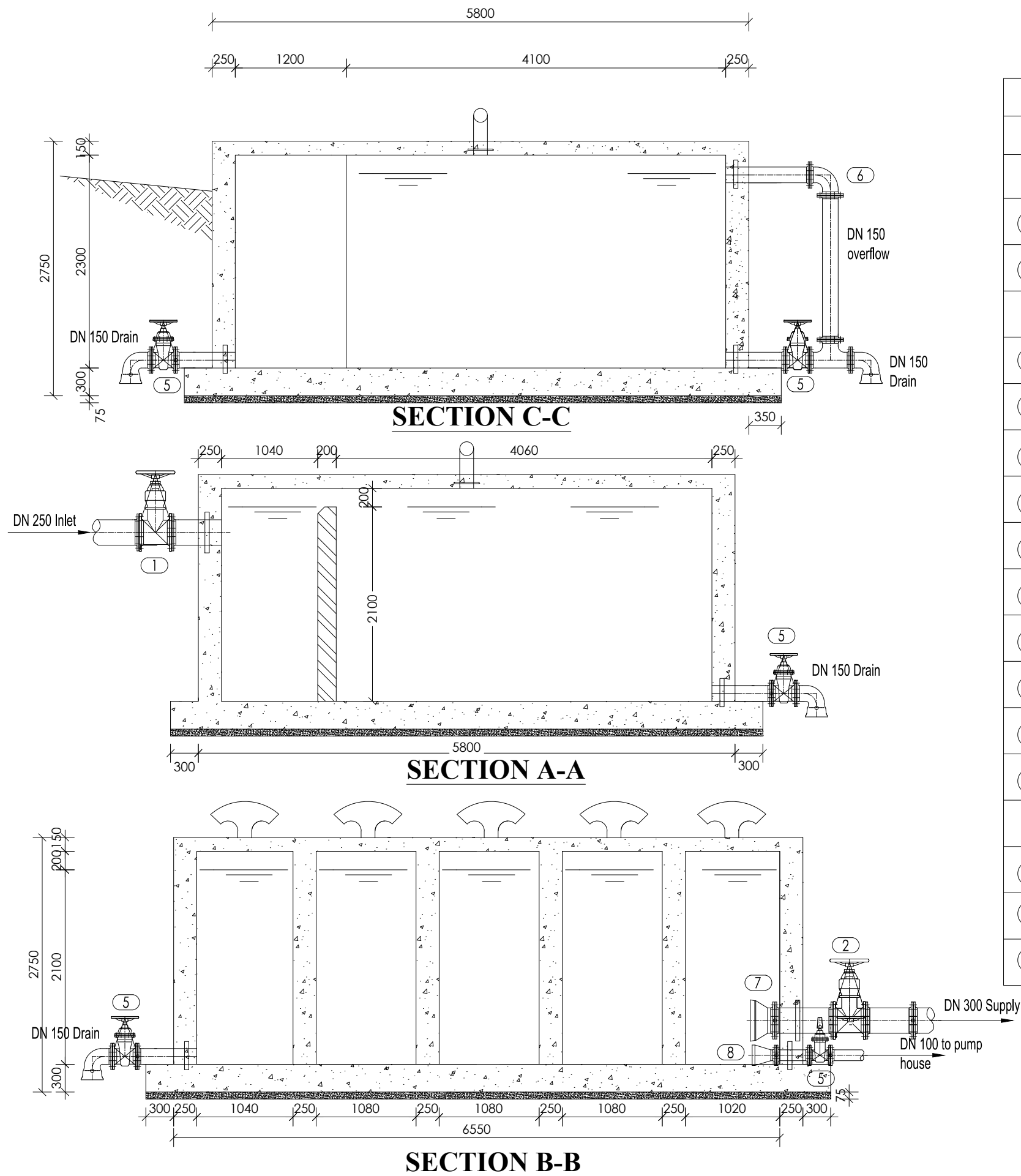
**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

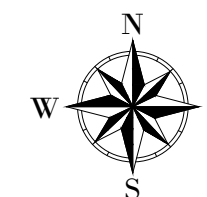
DRAWING TITLE : **CLEAR WATER TANK Plan**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-008</b>
Scale:	1:65
Sheet No.:	1 of 3



PIPES AND FITTINGS SCHEDULE		
ITEM	No. OF	DESCRIPTION
		<u>INLET</u>
1	1	DN250 FLANGED GATE VALVE
z	1	DN250 FLANGED & PUDDLED PIPE
		<u>OUTLET</u>
2	1	DN300 FLANGED GATE VALVE
3	1	DN300 FLOW METER
7	1	DN300 FLANGED STRAINER
4	2	DN80 FLANGED GATE VALVE
8	2	DN80 FLANGED STRAINER
9	2	DN50 FLANGED GATE VALVE
10	2	DN50 FLANGED STRAINER
y	1	DN300 FLANGED & PUDDLED PIPE
w	1	DN50 FLANGED & PUDDLED PIPE
v	1	DN50 FLANGED & PUDDLED PIPE
		<u>DRAINS</u>
5	1	DN150 FLANGED GATE VALVE
6	1	DN150 FLANGED 90° BEND
x	5	DN150 FLANGED & PUDDLED PIPE

## LEGEND



CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

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IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

 **Alliance Consultants Ltd**  
In Association with  
 **Infra-Consult Ltd**

PROJECT :

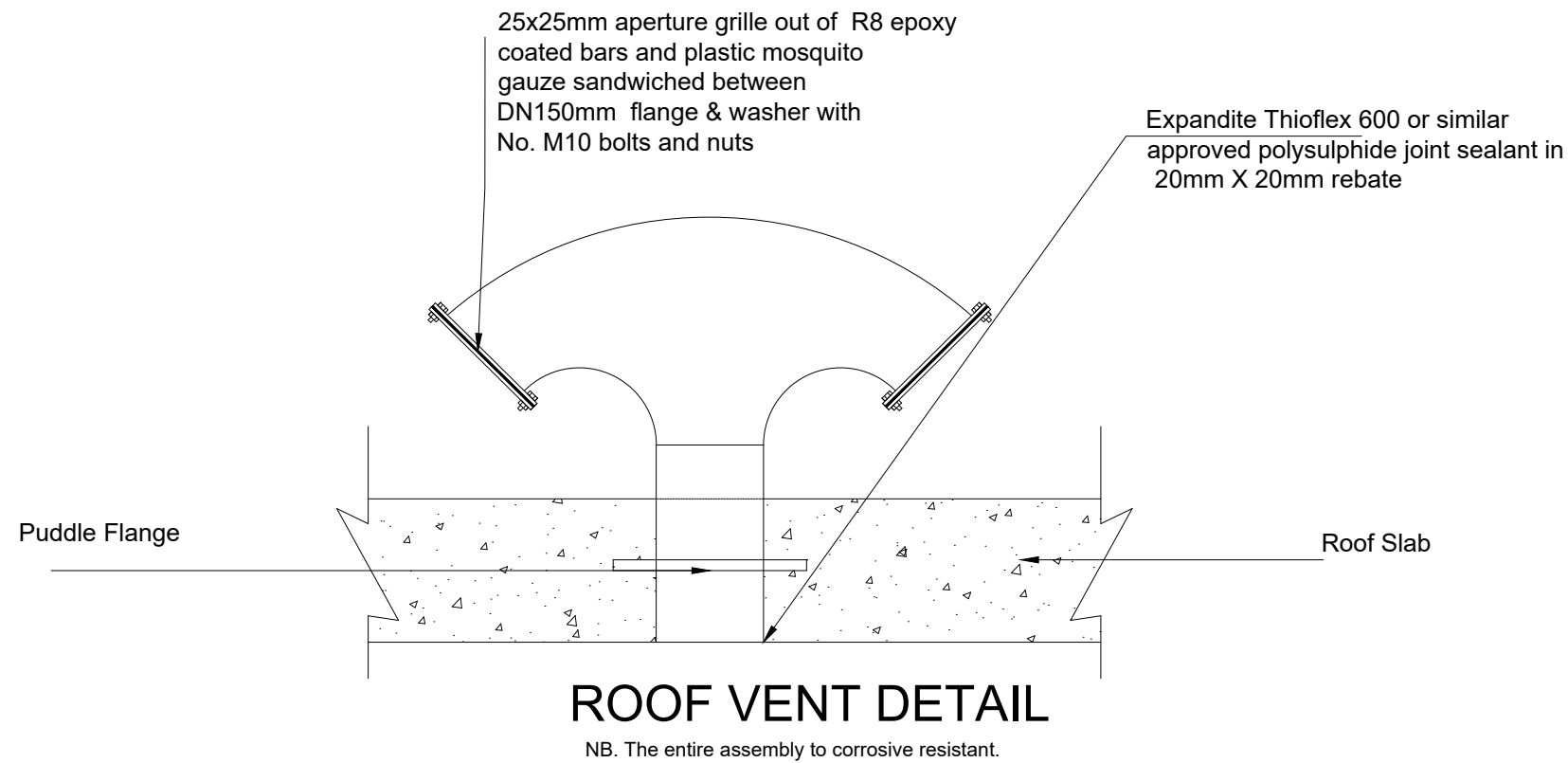
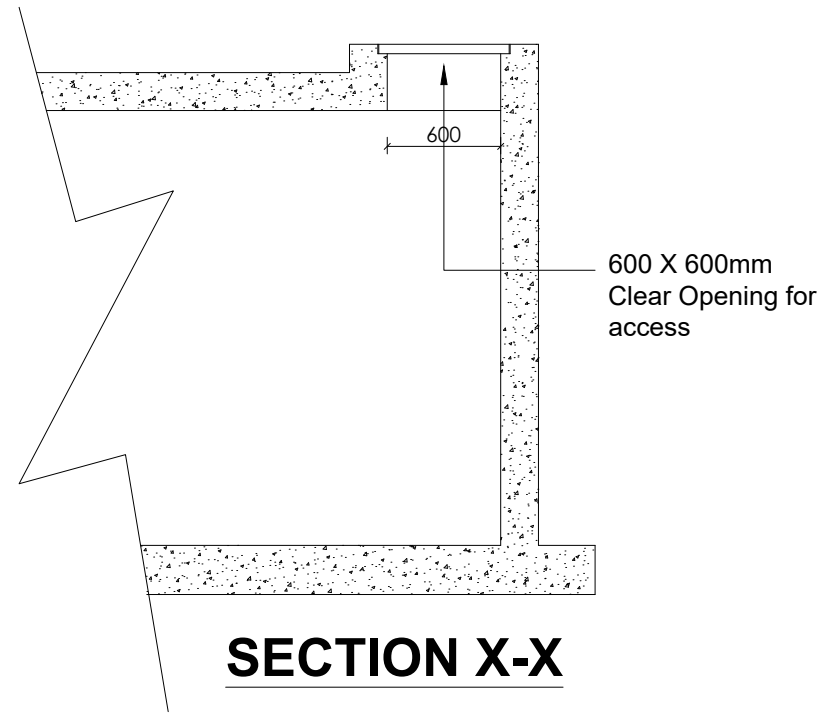
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

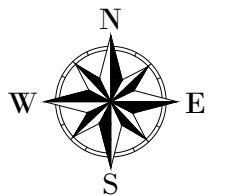
REVISIONS :		
No	Date	Description

DRAWING TITLE : **CLEAR WATER TANK  
Sections**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-008</b>
Scale:	1:50
Sheet No.:	2 of 3



## LEGEND



CLIENT :



THE REPUBLIC OF UGANDA

**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:



CONSULTANT :



Alliance Consultants Ltd

*In Association with*

**Infra-Consult Ltd**

PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**CLEAR WATER TANK  
Details**

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

**ENY-WTP-008**

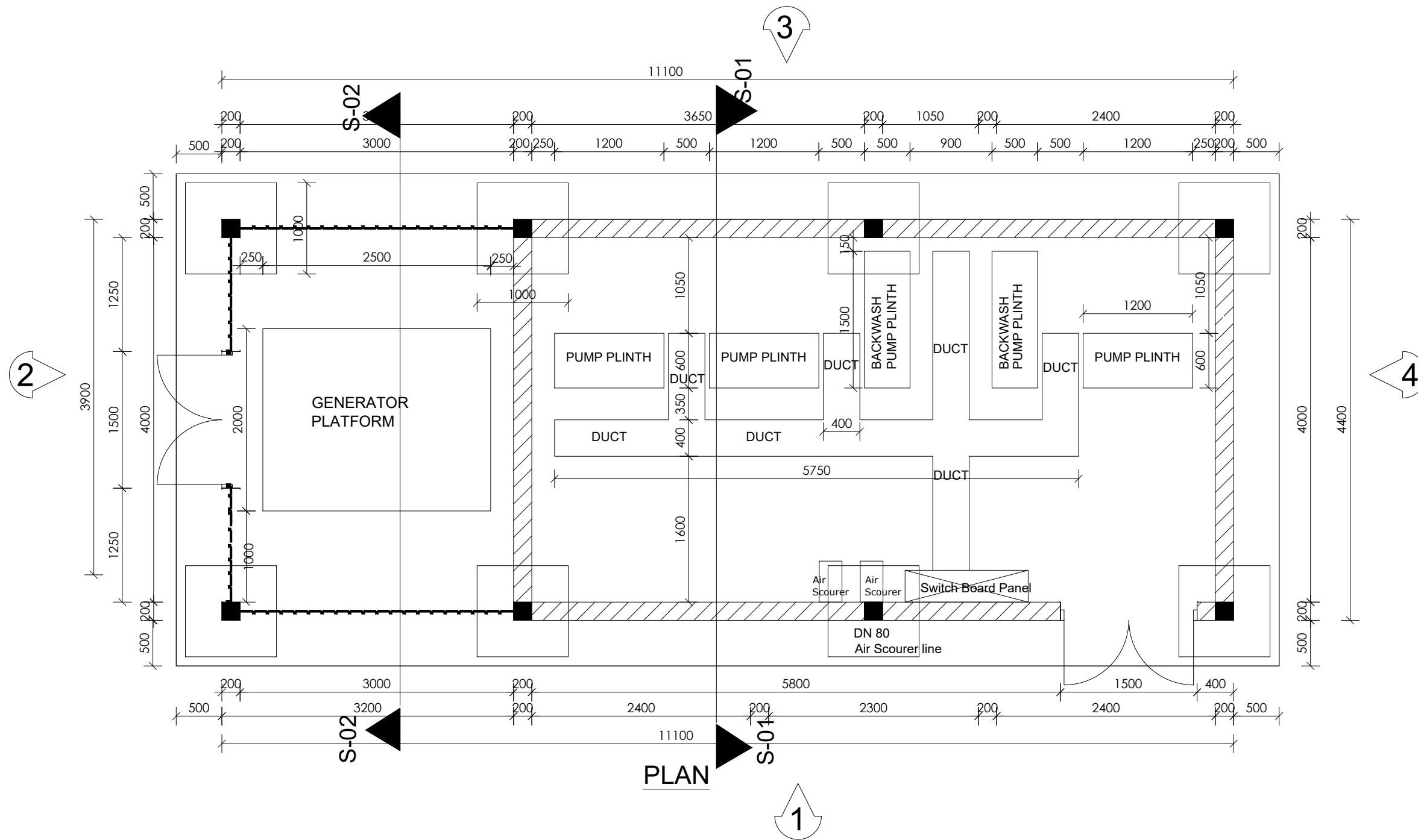
Scale:

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Sheet No.:

3 of 3

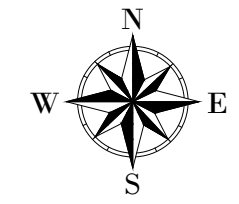




PLAN

LEGEND

 Pipe support



CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

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CONSULTANT :

 **Alliance Consultants Ltd**  
*In Association with*  
 **Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

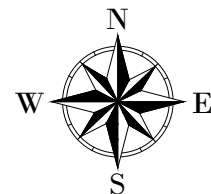
REVISIONS :

No	Date	Description

DRAWING TITLE : **PUMP HOUSE  
Plan**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-009</b>
Scale:	1:50
Sheet No.:	1 of 12

LEGEND



CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:



CONSULTANT :



PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**PUMP HOUSE  
Sections**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-009</b>
Scale:	1:50
Sheet No.:	2 of 12

NOTES:

- The shed floor shall be self draining
- All the mild steel components shall be painted with primer coat and 2 coats of oil paint
- The metal grille door shall have at least 4 No. padlock bolts. One each bolting onto the header/ floor, the other two bolting onto the grille leaves

ROOF NOTES : pitch 30°

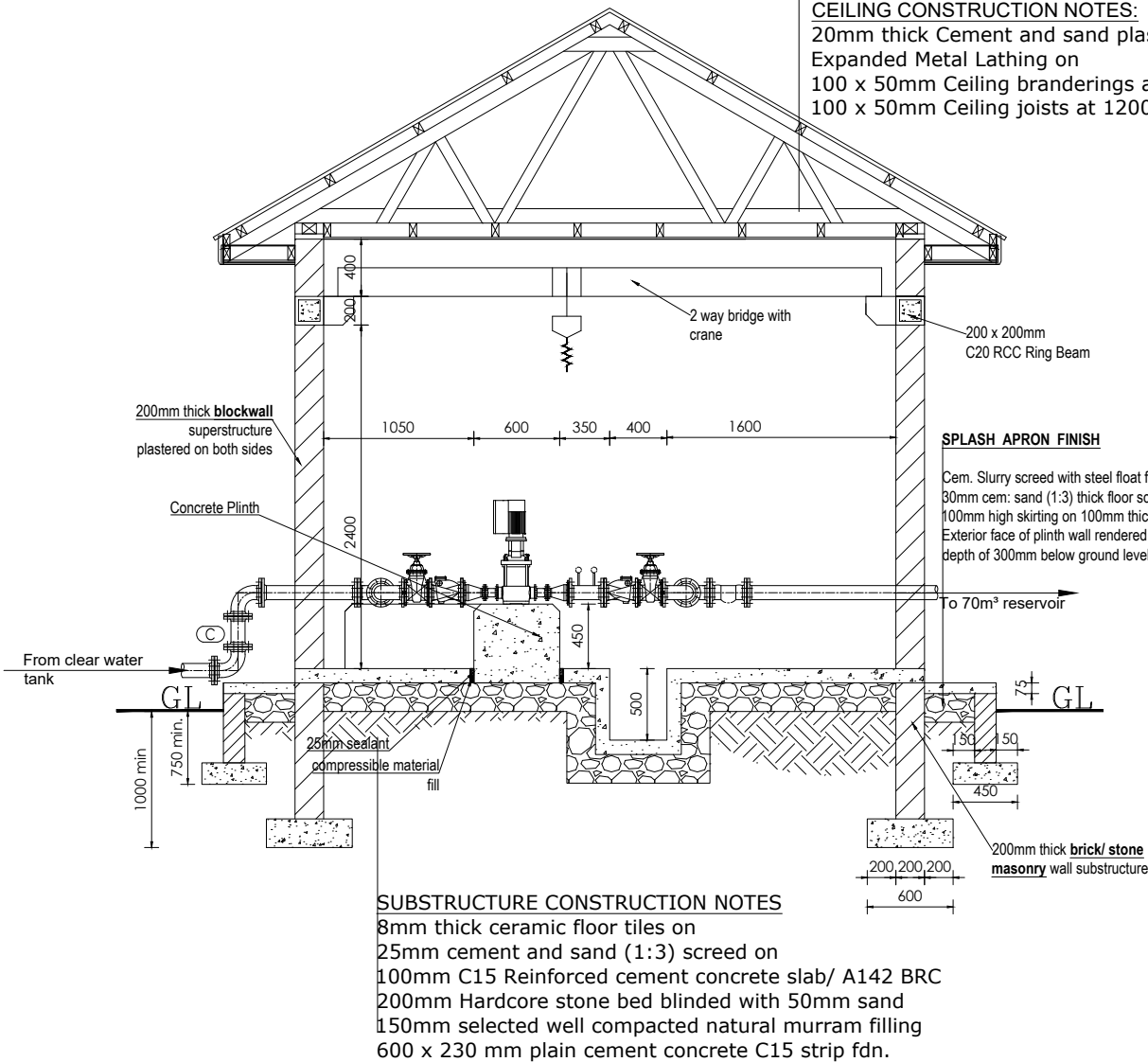
Fire clay ridge cap/Mangalore roofing tiles on  
50 X 25 timber battens with  
gauge 32 GI plane sheet  
**Pressure treated roofing soft wood timber**  
Double 100 x 50 mm timber rafters with  
100x 50mm struts & ties in truss with  
75 x 50 mm purlins on  
150 x 50mm tie beam on  
150 x 75 mm wall plate  
250 mm plastic fascia boards

CEILING CONSTRUCTION NOTES:

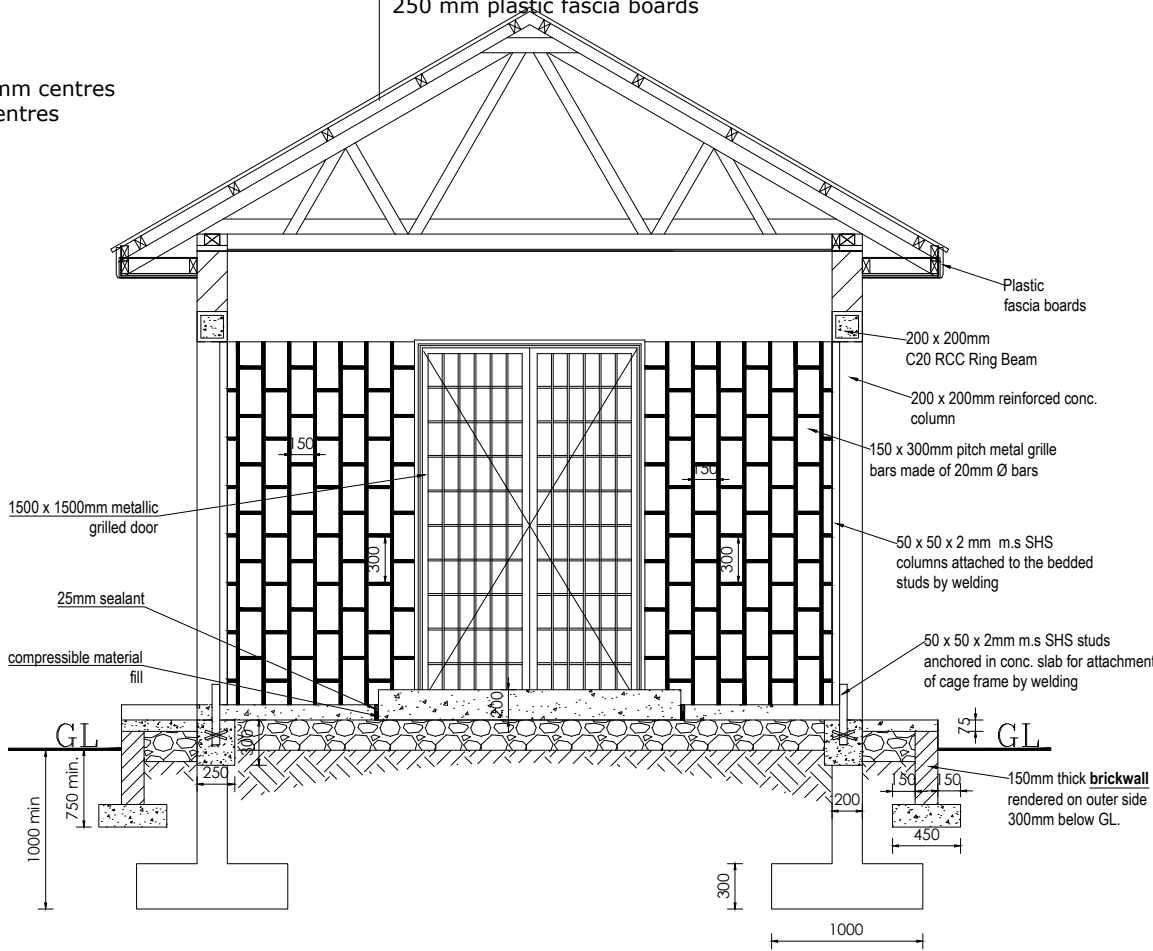
20mm thick Cement and sand plaster on  
Expanded Metal Lathing on  
100 x 50mm Ceiling branderings at 600mm centres  
100 x 50mm Ceiling joists at 1200mm centres

ROOF NOTES : pitch 30°

Fire clay ridge cap/Mangalore roofing tiles on  
50 X 25 timber battens with  
gauge 32 GI plane sheet  
**Pressure treated roofing soft wood timber**  
Double 100 x 50 mm timber rafters with  
100x 50mm struts & ties in truss with  
75 x 50 mm purlins on  
150 x 50mm tie beam on  
150 x 75 mm wall plate  
250 mm plastic fascia boards

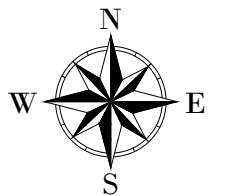


**SECTION S-01**



**SECTION S-02**

# LEGEND



CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT

CO-FINANCED BY:



CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**PUMP HOUSE  
Elevations**

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

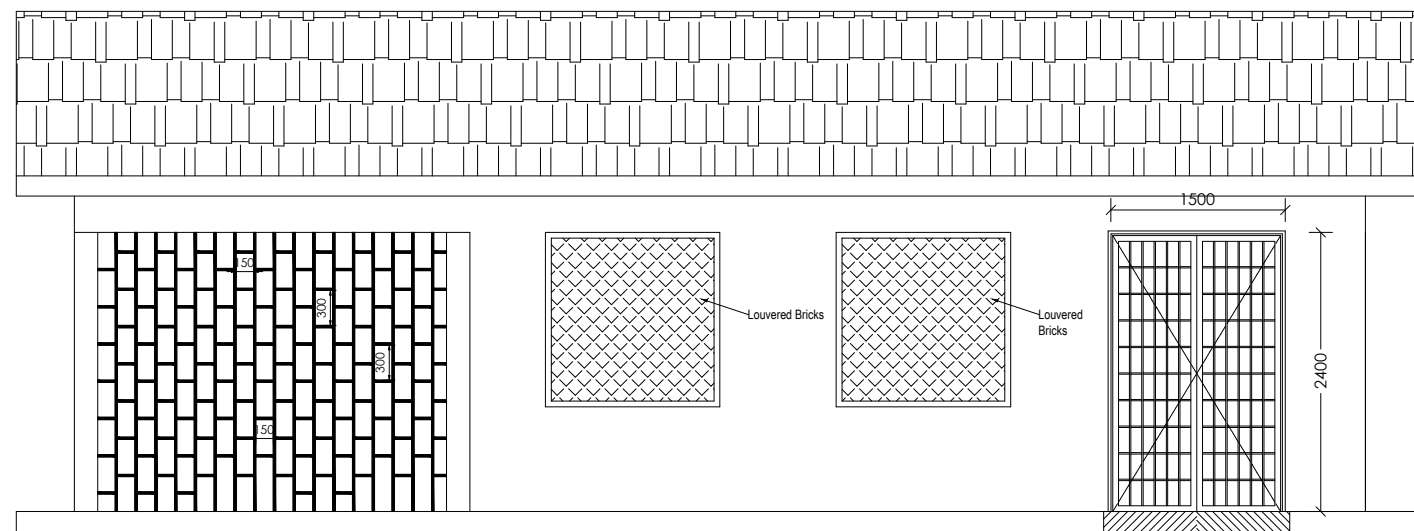
**ENY-WTP-009**

Scale:

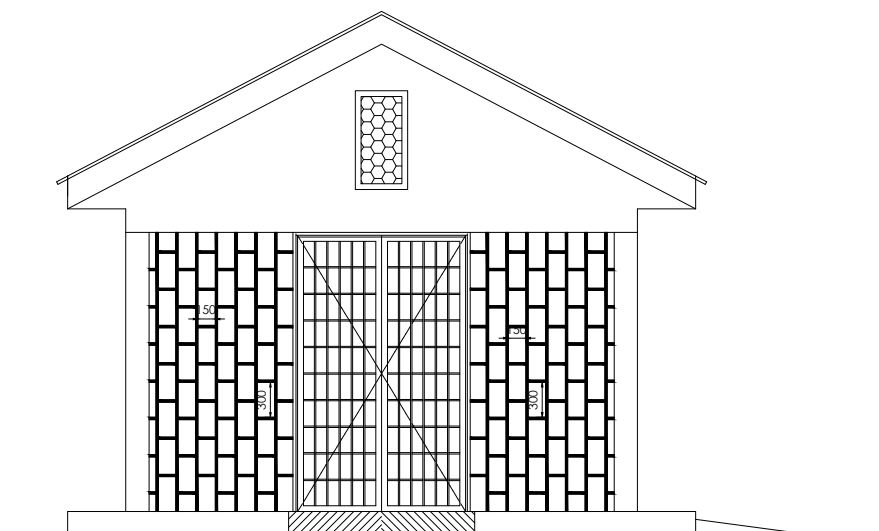
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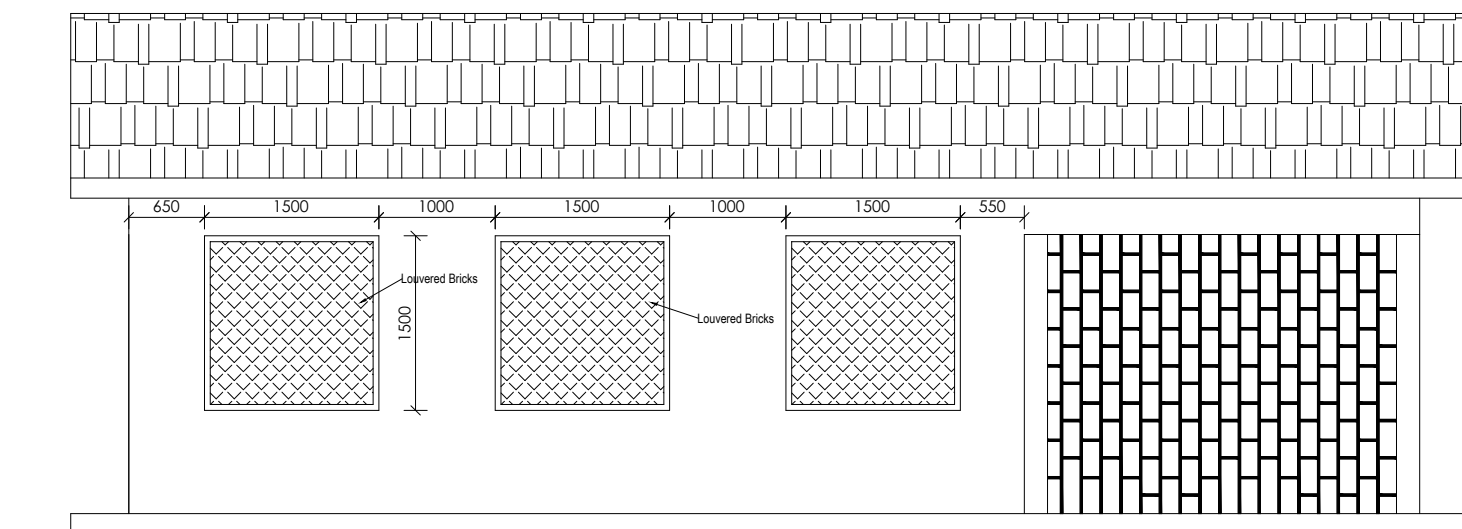
3 of 12



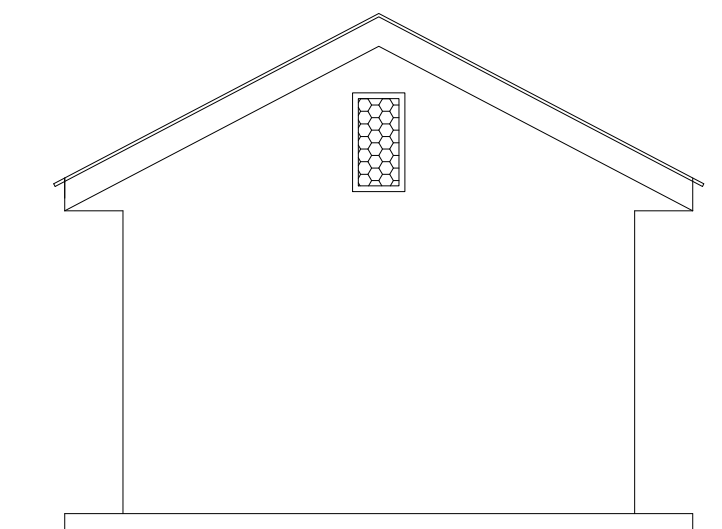
ELEVATION 1



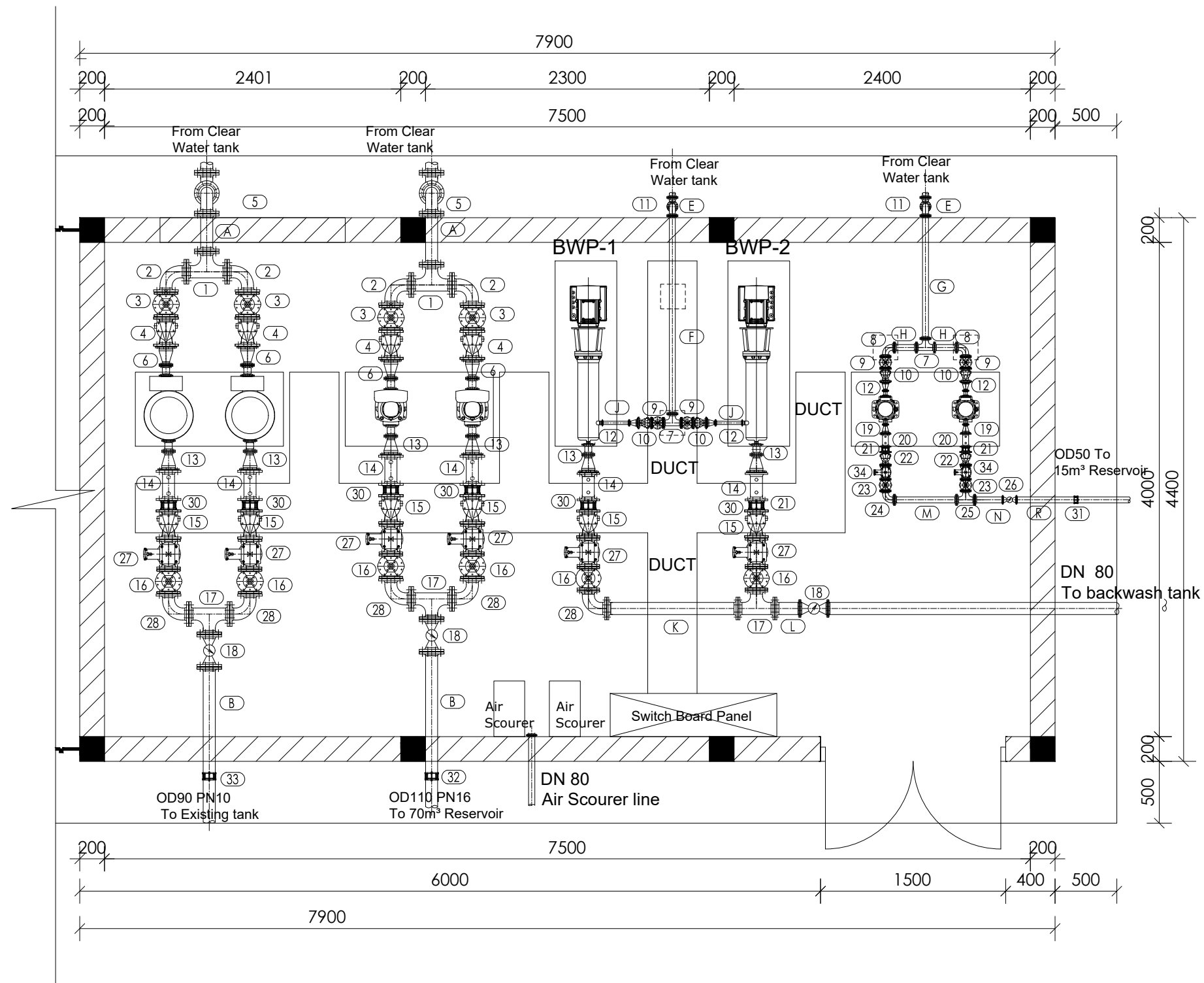
ELEVATION 2



ELEVATION 3



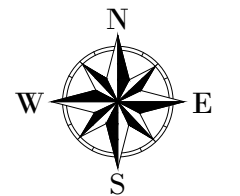
ELEVATION 4



# LEGEND



Pipe support



CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT

CO-FINANCED BY:



CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**PUMP HOUSE  
Pipe Schedule**

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

**ENY-WTP-009**

Scale:

1:75

Sheet No.:

4 of 12

PIPES AND FITTINGS SCHEDULE		
ITEM	No. OF	DESCRIPTION
		<u>DN80 INLETS</u>
1	2	DN80 ALL EQUAL TEE
2	4	DN80 FLANGED 90° BEND
3	4	DN80 FLANGED GATE VALVE
4	4	D80 FLANGED NON–RETURN VALVE
5	8	D80 FLANGED 90° BEND
6	4	DN80/DN32 FLANGED REDUCER
		<u>DN50 INLETS</u>
7	2	D50 FLANGED EQUAL TEE
8	2	DN50 FLANGED 90° BEND
9	4	DN50 FLANGED GATE VALVE
10	4	DN50 FLANGED NON–RETURN VALVE
11	4	D50 FLANGED 90° BEND
12	2	DN50/DN25 FLANGED REDUCERS

PIPES AND FITTINGS SCHEDULE		
ITEM	No. OF	DESCRIPTION
		<u>DN80 OUTLETS</u>
13	6	DN80/DN32 FLANGED REDUCER
14	6	DN80 FLANGED PRESSURE GAUGE
15	6	D80 FLANGED NON–RETURN VALVE
16	6	D80 FLANGED GATE VALVE
17	3	D80 FLANGED ALL EQUAL TEE
18	3	DN80 FLANGED BULK WATER METER
27	6	DN80 FLANGED AIR VALVE
28	5	DN80 FLANGED 90° BEND
30	6	DN80 DISMANTLING JOINT
32	1	DN80/OD110 COUPLING
33	1	DN80/OD90 COUPLING
		<u>DN50 OUTLETS</u>
19	2	D50/DN25 FLANGED REDUCER
20	2	DN50 FLANGED PRESSURE GAUGE
21	2	DN50 DISMANTLING JOINT
22	2	DN50 FLANGED NON–RETURN VALVE
23	2	DN50 FLANGED GATE VALVE
24	1	D50 FLANGED 90° BEND
25	1	D50 FLANGED ALL EQUAL TEE
26	1	D50 FLANGED BULK WATER METER
31	1	D50/OD50 COUPLING
34	2	D50 FLANGED AIR VALVE

PIPES AND FITTINGS SCHEDULE		
ITEM	No. OF	DESCRIPTION
		<u>DN80 PIPE SPECIALS</u>
A	2	DN 80 FLANGED PIPE LENGTH n.e 0.5m
B	2	DN 80 FLANGED PIPE LENGTH n.e 1m
C	2	DN 80 FLANGED PIPE LENGTH n.e 0.25m
		<u>DN50 PIPE SPECIALS</u>
E	2	DN 50 FLANGED PIPE LENGTH n.e 0.4m
F	1	DN 50 FLANGED PIPE LENGTH n.e 2m
G	1	DN 50 FLANGED PIPE LENGTH n.e 1.2m
H	2	DN 50 FLANGED PIPE LENGTH n.e 0.25m
J	2	DN 50 FLANGED PIPE LENGTH n.e 0.3m
K	1	DN 50 FLANGED PIPE LENGTH n.e 1.2m
L	1	DN 50 FLANGED PIPE LENGTH n.e 0.25m
M	1	DN 50 FLANGED PIPE LENGTH n.e 0.75m
N	1	DN 50 FLANGED PIPE LENGTH n.e 0.3m
R	1	DN 50 FLANGED PIPE LENGTH n.e 0.5m

LEGEND

Pipe support

CLIENT :

THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT

CO-FINANCED BY:

THE WORLD BANK  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

Alliance Consultants Ltd  
In Association with  
Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE :

PUMP HOUSE  
Pipe parts Details

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

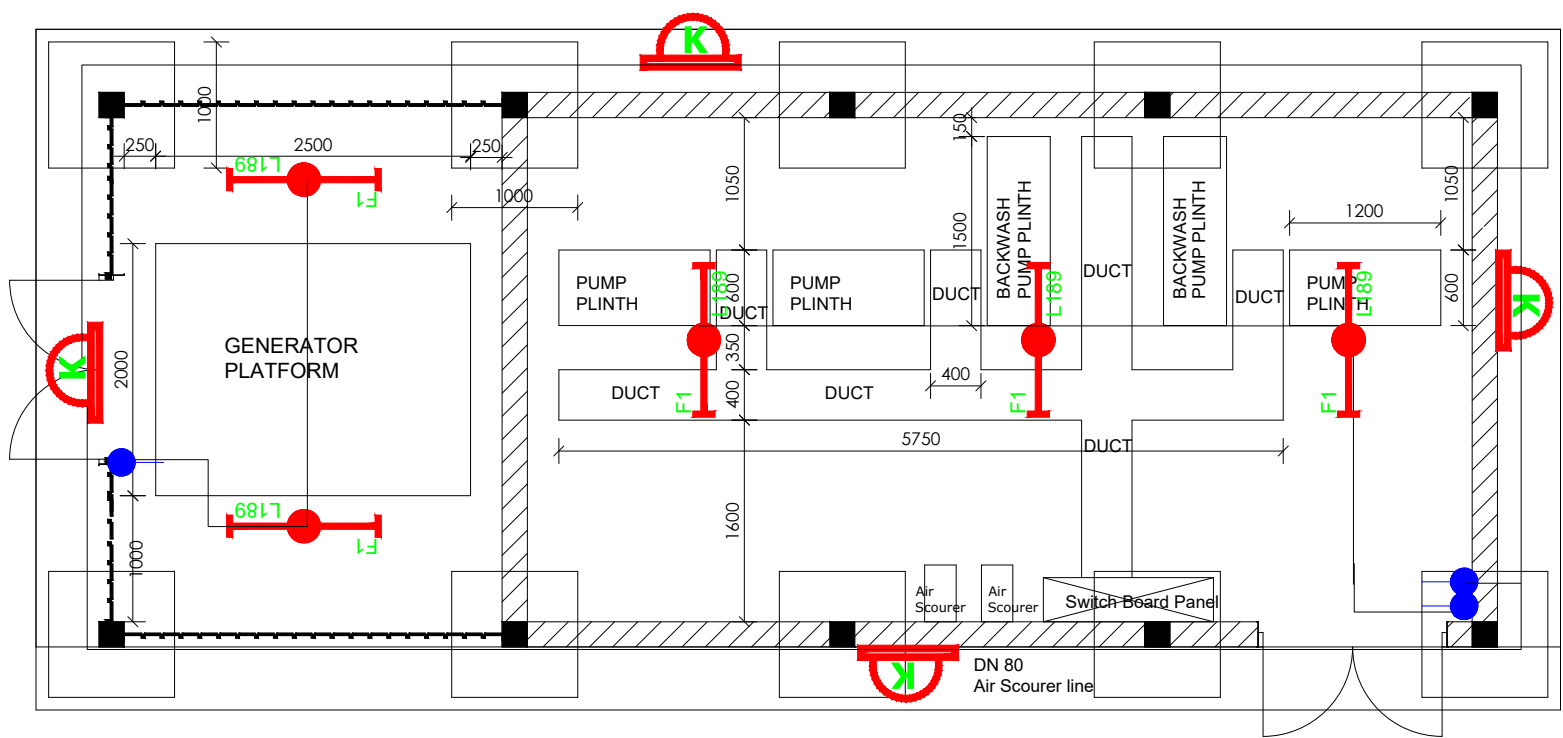
ENY-WTP-009

Scale:

1:50

Sheet No.:

5 of 12



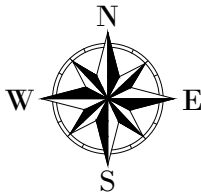
- 1). ALL WALL BRACKETS SHALL BE MOUNTED 1800mm ABOVE FINISHED FLOOR LEVEL
- 2). TELEPHONE, SOCKETS,T.V AND COMPUTER OUTLETS SHALL BE MOUNTED 300mm ABOVE FINISHED FLOOR LEVEL EXCEPT WHERE THEIR IS A WORKTOP.
- 3). WHERE THEIR IS A WORKTOP,TELEPHONE, SOCKETS,T.V AND COMPUTER OUTLETS SHALL BE MOUNTED 150mm ABOVE WORKTOPS.
- 4). CONSUMER UNITS SHALL BE 1800mm ABOVE FINISHED FLOOR LEVEL
- 5). ALL SWITCHES SHALL BE 1400mm ABOVE FINISHED FLOOR LEVEL
- 6). ALL OUTSIDE SOCKETS SHOULD BE WEATHER PROOF
- 7). ALL SHAVER SOCKETS SHOULD BE ON THE RIGHT HAND SIDE OF THE WASH HAND BASIN
- 8). ALL CABLES MUST BE STRANDED

SYMBOL	DESCRIPTION
	1200mm 18W LED batten with a removable LED engine. IP20 As Thorn PopPack LED. or equal approved. (Light Type F1)
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6WLED Lamp
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp
	Decorative Bed side lamp complete with flexible spot light arm as LEDS-C4 BALI (05-3217-19-82 + PAN-157-BY) to client's approval.
	wall mounted light
	Socket outlet on Wall
	Consumer's Unit
	One Gang 2way Switch
	Two Gang 2way Switch
	Three Gang 2way Switch
	One Gang 1way Switch
	Two Gang 1way Switch
	Three Gang 1way Switch
	Intermediate Switch
	Photo - Cell

LEGEND



Pipe support



CLIENT :



THE REPUBLIC OF UGANDA

MINISTRY OF WATER AND ENVIRONMENT

CO-FINANCED BY:



CONSULTANT :



Alliance Consultants Ltd  
In Association with

Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE :

PUMP HOUSE  
Electrical Layout

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

ENY-WTP-009

Scale:

1:50

Sheet No.:

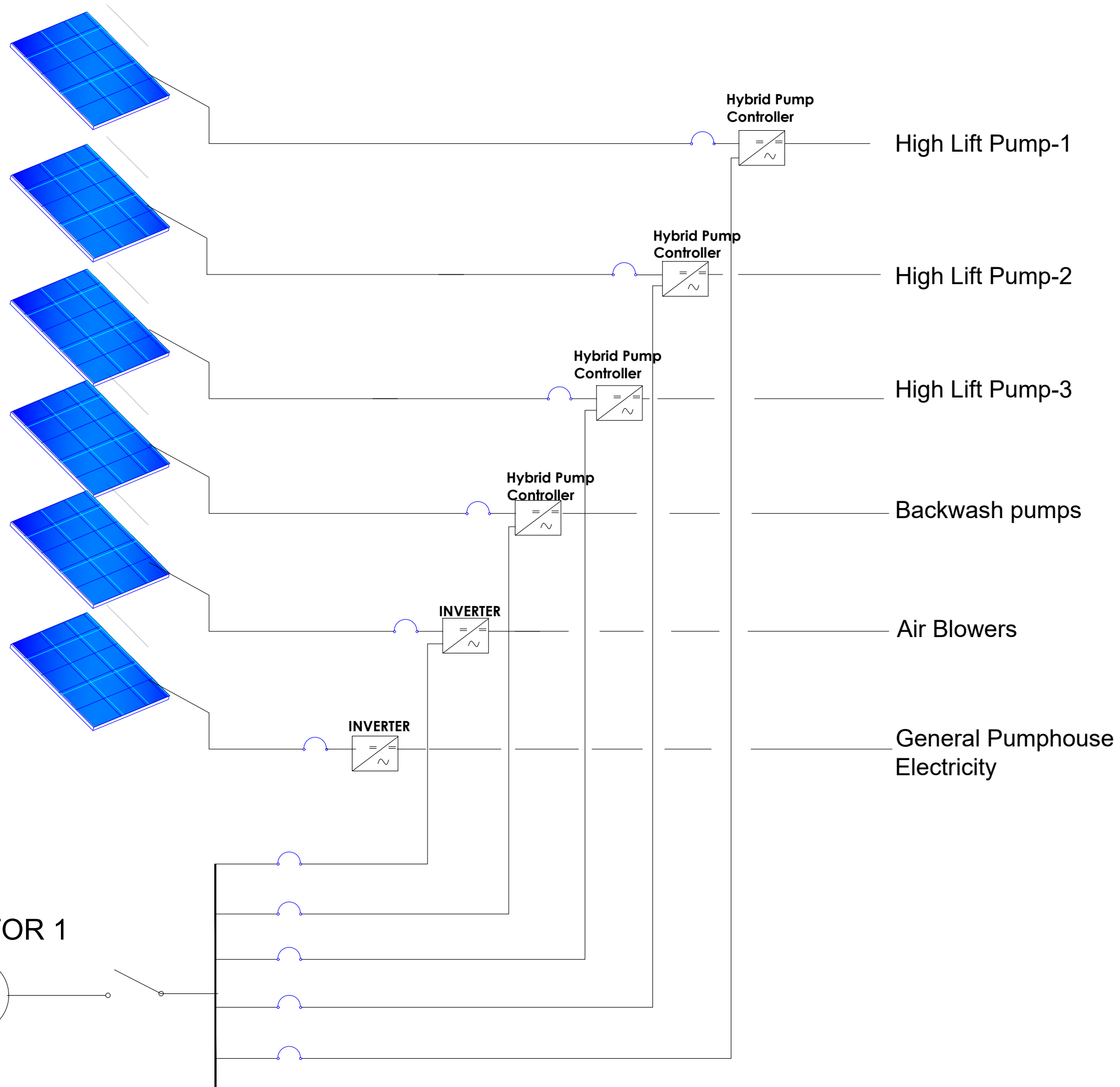
6 of 12



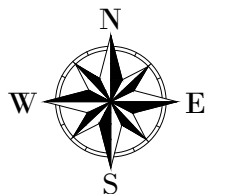
SOLAR ARRAY

GENERATOR 1

GENERATOR  
EARTH



**LEGEND**



CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

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IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

 **Alliance Consultants Ltd**  
In Association with  
 **Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

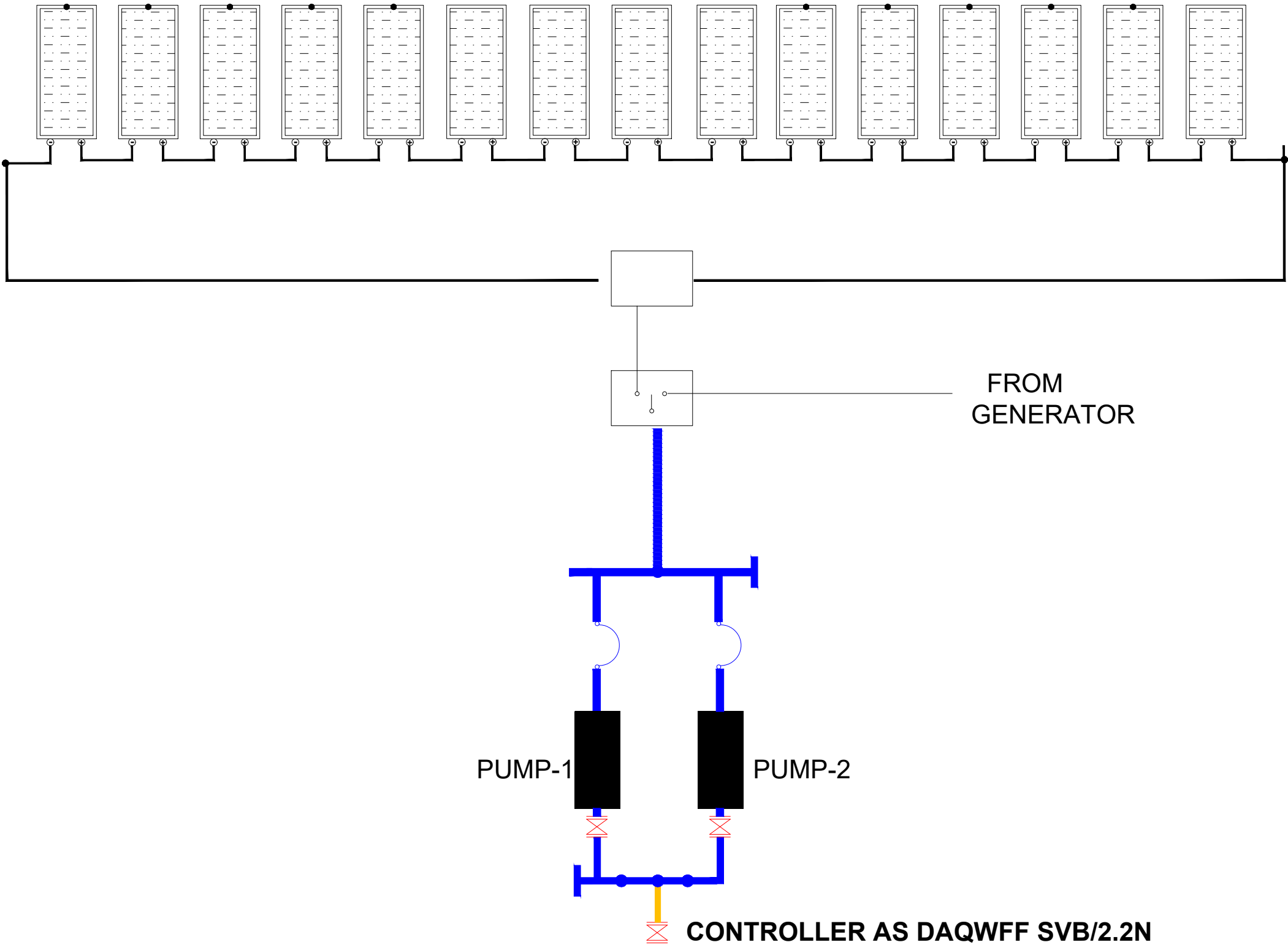
REVISIONS :

No	Date	Description

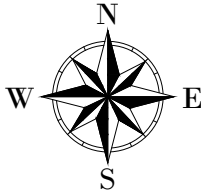
DRAWING TITLE : **PUMP HOUSE  
Solar Array Layout**

Surveyed by:	R.K
Drawn by:	P.K
Designed by:	S.C.D
Checked by:	P.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-009</b>
Scale:	1:500
Sheet No.:	7 of 12

BACKWASH PUMP  
15x200Wp SOLAR PV ARRAY



LEGEND



CLIENT :  
  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:  
 **THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :  
 Alliance Consultants Ltd  
In Association with  
 Infra-Consult Ltd

PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

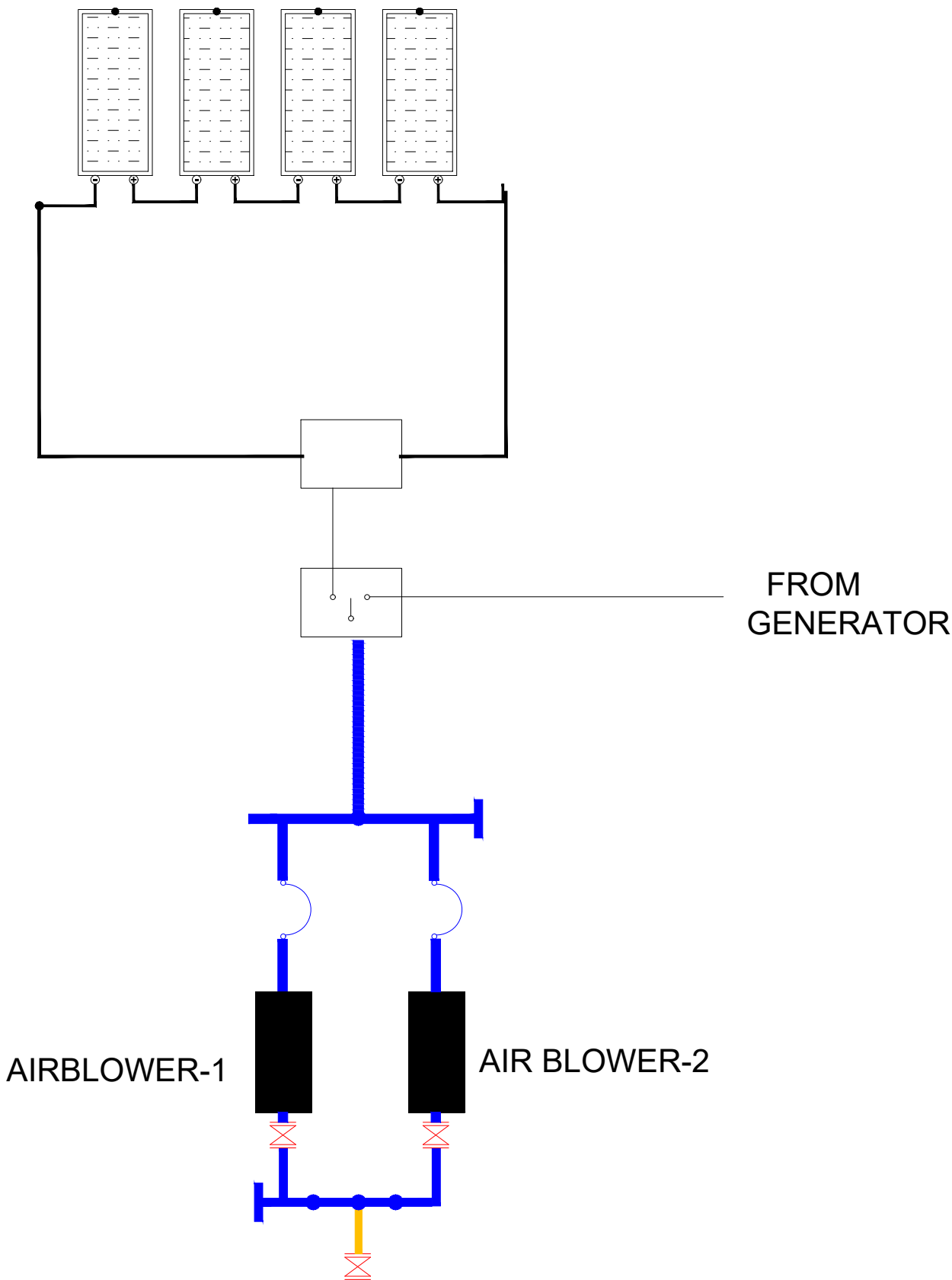
REVISIONS :

No	Date	Description

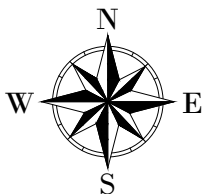
DRAWING TITLE : **PUMP HOUSE**  
Solar Array Layout- Backwash Pump

Surveyed by:	R.K
Drawn by:	P.K
Designed by:	S.C.D
Checked by:	P.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-009</b>
Scale:	1:300
Sheet No.:	8 of 12

AIR BLOWERS  
4x200Wp SOLAR PV ARRAY



LEGEND



CLIENT :  
  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

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IBRD • IDA | WORLD BANK GROUP

CONSULTANT :  
 Alliance Consultants Ltd  
In Association with  
 Infra-Consult Ltd

PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

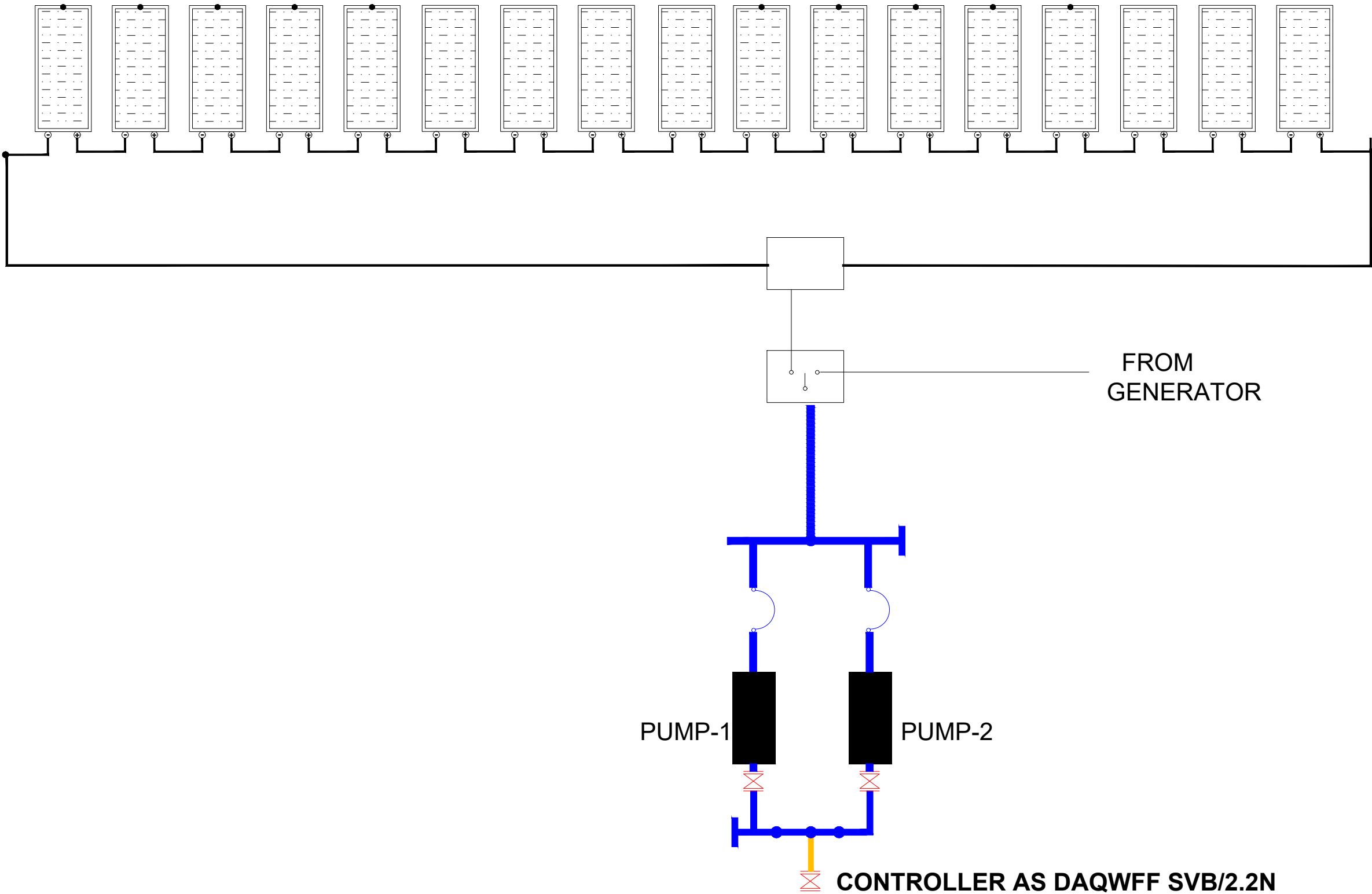
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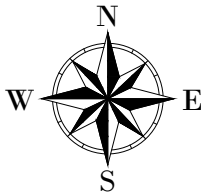
DRAWING TITLE : **PUMP HOUSE**  
Solar Array Layout- Air Blowers

Surveyed by:	R.K
Drawn by:	P.K
Designed by:	S.C.D
Checked by:	P.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-009</b>
Scale:	1:300
Sheet No.:	9 of 12

13m<sup>3</sup>/Hr HIGH LIFT PUMP  
17x200Wp SOLAR PV ARRAY



LEGEND



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PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

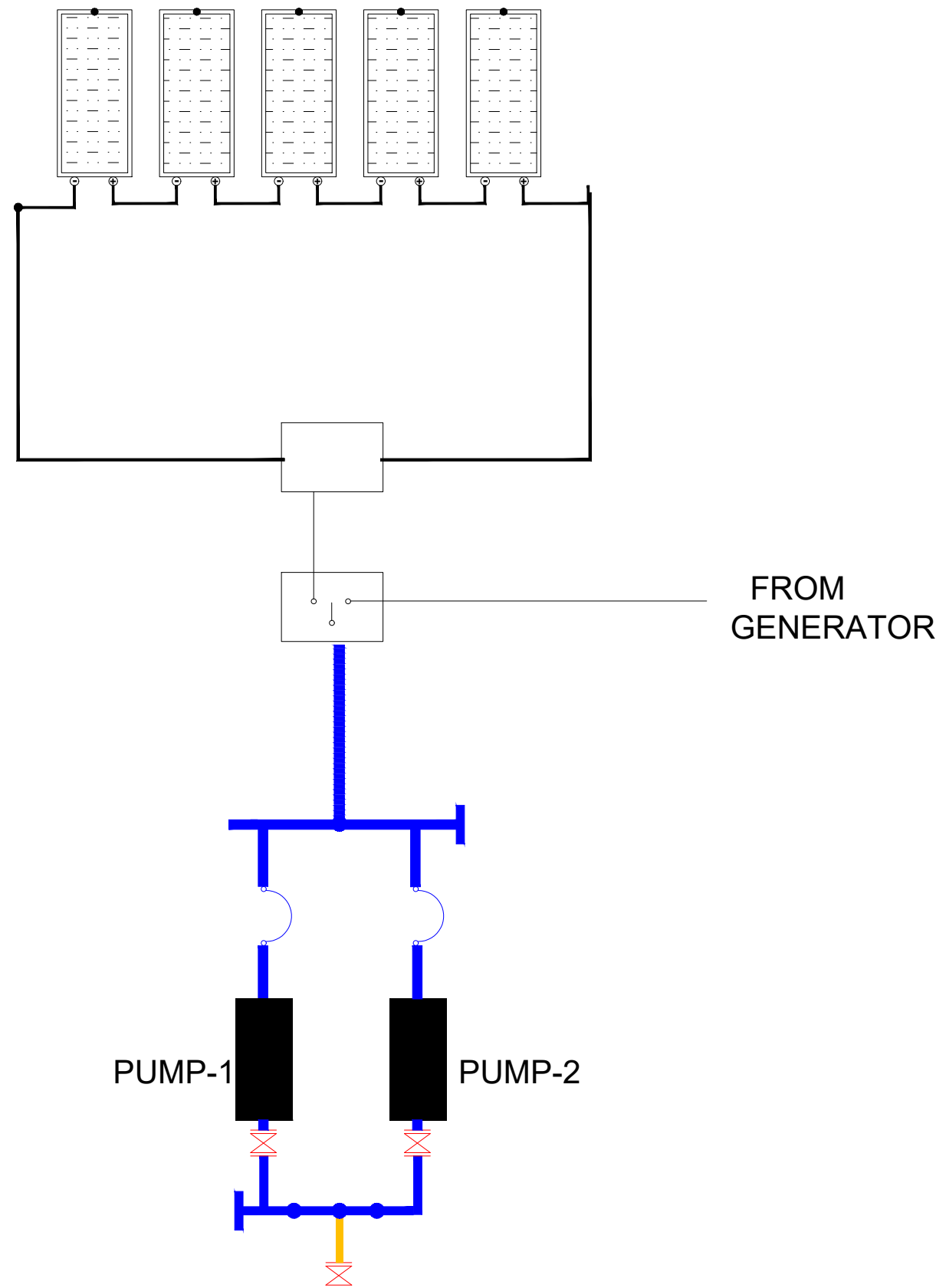
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DRAWING TITLE : **PUMP HOUSE**  
Solar Array Layout- High Lift Pumps 1

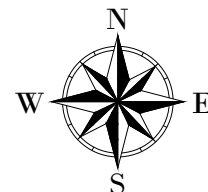
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Drawn by:	P.K
Designed by:	S.C.D
Checked by:	P.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-009</b>
Scale:	1:300
Sheet No.:	10 of 12

# 1m<sup>3</sup>/Hr HIGH LIFT PUMP

## 5x200Wp SOLAR PV ARRAY



### LEGEND



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PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

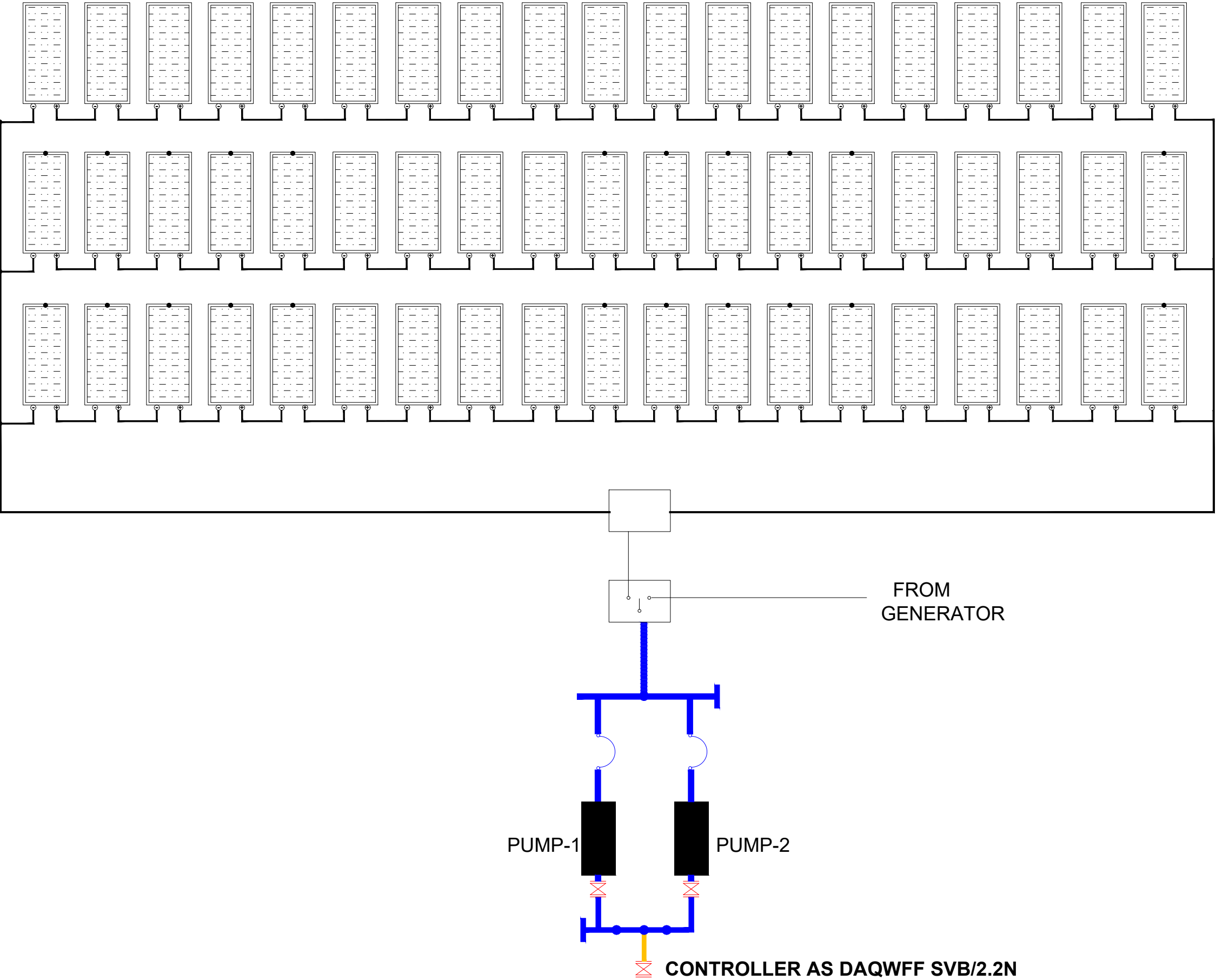
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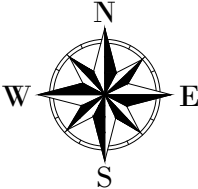
DRAWING TITLE : **PUMP HOUSE**  
Solar Array Layout- High Lift Pumps 2

Surveyed by:	R.K
Drawn by:	P.K
Designed by:	S.C.D
Checked by:	P.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-009</b>
Scale:	1:300
Sheet No.:	11 of 12

19m<sup>3</sup>/Hr HIGH LIFT PUMP  
3x18x200Wp SOLAR PV ARRAY



LEGEND



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PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT  
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

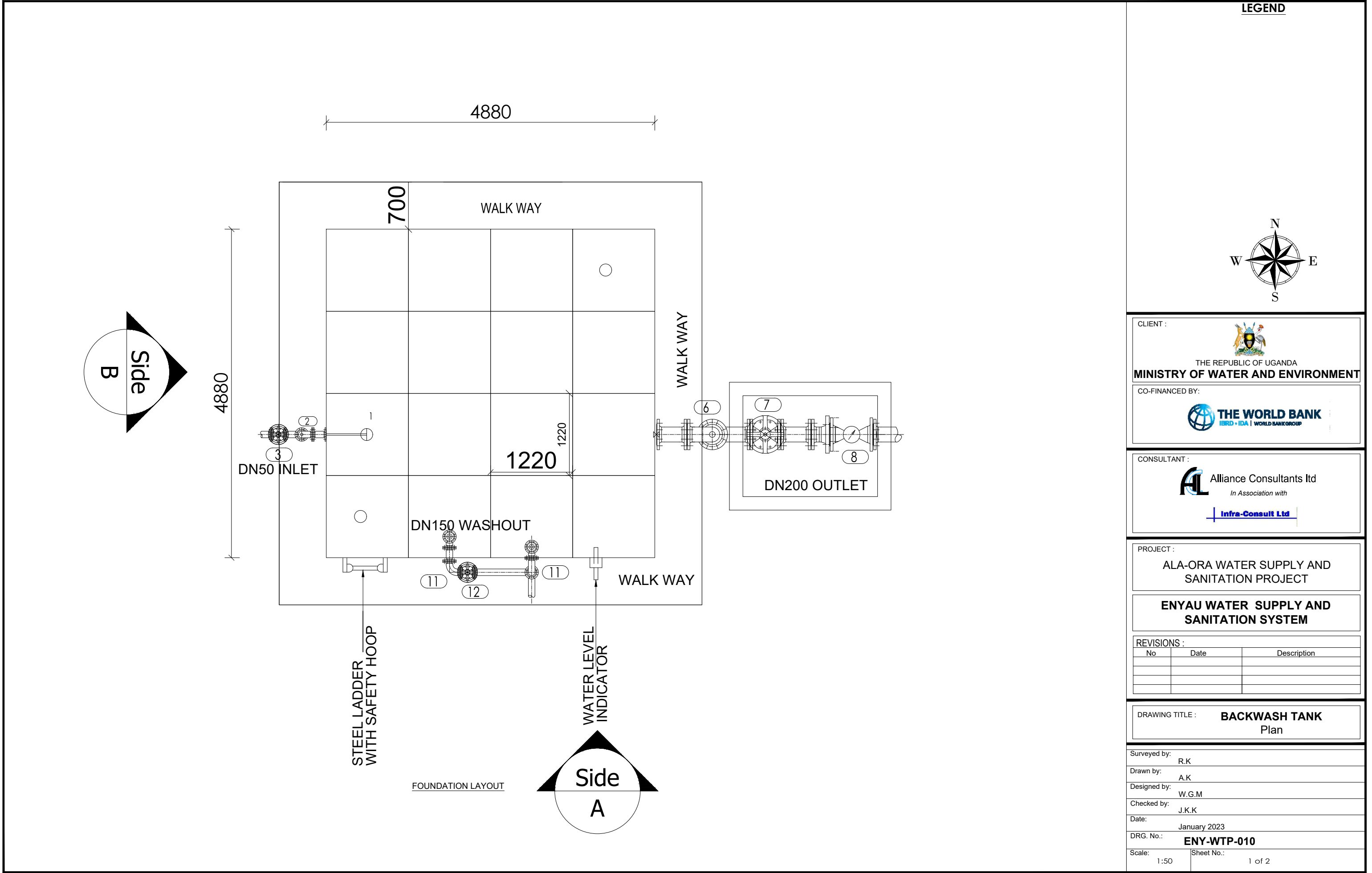
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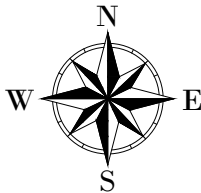
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Solar Array Layout- High Lift Pumps 3

Surveyed by:	R.K
Drawn by:	P.K
Designed by:	S.C.D
Checked by:	P.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-009</b>
Scale:	1:300
Sheet No.:	12 of 12





LEGEND



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CONSULTANT :  
**AL** Alliance Consultants Ltd  
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**Infra-Consult Ltd**

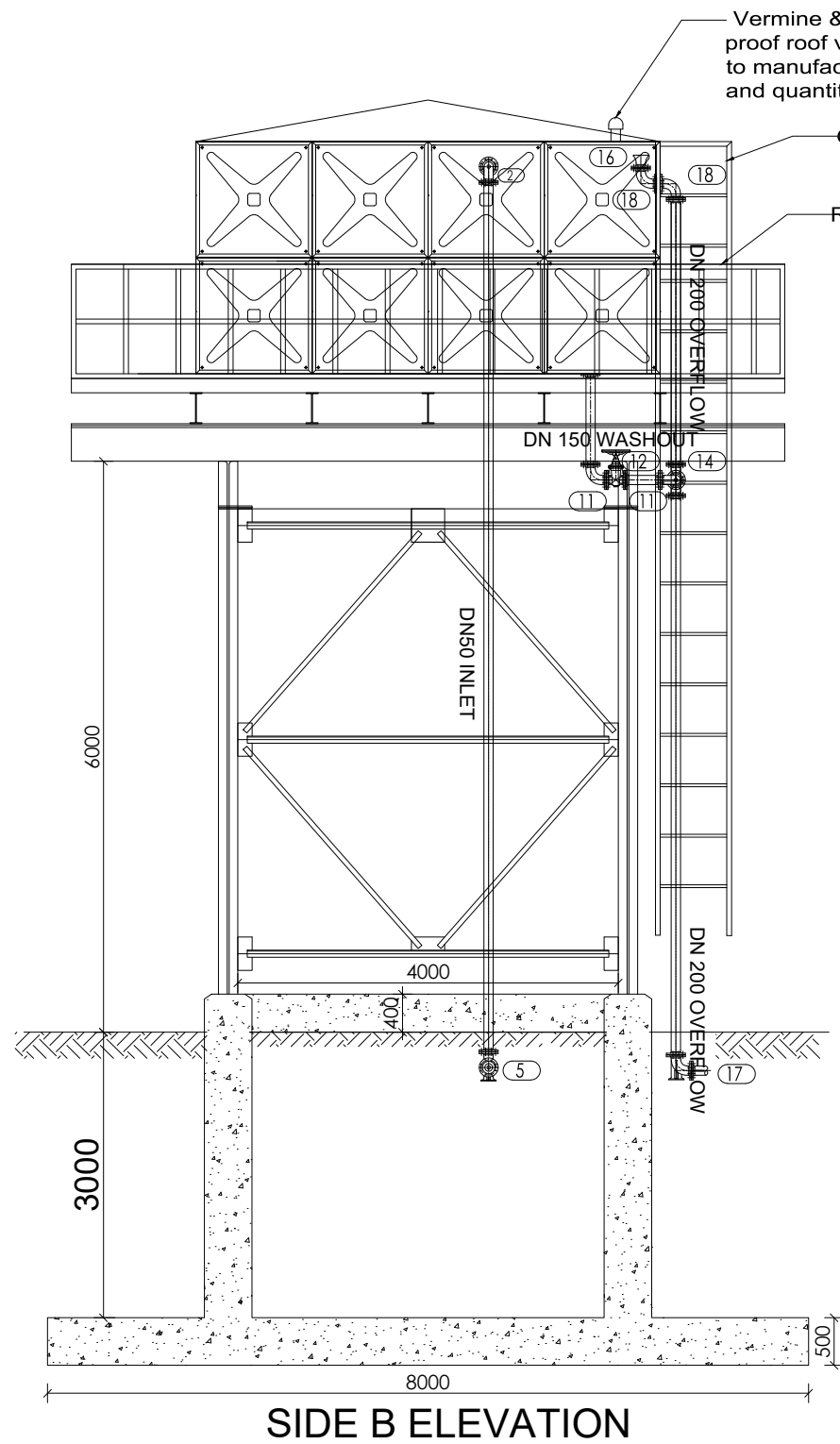
PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

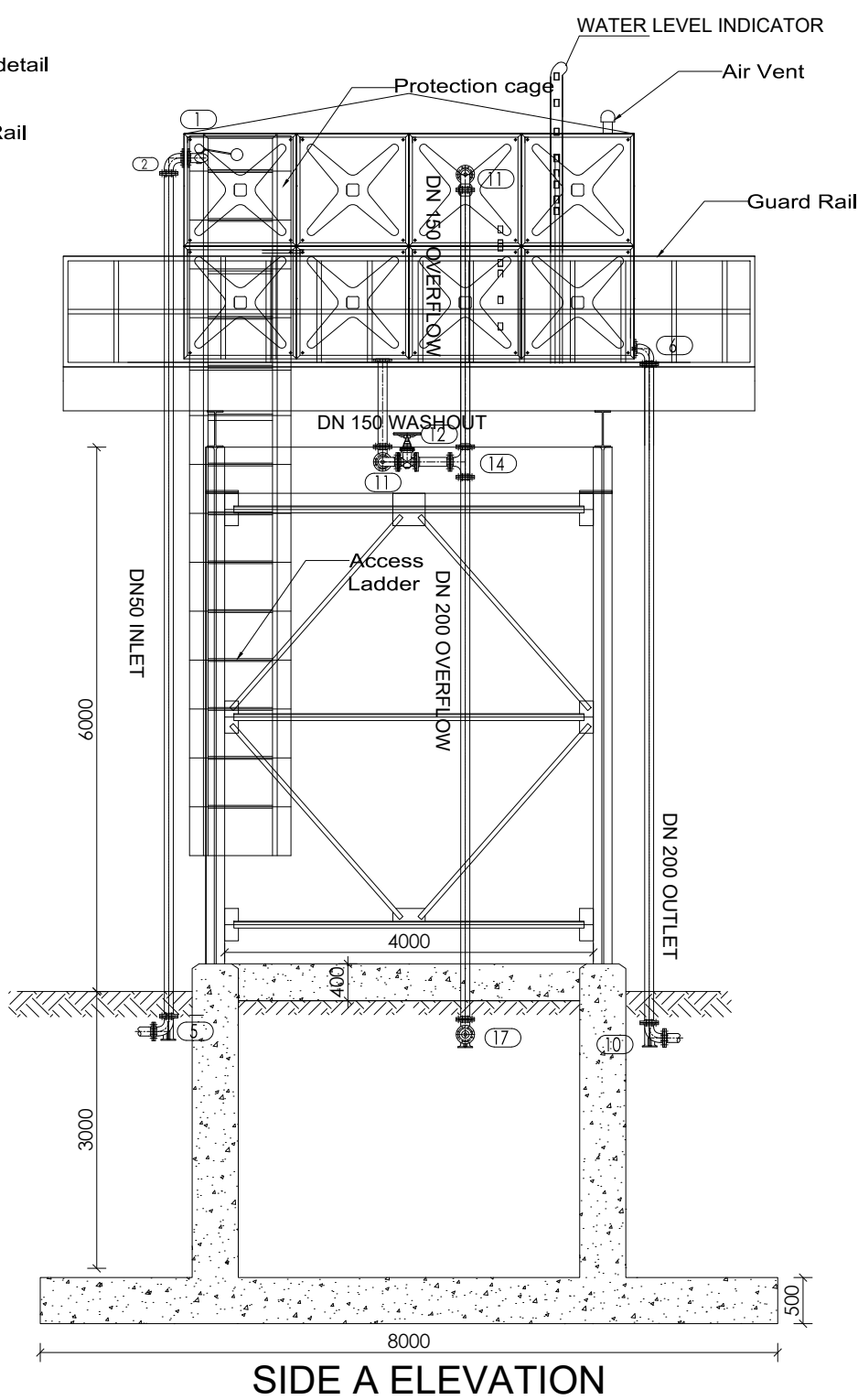
REVISIONS :		
No	Date	Description

DRAWING TITLE : **BACKWASH TANK  
Plan**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-010</b>
Scale:	1:50
Sheet No.:	1 of 2



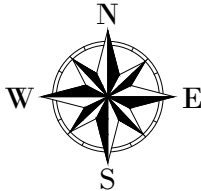
SIDE B ELEVATION



SIDE A ELEVATION

PIPES AND FITTINGS SCHEDULE (INLET)		
ITEM	No. OF	DESCRIPTION
①	1	DN50 FLOAT VALVE
②	1	DN50 FLANGED 90° BEND
③	1	DN50 FLANGED GATE VALVE
⑤	1	DN50 90° DUCKFOOT BEND
PIPES AND FITTINGS SCHEDULE (OUTLET)		
⑥	1	DN200 FLANGED 90° BEND
⑦	1	DN200 FLANGED GATE VALVE
⑧	1	DN200 BULK WATER METER
⑩	1	DN200 90° DUCKFOOT BEND
PIPES AND FITTINGS SCHEDULE (WASHOUT & OVERFLOW)		
⑪	2	DN150 FLANGED 90° BEND
⑫	1	DN150 FLANGED GATE VALVE
⑭	1	DN200/150 ALL FLANGED TEE
⑮	1	DN200 BELL MOUTH
⑰	1	DN200 90° DUCKFOOT BEND
⑱	2	DN200 90° BEND

LEGEND



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 **Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

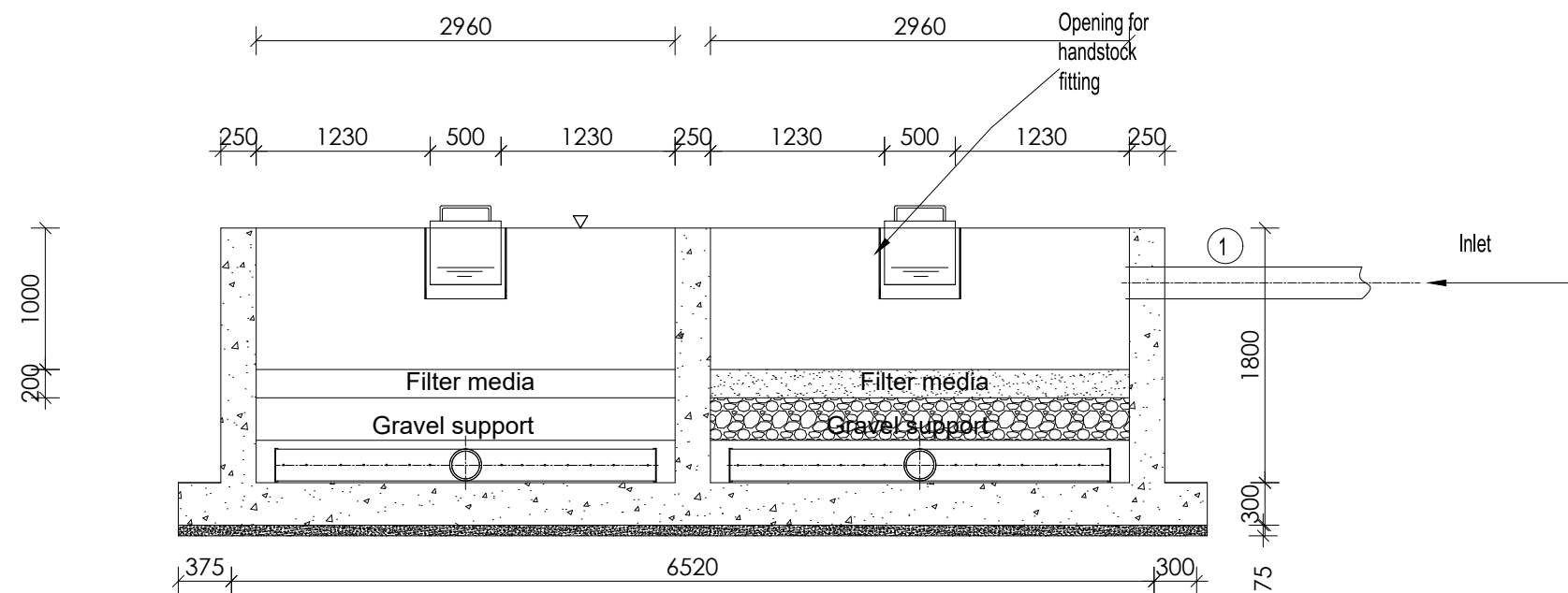
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

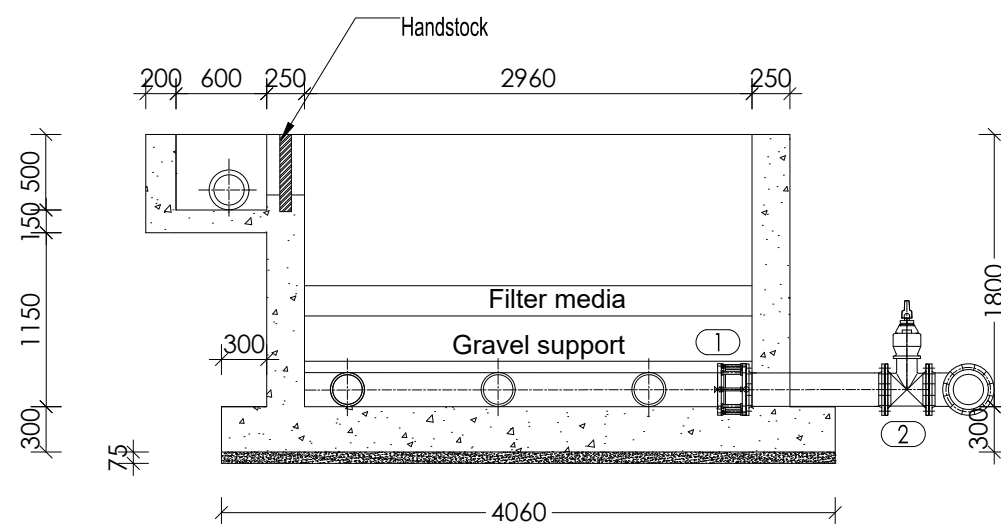
DRAWING TITLE : **BACKWASH TANK  
Elevations**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-010</b>
Scale:	1:75
Sheet No.:	2 of 2



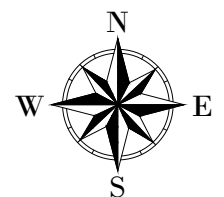


**SECTION A-A**



**SECTION B-B**

**LEGEND**



CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

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PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **SLUDGE DRYING BEDS**  
Sections

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

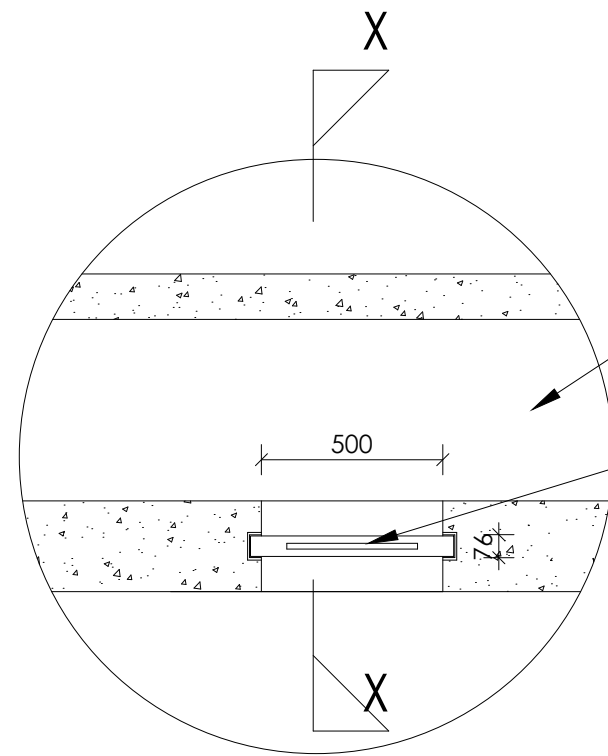
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Scale:

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Sheet No.:

2 of 3

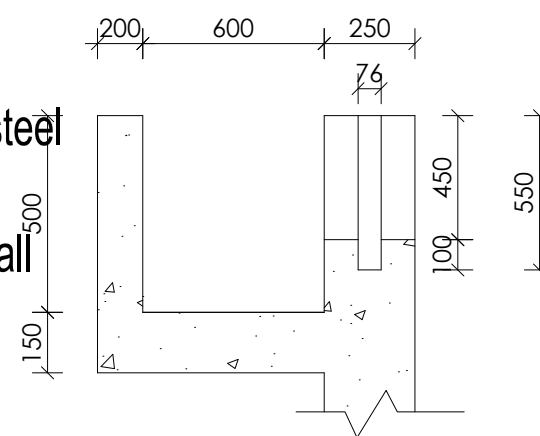


HAND STOCK FIXING  
PLAN DETAILS

DETAIL a

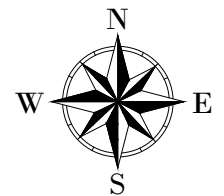
Inlet channel

560mm wide x 550mm high stainless steel  
plate slid through 2no stainless steel  
channel guides 76x38x7 in concrete wall  
length 550mm



SECTION X-X

**LEGEND**



CLIENT :



CO-FINANCED BY:



CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**SLUDGE DRYING BEDS  
Sections**

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

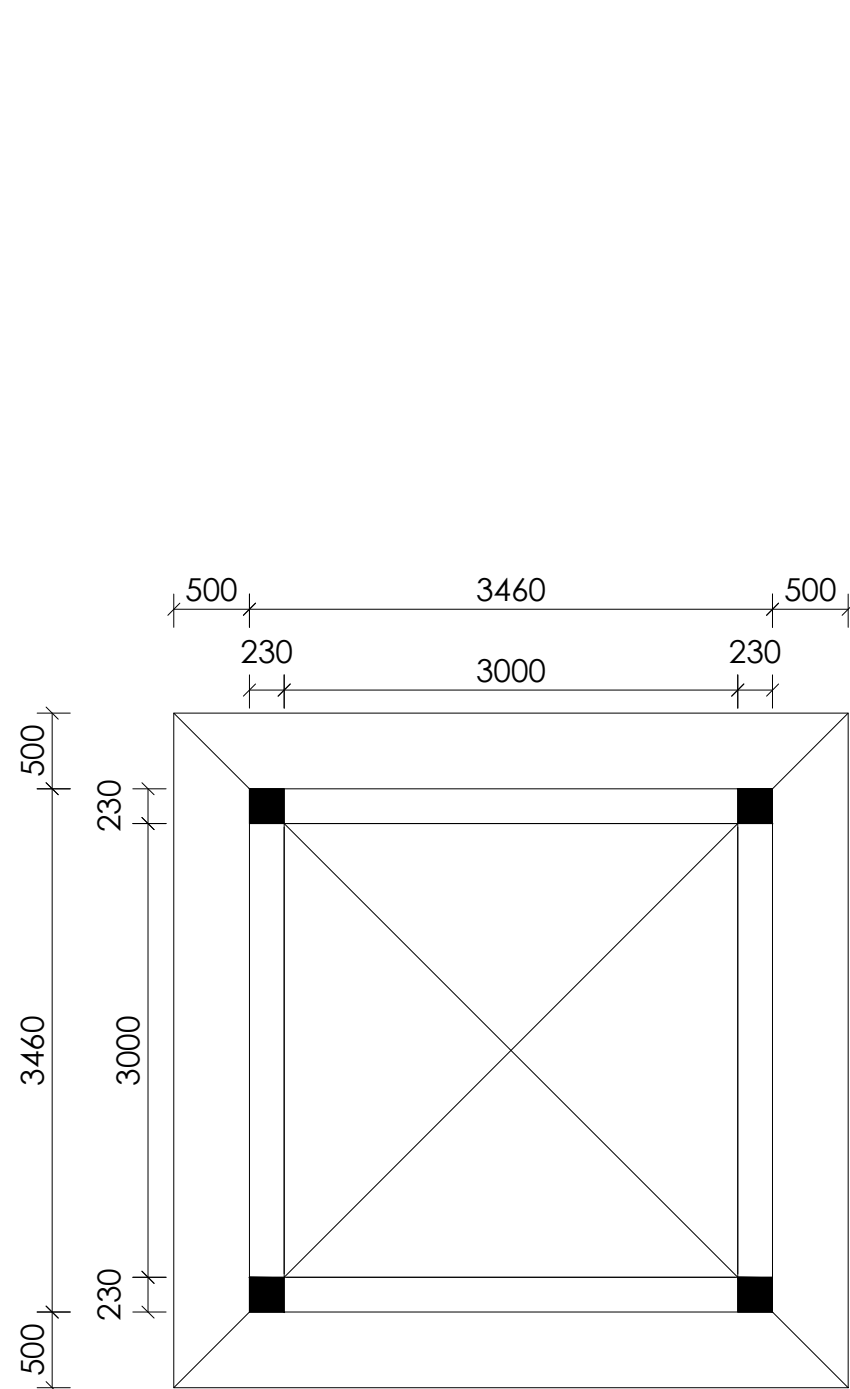
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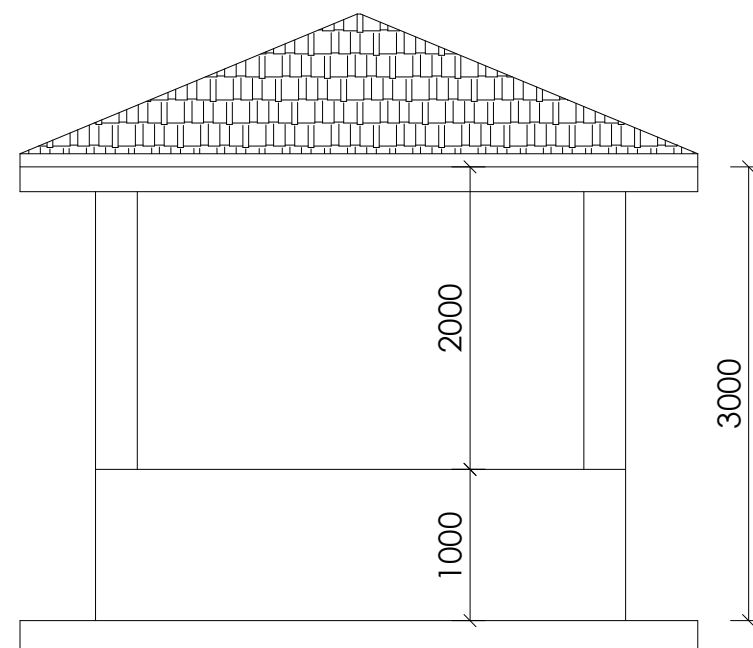
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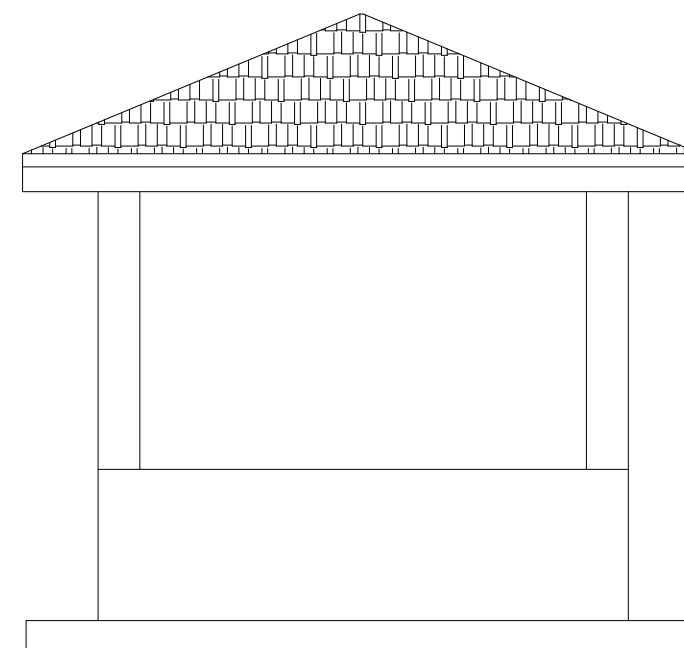
3 of 3



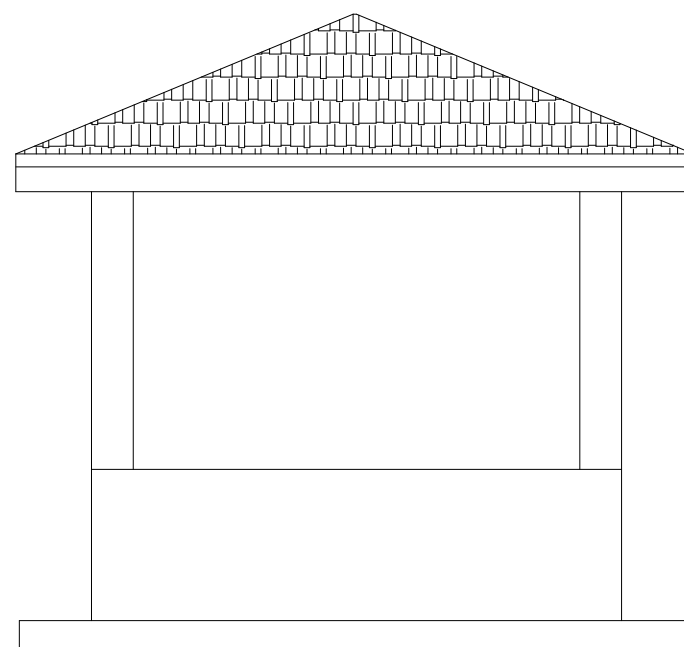
SECTION 4-4



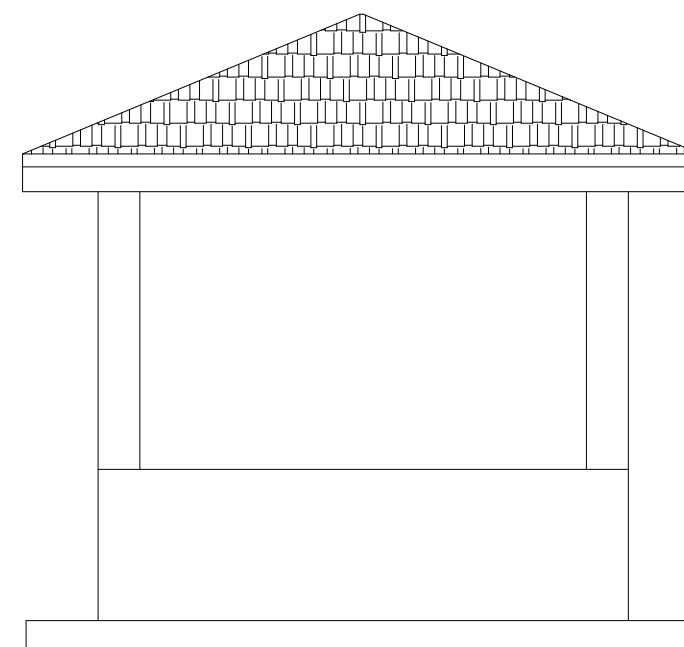
NORTH ELEVATION



EAST ELEVATION

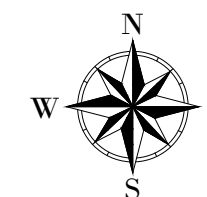


SOUTH ELEVATION



WEST ELEVATION

## LEGEND



CLIENT :



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CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**SAND STORAGE**

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

**ENY-WTP-012**

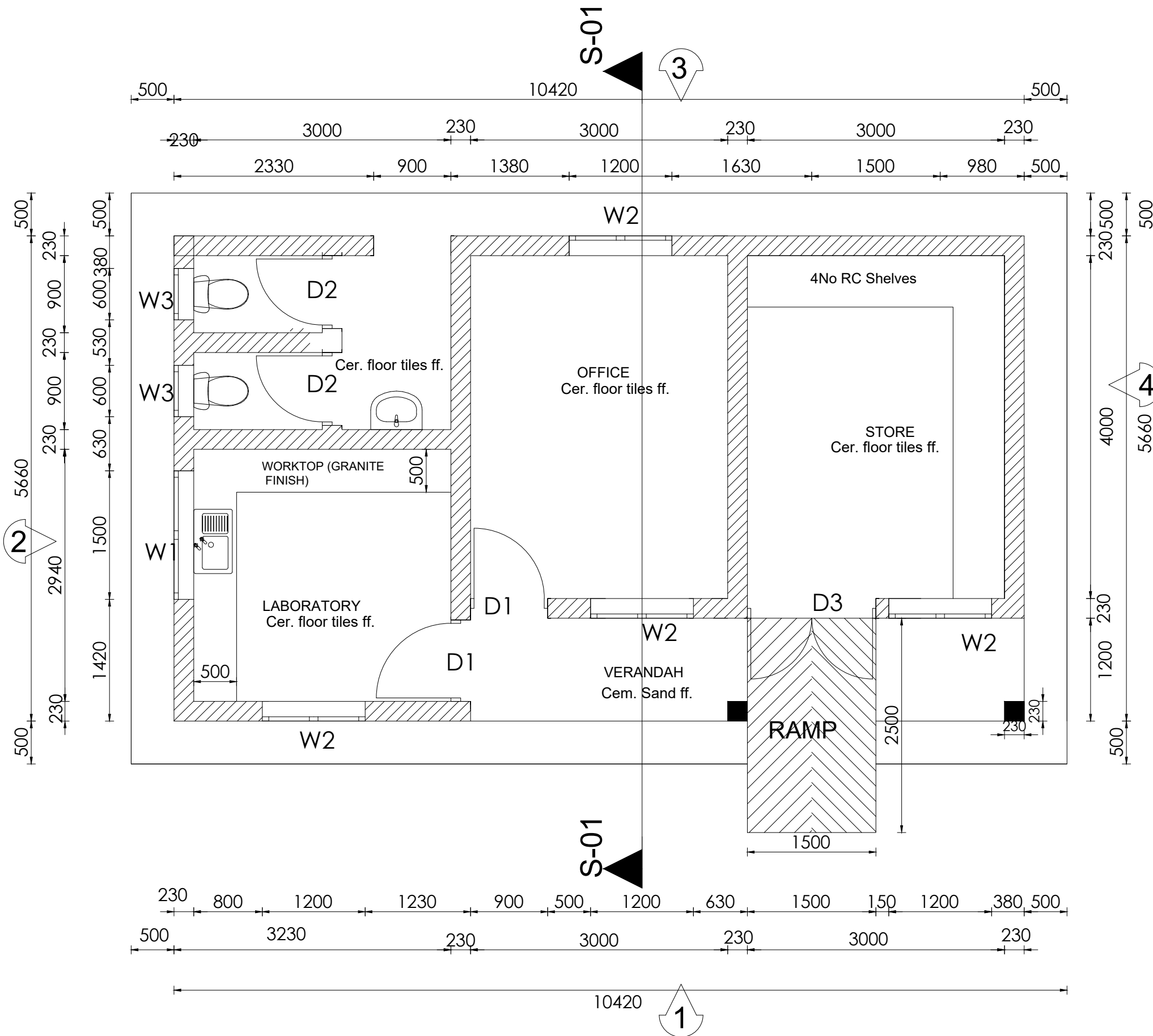
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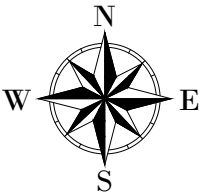
Sheet No.:

1 of 1





LEGEND



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CONSULTANT :

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In Association with  
 **Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

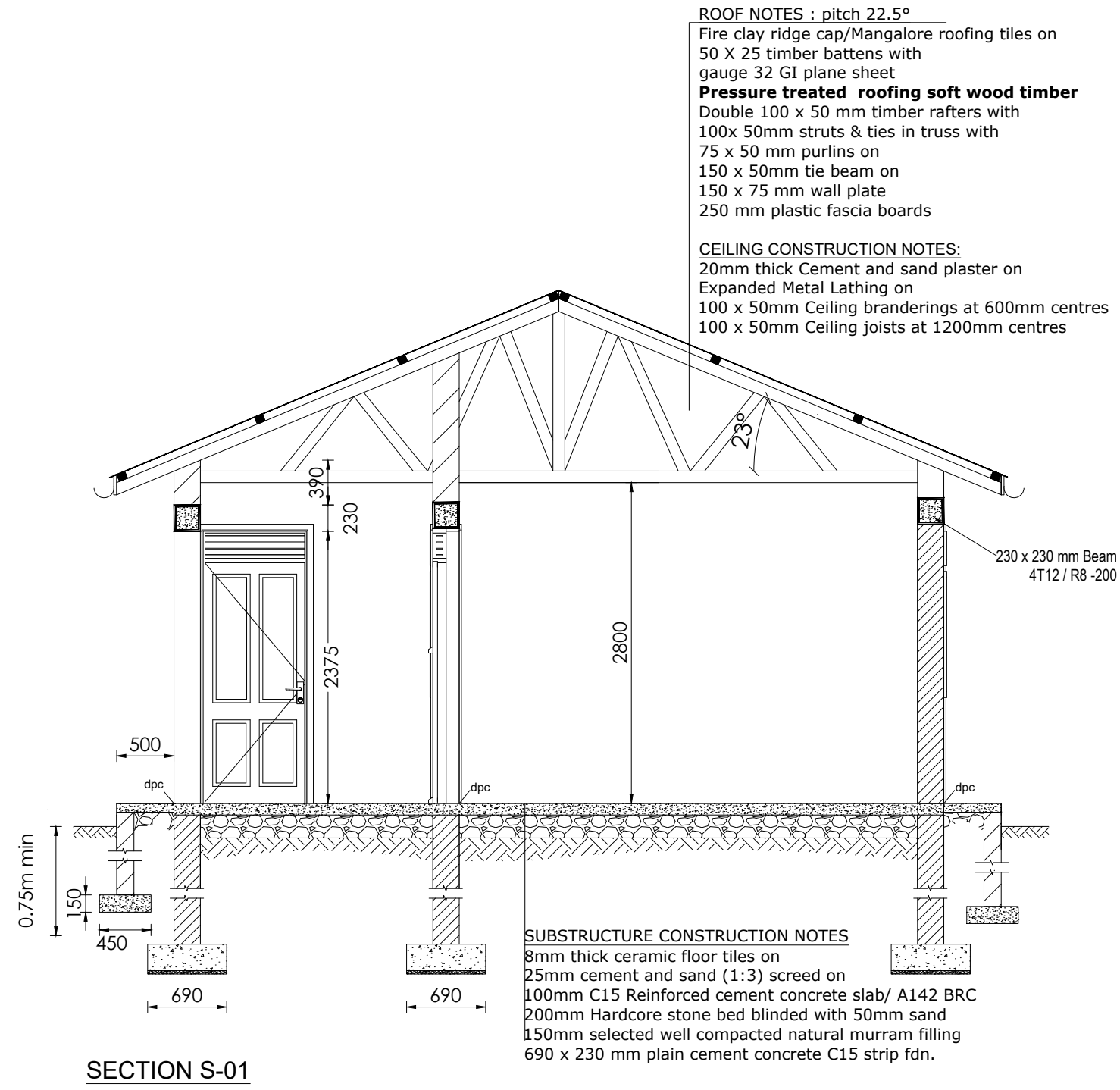
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **ADMINISTRATION BLOCK  
Plan**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-013</b>
Scale:	1:50
Sheet No.:	1 of 5



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SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **ADMINISTRATION BLOCK**  
Section

Surveyed by: R.K

Drawn by: A.K

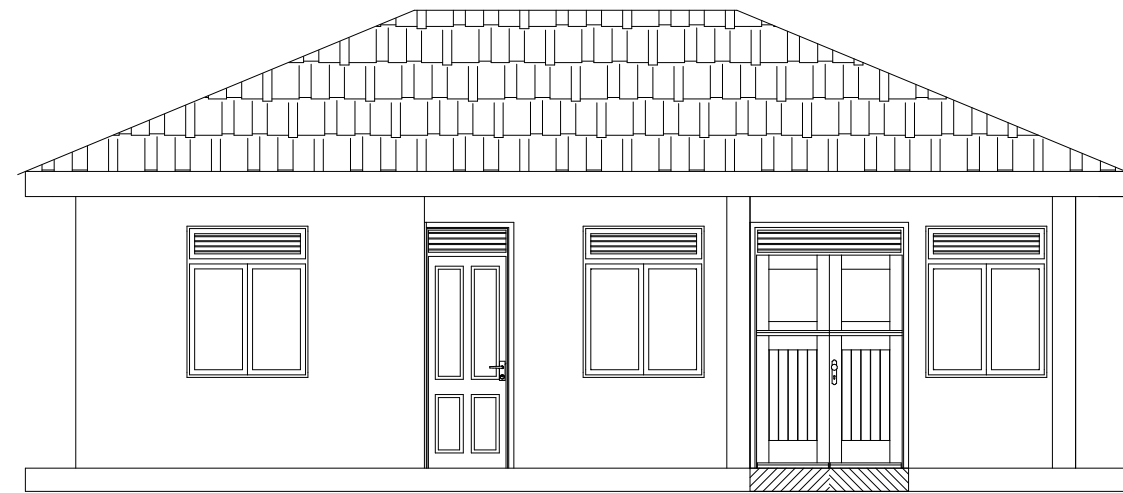
Designed by: W.G.M

Checked by: J.K.K

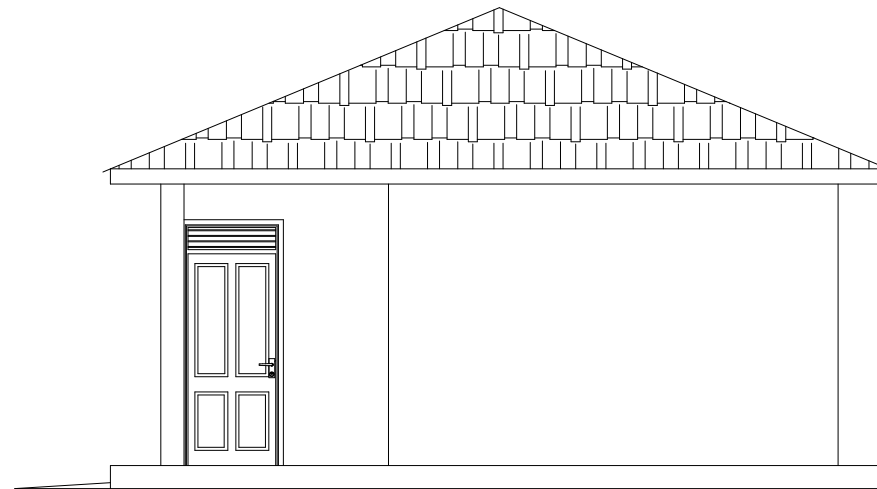
Date: January 2023

DRG. No.: **ENY-WTP-013**

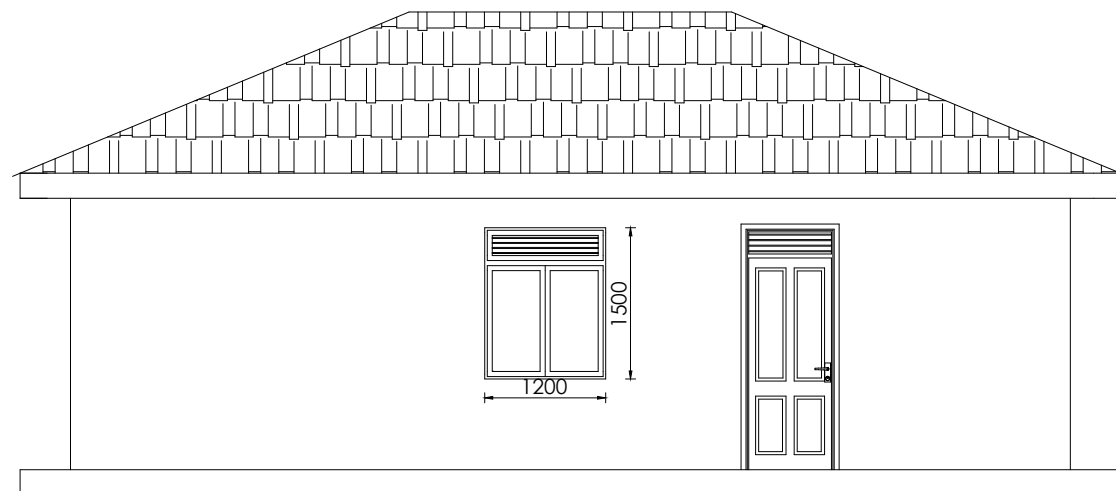
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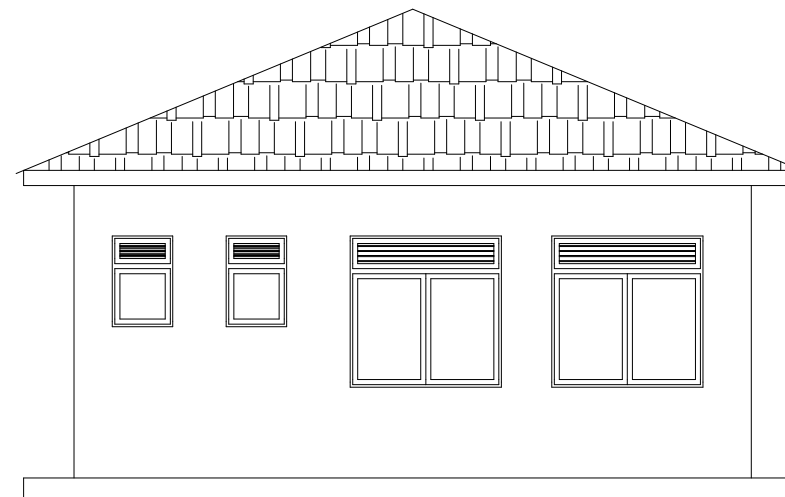
FRONT ELEVATION



SIDE ELEVATION 1

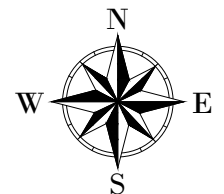


RARE ELEVATION



SIDE ELEVATION 2

LEGEND



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In Association with  
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PROJECT :

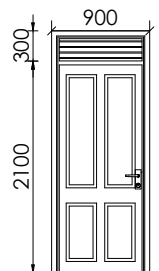
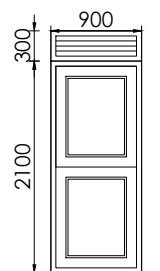
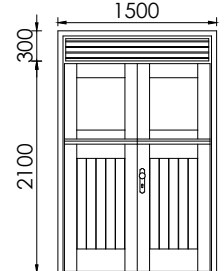
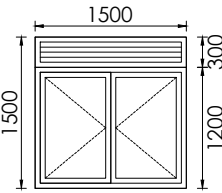
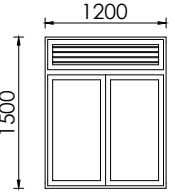
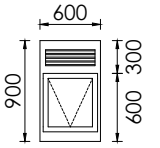
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

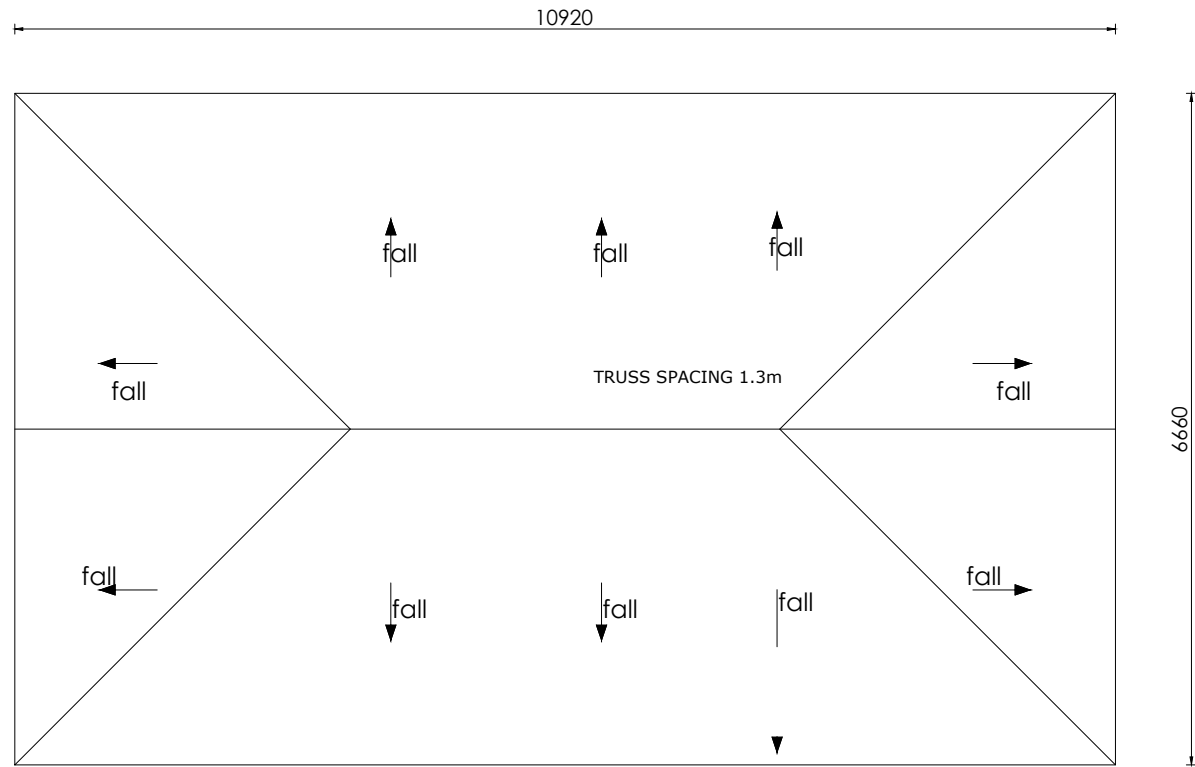
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

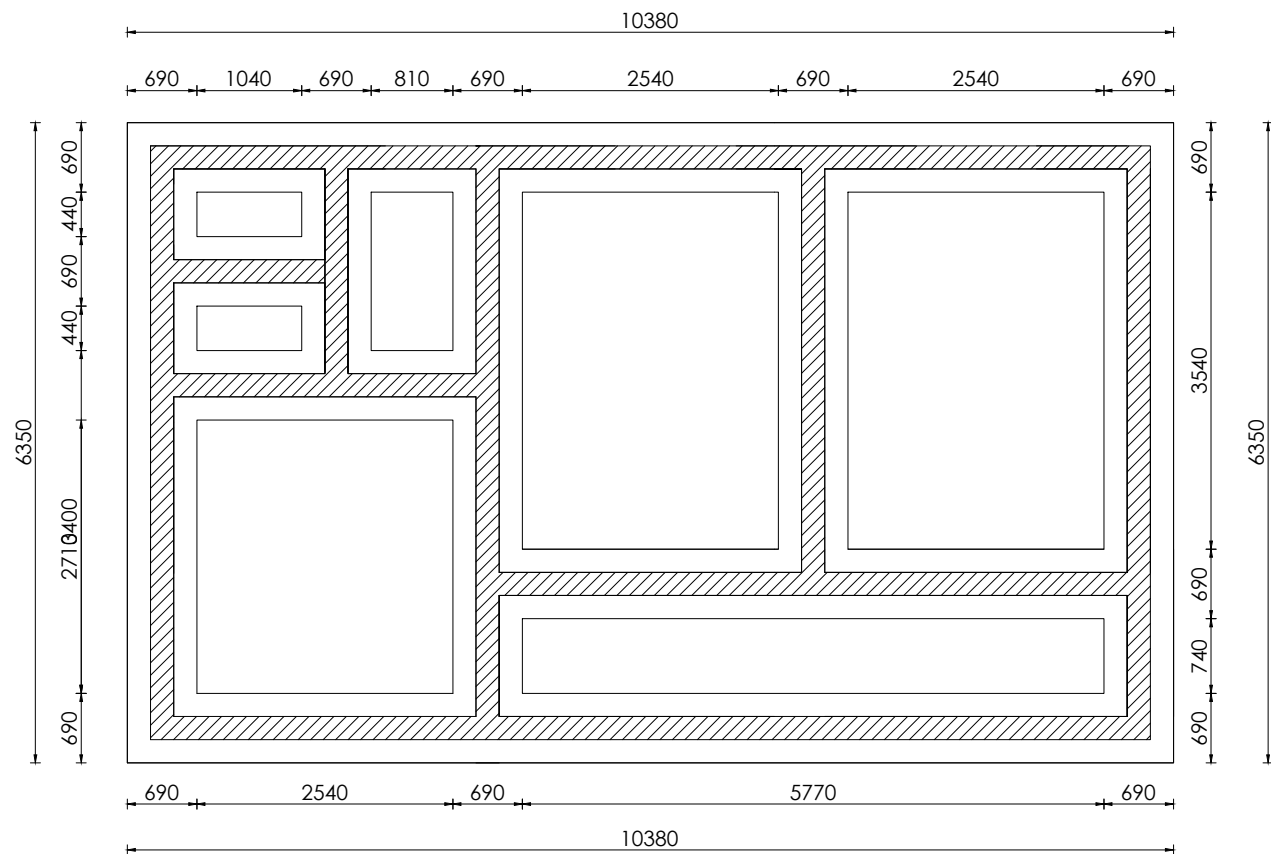
DRAWING TITLE : **ADMINISTRATION BLOCK  
Elevations**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-013</b>
Scale:	1:100
Sheet No.:	3 of 5

DOOR SCHEDULE				WINDOW SCHEDULE			
Item	D1	D2	D3	Item	Window (W1)	Window (W2)	Window (W3)
Size	900 X 2400	800X 2400	1500 X 2400	Size	1500 X 1500	1200 X 1500	600 X 900
Number	2	2	1	Number	1	4	2
3D Symbol				3D Symbol			
Description	Single leaf wooden paneled door	Single leaf wooden paneled door	Double leaf metallic door	Description	Double sash glazed metallic casement	Double sash glazed metallic casement	Top Hung metallic casement
				<b>NB.</b> <ul style="list-style-type: none"><li>Glass panes to be <math>\leq 0.2m^2</math></li><li>Burglar proofing to be of a 25x3mm flat bar grille with 175x300mm pitch.</li><li>Permanent Vents are to be fitted with mosquito proofing nets i.e plastic net sandwiched with coffeetray mesh.</li><li>All metallic window &amp; Door sections to be 3.0mm minimum thickness</li></ul>			

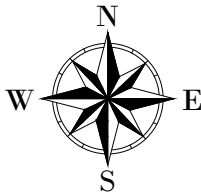


ROOF LAYOUT



FOUNDATION LAYOUT

LEGEND



CLIENT :  
  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:  
  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :  
 Alliance Consultants Ltd  
In Association with  


PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

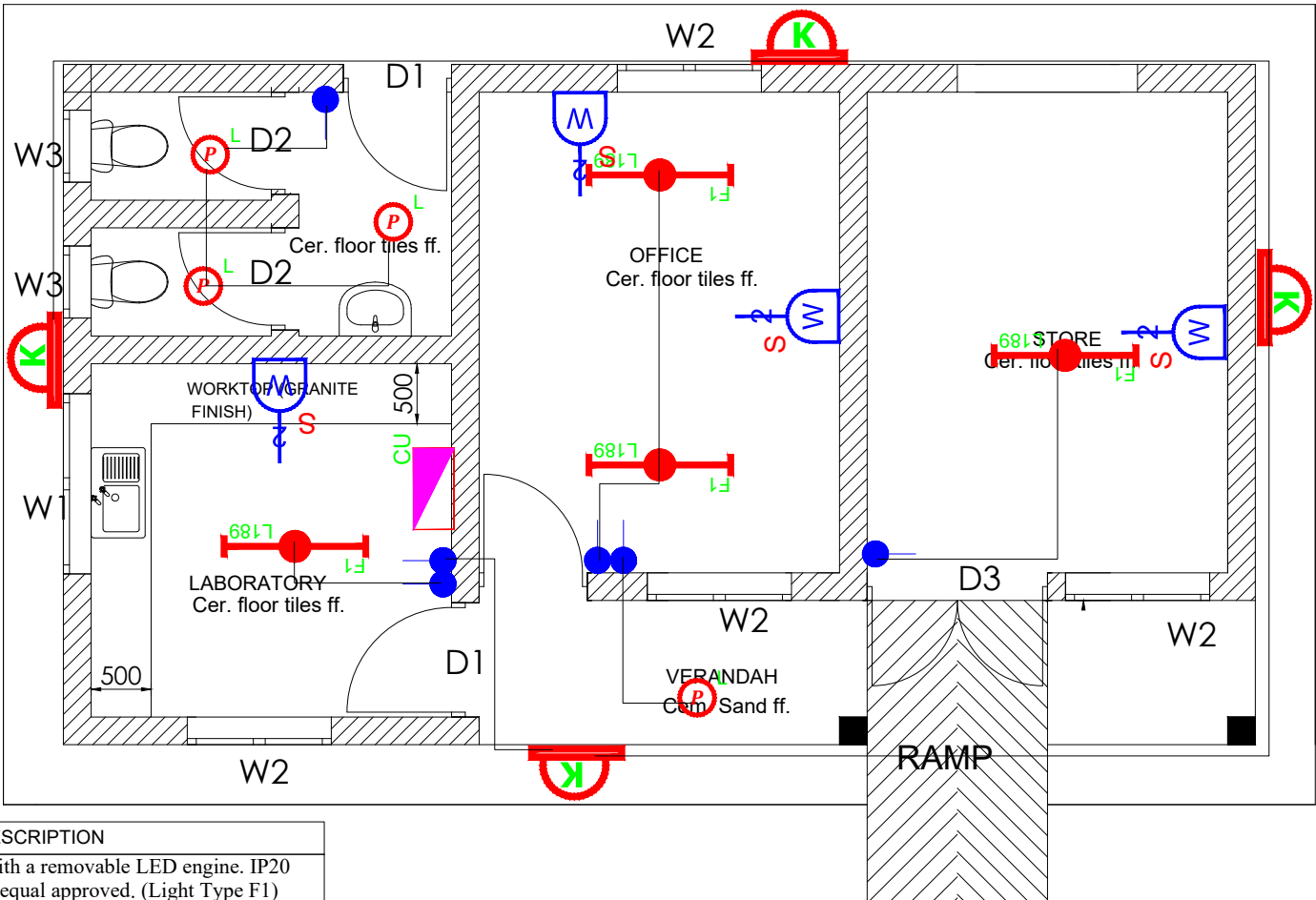
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

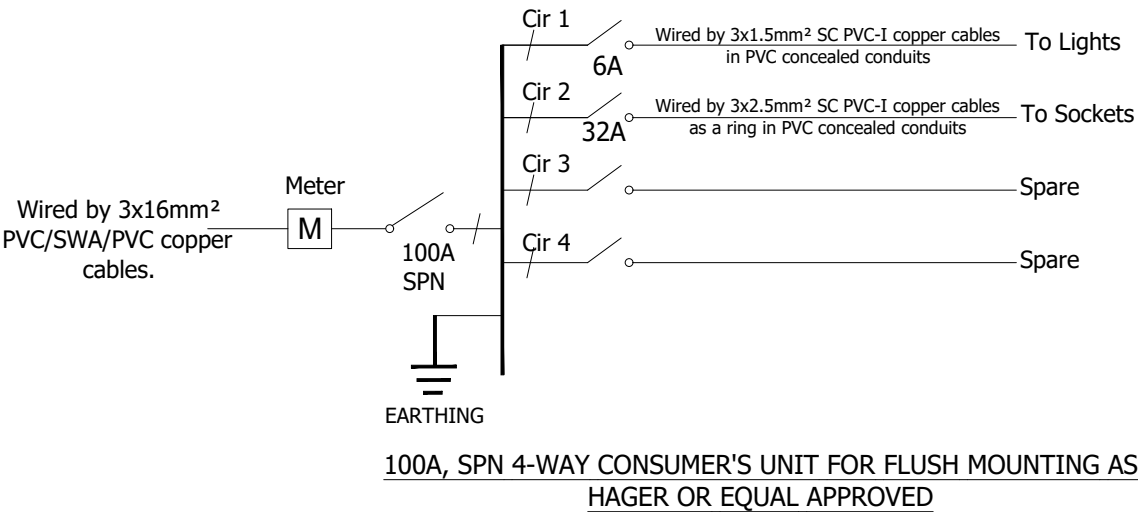
No	Date	Description

DRAWING TITLE : **ADMINISTRATION BLOCK**  
Foundation & Roof Layout

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-013</b>
Scale:	1:75
Sheet No.:	4 of 5



SYMBOL	DESCRIPTION
	1200mm 18W LED batten with a removable LED engine. IP20 As Thorn PopPack LED. or equal approved. (Light Type F1)
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp
	wall mounted light
	Socket outlet on Wall
	Consumer's Unit
	One Gang 1way Switch
	Two Gang 1way Switch
	Three Gang 1way Switch



**LEGEND**

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**MINISTRY OF WATER AND ENVIRONMENT**

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CONSULTANT :

**Alliance Consultants Ltd**  
In Association with  
  
**Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **ADMINISTRATION BLOCK**  
Electrical Layout

Surveyed by:

Drawn by: P.K

Designed by: P.K

Checked by: S.C.D

Date: January 2023

DRG. No.: **ENY-WTP-013**

Scale: 1:60 Sheet No.: 5 of 5



1 of 5





**THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

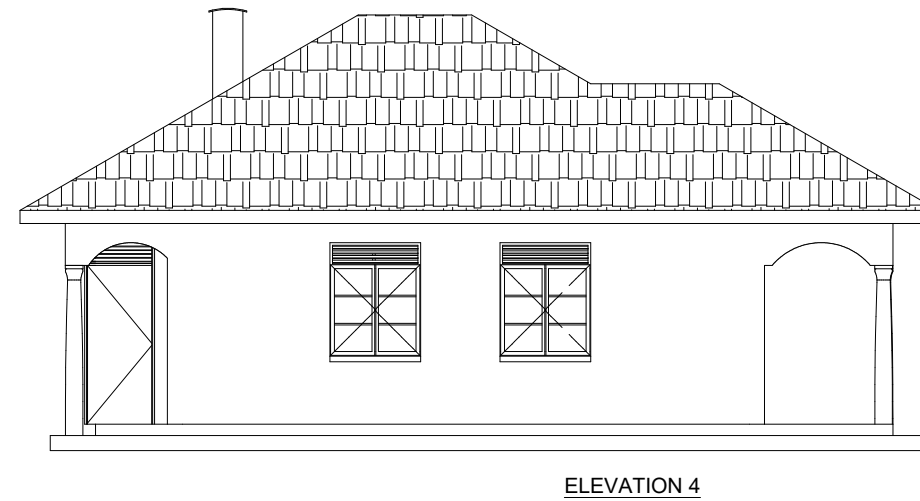
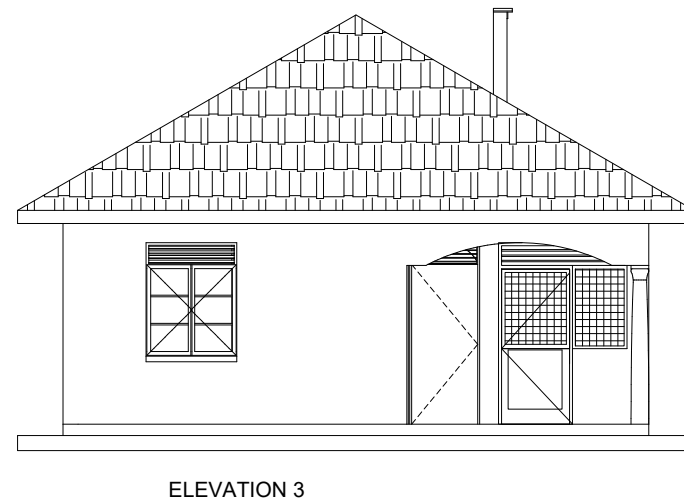
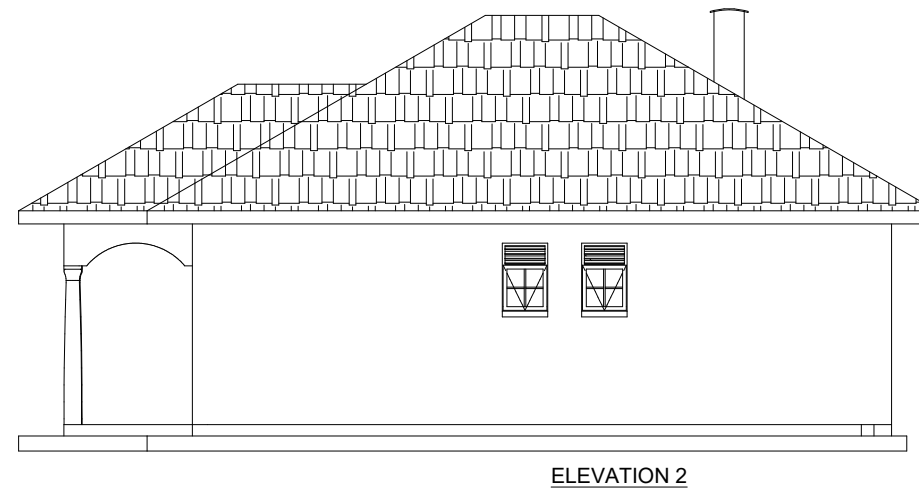
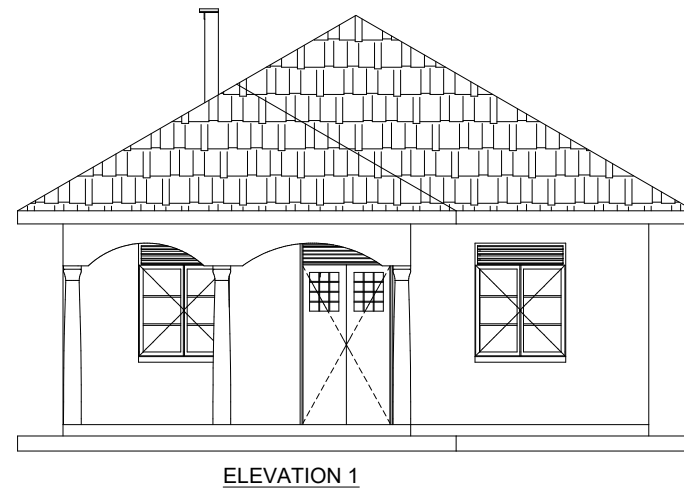
**AL** Alliance Consultants Ltd  
In Association with  
**Infra-Consult Ltd**

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

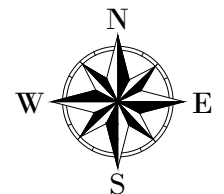
No	Date	Description

2 of 5

SECTION THROUGH  
COOKING PLACE B-B



## LEGEND



CLIENT :



THE REPUBLIC OF UGANDA

THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT

CO-FINANCED BY:



CONSULTANT :



Alliance Consultants Ltd

*In Association with*



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

## ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

REVISIONS:		
No	Date	Description

DRAWING TITLE : **SUPERINTENDENT'S HOUSE**  
Elevations

Surveyed by:
--------------

R.K

Drawn by:

A.K

Designed by:	
--------------	--

W.G.M

Checked by:	
-------------	--

J.K.K

Date:

January 2023

DRG. No.:	
-----------	--

**ENY-WTP-014**




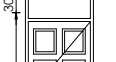
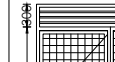
Scale:

e: 1:100




Sheet No.:

3 of 5

**Door Schedule**

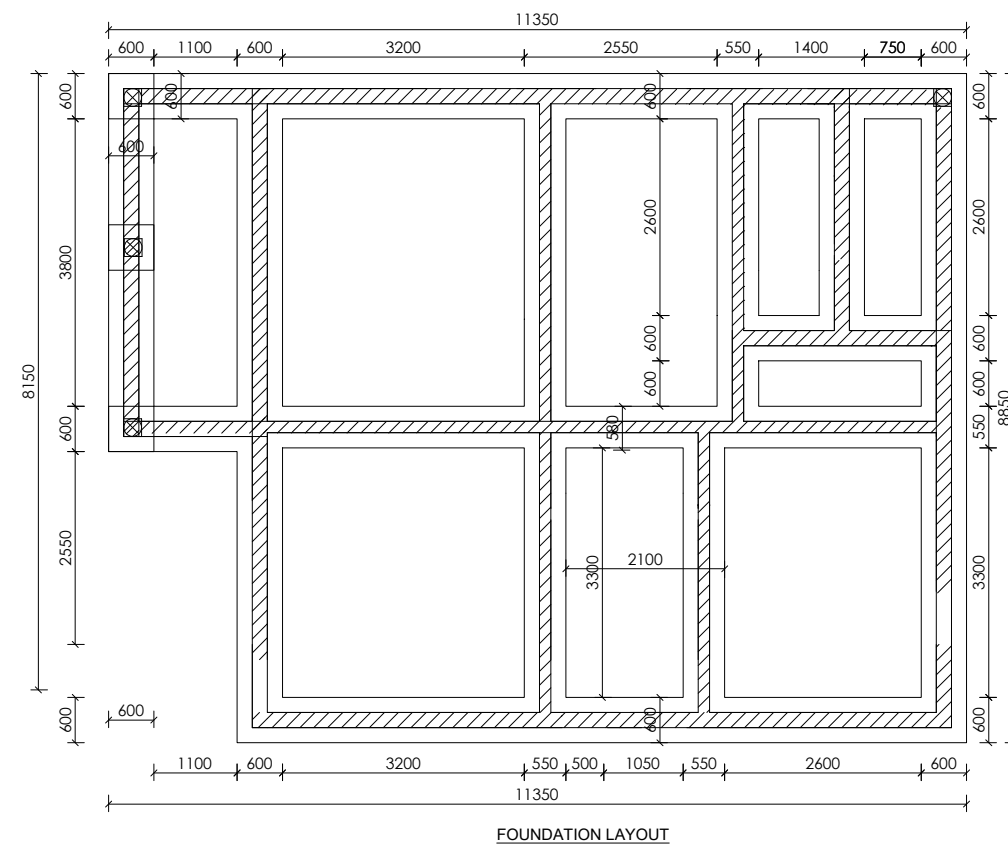
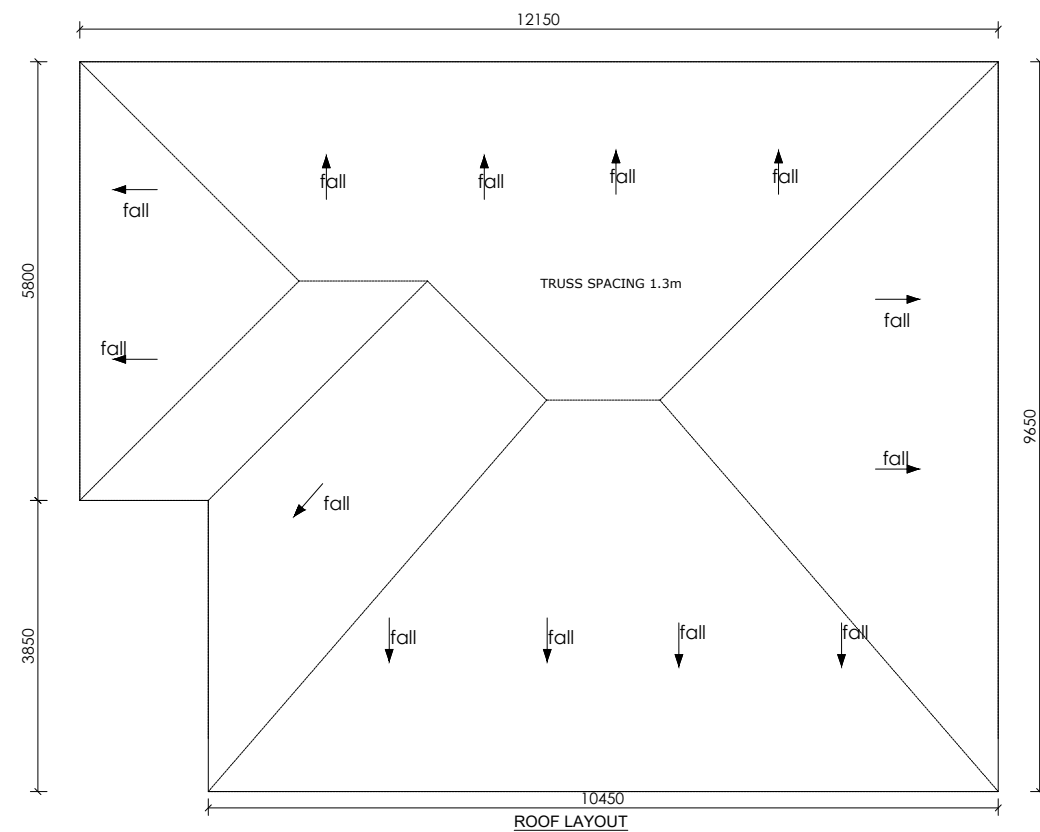
Door Name	D1	D2	D3	D4	D5
Quantity	1	3	3	1	1
W x H Size	1000x2400	900x2400	900x2400	800x2400	900x2400
Elevation View	 <p>Single Leaf Metallic Casement Door</p>	 <p>Single Leaf Wooden Paneled Door</p>	 <p>Single Leaf Half Glazed/ Half Steel plate Door</p>	 <p>Single Leaf Wooden Paneled Door</p>	 <p>Single Leaf half steel plate door with metallic grill</p>

