



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 4: CONSTRUCTION OF ENYAU WATER SUPPLY AND SANITATION SYSTEM

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

BIDDING DOCUMENTS

VOLUME 4 – BOOK OF DRAWINGS

ISSUED ON: JANUARY 2023

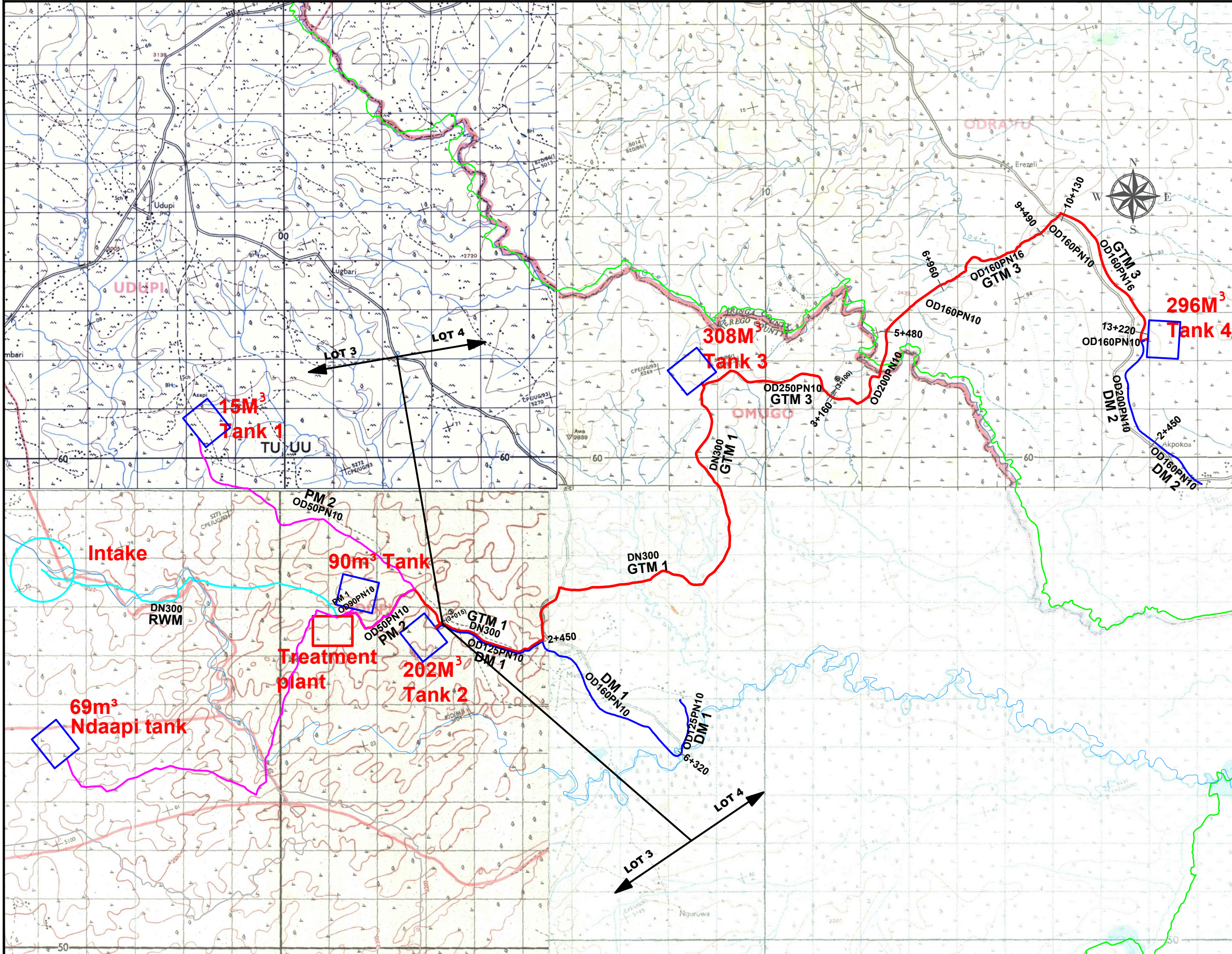
CONSTRUCTION OF ENYAU WATER SUPPLY AND SANITATION SCHEME - LOT 4
BOOK OF DRAWINGS CONTENT

ITEM	DESCRIPTION	DWG. NO.	SHEETS
	ENYAU Project General Layout	ENY-GL-001	2
380m³ RESERVOIR (TANK 3/ MVEPI ZONE 3) AREA			
Gravity Main 1	To 380m³ Reservoir	ENY-GTM-001	23
380m³ Reservoir	Reservoir Site Layout	ENY-RES-MVP-003	1
	380m³ Reservoir Plan and Sections	ENY-RES-MVP-003	2
296m³ RESERVOIR (TANK 4/ARIWA/OMUBECI) AREA			
Gravity Main 3	From 380m³ Reservoir to 296m³ Reservoir	ENY-GTM-003	27
296m³ Reservoir	Reservoir Site Layout	ENY-RES-MVP-004	1
	296m³ Reservoir Plan and Sections	ENY-RES-MVP-004	2
Distribution Mains	Distribution 2	ENY-DM-002	8
Scheme Nodes	Enyau Nodes	ENY-ND-001	3

STRUCTURALS			
ITEM	DESCRIPTION	DWG. NO.	SHEETS
Reservoirs	296m³ Reservoir	AR/WSASS/EN/STR/014	2
	382m³ Reservoir	AR/WSASS/EN/STR/015	2

ITEM	DESCRIPTION	DWG. NO.	SHEETS
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	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
23	Pipe Bridge ≤ 20m	ALA-ORA-SD-022	3
24	Pipe Bridge ≤ 35m	ALA-ORA-SD-023	3

SANITATION FACILITIES			
1	Public Waterborne Toilet	ALA-ORA-SAN-001	5
2	Institutional VIP for Gents	ALA-ORA-SAN-002	3
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

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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

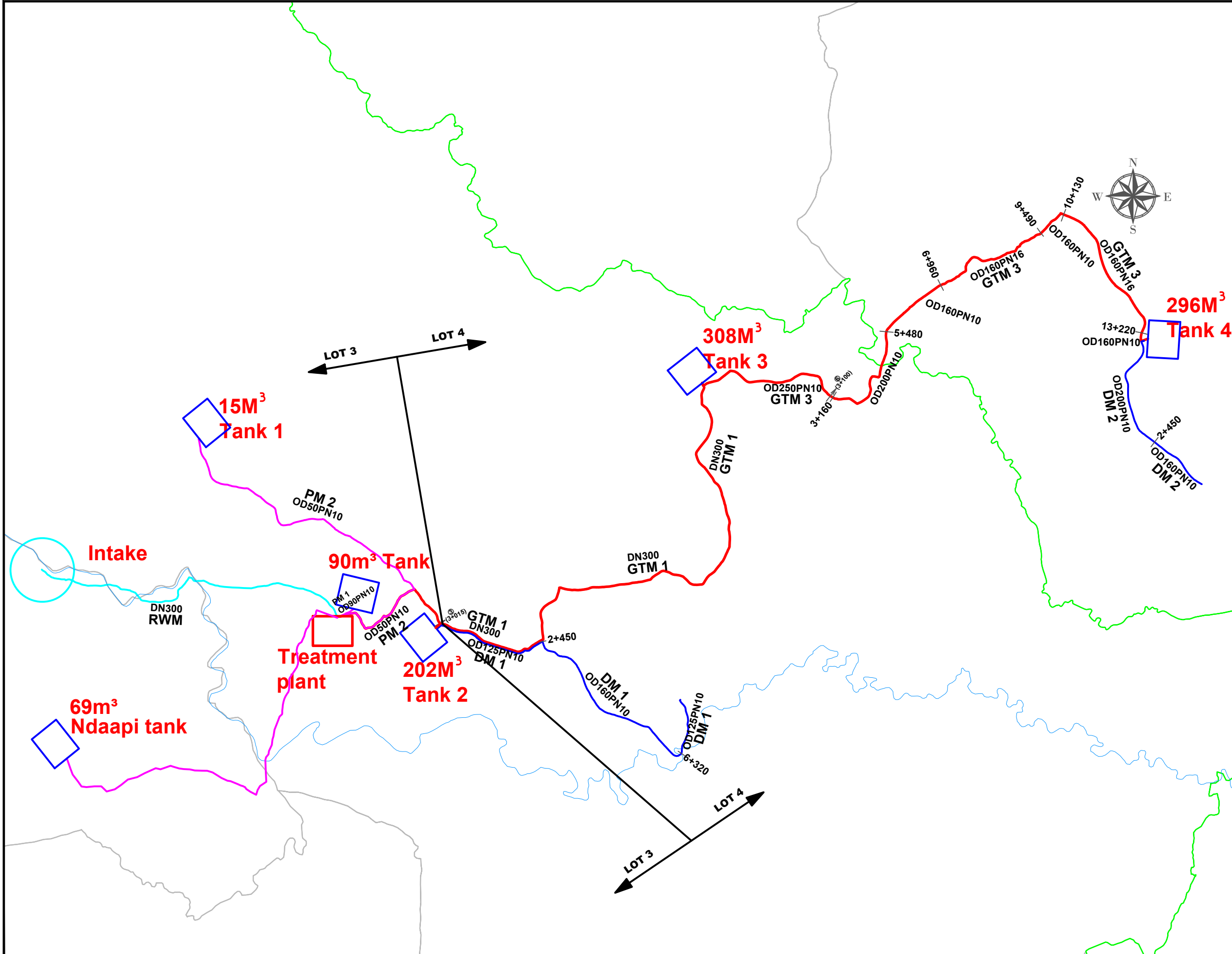
REVISIONS :

No	Date	Description

DRAWING TITLE :

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
- Intake
- Water Treatment Plant
- Reservoirs
- District boundary
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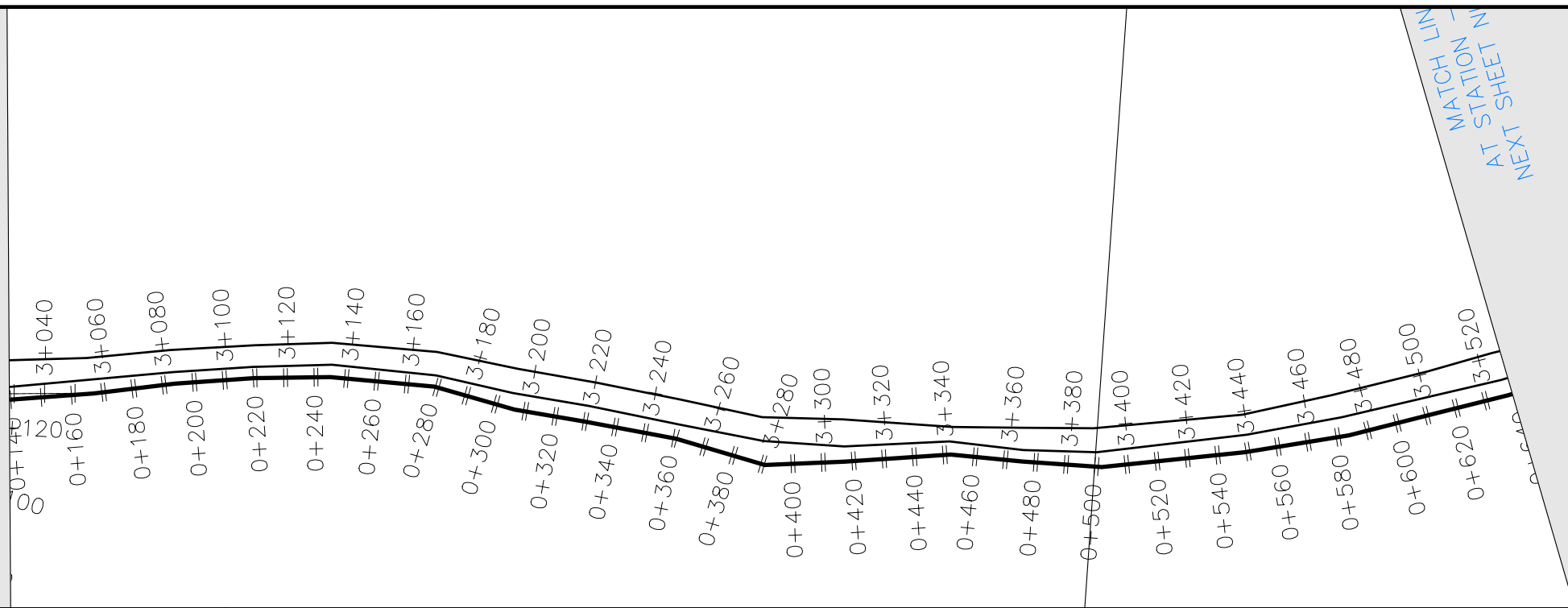
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DRAWING TITLE :
GENERAL SCHEME LAYOUT

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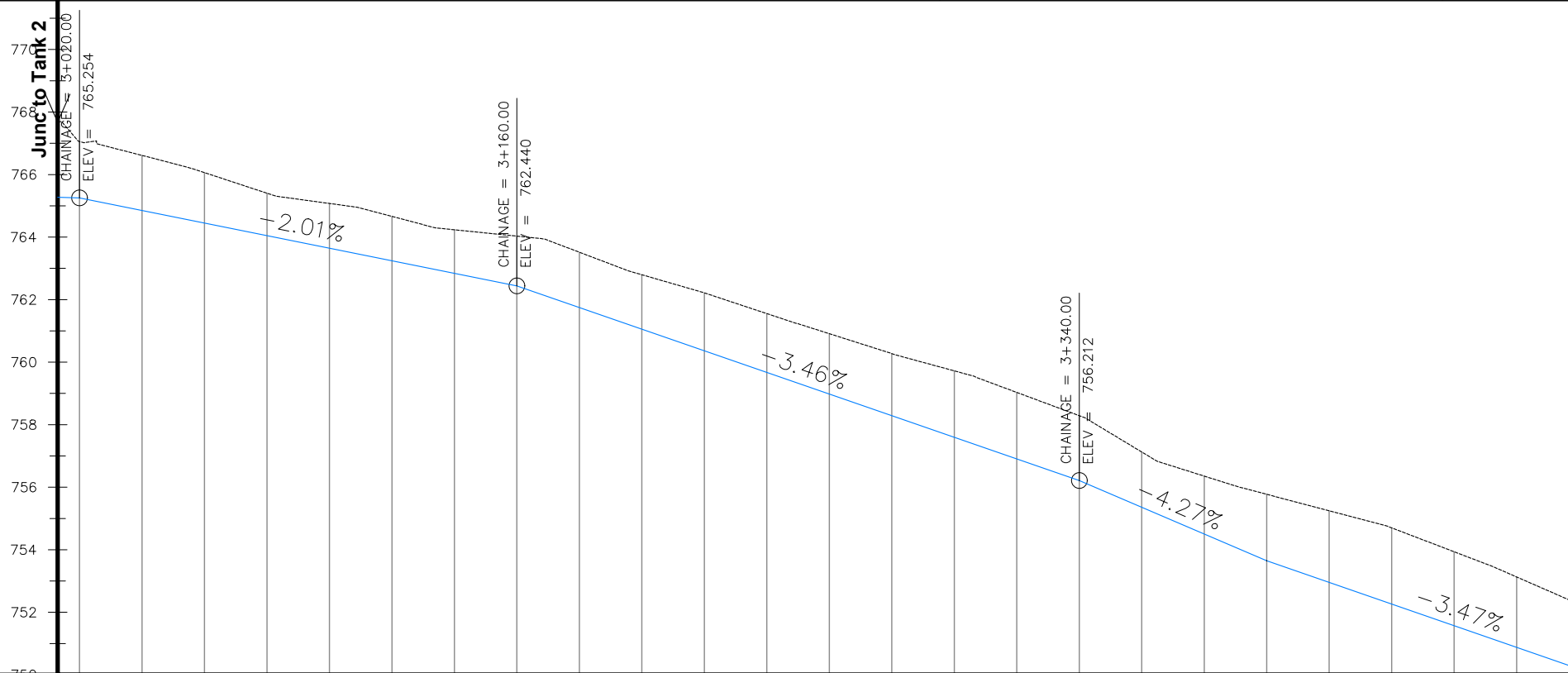
**380m³ RESERVOIR (TANK 3/ MVEPI ZONE 3)
AREA**

E - 6
3+028.40
NUMBER - ###



LEGEND

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



Chainage (m)	3+013	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)	767.68	767.05	766.61	766.06	765.40	765.08	764.66	764.23	764.03	763.52	762.80	762.22	761.55	760.91	760.27	759.72	759.03	758.29	757.13	756.36	755.77	755.25	754.70	753.94	753.13	752.26		
Invert Levels (masl)	765.27	765.25							762.44									756.21			753.65					750.18		
Slope (%)			-2.01%																									
Pipe Data	DN300PN10, STEEL																											

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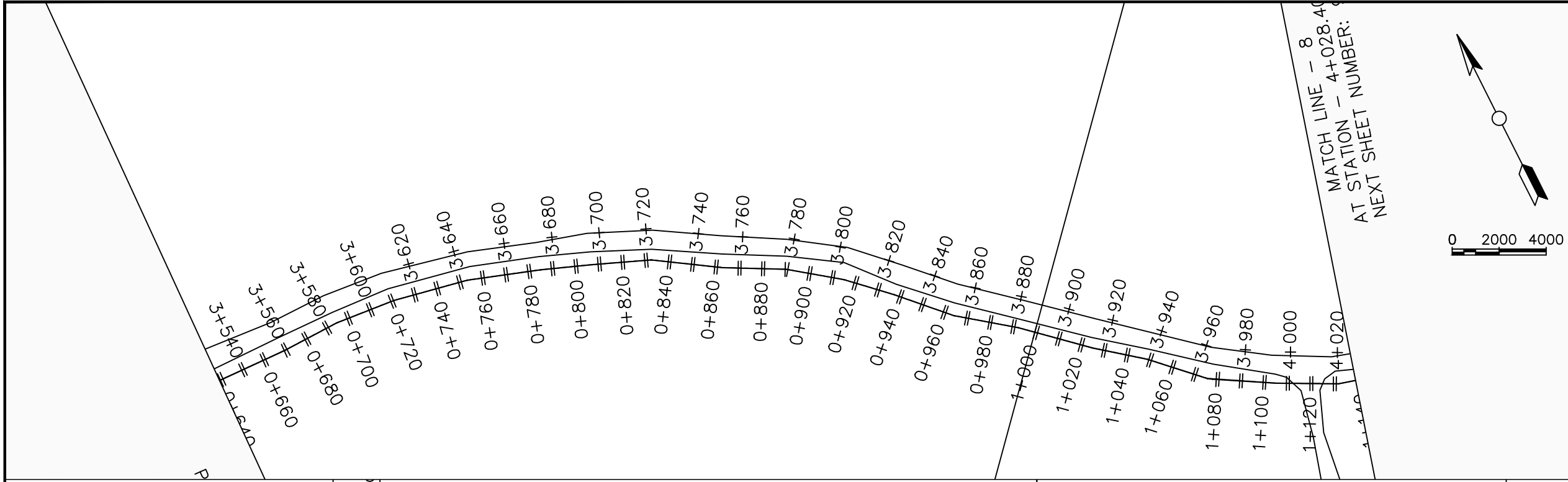
REVISIONS :

No	Date	Description

DRAWING TITLE :

GRAVITY TRANSMISSION 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.:	ENY-GTM-001
Scale:	1:2000
Sheet No.:	7 of 29



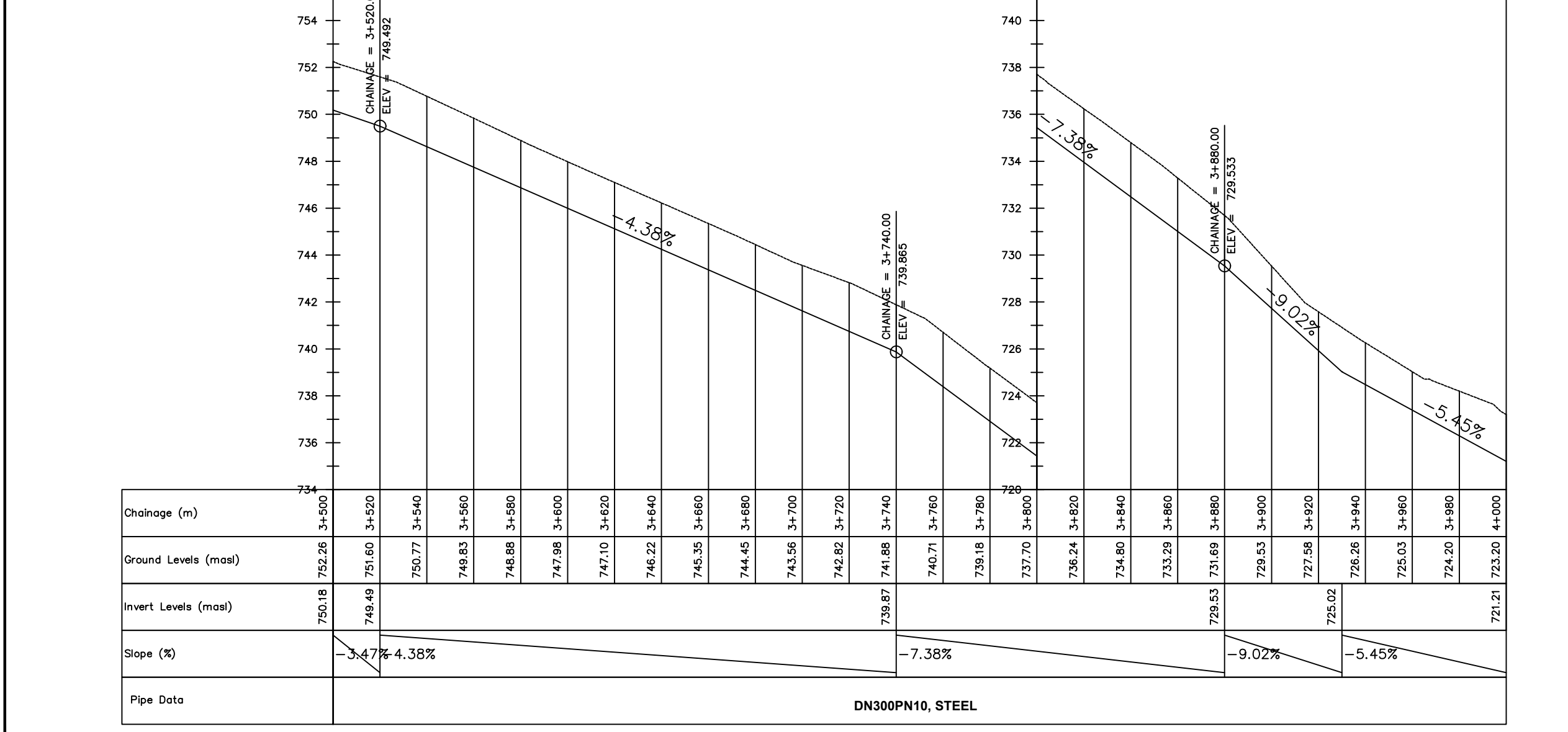
LEGEND

Plan

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

Profile

- Ground Level
- Invert Level
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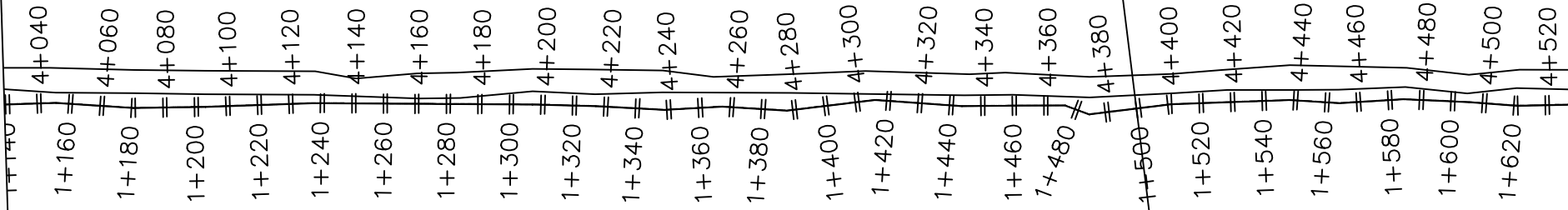
No	Date	Description

DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 1
 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-GTM-001**
 Scale: 1:2000 Sheet No.: 8 of 29

CHAIN LINE - 8
 ION - 4+028.40
 SHEET NUMBER - 8



MATCH LINE - 9
 AT STATION - 4+528.40
 NEXT SHEET NUMBER: 10

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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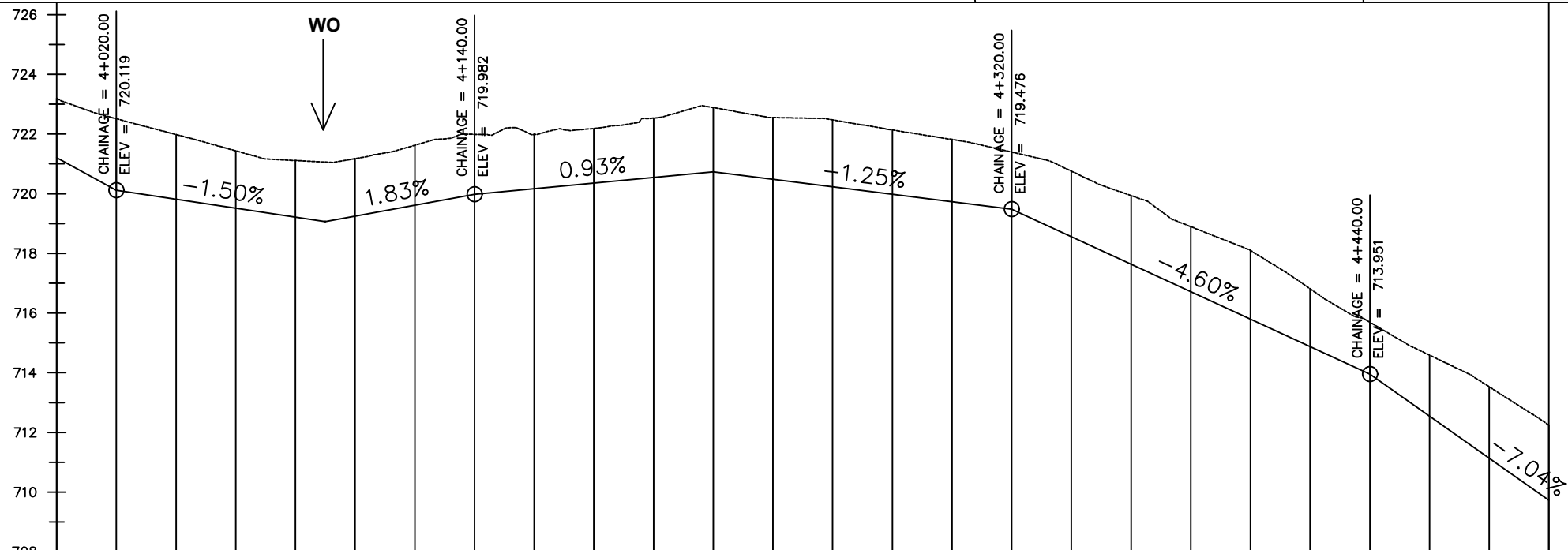
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No	Date	Description

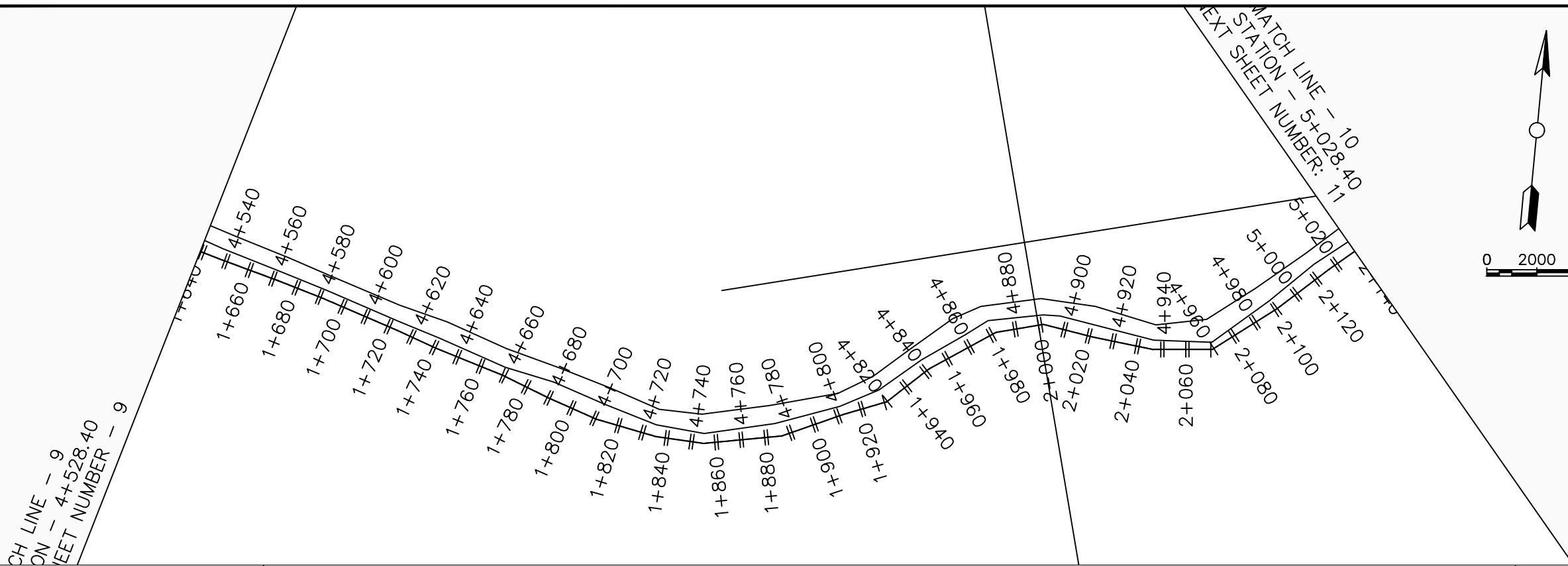
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 1
 4+000 - 4+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.: 9 of 29



Chainage (m)	4+000	4+020	4+040	4+060	4+080	4+100	4+120	4+140	4+160	4+180	4+200	4+220	4+240	4+260	4+280	4+300	4+320	4+340	4+360	4+380	4+400	4+420	4+440	4+460	4+480	4+500		
Ground Levels (masl)	723.20	722.51	721.98	721.44	721.11	721.18	721.63	721.99	722.00	722.18	722.54	722.89	722.55	722.47	722.13	721.82	721.40	720.75	719.94	718.90	718.10	716.81	715.69	714.59	713.53	712.25		
Invert Levels (masl)	721.21	720.12			719.07			719.98				720.73					719.48						713.95			709.73		
Slope (%)		-5.45%	-1.50%			1.83%			0.93%			-1.25%					-4.60%						-7.04%					
Pipe Data	DN300PN10, STEEL																											



LEGEND

Plan

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

Profile

- Ground Level
- Invert Level
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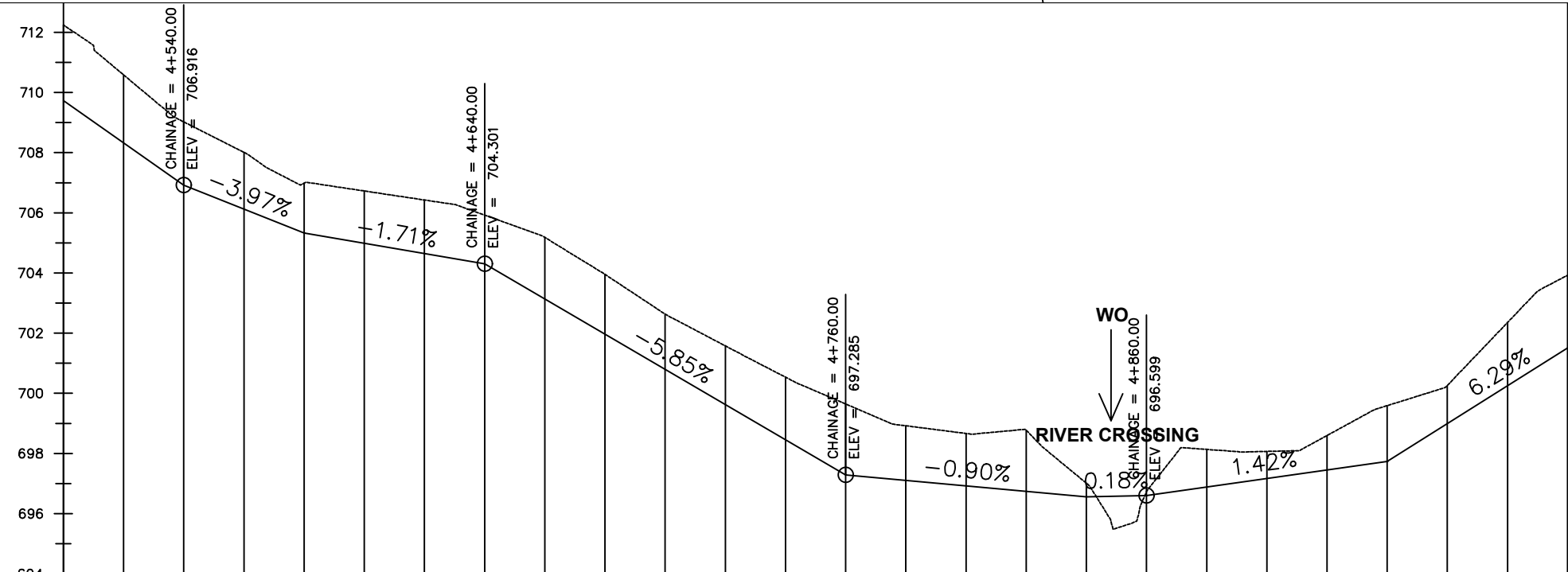
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No	Date	Description

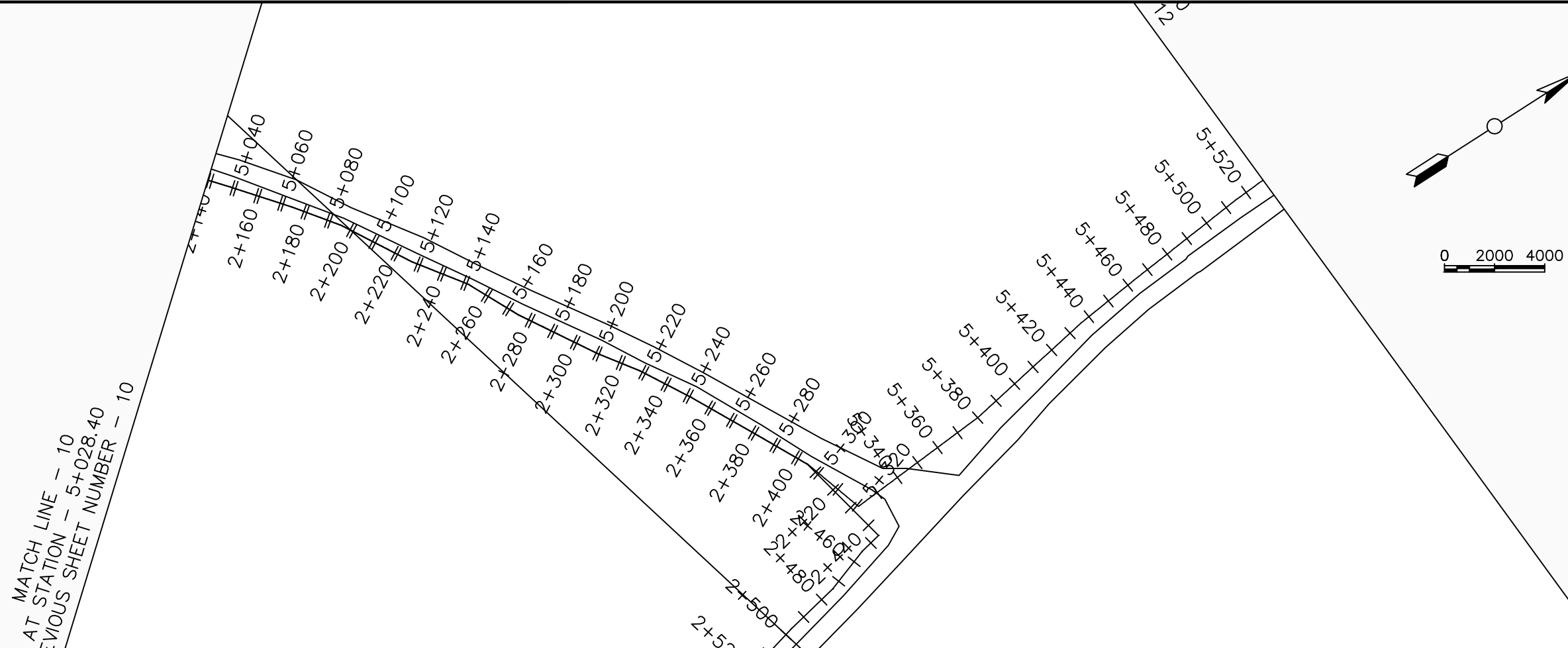
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 1
4+500 - 5+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-GTM-001
Scale:	1:2000
Sheet No.:	10 of 29



Chainage (m)	4+500	4+520	4+540	4+560	4+580	4+600	4+620	4+640	4+660	4+680	4+700	4+720	4+740	4+760	4+780	4+800	4+820	4+840	4+860	4+880	4+900	4+920	4+940	4+960	4+980	5+000		
Ground Levels (masl)	712.25	710.59	709.02	708.01	706.99	706.73	706.43	705.92	705.18	703.95	702.63	701.58	700.54	699.65	698.92	698.66	698.77	697.01	696.72	698.14	698.07	698.60	699.59	700.26	702.35	703.93		
Invert Levels (masl)	709.73		706.92		705.33			704.30						697.29				696.56	696.60				697.73			701.51		
Slope (%)		-7.04%	-3.97%		-1.71%				-5.85%					-0.90%					0.18%	1.42%					6.29%			
Pipe Data	DN300PN10, STEEL																											



LEGEND

Plan

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

Profile

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

MATCH LINE - 10
 AT STATION - 5+028.40
 PREVIOUS SHEET NUMBER - 10

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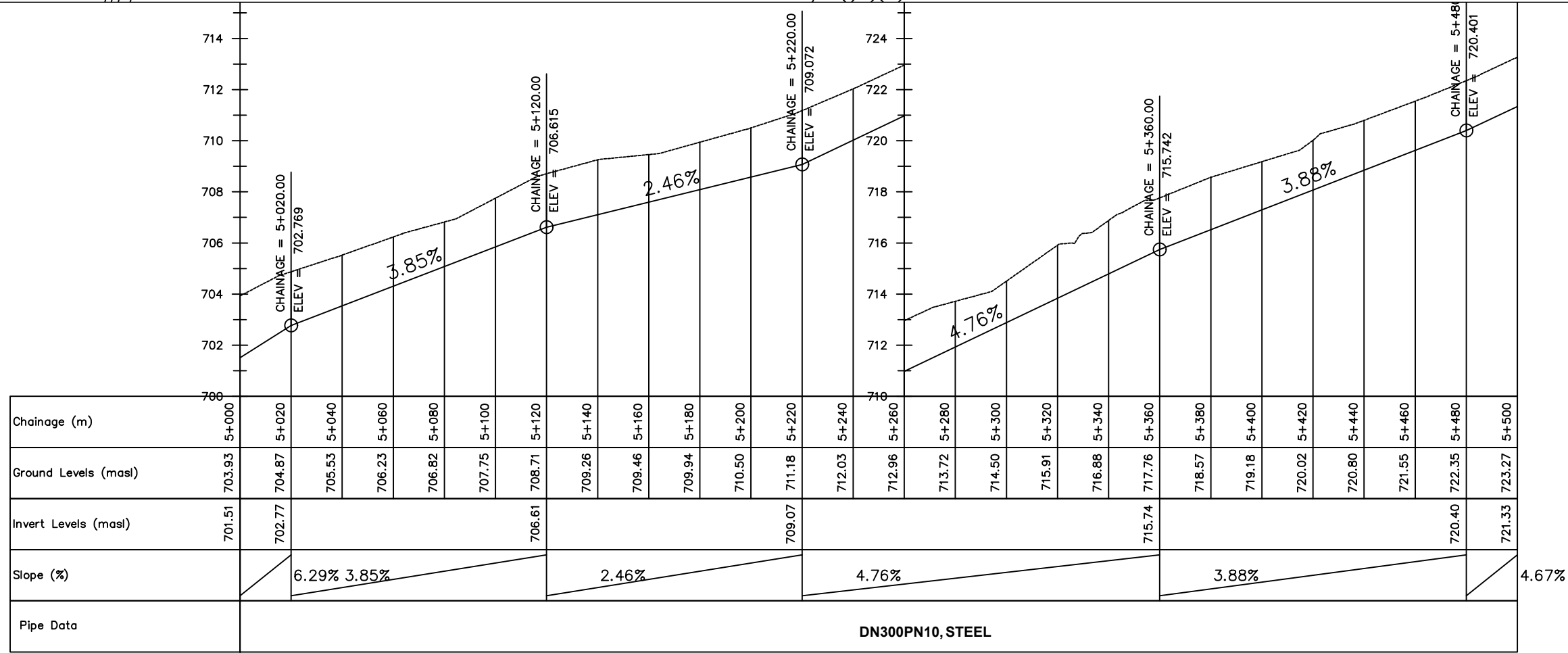
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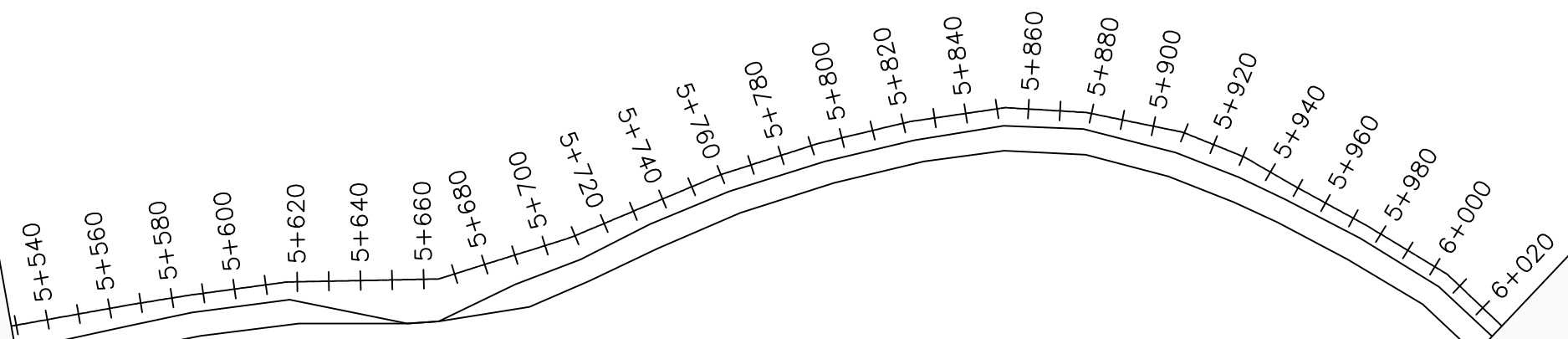
No	Date	Description

DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 1
 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-GTM-001
Scale:	1:2000
Sheet No.:	11 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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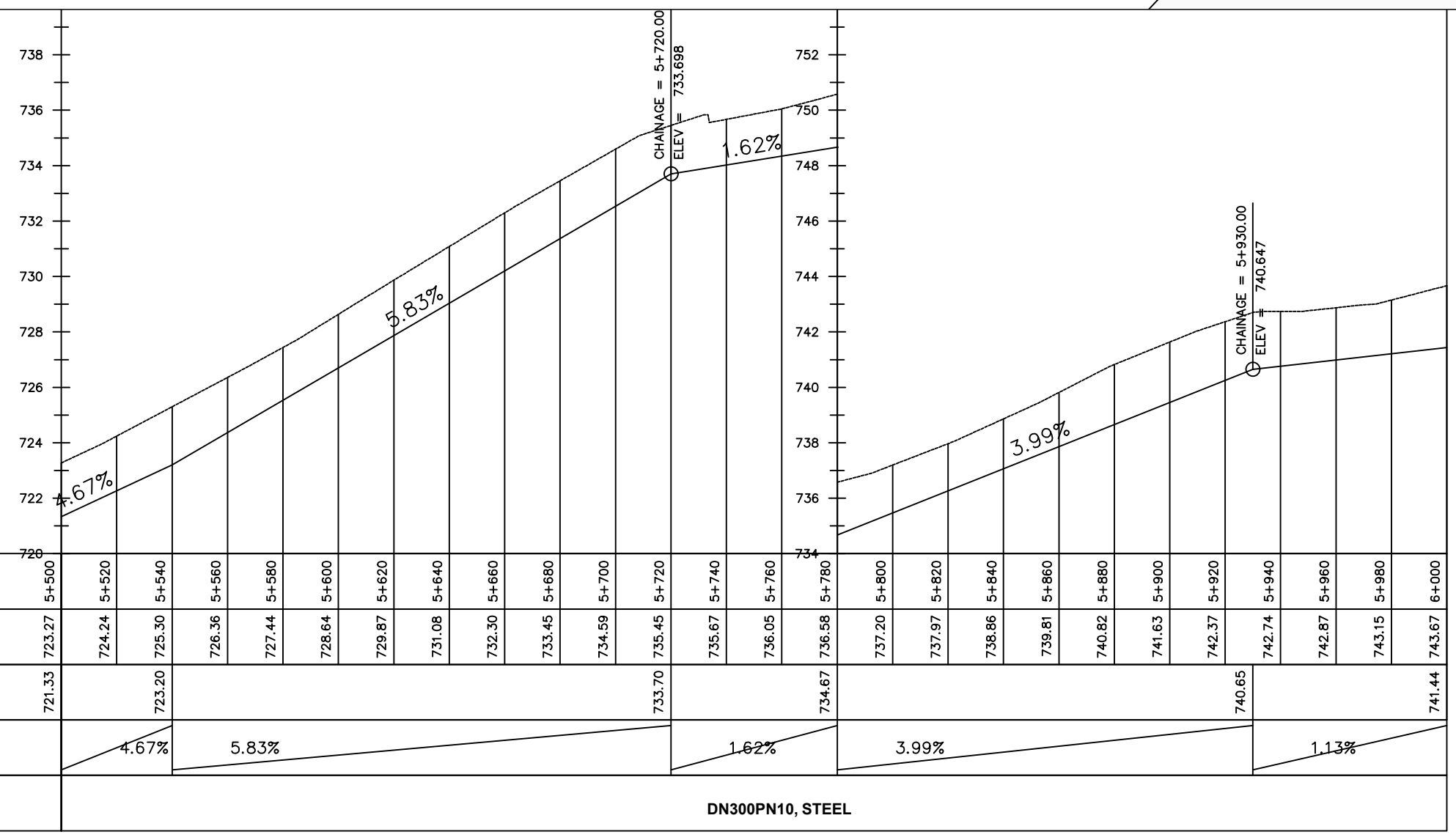
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No	Date	Description

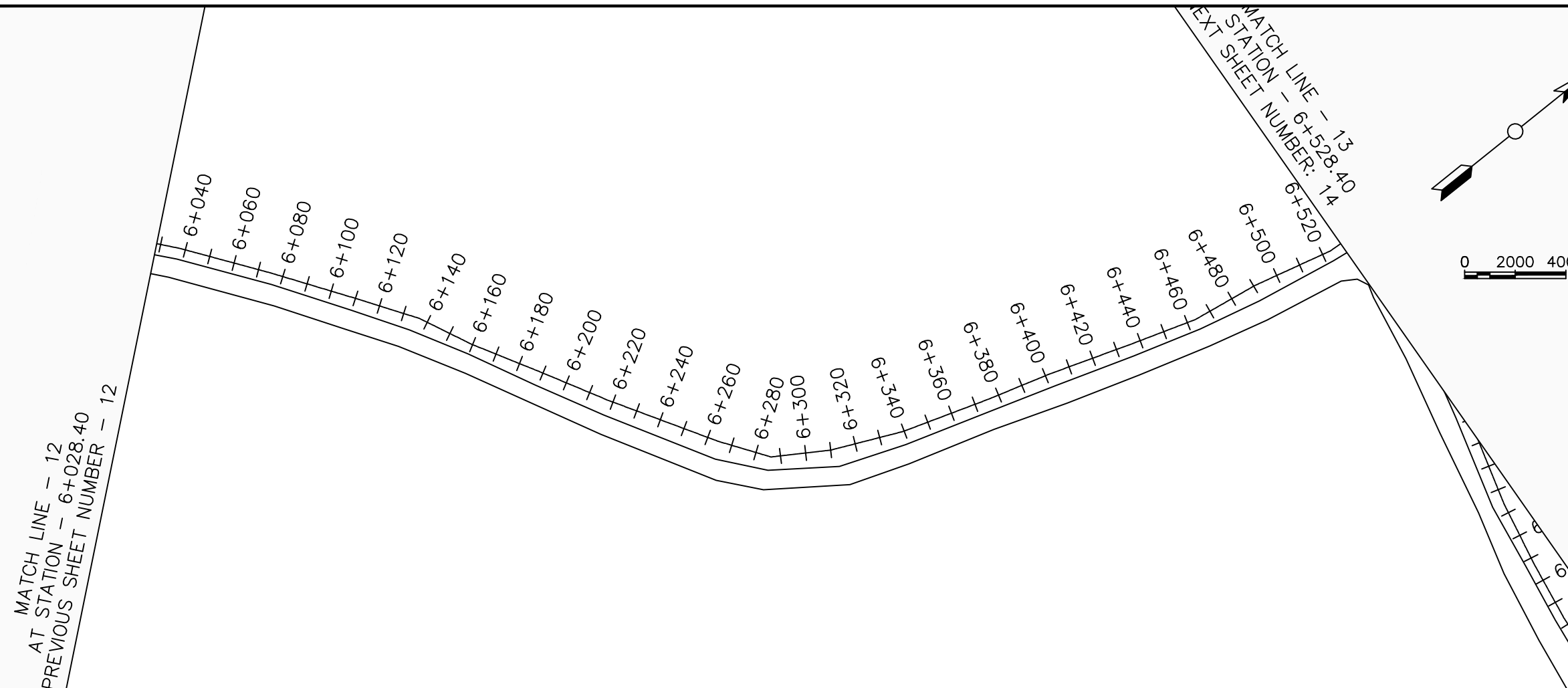
DRAWING TITLE :

GRAVITY TRANSMISSION 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.:	ENY-GTM-001
Scale:	1:2000
Sheet No.:	12 of 29



Chainage (m)	Ground Levels (masl)	Invert Levels (masl)	Slope (%)	Pipe Data
5+500	723.27	721.33	4.67%	DN300PN10, STEEL
5+520	724.24	723.20		
5+540	725.30		726.36	
5+560	726.36	729.87		
5+580	727.44		733.70	
5+600	728.64	734.67		
5+620	729.87		740.65	
5+640	731.08	742.74		
5+660	732.30		744.87	
5+680	733.45	746.97		
5+700	734.59		749.10	
5+720	735.45	751.27		
5+740	735.67		753.48	
5+760	736.05	755.73		
5+780	736.58		758.03	
5+800	737.20	760.38		
5+820	737.97		762.78	
5+840	738.86	765.23		
5+860	739.81		767.73	
5+880	740.82	770.28		
5+900	741.63		772.88	
5+920	742.37	775.53		
5+940	742.74		778.23	
5+960	742.87	780.98		
5+980	743.15		783.78	
6+000	743.67	786.63		



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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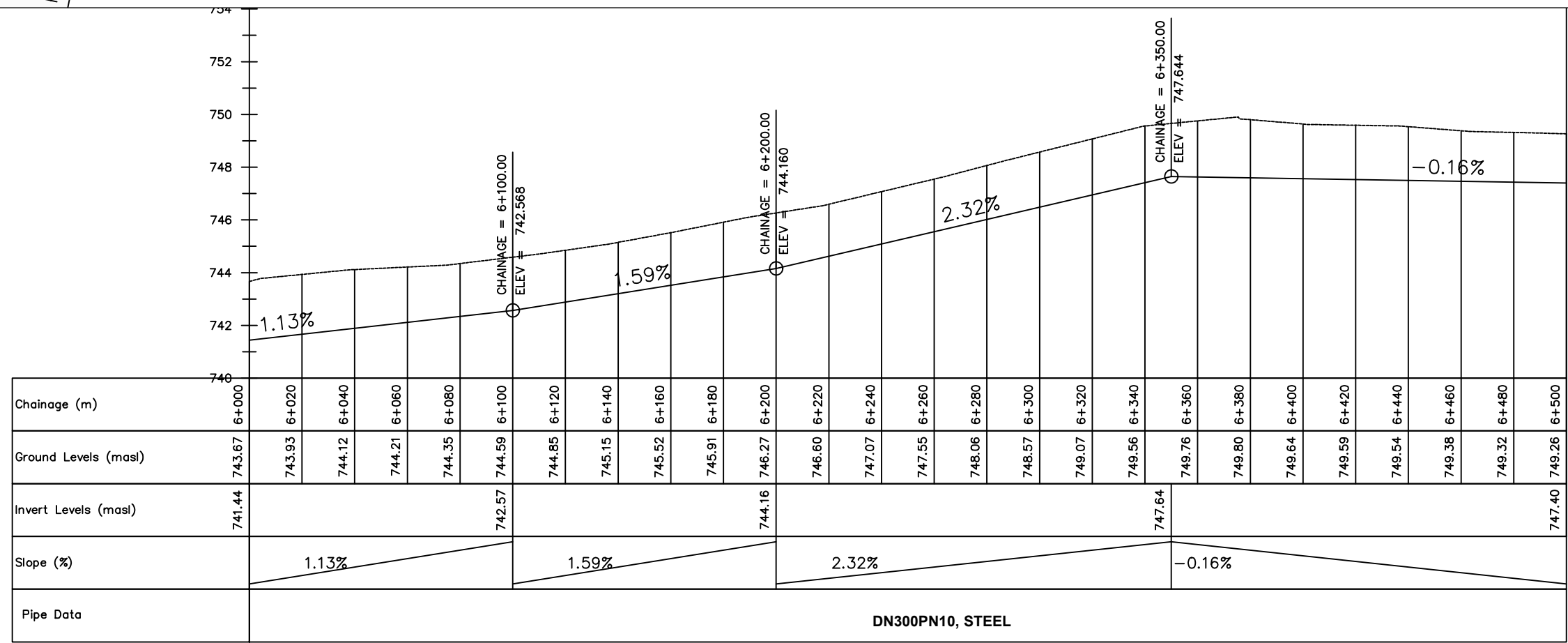
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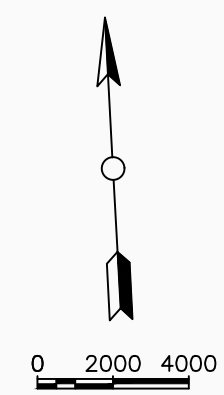
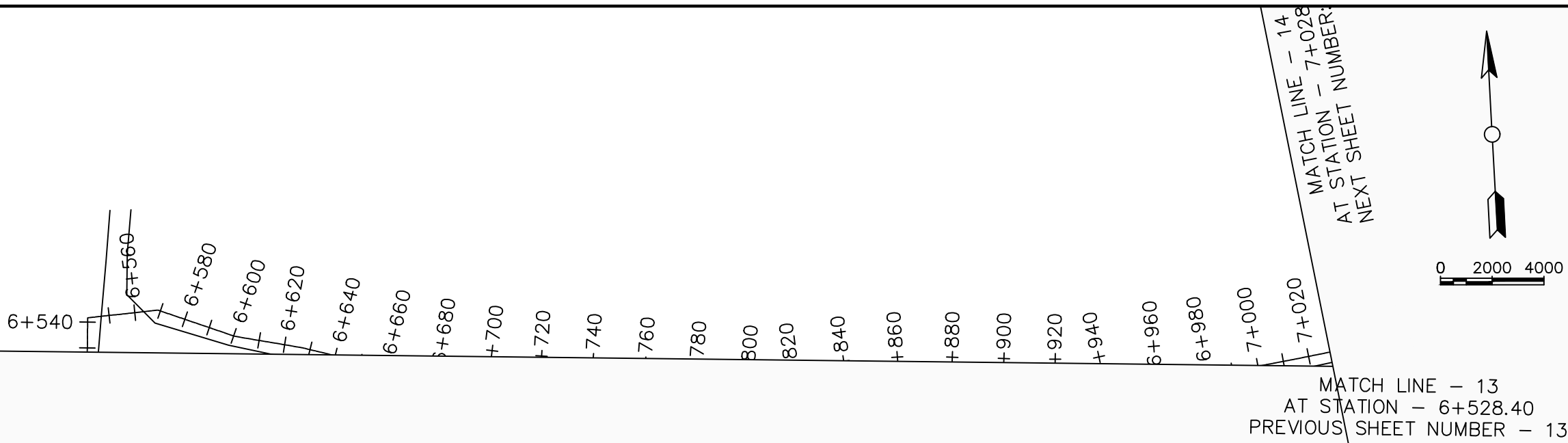
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 1
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.:	ENY-GTM-001
Scale:	1:2000
Sheet No.:	13 of 29



Chainage (m)	6+000	6+020	6+040	6+060	6+080	6+100	6+120	6+140	6+160	6+180	6+200	6+220	6+240	6+260	6+280	6+300	6+320	6+340	6+360	6+380	6+400	6+420	6+440	6+460	6+480	6+500		
Ground Levels (masl)	743.67	743.93	744.12	744.21	744.35	744.59	744.85	745.15	745.52	745.91	746.27	746.60	747.07	747.55	748.06	748.57	749.07	749.56	749.76	749.80	749.80	749.64	749.59	749.54	749.38	749.32	749.26	
Invert Levels (masl)	741.44					742.57					744.16								747.64								747.40	
Slope (%)		1.13%					1.59%					2.32%					-0.16%											
Pipe Data	DN300PN10, STEEL																											



LEGEND

Plan

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

Profile

- Ground Level
- Invert Level
- AV Air Valve
- WO Washout
- ⑩ Node detail No.

CLIENT :

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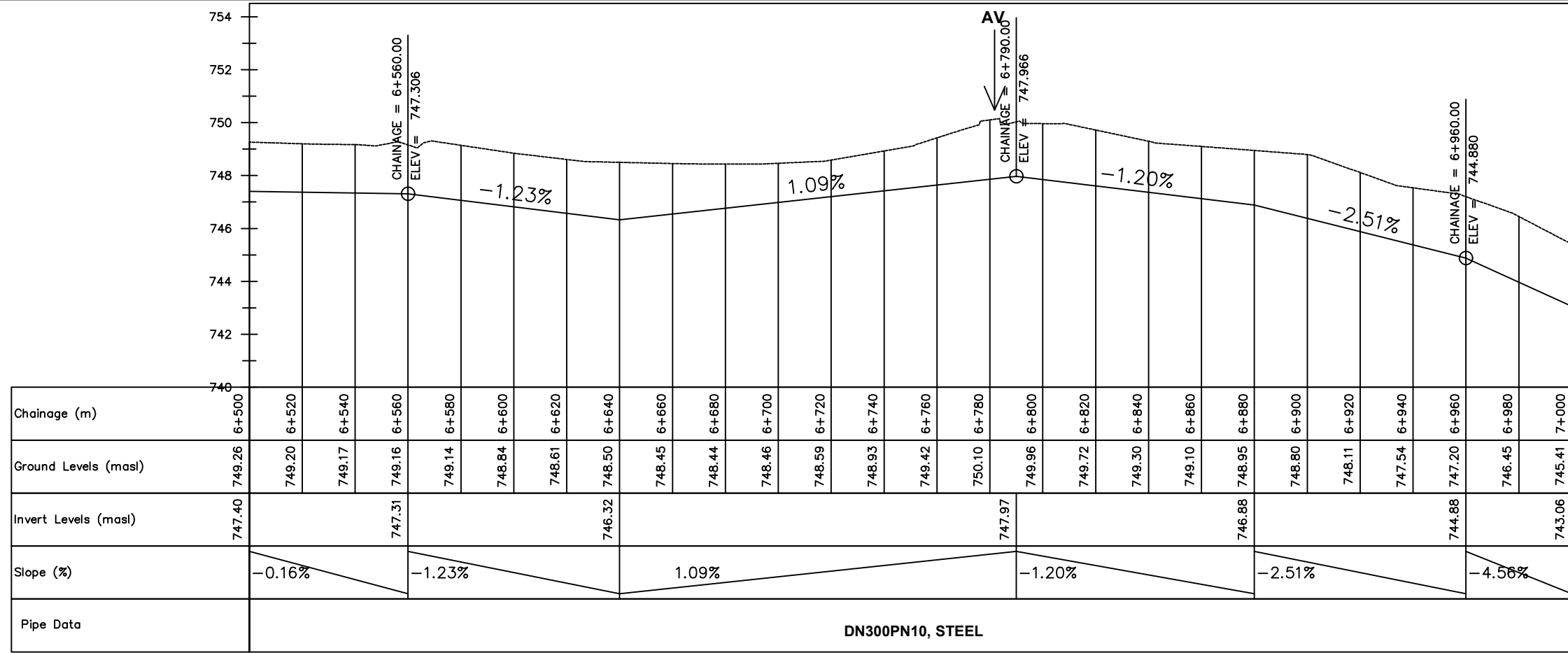
REVISIONS :

No	Date	Description

DRAWING TITLE :

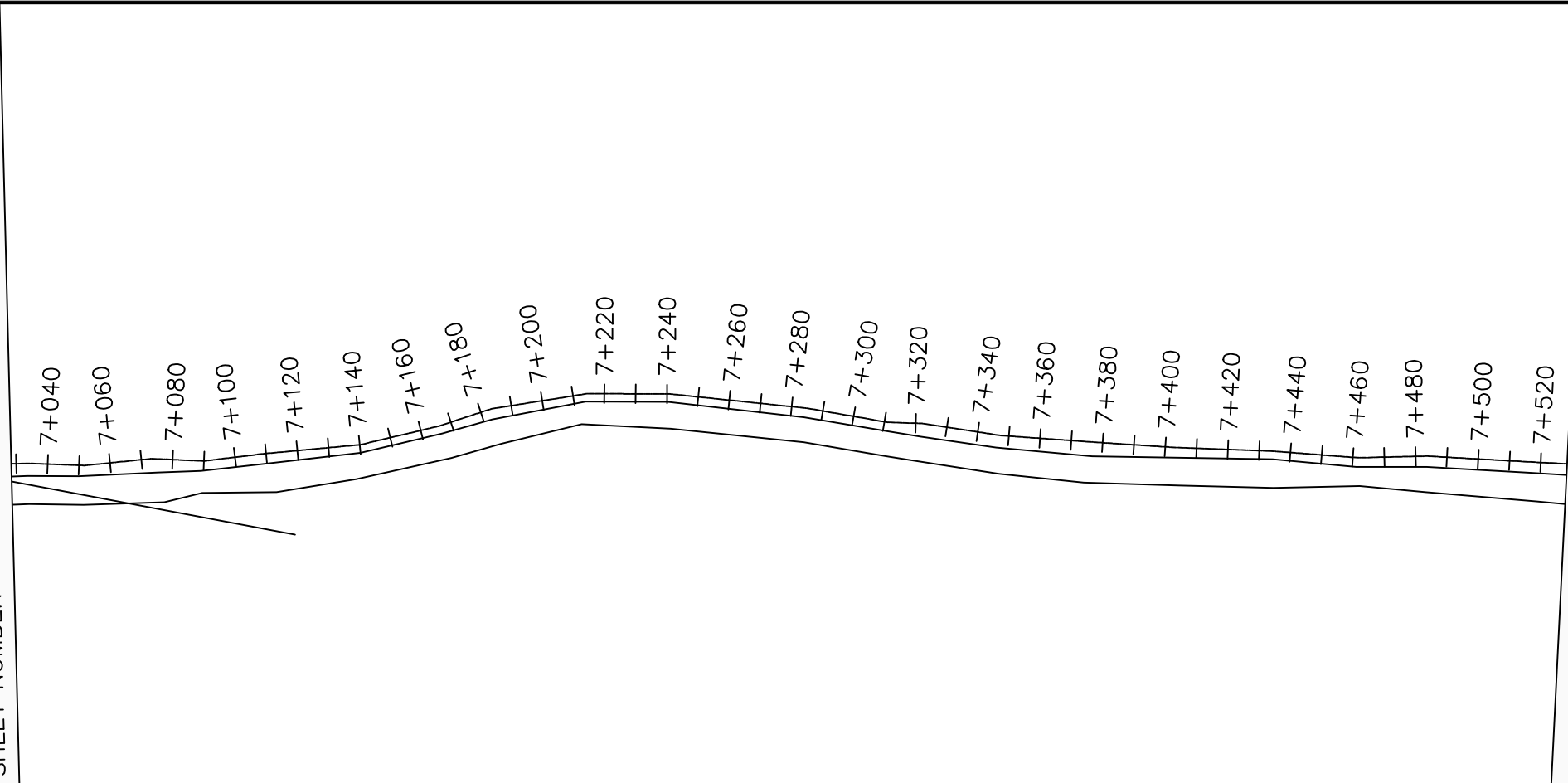
GRAVITY TRANSMISSION MAIN 1
6+500 - 7+000

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2022
DRG. No.:	ENY-GTM-001
Scale:	1:2000
Sheet No.:	14 of 29



DN300PN10, STEEL

MATCH LINE - 14
STATION - 7+028.40
SHEET NUMBER - 14



MATCH LINE - 15
AT STATION - 7+528.40
NEXT SHEET NUMBER: 16

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:

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**

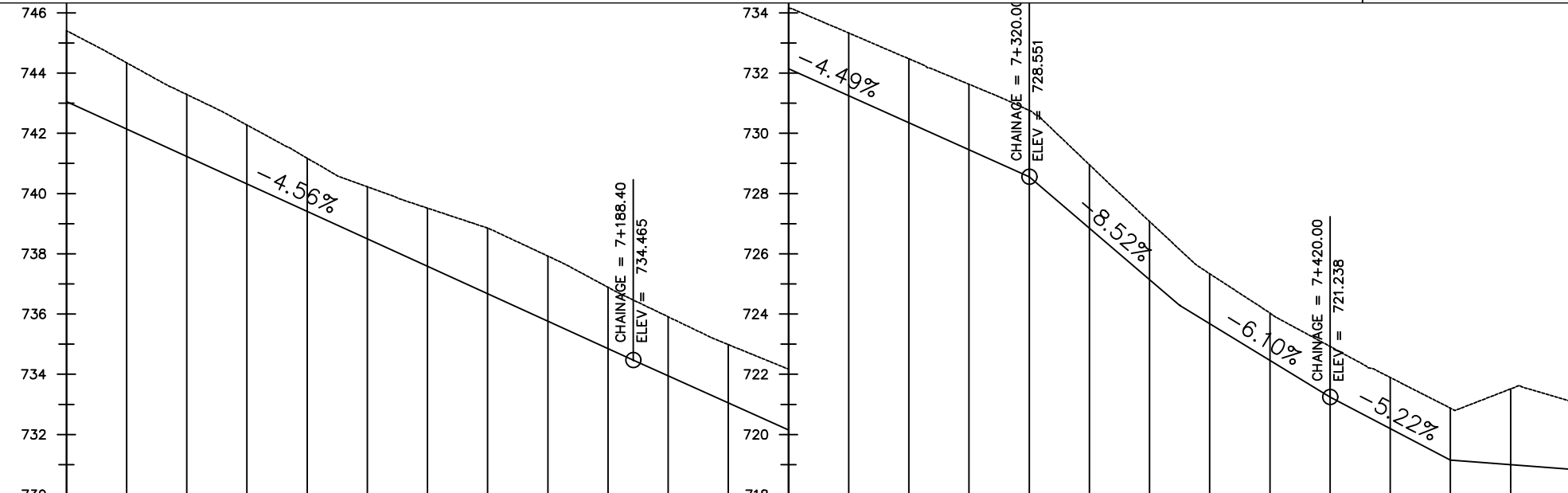
REVISIONS :

No	Date	Description

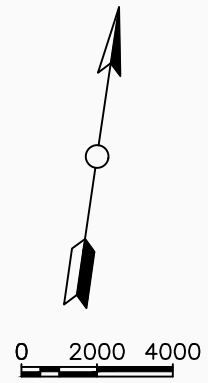
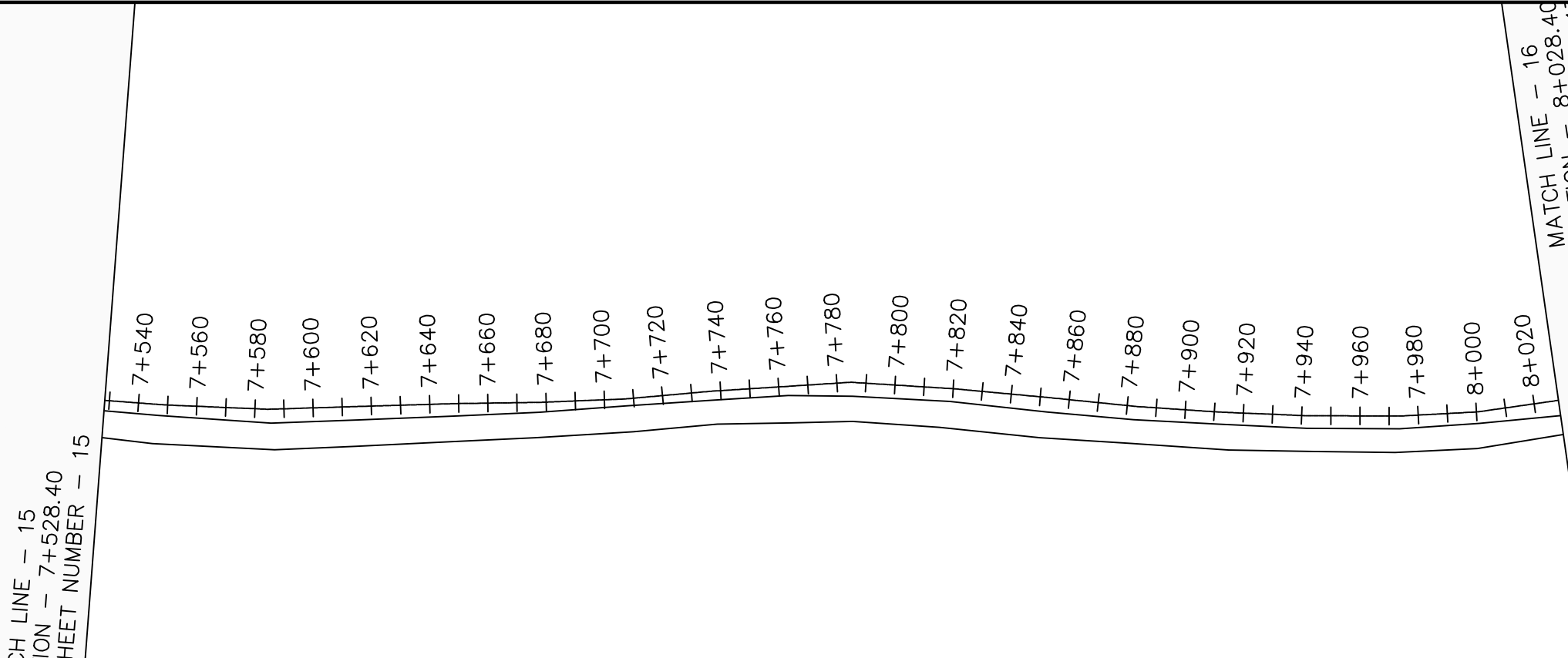
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 1
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.:	ENY-GTM-001
Scale:	1:2000
Sheet No.:	15 of 29



Chainage (m)	Ground Levels (masl)	Invert Levels (masl)	Slope (%)	Pipe Data		
7+000	745.41	743.06	-4.56%	DN300PN10, STEEL		
7+020	744.34					
7+040	743.29					
7+060	742.27					
7+080	741.18					
7+100	740.23					
7+120	739.52					
7+140	738.85					
7+160	737.92					
7+180	736.89					
7+188.40	734.47	734.47	-4.49%	DN300PN10, STEEL		
7+200	735.91					
7+220	734.98					
7+240	734.17					
7+260	733.33					
7+280	732.47					
7+300	731.63					
7+320	730.76	728.55				
7+320.00	728.55	728.55			-8.52%	DN300PN10, STEEL
7+340	728.96					
7+360	727.07					
7+380	725.34					
7+400	724.03					
7+420	722.92	721.24				
7+420.00	721.24	721.24	-6.10%	DN300PN10, STEEL		
7+440	721.89					
7+460	720.88					
7+480	721.51					
7+500	721.11					
7+500	721.11	718.84			-5.22%	DN300PN10, STEEL
7+520	721.11					
7+540	721.11					
7+560	721.11					
7+580	721.11					
7+600	721.11					
7+620	721.11					
7+640	721.11					
7+660	721.11					
7+680	721.11					
7+700	721.11		-0.77%	DN300PN10, STEEL		
7+720	721.11					
7+740	721.11					
7+760	721.11					
7+780	721.11					
7+800	721.11					
7+820	721.11					
7+840	721.11					
7+860	721.11					
7+880	721.11					



LEGEND

Plan

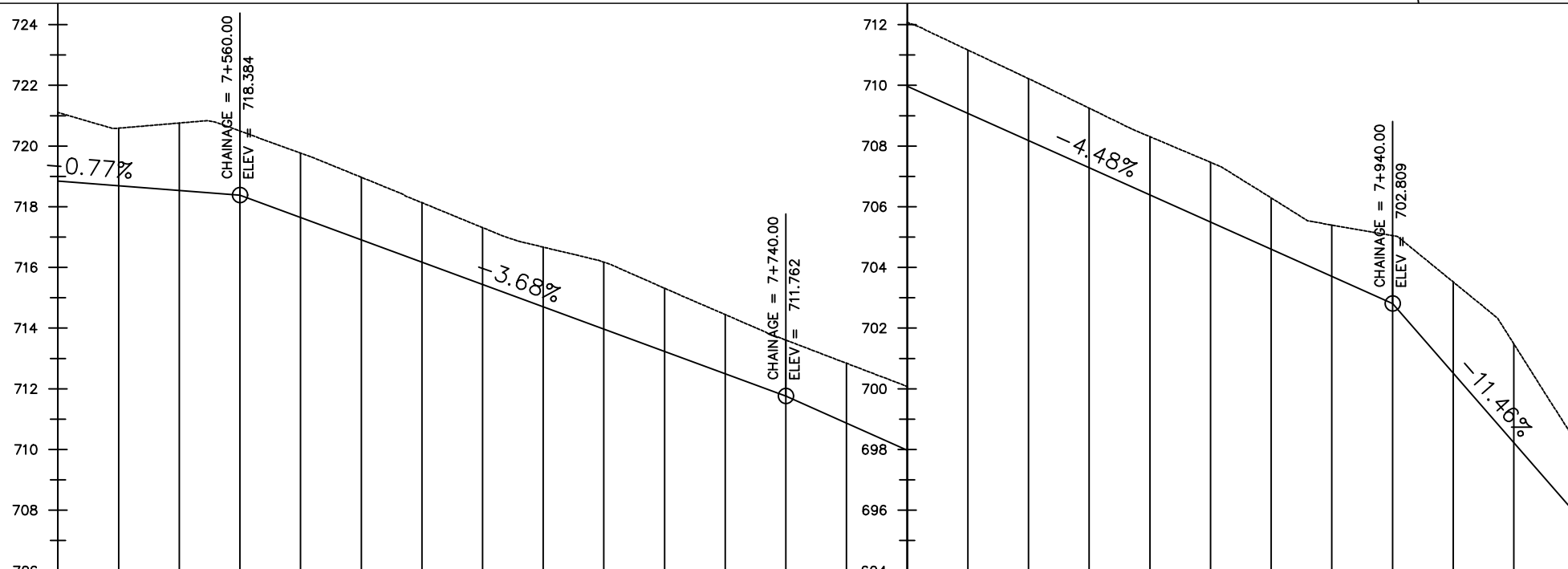
- Transmission Main
- DISTRIBUTION Main
- Road
- Building
- Contours

Profile

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

CHAIN LINE - 15
 STATION - 7+528.40
 SHEET NUMBER - 15

MATCH LINE - 16
 AT STATION - 8+028.40
 NEXT SHEET NUMBER: 16



Chainage (m)	7+500	7+520	7+540	7+560	7+580	7+600	7+620	7+640	7+660	7+680	7+700	7+720	7+740	7+760	7+780	7+800	7+820	7+840	7+860	7+880	7+900	7+920	7+940	7+960	7+980	8+000		
Ground Levels (masl)	721.11	720.59	720.76	720.49	719.77	718.97	718.13	717.31	716.67	716.17	715.31	714.45	713.60	712.84	712.08	711.16	710.22	709.25	708.31	707.46	706.29	705.40	705.05	703.52	701.48	698.32		
Invert Levels (masl)	718.84			718.38									711.76										702.81			695.93		
Slope (%)		-0.77%			-3.68%									-4.48%											-11.46%	-2.05%		
Pipe Data	DN300PN10, STEEL																											

CLIENT :

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PROJECT :
ALA-ORA WATER SUPPLY AND SANITATION PROJECT

ENYAU WATER SUPPLY AND SANITATION SYSTEM

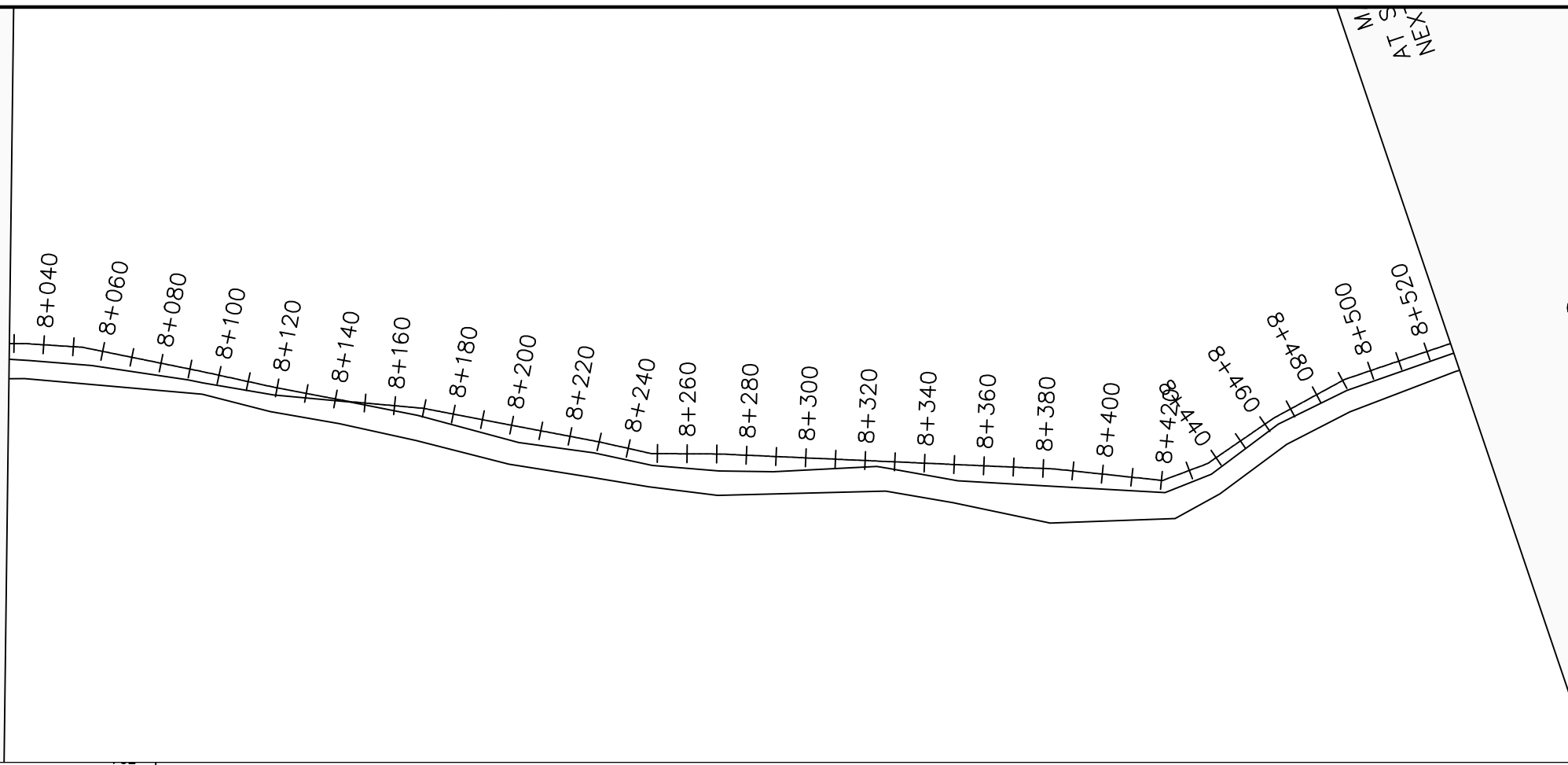
REVISIONS :

No	Date	Description

DRAWING TITLE :
GRAVITY TRANSMISSION MAIN 1
 7+500 - 8+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-GTM-001**
 Scale: 1:2000 Sheet No.: 16 of 29

MATCH LINE - 16
 T STATION - 8+028.40
 JOUS SHEET NUMBER - 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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PROJECT :

ALA-ORA WATER SUPPLY AND
 SANITATION PROJECT

**ENYAU WATER SUPPLY AND
 SANITATION SYSTEM**

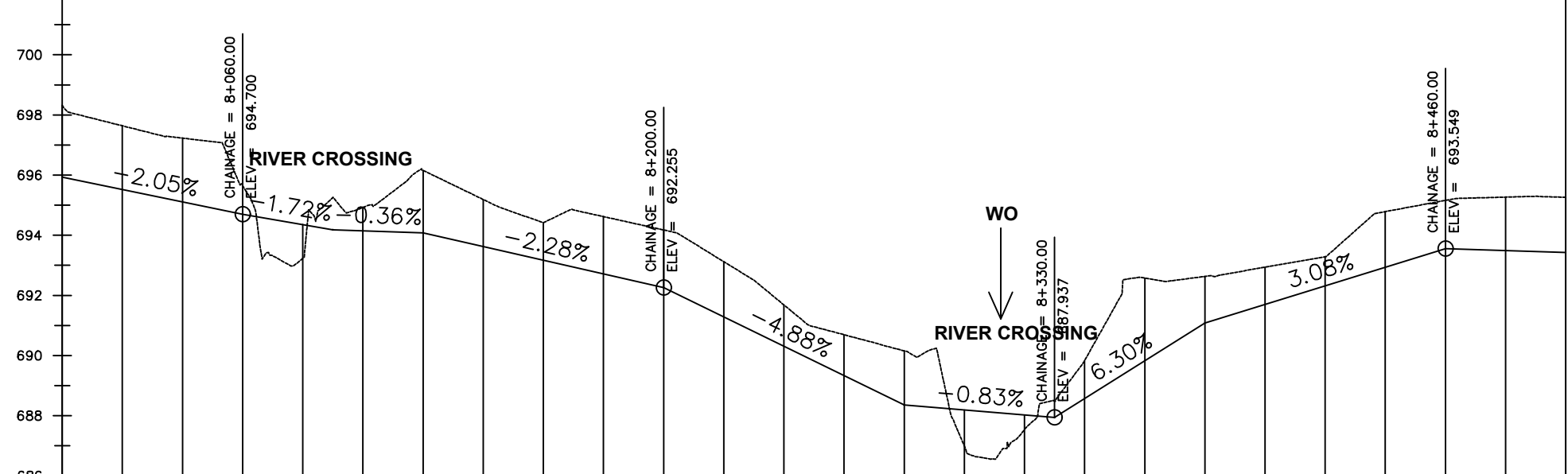
REVISIONS :

No	Date	Description

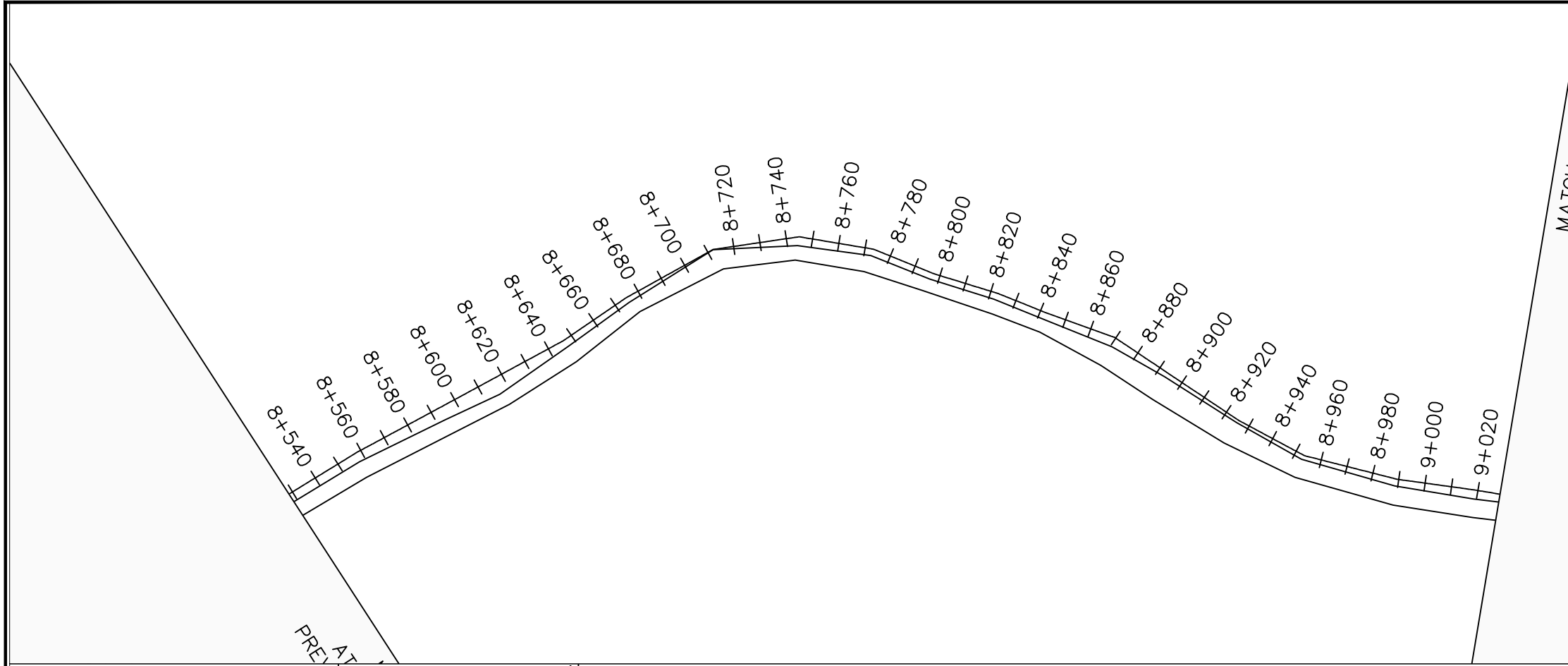
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 1
 8+000 - 8+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.: 17 of 29



Chainage (m)	8+000	8+020	8+040	8+060	8+080	8+100	8+120	8+140	8+160	8+180	8+200	8+220	8+240	8+260	8+280	8+300	8+320	8+340	8+360	8+380	8+400	8+420	8+440	8+460	8+480	8+500		
Ground Levels (masl)	698.32	697.64	697.23	695.65	693.23	694.92	696.16	695.19	694.42	694.62	694.18	693.12	691.68	690.69	690.16	686.99	687.54	689.83	692.57	692.63	692.94	693.29	694.79	695.16	695.27	695.26		
Invert Levels (masl)	695.93			694.70		694.18					692.25				688.35		687.94			691.09				693.55		693.42		
Slope (%)		-2.05%		-1.72%	-0.36%		-2.28%				-4.88%		-0.83%				6.30%			3.08%				-0.32%				
Pipe Data	DN300PN10, STEEL																											



MATCH LINE - 18
 AT STATION - 9+028.40
 NEXT SHEET NUMBER: 19

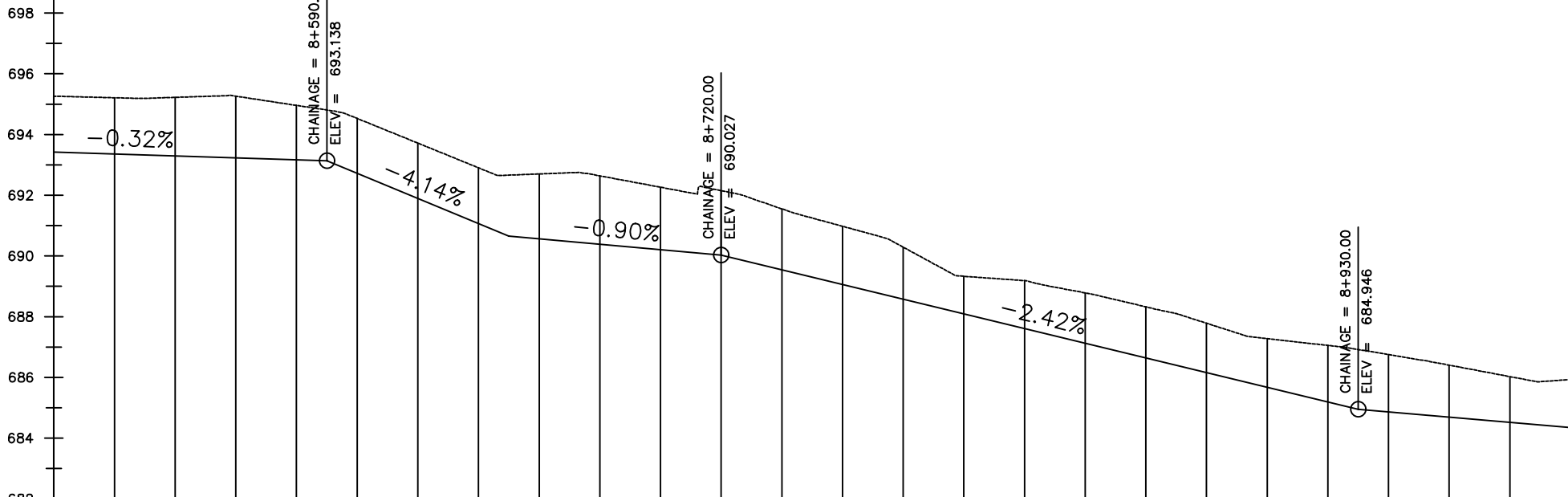
LEGEND

Plan

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

Profile

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



Chainage (m)	8+500	8+520	8+540	8+560	8+580	8+600	8+620	8+640	8+660	8+680	8+700	8+720	8+740	8+760	8+780	8+800	8+820	8+840	8+860	8+880	8+900	8+920	8+940	8+960	8+980	9+000		
Ground Levels (masl)	695.26	695.21	695.22	695.26	694.96	694.53	693.72	692.90	692.70	692.64	692.26	692.15	691.55	690.98	690.29	689.33	689.19	688.78	688.32	687.78	687.28	687.05	686.75	686.40	686.03	685.93		
Invert Levels (masl)	693.42				693.14			690.66				690.03										684.95				684.35		
Slope (%)	-0.32%					-4.14%			-0.90%				-2.42%							-0.85%								
Pipe Data	DN300PN10, STEEL																											

CLIENT :

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PROJECT :

ALA-ORA WATER SUPPLY AND
 SANITATION PROJECT

**ENYAU WATER SUPPLY AND
 SANITATION SYSTEM**

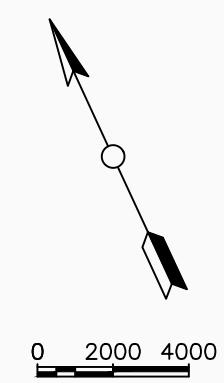
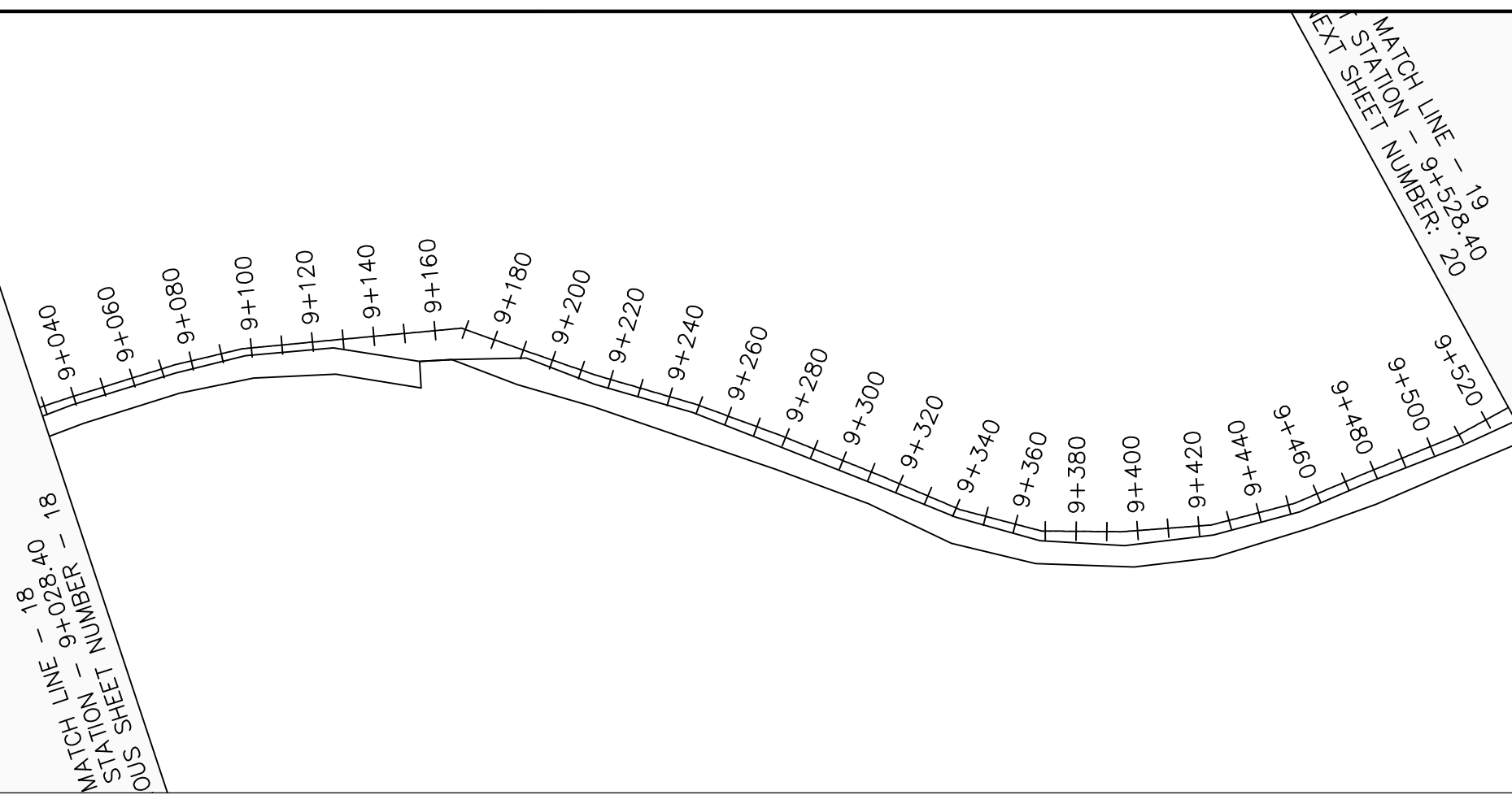
REVISIONS :

No	Date	Description

DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 1
 8+500 - 9+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-GTM-001
Scale:	1:2000
Sheet No.:	18 of 29



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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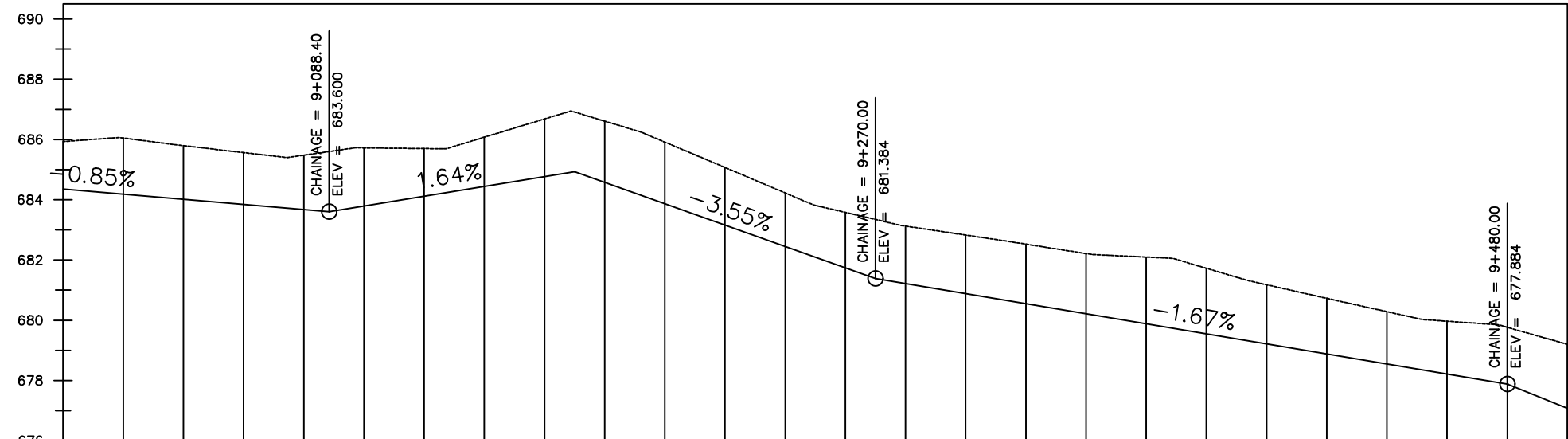
REVISIONS :

No	Date	Description

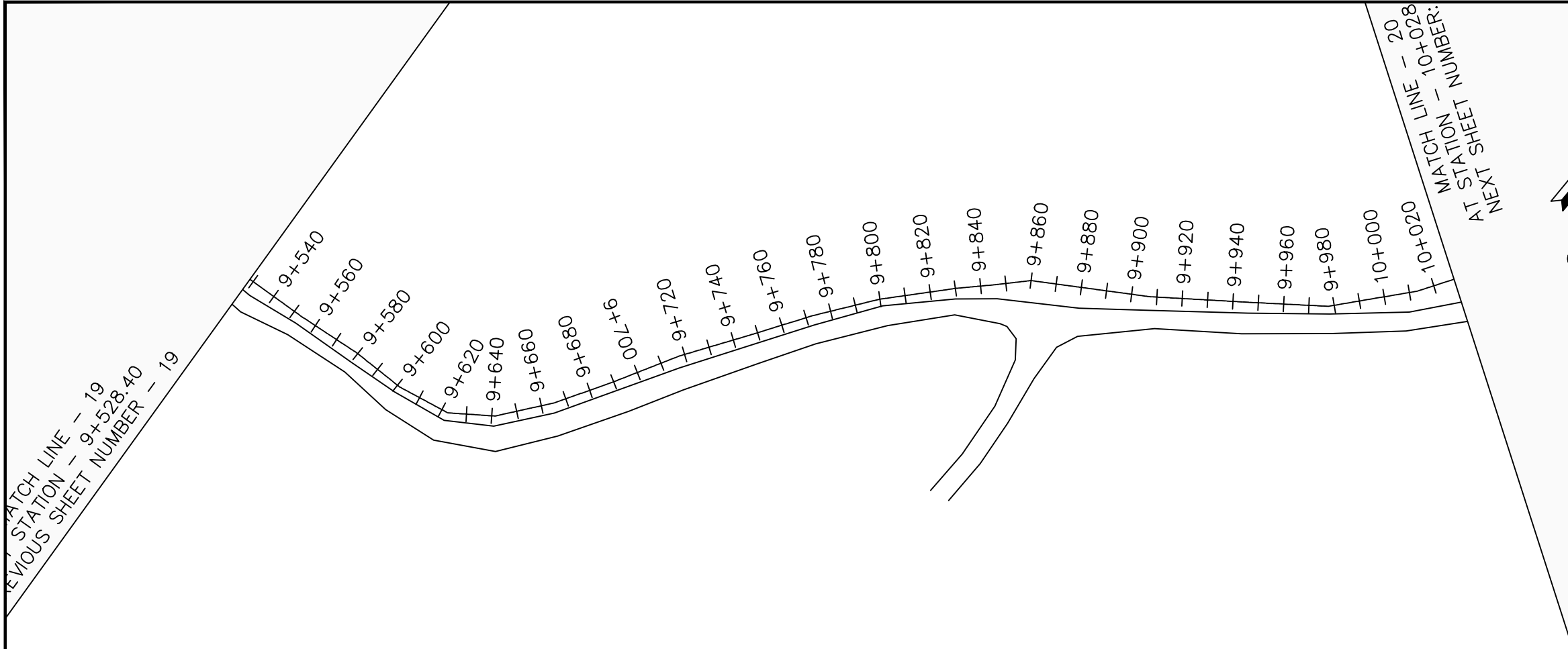
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 1
9+000 - 9+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.:	19 of 29



Chainage (m)	9+000	9+020	9+040	9+060	9+080	9+100	9+120	9+140	9+160	9+180	9+200	9+220	9+240	9+260	9+280	9+300	9+320	9+340	9+360	9+380	9+400	9+420	9+440	9+460	9+480	9+500		
Ground Levels (masl)	685.93	686.05	685.79	685.57	685.48	685.72	685.70	686.08	686.68	686.61	685.91	685.07	684.23	683.58	683.13	682.83	682.53	682.21	682.10	681.72	681.18	680.73	680.29	679.97	679.77	679.20		
Invert Levels (masl)	684.35	683.60				684.94				681.38				677.88				677.08										
Slope (%)	-0.85%				1.64%				-3.55%				-1.67%				-4.04%											
Pipe Data	DN300PN10, STEEL																											



LEGEND

Plan

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

Profile

- Ground Level
- Invert Level
- AV Air Valve
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ENYAU WATER SUPPLY AND SANITATION SYSTEM