## Window Schedule

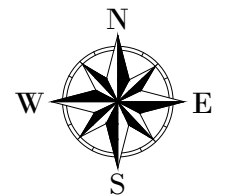
Window Schedule			
Window Name		W1	W2
Quantity		5	2
W x H Size		1200x1500	600x900
	Elevation View		
	<i>NB.</i>	Double Sash Glazed Metallic Casement	Top Hung Metallic Casement

*NB.*

- | Sl. No. | Particulars  | Unit | Quantity | Rate | Amount |
|---------|--|------|----------|------|--------|
|         | <ul style="list-style-type: none"> <li>Glass panes to be <math>\leq 0.2m^2</math></li> <li>Burglar proofing to be of a 25x3mm flat bar grille with 175x300mm pitch.</li> <li>Permanent Vents are to be fitted with mosquito proofing nets i.e plastic net sandwiched with coffeetray mesh.</li> <li>All metallic window &amp; Door sections to be 3.0mm minimum thickness</li> </ul> |      |          |      |        |



## LEGEND



CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:



CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **SUPERINTENDENT'S HOUSE**  
Foundation and Roof Layout

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

















**ENY-WTP-014**

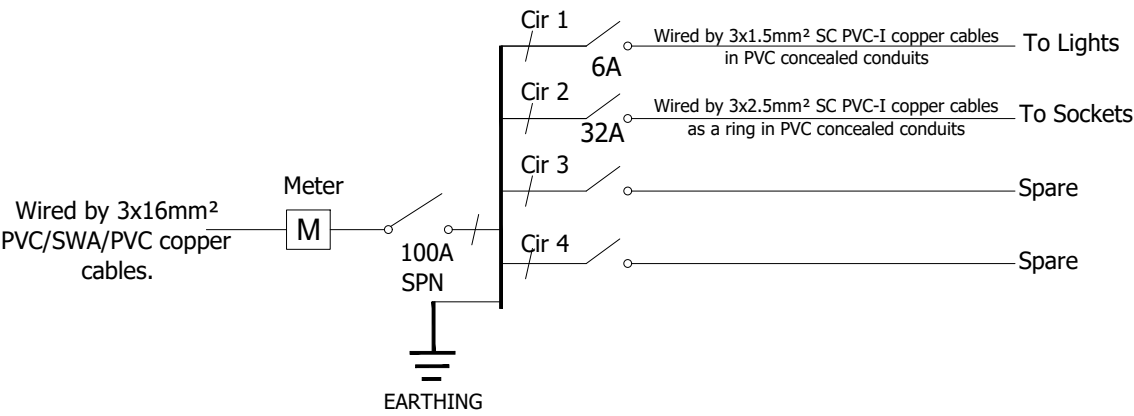
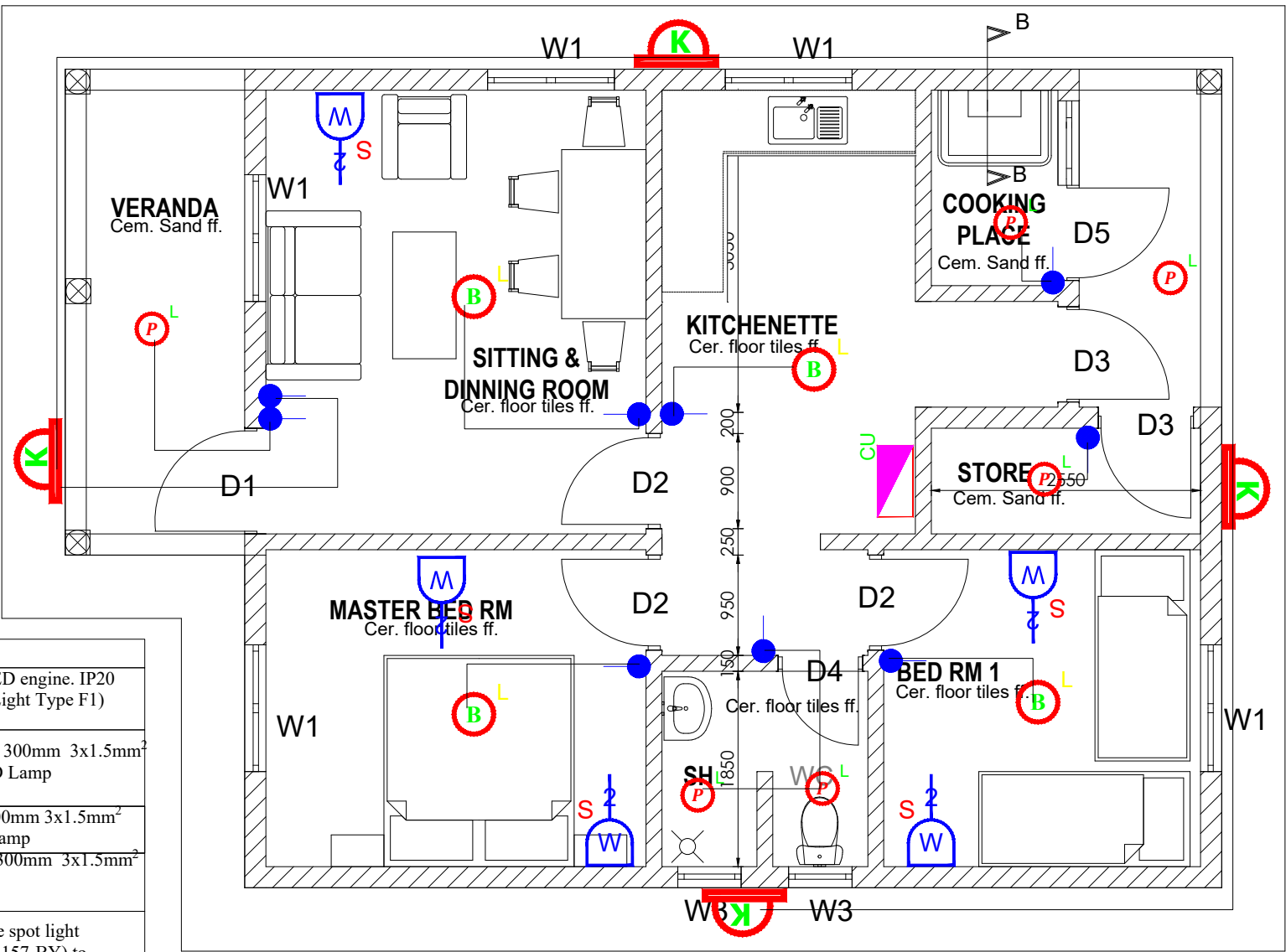
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Sheet No.:

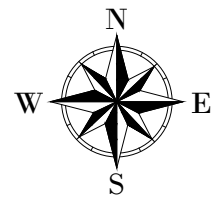
4 of 5

SYMBOL	DESCRIPTION
	1200mm 18W LED batten with a removable LED engine. IP20 As Thorn PopPack LED. or equal approved. (Light Type F1)
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp
	Decorative Bed side lamp complete with flexible spot light arm as LEDS-C4 BALI (05-3217-19-82 + PAN-157-BY) to client's approval.
	wall mounted light
	Socket outlet on Wall
	Consumer's Unit
	One Gang 2way Switch
	Two Gang 2way Switch
	Three Gang 2way Switch
	One Gang 1way Switch
	Two Gang 1way Switch
	Three Gang 1way Switch
	Intermediate Switch
	Photo - Cell




100A, SPN 4-WAY CONSUMER'S UNIT FOR FLUSH MOUNTING AS HAGER OR EQUAL APPROVED


**LEGEND**





CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

 Alliance Consultants Ltd  
In Association with  


PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**SUPERINTENDENT'S HOUSE**  
Electrical Layout

Surveyed by:

Drawn by:

P.K

Designed by:

P.K

Checked by:

S.C.D

Date:

January 2023

DRG. No.:

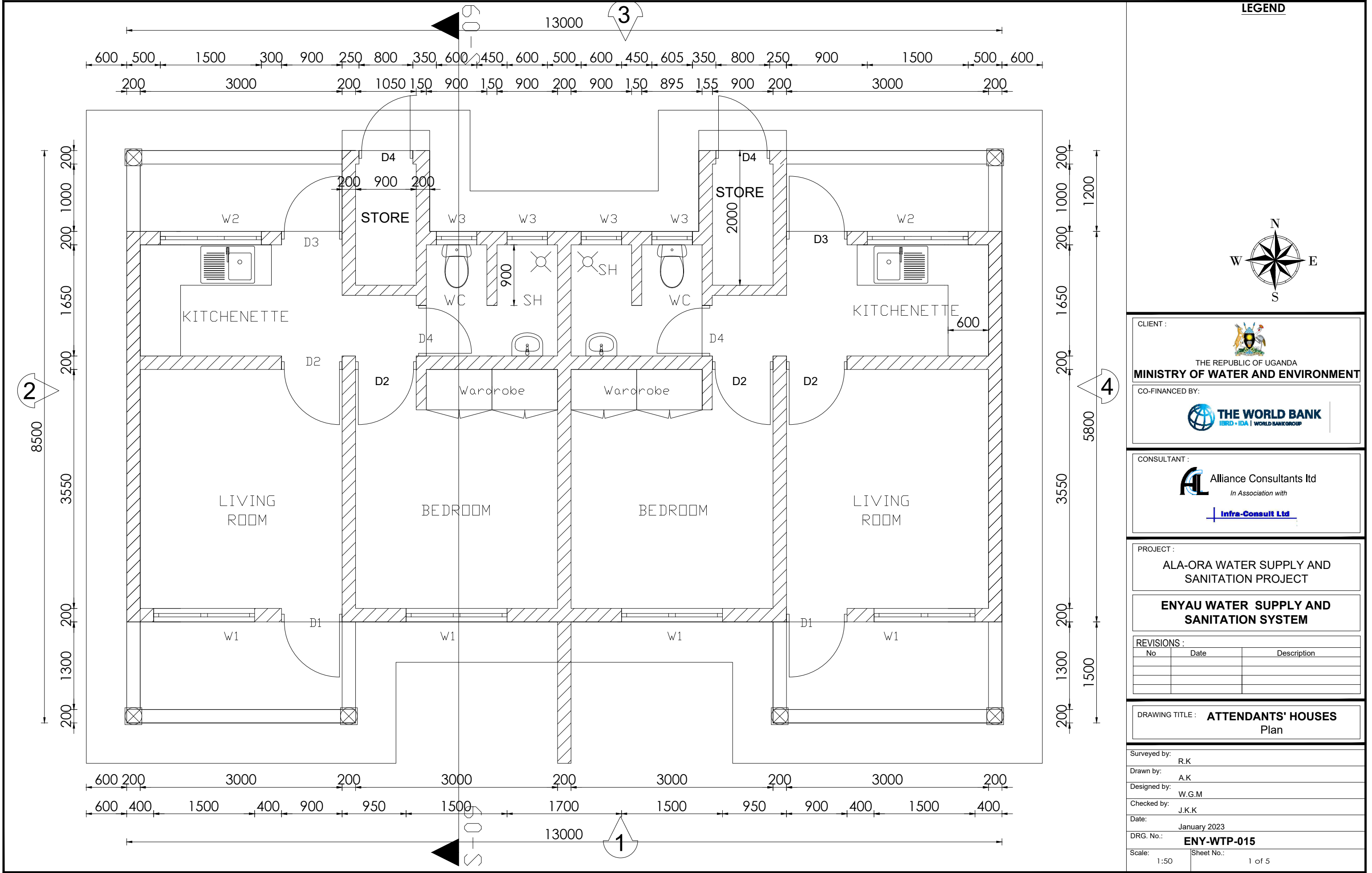
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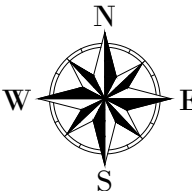
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Sheet No.:

5 of 5



LEGEND



CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT

CO-FINANCED BY:



CONSULTANT :



Alliance Consultants Ltd  
In Association with

Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE : ATTENDANTS' HOUSES  
Plan

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

ENY-WTP-015

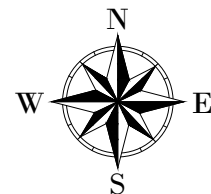
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Sheet No.:

1 of 5

LEGEND



CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT

CO-FINANCED BY:



CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE : **ATTENDANTS' HOUSES**  
Section

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-015</b>
Scale:	1:50
Sheet No.:	2 of 5

ROOF NOTES : pitch 25°

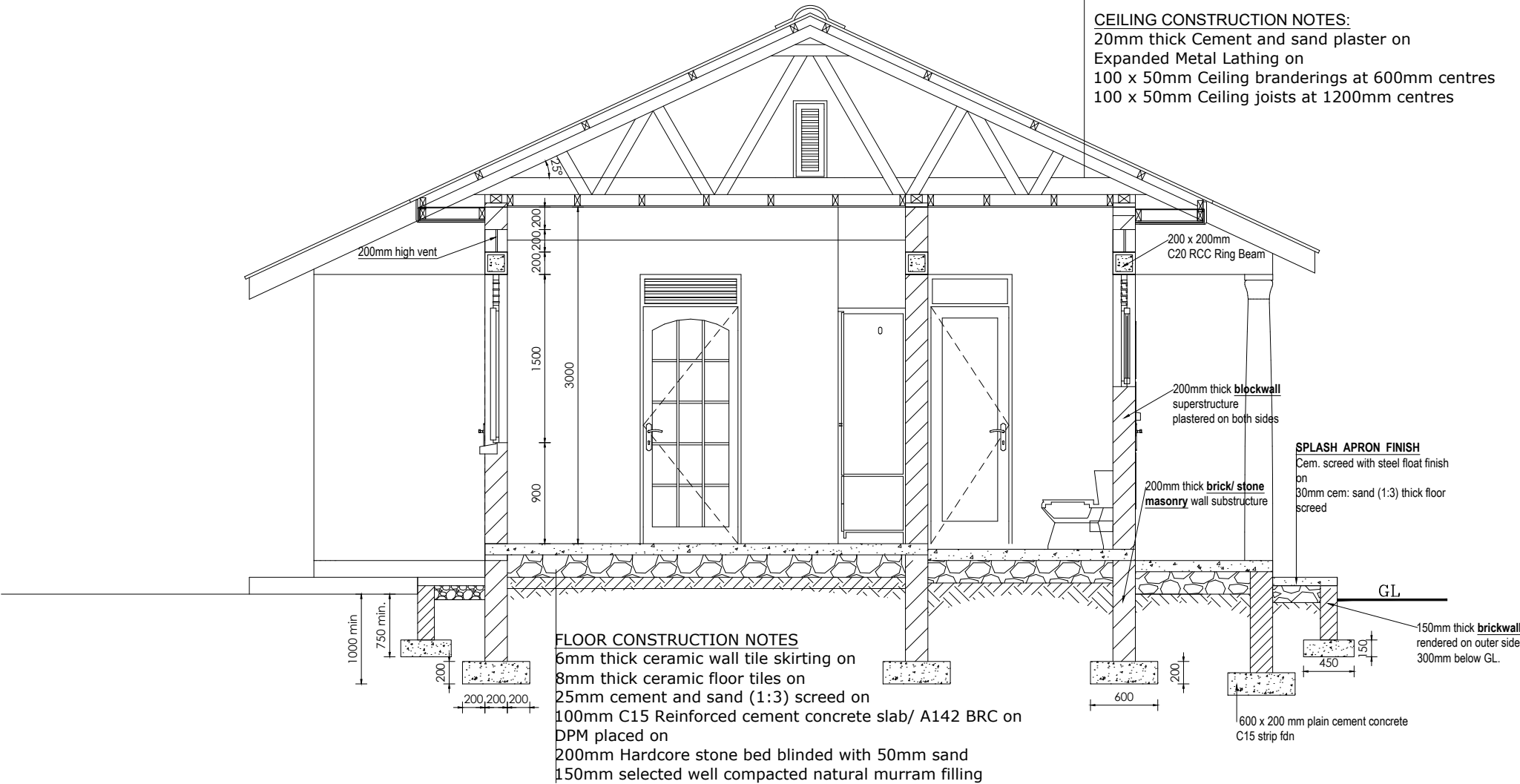
Fire clay ridge cap/Mangalore roofing tiles on  
50 X 25 timber battens with  
gauge 32 GI plane sheet

**Pressure treated roofing soft wood timber**

Double 100 x 50 mm timber rafters with  
100x 50mm struts & ties in truss with  
75 x 50 mm purlins on  
150 x 50mm tie beam on  
150 x 75 mm wall plate  
250 mm plastic fascia boards

CEILING CONSTRUCTION NOTES:

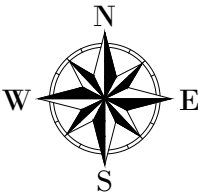
20mm thick Cement and sand plaster on  
Expanded Metal Lathing on  
100 x 50mm Ceiling branderings at 600mm centres  
100 x 50mm Ceiling joists at 1200mm centres



SECTION S-09



LEGEND



CLIENT :



CO-FINANCED BY:



CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE : **ATTENDANTS' HOUSES**  
Elevations

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

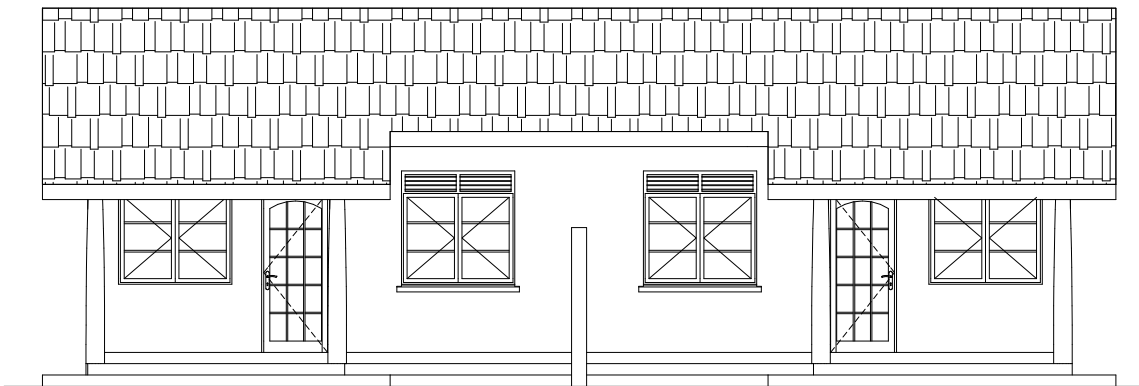
**ENY-WTP-015**

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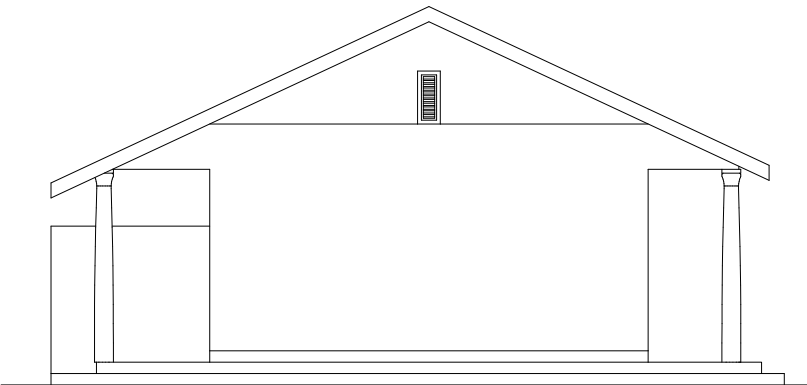
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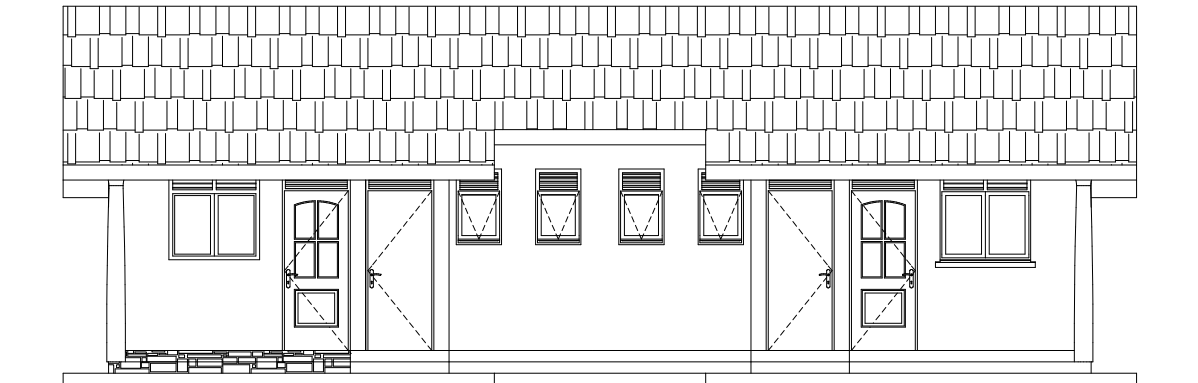
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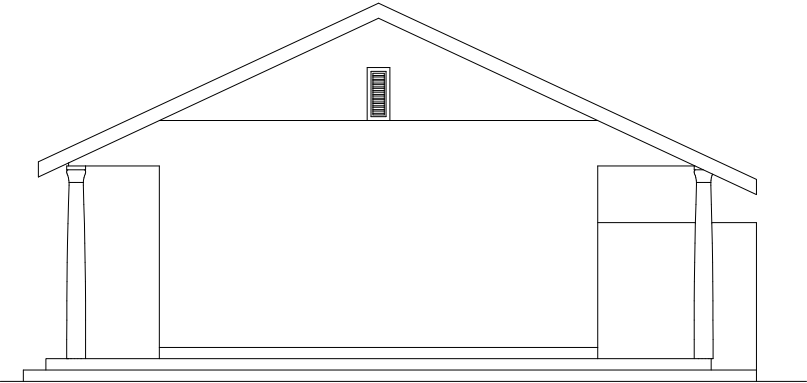
ELEVATION 1



ELEVATION 2



ELEVATION 3



ELEVATION 4

Door Schedule

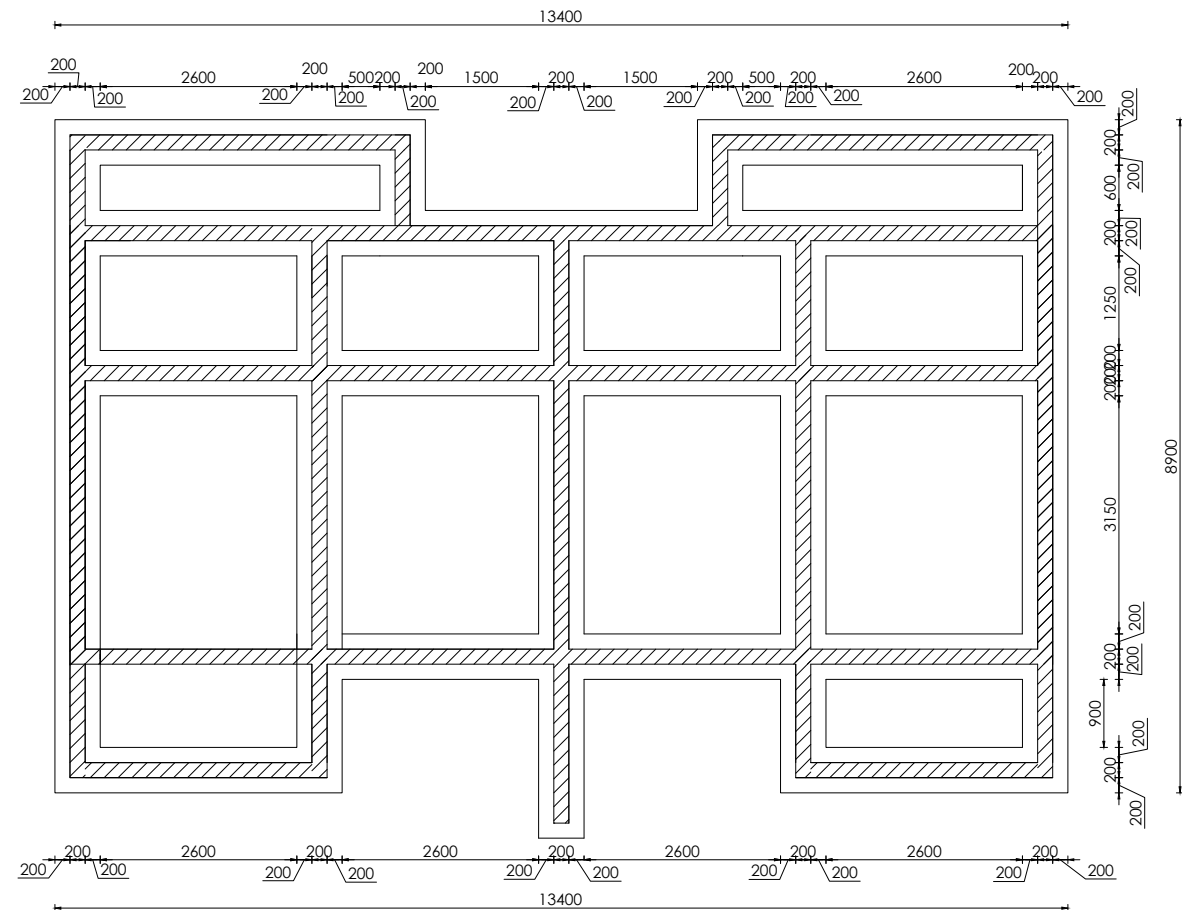
Door Name	D1	D2	D3	D4
Quantity	2	4	2	2
W x H Size	1000x2400	900x2400	900x2400	800x2400
Elevation View				

Window Schedule

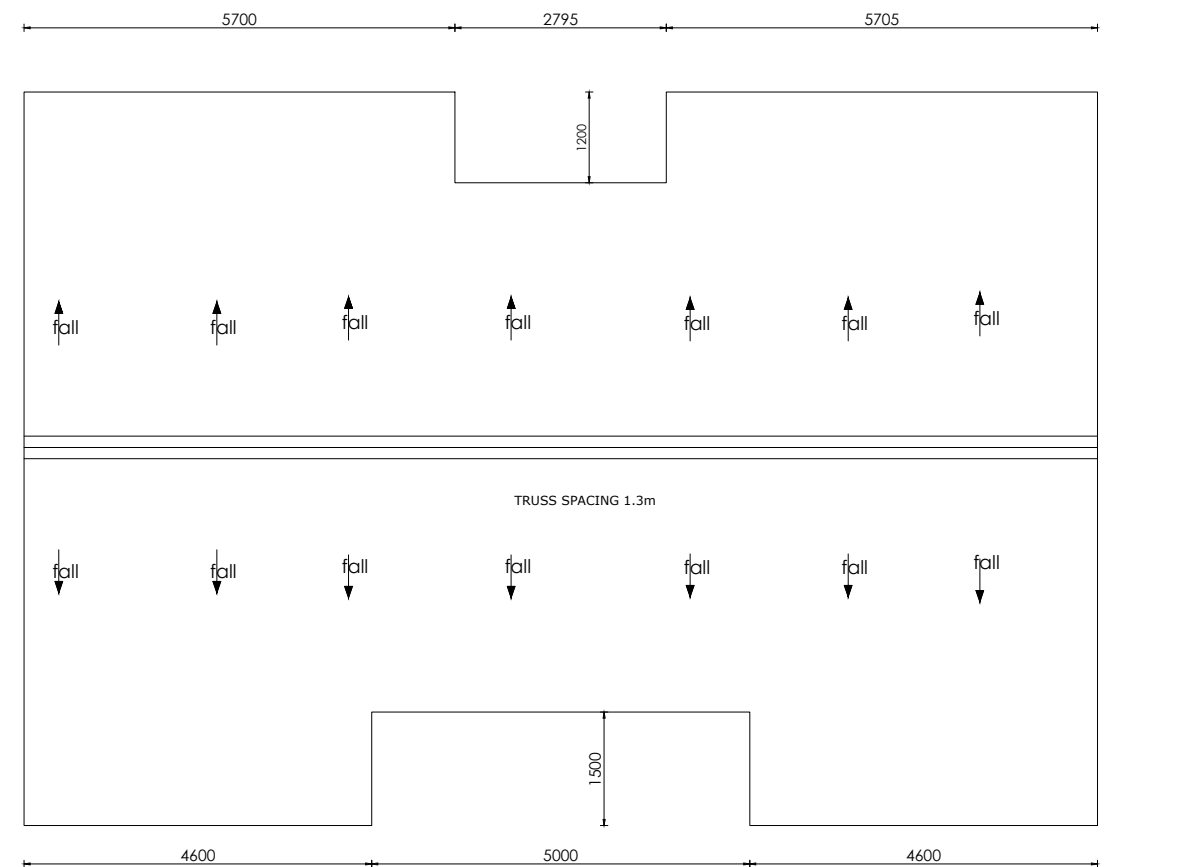
Window Name	W1	W2
Quantity	6	4
W x H Size	1500x1500	600x900
Elevation View		

**NB.**

- Glass panes to be  $\leq 0.2m^2$
- Burglar proofing to be of a 25x3mm flat bar grille with 175x300mm pitch.
- Permanent Vents are to be fitted with mosquito proofing nets i.e plastic net sandwiched with coffeetray mesh.
- All window & Door sections to be 3.0mm minimum thickness

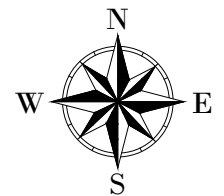


**FOUNDATION LAYOUT**



**ROOF LAYOUT**

**LEGEND**



CLIENT :



THE REPUBLIC OF UGANDA

**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:



CONSULTANT :



Alliance Consultants Ltd

In Association with



PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**ATTENDANTS' HOUSES**  
Foundation and Roof Layout

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

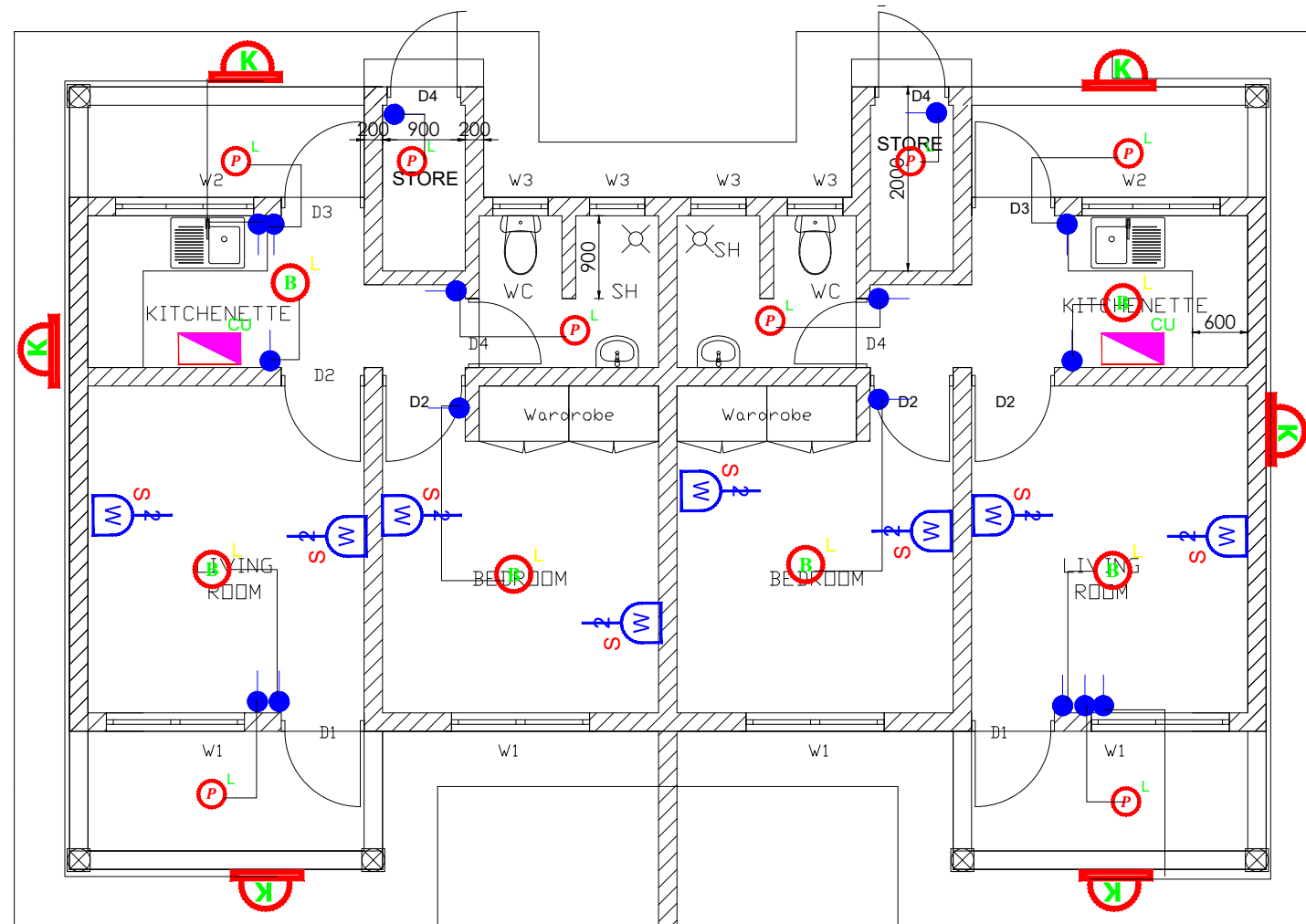
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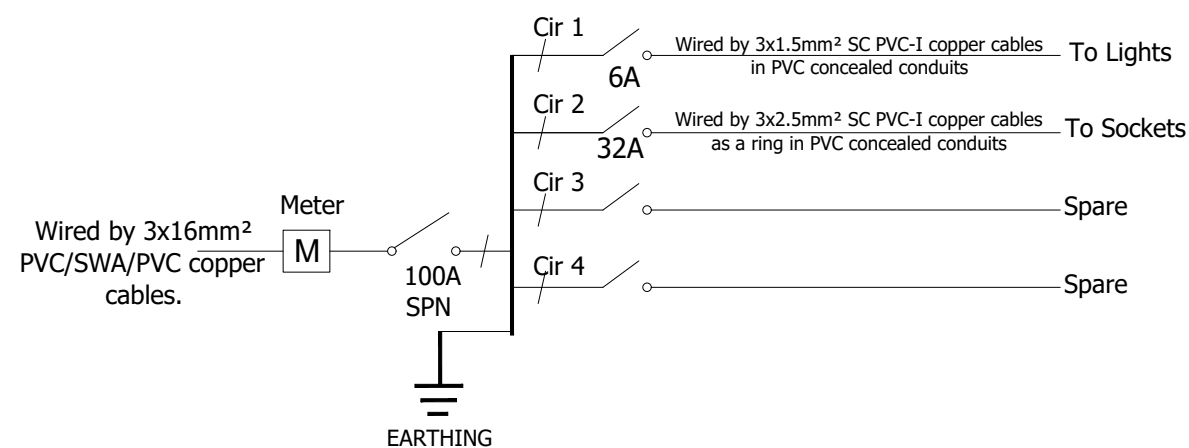
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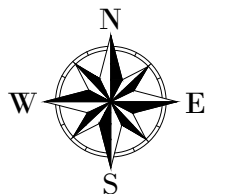
4 of 5



SYMBOL	DESCRIPTION
	1200mm 18W LED batten with a removable LED engine. IP20 As Thorn PopPack LED. or equal approved. (Light Type F1)
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	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp
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	wall mounted light
	Socket outlet on Wall
	Consumer's Unit
	One Gang 2way Switch
	Two Gang 2way Switch
	Three Gang 2way Switch
	One Gang 1way Switch
	Two Gang 1way Switch
	Three Gang 1way Switch
	Intermediate Switch
	Photo - Cell



## LEGEND



CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

 **THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

 **Alliance Consultants Ltd**  
In Association with  
 **Infra-Consult Ltd**

PROJECT :

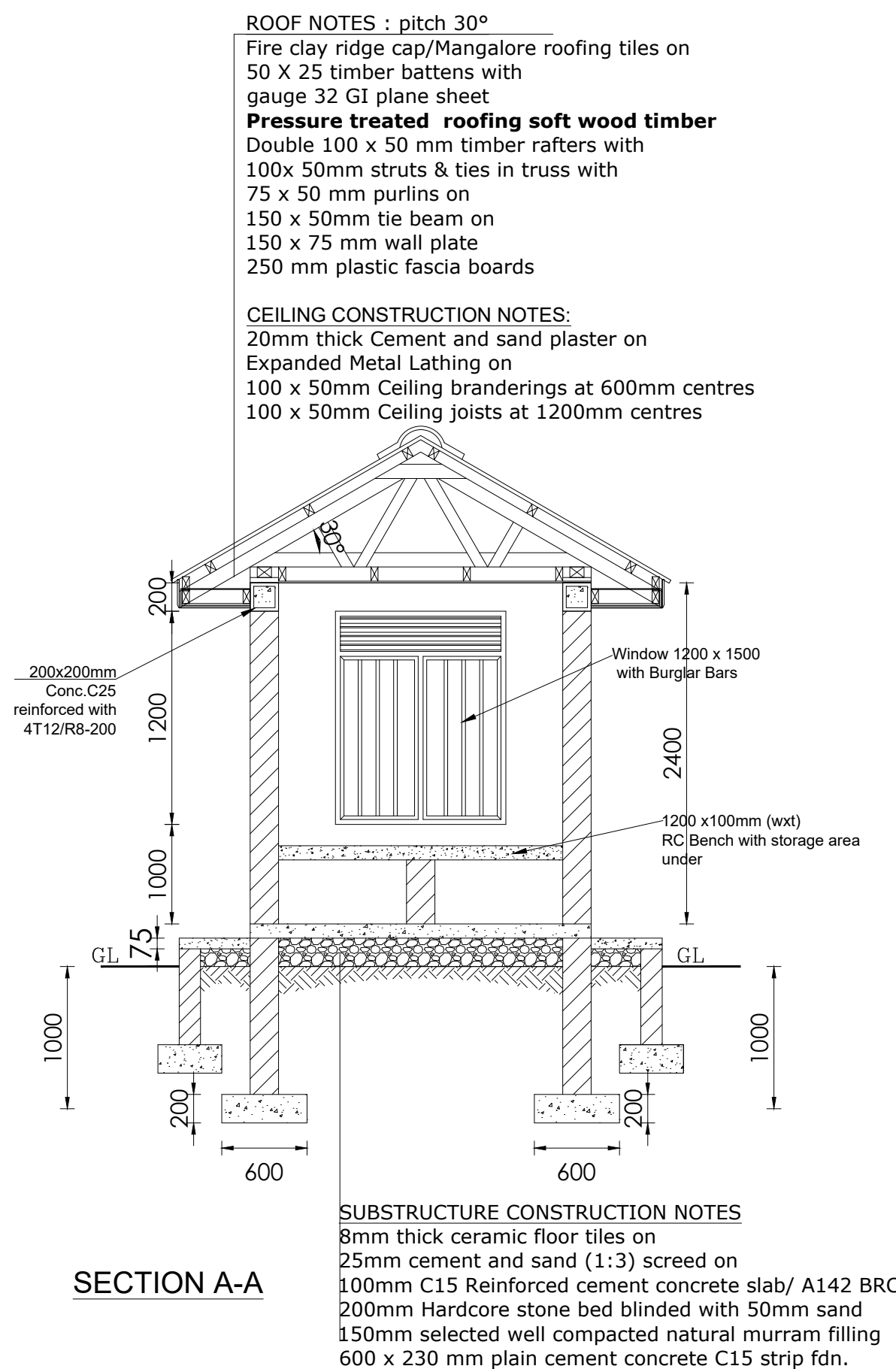
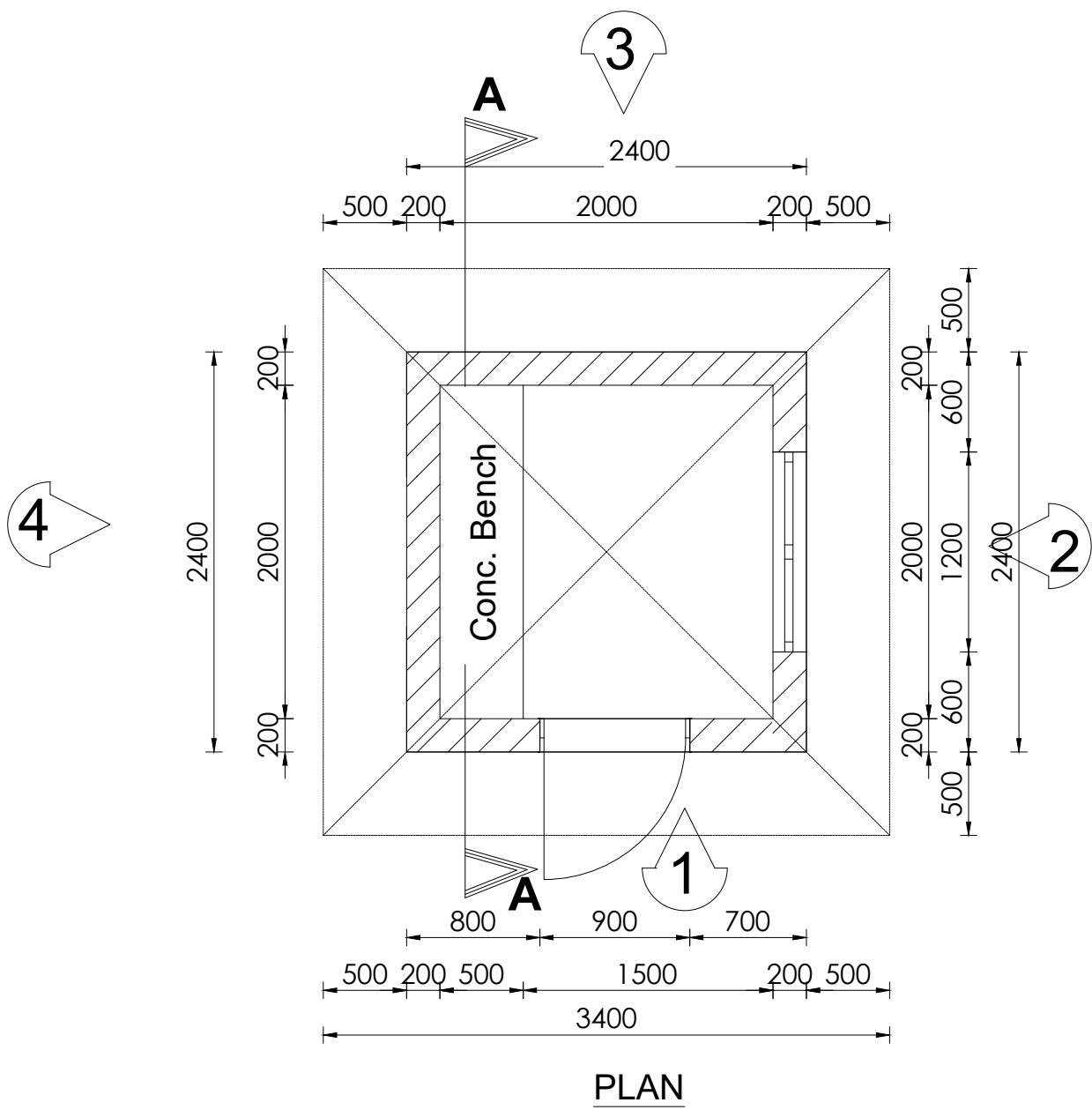
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **ATTENDANTS' HOUSES**  
Electrical Layout

Surveyed by:	
Drawn by: P.K	
Designed by: P.K	
Checked by: S.C.D	
Date: January 2023	
DRG. No.: <b>ENY-WTP-015</b>	
Scale: 1:75	Sheet No.: 5 of 5



**LEGEND**

CLIENT :

THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

CONSULTANT :

Alliance Consultants Ltd  
*In Association with*  
  
Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**GUARD POST**  
Plan and Section

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

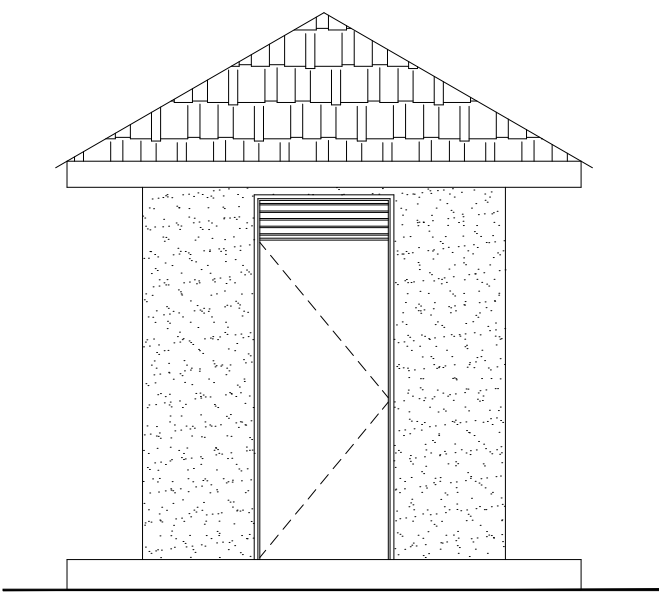
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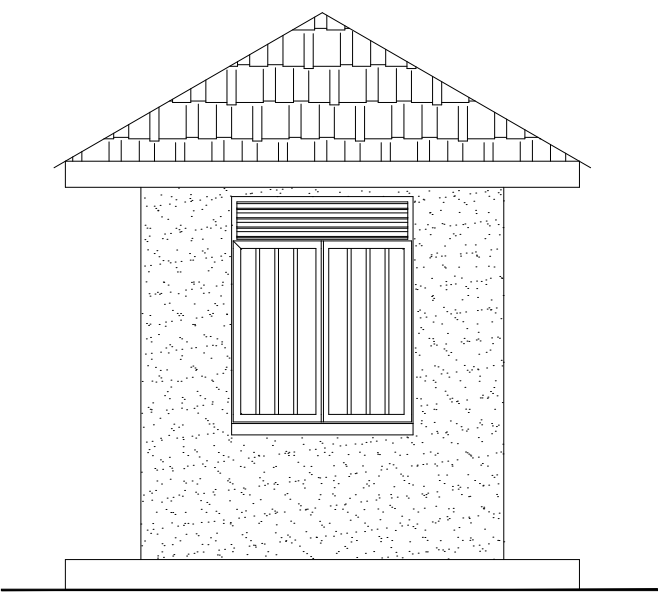
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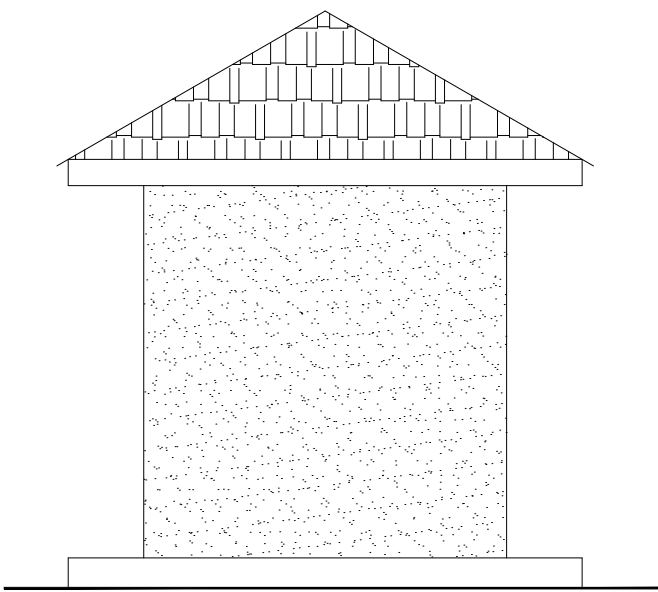
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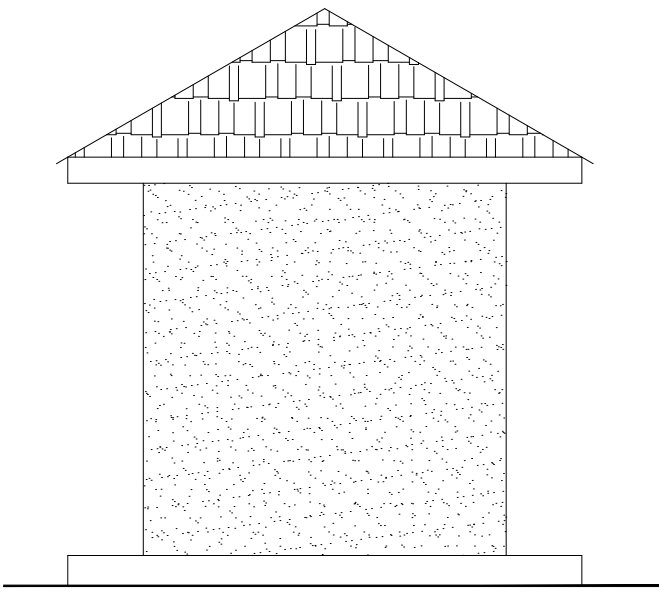
ELEVATION 1



ELEVATION 2

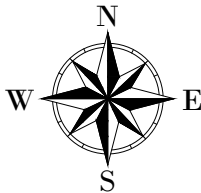


ELEVATION 3



ELEVATION 4

LEGEND



CLIENT :  
  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:  
 **THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :  
 Alliance Consultants Ltd  
In Association with  
 Infra-Consult Ltd

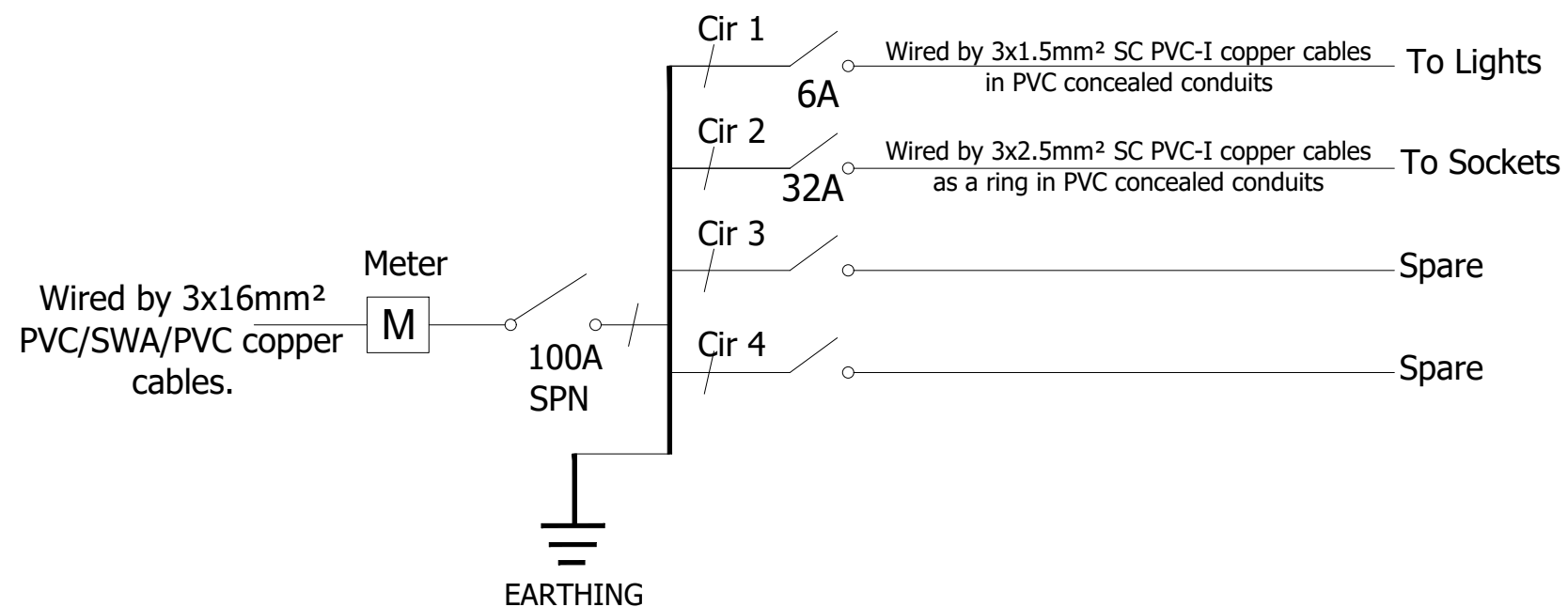
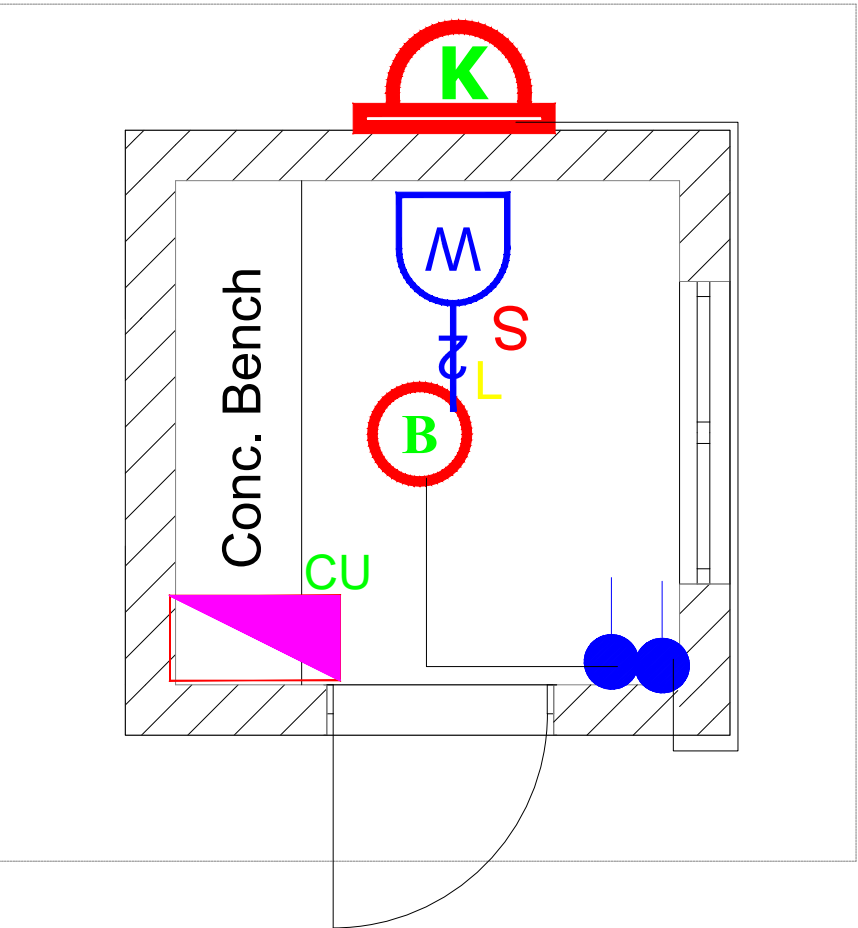
PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

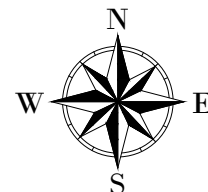
DRAWING TITLE : **GUARD POST**  
Elevations

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-016</b>
Scale:	1:50
Sheet No.:	2 of 3



100A, SPN 4-WAY CONSUMER'S UNIT FOR FLUSH MOUNTING AS  
HAGER OR EQUAL APPROVED

LEGEND



CLIENT :  
  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
CO-FINANCED BY:  


CONSULTANT :  
 Alliance Consultants Ltd  
In Association with  


PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT  
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

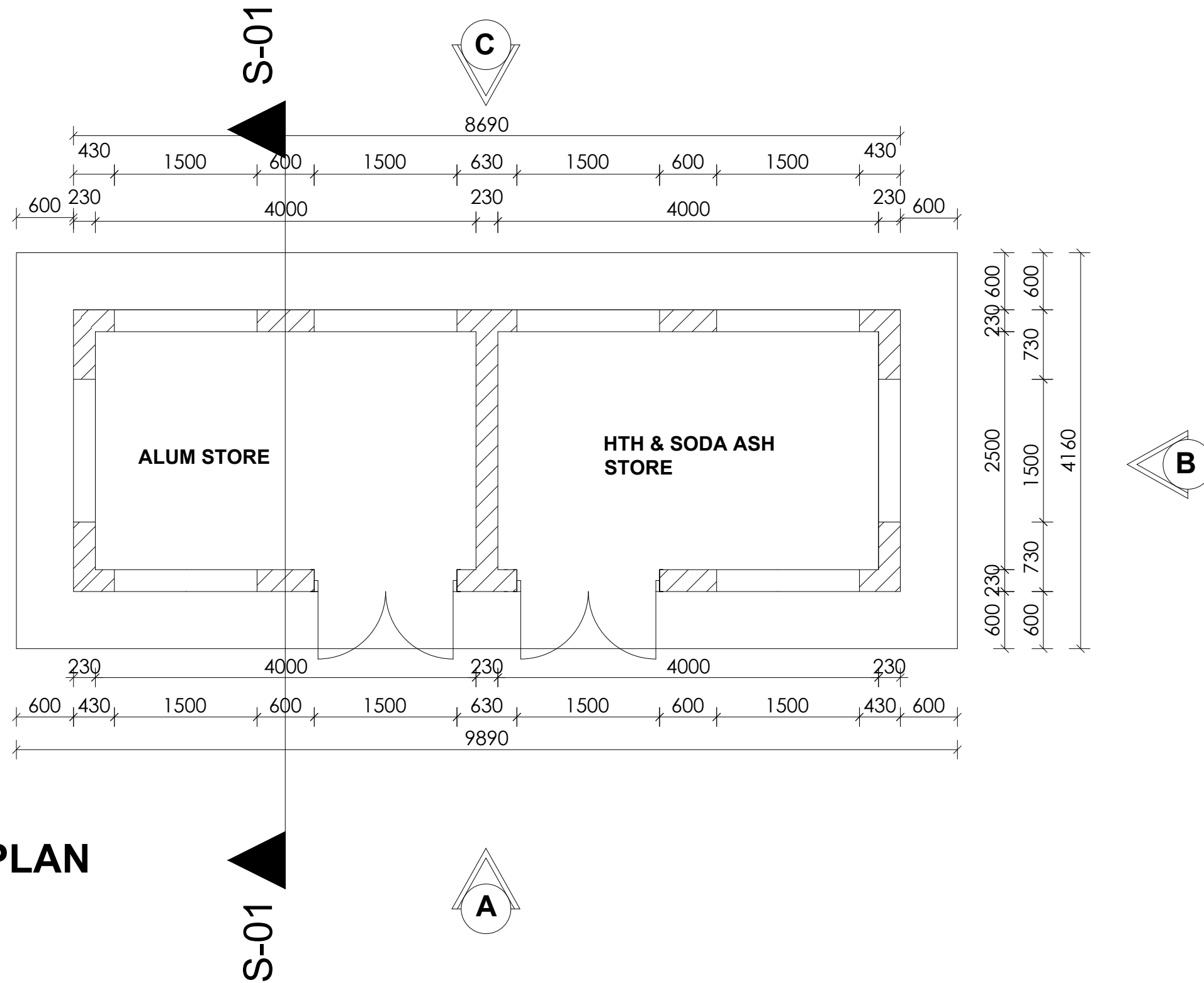
REVISIONS :		
No	Date	Description

DRAWING TITLE : **GUARD POST  
Electrical Layout**

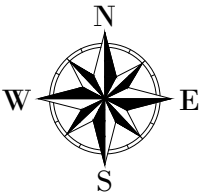
Surveyed by:	
Drawn by:	P.K
Designed by:	P.K
Checked by:	S.C.D
Date:	January 2023
DRG. No.:	<b>ENY-WTP-016</b>
Scale:	1:30
Sheet No.:	3 of 3



PLAN



LEGEND



CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

 **THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

 **Alliance Consultants Ltd**  
In Association with  
 **Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

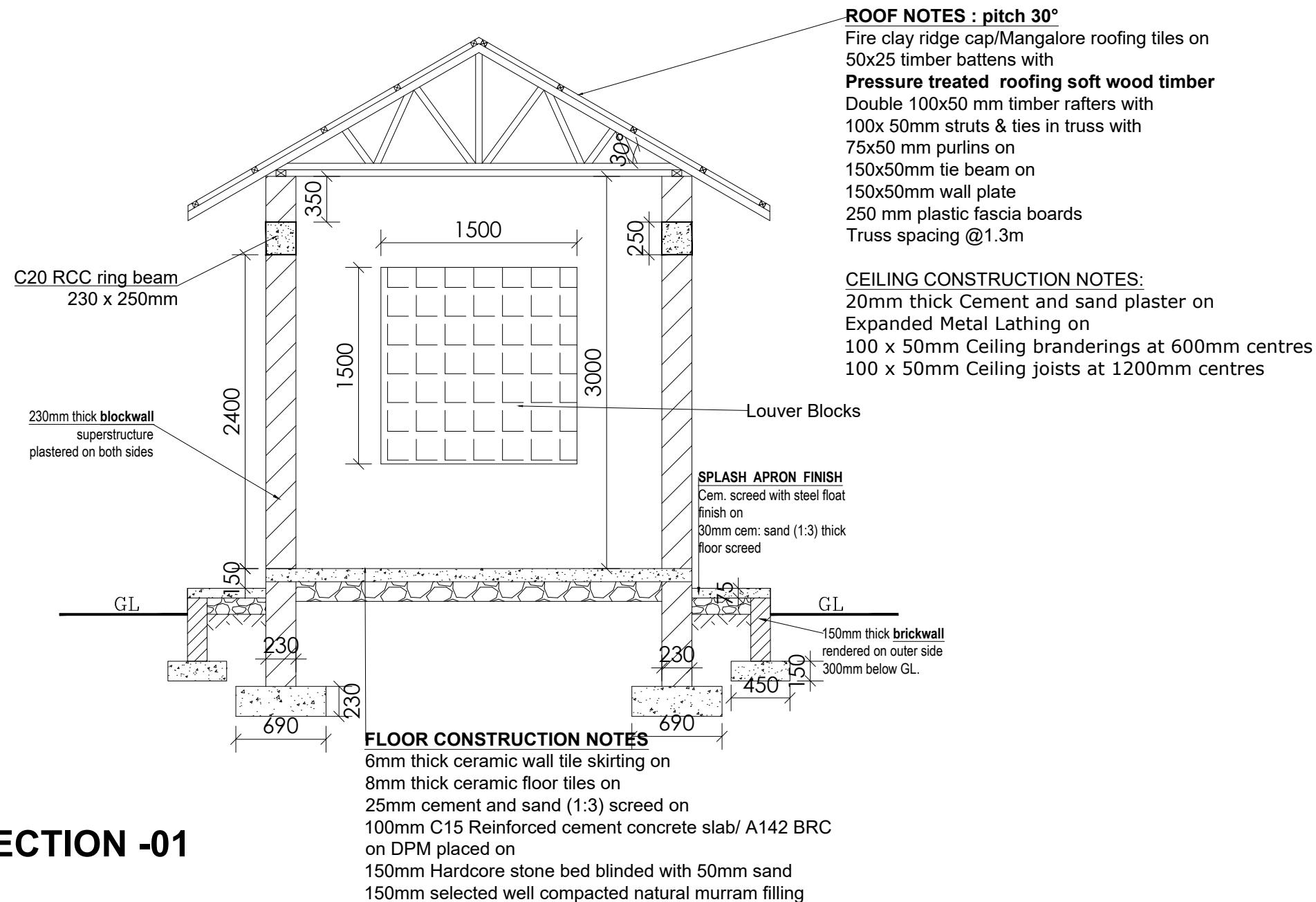
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

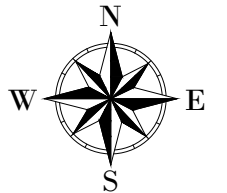
DRAWING TITLE : **CHEMICAL STORE  
Plan**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-017</b>
Scale:	1:50
Sheet No.:	1 of 5

## SECTION -01



### LEGEND



CLIENT :



THE REPUBLIC OF UGANDA

**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:



CONSULTANT :



Alliance Consultants Ltd

In Association with

**Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**CHEMICAL STORE  
Sections**

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

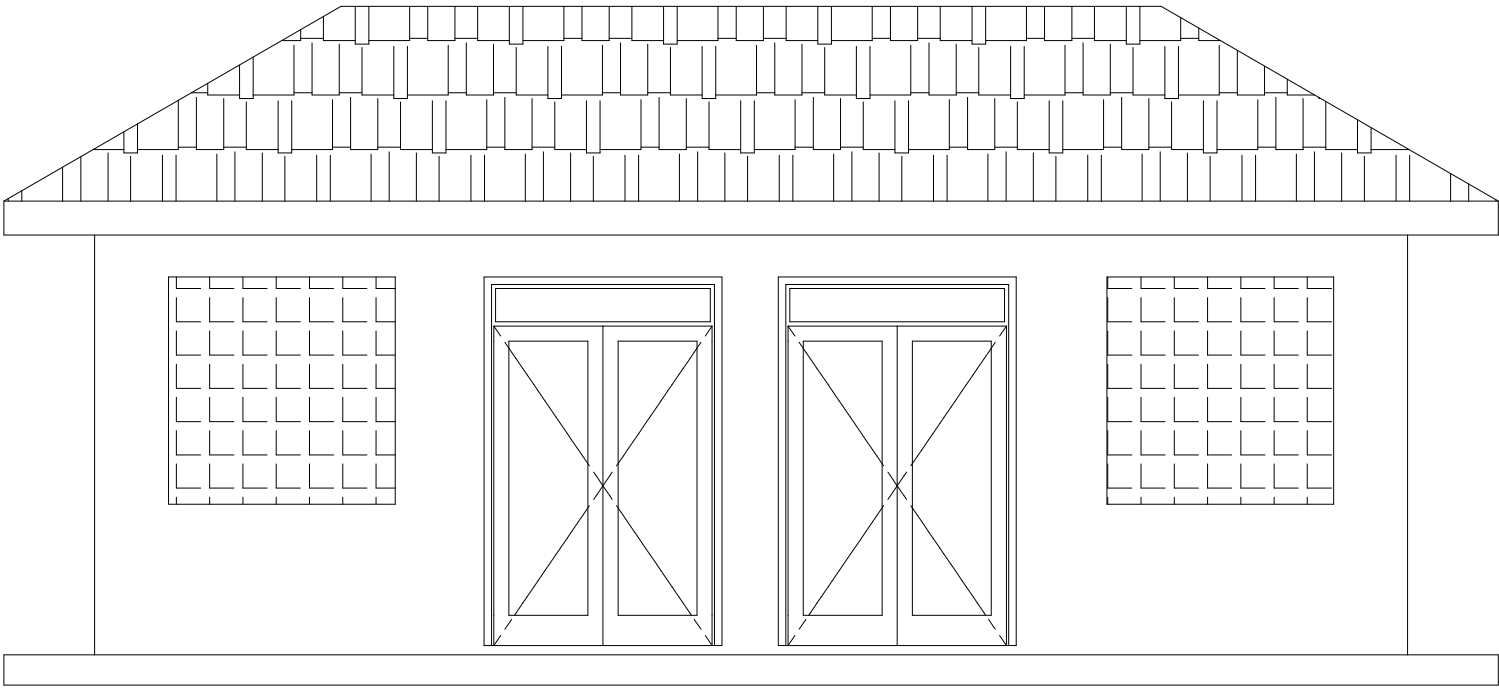
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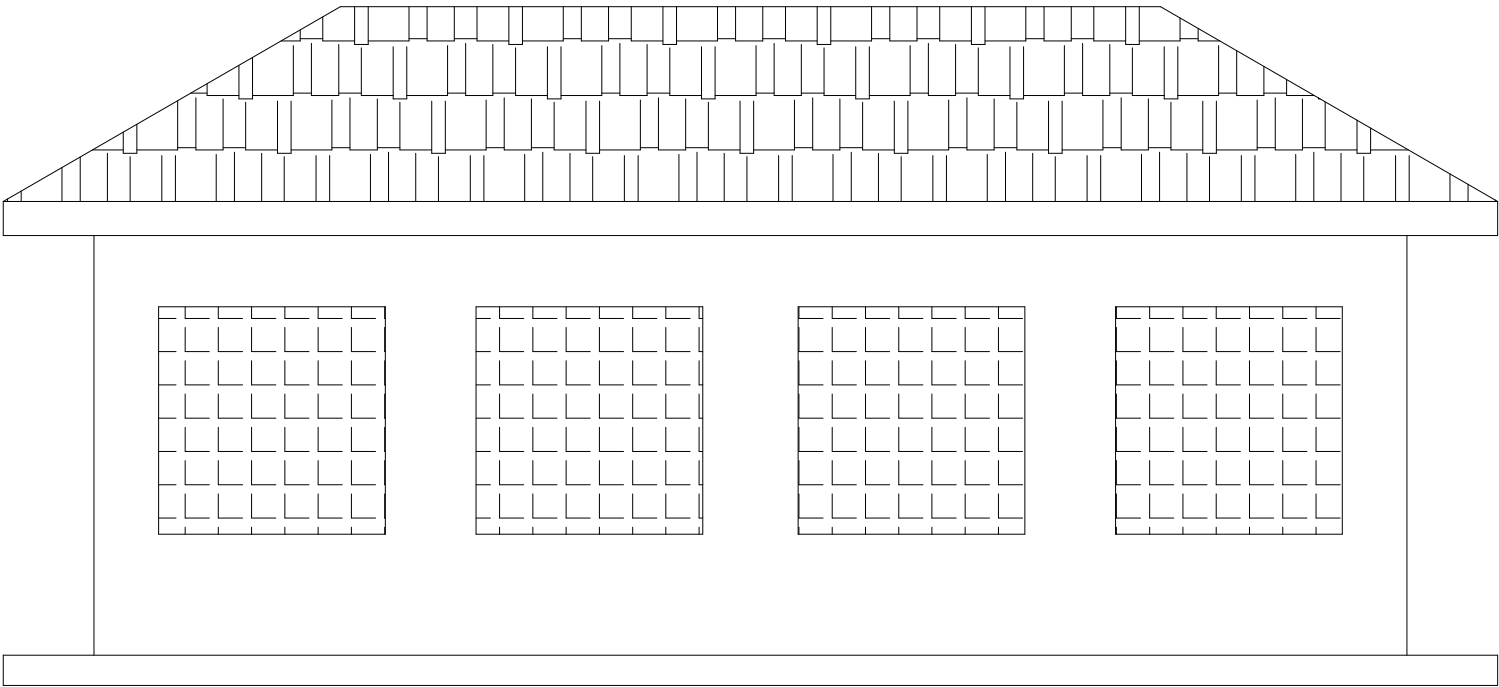
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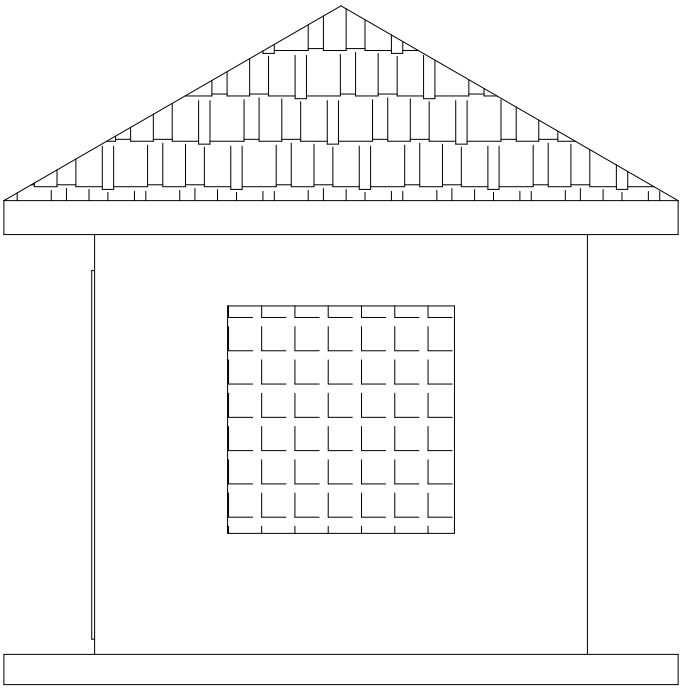
2 of 5



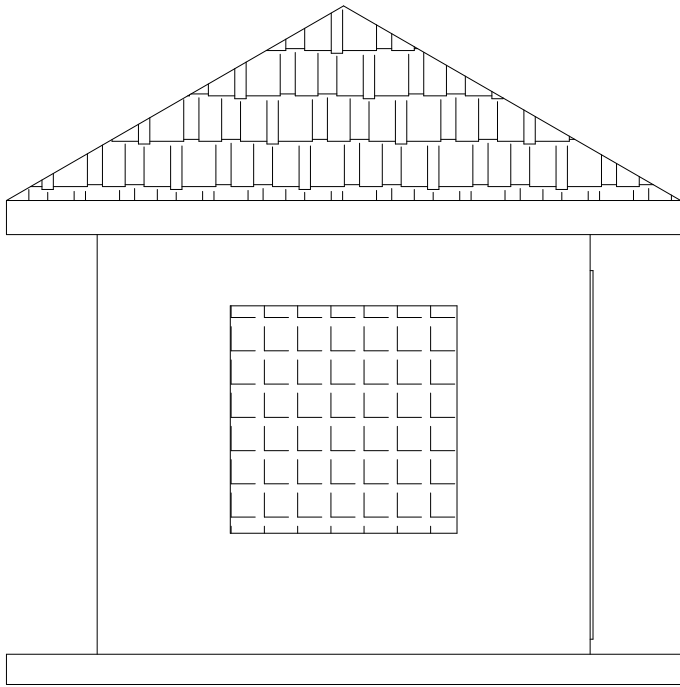
ELEVATION - A



ELEVATION - C

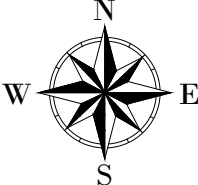


ELEVATION - B




ELEVATION - D

LEGEND




CLIENT :





THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT

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CONSULTANT :



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PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE :

CHEMICAL STORE  
Elevations

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

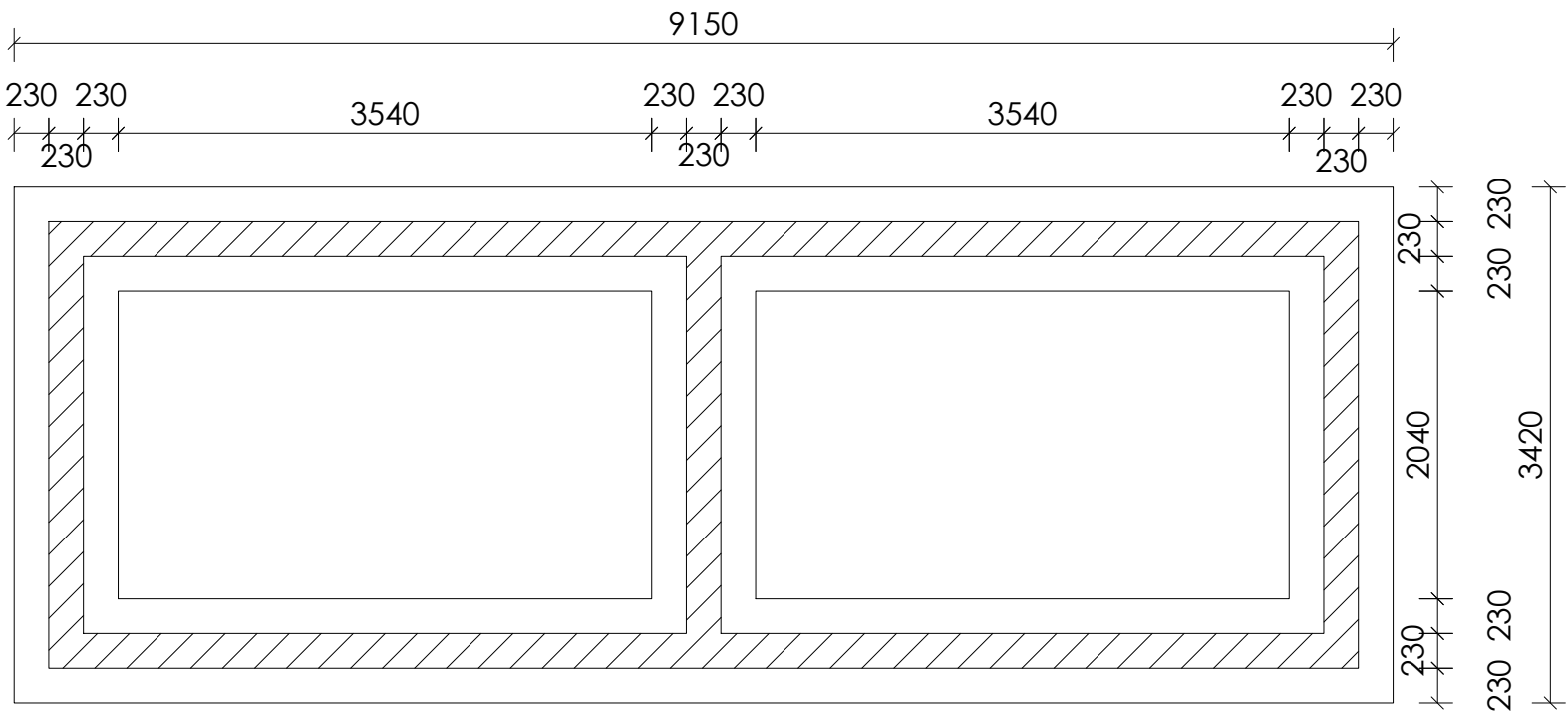
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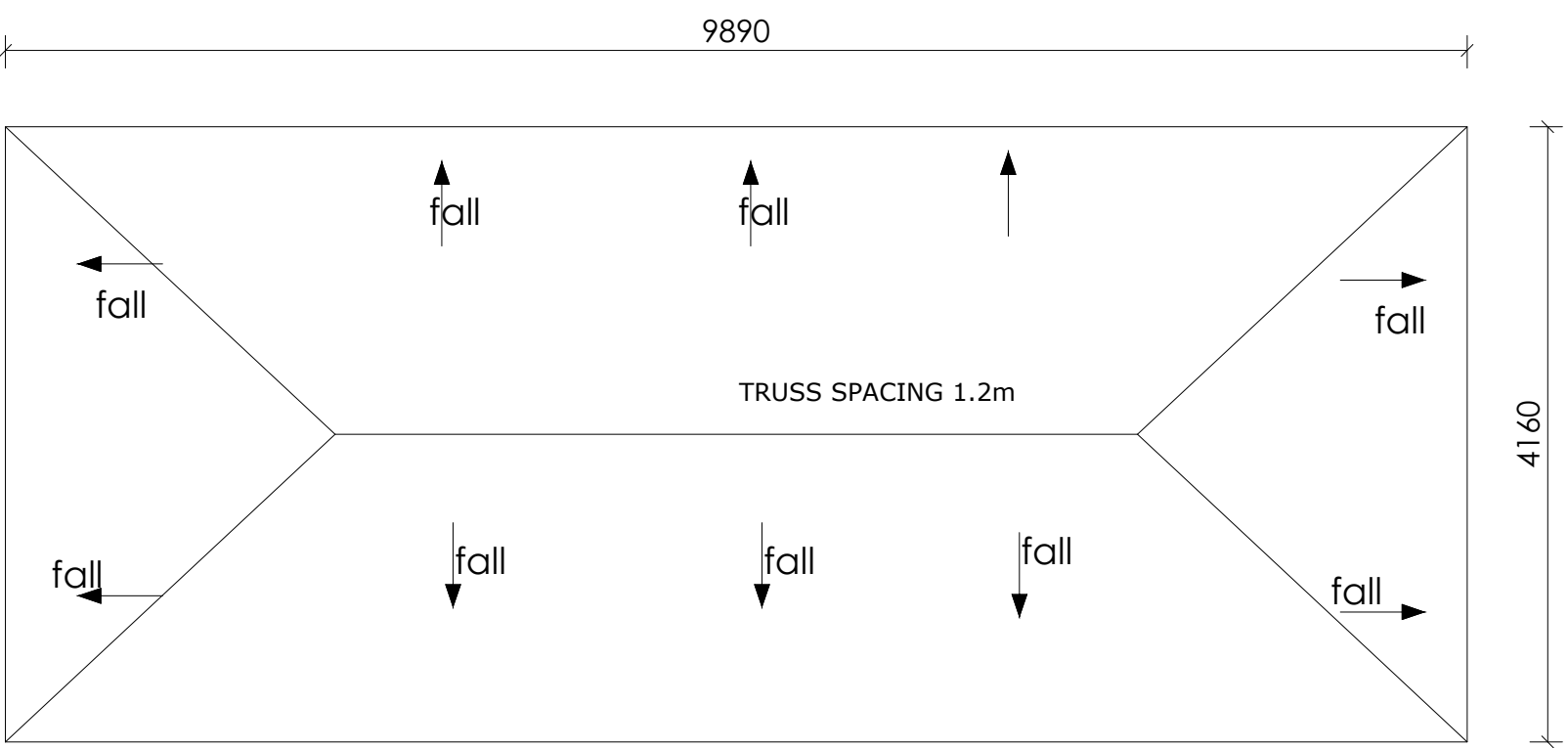
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Sheet No.:

3 of 5

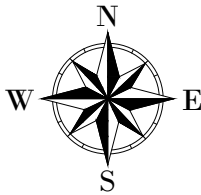


FOUNDATION LAYOUT



ROOF LAYOUT

LEGEND



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PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

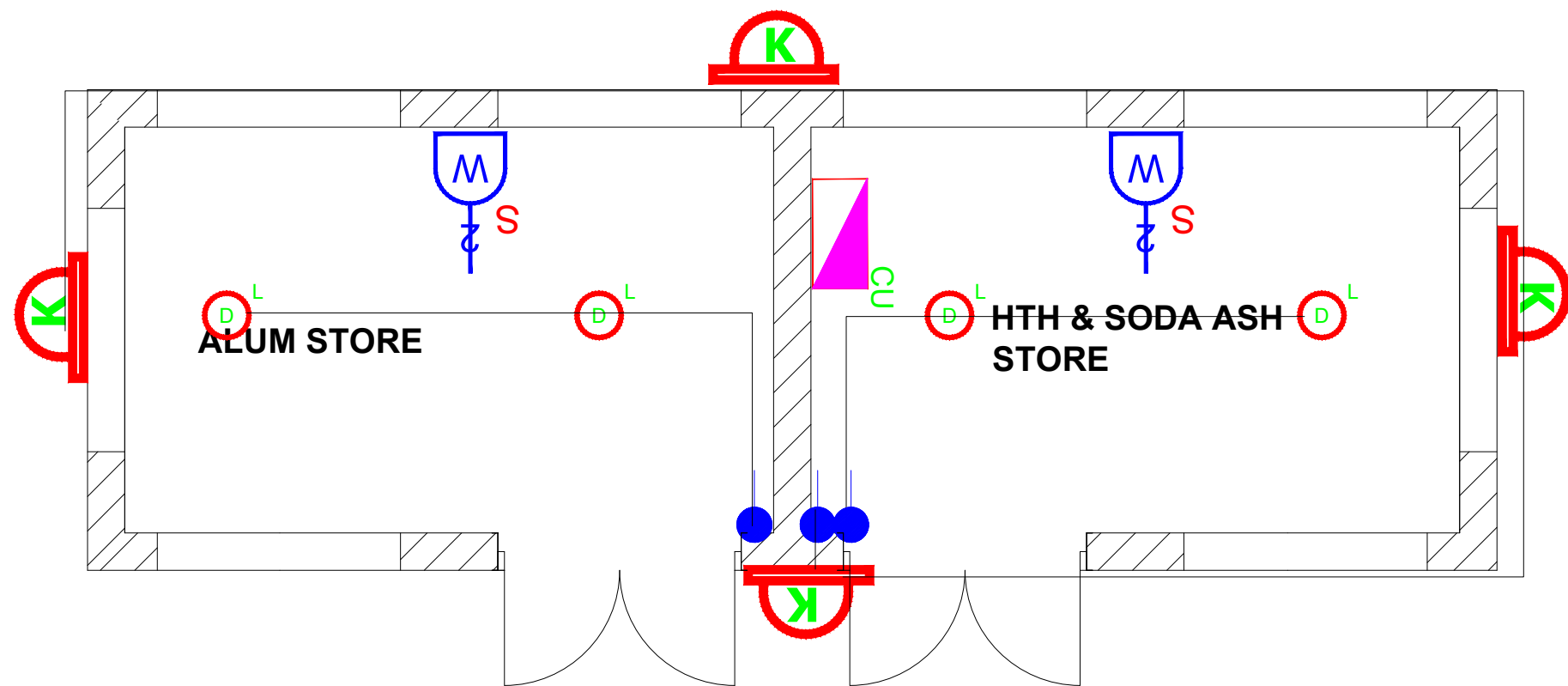
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **CHEMICAL STORE**  
Foundation and Roof Layout

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-017</b>
Scale:	1:50
Sheet No.:	4 of 5



- 1). ALL WALL BRACKETS SHALL BE MOUNTED 1800mm ABOVE FINISHED FLOOR LEVEL
- 2). TELEPHONE, SOCKETS,T.V AND COMPUTER OUTLETS SHALL BE MOUNTED 300mm ABOVE FINISHED FLOOR LEVEL EXCEPT WHERE THEIR IS A WORKTOP.
- 3). WHERE THEIR IS A WORKTOP,TELEPHONE, SOCKETS,T.V AND COMPUTER OUTLETS SHALL BE MOUNTED 150mm ABOVE WORKTOPS.
- 4). CONSUMER UNITS SHALL BE 1800mm ABOVE FINISHED FLOOR LEVEL
- 5). ALL SWITCHES SHALL BE 1400mm ABOVE FINISHED FLOOR LEVEL
- 6). ALL OUTSIDE SOCKETS SHOULD BE WEATHER PROOF
- 7). ALL SHAVER SOCKETS SHOULD BE ON THE RIGHT HAND SIDE OF THE WASH HAND BASIN
- 8). ALL CABLES MUST BE STRANDED

SYMBOL	DESCRIPTION
	1200mm 18W LED batten with a removable LED engine, IP20 As Thorn PopPack LED. or equal approved. (Light Type F1)
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm² flexible copper cable lamp holder and 6W LED Lamp
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm² flexible copper cable lamp holder and 6W LED Lamp
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm² flexible copper cable lamp holder and 6W LED Lamp
	Decorative Bed side lamp complete with flexible spot light arm as LEDS-C4 BALI (05-3217-19-82 + PAN-157-BY) to client's approval.
	wall mounted light
	Socket outlet on Wall
	Consumer's Unit
	One Gang 2way Switch
	Two Gang 2way Switch
	Three Gang 2way Switch
	One Gang 1way Switch
	Two Gang 1way Switch
	Three Gang 1way Switch
	Intermediate Switch
	Photo - Cell

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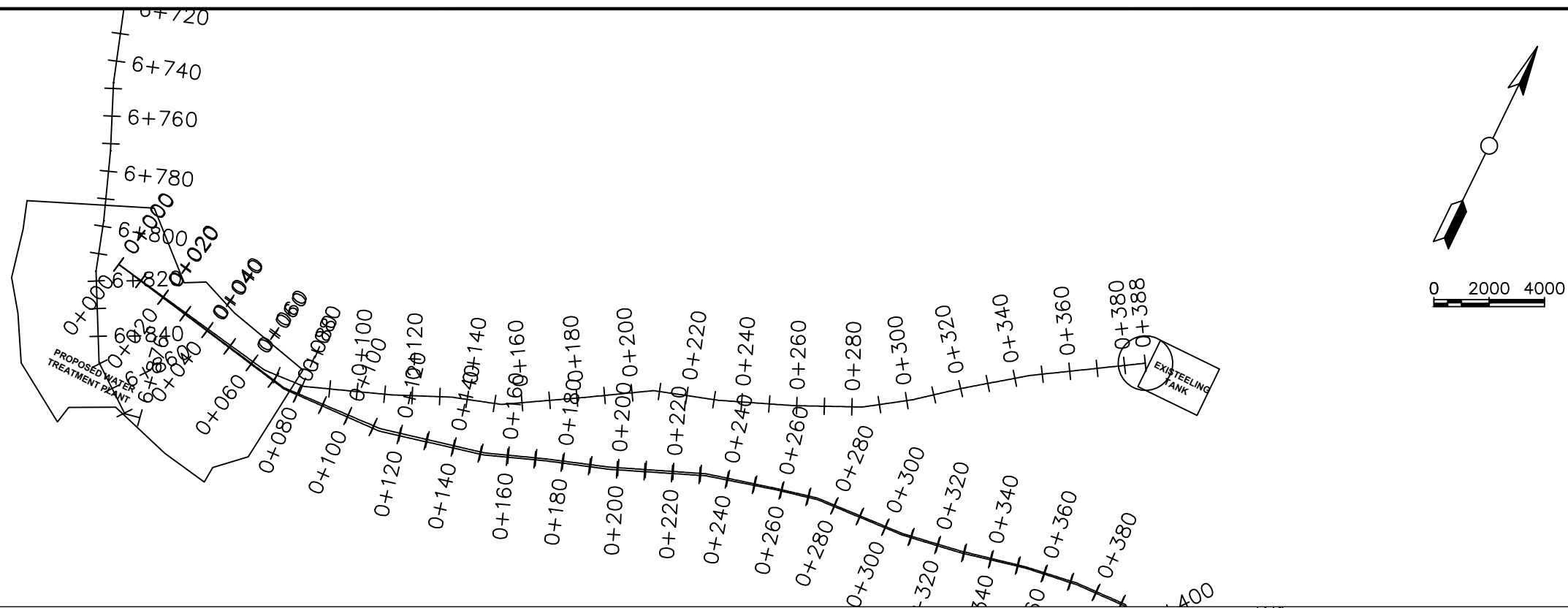
PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **CHEMICAL STORE**  
Foundation and Roof Layout

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-WTP-017</b>
Scale:	1:50
Sheet No.:	5 of 5



**LEGEND**  
**Plan**  
Transmission Main  
DISTRIBUTION Main  
Road  
Building  
Contours  
**Profile**  
Ground Level  
Invert Level  
AV Air Valve  
WO Washout  
Node detail No.

CLIENT :  
  
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**MINISTRY OF WATER AND ENVIRONMENT**

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PROJECT :  
**ALA-ORA WATER SUPPLY AND SANITATION PROJECT**

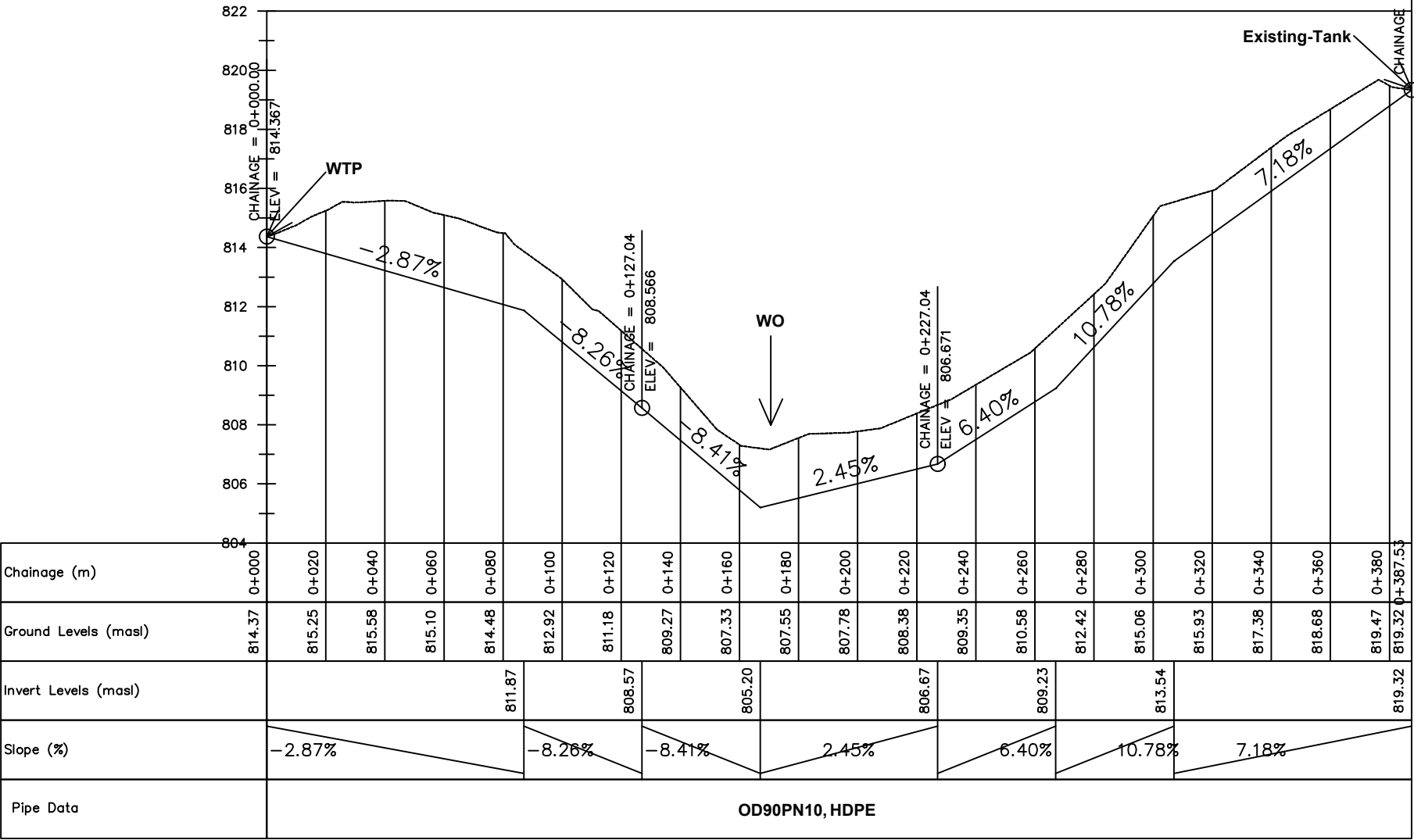
**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :  
**PUMPING MAIN 1**  
0+000 - 0+360.49

Surveyed by: R.K  
Drawn by: M.K  
Designed by: W.G.M  
Checked by: J.K.K  
Date: January 2022  
DRG. No.: **ENY-PM-001**  
Scale: 1:2000  
Sheet No.: 1 of 1

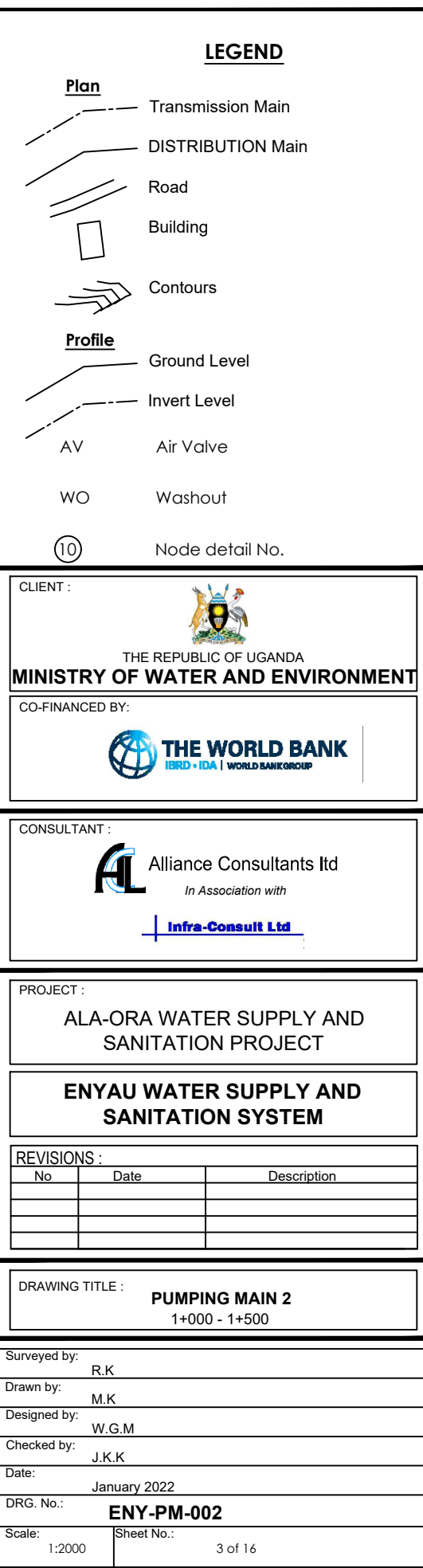
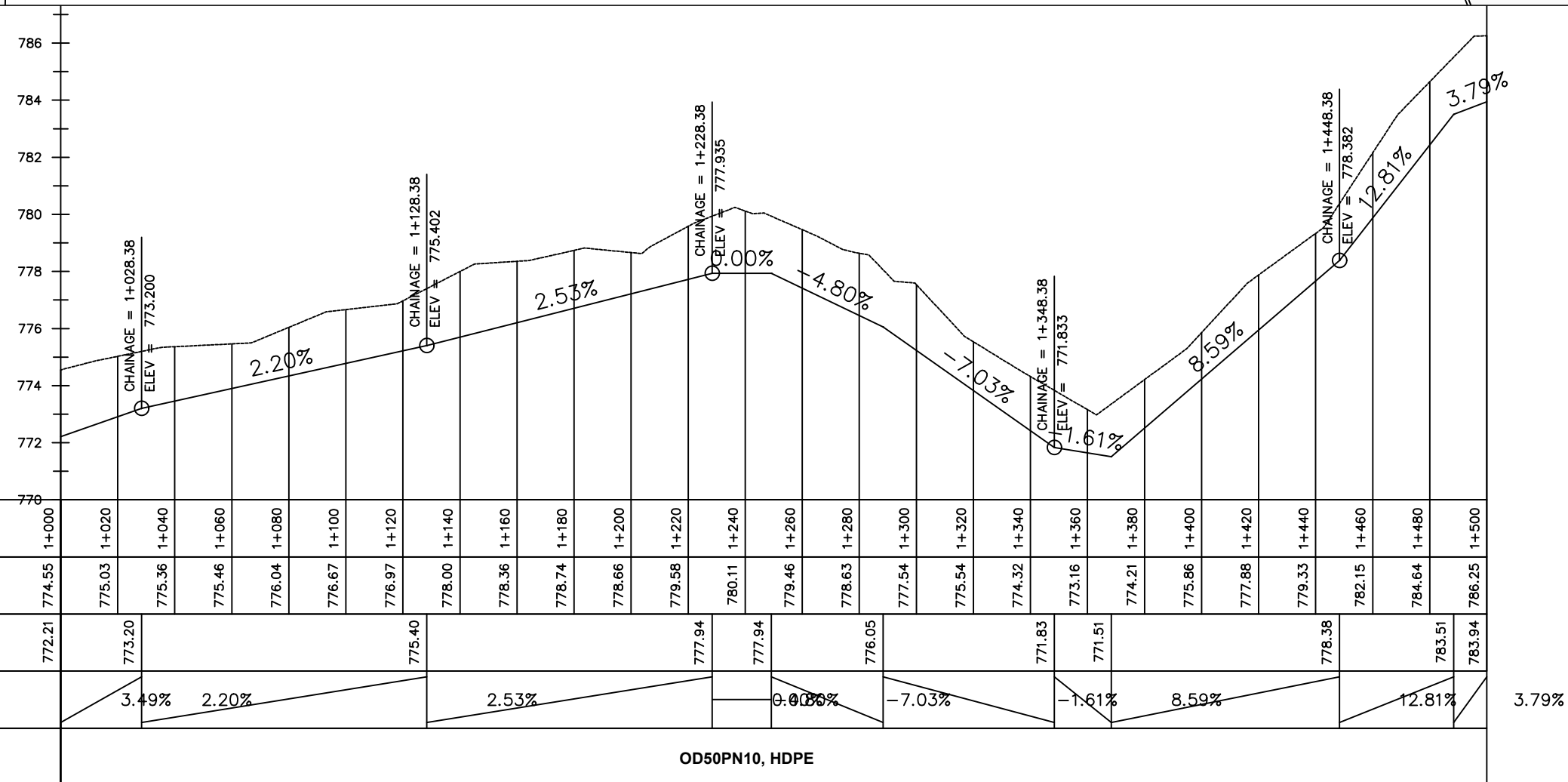
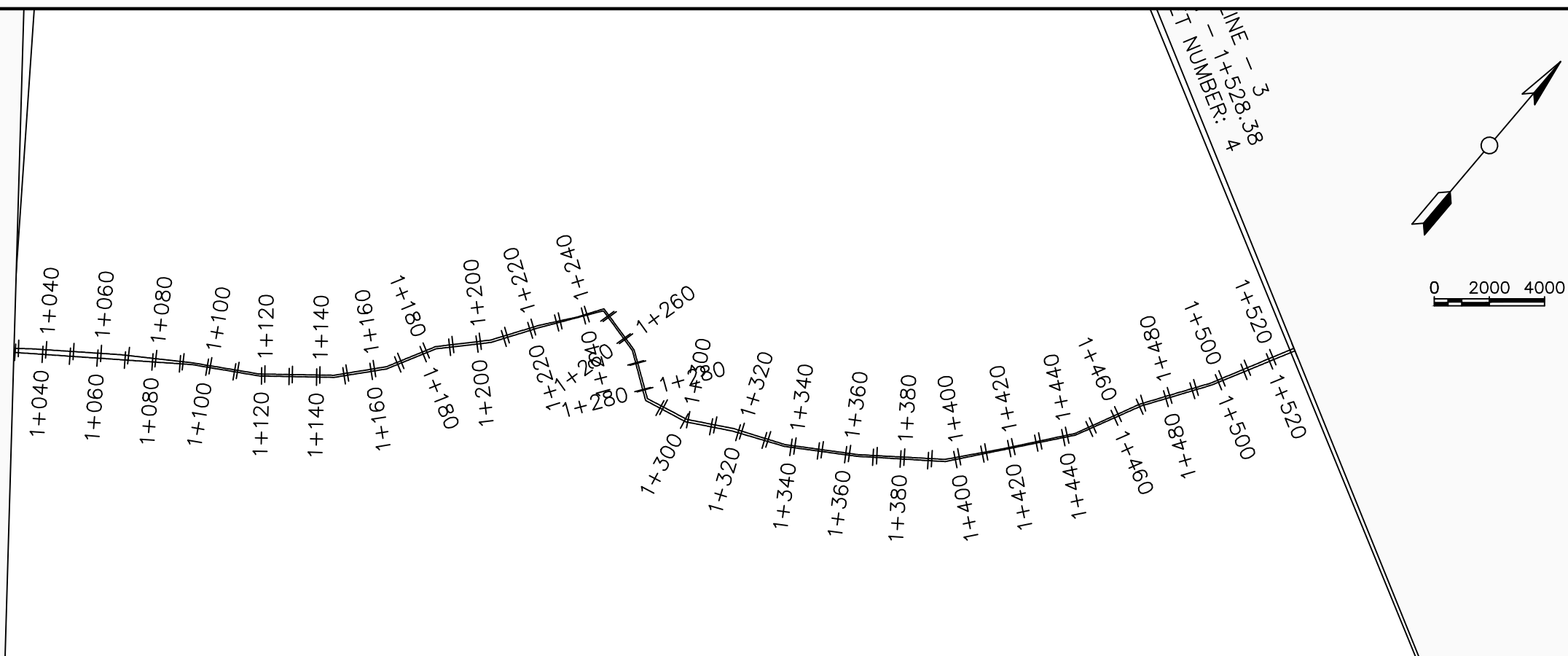




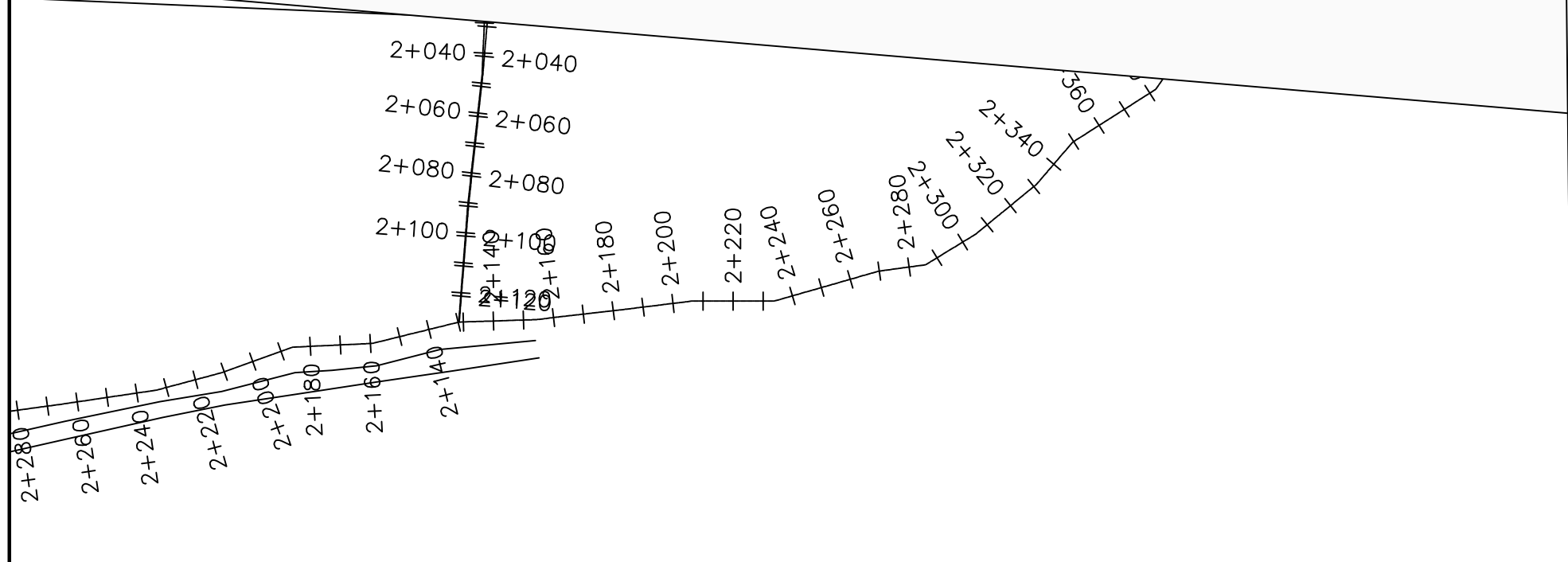
# **15m<sup>3</sup> RESERVOIR (TANK 1 / OTUMBALI) AREA**











A map showing a road network. A scale bar at the bottom indicates distances of 0, 2000, and 4000 meters. The map features several roads, including a main road running diagonally from the top left towards the bottom right, and another road branching off it.

## Plan

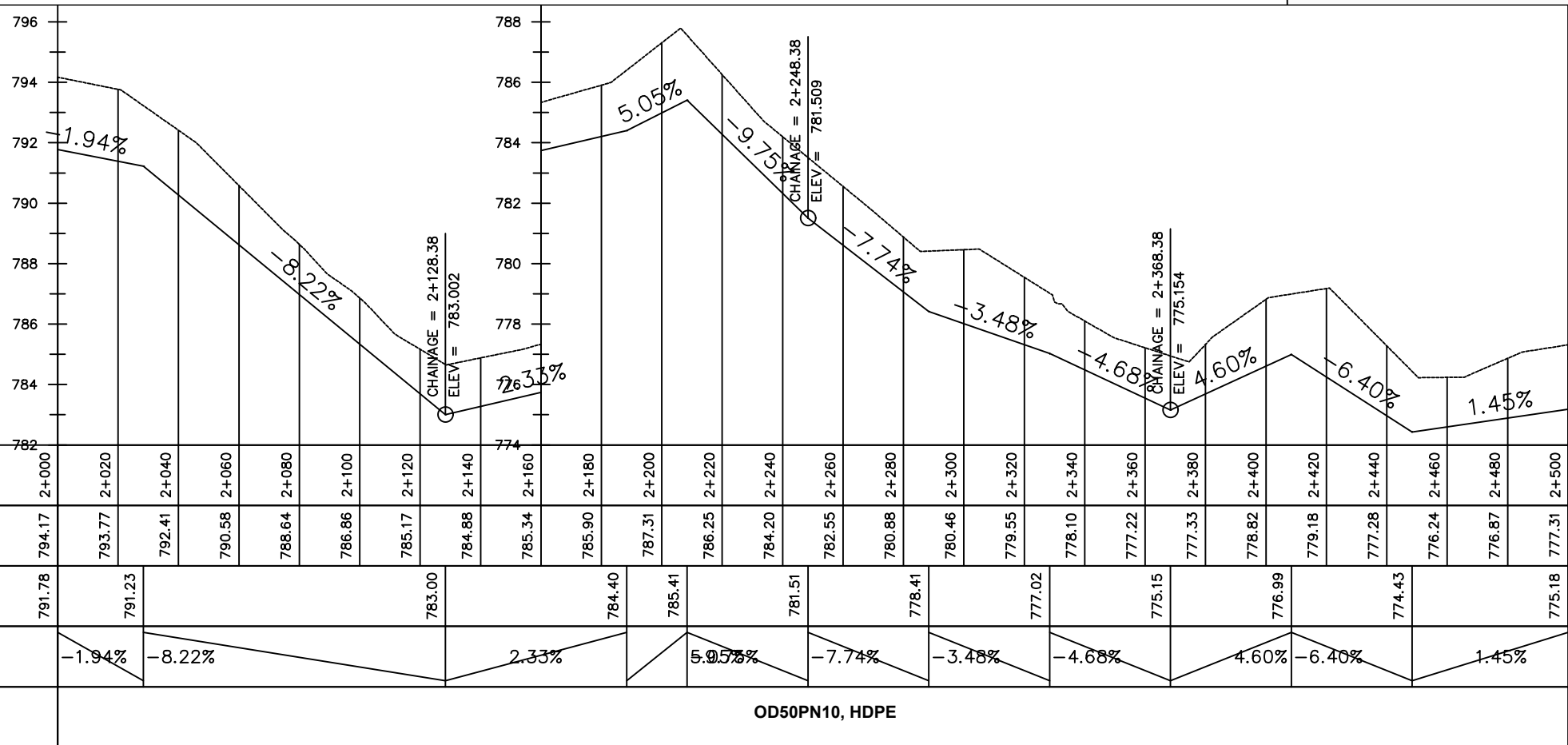
- ## Profile



**THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

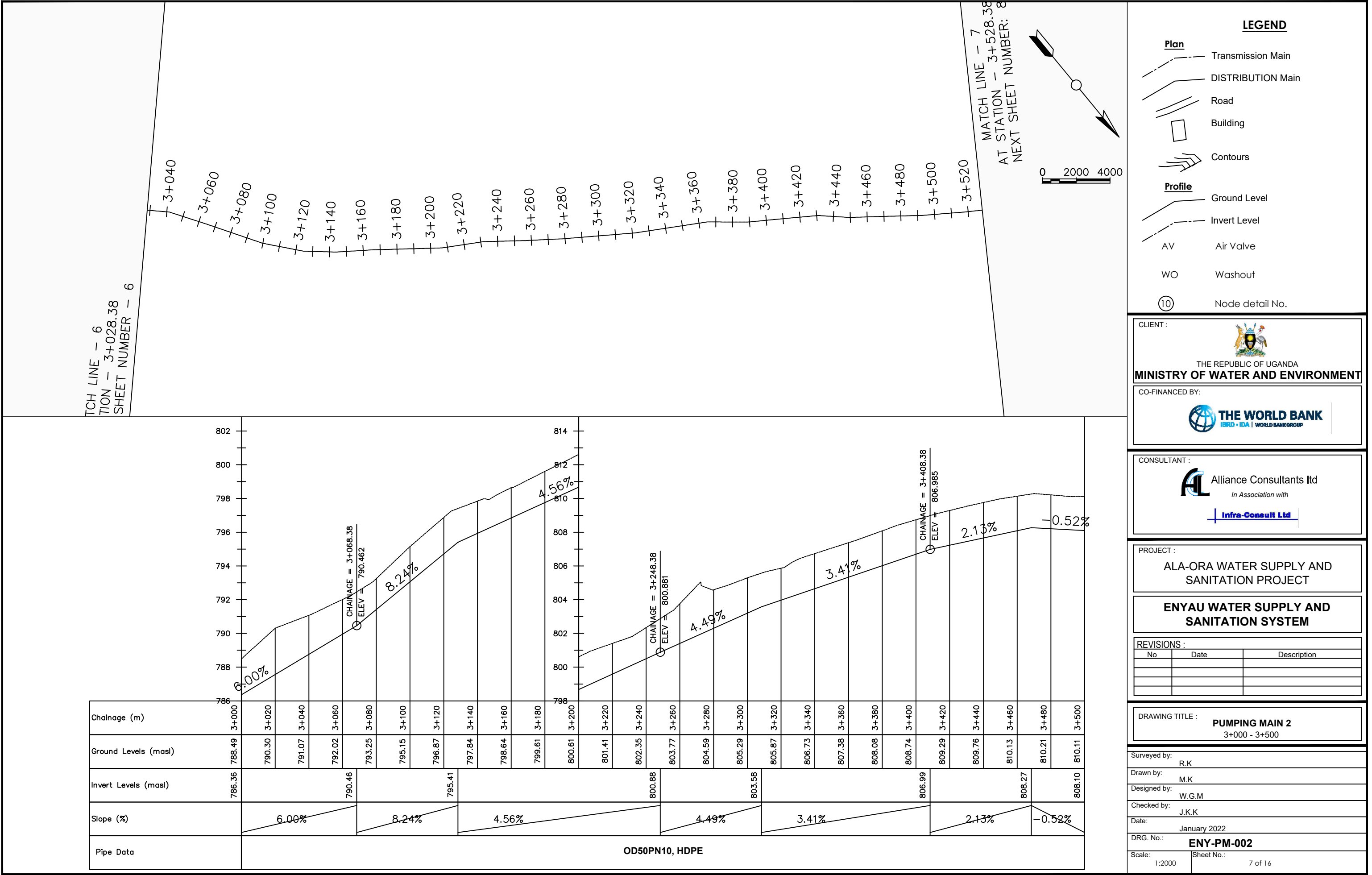
**Infra-Consult Ltd**

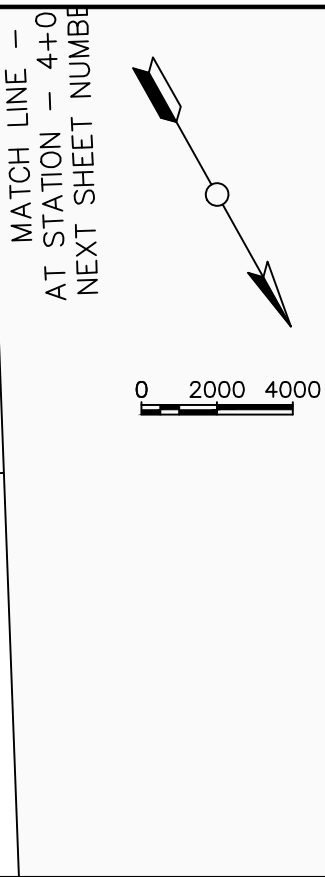
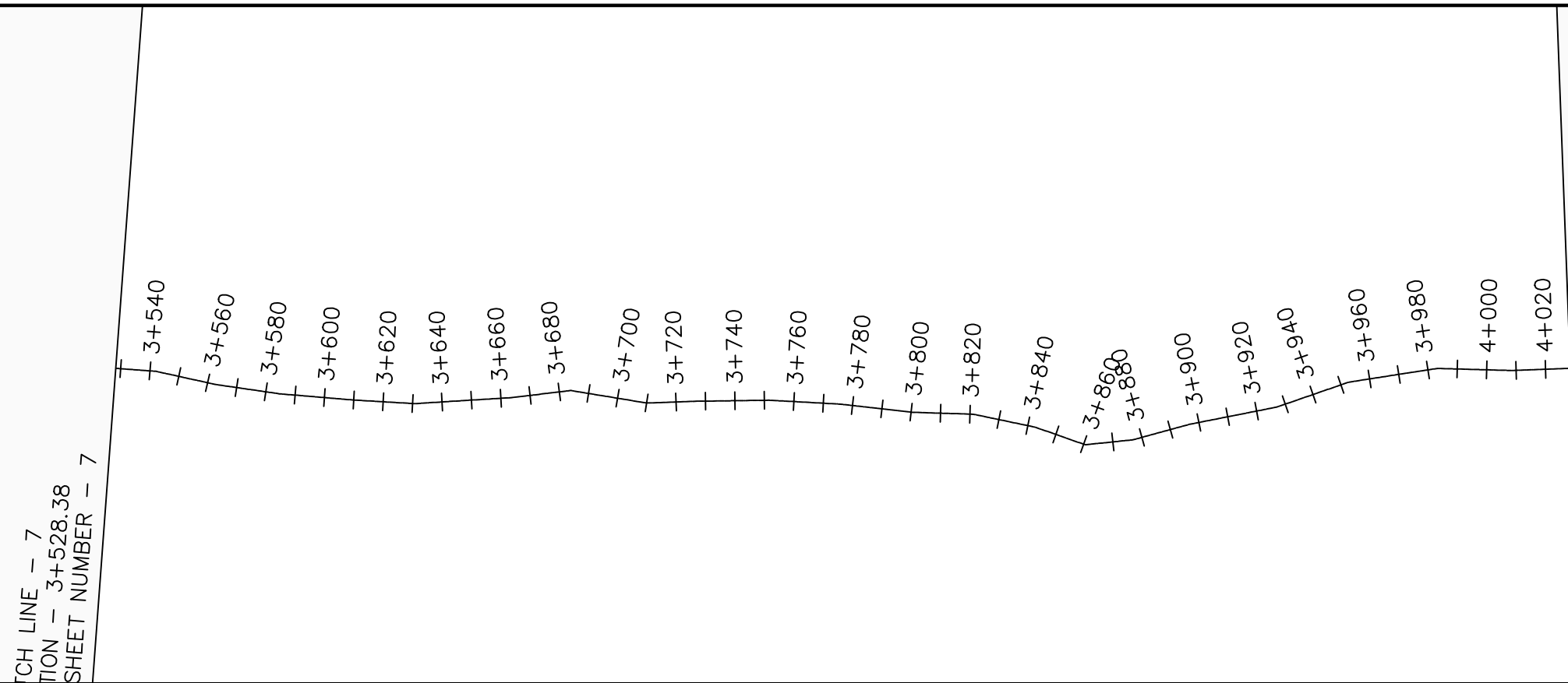
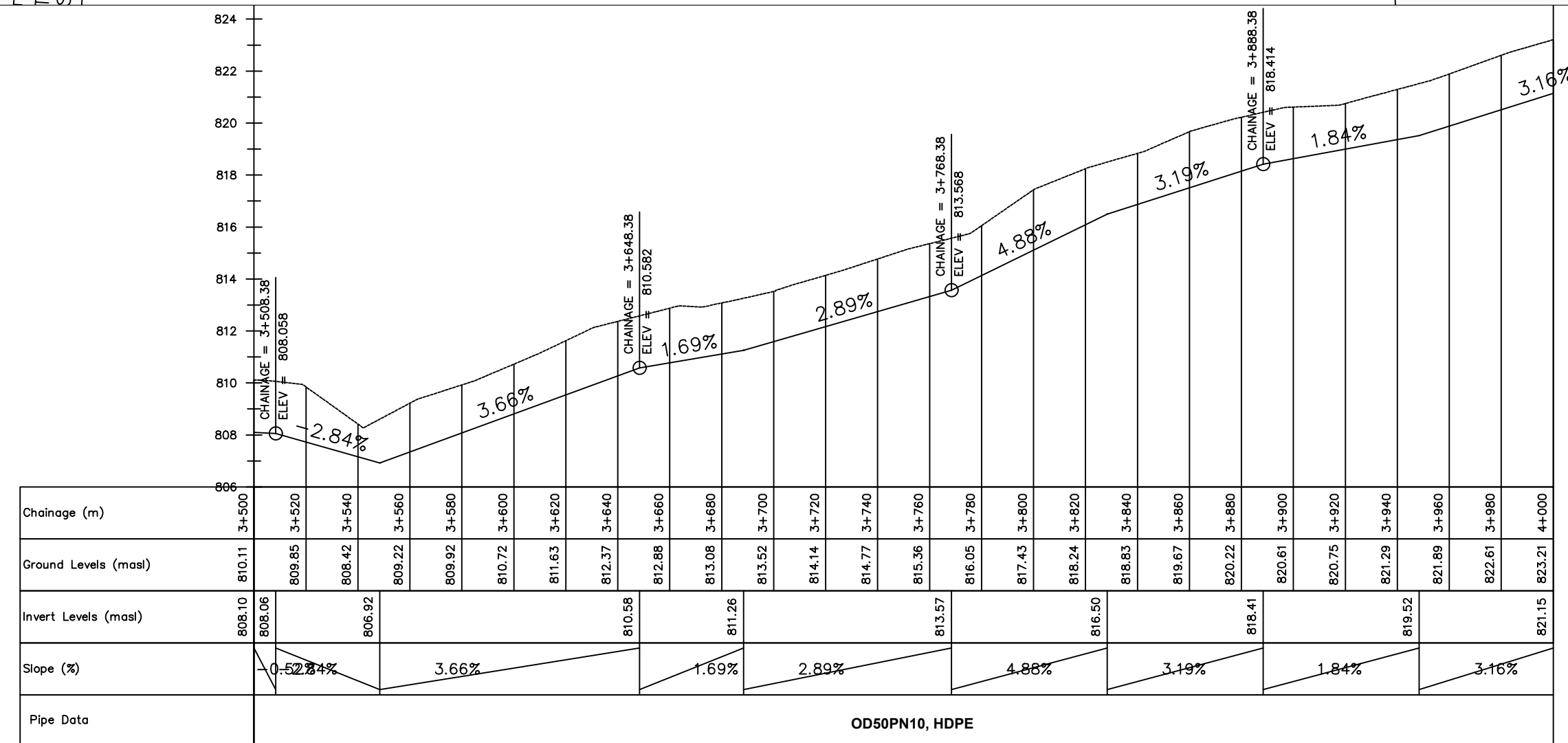
5 of 16











## LEGEND

**Plan**

Transmission Main

DISTRIBUTION Main

Road

Building

Contours

**Profile**

Ground Level

Invert Level

AV
Air Valve

WO
Washout

10

Node detail No.

CLIENT :

THE REPUBLIC OF UGANDA

### MINISTRY OF WATER AND ENVIRONMENT

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CONSULTANT :

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*In Association with*

**Infra-Consult Ltd**

PROJECT :

## ALA-ORA WATER SUPPLY AND SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE :

## PUMPING MAIN 2

3+500 - 4+000

Surveyed by: R.K

Drawn by: M.K

Designed by: W.G.M

Checked by: J.K.K

Date: January 2022

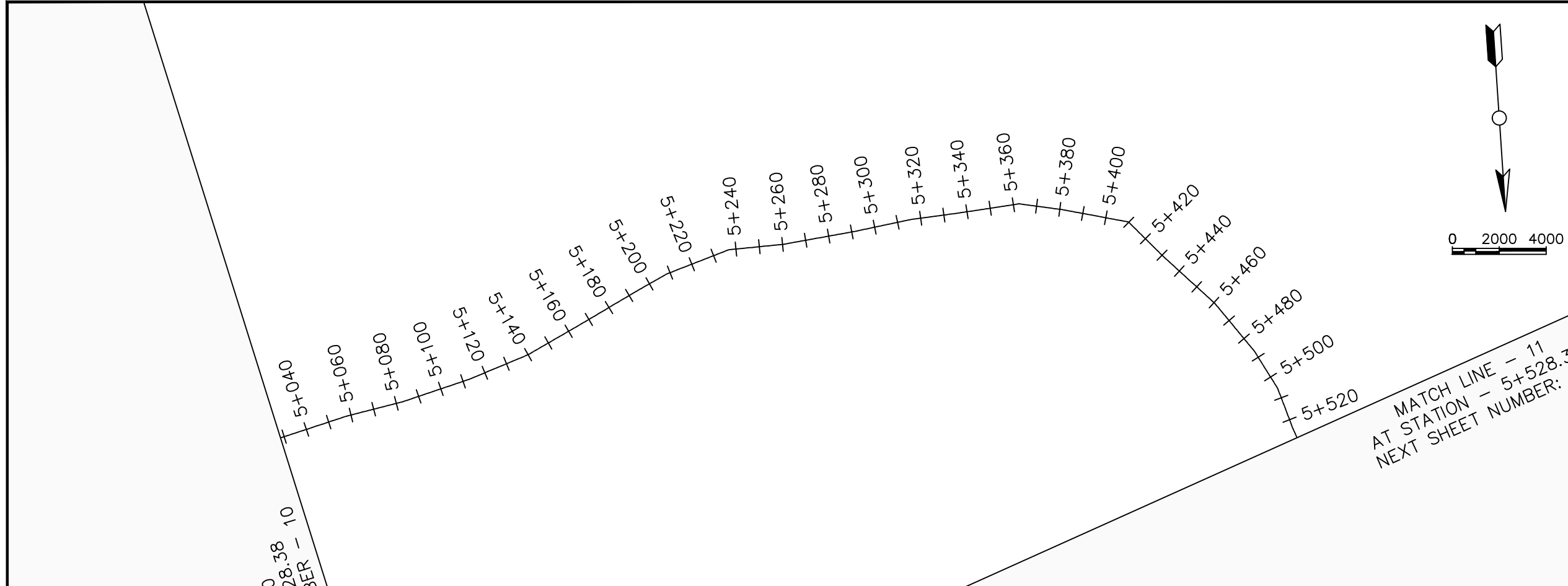
DRG. No.: **ENY-PM-002**

Scale: 1:2000

Sheet No.: 8 of 16







**LEGEND**

**Plan**

- Transmission Main
- DISTRIBUTION Main
- Road
- Building
- Contours

**Profile**

- Ground Level
- Invert Level
- AV Air Valve
- WO Washout
- Node detail No.

CLIENT :

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**MINISTRY OF WATER AND ENVIRONMENT**

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CONSULTANT :

**AL** Alliance Consultants Ltd  
In Association with  
**Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION PROJECT**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **PUMPING MAIN 2**  
5+000 - 5+500

Surveyed by: R.K

Drawn by: M.K

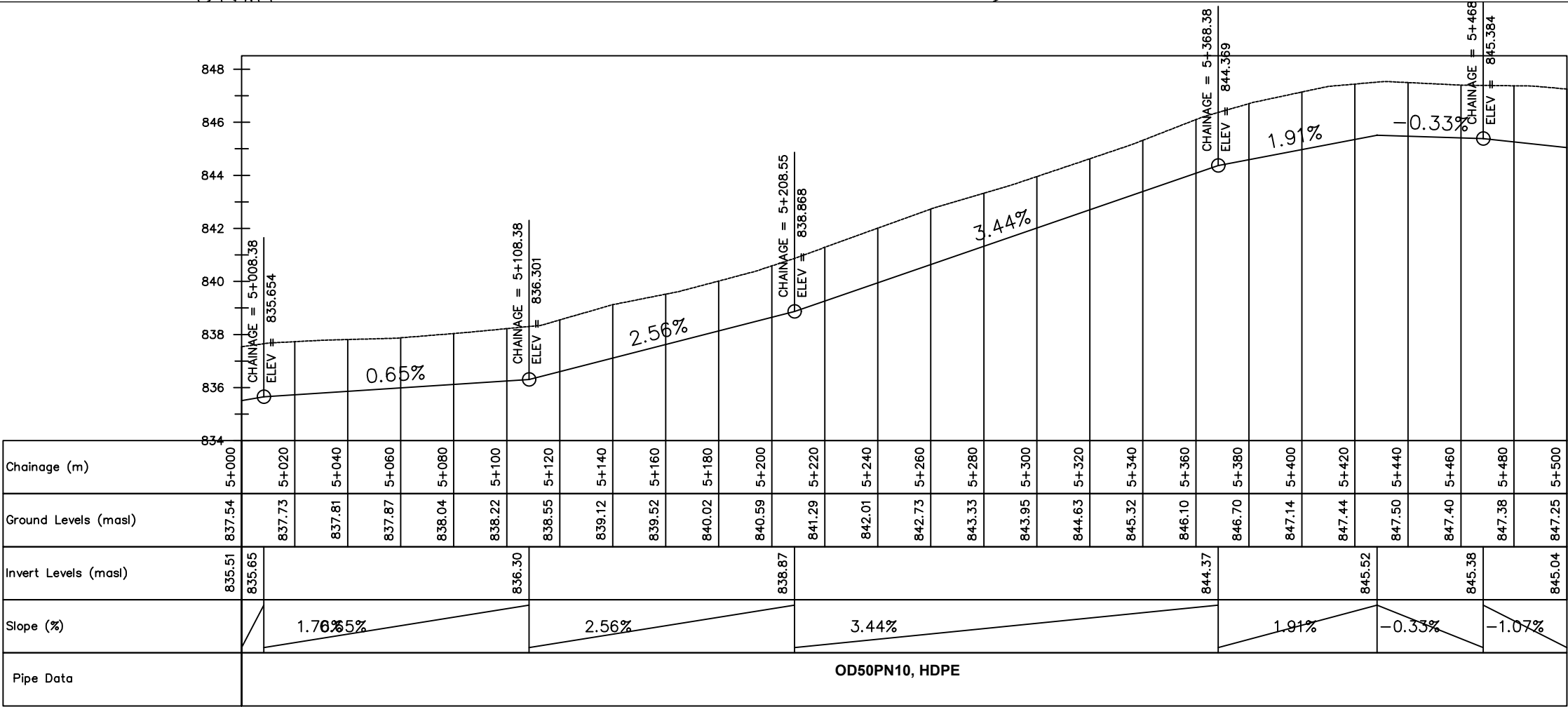
Designed by: W.G.M

Checked by: J.K.K

Date: January 2022

DRG. No.: **ENY-PM-002**

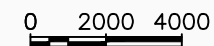
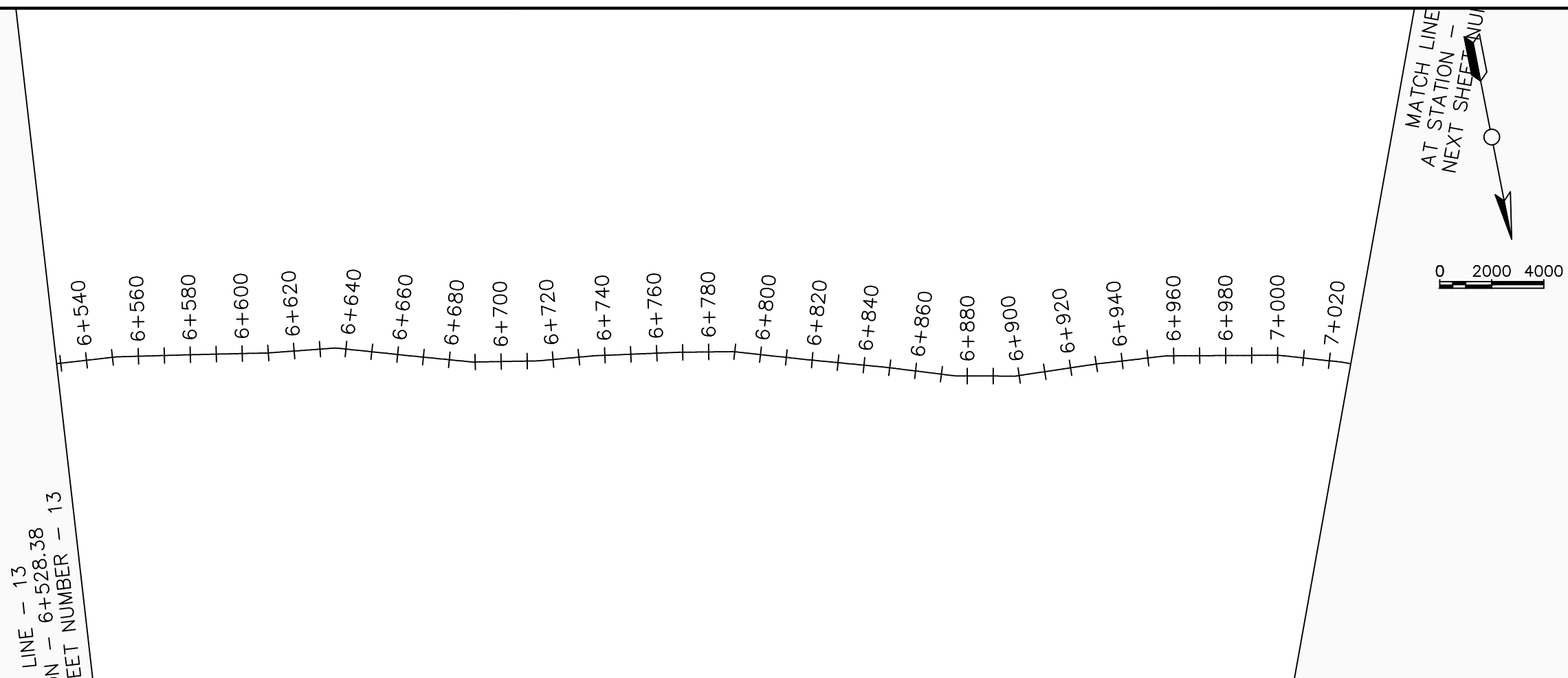
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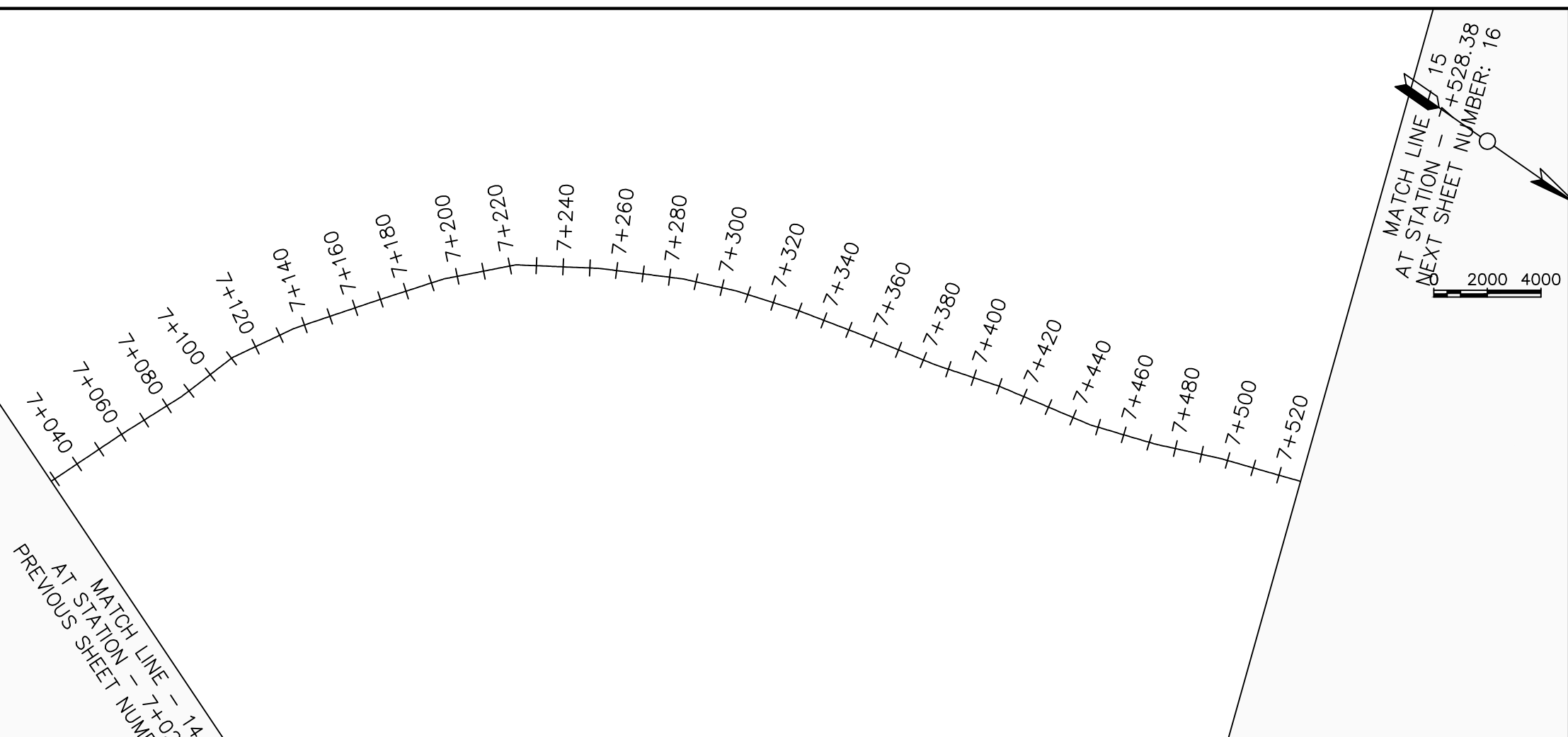




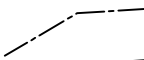

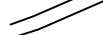


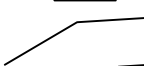
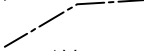




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## LEGEND

<u>Plan</u>	
	Transmission Main
	DISTRIBUTION Main
	Road
	Building
	Contours
<u>Profile</u>	
	Ground Level
	Invert Level
AV	Air Valve
WO	Washout
⑩	Node detail No.