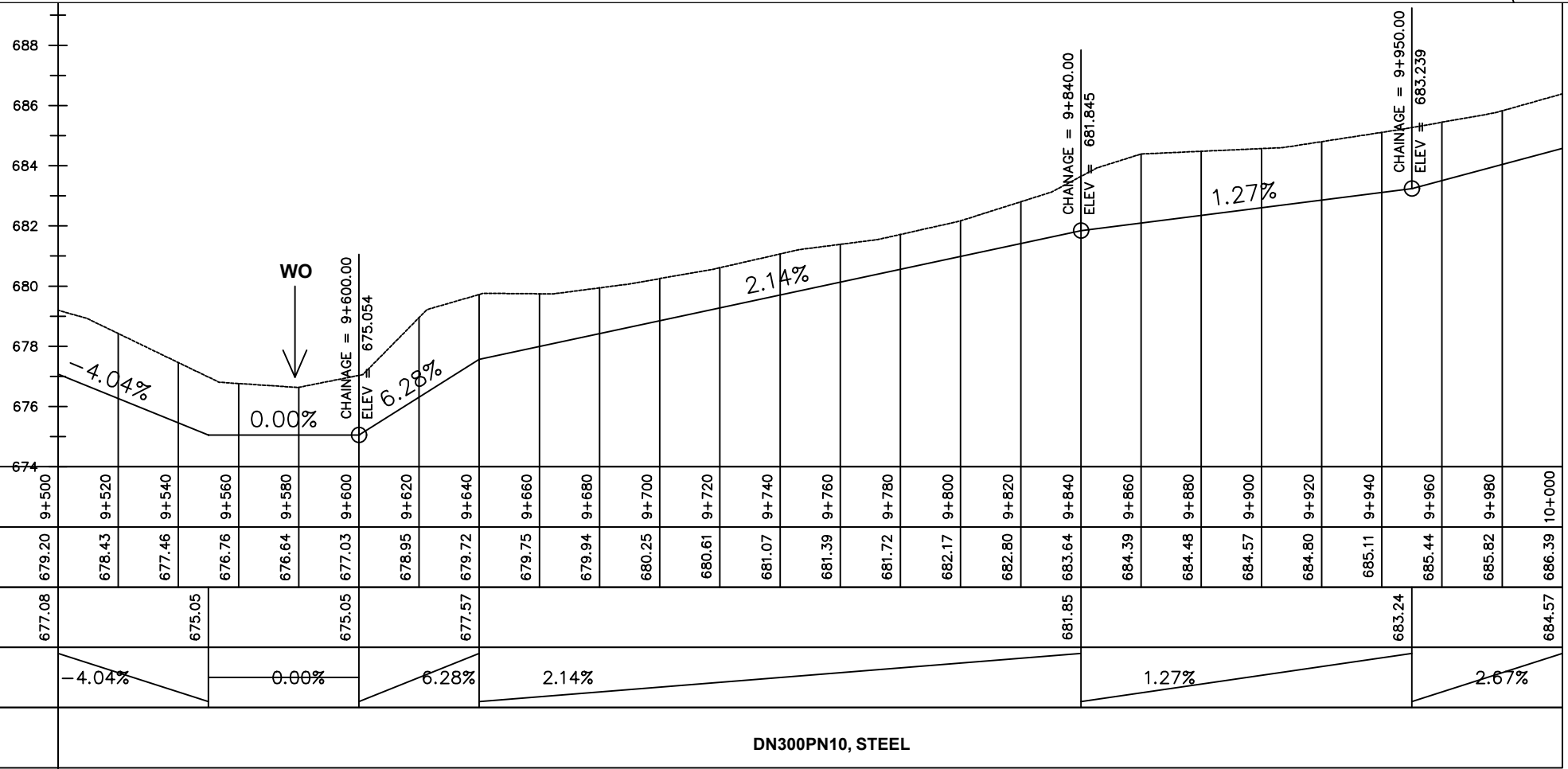
REVISIONS :

No	Date	Description

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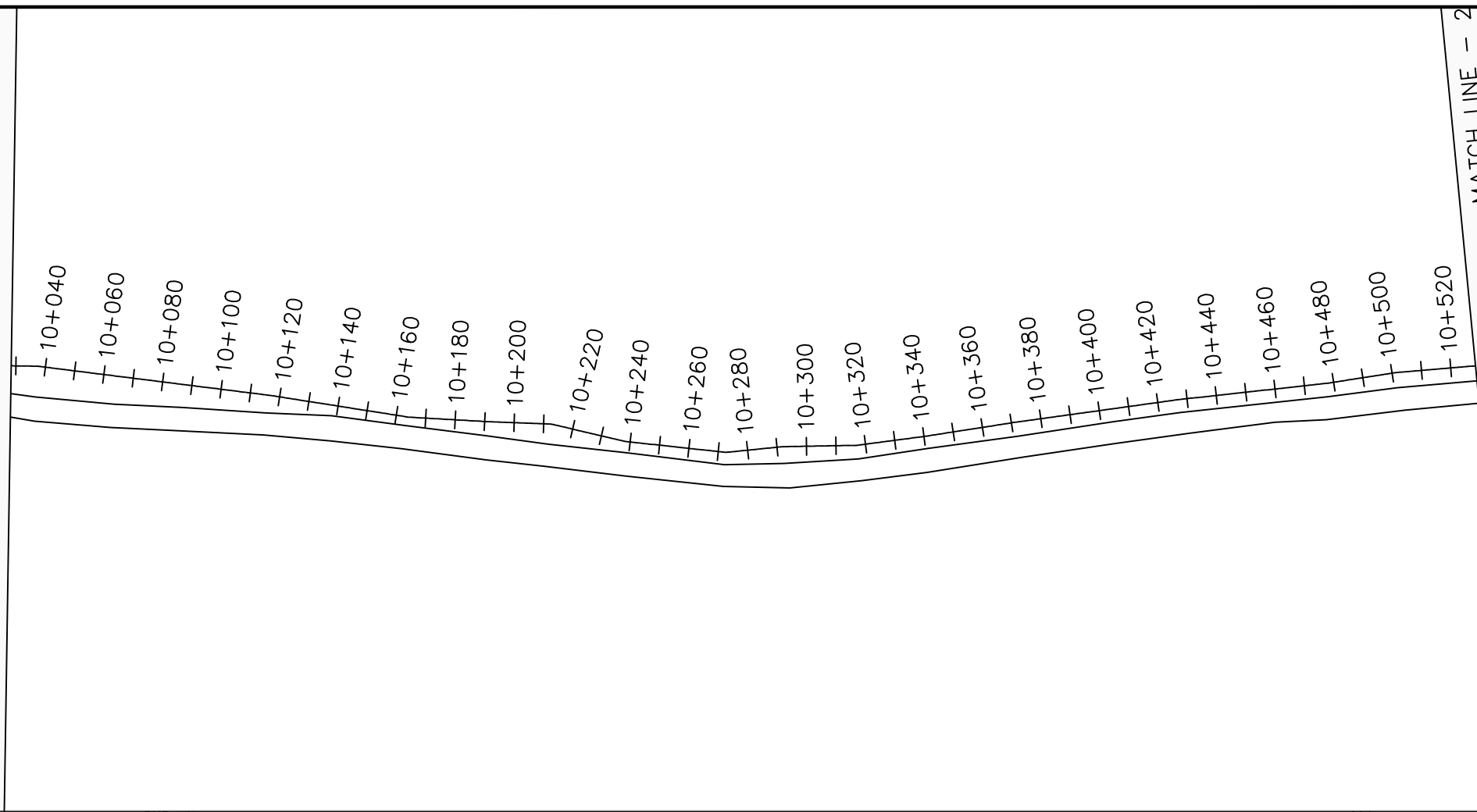
GRAVITY TRANSMISSION MAIN 1
9+500 - 10+000

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2022
DRG. No.:	ENY-GTM-001
Scale:	1:2000
Sheet No.:	20 of 29



Chainage (m)	Ground Levels (masl)	Invert Levels (masl)	Slope (%)	Pipe Data
9+500	679.20	677.08	-4.04%	DN300PN10, STEEL
9+520	678.43	675.05	0.00%	
9+540	677.46	675.05	0.00%	
9+560	676.76	675.05	6.28%	
9+580	676.64	675.05	6.28%	
9+600	677.03	675.05	6.28%	
9+620	678.95	677.57	2.14%	
9+640	679.72	677.57	2.14%	
9+660	679.75	681.85	2.14%	
9+680	679.94	681.85	2.14%	
9+700	680.25	681.85	2.14%	
9+720	680.61	681.85	2.14%	
9+740	681.07	681.85	2.14%	
9+760	681.39	681.85	2.14%	
9+780	681.72	681.85	2.14%	
9+800	682.17	681.85	2.14%	
9+820	682.80	681.85	1.27%	
9+840	683.64	681.85	1.27%	
9+860	684.39	683.24	1.27%	
9+880	684.48	683.24	1.27%	
9+900	684.57	683.24	1.27%	
9+920	684.80	683.24	1.27%	
9+940	685.11	683.24	1.27%	
9+960	685.44	683.24	1.27%	
9+980	685.82	683.24	2.67%	
10+000	686.39	684.57	2.67%	

MATCH LINE - 20
STATION - 10+028.40
PREVIOUS SHEET NUMBER - 20



MATCH LINE - 2
AT STATION - 10+528.40
NEXT SHEET NUMBER

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
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PROJECT :

ALA-ORA WATER SUPPLY AND
SANITATION PROJECT

**ENYAU WATER SUPPLY AND
SANITATION SYSTEM**

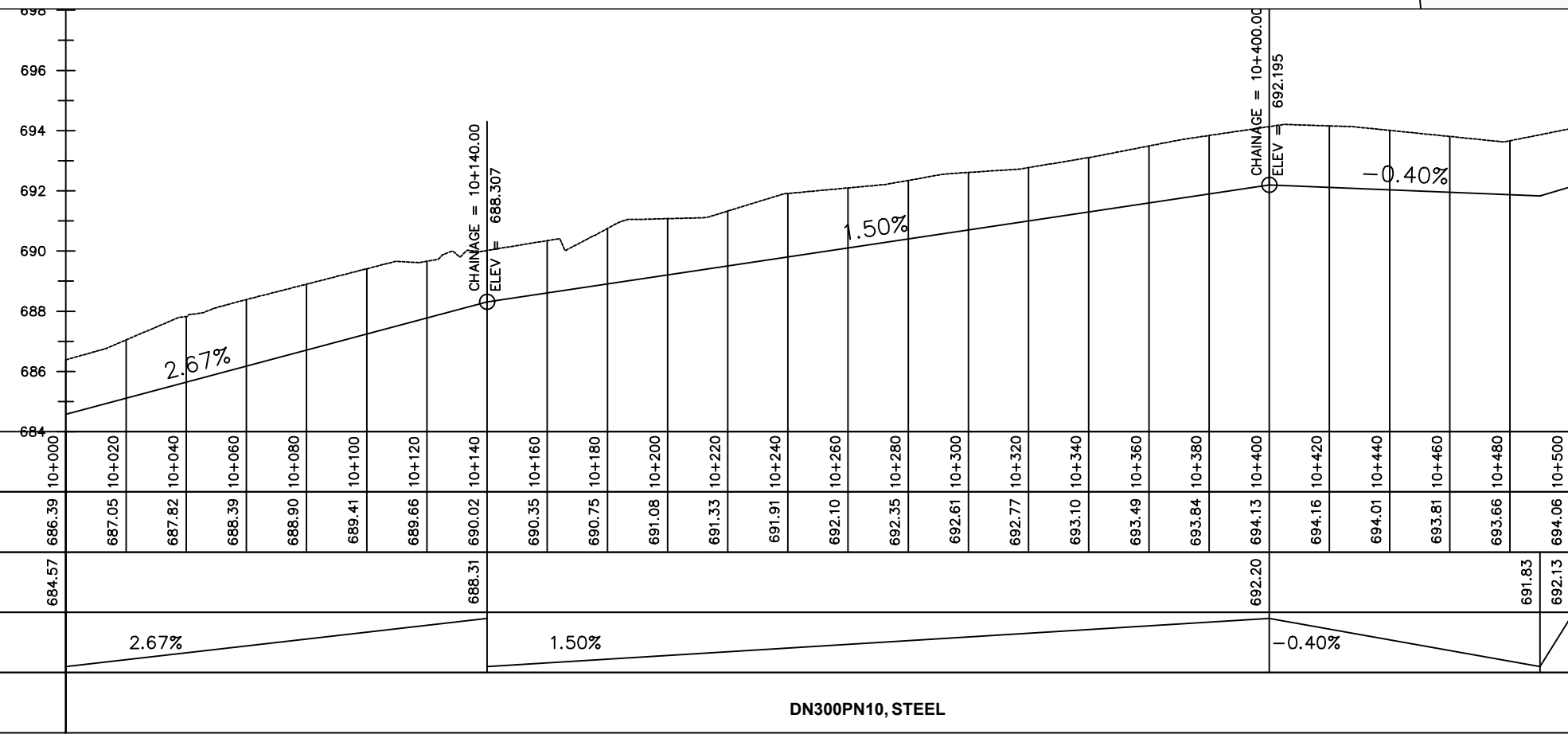
REVISIONS :

No	Date	Description

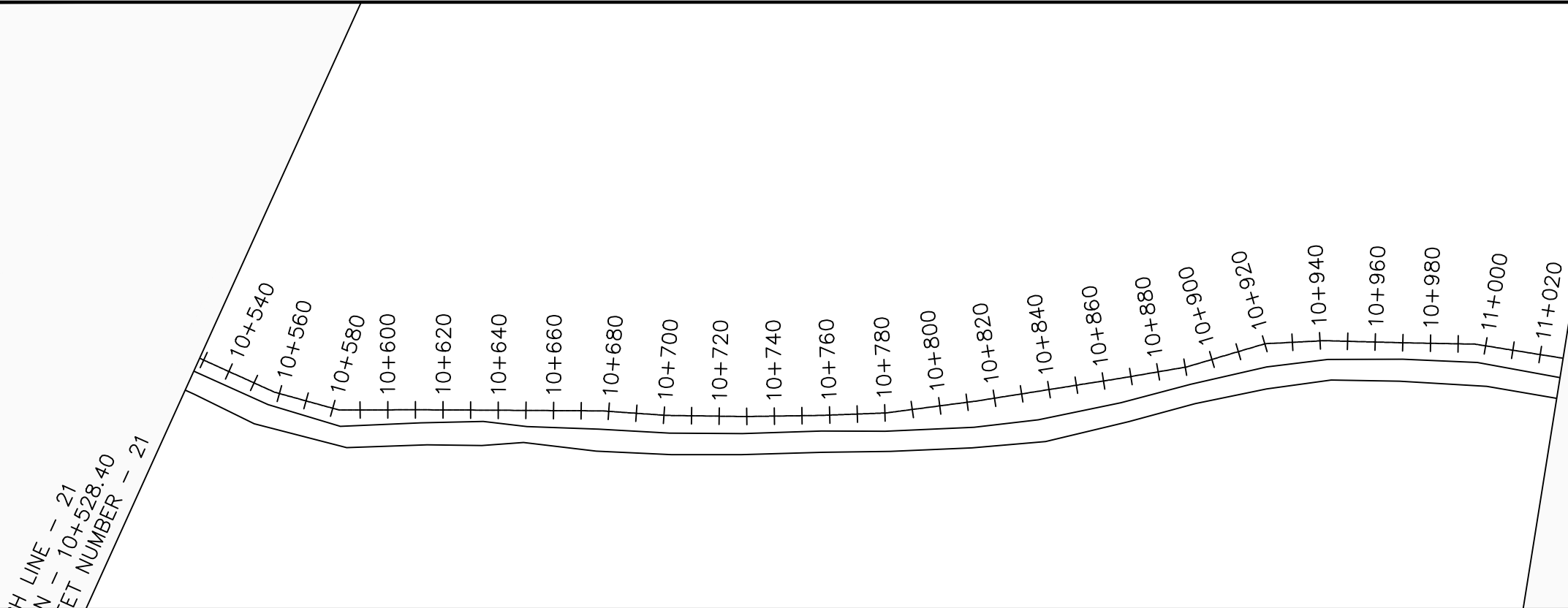
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 1
10+000 - 10+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.:	21 of 29



Chainage (m)	10+000	10+020	10+040	10+060	10+080	10+100	10+120	10+140	10+160	10+180	10+200	10+220	10+240	10+260	10+280	10+300	10+320	10+340	10+360	10+380	10+400	10+420	10+440	10+460	10+480	10+500		
Ground Levels (masl)	686.39	687.05	687.82	688.39	688.90	689.41	689.66	690.02	690.35	690.75	691.08	691.33	691.91	692.10	692.35	692.61	692.77	693.10	693.49	693.84	694.13	694.16	694.01	693.81	693.66	694.06		
Invert Levels (masl)	684.57							688.31													692.20				691.83	692.13		
Slope (%)		2.67%								1.50%												-0.40%						
Pipe Data	DN300PN10, STEEL																											



MATCH LINE - 22
 AT STATION - 11+028.40
 NEXT SHEET NUMBER: 23

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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CONSULTANT :

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PROJECT :
ALA-ORA WATER SUPPLY AND SANITATION PROJECT

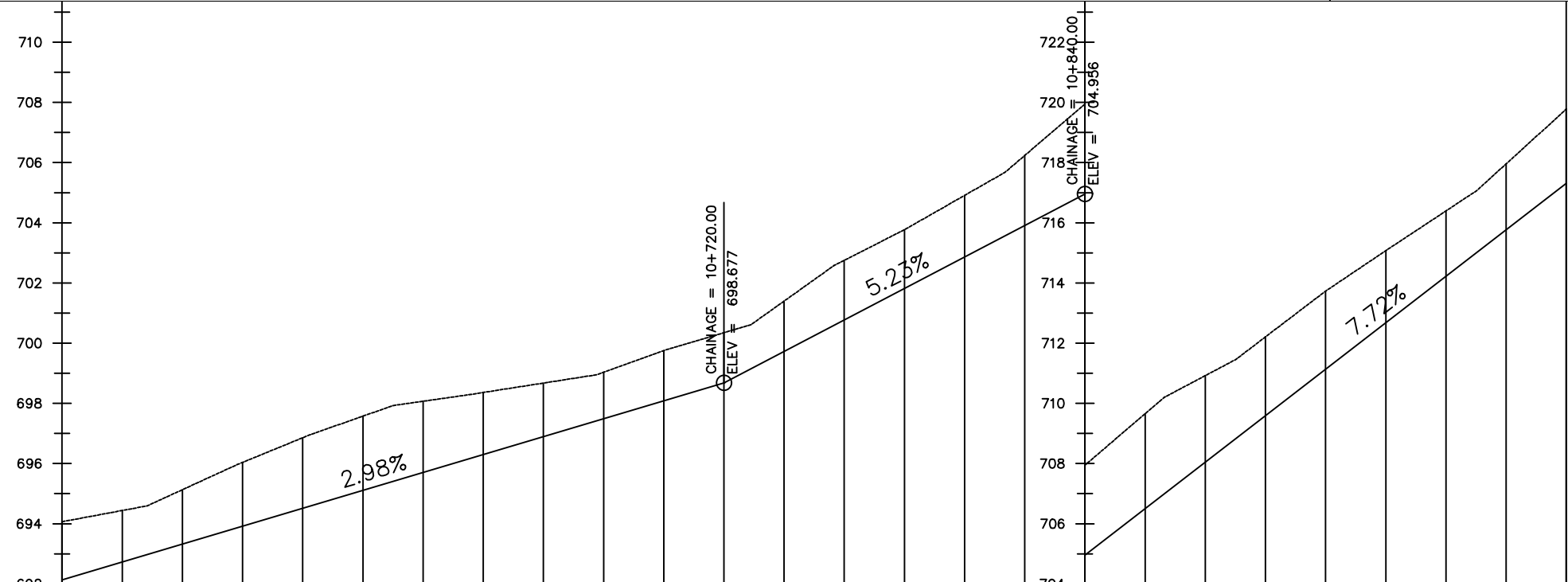
ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

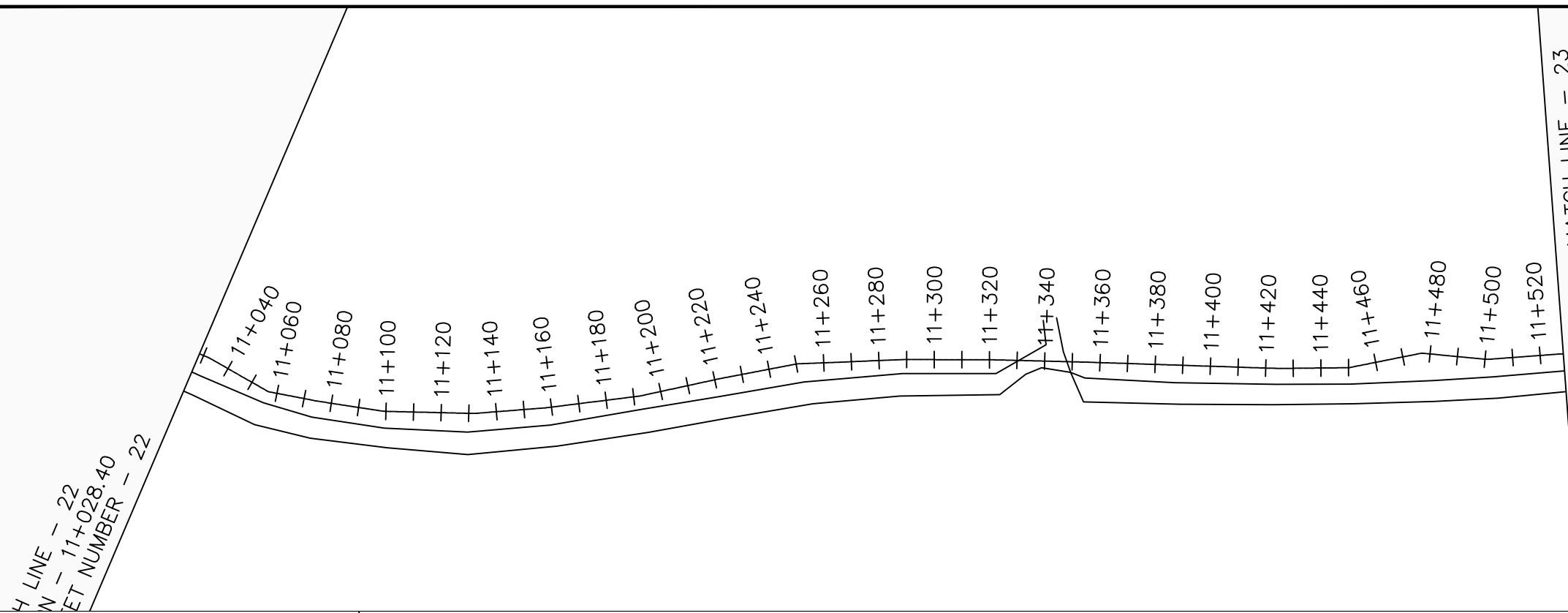
No	Date	Description

DRAWING TITLE :
GRAVITY TRANSMISSION MAIN 1
 10+500 - 11+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-GTM-001**
 Scale: 1:2000 Sheet No.: 22 of 29



Chainage (m)	692	694.06	10+500	10+520	10+540	10+560	10+580	10+600	10+620	10+640	10+660	10+680	10+700	10+720	10+740	10+760	10+780	10+800	10+820	10+840	10+860	10+880	10+900	10+920	10+940	10+960	10+980	11+000	719.78
Ground Levels (masl)	692	694.06	694.44	695.13	696.04	696.86	697.57	698.07	698.36	698.67	699.03	699.75	700.35	701.40	702.75	703.77	704.91	706.24	707.95	709.66	710.92	712.21	713.73	715.07	716.39	717.96	719.78		
Invert Levels (masl)	692.13	698.68	704.96	717.31	719.78	722.00	720.00	718.40	716.77	715.00	713.23	711.46	709.69	707.92	706.15	704.38	702.61	700.84	704.96	709.08	713.20	717.32	721.44	725.56	729.68	733.80	737.92	742.04	
Slope (%)	2.98%	5.23%	7.72%																										
Pipe Data	DN300PN10, STEEL																												



MATCH LINE - 23
AT STATION - 11+528.40
NEXT SHEET NUMBER: 24

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
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**ENYAU WATER SUPPLY AND
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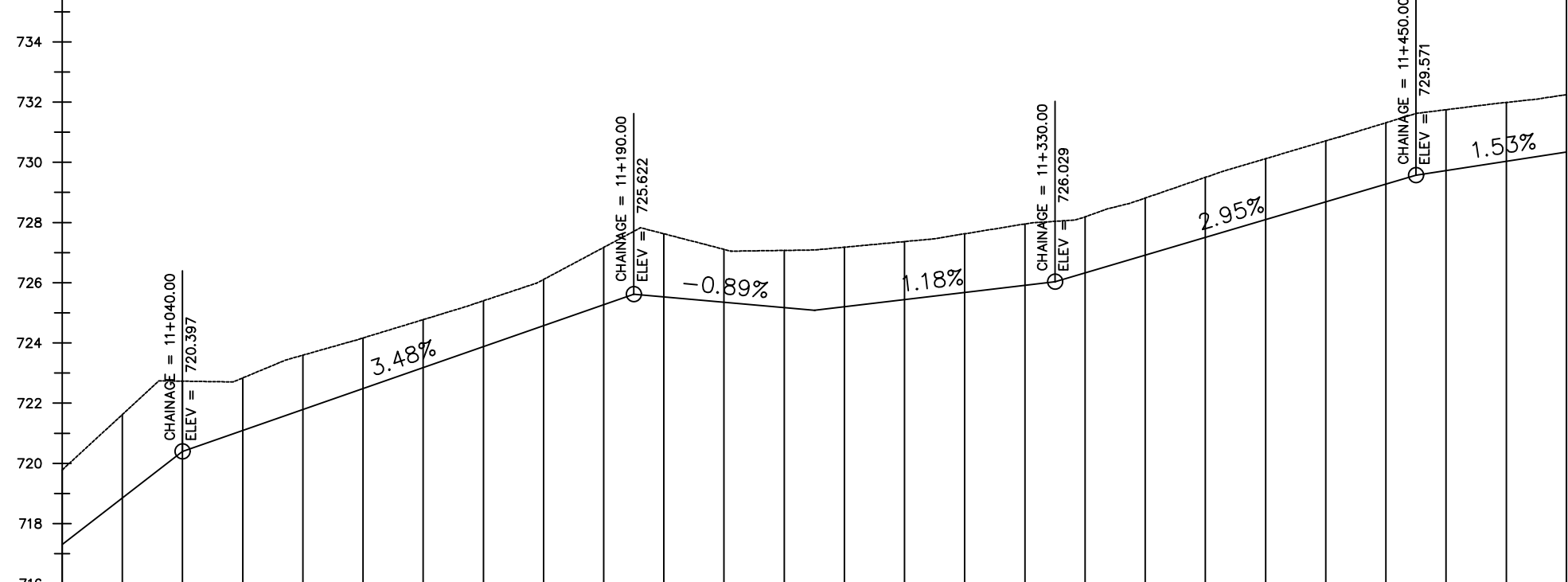
REVISIONS :

No	Date	Description

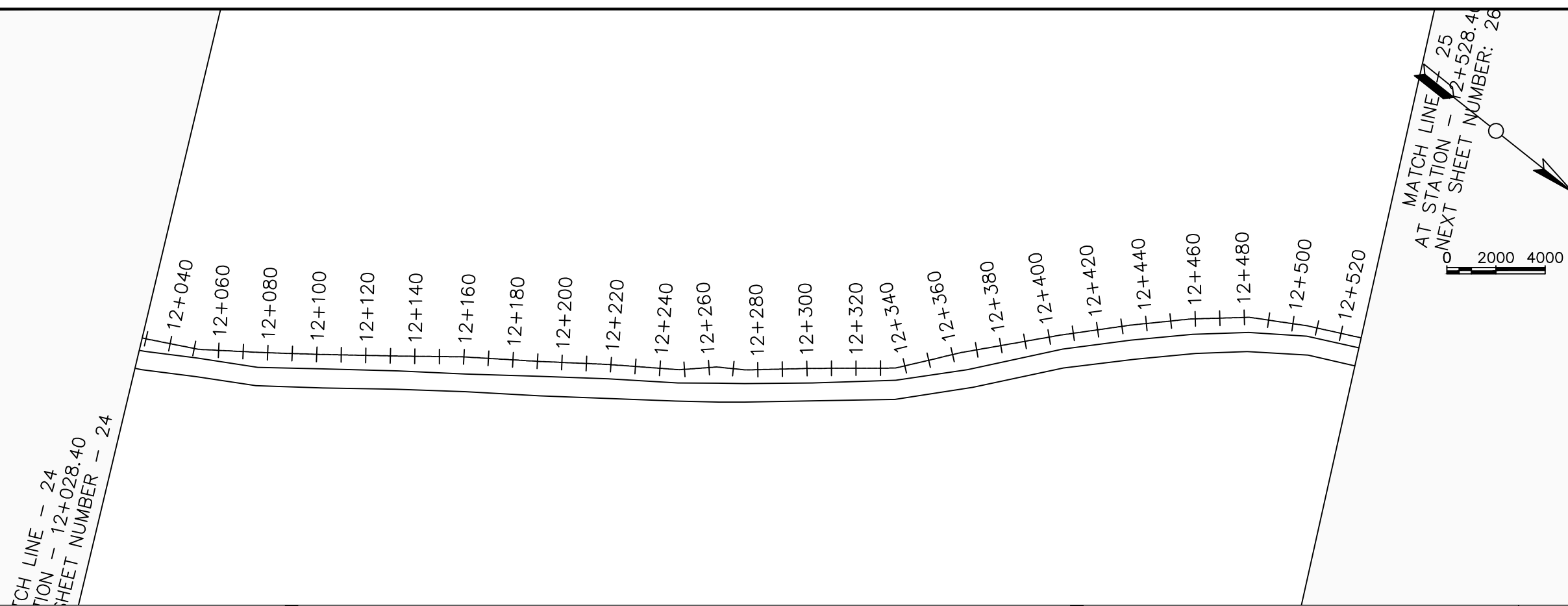
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 1
11+000 - 11+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.:	23 of 29



Chainage (m)	Ground Levels (masl)	Invert Levels (masl)	Slope (%)	Pipe Data
11+000	719.78	717.31	7.72%	DN300PN10, STEEL
11+020	721.62	720.40		
11+040	722.73	720.40	3.48%	
11+060	722.84	725.62	-0.89%	
11+080	723.59	725.09		
11+100	724.17	726.03	1.18%	
11+120	724.77	726.03	2.95%	
11+140	725.40	729.57		
11+160	726.11	730.34	1.53%	
11+180	727.17	730.34		
11+200	727.63	730.34		
11+220	727.11			
11+240	727.07			
11+260	727.18			
11+280	727.37			
11+300	727.63			
11+320	727.95			
11+340	728.19			
11+360	728.81			
11+380	729.50			
11+400	730.12			
11+420	730.71			
11+440	731.31			
11+460	731.75			
11+480	731.99			
11+500	732.25			



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:

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

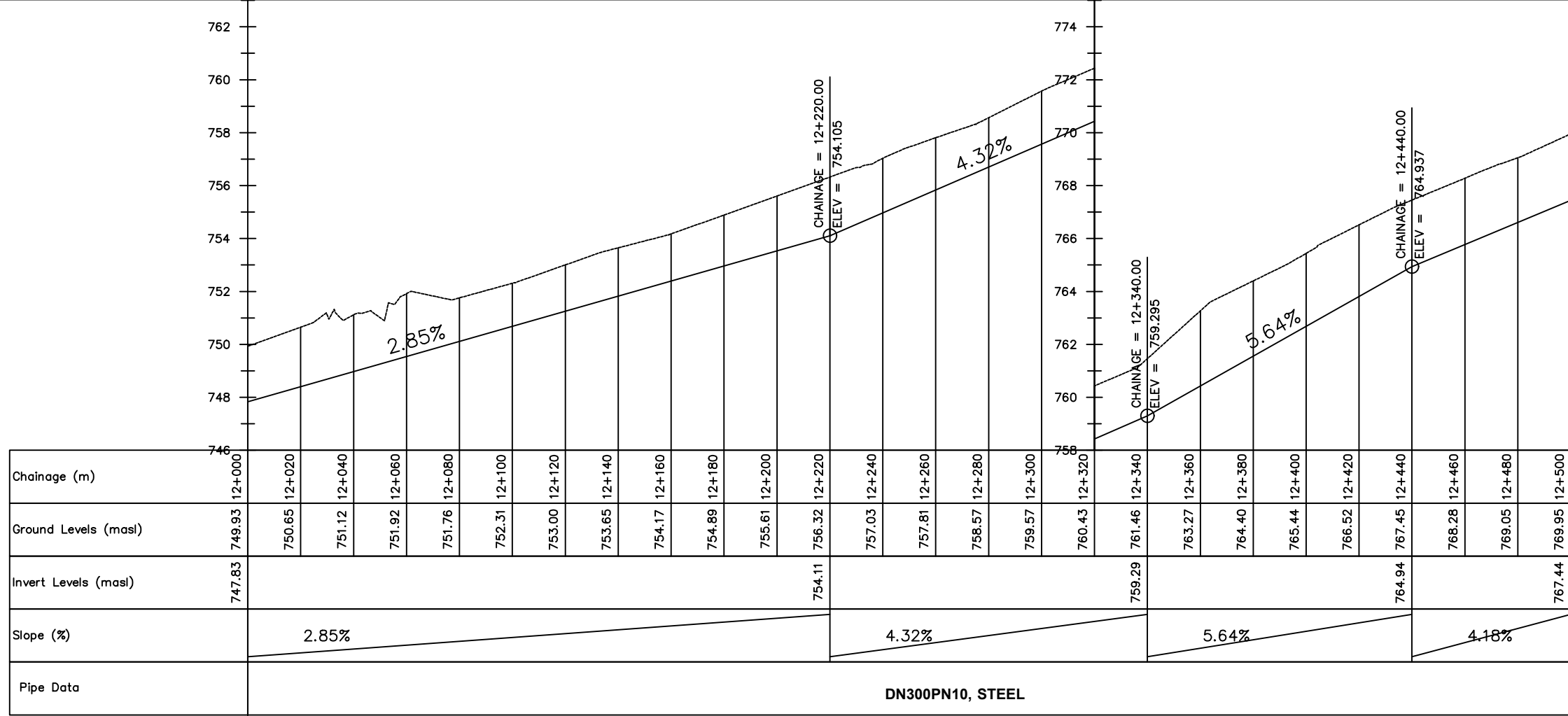
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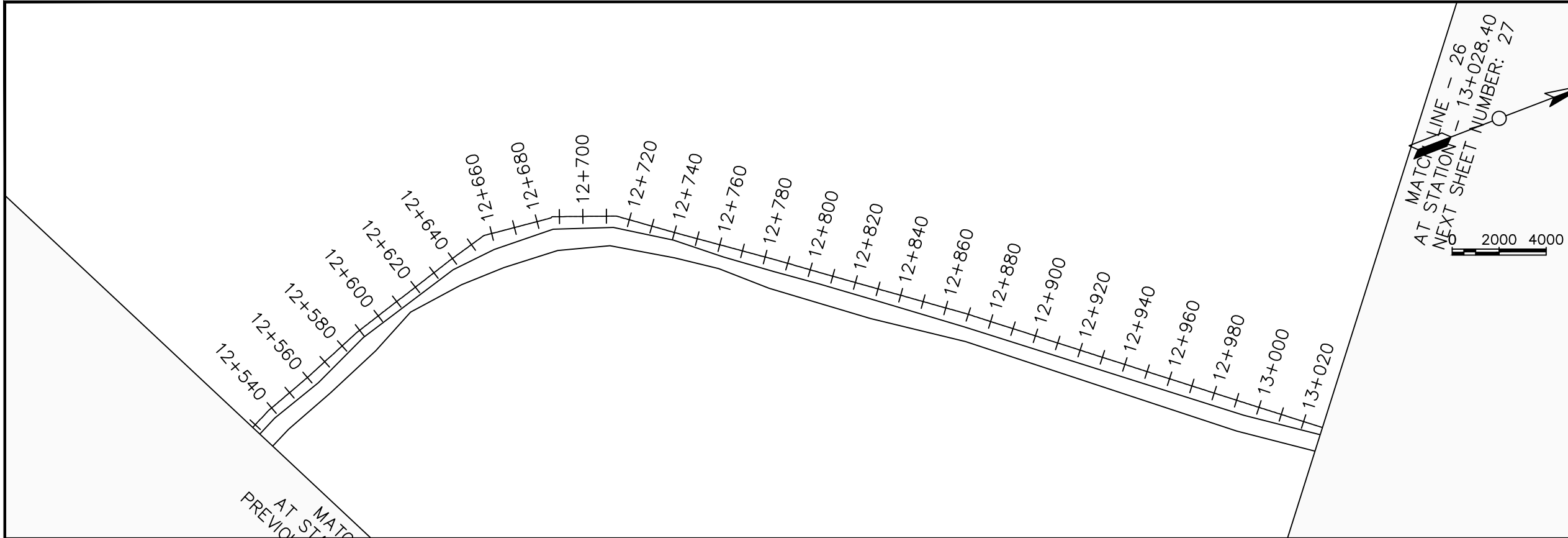
No	Date	Description

DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 1
12+000 - 12+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.:	25 of 29





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

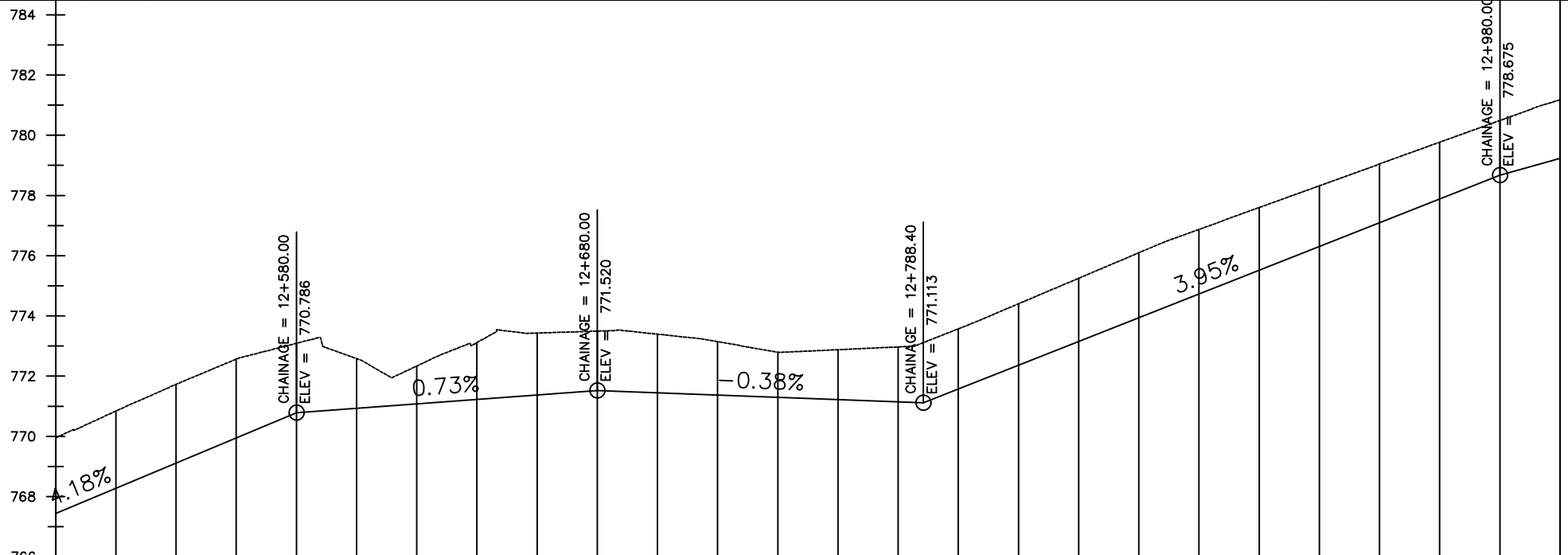
REVISIONS :

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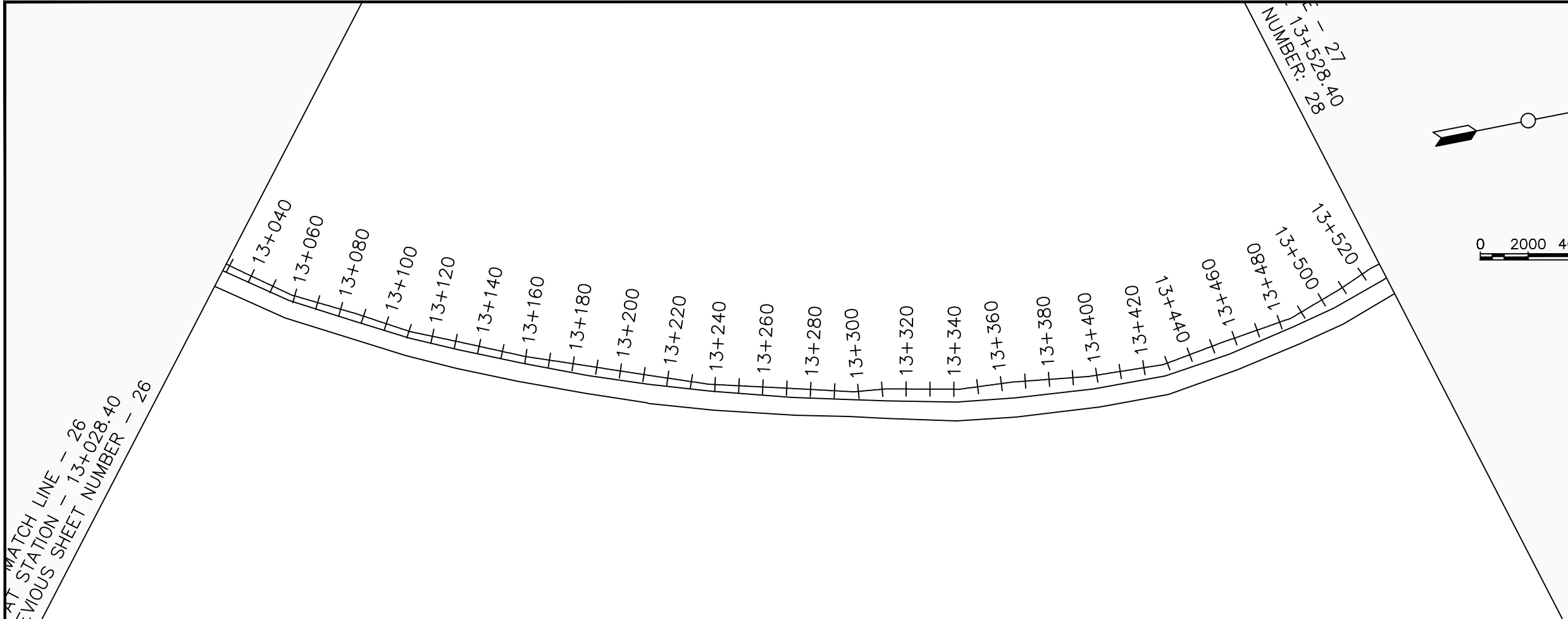
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 1
12+500 - 13+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-GTM-001**
 Scale: 1:2000 Sheet No.: 26 of 29



Chainage (m)	12+500	12+520	12+540	12+560	12+580	12+600	12+620	12+640	12+660	12+680	12+700	12+720	12+740	12+760	12+780	12+800	12+820	12+840	12+860	12+880	12+900	12+920	12+940	12+960	12+980	13+000		
Ground Levels (masl)	769.95	770.84	771.73	772.57	773.09	772.58	772.34	773.11	773.43	773.49	773.39	773.14	772.79	772.88	772.97	773.57	774.40	775.25	776.10	776.87	777.60	778.32	779.04	779.77	780.49	781.18		
Invert Levels (masl)	767.44				770.79					771.52					771.11										778.67	779.24		
Slope (%)		4.18%			0.73%				-0.38%				3.95%				2.81%											
Pipe Data	DN300PN10, STEEL																											



LEGEND

Plan

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

Profile

- Ground Level
- Invert Level
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- WO Washout
- Node detail No.

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

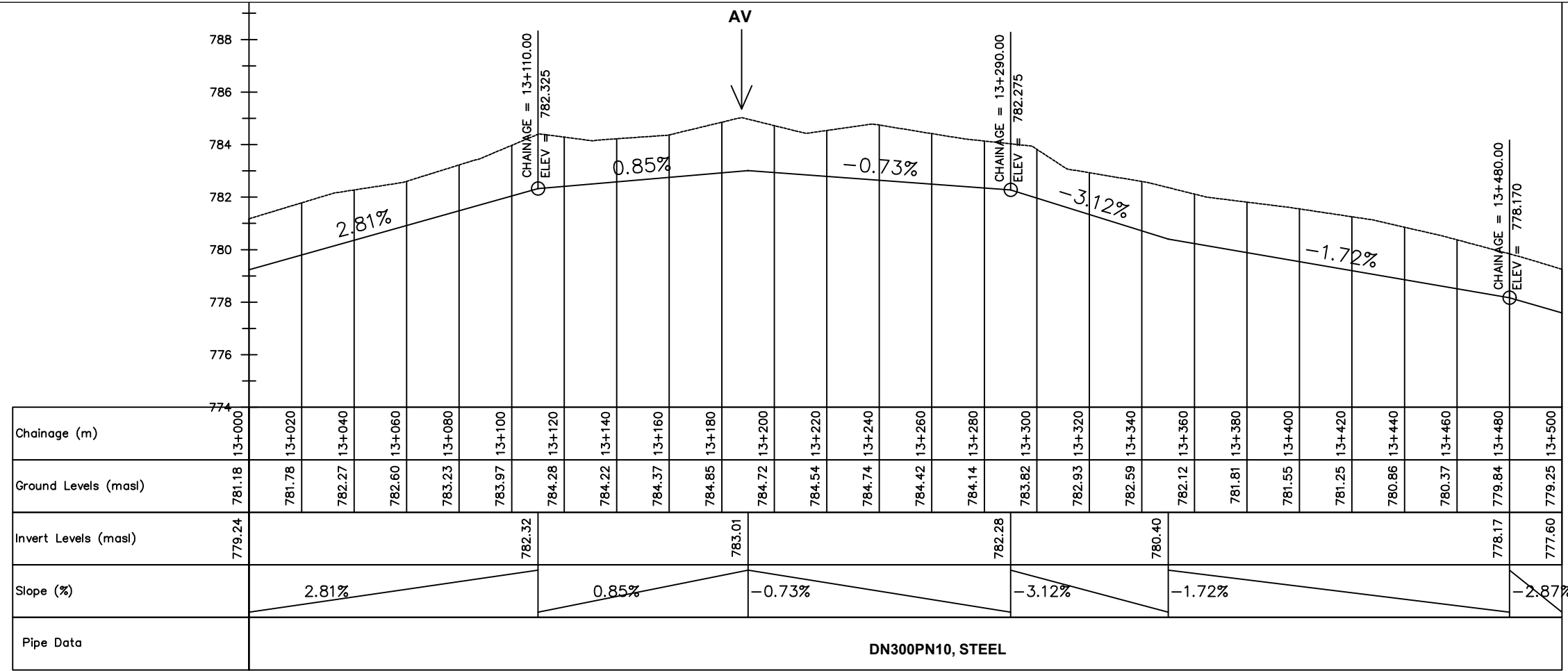
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No	Date	Description

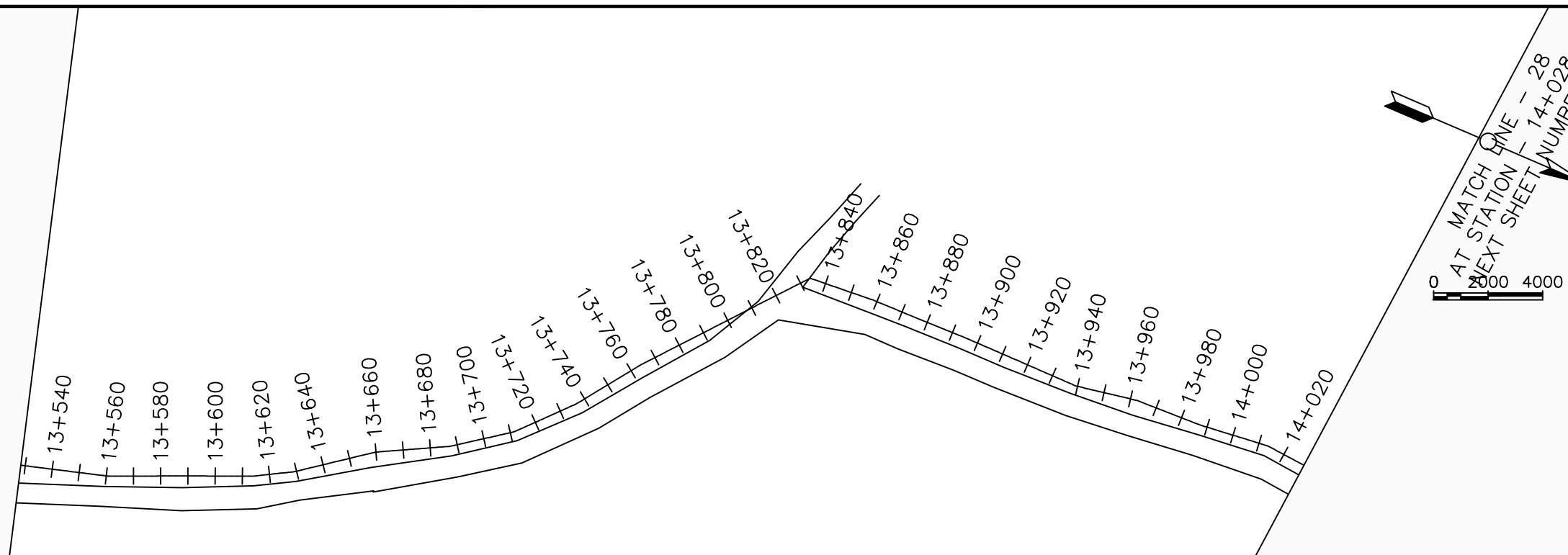
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GRAVITY TRANSMISSION MAIN 1
13+000 - 13+500

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
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Date:	January 2022
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Scale:	1:2000
Sheet No.:	27 of 29



DN300PN10, STEEL



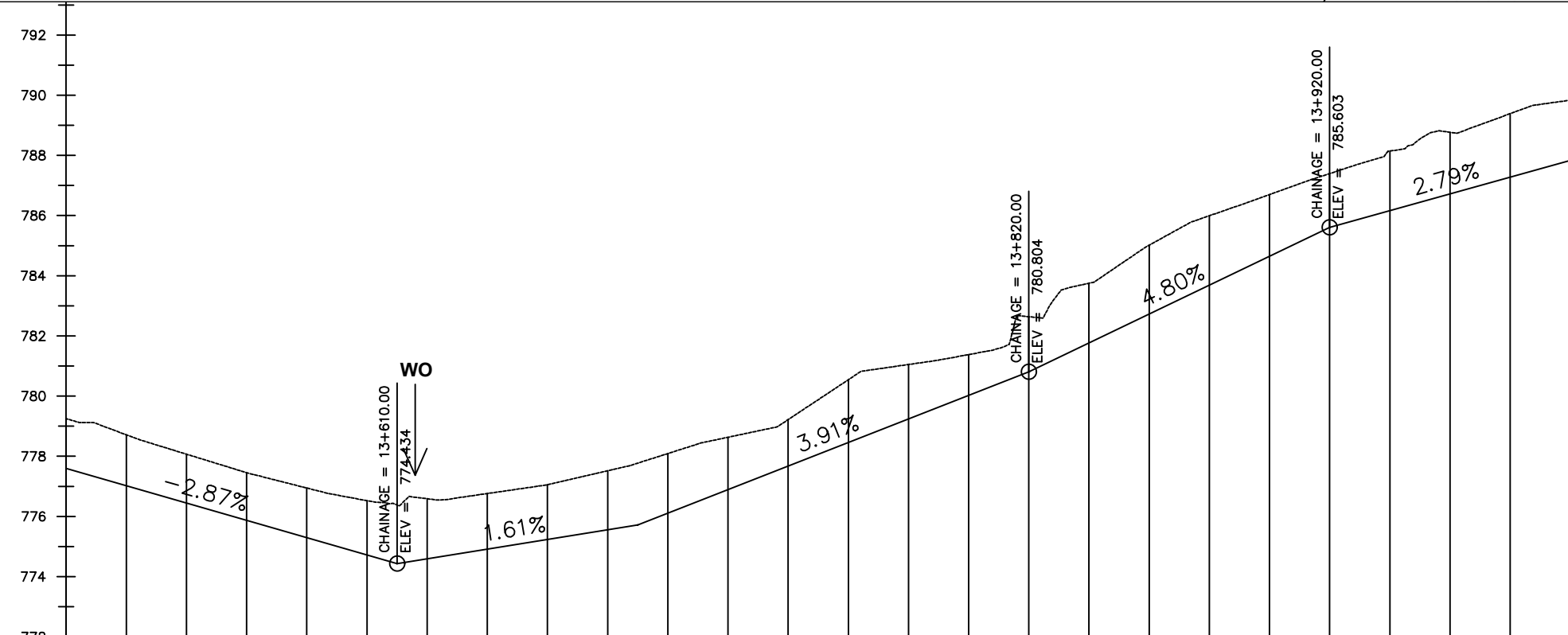
LEGEND

Plan

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

Profile

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



Chainage (m)	13+500	13+520	13+540	13+560	13+580	13+600	13+620	13+640	13+660	13+680	13+700	13+720	13+740	13+760	13+780	13+800	13+820	13+840	13+860	13+880	13+900	13+920	13+940	13+960	13+980	14+000		
Ground Levels (masl)	779.25	778.71	778.07	777.45	776.95	776.52	776.59	776.76	777.05	777.52	778.09	778.63	779.22	780.54	781.05	781.38	782.64	783.75	785.02	785.99	786.70	787.40	788.14	788.77	789.39	789.84		
Invert Levels (masl)	777.60					774.43				775.72							780.80					785.60				787.83		
Slope (%)		-2.87%						1.61%			3.91%						4.80%					2.79%						
Pipe Data	DN300PN10, STEEL																											

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PROJECT :

ALA-ORA WATER SUPPLY AND SANITATION PROJECT

ENYAU WATER SUPPLY AND SANITATION SYSTEM

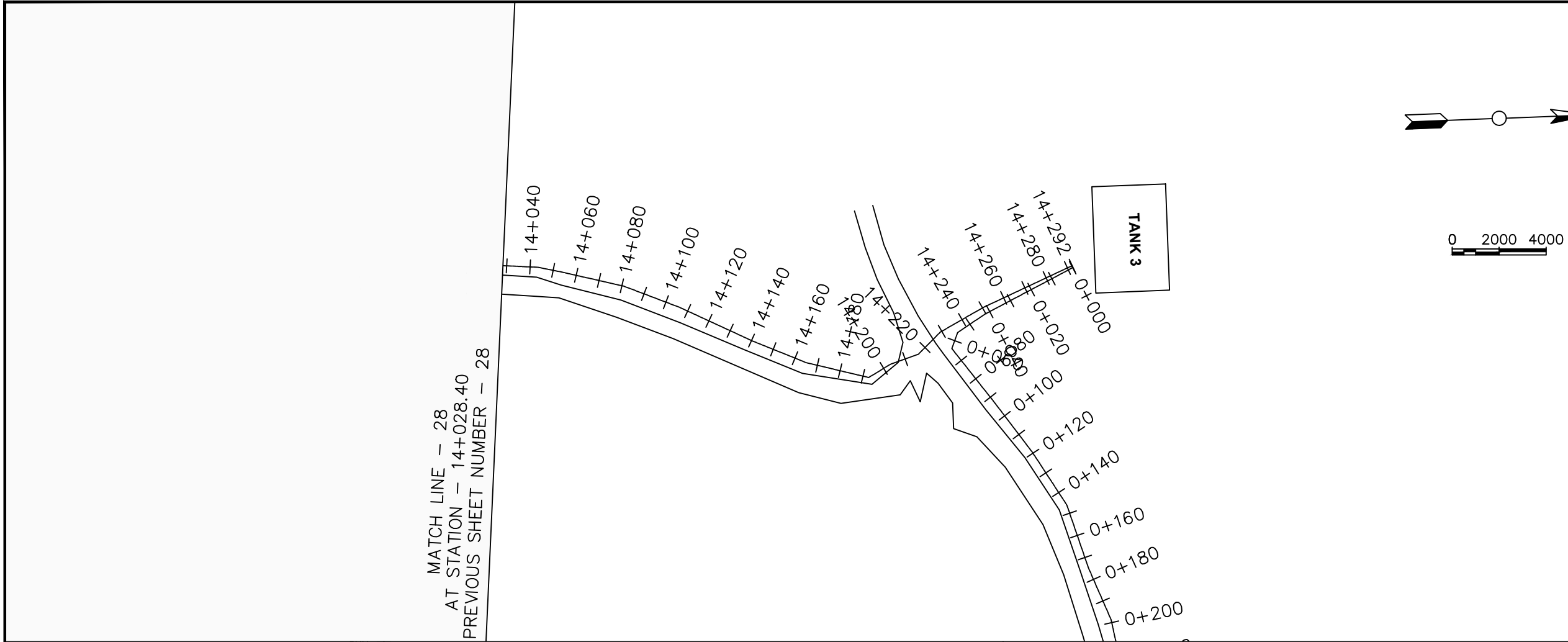
REVISIONS :

No	Date	Description

DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 1
13+500 - 14+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-GTM-001**
 Scale: 1:2000 Sheet No.: 28 of 29



LEGEND

Plan

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

Profile

- Ground Level
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- WO Washout
- Node detail No.

CLIENT :

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ENYAU WATER SUPPLY AND SANITATION SYSTEM

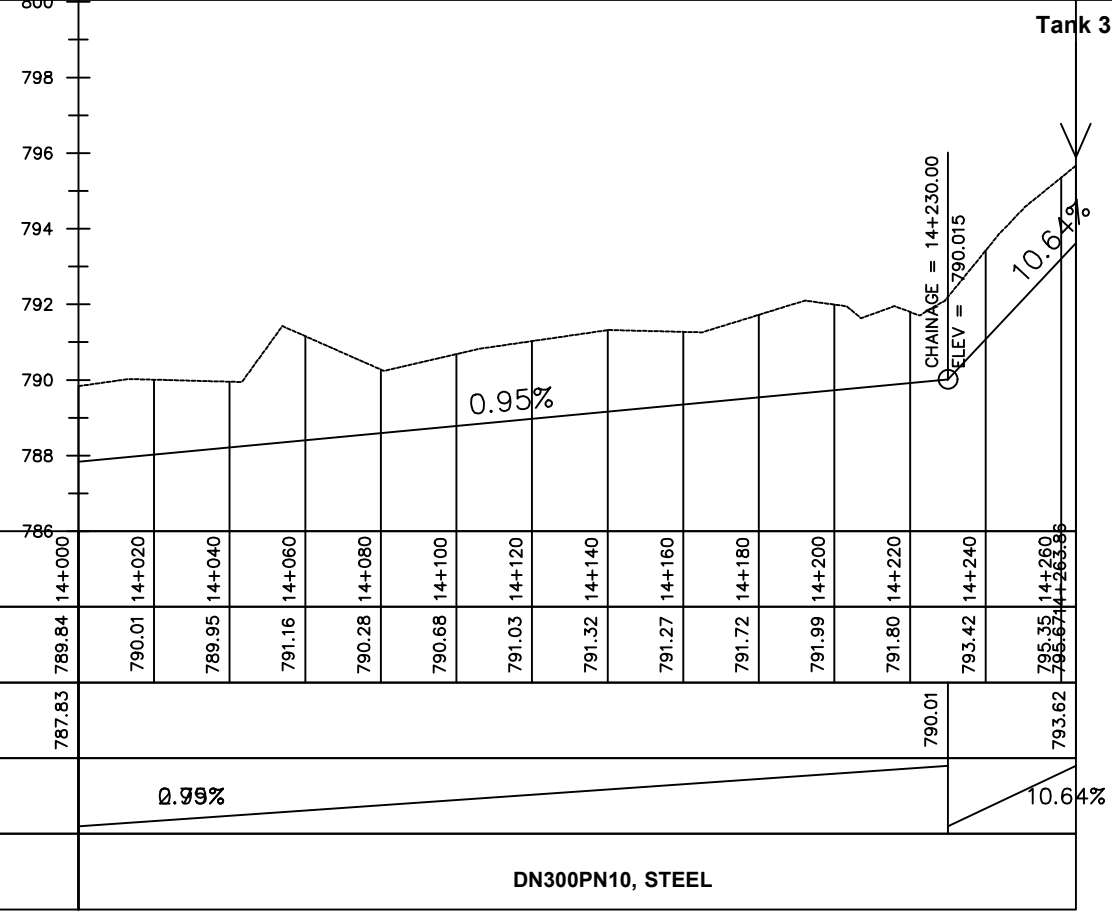
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No	Date	Description

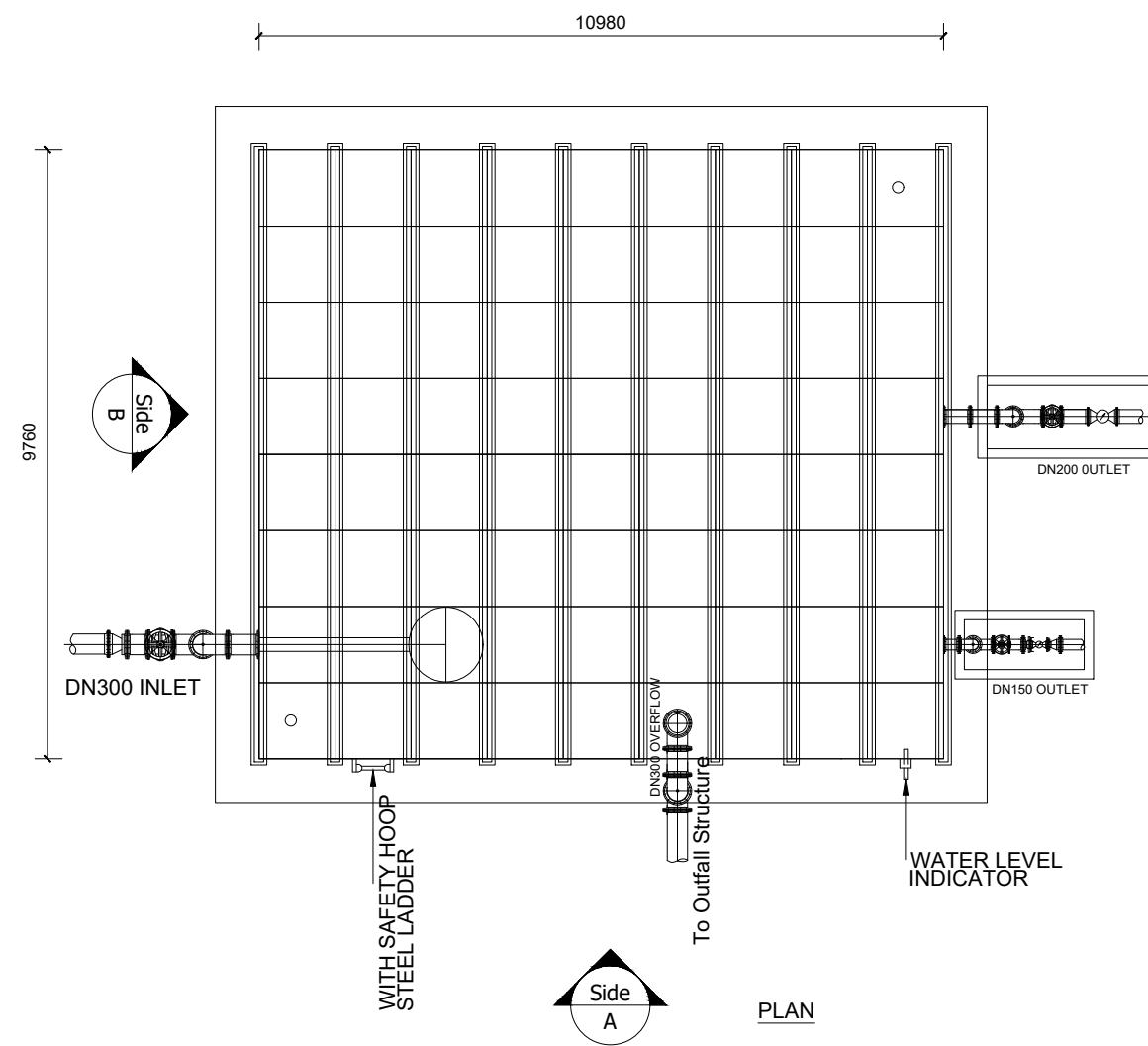
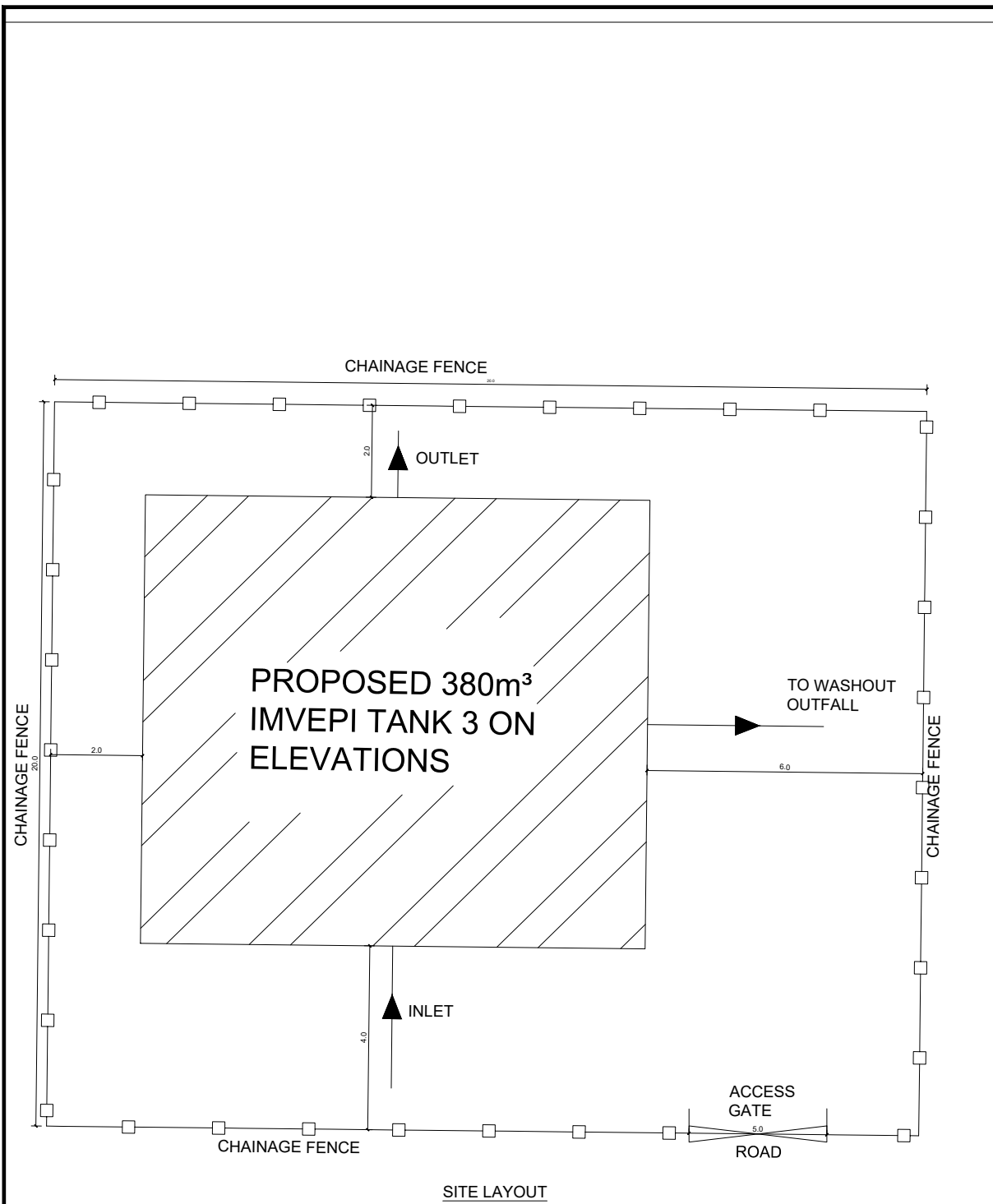
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GRAVITY TRANSMISSION MAIN 1
14+000 - 14+263.86

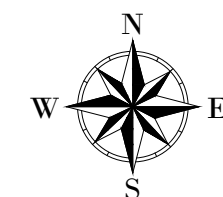
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Designed by:	W.G.M
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Date:	January 2022
DRG. No.:	ENY-GTM-001
Scale:	1:2000
Sheet No.:	29 of 29



Chainage (m)	Ground Levels (masl)	Invert Levels (masl)	Slope (%)	Pipe Data
14+000	789.84	787.83	0.95%	DN300PN10, STEEL
14+020	790.01			
14+040	789.95			
14+060	791.16			
14+080	790.28			
14+100	790.68			
14+120	791.03			
14+140	791.32			
14+160	791.27			
14+180	791.72			
14+200	791.99			
14+220	791.80			
14+240	793.42	790.01		
14+260	795.35	793.62		



LEGEND



CLIENT :





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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 :

IMVEPI RESERVOIR TANK 3- 380m³
PLAN and ELEVATION

Surveyed by: R.K

Drawn by: N.R

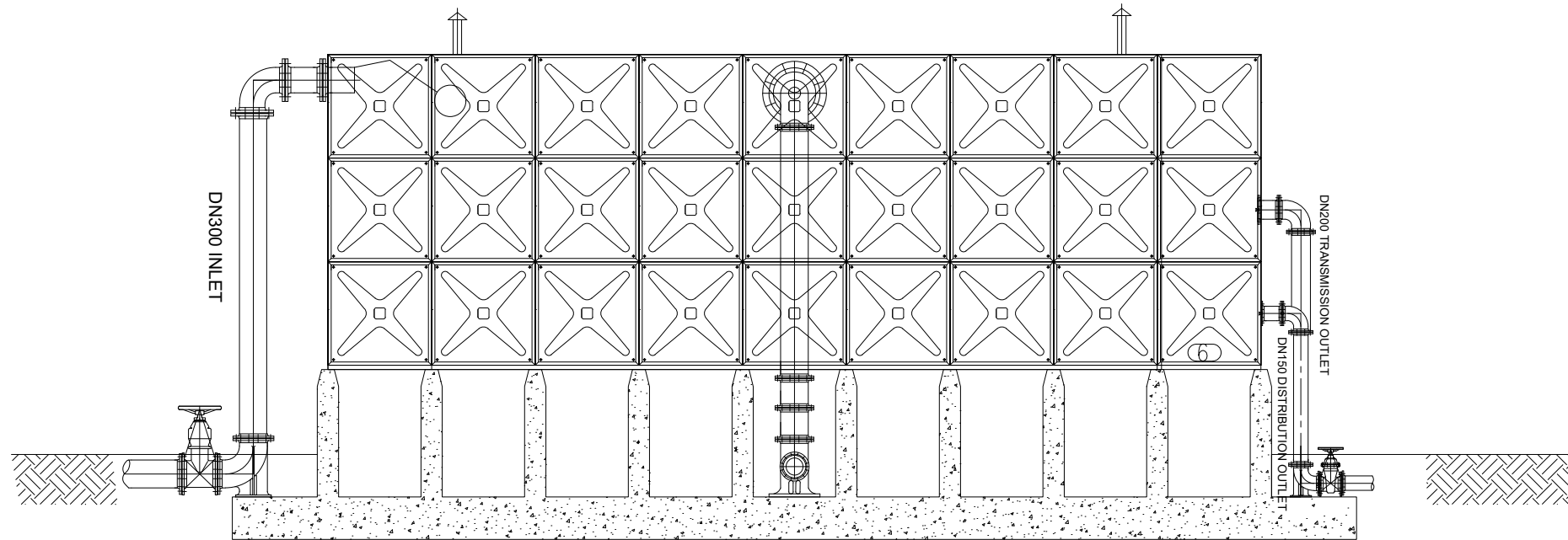
Designed by: W.G.M

Checked by: J.K.K

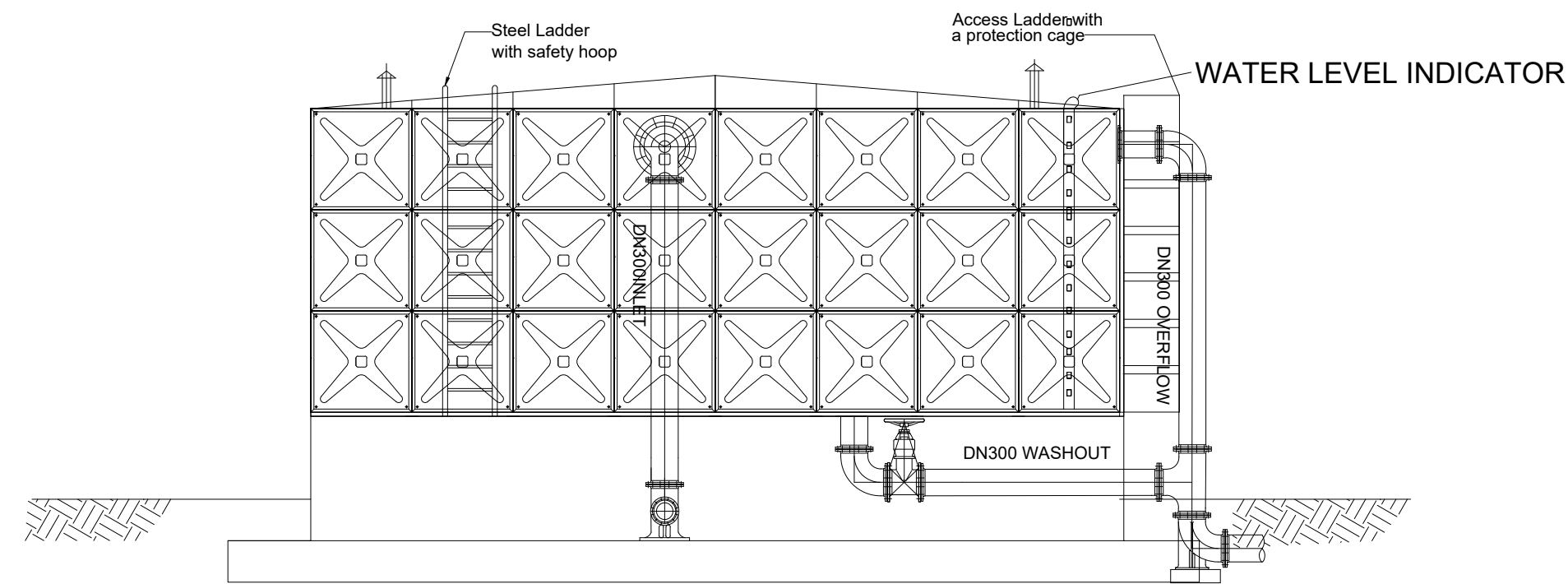
Date: January 2023

DRG. No.: **ENY_RES_MVP_003**

Scale: 1:100 Sheet No.: 1 of 3

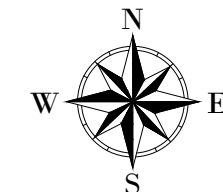



ELEVATION A




ELEVATION B

LEGEND



CLIENT :

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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**

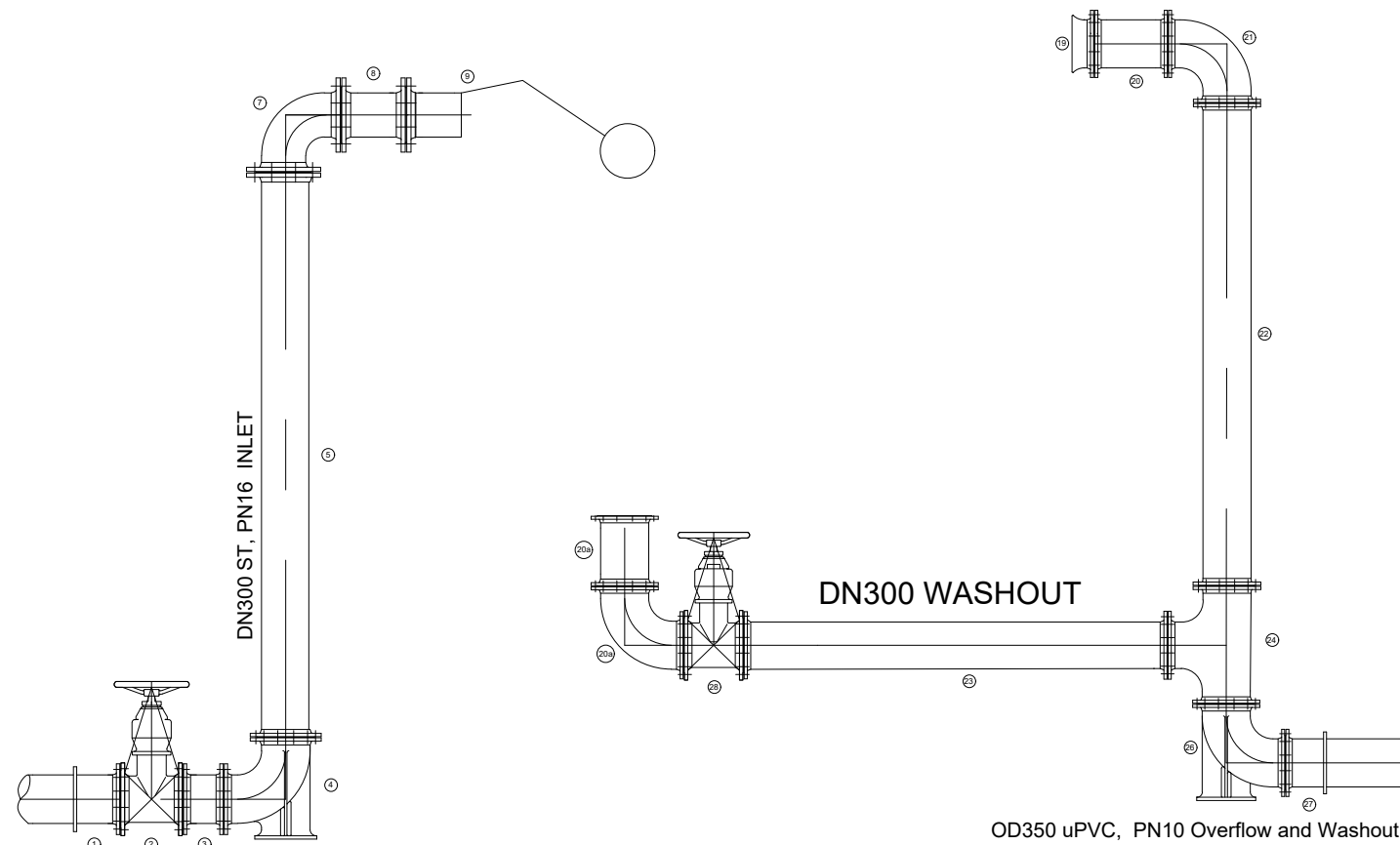
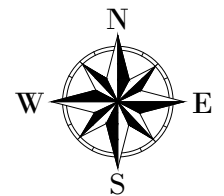
REVISIONS :

No	Date	Description

DRAWING TITLE :
**IMVEPI RESERVOIR TANK 3- 380m³
 ELEVATIONS**

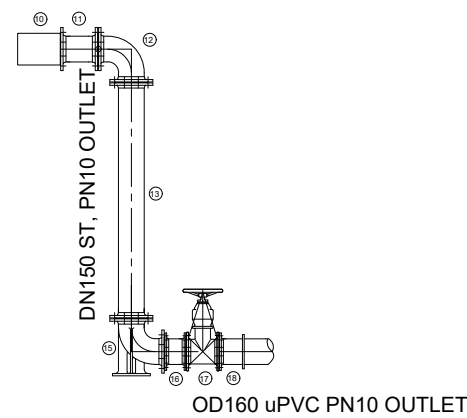
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 Checked by: J.K.K
 Date: January 2023
 DRG. No.: **ENY_RES_MVP_003**
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LEGEND

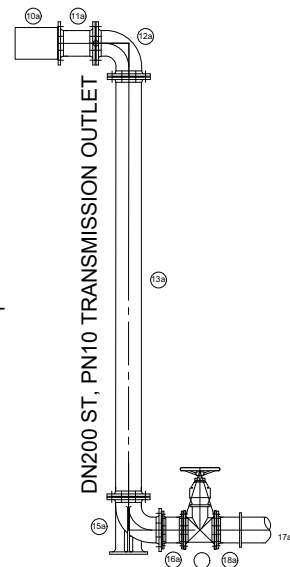


DN300 ST PN16 INLET

OD350 uPVC, PN10 Overflow and Washout



OD160 uPVC PN10 OUTLET



OD225 uPVC, PN16 OUTLET

PIPE AND FITTINGS SCHEDULE

Mark	Description	Material	DN	PN	Qty.
INLET					
1	Flanged Adapter	DI	300		1
2	Flanged Gate Valve	CI	300		1
3	Flanged Pipe Piece, Length - 0.3m	DI	300		1
4	90° Flanged Duckfoot Bend	DI	300	16	1
5	Flanged Pipe, Length - n.e 6.0m	DI	300		1
7	90° Flanged Bend	DI	300		1
8	Flanged Pipe Piece, Length - 0.2m	DI	300		1
9	Flanged Float Valve	CI	300		1
150mm OUTLET					
10	Flanged Strainer	SS	150		1
11	Flanged Pipe Piece, Length - 0.2m	DI	150		1
12	90° Flanged Bend	DI	150		1
13	Flanged Pipe, Length n.e - 3.0m	DI	150	10	1
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
200mm OUTLET (TRANSMISSION)					
10a	Flanged Strainer		200		1
11a	Flanged Pipe Piece, Length - 0.2m	DI	200		1
12a	90° Flanged Bend	DI	200		1
13a	Flanged Pipe, Length n.e - 5.0m	DI	200		1
14a	Flanged Pipe, Length - 6.0m	DI	200	10	2
15a	90° Flanged Duckfoot Bend	DI	200		1
16a	Flanged Pipe Piece, Length - 0.3m	DI	200		1
17a	Flanged Gate Valve	CI	200		1
18a	Flanged Adapter	DI	200		1
WASHOUT & OVERFLOW					
19	Flanged Bellmouth	DI	350		1
20	90° Flanged Bend	DI	350		2
21	Flanged Pipe, Length n.e - 0.2m	DI	350		1
22	Flanged Pipe Piece, Length n.e - 6.0m	DI	350		2
20a	90° Flanged Bend	DI	200	10	1
23	Flanged Pipe Piece, Length n.e - 3.0m	DI	200		2
24	Flanged Tee	DI	350/200		1
26	90° Flanged Duckfoot Bend	DI	350		1
27	Flanged Adapter	DI	350		1
28	Flanged Gate Valve	CI	200		1

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 :

**IMVEPI RESERVOIR TANK 3- 380m³
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.:

ENY_RES_MVP_003

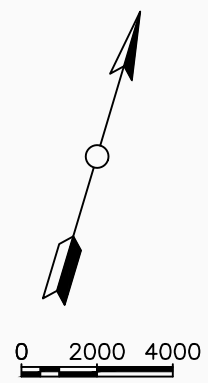
Scale:

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3 of 3

**296m³ RESERVOIR (TANK /ARIWA/OMUBECI)
AREA**



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 :

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ENYAU WATER SUPPLY AND SANITATION SYSTEM

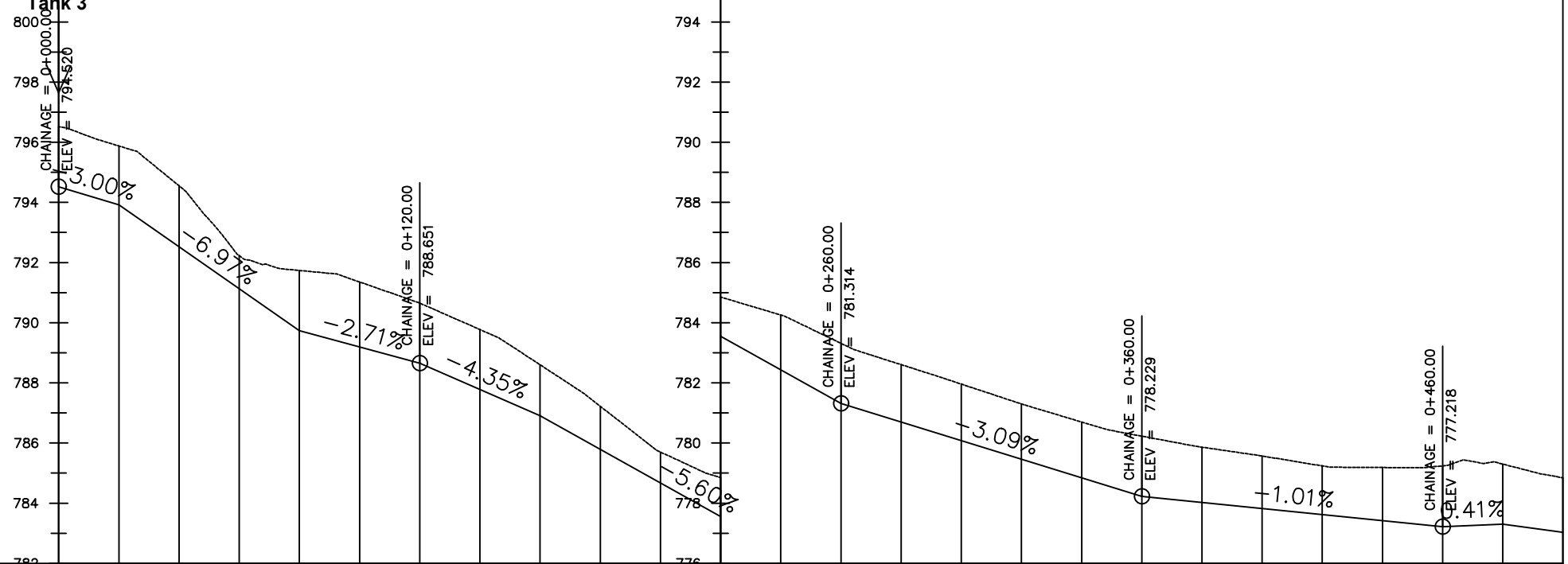
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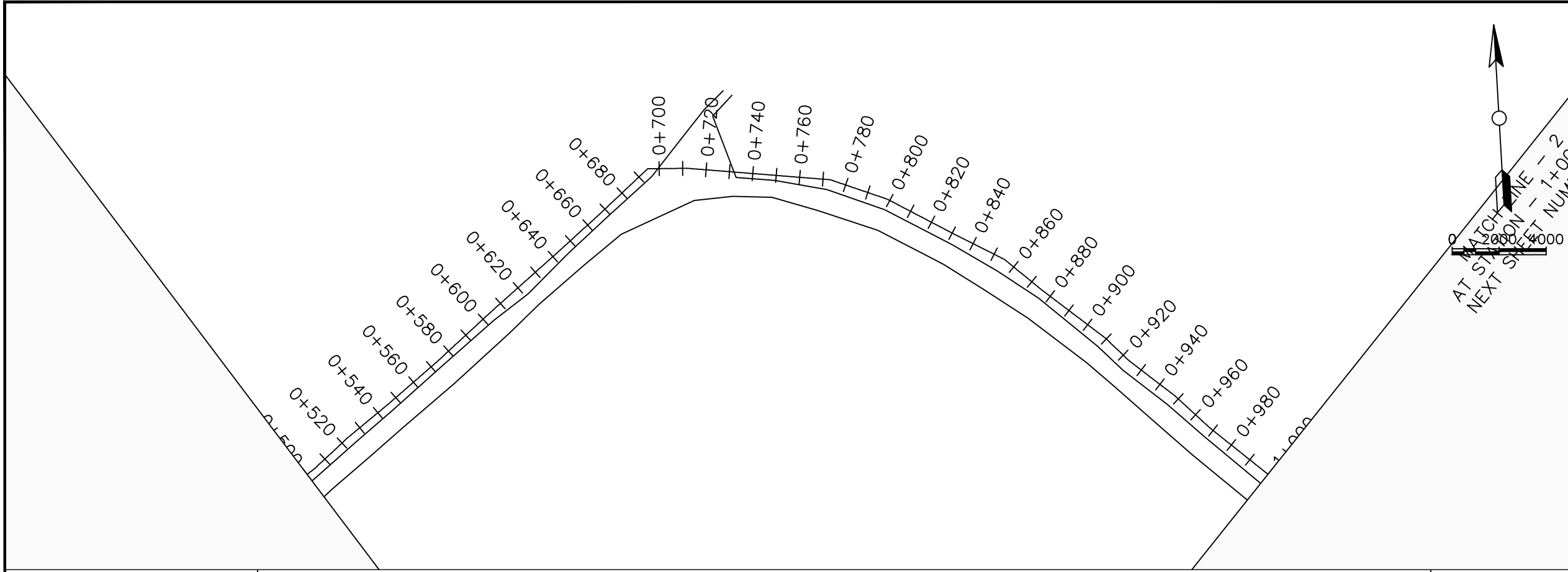
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
 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-GTM-003
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Chainage (m)	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500		
Ground Levels (masl)	796.52	795.88	794.55	792.23	791.74	791.35	790.65	789.77	788.60	787.22	785.70	784.85	784.26	783.31	782.61	781.96	781.30	780.70	780.23	779.86	779.57	779.24	779.19	779.24	779.30	778.84		
Invert Levels (masl)		793.92			789.74		788.65		786.91					781.31					778.23					777.22	777.30	777.04		
Slope (%)		-3.00%	-6.97%			-2.71%		-4.35%		-5.60%				-3.09%					-1.01%						0.41%	-0.42%		
Pipe Data	OD250PN10, uPVC																											



LEGEND

Plan

- Transmission Main
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CLIENT :

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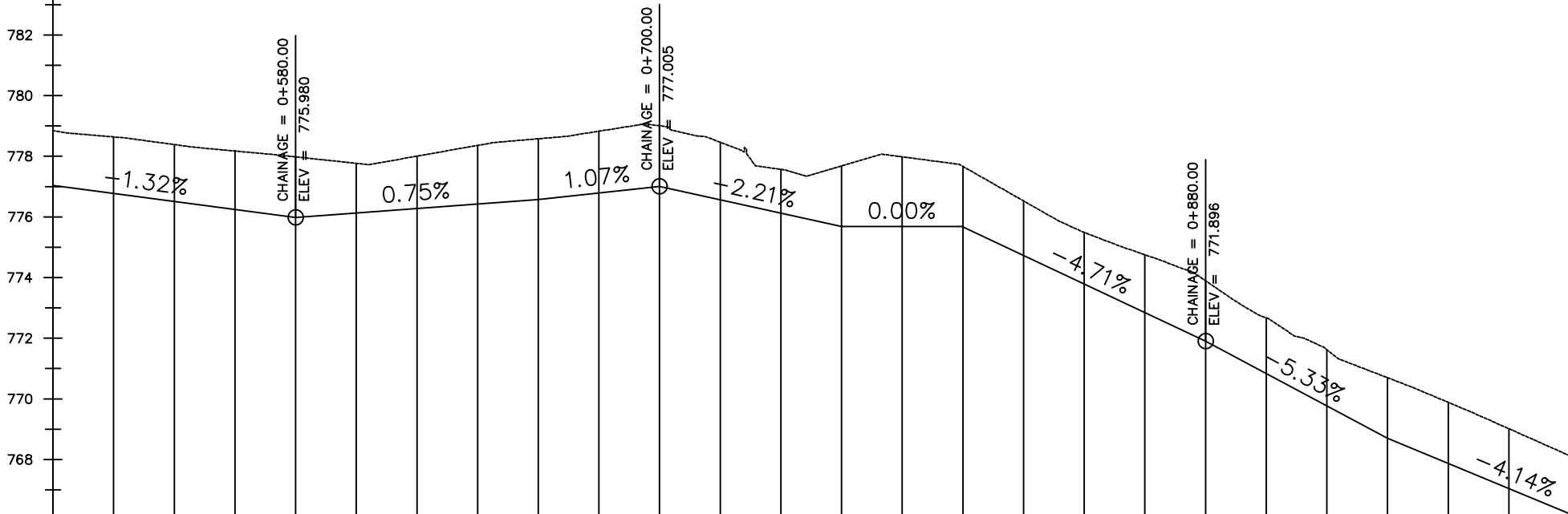
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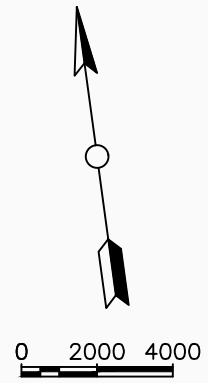
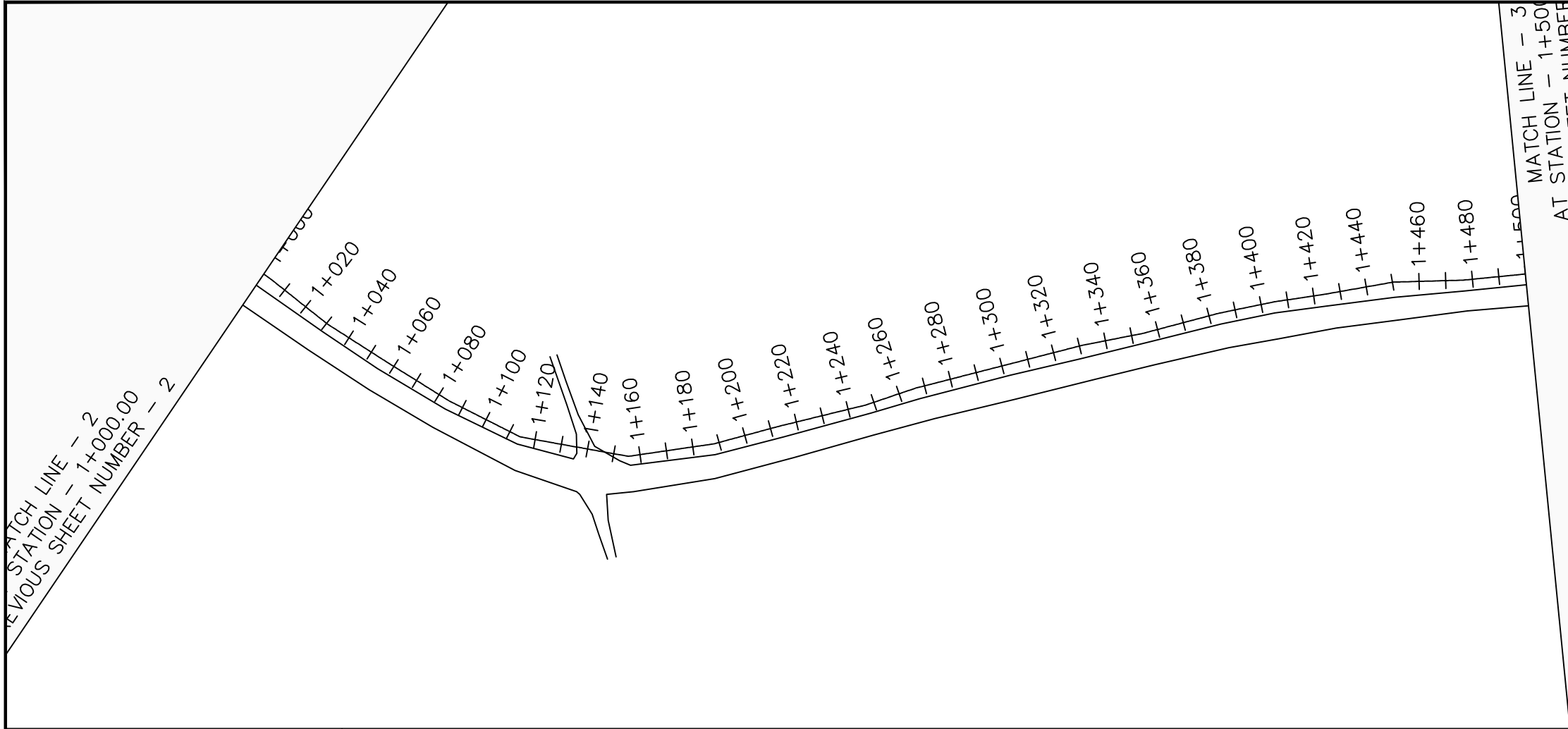
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
0+500 - 1+000

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Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2022
DRG. No.:	ENY-GTM-003
Scale:	1:2000
Sheet No.:	2 of 27



Chainage (m)	0+500	0+520	0+540	0+560	0+580	0+600	0+620	0+640	0+660	0+680	0+700	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	0+940	0+960	0+980	1+000		
Ground Levels (masl)	778.84	778.64	778.39	778.17	777.98	777.77	778.00	778.36	778.58	778.83	779.01	778.46	777.57	777.68	777.98	777.66	776.53	775.49	774.75	773.90	772.67	771.62	770.70	769.89	769.01	768.13		
Invert Levels (masl)	777.04				775.98				776.58		777.01			775.68		775.68				771.90			768.70			766.21		
Slope (%)		-1.32%				0.75%				1.07%	-2.21%			0.00%	-4.71%					-5.33%			-4.14%					
Pipe Data	OD250PN10,uPVC																											



LEGEND

Plan

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Profile

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- WO Washout
- Node detail No.