CLIENT :	
	<p>THE REPUBLIC OF UGANDA</p> <p><b>MINISTRY OF WATER AND ENVIRONMENT</b></p>
CO-FINANCED BY:	 <p><b>THE WORLD BANK</b> IBRD • IDA   WORLD BANK GROUP</p>

CONSULTANT :

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*In Association with*

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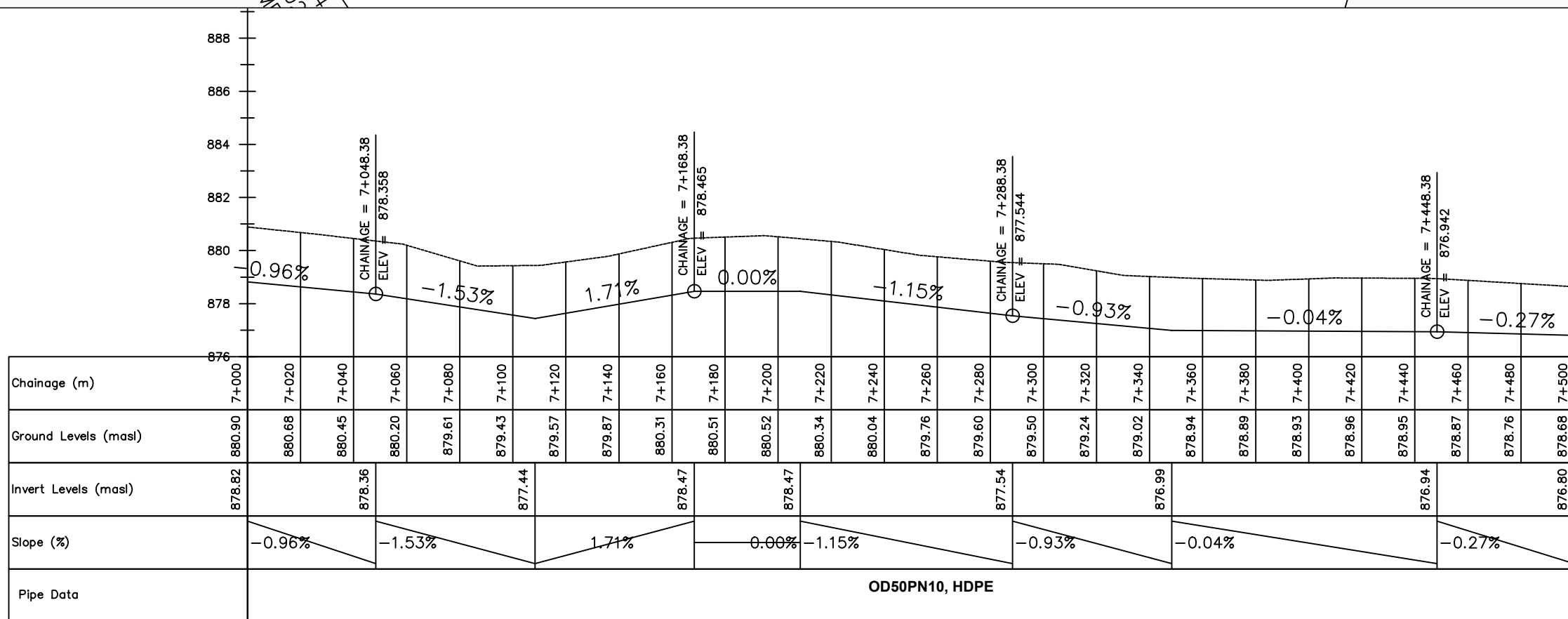
PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

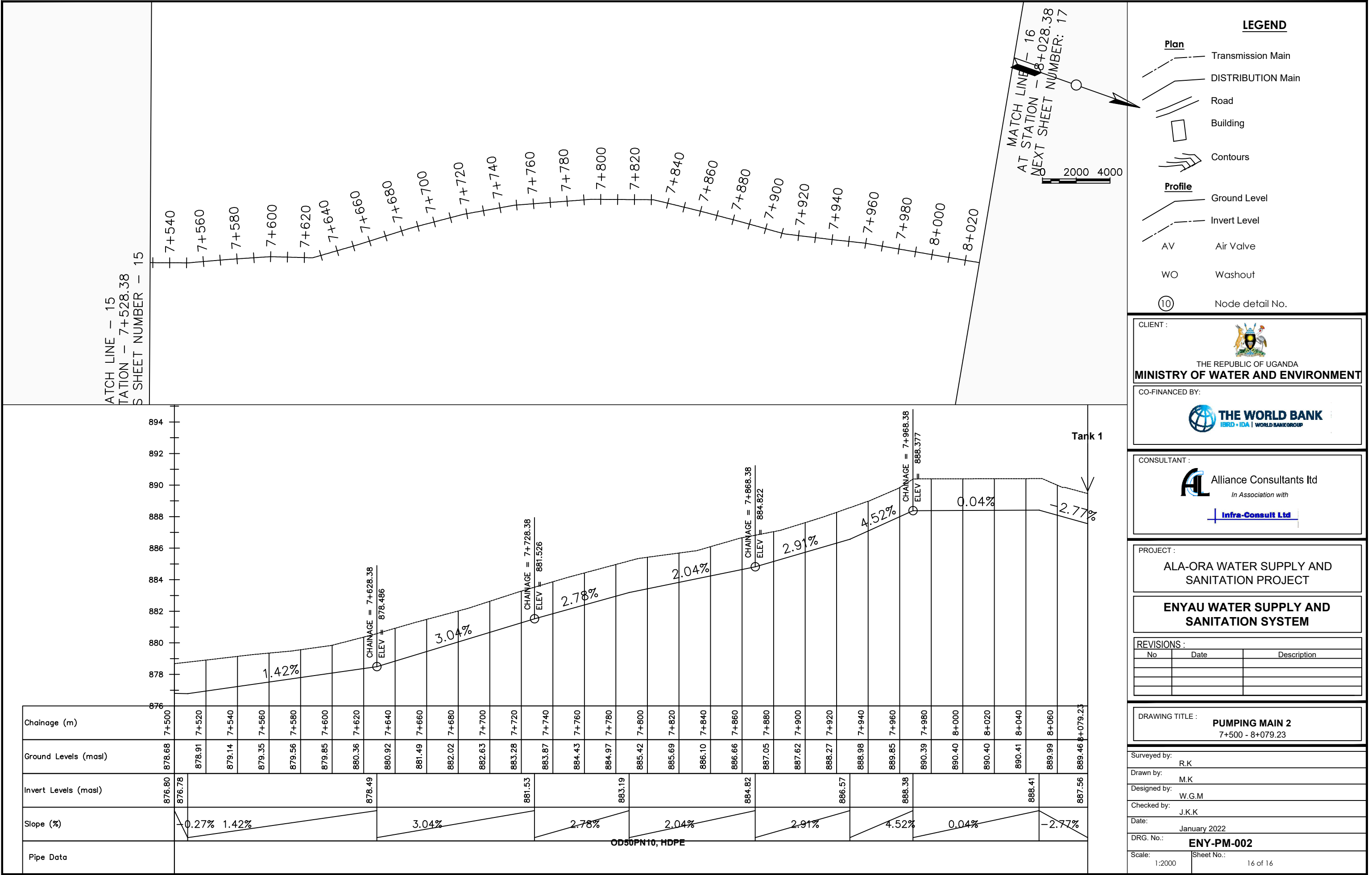
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

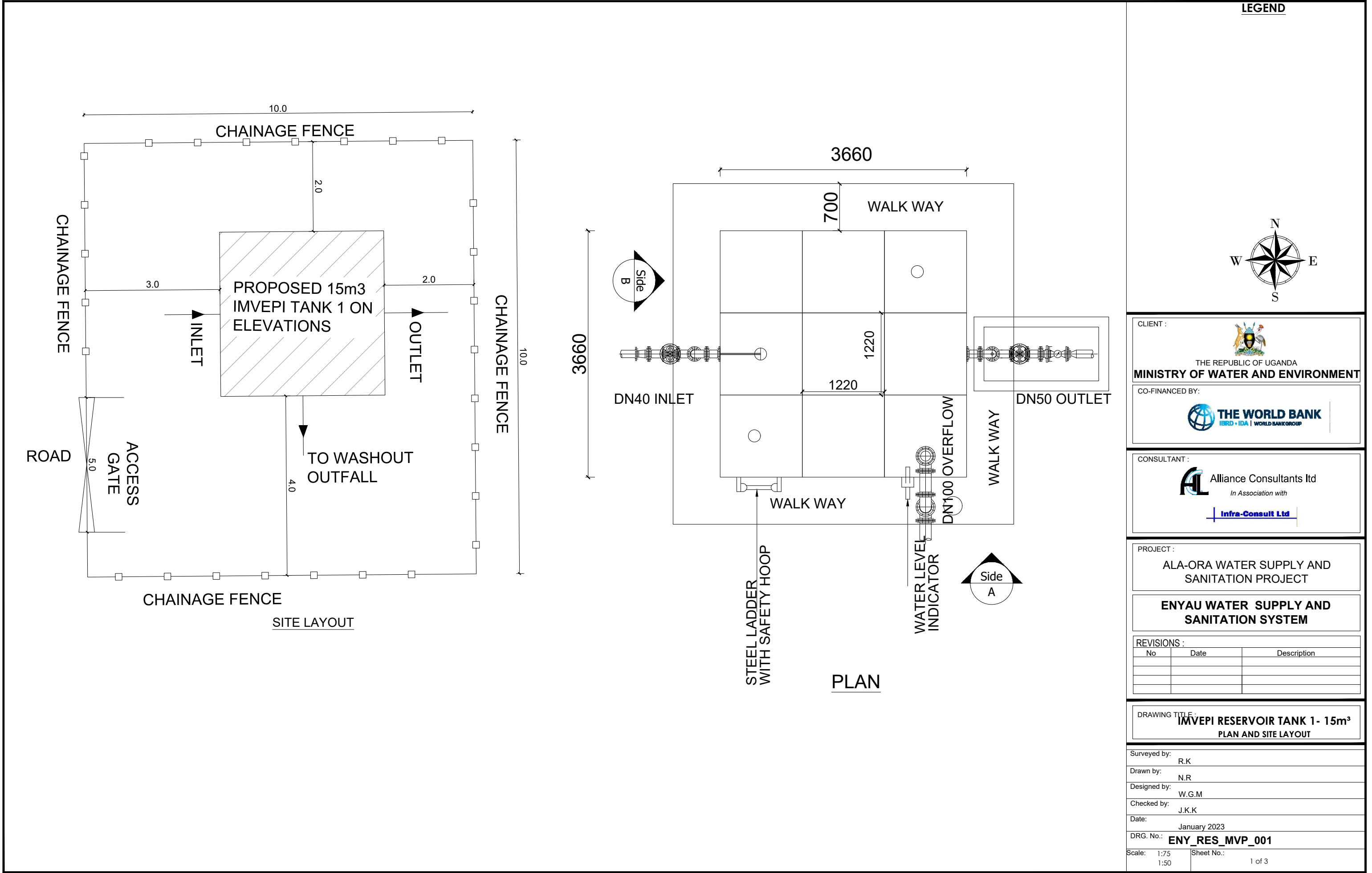
REVISIONS :		
No	Date	Description

DRAWING TITLE : **PUMPING MAIN 2**  
7+000 - 7+500

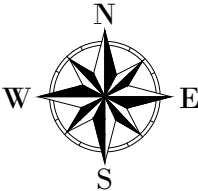
Surveyed by:		R.K
Drawn by:		M.K
Designed by:		W.G.M
Checked by:		J.K.K
Date:		January 2022
DRG. No.:		<b>ENY-PM-002</b>
Scale:	1:2000	Sheet No.:
		15 of 16

DRG. No.:Scale:Sheet No.:





LEGEND



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PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

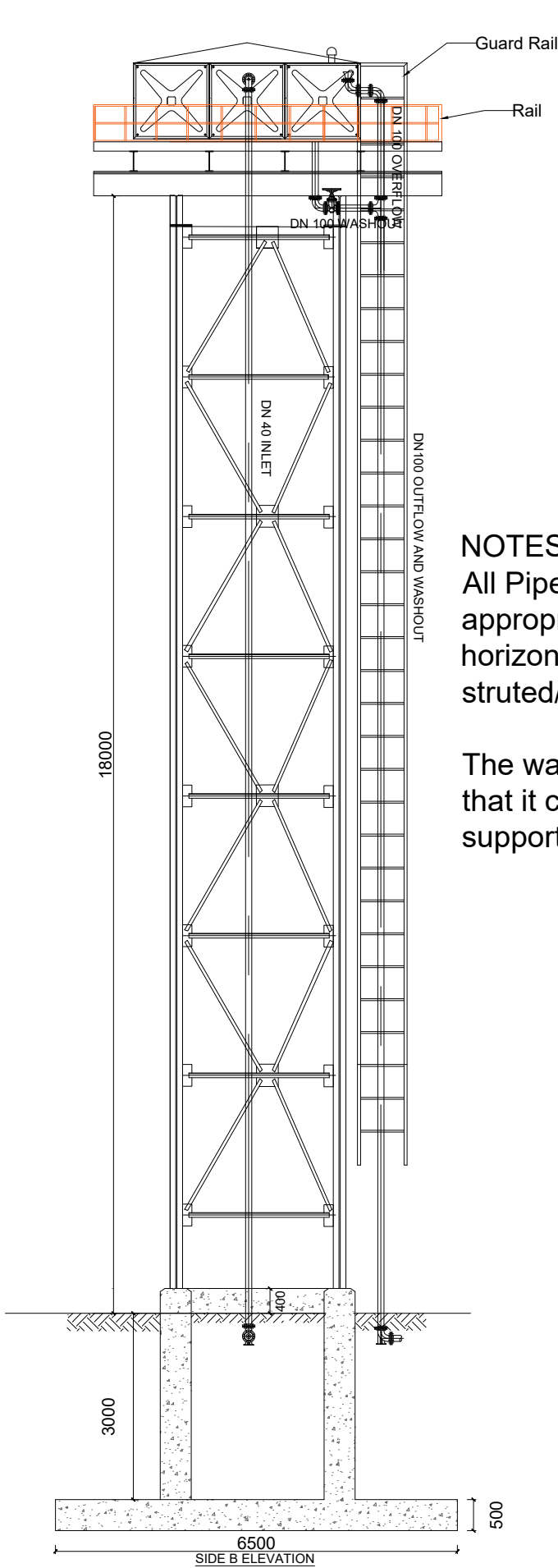
REVISIONS :		
No	Date	Description

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**IMVEPI RESERVOIR TANK 1- 15m<sup>3</sup>  
PLAN AND SITE LAYOUT**

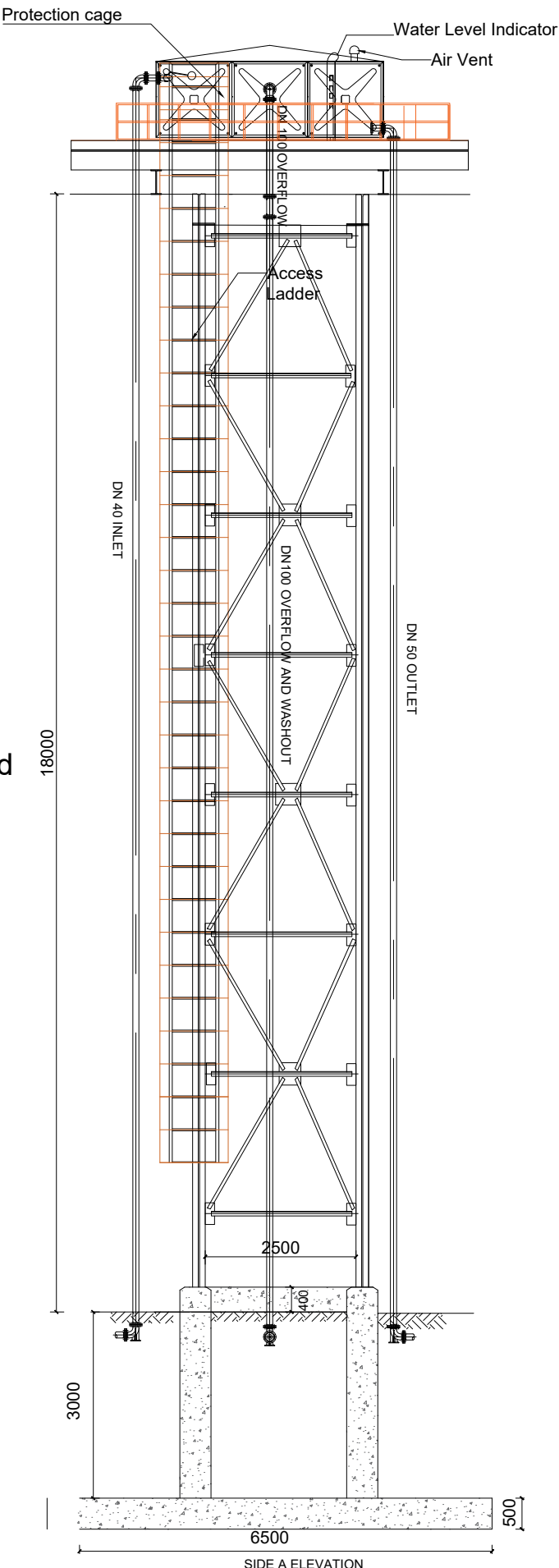
Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY_RES_MVP_001</b>
Scale:	1:75 1:50
Sheet No.:	1 of 3



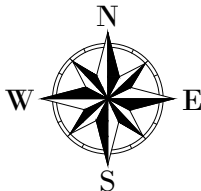


**NOTES:**  
 All Pipes and fittings shall be appropriately aligned vertically or horizontally and strutted/braced to approval

The washout shall be so positioned that it can access using the tank support structure ladder



**LEGEND**



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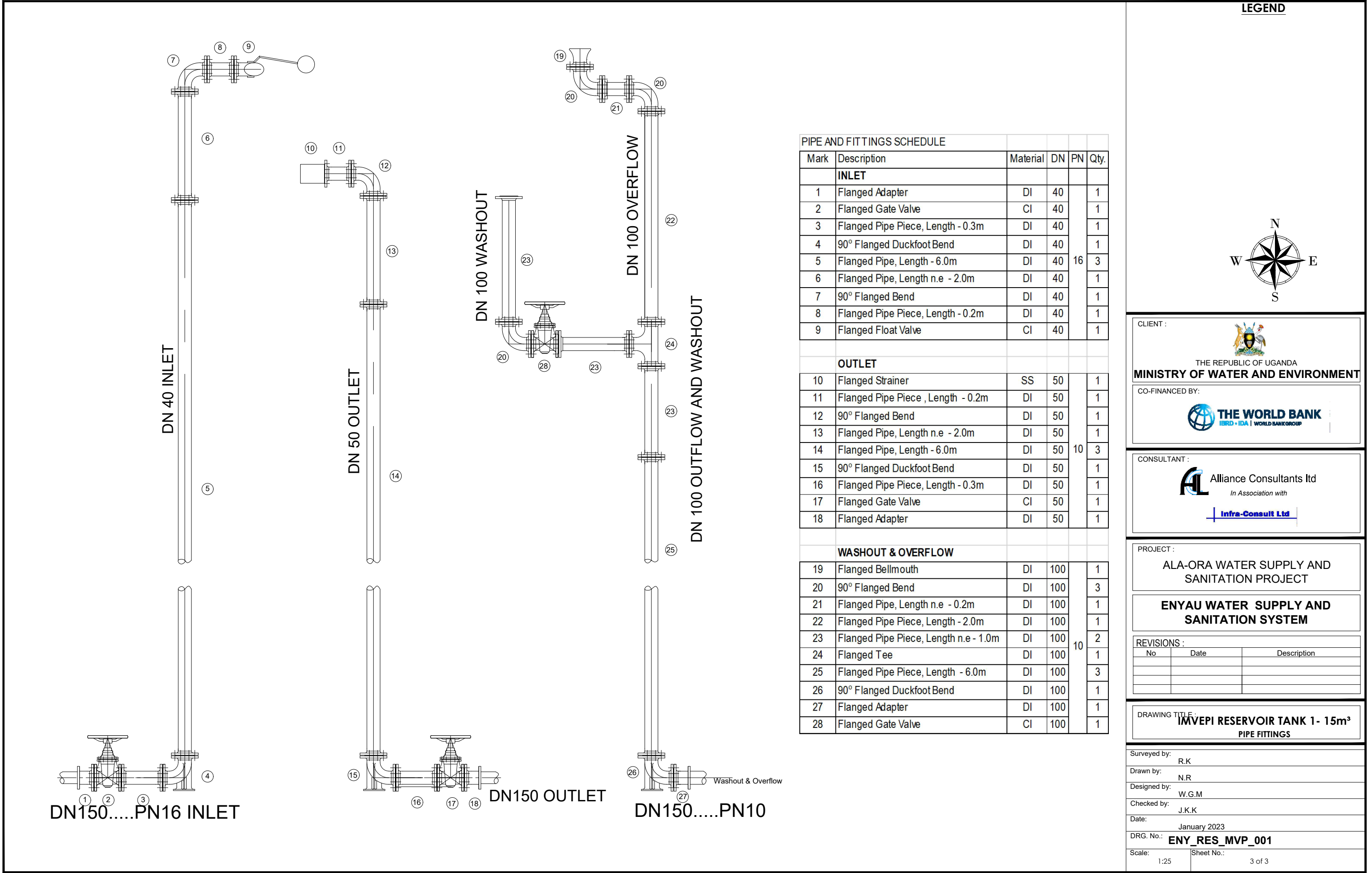
PROJECT :  
**ALA-ORA WATER SUPPLY AND SANITATION PROJECT**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

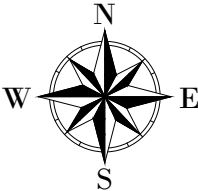
DRAWING TITLE :  
**IMVEPI RESERVOIR TANK 1- 15m³ ELEVATIONS**

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY_RES_MVP_001</b>
Scale:	1:75
Sheet No.:	2 of 3



PIPE AND FITTINGS SCHEDULE					
Mark	Description	Material	DN	PN	Qty.
INLET					
1	Flanged Adapter	DI	40		1
2	Flanged Gate Valve	CI	40		1
3	Flanged Pipe Piece, Length - 0.3m	DI	40		1
4	90° Flanged Duckfoot Bend	DI	40		1
5	Flanged Pipe, Length - 6.0m	DI	40	16	3
6	Flanged Pipe, Length n.e - 2.0m	DI	40		1
7	90° Flanged Bend	DI	40		1
8	Flanged Pipe Piece, Length - 0.2m	DI	40		1
9	Flanged Float Valve	CI	40		1
OUTLET					
10	Flanged Strainer	SS	50		1
11	Flanged Pipe Piece , Length - 0.2m	DI	50		1
12	90° Flanged Bend	DI	50		1
13	Flanged Pipe, Length n.e - 2.0m	DI	50		1
14	Flanged Pipe, Length - 6.0m	DI	50	10	3
15	90° Flanged Duckfoot Bend	DI	50		1
16	Flanged Pipe Piece, Length - 0.3m	DI	50		1
17	Flanged Gate Valve	CI	50		1
18	Flanged Adapter	DI	50		1
WASHOUT & OVERFLOW					
19	Flanged Bellmouth	DI	100		1
20	90° Flanged Bend	DI	100		3
21	Flanged Pipe, Length n.e - 0.2m	DI	100		1
22	Flanged Pipe Piece, Length - 2.0m	DI	100		1
23	Flanged Pipe Piece, Length n.e - 1.0m	DI	100	10	2
24	Flanged Tee	DI	100		1
25	Flanged Pipe Piece, Length - 6.0m	DI	100		3
26	90° Flanged Duckfoot Bend	DI	100		1
27	Flanged Adapter	DI	100		1
28	Flanged Gate Valve	CI	100		1

LEGEND



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PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

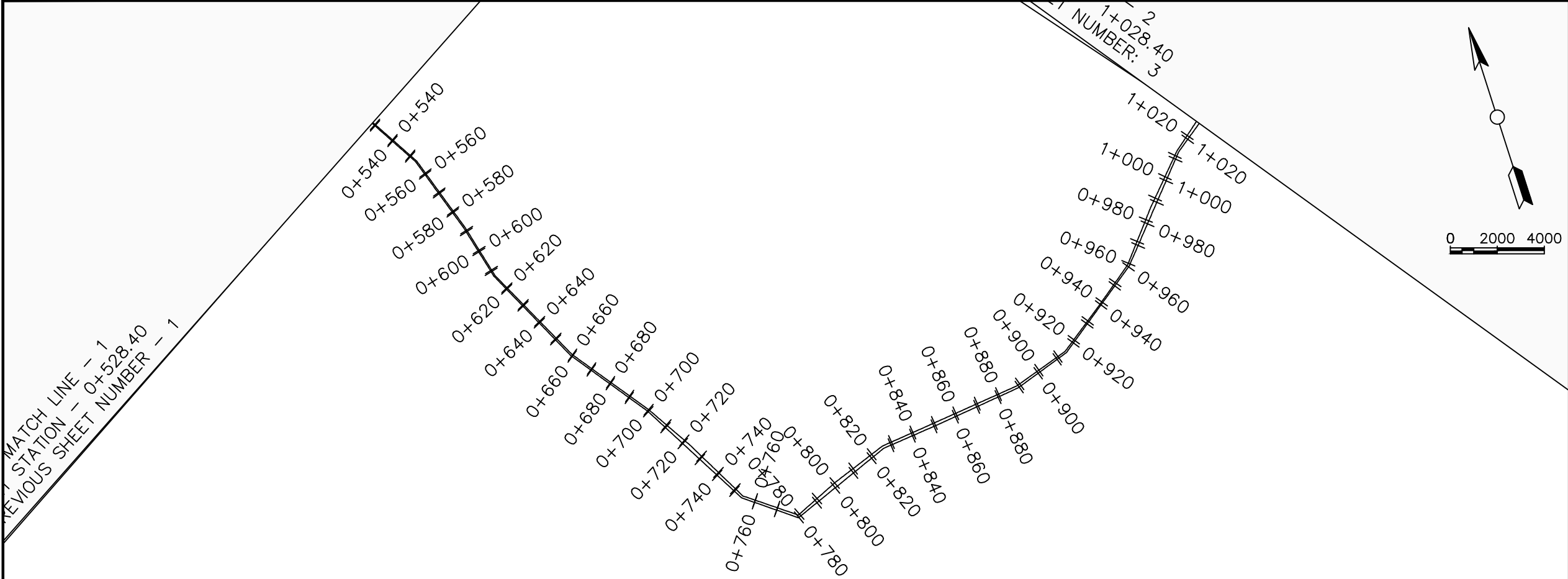
REVISIONS :		
No	Date	Description

DRAWING TITLE :

**IMVEPI RESERVOIR TANK 1- 15m³  
PIPE FITTINGS**

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY_RES_MVP_001</b>
Scale:	1:25
Sheet No.:	3 of 3





**LEGEND**

**Plan**

- Transmission Main
- DISTRIBUTION Main
- Road
- Building
- Contours

**Profile**

- Ground Level
- Invert Level
- AV Air Valve
- WO Washout
- Node detail No.

CLIENT :

THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

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IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

**AL** Alliance Consultants Ltd  
In Association with  
**Infra-Consult Ltd**

PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

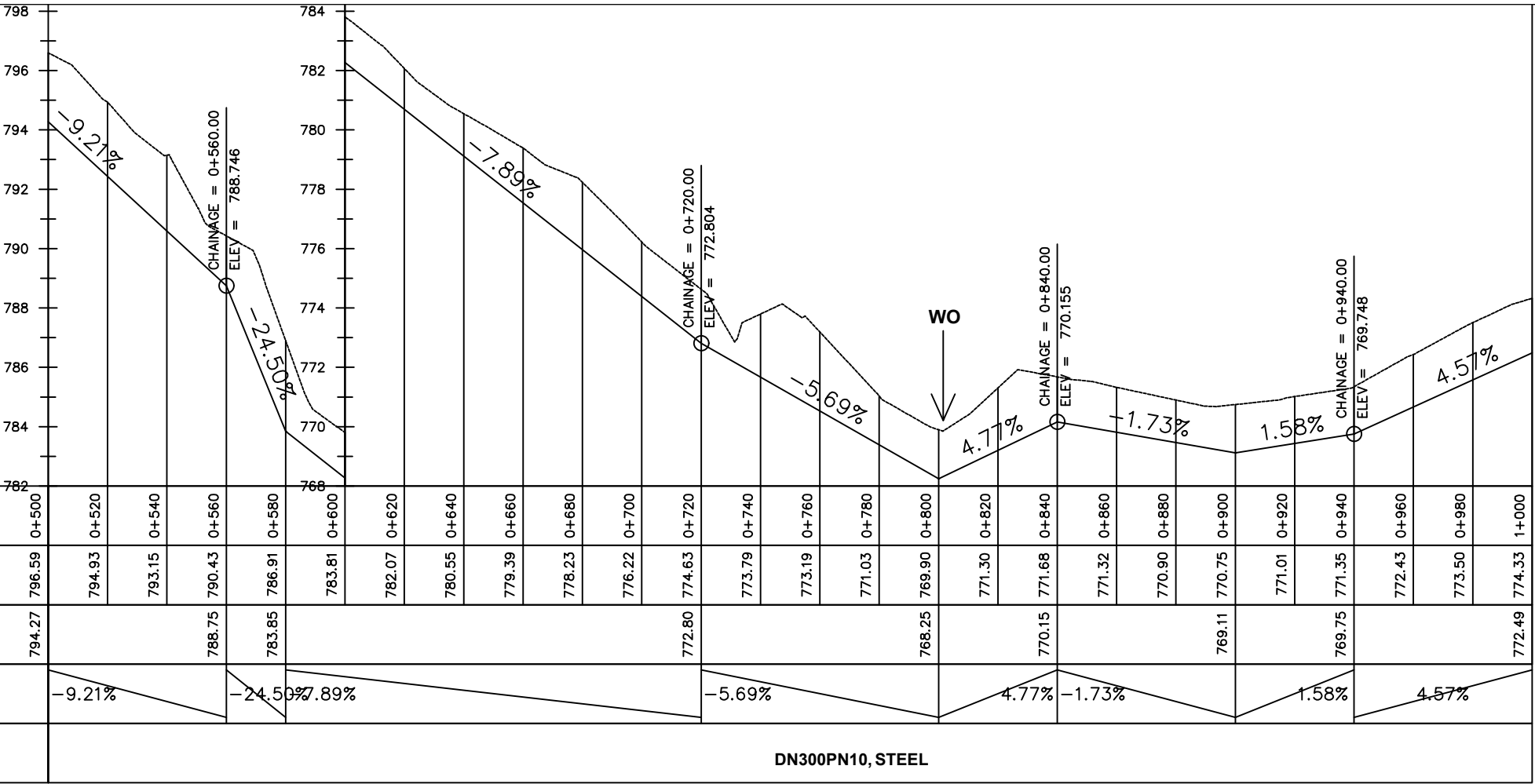
REVISIONS :

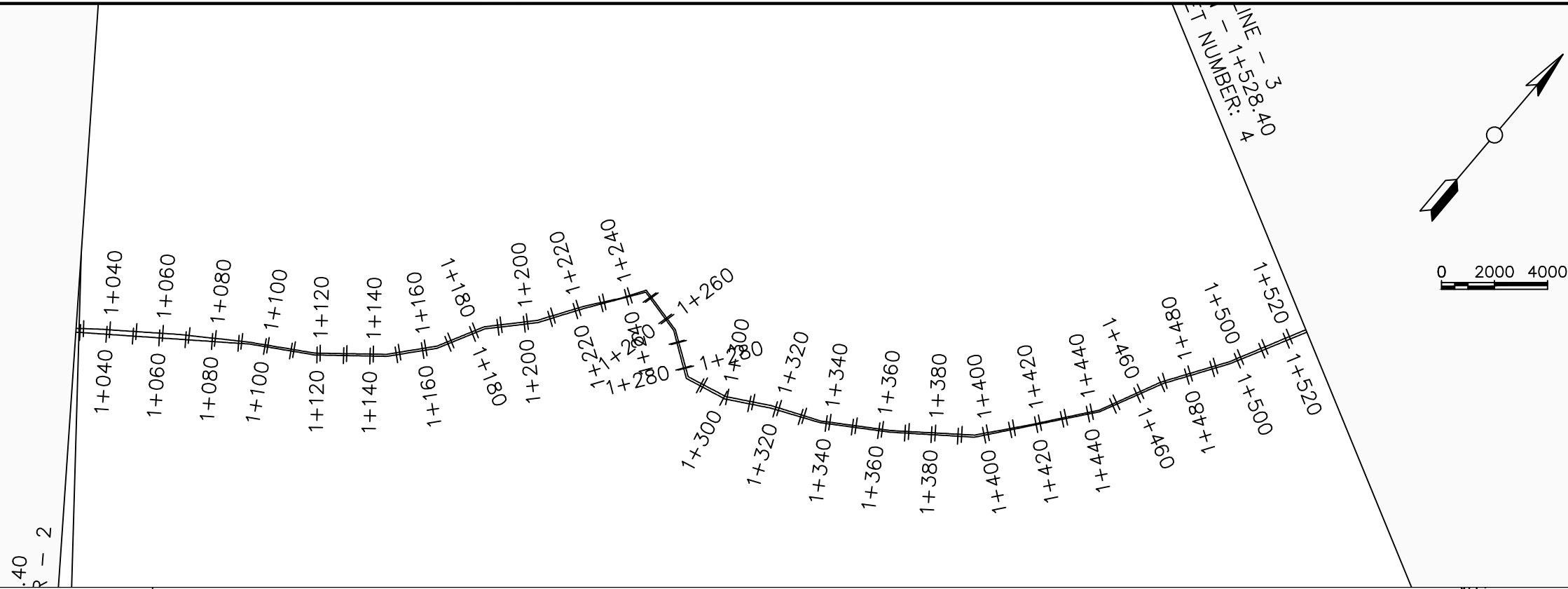
No	Date	Description

DRAWING TITLE :

**GRAVITY TRANSMISSION MAIN 1**  
0+500 - 1+000

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2022
DRG. No.:	<b>ENY-GTM-001</b>
Scale:	1:2000
Sheet No.:	2 of 29





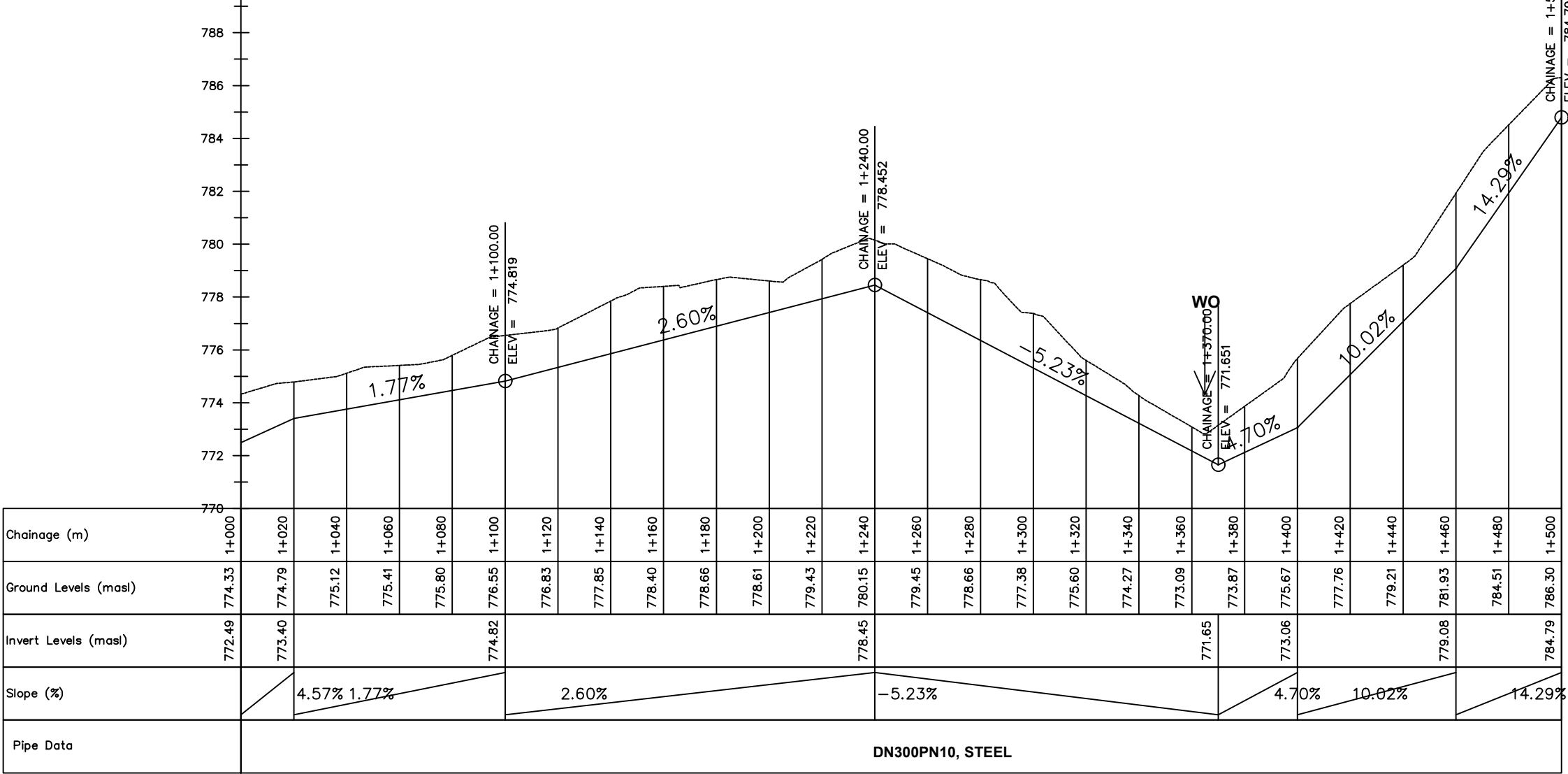
**LEGEND**

**Plan**

- Transmission Main
- DISTRIBUTION Main
- Road
- Building
- Contours

**Profile**

- Ground Level
- Invert Level
- AV Air Valve
- WO Washout
- Node detail No.



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**MINISTRY OF WATER AND ENVIRONMENT**

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Infra-Consult Ltd

**PROJECT :**  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

**REVISIONS :**

No	Date	Description

**DRAWING TITLE :**  
**GRAVITY TRANSMISSION MAIN 1**  
1+000 - 1+500

**Surveyed by:** R.K  
**Drawn by:** M.K  
**Designed by:** W.G.M  
**Checked by:** J.K.K  
**Date:** January 2022  
**DRG. No.:** **ENY-GTM-001**  
**Scale:** 1:2000  
**Sheet No.:** 3 of 29







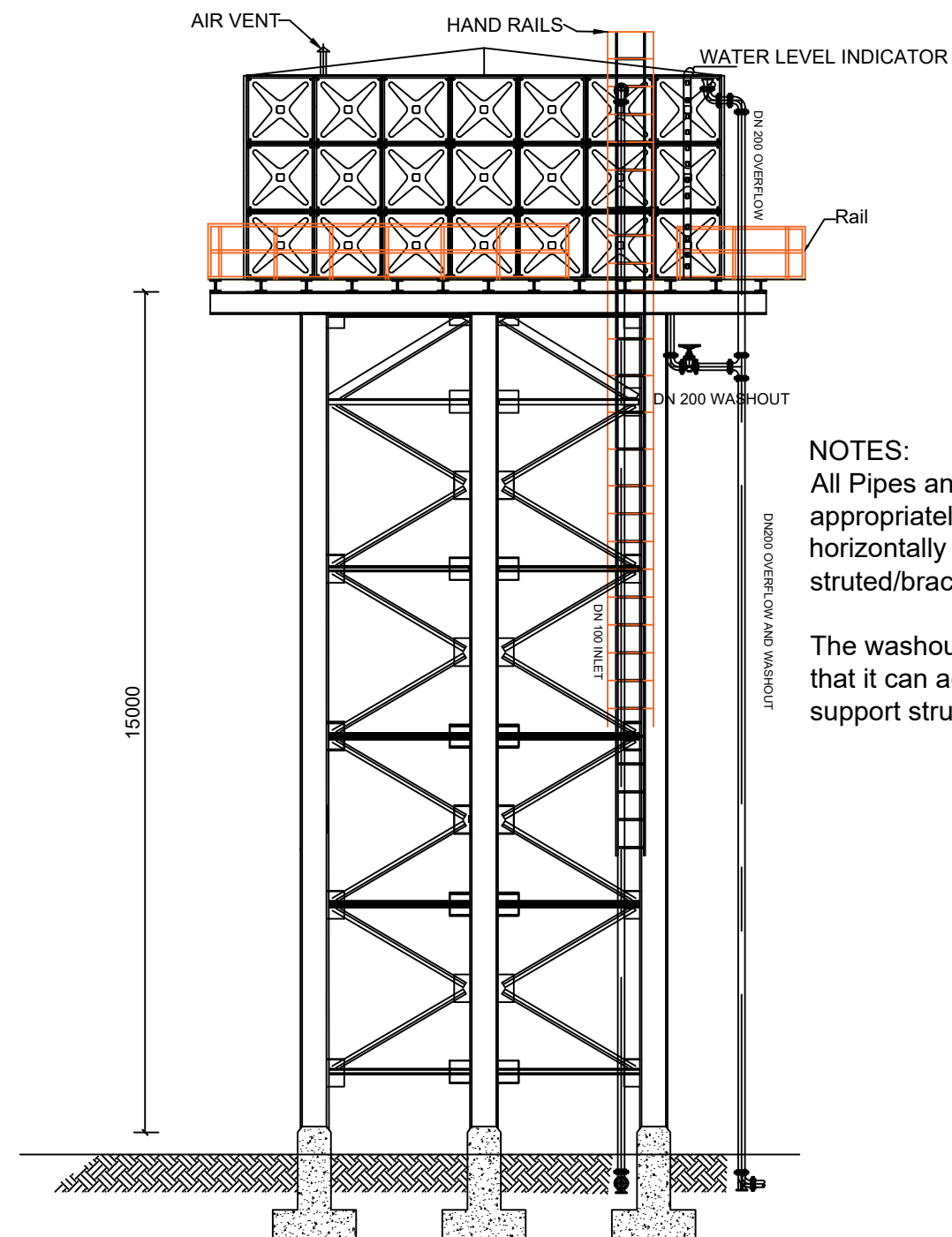




**202m<sup>3</sup> RESERVOIR (TANK 2/MVEPI ZONE 3)  
AREA**



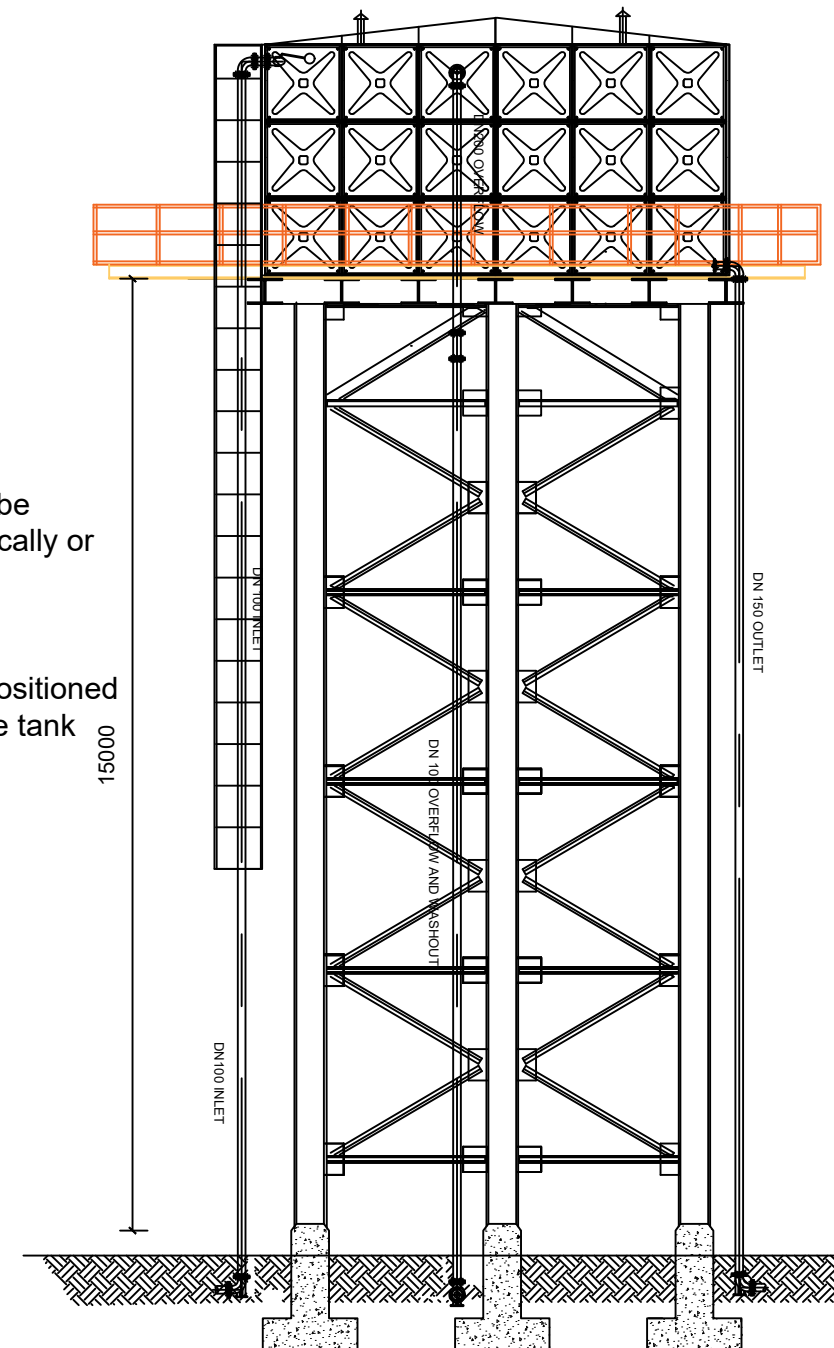




ELEVATION B

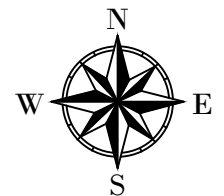
**NOTES:**  
All Pipes and fittings shall be appropriately aligned vertically or horizontally and strutted/braced to approval

The washout shall be so positioned that it can access using the tank support structure ladder



ELEVATION A

# LEGEND



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PROJECT :  
**ALA-ORA WATER SUPPLY AND  
 SANITATION PROJECT**

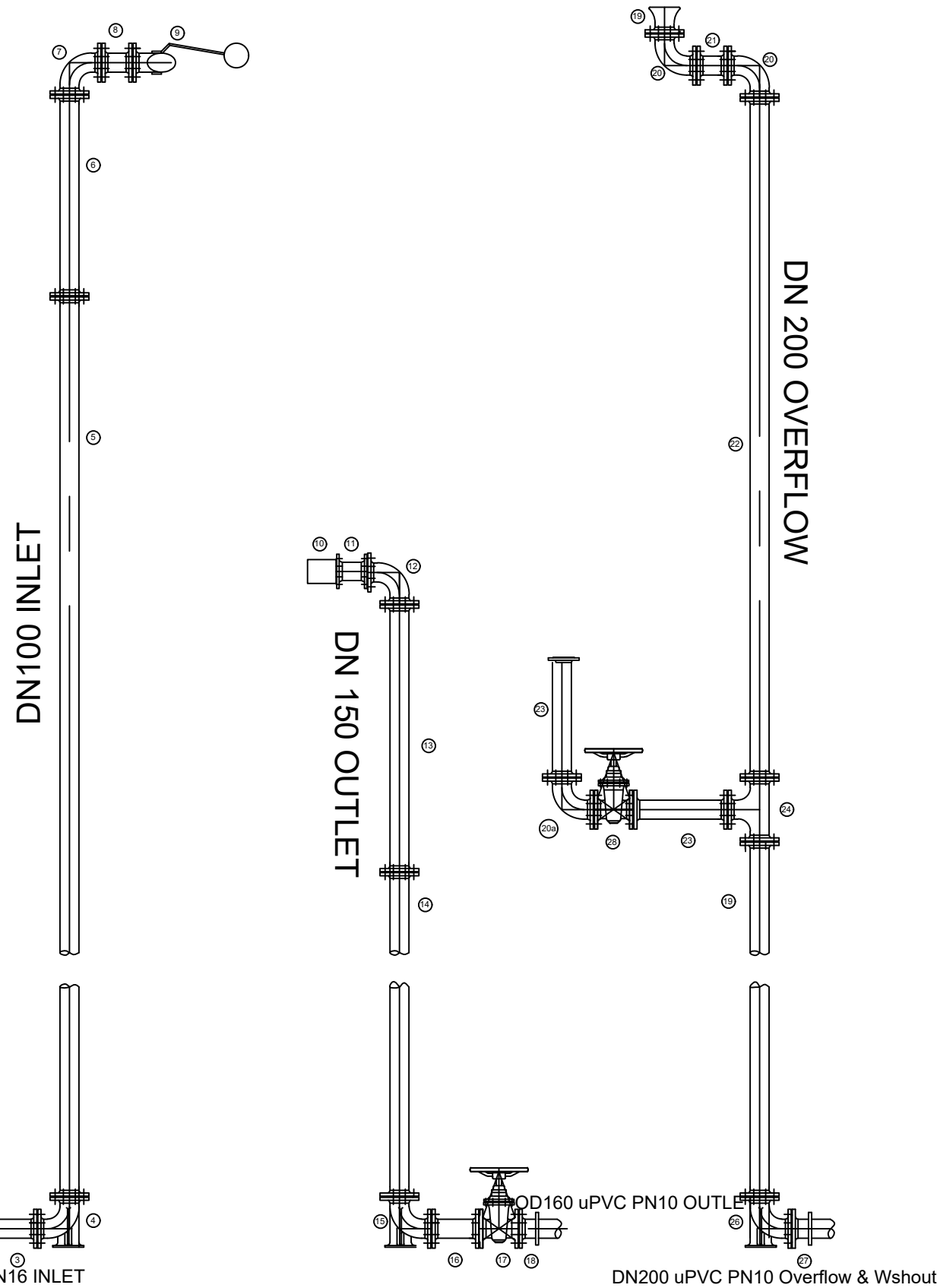
**ENYAU WATER SUPPLY AND  
 SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE :  
**IMVEPI RESERVOIR TANK 2- 202m<sup>3</sup>  
 ELEVATIONS**

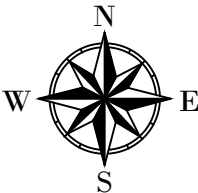
Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY_RES_MVP_002</b>
Scale:	1:120
Sheet No.:	2 of 3





PIPE AND FITTINGS SCHEDULE					
Mark	Description	Material	DN	PN	Qty.
	INLET				
1	Flanged Adapter	DI	100	16	1
2	Flanged Gate Valve	CI	100		1
3	Flanged Pipe Piece, Length - 0.3m	DI	100		1
4	90° Flanged Duckfoot Bend	DI	100		1
5	Flanged Pipe, Length - 6.0m	DI	100		3
6	Flanged Pipe, Length n.e - 3.0m	DI	100		1
7	90° Flanged Bend	DI	100		1
8	Flanged Pipe Piece, Length - 0.2m	DI	100		1
9	Flanged Float Valve	CI	100		1
	OUTLET				
10	Flanged Strainer	SS	150	10	1
11	Flanged Pipe Piece , Length - 0.2m	DI	150		1
12	90° Flanged Bend	DI	150		1
13	Flanged Pipe, Length n.e - 5.0m	DI	150		1
14	Flanged Pipe, Length - 6.0m	DI	150		2
15	90° Flanged Duckfoot Bend	DI	150		1
16	Flanged Pipe Piece, Length - 0.3m	DI	150		1
17	Flanged Gate Valve	CI	150		1
18	Flanged Adapter	DI	150		1
	WASHOUT & OVERFLOW				
19	Flanged Bellmouth	DI	200	10	1
20	90° Flanged Bend	DI	200		2
21	Flanged Pipe, Length n.e - 0.2m	DI	200		1
22	Flanged Pipe Piece, Length - 5.0m	DI	200		2
20a	90° Flanged Bend	DI	100		1
23	Flanged Pipe Piece, Length n.e - 1.0m	DI	100		2
24	Flanged Tee	DI	200/100		1
25	Flanged Pipe Piece, Length - 6.0m	DI	200		3
26	90° Flanged Duckfoot Bend	DI	200		1
27	Flanged Adapter	DI	200		1
28	Flanged Gate Valve	CI	100		

LEGEND



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PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

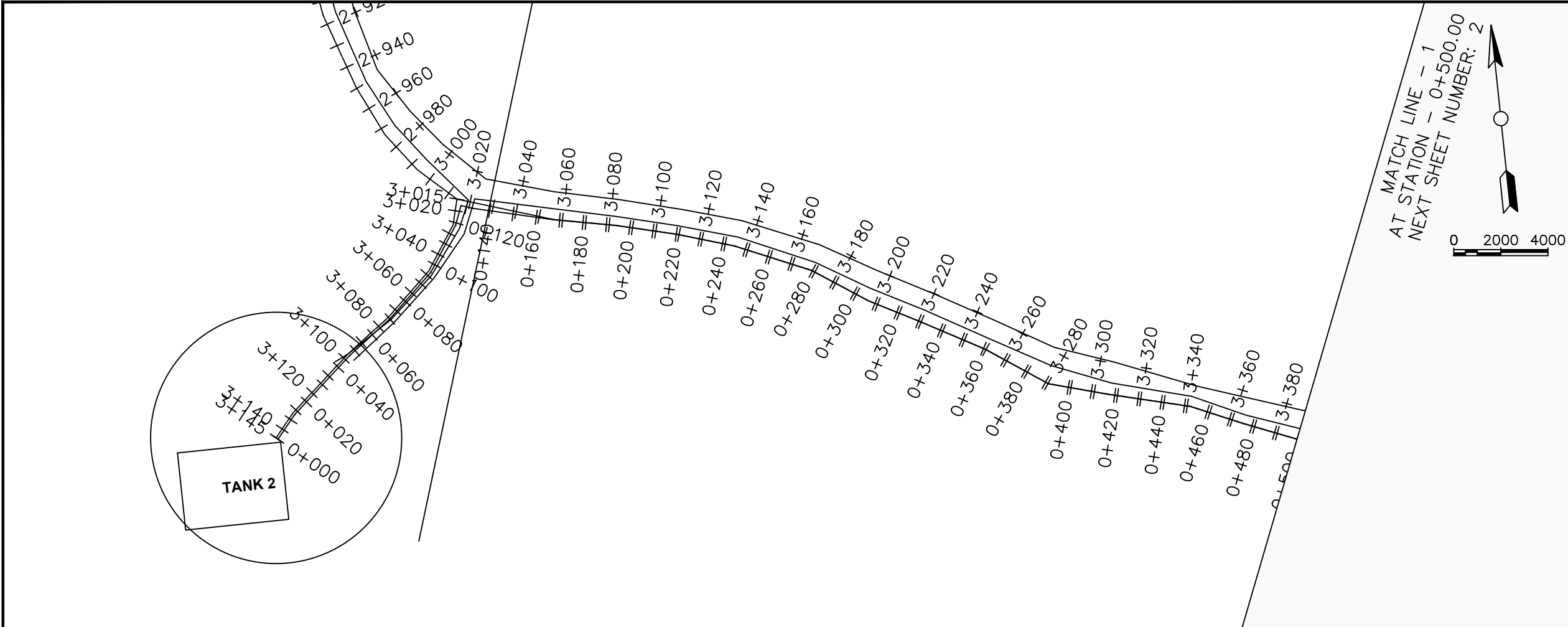
REVISIONS :

No	Date	Description

DRAWING TITLE :

**IMVEPI RESERVOIR TANK 2- 202m³  
PIPE FITTINGS**

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY_RES_MVP_002</b>
Scale:	1:75
Sheet No.:	3 of 3



**LEGEND**

**Plan**

- Transmission Main
- DISTRIBUTION Main
- Road
- Building
- Contours

**Profile**

- Ground Level
- Invert Level
- AV Air Valve
- WO Washout
- Node detail No.

CLIENT :

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PROJECT :

ALA-ORA WATER SUPPLY AND SANITATION PROJECT

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**DISTRIBUTION MAIN 1**

0+000 - 0+500

Surveyed by: R.K

Drawn by: M.K

Designed by: W.G.M

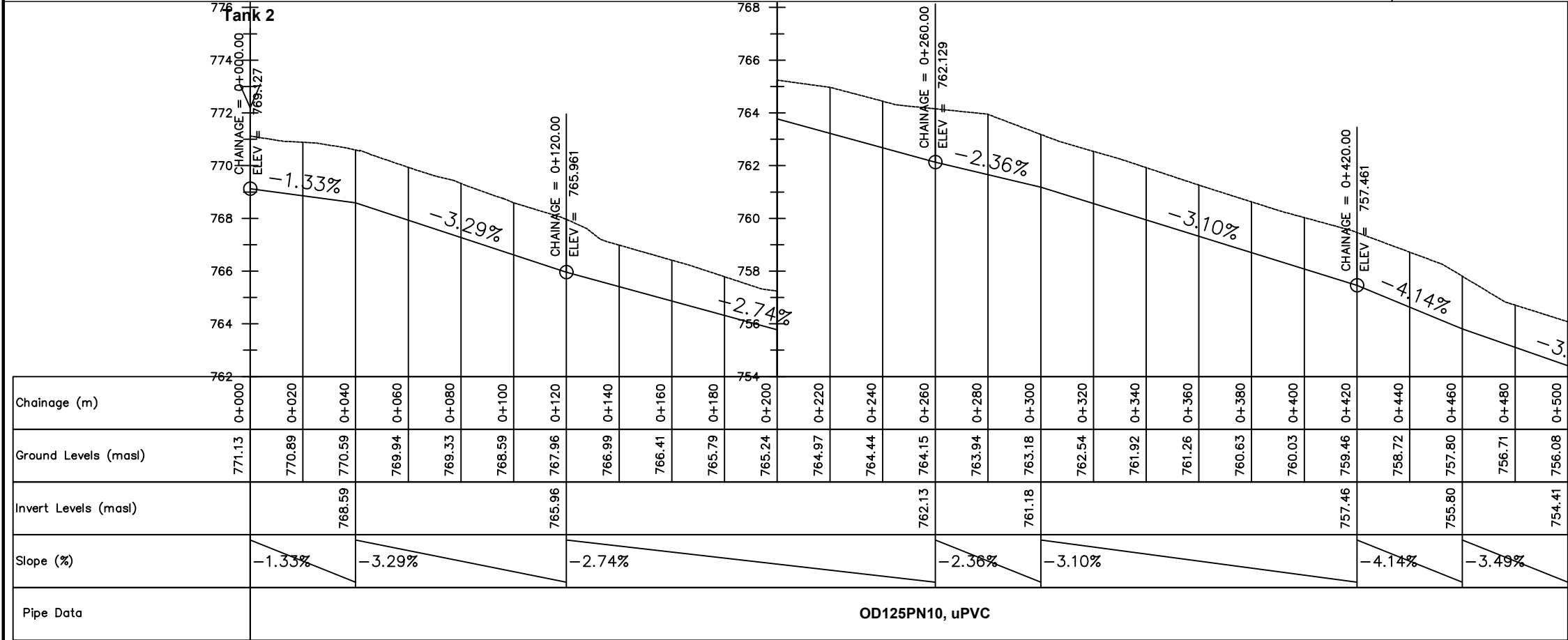
Checked by: J.K.K

Date: January 2022

DRG. No.: **ENY-DM-001**

Scale: 1:2000

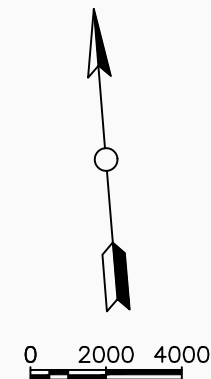
Sheet No.: 1 of 15











**LEGEND**



**Plan**

- Transmission Main
- DISTRIBUTION Main
- Road
- Building
- Contours

**Profile**

- Ground Level
- Invert Level
- AV Air Valve
- WO Washout
- Node detail No.

CONSULTANT :

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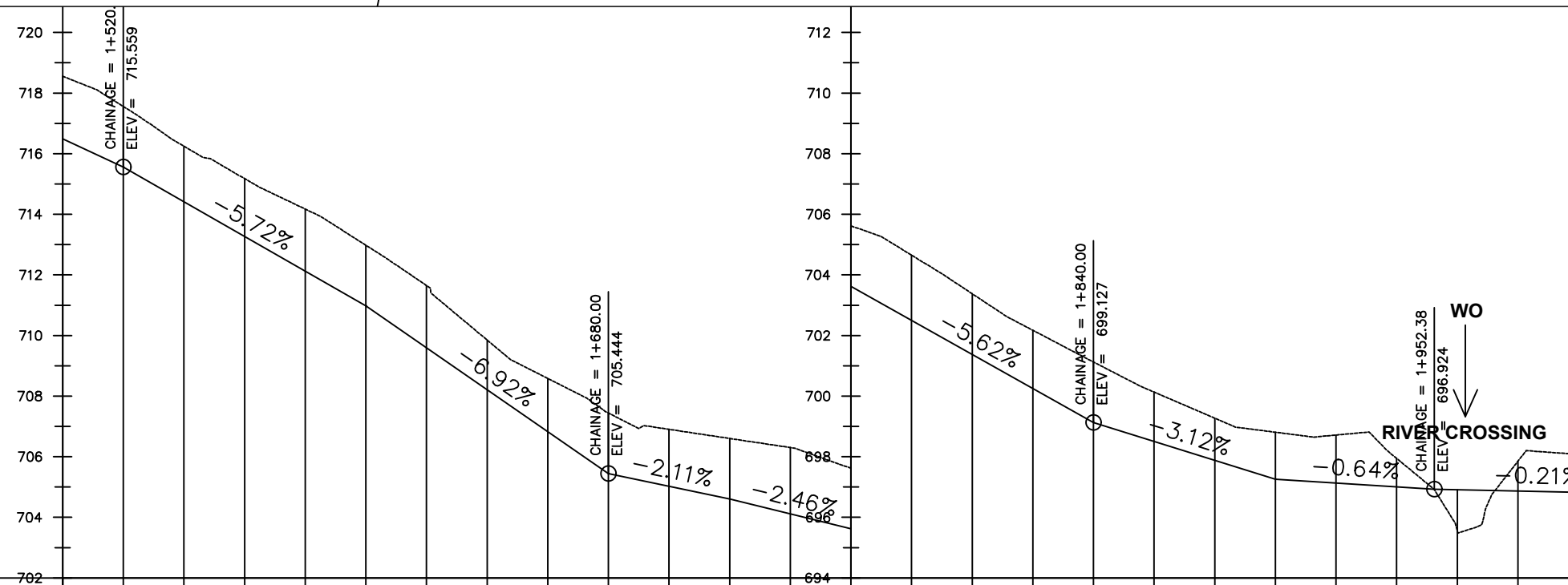
PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

## ENYAU WATER SUPPLY AND SANITATION SYSTEM

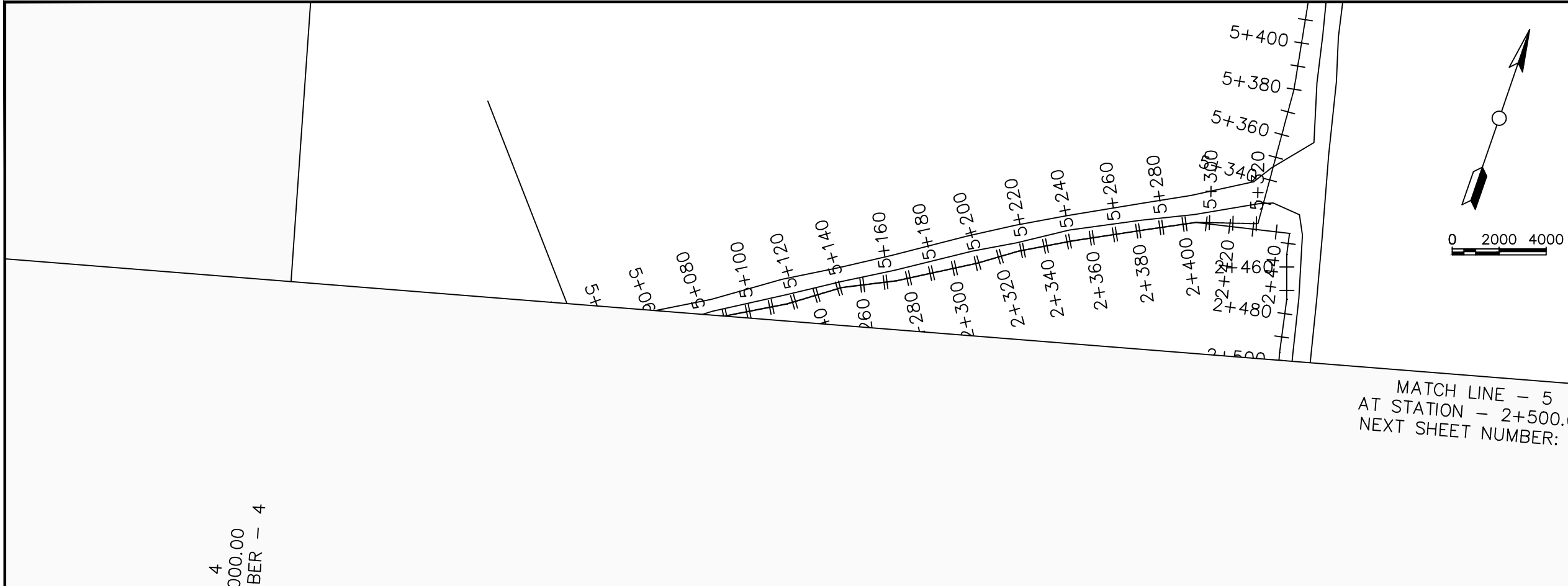
REVISIONS :		
No	Date	Description

DRAWING TITLE : **DISTRIBUTION MAIN 1**  
1+500 - 2+000

Surveyed by:		R.K
Drawn by:		M.K
Designed by:		W.G.M
Checked by:		J.K.K
Date:		January 2022
DRG. No.:		<b>ENY-DM-001</b>
Scale:	Sheet No.:	
1:2000		4 of 15



Chainage (m)	718.55	717.56	716.25	715.18	714.17	712.98	711.65	709.85	708.58	707.44	706.90	706.60	706.30	705.62	704.65	703.38	702.17	701.13	700.13	699.27	698.81	698.72	697.94	695.55	697.85	698.08	2+000
Ground Levels (masl)	716.49	715.56				710.98				705.44		704.60		703.62				699.13			697.26			696.92			696.82
Invert Levels (masl)																											
Slope (%)		-4.65%	-5.72%				-6.92%				-2.11%		-2.46%		-5.62%				-3.12%		-0.64%			-0.21%			
Pipe Data	OD125PN10, uPVC																										



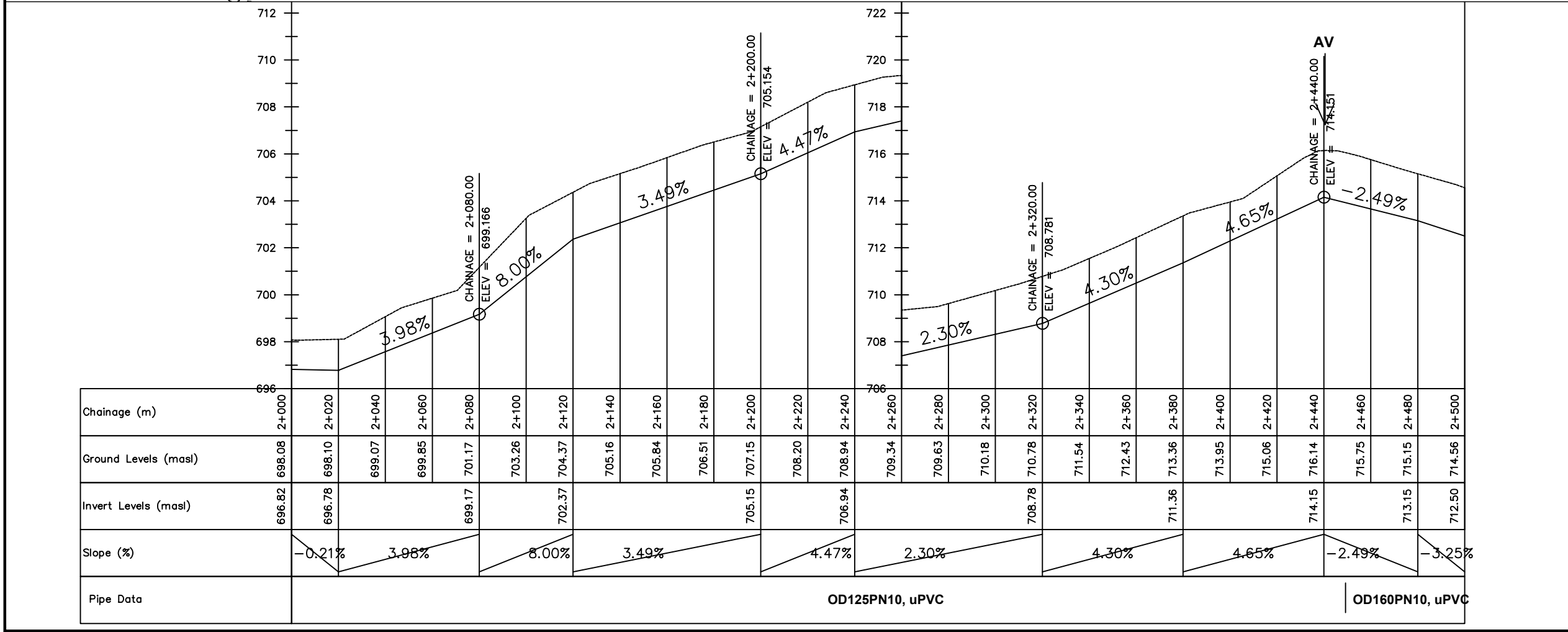
**LEGEND**

**Plan**

- Transmission Main
- DISTRIBUTION Main
- Road
- Building
- Contours

**Profile**

- Ground Level
- Invert Level
- AV Air Valve
- WO Washout
- Node detail No.



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**MINISTRY OF WATER AND ENVIRONMENT**

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PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION PROJECT**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **DISTRIBUTION MAIN 1**  
2+000 - 2+500

Surveyed by: R.K

Drawn by: M.K

Designed by: W.G.M

Checked by: J.K.K

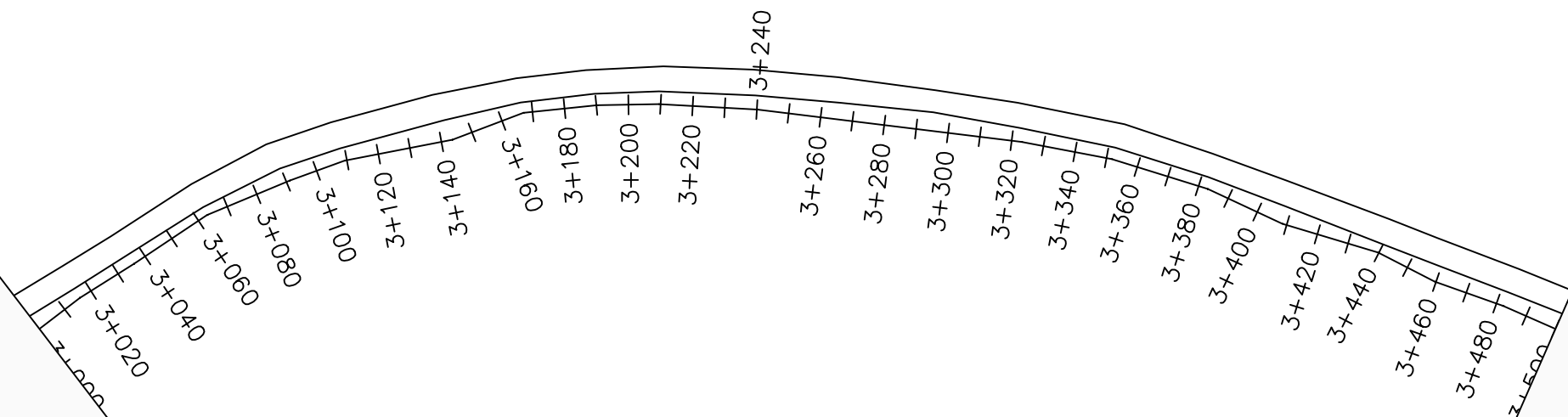
Date: January 2022

DRG. No.: **ENY-DM-001**

Scale: 1:2000 Sheet No.: 5 of 15







**LEGEND**

**Plan**

Transmission Main

DISTRIBUTION Main

Road

Building

Contours

**Profile**

Ground Level

Invert Level

AV Air Valve

WO Washout

Node detail No.

CLIENT :



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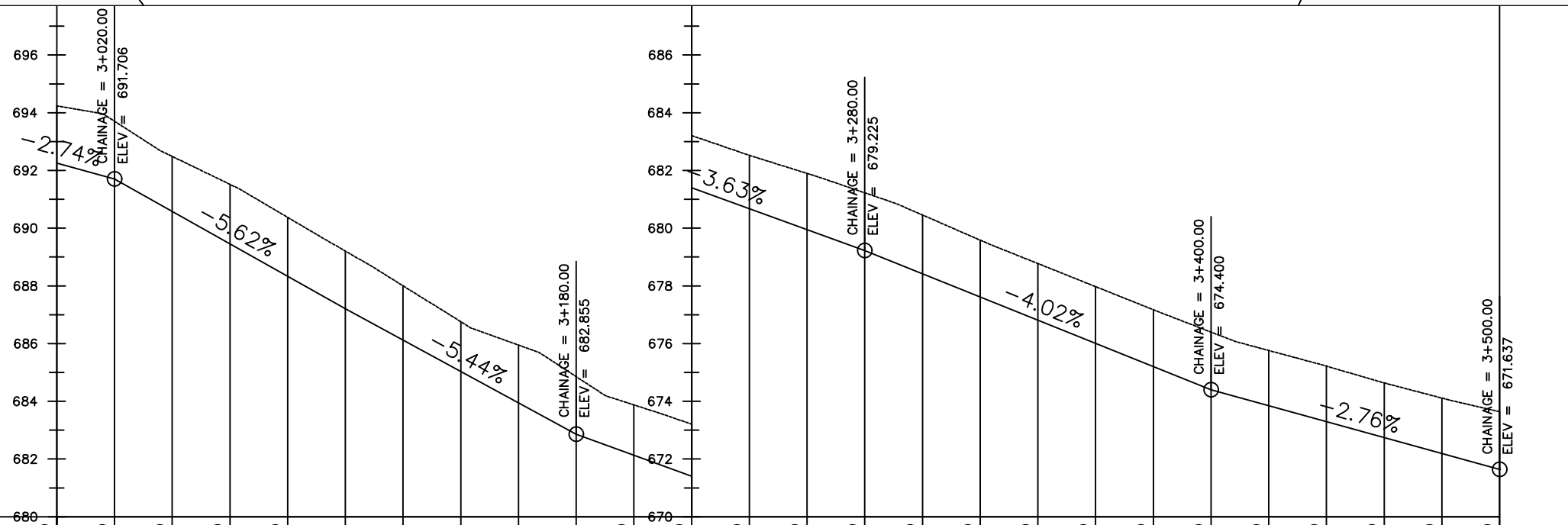
PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

## ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :		
No	Date	Description

DRAWING TITLE : **DISTRIBUTION MAIN 1**  
3+000 - 3+500

Surveyed by:		R.K
Drawn by:		M.K
Designed by:		W.G.M
Checked by:		J.K.K
Date:		January 2022
DRG. No.:		<b>ENY-DM-001</b>
Scale:	Sheet No.:	
1:2000		7 of 15



Chainage (m)	680	3+000	3+020	3+040	3+060	3+080	3+100	3+120	3+140	3+160	3+180	3+200	3+220	3+240	3+260	3+280	3+300	3+320	3+340	3+360	3+380	3+400	3+420	3+440	3+460	3+480	3+500
Ground Levels (masl)	694.24	693.71	692.49	691.52	690.37	689.21	688.00	686.76	685.95	684.85	683.88	683.21	682.52	681.90	681.23	680.46	679.59	678.77	677.97	677.17	676.40	675.76	675.22	674.64	674.11	673.64	
Invert Levels (masl)	692.25	691.71	687.21				682.85				679.23				674.40				671.64								
Slope (%)	-2.74%	-5.62%				-5.44%				-3.63%				-4.02%				-2.76%				-1.88%					
Pipe Data	OD160PN10, uPVC																										

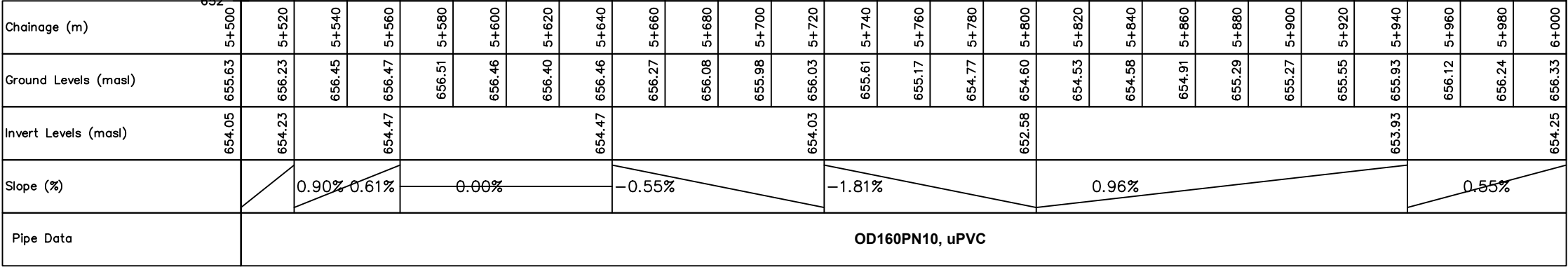
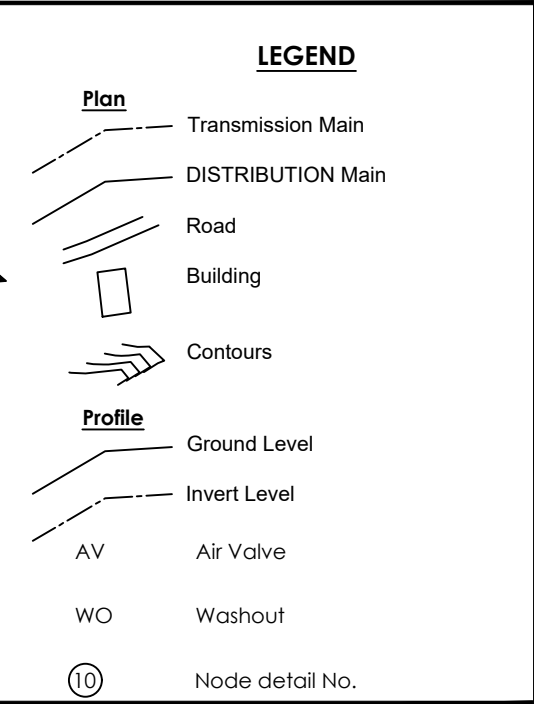
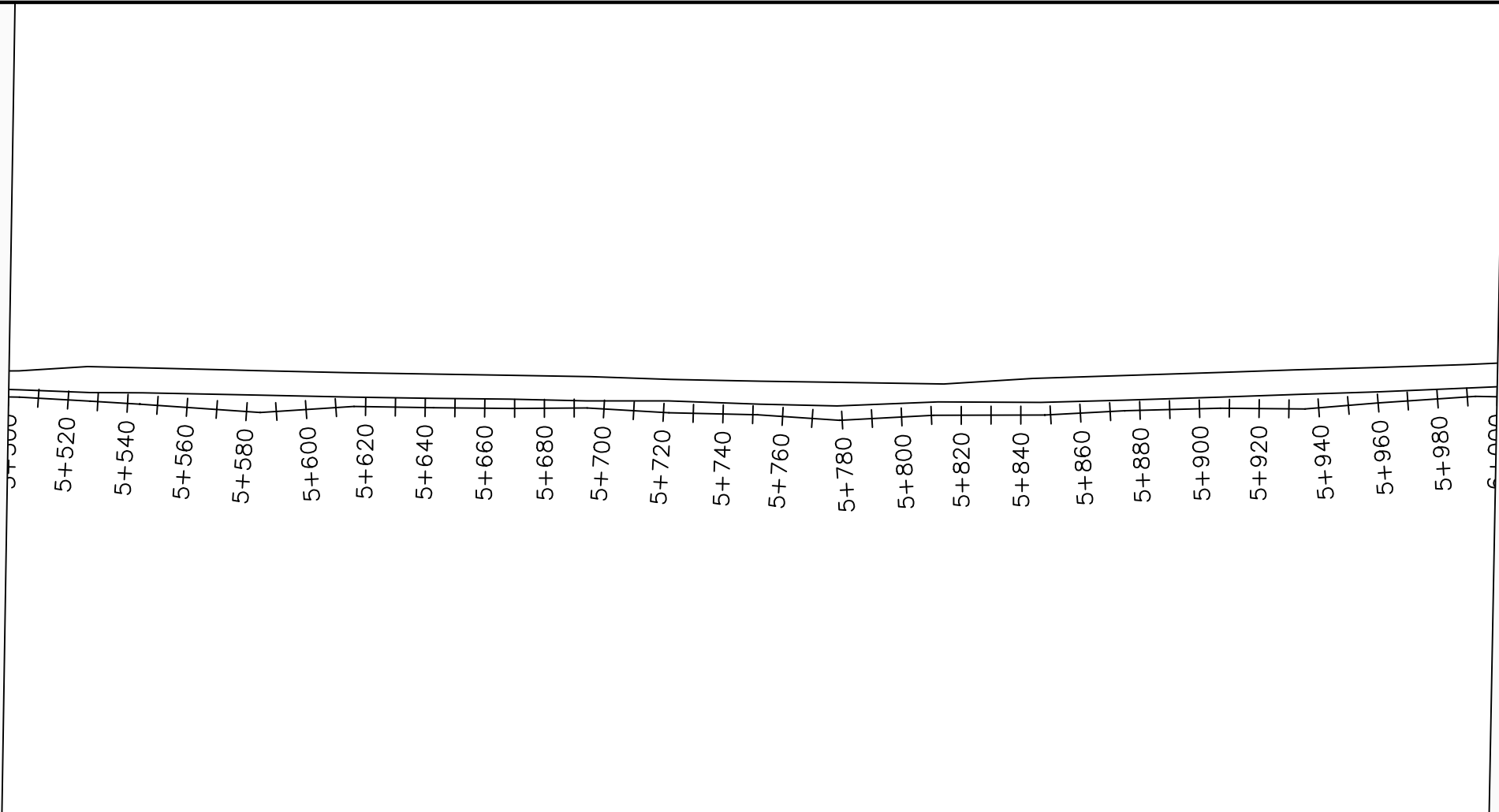












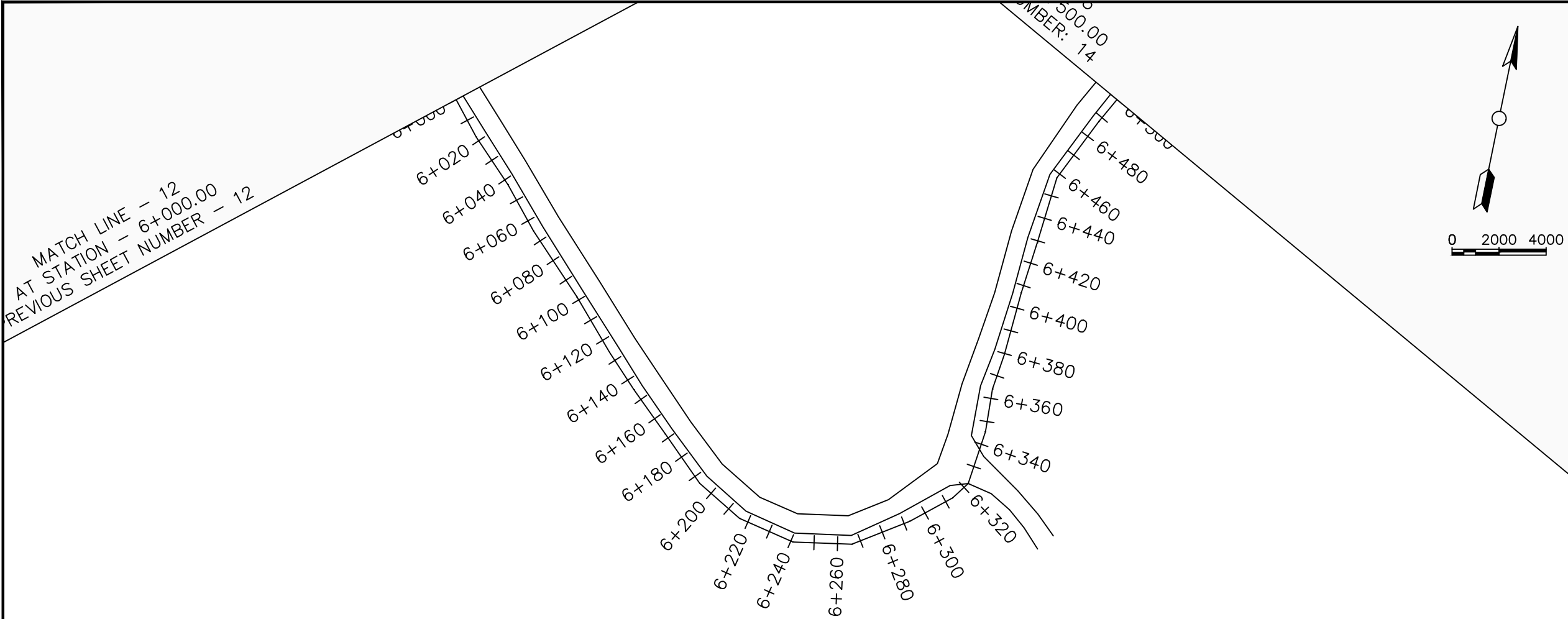
CONSULTANT :

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## ENYAU WATER SUPPLY AND SANITATION SYSTEM

DRAWING TITLE : **DISTRIBUTION MAIN 1**  
5+500 - 6+000

Surveyed by:		R.K
Drawn by:		M.K
Designed by:		W.G.M
Checked by:		J.K.K
Date:		January 2022
DRG. No.:		<b>ENY-DM-001</b>
Scale:	Sheet No.:	
1:2000		12 of 15



**LEGEND**

**Plan**

- Transmission Main
- DISTRIBUTION Main
- Road
- Building
- Contours

**Profile**

- Ground Level
- Invert Level
- AV Air Valve
- WO Washout
- Node detail No.

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CONSULTANT :

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PROJECT :

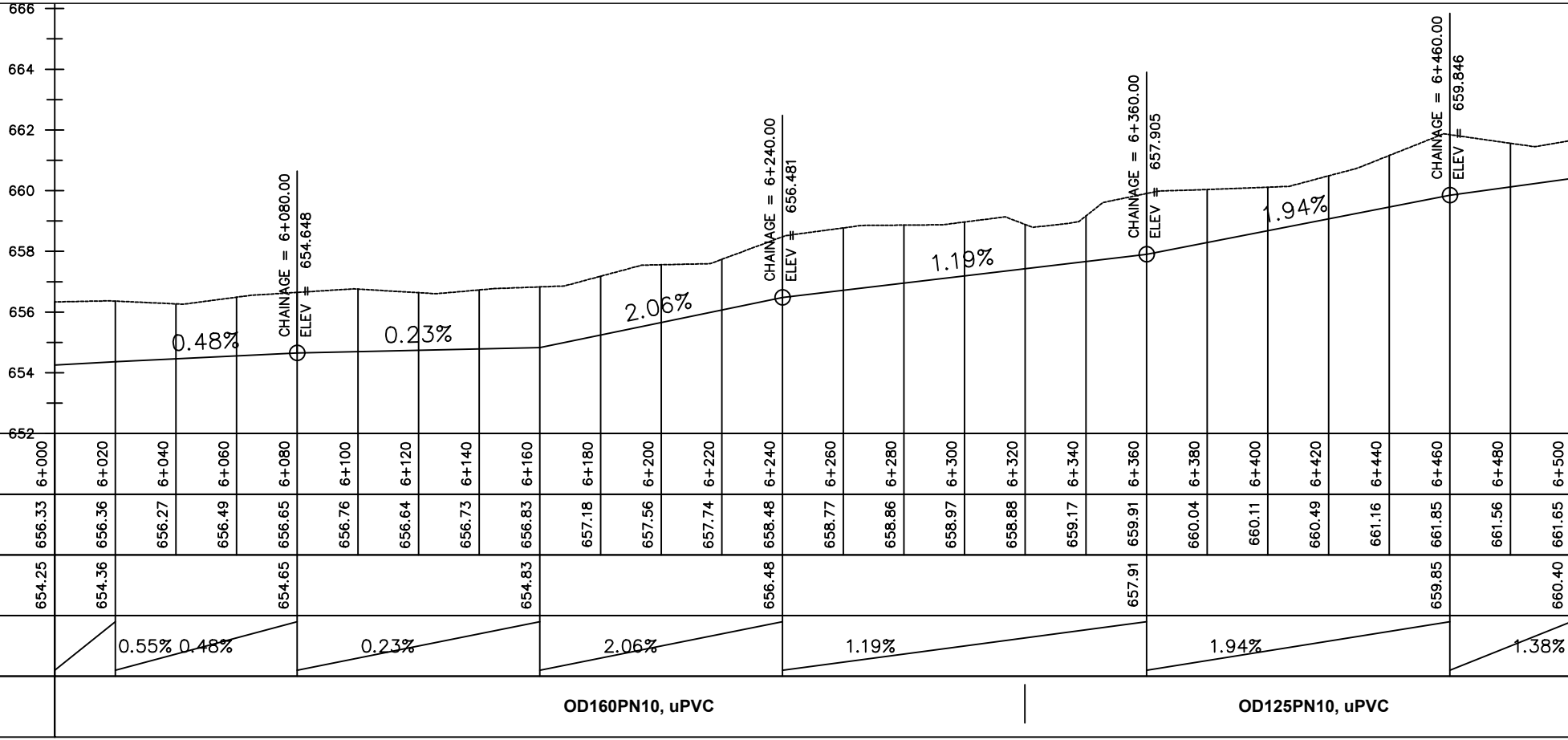
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

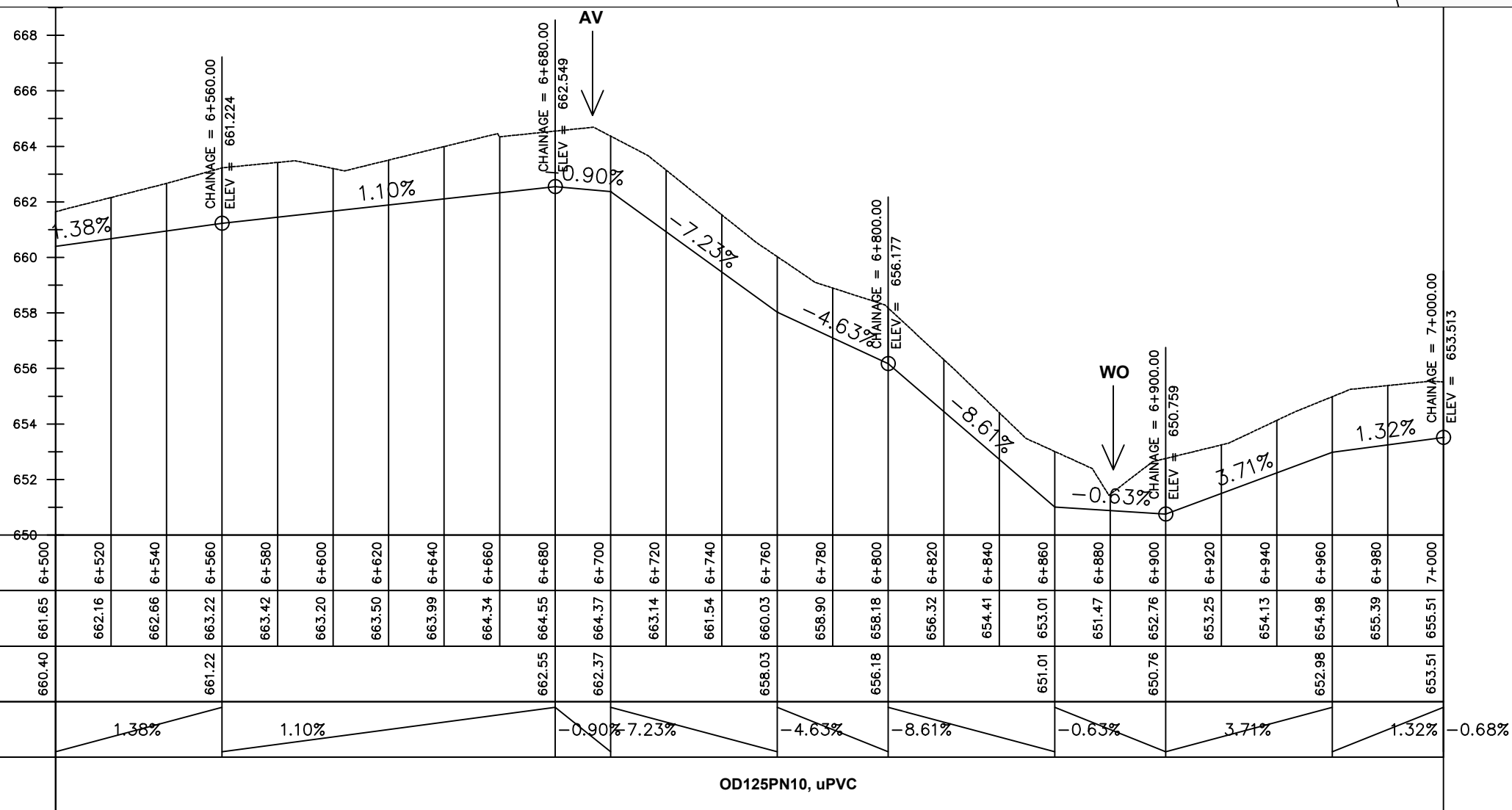
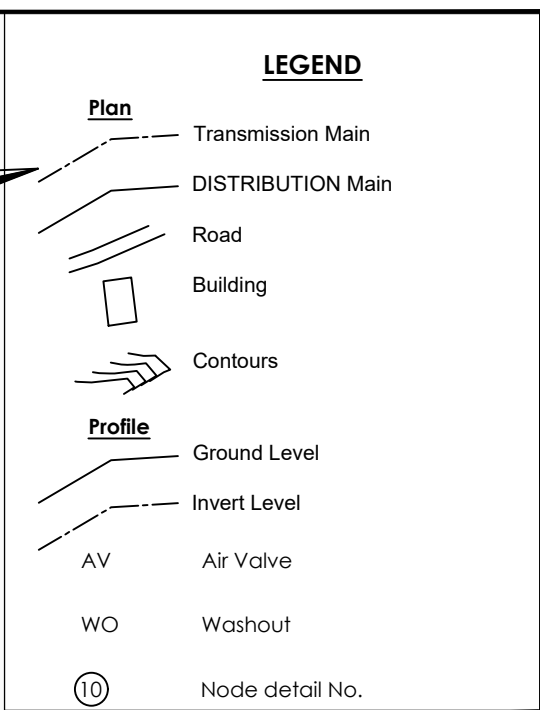
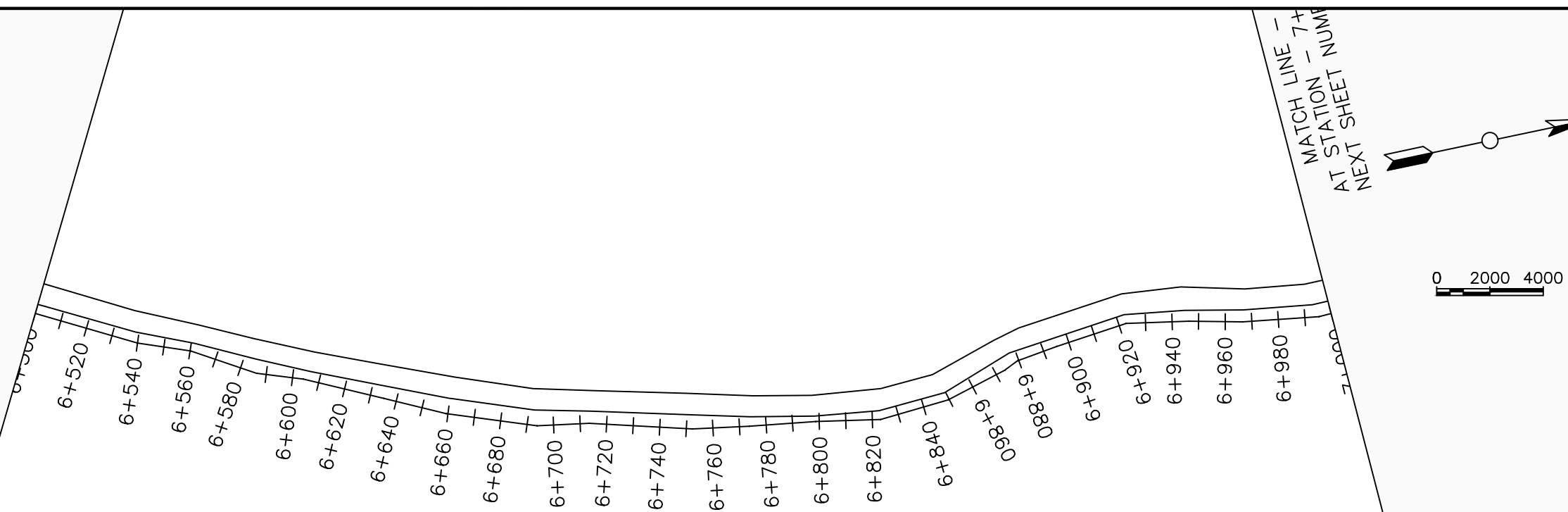
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **DISTRIBUTION MAIN 1**  
6+000 - 6+500

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
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Date:	January 2022
DRG. No.:	<b>ENY-DM-001</b>
Scale:	1:2000
Sheet No.:	13 of 15





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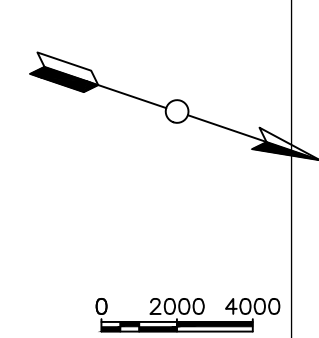
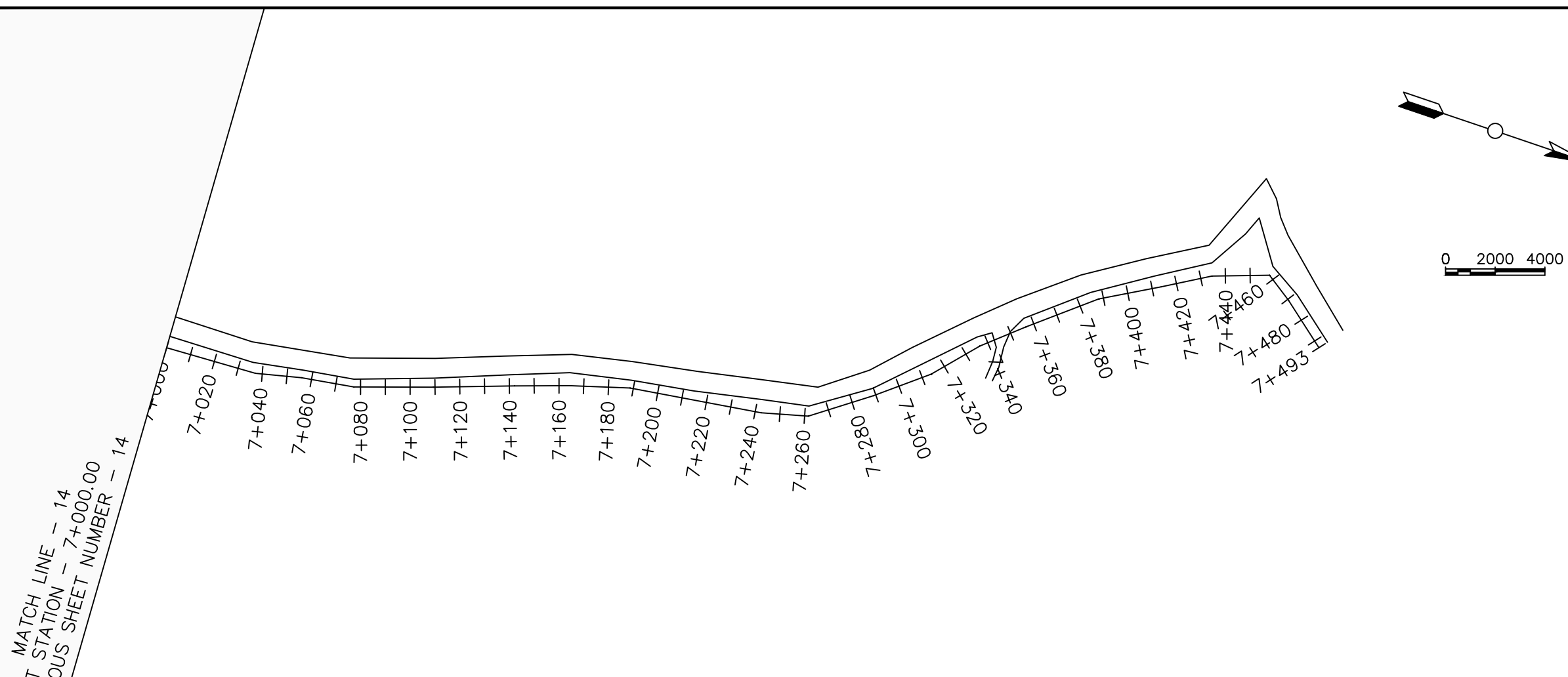
PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

## ENYAU WATER SUPPLY AND SANITATION SYSTEM








REVISIONS :		
No	Date	Description

DRAWING TITLE : **DISTRIBUTION MAIN 1**  
6+500 - 7+000

Surveyed by:		R.K
Drawn by:		M.K
Designed by:		W.G.M
Checked by:		J.K.K
Date:		January 2022
DRG. No.:		<b>ENY-DM-001</b>
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### LEGEND

	Transmission Main
	DISTRIBUTION Main
	Road
	Building
	Contours
<u>Profile</u>	
	Ground Level
	Invert Level
AV	Air Valve
WO	Washout
⑩	Node detail No.

CONSULTANT :

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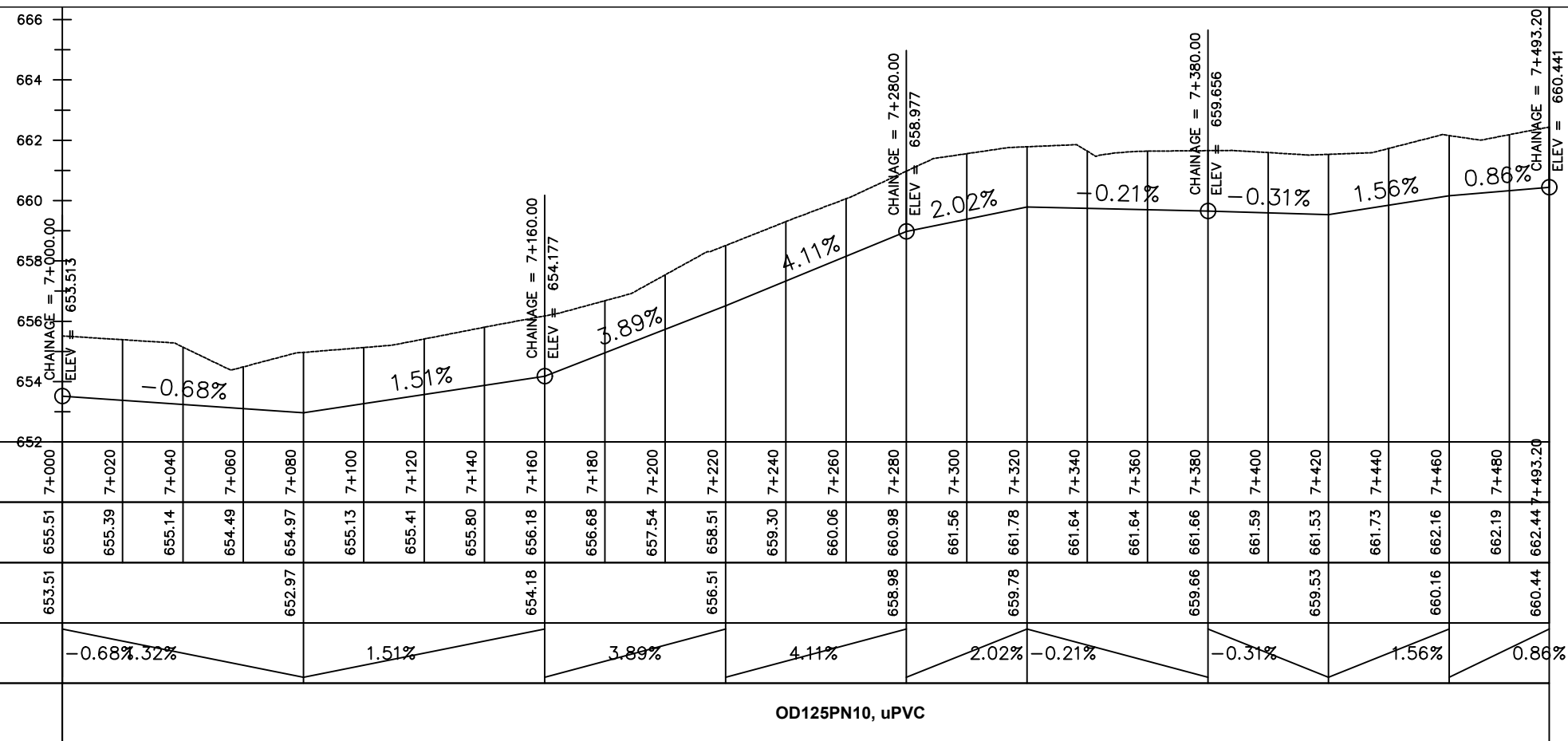
PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

## ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :		
No	Date	Description

DRAWING TITLE : **DISTRIBUTION MAIN 1**  
7+000 - 7+493.20

Surveyed by:		R.K
Drawn by:		M.K
Designed by:		W.G.M
Checked by:		J.K.K
Date:		January 2022
DRG. No.: <b>ENY-DM-001</b>		
Scale:	Sheet No.:	
1:2000		15 of 15

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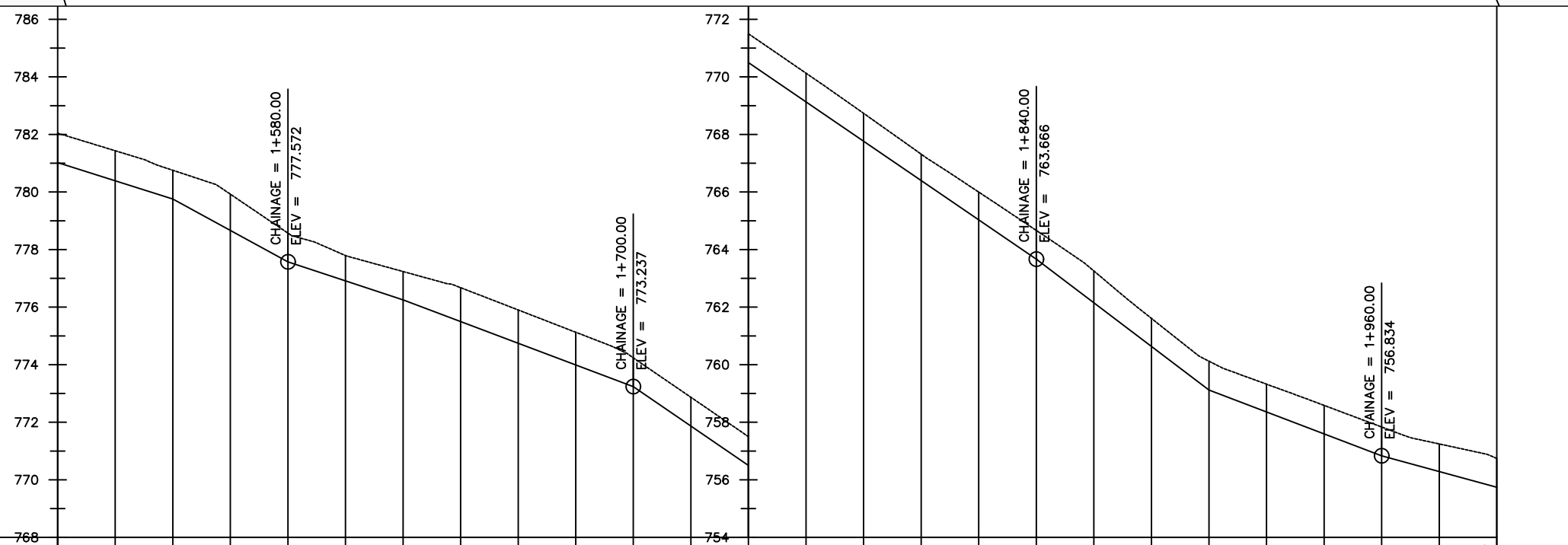
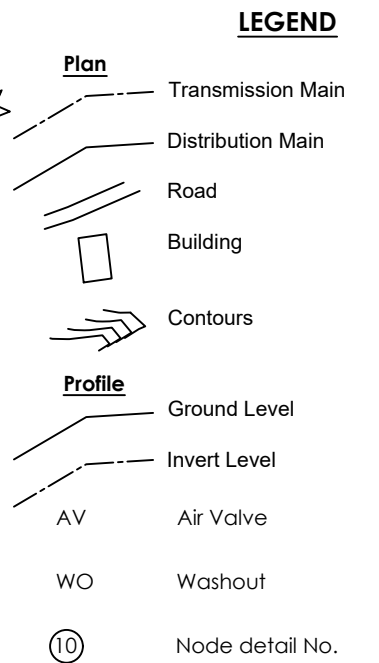
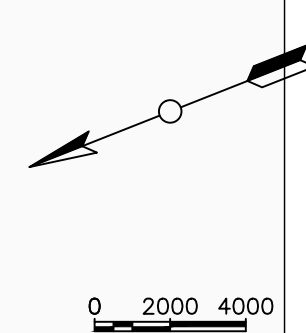
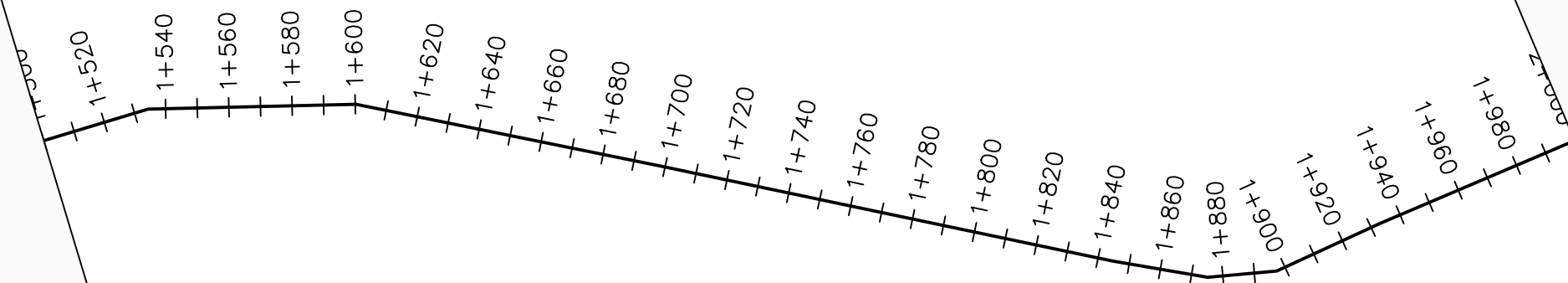
**69m<sup>3</sup> NDAAPI RESERVOIR AREA**











Chainage (m)	768	1+500	1+520	1+540	1+560	1+580	1+600	1+620	1+640	1+660	1+680	1+700	1+720	754	1+740	1+760	1+780	1+800	1+820	1+840	1+860	1+880	1+900	1+920	1+940	1+960	1+980	2+000
Ground Levels (masl)	782.04	781.43	780.75	779.92	778.57	777.79	777.24	776.68	775.90	775.13	774.24	772.87	771.50	770.13	768.73	767.32	766.00	764.67	763.26	761.61	760.12	759.32	758.59	757.83	757.25	756.74		
Invert Levels (masl)	781.02	779.75	777.57	776.25	773.24	769.13	763.67	759.12	756.83	755.74																		
Slope (%)	-3.16%	-5.46%	-3.30%	-3.77%	-6.85%	-6.83%	-7.58%	-3.81%	-2.73%	-4.03%																		
Pipe Data	OD110PN10,uPVC																											

CLIENT :



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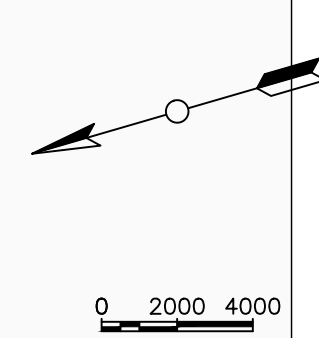
PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

## ENYAU WATER SUPPLY AND SANITATION SYSTEM

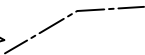

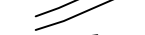


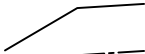


REVISIONS :		
No	Date	Description

DRAWING TITLE : **NDAAPI PUMPING MAIN  
PLAN AND PROFILE**


Surveyed by:		R.K
Drawn by:		M.K
Designed by:		W.G.M
Checked by:		J.K.K
Date:		January 2023
DRG. No.:		<b>ENY-PM-003</b>
Scale:	Sheet No.:	
1:2000	4 of 18	



## LEGEND

	Transmission Main
	Distribution Main
	Road
	Building
	Contours
<b><u>Profile</u></b>	
	Ground Level
	Invert Level
AV	Air Valve
WO	Washout
	Node detail No.


CLIENT :



THE REPUBLIC OF UGANDA

**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

 **THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

 Alliance Consultants Ltd  
*In Association with*

 **Infra-Consult Ltd**

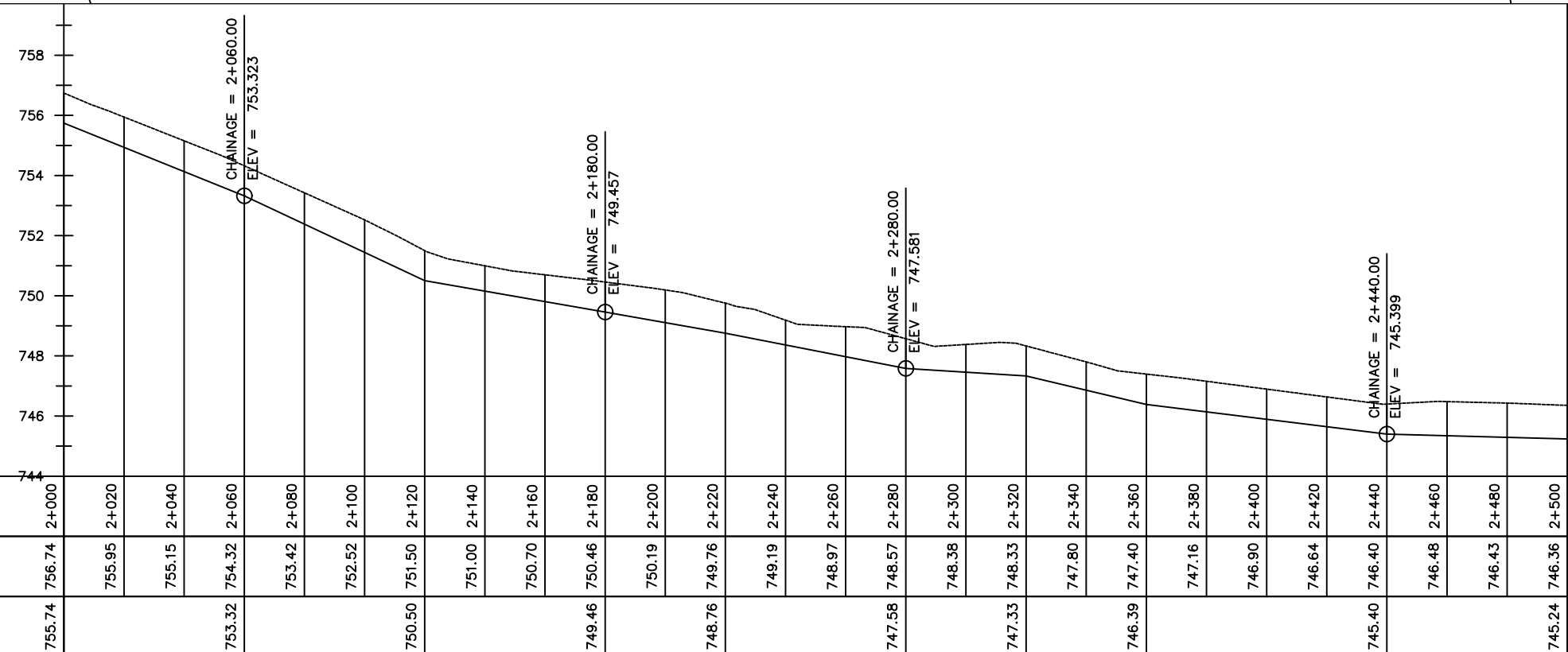
PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

## ENYAU WATER SUPPLY AND SANITATION SYSTEM

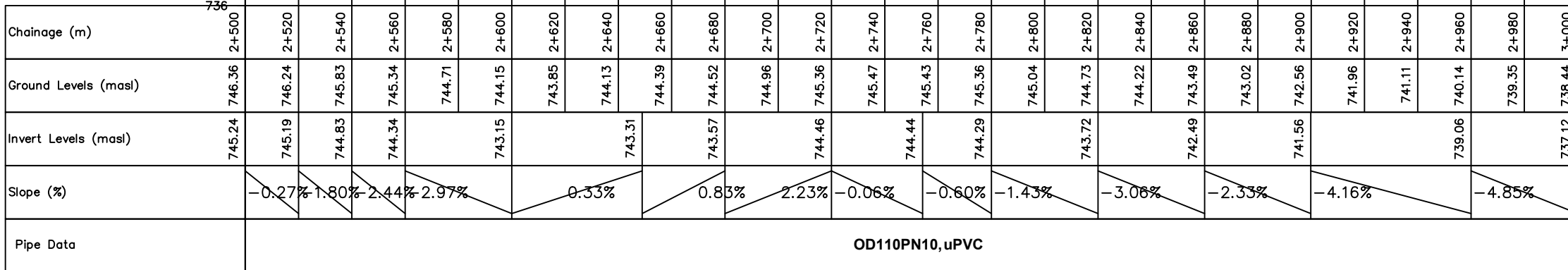
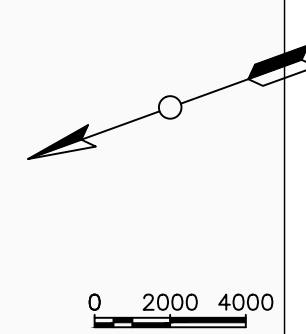
REVISIONS :		
No	Date	Description

DRAWING TITLE : **NDAAPI PUMPING MAIN  
PLAN AND PROFILE**

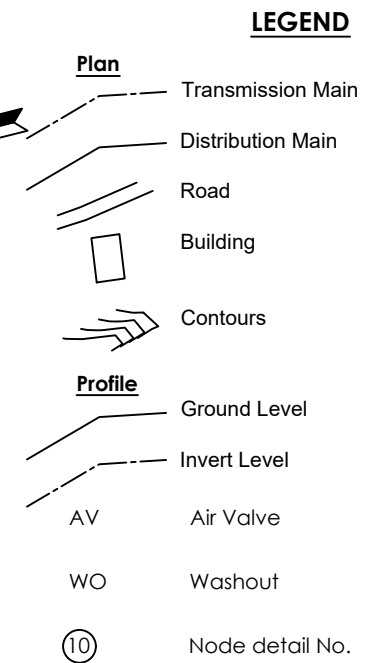
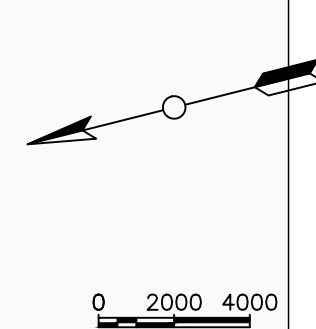
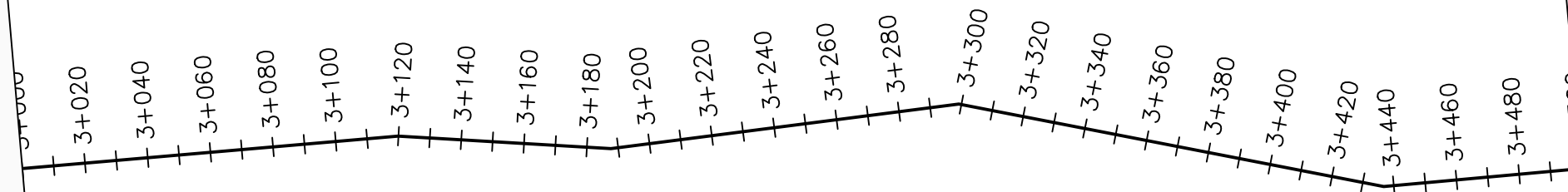
Surveyed by:		R.K
Drawn by:		M.K
Designed by:		W.G.M
Checked by:		J.K.K
Date:		January 2023
DRG. No.:		<b>ENY-PM-003</b>
Scale:	Sheet No.:	
1:2000		5 of 18



Chainage (m)	744	2+000	2+020	2+040	2+060	2+080	2+100	2+120	2+140	2+160	2+180	2+200	2+220	2+240	2+260	2+280	2+300	2+320	2+340	2+360	2+380	2+400	2+420	2+440	2+460	2+480	2+500	
Ground Levels (masl)	756.74	755.95	755.15	754.32	753.42	752.52	751.50	751.00	750.70	750.46	750.19	749.76	749.19	748.97	748.57	748.38	748.33	747.80	747.40	747.16	746.90	746.64	746.40	746.48	746.43	746.36		
Invert Levels (masl)	755.74	753.32			750.50			749.46			748.76			747.58			747.33			746.39			745.40			745.24		
Slope (%)	-2.03%		-4.70%			-1.74%			-1.76%			-1.96%			-0.62%			-2.37%			-1.23%			-0.27%				
Pipe Data	OD110PN10,uPVC																											



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CONSULTANT :

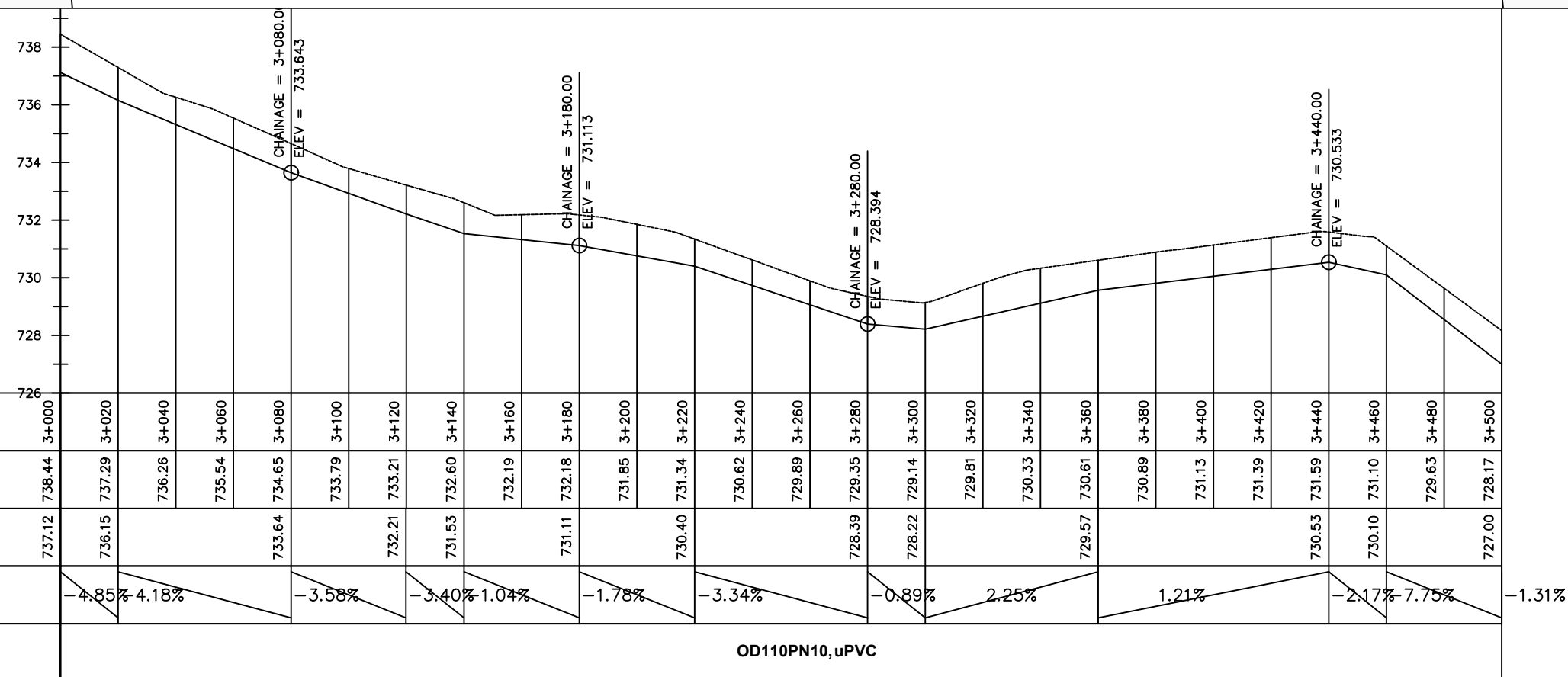
 Alliance Consultants Ltd  
*In Association with*  


PROJECT :  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">             ALA-ORA WATER SUPPLY AND              SANITATION PROJECT         </div>
<div style="font-weight: bold; font-size: 1.2em;">             ENYAU WATER SUPPLY AND              SANITATION SYSTEM         </div>

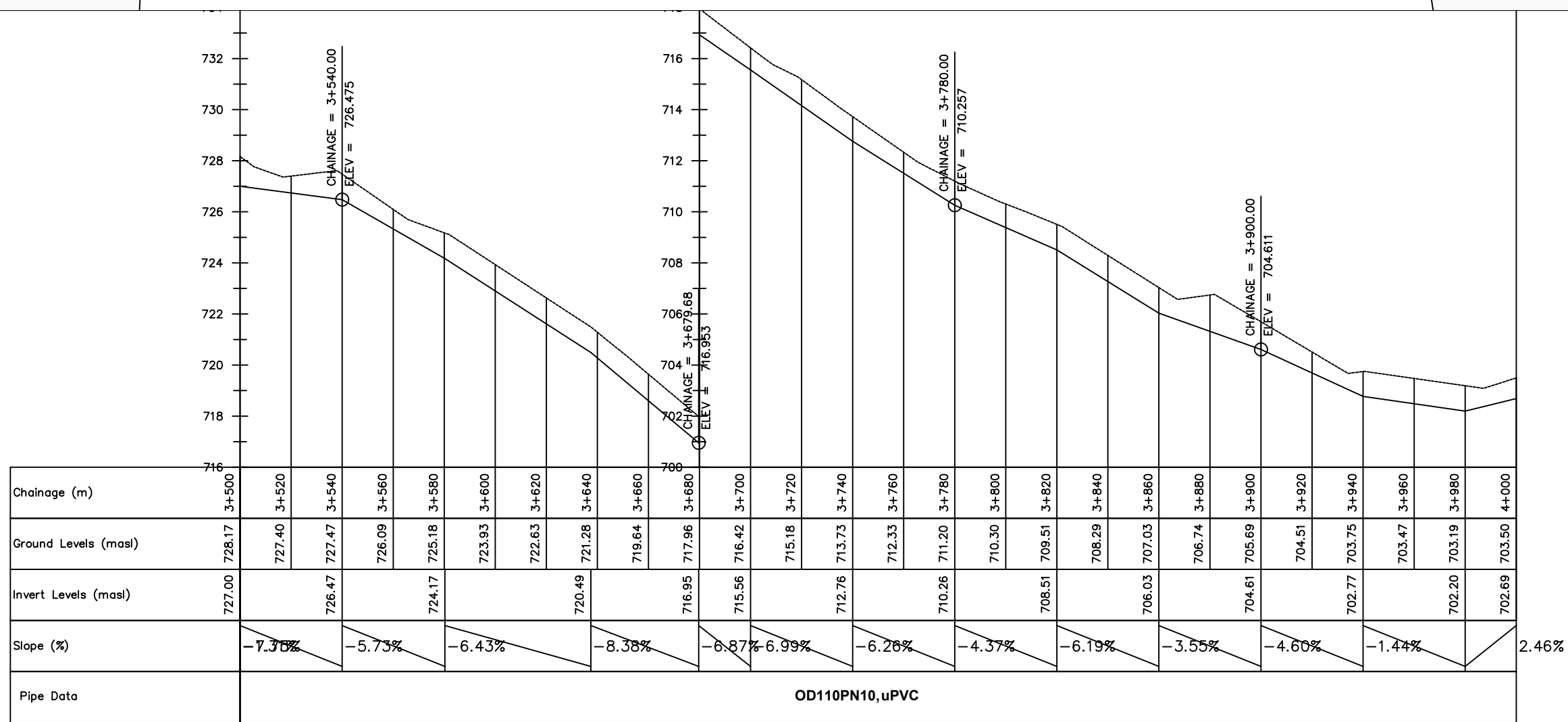
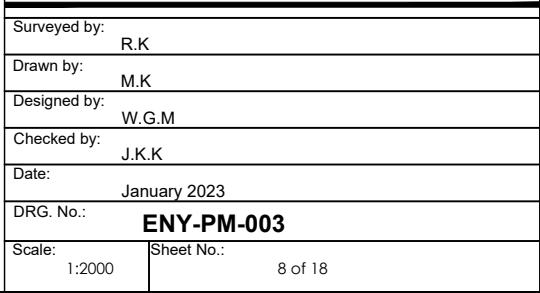
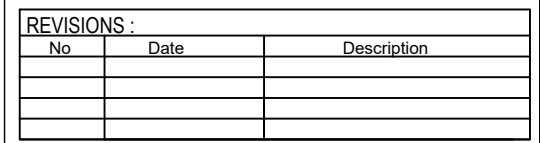
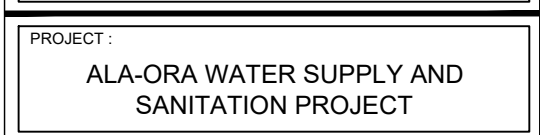
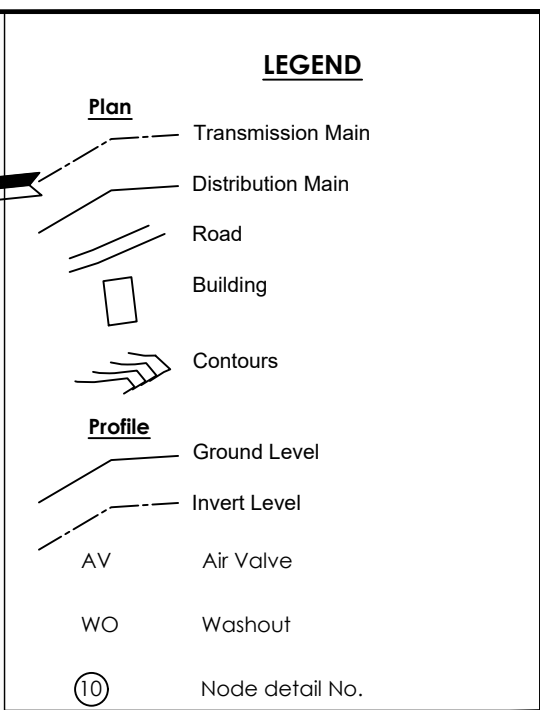
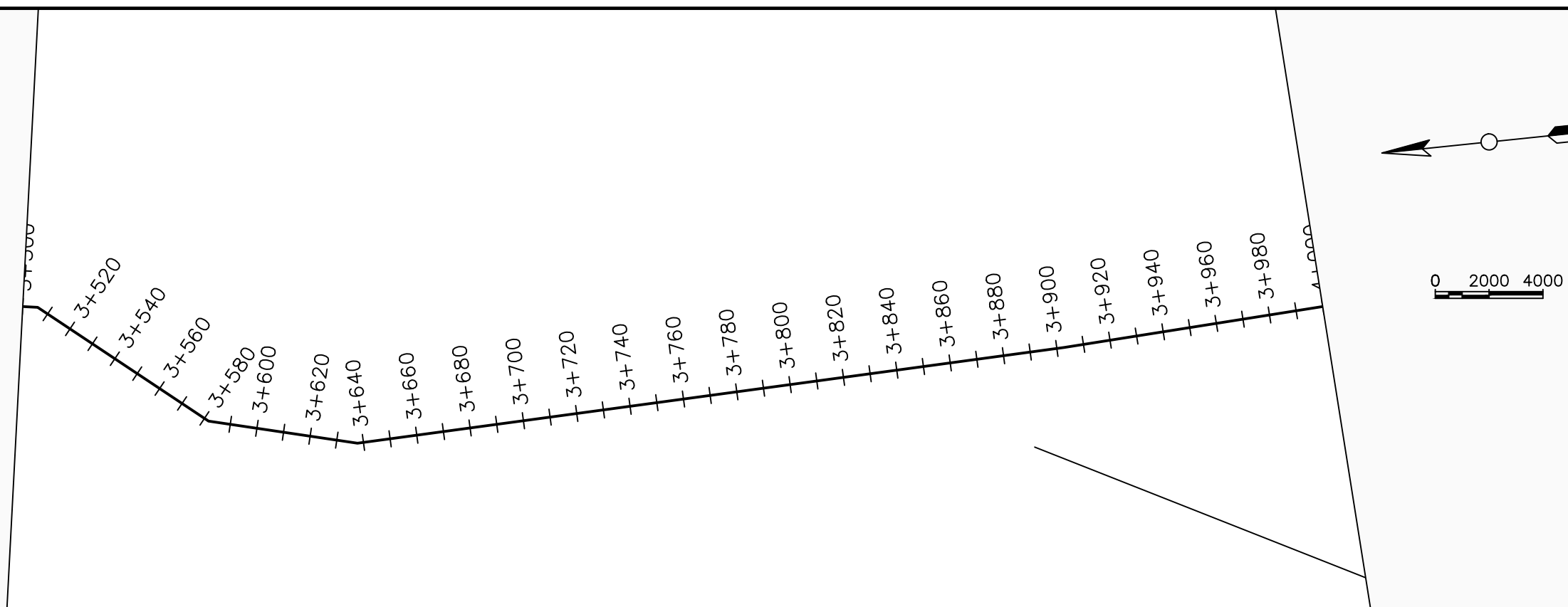
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No	Date	Description

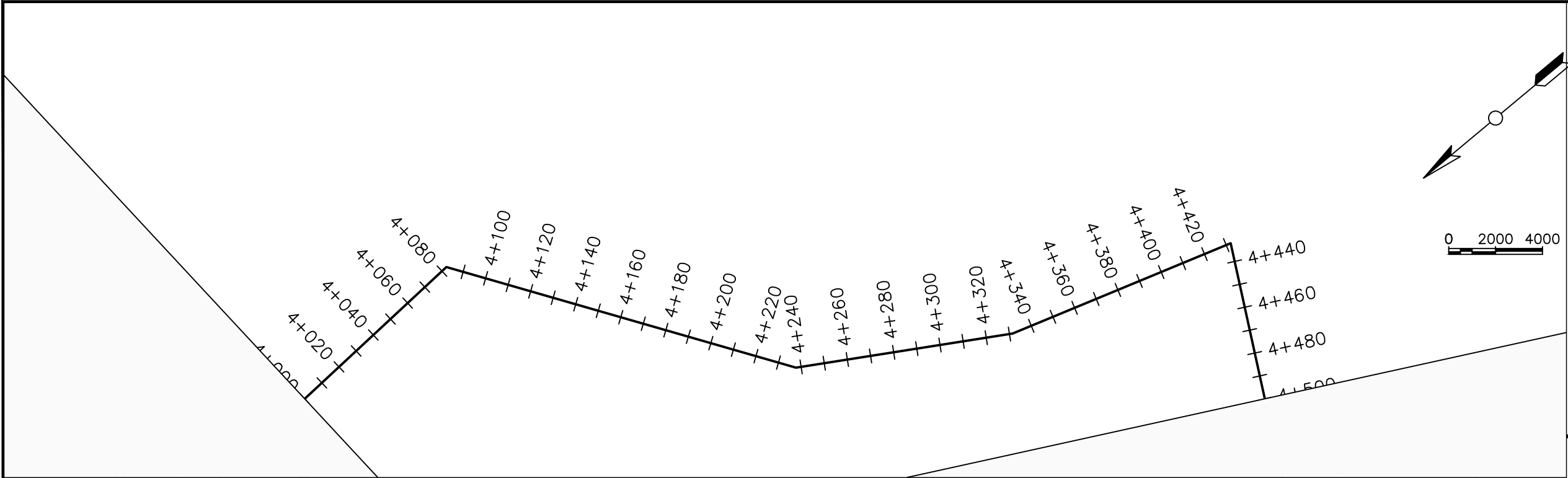
DRAWING TITLE : **NDAAPI PUMPING MAIN  
PLAN AND PROFILE**

Surveyed by: R.K	
Drawn by: M.K	
Designed by: W.G.M	
Checked by: J.K.K	
Date: January 2023	
DRG. No.: <b>ENY-PM-003</b>	
Scale: 1:2000	Sheet No.: 7 of 18









**LEGEND**

Plan

Transmission Main

Distribution Main

Road

Building

Contours

Profile

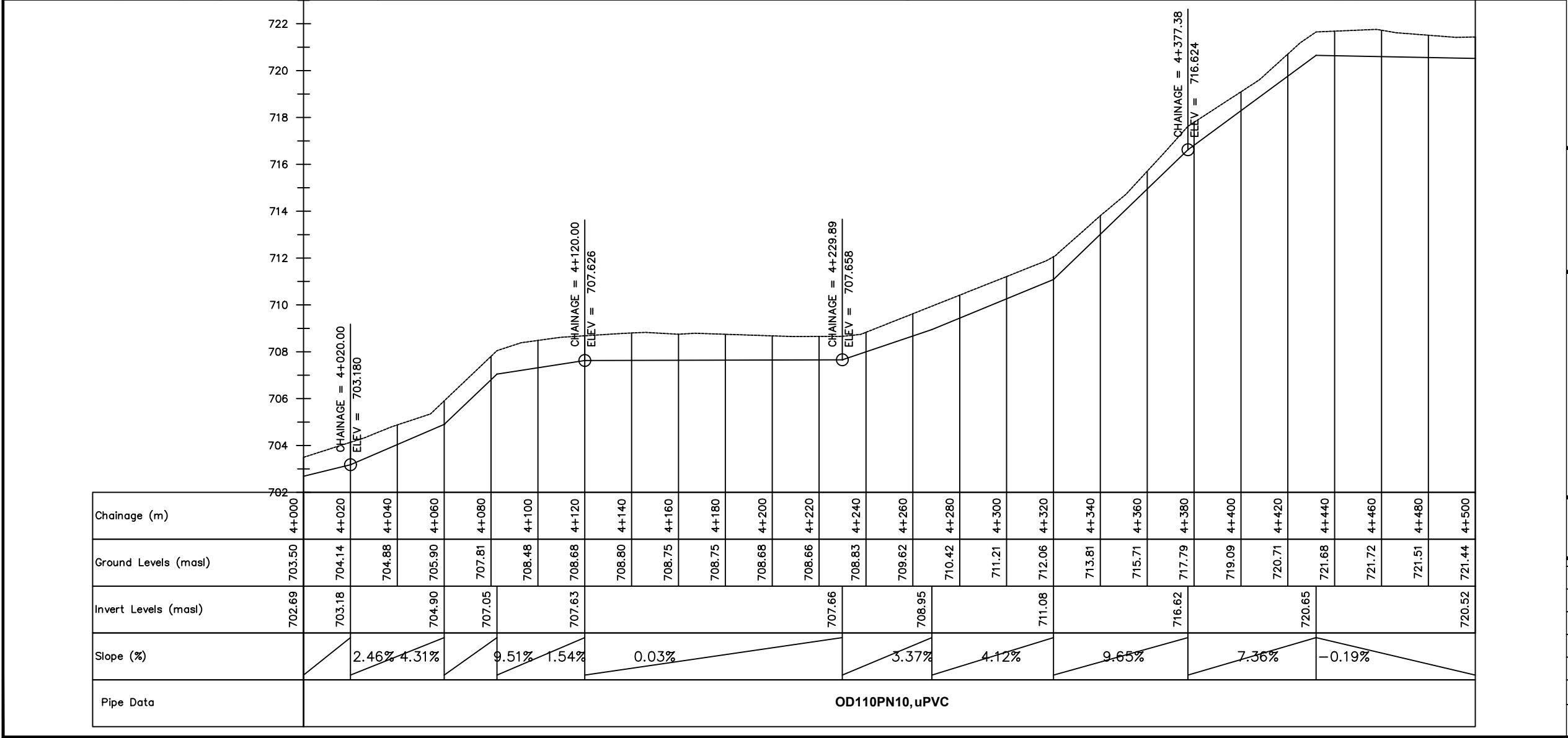
Ground Level

Invert Level

Air Valve

Washout

Node detail No.



CLIENT :

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**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

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CONSULTANT :

Alliance Consultants Ltd  
*In Association with*  
  
Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE :

**NDAAPI PUMPING MAIN  
PLAN AND PROFILE**

Surveyed by:

R.K

Drawn by:

M.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

**ENY-PM-003**

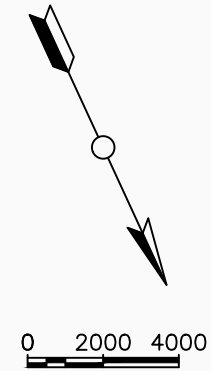
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
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


## LEGEND

**Plan**

 Transmission Main  
 Distribution Main  
 Road  
 Building  
 Contours

**Profile**


 Ground Level  
 Invert Level  

AV                      Air Valve


WO                     Washout

⑩                      Node detail No.



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PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE :

NDAAPI PUMPING MAIN  
PLAN AND PROFILE

Surveyed by: R.K

Drawn by: M.K

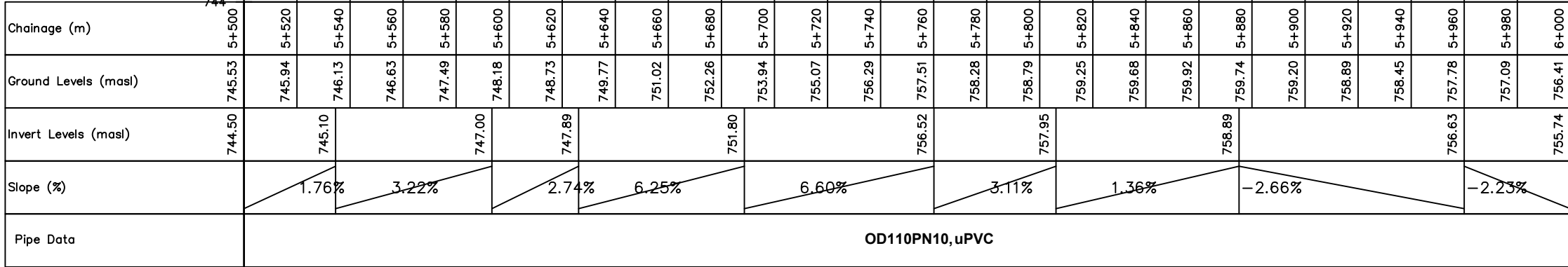
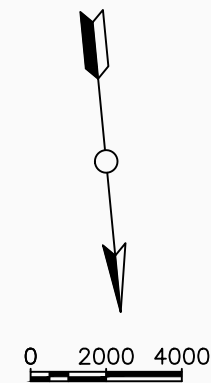
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Checked by: J.K.K

Date: January 2023






DRG. No.: **ENY-PM-003**

Scale: 1:2000	Sheet No.: 11 of 18
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## LEGEND

**Plan**

**Profile**

AV                      Air Valve

WO                      Washout

⑩                      Node detail No.

Transmission Main

Distribution Main

Road


Building

Contours

Ground Level

Invert Level


CLIENT :



THE REPUBLIC OF UGANDA

### MINISTRY OF WATER AND ENVIRONMENT

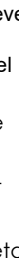
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CONSULTANT :



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PROJECT :

## ALA-ORA WATER SUPPLY AND SANITATION PROJECT

## ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE :

## NDAAPI PUMPING MAIN PLAN AND PROFILE

Surveyed by: R.K

Drawn by: M.K

Designed by: W.G.M

Checked by: J.K.K

Date: January 2023

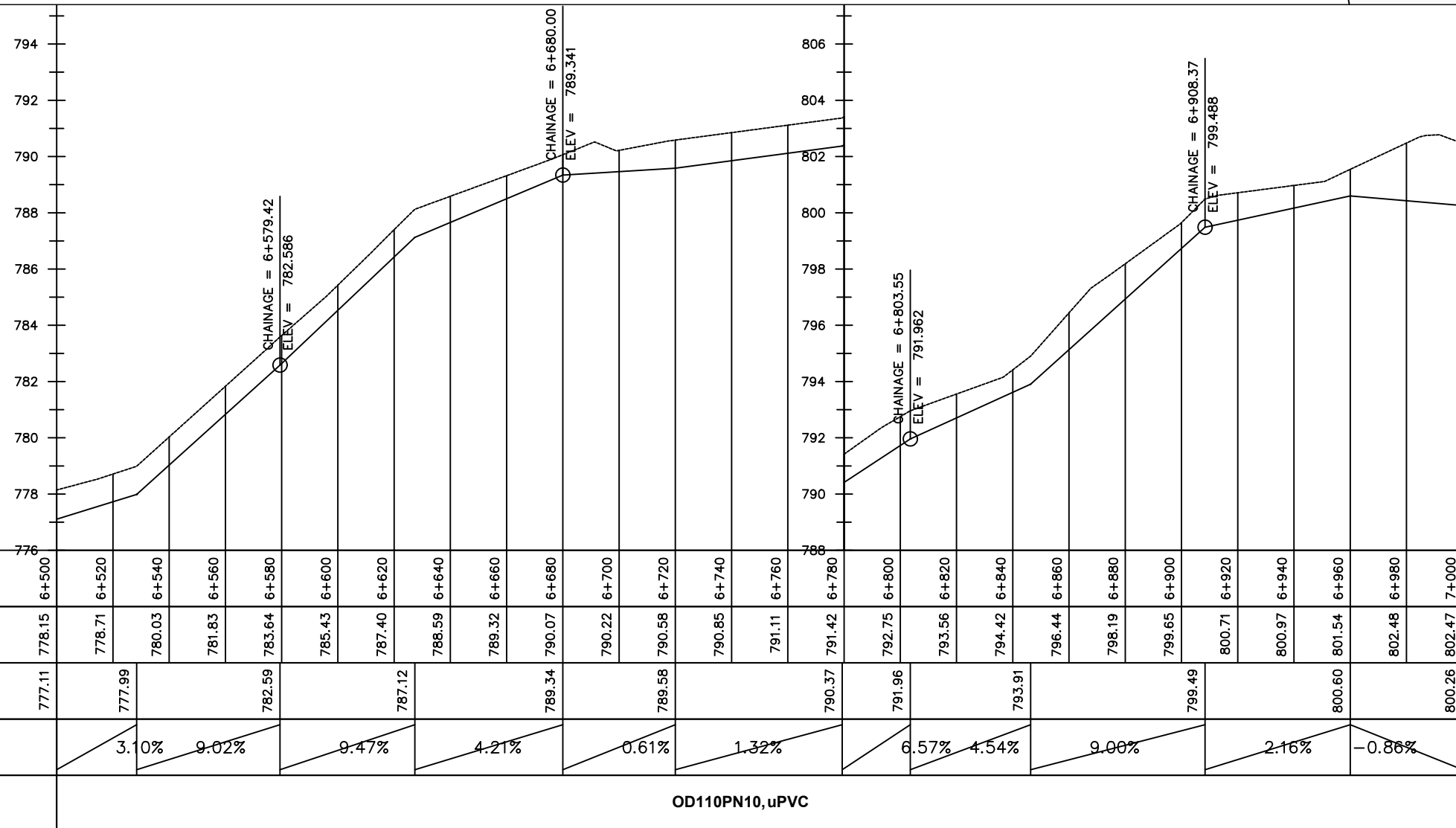
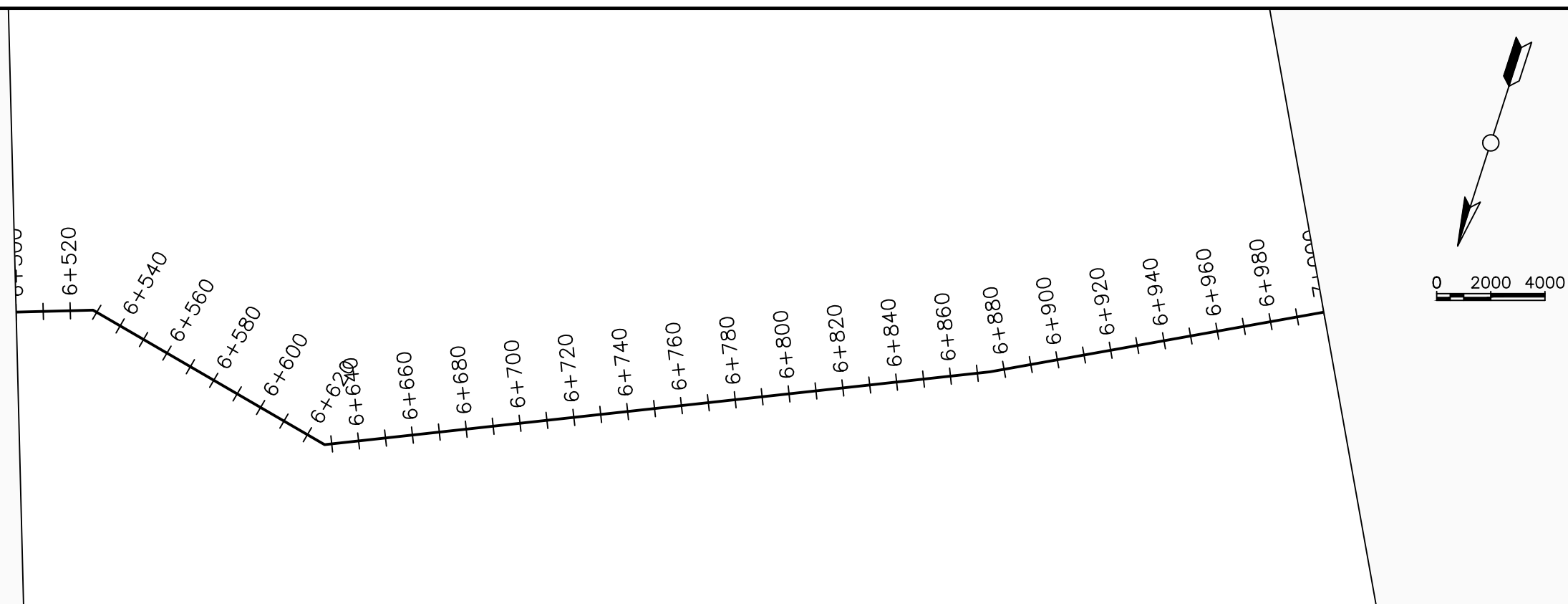
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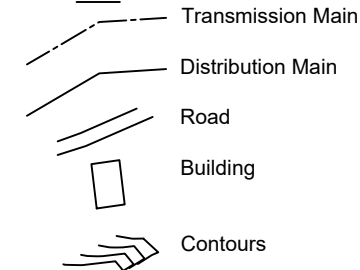




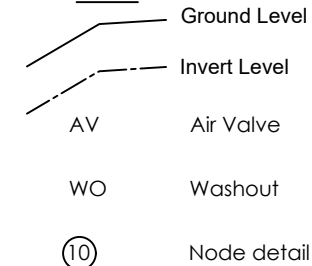
Chainage (m)	776	6+500	6+520	6+540	6+560	6+580	6+600	6+620	6+640	6+660	6+680	6+700	6+720	6+740	6+760	6+780	6+800	6+820	6+840	6+860	6+880	6+900	6+920	6+940	6+960	6+980	7+000
Ground Levels (masl)	778.15	778.71	780.03	781.83	783.64	785.43	787.40	788.59	789.32	790.07	790.22	790.58	790.85	791.11	791.42	792.75	793.56	794.42	796.44	798.19	799.65	800.71	800.97	801.54	802.48	802.47	
Invert Levels (masl)	777.11	777.99	782.59	787.12	789.34	789.58	790.37	791.96	793.91	799.49	800.60	800.26															
Slope (%)		3.10%	9.02%	9.47%	4.21%	0.61%	1.32%	6.57%	4.54%	9.00%	2.16%	-0.86%															
Pipe Data	OD110PN10,uPVC																										

## LEGEND

### Plan



## Profile



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**MINISTRY OF WATER AND ENVIRONMENT**

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CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

## ENYAU WATER SUPPLY AND SANITATION SYSTEM

## REVISIONS :

No	Date	Description

DRAWING TITLE :

LE: **NDAAPI PUMPING MAIN  
PLAN AND PROFILE**

Surveyed by:	
--------------	--

R.K

Drawn by:

M.K

Designed by:	
--------------	--

W.G.M.

Check
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J.K.K

Date:

January 2023

DRG. No.:

ENY-PM-003

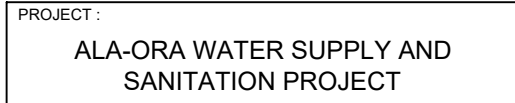
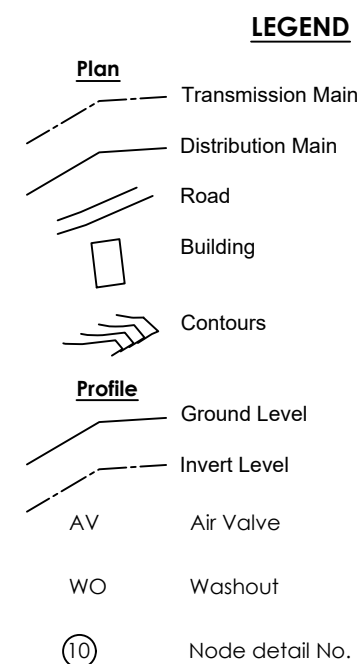
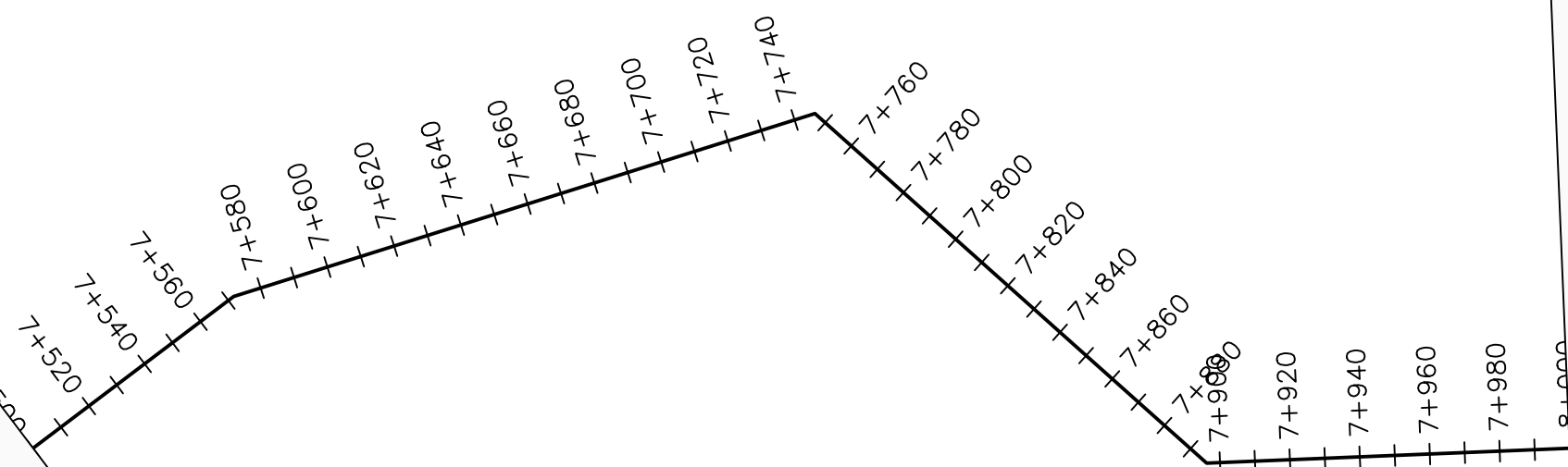
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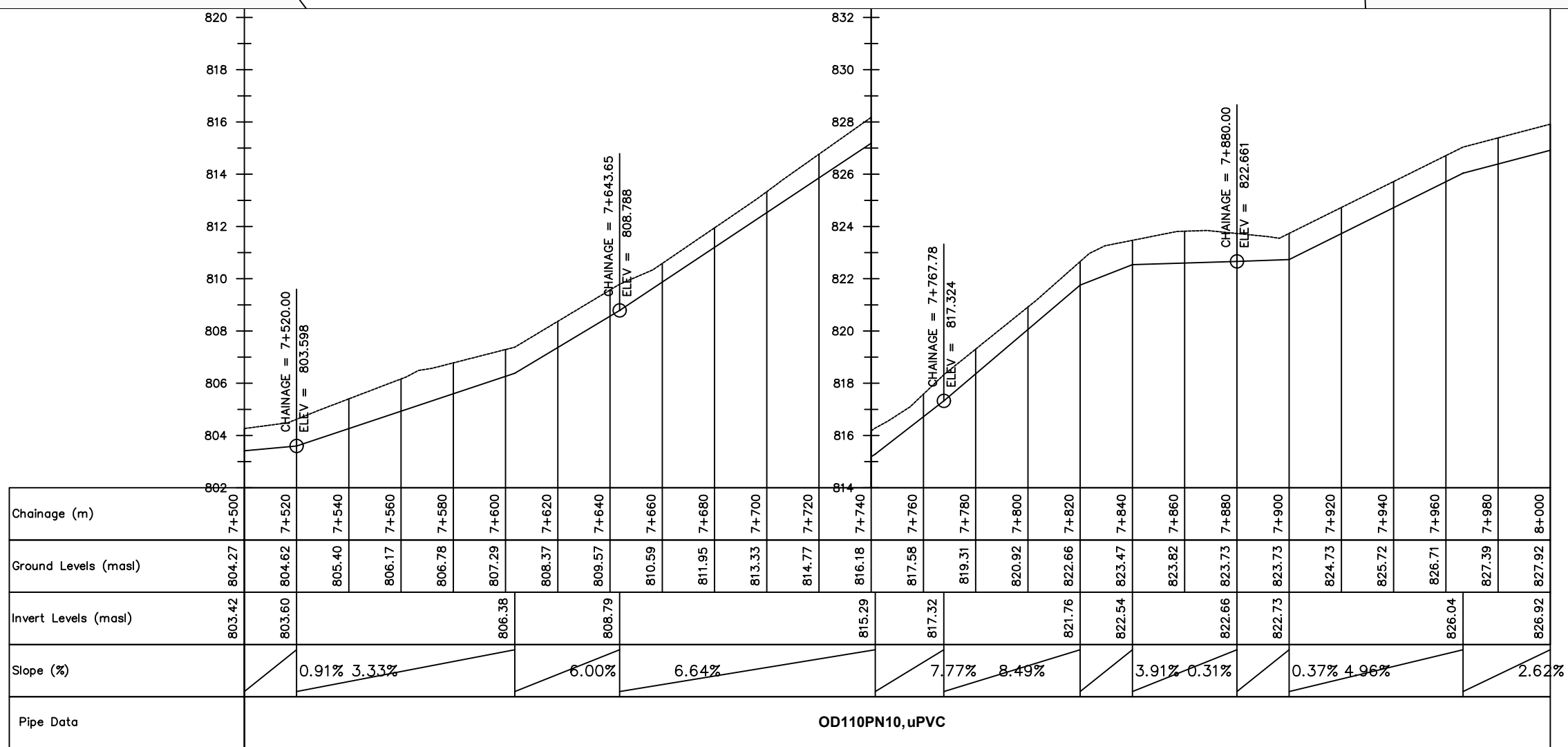
14 of 18



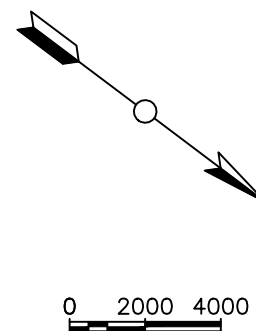


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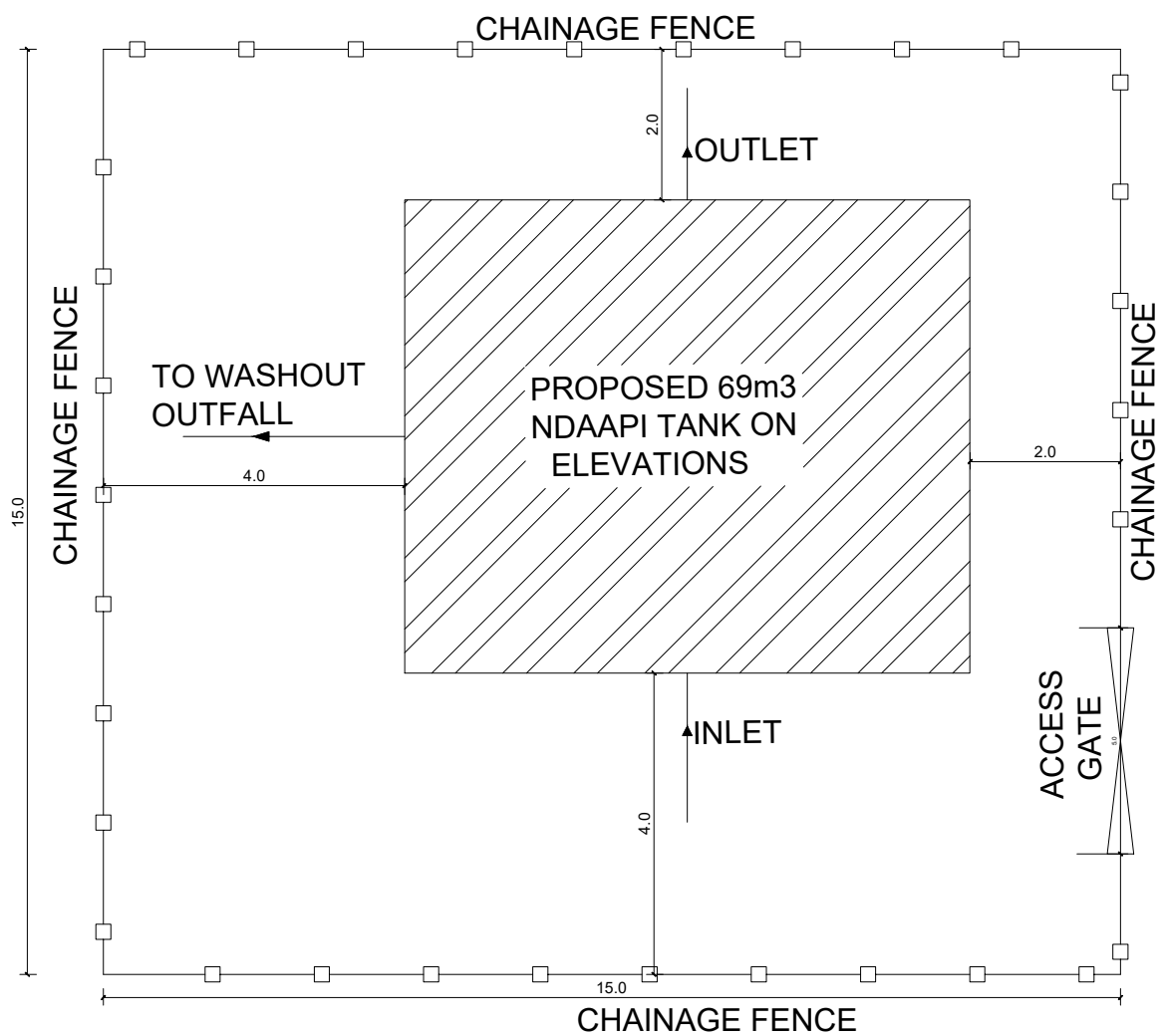
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Checked by:	J.K.K	
Date:	January 2023	
DRG. No.:	<b>ENY-PM-003</b>	
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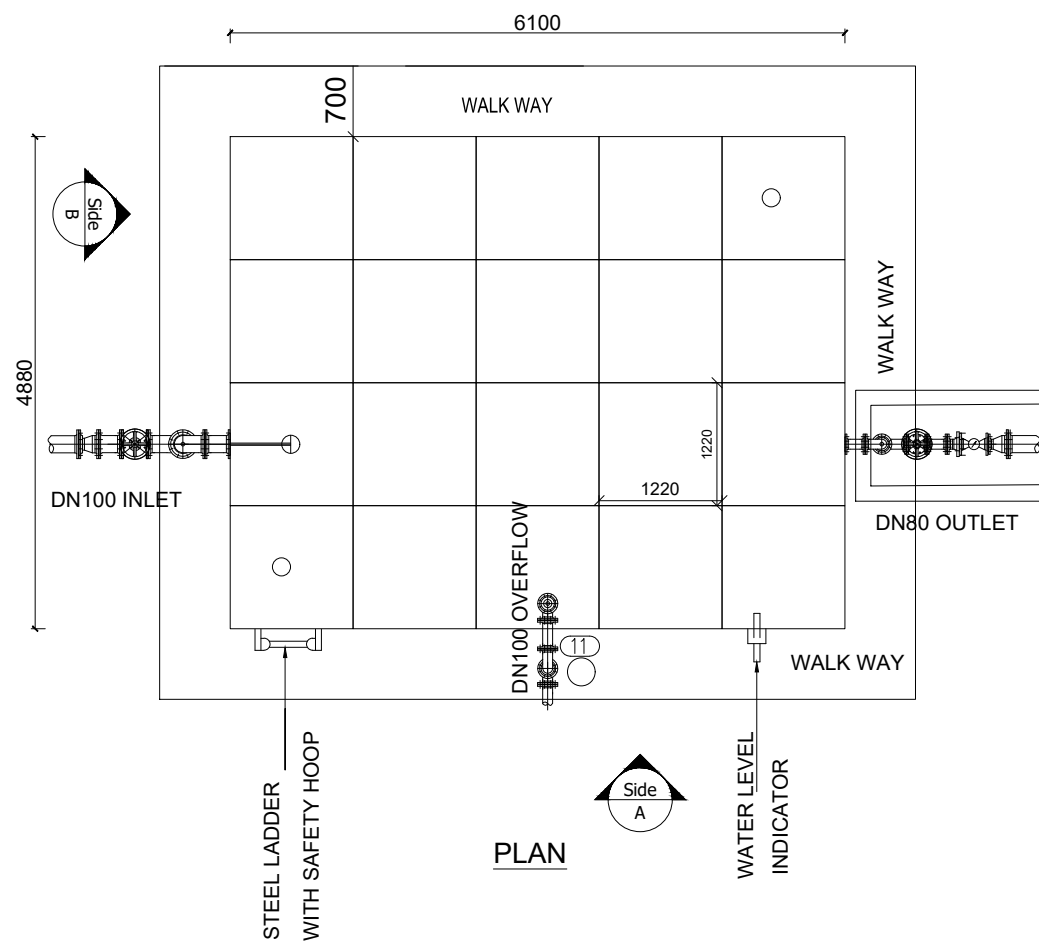




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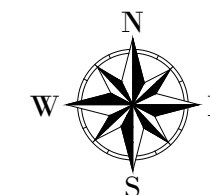


SITE LAYOUT



PLAN

LEGEND



CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

 Alliance Consultants Ltd  
In Association with  
 Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

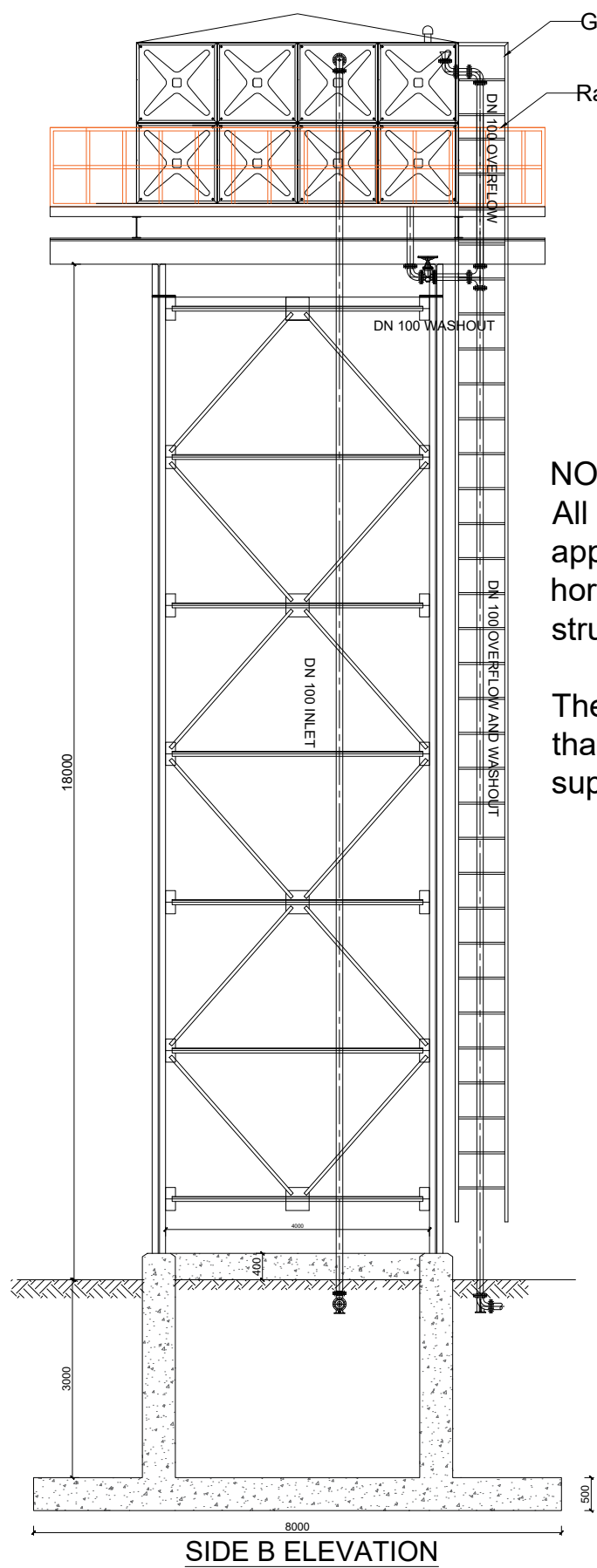
REVISIONS :		
No	Date	Description

DRAWING TITLE :

**NDAAPI TANK-69m<sup>3</sup>  
PLAN AND SITE LAYOUT**

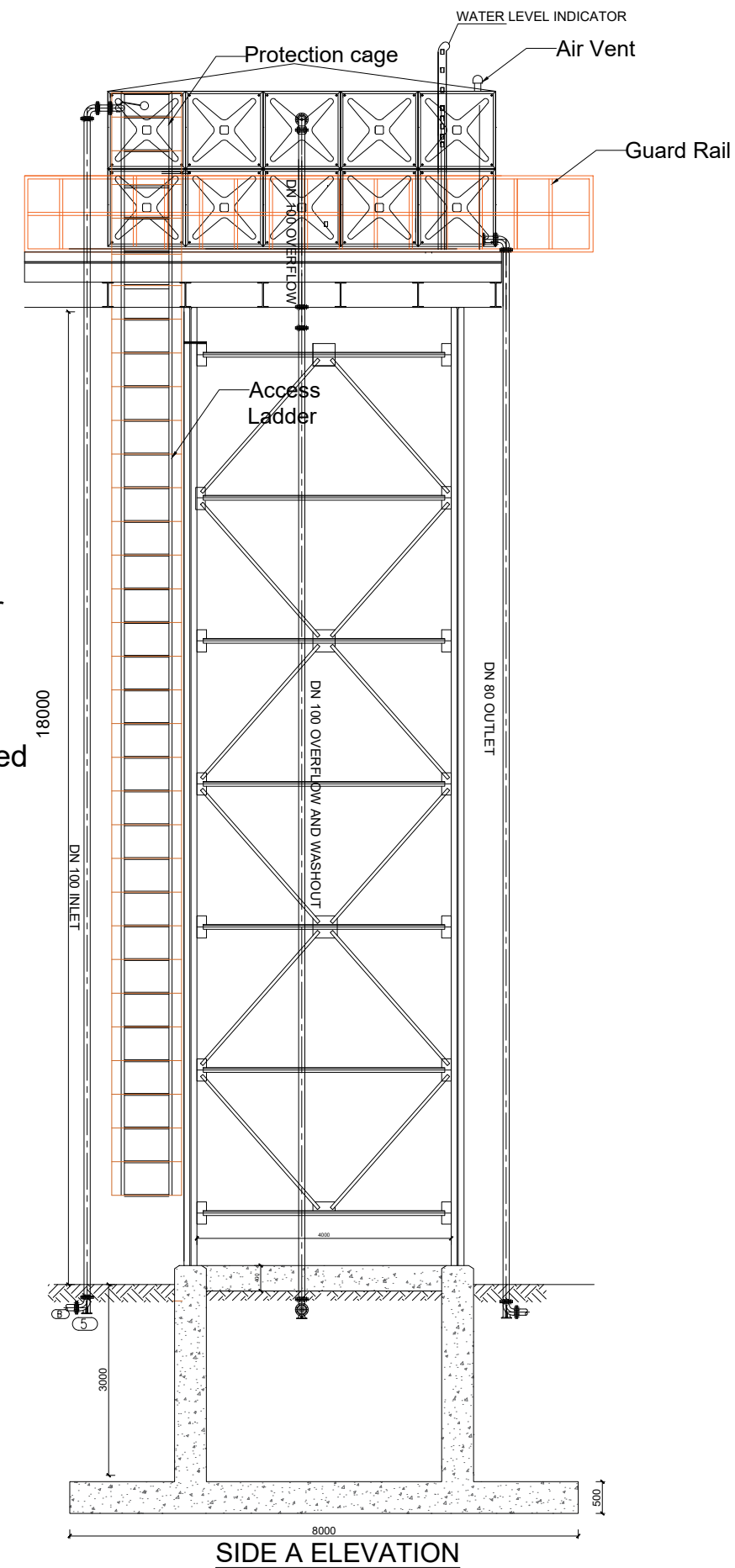
Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY_RES_NDA_005</b>
Scale: 1:100 1:75	Sheet No.: 1 of 3





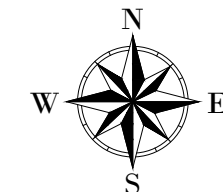
**SIDE B ELEVATION**



**NOTES:**  
 All Pipes and fittings shall be appropriately aligned vertically or horizontally and strutted/braced to approval  
 The washout shall be so positioned that it can access using the tank support structure ladder



**SIDE A ELEVATION**

**LEGEND**



CLIENT :  
  
 THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
 CO-FINANCED BY:  


CONSULTANT :  
 Alliance Consultants Ltd  
*In Association with*  


PROJECT :  
 ALA-ORA WATER SUPPLY AND  
 SANITATION PROJECT  
**ENYAU WATER SUPPLY AND  
 SANITATION SYSTEM**

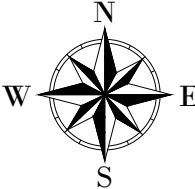




REVISIONS :

No	Date	Description

DRAWING TITLE :  
**NDAAPI TANK-69m<sup>3</sup>  
 ELEVATIONS**

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY_RES_NDA_005</b>
Scale:	1:100
Sheet No.:	2 of 3



<b>LEGEND</b>		
		
<b>CLIENT :</b>		
 THE REPUBLIC OF UGANDA <b>MINISTRY OF WATER AND ENVIRONMENT</b>		
<b>CO-FINANCED BY:</b>		
 <b>THE WORLD BANK</b> <small>IBRD • IDA   WORLD BANK GROUP</small>		
<b>CONSULTANT :</b>		
 <b>Alliance Consultants Ltd</b> <i>In Association with</i>  <b>Infra-Consult Ltd</b>		
<b>PROJECT :</b>		
<b>ALA-ORA WATER SUPPLY AND SANITATION PROJECT</b>		
<b>ENYAU WATER SUPPLY AND SANITATION SYSTEM</b>		
<b>REVISIONS :</b>		
No	Date	Description
<b>DRAWING TITLE :</b>		
<b>NDAAPI TANK-69m<sup>3</sup> PIPE FITTINGS</b>		
<b>Surveyed by:</b>		
R.K		
<b>Drawn by:</b>		
N.R		
<b>Designed by:</b>		
W.G.M		
<b>Checked by:</b>		
J.K.K		
<b>Date:</b>		
January 2023		
<b>DRG. No.:</b>		
<b>ENY_RES_NDA_005</b>		
<b>Scale:</b>	<b>Sheet No.:</b>	
1:75		3 of 3

PUMPING MAIN	DWG No. - CHAINAGE	NODE No.
1	ENY-PM-001 - CH 0+388	①

Diagram showing a vertical pipe with an end cap, labeled with node 1. The pipe is labeled OD 90 HDPE PN10.

SCHEDULE OF PIPEWORK & FITTINGS

ITEM	DESCRIPTION	SIZE	QTY.	PN
1.	HDPE END CAP	90	1	10

PUMPING MAIN	DWG No. - CHAINAGE	NODE No.
2	ENY-PM-002 - CH 8+108	②

Diagram showing a vertical pipe with an end cap, labeled with node 1. The pipe is labeled OD 50 HDPE PN10.

SCHEDULE OF PIPEWORK & FITTINGS

ITEM	DESCRIPTION	SIZE	QTY.	PN
1.	HDPE END CAP	50	1	10

GRAVITY MAIN	DWG No. - CHAINAGE	NODE No.
1	ENY-GTM-001- CH 3+015	③

Diagram showing a gravity main connection. It includes a tee (1), a gate valve (2), a taper (3), a gate valve (4), and two adaptors (5 and 6). The pipes are labeled DN 300 STEEL PN10 and DN 100 STEEL PN10.

SCHEDULE OF PIPEWORK & FITTINGS

ITEM	DESCRIPTION	SIZE	QTY.	PN
1.	CI ALL FLANGED TEE	300/100	1	10
2.	CI FLANGED GATE VALVE	300	1	10
3	DI FLANGED TAPER	300/100	1	10
4	CI FLANGED GATE VALVE	100	1	10
5	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	300	2	10
6	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	100	1	10

GRAVITY MAIN	DWG No. - CHAINAGE	NODE No.
1	ENY-GTM-001 - CH 14+292	④

Diagram showing a vertical pipe with an end cap, labeled with node 1. The pipe is labeled DN 300 STEEL PN10.

SCHEDULE OF PIPEWORK & FITTINGS

ITEM	DESCRIPTION	SIZE	QTY.	PN
1.	DI END CAP	300	1	10

GRAVITY MAIN	DWG No. - CHAINAGE	NODE No.
2	ENY-GTM-002 - CH 3+145	⑤

Diagram showing a vertical pipe with an end cap, labeled with node 1. The pipe is labeled DN 100 STEEL PN10.

SCHEDULE OF PIPEWORK & FITTINGS

ITEM	DESCRIPTION	SIZE	QTY.	PN
1.	DI END CAP	100	1	10

LEGEND

CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT

CO-FINANCED BY:



CONSULTANT :



Alliance Consultants Ltd  
In Association with

Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE :

TRANSMISSION NODES DETAILS

Surveyed by:

R.K

Drawn by:

A.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

ENY-ND-001

Scale:

1:5.5

Sheet No.:

1 of 3

GRAVITY MAIN	DWG No. - CHAINAGE	NODE No.
3	ENY-GTM-003 - CH 13+450	⑥

OD 160 uPVC PN16

①

ITEM	DESCRIPTION	SIZE	QTY.	PN
1.	DI END CAP	160	1	16

GRAVITY MAIN	DWG No. - CHAINAGE
3	ENY-GTM-003 - CH 3+100

OD250 uPVC PN10

①

②

③

DN200 STEEL PN10

ITEM	DESCRIPTION	SIZE	QTY.	PN
1	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	250	1	10
2	DI FLANGED TAPER	250/200	1	10
3	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	200	1	10

GRAVITY MAIN	DWG No. - CHAINAGE
3	ENY-GTM-003 - CH 7+080

DN 200 STEEL PN 10

①

③

②

④

DN 160 uPVC PN 16

ITEM	DESCRIPTION	SIZE	QTY.	PN
1	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	200	1	16
2	FLANGED COUPLER	200/160	1	16
3	DI FLANGED TAPER	200/160	1	16
4	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	160	1	16

GRAVITY MAIN	DWG No. - CHAINAGE
3	ENY-GTM-003 - CH 9+180

OD 160 uPVC PN16

①

②

③

OD 160 uPVC PN10

ITEM	DESCRIPTION	SIZE	QTY.	PN
1	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	160	1	16
2	FLANGED COUPLER	160/160	1	16
3	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	160	1	16

GRAVITY MAIN	DWG No. - CHAINAGE
3	ENY-GTM-003 - CH 10+260

OD 160 uPVC PN10

①

②

③

OD 160 uPVC PN16

ITEM	DESCRIPTION	SIZE	QTY.	PN
1	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	160	1	16
2	FLANGED COUPLER	160/160	1	16
3	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	160	1	16

LEGEND

CLIENT :



THE REPUBLIC OF UGANDA

MINISTRY OF WATER AND ENVIRONMENT

CO-FINANCED BY:



CONSULTANT :

Alliance Consultants Ltd

In Association with



PROJECT :

ALA-ORA WATER SUPPLY AND SANITATION PROJECT

ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE :

TRANSMISSION NODES DETAILS

Surveyed by: R.K

Drawn by: A.K

Designed by: W.G.M

Checked by: J.K.K

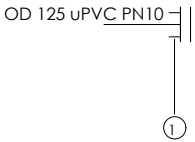
Date: January 2023

DRG. No.: ENY-ND-001

Scale: 1:5

Sheet No.: 2 of 3

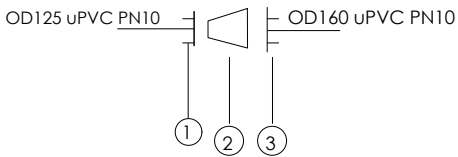
DISTRIBUTION MAIN	DWG No. - CHAINAGE	NODE No.
1	ENY-DM-001 - CH 7+493	⑦



SCHEDULE OF PIPEWORK & FITTINGS

ITEM	DESCRIPTION	SIZE	QTY.	PN
1.	DI END CAP	125	1	10

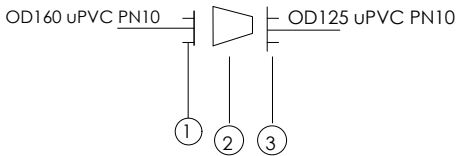
DISTRIBUTION MAIN	DWG No. - CHAINAGE
1	ENY-DM-001 - CH 2+450



SCHEDULE OF PIPEWORK & FITTINGS

ITEM	DESCRIPTION	SIZE	QTY.	PN
1	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	125	1	10
2	DI FLANGED TAPER	160/125	1	10
3	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	160	1	10

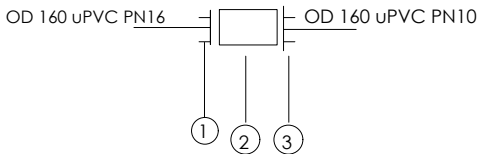
DISTRIBUTION MAIN	DWG No. - CHAINAGE
1	ENY-DM-001 - CH 6+320



SCHEDULE OF PIPEWORK & FITTINGS

ITEM	DESCRIPTION	SIZE	QTY.	PN
1	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	160	1	10
2	DI FLANGED TAPER	160/125	1	10
3	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	125	1	10

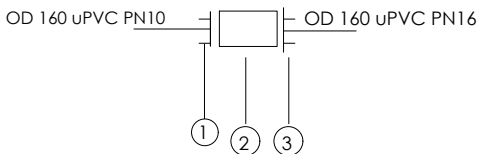
GRAVITY MAIN	DWG No. - CHAINAGE
3	ENY-GTM-003 - CH 9+180



SCHEDULE OF PIPEWORK & FITTINGS

ITEM	DESCRIPTION	SIZE	QTY.	PN
1	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	160	1	16
2	FLANGED COUPLER	160/160	1	16
3	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	160	1	16

GRAVITY MAIN	DWG No. - CHAINAGE
3	ENY-GTM-003 - CH 10+260



SCHEDULE OF PIPEWORK & FITTINGS

ITEM	DESCRIPTION	SIZE	QTY.	PN
1	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	160	1	16
2	FLANGED COUPLER	160/160	1	16
3	DI FLANGED ADAPTOR (MAXI TYPE OR SIMILAR)	160	1	16

LEGEND

CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

 Alliance Consultants Ltd  
In Association with  
 Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

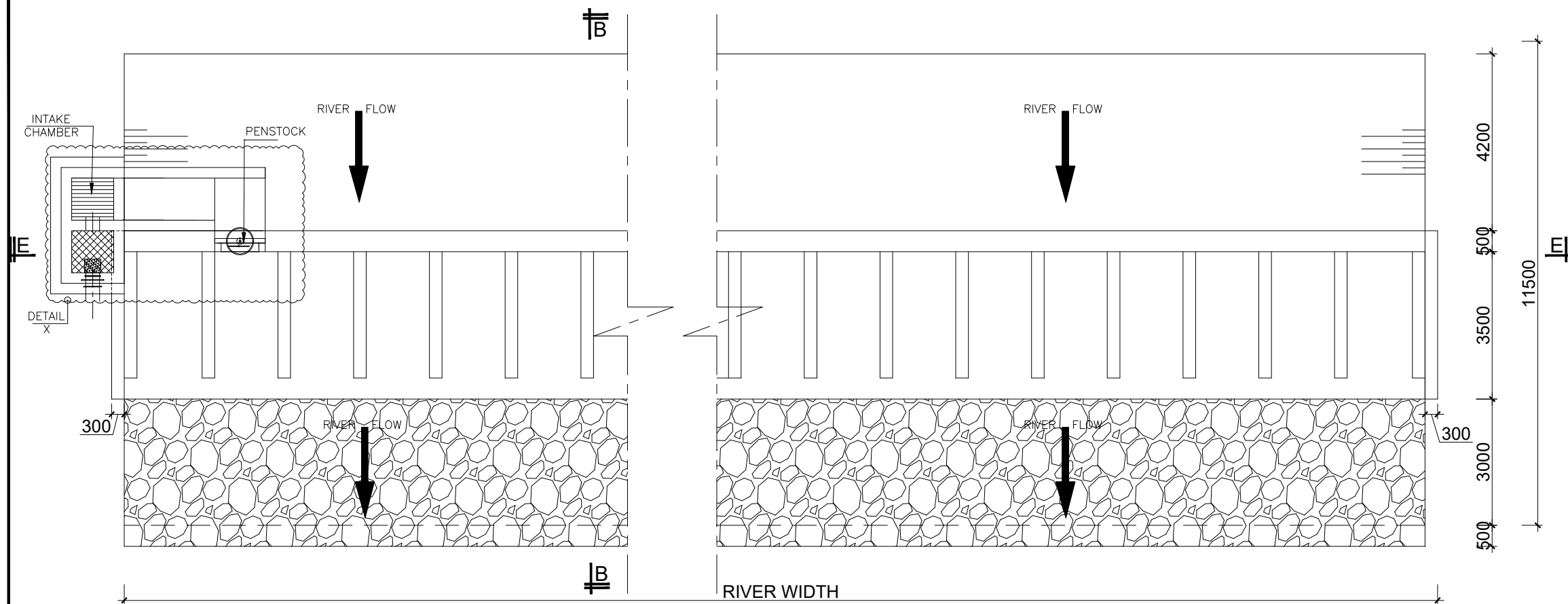
DRAWING TITLE :

**TRANSMISSION NODES DETAILS**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ENY-ND-001</b>
Scale:	1:5.5
Sheet No.:	3 of 3

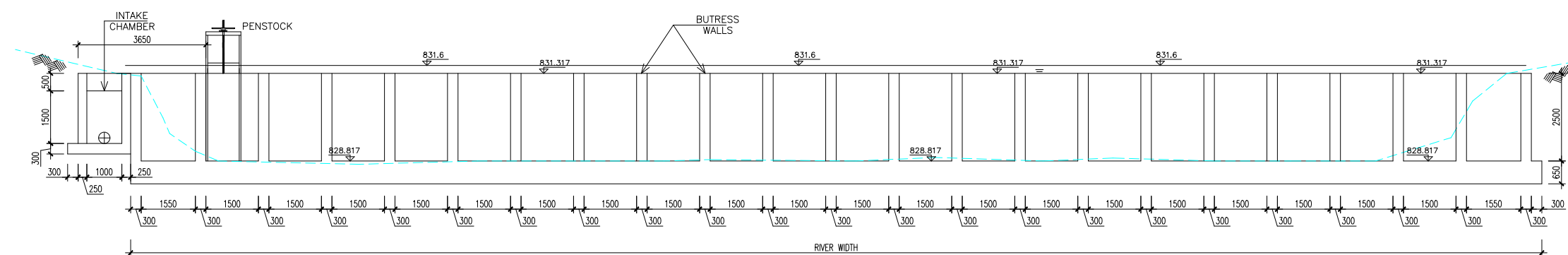
# **STRUCTURAL DRAWINGS**





**FOUNDATION LAYOUT.**

SCALE 1:60



**SECTION E-E**

SCALE 1:75

**GENERAL NOTES**

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
  - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
- Reinforcement
  - High tensile bars to be ribbed cold formed bars to B.S. 4461
  - Mild steel to be round bars to B.S. 4449
  - Mesh reinforcement to comply with requirement of B.S. 4483
- Minimum cover to all steel 50.
- THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

**ADDITIONAL NOTES**

- All vertical walls to be cast at once
- Approved stopper water bar to be installed in all joints as directed by the Engineer.
- Contractor to use non recoverable ties for tying formwork
- Contractor to submit methodology for Construction before commencing work.
- All Pipes going through walls to have paddle flange
- Diameter of pipes to first be confirmed by M&E before concreting.
- All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

In Association with

**Infra-Consult Ltd**

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

**REVISIONS :**

No	Date	Description

DRAWING TITLE :

**INTAKE WEIR**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

**FEBRUARY 2023**

DRG. No.:

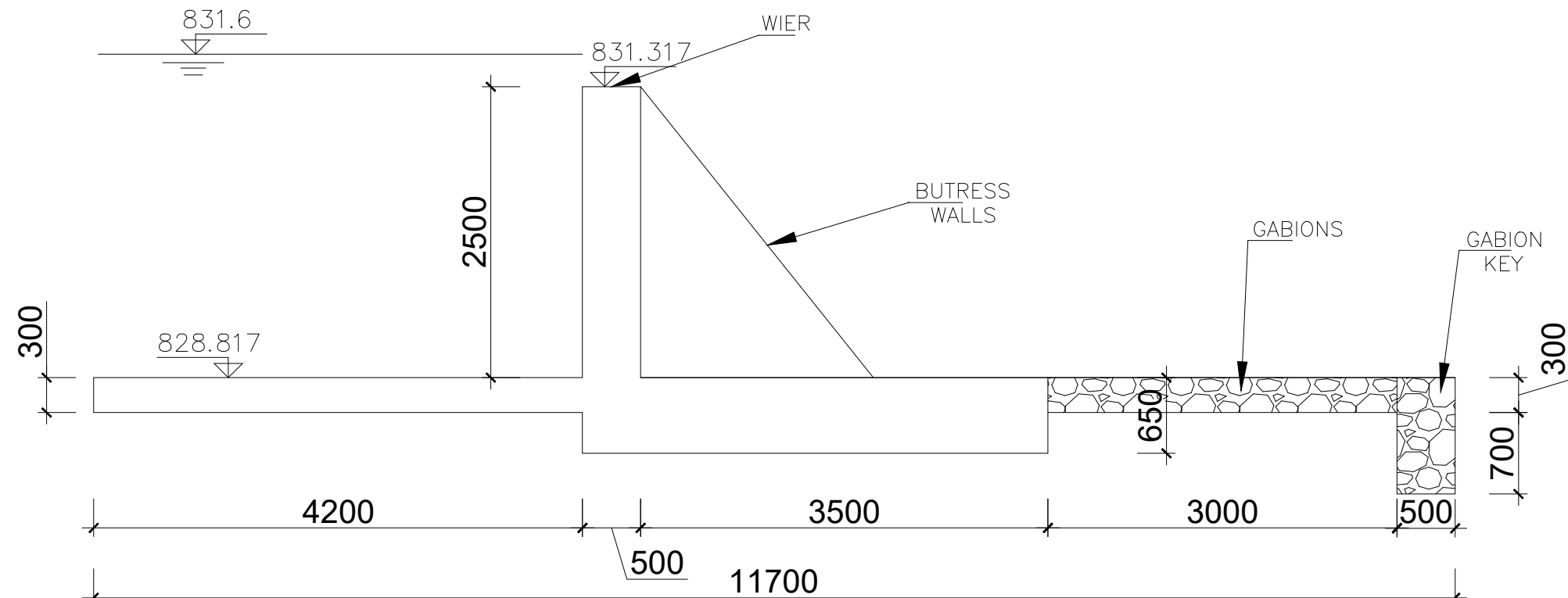
**AR/WSASS/EN/STR/001**

Scale:

Sheet No.:

As shown

1 of 4



**SECTION B-B**  
SCALE 1:25

#### GENERAL NOTES

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
  - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
- Reinforcement
  - High tensile bars to be ribbed cold formed bars to B.S. 4461
  - Mild steel to be round bars to B.S. 4449
  - Mesh reinforcement to comply with requirement of B.S. 4483
- Minimum cover to all steel 50.
- THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

- All vertical walls to be cast at once
- Approved stopper water bar to be installed in all joints as directed by the Engineer.
- Contractor to use non recoverable ties for tying formwork
- Contractor to submit methodology for Construction before commencing work.
- All Pipes going through walls to have paddle flange
- Diameter of pipes to first be confirmed by M&E before concreting.
- All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

In Association with



PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**INTAKE WEIR**

Surveyed by: R.K

Drawn by:

K.L.W

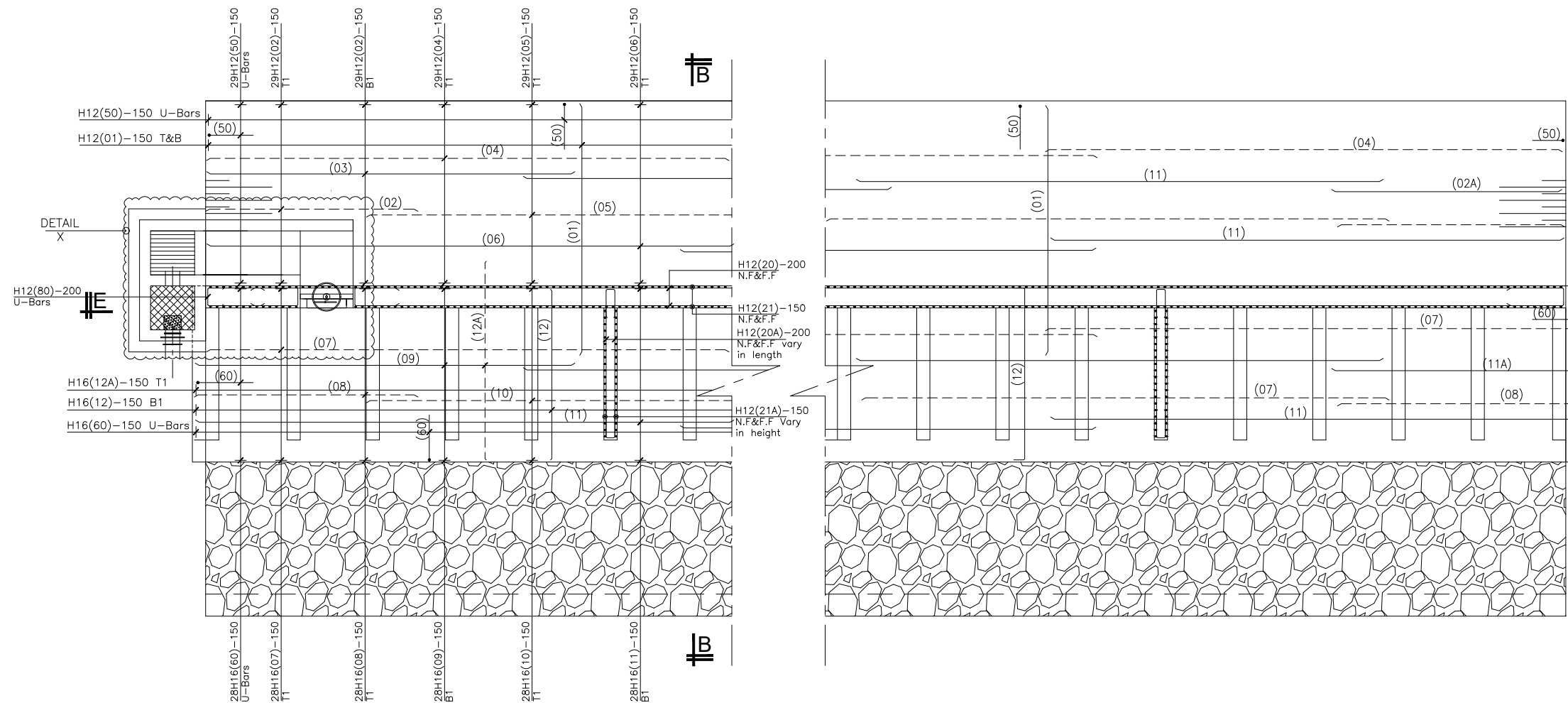
Designed by: A.B

Checked by: A.B

Date: FEBRUARY 2023

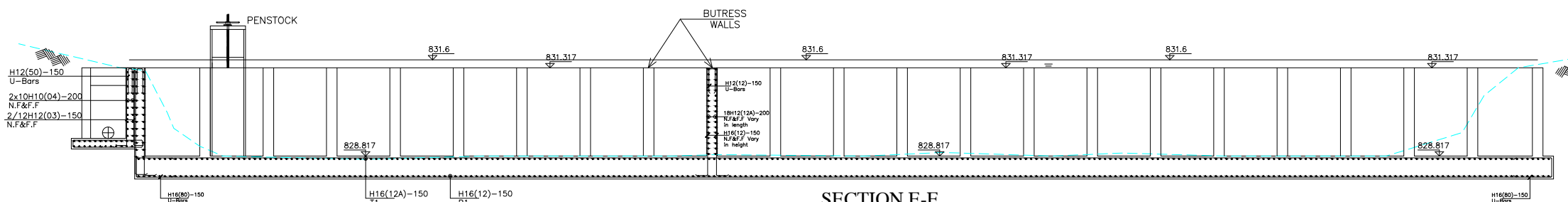
DRG. No.: AR/WSASS/EN/STR/001

Scale: As shown Sheet No.: 2 of 4



**R.C FOUNDATION LAYOUT.**

SCALE 1:75



**SECTION E-E**

SCALE 1:75

#### GENERAL NOTES

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
  - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
- Reinforcement
  - High tensile bars to be ribbed cold formed bars to B.S. 4461
  - Mild steel to be round bars to B.S. 4449
  - Mesh reinforcement to comply with requirement of B.S. 4483
- Minimum cover to all steel 50.
- THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

- All vertical walls to be cast at once
- Approved stopper water bar to be installed in all joints as directed by the Engineer.
- Contractor to use non recoverable ties for tying formwork
- Contractor to submit methodology for Construction before commencing work.
- All Pipes going through walls to have paddle flange
- Diameter of pipes to first be confirmed by M&E before concreting.
- All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

In Association with

**Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**INTAKE WEIR**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

FEBRUARY 2023

DRG. No.:

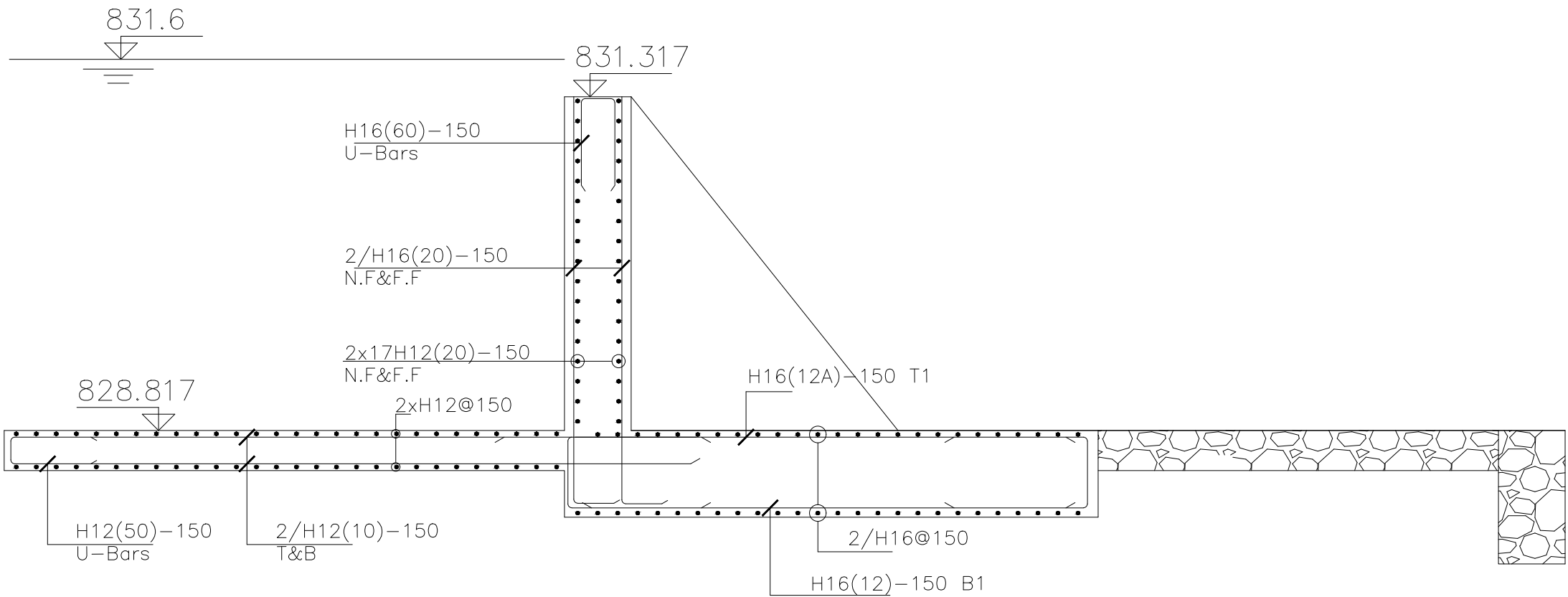
AR/WSASS/EN/STR/001

Scale:

Sheet No.:

As shown

3 of 4



SECTION B-B  
SCALE 1:50

GENERAL NOTES

1. This drawing shall be read in conjunction with all relevant drawings.
2. Concrete mixes to BS8500
  - a. Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - b. Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
3. Reinforcement
  - a. High tensile bars to be ribbed cold formed bars to B.S. 4461
  - b. Mild steel to be round bars to B.S. 4449
  - c. Mesh reinforcement to comply with requirement of B.S. 4483
4. Minimum cover to all steel 50.
5. THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

ADDITIONAL NOTES

1. All vertical walls to be cast at once
2. Approved stopper water bar to be installed in all joints as directed by the Engineer.
3. Contractor to use non recoverable ties for tying formwork
4. Contractor to submit methodology for Construction before commencing work.
5. All Pipes going through walls to have paddle flange
6. Diameter of pipes to first be confirmed by M&E before concreting.
7. All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM

ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE :

INTAKE WEIR

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

FEBRUARY 2023

DRG. No.:

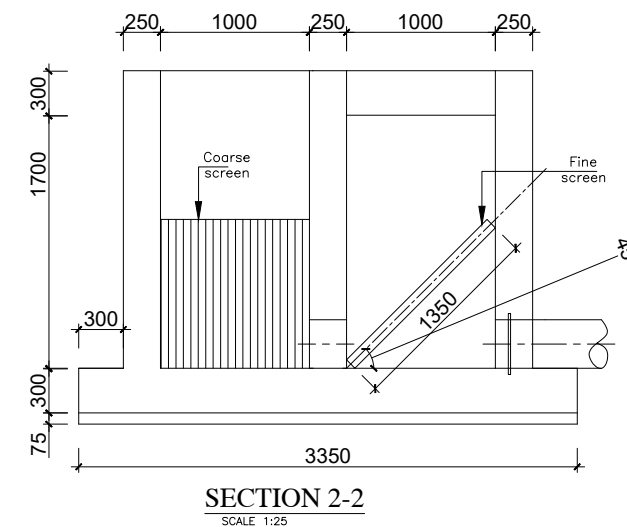
AR/WSASS/EN/STR/001

Scale:

As shown

Sheet No.:

4 of 4



1. All vertical walls to be cast at once
2. Approved stopper water bar to be installed in all joints as directed by the Engineer.
3. Contractor to use non recoverable ties for tying formwork
4. Contractor to submit methodology for Construction before commencing work.
5. All pipes going through walls to have potted flange.
6. Diameter of pipes to first be confirmed by M&E before concreting.
7. All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting



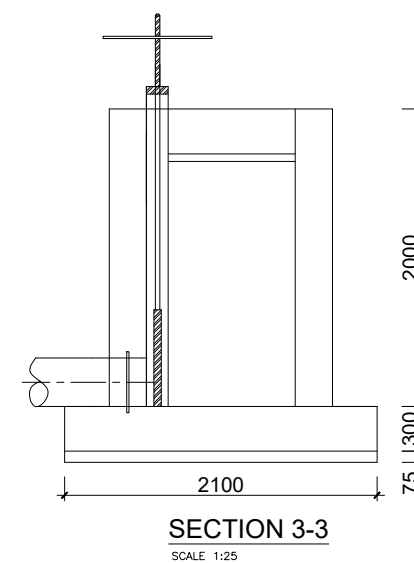
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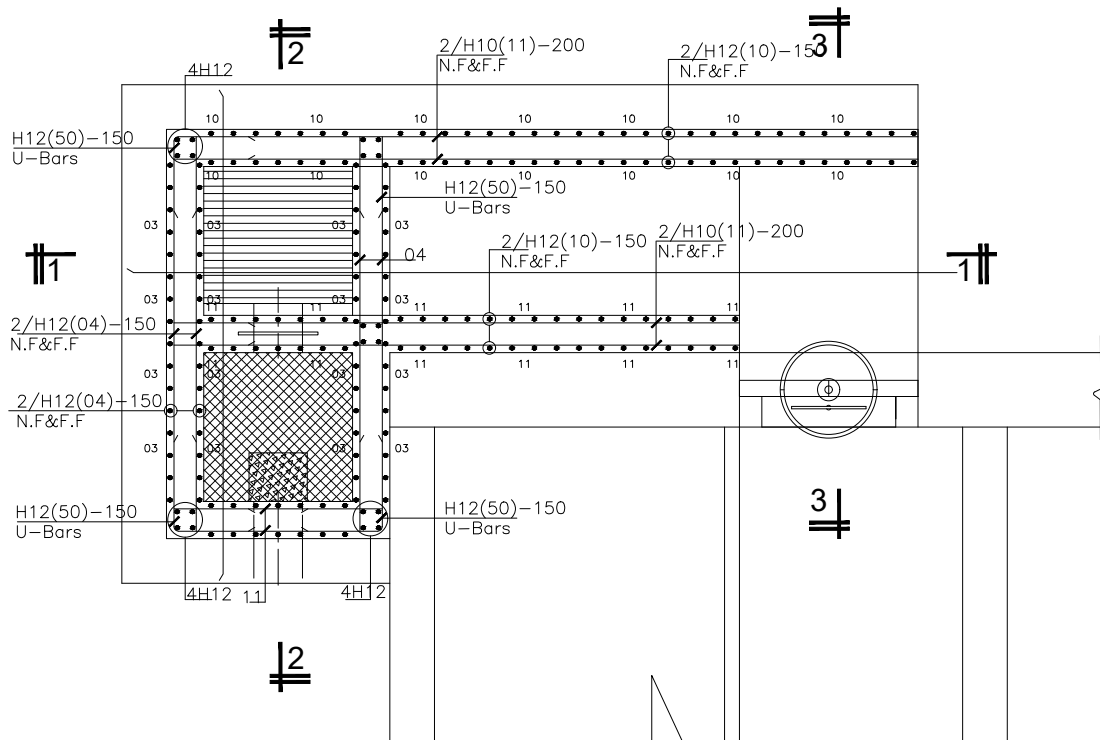
*In Association with*

P.O.BOX 33975 KAMPALA  
Email: [allainceconsultantsltd@gmail.com](mailto:allainceconsultantsltd@gmail.com)

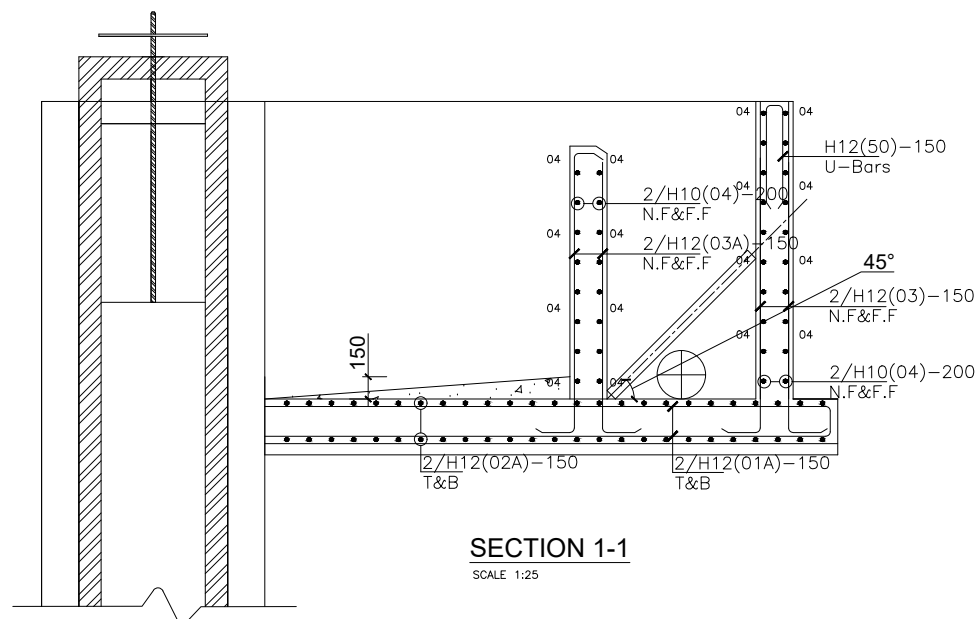
REVISIONS:		
No	Date	Description

1 of 2

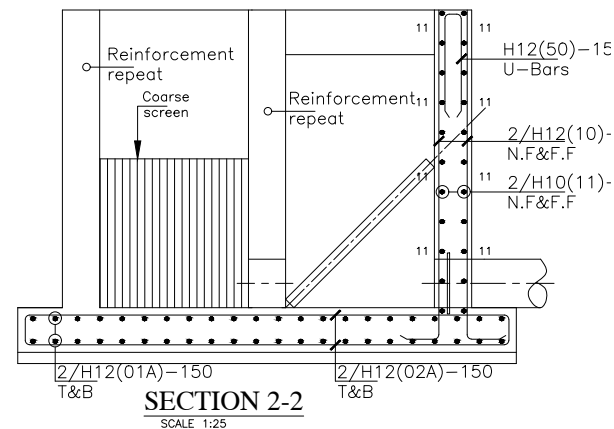




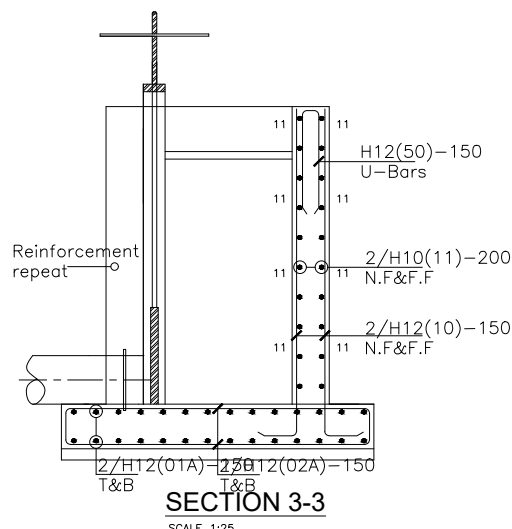
**DETAIL X**  
SCALE 1:25



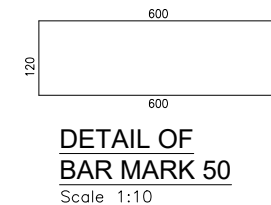
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SCALE 1:25



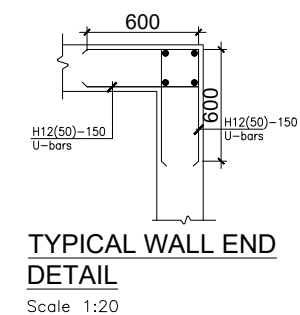
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SCALE 1:25



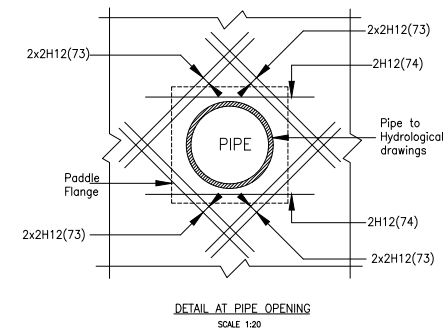
**SECTION 3-3**  
SCALE 1:25



**DETAIL OF BAR MARK 50**  
Scale 1:10



**TYPICAL WALL END DETAIL**  
Scale 1:20



**DETAIL AT PIPE OPENING**  
SCALE 1:20

1. This drawing shall be read in conjunction with all relevant drawings.
2. Concrete mixes to BS8500
  - a. Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - b. Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
3. Reinforcement
  - a. High tensile bars to be ribbed cold formed bars to B.S. 4461
  - b. Mild steel to be round bars to B.S. 4449
  - c. Mesh reinforcement to comply with requirement of B.S. 4483
4. Minimum cover to all steel 50.
5. THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

**ADDITIONAL NOTES**

1. All vertical walls to be cast at once
2. Approved stopper water bar to be installed in all joints as directed by the Engineer.
3. Contractor to use non recoverable ties for tying formwork
4. Contractor to submit methodology for Construction before commencing work.
5. All Pipes going through walls to have paddle flange
6. Diameter of pipes to first be confirmed by M&E before concreting.
7. All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

In Association with

**Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**INTAKE STRUCTURE**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

FEBRUARY 2023

DRG. No.:

AR/WSASS/EN/STR/002

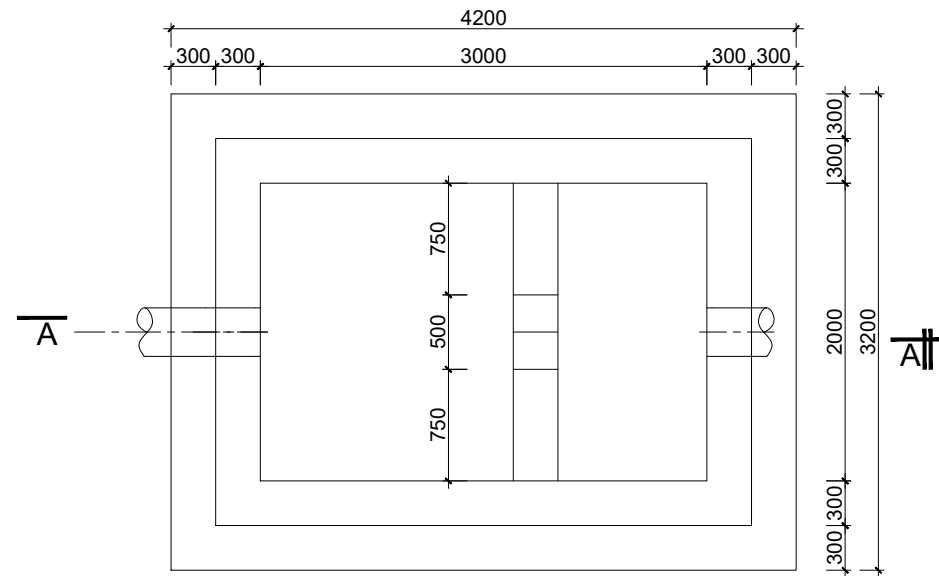
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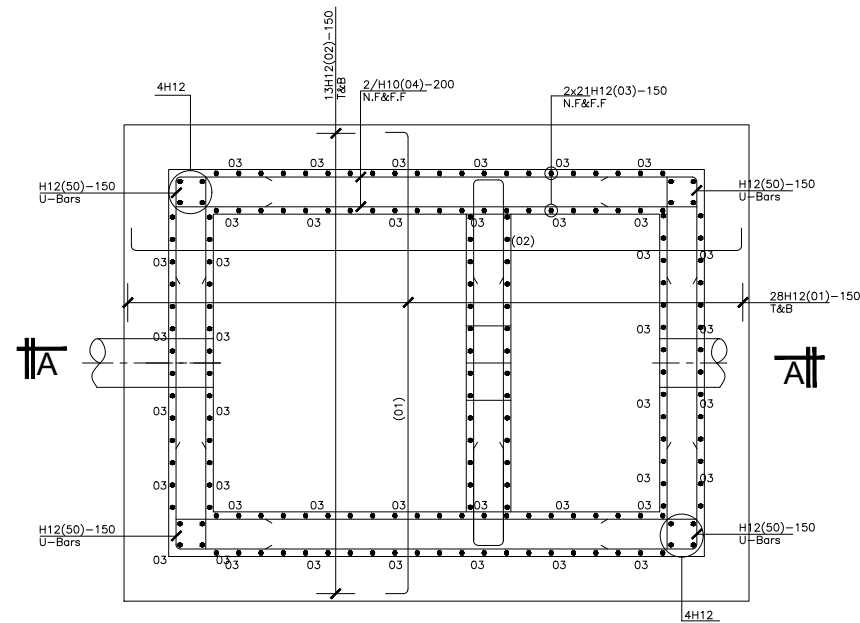
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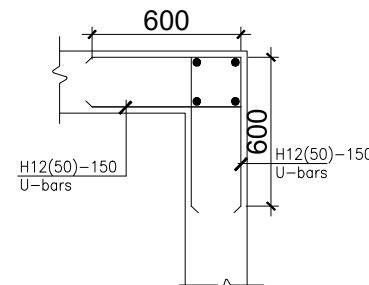




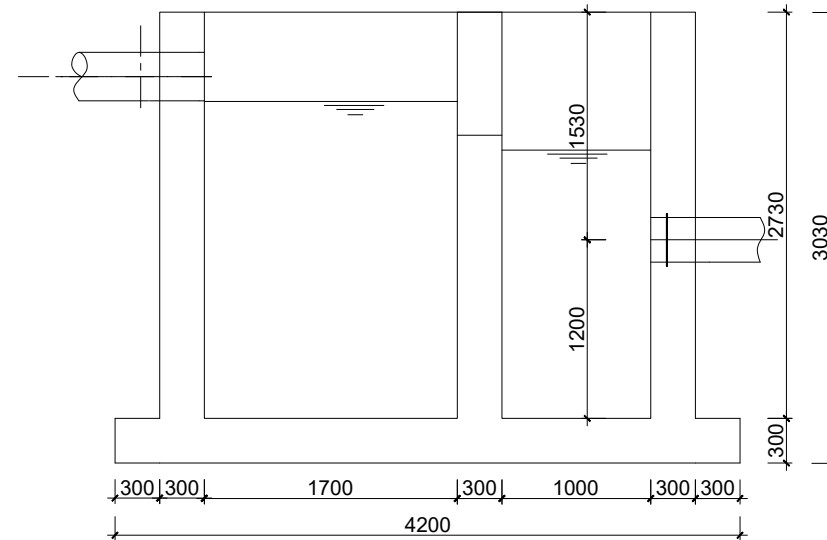
FOUDATION LAYOUT  
SCALE 1:25



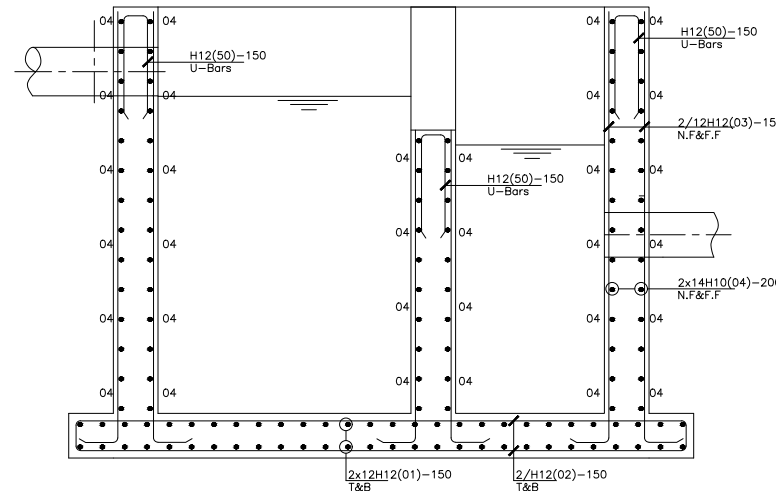
FOUDATION LAYOUT  
SCALE 1:25



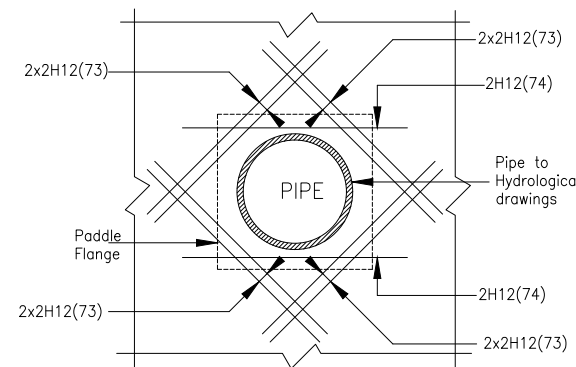
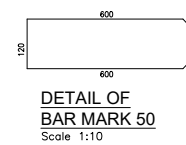
TYPICAL WALL END  
DETAIL  
Scale 1:15



SECTION A-A  
SCALE 1:25



SECTION A-A  
SCALE 1:25



#### GENERAL NOTES

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
  - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
- Reinforcement
  - High tensile bars to be ribbed cold formed bars to B.S. 4461
  - Mild steel to be round bars to B.S. 4449
  - Mesh reinforcement to comply with requirement of B.S. 4483
- Minimum cover to all steel 50.
- THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

- All vertical walls to be cast at once
- Approved stopper water bar to be installed in all joints as directed by the Engineer.
- Contrator to use non recoverable ties for tying formwork
- Contrator to submit methodology for Construction before commencing work.
- All Pipes going through walls to have paddle flange
- Diameter of pipes to first be confirmed by M&E before concreting.
- All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

In Association with

**Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ENYAU WATER TREATMENT PLANT**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**INLET STRUCTURE**

Surveyed by: R.K

Drawn by: Luks

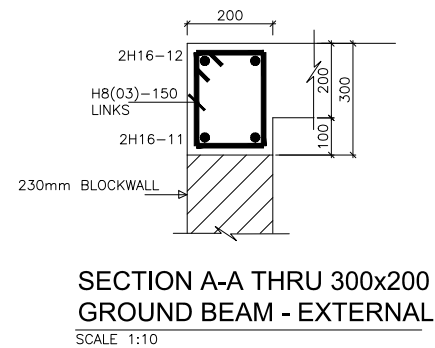
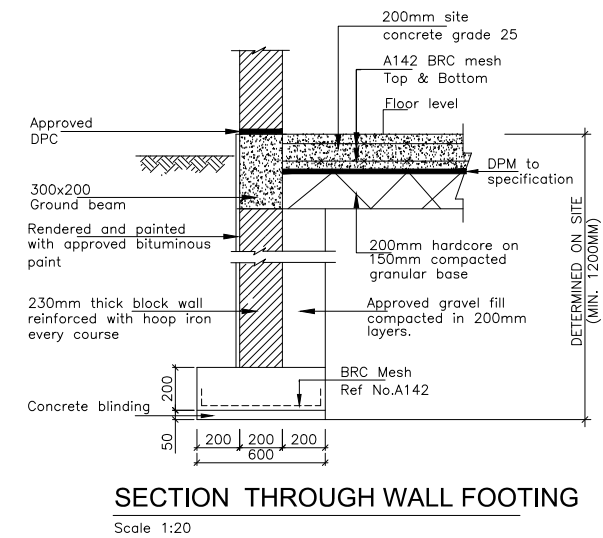
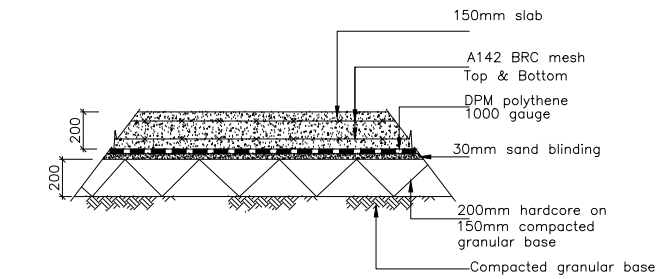
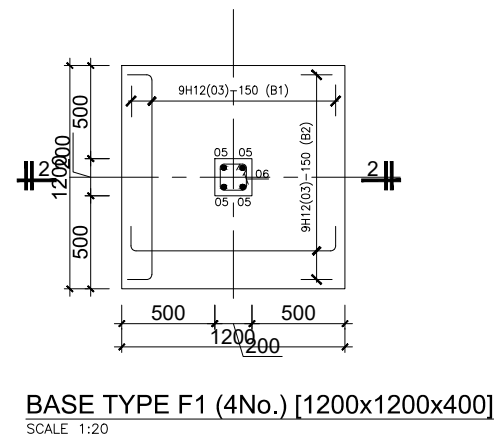
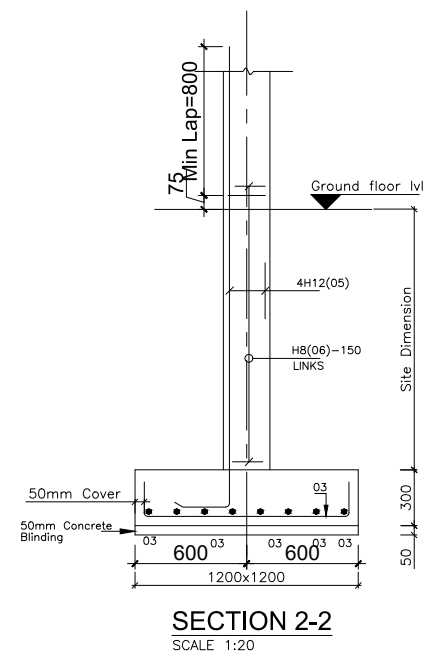
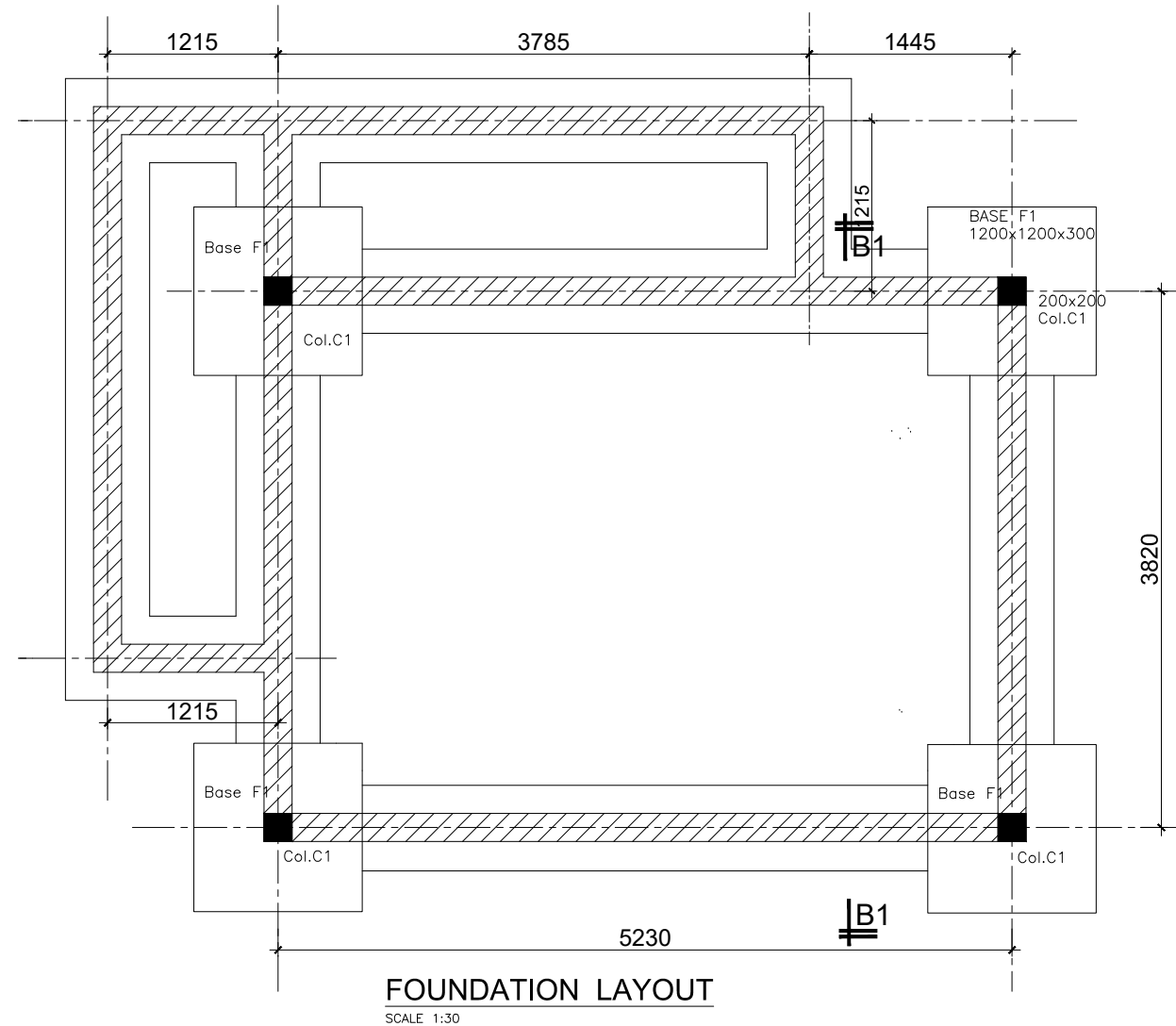
Designed by: A.B

Checked by: A.B

Date: FEBRUARY 2023

DRG. No.: AR/WSASS/EN/STR/003

Scale: Sheet No.: 1 of 1



#### GENERAL NOTES

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
  - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
- Reinforcement
  - High tensile bars to be ribbed cold formed bars to B.S. 4461
  - Mild steel to be round bars to B.S. 4449
  - Mesh reinforcement to comply with requirement of B.S. 4483
- Minimum cover to all steel 50.
- THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

- All vertical walls to be cast at once
- Approved stopper water bar to be installed in all joints as directed by the Engineer.
- Contractor to use non recoverable ties for tying formwork
- Contractor to submit methodology for Construction before commencing work.
- All Pipes going through walls to have paddle flange
- Diameter of pipes to first be confirmed by M&E before concreting.
- All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :

**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
In Association with

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ENYAU WATER TREATMENT PLANT**

REVISIONS :

No	Date	Description

**DRAWING TITLE : ALUM DOSING AND MIXING PLATFORM**

Surveyed by: R.K

Drawn by: Luks

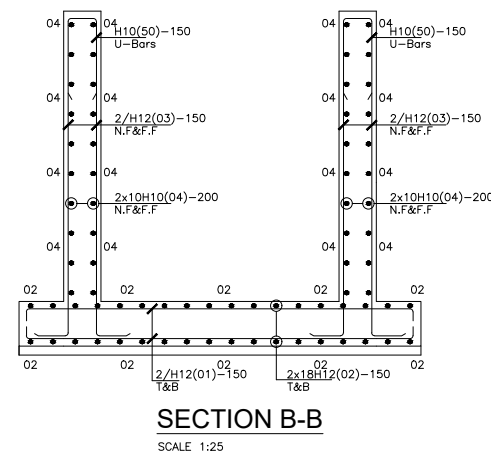
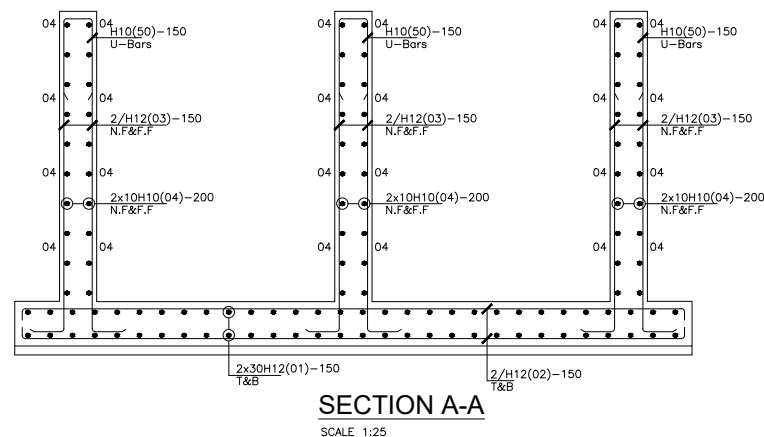
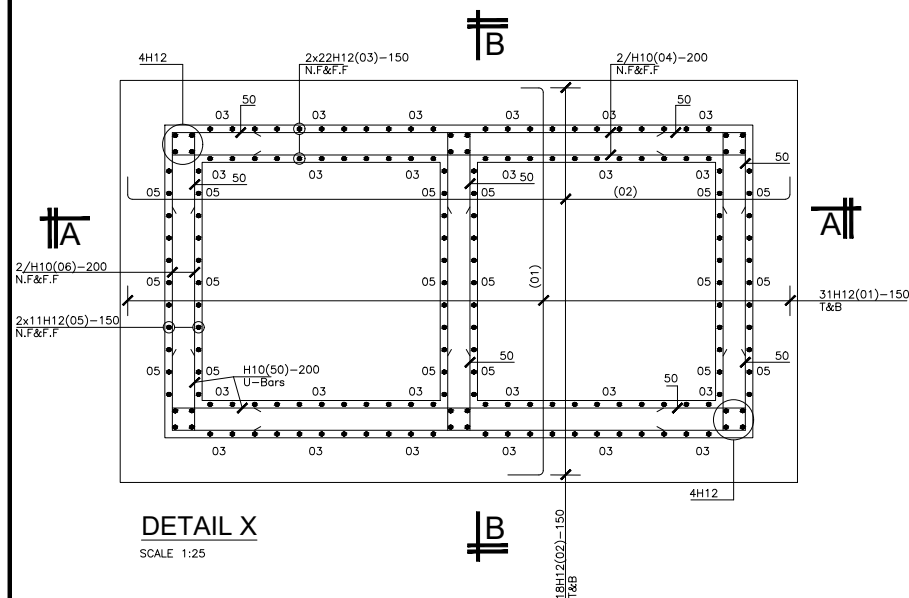
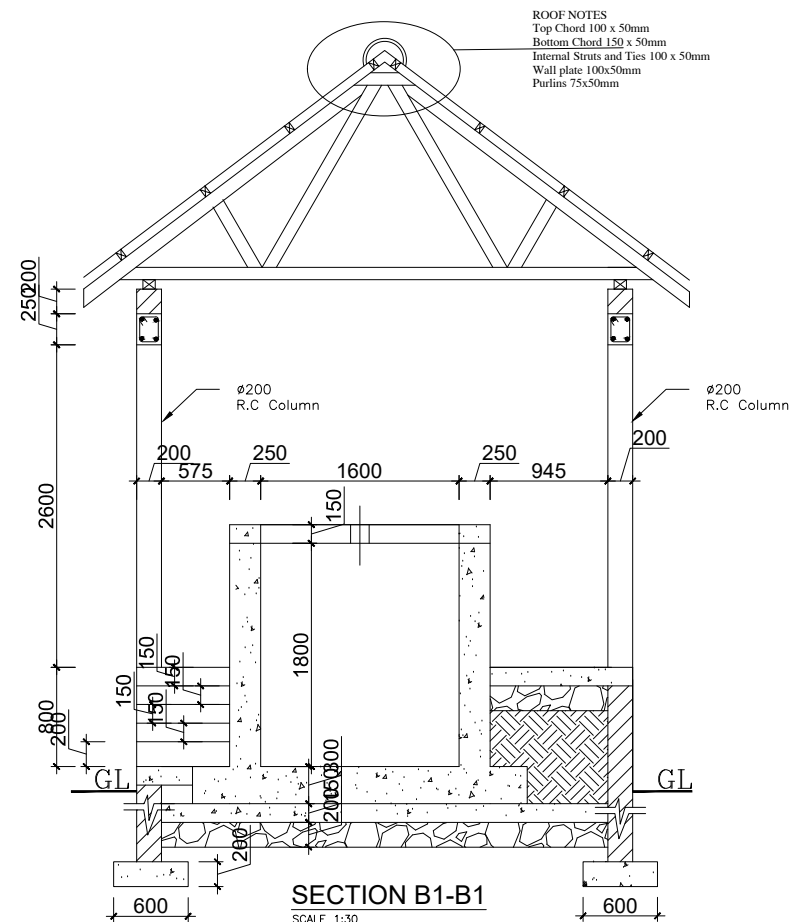
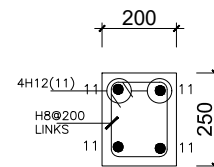
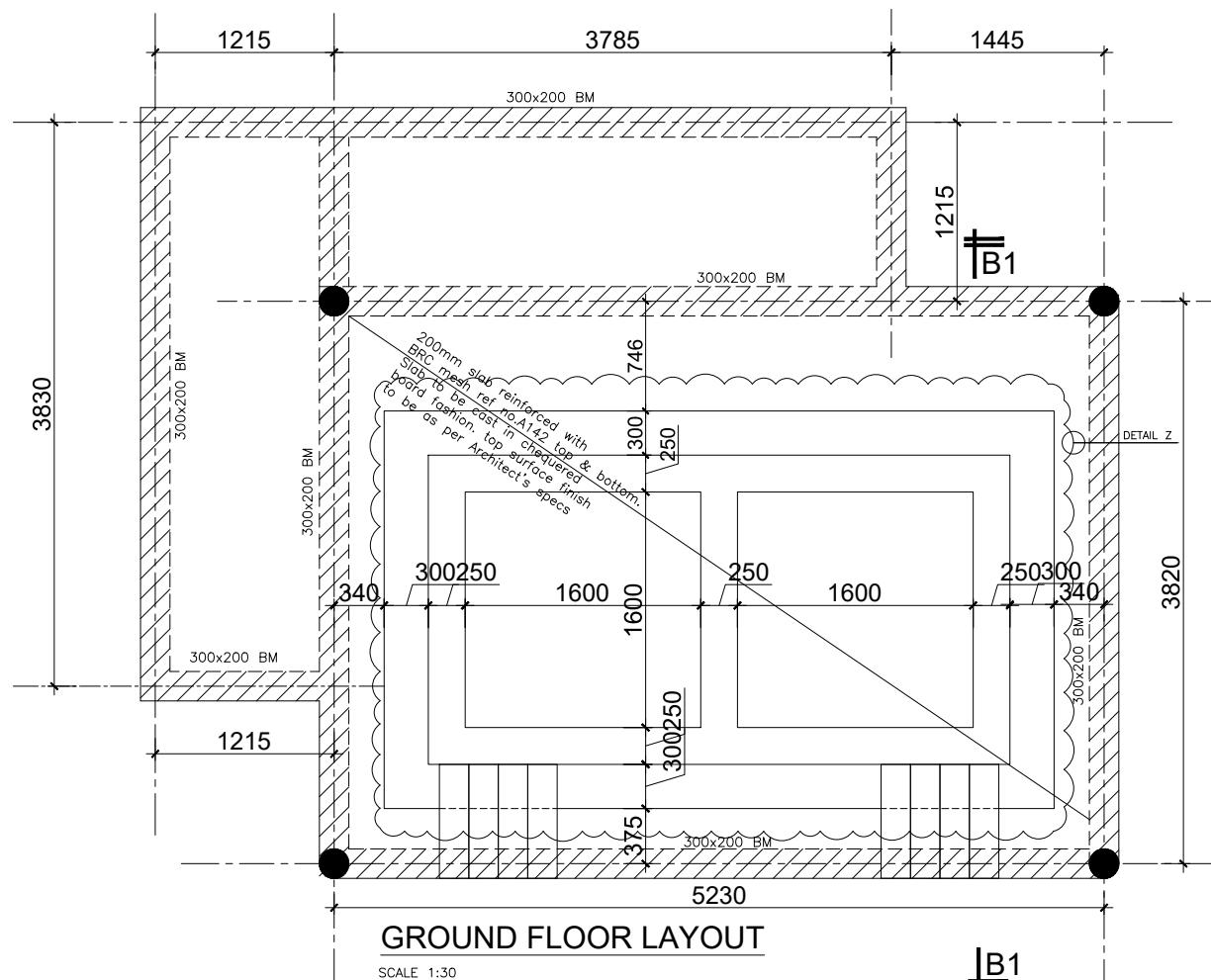
Designed by: A.B

Checked by: A.B

Date: FEBRUARY 2023

DRG. No.: AR/WSASS/EN/STR/004

Scale: Sheet No.: 1 of 2



#### GENERAL NOTES

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
  - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
- Reinforcement
  - High tensile bars to be ribbed cold formed bars to B.S. 4461
  - Mild steel to be round bars to B.S. 4449
  - Mesh reinforcement to comply with requirement of B.S. 4483
- Minimum cover to all steel 50.
- THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

- All vertical walls to be cast at once
- Approved stopper water bar to be installed in all joints as directed by the Engineer.
- Contractor to use non recoverable ties for tying formwork
- Contractor to submit methodology for Construction before commencing work.
- All Pipes going through walls to have paddle flange
- Diameter of pipes to first be confirmed by M&E before concreting.
- All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :

**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
In Association with

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allainceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ENYAU WATER TREATMENT PLANT**

REVISIONS :

No	Date	Description

**DRAWING TITLE : ALUM DOSING AND MIXING PLATFORM**

Surveyed by: R.K

Drawn by: Luks

Designed by: A.B

Checked by: A.B

Date: FEBRUARY 2023

DRG. No.: AR/WSASS/EN/STR/004

Scale: Sheet No.: 2 of 2



1. All vertical walls to be cast at once
2. Approved stopper water bar to be installed in all joints as directed by the Engineer.
3. Contractor to use non recoverable ties for tying formwork
4. Contractor to submit methodology for Construction before commencing work.
5. All Pipes going through walls to have paddle flange
6. Direction of pipes to first be confirmed by M&E before concreting.
7. All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT  
DIRECTORATE OF WATER DEVELOPMENT

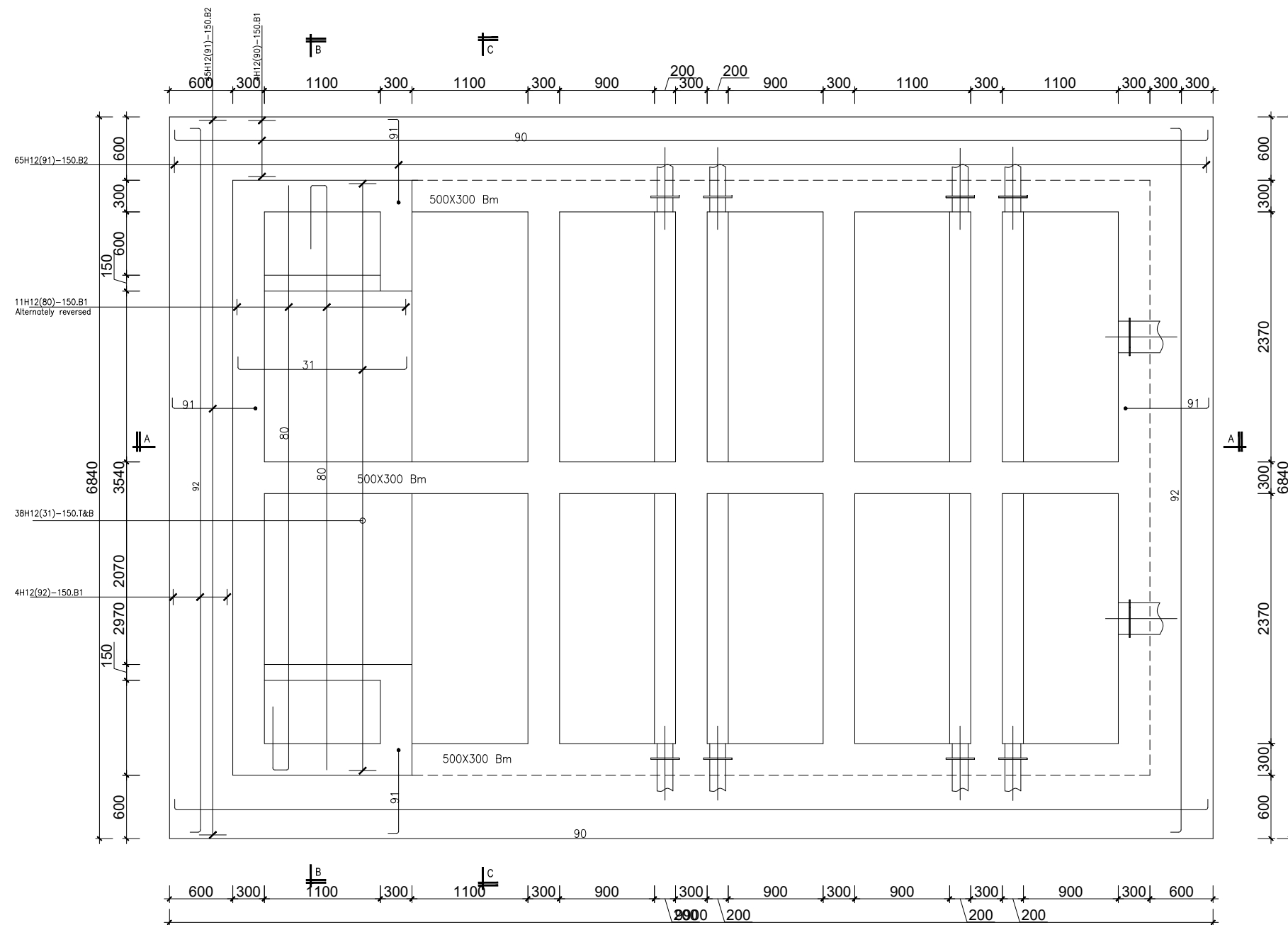
P.O.BOX 33975 KAMPALA  
Email: [allainceconsultantsltd@gmail.com](mailto:allainceconsultantsltd@gmail.com)

## ALA-ORA WATER SUPPLY AND SANITATION SYSTEM

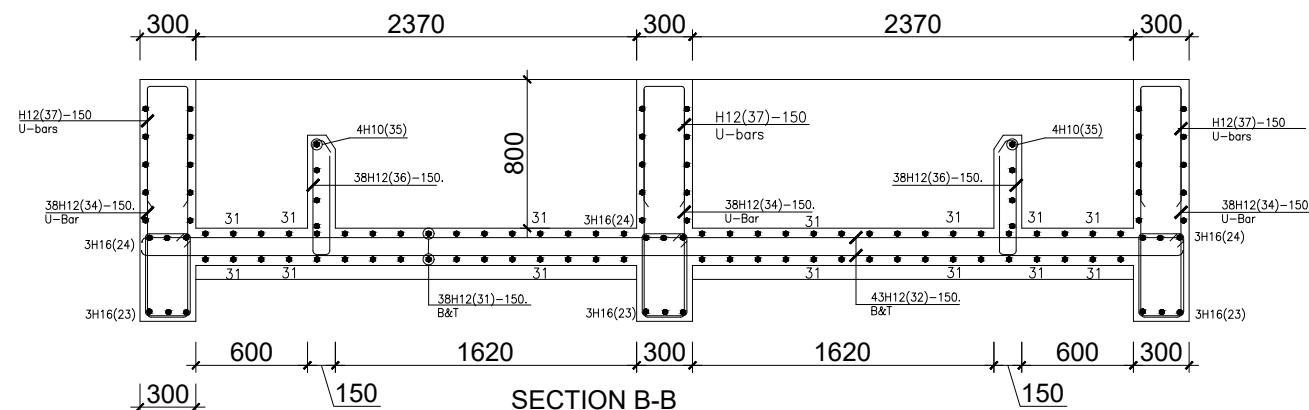
REVISIONS :		
No	Date	Description

## FLOCCULATOR

Scale:	Sheet No.:
As shown	1 of 4



TOP LAYOUT AT 1064.33m  
SCALE 1:25



SECTION B-B  
SCALE 1:20

1. This drawing shall be read in conjunction with all relevant drawings.
2. Concrete mixes to BS8500
  - a. Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - b. Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
3. Reinforcement
  - a. High tensile bars to be ribbed cold formed bars to B.S. 4461
  - b. Mild steel to be round bars to B.S. 4449
  - c. Mesh reinforcement to comply with requirement of B.S. 4483
4. Minimum cover to all steel 50.
5. THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

1. All vertical walls to be cast at once
2. Approved stopper water bar to be installed in all joints as directed by the Engineer.
3. Contractor to use non recoverable ties for tying formwork
4. Contractor to submit methodology for Construction before commencing work.
5. All Pipes going through walls to have paddle flange
6. Diameter of pipes to first be confirmed by M&E before concreting.
7. All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS

In Association with



**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**FLOCCULATOR**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

FEBRUARY 2023

DRG. No.:

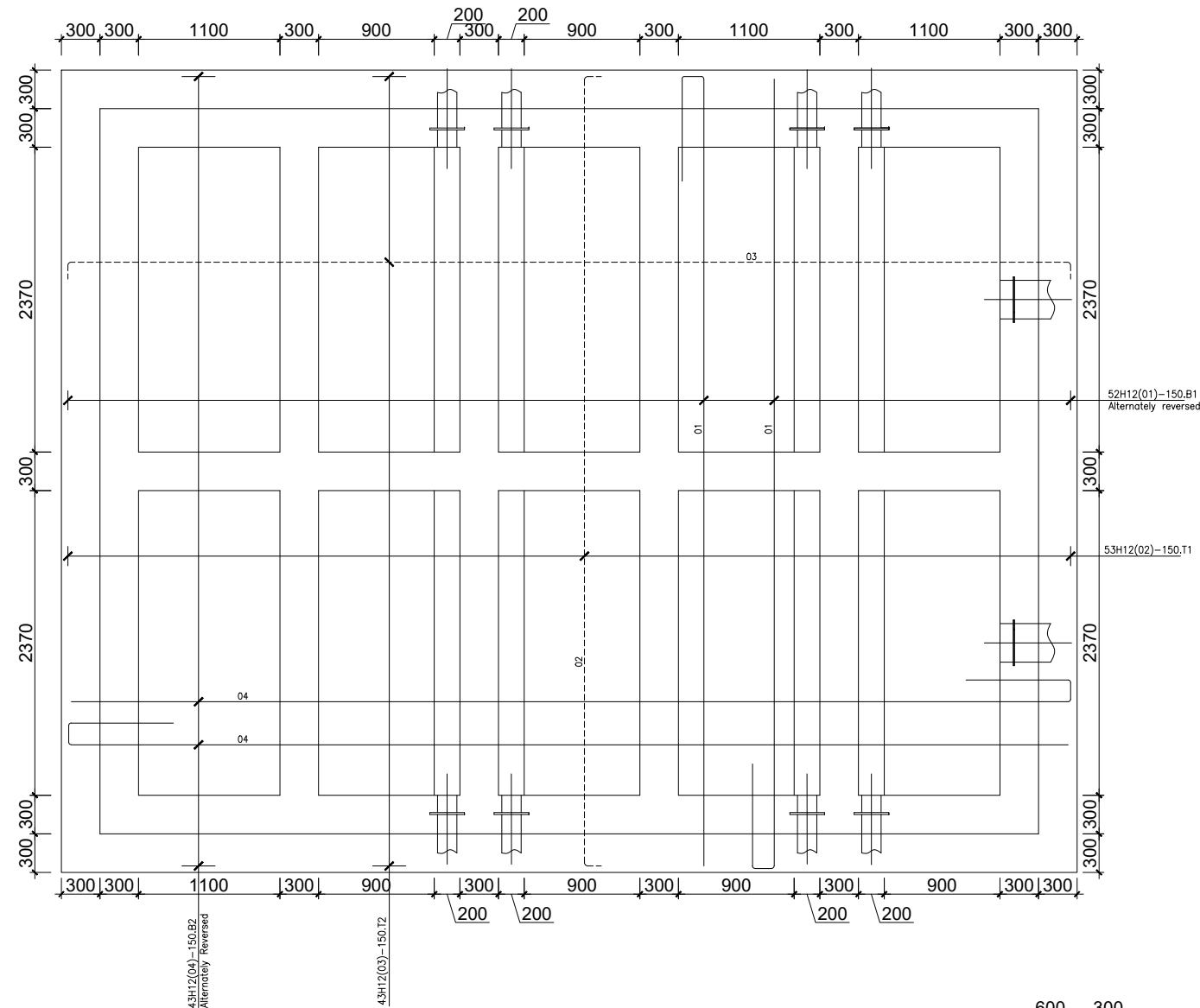
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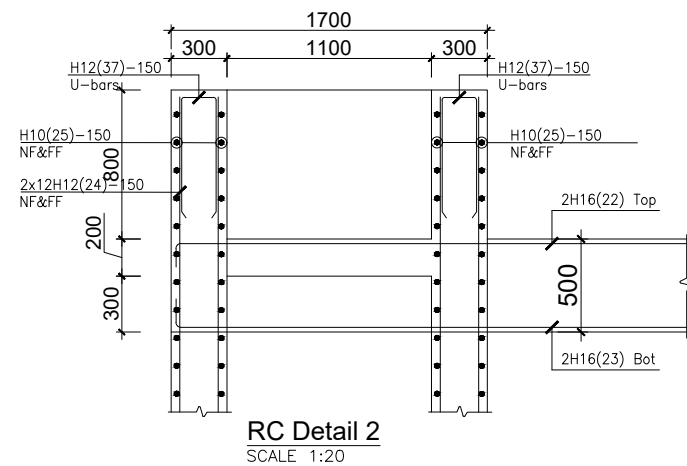
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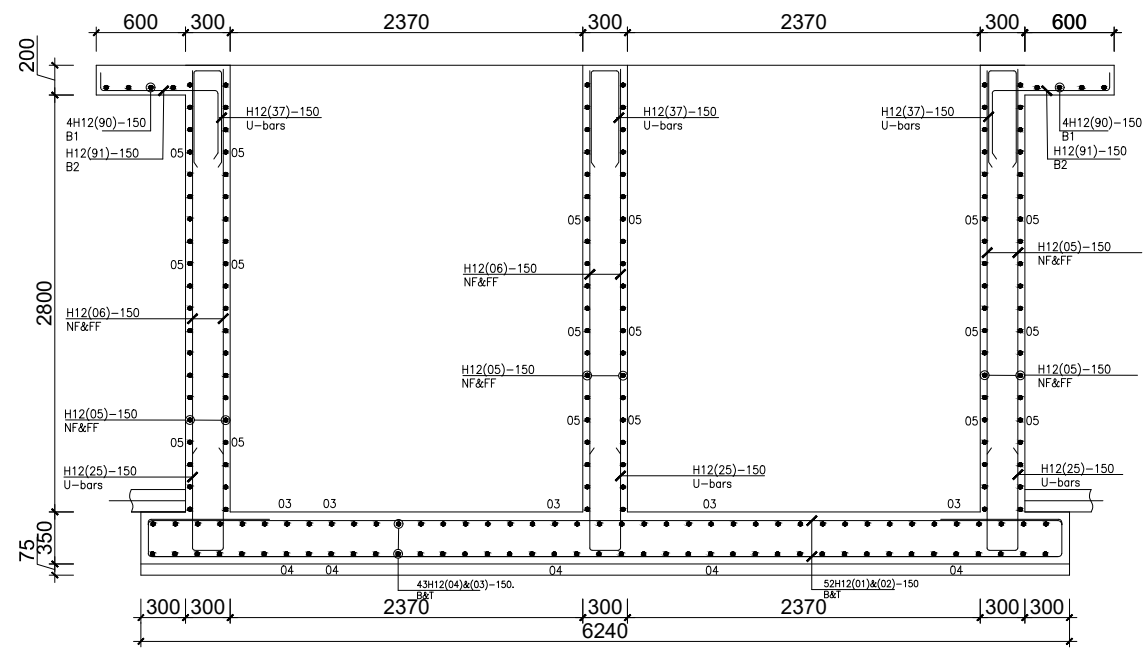
2 of 4



FOUNDATION LAYOUT.  
SCALE 1:25



RC Detail 2  
SCALE 1:20



SECTION C-C  
SCALE 1:25

1. This drawing shall be read in conjunction with all relevant drawings.
2. Concrete mixes to BS8500
  - a. Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - b. Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
3. Reinforcement
  - a. High tensile bars to be ribbed cold formed bars to B.S. 4461
  - b. Mild steel to be round bars to B.S. 4449
  - c. Mesh reinforcement to comply with requirement of B.S. 4483
4. Minimum cover to all steel 50.
5. THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

1. All vertical walls to be cast at once
2. Approved stopper water bar to be installed in all joints as directed by the Engineer.
3. Contractor to use non recoverable ties for tying formwork
4. Contractor to submit methodology for Construction before commencing work.
5. All Pipes going through walls to have paddle flange
6. Diameter of pipes to first be confirmed by M&E before concreting.
7. All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :

**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
In Association with

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**FLOCCULATOR**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

FEBRUARY 2023

DRG. No.:

AR/WSASS/EN/STR/005

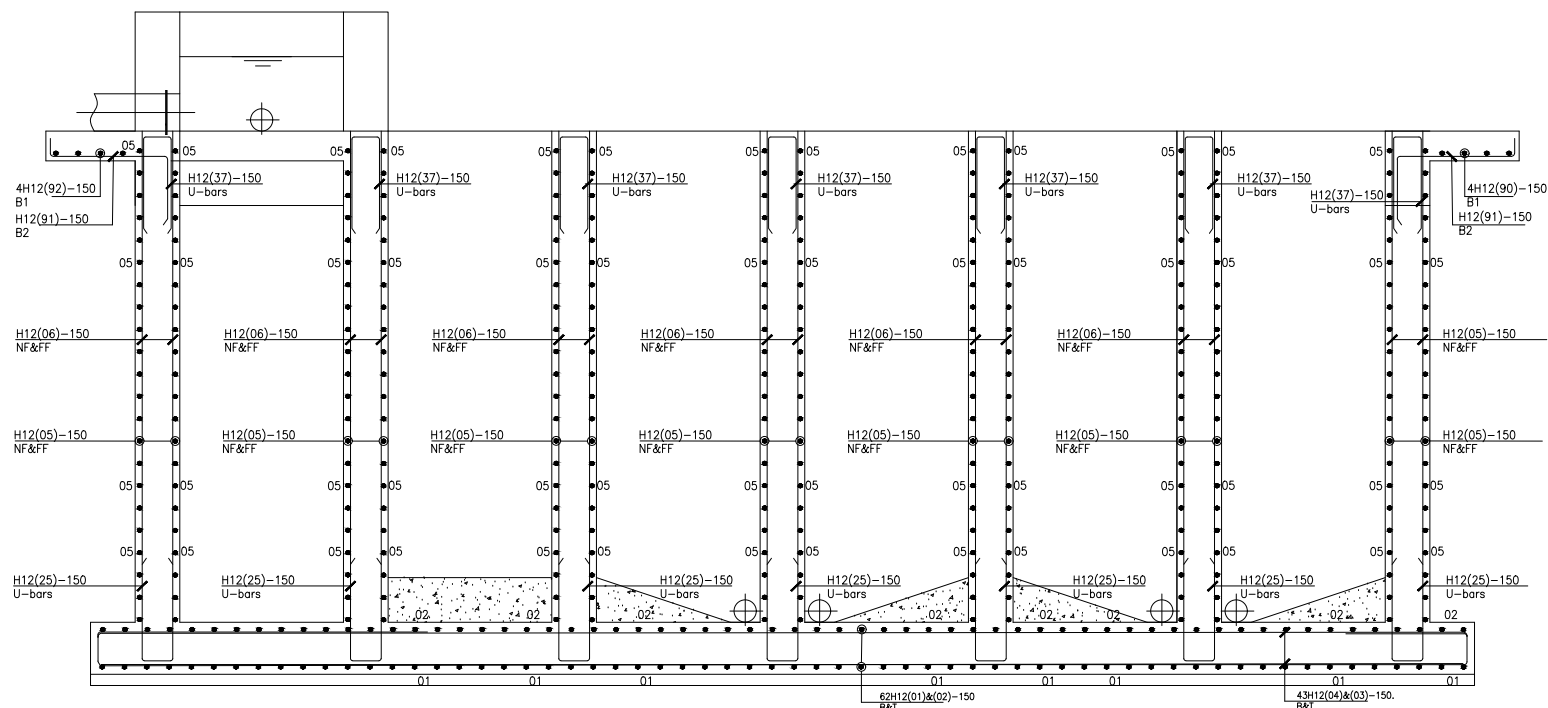
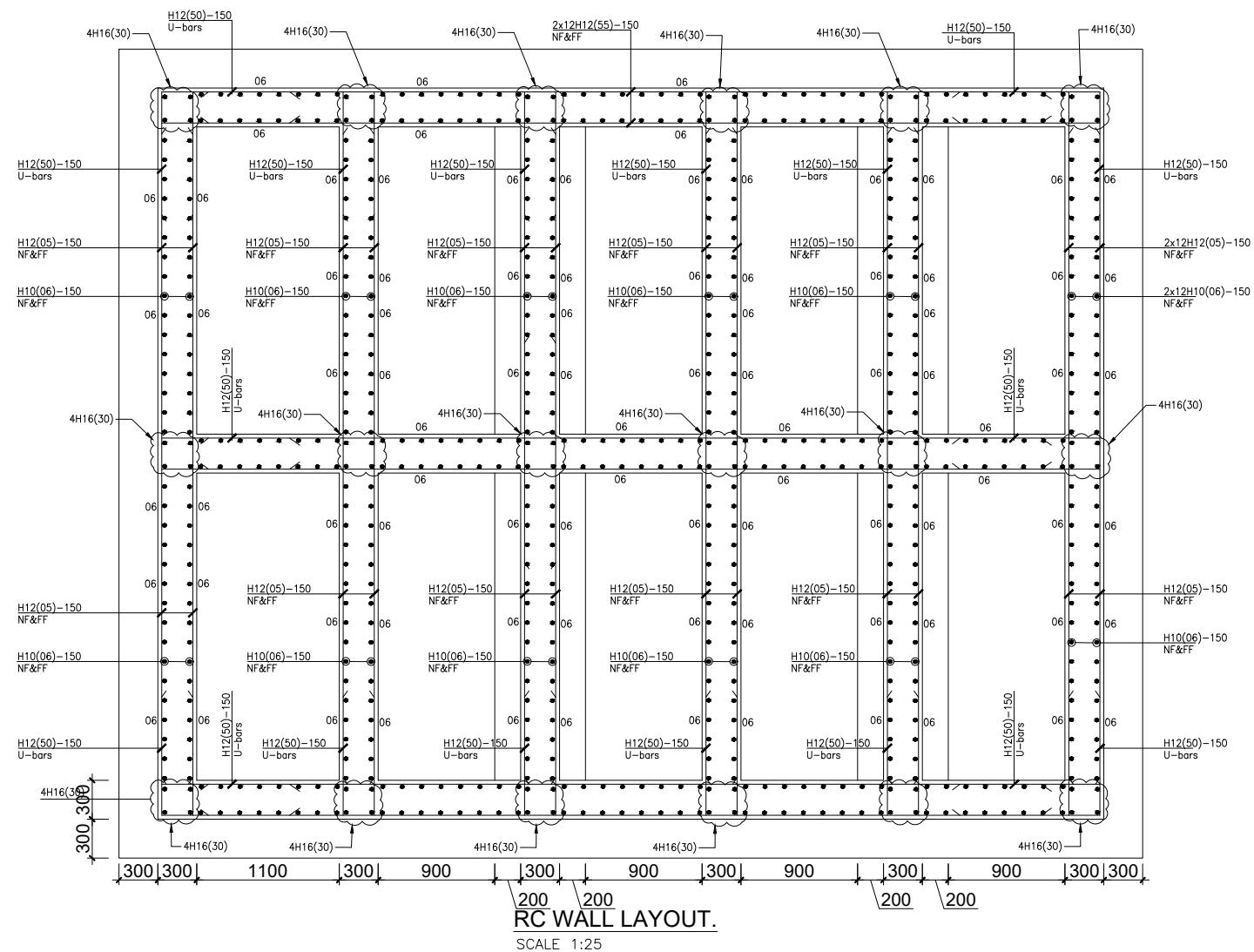
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As shown

Sheet No.:

3 of 4





RC SECTION A-A  
SCALE 1:25

1. This drawing shall be read in conjunction with all relevant drawings.
2. Concrete mixes to BS8500
  - a. Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - b. Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
3. Reinforcement
  - a. High tensile bars to be ribbed cold formed bars to B.S. 4461
  - b. Mild steel to be round bars to B.S. 4449
  - c. Mesh reinforcement to comply with requirement of B.S. 4483
4. Minimum cover to all steel 50.
5. THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

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5. All Pipes going through walls to have paddle flange
6. Diameter of pipes to first be confirmed by M&E before concreting.
7. All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



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**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :

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CONSULTING ENGINEERS  
In Association with

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allainceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**FLOCCULATOR**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date: FEBRUARY 2023

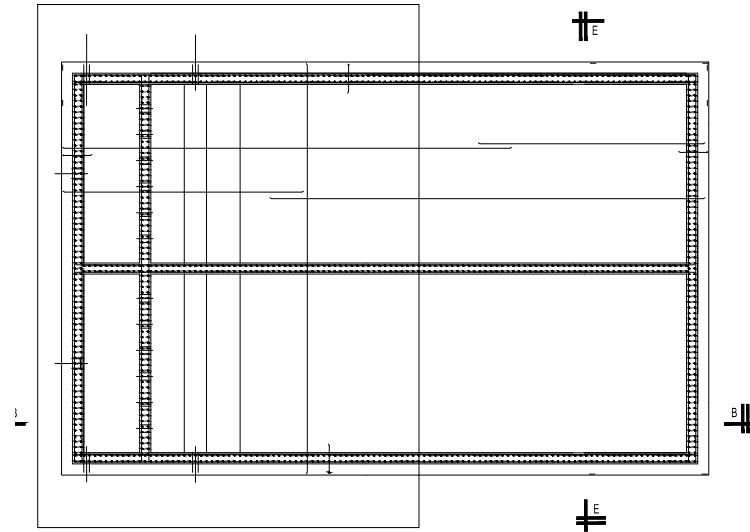
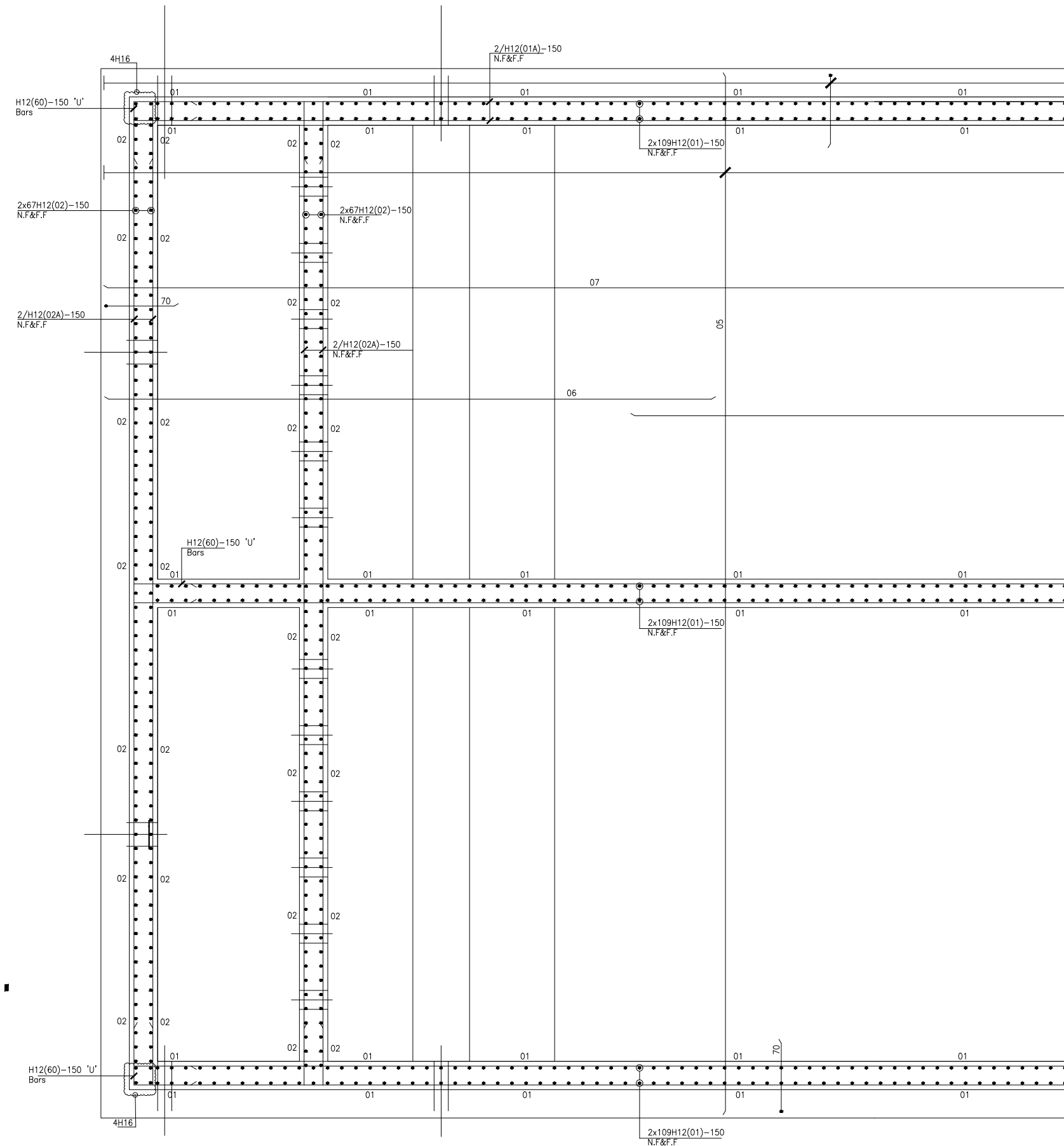
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Sheet No.: 4 of 4

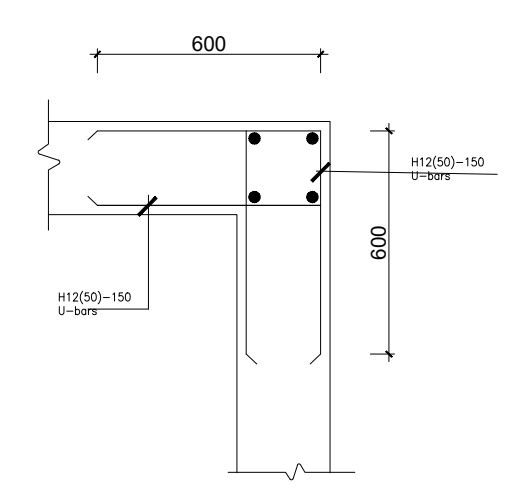
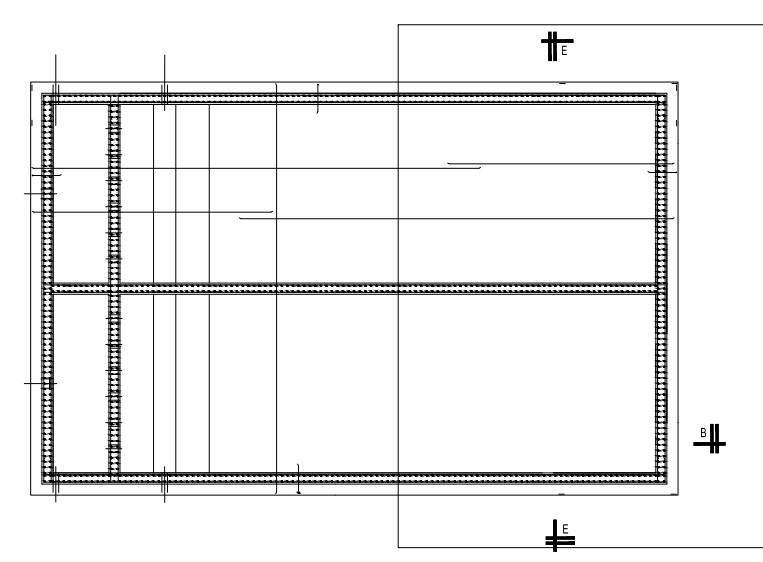
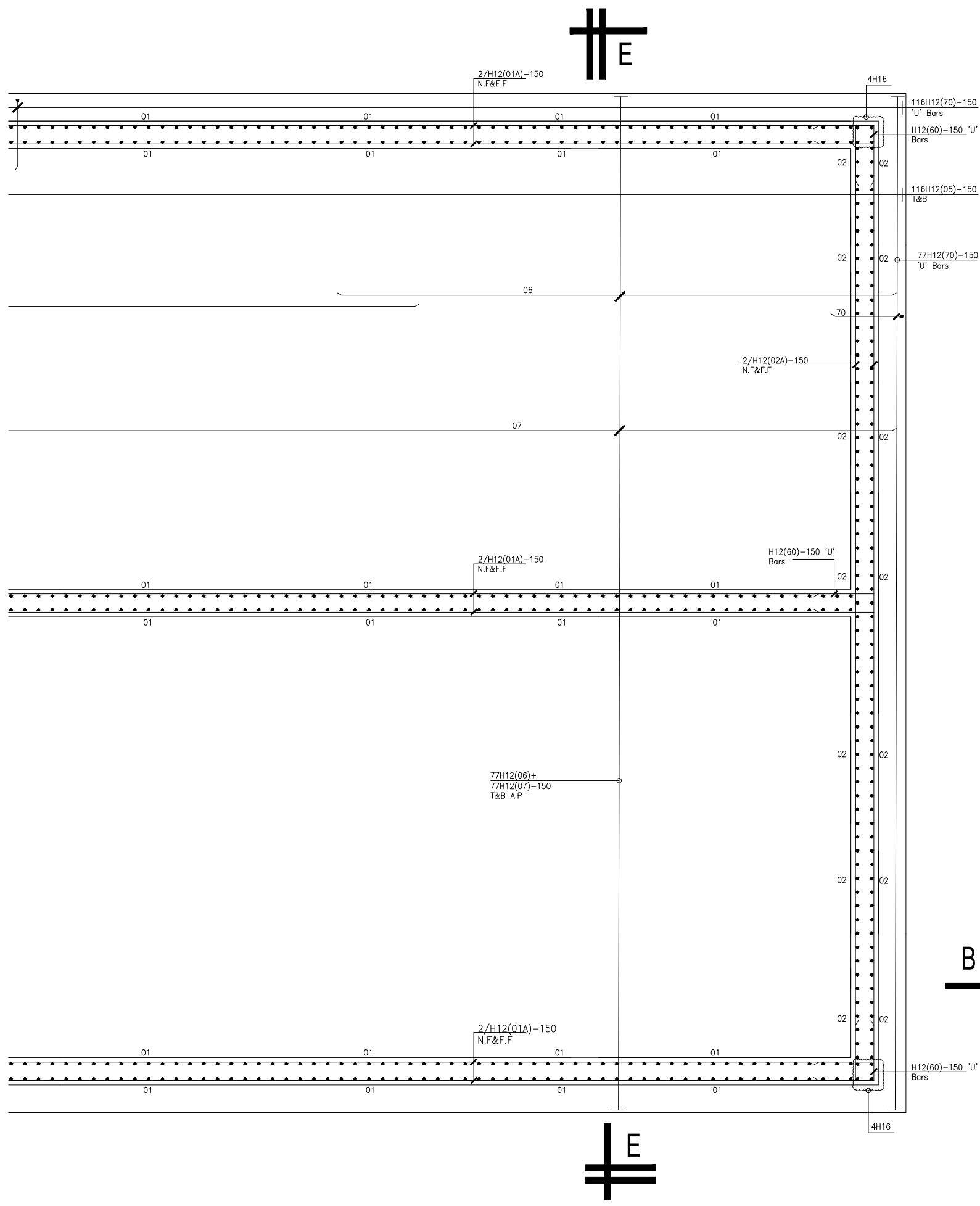


Surveyed by: R.K	
Drawn by: K..L.W	
Designed by: A.B	
Checked by:	
A.B	
Date: FEBRUARY 2023	
DRG. No.: AR/WSASS/EN/STR/006	
Scale: As shown	Sheet No.: 1 of 5



DRAWING CONTINUED TO SHEET 3

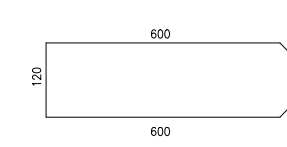
CLIENT :		
 THE REPUBLIC OF UGANDA MINISTRY OF WATER AND ENVIRONMENT DIRECTORATE OF WATER DEVELOPMENT		
CONSULTANT :		
 <b>ALLIANCE CONSULTANTS LTD</b> CONSULTING ENGINEERS <i>In Association with</i>  <b>Infra-Consult Ltd</b> P.O.BOX 33975 KAMPALA Email: allainceconsultantsltd@gmail.com		
PROJECT :		
<b>ALA-ORA WATER SUPPLY AND SANITATION SYSTEM</b>		
<b>ENYAU WATER SUPPLY AND SANITATION SYSTEM</b>		
REVISIONS :		
No	Date	Description
DRAWING TITLE :		
<b>SEDIMENTATION TANK</b>		
Surveyed by: R.K		
Drawn by: K.L.W		
Designed by: A.B		
Checked by: A.B		
Date: FEBRUARY 2023		
DRG. No.: AR/WSASS/EN/STR/006		
Scale: As shown	Sheet No.: 2 of 5	



TYPICAL WALL END DETAIL

FOR WALL

Scale 1:10



DETAIL OF BAR MARK 50

Scale 1:10

CLIENT :  
  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :  
 **ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
*In Association with*  
 **Infra-Consult Ltd**  
P.O.BOX 33975 KAMPALA  
Email: allainceconsultantsltd@gmail.com

PROJECT :  
**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

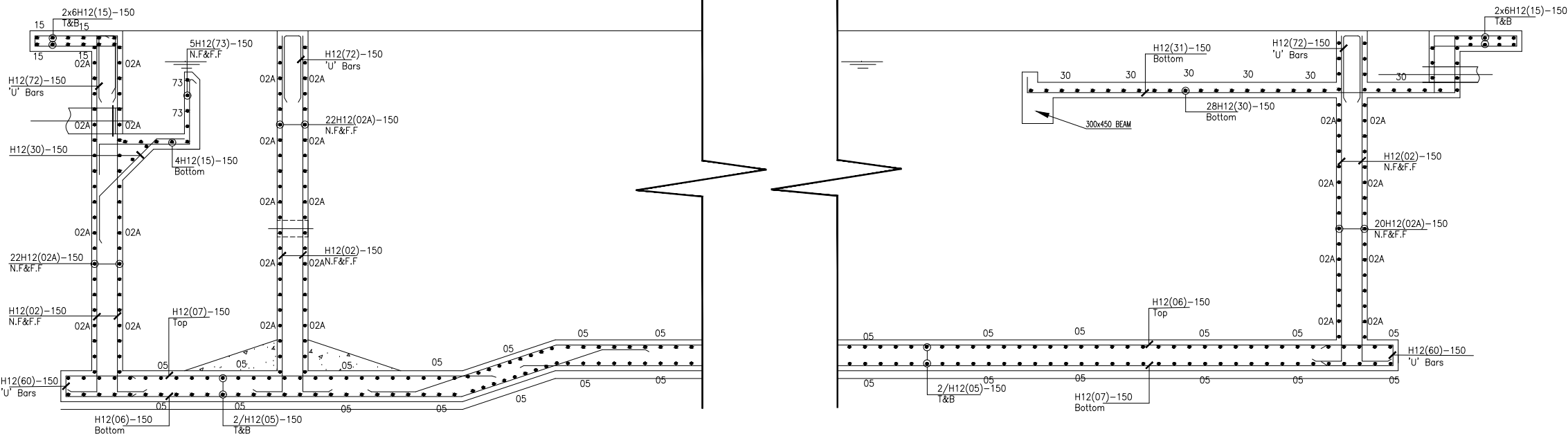
REVISIONS :

No	Date	Description

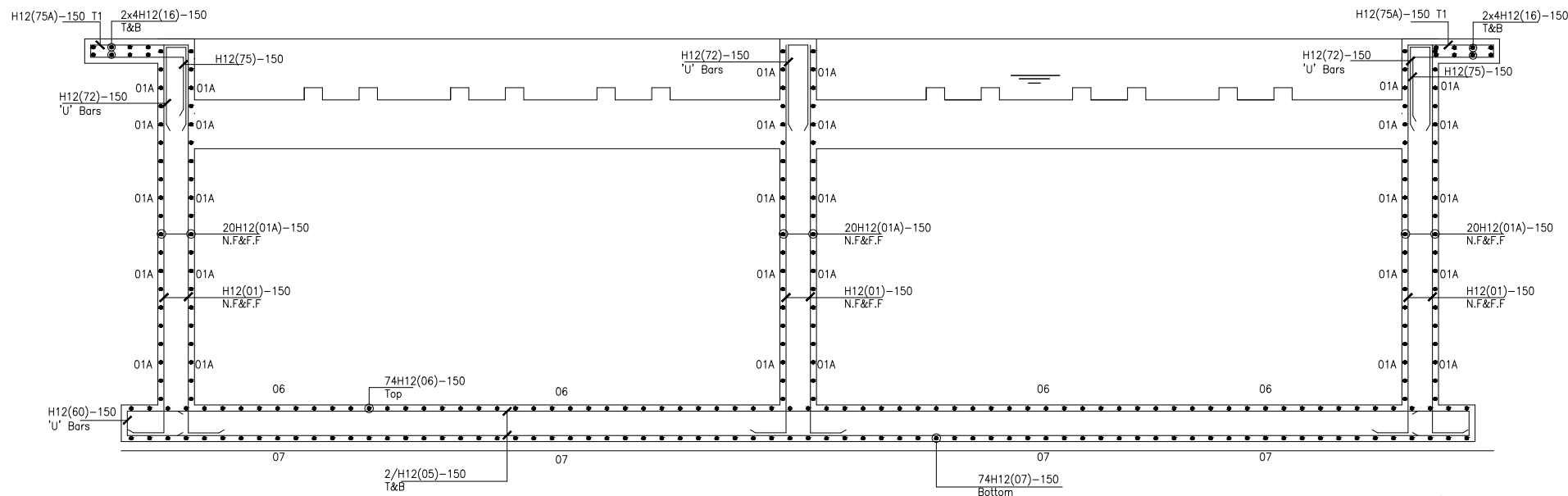
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**SEDIMENTATION TANK**

Surveyed by: R.K  
Drawn by: K.L.W  
Designed by: A.B  
Checked by: A.B  
Date: FEBRUARY 2023  
DRG. No.: AR/WSASS/EN/STR/006  
Scale: As shown Sheet No.: 3 of 5

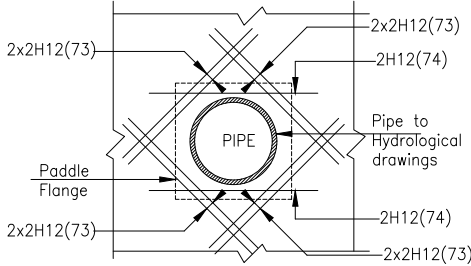
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Drawn by: K.L.W	
Designed by: A.B	
Checked by:	
A.B	
Date: FEBRUARY 2023	
DRG. No.: AR/WSASS/EN/STR/006	
Scale: As shown	Sheet No.: 4 of 5



SECTION B-B  
SCALE 1:25



SECTION E-E  
SCALE 1:25



DETAIL AT PIPE OPENING  
SCALE 1:20

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
  - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
- Reinforcement
  - High tensile bars to be ribbed cold formed bars to B.S. 4461
  - Mild steel to be round bars to B.S. 4449
  - Mesh reinforcement to comply with requirement of B.S. 4483
- Minimum cover to all steel 50.
- THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

ADDITIONAL NOTES

- All vertical walls to be cast at once
- Approved stopper water bar to be installed in all joints as directed by the Engineer.
- Contractor to use non recoverable ties for tying formwork
- Contractor to submit methodology for Construction before commencing work.
- All Pipes going through walls to have paddle flange
- Diameter of pipes to first be confirmed by M&E before concreting.
- All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :

**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
*In Association with*

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allainceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**SEDIMENTATION TANK**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

FEBRUARY 2023

DRG. No.:

AR/WSASS/EN/STR/006

Scale:

As shown

Sheet No.:

5 of 5





1. All vertical walls to be cast at once
2. Approved stopper water bar to be installed in all joints as directed by the Engineer.
3. Contractor to use non recoverable ties for tying formwork
4. Contractor to submit methodology for Construction before commencing work.
5. All pipes going through walls to have potted flange.
6. Diameter of pipes to first be confirmed by M&E before concreting.
7. All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT  
DIRECTORATE OF WATER DEVELOPMENT