CLIENT :

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PROJECT :

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ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE :

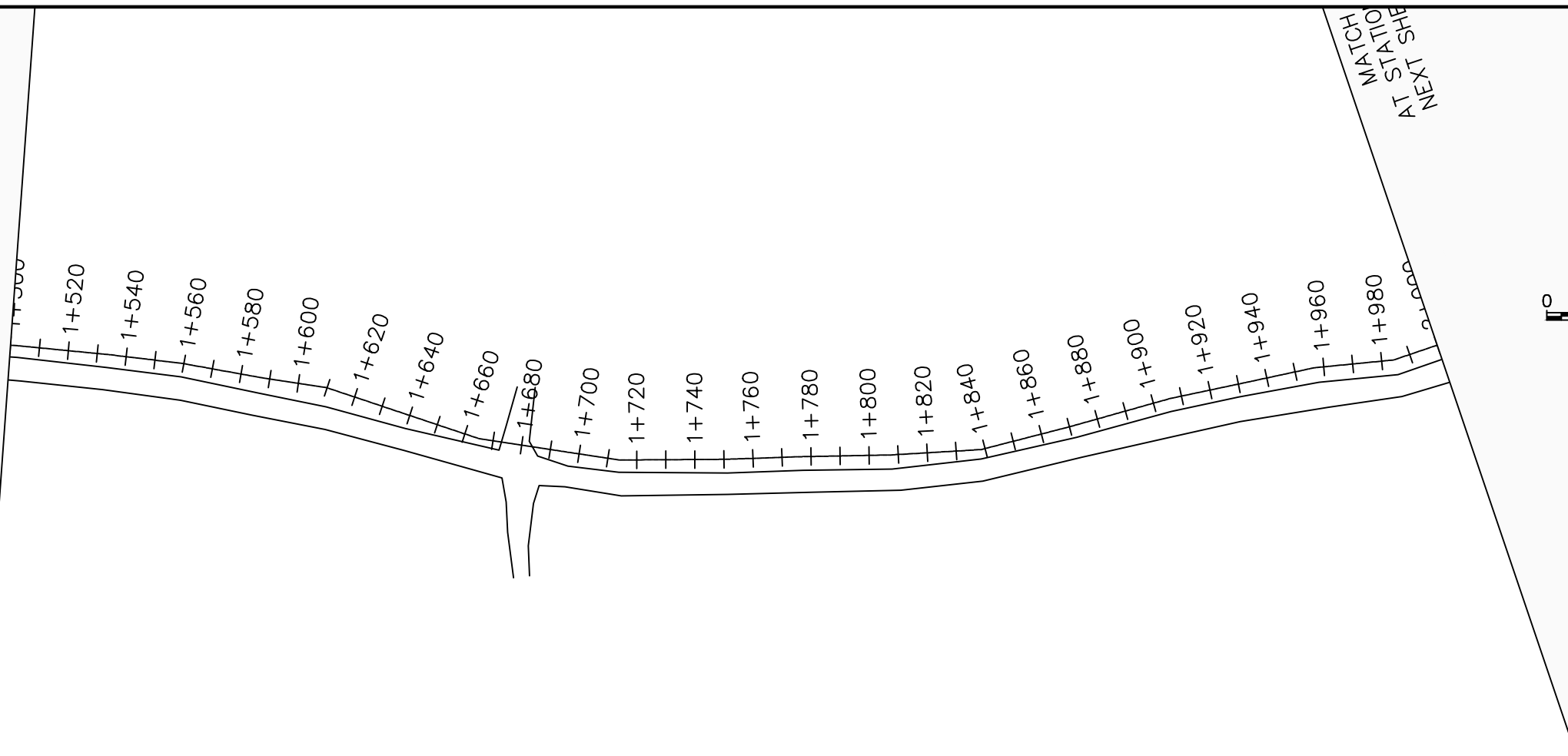
GRAVITY TRANSMISSION MAIN 3
1+000 - 1+500

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-003
Scale:	1:2000
Sheet No.:	3 of 27



Chainage (m)	1+000	1+020	1+040	1+060	1+080	1+100	1+120	1+140	1+160	1+180	1+200	1+220	1+240	1+260	1+280	1+300	1+320	1+340	1+360	1+380	1+400	1+420	1+440	1+460	1+480	1+500		
Ground Levels (masl)	768.13	767.38	766.71	766.16	765.81	765.37	765.24	766.00	766.50	766.79	767.01	767.04	766.79	766.63	766.45	766.29	766.07	765.83	765.68	765.86	766.07	766.23	766.48	766.65	766.76	767.01		
Invert Levels (masl)	766.21	765.38			763.81		763.24		764.50			765.04					764.07			763.86				764.65		765.12		
Slope (%)		-4.14%	-2.62%			-1.42%		3.15%			0.90%		-0.97%				-0.35%			0.99%						1.18%		
Pipe Data	OD250PN10, uPVC																											

MATCH LINE - 3
STATION - 1+500.00
US SHEET NUMBER - 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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CONSULTANT :

Alliance Consultants Ltd
In Association with

Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND
SANITATION PROJECT

**ENYAU WATER SUPPLY AND
SANITATION SYSTEM**

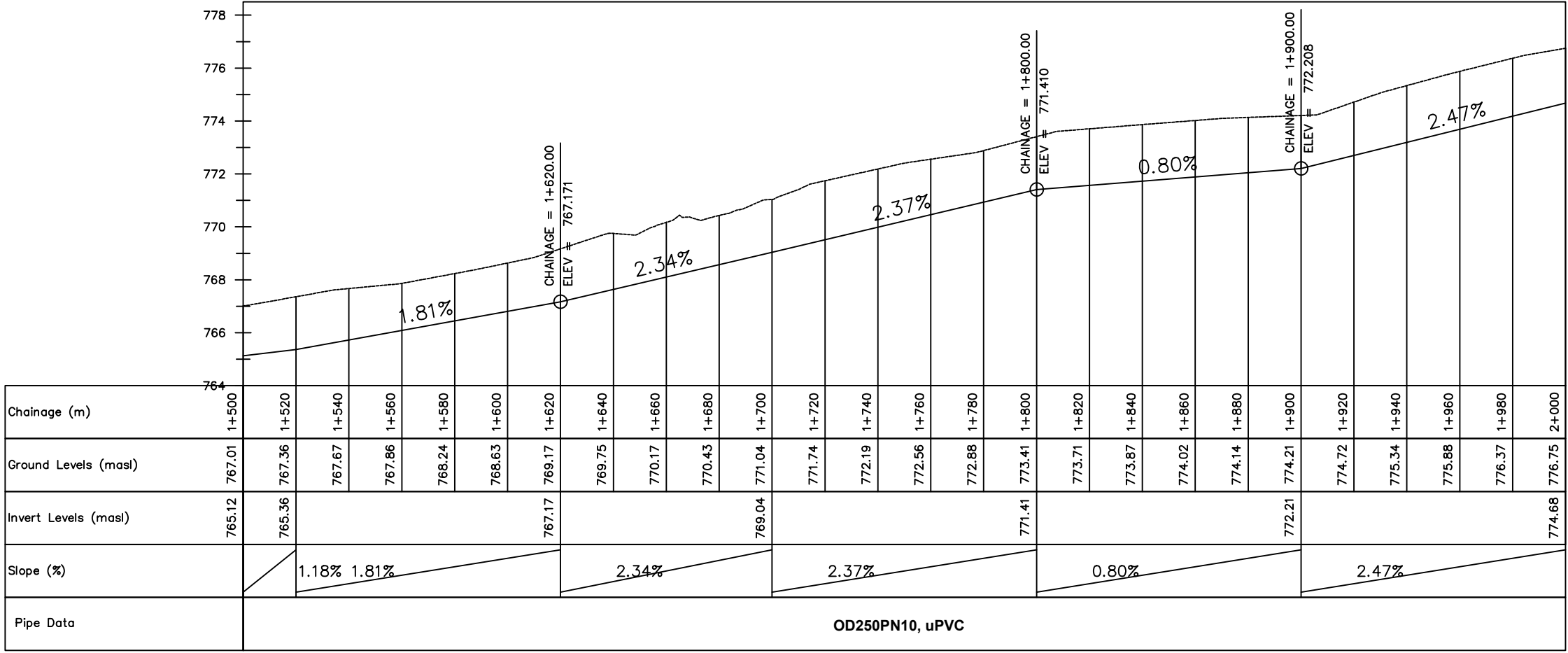
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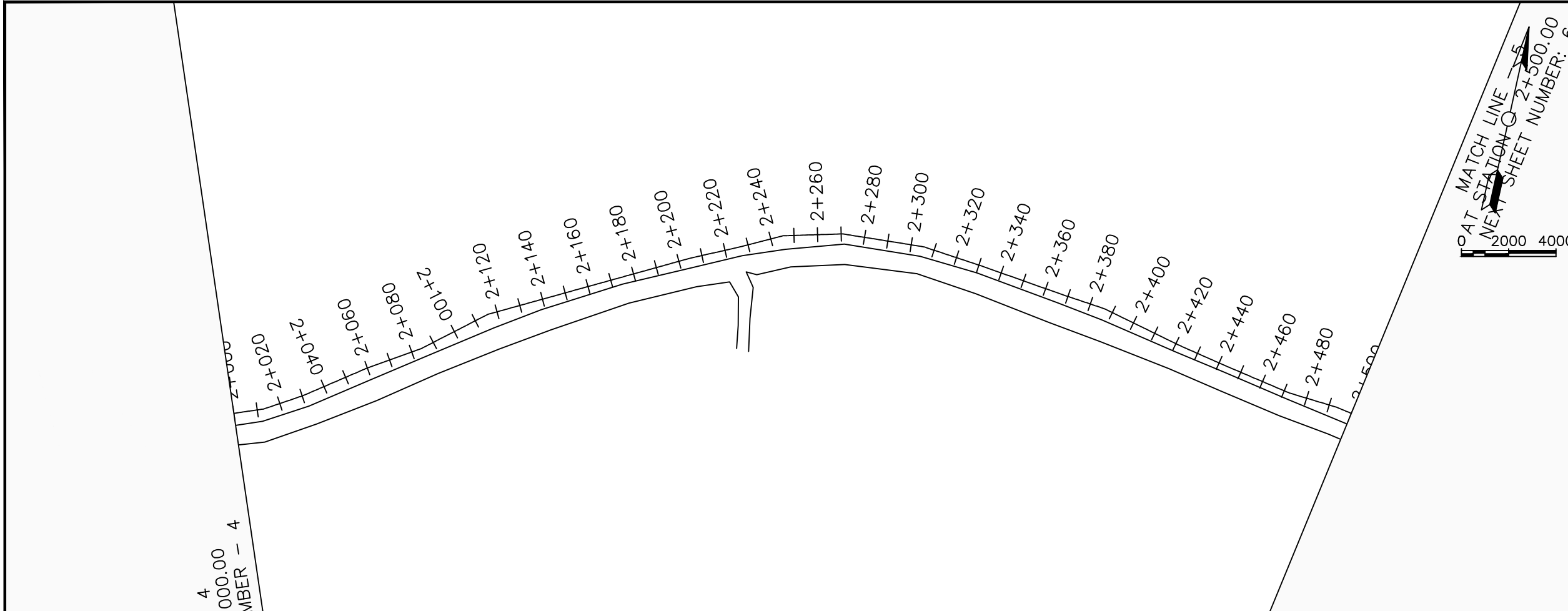
No	Date	Description

DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
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.:	ENY-GTM-003
Scale:	1:2000
Sheet No.:	4 of 27





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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CONSULTANT :

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PROJECT :

ALA-ORA WATER SUPPLY AND SANITATION PROJECT

ENYAU WATER SUPPLY AND SANITATION SYSTEM

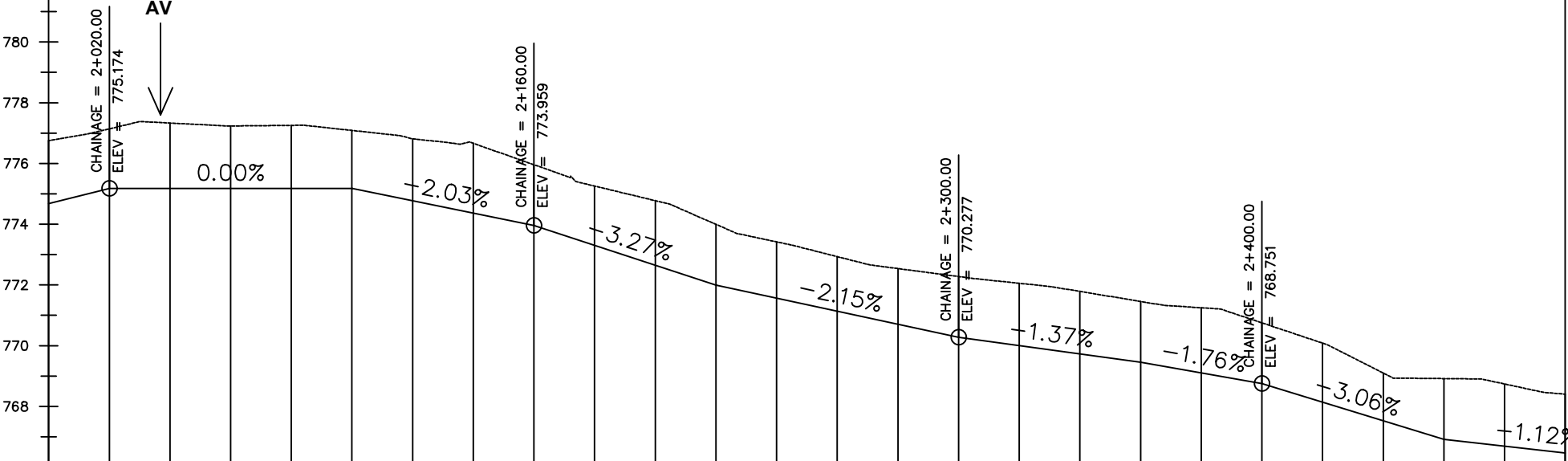
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No	Date	Description

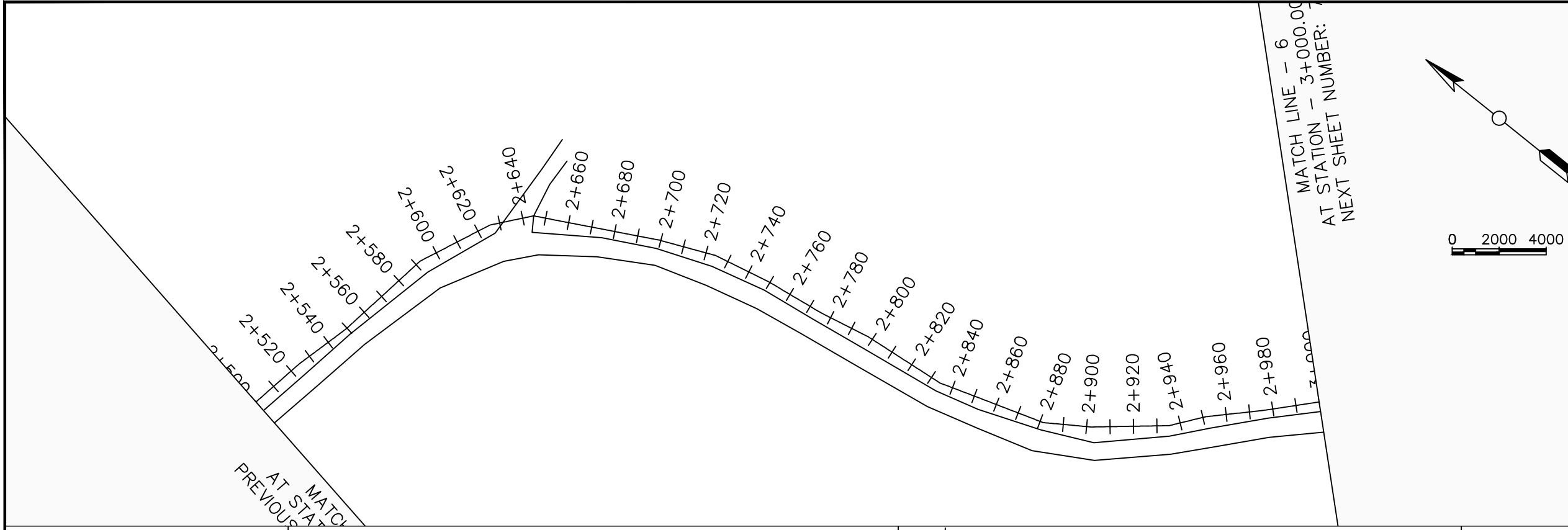
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
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-GTM-003
Scale:	1:2000
Sheet No.:	5 of 27



Chainage (m)	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)	776.75	777.14	777.33	777.23	777.25	777.09	776.81	776.66	775.96	775.26	774.77	774.00	773.42	772.93	772.54	772.28	772.05	771.79	771.46	771.25	770.75	770.08	769.10	768.92	768.74	768.40		
Invert Levels (masl)	774.68	775.17				775.17			773.96			772.00				770.28			769.46		768.75			766.92		766.47		
Slope (%)		2.47%	0.00%			-2.03%			-3.27%			-2.15%				-1.37%			-1.76%		-3.06%			-1.12%				
Pipe Data	OD250PN10, uPVC																											



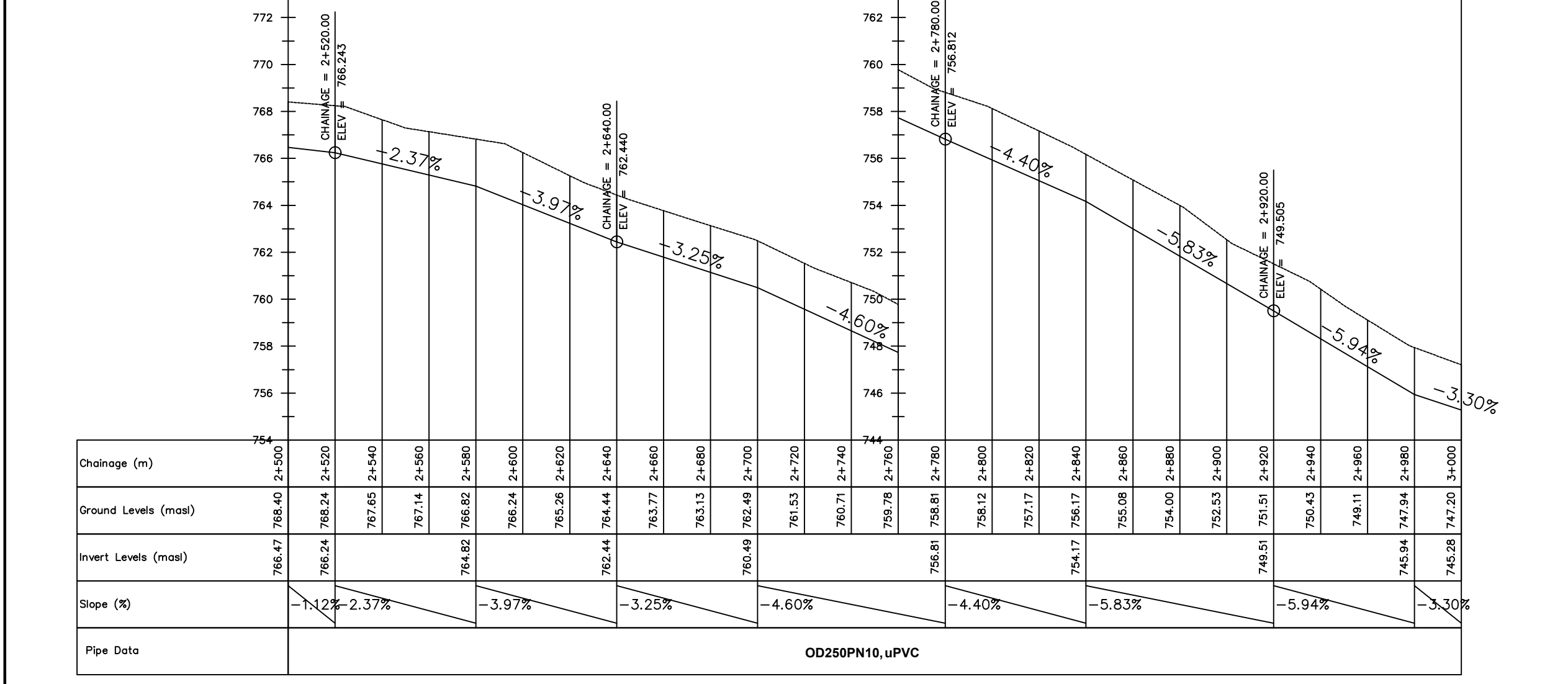
LEGEND

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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CONSULTANT :
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Infra-Consult Ltd

PROJECT :
ALA-ORA WATER SUPPLY AND SANITATION PROJECT

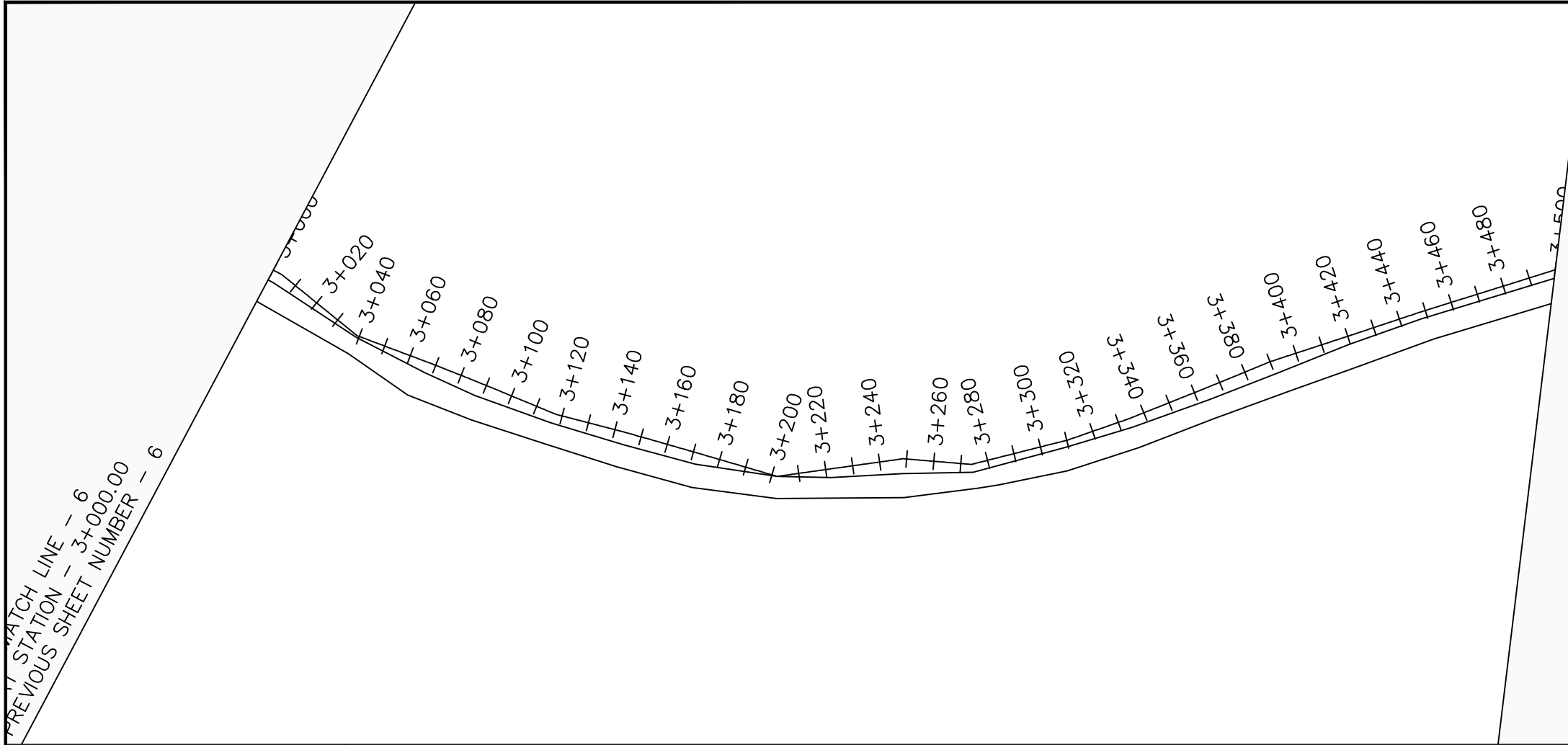
ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE :
GRAVITY TRANSMISSION MAIN 3
 2+500 - 3+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-GTM-003**
 Scale: 1:2000 Sheet No.: 6 of 27



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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Alliance Consultants Ltd
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Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND SANITATION PROJECT

ENYAU WATER SUPPLY AND SANITATION SYSTEM

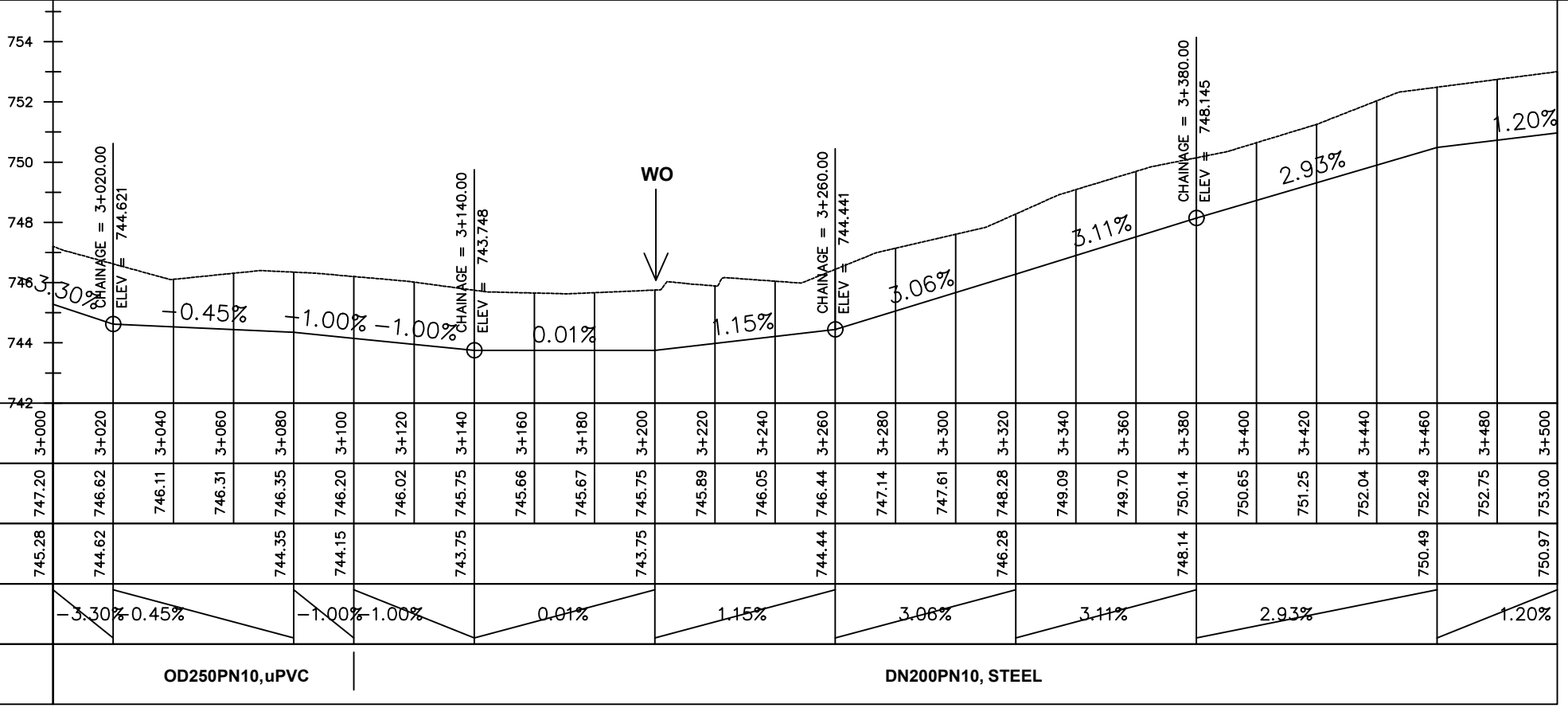
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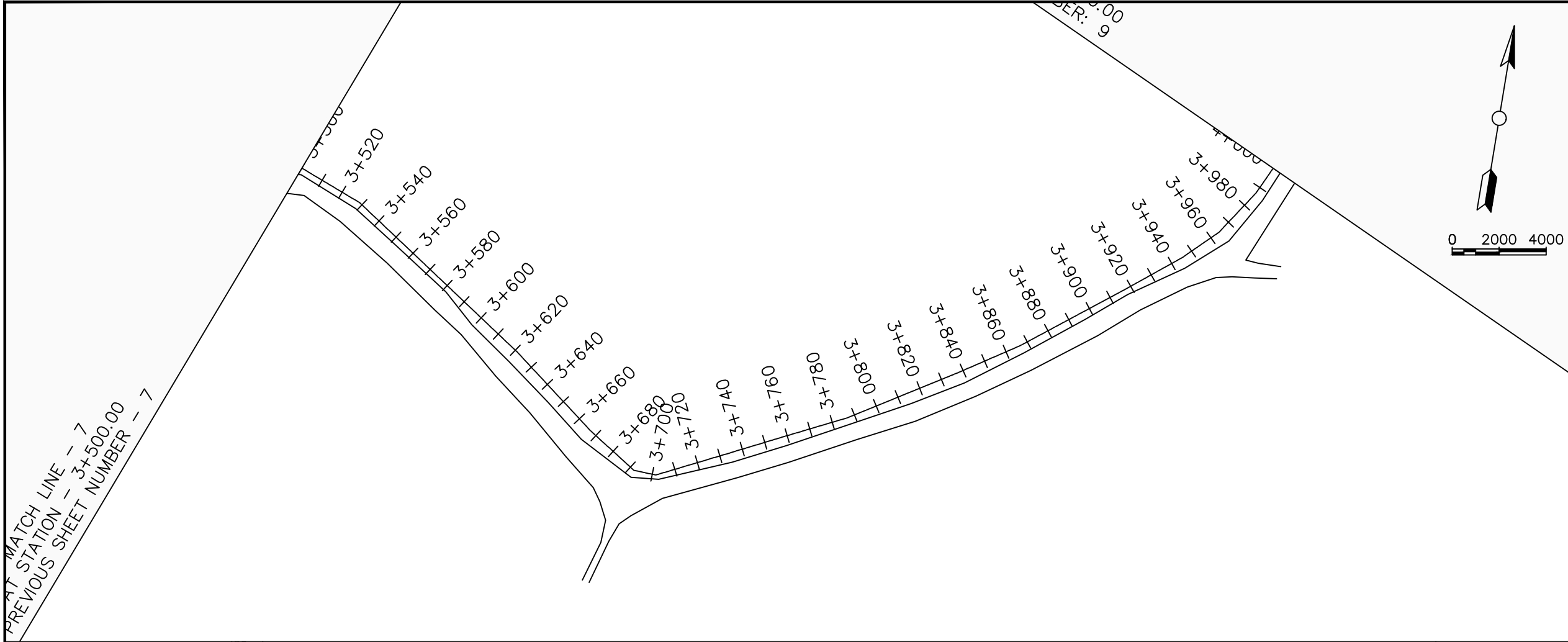
No	Date	Description

DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
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.:	ENY-GTM-003
Scale:	1:2000
Sheet No.:	7 of 27





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

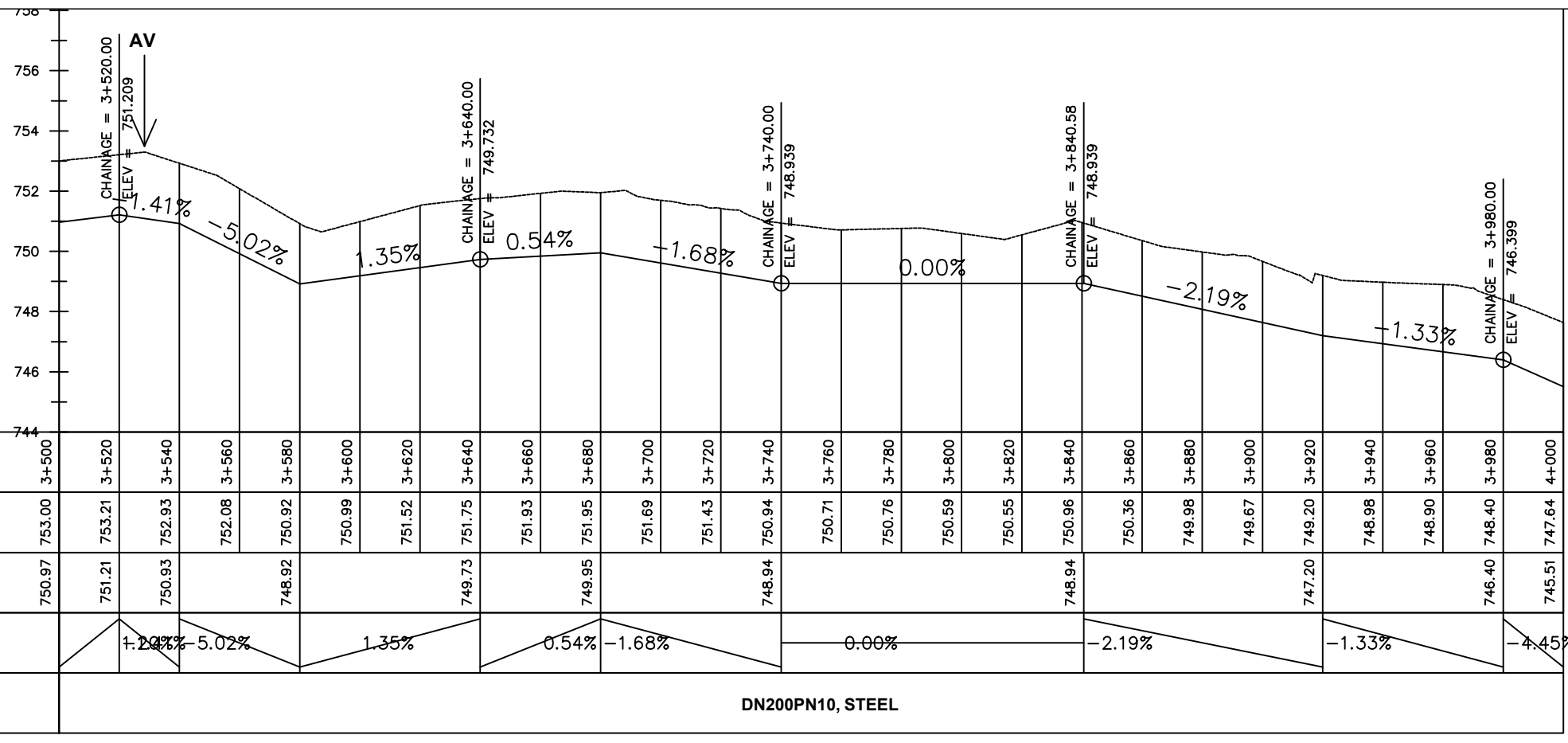
REVISIONS :

No	Date	Description

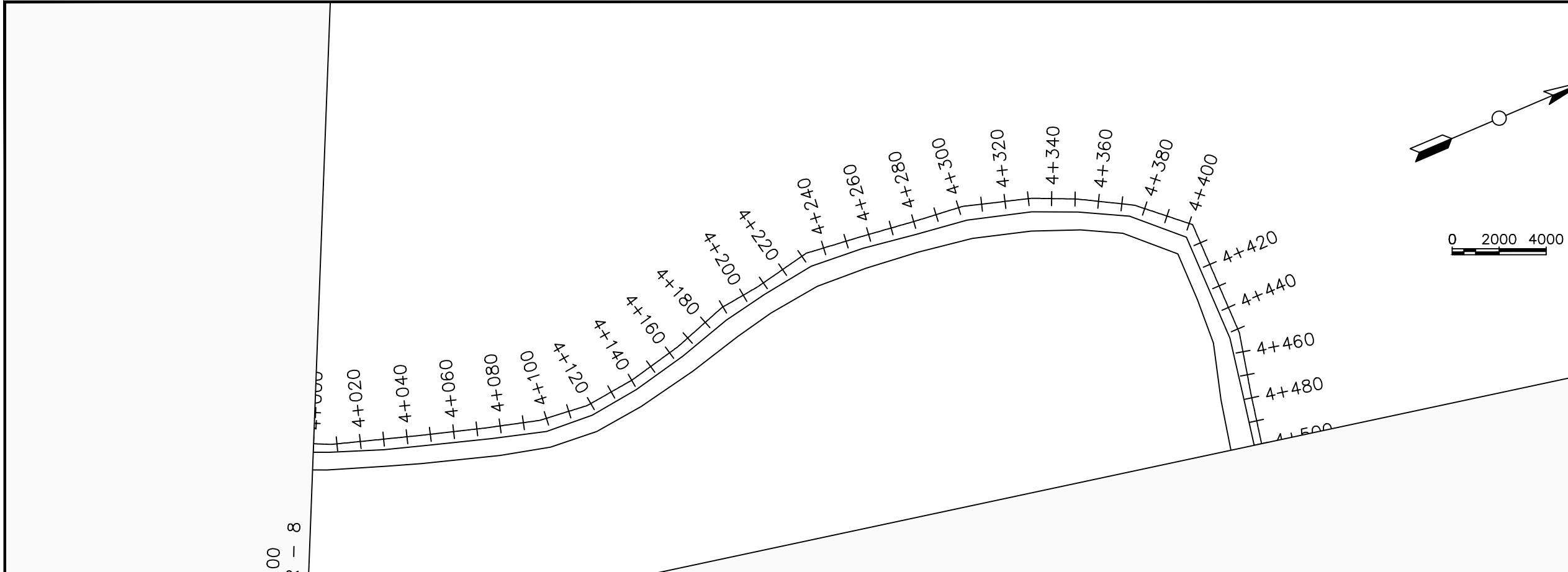
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
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-GTM-003
Scale:	1:2000
Sheet No.:	8 of 27



Chainage (m)	Ground Levels (masl)	Invert Levels (masl)	Slope (%)	Pipe Data
3+500	753.00	750.97		DN200PN10, STEEL
3+520	753.21	751.21	1.41%	
3+540	752.93	750.93	-5.02%	
3+560	752.08			
3+580	750.92	748.92	1.35%	
3+600	750.99			
3+620	751.52	749.73	0.54%	
3+640	751.75	749.95	-1.68%	
3+660	751.93			
3+680	751.95	748.94	0.00%	
3+700	751.69			
3+720	751.43	748.94	-2.19%	
3+740	750.94	747.20	-1.33%	
3+760	750.71			
3+780	750.76	746.40	-4.45%	



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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ENYAU WATER SUPPLY AND SANITATION SYSTEM

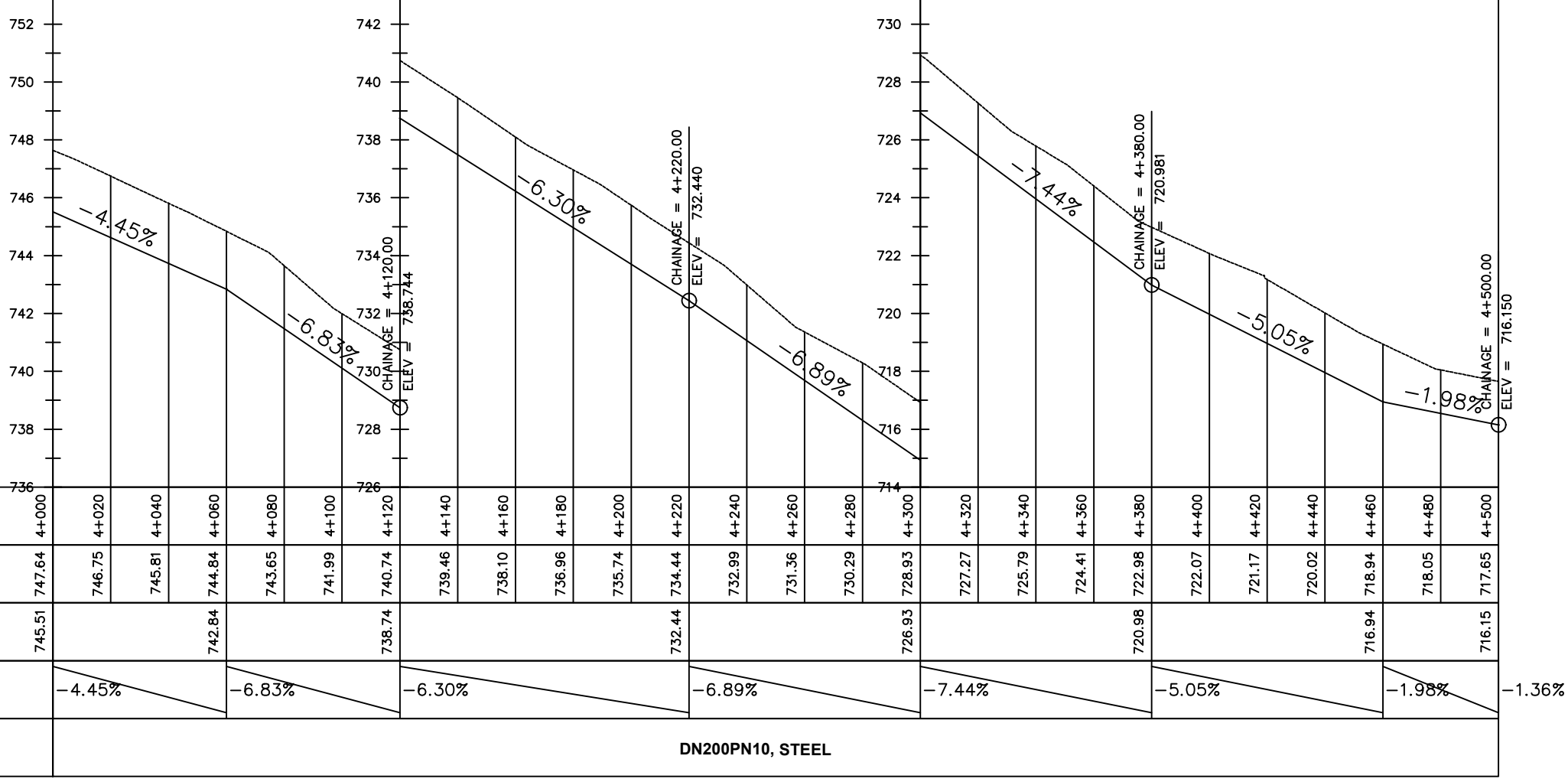
REVISIONS :

No	Date	Description

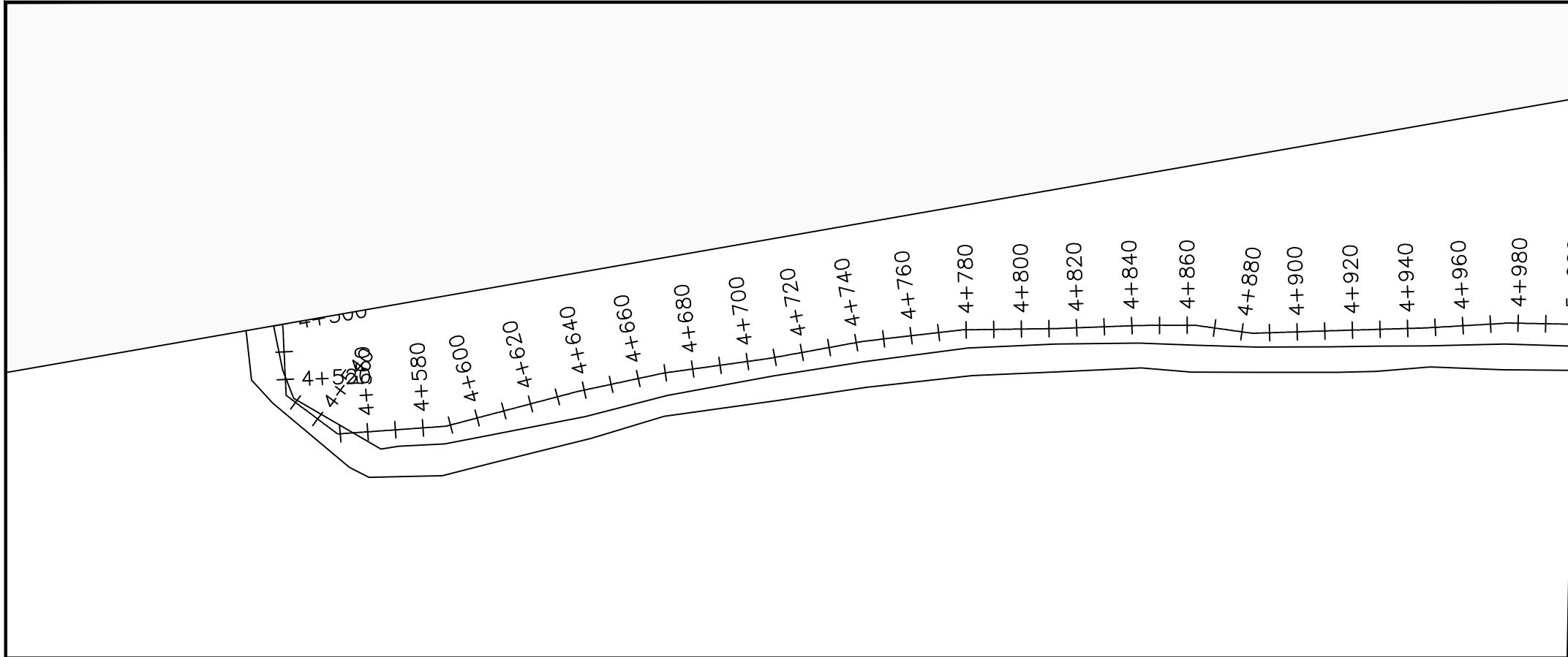
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
4+000 - 4+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-003
Scale:	1:2000
Sheet No.:	9 of 27



DN200PN10, STEEL



MATCH LINE - 1
AT STATION - 5+000
NEXT SHEET NUMBER

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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PROJECT :

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ENYAU WATER SUPPLY AND SANITATION SYSTEM

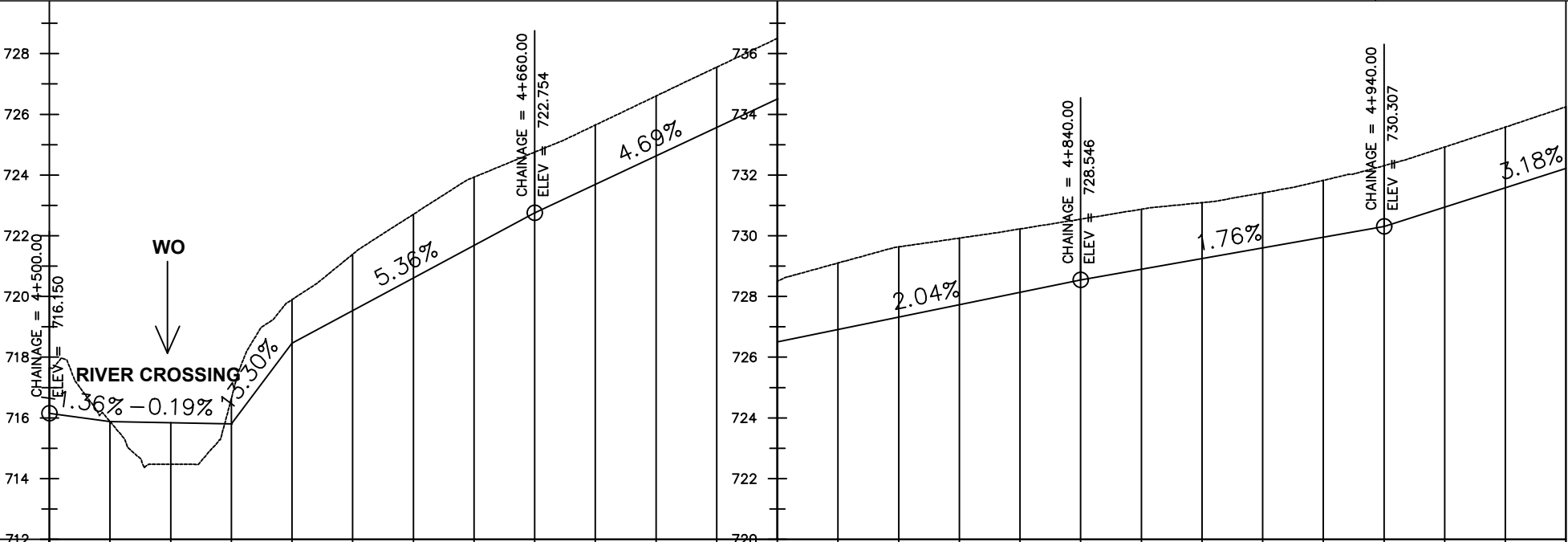
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No	Date	Description

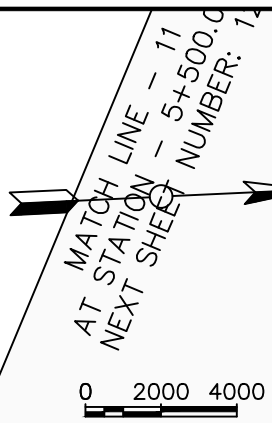
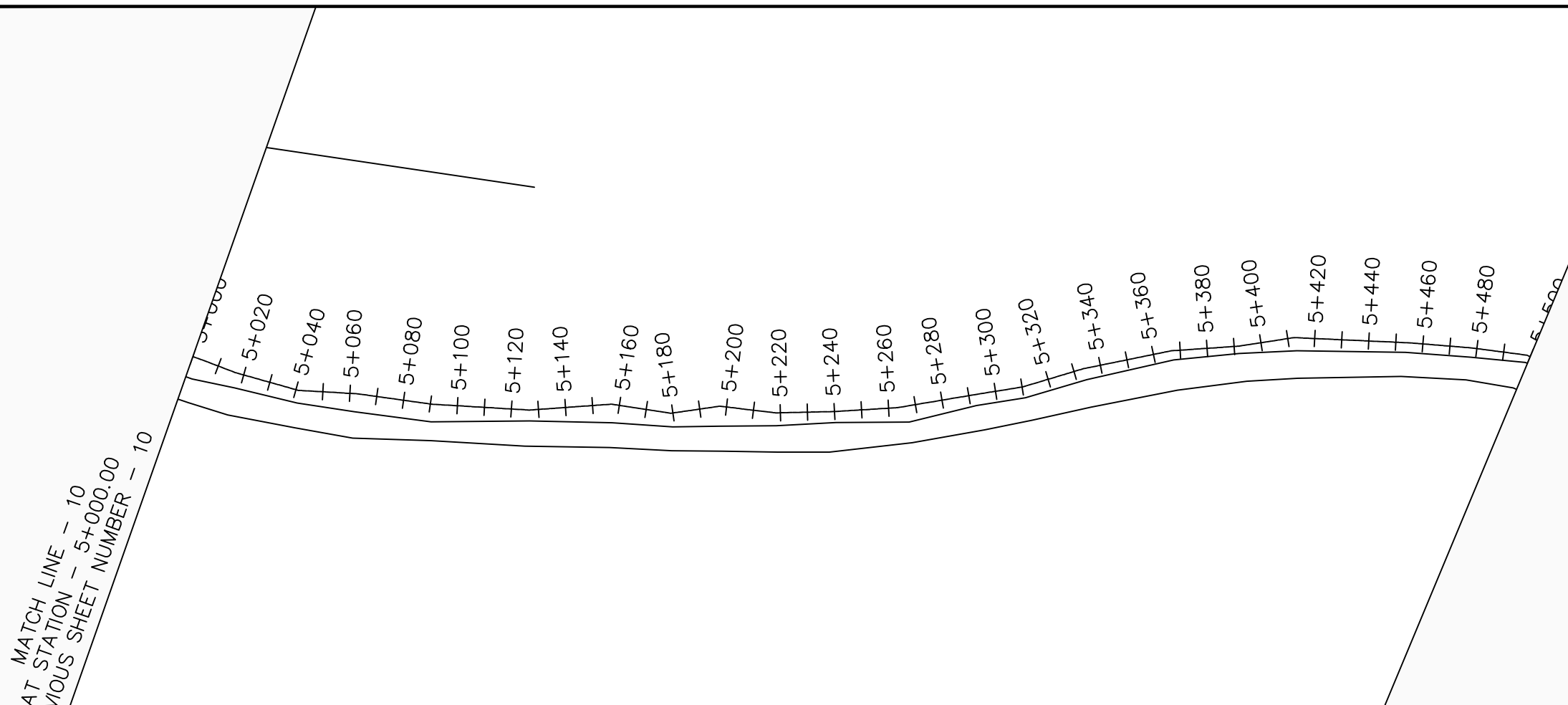
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
4+500 - 5+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-GTM-003
Scale:	1:2000
Sheet No.:	10 of 27



Chainage (m)	4+500	4+520	4+540	4+560	4+580	4+600	4+620	4+640	4+660	4+680	4+700	4+720	4+740	4+760	4+780	4+800	4+820	4+840	4+860	4+880	4+900	4+920	4+940	4+960	4+980	5+000		
Ground Levels (masl)	717.65	715.88	714.47	716.64	719.90	721.39	722.71	723.93	724.75	725.65	726.60	727.55	728.50	729.10	729.63	729.92	730.22	730.55	730.87	731.09	731.41	731.83	732.31	732.92	733.58	734.25		
Invert Levels (masl)	716.15	715.88	715.80	718.46	722.75	726.50	728.50	728.55	730.31	732.22																		
Slope (%)	-1.98%	-0.19%	13.30%	5.36%	4.69%	2.04%	1.76%	3.18%																				
Pipe Data	DN200PN10, STEEL																											



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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ENYAU WATER SUPPLY AND SANITATION SYSTEM

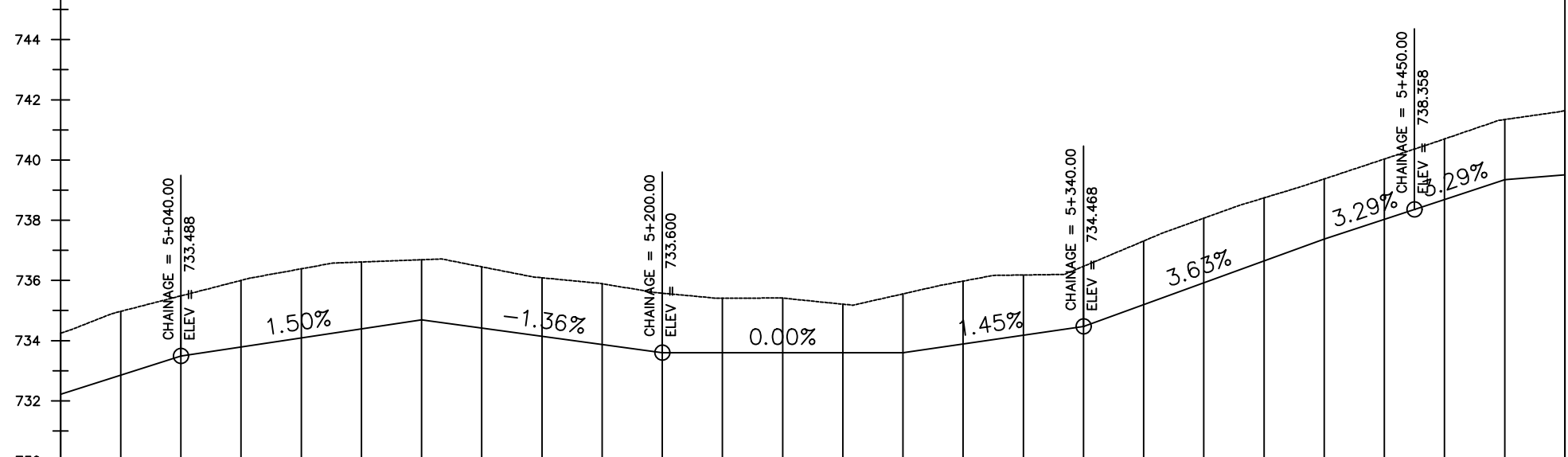
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No	Date	Description

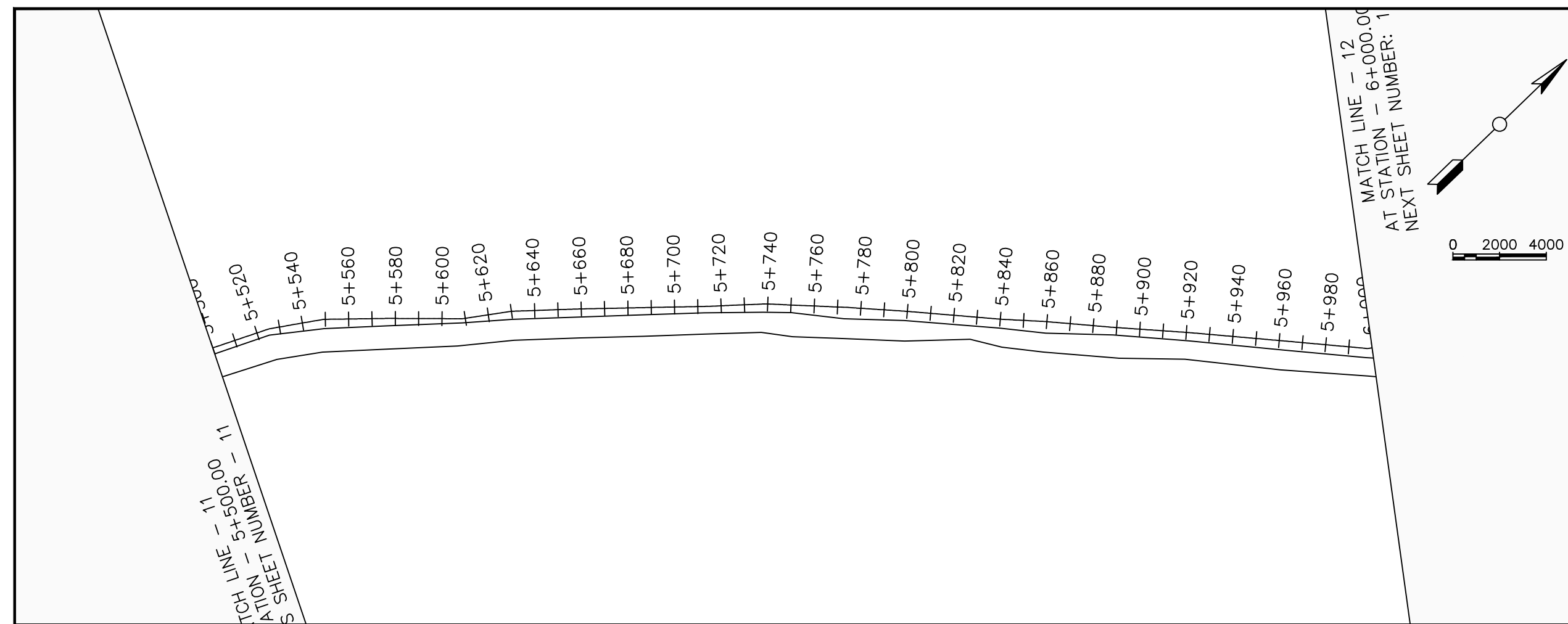
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
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-GTM-003
Scale:	1:2000
Sheet No.:	11 of 27



Chainage (m)	5+000	5+020	5+040	5+060	5+080	5+100	5+120	5+140	5+160	5+180	5+200	5+220	5+240	5+260	5+280	5+300	5+320	5+340	5+360	5+380	5+400	5+420	5+440	5+460	5+480	5+500		
Ground Levels (masl)	734.25	734.97	735.49	736.00	736.39	736.61	736.69	736.45	736.09	735.89	735.58	735.41	735.41	735.21	735.55	735.98	736.18	736.47	737.31	738.07	738.74	739.37	740.03	740.70	741.35	741.64		
Invert Levels (masl)	732.22		733.49				734.69				733.60				733.60			734.47				737.37		738.36		739.35	739.51	
Slope (%)		3.18%	1.50%				-1.36%				0.00%				1.45%			3.63%				3.29%		3.29%		0.83%		
Pipe Data	DN200PN10, STEEL																											



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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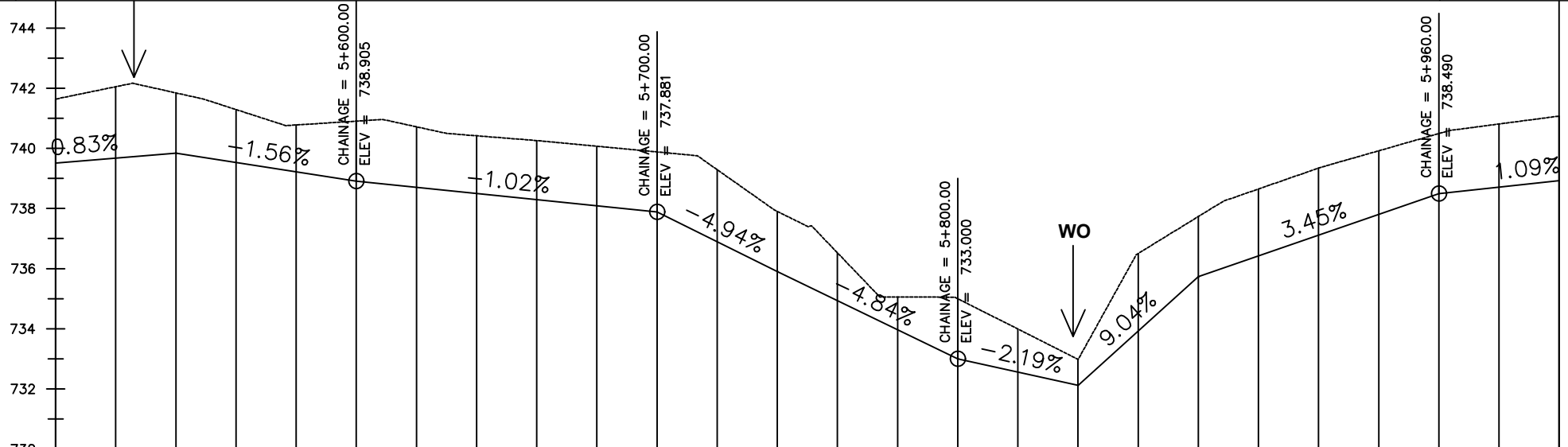
REVISIONS :

No	Date	Description

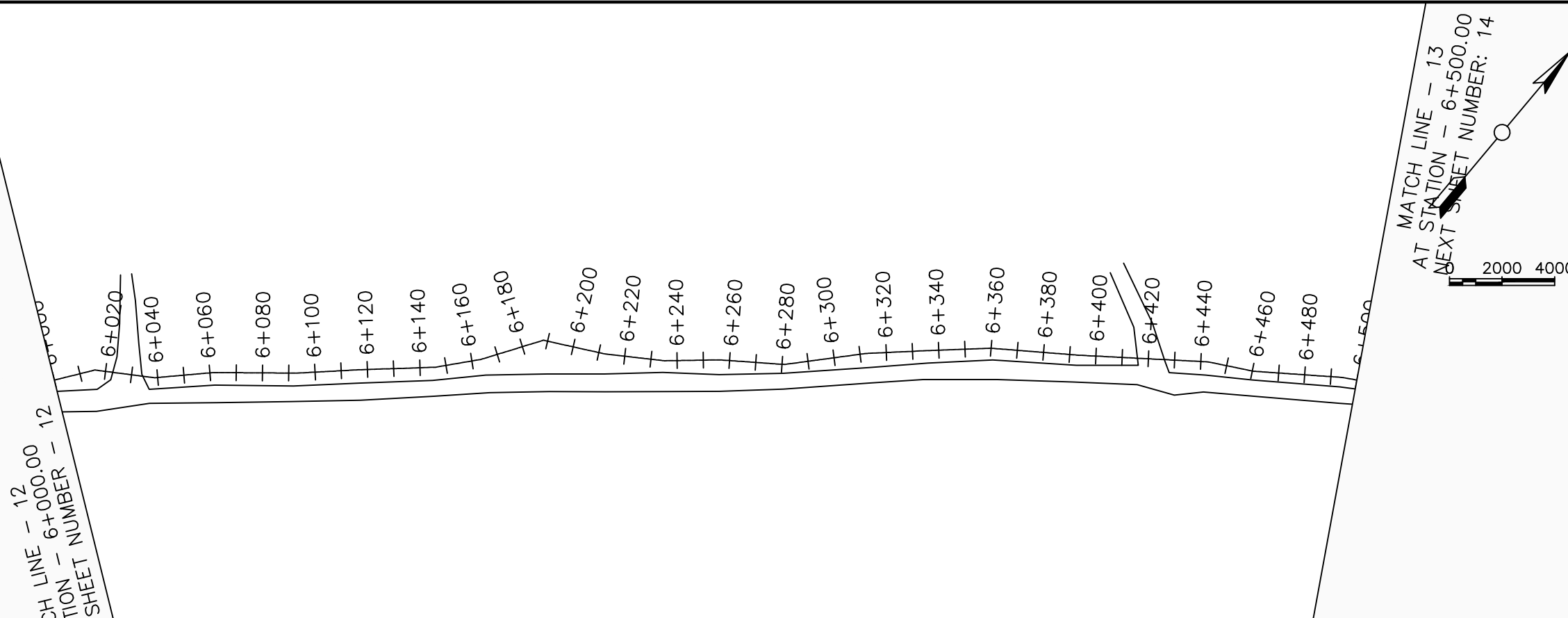
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
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.:	ENY-GTM-003
Scale:	1:2000
Sheet No.:	12 of 27



Chainage (m)	5+500	5+520	5+540	5+560	5+580	5+600	5+620	5+640	5+660	5+680	5+700	5+720	5+740	5+760	5+780	5+800	5+820	5+840	5+860	5+880	5+900	5+920	5+940	5+960	5+980	6+000		
Ground Levels (masl)	741.64	742.05	741.84	741.29	740.78	740.90	740.72	740.42	740.26	740.07	739.88	739.29	737.90	736.53	735.06	735.00	733.99	732.99	736.50	737.73	738.65	739.34	739.92	740.49	740.81	741.07		
Invert Levels (masl)	739.51	739.84	739.84	739.84	739.84	738.90	738.90	738.90	738.90	738.90	737.88	737.88	737.88	735.90	735.90	733.00	733.00	732.12	735.73	735.73	735.73	735.73	735.73	738.49	738.49	738.93		
Slope (%)		0.83%	-1.56%			-1.02%					-4.94%			-4.84%		-2.19%			9.04%		3.45%				1.09%			
Pipe Data	DN200PN10, STEEL																											



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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PROJECT :

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ENYAU WATER SUPPLY AND SANITATION SYSTEM

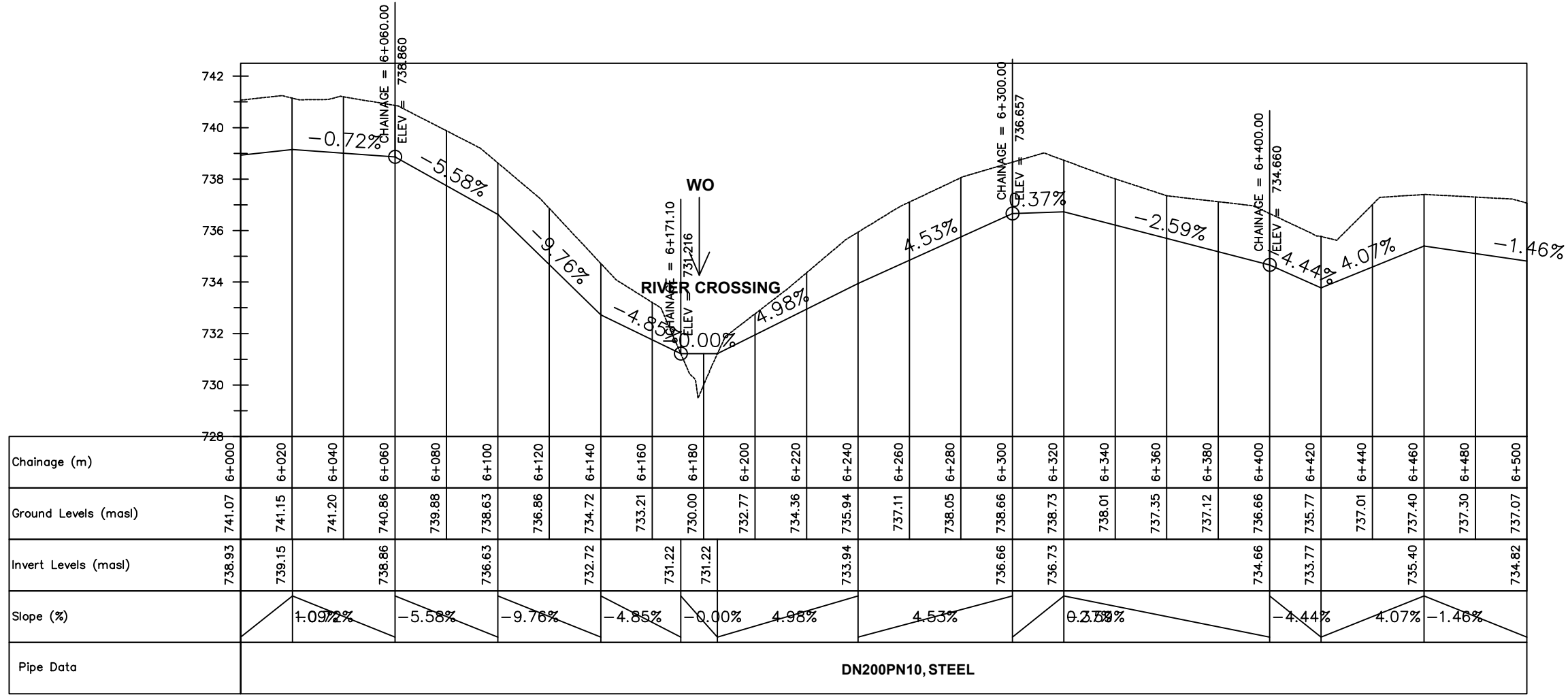
REVISIONS :

No	Date	Description

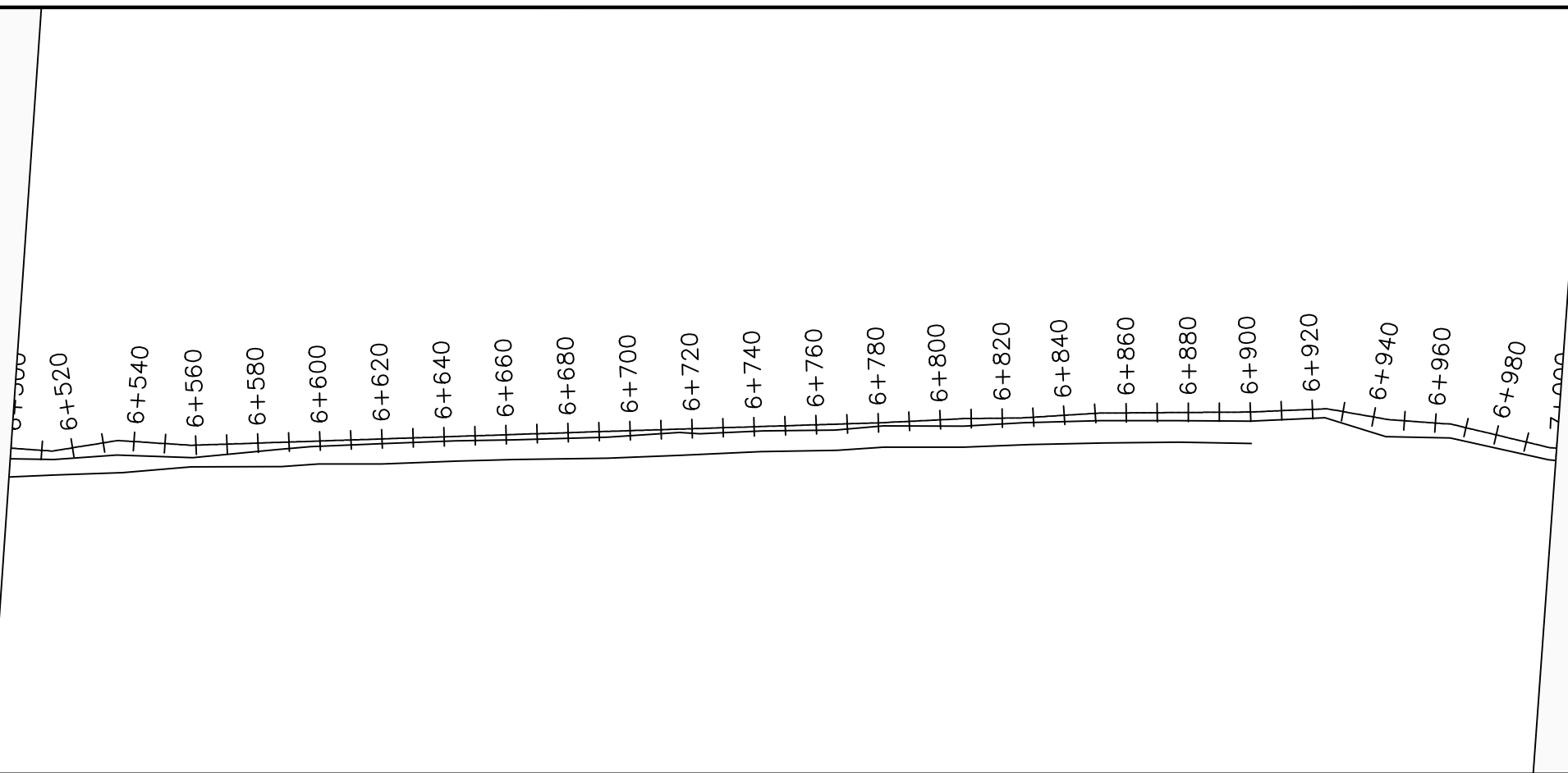
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
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.:	ENY-GTM-003
Scale:	1:2000
Sheet No.:	13 of 27



MATCH LINE - 13
STATION - 6+500.00
US SHEET NUMBER - 13



MATCH LINE - 14
AT STATION - 7+000.00
NEXT SHEET NUMBER: 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**

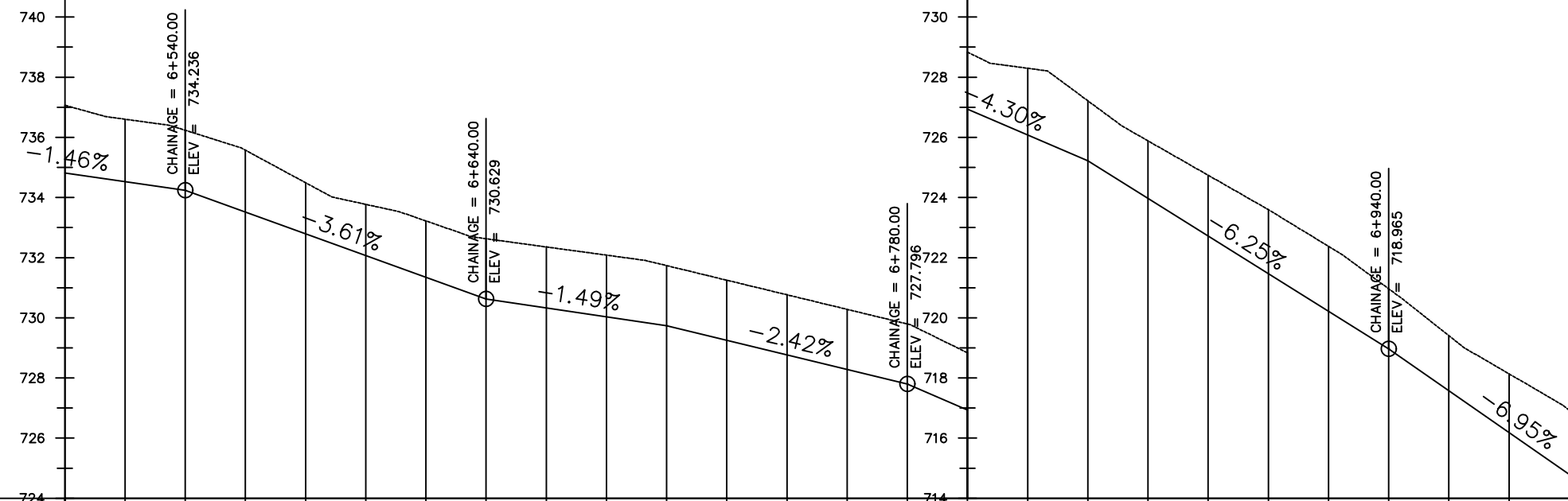
REVISIONS :

No	Date	Description

DRAWING TITLE :

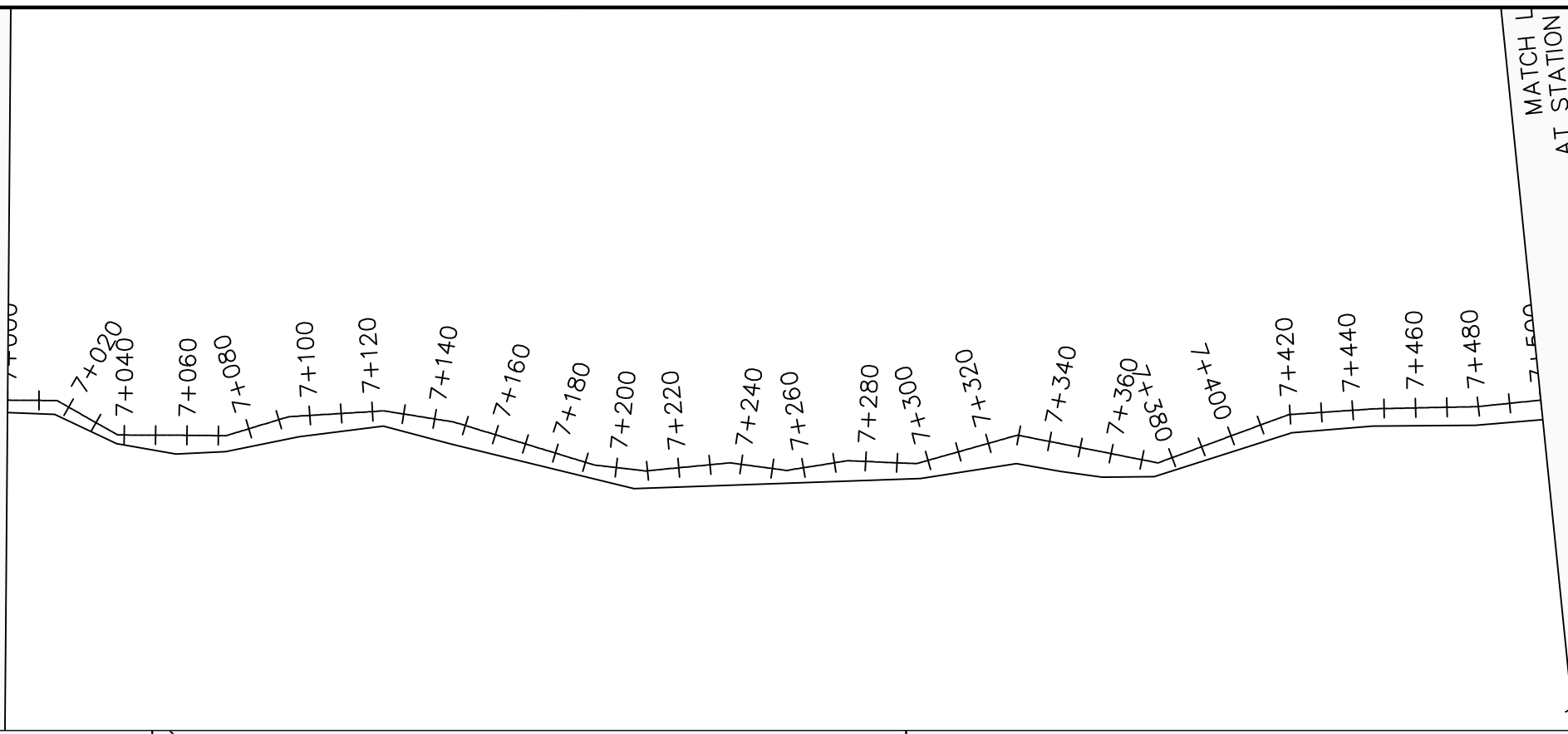
GRAVITY TRANSMISSION MAIN 3
6+500 - 7+000

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2022
DRG. No.:	ENY-GTM-003
Scale:	1:2000
Sheet No.:	14 of 27



Chainage (m)	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)	737.07	736.60	736.24	735.57	734.49	733.77	733.22	732.63	732.36	732.08	731.74	731.25	730.77	730.28	729.80	728.84	728.30	727.22	725.88	724.74	723.60	722.38	720.97	719.41	718.14	716.92		
Invert Levels (masl)	734.82		734.24					730.63			729.74				727.80			725.22					718.97			714.80		
Slope (%)		-1.46%		-3.61%					-1.49%			-2.42%				-4.30%			-6.25%							-6.95%		
Pipe Data	DN200PN10, STEEL																											

CH LINE - 14
TION - 7+000.00
SHEET NUMBER - 14



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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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

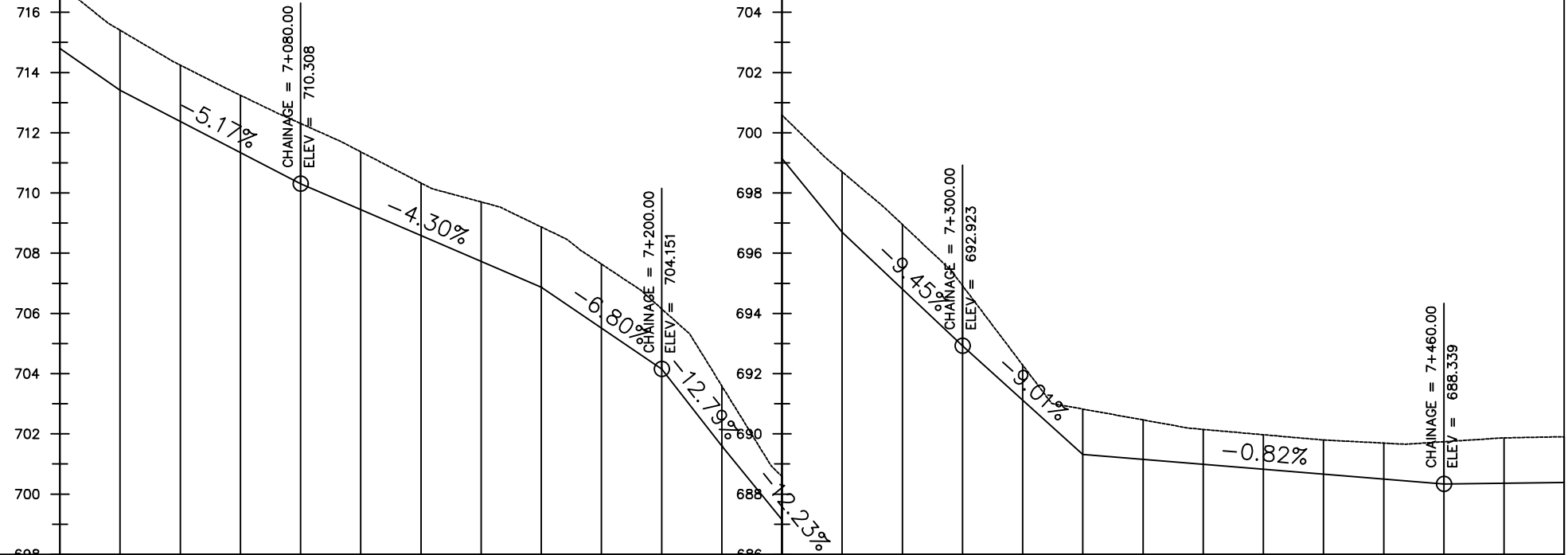
REVISIONS :

No	Date	Description

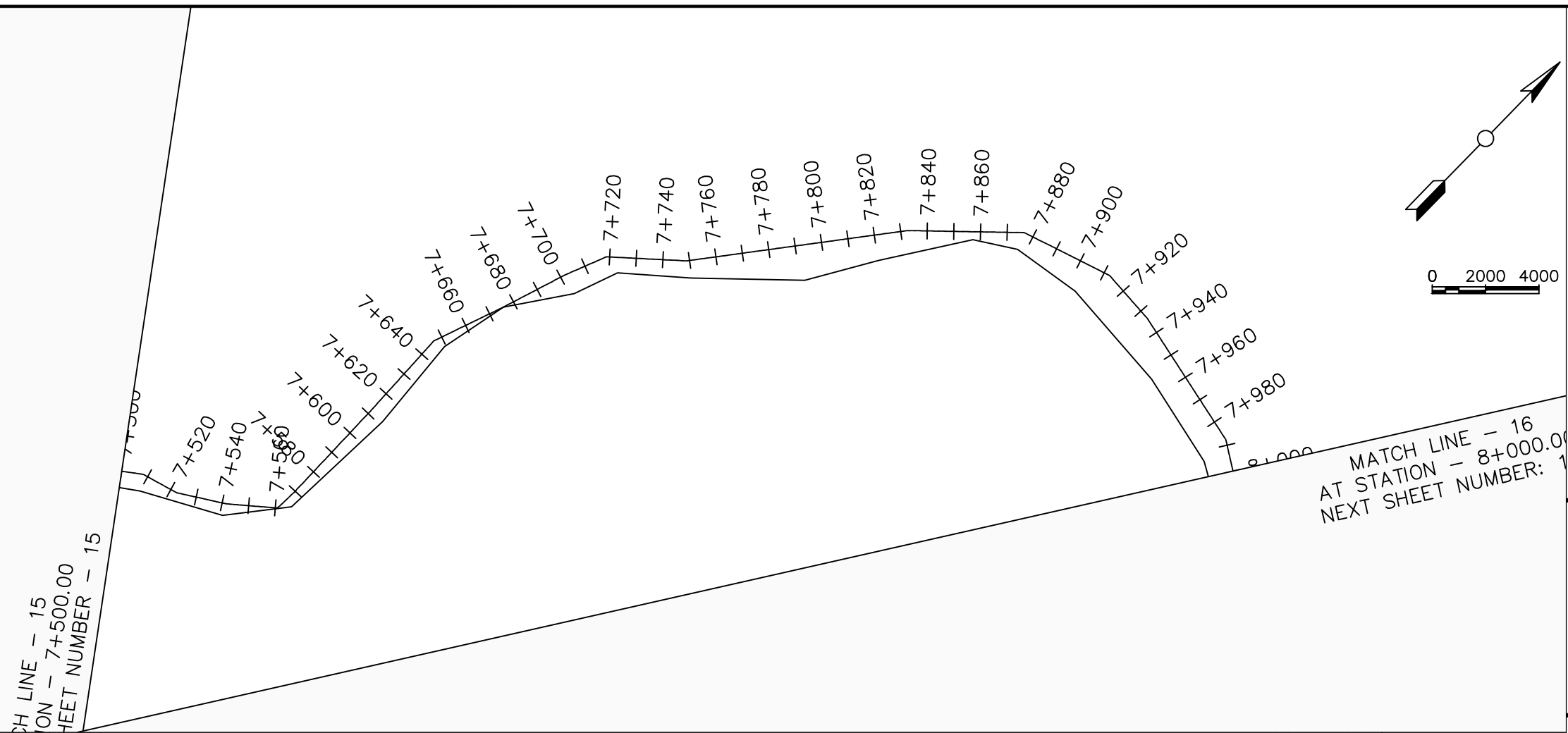
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
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.:	ENY-GTM-003
Scale:	1:2000
Sheet No.:	15 of 27



Chainage (m)	7+000	7+020	7+040	7+060	7+080	7+100	7+120	7+140	7+160	7+180	7+200	7+220	7+240	7+260	7+280	7+300	7+320	7+340	7+360	7+380	7+400	7+420	7+440	7+460	7+480	7+500
Ground Levels (masl)	716.92	715.41	714.24	713.24	712.31	711.37	710.33	709.70	708.87	707.64	706.15	703.59	700.59	698.70	696.95	694.92	692.28	690.82	690.46	690.15	689.97	689.80	689.69	689.74	689.87	689.90
Invert Levels (masl)	714.80	713.41	710.31	706.87	704.15	701.59	696.70	692.92	689.32	688.34	688.38															
Slope (%)	-6.95%	-5.17%	-4.30%	-6.80%	-12.79%	12.23%	-9.45%	-9.01%	-0.82%	0.11%																
Pipe Data	DN200PN10, STEEL										OD160PN16, uPVC															



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

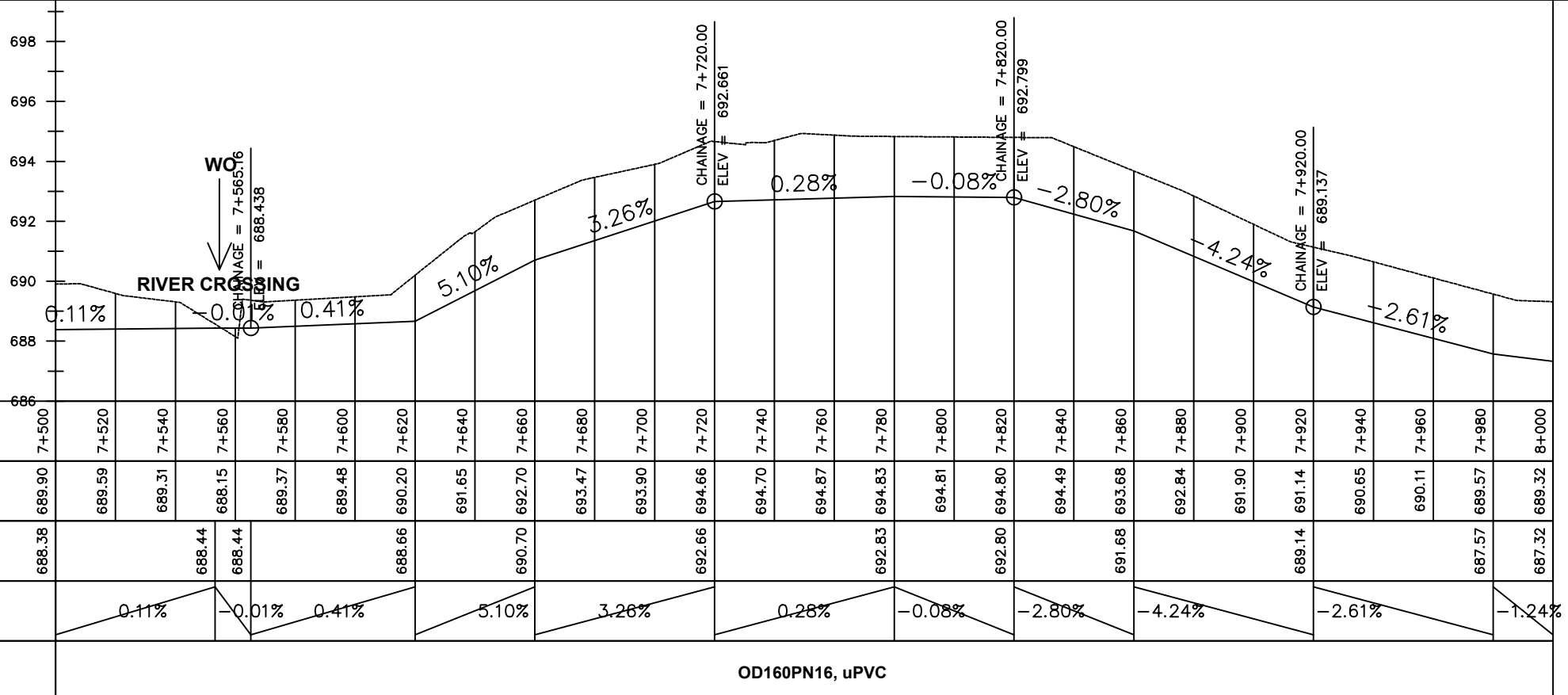
REVISIONS :

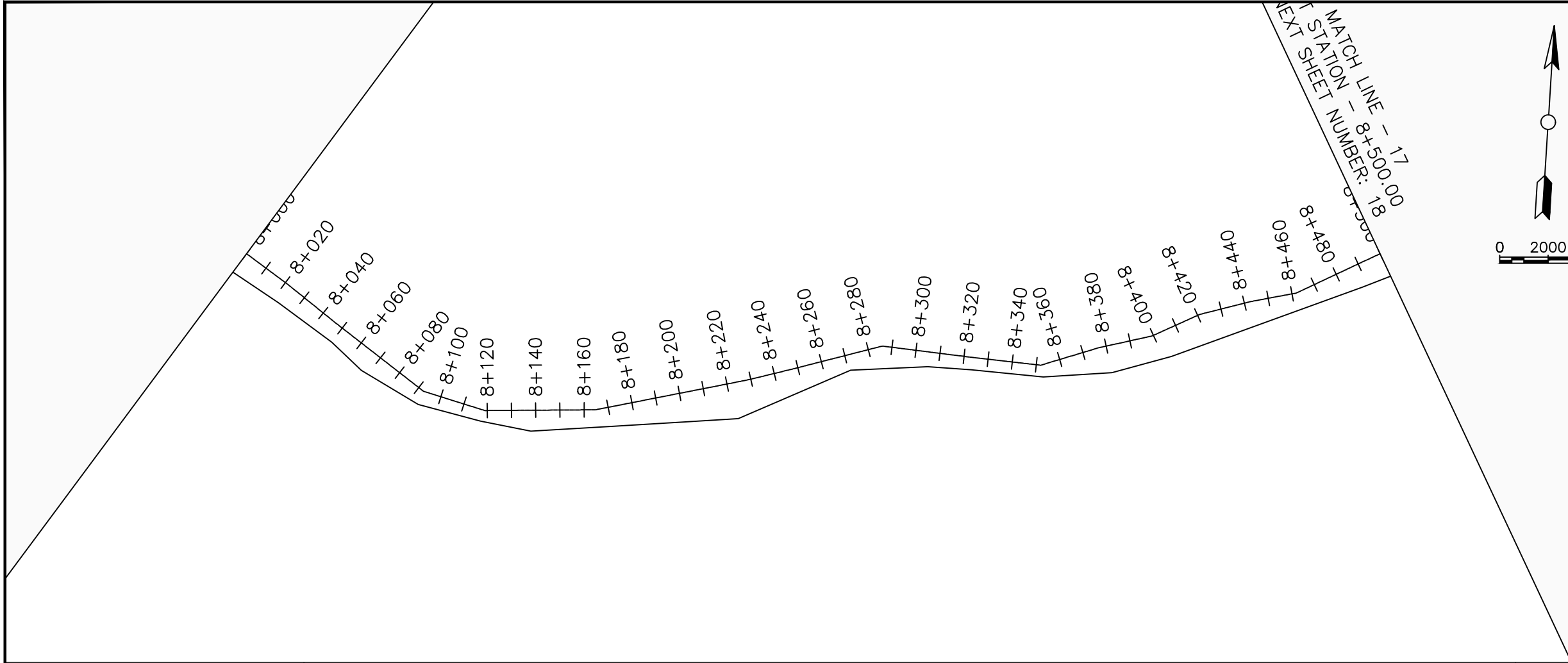
No	Date	Description

DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
7+500 - 8+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-GTM-003
Scale:	1:2000
Sheet No.:	16 of 27





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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ENYAU WATER SUPPLY AND SANITATION SYSTEM

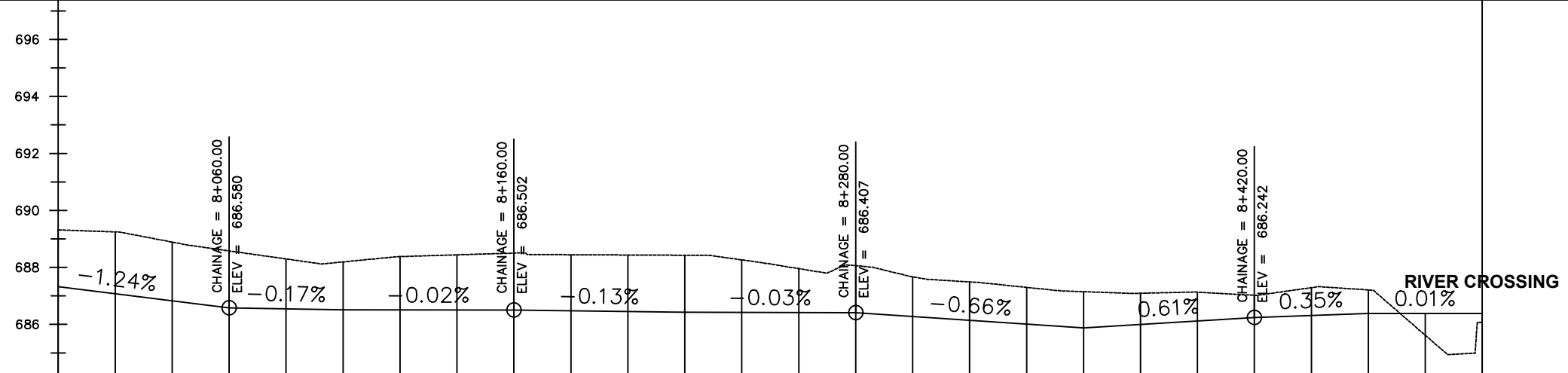
REVISIONS :

No	Date	Description

DRAWING TITLE :

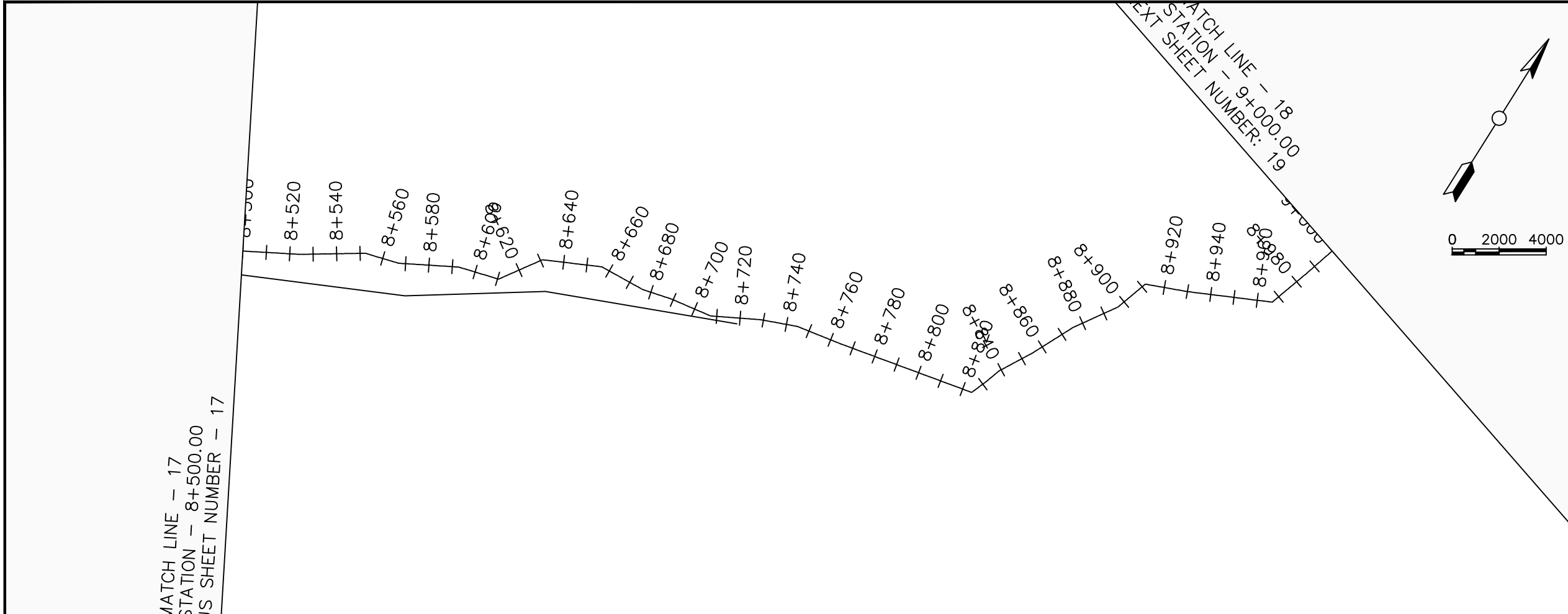
GRAVITY TRANSMISSION MAIN 3
8+000 - 8+500

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-003
Scale:	1:2000
Sheet No.:	17 of 27



Chainage (m)	8+000	8+020	8+040	8+060	8+080	8+100	8+120	8+140	8+160	8+180	8+200	8+220	8+240	8+260	8+280	8+300	8+320	8+340	8+360	8+380	8+400	8+420	8+440	8+460	8+480	8+500		
Ground Levels (masl)	689.32	689.25	688.89	688.58	688.30	688.19	688.38	688.44	688.50	688.45	688.44	688.43	688.27	687.96	688.06	687.67	687.49	687.30	687.15	687.09	687.13	687.02	687.29	687.21	685.62	686.07		
Invert Levels (masl)	687.32			686.58		686.51			686.50			686.43			686.41				685.88			686.24		686.38		686.39		
Slope (%)		-1.24%		-0.17%		-0.02%			-0.13%			-0.03%			-0.66%				0.61%			0.35%			0.01%			
Pipe Data	OD160PN16, uPVC																											

0.07%



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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ENYAU WATER SUPPLY AND SANITATION SYSTEM

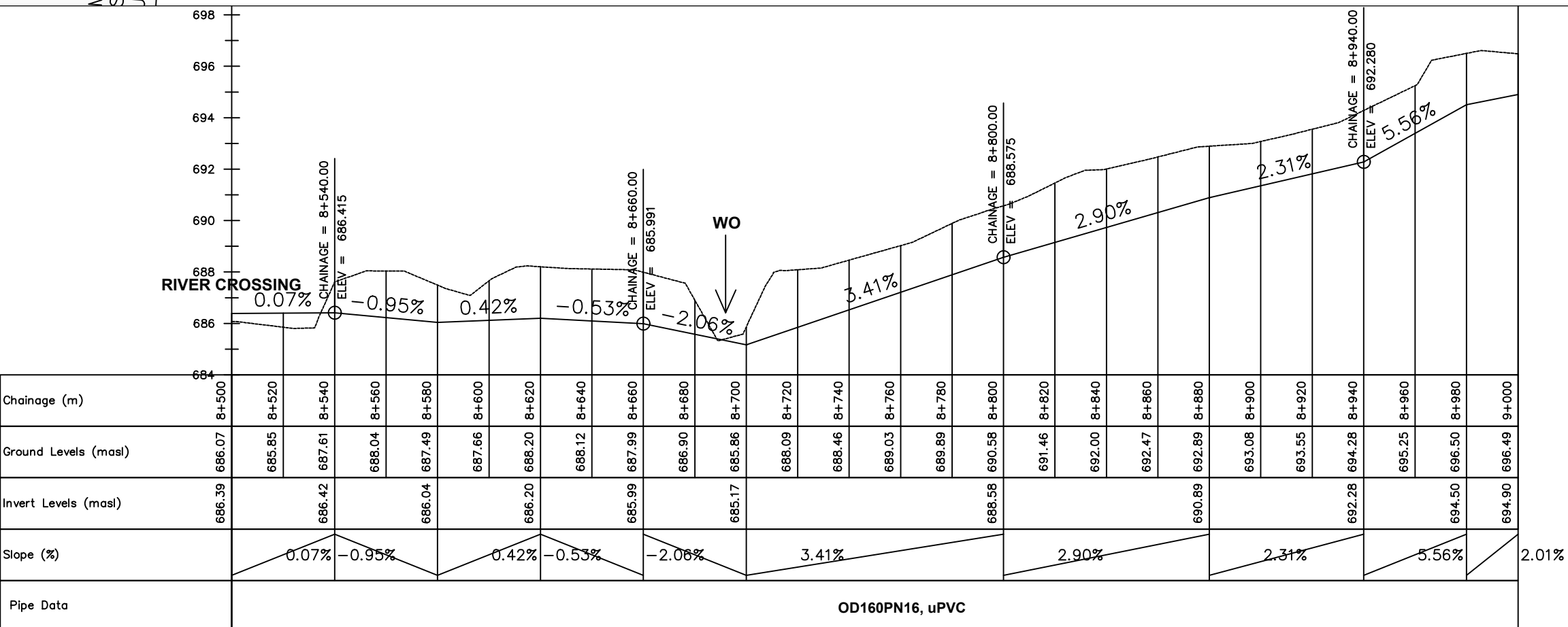
REVISIONS :

No	Date	Description

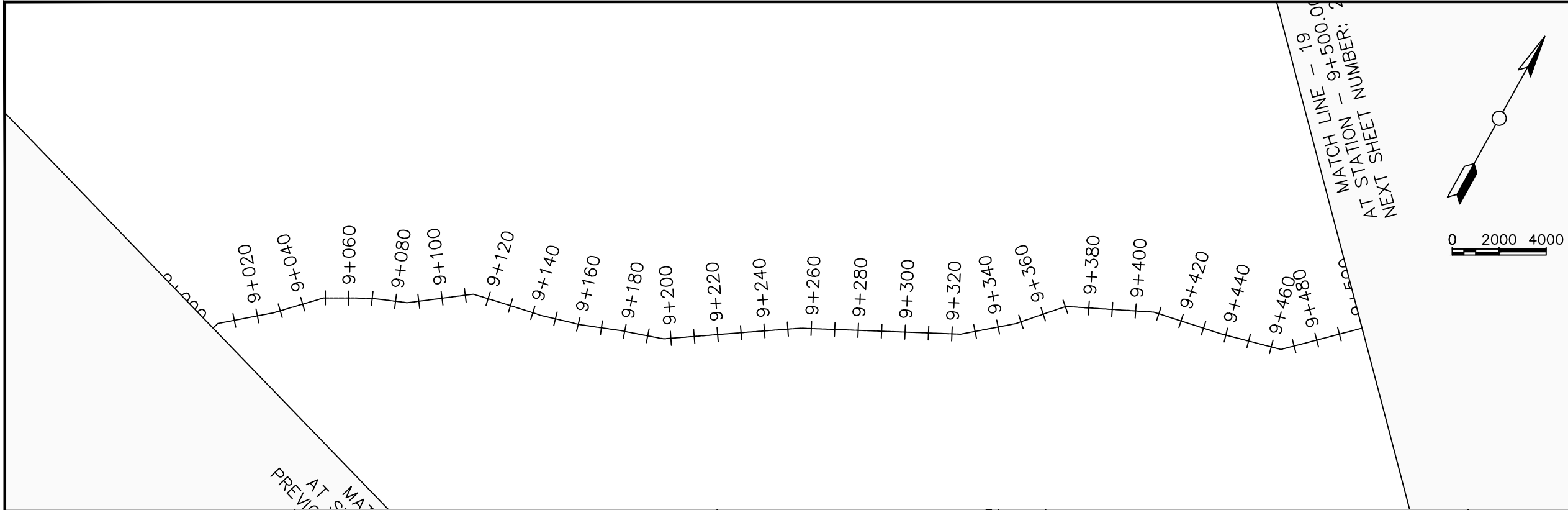
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
8+500 - 9+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-GTM-003
Scale:	1:2000
Sheet No.:	18 of 27



Chainage (m)	8+500	8+520	8+540	8+560	8+580	8+600	8+620	8+640	8+660	8+680	8+700	8+720	8+740	8+760	8+780	8+800	8+820	8+840	8+860	8+880	8+900	8+920	8+940	8+960	8+980	9+000		
Ground Levels (masl)	686.07	685.85	687.61	688.04	687.49	687.66	688.20	688.12	687.99	686.90	685.86	688.09	688.46	689.03	689.89	690.58	691.46	692.00	692.47	692.89	693.08	693.55	694.28	695.25	696.50	696.49		
Invert Levels (masl)	686.39		686.42		686.04		686.20		685.99		685.17					688.58				690.89		692.28			694.50	694.90		
Slope (%)		0.07%	-0.95%	0.42%	-0.53%	-2.06%	3.41%					2.90%					2.31%				2.31%			5.56%		2.01%		
Pipe Data	OD160PN16, uPVC																											



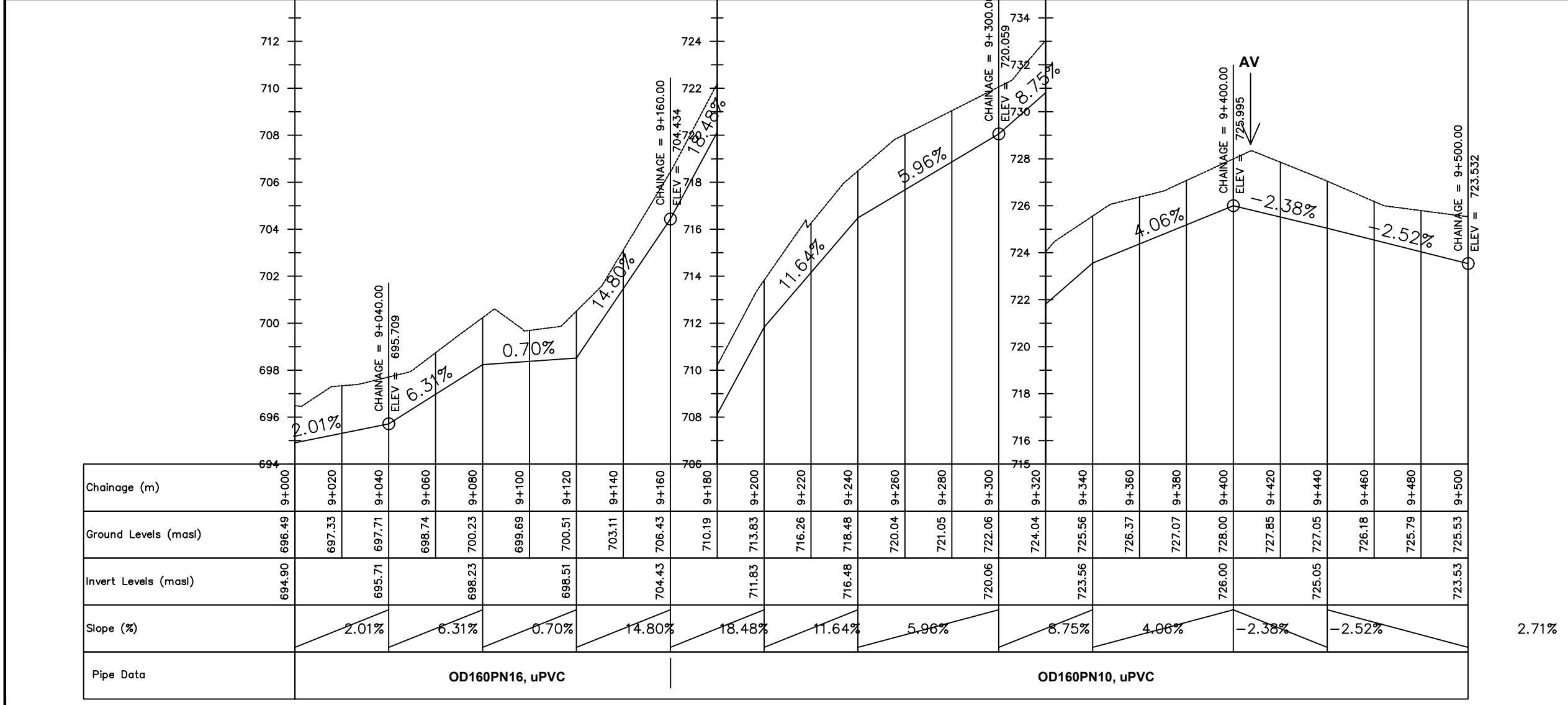
LEGEND

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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PROJECT :