P.O.BOX 33975 KAMPALA  
Email: allainceconsultantsltd@gmail.com

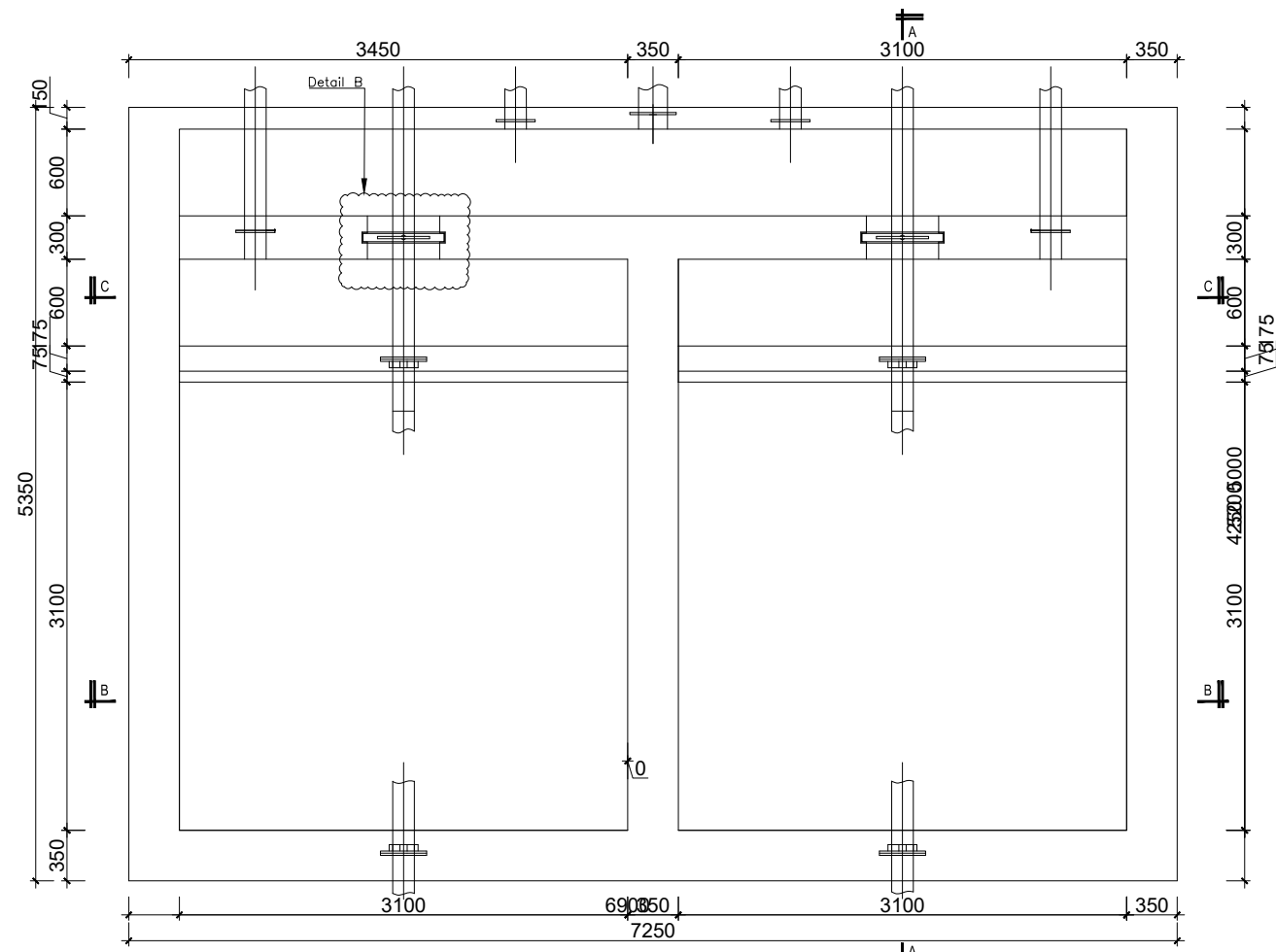
## ALA-ORA WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :		
No	Date	Description

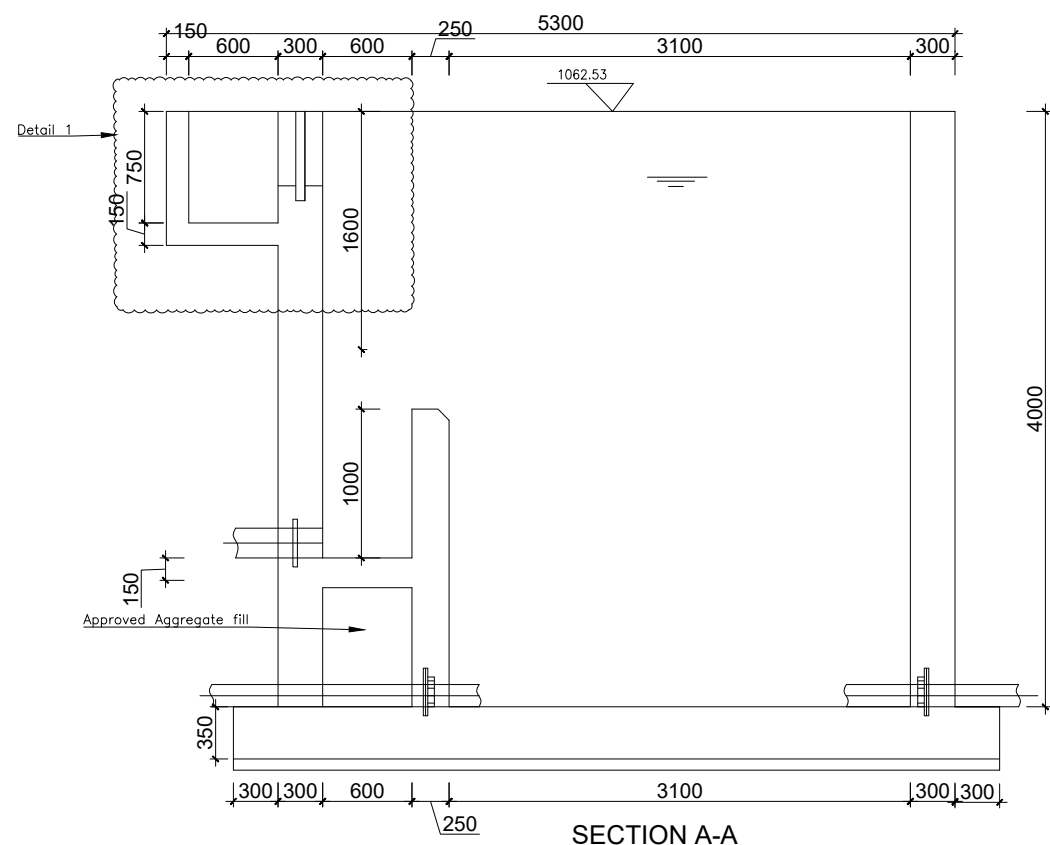
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A.B

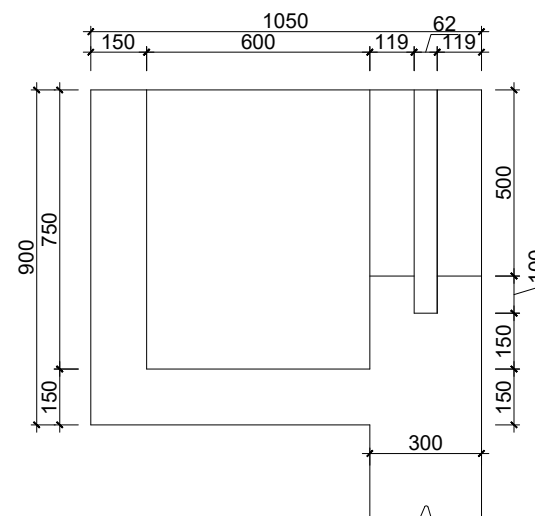
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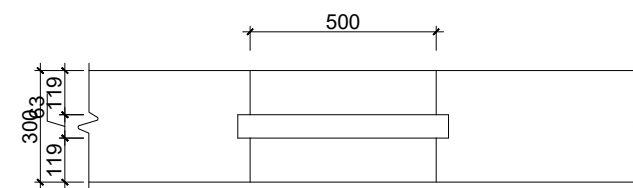
TOP LAYOUT AT 1062.53m  
SCALE 1:25



SECTION A-A



Detail 2  
SCALE 1:10



Detail B  
SCALE 1:10

1. This drawing shall be read in conjunction with all relevant drawings.
2. Concrete mixes to BS8500
  - a. Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - b. Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
3. Reinforcement
  - a. High tensile bars to be ribbed cold formed bars to B.S. 4461
  - b. Mild steel to be round bars to B.S. 4449
  - c. Mesh reinforcement to comply with requirement of B.S. 4483
4. Minimum cover to all steel 50.
5. THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

1. All vertical walls to be cast at once
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5. All Pipes going through walls to have paddle flange
6. Diameter of pipes to first be confirmed by M&E before concreting.
7. All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS

*In Association with*

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**FILTERS**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

**FEBRUARY 2023**

DRG. No.:

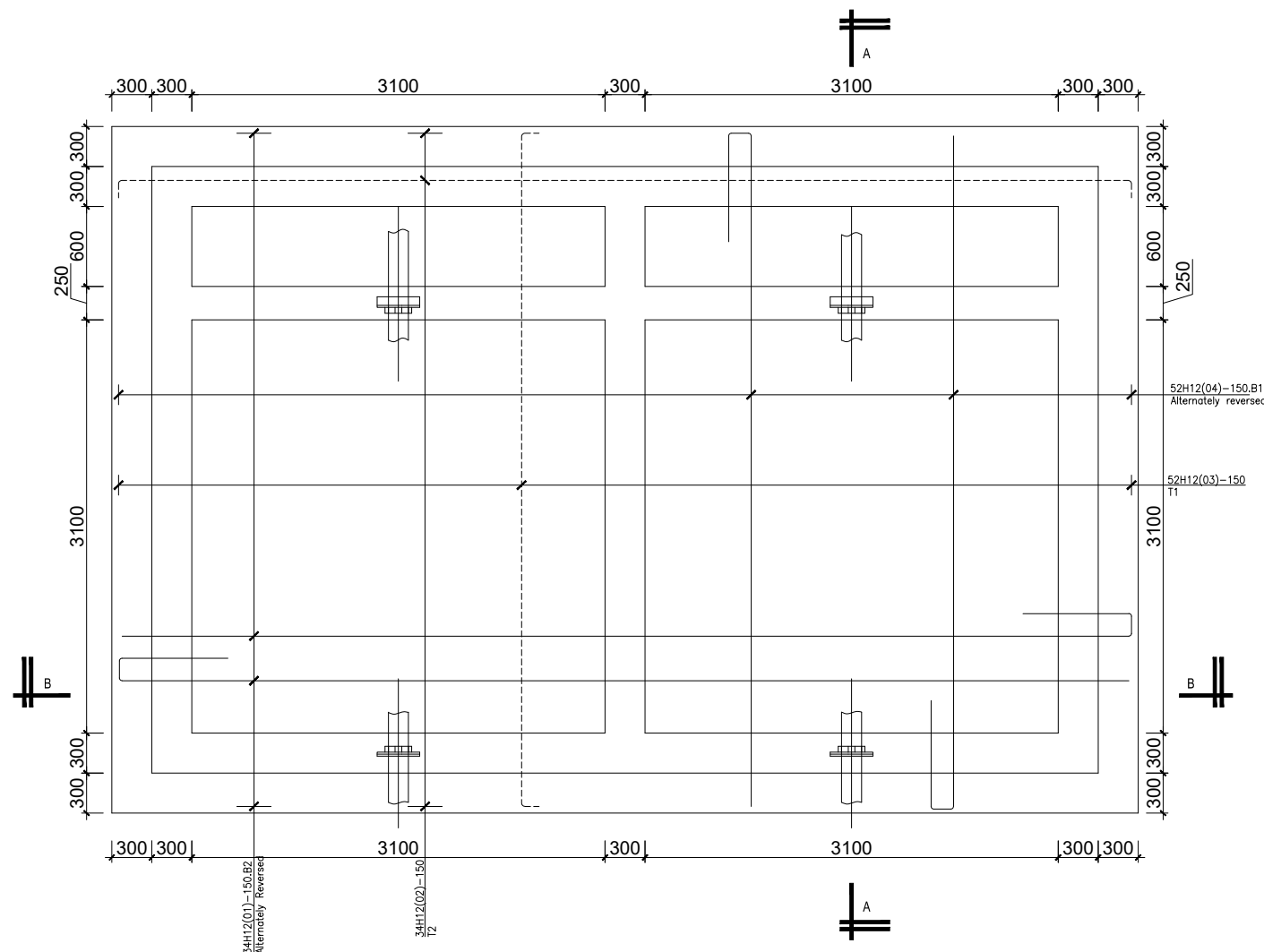
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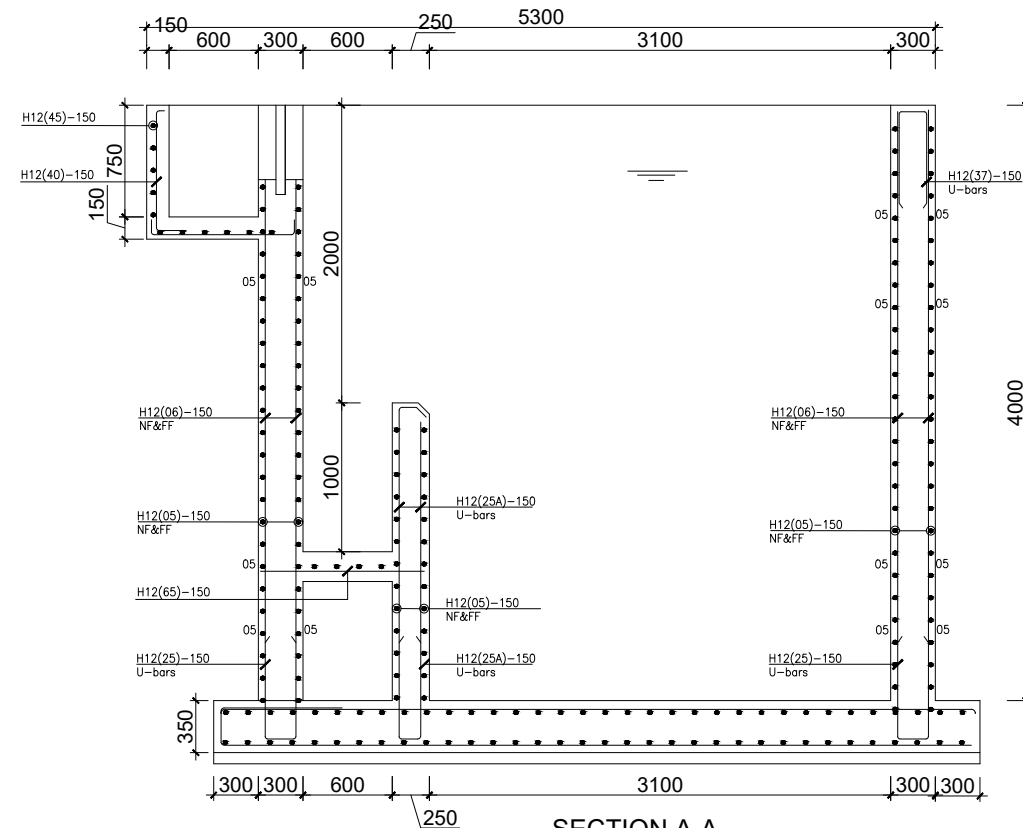
As shown

Sheet No.:

2 of 4



RC FOUNDATION LAYOUT.  
SCALE 1:25



SECTION A-A  
SCALE 1:25

1. This drawing shall be read in conjunction with all relevant drawings.
2. Concrete mixes to BS8500
  - a. Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
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CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS

*In Association with*



**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**FILTERS**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

**FEBRUARY 2023**

DRG. No.:

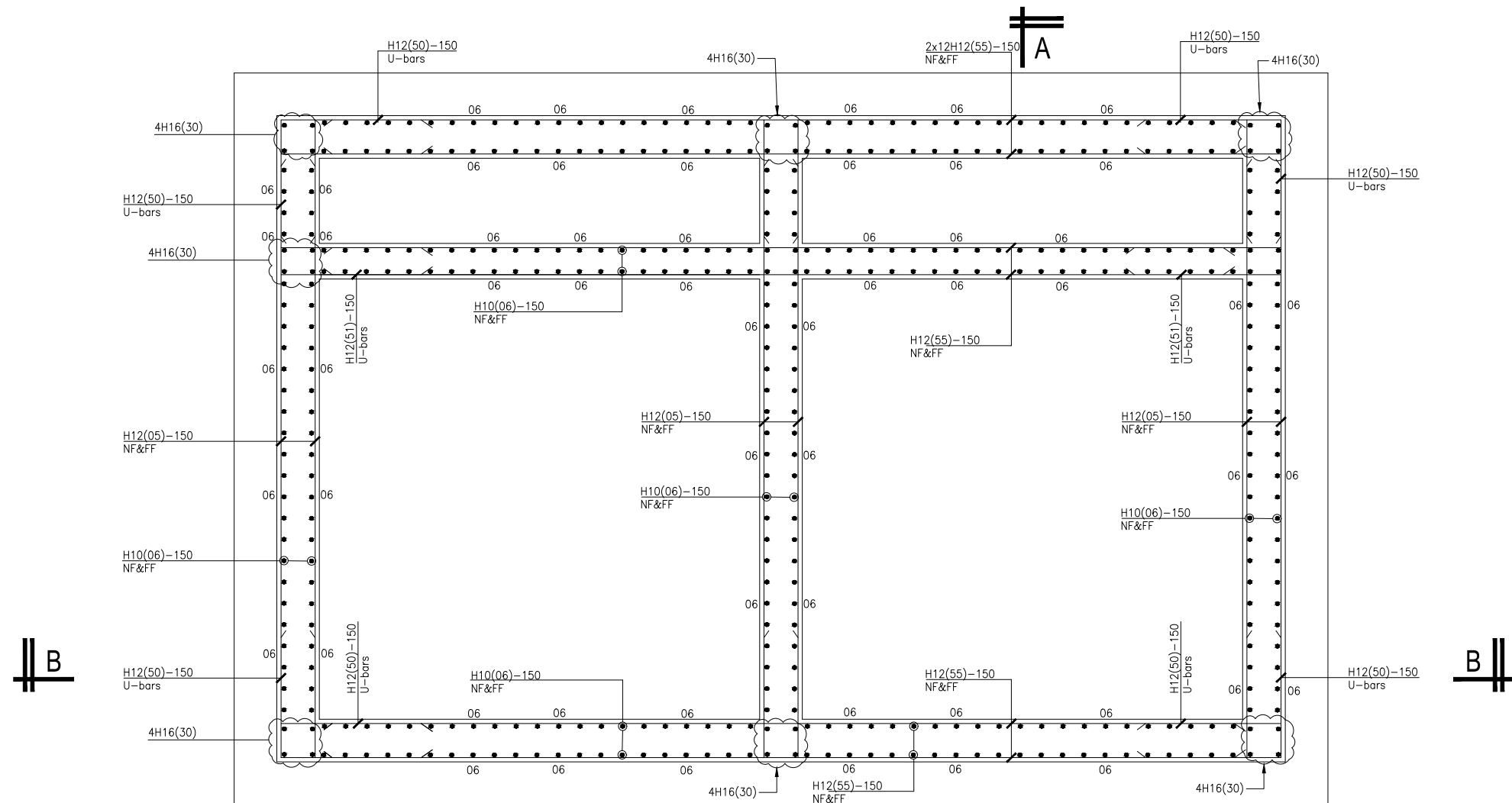
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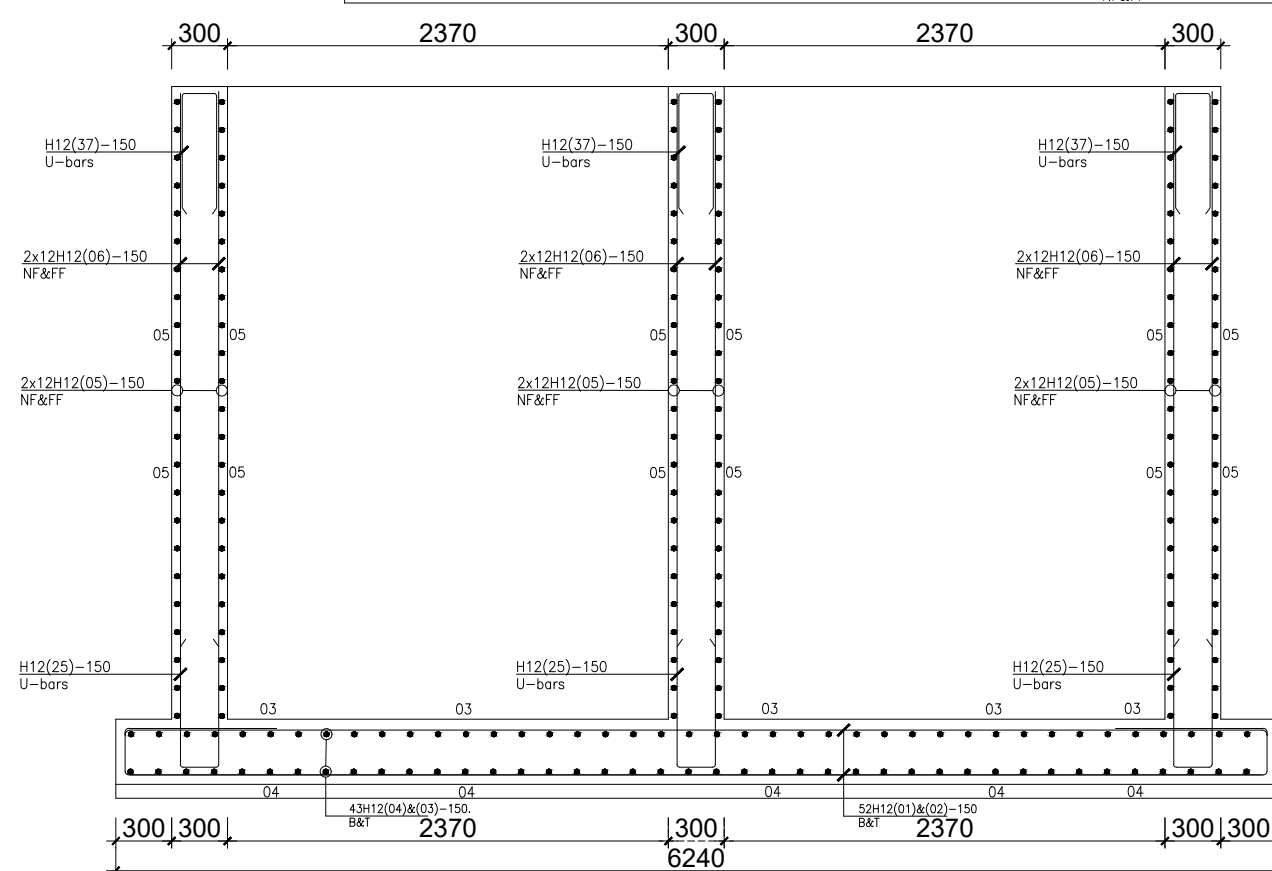
Sheet No.:

3 of 4



RC WALL LAYOUT.

SCALE 1:20



RC SECTION C-C

SCALE 1:20

1. This drawing shall be read in conjunction with all relevant drawings.
2. Concrete mixes to BS8500
  - a. Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - b. Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
3. Reinforcement
  - a. High tensile bars to be ribbed cold formed bars to B.S. 4461
  - b. Mild steel to be round bars to B.S. 4449
  - c. Mesh reinforcement to comply with requirement of B.S. 4483
4. Minimum cover to all steel 50.
5. THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

ADDITIONAL NOTES

1. All vertical walls to be cast at once
2. Approved stopper water bar to be installed in all joints as directed by the Engineer.
3. Contractor to use non recoverable ties for tying formwork
4. Contractor to submit methodology for Construction before commencing work.
5. All Pipes going through walls to have paddle flange
6. Diameter of pipes to first be confirmed by M&E before concreting.
7. All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS

In Association with



**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**FILTERS**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

FEBRUARY 2023

DRG. No.:

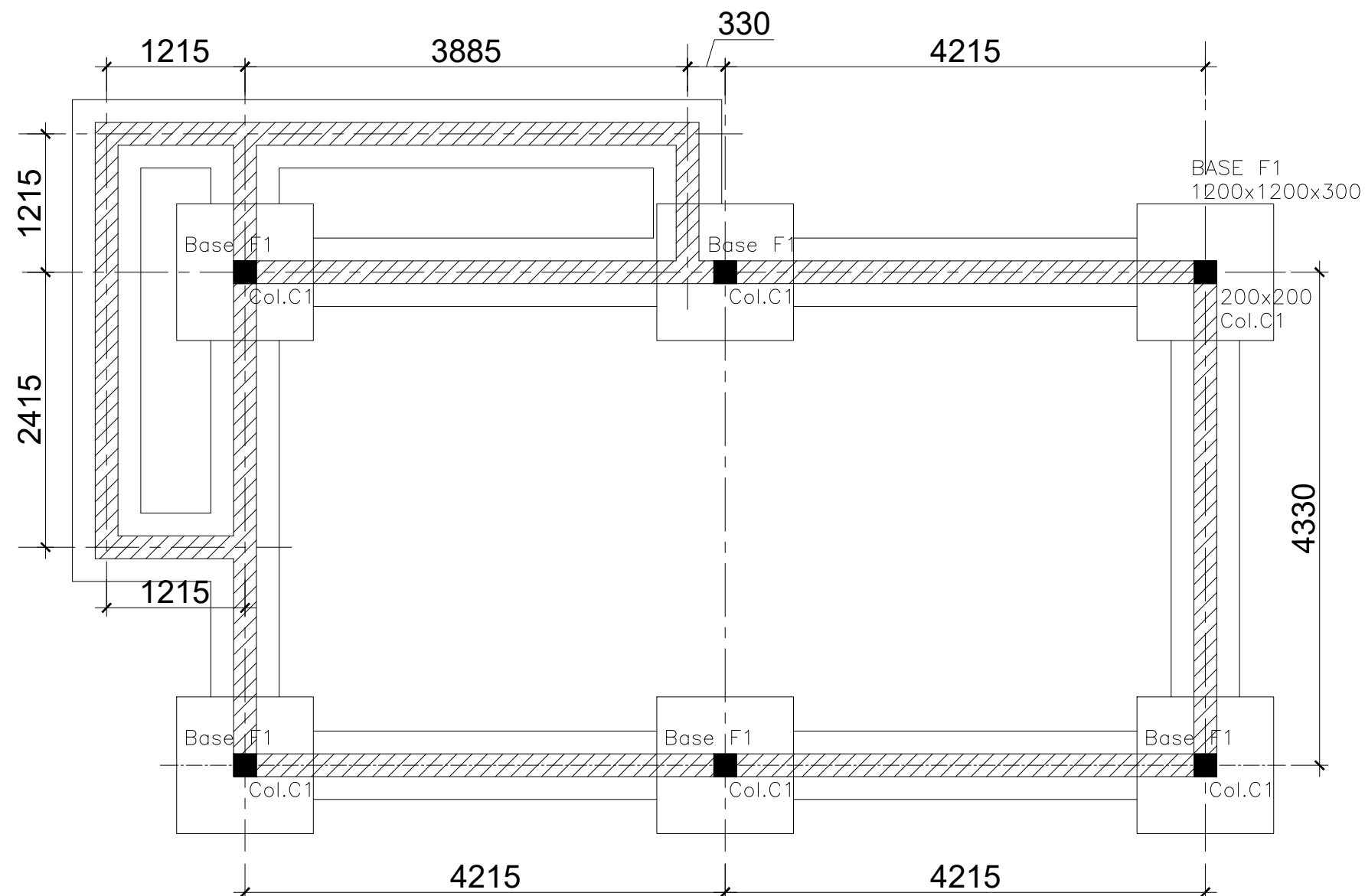
AR/WSASS/EN/STR/007

Scale:

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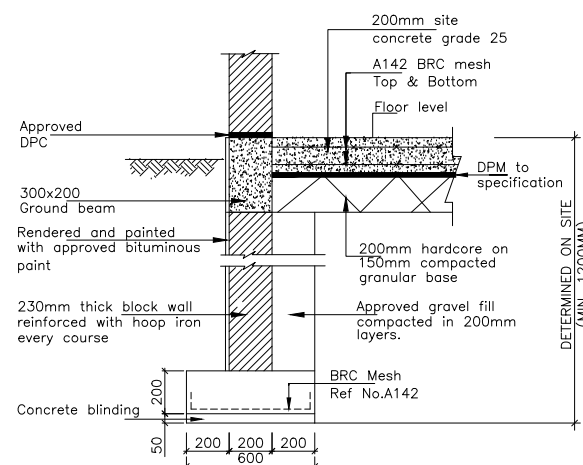
Sheet No.:

4 of 4



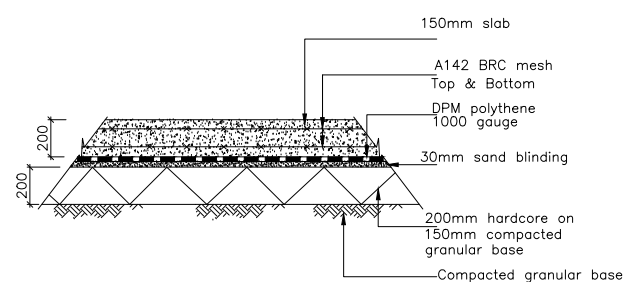
## FOUNDATION LAYOUT

SCALE 1:50



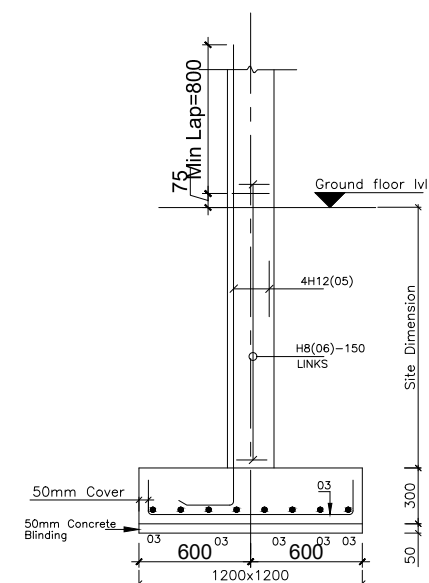
SECTION THROUGH WALL FOOTING

Scale 1:20



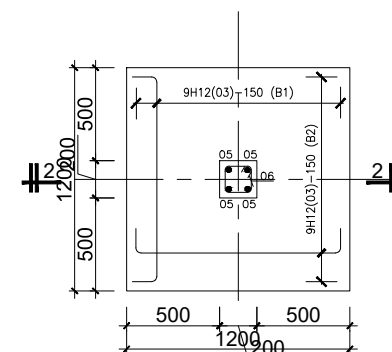
### TYPICAL SECTION THROUGH THE GROUND SLAB

SCALE 1:20



SECTION 2-2

SCALE 1:20



BASE TYPE F1 (6No.) [1200x1200x400]

SCALE 1:20

## GENERAL NOTES

1. This drawing shall be read in conjunction with all relevant drawings.
2. Concrete mixes to BS5800
  - a. Mass concrete to have a minimum works cube strength of  $15\text{N/mm}^2$  and at 28 days with 20 mm maximum aggregate size
  - b. Reinforced concrete to have works cube strength of  $30\text{N/mm}^2$  cylinder strength of  $30\text{N/mm}^2$  with 20mm maximum aggregate size UNLESS OTHERWISE STATED
3. Reinforcement
  - a. High tensile bars to be ribbed cold formed bars to B.S. 4461
  - b. Mild steel to be round bars to B.S. 4449
  - c. Mesh reinforcement to comply with requirement of B.S. 4483
4. Minimum cover to all steel 50.
5. THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

## ADDITIONAL NOTES

1. All vertical walls to be cast at once
2. Approved stopper water bar to be installed in all joints as directed by the Engineer.
3. Contractor to use non recoverable ties for tying formwork
4. Contractor to submit methodology for Construction before commencing work.
5. All Pipes going through walls to have paddle flange
6. Diameter of pipes to first be confirmed by M&E before concreting.
7. All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS

*In Association with*

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: [allainceconsultantsltd@gmail.com](mailto:allainceconsultantsltd@gmail.com)

PROJECT :

## ALA-ORA WATER SUPPLY AND SANITATION SYSTEM

## ENYAUWATER SUPPLY AND SANITATION SCHEME

## REVISIONS :

REVISIONS :		
No	Date	Description

DRAWING TITLE : **CHLORINE DOSING AND MIXING PLATFORM**

Surveyed by: R.K
------------------

Drawn by:      Luks

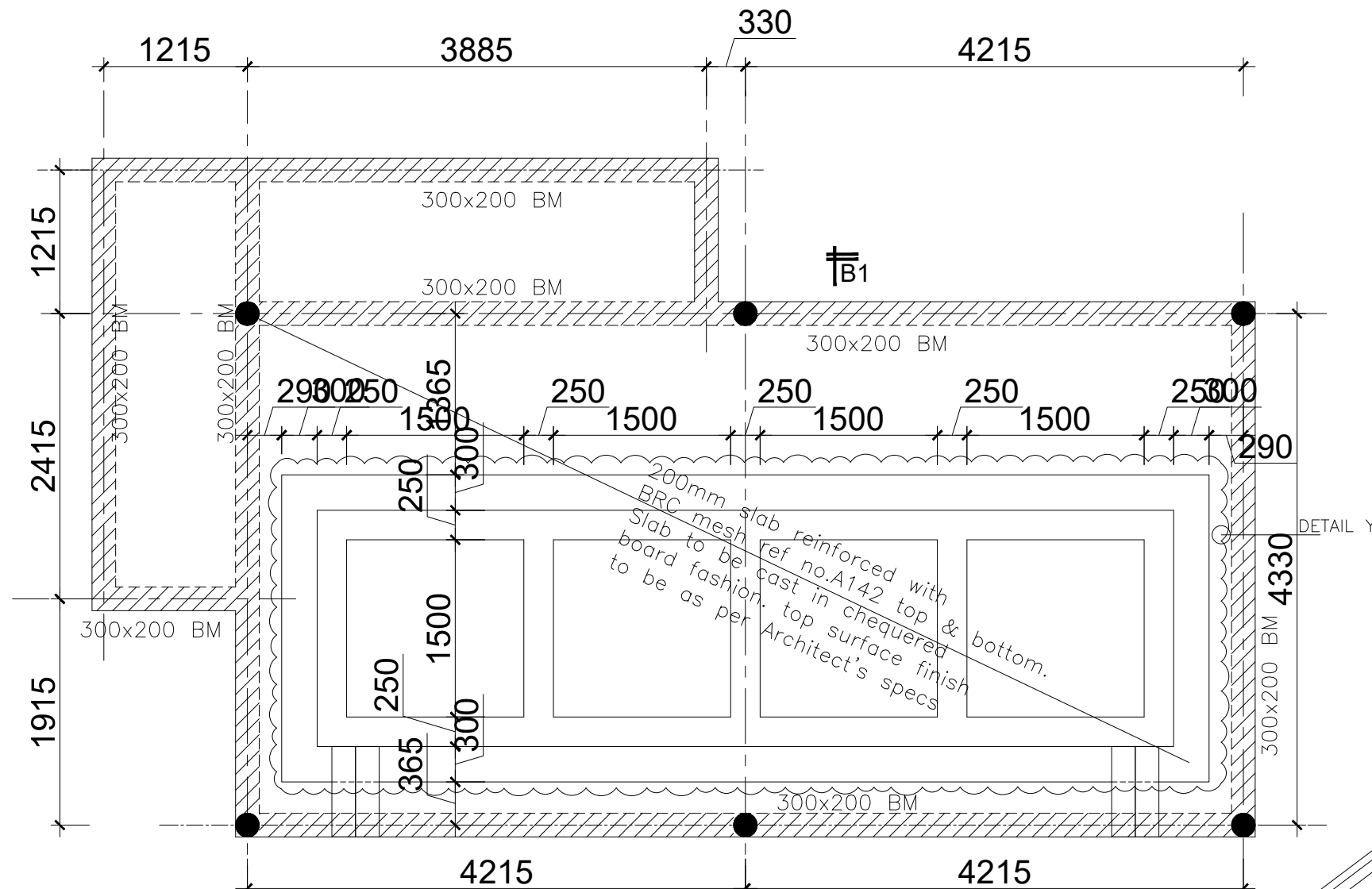
Designed by:	A.B
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Checked by: A.B

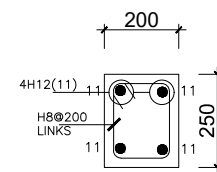
Date: FEBRUARY 2023

DRG. No.: AR/WSASS/EN/STR/008

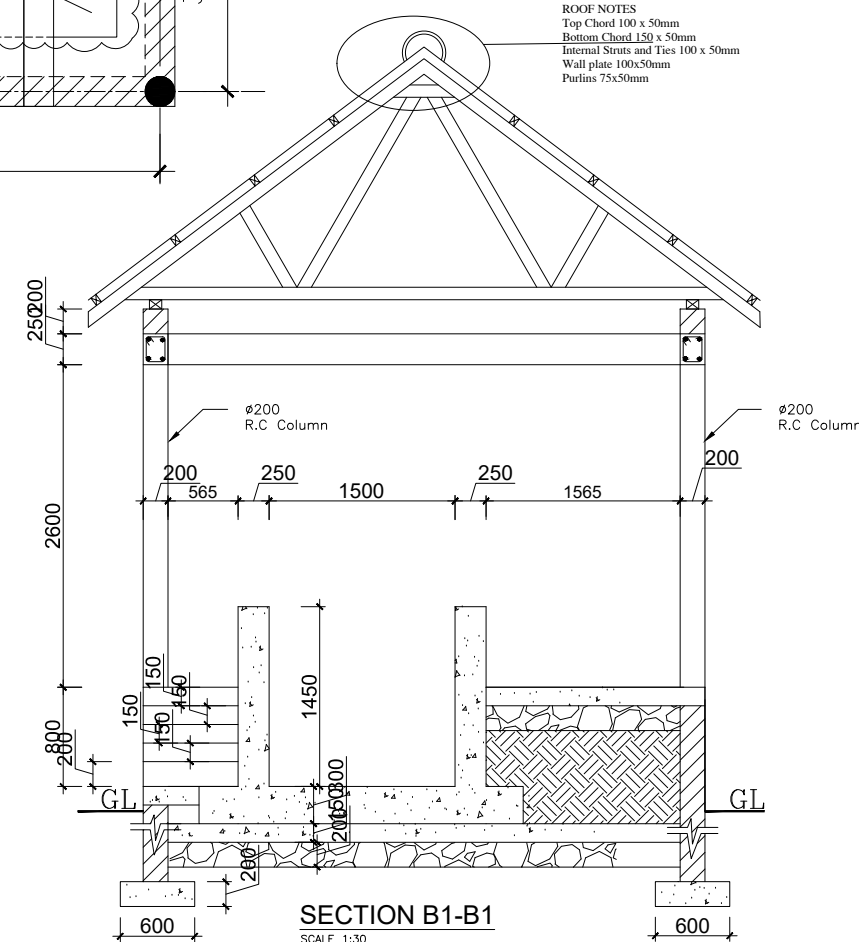
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**GROUND FLOOR LAYOUT**  $\equiv$  B1  
SCALE 1:50



**TYPICAL SECTION THROUGH RING BEAM**  
SCALE 1:10



**SECTION B1-B1**  
SCALE 1:30

#### GENERAL NOTES

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
  - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
- Reinforcement
  - High tensile bars to be ribbed cold formed bars to B.S. 4461
  - Mild steel to be round bars to B.S. 4449
  - Mesh reinforcement to comply with requirement of B.S. 4483
- Minimum cover to all steel 50.
- THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

- All vertical walls to be cast at once
- Approved stopper water bar to be installed in all joints as directed by the Engineer.
- Contractor to use non recoverable ties for tying formwork
- Contractor to submit methodology for Construction before commencing work.
- All Pipes going through walls to have paddle flange
- Diameter of pipes to first be confirmed by M&E before concreting.
- All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :

**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
In Association with

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ENYAUWATER SUPPLY AND SANITATION SCHEME**

REVISIONS :

No	Date	Description

**DRAWING TITLE : CHLORINE DOSING AND MIXING PLATFORM**

Surveyed by: R.K

Drawn by: Luks

Designed by: A.B

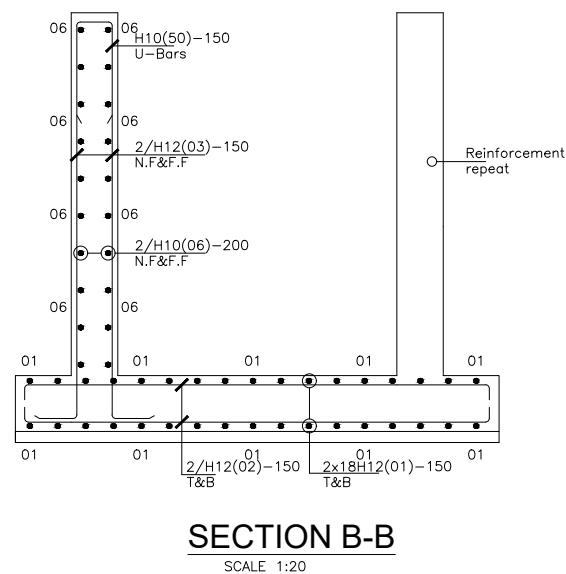
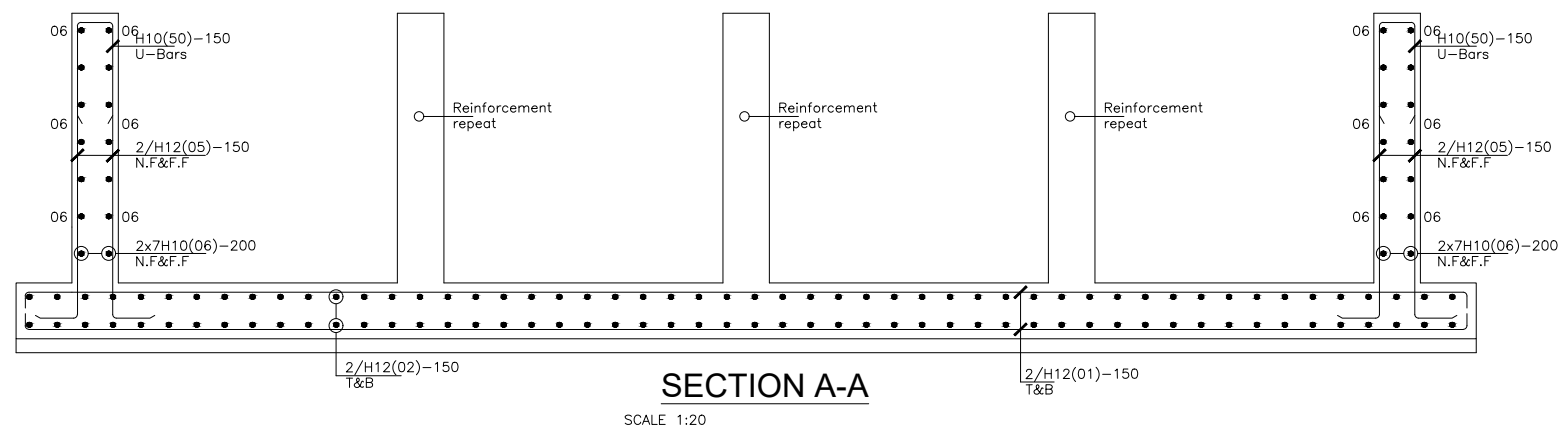
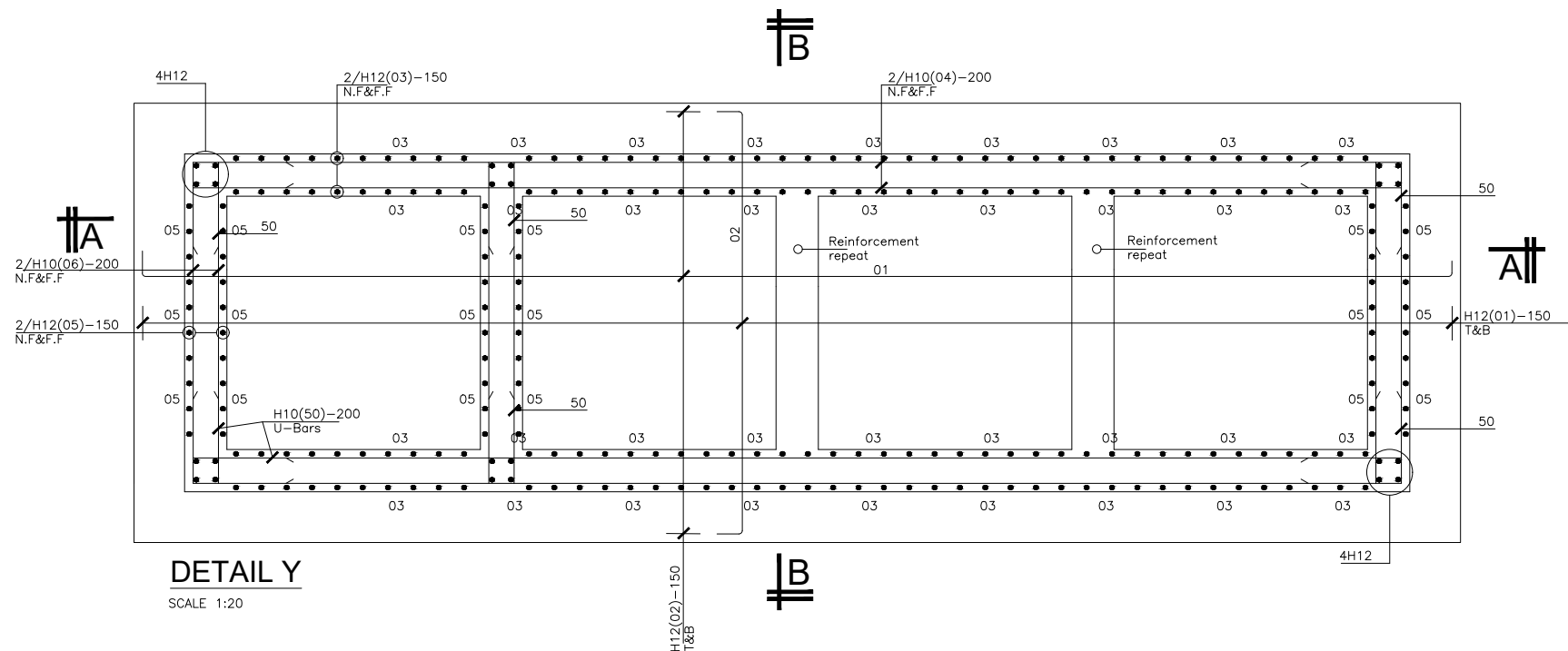
Checked by: A.B

Date: FEBRUARY 2023

DRG. No.: AR/WSASS/EN/STR/008

Scale: Sheet No.: 2 of 3





#### GENERAL NOTES

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
  - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
- Reinforcement
  - High tensile bars to be ribbed cold formed bars to B.S. 4461
  - Mild steel to be round bars to B.S. 4449
  - Mesh reinforcement to comply with requirement of B.S. 4483
- Minimum cover to all steel 50.
- THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

- All vertical walls to be cast at once
- Approved stopper water bar to be installed in all joints as directed by the Engineer.
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CLIENT :



THE REPUBLIC OF UGANDA  
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CONSULTANT :



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CONSULTING ENGINEERS

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**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ENYAUWATER SUPPLY AND SANITATION SCHEME**

REVISIONS :

No	Date	Description

DRAWING TITLE : **CHLORINE DOSING AND MIXING  
PLATFORM**

Surveyed by: R.K

Drawn by: Luks

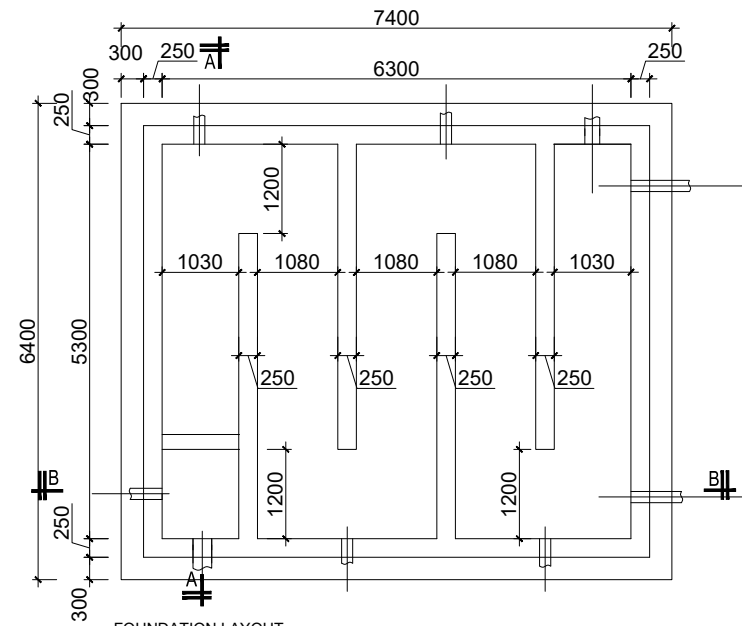
Designed by: A.B

Checked by: A.B

Date: **FEBRUARY 2023**

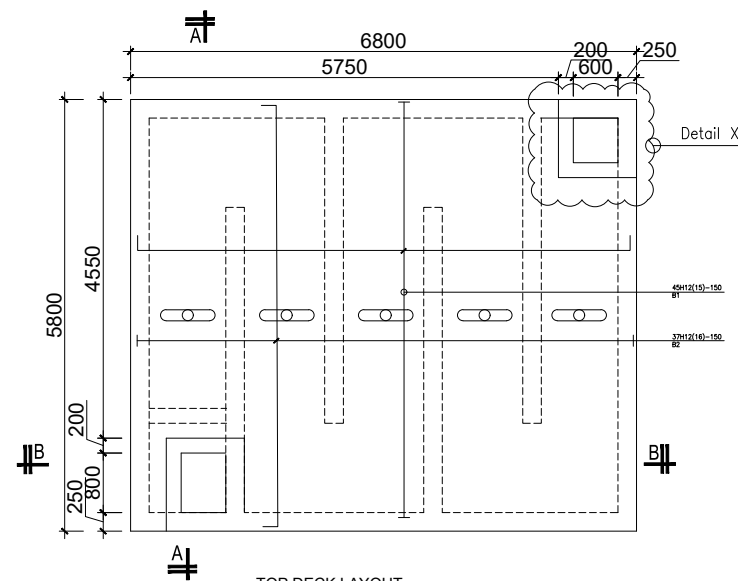
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Scale: Sheet No.: 3 of 3



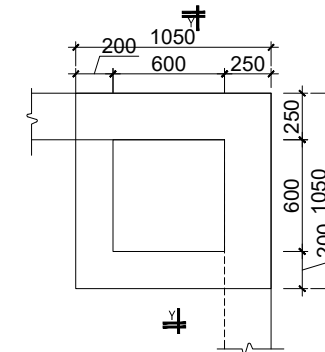
FOUNDATION LAYOUT

SCALE 1:50



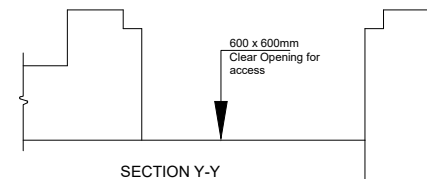
TOP DECK LAYOUT

SCALE 1:50



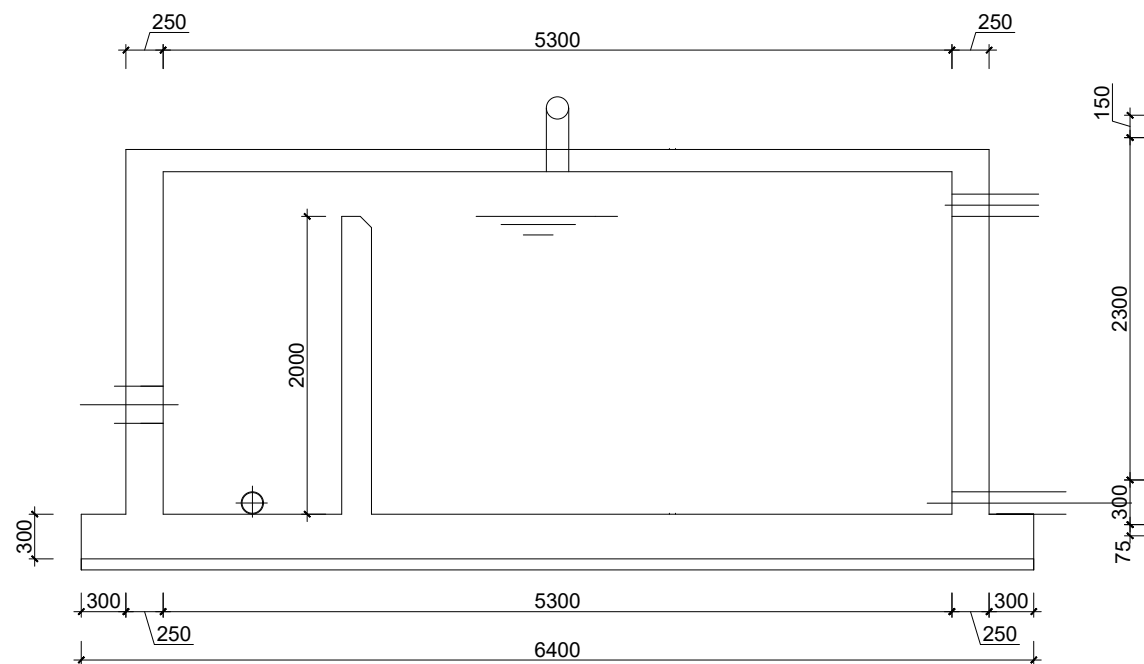
TOP DECK LAYOUT

SCALE 1:20



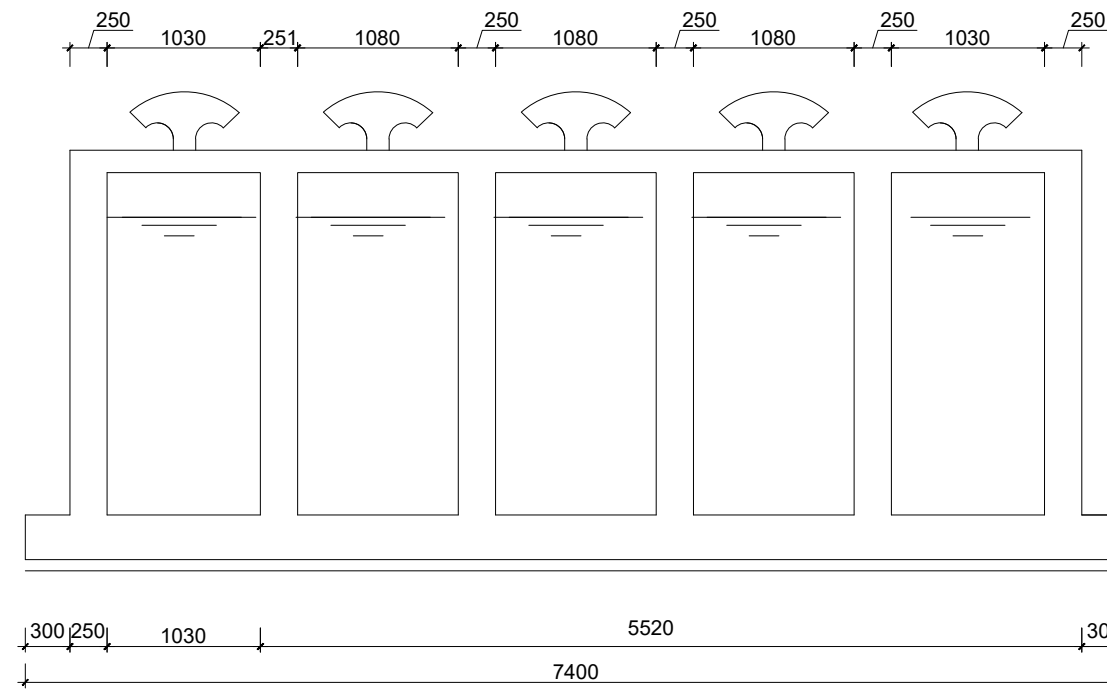
SECTION Y-Y

SCALE 1:25



SECTION A-A

SCALE 1:25



SECTION B-B

SCALE 1:25

#### GENERAL NOTES

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
  - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
- Reinforcement
  - High tensile bars to be ribbed cold formed bars to B.S. 4461
  - Mild steel to be round bars to B.S. 4449
  - Mesh reinforcement to comply with requirement of B.S. 4483
- Minimum cover to all steel 50.
- THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

- All vertical walls to be cast at once
- Approved stopper water bar to be installed in all joints as directed by the Engineer.
- Contractor to use non recoverable ties for tying formwork
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- All Pipes going through walls to have paddle flange
- Diameter of pipes to first be confirmed by M&E before concreting.
- All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
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DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS

In Association with



**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**CLEAR WATER WELL**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

**FEBRUARY 2023**

DRG. No.:

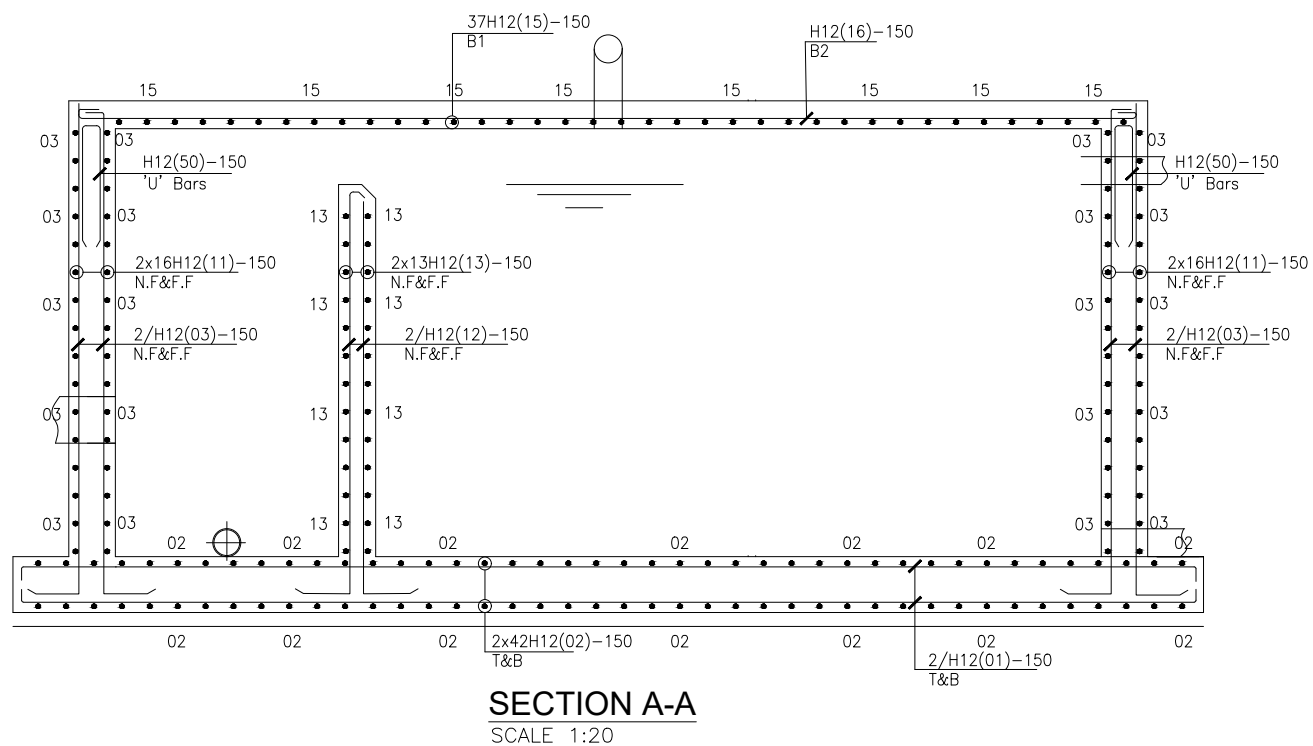
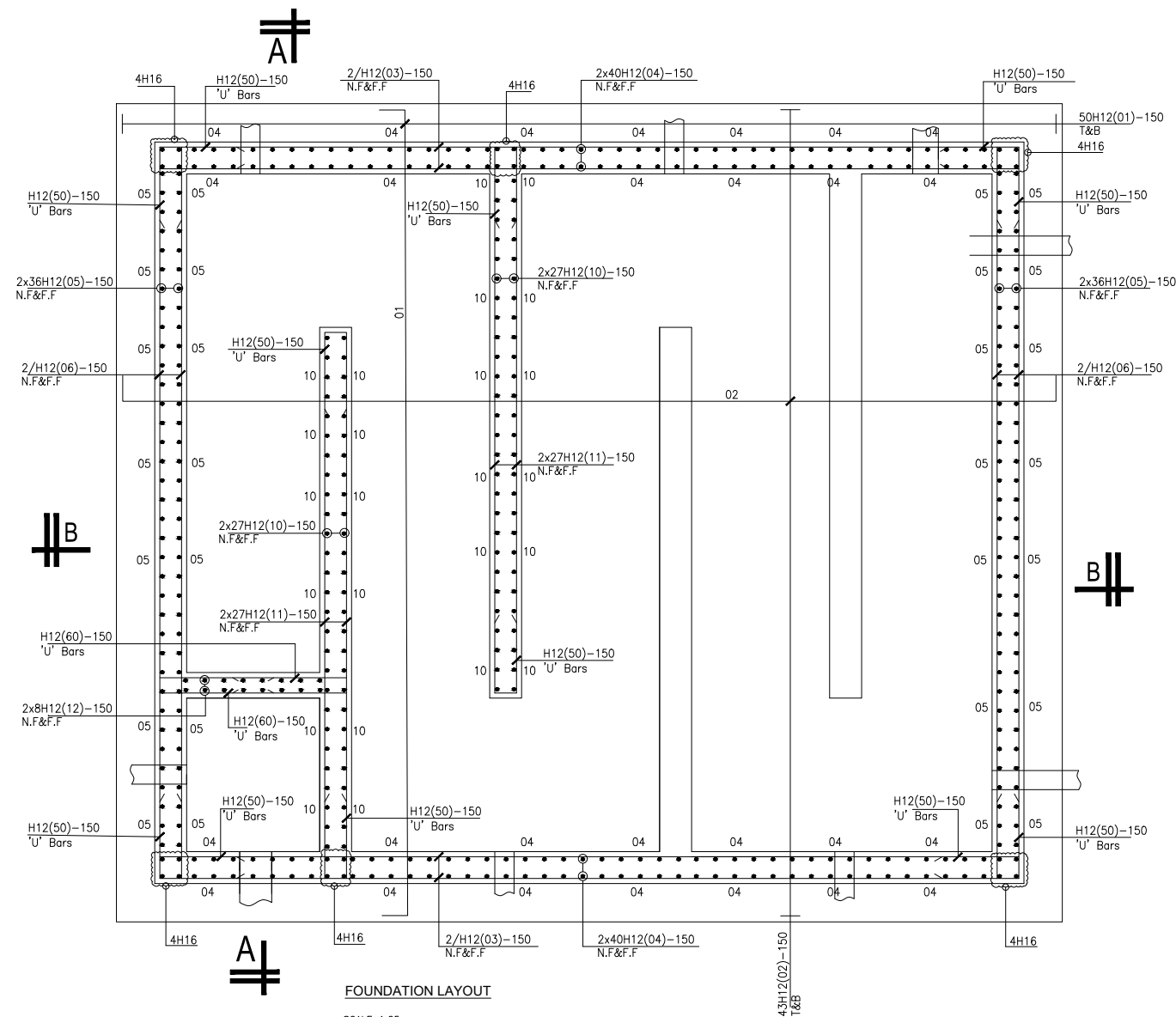
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Scale:

As shown

Sheet No.:

1 of 3



CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :

**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS

*In Association with*

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**R.C DETAILS-CLEAR WATER WELL**

Surveyed by:  
R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

**FEBRUARY 2023**

DRG. No.:

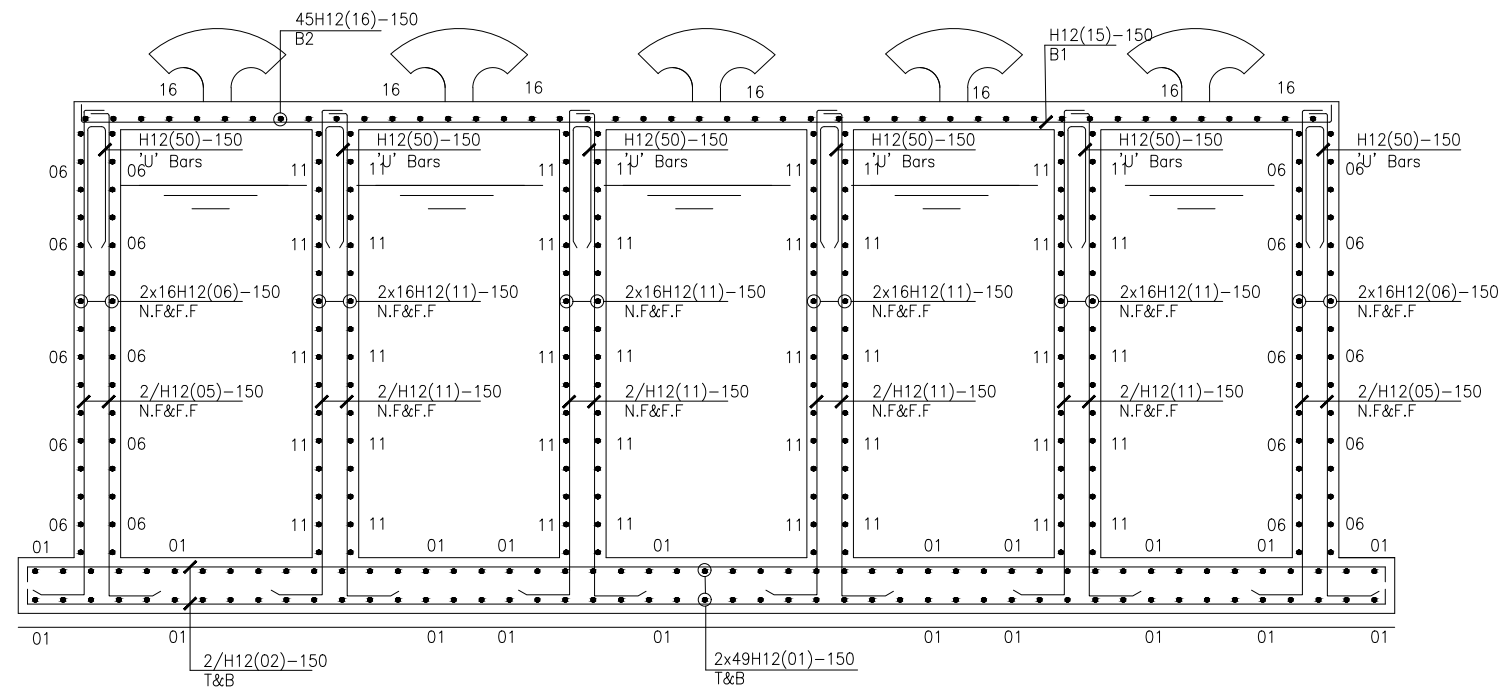
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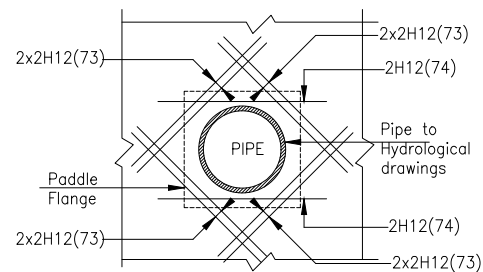
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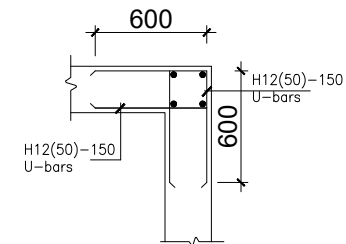
2 of 3



**SECTION B-B**  
SCALE 1:20

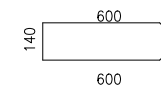


**DETAIL AT PIPE OPENING**  
SCALE 1:20



**TYPICAL WALL END DETAIL**  
**FOR WALL**

Scale 1:20



**DETAIL OF**  
**BAR MARK 50**

Scale 1:20

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS

*In Association with*



**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION**  
**SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**R.C DETAILS-CLEAR WATER WELL**

Surveyed by: R.K

Drawn by:

K.L.W

Designed by: A.B

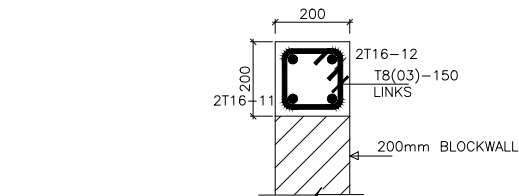
Checked by: A.B

Date: FEBRUARY 2023

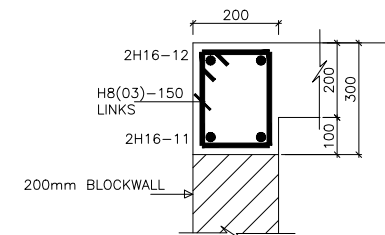
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Sheet No.: 3 of 3

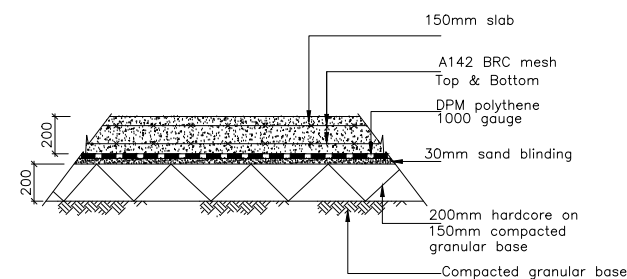


200x200 RC BEAM  
DETAIL A  
SCALE 1:10

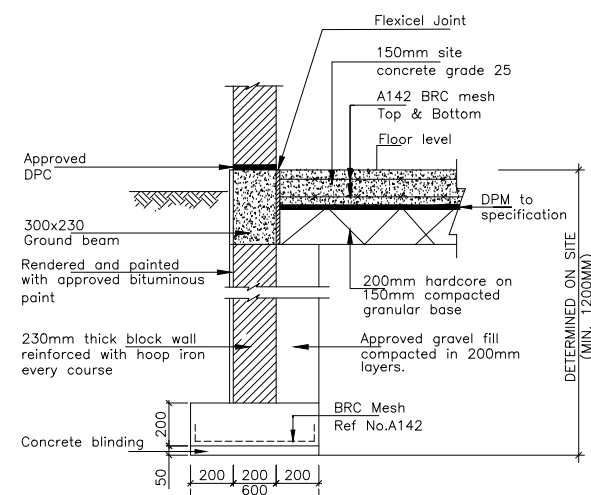


SECTION A-A THROUGH 300x200

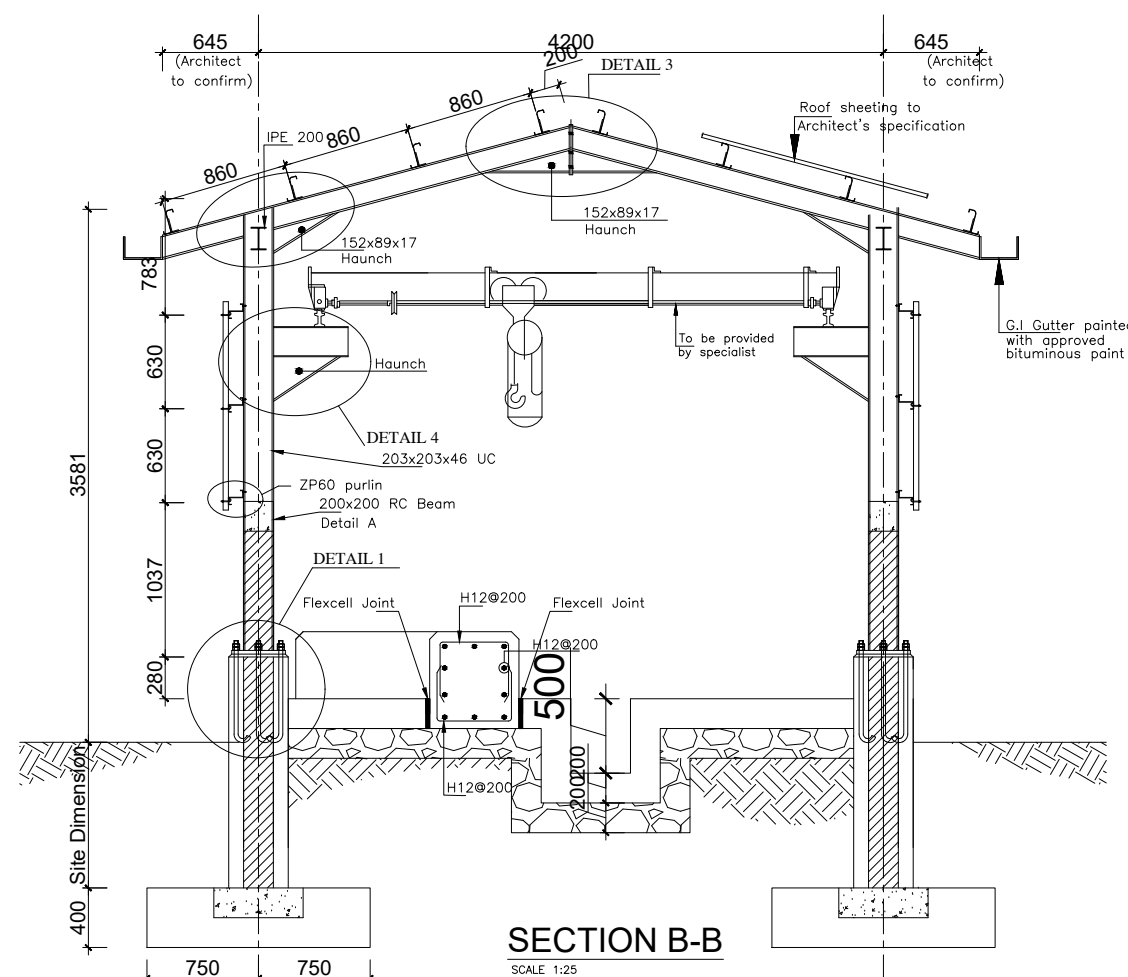
SCALE 1:50



SCALE 1:20



Scale 1:20



SCALE 1:25

### GENERAL NOTES

1. This drawing shall be read in conjunction with all relevant drawings.
2. Concrete mixes to BS5500
  - a. Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - b. Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
3. Reinforcement
  - a. High tensile bars to be ribbed cold formed bars to B.S. 4461
  - c. Mild steel to be round bars to B.S. 4449
  - d. Mesh reinforcement to comply with requirement of B.S. 4483
4. Minimum cover to all steel 50.
5. THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

## ADDITIONAL NOTES

1. All vertical walls to be cast at once
2. Approved stopper water bar to be installed in all joints as directed by the Engineer.
3. Contractor to use non recoverable ties for tying formwork
4. Contractor to submit methodology for Construction before commencing work.
5. All Pipes going through walls to have paddle flange
6. Diameter of pipes to first be confirmed by M&E before concreting.
7. All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS

*In Association with*

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: [allainceconsultantsltd@gmail.com](mailto:allainceconsultantsltd@gmail.com)

PROJECT :

## ALA-ORA WATER SUPPLY AND SANITATION SYSTEM

## ENYAU WATER SUPPLY AND SANITATION SCHEME

## REVISIONS :

REVISIONS :		
No	Date	Description

DRAWING TITLE : **PUMP HOUSE**

Surveyed by: R.K

Drawn by:      Luks

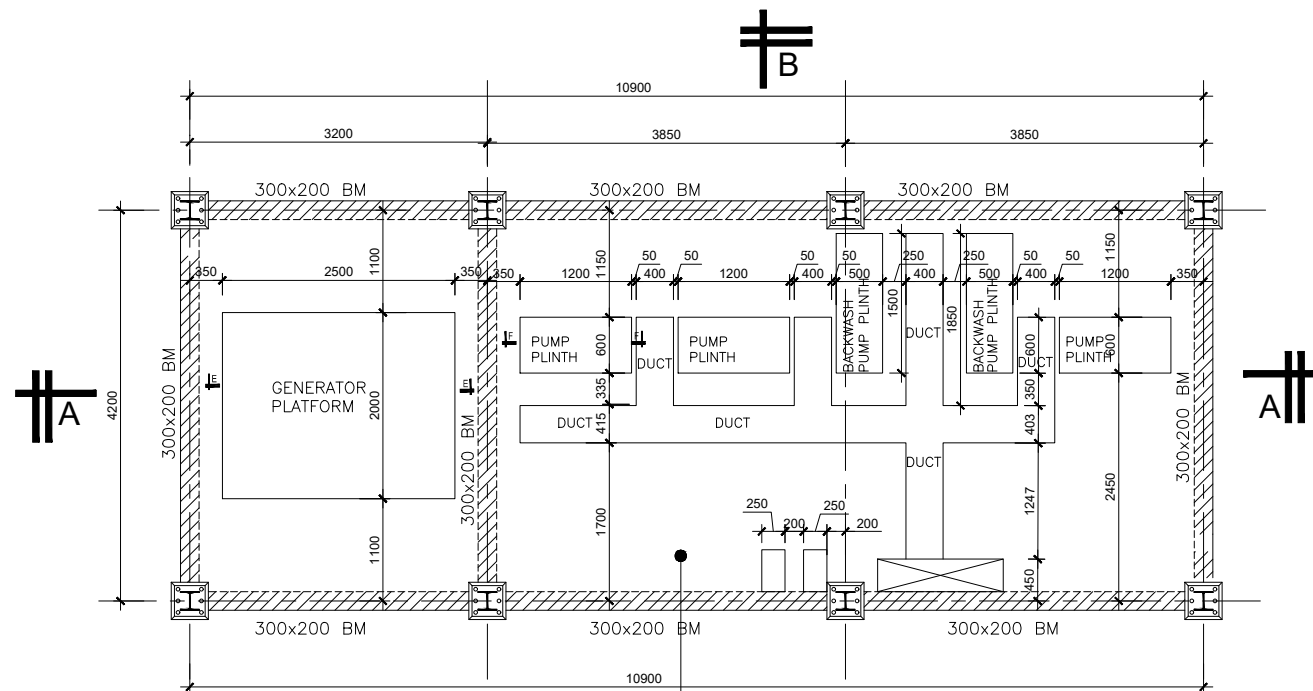
Designed by:	A.B
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Checked by: A.B

Date: FEBRUARY 2023

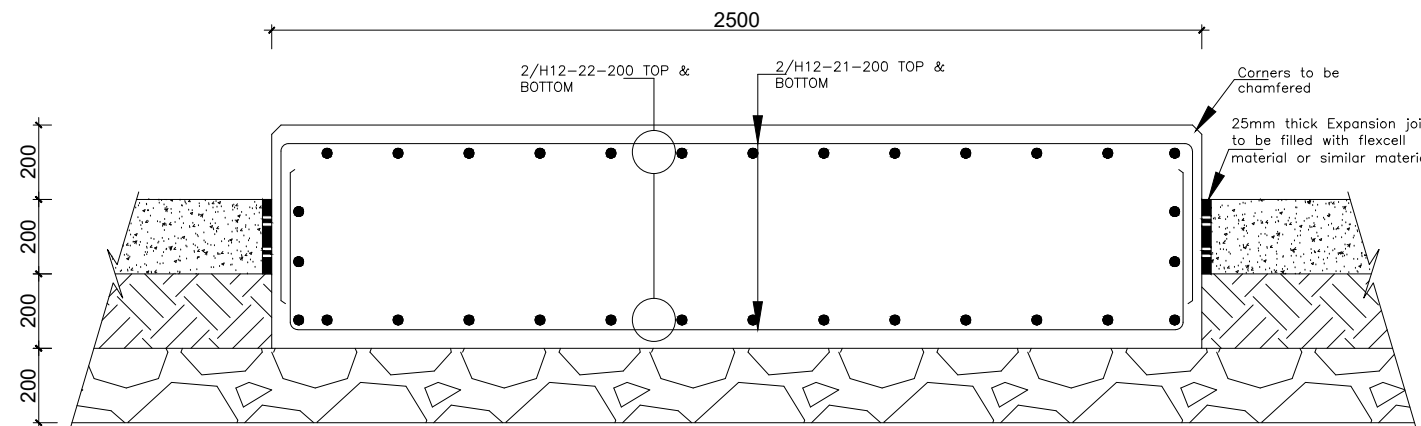
DRG. No.: AR/WSASS/EN/STR/010

Scale:	Sheet No.: 1 of 3
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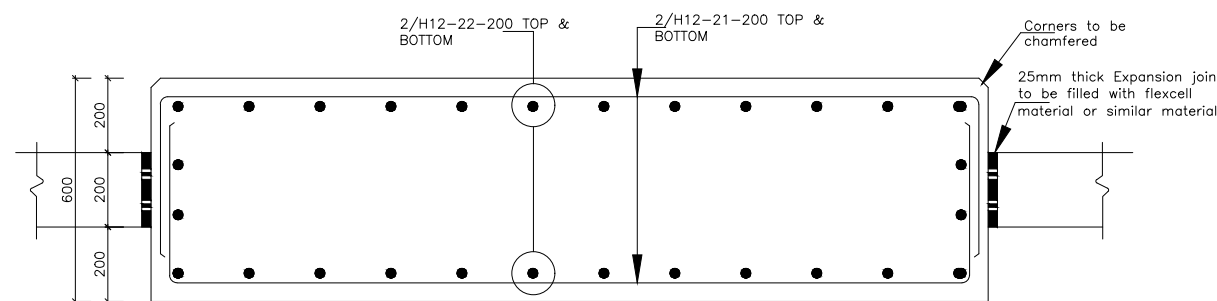


**FOUNDATION LAYOUT**  
SCALE 1:40

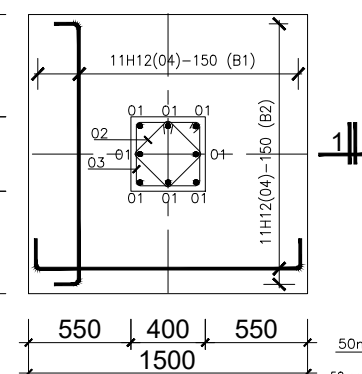
200MM SLAB REINFORCED WITH  
BRC MESH REF NO.A142 TOP & BOTTOM.  
SLAB TO BE CAST IN CHEQUERED BOARD FASHION.  
TOP SURFACE FINISH TO BE AS PER ARCHITECT'S SPECS  
SERVICES ENGINEER TO PROVIDE HIS SERVICES IN PLACE  
BEFORE CASTING OF THE FLOOR SLAB.  
NO CUTTING OF THE SLAB SHALL BE ALLOWED AT A LATER DATE



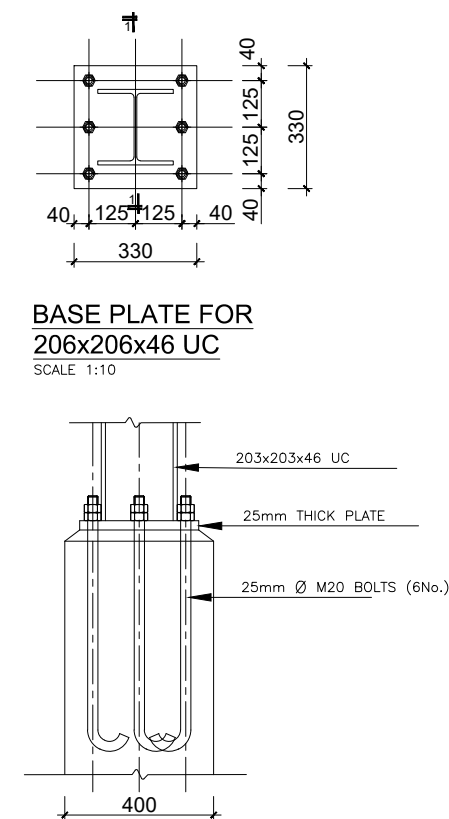
**SECTION E-E THROUGH GENERATOR PLATFORM**  
SCALE 1:10



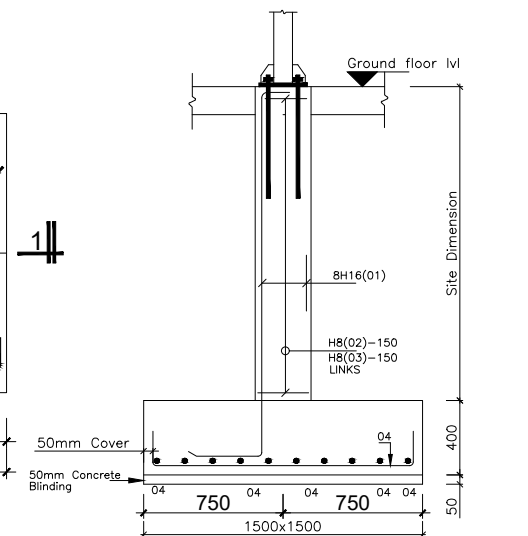
**SECTION F-F- TYPICAL PLINTH DETAIL**  
Scale 1:10



**BASE TYPE F1 (8No.) [1500x1500x400]**  
Scale 1:20



**SECTION 1-1**  
SCALE 1:10



**STUB COLUMN SECTION 1-1**  
SCALE 1:20

#### GENERAL NOTES

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
  - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
- Reinforcement
  - High tensile bars to be ribbed cold formed bars to B.S. 4461
  - Mild steel to be round bars to B.S. 4449
  - Mesh reinforcement to comply with requirement of B.S. 4483
- Minimum cover to all steel 50.
- THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

- All vertical walls to be cast at once
- Approved stopper water bar to be installed in all joints as directed by the Engineer.
- Contractor to use non recoverable ties for tying formwork
- Contractor to submit methodology for Construction before commencing work.
- All Pipes going through walls to have paddle flange
- Diameter of pipes to first be confirmed by M&E before concreting.
- All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :

**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
In Association with

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SCHEME**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**PUMP HOUSE**

Surveyed by: R.K

Drawn by: Luks

Designed by: A.B

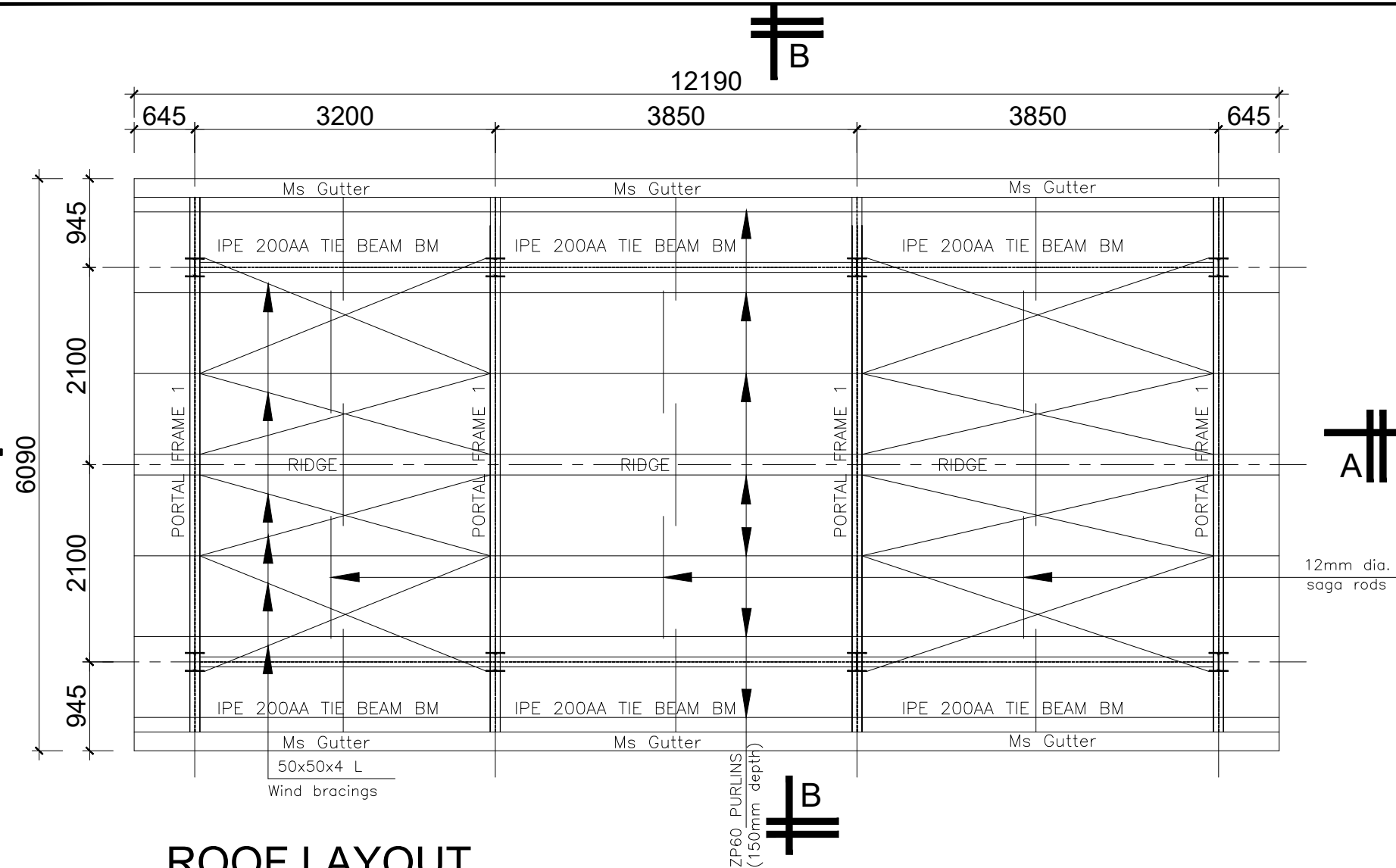
Checked by: A.B

Date: FEBRUARY 2023

DRG. No.: AR/WSASS/EN/STR/010

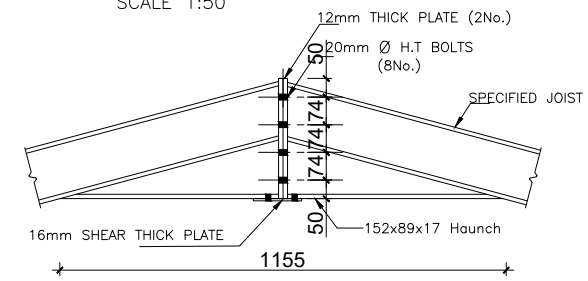
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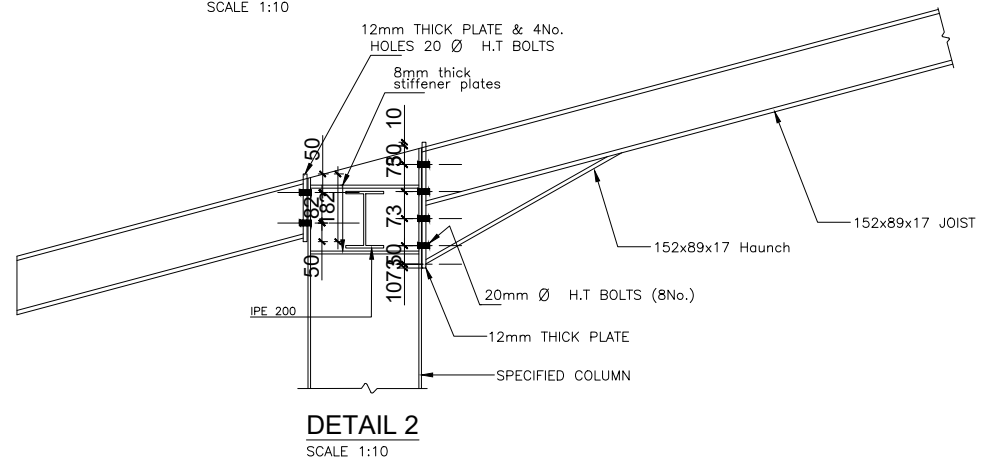


ROOF LAYOUT

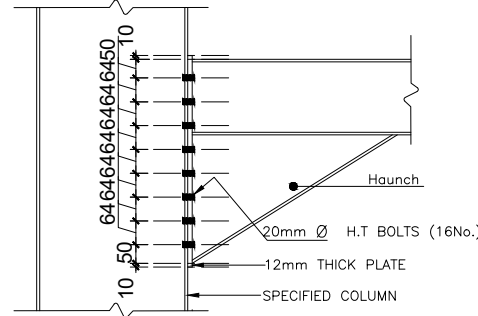
SCALE 1:50



DETAIL 3  
SCALE 1:10



DETAIL 2  
SCALE 1:10



DETAIL 4  
SCALE 1:10

GENERAL NOTES

1. This drawing shall be read in conjunction with all relevant drawings.
2. Concrete mixes to BS8500
  - a. Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - b. Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
3. Reinforcement
  - a. High tensile bars to be ribbed cold formed bars to B.S. 4461
  - b. Mild steel to be round bars to B.S. 4449
  - c. Mesh reinforcement to comply with requirement of B.S. 4483
4. Minimum cover to all steel 50.
5. THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

ADDITIONAL NOTES

1. All vertical walls to be cast at once
2. Approved stopper water bar to be installed in all joints as directed by the Engineer.
3. Contractor to use non recoverable ties for tying formwork
4. Contractor to submit methodology for Construction before commencing work.
5. All Pipes going through walls to have paddle flange
6. Diameter of pipes to first be confirmed by M&E before concreting.
7. All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS

*In Association with*



P.O.BOX 33975 KAMPALA  
Email: [allianceconsultantsltd@gmail.com](mailto:allianceconsultantsltd@gmail.com)

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SCHEME**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**PUMP HOUSE**

Surveyed by: R.K

Drawn by: Luks

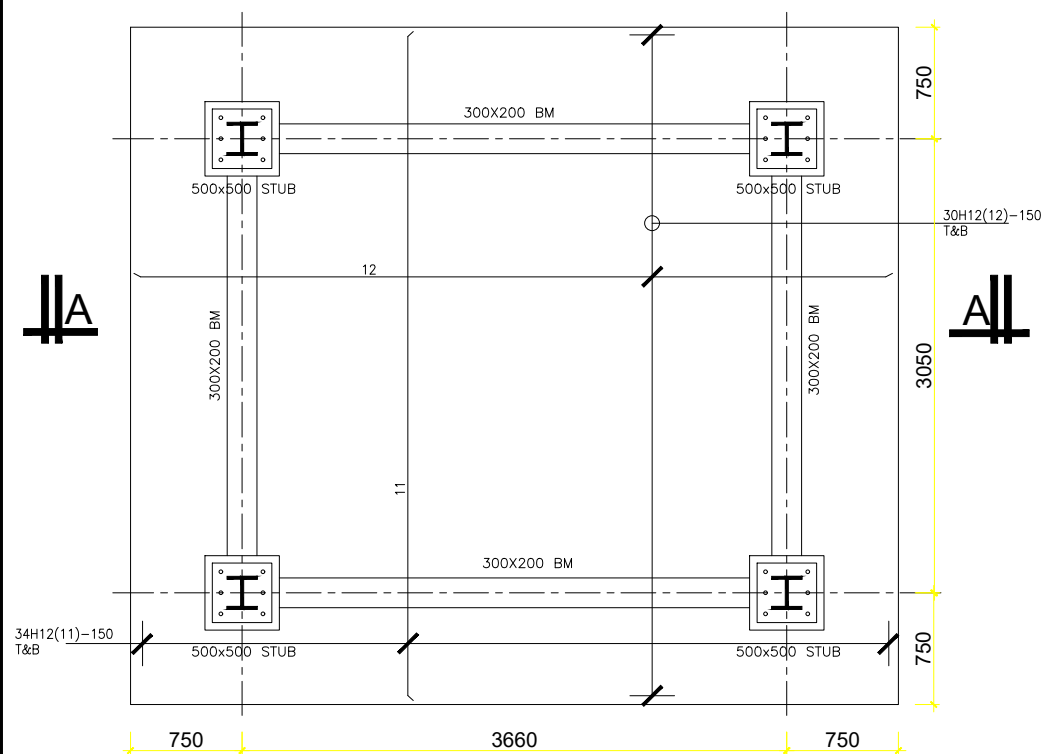
Designed by: A.B

Checked by: A.B

Date: **FEBRUARY 2023**

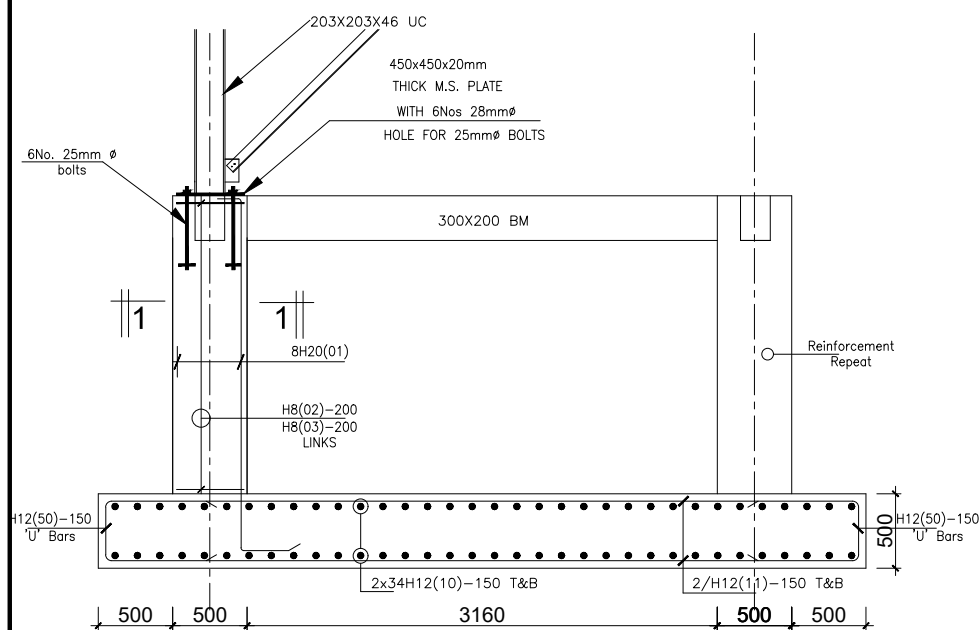
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Scale: Sheet No.: 3 of 3



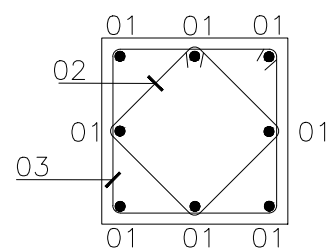
FOUNDATION LAYOUT

SCALE 1:25



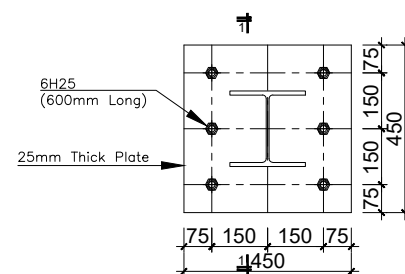
SECTION A-A

Scale 1:25



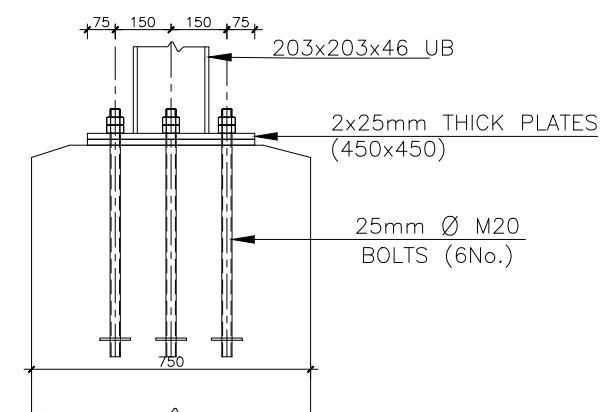
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SCALE 1:10



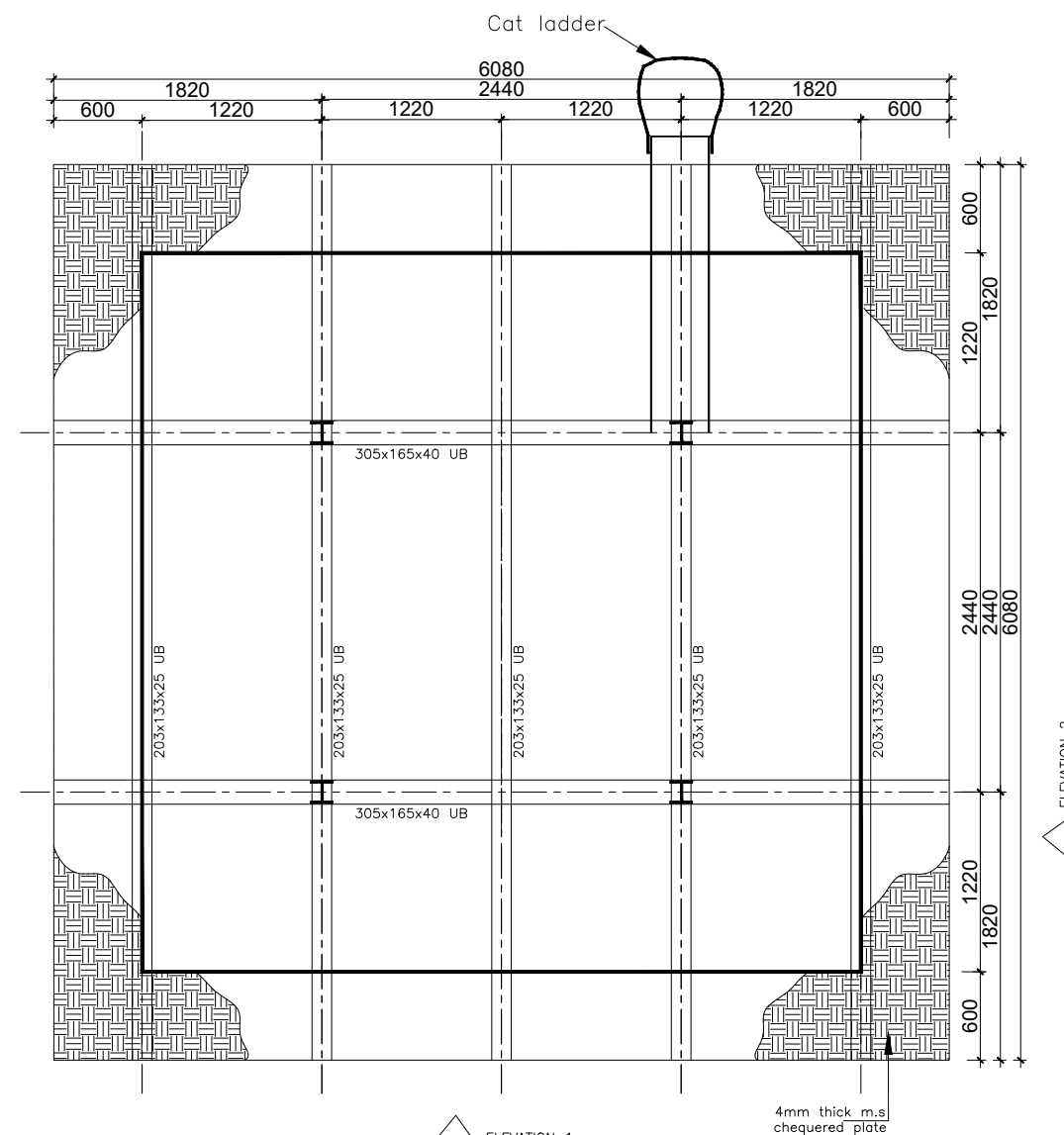
BASE PLATE FOR  
203x203x46 UC

SCALE 1:10



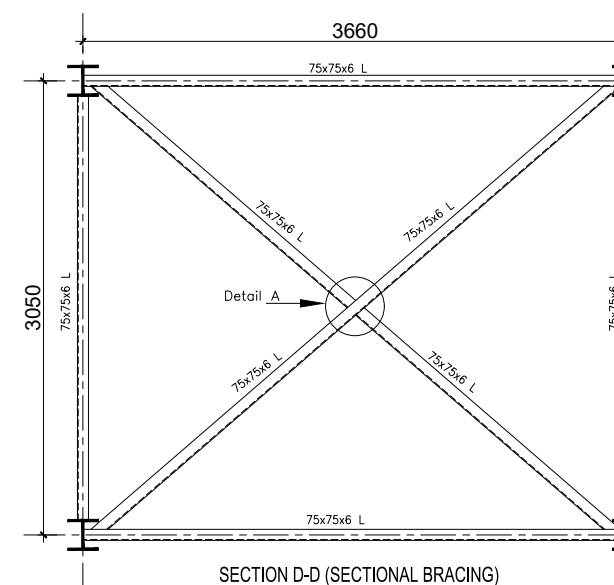
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SCALE 1:10



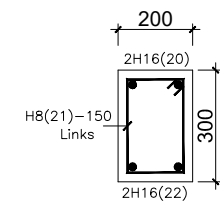
TANK PLATFORM

SCALE 1:25



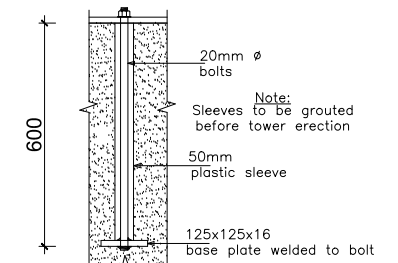
SECTION D-D (SECTIONAL BRACING)

SCALE 1:25



Ground Beam

Scale 1:10



Bolt Connection Detail

Scale 1:10

CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS

In Association with

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ANYAU WATER TREATMENT PLANT**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**BACKWASH 50m<sup>3</sup> TANK**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

FEBRUARY 2023

DRG. No.:

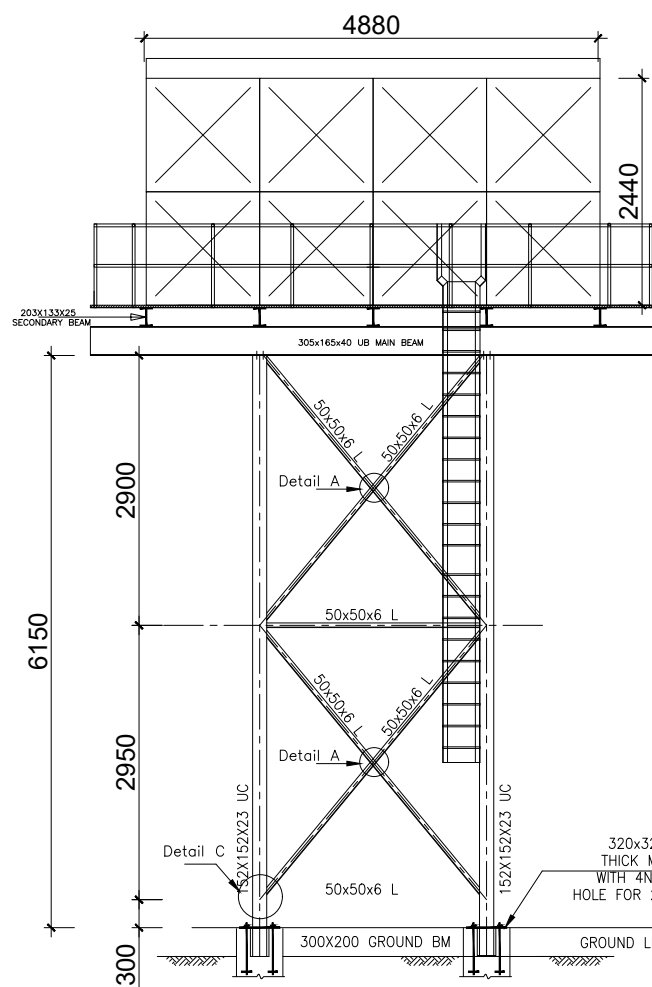
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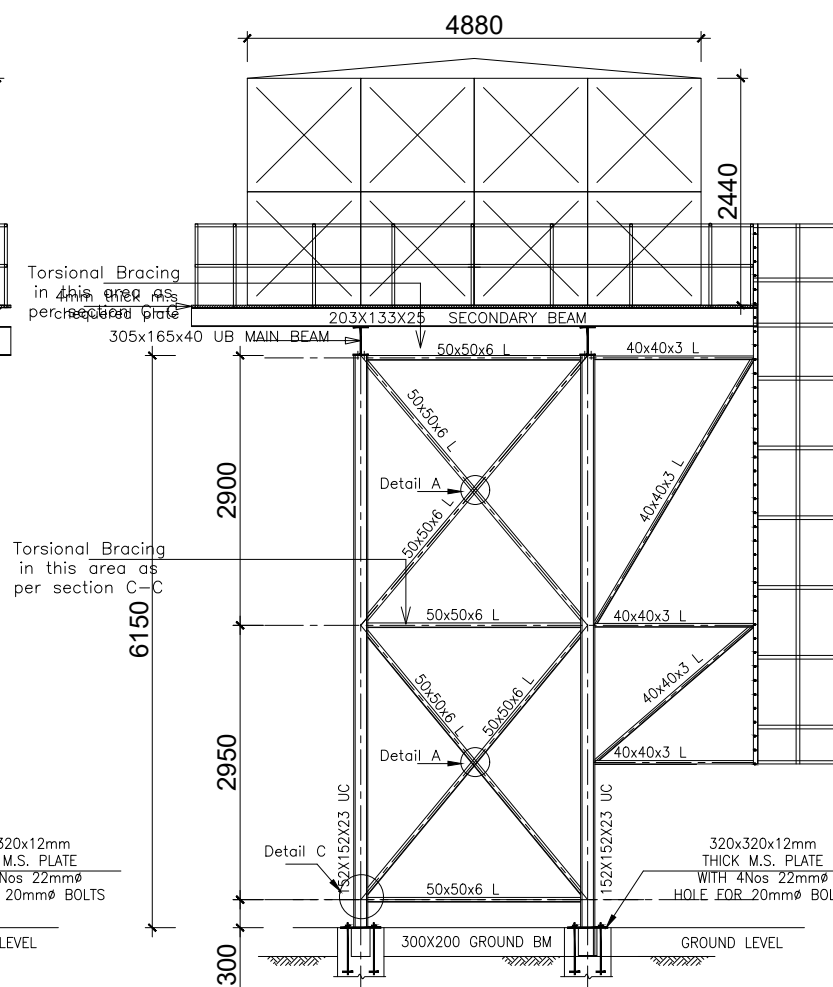
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As shown

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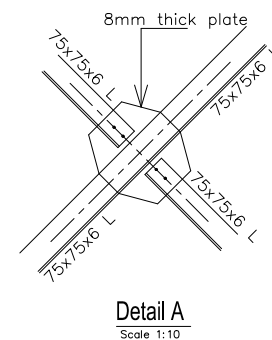
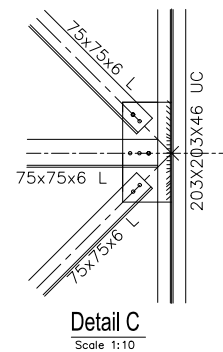


**TOWER ELEVATION 1**  
SCALE 1:40



**TOWER ELEVATION 1**  
SCALE 1:40

Cat Ladder



#### GENERAL NOTES

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
  - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
- Reinforcement
  - High tensile bars to be ribbed cold formed bars to B.S. 4461
  - Mild steel to be round bars to B.S. 4449
  - Mesh reinforcement to comply with requirement of B.S. 4483
- Minimum cover to all steel 50.
- THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

- All vertical walls to be cast at once
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- Diameter of pipes to first be confirmed by M&E before concreting.
- All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :

**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
In Association with

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ANYAU WATER TREATMENT PLANT**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**BACKWASH 50m<sup>3</sup> TANK**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

FEBRUARY 2023

DRG. No.:

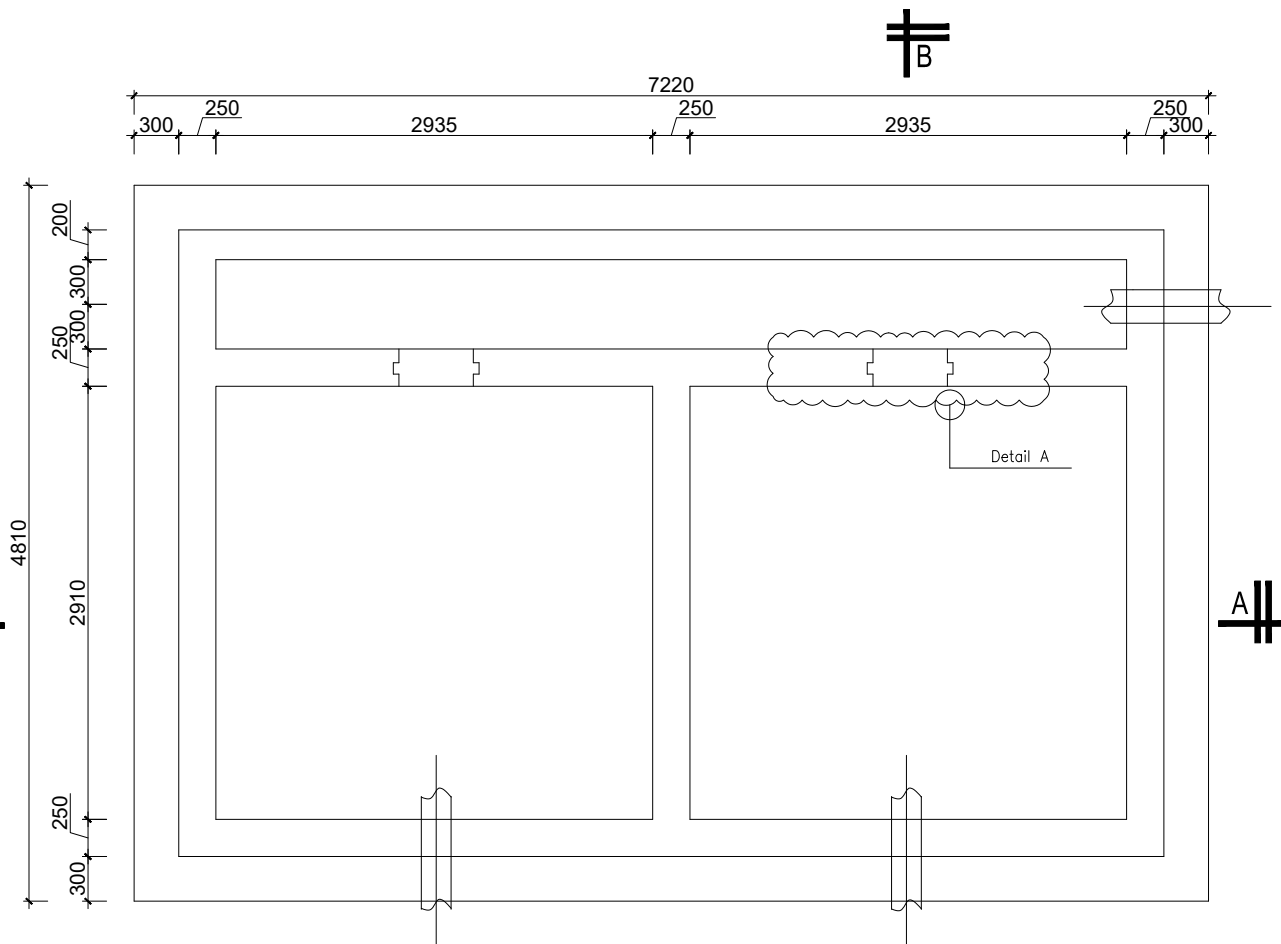
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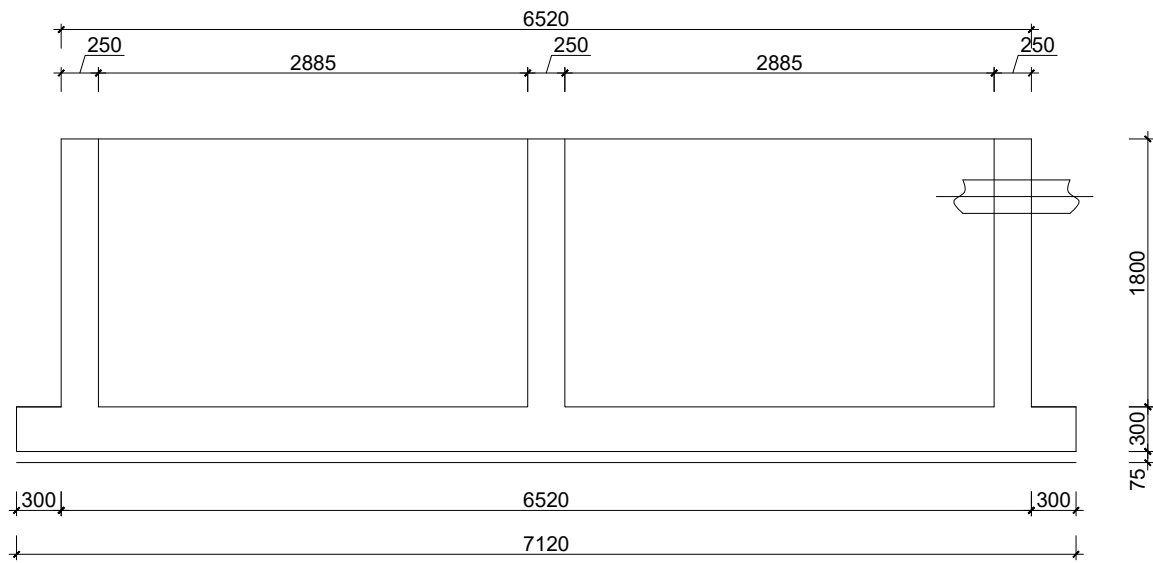
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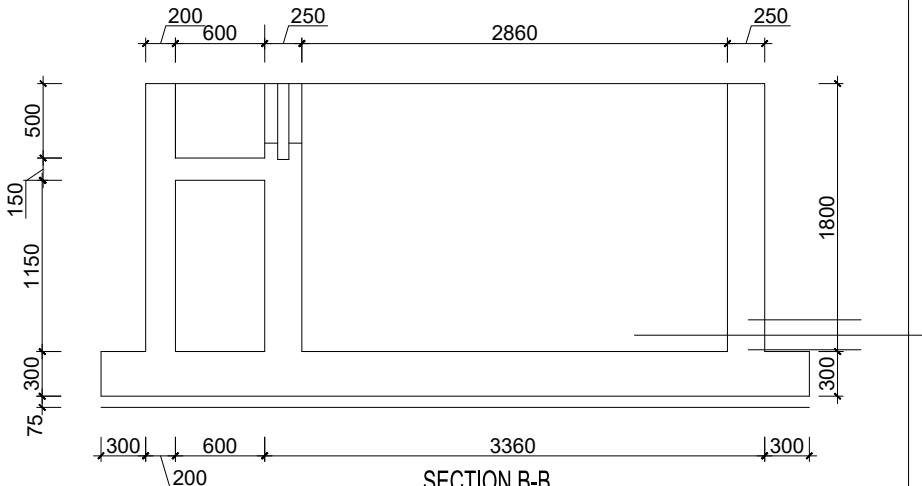
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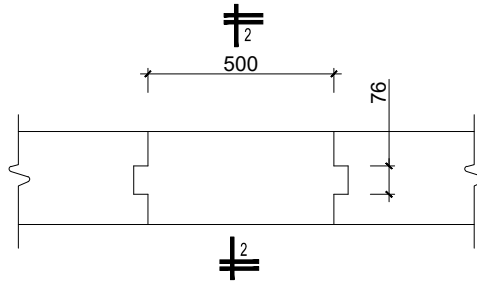
FOUNDATION LAYOUT  
SCALE 1:25



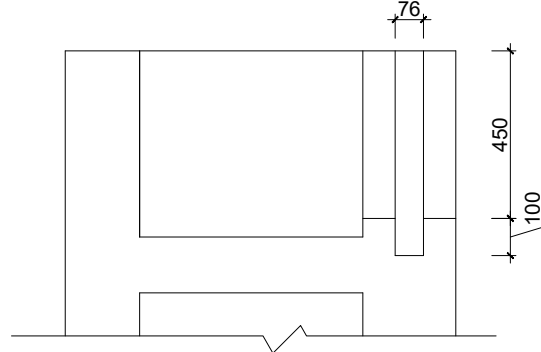
SECTION A-A  
SCALE 1:25



SECTION B-B  
SCALE 1:25



DETAIL A  
SCALE 1:10



SECTION 2-2  
SCALE 1:10

GENERAL NOTES

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  - c. Mesh reinforcement to comply with requirement of B.S. 4483
4. Minimum cover to all steel 50.
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CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS

*In Association with*



**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: [allianceconsultantsltd@gmail.com](mailto:allianceconsultantsltd@gmail.com)

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**SLUDGE DRYING BEDS**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

**FEBRUARY 2023**

DRG. No.:

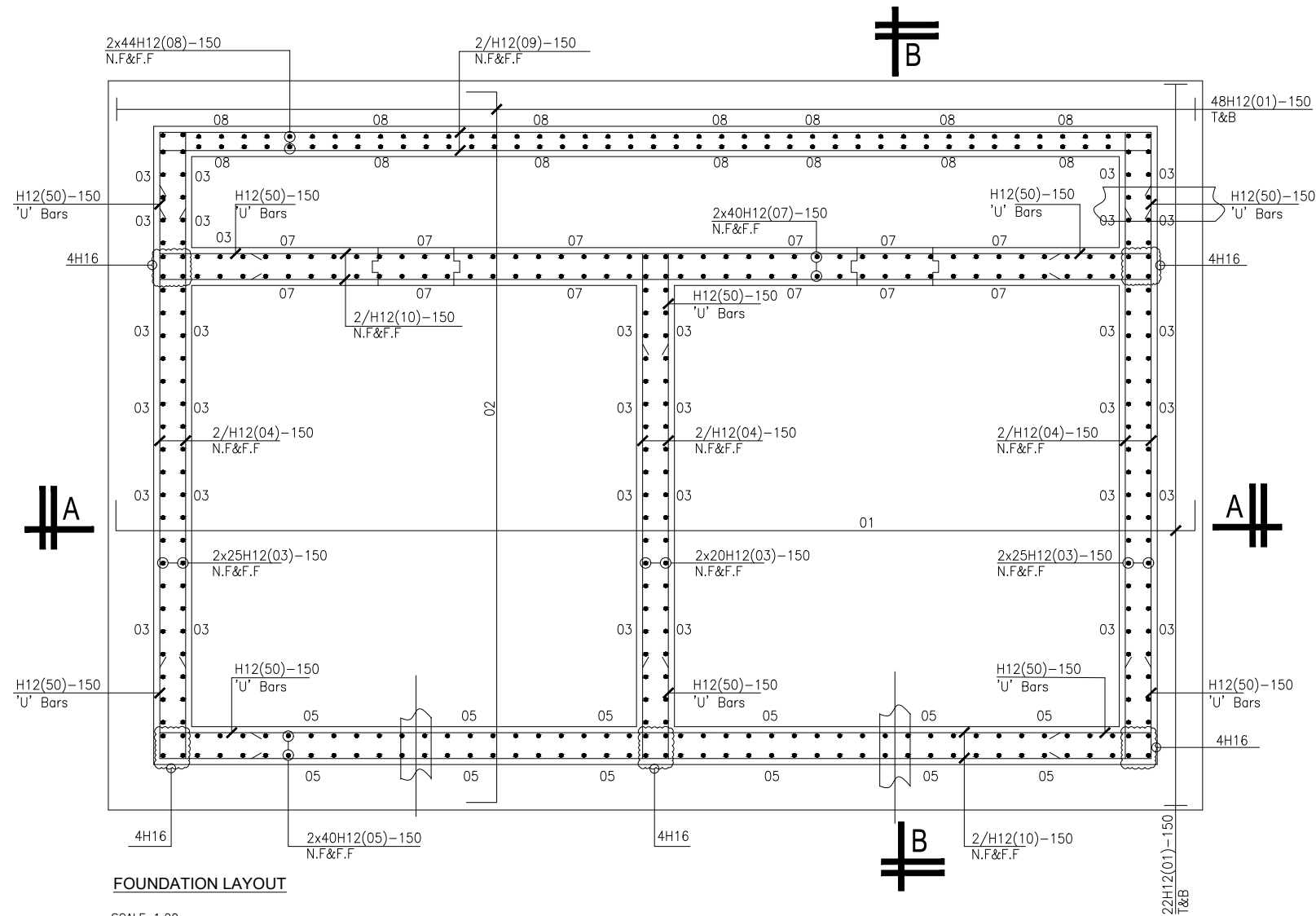
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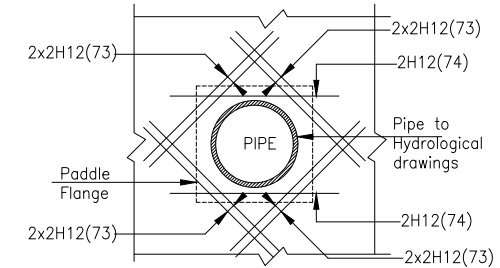
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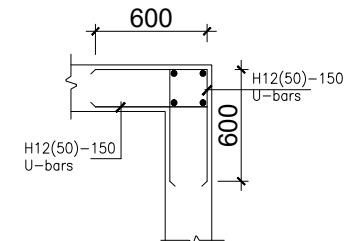
FOUNDATION LAYOUT

SCALE 1:20



DETAIL AT PIPE OPENING

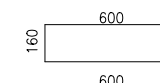
SCALE 1:20



TYPICAL WALL END DETAIL

FOR WALL

Scale 1:20



DETAIL OF BAR MARK 50

Scale 1:20

#### GENERAL NOTES

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CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS

In Association with



**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**R.C DETAILS- SLUDGE DRYING BEDS**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

FEBRUARY 2023

DRG. No.:

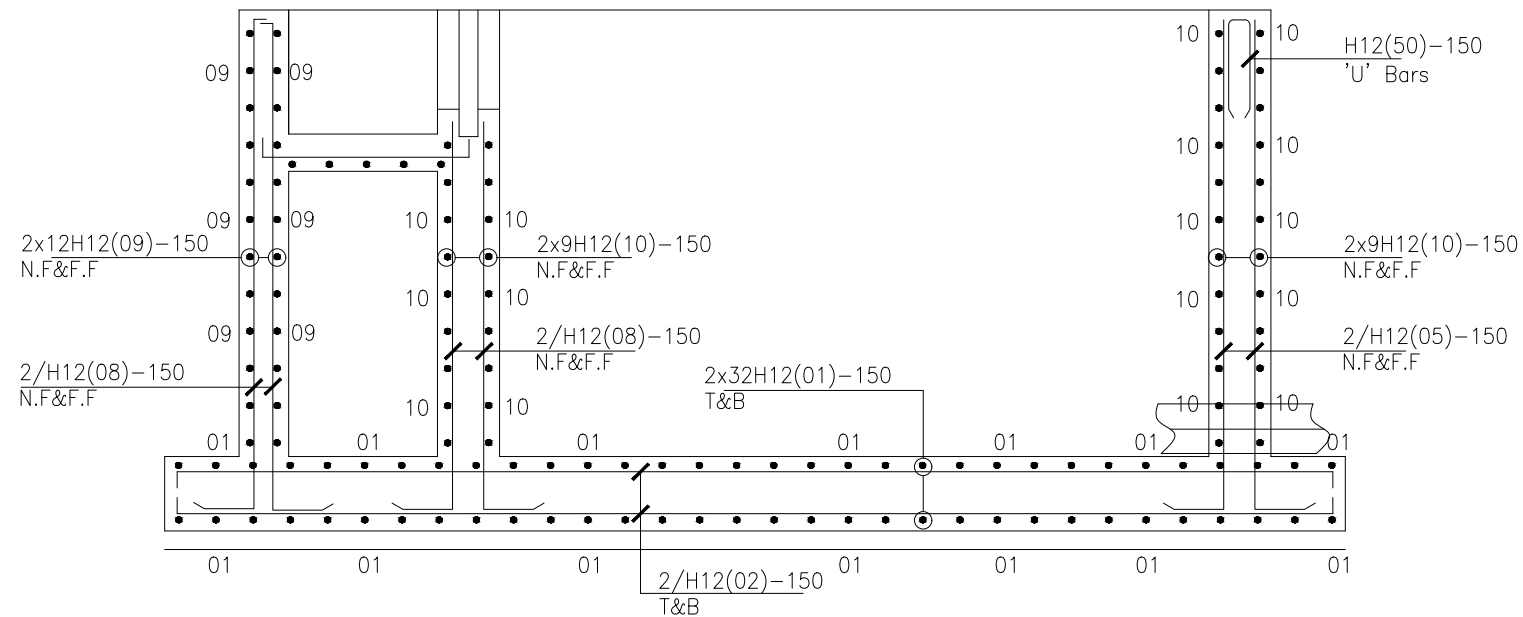
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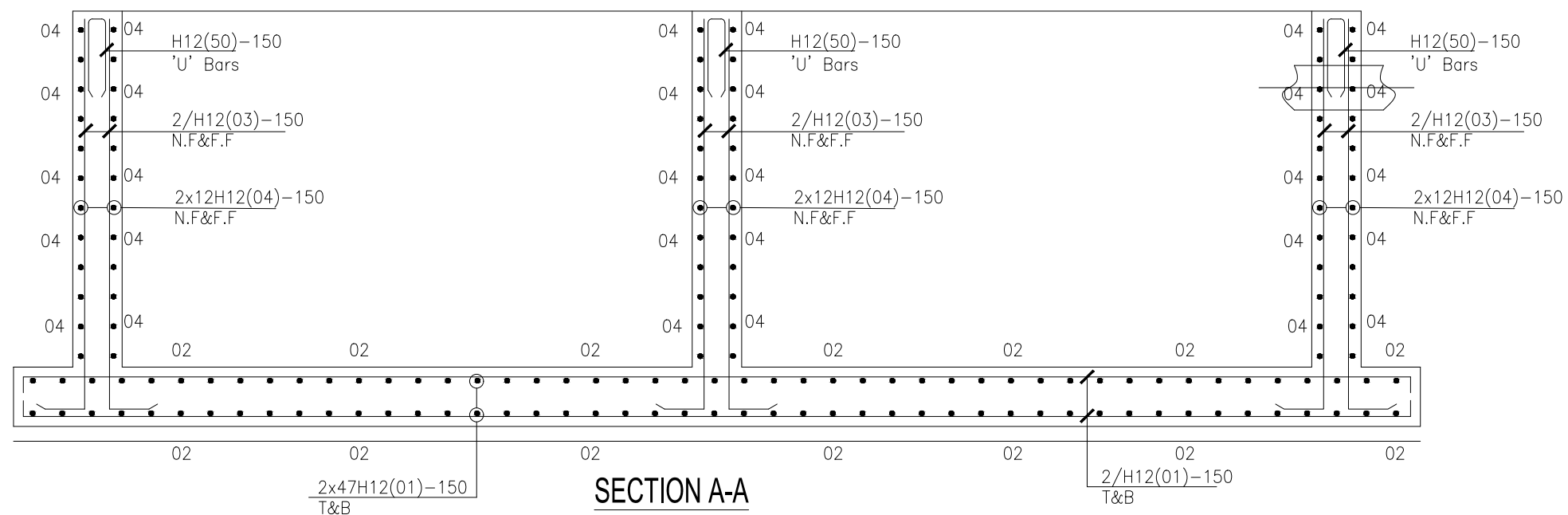
As shown

2 of 3



### SECTION B-B

SCALE 1:25



### SECTION A-A

SCALE 1:25

#### GENERAL NOTES

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
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CLIENT :



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MINISTRY OF WATER AND ENVIRONMENT  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :

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CONSULTING ENGINEERS  
*In Association with*

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**R.C DETAILS- SLUDGE DRYING BEDS**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

FEBRUARY 2023

DRG. No.:

AR/WSASS/EN/STR/012

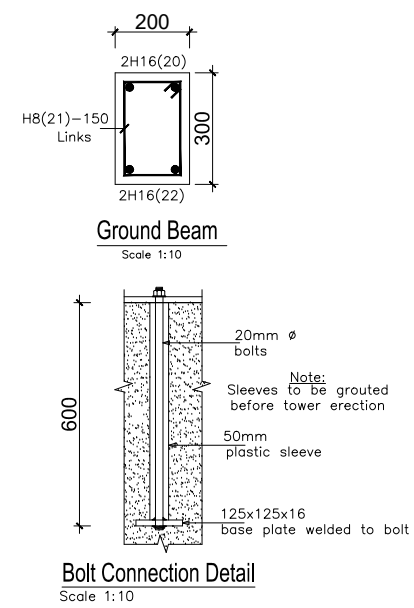
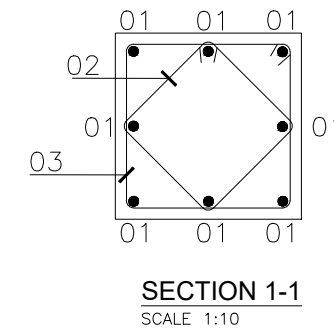
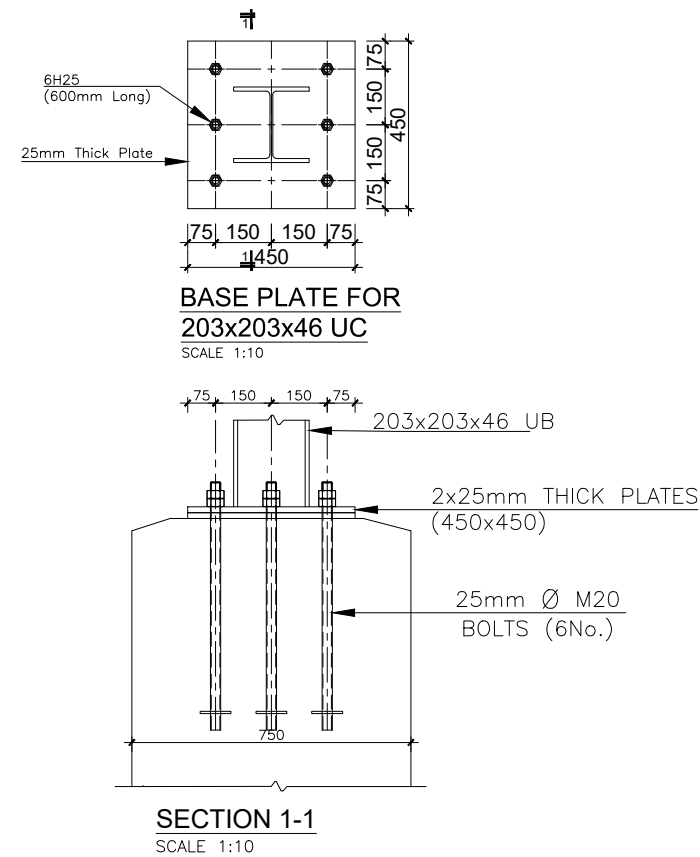
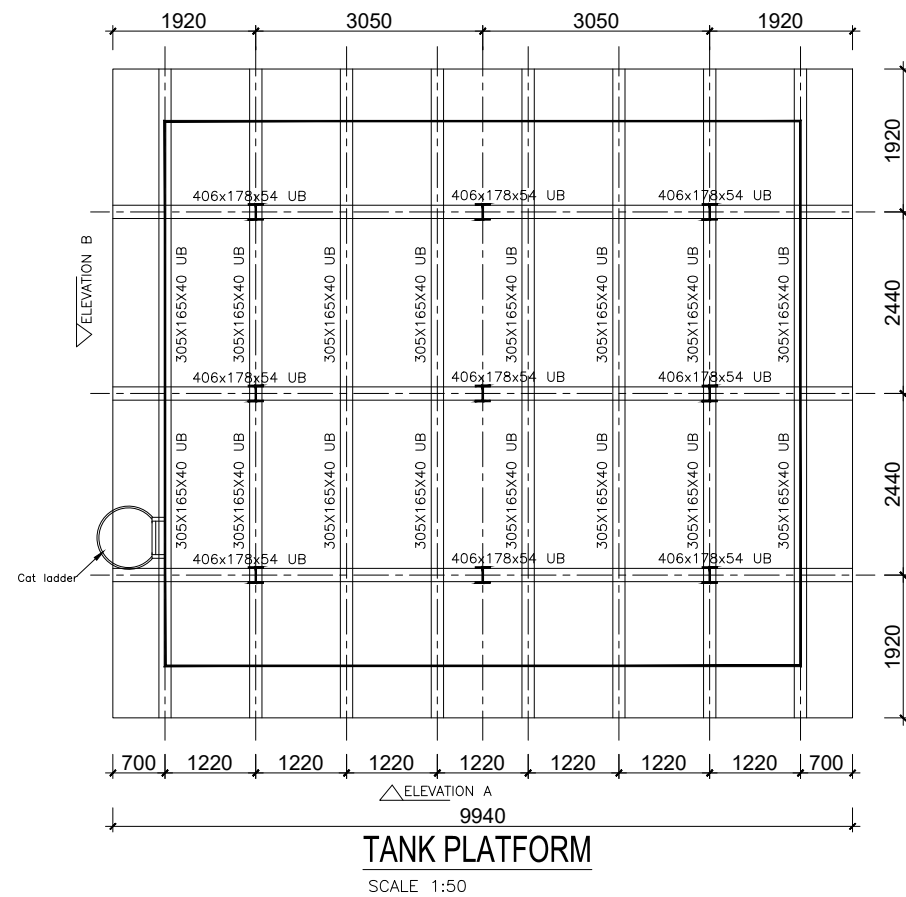
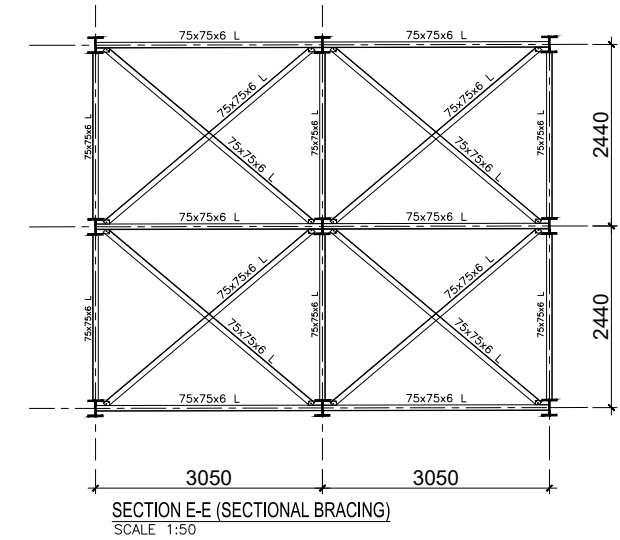
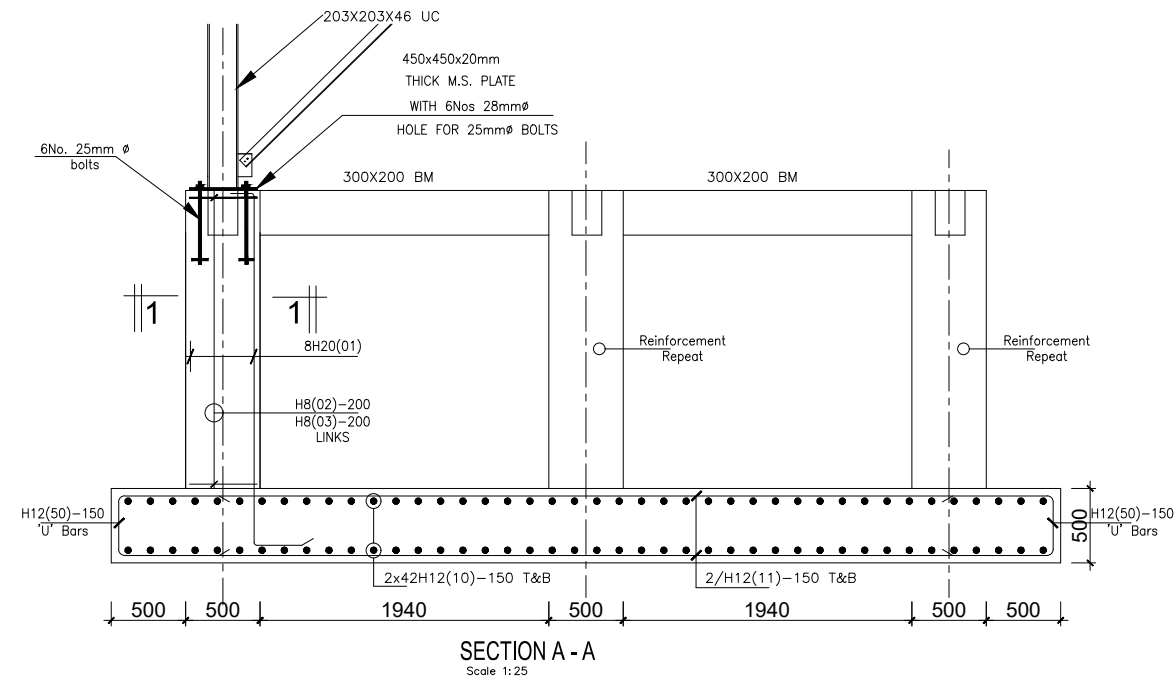
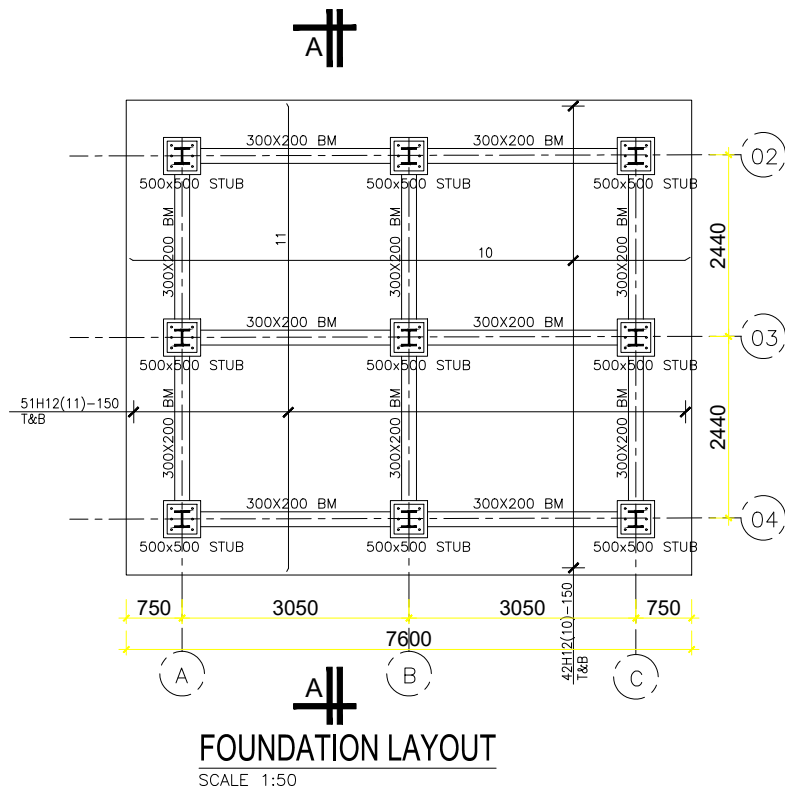
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Sheet No.:

As shown

3 of 3





CLIENT :

THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :

**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
In Association with  
**Infra-Consult Ltd**  
P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**202m<sup>3</sup> TANK**

Surveyed by: R.K

Drawn by: K.L.W

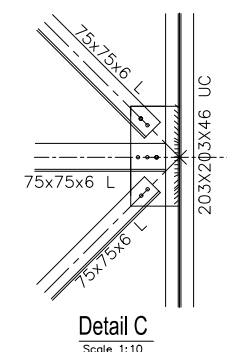
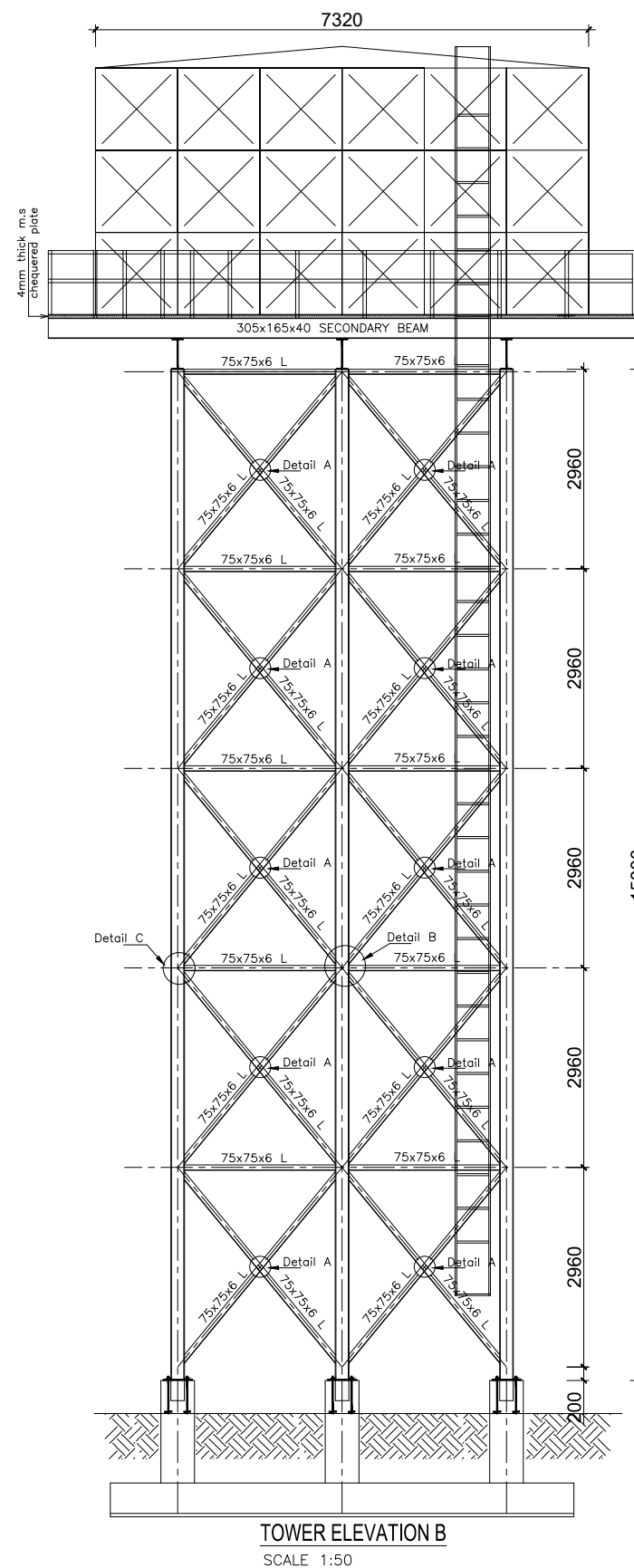
Designed by: A.B

Checked by: A.B

Date: FEBRUARY 2023

DRG. No.: AR/WSASS/EN/STR/013

Scale: As shown Sheet No.: 1 of 2



- ### ADDITIONAL NOTES
1. All vertical walls to be cast at once
  2. Approved stopper water bar to be installed in all joints as directed by the Engineer.
  3. Contractor to use non recoverable ties for tying formwork
  4. Contractor to submit methodology for Construction before commencing work.
  5. All Pipes going through walls to have paddle flange
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  7. All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT  
DIRECTORATE OF WATER DEVELOPMENT

**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
*In Association with*

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: [allainceconsultantsltd@gmail.com](mailto:allainceconsultantsltd@gmail.com)

## ALA-ORA WATER SUPPLY AND SANITATION SYSTEM

## ENYAU WATER SUPPLY AND SANITATION SYSTEM

No	Date	Description

### 202m<sup>3</sup> TANK

Surveyed by: D.K.

by: R.K

Drawn by:

K.L.W

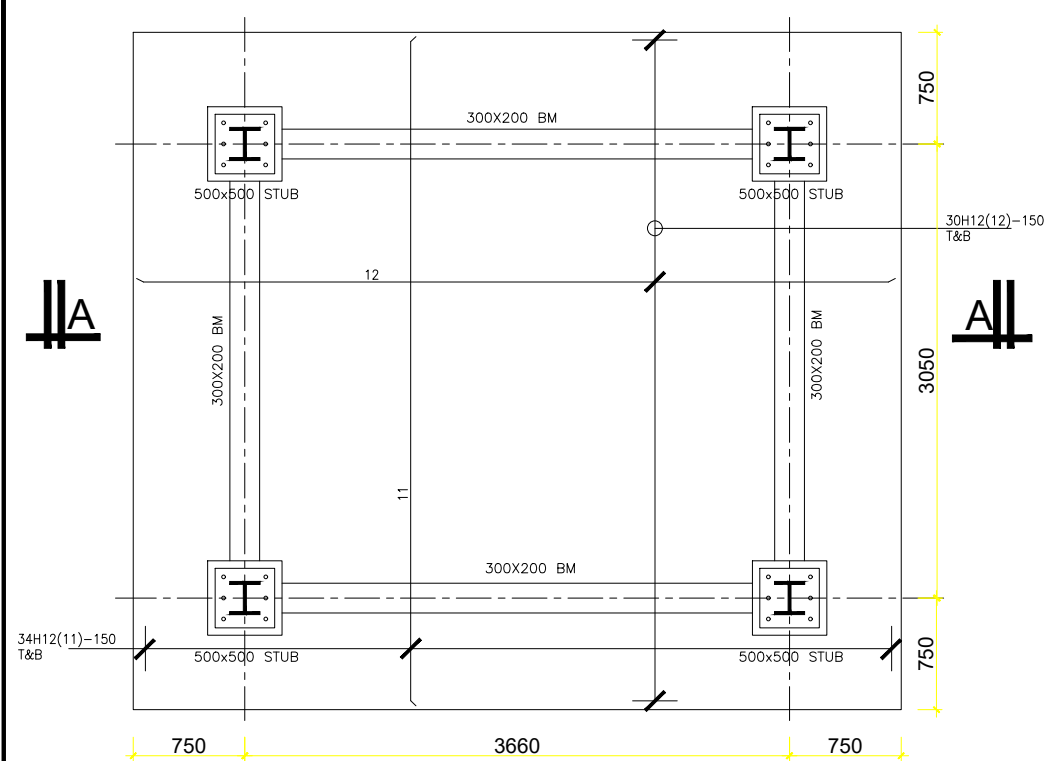
Designed by:	A. B.
--------------	-------

y:

FEBRUARY 2023

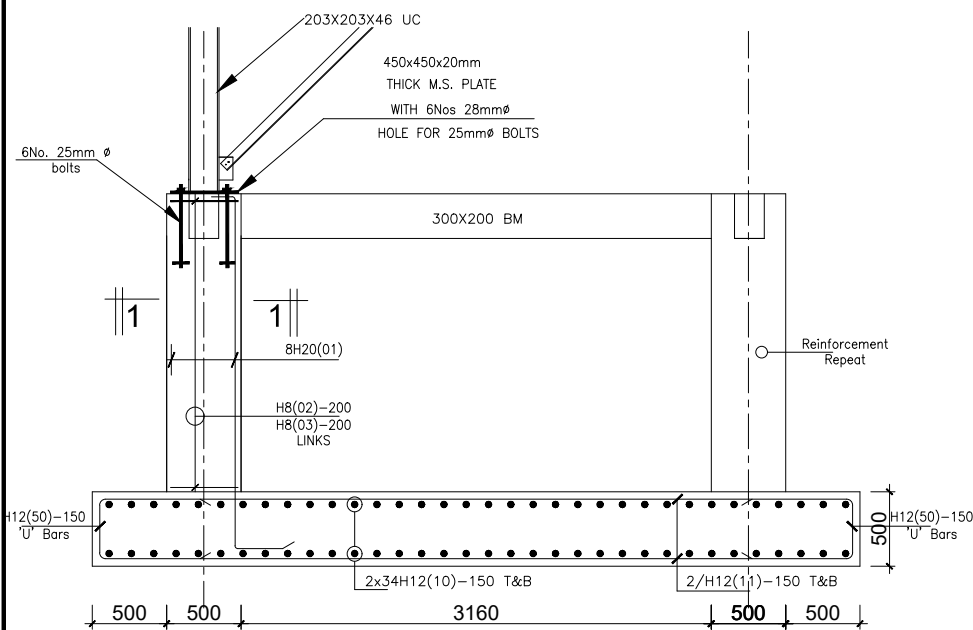
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Scale:	Sheet No.:
As shown	2 of 2



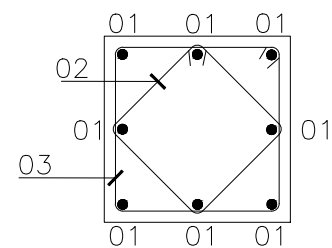
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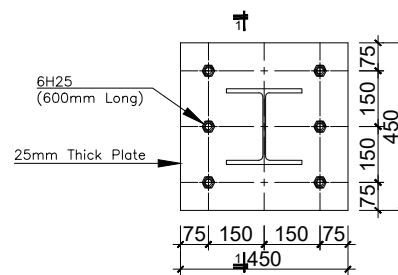
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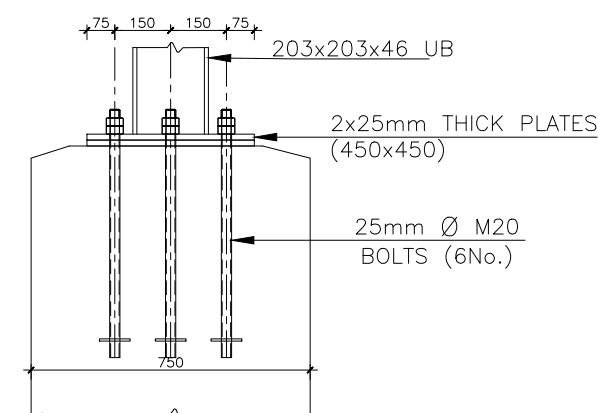
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SCALE 1:10



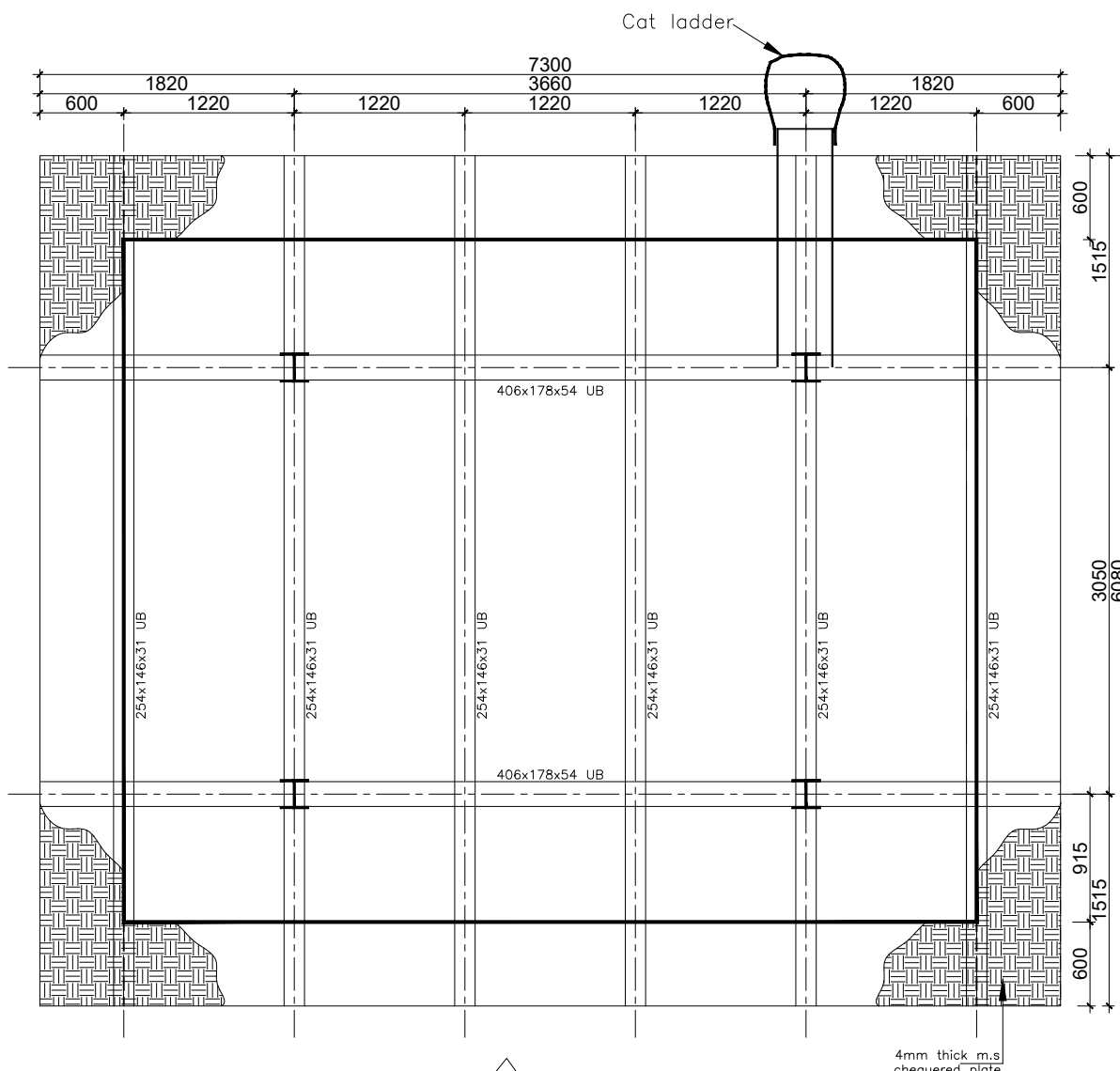
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203x203x46 UC**

SCALE 1:10



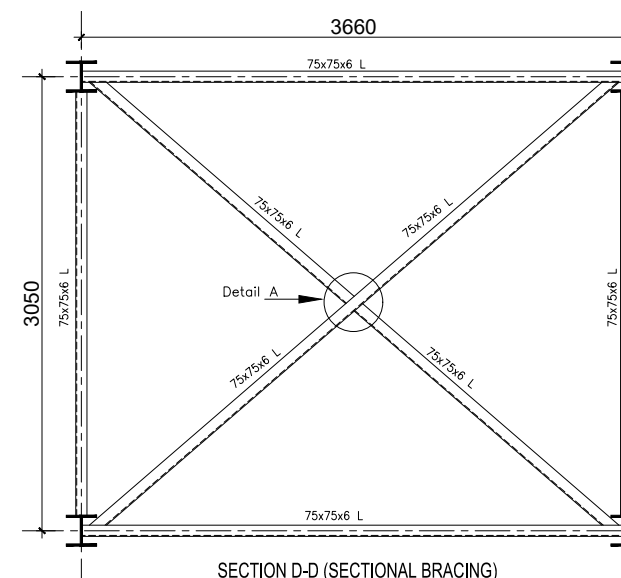
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SCALE 1:10



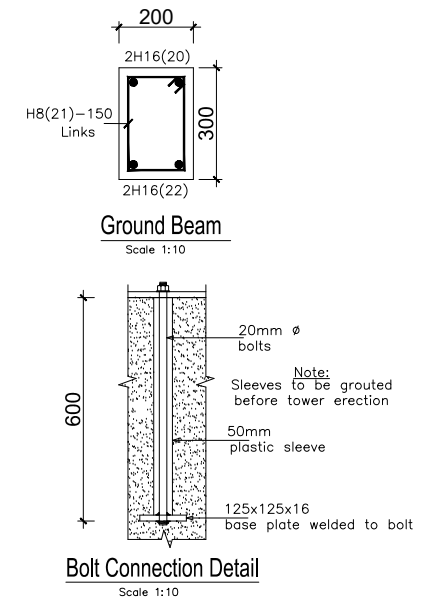
**ELEVATION 1  
TANK PLATFORM**

SCALE 1:25



**SECTION D-D (SECTIONAL BRACING)**

SCALE 1:25



CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS

In Association with

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ANYAU WATER TREATMENT PLANT**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**NDAAPI 69m<sup>3</sup> TANK**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

**FEBRUARY 2023**

DRG. No.:

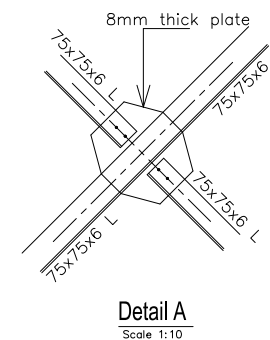
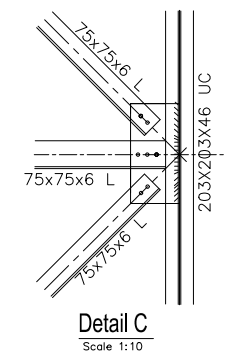
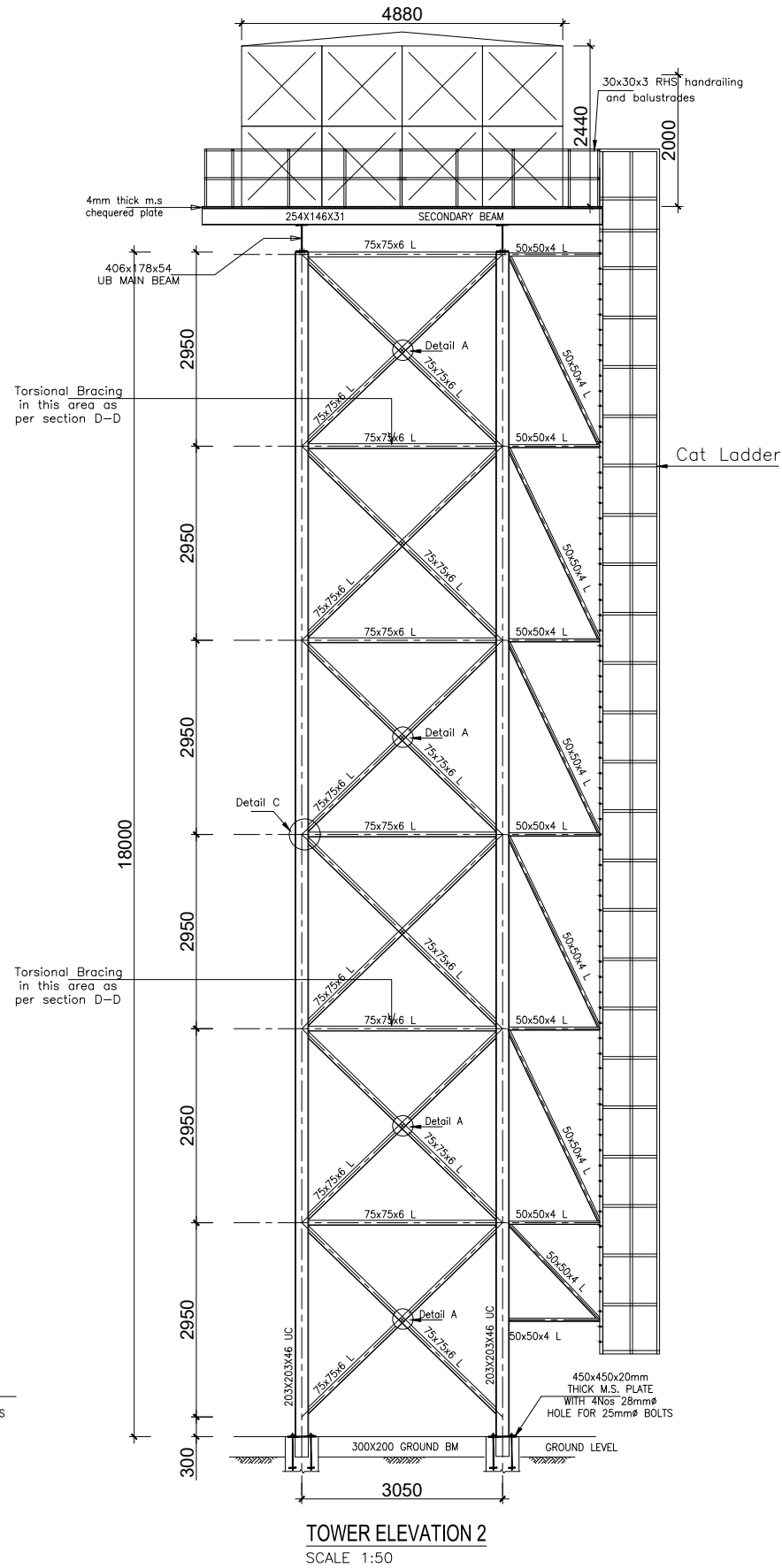
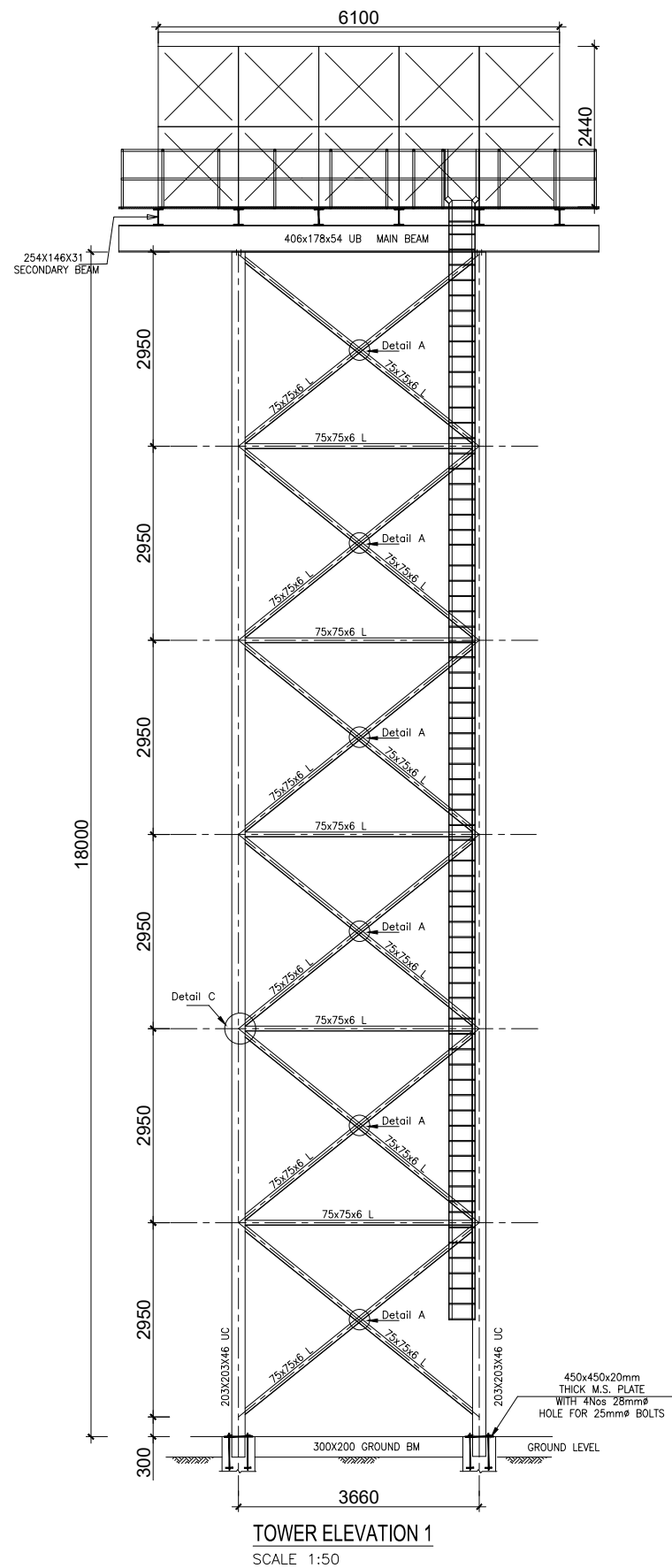
**AR/WSASS/EN/STR/016**

Scale:

Sheet No.:

As shown

1 of 2



#### GENERAL NOTES

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
  - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
- Reinforcement
  - High tensile bars to be ribbed cold formed bars to B.S. 4461
  - Mild steel to be round bars to B.S. 4449
  - Mesh reinforcement to comply with requirement of B.S. 4483
- Minimum cover to all steel 50.
- THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

- All vertical walls to be cast at once
- Approved stopper water bar to be installed in all joints as directed by the Engineer.
- Contractor to use non recoverable ties for tying formwork
- Contractor to submit methodology for Construction before commencing work.
- All Pipes going through walls to have paddle flange
- Diameter of pipes to first be confirmed by M&E before concreting.
- All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :

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CONSULTING ENGINEERS  
In Association with

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ANYAU WATER TREATMENT PLANT**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**NDAAPI 69m<sup>3</sup> TANK**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

**FEBRUARY 2023**

DRG. No.:

**AR/WSASS/EN/STR/016**

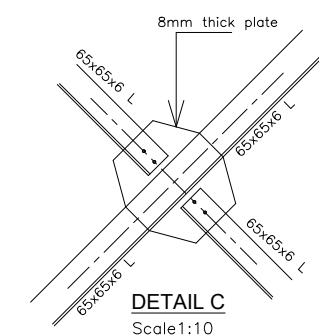
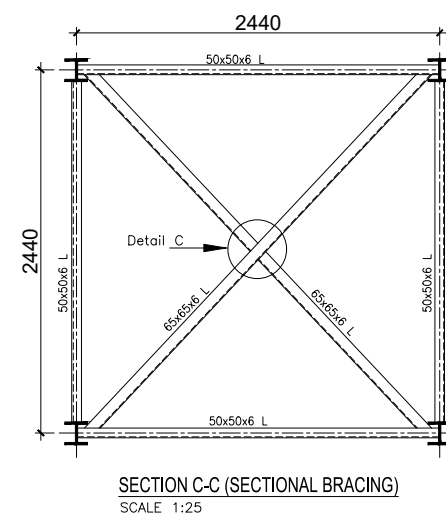
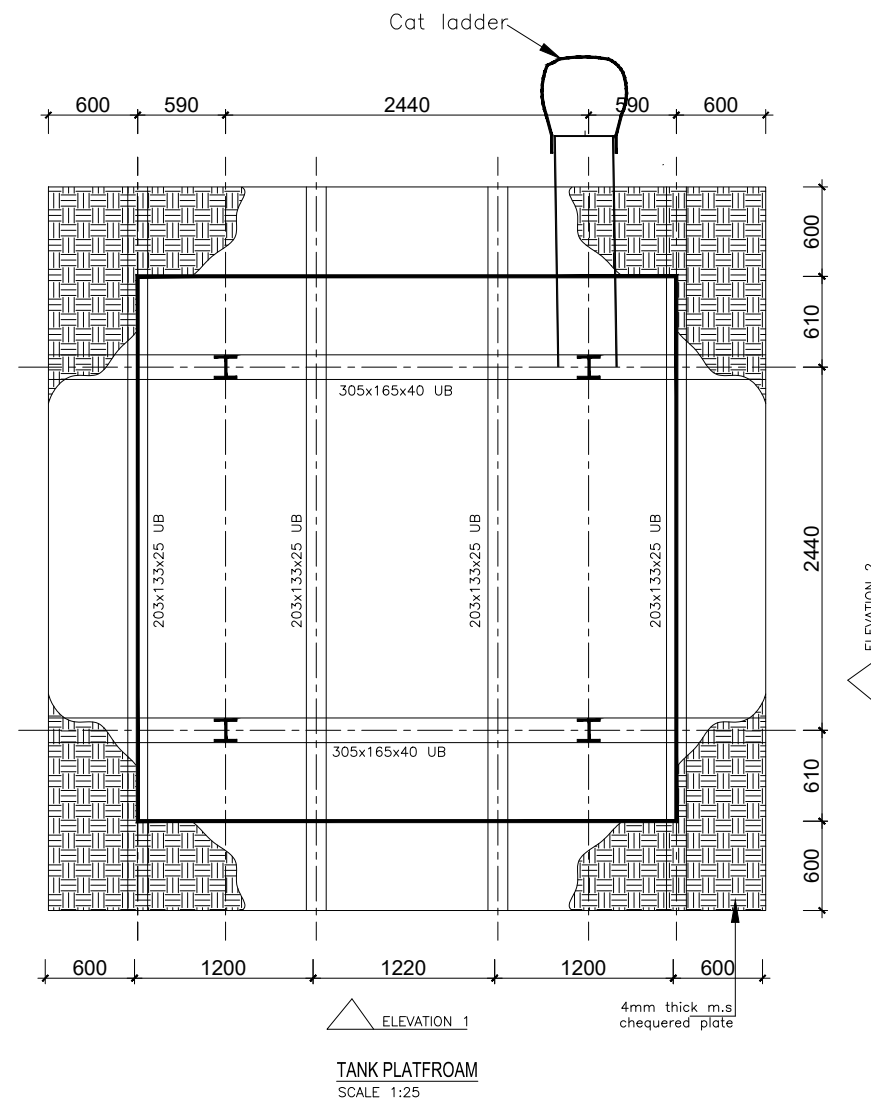
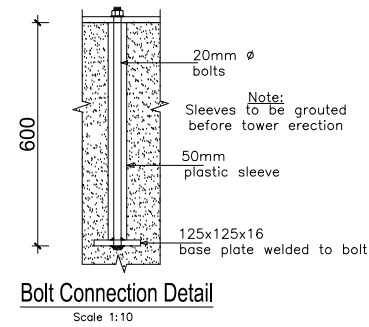
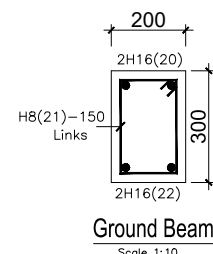
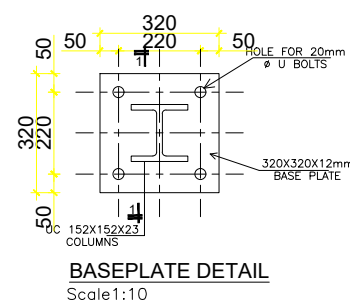
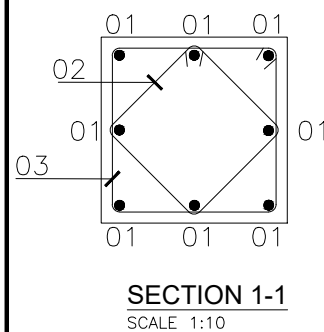
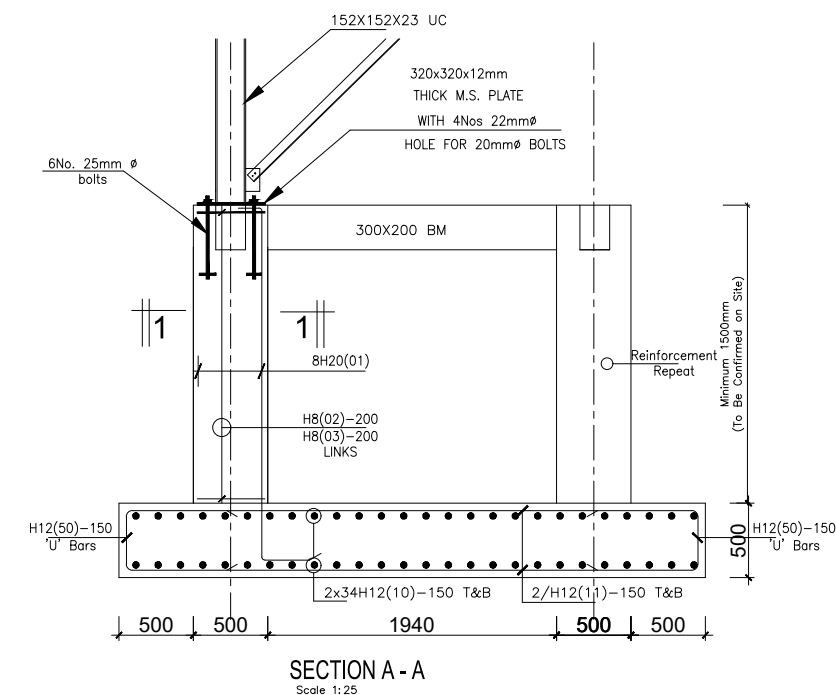
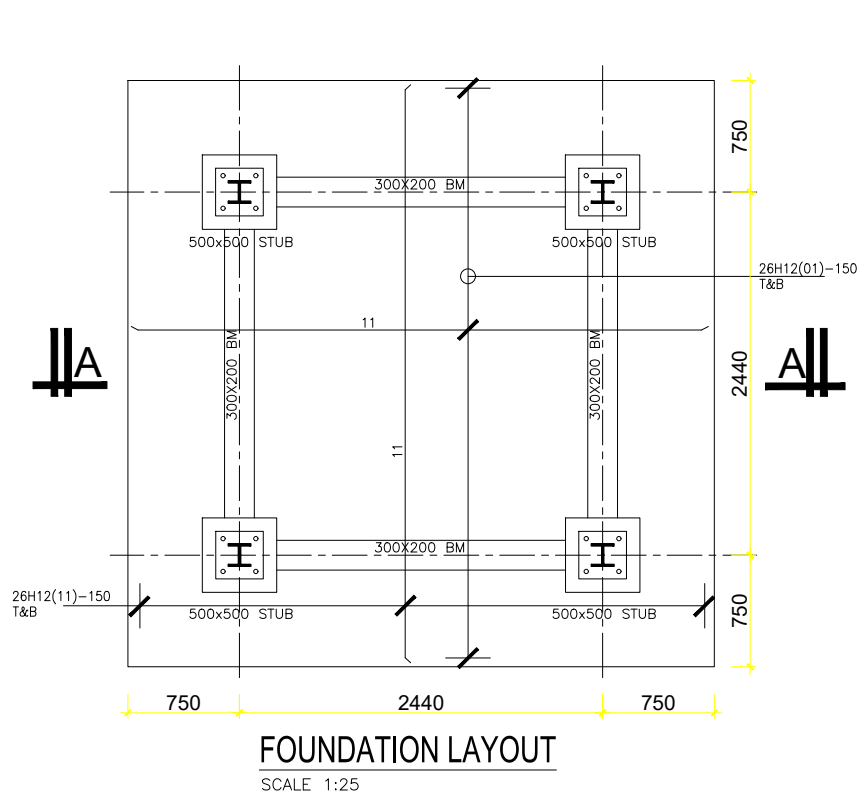
Scale:

Sheet No.:

As shown

2 of 2





- GENERAL NOTES**
- This drawing shall be read in conjunction with all relevant drawings.
  - Concrete mixes to BS8500
    - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
    - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
  - Reinforcement
    - High tensile bars to be ribbed cold formed bars to B.S. 4461
    - Mild steel to be round bars to B.S. 4449
    - Mesh reinforcement to comply with requirement of B.S. 4483
  - Minimum cover to all steel 50.
  - THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.
- ADDITIONAL NOTES**
- All vertical walls to be cast at once
  - Approved stopper water bar to be installed in all joints as directed by the Engineer.
  - Contractor to use non recoverable ties for tying formwork
  - Contractor to submit methodology for Construction before commencing work.
  - All Pipes going through walls to have paddle flange
  - Diameter of pipes to first be confirmed by M&E before concreting.
  - All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :



**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
In Association with  
**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION SYSTEM**

**ANYAU WATER TREATMENT PLANT**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**15m<sup>3</sup> TANK**

Surveyed by: R.K

Drawn by: K.L.W

Designed by: A.B

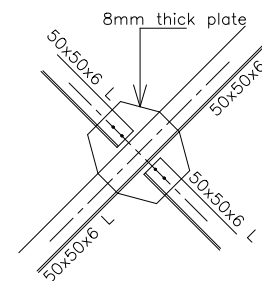
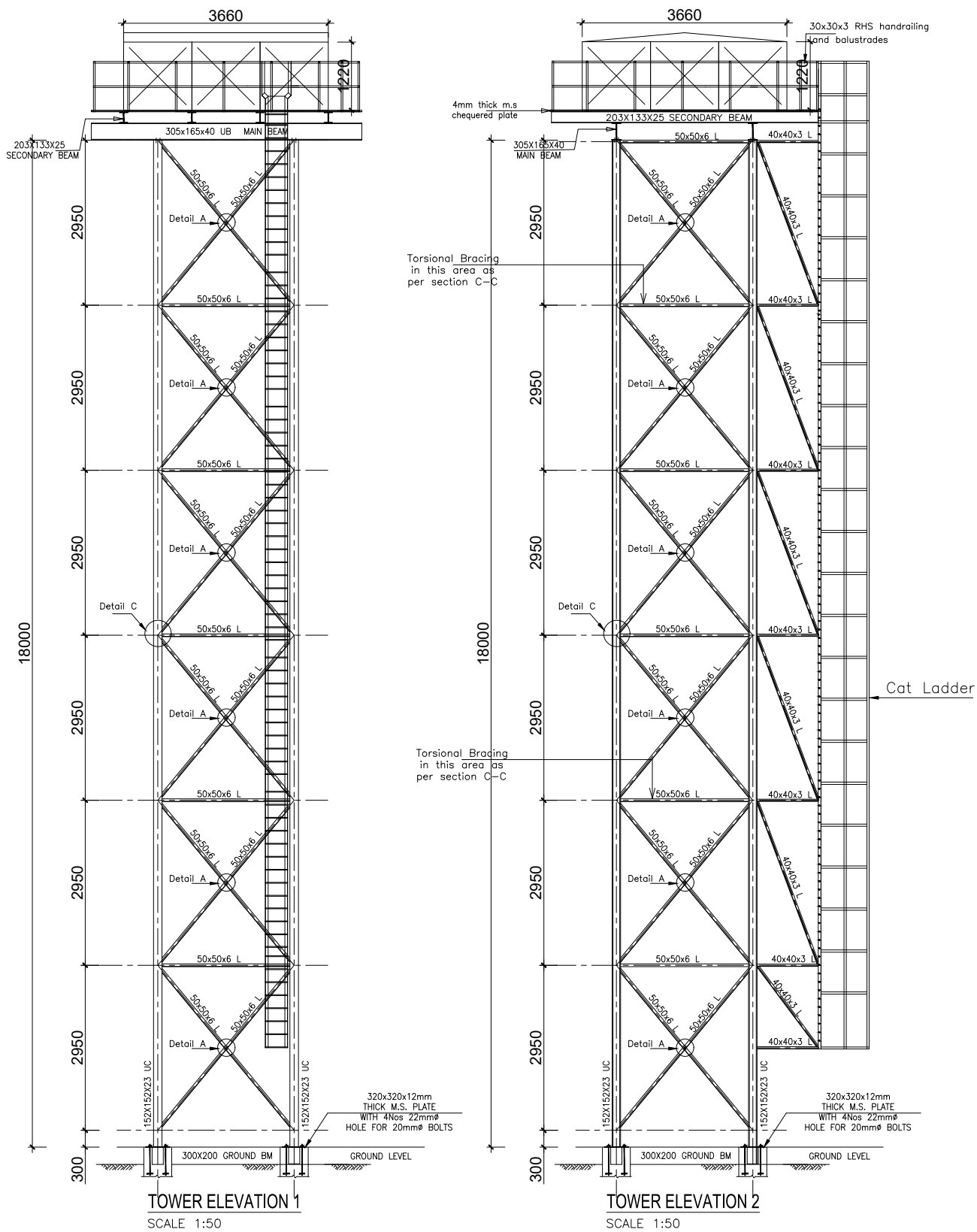
Checked by: A.B

Date: FEBRUARY 2023

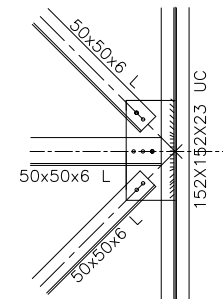
DRG. No.: AR/WSASS/EN/STR/017

Scale: As shown

Sheet No.: 1 of 2



Detail A  
Scale 1:10



Detail C  
Scale 1:10

#### GENERAL NOTES

- This drawing shall be read in conjunction with all relevant drawings.
- Concrete mixes to BS8500
  - Mass concrete to have a minimum works cube strength of 15N/mm<sup>2</sup> and at 28 days with 20 mm maximum aggregate size
  - Reinforced concrete to have works cube strength of 30N/mm<sup>2</sup> cylinder strength of 30N/mm<sup>2</sup> with 20mm maximum aggregate size UNLESS OTHERWISE STATED
- Reinforcement
  - High tensile bars to be ribbed cold formed bars to B.S. 4461
  - Mild steel to be round bars to B.S. 4449
  - Mesh reinforcement to comply with requirement of B.S. 4483
- Minimum cover to all steel 50.
- THE QUALITY OF ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE MOST RECENT ISSUES OF RELEVANT EUROPEAN STANDARDS AND CODES OF PRACTICE.

#### ADDITIONAL NOTES

- All vertical walls to be cast at once
- Approved stopper water bar to be installed in all joints as directed by the Engineer.
- Contractor to use non recoverable ties for tying formwork
- Contractor to submit methodology for Construction before commencing work.
- All Pipes going through walls to have paddle flange
- Diameter of pipes to first be confirmed by M&E before concreting.
- All position of services i.e pipes passing through RC walls to be confirmed by M&E Before Casting

CLIENT :



THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**  
DIRECTORATE OF WATER DEVELOPMENT

CONSULTANT :

**ALLIANCE CONSULTANTS LTD**  
CONSULTING ENGINEERS  
In Association with

**Infra-Consult Ltd**

P.O.BOX 33975 KAMPALA  
Email: allianceconsultantsltd@gmail.com

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION  
SYSTEM**

**ANYAU WATER TREATMENT PLANT**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**15m<sup>3</sup> TANK**

Surveyed by:

R.K

Drawn by:

K.L.W

Designed by:

A.B

Checked by:

A.B

Date:

**FEBRUARY 2023**

DRG. No.:

**AR/WSASS/EN/STR/017**

Scale:

Sheet No.:

As shown

2 of 2



# GENERAL NOTES FOR STANDARD DETAIL DRAWINGS

- Unless flexibility is otherwise provided, where pipes enter or leave concrete structures, or anchor blocks, flexible joints are to be provided as shown.
- Anchor block designs are based on the following ground conditions.
  - Dry soil density: 1800 kg/m<sup>3</sup>
  - Submerged soil density: 1090 kg/m<sup>3</sup>
  - Angle of internal friction: 30°
  - Passive resistance factor: 3
  - Where considerably better ground conditions, such as rock, are encountered, the dimensions of anchor blocks may be reduced. Supporting calculations for any reduced size anchor blocks must be submitted to the Project Manager 48 hours before construction of the particular anchor block commences and maybe concreted only after his approval.
- Bases and thrust faces of anchor blocks are to be cast against undisturbed ground, or against blinding cast against undisturbed ground.
- Pipe work joints as shown for the water supply details are diagrammatic only.
- The following notes apply to reinforced concrete chambers.
  - Concrete in walls and base and cover slab 2
    - Characteristic strength (N/mm<sup>2</sup>): 30
    - Maximum aggregate size (mm): 20
    - Cement type: SR 3
    - Minimum cement content (kg/m<sup>3</sup>): 330
    - Maximum cement content (kg/m<sup>3</sup>): 400
    - Maximum free water/cement ratio: 0.47
  - Concrete in blinding 2
    - Characteristic strength (N/mm<sup>2</sup>): 1030
    - Maximum aggregate size (mm): 40
    - Cement type: SR 3
    - Minimum cement content (kg/m<sup>3</sup>): 230
  - Cover to reinforcement 40mm unless positioned centrally
    - Minimum reinforcement lap 300 mm
    - For details of step irons see Standard Detail Ala-ora-SD-009
    - Corners of rectangular openings to have T8 bars 500 mm long set diagonally
- All dimensions are in millimeters unless shown otherwise.
- Do not scale dimensions from standard Detail drawings.

- References  
All engineering Drawings shall be read in conjunction with Specifications. Any discrepancies should be reported to the Supervising Engineer.
- Dimensions  
All dimensions are in millimeters ( unless stated otherwise )
- Foundations  
Foundations have been designed on bearing pressure of 200 KN/m<sup>2</sup> foundation depth to be determined by engineer prior to placing minimum foundation depth to be 1000mm below floor concrete. Level or 600 mm below Splash Apron level whichever is critical maximum allowable fill below ground slab = 500 mm
- Block work  
All Load bearing block walls to be constructed from solid block characteristic compression strength complying of 5.0 N/mm<sup>2</sup> Min. with BS 5620 Part1 1978 Structural use of Unreinforced Masonry Mortar to conform to mortar designation ( iii ) of Table 1 BS 5620 Part1
- Concrete

PROPOSED USE	GRADE	PERMITTED TYPE AGGREGATES		MAX. SIZE AGGREGATES	WORKABILITY
		COARSE	FINE		
Reinforced conc. (including ground bearing slab )	C 25	BS 882	BS 882	20mm	Medium (75)
Concrete containing no embedded metal	C 15	BS 882	BS 882	40mm	Medium (75)
Blinding Concrete	C 7.5	BS 882	BS 882	20mm	Medium (75)
Concrete in minor elements e.g lintels	C 25	BS 882	BS 882	10mm	Medium (75)

## COVER

LOCATION	COVER
To Mesh in ground slab	30mm
Columns (cover to links)	25mm
Slabs (cover to main bars)	25mm
Foundations	50mm
Top and bottom slides	75mm

- Joints  
Movement joints to be at a maximum 9.0m centres. Joint positions as indicated on drg. Joint in slab to be carried through walls to underside of ring beam
- Wall ties  
Provide masonry anchors every 2 courses using galvanised. Mild steel debond ties to BS 1243 . 1978
- Reinforcement  
Reinforcement to be in accordance with consulting engineer's specification.
  - R - - - - - Denotes round mild steel bars
  - T - - - - - Denotes high yield bond strength bars.

## NOTES

- All dimensions in mm unless otherwise stated
- Where it is stated " Site Dimension " the measurement is to be determined on site.

## LEGEND

CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

 **THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

 **Alliance Consultants Ltd**  
In Association with  
 **Infra-Consult Ltd**

PROJECT :

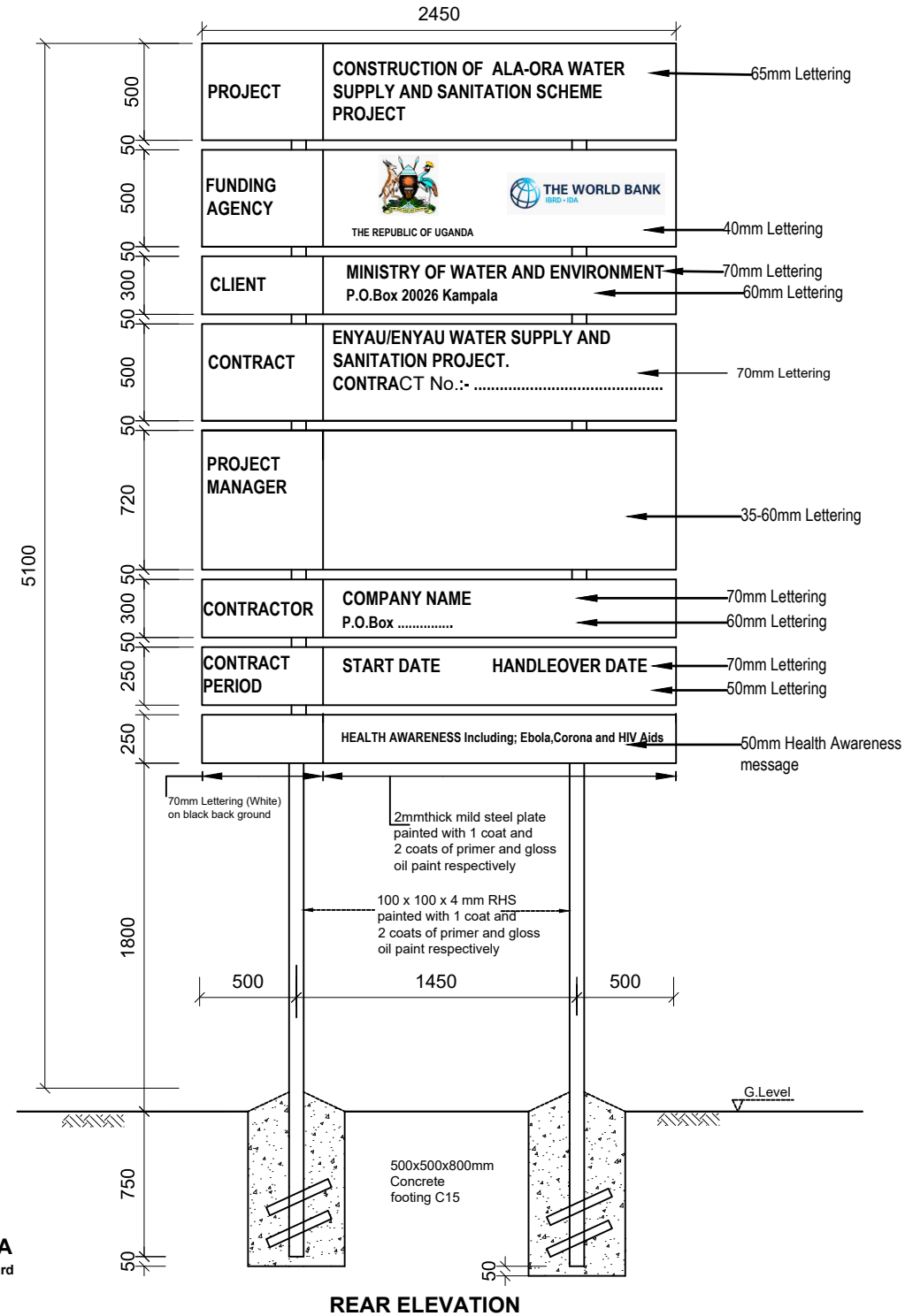
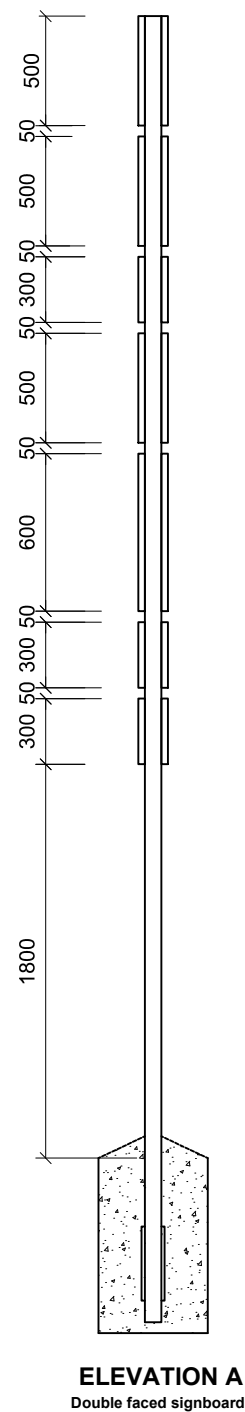
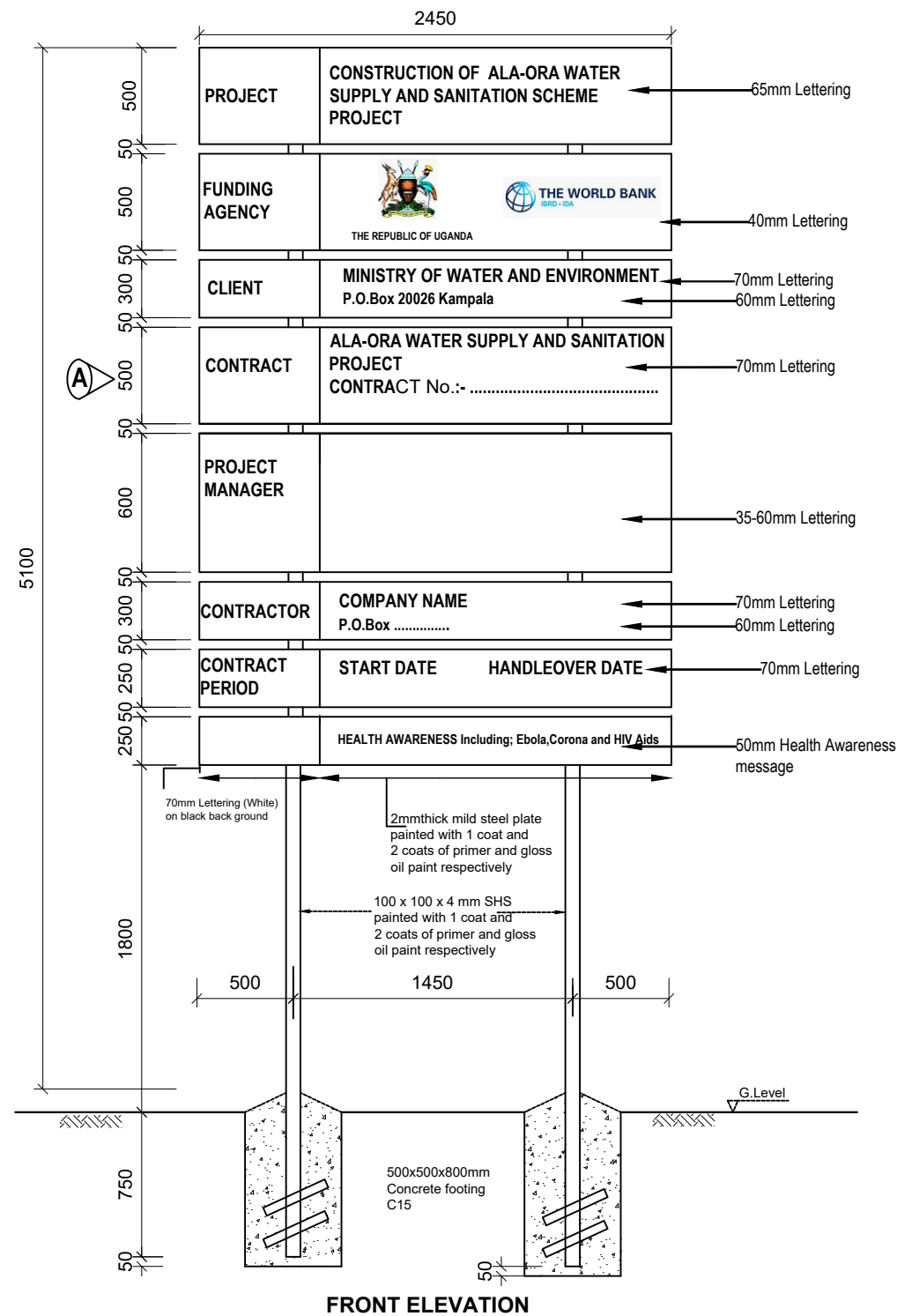
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**  
**General Notes**

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-000</b>
Scale:	1:120
Sheet No.:	1 of 1



## NOTES

- Project Signboards are to be double faced
- The Plates to be printed white and Words to be in black include all Logos.

## LEGEND

CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

 **THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

 **Alliance Consultants Ltd**  
In Association with  
 **Infra-Consult Ltd**

PROJECT :

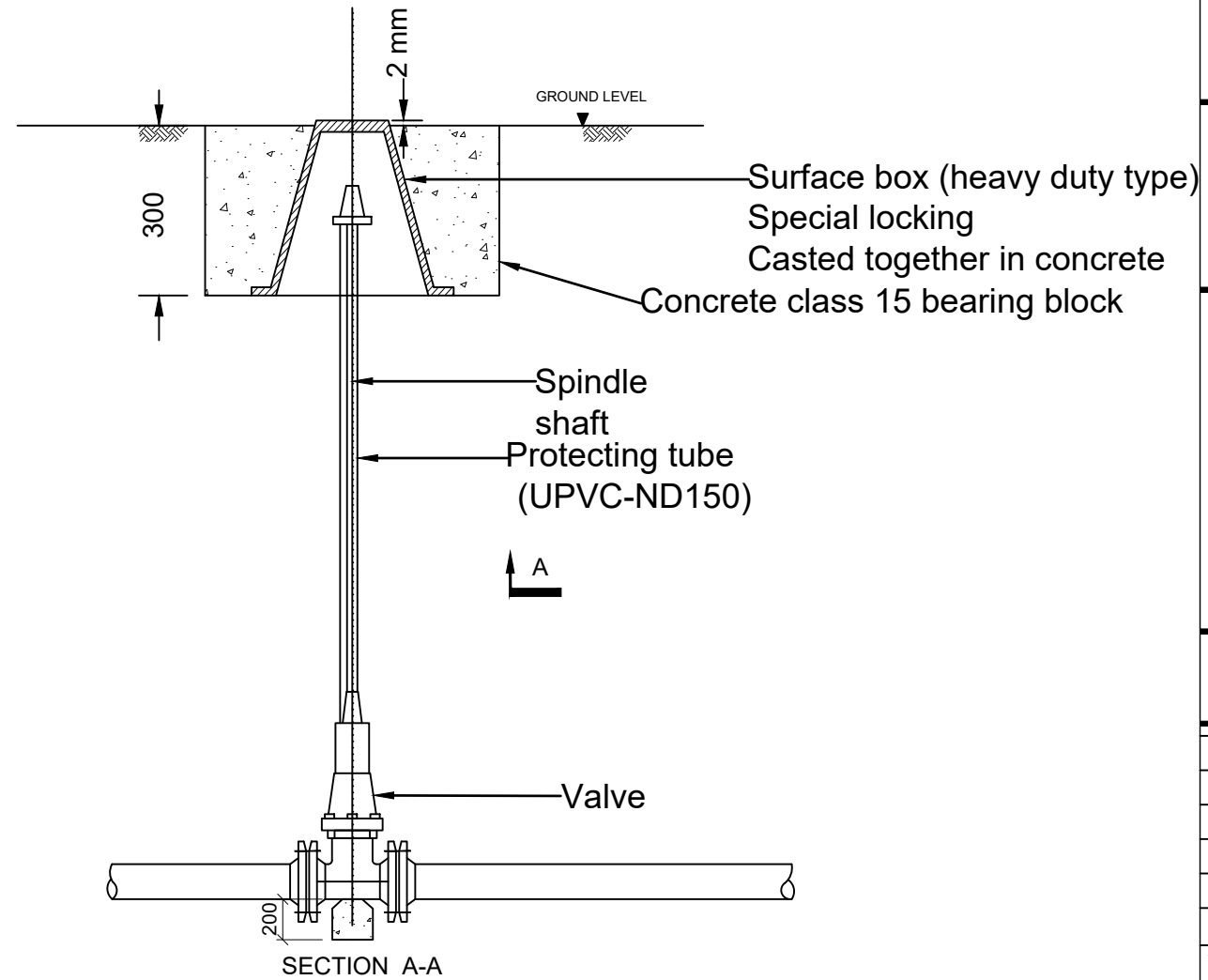
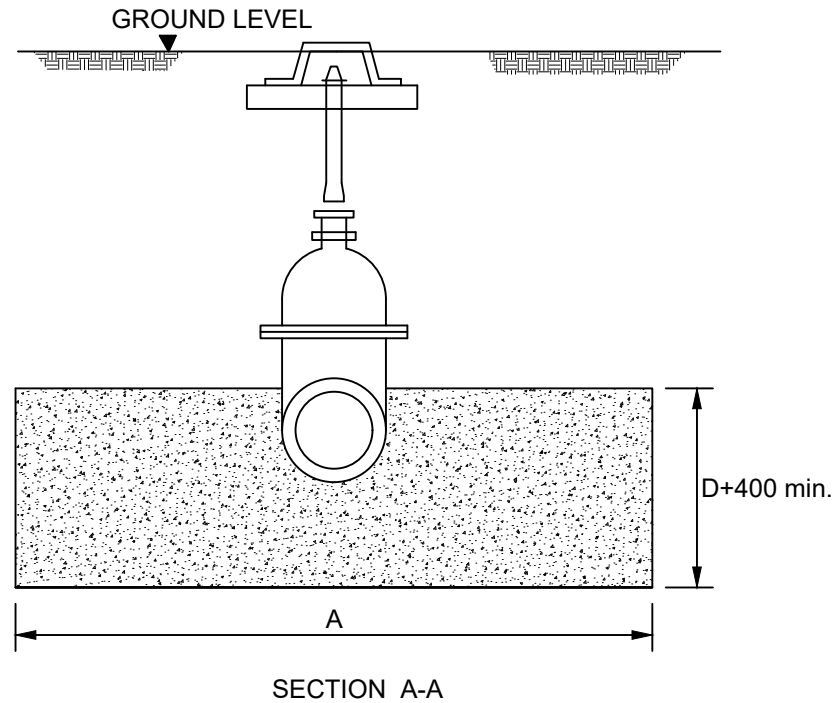
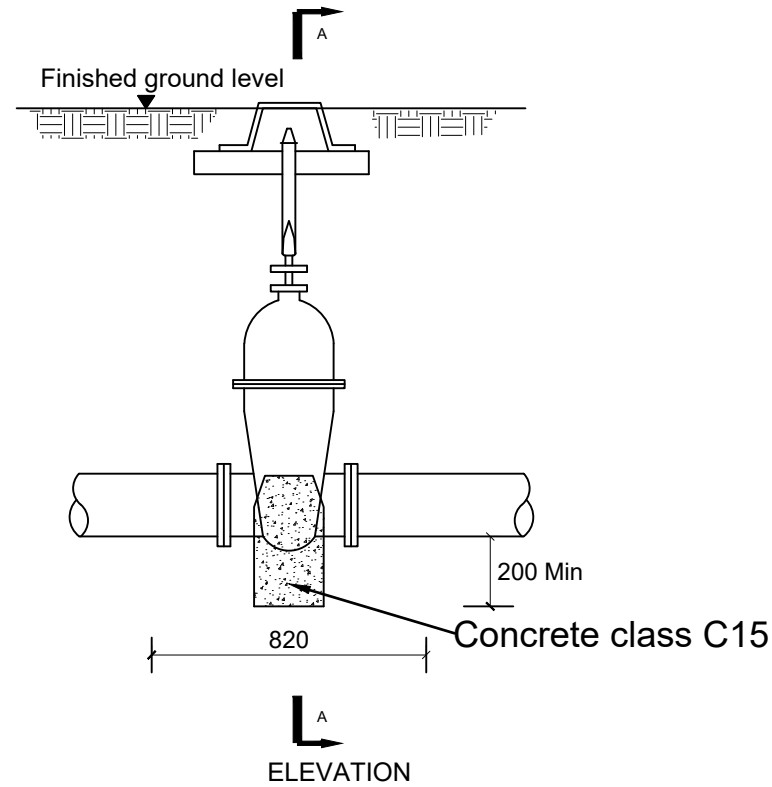
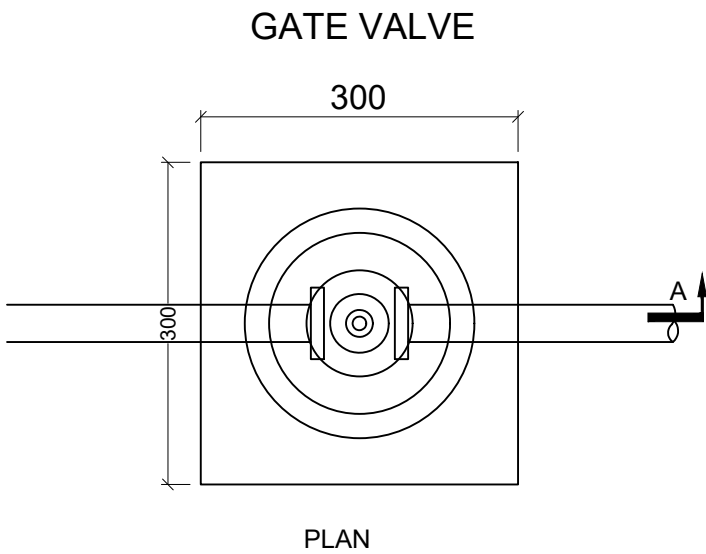
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS  
Sign Board**

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-001</b>
Scale:	1:120
Sheet No.:	1 of 1



## LEGEND

CLIENT :

  
 THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

  
**THE WORLD BANK**  
 IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

  
 Alliance Consultants Ltd  
 In Association with  
  
 Infra-Consult Ltd

PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

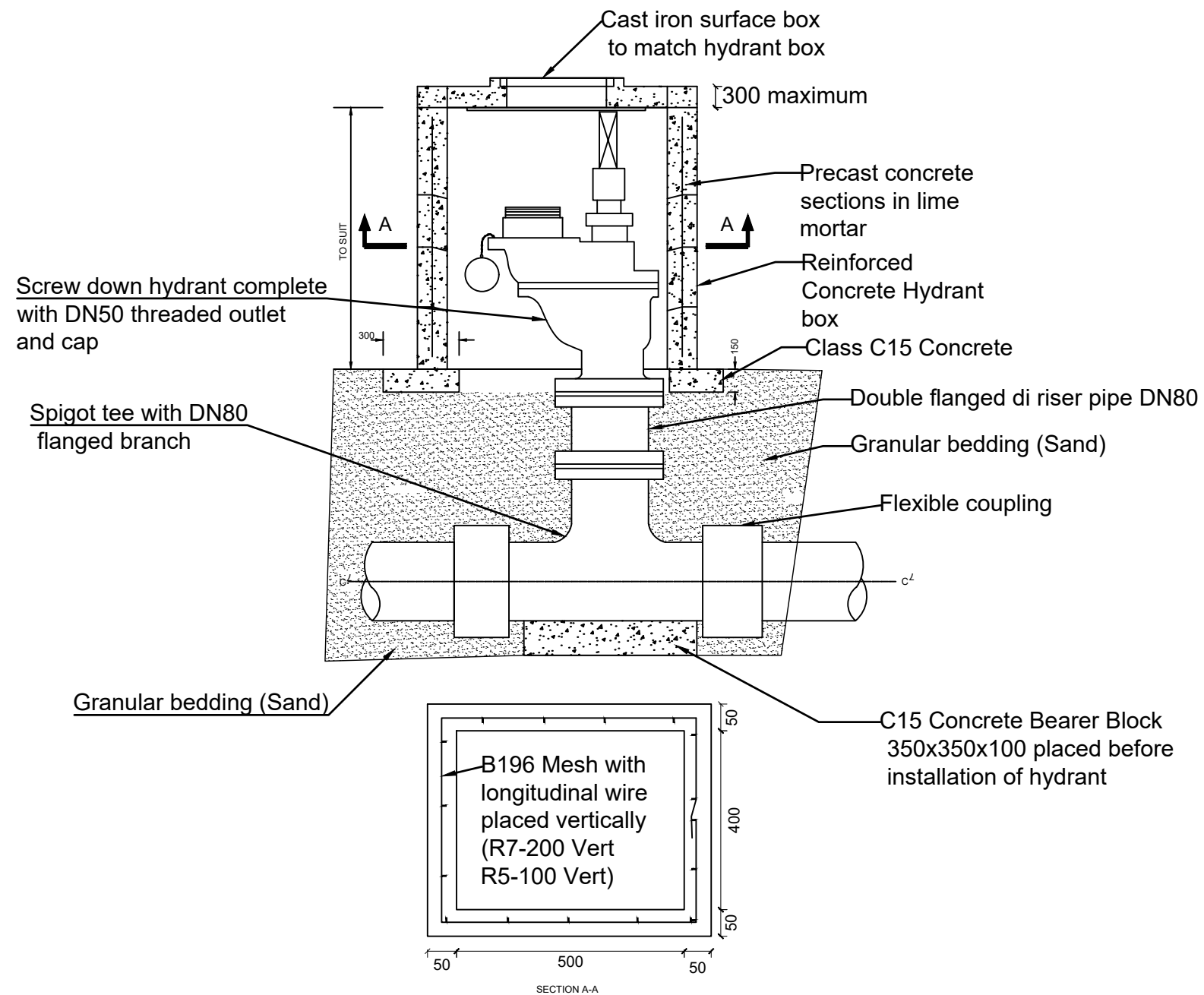
REVISIONS :		
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS  
Gate Valve and Surface Box**

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-002</b>
Scale:	1:120
Sheet No.:	1 of 1

# FIRE HYDRANT DETAILS

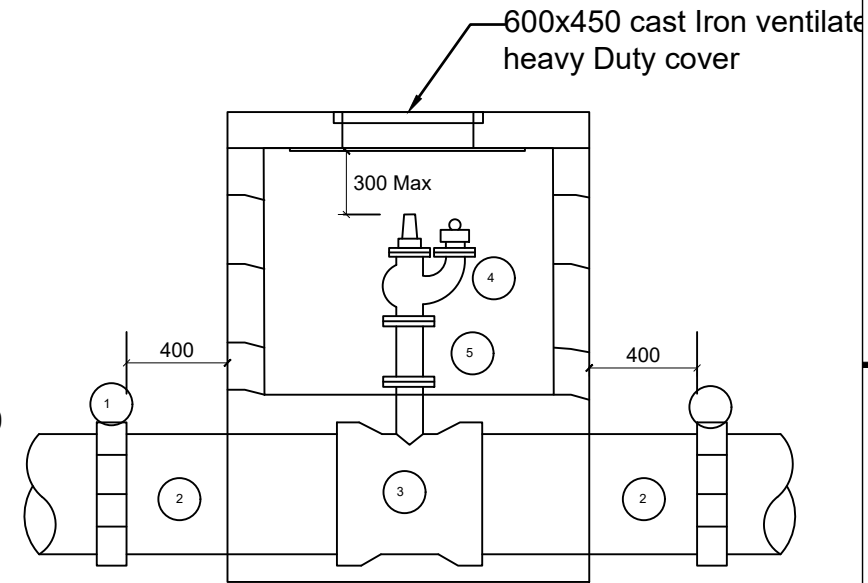
## FIRE HYDRANT-CHAMBER



### NOTE

Alternative to Precast concrete Chamber Section is 150/200mm thick C25 Layer of A393 Mesh to all members

## FIRE HYDRANT-PIPEWORK



## SCHEDULE

## ITEM DESCRIPTION

- 1 Flexible adaptor if required
- 2 Make-up pipe
- 3 Socket tee flanged branch 80 dia.
- 4 Flanged pipe 80 dia. As required
- 5 Screwdown hydrant

## NOTES

1. Flanged pipework to be ductile iron
2. Make up pipes to be ductile iron or UPVC

### LEGEND

CLIENT :



THE REPUBLIC OF UGANDA

**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:



CONSULTANT :



**Alliance Consultants Ltd**  
*In Association with*

**Infra-Consult Ltd**

PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

## ENYAU WATER SUPPLY AND SANITATION SYSTEM

#### REVISIONS :

No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**  
**Fire Hydrant Chamber and Pipework**

Surveyed by:	
--------------	--

y: R.K

Drawn by:

N.R

Designed by:	
--------------	--

W.G.M

Checked by:	
-------------	--

J.K.K

Date:

January 2023

DRG. No.:

ALA-ORA-SD-003

Scale:

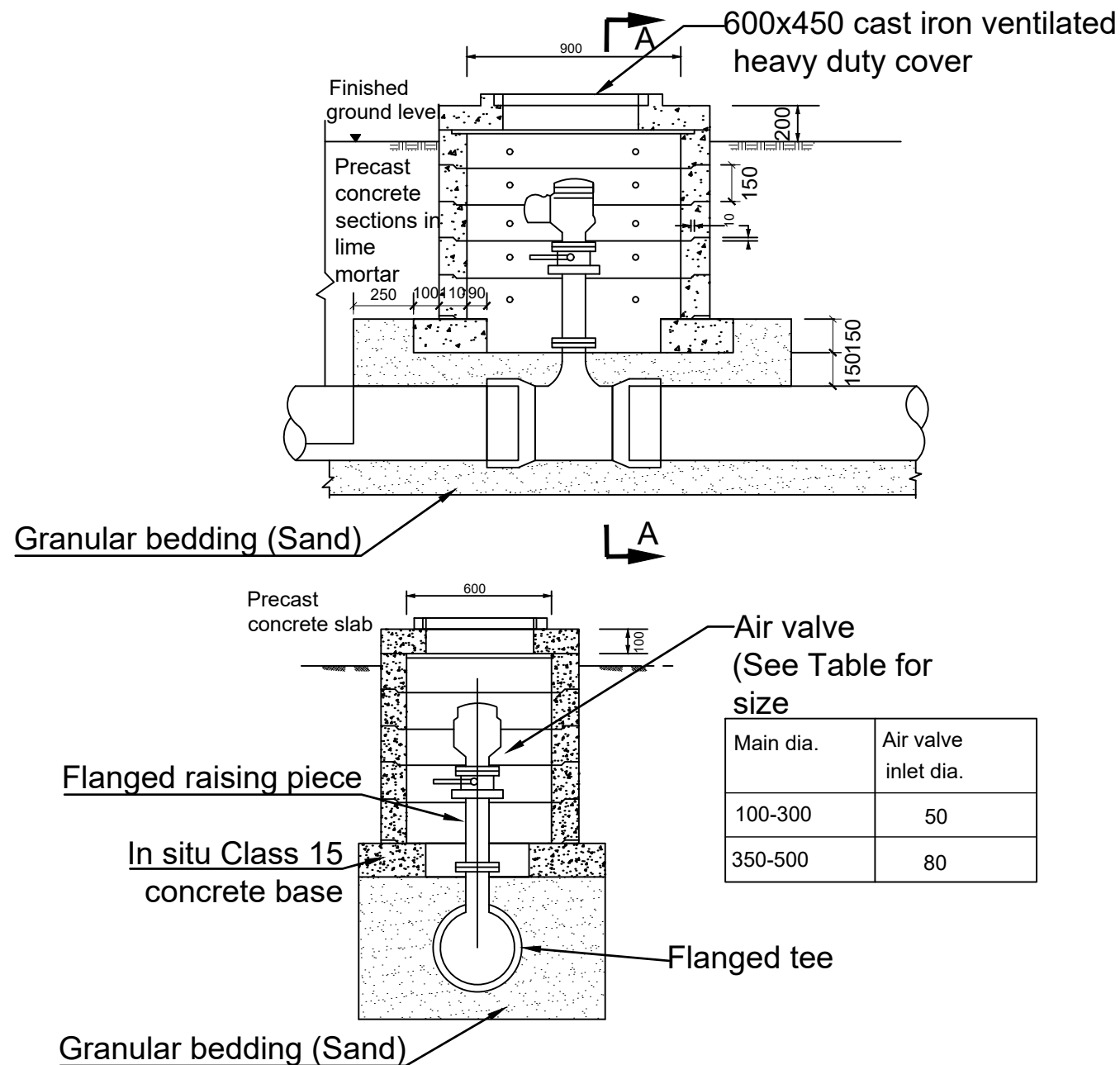
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Sheet No.:

1 of 1

# AIR VALVE DETAILS

## AIR VALVE CHAMBER

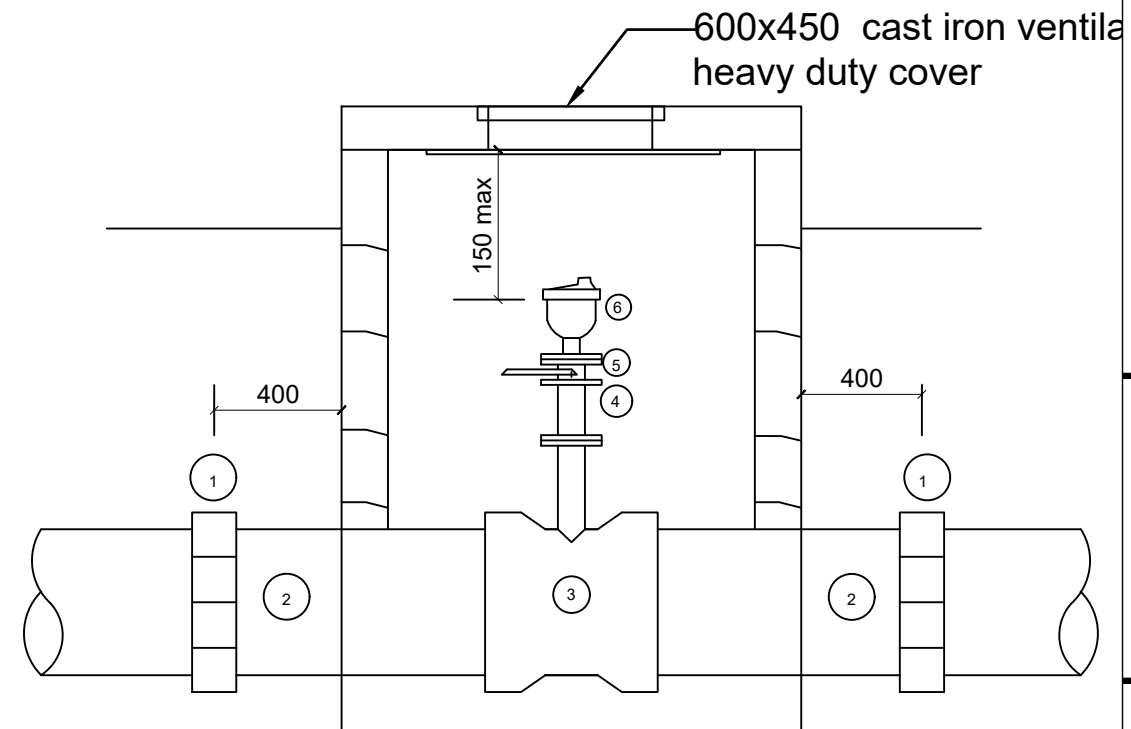


### Note:

Alternative to Precast Concrete Chamber Sections is 150/200mm thick C25/Single layer of A393 Mesh to all Members

Main dia.	Air valve inlet dia.
100-300	50
350-500	80

## AIR VALVE PIPEWORK



### Note:

1. All Dimensions are in Millimeters
2. Flanged Pipework to be Ductile Iron
3. Make up Pipes to be Ductile Iron
4. Chamber to be 1200x900 Internal Dimensions
5. See General Notes

### SCHEDULE

#### ITEM DESCRIPTION

1. Flexible adaptor if required
2. Make-up pipe
3. Socket tee flanged branch 80/50 dia as required
4. Flanged pipe 80/50 dia as required
5. Isolating valve main 100-300 Dia valve 50 Dia
6. Air valve main 350-600 Dia valve 80Dia

### LEGEND

CLIENT :



THE REPUBLIC OF UGANDA

**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

 **THE WORLD BANK**  
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CONSULTANT :

 **Alliance Consultants Ltd**  
In Association with  
 **Infra-Consult Ltd**

PROJECT :

ALA-ORA WATER SUPPLY AND SANITATION PROJECT

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**  
**Air Valve Chamber and Pipework**

Surveyed by: R.K

Drawn by: N.R

Designed by: W.G.M

Checked by: J.K.K

Date: January 2023

DRG. No.: **ALA-ORA-SD-004**

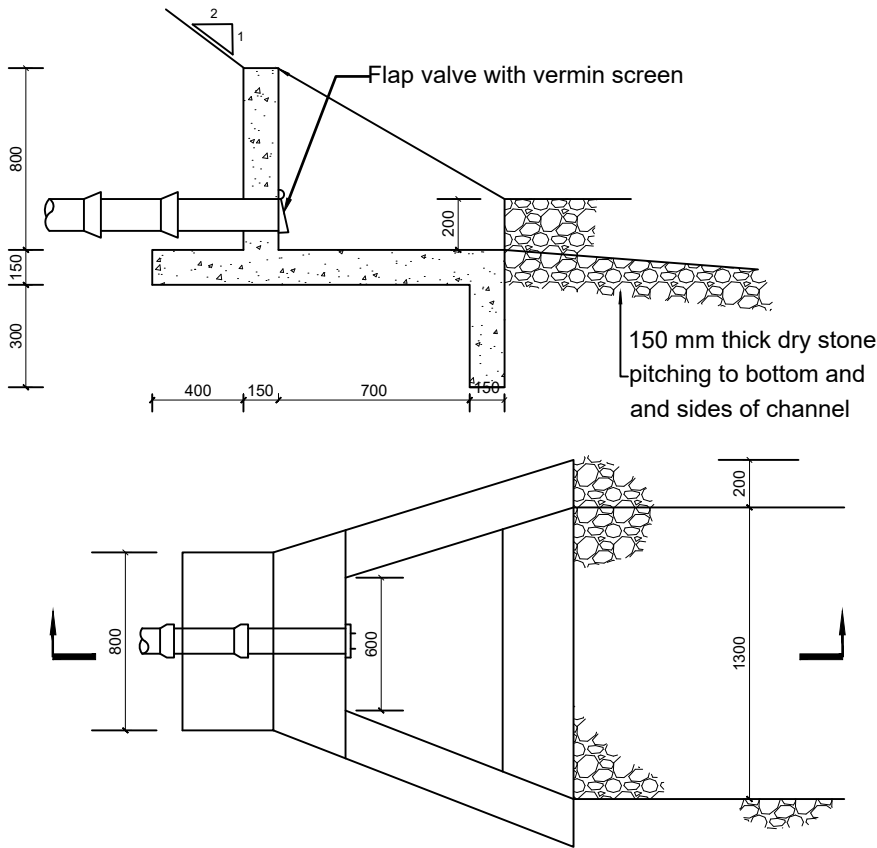
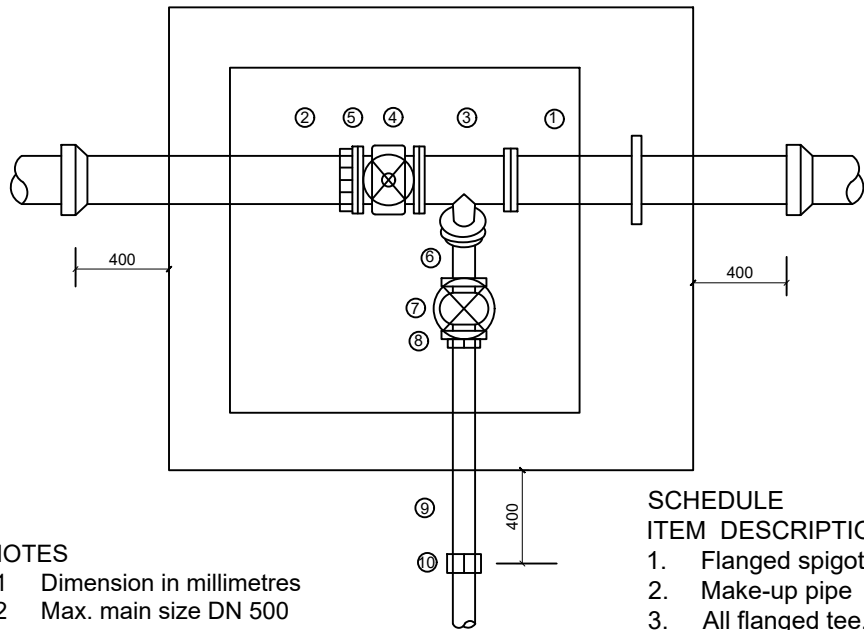
Scale: 1:120 Sheet No.: 1 of 1



# WASHOUT CHAMBER

# OUTFALL STRUCTURE

## LEGEND



NOTES

1 Dimension in millimetres

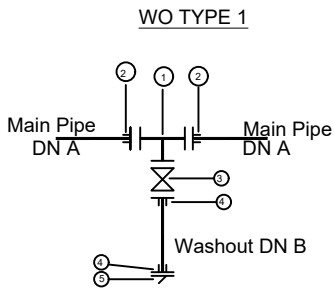
2 Max. main size DN 500

3 Pipework within chamber to be ductile iron

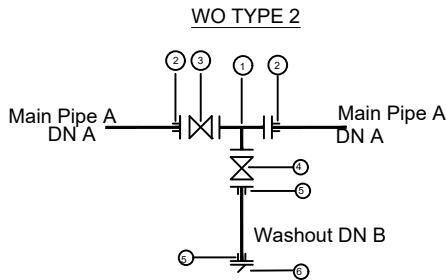
4 For details of chamber see standard detail drawing SD135

- SCHEDULE
- | ITEM | DESCRIPTION                                      |
|------|--|
| 1.   | Flanged spigot pipe 1200 long with thrust flange |
| 2.   | Make-up pipe                                     |
| 3.   | All flanged tee, branch DN 80                    |
| 4.   | Flanged in-line gate valve                       |
| 5.   | Flange adaptor                                   |
| 6.   | Flanged 45o bend DN 80                           |
| 7.   | Flanged gate valve DN 80                         |
| 8.   | Flanged adaptor DN 80                            |
| 9.   | Spigot pipe DN 80                                |
| 10.  | Flexible adaptor if required                     |

# WASHOUT DETAILS TYPE 1 & 2



- ① 1No CI Flanged Tee DN A/B
- ② 2No DI Flange Adaptor, Maxi type or similar type DN A
- ③ 1No CI Flanged Gate Valve DN A
- ④ 1No DI Flange Adaptor, Maxi type or similar DN B
- ⑤ 1 No. D1 Flanged Flap Valve DN B



- ① 1No CI Flanged Tee DN A/B
- ② 1No DI Flange Adaptor, Maxi type or similar type DN A
- ③ 1No CI Flanged Gate Valve DN A
- ④ 1No DI Flanged Gate Valve DN B
- ⑤ 2No DI Flange Adaptor, Maxi type or similar DN B
- ⑥ 1No D1 Flanged Flap Valve DN B

Pipe Diameter		Fittings Diameter	
Main Pipe	Washout	A	B
OD 63	OD 63	DN 50	OD 50
OD 90	OD 63	DN 80	OD 50
OD 110	OD 63	DN 100	OD 50
OD 160	OD 63	DN 150	OD 50
OD 208	OD 110	DN 200	OD 100
OD 250	OD 110	DN 250	OD 100
OD 300	OD 110	DN 300	OD 100

NOTES:

1. Pressure ratings of Washouts and Fittings shall be similar to those of main pipe on which the washout is to be installed

2. All Pipe Fittings within the Chamber are to be Ductile Iron

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MINISTRY OF WATER AND ENVIRONMENT

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THE WORLD BANK

CONSULTANT :

Alliance Consultants Ltd

In Association with

Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND SANITATION PROJECT

ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :		
No	Date	Description

DRAWING TITLE : STANDARD DRAWINGS

Washout Chamber and Outfall Structure

Surveyed by: R.K

Drawn by: N.R

Designed by: W.G.M

Checked by: J.K.K

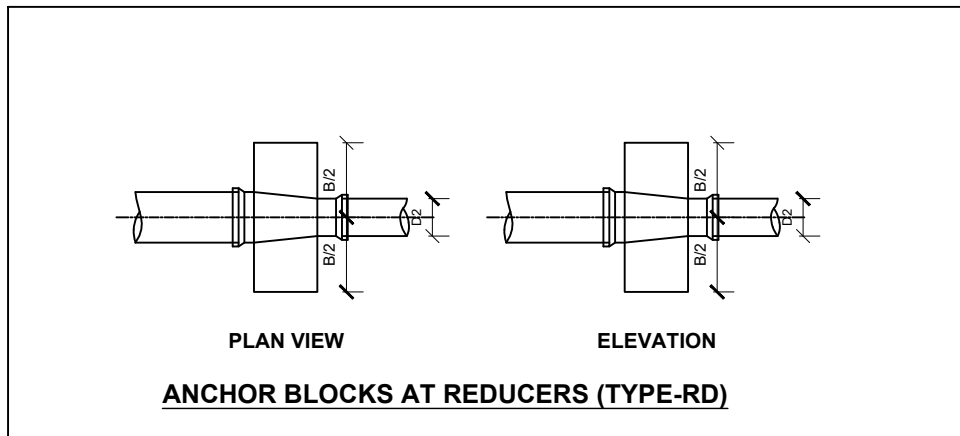
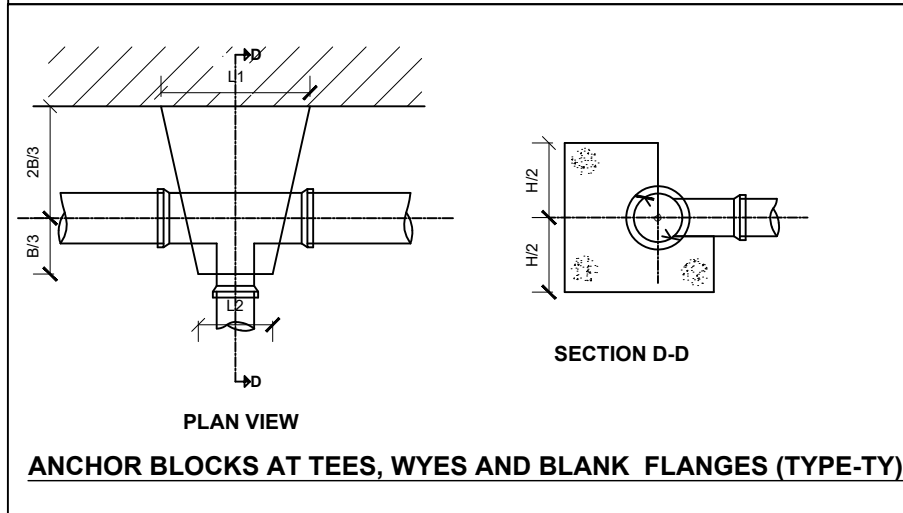
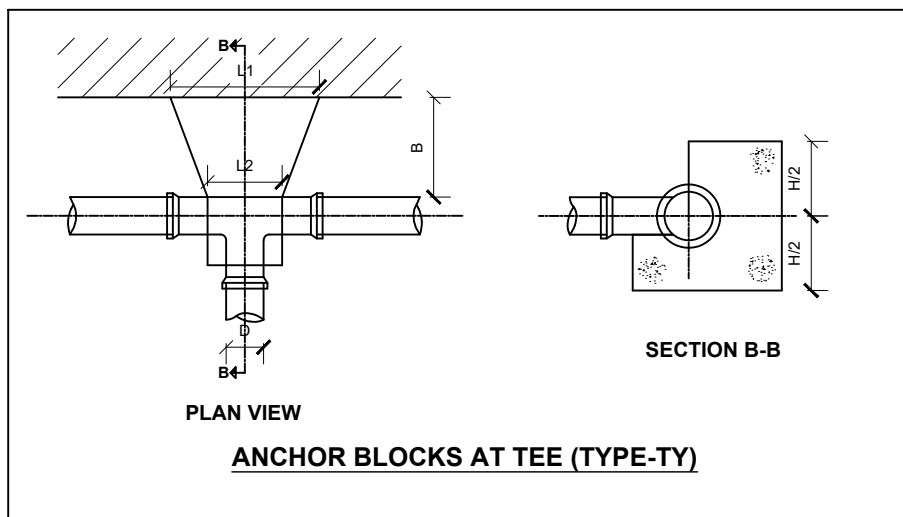
Date: January 2023

DRG. No.: ALA-ORA-SD-005

Scale: 1:120

Sheet No.: 1 of 1





TEES (TYPE-TY)						TEES (TYPE-TY)					
BRANCH SIZE	TEST PRESSURE					BRANCH SIZE	TEST PRESSURE				
ND (mm)	m	L1 m	L2 m	B m	H m	ND (mm)	m	L1 m	L2 m	B m	H m
50	250	0.40	0.20	0.40	0.30	80	250	0.50	0.25	0.50	0.40
	225	0.40	0.20	0.40	0.30		225	0.50	0.25	0.50	0.40
	180	0.40	0.20	0.40	0.30		180	0.50	0.25	0.50	0.40
	135	0.40	0.20	0.40	0.30		135	0.50	0.25	0.50	0.40
	90	0.40	0.20	0.40	0.30		90	0.50	0.25	0.50	0.40
BRANCH SIZE	TEST PRESSURE					BRANCH SIZE	TEST PRESSURE				
ND (mm)	m	L1 m	L2 m	B m	H m	ND (mm)	m	L1 m	L2 m	B m	H m
100	250	0.60	0.30	0.60	0.50	150	250	0.70	0.40	0.60	0.50
	225	0.60	0.30	0.60	0.50		225	0.70	0.40	0.60	0.50
	180	0.60	0.30	0.60	0.50		180	0.70	0.40	0.60	0.50
	135	0.60	0.30	0.60	0.50		135	0.70	0.40	0.60	0.50
	90	0.60	0.30	0.60	0.50		90	0.70	0.40	0.60	0.50

REDUCERS (TYPE-RD)					REDUCERS (TYPE-RD)					REDUCERS (TYPE-RD)				
NOMINAL DIAMETER	TEST PRESSURE				NOMINAL DIAMETER	TEST PRESSURE				NOMINAL DIAMETER	TEST PRESSURE			
mm	m	L m	B m	H m	mm	m	L m	B m	H m	mm	m	L m	B m	H m
100/80	250	0.35	0.50	0.55	150/80	250	0.40	0.70	0.45	100/150	250	0.40	0.75	0.55
	225	0.35	0.50	0.50		225	0.40	0.70	0.45		225	0.40	0.70	0.55
	180	0.35	0.50	0.45		180	0.40	0.65	0.40		180	0.40	0.60	0.50
	135	0.35	0.50	0.40		135	0.40	0.60	0.40		135	0.40	0.60	0.45
	90	0.35	0.50	0.40		90	0.40	0.60	0.40		90	0.40	0.60	0.40

## LEGEND

CLIENT :



CO-FINANCED BY:



CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**STANDARD DRAWINGS**  
Anchor Block Details

Surveyed by:

R.K

Drawn by:

N.R

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

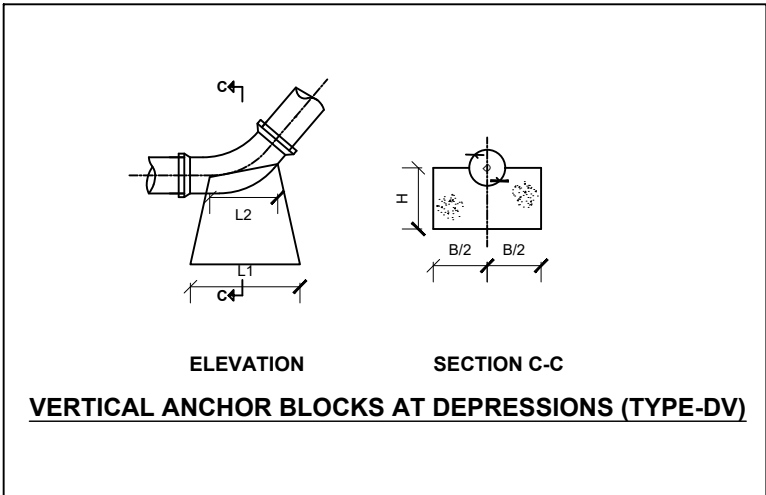
**ALA-ORA-SD-006**

Scale:

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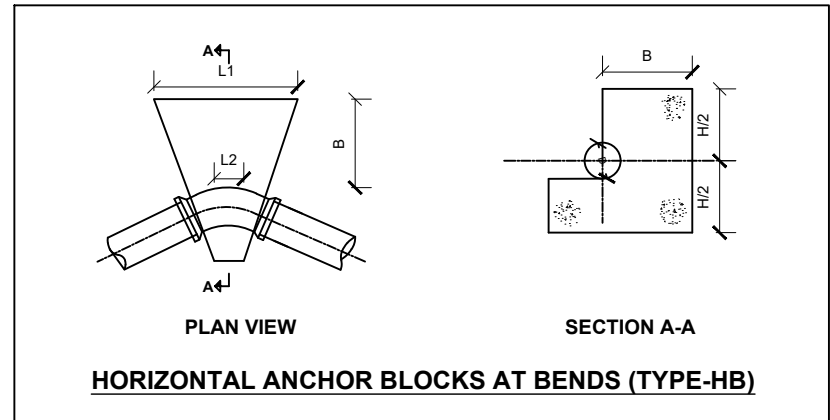
Sheet No.:

1 of 3



VERTICAL ANCHOR BLOCKS AT DEPRESSIONS (TYPE-DV)

NOMINAL DIAMETER	TEST PRESSURE	45° BEND				22½° BEND				11¼° BEND			
mm	m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m
100	250	0.40	0.20	0.30	0.50	0.40	0.20	0.30	0.50	0.40	0.20	0.20	0.50
	225	0.40	0.20	0.30	0.50	0.40	0.20	0.30	0.50	0.40	0.20	0.20	0.50
	180	0.40	0.20	0.30	0.50	0.40	0.20	0.30	0.50	0.40	0.20	0.20	0.50
	135	0.40	0.20	0.30	0.50	0.40	0.20	0.30	0.50	0.40	0.20	0.20	0.50
	90	0.40	0.20	0.30	0.50	0.40	0.20	0.30	0.50	0.40	0.20	0.20	0.50



HORIZONTAL ANCHOR BLOCKS AT BENDS (TYPE-HB)

NOMINAL DIAMETER	TEST PRESSURE	90° BEND				45° BEND				22½° BEND				11¼° BEND			
mm	m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m
150	250	1.20	0.45	0.80	0.80	0.80	0.45	0.80	0.80	0.80	0.45	0.70	0.70	0.60	0.45	0.60	0.60
	225	1.20	0.45	0.80	0.80	0.80	0.45	0.80	0.80	0.80	0.45	0.70	0.70	0.60	0.45	0.60	0.60
	180	1.00	0.45	0.80	0.80	0.80	0.45	0.80	0.80	0.80	0.45	0.70	0.70	0.60	0.45	0.60	0.60
	135	1.00	0.45	0.60	0.60	0.80	0.45	0.80	0.80	0.60	0.45	0.70	0.70	0.60	0.45	0.60	0.60
	90	1.00	0.45	0.60	0.60	0.60	0.45	0.80	0.80	0.60	0.45	0.70	0.70	0.60	0.45	0.60	0.60

VERTICAL BENDS - DEPRESSIONS (TYPE-DV)													
NOMINAL DIAMETER	TEST PRESSURE	45° BEND				22½° BEND				11¼° BEND			
mm	m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m
80	250	0.40	0.16	0.30	0.50	0.40	0.16	0.30	0.50	0.40	0.16	0.20	0.50
	225	0.40	0.16	0.27	0.50	0.40	0.16	0.30	0.50	0.40	0.16	0.20	0.50
	180	0.40	0.16	0.30	0.50	0.40	0.16	0.30	0.50	0.40	0.16	0.20	0.50
	135	0.40	0.16	0.30	0.50	0.40	0.16	0.30	0.50	0.40	0.16	0.20	0.50
	90	0.40	0.16	0.30	0.50	0.40	0.16	0.30	0.50	0.40	0.16	0.20	0.50

NOMINAL DIAMETER	TEST PRESSURE	45° BEND				22½° BEND				11¼° BEND			
mm	m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m
150	250	0.80	0.30	0.40	0.55	0.70	0.30	0.30	0.55	0.50	0.30	0.30	0.55
	225	0.70	0.30	0.40	0.55	0.60	0.30	0.30	0.55	0.50	0.30	0.30	0.55
	180	0.70	0.30	0.40	0.55	0.50	0.30	0.30	0.55	0.50	0.30	0.30	0.55
	135	0.70	0.30	0.40	0.55	0.50	0.30	0.30	0.55	0.40	0.30	0.30	0.55
	90	0.70	0.30	0.40	0.55	0.40	0.30	0.30	0.55	0.40	0.30	0.30	0.55

HORIZONTAL BENDS (TYPE-HB)																	
NOMINAL DIAMETER	TEST PRESSURE	90° BEND				45° BEND				22½° BEND				11¼° BEND			
mm	m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m
80	250	1.00	0.24	0.35	0.50	0.60	0.24	0.30	0.40	0.50	0.24	0.20	0.20	0.40	0.24	0.20	0.20
	225	0.60	0.24	0.35	0.40	0.50	0.24	0.25	0.30	0.40	0.24	0.20	0.20	0.30	0.24	0.20	0.20
	180	0.60	0.24	0.35	0.30	0.50	0.24	0.23	0.25	0.40	0.24	0.20	0.20	0.30	0.24	0.20	0.20
	135	0.60	0.24	0.35	0.30	0.50	0.24	0.20	0.20	0.40	0.24	0.20	0.20	0.30	0.24	0.20	0.20
	90	0.60	0.24	0.35	0.20	0.50	0.24	0.20	0.20	0.40	0.24	0.20	0.20	0.30	0.24	0.20	0.20

NOMINAL DIAMETER	TEST PRESSURE	90° BEND				45° BEND				22½° BEND				11¼° BEND			
mm	m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m	L1 m	L2 m	B m	H m
100	250	1.00	0.30	0.35	0.50	0.80	0.30	0.80	0.80	0.80	0.30	0.60	0.60	0.60	0.30	0.60	0.60
	225	0.90	0.30	0.30	0.40	0.60	0.30	0.80	0.80	0.80	0.30	0.60	0.60	0.60	0.30	0.60	0.60
	180	0.60	0.30	0.25	0.30	0.60	0.30	0.80	0.80	0.80	0.30	0.60	0.60	0.60	0.30	0.60	0.60
	135	0.60	0.30	0.25	0.30	0.60	0.30	0.80	0.80	0.60	0.30	0.60	0.60	0.60	0.30	0.60	0.60
	90	0.60	0.30	0.20	0.20	0.60	0.30	0.80	0.80	0.60	0.30	0.60	0.60	0.60	0.30	0.60	0.60

LEGEND

CLIENT :



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CO-FINANCED BY:



CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**  
Anchor Block Details

Surveyed by:

R.K

Drawn by:

N.R

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

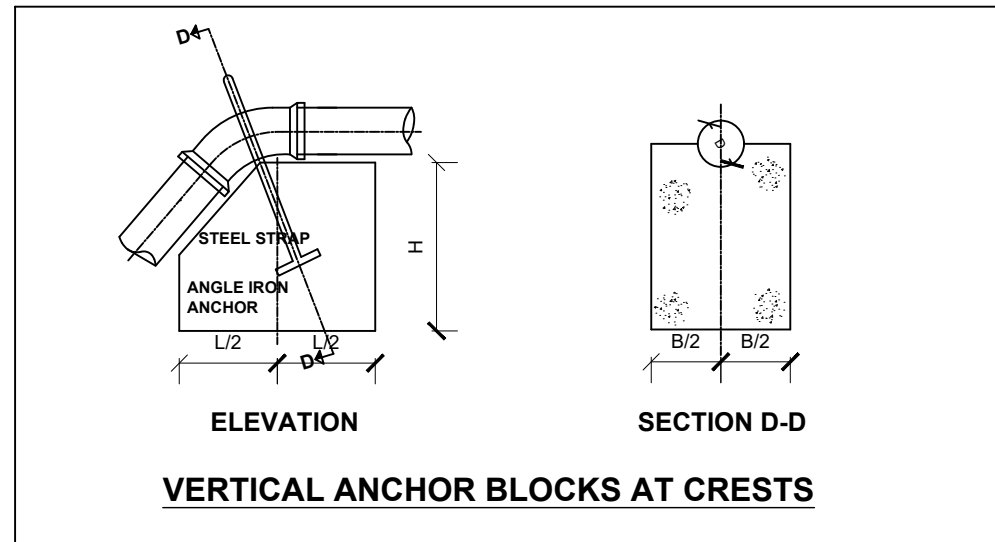
**ALA-ORA-SD-006**

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2 of 3



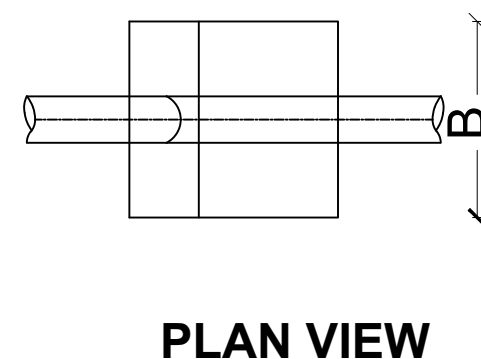
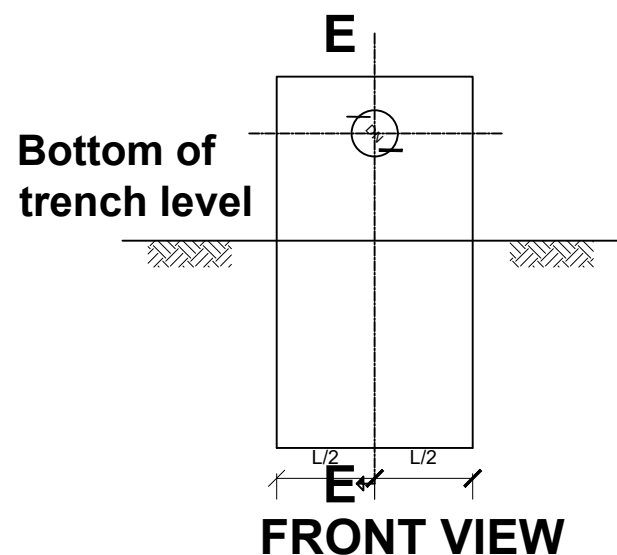
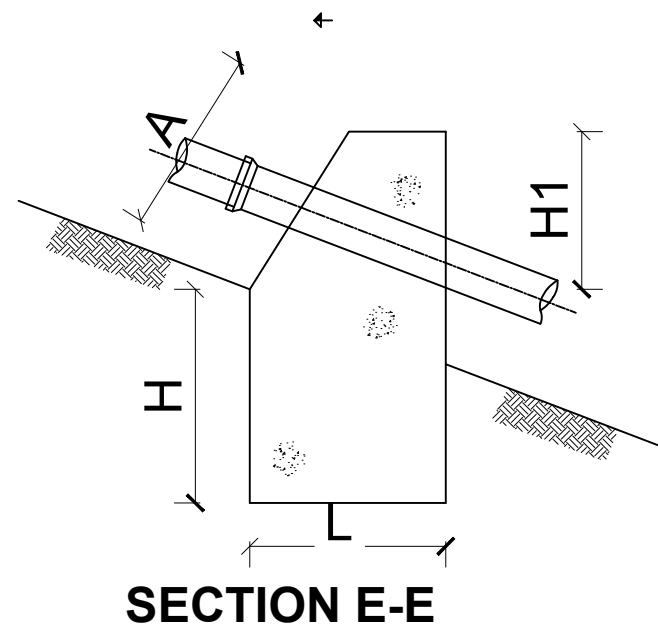
NOMINAL DIAMETER	TEST PRESSURE	45° BEND			22½° BEND			11¼° BEND		
mm	m	L m	B m	H m	L m	B m	H m	L m	B m	H m
150	250	1.70	1.10	0.80	1.30	0.90	0.80	1.00	0.70	0.60
	225	1.50	1.10	0.80	1.20	0.80	0.80	1.00	0.70	0.60
	180	1.50	1.10	0.70	1.10	0.80	0.80	1.00	0.70	0.60
	135	1.40	0.90	0.70	1.00	0.70	0.80	1.00	0.70	0.60
	90	1.20	0.80	0.60	0.90	0.70	0.80	1.00	0.70	0.60

NOMINAL DIAMETER	TEST PRESSURE	45° BEND			22½° BEND			11¼° BEND		
mm	m	L m	B m	H m	L m	B m	H m	L m	B m	H m
100	250	1.40	0.70	0.80	1.20	0.70	0.80	1.20	0.70	0.80
	225	1.20	0.70	0.80	1.20	0.70	0.80	1.20	0.70	0.80
	180	1.20	0.70	0.80	1.20	0.70	0.80	1.20	0.70	0.80
	135	1.20	0.70	0.80	1.20	0.70	0.80	1.20	0.70	0.80
	90	1.20	0.70	0.80	1.20	0.70	0.80	1.20	0.70	0.80

VERTICAL BENDS (TYPE-CV)										
NOMINAL DIAMETER	TEST PRESSURE	45° BEND			22½° BEND			11¼° BEND		
mm	m	L m	B m	H m	L m	B m	H m	L m	B m	H m
80	250	1.40	0.70	0.80	1.20	0.70	0.80	1.20	0.70	0.80
	225	1.20	0.70	0.80	1.20	0.70	0.80	1.20	0.70	0.80
	180	1.20	0.70	0.80	1.20	0.70	0.80	1.20	0.70	0.80
	135	1.20	0.70	0.80	1.20	0.70	0.80	1.20	0.70	0.80
	90	1.20	0.70	0.80	1.20	0.70	0.80	1.20	0.70	0.80

**NOTES:**

- Anchor blocks to be constructed from unreinforced concrete class 20.
- Concrete to be casted and undisturbed soil, where disturbed soil around the anchor blocks either to be removed and filled with concrete before pressure testing, or soil to be compacted to not less than 95% max. dry density before the mass is pressure tested.
- 11¼° bends to be used for bends  $\geq 6^\circ$  and  $\leq 16^\circ$
- Anchor blocks to be cast to leave all pipe joints free.
- Shuttered surfaces to be suitable to receive backfill or further concrete framework suitable to precast loss of ground fibrated.
- The p.v.c bends shall be covered with three layers of polythene sheeting before concreting.



**ANCHOR BLOCKS ON GRADIENTS (TYPE-GD)**

**LEGEND**

CLIENT :



THE REPUBLIC OF UGANDA

**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:



**THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

CONSULTANT :



**Alliance Consultants Ltd**  
In Association with



**Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION PROJECT**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

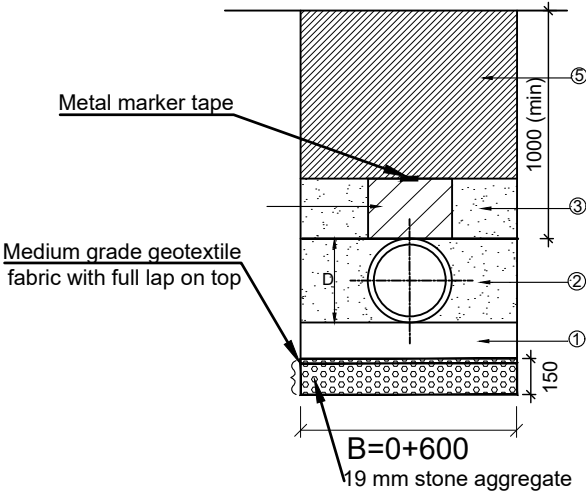
REVISIONS :		
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**  
Anchor Block Details

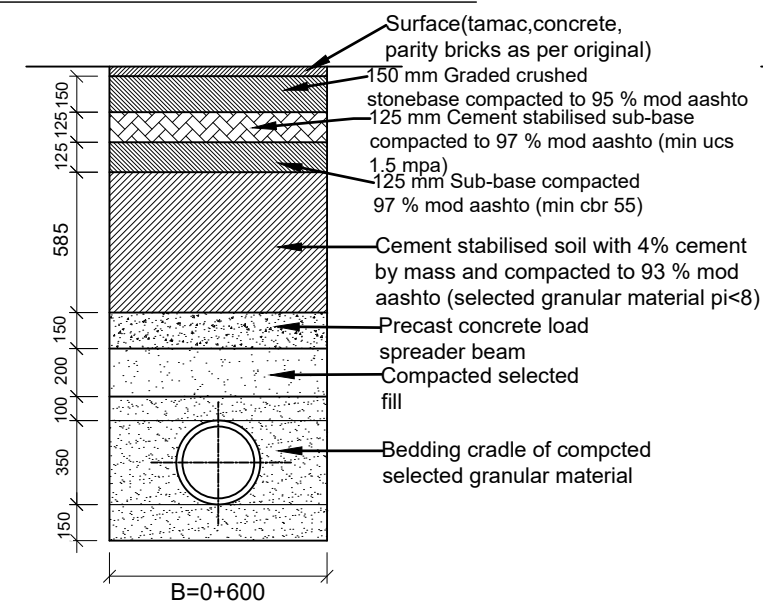
Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-006</b>
Scale:	1:120
Sheet No.:	3 of 3

# TRENCHING AND BACKFILLING DETAILS

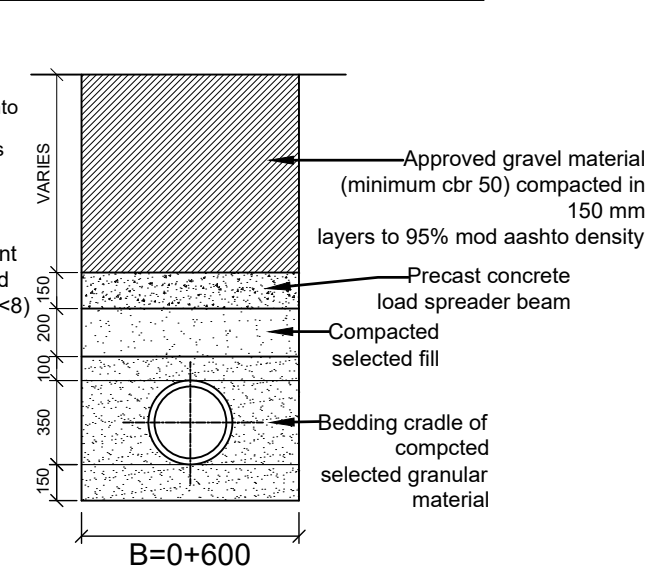
## TYPICAL TRENCH EXCAVATION AND BACKFILLING FOR PE/uPVC/GRP PIPES



## PIPE PROTECTION AT SURFACED ROAD CROSSING



## PIPE PROTECTION AT UNSURFACED ROAD CROSSING



### NOTES:

1. Minimum and normal trench width are defined as normal pipe diameter plus 600 mm.
2. The backfill around the pipe from the trench bottom to the crown of the pipe shall be carried out in layers whose depth shall not exceed 75 mm nor half the nominal pipe diameter whichever is the lesser.
3. The bedding required is selected by the engineer according to :
  - (i) Depth of cover
  - (ii) Diameter of pipe
  - (iii) Type of vehicle loading
  - (iv) Type of soil
4. The embedment specifies the degree of compaction required in order to fulfill design requirements.
5. In general, the method of attaining the required compaction will be ascertained as follows :
  - (i) The engineer's representative will identify, classify and agree the soil type of embedment material available from the trench.
  - (ii) The site soil type will be compared with those on the material description chart [ see table 1 ]
  - (iii) The compaction method required is then selected from the compaction chart for the appropriate soil type and class of embedment [ see table 2 ]
6. not all soils are given in table 1. it should be noted that :
  - (i) Fined grained soils with high plasticity may not be used as backfill

- (ii) Fined grained soils with low plasticity may be condemned for use as backfill if the contractor has difficulty in attaining the required compaction.
7. Where site material is condemned, imported material shall be used. this shall be a well graded soil from fines upto 20 mm gravel or as approved by the engineer's representative.
  8. Where some doubt exists as to the compactibility of the soil as defined above, recourse shall be made to the modified proctor density test. the site and laboratory tests shall be carried out to tests 14 b and 12 respectively to ssrn 601 the contractor shall include in his rates for backfilling with available soil.
  9. If stones or rock are present, imported bedding material of min. 150 mm thick shall be required as approved by the engineer's representative. at designated road crossings the bedding shall have a minimum thickness of 150 mm.
  10. The backfill shall be placed in layers as defined above, each layer shall be rammed with a small vibratory rammer. the required number of passes of the rammer is given in table 2. in any event 90% mpd shall be achieved. only when there is 300 mm cover over the pipe may heavier compacting equipment
  11. Be used. the remainder of the backfill shall be suitably compacted in keeping with the reinstatement of the ground to be carried out. this shall be agreed upon with the engineer's representative.
  12. Ferrous pipes shall be wrapped in polyethylene sleeving as corrosion protection when and as directed by the engineer's representative. soil tests shall be carried out in advance of pipe laying to ascertain requirements.
  13. All dimensions are in millimetres unless stated otherwise.

### LEGEND

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PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

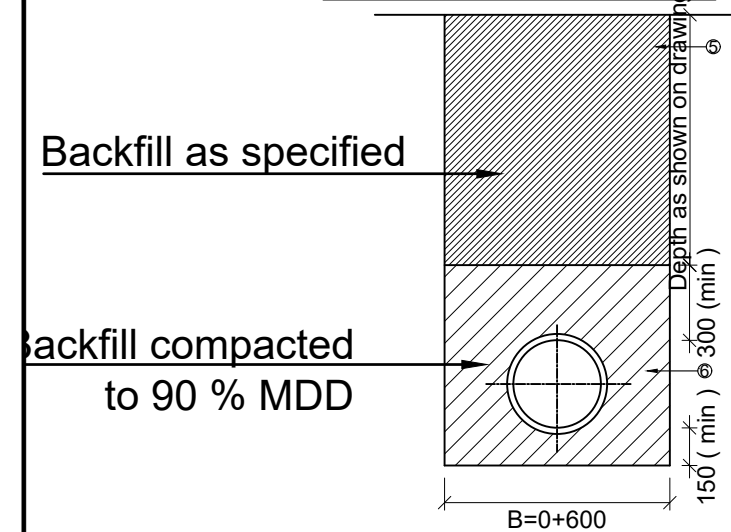
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

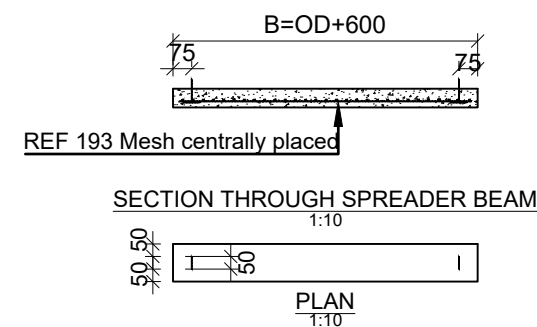
DRAWING TITLE : **STANDARD DRAWINGS**  
**Trenching, Road Crossing and Backfilling Details**

Surveyed by: R.K  
Drawn by: N.R  
Designed by: W.G.M  
Checked by: J.K.K  
Date: January 2023  
DRG. No.: **ALA-ORA-SD-007**  
Scale: 1:120 Sheet No.: 1 of 2

TYPICAL TRENCH EXCAVATION AND BACKFILLING FOR FERROUS PIPES



PRECAST CONCRETE LOAD SPREADER BEAM



### NOTE

1. Where required by local authorities, a concrete pipe or culvert must be used instead of a concrete spreader beam.
2. Horizontal directional drilling must be undertaken where specified to the engineer's approval.

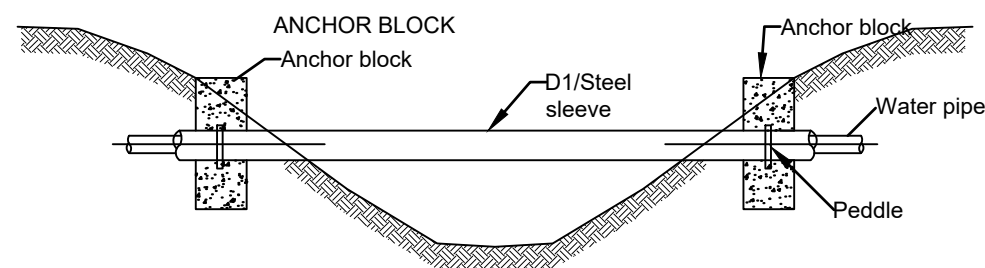
TABLE 1 : MATERIAL DESCRIPTION CHART

SOIL TYPE	DESCRIPTION	GROUP SYMBOL
A	Angular, crushed rock negligible fines	-
B	Well graded gravel-sand mixtures few fines	GW
C	Fine Gravel, No fines	GP
D	Gravel-Sand Mix, upto 15% Fines	GF

TABLE 2 : COMPACTION CHART

% MPD	SOIL TYPE	COMPACTION METHOD	
		Thickness of Layer (mm)	No. of Passes
90	A AND B	150	1
	C	150	2
	D	75	2

PIPE SLEEVING DETAILS



### LEGEND :

D pipe outside diameter approved

1. Granular bedding material (10 - 20 mm size) compacted in 50 mm layers to a thickness of 100 mm or as directed by the engineer's representative.
2. Approved granular bedding material compacted in layers as per note 2. careful tamping on either the pipe should be maintained to ensure equal pressure on both sides of the bedding.
3. Approved granular bedding material compacted in shallow layers to a maximum of 150 mm thick a,b,c and 75 mm thick type d.
4. As in above, but excessive tamping to be avoided.
5. Normal backfill material properly rammed in layers. not exceeding 150 mm thick.
6. Approved granular backfill material compacted to 90 % mpd in layers as per note 2.