ALA-ORA WATER SUPPLY AND SANITATION PROJECT

ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

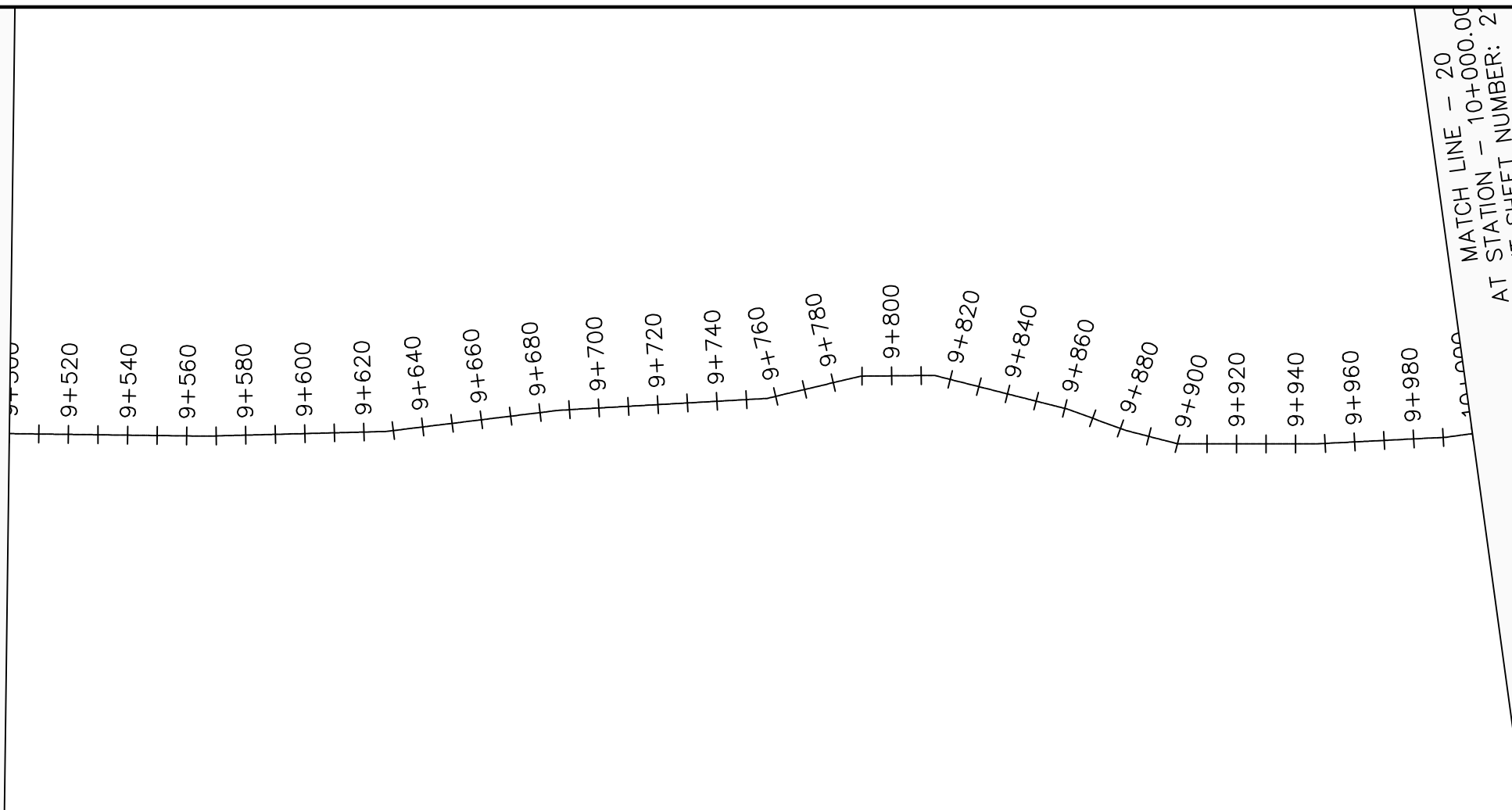
No	Date	Description

DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
9+000 - 9+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-003
Scale:	1:2000
Sheet No.:	19 of 27

MATCH LINE - 19
AT STATION - 9+500.00
PREVIOUS SHEET NUMBER - 19



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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Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND SANITATION PROJECT

ENYAU WATER SUPPLY AND SANITATION SYSTEM

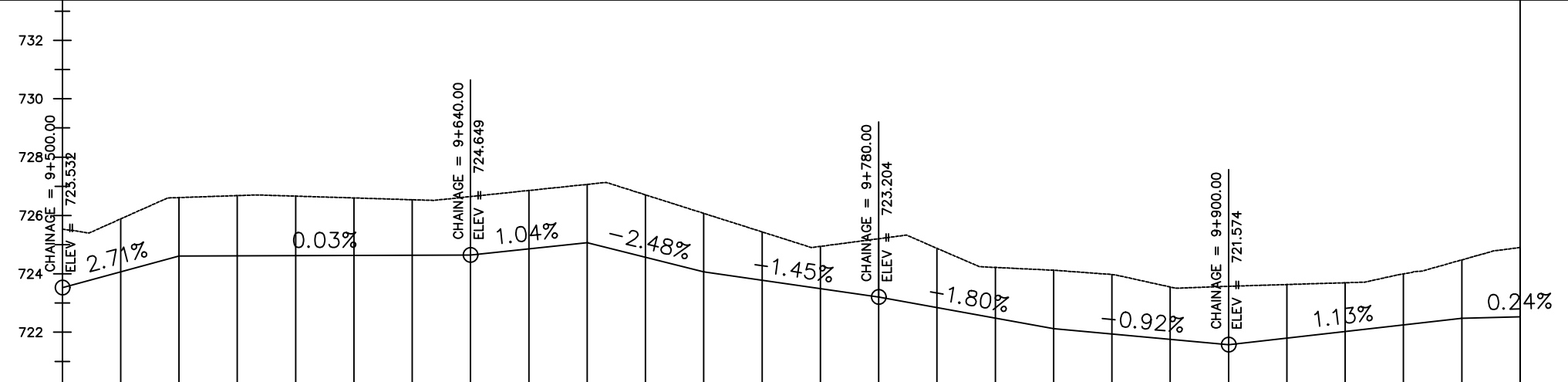
REVISIONS :

No	Date	Description

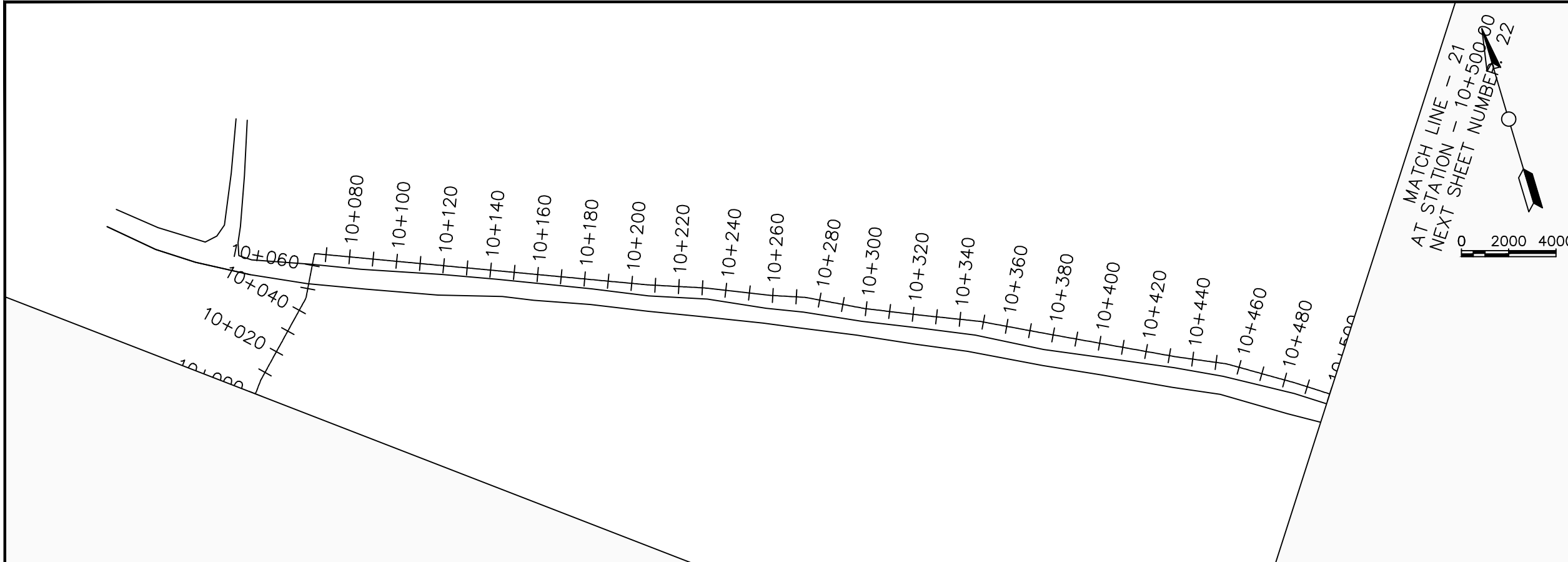
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
9+500 - 10+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-GTM-003
Scale:	1:2000
Sheet No.:	20 of 27



Chainage (m)	Ground Levels (masl)	Invert Levels (masl)	Slope (%)	Pipe Data
9+500	725.53	723.53	-2.52%	OD160PN10, uPVC
9+520	725.88	724.61	2.71%	
9+540	726.61	724.65	0.03%	
9+560	726.68	724.65	1.04%	
9+580	726.66	725.07	-2.48%	
9+600	726.60	724.07	-1.45%	
9+620	726.54	723.20	-1.80%	
9+640	726.65	722.12	-0.92%	
9+660	726.86	721.57	1.13%	
9+680	727.07	722.48	0.24%	
9+700	726.71	722.53		
9+720	726.07			
9+740	725.44			
9+760	724.94			
9+780	725.20			
9+800	724.88			
9+820	724.22			
9+840	724.12			
9+860	723.98			
9+880	723.55			
9+900	723.57			
9+920	723.63			
9+940	723.70			
9+960	724.00			
9+980	724.48			
10+000	724.90			



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 :

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ENYAU WATER SUPPLY AND SANITATION SYSTEM

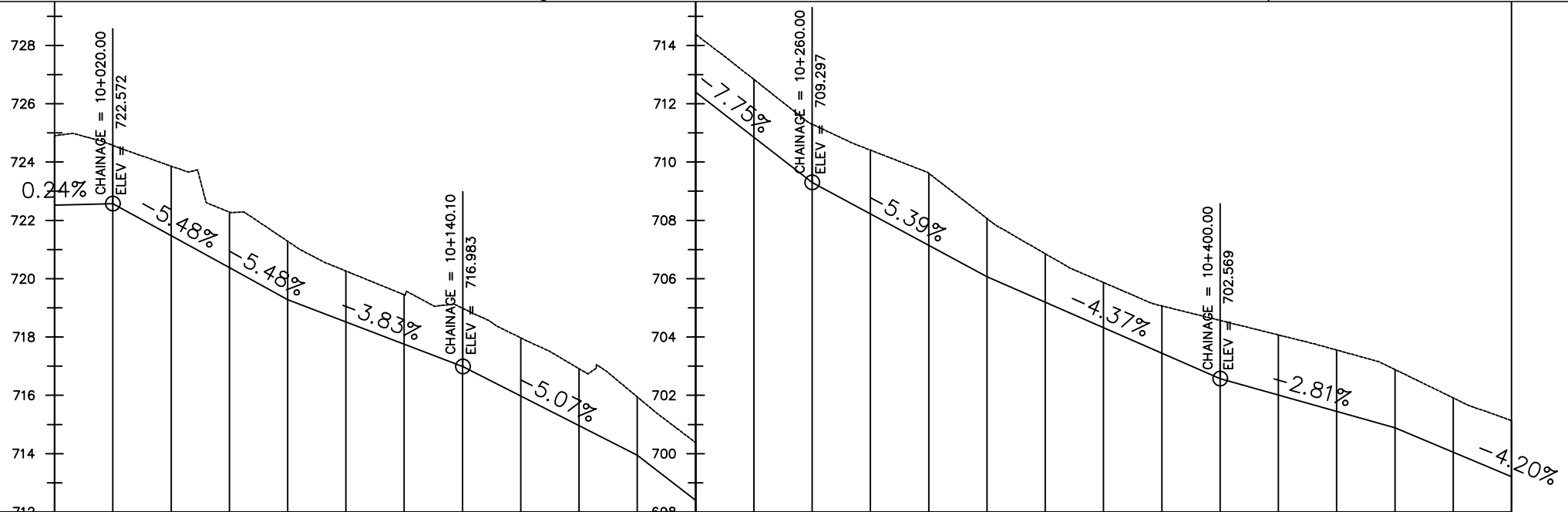
REVISIONS :

No	Date	Description

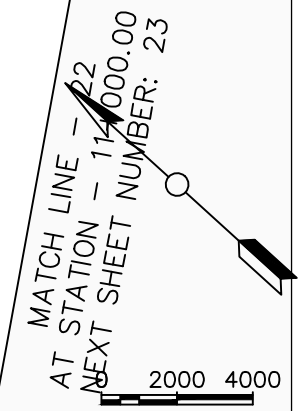
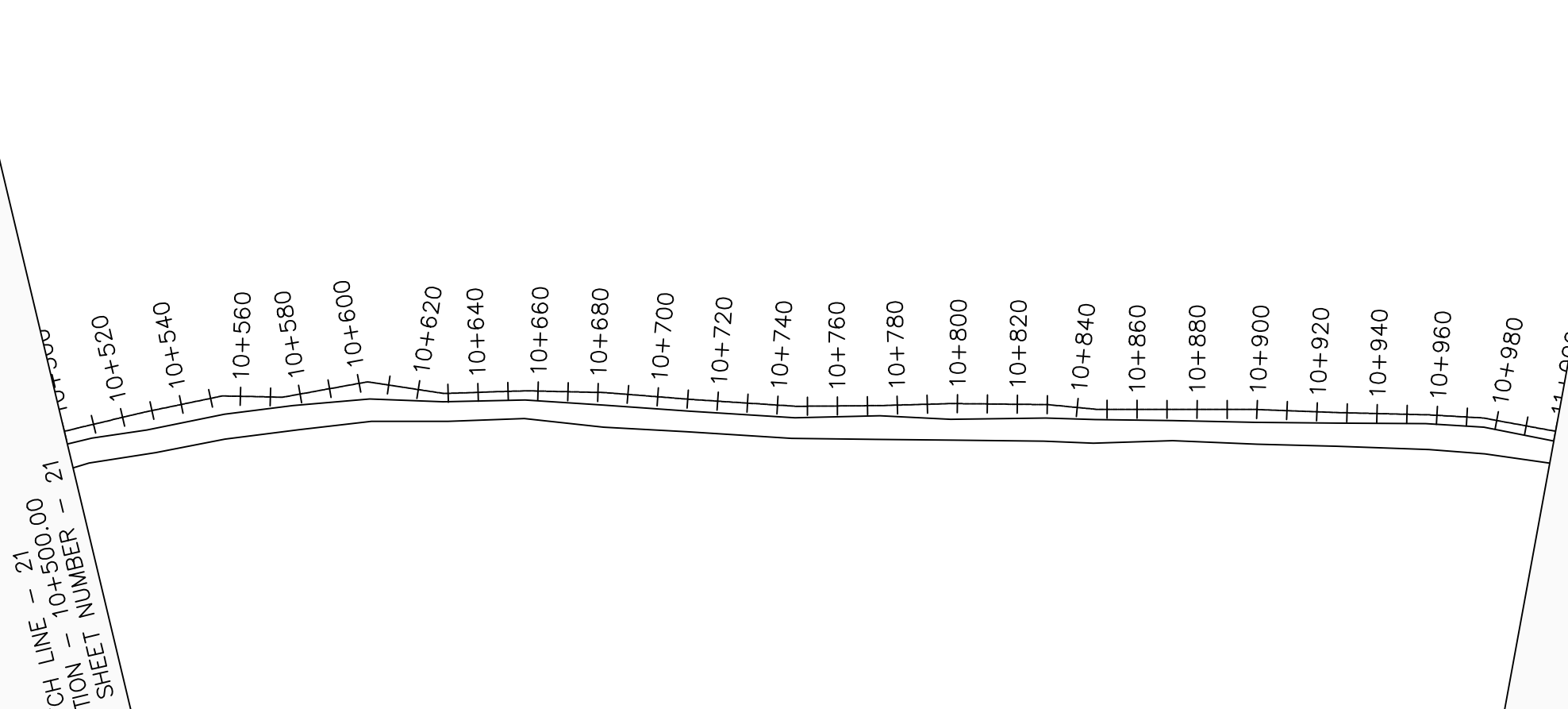
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
10+000 - 10+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-003
Scale:	1:2000
Sheet No.:	21 of 27



Chainage (m)	Ground Levels (masl)	Invert Levels (masl)	Slope (%)	Pipe Data
10+000	724.90	722.53		
10+020	724.57	722.57	0.24%	
10+040	723.86		-5.48%	
10+060	722.28	720.38	-5.48%	
10+080	721.28	719.28	-3.83%	
10+100	720.26		-5.07%	
10+120	719.45		-7.75%	
10+140	718.99	716.98	-5.39%	OD160PN10, uPVC
10+160	717.97		-4.37%	
10+180	716.91		-2.81%	
10+200	715.94	713.94	-4.20%	
10+220	714.38			
10+240	712.83			
10+260	711.30	709.30		OD160PN16, uPVC
10+280	710.41			
10+300	709.62			
10+320	708.06	706.06		
10+340	706.86			
10+360	705.87			
10+380	705.07			
10+400	704.57	702.57		
10+420	704.07			
10+440	703.55			
10+460	702.89	700.89		
10+480	701.91			
10+500	701.14	699.21		



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 :

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ENYAU WATER SUPPLY AND SANITATION SYSTEM

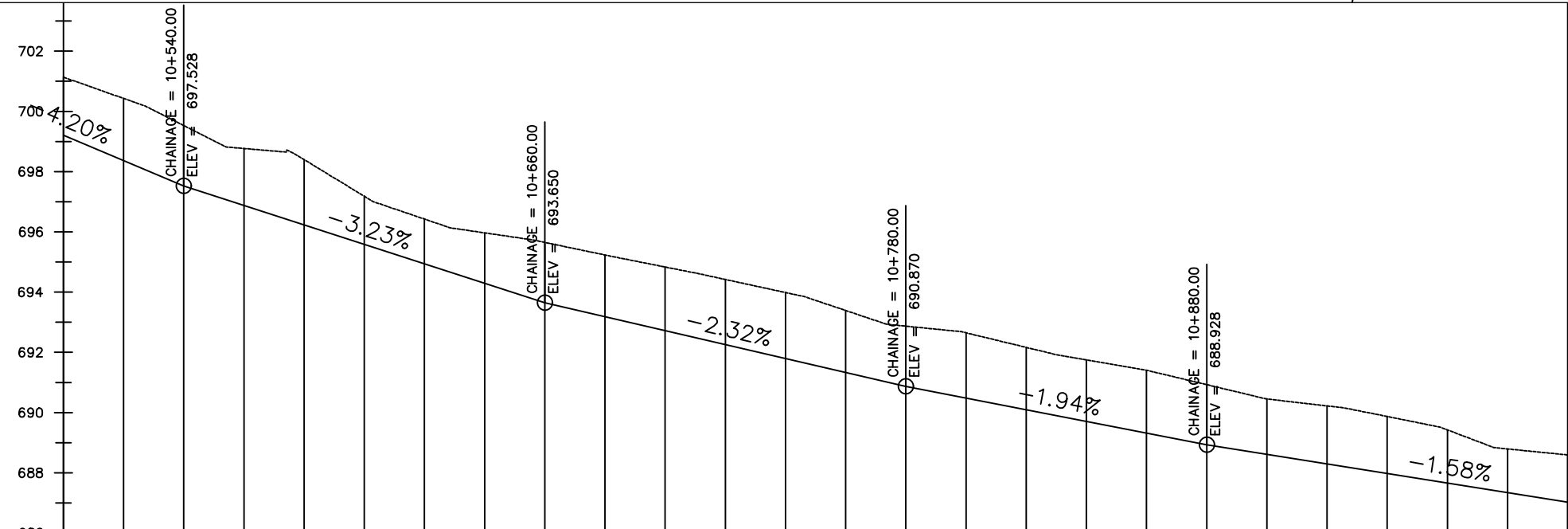
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No	Date	Description

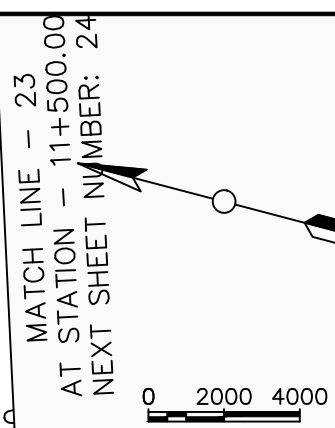
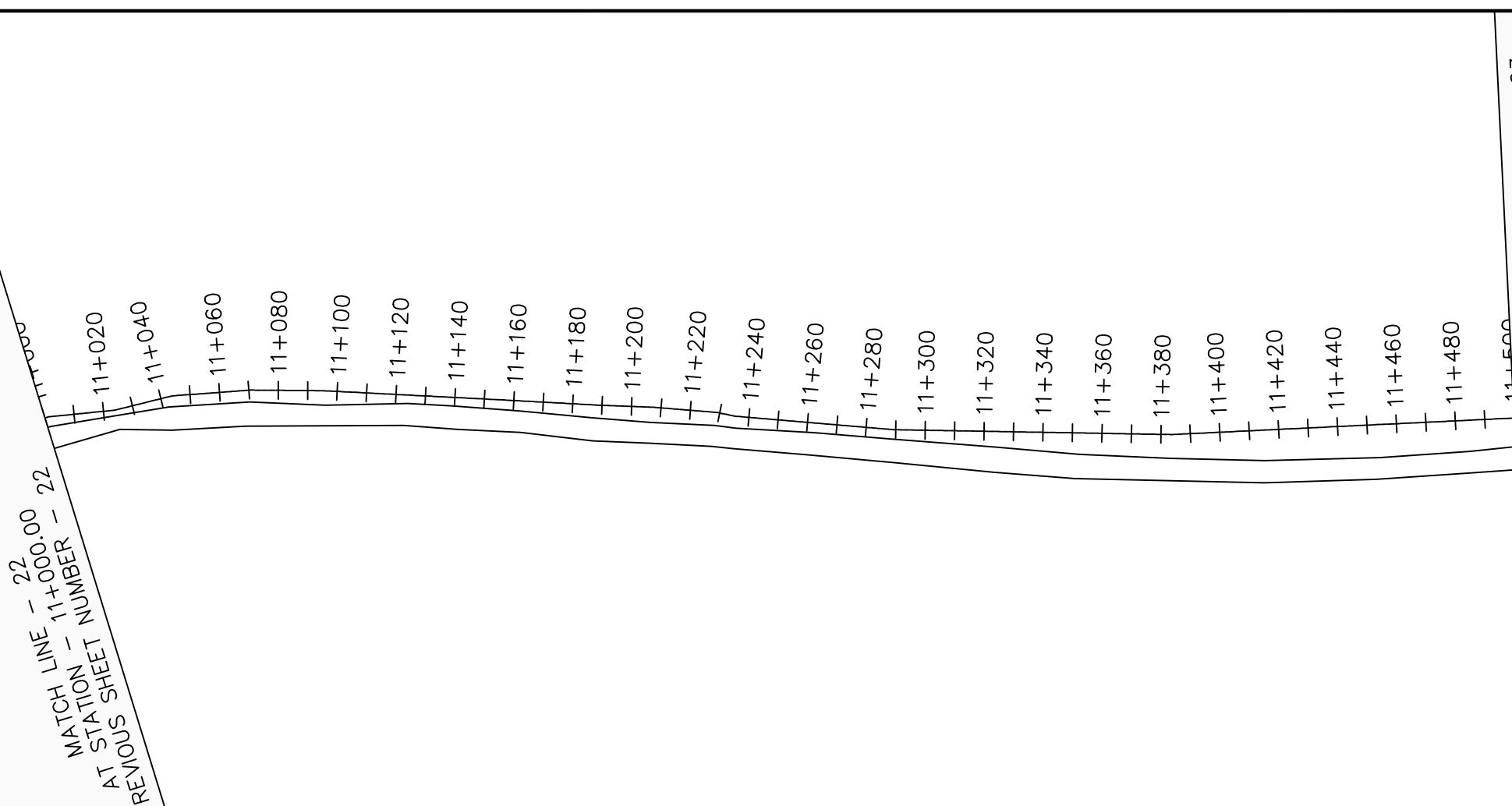
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
10+500 - 11+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-GTM-003
Scale:	1:2000
Sheet No.:	22 of 27



Chainage (m)	10+500	10+520	10+540	10+560	10+580	10+600	10+620	10+640	10+660	10+680	10+700	10+720	10+740	10+760	10+780	10+800	10+820	10+840	10+860	10+880	10+900	10+920	10+940	10+960	10+980	11+000		
Ground Levels (masl)	701.14	700.43	699.53	698.77	698.40	697.18	696.42	695.97	695.65	695.23	694.83	694.42	693.99	693.39	692.87	692.65	692.16	691.75	691.40	690.93	690.45	690.22	689.87	689.43	688.79	688.59		
Invert Levels (masl)	699.21	697.53	693.65	690.87	688.93	687.03																						
Slope (%)	-4.20%	-3.23%	-2.32%	-1.94%	-1.58%																							
Pipe Data	OD160PN16, 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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ENYAU WATER SUPPLY AND SANITATION SYSTEM

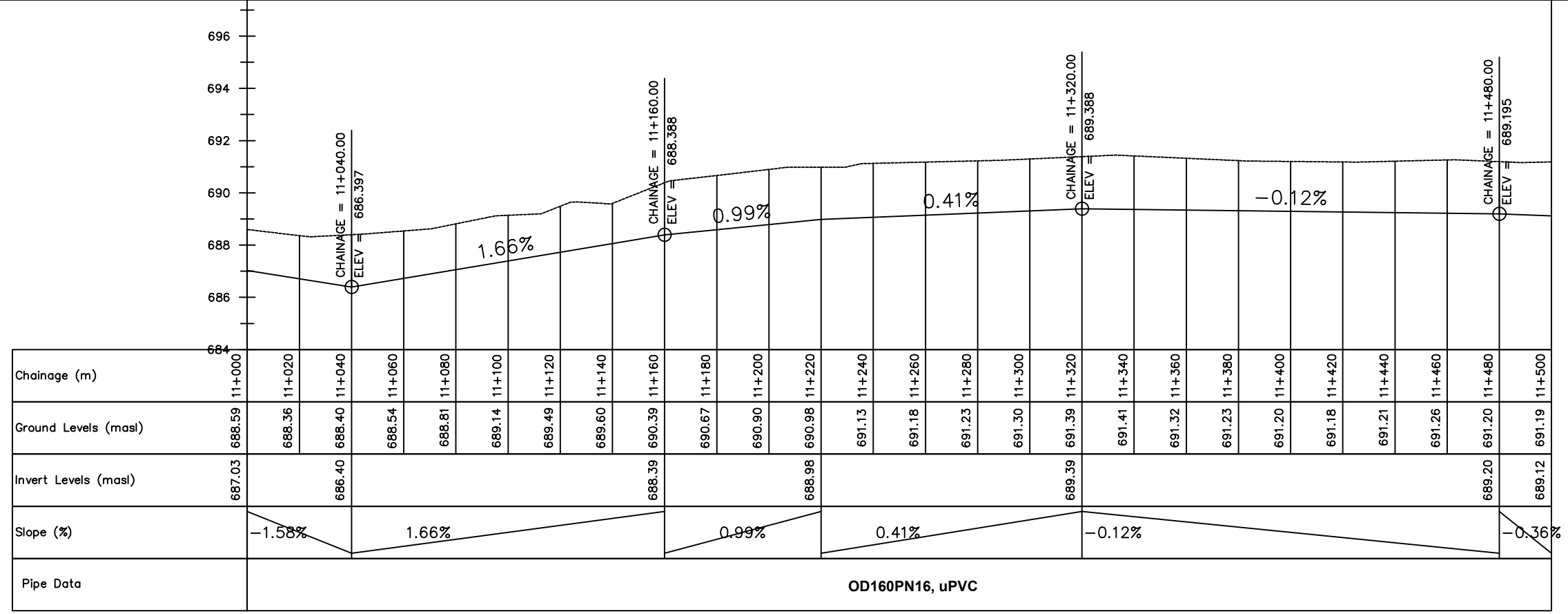
REVISIONS :

No	Date	Description

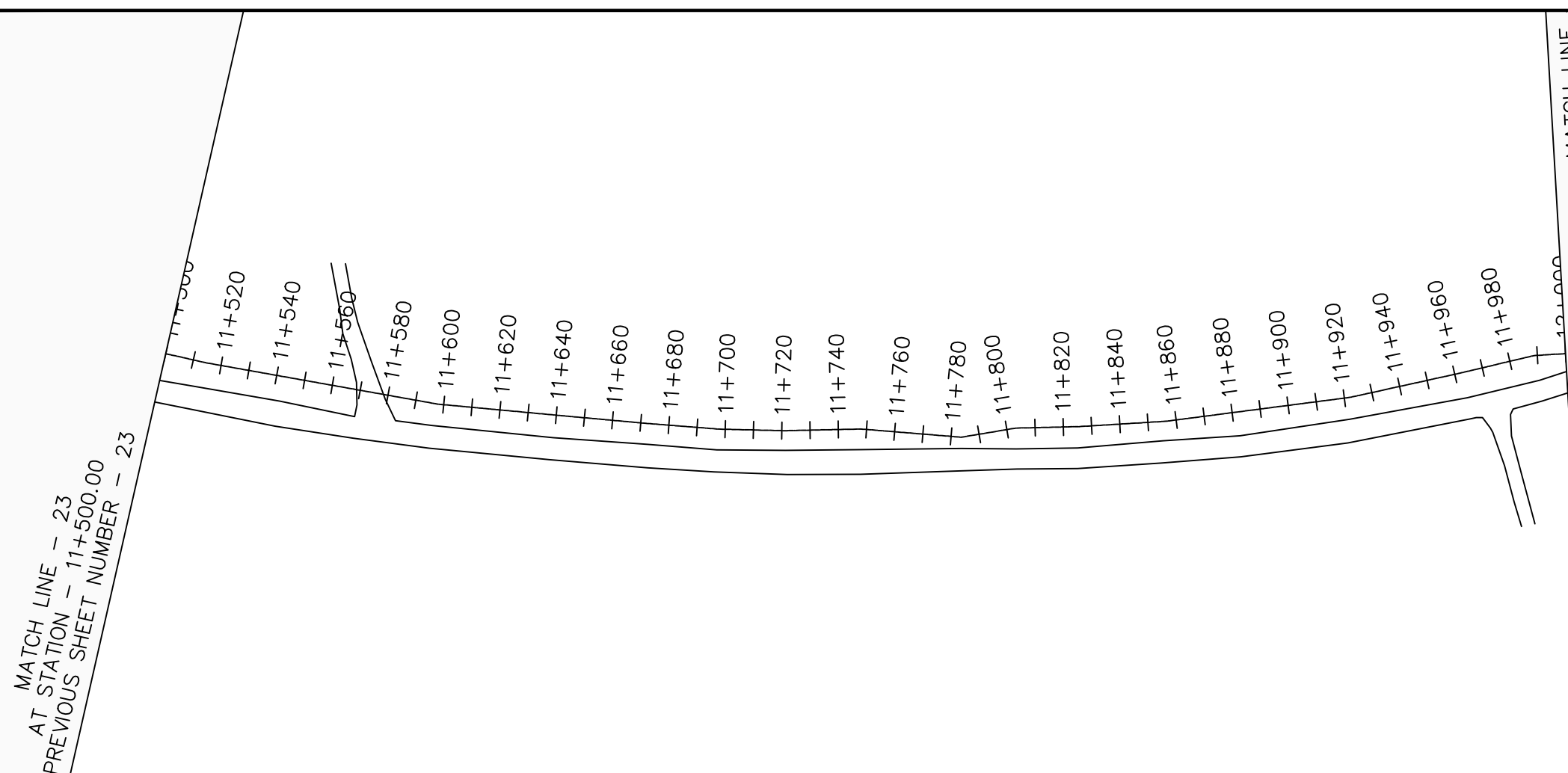
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
11+000 - 11+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-003
Scale:	1:2000
Sheet No.:	23 of 27



OD160PN16, 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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ENYAU WATER SUPPLY AND SANITATION SYSTEM

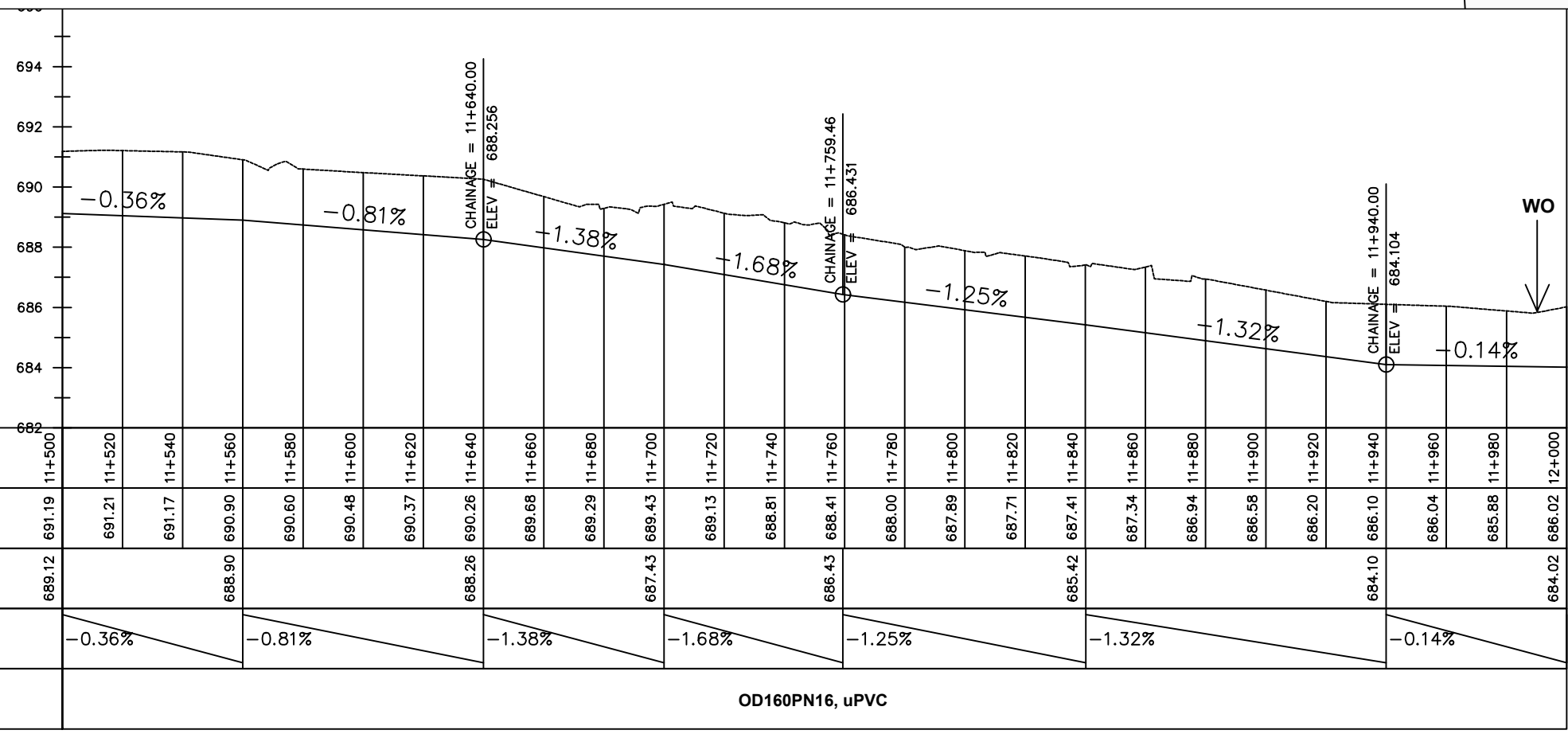
REVISIONS :

No	Date	Description

DRAWING TITLE :

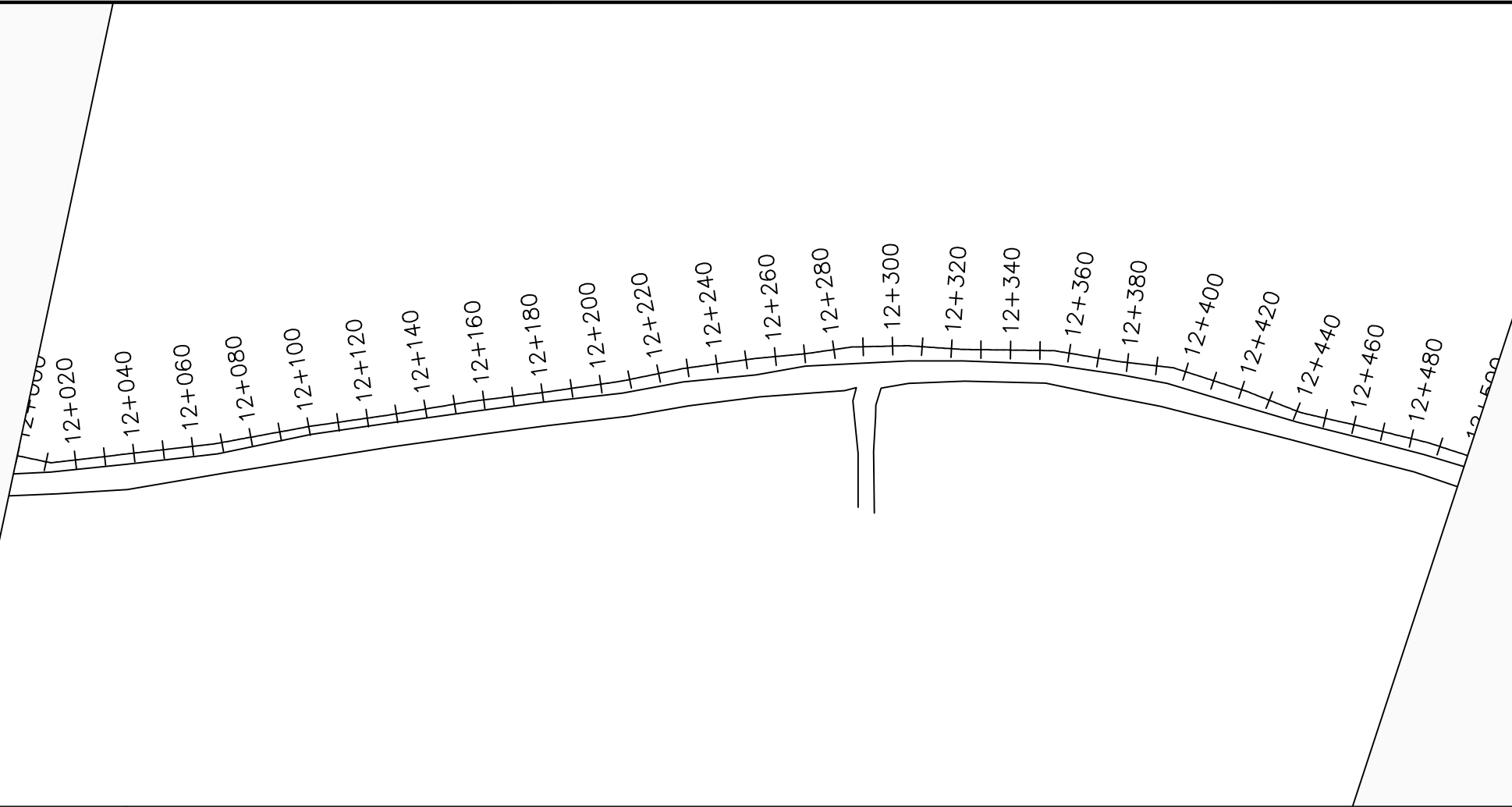
GRAVITY TRANSMISSION MAIN 3
11+500 - 12+000

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2022
DRG. No.:	ENY-GTM-003
Scale:	1:2000
Sheet No.:	24 of 27



Chainage (m)	11+500	11+520	11+540	11+560	11+580	11+600	11+620	11+640	11+660	11+680	11+700	11+720	11+740	11+760	11+780	11+800	11+820	11+840	11+860	11+880	11+900	11+920	11+940	11+960	11+980	12+000		
Ground Levels (masl)	691.19	691.21	691.17	690.90	690.60	690.48	690.37	690.26	689.68	689.29	689.43	689.13	688.81	688.41	688.00	687.89	687.71	687.41	687.34	686.94	686.58	686.20	686.10	686.04	685.88	686.02		
Invert Levels (masl)	689.12			688.90				688.26			687.43			686.43				685.42				684.10				684.02		
Slope (%)	-0.36%			-0.81%				-1.38%			-1.68%			-1.25%				-1.32%				-0.14%				0.88%		
Pipe Data	OD160PN16, uPVC																											

MATCH LINE - 24
STATION - 12+000.00
US SHEET NUMBER - 24



MATCH LINE - 25
AT STATION - 12+500.00
NEXT SHEET NUMBER: 26

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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In Association with

Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND
SANITATION PROJECT

**ENYAU WATER SUPPLY AND
SANITATION SYSTEM**

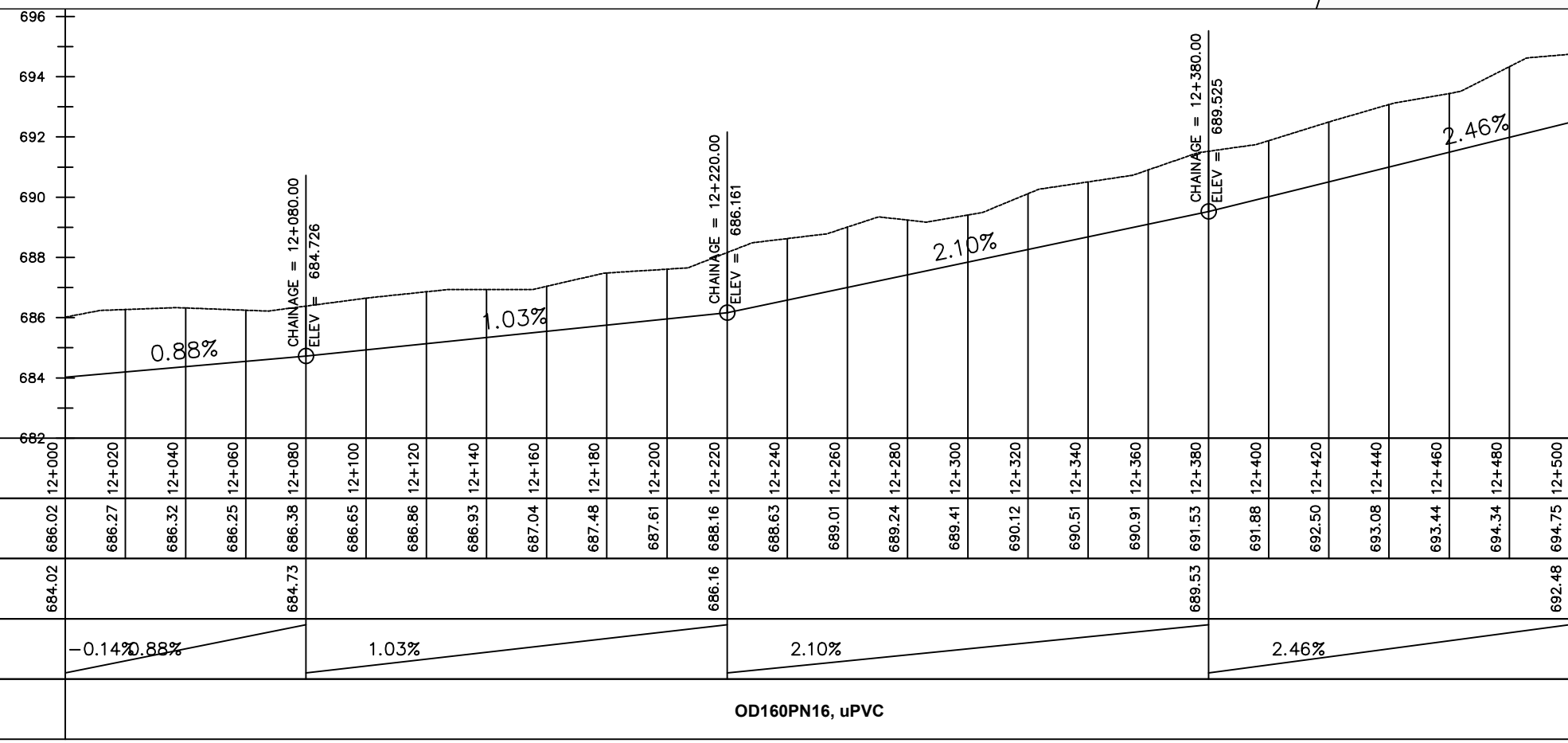
REVISIONS :

No	Date	Description

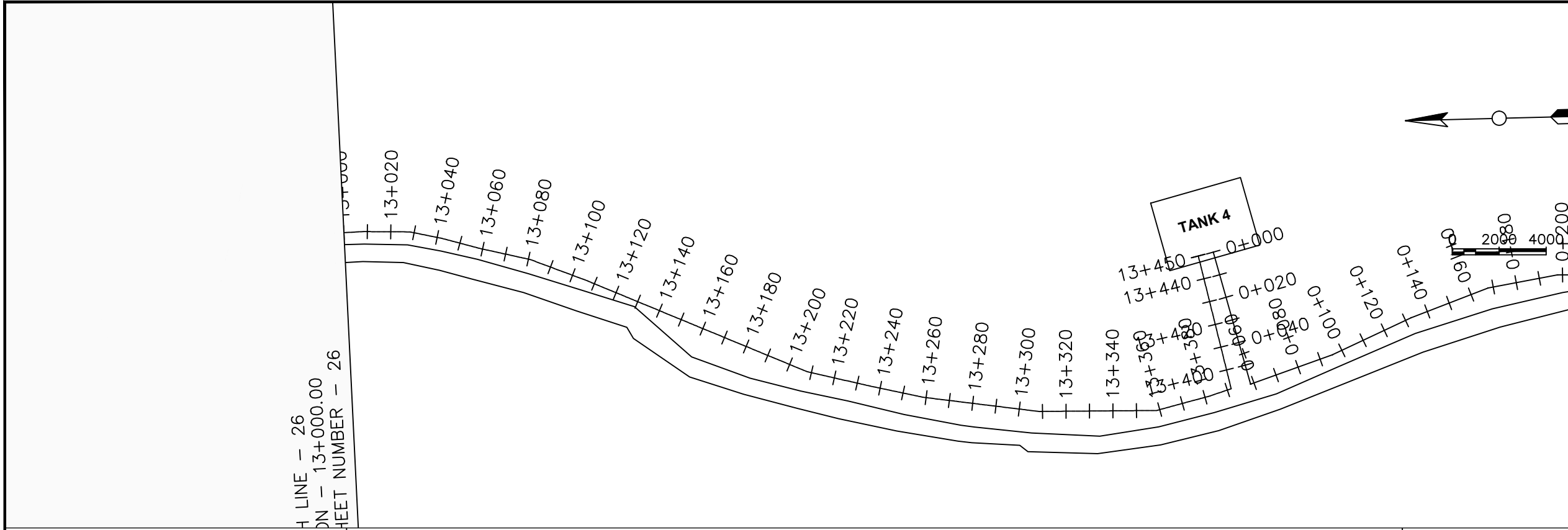
DRAWING TITLE :

GRAVITY TRANSMISSION MAIN 3
12+000 - 12+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-003
Scale:	1:2000
Sheet No.:	25 of 27



Chainage (m)	Ground Levels (masl)	Invert Levels (masl)	Slope (%)	Pipe Data
12+000	686.02	684.02	-0.14%	OD160PN16, uPVC
12+020	686.27		0.88%	
12+040	686.32			
12+060	686.25			
12+080	686.38	684.73		
12+100	686.65		1.03%	
12+120	686.86			
12+140	686.93			
12+160	687.04			
12+180	687.48			
12+200	687.61			
12+220	688.16	686.16		
12+240	688.63		2.10%	
12+260	689.01			
12+280	689.24			
12+300	689.41			
12+320	690.12			
12+340	690.51			
12+360	690.91			
12+380	691.53	689.53		
12+400	691.88		2.46%	
12+420	692.50			
12+440	693.08			
12+460	693.44			
12+480	694.34			
12+500	694.75	692.48		



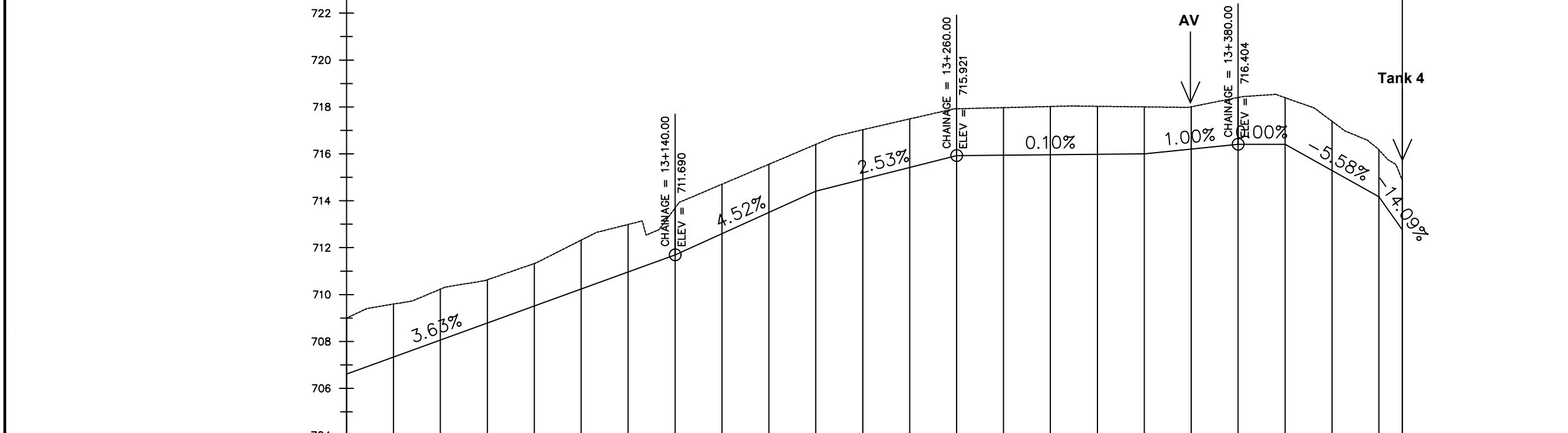
LEGEND

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 :

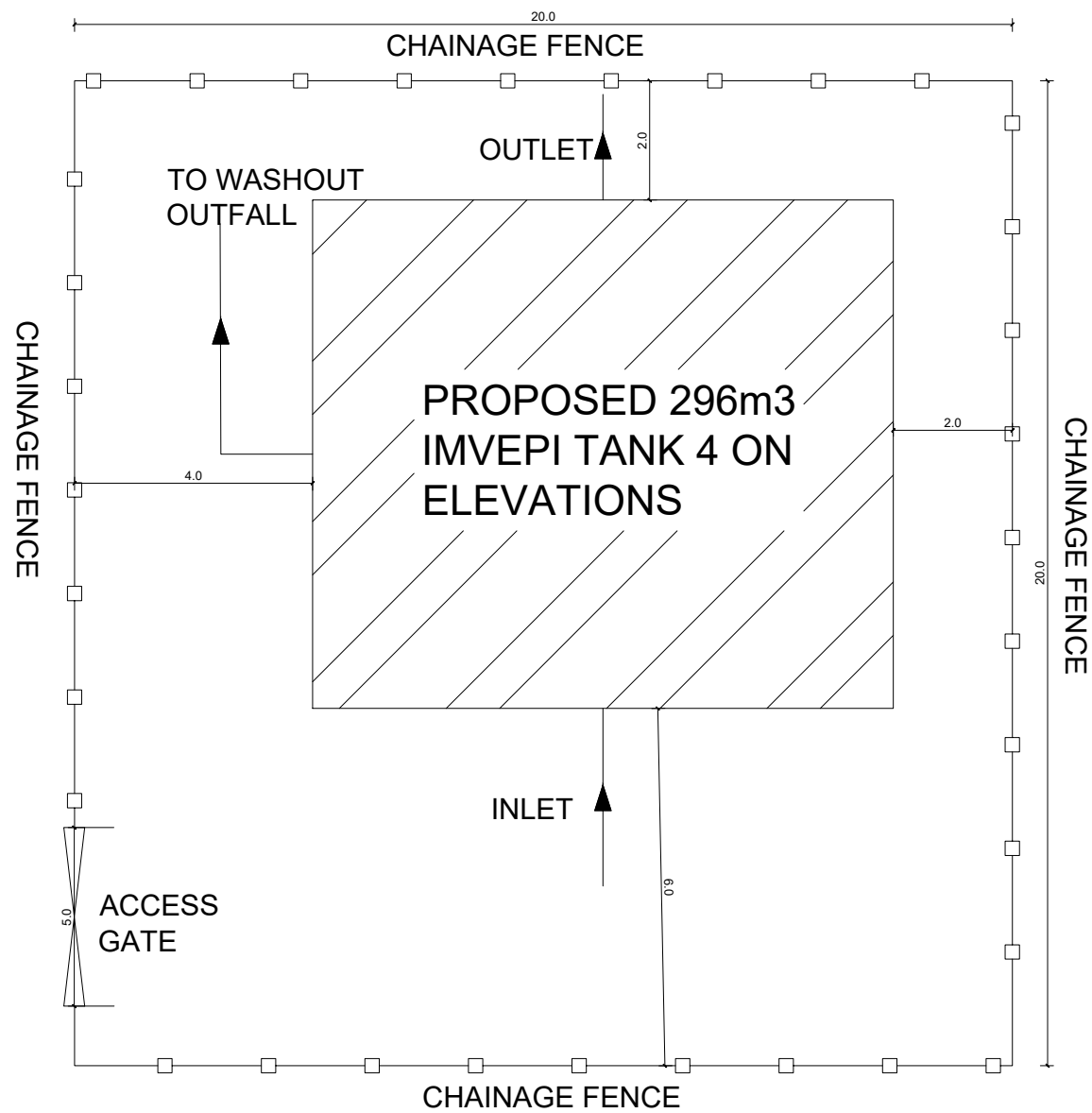
No	Date	Description

DRAWING TITLE :

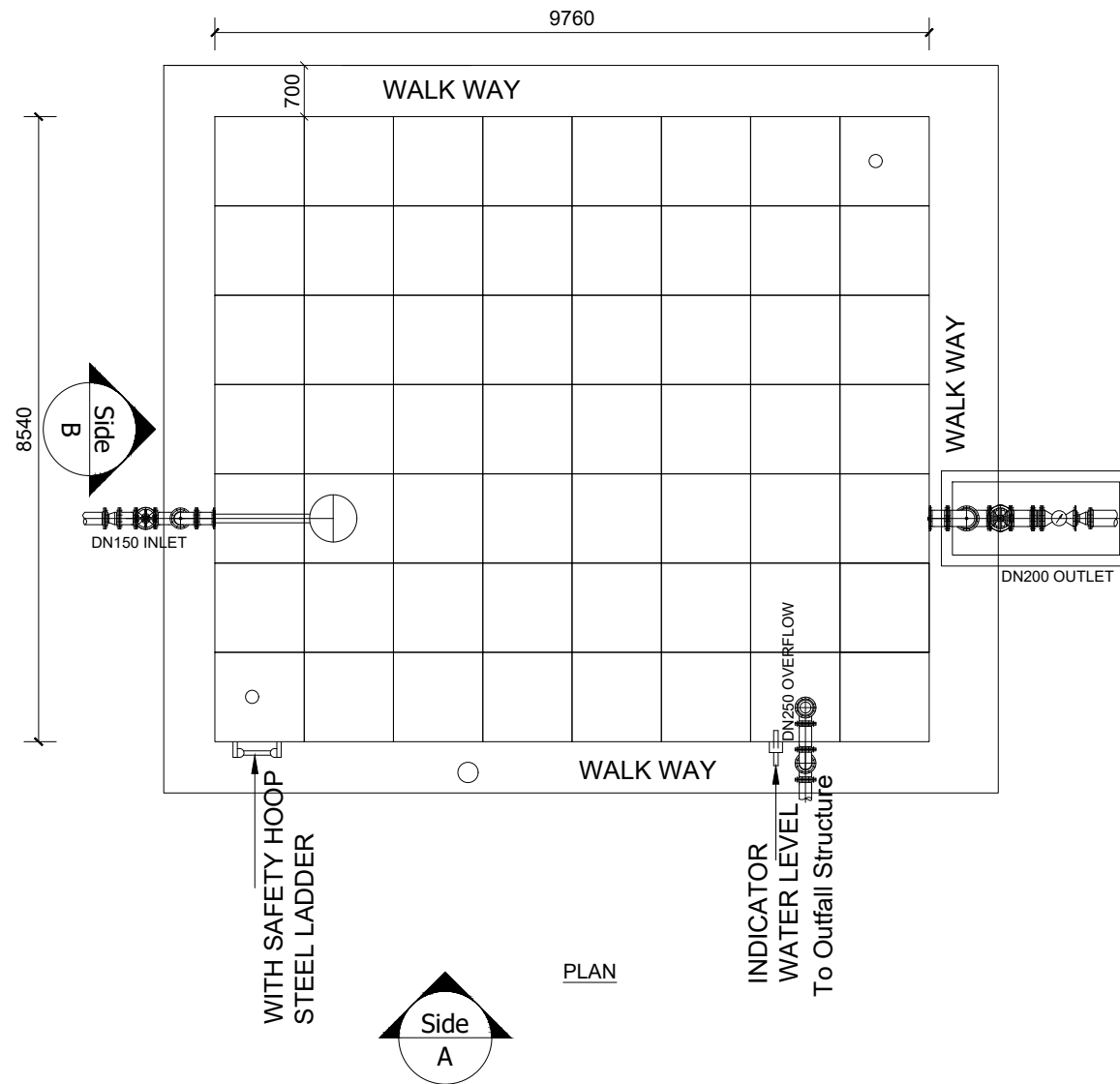
GRAVITY TRANSMISSION MAIN 3
13+000 - 13+450

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-003
Scale:	1:2000
Sheet No.:	27 of 27

Chainage (m)	13+000	13+020	13+040	13+060	13+080	13+100	13+120	13+140	13+160	13+180	13+200	13+220	13+240	13+260	13+280	13+300	13+320	13+340	13+360	13+380	13+400	13+420	13+440	13+450
Ground Levels (masl)	709.00	709.59	710.23	710.63	711.32	712.32	712.99	713.69	714.70	715.55	716.40	717.03	717.49	717.92	717.97	718.02	718.03	718.00	718.01	718.40	718.39	717.39	716.17	714.87
Invert Levels (masl)	706.61							711.69			714.40			715.92				716.00		716.40	716.40		714.17	712.76
Slope (%)		3.63%						4.52%			2.53%			0.10%				1.00%		0.55%				-14.09%
Pipe Data		OD160PN16, uPVC																						

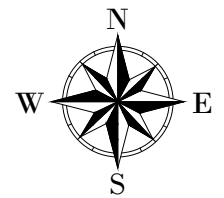


SITE LAYOUT



PLAN

LEGEND



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ENYAU WATER SUPPLY AND SANITATION SYSTEM

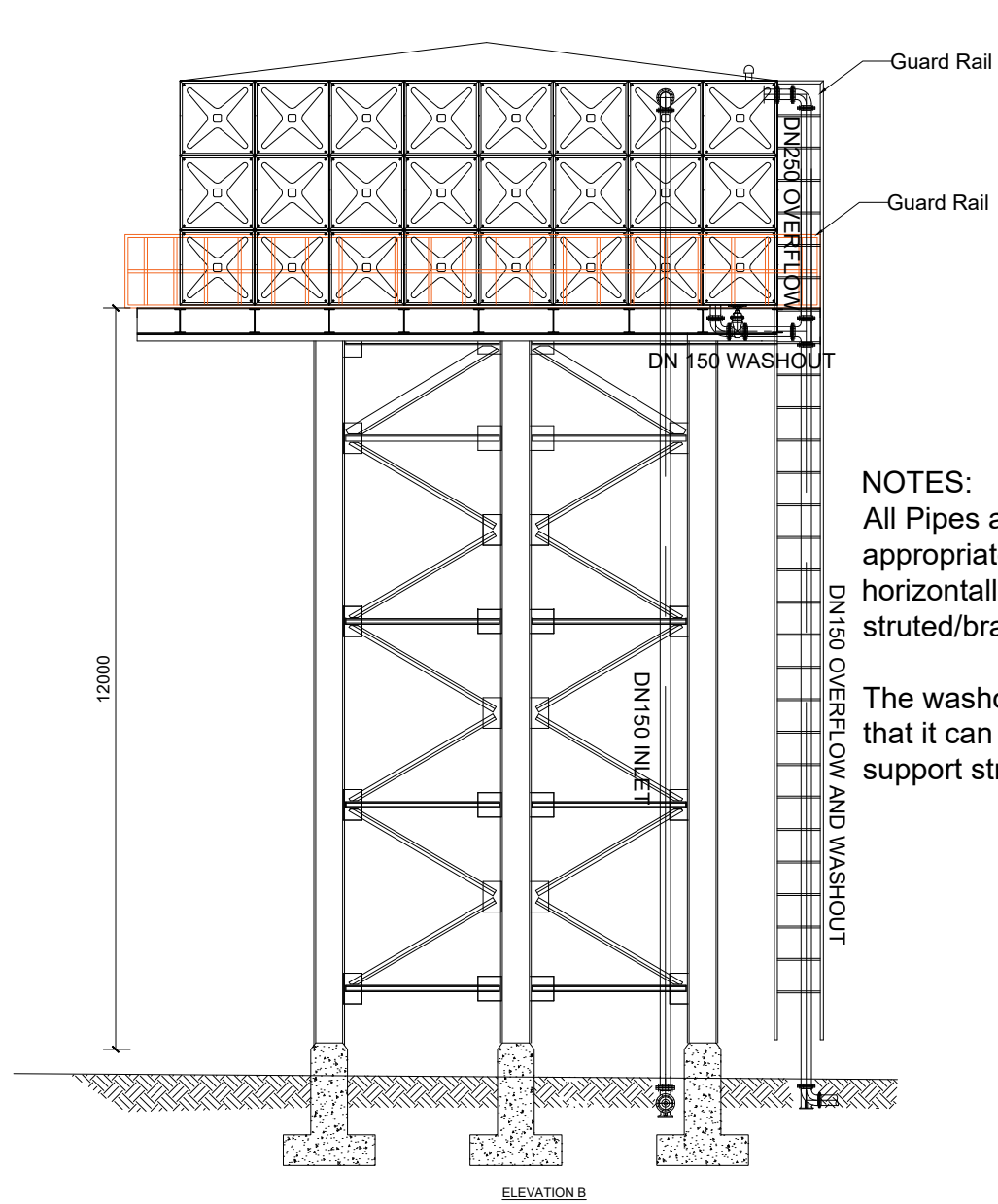
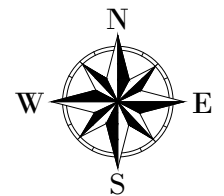
REVISIONS :

No	Date	Description

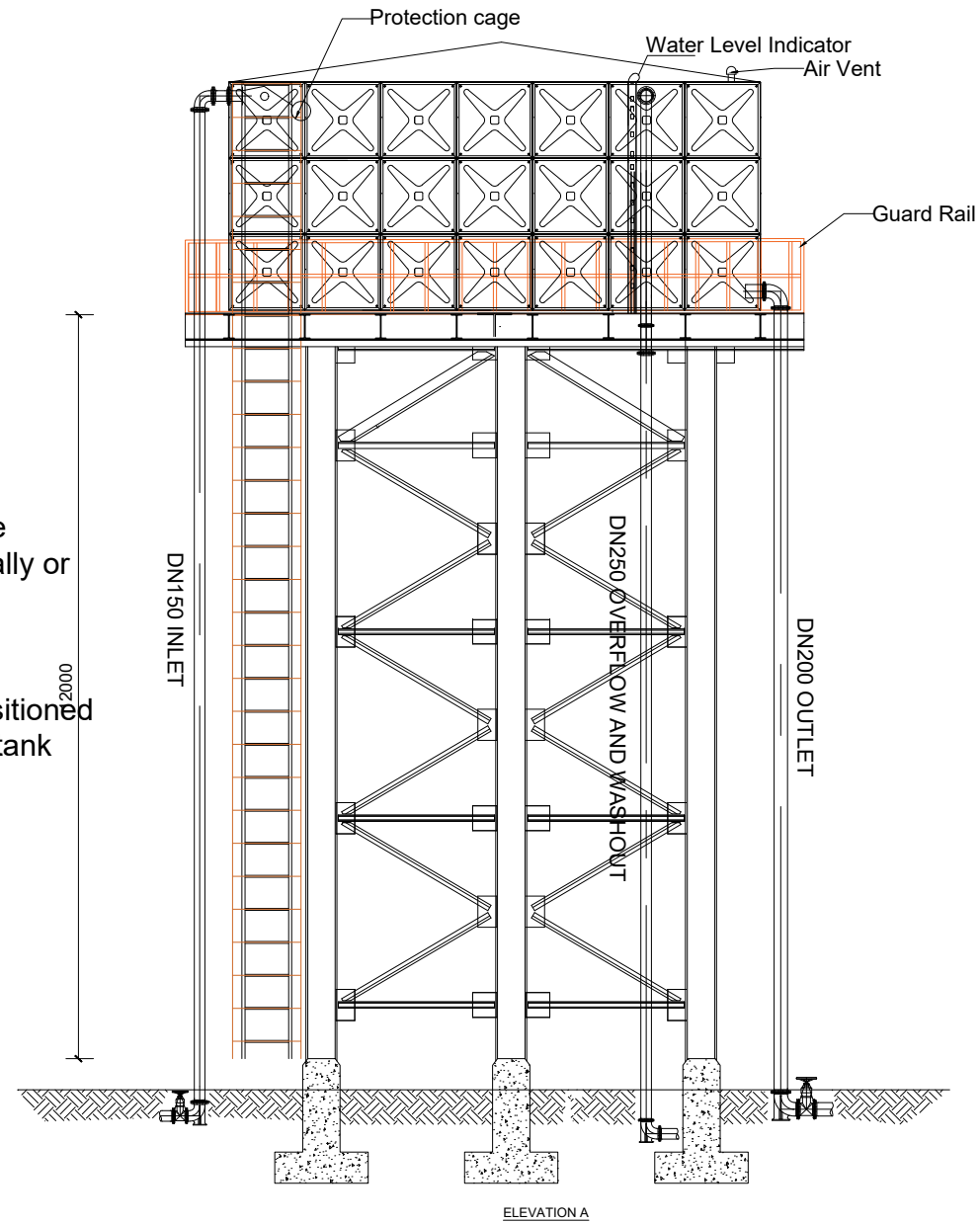
DRAWING TITLE :
IMVEPI RESERVOIR TANK 4- 296m³
PLAN AND SITE LAYOUT

Surveyed by: R.K
 Drawn by: N.R
 Designed by: W.G.M
 Checked by: J.K.K
 Date: January 2023
 DRG. No.: **ENY_RES_MVP_004**
 Scale: 1:100 Sheet No.: 1 of 3

LEGEND



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



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PROJECT :
 ALA-ORA WATER SUPPLY AND
 SANITATION PROJECT

**ENYAU WATER SUPPLY AND
 SANITATION SYSTEM**

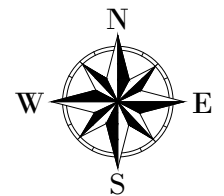
REVISIONS :

No	Date	Description

DRAWING TITLE :
IMVEPI RESERVOIR TANK 4- 296m³
 ELEVATIONS

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ENY_RES_MVP_004
Scale:	1:120
Sheet No.:	2 of 3

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 :

**IMVEPI RESERVOIR TANK 4- 296m³
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.:

ENY_RES_MVP_004

Scale:

1:50

Sheet No.:

3 of 3

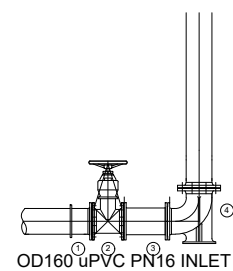
PIPE AND FITTINGS SCHEDULE

Mark	Description	Material	DN	PN	Qty.
INLET					
1	Flanged Adapter	DI	150		1
2	Flanged Gate Valve	CI	150		1
3	Flanged Pipe Piece, Length - 0.3m	DI	150		1
4	90° Flanged Duckfoot Bend	DI	150		1
5	Flanged Pipe, Length - 6.0m	DI	150	16	2
6	Flanged Pipe, Length n.e - 6.0m	DI	150		1
7	90° Flanged Bend	DI	150		1
8	Flanged Pipe Piece, Length - 0.2m	DI	150		1
9	Flanged Float Valve	CI	150		1
OUTLET					
10	Flanged Strainer	SS	200		1
11	Flanged Pipe Piece, Length - 0.2m	DI	200		1
12	90° Flanged Bend	DI	200		1
13	Flanged Pipe, Length n.e - 2.0m	DI	200		1
14	Flanged Pipe, Length - 6.0m	DI	200	10	2
15	90° Flanged Duckfoot Bend	DI	200		1
16	Flanged Pipe Piece, Length - 0.3m	DI	200		1
17	Flanged Gate Valve	CI	200		1
18	Flanged Adapter	DI	200		1
WASHOUT & OVERFLOW					
19	Flanged Bellmouth	DI	250		1
20	90° Flanged Bend	DI	250		2
21	Flanged Pipe, Length n.e - 0.2m	DI	250		1
22	Flanged Pipe Piece, Length - 6.0m	DI	250		2
20a	90° Flanged Bend	DI	100		1
23	Flanged Pipe Piece, Length n.e - 1.0m	DI	100	10	2
24	Flanged Tee	DI	250/100		1
25	Flanged Pipe Piece, Length - 6.0m	DI	200		2
26	90° Flanged Duckfoot Bend	DI	200		1
27	Flanged Adapter		200		1
28	Flanged Gate Valve	CI	100		

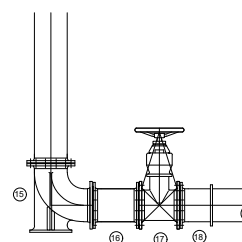
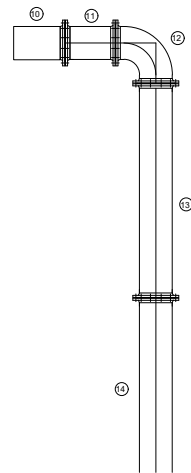
DN150 INLET

DN200 OUTLET

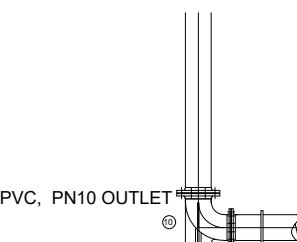
DN250 OVERFLOW
DN250 OVERFLOW AND WASHOUT



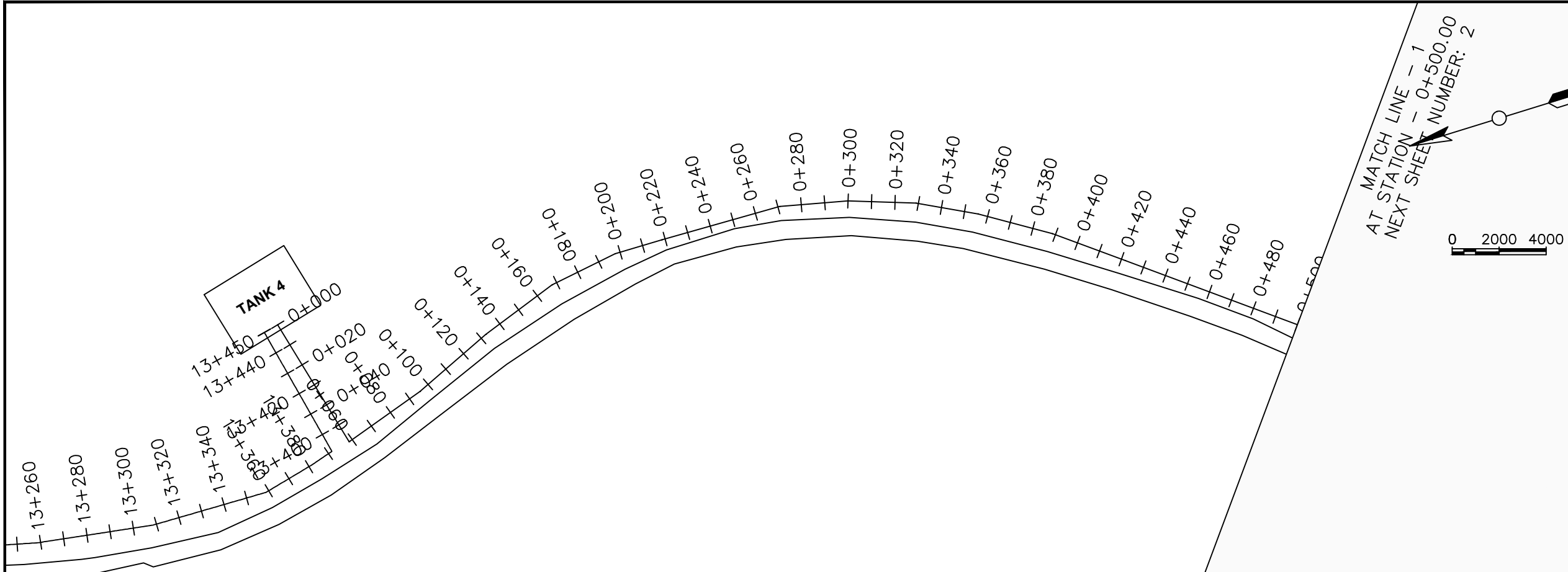
OD160 uPVC PN16 INLET



OD225 uPVC, PN10 OUTLET



OD250 uPVC, PN10 Overflow and Washout



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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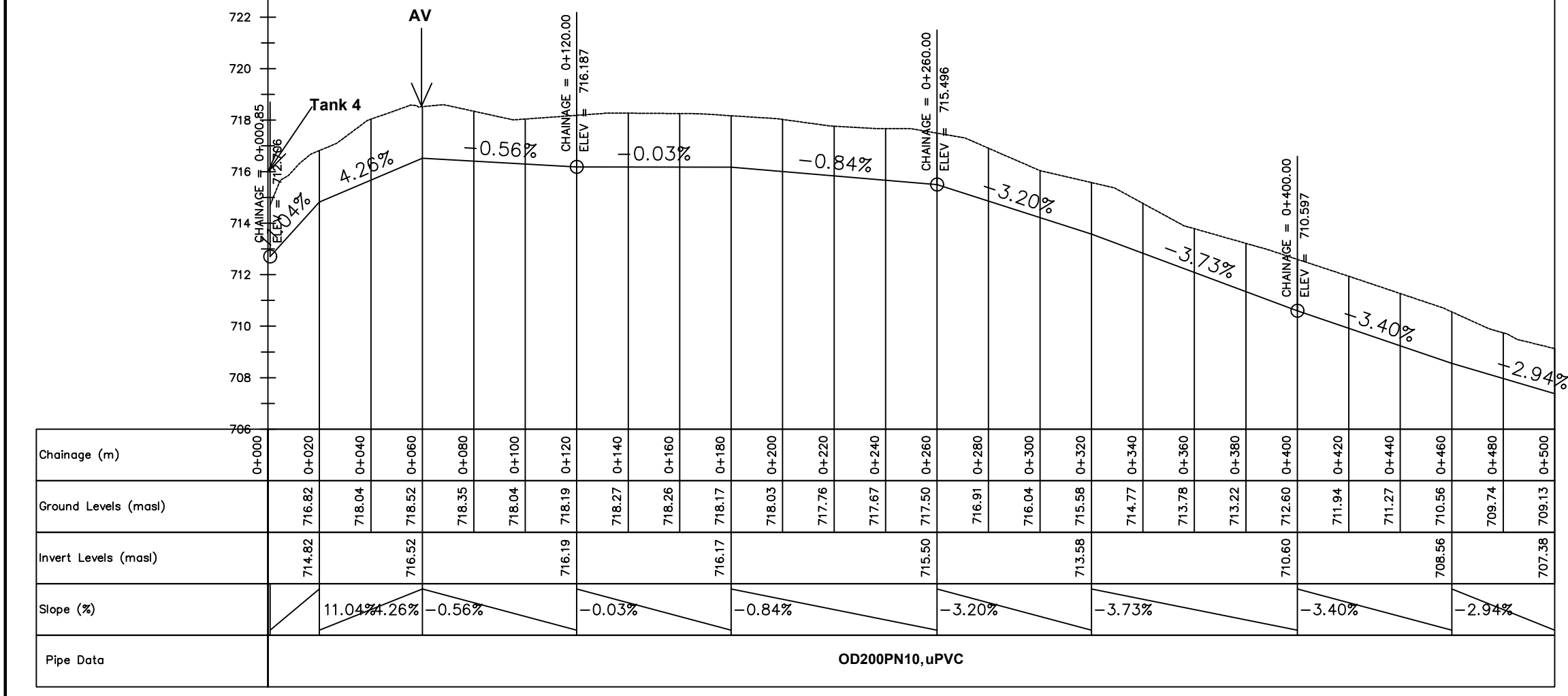
ENYAU WATER SUPPLY AND SANITATION SYSTEM

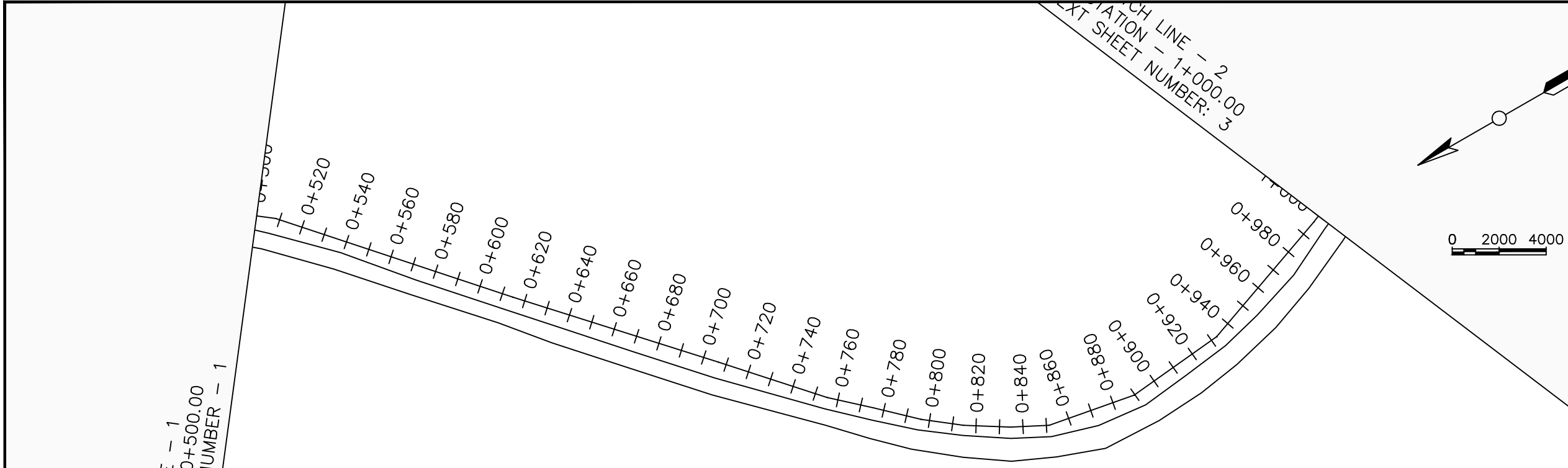
REVISIONS :

No	Date	Description

DRAWING TITLE : **DISTRIBUTION MAIN 2**
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-002
Scale:	1:2000
Sheet No.:	1 of 8





LEGEND

Plan

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

Profile

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- Node detail No.

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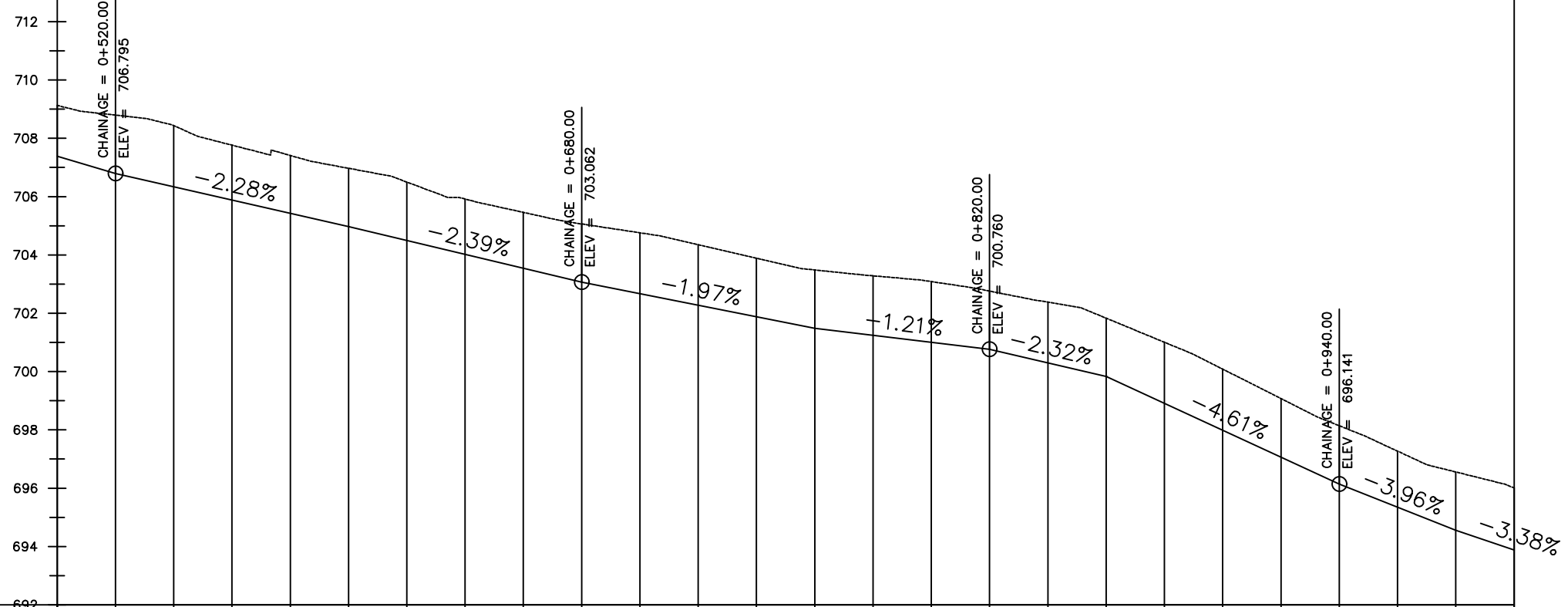
ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

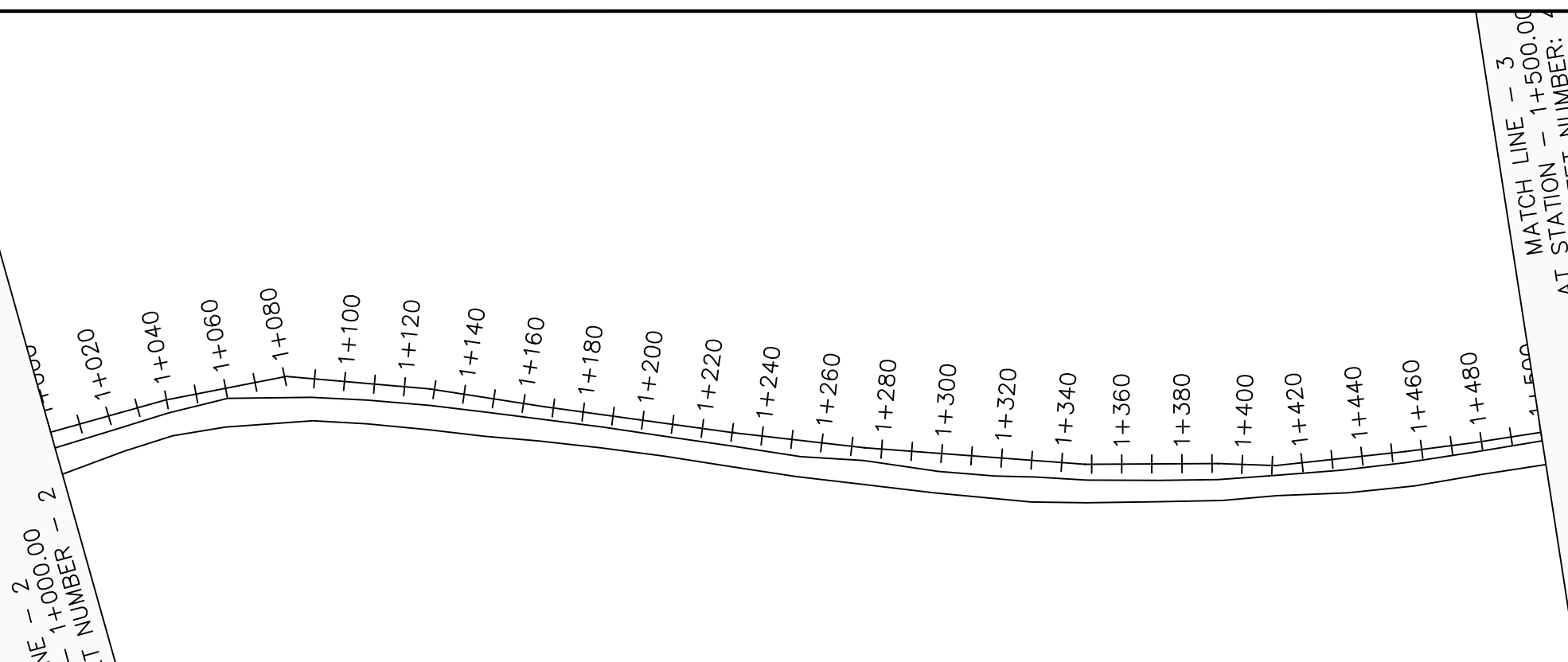
No	Date	Description

DRAWING TITLE : **DISTRIBUTION MAIN 2**
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.:	ENY-DM-002
Scale:	1:2000
Sheet No.:	2 of 8



Chainage (m)	0+500	0+520	0+540	0+560	0+580	0+600	0+620	0+640	0+660	0+680	0+700	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	0+940	0+960	0+980	1+000		
Ground Levels (masl)	709.13	708.80	708.44	707.77	707.41	706.97	706.50	705.92	705.46	705.06	704.76	704.35	703.89	703.48	703.28	703.09	702.76	702.38	701.83	701.00	700.08	699.07	698.14	697.27	696.56	696.01		
Invert Levels (masl)	707.38	706.80				704.97				703.06				701.48			700.76		699.83			696.14			694.56	693.88		
Slope (%)	-2.94%	2.28%				-2.39%				-1.97%				-1.21%			-2.32%		-4.61%			-3.96%			-3.38%			
Pipe Data	OD200PN10,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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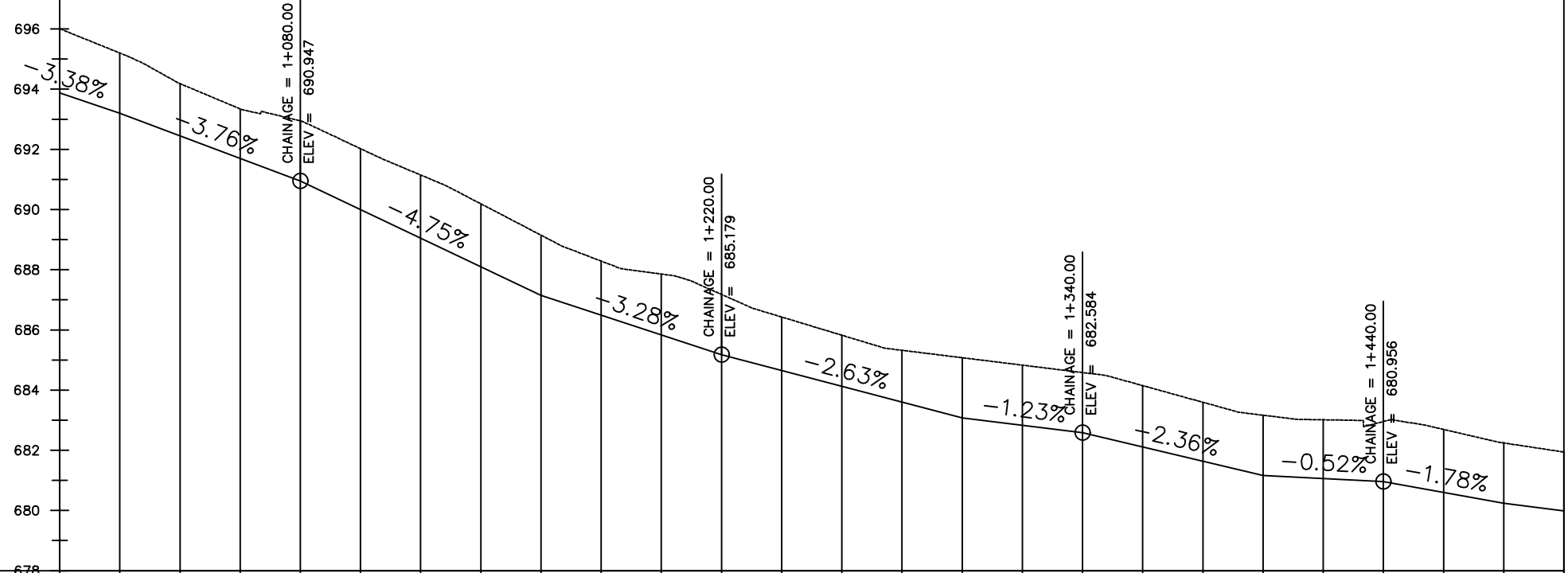
ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

No	Date	Description

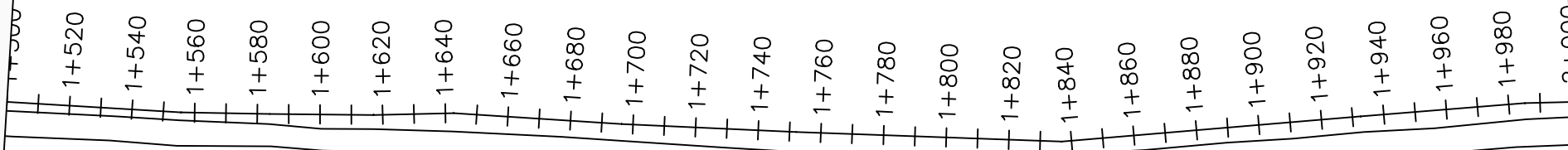
DRAWING TITLE : **DISTRIBUTION MAIN 2**
1+000 - 1+500

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2022
DRG. No.:	ENY-DM-002
Scale:	1:2000
Sheet No.:	3 of 8



Chainage (m)	Ground Levels (masl)	Invert Levels (masl)	Slope (%)	Pipe Data
1+000	696.01	693.88	-3.38%	OD200PN10,uPVC
1+020	695.20	693.20		
1+040	694.18		-3.76%	
1+060	693.34			
1+080	692.95	690.95	-4.75%	
1+100	692.02			
1+120	691.15			
1+140	690.19			
1+160	689.15	687.15	-3.28%	
1+180	688.29			
1+200	687.86			
1+220	687.18	685.18	-2.63%	
1+240	686.43			
1+260	685.82			
1+280	685.32			
1+300	685.08	683.08	-1.23%	
1+320	684.83			
1+340	684.58	682.58	-2.36%	
1+360	684.15			
1+380	683.59			
1+400	683.17	681.17	-0.52%	
1+420	683.01			
1+440	682.96	680.96	-1.78%	
1+460	682.69			
1+480	682.24	680.24		
1+500	681.94	679.99	-1.27%	

MATCH LINE - 3
AT STATION - 1+500.00
PREVIOUS SHEET NUMBER - 3



MATCH LINE - 4
AT STATION - 2+000.00
NEXT SHEET NUMBER

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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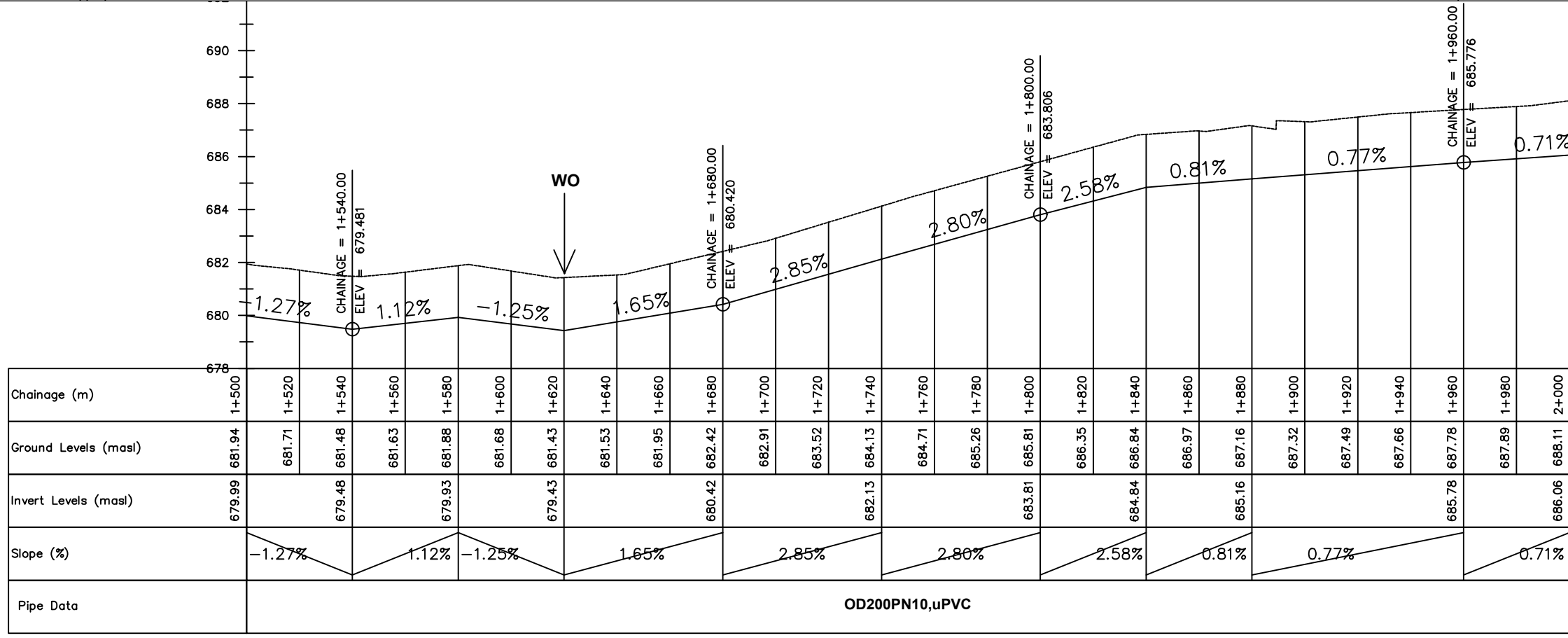
**ENYAU WATER SUPPLY AND
SANITATION SYSTEM**

REVISIONS :

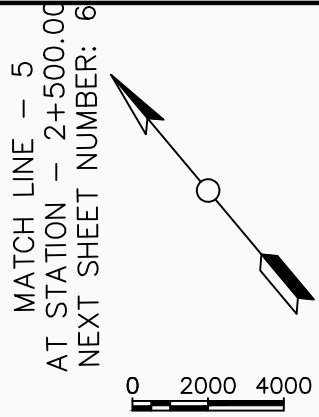
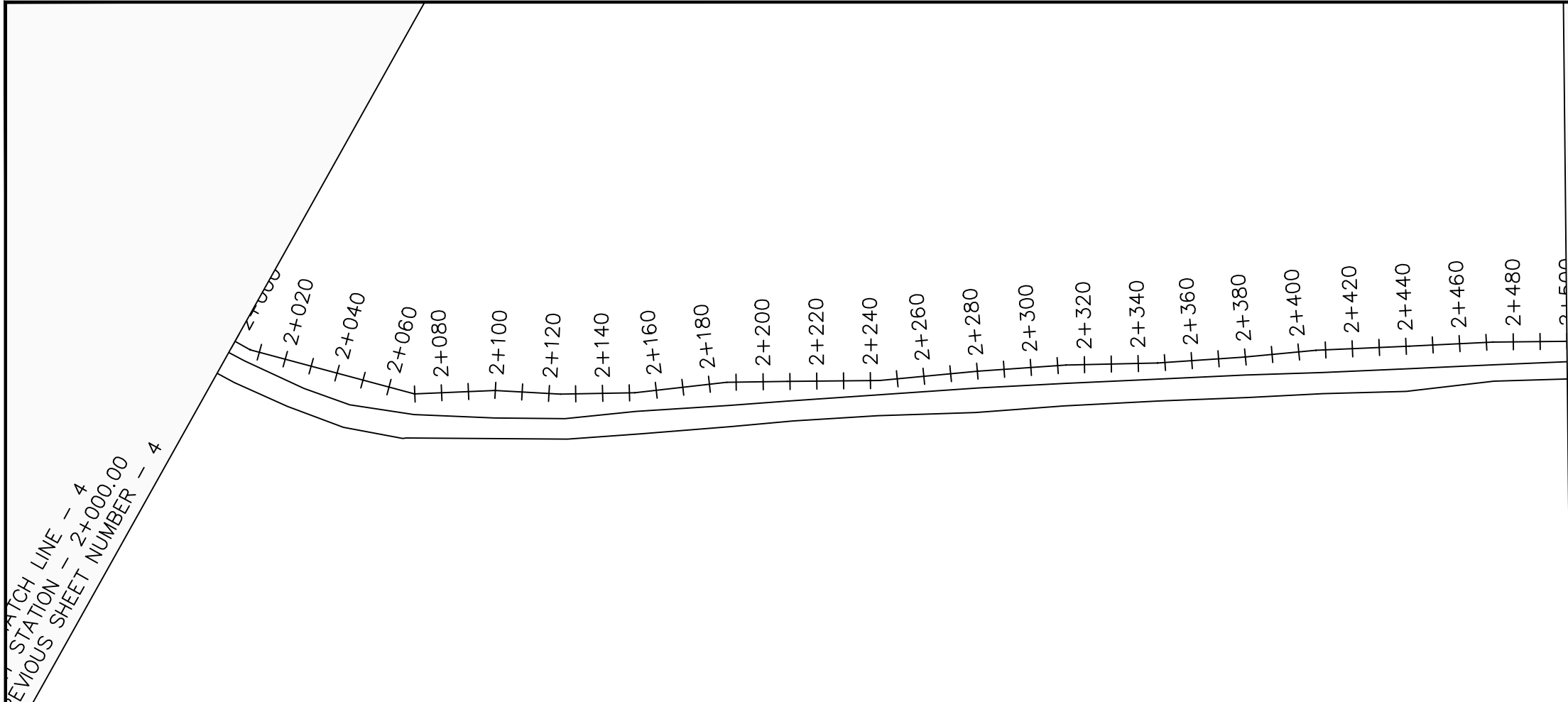
No	Date	Description

DRAWING TITLE : **DISTRIBUTION MAIN 2**
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.:	ENY-DM-002
Scale:	1:2000
Sheet No.:	4 of 8



OD200PN10,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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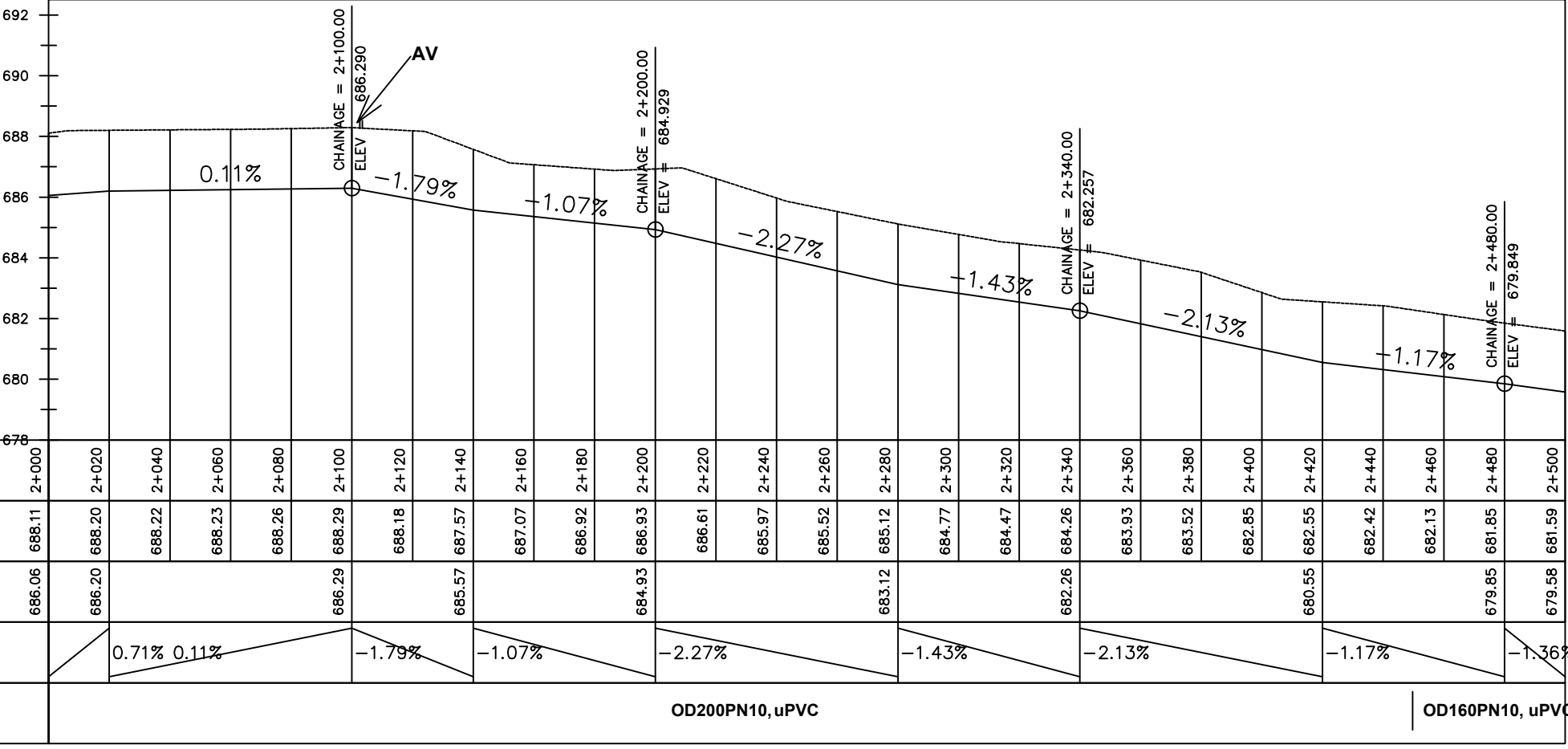
ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

No	Date	Description

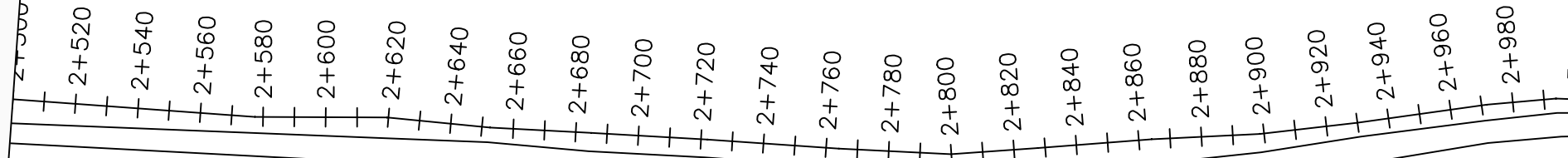
DRAWING TITLE : **DISTRIBUTION MAIN 2**
2+000 - 2+500

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-002
Scale:	1:2000
Sheet No.:	5 of 8

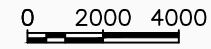


Chainage (m)	2+000	2+020	2+040	2+060	2+080	2+100	2+120	2+140	2+160	2+180	2+200	2+220	2+240	2+260	2+280	2+300	2+320	2+340	2+360	2+380	2+400	2+420	2+440	2+460	2+480	2+500
Ground Levels (masl)	688.11	688.20	688.22	688.23	688.26	688.29	688.18	687.57	687.07	686.92	686.93	686.61	685.97	685.52	685.12	684.77	684.47	684.26	683.93	683.52	682.85	682.55	682.42	682.13	681.85	681.59
Invert Levels (masl)	686.06	686.20				686.29		685.57			684.93				683.12			682.26				680.55			679.85	679.58
Slope (%)			0.71%	0.11%			-1.79%		-1.07%			-2.27%			-1.43%			-2.13%				-1.17%			-1.36%	
Pipe Data	OD200PN10, uPVC																								OD160PN10, uPVC	

MATCH LINE - 5
AT STATION - 2+500.00
PREVIOUS SHEET NUMBER - 5



MATCH LINE - 6
AT STATION - 3+00
NEXT SHEET NUMBER



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

CO-FINANCED BY:

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CONSULTANT :

Alliance Consultants Ltd
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PROJECT :
**ALA-ORA WATER SUPPLY AND
SANITATION PROJECT**

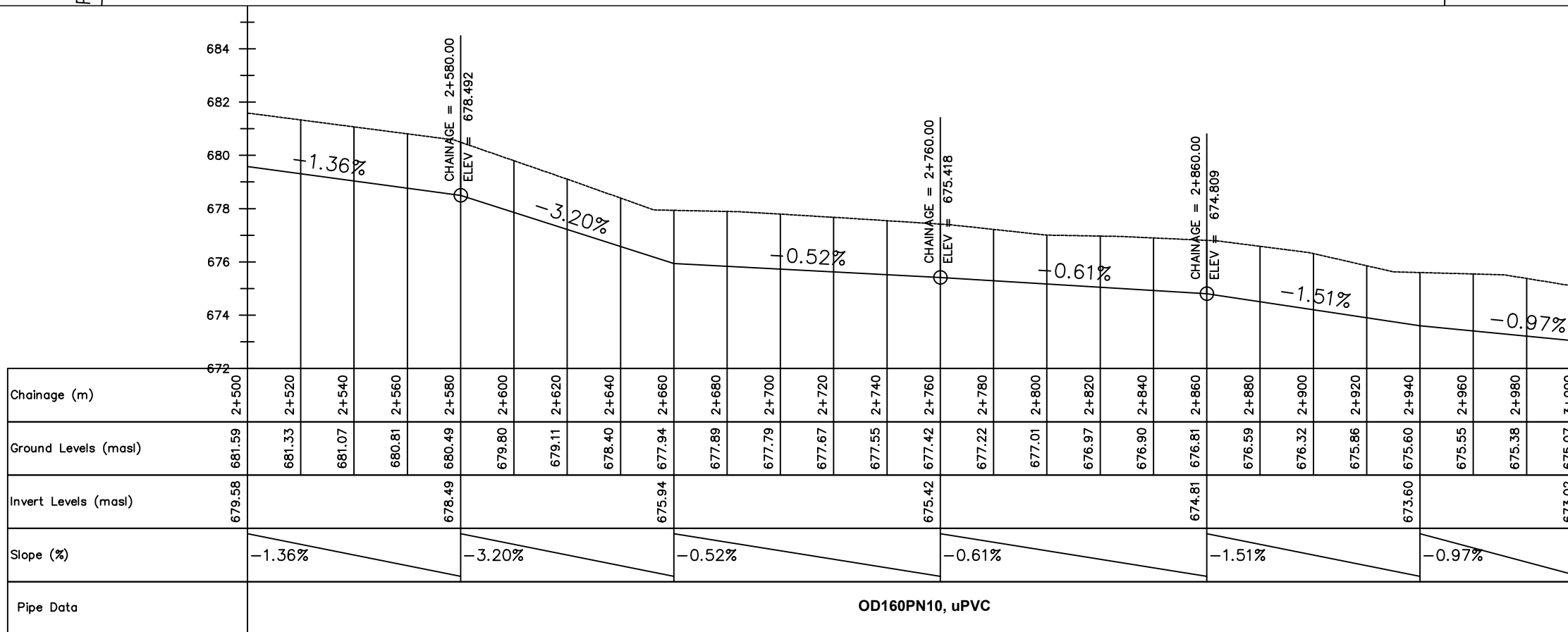
**ENYAU WATER SUPPLY AND
SANITATION SYSTEM**

REVISIONS :

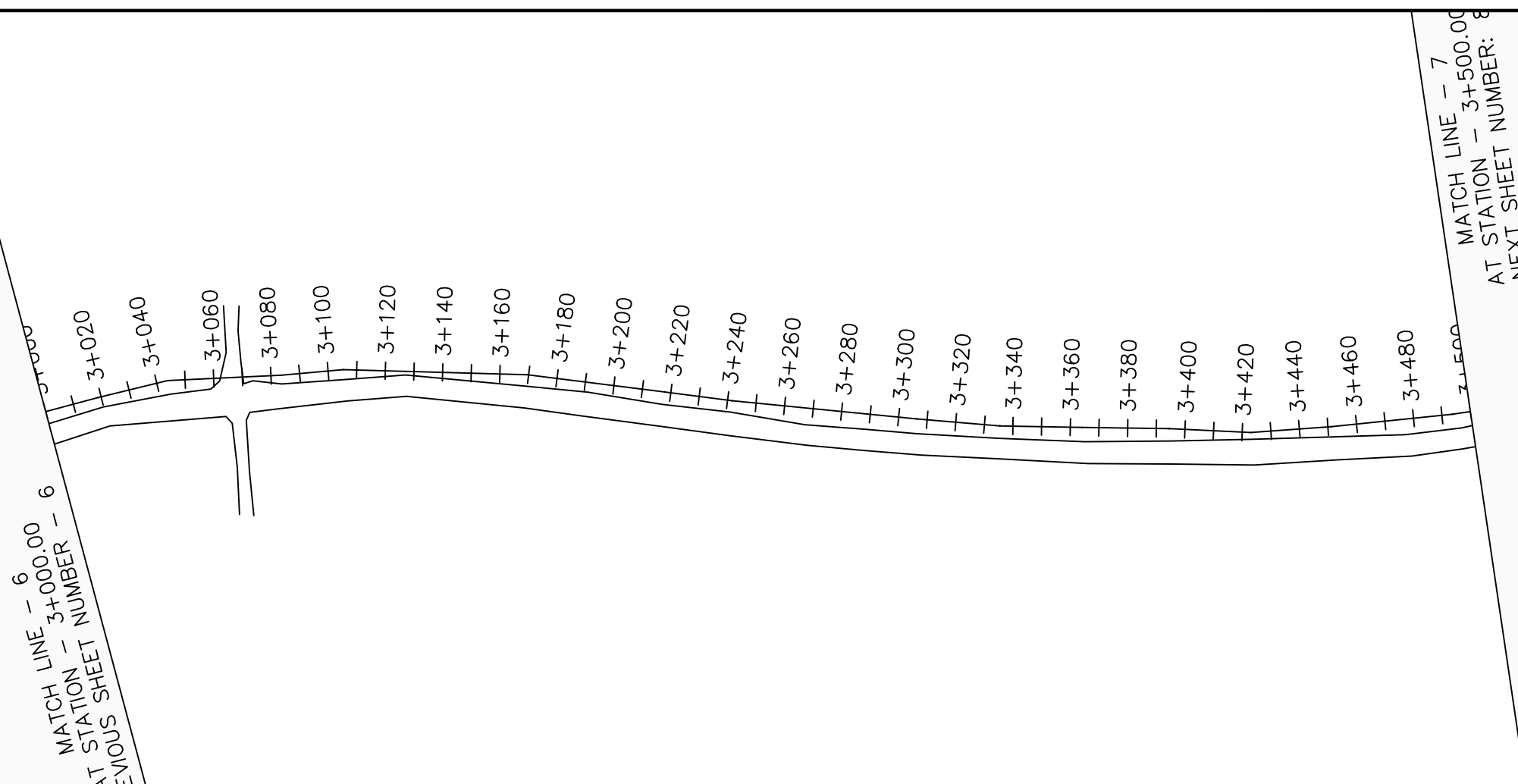
No	Date	Description

DRAWING TITLE : **DISTRIBUTION MAIN 2**
2+500 - 3+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-DM-002
Scale:	1:2000
Sheet No.:	6 of 8



OD160PN10, uPVC



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 :

Alliance Consultants Ltd
In Association with

Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND SANITATION PROJECT

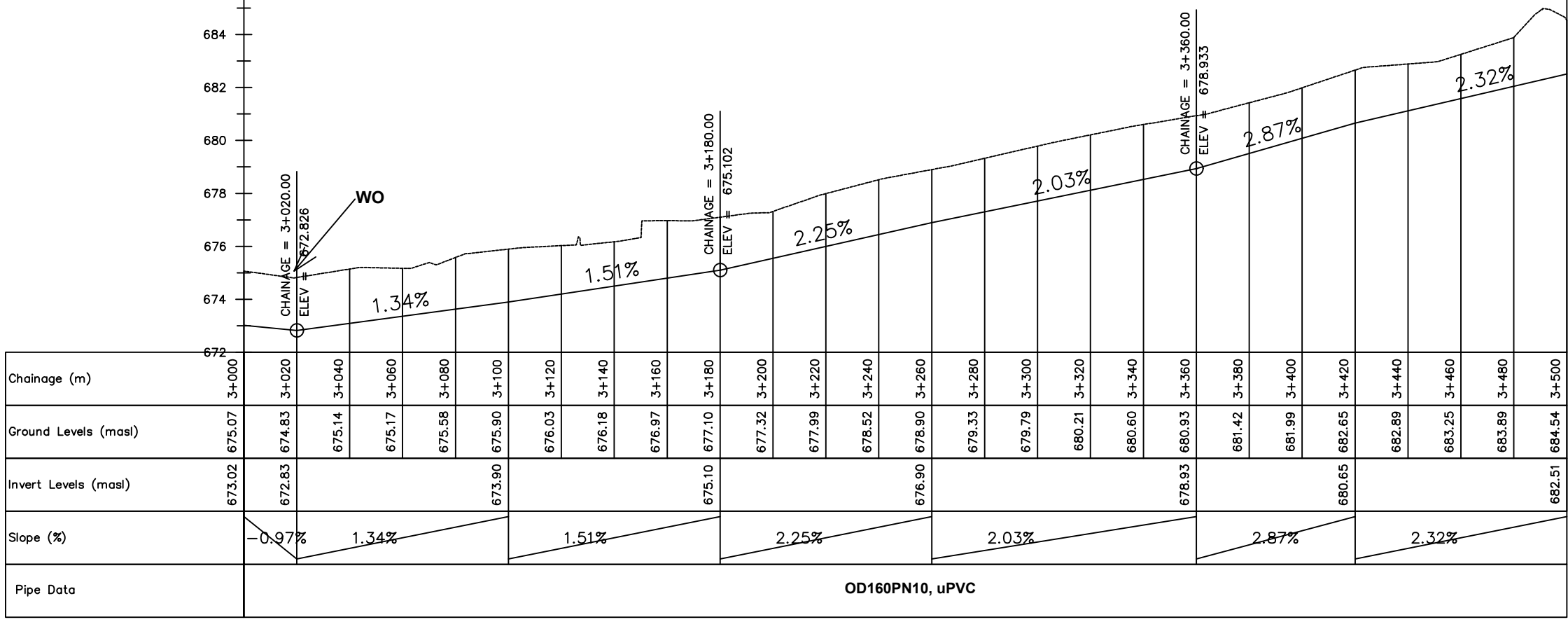
ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

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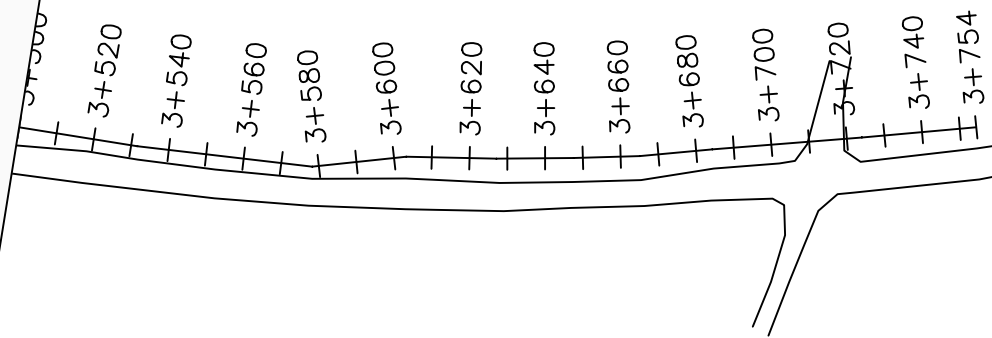
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3+000 - 3+500

Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2022
DRG. No.:	ENY-DM-002
Scale:	1:2000
Sheet No.:	7 of 8



OD160PN10, uPVC

MATCH LINE - 7
 AT STATION - 3+500.00
 PREVIOUS SHEET NUMBER - 7



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 :



Alliance Consultants Ltd
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Infra-Consult Ltd

PROJECT :

ALA-ORA WATER SUPPLY AND SANITATION PROJECT

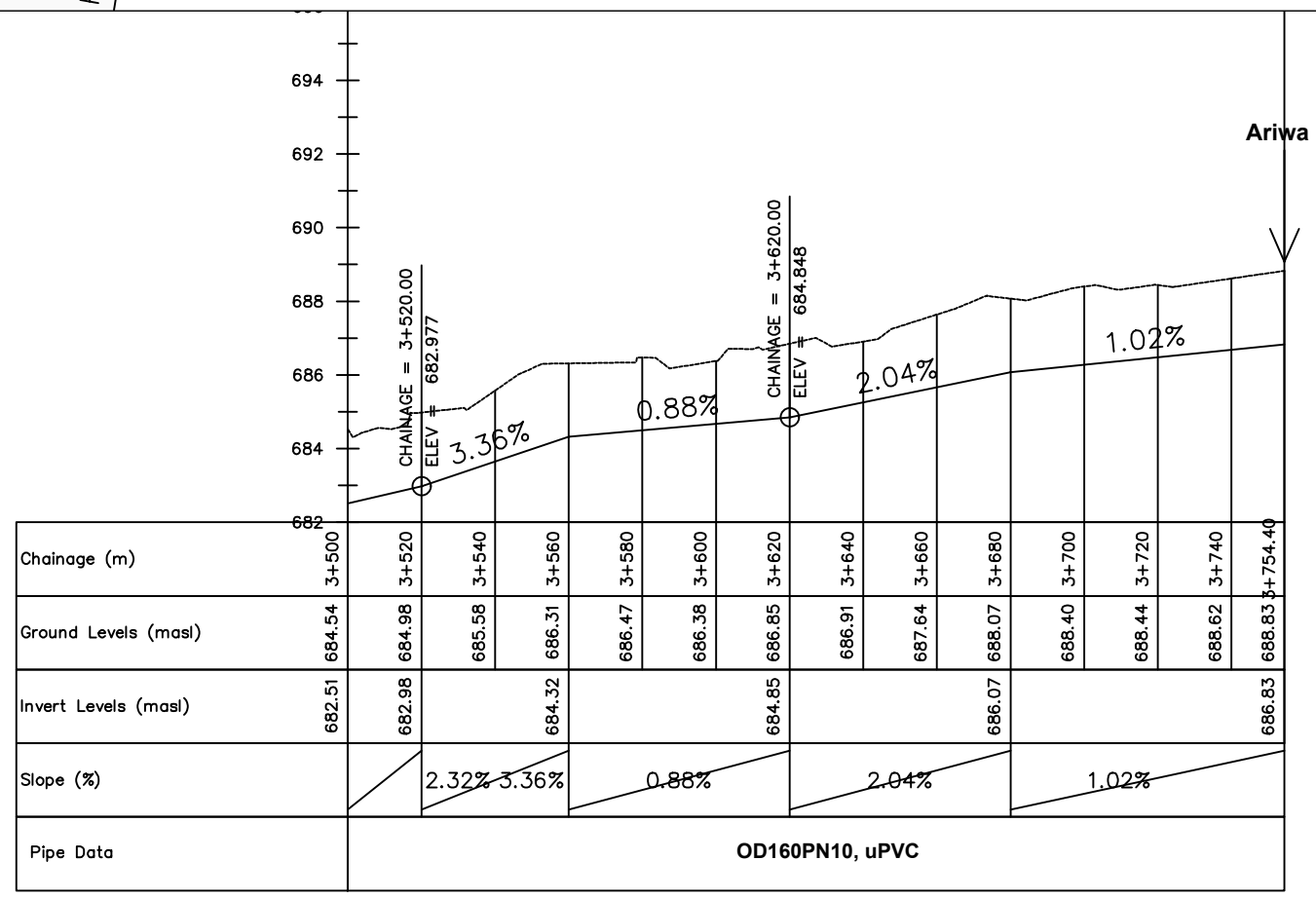
ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

No	Date	Description

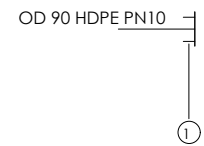
DRAWING TITLE : **DISTRIBUTION MAIN 2**
 3+500 - 3+754.40

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-002
Scale:	1:2000
Sheet No.:	8 of 8



LEGEND

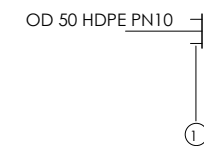
PUMPING MAIN	DWG No. - CHAINAGE	NODE No.
1	ENY-PM-001 - CH 0+388	①



SCHEDULE OF PIPEWORK & FITTINGS

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

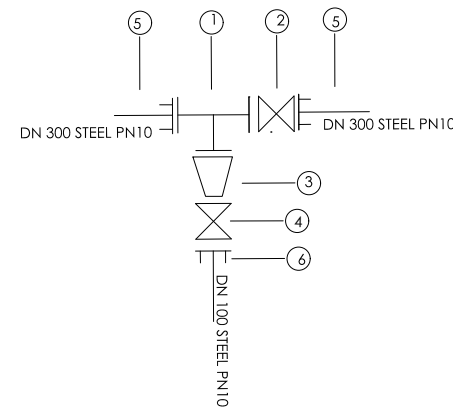
PUMPING MAIN	DWG No. - CHAINAGE	NODE No.
2	ENY-PM-002 - CH 8+108	②



SCHEDULE OF PIPEWORK & FITTINGS

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1.	HDPE END CAP	50	1	10

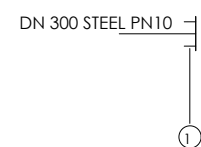
GRAVITY MAIN	DWG No. - CHAINAGE	NODE No.
1	ENY-GTM-001 - CH 3+015	③



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

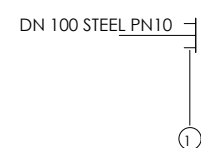
GRAVITY MAIN	DWG No. - CHAINAGE	NODE No.
1	ENY-GTM-001 - CH 14+292	④



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



SCHEDULE OF PIPEWORK & FITTINGS

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

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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

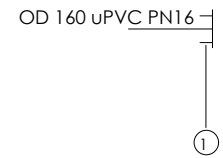
DRAWING TITLE :

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

LEGEND

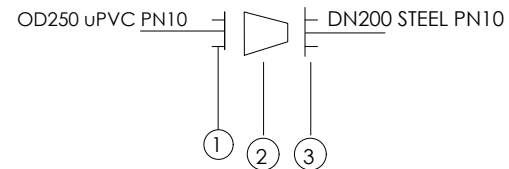
GRAVITY MAIN	DWG No. - CHAINAGE	NODE No.
3	ENY-GTM-003 - CH 13+450	⑥



SCHEDULE OF PIPEWORK & FITTINGS

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

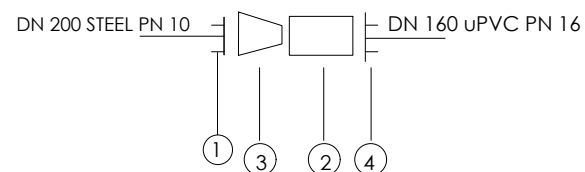
GRAVITY MAIN	DWG No. - CHAINAGE
3	ENY-GTM-003 - CH 3+100



SCHEDULE OF PIPEWORK & FITTINGS

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

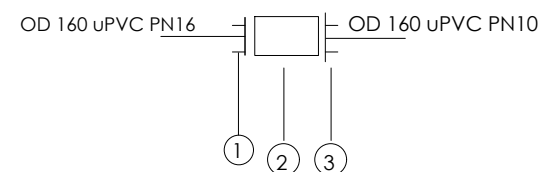
GRAVITY MAIN	DWG No. - CHAINAGE
3	ENY-GTM-003 - CH 7+080



SCHEDULE OF PIPEWORK & FITTINGS

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

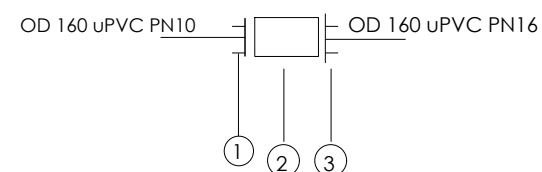
GRAVITY MAIN	DWG No. - CHAINAGE
3	ENY-GTM-003 - CH 9+180



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

CLIENT :



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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

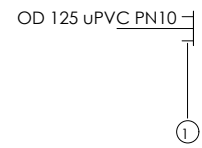
DRAWING TITLE :

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

LEGEND

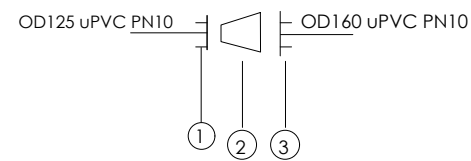
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1	ENY-DM-001 - CH 7+493	⑦



SCHEDULE OF PIPEWORK & FITTINGS

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

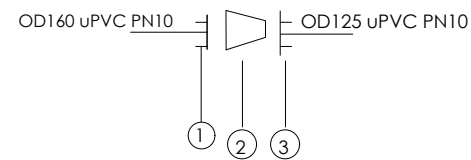
DISTRIBUTION MAIN	DWG No. - CHAINAGE
1	ENY-DM-001 - CH 2+450



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

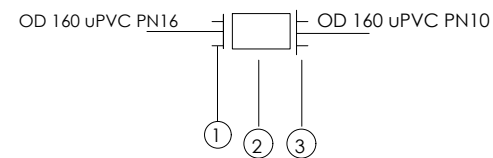
DISTRIBUTION MAIN	DWG No. - CHAINAGE
1	ENY-DM-001 - CH 6+320



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

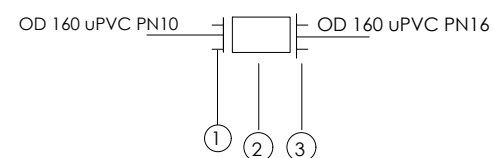
GRAVITY MAIN	DWG No. - CHAINAGE
3	ENY-GTM-003 - CH 9+180



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

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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 :

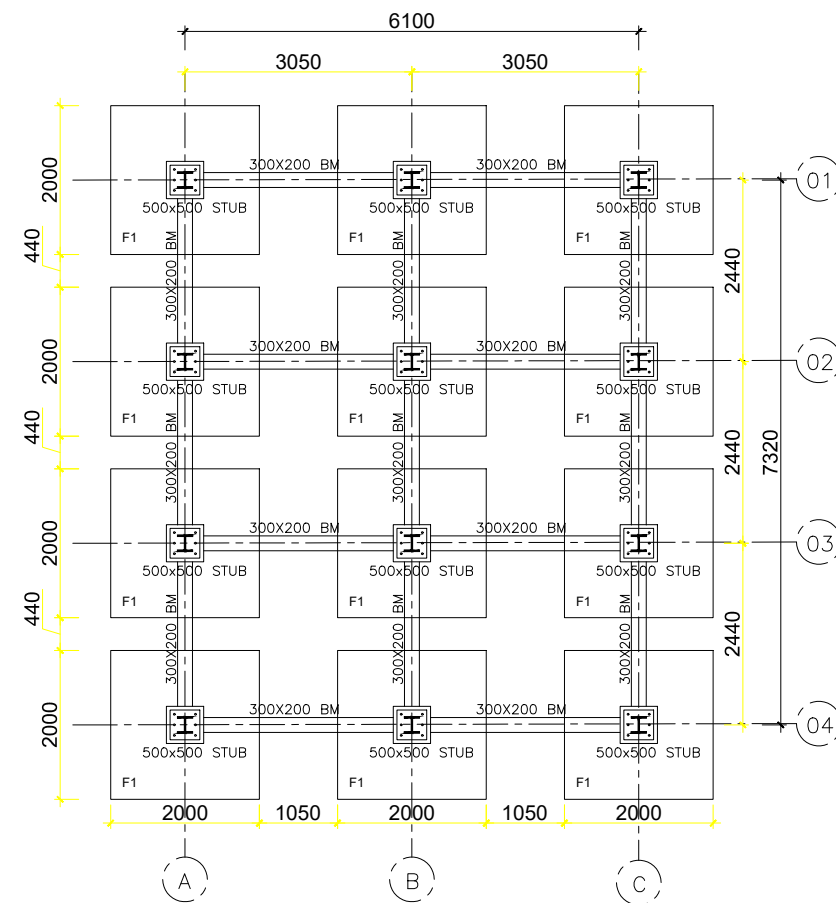
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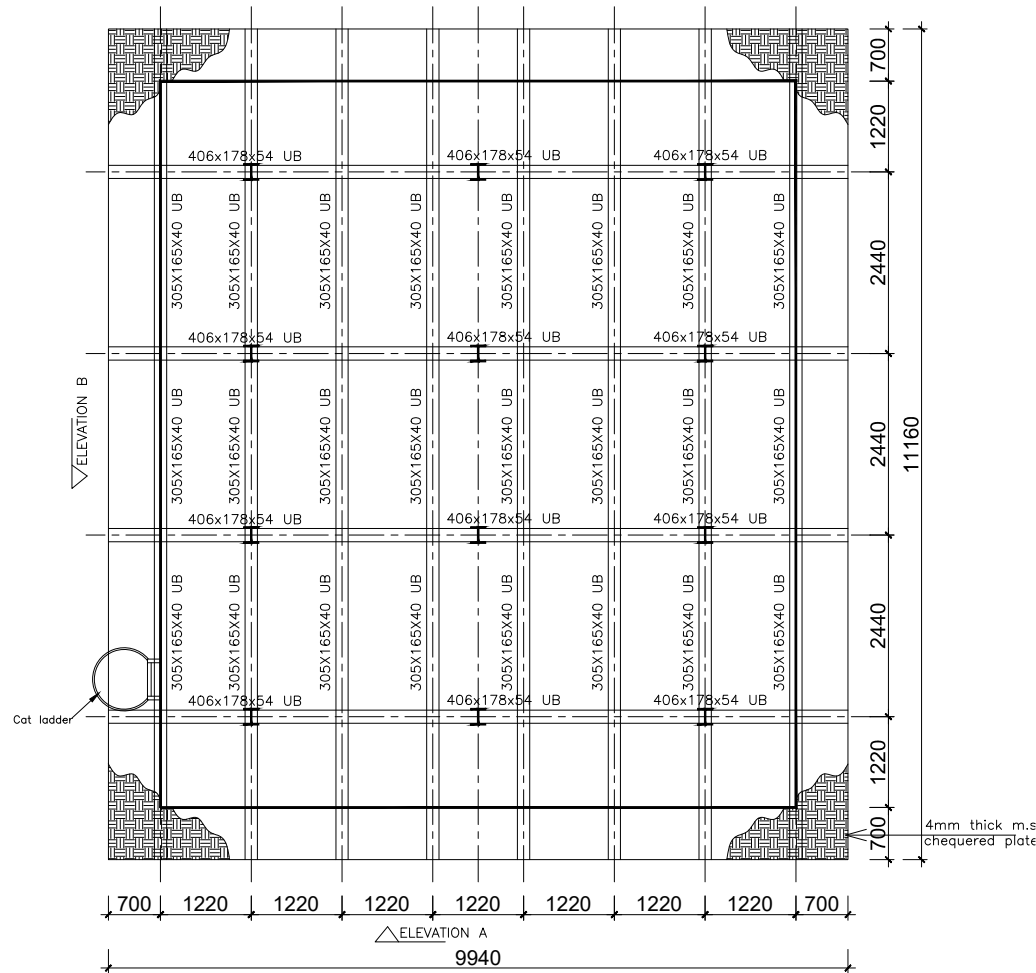
TRANSMISSION NODES DETAILS

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.:	3 of 3

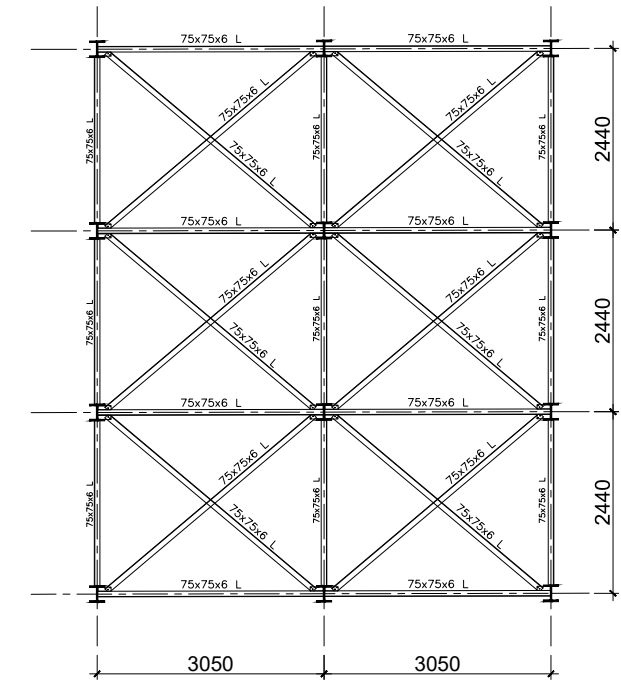
STRUCTURAL DRAWINGS



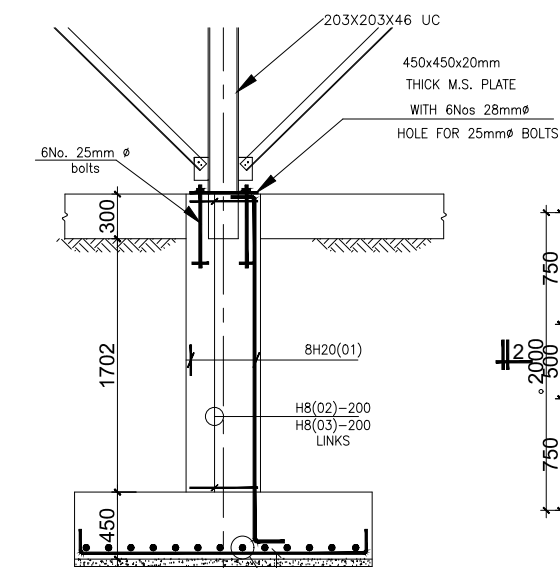
FOUNDATION LAYOUT
SCALE 1:50



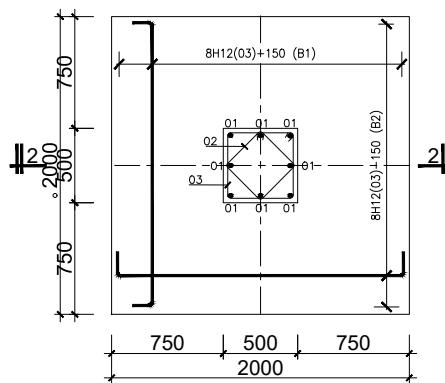
TANK PLATFORM
SCALE 1:50



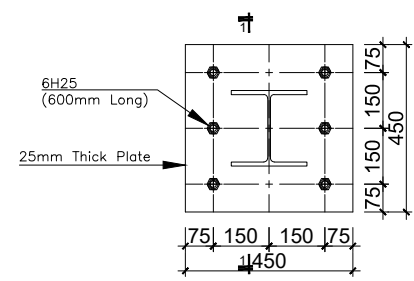
SECTION E-E (SECTIONAL BRACING)
SCALE 1:50



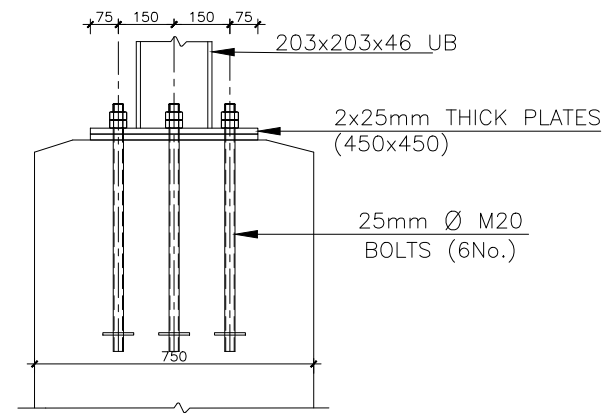
STUB COLUMN SECTION 2-2
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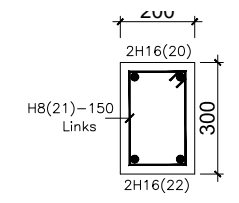
BASE TYPE F1 (12No.) [2000x2000x450]
Scale 1:25



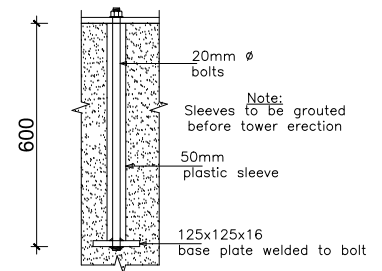
BASE PLATE FOR 203x203x46 UC
SCALE 1:10



SECTION 1-1
SCALE 1:10



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: allianceconsultantsld@gmail.com

PROJECT :
ALA-ORA WATER SUPPLY AND SANITATION SYSTEM

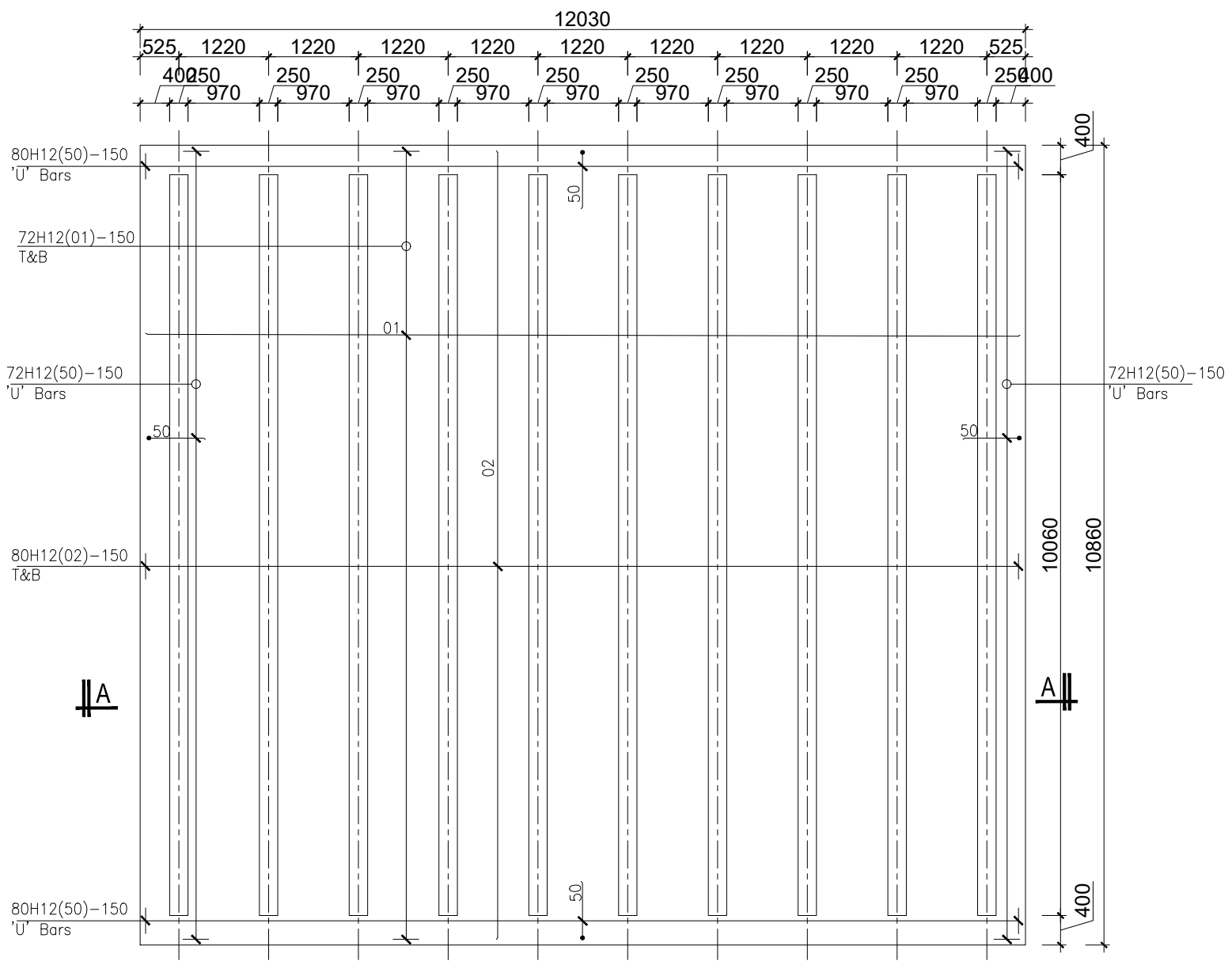
ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

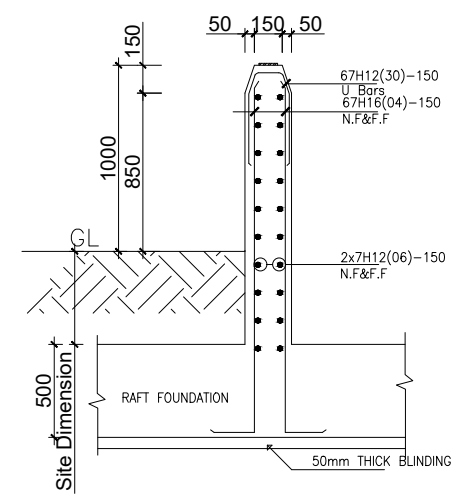
No	Date	Description

DRAWING TITLE :
296m³ 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/014
Scale:	As shown
Sheet No.:	1 of 2

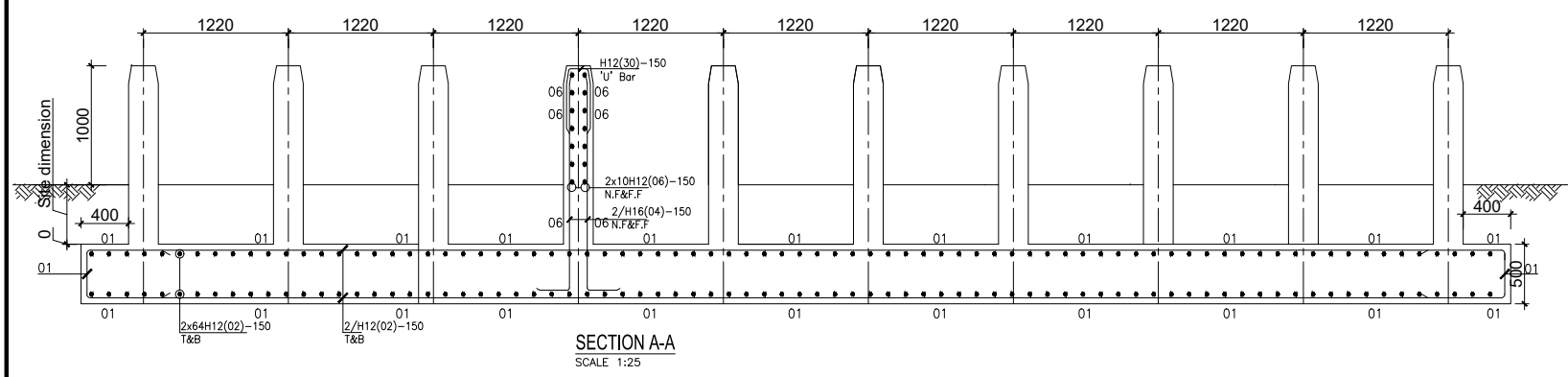


FOUNDATION LAYOUT
SCALE 1:40

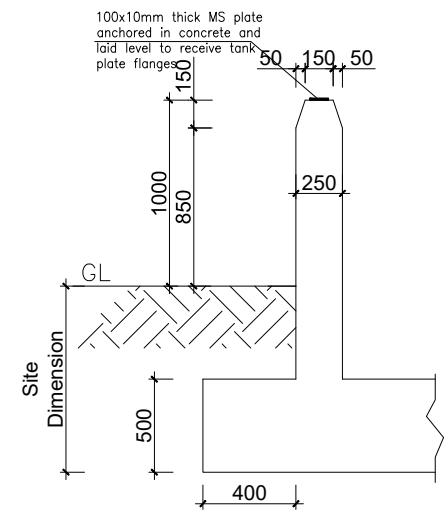


DWARF WALL RC DETAIL
SCALE 1:20

DWARF WALL RC DETAIL
SCALE 1:20



SECTION A-A
SCALE 1:25



DWARF WALL DETAIL
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/mm² and at 28 days with 20 mm maximum aggregate size
 - Reinforced concrete to have works cube strength of 30N/mm² cylinder strength of 30N/mm² 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 SYSTEM

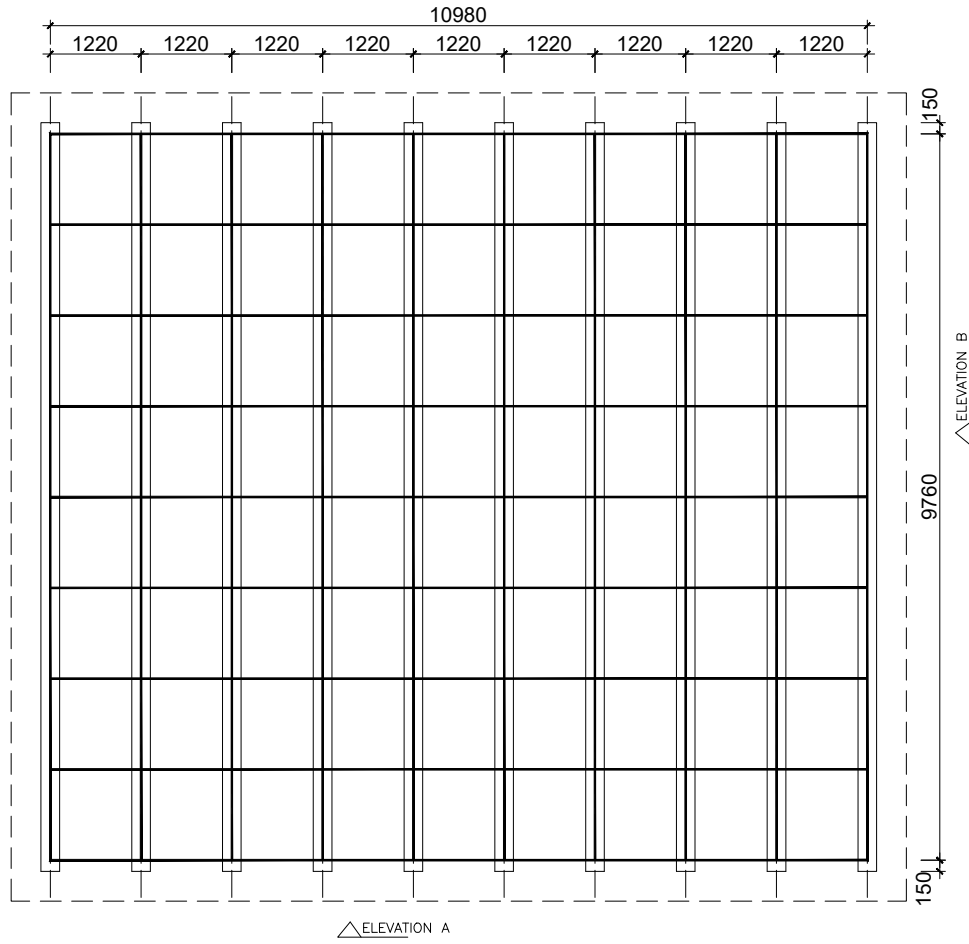
REVISIONS :

No	Date	Description

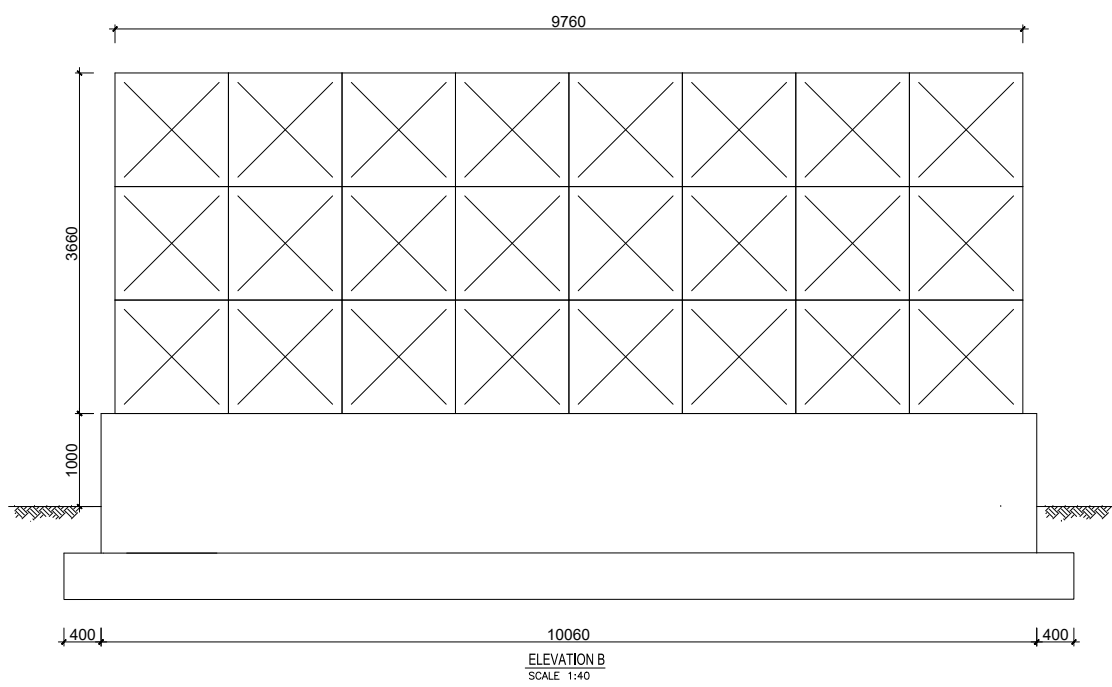
DRAWING TITLE :

382m³ TANK

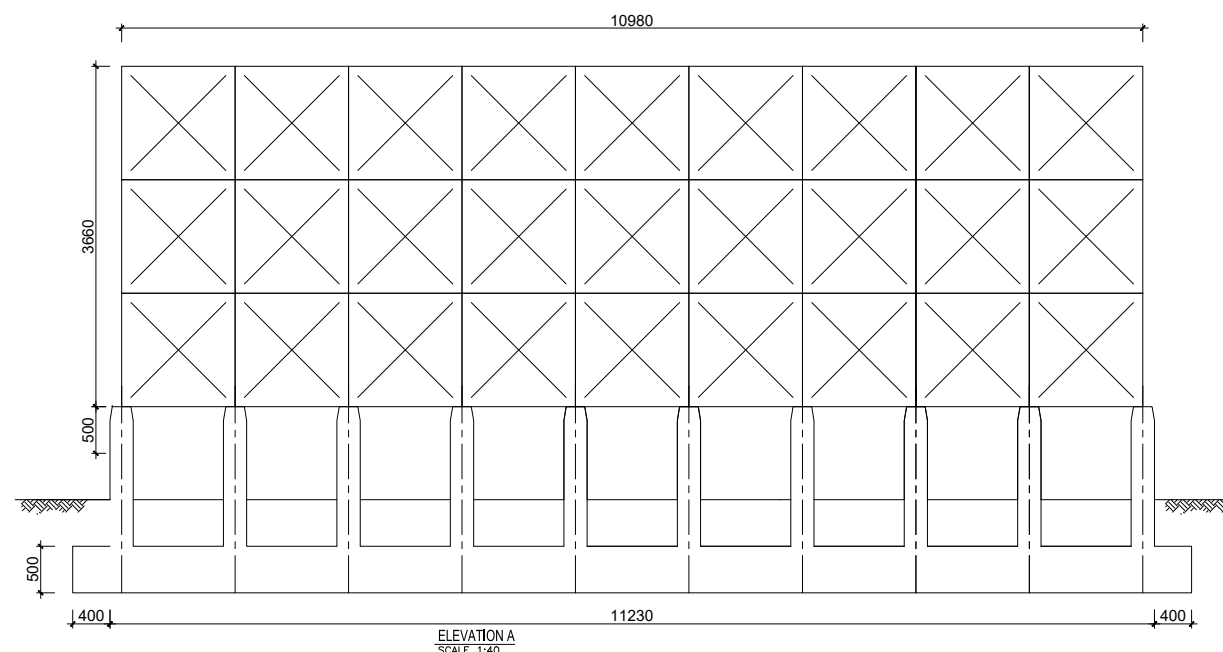
Surveyed by:	R.K
Drawn by:	K.L.W
Designed by:	A.B
Checked by:	A.B
Date:	FEBRUARY 2023
DRG. No.:	AR/WSASS/EN/STR/015
Scale:	As shown
Sheet No.:	1 of 2



△ ELEVATION A
TANK PLATFORM
SCALE 1:50



ELEVATION B
SCALE 1:40



ELEVATION A
SCALE 1:40

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/mm² and at 28 days with 20 mm maximum aggregate size
 - b. Reinforced concrete to have works cube strength of 30N/mm² cylinder strength of 30N/mm² 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

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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 :

382m³ 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/015
Scale:	As shown
Sheet No.:	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/m³
 - Submerged soil density: 1090 kg/m³
 - 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 may be 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/mm²): 30
 - Maximum aggregate size (mm): 20
 - Cement type: SR 3
 - Minimum cement content (kg/m³): 330
 - Maximum cement content (kg/m³): 400
 - Maximum free water/cement ratio: 0.47
 - Concrete in blinding 2
 - Characteristic strength (N/mm²): 10.30
 - Maximum aggregate size (mm): 40
 - Cement type: SR 3
 - Minimum cement content (kg/m³): 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/m² 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/mm² 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

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PROJECT :

ALA-ORA WATER SUPPLY AND
SANITATION PROJECT

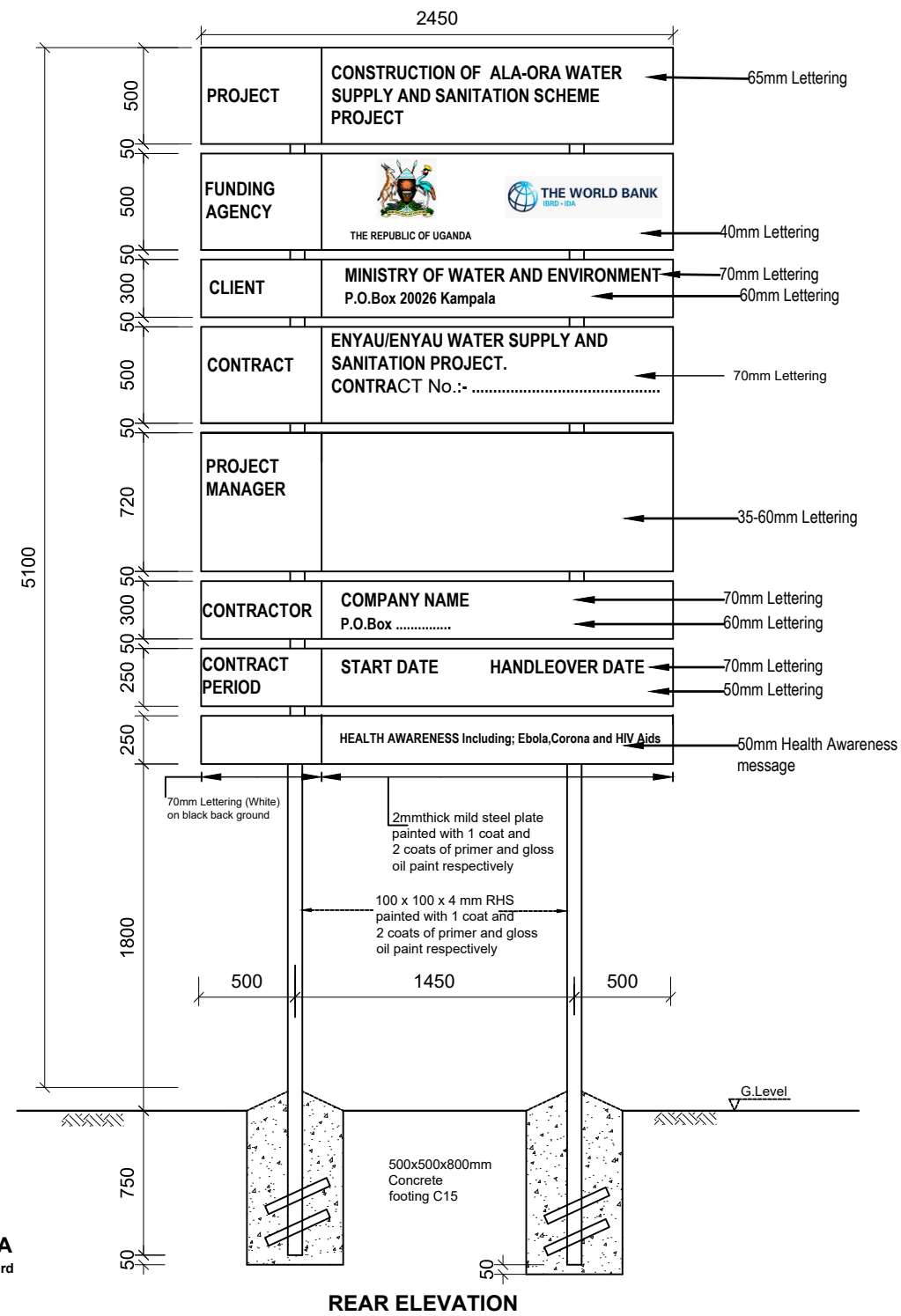
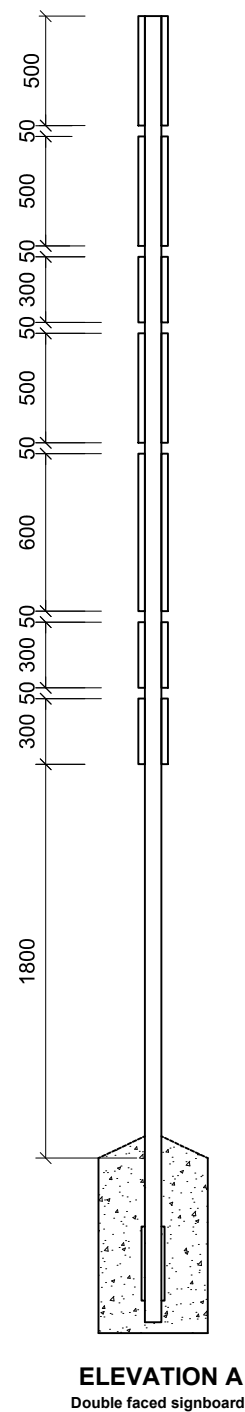
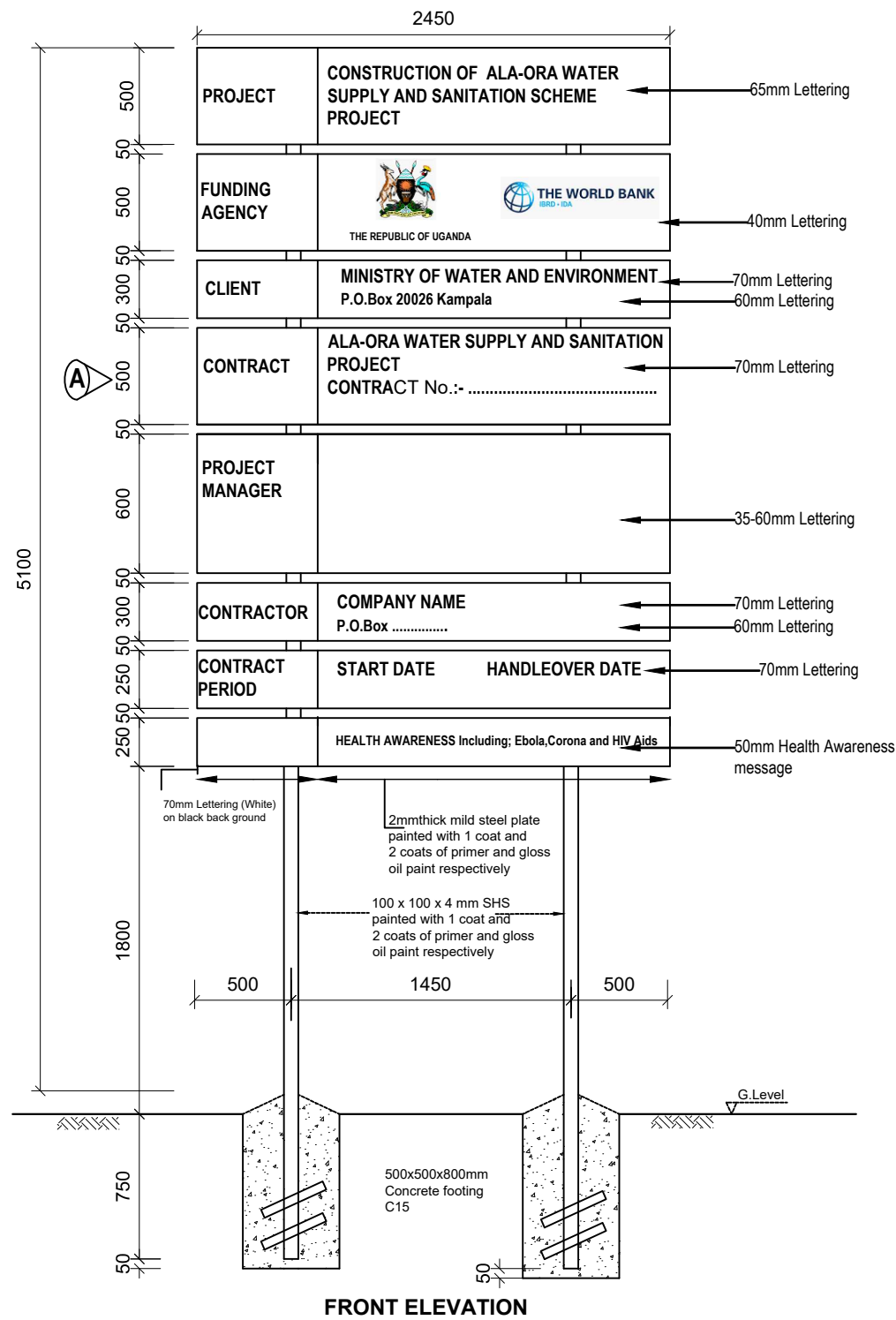
**ENYAU WATER SUPPLY AND
SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**
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.:	ALA-ORA-SD-000
Scale:	1:120
Sheet No.:	1 of 1



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PROJECT :

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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.:	ALA-ORA-SD-001
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

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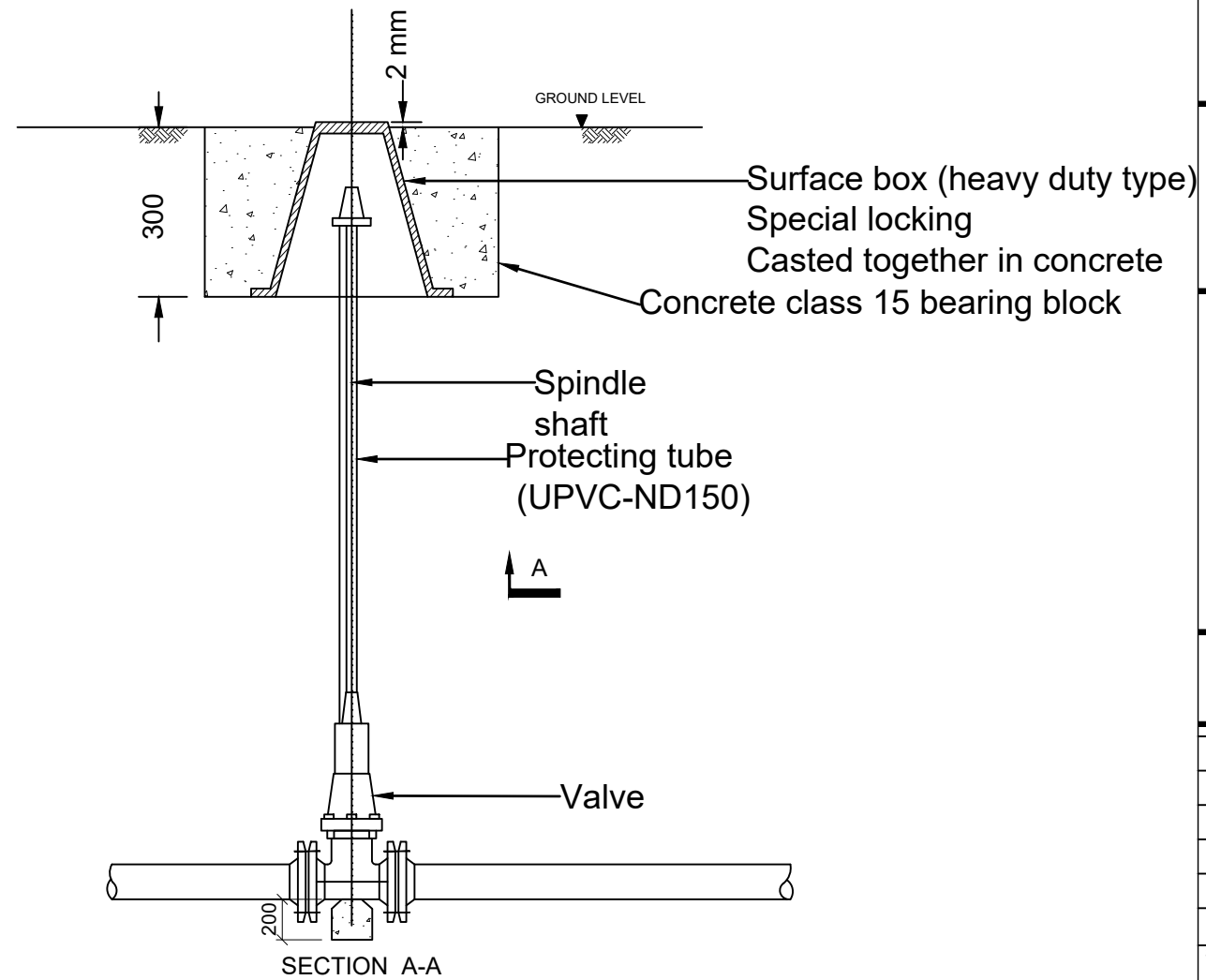
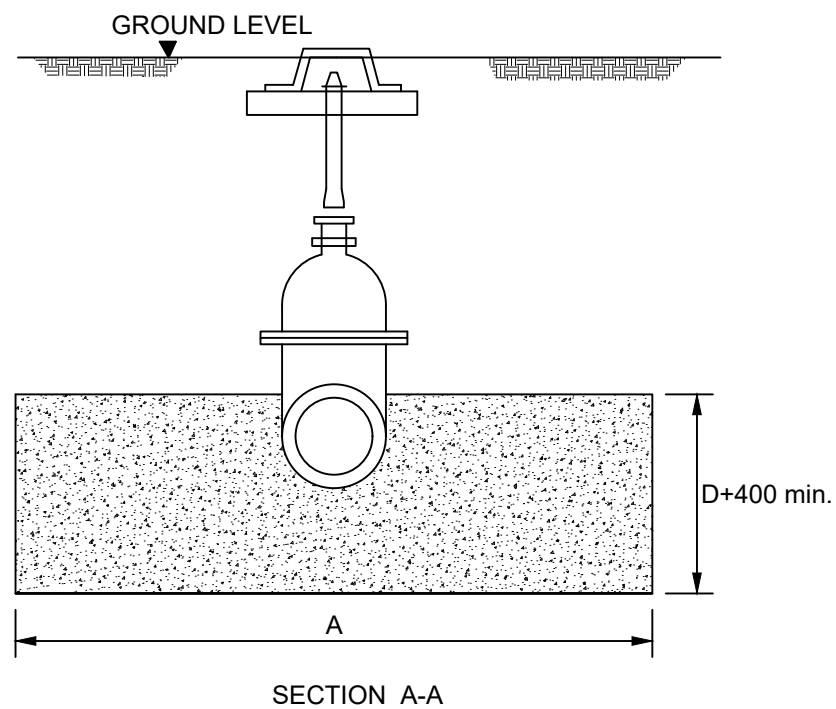
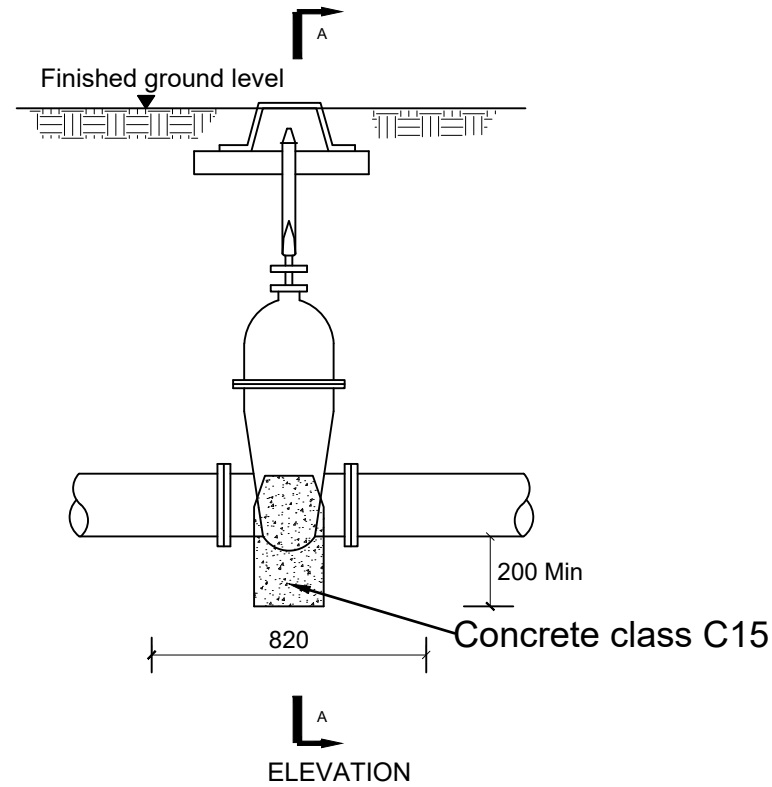
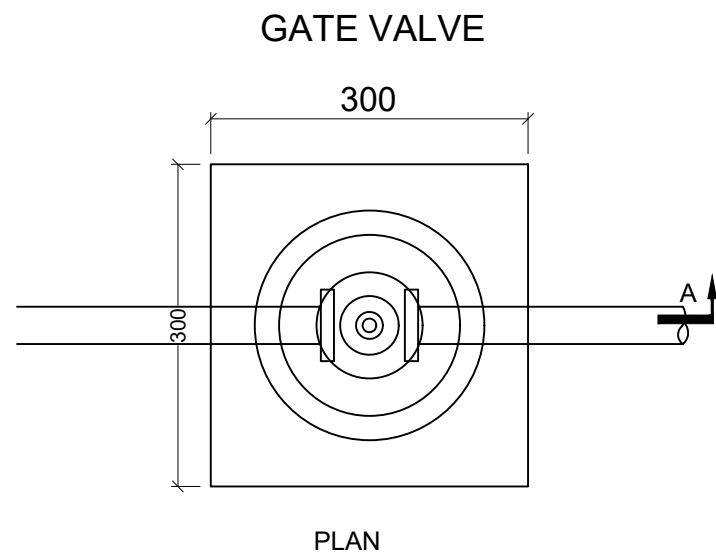
**ENYAU WATER SUPPLY AND
 SANITATION SYSTEM**

REVISIONS :

No	Date	Description

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

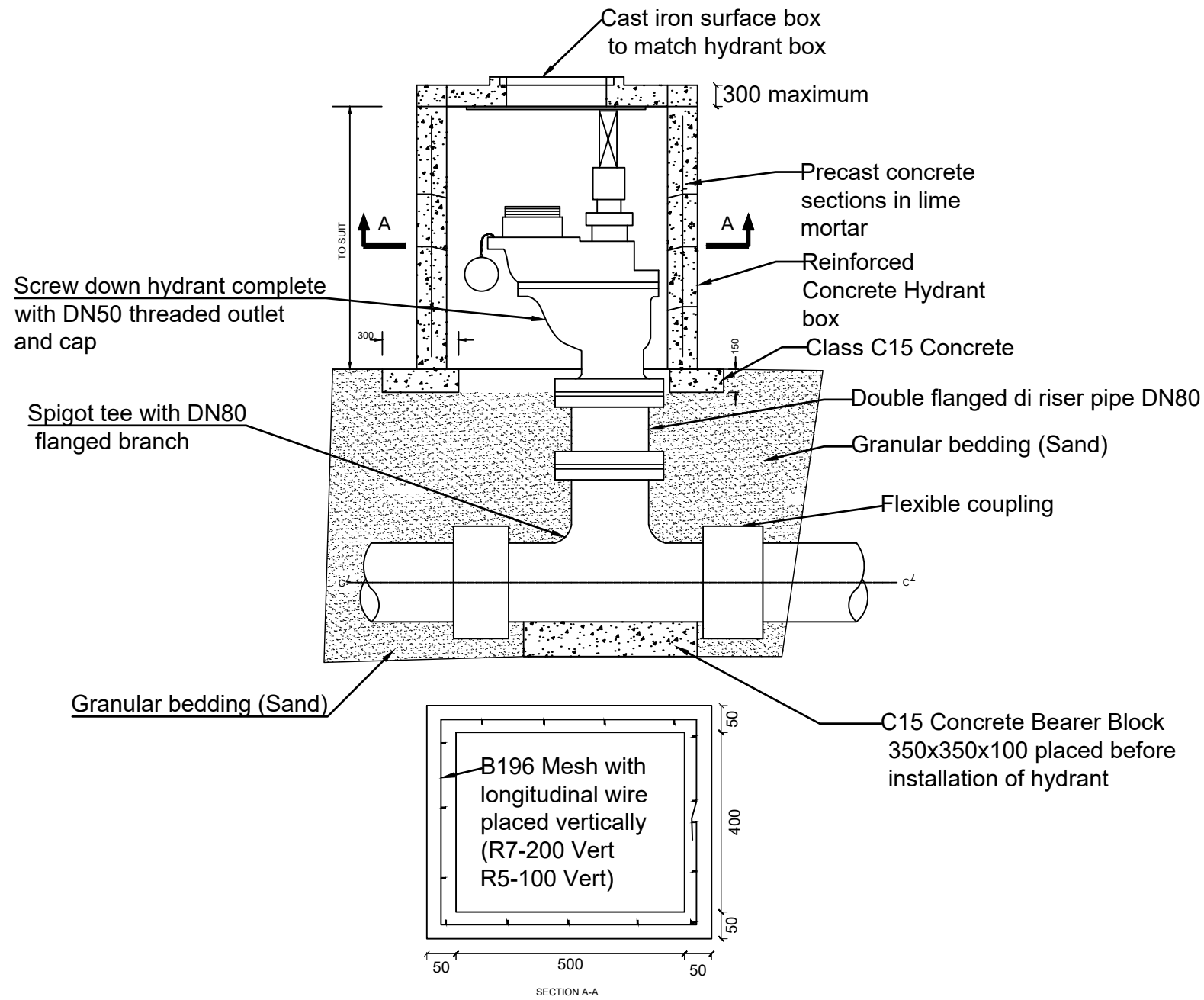
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Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA-SD-002
Scale:	1:120
Sheet No.:	1 of 1



FIRE HYDRANT DETAILS

LEGEND

FIRE HYDRANT-CHAMBER



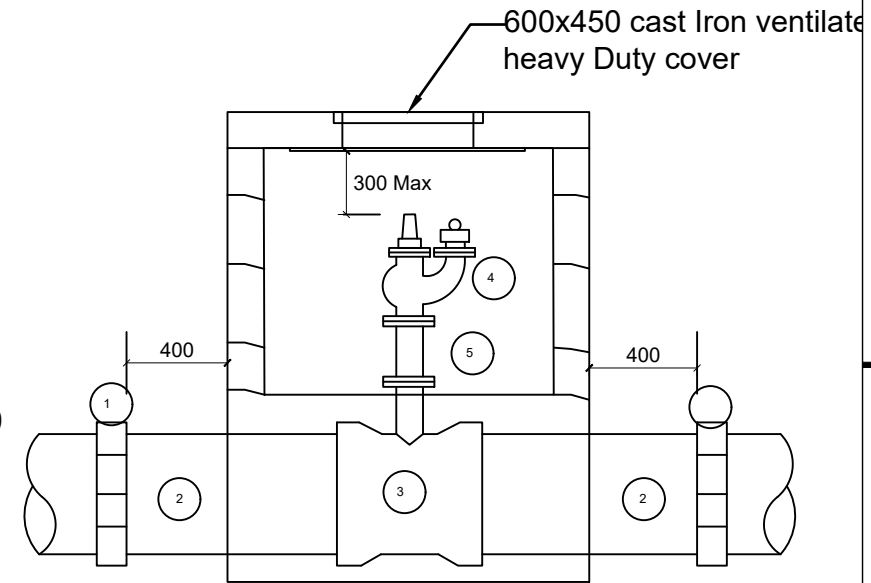
Screw down hydrant complete with DN50 threaded outlet and cap

Spigot tee with DN80 flanged branch

Granular bedding (Sand)

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

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**ENYAU WATER SUPPLY AND
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REVISIONS :

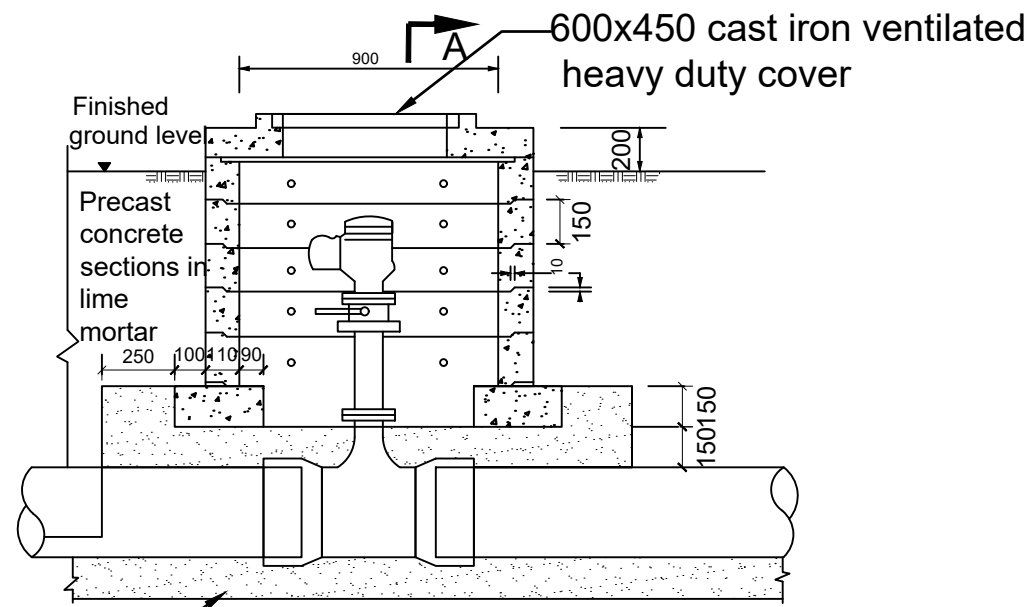
No	Date	Description

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

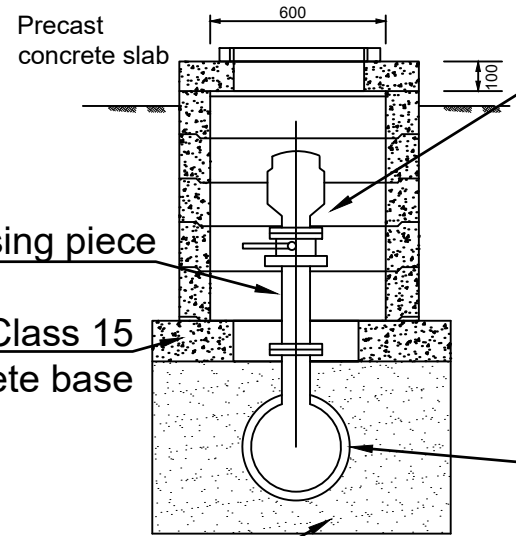
Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA-SD-003
Scale:	1:120
Sheet No.:	1 of 1

AIR VALVE DETAILS

AIR VALVE CHAMBER



Granular bedding (Sand)



Air valve
(See Table for size)

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

Flanged raising piece

In situ Class 15 concrete base

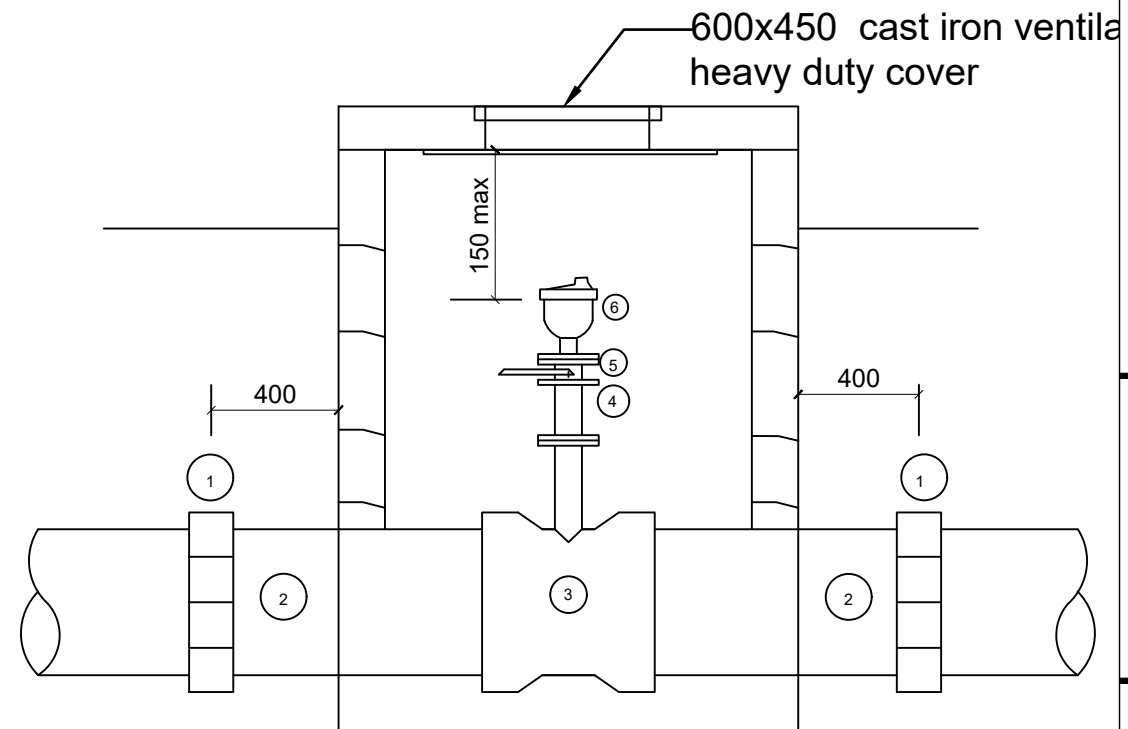
Flanged tee

Granular bedding (Sand)

Note:

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

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

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REVISIONS :

No	Date	Description

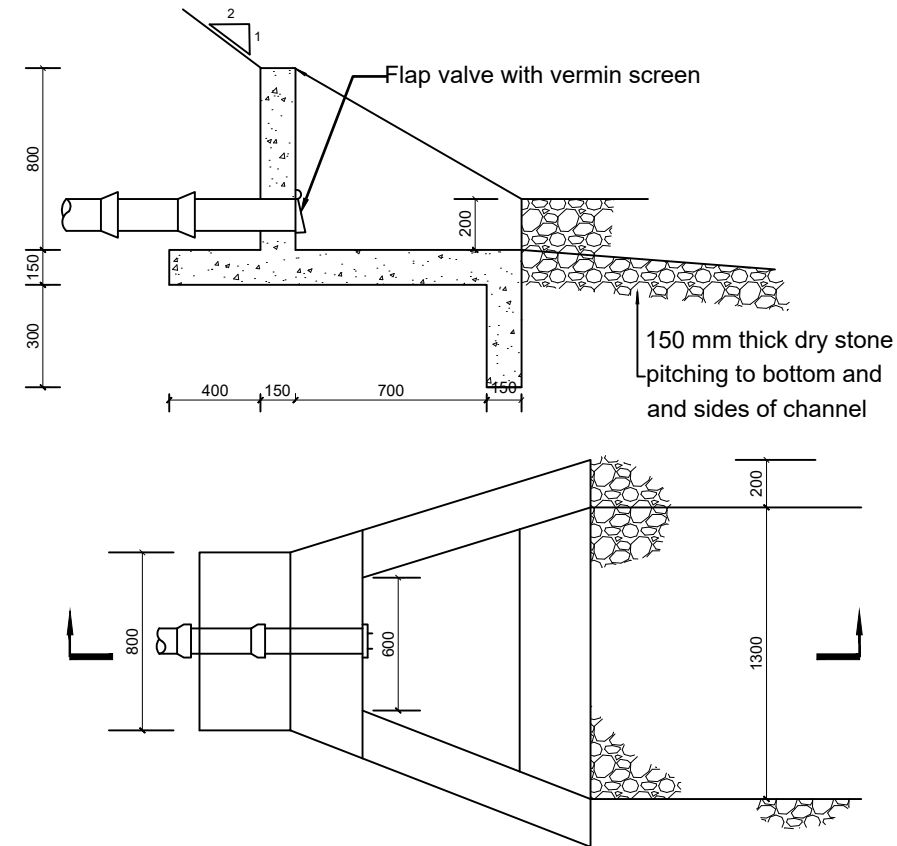
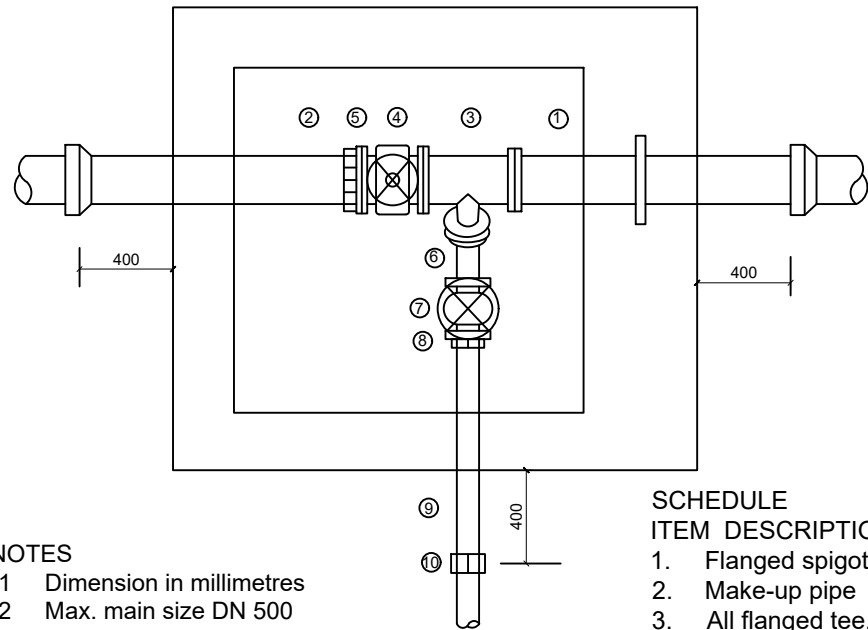
DRAWING TITLE : **STANDARD DRAWINGS**
 Air Valve Chamber and Pipework

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

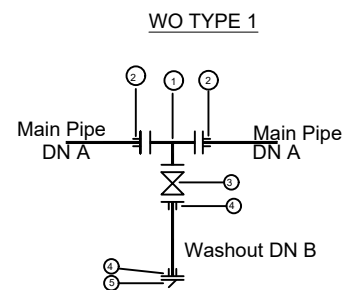
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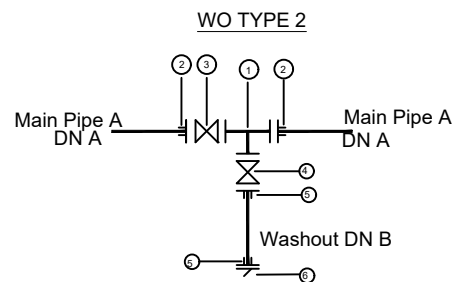
- NOTES**
- 1 Dimension in millimetres
 - 2 Max. main size DN 500
 - 3 Pipework within chamber to be ductile iron
 - 4 For details of chamber see standard detail drawing SD135

- 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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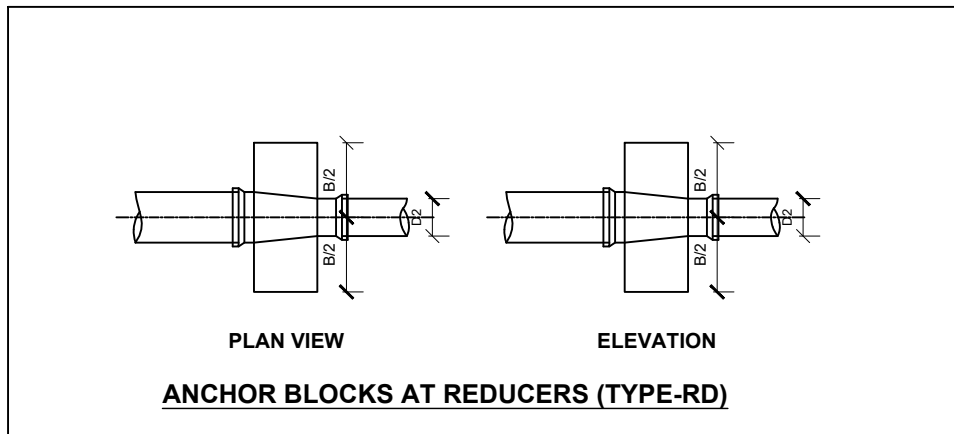
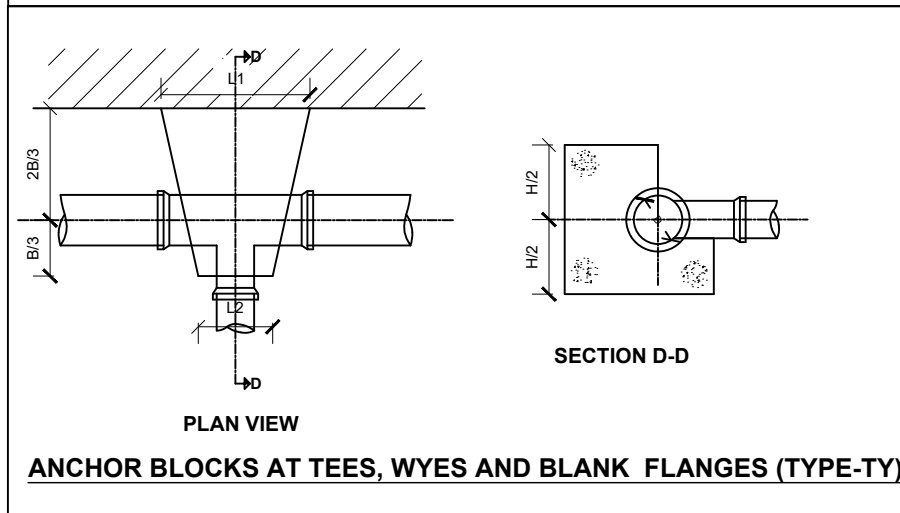
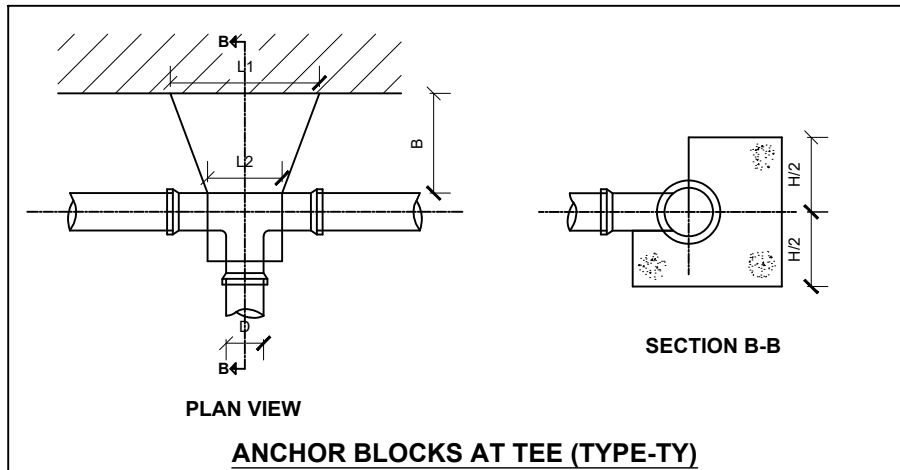
REVISIONS :

No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**
Washout Chamber and Outfall Structure


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-005**
 Scale: 1:120 Sheet No.: 1 of 1


LEGEND



TEES (TYPE-TY)						TEES (TYPE-TY)					
BRANCH SIZE	TEST PRESSURE	L1 m	L2 m	B m	H m	BRANCH SIZE	TEST PRESSURE	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
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	L m	B m	H m	NOMINAL DIAMETER	TEST PRESSURE	L m	B m	H m	NOMINAL DIAMETER	TEST PRESSURE	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

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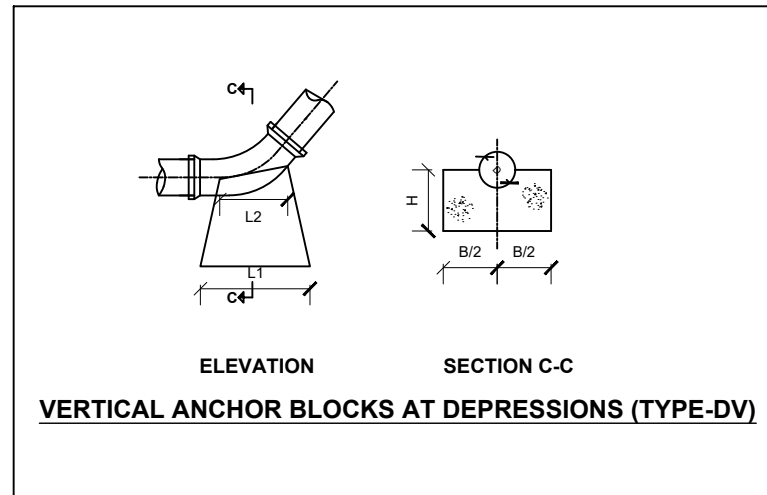
REVISIONS :

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:	1:120
Sheet No.:	1 of 3

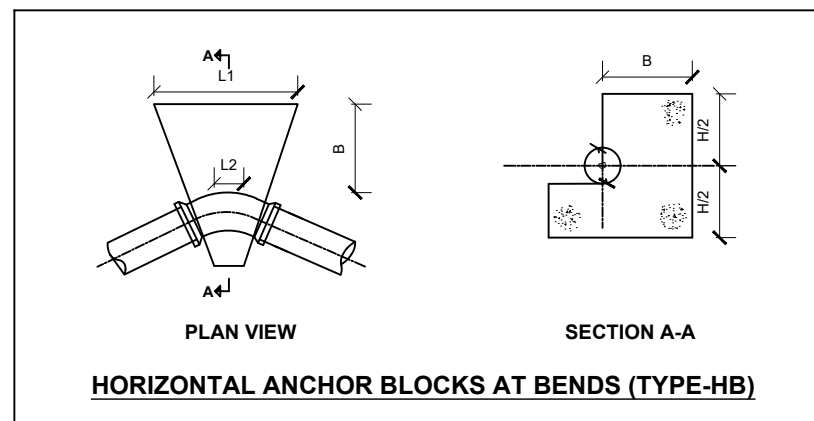
LEGEND



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
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

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
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

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

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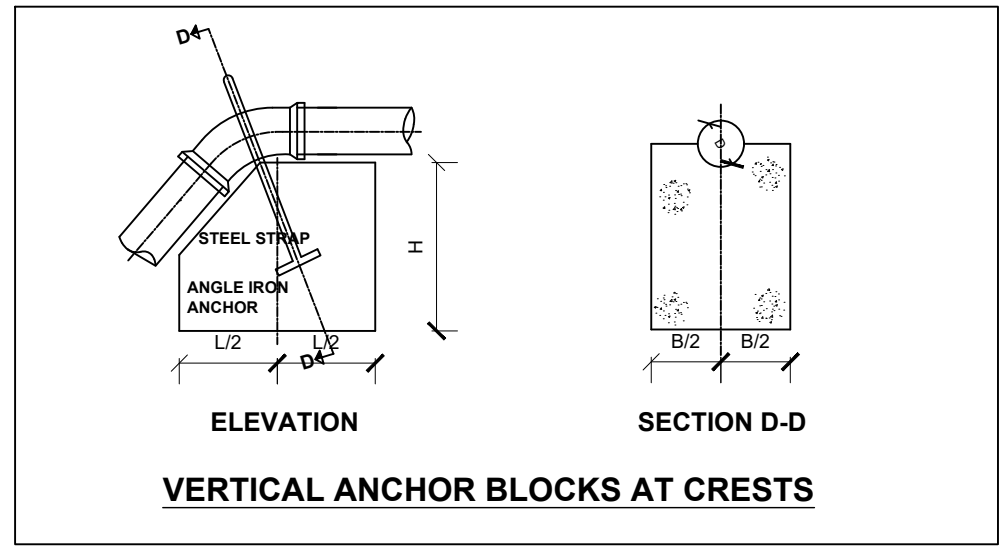
ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

No	Date	Description

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

Surveyed by: R.K
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Checked by: J.K.K
Date: January 2023
DRG. No.: **ALA-ORA-SD-006**
Scale: 1:120 Sheet No.: 2 of 3



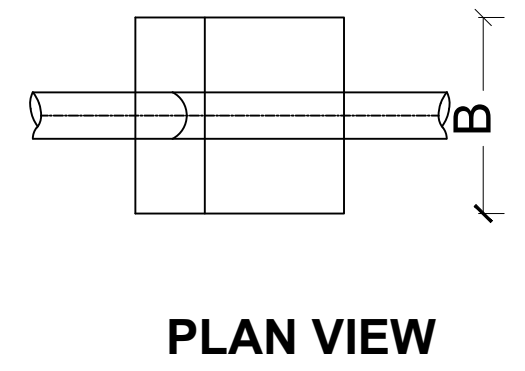
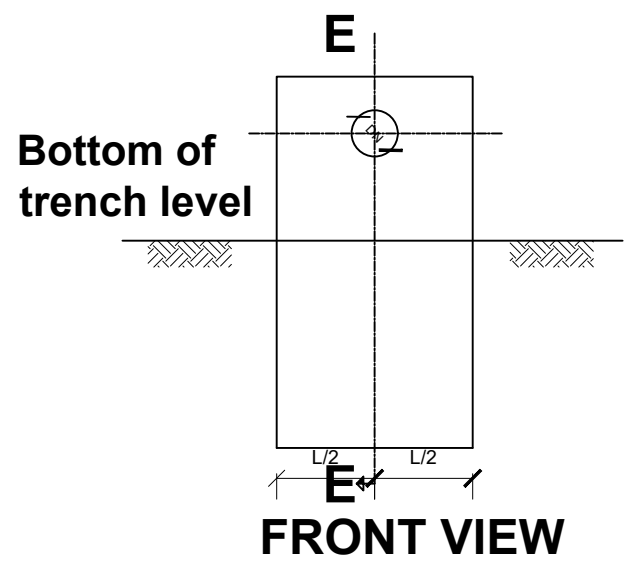
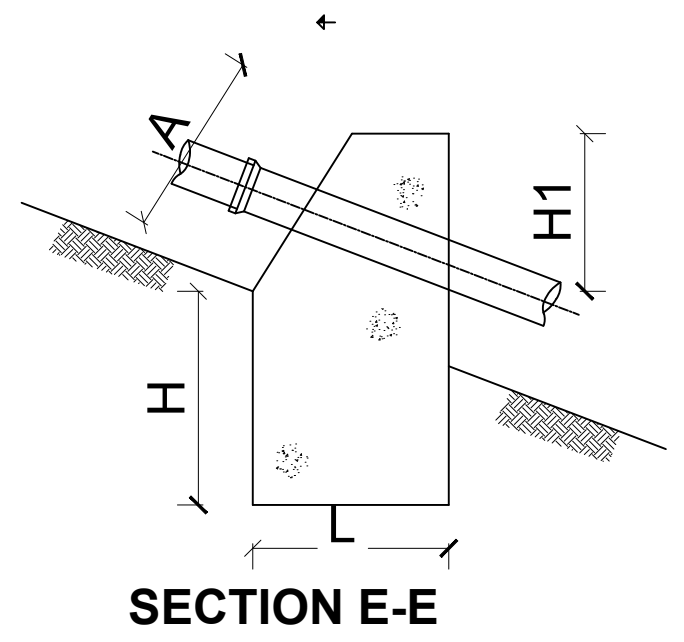
NOMINAL DIAMETER	TEST PRESSURE	45° BEND			22½° BEND			11¼° BEND		
		L m	B m	H m	L m	B m	H m	L m	B m	H m
150	250	1.70	1.10	0.80	1.30	0.90	0.80	1.00	0.70	0.60
	225	1.50	1.10	0.80	1.20	0.80	0.80	1.00	0.70	0.60
	180	1.50	1.10	0.70	1.10	0.80	0.80	1.00	0.70	0.60
	135	1.40	0.90	0.70	1.00	0.70	0.80	1.00	0.70	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		
		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		
		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 >=6° and <=16°
 - 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

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REVISIONS :

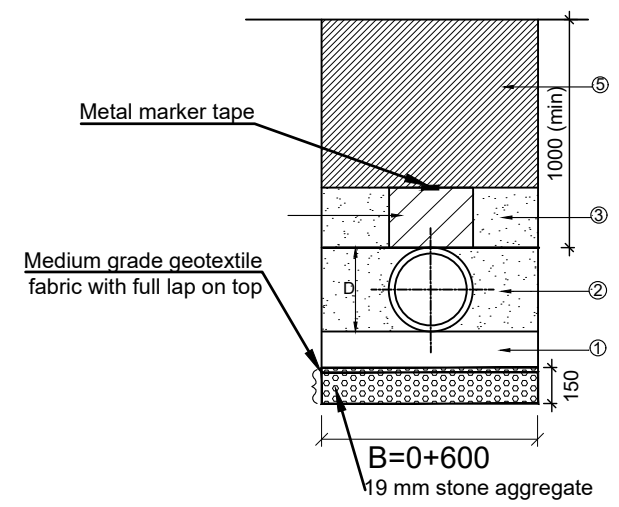
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Anchor Block Details

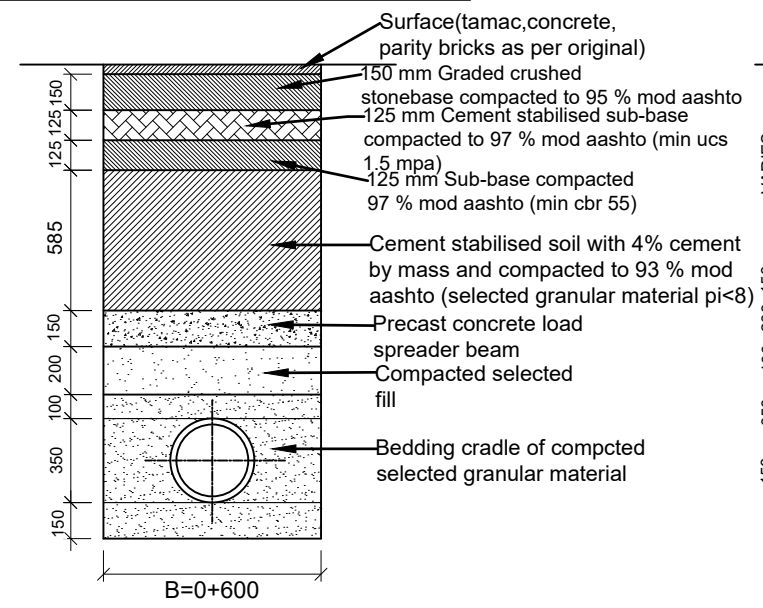
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Scale:	1:120
Sheet No.:	3 of 3

TRENCHING AND BACKFILLING DETAILS

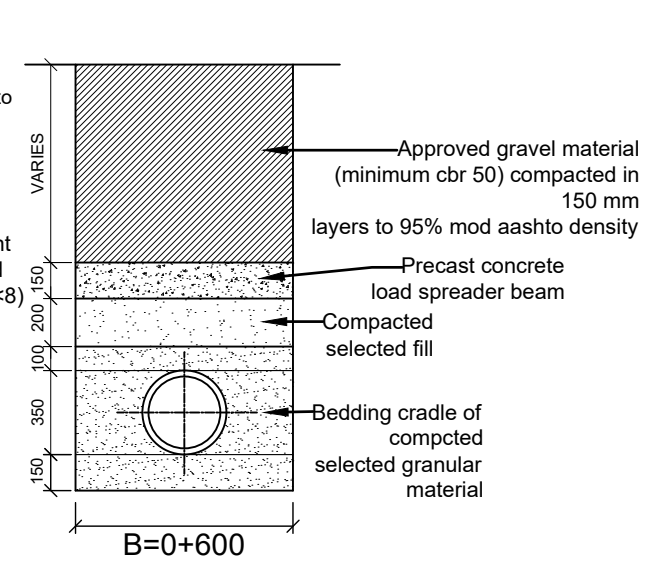
TYPICAL TRENCH EXCAVATION AND BACKFILLING FOR PE/uPVC/GRP PIPES



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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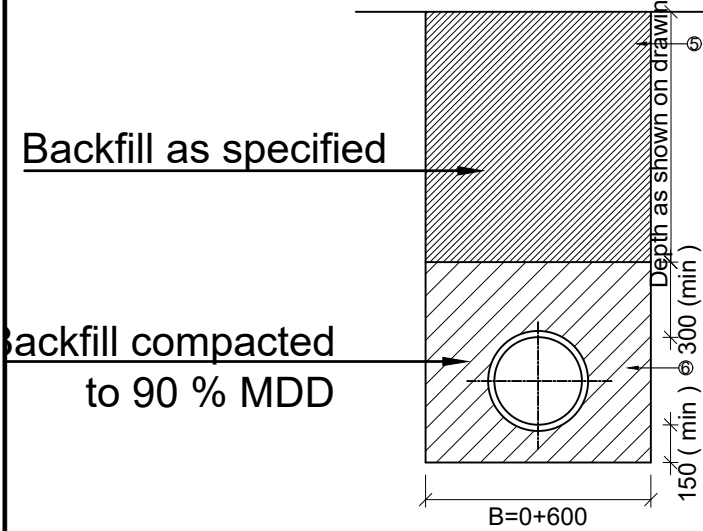
REVISIONS :

No	Date	Description

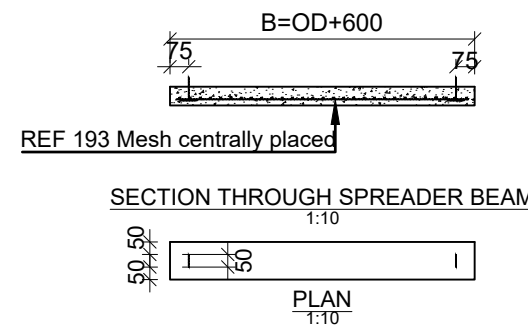
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Trenching, Road Crossing and Backfilling Details

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.