### LEGEND

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PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**  
**Trenching,Road Crossing and Backfilling Details**

Surveyed by:

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Drawn by:

N.R

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

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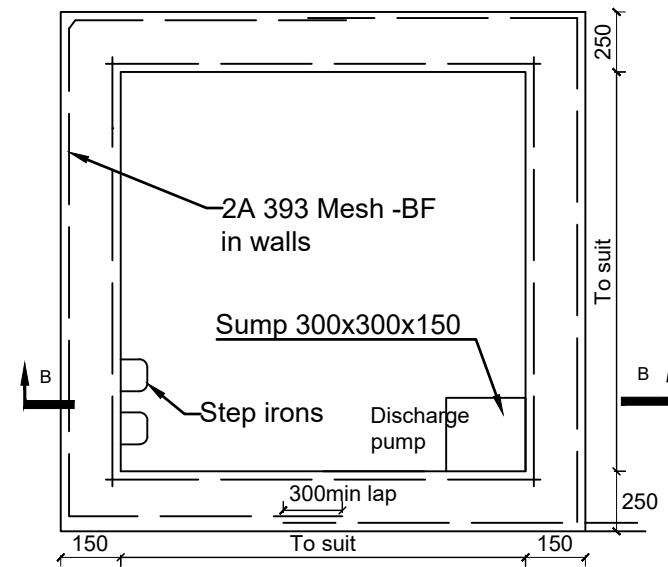
**ALA-ORA-SD-007**

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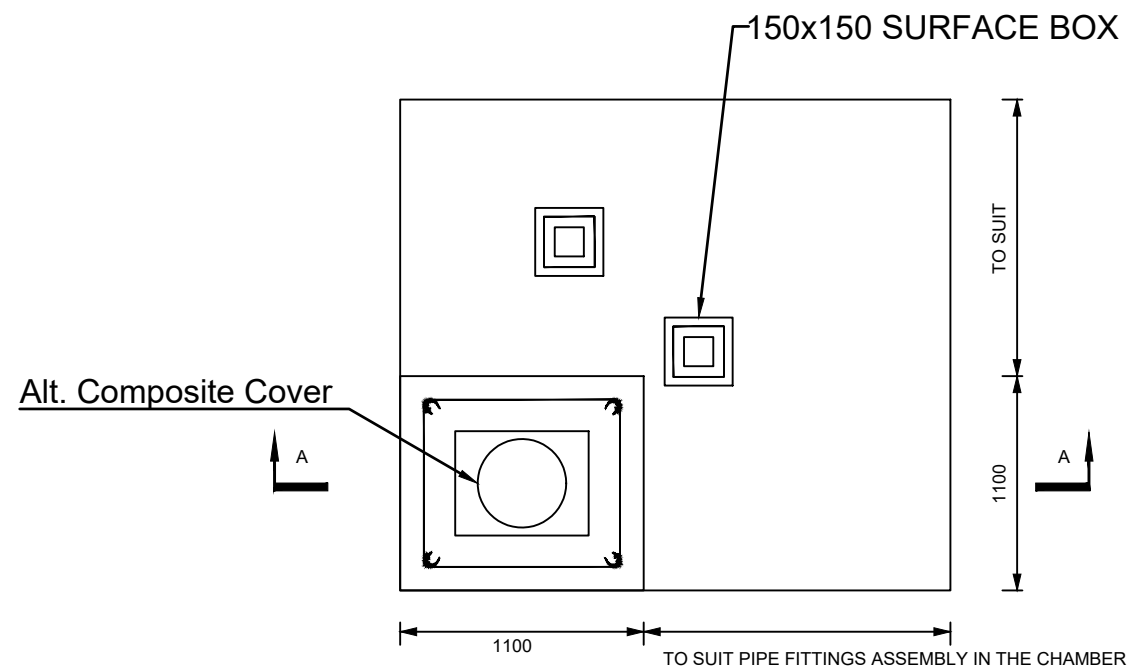
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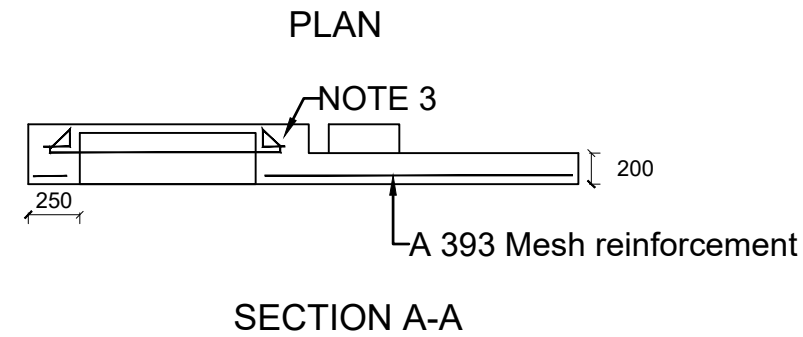
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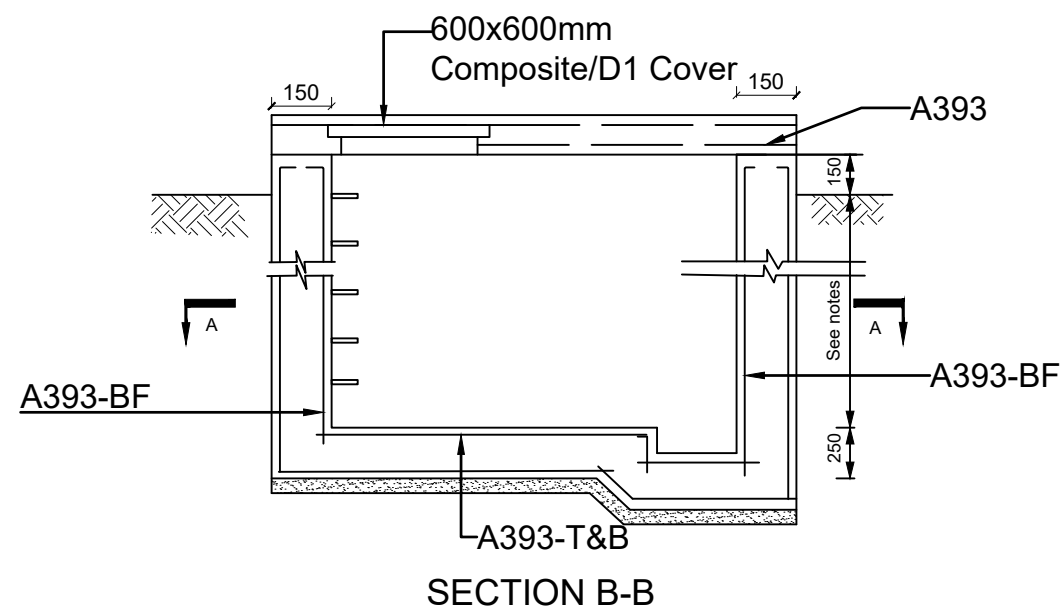
SECTIONAL PLAN A-A



ROOF SLAB



SECTION A-A



SECTION B-B

### NOTES

1. Floor of chamber to be 250 below pipe IL.
2. For details of cover slab see General notes.

### LEGEND

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REVISIONS :		
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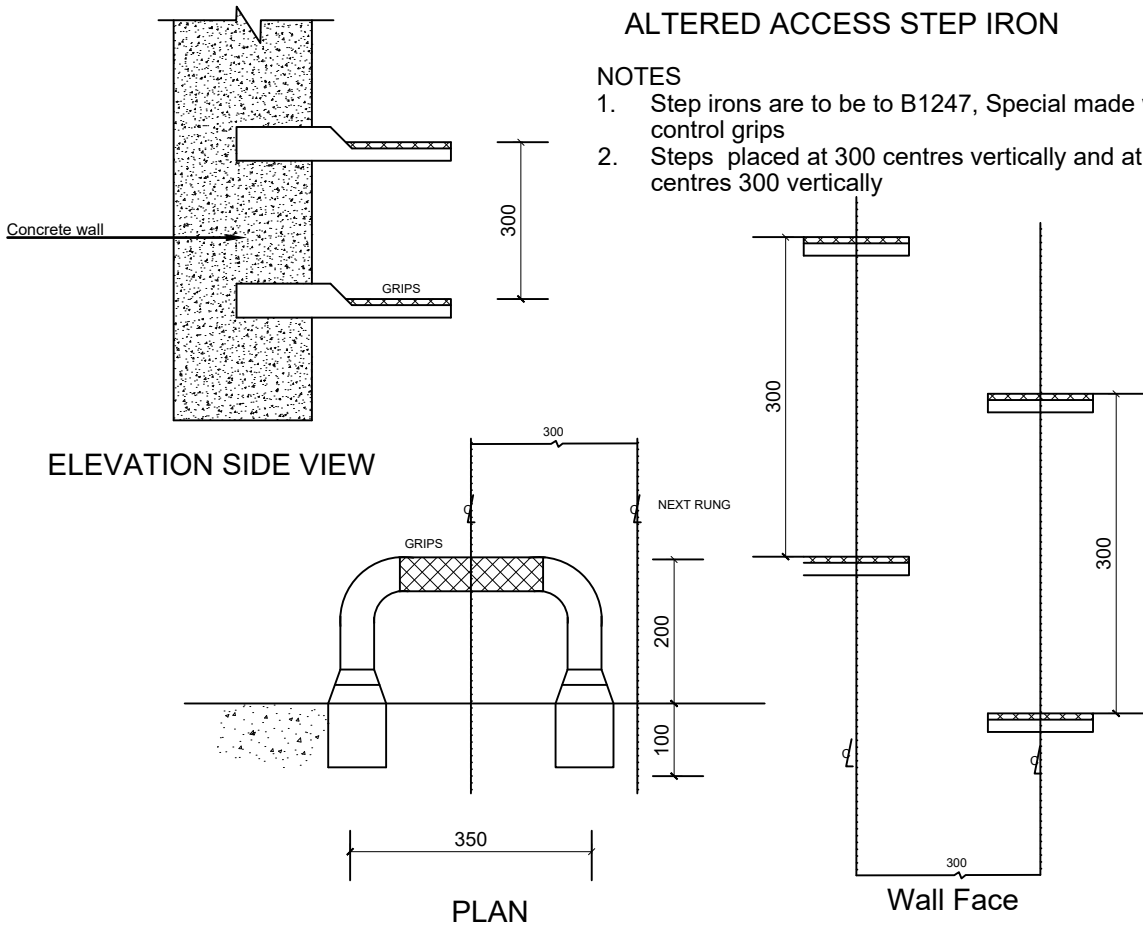
DRAWING TITLE : **STANDARD DRAWINGS**  
**Reinforcement Details for Washout/Gate Valve  
Chamber and Roof Slab Details**

Surveyed by:	R.K
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Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-008</b>
Scale:	1:120
Sheet No.:	1 of 1

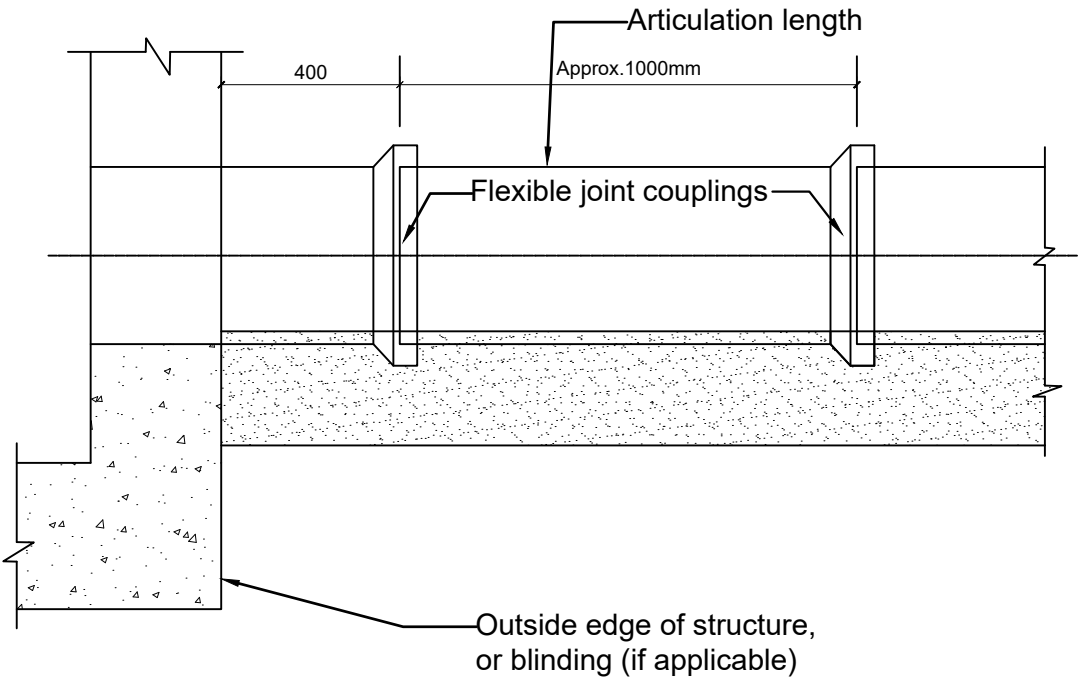


ALTERED ACCESS STEP IRON

- NOTES
- 1. Step irons are to be to B1247, Special made with slid control grips
  - 2. Steps placed at 300 centres vertically and at alternate centres 300 vertically



FLEXIBLE PIPE JOINT DETAILS FOR PIPES  
ENTERING OR LEAVING CONCRETE STRUCTURES



LEGEND

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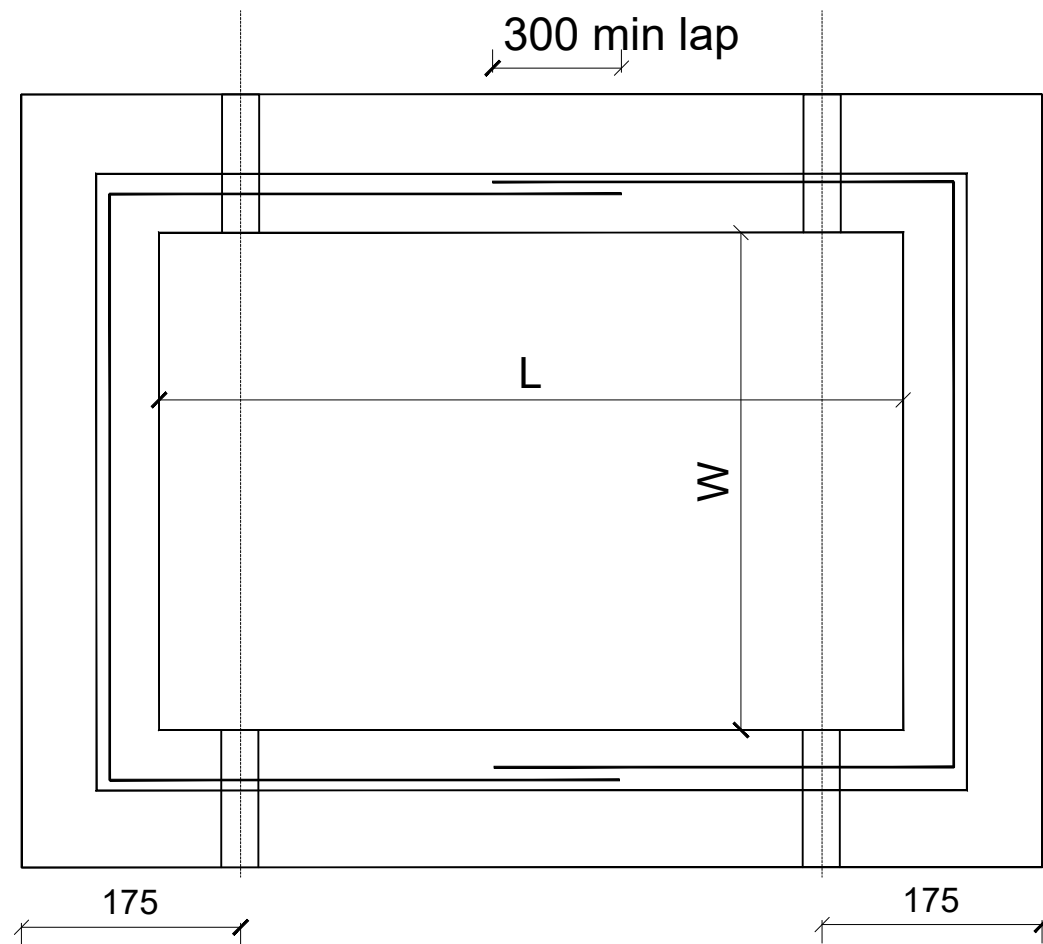
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

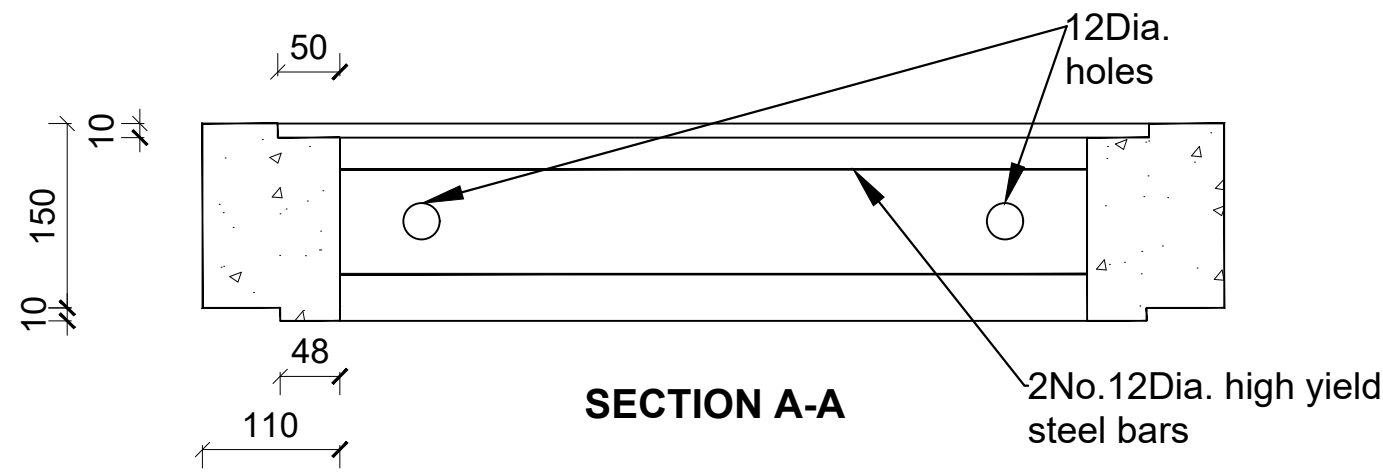
DRAWING TITLE : **STANDARD DRAWINGS**  
**Step Iron and Flexible Pipe Joint Details**

Surveyed by:	R.K
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Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-009</b>
Scale:	1:120
Sheet No.:	1 of 1



PLAN

TYPE	L	W
A	430	200
B	600	450
C	750	600
D	900	600
E	1200	600
F	1200	900



SECTION A-A

LEGEND

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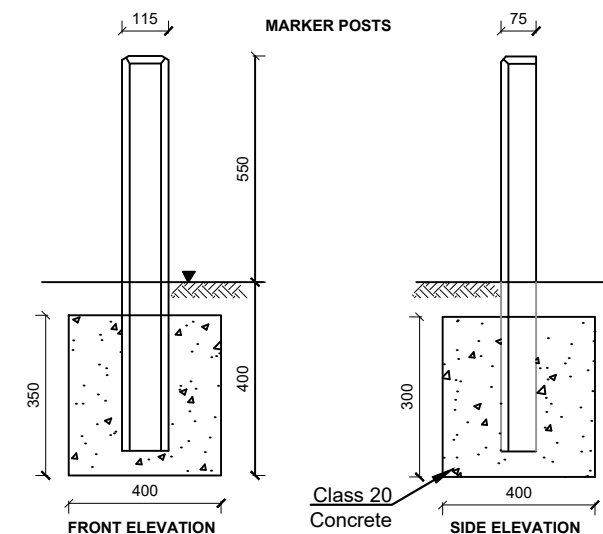
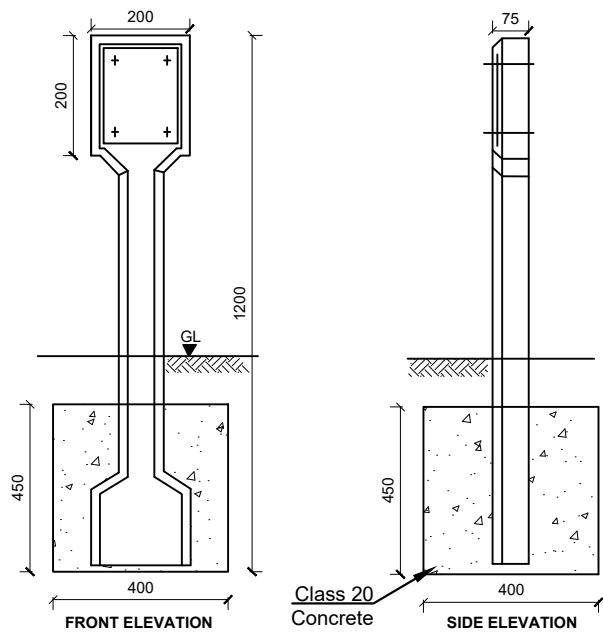
REVISIONS :

No	Date	Description

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**Precast Chamber Cover slab and Section**

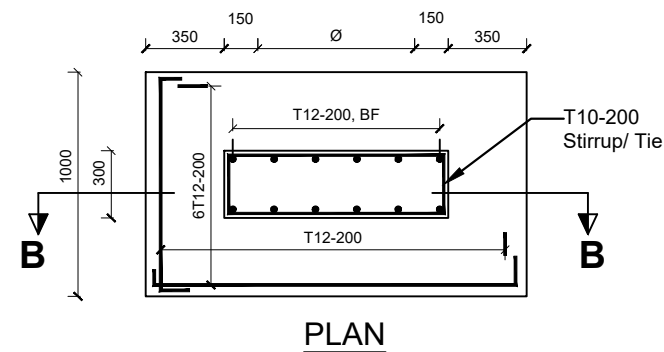
Surveyed by:	R.K
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DRG. No.:	<b>ALA-ORA-SD-010</b>
Scale:	1:120
Sheet No.:	1 of 1

## INDICATOR POSTS



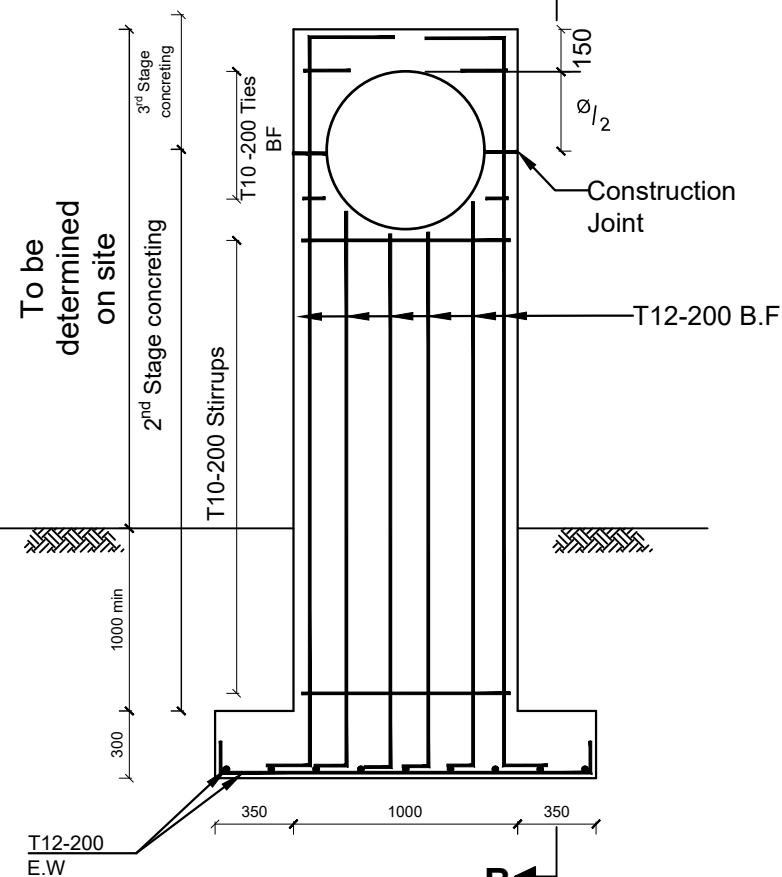
## STANDARD PIPE SUPPORT ABOVE GROUND

Alternative 1 - Insitu



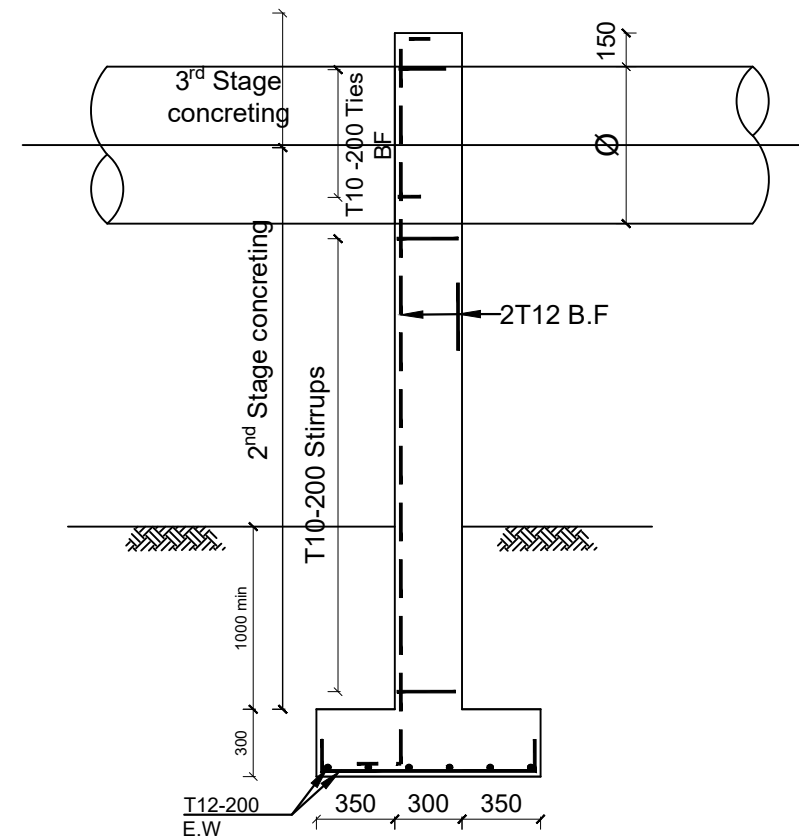
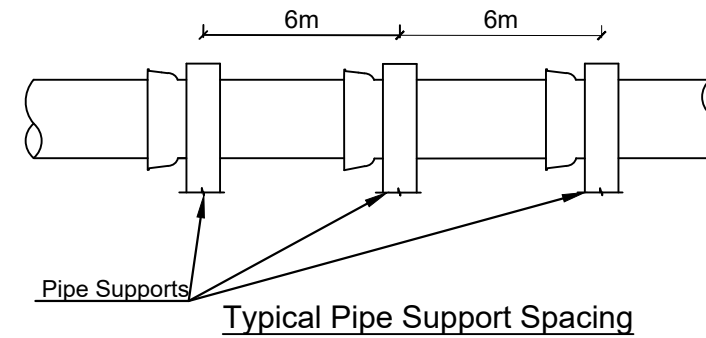
OD+300

OD



1:25

Note:  
All Pipe Surfaces in contact with Concrete are to be rapped in 2 layers of Guage 1000 Polythene Sheeting



1:25

## LEGEND

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SANITATION SYSTEM

REVISIONS :		
No	Date	Description

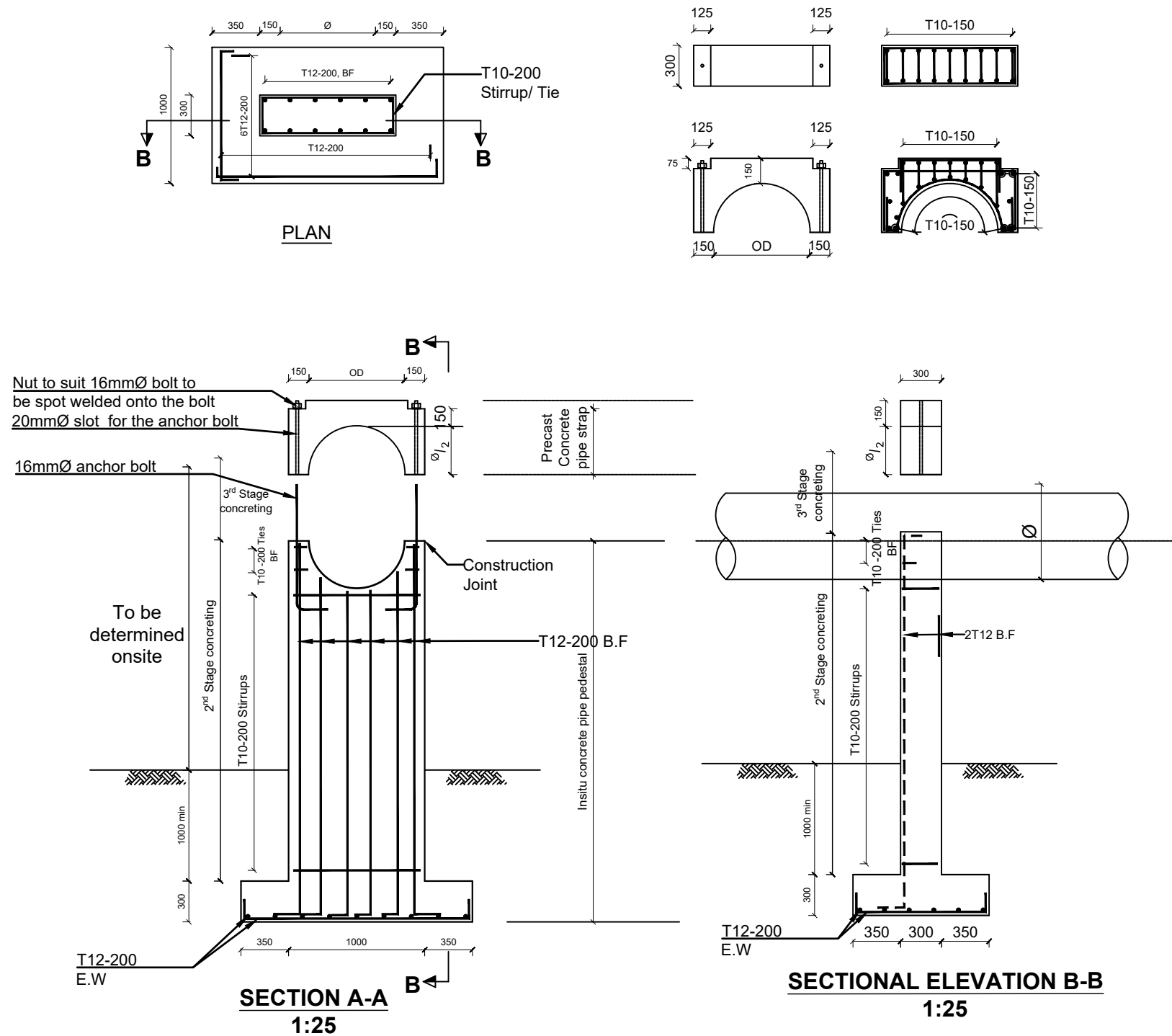
DRAWING TITLE : **STANDARD DRAWINGS**  
Marker Post and Pipe Support Details

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Scale:	1:120
Sheet No.:	1 of 2

LEGEND

STANDARD PIPE SUPPORT ABOVE GROUND

Alternative 2 - Insitu with a precast concrete strap



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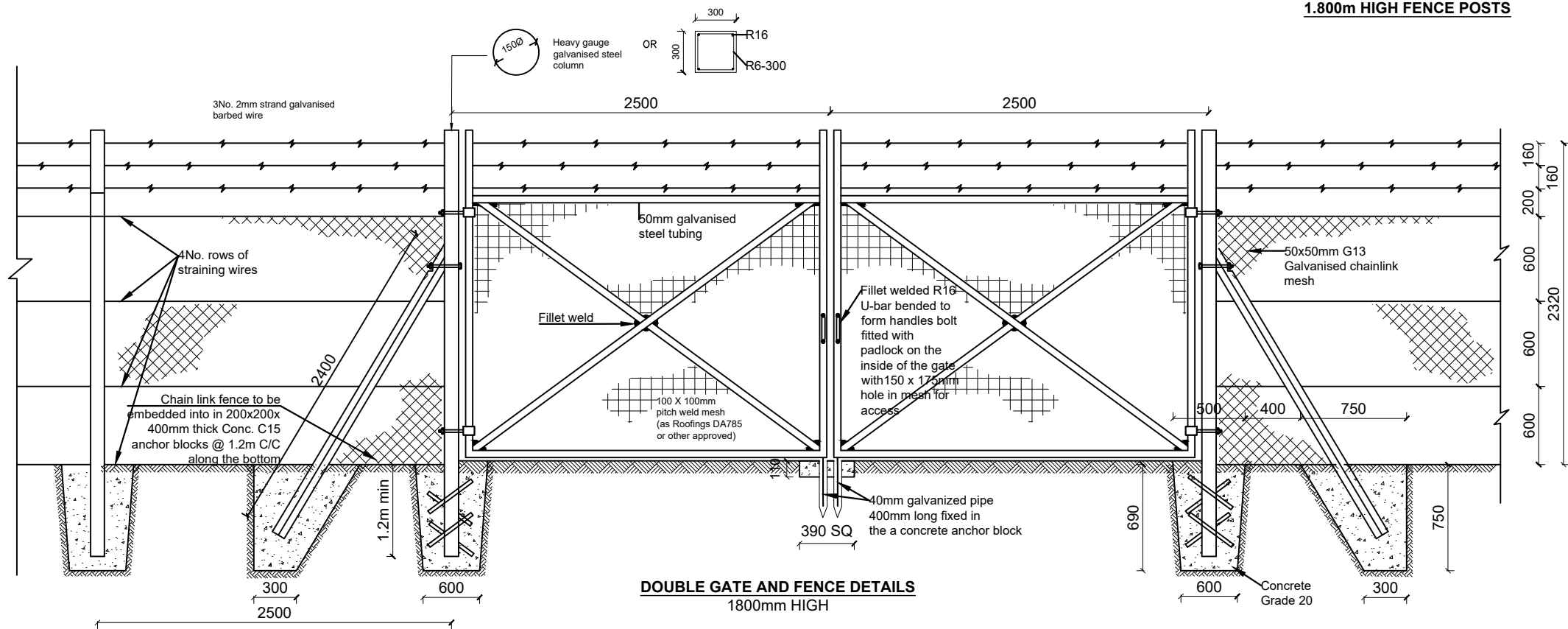
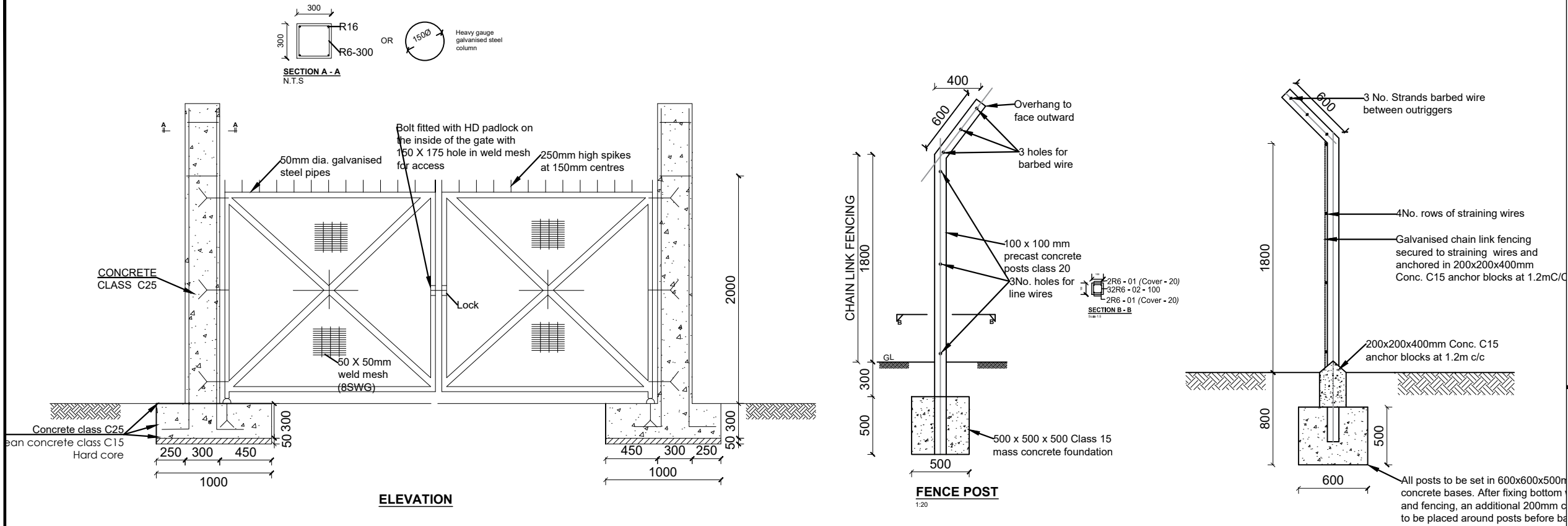
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS  
Marker Post and Pipe Support Details**

Surveyed by: R.K  
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Designed by: W.G.M  
Checked by: J.K.K  
Date: January 2023  
DRG. No.: **ALA-ORA-SD-011**  
Scale: 1:120 Sheet No.: 2 of 2

FENCE DETAILS



LEGEND

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PROJECT :  
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**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

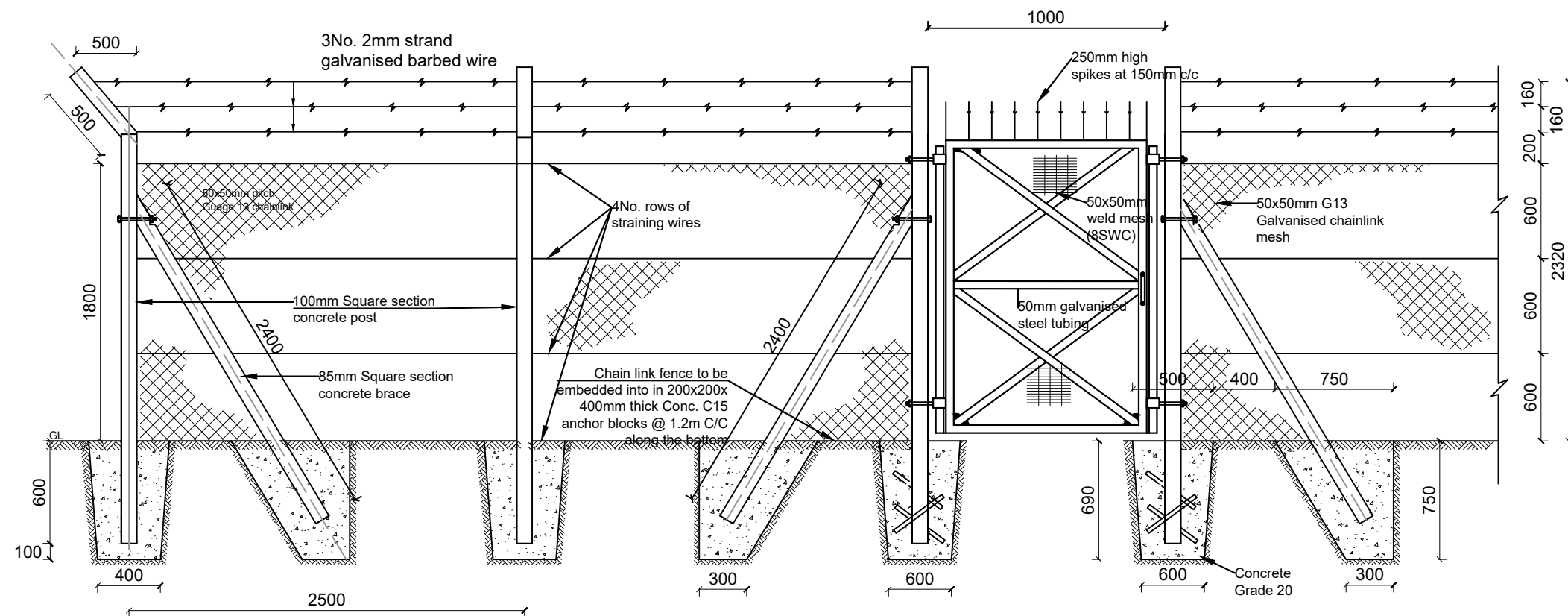
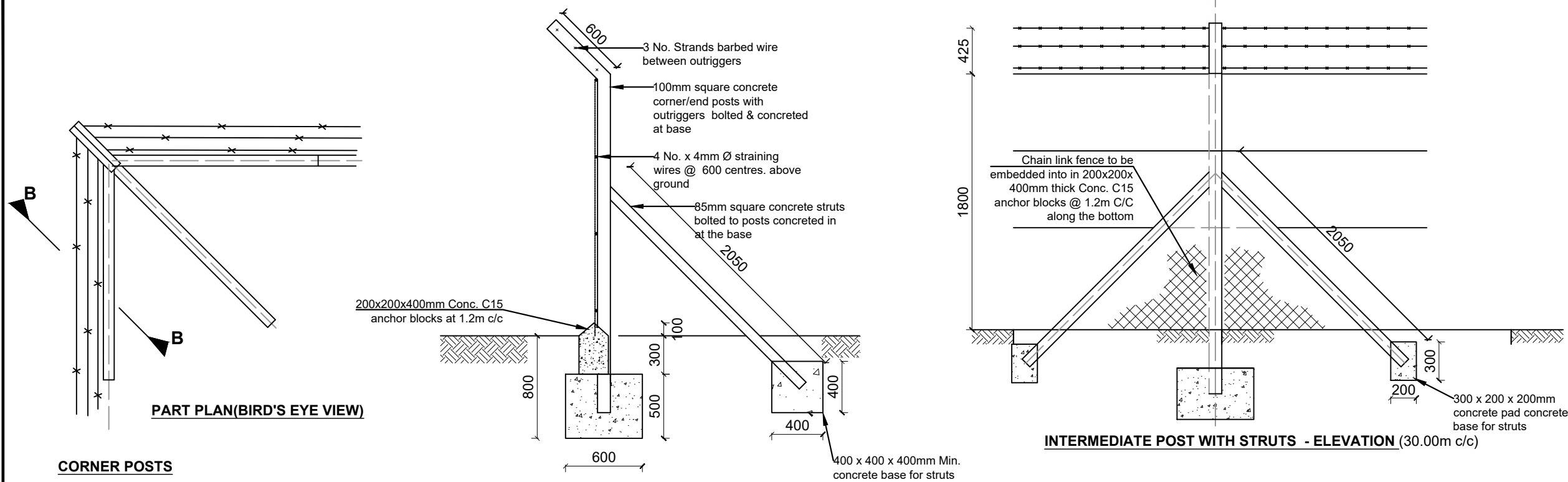
REVISIONS :

No	Date	Description

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**Fence details**

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Scale:	1:120
Sheet No.:	1 of 2

## FENCE DETAILS



### SMALL GATE AND FENCE DETAILS

#### NOTE:

1. Pedestrian Gate specification similar to the Vehicular gate in all aspects except width.

## LEGEND

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**ENYAU WATER SUPPLY AND  
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DRAWING TITLE : **STANDARD DRAWINGS  
Fence Details**

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Checked by:

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Date:

January 2023

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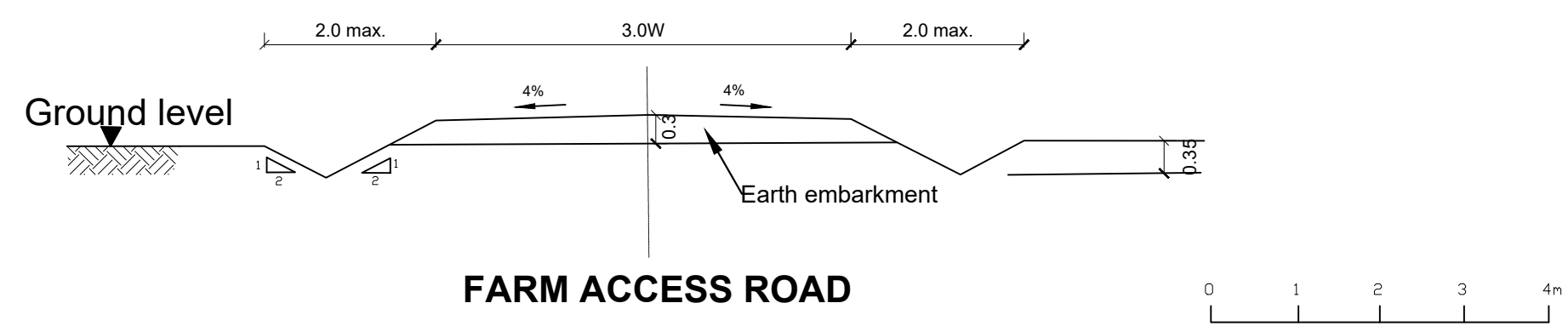
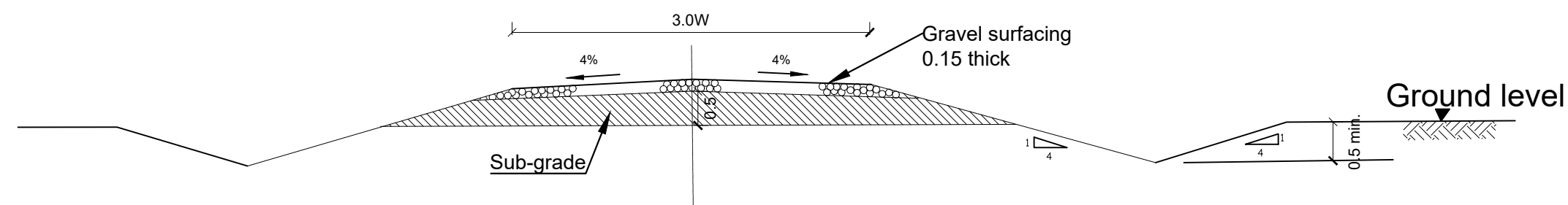
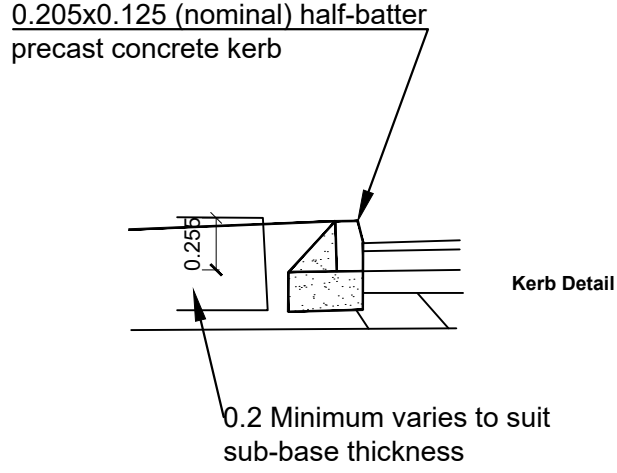
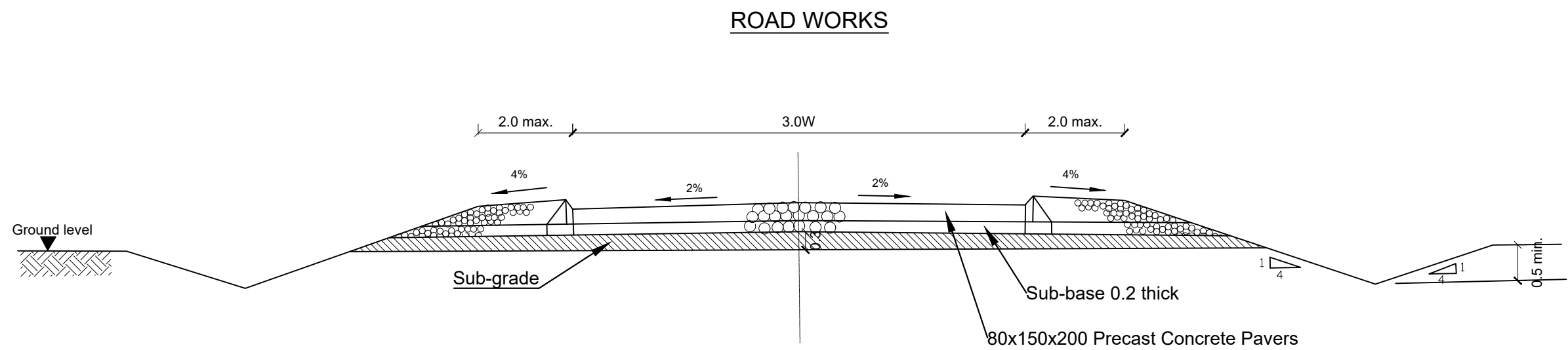
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**ROAD WORKS DETAILS**

**LEGEND**

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PROJECT :

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**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

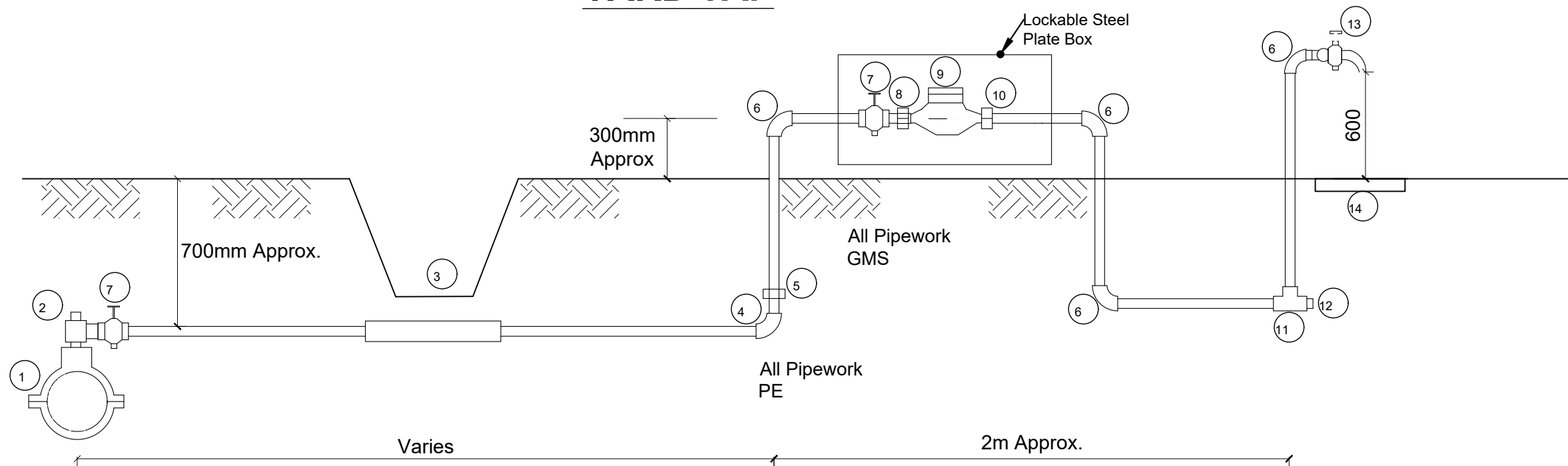
REVISIONS :

No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS Road Works**

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-013</b>
Scale:	1:120
Sheet No.:	1 of 1

# YARD TAP



## SCHEDULE OF FITTINGS

ITEM NO.	DESCRIPTION	NO. REQUIRED PER CONNECTION
1.	PVC Saddle Clamp	1
2.	PE Outlet type swivel ferule	1
3.	1m Length GMS sleeve	1 (optional)
4.	PE Elbow	1
5.	PE/GMS Adaptor	4
6.	GMS Elbow	3
7.	Stop cock	1
8.	Male threaded connector	1
9.	Water meter	1
10.	Adjusting coupling	1
11.	GMS equal tee	1
12.	Plug	1
13.	Tap	3
14.	600x600x50mm RC precast reinforced	1
15.	with a G10 (3.0mm Ø x 60 x 60mm pitch) steel fabric Purpose made Lockable Meter protection casing made of 3mm Ms plate Complete including Painting and a 50mm Padlock	

## NOTES:

- GMS pipe ends to be screwed with tapered threads to ISO R7 and to be supplied with sealing PTFE tape
- GMS pipe fittings to be malleable cast iron to BS 143 and BS 1256 with female threaded ends
- The adjusting coupling shall be made of bronze or brass with a threaded female connection at the outlet end. It shall incorporate sufficient adjustment to permit removal at the meter
- All PE connections shall be of the push fit type
- Diameter of pipe varies
- The Meter Protection shall be robust and be able to enclose the Meter and Stop clocks.

## LEGEND

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CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**  
**Tape Yard**

Surveyed by:

R.K

Drawn by:

N.R

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

**ALA-ORA-SD-014**

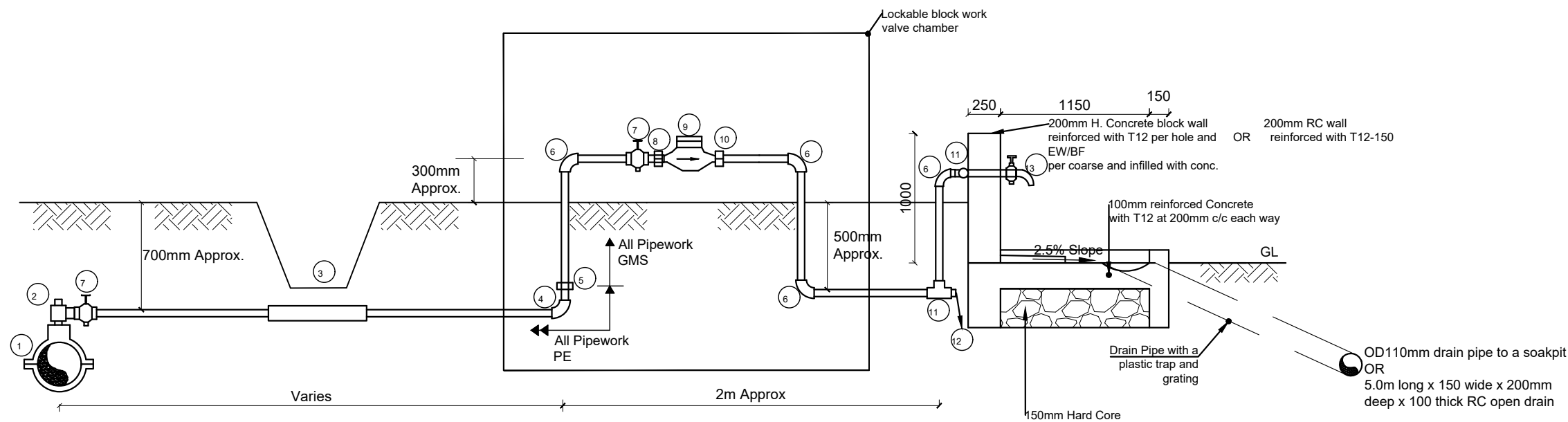
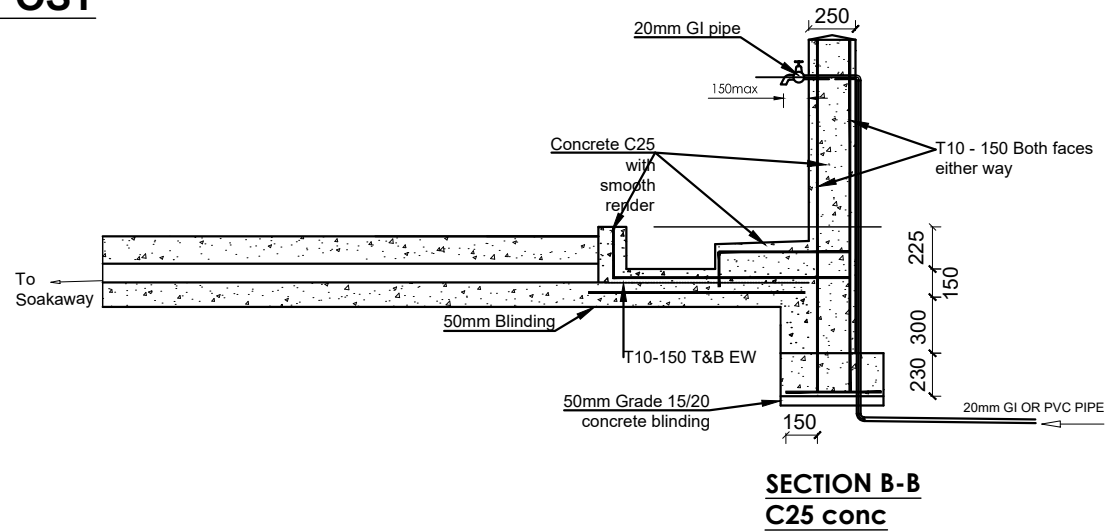
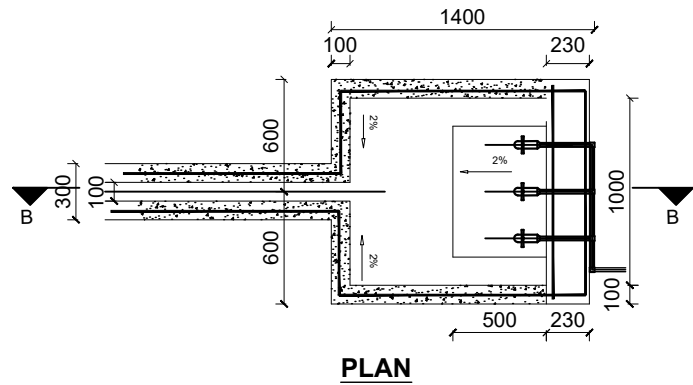
Scale:

1:120

Sheet No.:

1 of 1

STAND POST



SCHEDULE OF FITTINGS

ITEM NO.	DESCRIPTION	NO. REQUIRED PER CONNECTION
1.	PVC Saddle Clamp	1
2.	PE Outlet type swivel ferule	1
3.	1m Length GMS sleeve	1 (optional)
4.	PE Elbow	1
5.	PE/GMS Adaptor	1
6.	GMS Elbow	6
7.	Stop cock	3
8.	Male threaded connector	1
9.	Water meter	1
10.	Adjusting coupling	1
11.	GMS equal tee	3
12.	Plug	1
13.	Tap	3

NOTES:

- GMS pipe ends to be screwed with tapered threads to ISO R7 and to be supplied with sealing PTFE tape
- GMS pipe fittings to be malleable cast iron to BS 143 and BS 1256 with female threaded ends
- The adjusting coupling shall be made of bronze or brass with a threaded female connection at the outlet end. It shall incorporate sufficient adjustment to permit removal at the meter
- All PE connections shall be of the push fit type
- Diameter of pipe varies
- The Meter Protection shall be robust and be able to enclose the Meter and Stop clocks.

NOTE:

Soak pit to be 2.0m Ø by 2.0m deep with hardcore fill of 300mm min size covered with 2 layers of gauge 1000 polythene sheet

LEGEND

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PROJECT :

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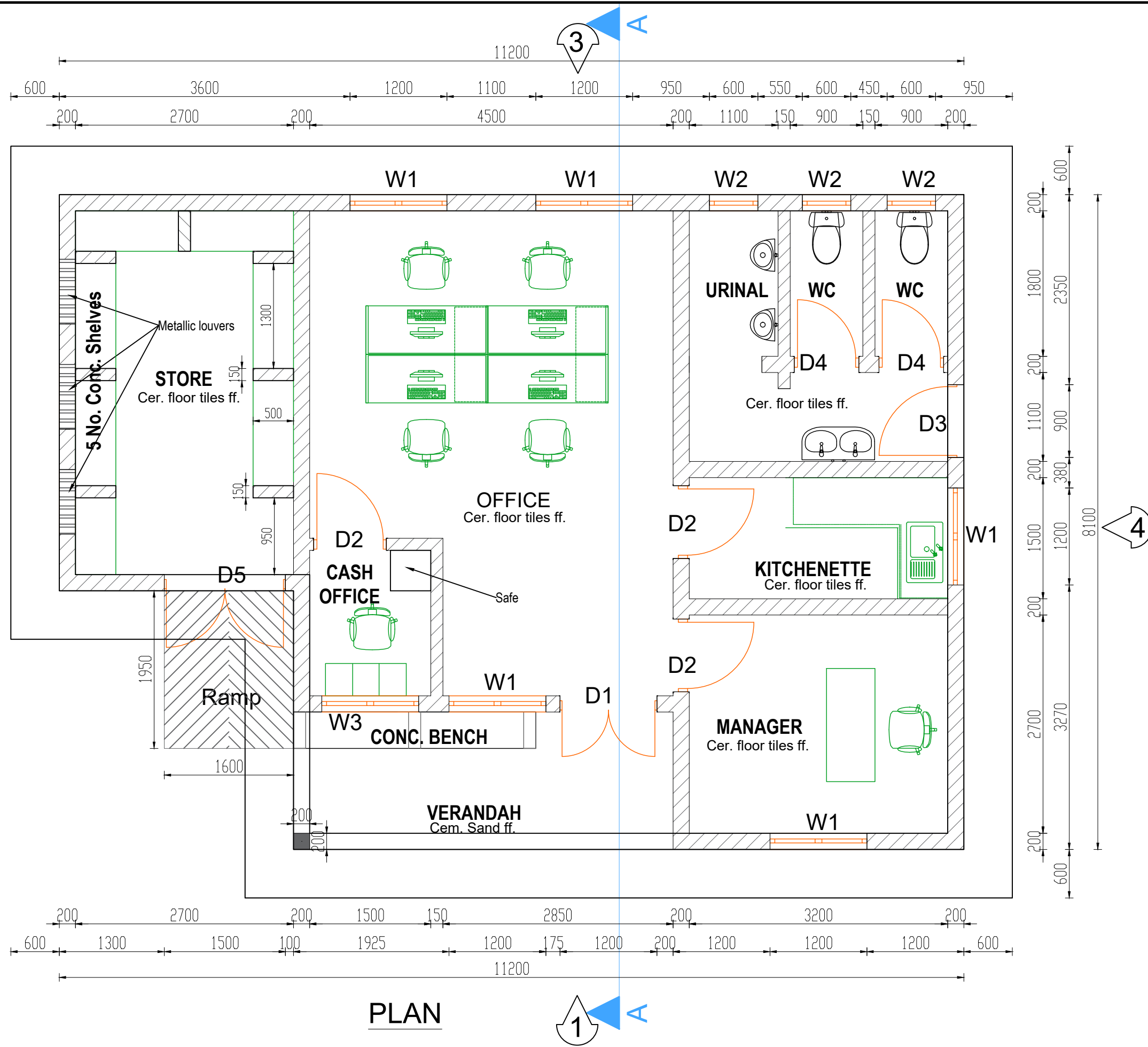
ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**  
**Stand Post**

Surveyed by:	R.K
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Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-015</b>
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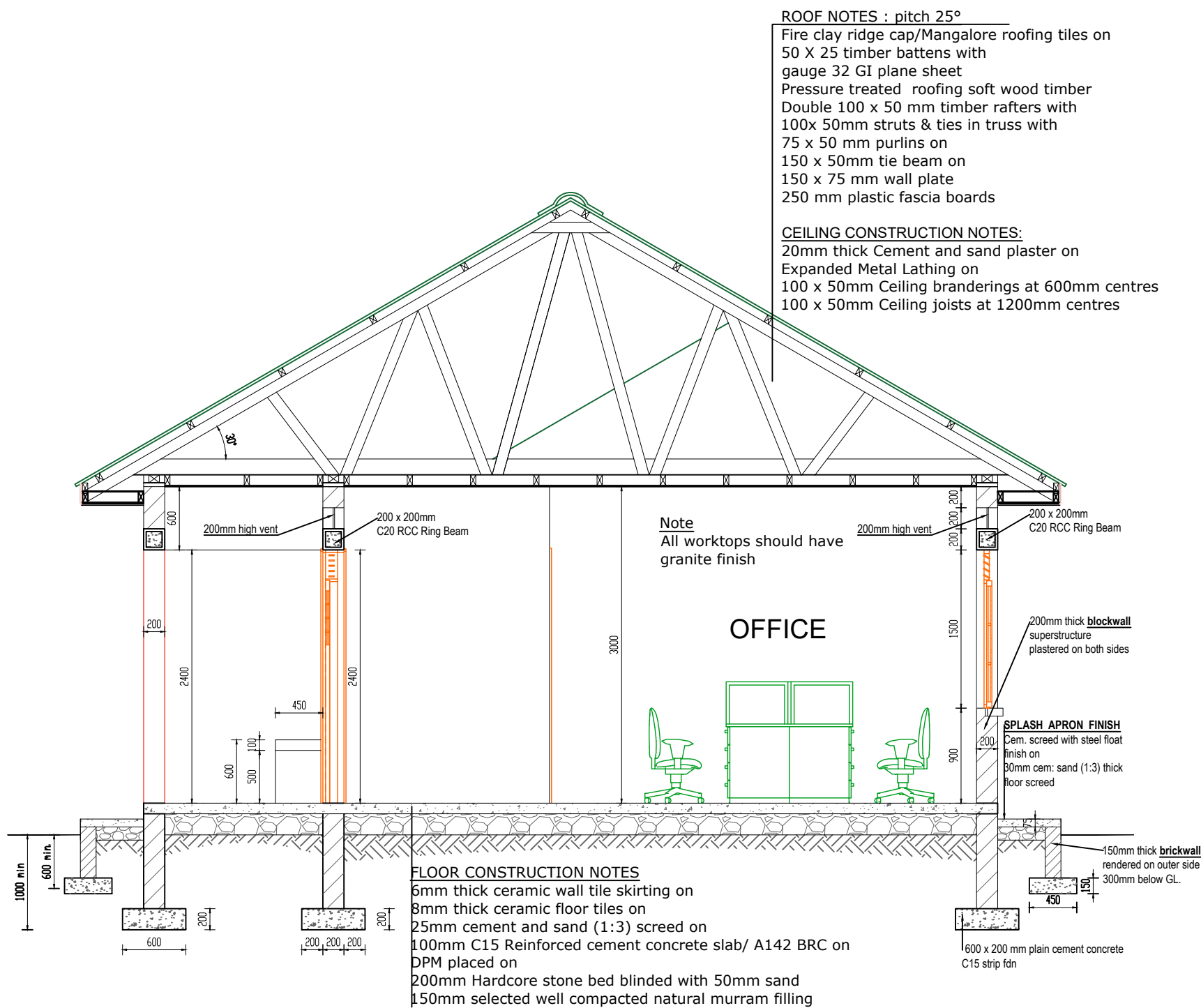
PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS  
Water Office-Type 1-Plan**

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-016A</b>
Scale:	1:50
Sheet No.:	1 of 5



**SECTION A-A**

**LEGEND**

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SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS  
Water Office-Type 1- Section**

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-016A</b>
Scale:	1:50
Sheet No.:	2 of 5

LEGEND

CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT

CO-FINANCED BY:



CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**  
**Water Office-Type 1- Elevations**

Surveyed by:

R.K

Drawn by:

N.R

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

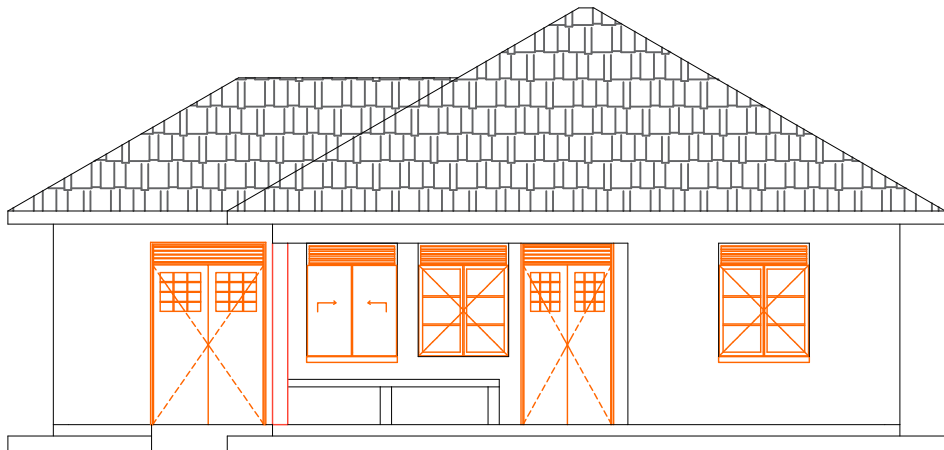
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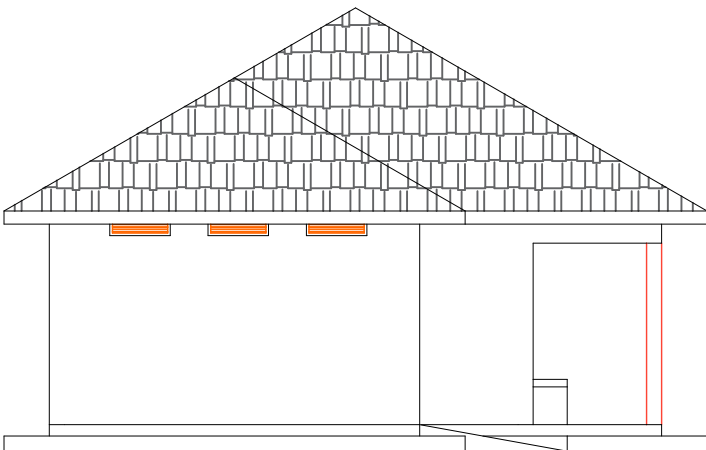
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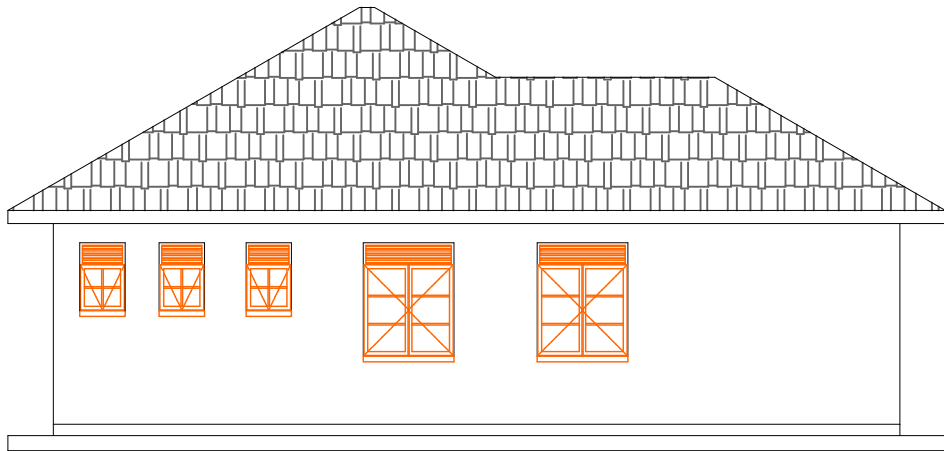
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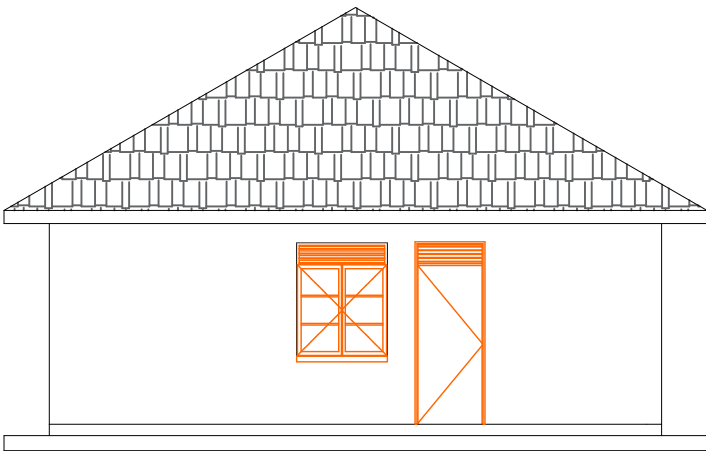
ELEVATION 1



ELEVATION 2



ELEVATION 3



ELEVATION 4

Door Schedule

Door Name	D1	D2	D3	D4	D5
Quantity	2	3	1	2	1
W x H Size	1200x2400	900x2400	900x2400	800x2400	1500x2400
Elevation View					
	Double Leaf Metallic Casement Door	Single Leaf Wooden Paneled Door	Single Leaf Half Glazed/ Half Steel plate Door	Single Leaf Wooden Paneled Door	Double Leaf Metallic Casement Door

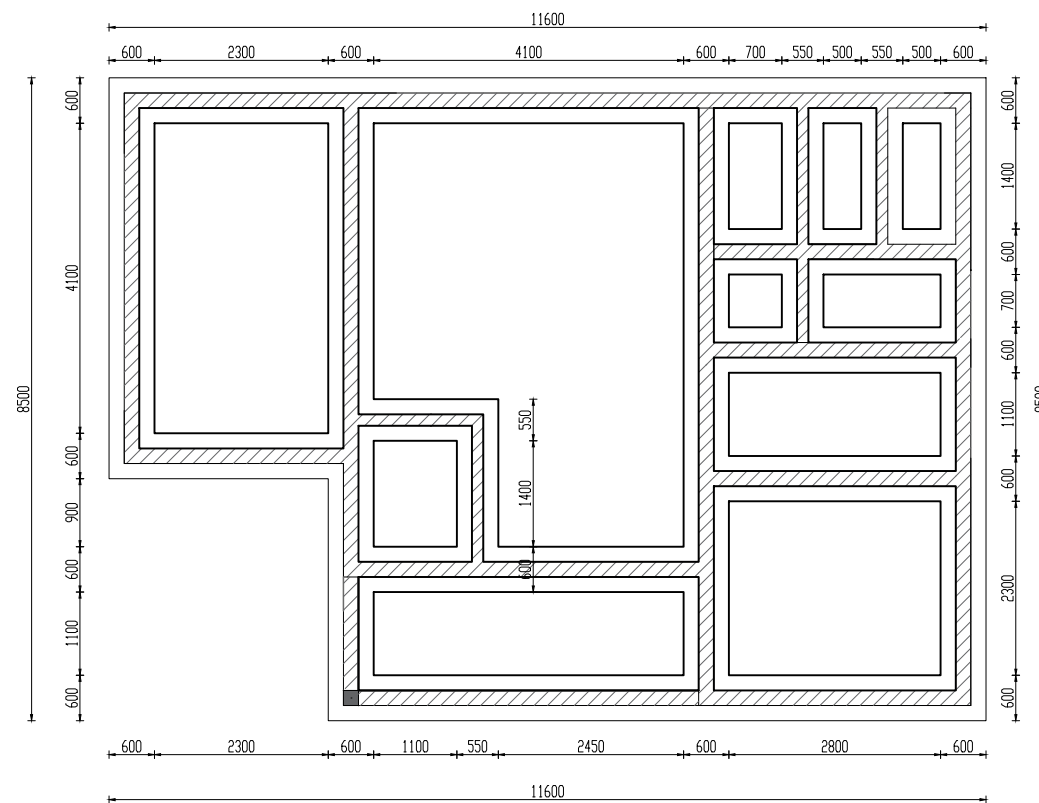
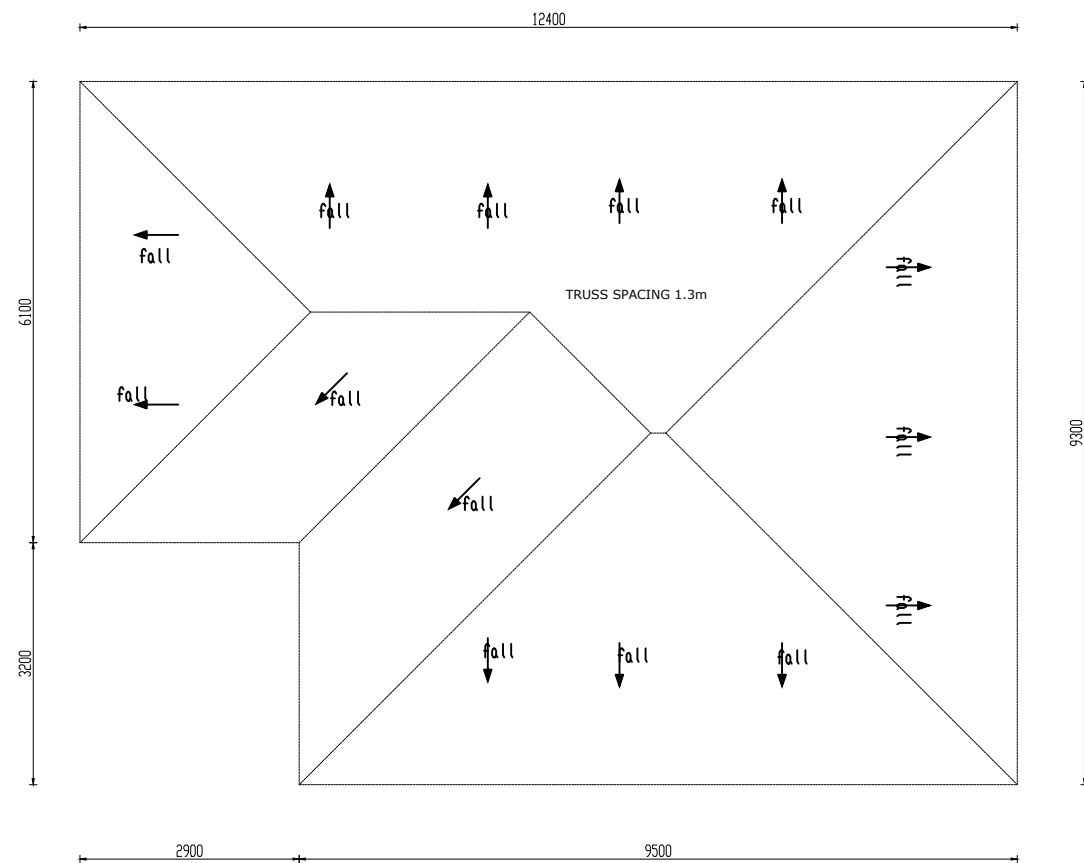
Window Schedule

Window Name	W1	W2	W3
Quantity	5	3	1
W x H Size	1200x1500	600x900	1200 X 1500
Elevation View			
	Double Sash Glazed Metallic Casement	Top Hung Metallic Casement	Metallic Double sash sliding

NB.

- Glass panes to be  $\leq 0.2m^2$
- Burglar proofing to be of a 25x3mm flat bar grille with 175x300mm pitch.
- Permanent Vents are to be fitted with mosquito proofing nets i.e plastic net sandwiched with coffeetray mesh.
- All metallic window & Door sections to be 3.0mm minimum thickness





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**Alliance Consultants Ltd**  
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*In Association with*



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

## ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

REVISIONS :		
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**

### Water Office-Type 1-Foundation & Roof Layout

Surveyed by:
--------------

R.K

Drawn by:

N.R

Designed by:	
--------------	--

W.G.M

Checked by:
-------------

J.K.K

Date:

January 2023

DRG. No.:	
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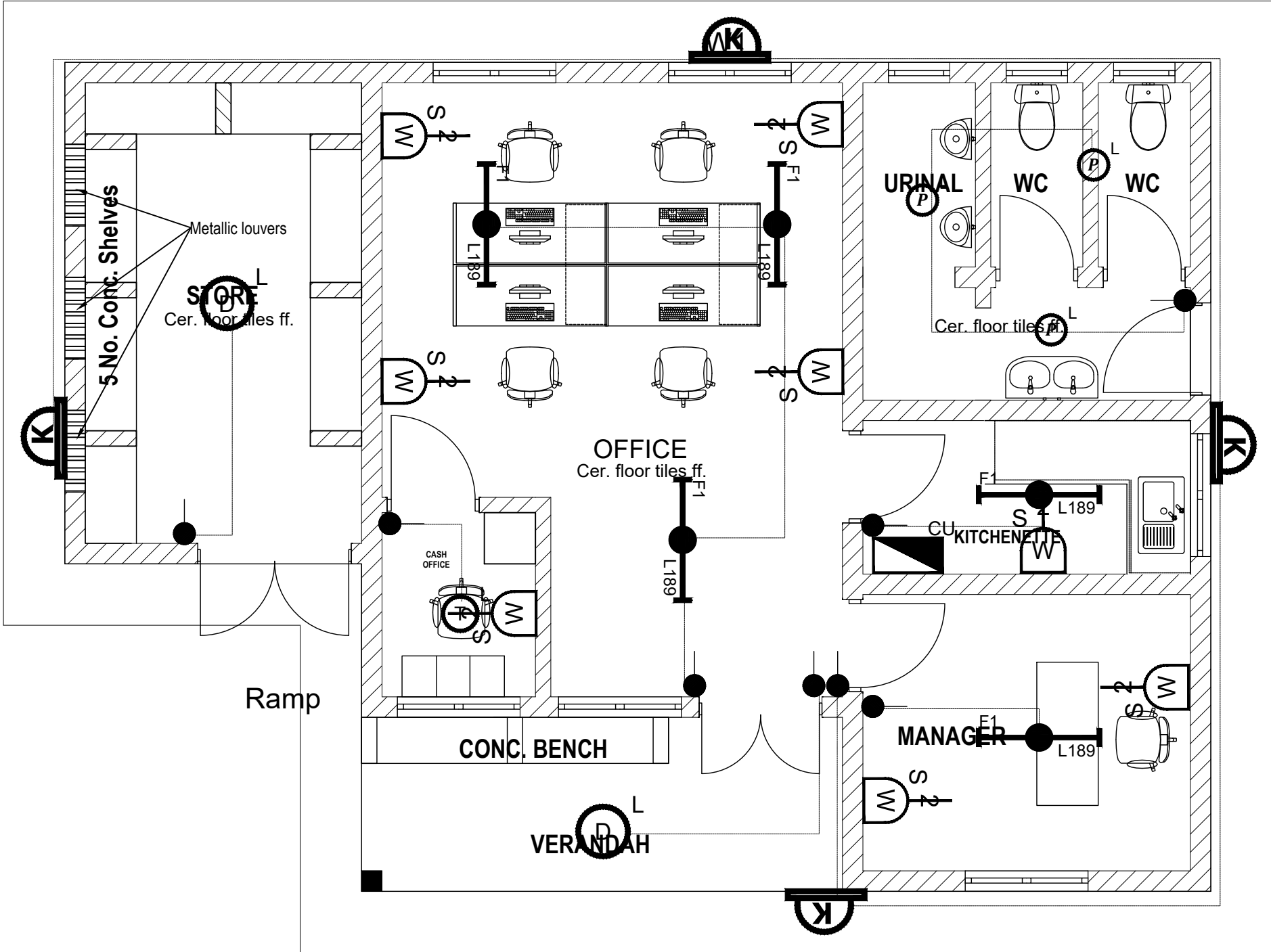
ALA-ORA-SD-016A

Scale:

1:100

Sheet No.:	
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4 of 5



SYMBOL	DESCRIPTION
	1200mm 18W LED batten with a removable LED engine, IP20 As Thorn PopPack LED. or equal approved. (Light Type F1)
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm² flexible copper cable lamp holder and 6W LED Lamp
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm² flexible copper cable lamp holder and 6W LED Lamp
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm² flexible copper cable lamp holder and 6W LED Lamp
	Decorative Bed side lamp complete with flexible spot light arm as LEDS-C4 BALI (05-3217-19-82 + PAN-157-BY) to client's approval.
	wall mounted light
	Socket outlet on Wall
	Consumer's Unit
	One Gang 2way Switch
	Two Gang 2way Switch
	Three Gang 2way Switch
	One Gang 1way Switch
	Two Gang 1way Switch
	Three Gang 1way Switch
	Intermediate Switch
	Photo - Cell

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**Infra-Consult Ltd**

PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

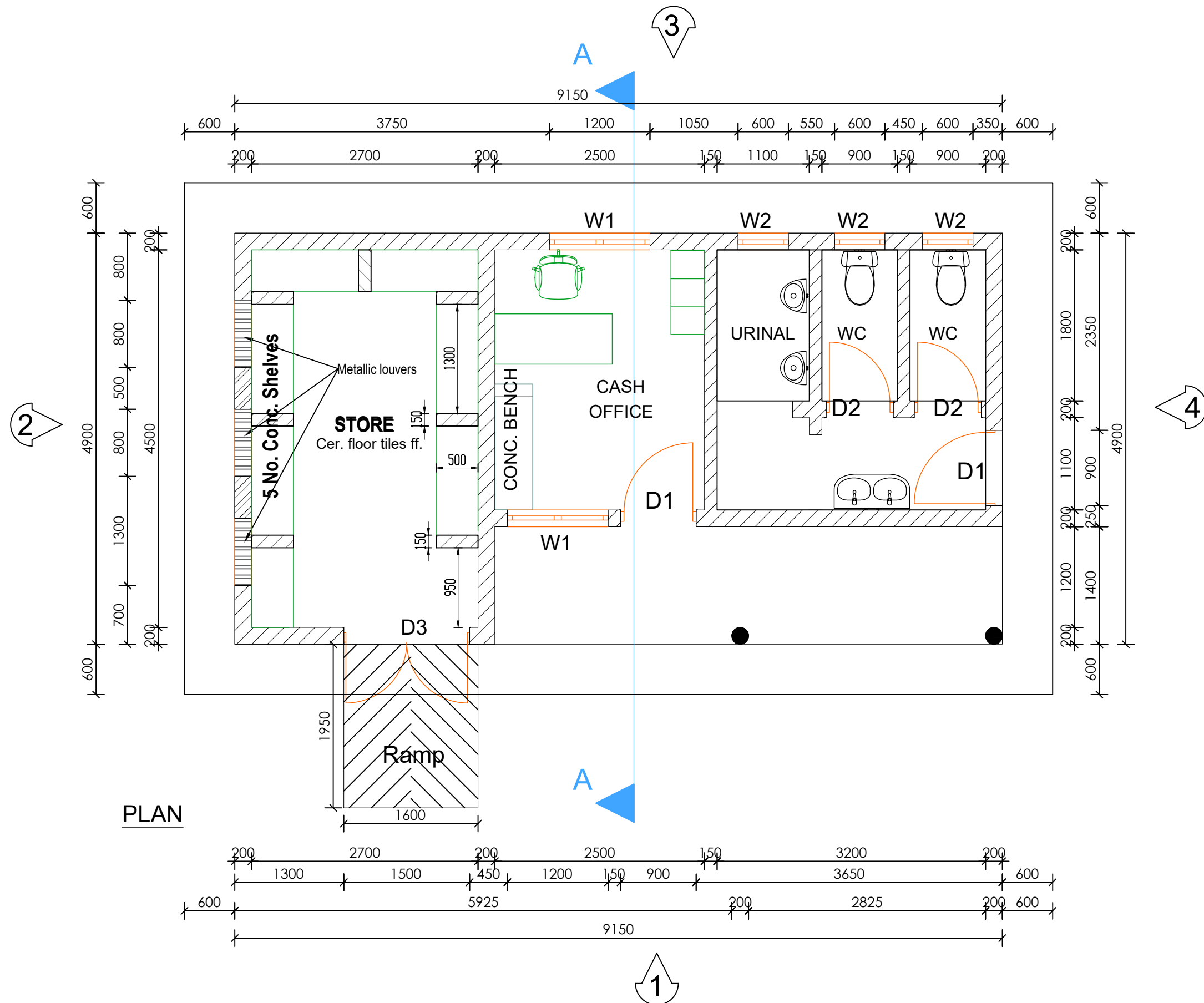
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**  
**Water Office-Type 1- Electrical layouts**

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-016A</b>
Scale:	1:50
Sheet No.:	5 of 5

- 1). ALL WALL BRACKETS SHALL BE MOUNTED 1800mm ABOVE FINISHED FLOOR LEVEL
- 2). TELEPHONE, SOCKETS,T.V AND COMPUTER OUTLETS SHALL BE MOUNTED 300mm ABOVE FINISHED FLOOR LEVEL EXCEPT WHERE THEIR IS A WORKTOP.
- 3). WHERE THEIR IS A WORKTOP,TELEPHONE, SOCKETS,T.V AND COMPUTER OUTLETS SHALL BE MOUNTED 150mm ABOVE WORKTOPS.
- 4). CONSUMER UNITS SHALL BE 1800mm ABOVE FINISHED FLOOR LEVEL
- 5). ALL SWITCHES SHALL BE 1400mm ABOVE FINISHED FLOOR LEVEL
- 6). ALL OUTSIDE SOCKETS SHOULD BE WEATHER PROOF
- 7). ALL SHAVER SOCKETS SHOULD BE ON THE RIGHT HAND SIDE OF THE WASH HAND BASIN
- 8). ALL CABLES MUST BE STRANDED



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PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

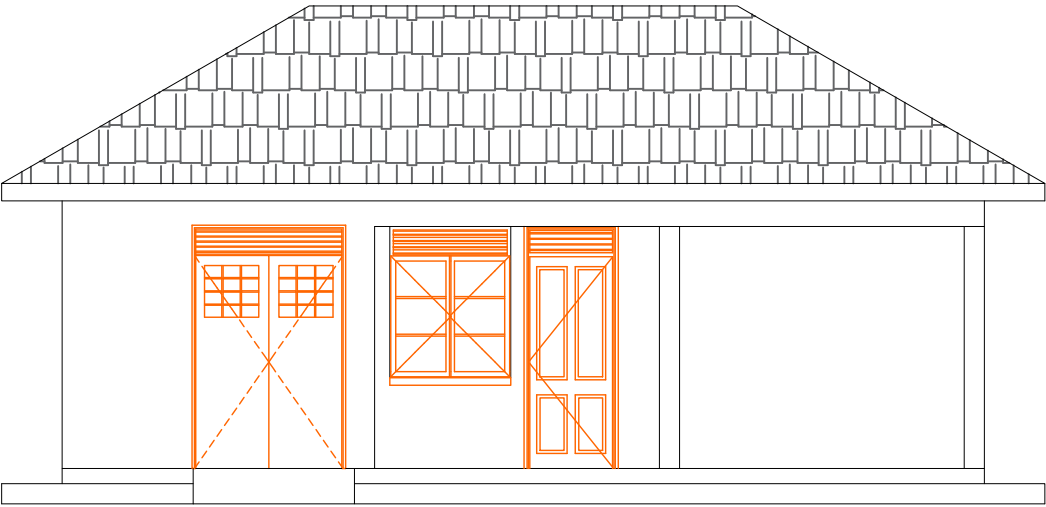
REVISIONS :

No	Date	Description

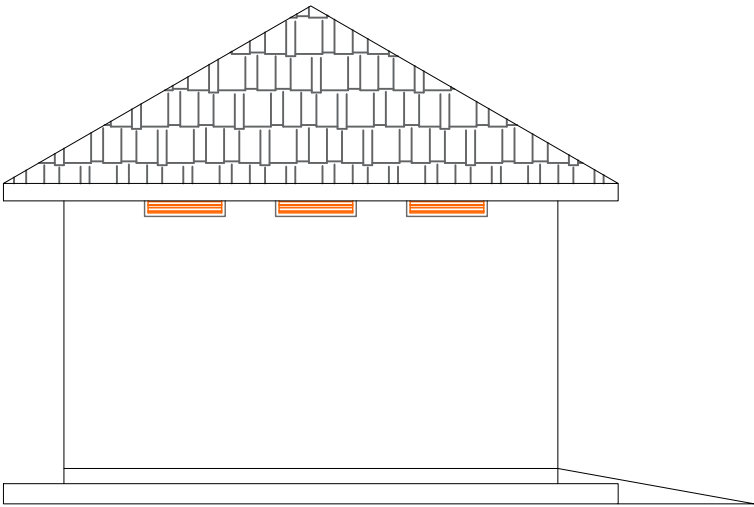
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Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-016B</b>
Scale:	1:50
Sheet No.:	1 of 5

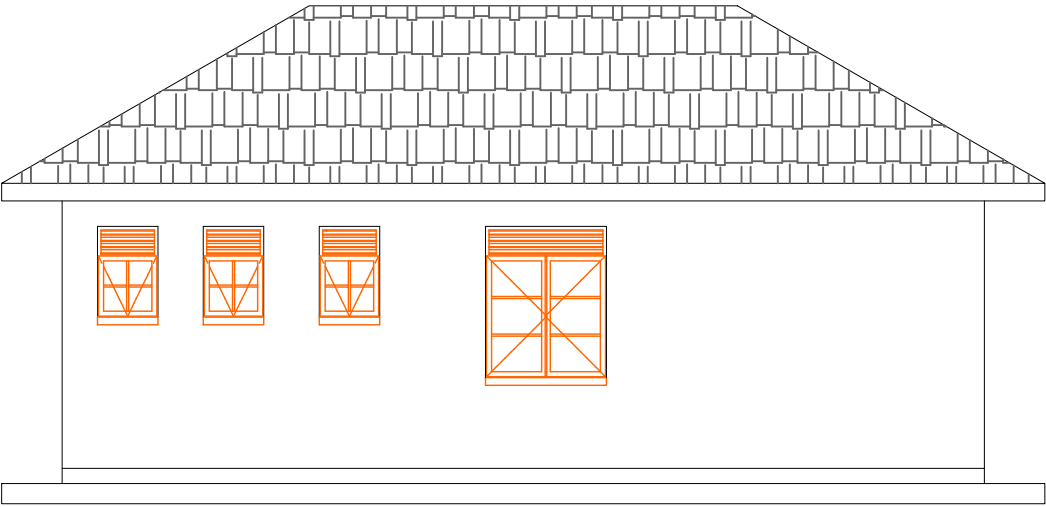




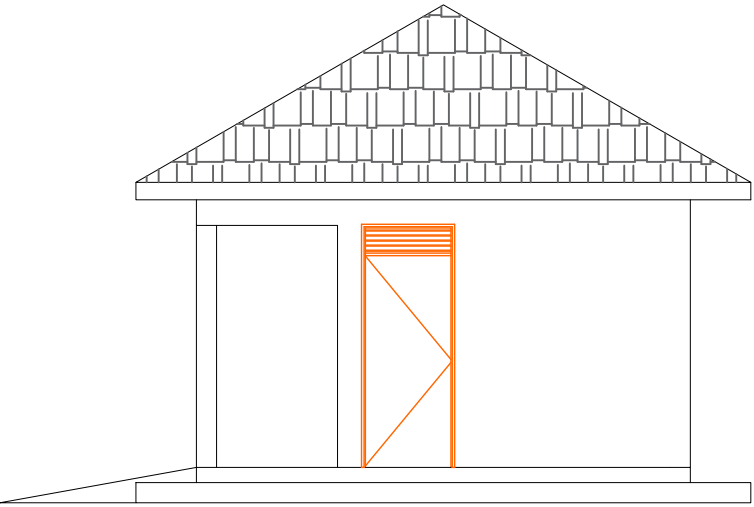
ELEVATION 1



ELEVATION 2



ELEVATION 3



ELEVATION 4

LEGEND

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PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :		
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**  
Water Office(Type 2)-Elevations

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-016B</b>
Scale:	1:75
Sheet No.:	3 of 5

Door Schedule

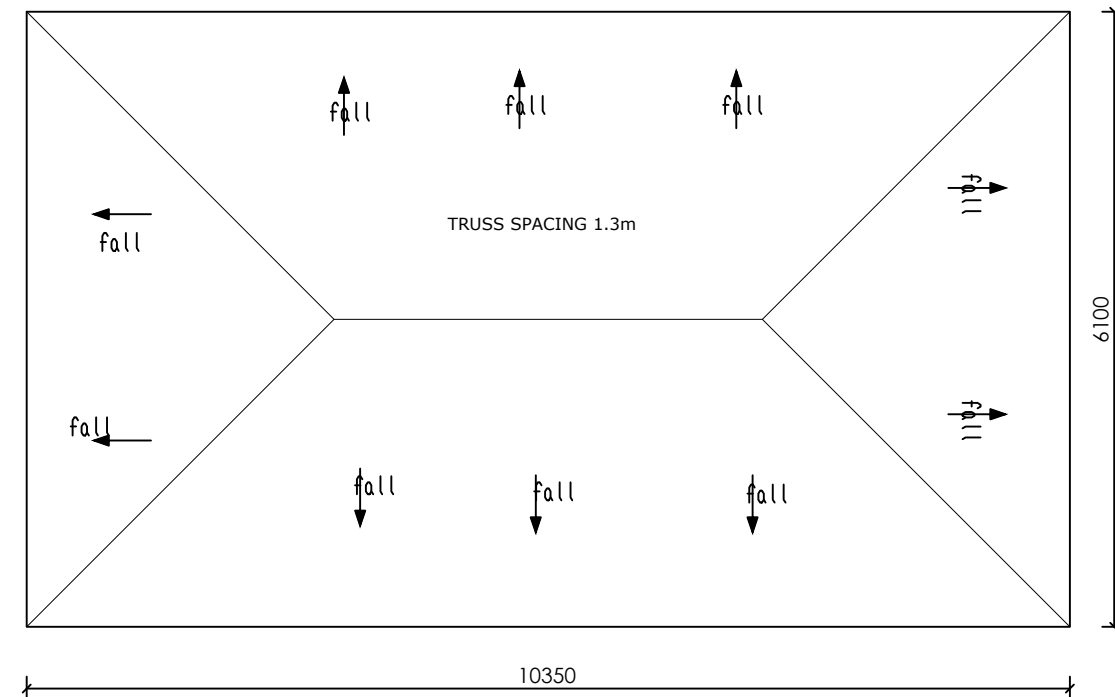
Door Name	D1	D2	D3	D4	D5
Quantity	2	3	1	2	1
W x H Size	1200x2400	900x2400	900x2400	800x2400	1500x2400
Elevation View					
	Double Leaf Metallic Casement Door	Single Leaf Wooden Paneled Door	Single Leaf Half Glazed/ Half Steel plate Door	Single Leaf Wooden Paneled Door	Double Leaf Metallic Casement Door

Window Schedule

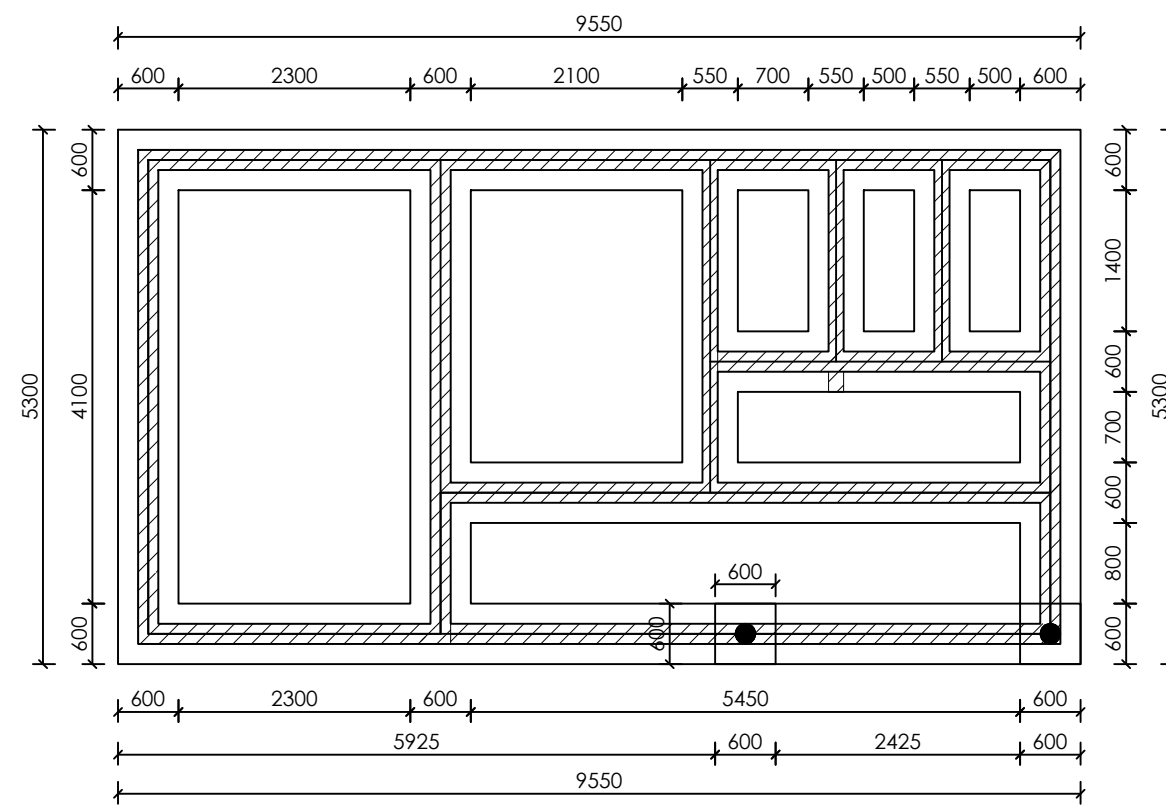
Window Name	W1	W2	W3
Quantity	5	3	1
W x H Size	1200x1500	600x900	1200 X 1500
Elevation View			
	Double Sash Glazed Metallic Casement	Top Hung Metallic Casement	Metallic Double sash sliding

NB.

- Glass panes to be  $\leq 0.2m^2$
- Burglar proofing to be of a 25x3mm flat bar grille with 175x300mm pitch.
- Permanent Vents are to be fitted with mosquito proofing nets i.e plastic net sandwiched with coffeetray mesh.
- All metallic window & Door sections to be 3.0mm minimum thickness



**ROOF LAYOUT**



**FOUNDATION LAYOUT**

**LEGEND**

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PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

















No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**  
**Water Office(Type 2)-Roof and Foundation Layout**

Surveyed by:	R.K
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Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-016B</b>
Scale:	1:75
Sheet No.:	4 of 5





- | SYMBOL  | DESCRIPTION   |
|---|---|
|  | 1200mm 18W LED batten with a removable LED engine. IP20 As Thorn PopPack LED. or equal approved. (Light Type F1)                  |
|  | Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp      |
|  | Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp      |
|  | Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm <sup>2</sup> flexible copper cable lamp holder and 6W LED Lamp      |
|  | Decorative Bed side lamp complete with flexible spot light arm as LEDS-C4 BALI (05-3217-19-82 + PAN-157-BY) to client's approval. |
|  | wall mounted light  |
|  | Socket outlet on Wall   |
|  | Consumer's Unit   |
|  | One Gang 2way Switch  |
|  | Two Gang 2way Switch  |
|  | Three Gang 2way Switch  |
|  | One Gang 1way Switch  |
|  | Two Gang 1way Switch  |
|  | Three Gang 1way Switch  |
|  | Intermediate Switch   |
|  | Photo - Cell  |



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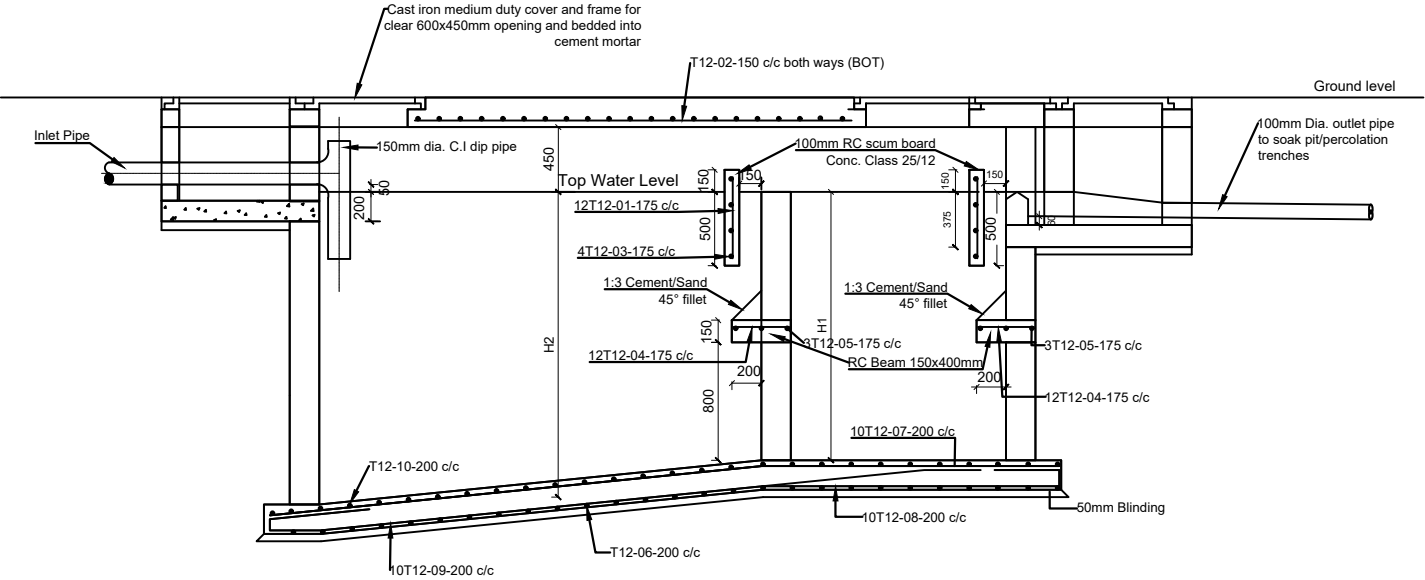
## ENYAU WATER SUPPLY AND SANITATION SYSTEM

No	Date	Description

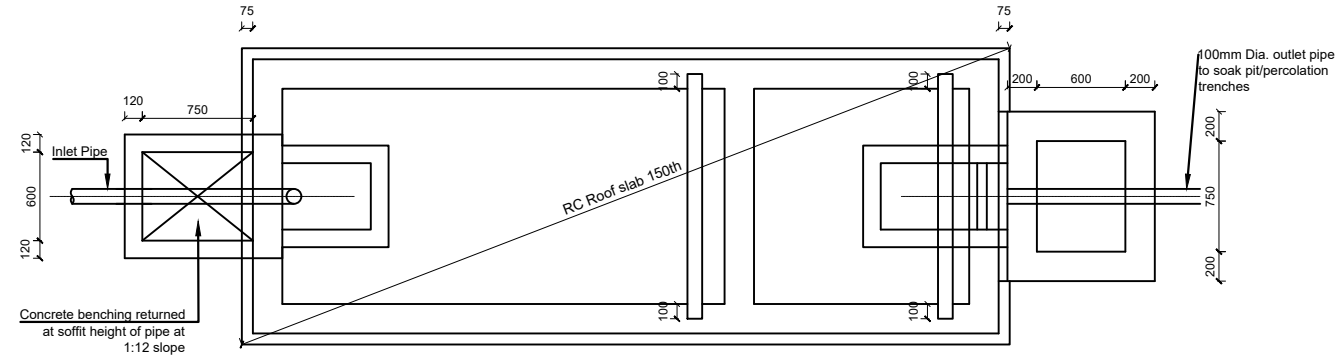
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Designed by:	W.G.M
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Scale: 1:40	Sheet No.: 5 of 5
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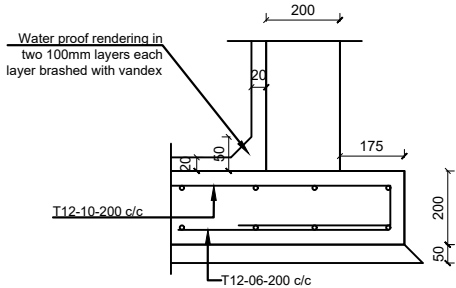
SEPTIC TANK



SECTION A-A

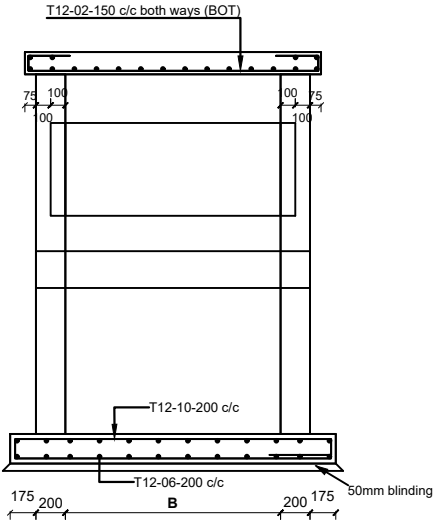
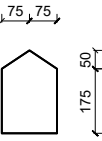


ROOF SLAB PLAN

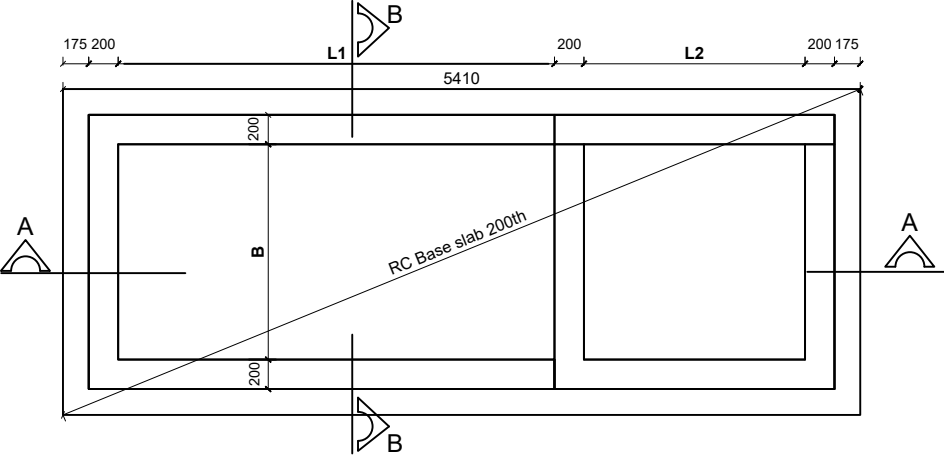


INTERNAL WATER PROOF TO WALLS AND SLABS

CONC. WEIR BLOCK DETAIL



SECTION B-B



SEPTIC TANK DIMENSIONS

INTERNAL DIMENSIONS (mm)					CAPACITY	NO. OF USERS
L1	L2	H1	H2	B	Cu. M	
1540	760	1600	1750	760	3.2	10
1900	900	1800	2000	900	4.5	20
2000	1000	1800	2000	1100	5.9	30
2400	1100	1800	2000	1150	7.24	40
2500	1200	1800	2000	1300	8.6	50
2000	1300	1800	2000	1400	10	60
2000	1400	1800	2000	1450	11.3	70
3000	1500	1800	2000	1560	12.7	80
3200	1600	1800	2000	1600	14	90
3300	1700	1800	2000	1700	15.4	100
4000	2000	1800	2000	2090	24	150
4500	2000	1800	2000	2650	34.3	200

LEGEND

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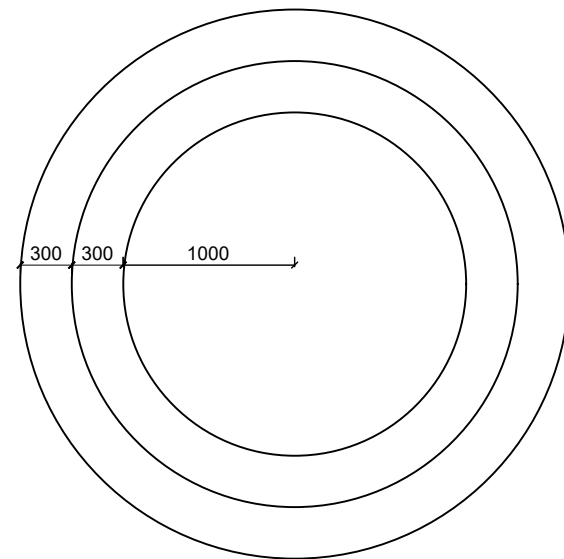
PROJECT :  
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SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

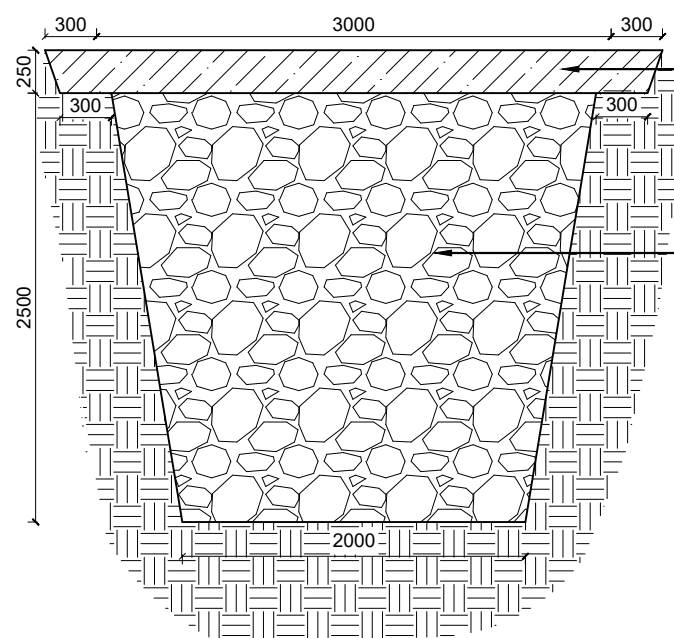
REVISIONS :		
No	Date	Description

DRAWING TITLE : STANDARD DRAWINGS  
Septic Tank

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA-SD-017
Scale:	1:120
Sheet No.:	1 of 1

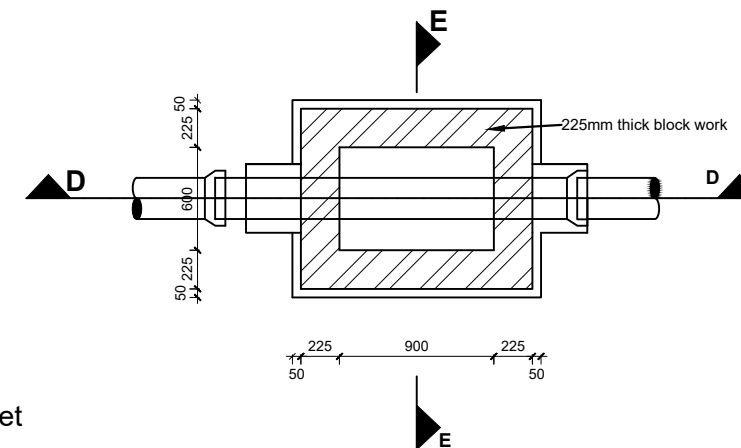
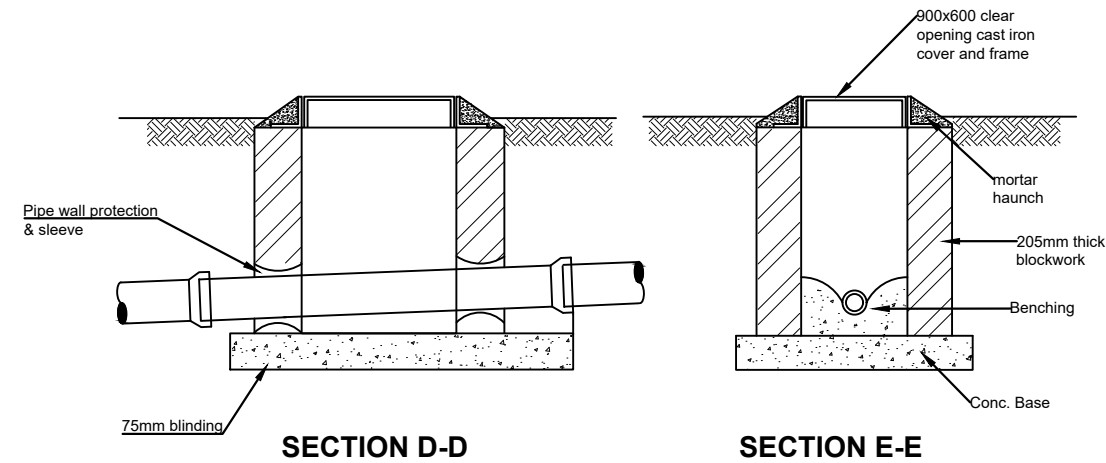


**Soak Pit Plan**

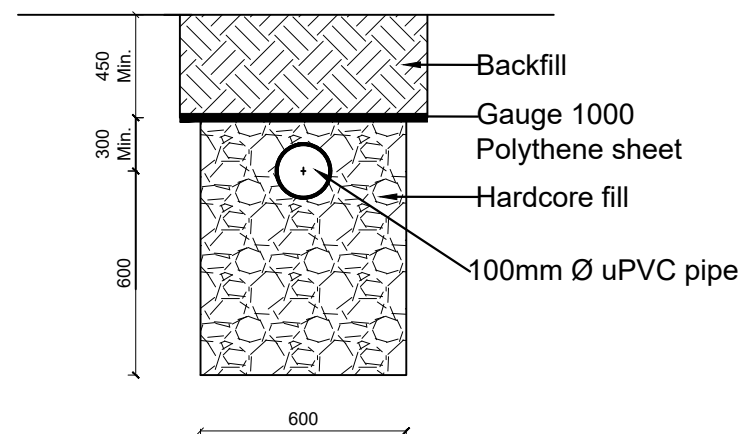


**SECTION A - A**

**Note:**  
Detail for areas with sandy or red soils,  
for clay or black-cotton soils appropriate  
solutions to be determined on site.



**SHALLOW MANHOLE  
(DEPTH < 1000mm)**



**Percolation Trench Detail**

**LEGEND**

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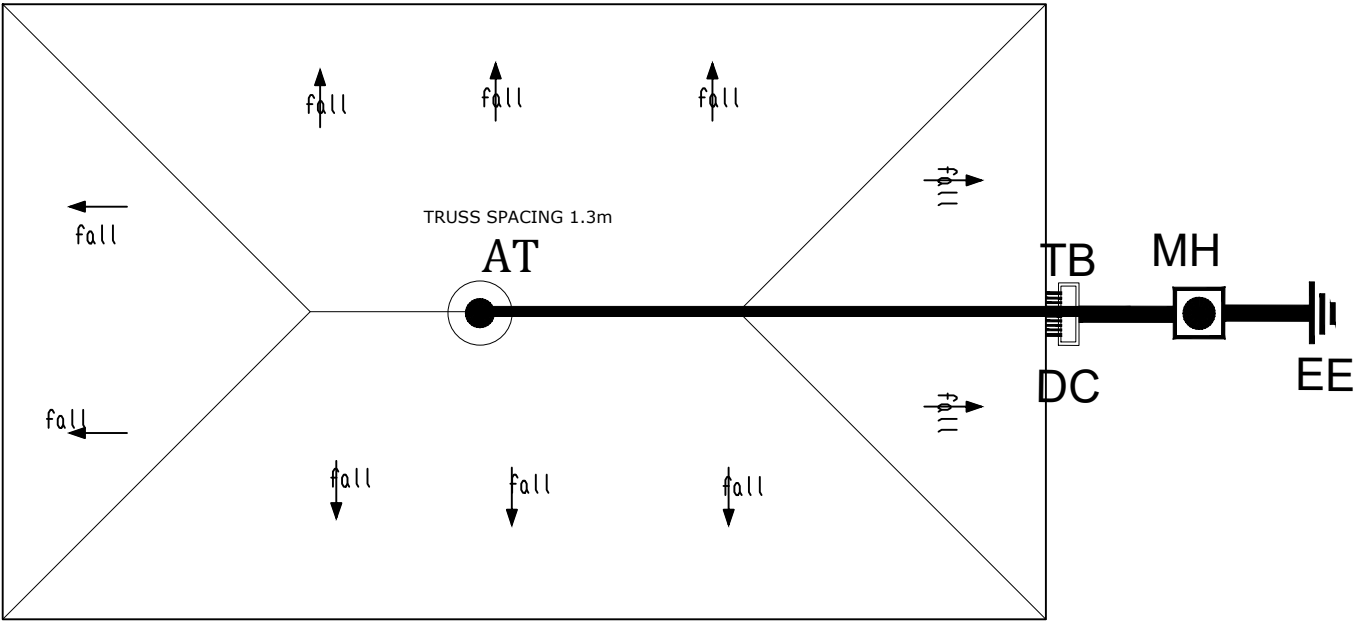
PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS  
Manhole and Soak Pit Details**

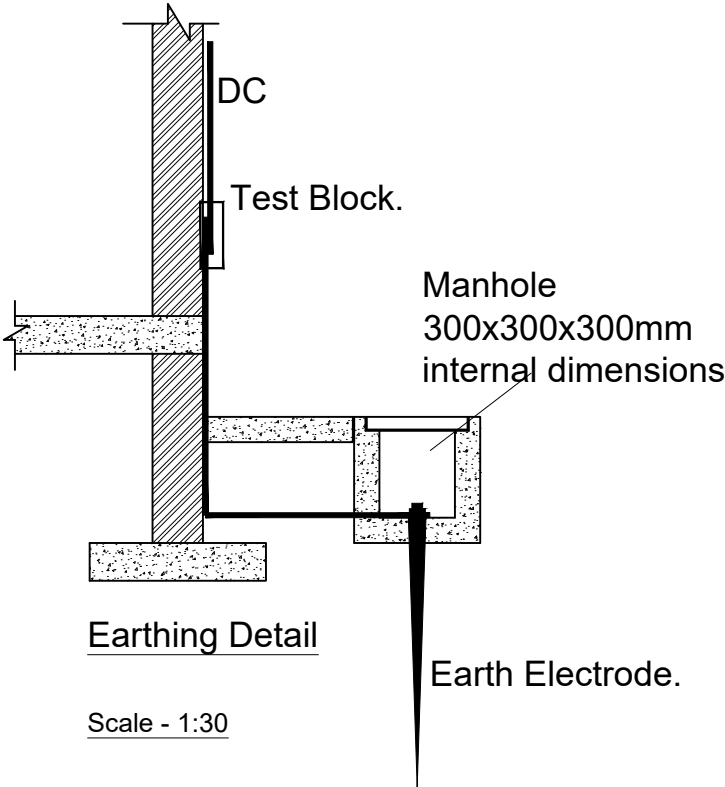
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Checked by:	J.K.K
Date:	January 2023
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Scale:	1:120
Sheet No.:	1 of 1



- LEGEND**
- AT AIR TERMINAL
  - TB TEST CLAMP
  - MH INSPECTION MANHOLE
  - EE EARTH ELECTRODE
  - HC HORIZONTAL CONDUCTOR
  - DC DOWN CONDUCTOR

**NOTE**

Air Terminal to be placed at the highest and center point of the roof



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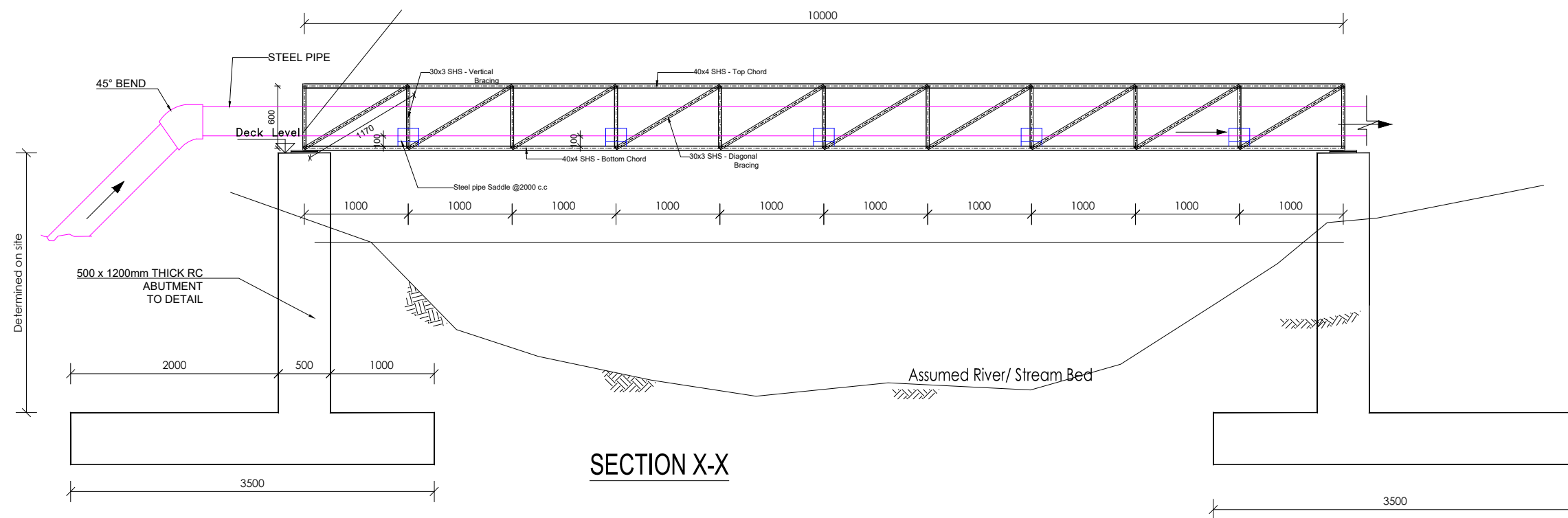
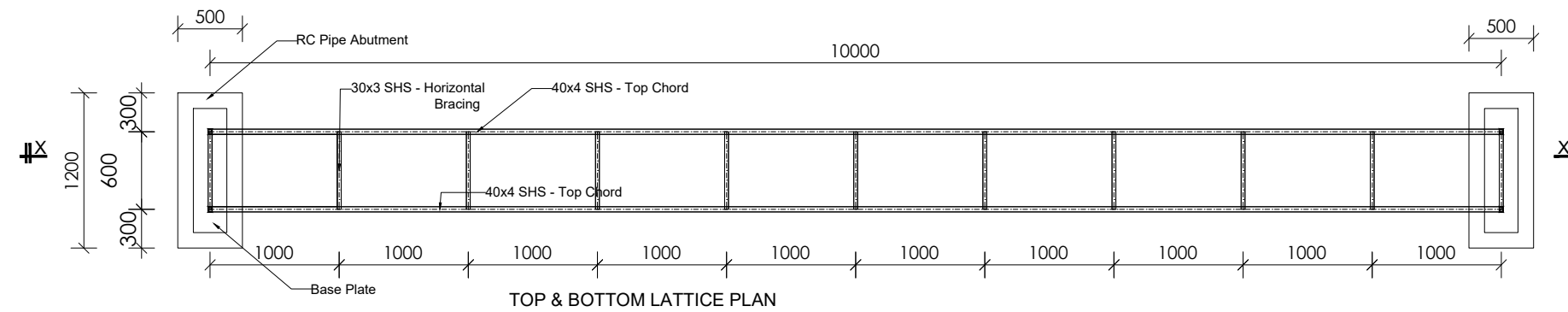
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**  
**Lightning Conductor**

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	<b>ALA-ORA-SD-019</b>
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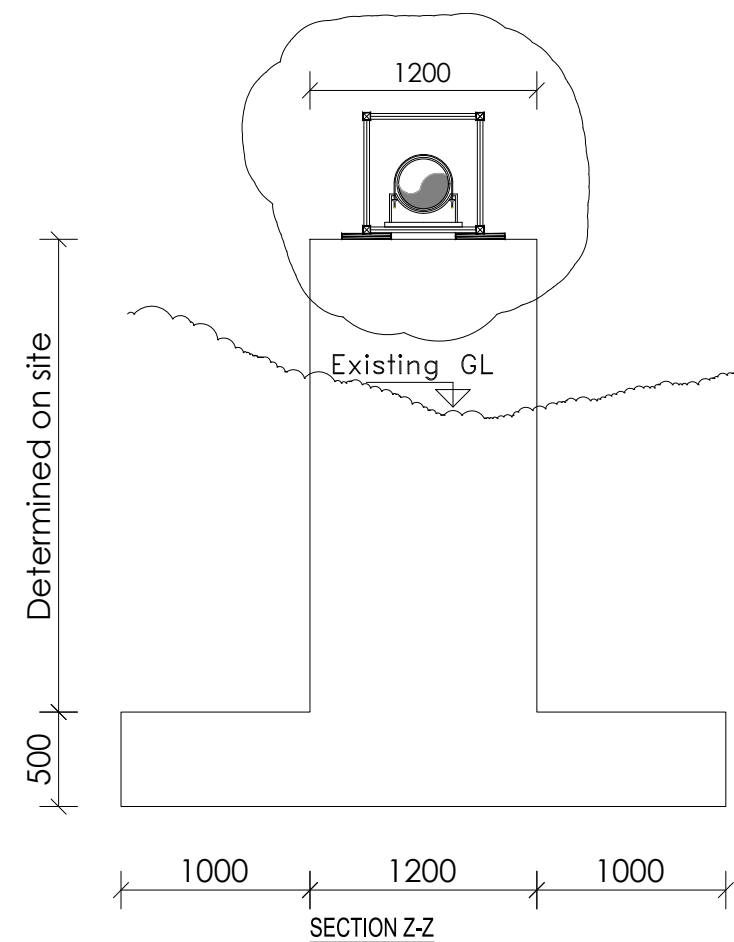
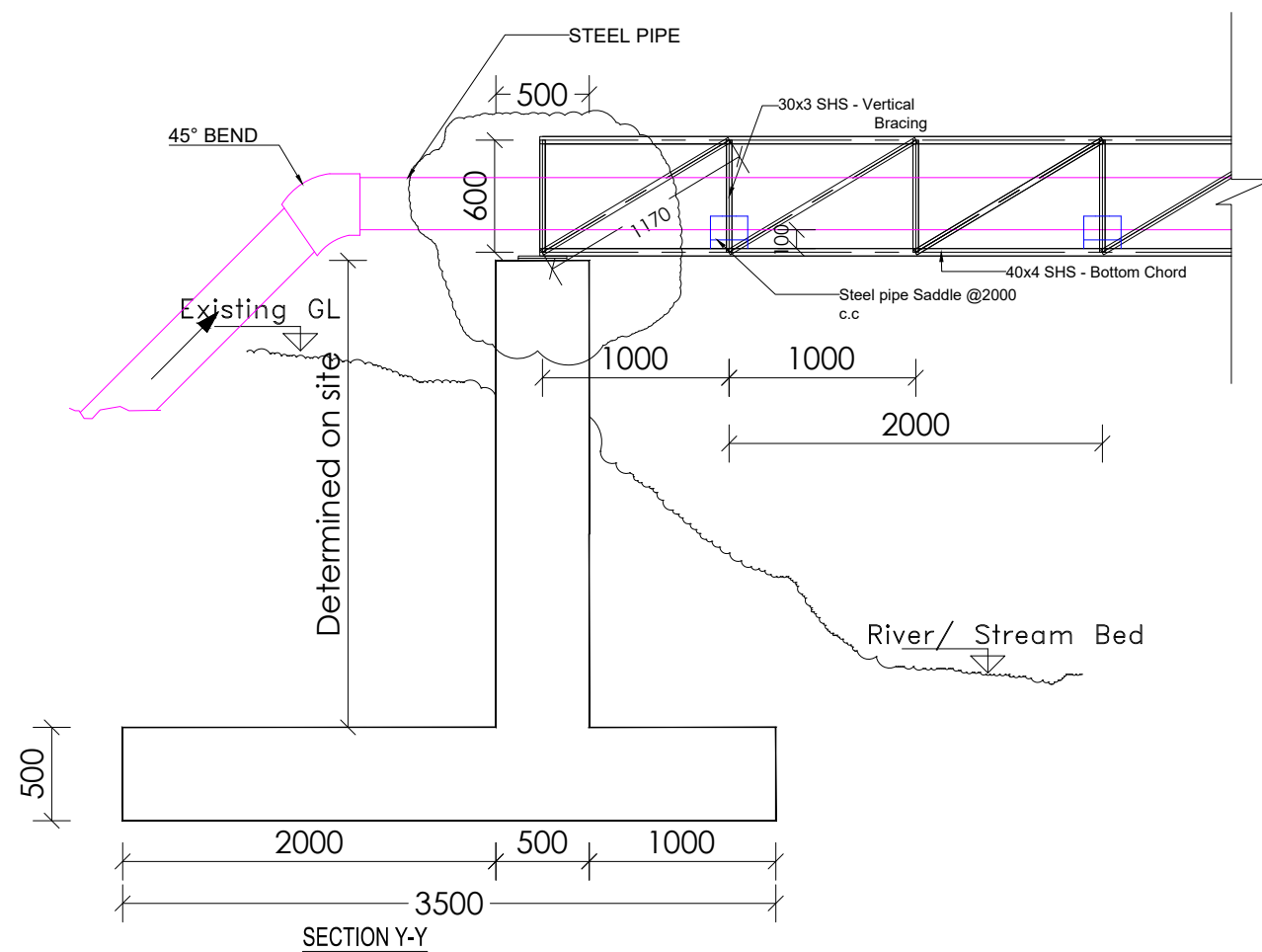
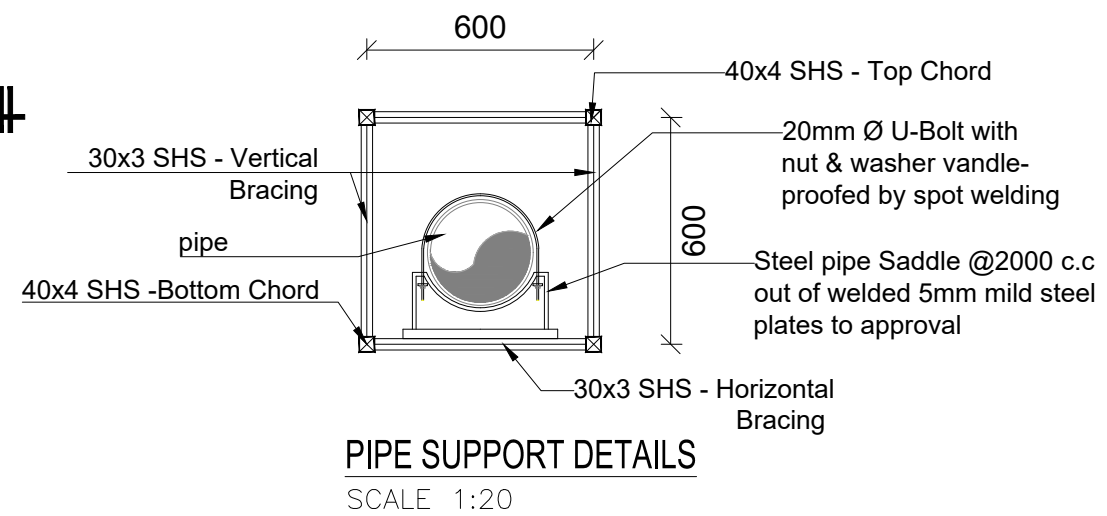
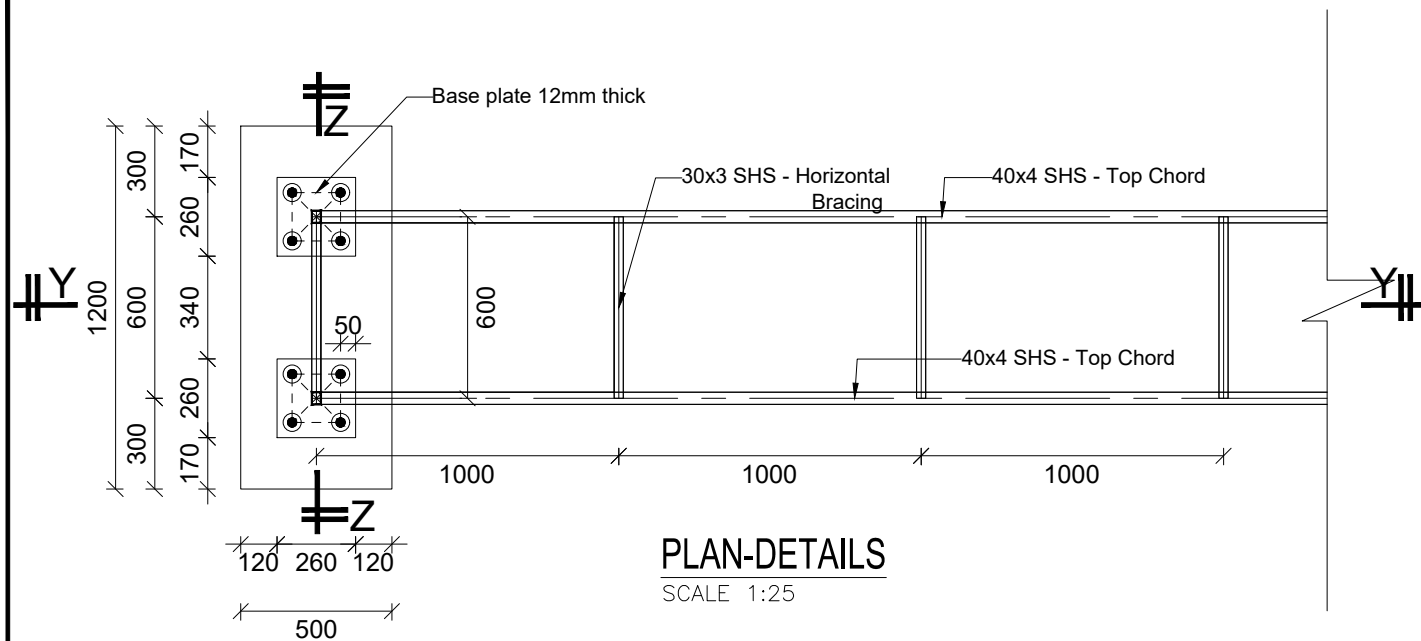
**ALA-ORA WATER SUPPLY AND  
 SANITATION PROJECT**

**STANDARD DRAWINGS**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **PIPE BRIDGES-10m**  
 Plan and Elevation

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	B.A
Checked by:	J.K.K
Date:	March 2023
DRG. No.:	<b>ALA-ORA-SD-020</b>
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SANITATION PROJECT**

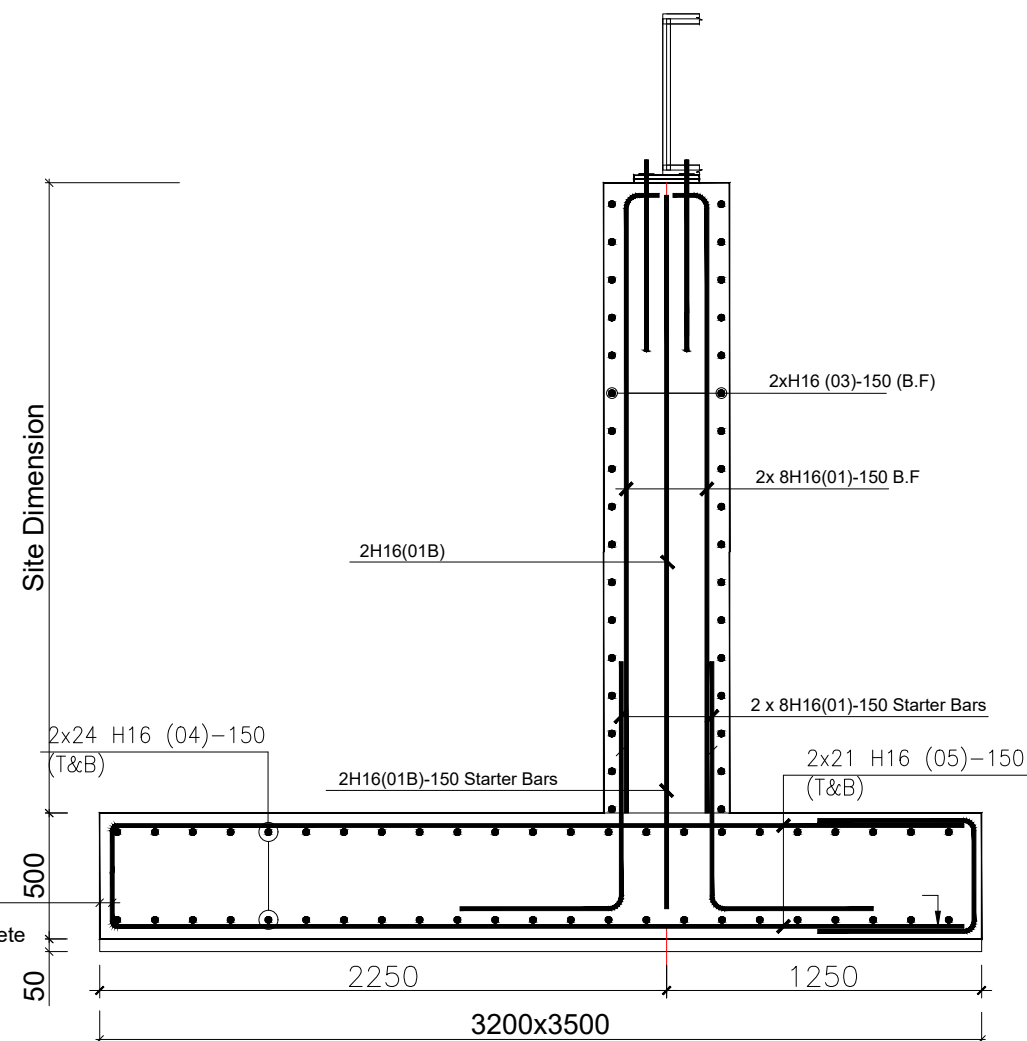
**STANDARD DRAWINGS**

REVISIONS :		
No	Date	Description

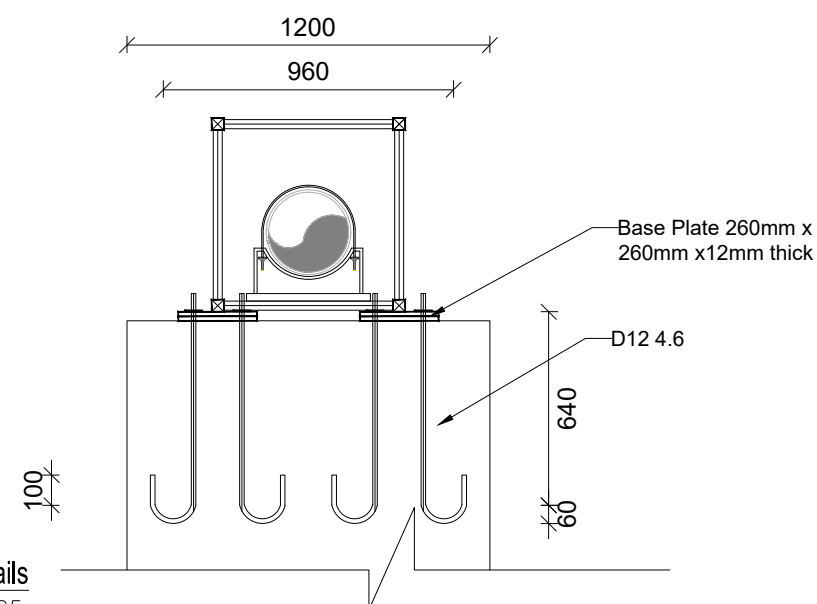
DRAWING TITLE : **PIPE BRIDGES-10m  
Details**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	B.A
Checked by:	J.K.K
Date:	March 2023
DRG. No.:	<b>ALA-ORA-SD-020</b>
Scale:	1:40
Sheet No.:	2 of 3

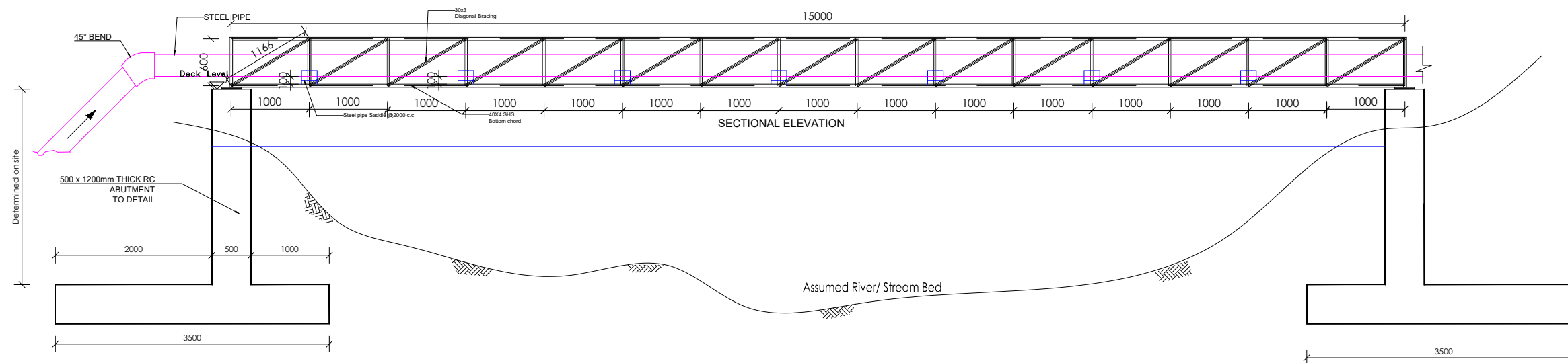
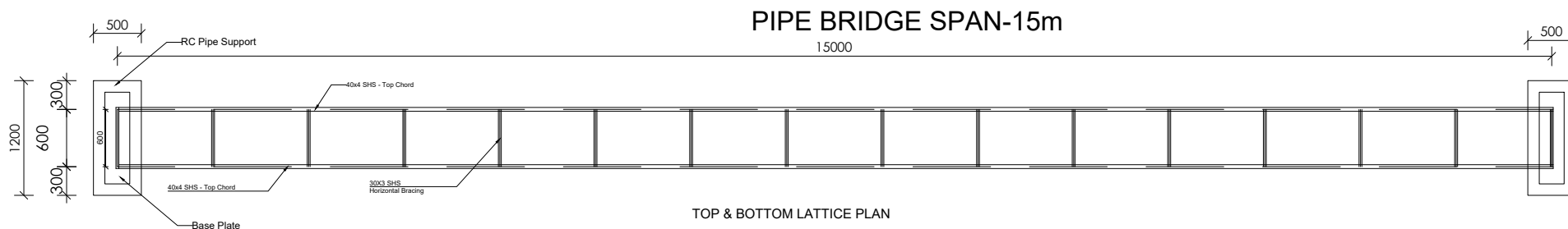




RC PIPE BRIDGE ABUTMENT (2No.) [3500X3200x500]



3 of 3



CLIENT :

  
THE REPUBLIC OF UGANDA  
**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:

  
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IBRD • IDA | WORLD BANK GROUP

CONSULTANT :

 **Alliance Consultants Ltd**  
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PROJECT :

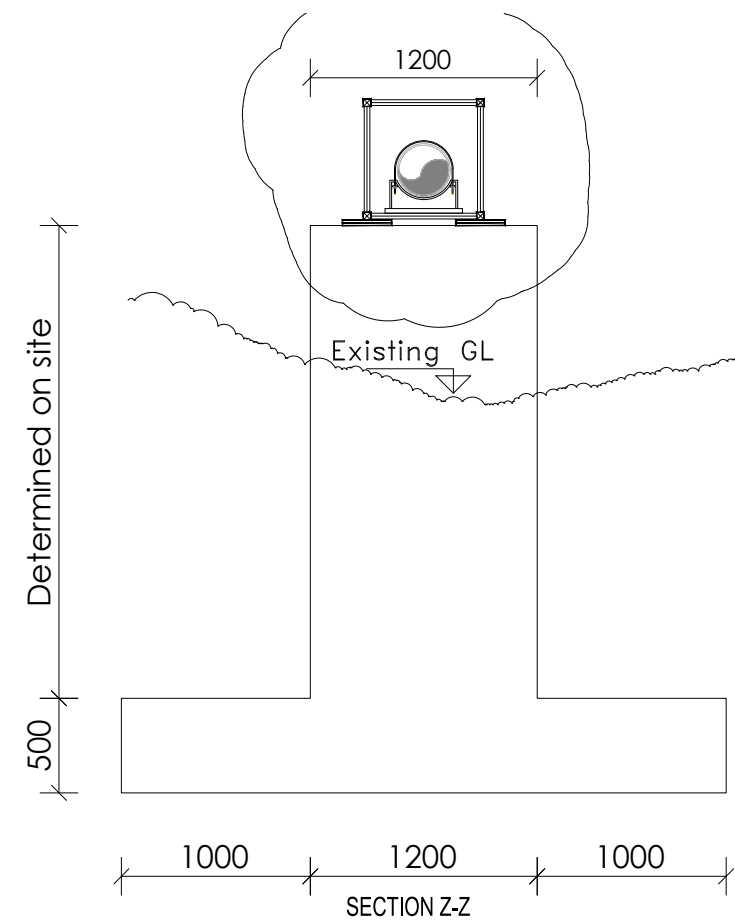
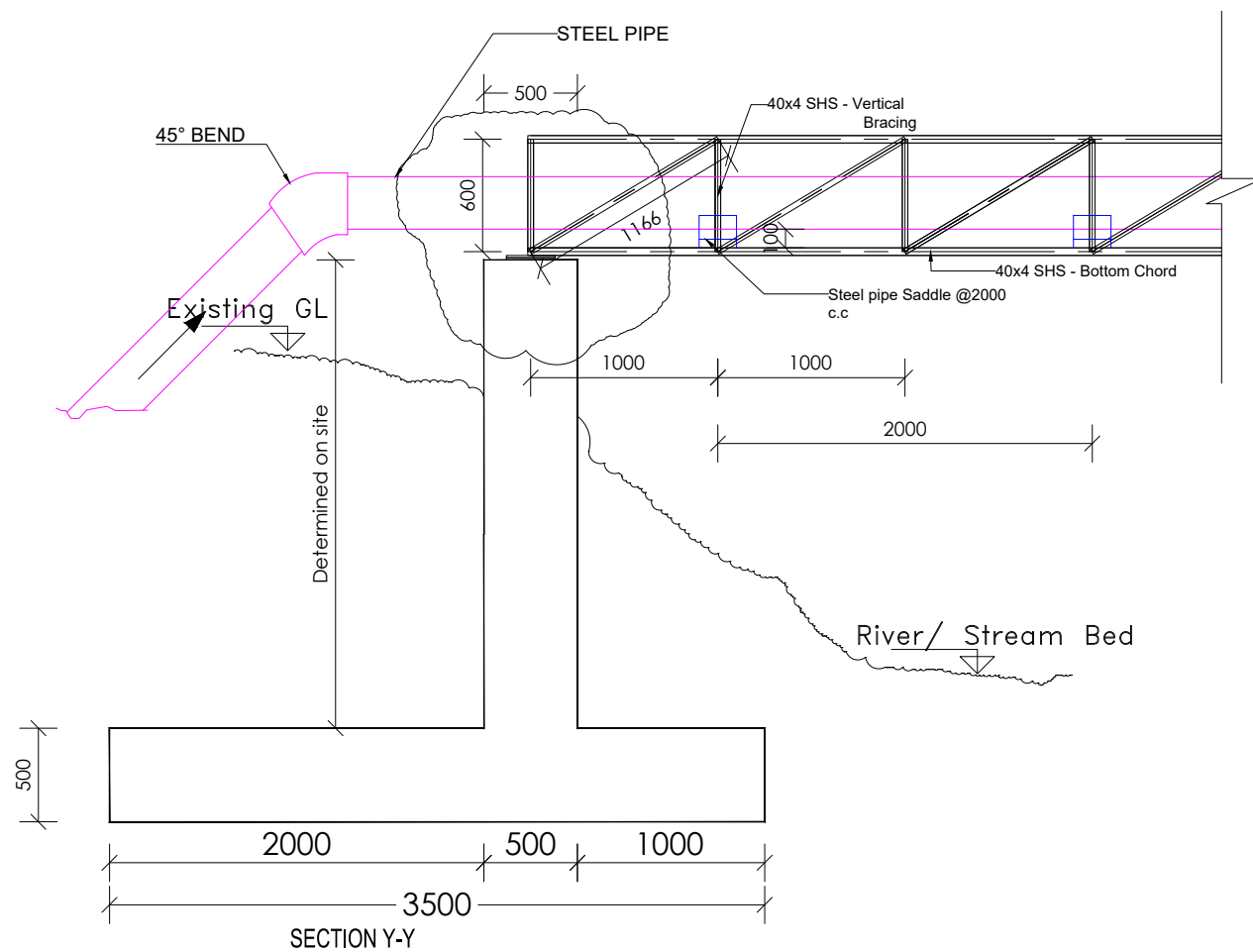
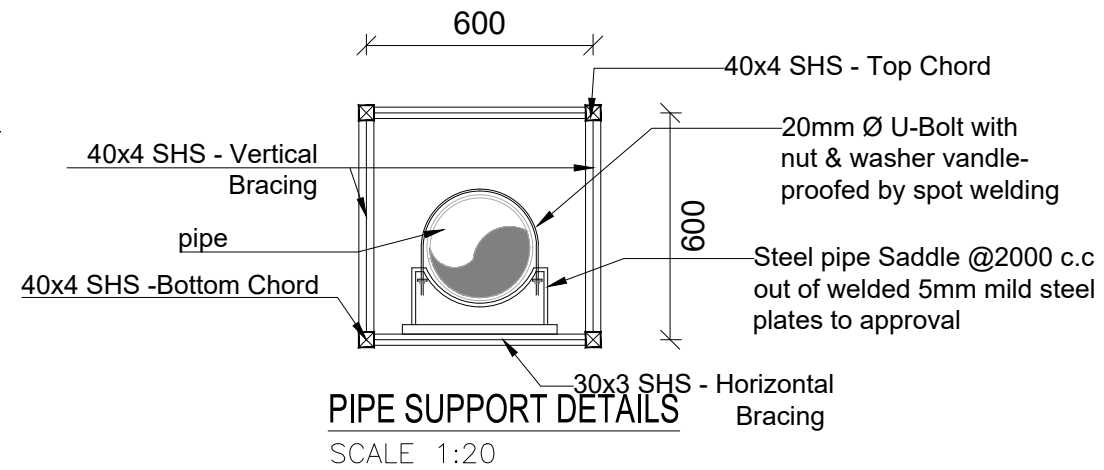
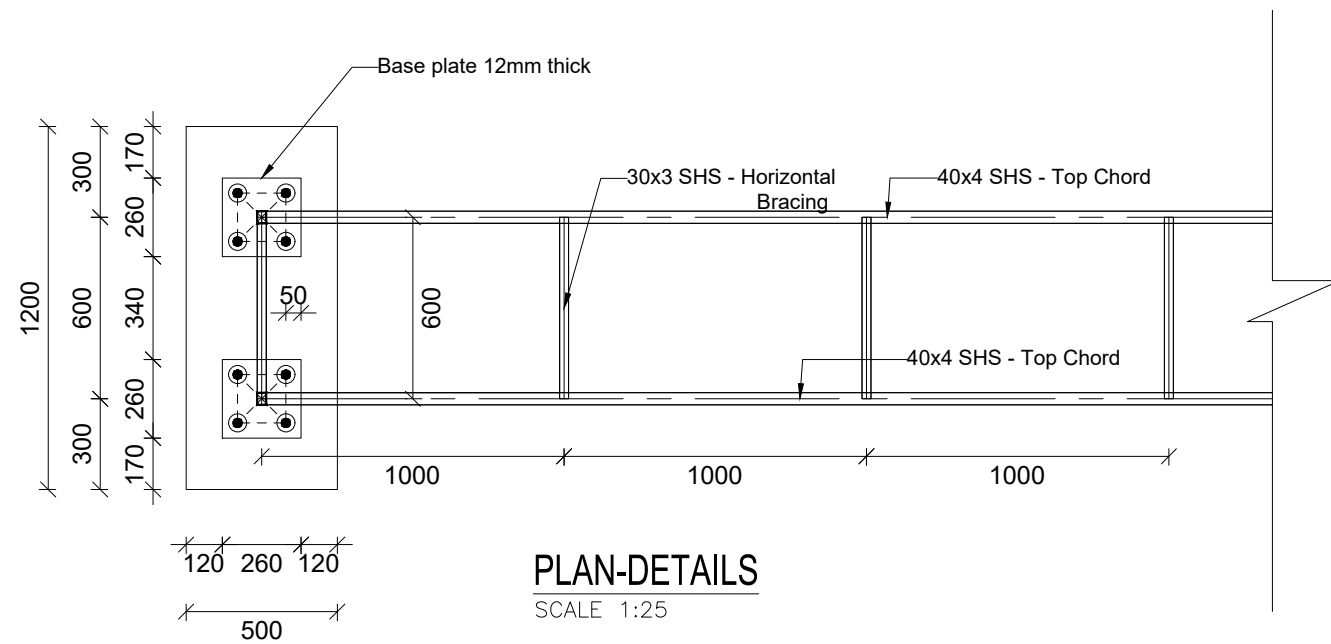
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**STANDARD DRAWINGS**

REVISIONS :		
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DRAWING TITLE : **PIPE BRIDGES-15m**  
Plan and Elevation

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	B.A
Checked by:	J.K.K
Date:	March 2023
DRG. No.:	<b>ALA-ORA-SD-021</b>
Scale:	1:65
Sheet No.:	1 of 3



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PROJECT :

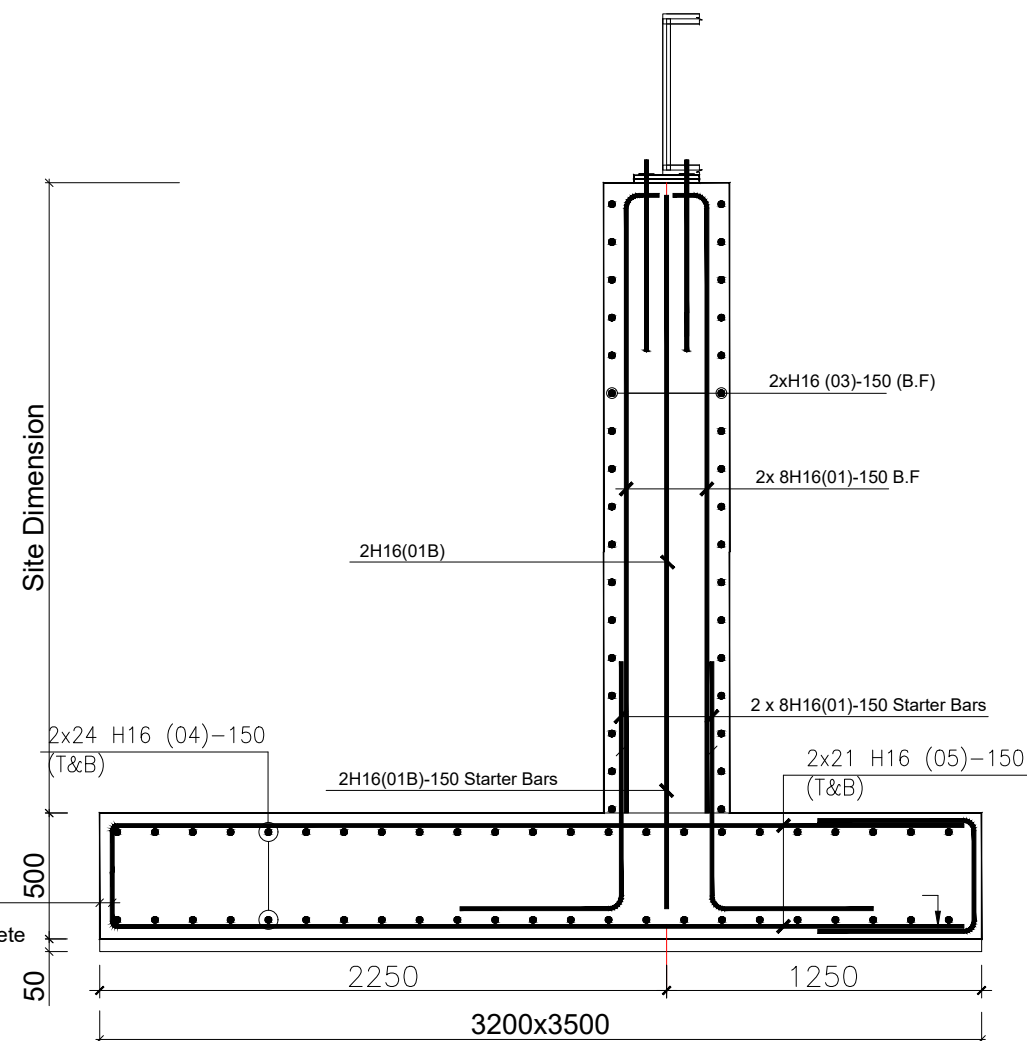
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SANITATION PROJECT**

**STANDARD DRAWINGS**

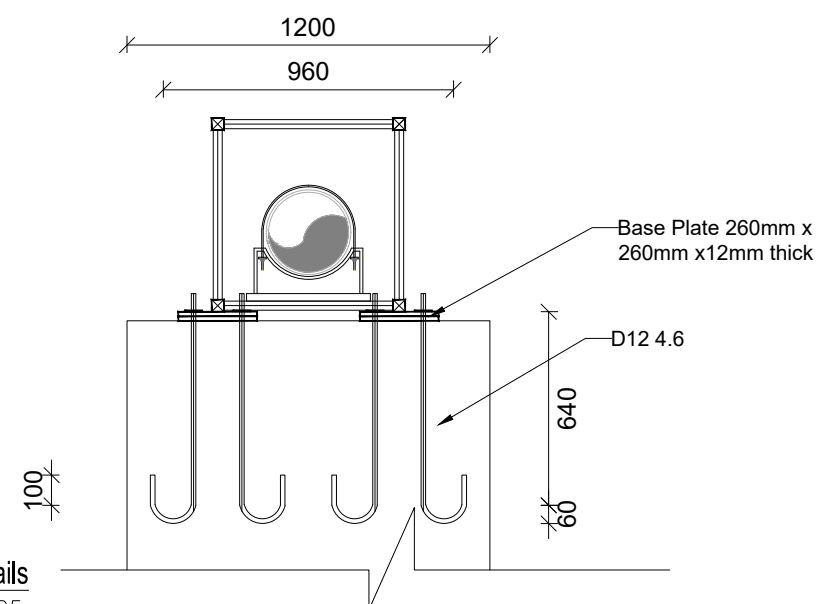
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No	Date	Description

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Details**

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Drawn by:	A.K
Designed by:	B.A
Checked by:	J.K.K
Date:	March 2023
DRG. No.:	<b>ALA-ORA-SD-021</b>
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Sheet No.:	2 of 3

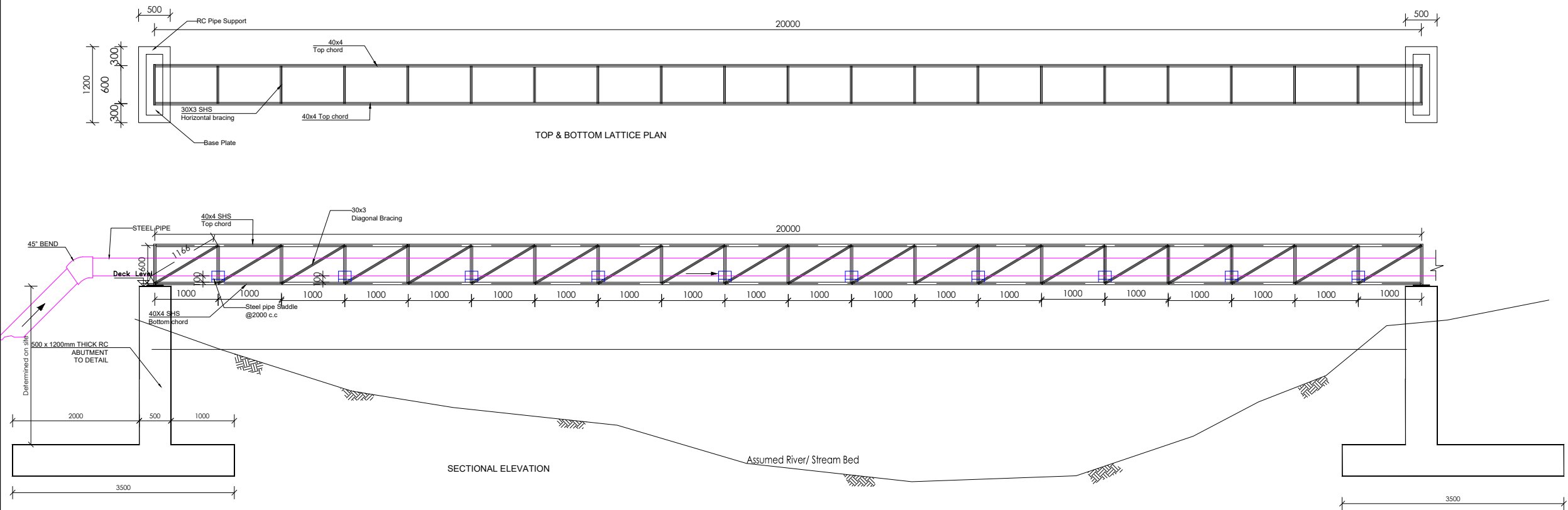


RC PIPE BRIDGE ABUTMENT (2No.) [3500X3200x500]