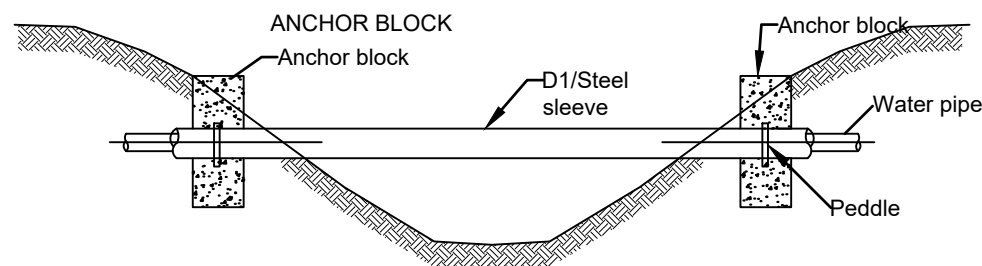
TABLE 1 : MATERIAL DESCRIPTION CHART

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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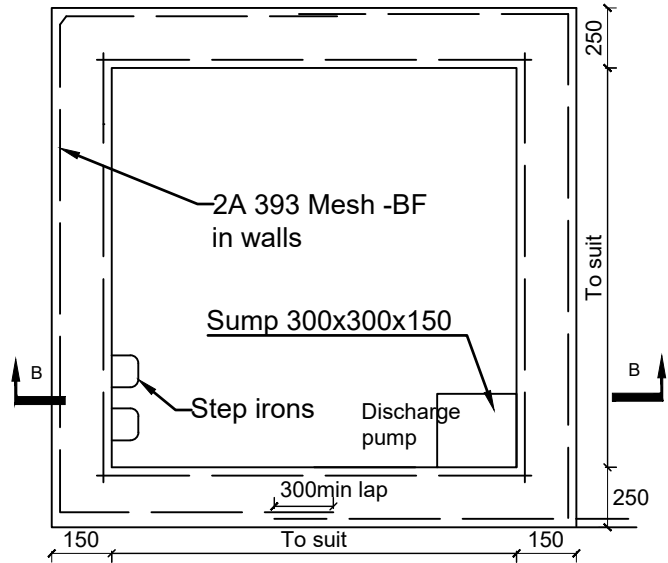
ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

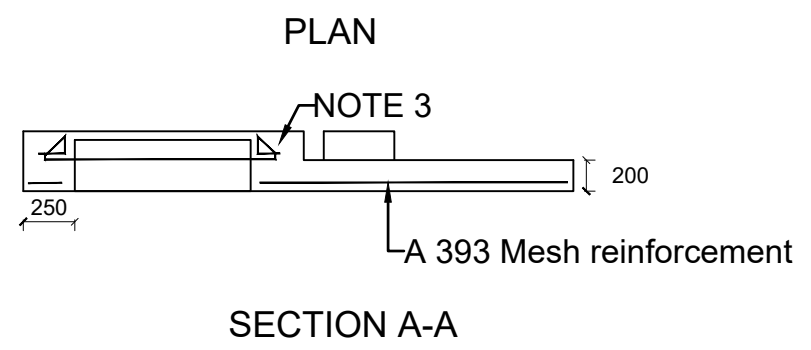
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Trenching, Road Crossing and Backfilling Details

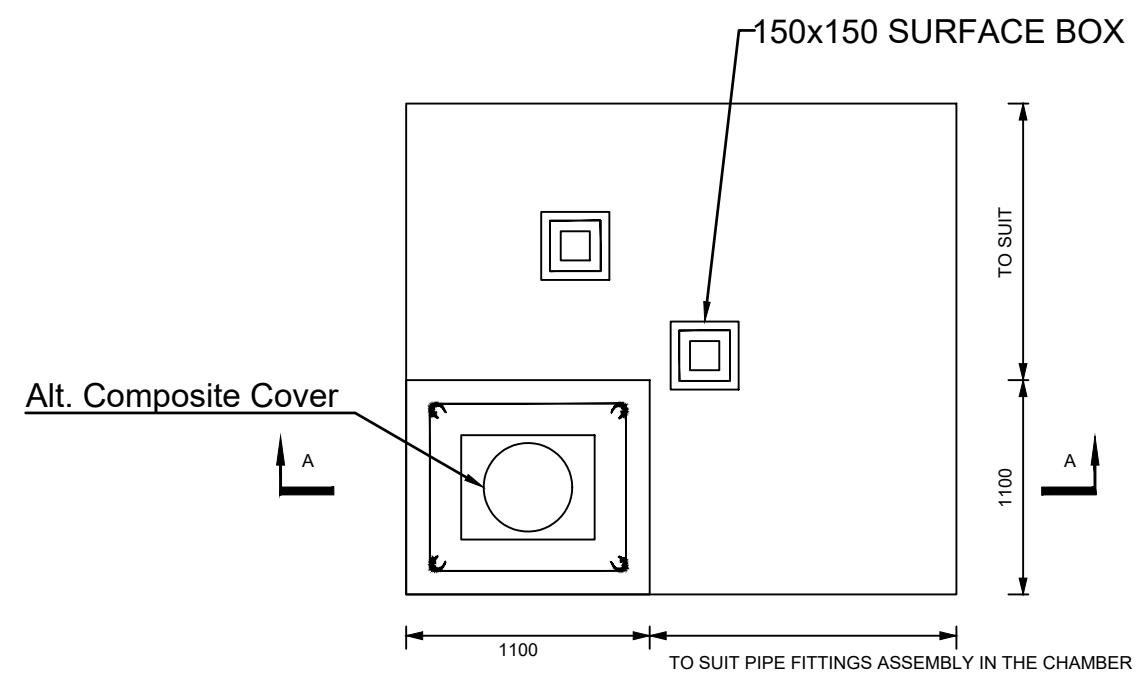
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 Date: January 2023
 DRG. No.: **ALA-ORA-SD-007**
 Scale: 1:120 Sheet No.: 2 of 2



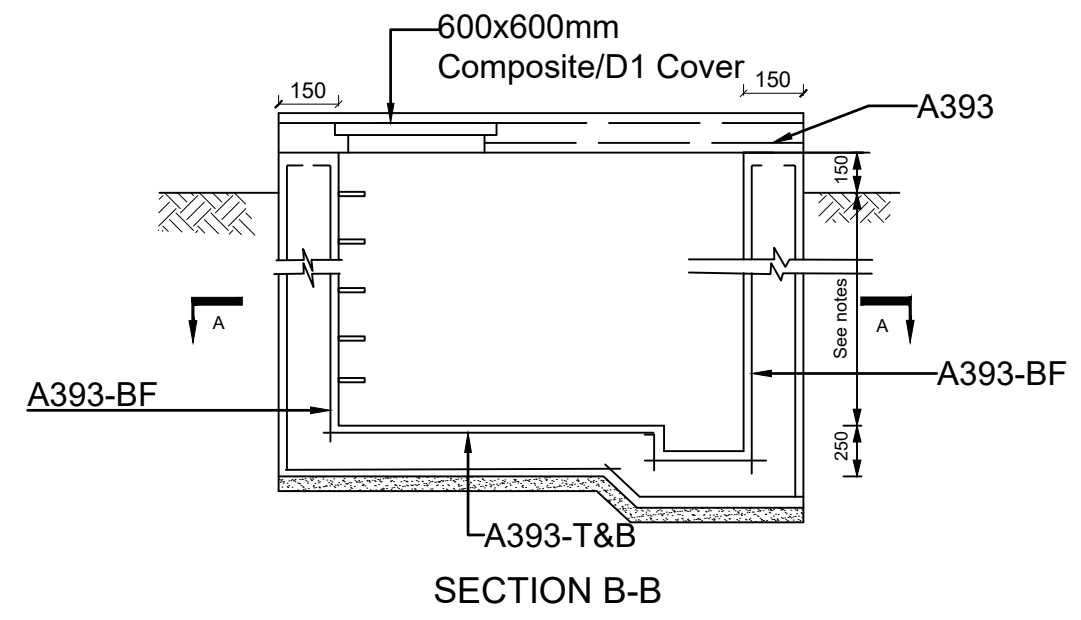
SECTIONAL PLAN A-A



SECTION A-A



ROOF SLAB



SECTION B-B

NOTES

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

LEGEND

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No	Date	Description

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

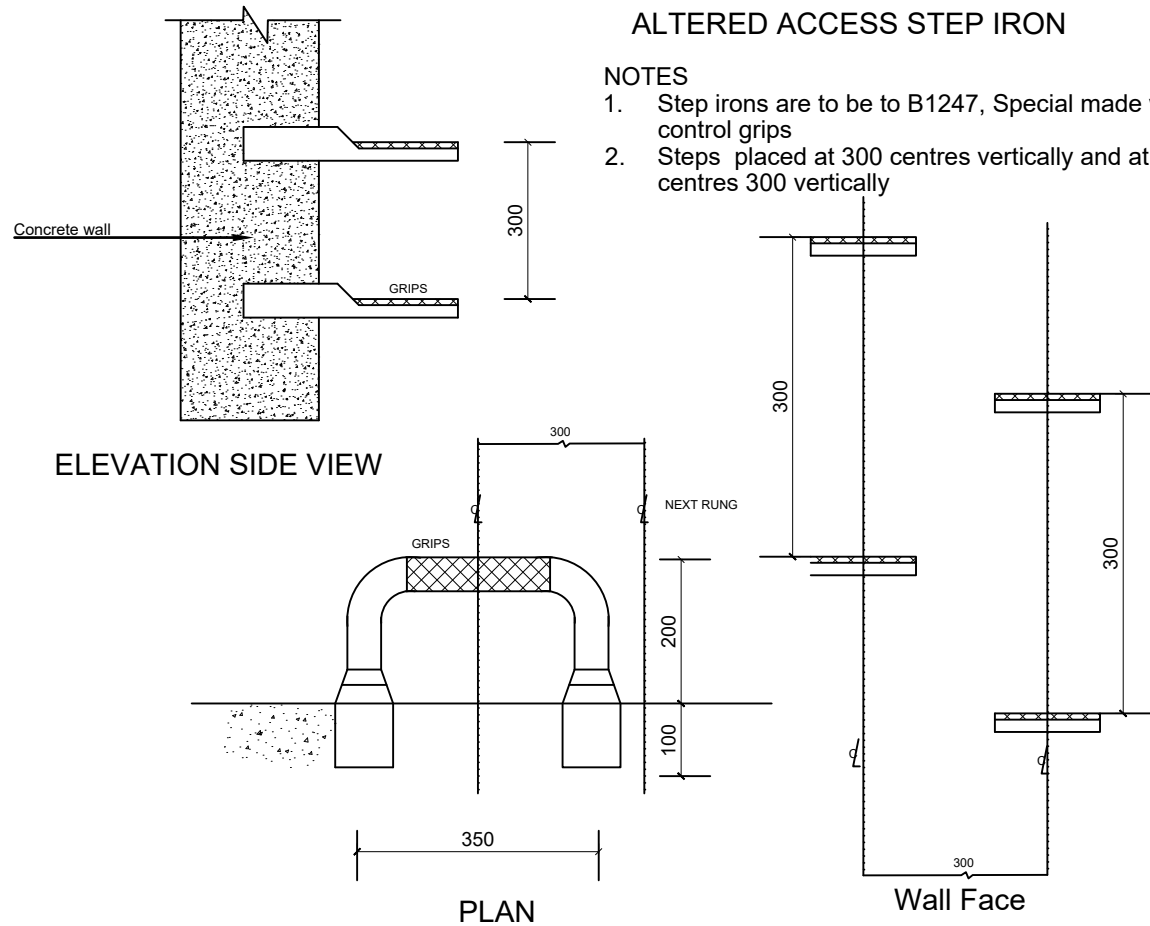
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DRG. No.:	ALA-ORA-SD-008
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LEGEND

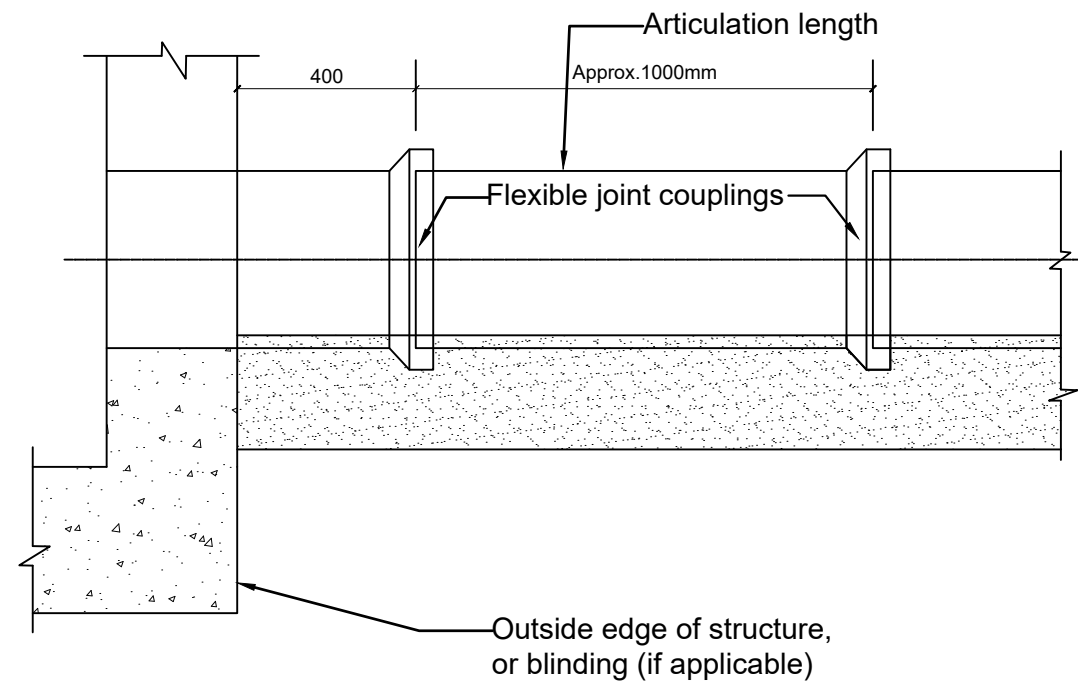
ALTERED ACCESS STEP IRON

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



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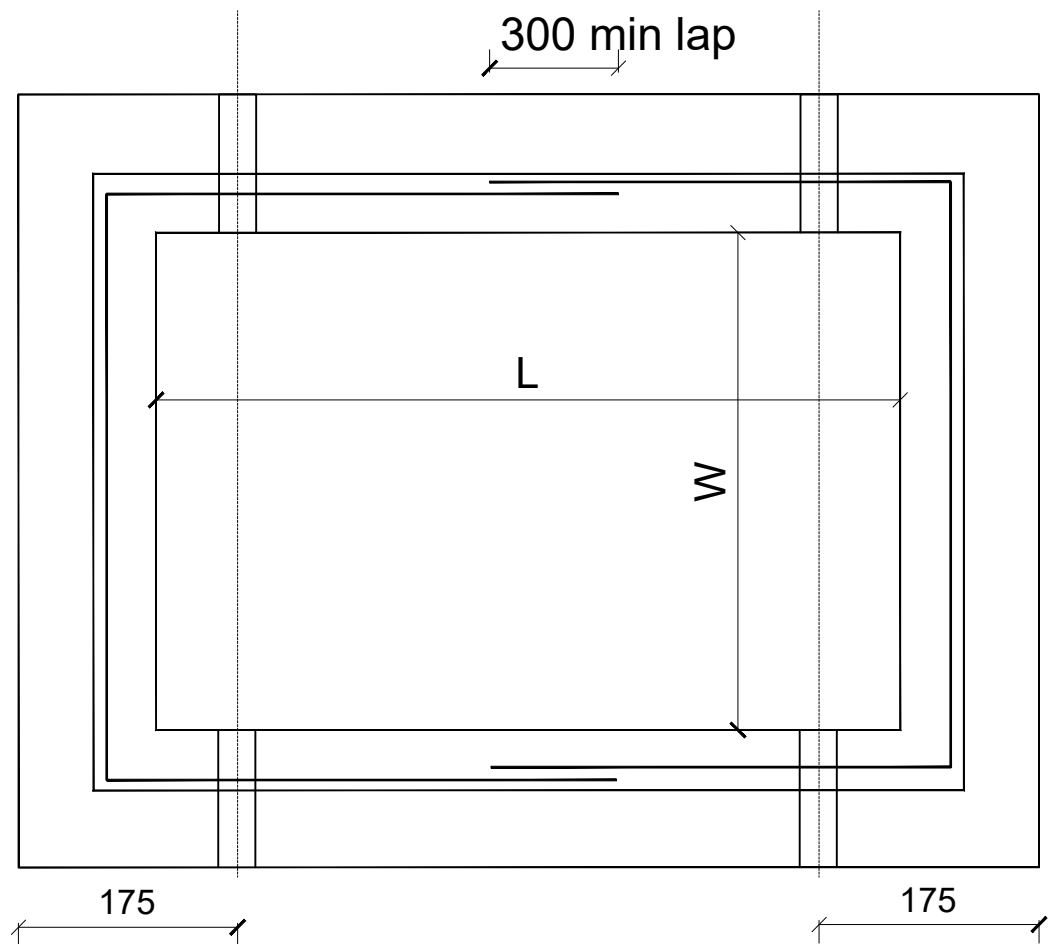
**ENYAU WATER SUPPLY AND
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No	Date	Description

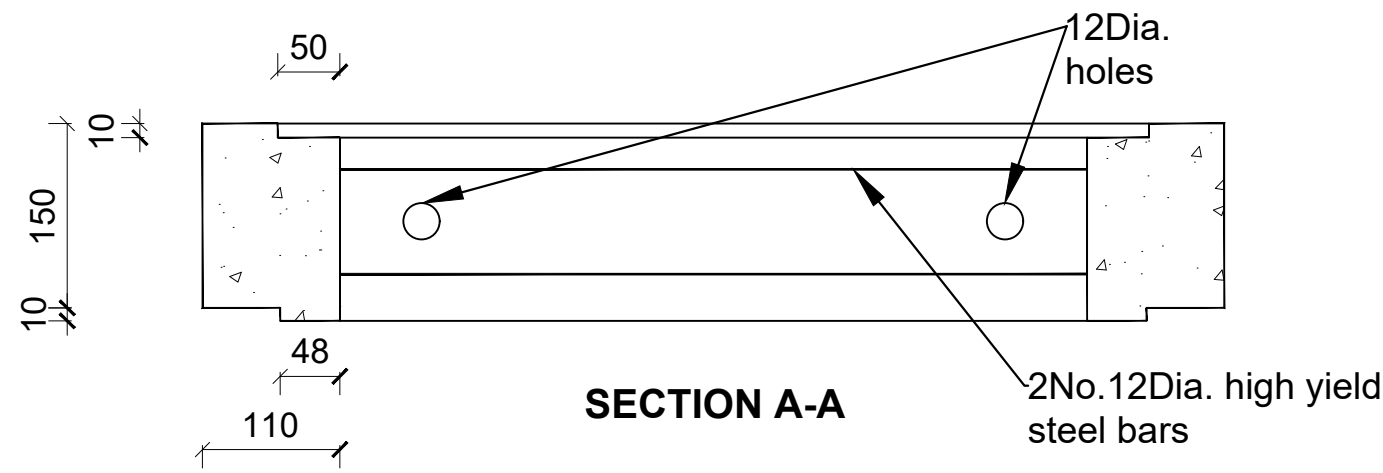
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Step Iron and Flexible Pipe Joint Details

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Checked by:	J.K.K
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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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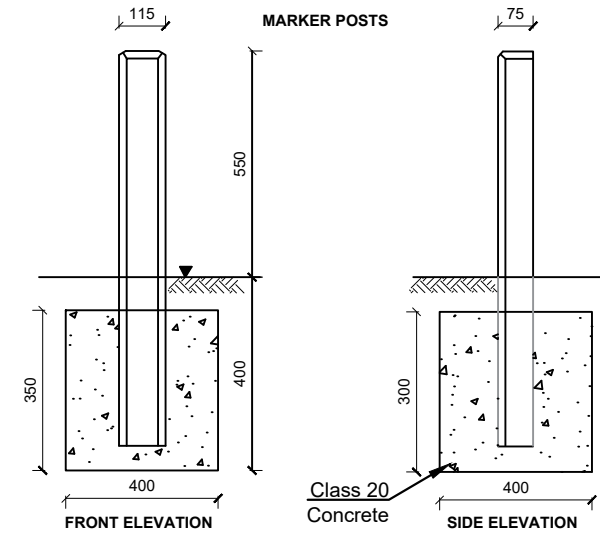
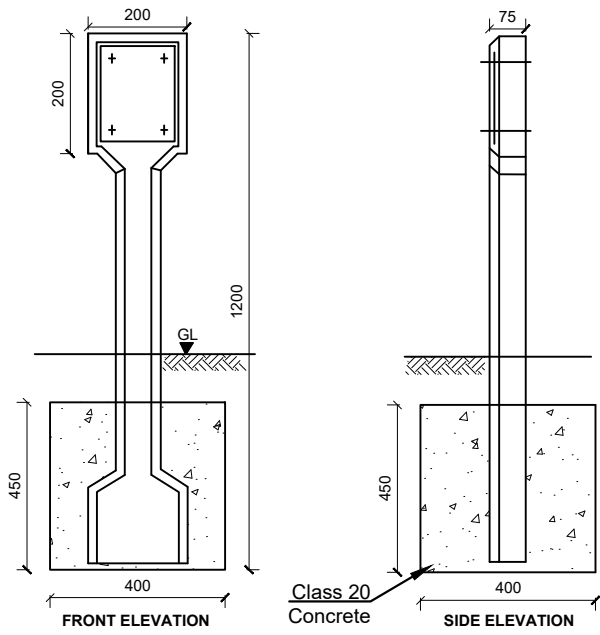
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**
Precast Chamber Cover slab and Section

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Scale:	1:120
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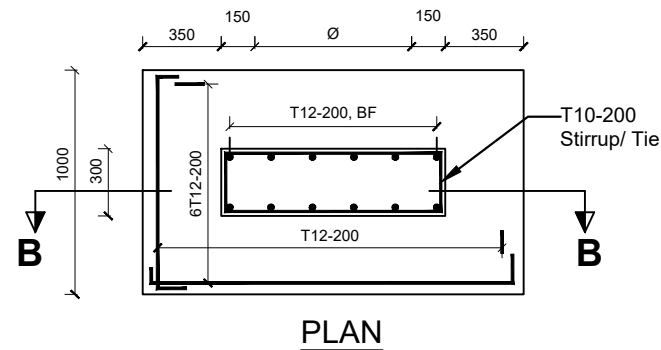
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INDICATOR POSTS

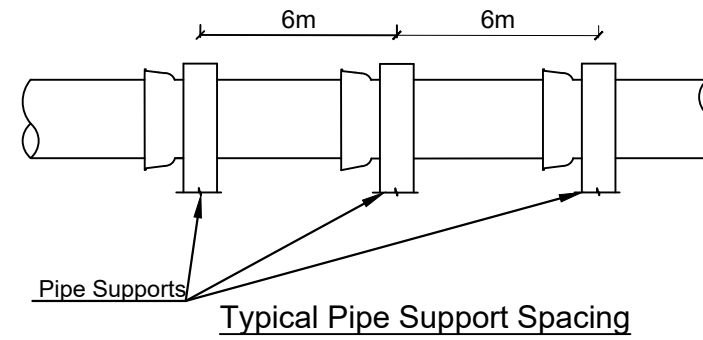


STANDARD PIPE SUPPORT ABOVE GROUND

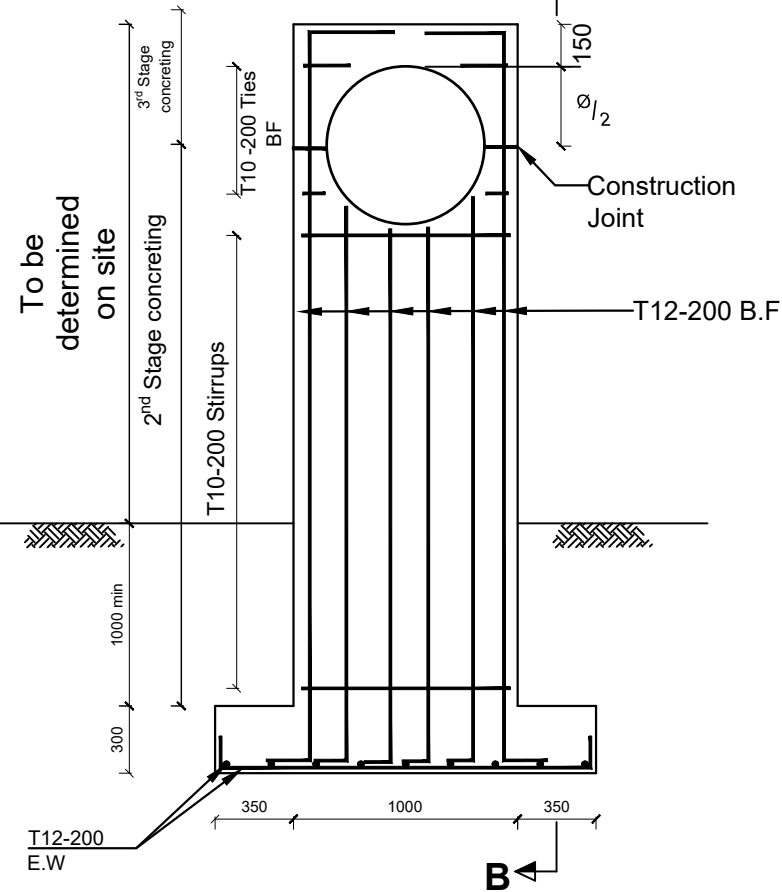
Alternative 1 - In situ



PLAN
OD+300
OD

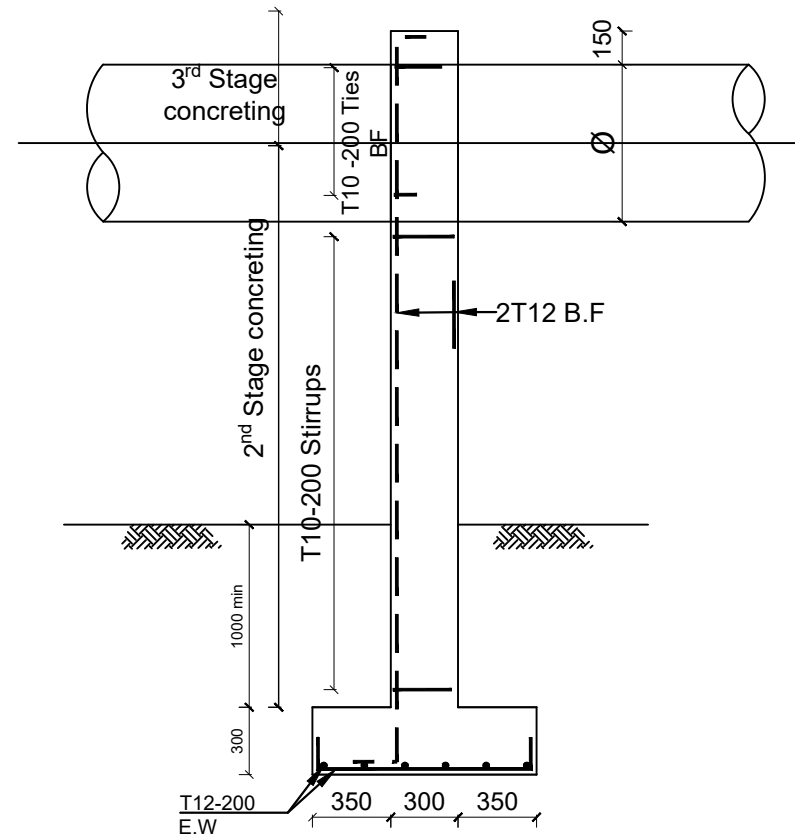


Typical Pipe Support Spacing



SECTION A-A
1:25

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



SECTIONAL ELEVATION B-B
1:25

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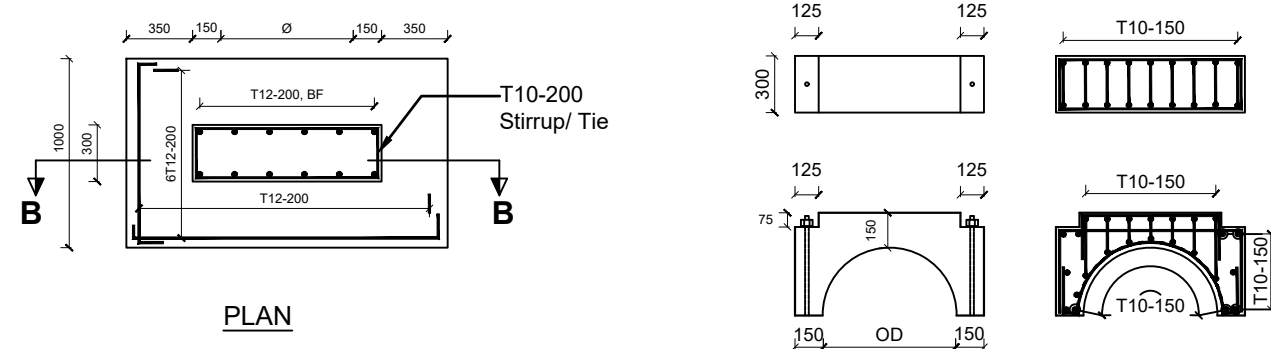
DRAWING TITLE : **STANDARD DRAWINGS**
Marker Post and Pipe Support Details

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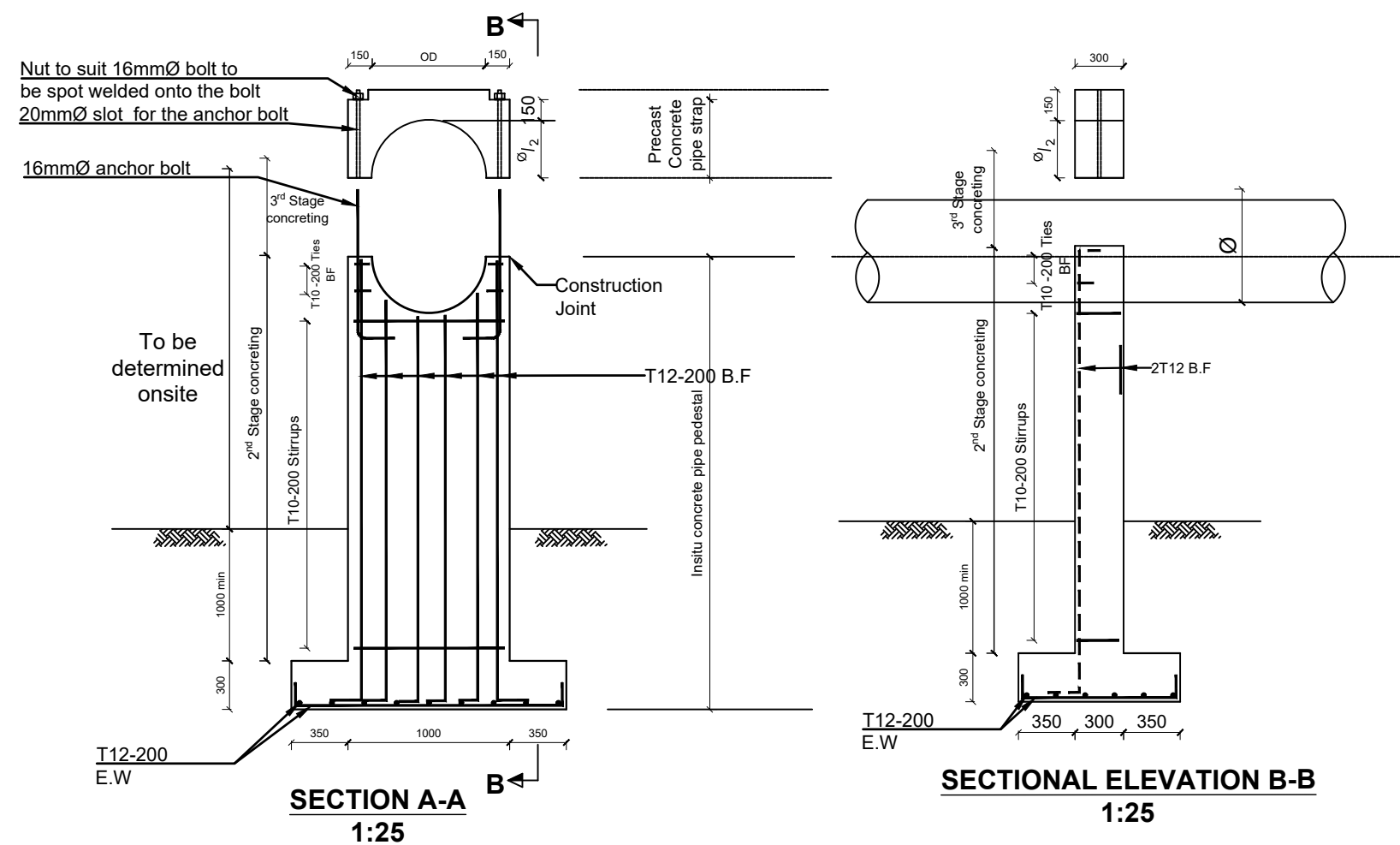
LEGEND

STANDARD PIPE SUPPORT ABOVE GROUND

Alternative 2 - Insitu with a precast concrete strap




PLAN



SECTION A-A
1:25

SECTIONAL ELEVATION B-B
1:25

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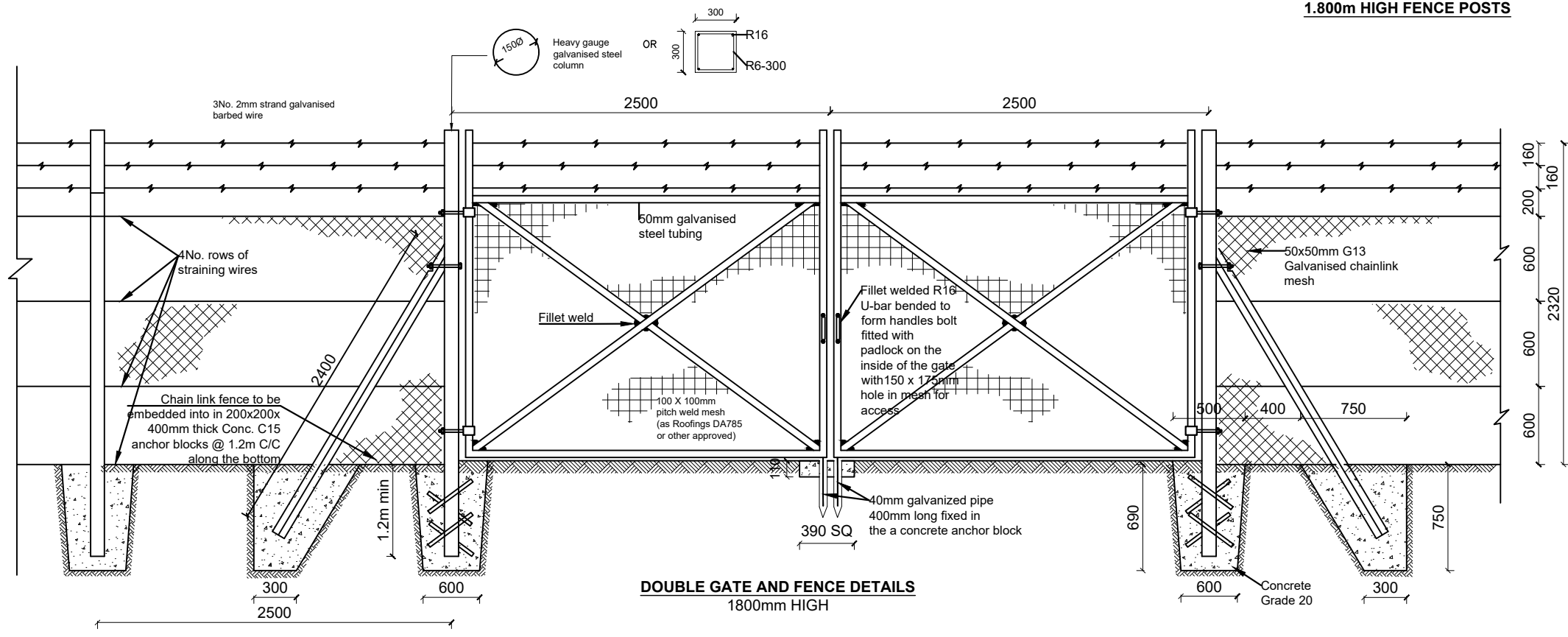
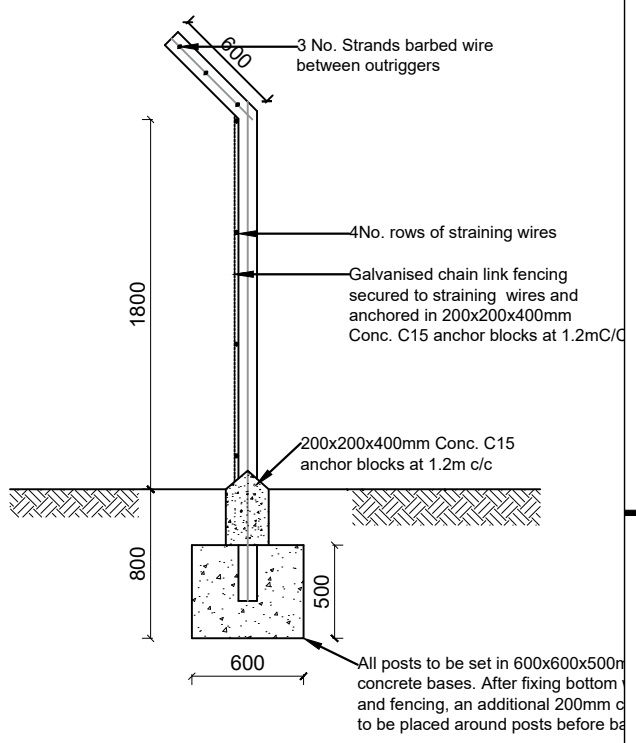
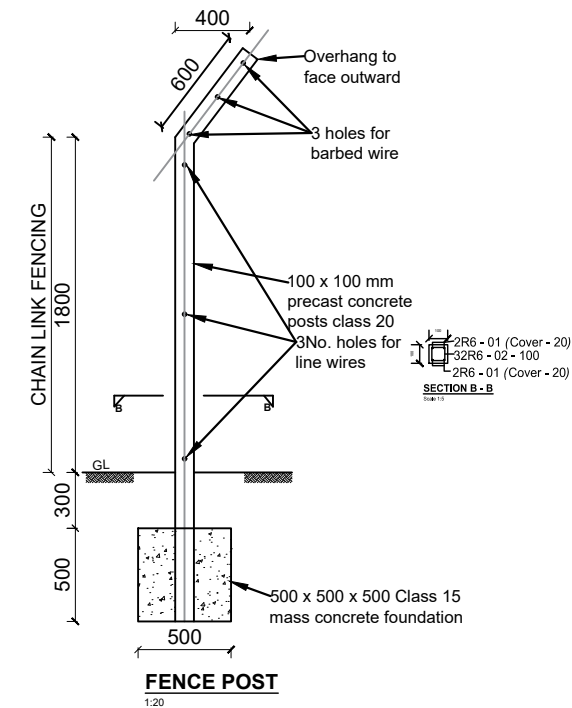
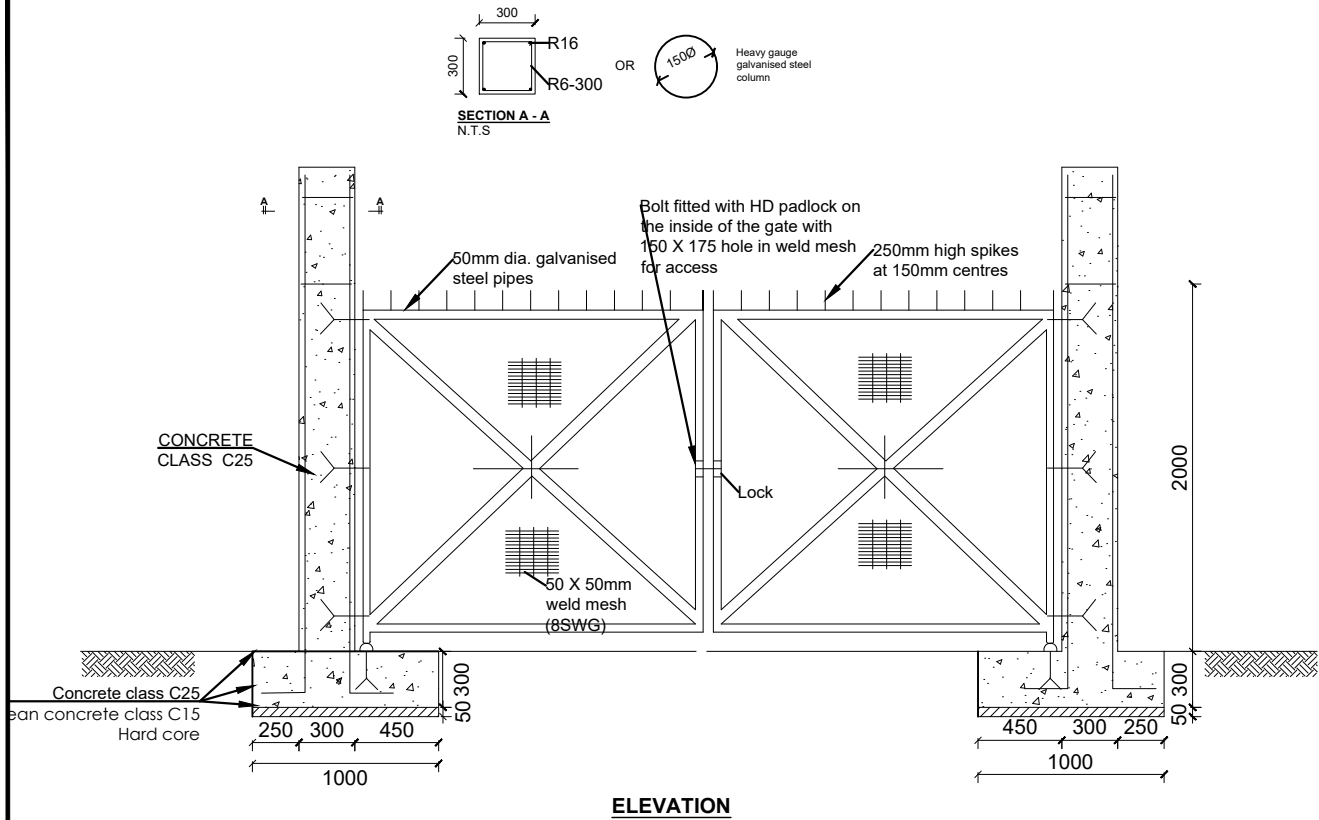
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DRAWING TITLE : **STANDARD DRAWINGS**
Marker Post and Pipe Support Details

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FENCE DETAILS

LEGEND



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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 :

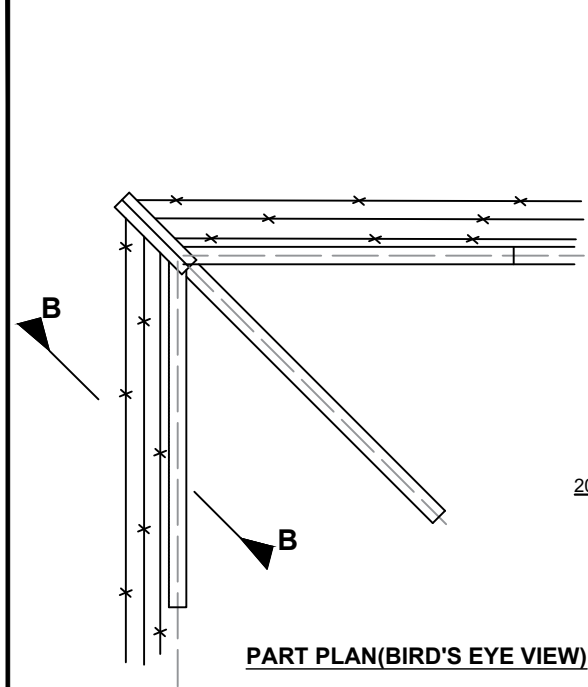
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**
Fence 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-012**
 Scale: 1:120 Sheet No.: 1 of 2

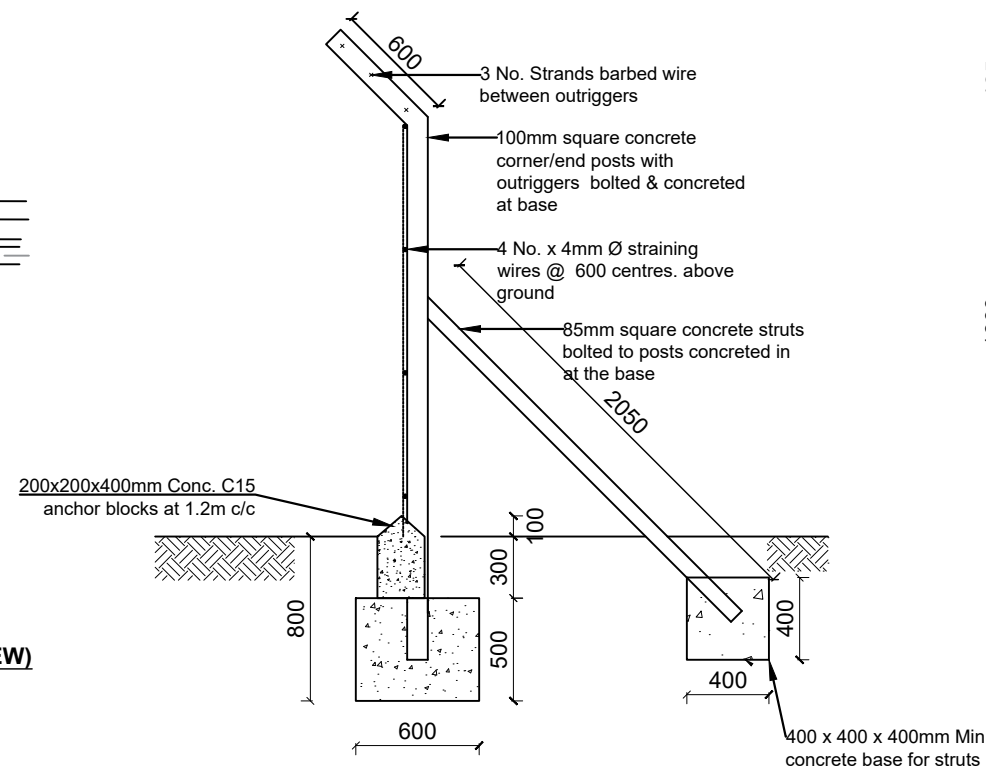
FENCE DETAILS

LEGEND

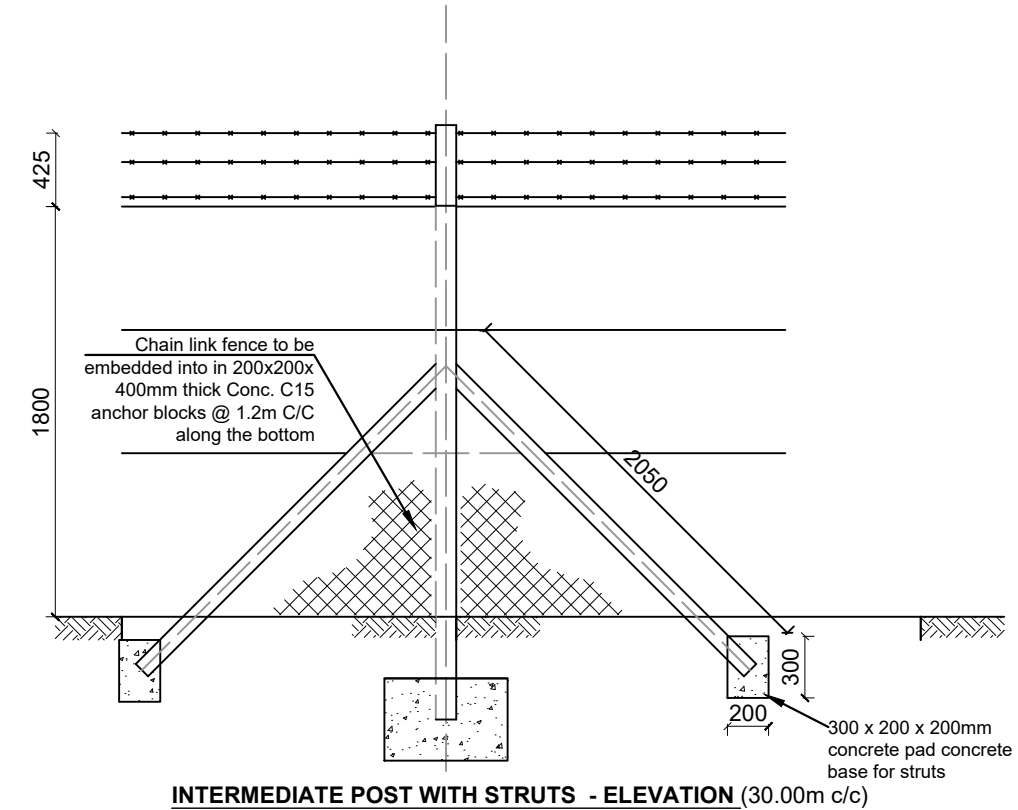


PART PLAN (BIRD'S EYE VIEW)

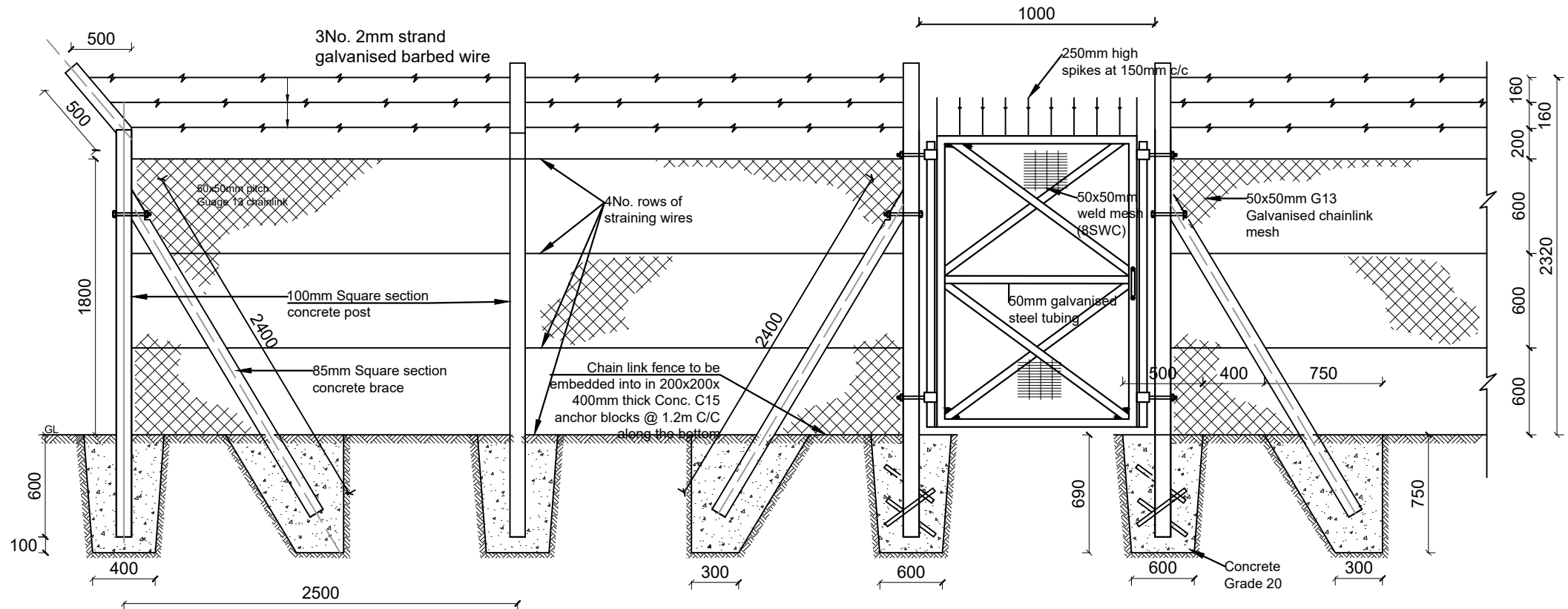
CORNER POSTS



CORNER/END POSTS SECTION B-B



INTERMEDIATE POST WITH STRUTS - ELEVATION (30.00m c/c)



SMALL GATE AND FENCE DETAILS

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

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ENYAU WATER SUPPLY AND SANITATION SYSTEM

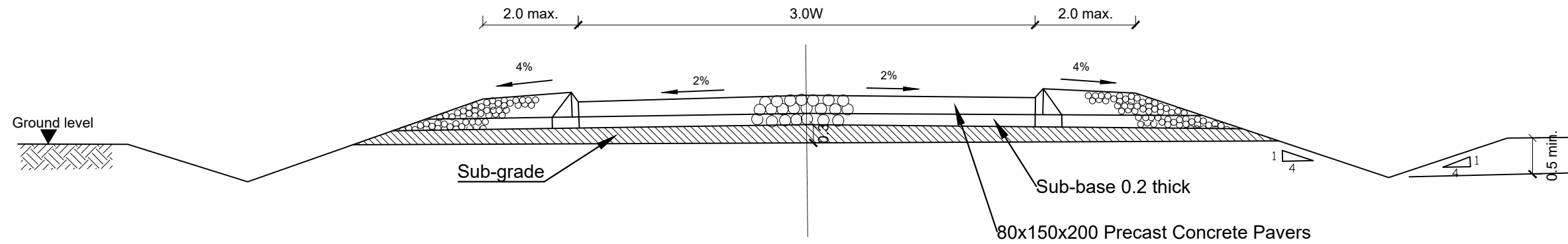
REVISIONS :

No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**
Fence Details

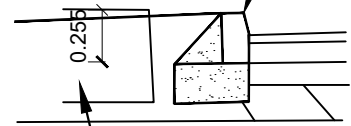
Surveyed by:	R.K
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Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA-SD-012
Scale:	1:120
Sheet No.:	2 of 2

ROAD WORKS

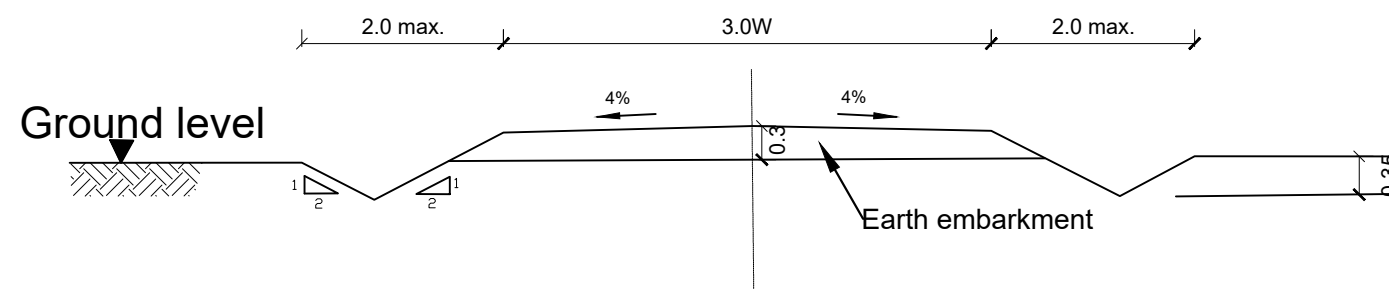
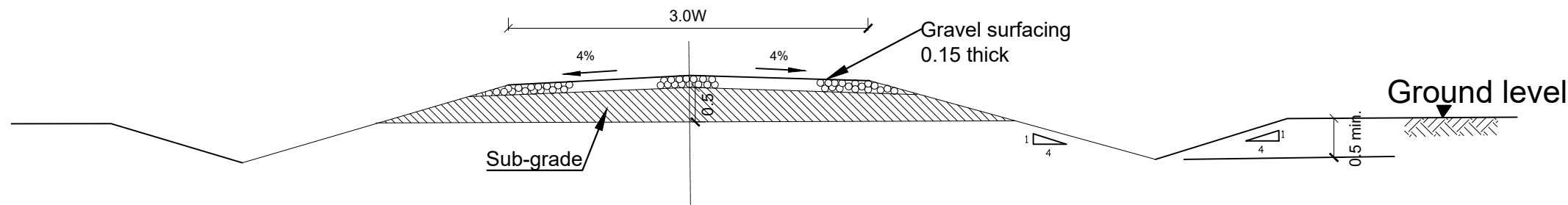


SURFACE ROAD

0.205x0.125 (nominal) half-batter precast concrete kerb

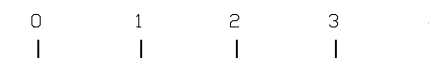


0.2 Minimum varies to suit sub-base thickness



FARM ACCESS ROAD

ROAD WORKS DETAILS



LEGEND

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ENYAU WATER SUPPLY AND SANITATION SYSTEM

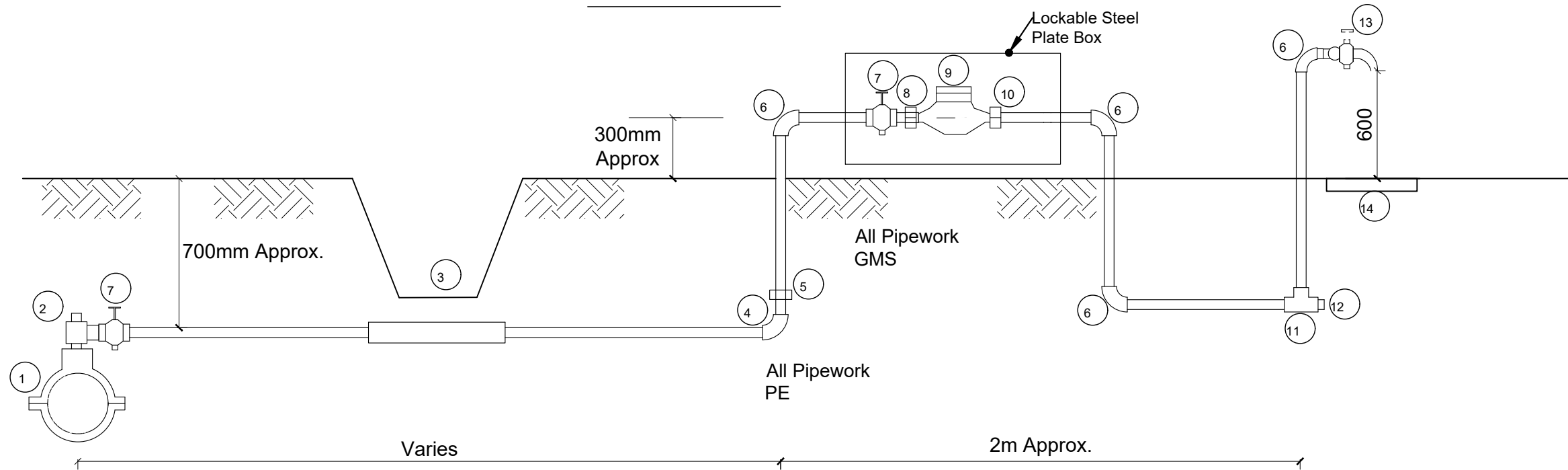
REVISIONS :

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.:	ALA-ORA-SD-013
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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PROJECT :
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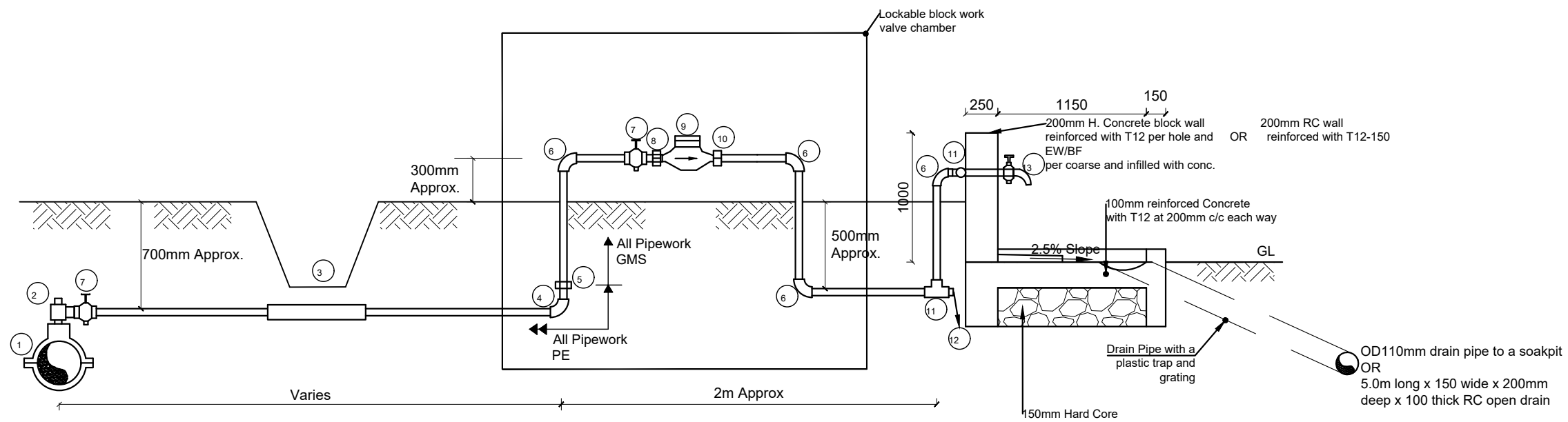
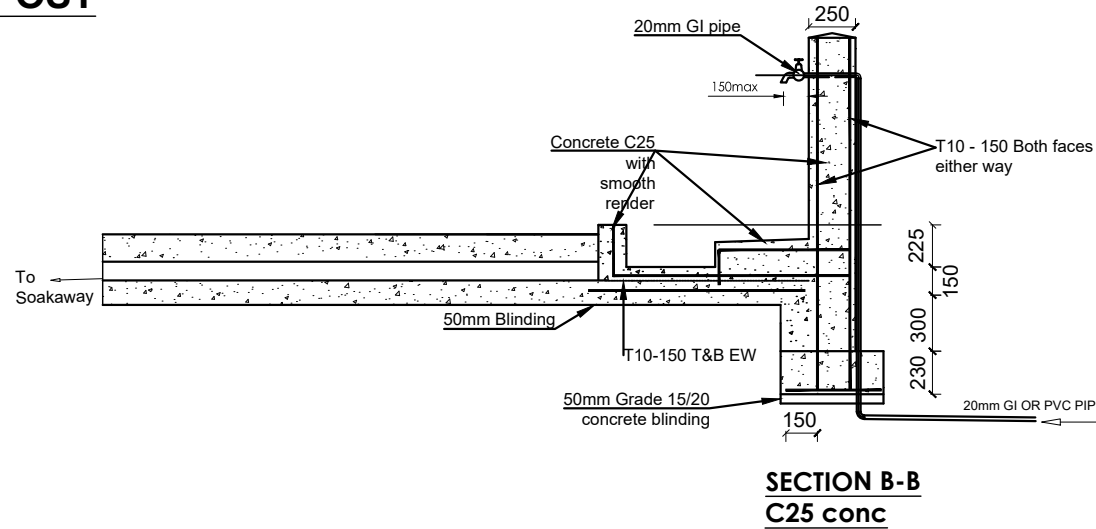
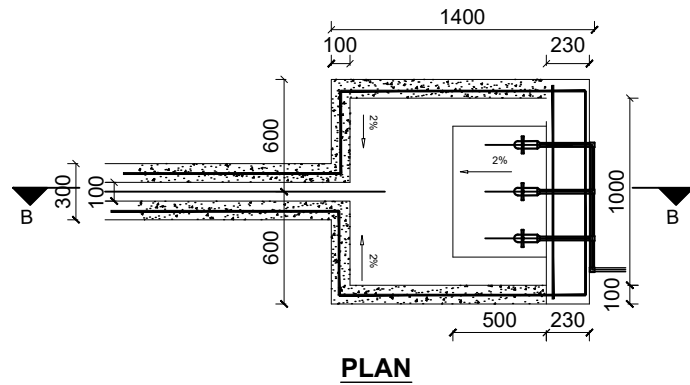
ENYAU WATER SUPPLY AND SANITATION SYSTEM

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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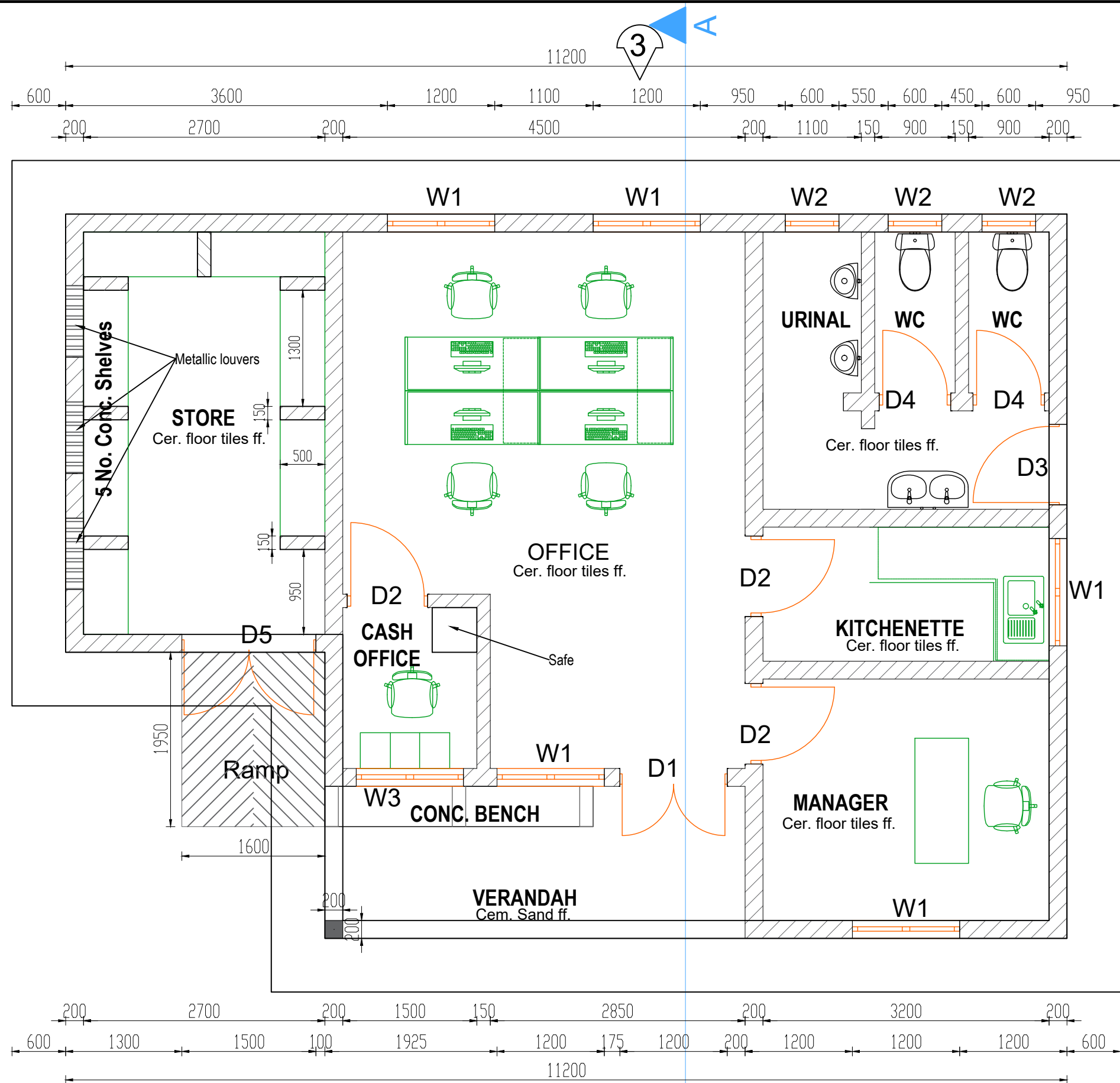
PROJECT :
ALA-ORA WATER SUPPLY AND SANITATION PROJECT

ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :		
No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**
Stand Post

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Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA-SD-015
Scale:	1:120
Sheet No.:	1 of 1



PLAN


LEGEND

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ALA-ORA WATER SUPPLY AND SANITATION PROJECT

ENYAU WATER SUPPLY AND SANITATION SYSTEM

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

REVISIONS :		
No	Date	Description

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-016A
Scale:	1:50
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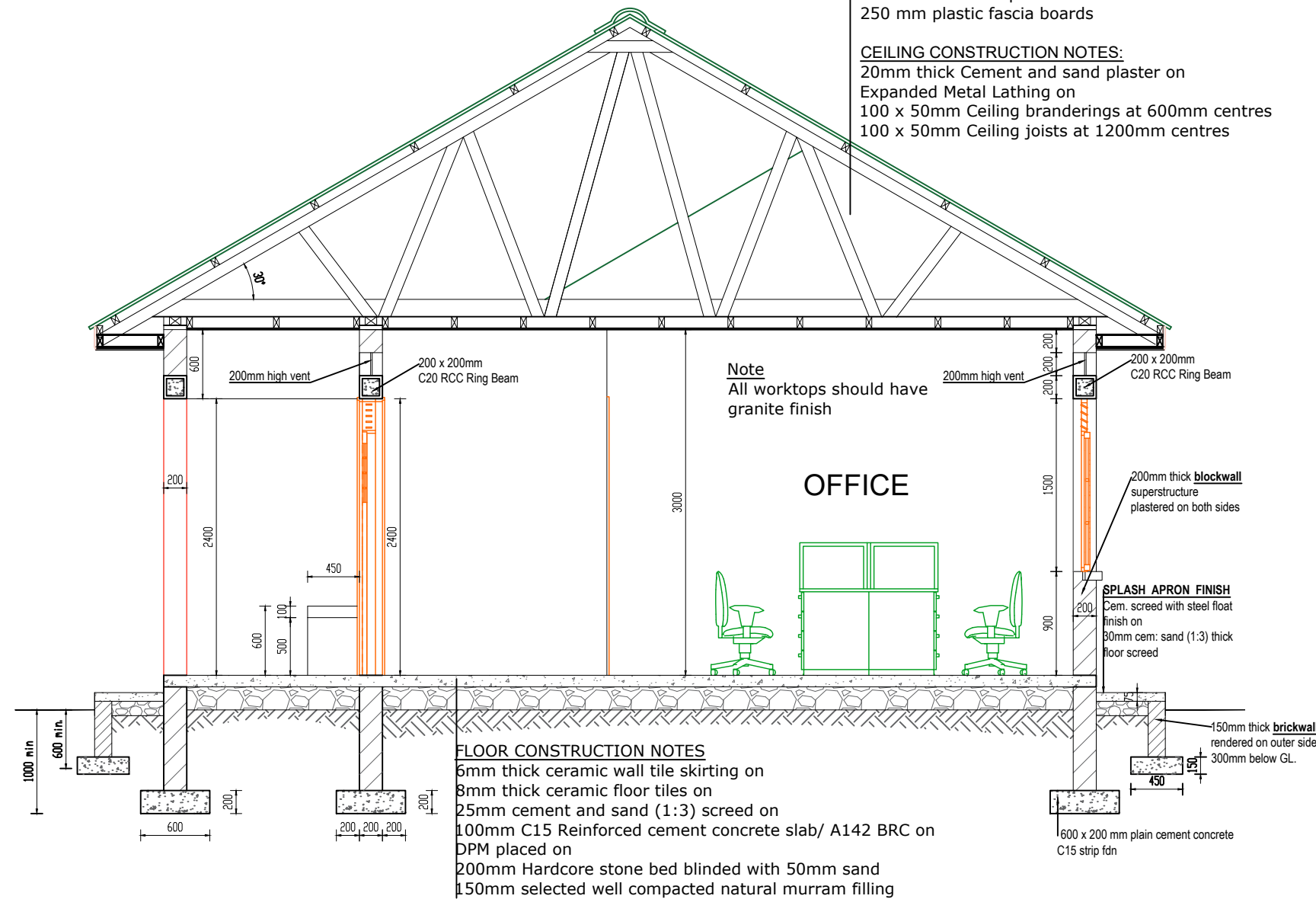
LEGEND

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 A-A

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PROJECT :
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 SANITATION PROJECT**

**ENYAU WATER SUPPLY AND
 SANITATION SYSTEM**

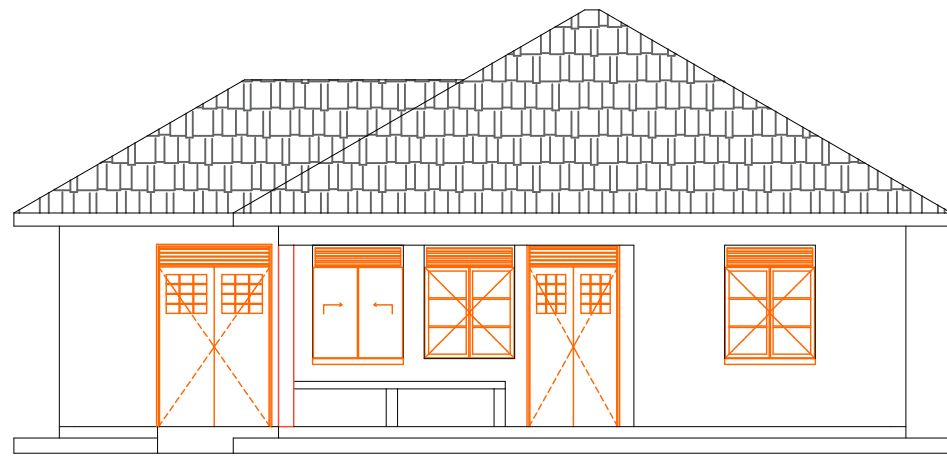
REVISIONS :

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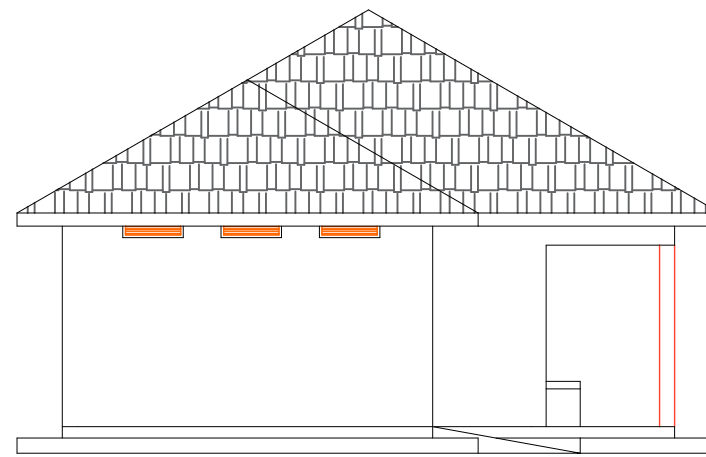
DRAWING TITLE : **STANDARD DRAWINGS**
Water Office-Type 1- Section

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

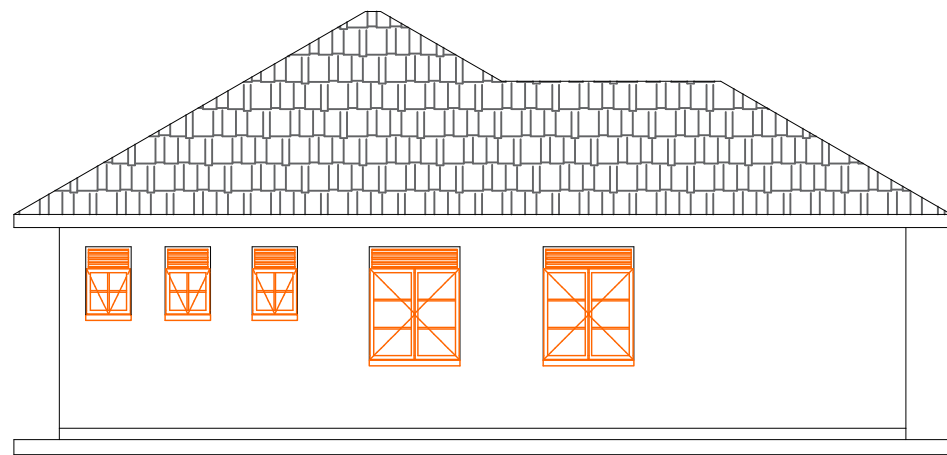
LEGEND



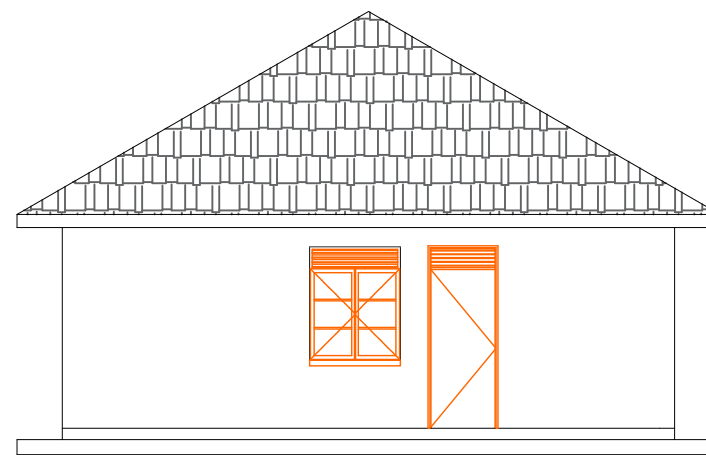
ELEVATION 1



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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PROJECT :
 ALA-ORA WATER SUPPLY AND
 SANITATION PROJECT

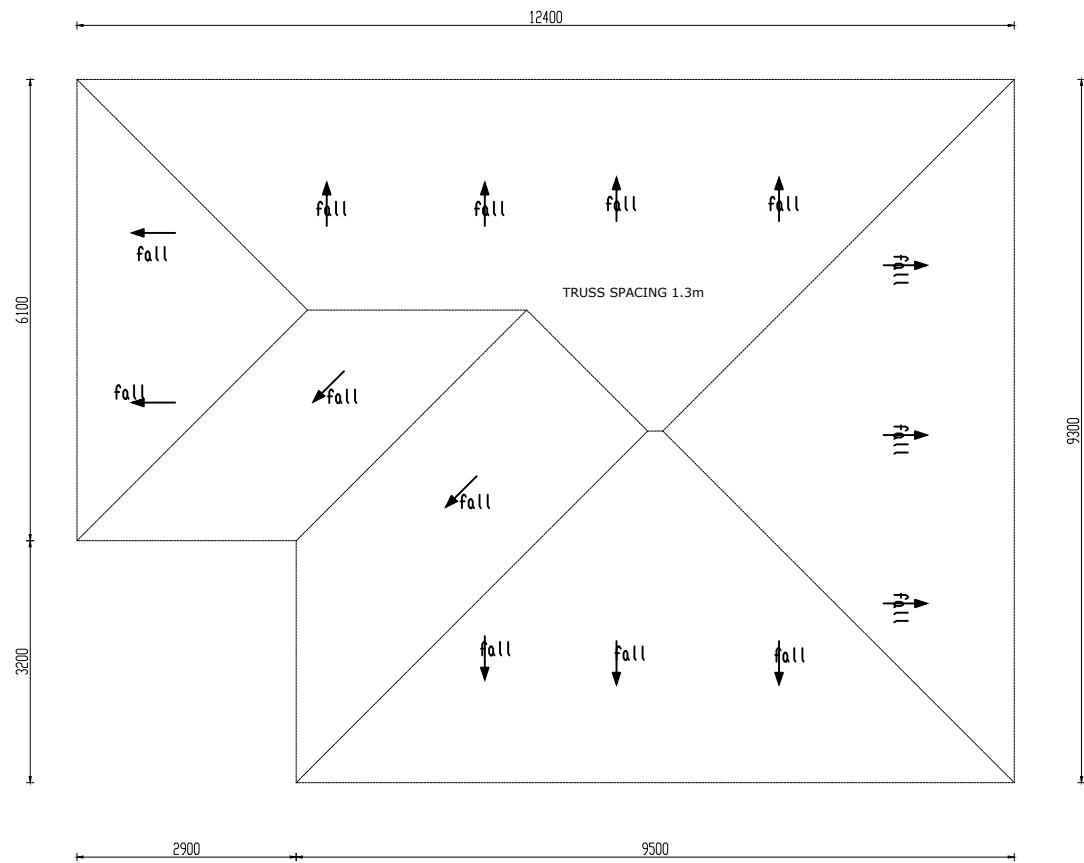
**ENYAU WATER SUPPLY AND
 SANITATION SYSTEM**

REVISIONS :

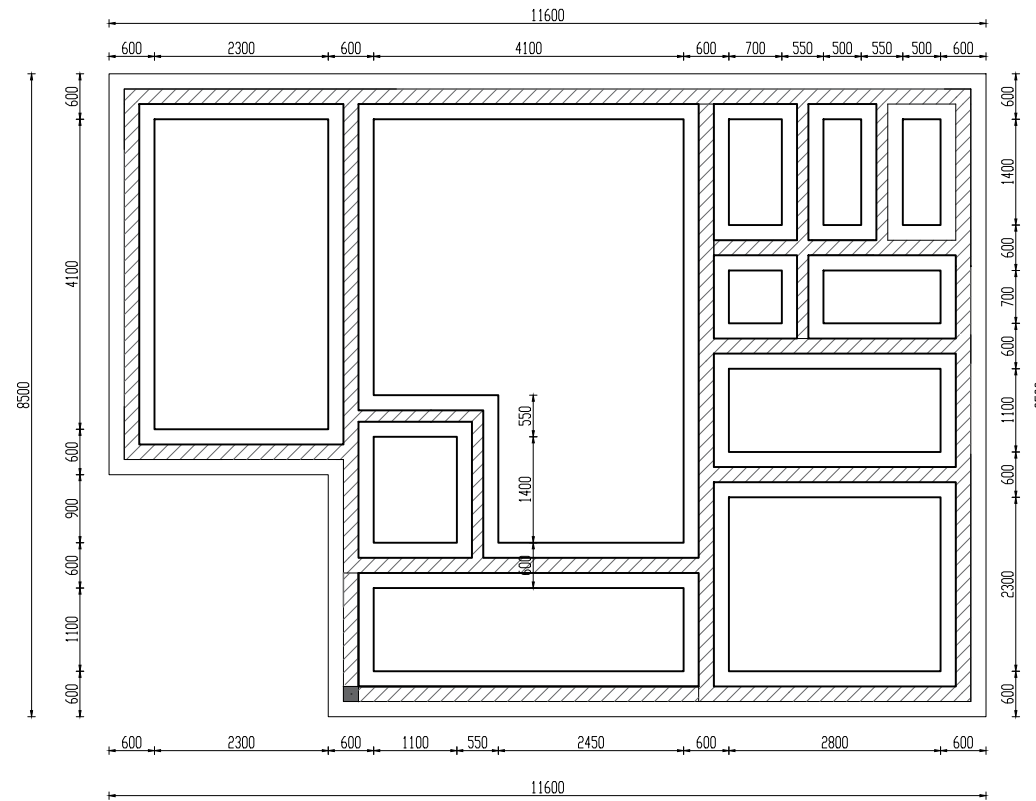
No	Date	Description

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

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Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA-SD-016A
Scale:	1:100
Sheet No.:	3 of 5



ROOF LAYOUT



FOUNDATION LAYOUT

LEGEND

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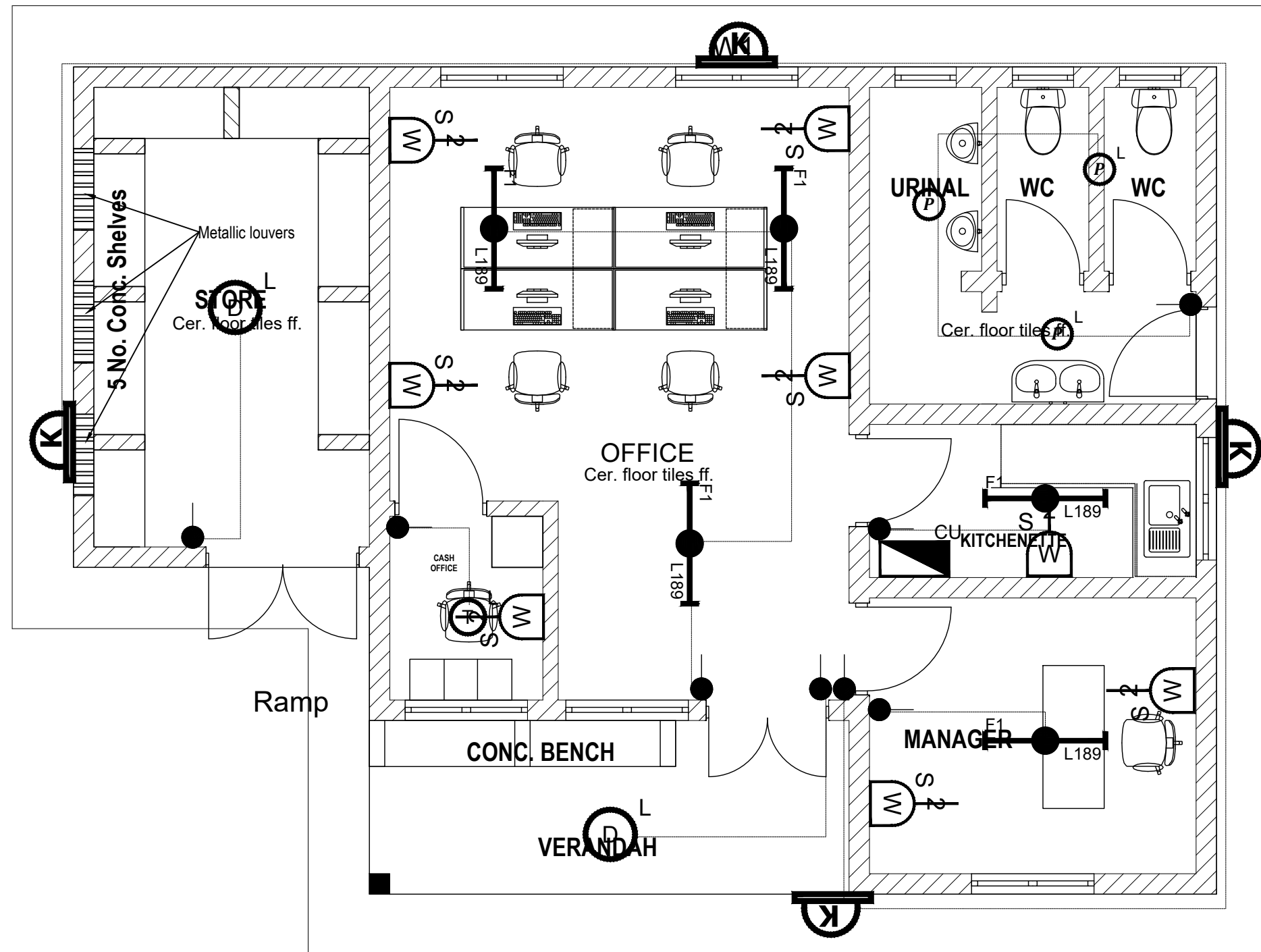
**ENYAU WATER SUPPLY AND
 SANITATION SYSTEM**

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.:	ALA-ORA-SD-016A
Scale:	1:100
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 ² flexible copper cable lamp holder and 6W LED Lamp
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm ² flexible copper cable lamp holder and 6W LED Lamp
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm ² 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

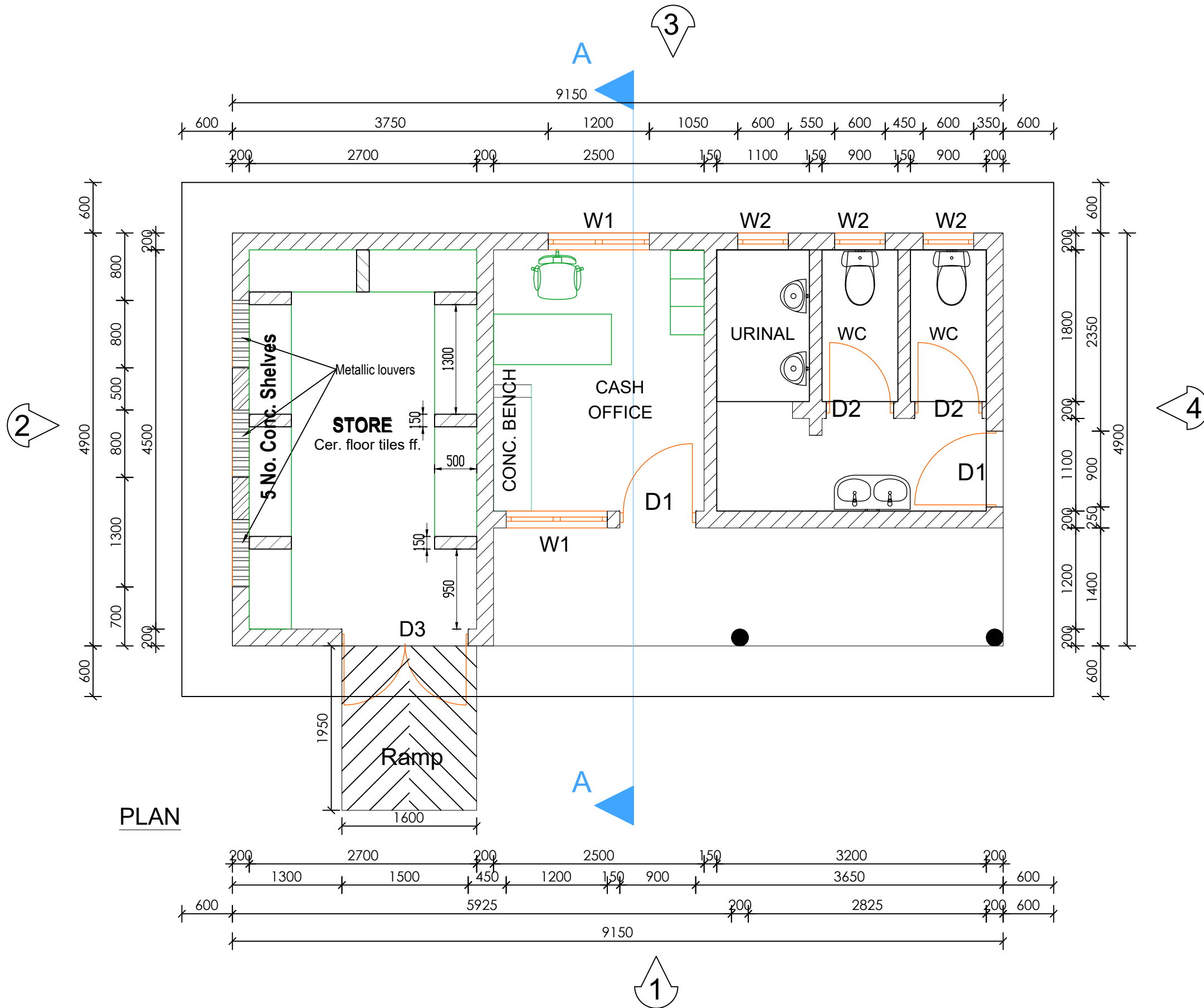
REVISIONS :

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
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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



PLAN

LEGEND

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ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS**
Water Office-Type 2- Plan

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Designed by:	W.G.M
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Scale:	1:50
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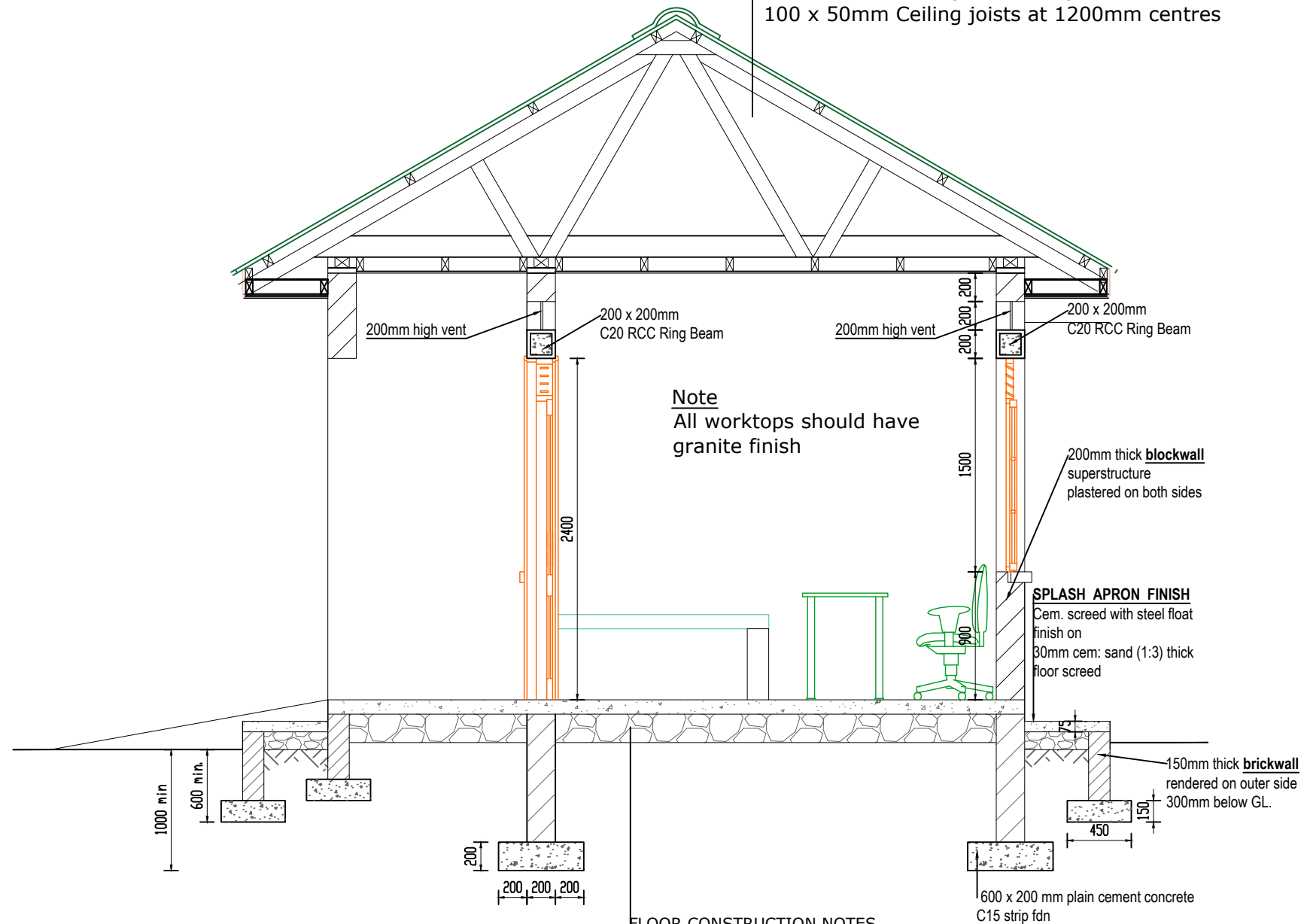
LEGEND

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



Note
 All worktops should have
 granite finish

200mm thick **blockwall**
 superstructure
 plastered on both sides

SPLASH APRON FINISH
 Cem. screed with steel float
 finish on
 30mm cem: sand (1:3) thick
 floor screed

150mm thick **brickwall**
 rendered on outer side
 300mm below GL.

600 x 200 mm plain cement concrete
 C15 strip fdn

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 C20 Reinforced cement concrete slab/ A142 BRC on DPM placed on
 200mm Hardcore stone bed blinded with 50mm sand
 150mm selected well compacted natural murrum filling

SECTION A-A

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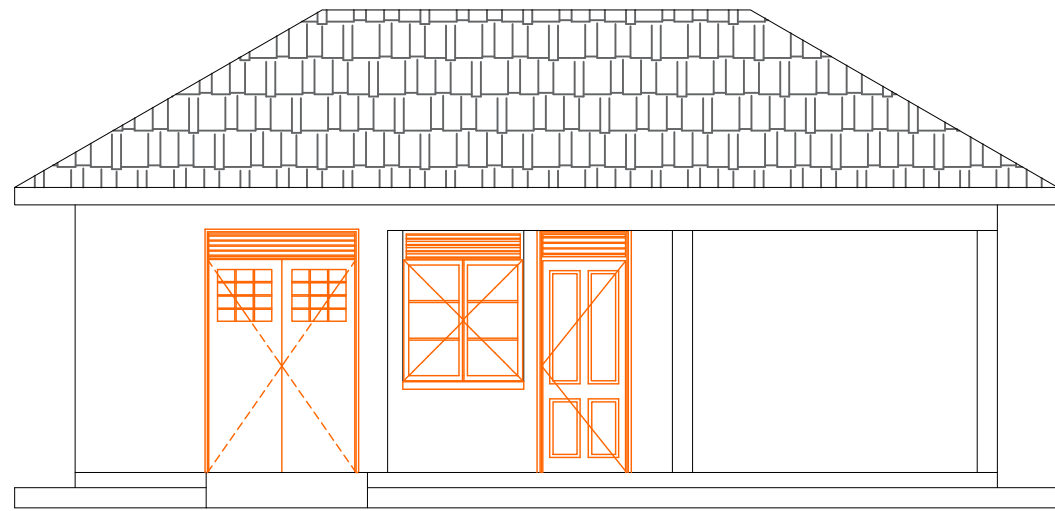
**ENYAU WATER SUPPLY AND
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REVISIONS :

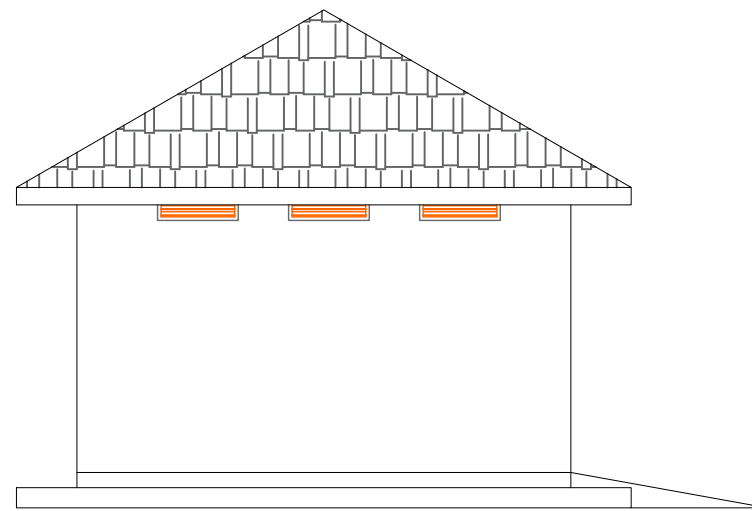
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Water Office(Type 2)-Section

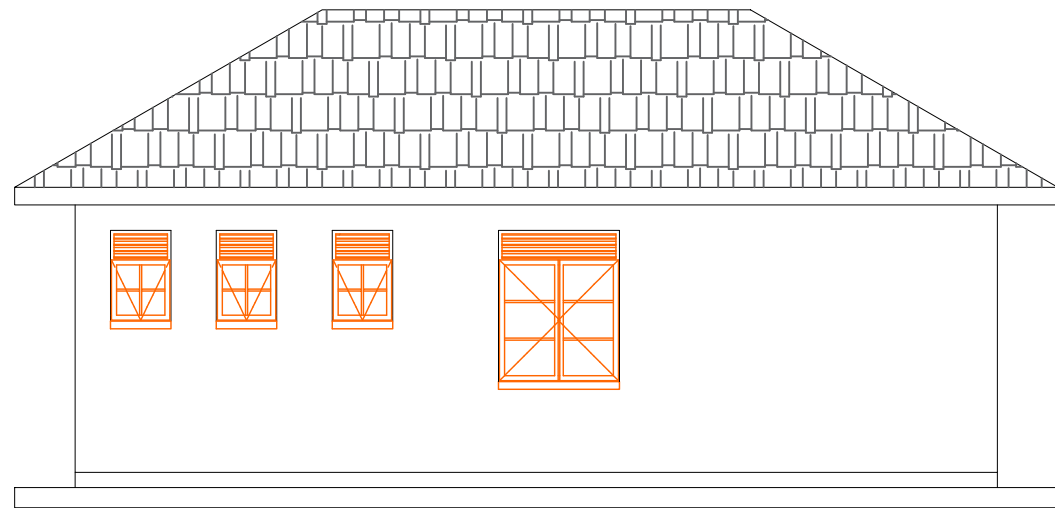
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Sheet No.:	2 of 5



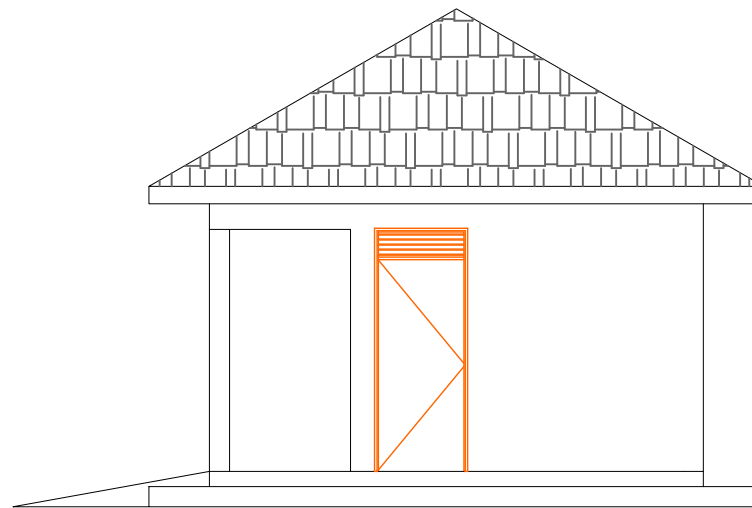
ELEVATION 1



ELEVATION 2



ELEVATION 3



ELEVATION 4

LEGEND

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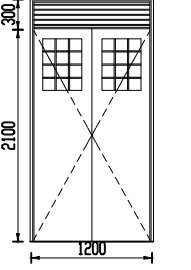
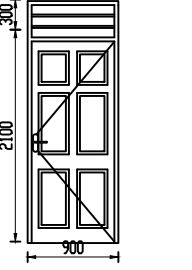
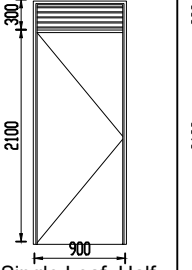
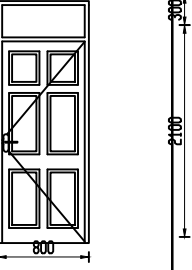
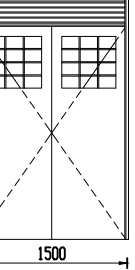
**ENYAU WATER SUPPLY AND
 SANITATION SYSTEM**

REVISIONS :		
No	Date	Description

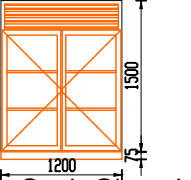
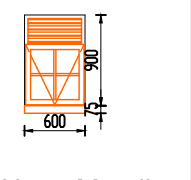
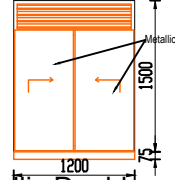
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 Water Office(Type 2)-Elevations

Surveyed by:	R.K
Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA-SD-016B
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

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 ² flexible copper cable lamp holder and 6W LED Lamp
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm ² flexible copper cable lamp holder and 6W LED Lamp
	Pedant lighting fitting comprising ceiling Rose 300mm 3x1.5mm ² 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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CONSULTANT :



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PROJECT :

ALA-ORA WATER SUPPLY AND SANITATION PROJECT

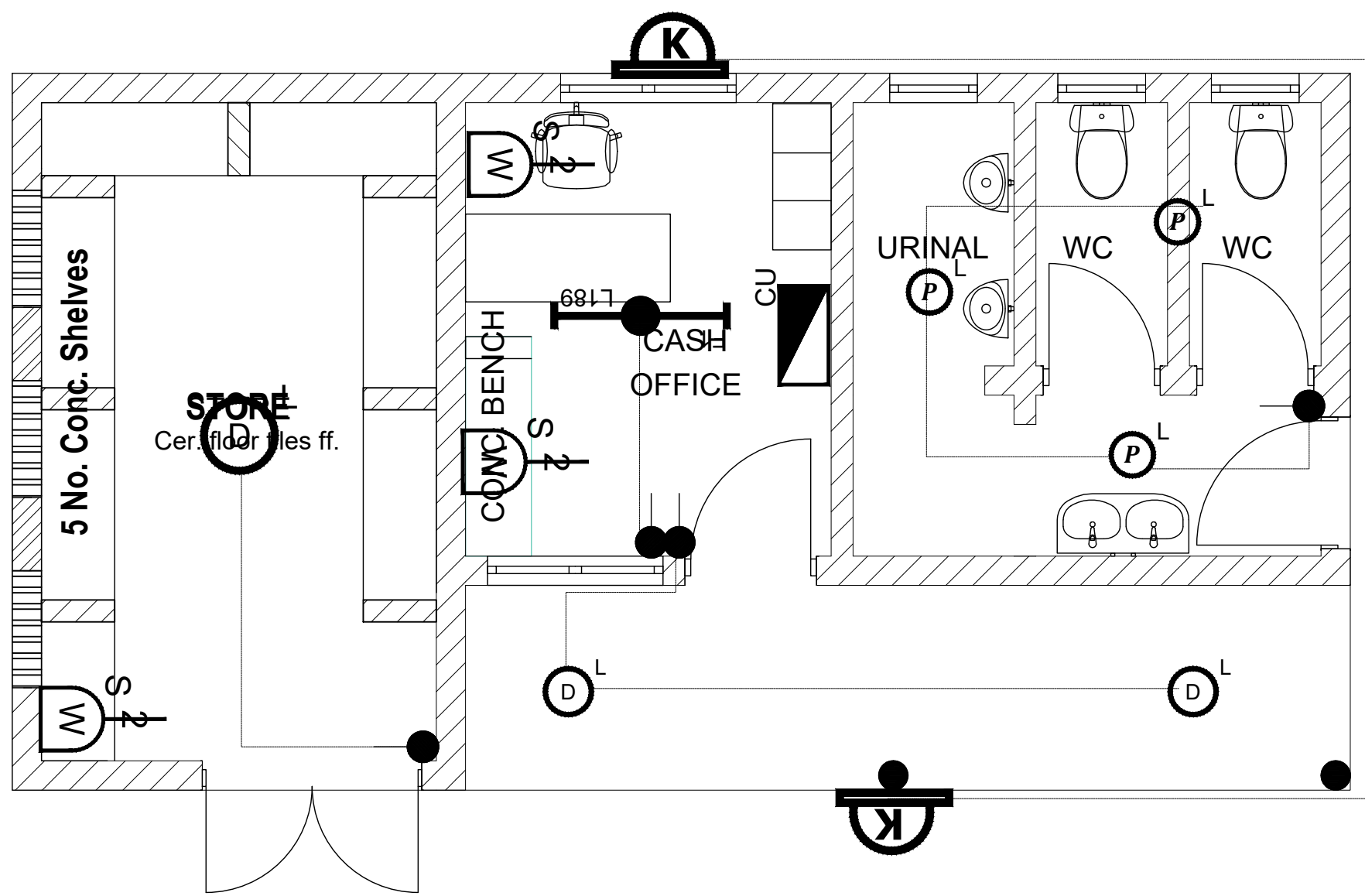
ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

No	Date	Description

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Water Office(Type 2)-Electrical Layout

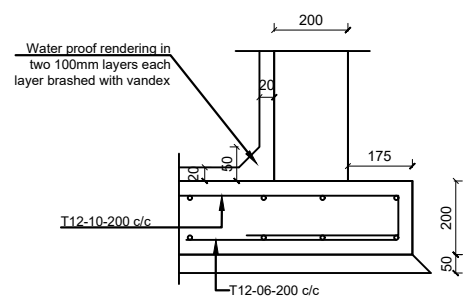
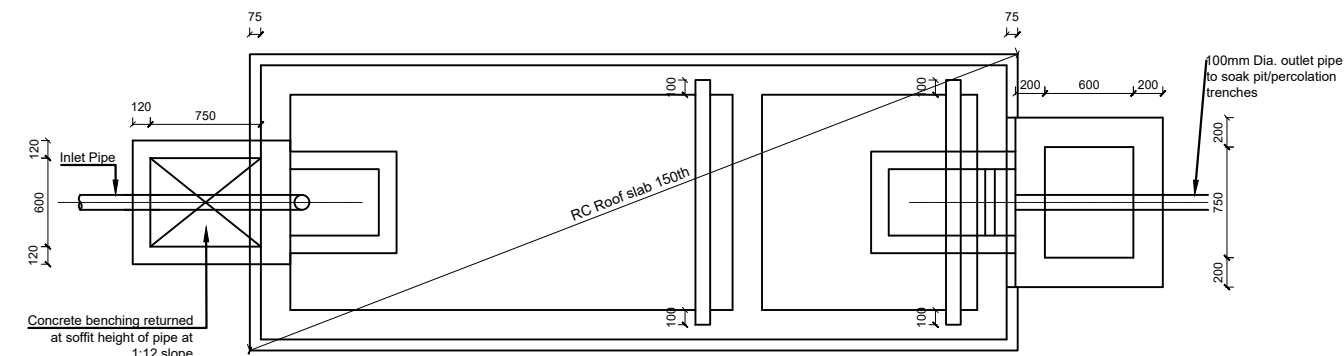
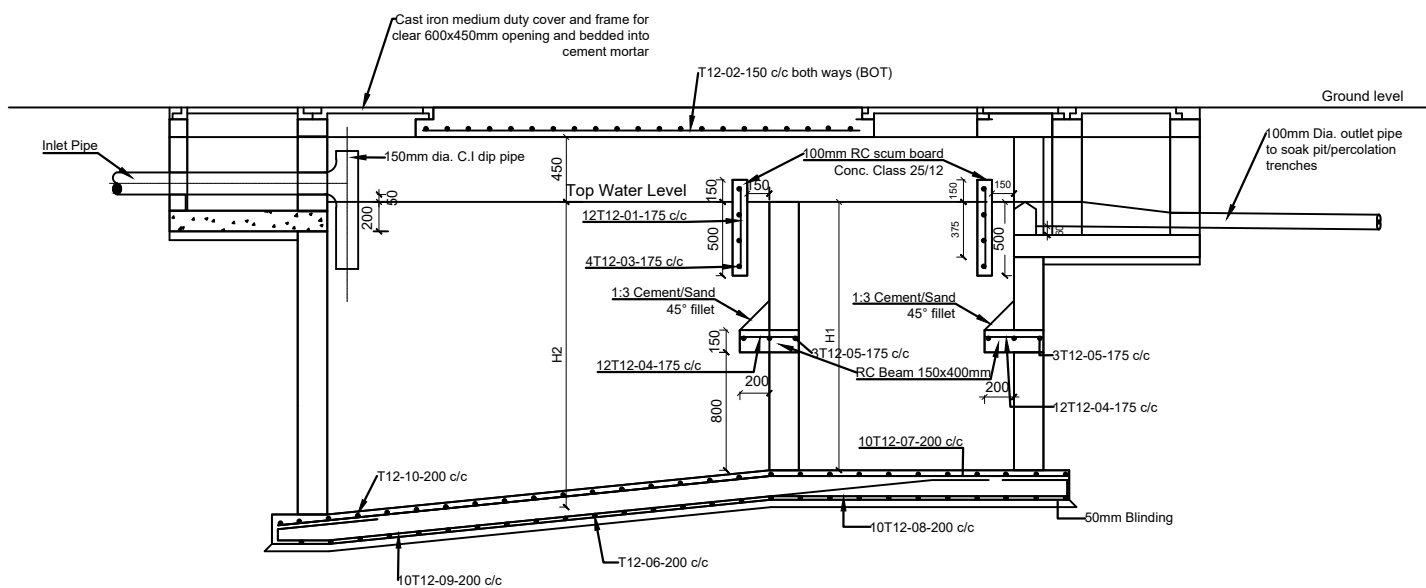
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Drawn by:	N.R
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA-SD-016B
Scale:	1:40
Sheet No.:	5 of 5



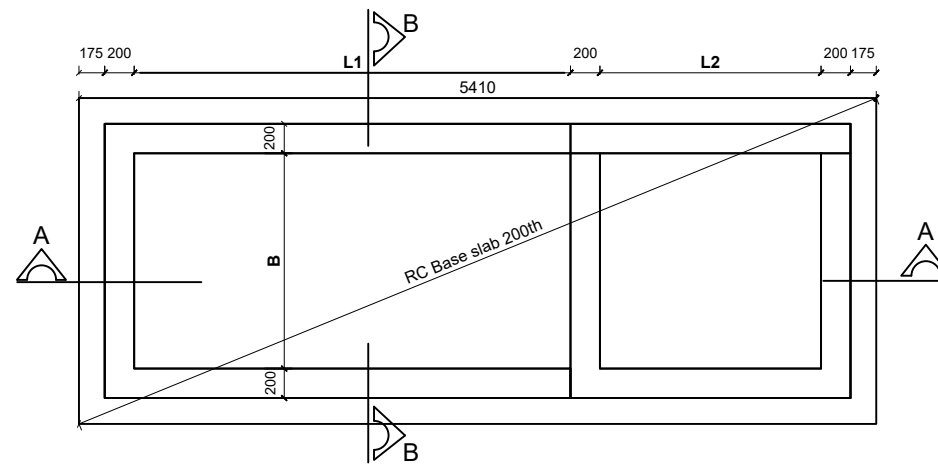
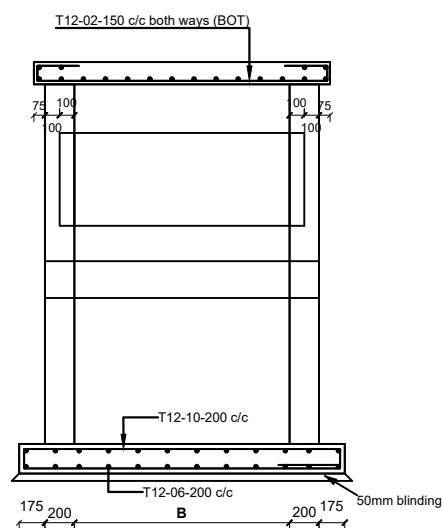
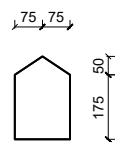
PLAN

- 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

SEPTIC TANK



CONC. WEIR BLOCK DETAIL



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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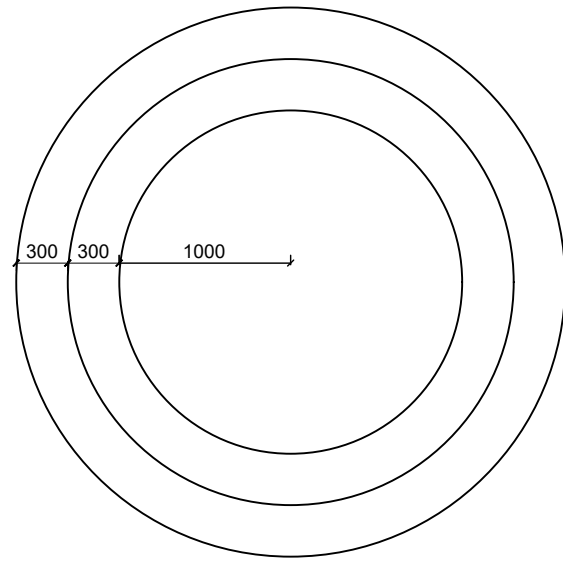
ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

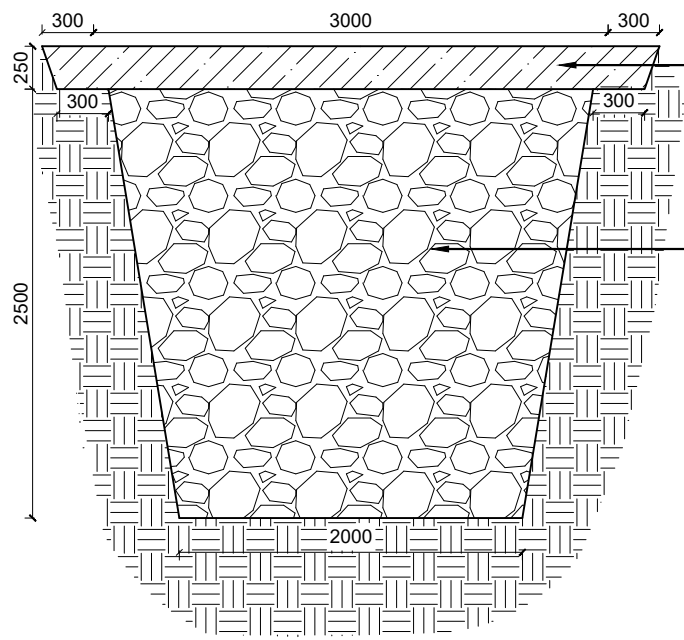
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DRAWING TITLE : **STANDARD DRAWINGS**
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Surveyed by:	R.K
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Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA-SD-017
Scale:	1:120
Sheet No.:	1 of 1

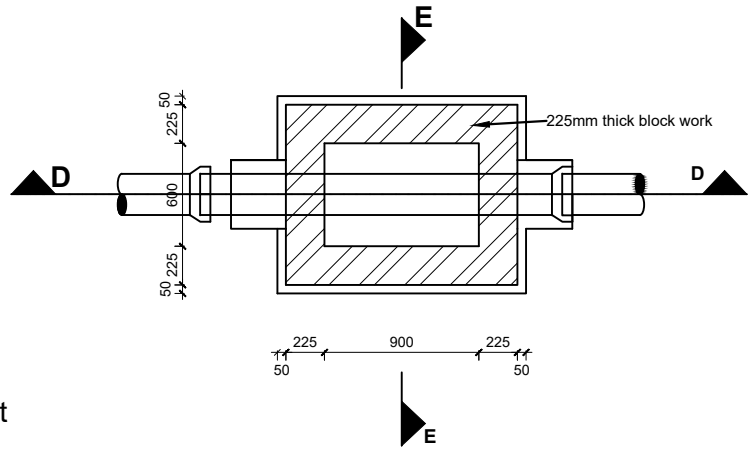
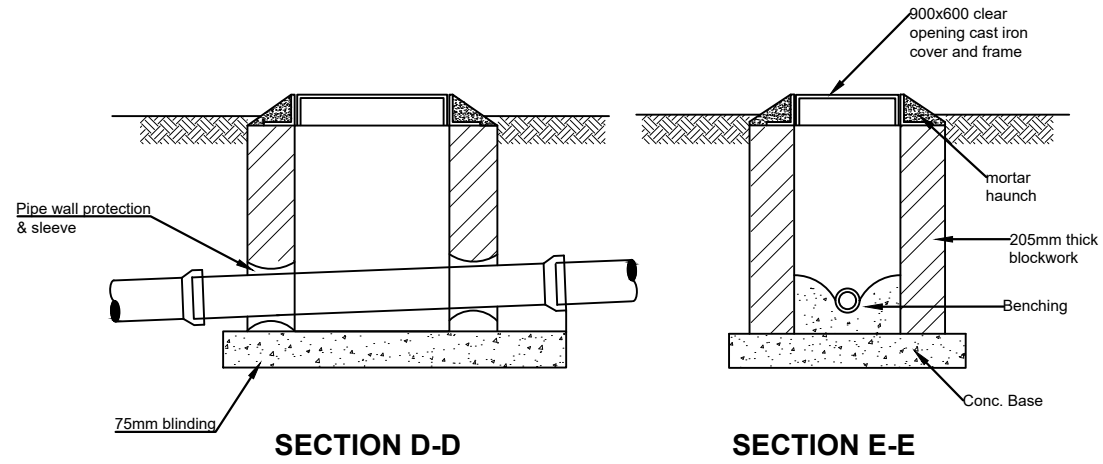


Soak Pit Plan

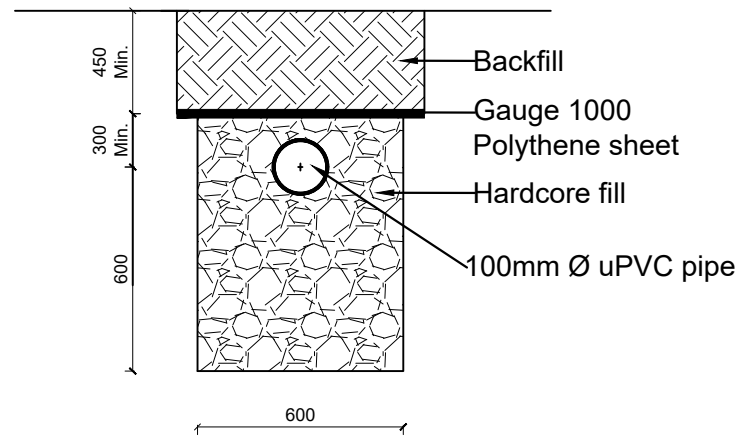


SECTION A - A

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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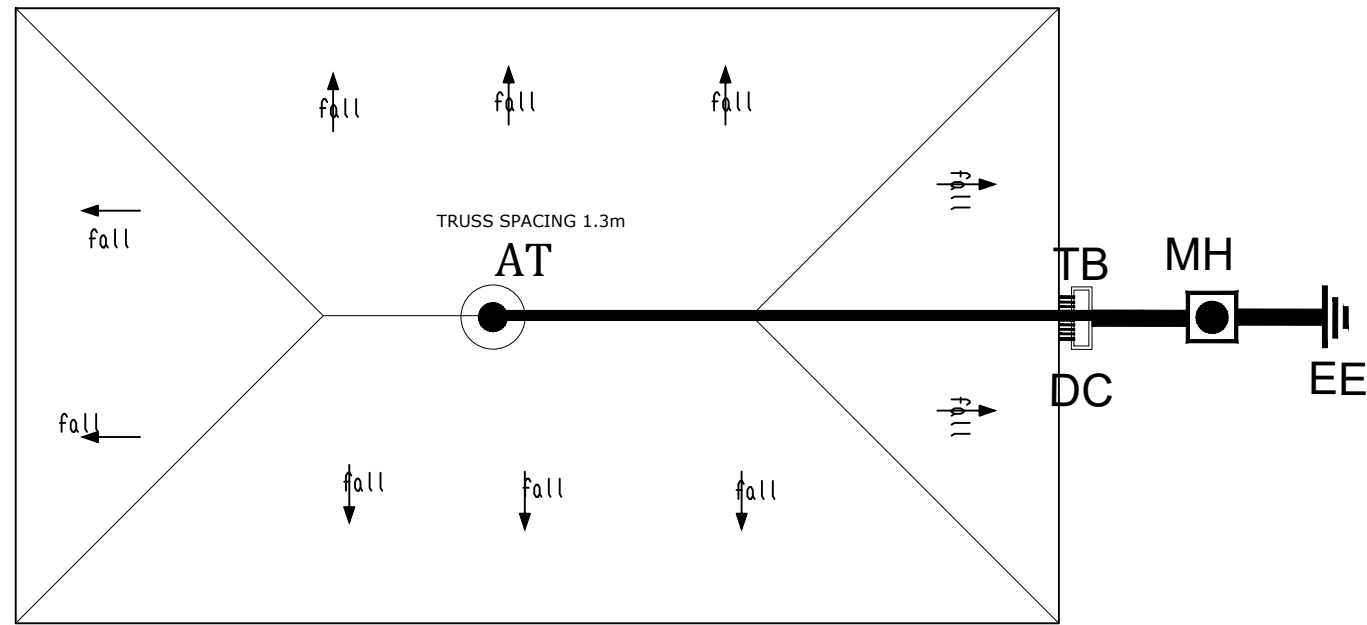
**ENYAU WATER SUPPLY AND
 SANITATION SYSTEM**

REVISIONS :

No	Date	Description

DRAWING TITLE : **STANDARD DRAWINGS
 Manhole and Soak Pit 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-018
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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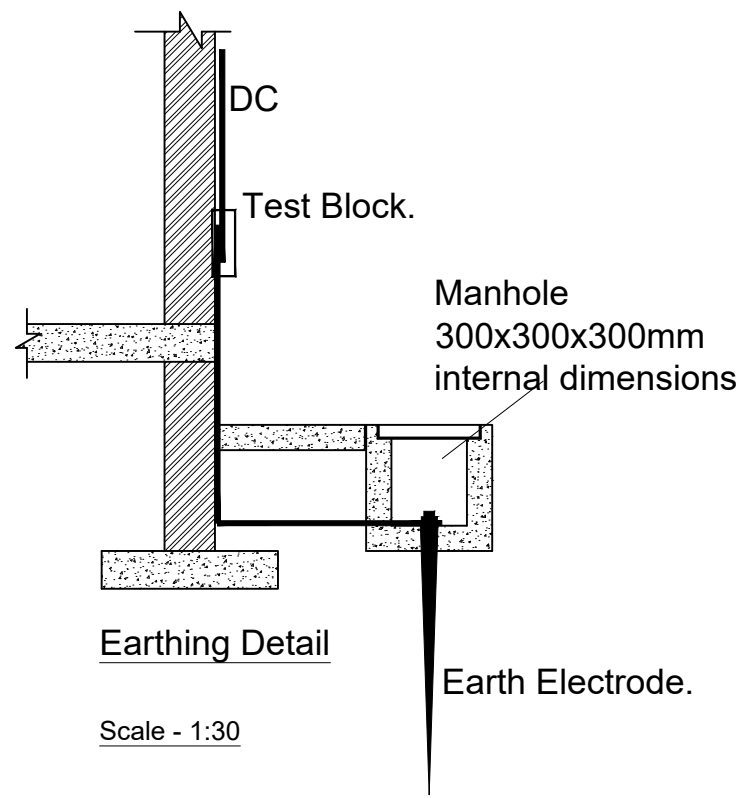
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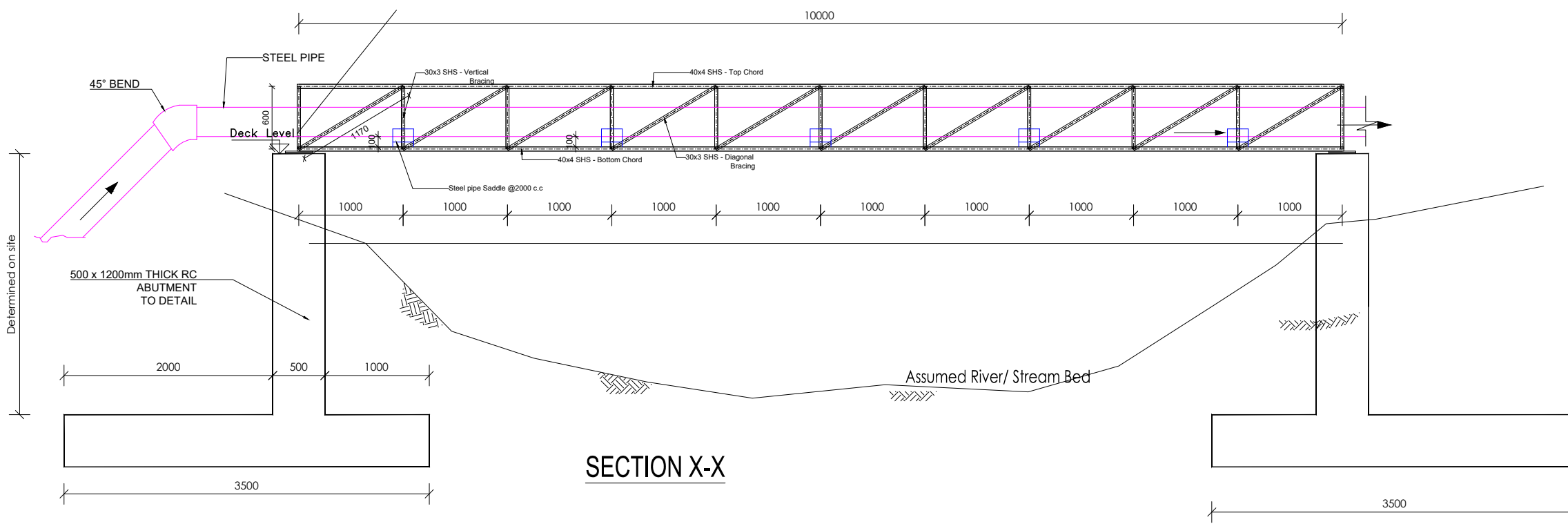
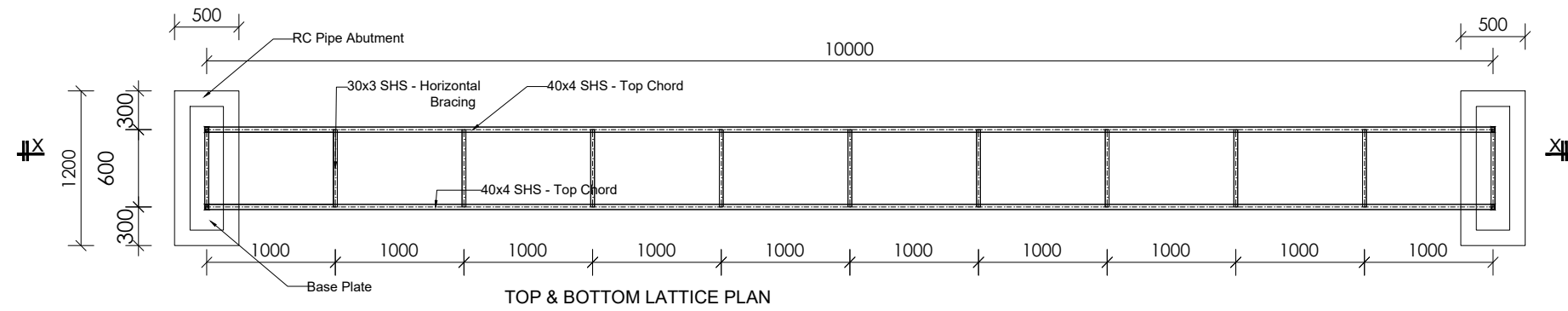
REVISIONS :

No	Date	Description

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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.:	ALA-ORA-SD-019
Scale:	1:75
Sheet No.:	1 of 1





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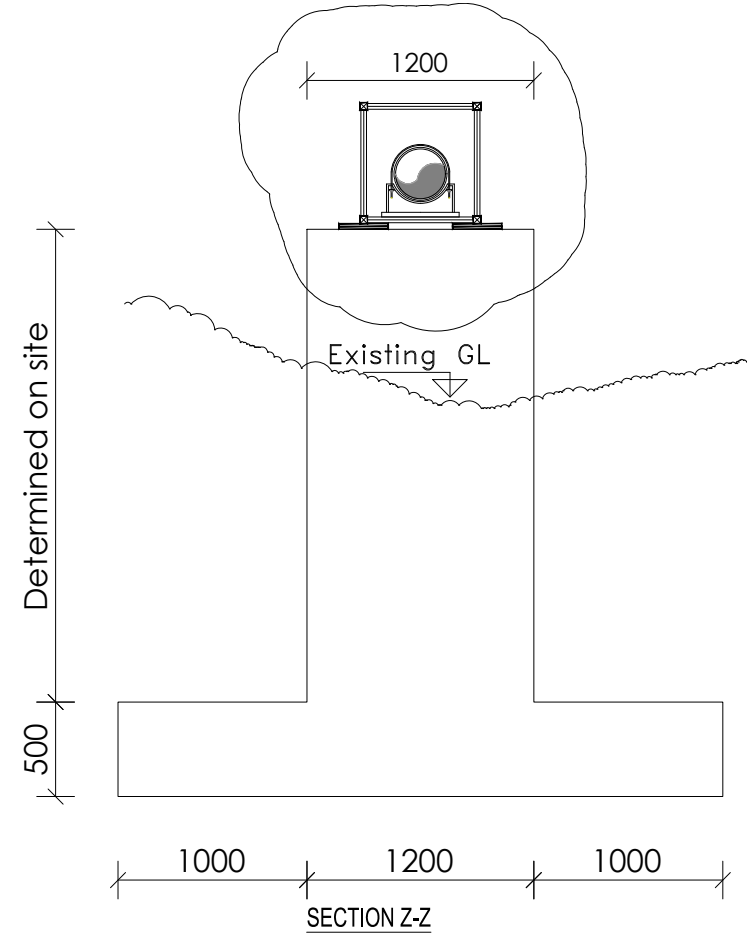
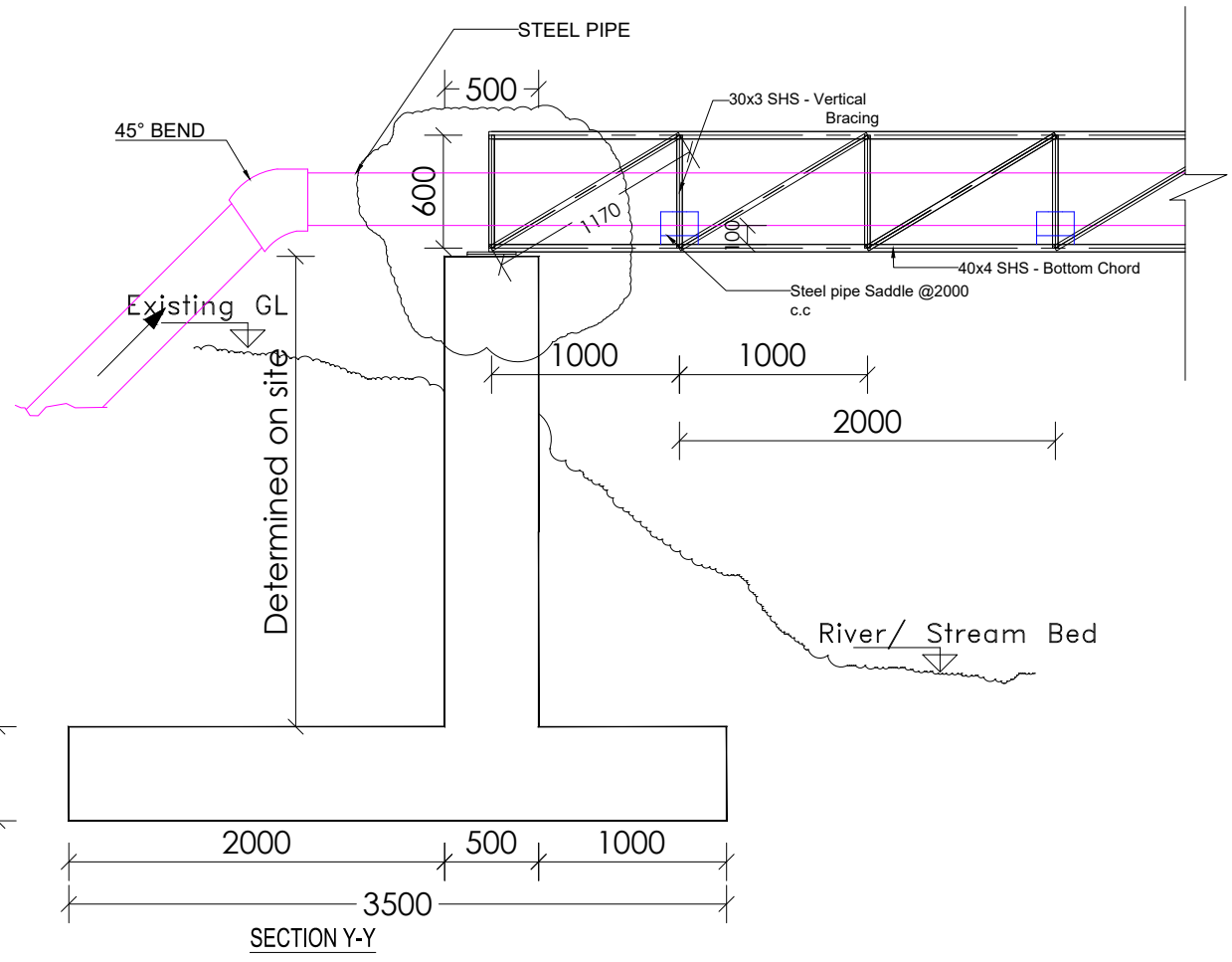
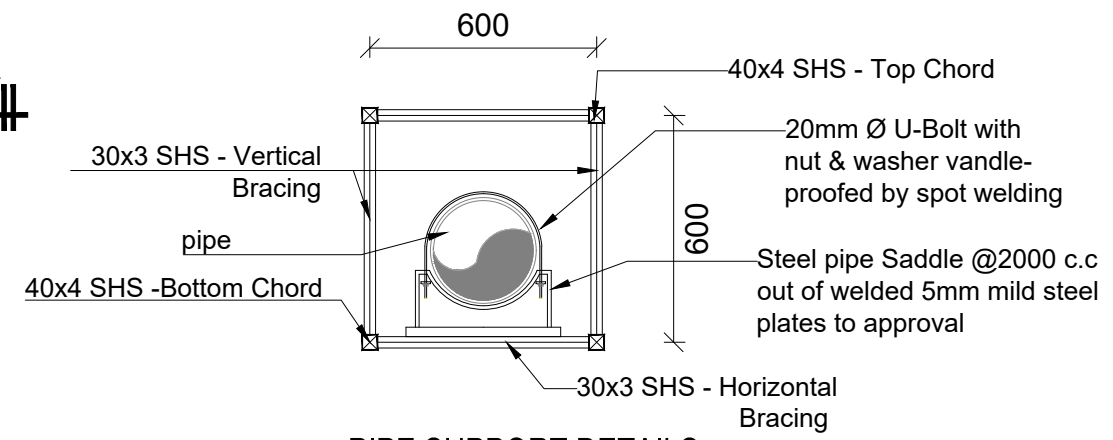
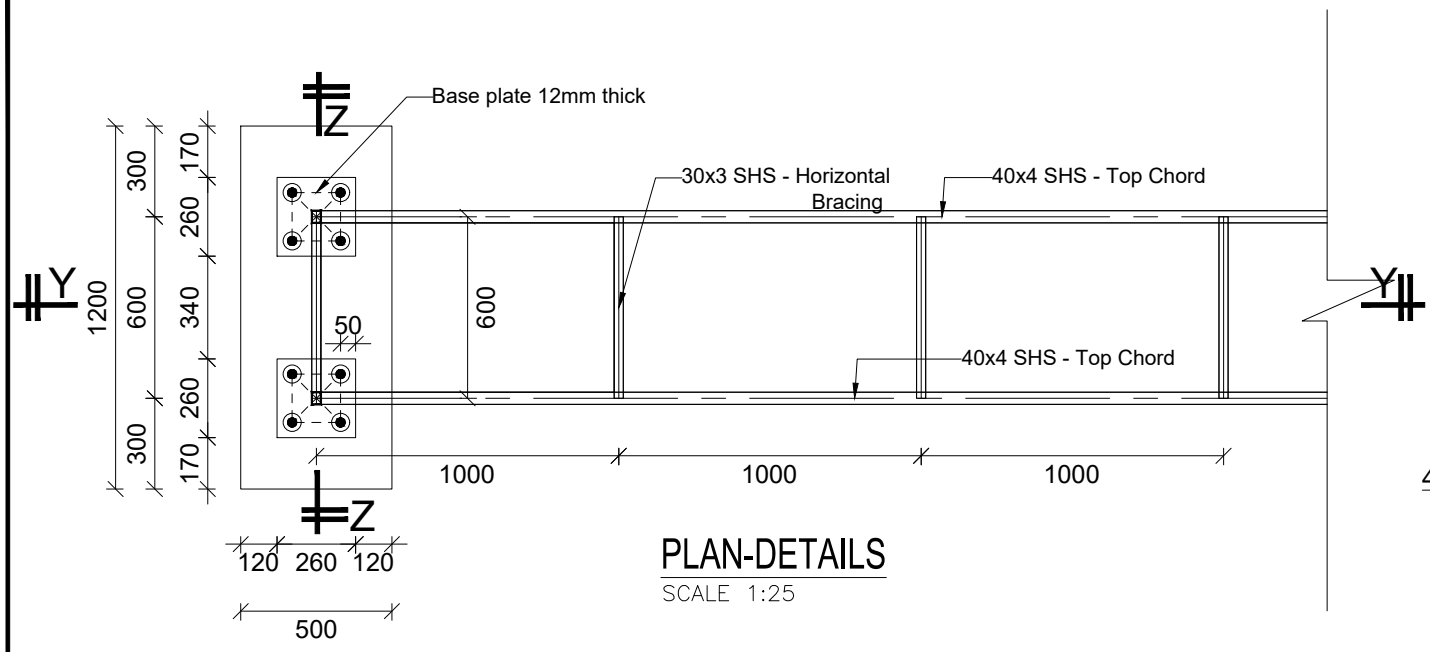
STANDARD DRAWINGS

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.:	ALA-ORA-SD-020
Scale:	1:50
Sheet No.:	1 of 3



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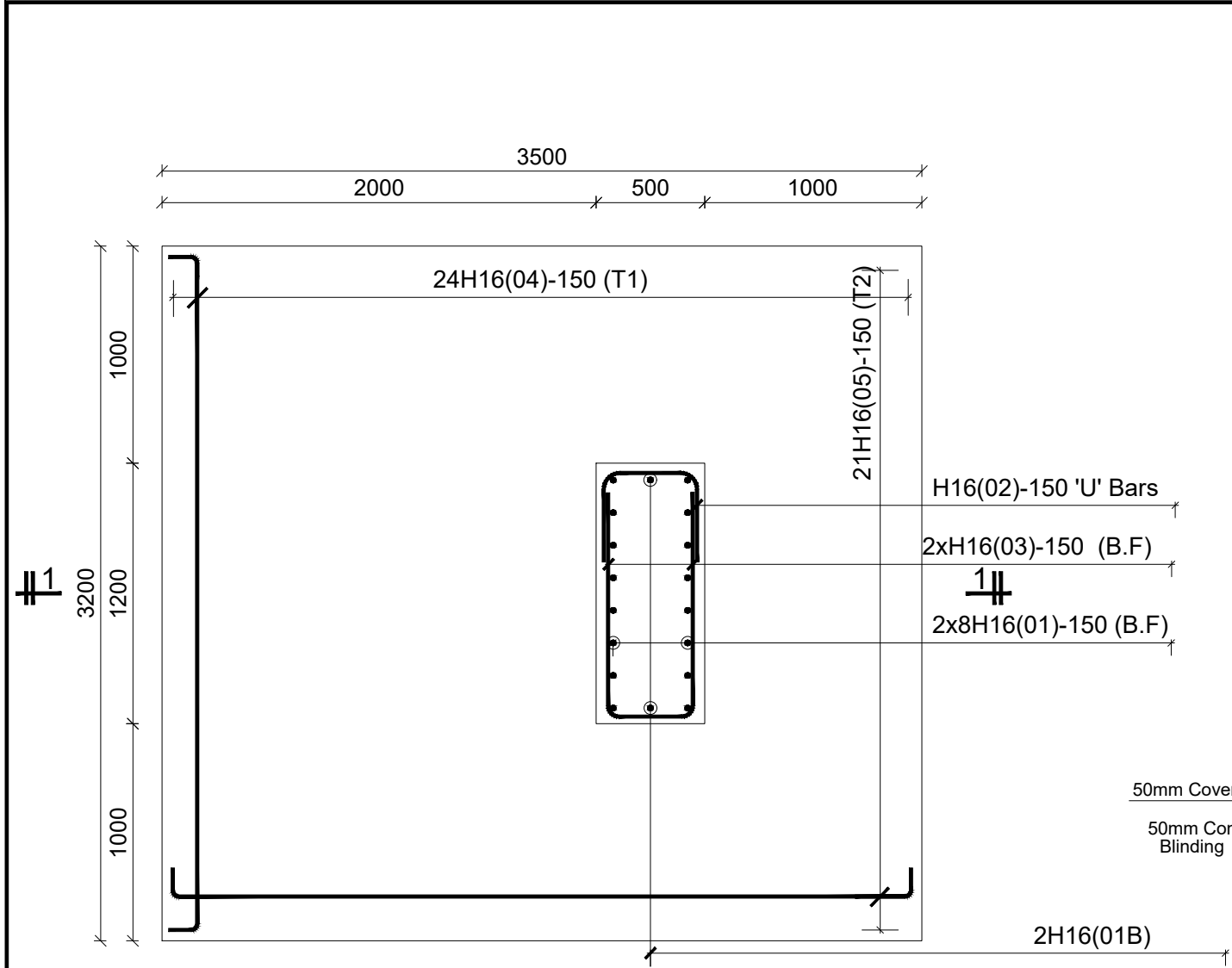
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REVISIONS :

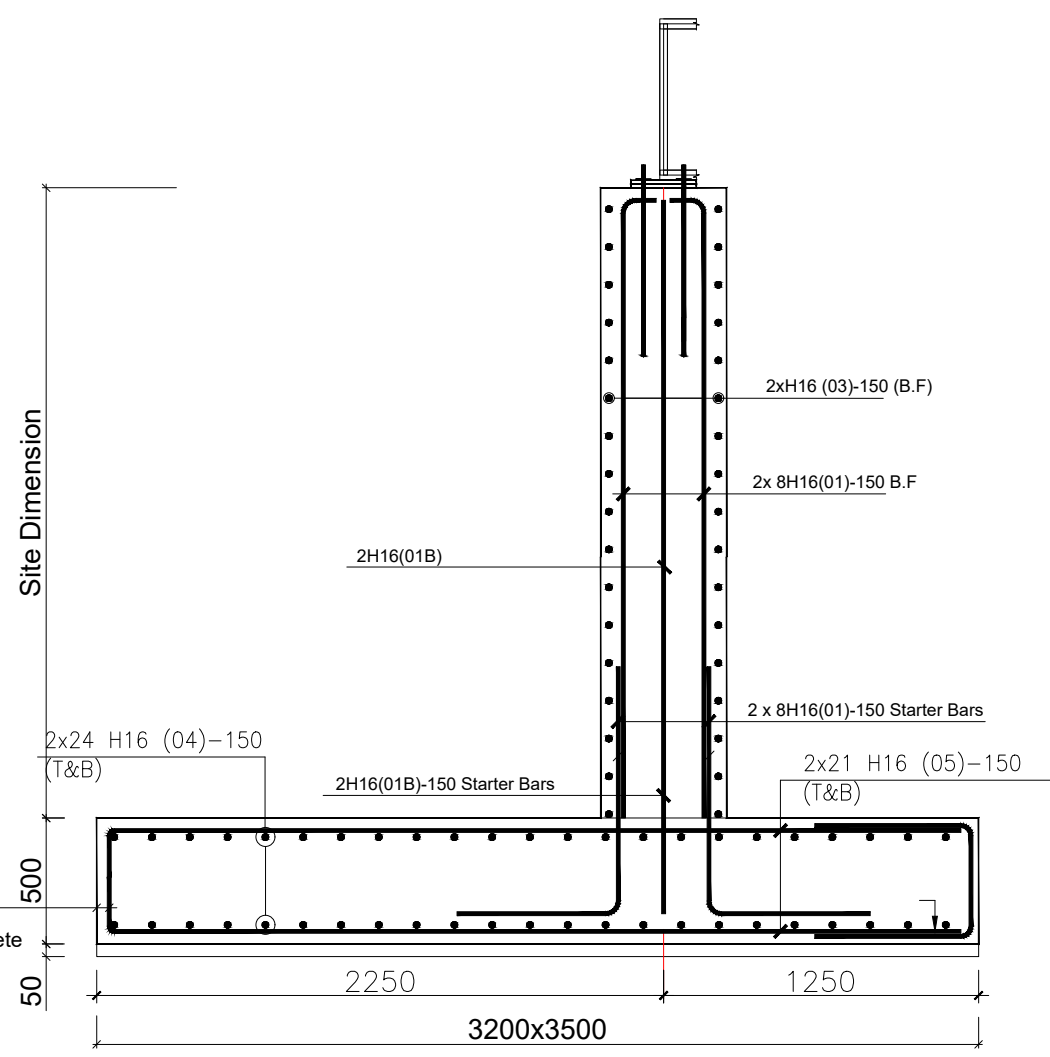
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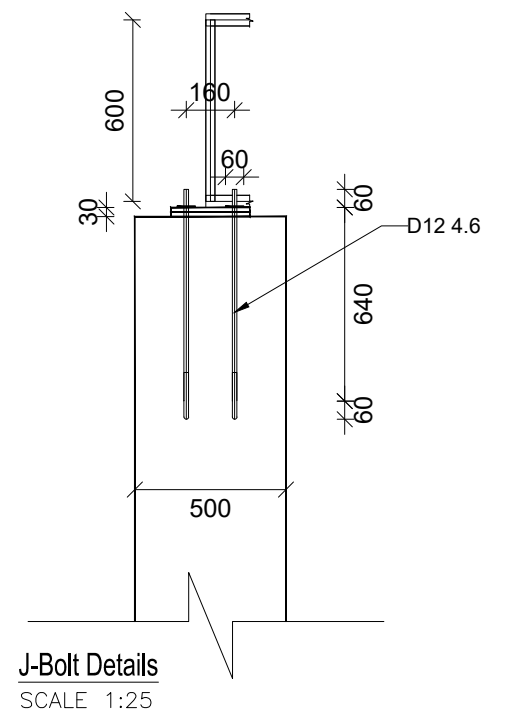
Surveyed by: R.K
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 Designed by: B.A
 Checked by: J.K.K
 Date: March 2023
 DRG. No.: **ALA-ORA-SD-020**
 Scale: 1:40 Sheet No.: 2 of 3



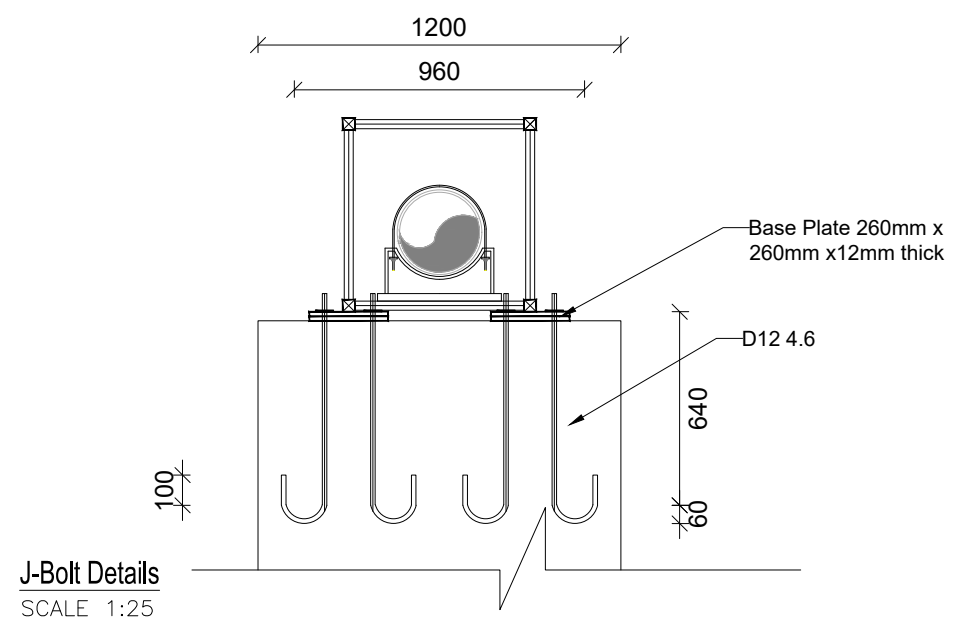
RC PIPE BRIDGE ABUTMENT (2No.) [3500X3200x500]



RC PIPE BRIDGE ABUTMENT SECTION 1-1



J-Bolt Details
SCALE 1:25



J-Bolt Details
SCALE 1:25

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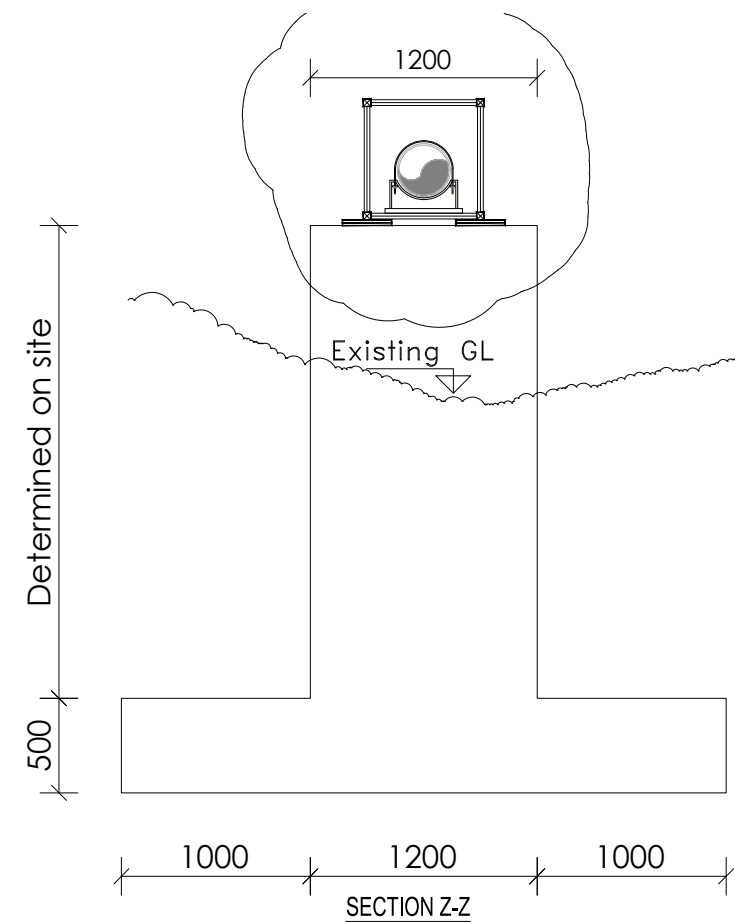
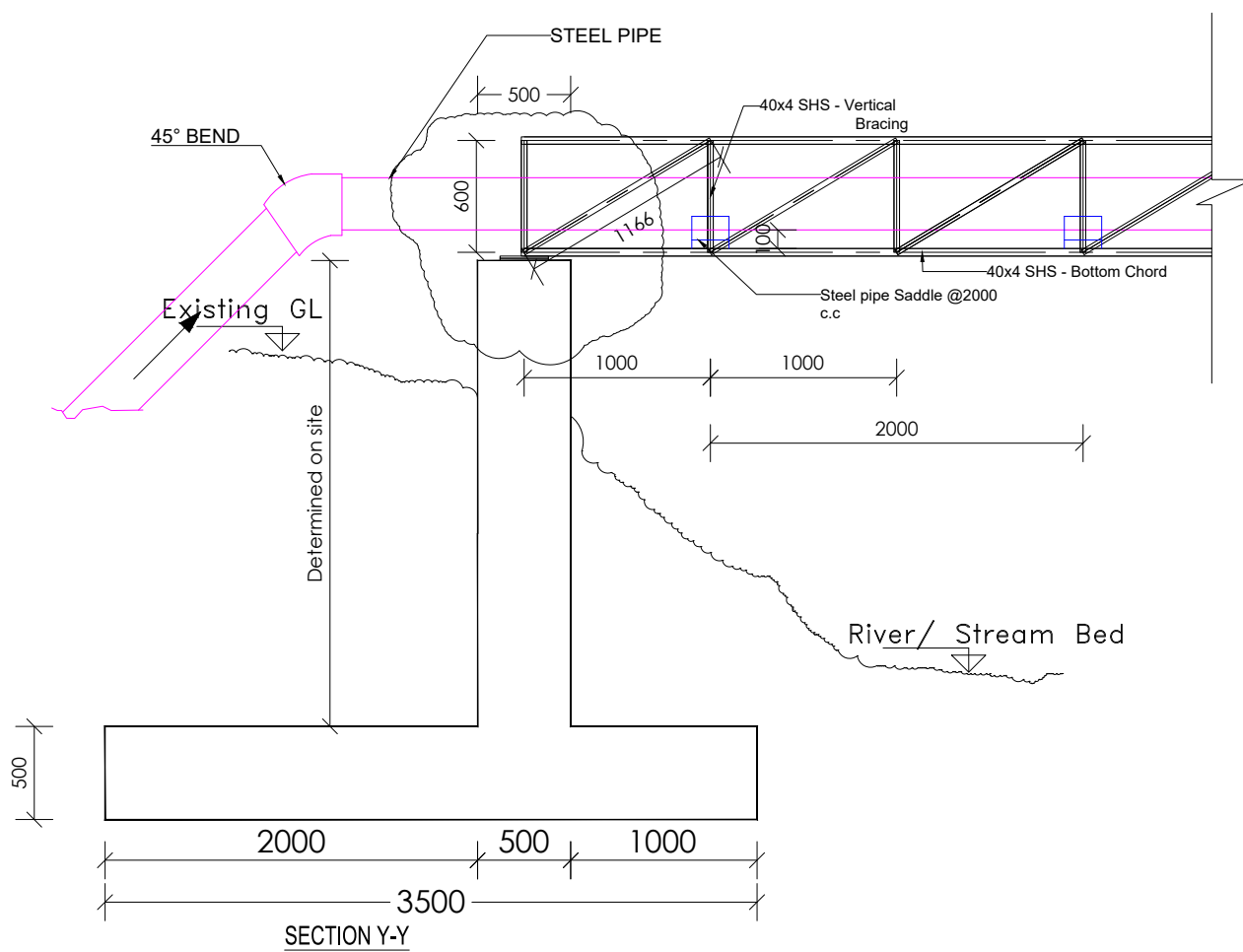
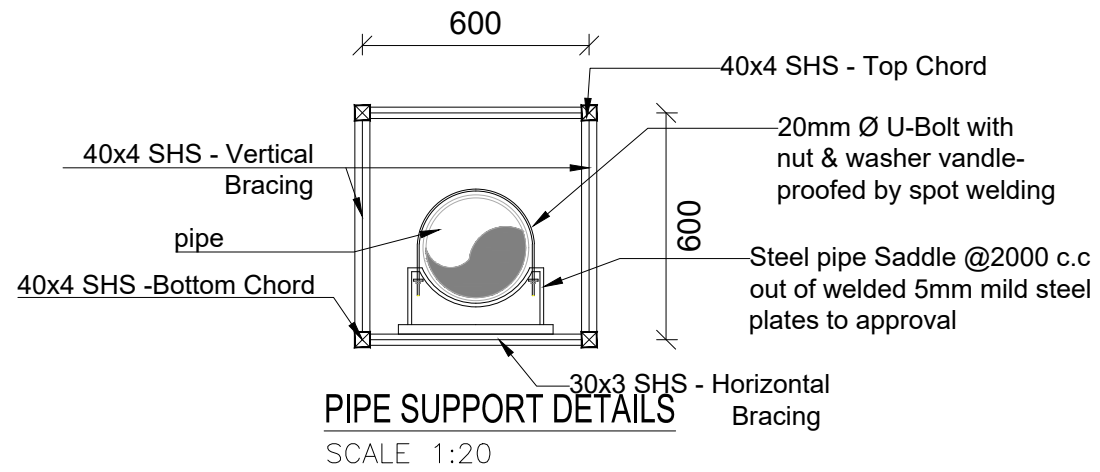
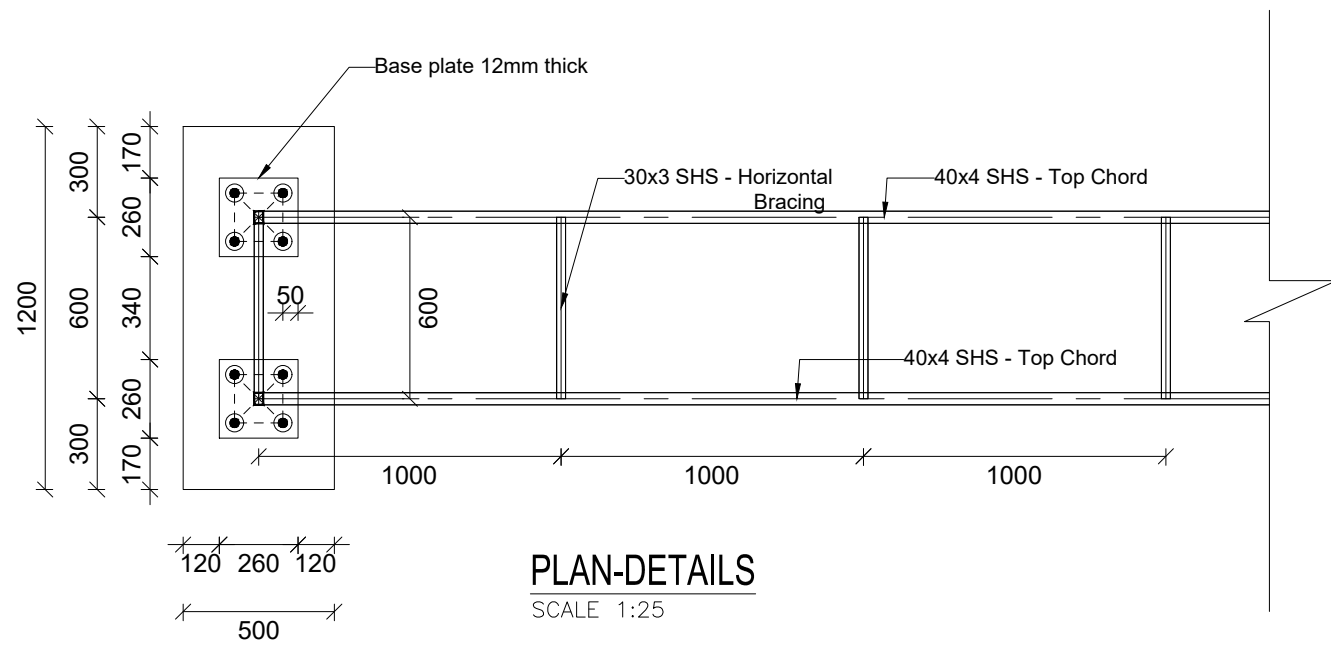
STANDARD DRAWINGS

REVISIONS :

No	Date	Description

DRAWING TITLE : **PIPE BRIDGES-10m
 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-020
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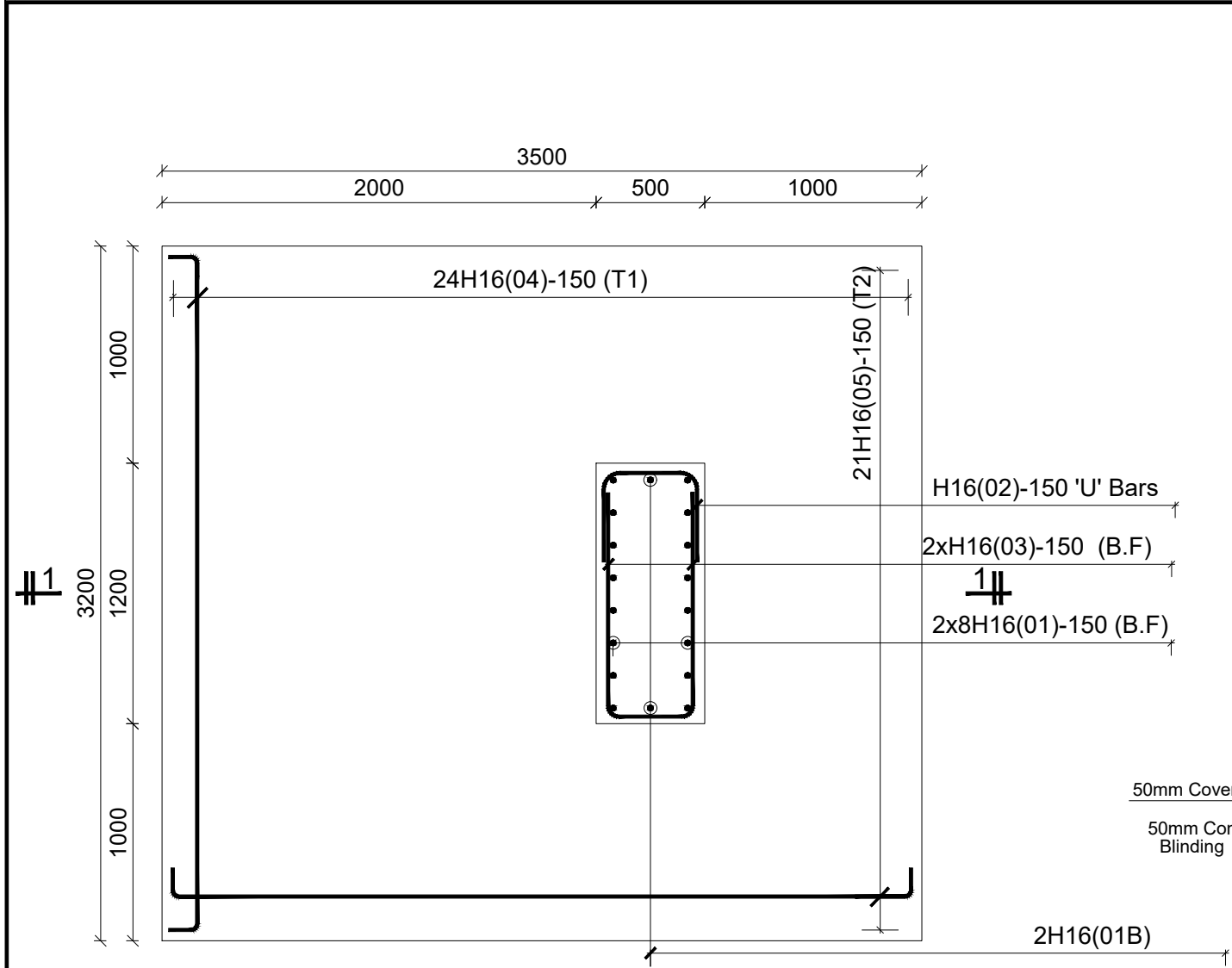
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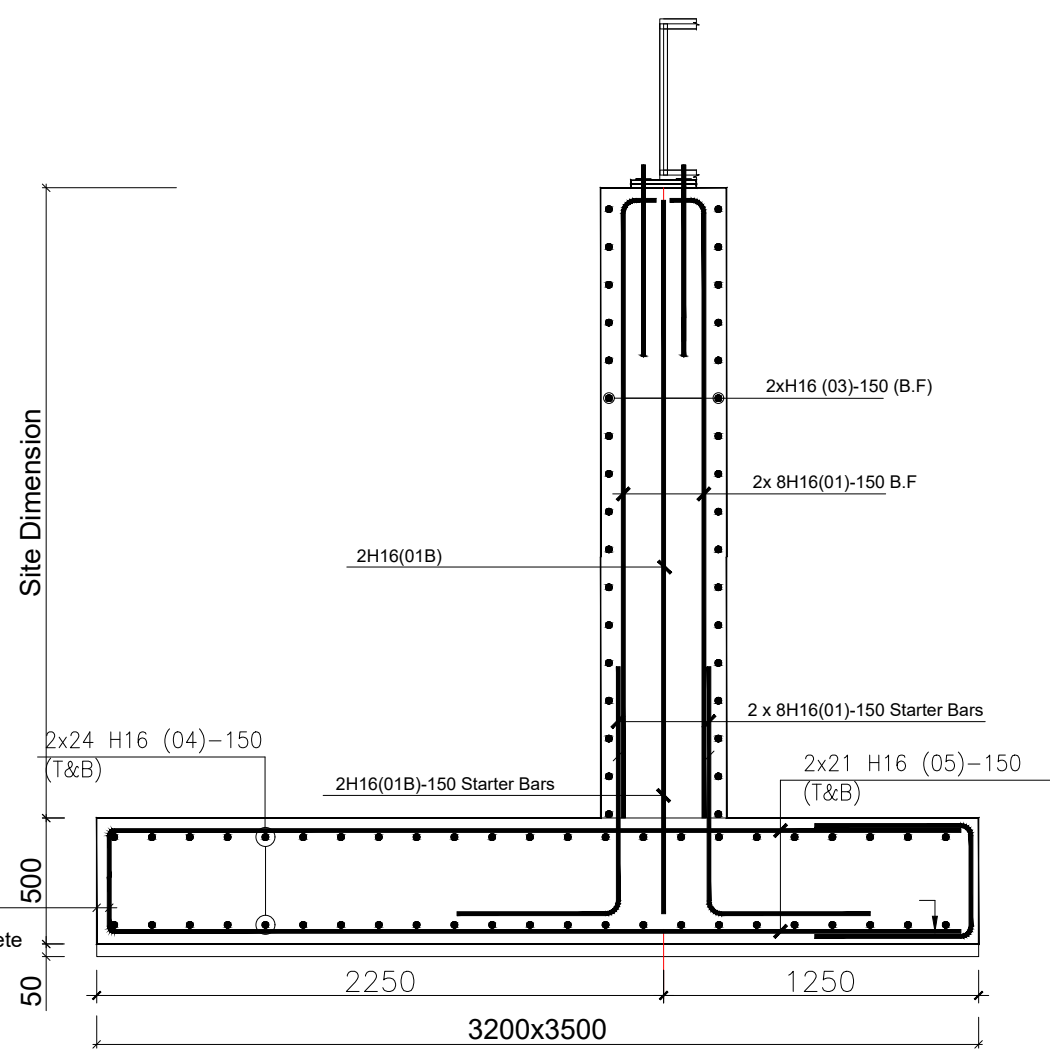
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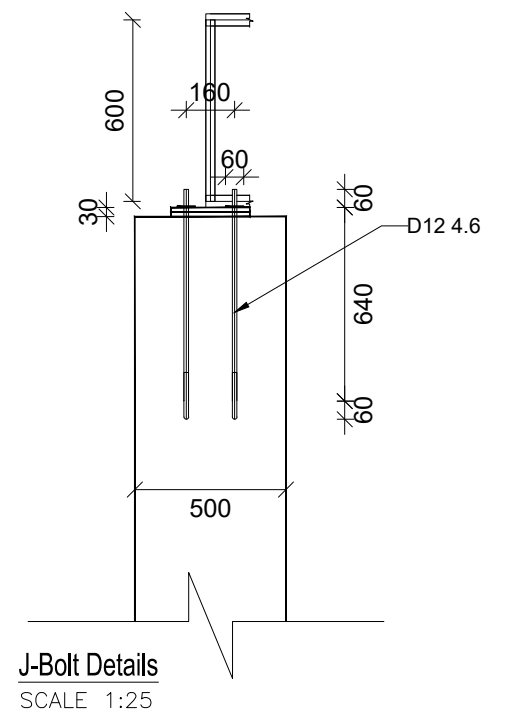
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Date:	March 2023
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Scale:	1:40
Sheet No.:	2 of 3



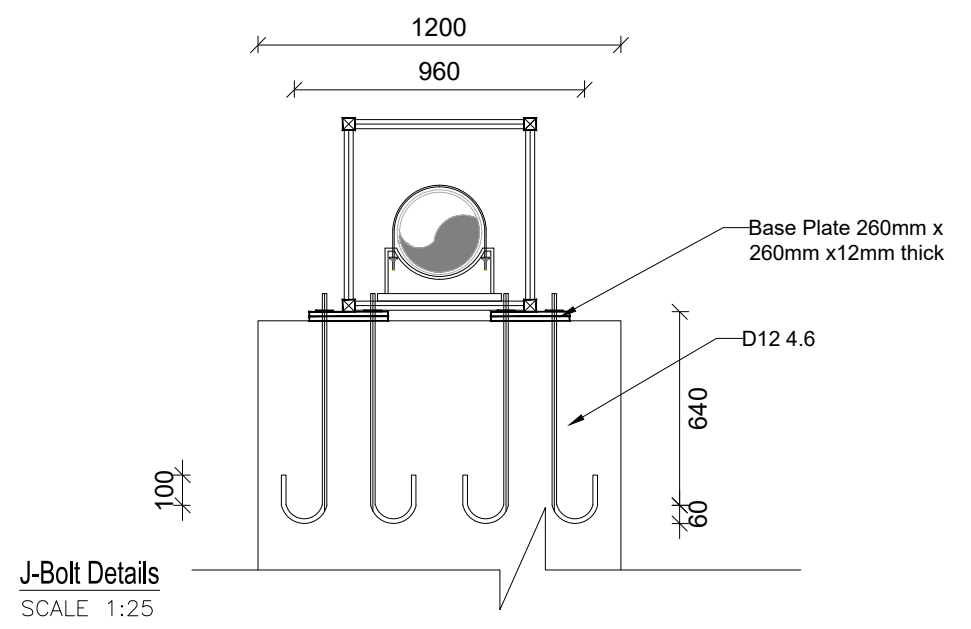
RC PIPE BRIDGE ABUTMENT (2No.) [3500X3200x500]



RC PIPE BRIDGE ABUTMENT SECTION 1-1



J-Bolt Details
SCALE 1:25



J-Bolt Details
SCALE 1:25

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STANDARD DRAWINGS

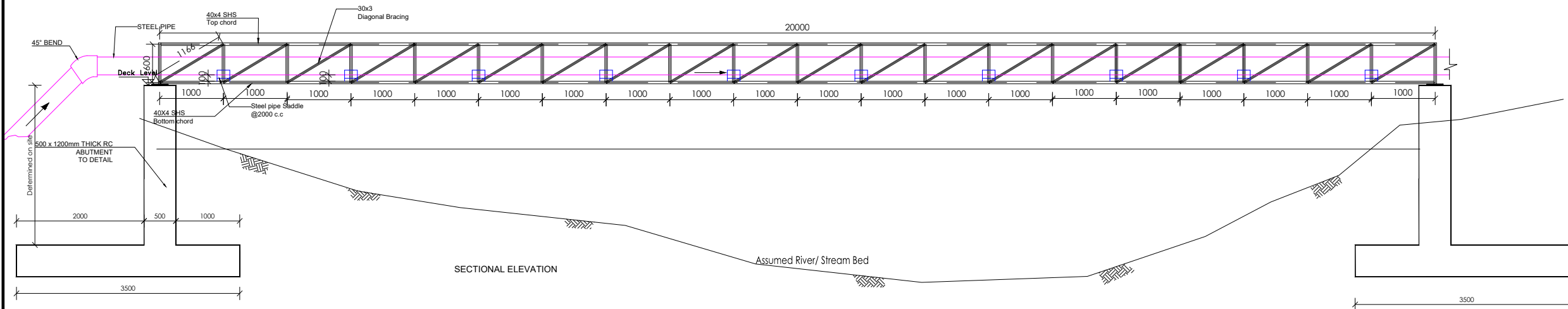
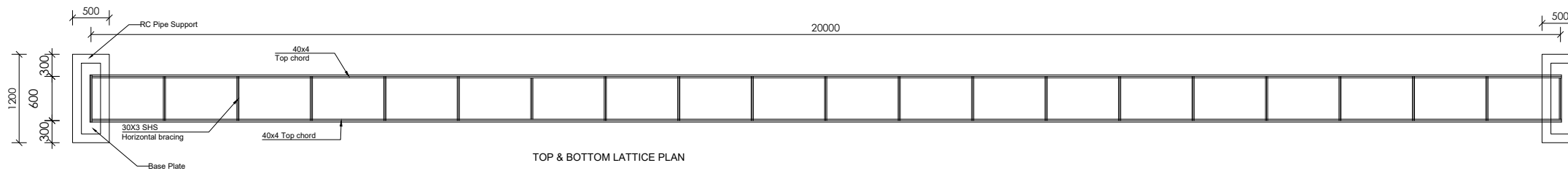
REVISIONS :

No	Date	Description


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

PIPE BRIDGE SPAN-20m



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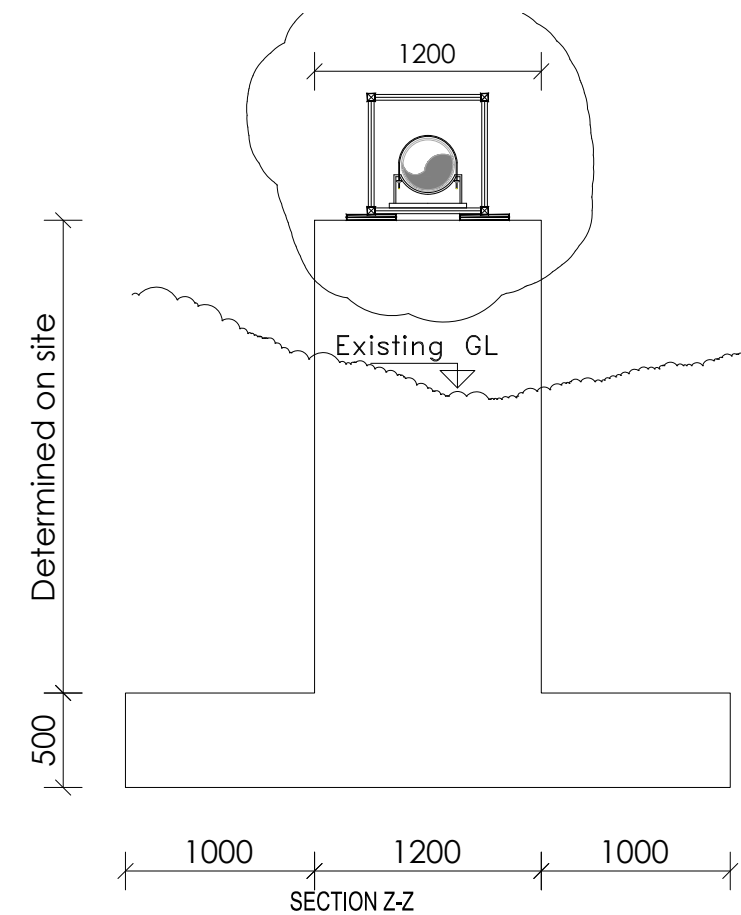
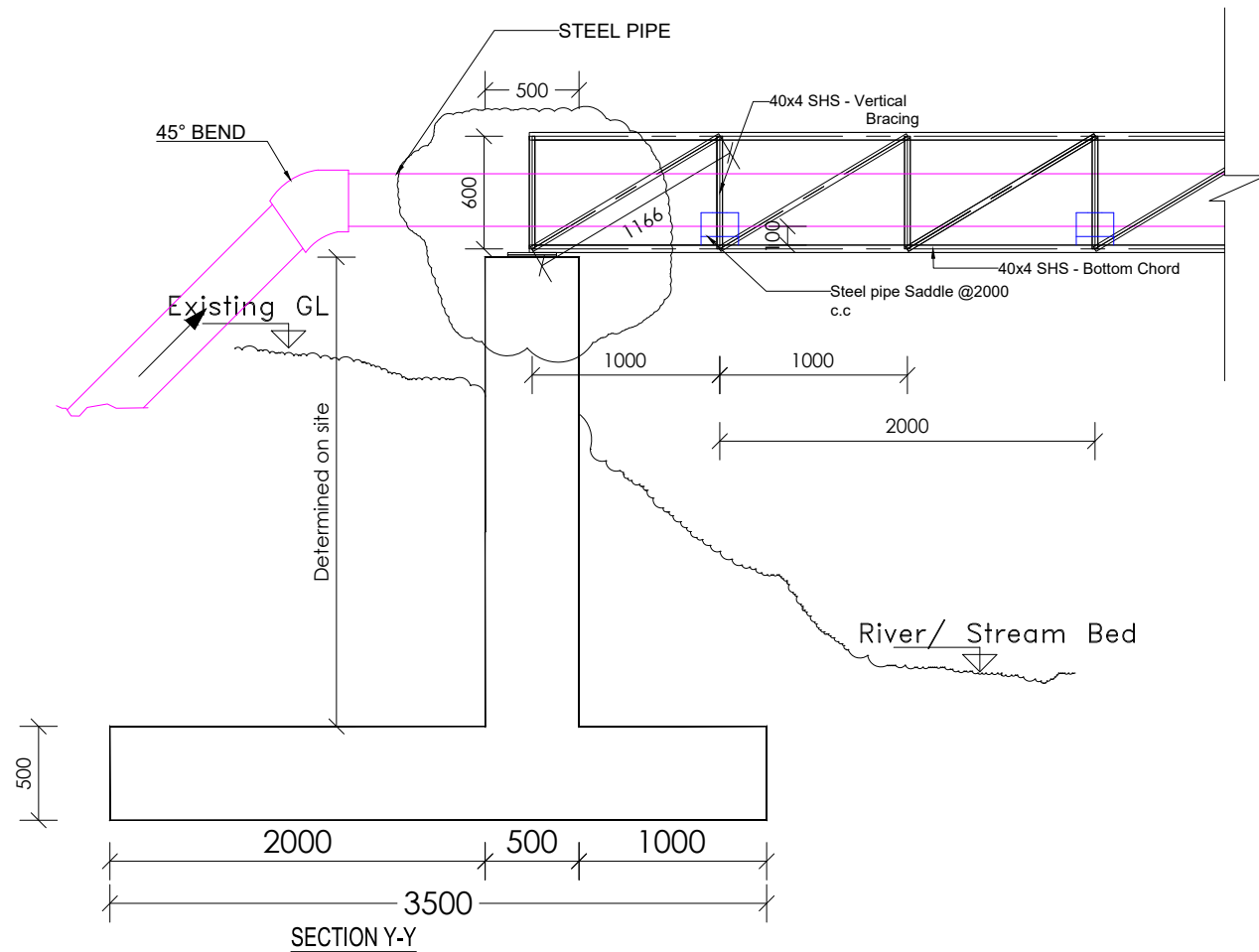
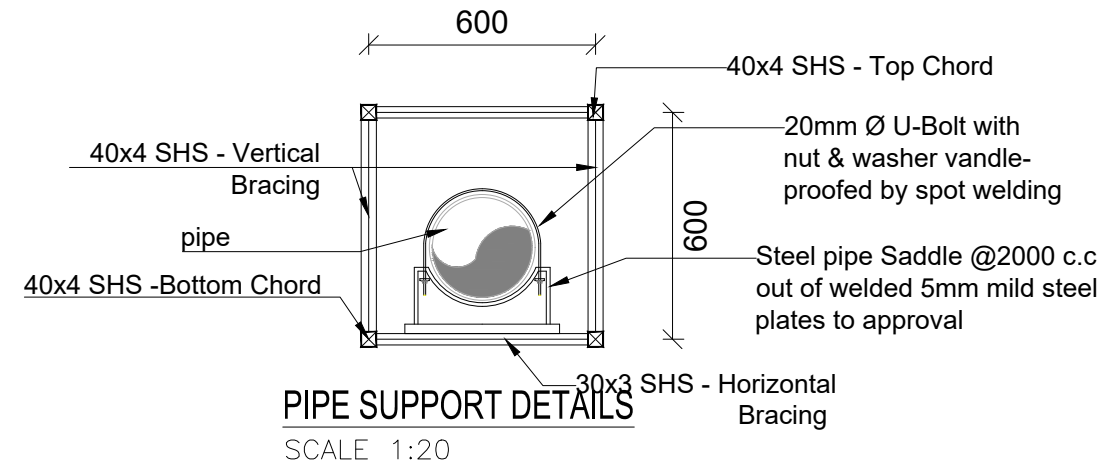
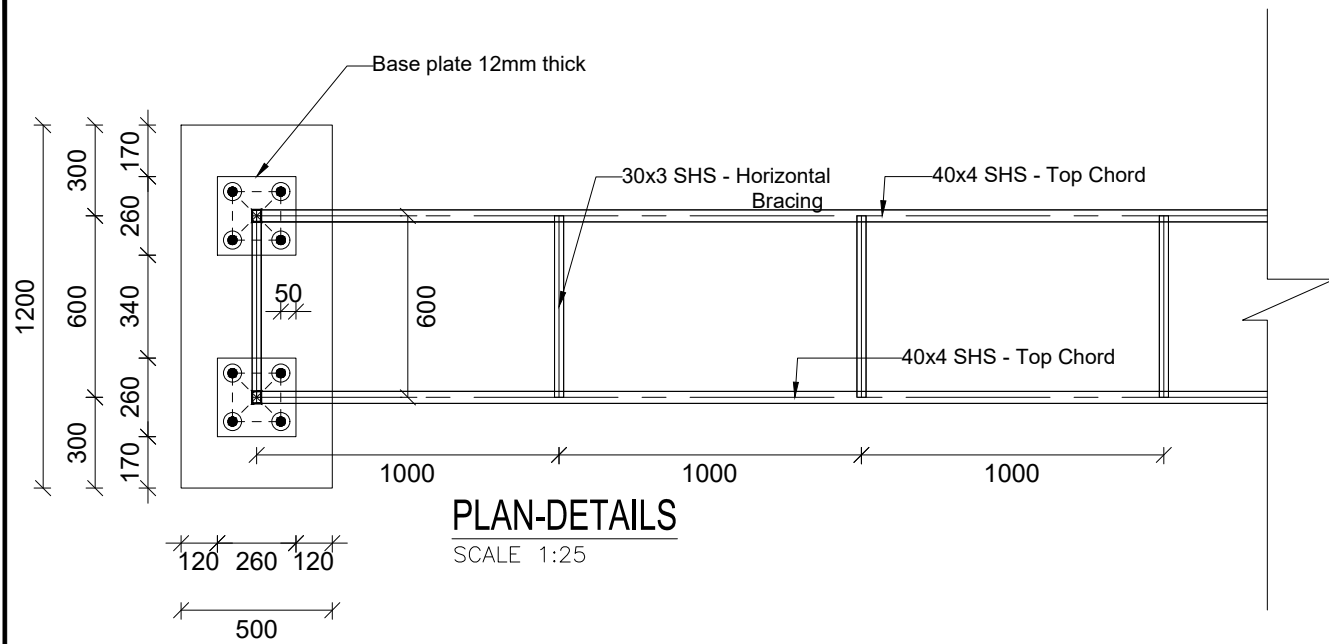
STANDARD DRAWINGS

REVISIONS :

No	Date	Description

DRAWING TITLE : **PIPE BRIDGES-20m**
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-022
Scale:	1:75
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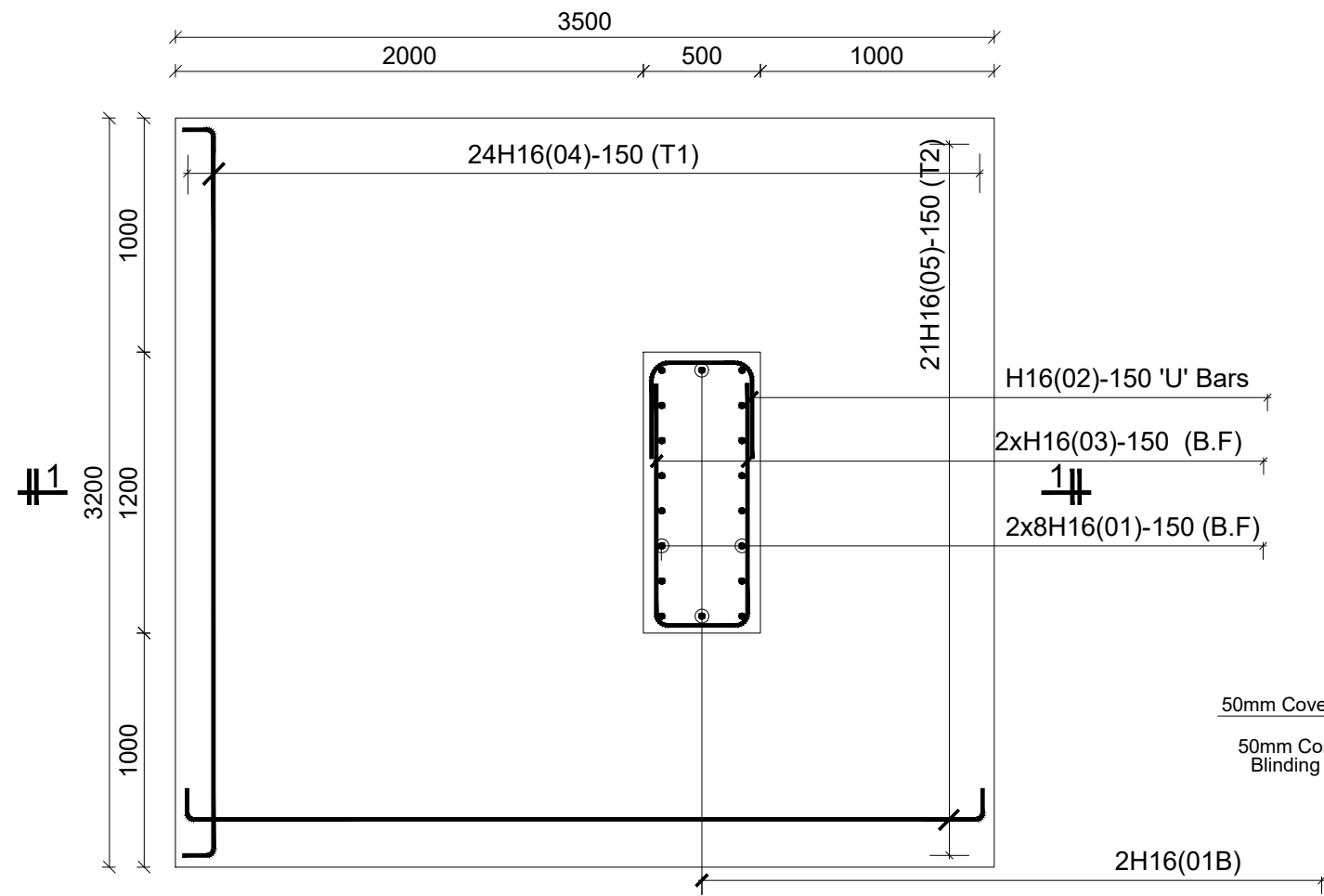
STANDARD DRAWINGS

REVISIONS :

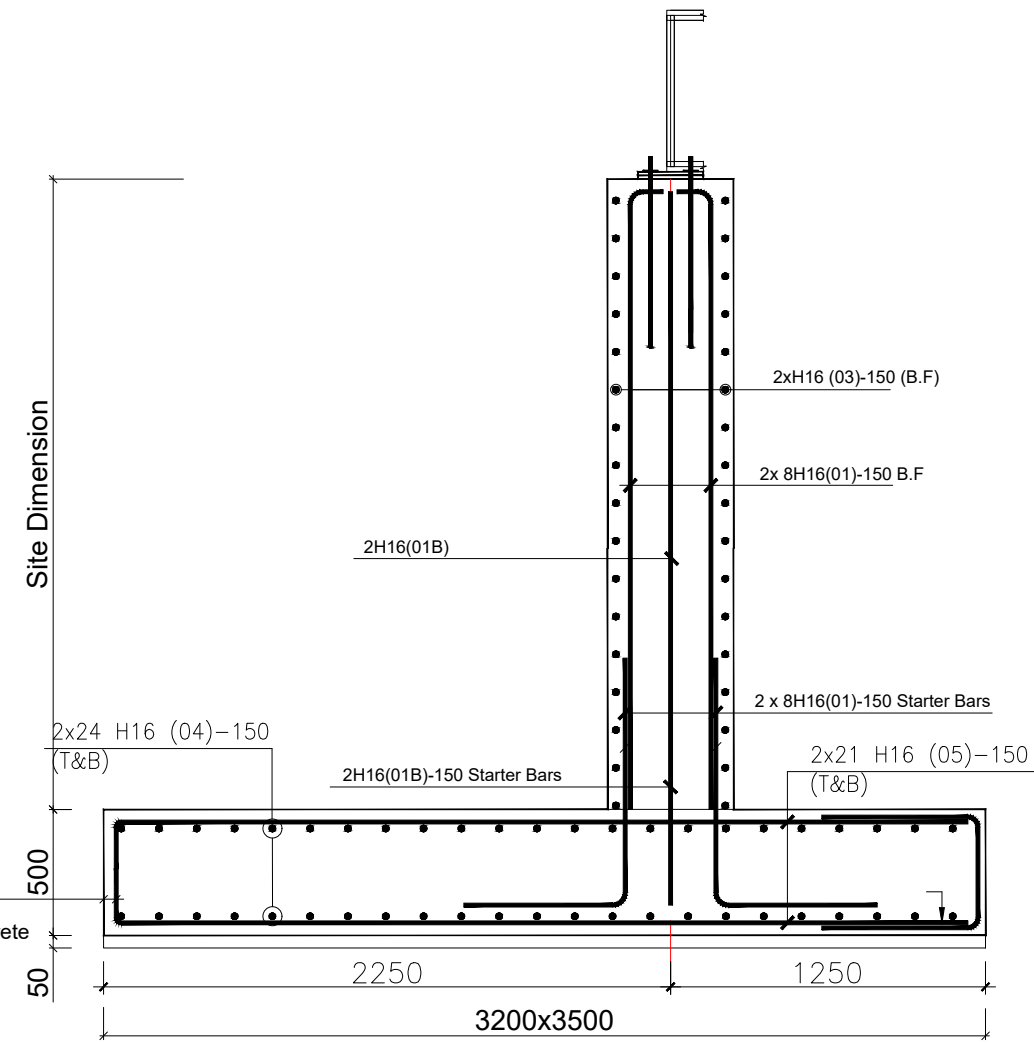
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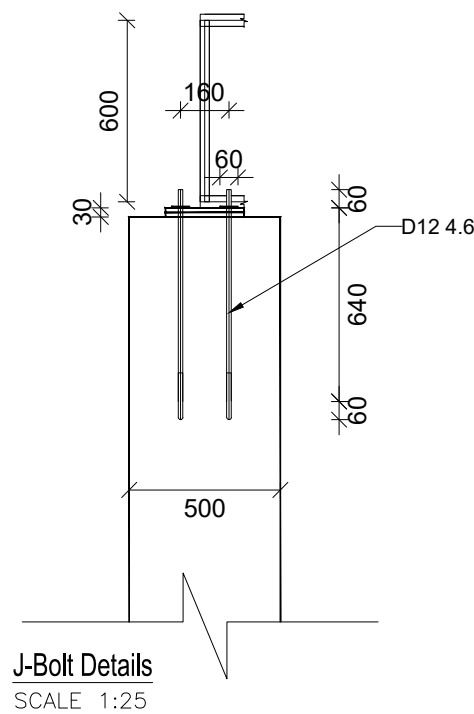
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 Drawn by: A.K
 Designed by: B.A
 Checked by: J.K.K
 Date: March 2023
 DRG. No.: **ALA-ORA-SD-022**
 Scale: 1:40 Sheet No.: 2 of 3



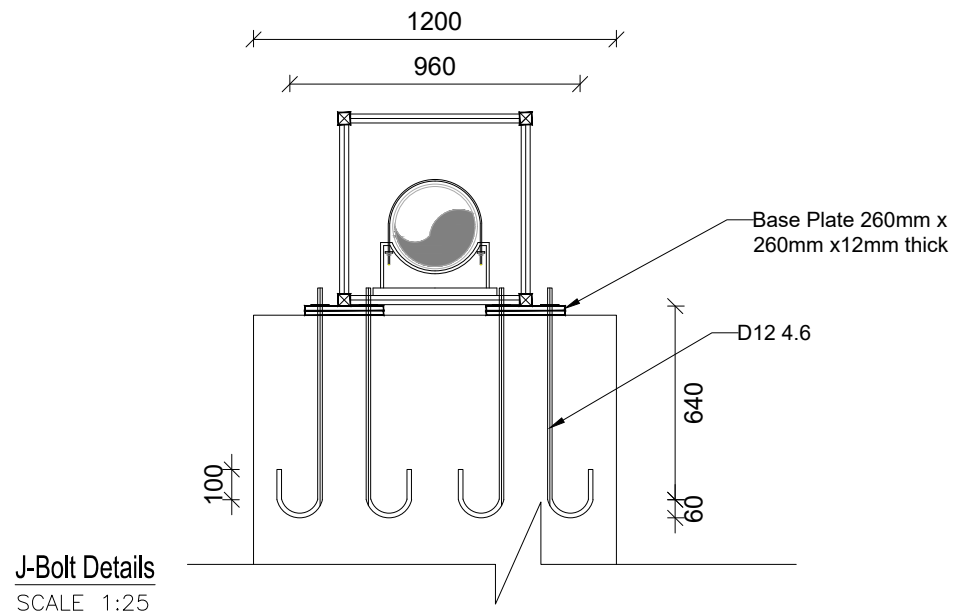
RC PIPE BRIDGE ABUTMENT (2No.) [3500X3200x500]



RC PIPE BRIDGE ABUTMENT SECTION 1-1



J-Bolt Details
SCALE 1:25



J-Bolt Details
SCALE 1:25

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 SANITATION PROJECT

STANDARD DRAWINGS

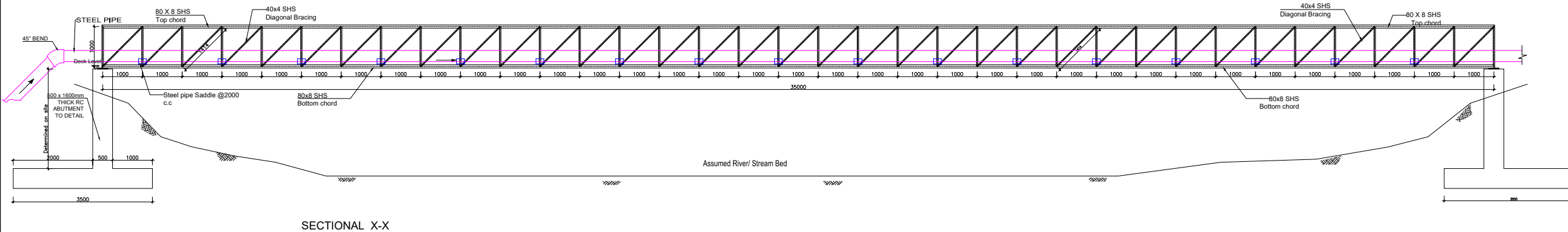
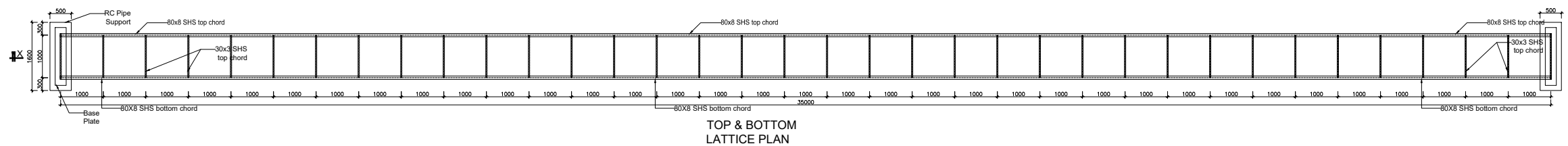
REVISIONS :

No	Date	Description

DRAWING TITLE : **PIPE BRIDGES-20m**
 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

PIPE BRIDGE SPAN-35m



SECTIONAL X-X

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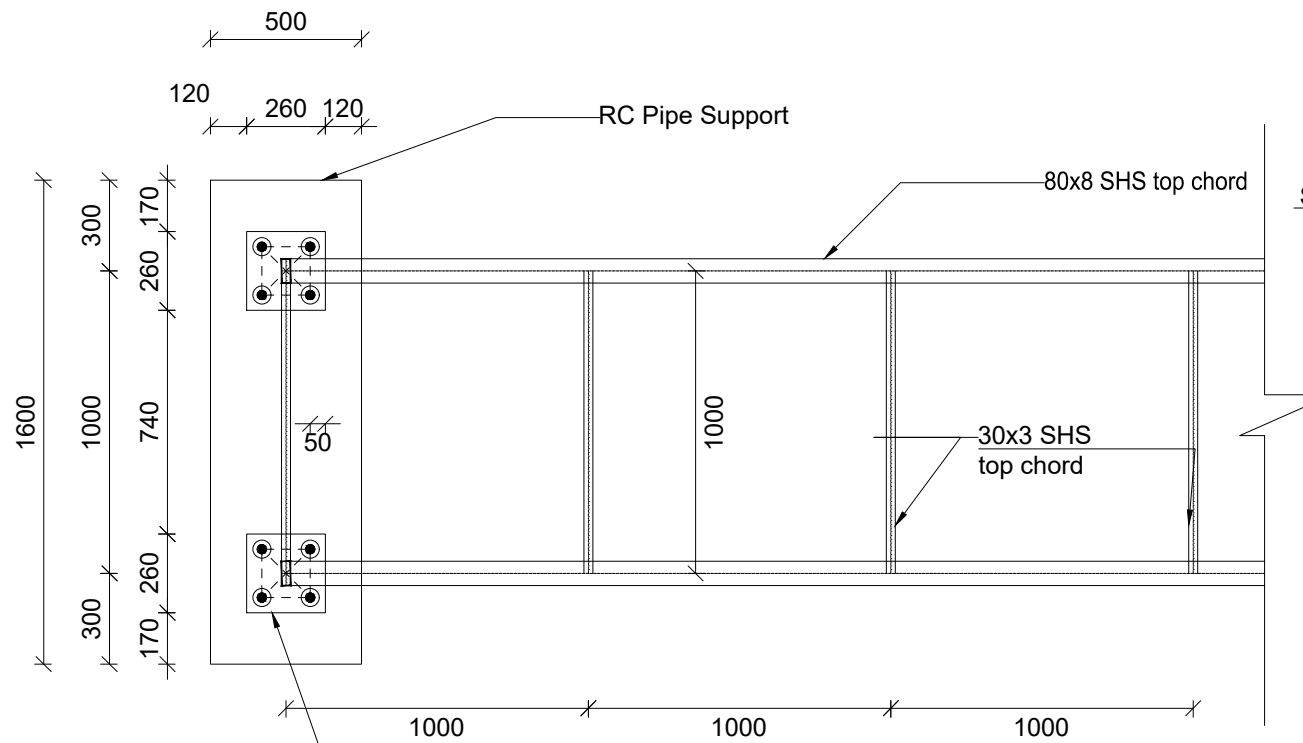
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REVISIONS :

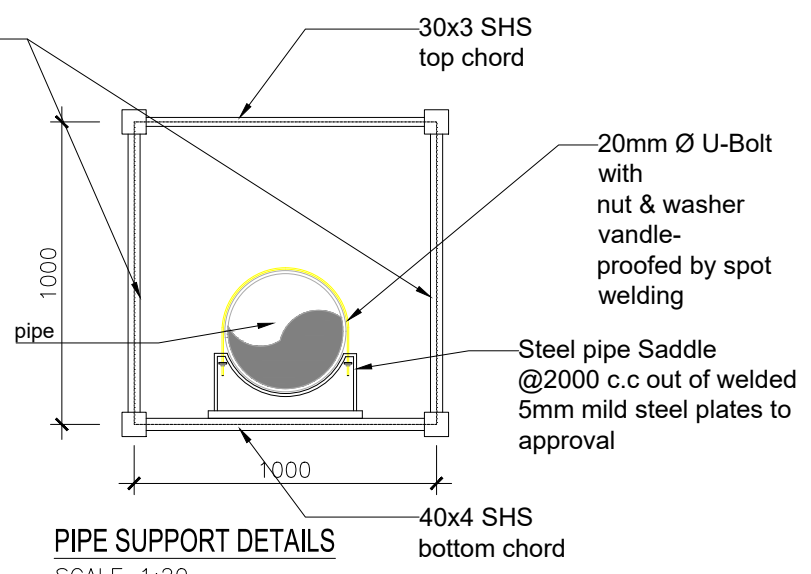
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 Plan and Elevation

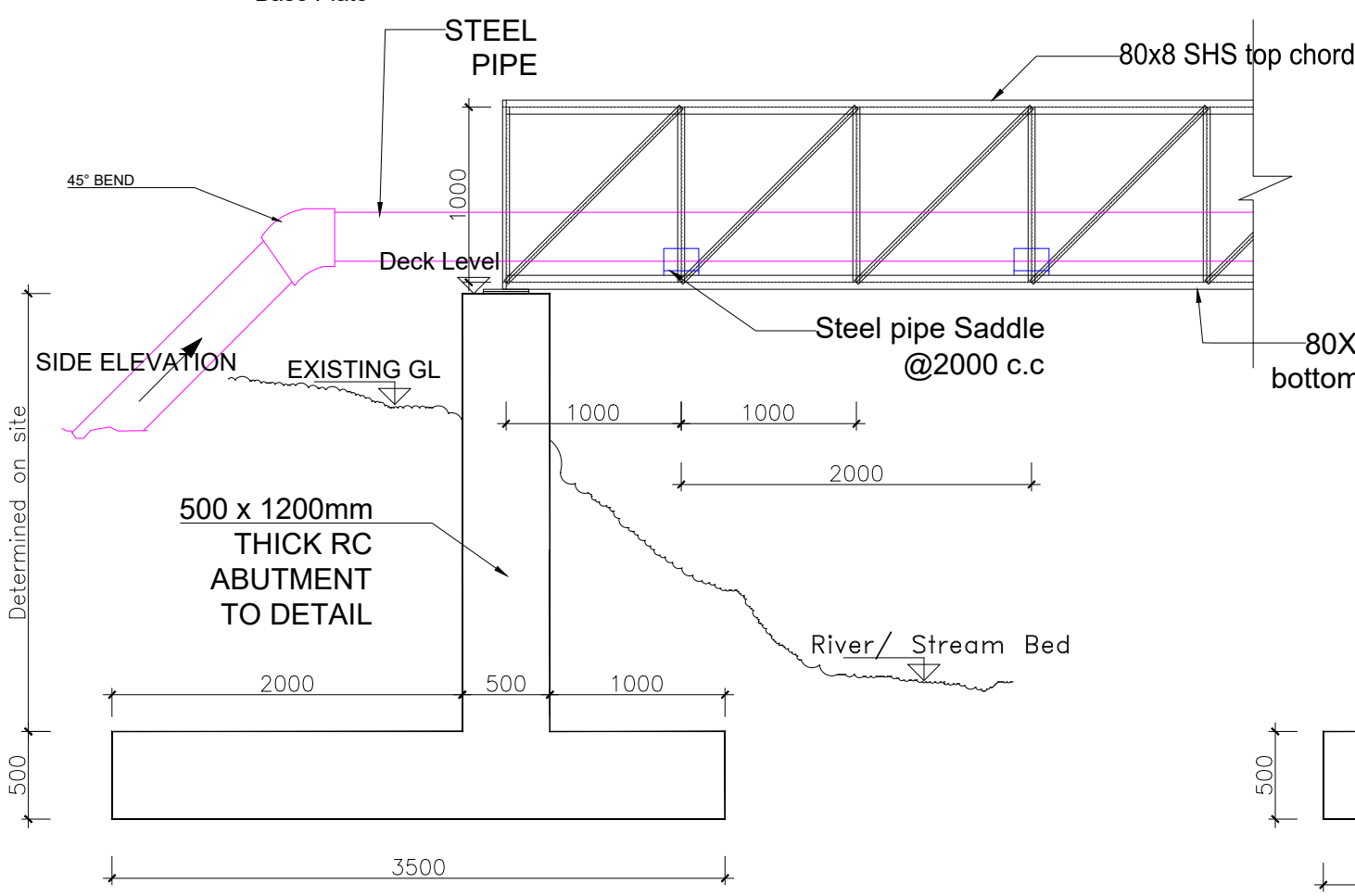
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 Drawn by: A.K
 Designed by: B.A
 Checked by: J.K.K
 Date: March 2023
 DRG. No.: **ALA-ORA-SD-023**
 Scale: 1:120 Sheet No.: 1 of 3