Sheet No.: 3 of 3

PIPE BRIDGE SPAN-20m



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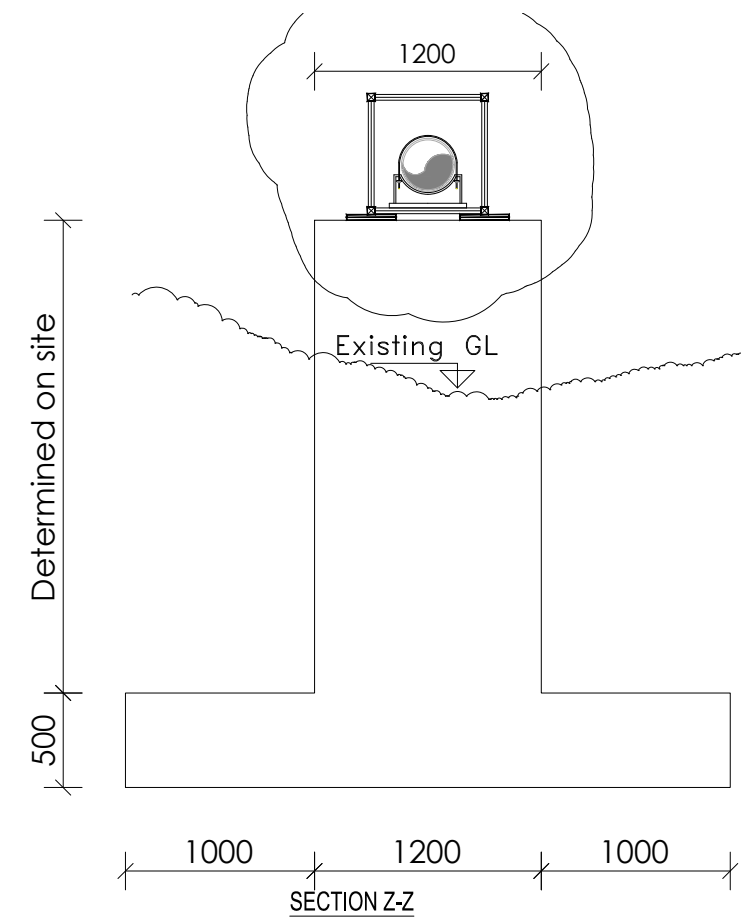
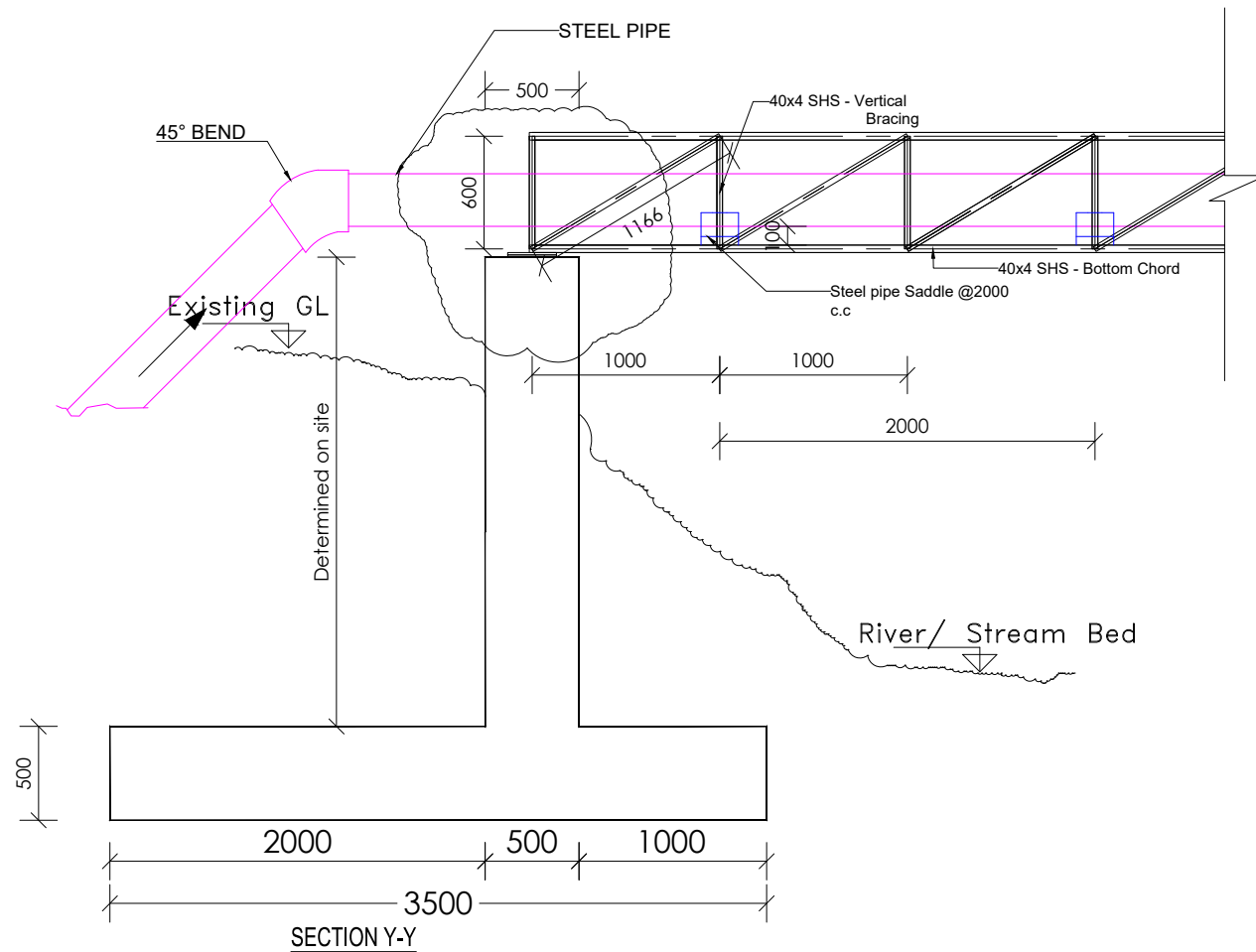
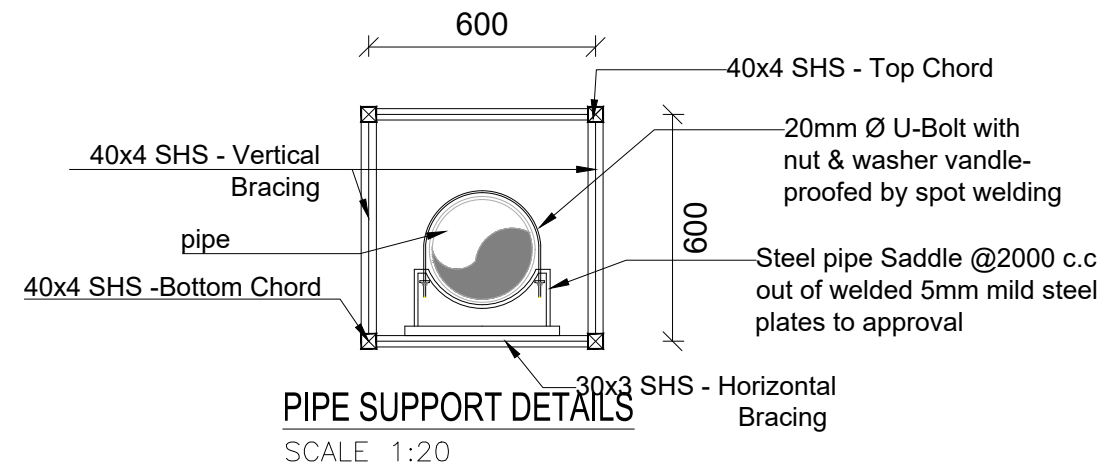
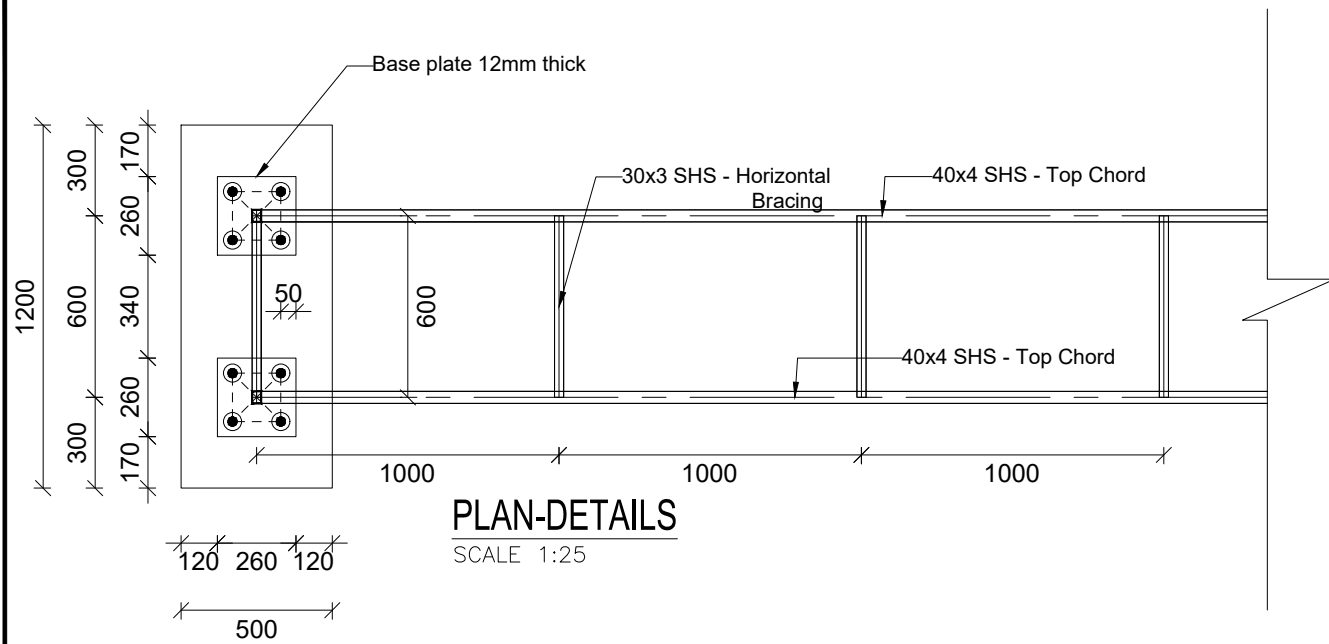
PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**STANDARD DRAWINGS**

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No	Date	Description

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Plan and Elevation**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	B.A
Checked by:	J.K.K
Date:	March 2023
DRG. No.:	<b>ALA-ORA-SD-022</b>
Scale:	1:75
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PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION PROJECT**

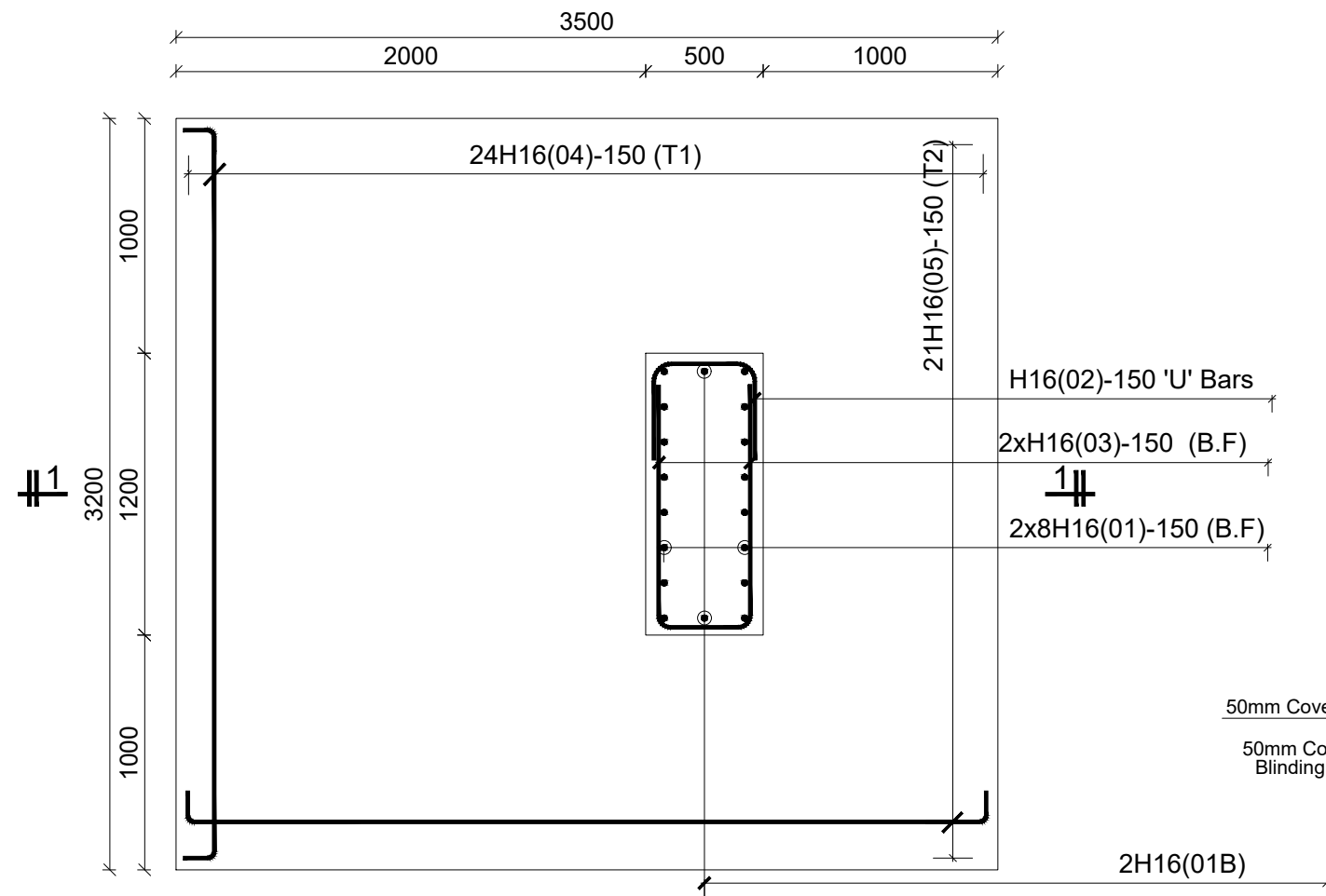
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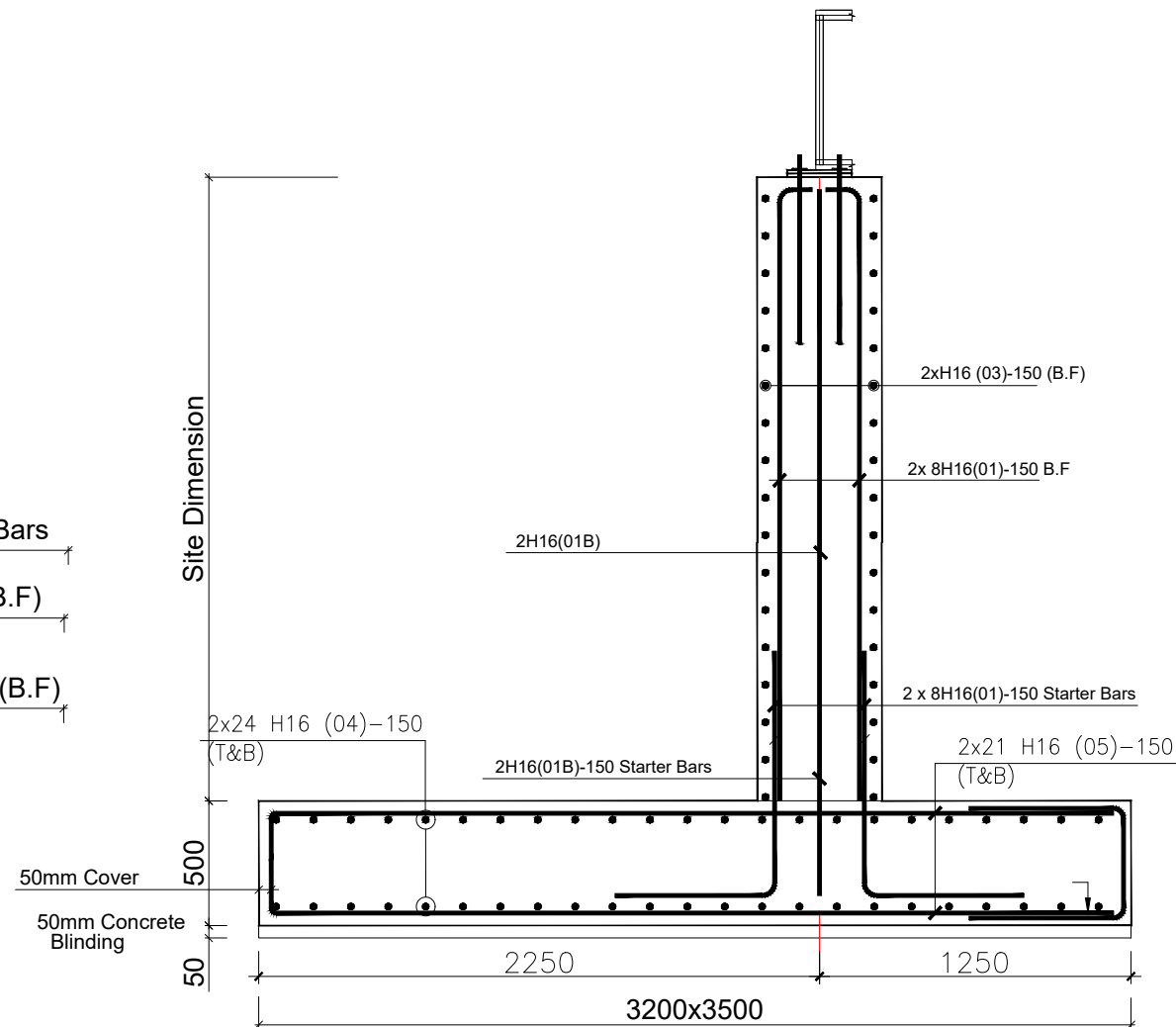
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Drawn by:	A.K
Designed by:	B.A
Checked by:	J.K.K
Date:	March 2023
DRG. No.:	<b>ALA-ORA-SD-022</b>
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Sheet No.:	2 of 3

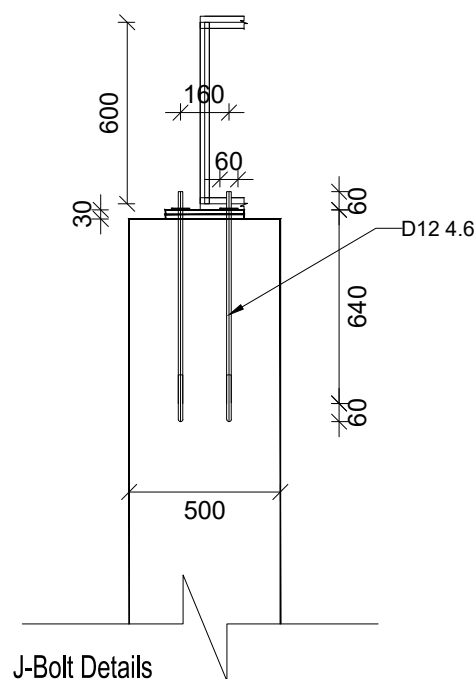




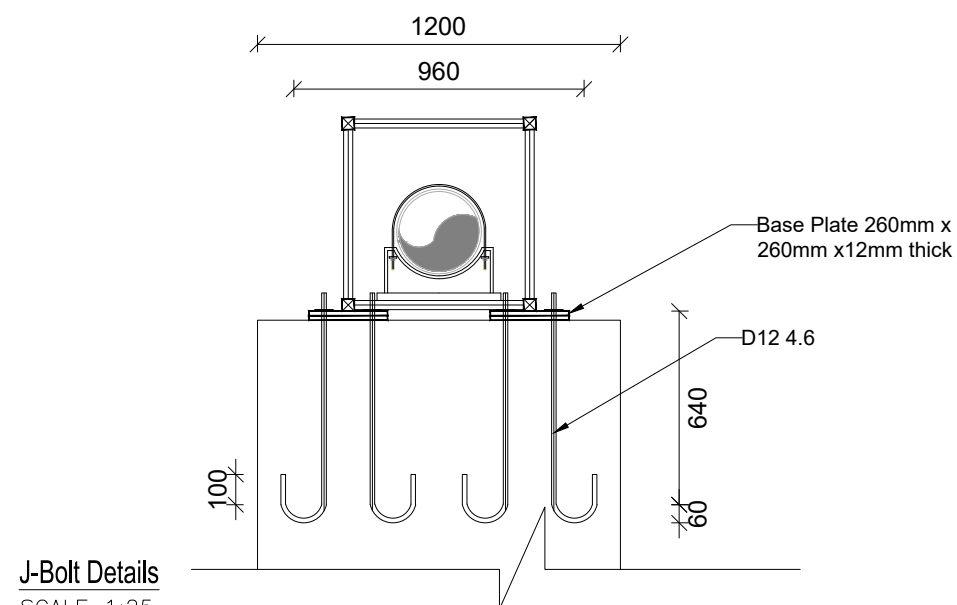
RC PIPE BRIDGE ABUTMENT (2No.) [3500X3200x500]



RC PIPE BRIDGE ABUTMENT SECTION 1-1



J-Bolt Details  
SCALE 1:25



J-Bolt Details  
SCALE 1:25

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PROJECT :

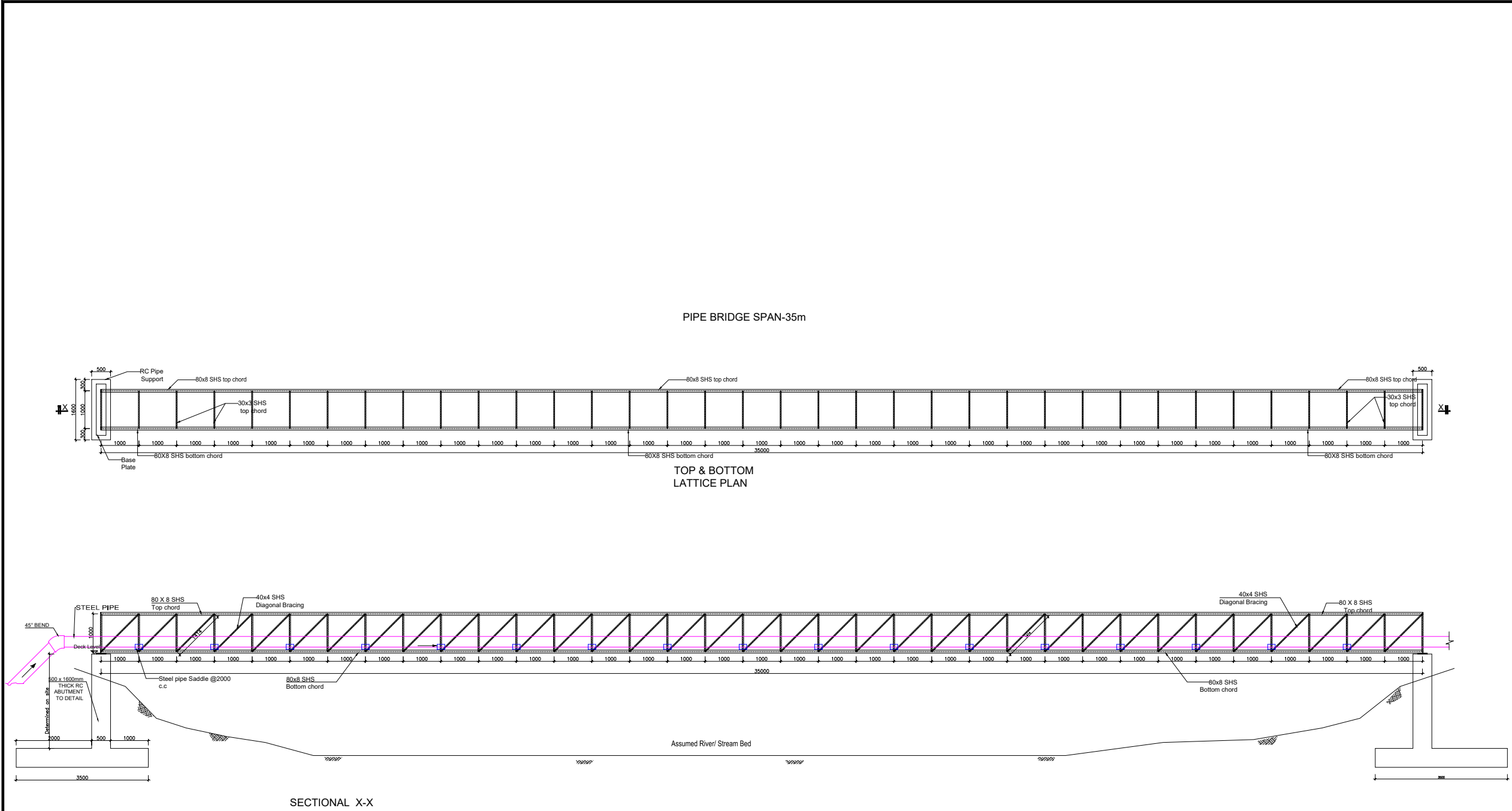
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

STANDARD DRAWINGS


REVISIONS :		
No	Date	Description

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Reinforcement Details


Surveyed by:	R.K
Drawn by:	A.K
Designed by:	B.A
Checked by:	J.K.K
Date:	March 2023
DRG. No.:	ALA-ORA-SD-022
Scale:	1:30
Sheet No.:	3 of 3





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PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**STANDARD DRAWINGS**

REVISIONS :

No	Date	Description

DRAWING TITLE : **PIPE BRIDGES-35m**  
Plan and Elevation

Surveyed by: R.K

Drawn by: A.K

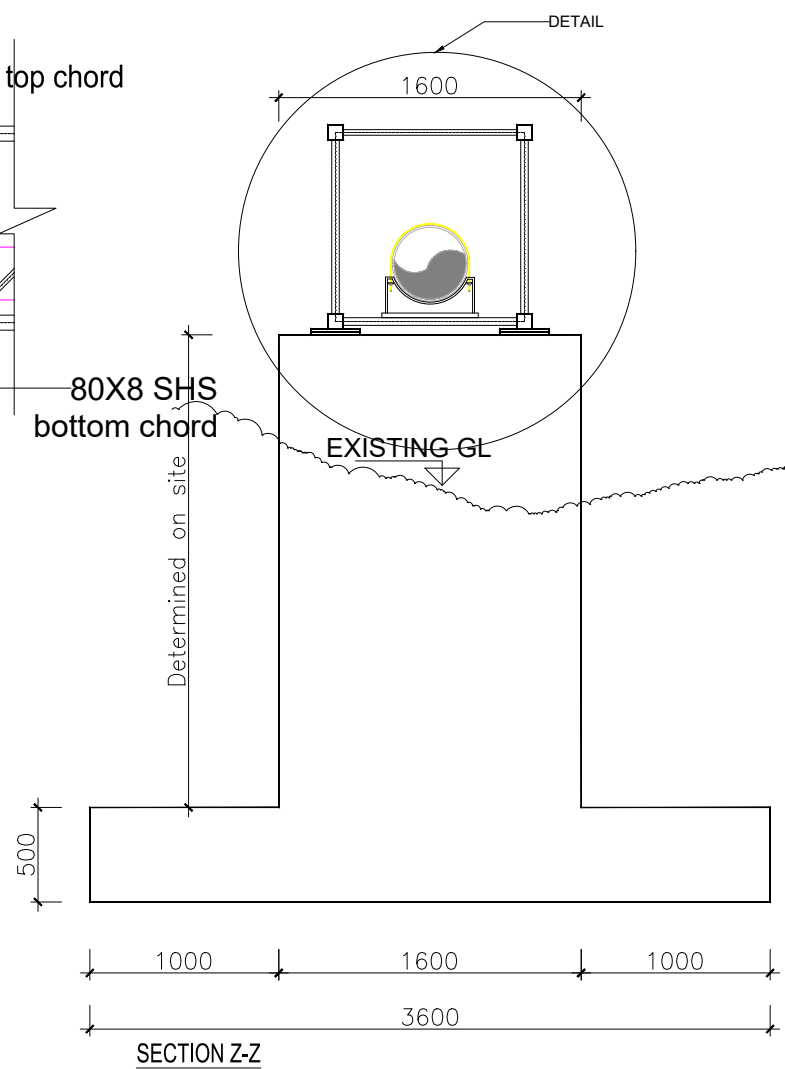
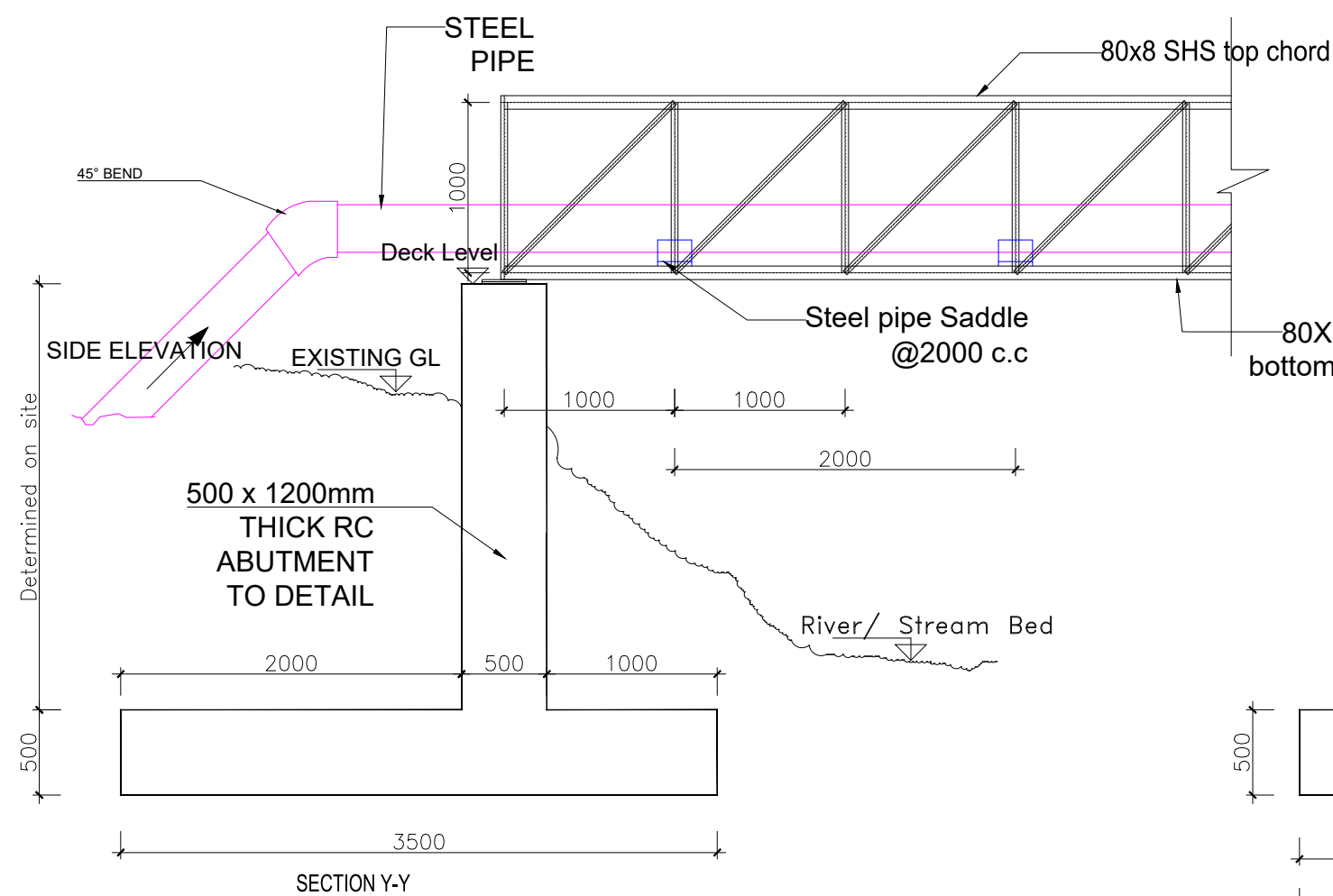
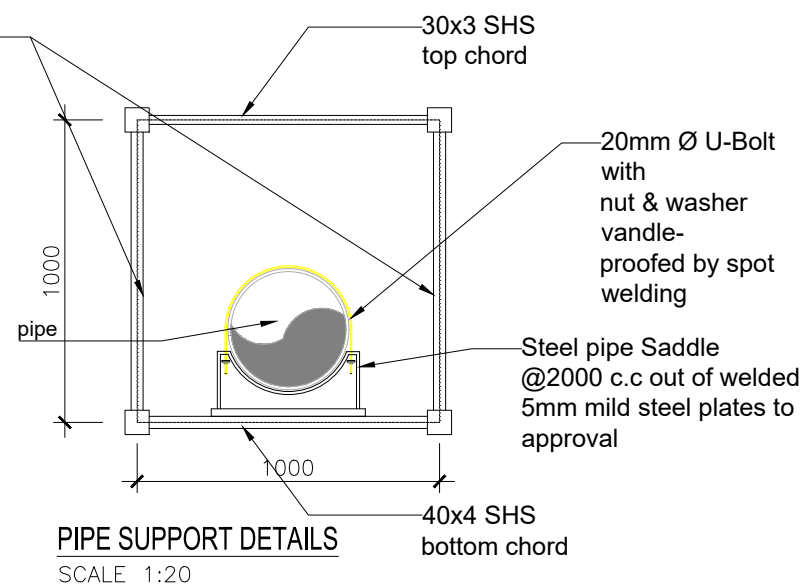
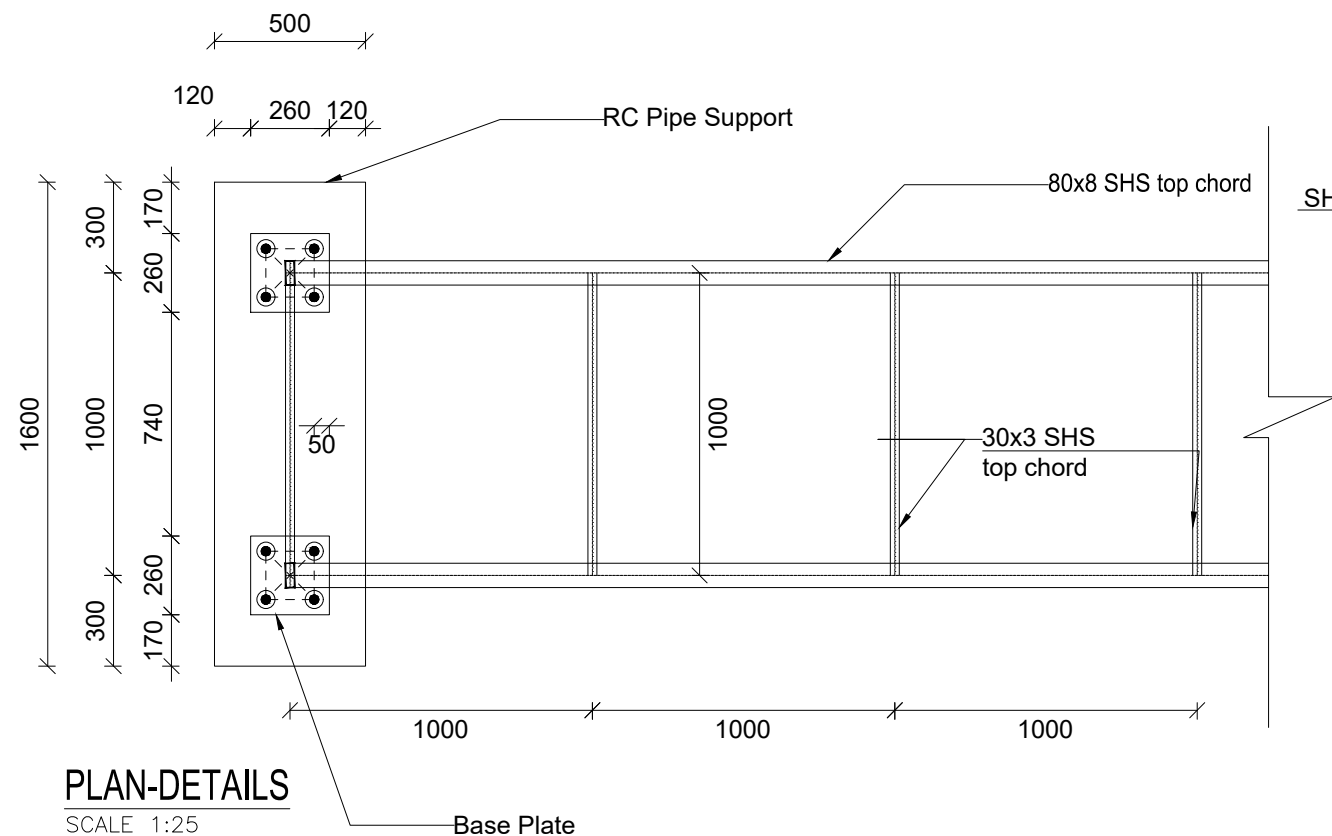
Designed by: B.A

Checked by: J.K.K

Date: March 2023

DRG. No.: **ALA-ORA-SD-023**

Scale: 1:120 Sheet No.: 1 of 3



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CONSULTANT :  
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In Association with  
**Infra-Consult Ltd**

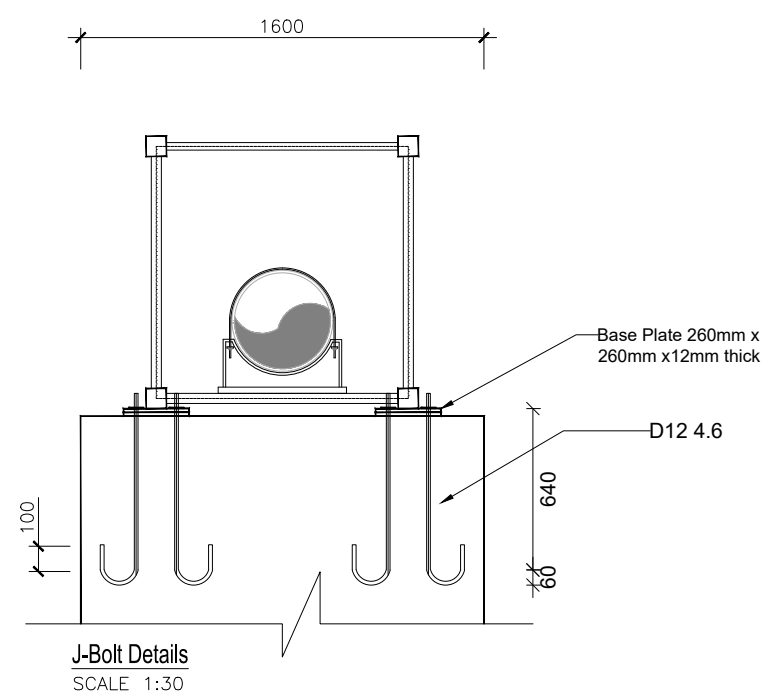
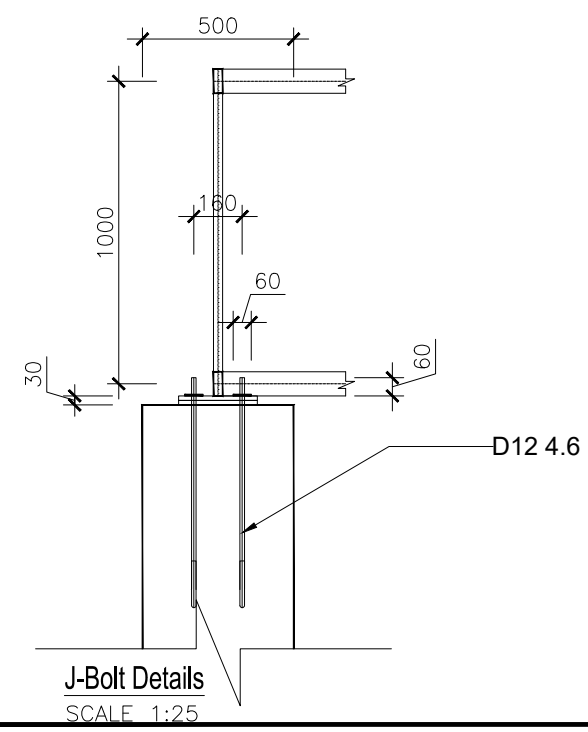
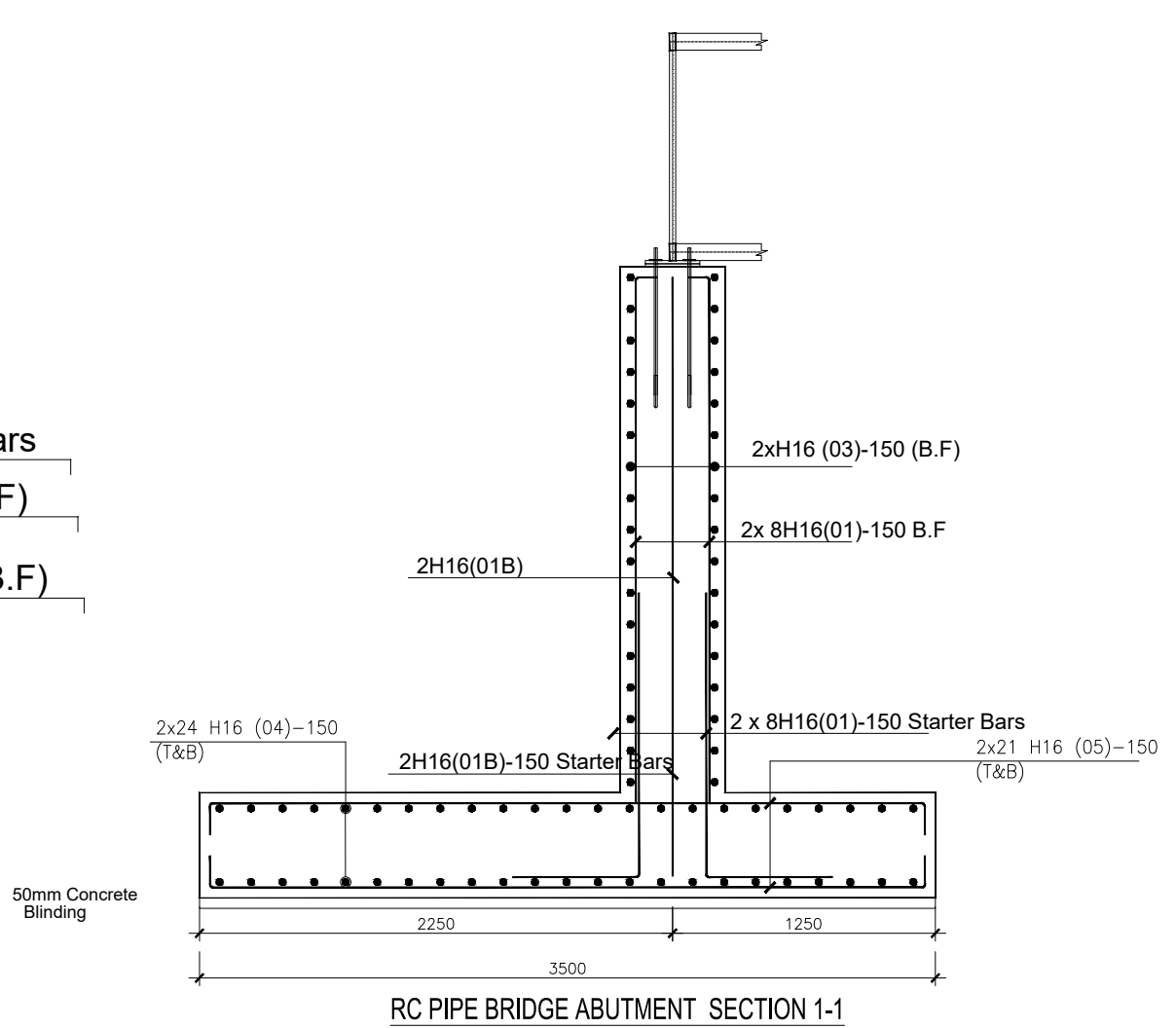
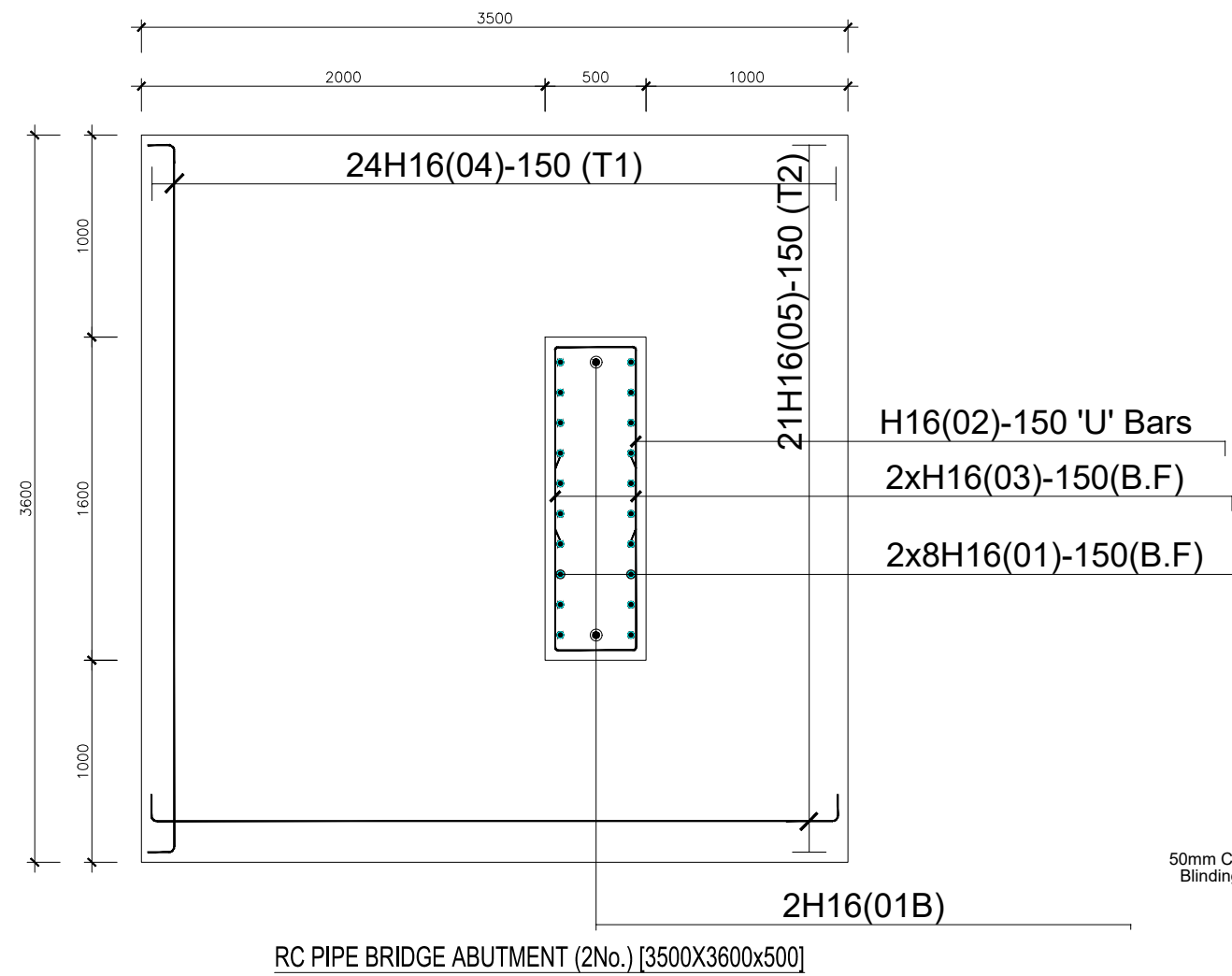
PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

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Details**

Surveyed by:	R.K
Drawn by:	A.K
Designed by:	B.A
Checked by:	J.K.K
Date:	March 2023
DRG. No.:	<b>ALA-ORA-SD-023</b>
Scale:	1:40
Sheet No.:	2 of 3



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PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

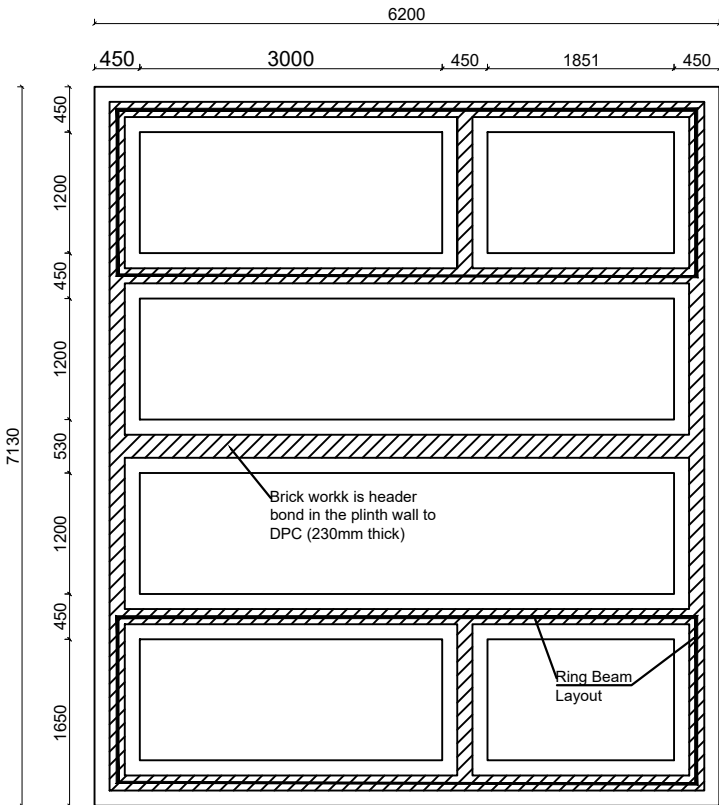
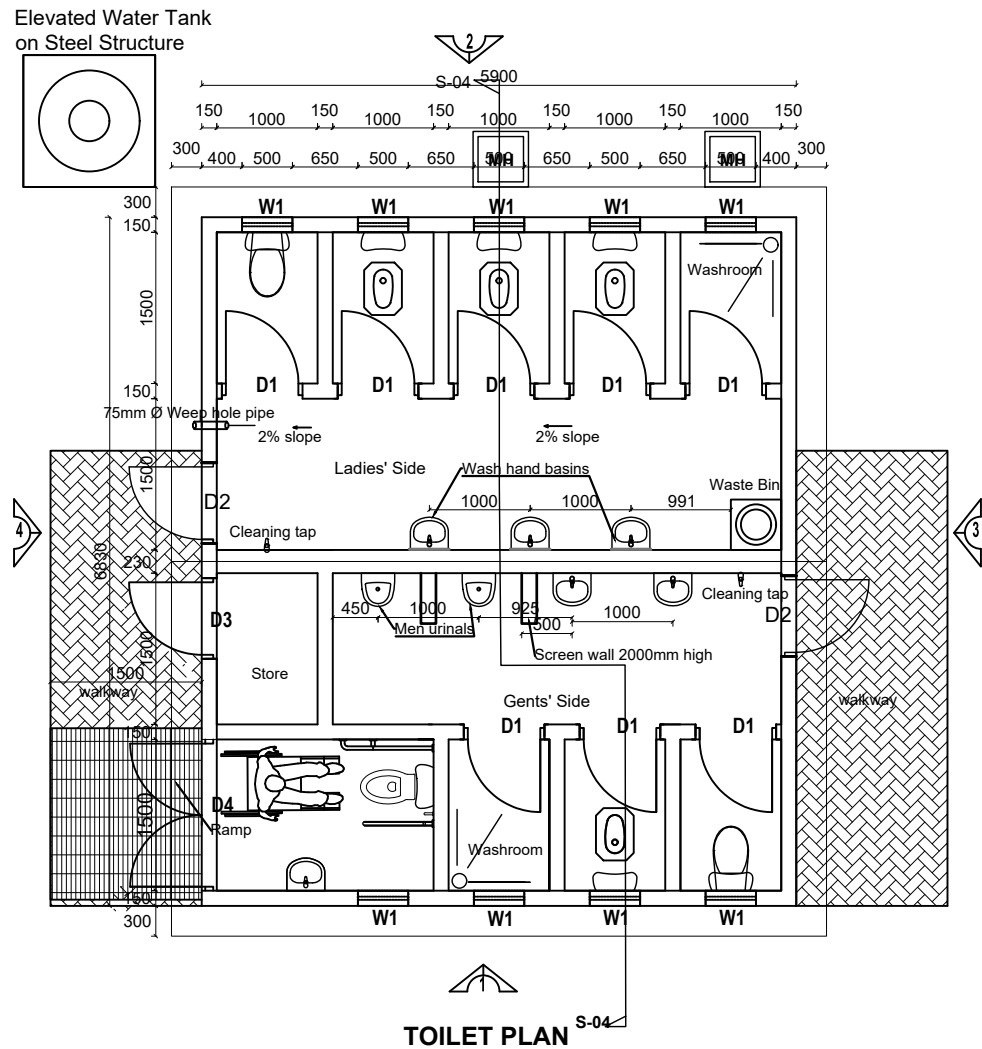
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Drawn by:	A.K
Designed by:	B.A
Checked by:	J.K.K
Date:	March 2023
DRG. No.:	<b>ALA-ORA-SD-023</b>
Scale:	1:35
Sheet No.:	3 of 3

EIGHT STANCE WITH DISABLED UNIT, STORE AND A BATHROOM WATERBORNE TOILET FULLY ROOFED



FOUNDATION LAYOUT

LEGEND

CLIENT :

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**MINISTRY OF WATER AND ENVIRONMENT**

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CONSULTANT :

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In Association with  
**Infra-Consult Ltd**

PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

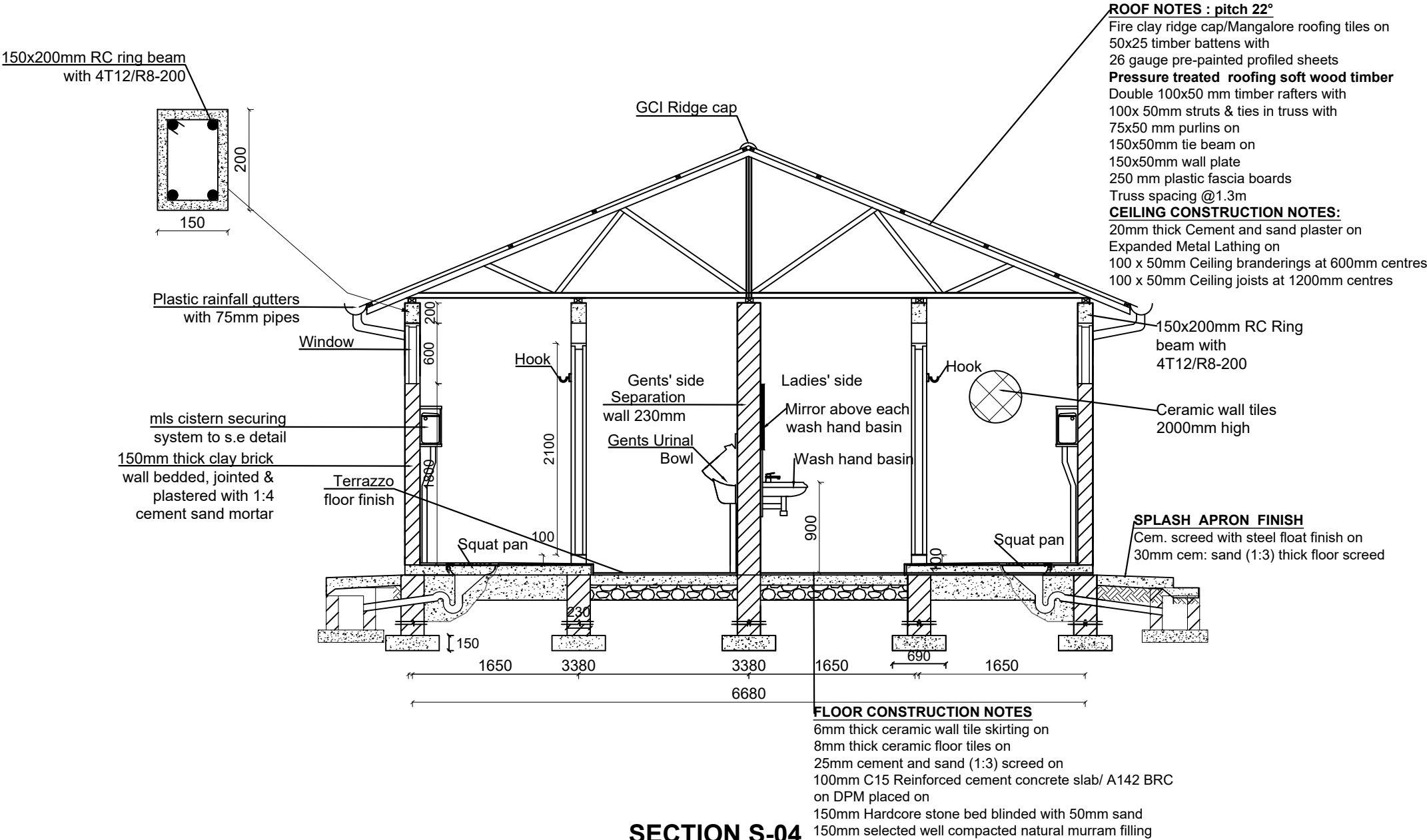
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No	Date	Description

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Public Toilets - Plan and Foundation Layout

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA- SAN-001
Scale:	1:75
Sheet No.:	1 of 6

EIGHT STANCE WITH DISABLED UNIT, STORE AND A BATHROOM WATERBORNE TOILET FULLY ROOFED



SECTION S-04

**Notes:**  
200/230mm thick substructure and  
150mm thick super structure walling

LEGEND

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**MINISTRY OF WATER AND ENVIRONMENT**

CO-FINANCED BY:



CONSULTANT :



PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE :

**SANITATION FACILITIES**  
Public Toilets - Section

Surveyed by:

R.K

Drawn by:

M.K

Designed by:

W.G.M

Checked by:

J.K.K

Date:

January 2023

DRG. No.:

ALA-ORA- SAN-001

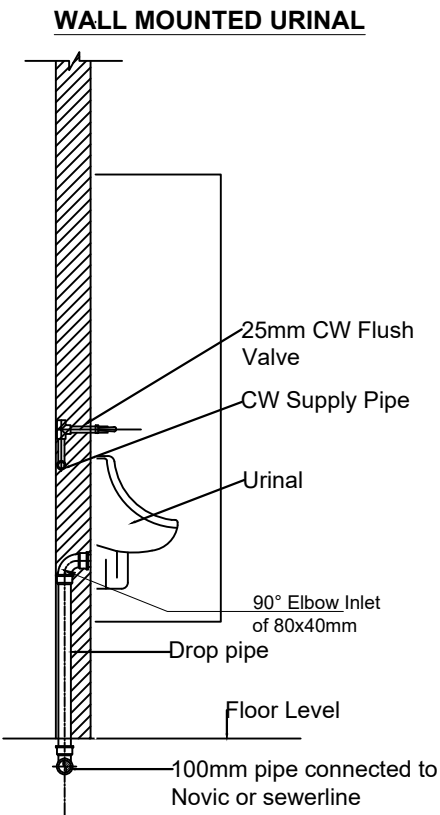
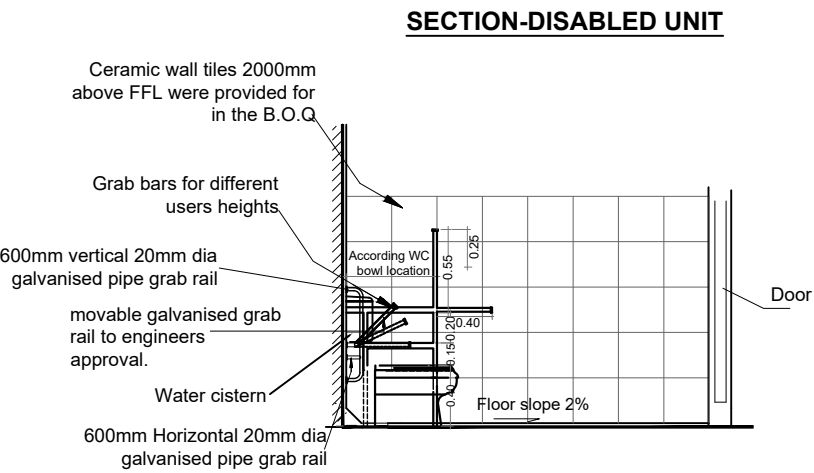
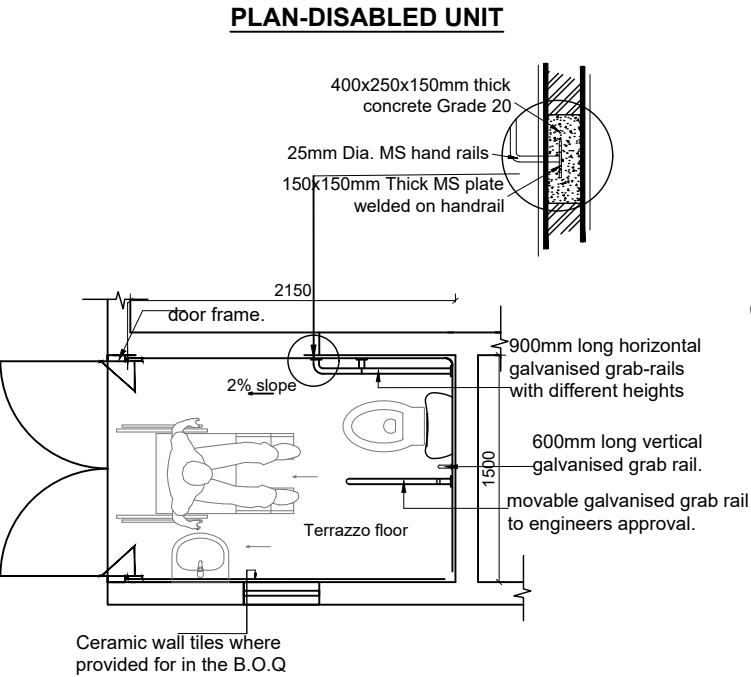
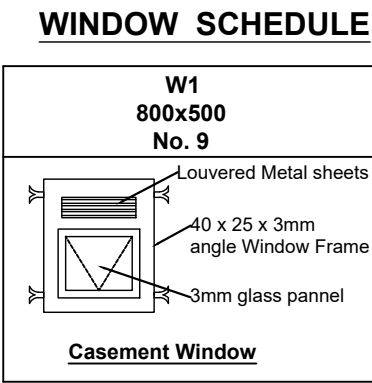
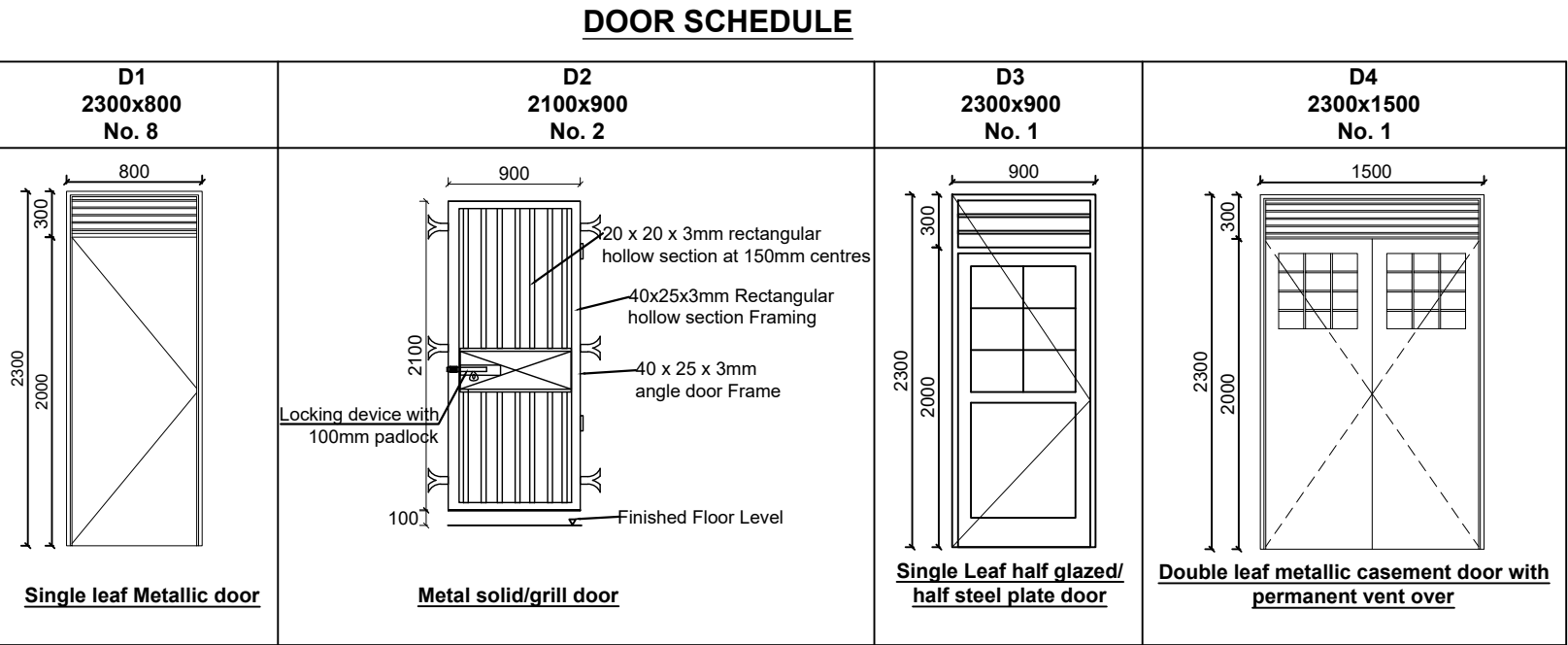
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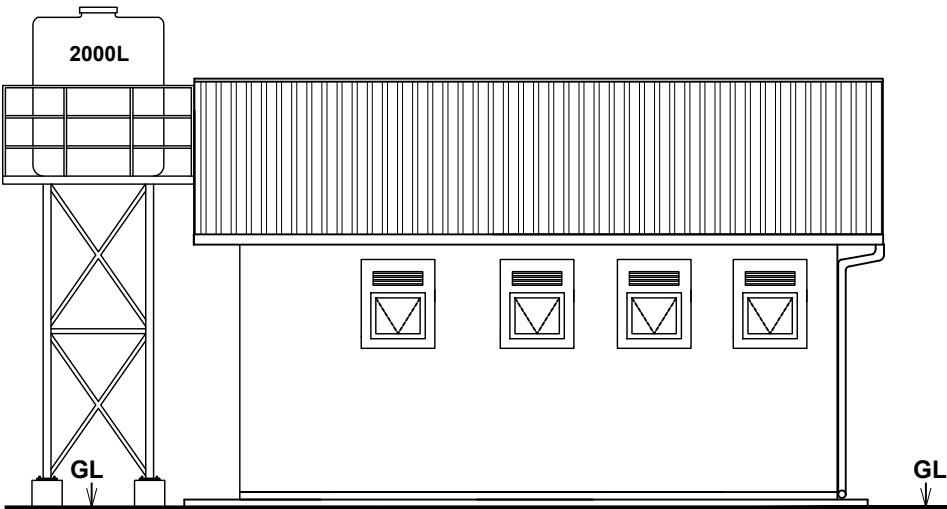
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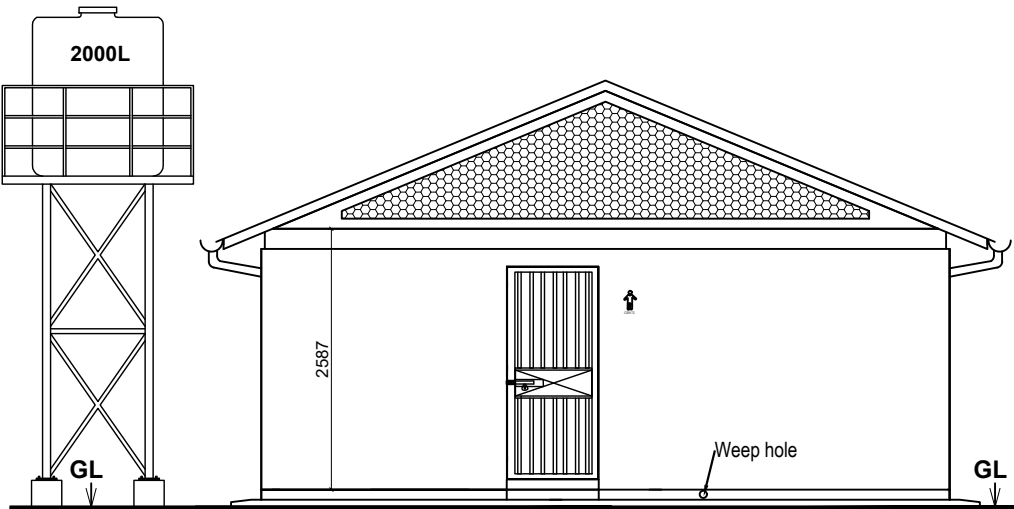


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CLIENT :  THE REPUBLIC OF UGANDA <b>MINISTRY OF WATER AND ENVIRONMENT</b>																	
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CONSULTANT :  <b>Alliance Consultants Ltd</b> In Association with  <b>Infra-Consult Ltd</b>																	
PROJECT : <b>ALA-ORA WATER SUPPLY AND SANITATION PROJECT</b>																	
<b>ENYAU WATER SUPPLY AND SANITATION SYSTEM</b>																	
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Surveyed by: R.K																	
Drawn by: M.K																	
Designed by: W.G.M																	
Checked by: J.K.K																	
Date: January 2023																	
DRG. No.: <b>ALA-ORA- SAN-001</b>																	
Scale: 1:50	Sheet No.: 3 of 6																

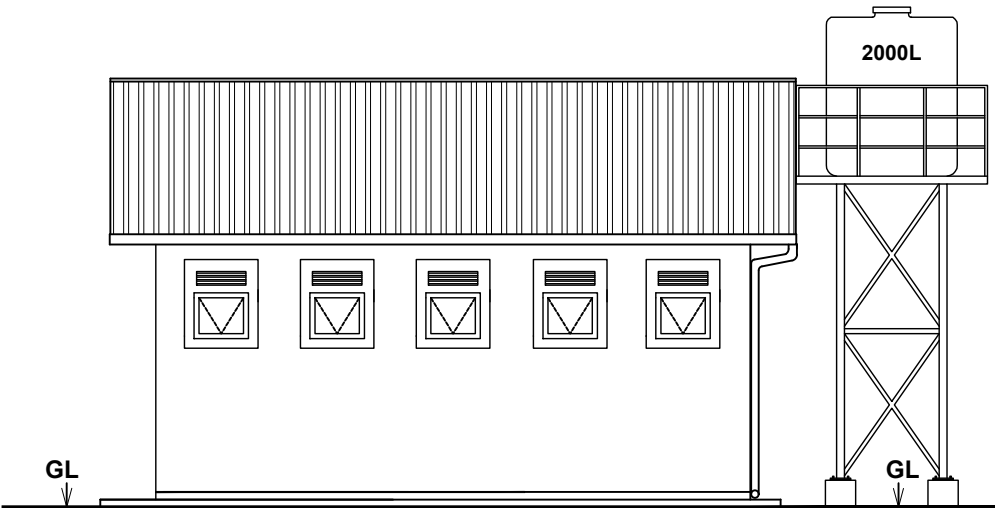
EIGHT STANCE WITH DISABLED UNIT, STORE AND A BATHROOM WATERBORNE TOILET FULLY ROOFED



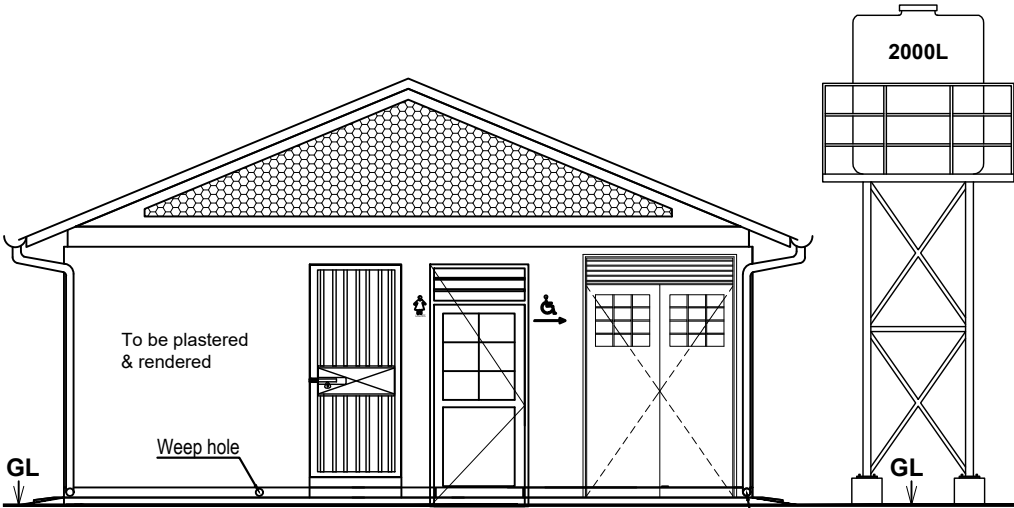
ELEVATION 1



ELEVATION 3



ELEVATION 2



ELEVATION 4

LEGEND

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CONSULTANT :  
 Alliance Consultants Ltd  
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 **Infra-Consult Ltd**

PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

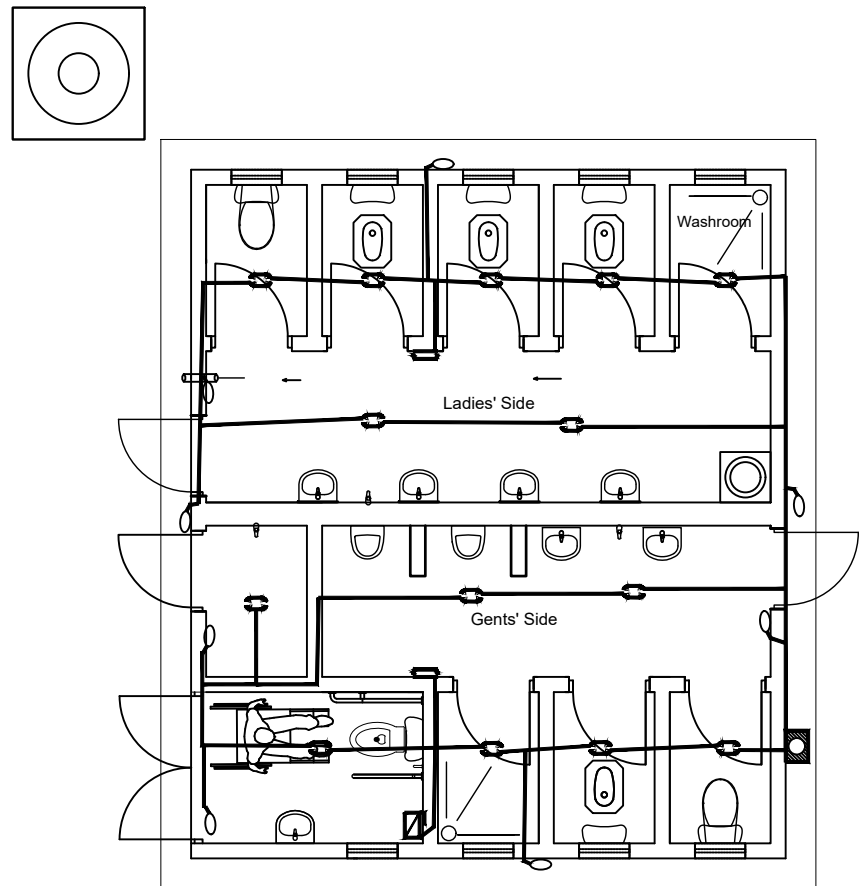
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE :  
**SANITATION FACILITIES**  
Public Toilets - Elevations

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA- SAN-001
Scale:	1:75
Sheet No.:	4 of 6

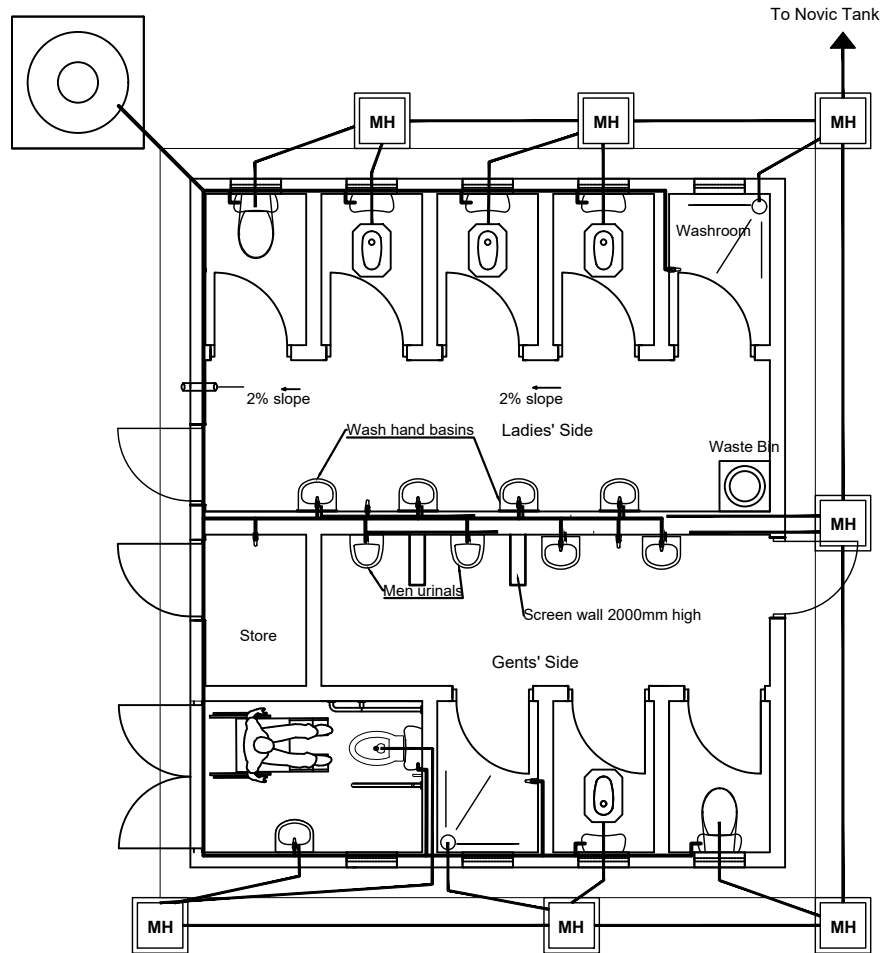
EIGHT STANCE WITH DISABLED UNIT, STORE AND A BATHROOM WATERBORNE TOILET FULLY ROOFED



ELECTRICAL LAYOUT

NOTE :-  
Electrical installation limited to  
- Conducting  
- MK boxes and  
- Blanks

LEGEND	
	Meter Reader Box
	Main Switch
	One-gang / Three-ways flush wall switch
	Bulk head fitting (Security Lamp)
	Ceiling out let lamp
	Electric Conductor



PLUMBING LAYOUT

LEGEND

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PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

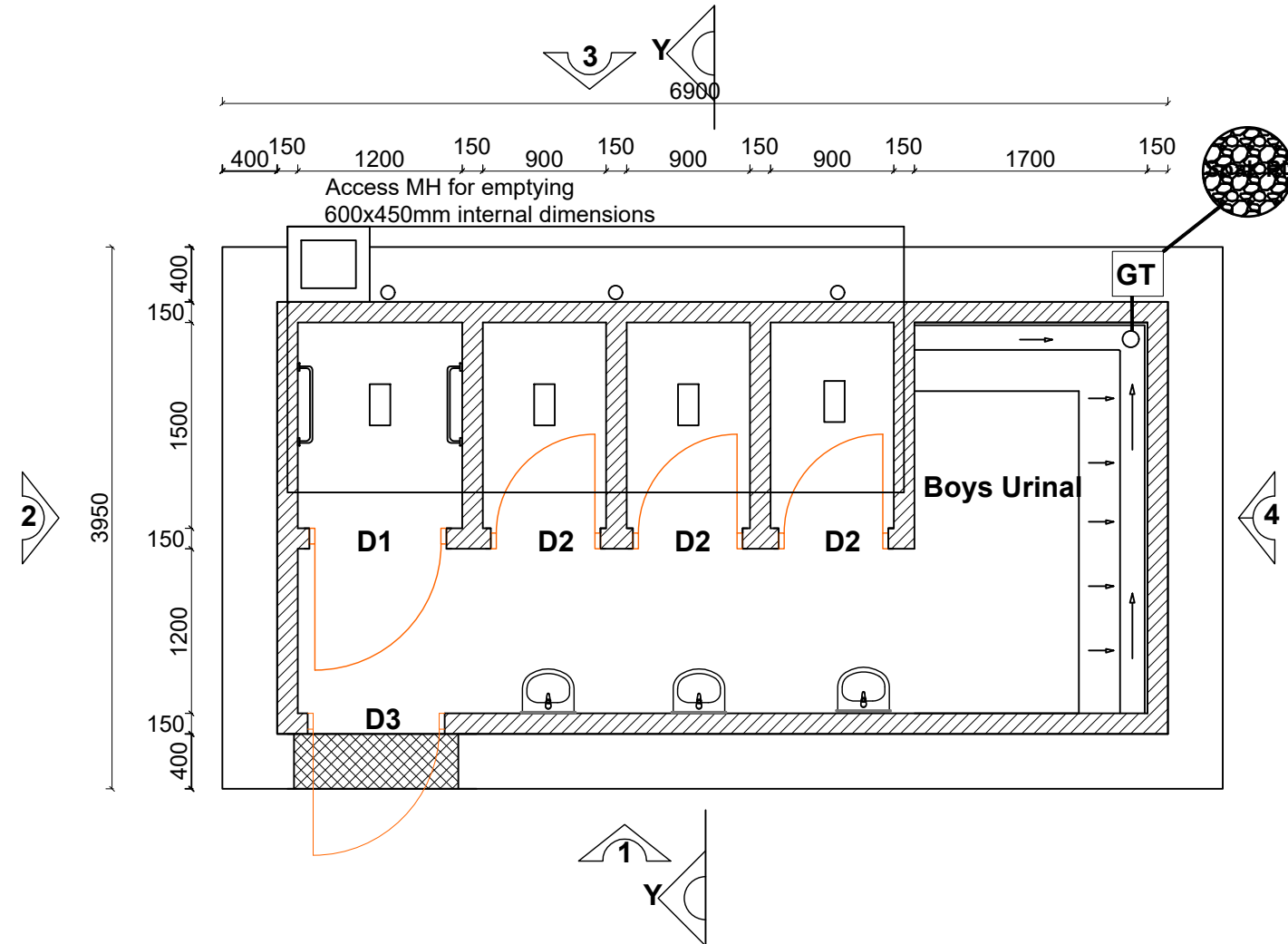
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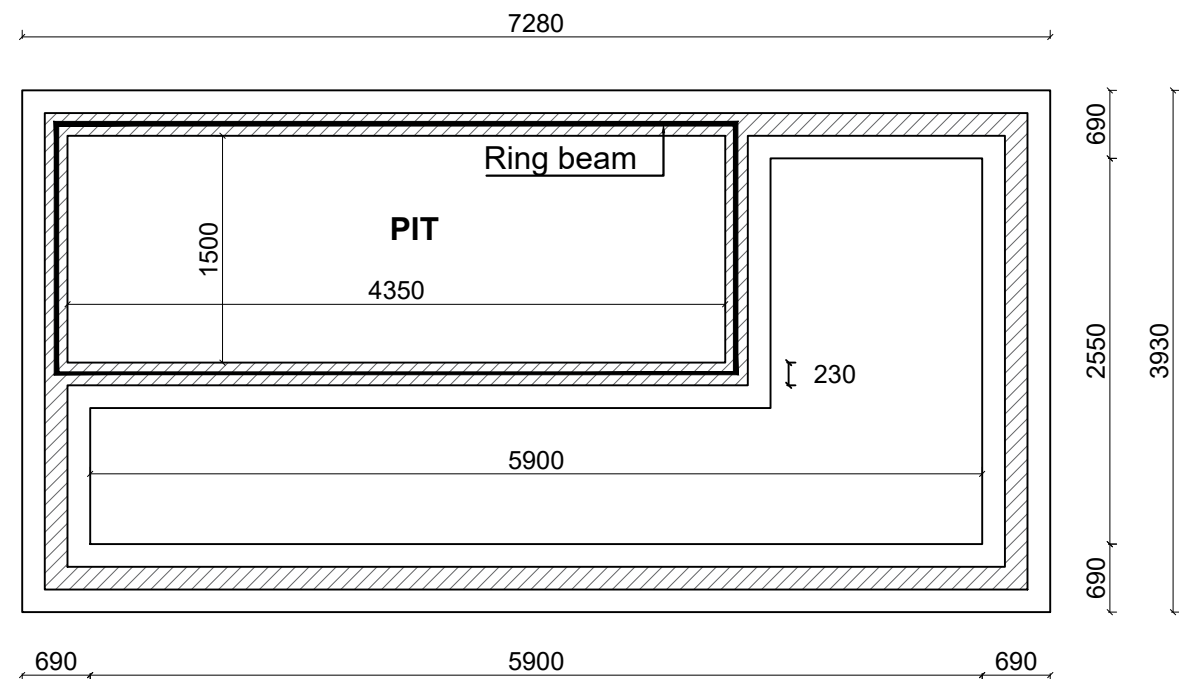
DRAWING TITLE: **SANITATION FACILITIES**  
Public Toilets - Electrical & Plumbing Layouts

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA- SAN-001
Scale:	1:75
Sheet No.:	6 of 6

# FOUR STANCE VIP LATRINE INCLUDING A DISABLED UNIT AND URINAL



## GENTS VIP PLAN



## FOUNDATION LAYOUT

**Note:**  
200/230mm thick sub-structure and 150mm thick super structure walling

### LEGEND

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CONSULTANT :

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PROJECT :

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SANITATION PROJECT

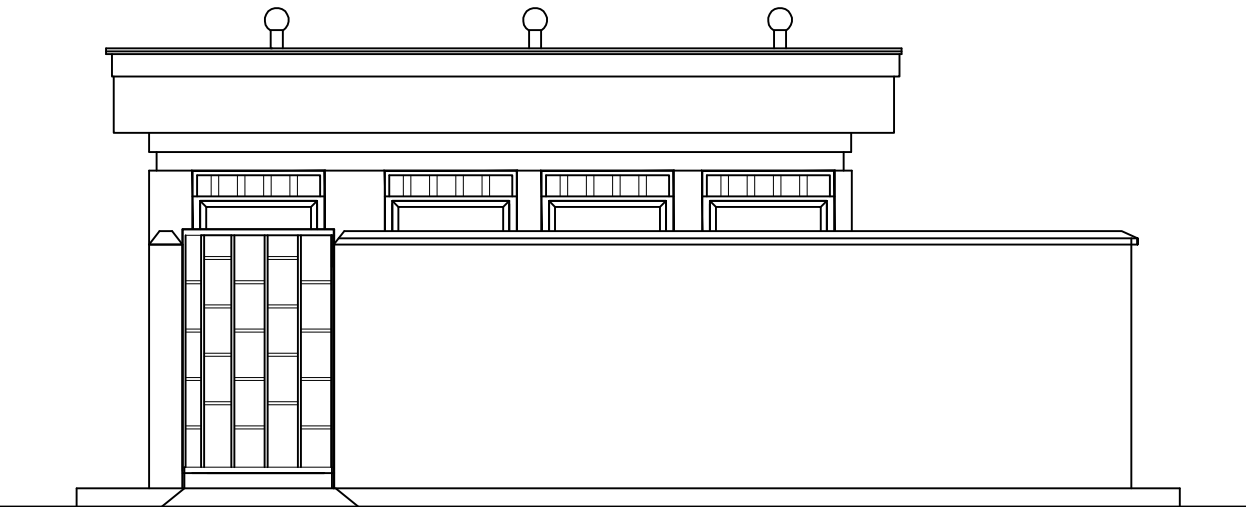
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REVISIONS :		
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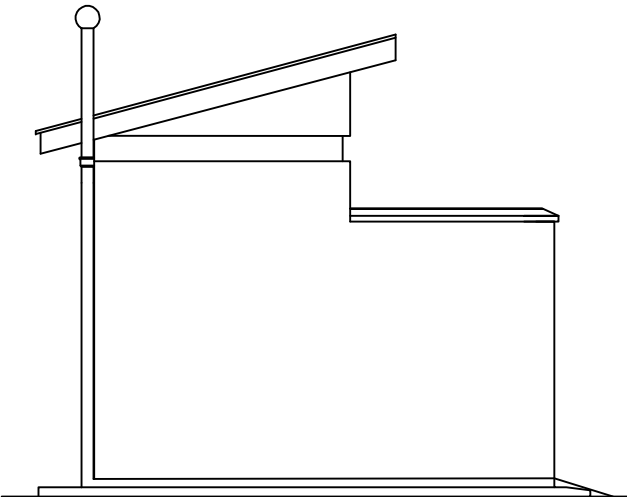
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VIP Latrine Gents - Plan and Foundation Layout

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA- SAN-002
Scale:	1:50
Sheet No.:	1 of 3

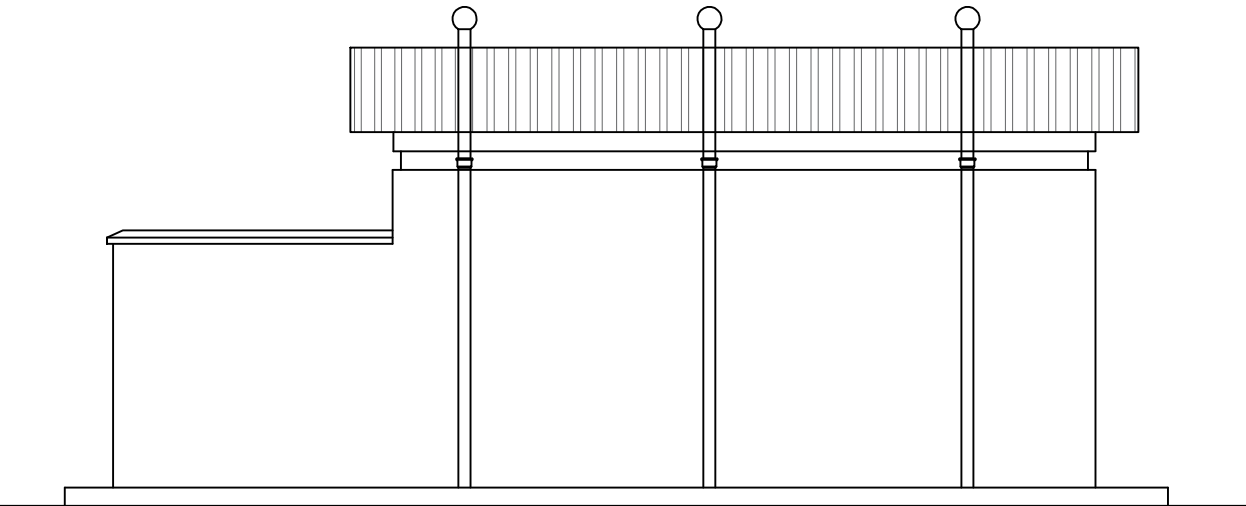
FOUR STANCE VIP LATRINE INCLUDING A DISABLED UNIT AND URINAL



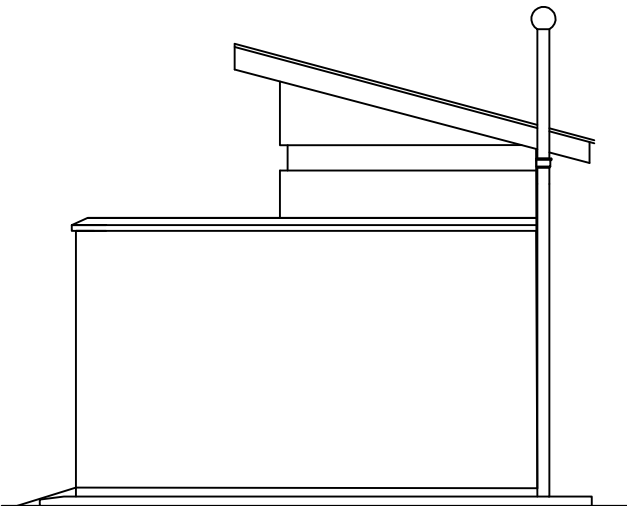
ELEVATION 1



ELEVATION 2



ELEVATION 3



ELEVATION 4

LEGEND

CLIENT :



THE REPUBLIC OF UGANDA  
MINISTRY OF WATER AND ENVIRONMENT

CO-FINANCED BY:



CONSULTANT :



Alliance Consultants Ltd  
In Association with  


PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :		
No	Date	Description

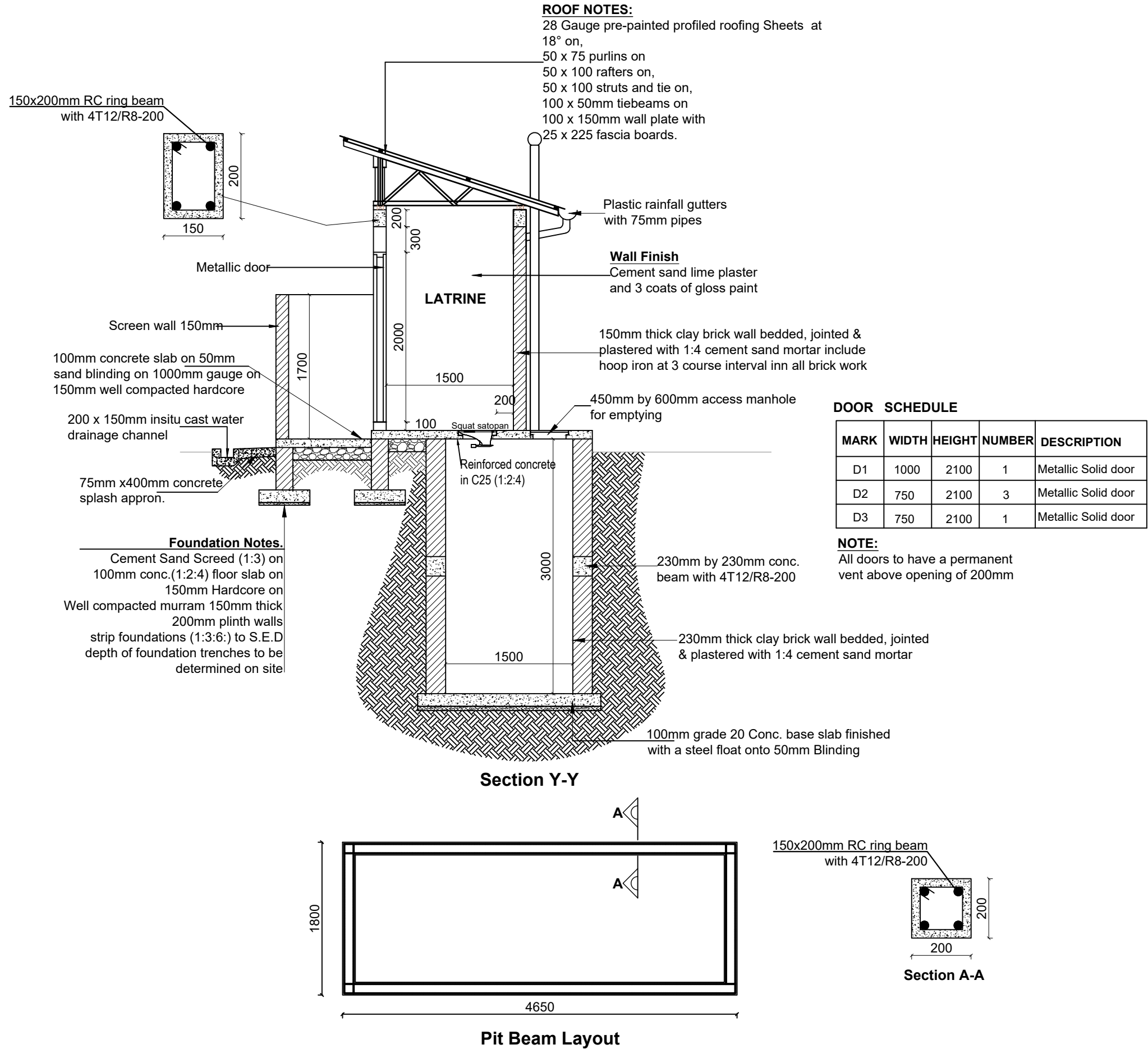
DRAWING TITLE :

SANITATION FACILITIES  
VIP Latrine Gents - Elevations

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA- SAN-002
Scale:	1:50
Sheet No.:	2 of 3

FOUR STANCE VIP LATRINE INCLUDING A DISABLED UNIT AND URINAL

LEGEND



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SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

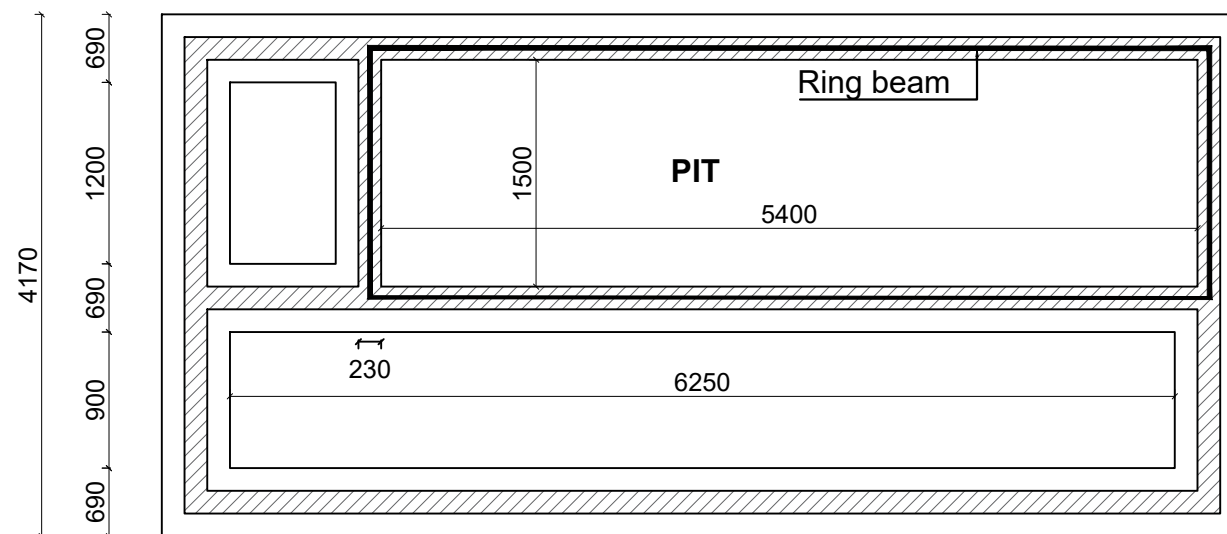
DRAWING TITLE : **SANITATION FACILITIES**  
VIP Latrine Gents - Section & Door and Window Schedule

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA- SAN-002
Scale:	1:50
Sheet No.:	3 of 3



The floor plan shows a rectangular building with a total width of 6850 mm and a total depth of 3150 mm. The layout includes:

- Incinerator:** Located on the left side, with a width of 1500 mm and a depth of 1500 mm.
- Wash Room:** Adjacent to the incinerator, with a width of 1500 mm and a depth of 1500 mm.
- GT (Generator Room):** Located at the top left, with a width of 1500 mm and a depth of 1500 mm.
- Rooms:** A series of rooms along the top wall, each with a width of 1500 mm and a depth of 1500 mm. The rooms are labeled D1, D2, D1, D1, D1, and D1 from left to right.
- Access MH (Manhole):** Located at the top right, with a width of 1500 mm and a depth of 1500 mm. A note indicates: "Access MH for emptying 600x450mm internal dimensions".
- Dimensions:** The total width is 6850 mm, and the total depth is 3150 mm. Individual room dimensions are 1500 mm by 1500 mm.
- Access Points:** Four access points are marked with arrows and numbers: 1 (bottom center), 2 (left side), 3 (top center), and 4 (right side).



### LEGEND



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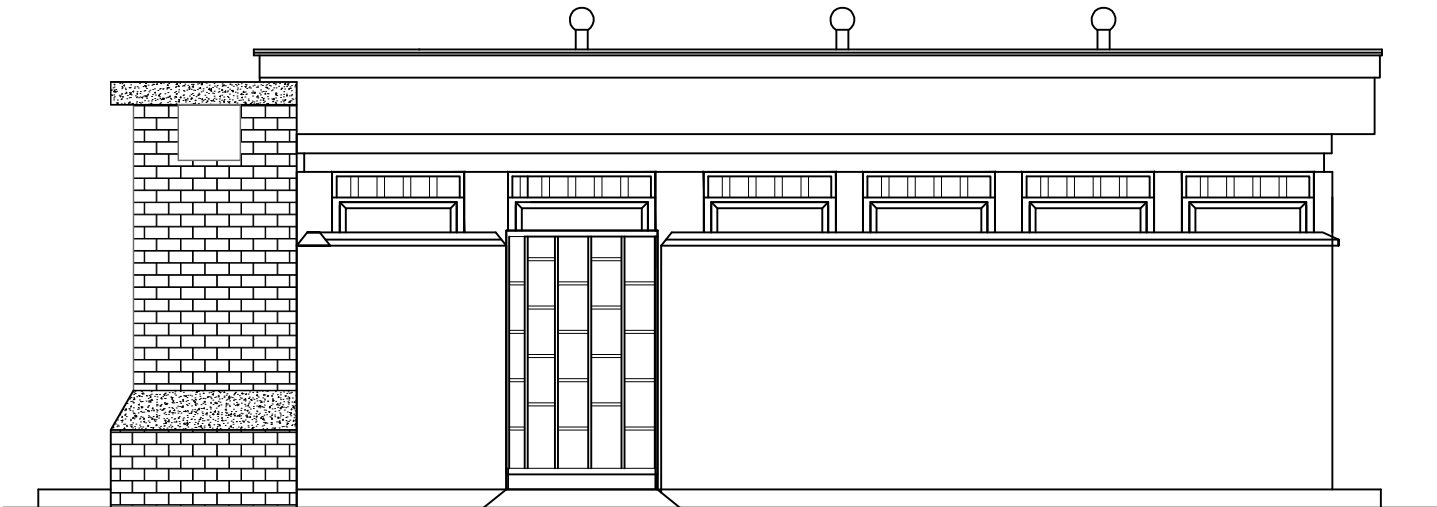
## ENYAU WATER SUPPLY AND SANITATION SYSTEM

No	Date	Description

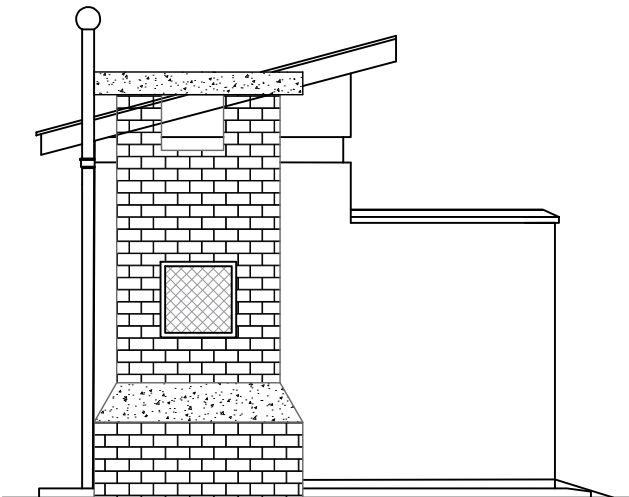
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1:50 Sheet No.: 1 of 3

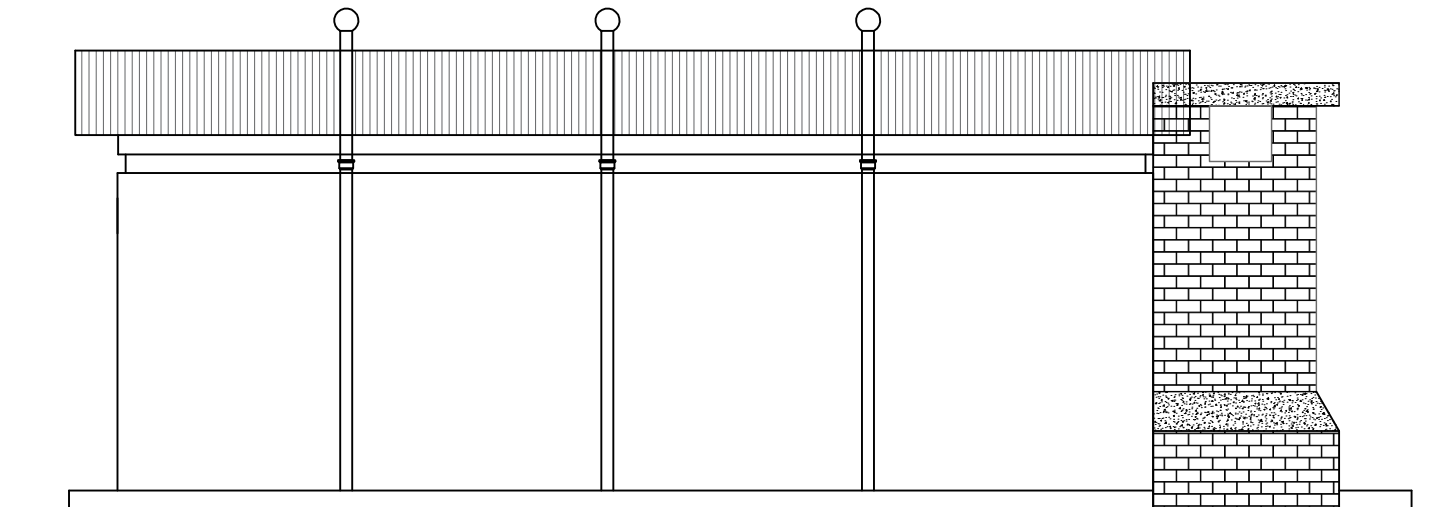
FIVE STANCE VIP LATRINE INCLUDING A DISABLED UNIT AND INCINERATOR



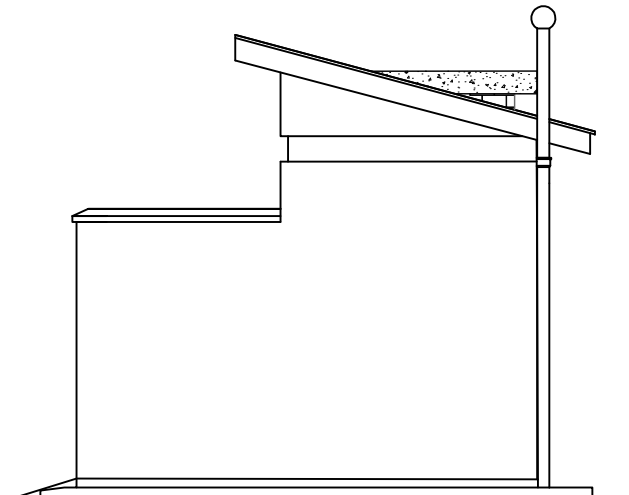
ELEVATION 1



ELEVATION 2



ELEVATION 3



ELEVATION 4

LEGEND

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PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

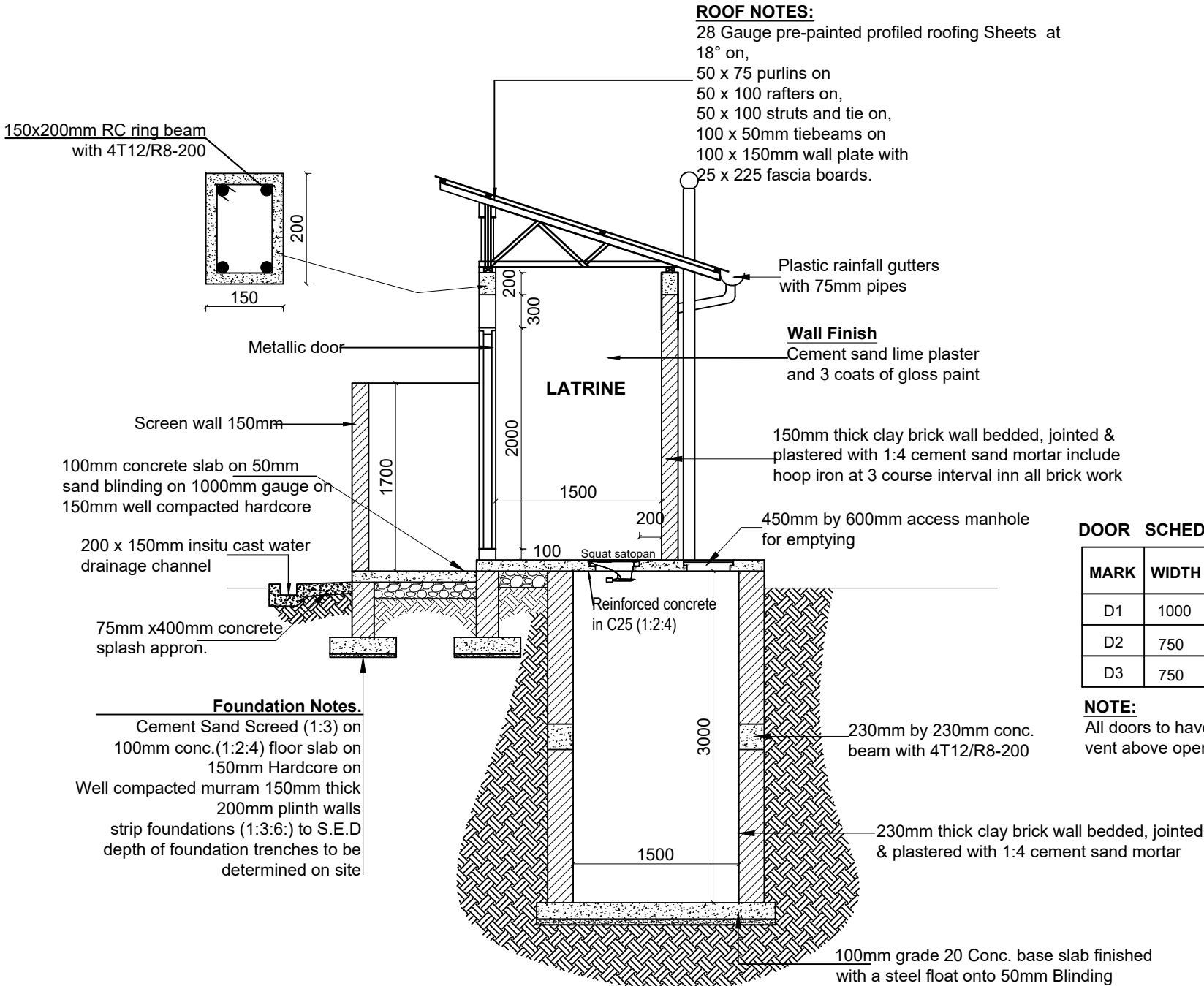
**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE :  
**SANITATION FACILITIES**  
VIP Latrine Ladies - Elevations

Surveyed by:		R.K
Drawn by:		M.K
Designed by:		W.G.M
Checked by:		J.K.K
Date:		January 2023
DRG. No.:		ALA-ORA- SAN-003
Scale:	1:50	Sheet No.: 2 of 3

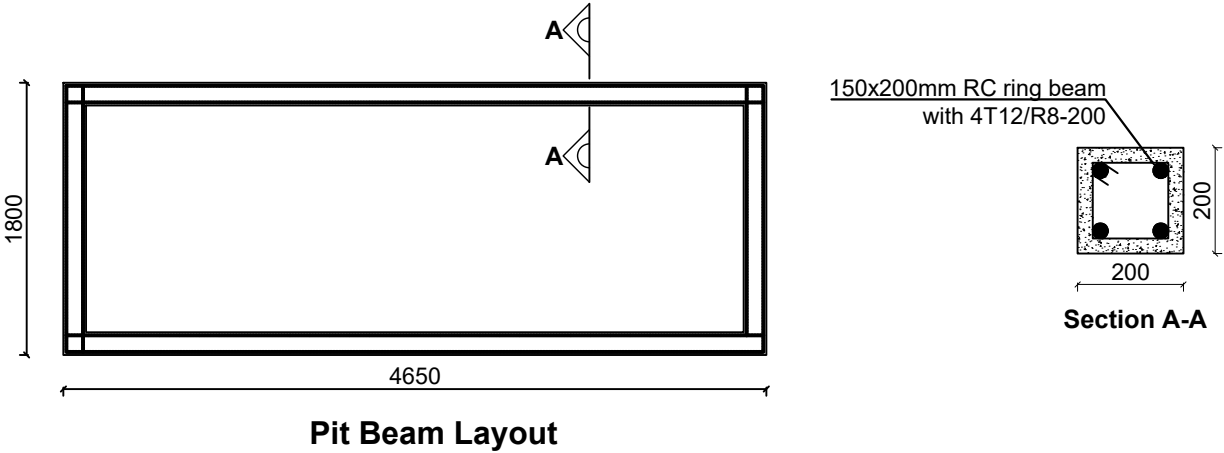
FIVE STANCE VIP LATRINE INCLUDING A DISABLED UNIT AND INCINERATOR



DOOR SCHEDULE

MARK	WIDTH	HEIGHT	NUMBER	DESCRIPTION
D1	1000	2100	1	Metallic Solid door
D2	750	2100	3	Metallic Solid door
D3	750	2100	1	Metallic Solid door

**NOTE:**  
All doors to have a permanent vent above opening of 200mm



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PROJECT :

ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

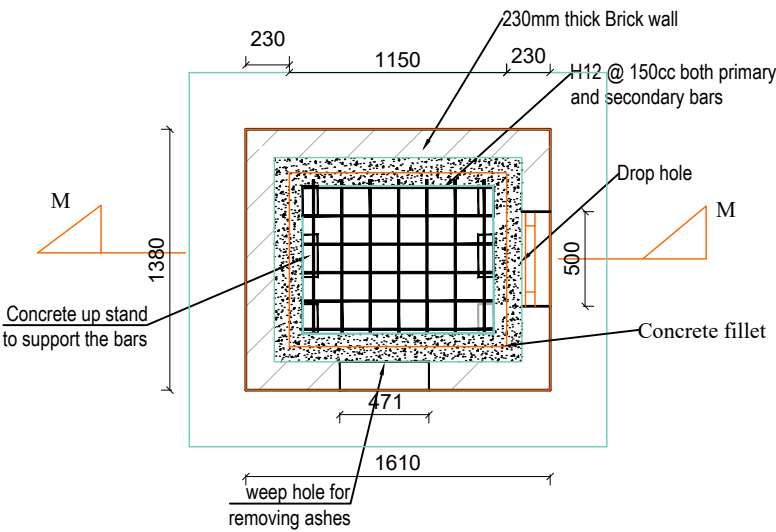
REVISIONS :

No	Date	Description

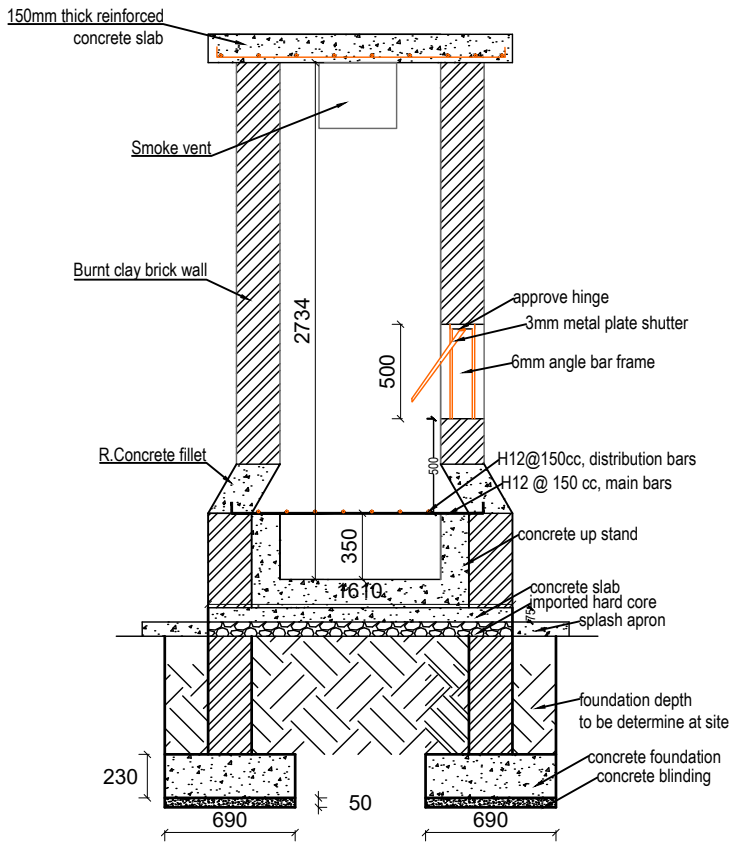
DRAWING TITLE : **SANITATION FACILITIES**  
VIP Latrine Ladies - Section & Door and Window Schedule

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA- SAN-003
Scale:	1:50
Sheet No.:	3 of 3

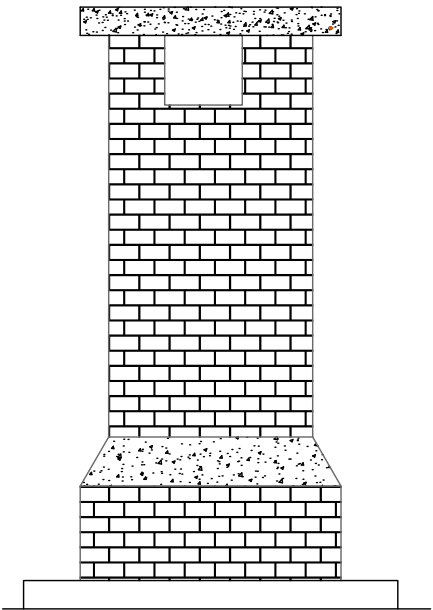
INCINERATOR DETAILS



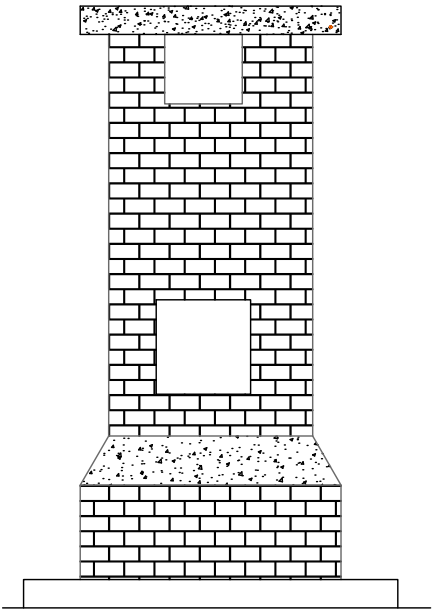
PLAN OF THE INCINERATOR



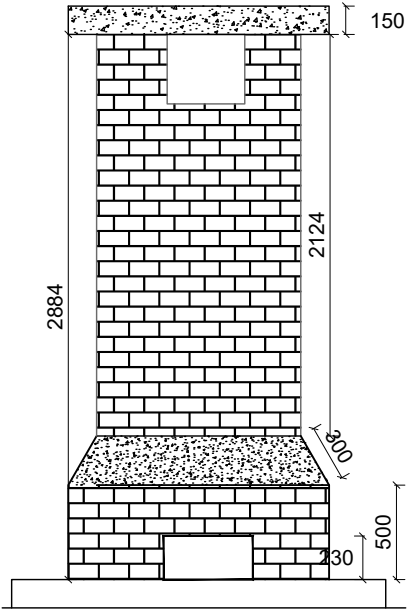
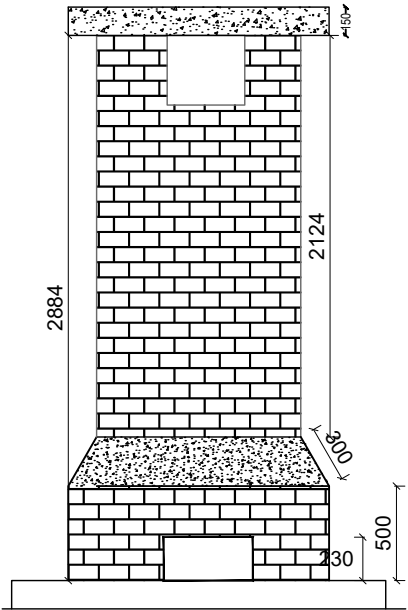
Section M-M



Elevations



Elevations



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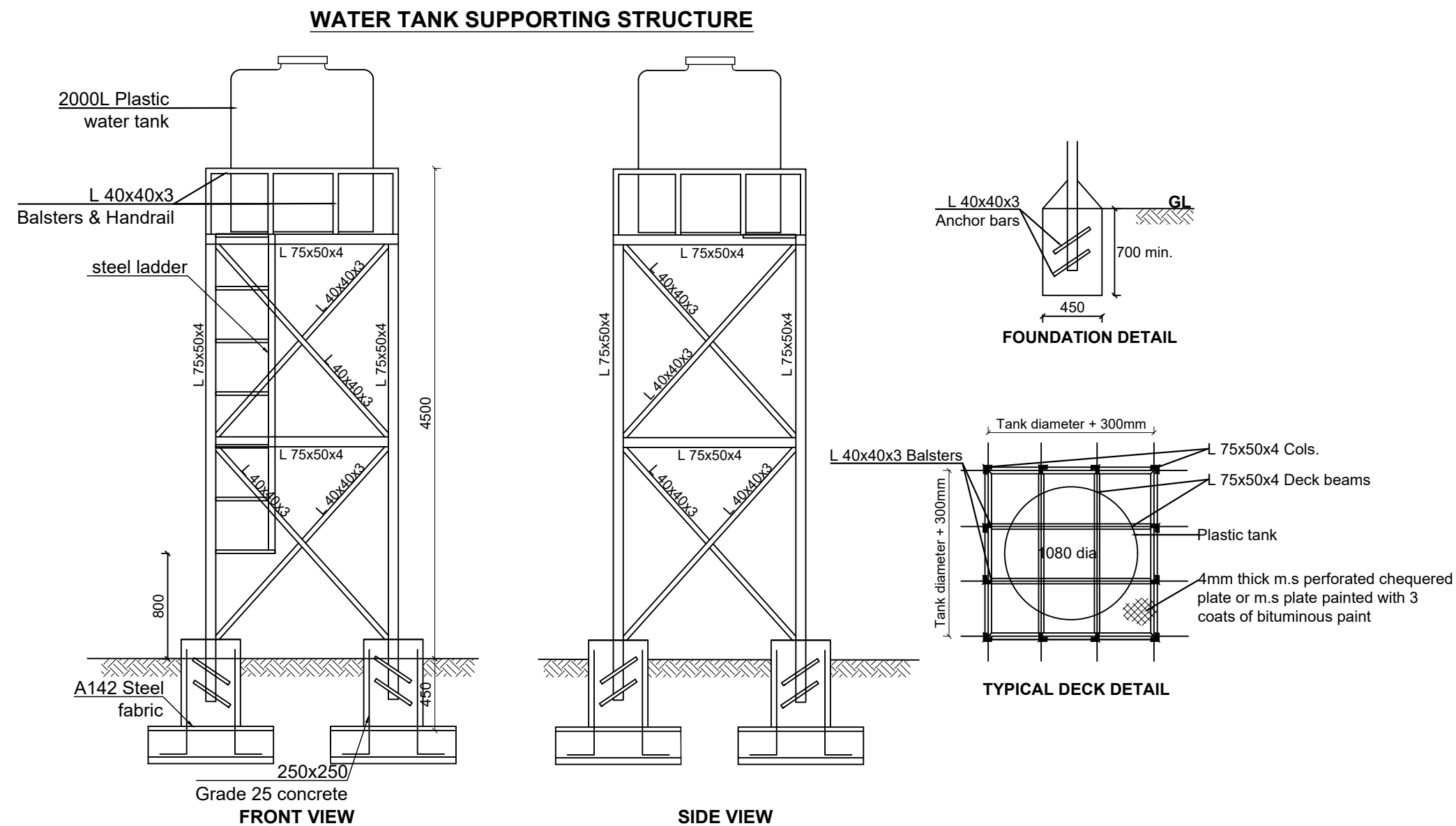
PROJECT :  
ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT

ENYAU WATER SUPPLY AND  
SANITATION SYSTEM

REVISIONS :		
No	Date	Description


DRAWING TITLE :  
SANITATION FACILITIES  
Incinerator

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA- SAN-004
Scale:	1:40
Sheet No.:	1 of 1



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PROJECT :

**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

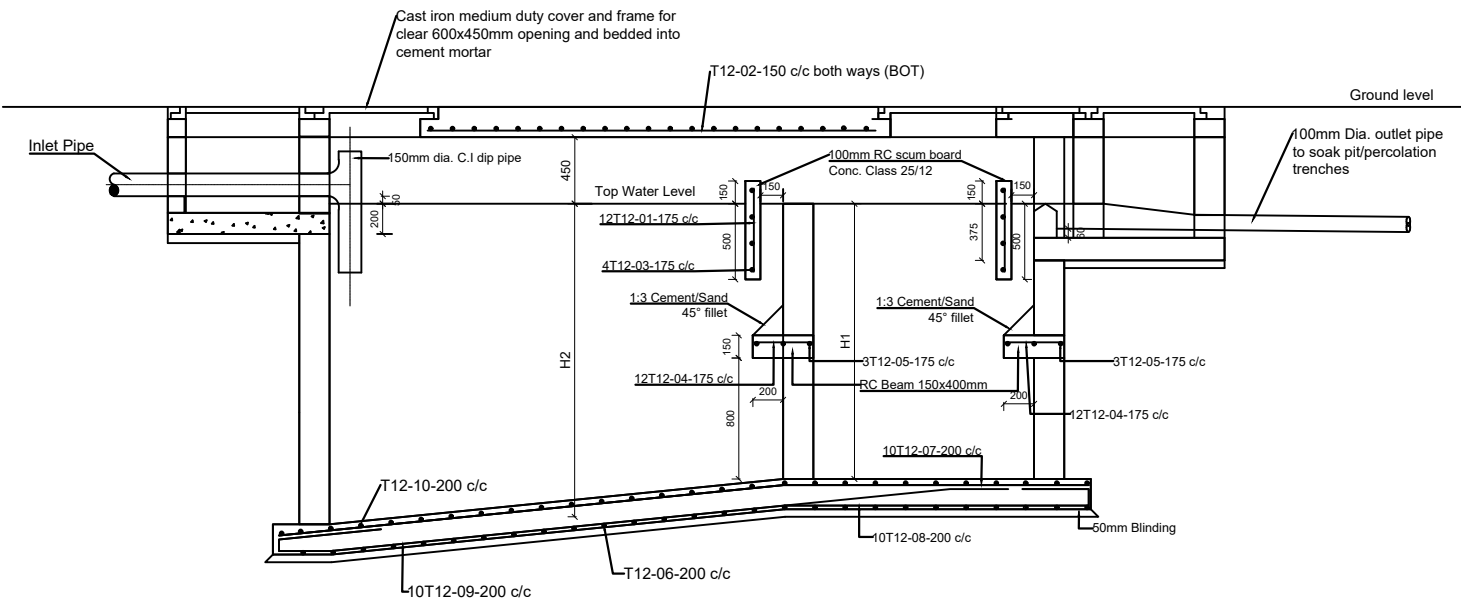
REVISIONS :		
No	Date	Description

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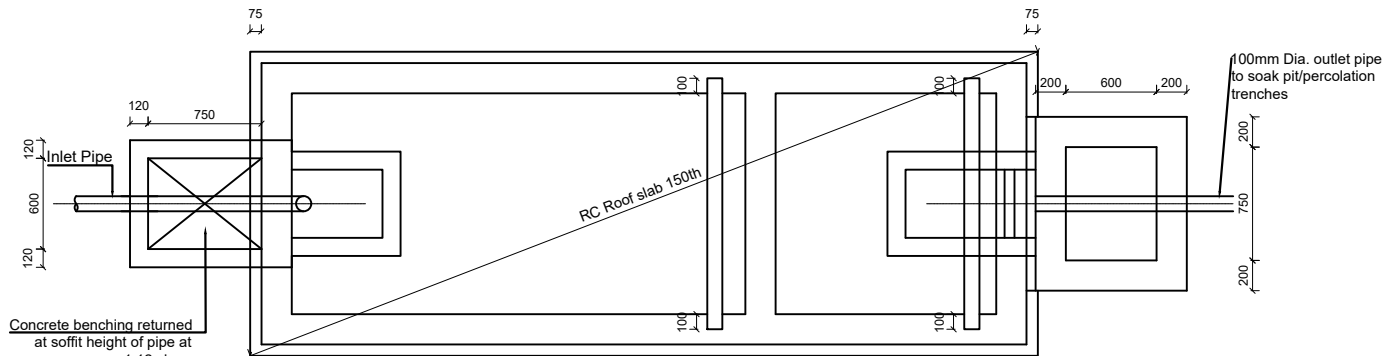
**SANITATION FACILITIES**  
Public Toilets - Elevated Tank Details

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA- SAN-005
Scale:	1:40
Sheet No.:	5 of 6

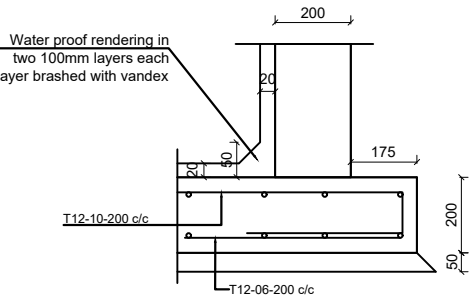
NoviC TANK



SECTION A-A

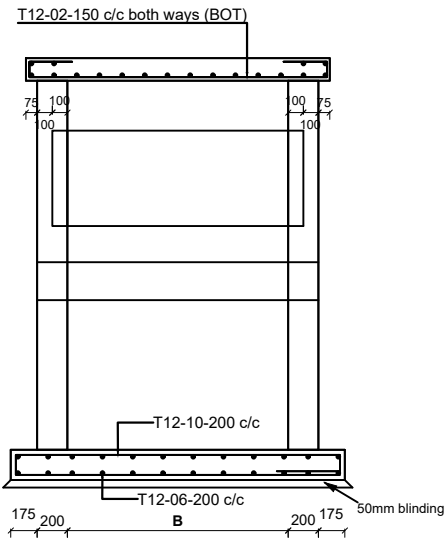
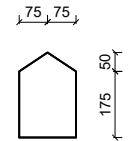


ROOF SLAB PLAN

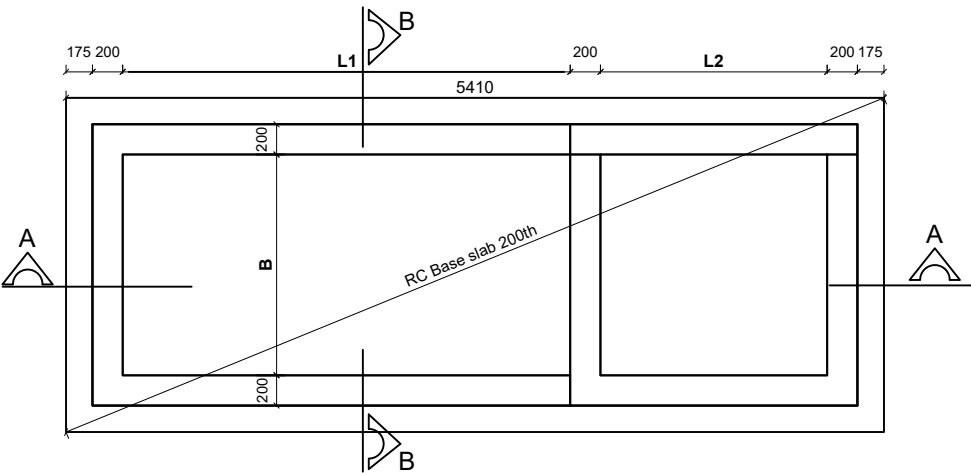


INTERNAL WATER PROOF TO WALLS AND SLABS

CONC. WEIR BLOCK DETAIL



SECTION B-B



NoviC TANK DIMENSIONS

INTERNAL DIMENSIONS (mm)					CAPACITY	NO. OF USERS
L1	L2	H1	H2	B	Cu. M	
1540	760	1600	1750	760	3.2	10
1900	900	1800	2000	900	4.5	20
2000	1000	1800	2000	1100	5.9	30
2400	1100	1800	2000	1150	7.24	40
2500	1200	1800	2000	1300	8.6	50
2000	1300	1800	2000	1400	10	60
2000	1400	1800	2000	1450	11.3	70
3000	1500	1800	2000	1560	12.7	80
3200	1600	1800	2000	1600	14	90
3300	1700	1800	2000	1700	15.4	100
4000	2000	1800	2000	2090	24	150
4500	2000	1800	2000	2650	34.3	200

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PROJECT :

**ALA-ORA WATER SUPPLY AND SANITATION PROJECT**

**ENYAU WATER SUPPLY AND SANITATION SYSTEM**

REVISIONS :

No	Date	Description

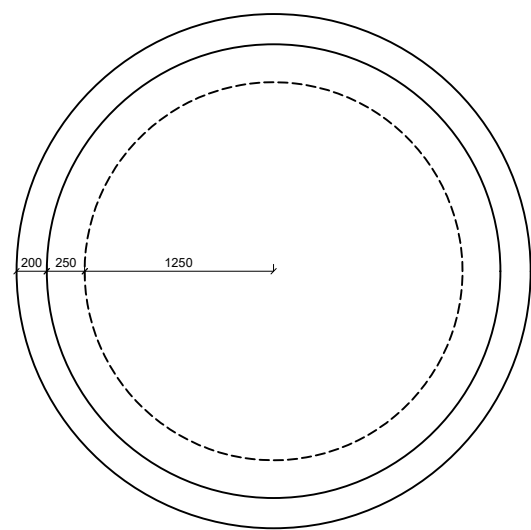
DRAWING TITLE :

**SANITATION FACILITIES**  
NoviC Tank

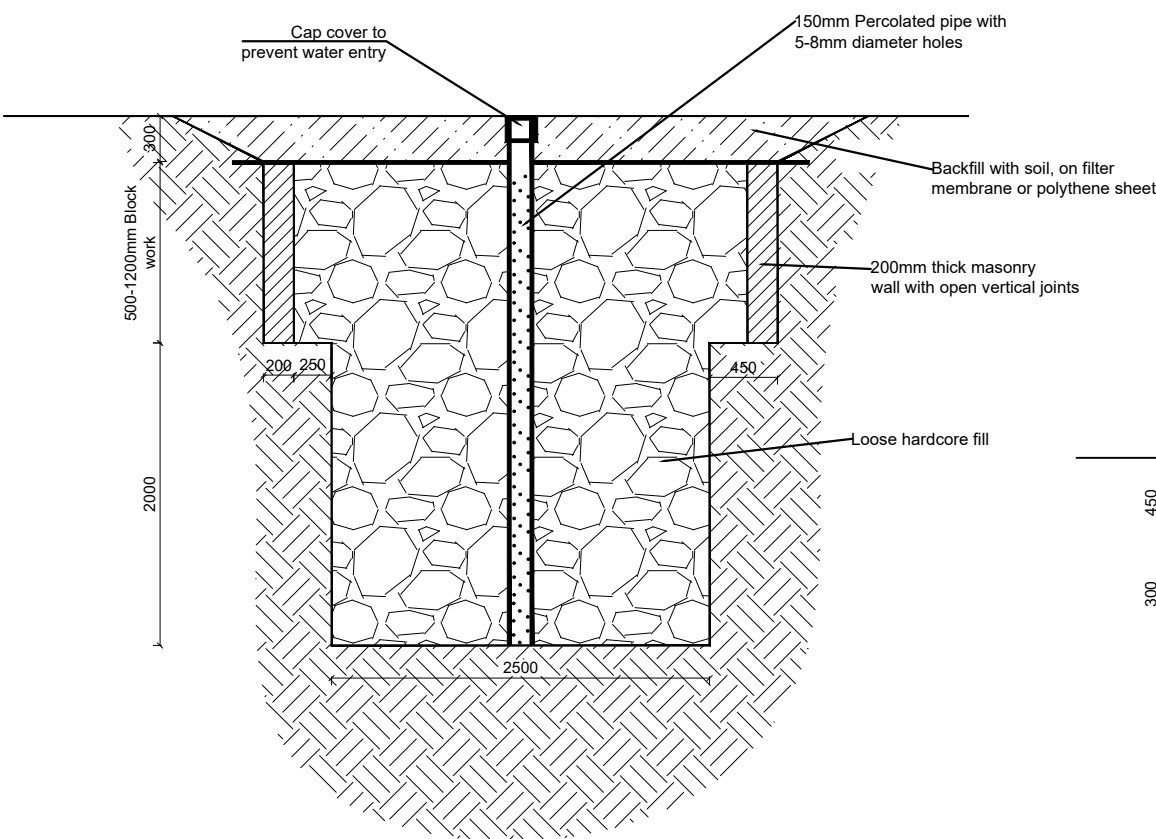
Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA- SAN-006
Scale:	1:50
Sheet No.:	1 of 1



# SOAK AWAY PIT AND MANHOLE DETAILS

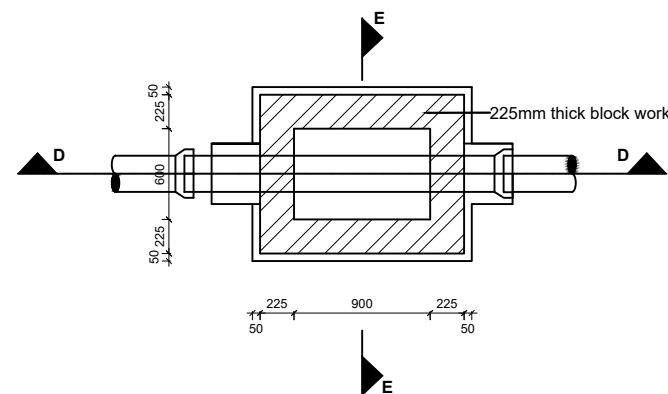
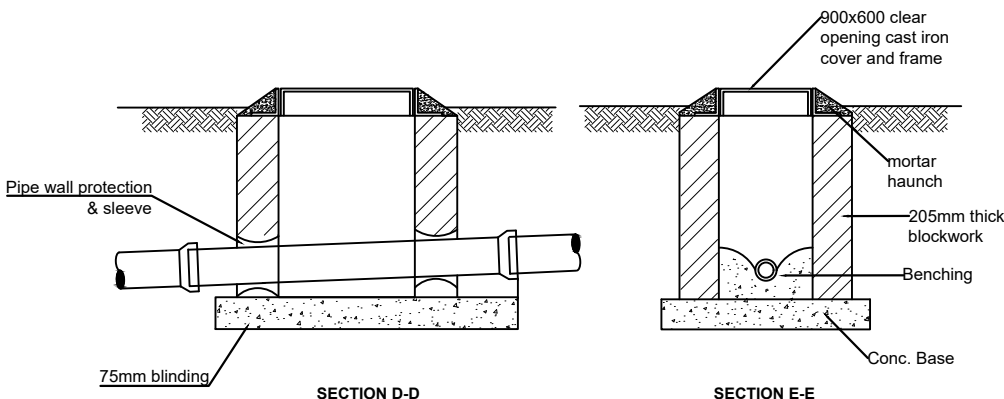


Soak Pit Plan

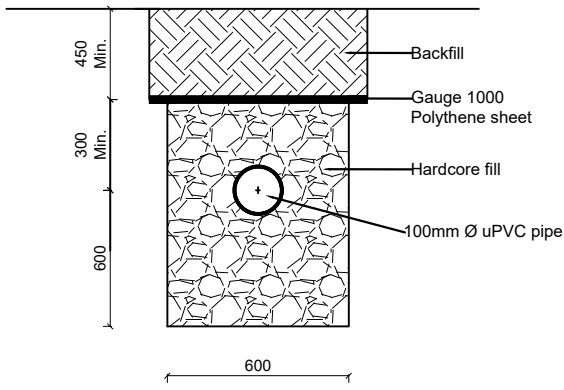


SECTION A - A

**Note:**  
Detail for areas with sandy or red soils,  
for clay or black-cotton soils appropriate  
solutions to be determined on site.



SHALLOW MANHOLE (DEPTH < 1000mm)



Percolation Trench Detail

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PROJECT :  
**ALA-ORA WATER SUPPLY AND  
SANITATION PROJECT**

**ENYAU WATER SUPPLY AND  
SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

DRAWING TITLE : **SANITATION FACILITIES**  
Manhole and Soak away Pit

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA- SAN-007
Scale:	1:50
Sheet No.:	1 of 1