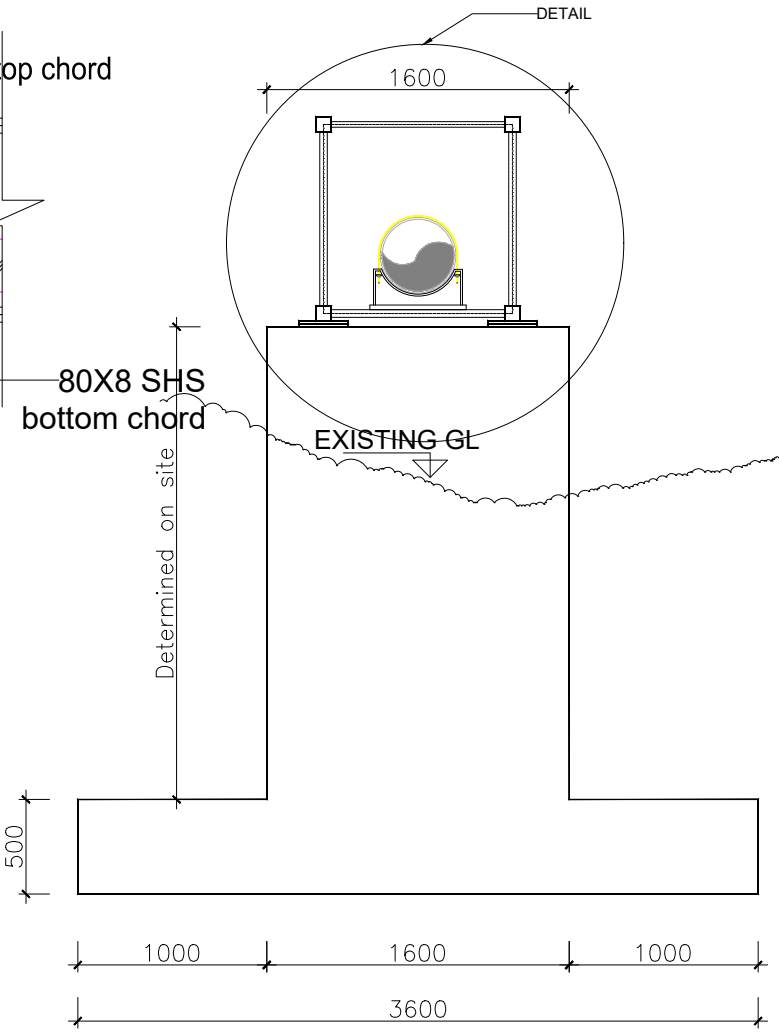
PLAN-DETAILS
SCALE 1:25



PIPE SUPPORT DETAILS
SCALE 1:20



SECTION Y-Y



SECTION Z-Z

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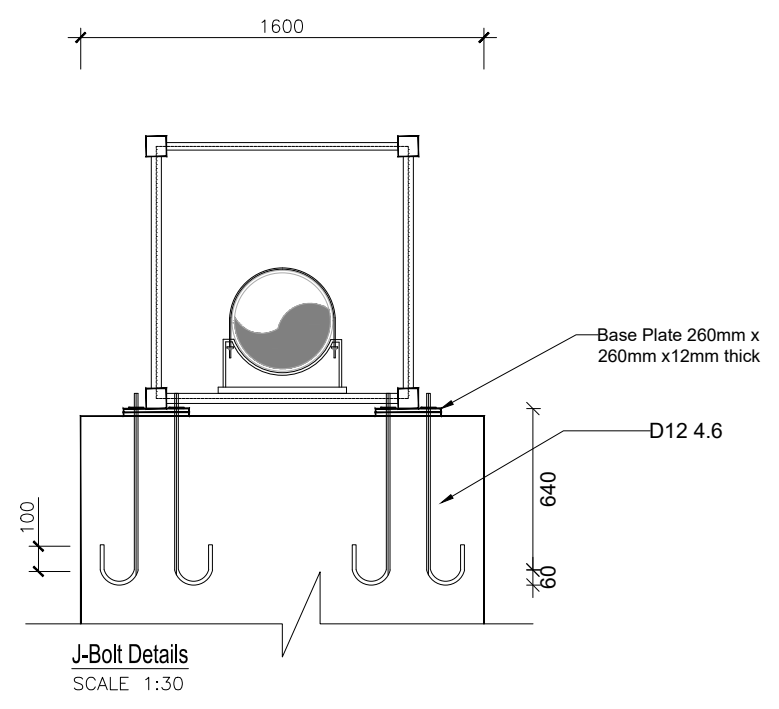
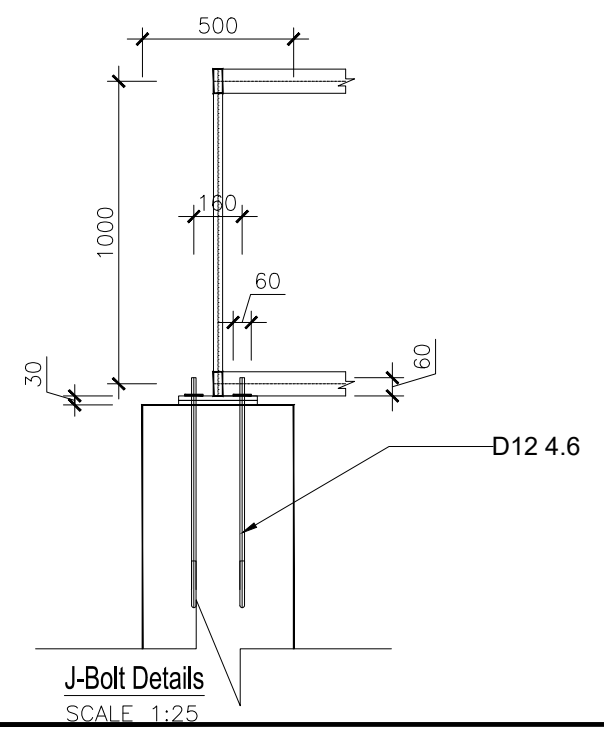
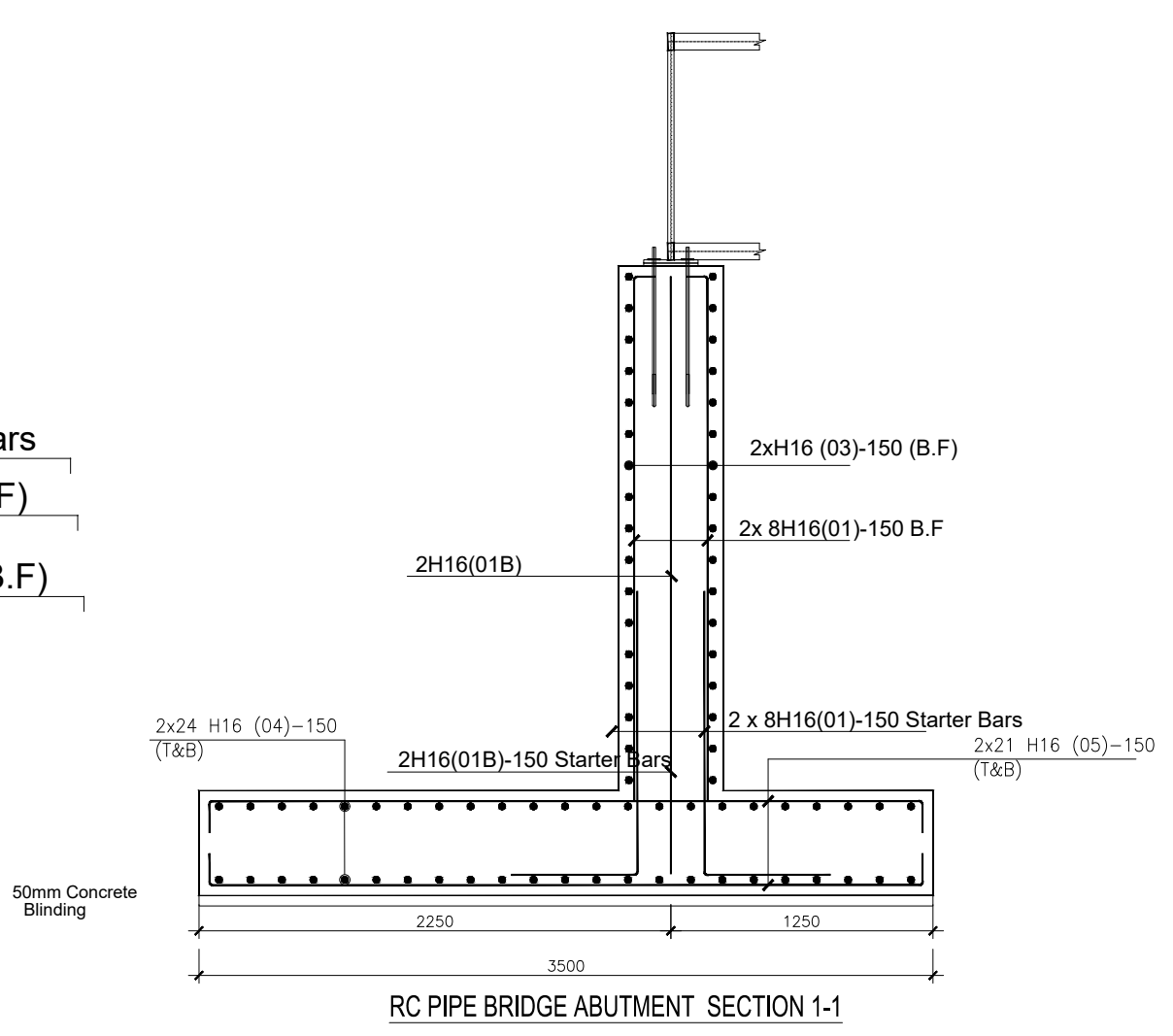
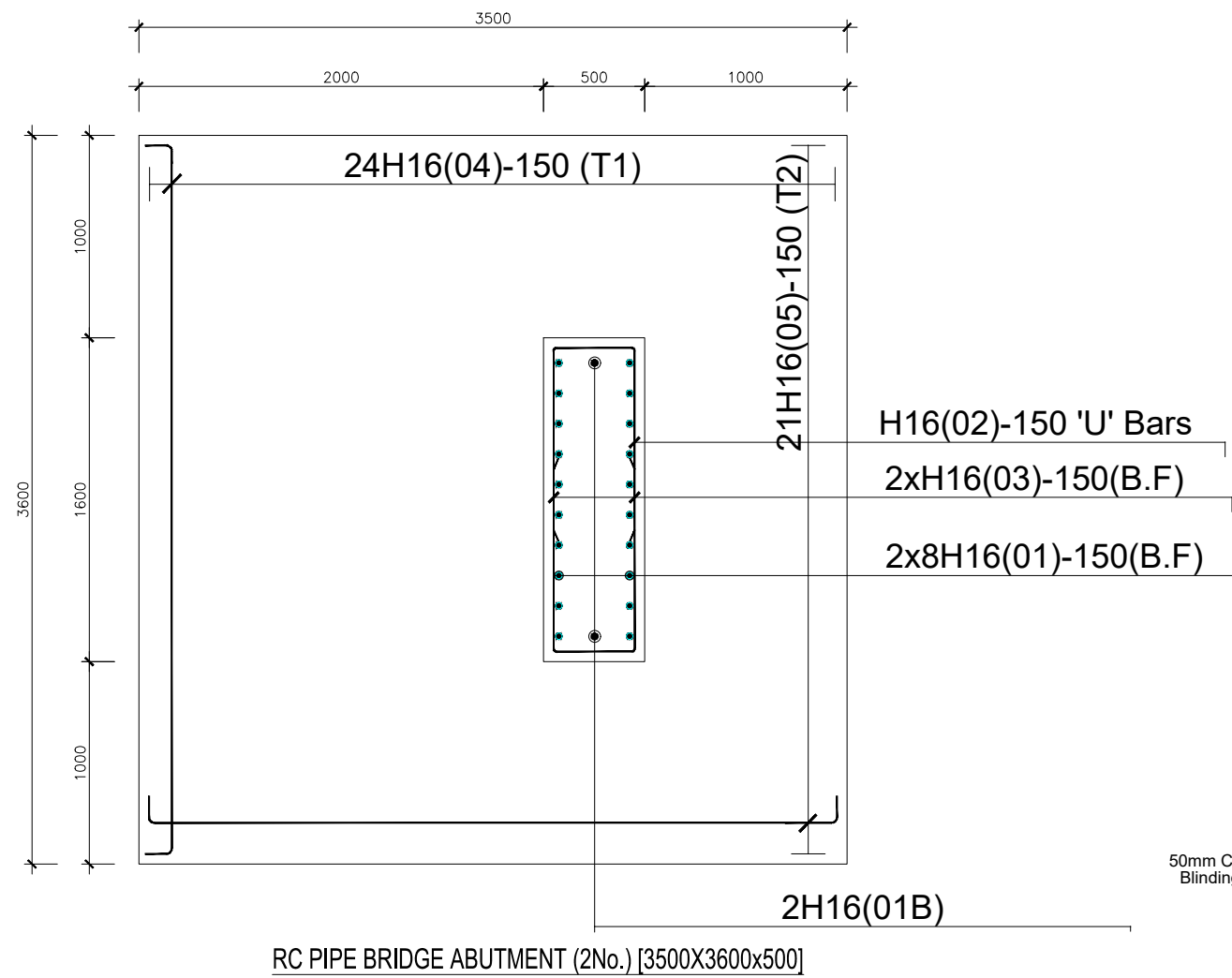
STANDARD DRAWINGS

REVISIONS :

No	Date	Description

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Surveyed by:	R.K
Drawn by:	A.K
Designed by:	B.A
Checked by:	J.K.K
Date:	March 2023
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Sheet No.:	2 of 3



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STANDARD DRAWINGS

REVISIONS :

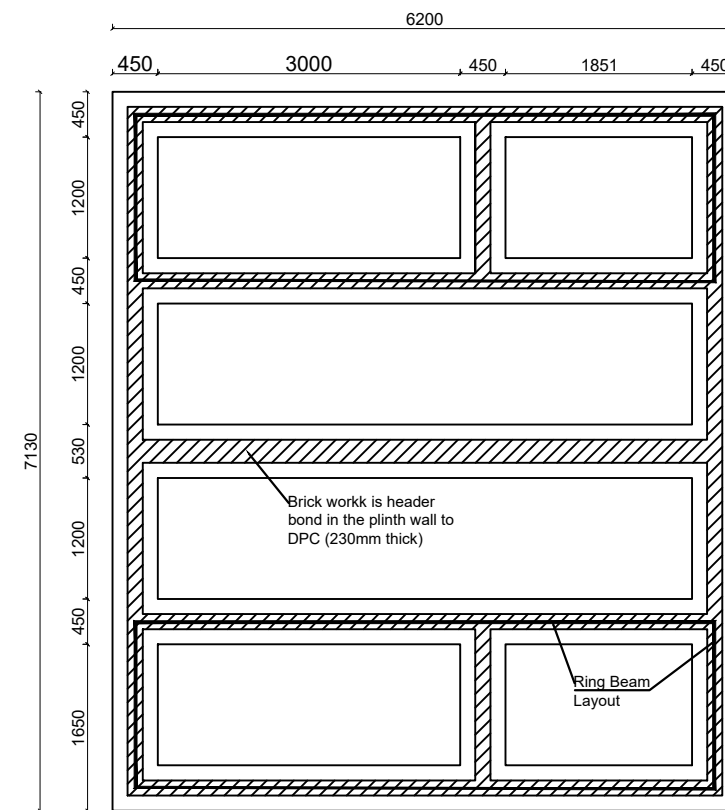
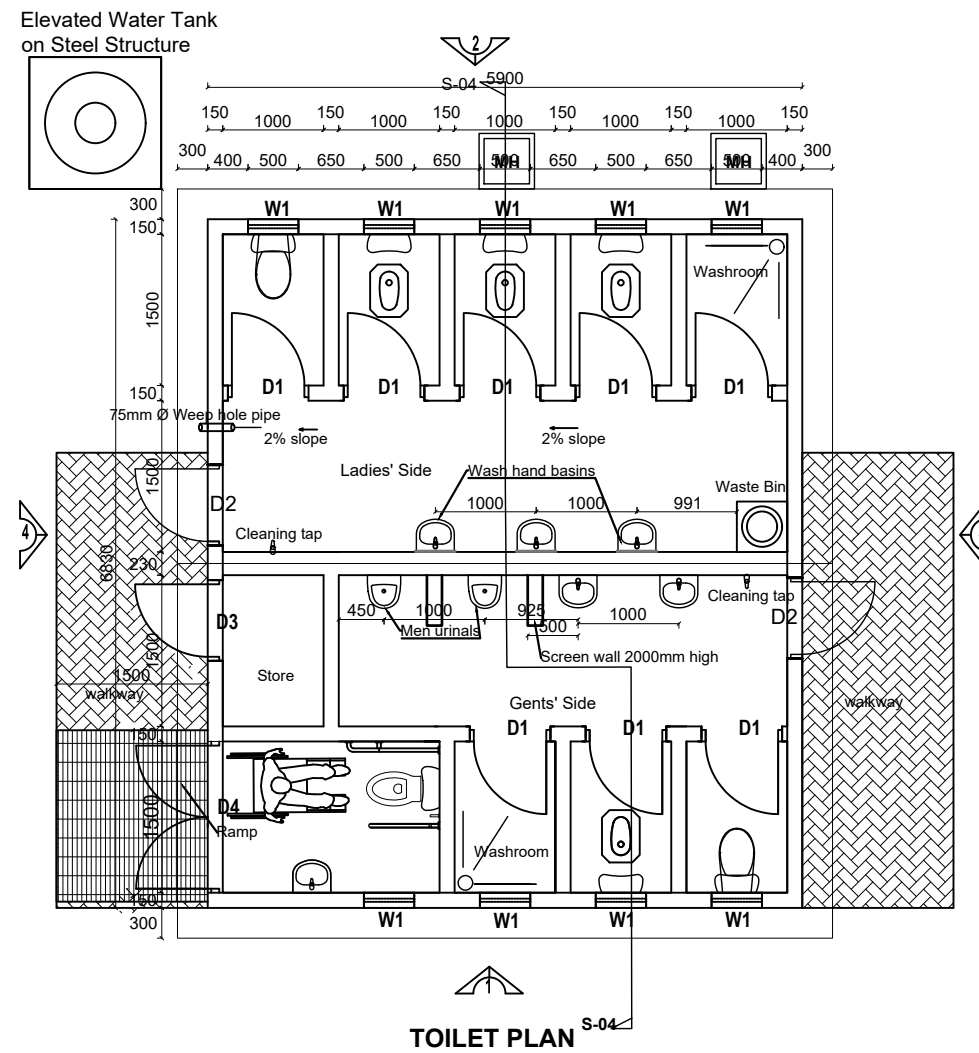
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DRAWING TITLE : **PIPE BRIDGES-35m**
 Reinforcement Details

Surveyed by: R.K
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 Date: March 2023
 DRG. No.: **ALA-ORA-SD-023**
 Scale: 1:35 Sheet No.: 3 of 3

LEGEND

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



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PROJECT :

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ENYAU WATER SUPPLY AND SANITATION SYSTEM

REVISIONS :

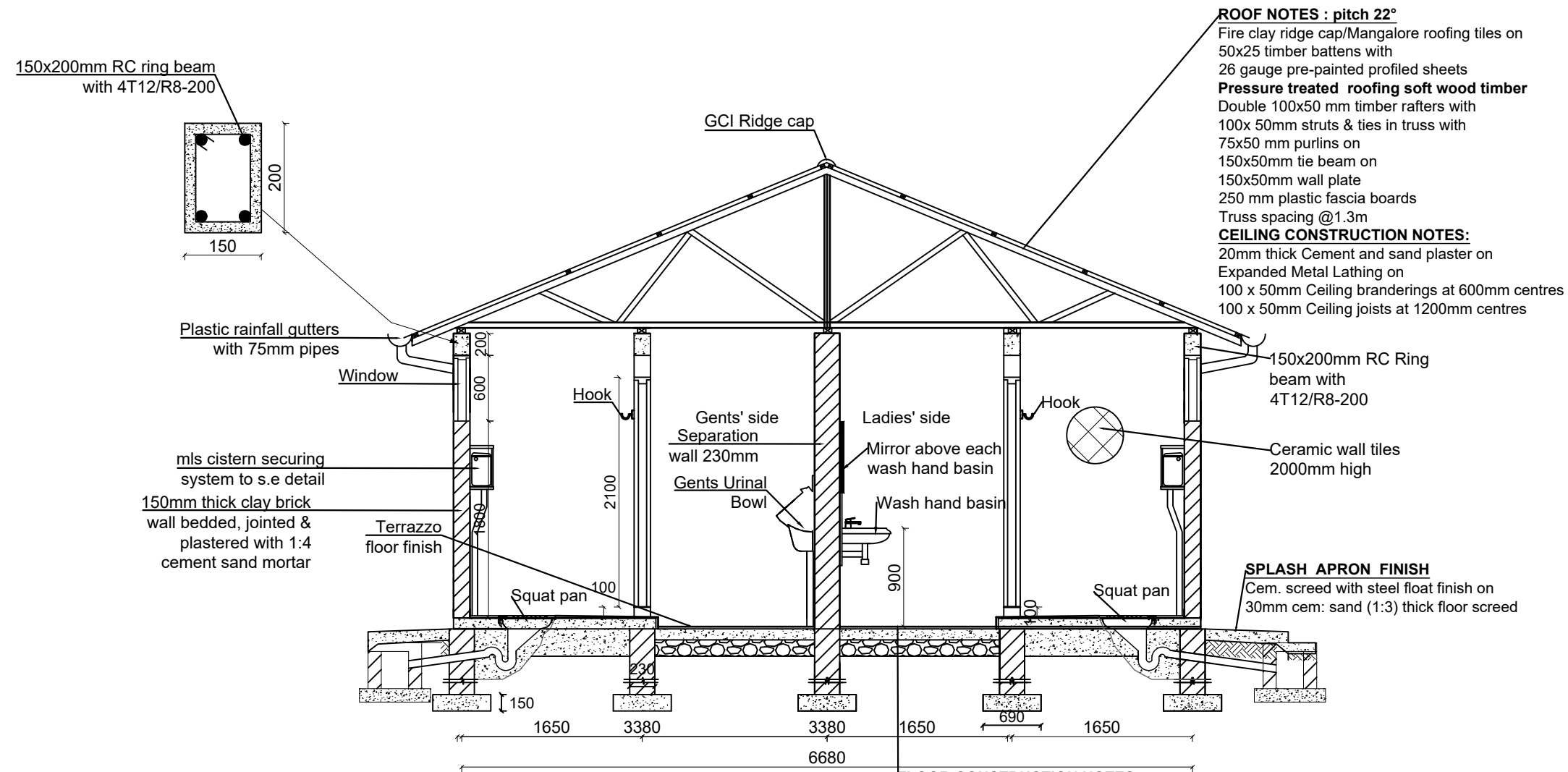
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DRAWING TITLE : **SANITATION FACILITIES**
Public Toilets - Plan and Foundation Layout

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

LEGEND

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



ROOF NOTES : pitch 22°
 Fire clay ridge cap/Mangalore roofing tiles on
 50x25 timber battens with
 26 gauge pre-painted profiled sheets
Pressure treated roofing soft wood timber
 Double 100x50 mm timber rafters with
 100x 50mm struts & ties in truss with
 75x50 mm purlins on
 150x50mm tie beam on
 150x50mm wall plate
 250 mm plastic fascia boards
 Truss spacing @1.3m
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

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
 150mm Hardcore stone bed blinded with 50mm sand
 150mm selected well compacted natural murrum filling

SECTION S-04

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

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**ENYAU WATER SUPPLY AND
 SANITATION SYSTEM**

REVISIONS :

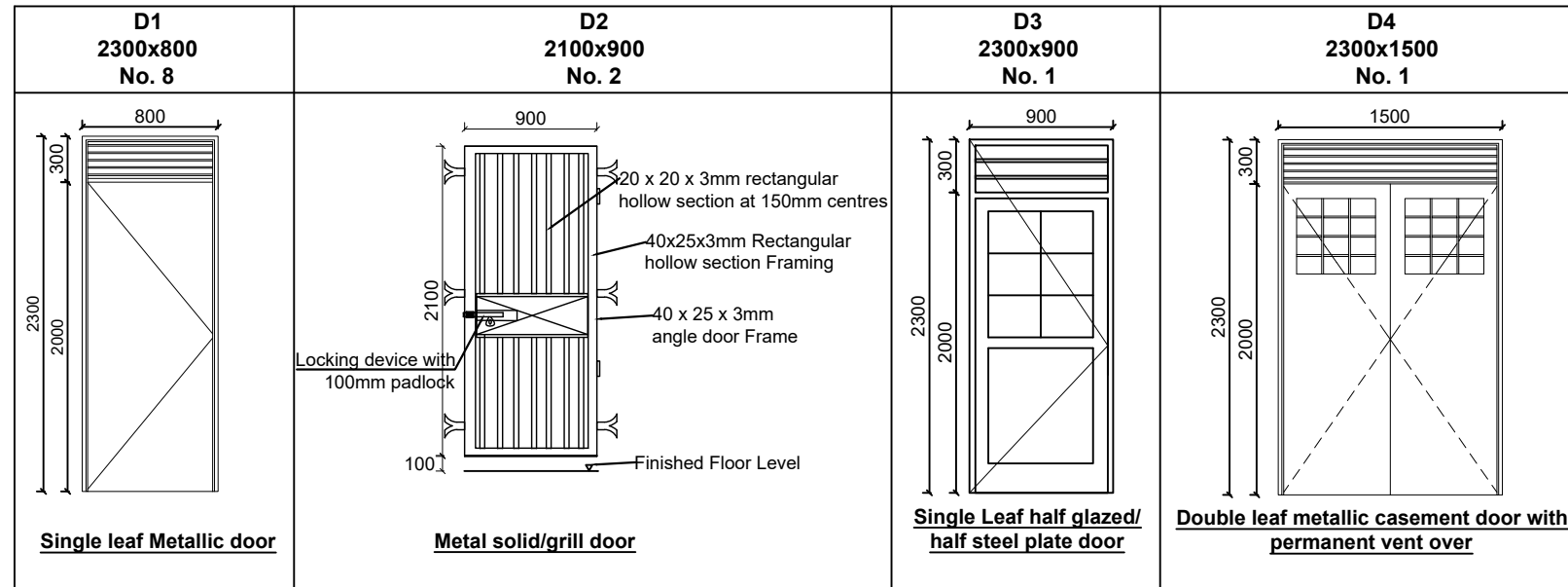
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 Public Toilets - Section

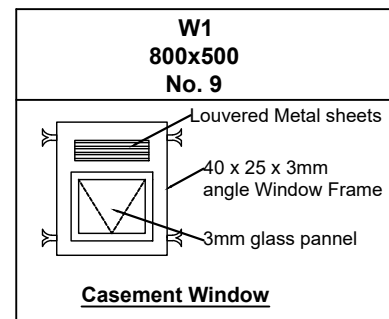
Surveyed by:	R.K
Drawn by:	M.K
Designed by:	W.G.M
Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA- SAN-001
Scale:	1:50
Sheet No.:	2 of 6

LEGEND

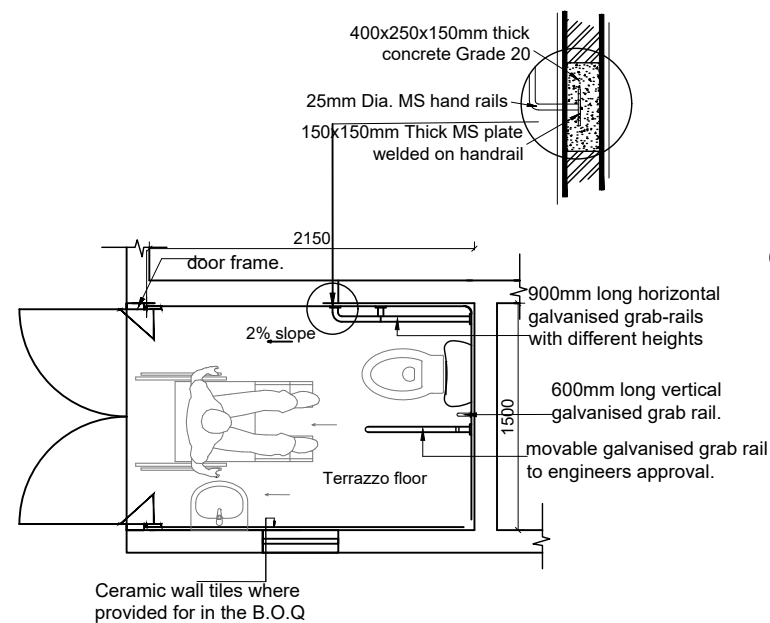
DOOR SCHEDULE



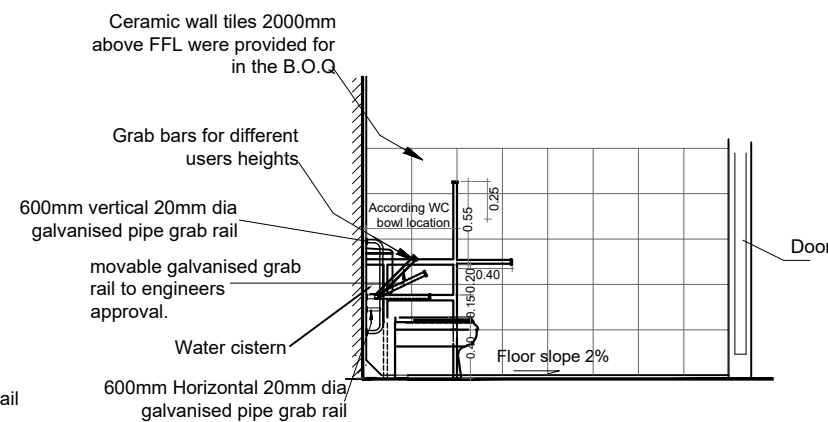
WINDOW SCHEDULE



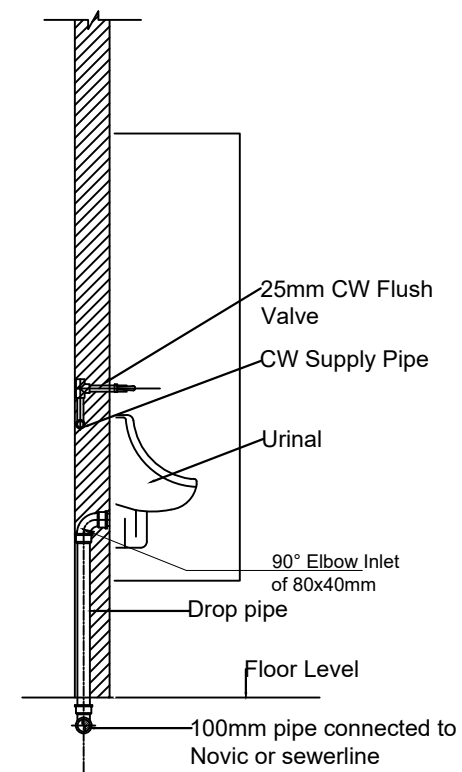
PLAN-DISABLED UNIT



SECTION-DISABLED UNIT



WALL MOUNTED URINAL



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ENYAU WATER SUPPLY AND SANITATION SYSTEM

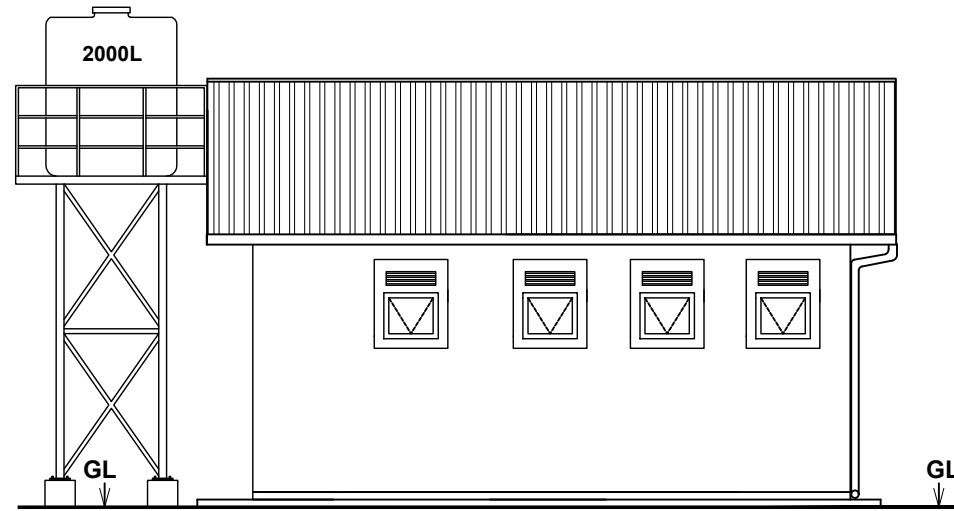
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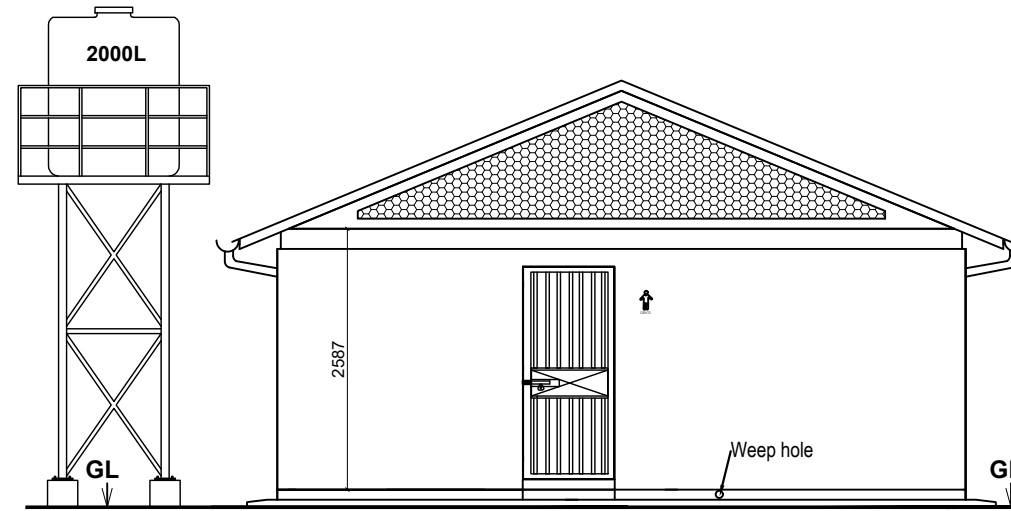
DRAWING TITLE : **SANITATION FACILITIES**
 Public Toilets - Door and Window Schedule, Disabled Unit Details & Urinal Detail

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: 1:50 Sheet No.: 3 of 6

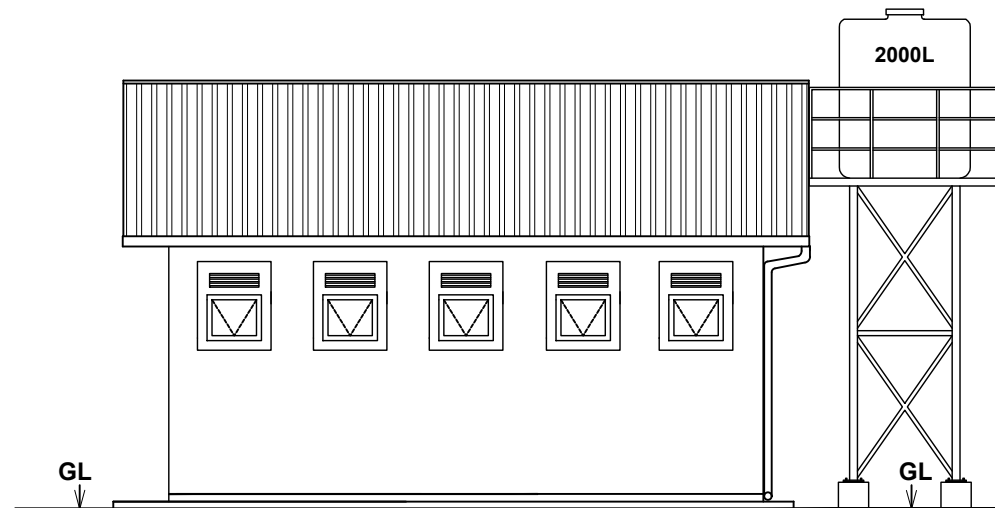
EIGHT STANCE WITH DISABLED UNIT, STORE AND A BATHROOM WATERBORNE TOILET FULLY ROOFED



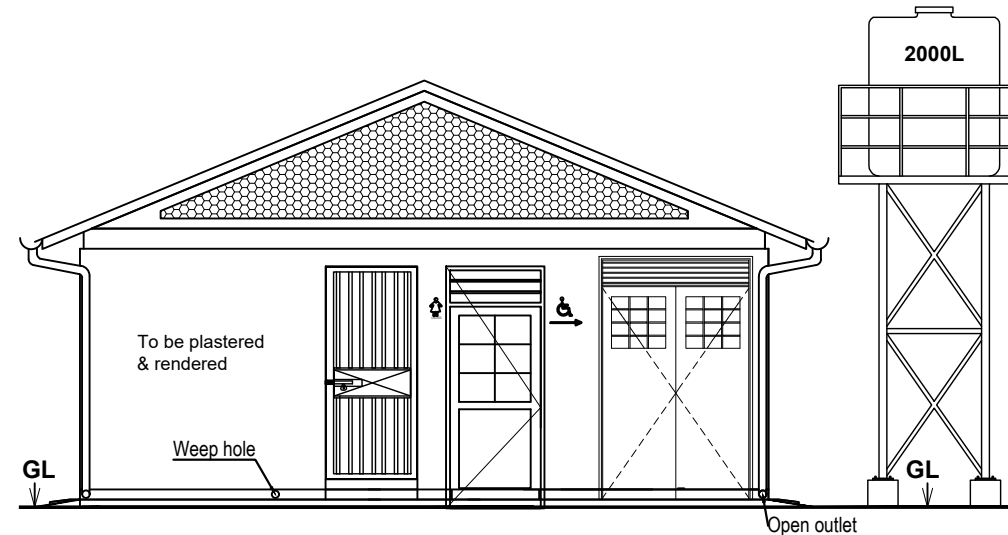
ELEVATION 1



ELEVATION 3



ELEVATION 2



ELEVATION 4

LEGEND

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 SANITATION PROJECT

**ENYAU WATER SUPPLY AND
 SANITATION SYSTEM**

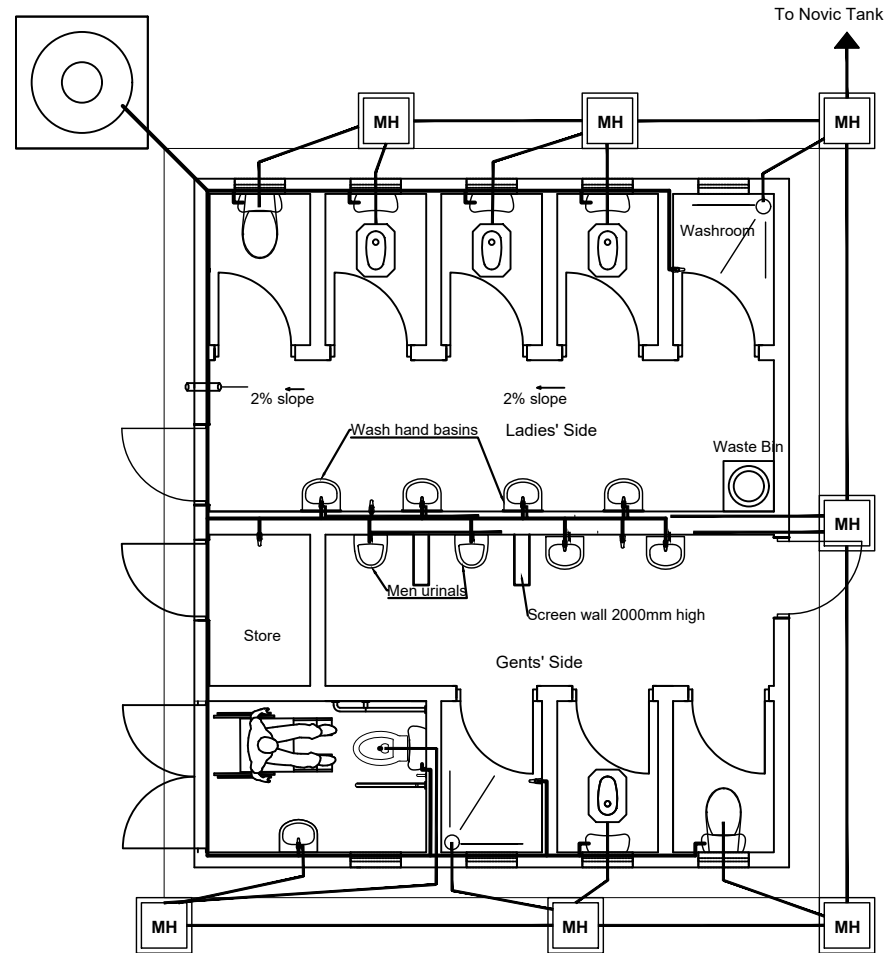
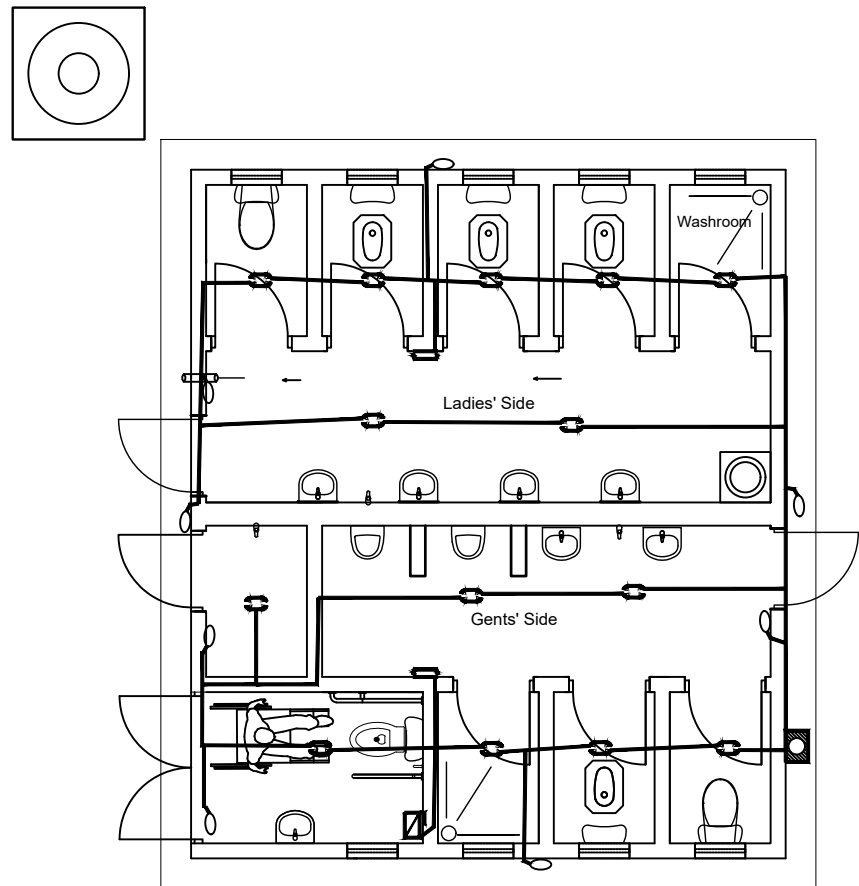
REVISIONS :

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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ENYAU WATER SUPPLY AND SANITATION SYSTEM

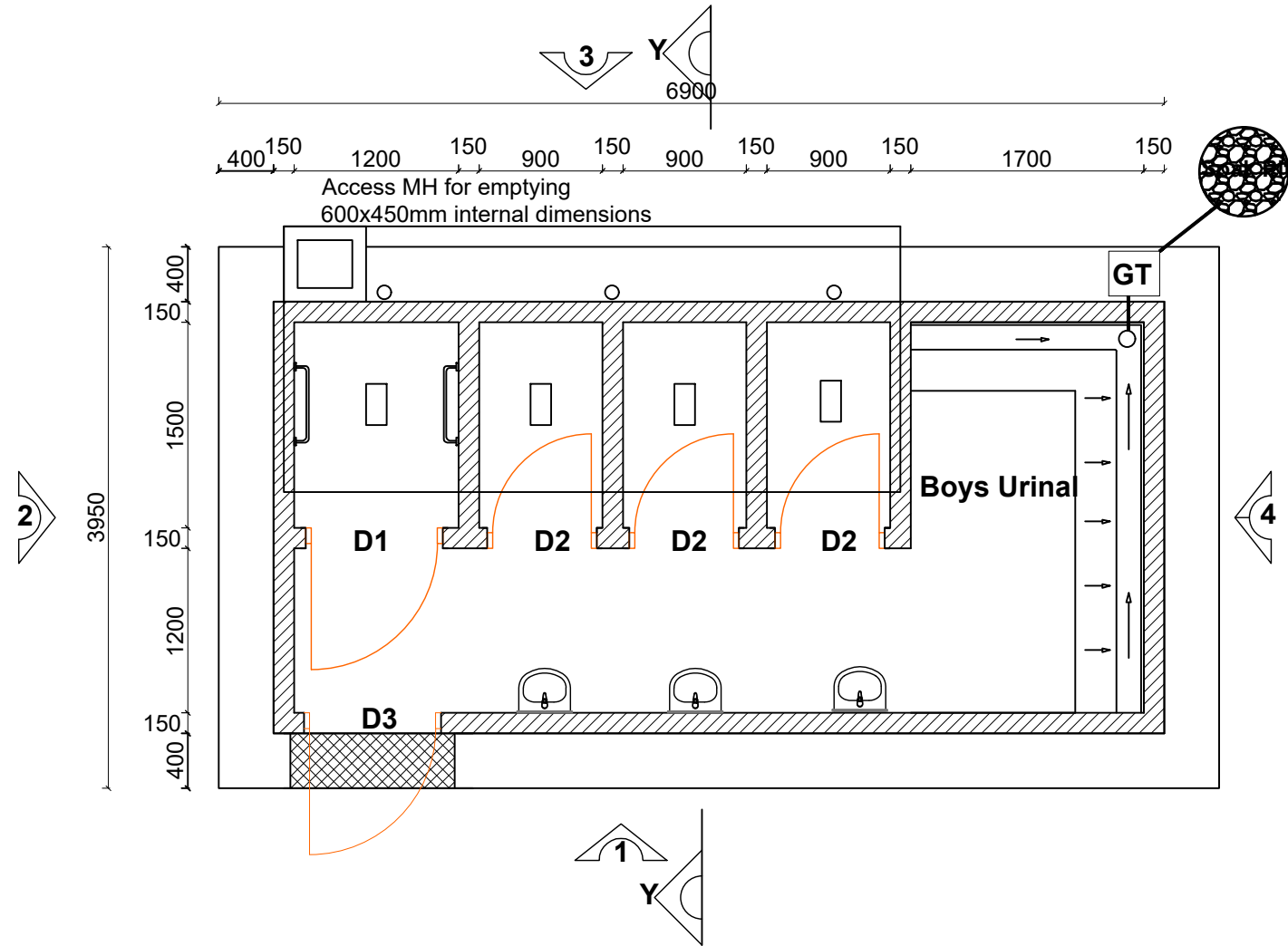
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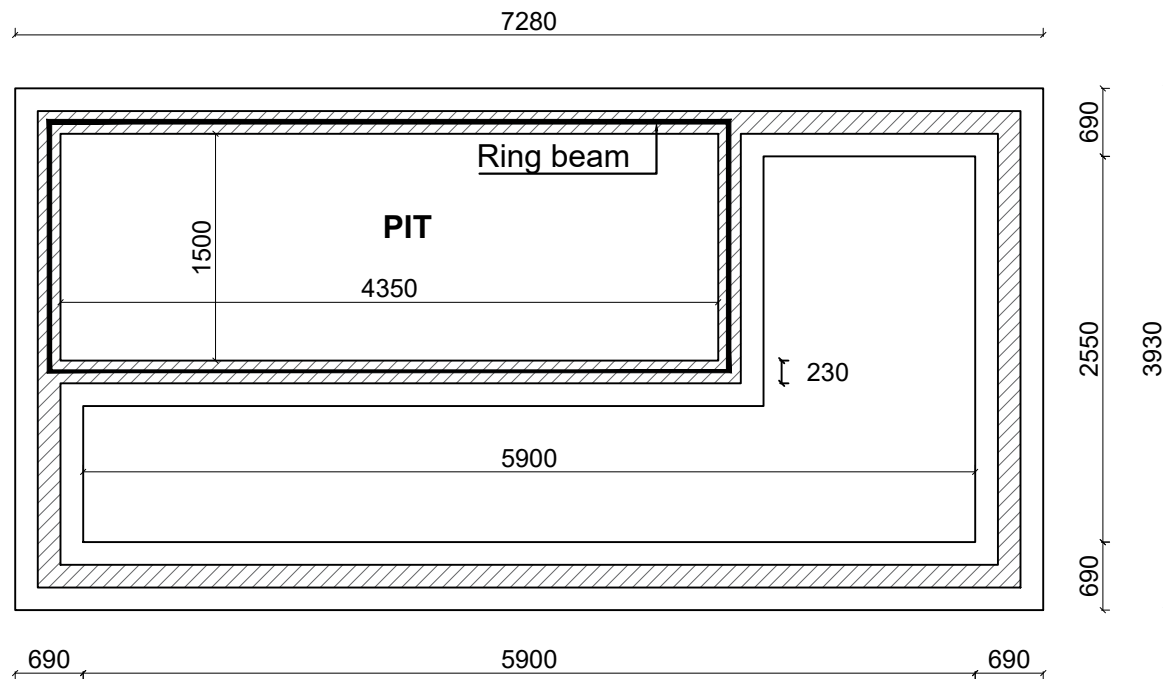
DRAWING TITLE : **SANITATION FACILITIES**
Public Toilets - Electrical & Plumbing Layouts

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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ENYAU WATER SUPPLY AND SANITATION SYSTEM

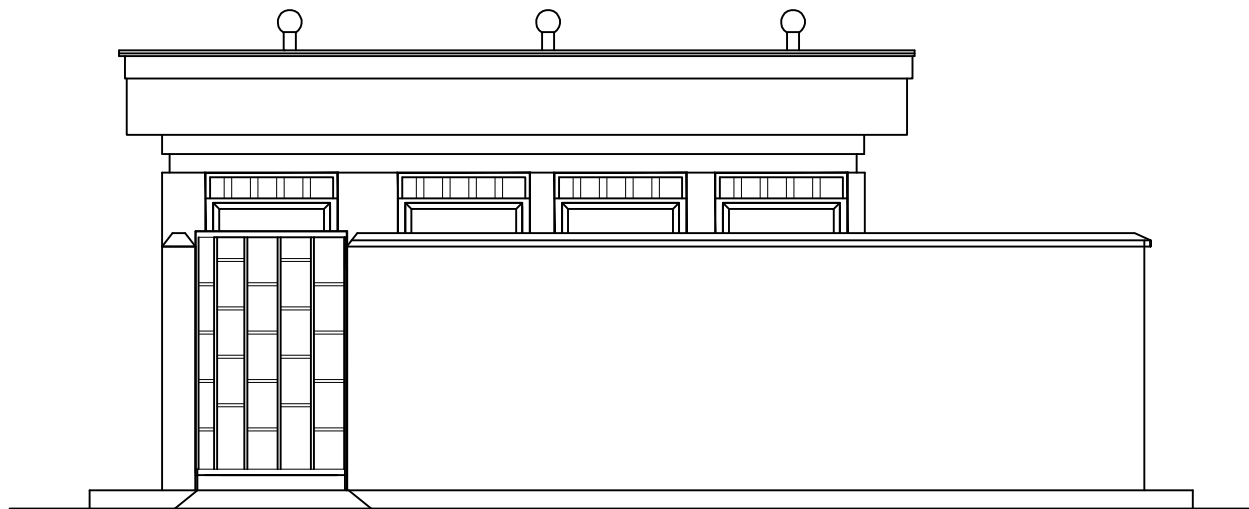
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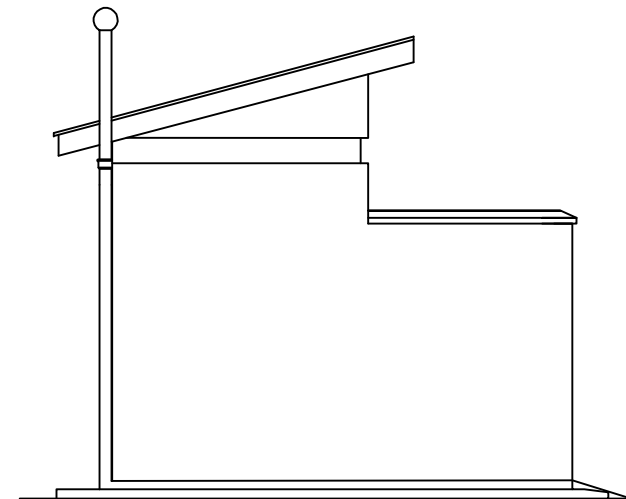
DRAWING TITLE : **SANITATION FACILITIES**
 VIP Latrine Gents - Plan and Foundation Layout

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

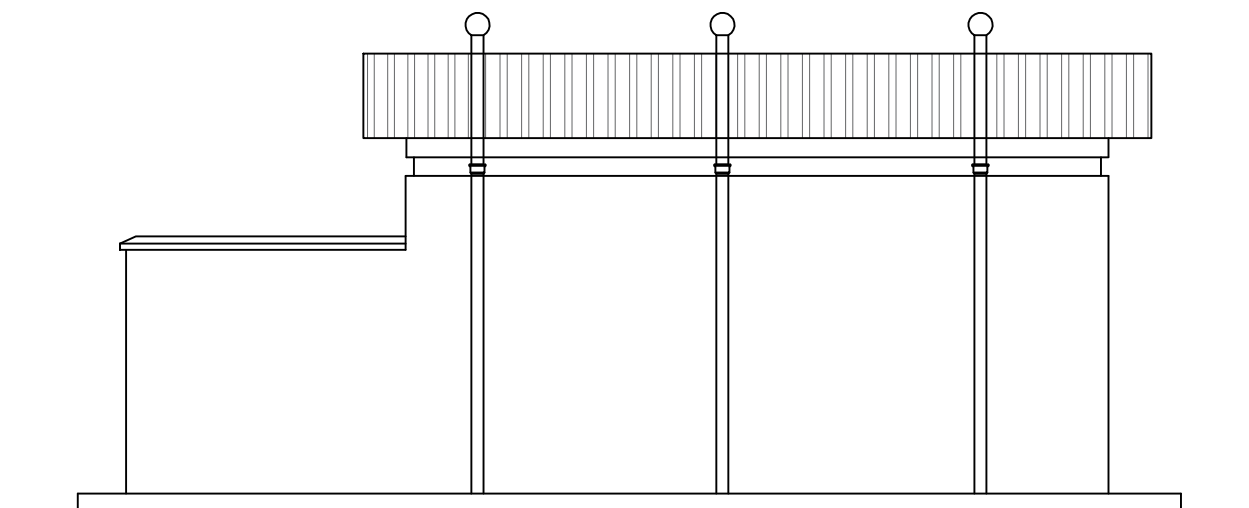
FOUR STANCE VIP LATRINE INCLUDING A DISABLED UNIT AND URINAL



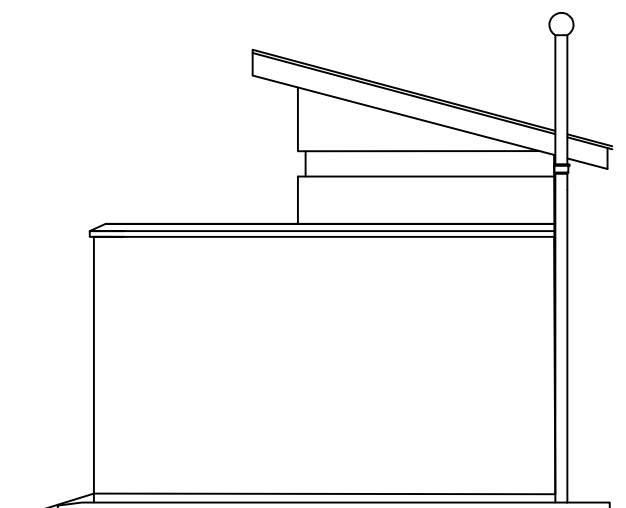
ELEVATION 1



ELEVATION 2



ELEVATION 3



ELEVATION 4

LEGEND

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REVISIONS :

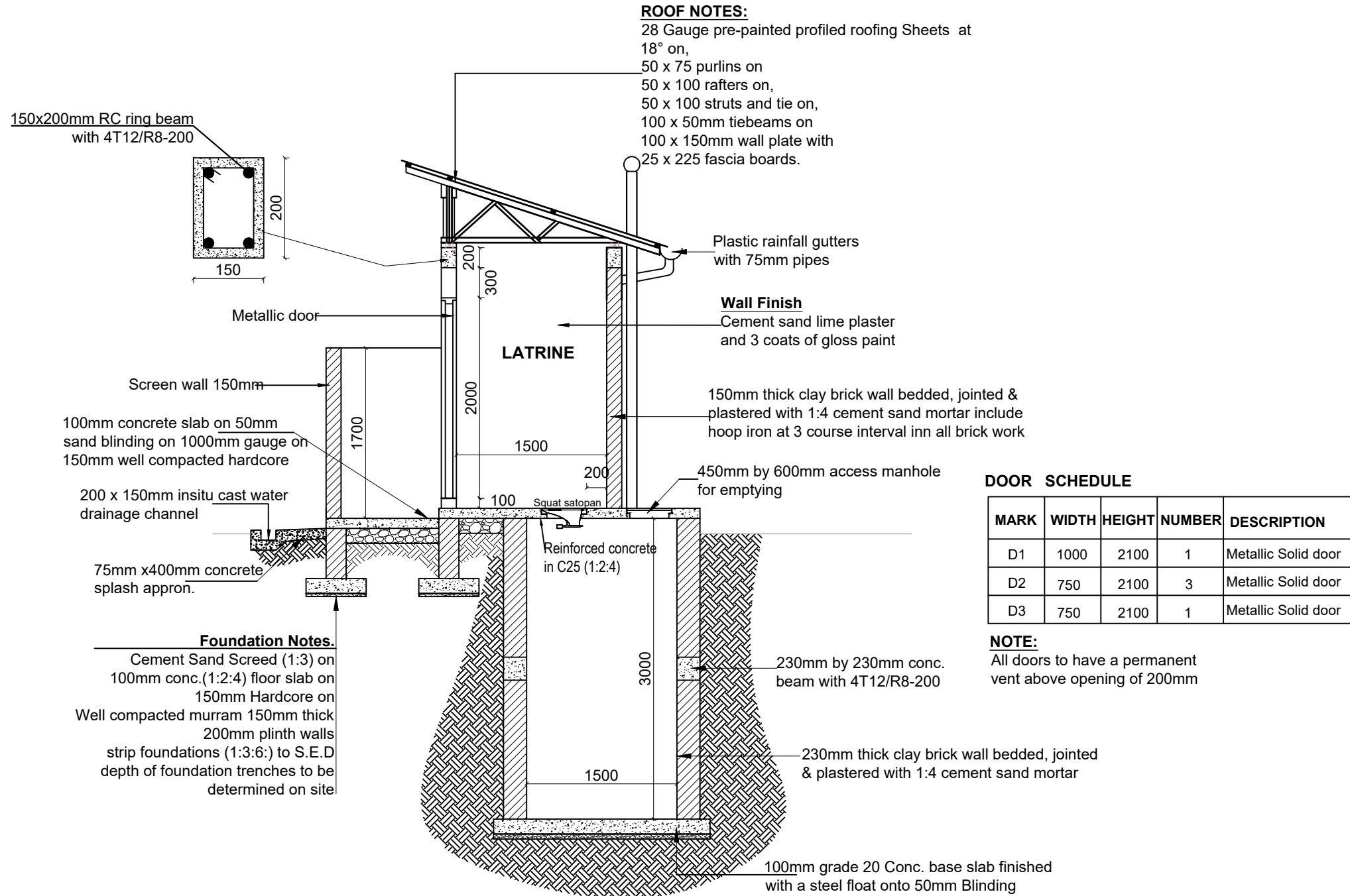
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DRAWING TITLE : **SANITATION FACILITIES**
 VIP Latrine Gents - Elevations

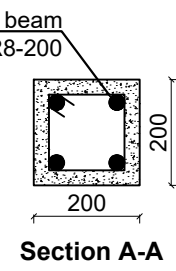
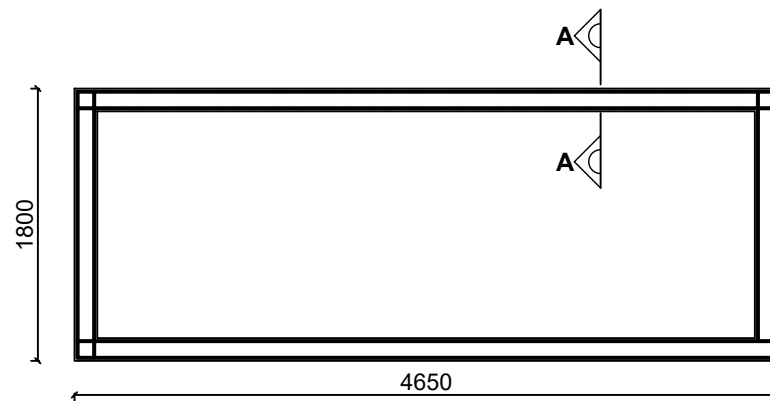
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Checked by:	J.K.K
Date:	January 2023
DRG. No.:	ALA-ORA- SAN-002
Scale:	1:50
Sheet No.:	2 of 3

FOUR STANCE VIP LATRINE INCLUDING A DISABLED UNIT AND URINAL

LEGEND



Section Y-Y



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 SANITATION PROJECT

**ENYAU WATER SUPPLY AND
 SANITATION SYSTEM**

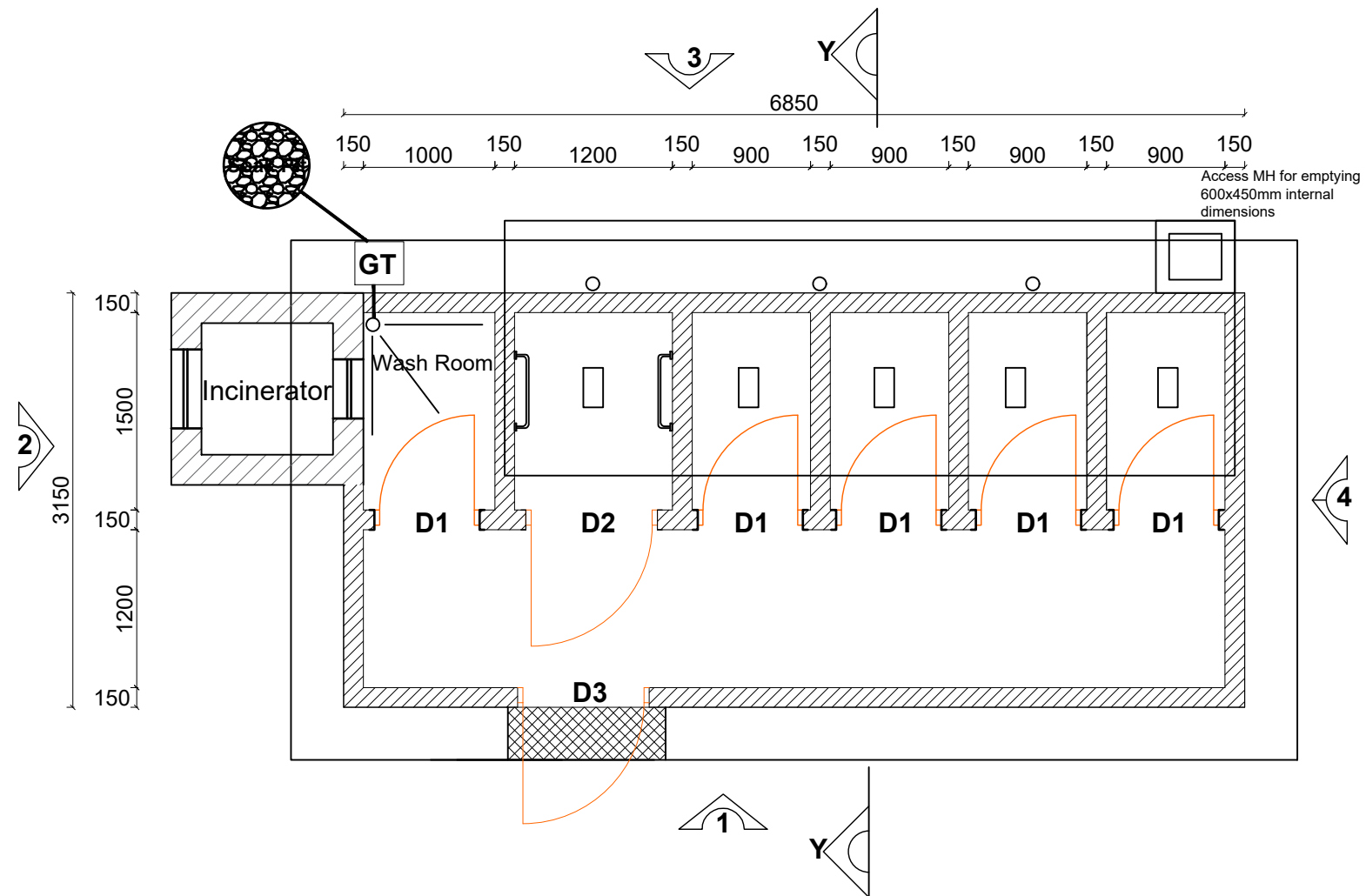
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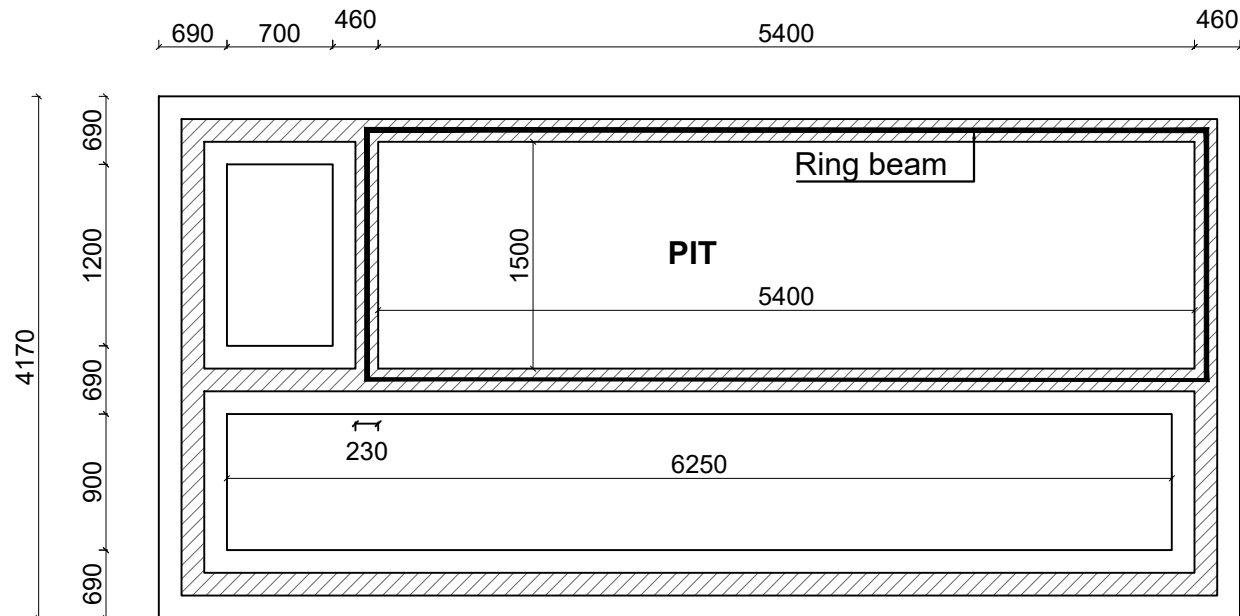
DRAWING TITLE : **SANITATION FACILITIES**
 VIP Latrine Gents - Section & Door and Window Schedule

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

FIVE STANCE VIP LATRINE INCLUDING A DISABLED UNIT AND INCINERATOR



LADIES VIP PLAN



FOUNDATION LAYOUT

LEGEND

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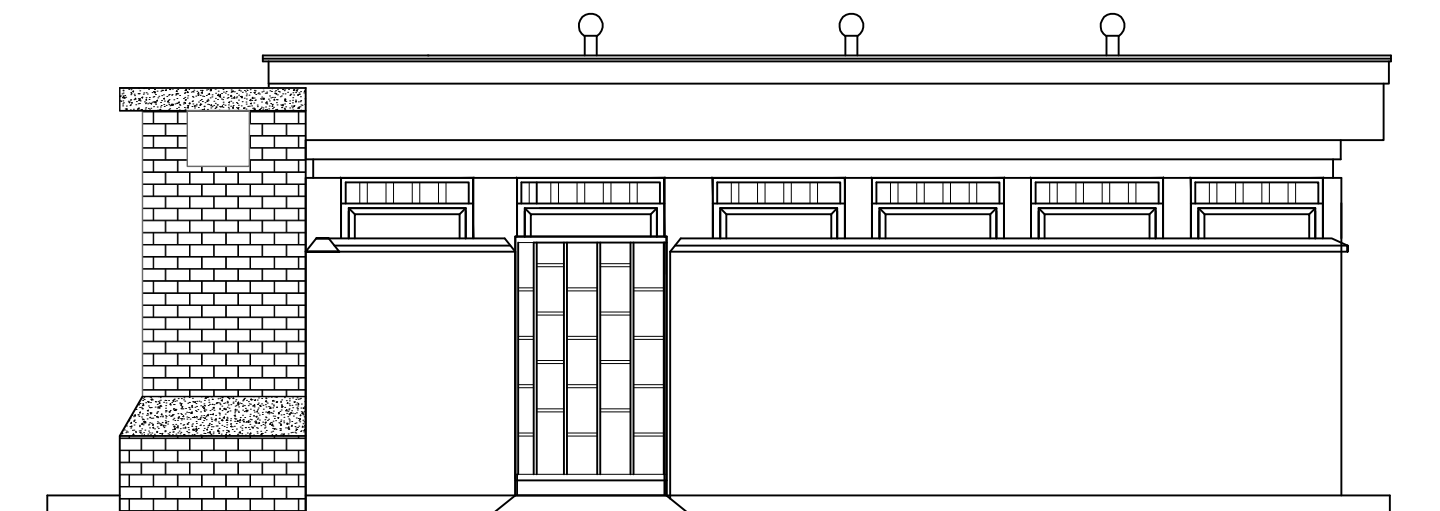
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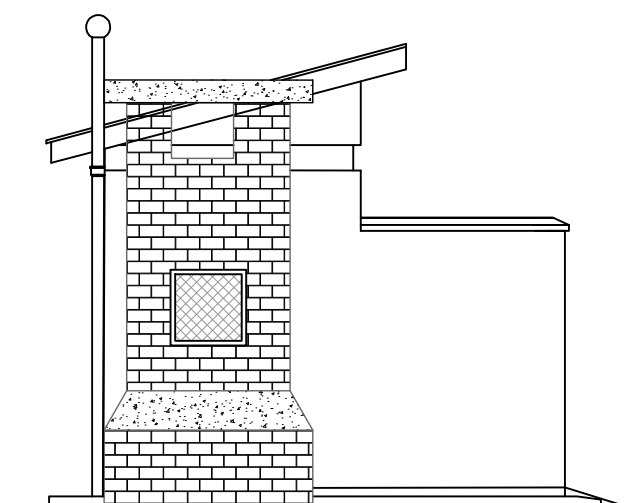
DRAWING TITLE : **SANITATION FACILITIES**
 VIP Latrine Ladies - Plan and Foundation Layout

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-003
Scale:	1:50
Sheet No.:	1 of 3

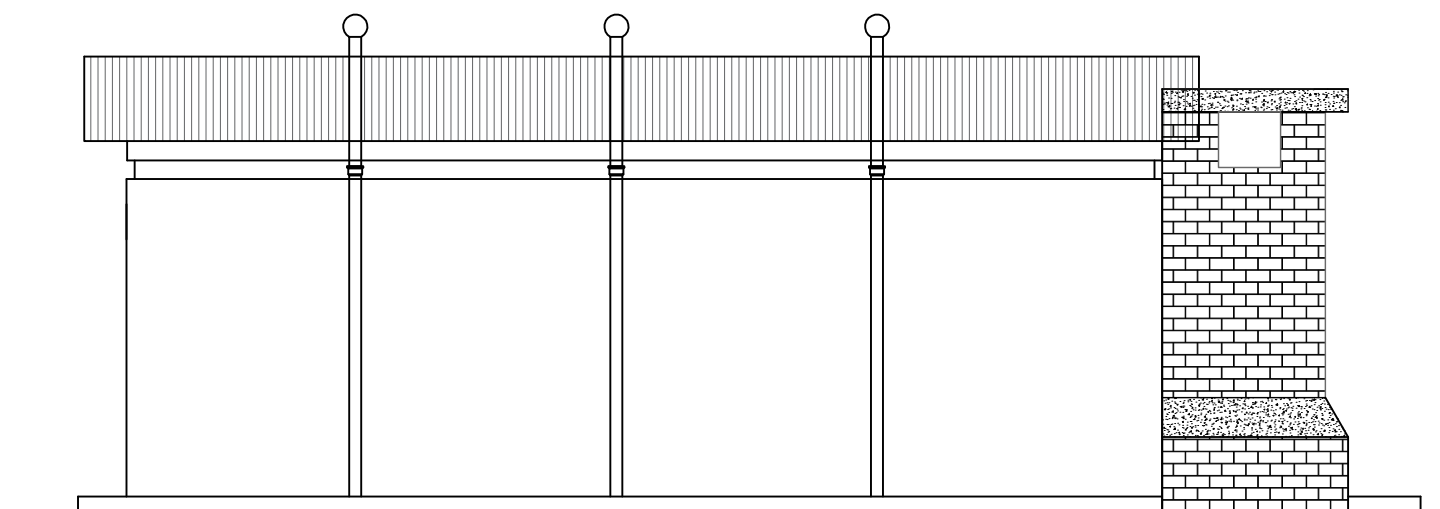
FIVE STANCE VIP LATRINE INCLUDING A DISABLED UNIT AND INCINERATOR



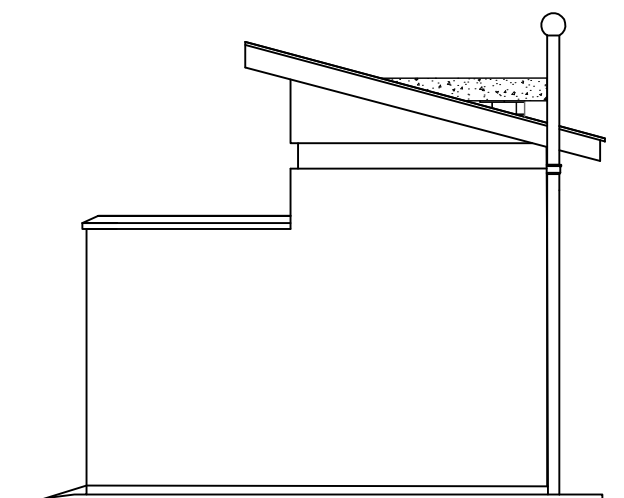
ELEVATION 1



ELEVATION 2




ELEVATION 3



ELEVATION 4

LEGEND

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**ENYAU WATER SUPPLY AND
SANITATION SYSTEM**

REVISIONS :

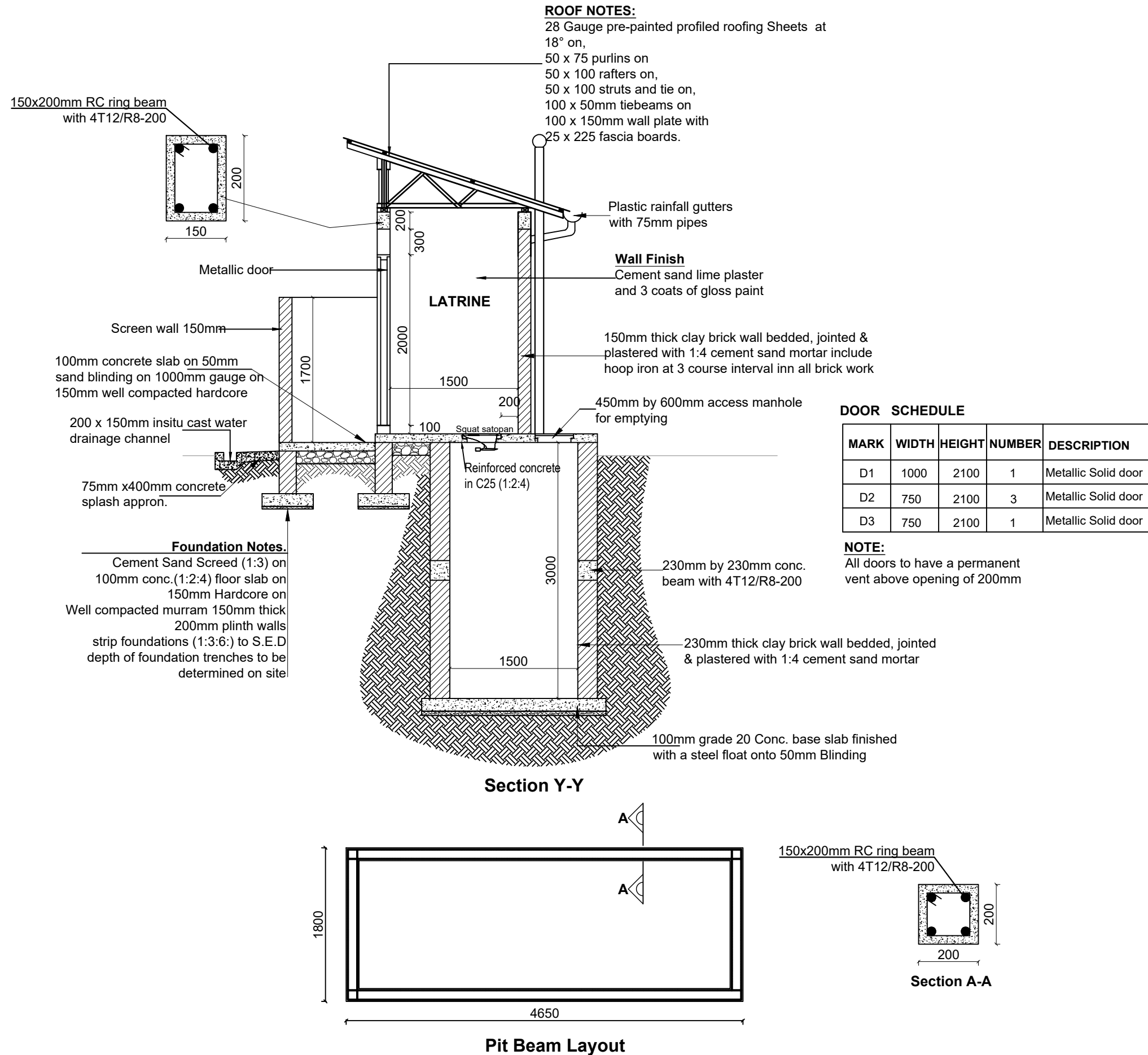
No	Date	Description

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

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 :

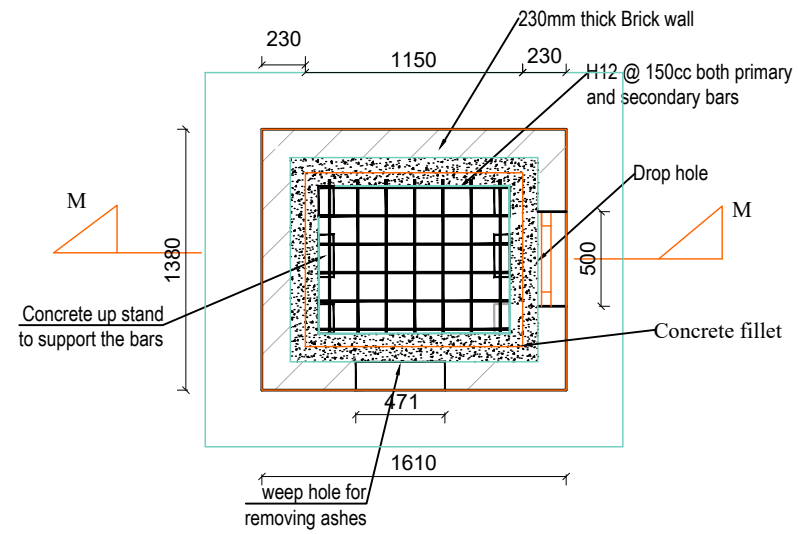
No	Date	Description

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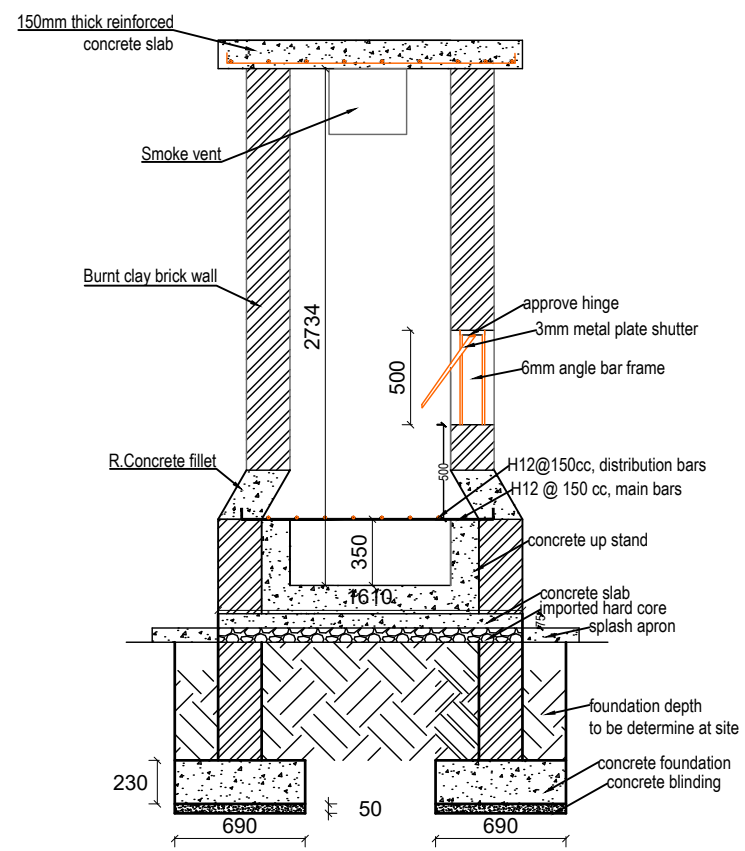
SANITATION FACILITIES
 VIP Latrine Ladies - Section & Door and Window Schedule

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

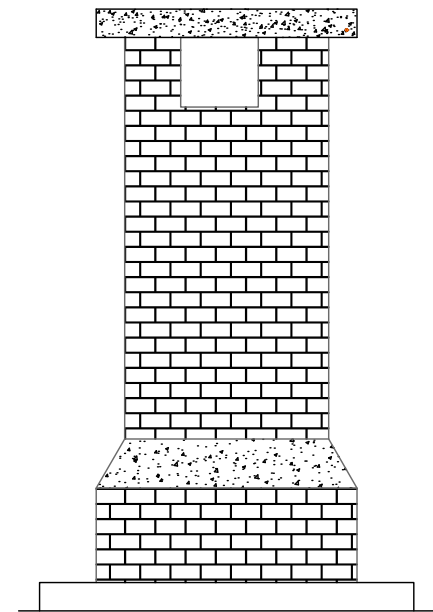
INCINERATOR DETAILS



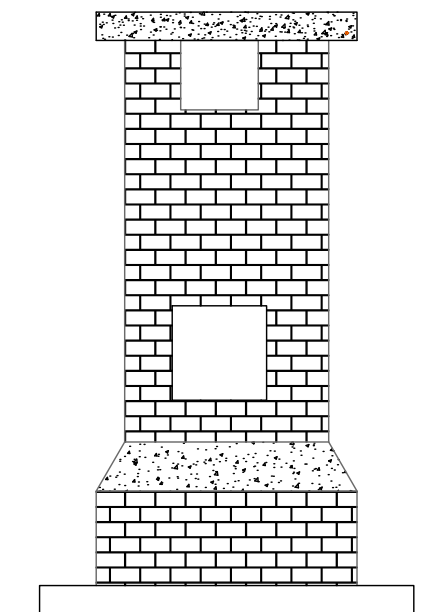
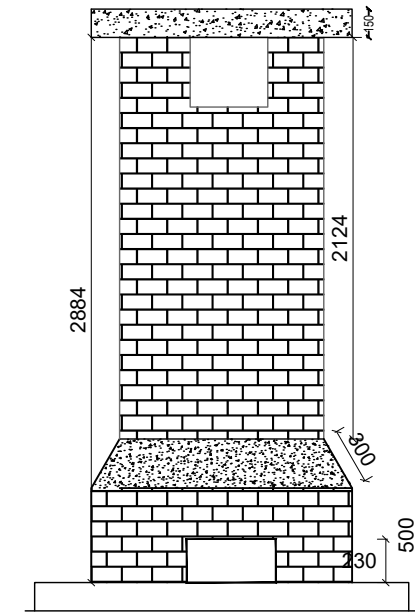
PLAN OF THE INCINERATOR



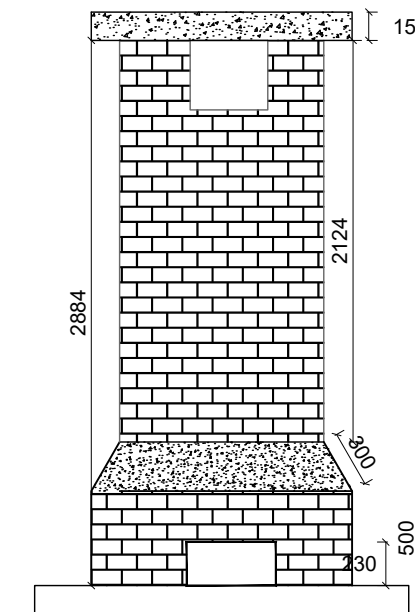
Section M-M



Elevations



Elevations



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 :

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

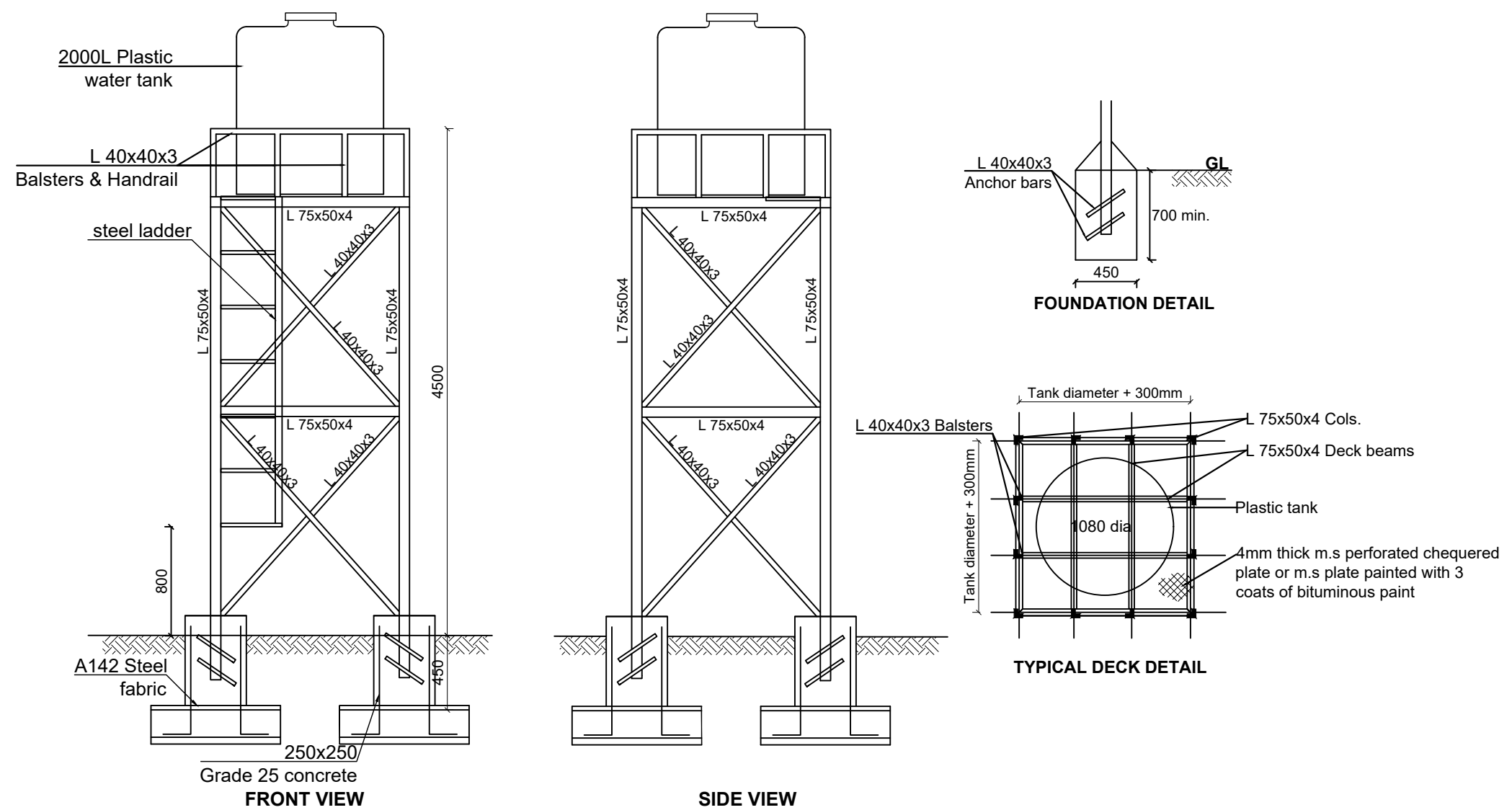
Scale:

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Sheet No.:

1 of 1

WATER TANK SUPPORTING STRUCTURE



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 :

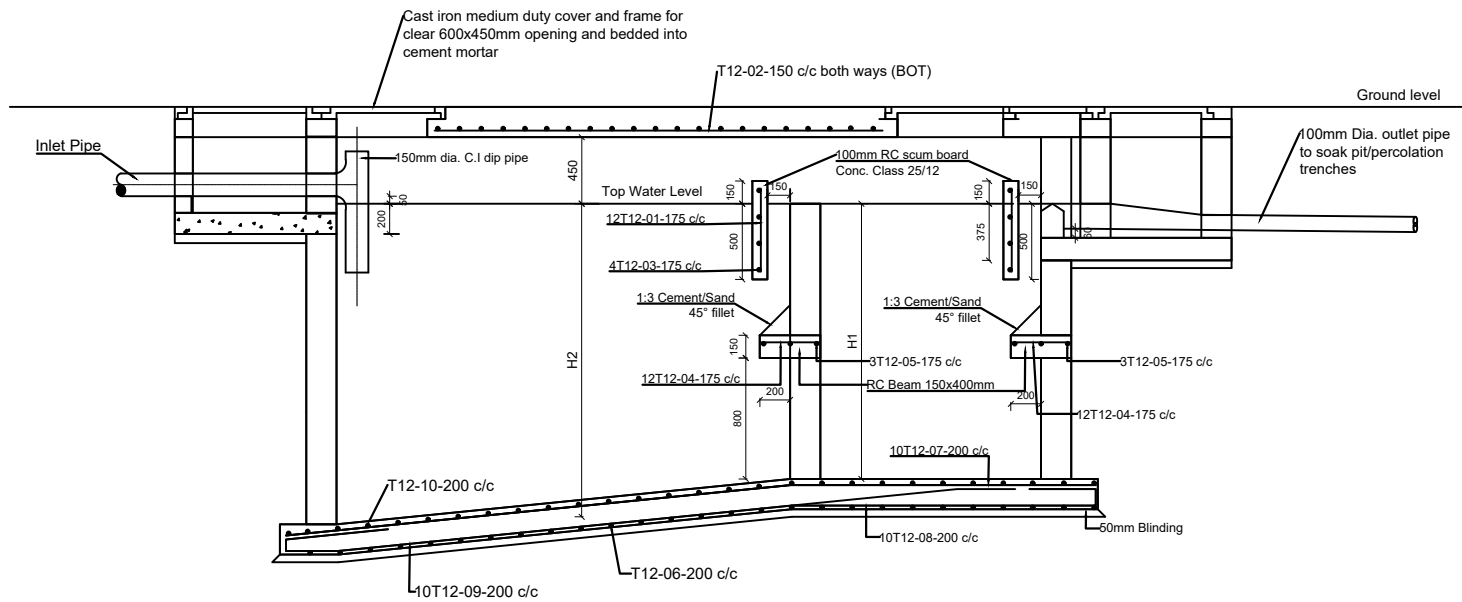
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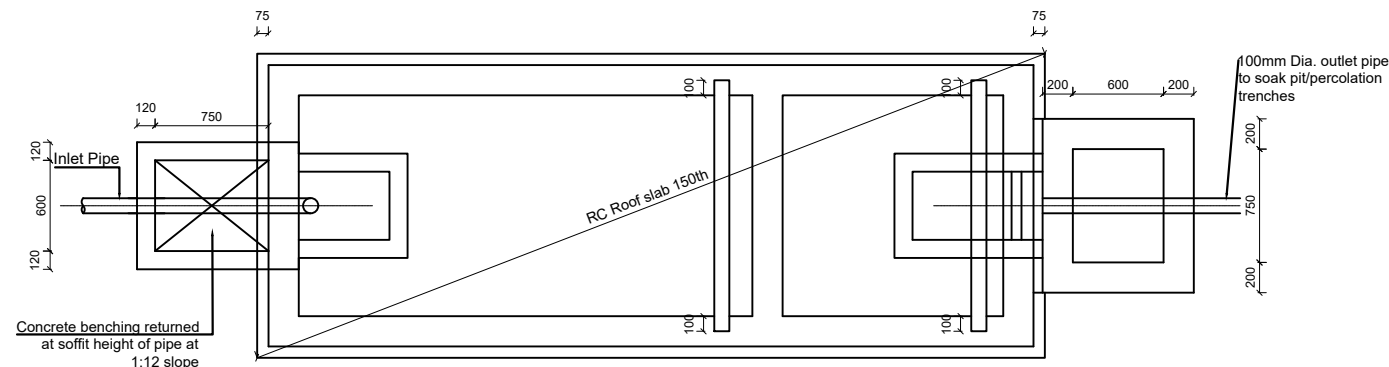
SANITATION FACILITIES
Public Toilets - Elevated Tank Details

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

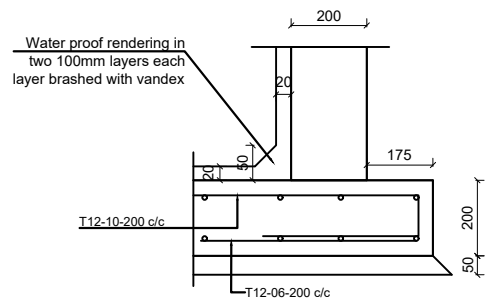
NoviC TANK



SECTION A-A

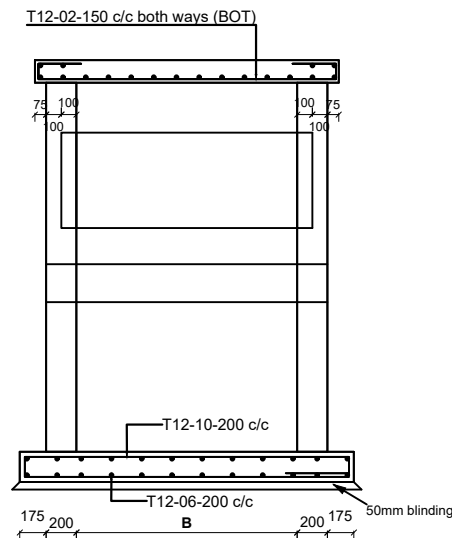
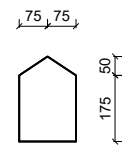


ROOF SLAB PLAN

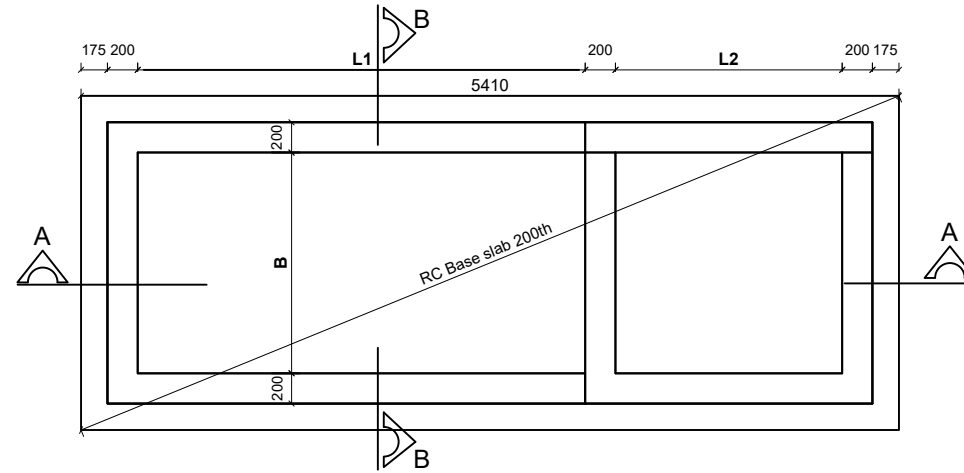


INTERNAL WATER PROOF TO WALLS AND SLABS

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

LEGEND

CLIENT :

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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

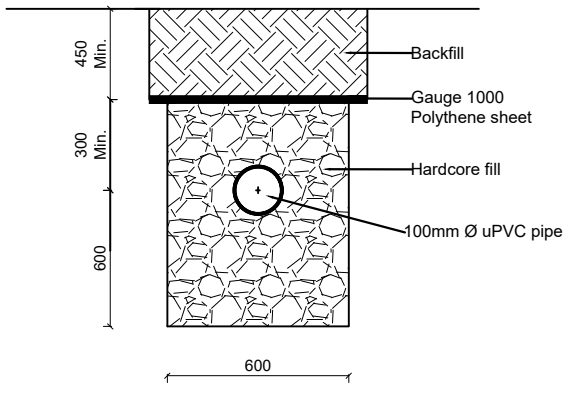
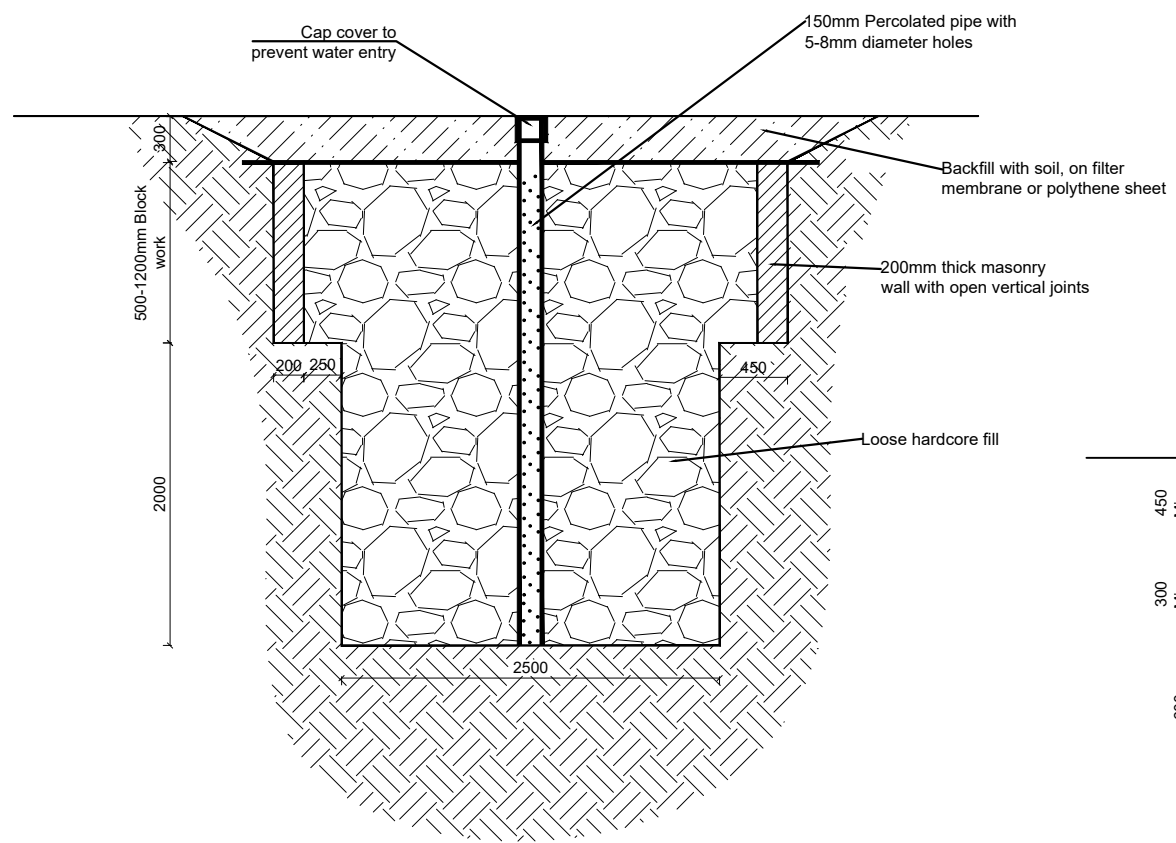
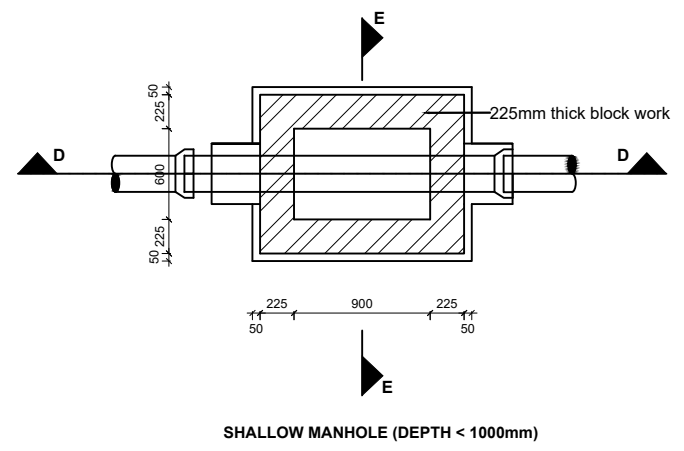
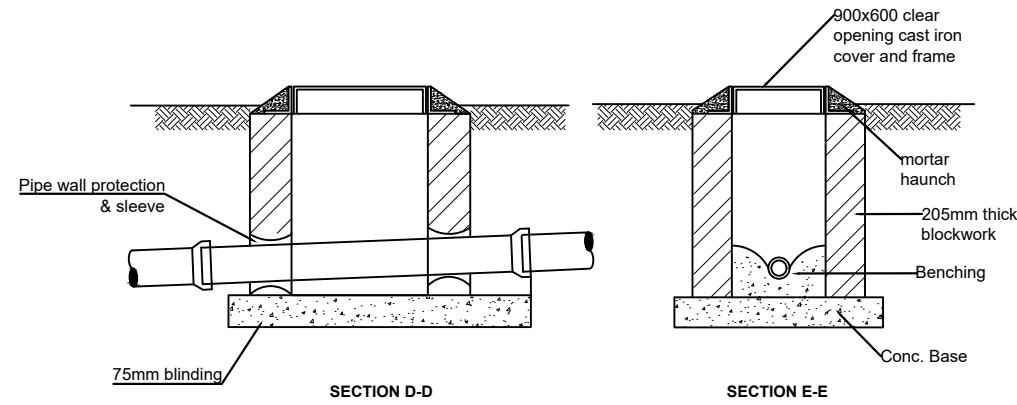
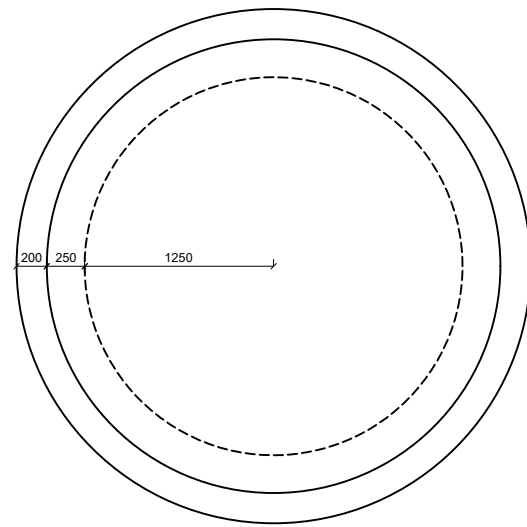
REVISIONS :

No	Date	Description

DRAWING TITLE :
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



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

LEGEND

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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: **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